


# Available Spectral Satellites for Land Imaging

Rocky Mountain Geographic Science Center

Listed in order of resolution:



**Quickbird-2**  
USA  
Launch: 10/18/01

**Resolution: 61 cm, 2.44 m Swath: 16.5 km**

**Specifications**  
Sensor Resolution: 61-cm (2-ft) panchromatic  
2.44 m (8-ft) multispectral  
Orbital Altitude: 450 km - 98 degrees sun-synchronous inclination  
Revisit Frequency: 1 to 3.5 days depending on latitude at 70-centimeter resolution  
Predicted Life Span: 5-7 years  
Imagery Access: Commercial-DigitalGlobe



**Resurs DK-1**  
Russia  
Launch: 6/15/06

**Resolution: 0.8 m Swath: 448 km**


**Specifications**  
Sensor Type: 1-0.8m panchromatic  
2-3m narrow spectral imager  
Orbit: Altitude 180 - 500 km, Inclination: 64.8, 70.4 deg, near polar, sun-synchronous  
Revisit Frequency: 14.3 orbits per day, Repeat cycle: 1 day  
Predicted Life Span: 3 years  
Imagery Access: Commercial-TSKB Progress



**IKONOS-2**  
USA  
Launch: 9/24/99

**Resolution: 1 m, 4 m Swath: 11 km**

**Specifications**  
Sensor Resolution: 1m panchromatic  
4m multispectral  
Orbit: Altitude: 681 km circular, sun-synchronous, 98 minutes  
Revisit Frequency: 3 days, exact revisit occurrence every 142 days  
Predicted Life Span: 7 years  
Imagery Access: Commercial-GeoEye



**OrbView-3**  
USA  
Launch: 6/26/03  
**Inoperable: 4/23/07**

**Resolution: 1 m, 4 m Swath: 8 km**

**Specifications**  
Sensor Resolution: 1 m panchromatic  
4 m multispectral  
Orbit: Spot-2 Altitude 470 km - 97 deg inclination, sun-synchronous  
Revisit Frequency: 3 days  
Predicted Life Span: 5 years  
Imagery Access: Commercial-GeoEye



**KOMPSAT-2**  
(Arirang-2)  
South Korea  
Launch: 7/28/06

**Spatial Resolution: 1 m Swath: 15 km**


**Specifications**  
Sensor Resolution: 1m panchromatic  
4m multispectral  
Orbit: Altitude: 685 km - 98.13 inclination, sun-synchronous  
Revisit Frequency: ?  
Predicted Life Span: 3+ years  
Imagery Access: Commercial-Korea ARI and TRW



**IRS Cartosat 1, 2**  
India  
C1 Launch: 5/05/05  
C2 Launch: 1/02/07

**Resolution: 1m, 2.5 m Swath: 9.6, 30 km (stereo)**

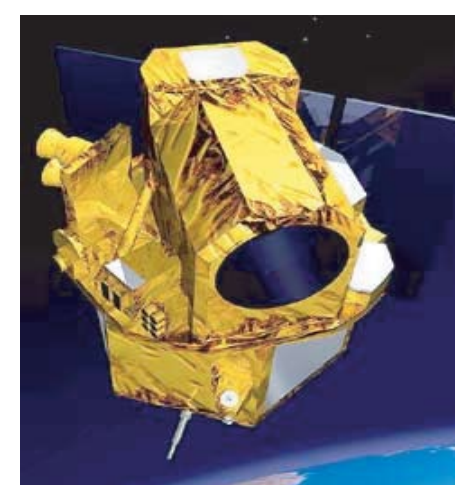
**Specifications**  
Sensor Resolution:  
C1 - 2.5 m, +26 and -5 deg, nadir stereoscopic, Panchromatic  
C2 - Less than 1 m, Panchromatic  
Orbit: C1: Altitude 618 km - 97.87 deg inclination, high polar, sun-synchronous  
C2: Altitude 630 km - 97.91 deg inclination, high polar, sun-synchronous  
Revisit Frequency: C1 116 days, 15 orbits per day, C2 4 days, 14 orbits per day  
Predicted Life Span: 5 years  
Imagery Access: Commercial-Indian Space Research Organization



**EROS A1, B1**  
Israel  
Launch: A1 12/05/00  
B1 4/25/06

**Resolution: 1.8 m Swath: 13.5 km**


**Specifications**  
Sensor Resolution: 1.8 m panchromatic CCD  
Orbit: Altitude: 480 km - 97.33 deg, circular, sun-synchronous  
Revisit Frequency: 2 days  
Predicted Life Span: A1 4 years, B1 10 years  
Imagery Access: Commercial-Orbotech, ImageSat International



**RocSat2 (FormoSat)**  
Taiwan  
Launch: 5/21/04

**Resolution: 2m, 8m Swath: 24 km**


**Specifications**  
Sensor Resolution: 2 m panchromatic CCD @ Nadir  
8 m multispectral @ Nadir  
Orbit: Altitude: 891 km circular, sun-synchronous, 99.1 inclination  
Revisit Frequency: 1 day  
Predicted Life Span: 5 years  
Imagery Access: Commercial-NSPO



**Spot-2, 4, 5**  
France  
2 Launch: 1/22/90  
4 Launch: 3/24/98  
5 Launch: 5/22/02


**Resolution: 2.5-5 m, 10 m Swath: 60-120 km**

**Specifications**  
Sensor Resolution: 2.5-5 m panchromatic  
10 m multispectral  
Orbit: Spot-2 Altitude 822 km - 98.7 deg inclination, sun-synchronous  
Orbit: Spot-4 Altitude 830 km - 98.7 deg inclination, sun-synchronous  
Orbit: Spot-5 Altitude 822 km - 98.7 deg inclination, sun-synchronous  
Revisit Frequency: 7 days  
Predicted Life Span: 3-5+ years  
Imagery Access: Government-(CNES)-French Space Agency



**SSTL (DMC)**  
Turkey, Nigeria, Algeria, China, United Kingdom, Thailand  
Res.: 2.5, 4, 12, 26, 32 m  
Swath: 640 km for all

**Specifications**  
SSTL Optical satellites (ASAT-1) Algeria, (BILSAT) Turkey, (DMC-4) China, (NigerSat-1) Nigeria, (TopSat), (UK DMC), (DMC) United Kingdom  
Sensor Resolution: 2.5, 4, 12, 26 panchromatic  
Orbit: Spot-2 Altitude: 700 km, sun-synchronous  
Revisit Frequency: 1 day  
Predicted Life Span: 5+ years  
Imagery Access: Commercial-Surrey



**ALOS**  
Japan  
Launch: 5/04/02

**Resolution: 25, 10 m Swath: 35, 70 km**

**Specifications**  
Sensor Resolution: 10m Panchromatic Remote-sensing Instrument for Stereo Mapping (PRISM), 2.5m Phased Array type L-band Synthetic Aperture Radar (PALSAR)  
Orbit: Altitude 692 km - 98.16 deg inclination, equatorial  
Revisit Frequency: 46 days  
Predicted Life Span: 7 years  
Imagery Access: Government-Japan Aerospace Exploration Agency (JAXA)



**MTI**  
USA  
Launch: 3/12/00

**Resolution: 5-20 m Swath: 12 km**

**Specifications**  
Sensor Resolution: 5 m - 20 m  
Sensor Resolution: 5 m panchromatic  
20 m multispectral  
Orbit: Altitude 573 km - 97.52 deg inclination, sun-synchronous, near circular  
Revisit Frequency: 7 days  
Predicted Life Span: 2 years  
Imagery Access: Government-Department of Energy - Proprietary to (FAS)



**Proba**  
Europe  
Launch: 10/22/01

**Resolution: 5, 25-50 m Swath: 160, 18.6 km**


**Specifications**  
Sensor Resolution: 5 m b/w multispectral (HRIC)  
5 m b/w multispectral (WAC)  
25-50 m multispectral (CHRIS)  
Orbit: Altitude 681x561 km - 97.9 deg inclination, LEO sun-synchronous  
Revisit Frequency: 7 days  
Predicted Life Span: 1 year  
Imagery Access: Government-ESA



**IRS-1C, 1D**  
India  
1C Launch: 12/28/95  
1D Launch: 9/29/97

**Resolution: 6, 25, 56 m Swath: 23-70, 141, 737 km**


**Specifications**  
Sensor Resolution: 5.8 m multispectral w/23-70 km swath (LISS-IV)  
23.6 m multispectral w/141 km swath (LISS-III)  
56 m multispectral w/737 km swath (AWIFS)  
Orbit: Altitude 817 km - 98.69 deg inclination, sun-synchronous  
Revisit Frequency: 5-24 days  
Predicted Life Span: 5 year  
Imagery Access: Commercial-Indian Remote Sensing



**KOMPSAT-1**  
South Korea  
Launch: 1/24/99

**Spatial Resolution: 6.6 m Swath: 17 km**


**Specifications**  
Sensor Resolution: 6.6 m panchromatic EOC  
Orbit: Altitude: 686 km circular, 98.37 inclination, sun-synchronous  
Revisit Frequency: 20 days  
Predicted Life Span: 3 years  
Imagery Access: Commercial-Korea ARI and TRW



**Monitor-E**  
Russia  
Launch: 9/26/05

**Resolution: 8, 20-40 m Swath: 96, 160 km**


**Specifications**  
Sensor Resolution: 8 m panchromatic  
20-40 m multispectral  
Orbit: Altitude 540 km, sun-synchronous  
Revisit Frequency: 4 days, 6 days  
Predicted Life Span: 5 years  
Imagery Access: Commercial - Khruichev SRPSC



**RadarSat-1, 2**  
Canada  
Launch: 11/04/95,  
3/??/07 RS2 planned

**Resolution: 9-28 m Swath: 50-500 km**

**Specifications**  
Sensor Resolution: 250km nadir offset  
Orbit: Altitude: 798 km circular, sun-synchronous, 98.6 deg inclination  
Revisit Frequency: 24 days, 14-17/24 orbits per day  
Predicted Life Span: 5 years  
Imagery Access: Government - MDA



**ENVISAT**  
Europe  
Launch: 3/01/02

**Resolution: 15-290 m Swath: 1150 km**

**Specifications**  
Sensor Resolution: 290 m (15 Spectral Bands) Medium Resolution Imaging Spectrometer (MERIS), and 8 other instruments  
Orbit: Altitude 800 km - 98.55 deg inclination, sun-synchronous polar orbit  
Revisit Frequency: 35 days  
Predicted Life Span: 5 years  
Imagery Access: Government-European Space Agency (ESA)



**Landsat 5, 7**  
USA  
5 Launch: 3/01/84  
Resolution: 15, 30, 120ir m  
7 Launch: 4/15/99  
Res.: 15, 30, 60ir, 80m Swath: 185 km

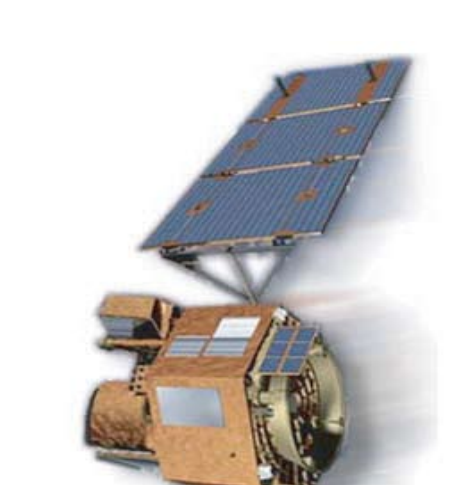
**Specifications (LS x-band downlink transmitter down 3/16/06)**  
Sensor Resolution: 80 m multispectral (MSS)  
30 m Thematic Mapper (TM)  
Landsat 7 also has: 15 m Enhanced Thematic Mapper Plus (ETM+)  
Orbit: Altitude 705 km - 98.2 deg inclination, sun-synchronous  
Revisit Frequency: 16 days  
Predicted Life Span: 5+ years  
Imagery Access: Government-USGS, NASA



**CBERS-2 (Zi Yuan-1B)**  
China/Brazil  
Launch: 10/21/03

**Resolution: 19.5, 260m Swath: 113, 910 km**

**Specifications**  
Sensor Resolution: 19.5 m multispectral CCD (HRCC)  
260 m multispectral CCD (WFI)  
Orbit: Altitude 778 km - 98.5 deg inclination, sun-synchronous  
Revisit Frequency: 26 days  
Predicted Life Span: 2 years  
Imagery Access: Government-Chinese Academy of Space and INPE



**EO-1**  
USA  
Launch: 11/21/00

**Spatial Res.: 30 m Swath: 7.7-37 km**


**Specifications**  
Sensor Resolution: 30 m continuous multispectral (Hyperion)  
30 m variable multispectral (ALI)  
Orbit: Spot-2 Altitude 705 km - 98.7 deg inclination, sun-synchronous  
Revisit Frequency: 16 days  
Predicted Life Span: 2 years  
Imagery Access: Government-Geoscience Australia and USGS-ACRES customers



**ERS-1, 2**  
Europe  
Launch: 7/17/91, 4/20/95


**Resolution: 30-240 m Swath: 100.4 km**

**Specifications**  
Sensor Type: Active Microwave Instrument, Precise Range and Range Rate Exp. Synthetic Aperture Radar, Global Ozone Monitoring Experiment  
Orbit: Altitude 782 to 785 km, Inclination: 98.52 deg, near polar, sun-synchronous  
Revisit Frequency: 14.3 orbits per day, Repeat cycle: 3 days, 35 days, and 176 days  
Predicted Life Span: ?  
Imagery Access: Government - European Space Agency (ESA)



**EOS AM-1 (Terra)**  
USA  
Launch: 12/18/99  
Res.: 1000, 500, 250m MODIS Swath: 2330 km  
Resolution: 90, 30, 15 m ASTER Swath: 60 km

**Specifications**  
Sensor Resolution: 1000, 500, 250 m w/36 spectral bands (MODIS)  
90, 30, 15 m w/14 spectral bands (ASTER)  
Orbit: Altitude 705 km - 98.2 deg inclination, sun-synchronous  
Revisit Frequency: 1-2 days  
Predicted Life Span: 5+ years  
Imagery Access: Government-USGS, NASA, METI



**EOS PM-1 (Aqua)**  
USA, Japan  
Launch: 5/04/02  
Res.: 1000, 500, 250m MODIS Swath: 2330 km  
Resolution: 90, 30, 15 m ASTER Swath: 60 km

**Specifications**  
Sensor Resolution: 1000, 500, 250 m w/36 spectral bands (MODIS)  
90, 30, 15 m w/14 spectral bands (ASTER)  
Orbit: Altitude 705 km - 98.2 deg inclination, sun-synchronous  
Revisit Frequency: 1-2 days  
Predicted Life Span: 6 years  
Imagery Access: Government-USGS, NASA, METI