SPECIAL DATA COLLECTION SYSTEM (SDCS) EVENT REPORT,
OFF COAST OF OREGON, 10 JANUARY 1976

TELEDYNE GEOTECH

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APRIL 1976
SPECIAL DATA COLLECTION SYSTEM EVENT REPORT
Off Coast of Oregon, 10 January 1976

K.J. Hill, M.S. Dawkins, and M.D. Gillispie
Alexandria Laboratories
Teledyne Geotech, 314 Montgomery Street, Alexandria, Virginia 22314

APRIL 1976

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Nuclear Monitoring Research Office
1400 Wilson Boulevard, Arlington, Virginia 22209
ARPA Order No. 2897

Monitored By
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312 Montgomery Street, Alexandria, Virginia 22314
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# SPECIAL DATA COLLECTION SYSTEM (SDCS)

Off Coast of Oregon, 10 January 1976

**Author(s):** Hill, K. J., Dawkins, M. S., Baumstark, R. R. and Gillispie, M. D.

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Alexandria, Virginia 22314

**Distribution Statement (of this report):**
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**Security Classification of This Page:**
Unclassified
SDCS EVENT REPORT NO. 81

Off Coast of Oregon, 10 January 1976

This event report contains seismic data from the Special Data Collection System (SDCS), and other sources for the above event. Published epicenter information from seismic observations is:

<table>
<thead>
<tr>
<th></th>
<th>&quot;P&quot; Arrival</th>
<th>Origin Time</th>
<th>Lat.</th>
<th>Long.</th>
<th>mb</th>
<th>Ms</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORSAR</td>
<td>09:09:59.1</td>
<td>08:58:46</td>
<td>43 N</td>
<td>127 W</td>
<td>5.6</td>
<td>N/A</td>
</tr>
<tr>
<td>Hagfors</td>
<td>09:10:08.5</td>
<td>08:59:09</td>
<td>47 N</td>
<td>126 W</td>
<td>5.6</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Using SDCS stations, LASA and NORSAR, the epicenter location and magnitudes become

08:58:42.6 43.3N 127.4W 5.4 N/A

All SDCS stations were operational during this period.

The programs used for LASA, NORSAR and ALPA data recovery are presently undergoing modifications. Information for LASA short-period is reported from their Teleseism Event Report; NORSAR short-period data is obtained from their bulletin. The long-period array beam recovery for these stations will be resumed upon completion of these modifications.

Short-period signals associated with this event were recorded at all SDCS stations, LASA and NORSAR. All SP channels at HN-ME had polarity reversals; to correct this, mathematical inversions of the data were performed. Horizontal SP channels at all SDCS stations were rotated.

Long-period signals were recorded at all SDCS stations. All LP channels at HN-ME and the LP radial channel at RK-ON had polarity reversals; to correct this, mathematical inversions of the data were performed. Horizontal LP channels at WH2YK, RK-ON and HN-ME were rotated. Signal clipping at CPSO and FN-WV prevented rotation of their LP horizontal channels.

Scaling factors on plots are millimicrons at 1 Hz (not corrected for instrument response).
### Station Description

<table>
<thead>
<tr>
<th>Site Code</th>
<th>Location</th>
<th>Site Coordinates</th>
<th>Elevation Meters</th>
<th>Instrumentation (Short-Period)</th>
<th>Instrumentation (Long-Period)</th>
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<tbody>
<tr>
<td>ALPA</td>
<td>Alaska</td>
<td>65 14 00.0 N</td>
<td>626</td>
<td>None</td>
<td>31300</td>
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<tr>
<td></td>
<td>147 44 36.0 W</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>CPSO</td>
<td>McMinnville, Tennessee</td>
<td>35 35 41.4 N</td>
<td>574</td>
<td>6480 V</td>
<td>SL210 V</td>
</tr>
<tr>
<td></td>
<td>085 34 13.5 W</td>
<td></td>
<td></td>
<td>7515 H</td>
<td>SL220 H</td>
</tr>
<tr>
<td>FN-WV</td>
<td>Franklin, West Virginia</td>
<td>38 32 58.0 N</td>
<td>910</td>
<td>KS36000</td>
<td>KS36000</td>
</tr>
<tr>
<td></td>
<td>079 30 47.0 W</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>LASA</td>
<td>Billings, Montana</td>
<td>46 41 19.0 N</td>
<td>744</td>
<td>HS10</td>
<td>7505A V</td>
</tr>
<tr>
<td></td>
<td>106 13 20.0 W</td>
<td></td>
<td></td>
<td>8700C H</td>
<td></td>
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<tr>
<td>HN-ME</td>
<td>Houlton, Maine</td>
<td>46 09 43.0 N</td>
<td>213</td>
<td>KS36000</td>
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<td></td>
<td>067 59 09.0 W</td>
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<td></td>
<td></td>
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<tr>
<td>NORSAR</td>
<td>Kjeller, Norway</td>
<td>60 49 25.4 N</td>
<td>379</td>
<td>HS10</td>
<td>7505A V</td>
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<tr>
<td></td>
<td>010 49 56.5 E</td>
<td></td>
<td></td>
<td>8700C H</td>
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<tr>
<td>RK-ON</td>
<td>Red Lake, Ontario</td>
<td>50 50 20.0 N</td>
<td>366</td>
<td>18300</td>
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</tr>
<tr>
<td></td>
<td>093 40 20.0 W</td>
<td></td>
<td></td>
<td>SL220 H</td>
<td></td>
</tr>
<tr>
<td>WH2YK</td>
<td>White Horse, Yukon</td>
<td>60 41 41.0 N</td>
<td>853</td>
<td>18300</td>
<td>SL210 V</td>
</tr>
<tr>
<td></td>
<td>134 58 02.0 W</td>
<td></td>
<td></td>
<td>SL220 H</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** The orientation of the radial instruments at FN-WV is assumed to be $16^\circ \pm 5^\circ$ based on empirical data (event recordings). Rotation, where performed, is referenced to this azimuth and may be questionable.
**HYPOCENTER DETERMINATION**

**INPUT FOR EVENT**

<table>
<thead>
<tr>
<th></th>
<th>10 JAN 76</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>08:58:46.0</td>
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</tbody>
</table>

**RESIDUALS**

<table>
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<tr>
<th>STA.</th>
<th>ARRIVAL</th>
<th>CALC</th>
<th>REST</th>
<th>DIST.</th>
<th>AZ.</th>
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<tbody>
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<td>-0.1</td>
<td>0.1</td>
<td>15.4</td>
<td>70.1</td>
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<td>0.4</td>
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<td>RK-ON</td>
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<td>0.3</td>
<td>-0.1</td>
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<td>60.0</td>
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<td>-0.2</td>
<td>0.2</td>
<td>33.0</td>
<td>89.2</td>
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<td>-0.8</td>
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67 HERRIN TRAVEL TIME TABLES

<table>
<thead>
<tr>
<th>ORIGIN</th>
<th>LAT.</th>
<th>LONG.</th>
<th>DEPTH (KM)</th>
<th>SDV IT STA</th>
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<tbody>
<tr>
<td>08:58:49.6</td>
<td>43.572N</td>
<td>127.235W</td>
<td>40.0</td>
<td>CALC</td>
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<tr>
<td>08:58:42.6</td>
<td>43.341N</td>
<td>127.438W</td>
<td>0.0</td>
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</table>

**CHI2 COVERAGE ELLIPSE:** 95 PER CENT CONF. LEVEL, SDV = 1.67

**MAJOR** 94.5 KM, **MINOR** 31.3 KM, **AZ** = 36, **AREA** = 9284 SQ.KM.
### DATA SUMMARY

**INPUT FOR EVENT**

<table>
<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
<th>LAT.</th>
<th>LON.</th>
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</thead>
<tbody>
<tr>
<td>10 JAN 76</td>
<td>08:58:46.0</td>
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<td>127.000W</td>
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**ARRIVAL**

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<th>PER</th>
<th>A/T</th>
<th>MB</th>
<th>MS</th>
<th>DIR</th>
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<td>WZYKM</td>
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<td>315</td>
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<td>WZYK</td>
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<td>09:07:29.0</td>
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<td>1682</td>
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<tr>
<td>RK-ON</td>
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<td>09:13:30.0</td>
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<td>19.0</td>
<td>9999</td>
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<td>CPSO</td>
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<td>131</td>
<td>5.41</td>
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<tr>
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<td>4099</td>
<td>0.0</td>
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<tr>
<td>FN-WV</td>
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<td>LPZ</td>
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<td>0.0</td>
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<tr>
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<tr>
<td>NAO</td>
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<td>138</td>
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<td>70.8</td>
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**ORIGIN**

<table>
<thead>
<tr>
<th>LAT.</th>
<th>LON.</th>
<th>DEPTH (Km)</th>
<th>MAG</th>
<th>SDV</th>
<th>STA</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:58:49.6</td>
<td>43.572N</td>
<td>127.235W</td>
<td>40</td>
<td>5.37</td>
<td>0.24</td>
</tr>
<tr>
<td>08:56:42.6</td>
<td>43.341N</td>
<td>127.438W</td>
<td>0</td>
<td>5.39</td>
<td>0.29</td>
</tr>
</tbody>
</table>

Short-period magnitudes (mP) used in averaging are restricted to those recorded at distances between 20 and 110 degrees from the epicenter.
CPSO  10 JAN 76

SPZ  204.48  MU

SPR  362.01  MU

SPT  159.81  MU

TIME  10 SEC  09:05:30