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# NEW ZEALAND SEISMOLOGICAL REPORT 1989

SEISMOLOGICAL OBSERVATORY BULLETIN

E-173

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## POSTAL SERVICE

All measurement and interpretation of records is carried out at the central station. Requests and communications should therefore be sent to:

The Chief Seismologist
Seismological Observatory
P O Box 1320
Wellington
NEW ZEALAND

or to FAX No. + 64-4-471-0977.

Correspondents are asked to note that surface mails from Europe and the Americas are infrequent, and that articles not sent by airmail may take four or five months to reach us.

Published in 1992

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# STAFF IN 1989

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# STAFF IN 1989

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| | |
|---|---|
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| Technician: | D. Keen |

## Apia

| | |
|---|---|
| Superintendent: | F. Malele |

## Rarotonga

| | |
|---|---|
| Observer in Charge: | R. Taia |

## Niue

| | |
|---|---|
| Observer: | L.I. Lavini |

## Raoul Island

| | |
|---|---|
| Observer: | C. McCarroll |

## Campbell Island

| | |
|---|---|
| Observer: | G. Lynch |

## Scott Base

| | |
|---|---|
| Observer: | H. Nicholson |

# INTRODUCTION

The form of this Report follows lines established in recent years. The main list of regional shocks contains only earthquakes of magnitude 3.5 or greater located within 10° of Wellington, and smaller earthquakes known to have been felt in New Zealand. Many other earthquakes have however been assigned serial numbers, so the serials of the shocks listed are often not consecutive.

Phase data are not published here, but are instead sent to the International Seismological Centre, and appear in their bulletins, which constitute the only medium now in use for routine reporting of arrival time observations made in New Zealand. The lists of origin coordinates and magnitudes include sufficient supplementary information for assessment of the quality of the data on which they are based.

There is also a list of origins of earthquakes in the Wellington area with magnitudes of 2.0 or more. This list gives less information on the quality of individual determinations, but the density of recording stations in the area, and their easy accessibility for maintenance ensure that errors are small.

Seismologists urgently requiring unpublished New Zealand data may apply to the Observatory. Historic data are also available but unless a two-way information exchange is involved it is the Observatory's practice to make a charge for recovery of this material. Definitive origins for local earthquakes are usually available within a few months of their occurrence.

M.A. Lowry
D.E. Maunder
Editors

## NEW ZEALAND SEISMICITY IN 1989

1989 was rather a quiet year seismically in New Zealand itself, but the World's most powerful earthquake for more than a decade had its origin on the Macquarie Ridge, beneath the ocean to the south of the country, in May. This shock was felt in Stewart Island and Southland, and possibly in Tihiotonga in the Rotorua (33) locality of the North Island.

It is unusual for an earthquake to the south of New Zealand to be felt anomalously far away at a place in the North Island, although it is not particularly rare for shocks to the north of the country to be felt in the South Island, especially around Christchurch, when no reports, or only a few, have been received from further north. As earthquakes to the north are more numerous, it is not surprising that this phenomenon is observed more frequently from northern earthquakes. However, the North Island has enough earthquakes of its own for there to be some risk that the Tihiotonga report stemmed from a small local event that coincided with the expected arrival time of waves from the Macquarie Ridge earthquake.

Closer to home, and also in May, a deep shock of magnitude 6.1 some 100 km north of White Island (89/3120) was felt on the East Coast of the North Island at Ormond (44) and in the lower North Island at Palmerston North (62) and Paekakariki (65).

At the end of May, the most widely felt earthquake of the year (89/3221) was again close to Lake Te Anau, but some 40 km SW of the earthquake which struck the region a year before. It is interesting to compare the two shocks:

88/2354 June $03^{d}23^{h}27^{m}$ 45.12S 167.29E 73 km $M_L$ 5.7
Max intensity MM9, felt from Wellington (68) to Taatuku (156).

89/3221 May $31^{d}05^{h}54^{m}$ 45.33S 166.87E 23 km $M_L$ 6.1
Max intensity MM6, felt from Westport (79) to Stewart Island (158).

Both earthquakes have been the subject of mechanism studies by NEIC and the Harvard CMT group, and the earlier one and its aftershocks are related to their tectonic setting in Reyners et al., Geophys. J. Int. (1991) 104, 105-115. Although the 1989 earthquake has a higher $M_L$, those agencies that assigned a surface-wave magnitude ($M_S$) or seismic moment ($M_O$) to both earthquakes gave higher values of these parameters to the 1988 shock.

In August, a deep $M_L$ 6.0 earthquake (89/4622), over 120 km beneath the South Taranaki Bight was felt from as far north as Te Kuiti (31) to the Okuti Valley (110) in the South Island, and this time the southernmost report was not an isolated outlier. In the North Island, MM7 was reported from Raumati (65) and MM6 from Uruti (47).

Later in August a much smaller ($M_L$ 4.6) earthquake, but a very shallow one (89/4812) was responsible for MM6 being experienced at Waihi (21) and this intensity was reached again at the end of November, in Gisborne (45) as a result of a normal depth earthquake of $M_L$ 5.0.

White Island volcano continued to be active on a relative small scale. The Central North Island volcanoes were also without spectacular activity, except for a mushroom-shaped steam cloud emitted by Mount Ruapehu on August 9. Inspection of the crater lake on the same day ruled out the possibility of anything more than a small phreatic event.

### References

US NEIS PDE Monthly Listing, June 1988
Dziewonski et al: Phys. Earth.
Planet. Inter. 54: 199-209

US NEIS PDE Monthly Listing, May 1989
Dziewonski et al: Phys. Earth.
Planet. Inter. 60: 243-253.

## INSTRUMENTATION IN 1989

In 1989 the Seismological Observatory seismic data collection system made slow but important progress in its transition from being mainly a network of seismographs recording analogue traces continuously on paper, to being one in which recognised "events" are recorded digitally on magnetic tape. Continuous recording by WWSSN and SRO seismographs for the registration and analysis of teleseisms and the use, at some sites, of pen-recorders for immediate inspection of freshly recorded events, continued, as

did operation of all but one of the old analogue recorders, although the search for better sites for their replacements was actively pursued. Some Wood-Anderson seismographs are to be permanently retained as a calibration standard for local earthquake magnitudes. As re-equipment proceeds, some stations will be moved to seismically quieter sites, and some seismometers will be installed in boreholes.

Included in the new system are telemetered networks of several seismographs at spacings of only a few tens of kilometres. These networks have been established for research purposes or to monitor possible changes in seismicity resulting from human activity. Within each network, events are recorded digitally on magnetic tape at a central recording station.

Two types of event-recording system have been developed by the Observatory. The older system, SNARE (Seismic Network Automatic Recording Equipment) is a 16-channel system which relies on a combination of spectral analysis of seismometer outputs and coincidence detection to trigger recording by the whole network. EARSS (Automatic Equipment for the Recording of Seismograph Signals) was developed from SNARE as a single station system which can operate unattended for at least a week. Because it is a single station system it relies solely on a frequency-spectrum algorithm for event detection. An improvement on SNARE is the introduction of automatic magnification adjustment ("gain-ranging") to allow faithful recording of large-amplitude wave-forms. A 16-channel version of EARSS is under development and will eventually supersede SNARE.

Not included in the current re-equipment programme are instruments owned by organisations other than DSIR. In 1989, organisations cooperating in continuous or ad hoc seismic monitoring were: the Defence Scientific Establishment, the Universities of Auckland, Wellington and Otago, and the Electricity Corporation of New Zealand.

## CHANGES TO THE NETWORKS IN 1989

1989 saw the Observatory relieved of the last vestiges of responsibility for three Pacific Island seismograph stations.

After modernising the seismic recording equipment at Nadi, the Fiji Ministry of Energy, Mines and Mineral Resources decided that records made there would be read and retained in Fiji, instead of being sent to the Seismological Observatory in Wellington as in the past. This decision affected all records made after 1988 August.

In Western Samoa, our long-standing link with Apia Observatory and its satellite station at Afiamalu was broken with the return home of the last New Zealand supplied and salaried Technical Adviser in December. The Apia Observatory is now administered by the Geophysics Section of the Western Samoan Department of Agriculture, Forest and Fisheries.

The photographic recorder at Raoul Island (RAO) in the Kermadec group was replaced by a pen-recorder in September, making it easier for the operator there to recognise volcano-seismicity quickly if it should appear.

Back in New Zealand a 3-component EARSS recorder was connected to the Wellington Benioffs from the beginning of the year and a 3-component short-period seismometer with an EARSS recorder started operation at Cobb Dam (CDZ) in December. The intention was that this seismograph would replace the one at Cobb River, but the site proved to be unsuitable and was abandoned in April of 1990. In June the EARSS station at Kahutara (KHZ) was upgraded to have 3 components and the nearby analogue station at Kaikoura (KKZ) was decommissioned. About 100 km to the south-west another 3-component EARSS station, Lake Taylor (LTZ) started recording in November. Also in November, a new 3-component EARSS station was installed at Whitehall (WLZ) in the Waikato.

The 3 L4-C seismometers at Makara Radio (MRW) were replaced by an L4-3D instrument in July.

In March the Taupo network lost the four WK stations which had been installed in 1987 to monitor experiments in geothermal power management and in April the station at Rangipo (RGZ) was closed.

The Clyde network was improved in June by the addition of two new stations, Mount Michael (MMC) and Trig L (TLC) and the upgrading of Cairnmuir Mountains (CMC) from 1- to 3-component recording.

# INDEX OF STATION CODES AND POSITIONS

The growth in numbers of seismograph stations in recent years has been so great that it is not always possible to find short mnemonic codes that are unique in the world. Nearly all the codes used below are recognised and used by the United States NEIS and by ISC, but some of those for stations in the telemetered networks may not be.

| CODE | NAME | LATITUDE d | m | s | | LONGITUDE d | m | s | | ALT m |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | SEISMIC RESEARCH OBSERVATORY | | | | | | | | |
| SNZO | South Karori | 41 | 18 | 37 | S | 174 | 42 | 17 | E | -10 |
| | | STANDARD NETWORK | | | | | | | | |
| AFI | Afiamalu | 13 | 54 | 34 | S | 171 | 46 | 38 | W | 706 |
| API | Apia | 13 | 48 | 26 | S | 171 | 46 | 30 | W | 2 |
| AUC | Auckland | 36 | 51 | 36 | S | 174 | 46 | 41 | E | 79 |
| BRZ | Borland Lodge | 45 | 46 | 45 | S | 167 | 32 | 19 | E | 190 |
| CBZ | Campbell Island | 52 | 33 | 03 | S | 169 | 09 | 33 | E | 30 |
| CDZ | Cobb Dam | 41 | 05 | 44 | S | 172 | 42 | 47 | E | 780 |
| CIZ | Chatham Islands | 43 | 57 | 18 | S | 176 | 33 | 56 | W | 45 |
| CMZ | Cashmere | 43 | 35 | 10 | S | 172 | 38 | 23 | E | 255 |
| CNZ | Chateau | 39 | 12 | 00 | S | 175 | 32 | 51 | E | 1116 |
| COB | Cobb River | 41 | 05 | 16 | S | 172 | 44 | 02 | E | 213 |
| DNZ | Dunedin (U. of Otago) | 45 | 51 | 59 | S | 170 | 30 | 54 | E | 15 |
| DRZ | Dome Shelter | 39 | 16 | 35 | S | 175 | 33 | 49 | E | 2600 |
| GBZ | Great Barrier (DSE) | 36 | 13 | 04 | S | 175 | 28 | 52 | E | 70 |
| GNZ | Gisborne | 38 | 38 | 39 | S | 178 | 01 | 21 | E | 30 |
| HBZ | Hicks Bay | 37 | 35 | 57 | S | 178 | 18 | 05 | E | 0 |
| KAI | Kaimata | 42 | 31 | 33 | S | 171 | 24 | 31 | E | 82 |
| KHZ | Kahutara | 42 | 25 | 05 | S | 173 | 32 | 25 | E | 70 |
| KKZ | Kaikoura | 42 | 25 | 19 | S | 173 | 41 | 47 | E | 109 |
| KRP | Karapiro | 37 | 55 | 30 | S | 175 | 32 | 15 | E | 64 |
| LTZ | Lake Taylor | 42 | 46 | 58 | S | 172 | 16 | 08 | E | 640 |
| MGZ | Maungaku | 39 | 00 | 07 | S | 175 | 32 | 20 | E | 806 |
| MNG | Mangahao | 40 | 37 | 07 | S | 175 | 28 | 55 | E | 396 |
| MSZ | Milford Sound | 44 | 40 | 14 | S | 167 | 55 | 01 | E | 38 |
| NDF | Nandi | 17 | 45 | 25 | S | 177 | 27 | 00 | E | 30 |
| NEZ | North Egmont | 39 | 16 | 22 | S | 174 | 05 | 46 | E | 920 |
| NGZ | Ngauruhoe | 39 | 10 | 37 | S | 175 | 36 | 04 | E | 806 |
| NUE | Niue | 19 | 04 | 35 | S | 169 | 55 | 41 | W | 56 |
| OBZ | Oban | 46 | 54 | 18 | S | 168 | 06 | 55 | E | 26 |
| OMZ | Oamaru | 45 | 04 | 14 | S | 170 | 54 | 53 | E | 95 |
| PAT | Paeroa | 38 | 22 | 53 | S | 176 | 15 | 30 | E | 940 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PGZ | Pongaroa | 40 | 37 | 08 | S | 176 | 16 | 25 | E | 60 |
| RAO | Raoul Island | 29 | 15 | 06 | S | 177 | 55 | 06 | W | 110 |
| RAR | Rarotonga | 21 | 12 | 45 | S | 159 | 46 | 24 | W | 28 |
| RGZ | Rangipo | 39 | 09 | 19 | S | 175 | 50 | 02 | E | 667 |
| RTY | Rotoiti | 41 | 48 | 27 | S | 172 | 50 | 35 | E | 635 |
| SBA | Scott Base | 77 | 51 | 01 | S | 166 | 45 | 22 | E | 38 |
| TMP | Tomahawk Gully | 44 | 18 | 54 | S | 170 | 07 | 12 | E | 720 |
| WEL | Wellington | 41 | 17 | 10 | S | 174 | 46 | 06 | E | 122 |
| WIZ | White Island | 37 | 31 | 42 | S | 177 | 11 | 21 | E | 40 |
| WLZ | Whitehall | 37 | 52 | 12 | S | 175 | 35 | 46 | E | 190 |
| WTZ | Whakatane | 37 | 59 | 05 | S | 176 | 59 | 18 | E | 43 |

## CLYDE NETWORK (Electricorp)

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| CFC | Cairnmuir Flats | 45 | 11 | 03 | S | 169 | 17 | 32 | E | 576 |
| CMC | Cairnmuir Mts | 45 | 08 | 57 | S | 169 | 16 | 30 | E | 1039 |
| LRC | Leaning Rock | 45 | 03 | 55 | S | 169 | 20 | 46 | E | 1533 |
| LSC | Lilico Spur | 45 | 06 | 59 | S | 169 | 22 | 09 | E | 759 |
| MHZ | Mt Horn | 45 | 03 | 44 | S | 169 | 16 | 46 | E | 1127 |
| MMC | Mount Michael | 45 | 00 | 13 | S | 169 | 07 | 53 | E | 1163 |
| MSC | Moutere Station | 45 | 05 | 35 | S | 169 | 24 | 42 | E | 701 |
| SBC | Sonora Basin | 45 | 05 | 32 | S | 169 | 18 | 40 | E | 801 |
| TBC | Trig B | 45 | 08 | 47 | S | 169 | 19 | 49 | E | 619 |
| TLC | Trig L | 45 | 11 | 29 | S | 169 | 04 | 17 | E | 1393 |

## HAWKES BAY NETWORK

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| HNH | Havelock North | 39 | 39 | 55 | S | 176 | 52 | 52 | E | - |
| MAH | Mahia | 39 | 11 | 18 | S | 177 | 52 | 51 | E | 336 |
| MOH | Mohaka | 39 | 07 | 57 | S | 177 | 08 | 52 | E | 245 |
| MRH | Marewa | 39 | 29 | 57 | S | 176 | 53 | 18 | E | 4 |
| PAH | Panekirikiri | 38 | 51 | 33 | S | 177 | 03 | 15 | E | 563 |
| TAH | Taraponui | 39 | 08 | 09 | S | 176 | 44 | 25 | E | 1297 |
| TEH | Te Atua | 39 | 59 | 22 | S | 176 | 48 | 40 | E | 407 |
| TTH | Taradale Trig | 39 | 32 | 29 | S | 176 | 49 | 34 | E | 120 |
| WAH | Wakarara | 39 | 41 | 57 | S | 176 | 21 | 19 | E | 657 |
| WHH | Whakatau | 38 | 53 | 04 | S | 176 | 29 | 42 | E | 921 |

## TAUPO NETWORK

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| HAT | Hinemaiaia | 38 | 53 | 32 | S | 176 | 05 | 31 | E | 492 |
| HIT | Hingarae | 38 | 42 | 31 | S | 175 | 45 | 59 | E | 458 |
| HUT | Huka | 38 | 38 | 01 | S | 176 | 05 | 39 | E | 300 |
| KET | Ketetahi | 39 | 06 | 02 | S | 175 | 39 | 06 | E | 1208 |
| OH1 | Ohaaki 1 | 38 | 32 | 41 | S | 176 | 18 | 27 | E | 295 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| OH2 | Ohaaki 2 | 38 | 30 | 42 | S | 176 | 18 | 10 | E | 300 |
| OH3 | Ohaaki 3 | 38 | 31 | 59 | S | 176 | 19 | 34 | E | 300 |
| OH4 | Ohaaki 4 | 38 | 32 | 41 | S | 176 | 19 | 09 | E | 300 |
| RAT | Rangitukua | 38 | 52 | 07 | S | 175 | 46 | 16 | E | 649 |
| TUT | Tuhingamata | 38 | 42 | 42 | S | 175 | 59 | 28 | E | 614 |

## WELLINGTON NETWORK

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| BHW | Baring Head | 41 | 24 | 33 | S | 174 | 52 | 17 | E | 10 |
| BLW | Big Hill | 41 | 22 | 07 | S | 175 | 28 | 29 | E | 340 |
| CAW | Cannon Point | 41 | 06 | 32 | S | 175 | 04 | 04 | E | 330 |
| CCW | Cape Campbell | 41 | 45 | 03 | S | 174 | 13 | 01 | E | 216 |
| KIW | Kapiti Island | 40 | 51 | 50 | S | 174 | 54 | 42 | E | 320 |
| MOW | Moikau | 41 | 25 | 18 | S | 175 | 15 | 07 | E | 430 |
| MRW | Makara Radio | 41 | 13 | 57 | S | 174 | 42 | 18 | E | 235 |
| MTW | Mount Morrison | 41 | 09 | 34 | S | 175 | 30 | 07 | E | 282 |
| TCW | Tory Channel | 41 | 12 | 48 | S | 174 | 16 | 33 | E | 150 |
| WDW | Wainui Dam | 41 | 16 | 07 | S | 174 | 59 | 37 | E | 130 |
| WEL | Wellington | 41 | 17 | 10 | S | 174 | 46 | 06 | E | 122 |

# INSTRUMENTATION AND LITHOLOGY

## STANDARD NETWORK AND CONTRIBUTING STATIONS

Stations are listed in alphabetical order of their abbreviations. Pendulum and galvanometer periods, To and Tg, are given in seconds. Damping when not listed, may be assumed to be critical. Magnifications listed are for the period of maximum response, except for World-Wide Standard Station instruments, where the magnifications are given at the conventional periods of 1.0 and 15 seconds. Response curves for Willmore II, Benioff, Wood-Anderson and Mark Products L4-C seismographs and an EARSS system, are shown at the end of this section. WWSS pen recorders mimic the response of galvanometers with the Tg shown.

| | Instrument | Compt. | To | Tg | Damping | Magnification |
|---|---|---|---|---|---|---|
| AFI | AFIAMALU | | | | | |
| | Foundation: Basaltic lava flows. | | | | | |
| | Streckeisen digital | ZNE | 1.0 | 0.75 | | 12 500 at 1.0s |
| | | ZNE | 15 | 100 | | 750 at 15s |
| API | APIA | | | | | |
| | Foundation: Coral sand on Recent and Pleistocene basalt. | | | | | |
| | Johnson-Matheson (photo-cell amplifier with hot stylus recorder). | | | | | |
| | | Z | 1.2 | | | Uncertain |
| AUC | AUCKLAND | | | | | |
| | Foundation: Volcanic beds on Tertiary sandstone and mudstone. | | | | | |
| | Mark Products L4-C (with Kinemetrics VR-1 pen-recorder). | | | | | |
| | | Z | 1.0 | | | 3 800 at 0.25s |
| BRZ | BORLAND LODGE | | | | | |
| | Foundation: Quaternary gravels. | | | | | |
| | Willmore II | Z | 1.0 | 0.25 | | 29 100 at 0.25s |
| | Wood-Anderson | X | 0.80 | | crit. | 2 800 at 0.80s |
| | The Wood-Anderson is oriented with the X component northeast. | | | | | |
| CBZ | CAMPBELL ISLAND | | | | | |
| | Foundation: Basalt. | | | | | |
| | Willmore II | Z | 1.0 | 0.25 | | 5 000 at 0.25s |
| CDZ | COBB DAM | | | | | |
| | Foundation: Schist. | | | | | |
| | Mark Products L4-3D (with EARSS digital gain-ranging recorder). | | | | | |
| | | Z | 1.0 | | | |
| | | N | 1.0 | | | |
| | | E | 1.0 | | | |
| CIZ | CHATHAM ISLANDS | | | | | |
| | Foundation: Clay over basalt. | | | | | |
| | Willmore II (with Kinemetrics VR-1 pen-recorder). | | | | | |
| | | Z | 1.0 | | | 4 440 at 0.20s |
| CMZ | CASHMERE | | | | | |
| | Foundation: Rhyolite. | | | | | |
| | Mark Products L4-C (Telemetered to Kinemetrics VR-1 pen-recorder). | | | | | |
| | | Z | 1.0 | | | 24 000 at 0.20s |

| | Instrument | Compt. | To | Tg | Damping | Magnification |
|---|---|---|---|---|---|---|
| CNZ | CHATEAU | | | | | |
| | Foundation: Volcanic ash and Lava. | | | | | |
| | Mark Products L4-C (Telemetered to Kinemetrics VR-1 pen-recorder). | | | | | |
| | | Z | 1.0 | | | Variable |
| COB | COBB RIVER | | | | | |
| | Foundation: Schist. | | | | | |
| | Willmore II | Z | 1.0 | 0.25 | | 27 300 at 0.20s |
| DNZ | DUNEDIN (University of Otago) | | | | | |
| | Foundation: Basaltic lava flow. | | | | | |
| | Willmore III with Kinemetrics pen-recorder. | | | | | |
| | | Z | 1.0 | | | Variable |
| | | N | 1.0 | | | Variable |
| | | E | 1.0 | | | Variable |
| DRZ | DOME SHELTER (Department of Conservation) | | | | | |
| | Foundation: Recent andesitic ash. | | | | | |
| | Mark Products L4-C (High and low magnifications, telemetered to Kinemetrics VR-1 pen-recorders). | | | | | |
| | | Z | 1.0 | | | Variable |
| GBZ | GREAT BARRIER (Defence Scientific Establishment) | | | | | |
| | Foundation: Tertiary volcanics. | | | | | |
| | Mark Products L4-C (with Kinemetrics VR-1 pen-recorder) | | | | | |
| | | Z | 1.0 | | | |
| GNZ | GISBORNE | | | | | |
| | Foundation: Alluvium on Tertiary mudstone. | | | | | |
| | Willmore II | Z | 1.0 | 0.25 | | 27 000 at 0.25s |
| | | N | 1.0 | 0.25 | | 29 500 at 0.20s |
| HBZ | HICKS BAY | | | | | |
| | Foundation: Consolidated conglomerate. | | | | | |
| | Mark Products L4-C in borehole (with Kinemetrics VR-1 pen-recorder). | | | | | |
| | | Z | 1.0 | | | 67 500 at 0.10s |
| | also EARSS digital recorder from November. | | | | | |
| KAI | KAIMATA | | | | | |
| | Foundation: Moraine and river gravels over Tertiary mudstone and sandstone. | | | | | |
| | Wood-Anderson | X | 0.80 | | crit. | 2 800 at 0.80s |
| | This instrument is oriented with the X component northeast. | | | | | |
| KHZ | KAHUTARA | | | | | |
| | Foundation: Jurassic greywacke | | | | | |
| | Mark Products L4-3D (with EARSS digital gain-ranging recorder) | | | | | |
| | | ZNE | 1.0 | | | |
| KKZ | KAIKOURA | | | | | |
| | Foundation: Tertiary limestone and mudstone. | | | | | |
| | Willmore II | Z | 1.0 | 0.25 | | 12 000 at 0.25s |
| KRP | KARAPIRO | | | | | |
| | Foundation: Greywacke. | | | | | |
| | Benioff | Z | 1.0 | 0.20 | | 46 700 at 0.25s |
| | (until September) | N | 1.0 | 0.20 | | 41 000 at 0.50s |
| | Wood-Anderson | E | 0.8 | | crit. | 2 800 at 0.80s |

| | Instrument | Compt. | To | Tg | Damping | Magnification |
|---|---|---|---|---|---|---|
| LTZ | LAKE TAYLOR | | | | | |
| | Foundation: Triassic Greywacke. | | | | | |
| | Mark Products L4-3D (with EARSS digital gain-ranging recorder). | | | | | |
| | | Z | 1.0 | | | |
| | | N | 1.0 | | | |
| | | E | 1.0 | | | |
| MGZ | MAUNGAKU (Department of Conservation) | | | | | |
| | Foundation: Quaternary andesite. | | | | | |
| | Mark Products L4-C (Telemetered to Kinemetrics VR-1 pen-recorder). | | | | | |
| | | Z | 1.0 | | | Variable |
| MNG | MANGAHAO | | | | | |
| | Foundation: Greywacke | | | | | |
| | Willmore II | Z | 1.0 | 0.25 | | 53 000 at 0.33s |
| | (EARSS digital gain-ranging recorder from February) | | | | | |
| MSZ | MILFORD SOUND | | | | | |
| | Foundation: Gneiss. | | | | | |
| | Willmore II | Z | 1.0 | 0.25 | | 49 800 at 0.25s |
| NEZ | NORTH EGMONT | | | | | |
| | Foundation: Volcanic ash. | | | | | |
| | Mark Products L4-C (with Kinemetrics VR-1 pen-recorder). | | | | | |
| | | Z | 1.0 | | | 25 100 at 0.10s |
| NGZ | NGAURUHOE | | | | | |
| | Foundation: Recent volcanic flows. | | | | | |
| | Mark Products L4-C (Telemetered to Kinemetrics VR-1 pen-recorder). | | | | | |
| | | Z | 1.0 | | | Variable |
| NUE | NIUE | | | | | |
| | Foundation: Hard coral. | | | | | |
| | Willmore II (with Kinemetrics VR-1 pen-recorder). | | | | | |
| | | Z | 1.0 | | | 17 200 at 0.10s |
| OBZ | OBAN | | | | | |
| | Foundation: Weathered granite. | | | | | |
| | Mark Products L4-C (with Kinemetrics VR-1 pen-recorder). | | | | | |
| | | Z | 1.0 | | | 12 000 at 1.0s |
| OMZ | OAMARU | | | | | |
| | Foundation: Recent deposits overlying Tertiary limestone. | | | | | |
| | Willmore II | Z | 1.0 | 0.20 | | 11 500 at 0.20s |
| PGZ | PONGAROA | | | | | |
| | Foundation: Tertiary Sediments | | | | | |
| | Mark Products L4-C (with EARSS digital gain-ranging recorder). | | | | | |
| | | Z (borehole) | 1.0 | | | |
| RAO | RAOUL ISLAND | | | | | |
| | Foundation: Volcanic rock. | | | | | |
| | Willmore II | Z | 1.0 | | | 4 800 at 0.25s |
| RAR | RAROTONGA (World-Wide Standard Station) | | | | | |
| | Foundation: Basalt. | | | | | |
| | Benioff | ZNE | 1.0 | | | 6 250 at 1.0s |
| | Press-Ewing | ZNE | 15 | | | 375 at 15s |
| | EARSS digital event recorder tuned to trigger on T-waves. | | | | | |

| | Instrument | Compt. | To | Tg | Damping | Magnification |
|---|---|---|---|---|---|---|
| RGZ | RANGIPO | | | | | |
| | Foundation: Volcanic rock. | | | | | |
| | Mark Products L4-C (with Kinemetrics VR-1 pen-recorder). | | | | | |
| | | Z | 1.0 | | | 4 000 at 1.0s |
| RTY | ROTOITI | | | | | |
| | Foundation: Glacial gravels. | | | | | |
| | Mark Products L4-C (with Kinemetrics VR-1 pen-recorder). | | | | | |
| | | Z | 1.0 | | | Uncertain |
| SBA | SCOTT BASE (World-Wide Standard Station) | | | | | |
| | Foundation: Frozen basaltic debris resting on lava flows. | | | | | |
| | Benioff | ZNE | 1.0 | | | 12 500-50 000 at 1.0s according to season |
| | Press-Ewing | ZNE | 15 | | | 750 at 15s |
| TAZ | TARAWERA | | | | | |
| | Foundation: Rhyolite lava. | | | | | |
| | Mark Products L4-C (Telemetered to Kinemetrics VR-1 pen-recorder). | | | | | |
| | | Z | 1.0 | | | Variable |
| TMP | TOMAHAWK GULLY | | | | | |
| | Foundation: Mesozoic Greywacke | | | | | |
| | Mark Products L4-C (Telemetered to separate Kinemetrics VR-1 pen-recorders). | | | | | |
| | | Z | 1.0 | | | 750 000 at 0.20s |
| | | N | 1.0 | | | 100 000 at 0.20s |
| UTU | UTUHINA | | | | | |
| | Foundation: Ignimbrite. | | | | | |
| | Mark Products L4-C (Telemetered to Kinemetrics VR-1 pen-recorder). | | | | | |
| | | Z | 1.0 | | | Variable |
| WEL | WELLINGTON (World-Wide Standard Station) | | | | | |
| | Foundation: Greywacke. | | | | | |
| | Benioff | Z | 1.0 | | | 6 250 at 1.0s |
| | Press-Ewing | ZNE | 15 | | | 375 at 15s |
| | Wood-Anderson | NE | 0.80 | | crit. | 1 400 at 0.8s |
| | Imamura | Z | 1 | | 5:1 | 2 |
| | | NE | 4 | | 5:1 | 2 |
| | The Benioff vertical component operates both pen-and-ink and heated stylus recorders | | | | | |
| WIZ | WHITE ISLAND | | | | | |
| | Foundation: Recent andesite. | | | | | |
| | Mark Products L4-C (Telemetered to Kinemetrics VR-1 pen-recorder). | | | | | |
| | | Z | 1.0 | | | Variable |
| WLZ | WHITEHALL | | | | | |
| | Foundation: Jurassic Greywacke. | | | | | |
| | Mark Products L4-3D (with EARSS digital gain-ranging recorder). | | | | | |
| | | Z | 1.0 | | | |
| | | N | 1.0 | | | |
| | | E | 1.0 | | | |
| WTZ | WHAKATANE | | | | | |
| | Foundation: Weathered Jurassic greywacke. | | | | | |
| | Willmore II | Z | 1.0 | 0.20 | | 24 000 at 0.20s |

## SEISMIC RESEARCH OBSERVATORY

This station is sponsored by the United States Geological Survey. A three-component seismometer sealed in a gas-filled capsule is located in a borehole 165 mm in diameter and about 100 m deep, at a quiet site several kilometres from the Observatory. The ground surface there is 88 m above, and the seismometer 10 m below, sea level. Both digital and analogue recordings are made from the three long-period and the vertical component short-period outputs. Paper analogue records are archived by the Observatory, but the digital tape records of detected events are held by the USGS. The recorder is at the observatory site in Kelburn, and the signals are transmitted to it by landline.

| Code | Station | Component | Magnification |
|---|---|---|---|
| SNZO | South Karori | ZNE<br>Z | 5 000 at 25s<br>6 250 at 1.0s |
| The lithological foundation is Jurassic-Permian Greywacke. | | | |

## CLYDE NETWORK

A network of seismometers has been installed near Clyde to collect data on the prevailing level of microseismicity in the area of the dam now being constructed on the Clutha River. The network operated by the Electricity Corporation of New Zealand, is used to monitor any changes in local seismicity associated with the use of the lake for the generation of electricity. The system records all detected seismic events in digital form, on magnetic tape. Tapes are interpreted and retained at the Observatory where they are available for other seismological use. Clyde network stations are linked by radio telemetry to a multi-channel SNARE (Seismic Network Automatic Recording Equipment), which both detects and records seismic events, at Clyde. The seismometers are Mark Products L4-C or L4-3D instruments with a natural period of one second and the lithological foundation at all stations is Schist. Recorded waveforms can be displayed on a monitor screen at any required scale.

| Code | Station | Component |
|---|---|---|
| CFC | Cairnmuir Flats | Z |
| CMC | Cairnmuir Mountains | ZNE |
| CYZ | Clyde (renamed Trig B) | Z |
| LRC | Leaning Rock | Z |
| LSC | Lilico Spur | Z |
| MMC | Mount Michael | Z |
| MHZ | Mount Horn | Z |
| MSC | Moutere Station | Z |
| SBC | Sonora Basin | Z |
| TBC | Trig B (formerly Clyde) | Z |
| TLC | Trig L | Z |

## HAWKES BAY NETWORK

The Hawke's Bay network has been installed to monitor seismicity in an area which has not only some potential for hydro-electric power generation, but also a history of severe earthquakes. Station codes are not internationally recognised. Marewa produces high- and low-gain records from a three-component seismometer. The network records on a SNARE System in Napier.

| Code | Station | Component(s) | Foundation |
|---|---|---|---|
| HNH | Havelock North | ZNE (High gain)<br>ZNE (Low gain) | Greywacke gravel<br>" " |
| MAH | Mahia | Z | Mudstone |
| MOH | Mohaka | Z | Dune Sand |
| MRH | Marewa | ZNE (High gain)<br>ZNE (Low gain) | Alluvium<br>" |
| PAH | Parekirikiri | Z | Pumice Tuff |
| TAH | Taraponui | Z | Limestone |
| TEH | Te Atua | Z | Limestone |
| TTH | Taradale Trig | Z | Calcareous mudstone |
| WAH | Wakarara | Z | Greywacke |
| WHH | Whakatau | Z | Ignimbrite |

## TAUPO NETWORK

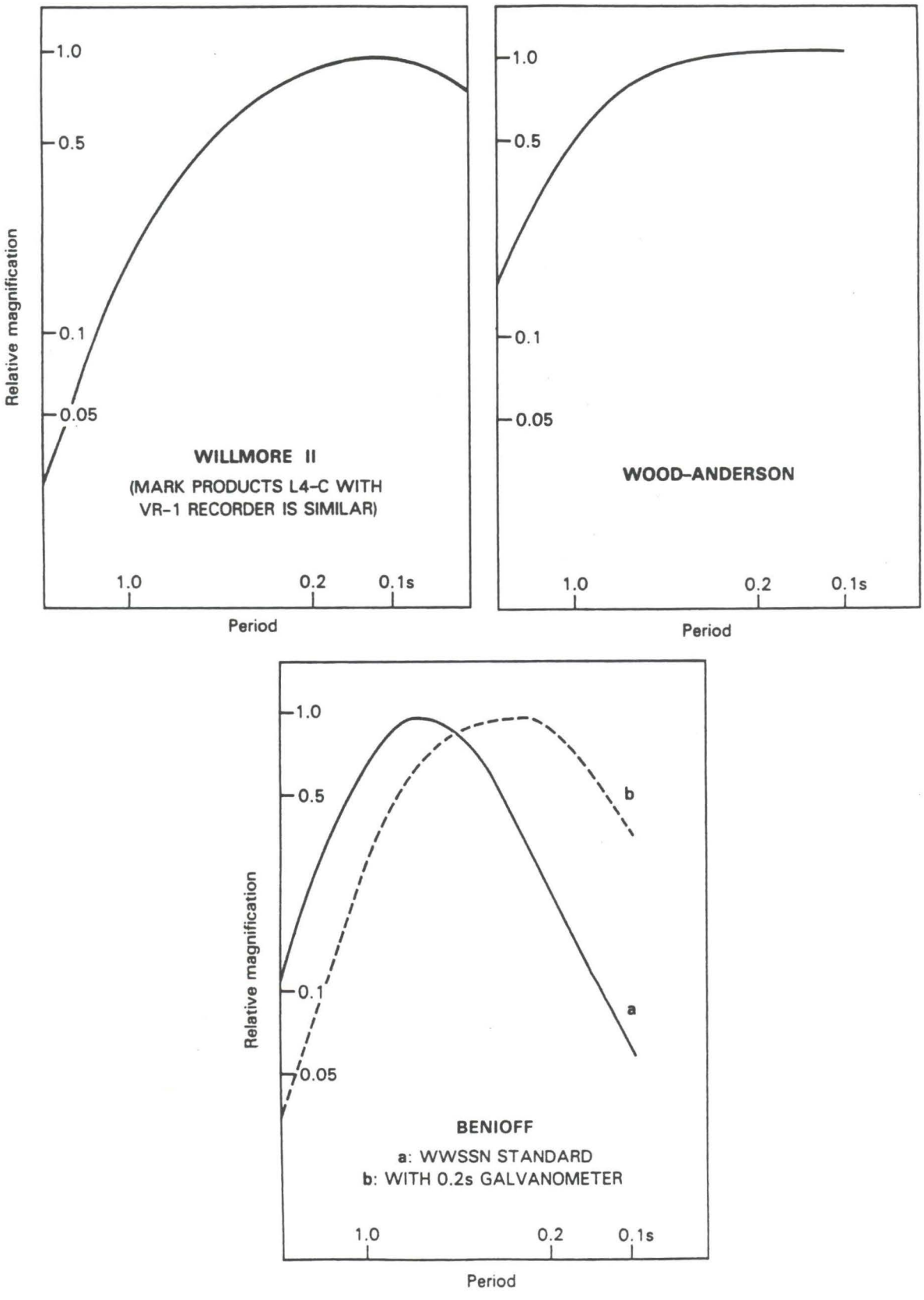
This network is intended to monitor volcanic and geothermal activity in the Taupo Volcanic Region. Although relatively quiet in historic times, (the 1886 Tarawera eruption notwithstanding), the geological record shows that the Region has been the scene of larger-scale activity at a number of times in the more distant past. The network records on a SNARE system at Wairakei. Station codes are not internationally recognised.

| Code | Station | Component | Foundation |
|---|---|---|---|
| HAT | Hinemaiaia | Z | Ignimbrite |
| HIT | Hingarae | Z | Ignimbrite |
| HUT | Huka | Z | Pumice breccia |
| KET | Ketatahi | Z | Andesite |
| OH1 | Ohaaki 1 | Z | Pumice |
| OH2 | Ohaaki 2 | Z | Pumice |
| OH3 | Ohaaki 3 | Z | Pumice |
| OH4 | Ohaaki 4 | Z | Pumice |
| PAT | Paeroa | Z | Ignimbrite |
| RAT | Rangitukua | Z | Rhyolite |
| TUT | Tuhingamata | Z | Rhyolite |
| WK1 | Wairakei 1 | Z | Pumice |
| WK2 | Wairakei 1 | Z | Pumice |
| WK3 | Wairakei 1 | Z | Pumice |
| WK4 | Wakrakei | Z | Pumice |

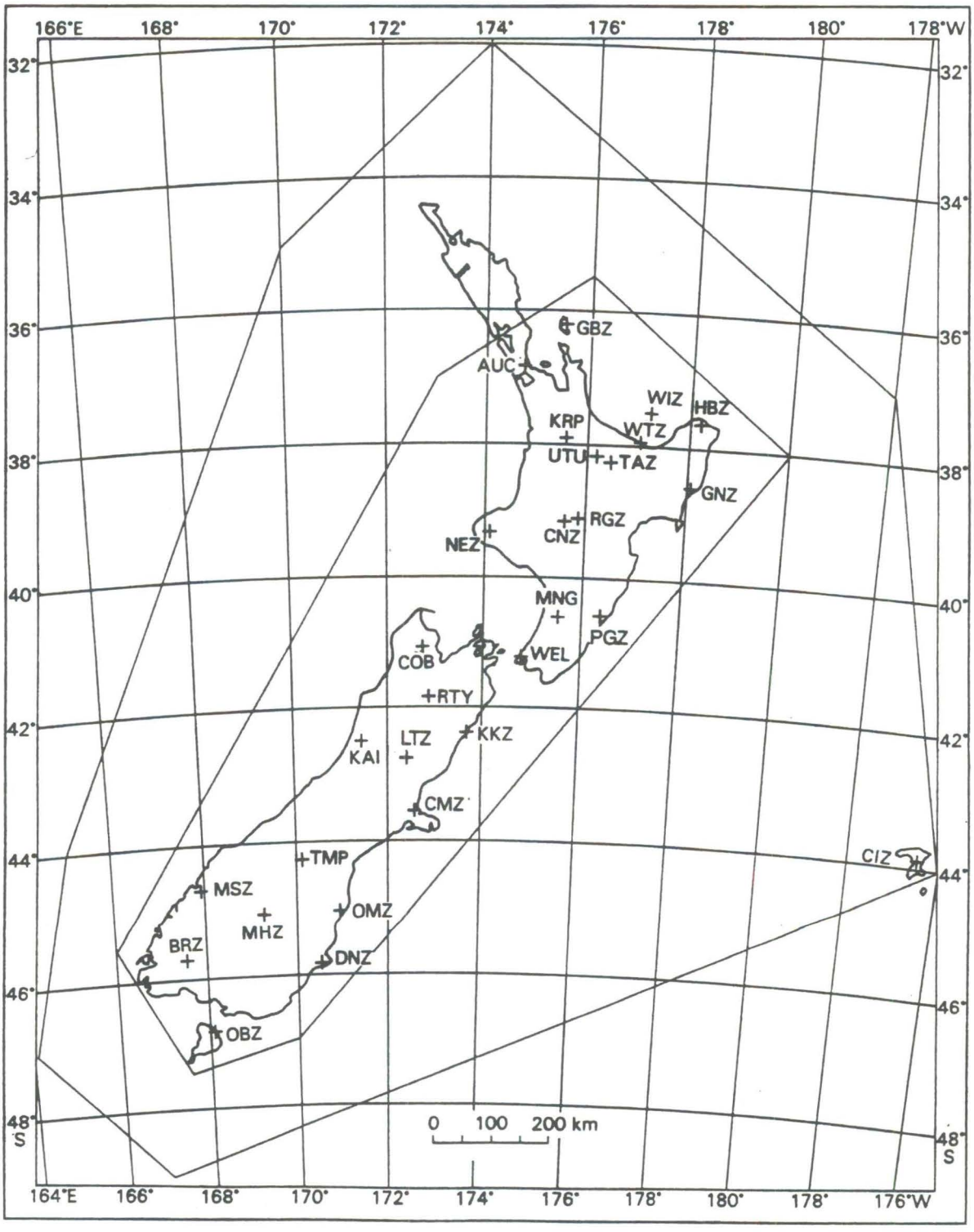
## WELLINGTON NETWORK

The stations of the Wellington network are linked by radio or land-line to a common SNARE event-detecting and recording system at the Observatory at Kelburn. The seismometers are Mark Products L4-C instruments with a period of 1.0 second. SNARE records are made on magnetic tape and may be displayed on a monitor screen at any required magnification. The lithological foundation at all stations is Jurassic-Permian Greywacke, except at CCW which is on Miocene sandstone.

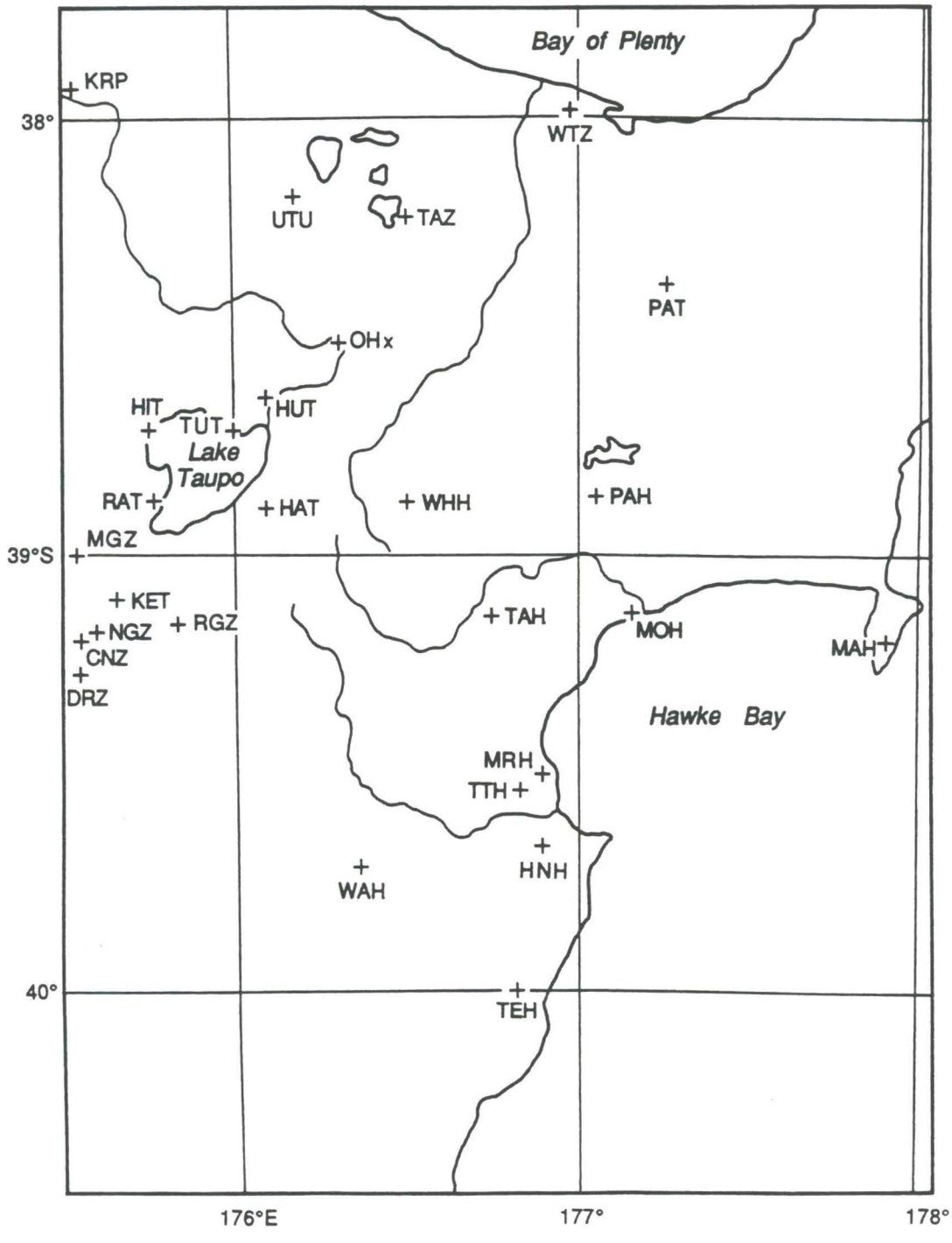
| Code | Station | Component(s) |
|---|---|---|
| BHW | Baring Head | Z |
| BLW | Big Hill | Z |
| CAW | Cannon Point | Z |
| CCW | Cape Campbell | Z |
| KIW | Kapiti Island | Z |
| MQW | Moikau | Z |
| MRW | Makara Radio | ZNE |
| MTW | Mount Morrison | Z |
| TCW | Tory Channel | Z |
| WDW | Wainui Dam | Z |
| WEL | Wellington | ZNE |



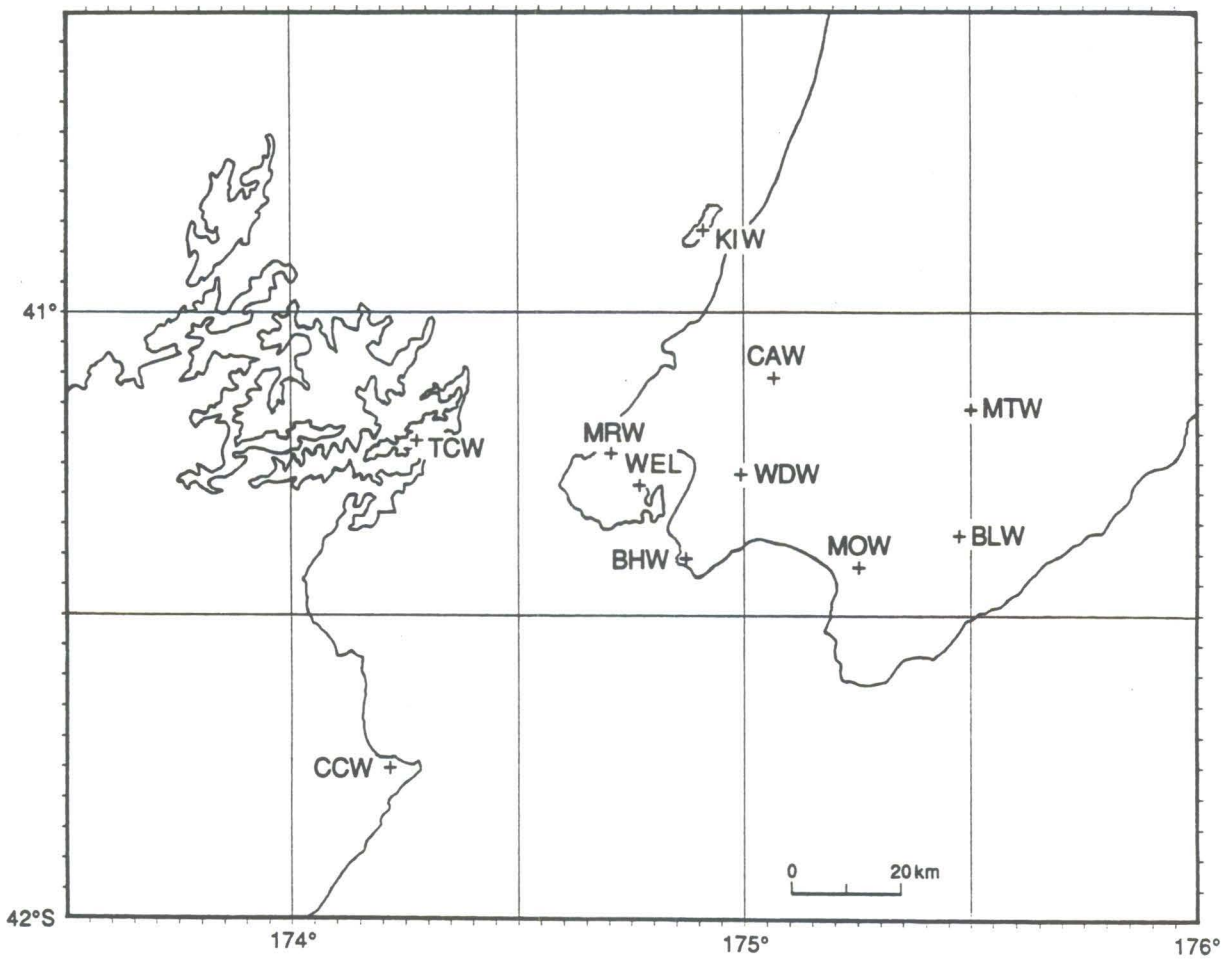

Period response curves of short period seismographs.



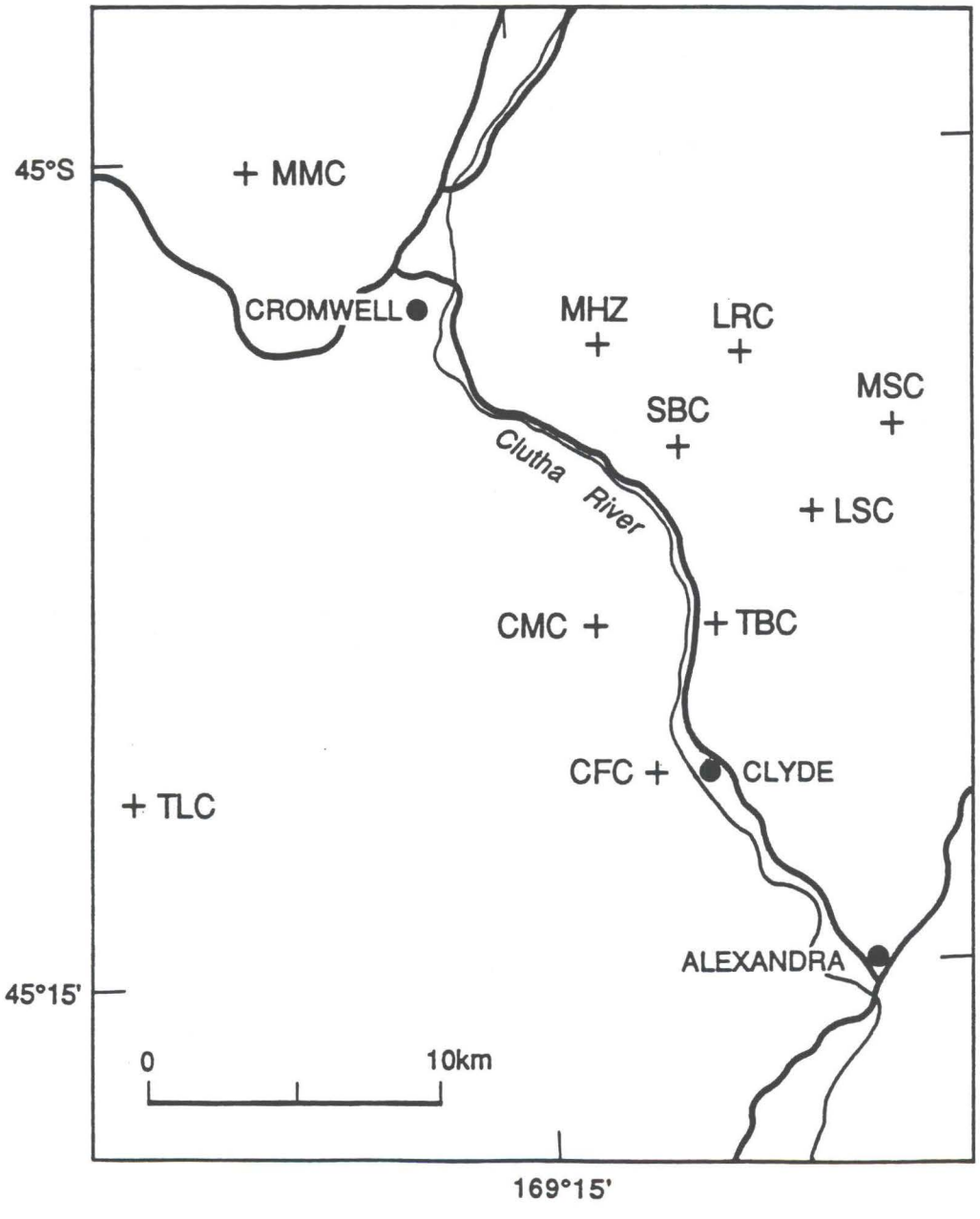

Stations of the National Seismograph Network. Some stations that are too closely spaced to show on this scale are shown instead on the map of the Taupo and Hawke's Bay Networks. The inner and outer polygons define areas where accuracy of epicentre locations is considered reliable, less reliable and inadequate.



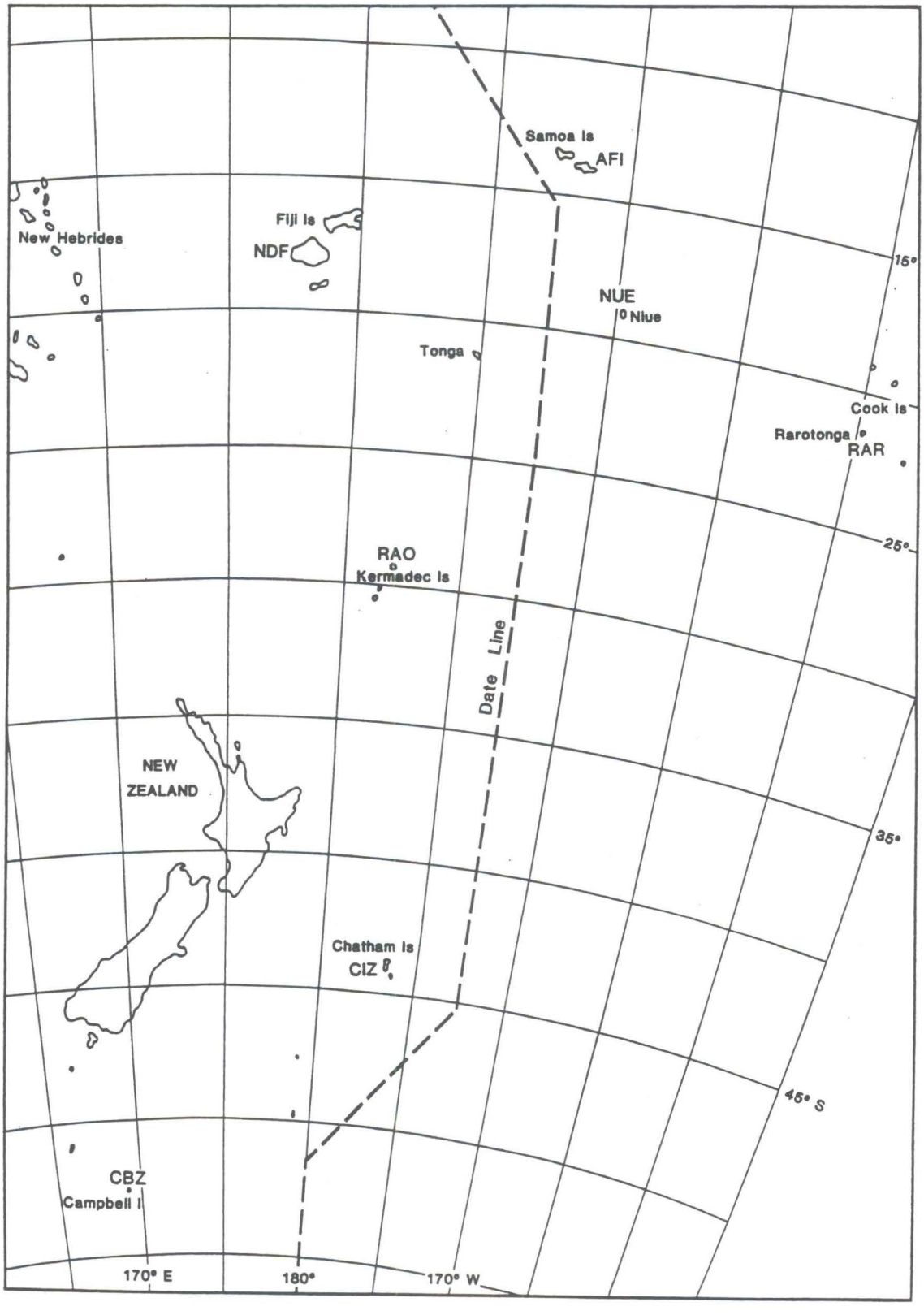

Stations of the Taupo and Hawke's Bay Networks. Other stations lying within the boundaries of the map are also shown. OH1-OH4 are clustered close to the position shown by OHx.




The Wellington Network includes stations on both sides of Cook Strait.




The Clyde Network monitors seismic activity around the Clyde Dam.




Pacific Island Stations

## TIMING ARRANGEMENTS

Unless stated otherwise, times in this Report are given in Universal Time (U.T. or, more strictly, U.T.C., which is basically atomically kept time, adjusted when necessary by one second steps ("leap seconds") to agree with the astronomically determined time known as UT1). For most seismological and civil purposes this may be regarded as the Mean Solar Time of the Greenwich meridian.

On paper seismograms made by the national network, minute marks, derived from quartz crystal clocks of high stability, appear on records as abrupt trace deflections of about two seconds duration. Radio time signals also operate the trace deflector so that the relationship between the locally generated minute marks and Universal Time can be established. In most cases the radio signals are those of the New Zealand Time Service, transmitted hourly through the stations of Radio New Zealand, but in areas where local reception is bad, a time signal broadcast from overseas may be used. It is estimated that the total error in time-signal recording resulting from signal transmission and delay in operation of the trace deflector should never exceed 30 milliseconds.

SNARE and EARSS instruments are also equipped with high stability clocks and radio receivers tuned to pick up Time Service signals. A software routine establishes a clock drift rate and applies a correcting signal calculated to bring the clock smoothly into synchronism with the time signals (which are usually received hourly). The difference between internally kept time and Time Service times is recorded and a correction applied by CUSP interactive display software to the phase onset times chosen by analysts. Corrected arrival times are expressed to a precision of one hundredth of a second, usually with an accuracy of a few hundredths, but errors of almost a tenth of a second have occasionally been detected.

Stations of the World-Wide Standard Seismograph Network have the timing arrangements usual at such stations. At other stations beyond New Zealand, time signals originating from the national Time Service or some other reliable time service are used.

It is sometimes desirable to know the local civil time at which an earthquake occurred. The times now used for civil purposes in New Zealand (except the Chatham Islands) are New Zealand Standard Time, and New Zealand Daylight Time, which are defined in the Time Act, 1974. New Zealand Standard Time is 12 hours, and New Zealand Daylight Time 13 hours, ahead of U.T. The period of Daylight Time is specified by Order in Council, as provided by the Act, and in 1989 Daylight Time was in effect until 02h NZST on March 5th, and from 02h NZST on October 8th until the end of the year.

The time observed in the Chatham Islands is 45 minutes in advance of that currently in use in New Zealand. New Zealand Standard Time is observed at Scott Base, in Fiji and on Raoul and Campbell Islands. Times kept elsewhere in the South Pacific are set by the governments of the respective countries. Those used in places which sometimes report earthquakes to the Observatory are listed below.

| | |
|---|---|
| Western Samoa | 11h 00m behind U.T. |
| Niue | 11h 00m behind U.T. |
| Rarotonga | 10h 00m behind U.T. |
| Tonga | 13h 00m ahead of U.T. |
| Norfolk Island | 11h 30m ahead of U.T. |
| French Polynesia | 10h 00m behind U.T. |

Note that Western Samoa, Niue, Rarotonga and French Polynesia are on the opposite side of the International Date Line from New Zealand.

# ORIGIN INFORMATION

## CONTENT

This section contains origin times, epicentres, focal depths, and magnitudes of earthquakes in the New Zealand region that the Observatory has located from instrumental data, together with indicators of the quality of the data used.

In the areas within the inner and outer polygons outlined on the map on page 20, the Observatory attempts to determine origins for all shallow earthquakes of $M_L$ 3.7 or more, and all shocks of $M_L$ 4.0 or more, respectively. (Origins are regarded as shallow if their depth is less than 60 km.) Origins are also calculated for smaller or more distant earthquakes reported to have been felt in New Zealand. Weak shocks felt during earthquake swarms do not automatically get this individual attention, but an origin is found for at least one shock in any sequence giving rise to felt reports.

## DETERMINATION OF ORIGINS

Earthquake origins are determined using P & S phases or first-arriving crustal P & S phases. Four different velocity/depth structures are used to calculate travel-times of rays passing through and immediately beneath the crust in different parts of the country (see table below). Beneath the "Moho" defined by these models, velocities are smoothly merged with those of the Jeffreys-Bullen Tables (British Association for the Advancement of Science, 1958). The Standard velocity model is used to calculate crustal velocities beneath all regions except those defined in the following table.

| MODEL | UPPER DEPTH BOUNDARY (km) | Vp (km/s) | Vs (km/s) | CORNERS OF REGION Lat. | Long. |
|---|---|---|---|---|---|
| | | | | (in clockwise order) | |
| New Zealand Standard | 0.0 | 5.5 | 3.3 | | |
| | 12.0 | 6.5 | 3.7 | | |
| | 33.0 | 8.1 | 4.6 | | |
| Wellington | 0.0 | 4.40 | 2.54 | 41.0 S | 178.0 E |
| | 0.4 | 5.63 | 3.16 | 43.5 S | 175.0 E |
| | 5.0 | 5.77 | 3.49 | 42.0 S | 173.0 E |
| | 15.0 | 6.39 | 3.50 | 39.7 S | 175.7 E |
| | 25.0 | 6.79 | 3.92 | | |
| | 35.0 | 8.07 | 4.80 | | |
| | 45.0 | 8.77 | 4.86 | | |
| Taupo | 0.0 | 3.00 | 1.70 | 35.6 S | 180.0 E |
| | 2.0 | 5.30 | 3.00 | 38.0 S | 177.5 E |
| | 5.0 | 6.00 | 3.50 | 39.7 S | 175.7 E |
| | 15.0 | 7.40 | 4.30 | 39.0 S | 175.0 E |
| | 33.0 | 7.78 | 4.39 | 37.0 S | 176.0 E |
| | 65.0 | 7.94 | 4.51 | 34.6 S | 178.5 E |
| | 96.4 | 8.08 | 4.52 | | |
| Clyde | 0.0 | 4.4 | 2.6 | 45.5 S | 172.0 E |
| | 0.5 | 6.0 | 3.3 | 49.0 S | 167.0 E |
| | 12.0 | 6.5 | 3.7 | 44.5S | 168.0 E |
| | 33.0 | 8.1 | 4.6 | 44.0 S | 169.0E |

Seismograms are displayed on high-resolution graphics monitor screens under the control of CUSP (Caltech-USGS Seismic Processor) interactive software, for an analyst to select phase onset times by positioning a cursor on the trace. The analyst also selects the amplitude maximum to be used in magnitude calculations. Whenever possible, locations are based exclusively on times of first-arriving P and S phases.

Weights are initially assigned to phase arrival times by analysts according to the precision of the measurement. The weight of readings is further modified by the location program, which, after each iteration, weights the residuals used to adjust the trial origin. The procedure (see Jeffreys, H., 1939: Probability Theory, Cambridge University Press) greatly reduces the weight given to phases with residuals greater than three standard errors.

In general, all four coordinates of the earthquake origin are calculated (origin time, latitude, longitude, and focal depth). In some cases, however, the focal depth is not allowed to vary, but restricted to some chosen depth. This is most commonly done for crustal earthquakes. Unless there is a station within 25 km of a shock in the upper crust, or within 50 km of a shock in the lower crust, a nominal depth of either 12 or 33 km is usually assigned, according to the crustal phases present and the goodness of fit of the resulting solution. Less often, the depth is restricted to a smaller value, particularly when the strengths of locally reported felt intensities indicate an uncommonly shallow focus. The letter R printed after the depth in the lists which follow indicates a restriction for any of the foregoing reasons. There are also times when data not suitable for input to the location program (e.g. overseas PKP readings), indicate the depth of focus; in such cases the depth is similarly fixed and the restriction shown by following the depth by the letter G (to indicate intervention by a Geophysicist). When convergence of the location program fails for lack of enough data, both epicentre and depth are fixed at values consistent with the available information, and computation limited to finding a compatible origin time. Such doubly-restricted origins have the letters RR printed after the depth.

In routine origin determinations, sufficient of the stations nearest to the epicentre are read to ensure that there will be enough data for a satisfactory solution. When enough near observations are available, arrival times recorded at stations more distant from the epicentre are excluded from the calculations. Observatory analysts are free to completely reject data which they think to be unreliable, or to assign a low initial weight to it in the location program's procedure for minimising mean residuals. (See earlier details of how the weights are used).

In using the results in this section, it is essential to keep in mind that the positions of earthquakes with epicentres outside the network of seismograph stations can be very uncertain, even though the mean residual is small. With the aim of helping the reader to assess the reliability of the results presented here, the positional relationships between an epicentre, and the stations which recorded the data used to find it, are given after the calculated origin coordinates. Similarly, the number of magnitude estimates contributing to the mean value, and an indication of their scatter, are also shown.

The solutions presented here are in all cases based upon uniform procedures applied to laterally homogeneous models. Because well-established local models have been used to calculate the origins of shocks within the Wellington and Clyde Networks, systematic errors in these areas should be smaller than in other parts of the country.

The extensive development of CUSP software necessary to adapt it for use in New Zealand was undertaken by Dr T Webb and Dr E Smith.

## MAGNITUDES

The magnitudes assigned to local earthquakes are intended to be the values of $M_L$ as originally defined by C.F. Richter (Bull. Seism. Soc. Am. 25: 1-32, 1935), but his procedure for performing the magnitude calculation at other than the standard distance of 100 km has been modified, to take account of the observed characteristics of energy propagation in New Zealand, including the effect of focal depth. (For details, see Haines, A.J.: A local magnitude scale for New Zealand earthquakes, Bull. Seism. Soc. Am. 71: 275-94.)

## ANALOGUE RECORDS

Magnitude estimates made from analogue seismograms are based on the largest amplitudes in the P and S groups, recorded by Willmore vertical and Wood-Anderson seismographs. (The distribution of these may be found in the earlier section on instrumentation.) At Wellington, where two-component Wood-Anderson instruments are installed, the sum of the amplitudes is used. An amplitude-distance relationship of the form

$$A = A_0 R^{-N} \exp(-\alpha R)$$

where A is a trace amplitude recorded at an epicentral distance R, $A_0$ is a calibration function, N is a geometric spreading factor and $\alpha$ is an inelastic attenuation coefficient, has been found appropriate for all parts of the country.

For all New Zealand crustal earthquakes N is 2 and $\alpha$ generally takes a value close to 0. With these values, the relationship describes head-wave propagation with no attenuation. In the Central Volcanic Region, however, (see Map, page 30), $\alpha$ takes values of 0.8 $deg^{-1}$ for P waves and 1.05 $deg^{-1}$ for S waves. Adjustments are therefore made according to the distance travelled in the volcanic region.

For deep earthquakes in the Main Seismic Region the same parameters as for crustal earthquakes apply (N = 2, $\alpha$ = 0), provided that (i) R now measures the slant distance from the focus to the base of the crust, and (ii) stations to the west of the volcanic region or south of the Main Seismic Region are not used, because the structure there necessitates different spreading and attenuation terms.

Magnitude corrections for the two classes of focal depth, for P and S phases recorded on Willmore and Wood-Anderson instruments.

| Station | | Willmore P | | Willmore S | | Wood-Anderson | |
|---|---|---|---|---|---|---|---|
| | | ≤ 33 km | > 33 km | ≤ 33 km | > 33 km | ≤ 33 km | > 33 km |
| AUC | | | | | | | |
| BRZ | Fiordland only | | 0.05 | | -0.20 | | 0.05 |
| | All shallow | 0.15 | | -0.10 | | 0.15 | |
| CMZ | | 0.05 | | -0.15 | | | |
| COB | | 0.15 | | -0.40 | | | |
| CRZ | | 0.25 | | 0.20 | | | |
| GBZ | | | | | | | |
| GNZ | | 0.00 | 0.00 | -0.20 | -0.20 | | |
| HBZ | | | | | | | |
| KAI | | | | | | | 0.30 |
| KKZ | | 0.25 | 0.25 | 0.05 | 0.05 | | |
| KRP | | -0.25 | | -0.30 | | | |
| MNG | | -0.35 | -0.40 | -0.45 | -0.50 | | |
| MSZ | Fiordland only | | -0.35 | | -0.60 | | |
| | All shallow | -0.25 | | -0.50 | | | |
| NEZ | | | | | | | |
| OBZ | | 0.00 | | -0.40 | | | |
| OMZ | | 0.15 | | -0.15 | | | |
| RGZ | | | | | | | |
| RTY | | | | | | | |
| TMP | | | | | | | |
| TRZ | | 0.30 | 0.45 | 0.15 | 0.10 | | |
| TUA | | 0.40 | 0.40 | 0.35 | 0.40 | | |
| WEL | | | | | | 0.30 | 0.30 |
| WTZ | | -0.10 | 0.05 | 0.05 | 0.00 | | |

For deep earthquakes in Fiordland the same amplitude-distance relationship is used, with (i) N given the value 1 (body wave propagation), (ii) $\alpha$ increasing with focal depth, and (iii) stations in the Main Seismic Region (apart from COB) not used, because of variations of the coefficients N and $\alpha$. Milford Sound (MSZ) and Borland Lodge (BRZ) should ideally be excluded for the same reason, but as they are sometimes the only stations from which any estimate of magnitude can be made, they are used when necessary, with $N = 2$ and $\alpha = 0$.

Corrections are applied to allow for differences in site effects, frequency responses and magnifications of the instruments. Their determination is empirical, and made in such a manner as to give the most consistent estimates of magnitude from the different stations, and their absolute level is adjusted to give a standard Wood-Anderson instrument at Wellington a zero correction, a procedure that can be justified on *a priori* grounds and provides a smooth connection with New Zealand magnitudes published before 1977. Station Corrections (Table on page 28) are added to the individual estimates of magnitude, which are then averaged. The trace amplitudes on which magnitude calculations are based are no longer published, but the number of measurements and the number of stations contributing to the average magnitude are listed (e.g. "5M/4stn" appearing in a data summary indicates that 5 amplitude measurements of records from 4 stations were used to compute an average). When amplitude measurements from other stations are available, the BRZ and MSZ estimates are only given half weight in the calculation of the average magnitude.

## DIGITAL RECORDS

For stations more than 100 km away from the epicentre of an earthquake, magnitude is estimated using the maximum number of digital amplitude counts in the wave train, scaled to be equivalent to a maximum amplitude (in millimetres) recorded by a Willmore vertical seismometer with an analogue recorder. This amplitude is then processed in the same way as any other Willmore analogue amplitude, to produce a single-station estimate of $M_L$.

For stations closer than 100 km, the formula

$$M_A = \log_{10} A + 1.0 \log_{10} R + 0.0029 R + K$$

developed by Robinson (1987) is used, where A is the maximum digital count, R is the slant distance from the station to the earthquake focus (in kilometres) and K is a station correction allowing for digital sensitivity and site factors.

Some stations of the Taupo Network have a non-linear amplitude response, and are used to estimate magnitudes only if earthquakes are of $M_L < 5$ and have epicentres in the Central Volcanic Region. For such earthquakes, the relation

$$M_D = 3.0 \log_{10} D$$

is used, where D is the interval in seconds from the origin time of the event until the amplitude falls below a pre-set level.

The definitive local magnitude is finally calculated as a weighted average of all station estimates, with Taupo Network estimates and estimates from stations at distances less than 100 km given half weight and all other stations given full weight.

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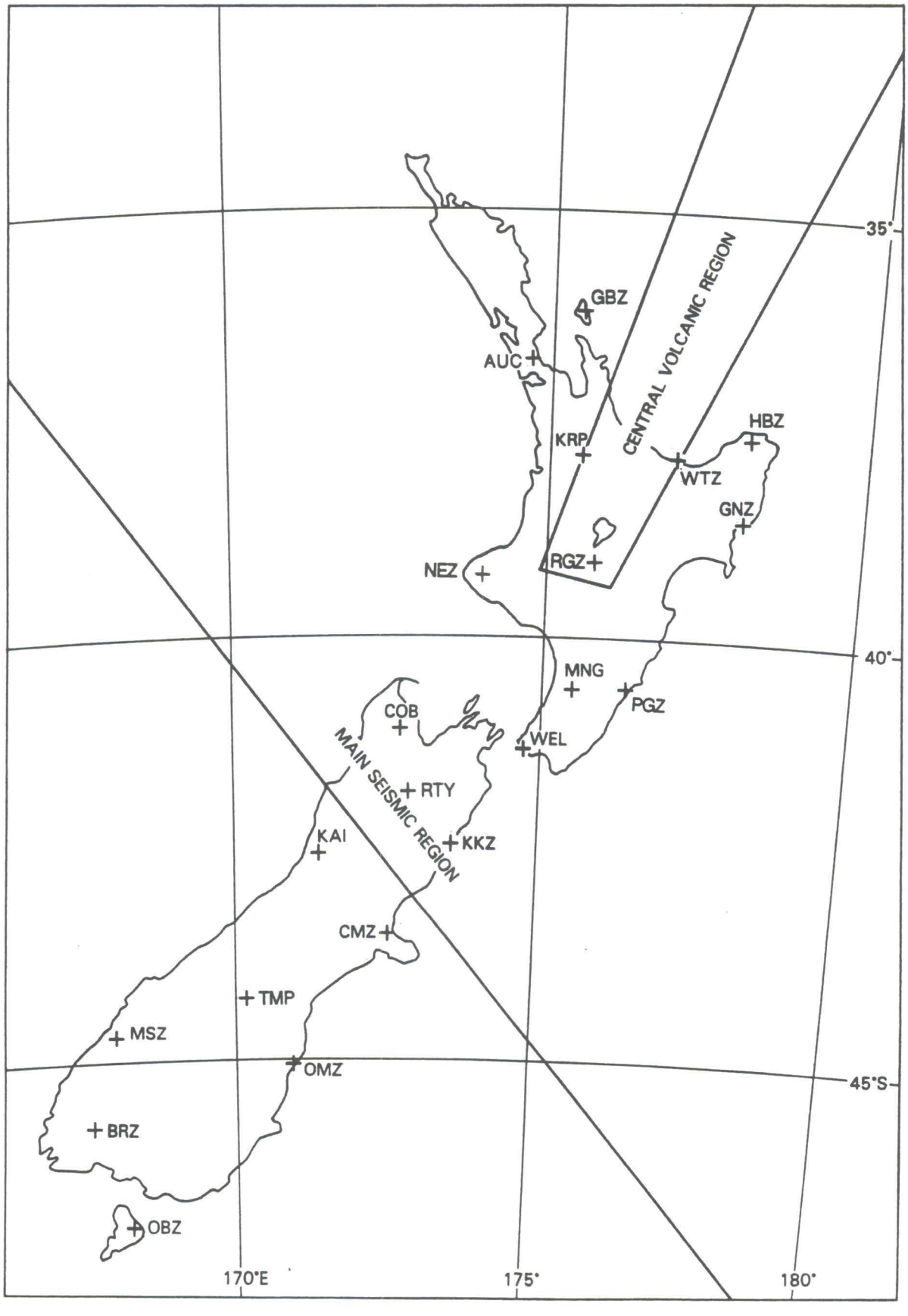
Robinson, R., 1987, "Temporal variations in coda duration of local earthquakes in the Wellington region, New Zealand."




Stations and regions used for determination of magnitudes from analogue records.

# DATA FROM THE NATIONAL NETWORK

## LAYOUT

The first entry for each earthquake is the reference number, used throughout the Report. The second line gives the origin coordinates and the magnitude and the third line shows, beneath each of the coordinates in line two, its standard error. Where depth has been restricted, the letter R or G in place of the standard error indicates the fact. The fourth line starts with Rsd, the standard deviation of residuals, an indication of how well the adopted origin reconciles the available data with the earth models used by the location program. Formally,

$$Rsd = \left[ \sum_{i=1}^{n} \{(w_i r_i / 100)^2 / (n-m)\} \right]^{1/2}$$

where $r_i$ is the ith residual, $w_i$ its weight, n the number of readings and m the number of parameters determined (4 for unrestricted depth, 3 when depth is restricted.) When the number of readings used and the number of parameters are the same, the standard errors and Rsd are not defined. This is shown by the letters ND. The remainder of the fourth line and most of the fifth line present information indicating to the reader the degree of constraint on the adopted origin. Xph/Ystn shows that X phases from Y stations were used in the determination of the origin. (All phases given non-zero weight are counted but stations which failed to provide such a phase are not). Dmin is the distance from the epicentre to the nearest of these Y stations and Az. gap is the greatest angular gap in their distribution about the epicentre.

Corr. is the correlation coefficient of the errors in latitude and longitude. It may be used to construct an epicentral confidence region. (See Flinn, E.A., 1965, "Confidence regions and error determinations for seismic event locations". Rev. Geophys. 3: 156-185.) pM/Qstn shows that p magnitude estimates from phases recorded at Q stations contributed to the average value shown on line two. Msd is the standard deviation of the magnitude estimates.

The numbers of upward and downward first motions recorded are indicated at the end of line five.

Additional information may be appended to the above. This usually consists of a short summary of the places where a shock has been felt and the intensities there, but may include other comments. Further details of reports received by the Observatory concerning the effects of earthquakes and the intensities assessed from these observations appear in later sections of this Report.

The telemetered networks all detect earthquakes of very small magnitude in their respective regions. These are all located and the data are held in the Observatory's archives. The following list, however, contains only those events which were of magnitude 3.5 or greater, or were reported felt. Smaller events have been excluded, as have events located more than 10° from Wellington.

89/14
**JAN 02 0202 43.7s 38.16S 175.79E 168km M=3.8**
0.5 0.03 0.07 6
Rsd 0.2s 22ph/15stn Dmin 101km Az.gap 292°
Corr. -0.110 14M/14stn Msd 0.3 1↑ 2↓

89/15
**JAN 02 0355 16.5s 38.90S 178.32E 65km M=4.3**
0.2 0.01 0.02 5
Rsd 0.1s 16ph/12stn Dmin 105km Az.gap 222°
Corr. -0.824 18M/16stn Msd 0.2 1↑

89/22
**JAN 02 0945 09.6s 39.75S 174.09E 137km M=3.6**
0.2 0.01 0.02 3
Rsd 0.1s 21ph/16stn Dmin 53km Az.gap 171°
Corr. 0.063 12M/12stn Msd 0.3 5↑ 2↓

89/32
**JAN 02 1630 13.0s 38.27S 175.95E 221km M=3.9**
0.5 0.06 0.10 7
Rsd 0.2s 18ph/13stn Dmin 106km Az.gap 228°
Corr. -0.906 15M/15stn Msd 0.1 3↑ 1↓

89/37
**JAN 02 2256 56.0s 39.11S 175.22E 150km M=4.6**
0.4 0.02 0.02 3
Rsd 0.3s 36ph/26stn Dmin 30km Az.gap 113°
Corr. -0.115 14M/13stn Msd 0.4 12↑ 9↓

89/43
**JAN 03 0128 50.5s 42.50S 173.60E 10km M=2.6**
0.3 0.02 0.01 1
Rsd 0.1s 10ph/9stn Dmin 10km Az.gap 271°
Corr. 0.523 6M/6stn Msd 0.4
Felt Kahutara (90) MM4.

89/108
**JAN 05 1633 34.1s 39.77S 177.00E 43km M=4.2**
0.2 0.01 0.02 1
Rsd 0.2s 28ph/23stn Dmin 29km Az.gap 178°
Corr. -0.222 15M/13stn Msd 0.2 9↑ 4↓
Felt Patoka (52), Waipukurau (60) MM4 and Napier (52).

89/120
**JAN 06 0034 19.3s 41.37S 172.42E 0km M=3.8**
0.2 0.00 0.01 1
Rsd 0.1s 21ph/14stn Dmin 41km Az.gap 186°
Corr. -0.156 13M/11stn Msd 0.2 1↑

89/146
**JAN 07 0143 28.3s 37.98S 176.35E 178km M=4.3**
0.4 0.02 0.02 4
Rsd 0.1s 12ph/11stn Dmin 101km Az.gap 225°
Corr. -0.660 18M/18stn Msd 0.4 4↑ 4↓

89/147
**JAN 07 0153 18.2s 36.49S 177.45E 281km M=4.9**
0.6 0.03 0.03 4
Rsd 0.1s 15ph/14stn Dmin 145km Az.gap 283°
Corr. -0.061 20M/18stn Msd 0.1

89/158
**JAN 07 1359 22.0s 37.99S 176.18E 172km M=3.6**
1.3 0.05 0.07 12
Rsd 0.4s 11ph/9stn Dmin 57km Az.gap 161°
Corr. 0.271 14M/14stn Msd 0.2 1↓

89/161
**JAN 07 1552 54.7s 37.86S 175.34E 274km M=3.6**
0.5 0.05 0.11 7
Rsd 0.1s 15ph/12stn Dmin 152km Az.gap 306°
Corr. -0.883 13M/13stn Msd 0.1 1↓

89/165
**JAN 07 2216 23.0s 38.31S 175.81E 244km M=3.7**
0.3 0.04 0.07 3
Rsd 0.1s 15ph/12stn Dmin 122km Az.gap 297°
Corr. -0.930 15M/15stn Msd 0.2 3↑ 2↓

89/169
**JAN 08 0136 25.0s 38.00S 176.32E 171km M=4.5**
0.7 0.03 0.03 6
Rsd 0.3s 19ph/15stn Dmin 23km Az.gap 160°
Corr. -0.056 19M/17stn Msd 0.3 2↑ 7↓

89/174
**JAN 08 1159 04.0s 37.16S 179.44W 33km M=4.0**
1.2 0.08 0.12 R
Rsd 0.4s 11ph/6stn Dmin 206km Az.gap 330°
Corr. -0.108 14M/14stn Msd 0.1

89/185
**JAN 09 0440 29.9s 38.08S 175.73E 171km M=3.8**
0.4 0.06 0.09 7
Rsd 0.1s 16ph/13stn Dmin 147km Az.gap 305°
Corr. -0.930 10M/10stn Msd 0.3 1↓

89/189
**JAN 09 1132 59.2s 37.49S 177.27E 151km M=4.1**
0.5 0.03 0.03 5
Rsd 0.2s 9ph/6stn Dmin 92km Az.gap 239°
Corr. -0.322 14M/14stn Msd 0.1 1↓

89/192
**JAN 09 1316 44.6s 36.39S 179.50W 107km M=4.3**
1.7 0.10 0.17 23
Rsd 0.2s 12ph/8stn Dmin 237km Az.gap 330°
Corr. 0.438 13M/13stn Msd 0.2

89/200
**JAN 09 1923 48.1s 37.25S 177.85E 52km M=4.9**
0.5 0.03 0.01 4
Rsd 0.1s 12ph/10stn Dmin 56km Az.gap 196°
Corr. 0.219 18M/16stn Msd 0.1 2↑ 2↓
Felt Ohope (35) MM4.

89/208
**JAN 10 0403 13.2s 38.17S 176.03E 174km M=4.1**
0.6 0.03 0.04 5
Rsd 0.3s 14ph/13stn Dmin 51km Az.gap 189°
Corr. 0.422 18M/18stn Msd 0.2 5↑ 5↓

89/211
**JAN 10 0659 05.8s 38.03S 178.71E 41km M=4.0**
0.8 0.05 0.14 41
Rsd 0.3s 5ph/3stn Dmin 60km Az.gap 258°
Corr. -0.797 2M/2stn Msd 0.2

89/224
**JAN 10 2340 01.9s 41.41S 172.95E 89km M=4.9**
0.4 0.02 0.03 4
Rsd 0.3s 23ph/18stn Dmin 41km Az.gap 106°
Corr. -0.598 13M/11stn Msd 0.7 1↑
Felt Wellington (68) MM4 and Nelson (76).

89/227
**JAN 11 0652 29.5s 46.95S 165.21E 12km M=4.7**
0.7 0.03 0.08 R
Rsd 0.2s 17ph/12stn Dmin 221km Az.gap 311°
Corr. 0.187 15M/15stn Msd 0.3 7↑ 1↓

89/228
**JAN 11 0846 53.6s 46.87S 165.65E 12km M=3.7**
0.5 0.03 0.05 R
Rsd 0.2s 14ph/10stn Dmin 188km Az.gap 305°
Corr. 0.116 9M/9stn Msd 0.2

89/233
**JAN 11 1952 04.5s 36.95S 176.53E 210km M=3.6**
0.8 0.13 0.23 29
Rsd 0.2s 11ph/8stn Dmin 173km Az.gap 277°
Corr. -0.965 5M/5stn Msd 0.3

89/235
**JAN 11 2151 44.7s 45.15S 167.41E 88km M=4.2**
0.1 0.01 0.01 1
Rsd 0.0s 23ph/12stn Dmin 67km Az.gap 232°
Corr. 0.023 2M/2stn Msd 0.4 1↑ 7↓

89/245
**JAN 12 1240 05.2s 45.99S 170.33E 7km M=3.6**
0.2 0.01 0.01 2
Rsd 0.2s 18ph/12stn Dmin 19km Az.gap 192°
Corr. -0.264 11M/11stn Msd 0.2 1↓

89/253
**JAN 12 2039 53.6s 37.08S 177.71E 114km M=4.3**
0.8 0.04 0.03 7
Rsd 0.2s 12ph/9stn Dmin 68km Az.gap 255°
Corr. 0.243 21M/21stn Msd 0.1 1↑

89/256
**JAN 12 2343 07.1s 38.28S 175.66E 153km M=3.5**
0.4 0.05 0.08 12
Rsd 0.2s 13ph/11stn Dmin 244km Az.gap 233°
Corr. -0.934 10M/10stn Msd 0.2 3↑ 2↓

89/288
**JAN 14 1452 10.6s 38.17S 176.17E 181km M=3.9**
0.8 0.03 0.04 7
Rsd 0.3s 17ph/15stn Dmin 2km Az.gap 138°
Corr. 0.117 19M/19stn Msd 0.3 4↑ 3↓

89/302
**JAN 15 0701 59.1s 47.25S 164.81E 33km M=4.5**
0.7 0.04 0.06 R
Rsd 0.2s 17ph/11stn Dmin 254km Az.gap 318°
Corr. 0.430 19M/19stn Msd 0.3 1↑

89/314
**JAN 15 1839 56.0s 38.99S 174.98E 201km M=3.6**
0.2 0.01 0.02 2
Rsd 0.1s 20ph/15stn Dmin 54km Az.gap 226°
Corr. -0.273 17M/17stn Msd 0.2 4↑ 2↓

89/343
**JAN 17 0224 37.0s 36.94S 177.08E 242km M=3.7**
0.5 0.08 0.15 7
Rsd 0.1s 14ph/10stn Dmin 131km Az.gap 278°
Corr. -0.973 10M/10stn Msd 0.4 1↑ 1↓

89/363
**JAN 17 2154 33.3s 38.20S 176.31E 173km M=3.6**
0.3 0.04 0.07 6
Rsd 0.1s 10ph/8stn Dmin 188km Az.gap 223°
Corr. -0.977 6M/6stn Msd 0.5

89/365
**JAN 18 0208 20.6s 38.37S 177.72E 110km M=3.5**
0.4 0.02 0.03 4
Rsd 0.2s 13ph/10stn Dmin 41km Az.gap 150°
Corr. -0.820 16M/16stn Msd 0.2 1↑

89/394
**JAN 19 0354 37.0s 37.22S 178.00E 145km M=3.6**
1.3 0.13 0.21 10
Rsd 0.3s 11ph/9stn Dmin 50km Az.gap 293°
Corr. -0.707 12M/12stn Msd 0.2

89/417
**JAN 20 0056 22.3s 38.46S 175.91E 153km M=3.8**
0.6 0.05 0.04 6
Rsd 0.3s 13ph/11stn Dmin 69km Az.gap 222°
Corr. 0.096 17M/17stn Msd 0.3 1↓

89/432
**JAN 20 1436 27.4s 48.80S 164.50E 33km M=3.9**
0.2 0.06 0.07 R
Rsd 0.1s 11ph/8stn Dmin 343km Az.gap 350°
Corr. -0.930 7M/7stn Msd 0.2

89/434
**JAN 20 1650 33.3s 35.09S 177.79E 249km M=4.0**
0.8 0.10 0.56 27
Rsd 0.2s 12ph/10stn Dmin 283km Az.gap 328°
Corr. -0.914 5M/5stn Msd 0.4

89/443
**JAN 21 0357 28.8s 38.43S 178.63E 81km M=3.7**
0.6 0.03 0.08 7
Rsd 0.2s 10ph/7stn Dmin 58km Az.gap 236°
Corr. -0.844 12M/11stn Msd 0.1

89/452
**JAN 21 1302 30.4s 47.49S 165.11E 33km M=3.7**
0.5 0.02 0.05 R
Rsd 0.1s 11ph/8stn Dmin 237km Az.gap 337°
Corr. 0.412 8M/8stn Msd 0.2

89/458
**JAN 21 2209 25.0s 42.15S 177.64E 74km M=4.3**
0.6 0.04 0.06 23
Rsd 0.3s 36ph/27stn Dmin 200km Az.gap 242°
Corr. -0.832 19M/19stn Msd 0.2 1↓

89/464
**JAN 22 1025 47.9s 37.73S 176.29E 198km M=4.8**
0.9 0.05 0.04 8
Rsd 0.3s 19ph/17stn Dmin 90km Az.gap 243°
Corr. -0.355 16M/16stn Msd 0.4 8↑ 7↓

89/469
**JAN 22 1841 23.2s 37.29S 178.48E 139km M=3.9**
0.8 0.06 0.17 5
Rsd 0.3s 10ph/7stn Dmin 37km Az.gap 325°
Corr. -0.578 19M/18stn Msd 0.1

89/471
**JAN 22 2011 33.2s 44.64S 167.34E 71km M=3.6**
0.3 0.05 0.04 2
Rsd 0.1s 13ph/9stn Dmin 46km Az.gap 330°
Corr. 0.750 9M/9stn Msd 0.2 1↑ 1↓

89/476
**JAN 22 2230 16.4s 38.52S 176.21E 133km M=4.1**
0.4 0.02 0.02 3
Rsd 0.2s 23ph/18stn Dmin 29km Az.gap 177°
Corr. -0.105 20M/19stn Msd 0.3 8↑ 7↓

89/477
**JAN 23 0317 41.6s 47.61S 164.96E 33km M=3.9**
0.5 0.03 0.05 R
Rsd 0.2s 15ph/10stn Dmin 252km Az.gap 323°
Corr. 0.243 10M/10stn Msd 0.2

89/481
**JAN 23 0646 26.3s 45.44S 164.08E 33km M=4.4**
0.7 0.59 0.07 R
Rsd 0.2s 10ph/8stn Dmin 409km Az.gap 358°
Corr. -0.555 8M/8stn Msd 0.2

89/490
**JAN 23 1056 13.9s 47.43S 165.05E 33km M=3.7**
0.5 0.03 0.04 R
Rsd 0.2s 13ph/9stn Dmin 240km Az.gap 320°
Corr. 0.402 7M/7stn Msd 0.1

89/495
**JAN 23 1610 37.7s 40.61S 174.55E 56km M=3.6**
0.2 0.01 0.01 4
Rsd 0.3s 23ph/15stn Dmin 42km Az.gap 106°
Corr. -0.168 9M/9stn Msd 0.2 6↑ 2↓

89/504
**JAN 24 0509 55.6s 45.13S 167.30E 28km M=3.7**
0.5 0.11 0.17 21
Rsd 0.2s 14ph/10stn Dmin 70km Az.gap 311°
Corr. -0.953 10M/10stn Msd 0.2 1↓

89/511
**JAN 24 1225 13.9s 37.78S 176.40E 190km M=4.0**
0.9 0.04 0.04 8
Rsd 0.3s 12ph/9stn Dmin 78km Az.gap 187°
Corr. -0.217 18M/17stn Msd 0.2 1↑ 1↓

89/515
**JAN 24 1904 11.4s 38.08S 176.27E 155km M=3.5**
0.3 0.03 0.05 7
Rsd 0.1s 19ph/12stn Dmin 165km Az.gap 228°
Corr. -0.941 7M/6stn Msd 0.2

89/521
**JAN 25 0132 18.7s 38.34S 176.07E 129km M=4.0**
0.9 0.03 0.04 8
Rsd 0.4s 16ph/13stn Dmin 42km Az.gap 148°
Corr. 0.232 15M/15stn Msd 0.2 9↑ 5↓

89/524
**JAN 25 0141 25.3s 41.09S 175.47E 29km M=3.3**
0.1 0.00 0.01 1
Rsd 0.1s 21ph/13stn Dmin 8km Az.gap 111°
Corr. -0.400 8M/8stn Msd 0.4 10↑ 6↓
Felt Kelburn (68).

89/526
**JAN 25 0250 28.7s 45.19S 165.58E 22km M=4.5**
0.8 0.05 0.25 27
Rsd 0.2s 13ph/9stn Dmin 193km Az.gap 279°
Corr. -0.922 6M/6stn Msd 0.4 1↓

89/529
**JAN 25 0432 54.3s 44.32S 165.37E 157km M=3.9**
0.3 0.05 0.03 3
Rsd 0.1s 12ph/10stn Dmin 207km Az.gap 343°
Corr. -0.138 9M/9stn Msd 0.2

89/532
**JAN 25 0556 48.7s 38.60S 176.12E 112km M=4.7**
0.4 0.01 0.02 3
Rsd 0.2s 33ph/29stn Dmin 3km Az.gap 83°
Corr. -0.103 12M/12stn Msd 0.2 10↑ 6↓

89/535
**JAN 25 1019 37.3s 35.63S 178.68E 268km M=4.3**
0.8 0.07 0.13 8
Rsd 0.3s 11ph/8stn Dmin 222km Az.gap 335°
Corr. -0.512 16M/15stn Msd 0.2

89/552
**JAN 26 0329 27.7s 38.07S 176.27E 187km M=3.6**
0.3 0.06 0.10 8
Rsd 0.1s 12ph/9stn Dmin 186km Az.gap 228°
Corr. -0.977 9M/9stn Msd 0.1

89/559
**JAN 26 1411 39.6s 36.79S 175.96E 18km M=4.5**
0.9 0.13 0.12 19
Rsd 0.2s 13ph/11stn Dmin 227km Az.gap 278°
Corr. -0.965 8M/8stn Msd 0.2

89/563
**JAN 26 1645 55.0s 44.83S 167.37E 12km M=3.7**
0.3 0.01 0.02 R
Rsd 0.1s 17ph/10stn Dmin 47km Az.gap 262°
Corr. -0.163 7M/7stn Msd 0.2 1↑

89/574
**JAN 27 1308 58.9s 38.50S 177.42E 78km M=3.7**
0.7 0.02 0.04 8
Rsd 0.5s 13ph/9stn Dmin 51km Az.gap 91°
Corr. -0.385 17M/17stn Msd 0.2 1↑ 1↓

89/578
**JAN 27 2045 13.8s 45.11S 167.48E 113km M=4.2**
0.2 0.01 0.02 2
Rsd 0.1s 20ph/13stn Dmin 60km Az.gap 219°
Corr. -0.457 6M/6stn Msd 0.2 1↓

89/583
**JAN 28 0711 25.8s 45.63S 166.96E 12km M=3.6**
0.4 0.01 0.04 R
Rsd 0.3s 11ph/6stn Dmin 48km Az.gap 248°
Corr. 0.189 10M/10stn Msd 0.2

89/599
**JAN 29 0109 06.6s 39.56S 174.63E 135km M=3.6**
0.4 0.02 0.03 3
Rsd 0.2s 20ph/13stn Dmin 56km Az.gap 118°
Corr. 0.297 13M/13stn Msd 0.3 4↑ 2↓

89/604
**JAN 29 0727 19.5s 38.12S 175.93E 167km M=4.4**
0.5 0.05 0.03 7
Rsd 0.2s 18ph/15stn Dmin 67km Az.gap 204°
Corr. -0.050 18M/18stn Msd 0.2 4↑ 9↓

89/621
**JAN 29 1516 41.3s 38.26S 176.23E 116km M=3.6**
0.7 0.04 0.03 7
Rsd 0.3s 13ph/12stn Dmin 54km Az.gap 210°
Corr. -0.042 15M/15stn Msd 0.5 1↑

89/623
**JAN 29 1719 19.5s 36.61S 177.56E 291km M=4.2**
0.4 0.06 0.10 6
Rsd 0.2s 9ph/6stn Dmin 128km Az.gap 304°
Corr. -0.852 16M/16stn Msd 0.1

89/627
**JAN 29 1942 24.8s 44.79S 166.85E 5km M=4.0**
0.1 0.01 0.01 R
Rsd 0.0s 14ph/10stn Dmin 85km Az.gap 282°
Corr. -0.711 8M/8stn Msd 0.2

89/640
**JAN 30 0343 29.4s 41.82S 172.79E 80km M=3.6**
0.4 0.02 0.03 4
Rsd 0.2s 18ph/13stn Dmin 5km Az.gap 220°
Corr. 0.295 11M/11stn Msd 0.2 2↑ 1↓

89/651
**JAN 30 0721 26.2s 39.27S 174.70E 211km M=3.8**
0.3 0.02 0.03 3
Rsd 0.1s 23ph/17stn Dmin 74km Az.gap 240°
Corr. -0.598 18M/18stn Msd 0.2 4↑ 1↓

89/654
**JAN 30 0830 01.2s 39.77S 174.01E 198km M=3.7**
0.3 0.02 0.03 4
Rsd 0.2s 26ph/19stn Dmin 144km Az.gap 209°
Corr. -0.455 16M/16stn Msd 0.2 4↑ 1↓

89/678
**JAN 31 0754 42.6s 41.39S 174.71E 60km M=4.9**
0.1 0.01 0.01 1
Rsd 0.1s 25ph/19stn Dmin 13km Az.gap 117°
Corr. -0.410 12M/12stn Msd 0.2 5↑ 8↓
Felt Lower North Island, max MM5 at Tawa (68).

89/690
**JAN 31 1624 16.8s 44.87S 167.47E 33km M=3.8**
0.2 0.01 0.01 R
Rsd 0.1s 18ph/13stn Dmin 42km Az.gap 241°
Corr. -0.695 3M/3stn Msd 0.5 1↓

89/707
**FEB 01 0314 36.1s 39.16S 174.83E 213km M=4.7**
0.4 0.02 0.03 3
Rsd 0.2s 38ph/30stn Dmin 62km Az.gap 156°
Corr. -0.139 18M/16stn Msd 0.2 14↑ 7↓

89/708
**FEB 01 0321 58.2s 45.16S 167.27E 54km M=3.9**
0.3 0.01 0.03 4
Rsd 0.1s 19ph/13stn Dmin 72km Az.gap 240°
Corr. -0.645 5M/5stn Msd 0.1 1↑

89/715
**FEB 01 0852 35.0s 40.41S 174.40E 20km M=4.0**
0.2 0.01 0.01 2
Rsd 0.2s 32ph/25stn Dmin 67km Az.gap 107°
Corr. -0.122 13M/12stn Msd 0.2 5↑ 2↓

89/721
**FEB 01 1510 56.1s 38.33S 175.79E 159km M=3.9**
0.5 0.03 0.03 5
Rsd 0.3s 22ph/19stn Dmin 39km Az.gap 191°
Corr. 0.051 18M/18stn Msd 0.2 6↑ 6↓

89/723
**FEB 01 1702 17.8s 39.94S 174.45E 15km M=3.6**
0.3 0.01 0.03 4
Rsd 0.5s 29ph/20stn Dmin 81km Az.gap 110°
Corr. -0.275 14M/12stn Msd 0.2 5↑ 3↓

89/728
**FEB 01 2035 57.6s 40.49S 176.58E 28km M=3.6**
0.2 0.01 0.01 2
Rsd 0.2s 33ph/23stn Dmin 30km Az.gap 204°
Corr. -0.652 18M/17stn Msd 0.2 1↑ 3↓

89/758
**FEB 03 1041 08.8s 36.90S 178.07E 95km M=4.1**
0.6 0.04 0.05 5
Rsd 0.1s 9ph/8stn Dmin 80km Az.gap 283°
Corr. 0.213 13M/13stn Msd 0.2

89/762
**FEB 03 1318 41.1s 38.57S 176.68E 65km M=3.7**
0.2 0.01 0.01 2
Rsd 0.2s 22ph/21stn Dmin 31km Az.gap 81°
Corr. 0.243 17M/17stn Msd 0.2 1↓

89/763
**FEB 03 1332 00.9s 44.92S 167.53E 113km M=3.6**
0.2 0.01 0.01 2
Rsd 0.1s 16ph/11stn Dmin 41km Az.gap 230°
Corr. -0.229 11M/11stn Msd 0.2 1↑

89/767
**FEB 03 1551 41.8s 39.62S 173.18E 27km M=3.8**
0.4 0.02 0.04 3
Rsd 0.1s 26ph/17stn Dmin 88km Az.gap 271°
Corr. -0.867 15M/13stn Msd 0.2 1↑

89/772
**FEB 04 0432 24.6s 37.28S 176.75E 263km M=5.0**
0.6 0.03 0.04 5
Rsd 0.2s 27ph/26stn Dmin 81km Az.gap 149°
Corr. 0.031 21M/19stn Msd 0.2 7↑ 7↓

89/776
**FEB 04 1205 30.3s 44.82S 167.68E 96km M=3.5**
0.3 0.03 0.02 2
Rsd 0.1s 13ph/9stn Dmin 25km Az.gap 237°
Corr. 0.605 10M/10stn Msd 0.2 1↓

89/777
**FEB 04 1356 19.1s 44.10S 168.57E 5km M=4.5**
0.6 0.04 0.02 R
Rsd 0.2s 12ph/10stn Dmin 82km Az.gap 184°
Corr. -0.543 18M/16stn Msd 0.3 1↓
Felt Mahitahi (104) and Mount Aspiring Station (113) MM4.

89/782
**FEB 04 1906 48.2s 36.87S 177.11E 259km M=4.8**
0.1 0.03 0.02 2
Rsd 0.1s 20ph/19stn Dmin 124km Az.gap 258°
Corr. -0.703 22M/20stn Msd 0.1 1↑

89/789
**FEB 05 0831 55.0s 41.08S 175.53E 30km M=3.8**
0.0 0.00 0.01 1
Rsd 0.1s 20ph/13stn Dmin 9km Az.gap 138°
Corr. -0.484 5M/4stn Msd 0.2 10↑ 5↓
Felt Johnsonville (68) MM3 and Trentham Racecourse (69).

89/805
**FEB 06 0147 50.7s 40.45S 176.79E 33km M=3.7**
0.2 0.01 0.03 R
Rsd 0.2s 32ph/27stn Dmin 47km Az.gap 219°
Corr. -0.793 20M/18stn Msd 0.2 3↑ 1↓

89/807
**FEB 06 0342 31.2s 45.81S 166.29E 5km M=3.7**
0.8 0.04 0.09 R
Rsd 0.4s 15ph/11stn Dmin 180km Az.gap 274°
Corr. -0.459 10M/10stn Msd 0.2 1↓

89/811
**FEB 06 0601 15.3s 41.45S 173.01E 108km M=4.3**
0.5 0.03 0.04 5
Rsd 0.3s 19ph/16stn Dmin 42km Az.gap 154°
Corr. -0.613 9M/7stn Msd 0.3 7↑ 11↓

89/812
**FEB 06 0719 59.2s 35.17S 178.87E 265km M=4.3**
0.3 0.01 0.02 4
Rsd 0.1s 17ph/11stn Dmin 274km Az.gap 302°
Corr. 0.311 17M/17stn Msd 0.2

89/814
**FEB 06 0855 41.0s 38.29S 176.36E 3km M=2.7**
0.4 0.01 0.02 5
Rsd 0.4s 12ph/9stn Dmin 14km Az.gap 115°
Corr. 0.198 6M/6stn Msd 0.1 1↓
Felt Ngapouri Rd, Waiotapu (33) MM5.

89/815
**FEB 06 0904 09.0s 38.29S 176.38E 2km M=3.1**
0.3 0.01 0.01 1
Rsd 0.3s 16ph/14stn Dmin 13km Az.gap 116°
Corr. 0.001 13M/13stn Msd 0.2 1↓
Felt Ngapouri Rd, Waiotapu (33) MM5.

89/821
**FEB 06 1302 59.8s 41.93S 173.52E 60km M=3.5**
0.4 0.02 0.03 6
Rsd 0.2s 18ph/14stn Dmin 55km Az.gap 108°
Corr. 0.110 13M/11stn Msd 0.2 4↑ 7↓

89/824
**FEB 06 1748 09.9s 35.20S 179.25E 261km M=5.2**
0.2 0.05 0.03 8
Rsd 0.1s 20ph/18stn Dmin 280km Az.gap 329°
Corr. -0.074 20M/18stn Msd 0.2

89/826
**FEB 06 2228 40.6s 38.09S 175.81E 200km M=4.0**
0.7 0.03 0.04 6
Rsd 0.2s 13ph/12stn Dmin 30km Az.gap 129°
Corr. 0.311 19M/19stn Msd 0.2 1↓

89/828
**FEB 07 0053 04.7s 42.84S 171.59E 12km M=3.5**
0.2 0.01 0.02 R
Rsd 0.2s 12ph/8stn Dmin 38km Az.gap 121°
Corr. 0.637 21M/21stn Msd 0.2

89/835
**FEB 07 0554 54.5s 39.75S 177.01E 48km M=4.2**
0.2 0.01 0.02 2
Rsd 0.2s 38ph/32stn Dmin 28km Az.gap 187°
Corr. -0.301 19M/17stn Msd 0.2 4↑ 4↓

89/841
**FEB 07 1604 33.0s 39.15S 175.68E 80km M=3.7**
0.3 0.01 0.02 3
Rsd 0.3s 32ph/26stn Dmin 6km Az.gap 58°
Corr. -0.066 18M/16stn Msd 0.2 2↑ 3↓

89/852
**FEB 08 0657 36.7s 45.20S 167.45E 117km M=3.5**
0.2 0.01 0.02 2
Rsd 0.1s 17ph/11stn Dmin 69km Az.gap 227°
Corr. -0.024 11M/11stn Msd 0.2 1↓

89/853
**FEB 08 0723 56.9s 37.34S 178.86E 33km M=3.7**
0.9 0.08 0.10 R
Rsd 0.4s 12ph/12stn Dmin 57km Az.gap 321°
Corr. -0.357 14M/14stn Msd 0.2

89/857
**FEB 08 1030 02.2s 37.46S 176.46E 220km M=3.8**
0.9 0.06 0.13 9
Rsd 0.2s 13ph/11stn Dmin 158km Az.gap 290°
Corr. -0.383 12M/12stn Msd 0.2 1↓

89/908
**FEB 10 1621 25.5s 37.17S 176.51E 450km M=4.8**
0.5 0.08 0.06 6
Rsd 0.2s 10ph/9stn Dmin 100km Az.gap 242°
Corr. -0.222 15M/15stn Msd 0.2 3↑ 4↓

89/910
**FEB 11 0122 15.6s 38.01S 176.32E 162km M=3.8**
0.6 0.02 0.03 6
Rsd 0.3s 18ph/15stn Dmin 70km Az.gap 159°
Corr. -0.068 19M/19stn Msd 0.1 2↑ 3↓

89/915
**FEB 11 0825 17.5s 38.92S 175.01E 239km M=4.8**
0.4 0.02 0.03 3
Rsd 0.3s 40ph/31stn Dmin 46km Az.gap 124°
Corr. 0.088 20M/18stn Msd 0.2 17↑ 13↓

89/942
**FEB 12 1746 17.1s 35.81S 177.28E 140km M=3.6**
0.8 0.07 0.17 30
Rsd 0.2s 5ph/3stn Dmin 219km Az.gap 320°
Corr. -0.652 2M/2stn Msd 0.4

89/949
**FEB 13 0218 04.3s 35.62S 179.54E 255km M=4.0**
1.1 0.10 0.13 7
Rsd 0.2s 11ph/10stn Dmin 246km Az.gap 333°
Corr. -0.098 7M/7stn Msd 0.2

89/958
**FEB 13 1229 21.1s 38.67S 175.79E 175km M=3.5**
0.3 0.01 0.01 2
Rsd 0.1s 15ph/11stn Dmin 43km Az.gap 239°
Corr. -0.479 13M/13stn Msd 0.1 1↑

89/961
**FEB 13 1433 01.0s 37.43S 176.39E 296km M=4.3**
2.0 0.09 0.08 18
Rsd 0.3s 10ph/9stn Dmin 93km Az.gap 223°
Corr. -0.088 17M/16stn Msd 0.2 1↓

89/975
**FEB 14 0446 27.4s 38.35S 176.28E 111km M=4.1**
0.4 0.02 0.02 4
Rsd 0.2s 18ph/15stn Dmin 24km Az.gap 111°
Corr. -0.171 17M/15stn Msd 0.1 1↑

89/988
**FEB 14 2202 22.3s 37.65S 176.68E 289km M=3.6**
0.2 0.09 0.06 10
Rsd 0.1s 13ph/9stn Dmin 346km Az.gap 347°
Corr. -0.535 7M/7stn Msd 0.1 1↑ 1↓

89/995
**FEB 15 0334 54.4s 44.96S 166.59E 33km M=3.9**
0.8 0.07 0.07 R
Rsd 0.1s 13ph/10stn Dmin 110km Az.gap 282°
Corr. -0.555 12M/12stn Msd 0.2

89/1000
**FEB 15 0938 01.7s 36.40S 179.95E 33km M=4.2**
0.5 0.04 0.06 R
Rsd 0.2s 12ph/9stn Dmin 198km Az.gap 328°
Corr. -0.484 16M/16stn Msd 0.2 2↑ 1↓

89/1006
**FEB 15 1930 16.3s 39.19S 175.02E 165km M=3.8**
0.2 0.01 0.05 2
Rsd 0.1s 21ph/14stn Dmin 45km Az.gap 226°
Corr. 0.085 11M/11stn Msd 0.1 3↑ 4↓

89/1015
**FEB 16 1024 15.5s 41.78S 172.59E 98km M=4.2**
0.6 0.03 0.04 6
Rsd 0.3s 18ph/14stn Dmin 22km Az.gap 140°
Corr. -0.396 13M/13stn Msd 0.2 1↑

89/1018
**FEB 16 1624 07.2s 45.14S 167.42E 86km M=3.7**
0.3 0.02 0.02 4
Rsd 0.1s 14ph/10stn Dmin 65km Az.gap 232°
Corr. -0.079 10M/10stn Msd 0.2 1↓

89/1028
**FEB 17 0758 02.4s 36.83S 177.36E 202km M=3.5**
0.8 0.09 0.15 10
Rsd 0.1s 11ph/8stn Dmin 120km Az.gap 288°
Corr. -0.777 10M/10stn Msd 0.2

89/1033
**FEB 17 1039 45.9s 38.26S 176.11E 174km M=3.8**
1.2 0.03 0.05 11
Rsd 0.2s 12ph/9stn Dmin 62km Az.gap 123°
Corr. -0.719 14M/14stn Msd 0.3 3↑ 2↓

89/1053
**FEB 18 0849 29.1s 44.26S 168.81E 12km M=3.5**
0.2 0.01 0.01 R
Rsd 0.1s 13ph/9stn Dmin 84km Az.gap 217°
Corr. -0.365 8M/8stn Msd 0.1 4↑ 1↓
Felt Mount Aspiring Station (113) MM4.

89/1074
**FEB 18 2225 00.4s 38.35S 175.66E 190km M=3.5**
0.4 0.01 0.08 4
Rsd 0.1s 18ph/13stn Dmin 49km Az.gap 181°
Corr. -0.216 10M/10stn Msd 0.1 1↑ 2↓

89/1081
**FEB 19 1428 09.6s 38.66S 176.85E 65km M=3.7**
0.2 0.01 0.01 3
Rsd 0.1s 20ph/16stn Dmin 56km Az.gap 104°
Corr. -0.307 13M/13stn Msd 0.1 4↑ 3↓

89/1084
**FEB 19 1744 47.1s 38.98S 175.82E 97km M=4.2**
0.4 0.01 0.03 4
Rsd 0.2s 27ph/23stn Dmin 13km Az.gap 88°
Corr. -0.539 16M/14stn Msd 0.2 10↑ 7↓

89/1086
**FEB 19 2117 13.0s 37.82S 176.96E 144km M=4.0**
0.7 0.03 0.02 7
Rsd 0.3s 12ph/9stn Dmin 19km Az.gap 175°
Corr. -0.017 12M/12stn Msd 0.2 1↓

89/1092
**FEB 20 0026 41.3s 38.60S 176.07E 5km M=3.3**
0.6 0.05 0.04 R
Rsd 0.7s 13ph/12stn Dmin 3km Az.gap 170°
Corr. -0.441 6M/6stn Msd 0.3 1↑ 1↓
Felt Wairakei (41) MM3. Multiple event? 3 min. duration on TAZ.

89/1103
**FEB 20 1457 50.5s 38.42S 175.76E 202km M=3.8**
1.8 0.04 0.07 15
Rsd 0.4s 15ph/14stn Dmin 58km Az.gap 138°
Corr. -0.153 15M/15stn Msd 0.2 4↑ 5↓

89/1107
**FEB 20 2219 49.8s 39.07S 175.55E 113km M=3.5**
0.3 0.01 0.03 2
Rsd 0.1s 19ph/14stn Dmin 12km Az.gap 259°
Corr. 0.179 9M/9stn Msd 0.2 4↑ 2↓

89/1127
**FEB 22 1919 28.5s 36.96S 176.66E 78km M=3.6**
0.5 0.04 0.10 28
Rsd 0.1s 17ph/12stn Dmin 162km Az.gap 273°
Corr. -0.719 8M/8stn Msd 0.2

89/1128
**FEB 22 2130 16.9s 35.10S 179.19E 263km M=4.8**
1.0 0.07 0.09 9
Rsd 0.2s 11ph/8stn Dmin 288km Az.gap 305°
Corr. 0.840 14M/14stn Msd 0.2 1↑ 1↓

89/1129
**FEB 22 2158 25.7s 45.19S 167.43E 33km M=4.0**
0.2 0.01 0.02 R
Rsd 0.1s 17ph/12stn Dmin 69km Az.gap 229°
Corr. 0.137 8M/8stn Msd 0.1 2↑ 5↓

89/1142
**FEB 23 1608 02.8s 39.15S 174.99E 220km M=3.7**
0.4 0.02 0.05 4
Rsd 0.2s 18ph/15stn Dmin 49km Az.gap 173°
Corr. 0.051 8M/8stn Msd 0.2 2↑ 2↓

89/1143
**FEB 23 1643 45.8s 41.09S 174.22E 50km M=3.6**
0.4 0.02 0.03 3
Rsd 0.3s 21ph/15stn Dmin 15km Az.gap 209°
Corr. -0.602 8M/8stn Msd 0.1 6↑ 1↓

89/1151
**FEB 23 2307 28.3s 45.46S 167.40E 12km M=3.8**
0.2 0.01 0.02 R
Rsd 0.1s 14ph/10stn Dmin 96km Az.gap 283°
Corr. 0.609 9M/9stn Msd 0.2 1↑

89/1152
**FEB 24 0054 28.0s 40.40S 174.41E 83km M=4.1**
0.2 0.01 0.01 3
Rsd 0.2s 28ph/21stn Dmin 67km Az.gap 107°
Corr. -0.164 6M/5stn Msd 0.2 8↑ 3↓

89/1153
**FEB 24 0101 38.0s 38.57S 175.74E 168km M=3.6**
0.5 0.01 0.23 4
Rsd 0.1s 16ph/14stn Dmin 51km Az.gap 341°
Corr. -0.699 10M/10stn Msd 0.3 1↑ 1↓

89/1157
**FEB 24 0954 33.5s 38.64S 176.05E 0km M=2.3**
0.1 0.00 0.00 1
Rsd 0.1s 6ph/5stn Dmin 2km Az.gap 142°
Corr. 0.064 2M/2stn Msd 0.6 1↓
Felt Taupo (41).

89/1158
**FEB 24 0955 01.7s 38.63S 176.06E 2km M=3.2**
0.1 0.00 0.00 R
Rsd 0.1s 10ph/8stn Dmin 1km Az.gap 131°
Corr. 0.434 2M/2stn Msd 0.1 1↓
Felt Taupo (41).

89/1159
**FEB 24 0958 49.5s 38.58S 176.07E 2km M=2.1**
0.4 0.02 0.01 R
Rsd 0.2s 7ph/4stn Dmin 5km Az.gap 314°
Corr. 0.395 4M/4stn Msd 0.3 1↓
Felt Taupo (41).

89/1160
**FEB 24 1019 29.1s 38.52S 176.09E 7km M=2.3**
0.4 0.02 0.02 5
Rsd 0.1s 6ph/5stn Dmin 11km Az.gap 337°
Corr. -0.400 3M/3stn Msd 0.1
Felt Taupo (41). Solution very doubtful. Two events.

89/1162
**FEB 24 1141 51.6s 39.22S 175.08E 143km M=4.0**
0.5 0.02 0.08 5
Rsd 0.2s 21ph/16stn Dmin 40km Az.gap 218°
Corr. -0.100 13M/13stn Msd 0.2 11↑ 2↓

89/1163
**FEB 24 1237 25.3s 45.47S 166.43E 33km M=4.1**
0.6 0.03 0.06 R
Rsd 0.2s 13ph/11stn Dmin 147km Az.gap 272°
Corr. -0.389 11M/11stn Msd 0.2
MSZ early.

89/1166
**FEB 24 1412 21.2s 45.27S 165.97E 33km M=3.9**
1.0 0.04 0.10 R
Rsd 0.2s 14ph/10stn Dmin 168km Az.gap 289°
Corr. -0.719 10M/10stn Msd 0.2 1↑

89/1167
**FEB 24 1555 05.0s 45.26S 165.78E 33km M=4.4**
0.3 0.01 0.03 R
Rsd 0.1s 13ph/11stn Dmin 181km Az.gap 277°
Corr. -0.602 16M/16stn Msd 0.3 2↑ 3↓

89/1168
**FEB 24 1556 51.0s 45.53S 166.50E 33km M=4.5**
0.6 0.02 0.07 R
Rsd 0.1s 12ph/11stn Dmin 147km Az.gap 269°
Corr. -0.711 8M/8stn Msd 0.1
Felt Te Anau Downs Homestead and Iris Burn Hut (130) MM4.

89/1169
**FEB 24 1733 52.4s 45.47S 166.38E 33km M=4.2**
0.8 0.03 0.08 R
Rsd 0.2s 15ph/12stn Dmin 150km Az.gap 268°
Corr. -0.707 10M/10stn Msd 0.1 1↑
MSZ early.

89/1173
**FEB 25 0030 17.9s 37.24S 177.44E 144km M=4.2**
0.3 0.01 0.01 3
Rsd 0.1s 13ph/12stn Dmin 86km Az.gap 176°
Corr. 0.277 21M/21stn Msd 0.2 1↑ 3↓

89/1184
**FEB 25 1118 01.2s 45.50S 166.44E 33km M=4.3**
0.8 0.03 0.08 R
Rsd 0.3s 18ph/11stn Dmin 148km Az.gap 271°
Corr. -0.609 10M/10stn Msd 0.1 1↓
MSZ early.

89/1187
**FEB 25 1630 26.4s 39.19S 174.91E 238km M=4.5**
0.3 0.01 0.02 2
Rsd 0.1s 24ph/17stn Dmin 55km Az.gap 158°
Corr. 0.074 20M/20stn Msd 0.2 15↑ 5↓
HBN timing uncertain - MOH from paper records.

89/1205
**FEB 26 0359 54.6s 36.79S 176.97E 249km M=4.0**
0.9 0.06 0.04 7
Rsd 0.2s 10ph/7stn Dmin 133km Az.gap 281°
Corr. -0.598 21M/21stn Msd 0.2 3↑ 2↓

89/1209
**FEB 26 0639 26.3s 41.80S 174.60E 30km M=4.2**
0.1 0.01 0.01 1
Rsd 0.1s 21ph/17stn Dmin 32km Az.gap 170°
Corr. -0.668 25M/25stn Msd 0.3 10↑ 6↓
Felt Wellington (68) max MM5, also Blenheim (77) MM4. Hawke's Bay Net timing uncertain.

89/1222
**FEB 26 1757 45.8s 37.96S 176.38E 175km M=4.1**
0.5 0.03 0.02 5
Rsd 0.2s 17ph/13stn Dmin 33km Az.gap 164°
Corr. -0.277 19M/19stn Msd 0.3 11↑ 5↓
HBN time correction unknown.

89/1224
**FEB 26 1837 53.8s 45.29S 165.86E 33km M=4.4**
1.2 0.03 0.13 R
Rsd 0.2s 13ph/12stn Dmin 176km Az.gap 276°
Corr. -0.797 15M/15stn Msd 0.3 1↑ 6↓
Unstable solution.

89/1231
**FEB 26 2324 15.4s 38.72S 175.34E 297km M=3.9**
0.6 0.10 0.19 9
Rsd 0.2s 15ph/11stn Dmin 130km Az.gap 225°
Corr. -0.801 16M/16stn Msd 0.2 1↑ 1↓

89/1237
**FEB 27 0939 19.0s 37.07S 176.91E 353km M=3.7**
0.2 0.06 0.10 4
Rsd 0.1s 10ph/9stn Dmin 137km Az.gap 270°
Corr. -0.984 12M/12stn Msd 0.1

89/1239
**FEB 27 1104 21.7s 37.44S 176.76E 191km M=4.0**
1.1 0.04 0.03 9
Rsd 0.2s 18ph/14stn Dmin 64km Az.gap 247°
Corr. -0.570 20M/20stn Msd 0.2 2↑ 2↓

89/1242
**FEB 27 1130 35.8s 38.69S 176.16E 9km M=2.4**
0.5 0.01 0.04 3
Rsd 0.2s 7ph/7stn Dmin 9km Az.gap 234°
Corr. 0.652 7M/7stn Msd 0.2
Felt Taupo (41) MM4.

89/1249
**FEB 28 0116 13.7s 38.47S 175.92E 156km M=4.2**
0.8 0.03 0.05 7
Rsd 0.3s 15ph/12stn Dmin 68km Az.gap 143°
Corr. 0.479 16M/16stn Msd 0.4 5↑ 5↓

89/1252
**FEB 28 0430 18.8s 44.85S 167.29E 71km M=3.5**
0.3 0.08 0.04 6
Rsd 0.1s 14ph/11stn Dmin 54km Az.gap 263°
Corr. 0.859 13M/13stn Msd 0.2 1↑ 1↓

89/1256
**FEB 28 1242 11.3s 38.72S 175.60E 157km M=3.6**
0.4 0.03 0.02 3
Rsd 0.1s 13ph/10stn Dmin 32km Az.gap 273°
Corr. 0.218 12M/12stn Msd 0.2 2↑ 4↓

89/1281
**MAR 01 0934 26.0s 37.91S 176.41E 181km M=3.8**
0.8 0.06 0.05 8
Rsd 0.4s 15ph/13stn Dmin 52km Az.gap 227°
Corr. -0.676 20M/20stn Msd 0.2 1↓

89/1284
**MAR 01 1036 37.3s 44.82S 167.48E 5km M=3.5**
0.2 0.01 0.02 R
Rsd 0.1s 13ph/9stn Dmin 38km Az.gap 257°
Corr. -0.648 10M/10stn Msd 0.3 1↑

89/1298
**MAR 01 1848 37.1s 39.07S 175.06E 215km M=3.7**
0.4 0.02 0.04 3
Rsd 0.2s 25ph/20stn Dmin 43km Az.gap 200°
Corr. -0.190 18M/18stn Msd 0.2 4↑ 2↓

89/1300
**MAR 01 1933 18.4s 44.18S 169.17E 57km M=3.7**
0.2 0.01 0.01 4
Rsd 0.1s 19ph/11stn Dmin 77km Az.gap 221°
Corr. -0.188 4M/4stn Msd 0.1 1↓

89/1317
**MAR 02 1338 59.0s 38.21S 176.29E 0km M=2.3**
3.0 1.02 0.38 R
Rsd 1.0s 4ph/2stn Dmin 9km Az.gap 192°
Corr. 0.996 1M/1stn Msd N.D. 1↑
Felt Rotorua (33) MM4.

89/1320
**MAR 02 1520 29.1s 45.90S 165.10E 5km M=3.7**
0.8 0.03 0.09 R
Rsd 0.2s 12ph/10stn Dmin 257km Az.gap 302°
Corr. -0.434 10M/10stn Msd 0.2

89/1324
**MAR 02 2249 01.7s 40.50S 174.72E 73km M=3.5**
0.2 0.01 0.02 4
Rsd 0.2s 19ph/16stn Dmin 43km Az.gap 90°
Corr. -0.508 9M/9stn Msd 0.2 1↑
Wairarapa stations all have a very weak, emergent first arrival.

89/1335
**MAR 03 1148 02.3s 39.23S 174.04E 10km M=2.9**
0.4 0.02 0.03 1
Rsd 0.2s 16ph/12stn Dmin 7km Az.gap 222°
Corr. -0.434 11M/11stn Msd 0.1 1↓
Felt Pukeiti (46).

89/1355
**MAR 04 0511 33.4s 35.26S 178.27E 259km M=3.7**
0.6 0.09 0.20 9
Rsd 0.2s 12ph/11stn Dmin 259km Az.gap 332°
Corr. -0.836 8M/8stn Msd 0.3

89/1369
**MAR 04 2026 50.7s 37.95S 176.08E 179km M=3.6**
0.7 0.03 0.07 6
Rsd 0.2s 11ph/9stn Dmin 49km Az.gap 236°
Corr. -0.379 18M/18stn Msd 0.1 1↑

89/1384
**MAR 05 1146 29.4s 36.67S 177.64E 218km M=4.1**
0.4 0.03 0.03 4
Rsd 0.1s 15ph/15stn Dmin 118km Az.gap 278°
Corr. -0.163 21M/21stn Msd 0.2

89/1396
**MAR 05 2048 53.0s 44.78S 167.66E 49km M=3.7**
0.2 0.01 0.01 1
Rsd 0.1s 20ph/13stn Dmin 24km Az.gap 222°
Corr. -0.691 8M/7stn Msd 0.2 1↓

89/1406
**MAR 06 0438 23.8s 44.66S 167.91E 65km M=3.9**
0.1 0.01 0.01 1
Rsd 0.1s 21ph/14stn Dmin 1km Az.gap 213°
Corr. -0.477 6M/6stn Msd 0.1 1↓

89/1415
**MAR 06 1200 56.8s 37.26S 179.02E 12km M=3.6**
0.5 0.06 0.06 R
Rsd 0.2s 14ph/10stn Dmin 74km Az.gap 314°
Corr. -0.621 19M/19stn Msd 0.2 1↑

89/1429
**MAR 06 2249 57.2s 41.84S 173.14E 63km M=3.9**
0.3 0.01 0.02 4
Rsd 0.3s 24ph/16stn Dmin 25km Az.gap 66°
Corr. -0.033 13M/11stn Msd 0.2 1↑ 3↓

89/1433
**MAR 07 0755 29.5s 38.16S 175.74E 212km M=3.6**
0.6 0.05 0.08 6
Rsd 0.3s 12ph/10stn Dmin 31km Az.gap 125°
Corr. 0.314 15M/15stn Msd 0.2

89/1451
**MAR 07 2318 38.7s 37.71S 176.63E 180km M=3.8**
0.5 0.03 0.03 5
Rsd 0.2s 11ph/10stn Dmin 44km Az.gap 191°
Corr. -0.363 19M/19stn Msd 0.4 1↑ 2↓

89/1460
**MAR 08 1007 09.9s 37.58S 176.59E 319km M=3.6**
0.3 0.16 0.05 16
Rsd 0.1s 11ph/9stn Dmin 350km Az.gap 347°
Corr. 0.015 6M/6stn Msd 0.2

89/1461
**MAR 08 1121 39.6s 38.16S 175.91E 179km M=3.7**
0.7 0.04 0.07 6
Rsd 0.2s 19ph/16stn Dmin 95km Az.gap 232°
Corr. -0.719 20M/20stn Msd 0.2 1↑ 2↓

89/1463
**MAR 08 1236 33.4s 40.35S 174.73E 63km M=3.7**
0.1 0.01 0.01 3
Rsd 0.2s 25ph/19stn Dmin 59km Az.gap 93°
Corr. -0.264 14M/12stn Msd 0.2 1↑

89/1465
**MAR 08 1435 37.3s 35.71S 179.16W 45km M=4.6**
0.3 0.06 0.06 13
Rsd 0.1s 15ph/9stn Dmin 309km Az.gap 334°
Corr. -0.871 13M/12stn Msd 0.3 1↑

89/1470
**MAR 08 1725 60.0s 38.09S 178.68E 229km M=3.6**
0.3 0.21 0.32 6
Rsd 0.1s 14ph/9stn Dmin 38km Az.gap 305°
Corr. -0.996 9M/9stn Msd 0.1

89/1473
**MAR 08 2354 47.6s 44.81S 167.43E 5km M=3.6**
0.2 0.01 0.01 R
Rsd 0.1s 16ph/9stn Dmin 41km Az.gap 253°
Corr. -0.813 12M/12stn Msd 0.4 1↑

89/1479
**MAR 09 0615 15.1s 37.94S 177.90E 69km M=3.6**
0.2 0.01 0.02 3
Rsd 0.1s 7ph/4stn Dmin 34km Az.gap 140°
Corr. -0.412 2M/2stn Msd 0.2 1↑ 1↓

89/1499
**MAR 09 2339 01.8s 39.26S 177.80E 57km M=3.8**
0.2 0.02 0.02 3
Rsd 0.2s 23ph/18stn Dmin 58km Az.gap 202°
Corr. -0.766 15M/15stn Msd 0.2 3↑ 7↓

89/1502
**MAR 10 0448 28.8s 35.18S 178.74E 289km M=3.8**
0.4 0.09 0.20 8
Rsd 0.1s 10ph/8stn Dmin 324km Az.gap 339°
Corr. -0.898 6M/6stn Msd 0.1

89/1507
**MAR 10 0744 06.2s 36.91S 178.17E 33km M=3.7**
0.4 0.03 0.03 R
Rsd 0.2s 24ph/20stn Dmin 78km Az.gap 244°
Corr. 0.531 19M/19stn Msd 0.2 1↑

89/1509
**MAR 10 0816 13.6s 36.93S 176.88E 275km M=4.1**
0.7 0.07 0.08 8
Rsd 0.3s 17ph/13stn Dmin 146km Az.gap 276°
Corr. -0.660 20M/20stn Msd 0.2 1↑

89/1530
**MAR 11 0521 35.2s 40.14S 173.64E 151km M=5.1**
0.3 0.01 0.02 3
Rsd 0.2s 33ph/25stn Dmin 104km Az.gap 160°
Corr. -0.218 12M/10stn Msd 0.2 13↑ 6↓
Felt Miramar, Tawa (68) MM4 and Khandallah (68).

89/1533
**MAR 11 0747 43.2s 36.85S 177.00E 219km M=4.3**
0.4 0.02 0.02 4
Rsd 0.1s 14ph/11stn Dmin 143km Az.gap 189°
Corr. 0.703 20M/18stn Msd 0.2

89/1559
**MAR 12 2307 43.8s 46.61S 165.83E 33km M=3.5**
0.9 0.04 0.09 R
Rsd 0.3s 12ph/9stn Dmin 178km Az.gap 297°
Corr. 0.273 8M/8stn Msd 0.2

89/1561
**MAR 13 0427 09.4s 38.40S 176.38E 171km M=3.6**
0.7 0.10 0.15 9
Rsd 0.4s 11ph/8stn Dmin 88km Az.gap 214°
Corr. -0.945 16M/16stn Msd 0.3 1↑

89/1565
**MAR 13 1005 26.8s 37.98S 175.95E 182km M=3.5**
0.7 0.05 0.10 7
Rsd 0.3s 18ph/15stn Dmin 112km Az.gap 300°
Corr. -0.504 16M/16stn Msd 0.2 1↑

89/1571
**MAR 13 1216 04.0s 38.88S 175.01E 222km M=4.0**
0.6 0.03 0.04 5
Rsd 0.3s 24ph/19stn Dmin 48km Az.gap 143°
Corr. -0.025 20M/20stn Msd 0.2 7↑ 3↓

89/1572
**MAR 13 1440 40.6s 41.47S 173.24E 82km M=4.0**
0.6 0.02 0.03 7
Rsd 0.4s 20ph/18stn Dmin 50km Az.gap 83°
Corr. -0.322 16M/14stn Msd 0.2 5↑ 4↓

89/1574
**MAR 13 1613 26.1s 38.73S 175.41E 182km M=3.7**
0.7 0.04 0.04 6
Rsd 0.2s 16ph/12stn Dmin 52km Az.gap 223°
Corr. -0.014 18M/18stn Msd 0.3 4↑ 3↓

89/1581
**MAR 13 2008 38.6s 35.54S 179.48E 195km M=4.6**
0.9 0.11 0.16 11
Rsd 0.3s 12ph/10stn Dmin 252km Az.gap 339°
Corr. -0.637 20M/19stn Msd 0.2

89/1583
**MAR 13 2138 49.3s 37.11S 176.93E 298km M=4.0**
0.7 0.05 0.09 7
Rsd 0.3s 13ph/11stn Dmin 131km Az.gap 268°
Corr. -0.648 16M/16stn Msd 0.2

89/1592
**MAR 14 1120 46.6s 37.30S 176.99E 178km M=4.0**
0.3 0.02 0.02 3
Rsd 0.1s 13ph/11stn Dmin 76km Az.gap 225°
Corr. -0.144 18M/18stn Msd 0.1

89/1601
**MAR 15 0628 08.2s 36.51S 177.08E 107km M=3.7**
1.0 0.07 0.18 36
Rsd 0.3s 8ph/6stn Dmin 162km Az.gap 300°
Corr. -0.473 5M/5stn Msd 0.2

89/1605
**MAR 15 1554 15.8s 37.83S 176.89E 92km M=3.9**
1.1 0.05 0.03 17
Rsd 0.5s 12ph/9stn Dmin 56km Az.gap 174°
Corr. -0.410 4M/4stn Msd 0.1 1↓

89/1609
**MAR 16 0029 01.6s 40.14S 174.57E 71km M=3.9**
0.2 0.01 0.02 5
Rsd 0.2s 28ph/24stn Dmin 85km Az.gap 144°
Corr. -0.605 19M/17stn Msd 0.2 4↑ 1↓

89/1615
**MAR 16 1439 37.3s 37.61S 176.23E 33km M=3.9**
0.7 0.05 0.04 R
Rsd 0.3s 13ph/10stn Dmin 185km Az.gap 265°
Corr. -0.688 6M/6stn Msd 0.3

89/1619
**MAR 16 1831 02.1s 38.52S 175.05E 227km M=3.6**
0.4 0.06 0.07 9
Rsd 0.3s 19ph/13stn Dmin 236km Az.gap 240°
Corr. -0.895 8M/8stn Msd 0.2

89/1621
**MAR 16 2129 21.2s 37.91S 177.01E 8km M=3.1**
0.3 0.03 0.02 R
Rsd 0.3s 7ph/4stn Dmin 57km Az.gap 204°
Corr. -0.684 3M/3stn Msd 0.1 1↑
Felt Bay of Plenty (27,33,35) max MM4 at Ohope (35).

89/1626
**MAR 17 0538 51.1s 41.85S 172.65E 95km M=4.4**
0.4 0.02 0.03 4
Rsd 0.2s 23ph/18stn Dmin 17km Az.gap 132°
Corr. -0.590 16M/14stn Msd 0.2 5↑ 6↓

89/1632
**MAR 17 1322 38.8s 39.02S 174.93E 230km M=4.8**
0.4 0.03 0.03 3
Rsd 0.3s 43ph/33stn Dmin 53km Az.gap 136°
Corr. -0.051 15M/14stn Msd 0.3 14↑ 3↓

89/1639
**MAR 17 1753 04.3s 40.51S 173.61E 138km M=3.9**
0.2 0.01 0.01 2
Rsd 0.2s 27ph/19stn Dmin 96km Az.gap 148°
Corr. -0.186 14M/12stn Msd 0.2 7↑ 2↓

89/1645
**MAR 18 0151 53.4s 45.12S 167.54E 119km M=3.7**
0.2 0.01 0.01 1
Rsd 0.1s 24ph/12stn Dmin 58km Az.gap 211°
Corr. -0.373 11M/11stn Msd 0.2 1↑

89/1656
**MAR 18 1352 24.4s 35.23S 177.89W 33km M=3.9**
0.4 0.07 0.08 R
Rsd 0.1s 7ph/3stn Dmin 431km Az.gap 352°
Corr. -0.859 1M/1stn Msd N.D.

89/1661
**MAR 18 1702 48.2s 38.29S 176.16E 5km M=2.0**
0.2 R R R
Rsd 0.4s 3ph/2stn Dmin 13km Az.gap 295°
Corr. 0.000 2M/2stn Msd 0.4
Felt Rotorua (33) MM4.

89/1664
**MAR 18 2030 54.0s 37.95S 175.71E 41km**
0.1 0.08 0.05 2
Rsd 0.0s 5ph/3stn Dmin 15km Az.gap 196°
Corr. 0.992 0M/0stn Msd 0.0
Felt Katikati (25).

89/1670
**MAR 19 0354 54.8s 42.91S 172.89E 33km M=4.0**
0.1 0.01 0.01 R
Rsd 0.1s 18ph/15stn Dmin 76km Az.gap 143°
Corr. -0.563 19M/17stn Msd 0.2 1↑
Felt Motunau Beach (96) MM4 and Clay Knob (95).

89/1686
**MAR 19 2234 05.0s 45.06S 167.29E 41km M=3.8**
0.4 0.01 0.03 7
Rsd 0.1s 15ph/13stn Dmin 66km Az.gap 243°
Corr. -0.688 3M/3stn Msd 0.4 3↑ 10↓
Felt Wanaka (123).

89/1687
**MAR 19 2305 43.3s 43.40S 170.42E 12km M=4.0**
1.0 0.06 0.08 R
Rsd 0.3s 13ph/10stn Dmin 105km Az.gap 319°
Corr. 0.316 10M/10stn Msd 0.3 1↑

89/1692
**MAR 20 0853 55.4s 37.77S 177.69E 86km M=3.6**
0.4 0.02 0.03 5
Rsd 0.2s 18ph/14stn Dmin 57km Az.gap 167°
Corr. -0.207 13M/13stn Msd 0.2 1↑

89/1698
**MAR 20 1134 10.4s 38.01S 176.48E 133km M=4.6**
0.4 0.02 0.02 4
Rsd 0.3s 36ph/31stn Dmin 25km Az.gap 134°
Corr. -0.334 21M/19stn Msd 0.2 9↑ 3↓

89/1703
**MAR 20 1659 01.4s 37.74S 175.86E 5km**
0.3 0.02 0.01 R
Rsd 0.1s 6ph/3stn Dmin 35km Az.gap 261°
Corr. 0.188 0M/0stn Msd 0.0
Felt Katikati (25).

89/1705
**MAR 20 2227 04.7s 38.66S 175.72E 153km M=3.9**
0.5 0.02 0.03 4
Rsd 0.2s 22ph/15stn Dmin 49km Az.gap 146°
Corr. 0.125 20M/18stn Msd 0.2 5↑ 2↓

89/1711
**MAR 21 0434 54.9s 37.57S 175.30E 5km**
0.7 0.04 0.06 R
Rsd 0.2s 8ph/5stn Dmin 45km Az.gap 339°
Corr. 0.393 0M/0stn Msd 0.0
Felt Apata (25) MM4.

89/1720
**MAR 21 0941 00.8s 36.62S 176.31E 33km M=4.5**
0.5 0.04 0.03 R
Rsd 0.2s 13ph/10stn Dmin 236km Az.gap 296°
Corr. 0.311 8M/8stn Msd 0.3

89/1735
**MAR 22 0153 14.4s 36.29S 177.15E 33km M=3.8**
2.5 0.18 0.11 R
Rsd 0.6s 7ph/5stn Dmin 221km Az.gap 314°
Corr. 0.512 4M/4stn Msd 0.1

89/1747
**MAR 22 1228 17.7s 37.10S 176.88E 248km M=4.1**
0.4 0.03 0.02 4
Rsd 0.1s 11ph/8stn Dmin 129km Az.gap 242°
Corr. -0.202 14M/14stn Msd 0.1 1↑

89/1752
**MAR 22 1656 34.4s 40.40S 173.63E 167km M=3.9**
0.2 0.01 0.02 2
Rsd 0.1s 21ph/17stn Dmin 105km Az.gap 196°
Corr. -0.254 15M/13stn Msd 0.2 3↑ 2↓

89/1758
**MAR 22 2339 00.3s 36.48S 179.91W 12km M=4.6**
0.4 0.02 0.05 R
Rsd 0.1s 12ph/8stn Dmin 201km Az.gap 328°
Corr. -0.555 17M/15stn Msd 0.3 1↓

89/1771
**MAR 23 2308 36.1s 36.95S 177.14E 216km M=4.3**
0.8 0.07 0.08 11
Rsd 0.3s 10ph/7stn Dmin 126km Az.gap 274°
Corr. -0.490 14M/14stn Msd 0.2 1↑

89/1783
**MAR 24 1419 17.0s 37.57S 176.89E 171km M=3.6**
0.6 0.03 0.04 6
Rsd 0.2s 12ph/9stn Dmin 124km Az.gap 201°
Corr. -0.092 10M/10stn Msd 0.2

89/1784
**MAR 24 1421 42.5s 41.25S 172.72E 213km M=3.6**
0.2 0.03 0.05 4
Rsd 0.1s 9ph/8stn Dmin 131km Az.gap 285°
Corr. -0.953 9M/9stn Msd 0.2 1↑ 1↓

89/1788
**MAR 24 1843 51.4s 37.62S 175.90E 5km M=2.6**
1.9 0.13 0.05 R
Rsd 0.5s 4ph/3stn Dmin 47km Az.gap 279°
Corr. -0.254 1M/1stn Msd N.D. 1↑
Felt Tauranga area (26).

89/1797
**MAR 25 0532 03.0s 41.44S 173.55E 75km M=4.5**
0.3 0.01 0.02 5
Rsd 0.2s 23ph/18stn Dmin 65km Az.gap 72°
Corr. -0.605 7M/6stn Msd 0.2 5↑ 8↓
Felt Blenheim (77) MM4.

89/1798
**MAR 25 0653 12.5s 40.36S 173.86E 6km M=3.6**
0.6 0.01 0.01 5
Rsd 0.2s 31ph/21stn Dmin 100km Az.gap 139°
Corr. 0.065 16M/14stn Msd 0.2 1↓

89/1801
**MAR 25 0730 50.2s 43.22S 172.42E 12km M=3.5**
0.3 0.02 0.03 R
Rsd 0.3s 12ph/8stn Dmin 44km Az.gap 105°
Corr. 0.163 21M/21stn Msd 0.3
Felt Mount Thomas (101).

89/1806
**MAR 25 1534 14.4s 37.27S 177.87E 106km M=3.6**
0.7 0.03 0.04 8
Rsd 0.2s 9ph/8stn Dmin 53km Az.gap 243°
Corr. 0.398 10M/10stn Msd 0.1 1↑

89/1809
**MAR 25 1714 14.8s 38.38S 177.18E 226km M=3.7**
0.3 0.11 0.16 6
Rsd 0.1s 13ph/10stn Dmin 79km Az.gap 255°
Corr. -0.992 10M/10stn Msd 0.2 1↓

89/1810
**MAR 25 1746 31.3s 37.76S 176.55E 223km M=3.8**
1.1 0.06 0.07 9
Rsd 0.2s 17ph/13stn Dmin 162km Az.gap 276°
Corr. -0.221 12M/12stn Msd 0.2 1↓

89/1812
**MAR 25 1922 19.5s 35.20S 178.88E 218km M=4.0**
1.6 0.12 0.23 31
Rsd 0.2s 8ph/5stn Dmin 271km Az.gap 332°
Corr. -0.863 9M/9stn Msd 0.2

89/1819
**MAR 26 0135 11.8s 37.23S 176.78E 240km M=4.5**
0.4 0.04 0.03 4
Rsd 0.1s 10ph/7stn Dmin 114km Az.gap 234°
Corr. -0.408 16M/14stn Msd 0.2 3↑ 1↓

89/1820
**MAR 26 0243 52.8s 42.32S 172.62E 12km M=3.7**
0.1 0.01 0.01 R
Rsd 0.1s 21ph/16stn Dmin 60km Az.gap 107°
Corr. -0.095 19M/17stn Msd 0.3 2↑ 2↓

89/1832
**MAR 26 1511 08.4s 43.05S 172.11E 12km M=3.5**
0.2 0.01 0.02 R
Rsd 0.2s 16ph/10stn Dmin 73km Az.gap 92°
Corr. 0.500 22M/20stn Msd 0.2 1↑

89/1854
**MAR 28 1110 52.5s 44.10S 168.80E 12km M=4.1**
0.5 0.03 0.03 R
Rsd 0.2s 14ph/10stn Dmin 108km Az.gap 194°
Corr. -0.621 17M/15stn Msd 0.2 4↑ 1↓
Felt Mahitahi (104) MM3.

89/1855
**MAR 28 1146 52.3s 37.62S 175.90E 5km**
0.0 R R R
Rsd 0.0s 1ph/1stn Dmin 47km Az.gap 360°
Corr. 0.000 0M/0stn Msd 0.0
Felt Pahoia (25).

89/1859
**MAR 28 1402 46.7s 37.62S 175.90E 5km**
0.2 R R R
Rsd 0.4s 5ph/3stn Dmin 47k Az.gap 279°
Corr. 0.000 0M/0stn Msd 0.0 1↑
Felt Pahoia (25).

89/1860
**MAR 28 1427 22.3s 37.62S 175.90E 5km**
0.0 R R R
Rsd 0.0s 1ph/1stn Dmin 47km Az.gap 360°
Corr. 0.000 0M/0stn Msd 0.0
Felt Pahoia (25).

89/1861
**MAR 28 1530 51.4s 38.83S 175.54E 154km M=3.8**
1.0 0.02 0.09 8
Rsd 0.3s 20ph/15stn Dmin 19km Az.gap 137°
Corr. -0.204 13M/13stn Msd 0.1 3↑ 1↓

89/1885
**MAR 30 0516 34.3s 39.13S 174.90E 216km M=3.6**
0.8 0.03 0.05 6
Rsd 0.3s 27ph/21stn Dmin 56km Az.gap 158°
Corr. -0.275 17M/17stn Msd 0.1 5↑ 2↓

89/1896
**MAR 30 1422 20.1s 39.17S 174.98E 235km M=4.0**
0.3 0.02 0.02 2
Rsd 0.2s 32ph/23stn Dmin 49km Az.gap 169°
Corr. -0.182 21M/19stn Msd 0.2 10↑ 4↓

89/1916
**MAR 31 0649 36.1s 37.70S 177.04E 5km M=3.7**
0.2 0.02 0.02 R
Rsd 0.3s 16ph/15stn Dmin 23km Az.gap 136°
Corr. -0.520 10M/10stn Msd 0.2 1↓

89/1924
**MAR 31 0818 43.2s 38.59S 175.70E 154km M=4.4**
0.4 0.02 0.03 3
Rsd 0.2s 29ph/23stn Dmin 14km Az.gap 108°
Corr. 0.228 20M/18stn Msd 0.3 12↑ 6↓

89/1932
**MAR 31 1413 32.5s 47.83S 166.64E 33km M=3.7**
0.4 0.29 0.58 R
Rsd 0.1s 7ph/6stn Dmin 360km Az.gap 358°
Corr. -0.992 9M/9stn Msd 0.2

89/1947
**APR 01 0141 58.7s 39.15S 175.09E 238km M=3.6**
0.3 0.04 0.05 4
Rsd 0.1s 16ph/12stn Dmin 166km Az.gap 310°
Corr. -0.637 10M/10stn Msd 0.3 2↑ 2↓

89/1953
**APR 01 1206 48.4s 37.80S 176.32E 191km M=5.2**
0.7 0.03 0.02 6
Rsd 0.2s 31ph/27stn Dmin 44km Az.gap 186°
Corr. 0.052 10M/10stn Msd 0.2 7↑ 7↓

89/1975
**APR 02 2201 38.5s 40.51S 174.37E 24km M=4.3**
0.2 0.01 0.01 2
Rsd 0.1s 26ph/22stn Dmin 60km Az.gap 153°
Corr. -0.539 14M/14stn Msd 0.3 5↑ 2↓
Felt Wanganui (57), Foxton (61) and Thorndon (68).

89/1979
**APR 03 0359 45.1s 41.30S 172.29E 2km M=3.6**
0.7 0.02 0.04 4
Rsd 0.2s 16ph/10stn Dmin 73km Az.gap 271°
Corr. 0.156 11M/11stn Msd 0.2

89/1992
**APR 03 1902 38.7s 44.73S 167.70E 55km M=3.8**
0.1 0.01 0.01 1
Rsd 0.0s 23ph/13stn Dmin 18km Az.gap 243°
Corr. -0.684 5M/5stn Msd 0.1 1↓

89/1996
**APR 03 2219 03.1s 41.10S 174.47E 61km M=3.5**
0.1 0.01 0.01 1
Rsd 0.1s 22ph/15stn Dmin 21km Az.gap 114°
Corr. -0.209 7M/7stn Msd 0.2 4↑ 6↓

89/1999
**APR 04 0727 40.5s 35.06S 178.41E 233km M=4.0**
0.3 0.05 0.21 8
Rsd 0.1s 13ph/11stn Dmin 282km Az.gap 335°
Corr. -0.914 10M/10stn Msd 0.2

89/2003
**APR 04 0956 39.9s 41.83S 174.13E 35km M=3.7**
0.1 0.01 0.01 2
Rsd 0.2s 20ph/16stn Dmin 11km Az.gap 143°
Corr. -0.387 9M/9stn Msd 0.1 4↑ 6↓

89/2011
**APR 04 1737 25.3s 39.01S 175.10E 210km M=3.6**
0.2 0.01 0.03 2
Rsd 0.1s 17ph/13stn Dmin 44km Az.gap 275°
Corr. -0.245 11M/11stn Msd 0.2 5↑ 1↓

89/2012
**APR 04 1808 11.1s 36.49S 176.39E 192km M=3.5**
1.6 0.10 0.26 43
Rsd 0.2s 12ph/8stn Dmin 210km Az.gap 287°
Corr. -0.879 7M/7stn Msd 0.1

89/2024
**APR 05 0731 00.6s 38.92S 175.23E 235km M=4.0**
0.3 0.02 0.02 3
Rsd 0.1s 23ph/18stn Dmin 41km Az.gap 174°
Corr. -0.147 18M/18stn Msd 0.3 4↑ 2↓

89/2025
**APR 05 0738 19.6s 45.18S 167.37E 117km M=3.6**
0.1 0.00 0.01 1
Rsd 0.1s 21ph/11stn Dmin 68km Az.gap 229°
Corr. -0.361 11M/11stn Msd 0.2 1↑

89/2036
**APR 05 1707 40.7s 41.39S 174.61E 22km M=3.8**
0.1 0.01 0.01 1
Rsd 0.2s 27ph/19stn Dmin 17km Az.gap 116°
Corr. -0.381 9M/9stn Msd 0.2 7↑ 6↓
Felt Wellington area (68) max MM5.

89/2037
**APR 05 1846 37.8s 37.65S 178.58E 45km M=3.9**
0.1 0.00 0.01 1
Rsd 0.0s 5ph/3stn Dmin 25km Az.gap 289°
Corr. -0.324 1M/1stn Msd N.D. 1↑

89/2038
**APR 05 1905 38.1s 37.56S 178.45E 57km M=3.8**
0.2 0.01 0.02 2
Rsd 0.1s 10ph/8stn Dmin 14km Az.gap 304°
Corr. 0.067 16M/16stn Msd 0.2

89/2045
**APR 06 0233 20.1s 36.60S 178.34E 231km M=3.7**
0.7 0.08 0.23 8
Rsd 0.1s 9ph/7stn Dmin 110km Az.gap 329°
Corr. -0.871 12M/12stn Msd 0.2

89/2047
**APR 06 0319 55.6s 39.36S 174.71E 196km M=4.2**
0.3 0.01 0.02 3
Rsd 0.2s 32ph/25stn Dmin 54km Az.gap 131°
Corr. -0.206 18M/18stn Msd 0.2 8↑ 5↓

89/2050
**APR 06 0522 04.3s 39.03S 175.04E 229km M=3.7**
0.2 0.01 0.03 2
Rsd 0.1s 20ph/15stn Dmin 48km Az.gap 248°
Corr. -0.334 12M/12stn Msd 0.2 5↑ 2↓

89/2056
**APR 06 0937 48.1s 37.61S 177.06E 157km M=4.2**
0.3 0.02 0.03 4
Rsd 0.1s 15ph/13stn Dmin 84km Az.gap 226°
Corr. -0.664 16M/16stn Msd 0.2 2↑ 1↓

89/2057
**APR 06 1014 06.0s 41.63S 172.96E 89km M=4.1**
0.5 0.02 0.03 4
Rsd 0.3s 20ph/17stn Dmin 22km Az.gap 110°
Corr. -0.410 10M/10stn Msd 0.2 4↑ 7↓

89/2061
**APR 06 1543 13.0s 37.43S 178.38E 222km M=3.8**
0.5 0.11 0.22 5
Rsd 0.1s 10ph/8stn Dmin 20km Az.gap 330°
Corr. -0.895 17M/17stn Msd 0.2 1↑ 1↓

89/2064
**APR 06 1827 54.9s 38.16S 176.35E 161km M=3.5**
1.7 0.10 0.07 14
Rsd 0.4s 10ph/9stn Dmin 81km Az.gap 291°
Corr. -0.034 14M/14stn Msd 0.3 1↓

89/2073
**APR 07 0155 42.3s 37.39S 176.46E 198km M=4.0**
0.9 0.08 0.10 15
Rsd 0.2s 11ph/9stn Dmin 165km Az.gap 242°
Corr. -0.855 18M/18stn Msd 0.2 3↑ 3↓

89/2081
**APR 07 0701 23.7s 45.21S 167.05E 12km M=3.7**
0.3 0.01 0.03 R
Rsd 0.1s 13ph/10stn Dmin 91km Az.gap 252°
Corr. -0.629 10M/10stn Msd 0.2 1↓

89/2083
**APR 07 0953 21.6s 37.35S 176.60E 217km M=3.8**
0.5 0.05 0.06 8
Rsd 0.2s 13ph/9stn Dmin 153km Az.gap 257°
Corr. -0.793 17M/17stn Msd 0.2 1↓

89/2092
**APR 07 1627 37.0s 40.92S 173.57E 93km M=4.2**
0.2 0.01 0.01 3
Rsd 0.2s 26ph/17stn Dmin 68km Az.gap 119°
Corr. -0.217 14M/14stn Msd 0.2 4↑ 2↓

89/2107
**APR 08 0942 55.8s 35.65S 179.43E 288km M=4.1**
0.3 0.16 0.31 7
Rsd 0.1s 9ph/7stn Dmin 239km Az.gap 348°
Corr. -0.977 11M/11stn Msd 0.1

89/2113
**APR 08 1743 01.1s 39.57S 174.38E 249km M=4.0**
0.2 0.01 0.02 2
Rsd 0.1s 28ph/18stn Dmin 109km Az.gap 200°
Corr. -0.590 19M/17stn Msd 0.2 4↑ 2↓

89/2127
**APR 09 0319 39.7s 33.63S 179.20E 271km M=3.8**
1.1 0.18 0.36 21
Rsd 0.1s 9ph/8stn Dmin 447km Az.gap 345°
Corr. -0.863 6M/6stn Msd 0.1

89/2130
**APR 09 0444 18.7s 44.78S 168.19E 45km M=4.3**
1.2 0.03 0.08 16
Rsd 0.2s 14ph/12stn Dmin 25km Az.gap 174°
Corr. -0.371 6M/6stn Msd 0.2 1↓

89/2147
**APR 09 2013 53.1s 39.61S 174.28E 194km M=4.4**
0.3 0.01 0.04 4
Rsd 0.2s 32ph/24stn Dmin 119km Az.gap 197°
Corr. -0.723 17M/17stn Msd 0.2 9↑ 5↓

89/2159
**APR 10 2041 37.1s 38.10S 176.85E 291km M=3.7**
0.7 0.20 0.34 14
Rsd 0.2s 7ph/3stn Dmin 123km Az.gap 224°
Corr. -0.992 2M/2stn Msd 0.5

89/2160
**APR 11 0126 46.2s 45.12S 167.47E 89km M=3.6**
0.1 0.00 0.01 1
Rsd 0.0s 22ph/12stn Dmin 62km Az.gap 219°
Corr. -0.496 9M/9stn Msd 0.2 1↓

89/2161
**APR 11 0131 19.5s 38.39S 175.57E 171km M=4.0**
0.4 0.04 0.03 4
Rsd 0.2s 17ph/13stn Dmin 88km Az.gap 231°
Corr. 0.024 19M/19stn Msd 0.2 5↑ 3↓

89/2165
**APR 11 0618 46.4s 38.63S 176.06E 113km M=4.2**
0.4 0.02 0.02 4
Rsd 0.3s 29ph/23stn Dmin 1km Az.gap 114°
Corr. -0.002 18M/18stn Msd 0.2 7↑ 5↓

89/2166
**APR 11 1219 24.9s 38.12S 175.92E 224km M=4.9**
1.7 0.06 0.06 15
Rsd 0.3s 10ph/9stn Dmin 40km Az.gap 132°
Corr. 0.186 16M/16stn Msd 0.2 5↑ 5↓

89/2175
**APR 11 2041 06.1s 41.30S 172.77E 221km M=3.5**
0.6 0.08 0.12 7
Rsd 0.1s 15ph/11stn Dmin 126km Az.gap 279°
Corr. -0.934 10M/10stn Msd 0.1 5↑ 2↓

89/2182
**APR 12 0339 17.5s 36.15S 177.31E 262km M=3.8**
1.1 0.17 0.34 27
Rsd 0.3s 8ph/3stn Dmin 183km Az.gap 314°
Corr. -0.961 3M/2stn Msd 0.2

89/2185
**APR 12 0835 28.8s 44.85S 167.51E 96km M=4.4**
0.2 0.01 0.01 2
Rsd 0.1s 16ph/11stn Dmin 38km Az.gap 239°
Corr. -0.404 1M/1stn Msd N.D. 1↓
Felt Riverton (149) MM3.

89/2190
**APR 12 1432 59.4s 39.21S 175.63E 93km M=3.5**
0.4 0.02 0.02 4
Rsd 0.3s 32ph/23stn Dmin 5km Az.gap 60°
Corr. -0.336 13M/13stn Msd 0.2 8↑ 5↓

89/2192
**APR 12 1548 11.3s 36.81S 177.79E 97km M=3.7**
0.4 0.02 0.06 8
Rsd 0.1s 10ph/5stn Dmin 99km Az.gap 302°
Corr. -0.742 10M/10stn Msd 0.2

89/2193
**APR 12 2005 15.1s 47.16S 166.16E 59km M=3.6**
0.2 0.02 0.03 11
Rsd 0.1s 12ph/9stn Dmin 152km Az.gap 307°
Corr. -0.365 7M/7stn Msd 0.2

89/2197
**APR 12 2248 23.5s 38.38S 176.03E 293km M=3.6**
0.7 0.22 0.44 17
Rsd 0.2s 12ph/8stn Dmin 104km Az.gap 276°
Corr. -0.984 11M/11stn Msd 0.3
Unusual depth.

89/2207
**APR 13 0653 13.6s 44.89S 167.66E 110km M=4.2**
0.2 0.03 0.02 2
Rsd 0.1s 17ph/12stn Dmin 32km Az.gap 284°
Corr. 0.703 9M/9stn Msd 0.2 5↑ 2↓

89/2215
**APR 13 1522 56.7s 39.77S 174.28E 191km M=3.7**
0.2 0.01 0.03 3
Rsd 0.1s 26ph/19stn Dmin 126km Az.gap 225°
Corr. -0.598 18M/18stn Msd 0.2 6↑ 2↓

89/2224
**APR 14 0514 56.1s 37.66S 178.37E 51km M=3.8**
0.0 0.00 0.00 0
Rsd 0.0s 6ph/3stn Dmin 8km Az.gap 235°
Corr. 0.117 1M/1stn Msd N.D. 1↑

89/2233
**APR 14 1606 39.6s 38.07S 176.21E 169km M=3.9**
0.6 0.03 0.02 5
Rsd 0.2s 19ph/16stn Dmin 74km Az.gap 226°
Corr. -0.238 16M/16stn Msd 0.2 6↑ 4↓

89/2236
**APR 14 2006 04.1s 38.13S 176.13E 187km M=4.4**
0.8 0.04 0.04 7
Rsd 0.3s 20ph/18stn Dmin 31km Az.gap 200°
Corr. 0.074 17M/17stn Msd 0.4 8↑ 5↓

89/2237
**APR 14 2044 14.1s 37.18S 177.92E 33km M=3.5**
1.0 0.09 0.02 R
Rsd 0.1s 5ph/4stn Dmin 58km Az.gap 277°
Corr. 0.762 3M/3stn Msd 0.2 1↑

89/2238
**APR 14 2059 58.7s 38.41S 175.85E 154km M=3.8**
0.6 0.03 0.04 5
Rsd 0.3s 20ph/18stn Dmin 34km Az.gap 112°
Corr. 0.439 17M/17stn Msd 0.2 2↑ 4↓

89/2257
**APR 15 1730 00.8s 37.59S 177.20E 134km M=3.9**
0.8 0.06 0.06 6
Rsd 0.3s 10ph/9stn Dmin 48km Az.gap 231°
Corr. -0.785 19M/19stn Msd 0.2 1↑

89/2273
**APR 17 0439 15.1s 38.18S 176.04E 182km M=4.0**
0.9 0.03 0.04 8
Rsd 0.3s 22ph/20stn Dmin 29km Az.gap 130°
Corr. 0.127 18M/18stn Msd 0.2 1↑ 1↓

89/2277
**APR 17 1056 11.9s 38.81S 175.04E 276km M=3.5**
0.8 0.04 0.34 10
Rsd 0.2s 15ph/11stn Dmin 49km Az.gap 283°
Corr. -0.609 7M/7stn Msd 0.2 1↓

89/2278
**APR 17 1305 16.0s 37.87S 175.86E 296km M=6.1**
0.6 0.05 0.07 5
Rsd 0.3s 34ph/30stn Dmin 29km Az.gap 94°
Corr. 0.098 7M/5stn Msd 0.2 6↑ 3↓
Felt Ormond (44) to Khandallah (68) MM4, and Wanganui (57).

89/2283
**APR 17 2131 25.6s 41.86S 174.00E 5km M=2.1**
0.3 0.02 0.04 R
Rsd 0.3s 10ph/8stn Dmin 22km Az.gap 166°
Corr. -0.641 7M/7stn Msd 0.2 1↑
Felt Blue Mountain (83) MM5.

89/2284
**APR 17 2248 32.5s 41.86S 174.00E 5km M=2.2**
0.2 0.02 0.04 R
Rsd 0.3s 9ph/8stn Dmin 22km Az.gap 165°
Corr. -0.816 5M/5stn Msd 0.2 1↑
Felt Blue Mountain (83) MM5.

89/2301
**APR 19 0149 48.2s 44.05S 169.52E 5km M=3.6**
0.1 0.01 0.00 R
Rsd 0.1s 14ph/10stn Dmin 57km Az.gap 241°
Corr. 0.006 6M/6stn Msd 0.1 5↑ 1↓

89/2302
**APR 19 0307 49.5s 41.09S 173.45E 88km M=3.6**
0.4 0.02 0.02 4
Rsd 0.3s 24ph/17stn Dmin 60km Az.gap 105°
Corr. -0.416 17M/15stn Msd 0.2 1↑

89/2304
**APR 19 0449 27.2s 36.47S 177.23E 213km M=3.7**
0.7 0.12 0.20 12
Rsd 0.1s 10ph/9stn Dmin 469km Az.gap 345°
Corr. -0.902 10M/10stn Msd 0.2

89/2305
**APR 19 0627 43.1s 40.14S 174.77E 14km M=3.5**
0.3 0.01 0.02 5
Rsd 0.3s 29ph/24stn Dmin 80km Az.gap 127°
Corr. -0.363 10M/9stn Msd 0.4 1↑ 2↓
Felt Wanganui (57) MM5.

89/2308
**APR 19 1054 37.4s 37.78S 176.52E 154km M=4.5**
0.6 0.03 0.03 5
Rsd 0.3s 20ph/18stn Dmin 47km Az.gap 184°
Corr. -0.305 18M/18stn Msd 0.2 7↑ 5↓

89/2309
**APR 19 1337 07.3s 38.24S 175.57E 196km M=3.8**
0.6 0.05 0.08 6
Rsd 0.3s 20ph/18stn Dmin 107km Az.gap 236°
Corr. -0.828 15M/15stn Msd 0.2 1↑ 1↓

89/2311
**APR 19 1706 07.3s 40.29S 173.47E 197km M=4.4**
0.4 0.02 0.02 4
Rsd 0.2s 24ph/21stn Dmin 108km Az.gap 171°
Corr. -0.070 12M/10stn Msd 0.2 5↑ 2↓

89/2314
**APR 19 1903 50.9s 38.14S 176.28E 160km M=3.9**
0.6 0.02 0.03 5
Rsd 0.3s 19ph/17stn Dmin 23km Az.gap 142°
Corr. -0.227 17M/17stn Msd 0.2 5↑ 5↓

89/2315
**APR 19 1909 34.1s 38.12S 176.71E 192km M=3.5**
0.4 0.07 0.12 10
Rsd 0.1s 13ph/11stn Dmin 128km Az.gap 265°
Corr. -0.945 8M/8stn Msd 0.1

89/2326
**APR 20 0015 03.9s 38.34S 175.89E 173km M=3.8**
2.4 0.05 0.07 20
Rsd 0.3s 14ph/14stn Dmin 56km Az.gap 123°
Corr. -0.434 19M/19stn Msd 0.2 3↑ 2↓

89/2333
**APR 20 0408 06.8s 45.07S 167.65E 135km M=4.2**
0.2 0.02 0.01 2
Rsd 0.1s 17ph/12stn Dmin 50km Az.gap 216°
Corr. 0.400 2M/2stn Msd 0.1 1↑

89/2350
**APR 20 2308 27.4s 38.58S 177.56E 28km M=2.4**
0.5 0.03 0.03 3
Rsd 0.2s 10ph/5stn Dmin 54km Az.gap 321°
Corr. 0.136 7M/7stn Msd 0.2 1↑
Felt Ormond (44) MM4.

89/2357
**APR 21 0213 34.7s 38.65S 175.60E 132km M=3.5**
1.3 0.07 0.07 9
Rsd 0.4s 15ph/11stn Dmin 39km Az.gap 266°
Corr. -0.318 15M/15stn Msd 0.1 1↑ 1↓

89/2373
**APR 21 1749 31.8s 40.70S 174.98E 39km M=3.6**
0.1 0.01 0.02 3
Rsd 0.3s 22ph/16stn Dmin 43km Az.gap 133°
Corr. -0.473 8M/6stn Msd 0.1 5↑ 1↓

89/2392
**APR 22 1336 46.9s 38.10S 175.57E 145km M=3.7**
0.4 0.03 0.04 R
Rsd 0.2s 14ph/12stn Dmin 223km Az.gap 246°
Corr. -0.895 7M/7stn Msd 0.2 1↓

89/2393
**APR 22 1547 12.9s 35.60S 178.05E 236km M=3.9**
1.4 0.22 0.51 27
Rsd 0.5s 8ph/6stn Dmin 223km Az.gap 332°
Corr. -0.848 1M/1stn Msd N.D.

89/2404
**APR 22 2232 33.0s 38.22S 175.83E 177km M=3.8**
1.8 0.05 0.07 15
Rsd 0.3s 15ph/13stn Dmin 42km Az.gap 126°
Corr. -0.024 15M/15stn Msd 0.3 4↑ 3↓

89/2407
**APR 23 0300 04.5s 40.45S 175.99E 33km M=4.9**
0.1 0.01 0.02 R
Rsd 0.3s 41ph/37stn Dmin 31km Az.gap 75°
Corr. -0.719 14M/13stn Msd 0.3 13↑ 14↓
Felt Kakahi (39) to Wellington (68), max MM5 in (58,61,62,64,67).

89/2424
**APR 23 0645 54.1s 37.52S 176.56E 295km M=5.4**
0.4 0.03 0.03 3
Rsd 0.2s 39ph/32stn Dmin 64km Az.gap 128°
Corr. 0.196 13M/11stn Msd 0.3 19↑ 13↓

89/2425
**APR 23 0751 55.4s 41.86S 174.07E 12km M=3.7**
0.1 0.02 0.01 R
Rsd 0.3s 16ph/14stn Dmin 18km Az.gap 141°
Corr. -0.484 10M/9stn Msd 0.1 7↑ 3↓
Felt Blue Mountain (83) MM5.

89/2435
**APR 23 1151 27.5s 35.62S 178.41E 282km M=4.0**
1.9 0.12 0.21 20
Rsd 0.4s 9ph/5stn Dmin 220km Az.gap 338°
Corr. -0.566 4M/4stn Msd 0.1

89/2438
**APR 23 1405 50.8s 35.96S 178.09E 222km M=4.0**
0.5 0.03 0.08 6
Rsd 0.1s 12ph/9stn Dmin 182km Az.gap 328°
Corr. -0.492 16M/16stn Msd 0.1

89/2444
**APR 23 1738 41.4s 37.30S 178.86E 291km M=3.7**
0.4 0.26 0.37 6
Rsd 0.1s 11ph/7stn Dmin 163km Az.gap 348°
Corr. -0.988 6M/6stn Msd 0.2

89/2447
**APR 23 1832 37.6s 36.20S 178.56E 154km M=3.8**
2.4 0.13 0.19 24
Rsd 0.5s 10ph/5stn Dmin 157km Az.gap 333°
Corr. 0.010 3M/3stn Msd 0.1

89/2452
**APR 23 2040 17.5s 35.81S 179.65W 33km M=4.0**
2.6 0.15 0.17 R
Rsd 0.2s 12ph/11stn Dmin 270km Az.gap 333°
Corr. 0.777 12M/12stn Msd 0.2

89/2458
**APR 24 0036 29.2s 41.88S 174.09E 12km M=4.3**
0.2 0.02 0.01 R
Rsd 0.3s 18ph/16stn Dmin 17km Az.gap 144°
Corr. -0.551 21M/20stn Msd 0.3 7↑ 5↓
Felt Blue Mountain (83) MM5.

89/2462
**APR 24 0421 23.1s 38.25S 176.08E 187km M=3.6**
0.5 0.07 0.13 10
Rsd 0.1s 10ph/6stn Dmin 208km Az.gap 231°
Corr. -0.984 5M/5stn Msd 0.3 1↓

89/2470
**APR 24 0728 04.1s 38.49S 175.81E 178km M=3.6**
0.3 0.01 0.04 2
Rsd 0.1s 16ph/14stn Dmin 62km Az.gap 327°
Corr. -0.126 9M/9stn Msd 0.2

89/2475
**APR 24 1014 51.4s 45.13S 167.48E 109km M=3.8**
0.2 0.01 0.01 2
Rsd 0.1s 17ph/12stn Dmin 62km Az.gap 218°
Corr. -0.264 7M/7stn Msd 0.1 1↑

89/2477
**APR 24 1300 49.6s 38.54S 175.84E 149km M=4.2**
0.4 0.02 0.02 4
Rsd 0.3s 29ph/22stn Dmin 20km Az.gap 98°
Corr. 0.001 20M/18stn Msd 0.2 6↑ 7↓

89/2494
**APR 25 0310 28.5s 39.86S 174.00E 185km M=4.2**
0.4 0.01 0.03 4
Rsd 0.2s 39ph/30stn Dmin 66km Az.gap 149°
Corr. -0.285 20M/18stn Msd 0.2 7↑ 3↓

89/2496
**APR 25 0454 23.4s 37.21S 177.51E 101km M=3.8**
0.5 0.03 0.03 4
Rsd 0.2s 15ph/12stn Dmin 83km Az.gap 260°
Corr. -0.408 15M/15stn Msd 0.2 1↑

89/2501
**APR 25 0824 37.1s 37.39S 176.55E 246km M=4.4**
1.0 0.05 0.04 9
Rsd 0.3s 25ph/20stn Dmin 76km Az.gap 223°
Corr. -0.081 18M/18stn Msd 0.1 2↑ 3↓

89/2506
**APR 25 1454 54.1s 38.02S 176.13E 177km M=3.7**
0.9 0.07 0.08 10
Rsd 0.3s 10ph/7stn Dmin 101km Az.gap 233°
Corr. -0.590 12M/12stn Msd 0.4 2↑ 2↓

89/2519
**APR 25 2214 49.9s 44.57S 168.25E 12km M=3.6**
0.2 0.02 0.01 R
Rsd 0.3s 15ph/11stn Dmin 28km Az.gap 192°
Corr. -0.030 8M/8stn Msd 0.2

89/2540
**APR 26 2011 15.1s 37.02S 179.49W 171km M=3.7**
0.7 0.08 0.13 10
Rsd 0.1s 6ph/3stn Dmin 206km Az.gap 335°
Corr. -0.828 2M/2stn Msd 0.4

89/2541
**APR 26 2038 38.5s 37.86S 176.09E 213km M=4.4**
0.9 0.04 0.04 8
Rsd 0.3s 18ph/15stn Dmin 49km Az.gap 181°
Corr. -0.077 21M/19stn Msd 0.2 1↑ 4↓

89/2544
**APR 26 2131 49.3s 39.50S 175.02E 107km M=3.6**
0.3 0.01 0.02 3
Rsd 0.2s 27ph/21stn Dmin 57km Az.gap 111°
Corr. -0.287 15M/15stn Msd 0.2 6↑ 1↓

89/2562
**APR 27 1041 23.4s 37.78S 177.24E 312km M=3.5**
0.4 0.09 0.15 7
Rsd 0.1s 14ph/10stn Dmin 116km Az.gap 290°
Corr. -0.977 6M/6stn Msd 0.1

89/2579
**APR 28 0530 00.9s 36.32S 177.94E 233km M=4.5**
0.7 0.03 0.04 6
Rsd 0.2s 15ph/12stn Dmin 146km Az.gap 298°
Corr. 0.061 18M/18stn Msd 0.2 1↓

89/2595
**APR 28 1404 06.0s 34.15S 177.41E 33km M=4.9**
3.3 0.22 0.28 R
Rsd 0.5s 4ph/3stn Dmin 391km Az.gap 335°
Corr. 0.684 1M/1stn Msd N.D.

89/2619
**APR 29 0136 10.1s 37.97S 176.63E 124km M=3.7**
0.2 0.01 0.01 2
Rsd 0.1s 16ph/11stn Dmin 31km Az.gap 162°
Corr. -0.463 13M/13stn Msd 0.2 1↑ 2↓

89/2623
**APR 29 0449 22.0s 44.20S 168.67E 30km M=3.5**
0.3 0.02 0.02 4
Rsd 0.2s 15ph/11stn Dmin 80km Az.gap 229°
Corr. -0.582 8M/8stn Msd 0.1

89/2636
**APR 29 2140 36.3s 38.90S 175.46E 261km M=3.6**
0.3 0.06 0.08 5
Rsd 0.2s 16ph/11stn Dmin 191km Az.gap 241°
Corr. -0.957 10M/10stn Msd 0.1

89/2643
**APR 30 1637 00.6s 39.63S 174.45E 123km M=3.7**
0.5 0.01 0.04 6
Rsd 0.3s 17ph/15stn Dmin 50km Az.gap 128°
Corr. -0.198 12M/12stn Msd 0.2 5↑ 1↓

89/2662
**MAY 01 1404 40.8s 35.26S 179.03E 332km M=3.8**
0.2 0.06 0.12 6
Rsd 0.0s 11ph/11stn Dmin 383km Az.gap 342°
Corr. -0.957 6M/6stn Msd 0.2

89/2674
**MAY 02 0011 34.9s 38.57S 175.94E 209km M=3.6**
0.4 0.02 0.03 4
Rsd 0.2s 18ph/11stn Dmin 59km Az.gap 236°
Corr. -0.609 14M/14stn Msd 0.2 2↑ 1↓

89/2677
**MAY 02 0327 16.5s 37.98S 176.43E 141km M=4.0**
0.6 0.03 0.02 5
Rsd 0.2s 23ph/19stn Dmin 29km Az.gap 162°
Corr. -0.369 15M/15stn Msd 0.2 4↑ 8↓

89/2690
**MAY 02 1043 48.6s 39.83S 174.13E 126km M=4.0**
0.3 0.01 0.02 4
Rsd 0.2s 28ph/22stn Dmin 62km Az.gap 137°
Corr. -0.216 14M/12stn Msd 0.2 9↑ 2↓

89/2693
**MAY 02 1314 37.2s 38.14S 176.30E 145km M=4.5**
0.4 0.02 0.01 3
Rsd 0.2s 33ph/26stn Dmin 10km Az.gap 142°
Corr. -0.011 17M/15stn Msd 0.2 11↑ 4↓

89/2696
**MAY 02 1608 06.6s 45.54S 167.84E 12km M=4.0**
0.3 0.02 0.03 R
Rsd 0.4s 12ph/8stn Dmin 97km Az.gap 192°
Corr. -0.154 3M/3stn Msd 0.1 1↑
Felt Te Anau (130) MM5.

89/2703
**MAY 03 0140 48.3s 45.40S 167.19E 96km M=4.5**
0.1 0.00 0.01 2
Rsd 0.0s 14ph/11stn Dmin 99km Az.gap 239°
Corr. -0.195 4M/4stn Msd 0.1 2↓

89/2714
**MAY 03 1440 41.5s 35.84S 179.94E 295km M=4.1**
1.2 0.17 0.21 7
Rsd 0.2s 10ph/8stn Dmin 244km Az.gap 341°
Corr. -0.727 2M/2stn Msd 0.1

89/2715
**MAY 03 1906 23.2s 45.35S 167.37E 102km M=4.6**
0.8 0.03 0.05 11
Rsd 0.3s 11ph/6stn Dmin 87km Az.gap 228°
Corr. -0.570 2M/2stn Msd 0.2 1↑

89/2716
**MAY 03 1953 43.4s 38.32S 175.92E 178km M=3.9**
1.5 0.05 0.04 11
Rsd 0.2s 14ph/11stn Dmin 81km Az.gap 226°
Corr. -0.408 15M/15stn Msd 0.2 1↑

89/2726
**MAY 04 0100 46.4s 39.65S 173.39E 5km M=4.2**
0.1 0.01 0.01 R
Rsd 0.1s 32ph/21stn Dmin 73km Az.gap 198°
Corr. -0.750 14M/12stn Msd 0.3 2↑ 2↓

89/2727
**MAY 04 0113 35.3s 41.84S 172.74E 79km M=4.1**
0.4 0.01 0.02 4
Rsd 0.2s 19ph/14stn Dmin 9km Az.gap 124°
Corr. 0.157 12M/10stn Msd 0.1 3↑ 4↓

89/2735
**MAY 04 0646 44.8s 40.19S 175.24E 63km M=3.7**
0.1 0.01 0.01 3
Rsd 0.2s 33ph/24stn Dmin 52km Az.gap 72°
Corr. -0.451 18M/16stn Msd 0.2 3↑ 3↓
Felt W of North Is. Max MM4 in Wanganui (57) & Palmerston N (62).

89/2747
**MAY 04 2357 50.1s 40.90S 175.06E 59km M=3.8**
0.1 0.01 0.01 1
Rsd 0.1s 26ph/18stn Dmin 13km Az.gap 54°
Corr. -0.539 6M/4stn Msd 0.2 5↑ 9↓
Felt Wellington (68).

89/2766
**MAY 06 0003 01.7s 36.37S 178.11E 109km M=3.7**
0.5 0.03 0.08 6
Rsd 0.1s 11ph/7stn Dmin 137km Az.gap 325°
Corr. -0.283 7M/7stn Msd 0.1

89/2778
**MAY 06 0615 44.5s 37.54S 177.21E 130km M=3.6**
0.1 0.01 0.01 1
Rsd 0.0s 9ph/4stn Dmin 53km Az.gap 250°
Corr. -0.264 4M/4stn Msd 0.2 1↑

89/2781
**MAY 06 1153 48.7s 40.54S 175.91E 26km M=3.6**
0.2 0.01 0.02 2
Rsd 0.2s 26ph/19stn Dmin 32km Az.gap 94°
Corr. -0.586 18M/16stn Msd 0.2 7↑ 5↓

89/2790
**MAY 06 2111 16.0s 44.77S 167.62E 12km M=3.6**
0.3 0.01 0.02 R
Rsd 0.1s 15ph/10stn Dmin 26km Az.gap 315°
Corr. 0.050 11M/11stn Msd 0.3 1↓

89/2795
**MAY 07 0318 40.6s 34.19S 177.01E 33km M=4.9**
2.9 0.22 0.24 R
Rsd 0.3s 4ph/3stn Dmin 396km Az.gap 333°
Corr. 0.355 2M/2stn Msd 0.3

89/2801
**MAY 07 0815 05.3s 38.14S 176.07E 168km M=4.4**
0.6 0.03 0.03 5
Rsd 0.3s 22ph/17stn Dmin 52km Az.gap 137°
Corr. 0.043 15M/15stn Msd 0.3 6↑ 8↓

89/2802
**MAY 07 0815 46.8s 37.26S 178.88W 33km M=3.8**
1.7 0.11 0.14 R
Rsd 0.3s 12ph/8stn Dmin 252km Az.gap 327°
Corr. 0.152 6M/6stn Msd 0.2

89/2811
**MAY 07 1550 51.4s 42.49S 173.69E 8km M=3.4**
0.5 0.04 0.02 2
Rsd 0.4s 19ph/17stn Dmin 8km Az.gap 165°
Corr. -0.357 18M/16stn Msd 0.3 1↓
Felt Kaikoura (90).

89/2817
**MAY 08 0032 07.4s 42.63S 173.72E 3km M=3.1**
0.9 0.05 0.03 2
Rsd 0.2s 14ph/11stn Dmin 23km Az.gap 274°
Corr. 0.404 11M/11stn Msd 0.3 1↑ 2↓
Felt Kaikoura (90).

89/2826
**MAY 08 0816 34.9s 35.34S 178.87E 225km M=4.5**
0.5 0.03 0.03 7
Rsd 0.1s 13ph/10stn Dmin 256km Az.gap 326°
Corr. -0.082 8M/8stn Msd 0.2 1↑ 3↓

89/2827
**MAY 08 0825 01.7s 39.43S 174.28E 235km M=3.8**
0.4 0.02 0.07 5
Rsd 0.1s 13ph/11stn Dmin 117km Az.gap 212°
Corr. -0.559 7M/7stn Msd 0.2 2↑ 2↓

89/2831
**MAY 08 1615 35.0s 40.35S 176.40E 43km M=3.6**
0.3 0.01 0.04 6
Rsd 0.2s 16ph/13stn Dmin 83km Az.gap 241°
Corr. -0.535 12M/10stn Msd 0.2 1↓

89/2841
**MAY 09 1700 50.6s 43.04S 171.46E 5km M=3.6**
0.2 0.01 0.02 R
Rsd 0.1s 14ph/12stn Dmin 58km Az.gap 120°
Corr. 0.107 13M/13stn Msd 0.2
Felt Arthur's Pass (93) MM4.

89/2842
**MAY 09 2020 47.4s 37.71S 176.15E 220km M=3.9**
0.7 0.04 0.04 6
Rsd 0.2s 16ph/12stn Dmin 80km Az.gap 245°
Corr. -0.334 14M/14stn Msd 0.2 1↑

89/2848
**MAY 10 0411 07.9s 41.09S 173.43E 100km M=3.6**
0.3 0.02 0.01 3
Rsd 0.2s 25ph/16stn Dmin 59km Az.gap 163°
Corr. -0.471 12M/11stn Msd 0.2 9↑ 2↓

89/2862
**MAY 10 1940 03.1s 37.09S 179.91W 33km M=3.8**
2.3 0.14 0.20 R
Rsd 0.7s 9ph/5stn Dmin 168km Az.gap 334°
Corr. 0.082 4M/4stn Msd 0.3 1↑ 1↓

89/2865
**MAY 10 2050 33.4s 40.29S 176.17E 47km M=3.9**
0.1 0.01 0.02 5
Rsd 0.2s 40ph/27stn Dmin 67km Az.gap 164°
Corr. -0.715 16M/13stn Msd 0.2 8↑ 5↓

89/2869
**MAY 11 0223 45.5s 44.91S 167.69E 76km M=3.8**
0.2 0.01 0.01 2
Rsd 0.1s 21ph/14stn Dmin 32km Az.gap 207°
Corr. -0.465 11M/11stn Msd 0.2 12↑ 1↓

89/2877
**MAY 11 1308 07.4s 37.75S 175.88E 281km M=4.2**
0.5 0.09 0.06 8
Rsd 0.1s 10ph/7stn Dmin 142km Az.gap 247°
Corr. -0.746 15M/15stn Msd 0.2 1↓

89/2883
**MAY 11 2045 34.2s 39.73S 176.29E 33km M=3.5**
0.1 0.01 0.01 R
Rsd 0.3s 43ph/35stn Dmin 6km Az.gap 83°
Corr. -0.231 17M/17stn Msd 0.2 7↑ 2↓

89/2886
**MAY 11 2213 20.0s 38.54S 176.67E 68km M=4.6**
0.2 0.01 0.01 2
Rsd 0.2s 32ph/31stn Dmin 30km Az.gap 47°
Corr. 0.250 14M/12stn Msd 0.2 2↑ 10↓

89/2892
**MAY 12 1126 41.6s 38.27S 178.72E 55km M=4.1**
0.4 0.01 0.04 5
Rsd 0.1s 17ph/11stn Dmin 71km Az.gap 245°
Corr. -0.504 17M/17stn Msd 0.2 1↓

89/2896
**MAY 12 1805 20.6s 40.30S 174.20E 109km M=3.7**
0.2 0.01 0.02 3
Rsd 0.2s 25ph/19stn Dmin 87km Az.gap 122°
Corr. -0.170 10M/10stn Msd 0.2 7↑ 3↓

89/2898
**MAY 12 2005 14.8s 36.98S 179.55W 33km M=3.8**
3.6 0.15 0.31 R
Rsd 0.4s 5ph/4stn Dmin 203km Az.gap 339°
Corr. 0.590 3M/3stn Msd 0.2 1↑ 2↓

89/2902
**MAY 13 0117 30.7s 35.24S 177.07E 33km M=4.3**
0.5 0.03 0.04 R
Rsd 0.2s 7ph/4stn Dmin 284km Az.gap 325°
Corr. -0.232 2M/2stn Msd 0.4

89/2905
**MAY 13 0606 11.0s 38.14S 175.98E 165km M=3.8**
1.3 0.06 0.09 10
Rsd 0.3s 10ph/8stn Dmin 47km Az.gap 260°
Corr. -0.239 16M/16stn Msd 0.2 2↑ 1↓

89/2926
**MAY 15 1246 13.0s 39.50S 174.55E 211km M=4.3**
0.3 0.01 0.02 2
Rsd 0.1s 26ph/18stn Dmin 46km Az.gap 115°
Corr. -0.099 11M/11stn Msd 0.2 8↑ 4↓

89/2971
**MAY 18 0412 50.3s 38.06S 176.40E 152km M=3.5**
0.9 0.15 0.15 28
Rsd 0.2s 11ph/8stn Dmin 295km Az.gap 345°
Corr. -0.412 8M/8stn Msd 0.2

89/2972
**MAY 18 0501 56.2s 37.23S 176.70E 213km M=3.9**
0.4 0.03 0.03 4
Rsd 0.1s 10ph/6stn Dmin 87km Az.gap 261°
Corr. -0.034 12M/12stn Msd 0.2 1↓

89/2975
**MAY 18 0826 46.3s 38.26S 176.11E 175km M=3.6**
0.4 0.09 0.12 13
Rsd 0.2s 18ph/12stn Dmin 173km Az.gap 259°
Corr. -0.969 11M/11stn Msd 0.2 2↑ 1↓

89/2991
**MAY 19 0132 47.0s 38.07S 176.33E 175km M=3.7**
1.6 0.08 0.08 12
Rsd 0.4s 14ph/10stn Dmin 92km Az.gap 267°
Corr. -0.602 15M/15stn Msd 0.2 1↑ 2↓

89/2993
**MAY 19 0216 57.9s 39.72S 173.47E 12km M=4.0**
0.4 0.01 0.04 R
Rsd 0.2s 20ph/16stn Dmin 73km Az.gap 242°
Corr. -0.416 11M/11stn Msd 0.1 1↑

89/3001
**MAY 19 1134 43.5s 38.11S 175.66E 164km M=3.6**
0.4 0.05 0.09 10
Rsd 0.2s 14ph/11stn Dmin 215km Az.gap 244°
Corr. -0.965 10M/10stn Msd 0.1 1↓

89/3004
**MAY 19 1530 46.8s 36.68S 178.82E 33km M=3.8**
1.1 0.08 0.05 R
Rsd 0.2s 6ph/4stn Dmin 112km Az.gap 330°
Corr. 0.080 9M/9stn Msd 0.4 1↑

89/3008
**MAY 19 1815 55.3s 45.65S 166.28E 33km M=3.8**
0.4 0.02 0.04 R
Rsd 0.1s 11ph/10stn Dmin 169km Az.gap 331°
Corr. -0.330 10M/10stn Msd 0.2 1↓

89/3014
**MAY 20 0152 09.4s 44.28S 168.45E 10km M=3.7**
0.4 0.01 0.02 5
Rsd 0.1s 12ph/8stn Dmin 60km Az.gap 228°
Corr. 0.018 5M/5stn Msd 0.1

89/3039
**MAY 21 0048 47.9s 36.99S 177.02E 217km M=4.2**
0.7 0.08 0.07 6
Rsd 0.2s 13ph/10stn Dmin 110km Az.gap 271°
Corr. -0.475 18M/18stn Msd 0.2 1↓

89/3042
**MAY 21 0148 14.8s 45.40S 167.04E 12km M=3.6**
0.2 0.01 0.01 R
Rsd 0.0s 10ph/7stn Dmin 107km Az.gap 318°
Corr. 0.453 8M/8stn Msd 0.2 1↑

89/3052
**MAY 21 1447 54.1s 37.38S 177.14E 218km M=4.0**
0.8 0.06 0.05 7
Rsd 0.2s 10ph/6stn Dmin 110km Az.gap 295°
Corr. 0.134 14M/14stn Msd 0.3 1↑

89/3058
**MAY 22 0140 56.8s 38.10S 176.05E 190km M=4.0**
0.8 0.05 0.05 7
Rsd 0.3s 17ph/15stn Dmin 68km Az.gap 232°
Corr. -0.107 16M/16stn Msd 0.2 4↑ 5↓

89/3064
**MAY 22 1448 08.3s 40.23S 175.03E 33km M=3.3**
0.1 0.01 0.02 R
Rsd 0.3s 27ph/21stn Dmin 58km Az.gap 113°
Corr. -0.039 12M/12stn Msd 0.2 1↑
Felt Wanganui (57).

89/3067
**MAY 22 1720 56.8s 38.34S 175.90E 183km M=3.6**
0.5 0.07 0.10 12
Rsd 0.2s 16ph/12stn Dmin 189km Az.gap 257°
Corr. -0.961 8M/8stn Msd 0.3 1↑ 1↓

89/3080
**MAY 23 1117 18.1s 38.26S 176.42E 5km M=1.9**
0.1 0.01 0.01 R
Rsd 0.1s 4ph/3stn Dmin 9km Az.gap 161°
Corr. -0.742 1M/1stn Msd N.D.
Felt Oruanui (41) MM5.

89/3092
**MAY 23 2039 19.4s 44.50S 170.00E 33km M=1.8**
1.2 R R R
Rsd 1.7s 2ph/1stn Dmin 23km Az.gap 360°
Corr. 0.000 1M/1stn Msd 0.0
Felt Mahitahi (104) MM4.

89/3093
**MAY 23 2103 11.6s 40.04S 174.54E 235km M=3.6**
1.2 0.08 0.12 11
Rsd 0.4s 11ph/10stn Dmin 97km Az.gap 214°
Corr. -0.361 8M/8stn Msd 0.2 1↑

89/3095
**MAY 23 2313 54.5s 38.28S 175.81E 181km M=3.9**
2.6 0.10 0.09 19
Rsd 0.3s 10ph/9stn Dmin 84km Az.gap 261°
Corr. -0.621 15M/15stn Msd 0.2 1↓

89/3118
**MAY 25 0817 56.6s 38.86S 178.16E 26km M=3.6**
0.5 0.03 0.03 1
Rsd 0.2s 8ph/5stn Dmin 29km Az.gap 282°
Corr. -0.609 4M/4stn Msd 0.2 1↓

89/3120
**MAY 25 1301 35.5s 36.66S 177.22E 259km M=6.6**
1.1 0.05 0.04 9
Rsd 0.2s 28ph/25stn Dmin 96km Az.gap 272°
Corr. 0.133 2M/2stn Msd 0.1 3↑ 8↓
Felt Ormond (44) MM5 and south to Paekakariki (65).

89/3134
**MAY 26 0527 21.8s 42.44S 172.75E 33km M=3.4**
0.2 0.01 0.03 R
Rsd 0.2s 11ph/8stn Dmin 71km Az.gap 122°
Corr. -0.210 9M/9stn Msd 0.3
Felt Motunau Homestead (96) MM4.

89/3135
**MAY 26 0629 46.6s 39.16S 175.22E 231km M=3.7**
0.2 0.04 0.05 4
Rsd 0.1s 12ph/8stn Dmin 164km Az.gap 333°
Corr. -0.668 6M/6stn Msd 0.2 1↓

89/3136
**MAY 26 1258 58.0s 39.59S 174.45E 210km M=4.0**
0.3 0.01 0.04 3
Rsd 0.1s 17ph/13stn Dmin 104km Az.gap 241°
Corr. -0.488 7M/7stn Msd 0.2 5↑ 3↓

89/3138
**MAY 26 1702 43.4s 41.22S 172.99E 182km M=3.8**
0.1 0.02 0.03 3
Rsd 0.1s 17ph/11stn Dmin 108km Az.gap 312°
Corr. -0.508 10M/10stn Msd 0.1 1↑

89/3139
**MAY 26 1859 24.2s 38.12S 176.43E 222km M=3.9**
0.3 0.02 0.03 3
Rsd 0.1s 18ph/12stn Dmin 143km Az.gap 219°
Corr. -0.746 11M/11stn Msd 0.2 1↓

89/3144
**MAY 27 0805 36.2s 39.92S 172.93E 12km M=3.8**
0.6 0.01 0.06 R
Rsd 0.2s 17ph/14stn Dmin 124km Az.gap 273°
Corr. -0.393 11M/11stn Msd 0.1

89/3161
**MAY 28 0606 45.1s 38.57S 179.90E 296km M=3.6**
3.9 1.13 1.42 76
Rsd 0.9s 10ph/8stn Dmin 163km Az.gap 322°
Corr. -0.973 2M/2stn Msd 0.2

89/3188
**MAY 28 2249 45.2s 39.10S 176.10E 84km M=3.5**
1.5 0.05 0.05 14
Rsd 0.5s 7ph/5stn Dmin 42km Az.gap 158°
Corr. 0.194 3M/3stn Msd 0.1 1↑

89/3194
**MAY 29 0337 58.8s 40.79S 177.62E 53km M=3.7**
0.4 0.06 0.04 22
Rsd 0.1s 14ph/8stn Dmin 115km Az.gap 337°
Corr. -0.652 11M/11stn Msd 0.2

89/3205
**MAY 29 1759 36.9s 40.83S 176.30E 31km M=4.1**
0.3 0.02 0.05 3
Rsd 0.1s 15ph/12stn Dmin 23km Az.gap 218°
Corr. 0.322 12M/12stn Msd 0.4 3↑ 7↓

89/3210
**MAY 30 0011 27.1s 37.68S 176.37E 5km M=3.7**
0.6 0.04 0.04 R
Rsd 0.4s 7ph/4stn Dmin 171km Az.gap 255°
Corr. -0.527 3M/3stn Msd 0.1

89/3212
**MAY 30 0559 29.6s 44.91S 174.82E 96km M=4.9**
0.6 0.05 0.05 21
Rsd 0.1s 25ph/23stn Dmin 228km Az.gap 223°
Corr. -0.656 13M/13stn Msd 0.1
Felt Christchurch (110).

89/3221
**MAY 31 0554 23.1s 45.33S 166.87E 23km M=6.1**
0.7 0.02 0.07 R
Rsd 0.1s 10ph/9stn Dmin 110km Az.gap 235°
Corr. -0.770 7M/7stn Msd 0.5 1↓
Felt Westport (79) to Stewart Is (158) max MM6 in (113,130,139). USGS PDE depth used.

89/3226
**MAY 31 0734 36.1s 45.03S 166.98E 12km M=4.3**
0.4 0.02 0.04 R
Rsd 0.0s 11ph/9stn Dmin 84km Az.gap 259°
Corr. -0.125 12M/12stn Msd 0.3
Felt Manapouri (139).

89/3228
**MAY 31 0846 45.0s 45.05S 166.80E 12km M=3.7**
0.3 0.01 0.03 R
Rsd 0.1s 14ph/10stn Dmin 98km Az.gap 271°
Corr. -0.688 10M/10stn Msd 0.1

89/3234
**MAY 31 1252 08.7s 44.77S 166.45E 76km M=3.5**
1.0 0.05 0.08 10
Rsd 0.2s 12ph/10stn Dmin 117km Az.gap 293°
Corr. -0.785 10M/10stn Msd 0.1

89/3239
**MAY 31 1440 14.4s 40.32S 177.51E 61km M=3.5**
0.2 0.01 0.02 7
Rsd 0.2s 18ph/16stn Dmin 110km Az.gap 222°
Corr. -0.816 11M/11stn Msd 0.2 2↑ 4↓

89/3251
**JUN 01 0515 55.8s 39.71S 178.18E 33km M=3.7**
0.5 0.03 0.04 R
Rsd 0.2s 19ph/16stn Dmin 113km Az.gap 227°
Corr. -0.875 18M/18stn Msd 0.4 1↑ 3↓

89/3252
**JUN 01 0533 16.6s 39.30S 175.17E 142km M=3.8**
0.4 0.01 0.02 3
Rsd 0.1s 21ph/16stn Dmin 34km Az.gap 131°
Corr. 0.210 12M/12stn Msd 0.2 9↑ 4↓

89/3255
**JUN 01 0922 10.8s 45.16S 167.38E 72km M=3.7**
0.3 0.01 0.02 4
Rsd 0.1s 15ph/12stn Dmin 69km Az.gap 234°
Corr. -0.436 4M/4stn Msd 0.5 9↑ 3↓
Felt Te Anau (130) and Riverton (149) MM4.

89/3261
**JUN 01 1635 43.4s 36.35S 178.17E 85km M=3.8**
0.6 0.03 0.11 14
Rsd 0.1s 11ph/5stn Dmin 139km Az.gap 325°
Corr. -0.451 4M/4stn Msd 0.2 1↑

89/3268
**JUN 02 0148 29.1s 37.17S 177.05E 126km M=3.8**
0.7 0.05 0.12 17
Rsd 0.3s 10ph/5stn Dmin 120km Az.gap 275°
Corr. -0.766 4M/4stn Msd 0.3 1↑

89/3272
**JUN 02 0416 34.7s 36.87S 176.29E 427km M=4.0**
1.3 0.18 0.20 17
Rsd 0.3s 11ph/8stn Dmin 224km Az.gap 307°
Corr. -0.711 11M/11stn Msd 0.2

89/3273
**JUN 02 0446 36.8s 41.08S 174.26E 64km M=4.1**
0.1 0.01 0.01 2
Rsd 0.2s 24ph/21stn Dmin 15km Az.gap 87°
Corr. -0.432 10M/10stn Msd 0.4 10↑ 4↓
Felt both sides of Cook Strait (65,68,77,78) max MM4.

89/3278
**JUN 02 1129 36.4s 39.67S 178.23E 95km M=3.9**
0.5 0.03 0.04 9
Rsd 0.2s 19ph/15stn Dmin 116km Az.gap 239°
Corr. -0.535 13M/13stn Msd 0.3 1↓

89/3279
**JUN 02 1258 41.6s 40.89S 172.86E 156km M=3.8**
0.3 0.03 0.02 3
Rsd 0.1s 21ph/14stn Dmin 24km Az.gap 204°
Corr. -0.086 12M/12stn Msd 0.2 5↑ 1↓

89/3280
**JUN 02 1412 02.6s 45.23S 166.72E 12km M=3.6**
0.5 0.01 0.04 R
Rsd 0.2s 13ph/11stn Dmin 81km Az.gap 283°
Corr. -0.103 11M/11stn Msd 0.1 1↑ 5↓

89/3284
**JUN 02 1926 30.2s 37.96S 178.40E 62km M=3.9**
0.8 0.02 0.07 7
Rsd 0.2s 11ph/6stn Dmin 41km Az.gap 216°
Corr. -0.022 13M/13stn Msd 0.4 1↑ 3↓

89/3285
**JUN 02 2028 37.0s 39.70S 174.24E 196km M=3.6**
0.3 0.02 0.06 5
Rsd 0.2s 15ph/9stn Dmin 125km Az.gap 233°
Corr. -0.664 10M/10stn Msd 0.1

89/3292
**JUN 03 0504 35.1s 37.71S 177.46E 63km M=4.4**
0.5 0.03 0.02 6
Rsd 0.2s 26ph/24stn Dmin 31km Az.gap 130°
Corr. 0.371 16M/14stn Msd 0.2 3↑ 2↓
Felt Whakatane (27).

89/3297
**JUN 03 0818 40.2s 43.13S 171.64E 5km M=3.8**
0.1 0.01 0.01 R
Rsd 0.2s 20ph/16stn Dmin 70km Az.gap 105°
Corr. -0.414 16M/16stn Msd 0.2

89/3303
**JUN 03 1343 21.6s 42.93S 172.88E 33km M=3.7**
0.2 0.02 0.03 R
Rsd 0.3s 14ph/12stn Dmin 75km Az.gap 145°
Corr. -0.395 24M/24stn Msd 0.2 3↑ 1↓

89/3308
**JUN 03 1804 14.8s 35.72S 177.75E 180km M=3.8**
0.3 0.03 0.07 9
Rsd 0.1s 10ph/5stn Dmin 214km Az.gap 328°
Corr. -0.898 4M/4stn Msd 0.2

89/3324
**JUN 04 1446 13.6s 45.26S 166.94E 20km M=4.3**
0.2 0.01 0.02 R
Rsd 0.2s 23ph/17stn Dmin 29km Az.gap 254°
Corr. -0.247 6M/6stn Msd 0.3 2↑ 10↓

89/3328
**JUN 04 1650 39.8s 37.75S 176.53E 285km M=4.1**
0.5 0.04 0.05 5
Rsd 0.2s 16ph/10stn Dmin 158km Az.gap 237°
Corr. -0.820 13M/13stn Msd 0.1 1↑ 3↓

89/3338
**JUN 05 0324 28.8s 37.01S 176.92E 235km M=4.6**
0.8 0.04 0.02 8
Rsd 0.1s 16ph/13stn Dmin 109km Az.gap 249°
Corr. -0.042 15M/13stn Msd 0.2 3↑ 4↓

89/3342
**JUN 05 0618 34.5s 37.59S 176.37E 210km M=3.8**
1.0 0.10 0.06 9
Rsd 0.3s 10ph/7stn Dmin 70km Az.gap 245°
Corr. 0.766 12M/12stn Msd 0.1 1↓

89/3372
**JUN 06 1457 06.4s 36.83S 177.38E 190km M=3.6**
0.3 0.02 0.03 2
Rsd 0.1s 13ph/11stn Dmin 132km Az.gap 316°
Corr. 0.042 5M/5stn Msd 0.1

89/3374
**JUN 06 1522 57.7s 45.01S 167.57E 128km M=3.7**
0.3 0.02 0.03 2
Rsd 0.2s 27ph/19stn Dmin 29km Az.gap 183°
Corr. -0.449 12M/12stn Msd 0.2 9↑ 2↓

89/3376
**JUN 06 1615 59.0s 41.82S 172.77E 88km M=4.0**
0.4 0.02 0.03 4
Rsd 0.2s 21ph/15stn Dmin 6km Az.gap 165°
Corr. -0.475 11M/11stn Msd 0.3 3↑ 4↓

89/3394
**JUN 07 1653 48.9s 38.19S 179.02W 33km M=3.9**
0.5 0.03 0.04 R
Rsd 0.1s 11ph/7stn Dmin 245km Az.gap 308°
Corr. -0.062 7M/7stn Msd 0.2

89/3396
**JUN 07 1844 02.4s 37.93S 179.16W 33km M=3.7**
1.4 0.14 0.12 R
Rsd 0.3s 5ph/4stn Dmin 226km Az.gap 332°
Corr. -0.346 2M/2stn Msd 0.2 1↑

89/3403
**JUN 08 0632 01.9s 45.24S 166.86E 12km M=4.4**
0.3 0.01 0.03 R
Rsd 0.3s 26ph/20stn Dmin 34km Az.gap 254°
Corr. -0.049 15M/15stn Msd 0.3 1↑ 19↓
Felt MM 4 at Manapouri (139), Riverton (149).

89/3408
**JUN 08 0813 27.8s 37.22S 177.48E 135km M=4.4**
0.5 0.02 0.02 5
Rsd 0.1s 19ph/16stn Dmin 84km Az.gap 235°
Corr. 0.235 13M/13stn Msd 0.1 3↑ 2↓

89/3411
**JUN 08 0822 11.6s 38.78S 175.56E 168km M=3.6**
0.6 0.02 0.10 5
Rsd 0.2s 19ph/15stn Dmin 24km Az.gap 322°
Corr. -0.112 9M/9stn Msd 0.1 3↑ 3↓

89/3413
**JUN 08 0920 03.7s 40.44S 173.41E 172km M=4.1**
0.3 0.03 0.02 3
Rsd 0.2s 27ph/19stn Dmin 92km Az.gap 192°
Corr. -0.420 12M/12stn Msd 0.2 12↑ 3↓

89/3415
**JUN 08 1111 14.5s 37.28S 177.49E 132km M=3.7**
0.8 0.05 0.04 8
Rsd 0.3s 10ph/7stn Dmin 80km Az.gap 229°
Corr. 0.178 12M/12stn Msd 0.2 1↑ 1↓

89/3419
**JUN 08 1148 22.1s 45.33S 166.90E 20km M=3.5**
0.4 0.02 0.04 R
Rsd 0.2s 20ph/18stn Dmin 25km Az.gap 274°
Corr. -0.453 11M/11stn Msd 0.1 2↑ 6↓

89/3430
**JUN 08 1842 57.4s 36.87S 176.61E 327km M=3.8**
0.7 0.03 0.06 6
Rsd 0.1s 15ph/11stn Dmin 128km Az.gap 277°
Corr. -0.789 10M/10stn Msd 0.2 1↑

89/3434
**JUN 08 2043 38.0s 38.75S 175.77E 155km M=3.7**
0.4 0.02 0.05 3
Rsd 0.1s 18ph/15stn Dmin 35km Az.gap 313°
Corr. 0.220 9M/9stn Msd 0.3 2↑ 3↓

89/3450
**JUN 09 1047 12.8s 38.05S 178.06E 5km M=3.7**
0.2 0.01 0.02 R
Rsd 0.3s 15ph/13stn Dmin 55km Az.gap 159°
Corr. 0.273 14M/14stn Msd 0.3 2↑ 5↓

89/3474
**JUN 10 0434 44.7s 44.22S 168.57E 5km M=3.5**
0.7 0.05 0.02 R
Rsd 0.3s 16ph/12stn Dmin 72km Az.gap 229°
Corr. -0.106 11M/11stn Msd 0.2 1↓

89/3482
**JUN 10 0630 17.2s 40.77S 177.34E 26km M=4.0**
0.2 0.02 0.03 3
Rsd 0.1s 21ph/15stn Dmin 92km Az.gap 225°
Corr. 0.551 16M/14stn Msd 0.3 4↑ 4↓

89/3487
**JUN 10 0831 29.7s 40.50S 176.79E 33km M=3.6**
0.3 0.01 0.04 R
Rsd 0.2s 19ph/17stn Dmin 45km Az.gap 200°
Corr. -0.504 15M/13stn Msd 0.1 4↑ 2↓

89/3489
**JUN 10 0900 40.1s 40.51S 176.97E 33km M=3.6**
0.7 0.03 0.07 R
Rsd 0.3s 15ph/12stn Dmin 60km Az.gap 210°
Corr. -0.432 11M/11stn Msd 0.2

89/3494
**JUN 10 1157 33.2s 45.32S 166.98E 20km M=3.9**
0.6 0.02 0.04 R
Rsd 0.3s 17ph/15stn Dmin 54km Az.gap 270°
Corr. -0.746 12M/12stn Msd 0.2 1↑ 6↓

89/3507
**JUN 11 1329 01.2s 37.81S 176.90E 211km M=3.5**
0.5 0.07 0.13 10
Rsd 0.1s 10ph/9stn Dmin 134km Az.gap 282°
Corr. -0.906 5M/5stn Msd 0.2 1↑

89/3508
**JUN 11 1609 32.5s 45.27S 166.95E 5km M=3.7**
0.7 0.02 0.07 R
Rsd 0.3s 15ph/11stn Dmin 73km Az.gap 268°
Corr. 0.003 10M/10stn Msd 0.2 2↑ 1↓

89/3515
**JUN 12 0106 01.0s 45.27S 167.03E 5km M=3.5**
0.7 0.02 0.07 R
Rsd 0.3s 15ph/10stn Dmin 69km Az.gap 262°
Corr. -0.287 12M/12stn Msd 0.1 1↑

89/3521
**JUN 12 1710 42.0s 37.29S 175.49E 33km M=4.0**
0.7 0.05 0.02 R
Rsd 0.2s 12ph/10stn Dmin 268km Az.gap 288°
Corr. -0.422 3M/3stn Msd 0.4

89/3546
**JUN 14 0130 23.1s 39.73S 175.60E 5km M=3.7**
0.1 0.00 0.01 R
Rsd 0.3s 36ph/32stn Dmin 51km Az.gap 65°
Corr. -0.344 19M/17stn Msd 0.3 5↑ 8↓
Felt Moawhango (58) MM5.

89/3556
**JUN 15 0017 33.5s 40.33S 173.79E 199km M=3.5**
0.3 0.02 0.04 3
Rsd 0.2s 19ph/12stn Dmin 106km Az.gap 188°
Corr. -0.334 9M/9stn Msd 0.1 4↑ 1↓

89/3559
**JUN 15 0254 06.8s 43.31S 177.83E 33km M=4.3**
0.5 0.03 0.03 R
Rsd 0.2s 27ph/20stn Dmin 291km Az.gap 248°
Corr. -0.543 21M/19stn Msd 0.2 2↑ 1↓

89/3562
**JUN 15 0310 04.8s 37.81S 176.19E 289km M=4.2**
1.1 0.06 0.06 9
Rsd 0.3s 15ph/12stn Dmin 122km Az.gap 277°
Corr. -0.453 14M/14stn Msd 0.3 1↑ 2↓

89/3563
**JUN 15 0529 28.4s 38.19S 177.78E 63km M=3.9**
0.7 0.03 0.03 9
Rsd 0.4s 11ph/7stn Dmin 52km Az.gap 120°
Corr. -0.006 1M/1stn Msd 0.0 1↑ 1↓

89/3566
**JUN 15 0719 23.6s 37.59S 176.14E 293km M=3.8**
0.4 0.07 0.12 10
Rsd 0.1s 16ph/13stn Dmin 202km Az.gap 283°
Corr. -0.957 3M/3stn Msd 0.1 1↓

89/3574
**JUN 15 1556 03.7s 45.31S 166.73E 12km M=4.6**
0.6 0.02 0.07 R
Rsd 0.2s 15ph/11stn Dmin 82km Az.gap 273°
Corr. 0.477 15M/15stn Msd 0.2 2↑ 6↓
Felt Mahitahi (104) MM4.

89/3576
**JUN 15 1617 37.9s 45.33S 166.82E 5km M=3.7**
0.5 0.01 0.05 R
Rsd 0.2s 12ph/11stn Dmin 75km Az.gap 276°
Corr. -0.112 9M/9stn Msd 0.1 3↑ 1↓

89/3577
**JUN 15 1628 18.0s 45.15S 166.85E 5km M=3.5**
0.3 0.01 0.03 R
Rsd 0.1s 13ph/10stn Dmin 88km Az.gap 275°
Corr. -0.186 11M/11stn Msd 0.1 1↑

89/3578
**JUN 15 1629 24.2s 45.39S 166.86E 12km M=3.6**
0.2 0.01 0.02 R
Rsd 0.0s 11ph/9stn Dmin 69km Az.gap 278°
Corr. -0.465 10M/10stn Msd 0.1 1↑

89/3589
**JUN 15 2253 27.4s 47.50S 165.99E 12km M=3.6**
1.8 0.13 0.24 R
Rsd 0.3s 12ph/9stn Dmin 218km Az.gap 340°
Corr. -0.175 11M/11stn Msd 0.3 1↑

89/3601
**JUN 16 1525 25.6s 40.91S 175.18E 25km M=3.5**
0.1 0.01 0.01 2
Rsd 0.2s 26ph/20stn Dmin 23km Az.gap 86°
Corr. -0.277 12M/10stn Msd 0.2 7↑ 4↓

89/3610
**JUN 16 2029 47.0s 37.34S 177.49E 131km M=4.2**
0.4 0.02 0.02 4
Rsd 0.1s 15ph/11stn Dmin 77km Az.gap 223°
Corr. 0.151 16M/14stn Msd 0.3 1↑ 2↓

89/3616
**JUN 17 0019 33.1s 39.16S 174.95E 220km M=4.3**
0.4 0.02 0.03 4
Rsd 0.3s 42ph/30stn Dmin 52km Az.gap 121°
Corr. -0.113 21M/19stn Msd 0.2 6↑ 10↓

89/3643
**JUN 17 0715 14.4s 45.63S 165.93E 2km M=4.0**
1.4 0.06 0.14 R
Rsd 0.4s 17ph/13stn Dmin 126km Az.gap 304°
Corr. 0.578 12M/12stn Msd 0.1 1↓

89/3658
**JUN 18 2044 03.9s 45.22S 166.86E 20km M=4.1**
1.0 0.03 0.11 R
Rsd 0.4s 13ph/10stn Dmin 82km Az.gap 268°
Corr. -0.073 12M/12stn Msd 0.1

89/3670
**JUN 19 1234 07.4s 45.43S 166.55E 20km M=4.3**
0.6 0.03 0.06 R
Rsd 0.1s 11ph/9stn Dmin 119km Az.gap 264°
Corr. 0.758 13M/12stn Msd 0.5 1↓

89/3671
**JUN 19 1237 11.0s 45.33S 167.02E 20km M=3.8**
0.9 0.03 0.08 R
Rsd 0.3s 18ph/12stn Dmin 64km Az.gap 249°
Corr. 0.164 12M/12stn Msd 0.1

89/3673
**JUN 19 1304 37.6s 37.56S 176.80E 340km M=3.6**
0.1 0.01 0.01 1
Rsd 0.0s 14ph/10stn Dmin 161km Az.gap 289°
Corr. -0.680 6M/6stn Msd 0.1

89/3693
**JUN 20 0852 36.5s 44.92S 166.66E 12km M=4.3**
0.3 0.02 0.03 R
Rsd 0.1s 12ph/10stn Dmin 104km Az.gap 258°
Corr. -0.609 6M/6stn Msd 0.1

89/3696
**JUN 20 1745 37.0s 47.27S 165.21E 33km M=3.6**
0.4 0.02 0.04 R
Rsd 0.1s 14ph/10stn Dmin 224km Az.gap 316°
Corr. 0.467 11M/11stn Msd 0.1

89/3699
**JUN 20 1944 22.7s 37.31S 177.05E 143km M=3.7**
0.5 0.04 0.03 5
Rsd 0.2s 12ph/7stn Dmin 76km Az.gap 225°
Corr. 0.060 6M/6stn Msd 0.2 1↓

89/3701
**JUN 20 2307 28.7s 36.75S 177.78E 240km M=4.1**
0.5 0.07 0.10 9
Rsd 0.1s 11ph/7stn Dmin 208km Az.gap 324°
Corr. -0.770 12M/12stn Msd 0.3 1↑ 1↓

89/3705
**JUN 21 0121 52.2s 39.78S 174.27E 189km M=4.3**
0.3 0.01 0.02 2
Rsd 0.2s 37ph/25stn Dmin 59km Az.gap 123°
Corr. -0.301 18M/16stn Msd 0.3 3↑ 4↓

89/3709
**JUN 21 0440 05.9s 36.29S 179.60E 55km M=4.0**
1.4 0.08 0.16 88
Rsd 0.2s 12ph/7stn Dmin 186km Az.gap 326°
Corr. 0.209 5M/5stn Msd 0.4

89/3714
**JUN 21 0817 22.2s 35.75S 177.96E 206km M=3.9**
0.7 0.08 0.11 10
Rsd 0.2s 13ph/6stn Dmin 208km Az.gap 325°
Corr. -0.147 5M/5stn Msd 0.1

89/3721
**JUN 21 1619 35.1s 35.96S 178.26E 226km M=3.9**
1.1 0.06 0.17 12
Rsd 0.2s 8ph/5stn Dmin 181km Az.gap 333°
Corr. -0.447 2M/2stn Msd 0.1

89/3737
**JUN 22 1618 35.0s 40.18S 176.38E 64km M=3.9**
0.2 0.01 0.02 4
Rsd 0.2s 34ph/30stn Dmin 49km Az.gap 151°
Corr. -0.613 21M/19stn Msd 0.2 3↑ 3↓

89/3742
**JUN 22 2209 47.0s 36.02S 178.09E 194km M=3.8**
0.5 0.06 0.11 7
Rsd 0.1s 11ph/7stn Dmin 177km Az.gap 323°
Corr. -0.480 10M/10stn Msd 0.2

89/3743
**JUN 23 0126 37.2s 40.24S 173.50E 192km M=3.6**
0.4 0.04 0.03 4
Rsd 0.2s 20ph/14stn Dmin 114km Az.gap 203°
Corr. -0.326 11M/11stn Msd 0.2 1↑

89/3750
**JUN 23 0659 55.7s 38.04S 176.80E 5km M=3.0**
0.2 0.01 0.02 R
Rsd 0.3s 10ph/8stn Dmin 18km Az.gap 115°
Corr. -0.412 7M/7stn Msd 0.2 1↑
Felt Kawerau (34).

89/3753
**JUN 23 0945 22.7s 35.85S 178.56E 214km M=3.9**
0.8 0.09 0.34 10
Rsd 0.2s 9ph/5stn Dmin 195km Az.gap 336°
Corr. -0.629 8M/8stn Msd 0.2

89/3766
**JUN 24 0044 49.2s 37.38S 177.32E 126km M=3.6**
0.5 0.02 0.03 6
Rsd 0.2s 13ph/10stn Dmin 73km Az.gap 217°
Corr. -0.228 6M/6stn Msd 0.1

89/3772
**JUN 24 0835 28.8s 37.78S 179.90E 33km M=4.1**
0.3 0.02 0.03 R
Rsd 0.1s 14ph/10stn Dmin 142km Az.gap 304°
Corr. -0.104 17M/15stn Msd 0.2

89/3780
**JUN 24 1908 00.9s 42.90S 172.92E 28km M=3.9**
0.4 0.02 0.03 4
Rsd 0.1s 20ph/16stn Dmin 73km Az.gap 145°
Corr. -0.625 22M/20stn Msd 0.2 1↑
Felt Howarden (95).

89/3788
**JUN 25 1415 34.0s 39.23S 175.12E 168km M=3.7**
0.3 0.01 0.02 2
Rsd 0.1s 24ph/16stn Dmin 37km Az.gap 149°
Corr. 0.236 12M/12stn Msd 0.2 2↑ 1↓

89/3793
**JUN 25 1950 07.1s 37.54S 176.26E 305km M=5.1**
1.3 0.07 0.05 11
Rsd 0.2s 20ph/17stn Dmin 77km Az.gap 217°
Corr. -0.158 14M/12stn Msd 0.2 4↑ 6↓

89/3809
**JUN 26 1647 45.5s 38.65S 175.83E 137km M=3.7**
0.7 0.03 0.03 6
Rsd 0.2s 21ph/16stn Dmin 8km Az.gap 119°
Corr. -0.543 11M/11stn Msd 0.2 1↑

89/3816
**JUN 26 2210 06.9s 38.08S 176.56E 103km M=4.4**
0.5 0.02 0.02 4
Rsd 0.2s 31ph/28stn Dmin 17km Az.gap 150°
Corr. 0.033 19M/17stn Msd 0.2 4↑ 3↓

89/3818
**JUN 27 0429 33.4s 37.80S 176.78E 149km M=3.8**
0.5 0.02 0.02 4
Rsd 0.2s 17ph/14stn Dmin 28km Az.gap 179°
Corr. 0.099 15M/15stn Msd 0.4 3↑ 3↓

89/3828
**JUN 27 0855 15.3s 40.02S 179.76W 33km M=3.8**
1.1 0.04 0.10 R
Rsd 0.4s 25ph/21stn Dmin 245km Az.gap 275°
Corr. -0.396 20M/20stn Msd 0.3

89/3841
**JUN 28 0221 01.3s 38.36S 176.29E 5km M=2.7**
0.1 0.00 0.01 2
Rsd 0.1s 7ph/7stn Dmin 16km Az.gap 124°
Corr. -0.036 8M/8stn Msd 0.2 1↓
Felt Ngapouri Rd (33) MM5.

89/3846
**JUN 28 1259 01.0s 39.86S 174.39E 198km M=3.5**
0.2 0.03 0.04 3
Rsd 0.1s 14ph/10stn Dmin 120km Az.gap 234°
Corr. -0.598 9M/9stn Msd 0.1 1↑ 1↓

89/3852
**JUN 28 2321 07.3s 38.18S 176.19E 5km M=2.7**
0.3 R R R
Rsd 0.7s 4ph/2stn Dmin 0km Az.gap 292°
Corr. 0.000 1M/1stn Msd N.D.
Felt Rotorua (33) MM4.

89/3853
**JUN 29 0126 27.2s 45.07S 166.57E 12km M=4.1**
0.8 0.04 0.09 R
Rsd 0.2s 6ph/4stn Dmin 115km Az.gap 261°
Corr. -0.887 4M/4stn Msd 0.1

89/3858
**JUN 29 1115 14.8s 38.38S 175.10E 248km M=3.8**
0.4 0.04 0.07 6
Rsd 0.2s 19ph/12stn Dmin 172km Az.gap 223°
Corr. -0.832 11M/11stn Msd 0.1 1↑ 1↓

89/3860
**JUN 29 1148 30.9s 35.71S 178.47E 304km M=3.9**
0.9 0.08 0.14 7
Rsd 0.3s 11ph/10stn Dmin 285km Az.gap 340°
Corr. -0.469 2M/2stn Msd 0.2

89/3862
**JUN 29 1253 53.5s 38.36S 176.28E 5km M=2.6**
0.1 0.01 0.02 R
Rsd 0.3s 12ph/10stn Dmin 17km Az.gap 123°
Corr. -0.233 8M/8stn Msd 0.2
Felt Ngapouri Rd (33) MM4.

89/3869
**JUN 29 2115 37.5s 45.17S 166.14E 33km M=3.5**
0.4 0.02 0.04 R
Rsd 0.1s 15ph/11stn Dmin 151km Az.gap 287°
Corr. -0.395 12M/12stn Msd 0.1

89/3874
**JUN 30 0157 42.2s 38.21S 175.59E 223km M=3.8**
0.4 0.03 0.04 4
Rsd 0.2s 22ph/14stn Dmin 126km Az.gap 239°
Corr. -0.766 12M/12stn Msd 0.2 1↑ 1↓

89/3881
**JUN 30 0458 31.2s 45.04S 166.54E 20km M=3.6**
0.6 0.04 0.06 R
Rsd 0.1s 14ph/10stn Dmin 117km Az.gap 334°
Corr. -0.414 14M/14stn Msd 0.2 2↑ 1↓

89/3884
**JUN 30 0801 54.5s 37.90S 176.54E 138km M=3.8**
0.6 0.03 0.02 5
Rsd 0.3s 15ph/10stn Dmin 41km Az.gap 171°
Corr. -0.226 15M/15stn Msd 0.2 3↑ 3↓

89/3899
**JUN 30 1612 51.6s 41.10S 175.44E 11km M=3.9**
0.1 0.00 0.00 1
Rsd 0.1s 28ph/22stn Dmin 8km Az.gap 88°
Corr. -0.153 12M/11stn Msd 0.2 4↑ 8↓
Felt Greytown, Upper Hutt (69); Martinborough (70).

89/3900
**JUN 30 1642 43.3s 38.28S 176.09E 201km M=4.0**
1.4 0.04 0.05 12
Rsd 0.2s 10ph/10stn Dmin 63km Az.gap 119°
Corr. 0.270 11M/11stn Msd 0.3 2↑ 1↓

89/3908
**JUN 30 2246 27.5s 39.71S 174.32E 204km M=3.8**
0.3 0.01 0.03 3
Rsd 0.2s 27ph/19stn Dmin 52km Az.gap 118°
Corr. -0.338 17M/17stn Msd 0.3 3↑ 1↓

89/3914
**JUL 01 0328 21.1s 38.89S 175.34E 123km M=3.9**
0.4 0.01 0.03 3
Rsd 0.2s 30ph/24stn Dmin 21km Az.gap 121°
Corr. 0.131 15M/15stn Msd 0.3 2↑ 2↓

89/3924
**JUL 01 1848 44.8s 38.20S 176.59E 161km M=3.5**
1.3 0.10 0.18 22
Rsd 0.3s 10ph/9stn Dmin 135km Az.gap 266°
Corr. -0.750 4M/4stn Msd 0.0

89/3925
**JUL 01 1909 51.1s 45.18S 166.18E 33km M=3.7**
0.3 0.01 0.03 R
Rsd 0.1s 15ph/9stn Dmin 149km Az.gap 285°
Corr. -0.479 8M/8stn Msd 0.1

89/3938
**JUL 02 0814 50.6s 38.73S 175.65E 158km M=3.7**
0.2 0.01 0.01 2
Rsd 0.1s 16ph/12stn Dmin 31km Az.gap 244°
Corr. -0.578 9M/9stn Msd 0.1

89/3941
**JUL 02 1103 21.9s 37.55S 178.94E 12km M=3.8**
0.8 0.03 0.07 R
Rsd 0.3s 12ph/8stn Dmin 57km Az.gap 303°
Corr. 0.398 4M/4stn Msd 0.4 1↑

89/3945
**JUL 02 1411 09.8s 37.65S 176.21E 301km M=4.5**
0.9 0.05 0.07 8
Rsd 0.3s 13ph/10stn Dmin 67km Az.gap 206°
Corr. -0.079 9M/9stn Msd 1.3 1↑

89/3946
**JUL 02 1432 41.6s 37.40S 178.40E 266km M=3.8**
0.5 0.06 0.18 4
Rsd 0.1s 14ph/10stn Dmin 24km Az.gap 337°
Corr. -0.914 8M/8stn Msd 0.2

89/3962
**JUL 03 1115 31.2s 34.50S 178.61W 219km M=4.9**
2.1 0.17 0.21 34
Rsd 0.2s 11ph/9stn Dmin 442km Az.gap 340°
Corr. 0.402 17M/15stn Msd 0.2

89/3970
**JUL 03 1458 14.2s 38.35S 175.93E 153km M=4.2**
0.7 0.04 0.04 5
Rsd 0.2s 16ph/14stn Dmin 40km Az.gap 137°
Corr. 0.641 11M/11stn Msd 0.3 7↑ 3↓

89/3971
**JUL 03 1724 15.0s 45.03S 167.37E 12km M=3.9**
0.4 0.01 0.04 R
Rsd 0.1s 16ph/14stn Dmin 59km Az.gap 236°
Corr. 0.225 10M/10stn Msd 0.1 1↓

89/3981
**JUL 04 0248 01.8s 37.69S 176.24E 226km M=4.4**
1.0 0.06 0.07 8
Rsd 0.4s 19ph/16stn Dmin 54km Az.gap 200°
Corr. 0.006 18M/16stn Msd 0.2 5↑ 2↓

89/3994
**JUL 04 2240 57.9s 37.81S 176.89E 5km M=4.0**
0.1 0.01 0.01 R
Rsd 0.2s 21ph/19stn Dmin 21km Az.gap 137°
Corr. -0.408 12M/12stn Msd 0.3 1↑
Felt Waihi (21) to Ruatuna Rd (35) MM5. Preceded by small event on WTZ.

89/4004
**JUL 05 1309 04.7s 37.83S 176.88E 5km M=4.2**
0.1 0.01 0.01 R
Rsd 0.2s 23ph/21stn Dmin 20km Az.gap 136°
Corr. -0.551 18M/16stn Msd 0.3 1↑
Felt Waihi (21) MM5 to Ruatuna Rd (35).

89/4007
**JUL 05 1649 52.0s 43.30S 170.54E 12km M=3.8**
0.3 0.02 0.04 R
Rsd 0.1s 15ph/10stn Dmin 117km Az.gap 299°
Corr. -0.715 8M/8stn Msd 0.2 1↑

89/4019
**JUL 06 0545 30.0s 36.77S 176.75E 275km M=3.9**
0.3 0.03 0.04 4
Rsd 0.1s 16ph/12stn Dmin 137km Az.gap 281°
Corr. -0.198 8M/8stn Msd 0.1

89/4020
**JUL 06 0548 56.3s 38.46S 176.18E 5km M=3.0**
0.4 0.02 0.04 R
Rsd 0.1s 6ph/5stn Dmin 19km Az.gap 344°
Corr. -0.295 4M/4stn Msd 0.3
Felt Oruanui Rd (41) MM5.

89/4031
**JUL 06 2311 13.2s 36.84S 177.95E 209km M=3.8**
1.9 0.12 0.12 12
Rsd 0.5s 14ph/11stn Dmin 90km Az.gap 280°
Corr. 0.281 7M/7stn Msd 0.1

89/4037
**JUL 07 0208 42.8s 37.62S 176.33E 260km M=4.4**
1.0 0.05 0.05 8
Rsd 0.3s 23ph/21stn Dmin 63km Az.gap 206°
Corr. -0.262 16M/16stn Msd 0.3 3↑ 3↓

89/4041
**JUL 07 0302 22.0s 37.70S 176.64E 237km M=3.6**
0.5 0.09 0.16 5
Rsd 0.0s 12ph/9stn Dmin 147km Az.gap 239°
Corr. -0.992 7M/7stn Msd 0.1

89/4043
**JUL 07 0340 41.1s 37.12S 176.62E 357km M=5.6**
0.6 0.05 0.05 5
Rsd 0.2s 28ph/25stn Dmin 101km Az.gap 156°
Corr. 0.150 6M/4stn Msd 0.6 12↑ 4↓
Felt Ruatuna Rd (35) MM5.

89/4050
**JUL 07 0948 56.3s 38.54S 175.80E 119km M=3.7**
0.6 0.03 0.03 5
Rsd 0.3s 17ph/14stn Dmin 18km Az.gap 137°
Corr. 0.106 12M/12stn Msd 0.2 1↑ 1↓

89/4056
**JUL 08 0112 12.8s 39.51S 175.00E 138km M=4.2**
0.3 0.01 0.01 3
Rsd 0.2s 37ph/29stn Dmin 58km Az.gap 88°
Corr. -0.420 14M/12stn Msd 0.3 14↑ 5↓

89/4067
**JUL 08 1723 15.4s 36.49S 177.68E 208km M=3.9**
0.8 0.06 0.12 10
Rsd 0.3s 10ph/7stn Dmin 135km Az.gap 308°
Corr. -0.594 12M/12stn Msd 0.2

89/4070
**JUL 08 2211 43.8s 38.09S 176.74E 3km M=2.9**
0.7 0.02 0.03 7
Rsd 0.4s 8ph/6stn Dmin 25km Az.gap 143°
Corr. -0.379 5M/5stn Msd 0.1
Felt Kawerau (34).

89/4075
**JUL 09 0031 13.1s 38.32S 175.80E 185km M=3.7**
1.1 0.07 0.07 10
Rsd 0.3s 11ph/9stn Dmin 79km Az.gap 277°
Corr. 0.112 14M/14stn Msd 0.3 3↑ 2↓

89/4078
**JUL 09 0218 28.6s 37.69S 175.89E 5km**
0.3 0.03 0.01 R
Rsd 0.2s 6ph/3stn Dmin 41km Az.gap 239°
Corr. -0.500 0M/0stn Msd 0.0
Felt Apata (25). Largest of small swarm.

89/4081
**JUL 09 0716 00.7s 37.19S 177.84E 121km M=4.1**
0.4 0.02 0.03 3
Rsd 0.1s 15ph/13stn Dmin 61km Az.gap 251°
Corr. -0.240 15M/15stn Msd 0.2 3↑ 1↓

89/4096
**JUL 09 2144 29.3s 39.78S 175.20E 75km M=3.9**
0.3 0.01 0.02 5
Rsd 0.3s 32ph/26stn Dmin 64km Az.gap 68°
Corr. -0.486 16M/14stn Msd 0.4 4↑ 4↓

89/4111
**JUL 10 1619 41.3s 45.32S 166.94E 5km M=3.9**
0.4 0.01 0.04 R
Rsd 0.2s 17ph/12stn Dmin 69km Az.gap 254°
Corr. -0.137 10M/10stn Msd 0.1

89/4118
**JUL 11 0121 30.8s 38.68S 178.80E 21km M=3.9**
0.7 0.03 0.05 3
Rsd 0.2s 12ph/11stn Dmin 68km Az.gap 243°
Corr. -0.836 18M/16stn Msd 0.4 1↑

89/4120
**JUL 11 0331 41.4s 36.90S 175.64E 33km M=3.8**
1.2 0.10 0.06 R
Rsd 0.2s 8ph/7stn Dmin 248km Az.gap 280°
Corr. -0.855 6M/6stn Msd 0.4

89/4129
**JUL 11 1300 10.8s 38.07S 178.41E 21km M=4.1**
0.2 0.01 0.02 2
Rsd 0.1s 15ph/14stn Dmin 53km Az.gap 219°
Corr. -0.208 12M/12stn Msd 0.2 1↑

89/4132
**JUL 11 1607 08.7s 38.62S 176.22E 212km M=3.5**
0.3 0.07 0.07 8
Rsd 0.1s 11ph/9stn Dmin 223km Az.gap 332°
Corr. -0.945 7M/7stn Msd 0.2

89/4134
**JUL 11 1754 35.2s 41.12S 172.79E 157km M=4.4**
0.3 0.02 0.02 2
Rsd 0.1s 18ph/13stn Dmin 6km Az.gap 87°
Corr. -0.299 9M/7stn Msd 0.1 1↑

89/4139
**JUL 11 2324 41.0s 45.30S 167.39E 5km M=3.6**
0.2 0.01 0.02 R
Rsd 0.1s 19ph/14stn Dmin 54km Az.gap 223°
Corr. -0.299 11M/11stn Msd 0.1

89/4150
**JUL 12 1838 57.2s 38.98S 175.34E 208km M=3.6**
0.3 0.01 0.04 2
Rsd 0.0s 12ph/9stn Dmin 30km Az.gap 311°
Corr. -0.703 3M/3stn Msd 0.2

89/4151
**JUL 12 1852 34.0s 40.59S 173.31E 129km M=4.7**
0.4 0.02 0.02 5
Rsd 0.2s 25ph/19stn Dmin 73km Az.gap 162°
Corr. -0.194 6M/5stn Msd 0.3 4↑ 6↓
Felt Cook Strait area (68,76,78) max MM3.

89/4152
**JUL 12 1934 08.1s 46.05S 170.42E 12km M=4.3**
0.4 0.03 0.02 R
Rsd 0.1s 13ph/12stn Dmin 22km Az.gap 201°
Corr. -0.777 17M/15stn Msd 0.8 1↑ 3↓
Felt Dunedin (144), Clarksville (152) MM4; Papatowai (156) MM3.

89/4155
**JUL 13 0058 32.3s 41.28S 174.10E 45km M=3.5**
0.1 0.01 0.01 2
Rsd 0.2s 20ph/14stn Dmin 17km Az.gap 136°
Corr. -0.361 11M/9stn Msd 0.2 1↑ 3↓

89/4156
**JUL 13 0357 52.8s 38.04S 176.03E 284km M=4.0**
0.3 0.11 0.08 11
Rsd 0.1s 16ph/12stn Dmin 287km Az.gap 333°
Corr. -0.656 6M/6stn Msd 0.3 1↓

89/4179
**JUL 15 0108 54.7s 38.31S 175.67E 5km M=3.0**
0.5 0.12 0.17 R
Rsd 0.1s 7ph/5stn Dmin 46km Az.gap 356°
Corr. 0.961 4M/4stn Msd 0.1 1↑
Felt Oruanui Rd (41) MM4.

89/4180
**JUL 15 0135 43.3s 38.60S 176.03E 5km M=2.0**
0.6 0.04 0.04 R
Rsd 0.3s 7ph/6stn Dmin 1km Az.gap 260°
Corr. -0.563 3M/3stn Msd 0.3
Felt Oruanui Rd (41) MM4.

89/4185
**JUL 15 0848 22.0s 37.69S 175.87E 5km M=3.5**
0.3 0.02 0.01 R
Rsd 0.2s 5ph/3stn Dmin 39km Az.gap 240°
Corr. -0.428 1M/1stn Msd 0.0
Felt Apata (25). Largest of small swarm.

89/4187
**JUL 15 1457 09.4s 45.24S 167.33E 111km M=4.2**
0.2 0.01 0.02 2
Rsd 0.1s 20ph/15stn Dmin 62km Az.gap 231°
Corr. 0.430 7M/7stn Msd 0.2 2↓

89/4189
**JUL 15 1607 14.1s 45.01S 167.58E 120km M=3.6**
0.2 0.02 0.02 1
Rsd 0.1s 17ph/13stn Dmin 47km Az.gap 213°
Corr. 0.734 11M/11stn Msd 0.2 2↓

89/4195
**JUL 15 2106 57.7s 38.63S 175.40E 169km M=4.2**
3.9 0.06 0.13 33
Rsd 0.5s 14ph/12stn Dmin 57km Az.gap 169°
Corr. -0.077 12M/11stn Msd 0.2 4↑ 5↓

89/4197
**JUL 15 2123 56.7s 37.97S 175.93E 186km M=3.6**
0.5 0.06 0.11 12
Rsd 0.2s 12ph/10stn Dmin 213km Az.gap 237°
Corr. -0.965 6M/6stn Msd 0.1 1↓

89/4206
**JUL 16 0356 56.6s 41.66S 174.25E 28km M=3.7**
0.2 0.01 0.01 2
Rsd 0.2s 18ph/14stn Dmin 10km Az.gap 121°
Corr. -0.346 13M/13stn Msd 0.2 11↑ 4↓
Felt Cook Strait (68,77,78), max intensity MM 4. Multiple arrivals on visual records.

89/4207
**JUL 16 0421 34.3s 40.84S 174.31E 24km M=3.5**
0.2 0.01 0.01 1
Rsd 0.2s 26ph/18stn Dmin 42km Az.gap 121°
Corr. -0.504 12M/11stn Msd 0.1 7↑ 5↓

89/4216
**JUL 16 1314 24.3s 45.29S 167.04E 33km M=4.1**
0.1 0.01 0.02 R
Rsd 0.1s 24ph/13stn Dmin 67km Az.gap 250°
Corr. -0.232 10M/10stn Msd 0.2 3↑ 10↓

89/4223
**JUL 16 2306 37.6s 37.75S 177.57E 57km M=4.1**
0.1 0.01 0.01 2
Rsd 0.1s 17ph/16stn Dmin 58km Az.gap 124°
Corr. -0.652 15M/15stn Msd 0.3 3↑ 1↓

89/4230
**JUL 17 0822 52.8s 40.33S 178.95E 33km M=3.8**
0.3 0.02 0.03 R
Rsd 0.2s 18ph/11stn Dmin 229km Az.gap 252°
Corr. -0.750 12M/12stn Msd 0.2 1↑

89/4233
**JUL 17 0944 36.4s 37.60S 176.81E 145km M=3.9**
0.5 0.03 0.02 5
Rsd 0.1s 8ph/7stn Dmin 46km Az.gap 199°
Corr. -0.363 12M/12stn Msd 0.1 2↑ 1↓

89/4234
**JUL 17 1019 28.4s 40.65S 176.54E 27km M=3.6**
0.4 0.01 0.03 3
Rsd 0.2s 19ph/16stn Dmin 23km Az.gap 203°
Corr. -0.295 16M/14stn Msd 0.2 3↑ 4↓

89/4239
**JUL 17 1631 54.7s 38.87S 175.93E 5km M=3.8**
0.1 0.01 0.01 R
Rsd 0.2s 24ph/22stn Dmin 14km Az.gap 59°
Corr. -0.467 19M/19stn Msd 0.4 5↑ 4↓
Felt Taupo (41) MM5.

89/4255
**JUL 18 0528 10.4s 39.77S 174.25E 141km M=3.5**
0.2 0.01 0.03 3
Rsd 0.1s 14ph/12stn Dmin 128km Az.gap 200°
Corr. -0.504 7M/7stn Msd 0.2 7↑ 1↓

89/4268
**JUL 19 0303 44.4s 43.28S 171.74E 12km M=3.6**
0.6 0.07 0.08 R
Rsd 0.1s 10ph/9stn Dmin 174km Az.gap 354°
Corr. -0.539 10M/10stn Msd 0.2 1↓

89/4273
**JUL 19 0526 21.7s 39.65S 174.65E 123km M=3.5**
0.3 0.01 0.03 3
Rsd 0.2s 21ph/15stn Dmin 64km Az.gap 114°
Corr. -0.365 9M/9stn Msd 0.1 2↑ 4↓

89/4287
**JUL 21 0344 37.8s 48.00S 165.00E 33km M=3.9**
0.9 0.07 0.09 R
Rsd 0.1s 15ph/10stn Dmin 265km Az.gap 328°
Corr. -0.129 10M/10stn Msd 0.1

89/4294
**JUL 21 2016 57.2s 44.94S 167.48E 33km M=3.8**
0.2 0.01 0.02 R
Rsd 0.1s 14ph/12stn Dmin 46km Az.gap 242°
Corr. 0.637 8M/8stn Msd 0.2 2↑ 3↓

89/4296
**JUL 21 2135 00.9s 39.64S 173.38E 5km M=4.1**
0.2 0.01 0.02 R
Rsd 0.1s 26ph/18stn Dmin 74km Az.gap 239°
Corr. -0.648 10M/10stn Msd 0.2 1↑

89/4301
**JUL 22 0645 50.8s 37.72S 179.86W 33km M=3.6**
2.1 0.07 0.20 R
Rsd 0.5s 7ph/4stn Dmin 163km Az.gap 316°
Corr. -0.048 6M/6stn Msd 0.3

89/4302
**JUL 22 0731 20.8s 38.08S 176.39E 163km M=4.3**
0.8 0.03 0.03 7
Rsd 0.3s 23ph/20stn Dmin 20km Az.gap 150°
Corr. 0.001 17M/17stn Msd 0.5 8↑ 7↓

89/4306
**JUL 22 1512 17.4s 40.06S 173.98E 217km M=3.5**
0.5 0.02 0.05 5
Rsd 0.2s 18ph/12stn Dmin 88km Az.gap 179°
Corr. -0.355 7M/7stn Msd 0.2 3↑ 3↓

89/4318
**JUL 23 0101 09.8s 37.46S 179.80E 33km M=3.9**
0.3 0.04 0.03 R
Rsd 0.1s 7ph/5stn Dmin 133km Az.gap 338°
Corr. -0.330 3M/3stn Msd 0.2 1↑

89/4325
**JUL 23 1403 19.9s 39.66S 173.41E 5km M=4.5**
0.4 0.01 0.04 R
Rsd 0.1s 22ph/18stn Dmin 73km Az.gap 188°
Corr. -0.832 15M/14stn Msd 0.4 2↑ 4↓
Felt Wellington (68) MM4 and New Plymouth (47).

89/4328
**JUL 23 1910 57.0s 38.21S 176.20E 154km M=4.3**
0.6 0.02 0.03 5
Rsd 0.3s 22ph/20stn Dmin 19km Az.gap 131°
Corr. 0.063 14M/14stn Msd 0.5 7↑ 5↓

89/4333
**JUL 23 2141 33.8s 40.51S 174.35E 25km M=4.3**
0.2 0.01 0.01 2
Rsd 0.2s 32ph/27stn Dmin 61km Az.gap 107°
Corr. 0.156 15M/13stn Msd 0.2 6↑ 3↓

89/4347
**JUL 24 0428 29.3s 45.03S 167.47E 97km M=3.9**
0.3 0.03 0.03 4
Rsd 0.1s 17ph/13stn Dmin 53km Az.gap 234°
Corr. 0.482 8M/8stn Msd 0.2 2↑

89/4348
**JUL 24 0526 54.3s 37.25S 179.87E 33km M=3.7**
1.2 0.35 0.17 R
Rsd 0.4s 6ph/4stn Dmin 144km Az.gap 345°
Corr. -0.840 3M/3stn Msd 0.2

89/4351
**JUL 24 1012 07.2s 38.21S 176.87E 81km M=3.6**
0.6 0.03 0.03 5
Rsd 0.4s 22ph/19stn Dmin 27km Az.gap 110°
Corr. 0.079 9M/9stn Msd 0.2 2↑ 1↓

89/4353
**JUL 24 1158 34.9s 45.22S 166.82E 12km M=4.9**
1.0 0.03 0.11 R
Rsd 0.1s 15ph/12stn Dmin 106km Az.gap 253°
Corr. -0.385 10M/10stn Msd 0.3 15↑ 1↓
Felt Manapouri (139) MM4.

89/4358
**JUL 24 1755 19.9s 39.68S 173.47E 10km M=3.8**
0.3 0.01 0.02 3
Rsd 0.1s 21ph/14stn Dmin 70km Az.gap 201°
Corr. -0.852 11M/9stn Msd 0.2 1↓

89/4359
**JUL 24 1854 37.2s 40.25S 173.55E 167km M=4.1**
0.4 0.02 0.02 4
Rsd 0.2s 26ph/20stn Dmin 115km Az.gap 168°
Corr. -0.079 10M/8stn Msd 0.2 5↑ 6↓

89/4369
**JUL 25 0402 08.1s 38.79S 175.99E 2km M=3.4**
0.3 0.01 0.01 1
Rsd 0.3s 25ph/24stn Dmin 9km Az.gap 50°
Corr. -0.645 19M/19stn Msd 0.3 3↑ 9↓
Felt Wairakei (41) MM4.

89/4370
**JUL 25 0623 14.6s 35.60S 179.63E 262km M=3.8**
0.5 0.08 0.14 3
Rsd 0.1s 8ph/5stn Dmin 252km Az.gap 347°
Corr. -0.859 6M/6stn Msd 0.1

89/4380
**JUL 25 2053 50.4s 39.40S 174.82E 33km M=3.7**
0.1 0.01 0.01 R
Rsd 0.2s 23ph/20stn Dmin 64km Az.gap 99°
Corr. -0.297 15M/15stn Msd 0.3 2↑ 4↓

89/4394
**JUL 26 0837 04.0s 38.75S 175.81E 197km M=3.6**
0.1 0.03 0.02 3
Rsd 0.0s 15ph/13stn Dmin 209km Az.gap 324°
Corr. -0.738 10M/10stn Msd 0.2 1↓

89/4396
**JUL 26 0959 36.5s 37.61S 178.11E 82km M=3.7**
2.4 0.40 0.18 19
Rsd 0.6s 8ph/5stn Dmin 17km Az.gap 197°
Corr. -0.832 3M/3stn Msd 0.4 1↑ 1↓

89/4399
**JUL 26 1639 32.1s 37.73S 175.97E 197km M=3.9**
0.4 0.05 0.10 10
Rsd 0.1s 15ph/12stn Dmin 206km Az.gap 246°
Corr. -0.969 11M/11stn Msd 0.2 1↓

89/4403
**JUL 26 2151 01.1s 39.25S 174.80E 212km M=4.5**
0.5 0.02 0.04 4
Rsd 0.3s 30ph/23stn Dmin 61km Az.gap 147°
Corr. -0.082 15M/15stn Msd 0.3 9↑ 4↓

89/4409
**JUL 27 0412 25.0s 38.71S 175.59E 115km M=3.7**
0.8 0.02 0.06 8
Rsd 0.2s 17ph/13stn Dmin 52km Az.gap 200°
Corr. -0.032 14M/14stn Msd 0.2 4↑ 3↓

89/4427
**JUL 28 0424 29.9s 45.19S 167.73E 98km M=4.7**
0.2 0.01 0.03 5
Rsd 0.1s 19ph/13stn Dmin 106km Az.gap 233°
Corr. -0.754 2M/2stn Msd 0.4 2↑ 12↓

89/4451
**JUL 29 1114 01.6s 44.84S 167.64E 101km M=3.8**
0.2 0.03 0.02 2
Rsd 0.1s 23ph/14stn Dmin 29km Az.gap 238°
Corr. 0.574 10M/10stn Msd 0.2 2↓

89/4455
**JUL 29 1801 23.2s 42.06S 172.94E 82km M=3.5**
0.5 0.05 0.02 9
Rsd 0.1s 18ph/12stn Dmin 109km Az.gap 278°
Corr. 0.498 9M/9stn Msd 0.2 1↑

89/4457
**JUL 29 1859 45.1s 35.93S 179.78W 223km M=3.8**
0.4 0.02 0.04 2
Rsd 0.0s 12ph/9stn Dmin 252km Az.gap 342°
Corr. -0.108 8M/8stn Msd 0.2
No sign on HBZ visual.

89/4489
**JUL 31 1939 21.7s 38.64S 175.72E 117km M=3.8**
0.6 0.02 0.04 5
Rsd 0.3s 18ph/16stn Dmin 9km Az.gap 145°
Corr. 0.293 14M/14stn Msd 0.2 3↑ 2↓

89/4511
**AUG 02 0119 24.7s 36.98S 178.18E 183km M=3.9**
0.5 0.03 0.05 3
Rsd 0.1s 6ph/4stn Dmin 69km Az.gap 308°
Corr. -0.633 4M/4stn Msd 0.1

89/4523
**AUG 02 2022 09.0s 45.42S 167.06E 12km M=3.7**
0.4 0.01 0.04 R
Rsd 0.2s 19ph/12stn Dmin 107km Az.gap 245°
Corr. -0.201 9M/9stn Msd 0.1 1↑

89/4529
**AUG 03 0354 29.0s 38.43S 175.35E 33km M=3.5**
0.2 0.01 0.03 R
Rsd 0.0s 6ph/3stn Dmin 243km Az.gap 341°
Corr. -0.566 5M/5stn Msd 0.2

89/4531
**AUG 03 0545 41.4s 39.01S 175.91E 174km M=3.6**
0.2 0.06 0.04 5
Rsd 0.1s 14ph/12stn Dmin 182km Az.gap 321°
Corr. -0.703 5M/5stn Msd 0.3 1↓

89/4543
**AUG 03 1909 15.5s 36.99S 177.75E 300km M=3.6**
0.3 0.06 0.17 R
Rsd 0.1s 8ph/7stn Dmin 449km Az.gap 353°
Corr. -0.906 5M/5stn Msd 0.2

89/4565
**AUG 05 0624 59.3s 36.78S 177.62E 201km M=4.2**
0.6 0.04 0.04 5
Rsd 0.2s 15ph/12stn Dmin 110km Az.gap 271°
Corr. -0.170 17M/17stn Msd 0.1 1↑

89/4573
**AUG 05 1635 41.9s 45.29S 166.86E 12km M=3.9**
0.8 0.01 0.08 R
Rsd 0.2s 13ph/12stn Dmin 76km Az.gap 275°
Corr. 0.408 12M/11stn Msd 0.1

89/4575
**AUG 05 1908 59.0s 38.32S 175.91E 170km M=4.6**
0.6 0.02 0.04 5
Rsd 0.3s 24ph/20stn Dmin 29km Az.gap 95°
Corr. 0.127 14M/13stn Msd 0.3 13↑ 5↓

89/4579
**AUG 06 0410 24.8s 45.07S 167.39E 52km M=3.7**
0.2 0.04 0.03 10
Rsd 0.1s 17ph/13stn Dmin 80km Az.gap 258°
Corr. -0.844 11M/10stn Msd 0.1 1↓

89/4588
**AUG 06 1925 05.1s 45.24S 166.82E 5km M=4.4**
1.2 0.02 0.13 R
Rsd 0.2s 12ph/11stn Dmin 83km Az.gap 263°
Corr. -0.326 12M/11stn Msd 0.2 1↓

89/4593
**AUG 06 2223 52.7s 41.40S 172.76E 193km M=4.2**
0.3 0.02 0.02 3
Rsd 0.2s 21ph/14stn Dmin 35km Az.gap 136°
Corr. -0.414 11M/9stn Msd 0.1 8↑ 2↓

89/4594
**AUG 06 2243 50.8s 45.25S 167.17E 5km M=3.6**
0.4 0.01 0.04 R
Rsd 0.1s 13ph/12stn Dmin 66km Az.gap 244°
Corr. -0.190 12M/11stn Msd 0.1 1↑

89/4596
**AUG 07 0106 41.2s 45.25S 166.99E 5km M=3.8**
0.6 0.02 0.06 R
Rsd 0.2s 17ph/13stn Dmin 73km Az.gap 254°
Corr. -0.015 12M/11stn Msd 0.2 1↑

89/4610
**AUG 07 1308 25.8s 38.59S 178.83E 64km M=3.5**
0.6 0.02 0.04 13
Rsd 0.2s 11ph/10stn Dmin 119km Az.gap 245°
Corr. -0.420 11M/11stn Msd 0.2 1↓

89/4615
**AUG 07 2052 48.8s 45.29S 166.86E 5km M=3.8**
0.7 0.01 0.07 R
Rsd 0.2s 12ph/11stn Dmin 76km Az.gap 275°
Corr. 0.402 11M/10stn Msd 0.1 1↑

89/4619
**AUG 08 0637 49.7s 45.26S 166.99E 12km M=3.9**
0.5 0.01 0.05 R
Rsd 0.2s 15ph/13stn Dmin 72km Az.gap 253°
Corr. -0.299 12M/11stn Msd 0.2

89/4622
**AUG 08 0759 06.8s 40.10S 174.41E 122km M=6.0**
0.3 0.01 0.02 4
Rsd 0.2s 34ph/31stn Dmin 95km Az.gap 111°
Corr. -0.391 3M/2stn Msd 0.5 9↑ 11↓
Felt Te Kuiti (31) to Woodend (102) max MM7 at Raumati (65).

89/4626
**AUG 08 1220 18.3s 45.30S 166.91E 5km M=4.0**
0.7 0.02 0.07 R
Rsd 0.3s 16ph/13stn Dmin 73km Az.gap 254°
Corr. -0.110 13M/12stn Msd 0.1 1↓

89/4627
**AUG 08 1300 00.9s 37.51S 177.24E 219km M=4.0**
0.9 0.04 0.05 8
Rsd 0.2s 9ph/8stn Dmin 57km Az.gap 238°
Corr. -0.727 11M/11stn Msd 0.2

89/4628
**AUG 08 1315 02.7s 37.62S 176.45E 200km M=4.4**
0.7 0.06 0.05 6
Rsd 0.3s 15ph/14stn Dmin 62km Az.gap 203°
Corr. -0.586 14M/12stn Msd 0.1 4↑ 2↓

89/4634
**AUG 08 2031 52.1s 40.13S 174.14E 118km M=4.5**
0.2 0.01 0.02 3
Rsd 0.2s 28ph/22stn Dmin 95km Az.gap 130°
Corr. -0.220 7M/6stn Msd 0.2 9↑ 8↓

89/4648
**AUG 09 1727 33.3s 40.10S 174.44E 110km M=4.2**
0.3 0.01 0.02 3
Rsd 0.2s 25ph/19stn Dmin 94km Az.gap 110°
Corr. 0.068 9M/8stn Msd 0.2 7↑ 2↓

89/4658
**AUG 10 0016 06.6s 38.19S 176.24E 5km**
0.0 0.00 0.00 R
Rsd 0.0s 3ph/2stn Dmin 5km Az.gap 188°
Corr. 0.996 0M/0stn Msd 0.0
Felt Rotorua (33).

89/4661
**AUG 10 0425 17.8s 44.13S 168.32E 12km M=3.6**
0.4 0.02 0.02 R
Rsd 0.2s 18ph/13stn Dmin 68km Az.gap 251°
Corr. -0.711 11M/10stn Msd 0.2

89/4663
**AUG 10 0649 19.4s 41.96S 174.17E 12km M=3.8**
0.3 0.03 0.03 R
Rsd 0.5s 19ph/15stn Dmin 24km Az.gap 167°
Corr. -0.637 11M/9stn Msd 0.2 5↑ 1↓

89/4664
**AUG 10 1026 42.5s 38.56S 177.58E 70km M=3.6**
1.0 0.09 0.08 13
Rsd 0.3s 7ph/5stn Dmin 74km Az.gap 322°
Corr. 0.197 4M/4stn Msd 0.3 1↑

89/4666
**AUG 10 1234 01.5s 40.31S 174.72E 90km M=3.7**
0.3 0.01 0.02 4
Rsd 0.2s 17ph/13stn Dmin 64km Az.gap 144°
Corr. -0.301 10M/8stn Msd 0.2 4↑ 4↓

89/4670
**AUG 10 1714 18.5s 41.33S 173.04E 105km M=3.5**
0.4 0.02 0.02 4
Rsd 0.2s 17ph/13stn Dmin 37km Az.gap 154°
Corr. -0.246 8M/8stn Msd 0.2 2↑ 1↓

89/4672
**AUG 10 2232 26.7s 37.89S 176.09E 298km M=3.9**
0.2 0.12 0.11 13
Rsd 0.1s 9ph/7stn Dmin 346km Az.gap 345°
Corr. -0.934 7M/7stn Msd 0.2

89/4692
**AUG 12 0541 34.4s 37.34S 176.68E 261km M=3.6**
0.3 0.08 0.14 5
Rsd 0.1s 9ph/7stn Dmin 420km Az.gap 349°
Corr. -0.969 5M/5stn Msd 0.1

89/4699
**AUG 12 1819 33.1s 45.41S 167.16E 12km M=4.0**
0.3 0.01 0.04 R
Rsd 0.2s 17ph/14stn Dmin 51km Az.gap 240°
Corr. -0.047 10M/10stn Msd 0.2

89/4709
**AUG 13 0925 47.2s 39.76S 174.17E 244km M=3.8**
0.3 0.09 0.02 8
Rsd 0.1s 15ph/11stn Dmin 138km Az.gap 285°
Corr. 0.391 8M/8stn Msd 0.2 1↑

89/4710
**AUG 13 1047 46.2s 44.46S 168.40E 33km M=3.5**
0.2 0.01 0.01 R
Rsd 0.2s 23ph/13stn Dmin 45km Az.gap 206°
Corr. -0.104 10M/9stn Msd 0.1 1↓

89/4713
**AUG 13 1748 10.9s 38.12S 176.68E 144km M=3.7**
0.6 0.03 0.03 5
Rsd 0.1s 10ph/9stn Dmin 31km Az.gap 139°
Corr. 0.598 7M/7stn Msd 0.2 1↑ 2↓

89/4716
**AUG 14 0432 04.6s 37.13S 177.40E 135km M=4.3**
0.5 0.04 0.02 6
Rsd 0.2s 10ph/9stn Dmin 95km Az.gap 242°
Corr. -0.434 11M/10stn Msd 0.1 1↑

89/4718
**AUG 14 0600 27.6s 39.70S 173.51E 12km M=4.2**
0.3 0.02 0.03 R
Rsd 0.2s 21ph/17stn Dmin 69km Az.gap 199°
Corr. -0.660 11M/9stn Msd 0.1 1↑

89/4723
**AUG 14 1044 42.5s 38.82S 175.69E 187km M=3.5**
0.2 0.03 0.03 5
Rsd 0.1s 12ph/10stn Dmin 237km Az.gap 340°
Corr. -0.539 3M/3stn Msd 0.2

89/4726
**AUG 14 2228 50.1s 36.97S 177.17E 312km M=3.7**
0.3 0.22 0.08 27
Rsd 0.1s 9ph/7stn Dmin 431km Az.gap 350°
Corr. -0.117 3M/3stn Msd 0.2

89/4735
**AUG 15 1452 26.3s 41.36S 174.66E 21km M=2.3**
0.1 0.01 0.01 1
Rsd 0.2s 15ph/11stn Dmin 12km Az.gap 188°
Corr. 0.357 8M/8stn Msd 0.2 3↑ 2↓
Felt Naenae (68).

89/4742
**AUG 16 0453 49.4s 37.07S 177.81E 191km M=3.6**
1.7 0.12 0.19 12
Rsd 0.5s 9ph/6stn Dmin 73km Az.gap 289°
Corr. -0.498 4M/4stn Msd 0.1

89/4752
**AUG 16 1815 53.7s 38.40S 176.05E 230km M=3.5**
0.3 0.05 0.04 7
Rsd 0.1s 15ph/11stn Dmin 247km Az.gap 331°
Corr. -0.746 8M/8stn Msd 0.1 1↓

89/4774
**AUG 17 1351 27.6s 38.42S 175.89E 182km M=3.5**
0.4 0.02 0.08 4
Rsd 0.1s 16ph/12stn Dmin 71km Az.gap 327°
Corr. -0.207 7M/7stn Msd 0.2

89/4775
**AUG 17 1753 01.3s 37.66S 175.88E 5km M=3.0**
0.3 0.02 0.01 R
Rsd 0.2s 7ph/4stn Dmin 42km Az.gap 244°
Corr. -0.486 3M/3stn Msd 0.3
Felt Waihi (21) MM6.

89/4795
**AUG 18 1720 43.2s 38.49S 176.05E 189km M=3.6**
0.6 0.02 0.05 6
Rsd 0.2s 12ph/10stn Dmin 72km Az.gap 206°
Corr. -0.746 10M/10stn Msd 0.1 1↑ 2↓

89/4798
**AUG 18 2110 08.0s 39.10S 175.11E 237km M=3.6**
0.1 0.02 0.03 2
Rsd 0.1s 16ph/12stn Dmin 172km Az.gap 330°
Corr. -0.590 10M/10stn Msd 0.2 1↑ 1↓

89/4806
**AUG 19 0400 50.8s 35.86S 178.69E 212km M=4.4**
1.6 0.08 0.07 10
Rsd 0.1s 12ph/10stn Dmin 197km Az.gap 320°
Corr. 0.770 16M/16stn Msd 0.1

89/4812
**AUG 19 1016 13.1s 37.65S 175.90E 5km M=4.6**
0.4 0.02 0.01 3
Rsd 0.1s 21ph/20stn Dmin 44km Az.gap 217°
Corr. -0.482 18M/18stn Msd 0.4 1↑ 2↓
Felt Waihi (21) MM6 and south to Rotorua (33).

89/4826
**AUG 19 2127 13.5s 37.65S 175.90E 5km M=4.3**
0.1 R R R
Rsd 0.5s 17ph/15stn Dmin 44km Az.gap 246°
Corr. 0.000 13M/13stn Msd 0.3 1↓
Felt Waihi (21)and Minden Rd (26) MM4.

89/4828
**AUG 19 2358 37.5s 37.73S 179.73E 12km M=4.2**
1.1 0.04 0.09 R
Rsd 0.2s 8ph/7stn Dmin 127km Az.gap 305°
Corr. -0.200 19M/19stn Msd 0.2 1↓

89/4848
**AUG 20 1948 46.4s 38.40S 176.20E 125km M=4.2**
0.6 0.02 0.03 6
Rsd 0.3s 19ph/16stn Dmin 5km Az.gap 175°
Corr. -0.471 13M/13stn Msd 0.1 1↑ 5↓

89/4856
**AUG 21 0604 27.7s 38.95S 175.69E 80km M=4.3**
0.6 0.03 0.03 7
Rsd 0.6s 22ph/15stn Dmin 11km Az.gap 98°
Corr. -0.105 12M/12stn Msd 0.1 10↑ 5↓

89/4858
**AUG 21 0753 30.9s 39.87S 174.04E 225km M=4.4**
0.4 0.01 0.03 3
Rsd 0.1s 21ph/19stn Dmin 60km Az.gap 138°
Corr. -0.299 10M/10stn Msd 0.2 2↑ 1↓

89/4866
**AUG 21 2254 26.4s 38.92S 176.41E 258km M=3.5**
1.0 0.16 0.13 11
Rsd 0.3s 14ph/12stn Dmin 189km Az.gap 328°
Corr. -0.590 5M/5stn Msd 0.3

89/4877
**AUG 22 1101 31.6s 38.46S 176.15E 213km M=3.6**
0.2 0.10 0.06 10
Rsd 0.1s 11ph/9stn Dmin 240km Az.gap 336°
Corr. -0.879 6M/6stn Msd 0.4 1↓

89/4892
**AUG 23 0253 38.6s 39.21S 173.94E 12km M=3.1**
0.5 0.02 0.04 R
Rsd 0.3s 13ph/10stn Dmin 15km Az.gap 258°
Corr. -0.143 5M/5stn Msd 0.1
Felt Pukeiti (46) MM4.

89/4894
**AUG 23 0604 35.4s 40.75S 175.39E 25km M=3.6**
0.1 0.01 0.01 2
Rsd 0.3s 18ph/14stn Dmin 17km Az.gap 89°
Corr. -0.453 7M/7stn Msd 0.1 2↑ 4↓

89/4903
**AUG 23 1233 27.2s 45.10S 167.42E 116km M=3.7**
0.2 0.01 0.01 1
Rsd 0.1s 22ph/14stn Dmin 62km Az.gap 227°
Corr. -0.369 12M/12stn Msd 0.2 1↑

89/4906
**AUG 23 1731 20.8s 37.62S 175.93E 5km M=4.2**
0.3 0.02 0.02 R
Rsd 0.5s 17ph/13stn Dmin 13km Az.gap 130°
Corr. 0.311 13M/13stn Msd 0.3 1↑ 1↓
Felt Apata (25).

89/4918
**AUG 24 0816 51.5s 37.06S 179.33W 12km M=4.3**
1.3 0.12 0.10 R
Rsd 0.5s 11ph/6stn Dmin 218km Az.gap 326°
Corr. -0.146 3M/3stn Msd 0.1

89/4922
**AUG 24 1221 02.2s 39.63S 173.36E 14km M=3.5**
0.4 0.02 0.05 2
Rsd 0.1s 15ph/12stn Dmin 75km Az.gap 262°
Corr. -0.797 10M/10stn Msd 0.2

89/4924
**AUG 24 1436 16.7s 37.47S 176.72E 247km M=3.5**
0.6 0.04 0.10 5
Rsd 0.1s 11ph/9stn Dmin 62km Az.gap 250°
Corr. -0.910 7M/7stn Msd 0.3

89/4939
**AUG 25 0644 42.8s 35.80S 175.80E 33km M=4.0**
0.5 0.04 0.02 R
Rsd 0.1s 11ph/7stn Dmin 299km Az.gap 300°
Corr. -0.883 6M/6stn Msd 0.5

89/4941
**AUG 25 0754 12.7s 39.39S 177.78E 52km M=4.1**
0.4 0.02 0.04 9
Rsd 0.2s 21ph/18stn Dmin 84km Az.gap 210°
Corr. -0.459 11M/11stn Msd 0.2 3↑ 1↓

89/4945
**AUG 25 1418 26.7s 38.98S 176.76W 33km M=4.6**
2.1 0.09 0.14 R
Rsd 0.5s 11ph/7stn Dmin 458km Az.gap 314°
Corr. -0.215 11M/11stn Msd 0.1

89/4955
**AUG 26 0037 51.4s 38.61S 175.79E 190km M=3.6**
0.5 0.02 0.06 4
Rsd 0.1s 16ph/12stn Dmin 49km Az.gap 323°
Corr. -0.064 7M/7stn Msd 0.2 1↓

89/4957
**AUG 26 0819 52.9s 39.15S 173.80E 12km M=3.8**
0.2 0.02 0.02 R
Rsd 0.1s 20ph/13stn Dmin 151km Az.gap 252°
Corr. -0.242 9M/9stn Msd 0.2 1↓

89/4958
**AUG 26 0824 01.1s 39.14S 175.71E 113km M=3.7**
0.4 0.02 0.06 3
Rsd 0.2s 21ph/16stn Dmin 7km Az.gap 110°
Corr. -0.387 10M/10stn Msd 0.2 9↑ 6↓
Felt New Plymouth (47).

89/4978
**AUG 27 0612 45.2s 35.57S 179.70E 263km M=4.0**
0.5 0.12 0.24 8
Rsd 0.2s 8ph/7stn Dmin 258km Az.gap 348°
Corr. -0.938 3M/3stn Msd 0.4

89/4980
**AUG 27 0950 09.5s 44.54S 168.21E 69km M=3.7**
0.2 0.01 0.01 2
Rsd 0.1s 20ph/14stn Dmin 28km Az.gap 179°
Corr. 0.157 3M/3stn Msd 0.3 1↓

89/4981
**AUG 27 1024 36.6s 38.10S 176.88E 72km M=3.7**
0.3 0.01 0.02 5
Rsd 0.3s 22ph/19stn Dmin 15km Az.gap 102°
Corr. -0.087 17M/17stn Msd 0.2 2↑ 2↓

89/5003
**AUG 28 1727 05.8s 35.51S 179.71E 288km M=3.9**
0.3 0.11 0.24 8
Rsd 0.1s 9ph/7stn Dmin 367km Az.gap 348°
Corr. -0.977 5M/5stn Msd 0.3

89/5007
**AUG 29 0138 15.7s 38.59S 175.60E 186km M=3.7**
0.7 0.02 0.06 6
Rsd 0.2s 21ph/16stn Dmin 46km Az.gap 153°
Corr. 0.555 13M/13stn Msd 0.1 2↑ 1↓

89/5017
**AUG 29 1719 36.2s 38.06S 176.34E 228km M=4.6**
2.3 0.06 0.07 20
Rsd 0.2s 9ph/8stn Dmin 57km Az.gap 152°
Corr. -0.816 12M/12stn Msd 0.2

89/5020
**AUG 29 2130 01.4s 44.07S 168.74E 33km M=3.9**
0.3 0.02 0.02 R
Rsd 0.2s 15ph/12stn Dmin 94km Az.gap 241°
Corr. -0.301 8M/8stn Msd 0.1 1↑

89/5033
**AUG 30 2013 32.2s 38.75S 175.85E 90km M=3.6**
1.0 0.05 0.04 8
Rsd 0.5s 17ph/15stn Dmin 9km Az.gap 154°
Corr. -0.066 14M/14stn Msd 0.3 1↑

89/5034
**AUG 30 2021 44.0s 39.78S 178.75E 12km M=3.5**
0.3 0.01 0.03 R
Rsd 0.2s 15ph/11stn Dmin 245km Az.gap 245°
Corr. -0.590 9M/9stn Msd 0.1

89/5036
**AUG 30 2130 07.4s 38.88S 175.41E 184km M=3.5**
0.2 0.01 0.02 1
Rsd 0.0s 12ph/9stn Dmin 37km Az.gap 320°
Corr. -0.258 6M/6stn Msd 0.2 1↓

89/5038
**AUG 31 0020 32.8s 45.04S 167.59E 119km M=3.6**
0.3 0.01 0.02 2
Rsd 0.2s 19ph/13stn Dmin 48km Az.gap 209°
Corr. -0.344 12M/12stn Msd 0.2 1↑

89/5040
**AUG 31 0224 14.8s 36.05S 175.73E 33km M=4.1**
2.5 0.16 0.11 R
Rsd 0.5s 6ph/5stn Dmin 286km Az.gap 299°
Corr. -0.793 2M/2stn Msd 0.1

89/5054
**AUG 31 2202 21.8s 39.65S 179.61W 12km M=3.6**
0.5 0.04 0.05 R
Rsd 0.2s 8ph/6stn Dmin 432km Az.gap 307°
Corr. -0.492 6M/6stn Msd 0.1 1↓

89/5064
**SEP 01 2150 19.5s 35.99S 177.58E 217km M=3.7**
1.0 0.22 0.46 30
Rsd 0.3s 10ph/8stn Dmin 190km Az.gap 315°
Corr. -0.957 3M/3stn Msd 0.1

89/5067
**SEP 02 0039 32.2s 38.19S 175.82E 188km M=3.6**
0.3 0.08 0.08 12
Rsd 0.1s 11ph/9stn Dmin 271km Az.gap 337°
Corr. -0.777 8M/8stn Msd 0.3 1↑ 1↓

89/5072
**SEP 02 0404 16.6s 37.52S 177.05E 33km M=3.8**
0.2 0.02 0.02 R
Rsd 0.3s 10ph/9stn Dmin 93km Az.gap 140°
Corr. -0.067 6M/6stn Msd 0.6

89/5073
**SEP 02 0831 03.0s 37.43S 178.84W 33km M=4.2**
0.8 0.03 0.07 R
Rsd 0.2s 12ph/9stn Dmin 253km Az.gap 323°
Corr. 0.135 12M/12stn Msd 0.2

89/5076
**SEP 02 1301 06.5s 41.39S 174.53E 60km M=3.7**
0.1 0.01 0.01 1
Rsd 0.2s 21ph/15stn Dmin 23km Az.gap 118°
Corr. -0.637 8M/6stn Msd 0.1 7↑ 6↓

89/5077
**SEP 02 1302 18.9s 35.77S 177.85E 311km M=4.1**
1.2 0.16 0.22 14
Rsd 0.1s 9ph/7stn Dmin 576km Az.gap 352°
Corr. -0.414 5M/5stn Msd 0.6

89/5080
**SEP 02 1345 01.4s 38.64S 175.76E 179km M=3.6**
0.2 0.01 0.03 2
Rsd 0.1s 16ph/12stn Dmin 45km Az.gap 323°
Corr. -0.092 10M/10stn Msd 0.3 1↑ 2↓

89/5084
**SEP 02 1617 50.5s 37.85S 179.94W 33km M=3.9**
0.9 0.03 0.08 R
Rsd 0.3s 6ph/3stn Dmin 157km Az.gap 311°
Corr. 0.069 4M/4stn Msd 0.2

89/5085
**SEP 02 1632 59.7s 37.50S 177.09E 33km M=3.7**
0.2 0.02 0.02 R
Rsd 0.3s 8ph/7stn Dmin 96km Az.gap 142°
Corr. -0.109 6M/6stn Msd 0.6

89/5096
**SEP 03 0328 08.6s 39.22S 175.25E 134km M=3.6**
0.3 0.01 0.04 2
Rsd 0.1s 16ph/12stn Dmin 26km Az.gap 204°
Corr. -0.169 11M/11stn Msd 0.1 1↓

89/5097
**SEP 03 0416 22.7s 38.48S 176.24E 209km M=3.5**
0.3 0.09 0.04 10
Rsd 0.1s 11ph/9stn Dmin 246km Az.gap 344°
Corr. -0.183 8M/8stn Msd 0.3 1↓

89/5098
**SEP 03 0439 21.0s 38.45S 176.22E 186km M=3.7**
0.4 0.02 0.19 5
Rsd 0.1s 14ph/12stn Dmin 86km Az.gap 327°
Corr. -0.676 8M/8stn Msd 0.3 1↓

89/5112
**SEP 03 2052 18.7s 37.77S 177.58E 49km M=5.2**
0.3 0.02 0.02 4
Rsd 0.2s 26ph/26stn Dmin 58km Az.gap 122°
Corr. 0.123 10M/8stn Msd 0.2 5↑ 1↓
Felt Opotiki and Ruatuna Road (35) MM5, also in (27).

89/5113
**SEP 04 0124 13.4s 44.98S 167.27E 33km M=3.8**
0.3 0.01 0.03 R
Rsd 0.1s 16ph/12stn Dmin 91km Az.gap 266°
Corr. -0.824 10M/10stn Msd 0.1 1↓

89/5120
**SEP 04 0756 10.3s 37.34S 176.61E 242km M=4.0**
1.1 0.06 0.07 10
Rsd 0.3s 9ph/8stn Dmin 79km Az.gap 227°
Corr. -0.531 15M/15stn Msd 0.2

89/5121
**SEP 04 0831 27.9s 37.75S 173.45W 33km M=4.8**
0.4 0.11 0.06 R
Rsd 0.1s 4ph/3stn Dmin 943km Az.gap 354°
Corr. -0.801 9M/9stn Msd 0.1

89/5123
**SEP 04 1249 45.7s 44.93S 167.85E 91km M=3.9**
0.2 0.02 0.05 6
Rsd 0.1s 14ph/12stn Dmin 100km Az.gap 239°
Corr. -0.496 1M/1stn Msd N.D. 2↓

89/5132
**SEP 05 0631 03.2s 40.25S 176.34E 60km M=4.2**
0.1 0.01 0.02 2
Rsd 0.2s 32ph/28stn Dmin 41km Az.gap 153°
Corr. -0.637 15M/13stn Msd 0.2 5↑ 4↓
Felt Table Flat (58) MM5.

89/5135
**SEP 05 0930 17.5s 37.49S 176.99E 12km M=3.7**
0.4 0.04 0.03 R
Rsd 0.4s 14ph/13stn Dmin 55km Az.gap 140°
Corr. -0.270 8M/8stn Msd 0.5

89/5142
**SEP 05 1730 51.0s 40.63S 173.37E 5km M=3.6**
0.2 0.01 0.01 R
Rsd 0.2s 23ph/17stn Dmin 74km Az.gap 157°
Corr. -0.237 15M/13stn Msd 0.1

89/5153
**SEP 05 2245 32.5s 37.01S 177.20E 267km M=3.5**
0.5 0.23 0.10 36
Rsd 0.1s 11ph/9stn Dmin 409km Az.gap 344°
Corr. -0.816 6M/6stn Msd 0.1

89/5184
**SEP 07 1512 52.2s 41.22S 172.58E 214km M=3.6**
0.1 0.01 0.01 1
Rsd 0.0s 18ph/12stn Dmin 19km Az.gap 251°
Corr. -0.539 9M/9stn Msd 0.3 2↑ 1↓

89/5198
**SEP 09 0451 59.0s 38.00S 176.30E 190km M=4.6**
2.0 0.06 0.08 18
Rsd 0.4s 11ph/9stn Dmin 61km Az.gap 160°
Corr. -0.707 14M/12stn Msd 0.2 2↑ 1↓

89/5199
**SEP 09 0457 32.9s 35.94S 179.16E 226km M=4.6**
0.9 0.05 0.06 4
Rsd 0.1s 15ph/13stn Dmin 298km Az.gap 330°
Corr. 0.805 11M/11stn Msd 0.2

89/5209
**SEP 09 2156 06.1s 40.42S 176.92E 33km M=3.8**
0.2 0.01 0.03 R
Rsd 0.2s 22ph/19stn Dmin 59km Az.gap 231°
Corr. -0.781 14M/12stn Msd 0.2 1↑ 1↓
Second smaller event not located in coda (MNG esp).

89/5222
**SEP 10 1422 10.6s 37.32S 176.64E 344km M=4.0**
0.3 0.17 0.08 17
Rsd 0.1s 14ph/12stn Dmin 368km Az.gap 340°
Corr. -0.594 8M/8stn Msd 0.1

89/5224
**SEP 10 1504 53.9s 36.23S 177.14E 299km M=3.6**
1.5 0.55 0.48 103
Rsd 0.1s 11ph/9stn Dmin 509km Az.gap 351°
Corr. -0.083 6M/6stn Msd 0.2

89/5225
**SEP 10 1620 11.2s 40.92S 173.18E 153km M=3.8**
0.6 0.03 0.03 5
Rsd 0.2s 20ph/14stn Dmin 42km Az.gap 198°
Corr. -0.471 9M/9stn Msd 0.2 5↑ 3↓

89/5227
**SEP 10 1801 15.1s 37.74S 179.98W 33km M=3.8**
2.0 0.04 0.19 R
Rsd 0.2s 12ph/9stn Dmin 153km Az.gap 308°
Corr. -0.531 12M/12stn Msd 0.2

89/5258
**SEP 12 1400 29.7s 38.28S 176.50E 152km M=3.6**
1.7 0.07 0.07 15
Rsd 0.2s 10ph/8stn Dmin 54km Az.gap 180°
Corr. -0.785 9M/9stn Msd 0.3 1↑ 2↓

89/5259
**SEP 12 1634 53.6s 41.37S 173.14E 97km M=3.5**
0.4 0.02 0.02 5
Rsd 0.2s 17ph/13stn Dmin 46km Az.gap 117°
Corr. -0.359 8M/8stn Msd 0.3 1↑ 3↓

89/5264
**SEP 12 2137 34.1s 37.04S 177.50E 267km M=4.5**
0.6 0.08 0.07 4
Rsd 0.2s 11ph/8stn Dmin 95km Az.gap 273°
Corr. -0.852 11M/11stn Msd 0.2

89/5266
**SEP 12 2201 06.0s 40.75S 177.57E 33km M=4.0**
1.0 0.05 0.09 R
Rsd 0.6s 19ph/17stn Dmin 110km Az.gap 272°
Corr. -0.734 15M/13stn Msd 0.3 1↑ 1↓

89/5268
**SEP 12 2317 24.0s 38.32S 175.96E 5km M=2.6**
0.2 0.01 0.01 R
Rsd 0.2s 5ph/5stn Dmin 26km Az.gap 127°
Corr. 0.071 1M/1stn Msd 0.0
Felt Rotorua (33) MM4.

89/5269
**SEP 13 0030 12.2s 40.41S 176.89E 33km M=4.0**
0.2 0.01 0.02 R
Rsd 0.2s 23ph/21stn Dmin 57km Az.gap 223°
Corr. -0.754 15M/13stn Msd 0.2 4↑ 4↓

89/5276
**SEP 13 0753 07.2s 40.41S 176.88E 33km M=3.6**
0.2 0.01 0.03 R
Rsd 0.2s 19ph/16stn Dmin 56km Az.gap 226°
Corr. -0.408 13M/11stn Msd 0.2 1↓

89/5279
**SEP 13 1128 54.0s 36.99S 176.58E 33km M=3.9**
0.4 0.04 0.16 R
Rsd 0.1s 10ph/8stn Dmin 414km Az.gap 349°
Corr. -0.801 4M/4stn Msd 0.2

89/5282
**SEP 13 1640 43.4s 37.65S 176.83E 198km M=4.3**
0.8 0.02 0.01 7
Rsd 0.1s 12ph/12stn Dmin 39km Az.gap 193°
Corr. -0.645 11M/11stn Msd 0.3 1↑ 1↓

89/5290
**SEP 13 2309 53.8s 38.22S 176.79E 138km M=3.7**
1.6 0.08 0.09 18
Rsd 0.3s 9ph/7stn Dmin 31km Az.gap 170°
Corr. -0.918 11M/11stn Msd 0.1

89/5301
**SEP 14 1310 59.6s 38.64S 175.58E 187km M=3.5**
0.2 0.00 0.03 1
Rsd 0.0s 16ph/14stn Dmin 40km Az.gap 323°
Corr. -0.080 8M/8stn Msd 0.2 1↓

89/5302
**SEP 14 1425 31.4s 38.48S 176.42E 5km M=3.2**
0.2 0.01 0.02 R
Rsd 0.3s 12ph/11stn Dmin 10km Az.gap 196°
Corr. -0.582 13M/13stn Msd 0.3 4↑ 2↓
Felt Rawhiti Rd (33) MM5.

89/5303
**SEP 14 1427 24.3s 38.49S 176.43E 5km M=3.0**
0.1 0.01 0.01 R
Rsd 0.1s 11ph/10stn Dmin 10km Az.gap 199°
Corr. -0.621 7M/7stn Msd 0.2 3↑ 1↓
Felt Reporoa (33) MM5.

89/5314
**SEP 15 0816 05.5s 40.40S 176.86E 40km M=3.7**
0.2 0.01 0.03 6
Rsd 0.2s 24ph/21stn Dmin 55km Az.gap 225°
Corr. -0.762 16M/14stn Msd 0.2 3↑ 3↓

89/5335
**SEP 16 0426 01.8s 41.15S 175.08E 8km M=2.8**
0.0 0.00 0.00 1
Rsd 0.1s 16ph/12stn Dmin 5km Az.gap 73°
Corr. -0.031 8M/6stn Msd 0.2 1↑ 8↓
Felt Paekakariki (65) MM3.

89/5344
**SEP 16 1356 06.5s 44.87S 168.75E 12km M=4.0**
0.1 0.01 0.01 R
Rsd 0.2s 17ph/13stn Dmin 33km Az.gap 132°
Corr. 0.204 4M/3stn Msd 0.1 1↑ 10↓
First motions on CMC N, E inconsistent with epicentre.

89/5361
**SEP 17 0438 39.7s 38.89S 175.30E 223km M=3.6**
1.2 0.04 0.04 9
Rsd 0.1s 12ph/10stn Dmin 41km Az.gap 301°
Corr. -0.169 9M/9stn Msd 0.1

89/5366
**SEP 17 1046 31.2s 37.94S 176.57E 143km M=4.4**
0.3 0.02 0.02 3
Rsd 0.2s 26ph/22stn Dmin 37km Az.gap 104°
Corr. -0.165 16M/16stn Msd 0.1 4↑ 2↓

89/5369
**SEP 17 2253 09.1s 38.24S 175.89E 174km M=4.2**
0.6 0.03 0.04 6
Rsd 0.3s 21ph/19stn Dmin 47km Az.gap 115°
Corr. 0.291 15M/15stn Msd 0.2 1↑ 1↓

89/5372
**SEP 18 1004 08.9s 38.17S 176.16E 200km M=3.6**
0.4 0.05 0.09 R
Rsd 0.3s 14ph/12stn Dmin 76km Az.gap 222°
Corr. -0.586 10M/10stn Msd 0.2 1↑

89/5374
**SEP 18 1140 59.7s 41.13S 173.53E 99km M=4.2**
0.3 0.02 0.01 3
Rsd 0.2s 20ph/15stn Dmin 63km Az.gap 123°
Corr. -0.369 6M/5stn Msd 0.2 11↑ 1↓

89/5376
**SEP 18 1334 35.3s 39.53S 174.46E 206km M=3.8**
0.5 0.01 0.04 5
Rsd 0.1s 16ph/14stn Dmin 100km Az.gap 225°
Corr. -0.641 9M/9stn Msd 0.2 5↑ 1↓

89/5377
**SEP 18 1748 14.6s 41.26S 173.33E 105km M=4.3**
0.3 0.02 0.02 3
Rsd 0.2s 21ph/16stn Dmin 54km Az.gap 108°
Corr. -0.428 8M/6stn Msd 0.1 3↑ 7↓

89/5379
**SEP 18 1814 20.3s 36.80S 177.53E 304km M=3.6**
1.0 0.24 0.16 39
Rsd 0.1s 11ph/8stn Dmin 438km Az.gap 345°
Corr. -0.891 7M/7stn Msd 0.2

89/5383
**SEP 19 0527 59.9s 37.37S 177.30E 191km M=3.5**
0.6 0.02 0.03 6
Rsd 0.1s 13ph/10stn Dmin 74km Az.gap 159°
Corr. 0.480 10M/10stn Msd 0.2 1↑

89/5386
**SEP 19 1113 27.0s 45.37S 167.26E 80km M=3.7**
0.1 0.01 0.01 2
Rsd 0.0s 21ph/13stn Dmin 94km Az.gap 235°
Corr. -0.241 7M/7stn Msd 0.1 1↓

89/5397
**SEP 20 1040 35.4s 37.60S 177.13E 162km M=4.5**
0.5 0.02 0.02 5
Rsd 0.2s 28ph/24stn Dmin 45km Az.gap 135°
Corr. -0.172 18M/16stn Msd 0.3 3↑ 3↓

89/5399
**SEP 20 1316 15.9s 38.19S 176.14E 184km M=4.0**
0.9 0.03 0.05 8
Rsd 0.4s 19ph/17stn Dmin 23km Az.gap 133°
Corr. 0.058 16M/16stn Msd 0.2 5↑ 3↓

89/5408
**SEP 20 2212 47.8s 37.14S 177.32E 81km M=3.6**
2.0 0.22 0.11 13
Rsd 0.5s 6ph/5stn Dmin 98km Az.gap 263°
Corr. -0.785 2M/2stn Msd 0.1

89/5409
**SEP 20 2305 21.9s 40.51S 173.68E 101km M=3.7**
0.4 0.03 0.02 5
Rsd 0.2s 23ph/18stn Dmin 93km Az.gap 173°
Corr. -0.340 12M/10stn Msd 0.2 2↑ 2↓

89/5411
**SEP 20 2340 46.7s 38.91S 175.10E 251km M=3.5**
0.1 0.01 0.03 1
Rsd 0.0s 17ph/13stn Dmin 40km Az.gap 268°
Corr. -0.194 8M/8stn Msd 0.2 2↑ 1↓

89/5414
**SEP 21 0611 10.6s 47.36S 165.61E 89km M=4.3**
0.7 0.03 0.10 13
Rsd 0.2s 14ph/12stn Dmin 197km Az.gap 316°
Corr. 0.322 12M/11stn Msd 0.1

89/5416
**SEP 21 0730 09.6s 34.13S 179.47E 33km M=3.8**
0.9 0.18 0.42 R
Rsd 0.1s 7ph/6stn Dmin 802km Az.gap 356°
Corr. -0.918 2M/2stn Msd 0.0

89/5424
**SEP 21 1542 37.3s 41.79S 174.37E 28km M=3.6**
0.1 0.01 0.01 1
Rsd 0.2s 19ph/15stn Dmin 13km Az.gap 161°
Corr. -0.645 11M/10stn Msd 0.1 3↑ 8↓

89/5426
**SEP 21 1750 43.9s 40.22S 176.75E 62km M=5.0**
0.2 0.01 0.01 3
Rsd 0.2s 39ph/35stn Dmin 60km Az.gap 195°
Corr. -0.684 6M/5stn Msd 0.3 5↑ 9↓
Felt (52) to (63), max MM5 at Moawhango (58) & Aramoana (63).

89/5429
**SEP 21 2134 56.0s 37.51S 178.40E 191km M=3.9**
1.1 0.25 0.57 8
Rsd 0.2s 6ph/3stn Dmin 13km Az.gap 344°
Corr. -0.977 8M/8stn Msd 0.2

89/5432
**SEP 22 0150 31.1s 37.04S 177.25E 33km M=3.7**
3.3 0.29 0.13 R
Rsd 0.9s 5ph/3stn Dmin 112km Az.gap 268°
Corr. -0.684 2M/2stn Msd 0.2

89/5437
**SEP 22 0940 56.9s 39.74S 173.51E 12km M=3.9**
0.2 0.01 0.02 R
Rsd 0.2s 26ph/21stn Dmin 73km Az.gap 198°
Corr. -0.566 13M/11stn Msd 0.2

89/5448
**SEP 23 0411 23.0s 37.10S 176.91E 200km M=4.0**
0.5 0.05 0.08 R
Rsd 0.2s 11ph/9stn Dmin 135km Az.gap 268°
Corr. -0.762 16M/16stn Msd 0.2

89/5454
**SEP 23 1228 59.2s 39.66S 173.38E 5km M=3.7**
0.1 0.01 0.01 R
Rsd 0.1s 25ph/19stn Dmin 76km Az.gap 216°
Corr. -0.688 13M/11stn Msd 0.2

89/5456
**SEP 23 1427 37.0s 39.04S 175.08E 206km M=3.7**
0.3 0.01 0.05 2
Rsd 0.1s 19ph/15stn Dmin 40km Az.gap 245°
Corr. -0.203 10M/10stn Msd 0.3 3↑ 1↓

89/5459
**SEP 23 1607 06.2s 39.65S 173.36E 5km M=4.0**
0.2 0.01 0.02 R
Rsd 0.1s 26ph/20stn Dmin 75km Az.gap 219°
Corr. -0.691 13M/11stn Msd 0.2

89/5467
**SEP 24 0301 04.7s 38.03S 176.62E 178km M=3.8**
1.2 0.04 0.05 12
Rsd 0.3s 13ph/11stn Dmin 96km Az.gap 156°
Corr. -0.758 11M/11stn Msd 0.3 1↓

89/5468
**SEP 24 0310 03.6s 38.73S 175.65E 142km M=3.7**
0.5 0.02 0.03 4
Rsd 0.2s 21ph/18stn Dmin 11km Az.gap 151°
Corr. 0.206 16M/16stn Msd 0.2 1↑ 3↓

89/5491
**SEP 25 1435 00.9s 40.44S 175.05E 5km M=3.5**
0.1 0.01 0.01 R
Rsd 0.3s 20ph/18stn Dmin 41km Az.gap 126°
Corr. -0.328 14M/12stn Msd 0.1 1↑ 10↓

89/5494
**SEP 25 1626 09.4s 38.37S 176.03E 191km M=3.6**
0.3 0.09 0.08 13
Rsd 0.1s 16ph/12stn Dmin 250km Az.gap 330°
Corr. -0.813 10M/10stn Msd 0.3 1↑ 1↓

89/5499
**SEP 26 0113 13.6s 39.13S 173.68E 12km M=3.7**
0.3 0.02 0.03 R
Rsd 0.2s 15ph/12stn Dmin 39km Az.gap 236°
Corr. -0.684 13M/11stn Msd 0.2

89/5503
**SEP 26 1153 00.7s 39.64S 175.57E 266km M=3.6**
0.3 0.05 0.06 3
Rsd 0.1s 5ph/3stn Dmin 108km Az.gap 239°
Corr. -0.801 3M/3stn Msd 0.1

89/5505
**SEP 27 0420 30.0s 38.84S 175.74E 137km M=3.7**
0.9 0.04 0.04 7
Rsd 0.4s 17ph/13stn Dmin 25km Az.gap 168°
Corr. -0.200 8M/8stn Msd 0.3 1↑ 1↓

89/5506
**SEP 27 0518 53.2s 40.79S 174.54E 69km M=3.6**
0.1 0.01 0.01 2
Rsd 0.2s 26ph/20stn Dmin 33km Az.gap 90°
Corr. -0.500 8M/6stn Msd 0.1 12↑ 1↓

89/5507
**SEP 27 0631 18.3s 37.08S 178.44E 135km M=3.7**
0.3 0.02 0.05 2
Rsd 0.0s 5ph/3stn Dmin 59km Az.gap 340°
Corr. -0.578 3M/3stn Msd 0.2

89/5509
**SEP 27 1032 02.3s 38.32S 175.84E 168km M=4.0**
1.3 0.05 0.08 11
Rsd 0.5s 16ph/15stn Dmin 35km Az.gap 94°
Corr. 0.266 18M/18stn Msd 0.2 2↑ 1↓

89/5510
**SEP 27 1135 37.4s 41.24S 172.63E 212km M=3.7**
0.1 0.01 0.01 1
Rsd 0.0s 18ph/13stn Dmin 19km Az.gap 238°
Corr. -0.385 11M/11stn Msd 0.4 6↑ 2↓

89/5524
**SEP 28 1040 07.8s 37.80S 176.13E 284km M=4.9**
1.5 0.08 0.08 12
Rsd 0.4s 23ph/20stn Dmin 42km Az.gap 189°
Corr. 0.016 17M/17stn Msd 0.2 7↑ 4↓

89/5527
**SEP 28 1254 58.9s 41.09S 174.08E 68km M=3.7**
0.2 0.01 0.01 3
Rsd 0.2s 23ph/17stn Dmin 22km Az.gap 103°
Corr. -0.439 10M/8stn Msd 0.1 5↑ 2↓

89/5540
**SEP 29 1238 16.4s 38.17S 176.49E 179km M=3.7**
0.4 0.02 0.04 5
Rsd 0.2s 18ph/14stn Dmin 140km Az.gap 214°
Corr. -0.785 10M/10stn Msd 0.3

89/5541
**SEP 29 1545 32.4s 36.35S 176.76E 271km M=4.2**
0.2 0.02 0.03 2
Rsd 0.1s 17ph/12stn Dmin 183km Az.gap 295°
Corr. -0.602 13M/13stn Msd 0.1

89/5542
**SEP 29 1601 35.4s 39.13S 178.02E 12km M=3.6**
1.7 0.10 0.08 R
Rsd 0.6s 7ph/4stn Dmin 54km Az.gap 290°
Corr. -0.559 4M/4stn Msd 0.1

89/5552
**SEP 30 0618 00.5s 37.60S 179.49E 105km M=3.5**
0.6 0.03 0.06 5
Rsd 0.2s 9ph/7stn Dmin 105km Az.gap 308°
Corr. 0.219 6M/6stn Msd 0.2

89/5553
**SEP 30 0919 30.6s 39.59S 173.25E 12km M=3.6**
0.5 0.02 0.06 R
Rsd 0.1s 18ph/13stn Dmin 81km Az.gap 254°
Corr. -0.613 13M/11stn Msd 0.2

89/5561
**SEP 30 2059 43.0s 41.60S 174.45E 12km M=3.9**
0.1 0.01 0.01 R
Rsd 0.2s 18ph/14stn Dmin 25km Az.gap 146°
Corr. -0.451 7M/6stn Msd 0.1 7↑ 4↓

89/5569
**OCT 01 0356 23.0s 37.74S 175.62E 33km M=3.8**
0.5 0.03 0.11 R
Rsd 0.1s 6ph/4stn Dmin 320km Az.gap 346°
Corr. -0.473 4M/4stn Msd 0.2

89/5573
**OCT 01 0551 49.8s 35.51S 178.99E 195km M=4.1**
1.3 0.13 0.17 21
Rsd 0.3s 7ph/4stn Dmin 240km Az.gap 327°
Corr. -0.105 5M/4stn Msd 0.2

89/5580
**OCT 01 1058 22.2s 38.37S 175.81E 195km M=4.7**
0.5 0.03 0.03 4
Rsd 0.3s 26ph/20stn Dmin 38km Az.gap 94°
Corr. 0.268 14M/14stn Msd 0.7 15↑ 7↓

89/5586
**OCT 01 1152 30.2s 37.72S 177.29E 118km M=3.7**
0.1 0.01 0.01 1
Rsd 0.1s 6ph/4stn Dmin 40km Az.gap 181°
Corr. 0.214 3M/3stn Msd 0.1 1↓

89/5619
**OCT 02 2141 49.5s 38.54S 176.29E 201km M=3.6**
0.2 0.04 0.02 5
Rsd 0.0s 12ph/10stn Dmin 230km Az.gap 331°
Corr. -0.746 9M/9stn Msd 0.2

89/5622
**OCT 03 0215 33.6s 41.21S 174.63E 33km M=4.5**
0.1 0.01 0.01 R
Rsd 0.2s 15ph/15stn Dmin 7km Az.gap 94°
Corr. -0.125 20M/20stn Msd 0.4 5↑ 4↓
Felt Palmerston N (62) to Blenheim (77) max MM5 in (68). WLN net overloaded; no close S picks.

89/5626
**OCT 03 0239 13.6s 37.24S 176.38E 287km M=4.2**
0.2 0.01 0.03 2
Rsd 0.0s 15ph/11stn Dmin 183km Az.gap 320°
Corr. -0.863 14M/14stn Msd 0.2

89/5631
**OCT 03 0357 16.0s 40.28S 173.70E 170km M=4.1**
0.2 0.01 0.02 2
Rsd 0.1s 27ph/20stn Dmin 115km Az.gap 194°
Corr. 0.052 12M/12stn Msd 0.3 9↑ 2↓

89/5645
**OCT 03 1418 13.9s 40.83S 172.96E 12km M=3.6**
0.2 0.01 0.01 R
Rsd 0.1s 16ph/13stn Dmin 119km Az.gap 225°
Corr. -0.410 12M/12stn Msd 0.1

89/5646
**OCT 03 1424 01.8s 36.88S 176.38E 219km M=3.8**
0.4 0.03 0.07 8
Rsd 0.1s 17ph/13stn Dmin 188km Az.gap 275°
Corr. -0.863 11M/11stn Msd 0.2

89/5663
**OCT 04 0843 27.5s 41.17S 174.64E 32km M=3.0**
0.1 0.01 0.01 1
Rsd 0.2s 15ph/12stn Dmin 9km Az.gap 121°
Corr. -0.232 7M/7stn Msd 0.2 3↑ 4↓
Felt Wellington (68) MM4.

89/5680
**OCT 05 0110 30.4s 37.42S 176.82E 198km M=4.2**
0.3 0.02 0.03 2
Rsd 0.1s 14ph/10stn Dmin 64km Az.gap 252°
Corr. -0.006 4M/4stn Msd 0.4 1↓

89/5684
**OCT 05 0439 31.0s 39.10S 175.68E 2km M=3.5**
0.4 0.01 0.02 6
Rsd 0.4s 9ph/8stn Dmin 3km Az.gap 88°
Corr. -0.223 18M/18stn Msd 0.2 3↑ 1↓

89/5687
**OCT 05 0631 09.4s 38.85S 175.70E 120km M=3.9**
0.8 0.04 0.05 7
Rsd 0.2s 15ph/13stn Dmin 41km Az.gap 206°
Corr. -0.852 12M/12stn Msd 0.3 4↑ 1↓

89/5688
**OCT 05 0834 30.4s 40.66S 179.62E 33km M=3.6**
0.8 0.04 0.08 R
Rsd 0.2s 10ph/8stn Dmin 351km Az.gap 275°
Corr. -0.898 7M/7stn Msd 0.2

89/5693
**OCT 05 1605 15.6s 39.65S 173.30E 5km M=3.5**
0.4 0.02 0.04 R
Rsd 0.1s 15ph/12stn Dmin 80km Az.gap 243°
Corr. -0.895 10M/10stn Msd 0.2

89/5695
**OCT 05 2141 31.7s 38.43S 176.30E 105km M=3.9**
0.4 0.02 0.02 4
Rsd 0.2s 18ph/13stn Dmin 7km Az.gap 82°
Corr. -0.447 12M/12stn Msd 0.4 6↑ 3↓

89/5696
**OCT 05 2141 59.9s 38.55S 175.89E 136km M=3.9**
1.0 0.04 0.04 10
Rsd 0.1s 16ph/13stn Dmin 37km Az.gap 189°
Corr. 0.424 9M/9stn Msd 0.2

89/5703
**OCT 06 1010 31.8s 37.04S 177.55E 145km M=5.0**
0.3 0.03 0.02 3
Rsd 0.1s 21ph/16stn Dmin 91km Az.gap 197°
Corr. -0.104 13M/13stn Msd 0.2 9↑ 2↓

89/5706
**OCT 06 1215 49.5s 37.50S 177.89E 125km M=3.6**
1.4 0.07 0.08 12
Rsd 0.5s 11ph/9stn Dmin 38km Az.gap 231°
Corr. 0.083 9M/9stn Msd 0.3 1↑

89/5710
**OCT 06 1914 58.8s 38.02S 179.35E 40km M=3.9**
0.4 0.02 0.05 23
Rsd 0.1s 11ph/7stn Dmin 104km Az.gap 285°
Corr. -0.594 14M/14stn Msd 0.3 1↑

89/5720
**OCT 07 1855 48.6s 40.23S 173.69E 192km M=3.6**
0.2 0.03 0.02 2
Rsd 0.1s 14ph/10stn Dmin 120km Az.gap 302°
Corr. 0.210 9M/9stn Msd 0.2 1↑ 1↓

89/5726
**OCT 08 0236 25.7s 38.77S 175.50E 247km M=3.7**
0.3 0.02 0.06 2
Rsd 0.0s 13ph/11stn Dmin 48km Az.gap 333°
Corr. -0.781 9M/9stn Msd 0.2

89/5731
**OCT 08 0927 54.1s 39.34S 174.85E 186km M=4.5**
0.6 0.02 0.02 6
Rsd 0.2s 29ph/23stn Dmin 62km Az.gap 105°
Corr. -0.141 13M/12stn Msd 0.4 12↑ 3↓

89/5743
**OCT 08 2224 34.9s 47.74S 165.77E 72km M=5.0**
0.7 0.04 0.09 21
Rsd 0.2s 17ph/14stn Dmin 200km Az.gap 230°
Corr. 0.066 9M/9stn Msd 0.1

89/5744
**OCT 08 2244 45.7s 47.79S 165.68E 33km M=4.0**
0.6 0.04 0.05 R
Rsd 0.2s 13ph/10stn Dmin 209km Az.gap 324°
Corr. 0.125 11M/11stn Msd 0.2 1↑

89/5751
**OCT 09 0659 33.8s 39.64S 173.42E 12km M=4.2**
0.1 0.01 0.01 R
Rsd 0.1s 17ph/14stn Dmin 72km Az.gap 198°
Corr. -0.598 12M/12stn Msd 0.3 1↓

89/5766
**OCT 10 0146 12.4s 37.36S 176.95E 156km M=3.6**
0.7 0.05 0.06 5
Rsd 0.3s 13ph/9stn Dmin 70km Az.gap 256°
Corr. -0.258 8M/7stn Msd 0.2

89/5769
**OCT 10 0351 15.3s 37.71S 177.62E 81km M=3.8**
0.8 0.04 0.04 10
Rsd 0.3s 14ph/12stn Dmin 61km Az.gap 176°
Corr. 0.447 12M/12stn Msd 0.2 1↑

89/5782
**OCT 10 2307 11.1s 38.11S 178.03E 350km M=3.7**
0.6 0.06 0.10 6
Rsd 0.1s 10ph/8stn Dmin 61km Az.gap 185°
Corr. -0.902 7M/7stn Msd 0.2

89/5793
**OCT 11 2150 41.7s 38.52S 175.86E 175km M=4.7**
0.9 0.04 0.05 8
Rsd 0.4s 20ph/16stn Dmin 22km Az.gap 82°
Corr. 0.477 15M/15stn Msd 0.3 12↑ 2↓

89/5796
**OCT 12 0930 16.6s 38.50S 175.98E 120km M=4.0**
0.6 0.02 0.02 7
Rsd 0.3s 15ph/11stn Dmin 62km Az.gap 90°
Corr. -0.006 18M/18stn Msd 0.2 4↑ 3↓

89/5807
**OCT 13 0037 17.9s 47.38S 165.27E 12km M=4.6**
0.7 0.03 0.07 R
Rsd 0.1s 17ph/14stn Dmin 222km Az.gap 318°
Corr. 0.551 13M/13stn Msd 0.1 1↓

89/5812
**OCT 13 0610 15.6s 38.42S 175.97E 225km M=3.5**
1.4 0.07 0.05 12
Rsd 0.1s 10ph/9stn Dmin 245km Az.gap 322°
Corr. 0.193 6M/6stn Msd 0.2

89/5817
**OCT 13 0953 16.8s 43.90S 179.13W 33km M=3.8**
0.6 0.06 0.05 R
Rsd 0.1s 14ph/10stn Dmin 206km Az.gap 204°
Corr. 0.482 4M/4stn Msd 0.1

89/5825
**OCT 14 0611 09.1s 36.16S 178.11E 212km M=4.2**
1.1 0.08 0.11 12
Rsd 0.3s 5ph/3stn Dmin 160km Az.gap 328°
Corr. -0.281 3M/3stn Msd 0.1

89/5827
**OCT 14 1709 25.2s 38.49S 175.81E 118km M=3.6**
0.4 0.03 0.05 7
Rsd 0.2s 17ph/11stn Dmin 117km Az.gap 218°
Corr. -0.793 12M/12stn Msd 0.2 1↑

89/5834
**OCT 15 0251 15.4s 38.71S 175.25E 221km M=4.8**
0.5 0.05 0.04 4
Rsd 0.3s 19ph/15stn Dmin 40km Az.gap 87°
Corr. 0.590 14M/14stn Msd 0.2 13↑ 3↓

89/5843
**OCT 15 0814 26.7s 36.62S 177.42E 12km M=3.6**
1.3 0.10 0.06 R
Rsd 0.3s 8ph/6stn Dmin 134km Az.gap 301°
Corr. 0.185 3M/3stn Msd 0.1

89/5847
**OCT 15 1049 45.1s 38.11S 176.18E 220km M=3.6**
1.4 0.07 0.10 14
Rsd 0.4s 16ph/13stn Dmin 129km Az.gap 223°
Corr. -0.734 11M/11stn Msd 0.2

89/5850
**OCT 15 1138 44.4s 34.79S 178.06E 246km M=4.1**
1.3 0.19 0.85 42
Rsd 0.2s 13ph/9stn Dmin 313km Az.gap 332°
Corr. -0.922 11M/11stn Msd 0.1

89/5858
**OCT 16 0913 32.7s 38.48S 175.40E 240km M=4.5**
0.5 0.04 0.03 4
Rsd 0.3s 16ph/13stn Dmin 52km Az.gap 105°
Corr. 0.152 17M/17stn Msd 0.2 10↑ 3↓

89/5861
**OCT 16 0937 13.2s 40.48S 176.89E 33km M=3.8**
0.2 0.01 0.03 R
Rsd 0.2s 27ph/21stn Dmin 55km Az.gap 204°
Corr. -0.813 17M/15stn Msd 0.2 1↑

89/5863
**OCT 16 1008 36.1s 40.47S 176.90E 33km M=3.6**
0.2 0.01 0.03 R
Rsd 0.2s 22ph/17stn Dmin 56km Az.gap 221°
Corr. -0.840 17M/15stn Msd 0.2 1↑

89/5876
**OCT 17 0745 06.9s 37.32S 176.59E 33km M=3.9**
0.2 0.02 0.03 R
Rsd 0.0s 10ph/7stn Dmin 437km Az.gap 348°
Corr. -0.570 4M/4stn Msd 0.1

89/5891
**OCT 19 0312 23.0s 36.85S 176.77E 303km M=4.2**
0.8 0.06 0.06 8
Rsd 0.2s 10ph/9stn Dmin 127km Az.gap 273°
Corr. -0.410 18M/18stn Msd 0.2 1↓

89/5895
**OCT 19 0852 33.1s 38.05S 175.92E 330km M=3.7**
0.3 0.06 0.05 7
Rsd 0.1s 12ph/10stn Dmin 286km Az.gap 325°
Corr. -0.809 9M/9stn Msd 0.1

89/5902
**OCT 19 1558 39.7s 37.86S 175.43E 272km M=3.9**
1.2 0.04 0.06 10
Rsd 0.1s 15ph/13stn Dmin 138km Az.gap 239°
Corr. -0.836 13M/13stn Msd 0.2

89/5907
**OCT 19 2358 32.9s 40.60S 173.39E 141km M=4.4**
0.3 0.01 0.02 4
Rsd 0.2s 22ph/17stn Dmin 77km Az.gap 158°
Corr. -0.145 15M/13stn Msd 0.1 8↑ 4↓

89/5912
**OCT 20 0954 34.9s 37.52S 177.16E 126km M=3.6**
0.4 0.03 0.03 2
Rsd 0.1s 19ph/14stn Dmin 54km Az.gap 245°
Corr. -0.797 11M/11stn Msd 0.2

89/5915
**OCT 20 1541 53.7s 35.77S 178.71E 254km M=4.4**
2.2 0.13 0.22 18
Rsd 0.5s 11ph/10stn Dmin 206km Az.gap 335°
Corr. -0.158 13M/13stn Msd 0.2

89/5925
**OCT 20 2001 54.0s 39.18S 175.30E 120km M=3.5**
0.3 0.01 0.03 3
Rsd 0.1s 20ph/16stn Dmin 21km Az.gap 127°
Corr. 0.641 10M/10stn Msd 0.2 2↑ 1↓

89/5935
**OCT 21 1035 13.6s 38.36S 175.99E 176km M=4.3**
0.8 0.03 0.03 7
Rsd 0.4s 22ph/18stn Dmin 44km Az.gap 105°
Corr. 0.283 18M/18stn Msd 0.2 3↑ 6↓

89/5937
**OCT 21 1416 24.9s 37.89S 175.99E 300km M=5.3**
0.5 0.04 0.05 5
Rsd 0.3s 29ph/25stn Dmin 40km Az.gap 96°
Corr. 0.160 12M/10stn Msd 0.2 11↑ 5↓

89/5938
**OCT 21 1500 22.2s 45.12S 167.61E 114km M=3.8**
0.3 0.04 0.04 4
Rsd 0.2s 16ph/13stn Dmin 74km Az.gap 260°
Corr. -0.863 10M/10stn Msd 0.1 2↑

89/5939
**OCT 21 1532 45.0s 38.06S 175.84E 308km M=4.0**
0.5 0.02 0.02 4
Rsd 0.0s 17ph/13stn Dmin 126km Az.gap 260°
Corr. -0.832 11M/11stn Msd 0.2

89/5947
**OCT 22 0056 50.6s 41.48S 174.70E 15km M=3.6**
0.2 0.01 0.01 2
Rsd 0.3s 19ph/16stn Dmin 16km Az.gap 130°
Corr. -0.145 11M/9stn Msd 0.2 8↑ 5↓
Felt Wellington (68) MM3.

89/5963
**OCT 23 0015 21.5s 38.36S 176.38E 238km M=3.6**
0.3 0.04 0.04 6
Rsd 0.1s 12ph/10stn Dmin 251km Az.gap 333°
Corr. -0.813 7M/7stn Msd 0.2

89/5964
**OCT 23 0212 28.5s 36.06S 177.80E 232km M=4.2**
0.8 0.05 0.12 9
Rsd 0.2s 15ph/13stn Dmin 177km Az.gap 318°
Corr. -0.441 10M/10stn Msd 0.2

89/5974
**OCT 24 0105 28.5s 38.15S 177.11E 69km M=3.7**
0.1 0.01 0.01 1
Rsd 0.1s 11ph/9stn Dmin 21km Az.gap 115°
Corr. -0.516 9M/9stn Msd 0.2 1↑

89/5978
**OCT 24 0854 32.5s 37.01S 177.32E 203km M=3.9**
0.9 0.04 0.06 7
Rsd 0.2s 17ph/14stn Dmin 109km Az.gap 275°
Corr. -0.020 10M/10stn Msd 0.2

89/5984
**OCT 24 1712 28.3s 40.51S 176.54E 42km M=4.3**
0.2 0.01 0.03 3
Rsd 0.2s 20ph/18stn Dmin 26km Az.gap 197°
Corr. -0.695 13M/12stn Msd 0.3 2↑ 3↓
Felt Mt Vernon (60) and Pongaroa (67) MM4.

89/5986
**OCT 24 1906 41.2s 39.76S 174.13E 235km M=3.6**
0.2 0.01 0.03 2
Rsd 0.1s 18ph/13stn Dmin 137km Az.gap 219°
Corr. -0.641 10M/10stn Msd 0.2 2↑ 1↓

89/5987
**OCT 24 2011 43.3s 37.16S 176.94E 210km M=4.9**
0.6 0.04 0.03 4
Rsd 0.1s 16ph/15stn Dmin 92km Az.gap 238°
Corr. -0.025 18M/18stn Msd 0.1 3↑ 1↓

89/5989
**OCT 24 2211 09.9s 37.45S 177.11E 200km M=3.9**
0.2 0.03 0.04 R
Rsd 0.1s 12ph/9stn Dmin 61km Az.gap 247°
Corr. -0.832 14M/14stn Msd 0.2

89/6018
**OCT 26 0124 10.5s 37.70S 177.36E 128km M=3.7**
0.6 0.04 0.05 4
Rsd 0.2s 11ph/8stn Dmin 45km Az.gap 215°
Corr. -0.887 11M/11stn Msd 0.1

89/6026
**OCT 27 0440 15.4s 37.07S 177.45E 306km M=3.8**
0.2 0.13 0.14 22
Rsd 0.1s 10ph/8stn Dmin 430km Az.gap 353°
Corr. 0.641 4M/4stn Msd 0.1 1↑

89/6029
**OCT 27 0658 30.8s 35.56S 178.91E 205km M=4.8**
0.8 0.04 0.05 9
Rsd 0.1s 17ph/16stn Dmin 233km Az.gap 325°
Corr. 0.172 18M/18stn Msd 0.2 1↑

89/6031
**OCT 27 0716 09.8s 38.92S 175.20E 229km M=3.5**
0.2 0.02 0.08 3
Rsd 0.1s 15ph/11stn Dmin 43km Az.gap 296°
Corr. -0.482 6M/6stn Msd 0.3 1↓

89/6032
**OCT 27 0835 25.3s 37.50S 176.83E 222km M=5.1**
1.0 0.04 0.04 9
Rsd 0.2s 26ph/21stn Dmin 56km Az.gap 208°
Corr. 0.054 15M/15stn Msd 0.3 10↑ 6↓
Felt Opotiki (35) MM4.

89/6035
**OCT 27 1347 55.7s 38.30S 176.06E 181km M=4.4**
0.4 0.02 0.02 3
Rsd 0.2s 30ph/21stn Dmin 53km Az.gap 115°
Corr. 0.260 18M/18stn Msd 0.3 6↑ 2↓

89/6040
**OCT 28 0259 15.0s 44.79S 167.58E 5km M=4.0**
0.4 0.02 0.03 R
Rsd 0.1s 16ph/12stn Dmin 29km Az.gap 247°
Corr. 0.024 4M/4stn Msd 0.3 1↓

89/6044
**OCT 28 0729 26.8s 45.05S 168.91E 5km M=3.8**
0.1 0.01 0.01 R
Rsd 0.1s 18ph/14stn Dmin 18km Az.gap 112°
Corr. 0.080 2M/2stn Msd 0.3 1↑ 11↓
CMC first motions inconsistent with location.

89/6046
**OCT 28 0825 35.4s 40.06S 174.58E 101km M=4.1**
0.2 0.01 0.02 3
Rsd 0.2s 25ph/18stn Dmin 93km Az.gap 149°
Corr. -0.303 11M/9stn Msd 0.3 9↑ 3↓

89/6047
**OCT 28 1054 21.1s 38.56S 175.69E 178km M=3.6**
0.4 0.01 0.07 4
Rsd 0.1s 12ph/10stn Dmin 51km Az.gap 325°
Corr. -0.153 9M/9stn Msd 0.2 1↑

89/6052
**OCT 28 1444 48.8s 35.31S 178.34E 316km M=4.4**
0.2 0.02 0.07 2
Rsd 0.0s 13ph/12stn Dmin 321km Az.gap 337°
Corr. -0.734 11M/11stn Msd 0.1

89/6064
**OCT 29 0210 26.8s 38.91S 175.84E 5km M=3.3**
0.1 0.01 0.01 R
Rsd 0.3s 12ph/9stn Dmin 8km Az.gap 131°
Corr. -0.081 12M/12stn Msd 0.2 2↑ 2↓
Felt Motuoapa (40) MM4.

89/6065
**OCT 29 0320 22.6s 38.91S 175.84E 3km M=3.5**
0.2 0.01 0.01 R
Rsd 0.3s 9ph/7stn Dmin 8km Az.gap 136°
Corr. -0.158 4M/4stn Msd 0.2 2↑ 3↓

89/6068
**OCT 29 0410 09.3s 38.91S 175.84E 5km M=3.2**
0.1 0.00 0.01 R
Rsd 0.1s 8ph/6stn Dmin 7km Az.gap 132°
Corr. -0.232 4M/4stn Msd 0.2 1↑
Felt Motuoapa (40) MM4.

89/6073
**OCT 29 0956 52.8s 37.59S 176.05E 306km M=3.8**
0.2 0.03 0.05 3
Rsd 0.0s 17ph/13stn Dmin 209km Az.gap 283°
Corr. -0.949 9M/9stn Msd 0.2 1↓

89/6088
**OCT 30 1348 32.4s 38.88S 175.84E 5km M=4.0**
0.2 0.01 0.02 R
Rsd 0.4s 19ph/17stn Dmin 6km Az.gap 58°
Corr. -0.222 19M/17stn Msd 0.3 2↑ 4↓
Felt Waihora Rd (40) MM5 and in (40,41).

89/6098
**OCT 30 1936 36.2s 38.98S 178.04E 33km M=4.3**
0.4 0.01 0.04 R
Rsd 0.2s 20ph/18stn Dmin 79km Az.gap 279°
Corr. 0.123 13M/13stn Msd 0.1 4↑ 3↓
Felt Patoka (52) MM3.

89/6099
**OCT 30 1941 32.9s 38.91S 175.84E 5km M=3.3**
0.1 0.01 0.01 R
Rsd 0.2s 9ph/7stn Dmin 7km Az.gap 128°
Corr. -0.151 3M/3stn Msd 0.2 1↑ 1↓
Felt Omori (40) MM3.

89/6104
**OCT 30 2357 47.5s 40.49S 173.92E 107km M=3.9**
0.3 0.01 0.02 4
Rsd 0.2s 26ph/18stn Dmin 86km Az.gap 130°
Corr. 0.034 12M/10stn Msd 0.2 8↑ 1↓

89/6114
**OCT 31 0925 32.2s 38.71S 175.80E 177km M=3.9**
0.4 0.01 0.02 3
Rsd 0.1s 14ph/11stn Dmin 40km Az.gap 234°
Corr. -0.520 14M/14stn Msd 0.3 3↑ 3↓

89/6124
**OCT 31 1736 04.1s 38.67S 176.09E 5km M=2.9**
0.1 0.01 0.01 R
Rsd 0.3s 12ph/11stn Dmin 25km Az.gap 128°
Corr. -0.346 6M/6stn Msd 0.4 1↑ 1↓
Felt Oruanui Rd (41) MM4 and Acacia Bay (41) MM3.

89/6125
**OCT 31 2205 50.1s 38.37S 176.21E 185km M=3.5**
0.4 0.02 0.11 3
Rsd 0.1s 12ph/10stn Dmin 108km Az.gap 339°
Corr. -0.340 7M/7stn Msd 0.4 1↓

89/6130
**NOV 01 0622 25.6s 38.48S 175.80E 168km M=3.9**
0.7 0.01 0.03 6
Rsd 0.2s 14ph/12stn Dmin 65km Az.gap 136°
Corr. -0.479 9M/9stn Msd 0.2 1↓

89/6140
**NOV 01 2107 51.4s 38.14S 176.08E 222km M=4.7**
0.4 0.02 0.04 3
Rsd 0.2s 21ph/18stn Dmin 46km Az.gap 162°
Corr. 0.496 15M/15stn Msd 0.2 8↑ 5↓

89/6146
**NOV 02 1337 17.8s 38.99S 175.52E 141km M=3.6**
0.3 0.01 0.03 3
Rsd 0.1s 15ph/14stn Dmin 23km Az.gap 198°
Corr. -0.809 10M/10stn Msd 0.2 3↑ 1↓

89/6147
**NOV 02 1348 28.8s 37.45S 176.43E 258km M=4.6**
0.8 0.03 0.04 7
Rsd 0.2s 16ph/15stn Dmin 77km Az.gap 128°
Corr. 0.117 17M/17stn Msd 0.2 4↑ 1↓

89/6163
**NOV 03 0629 36.5s 38.26S 175.72E 212km M=3.5**
0.7 0.02 0.03 6
Rsd 0.1s 15ph/14stn Dmin 40km Az.gap 136°
Corr. -0.918 9M/9stn Msd 0.2

89/6164
**NOV 03 1025 44.8s 40.97S 176.10E 34km M=3.7**
0.1 0.01 0.02 2
Rsd 0.1s 15ph/11stn Dmin 41km Az.gap 208°
Corr. -0.789 9M/7stn Msd 0.1 7↑ 3↓

89/6165
**NOV 03 1200 22.5s 38.14S 177.12E 53km M=3.7**
0.3 0.01 0.01 8
Rsd 0.2s 20ph/17stn Dmin 21km Az.gap 93°
Corr. -0.221 16M/16stn Msd 0.2 1↓

89/6166
**NOV 03 1448 44.5s 39.17S 175.02E 154km M=3.9**
0.4 0.02 0.03 3
Rsd 0.1s 20ph/15stn Dmin 45km Az.gap 211°
Corr. -0.396 11M/11stn Msd 0.2 1↑

89/6168
**NOV 03 1812 05.9s 39.20S 174.93E 200km M=3.8**
0.1 0.01 0.03 R
Rsd 0.1s 17ph/15stn Dmin 54km Az.gap 157°
Corr. -0.322 14M/12stn Msd 0.2 1↑

89/6175
**NOV 04 0543 13.3s 41.58S 174.12E 64km M=3.6**
0.1 0.01 0.01 2
Rsd 0.2s 26ph/16stn Dmin 21km Az.gap 83°
Corr. -0.375 11M/9stn Msd 0.3 4↑ 7↓

89/6177
**NOV 04 0842 37.7s 41.08S 174.74E 51km M=4.8**
0.1 0.01 0.01 1
Rsd 0.2s 24ph/20stn Dmin 17km Az.gap 102°
Corr. -0.439 9M/9stn Msd 0.3 8↑ 4↓
Felt (61) to (69), max MM5 in Wellington area (68).

89/6179
**NOV 04 1303 29.7s 43.08S 171.70E 12km M=3.7**
0.3 0.01 0.02 R
Rsd 0.2s 13ph/7stn Dmin 57km Az.gap 113°
Corr. 0.147 24M/24stn Msd 0.2 1↓
Very clear secondary phases on CYN, WLN.

89/6181
**NOV 04 1327 55.6s 38.57S 176.14E 211km M=3.6**
0.2 0.04 0.03 4
Rsd 0.1s 14ph/12stn Dmin 228km Az.gap 329°
Corr. -0.570 9M/9stn Msd 0.4 1↑ 1↓

89/6186
**NOV 04 1840 14.9s 41.18S 174.94E 30km M=4.0**
0.1 0.01 0.01 1
Rsd 0.2s 20ph/16stn Dmin 11km Az.gap 83°
Corr. -0.387 9M/7stn Msd 0.3 6↑ 6↓
Felt in Wellington area (68,69), max MM5 at Paekakariki (68).

89/6195
**NOV 05 0600 51.5s 37.25S 176.35E 440km M=3.9**
0.3 0.03 0.05 4
Rsd 0.0s 16ph/14stn Dmin 207km Az.gap 296°
Corr. -0.875 8M/8stn Msd 0.1

89/6201
**NOV 05 0910 27.6s 38.31S 176.08E 190km M=3.5**
0.3 0.01 0.04 3
Rsd 0.1s 18ph/13stn Dmin 90km Az.gap 324°
Corr. -0.141 7M/7stn Msd 0.4 1↓

89/6214
**NOV 05 1709 57.2s 40.13S 173.65E 185km M=3.5**
0.5 0.02 0.03 5
Rsd 0.2s 17ph/13stn Dmin 103km Az.gap 166°
Corr. -0.112 7M/7stn Msd 0.1 1↑

89/6217
**NOV 05 1953 50.8s 38.21S 175.43E 33km M=3.7**
0.5 0.03 0.12 R
Rsd 0.1s 5ph/3stn Dmin 268km Az.gap 343°
Corr. -0.402 3M/3stn Msd 0.1

89/6229
**NOV 06 1111 17.6s 35.15S 178.56E 268km M=4.3**
0.4 0.12 0.27 9
Rsd 0.1s 12ph/9stn Dmin 273km Az.gap 334°
Corr. -0.965 10M/10stn Msd 0.3

89/6230
**NOV 06 1330 13.5s 35.45S 178.83E 295km M=4.0**
0.8 0.07 0.14 6
Rsd 0.2s 10ph/8stn Dmin 243km Az.gap 341°
Corr. -0.551 7M/7stn Msd 0.2

89/6233
**NOV 06 1903 58.6s 36.60S 179.76E 33km M=4.3**
0.6 0.08 0.09 R
Rsd 0.2s 10ph/8stn Dmin 171km Az.gap 325°
Corr. -0.766 9M/9stn Msd 0.1

89/6239
**NOV 07 0453 12.0s 38.59S 175.38E 254km M=4.3**
0.8 0.04 0.05 7
Rsd 0.3s 20ph/17stn Dmin 36km Az.gap 136°
Corr. -0.070 15M/13stn Msd 0.2 1↓

89/6242
**NOV 07 0825 10.5s 37.60S 176.91E 260km M=3.5**
0.2 0.11 0.10 18
Rsd 0.0s 10ph/9stn Dmin 357km Az.gap 352°
Corr. 0.691 4M/4stn Msd 0.4

89/6254
**NOV 08 0213 24.0s 40.03S 176.88E 53km M=3.7**
0.2 0.01 0.02 2
Rsd 0.2s 34ph/26stn Dmin 7km Az.gap 185°
Corr. -0.582 19M/17stn Msd 0.2 4↑ 3↓

89/6259
**NOV 08 1450 04.6s 37.61S 176.66E 188km M=4.2**
0.6 0.02 0.02 6
Rsd 0.2s 19ph/16stn Dmin 50km Az.gap 195°
Corr. 0.107 17M/17stn Msd 0.3 2↑ 3↓

89/6262
**NOV 08 1513 37.5s 44.26S 167.74E 5km M=4.0**
0.4 0.02 0.02 R
Rsd 0.2s 21ph/13stn Dmin 48km Az.gap 268°
Corr. -0.520 11M/10stn Msd 0.1 1↓

89/6264
**NOV 08 1711 08.9s 40.88S 174.59E 61km M=4.2**
0.1 0.01 0.01 1
Rsd 0.1s 23ph/17stn Dmin 27km Az.gap 113°
Corr. -0.248 6M/4stn Msd 0.2 10↑ 1↓
Felt Paekakariki and Tawa (68) MM5.

89/6269
**NOV 09 0240 50.8s 39.69S 174.42E 197km M=3.7**
0.5 0.02 0.06 5
Rsd 0.2s 22ph/18stn Dmin 112km Az.gap 209°
Corr. -0.668 10M/10stn Msd 0.3 3↑ 1↓

89/6272
**NOV 09 0710 53.5s 38.76S 175.64E 162km M=3.9**
0.2 0.01 0.04 2
Rsd 0.0s 20ph/15stn Dmin 29km Az.gap 322°
Corr. -0.158 10M/10stn Msd 0.2 1↑ 2↓

89/6279
**NOV 09 1810 58.4s 38.13S 175.46E 237km M=4.0**
6.7 0.20 0.13 61
Rsd 0.1s 10ph/10stn Dmin 257km Az.gap 242°
Corr. 0.758 1M/1stn Msd 0.0

89/6289
**NOV 10 0902 26.4s 38.67S 175.88E 206km M=3.7**
0.5 0.12 0.05 11
Rsd 0.1s 12ph/10stn Dmin 219km Az.gap 341°
Corr. 0.355 1M/1stn Msd 0.0 1↓

89/6298
**NOV 11 1038 22.3s 37.24S 176.73E 249km M=4.9**
1.2 0.03 0.03 10
Rsd 0.1s 19ph/18stn Dmin 85km Az.gap 151°
Corr. 0.131 17M/17stn Msd 0.2 4↑ 1↓

89/6300
**NOV 11 1134 32.8s 37.18S 176.28E 179km M=3.7**
0.7 0.05 0.13 19
Rsd 0.2s 16ph/12stn Dmin 185km Az.gap 265°
Corr. -0.848 9M/9stn Msd 0.3

89/6321
**NOV 13 0134 42.3s 37.12S 177.57E 154km M=4.2**
0.5 0.04 0.03 4
Rsd 0.2s 10ph/8stn Dmin 84km Az.gap 245°
Corr. -0.124 15M/15stn Msd 0.1 1↑ 1↓

89/6330
**NOV 13 2128 02.1s 37.09S 177.03E 174km M=3.9**
0.5 0.07 0.13 8
Rsd 0.1s 11ph/9stn Dmin 126km Az.gap 270°
Corr. -0.945 4M/4stn Msd 0.2

89/6332
**NOV 13 2351 18.6s 46.75S 165.47E 5km M=3.9**
0.4 0.02 0.03 R
Rsd 0.1s 14ph/11stn Dmin 202km Az.gap 319°
Corr. 0.245 6M/6stn Msd 0.1

89/6335
**NOV 14 0213 33.8s 45.40S 166.92E 69km M=4.1**
0.2 0.02 0.08 24
Rsd 0.0s 14ph/11stn Dmin 170km Az.gap 274°
Corr. -0.977 7M/7stn Msd 0.1 1↑

89/6355
**NOV 15 1854 25.6s 40.21S 173.81E 211km M=3.5**
0.4 0.03 0.05 5
Rsd 0.2s 15ph/11stn Dmin 119km Az.gap 229°
Corr. -0.535 6M/6stn Msd 0.1 1↑

89/6367
**NOV 16 1922 36.5s 36.15S 178.47E 219km M=3.9**
1.1 0.08 0.13 8
Rsd 0.3s 13ph/11stn Dmin 162km Az.gap 333°
Corr. -0.455 6M/6stn Msd 0.3

89/6370
**NOV 17 1249 51.4s 40.46S 173.38E 152km M=3.6**
0.4 0.04 0.02 4
Rsd 0.2s 20ph/15stn Dmin 88km Az.gap 196°
Corr. -0.147 10M/10stn Msd 0.2 2↑ 3↓

89/6394
**NOV 19 1658 40.6s 38.23S 178.15E 88km M=3.8**
0.3 0.01 0.03 3
Rsd 0.1s 10ph/6stn Dmin 47km Az.gap 182°
Corr. -0.477 9M/9stn Msd 0.3 1↓

89/6402
**NOV 20 0837 43.0s 38.19S 176.05E 204km M=3.8**
1.3 0.05 0.06 12
Rsd 0.3s 13ph/10stn Dmin 85km Az.gap 221°
Corr. -0.539 11M/11stn Msd 0.1 1↑

89/6406
**NOV 20 1704 43.9s 38.69S 175.67E 163km M=4.0**
0.4 0.01 0.03 4
Rsd 0.2s 20ph/13stn Dmin 94km Az.gap 144°
Corr. -0.563 13M/12stn Msd 0.2

89/6423
**NOV 22 2121 38.8s 38.28S 179.94E 69km M=5.2**
1.3 0.02 0.11 9
Rsd 0.1s 12ph/11stn Dmin 163km Az.gap 289°
Corr. -0.271 12M/10stn Msd 0.2 2↑ 1↓

89/6424
**NOV 23 1039 11.1s 45.95S 166.96E 98km M=4.0**
0.2 0.00 0.02 3
Rsd 0.1s 16ph/12stn Dmin 138km Az.gap 248°
Corr. -0.046 10M/10stn Msd 0.1 2↑ 5↓

89/6429
**NOV 24 0134 33.8s 40.65S 176.48E 26km M=4.0**
0.3 0.01 0.02 3
Rsd 0.2s 17ph/14stn Dmin 18km Az.gap 251°
Corr. -0.161 16M/14stn Msd 0.3 2↑ 7↓

89/6435
**NOV 24 0753 31.4s 40.07S 173.73E 160km M=3.8**
0.4 0.02 0.02 4
Rsd 0.2s 22ph/17stn Dmin 133km Az.gap 196°
Corr. -0.379 10M/10stn Msd 0.3 2↑ 4↓

89/6437
**NOV 24 0943 17.0s 37.62S 176.33E 253km M=3.7**
0.2 0.04 0.06 5
Rsd 0.0s 11ph/8stn Dmin 187km Az.gap 285°
Corr. -0.973 2M/2stn Msd 0.0

89/6453
**NOV 25 0619 45.6s 36.45S 177.84E 215km M=4.3**
0.6 0.07 0.05 5
Rsd 0.2s 8ph/5stn Dmin 134km Az.gap 309°
Corr. -0.523 12M/12stn Msd 0.2

89/6464
**NOV 26 0904 52.8s 37.80S 177.58E 57km M=3.5**
0.3 0.02 0.02 5
Rsd 0.3s 10ph/7stn Dmin 56km Az.gap 163°
Corr. -0.144 10M/10stn Msd 0.2 1↑

89/6467
**NOV 26 1718 26.0s 38.69S 176.29E 99km M=3.6**
1.0 0.04 0.14 13
Rsd 0.3s 12ph/9stn Dmin 46km Az.gap 273°
Corr. -0.393 10M/10stn Msd 0.2 1↑

89/6470
**NOV 26 2304 39.7s 37.56S 176.42E 219km M=4.5**
1.2 0.05 0.03 10
Rsd 0.2s 12ph/11stn Dmin 69km Az.gap 206°
Corr. -0.430 12M/12stn Msd 0.2 1↑

89/6473
**NOV 27 0144 40.6s 47.73S 164.86E 33km M=3.6**
1.2 0.12 0.21 R
Rsd 0.1s 9ph/8stn Dmin 298km Az.gap 352°
Corr. -0.578 7M/6stn Msd 0.1 1↑

89/64776
**NOV 27 0649 32.4s 39.64S 174.36E 207km M=4.3**
0.3 0.01 0.03 3
Rsd 0.2s 29ph/22stn Dmin 47km Az.gap 111°
Corr. -0.291 10M/10stn Msd 0.2 2↑ 7↓

89/6493
**NOV 28 1737 45.8s 37.63S 177.44E 142km M=3.8**
0.5 0.02 0.02 4
Rsd 0.1s 14ph/12stn Dmin 56km Az.gap 187°
Corr. 0.233 9M/9stn Msd 0.2

89/6496
**NOV 28 2201 34.9s 37.80S 177.19E 219km M=3.7**
0.2 0.05 0.03 6
Rsd 0.0s 12ph/10stn Dmin 323km Az.gap 341°
Corr. -0.754 1M/1stn Msd 0.0

89/6515
**NOV 30 0324 46.2s 38.63S 175.96E 168km M=4.1**
0.5 0.02 0.03 4
Rsd 0.2s 13ph/9stn Dmin 19km Az.gap 106°
Corr. -0.281 12M/12stn Msd 0.3 1↑ 4↓

89/6517
**NOV 30 0656 01.0s 39.24S 174.89E 208km M=4.0**
0.2 0.01 0.02 2
Rsd 0.1s 16ph/14stn Dmin 57km Az.gap 171°
Corr. 0.494 11M/11stn Msd 0.3 4↑ 3↓

89/6519
**NOV 30 0858 37.9s 38.68S 177.98E 30km M=5.0**
0.1 0.01 0.01 1
Rsd 0.1s 19ph/18stn Dmin 5km Az.gap 100°
Corr. -0.863 22M/21stn Msd 0.2 2↑ 5↓
Felt Gisborne area (43,44,45), max MM6 at Gisborne (45).

89/6522
**NOV 30 1036 53.0s 40.23S 174.24E 74km M=4.0**
0.2 0.01 0.02 4
Rsd 0.2s 27ph/21stn Dmin 90km Az.gap 131°
Corr. -0.020 8M/8stn Msd 0.1 1↑

89/6524
**NOV 30 2007 49.2s 39.28S 174.58E 12km M=4.7**
0.3 0.01 0.03 R
Rsd 0.2s 27ph/23stn Dmin 84km Az.gap 147°
Corr. -0.715 22M/20stn Msd 0.3 4↑ 1↓
Felt Taranaki, max MM5 at Uruti (38) and Purangi (48).

89/6530
**DEC 01 0038 36.4s 38.41S 176.04E 190km M=4.0**
0.5 0.02 0.03 5
Rsd 0.2s 17ph/13stn Dmin 79km Az.gap 208°
Corr. -0.754 12M/12stn Msd 0.2 3↑ 2↓

89/6534
**DEC 01 0851 57.3s 37.86S 177.25E 63km M=3.8**
0.2 0.02 0.01 2
Rsd 0.2s 11ph/8stn Dmin 27km Az.gap 163°
Corr. 0.156 11M/11stn Msd 0.1 1↓

89/6540
**DEC 02 0554 43.0s 36.67S 177.20E 12km M=3.7**
0.6 0.04 0.02 R
Rsd 0.2s 7ph/5stn Dmin 96km Az.gap 270°
Corr. 0.273 3M/3stn Msd 0.1

89/6542
**DEC 02 1137 34.3s 36.97S 177.80E 106km M=4.0**
0.4 0.02 0.02 4
Rsd 0.1s 13ph/12stn Dmin 83km Az.gap 265°
Corr. 0.477 8M/8stn Msd 0.2 1↓

89/6547
**DEC 02 2233 16.5s 39.40S 174.75E 160km M=3.7**
0.3 0.01 0.02 3
Rsd 0.1s 21ph/16stn Dmin 58km Az.gap 133°
Corr. 0.084 9M/9stn Msd 0.3 5↑ 2↓

89/6555
**DEC 03 1651 13.8s 37.44S 177.23E 317km M=3.8**
0.2 0.07 0.11 4
Rsd 0.0s 11ph/8stn Dmin 114km Az.gap 272°
Corr. -0.988 5M/5stn Msd 0.2

89/6556
**DEC 03 1654 53.8s 42.12S 172.98E 44km M=4.5**
0.1 0.01 0.01 2
Rsd 0.1s 26ph/17stn Dmin 40km Az.gap 99°
Corr. -0.369 10M/9stn Msd 0.2 3↑ 5↓

89/6563
**DEC 04 0931 22.4s 36.87S 177.60E 107km M=3.7**
1.2 0.10 0.07 12
Rsd 0.3s 7ph/4stn Dmin 102km Az.gap 299°
Corr. -0.003 3M/3stn Msd 0.1

89/6564
**DEC 04 0941 16.9s 38.01S 177.71E 66km M=4.7**
0.2 0.01 0.01 3
Rsd 0.1s 22ph/18stn Dmin 48km Az.gap 134°
Corr. 0.301 15M/13stn Msd 0.1 7↑ 5↓

89/6567
**DEC 04 1058 25.7s 38.43S 176.17E 5km M=3.5**
0.1 0.01 0.01 R
Rsd 0.3s 17ph/16stn Dmin 9km Az.gap 94°
Corr. 0.117 9M/9stn Msd 0.5 1↑ 2↓
Felt Waikite Valley (33) MM4.

89/6584
**DEC 05 0122 07.8s 40.24S 173.60E 186km M=4.4**
0.3 0.02 0.02 3
Rsd 0.2s 32ph/22stn Dmin 116km Az.gap 164°
Corr. -0.258 11M/9stn Msd 0.2 5↑ 1↓

89/6587
**DEC 05 0644 54.5s 39.78S 174.40E 114km M=3.5**
0.3 0.01 0.02 3
Rsd 0.2s 28ph/21stn Dmin 62km Az.gap 111°
Corr. -0.254 10M/10stn Msd 0.1 6↑ 2↓

89/6589
**DEC 05 0825 34.3s 38.63S 175.93E 154km M=4.0**
0.6 0.02 0.03 6
Rsd 0.3s 16ph/12stn Dmin 53km Az.gap 121°
Corr. -0.479 11M/11stn Msd 0.3 3↑ 1↓

89/6600
**DEC 06 0404 33.6s 41.36S 173.47E 76km M=3.7**
0.3 0.01 0.01 3
Rsd 0.2s 28ph/15stn Dmin 65km Az.gap 130°
Corr. -0.418 11M/9stn Msd 0.3 1↑ 5↓

89/6602
**DEC 06 0814 09.1s 37.63S 176.62E 230km M=3.5**
0.2 0.02 0.02 2
Rsd 0.1s 13ph/8stn Dmin 50km Az.gap 247°
Corr. -0.559 8M/8stn Msd 0.2 1↑

89/6604
**DEC 06 1121 25.5s 37.49S 178.14E 265km M=3.8**
0.2 0.05 0.10 3
Rsd 0.0s 12ph/8stn Dmin 19km Az.gap 273°
Corr. -0.980 5M/5stn Msd 0.2

89/6607
**DEC 06 1931 16.3s 38.12S 176.25E 5km M=2.4**
0.1 0.01 0.01 R
Rsd 0.1s 7ph/4stn Dmin 8km Az.gap 181°
Corr. 0.535 2M/2stn Msd 0.4 1↑
Felt Rotorua (33) MM5.

89/6610
**DEC 07 0025 22.7s 41.24S 172.64E 204km M=3.7**
0.4 0.07 0.08 7
Rsd 0.1s 18ph/12stn Dmin 137km Az.gap 245°
Corr. -0.965 10M/10stn Msd 0.2 7↑ 1↓

89/6621
**DEC 07 1005 52.3s 44.77S 166.66E 12km M=4.0**
0.3 0.03 0.03 R
Rsd 0.1s 15ph/11stn Dmin 100km Az.gap 328°
Corr. -0.594 9M/9stn Msd 0.1

89/6633
**DEC 07 2146 50.9s 45.57S 165.81E 33km M=3.5**
0.5 0.04 0.05 R
Rsd 0.2s 15ph/11stn Dmin 194km Az.gap 338°
Corr. -0.049 9M/9stn Msd 0.1

89/6645
**DEC 08 1848 19.0s 44.77S 167.76E 85km M=3.5**
0.3 0.02 0.03 2
Rsd 0.1s 18ph/12stn Dmin 17km Az.gap 295°
Corr. 0.479 10M/10stn Msd 0.1 1↑

89/6654
**DEC 09 0651 07.7s 38.73S 177.99E 33km M=3.7**
0.4 0.03 0.04 R
Rsd 0.2s 11ph/9stn Dmin 10km Az.gap 196°
Corr. -0.820 14M/14stn Msd 0.5 2↑ 1↓
Felt Ormond (44) MM3.

89/6659
**DEC 09 1615 25.5s 41.46S 173.69E 73km M=4.1**
0.2 0.01 0.01 3
Rsd 0.2s 25ph/18stn Dmin 55km Az.gap 72°
Corr. -0.124 11M/9stn Msd 0.2 2↑ 10↓
Felt Fighting Bay (78) MM4.

89/6660
**DEC 09 1907 24.0s 36.83S 178.91W 145km M=4.0**
1.5 0.20 0.24 34
Rsd 0.4s 7ph/4stn Dmin 262km Az.gap 337°
Corr. -0.660 3M/3stn Msd 0.4

89/6663
**DEC 09 2219 58.8s 39.01S 175.30E 232km M=3.6**
0.3 0.03 0.04 3
Rsd 0.1s 14ph/12stn Dmin 179km Az.gap 325°
Corr. -0.281 7M/7stn Msd 0.2 1↑ 1↓

89/6665
**DEC 10 0033 39.0s 36.95S 177.00E 239km M=4.2**
0.7 0.06 0.04 7
Rsd 0.2s 14ph/11stn Dmin 115km Az.gap 251°
Corr. -0.408 12M/12stn Msd 0.2 1↓

89/6666
**DEC 10 0220 06.3s 38.12S 175.71E 134km M=3.6**
0.5 0.07 0.13 17
Rsd 0.2s 11ph/9stn Dmin 235km Az.gap 243°
Corr. -0.973 7M/7stn Msd 0.4 1↓

89/6667
**DEC 10 0316 37.2s 37.77S 177.50E 67km M=3.6**
0.6 0.04 0.02 7
Rsd 0.2s 6ph/3stn Dmin 51km Az.gap 193°
Corr. 0.025 2M/2stn Msd 0.1

89/6668
**DEC 10 0651 06.1s 35.62S 179.38E 12km M=4.1**
1.0 0.06 0.10 R
Rsd 0.3s 7ph/4stn Dmin 241km Az.gap 327°
Corr. 0.112 9M/9stn Msd 0.1

89/6669
**DEC 10 1033 49.6s 38.79S 175.99E 145km M=3.6**
0.6 0.02 0.03 5
Rsd 0.2s 17ph/12stn Dmin 59km Az.gap 209°
Corr. -0.664 8M/8stn Msd 0.3 1↓

89/6673
**DEC 10 1400 36.4s 37.12S 177.52E 145km M=3.8**
0.3 0.02 0.02 3
Rsd 0.1s 8ph/6stn Dmin 88km Az.gap 244°
Corr. -0.047 10M/10stn Msd 0.1

89/6677
**DEC 10 1744 13.9s 41.50S 173.90E 59km M=4.1**
0.1 0.01 0.01 3
Rsd 0.2s 25ph/17stn Dmin 38km Az.gap 93°
Corr. -0.222 10M/8stn Msd 0.2 4↑ 9↓
Felt Blenheim area (77); Fighting Bay, Picton (78) MM4.

89/6678
**DEC 10 1852 10.6s 37.77S 176.58E 276km M=4.6**
0.4 0.05 0.03 3
Rsd 0.2s 18ph/14stn Dmin 43km Az.gap 178°
Corr. -0.077 13M/13stn Msd 0.2 1↑ 4↓

89/6679
**DEC 10 2020 39.1s 39.14S 175.28E 228km M=3.6**
0.2 0.04 0.05 4
Rsd 0.1s 12ph/8stn Dmin 165km Az.gap 323°
Corr. -0.730 7M/7stn Msd 0.2 1↓

89/6692
**DEC 11 1353 12.6s 39.52S 174.21E 186km M=3.5**
0.3 0.01 0.05 5
Rsd 0.1s 18ph/13stn Dmin 121km Az.gap 229°
Corr. -0.625 9M/9stn Msd 0.3

89/6693
**DEC 11 1423 10.7s 40.92S 175.65E 26km M=4.2**
0.1 0.01 0.01 1
Rsd 0.2s 25ph/21stn Dmin 30km Az.gap 138°
Corr. -0.338 14M/13stn Msd 0.4 3↑ 12↓
Felt Levin, Ohau (65); Wellington (68) MM5.

89/6695
**DEC 11 1549 13.5s 38.66S 175.84E 154km M=4.2**
0.4 0.02 0.03 3
Rsd 0.1s 18ph/12stn Dmin 9km Az.gap 101°
Corr. 0.239 12M/12stn Msd 0.2 3↑ 3↓

89/6699
**DEC 12 0639 40.7s 37.17S 179.08E 10km M=3.9**
1.6 0.05 0.08 11
Rsd 0.2s 7ph/5stn Dmin 84km Az.gap 333°
Corr. 0.001 3M/3stn Msd 0.2

89/6700
**DEC 12 0725 23.6s 37.40S 177.95E 296km M=3.6**
0.4 0.23 0.38 9
Rsd 0.1s 11ph/7stn Dmin 79km Az.gap 304°
Corr. -0.992 5M/5stn Msd 0.3

89/6712
**DEC 13 0540 07.2s 44.99S 167.56E 120km M=3.7**
0.3 0.04 0.03 3
Rsd 0.1s 21ph/12stn Dmin 45km Az.gap 298°
Corr. 0.719 8M/8stn Msd 0.1 1↑

89/6713
**DEC 13 0936 48.6s 45.42S 167.21E 33km M=3.6**
0.2 0.01 0.01 R
Rsd 0.1s 17ph/11stn Dmin 100km Az.gap 312°
Corr. 0.535 10M/10stn Msd 0.2 1↓

89/6723
**DEC 14 0446 01.3s 40.50S 174.38E 80km M=4.0**
0.2 0.01 0.01 4
Rsd 0.2s 32ph/23stn Dmin 60km Az.gap 106°
Corr. -0.231 11M/9stn Msd 0.2 4↑ 5↓

89/6726
**DEC 14 1434 13.1s 39.19S 174.81E 208km M=3.7**
0.3 0.02 0.05 4
Rsd 0.2s 19ph/15stn Dmin 165km Az.gap 189°
Corr. -0.656 12M/12stn Msd 0.2

89/6743
**DEC 16 0653 23.1s 39.06S 175.09E 218km M=4.7**
0.6 0.02 0.04 5
Rsd 0.2s 33ph/26stn Dmin 39km Az.gap 124°
Corr. -0.391 13M/11stn Msd 0.3 5↑ 1↓

89/6750
**DEC 17 0349 54.5s 38.84S 175.10E 217km M=3.5**
0.2 0.01 0.06 2
Rsd 0.1s 13ph/9stn Dmin 55km Az.gap 293°
Corr. -0.488 6M/6stn Msd 0.1

89/6753
**DEC 17 1105 59.9s 37.77S 176.59E 155km M=3.9**
0.5 0.03 0.02 4
Rsd 0.2s 15ph/11stn Dmin 42km Az.gap 198°
Corr. 0.097 12M/12stn Msd 0.2 1↑

89/6757
**DEC 17 1938 46.6s 38.27S 179.00E 33km M=3.7**
0.6 0.02 0.05 R
Rsd 0.3s 11ph/7stn Dmin 69km Az.gap 268°
Corr. -0.271 5M/5stn Msd 0.1 1↑

89/6772
**DEC 18 2043 16.3s 39.69S 174.21E 147km M=3.8**
0.4 0.02 0.04 6
Rsd 0.2s 21ph/16stn Dmin 127km Az.gap 198°
Corr. -0.498 11M/11stn Msd 0.3 4↑ 1↓

89/6776
**DEC 19 0443 41.6s 37.87S 175.69E 139km M=3.8**
0.6 0.08 0.11 20
Rsd 0.2s 17ph/12stn Dmin 227km Az.gap 258°
Corr. -0.938 10M/10stn Msd 0.3 1↓

89/6787
**DEC 19 2254 22.5s 38.97S 175.01E 218km M=3.9**
0.4 0.02 0.07 3
Rsd 0.2s 18ph/14stn Dmin 46km Az.gap 224°
Corr. -0.115 12M/12stn Msd 0.2 1↑ 1↓

89/6793
**DEC 20 0549 03.1s 34.46S 178.08E 233km M=4.3**
0.2 0.04 0.09 9
Rsd 0.1s 8ph/4stn Dmin 348km Az.gap 330°
Corr. -0.918 11M/11stn Msd 0.3

89/6796
**DEC 20 0931 47.3s 40.85S 174.75E 48km M=3.6**
0.1 0.01 0.01 3
Rsd 0.2s 24ph/18stn Dmin 14km Az.gap 82°
Corr. -0.138 7M/5stn Msd 0.3 6↑ 4↓
Felt Tawa (68) MM4.

89/6805
**DEC 21 0912 12.8s 41.40S 172.76E 103km M=3.8**
0.3 0.01 0.02 2
Rsd 0.2s 27ph/17stn Dmin 35km Az.gap 140°
Corr. -0.042 12M/10stn Msd 0.1 2↑ 1↓

89/6812
**DEC 21 1617 35.5s 38.43S 175.86E 272km M=4.3**
0.1 0.01 0.05 1
Rsd 0.0s 21ph/14stn Dmin 69km Az.gap 333°
Corr. -0.578 10M/10stn Msd 0.2 3↑ 3↓

89/6825
**DEC 23 1755 34.4s 38.91S 175.94E 185km M=3.7**
0.3 0.05 0.04 5
Rsd 0.1s 12ph/10stn Dmin 194km Az.gap 339°
Corr. -0.011 1M/1stn Msd 0.0 1↓

89/6841
**DEC 24 1830 37.5s 44.12S 168.75E 12km M=3.7**
0.1 0.01 0.02 R
Rsd 0.0s 11ph/10stn Dmin 103km Az.gap 346°
Corr. 0.299 8M/8stn Msd 0.1 1↑

89/6843
**DEC 25 0015 42.0s 38.87S 176.06E 112km M=3.6**
1.0 0.05 0.05 9
Rsd 0.3s 18ph/14stn Dmin 47km Az.gap 174°
Corr. -0.867 10M/10stn Msd 0.3 1↑ 1↓

89/6848
**DEC 25 1005 50.3s 38.66S 175.41E 281km M=3.6**
0.2 0.05 0.04 4
Rsd 0.1s 15ph/10stn Dmin 218km Az.gap 338°
Corr. -0.652 7M/7stn Msd 0.1

89/6853
**DEC 25 1622 06.1s 41.52S 177.19E 33km M=4.2**
7.5 0.17 0.75 R
Rsd 0.1s 12ph/12stn Dmin 144km Az.gap 221°
Corr. -0.949 11M/11stn Msd 0.2 1↑

89/6855
**DEC 25 1700 21.9s 38.04S 176.41E 161km M=4.0**
0.3 0.03 0.04 5
Rsd 0.1s 16ph/13stn Dmin 51km Az.gap 219°
Corr. -0.773 12M/12stn Msd 0.4 1↓

89/6864
**DEC 26 0528 57.6s 36.08S 179.06E 242km M=4.0**
0.9 0.07 0.15 6
Rsd 0.3s 9ph/7stn Dmin 182km Az.gap 338°
Corr. -0.318 4M/4stn Msd 0.2

89/6869
**DEC 26 2154 55.2s 38.29S 176.09E 157km M=4.1**
0.5 0.03 0.03 4
Rsd 0.2s 15ph/12stn Dmin 48km Az.gap 109°
Corr. -0.451 12M/12stn Msd 0.3 1↓

89/6870
**DEC 26 2315 56.6s 37.96S 176.06E 192km M=4.1**
0.7 0.09 0.04 5
Rsd 0.3s 8ph/6stn Dmin 44km Az.gap 151°
Corr. 0.377 11M/11stn Msd 0.2

89/6871
**DEC 26 2321 57.7s 38.57S 175.91E 214km M=3.6**
0.3 0.07 0.06 7
Rsd 0.1s 9ph/7stn Dmin 231km Az.gap 342°
Corr. 0.234 3M/3stn Msd 0.4

89/6877
**DEC 27 1455 55.1s 38.64S 175.64E 103km M=3.6**
0.6 0.09 0.12 26
Rsd 0.4s 13ph/10stn Dmin 221km Az.gap 234°
Corr. -0.918 6M/6stn Msd 0.3 1↓

89/6880
**DEC 27 2256 56.7s 38.90S 175.68E 223km M=5.3**
0.5 0.02 0.05 4
Rsd 0.2s 26ph/20stn Dmin 9km Az.gap 129°
Corr. -0.598 8M/7stn Msd 0.4 10↑ 7↓

89/6881
**DEC 28 0430 21.7s 38.57S 178.08E 33km M=3.6**
0.3 0.02 0.03 R
Rsd 0.3s 7ph/5stn Dmin 10km Az.gap 194°
Corr. -0.475 3M/3stn Msd 0.1

89/6884
**DEC 28 1806 09.8s 37.35S 175.82E 89km M=3.8**
0.7 0.11 0.24 92
Rsd 0.2s 15ph/12stn Dmin 230km Az.gap 274°
Corr. -0.922 10M/10stn Msd 0.2

89/6885
**DEC 28 1857 57.3s 38.08S 175.94E 156km M=3.6**
1.7 0.08 0.18 40
Rsd 0.3s 12ph/10stn Dmin 204km Az.gap 248°
Corr. -0.719 7M/7stn Msd 0.3

89/6888
**DEC 29 0341 00.6s 40.44S 174.14E 102km M=3.8**
0.2 0.01 0.02 3
Rsd 0.2s 21ph/14stn Dmin 81km Az.gap 181°
Corr. 0.040 11M/10stn Msd 0.2 6↑ 2↓

89/6889
**DEC 29 0629 29.6s 38.51S 175.88E 175km M=4.4**
1.0 0.04 0.05 8
Rsd 0.2s 17ph/13stn Dmin 25km Az.gap 127°
Corr. -0.648 13M/13stn Msd 0.3 6↑ 2↓

89/6913
**DEC 30 1052 56.7s 38.48S 175.95E 181km M=4.1**
0.7 0.03 0.03 6
Rsd 0.1s 16ph/14stn Dmin 26km Az.gap 207°
Corr. -0.789 13M/13stn Msd 0.3 7↑ 4↓

89/6915
**DEC 30 1500 17.6s 37.70S 177.40E 104km M=3.6**
0.2 0.01 0.02 3
Rsd 0.1s 17ph/14stn Dmin 48km Az.gap 211°
Corr. -0.523 11M/11stn Msd 0.2 1↑

89/6918
**DEC 30 1855 00.2s 36.32S 177.13E 100km M=3.6**
1.1 0.07 0.06 R
Rsd 0.3s 9ph/7stn Dmin 176km Az.gap 304°
Corr. 0.103 6M/6stn Msd 0.1

89/6924
**DEC 31 0554 37.8s 38.05S 176.33E 171km M=4.7**
0.7 0.04 0.02 6
Rsd 0.3s 21ph/17stn Dmin 19km Az.gap 146°
Corr. -0.412 16M/14stn Msd 0.4 8↑ 3↓

# LISTS OF ORIGINS AND MAGNITUDE DETERMINATIONS

## HIGHER MAGNITUDE EARTHQUAKES

A chronological list of 1989 New Zealand earthquakes of $M_L \geq 5.0$ follows. A reference number at the beginning of each entry identifies the origin with the instrumental data summary, and also with the listing of non-instrumental data (if there is any) that appears in a later section.

The letter "R" following a depth indicates that the depth was restricted to some likely value because the data did not provide sufficient constraint for the depth to be determined by calculation. Choice of the depth of restriction is usually made on the basis of the crustal phases observed or the predominant depth of shallow earthquakes in the epicentral area. (For sub-crustal earthquakes, depth restriction is seldom necessary.)

The letter "G" after a depth shows that the depth was restricted on the basis of information that could not be used by the location program, such as macroseismic information, overseas PKP observations etc.

The letter "F" following a magnitude indicates that at least one report of the earthquake being felt has been received by the Observatory.

In the following table, Rsd is as defined on page 31 and NP phases from NS recording stations have been used to determine the origins.

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 772 | FEB 04 | 0432 24.6 | 37.28S | 176.75E | 263 | 5.0 | 0.2 | 27 | 26 |
| 824 | FEB 06 | 1748 9.9 | 35.20S | 179.25E | 261 | 5.2 | 0.1 | 20 | 18 |
| 1530 | MAR 11 | 0521 35.2 | 40.14S | 173.64E | 151 | 5.1F | 0.2 | 33 | 25 |
| 1953 | APR 01 | 1206 48.4 | 37.80S | 176.32E | 191 | 5.2 | 0.2 | 31 | 27 |
| 2278 | APR 17 | 1305 16.0 | 37.87S | 175.86E | 296 | 6.1F | 0.3 | 34 | 30 |
| 2424 | APR 23 | 0645 54.1 | 37.52S | 176.56E | 295 | 5.4 | 0.2 | 39 | 32 |
| 3120 | MAY 25 | 1301 35.5 | 36.66S | 177.22E | 259 | 6.6F | 0.2 | 28 | 25 |
| 3221 | MAY 31 | 0554 23.1 | 45.33S | 166.87E | 23R | 6.1F | 0.1 | 10 | 9 |
| 3793 | JUN 25 | 1950 7.1 | 37.54S | 176.26E | 305 | 5.1 | 0.2 | 20 | 17 |
| 4043 | JUL 07 | 0340 41.1 | 37.12S | 176.62E | 357 | 5.6F | 0.2 | 28 | 25 |
| 4622 | AUG 08 | 0759 6.8 | 40.10S | 174.41E | 122 | 6.0F | 0.2 | 34 | 31 |
| 5112 | SEP 03 | 2052 18.7 | 37.77S | 177.58E | 49 | 5.2F | 0.2 | 26 | 26 |
| 5426 | SEP 21 | 1750 43.9 | 40.22S | 176.75E | 62 | 5.0F | 0.2 | 39 | 35 |
| 5703 | OCT 06 | 1010 31.8 | 37.04S | 177.55E | 145 | 5.0 | 0.1 | 21 | 16 |
| 5743 | OCT 08 | 2224 34.9 | 47.74S | 165.77E | 72 | 5.0 | 0.2 | 17 | 14 |
| 5937 | OCT 21 | 1416 24.9 | 37.89S | 175.99E | 300 | 5.3 | 0.3 | 29 | 25 |
| 6032 | OCT 27 | 0835 25.3 | 37.50S | 176.83E | 222 | 5.1F | 0.2 | 26 | 21 |
| 6423 | NOV 22 | 2121 38.8 | 38.28S | 179.94E | 69 | 5.2 | 0.1 | 12 | 11 |
| 6519 | NOV 30 | 0858 37.9 | 38.68S | 177.98E | 30 | 5.0F | 0.1 | 19 | 18 |
| 6880 | DEC 27 | 2256 56.7 | 38.90S | 175.68E | 223 | 5.3 | 0.2 | 26 | 20 |

# WELLINGTON AREA SEISMICITY

Because of its close station spacing and the relative ease with which stations can be reached when repairs or adjustments are necessary, the Wellington Network can be relied on to furnish enough data for determination of earthquake origins in its neighbourhood from smaller events than those needed to achieve the same accuracy in other parts of the country. The following list includes all earthquakes of magnitude ($M_L$) 2.0 or more in the area surrounding Wellington, and includes the earthquakes of magnitude 3.5 or more within the area , which were listed on earlier pages.

The location of earthquakes in the neighbourhood of Wellington is no longer performed separately from the location of regional earthquakes as was done in the past. The old practice sometimes resulted in earthquakes having two listed origins, one arrived at from use of National Network data and a regional velocity model, and the other from Wellington Network data and a local model. In current practice the local model is merged into the regional model. A map of these epicentres and a cross-section showing their distribution in depth appears in the final section of this Report.

In the following table, Rsd is as defined on page 31 and NP phases from NS recording stations have been used to determine the origins.

The regional velocity model and its boundaries are listed in the table on page 26.

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 005 | JAN 01 | 0802 24.9 | 40.66S | 175.29E | 49 | 2.3 | 0.2 | 8 | 8 |
| 011 | JAN 01 | 2040 18.6 | 40.79S | 174.74E | 15 | 3.0 | 0.2 | 19 | 11 |
| 013 | JAN 02 | 0120 0.1 | 41.58S | 174.65E | 32 | 2.0 | 0.1 | 14 | 8 |
| 019 | JAN 02 | 0726 58.7 | 41.52S | 173.64E | 63 | 2.4 | 0.1 | 9 | 6 |
| 027 | JAN 02 | 1251 16.3 | 40.88S | 174.42E | 73 | 2.2 | 0.0 | 7 | 5 |
| 028 | JAN 02 | 1327 54.5 | 41.04S | 174.73E | 58 | 2.7 | 0.1 | 17 | 11 |
| 033 | JAN 02 | 1710 35.4 | 40.70S | 173.72E | 135 | 2.5 | 0.0 | 10 | 8 |
| 053 | JAN 03 | 1627 58.6 | 41.82S | 174.24E | 18 | 2.0 | 0.3 | 13 | 9 |
| 059 | JAN 03 | 2336 1.5 | 41.26S | 175.00E | 30 | 2.0 | 0.0 | 12 | 8 |
| 086 | JAN 04 | 2026 7.9 | 40.88S | 174.92E | 57 | 2.4 | 0.0 | 8 | 6 |
| 106 | JAN 05 | 1438 38.5 | 40.99S | 174.68E | 63 | 2.8 | 0.1 | 20 | 11 |
| 111 | JAN 05 | 1750 22.2 | 40.59S | 175.66E | 27 | 2.0 | 0.2 | 9 | 7 |
| 118 | JAN 05 | 2312 24.6 | 41.52S | 174.44E | 31 | 2.0 | 0.2 | 11 | 8 |
| 121 | JAN 06 | 0407 46.4 | 40.58S | 175.04E | 8 | 2.0 | 0.3 | 9 | 7 |
| 124 | JAN 06 | 0609 41.1 | 41.01S | 174.54E | 37 | 2.2 | 0.1 | 10 | 7 |
| 129 | JAN 06 | 0749 50.9 | 41.76S | 173.60E | 45 | 2.2 | 0.2 | 10 | 7 |
| 154 | JAN 07 | 1015 58.8 | 41.34S | 174.05E | 41 | 2.8 | 0.2 | 16 | 12 |
| 160 | JAN 07 | 1447 51.2 | 41.28S | 175.15E | 23 | 2.3 | 0.2 | 17 | 11 |
| 167 | JAN 08 | 0007 40.7 | 40.89S | 174.14E | 80 | 2.3 | 0.0 | 7 | 5 |
| 182 | JAN 09 | 0127 22.2 | 41.16S | 175.67E | 21 | 2.1 | 0.1 | 13 | 9 |
| 184 | JAN 09 | 0323 29.3 | 40.66S | 173.74E | 25 | 2.4 | 0.4 | 9 | 6 |
| 193 | JAN 09 | 1320 9.1 | 40.92S | 175.18E | 30 | 2.2 | 0.2 | 8 | 7 |
| 197 | JAN 09 | 1604 17.8 | 40.68S | 174.48E | 41 | 2.5 | 0.3 | 16 | 10 |
| 204 | JAN 10 | 0211 10.6 | 41.45S | 174.63E | 27 | 2.3 | 0.1 | 11 | 9 |
| 213 | JAN 10 | 1221 4.4 | 40.55S | 174.14E | 82 | 2.7 | 0.2 | 14 | 10 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 215 | JAN 10 | 1502 22.1 | 40.80S | 175.24E | 32 | 2.1 | 0.1 | 15 | 10 |
| 218 | JAN 10 | 1633 35.1 | 40.97S | 173.54E | 124 | 2.7 | 0.0 | 7 | 5 |
| 232 | JAN 11 | 1933 29.6 | 40.55S | 174.36E | 120 | 2.4 | 0.2 | 7 | 5 |
| 242 | JAN 12 | 0839 11.3 | 41.97S | 174.35E | 35 | 2.3 | 0.2 | 14 | 10 |
| 244 | JAN 12 | 1040 54.2 | 41.05S | 175.81E | 30 | 2.3 | 0.1 | 15 | 11 |
| 246 | JAN 12 | 1251 1.1 | 40.78S | 174.49E | 78 | 2.5 | 0.1 | 11 | 7 |
| 260 | JAN 13 | 0749 42.1 | 41.73S | 174.46E | 32 | 2.0 | 0.1 | 13 | 9 |
| 263 | JAN 13 | 1128 19.2 | 40.88S | 174.68E | 58 | 2.1 | 0.1 | 8 | 6 |
| 264 | JAN 13 | 1128 53.9 | 41.03S | 174.84E | 28 | 2.0 | 0.1 | 11 | 8 |
| 267 | JAN 13 | 1451 18.6 | 41.23S | 174.47E | 60 | 2.2 | 0.0 | 11 | 6 |
| 271 | JAN 13 | 2118 42.5 | 40.73S | 174.07E | 82 | 2.6 | 0.2 | 12 | 8 |
| 280 | JAN 14 | 0750 16.7 | 40.92S | 174.65E | 93 | 2.3 | 0.3 | 8 | 6 |
| 285 | JAN 14 | 1149 29.9 | 40.86S | 173.89E | 85 | 2.5 | 0.1 | 9 | 6 |
| 291 | JAN 14 | 1724 7.1 | 41.56S | 174.19E | 37 | 3.0 | 0.3 | 21 | 14 |
| 293 | JAN 14 | 1951 3.8 | 40.72S | 175.91E | 24 | 2.0 | 0.2 | 10 | 7 |
| 296 | JAN 14 | 2236 43.8 | 41.37S | 173.76E | 90 | 2.4 | 0.1 | 8 | 5 |
| 301 | JAN 15 | 0659 3.7 | 41.70S | 174.58E | 32 | 2.0 | 0.1 | 12 | 8 |
| 305 | JAN 15 | 0745 29.3 | 41.06S | 175.41E | 29 | 2.0 | 0.1 | 13 | 8 |
| 311 | JAN 15 | 1444 57.7 | 41.22S | 175.50E | 21 | 2.1 | 0.1 | 18 | 11 |
| 318 | JAN 15 | 2236 23.0 | 40.53S | 175.95E | 23 | 2.1 | 0.3 | 9 | 7 |
| 319 | JAN 16 | 0035 6.1 | 40.87S | 174.78E | 61 | 2.3 | 0.1 | 11 | 9 |
| 330 | JAN 16 | 1132 52.3 | 41.13S | 173.82E | 69 | 2.7 | 0.2 | 12 | 9 |
| 337 | JAN 16 | 2007 4.5 | 40.55S | 174.89E | 31 | 2.6 | 0.2 | 19 | 11 |
| 339 | JAN 16 | 2308 16.5 | 40.87S | 173.93E | 55 | 2.4 | 0.3 | 10 | 7 |
| 341 | JAN 17 | 0049 48.3 | 40.79S | 174.45E | 49 | 2.1 | 0.2 | 8 | 5 |
| 349 | JAN 17 | 0651 20.9 | 41.35S | 173.81E | 57 | 2.5 | 0.2 | 12 | 7 |
| 357 | JAN 17 | 1318 44.7 | 40.53S | 175.73E | 28 | 2.2 | 0.2 | 11 | 9 |
| 361 | JAN 17 | 2013 40.4 | 41.45S | 173.88E | 49 | 2.7 | 0.1 | 10 | 6 |
| 369 | JAN 18 | 0822 26.3 | 40.93S | 175.67E | 28 | 3.2 | 0.1 | 16 | 12 |
| 381 | JAN 18 | 1742 22.6 | 41.01S | 173.70E | 70 | 2.2 | 0.1 | 6 | 4 |
| 388 | JAN 18 | 2234 8.1 | 40.75S | 174.52E | 13 | 2.2 | 0.2 | 14 | 10 |
| 392 | JAN 18 | 2351 46.6 | 40.91S | 174.78E | 63 | 2.2 | 0.1 | 11 | 9 |
| 431 | JAN 20 | 1428 26.3 | 41.45S | 175.84E | 42 | 2.3 | 0.1 | 13 | 8 |
| 440 | JAN 20 | 2204 27.8 | 41.70S | 174.32E | 22 | 3.0 | 0.2 | 19 | 13 |
| 444 | JAN 21 | 0415 6.6 | 41.13S | 174.67E | 30 | 2.2 | 0.2 | 16 | 10 |
| 447 | JAN 21 | 0736 60.0 | 41.60S | 174.65E | 32 | 2.3 | 0.2 | 16 | 12 |
| 453 | JAN 21 | 1356 26.4 | 41.03S | 174.44E | 65 | 2.2 | 0.0 | 11 | 8 |
| 454 | JAN 21 | 1538 50.9 | 41.05S | 173.57E | 102 | 2.4 | 0.1 | 9 | 6 |
| 457 | JAN 21 | 1904 47.7 | 41.40S | 173.77E | 86 | 2.5 | 0.1 | 12 | 9 |
| 459 | JAN 21 | 2255 32.9 | 40.92S | 175.16E | 32 | 2.1 | 0.2 | 14 | 11 |
| 460 | JAN 22 | 0020 29.7 | 40.76S | 174.85E | 35 | 2.5 | 0.1 | 17 | 11 |
| 468 | JAN 22 | 1658 4.0 | 41.77S | 174.20E | 14 | 2.4 | 0.2 | 12 | 10 |
| 473 | JAN 22 | 2111 20.1 | 40.73S | 174.47E | 78 | 2.4 | 0.1 | 11 | 8 |
| 482 | JAN 23 | 0650 35.5 | 40.72S | 174.45E | 87 | 2.1 | 0.1 | 7 | 4 |
| 486 | JAN 23 | 0749 52.6 | 40.74S | 174.82E | 35 | 2.1 | 0.1 | 14 | 10 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 495 | JAN 23 | 1610 37.7 | 40.61S | 174.55E | 56 | 3.6 | 0.3 | 23 | 15 |
| 497 | JAN 23 | 1843 49.4 | 40.61S | 173.92E | 106 | 2.5 | 0.1 | 8 | 6 |
| 498 | JAN 23 | 2236 26.9 | 40.84S | 175.79E | 31 | 2.2 | 0.3 | 11 | 7 |
| 513 | JAN 24 | 1444 23.7 | 40.93S | 174.72E | 36 | 3.1 | 0.1 | 21 | 14 |
| 516 | JAN 24 | 1923 8.1 | 40.73S | 174.91E | 10 | 2.0 | 0.2 | 10 | 6 |
| 518 | JAN 25 | 0046 44.6 | 41.29S | 175.29E | 29 | 2.6 | 0.1 | 10 | 8 |
| 520 | JAN 25 | 0123 36.2 | 40.73S | 175.15E | 32 | 2.8 | 0.1 | 14 | 10 |
| 523 | JAN 25 | 0139 49.5 | 40.73S | 175.15E | 32 | 2.2 | 0.1 | 13 | 9 |
| 524 | JAN 25 | 0141 25.3 | 41.09S | 175.47E | 29 | 3.3F | 0.1 | 21 | 13 |
| 558 | JAN 26 | 1353 37.0 | 40.68S | 175.62E | 32 | 2.0 | 0.1 | 9 | 7 |
| 560 | JAN 26 | 1450 38.8 | 40.71S | 173.61E | 166 | 2.8 | 0.1 | 10 | 8 |
| 564 | JAN 26 | 1839 3.7 | 41.09S | 174.14E | 54 | 2.3 | 0.1 | 12 | 7 |
| 565 | JAN 26 | 1941 49.8 | 41.40S | 174.99E | 27 | 2.1 | 0.1 | 15 | 10 |
| 568 | JAN 26 | 2255 13.7 | 41.17S | 175.54E | 23 | 2.7 | 0.2 | 18 | 12 |
| 569 | JAN 26 | 2341 22.3 | 41.62S | 174.65E | 32 | 2.3 | 0.1 | 15 | 11 |
| 575 | JAN 27 | 1316 35.6 | 41.84S | 173.61E | 33R | 2.2 | 0.7 | 11 | 7 |
| 581 | JAN 28 | 0455 2.6 | 41.10S | 175.75E | 30 | 3.2 | 0.1 | 19 | 13 |
| 584 | JAN 28 | 0749 29.5 | 41.51S | 173.65E | 94 | 2.7 | 0.1 | 9 | 8 |
| 589 | JAN 28 | 1433 17.4 | 40.94S | 173.57E | 100R | 2.5 | 0.2 | 5 | 3 |
| 590 | JAN 28 | 1433 22.0 | 41.11S | 173.60E | 106 | 2.5 | 0.1 | 9 | 6 |
| 592 | JAN 28 | 1602 18.9 | 41.09S | 173.64E | 74 | 2.9 | 0.4 | 13 | 10 |
| 593 | JAN 28 | 1609 2.1 | 40.94S | 175.36E | 34 | 2.3 | 0.4 | 11 | 8 |
| 601 | JAN 29 | 0425 4.2 | 40.71S | 174.35E | 228 | 2.6 | 0.1 | 5 | 4 |
| 609 | JAN 29 | 1040 17.3 | 41.73S | 174.48E | 29 | 2.0 | 0.2 | 13 | 9 |
| 626 | JAN 29 | 1841 12.7 | 40.70S | 175.48E | 28 | 2.0 | 0.1 | 13 | 9 |
| 632 | JAN 30 | 0026 55.6 | 40.54S | 175.10E | 32 | 2.7 | 0.3 | 19 | 12 |
| 634 | JAN 30 | 0053 40.6 | 40.92S | 175.69E | 23 | 2.0 | 0.2 | 15 | 11 |
| 635 | JAN 30 | 0150 51.6 | 40.81S | 173.59E | 127 | 2.4 | 0.1 | 9 | 7 |
| 641 | JAN 30 | 0346 28.7 | 40.99S | 174.52E | 62 | 2.6 | 0.0 | 13 | 8 |
| 648 | JAN 30 | 0652 6.9 | 40.66S | 174.67E | 22 | 2.1 | 0.3 | 14 | 8 |
| 650 | JAN 30 | 0711 51.6 | 40.83S | 174.86E | 51 | 2.0 | 0.2 | 9 | 7 |
| 665 | JAN 30 | 2005 33.8 | 40.54S | 174.38E | 74 | 2.6 | 0.1 | 7 | 5 |
| 667 | JAN 30 | 2105 36.3 | 40.65S | 174.67E | 5 | 3.2 | 0.2 | 23 | 17 |
| 674 | JAN 31 | 0501 27.9 | 41.06S | 175.98E | 31 | 2.2 | 0.2 | 13 | 9 |
| 678 | JAN 31 | 0754 42.6 | 41.39S | 174.71E | 60 | 4.9F | 0.1 | 25 | 19 |
| 684 | JAN 31 | 1120 52.9 | 41.77S | 174.32E | 11 | 2.1 | 0.2 | 11 | 9 |
| 691 | JAN 31 | 1651 56.0 | 41.37S | 174.73E | 56 | 2.3 | 0.1 | 13 | 9 |
| 697 | JAN 31 | 2256 29.2 | 40.67S | 174.15E | 98 | 2.4 | 0.1 | 8 | 5 |
| 716 | FEB 01 | 1232 43.0 | 40.87S | 174.94E | 41 | 2.9 | 0.1 | 17 | 11 |
| 722 | FEB 01 | 1620 2.9 | 40.58S | 174.26E | 80 | 3.3 | 0.2 | 22 | 15 |
| 724 | FEB 01 | 1724 54.5 | 41.75S | 173.57E | 57 | 2.9 | 0.3 | 16 | 14 |
| 741 | FEB 02 | 1212 53.6 | 40.97S | 175.60E | 27 | 2.3 | 0.1 | 15 | 11 |
| 743 | FEB 02 | 1240 41.7 | 40.74S | 174.46E | 51 | 2.1 | 0.1 | 9 | 6 |
| 759 | FEB 03 | 1116 54.0 | 40.63S | 174.43E | 58 | 2.5 | 0.2 | 13 | 10 |
| 779 | FEB 04 | 1723 7.9 | 41.37S | 174.92E | 28 | 2.0 | 0.1 | 13 | 9 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 780 | FEB 04 | 1745 5.1 | 40.98S | 175.64E | 26 | 2.2 | 0.1 | 15 | 9 |
| 785 | FEB 05 | 0421 42.7 | 40.80S | 175.08E | 33 | 2.9 | 0.1 | 18 | 12 |
| 787 | FEB 05 | 0545 36.8 | 40.68S | 175.96E | 20 | 2.3 | 0.3 | 8 | 6 |
| 788 | FEB 05 | 0805 54.9 | 41.94S | 173.67E | 32 | 2.1 | 0.2 | 9 | 6 |
| 789 | FEB 05 | 0831 55.0 | 41.08S | 175.53E | 30 | 3.8F | 0.1 | 20 | 13 |
| 790 | FEB 05 | 0838 44.2 | 41.39S | 174.73E | 56 | 2.0 | 0.1 | 10 | 7 |
| 795 | FEB 05 | 1207 28.4 | 41.10S | 174.72E | 32 | 2.1 | 0.1 | 15 | 9 |
| 804 | FEB 05 | 2325 47.3 | 40.82S | 174.19E | 60 | 2.4 | 0.2 | 9 | 6 |
| 810 | FEB 06 | 0531 38.5 | 40.70S | 173.51E | 185 | 2.7 | 0.1 | 8 | 6 |
| 818 | FEB 06 | 1125 14.5 | 40.58S | 174.32E | 63 | 3.1 | 0.3 | 19 | 13 |
| 821 | FEB 06 | 1302 59.8 | 41.93S | 173.52E | 60 | 3.5 | 0.2 | 18 | 14 |
| 832 | FEB 07 | 0410 25.1 | 41.07S | 173.57E | 130 | 2.5 | 0.1 | 9 | 8 |
| 839 | FEB 07 | 1601 8.9 | 40.64S | 174.47E | 61 | 2.2 | 0.3 | 8 | 6 |
| 840 | FEB 07 | 1603 46.2 | 40.89S | 174.98E | 58 | 2.2 | 0.1 | 11 | 7 |
| 843 | FEB 07 | 1830 35.8 | 41.56S | 174.63E | 26 | 2.1 | 0.1 | 8 | 6 |
| 844 | FEB 07 | 2049 35.1 | 41.12S | 174.02E | 63 | 2.3 | 0.1 | 7 | 5 |
| 854 | FEB 08 | 0907 21.5 | 41.22S | 174.11E | 52 | 2.1 | 0.0 | 6 | 4 |
| 855 | FEB 08 | 0924 22.2 | 41.00S | 175.71E | 30 | 2.1 | 0.2 | 11 | 8 |
| 856 | FEB 08 | 0932 5.6 | 41.01S | 175.61E | 28 | 2.7 | 0.1 | 11 | 8 |
| 861 | FEB 08 | 1721 4.8 | 41.08S | 175.52E | 28 | 2.6 | 0.1 | 16 | 10 |
| 865 | FEB 08 | 2050 3.3 | 40.93S | 175.35E | 15 | 2.5 | 0.2 | 16 | 12 |
| 866 | FEB 08 | 2052 41.2 | 41.60S | 174.80E | 31 | 2.1 | 0.1 | 11 | 7 |
| 867 | FEB 08 | 2157 30.8 | 41.39S | 173.66E | 79 | 2.0 | 0.1 | 9 | 6 |
| 871 | FEB 08 | 2359 0.2 | 41.02S | 173.88E | 73 | 3.1 | 0.2 | 15 | 11 |
| 872 | FEB 09 | 0008 2.2 | 40.98S | 173.84E | 66 | 2.6 | 0.1 | 9 | 6 |
| 883 | FEB 09 | 1446 7.6 | 41.68S | 174.30E | 33 | 2.1 | 0.2 | 8 | 6 |
| 886 | FEB 09 | 1928 38.0 | 40.96S | 175.64E | 20 | 2.0 | 0.1 | 10 | 8 |
| 897 | FEB 10 | 0435 4.9 | 40.60S | 174.04E | 82 | 2.3 | 0.2 | 7 | 5 |
| 900 | FEB 10 | 0852 5.7 | 40.62S | 174.67E | 34 | 2.4 | 0.2 | 15 | 9 |
| 907 | FEB 10 | 1620 3.3 | 41.01S | 173.72E | 110 | 2.3 | 0.1 | 8 | 5 |
| 916 | FEB 11 | 0946 17.7 | 40.53S | 175.58E | 34 | 2.5 | 0.2 | 10 | 9 |
| 917 | FEB 11 | 0948 9.5 | 41.15S | 174.66E | 33 | 2.1 | 0.1 | 18 | 11 |
| 918 | FEB 11 | 0954 30.9 | 41.17S | 175.08E | 30 | 2.1 | 0.1 | 17 | 10 |
| 920 | FEB 11 | 1135 15.9 | 41.52S | 175.54E | 30 | 2.5 | 0.1 | 16 | 11 |
| 924 | FEB 11 | 1533 50.5 | 41.18S | 174.89E | 20 | 2.0 | 0.2 | 13 | 9 |
| 927 | FEB 11 | 1631 48.6 | 41.43S | 174.50E | 28 | 2.0 | 0.1 | 10 | 7 |
| 928 | FEB 11 | 2304 48.8 | 41.26S | 174.85E | 32 | 2.1 | 0.1 | 15 | 10 |
| 935 | FEB 12 | 1236 26.9 | 40.54S | 174.56E | 81 | 2.9 | 0.1 | 17 | 12 |
| 938 | FEB 12 | 1403 40.1 | 40.64S | 174.43E | 62 | 2.1 | 0.2 | 10 | 7 |
| 943 | FEB 12 | 1915 27.6 | 41.47S | 173.60E | 131 | 2.1 | 0.1 | 6 | 5 |
| 945 | FEB 12 | 2232 31.2 | 40.77S | 173.94E | 190 | 2.9 | 0.2 | 8 | 5 |
| 950 | FEB 13 | 0247 31.3 | 41.01S | 174.24E | 50 | 2.7 | 0.1 | 15 | 10 |
| 954 | FEB 13 | 0638 20.7 | 41.19S | 174.65E | 64 | 2.1 | 0.3 | 12 | 7 |
| 963 | FEB 13 | 1450 41.5 | 40.74S | 174.12E | 88 | 2.4 | 0.1 | 8 | 6 |
| 965 | FEB 13 | 1636 53.1 | 41.49S | 174.37E | 30 | 2.2 | 0.1 | 13 | 10 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 966 | FEB 13 | 1710 15.1 | 40.72S | 174.26E | 98 | 2.5 | 0.7 | 10 | 5 |
| 972 | FEB 14 | 0253 50.3 | 40.84S | 174.57E | 61 | 2.5 | 0.1 | 11 | 8 |
| 976 | FEB 14 | 0715 1.0 | 40.88S | 175.70E | 31 | 2.2 | 0.2 | 13 | 10 |
| 977 | FEB 14 | 0753 24.5 | 41.08S | 173.65E | 54 | 2.1 | 0.2 | 9 | 6 |
| 981 | FEB 14 | 1141 18.4 | 40.94S | 175.55E | 30 | 2.5 | 0.1 | 18 | 12 |
| 984 | FEB 14 | 1353 23.8 | 41.79S | 174.29E | 12R | 2.4 | 0.3 | 15 | 12 |
| 993 | FEB 15 | 0238 34.5 | 41.26S | 175.32E | 29 | 2.2 | 0.1 | 14 | 10 |
| 997 | FEB 15 | 0610 16.9 | 41.05S | 174.50E | 61 | 2.2 | 0.0 | 7 | 5 |
| 1007 | FEB 15 | 2157 3.1 | 40.76S | 173.88E | 113 | 2.5 | 0.1 | 10 | 7 |
| 1010 | FEB 16 | 0210 38.1 | 41.30S | 175.29E | 28 | 2.0 | 0.1 | 12 | 9 |
| 1012 | FEB 16 | 0606 34.3 | 41.60S | 173.73E | 96 | 2.6 | 0.4 | 11 | 10 |
| 1013 | FEB 16 | 0729 2.9 | 40.56S | 174.14E | 100 | 2.4 | 0.2 | 7 | 5 |
| 1019 | FEB 16 | 1747 25.4 | 40.53S | 174.06E | 76 | 2.3 | 0.0 | 5 | 4 |
| 1023 | FEB 16 | 2127 48.1 | 41.09S | 173.67E | 132 | 2.6 | 0.1 | 7 | 5 |
| 1024 | FEB 16 | 2301 55.5 | 40.77S | 174.87E | 34 | 2.1 | 0.1 | 12 | 8 |
| 1025 | FEB 17 | 0348 13.8 | 40.72S | 174.90E | 10 | 2.8 | 0.3 | 19 | 13 |
| 1038 | FEB 17 | 1413 3.3 | 41.17S | 173.95E | 69 | 2.6 | 0.2 | 13 | 9 |
| 1041 | FEB 17 | 1858 17.6 | 40.57S | 174.81E | 2 | 3.5 | 0.3 | 21 | 18 |
| 1042 | FEB 17 | 1919 59.2 | 40.84S | 173.91E | 70 | 2.3 | 0.3 | 8 | 6 |
| 1045 | FEB 17 | 2122 30.9 | 40.81S | 175.23E | 28 | 2.1 | 0.2 | 13 | 9 |
| 1048 | FEB 18 | 0505 42.8 | 40.92S | 175.48E | 27 | 2.3 | 0.2 | 14 | 10 |
| 1054 | FEB 18 | 0901 49.6 | 40.60S | 174.14E | 86 | 2.5 | 0.1 | 10 | 8 |
| 1060 | FEB 18 | 1241 25.1 | 40.99S | 174.74E | 34 | 2.3 | 0.1 | 15 | 9 |
| 1063 | FEB 18 | 1504 26.7 | 40.95S | 174.41E | 50 | 2.2 | 0.1 | 12 | 7 |
| 1073 | FEB 18 | 2211 35.9 | 40.92S | 175.92E | 39 | 2.0 | 0.3 | 10 | 7 |
| 1077 | FEB 19 | 0609 26.5 | 41.08S | 174.13E | 51 | 2.3 | 0.3 | 8 | 6 |
| 1078 | FEB 19 | 0831 35.2 | 40.54S | 174.44E | 79 | 2.7 | 0.2 | 10 | 8 |
| 1079 | FEB 19 | 0928 44.9 | 41.88S | 174.29E | 47 | 2.1 | 0.2 | 7 | 5 |
| 1080 | FEB 19 | 0933 56.6 | 40.53S | 174.56E | 79 | 2.4 | 0.1 | 12 | 9 |
| 1088 | FEB 19 | 2154 14.5 | 40.81S | 174.79E | 22 | 2.2 | 0.3 | 10 | 6 |
| 1098 | FEB 20 | 1012 25.5 | 41.00S | 175.03E | 42 | 2.5 | 0.1 | 17 | 11 |
| 1101 | FEB 20 | 1258 41.2 | 40.84S | 174.55E | 68 | 2.7 | 0.1 | 17 | 11 |
| 1105 | FEB 20 | 1650 19.0 | 41.72S | 174.53E | 38 | 2.1 | 0.1 | 11 | 8 |
| 1113 | FEB 21 | 0823 54.0 | 40.52S | 174.49E | 82 | 2.4 | 0.1 | 9 | 6 |
| 1117 | FEB 21 | 1633 52.4 | 41.51S | 173.69E | 76 | 2.7 | 0.0 | 7 | 5 |
| 1121 | FEB 22 | 0040 33.4 | 41.69S | 174.55E | 29 | 2.6 | 0.2 | 19 | 12 |
| 1122 | FEB 22 | 0538 3.2 | 41.28S | 174.85E | 27 | 2.0 | 0.1 | 17 | 11 |
| 1123 | FEB 22 | 1059 2.4 | 40.69S | 174.91E | 37 | 2.6 | 0.2 | 15 | 10 |
| 1130 | FEB 22 | 2232 53.9 | 41.24S | 175.22E | 24 | 2.0 | 0.1 | 11 | 9 |
| 1136 | FEB 23 | 0731 39.6 | 40.77S | 174.76E | 15 | 2.9 | 0.2 | 19 | 12 |
| 1143 | FEB 23 | 1643 45.8 | 41.09S | 174.22E | 50 | 3.6 | 0.3 | 21 | 15 |
| 1148 | FEB 23 | 1857 8.2 | 40.90S | 175.94E | 31 | 2.2 | 0.2 | 12 | 9 |
| 1156 | FEB 24 | 0702 27.6 | 40.75S | 174.84E | 34 | 2.1 | 0.1 | 14 | 10 |
| 1170 | FEB 24 | 2016 19.3 | 41.95S | 173.90E | 15 | 2.0 | 0.2 | 8 | 7 |
| 1172 | FEB 24 | 2215 32.2 | 40.98S | 173.98E | 71 | 2.5 | 0.2 | 9 | 7 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 1174 | FEB 25 | 0057 9.6 | 40.62S | 174.42E | 75 | 2.0 | 0.1 | 9 | 5 |
| 1188 | FEB 25 | 1713 11.3 | 41.46S | 173.83E | 56 | 2.6 | 0.2 | 12 | 9 |
| 1189 | FEB 25 | 1810 3.1 | 40.55S | 174.76E | 32 | 2.4 | 0.2 | 14 | 8 |
| 1198 | FEB 25 | 2222 8.1 | 40.59S | 174.19E | 59 | 2.1 | 0.2 | 8 | 5 |
| 1201 | FEB 26 | 0036 46.8 | 41.85S | 174.19E | 12R | 3.1 | 0.3 | 17 | 13 |
| 1203 | FEB 26 | 0232 35.2 | 41.43S | 175.11E | 27 | 2.1 | 0.1 | 17 | 11 |
| 1209 | FEB 26 | 0639 26.3 | 41.80S | 174.60E | 30 | 4.2F | 0.1 | 21 | 17 |
| 1213 | FEB 26 | 0830 8.6 | 40.96S | 175.54E | 13 | 3.2 | 0.3 | 22 | 15 |
| 1217 | FEB 26 | 1213 23.0 | 41.28S | 173.77E | 74 | 2.2 | 0.1 | 12 | 9 |
| 1219 | FEB 26 | 1656 21.1 | 41.15S | 175.76E | 31 | 2.1 | 0.1 | 17 | 10 |
| 1226 | FEB 26 | 1923 55.1 | 40.72S | 174.14E | 94 | 2.7 | 0.1 | 14 | 10 |
| 1228 | FEB 26 | 2228 11.6 | 41.04S | 174.45E | 62 | 2.7 | 0.1 | 16 | 10 |
| 1235 | FEB 27 | 0209 46.3 | 40.86S | 173.91E | 81 | 3.1 | 0.2 | 18 | 14 |
| 1255 | FEB 28 | 1035 41.4 | 41.22S | 175.22E | 30 | 2.7 | 0.1 | 16 | 10 |
| 1257 | FEB 28 | 1252 58.7 | 41.06S | 174.60E | 58 | 2.3 | 0.0 | 12 | 9 |
| 1259 | FEB 28 | 1427 55.1 | 40.73S | 173.95E | 129 | 2.5 | 0.0 | 8 | 6 |
| 1263 | FEB 28 | 1929 11.8 | 41.06S | 175.40E | 11 | 2.4 | 0.1 | 15 | 11 |
| 1266 | FEB 28 | 2206 37.3 | 41.65S | 173.75E | 72 | 2.3 | 0.0 | 8 | 6 |
| 1295 | MAR 01 | 1700 46.7 | 41.33S | 173.62E | 81 | 3.0 | 0.2 | 19 | 12 |
| 1296 | MAR 01 | 1757 4.0 | 40.94S | 174.61E | 58 | 2.0 | 0.1 | 10 | 8 |
| 1302 | MAR 01 | 1948 13.4 | 41.65S | 174.24E | 9 | 2.1 | 0.3 | 14 | 12 |
| 1303 | MAR 01 | 2127 2.2 | 41.82S | 174.52E | 32 | 2.6 | 0.2 | 16 | 12 |
| 1310 | MAR 02 | 0533 2.6 | 40.92S | 175.58E | 25 | 2.1 | 0.1 | 11 | 9 |
| 1314 | MAR 02 | 1007 57.3 | 41.22S | 174.05E | 54 | 2.1 | 0.1 | 12 | 9 |
| 1321 | MAR 02 | 1808 5.2 | 41.61S | 174.57E | 31 | 2.0 | 0.1 | 10 | 9 |
| 1323 | MAR 02 | 2218 25.5 | 41.65S | 174.24E | 10 | 2.3 | 0.3 | 13 | 11 |
| 1324 | MAR 02 | 2249 1.7 | 40.50S | 174.72E | 73 | 3.5 | 0.2 | 19 | 16 |
| 1326 | MAR 03 | 0328 39.4 | 41.22S | 175.22E | 28 | 2.3 | 0.1 | 12 | 10 |
| 1329 | MAR 03 | 0608 29.9 | 41.95S | 174.07E | 19 | 2.4 | 0.3 | 14 | 11 |
| 1344 | MAR 04 | 0052 20.2 | 41.27S | 173.78E | 87 | 2.0 | 0.0 | 6 | 4 |
| 1349 | MAR 04 | 0316 31.1 | 40.52S | 174.55E | 80 | 2.0 | 0.1 | 8 | 6 |
| 1352 | MAR 04 | 0422 32.6 | 41.70S | 174.48E | 42 | 2.4 | 0.2 | 16 | 12 |
| 1353 | MAR 04 | 0423 4.4 | 40.63S | 175.45E | 31 | 2.3 | 0.2 | 13 | 10 |
| 1358 | MAR 04 | 0638 14.8 | 40.59S | 174.37E | 99 | 2.3 | 0.1 | 8 | 6 |
| 1371 | MAR 04 | 2302 20.4 | 40.63S | 173.54E | 149 | 3.3 | 0.1 | 17 | 11 |
| 1373 | MAR 05 | 0314 24.0 | 41.21S | 174.81E | 34 | 3.1 | 0.1 | 15 | 11 |
| 1376 | MAR 05 | 0549 53.1 | 41.23S | 174.44E | 34 | 2.0 | 0.1 | 7 | 5 |
| 1387 | MAR 05 | 1226 33.5 | 41.26S | 174.84E | 31 | 2.3 | 0.1 | 17 | 11 |
| 1388 | MAR 05 | 1304 25.4 | 41.61S | 174.26E | 11 | 2.2 | 0.3 | 17 | 13 |
| 1392 | MAR 05 | 1700 19.3 | 41.21S | 174.88E | 19 | 2.0 | 0.1 | 11 | 7 |
| 1393 | MAR 05 | 1824 16.1 | 41.42S | 175.47E | 20 | 2.5 | 0.2 | 17 | 11 |
| 1400 | MAR 06 | 0024 51.2 | 41.43S | 175.46E | 18 | 2.0 | 0.1 | 12 | 9 |
| 1408 | MAR 06 | 0631 26.0 | 41.42S | 175.43E | 16 | 2.2 | 0.1 | 13 | 10 |
| 1409 | MAR 06 | 0716 3.4 | 41.24S | 175.14E | 25 | 2.0 | 0.1 | 14 | 10 |
| 1410 | MAR 06 | 0735 18.1 | 41.69S | 173.66E | 45 | 2.4 | 0.2 | 10 | 7 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 1417 | MAR 06 | 1224 49.1 | 41.01S | 174.71E | 58 | 2.6 | 0.1 | 15 | 9 |
| 1421 | MAR 06 | 1600 9.9 | 41.16S | 173.90E | 59 | 2.5 | 0.2 | 15 | 9 |
| 1423 | MAR 06 | 1642 15.4 | 40.88S | 175.23E | 33 | 3.0 | 0.2 | 18 | 12 |
| 1431 | MAR 07 | 0241 8.2 | 41.36S | 173.58E | 92 | 2.5 | 0.1 | 8 | 6 |
| 1432 | MAR 07 | 0309 33.2 | 41.38S | 173.76E | 97 | 2.4 | 0.6 | 9 | 7 |
| 1437 | MAR 07 | 1333 9.2 | 41.77S | 174.51E | 33 | 2.0 | 0.1 | 10 | 6 |
| 1442 | MAR 07 | 1559 27.7 | 41.19S | 173.62E | 98 | 2.3 | 0.1 | 9 | 6 |
| 1444 | MAR 07 | 1821 28.8 | 41.15S | 175.09E | 26 | 2.3 | 0.1 | 18 | 11 |
| 1459 | MAR 08 | 0955 10.7 | 41.36S | 174.29E | 51 | 2.2 | 0.1 | 14 | 10 |
| 1464 | MAR 08 | 1328 52.0 | 41.70S | 174.43E | 57 | 2.5 | 0.1 | 15 | 11 |
| 1484 | MAR 09 | 0957 5.4 | 41.28S | 175.28E | 30 | 2.3 | 0.1 | 17 | 11 |
| 1498 | MAR 09 | 2308 55.3 | 40.63S | 175.20E | 32 | 2.0 | 0.2 | 11 | 8 |
| 1500 | MAR 10 | 0033 32.9 | 40.98S | 175.64E | 28 | 2.4 | 0.1 | 18 | 12 |
| 1501 | MAR 10 | 0149 43.3 | 41.06S | 175.55E | 30 | 2.7 | 0.1 | 17 | 11 |
| 1503 | MAR 10 | 0507 53.5 | 41.38S | 173.91E | 57 | 2.7 | 0.2 | 14 | 12 |
| 1505 | MAR 10 | 0636 8.8 | 40.71S | 173.66E | 140 | 2.9 | 0.1 | 15 | 10 |
| 1506 | MAR 10 | 0647 9.7 | 40.65S | 174.84E | 11 | 2.4 | 0.3 | 12 | 10 |
| 1511 | MAR 10 | 1005 6.5 | 41.63S | 174.41E | 12R | 2.1 | 0.2 | 14 | 10 |
| 1512 | MAR 10 | 1020 50.4 | 41.63S | 174.41E | 12R | 2.2 | 0.2 | 17 | 11 |
| 1517 | MAR 10 | 1620 25.8 | 40.72S | 173.96E | 90 | 2.7 | 0.3 | 8 | 6 |
| 1522 | MAR 10 | 2314 55.0 | 40.50S | 174.48E | 0 | 2.1 | 0.2 | 9 | 7 |
| 1526 | MAR 11 | 0307 56.0 | 41.70S | 174.18E | 12R | 2.0 | 0.3 | 12 | 8 |
| 1538 | MAR 11 | 1154 56.2 | 41.92S | 174.72E | 41 | 2.0 | 0.2 | 7 | 5 |
| 1539 | MAR 11 | 1346 58.3 | 40.71S | 175.93E | 41 | 2.2 | 0.2 | 13 | 9 |
| 1545 | MAR 12 | 0008 58.6 | 40.73S | 174.07E | 75 | 3.1 | 0.2 | 14 | 11 |
| 1546 | MAR 12 | 0118 43.3 | 40.63S | 174.23E | 94 | 2.4 | 0.1 | 13 | 9 |
| 1554 | MAR 12 | 1205 0.5 | 40.67S | 175.57E | 29 | 2.0 | 0.3 | 10 | 8 |
| 1556 | MAR 12 | 1610 25.6 | 41.03S | 175.99E | 30 | 2.5 | 0.2 | 16 | 12 |
| 1569 | MAR 13 | 1141 17.8 | 41.54S | 173.86E | 55 | 2.3 | 0.1 | 9 | 7 |
| 1589 | MAR 14 | 0518 44.6 | 40.99S | 173.78E | 81 | 2.2 | 0.1 | 6 | 5 |
| 1599 | MAR 15 | 0010 8.1 | 41.10S | 174.12E | 49 | 2.7 | 0.2 | 12 | 8 |
| 1607 | MAR 15 | 1949 43.8 | 41.14S | 174.65E | 32 | 3.3 | 0.2 | 14 | 11 |
| 1611 | MAR 16 | 0518 5.4 | 41.40S | 174.56E | 24 | 2.3 | 0.2 | 11 | 9 |
| 1613 | MAR 16 | 1141 11.4 | 40.60S | 174.53E | 53 | 2.0 | 0.1 | 7 | 5 |
| 1622 | MAR 16 | 2159 40.3 | 40.53S | 174.23E | 33R | 2.6 | 0.2 | 14 | 9 |
| 1623 | MAR 16 | 2230 38.6 | 40.72S | 175.84E | 29 | 2.5 | 0.2 | 14 | 10 |
| 1625 | MAR 17 | 0038 4.7 | 41.55S | 173.56E | 72 | 3.1 | 0.2 | 18 | 14 |
| 1633 | MAR 17 | 1419 3.1 | 41.06S | 174.22E | 44 | 2.5 | 0.1 | 13 | 9 |
| 1639 | MAR 17 | 1753 4.3 | 40.51S | 173.61E | 138 | 3.9 | 0.2 | 27 | 19 |
| 1644 | MAR 18 | 0135 22.5 | 41.35S | 174.88E | 44 | 2.0 | 0.1 | 14 | 9 |
| 1647 | MAR 18 | 0234 33.0 | 41.06S | 174.59E | 57 | 2.9 | 0.0 | 17 | 11 |
| 1649 | MAR 18 | 0448 30.9 | 41.62S | 174.41E | 10 | 2.4 | 0.2 | 16 | 12 |
| 1652 | MAR 18 | 0733 56.0 | 40.50S | 174.12E | 90 | 3.1 | 0.2 | 21 | 14 |
| 1658 | MAR 18 | 1549 32.8 | 41.09S | 173.66E | 68 | 2.2 | 0.0 | 6 | 3 |
| 1663 | MAR 18 | 1834 25.8 | 40.87S | 174.95E | 53 | 3.0 | 0.1 | 16 | 11 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 1665 | MAR 18 | 2146 46.3 | 41.18S | 174.57E | 32 | 2.1 | 0.1 | 13 | 9 |
| 1667 | MAR 18 | 2345 1.6 | 40.97S | 175.62E | 28 | 2.0 | 0.1 | 14 | 10 |
| 1671 | MAR 19 | 0448 7.5 | 41.61S | 173.55E | 76 | 2.4 | 0.2 | 11 | 9 |
| 1673 | MAR 19 | 0622 30.0 | 40.89S | 175.14E | 27 | 2.2 | 0.2 | 12 | 8 |
| 1683 | MAR 19 | 1634 4.3 | 41.09S | 174.65E | 31 | 2.0 | 0.1 | 7 | 5 |
| 1684 | MAR 19 | 1918 49.7 | 40.63S | 175.34E | 32 | 2.8 | 0.2 | 14 | 10 |
| 1690 | MAR 20 | 0213 6.6 | 40.87S | 174.35E | 47 | 2.4 | 0.1 | 9 | 6 |
| 1691 | MAR 20 | 0547 46.2 | 41.36S | 175.01E | 27 | 2.7 | 0.1 | 14 | 10 |
| 1694 | MAR 20 | 0949 49.0 | 40.67S | 174.51E | 2R | 2.3 | 0.1 | 11 | 7 |
| 1697 | MAR 20 | 1116 23.7 | 40.54S | 175.63E | 29 | 2.0 | 0.1 | 6 | 4 |
| 1716 | MAR 21 | 0746 34.1 | 41.63S | 173.89E | 15 | 2.0 | 0.1 | 10 | 7 |
| 1729 | MAR 21 | 1826 10.3 | 41.34S | 174.14E | 71 | 2.2 | 0.0 | 8 | 6 |
| 1730 | MAR 21 | 1828 52.5 | 40.66S | 174.21E | 88 | 2.1 | 0.1 | 8 | 6 |
| 1732 | MAR 21 | 2306 27.4 | 40.62S | 174.25E | 79 | 2.7 | 0.1 | 14 | 10 |
| 1736 | MAR 22 | 0224 39.6 | 41.67S | 173.88E | 12 | 2.0 | 0.2 | 12 | 8 |
| 1737 | MAR 22 | 0241 35.2 | 41.33S | 175.09E | 36 | 2.9 | 0.0 | 16 | 10 |
| 1745 | MAR 22 | 1048 19.4 | 41.35S | 174.50E | 55 | 2.2 | 0.1 | 13 | 9 |
| 1750 | MAR 22 | 1534 48.0 | 41.06S | 173.94E | 88 | 2.0 | 0.3 | 8 | 6 |
| 1757 | MAR 22 | 2216 51.7 | 40.57S | 173.81E | 136 | 3.2 | 0.1 | 14 | 10 |
| 1762 | MAR 23 | 0128 45.7 | 41.76S | 173.75E | 57 | 2.4 | 0.3 | 6 | 4 |
| 1766 | MAR 23 | 1041 58.6 | 41.32S | 175.15E | 28 | 2.2 | 0.1 | 16 | 10 |
| 1770 | MAR 23 | 2100 32.1 | 40.66S | 174.49E | 42 | 2.3 | 0.1 | 8 | 5 |
| 1772 | MAR 24 | 0411 57.1 | 41.42S | 174.84E | 20 | 2.7 | 0.1 | 13 | 9 |
| 1774 | MAR 24 | 0547 53.9 | 41.11S | 174.91E | 50 | 2.5 | 0.1 | 12 | 8 |
| 1777 | MAR 24 | 0714 36.8 | 41.22S | 174.65E | 34 | 2.2 | 0.0 | 12 | 8 |
| 1779 | MAR 24 | 1018 20.8 | 41.75S | 173.73E | 42 | 2.1 | 0.2 | 9 | 7 |
| 1786 | MAR 24 | 1551 5.1 | 40.74S | 175.04E | 30 | 2.5 | 0.2 | 17 | 11 |
| 1790 | MAR 24 | 2006 31.8 | 41.26S | 174.44E | 57 | 2.1 | 0.0 | 6 | 5 |
| 1791 | MAR 24 | 2023 37.9 | 40.93S | 174.70E | 64 | 2.5 | 0.0 | 10 | 8 |
| 1796 | MAR 25 | 0355 37.2 | 40.74S | 174.34E | 56 | 2.2 | 0.1 | 9 | 6 |
| 1797 | MAR 25 | 0532 3.0 | 41.44S | 173.55E | 75 | 4.5F | 0.2 | 23 | 18 |
| 1799 | MAR 25 | 0657 58.4 | 41.63S | 173.70E | 68 | 2.2 | 0.2 | 6 | 5 |
| 1808 | MAR 25 | 1707 41.7 | 40.98S | 175.58E | 27 | 2.0 | 0.1 | 13 | 10 |
| 1811 | MAR 25 | 1800 45.6 | 40.93S | 174.82E | 52 | 2.1 | 0.1 | 7 | 5 |
| 1817 | MAR 25 | 2327 51.3 | 41.14S | 174.14E | 54 | 3.1 | 0.2 | 19 | 12 |
| 1818 | MAR 26 | 0122 20.5 | 41.12S | 175.77E | 29 | 2.4 | 0.1 | 15 | 9 |
| 1834 | MAR 26 | 1740 14.3 | 41.70S | 175.83E | 33 | 2.0 | 0.1 | 8 | 7 |
| 1835 | MAR 26 | 1748 59.2 | 40.56S | 174.23E | 57 | 2.5 | 0.2 | 13 | 8 |
| 1840 | MAR 27 | 0231 10.0 | 40.56S | 174.05E | 107 | 2.1 | 0.1 | 7 | 5 |
| 1847 | MAR 27 | 1610 1.2 | 40.50S | 174.39E | 87 | 2.0 | 0.1 | 7 | 5 |
| 1848 | MAR 27 | 1706 10.6 | 40.53S | 174.23E | 5R | 3.0 | 0.4 | 22 | 15 |
| 1850 | MAR 27 | 2315 20.1 | 41.44S | 175.00E | 13 | 2.3 | 0.1 | 18 | 11 |
| 1851 | MAR 28 | 0135 60.0 | 40.74S | 174.47E | 68 | 2.3 | 0.1 | 10 | 6 |
| 1870 | MAR 29 | 1432 31.0 | 40.69S | 173.65E | 151 | 2.8 | 0.1 | 8 | 7 |
| 1879 | MAR 29 | 2135 22.8 | 41.21S | 174.88E | 20 | 2.2 | 0.2 | 14 | 10 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 1886 | MAR 30 | 0534 29.0 | 40.75S | 174.80E | 45 | 2.3 | 0.2 | 12 | 7 |
| 1903 | MAR 31 | 0038 2.0 | 41.14S | 174.34E | 35 | 2.2 | 0.2 | 12 | 9 |
| 1904 | MAR 31 | 0204 44.5 | 40.72S | 174.48E | 73 | 3.3 | 0.1 | 20 | 14 |
| 1911 | MAR 31 | 0328 35.8 | 40.81S | 174.53E | 67 | 2.6 | 0.1 | 11 | 7 |
| 1914 | MAR 31 | 0514 49.8 | 41.75S | 174.52E | 31 | 2.6 | 0.2 | 16 | 12 |
| 1927 | MAR 31 | 1137 20.4 | 41.86S | 173.65E | 64 | 2.6 | 0.1 | 11 | 9 |
| 1941 | MAR 31 | 1912 44.3 | 41.32S | 175.90E | 20 | 2.5 | 0.2 | 12 | 10 |
| 1944 | MAR 31 | 2214 48.1 | 40.64S | 174.83E | 10 | 2.0 | 0.3 | 12 | 8 |
| 1948 | APR 01 | 0227 17.0 | 41.67S | 174.56E | 29 | 2.8 | 0.2 | 16 | 12 |
| 1950 | APR 01 | 0655 24.4 | 41.65S | 174.66E | 31 | 2.2 | 0.1 | 13 | 7 |
| 1951 | APR 01 | 0804 59.0 | 41.77S | 174.25E | 18 | 2.1 | 0.1 | 16 | 10 |
| 1952 | APR 01 | 0909 47.3 | 41.01S | 174.67E | 61 | 2.3 | 0.1 | 15 | 9 |
| 1954 | APR 01 | 1625 14.7 | 41.28S | 175.31E | 30 | 2.8 | 0.1 | 16 | 10 |
| 1959 | APR 01 | 2216 40.6 | 41.10S | 173.99E | 48 | 2.3 | 0.4 | 9 | 7 |
| 1961 | APR 01 | 2318 22.1 | 41.59S | 173.71E | 58 | 2.7 | 0.4 | 13 | 10 |
| 1962 | APR 02 | 0015 17.6 | 40.65S | 174.39E | 77 | 2.3 | 0.1 | 8 | 6 |
| 1964 | APR 02 | 0211 0.7 | 41.09S | 174.72E | 53 | 2.3 | 0.1 | 10 | 7 |
| 1970 | APR 02 | 1555 55.2 | 40.86S | 173.83E | 93 | 2.8 | 0.2 | 17 | 10 |
| 1974 | APR 02 | 1935 33.2 | 40.98S | 174.33E | 53 | 3.0 | 0.2 | 18 | 11 |
| 1975 | APR 02 | 2201 38.5 | 40.51S | 174.37E | 24 | 4.3F | 0.1 | 26 | 22 |
| 1976 | APR 02 | 2344 16.4 | 41.29S | 174.54E | 58 | 2.4 | 0.1 | 13 | 9 |
| 1977 | APR 03 | 0024 15.4 | 40.53S | 174.35E | 30 | 2.4 | 0.2 | 9 | 6 |
| 1978 | APR 03 | 0030 36.4 | 40.56S | 174.35E | 31 | 2.4 | 0.2 | 10 | 6 |
| 1986 | APR 03 | 1148 15.6 | 41.09S | 173.99E | 61 | 2.4 | 0.1 | 10 | 6 |
| 1990 | APR 03 | 1256 45.5 | 41.23S | 173.80E | 66 | 2.1 | 0.1 | 8 | 5 |
| 1993 | APR 03 | 2030 21.7 | 40.53S | 174.36E | 26 | 2.7 | 0.2 | 16 | 11 |
| 1996 | APR 03 | 2219 3.1 | 41.10S | 174.47E | 61 | 3.5 | 0.1 | 22 | 15 |
| 1997 | APR 03 | 2244 4.6 | 41.09S | 174.49E | 58 | 2.4 | 0.0 | 10 | 8 |
| 2003 | APR 04 | 0956 39.9 | 41.83S | 174.13E | 35 | 3.7 | 0.2 | 20 | 16 |
| 2005 | APR 04 | 1023 48.7 | 40.93S | 175.67E | 26 | 2.2 | 0.1 | 11 | 9 |
| 2009 | APR 04 | 1525 44.4 | 40.98S | 174.45E | 50 | 2.0 | 0.1 | 8 | 6 |
| 2021 | APR 05 | 0217 46.2 | 41.01S | 174.47E | 44 | 2.2 | 0.1 | 12 | 8 |
| 2036 | APR 05 | 1707 40.7 | 41.39S | 174.61E | 22 | 3.8F | 0.2 | 27 | 19 |
| 2041 | APR 05 | 2213 55.3 | 41.48S | 174.17E | 34 | 2.8 | 0.2 | 16 | 11 |
| 2042 | APR 06 | 0017 38.6 | 41.36S | 174.60E | 21 | 2.0 | 0.2 | 13 | 9 |
| 2060 | APR 06 | 1530 22.3 | 41.35S | 173.60E | 99 | 2.6 | 0.0 | 9 | 6 |
| 2066 | APR 06 | 1939 11.8 | 41.30S | 175.04E | 27 | 2.0 | 0.1 | 13 | 9 |
| 2067 | APR 06 | 1955 19.1 | 40.82S | 173.91E | 89 | 2.2 | 0.2 | 8 | 6 |
| 2070 | APR 06 | 2301 57.8 | 40.62S | 174.35E | 42 | 2.3 | 0.2 | 11 | 7 |
| 2071 | APR 06 | 2341 28.2 | 41.55S | 173.69E | 66 | 2.3 | 0.1 | 7 | 5 |
| 2074 | APR 07 | 0224 35.1 | 41.07S | 174.27E | 71 | 2.4 | 0.0 | 9 | 8 |
| 2076 | APR 07 | 0456 43.7 | 40.78S | 175.89E | 23 | 3.3 | 0.2 | 23 | 18 |
| 2078 | APR 07 | 0540 15.6 | 41.75S | 174.22E | 18 | 2.0 | 0.4 | 9 | 7 |
| 2079 | APR 07 | 0541 9.2 | 41.20S | 173.72E | 97 | 2.8 | 0.2 | 17 | 10 |
| 2085 | APR 07 | 1127 50.8 | 40.65S | 173.68E | 132 | 3.1 | 0.1 | 15 | 9 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 2092 | APR 07 | 1627 37.0 | 40.92S | 173.57E | 93 | 4.2 | 0.2 | 26 | 17 |
| 2096 | APR 08 | 0018 45.4 | 41.79S | 174.47E | 39 | 2.4 | 0.1 | 9 | 7 |
| 2099 | APR 08 | 0138 4.9 | 41.26S | 173.68E | 83 | 2.7 | 0.1 | 10 | 7 |
| 2102 | APR 08 | 0450 24.2 | 41.37S | 174.95E | 27 | 2.0 | 0.1 | 9 | 7 |
| 2104 | APR 08 | 0631 20.8 | 41.09S | 174.49E | 34 | 2.0 | 0.2 | 10 | 8 |
| 2119 | APR 08 | 2048 15.1 | 41.39S | 173.71E | 72 | 3.0 | 0.3 | 18 | 13 |
| 2120 | APR 08 | 2206 42.7 | 41.33S | 173.69E | 53 | 2.5 | 0.2 | 8 | 6 |
| 2122 | APR 08 | 2317 55.4 | 40.97S | 175.61E | 25 | 2.4 | 0.2 | 14 | 10 |
| 2123 | APR 08 | 2358 49.6 | 40.97S | 174.50E | 62 | 3.1 | 0.1 | 17 | 11 |
| 2137 | APR 09 | 1445 3.9 | 41.28S | 174.83E | 27 | 2.0 | 0.1 | 16 | 10 |
| 2144 | APR 09 | 1947 49.3 | 40.90S | 174.38E | 49 | 2.6 | 0.1 | 12 | 9 |
| 2148 | APR 09 | 2110 40.3 | 40.89S | 175.79E | 30 | 2.0 | 0.1 | 10 | 7 |
| 2150 | APR 09 | 2216 22.1 | 41.15S | 175.21E | 13 | 2.0 | 0.1 | 12 | 10 |
| 2153 | APR 10 | 0610 5.2 | 41.15S | 175.21E | 11 | 2.6 | 0.1 | 16 | 12 |
| 2156 | APR 10 | 1145 45.0 | 41.76S | 173.59E | 57 | 3.4 | 0.3 | 21 | 14 |
| 2158 | APR 10 | 1903 31.7 | 41.74S | 174.19E | 11 | 2.7 | 0.3 | 15 | 12 |
| 2173 | APR 11 | 1718 44.3 | 41.38S | 175.96E | 34 | 2.6 | 0.2 | 6 | 5 |
| 2174 | APR 11 | 1730 41.4 | 41.75S | 175.08E | 34 | 2.2 | 0.2 | 6 | 4 |
| 2177 | APR 11 | 2237 37.3 | 41.80S | 173.78E | 88 | 2.7 | 0.4 | 7 | 5 |
| 2181 | APR 12 | 0258 10.9 | 40.52S | 174.45E | 37 | 2.2 | 0.2 | 11 | 6 |
| 2184 | APR 12 | 0540 2.6 | 41.35S | 173.77E | 104 | 2.3 | 0.2 | 7 | 5 |
| 2194 | APR 12 | 2029 14.2 | 41.60S | 174.65E | 34 | 2.3 | 0.1 | 11 | 8 |
| 2211 | APR 13 | 0840 13.8 | 40.82S | 175.06E | 33 | 2.0 | 0.1 | 7 | 6 |
| 2214 | APR 13 | 1407 51.0 | 41.23S | 174.87E | 36 | 2.3 | 0.1 | 15 | 10 |
| 2217 | APR 13 | 1931 22.5 | 41.36S | 174.84E | 30 | 2.1 | 0.1 | 16 | 11 |
| 2220 | APR 14 | 0318 20.1 | 41.49S | 174.44E | 17 | 2.0 | 0.2 | 14 | 9 |
| 2230 | APR 14 | 1428 37.1 | 41.29S | 174.75E | 49 | 2.1 | 0.1 | 12 | 8 |
| 2240 | APR 15 | 0027 36.7 | 41.67S | 175.03E | 28 | 2.0 | 0.1 | 7 | 5 |
| 2242 | APR 15 | 0135 33.7 | 41.01S | 174.48E | 52 | 2.0 | 0.0 | 7 | 5 |
| 2249 | APR 15 | 0928 43.5 | 40.53S | 173.85E | 160R | 2.7 | 0.0 | 10 | 9 |
| 2260 | APR 15 | 1845 11.1 | 41.14S | 174.64E | 32 | 2.0 | 0.0 | 10 | 8 |
| 2264 | APR 16 | 0236 29.2 | 40.84S | 175.11E | 33 | 2.6 | 0.1 | 13 | 9 |
| 2265 | APR 16 | 0236 45.9 | 40.84S | 175.12E | 29 | 2.0 | 0.2 | 7 | 5 |
| 2270 | APR 16 | 1438 23.3 | 41.48S | 173.59E | 21 | 2.0 | 0.1 | 5 | 4 |
| 2281 | APR 17 | 1917 18.4 | 40.78S | 175.11E | 54 | 2.8 | 0.2 | 16 | 10 |
| 2283 | APR 17 | 2131 25.6 | 41.86S | 174.00E | 5R | 2.1F | 0.3 | 10 | 8 |
| 2284 | APR 17 | 2248 32.5 | 41.86S | 174.00E | 5R | 2.2F | 0.3 | 9 | 8 |
| 2292 | APR 18 | 1354 53.2 | 41.65S | 174.27E | 11 | 2.3 | 0.3 | 15 | 11 |
| 2294 | APR 18 | 1458 1.4 | 40.94S | 174.57E | 76 | 2.0 | 0.1 | 7 | 4 |
| 2295 | APR 18 | 1743 31.5 | 41.47S | 174.63E | 53 | 2.8 | 0.1 | 13 | 9 |
| 2322 | APR 19 | 2159 41.6 | 40.90S | 175.12E | 33 | 2.9 | 0.1 | 18 | 12 |
| 2324 | APR 19 | 2300 36.0 | 40.53S | 174.43E | 2 | 2.3 | 0.3 | 12 | 8 |
| 2327 | APR 20 | 0024 14.7 | 40.87S | 174.52E | 54 | 2.2 | 0.1 | 11 | 7 |
| 2328 | APR 20 | 0131 22.7 | 40.53S | 174.42E | 2 | 2.6 | 0.3 | 15 | 11 |
| 2329 | APR 20 | 0153 21.9 | 40.53S | 174.42E | 2 | 2.2 | 0.3 | 10 | 6 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 2330 | APR 20 | 0203 20.8 | 40.73S | 174.35E | 68 | 2.7 | 0.3 | 12 | 8 |
| 2334 | APR 20 | 0423 11.8 | 41.61S | 174.55E | 29 | 2.0 | 0.2 | 10 | 8 |
| 2339 | APR 20 | 0626 55.4 | 41.69S | 174.94E | 30 | 2.3 | 0.1 | 13 | 11 |
| 2343 | APR 20 | 0959 49.8 | 40.63S | 174.19E | 81 | 3.0 | 0.2 | 18 | 13 |
| 2359 | APR 21 | 0520 20.5 | 40.72S | 174.75E | 44 | 3.0 | 0.2 | 15 | 9 |
| 2371 | APR 21 | 1738 11.9 | 41.86S | 174.74E | 34 | 2.3 | 0.1 | 12 | 8 |
| 2373 | APR 21 | 1749 31.8 | 40.70S | 174.98E | 39 | 3.6 | 0.3 | 22 | 16 |
| 2378 | APR 21 | 2310 9.7 | 41.63S | 174.13E | 13 | 2.1 | 0.1 | 9 | 6 |
| 2380 | APR 22 | 0230 9.9 | 41.26S | 175.23E | 29 | 2.7 | 0.2 | 15 | 9 |
| 2387 | APR 22 | 0851 13.5 | 40.90S | 174.95E | 37 | 3.0 | 0.1 | 15 | 9 |
| 2388 | APR 22 | 1003 19.5 | 41.57S | 174.11E | 44 | 2.3 | 0.2 | 12 | 9 |
| 2389 | APR 22 | 1036 57.4 | 41.27S | 175.31E | 29 | 2.0 | 0.2 | 12 | 8 |
| 2391 | APR 22 | 1223 27.9 | 41.26S | 175.24E | 29 | 2.7 | 0.1 | 15 | 9 |
| 2394 | APR 22 | 1554 56.5 | 41.26S | 175.24E | 29 | 2.4 | 0.1 | 15 | 9 |
| 2396 | APR 22 | 1702 32.1 | 41.14S | 175.21E | 11 | 2.3 | 0.2 | 16 | 10 |
| 2399 | APR 22 | 2006 34.9 | 40.51S | 175.83E | 29 | 2.2 | 0.2 | 9 | 7 |
| 2400 | APR 22 | 2049 54.1 | 41.40S | 174.32E | 61 | 2.3 | 0.1 | 12 | 8 |
| 2402 | APR 22 | 2129 15.6 | 41.64S | 174.58E | 33 | 2.8 | 0.1 | 14 | 10 |
| 2409 | APR 23 | 0312 18.5 | 41.06S | 175.88E | 18 | 2.1 | 0.7 | 8 | 5 |
| 2419 | APR 23 | 0420 50.5 | 41.96S | 173.60E | 62 | 3.2 | 0.1 | 14 | 11 |
| 2425 | APR 23 | 0751 55.4 | 41.86S | 174.07E | 12R | 3.7F | 0.3 | 16 | 14 |
| 2426 | APR 23 | 0758 9.9 | 41.87S | 174.05E | 8R | 2.0 | 0.2 | 8 | 7 |
| 2458 | APR 24 | 0036 29.2 | 41.88S | 174.09E | 12R | 4.3F | 0.3 | 18 | 16 |
| 2459 | APR 24 | 0143 0.9 | 41.02S | 174.71E | 45 | 3.1 | 0.2 | 16 | 10 |
| 2461 | APR 24 | 0419 48.6 | 41.22S | 175.49E | 46 | 3.3 | 0.1 | 18 | 12 |
| 2474 | APR 24 | 0948 47.2 | 40.67S | 175.43E | 31 | 2.0 | 0.1 | 13 | 10 |
| 2484 | APR 24 | 1847 17.6 | 40.52S | 175.56E | 47 | 3.4 | 0.2 | 27 | 21 |
| 2491 | APR 24 | 2241 1.9 | 41.79S | 174.24E | 34 | 2.5 | 0.2 | 12 | 8 |
| 2500 | APR 25 | 0811 4.6 | 40.67S | 174.71E | 11 | 2.4 | 0.3 | 16 | 10 |
| 2502 | APR 25 | 0931 55.4 | 41.46S | 174.34E | 56 | 2.2 | 0.1 | 9 | 7 |
| 2503 | APR 25 | 1102 41.9 | 40.70S | 175.34E | 31 | 2.7 | 0.2 | 16 | 10 |
| 2512 | APR 25 | 1657 29.2 | 40.50S | 175.91E | 29 | 2.1 | 0.3 | 9 | 6 |
| 2528 | APR 26 | 0704 23.9 | 40.66S | 174.22E | 80 | 2.2 | 0.1 | 8 | 7 |
| 2534 | APR 26 | 1300 34.1 | 41.15S | 174.65E | 32 | 2.2 | 0.2 | 15 | 9 |
| 2543 | APR 26 | 2104 35.2 | 41.10S | 173.79E | 111 | 3.1 | 0.1 | 16 | 10 |
| 2546 | APR 26 | 2247 14.7 | 41.13S | 174.64E | 33 | 2.1 | 0.1 | 12 | 9 |
| 2552 | APR 27 | 0301 19.4 | 40.87S | 175.95E | 31 | 2.4 | 0.2 | 11 | 7 |
| 2553 | APR 27 | 0342 1.2 | 41.52S | 173.97E | 13 | 2.2 | 0.3 | 10 | 7 |
| 2570 | APR 27 | 1641 13.0 | 41.01S | 174.84E | 55 | 2.7 | 0.1 | 15 | 9 |
| 2572 | APR 27 | 1937 41.9 | 41.59S | 173.94E | 13 | 2.0 | 0.2 | 9 | 7 |
| 2582 | APR 28 | 0635 23.3 | 40.58S | 174.06E | 103 | 2.7 | 0.1 | 13 | 9 |
| 2583 | APR 28 | 0651 46.5 | 41.70S | 173.68E | 9 | 2.1 | 0.2 | 11 | 9 |
| 2584 | APR 28 | 0928 16.1 | 40.55S | 175.92E | 28 | 2.5 | 0.2 | 9 | 7 |
| 2594 | APR 28 | 1302 49.4 | 40.52S | 175.80E | 30 | 2.1 | 0.2 | 11 | 7 |
| 2596 | APR 28 | 1507 55.5 | 41.69S | 174.60E | 31 | 2.4 | 0.2 | 16 | 12 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 2602 | APR 28 | 1648 44.1 | 40.84S | 175.14E | 35 | 2.2 | 0.2 | 15 | 10 |
| 2606 | APR 28 | 2015 47.2 | 40.53S | 175.81E | 29 | 2.0 | 0.1 | 6 | 4 |
| 2610 | APR 28 | 2321 10.7 | 41.28S | 174.52E | 54 | 2.2 | 0.1 | 9 | 7 |
| 2616 | APR 29 | 0107 45.0 | 41.03S | 174.66E | 33 | 2.2 | 0.1 | 15 | 9 |
| 2633 | APR 29 | 1825 53.9 | 41.96S | 174.08E | 20R | 2.8 | 0.4 | 15 | 11 |
| 2635 | APR 29 | 2011 16.3 | 40.52S | 174.74E | 32 | 2.2 | 0.2 | 10 | 7 |
| 2638 | APR 30 | 0432 7.4 | 41.27S | 174.86E | 21 | 2.4 | 0.2 | 14 | 10 |
| 2645 | APR 30 | 1733 17.1 | 40.80S | 175.66E | 25 | 3.0 | 0.1 | 17 | 11 |
| 2649 | APR 30 | 2048 31.3 | 41.41S | 173.56E | 69 | 2.5 | 0.1 | 5 | 3 |
| 2653 | MAY 01 | 0309 39.5 | 40.50S | 173.66E | 175R | 2.7 | 0.1 | 7 | 6 |
| 2656 | MAY 01 | 0521 25.9 | 41.26S | 175.23E | 27 | 2.0 | 0.1 | 13 | 10 |
| 2657 | MAY 01 | 0530 10.6 | 40.81S | 174.49E | 63 | 2.1 | 0.0 | 6 | 4 |
| 2660 | MAY 01 | 0826 41.6 | 41.68S | 173.70E | 41 | 2.6 | 0.3 | 10 | 8 |
| 2661 | MAY 01 | 1349 37.5 | 40.93S | 174.19E | 59 | 3.1 | 0.2 | 15 | 10 |
| 2665 | MAY 01 | 1632 0.5 | 41.32S | 173.99E | 48 | 2.1 | 0.1 | 8 | 5 |
| 2666 | MAY 01 | 1723 39.4 | 41.23S | 174.31E | 39 | 2.7 | 0.2 | 15 | 11 |
| 2668 | MAY 01 | 2140 25.6 | 41.06S | 175.59E | 11 | 2.0 | 0.1 | 14 | 10 |
| 2685 | MAY 02 | 0638 39.9 | 41.68S | 173.57E | 81 | 2.2 | 0.0 | 6 | 5 |
| 2688 | MAY 02 | 0742 8.5 | 40.90S | 174.01E | 58 | 2.0 | 0.3 | 6 | 4 |
| 2689 | MAY 02 | 0856 10.1 | 41.20S | 175.29E | 13 | 2.2 | 0.1 | 12 | 9 |
| 2699 | MAY 02 | 2021 58.6 | 40.53S | 173.90E | 114 | 2.9 | 0.2 | 16 | 12 |
| 2701 | MAY 03 | 0021 6.4 | 40.66S | 175.03E | 37 | 2.6 | 0.2 | 16 | 10 |
| 2707 | MAY 03 | 0318 47.9 | 40.96S | 175.44E | 22 | 2.1 | 0.2 | 14 | 10 |
| 2708 | MAY 03 | 0428 1.9 | 41.32S | 174.31E | 38 | 2.6 | 0.1 | 10 | 6 |
| 2710 | MAY 03 | 1016 17.0 | 41.66S | 174.43E | 47 | 2.0 | 0.2 | 8 | 6 |
| 2713 | MAY 03 | 1327 23.1 | 40.52S | 175.64E | 34 | 2.0 | 0.1 | 7 | 5 |
| 2717 | MAY 03 | 2020 12.7 | 41.71S | 174.37E | 30 | 2.2 | 0.1 | 6 | 4 |
| 2734 | MAY 04 | 0607 57.6 | 41.22S | 175.01E | 23 | 2.0 | 0.1 | 12 | 8 |
| 2747 | MAY 04 | 2357 50.1 | 40.90S | 175.06E | 59 | 3.8F | 0.1 | 26 | 18 |
| 2751 | MAY 05 | 0422 19.8 | 40.87S | 174.73E | 48 | 2.1 | 0.0 | 11 | 9 |
| 2757 | MAY 05 | 1549 8.9 | 41.78S | 174.37E | 29 | 2.2 | 0.2 | 13 | 11 |
| 2765 | MAY 05 | 2148 24.2 | 41.84S | 174.80E | 32 | 2.1 | 0.2 | 15 | 9 |
| 2775 | MAY 06 | 0547 9.6 | 40.96S | 175.09E | 35 | 2.6 | 0.2 | 15 | 10 |
| 2777 | MAY 06 | 0550 4.2 | 40.76S | 174.89E | 45 | 2.5 | 0.2 | 14 | 8 |
| 2781 | MAY 06 | 1153 48.7 | 40.54S | 175.91E | 26 | 3.6 | 0.2 | 26 | 19 |
| 2786 | MAY 06 | 1603 26.2 | 40.81S | 175.03E | 36 | 2.1 | 0.2 | 7 | 6 |
| 2793 | MAY 07 | 0224 8.3 | 40.50S | 174.40E | 79 | 3.0 | 0.2 | 23 | 16 |
| 2803 | MAY 07 | 0839 18.3 | 41.31S | 174.61E | 35 | 2.2 | 0.1 | 9 | 7 |
| 2813 | MAY 07 | 2008 7.1 | 41.68S | 173.77E | 55 | 2.4 | 0.1 | 7 | 6 |
| 2820 | MAY 08 | 0409 16.8 | 41.07S | 174.94E | 27 | 2.1 | 0.1 | 12 | 9 |
| 2823 | MAY 08 | 0511 14.4 | 41.77S | 173.68E | 54 | 2.6 | 0.2 | 11 | 9 |
| 2832 | MAY 08 | 1746 0.1 | 41.09S | 174.59E | 34 | 2.0 | 0.2 | 7 | 6 |
| 2836 | MAY 09 | 0948 31.3 | 41.04S | 175.48E | 18 | 2.8 | 0.1 | 12 | 9 |
| 2837 | MAY 09 | 1139 58.0 | 41.58S | 174.32E | 27 | 2.5 | 0.1 | 15 | 11 |
| 2839 | MAY 09 | 1207 38.5 | 41.29S | 175.49E | 12 | 2.2 | 0.2 | 12 | 9 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 2840 | MAY 09 | 1335 0.7 | 41.12S | 174.36E | 34 | 2.3 | 0.1 | 12 | 8 |
| 2845 | MAY 10 | 0109 3.8 | 40.95S | 174.59E | 11 | 2.0 | 0.2 | 15 | 10 |
| 2851 | MAY 10 | 0815 32.2 | 41.13S | 174.64E | 31 | 2.0 | 0.1 | 14 | 10 |
| 2852 | MAY 10 | 0834 46.0 | 41.17S | 174.48E | 69 | 2.0 | 0.1 | 10 | 6 |
| 2856 | MAY 10 | 1447 2.8 | 41.30S | 173.50E | 69 | 2.2 | 0.3 | 9 | 6 |
| 2857 | MAY 10 | 1502 33.0 | 41.75S | 174.32E | 33 | 2.5 | 0.1 | 15 | 11 |
| 2859 | MAY 10 | 1541 8.7 | 40.74S | 175.78E | 29 | 3.1 | 0.3 | 21 | 14 |
| 2860 | MAY 10 | 1611 13.0 | 41.46S | 173.53E | 82 | 2.9 | 0.3 | 18 | 13 |
| 2867 | MAY 11 | 0205 40.5 | 40.93S | 175.06E | 32 | 2.9 | 0.2 | 19 | 12 |
| 2878 | MAY 11 | 1321 51.6 | 41.76S | 173.65E | 10 | 2.7 | 0.2 | 14 | 11 |
| 2880 | MAY 11 | 1515 47.3 | 40.62S | 175.91E | 34 | 2.6 | 0.2 | 9 | 7 |
| 2894 | MAY 12 | 1517 16.7 | 40.51S | 174.01E | 106 | 2.6 | 0.1 | 10 | 8 |
| 2900 | MAY 12 | 2139 16.2 | 41.17S | 174.14E | 50 | 2.2 | 0.1 | 8 | 6 |
| 2907 | MAY 13 | 0855 53.2 | 41.11S | 175.03E | 33 | 2.0 | 0.2 | 14 | 10 |
| 2909 | MAY 13 | 1809 38.4 | 41.89S | 175.19E | 33 | 2.1 | 0.1 | 8 | 6 |
| 2911 | MAY 13 | 1849 8.1 | 40.66S | 175.10E | 33 | 2.2 | 0.1 | 13 | 11 |
| 2912 | MAY 13 | 1852 41.5 | 41.03S | 174.61E | 41 | 2.2 | 0.1 | 14 | 10 |
| 2915 | MAY 13 | 2136 8.6 | 40.82S | 174.64E | 63 | 2.2 | 0.0 | 12 | 10 |
| 2919 | MAY 14 | 0917 2.3 | 40.67S | 173.96E | 12R | 2.0 | 0.2 | 6 | 4 |
| 2930 | MAY 15 | 1450 30.4 | 40.54S | 174.45E | 56 | 2.6 | 0.1 | 10 | 8 |
| 2931 | MAY 15 | 1457 13.3 | 41.06S | 173.77E | 59 | 2.5 | 0.1 | 10 | 7 |
| 2934 | MAY 15 | 1742 19.3 | 41.36S | 173.61E | 90 | 2.0 | 0.0 | 7 | 5 |
| 2941 | MAY 16 | 0633 8.0 | 40.72S | 174.94E | 34 | 2.5 | 0.1 | 16 | 11 |
| 2945 | MAY 16 | 1043 6.0 | 40.56S | 174.43E | 62 | 2.0 | 0.2 | 8 | 6 |
| 2947 | MAY 16 | 1309 57.7 | 41.50S | 174.39E | 16 | 2.2 | 0.2 | 14 | 11 |
| 2950 | MAY 16 | 1511 10.1 | 41.56S | 174.72E | 33 | 2.1 | 0.1 | 15 | 11 |
| 2953 | MAY 16 | 2111 39.2 | 41.28S | 175.30E | 30 | 2.8 | 0.1 | 16 | 10 |
| 2954 | MAY 16 | 2206 34.7 | 41.74S | 174.66E | 33 | 2.5 | 0.2 | 15 | 11 |
| 2955 | MAY 17 | 0014 30.2 | 41.19S | 174.19E | 48 | 2.6 | 0.1 | 9 | 7 |
| 2957 | MAY 17 | 0509 16.1 | 41.61S | 174.65E | 33 | 2.8 | 0.1 | 15 | 11 |
| 2963 | MAY 17 | 1621 47.6 | 41.06S | 174.07E | 75 | 2.9 | 0.3 | 18 | 12 |
| 2964 | MAY 17 | 1814 12.5 | 41.55S | 174.55E | 53 | 2.9 | 0.1 | 13 | 9 |
| 2965 | MAY 17 | 1951 6.7 | 41.35S | 175.11E | 24 | 2.1 | 0.1 | 12 | 9 |
| 2967 | MAY 17 | 2216 18.2 | 41.21S | 174.59E | 21 | 2.4 | 0.2 | 17 | 11 |
| 2969 | MAY 18 | 0159 37.0 | 41.12S | 175.03E | 29 | 2.0 | 0.1 | 11 | 8 |
| 2977 | MAY 18 | 1143 56.0 | 40.55S | 174.36E | 77 | 3.2 | 0.3 | 12 | 11 |
| 2981 | MAY 18 | 1537 54.1 | 41.43S | 174.02E | 42 | 2.3 | 0.2 | 12 | 10 |
| 2983 | MAY 18 | 1647 11.7 | 41.56S | 174.71E | 31 | 2.0 | 0.1 | 12 | 10 |
| 2992 | MAY 19 | 0203 5.6 | 41.65S | 174.25E | 22 | 2.2 | 0.3 | 9 | 8 |
| 2998 | MAY 19 | 0633 28.8 | 40.54S | 173.83E | 65 | 3.1 | 0.4 | 13 | 11 |
| 2999 | MAY 19 | 0738 37.3 | 41.03S | 174.56E | 63 | 2.1 | 0.1 | 8 | 6 |
| 3003 | MAY 19 | 1324 36.4 | 41.18S | 175.14E | 7 | 2.0 | 0.2 | 15 | 11 |
| 3005 | MAY 19 | 1750 37.4 | 41.11S | 174.72E | 30 | 2.7 | 0.1 | 14 | 10 |
| 3009 | MAY 19 | 2123 20.7 | 40.53S | 174.55E | 78 | 2.2 | 0.1 | 9 | 8 |
| 3016 | MAY 20 | 0302 34.0 | 41.41S | 175.66E | 14 | 2.1 | 0.1 | 11 | 8 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
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| 3024 | MAY 20 | 0856 54.8 | 40.65S | 175.90E | 31 | 2.5 | 0.2 | 12 | 10 |
| 3028 | MAY 20 | 1247 32.4 | 41.72S | 174.29E | 23 | 2.8 | 0.2 | 13 | 11 |
| 3046 | MAY 21 | 0504 53.8 | 40.64S | 174.66E | 74 | 2.8 | 0.1 | 17 | 11 |
| 3048 | MAY 21 | 0946 7.0 | 41.01S | 174.73E | 58 | 2.6 | 0.1 | 17 | 11 |
| 3049 | MAY 21 | 1027 14.5 | 40.50S | 174.89E | 68 | 2.5 | 0.1 | 15 | 11 |
| 3050 | MAY 21 | 1305 18.1 | 41.85S | 174.84E | 33 | 2.2 | 0.1 | 15 | 11 |
| 3055 | MAY 21 | 2006 55.9 | 40.53S | 173.69E | 208 | 3.5 | 0.1 | 12 | 10 |
| 3057 | MAY 21 | 2124 43.4 | 41.55S | 174.43E | 15 | 2.3 | 0.2 | 12 | 10 |
| 3068 | MAY 22 | 1813 19.9 | 40.90S | 174.87E | 58 | 2.0 | 0.1 | 8 | 6 |
| 3076 | MAY 23 | 0606 8.3 | 41.04S | 175.57E | 23 | 2.1 | 0.1 | 11 | 9 |
| 3077 | MAY 23 | 0657 3.9 | 40.78S | 173.88E | 94 | 2.4 | 0.2 | 6 | 4 |
| 3079 | MAY 23 | 0745 47.8 | 41.18S | 173.75E | 97 | 2.6 | 0.1 | 9 | 7 |
| 3094 | MAY 23 | 2241 9.8 | 41.07S | 174.94E | 28 | 2.8 | 0.1 | 14 | 10 |
| 3097 | MAY 24 | 0205 46.7 | 40.88S | 174.58E | 55 | 2.3 | 0.0 | 6 | 4 |
| 3100 | MAY 24 | 0427 23.3 | 40.78S | 174.48E | 71 | 2.4 | 0.0 | 10 | 8 |
| 3109 | MAY 24 | 2322 48.0 | 41.58S | 174.45E | 17 | 2.1 | 0.1 | 8 | 6 |
| 3116 | MAY 25 | 0603 32.2 | 41.39S | 173.82E | 61 | 3.0 | 0.2 | 12 | 7 |
| 3121 | MAY 25 | 1325 8.1 | 41.07S | 174.94E | 28 | 2.4 | 0.1 | 13 | 9 |
| 3122 | MAY 25 | 1325 57.1 | 40.98S | 173.83E | 76 | 2.6 | 0.1 | 7 | 5 |
| 3149 | MAY 27 | 1326 52.2 | 40.83S | 173.66E | 166 | 2.6 | 0.1 | 7 | 5 |
| 3150 | MAY 27 | 1402 29.3 | 40.53S | 174.37E | 23 | 2.0 | 0.2 | 11 | 7 |
| 3155 | MAY 28 | 0044 44.4 | 41.25S | 174.45E | 34 | 2.8 | 0.1 | 16 | 12 |
| 3157 | MAY 28 | 0142 26.7 | 41.26S | 173.91E | 57 | 2.2 | 0.1 | 7 | 5 |
| 3158 | MAY 28 | 0157 17.3 | 41.29S | 174.52E | 56 | 2.1 | 0.1 | 6 | 4 |
| 3191 | MAY 29 | 0027 2.4 | 40.88S | 174.54E | 55 | 2.1 | 0.0 | 7 | 5 |
| 3202 | MAY 29 | 1254 0.2 | 41.21S | 174.61E | 21 | 2.2 | 0.2 | 17 | 10 |
| 3203 | MAY 29 | 1404 47.5 | 41.72S | 174.58E | 28 | 2.3 | 0.2 | 15 | 8 |
| 3204 | MAY 29 | 1537 39.9 | 41.35S | 173.62E | 104 | 3.0 | 0.1 | 17 | 11 |
| 3208 | MAY 29 | 2214 13.6 | 40.99S | 173.73E | 47 | 2.5 | 0.1 | 7 | 4 |
| 3213 | MAY 30 | 1738 51.9 | 40.60S | 174.30E | 48 | 2.2 | 0.3 | 8 | 5 |
| 3242 | MAY 31 | 1821 49.3 | 41.22S | 175.72E | 32 | 3.2 | 0.1 | 18 | 13 |
| 3243 | MAY 31 | 1923 44.2 | 41.29S | 174.52E | 56 | 2.0 | 0.1 | 10 | 6 |
| 3257 | JUN 01 | 1230 20.5 | 41.49S | 173.90E | 57 | 2.2 | 0.1 | 8 | 5 |
| 3258 | JUN 01 | 1245 19.9 | 40.53S | 174.66E | 25 | 2.2 | 0.2 | 11 | 7 |
| 3260 | JUN 01 | 1527 44.6 | 40.88S | 174.15E | 60 | 2.3 | 0.2 | 12 | 8 |
| 3265 | JUN 01 | 2128 19.6 | 40.84S | 174.73E | 15 | 2.0 | 0.3 | 15 | 9 |
| 3270 | JUN 02 | 0242 43.1 | 40.73S | 174.77E | 14 | 2.5 | 0.2 | 15 | 11 |
| 3273 | JUN 02 | 0446 36.8 | 41.08S | 174.26E | 64 | 4.1F | 0.2 | 24 | 21 |
| 3275 | JUN 02 | 0622 37.5 | 41.28S | 175.31E | 30 | 2.6 | 0.1 | 18 | 11 |
| 3277 | JUN 02 | 0917 19.4 | 41.28S | 175.31E | 29 | 2.2 | 0.1 | 19 | 11 |
| 3293 | JUN 03 | 0544 36.3 | 40.98S | 175.46E | 30 | 2.1 | 0.1 | 11 | 7 |
| 3299 | JUN 03 | 1030 19.2 | 41.49S | 175.63E | 14 | 2.0 | 0.0 | 7 | 5 |
| 3301 | JUN 03 | 1140 29.2 | 41.44S | 174.14E | 39 | 3.4 | 0.2 | 18 | 15 |
| 3314 | JUN 04 | 0254 35.5 | 41.11S | 174.46E | 43 | 2.7 | 0.2 | 17 | 10 |
| 3327 | JUN 04 | 1517 14.3 | 41.04S | 175.84E | 27 | 2.1 | 0.1 | 11 | 7 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 3332 | JUN 04 | 2357 29.6 | 41.00S | 175.94E | 41 | 2.1 | 0.4 | 7 | 5 |
| 3359 | JUN 06 | 0338 8.8 | 41.20S | 175.06E | 17 | 2.0 | 0.1 | 13 | 10 |
| 3365 | JUN 06 | 0943 15.6 | 40.76S | 174.30E | 53 | 3.2 | 0.2 | 15 | 11 |
| 3370 | JUN 06 | 1125 5.6 | 41.71S | 174.03E | 14 | 2.1 | 0.2 | 11 | 9 |
| 3380 | JUN 06 | 1905 42.2 | 40.91S | 175.94E | 32 | 2.4 | 0.2 | 9 | 7 |
| 3395 | JUN 07 | 1718 33.4 | 41.86S | 174.41E | 45 | 3.0 | 0.1 | 13 | 9 |
| 3416 | JUN 08 | 1135 36.8 | 41.67S | 174.08E | 39 | 2.5 | 0.3 | 17 | 13 |
| 3426 | JUN 08 | 1643 9.7 | 41.93S | 174.38E | 28 | 2.2 | 0.2 | 15 | 11 |
| 3438 | JUN 09 | 0010 30.1 | 40.65S | 175.82E | 27 | 2.2 | 0.4 | 12 | 8 |
| 3452 | JUN 09 | 1342 49.5 | 40.57S | 173.86E | 131 | 2.4 | 0.0 | 7 | 6 |
| 3466 | JUN 09 | 1909 38.6 | 41.03S | 174.03E | 5R | 2.6 | 0.5 | 14 | 9 |
| 3471 | JUN 10 | 0144 3.1 | 41.81S | 174.05E | 12R | 2.3 | 0.3 | 10 | 9 |
| 3495 | JUN 10 | 1216 7.0 | 41.43S | 174.13E | 38 | 2.5 | 0.2 | 12 | 10 |
| 3499 | JUN 10 | 1904 52.5 | 40.54S | 173.91E | 119 | 2.8 | 0.1 | 12 | 10 |
| 3501 | JUN 10 | 2335 54.0 | 41.76S | 174.25E | 12R | 2.3 | 0.4 | 14 | 13 |
| 3502 | JUN 11 | 0820 56.0 | 40.84S | 174.56E | 68 | 2.5 | 0.1 | 12 | 7 |
| 3503 | JUN 11 | 0858 28.7 | 41.14S | 174.51E | 43 | 3.1 | 0.1 | 20 | 13 |
| 3506 | JUN 11 | 1137 29.8 | 41.12S | 175.71E | 22 | 2.0 | 0.2 | 12 | 9 |
| 3509 | JUN 11 | 1655 49.0 | 40.84S | 175.25E | 33 | 2.0 | 0.1 | 10 | 8 |
| 3513 | JUN 11 | 2221 3.5 | 41.29S | 175.30E | 29 | 2.1 | 0.1 | 10 | 8 |
| 3517 | JUN 12 | 1122 18.5 | 41.07S | 176.00E | 25 | 2.2 | 0.2 | 8 | 7 |
| 3522 | JUN 12 | 1815 30.6 | 40.61S | 174.11E | 104 | 2.5 | 0.2 | 8 | 6 |
| 3523 | JUN 12 | 1820 40.5 | 40.63S | 175.75E | 29 | 2.1 | 0.3 | 8 | 6 |
| 3524 | JUN 12 | 1916 18.4 | 40.83S | 175.17E | 62 | 2.1 | 0.1 | 11 | 7 |
| 3525 | JUN 12 | 1929 56.4 | 40.90S | 175.30E | 28 | 2.3 | 0.1 | 11 | 9 |
| 3529 | JUN 13 | 0326 51.1 | 41.31S | 174.67E | 20 | 2.2 | 0.2 | 15 | 11 |
| 3531 | JUN 13 | 0431 8.3 | 41.46S | 174.78E | 29 | 2.5 | 0.1 | 15 | 11 |
| 3540 | JUN 13 | 1552 19.3 | 41.69S | 174.49E | 48 | 3.1 | 0.2 | 21 | 13 |
| 3543 | JUN 13 | 2139 30.1 | 40.86S | 174.94E | 61 | 2.6 | 0.3 | 14 | 8 |
| 3553 | JUN 14 | 1458 41.5 | 41.30S | 175.50E | 14 | 2.2 | 0.2 | 18 | 11 |
| 3561 | JUN 15 | 0307 47.7 | 40.94S | 174.83E | 53 | 2.5 | 0.1 | 14 | 10 |
| 3568 | JUN 15 | 0915 11.5 | 41.43S | 173.58E | 82 | 2.6 | 0.1 | 11 | 9 |
| 3588 | JUN 15 | 2007 22.1 | 40.99S | 175.61E | 24 | 2.5 | 0.1 | 16 | 11 |
| 3595 | JUN 16 | 0932 28.1 | 40.99S | 173.59E | 127 | 2.8 | 0.1 | 11 | 7 |
| 3597 | JUN 16 | 1243 26.2 | 40.54S | 174.46E | 81 | 2.0 | 0.1 | 9 | 6 |
| 3598 | JUN 16 | 1310 46.0 | 40.89S | 175.18E | 29 | 3.1 | 0.3 | 21 | 12 |
| 3601 | JUN 16 | 1525 25.6 | 40.91S | 175.18E | 25 | 3.5 | 0.2 | 26 | 20 |
| 3602 | JUN 16 | 1529 56.9 | 40.92S | 175.16E | 24 | 2.0 | 0.2 | 7 | 6 |
| 3606 | JUN 16 | 1817 37.6 | 41.54S | 173.55E | 89 | 2.8 | 0.3 | 14 | 10 |
| 3607 | JUN 16 | 1831 10.5 | 40.85S | 175.44E | 25 | 2.7 | 0.2 | 19 | 13 |
| 3646 | JUN 17 | 1211 7.3 | 41.04S | 173.83E | 86 | 2.5 | 0.1 | 10 | 7 |
| 3647 | JUN 17 | 1217 47.8 | 41.80S | 174.32E | 5R | 2.2 | 0.5 | 10 | 9 |
| 3649 | JUN 17 | 1433 15.4 | 41.75S | 174.50E | 32 | 2.3 | 0.2 | 12 | 8 |
| 3651 | JUN 17 | 1713 45.8 | 40.57S | 174.04E | 92 | 2.3 | 0.0 | 6 | 5 |
| 3652 | JUN 17 | 2056 46.1 | 40.92S | 175.16E | 30 | 2.0 | 0.0 | 5 | 5 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 3656 | JUN 18 | 1357 42.3 | 40.64S | 175.51E | 32 | 2.0 | 0.1 | 6 | 4 |
| 3657 | JUN 18 | 1720 11.8 | 40.81S | 175.85E | 34 | 2.0 | 0.2 | 7 | 5 |
| 3660 | JUN 18 | 2332 42.8 | 40.83S | 175.74E | 28 | 3.4 | 0.3 | 20 | 16 |
| 3665 | JUN 19 | 0512 49.2 | 41.16S | 173.70E | 98 | 2.3 | 0.2 | 7 | 4 |
| 3684 | JUN 19 | 2339 59.4 | 41.68S | 174.15E | 0 | 2.1 | 0.2 | 11 | 7 |
| 3685 | JUN 20 | 0021 19.9 | 40.82S | 174.69E | 40 | 2.3 | 0.1 | 13 | 8 |
| 3686 | JUN 20 | 0058 4.6 | 41.86S | 174.29E | 5R | 2.2 | 0.2 | 5 | 4 |
| 3687 | JUN 20 | 0300 38.2 | 41.24S | 175.24E | 17 | 2.6 | 0.2 | 17 | 11 |
| 3689 | JUN 20 | 0427 37.8 | 41.05S | 174.41E | 67 | 2.8 | 0.1 | 19 | 12 |
| 3691 | JUN 20 | 0829 8.0 | 41.19S | 174.62E | 33 | 2.0 | 0.1 | 11 | 7 |
| 3692 | JUN 20 | 0835 53.5 | 41.70S | 174.51E | 31 | 2.7 | 0.2 | 16 | 12 |
| 3694 | JUN 20 | 1118 1.4 | 41.37S | 174.97E | 28 | 2.2 | 0.1 | 12 | 8 |
| 3731 | JUN 22 | 0938 42.0 | 41.76S | 174.52E | 40 | 2.1 | 0.2 | 8 | 5 |
| 3736 | JUN 22 | 1548 31.6 | 41.42S | 175.32E | 17 | 2.1 | 0.1 | 14 | 10 |
| 3738 | JUN 22 | 1743 36.6 | 41.70S | 174.50E | 32 | 2.5 | 0.2 | 15 | 11 |
| 3751 | JUN 23 | 0739 45.1 | 40.92S | 175.12E | 33 | 2.0 | 0.2 | 14 | 10 |
| 3763 | JUN 23 | 2206 34.5 | 40.96S | 175.57E | 29 | 2.0 | 0.1 | 9 | 5 |
| 3770 | JUN 24 | 0554 38.2 | 40.60S | 174.35E | 45 | 2.0 | 0.2 | 8 | 5 |
| 3774 | JUN 24 | 0937 17.0 | 41.71S | 174.47E | 66 | 2.1 | 0.2 | 12 | 7 |
| 3782 | JUN 25 | 0102 53.4 | 41.12S | 174.38E | 40 | 3.4 | 0.1 | 17 | 13 |
| 3789 | JUN 25 | 1417 28.6 | 40.86S | 175.79E | 29 | 2.2 | 0.1 | 12 | 8 |
| 3790 | JUN 25 | 1510 58.1 | 40.56S | 174.70E | 38 | 2.6 | 0.1 | 15 | 9 |
| 3796 | JUN 26 | 0313 48.0 | 41.12S | 175.38E | 27 | 2.3 | 0.1 | 14 | 9 |
| 3797 | JUN 26 | 0436 13.2 | 40.68S | 174.85E | 7 | 2.4 | 0.2 | 13 | 9 |
| 3801 | JUN 26 | 0801 33.4 | 40.72S | 173.75E | 138 | 2.9 | 0.1 | 11 | 8 |
| 3805 | JUN 26 | 1149 53.5 | 40.53S | 174.70E | 79 | 2.4 | 0.1 | 13 | 9 |
| 3806 | JUN 26 | 1225 47.4 | 41.89S | 173.70E | 65 | 2.5 | 0.1 | 10 | 7 |
| 3813 | JUN 26 | 2055 26.5 | 40.90S | 174.88E | 61 | 2.2 | 0.1 | 10 | 8 |
| 3815 | JUN 26 | 2135 56.4 | 40.64S | 174.28E | 33R | 2.5 | 0.3 | 17 | 11 |
| 3819 | JUN 27 | 0456 7.3 | 41.15S | 173.85E | 88 | 2.3 | 0.0 | 7 | 5 |
| 3821 | JUN 27 | 0508 34.4 | 40.58S | 175.16E | 44 | 3.4 | 0.3 | 24 | 17 |
| 3824 | JUN 27 | 0619 47.1 | 41.66S | 174.37E | 0 | 2.0 | 0.1 | 10 | 9 |
| 3830 | JUN 27 | 0937 35.1 | 41.59S | 174.45E | 18 | 2.0 | 0.2 | 10 | 9 |
| 3834 | JUN 27 | 1449 58.0 | 41.55S | 173.68E | 1 | 2.5 | 0.1 | 11 | 9 |
| 3840 | JUN 28 | 0215 57.8 | 41.67S | 174.38E | 9 | 2.4 | 0.2 | 12 | 10 |
| 3854 | JUN 29 | 0456 31.8 | 40.63S | 175.86E | 23 | 3.3 | 0.3 | 21 | 15 |
| 3856 | JUN 29 | 1049 2.6 | 40.86S | 174.36E | 68 | 2.7 | 0.2 | 14 | 10 |
| 3857 | JUN 29 | 1059 11.0 | 41.47S | 174.06E | 49 | 2.1 | 0.2 | 11 | 8 |
| 3859 | JUN 29 | 1145 5.8 | 40.71S | 174.47E | 62 | 2.4 | 0.1 | 12 | 7 |
| 3865 | JUN 29 | 1649 28.8 | 40.77S | 174.75E | 3 | 2.2 | 0.3 | 12 | 8 |
| 3867 | JUN 29 | 1851 48.6 | 41.33S | 175.16E | 29 | 2.0 | 0.1 | 12 | 8 |
| 3868 | JUN 29 | 1933 7.0 | 41.70S | 174.48E | 48 | 2.0 | 0.1 | 7 | 5 |
| 3879 | JUN 30 | 0250 2.1 | 40.91S | 174.94E | 41 | 2.0 | 0.1 | 10 | 8 |
| 3882 | JUN 30 | 0633 11.4 | 40.81S | 174.69E | 57 | 2.4 | 0.1 | 13 | 9 |
| 3883 | JUN 30 | 0751 34.2 | 40.95S | 173.65E | 106 | 2.4 | 0.3 | 7 | 4 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 3893 | JUN 30 | 1351 4.5 | 41.74S | 174.42E | 34 | 2.0 | 0.1 | 11 | 7 |
| 3894 | JUN 30 | 1421 59.5 | 41.00S | 175.62E | 29 | 2.2 | 0.1 | 16 | 10 |
| 3899 | JUN 30 | 1612 51.6 | 41.10S | 175.44E | 11 | 3.9F | 0.1 | 28 | 22 |
| 3902 | JUN 30 | 1723 32.7 | 40.91S | 175.70E | 28 | 2.1 | 0.2 | 15 | 11 |
| 3909 | JUN 30 | 2248 17.1 | 41.09S | 175.44E | 10 | 2.0 | 0.1 | 15 | 10 |
| 3910 | JUN 30 | 2315 8.9 | 40.71S | 174.62E | 69 | 2.8 | 0.1 | 16 | 11 |
| 3911 | JUN 30 | 2354 34.5 | 41.14S | 175.39E | 25 | 2.0 | 0.2 | 12 | 8 |
| 3916 | JUL 01 | 0825 43.0 | 41.90S | 173.92E | 19 | 2.1 | 0.2 | 10 | 7 |
| 3917 | JUL 01 | 0844 5.5 | 41.66S | 174.54E | 33 | 2.1 | 0.2 | 12 | 8 |
| 3921 | JUL 01 | 1555 22.3 | 41.40S | 174.22E | 65 | 2.4 | 0.1 | 11 | 7 |
| 3927 | JUL 01 | 2158 26.5 | 40.95S | 175.13E | 45 | 2.0 | 0.1 | 7 | 4 |
| 3928 | JUL 01 | 2310 59.7 | 41.08S | 174.77E | 53 | 2.3 | 0.1 | 13 | 8 |
| 3930 | JUL 02 | 0006 5.2 | 40.74S | 174.50E | 41 | 3.2 | 0.3 | 17 | 13 |
| 3937 | JUL 02 | 0746 59.4 | 40.79S | 175.10E | 31 | 2.0 | 0.1 | 11 | 8 |
| 3942 | JUL 02 | 1211 17.8 | 40.77S | 175.51E | 30 | 2.4 | 0.1 | 14 | 10 |
| 3952 | JUL 03 | 0044 46.2 | 40.86S | 173.83E | 87 | 3.1 | 0.3 | 16 | 12 |
| 3957 | JUL 03 | 0643 27.6 | 41.27S | 175.22E | 27 | 2.0 | 0.1 | 11 | 7 |
| 3965 | JUL 03 | 1236 51.3 | 40.78S | 174.83E | 45 | 2.4 | 0.1 | 8 | 7 |
| 3967 | JUL 03 | 1359 46.0 | 41.28S | 175.33E | 28 | 2.4 | 0.1 | 13 | 9 |
| 3975 | JUL 03 | 2020 58.9 | 41.08S | 174.53E | 39 | 2.3 | 0.2 | 11 | 8 |
| 3978 | JUL 03 | 2353 47.7 | 40.71S | 174.10E | 104 | 2.4 | 0.2 | 5 | 4 |
| 3984 | JUL 04 | 0657 29.9 | 40.90S | 175.18E | 31 | 2.6 | 0.1 | 13 | 10 |
| 3989 | JUL 04 | 1559 12.8 | 41.11S | 173.52E | 92 | 2.9 | 0.2 | 15 | 10 |
| 3990 | JUL 04 | 1706 47.4 | 40.91S | 175.92E | 52 | 2.4 | 0.3 | 9 | 8 |
| 3992 | JUL 04 | 1944 18.3 | 41.73S | 174.85E | 49 | 2.5 | 0.2 | 11 | 7 |
| 3998 | JUL 05 | 0052 11.9 | 41.45S | 174.92E | 28 | 2.2 | 0.1 | 10 | 7 |
| 4003 | JUL 05 | 0742 31.5 | 40.84S | 174.72E | 13 | 2.2 | 0.1 | 8 | 6 |
| 4006 | JUL 05 | 1645 50.5 | 40.78S | 175.29E | 33 | 2.8 | 0.2 | 12 | 8 |
| 4008 | JUL 05 | 1734 14.9 | 40.77S | 175.02E | 33R | 3.0 | 0.1 | 13 | 9 |
| 4009 | JUL 05 | 1735 29.9 | 40.75S | 174.98E | 35 | 2.3 | 0.1 | 10 | 8 |
| 4010 | JUL 05 | 2028 58.6 | 41.73S | 174.29E | 22 | 2.5 | 0.2 | 11 | 9 |
| 4011 | JUL 05 | 2042 42.1 | 41.76S | 174.33E | 20 | 2.3 | 0.2 | 11 | 10 |
| 4024 | JUL 06 | 0746 0.4 | 41.27S | 174.18E | 63 | 3.1 | 0.1 | 16 | 12 |
| 4025 | JUL 06 | 0810 21.7 | 41.08S | 174.39E | 64 | 2.3 | 0.0 | 10 | 8 |
| 4030 | JUL 06 | 1432 38.5 | 41.05S | 174.17E | 53 | 2.2 | 0.1 | 8 | 6 |
| 4035 | JUL 07 | 0131 40.7 | 40.88S | 175.82E | 34 | 2.1 | 0.1 | 8 | 6 |
| 4048 | JUL 07 | 0804 39.0 | 40.55S | 174.50E | 66 | 2.0 | 0.1 | 7 | 5 |
| 4052 | JUL 07 | 1318 49.6 | 40.82S | 174.50E | 55 | 3.4 | 0.2 | 18 | 13 |
| 4063 | JUL 08 | 0651 27.1 | 41.56S | 173.97E | 40 | 2.9 | 0.2 | 15 | 12 |
| 4064 | JUL 08 | 0853 44.3 | 41.20S | 174.01E | 67 | 3.5 | 0.2 | 17 | 13 |
| 4076 | JUL 09 | 0112 40.6 | 41.87S | 173.98E | 18 | 2.2 | 0.2 | 12 | 9 |
| 4082 | JUL 09 | 0801 43.4 | 40.94S | 175.77E | 31 | 2.1 | 0.2 | 11 | 9 |
| 4083 | JUL 09 | 1000 39.3 | 41.86S | 174.11E | 19 | 2.1 | 0.3 | 10 | 9 |
| 4085 | JUL 09 | 1524 25.0 | 41.15S | 174.91E | 35 | 2.2 | 0.1 | 15 | 10 |
| 4088 | JUL 09 | 1727 43.6 | 40.97S | 174.57E | 60 | 2.8 | 0.0 | 11 | 10 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 4089 | JUL 09 | 1727 51.2 | 41.56S | 174.70E | 34 | 2.9 | 0.2 | 16 | 11 |
| 4092 | JUL 09 | 1958 18.6 | 40.68S | 174.38E | 76 | 3.3 | 0.1 | 19 | 15 |
| 4094 | JUL 09 | 2036 13.1 | 41.36S | 175.17E | 23 | 2.3 | 0.1 | 11 | 10 |
| 4097 | JUL 09 | 2216 37.2 | 41.40S | 174.49E | 68 | 2.4 | 0.3 | 8 | 5 |
| 4098 | JUL 09 | 2319 59.4 | 40.59S | 174.12E | 44 | 2.1 | 0.2 | 8 | 5 |
| 4104 | JUL 10 | 0508 34.2 | 41.62S | 174.42E | 8 | 2.8 | 0.3 | 16 | 14 |
| 4106 | JUL 10 | 1215 27.5 | 40.93S | 174.54E | 19 | 3.3 | 0.2 | 21 | 17 |
| 4109 | JUL 10 | 1436 47.3 | 41.14S | 173.69E | 44 | 2.6 | 0.4 | 8 | 5 |
| 4116 | JUL 10 | 2245 6.7 | 40.57S | 174.32E | 26 | 3.3 | 0.2 | 17 | 15 |
| 4122 | JUL 11 | 0439 8.1 | 41.02S | 173.70E | 87 | 3.3 | 0.2 | 17 | 13 |
| 4124 | JUL 11 | 0518 54.6 | 41.23S | 174.51E | 55 | 2.0 | 0.1 | 13 | 9 |
| 4126 | JUL 11 | 0946 58.7 | 41.33S | 173.64E | 95 | 2.9 | 0.1 | 13 | 11 |
| 4127 | JUL 11 | 1005 30.2 | 40.56S | 174.53E | 20 | 2.1 | 0.1 | 8 | 5 |
| 4133 | JUL 11 | 1746 56.8 | 40.54S | 174.31E | 32 | 2.1 | 0.2 | 7 | 4 |
| 4142 | JUL 12 | 0335 50.3 | 41.35S | 175.62E | 15 | 2.2 | 0.1 | 10 | 8 |
| 4147 | JUL 12 | 1713 51.8 | 41.10S | 175.44E | 10 | 2.6 | 0.1 | 14 | 10 |
| 4148 | JUL 12 | 1745 47.5 | 41.87S | 173.56E | 17 | 3.0 | 0.2 | 16 | 12 |
| 4155 | JUL 13 | 0058 32.3 | 41.28S | 174.10E | 45 | 3.5 | 0.2 | 20 | 14 |
| 4159 | JUL 13 | 0630 51.2 | 41.34S | 174.98E | 29 | 2.7 | 0.1 | 17 | 11 |
| 4161 | JUL 13 | 1214 50.4 | 41.80S | 173.86E | 17 | 2.9 | 0.3 | 15 | 12 |
| 4162 | JUL 13 | 1634 34.1 | 41.58S | 174.13E | 12R | 2.3 | 0.3 | 13 | 8 |
| 4167 | JUL 14 | 0338 30.9 | 41.65S | 174.61E | 33 | 2.7 | 0.2 | 14 | 10 |
| 4171 | JUL 14 | 1104 23.5 | 41.41S | 173.65E | 102 | 3.1 | 0.1 | 13 | 9 |
| 4172 | JUL 14 | 1328 49.4 | 41.31S | 174.31E | 35 | 2.6 | 0.2 | 12 | 8 |
| 4176 | JUL 14 | 1814 12.2 | 40.89S | 175.93E | 31 | 2.6 | 0.3 | 12 | 8 |
| 4177 | JUL 14 | 2001 25.4 | 40.68S | 174.93E | 6 | 2.2 | 0.1 | 9 | 5 |
| 4191 | JUL 15 | 1726 38.0 | 41.52S | 174.30E | 11 | 2.6 | 0.2 | 13 | 9 |
| 4192 | JUL 15 | 1801 13.1 | 41.52S | 174.30E | 10 | 2.9 | 0.2 | 13 | 9 |
| 4193 | JUL 15 | 1805 41.0 | 41.50S | 174.29E | 15 | 2.2 | 0.2 | 10 | 6 |
| 4196 | JUL 15 | 2111 59.4 | 41.53S | 174.31E | 14 | 2.5 | 0.3 | 15 | 11 |
| 4201 | JUL 16 | 0028 50.5 | 41.03S | 175.43E | 26 | 2.2 | 0.1 | 13 | 9 |
| 4204 | JUL 16 | 0314 4.3 | 41.37S | 175.12E | 29 | 2.3 | 0.1 | 18 | 10 |
| 4206 | JUL 16 | 0356 56.6 | 41.66S | 174.25E | 28 | 3.7F | 0.2 | 18 | 14 |
| 4207 | JUL 16 | 0421 34.3 | 40.84S | 174.31E | 24 | 3.5 | 0.2 | 26 | 18 |
| 4209 | JUL 16 | 0513 57.9 | 41.10S | 175.36E | 27 | 2.2 | 0.1 | 16 | 9 |
| 4213 | JUL 16 | 1021 24.6 | 41.49S | 173.87E | 73 | 2.1 | 0.1 | 9 | 8 |
| 4214 | JUL 16 | 1148 13.9 | 40.55S | 174.72E | 5R | 2.1 | 0.2 | 13 | 7 |
| 4215 | JUL 16 | 1300 47.2 | 40.83S | 174.70E | 14 | 2.6 | 0.3 | 15 | 9 |
| 4221 | JUL 16 | 2014 55.8 | 41.47S | 174.49E | 55 | 2.4 | 0.1 | 11 | 7 |
| 4229 | JUL 17 | 0730 0.6 | 41.49S | 174.31E | 18 | 2.0 | 0.2 | 13 | 9 |
| 4231 | JUL 17 | 0930 43.3 | 41.55S | 175.18E | 30 | 2.4 | 0.1 | 16 | 10 |
| 4235 | JUL 17 | 1142 42.9 | 41.50S | 174.29E | 12R | 2.3 | 0.2 | 16 | 11 |
| 4236 | JUL 17 | 1159 11.7 | 41.54S | 174.24E | 5 | 2.1 | 0.1 | 11 | 7 |
| 4246 | JUL 17 | 2247 30.8 | 40.97S | 175.58E | 26 | 2.1 | 0.1 | 13 | 9 |
| 4256 | JUL 18 | 0539 31.6 | 40.53S | 175.88E | 30 | 2.3 | 0.2 | 9 | 7 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 4257 | JUL 18 | 0623 3.7 | 41.15S | 174.67E | 32 | 2.2 | 0.2 | 12 | 8 |
| 4259 | JUL 18 | 0812 54.6 | 41.42S | 175.90E | 21 | 2.0 | 0.1 | 10 | 6 |
| 4265 | JUL 18 | 1947 25.0 | 41.45S | 173.64E | 88 | 3.0 | 0.1 | 10 | 6 |
| 4266 | JUL 18 | 2225 58.5 | 41.13S | 175.33E | 27 | 2.4 | 0.2 | 13 | 9 |
| 4272 | JUL 19 | 0515 56.6 | 41.82S | 174.06E | 10 | 2.0 | 0.3 | 8 | 7 |
| 4275 | JUL 19 | 1400 3.0 | 41.89S | 174.34E | 24 | 2.2 | 0.2 | 7 | 6 |
| 4276 | JUL 19 | 1621 17.8 | 41.71S | 174.41E | 30 | 2.9 | 0.2 | 19 | 12 |
| 4277 | JUL 19 | 1928 57.4 | 41.00S | 174.55E | 37 | 2.3 | 0.2 | 11 | 7 |
| 4282 | JUL 20 | 1255 39.8 | 40.66S | 175.47E | 29 | 2.0 | 0.2 | 12 | 8 |
| 4286 | JUL 20 | 2333 51.1 | 40.98S | 175.47E | 24 | 2.0 | 0.1 | 11 | 7 |
| 4291 | JUL 21 | 0758 47.4 | 41.32S | 175.29E | 31 | 2.2 | 0.2 | 14 | 10 |
| 4292 | JUL 21 | 1019 23.2 | 40.83S | 173.97E | 77 | 2.4 | 0.2 | 8 | 5 |
| 4298 | JUL 22 | 0150 37.8 | 40.76S | 175.34E | 28 | 2.1 | 0.1 | 11 | 9 |
| 4303 | JUL 22 | 0820 37.5 | 41.71S | 173.95E | 5R | 2.1 | 0.2 | 7 | 5 |
| 4305 | JUL 22 | 1413 9.3 | 41.74S | 173.70E | 35 | 2.2 | 0.0 | 6 | 4 |
| 4317 | JUL 23 | 0021 33.5 | 40.52S | 174.33E | 22 | 2.7 | 0.2 | 14 | 11 |
| 4323 | JUL 23 | 0841 0.1 | 40.88S | 175.09E | 31 | 2.7 | 0.2 | 13 | 11 |
| 4327 | JUL 23 | 1753 56.1 | 40.95S | 174.18E | 55 | 2.7 | 0.1 | 10 | 7 |
| 4329 | JUL 23 | 1928 33.9 | 40.53S | 174.33E | 24 | 2.5 | 0.2 | 11 | 9 |
| 4330 | JUL 23 | 1942 56.2 | 40.52S | 174.32E | 23 | 2.5 | 0.3 | 8 | 6 |
| 4333 | JUL 23 | 2141 33.8 | 40.51S | 174.35E | 25 | 4.3 | 0.2 | 32 | 27 |
| 4334 | JUL 23 | 2145 32.6 | 40.51S | 174.34E | 23 | 3.3 | 0.2 | 19 | 14 |
| 4335 | JUL 23 | 2155 27.3 | 40.54S | 174.33E | 23 | 2.0 | 0.2 | 8 | 6 |
| 4337 | JUL 23 | 2247 4.9 | 40.53S | 174.33E | 21 | 2.4 | 0.2 | 8 | 6 |
| 4338 | JUL 23 | 2338 22.8 | 40.53S | 174.32E | 25 | 2.1 | 0.2 | 10 | 6 |
| 4340 | JUL 24 | 0024 55.0 | 40.53S | 174.32E | 21 | 2.4 | 0.1 | 11 | 8 |
| 4342 | JUL 24 | 0101 57.7 | 40.51S | 174.31E | 21 | 2.6 | 0.2 | 11 | 8 |
| 4343 | JUL 24 | 0107 46.3 | 40.86S | 175.10E | 31 | 2.0 | 0.2 | 9 | 6 |
| 4345 | JUL 24 | 0241 55.2 | 40.53S | 174.32E | 23 | 2.2 | 0.2 | 9 | 6 |
| 4346 | JUL 24 | 0257 43.6 | 40.79S | 175.60E | 45 | 2.0 | 0.1 | 6 | 3 |
| 4349 | JUL 24 | 0705 46.0 | 40.52S | 174.34E | 26 | 2.8 | 0.2 | 15 | 10 |
| 4350 | JUL 24 | 1010 1.9 | 41.30S | 175.31E | 27 | 2.3 | 0.1 | 13 | 8 |
| 4355 | JUL 24 | 1519 56.0 | 41.51S | 174.88E | 20 | 2.0 | 0.1 | 11 | 8 |
| 4360 | JUL 24 | 2023 58.7 | 41.56S | 175.20E | 19 | 2.4 | 0.1 | 12 | 9 |
| 4361 | JUL 24 | 2041 56.8 | 41.50S | 173.55E | 99 | 2.4 | 0.1 | 11 | 8 |
| 4363 | JUL 24 | 2136 6.4 | 41.02S | 174.05E | 54 | 2.5 | 0.3 | 11 | 8 |
| 4368 | JUL 25 | 0345 26.7 | 41.29S | 175.31E | 29 | 2.0 | 0.1 | 8 | 7 |
| 4371 | JUL 25 | 0627 16.7 | 41.73S | 174.17E | 11 | 2.2 | 0.3 | 10 | 9 |
| 4378 | JUL 25 | 1808 29.9 | 40.58S | 174.53E | 75 | 2.7 | 0.1 | 10 | 8 |
| 4381 | JUL 25 | 2158 52.5 | 41.36S | 173.59E | 109 | 3.1 | 0.1 | 11 | 10 |
| 4383 | JUL 26 | 0115 21.6 | 41.71S | 173.80E | 11 | 2.2 | 0.1 | 7 | 6 |
| 4391 | JUL 26 | 0500 36.2 | 40.51S | 174.37E | 18 | 2.3 | 0.2 | 14 | 10 |
| 4392 | JUL 26 | 0516 18.0 | 41.18S | 174.82E | 28 | 2.9 | 0.1 | 17 | 12 |
| 4395 | JUL 26 | 0909 14.2 | 40.53S | 174.34E | 30 | 2.0 | 0.3 | 9 | 7 |
| 4401 | JUL 26 | 1949 39.1 | 41.40S | 174.40E | 14 | 2.0 | 0.2 | 12 | 8 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 4402 | JUL 26 | 1949 55.1 | 41.30S | 174.18E | 39 | 2.2 | 0.2 | 8 | 6 |
| 4407 | JUL 27 | 0340 44.5 | 41.25S | 175.24E | 26 | 2.0 | 0.1 | 20 | 11 |
| 4413 | JUL 27 | 0640 24.2 | 41.25S | 175.24E | 23 | 2.7 | 0.1 | 14 | 10 |
| 4419 | JUL 27 | 1737 8.2 | 40.86S | 174.72E | 14 | 2.1 | 0.1 | 11 | 7 |
| 4421 | JUL 27 | 2314 10.8 | 40.94S | 175.12E | 29 | 2.4 | 0.1 | 11 | 8 |
| 4433 | JUL 28 | 1307 29.9 | 41.76S | 174.51E | 34 | 2.1 | 0.2 | 13 | 9 |
| 4434 | JUL 28 | 1626 15.9 | 40.90S | 175.71E | 31 | 2.5 | 0.1 | 14 | 10 |
| 4439 | JUL 28 | 2312 21.7 | 40.75S | 174.19E | 60 | 2.3 | 0.2 | 9 | 6 |
| 4441 | JUL 28 | 2343 25.0 | 41.12S | 174.62E | 56 | 2.1 | 0.1 | 12 | 8 |
| 4449 | JUL 29 | 0653 38.2 | 41.71S | 173.76E | 17 | 2.0 | 0.1 | 10 | 9 |
| 4452 | JUL 29 | 1332 24.5 | 40.77S | 174.21E | 59 | 2.2 | 0.2 | 10 | 7 |
| 4454 | JUL 29 | 1532 58.9 | 41.55S | 174.28E | 29 | 2.7 | 0.2 | 16 | 11 |
| 4460 | JUL 29 | 2242 56.3 | 40.91S | 175.05E | 30 | 2.2 | 0.1 | 13 | 10 |
| 4468 | JUL 30 | 0938 26.6 | 40.77S | 173.96E | 95 | 2.6 | 0.1 | 11 | 7 |
| 4469 | JUL 30 | 0939 20.3 | 40.74S | 174.68E | 5R | 2.1 | 0.1 | 10 | 7 |
| 4472 | JUL 30 | 1356 34.0 | 40.71S | 175.38E | 29 | 2.7 | 0.1 | 16 | 11 |
| 4482 | JUL 31 | 0743 30.1 | 41.76S | 174.49E | 26 | 2.0 | 0.2 | 10 | 7 |
| 4486 | JUL 31 | 1318 39.3 | 40.75S | 174.14E | 94 | 2.3 | 0.1 | 9 | 6 |
| 4490 | JUL 31 | 2037 9.7 | 41.26S | 175.33E | 28 | 2.1 | 0.1 | 15 | 10 |
| 4491 | JUL 31 | 2312 27.1 | 41.15S | 174.57E | 37 | 2.8 | 0.1 | 15 | 11 |
| 4493 | AUG 01 | 0416 31.0 | 41.10S | 175.36E | 27 | 2.1 | 0.1 | 18 | 11 |
| 4497 | AUG 01 | 0857 51.4 | 40.82S | 174.94E | 34 | 2.2 | 0.1 | 17 | 11 |
| 4498 | AUG 01 | 0921 9.5 | 41.20S | 175.44E | 22 | 2.1 | 0.1 | 19 | 11 |
| 4503 | AUG 01 | 1727 50.0 | 41.34S | 173.54E | 104 | 2.6 | 0.1 | 12 | 9 |
| 4505 | AUG 01 | 2015 7.4 | 40.66S | 173.86E | 115 | 2.6 | 0.1 | 15 | 10 |
| 4506 | AUG 01 | 2140 52.0 | 40.64S | 175.96E | 27 | 2.6 | 0.2 | 14 | 11 |
| 4507 | AUG 01 | 2157 0.0 | 41.43S | 174.43E | 60 | 3.0 | 0.1 | 19 | 13 |
| 4509 | AUG 01 | 2226 53.3 | 40.83S | 175.51E | 27 | 2.2 | 0.2 | 13 | 9 |
| 4510 | AUG 01 | 2346 9.6 | 40.82S | 175.04E | 33 | 2.3 | 0.1 | 13 | 10 |
| 4525 | AUG 02 | 2344 57.2 | 40.77S | 174.31E | 53 | 2.6 | 0.2 | 11 | 7 |
| 4527 | AUG 03 | 0006 20.1 | 41.10S | 174.77E | 32 | 2.3 | 0.1 | 18 | 11 |
| 4528 | AUG 03 | 0158 21.2 | 41.21S | 174.64E | 34 | 3.1 | 0.1 | 21 | 12 |
| 4532 | AUG 03 | 0546 42.3 | 41.04S | 174.54E | 34 | 3.0 | 0.2 | 20 | 11 |
| 4535 | AUG 03 | 0918 52.1 | 41.02S | 174.53E | 59 | 2.4 | 0.1 | 16 | 10 |
| 4547 | AUG 04 | 0713 23.2 | 40.88S | 174.24E | 52 | 2.0 | 0.1 | 8 | 6 |
| 4548 | AUG 04 | 0755 54.0 | 41.82S | 173.82E | 68 | 2.2 | 0.1 | 7 | 5 |
| 4549 | AUG 04 | 0941 52.7 | 41.33S | 174.99E | 29 | 2.1 | 0.1 | 16 | 10 |
| 4550 | AUG 04 | 1135 57.9 | 40.53S | 174.40E | 81 | 2.0 | 0.1 | 6 | 5 |
| 4552 | AUG 04 | 1502 21.3 | 41.42S | 173.82E | 64 | 2.2 | 0.1 | 9 | 7 |
| 4556 | AUG 05 | 0023 22.6 | 40.51S | 174.47E | 15 | 2.3 | 0.1 | 11 | 7 |
| 4568 | AUG 05 | 1400 54.3 | 40.64S | 174.33E | 63 | 2.4 | 0.2 | 9 | 5 |
| 4572 | AUG 05 | 1622 39.3 | 41.26S | 174.08E | 46 | 2.8 | 0.2 | 13 | 9 |
| 4574 | AUG 05 | 1832 37.8 | 41.17S | 173.77E | 99 | 2.5 | 0.0 | 8 | 6 |
| 4578 | AUG 06 | 0358 24.9 | 40.53S | 174.48E | 5R | 2.0 | 0.3 | 10 | 8 |
| 4586 | AUG 06 | 1219 53.7 | 40.91S | 175.07E | 33 | 2.0 | 0.2 | 10 | 8 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 4599 | AUG 07 | 0500 36.3 | 41.21S | 175.23E | 30 | 2.3 | 0.1 | 12 | 9 |
| 4603 | AUG 07 | 0635 32.1 | 40.98S | 175.50E | 30 | 2.6 | 0.2 | 13 | 11 |
| 4606 | AUG 07 | 0911 49.5 | 40.81S | 174.92E | 56 | 2.6 | 0.1 | 13 | 10 |
| 4612 | AUG 07 | 1421 57.4 | 41.15S | 174.80E | 27 | 2.3 | 0.1 | 13 | 9 |
| 4614 | AUG 07 | 1843 18.3 | 41.16S | 174.32E | 54 | 2.2 | 0.0 | 7 | 5 |
| 4621 | AUG 08 | 0716 20.3 | 40.53S | 173.83E | 97 | 2.9 | 0.2 | 14 | 10 |
| 4624 | AUG 08 | 1051 9.3 | 40.94S | 174.69E | 57 | 2.5 | 0.1 | 15 | 11 |
| 4636 | AUG 08 | 2212 48.1 | 41.19S | 174.71E | 29 | 2.5 | 0.1 | 15 | 11 |
| 4645 | AUG 09 | 0606 57.2 | 41.73S | 174.51E | 29 | 2.0 | 0.2 | 12 | 10 |
| 4647 | AUG 09 | 1517 12.7 | 40.82S | 175.21E | 33 | 2.2 | 0.1 | 14 | 10 |
| 4649 | AUG 09 | 1734 53.0 | 41.58S | 174.41E | 15 | 2.7 | 0.2 | 19 | 13 |
| 4651 | AUG 09 | 1751 25.8 | 41.01S | 174.79E | 31 | 2.1 | 0.1 | 18 | 11 |
| 4652 | AUG 09 | 1800 7.0 | 40.89S | 175.60E | 23 | 2.1 | 0.2 | 15 | 12 |
| 4657 | AUG 10 | 0012 36.9 | 41.27S | 173.67E | 99 | 2.4 | 0.0 | 9 | 6 |
| 4659 | AUG 10 | 0021 55.2 | 41.19S | 173.99E | 61 | 2.3 | 0.1 | 7 | 6 |
| 4663 | AUG 10 | 0649 19.4 | 41.96S | 174.17E | 12R | 3.8 | 0.5 | 19 | 15 |
| 4667 | AUG 10 | 1301 15.2 | 41.65S | 174.61E | 33 | 2.2 | 0.2 | 14 | 10 |
| 4691 | AUG 11 | 2356 7.5 | 40.64S | 174.51E | 75 | 2.4 | 0.1 | 6 | 5 |
| 4694 | AUG 12 | 1058 5.0 | 41.07S | 174.90E | 27 | 2.3 | 0.1 | 13 | 9 |
| 4702 | AUG 12 | 2335 4.3 | 40.94S | 174.66E | 10 | 2.2 | 0.1 | 12 | 10 |
| 4705 | AUG 13 | 0312 12.7 | 41.25S | 174.76E | 46 | 2.3 | 0.1 | 14 | 9 |
| 4706 | AUG 13 | 0625 25.3 | 41.14S | 174.65E | 33 | 2.3 | 0.1 | 12 | 8 |
| 4707 | AUG 13 | 0640 45.7 | 41.52S | 175.19E | 25 | 2.3 | 0.1 | 14 | 9 |
| 4714 | AUG 13 | 2258 37.7 | 40.54S | 173.66E | 177 | 3.2 | 0.2 | 8 | 6 |
| 4715 | AUG 14 | 0028 42.0 | 40.84S | 174.66E | 52 | 2.1 | 0.1 | 10 | 7 |
| 4720 | AUG 14 | 0938 29.0 | 41.67S | 174.29E | 10 | 2.3 | 0.2 | 14 | 9 |
| 4725 | AUG 14 | 1656 10.2 | 41.79S | 174.46E | 38 | 2.2 | 0.0 | 5 | 4 |
| 4731 | AUG 15 | 0643 26.5 | 40.81S | 174.64E | 64 | 3.0 | 0.1 | 18 | 12 |
| 4733 | AUG 15 | 1042 53.5 | 40.65S | 175.46E | 59 | 2.5 | 0.1 | 14 | 10 |
| 4734 | AUG 15 | 1446 28.8 | 40.66S | 174.68E | 34 | 2.0 | 0.2 | 9 | 6 |
| 4735 | AUG 15 | 1452 26.3 | 41.36S | 174.66E | 21 | 2.3F | 0.2 | 15 | 11 |
| 4744 | AUG 16 | 0646 41.3 | 40.87S | 174.95E | 45 | 2.0 | 0.1 | 7 | 5 |
| 4746 | AUG 16 | 0923 22.7 | 41.09S | 175.05E | 27 | 2.4 | 0.2 | 16 | 11 |
| 4748 | AUG 16 | 1112 31.0 | 41.42S | 173.52E | 38 | 2.3 | 0.3 | 8 | 5 |
| 4750 | AUG 16 | 1312 42.6 | 40.86S | 175.14E | 35 | 2.0 | 0.0 | 7 | 4 |
| 4751 | AUG 16 | 1422 20.1 | 41.60S | 173.85E | 16 | 2.3 | 0.2 | 16 | 11 |
| 4756 | AUG 16 | 2152 26.1 | 40.77S | 175.24E | 31 | 2.8 | 0.1 | 18 | 12 |
| 4757 | AUG 16 | 2153 20.3 | 40.78S | 175.24E | 31 | 3.0 | 0.2 | 19 | 12 |
| 4763 | AUG 17 | 0321 30.5 | 41.09S | 175.53E | 27 | 2.3 | 0.1 | 16 | 9 |
| 4767 | AUG 17 | 0628 30.3 | 40.81S | 174.76E | 43 | 2.0 | 0.1 | 14 | 9 |
| 4770 | AUG 17 | 0928 57.3 | 41.69S | 174.31E | 22 | 2.6 | 0.2 | 17 | 12 |
| 4773 | AUG 17 | 1330 57.8 | 40.75S | 175.69E | 26 | 2.0 | 0.1 | 10 | 7 |
| 4778 | AUG 17 | 2037 12.0 | 41.34S | 175.64E | 35 | 2.2 | 0.2 | 6 | 5 |
| 4796 | AUG 18 | 1743 59.1 | 40.70S | 175.20E | 44 | 2.0 | 0.1 | 9 | 5 |
| 4799 | AUG 18 | 2112 35.8 | 40.52S | 175.06E | 33 | 2.5 | 0.3 | 15 | 11 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 4802 | AUG 18 | 2307 4.8 | 40.69S | 174.30E | 60 | 2.4 | 0.2 | 12 | 8 |
| 4813 | AUG 19 | 1159 56.0 | 40.86S | 174.37E | 65 | 2.0 | 0.1 | 8 | 5 |
| 4819 | AUG 19 | 1823 30.8 | 41.54S | 174.40E | 16 | 2.9 | 0.2 | 17 | 12 |
| 4820 | AUG 19 | 1849 25.8 | 40.61S | 174.24E | 65 | 3.0 | 0.3 | 14 | 10 |
| 4839 | AUG 20 | 0912 4.0 | 41.00S | 175.51E | 33 | 2.2 | 0.1 | 10 | 8 |
| 4841 | AUG 20 | 1223 42.5 | 41.66S | 174.07E | 38 | 2.6 | 0.3 | 13 | 11 |
| 4847 | AUG 20 | 1816 46.9 | 41.66S | 174.23E | 9 | 2.7 | 0.3 | 13 | 12 |
| 4849 | AUG 21 | 0018 15.4 | 41.34S | 175.74E | 21 | 2.2 | 0.2 | 12 | 9 |
| 4850 | AUG 21 | 0133 14.9 | 41.34S | 175.77E | 18 | 2.0 | 0.1 | 13 | 7 |
| 4853 | AUG 21 | 0349 43.9 | 40.55S | 173.52E | 0 | 2.4 | 0.6 | 10 | 5 |
| 4857 | AUG 21 | 0705 23.4 | 41.28S | 173.76E | 38 | 2.3 | 0.2 | 8 | 6 |
| 4859 | AUG 21 | 0917 36.9 | 40.86S | 174.32E | 22 | 2.3 | 0.2 | 9 | 7 |
| 4865 | AUG 21 | 2057 29.0 | 40.87S | 175.70E | 29 | 2.2 | 0.3 | 11 | 9 |
| 4868 | AUG 22 | 0048 33.0 | 40.88S | 175.18E | 35 | 2.2 | 0.2 | 9 | 7 |
| 4870 | AUG 22 | 0550 50.6 | 41.00S | 174.67E | 33 | 2.1 | 0.1 | 13 | 10 |
| 4875 | AUG 22 | 1010 53.9 | 40.59S | 173.50E | 5R | 3.0 | 0.2 | 16 | 12 |
| 4881 | AUG 22 | 1246 54.6 | 40.84S | 174.73E | 14 | 2.1 | 0.2 | 15 | 9 |
| 4884 | AUG 22 | 1557 46.0 | 41.67S | 173.99E | 47 | 2.4 | 0.1 | 10 | 6 |
| 4889 | AUG 22 | 2206 59.0 | 40.71S | 173.56E | 5R | 2.6 | 0.5 | 8 | 7 |
| 4894 | AUG 23 | 0604 35.4 | 40.75S | 175.39E | 25 | 3.6 | 0.3 | 18 | 14 |
| 4898 | AUG 23 | 1105 33.3 | 40.51S | 175.91E | 30 | 2.3 | 0.2 | 7 | 5 |
| 4899 | AUG 23 | 1113 33.2 | 40.52S | 174.27E | 93 | 2.2 | 0.1 | 6 | 4 |
| 4902 | AUG 23 | 1206 29.0 | 41.67S | 174.53E | 33 | 2.1 | 0.2 | 16 | 11 |
| 4907 | AUG 23 | 1941 34.4 | 40.77S | 174.12E | 88 | 2.4 | 0.1 | 13 | 8 |
| 4909 | AUG 23 | 2306 30.8 | 40.79S | 173.91E | 98 | 2.9 | 0.1 | 18 | 12 |
| 4912 | AUG 24 | 0126 6.6 | 41.46S | 173.59E | 101 | 2.9 | 0.1 | 12 | 9 |
| 4921 | AUG 24 | 1159 23.8 | 40.90S | 174.97E | 28 | 2.2 | 0.2 | 14 | 9 |
| 4926 | AUG 24 | 1602 40.7 | 41.63S | 174.49E | 36 | 2.2 | 0.1 | 11 | 7 |
| 4927 | AUG 24 | 1645 59.7 | 40.80S | 174.14E | 64 | 2.2 | 0.1 | 8 | 6 |
| 4933 | AUG 25 | 0039 53.3 | 40.64S | 174.53E | 44 | 2.4 | 0.1 | 10 | 6 |
| 4968 | AUG 26 | 1849 12.8 | 40.63S | 174.64E | 38 | 2.8 | 0.1 | 14 | 9 |
| 4982 | AUG 27 | 1034 25.1 | 40.93S | 173.93E | 77 | 2.0 | 0.2 | 6 | 5 |
| 4984 | AUG 27 | 1555 52.6 | 41.83S | 174.79E | 46 | 2.3 | 0.1 | 18 | 11 |
| 4987 | AUG 27 | 1729 11.0 | 41.00S | 175.61E | 24 | 2.1 | 0.1 | 14 | 10 |
| 4993 | AUG 27 | 2308 49.5 | 41.74S | 174.45E | 31 | 2.2 | 0.1 | 14 | 9 |
| 4995 | AUG 28 | 0128 51.0 | 40.63S | 174.40E | 79 | 3.4 | 0.1 | 22 | 16 |
| 5000 | AUG 28 | 0758 22.9 | 40.98S | 175.48E | 27 | 2.2 | 0.1 | 14 | 10 |
| 5006 | AUG 29 | 0005 31.9 | 40.89S | 174.74E | 61 | 2.2 | 0.1 | 15 | 9 |
| 5018 | AUG 29 | 1803 35.9 | 41.37S | 175.12E | 28 | 2.0 | 0.1 | 14 | 10 |
| 5019 | AUG 29 | 1832 57.9 | 40.86S | 175.79E | 34 | 2.2 | 0.1 | 11 | 8 |
| 5021 | AUG 29 | 2138 24.9 | 41.32S | 173.59E | 95 | 2.6 | 0.0 | 10 | 7 |
| 5035 | AUG 30 | 2105 24.7 | 40.72S | 175.36E | 30 | 2.8 | 0.2 | 17 | 11 |
| 5037 | AUG 30 | 2238 25.3 | 40.63S | 175.77E | 29 | 2.3 | 0.2 | 13 | 8 |
| 5044 | AUG 31 | 1038 22.9 | 41.14S | 175.14E | 20 | 2.1 | 0.1 | 12 | 9 |
| 5046 | AUG 31 | 1113 28.0 | 40.68S | 173.98E | 169 | 2.9 | 0.1 | 6 | 4 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 5050 | AUG 31 | 1750 1.6 | 40.97S | 173.55E | 125 | 2.8 | 0.1 | 7 | 6 |
| 5052 | AUG 31 | 1819 39.1 | 41.14S | 174.32E | 65 | 2.1 | 0.1 | 5 | 5 |
| 5055 | SEP 01 | 0007 41.3 | 40.99S | 174.63E | 33 | 2.3 | 0.1 | 11 | 9 |
| 5057 | SEP 01 | 0247 24.0 | 41.14S | 174.65E | 31 | 2.3 | 0.2 | 15 | 10 |
| 5069 | SEP 02 | 0213 23.7 | 40.60S | 174.88E | 26 | 2.1 | 0.1 | 7 | 5 |
| 5074 | SEP 02 | 1044 10.2 | 40.50S | 174.66E | 22 | 2.9 | 0.3 | 12 | 10 |
| 5076 | SEP 02 | 1301 6.5 | 41.39S | 174.53E | 60 | 3.7 | 0.2 | 21 | 15 |
| 5078 | SEP 02 | 1305 7.3 | 41.68S | 175.31E | 28 | 2.3 | 0.1 | 12 | 10 |
| 5091 | SEP 02 | 1847 26.0 | 40.51S | 174.13E | 39 | 2.0 | 0.1 | 8 | 5 |
| 5094 | SEP 03 | 0132 30.5 | 41.78S | 174.29E | 34 | 2.0 | 0.2 | 9 | 6 |
| 5105 | SEP 03 | 1613 56.1 | 41.00S | 175.33E | 12 | 2.1 | 0.2 | 15 | 11 |
| 5109 | SEP 03 | 1741 28.2 | 41.08S | 174.88E | 31 | 2.4 | 0.1 | 17 | 11 |
| 5122 | SEP 04 | 1218 48.6 | 41.58S | 174.42E | 20 | 2.0 | 0.1 | 12 | 11 |
| 5128 | SEP 05 | 0238 44.2 | 40.96S | 173.55E | 31 | 2.1 | 0.2 | 8 | 6 |
| 5130 | SEP 05 | 0249 23.5 | 41.20S | 174.00E | 57 | 2.5 | 0.2 | 13 | 9 |
| 5139 | SEP 05 | 1424 46.5 | 40.53S | 174.21E | 95 | 2.8 | 0.1 | 15 | 10 |
| 5154 | SEP 05 | 2312 41.4 | 41.06S | 174.17E | 52 | 2.0 | 0.1 | 8 | 5 |
| 5159 | SEP 06 | 0502 36.3 | 40.85S | 174.32E | 75 | 2.6 | 0.1 | 16 | 10 |
| 5160 | SEP 06 | 0505 17.0 | 40.64S | 175.27E | 31 | 2.5 | 0.1 | 16 | 10 |
| 5173 | SEP 06 | 1629 15.4 | 41.23S | 174.19E | 65 | 2.2 | 0.0 | 10 | 7 |
| 5178 | SEP 06 | 2248 9.9 | 41.62S | 173.79E | 59 | 3.2 | 0.2 | 14 | 12 |
| 5182 | SEP 07 | 0656 2.5 | 40.84S | 174.73E | 15 | 2.1 | 0.3 | 16 | 8 |
| 5185 | SEP 07 | 1547 12.4 | 41.36S | 175.20E | 46 | 2.4 | 0.1 | 14 | 9 |
| 5186 | SEP 07 | 1656 45.3 | 40.69S | 175.94E | 23 | 2.2 | 0.2 | 9 | 7 |
| 5188 | SEP 07 | 1753 23.5 | 41.19S | 174.52E | 38 | 2.5 | 0.1 | 13 | 8 |
| 5189 | SEP 07 | 1812 48.0 | 41.77S | 175.27E | 30 | 3.1 | 0.1 | 16 | 10 |
| 5191 | SEP 08 | 0014 29.8 | 40.97S | 175.37E | 12 | 2.5 | 0.3 | 12 | 10 |
| 5193 | SEP 08 | 0432 25.6 | 40.82S | 173.76E | 112 | 3.1 | 0.1 | 10 | 9 |
| 5196 | SEP 08 | 1723 41.5 | 40.50S | 174.62E | 79 | 2.4 | 0.1 | 12 | 8 |
| 5197 | SEP 08 | 2024 20.4 | 41.10S | 175.58E | 43 | 2.3 | 0.1 | 9 | 7 |
| 5205 | SEP 09 | 1926 35.0 | 41.54S | 174.26E | 68 | 2.2 | 0.1 | 7 | 4 |
| 5208 | SEP 09 | 2149 0.8 | 41.99S | 175.39E | 20 | 2.3 | 0.1 | 12 | 8 |
| 5212 | SEP 10 | 0012 8.4 | 41.04S | 174.68E | 32 | 2.0 | 0.1 | 9 | 7 |
| 5214 | SEP 10 | 0027 53.1 | 41.27S | 175.00E | 24 | 2.0 | 0.1 | 13 | 9 |
| 5219 | SEP 10 | 0905 27.3 | 41.13S | 173.89E | 64 | 2.2 | 0.1 | 5 | 4 |
| 5220 | SEP 10 | 1012 35.9 | 40.77S | 174.52E | 42 | 2.1 | 0.2 | 8 | 7 |
| 5223 | SEP 10 | 1448 43.0 | 41.29S | 174.48E | 54 | 2.0 | 0.2 | 8 | 6 |
| 5228 | SEP 10 | 1849 8.9 | 41.41S | 173.90E | 53 | 2.5 | 0.1 | 12 | 8 |
| 5232 | SEP 11 | 0132 56.6 | 41.00S | 175.41E | 28 | 2.3 | 0.1 | 17 | 10 |
| 5240 | SEP 11 | 1330 26.4 | 40.79S | 174.28E | 57 | 2.1 | 0.3 | 8 | 5 |
| 5244 | SEP 11 | 1954 10.3 | 40.86S | 175.62E | 21 | 3.5 | 0.2 | 19 | 12 |
| 5248 | SEP 12 | 0449 33.8 | 41.01S | 174.48E | 57 | 2.1 | 0.0 | 9 | 6 |
| 5251 | SEP 12 | 0653 44.9 | 41.74S | 173.92E | 17 | 2.1 | 0.2 | 11 | 8 |
| 5252 | SEP 12 | 0850 23.1 | 41.18S | 174.79E | 51 | 2.5 | 0.1 | 11 | 9 |
| 5261 | SEP 12 | 2056 9.1 | 41.67S | 175.23E | 23 | 2.2 | 0.2 | 14 | 9 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 5267 | SEP 12 | 2242 11.6 | 41.04S | 173.68E | 55 | 2.4 | 0.1 | 8 | 5 |
| 5270 | SEP 13 | 0123 49.4 | 41.56S | 174.07E | 10 | 2.8 | 0.3 | 14 | 11 |
| 5274 | SEP 13 | 0539 25.5 | 40.96S | 175.10E | 37 | 2.0 | 0.3 | 5 | 4 |
| 5281 | SEP 13 | 1324 16.1 | 41.86S | 174.40E | 43 | 2.5 | 0.1 | 13 | 8 |
| 5284 | SEP 13 | 1803 56.4 | 41.34S | 174.10E | 41 | 3.1 | 0.2 | 17 | 12 |
| 5285 | SEP 13 | 1815 6.0 | 40.57S | 175.61E | 31 | 2.4 | 0.1 | 12 | 10 |
| 5291 | SEP 14 | 0139 11.5 | 41.36S | 174.98E | 28 | 2.4 | 0.1 | 16 | 10 |
| 5317 | SEP 15 | 0948 57.4 | 41.51S | 173.68E | 89 | 3.0 | 0.1 | 14 | 11 |
| 5326 | SEP 15 | 2156 29.6 | 40.97S | 175.56E | 26 | 2.4 | 0.2 | 18 | 10 |
| 5329 | SEP 15 | 2328 15.8 | 41.79S | 174.75E | 31 | 2.1 | 0.1 | 11 | 6 |
| 5331 | SEP 16 | 0229 19.9 | 41.76S | 174.70E | 32 | 2.0 | 0.3 | 11 | 7 |
| 5332 | SEP 16 | 0235 52.4 | 40.81S | 174.73E | 40 | 2.2 | 0.1 | 12 | 8 |
| 5335 | SEP 16 | 0426 1.8 | 41.15S | 175.08E | 8 | 2.8F | 0.1 | 16 | 12 |
| 5336 | SEP 16 | 0604 56.5 | 41.18S | 173.76E | 86 | 2.2 | 0.1 | 6 | 5 |
| 5337 | SEP 16 | 0630 19.5 | 40.55S | 173.86E | 188 | 2.8 | 0.1 | 8 | 6 |
| 5341 | SEP 16 | 0848 26.3 | 41.00S | 174.86E | 29 | 2.3 | 0.1 | 12 | 9 |
| 5358 | SEP 16 | 2122 46.0 | 41.36S | 175.11E | 27 | 2.0 | 0.1 | 13 | 9 |
| 5359 | SEP 16 | 2252 38.8 | 40.64S | 174.75E | 25 | 2.2 | 0.1 | 12 | 9 |
| 5365 | SEP 17 | 0823 44.4 | 40.72S | 175.52E | 30 | 2.1 | 0.1 | 11 | 9 |
| 5368 | SEP 17 | 1703 50.0 | 41.72S | 174.30E | 33 | 2.3 | 0.2 | 15 | 9 |
| 5374 | SEP 18 | 1140 59.7 | 41.13S | 173.53E | 99 | 4.2 | 0.2 | 20 | 15 |
| 5380 | SEP 18 | 2005 48.4 | 41.38S | 173.50E | 110 | 2.4 | 0.0 | 9 | 7 |
| 5390 | SEP 19 | 1839 17.8 | 41.58S | 174.31E | 28 | 2.6 | 0.2 | 16 | 13 |
| 5398 | SEP 20 | 1236 57.2 | 41.04S | 175.74E | 28 | 2.2 | 0.1 | 16 | 10 |
| 5403 | SEP 20 | 1639 28.3 | 40.91S | 175.22E | 32 | 2.3 | 0.2 | 17 | 11 |
| 5409 | SEP 20 | 2305 21.9 | 40.51S | 173.68E | 101 | 3.7 | 0.2 | 23 | 18 |
| 5423 | SEP 21 | 1336 1.2 | 40.95S | 175.20E | 33 | 2.0 | 0.2 | 17 | 10 |
| 5424 | SEP 21 | 1542 37.3 | 41.79S | 174.37E | 28 | 3.6 | 0.2 | 19 | 15 |
| 5427 | SEP 21 | 1928 27.3 | 41.78S | 174.34E | 29 | 2.6 | 0.2 | 15 | 11 |
| 5435 | SEP 22 | 0822 44.0 | 40.76S | 174.01E | 24 | 2.3 | 0.3 | 14 | 8 |
| 5436 | SEP 22 | 0849 44.5 | 41.02S | 174.60E | 34 | 2.0 | 0.0 | 12 | 8 |
| 5449 | SEP 23 | 0425 54.8 | 41.16S | 173.52E | 71 | 2.0 | 0.0 | 6 | 3 |
| 5457 | SEP 23 | 1438 54.1 | 40.68S | 175.87E | 28 | 3.2 | 0.3 | 20 | 15 |
| 5464 | SEP 24 | 0032 6.6 | 41.05S | 174.60E | 63 | 2.4 | 0.1 | 11 | 8 |
| 5466 | SEP 24 | 0228 3.3 | 40.52S | 173.79E | 142 | 2.6 | 0.1 | 9 | 7 |
| 5469 | SEP 24 | 0312 5.2 | 41.87S | 173.91E | 8 | 2.6 | 0.1 | 9 | 8 |
| 5477 | SEP 24 | 1631 34.6 | 41.79S | 174.29E | 32 | 2.1 | 0.1 | 15 | 10 |
| 5479 | SEP 24 | 1719 6.6 | 41.80S | 174.32E | 30 | 2.2 | 0.2 | 18 | 12 |
| 5480 | SEP 24 | 2019 59.2 | 41.83S | 174.01E | 12R | 2.1 | 0.2 | 11 | 10 |
| 5481 | SEP 24 | 2137 56.1 | 40.90S | 175.69E | 27 | 2.0 | 0.2 | 14 | 10 |
| 5488 | SEP 25 | 0113 44.3 | 40.59S | 173.94E | 110 | 2.4 | 0.1 | 9 | 6 |
| 5490 | SEP 25 | 1102 28.4 | 41.59S | 174.95E | 44 | 2.1 | 0.1 | 11 | 9 |
| 5492 | SEP 25 | 1457 41.9 | 40.61S | 173.88E | 48 | 2.0 | 0.2 | 7 | 5 |
| 5493 | SEP 25 | 1504 30.8 | 40.61S | 174.15E | 45 | 2.0 | 0.3 | 9 | 6 |
| 5496 | SEP 25 | 2023 59.2 | 41.71S | 173.65E | 78 | 2.2 | 0.1 | 8 | 6 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 5497 | SEP 25 | 2250 4.6 | 41.17S | 173.71E | 102 | 2.7 | 0.0 | 10 | 7 |
| 5498 | SEP 26 | 0041 14.7 | 40.77S | 174.66E | 55 | 2.2 | 0.0 | 7 | 5 |
| 5506 | SEP 27 | 0518 53.2 | 40.79S | 174.54E | 69 | 3.6 | 0.2 | 26 | 20 |
| 5512 | SEP 27 | 1315 25.3 | 41.48S | 173.90E | 43 | 2.0 | 0.1 | 11 | 8 |
| 5514 | SEP 27 | 1733 14.0 | 40.91S | 175.40E | 28 | 2.6 | 0.1 | 19 | 12 |
| 5517 | SEP 27 | 2001 32.3 | 41.77S | 174.55E | 34 | 2.5 | 0.1 | 18 | 12 |
| 5521 | SEP 28 | 0606 38.4 | 41.03S | 174.00E | 49 | 2.9 | 0.4 | 16 | 12 |
| 5526 | SEP 28 | 1152 43.8 | 41.22S | 174.73E | 36 | 2.5 | 0.1 | 18 | 11 |
| 5527 | SEP 28 | 1254 58.9 | 41.09S | 174.08E | 68 | 3.7 | 0.2 | 23 | 17 |
| 5528 | SEP 28 | 1412 0.9 | 41.05S | 174.68E | 55 | 2.3 | 0.1 | 17 | 11 |
| 5530 | SEP 28 | 1616 18.6 | 40.52S | 175.80E | 27 | 2.2 | 0.2 | 10 | 6 |
| 5532 | SEP 28 | 1828 18.8 | 41.13S | 174.01E | 59 | 2.1 | 0.1 | 8 | 5 |
| 5534 | SEP 28 | 2022 19.0 | 41.61S | 174.75E | 27 | 2.3 | 0.1 | 14 | 9 |
| 5535 | SEP 29 | 0322 26.3 | 41.01S | 175.43E | 27 | 2.2 | 0.2 | 14 | 10 |
| 5537 | SEP 29 | 0949 45.5 | 40.78S | 175.06E | 39 | 3.3 | 0.1 | 18 | 12 |
| 5538 | SEP 29 | 1019 11.2 | 41.30S | 173.81E | 79 | 2.8 | 0.1 | 12 | 9 |
| 5547 | SEP 29 | 2306 16.7 | 40.59S | 174.41E | 53 | 2.2 | 0.1 | 10 | 6 |
| 5548 | SEP 29 | 2321 33.7 | 40.62S | 174.79E | 25 | 2.2 | 0.2 | 15 | 11 |
| 5554 | SEP 30 | 1040 56.1 | 41.27S | 174.84E | 32 | 2.1 | 0.1 | 16 | 10 |
| 5556 | SEP 30 | 1248 28.6 | 40.96S | 175.31E | 34 | 3.1 | 0.2 | 19 | 12 |
| 5561 | SEP 30 | 2059 43.0 | 41.60S | 174.45E | 12R | 3.9 | 0.2 | 18 | 14 |
| 5564 | OCT 01 | 0124 18.8 | 41.79S | 174.43E | 32 | 2.1 | 0.1 | 11 | 8 |
| 5566 | OCT 01 | 0257 27.1 | 41.82S | 174.41E | 30 | 2.1 | 0.1 | 10 | 7 |
| 5571 | OCT 01 | 0422 26.0 | 41.48S | 174.88E | 29 | 2.6 | 0.1 | 17 | 12 |
| 5576 | OCT 01 | 0655 4.1 | 41.28S | 173.86E | 62 | 2.1 | 0.1 | 8 | 5 |
| 5578 | OCT 01 | 0814 14.9 | 41.59S | 173.63E | 74 | 2.3 | 0.1 | 6 | 5 |
| 5584 | OCT 01 | 1135 12.2 | 40.70S | 174.55E | 55 | 2.1 | 0.3 | 11 | 8 |
| 5590 | OCT 01 | 1530 31.6 | 41.26S | 174.40E | 60 | 2.0 | 0.0 | 8 | 5 |
| 5594 | OCT 01 | 1822 19.7 | 41.33S | 173.59E | 94 | 2.3 | 0.0 | 8 | 5 |
| 5596 | OCT 02 | 0034 55.3 | 41.74S | 174.92E | 32 | 2.0 | 0.1 | 10 | 7 |
| 5600 | OCT 02 | 0757 42.8 | 41.76S | 174.49E | 29 | 2.1 | 0.2 | 15 | 10 |
| 5603 | OCT 02 | 0957 32.1 | 41.17S | 173.81E | 74 | 2.4 | 0.1 | 8 | 6 |
| 5608 | OCT 02 | 1631 46.1 | 41.04S | 174.60E | 52 | 2.3 | 0.1 | 15 | 8 |
| 5611 | OCT 02 | 1755 12.6 | 40.81S | 173.66E | 131 | 2.9 | 0.2 | 19 | 11 |
| 5612 | OCT 02 | 1758 31.2 | 41.24S | 174.37E | 57 | 2.1 | 0.1 | 7 | 4 |
| 5618 | OCT 02 | 2037 52.9 | 41.73S | 174.48E | 31 | 2.8 | 0.2 | 19 | 12 |
| 5620 | OCT 02 | 2218 49.9 | 41.25S | 173.98E | 53 | 2.2 | 0.1 | 9 | 6 |
| 5621 | OCT 02 | 2255 56.1 | 41.72S | 174.47E | 28 | 2.1 | 0.1 | 11 | 8 |
| 5622 | OCT 03 | 0215 33.6 | 41.21S | 174.63E | 33R | 4.5F | 0.2 | 15 | 15 |
| 5623 | OCT 03 | 0221 58.7 | 41.20S | 174.63E | 30 | 2.3 | 0.1 | 11 | 9 |
| 5627 | OCT 03 | 0254 46.4 | 41.21S | 174.62E | 31 | 2.4 | 0.2 | 19 | 10 |
| 5628 | OCT 03 | 0255 36.0 | 41.21S | 174.62E | 32 | 2.0 | 0.1 | 12 | 8 |
| 5629 | OCT 03 | 0258 32.3 | 41.22S | 174.62E | 31 | 2.0 | 0.2 | 12 | 8 |
| 5633 | OCT 03 | 0453 43.6 | 41.20S | 174.62E | 30 | 2.2 | 0.1 | 16 | 9 |
| 5636 | OCT 03 | 0655 23.6 | 40.66S | 174.30E | 109 | 2.7 | 0.3 | 11 | 7 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 5640 | OCT 03 | 0948 9.8 | 40.56S | 174.79E | 23 | 2.2 | 0.2 | 13 | 9 |
| 5641 | OCT 03 | 1049 0.5 | 40.92S | 175.48E | 30 | 2.3 | 0.2 | 14 | 10 |
| 5643 | OCT 03 | 1058 2.5 | 40.96S | 175.45E | 24 | 2.3 | 0.1 | 16 | 11 |
| 5644 | OCT 03 | 1333 3.1 | 40.74S | 174.50E | 12R | 2.3 | 0.2 | 17 | 9 |
| 5647 | OCT 03 | 1556 16.3 | 41.76S | 174.34E | 31 | 2.0 | 0.2 | 13 | 10 |
| 5652 | OCT 04 | 0221 14.3 | 41.20S | 174.63E | 31 | 2.0 | 0.1 | 14 | 10 |
| 5653 | OCT 04 | 0310 18.4 | 41.18S | 174.63E | 33R | 3.1 | 0.1 | 16 | 12 |
| 5654 | OCT 04 | 0324 31.4 | 41.54S | 173.77E | 52 | 2.6 | 0.2 | 14 | 10 |
| 5657 | OCT 04 | 0514 58.3 | 41.19S | 174.60E | 56 | 2.2 | 0.1 | 10 | 7 |
| 5663 | OCT 04 | 0843 27.5 | 41.17S | 174.64E | 32 | 3.0F | 0.2 | 15 | 12 |
| 5665 | OCT 04 | 1020 43.7 | 40.90S | 175.75E | 33 | 2.2 | 0.2 | 8 | 6 |
| 5666 | OCT 04 | 1021 0.6 | 41.07S | 175.15E | 25 | 2.1 | 0.1 | 9 | 4 |
| 5668 | OCT 04 | 1341 37.3 | 40.94S | 175.19E | 30 | 2.4 | 0.1 | 11 | 8 |
| 5671 | OCT 04 | 1900 44.5 | 41.24S | 174.52E | 19 | 2.3 | 0.1 | 14 | 8 |
| 5675 | OCT 04 | 2203 57.5 | 41.19S | 174.63E | 31 | 2.0 | 0.1 | 11 | 7 |
| 5677 | OCT 04 | 2247 35.6 | 40.95S | 175.68E | 26 | 2.6 | 0.1 | 17 | 10 |
| 5679 | OCT 05 | 0059 42.0 | 41.19S | 174.62E | 32 | 2.4 | 0.1 | 14 | 9 |
| 5683 | OCT 05 | 0335 44.3 | 41.78S | 174.90E | 35 | 2.0 | 0.1 | 7 | 5 |
| 5685 | OCT 05 | 0524 51.0 | 41.23S | 175.06E | 21 | 2.0 | 0.1 | 14 | 9 |
| 5691 | OCT 05 | 1251 23.1 | 41.31S | 173.72E | 59 | 2.5 | 0.1 | 9 | 6 |
| 5692 | OCT 05 | 1536 44.2 | 41.09S | 174.88E | 30 | 2.0 | 0.1 | 13 | 9 |
| 5697 | OCT 05 | 2154 31.7 | 40.63S | 176.00E | 49 | 2.4 | 0.1 | 13 | 9 |
| 5699 | OCT 06 | 0315 0.6 | 41.51S | 173.66E | 77 | 2.8 | 0.2 | 12 | 10 |
| 5701 | OCT 06 | 0854 26.3 | 41.22S | 174.62E | 33 | 2.0 | 0.1 | 14 | 10 |
| 5712 | OCT 06 | 1947 8.1 | 40.52S | 173.76E | 184 | 2.9 | 0.1 | 8 | 6 |
| 5716 | OCT 07 | 1536 26.0 | 41.02S | 174.48E | 66 | 2.4 | 0.1 | 13 | 9 |
| 5719 | OCT 07 | 1854 46.8 | 40.84S | 174.97E | 54 | 2.3 | 0.1 | 13 | 9 |
| 5721 | OCT 07 | 1943 16.6 | 41.02S | 173.97E | 5R | 2.2 | 0.2 | 5 | 4 |
| 5725 | OCT 08 | 0144 46.8 | 41.64S | 174.56E | 33 | 2.5 | 0.1 | 14 | 10 |
| 5733 | OCT 08 | 1401 12.7 | 41.63S | 174.77E | 30 | 2.3 | 0.1 | 13 | 9 |
| 5734 | OCT 08 | 1428 13.3 | 40.86S | 174.70E | 13 | 2.2 | 0.2 | 12 | 10 |
| 5738 | OCT 08 | 1750 8.6 | 41.69S | 174.51E | 33 | 2.8 | 0.2 | 15 | 12 |
| 5741 | OCT 08 | 2155 50.9 | 40.70S | 174.62E | 62 | 2.4 | 0.1 | 7 | 5 |
| 5753 | OCT 09 | 0837 20.6 | 40.62S | 174.68E | 34 | 2.6 | 0.1 | 11 | 7 |
| 5770 | OCT 10 | 0558 48.8 | 40.66S | 174.15E | 88 | 2.8 | 0.1 | 9 | 7 |
| 5777 | OCT 10 | 1802 21.1 | 41.75S | 174.49E | 30 | 2.7 | 0.2 | 13 | 11 |
| 5783 | OCT 11 | 0328 52.1 | 41.66S | 174.33E | 3 | 2.0 | 0.3 | 8 | 7 |
| 5788 | OCT 11 | 1314 43.4 | 41.64S | 174.26E | 11 | 2.7 | 0.4 | 13 | 10 |
| 5795 | OCT 12 | 0203 29.0 | 41.28S | 175.28E | 30 | 2.5 | 0.1 | 14 | 9 |
| 5798 | OCT 12 | 1205 5.8 | 40.99S | 174.94E | 28 | 2.1 | 0.1 | 15 | 9 |
| 5799 | OCT 12 | 1249 41.8 | 41.78S | 175.50E | 30 | 2.4 | 0.1 | 14 | 9 |
| 5803 | OCT 12 | 1830 40.2 | 41.27S | 175.30E | 28 | 2.3 | 0.1 | 17 | 10 |
| 5810 | OCT 13 | 0512 35.8 | 40.93S | 175.44E | 24 | 2.1 | 0.2 | 14 | 9 |
| 5815 | OCT 13 | 0839 55.2 | 41.44S | 174.20E | 63 | 3.3 | 0.1 | 20 | 13 |
| 5816 | OCT 13 | 0844 58.0 | 40.86S | 175.19E | 33 | 3.1 | 0.2 | 17 | 11 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 5822 | OCT 14 | 0102 51.6 | 41.22S | 174.57E | 55 | 2.5 | 0.1 | 12 | 8 |
| 5823 | OCT 14 | 0139 34.3 | 40.97S | 175.39E | 21 | 2.0 | 0.1 | 11 | 8 |
| 5829 | OCT 14 | 1829 53.5 | 40.74S | 174.17E | 92 | 2.4 | 0.1 | 8 | 5 |
| 5830 | OCT 14 | 2024 51.6 | 41.12S | 174.65E | 32 | 2.9 | 0.1 | 15 | 11 |
| 5833 | OCT 15 | 0150 13.6 | 41.55S | 174.67E | 30 | 2.1 | 0.1 | 9 | 8 |
| 5835 | OCT 15 | 0337 18.9 | 40.61S | 173.64E | 147 | 2.6 | 0.1 | 8 | 7 |
| 5841 | OCT 15 | 0616 25.9 | 41.20S | 174.62E | 32 | 2.2 | 0.1 | 13 | 9 |
| 5844 | OCT 15 | 0917 30.3 | 40.83S | 174.98E | 34 | 2.1 | 0.2 | 6 | 6 |
| 5857 | OCT 16 | 0747 36.5 | 41.34S | 174.02E | 66 | 2.3 | 0.1 | 9 | 6 |
| 5859 | OCT 16 | 0920 36.5 | 41.58S | 174.31E | 28 | 2.7 | 0.2 | 14 | 12 |
| 5867 | OCT 16 | 1710 31.6 | 41.02S | 174.24E | 84 | 2.1 | 0.0 | 9 | 6 |
| 5868 | OCT 16 | 2058 39.4 | 41.66S | 174.29E | 33R | 3.4 | 0.2 | 23 | 16 |
| 5870 | OCT 17 | 0336 57.5 | 40.94S | 175.11E | 30 | 2.0 | 0.1 | 6 | 5 |
| 5875 | OCT 17 | 0647 8.8 | 40.73S | 174.62E | 44 | 2.1 | 0.2 | 10 | 8 |
| 5878 | OCT 17 | 0908 5.6 | 41.36S | 174.86E | 45 | 2.2 | 0.1 | 10 | 8 |
| 5879 | OCT 17 | 1020 7.9 | 41.61S | 174.29E | 5R | 2.2 | 0.2 | 12 | 7 |
| 5885 | OCT 18 | 0350 1.9 | 40.75S | 175.37E | 26 | 2.3 | 0.1 | 8 | 7 |
| 5886 | OCT 18 | 1101 54.5 | 40.78S | 174.22E | 100 | 2.5 | 0.1 | 5 | 4 |
| 5889 | OCT 19 | 0045 28.0 | 40.51S | 174.79E | 33 | 2.4 | 0.4 | 8 | 7 |
| 5890 | OCT 19 | 0130 10.7 | 41.32S | 174.24E | 19 | 2.1 | 0.2 | 8 | 7 |
| 5894 | OCT 19 | 0704 35.1 | 40.94S | 174.67E | 35 | 2.9 | 0.1 | 12 | 8 |
| 5896 | OCT 19 | 1159 47.8 | 41.64S | 174.59E | 34 | 2.4 | 0.2 | 12 | 10 |
| 5905 | OCT 19 | 2130 27.7 | 41.01S | 174.18E | 69 | 2.7 | 0.1 | 15 | 8 |
| 5906 | OCT 19 | 2349 30.4 | 40.89S | 175.56E | 22 | 2.0 | 0.1 | 12 | 9 |
| 5910 | OCT 20 | 0651 44.0 | 41.12S | 174.64E | 54 | 2.1 | 0.1 | 13 | 8 |
| 5916 | OCT 20 | 1548 46.8 | 41.19S | 173.86E | 68 | 2.3 | 0.1 | 10 | 7 |
| 5917 | OCT 20 | 1719 36.5 | 41.49S | 174.67E | 14 | 2.2 | 0.2 | 14 | 10 |
| 5920 | OCT 20 | 1740 43.5 | 41.48S | 174.67E | 15 | 2.4 | 0.2 | 16 | 12 |
| 5921 | OCT 20 | 1741 38.3 | 40.70S | 175.27E | 29 | 2.3 | 0.2 | 15 | 10 |
| 5928 | OCT 20 | 2221 26.5 | 41.17S | 174.57E | 56 | 2.2 | 0.1 | 9 | 7 |
| 5932 | OCT 21 | 0838 5.3 | 41.71S | 173.95E | 45 | 2.0 | 0.1 | 8 | 6 |
| 5943 | OCT 22 | 0046 30.4 | 41.48S | 174.67E | 15 | 2.5 | 0.2 | 15 | 11 |
| 5944 | OCT 22 | 0048 26.1 | 41.48S | 174.67E | 15 | 2.7 | 0.2 | 15 | 11 |
| 5947 | OCT 22 | 0056 50.6 | 41.48S | 174.70E | 15 | 3.6F | 0.3 | 19 | 16 |
| 5948 | OCT 22 | 0102 10.2 | 41.47S | 174.67E | 15 | 2.1 | 0.2 | 14 | 10 |
| 5949 | OCT 22 | 0106 20.2 | 41.47S | 174.68E | 15 | 2.6 | 0.2 | 19 | 12 |
| 5956 | OCT 22 | 0837 47.3 | 41.73S | 174.47E | 30 | 2.4 | 0.2 | 16 | 12 |
| 5958 | OCT 22 | 2314 36.6 | 41.48S | 174.69E | 13 | 2.0 | 0.2 | 15 | 9 |
| 5959 | OCT 22 | 2335 21.5 | 41.48S | 174.68E | 14 | 2.0 | 0.2 | 14 | 9 |
| 5960 | OCT 22 | 2335 59.5 | 41.49S | 174.68E | 12 | 2.1 | 0.2 | 15 | 10 |
| 5961 | OCT 22 | 2336 19.5 | 41.48S | 174.68E | 12 | 2.5 | 0.2 | 16 | 11 |
| 5966 | OCT 23 | 0707 22.4 | 41.03S | 175.35E | 29 | 2.0 | 0.1 | 15 | 10 |
| 5969 | OCT 23 | 1522 51.0 | 41.74S | 174.50E | 31 | 2.0 | 0.2 | 15 | 8 |
| 5971 | OCT 23 | 1602 54.9 | 40.93S | 174.65E | 40 | 2.2 | 0.1 | 10 | 8 |
| 5973 | OCT 23 | 2101 15.2 | 41.56S | 174.20E | 0 | 2.1 | 0.4 | 10 | 8 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 5975 | OCT 24 | 0352 6.4 | 40.98S | 174.48E | 58 | 2.0 | 0.1 | 7 | 6 |
| 5980 | OCT 24 | 1054 24.5 | 40.63S | 174.44E | 69 | 2.3 | 0.2 | 9 | 5 |
| 5982 | OCT 24 | 1528 14.7 | 40.79S | 174.60E | 53 | 2.0 | 0.1 | 11 | 7 |
| 5983 | OCT 24 | 1546 26.1 | 40.98S | 175.35E | 25 | 2.6 | 0.2 | 15 | 10 |
| 5998 | OCT 25 | 0434 31.3 | 40.90S | 175.71E | 28 | 2.5 | 0.1 | 13 | 9 |
| 6002 | OCT 25 | 0917 31.2 | 41.81S | 174.37E | 28 | 2.6 | 0.2 | 17 | 13 |
| 6003 | OCT 25 | 0922 36.3 | 41.75S | 174.31E | 36 | 2.0 | 0.2 | 9 | 7 |
| 6007 | OCT 25 | 1451 10.6 | 41.25S | 173.78E | 95 | 2.5 | 0.0 | 6 | 4 |
| 6014 | OCT 25 | 2351 49.2 | 41.76S | 174.49E | 35 | 2.2 | 0.1 | 10 | 8 |
| 6015 | OCT 26 | 0013 49.7 | 40.53S | 174.21E | 94 | 2.7 | 0.1 | 11 | 8 |
| 6020 | OCT 26 | 0740 50.2 | 41.28S | 173.85E | 120 | 2.4 | 0.1 | 10 | 6 |
| 6022 | OCT 26 | 1133 53.3 | 40.80S | 174.60E | 54 | 2.1 | 0.1 | 14 | 10 |
| 6023 | OCT 26 | 2210 46.7 | 41.23S | 174.53E | 57 | 2.6 | 0.1 | 14 | 9 |
| 6025 | OCT 27 | 0350 50.6 | 40.82S | 174.58E | 39 | 2.6 | 0.1 | 16 | 10 |
| 6033 | OCT 27 | 0850 24.7 | 41.85S | 173.87E | 28 | 2.4 | 0.2 | 9 | 7 |
| 6041 | OCT 28 | 0418 50.3 | 41.78S | 174.37E | 28 | 2.0 | 0.1 | 11 | 8 |
| 6053 | OCT 28 | 1727 27.0 | 41.16S | 174.65E | 32 | 3.0 | 0.2 | 18 | 11 |
| 6056 | OCT 28 | 1908 58.4 | 41.08S | 173.84E | 55 | 2.0 | 0.1 | 6 | 4 |
| 6062 | OCT 29 | 0131 48.8 | 41.08S | 174.15E | 54 | 2.5 | 0.1 | 10 | 8 |
| 6063 | OCT 29 | 0150 19.1 | 40.68S | 174.41E | 50 | 2.5 | 0.2 | 11 | 7 |
| 6072 | OCT 29 | 0744 28.0 | 40.67S | 174.81E | 12 | 2.4 | 0.2 | 17 | 10 |
| 6074 | OCT 29 | 1020 24.8 | 40.77S | 175.00E | 34 | 2.2 | 0.1 | 15 | 11 |
| 6075 | OCT 29 | 1119 32.4 | 41.10S | 174.59E | 58 | 3.5 | 0.0 | 21 | 15 |
| 6082 | OCT 30 | 0428 15.5 | 41.19S | 174.77E | 30 | 2.0 | 0.1 | 18 | 11 |
| 6086 | OCT 30 | 1335 41.1 | 40.83S | 174.71E | 14 | 2.6 | 0.3 | 17 | 11 |
| 6092 | OCT 30 | 1548 13.2 | 41.24S | 173.71E | 110 | 2.6 | 0.1 | 9 | 7 |
| 6097 | OCT 30 | 1924 44.8 | 40.83S | 175.16E | 32 | 2.0 | 0.2 | 14 | 10 |
| 6105 | OCT 31 | 0001 13.9 | 40.84S | 175.80E | 31 | 2.3 | 0.2 | 12 | 9 |
| 6106 | OCT 31 | 0001 55.9 | 40.83S | 175.81E | 28 | 2.1 | 0.0 | 8 | 5 |
| 6112 | OCT 31 | 0831 33.5 | 41.24S | 173.76E | 58 | 2.8 | 0.2 | 14 | 9 |
| 6127 | OCT 31 | 2242 4.1 | 41.70S | 174.48E | 32 | 2.5 | 0.1 | 12 | 10 |
| 6135 | NOV 01 | 1821 57.2 | 40.96S | 173.83E | 77 | 2.7 | 0.2 | 8 | 5 |
| 6136 | NOV 01 | 1822 25.4 | 40.55S | 174.74E | 47 | 3.3 | 0.2 | 20 | 14 |
| 6143 | NOV 02 | 0911 41.8 | 41.94S | 174.07E | 12R | 2.1 | 0.3 | 16 | 10 |
| 6149 | NOV 02 | 1539 5.4 | 41.39S | 174.77E | 27 | 2.0 | 0.1 | 15 | 10 |
| 6155 | NOV 02 | 2139 2.5 | 40.59S | 175.43E | 50 | 3.1 | 0.1 | 21 | 14 |
| 6170 | NOV 03 | 1928 50.7 | 41.02S | 174.84E | 52 | 2.1 | 0.1 | 14 | 10 |
| 6173 | NOV 04 | 0050 35.2 | 41.13S | 173.69E | 84 | 2.3 | 0.1 | 9 | 7 |
| 6175 | NOV 04 | 0543 13.3 | 41.58S | 174.12E | 64 | 3.6 | 0.2 | 26 | 16 |
| 6176 | NOV 04 | 0653 27.8 | 40.56S | 174.48E | 30 | 2.1 | 0.2 | 14 | 8 |
| 6177 | NOV 04 | 0842 37.7 | 41.08S | 174.74E | 51 | 4.8F | 0.2 | 24 | 20 |
| 6184 | NOV 04 | 1654 33.1 | 41.54S | 173.68E | 53 | 2.7 | 0.1 | 16 | 11 |
| 6185 | NOV 04 | 1739 4.9 | 41.94S | 174.18E | 17 | 2.1 | 0.1 | 10 | 6 |
| 6186 | NOV 04 | 1840 14.9 | 41.18S | 174.94E | 30 | 4.0F | 0.2 | 20 | 16 |
| 6189 | NOV 04 | 1931 28.7 | 41.42S | 174.45E | 32 | 2.0 | 0.1 | 15 | 10 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 6190 | NOV 04 | 1940 39.5 | 40.54S | 174.40E | 67 | 2.3 | 0.1 | 13 | 8 |
| 6193 | NOV 05 | 0422 55.4 | 41.75S | 174.33E | 29 | 2.5 | 0.2 | 19 | 12 |
| 6203 | NOV 05 | 1146 35.6 | 41.18S | 174.00E | 69 | 2.1 | 0.1 | 9 | 6 |
| 6205 | NOV 05 | 1237 30.1 | 41.26S | 174.27E | 71 | 2.0 | 0.1 | 12 | 8 |
| 6212 | NOV 05 | 1657 5.9 | 41.65S | 173.65E | 68 | 2.6 | 0.1 | 8 | 6 |
| 6222 | NOV 06 | 0130 43.3 | 40.69S | 174.83E | 13 | 2.1 | 0.2 | 12 | 7 |
| 6223 | NOV 06 | 0237 53.8 | 40.64S | 175.52E | 31 | 2.0 | 0.1 | 8 | 6 |
| 6225 | NOV 06 | 0624 43.7 | 41.51S | 175.39E | 22 | 2.4 | 0.2 | 20 | 11 |
| 6228 | NOV 06 | 1000 44.8 | 41.73S | 174.94E | 34 | 2.2 | 0.1 | 11 | 7 |
| 6231 | NOV 06 | 1522 27.7 | 40.58S | 174.09E | 91 | 3.4 | 0.1 | 17 | 11 |
| 6232 | NOV 06 | 1700 44.7 | 41.53S | 175.39E | 20 | 2.9 | 0.2 | 13 | 10 |
| 6235 | NOV 06 | 2207 26.1 | 40.83S | 175.10E | 35 | 2.0 | 0.1 | 10 | 8 |
| 6237 | NOV 07 | 0127 21.5 | 41.08S | 174.68E | 33 | 2.2 | 0.2 | 12 | 8 |
| 6238 | NOV 07 | 0228 19.7 | 40.90S | 175.20E | 27 | 2.1 | 0.2 | 13 | 10 |
| 6241 | NOV 07 | 0515 51.4 | 40.66S | 174.61E | 37 | 2.9 | 0.1 | 17 | 10 |
| 6246 | NOV 07 | 1124 20.2 | 41.15S | 173.92E | 57 | 2.2 | 0.2 | 10 | 7 |
| 6253 | NOV 08 | 0011 29.9 | 41.01S | 173.54E | 105 | 3.0 | 0.2 | 17 | 11 |
| 6261 | NOV 08 | 1502 22.1 | 41.74S | 173.81E | 19 | 2.1 | 0.1 | 7 | 6 |
| 6264 | NOV 08 | 1711 8.9 | 40.88S | 174.59E | 61 | 4.2F | 0.1 | 23 | 17 |
| 6265 | NOV 08 | 2030 55.7 | 40.88S | 175.17E | 36 | 2.3 | 0.2 | 11 | 8 |
| 6268 | NOV 09 | 0129 42.1 | 40.53S | 174.62E | 5R | 2.4 | 0.2 | 11 | 7 |
| 6270 | NOV 09 | 0348 50.4 | 40.54S | 174.60E | 5R | 2.1 | 0.3 | 11 | 8 |
| 6271 | NOV 09 | 0510 32.7 | 40.73S | 175.91E | 21 | 2.4 | 0.2 | 8 | 6 |
| 6273 | NOV 09 | 0750 24.7 | 40.69S | 174.95E | 34 | 2.2 | 0.1 | 12 | 9 |
| 6274 | NOV 09 | 0855 2.8 | 41.39S | 174.99E | 26 | 2.2 | 0.1 | 18 | 11 |
| 6276 | NOV 09 | 1416 8.5 | 41.27S | 173.80E | 57 | 2.1 | 0.1 | 8 | 5 |
| 6277 | NOV 09 | 1528 23.0 | 41.75S | 174.11E | 10 | 2.1 | 0.2 | 11 | 7 |
| 6280 | NOV 09 | 1840 43.9 | 40.98S | 175.92E | 31 | 2.6 | 0.2 | 17 | 12 |
| 6281 | NOV 09 | 1842 57.0 | 40.68S | 174.47E | 72 | 2.9 | 0.1 | 15 | 11 |
| 6282 | NOV 09 | 2030 2.4 | 41.66S | 174.23E | 13 | 3.0 | 0.2 | 18 | 12 |
| 6283 | NOV 09 | 2352 4.8 | 41.04S | 174.77E | 31 | 2.0 | 0.1 | 13 | 8 |
| 6285 | NOV 10 | 0223 38.7 | 41.18S | 174.92E | 30 | 2.3 | 0.1 | 17 | 10 |
| 6286 | NOV 10 | 0459 13.5 | 41.13S | 174.65E | 32 | 2.4 | 0.1 | 14 | 10 |
| 6287 | NOV 10 | 0512 43.7 | 40.94S | 175.06E | 31 | 3.0 | 0.2 | 18 | 12 |
| 6288 | NOV 10 | 0551 28.0 | 41.04S | 175.24E | 29 | 2.0 | 0.2 | 9 | 6 |
| 6290 | NOV 10 | 0930 42.4 | 41.18S | 174.92E | 30 | 2.3 | 0.1 | 17 | 11 |
| 6292 | NOV 10 | 1739 3.7 | 40.91S | 174.72E | 61 | 2.0 | 0.0 | 9 | 7 |
| 6297 | NOV 11 | 0340 41.2 | 41.52S | 173.60E | 92 | 2.3 | 0.0 | 8 | 5 |
| 6302 | NOV 11 | 1607 48.9 | 40.83S | 174.54E | 60 | 2.0 | 0.1 | 8 | 5 |
| 6303 | NOV 11 | 1619 33.4 | 41.22S | 174.62E | 34 | 3.2 | 0.2 | 19 | 13 |
| 6309 | NOV 12 | 0107 13.1 | 41.44S | 173.50E | 103 | 2.5 | 0.1 | 9 | 7 |
| 6319 | NOV 12 | 1712 49.2 | 41.40S | 174.85E | 23 | 2.1 | 0.2 | 17 | 11 |
| 6323 | NOV 13 | 0406 42.3 | 41.77S | 174.46E | 29 | 2.2 | 0.2 | 15 | 9 |
| 6325 | NOV 13 | 0701 46.1 | 41.60S | 173.61E | 35 | 2.5 | 0.2 | 7 | 6 |
| 6326 | NOV 13 | 0749 27.9 | 40.90S | 175.49E | 24 | 2.5 | 0.2 | 13 | 11 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 6329 | NOV 13 | 1741 23.8 | 40.51S | 174.75E | 25 | 2.1 | 0.2 | 9 | 7 |
| 6331 | NOV 13 | 2133 46.8 | 41.68S | 173.66E | 12R | 2.1 | 0.3 | 6 | 5 |
| 6342 | NOV 14 | 2334 8.0 | 40.97S | 175.62E | 31 | 2.1 | 0.1 | 9 | 6 |
| 6343 | NOV 14 | 2343 19.7 | 40.62S | 174.28E | 86 | 2.5 | 0.1 | 9 | 7 |
| 6345 | NOV 15 | 0524 2.6 | 40.51S | 173.90E | 106 | 3.1 | 0.1 | 16 | 11 |
| 6346 | NOV 15 | 0534 47.5 | 41.83S | 174.05E | 12R | 2.4 | 0.4 | 13 | 12 |
| 6348 | NOV 15 | 0759 40.0 | 41.64S | 174.27E | 8 | 2.2 | 0.3 | 15 | 11 |
| 6349 | NOV 15 | 0805 42.4 | 41.29S | 174.82E | 24 | 3.0 | 0.1 | 16 | 12 |
| 6352 | NOV 15 | 1534 25.7 | 41.02S | 174.12E | 78 | 2.2 | 0.1 | 10 | 6 |
| 6353 | NOV 15 | 1535 7.1 | 40.75S | 173.50E | 177 | 3.3 | 0.1 | 18 | 11 |
| 6356 | NOV 15 | 2118 50.0 | 41.13S | 174.58E | 62 | 2.7 | 0.1 | 15 | 10 |
| 6358 | NOV 16 | 0407 18.5 | 41.07S | 174.19E | 52 | 2.1 | 0.1 | 9 | 7 |
| 6360 | NOV 16 | 0907 18.7 | 40.90S | 175.19E | 28 | 2.9 | 0.2 | 17 | 11 |
| 6368 | NOV 16 | 2113 34.0 | 41.85S | 174.11E | 14 | 2.3 | 0.3 | 9 | 8 |
| 6369 | NOV 17 | 0425 14.6 | 41.45S | 174.25E | 61 | 2.6 | 0.1 | 16 | 12 |
| 6373 | NOV 17 | 1609 22.2 | 41.06S | 175.26E | 22 | 2.0 | 0.2 | 14 | 10 |
| 6377 | NOV 18 | 0716 20.3 | 41.28S | 175.30E | 30 | 2.2 | 0.1 | 18 | 11 |
| 6380 | NOV 18 | 1142 7.6 | 41.56S | 174.23E | 15 | 2.2 | 0.2 | 11 | 9 |
| 6381 | NOV 18 | 1828 2.3 | 41.58S | 174.73E | 25 | 2.3 | 0.1 | 13 | 9 |
| 6385 | NOV 19 | 0507 34.6 | 40.68S | 174.82E | 12 | 2.4 | 0.2 | 15 | 10 |
| 6386 | NOV 19 | 0523 33.3 | 40.87S | 175.50E | 24 | 2.0 | 0.1 | 13 | 10 |
| 6387 | NOV 19 | 0540 53.6 | 41.50S | 174.37E | 29 | 2.1 | 0.1 | 13 | 9 |
| 6388 | NOV 19 | 0627 15.8 | 40.70S | 175.39E | 32 | 2.2 | 0.1 | 13 | 9 |
| 6389 | NOV 19 | 0651 40.9 | 41.26S | 173.54E | 100 | 2.7 | 0.0 | 9 | 7 |
| 6390 | NOV 19 | 1015 52.5 | 40.50S | 174.28E | 28 | 2.4 | 0.1 | 10 | 7 |
| 6391 | NOV 19 | 1105 1.6 | 40.64S | 174.13E | 85 | 2.3 | 0.1 | 10 | 7 |
| 6392 | NOV 19 | 1250 41.7 | 41.47S | 175.65E | 27 | 2.3 | 0.1 | 11 | 9 |
| 6398 | NOV 20 | 0003 15.7 | 40.54S | 174.71E | 52 | 3.0 | 0.1 | 16 | 9 |
| 6399 | NOV 20 | 0308 45.4 | 41.75S | 174.49E | 43 | 2.5 | 0.1 | 10 | 8 |
| 6400 | NOV 20 | 0615 38.1 | 41.28S | 175.12E | 28 | 2.1 | 0.1 | 9 | 7 |
| 6403 | NOV 20 | 1151 15.4 | 41.06S | 174.58E | 58 | 2.7 | 0.0 | 12 | 8 |
| 6405 | NOV 20 | 1507 58.6 | 41.28S | 175.30E | 29 | 2.3 | 0.1 | 12 | 8 |
| 6412 | NOV 21 | 1434 31.3 | 41.34S | 174.36E | 62 | 2.1 | 0.1 | 11 | 8 |
| 6413 | NOV 21 | 1715 28.5 | 41.20S | 173.66E | 102 | 2.7 | 0.0 | 11 | 7 |
| 6416 | NOV 21 | 2034 24.2 | 40.87S | 174.39E | 74 | 2.6 | 0.0 | 9 | 8 |
| 6425 | NOV 23 | 1336 37.6 | 41.16S | 173.91E | 72 | 2.5 | 0.1 | 8 | 6 |
| 6427 | NOV 23 | 1953 2.5 | 41.11S | 174.82E | 56 | 2.5 | 0.0 | 9 | 7 |
| 6428 | NOV 23 | 2313 12.4 | 41.06S | 174.15E | 50 | 2.4 | 0.1 | 12 | 7 |
| 6432 | NOV 24 | 0558 14.8 | 41.19S | 174.53E | 58 | 2.4 | 0.1 | 10 | 7 |
| 6436 | NOV 24 | 0830 23.8 | 40.99S | 174.55E | 53 | 2.0 | 0.0 | 10 | 7 |
| 6440 | NOV 24 | 1128 24.8 | 41.58S | 174.31E | 27 | 2.2 | 0.2 | 15 | 11 |
| 6441 | NOV 24 | 1128 46.0 | 41.56S | 174.32E | 25 | 2.0 | 0.1 | 11 | 8 |
| 6447 | NOV 24 | 2202 21.4 | 40.64S | 174.87E | 12R | 2.2 | 0.2 | 13 | 8 |
| 6448 | NOV 24 | 2211 19.0 | 40.72S | 175.39E | 29 | 2.3 | 0.1 | 13 | 11 |
| 6449 | NOV 24 | 2334 26.5 | 40.83S | 174.72E | 14 | 2.6 | 0.3 | 17 | 10 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 6454 | NOV 25 | 1237 34.3 | 41.73S | 174.48E | 33 | 2.3 | 0.2 | 17 | 11 |
| 6455 | NOV 25 | 1840 19.1 | 41.73S | 174.27E | 24 | 2.0 | 0.3 | 11 | 10 |
| 6458 | NOV 26 | 0158 15.8 | 40.99S | 175.48E | 25 | 2.6 | 0.1 | 19 | 12 |
| 6465 | NOV 26 | 0927 33.8 | 40.93S | 175.03E | 35 | 2.4 | 0.1 | 15 | 11 |
| 6478 | NOV 27 | 1407 1.4 | 41.08S | 175.24E | 14 | 2.2 | 0.2 | 14 | 10 |
| 6480 | NOV 27 | 1520 11.2 | 41.24S | 174.49E | 34 | 2.3 | 0.1 | 13 | 9 |
| 6485 | NOV 27 | 2302 37.6 | 41.29S | 175.30E | 30 | 2.3 | 0.1 | 15 | 10 |
| 6487 | NOV 28 | 0718 53.7 | 40.78S | 174.44E | 46 | 2.9 | 0.2 | 16 | 8 |
| 6489 | NOV 28 | 0958 14.6 | 40.92S | 175.46E | 25 | 2.1 | 0.1 | 11 | 7 |
| 6491 | NOV 28 | 1536 42.6 | 40.68S | 174.40E | 63 | 2.2 | 0.1 | 8 | 6 |
| 6494 | NOV 28 | 1816 26.7 | 40.66S | 174.21E | 74 | 3.0 | 0.2 | 9 | 7 |
| 6498 | NOV 28 | 2311 16.9 | 41.71S | 174.12E | 12R | 2.3 | 0.3 | 14 | 10 |
| 6502 | NOV 29 | 0759 17.4 | 40.55S | 173.96E | 90 | 2.4 | 0.1 | 7 | 4 |
| 6504 | NOV 29 | 1033 37.5 | 41.18S | 174.08E | 76 | 2.4 | 0.1 | 10 | 8 |
| 6505 | NOV 29 | 1057 38.8 | 40.65S | 174.60E | 34 | 3.1 | 0.1 | 15 | 11 |
| 6507 | NOV 29 | 1312 24.8 | 40.50S | 174.14E | 177 | 2.5 | 0.1 | 7 | 6 |
| 6513 | NOV 29 | 2157 2.5 | 41.60S | 173.84E | 13 | 2.3 | 0.3 | 11 | 9 |
| 6516 | NOV 30 | 0630 2.6 | 40.86S | 174.71E | 49 | 2.0 | 0.1 | 7 | 5 |
| 6518 | NOV 30 | 0708 11.0 | 41.37S | 175.12E | 29 | 2.4 | 0.1 | 19 | 11 |
| 6527 | NOV 30 | 2238 49.7 | 41.41S | 174.66E | 22 | 2.1 | 0.1 | 16 | 11 |
| 6532 | DEC 01 | 0602 10.2 | 40.89S | 174.92E | 61 | 2.1 | 0.1 | 15 | 11 |
| 6535 | DEC 01 | 1345 8.4 | 40.74S | 174.03E | 100 | 2.5 | 0.0 | 10 | 8 |
| 6538 | DEC 01 | 2123 57.4 | 41.27S | 174.38E | 57 | 2.7 | 0.1 | 14 | 10 |
| 6541 | DEC 02 | 0950 30.8 | 41.89S | 174.14E | 12R | 2.3 | 0.3 | 11 | 9 |
| 6544 | DEC 02 | 1659 7.8 | 40.61S | 174.33E | 5R | 3.4 | 0.2 | 25 | 17 |
| 6551 | DEC 03 | 0812 36.3 | 41.73S | 174.24E | 11 | 3.1 | 0.2 | 22 | 16 |
| 6552 | DEC 03 | 1344 43.2 | 40.56S | 174.45E | 55 | 2.1 | 0.0 | 6 | 4 |
| 6553 | DEC 03 | 1538 59.0 | 41.68S | 174.17E | 25 | 2.6 | 0.2 | 11 | 9 |
| 6560 | DEC 04 | 0619 48.8 | 40.75S | 174.60E | 43 | 2.3 | 0.2 | 13 | 8 |
| 6561 | DEC 04 | 0645 7.5 | 41.84S | 174.47E | 31 | 2.6 | 0.1 | 19 | 12 |
| 6562 | DEC 04 | 0906 57.7 | 41.00S | 175.57E | 28 | 2.1 | 0.1 | 14 | 9 |
| 6565 | DEC 04 | 0952 20.6 | 41.39S | 175.32E | 17 | 2.3 | 0.1 | 17 | 11 |
| 6566 | DEC 04 | 1043 17.5 | 40.79S | 174.20E | 59 | 2.1 | 0.2 | 8 | 5 |
| 6570 | DEC 04 | 1129 41.7 | 40.80S | 175.46E | 28 | 2.2 | 0.1 | 12 | 8 |
| 6573 | DEC 04 | 1334 17.1 | 42.00S | 174.22E | 29 | 2.2 | 0.1 | 12 | 7 |
| 6574 | DEC 04 | 1510 37.8 | 40.86S | 174.25E | 81 | 2.1 | 0.0 | 9 | 6 |
| 6577 | DEC 04 | 2150 43.6 | 40.90S | 174.89E | 48 | 2.2 | 0.1 | 11 | 7 |
| 6579 | DEC 04 | 2336 23.6 | 41.27S | 175.00E | 27 | 2.0 | 0.1 | 14 | 10 |
| 6583 | DEC 05 | 0055 16.3 | 41.02S | 174.64E | 58 | 2.1 | 0.0 | 7 | 5 |
| 6585 | DEC 05 | 0413 31.8 | 40.59S | 174.68E | 5R | 2.1 | 0.2 | 9 | 7 |
| 6590 | DEC 05 | 1154 59.3 | 41.03S | 173.68E | 86 | 2.3 | 0.2 | 10 | 6 |
| 6591 | DEC 05 | 1258 7.0 | 41.26S | 173.65E | 96 | 2.5 | 0.1 | 14 | 9 |
| 6592 | DEC 05 | 1445 35.0 | 40.68S | 173.50E | 200R | 3.5 | 0.2 | 24 | 14 |
| 6595 | DEC 05 | 1813 2.8 | 40.50S | 174.30E | 94 | 2.2 | 0.1 | 8 | 7 |
| 6596 | DEC 05 | 1845 30.7 | 41.23S | 173.61E | 91 | 2.6 | 0.1 | 12 | 7 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 6597 | DEC 05 | 1846 41.0 | 41.18S | 174.92E | 30 | 2.2 | 0.1 | 18 | 11 |
| 6598 | DEC 05 | 1910 36.4 | 40.90S | 174.97E | 42 | 2.0 | 0.1 | 11 | 8 |
| 6601 | DEC 06 | 0421 4.4 | 41.69S | 174.57E | 53 | 2.2 | 0.1 | 14 | 11 |
| 6608 | DEC 06 | 2241 21.1 | 41.03S | 174.56E | 55 | 2.0 | 0.0 | 9 | 6 |
| 6611 | DEC 07 | 0041 11.3 | 41.05S | 175.60E | 24 | 2.6 | 0.1 | 15 | 10 |
| 6612 | DEC 07 | 0348 22.6 | 41.09S | 175.16E | 32 | 2.0 | 0.2 | 14 | 9 |
| 6618 | DEC 07 | 0810 18.1 | 41.40S | 173.87E | 47 | 2.6 | 0.1 | 16 | 10 |
| 6622 | DEC 07 | 1036 51.4 | 40.68S | 175.91E | 30 | 2.3 | 0.2 | 13 | 8 |
| 6624 | DEC 07 | 1148 44.7 | 41.22S | 174.52E | 35 | 2.1 | 0.1 | 15 | 10 |
| 6643 | DEC 08 | 1649 5.2 | 40.90S | 175.78E | 29 | 2.4 | 0.2 | 20 | 12 |
| 6647 | DEC 08 | 2125 28.7 | 41.72S | 174.50E | 29 | 2.0 | 0.1 | 12 | 8 |
| 6651 | DEC 09 | 0159 38.9 | 40.55S | 174.12E | 71 | 2.6 | 0.1 | 11 | 6 |
| 6652 | DEC 09 | 0426 6.0 | 41.24S | 174.50E | 40 | 2.2 | 0.1 | 14 | 9 |
| 6655 | DEC 09 | 1123 14.8 | 41.09S | 174.25E | 69 | 2.4 | 0.1 | 15 | 10 |
| 6658 | DEC 09 | 1302 44.7 | 40.54S | 174.72E | 73 | 2.4 | 0.1 | 15 | 10 |
| 6659 | DEC 09 | 1615 25.5 | 41.46S | 173.69E | 73 | 4.1F | 0.2 | 25 | 18 |
| 6661 | DEC 09 | 2001 50.3 | 40.98S | 174.47E | 48 | 2.8 | 0.2 | 18 | 11 |
| 6672 | DEC 10 | 1247 47.3 | 40.87S | 175.05E | 14 | 2.6 | 0.2 | 14 | 8 |
| 6676 | DEC 10 | 1732 49.5 | 41.73S | 173.76E | 17 | 2.7 | 0.2 | 12 | 11 |
| 6677 | DEC 10 | 1744 13.9 | 41.50S | 173.90E | 59 | 4.1F | 0.2 | 25 | 17 |
| 6684 | DEC 11 | 0320 40.9 | 40.90S | 175.73E | 24 | 2.5 | 0.2 | 17 | 11 |
| 6685 | DEC 11 | 0348 39.2 | 41.30S | 173.66E | 92 | 2.6 | 0.1 | 10 | 7 |
| 6687 | DEC 11 | 0633 10.3 | 41.12S | 175.07E | 24 | 2.5 | 0.2 | 18 | 11 |
| 6688 | DEC 11 | 1106 4.2 | 41.07S | 174.51E | 47 | 2.0 | 0.1 | 11 | 6 |
| 6693 | DEC 11 | 1423 10.7 | 40.92S | 175.65E | 26 | 4.2F | 0.2 | 25 | 21 |
| 6694 | DEC 11 | 1523 26.7 | 40.90S | 175.67E | 28 | 2.4 | 0.1 | 18 | 11 |
| 6696 | DEC 11 | 1945 11.6 | 40.90S | 175.67E | 28 | 2.3 | 0.2 | 14 | 10 |
| 6697 | DEC 11 | 1946 20.3 | 41.35S | 175.78E | 24 | 2.0 | 0.1 | 8 | 6 |
| 6707 | DEC 12 | 1831 13.3 | 41.50S | 174.56E | 48 | 2.7 | 0.1 | 19 | 12 |
| 6710 | DEC 13 | 0440 53.3 | 41.32S | 173.73E | 106 | 2.8 | 0.1 | 12 | 9 |
| 6711 | DEC 13 | 0512 29.1 | 41.04S | 175.86E | 31 | 2.1 | 0.1 | 11 | 8 |
| 6719 | DEC 13 | 1911 1.0 | 41.65S | 174.30E | 8 | 2.0 | 0.2 | 11 | 10 |
| 6721 | DEC 13 | 2243 19.3 | 41.79S | 174.50E | 32 | 2.3 | 0.2 | 15 | 11 |
| 6722 | DEC 14 | 0223 20.3 | 41.00S | 174.50E | 55 | 2.2 | 0.1 | 10 | 7 |
| 6723 | DEC 14 | 0446 1.3 | 40.50S | 174.38E | 80 | 4.0 | 0.2 | 32 | 23 |
| 6724 | DEC 14 | 0545 51.6 | 41.13S | 174.73E | 38 | 2.0 | 0.1 | 10 | 8 |
| 6725 | DEC 14 | 1100 25.8 | 41.16S | 174.52E | 32 | 2.0 | 0.2 | 11 | 7 |
| 6727 | DEC 14 | 1557 6.8 | 40.58S | 175.64E | 29 | 2.2 | 0.1 | 8 | 6 |
| 6734 | DEC 15 | 0535 10.8 | 40.94S | 175.41E | 26 | 2.4 | 0.1 | 15 | 9 |
| 6739 | DEC 15 | 1811 28.4 | 41.30S | 175.32E | 31 | 2.5 | 0.1 | 18 | 11 |
| 6741 | DEC 15 | 2158 21.7 | 40.79S | 174.61E | 69 | 3.0 | 0.1 | 17 | 9 |
| 6742 | DEC 16 | 0521 54.6 | 40.84S | 174.73E | 16 | 2.1 | 0.2 | 14 | 8 |
| 6744 | DEC 16 | 0727 1.3 | 41.54S | 174.95E | 53 | 2.3 | 0.1 | 16 | 10 |
| 6745 | DEC 16 | 0820 5.9 | 40.86S | 175.62E | 24 | 2.1 | 0.1 | 7 | 5 |
| 6746 | DEC 16 | 1023 17.1 | 40.92S | 175.48E | 27 | 2.5 | 0.1 | 17 | 11 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 6751 | DEC 17 | 0403 30.9 | 41.01S | 175.36E | 27 | 2.5 | 0.1 | 15 | 11 |
| 6754 | DEC 17 | 1134 11.4 | 41.39S | 175.08E | 24 | 2.0 | 0.0 | 7 | 5 |
| 6758 | DEC 17 | 2346 13.2 | 41.20S | 174.09E | 54 | 2.0 | 0.0 | 6 | 5 |
| 6759 | DEC 18 | 0023 43.2 | 40.57S | 174.09E | 80 | 3.2 | 0.2 | 20 | 12 |
| 6760 | DEC 18 | 0345 41.7 | 40.93S | 174.11E | 60 | 2.9 | 0.1 | 15 | 9 |
| 6761 | DEC 18 | 0403 10.5 | 40.68S | 175.51E | 28 | 2.1 | 0.1 | 10 | 6 |
| 6764 | DEC 18 | 0752 34.3 | 41.22S | 175.22E | 27 | 2.0 | 0.1 | 12 | 10 |
| 6768 | DEC 18 | 1455 50.2 | 41.23S | 174.52E | 58 | 2.2 | 0.1 | 15 | 9 |
| 6770 | DEC 18 | 1755 47.0 | 41.80S | 174.44E | 26 | 2.0 | 0.1 | 12 | 7 |
| 6781 | DEC 19 | 1258 51.3 | 41.00S | 175.62E | 29 | 2.2 | 0.2 | 15 | 11 |
| 6783 | DEC 19 | 1523 40.0 | 42.00S | 174.86E | 37 | 2.3 | 0.1 | 9 | 7 |
| 6784 | DEC 19 | 1829 3.8 | 41.40S | 173.61E | 103 | 2.6 | 0.0 | 7 | 5 |
| 6791 | DEC 20 | 0317 7.4 | 40.73S | 174.04E | 89 | 2.2 | 0.3 | 7 | 5 |
| 6795 | DEC 20 | 0844 11.4 | 41.27S | 175.23E | 31 | 2.0 | 0.1 | 16 | 11 |
| 6796 | DEC 20 | 0931 47.3 | 40.85S | 174.75E | 48 | 3.6F | 0.2 | 24 | 18 |
| 6797 | DEC 20 | 1210 35.7 | 41.66S | 174.50E | 53 | 2.1 | 0.1 | 11 | 8 |
| 6808 | DEC 21 | 1127 54.6 | 40.59S | 175.44E | 36 | 2.1 | 0.2 | 11 | 8 |
| 6818 | DEC 22 | 1336 33.4 | 40.85S | 174.39E | 62 | 2.7 | 0.1 | 17 | 10 |
| 6819 | DEC 22 | 1611 27.5 | 41.70S | 174.16E | 7 | 2.5 | 0.3 | 15 | 13 |
| 6821 | DEC 23 | 0238 24.9 | 40.91S | 175.16E | 33 | 2.3 | 0.2 | 16 | 11 |
| 6822 | DEC 23 | 0658 28.3 | 41.56S | 174.47E | 18 | 2.0 | 0.2 | 15 | 11 |
| 6823 | DEC 23 | 1437 25.6 | 40.73S | 174.46E | 70 | 2.8 | 0.1 | 18 | 12 |
| 6831 | DEC 24 | 1247 53.3 | 41.09S | 174.78E | 28 | 2.3 | 0.1 | 15 | 11 |
| 6834 | DEC 24 | 1338 27.0 | 40.97S | 175.36E | 22 | 2.4 | 0.2 | 13 | 11 |
| 6856 | DEC 25 | 1716 20.8 | 41.12S | 174.70E | 57 | 2.6 | 0.0 | 14 | 10 |
| 6859 | DEC 25 | 2155 23.5 | 40.90S | 175.71E | 30 | 2.3 | 0.2 | 15 | 10 |
| 6860 | DEC 25 | 2306 40.3 | 40.81S | 174.77E | 35 | 3.2 | 0.1 | 18 | 12 |
| 6861 | DEC 26 | 0059 23.4 | 41.51S | 174.00E | 14 | 2.4 | 0.2 | 14 | 10 |
| 6863 | DEC 26 | 0105 25.2 | 41.61S | 173.98E | 36 | 2.5 | 0.2 | 13 | 8 |
| 6866 | DEC 26 | 0926 14.6 | 40.85S | 175.11E | 36 | 2.0 | 0.1 | 9 | 7 |
| 6872 | DEC 27 | 0651 42.1 | 41.23S | 175.19E | 23 | 2.0 | 0.1 | 9 | 7 |
| 6873 | DEC 27 | 1057 16.5 | 40.73S | 174.63E | 45 | 2.3 | 0.2 | 10 | 8 |
| 6875 | DEC 27 | 1235 42.0 | 40.91S | 174.78E | 53 | 2.2 | 0.0 | 7 | 5 |
| 6876 | DEC 27 | 1427 21.3 | 41.18S | 173.67E | 101 | 2.5 | 0.1 | 5 | 4 |
| 6878 | DEC 27 | 1809 32.1 | 41.76S | 174.55E | 32 | 2.6 | 0.2 | 13 | 10 |
| 6879 | DEC 27 | 2206 37.9 | 41.22S | 173.70E | 103 | 2.7 | 0.0 | 8 | 6 |
| 6882 | DEC 28 | 1014 37.4 | 41.33S | 175.67E | 18 | 2.5 | 0.1 | 15 | 10 |
| 6887 | DEC 29 | 0146 16.6 | 40.79S | 174.28E | 57 | 2.5 | 0.2 | 8 | 5 |
| 6892 | DEC 29 | 0832 21.4 | 41.61S | 174.64E | 32 | 2.5 | 0.1 | 14 | 10 |
| 6902 | DEC 29 | 1649 5.1 | 41.60S | 174.01E | 36 | 2.2 | 0.2 | 12 | 10 |
| 6903 | DEC 29 | 2227 32.7 | 41.68S | 174.08E | 33R | 2.1 | 0.2 | 13 | 9 |
| 6904 | DEC 30 | 0143 11.4 | 41.13S | 175.72E | 40 | 2.3 | 0.1 | 15 | 10 |
| 6907 | DEC 30 | 0410 1.3 | 41.07S | 174.53E | 61 | 2.3 | 0.1 | 14 | 10 |
| 6911 | DEC 30 | 0916 24.6 | 41.93S | 173.77E | 19 | 2.0 | 0.1 | 7 | 5 |
| 6916 | DEC 30 | 1633 1.6 | 41.39S | 174.97E | 29 | 2.9 | 0.1 | 17 | 11 |

| NUM | DATE | TIME | LAT | LONG | DEP | MAG | Rsd | NP | NS |
|---|---|---|---|---|---|---|---|---|---|
| 6926 | DEC 31 | 0903 58.6 | 41.38S | 174.65E | 54 | 2.4 | 0.1 | 18 | 11 |
| 6927 | DEC 31 | 0925 13.9 | 41.73S | 174.15E | 12R | 2.2 | 0.3 | 14 | 12 |
| 6928 | DEC 31 | 0942 0.4 | 41.74S | 174.15E | 12R | 2.8 | 0.3 | 22 | 16 |
| 6930 | DEC 31 | 1217 52.3 | 41.73S | 174.14E | 12R | 2.3 | 0.2 | 12 | 10 |
| 6934 | DEC 31 | 1622 55.6 | 40.60S | 174.58E | 43 | 2.1 | 0.2 | 14 | 8 |
| 6936 | DEC 31 | 1808 34.2 | 40.50S | 174.20E | 114 | 2.2 | 0.1 | 8 | 6 |
| 6937 | DEC 31 | 2041 22.6 | 40.74S | 173.98E | 86 | 2.3 | 0.2 | 8 | 5 |

# TUAMOTU ARCHIPELAGO NUCLEAR EXPLOSIONS

Nuclear explosions at the French nuclear test sites in the Tuamotu Archipelago are often recorded at Rarotonga (RAR). The P-wave is usually not recorded but the T-waves have a rather distinctive signature with a very emergent onset, followed after a few seconds by a more prominent burst of energy which reaches its maximum and decays before the arrival of a smaller "echo" trailing the main energy by some 110 seconds. Although other teleseismic readings from the New Zealand instrumental networks are published by the International Seismological Centre, these T-wave observations are not.

Because the emergent first arrival cannot always be seen clearly when the explosions are relatively small, the instant of arrival is not recorded here. Instead, an inferred origin time is listed, based on the estimated travel time from the test site to Rarotonga, and indications that it is common practice to detonate tests exactly on the minute.

A means of estimating the magnitudes of these explosions has been devised, based on a comparison of maximum amplitudes of T-waves recorded at Rarotonga with magnitude estimates from the United States National Earthquake Information Service. (W.D. Smith, 1987: Underground nuclear explosions recorded at Rarotonga: estimation of $m_b$ from T-phase amplitude. Geophys. J. R. astr. Soc. 90: 35-42). These magnitudes are given, together with the N.E.I.S. and I.S.C. estimates where these are available. The maximum recorded trace amplitude at Rarotonga (in millimetres) is also listed. An 'F ' after the time of a test indicates that it is believed to have been sited at Fangataufa, while all others are thought to have been on Mururoa.

| DATE | TIME h m | AMPLITUDE millimetres | $m_b$ (T-wave) | $m_b$ (N.E.I.S.) | $m_b$ (I.S.C.) |
|---|---|---|---|---|---|
| May 11 | 16 45 | 5.5 | 5.21 | 5.6 | 5.5 |
| May 20 | 17 59 | 1.0 | 4.47 | -- | -- |
| Jun 03 | 17 30 | 6.5 | 5.28 | 5.3 | 5.2 |
| Jun 23 | 17 30 F | 19.0 | 5.75 | 5.5 | 5.5 |
| Oct 24 | 16 30 | 7.5 | 5.34 | 5.4 | 5.4 |
| Oct 31 | 16 57 | 6.5 | 5.28 | 5.2 | 5.2 |
| Nov 20 | 17 29 | 8.5 | 5.40 | 5.3 | 5.3 |
| Nov 27 | 17 00 F | 22.0 | 5.81 | 5.6 | 5.6 |

# NON-INSTRUMENTAL DATA

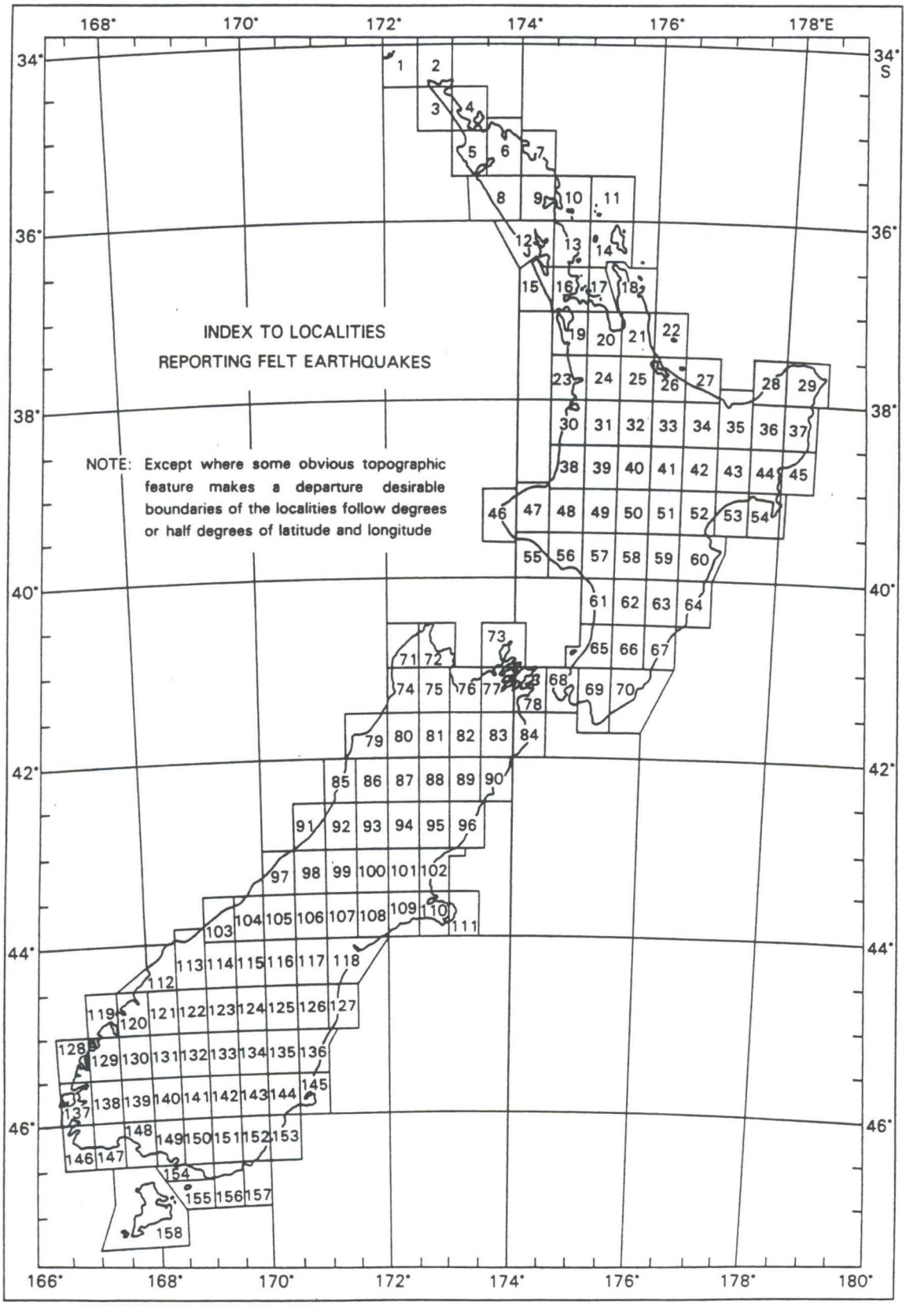
## THE FELT REPORTING SYSTEM

The Observatory has recruited a network of about 600 voluntary observers spread throughout the country, who use a standard form to describe the effects of any earthquake they feel. The Observatory also collects casual reports from newspapers, meteorological observers, postmasters and members of the local public. For large earthquakes, or ones with features of special interest, questionnaires are issued and assessed.

Several difficulties arise in assessing the distribution of felt intensity. The population of the country is very unevenly spread, and the observers' personal circumstances may prevent them from feeling a shock that has been noticed by others. These problems also affect lists of earthquakes felt in particular localities. It may reasonably be assumed that a strong earthquake reported from one township was felt in another nearby, even though the Observatory has received no report. However, an index of this kind must summarise data and not deductions, so the following scheme is used.

The land area of New Zealand has been divided into 'localities', mostly bounded by half-degree lines of latitude and longitude, but varied as necessary to avoid splitting obvious geographic or structural units (see map opposite). Each locality has a number and a name, usually that of the principal population centre within it. The names are listed overleaf. In most localities there are at least two well-separated reporters, but there are still some sparsely populated parts of the country without observers, notably in Southland. Felt information is summarised in information lines following the instrumental data in the main list of earthquakes. Modified Mercalli intensities quoted there have been assessed by the Observatory from replies to standard questionnaires. Assessments based on less formal descriptions of intensity are included in the following list, in which the localities which have reported shocks during the year are presented in alphabetical order, each followed by the reference numbers of the shocks felt and their respective maximum reported intensities within that locality. By comparing the reports from neighbouring localities, it is possible to form a truer estimate of the incidence of the felt effects than would be possible from a simple list of places reporting each shock.

A further list records reports received from places in the south-west Pacific.




Standard Reporting Localities

## STANDARD REPORTING LOCALITIES

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | Three Kings | 41 | Taupo | 81 | Glenhope | 121 | Glenorchy |
| 2 | Te Reinga | 42 | Te Whaiti | 82 | Wairau | 122 | Arrowtown |
| 3 | Ninety Mile Beach | 43 | Tuai | 83 | Awatere | 123 | Wanaka |
| 4 | Doubtless Bay | 44 | Whakapunaki | 84 | Cape Campbell | 124 | St Bathans |
| 5 | Kaitaia | 45 | Gisborne | 85 | Greymouth | 125 | Kurow |
| 6 | Kaikohe | 46 | Cape Egmont | 86 | Reefton | 126 | Duntroon |
| 7 | Bay of Islands | 47 | New Plymouth | 87 | Maruia | 127 | Waimate |
| 8 | Dargaville | 48 | Whangamomona | 88 | Hanmer | 128 | Secretary Is. |
| 9 | Whangarei | 49 | Ohakune | 89 | Clarence | 129 | Doubtful Sound |
| 10 | Bream Head | 50 | Chateau | 90 | Kaikoura | 130 | Te Anau |
| 11 | Moko Hinau | 51 | Kaweka | 91 | Hokitika | 131 | Livingstone Mts |
| 12 | Kaipara | 52 | Napier | 92 | Kumara | 132 | Kingston |
| 13 | Warkworth | 53 | Wairoa | 93 | Arthur's Pass | 133 | Alexandra |
| 14 | Barrier Islands | 54 | Mahia | 94 | Lake Sumner | 134 | Poolburn |
| 15 | Helensville | 55 | Hawera | 95 | Culverden | 135 | Ranfurly |
| 16 | Auckland | 56 | Waverley | 96 | Cheviot | 136 | Oamaru |
| 17 | Waiheke | 57 | Wanganui | 97 | Franz Josef | 137 | Resolution Island |
| 18 | Coromandel | 58 | Taihape | 98 | Hari Hari | 138 | Pillans Pass |
| 19 | Pukekohe | 59 | Ruahine | 99 | Whitcombe Pass | 139 | Monowai |
| 20 | Mercer | 60 | Hastings | 100 | Lake Coleridge | 140 | Mossburn |
| 21 | Thames | 61 | Bulls | 101 | Oxford | 141 | Waikaia |
| 22 | Mayor Is. | 62 | Palmerston North | 102 | Rangiora | 142 | Roxburgh |
| 23 | Raglan | 63 | Dannevirke | 103 | Haast | 143 | Lawrence |
| 24 | Hamilton | 64 | Porangahau | 104 | Bruce Bay | 144 | Outram |
| 25 | Matamata | 65 | Otaki | 105 | Mount Cook | 145 | Dunedin |
| 26 | Tauranga | 66 | Masterton | 106 | Tekapo | 146 | Puysegur Point |
| 27 | Whakatane | 67 | Castlepoint | 107 | Mount Somers | 147 | Poteretere |
| 28 | Te Kaha | 68 | Wellington | 108 | Ashburton | 148 | Tuatapere |
| 29 | East Cape | 69 | Featherston | 109 | Rakaia | 149 | Invercargill |
| 30 | Kawhia | 70 | Martinborough | 110 | Christchurch | 150 | Gore |
| 31 | Te Kuiti | 71 | Mount Stevens | 111 | Akaroa | 151 | Clinton |
| 32 | Tokoroa | 72 | Takaka | 112 | Big Bay | 152 | Balclutha |
| 33 | Rotorua | 73 | D'Urville Island | 113 | Jackson's Bay | 153 | Waihola |
| 34 | Murupara | 74 | Karamea | 114 | Makarora | 154 | Bluff |
| 35 | Opotiki | 75 | Motueka | 115 | Lake Ohau | 155 | Ruapuke |
| 36 | Motu | 76 | Nelson | 116 | Pukaki | 156 | Tahakopa |
| 37 | Tolaga Bay | 77 | Blenheim | 117 | Fairlie | 157 | Owaka |
| 38 | Mokau | 78 | Picton | 118 | Timaru | 158 | Stewart Is. |
| 39 | Taumarunui | 79 | Westport | 119 | George Sound | 159 | Chatham Islands |
| 40 | Tokaanu | 80 | Murchison | 120 | Milford | | |

# EARTHQUAKES FELT IN STANDARD LOCALITIES

Localities within which earthquakes were felt are listed in alphabetical order, each preceded by its number on the reference map. The figure following the name of the locality is the number of the epicentre, followed by the maximum intensity (in brackets) reported within the district covered by the locality name. An asterisk (*) indicates that the particular intensity was not evaluated from the standard questionnaire. The location of the earthquake and the instrumental magnitude may be found in the 'Summary of Origin and Magnitude Determinations'.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 133 | Alexandra | 3221 (4*). | | | | | |
| 122 | Arrowtown | 3221 (4). | | | | | |
| 93 | Arthur's Pass | 2841 (4). | | | | | |
| 83 | Awatere | 2283 (5), | 2284 (5), | 2425 (5), | 2458 (5). | | |
| 152 | Balclutha | 4152 (4). | | | | | |
| 77 | Blenheim | 1209 (4), 5622 (4), | 1797 (4), 6677 (4). | 2036 (4*), | 3273 (4*), | 4206 (4*), | 4622 (4), |
| 154 | Bluff | 3221 (4). | | | | | |
| 104 | Bruce Bay | 777 (4), | 1854 (3), | 3092 (4), | 3574 (4). | | |
| 61 | Bulls | 678 (4), | 1975 (4*), | 2407 (5), | 4622 (4), | 6177 (4). | |
| 46 | Cape Egmont | 1335 (4*), | 4622 (5), | 4892 (4), | 6524 (4). | | |
| 67 | Castlepoint | 2407 (5), | 5984 (4). | | | | |
| 96 | Cheviot | 1670 (4), | 3134 (4). | | | | |
| 110 | Christchurch | 3212 (4*), | 3221 (5), | 4622 (5). | | | |
| 95 | Culverden | 1670 (5*), | 3780 (4*). | | | | |
| 63 | Dannevirke | 5426 (5). | | | | | |
| 145 | Dunedin | 3221 (4). | | | | | |
| 69 | Featherston | 678 (4), | 789 (3*), | 3899 (4*), | 4622 (4), | 6177 (4), | 6186 (4). |
| 45 | Gisborne | 6519 (6). | | | | | |
| 121 | Glenorchy | 3221 (5). | | | | | |
| 150 | Gore | 3221 (4*). | | | | | |
| 85 | Greymouth | 4622 (5). | | | | | |
| 103 | Haast | 3221 (5). | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 60 | Hastings | 108 (4), | 2407 (5*), | 4622 (4), | 5426 (4), | 5984 (4). | |
| 149 | Invercargill | 2185 (3), | 3221 (5), | 3255 (4), | 3403 (4). | | |
| 113 | Jackson's Bay | 777 (4), | 1053 (4), | 3221 (6). | | | |
| 90 | Kaikoura | 43 (4), | 2811 (4*), | 2817 (4*). | | | |
| 132 | Kingston | 3221 (5). | | | | | |
| 70 | Martinborough | 3899 (4*). | | | | | |
| 66 | Masterton | 4622 (5), | 6177 (4). | | | | |
| 25 | Matamata | 1664 (4*), 4078 (4*), | 1703 (4*), 4185 (5*), | 1711 (4), 4812 (4), | 1855 (5*), 4906 (4*). | 1859 (5*), | 1860 (3*), |
| 120 | Milford | 3221 (4*). | | | | | |
| 38 | Mokau | 4622 (5), | 6524 (5). | | | | |
| 139 | Monowai | 3221 (6), | 3226 (4*), | 3403 (4), | 4353 (4). | | |
| 71 | Mount Stevens | 4622 (4). | | | | | |
| 34 | Murupara | 3750 (4*), | 3994 (4*), | 4070 (4*), | 4622 (4). | | |
| 52 | Napier | 108 (4), | 4622 (4), | 5426 (4), | 6098 (3). | | |
| 76 | Nelson | 224 (5*), | 4151 (4*), | 4622 (4). | | | |
| 47 | New Plymouth | 4325 (4*), | 4622 (6), | 4958 (4*), | 6524 (4). | | |
| 136 | Oamaru | 3221 (4*). | | | | | |
| 49 | Ohakune | 2735 (4*), | 4622 (4). | | | | |
| 35 | Opotiki | 200 (4), 5112 (5), | 1621 (4), 6032 (4). | 3994 (5), | 4004 (4), | 4043 (5), | 4622 (4), |
| 65 | Otaki | 678 (4), 5335 (3), | 2278 (4), 5622 (4), | 2407 (3), 6177 (4), | 3120 (4), 6264 (4), | 3273 (4), 6693 (5). | 4622 (7), |
| 144 | Outram | 4152 (4). | | | | | |
| 101 | Oxford | 1801 (5*). | | | | | |
| 62 | Palmerston North | 678 (3), 5622 (3). | 2407 (5), | 2735 (4), | 3120 (3), | 4622 (5), | 5426 (4), |
| 78 | Picton | 3273 (4), | 4151 (3), | 4206 (4), | 6659 (4), | 6677 (4). | |
| 134 | Poolburn | 3221 (4). | | | | | |
| 64 | Porangahau | 2407 (5), | 4622 (4). | | | | |
| 102 | Rangiora | 4622 (4). | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 33 | Rotorua | 814 (5), | 815 (5), | 1317 (4), | 1621 (4*), | 1661 (4), | 3841 (5), |
| | | 3852 (4), | 3862 (4), | 4658 (4*), | 4812 (4), | 5268 (4), | 5302 (5), |
| | | 5303 (5), | 6567 (4), | 6607 (5). | | | |
| 124 | St Bathans | 3221 (4). | | | | | |
| 158 | Stewart Is. | 3221 (4*). | | | | | |
| 156 | Tahakopa | 4152 (3). | | | | | |
| 58 | Taihape | 2407 (5), | 3546 (5), | 4622 (5), | 5132 (5), | 5426 (5). | |
| 39 | Taumarunui | 2407 (4), | 4622 (4), | 6524 (4). | | | |
| 41 | Taupo | 1092 (3), | 1157 (4*), | 1158 (4*), | 1159 (4*), | 1160 (4*), | 1242 (4), |
| | | 3080 (5), | 4020 (5), | 4179 (4), | 4180 (4), | 4239 (5), | 4369 (4), |
| | | 6088 (4), | 6124 (4). | | | | |
| 26 | Tauranga | 1788 (4*), | 3994 (4*), | 4812 (5), | 4826 (4). | | |
| 130 | Te Anau | 1168 (4), | 2696 (5), | 3221 (6), | 3255 (4). | | |
| 31 | Te Kuiti | 4622 (4). | | | | | |
| 21 | Thames | 3994 (5), | 4004 (5), | 4775 (6), | 4812 (6), | 4826 (4). | |
| 40 | Tokaanu | 4622 (4), | 4812 (3), | 6064 (4), | 6068 (4), | 6088 (5), | 6099 (3), |
| | | 6524 (4). | | | | | |
| 43 | Tuai | 6519 (5). | | | | | |
| 148 | Tuatapere | 3221 (4*). | | | | | |
| 123 | Wanaka | 1686 (3*), | 3221 (4). | | | | |
| 57 | Wanganui | 1975 (3), | 2278 (4*), | 2305 (5), | 2735 (4), | 3064 (4*), | 4622 (5). |
| 68 | Wellington | 224 (4), | 524 (4*), | 678 (5), | 789 (3), | 1209 (5), | 1530 (4), |
| | | 1975 (4), | 2036 (5), | 2278 (4), | 2407 (4), | 2735 (4*), | 2747 (4*), |
| | | 3273 (4), | 3899 (4*), | 4043 (3*), | 4151 (3), | 4206 (4*), | 4325 (4), |
| | | 4622 (5), | 4735 (4*), | 5622 (5), | 5663 (4), | 5947 (3), | 6177 (5), |
| | | 6186 (5), | 6264 (4), | 6693 (5), | 6796 (4). | | |
| 79 | Westport | 3221 (3), | 4622 (4). | | | | |
| 44 | Whakapunaki | 2278 (4), | 2350 (4), | 3120 (5), | 4622 (4), | 6519 (4), | 6654 (3). |
| 27 | Whakatane | 1621 (4*), | 3292 (4*), | 3994 (5), | 4004 (4), | 5112 (4). | |
| 48 | Whangamomona | 2407 (4), | 6524 (5). | | | | |

# REPORTS FROM OUTSIDE NEW ZEALAND

The Observatory sometimes receives reports of earthquakes felt on islands of the south-west Pacific and other places beyond the limits of its systematic reporting network. Where Modified Mercalli scale intensities in the list below are shown in quotes, they have been estimated by the reporters, not the Observatory.

| DATE | TIME | INTENSITY | PLACE |
|---|---|---|---|
| Feb 16 | 06h 58m | 'felt' | Raoul Island. |
| Feb 23 | 01h 48m | 'MM 4' | Raoul Island. |
| Feb 25 | 11h 26m | 'MM 5' | Raoul Island. |
| Feb 25 | 12h 03m | 'MM 4' | Raoul Island. |
| Mar 07 | 04h 30m | 'MM 4' | Raoul Island. |
| Mar 16 | 09h 34m | 'MM 4' | Raoul Island. |
| Mar 11 | 05h 06m | MM 4 | Apia. |
| Mar 25 | 16h 57m | MM 4 | Raoul Island. |
| Mar 25 | 17h 05m | MM 4 | Raoul Island. |
| Apr 06 | 17h 33m | MM 4 | Raoul Island. |
| Apr 27 | 12h 37m | MM 3 | Raoul Island. |
| May 14 | 01h 00m | MM 4 | Raoul Island. |
| May 20 | 16h 02m | MM 5 | Raoul Island. |
| May 20 | 20h 37m | 'felt' | Raoul Island. |
| May 23 | 10h 55m | MM 6 | Macquarie Island; |
| | | MM 5 | Campbell Island. |
| Jun 21 | 12h 43m | 'felt' | Raoul Island. |
| Jul 05 | 04h 50m | MM 4 | Raoul Island. |
| Jul 16 | 22h 11m | 'felt' | Raoul Island. |
| Aug 05 | 09h 54m | MM 4 | Raoul Island. |
| Aug 07 | 13h 34m | MM 5 | Raoul Island. |
| Sep 08 | 08h 26m | MM 3 | Raoul Island. |
| Oct 06 | 21h 30m - | | |
| Oct 08 | 20h 00m | '30 earthquakes felt' | Raoul Island. |
| Oct 13 | 20h 13m | MM 3 | Raoul Island. |
| Nov 22 | 03h 10m | 'felt' | Raoul Island. |
| Nov 23 | 15h 56m | 'felt' | Raoul Island. |
| Nov 24 | 07h 11m | 'felt' | Raoul Island. |
| Dec 02 | 01h 44m | 'felt' | Raoul Island. |
| Dec 05 | 16h 06m | 'MM4' | Apia. |
| Dec 16 | 09h 58m | 'felt' | Raoul Island. |

# PUBLICATIONS BY STAFF MEMBERS

The following papers by members of the Seismological Observatory staff were published in 1989.

S-317 Smith, E.G.C.; Stern, T. and Reyners, M.E.: Subduction and back-arc activity at the Hikurangi Convergent Margin, New Zealand. Pageoph, 129: 203-231.

The Hikurangi Margin is a region of oblique subduction with northwest-dipping intermediate depth seismicity extending southwest from the Kermadec system to about 42°S. The current episode of subduction is at least 16-20 Ma old. The plate convergence rate varies along the margin from about 60 mm/a at the south end of the Kermadec Trench to about 45 mm/a at 42°S.

The margin divides at about latitude 39°S into two quite dissimilar parts. The northern part has experienced andesitic volcanism for about 18 Ma, and back-arc extension in the last 4 Ma that has produced a back-arc basin onshore with high heatflow, thin crust and low upper-mantle seismic velocities. The plate interface is thought to be currently uncoupled, as geodetic data indicate extension of the fore-arc basin, and historic earthquakes have not exceeded $M_S = 7$.

South of 39°S there is no volcanism and a back-arc basin has been produced by downward flexure of the lithosphere due to strong coupling with the subducting plate. Heatflow in the basin is normal. Evidence for strong coupling comes from historic earthquakes of up to about $M_S = 8$ and high rates of uplift on the southeast coast of the North Island.

S-318 Lowry, M.A.; Ede, S.C. and Harris, J.S.: Assessment of seismic intensities resulting from the 1987 Edgecumbe earthquake, New Zealand, and implication of modernising the intensity scale. NZ J. Geol. Geophys., 32: 145-153.

The intensity of shaking caused by the main shock of the $M_L$ 6.3 Edgecumbe earthquake of 1987, as shown by ground deformation, property damage and the impressions of witnesses, and the distribution of intensities about the epicentre, is compared with expectations based on models developed by Smith and Berryman. Suggestions are made for minor revision of the New Zealand version of the MM scale to improve discrimination between intensities X and XI and to allow for changes in building standards since the current version was published. A need for more systematic archiving of intensity data to facilitate the recovery of specific classes of information is identified.

S-319 Smith, E.G.C. and Oppenheimer, C.M.M.: The Edgecumbe earthquake sequence: 1987 February 21 to March 18. NZ J. Geol. Geophys. 32: 31-42.

The Edgecumbe earthquake sequence consisted of more than 600 shocks of $M_L \geq 3.0$ in an area of about 70 x 50 km in the Bay of Plenty. About 130 of these shocks occurred prior to the main shock of $M_L$ 6.3.

Using the analysis of variance technique, a set of self-consistent magnitudes has been obtained, although there is a wide discrepancy between apparent magnitudes at some stations.

The foreshocks occurred in two distinct zones, one of them near the subsequent main event. Aftershocks were not confined to the vicinity of the surface faulting and may best be described as a series of swarms occurring contemporaneously with main rupture aftershocks, at distances up to 35 km away.

The value of the magnitude distribution parameter b was not constant throughout the sequence, following the usual pattern of change in an aftershock sequence. The change of b-value fits a Jeffreys-Lomniz creep law with the same constants as the post-seismic creep on the Te Teko segment of the fault break.

S-320 Bannister, S.C.; Perrin, B.J. and Webb, T.H.: Normal faulting through subducted oceanic crust: the 19 July 1985 earthquake of Hawke's Bay, New Zealand. Tectonophysics, 162: 303-313.

Source parameters of the $M_L$ 5.7, 19 July 1985 earthquake of northern Hawke's Bay, New Zealand are determined by modelling the teleseismic P and S body waves. A focal depth of 31 ± 1 km, scalar moment $5.6 \times 10^{17}$ Nm and source duration of 3.0-3.5 s are estimated. The focal mechanism shows normal faulting on a NW-dipping plane parallel to the strike of the subducted Pacific Plate. Twenty-one

aftershocks located using the JHD method define a northwest dipping plane, 20 x 30 km, which extends from the hypocentre of the mainshock to a depth of 47 km. The position of the subducted plate in Hawke's Bay is well defined from previous micro-earthquake studies, placing the hypocentre of the mainshock in the crust of the Pacific Plate. The extent and location of the aftershock distribution suggest that the mainshock ruptured downward and extended through the crust of the plate. This event thus differs from other normal faulting events in the region that usually occur in the mantle of the subducted plate.

S-321 Reyners, M.E.: New Zealand seismicity 1964-87: an interpretation. NZ J. Geol. Geophys., 32: 307-315.

The years 1964-1987 represent a relatively quiet period in the historical record of large earthquakes in New Zealand. Nevertheless, over 7000 earthquakes of magnitude $M_L \geq 4.0$ were located with the National Seismograph Network during this period. Events deeper than 40 km reveal the morphology of the subducted plates in Fiordland and at the Hikurangi Margin. These deeper earthquakes suggest that plate convergence is accommodated along a common northeasterly trend throughout New Zealand. Variations in the slope of the deeper limit of seismicity and in the depth of maximum earthquake activity in the dipping seismic zone at the Hikurangi Margin provide evidence for lateral segmentation of the subducted plate.

Earthquakes shallower than 40 km lack a clear association with major late Quaternary fault traces. However, the distribution of some of these events can be related to the large earthquake cycle. There is also evidence that the degree of coupling of the plate interface at shallow depth may control the state of stress in the dipping seismic zone at the Hikurangi Margin.

S-327 Robinson, R.: Aftershocks of the 1987 Edgecumbe earthquake, New Zealand: seismological and structural studies using portable seismographs in the epicentral region. NZ J. Geol. Geophys., 32: 61-72.

The Edgecumbe earthquake (1987 Mar $2^d01^h42^m34^s$ UT; $M_L$ 6.3, $M_S$ 6.6) was a normal faulting event accompanied by surface fault breaks. The earthquake occurred in an onshore area of active back-arc extension characterised by recent volcanic activity. Over 100 aftershocks have been located using 11 portable and 2 permanent seismographs in the epicentral region, and a velocity model derived from the arrival-time data itself. Station terms, which form a part of that model, reflect the lateral variation in near-surface geology.

The epicentres define a region 65 km long, in the northeast-southwest direction, and 10 km broad. This is much longer than the observed surface faulting or what would be expected from the mainshock magnitude. There is a gap in the aftershock distribution near the Kawerau Geothermal Field and the recently active andesite volcano, Mt Edgecumbe.

Computed depths of the aftershocks range from 0.2 to 9.6 km, most being from 4.0 to 5.9 km. The depth cutoff of 9.6 km probably reflects a high temperature gradient as would be expected in a volcanic region. As is typical for normal faulting events, the main shock initiated near the bottom edge of the aftershock zone.

Focal mechanisms have been obtained for 27 events; they are primarily of normal faulting type with varying degrees of strike-slip motion.

----- Smith, E.G.C. and Anderson, H.J. (editors): Workshop on the deformation of the Wellington region. Bull. NZ Natl. Soc. Earthq. Eng., 22: 2-38.

The workshop was held in Wellington on September 19 and 20, 1988, and was attended by 33 scientists and engineers interested in earthquakes, earth deformation and seismic hazard. The purpose was to review existing data and identify new, feasible projects to fill gaps in knowledge of the subject. Proposals for projects are summarised, and followed by participants' abstracts of their presentations, with supporting maps, diagrams, tables and references. The editors warn that workshop presentations may not represent the final views of authors on their topics.

----- Smith, W.D.: Principal New Zealand earthquakes in 1988.

A review of significant earthquakes of the year.

----- Smith, W.D.: New Zealand's role in nuclear detection. *In* Verifying a Test Ban: T. Findlay (Ed.); Peace Research Centre, Research School of Pacific Studies, Australian National University, Canberra. 91-99.

----- Smith, W.D. How well is the Insurance Industry in New Zealand served by existing research and technology?

Paper presented at the conference on Information Needs of the Earthquake Insurance Industry in New Zealand (organised by the Earthquake & War Damage Commission). Not published in print, but available at the National Library.

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E-170 New Zealand Seismological Report, 1981.

# OBSERVATORY SERVICES

## PUBLICATIONS

The Seismological Observatory issues the following series of publications:

1. E-bulletins. These consist of the 'New Zealand Seismological Reports' containing summaries of the data used for each origin determination, lists of origins, felt intensity data, and brief accounts of the principal earthquakes of the year. They also provide details of the instruments used to record earthquakes and descriptions of Observatory practices.

2. S-bulletins. These are mostly reprints of papers by members of the Observatory staff, but occasionally they have included other material not published elsewhere, such as the Eiby-Muir near-earthquake tables. Their automatic circulation is not now as widespread as it was in the past, but they are usually available from the Observatory on request.

Copies of this material may be purchased from the Observatory. In suitable cases the Observatory may be able to enter into agreements for a free exchange of publications on a continuing basis.

## EARTHQUAKE CATALOGUE

The Observatory has a master file of some tens of thousands of earthquake origins and associated information stored on magnetic tape. From this, lists of earthquakes within particular geographical areas of New Zealand, or in categories defined in other ways, can be made available to researchers. Full details have been published elsewhere (W.D. Smith, 1976: 'A Computer File of New Zealand Earthquakes'; Bull. N.Z. Natl. Soc. Earthq. Eng., Vol. 9, No. 2, pp.136-7, or N.Z. J. Geol. Geophys., Vol. 19, No. 3, pp.393-4). Criteria that may be specified are dates, magnitudes, focal depths, intensities and regions bounded in a number of different ways. It is also possible to search for earthquakes likely to have produced intensities above a specified minimum at a particular place and to list reports of above a given minimum intensity that have originated in a chosen reporting locality. Because of the dangers inherent in the use of incompletely assessed data, it is recommended that users should discuss their search criteria with the Observatory.

Waveforms of earthquakes recorded by digital seismographs are also archived and accessible for further processing by CUSP or other compatible software.

# OBITUARY

## George Allison Eiby (1918 - 1992)

One of New Zealand's most prominent seismologists, George Eiby, died on 26 February 1992 after a long illness.

He was born in Wellington in 1918, and became a cadet in the Department of Scientific and Industrial Research in 1939, training in Seismology and Positional Astronomy. Apart from four years in Britain as a radar mechanic during the Second World War, he remained with the DSIR until 1979, when he retired as Superintendent of the Seismological Observatory. He published more than 150 research papers in the fields of seismology, astronomy, and the history of science. His book EARTHQUAKES, which first appeared in 1957, has established itself as a standard work, running to five editions, the most recent in 1989. Following his retirement, he continued his work as an Honorary Research Associate at the Seismological Observatory.

He was recognized internationally as New Zealand's foremost authority on historical earthquakes, and was an active member of the IASPEI/UNESCO Working Group on Historical Seismograms and Earthquakes. At the time of his death, he was engaged in a major study of New Zealand's largest historical shock, the magnitude 8.1 West Wairarapa earthquake of 1855. In addition, he had recently completed a book on volcanoes, which is expected to be published shortly.

Throughout his career, he was very active in fostering the development of seismology, not only in New Zealand, but also in the wider South West Pacific region. He was the motivating force behind the Seismological Society of the South West Pacific, and served as convener and Newsletter editor for the Society from 1968 to 1974. He also served on several UNESCO Seismological Missions to Southeast Asia and the South West Pacific.

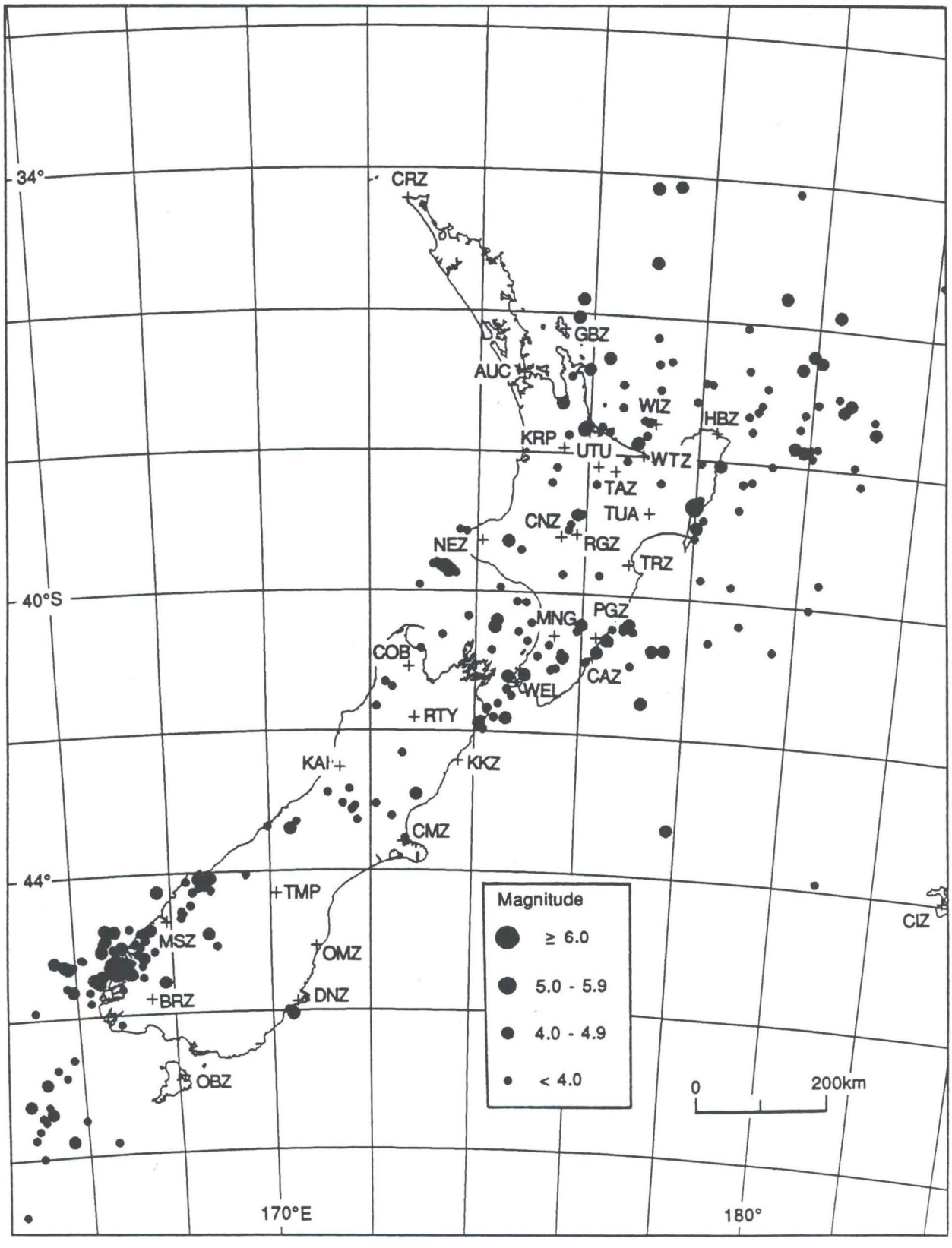
His non-scientific interests were extremely wide. He was an authority on the history of theatre buildings, stage scenery, and stagecraft, and produced or designed more than a hundred plays for local drama societies. He was a founder of the Film Society movement in New Zealand, was a keen musician, and exhibited photographs and sketches. He was also an enthusiastic linguist, historian, and collector of books important to the early development of geophysics.

He will be missed as a friend and colleague, as well as for his extensive knowledge.

M. E. Reyners

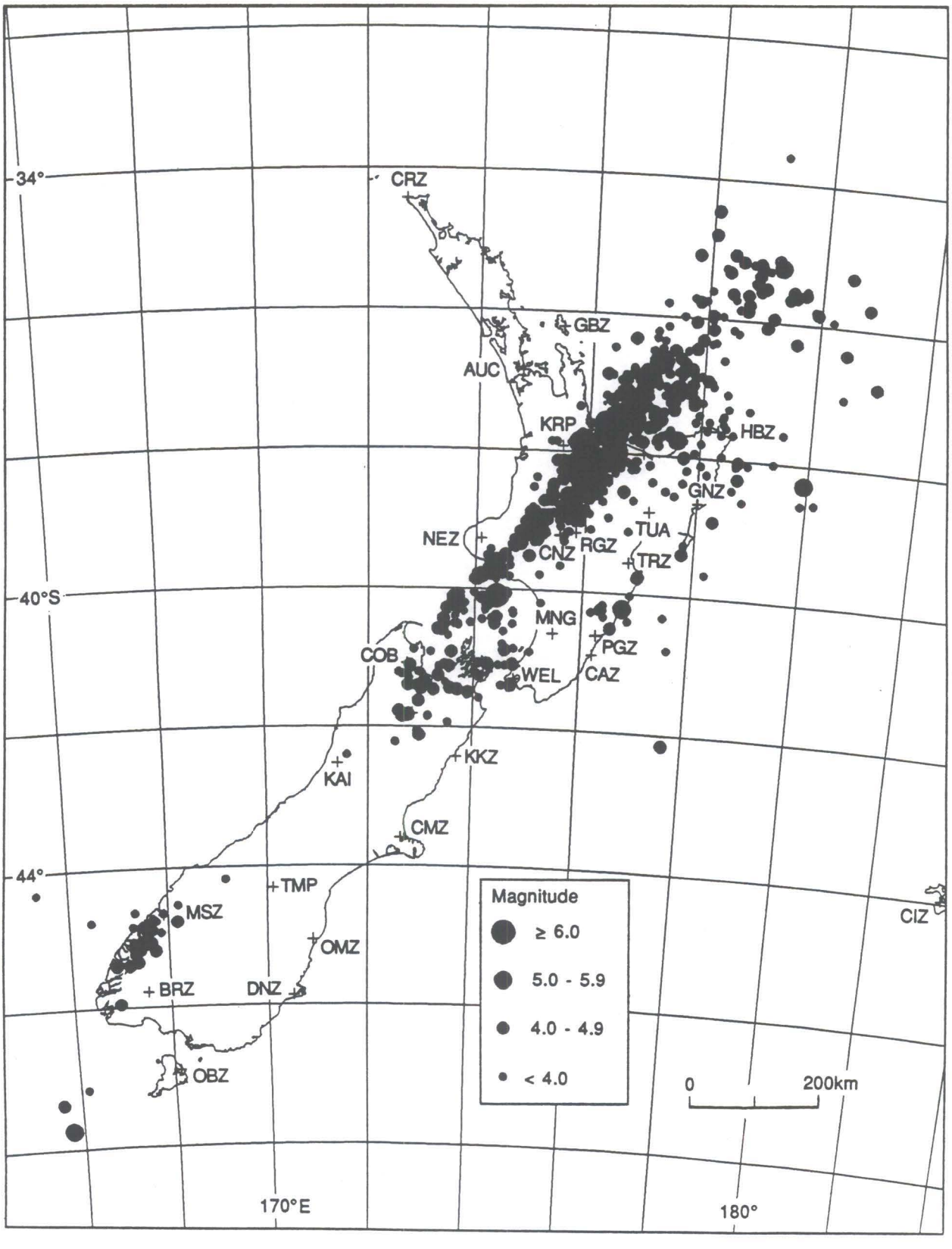
# EPICENTRE AND ISOSEISMAL MAPS 1989

# REGIONAL SHALLOW EARTHQUAKES



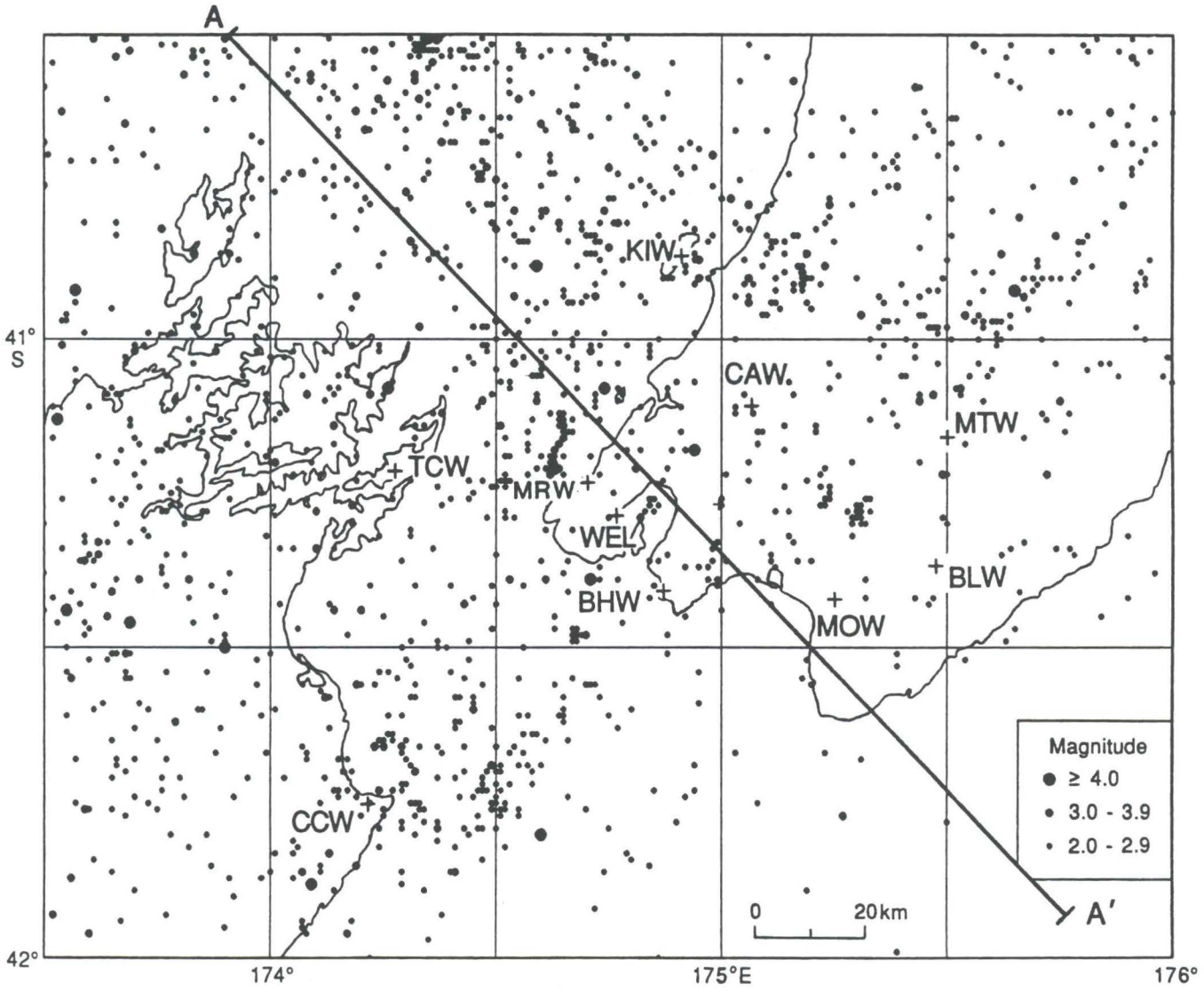

Epicentres of all earthquakes of $M_L \geq 3.5$ with focal depths less than 40 km. When several shocks have the same epicentre, the largest is shown.

# REGIONAL DEEP EARTHQUAKES



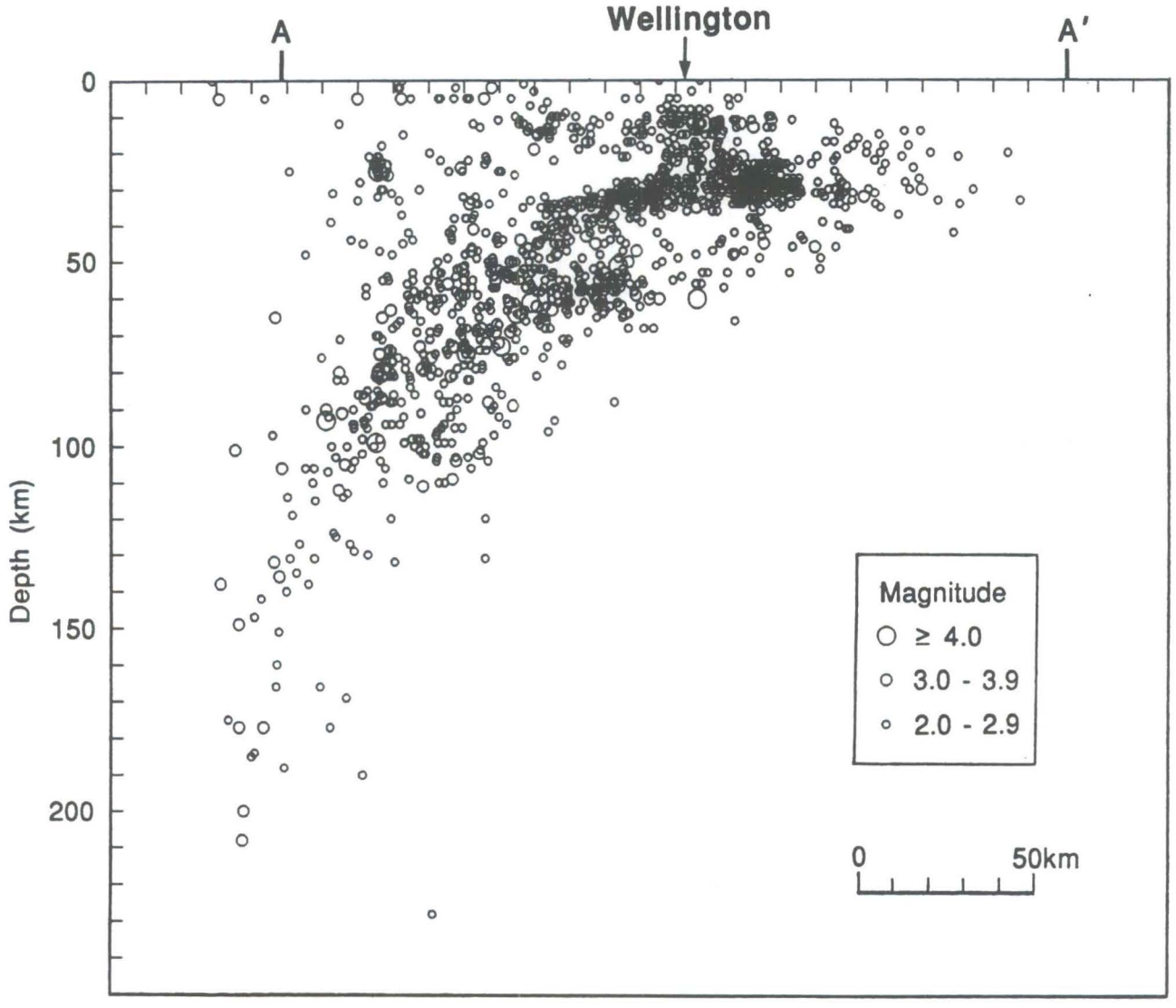

Epicentres of all earthquakes of $M_L \geq 3.5$ with focal depths of 40 km or more. When several shocks have the same epicentre, the largest is shown.

# WELLINGTON AREA EPICENTRES



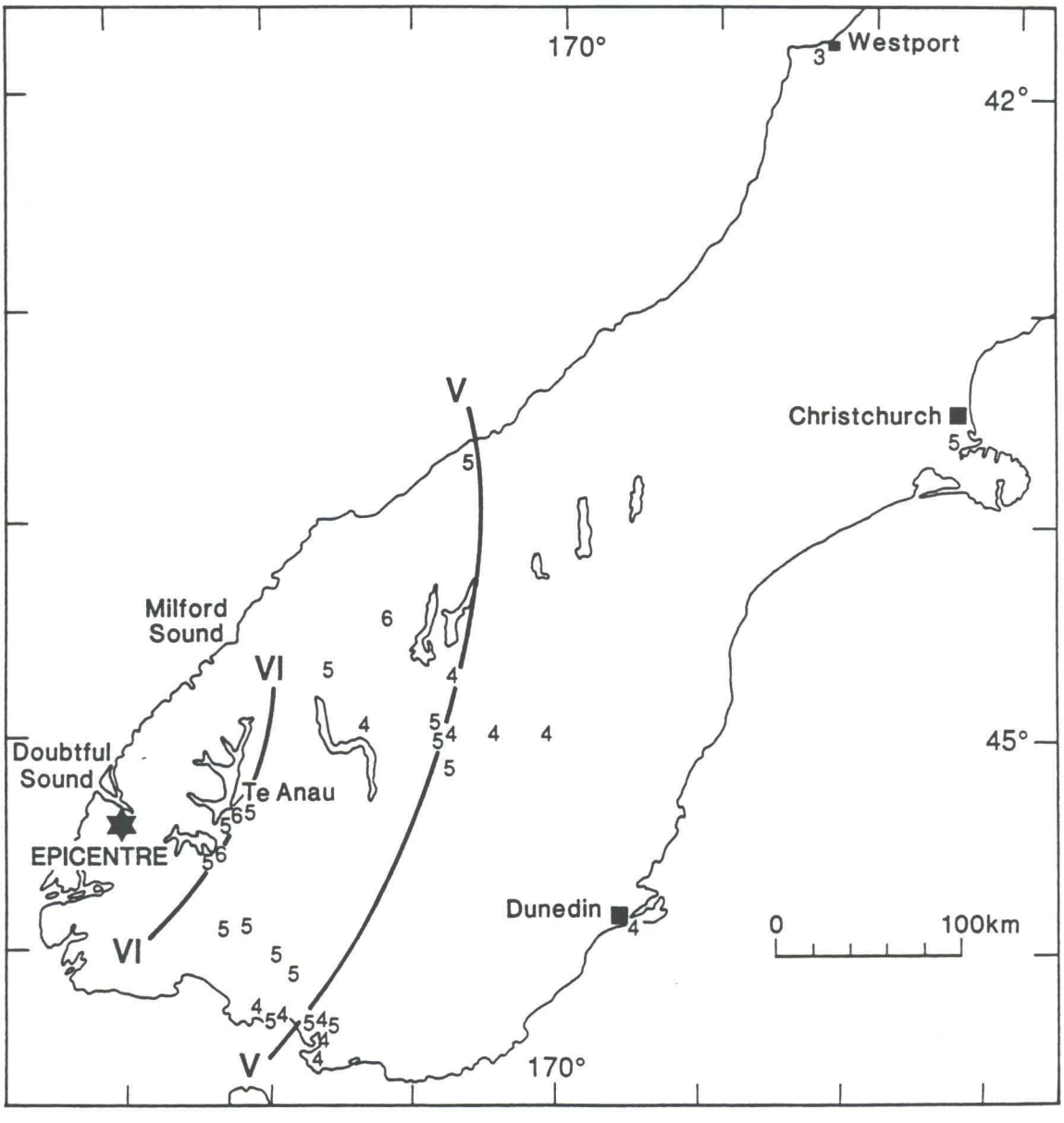

Epicentres of all earthquakes of $M_L \geq 2.0$ in the Wellington area. The distribution of these earthquakes in depth is shown on the next page, where the hypocentres have been projected onto a vertical plane passing through the line A-A'.

# WELLINGTON HYPOCENTRE DEPTHS




In this diagram, the hypocentres of all shocks mapped on the previous page have been projected onto a vertical plane passing through the line A-A', which is roughly normal to the Pacific/Australian plate boundary.

# DOUBTFUL SOUND EARTHQUAKE INTENSITIES




Modified Mercalli intensity distribution for the 1989 Doubtful Sound earthquake (89/3321).