Australian Regional GPS Network (ARGN) Coordinate Time Series

Space Geodesy Analysis Centre
National Mapping Division, Geoscience Australia

August 14, 2003

For questions regarding these solutions please email geodesy@auslig.gov.au

Figure 1: Geoscience Australia’s Australian Regional GPS Network (ARGN) and International GPS Service (IGS) Stations used in the time series computation.
## Contents

1. General Notes 4  
2. Site Specific Notes 4  
3. GPS Time Series, Site Velocities, Australia 5  
4. GPS Time Series, Site Velocities, Antarctica 6  
5. RAW GPS Time Series 7  
   5.1 Alice Springs, Australia 7  
   5.2 Brisbane, Australia 8  
   5.3 Burnie, Tasmania, Australia 9  
   5.4 Casey Station, Antarctica 10  
   5.5 Ceduna, Australia 11  
   5.6 Cocos Island, Australia 12  
   5.7 Darwin, Australia (GPS-GLONASS Receiver) 13  
   5.8 Darwin, Australia 14  
   5.9 Davis Station, Antarctica 15  
   5.10 Davis Station, Antarctica (GPS-GLONASS receiver) 16  
   5.11 Salisbury (DSTO), Australia 17  
   5.12 Hillarys (Tide Gauge), Australia 18  
   5.13 Hobart, Australia 19  
   5.14 Jabiru, Australia 20  
   5.15 Karratha, Australia 21  
   5.16 Macquarie Island, Sub-Antarctica 22  
   5.17 Mawson Station, Antarctica 23  
   5.18 Melbourne, Australia 24  
   5.19 Perth, Australia 25  
   5.20 Mount Stromlo, Australia 26  
   5.21 Mount Stromlo, Australia 27  
   5.22 Mount Stromlo, Australia 28  
   5.23 New Norcia, Australia 29  
   5.24 Sydney, Australia 30  
   5.25 Tidbinbilla, Australia 31  
   5.26 Townsville, Australia 32  
   5.27 Yaragadee, Australia (YAR1) 33  
   5.28 Yaragadee, Australia (YAR2) 34  
   5.29 Yaragadee, Australia (GPS-GLONASS receiver) 35  
6. GPS Time Series after Trend Removal 36  
   6.1 Alice Springs, Australia 36  
   6.2 Brisbane, Australia 37  
   6.3 Burnie, Tasmania, Australia 38  
   6.4 Casey Station, Antarctica 39  
   6.5 Ceduna, Australia 40  
   6.6 Cocos Island, Australia 41  
   6.7 Darwin, Australia (GPS-GLONASS Receiver) 42  
   6.8 Darwin, Australia 43  
   6.9 Davis Station, Antarctica 44  
   6.10 Davis Station, Antarctica (GPS-GLONASS receiver) 45  
   6.11 Salisbury (DSTO), Australia 46  
   6.12 Hillarys (Tide Gauge), Australia 47  
   6.13 Hobart, Australia 48  
   6.14 Jabiru, Australia 49  
   6.15 Karratha, Australia 50  
   6.16 Macquarie Island, Sub-Antarctica 51
<table>
<thead>
<tr>
<th>Section</th>
<th>Location</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.17</td>
<td>Mawson Station, Antarctica</td>
<td>52</td>
</tr>
<tr>
<td>6.18</td>
<td>Melbourne, Australia</td>
<td>53</td>
</tr>
<tr>
<td>6.19</td>
<td>Perth, Australia</td>
<td>54</td>
</tr>
<tr>
<td>6.20</td>
<td>Mount Stromlo, Australia</td>
<td>55</td>
</tr>
<tr>
<td>6.21</td>
<td>Mount Stromlo, Australia</td>
<td>56</td>
</tr>
<tr>
<td>6.22</td>
<td>Mount Stromlo, Australia</td>
<td>57</td>
</tr>
<tr>
<td>6.23</td>
<td>New Norcia, Australia</td>
<td>58</td>
</tr>
<tr>
<td>6.24</td>
<td>Sydney, Australia</td>
<td>59</td>
</tr>
<tr>
<td>6.25</td>
<td>Tidbinbilla, Australia</td>
<td>60</td>
</tr>
<tr>
<td>6.26</td>
<td>Townsville, Australia</td>
<td>61</td>
</tr>
<tr>
<td>6.27</td>
<td>Yaragadee, Australia (YAR1)</td>
<td>62</td>
</tr>
<tr>
<td>6.28</td>
<td>Yaragadee, Australia (YAR2)</td>
<td>63</td>
</tr>
<tr>
<td>6.29</td>
<td>Yaragadee, Australia (GPS-GLONASS receiver)</td>
<td>64</td>
</tr>
</tbody>
</table>
1 General Notes

I. This combined ARGN GPS solution has been aligned to International Terrestrial Reference Frame 2000 (ITRF2000) using the latest available International GPS Service (IGS) combined cumulative solution. The reference epoch for all station coordinates is 1 Jan 2000.

II. Error bars are 1 sigma. All variance-covariances have been re-scaled to better reflect actual precision.

III. Each solution 'circle' represents a weekly combined solution i.e. seven daily solutions. Outliers are not shown on plots.

IV. The tectonic velocities of some stations with less than 6 months of solutions are not estimated and are constrained to 0.0 +/- 0.1 mm/yr.

V. For the purposes of these time series GPS stations in close proximity have NOT been constrained by local terrestrial tie information or had their tectonic velocities constrained together.

VI. Plots marked 'GPS-GLONASS receiver' were derived using only the GPS data from a GPS-GLONASS capable receiver.

VII. Please note the scale difference between the vertical and horizontal components.

2 Site Specific Notes

I. Due to an ice build up on the Casey (CAS1) GPS antenna dome almost all data from 1997 has been excluded.

II. Cocos Island (COCO) experienced a magnitude 7.8 Earth Quake on June 16, 2000. The timing of this Earth Quake corresponds to a horizontal (several cm) offset in the time series, new velocities have not yet been estimated to reflect this apparent discontinuity (please treat the station coordinates and velocities with caution).

III. The Mount Stromlo, Canberra station (STR1) has been excluded upto mid-1999 due to a antenna malfunction. Data from this site is unreliable for this period.

IV. The Mawson station (MAW1) has been excluded, for the period 2001 to mid-2001, due to a data related issue with the receiver.

V. The Darwin station (DARW) antenna was replaced on the 19 Oct 2001. After this change analysis detected an apparent East and North shift in the coordinates. The antenna was replaced again on the 14 Dec 2001 under suspicion of antenna malfunction.

VI. The Burnie station (BUR1) suffered a degenerative antenna malfunction at around 25 December 2001. The processing results are most likely contaminated until the antenna was replaced on the 12 March 2002.
3 GPS Time Series, Site Velocities, Australia

Figure 2: Geoscience Australia site velocities (and 95% error ellipses) computed from ARGN GPS are shown in red. International Terrestrial Reference Frame (ITRF2000) site velocities are shown in black for comparison.
4 GPS Time Series, Site Velocities, Antarctica

Figure 3: Geoscience Australia site velocities (and 95% error ellipses) computed from ARGN GPS are shown in red. International Terrestrial Reference Frame (ITRF2000) site velocities are shown in black for comparison.
5  RAW GPS Time Series

5.1  Alice Springs, Australia

ALIC_50137M001 AT 2000:01:01

POS XYZ  -4052051.9624   4212836.1007  -2545105.6837    M

+/- ENU         0.0015         0.0013         0.0023    M

RMS ENU         0.0027         0.0015         0.0062    M

VEL XYZ        -0.0399        -0.0047         0.0516 M/YR

VEL ENU         0.0321         0.0570         0.0015 M/YR

+/- ENU         0.0004         0.0002         0.0010 M/YR

#SOLUTIONS=367 ALIC_50137M001 AT 2000:01:01
5.2 Brisbane, Australia

POS XYZ -5046793.9229 2567554.6783 -2926027.9058 M
+/- ENU 0.0058 0.0021 0.0243 M
RMS ENU 0.0034 0.0069 0.0113 M
VEL XYZ -0.0000 0.0000 0.0000 M/YR
VEL ENU 0.0000 0.0000 -0.0000 M/YR
+/- ENU 0.0001 0.0001 0.0001 M/YR
5.3 Burnie, Tasmania, Australia

```
#SOLUTIONS=130 BUR1_50144M001 AT 2000:01:01

POS XYZ  -3989419.7360   2699532.9040  -4166619.7932    M
+/- ENU         0.0027         0.0017         0.0073    M
RMS ENU         0.0027         0.0029         0.0097    M
VEL XYZ        -0.0429         0.0098         0.0366 M/YR
VEL ENU         0.0159         0.0545         0.0069 M/YR
+/- ENU         0.0012         0.0005         0.0032 M/YR
```
5.4 Casey Station, Antarctica

POS XYZ   -901776.1614   2409383.3920  -5816748.4336    M
+/- ENU         0.0018         0.0015         0.0033    M
RMS ENU         0.0046         0.0039         0.0122    M
VEL XYZ         0.0004        -0.0085        -0.0057 M/YR
VEL ENU         0.0026        -0.0097         0.0020 M/YR
+/- ENU         0.0006         0.0004         0.0014 M/YR
5.5 Ceduna, Australia

POS XYZ -3753472.3739 3912741.0064 -3347960.7219 M
+/- ENU 0.0016 0.0014 0.0027 M
RMS ENU 0.0019 0.0014 0.0062 M
VEL XYZ -0.0417 0.0008 0.0489 M/YR
VEL ENU 0.0296 0.0571 -0.0008 M/YR
+/- ENU 0.0005 0.0003 0.0013 M/YR
5.6 Cocos Island, Australia

POS XYZ   -741950.1613   6190961.6297  -1337768.4379    M
+/- ENU         0.0018         0.0013         0.0035    M
RMS ENU         0.0132         0.0047         0.0189    M
VEL XYZ        -0.0521         0.0050         0.0449 M/YR
VEL ENU         0.0512         0.0462         0.0014 M/YR
+/- ENU         0.0007         0.0003         0.0015 M/YR
5.7 Darwin, Australia (GPS-GLONASS Receiver)

DARR_50134M001 AT 2000:01:01

POS XYZ  -4091358.9012   4684606.6955  -1408580.2861    M
+/- ENU         0.0067         0.0024         0.0198    M
RMS ENU         0.0047         0.0047         0.0069    M
VEL XYZ        -0.0398        -0.0085         0.0509 M/YR
VEL ENU         0.0356         0.0540         0.0080 M/YR
+/- ENU         0.0026         0.0008         0.0071 M/YR

#SOLUTIONS=63 DARR_50134M001 AT 2000:01:01

POS XYZ  -4091358.9012   4684606.6955  -1408580.2861    M
+/- ENU         0.0067         0.0024         0.0198    M
RMS ENU         0.0047         0.0047         0.0069    M
VEL XYZ        -0.0398        -0.0085         0.0509 M/YR
VEL ENU         0.0356         0.0540         0.0080 M/YR
+/- ENU         0.0026         0.0008         0.0071 M/YR
5.8 Darwin, Australia

![Graph showing displacement and velocity data over years]

**Position XYZ**: -4091358.9127 4684606.7102 -1408580.2951 M

**Velocity XYZ**: -0.0350 -0.0137 0.0543 M/YR

**Velocity ENU**: 0.0354 0.0558 0.0003 M/YR

**Position ENU**: 0.0018 0.0013 0.0033 M

**RMS ENU**: 0.0050 0.0029 0.0096 M

**Velocity ENU**: 0.0007 0.0003 0.0015 M/YR
5.9 Davis Station, Antarctica

```
POS XYZ    486854.5461   2285099.2886  -5914955.6911    M
+/− ENU         0.0016         0.0016         0.0025    M
RMS ENU         0.0035         0.0030         0.0062    M
VEL XYZ         0.0000        -0.0039        -0.0054 M/YR
VEL ENU        -0.0009        -0.0055         0.0036 M/YR
+/− ENU         0.0004         0.0003         0.0011 M/YR
```

`#SOLUTIONS=352`
5.10 Davis Station, Antarctica (GPS-GLONASS receiver)

DAVR_66010M001 AT 2000:01:01

#SOLUTIONS=101 DAVR_66010M001 AT 2000:01:01

<table>
<thead>
<tr>
<th>Year</th>
<th>East (m)</th>
<th>North (m)</th>
<th>Up (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>-0.25</td>
<td>-0.10</td>
<td>-0.05</td>
</tr>
<tr>
<td>1997</td>
<td>-0.20</td>
<td>-0.08</td>
<td>-0.04</td>
</tr>
<tr>
<td>1998</td>
<td>-0.15</td>
<td>-0.06</td>
<td>-0.02</td>
</tr>
<tr>
<td>1999</td>
<td>-0.10</td>
<td>-0.04</td>
<td>0.00</td>
</tr>
<tr>
<td>2000</td>
<td>-0.05</td>
<td>-0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>2001</td>
<td>0.00</td>
<td>0.00</td>
<td>0.04</td>
</tr>
<tr>
<td>2002</td>
<td>0.05</td>
<td>0.02</td>
<td>0.06</td>
</tr>
<tr>
<td>2003</td>
<td>0.10</td>
<td>0.04</td>
<td>0.08</td>
</tr>
<tr>
<td>2004</td>
<td>0.15</td>
<td>0.06</td>
<td>0.10</td>
</tr>
</tbody>
</table>

POS XYZ  486854.5449  2285099.2785  -5914955.6990  M
+/- ENU  0.0023      0.0018      0.0046      M
RMS ENU  0.0027      0.0049      0.0071      M
VEL XYZ  -0.0000     -0.0000     -0.0000     M/yr
VEL ENU  -0.0000     -0.0000     0.0000      M/yr
+/- ENU  0.0001      0.0001      0.0001      M/yr
5.11 Salisbury (DSTO), Australia

AUST_50109S001 AT 2000:01:01

#SOLUTIONS=347 AUST_50109S001 AT 2000:01:01

POS XYZ  -3939182.0330 3467075.3087 -3613220.8114    M
+/- ENU         0.0015         0.0014         0.0022    M
RMS ENU         0.0039         0.0020         0.0093    M
VEL XYZ        -0.0419         0.0065         0.0450 M/YR
VEL ENU         0.0228         0.0574         0.0037 M/YR
+/- ENU         0.0004         0.0002         0.0009 M/YR
5.12 Hillarys (Tide Gauge), Australia

<table>
<thead>
<tr>
<th>Year</th>
<th>East (m)</th>
<th>North (m)</th>
<th>Up (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#SOLUTIONS=171 HIL1_50141S001 AT 2000:01:01

POS XYZ -2355571.1694 4886093.0481 -3343994.6788 M
+/- ENU  0.0024  0.0015  0.0055 M
RMS ENU  0.0040  0.0028  0.0102 M
VEL XYZ -0.0465  0.0044  0.0502 M/YR
VEL ENU  0.0400  0.0554 -0.0059 M/YR
+/- ENU  0.0011  0.0004  0.0025 M/YR
5.13 Hobart, Australia

HOB2_50116M004 AT 2000:01:01

#SOLUTIONS=372 HOB2_50116M004 AT 2000:01:01

POS XYZ -3950071.4790 2522415.2087 -4311638.2373 M
+/- ENU 0.0014 0.0014 0.0020 M
RMS ENU 0.0027 0.0026 0.0089 M

VEL XYZ -0.0425 0.0102 0.0367 M/YR
VEL ENU 0.0143 0.0550 0.0053 M/YR
+/- ENU 0.0004 0.0002 0.0008 M/YR
POS XYZ -4236442.9077 4559929.5576 -1388624.4703 M
+/- ENU 0.0019 0.0013 0.0035 M
RMS ENU 0.0035 0.0032 0.0094 M
VEL XYZ -0.0343 -0.0136 0.0551 M/YR
VEL ENU 0.0344 0.0567 0.0010 M/YR
+/- ENU 0.0007 0.0003 0.0016 M/YR
5.15 Karratha, Australia

POS XYZ -2713832.3990 5303935.1005 -2269514.8539 M
+/- ENU 0.0016 0.0013 0.0024 M
RMS ENU 0.0039 0.0026 0.0098 M
VEL XYZ -0.0445 0.0022 0.0512 M/YR
VEL ENU 0.0386 0.0558 0.0024 M/YR
+/- ENU 0.0005 0.0002 0.0010 M/YR
5.16 Macquarie Island, Sub-Antarctica

POS XYZ  -3464038.5629  1334172.8189  -5169224.2705    M
+/- ENU         0.0015         0.0015         0.0020    M
RMS ENU         0.0040         0.0038         0.0093    M
VEL XYZ        -0.0190         0.0188         0.0192 M/YR
VEL ENU        -0.0108         0.0311        -0.0014 M/YR
+/- ENU         0.0004         0.0003         0.0008 M/YR
5.17  Mawson Station, Antarctica

MAW1_66004M001 AT 2000:01:01

#SOLUTIONS=325 MAW1_66004M001 AT 2000:01:01

POS XYZ   1111287.1675   2168911.2693  -5874493.6008    M
+/- ENU         0.0016         0.0016         0.0025    M
RMS ENU         0.0037         0.0034         0.0066    M
VEL XYZ         0.0015        -0.0021        -0.0054 M/YR
VEL ENU        -0.0023        -0.0032         0.0045 M/YR
+/- ENU         0.0005         0.0004         0.0010 M/YR

-0.25
-0.20
-0.15
-0.10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25

East (m)


-0.10
-0.08
-0.06
-0.04
-0.02
0.00
0.02
0.04
0.06
0.08
0.10

North (m)


-0.25
-0.20
-0.15
-0.10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25

Up (m)


-0.25
-0.20
-0.15
-0.10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25

East (m)


-0.25
-0.20
-0.15
-0.10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25

North (m)
5.18 Melbourne, Australia

MOBS_50182M001 AT 2000:01:01

POS XYZ -4130636.0650  2894953.1193  -3890531.2494 M
+/- ENU  0.0490  0.0201  0.0960 M
RMS ENU  0.0013  0.0017  0.0049 M
VEL XYZ -0.0147  -0.0107  0.0679 M/YR
VEL ENU  0.0172  0.0573  -0.0369 M/YR
+/- ENU  0.0152  0.0063  0.0299 M/YR

#SOLUTIONS=33 MOBS_50182M001 AT 2000:01:01

Year


East (m)  0.10  0.08  0.06  0.04  0.02  0.00  0.00  0.00  0.00
Up (m)    -0.25 -0.20 -0.15 -0.10 -0.05  0.00  0.05  0.10  0.15
North (m) -0.25 -0.20 -0.15 -0.10 -0.05  0.00  0.05  0.10  0.15

24
5.19 Perth, Australia

### POS XYZ
-2368687.1126, 4881316.5392, -3341796.0061 M

### +/- ENU
-0.0016, 0.0014, 0.0023 M

### RMS ENU
-0.0034, 0.0020, 0.0090 M

### VEL XYZ
-0.0453, 0.0048, 0.0519 M/YR

### VEL ENU
0.0387, 0.0568, -0.0069 M/YR

### +/- ENU
0.0004, 0.0002, 0.0010 M/YR
5.20 Mount Stromlo, Australia

POS XYZ  -4467074.4973  2683011.8443  -3667008.0122    M
+/- ENU         0.0073         0.0029         0.0204    M
RMS ENU         0.0041         0.0010         0.0037    M
VEL XYZ        -0.0000         0.0000         0.0000 M/YR
VEL ENU        -0.0000         0.0000         0.0000 M/YR
+/- ENU         0.0001         0.0001         0.0001 M/YR
STR1_50119M002 AT 2000:01:01

POS XYZ  -4467102.4707   2683039.4613  -3666949.6653    M
+/- ENU         0.0017         0.0014         0.0037    M
RMS ENU         0.0096         0.0059         0.0117    M
VEL XYZ        -0.0388         0.0053         0.0388 M/YR
VEL ENU         0.0154         0.0524         0.0070 M/YR
+/- ENU         0.0008         0.0004         0.0020 M/YR
5.22 Mount Stromlo, Australia

POS XYZ  -4467074.5128   2683011.8307  -3667007.9600    M
+/- ENU         0.0076         0.0031         0.0249    M
RMS ENU         0.0023         0.0015         0.0077    M
VEL XYZ        -0.0410         0.0052         0.0391 M/YR
VEL ENU         0.0167         0.0538         0.0082 M/YR
+/- ENU         0.0037         0.0014         0.0122 M/YR

#SOLUTIONS=79 STR2_50119M001 AT 2000:01:01
5.23 New Norcia, Australia

<table>
<thead>
<tr>
<th>Year</th>
<th>Up (m)</th>
<th>North (m)</th>
<th>East (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>-0.25</td>
<td>-0.10</td>
<td>-0.15</td>
</tr>
<tr>
<td>1997</td>
<td>-0.20</td>
<td>-0.08</td>
<td>-0.10</td>
</tr>
<tr>
<td>1998</td>
<td>-0.15</td>
<td>-0.06</td>
<td>-0.08</td>
</tr>
<tr>
<td>1999</td>
<td>-0.10</td>
<td>-0.04</td>
<td>-0.06</td>
</tr>
<tr>
<td>2000</td>
<td>-0.05</td>
<td>-0.02</td>
<td>-0.04</td>
</tr>
<tr>
<td>2001</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>2002</td>
<td>0.05</td>
<td>0.02</td>
<td>0.04</td>
</tr>
<tr>
<td>2003</td>
<td>0.10</td>
<td>0.04</td>
<td>0.06</td>
</tr>
<tr>
<td>2004</td>
<td>0.15</td>
<td>0.06</td>
<td>0.08</td>
</tr>
</tbody>
</table>

### LOS SOLUTIONS = 53 NNOR_50181M001 AT 2000:01:01

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value (m)</th>
<th>Value (m/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>POS XYZ</td>
<td>-2414151.4201</td>
<td>-3270645.1975</td>
</tr>
<tr>
<td>+/- ENU</td>
<td>0.0237</td>
<td>0.0078</td>
</tr>
<tr>
<td>RMS ENU</td>
<td>0.0027</td>
<td>0.0013</td>
</tr>
<tr>
<td>VEL XYZ</td>
<td>-0.0546</td>
<td>0.0384</td>
</tr>
<tr>
<td>VEL ENU</td>
<td>0.0241</td>
<td>0.0576</td>
</tr>
<tr>
<td>+/- ENU</td>
<td>0.0090</td>
<td>0.0029</td>
</tr>
</tbody>
</table>
5.24 Sydney, Australia

POS XYZ -4648200.2318 2560483.9930 -3526505.1277 M
+/- ENU 0.0037 0.0020 0.0073 M
RMS ENU 0.0026 0.0069 0.0089 M
VEL XYZ -0.0000 0.0000 0.0000 M/YR
VEL ENU 0.0000 0.0000 -0.0000 M/YR
+/- ENU 0.0001 0.0001 0.0001 M/YR
5.25 Tidbinbilla, Australia

TID2_50103M108 AT 2000:01:01

POS XYZ   -4460996.2381   2682557.0767  -3674443.5562    M
+/- ENU     0.0014         0.0014         0.0020    M
RMS ENU     0.0029         0.0022         0.0093    M
VEL XYZ    -0.0393         0.0016         0.0423 M/YR
VEL ENU     0.0189         0.0544         0.0036 M/YR
+/- ENU     0.0004         0.0002         0.0008 M/YR
5.26 Townsville, Australia

POS XYZ  -5054582.8012   3275504.4115  -2091539.5510    M
+/- ENU         0.0015         0.0013         0.0024    M
RMS ENU         0.0042         0.0023         0.0103    M
VEL XYZ        -0.0334        -0.0126         0.0491 M/YR
VEL ENU         0.0287         0.0533         0.0038 M/YR
+/- ENU         0.0004         0.0002         0.0010 M/YR
5.27 Yaragadee, Australia (YAR1)

YAR1_50107M004 AT 2000:01:01

#SOLUTIONS=271 YAR1_50107M004 AT 2000:01:01

POS XYZ  -2389025.6863   5043316.9049  -3078530.5880    M
+/- ENU         0.0018         0.0014         0.0030    M
RMS ENU         0.0041         0.0027         0.0086    M
VEL XYZ        -0.0460         0.0034         0.0505 M/YR
VEL ENU         0.0401         0.0552        -0.0046 M/YR
+/- ENU         0.0006         0.0003         0.0015 M/YR
5.28 Yaragadee, Australia (YAR2)

YAR2_50107M004 AT 2000:01:01

<table>
<thead>
<tr>
<th>Year</th>
<th>Up (m)</th>
<th>North (m)</th>
<th>East (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>0.10</td>
<td>-0.25</td>
<td>-0.25</td>
</tr>
<tr>
<td>1997</td>
<td>0.10</td>
<td>-0.25</td>
<td>-0.25</td>
</tr>
<tr>
<td>1998</td>
<td>0.10</td>
<td>-0.25</td>
<td>-0.25</td>
</tr>
<tr>
<td>1999</td>
<td>0.10</td>
<td>-0.25</td>
<td>-0.25</td>
</tr>
<tr>
<td>2000</td>
<td>0.10</td>
<td>-0.25</td>
<td>-0.25</td>
</tr>
<tr>
<td>2001</td>
<td>0.10</td>
<td>-0.25</td>
<td>-0.25</td>
</tr>
<tr>
<td>2002</td>
<td>0.10</td>
<td>-0.25</td>
<td>-0.25</td>
</tr>
<tr>
<td>2003</td>
<td>0.10</td>
<td>-0.25</td>
<td>-0.25</td>
</tr>
<tr>
<td>2004</td>
<td>0.10</td>
<td>-0.25</td>
<td>-0.25</td>
</tr>
</tbody>
</table>

POS XYZ -2389025.6783 5043316.9093 -3078530.5835 M
+/− ENU 0.0019 0.0014 0.0028 M
RMS ENU 0.0031 0.0021 0.0098 M
VEL XYZ -0.0479 0.0034 0.0483 M/YR
VEL ENU 0.0418 0.0536 -0.0028 M/YR
+/− ENU 0.0001 0.0001 0.0001 M/YR
5.29 Yaragadee, Australia (GPS-GLONASS receiver)

YARR_50107M006 AT 2000:01:01

POS XYZ -2389024.6415  5043315.3780  -3078534.0028    M
+/- ENU         0.0028         0.0016         0.0072    M
RMS ENU         0.0030         0.0014         0.0080    M
VEL XYZ        -0.0463         0.0061         0.0494 M/YR
VEL ENU         0.0392         0.0555        -0.0019 M/YR
+/- ENU         0.0012         0.0004         0.0030 M/YR

#SOLUTIONS=109 YARR_50107M006 AT 2000:01:01

POS XYZ -2389024.6415  5043315.3780  -3078534.0028    M
+/- ENU         0.0028         0.0016         0.0072    M
RMS ENU         0.0030         0.0014         0.0080    M
VEL XYZ        -0.0463         0.0061         0.0494 M/YR
VEL ENU         0.0392         0.0555        -0.0019 M/YR
+/- ENU         0.0012         0.0004         0.0030 M/YR
6 GPS Time Series after Trend Removal

6.1 Alice Springs, Australia

TREND OFF ALIC_50137M001 AT 2000:01:01

#SOLUTIONS=367 TREND OFF ALIC_50137M001 AT 2000:01:01

POS XYZ  -4052051.9624  4212836.1007  -2545105.6837 M

+/- ENU         0.0015         0.0013         0.0023 M
RMS ENU         0.0027         0.0015         0.0062 M

VEL XYZ        -0.0399        -0.0047         0.0516 M/YR
VEL ENU         0.0321         0.0570         0.0015 M/YR
+/- ENU         0.0004         0.0002         0.0010 M/YR
6.2 Brisbane, Australia

TREND OFF SUNM_50143M001 AT 2000:01:01

POS XYZ -5046793.9229 2567554.6783 -2926027.9058 M
+/- ENU 0.0058 0.0021 0.0243 M
RMS ENU 0.0034 0.0069 0.0113 M
VEL XYZ -0.0000 0.0000 0.0000 M/YR
VEL ENU 0.0000 0.0000 -0.0000 M/YR
+/- ENU 0.0001 0.0001 0.0001 M/YR
6.3 Burnie, Tasmania, Australia

TREND OFF BURL_50144M001 AT 2000:01:01

#SOLUTIONS=130 TREND OFF BURL_50144M001 AT 2000:01:01

POS XYZ -3989419.7360 2699532.9040 -4166619.7932 M
+/- ENU 0.0027 0.0017 0.0073 M
RMS ENU 0.0027 0.0029 0.0097 M
VEL XYZ -0.0429 0.0098 0.0366 M/YR
VEL ENU 0.0159 0.0545 0.0069 M/YR
+/- ENU 0.0012 0.0005 0.0032 M/YR
6.4 Casey Station, Antarctica

TREND OFF CAS1_66011M001 AT 2000:01:01

POS XYZ   -901776.1614   2409383.3920  -5816748.4336    M
+/- ENU         0.0018         0.0015         0.0033    M
RMS ENU         0.0046         0.0039         0.0122    M
VEL XYZ         0.0004        -0.0085        -0.0057 M/YR
VEL ENU         0.0026        -0.0097         0.0020 M/YR
+/- ENU         0.0006         0.0004         0.0014 M/YR

East (m) 0.016 0.016 0.016 0.016 0.016 0.016 0.016 0.016
North (m) 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.008
Up (m)     0.070 0.056 0.042 0.028 0.014 0.000 -0.014 -0.028 -0.042 -0.056 -0.070


#SOLUTIONS=304 TREND OFF CAS1_66011M001 AT 2000:01:01
6.5 Ceduna, Australia

TREND OFF CEDU_50138M001 AT 2000:01:01

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Up (m)</td>
<td>0.070</td>
<td>0.056</td>
<td>0.042</td>
<td>0.028</td>
<td>0.014</td>
<td>0.000</td>
<td>-0.014</td>
<td>-0.028</td>
<td>-0.056</td>
<td>-0.070</td>
</tr>
<tr>
<td>+/- ENU</td>
<td>0.0016</td>
<td>0.0014</td>
<td>0.0027</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RMS ENU</td>
<td>0.0019</td>
<td>0.0014</td>
<td>0.0062</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VEL XYZ</td>
<td>-0.0417</td>
<td>0.0008</td>
<td>0.0489</td>
<td>M/yr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VEL ENU</td>
<td>0.0296</td>
<td>0.0571</td>
<td>-0.0008</td>
<td>M/yr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>+/- ENU</td>
<td>0.0005</td>
<td>0.0003</td>
<td>0.0013</td>
<td>M/yr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>North (m)</th>
<th>1996</th>
<th>1997</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up (m)</td>
<td>0.070</td>
<td>0.056</td>
<td>0.042</td>
<td>0.028</td>
<td>0.014</td>
<td>0.000</td>
<td>-0.014</td>
<td>-0.028</td>
<td>-0.056</td>
<td>-0.070</td>
</tr>
<tr>
<td>+/- ENU</td>
<td>0.0016</td>
<td>0.0014</td>
<td>0.0027</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RMS ENU</td>
<td>0.0019</td>
<td>0.0014</td>
<td>0.0062</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VEL XYZ</td>
<td>-0.0417</td>
<td>0.0008</td>
<td>0.0489</td>
<td>M/yr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VEL ENU</td>
<td>0.0296</td>
<td>0.0571</td>
<td>-0.0008</td>
<td>M/yr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>+/- ENU</td>
<td>0.0005</td>
<td>0.0003</td>
<td>0.0013</td>
<td>M/yr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Up (m)</th>
<th>1996</th>
<th>1997</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>East (m)</td>
<td>0.070</td>
<td>0.056</td>
<td>0.042</td>
<td>0.028</td>
<td>0.014</td>
<td>0.000</td>
<td>-0.014</td>
<td>-0.028</td>
<td>-0.056</td>
<td>-0.070</td>
</tr>
<tr>
<td>+/- ENU</td>
<td>0.0016</td>
<td>0.0014</td>
<td>0.0027</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RMS ENU</td>
<td>0.0019</td>
<td>0.0014</td>
<td>0.0062</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VEL XYZ</td>
<td>-0.0417</td>
<td>0.0008</td>
<td>0.0489</td>
<td>M/yr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VEL ENU</td>
<td>0.0296</td>
<td>0.0571</td>
<td>-0.0008</td>
<td>M/yr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>+/- ENU</td>
<td>0.0005</td>
<td>0.0003</td>
<td>0.0013</td>
<td>M/yr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6.6 Cocos Island, Australia

TREND OFF COCO_50127M001 AT 2000:01:01

#SOLUTIONS=367 TREND OFF COCO_50127M001 AT 2000:01:01

POS XYZ -741950.1613 6190961.6297 -1337768.4379 M
+/- ENU 0.0018 0.0013 0.0035 M
RMS ENU 0.0132 0.0047 0.0189 M
VEL XYZ -0.0521 0.0050 0.0449 M/YR
VEL ENU 0.0512 0.0462 0.0014 M/YR
+/- ENU 0.0007 0.0003 0.0015 M/YR
6.7 Darwin, Australia (GPS-GLONASS Receiver)

TREND OFF DARR_50134M001 AT 2000:01:01

<table>
<thead>
<tr>
<th>Year</th>
<th>Up (m)</th>
<th>North (m)</th>
<th>East (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>0.070</td>
<td>0.056</td>
<td>0.042</td>
</tr>
<tr>
<td>1997</td>
<td>0.014</td>
<td>0.000</td>
<td>0.016</td>
</tr>
<tr>
<td>1998</td>
<td>-0.014</td>
<td>-0.028</td>
<td>-0.042</td>
</tr>
<tr>
<td>1999</td>
<td>-0.056</td>
<td>-0.070</td>
<td>-0.016</td>
</tr>
<tr>
<td>2000</td>
<td>0.014</td>
<td>0.000</td>
<td>0.016</td>
</tr>
<tr>
<td>2001</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>2002</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>2003</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>2004</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

POS XYZ -4091358.9012  4684606.6955  -1408580.2861 M
/+ ENU  0.0067  0.0024  0.0198 M
RMS ENU  0.0047  0.0047  0.0069 M
VEL XYZ -0.0398 -0.0085  0.0509 M/YR
VEL ENU  0.0356  0.0540  0.0080 M/YR
/+ ENU  0.0026  0.0008  0.0071 M/YR
6.8 Darwin, Australia

TREND OFF DARW_50134M001 AT 2000:01:01

<table>
<thead>
<tr>
<th>Year</th>
<th>Up (m)</th>
<th>North (m)</th>
<th>East (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>-0.008</td>
<td>-0.042</td>
<td>-0.016</td>
</tr>
<tr>
<td>1997</td>
<td>-0.028</td>
<td>-0.042</td>
<td>-0.016</td>
</tr>
<tr>
<td>1998</td>
<td>-0.028</td>
<td>-0.042</td>
<td>-0.016</td>
</tr>
<tr>
<td>1999</td>
<td>-0.028</td>
<td>-0.042</td>
<td>-0.016</td>
</tr>
<tr>
<td>2000</td>
<td>-0.028</td>
<td>-0.042</td>
<td>-0.016</td>
</tr>
<tr>
<td>2001</td>
<td>-0.028</td>
<td>-0.042</td>
<td>-0.016</td>
</tr>
<tr>
<td>2002</td>
<td>-0.028</td>
<td>-0.042</td>
<td>-0.016</td>
</tr>
<tr>
<td>2003</td>
<td>-0.028</td>
<td>-0.042</td>
<td>-0.016</td>
</tr>
<tr>
<td>2004</td>
<td>-0.028</td>
<td>-0.042</td>
<td>-0.016</td>
</tr>
</tbody>
</table>

SOLUTIONS=248 TREND OFF DARW_50134M001 AT 2000:01:01

POS XYZ -4091358.9127 4684606.7102 -1408580.2951 M
+/- ENU 0.0018 0.0013 0.0033 M
RMS ENU 0.0050 0.0029 0.0096 M
VEL XYZ -0.0350 -0.0137 0.0543 M/YR
VEL ENU 0.0354 0.0558 0.0003 M/YR
+/- ENU 0.0007 0.0003 0.0015 M/YR
6.9 Davis Station, Antarctica

TREND OFF DAV1_66010M001 AT 2000:01:01

<table>
<thead>
<tr>
<th>Year</th>
<th>Up (m)</th>
<th>North (m)</th>
<th>East (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#SOLUTIONS=352 TREND OFF DAV1_66010M001 AT 2000:01:01

POS XYZ  486854.5461  2285099.2886  -5914955.6911   M
+/− ENU  0.0016      0.0016      0.0025   M
RMS ENU  0.0035      0.0030      0.0062   M
VEL XYZ  0.0000      -0.0039     -0.0054  M/YR
VEL ENU  -0.0009     -0.0055     0.0036   M/YR
+/− ENU  0.0004      0.0003      0.0011  M/YR
6.10  Davis Station, Antarctica (GPS-GLONASS receiver)

TREND OFF DAVR_66010M001 AT 2000:01:01

<table>
<thead>
<tr>
<th>Year</th>
<th>Year</th>
<th>Year</th>
<th>Year</th>
<th>Year</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.070</td>
<td>0.056</td>
<td>0.042</td>
<td>0.028</td>
<td>0.028</td>
<td>0.014</td>
</tr>
<tr>
<td>0.014</td>
<td>0.000</td>
<td>0.014</td>
<td>0.000</td>
<td>0.014</td>
<td>0.000</td>
</tr>
<tr>
<td>-0.014</td>
<td>-0.008</td>
<td>-0.014</td>
<td>-0.008</td>
<td>-0.014</td>
<td>-0.008</td>
</tr>
<tr>
<td>-0.042</td>
<td>-0.028</td>
<td>-0.042</td>
<td>-0.028</td>
<td>-0.042</td>
<td>-0.028</td>
</tr>
<tr>
<td>-0.056</td>
<td>-0.028</td>
<td>-0.056</td>
<td>-0.028</td>
<td>-0.056</td>
<td>-0.028</td>
</tr>
</tbody>
</table>

POS XYZ
486854.5449 2285099.2785 -5914955.6990 M

+/= ENU
0.0023 0.0018 0.0046 M

RMS ENU
0.0027 0.0049 0.0071 M

VEL XYZ
0.0000 0.0000 0.0000 M/YR

VEL ENU
0.0000 0.0000 0.0000 M/YR

+/= ENU
0.0001 0.0001 0.0001 M/YR
6.11 Salisbury (DSTO), Australia

TREND OFF AUST_50109S001 AT 2000:01:01

#SOLUTIONS=347 TREND OFF AUST_50109S001 AT 2000:01:01

POS XYZ -3939182.0330 3467075.3087 -3613220.8114 M
+/- ENU 0.0015 0.0014 0.0022 M
RMS ENU 0.0039 0.0020 0.0093 M

VEL XYZ -0.0419 0.0065 0.0450 M/YR
VEL ENU 0.0228 0.0574 0.0037 M/YR
+/- ENU 0.0004 0.0002 0.0009 M/YR
6.12 Hillarys (Tide Gauge), Australia

TREND OFF HILL_50141S001 AT 2000:01:01

#SOLUTIONS=171 TREND OFF HILL_50141S001 AT 2000:01:01

POS XYZ -2355571.1694  4886093.0481  -3343994.6788 M
/+ ENU  0.0024      0.0015      0.0055 M
RMS ENU  0.0040      0.0028      0.0102 M
VEL XYZ -0.0465     0.0044     0.0502 M/YR
VEL ENU  0.0400     0.0554    -0.0059 M/YR
/+ ENU   0.0011     0.0004     0.0025 M/YR
6.13 Hobart, Australia

TREND OFF HOB2_50116M004 AT 2000:01:01

#SOLUTIONS=372 TREND OFF HOB2_50116M004 AT 2000:01:01

POS XYZ  -3950071.4790   2522415.2087  -4311638.2373    M
+/- ENU         0.0014         0.0014         0.0020    M
RMS ENU         0.0027         0.0026         0.0089    M
VEL XYZ        -0.0425         0.0102         0.0367 M/YR
VEL ENU         0.0143         0.0550         0.0053 M/YR
+/- ENU         0.0004         0.0002         0.0008 M/YR
6.14 Jabiru, Australia

TREND OFF JAB1_50136M001 AT 2000:01:01

#SOLUTIONS=210 TREND OFF JAB1_50136M001 AT 2000:01:01

POS XYZ -4236442.9077 4559929.5576 -1388624.4703 M
+/− ENU 0.0019 0.0013 0.0035 M
RMS ENU 0.0035 0.0032 0.0094 M
VEL XYZ -0.0343 -0.0136 0.0551 M/YR
VEL ENU 0.0344 0.0567 0.0010 M/YR
+/− ENU 0.0007 0.0003 0.0016 M/YR
6.15 Karratha, Australia

TREND OFF KARR_50139M001 AT 2000:01:01

POS XYZ -2713832.3990 5303935.1005 -2269514.8539 M
+/- ENU 0.0016 0.0013 0.0024 M
RMS ENU 0.0039 0.0026 0.0098 M
VEL XYZ -0.0445 0.0022 0.0512 M/YR
VEL ENU 0.0386 0.0558 0.0024 M/YR
+/- ENU 0.0005 0.0002 0.0010 M/YR
6.16 Macquarie Island, Sub-Antarctica

TREND OFF MAC1_50135M001 AT 2000:01:01

POS XYZ -3464038.5629 1334172.8189 -5169224.2705 M

+/- ENU 0.0015 0.0015 0.0020 M

RMS ENU 0.0040 0.0038 0.0093 M

VEL XYZ -0.0190 0.0188 0.0192 M/YR

VEL ENU -0.0108 0.0311 -0.0014 M/YR

+/- ENU 0.0004 0.0003 0.0008 M/YR
6.17  Mawson Station, Antarctica

TREND OFF MAW1_66004M001 AT 2000:01:01

POS XYZ   1111287.1675   2168911.2693  -5874493.6008    M
+/- ENU         0.0016         0.0016         0.0025    M
RMS ENU         0.0037         0.0034         0.0066    M
VEL XYZ         0.0015        -0.0021        -0.0054 M/YR
VEL ENU        -0.0023        -0.0032         0.0045 M/YR
+/- ENU         0.0005         0.0004         0.0010 M/YR

---

#SOLUTIONS=325 TREND OFF MAW1_66004M001 AT 2000:01:01

POS XYZ   1111287.1675   2168911.2693  -5874493.6008    M
+/- ENU         0.0016         0.0016         0.0025    M
RMS ENU         0.0037         0.0034         0.0066    M
VEL XYZ         0.0015        -0.0021        -0.0054 M/YR
VEL ENU        -0.0023        -0.0032         0.0045 M/YR
+/- ENU         0.0005         0.0004         0.0010 M/YR
Melbourne, Australia

TREND OFF MOBS_50182M001 AT 2000:01:01

#SOLUTIONS=33 TREND OFF MOBS_50182M001 AT 2000:01:01

POS XYZ  -4130636.0650   2894953.1193  -3890531.2494    M
+/- ENU         0.0490         0.0201         0.0960    M
RMS ENU         0.0013         0.0017         0.0049    M
VEL XYZ        -0.0147        -0.0107         0.0679 M/YR
VEL ENU         0.0172         0.0573        -0.0369 M/YR
+/- ENU         0.0152         0.0063         0.0299 M/YR
6.19 Perth, Australia

TREND OFF PERT_50133M001 AT 2000:01:01

POS XYZ -2368687.1126 4881316.5392 -3341796.0061 M
+/- ENU 0.0016 0.0014 0.0023 M
RMS ENU 0.0034 0.0020 0.0090 M
VEL XYZ -0.0453 0.0048 0.0519 M/YR
VEL ENU 0.0387 0.0568 -0.0069 M/YR
+/- ENU 0.0004 0.0002 0.0010 M/YR
Mount Stromlo, Australia

TREND OFF STR0_50119M001 AT 2000:01:01

POS XYZ  

+/- ENU

RMS ENU

VEL XYZ

+/- ENU

#SOLUTIONS=4 TREND OFF STR0_50119M001 AT 2000:01:01

POS XYZ -4467074.4973 2683011.8443 -3667008.0122 M

+/- ENU 0.0073 0.0029 0.0204 M

RMS ENU 0.0041 0.0010 0.0037 M

VEL XYZ -0.0000 0.0000 0.0000 M/YR

VEL ENU -0.0000 0.0000 0.0000 M/YR

+/- ENU 0.0001 0.0001 0.0001 M/YR
6.21 Mount Stromlo, Australia

TREND OFF STR1_50119M002 AT 2000:01:01

<table>
<thead>
<tr>
<th>Year</th>
<th>RMS Up (m)</th>
<th>RMS North (m)</th>
<th>RMS East (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>0.056</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>1997</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>1998</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>1999</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>2000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>2001</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>2002</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>2003</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>2004</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

#SOLUTIONS=203 TREND OFF STR1_50119M002 AT 2000:01:01

POS XYZ -4467102.470, 2683039.461, 3666949.665 M
+/E ENU 0.0017, 0.0014, 0.0037 M
RMS ENU 0.0096, 0.0059, 0.0117 M
VEL XYZ -0.0388, 0.0053, 0.0388 M/yr
VEL ENU 0.0154, 0.0524, 0.0070 M/yr
+/E ENU 0.0008, 0.0004, 0.0020 M/yr
6.22 Mount Stromlo, Australia

TREND OFF STR2_50119M001 AT 2000:01:01

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Up (m)</td>
<td>0.070</td>
<td>0.056</td>
<td>0.042</td>
<td>0.028</td>
<td>0.014</td>
<td>0.014</td>
<td>0.000</td>
<td>0.014</td>
<td>0.000</td>
</tr>
<tr>
<td>North (m)</td>
<td>0.016</td>
<td>0.008</td>
<td>0.000</td>
<td>-0.008</td>
<td>-0.016</td>
<td>-0.016</td>
<td>0.000</td>
<td>0.008</td>
<td>0.016</td>
</tr>
<tr>
<td>East (m)</td>
<td>0.016</td>
<td>0.008</td>
<td>0.000</td>
<td>-0.008</td>
<td>-0.016</td>
<td>-0.016</td>
<td>0.000</td>
<td>0.008</td>
<td>0.016</td>
</tr>
</tbody>
</table>

#SOLUTIONS=79 TREND OFF STR2_50119M001 AT 2000:01:01

POS XYZ -4467074.5128 2683011.8307 -3667007.9600 M
+/- ENU 0.0076 0.0031 0.0249 M
RMS ENU 0.0023 0.0015 0.0077 M
VEL XYZ -0.0410 0.0052 0.0391 M/yr
VEL ENU 0.0167 0.0538 0.0082 M/yr
+/- ENU 0.0037 0.0014 0.0122 M/yr
6.23 New Norcia, Australia

TREND OFF NNOR_50181M001 AT 2000:01:01

POS XYZ -2414151.4201 4907778.4218 -3270645.1975 M
 +/- ENU 0.0237 0.0090 0.0472 M
RMS ENU 0.0027 0.0013 0.0071 M
VEL XYZ -0.0546 0.0241 0.0397 M/YR
VEL ENU 0.0384 0.0576 0.0187 M/YR
 +/- ENU 0.0078 0.0029 0.0156 M/YR
6.24 Sydney, Australia

TREND OFF NML1_--------- AT 2000:01:01

POS XYZ    -4648200.2318  2560483.9930  -3526505.1277    M
+/- ENU          0.0037         0.0020         0.0073    M
RMS ENU         0.0026         0.0069         0.0089    M
VEL XYZ        -0.0000         0.0000         0.0000 M/YR
VEL ENU         0.0000         0.0000        -0.0000 M/YR
+/- ENU         0.0001         0.0001         0.0001 M/YR
6.25  Tidbinbilla, Australia

TREND OFF TID2_50103M108 AT 2000:01:01

#SOLUTIONS=384 TREND OFF TID2_50103M108 AT 2000:01:01

POS XYZ  -4460996.2381   2682557.0767  -3674443.5562    M
/+/- ENU         0.0014         0.0014         0.0020    M
RMS ENU         0.0029         0.0022         0.0093    M
VEL XYZ        -0.0393         0.0016         0.0423 M/YR
VEL ENU         0.0189         0.0544         0.0036 M/YR
/+/- ENU         0.0004         0.0002         0.0008 M/YR

---
6.26  Townsville, Australia

TREND OFF TOW2_50140M001 AT 2000:01:01

#SOLUTIONS=380  TREND OFF TOW2_50140M001 AT 2000:01:01

POS XYZ  -5054582.8012  3275504.4115  -2091539.5510  M
+/= ENU    0.0015     0.0013     0.0024      M
RMS ENU    0.0042     0.0023     0.0103      M
VEL XYZ   -0.0334    -0.0126     0.0491     M/YR
VEL ENU    0.0287     0.0533     0.0038     M/YR
+/= ENU    0.0004     0.0002     0.0010     M/YR
6.27 Yaragadee, Australia (YAR1)

TREND OFF YAR1_50107M004 AT 2000:01:01

#SOLUTIONS=271 TREND OFF YAR1_50107M004 AT 2000:01:01

POS XYZ  -2389025.6863   5043316.9049  -3078530.5880    M
+/- ENU         0.0018         0.0014         0.0030    M
RMS ENU         0.0041         0.0027         0.0086    M
VEL XYZ        -0.0460         0.0034         0.0505 M/YR
VEL ENU         0.0401         0.0552        -0.0046 M/YR
+/- ENU         0.0006         0.0003         0.0015 M/YR

Year


Up (m)

0.070
0.056
0.042
0.028
0.014
0.000
-0.014
-0.028
-0.056

North (m)

0.016
0.008
0.000
-0.008
-0.016
-0.032

East (m)

0.016
0.008
0.000
-0.008
-0.016
-0.032
6.28  Yaragadee, Australia (YAR2)

TREND OFF YAR2_50107M004 AT 2000:01:01

POS XYZ  -2389025.6783   5043316.9093  -3078530.5835    M
+/- ENU         0.0019         0.0014         0.0028    M
RMS ENU         0.0031         0.0021         0.0098    M
VEL XYZ        -0.0479         0.0034         0.0483 M/YR
VEL ENU         0.0418         0.0536        -0.0028 M/YR
+/- ENU         0.0001         0.0001         0.0001 M/YR

#SOLUTIONS=110 TREND OFF YAR2_50107M004 AT 2000:01:01
6.29  Yaragadee, Australia (GPS-GLONASS receiver)

TREND OFF YARR_50107M006 AT 2000:01:01

#SOLUTIONS=109 TREND OFF YARR_50107M006 AT 2000:01:01

POS XYZ  -2389024.6415   5043315.3780  -3078534.0028    M
+/- ENU         0.0028         0.0016         0.0072    M
RMS ENU         0.0030         0.0014         0.0080    M
VEL XYZ        -0.0463         0.0061         0.0494 M/YR
VEL ENU         0.0392         0.0555        -0.0019 M/YR
+/- ENU         0.0012         0.0004         0.0030 M/YR