Preprocessed Input Data

**Description**

**SPOT4**
The Satellite Pour l’Observation de la Terre 4 (SPOT4) is a high resolution polar orbital satellite which worked for surface reflectance data from 1998 through 2002. This satellite is useful to get surface reflectance continuous data for both AVHRR and MODIS.

A 30+ years global CMG daily dataset is downloaded, composed of the following sensors: AVHRR (1981-1999), SPOT4 (1998-2002) and MODIS (2000-2010). The daily global data from MODIS and LTDR both have 3600x7200 pixels.

**Process**
This product does not have processes.

The following table shows the days of the year without data.

<table>
<thead>
<tr>
<th>Year</th>
<th>Missing Days (DOY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>0-90</td>
</tr>
<tr>
<td>1999</td>
<td>70, 199-365</td>
</tr>
<tr>
<td>2000</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>1, 2, 303, 304</td>
</tr>
<tr>
<td>2002</td>
<td>29, 80, 133, 250, 332, 337-365</td>
</tr>
</tbody>
</table>

**Data Set Characteristics**

<table>
<thead>
<tr>
<th>Temporary Coverage</th>
<th>1998 - 2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>Global</td>
</tr>
<tr>
<td>File Size</td>
<td>~9.4 GB</td>
</tr>
<tr>
<td>Projection</td>
<td>Latitude/Longitude WGS 1984</td>
</tr>
<tr>
<td>Data Format</td>
<td>HDF-EOS</td>
</tr>
<tr>
<td>Dimensions</td>
<td>14673 x 40320 rows/columns</td>
</tr>
<tr>
<td>Resolution</td>
<td>1 KM</td>
</tr>
<tr>
<td>Geographic Extent</td>
<td>Left: -180.0 Righ : 179.991071 Top : 75.0 Bottom: -56.0</td>
</tr>
<tr>
<td>Pre-processing</td>
<td>ATMOS_CORREC_REF: CTIV_SMAC_V4.0 CLOUD_COVER_REF: CTIV_CLOUD_COVER_V2.0 SNOW_COVER_REF: CTIV_SNOW_ICE_COVER_V2.0 SYNTHESIS_REF: CTIV_SYNTHESIS_V1.0</td>
</tr>
<tr>
<td>Science Data Sets (SDS HDF Layers)</td>
<td>11</td>
</tr>
<tr>
<td>Location</td>
<td>/VIP/DATA/MEASURES/SPOT/SPOT-VGT/</td>
</tr>
</tbody>
</table>
### Layer Specifications and QA/QC Descriptions

Science Data Sets for MODIS Terra Surface Reflectance Daily L3 Global 0.05Deg CMG V005 (MOD09CMG):

<table>
<thead>
<tr>
<th>Science Data Sets (HDF Layers) (21)</th>
<th>UNITS</th>
<th>BIT TYPE</th>
<th>FILL</th>
<th>VALID RANGE</th>
<th>MULTIPLY BY SCALE FACTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>B0 Spectral band (430–470 nm)</td>
<td>Reflectance</td>
<td>16-bit unsigned integer</td>
<td>0</td>
<td>&gt; 0</td>
<td>0.0005</td>
</tr>
<tr>
<td>B2 Spectral band (610-680 nm)</td>
<td>Reflectance</td>
<td>16-bit unsigned integer</td>
<td>0</td>
<td>&gt; 0</td>
<td>0.0005</td>
</tr>
<tr>
<td>B3 Spectral band (780-890 nm)</td>
<td>Reflectance</td>
<td>16-bit unsigned integer</td>
<td>0</td>
<td>&gt; 0</td>
<td>0.0005</td>
</tr>
<tr>
<td>MIR Spectral band (1580-1750 nm)</td>
<td>Reflectance</td>
<td>16-bit unsigned integer</td>
<td>0</td>
<td>&gt; 0</td>
<td>0.0005</td>
</tr>
<tr>
<td>NDV</td>
<td>Vegetation Global Index</td>
<td>8-bit unsigned integer</td>
<td>0</td>
<td>&gt; 0</td>
<td>( \text{NDVI} = 0.004 \times \text{NDV} - 0.1 )</td>
</tr>
<tr>
<td>SM</td>
<td>Status Map</td>
<td>8-bit unsigned integer</td>
<td>0</td>
<td>&gt; 0</td>
<td>0.0001</td>
</tr>
<tr>
<td>VZA</td>
<td>Viewing Zenith Angle</td>
<td>8-bit unsigned integer</td>
<td>0</td>
<td>&gt; 0</td>
<td>0.5</td>
</tr>
<tr>
<td>VAA</td>
<td>Viewing Azimuth Angle Grid</td>
<td>8-bit unsigned integer</td>
<td>0</td>
<td>&gt; 0</td>
<td>1.5</td>
</tr>
<tr>
<td>SZA</td>
<td>Solar Zenith Angle Grid</td>
<td>8-bit unsigned integer</td>
<td>0</td>
<td>&gt; 0</td>
<td>0.5</td>
</tr>
<tr>
<td>SAA</td>
<td>Solar Azimuth Angle Grid</td>
<td>8-bit unsigned integer</td>
<td>0</td>
<td>&gt; 0</td>
<td>1.5</td>
</tr>
<tr>
<td>TG</td>
<td>Time Grid</td>
<td>8-bit unsigned integer</td>
<td>0</td>
<td>&gt; 0</td>
<td></td>
</tr>
</tbody>
</table>
Table 1: Status Map QA Descriptions

<table>
<thead>
<tr>
<th>Bit No.</th>
<th>Long Name</th>
<th>Bit Comb.</th>
<th>Coarse Resolution QA</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Radiometric quality for BO</td>
<td>0</td>
<td>Bad quality</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>Good</td>
</tr>
<tr>
<td>6</td>
<td>Radiometric quality for B2</td>
<td>0</td>
<td>Bad quality</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>Good</td>
</tr>
<tr>
<td>5</td>
<td>Radiometric quality for B3</td>
<td>0</td>
<td>Bad quality</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>Good</td>
</tr>
<tr>
<td>4</td>
<td>Radiometric quality for MIR</td>
<td>0</td>
<td>Bad quality</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>Good</td>
</tr>
<tr>
<td>3</td>
<td>Land/Water</td>
<td>0</td>
<td>Sea</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>Land</td>
</tr>
<tr>
<td>2</td>
<td>Ice/Snow</td>
<td>0</td>
<td>Not present</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>Ice/Snow</td>
</tr>
<tr>
<td>0-1</td>
<td>Clouds/Shadow or Clear</td>
<td>00</td>
<td>Clear</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10</td>
<td>Shadow</td>
</tr>
<tr>
<td></td>
<td></td>
<td>01</td>
<td>Uncertain</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11</td>
<td>Cloud</td>
</tr>
</tbody>
</table>

Reference: