Hello VIIRS!

- Raytheon SBRS selected to build VIIRS
- Single sensor covering the spectral region from 0.4 μ to 12 μ
- 22 spectral bands including one broadband “day-night” band
- Aperture:190.5 mm (7.5”).
- Rotating telescope design
- Solar diffuser and a solar diffuser stability monitor

Spatial & Radiometric

- 16 or 32 detectors downtrack
- 12-bit quantization, some dual gains
- On-board pixel aggregation scheme
  - 742m (nadir), 1,092 m ±850 km & 1,595 m ±1,500 km for most bands
  - 371 m > 798 m for “imaging” bands

Flight Opportunities

- First flight on NPP in 2005
  - 10:30 AM Descending Node, 824 km
- All subsequent NPOESS missions beginning about 2008
  - 1:30 PM Ascending Node, 833 km (±17 km)
  - Terminator Orbit
  - Consideration being given to follow-on missions at w/ 9:30 AM crossing time

VIIRS Radiometric

Band Name	Band Ctr		Band Width	
M1	412	nm	20	nm
M2	445	nm	18	nm
M3	488	nm	20	nm
M4	555	nm	20	nm
I1	645	nm	50	nm
M5	672	nm	20	nm
M6	751	nm	15	nm
M7	865	nm	39	nm
I2	865	nm	39	nm
M8	1.24	μ	0.020	μ
M9	1.378	μ	0.015	μ
M10	1.61	μ	.06	μ
I3	1.61	μ	.06	μ
M11	2.25	μ	.05	μ
M12	3.70	μ	.18	μ
I4	3.74	μ	.38	μ
M13	4.05	μ	.16	μ
M14	8.55	μ	0.3	μ
M15	10.8	μ	1.0	μ
M16	12.0	μ	1.0	μ
I5	11.5	μ	1.9	μ
DNB				

VIIRS Geometric

GSD Nadir (m)	850 km (m)	GSD EOS (m)
742	1093	1597
742	1093	1597
742	1093	1597
742	1093	1597
371	547	799
742	1093	1597
742	1093	1597
742	1093	1597
371	547	799
742	1093	1597
742	1093	1597
742	1093	1597
371	547	799
742	1093	1597
742	1093	1597
371	547	799
742	1093	1597
742	1093	1597
742	1093	1597
742	1093	1597
371	547	799

MODIS Radiometric

MODIS Band #	Band Ctr		Band Width	
8	412	nm	15	nm
9	443	nm	10	nm
10	488	nm	10	nm
12	551	nm	10	nm
1	645	nm	50	nm
13*	667	nm	10	nm
15	748	nm	10	nm
16	870	nm	15	nm
2	859	nm	36	nm
5	1.24	μ	0.02	μ
26	1.375	μ	0.030	μ
6	1.64	μ	0.02	μ
7	2.13	μ	0.05	μ
20	3.75	μ	0.18	μ
23	4.05	μ	0.06	μ
29	8.55	μ	0.30	μ
31	11.03	μ	0.50	μ
32	12.02	μ	0.50	μ

MODIS Band #	Band Ctr		Band Width	
3	469	nm	20	nm
4	555	nm	20	nm
21	3.96	μ	0.06	μ

Red=Imaging Band # or Property

Blue = Ocean Band # or Property

Black= All other Band # or Property

VIIRS Data are from PDR

MODIS Data are Spec

* VIIRS does not do fluorescence

AGI Bands Not Included (4)

#	Band Ctr	Purpose
8	915 nm	Precipatable Water
15	6.535 m	Cloud Mask
17	10.3 m	Snow / Cloud Discrimination
20	13.2 m	CO2 Cloud Slicing

MODIS Bands Not Included (15)

#	Band Ctr		Band Wic		Purpose
11	531	nm	10	nm	Ocean Color
14	678	nm	10	nm	Fluorescence
17	905	nm	30	nm	Precip Wate
18	936	nm	10	nm	Precip Wate
19	940	nm	50	nm	Precip Wate
22	3.96	μ	0.06	μ	SST
24	4.47	μ	0.07	μ	Sounding

#	Band Ctr		Band Width		Purpose
25	4.52	μ	0.07	μ	Sounding
27	6.72	μ	0.36	μ	Sounding
28	7.33	μ	0.30	μ	Sounding
30	9.73	μ	0.30	μ	Sounding
33	13.3	μ	0.3	μ	Sounding
34	13.6	μ	0.3	μ	Sounding
35	13.9	μ	0.3	μ	Sounding
36	14.2	μ	0.3	μ	Sounding