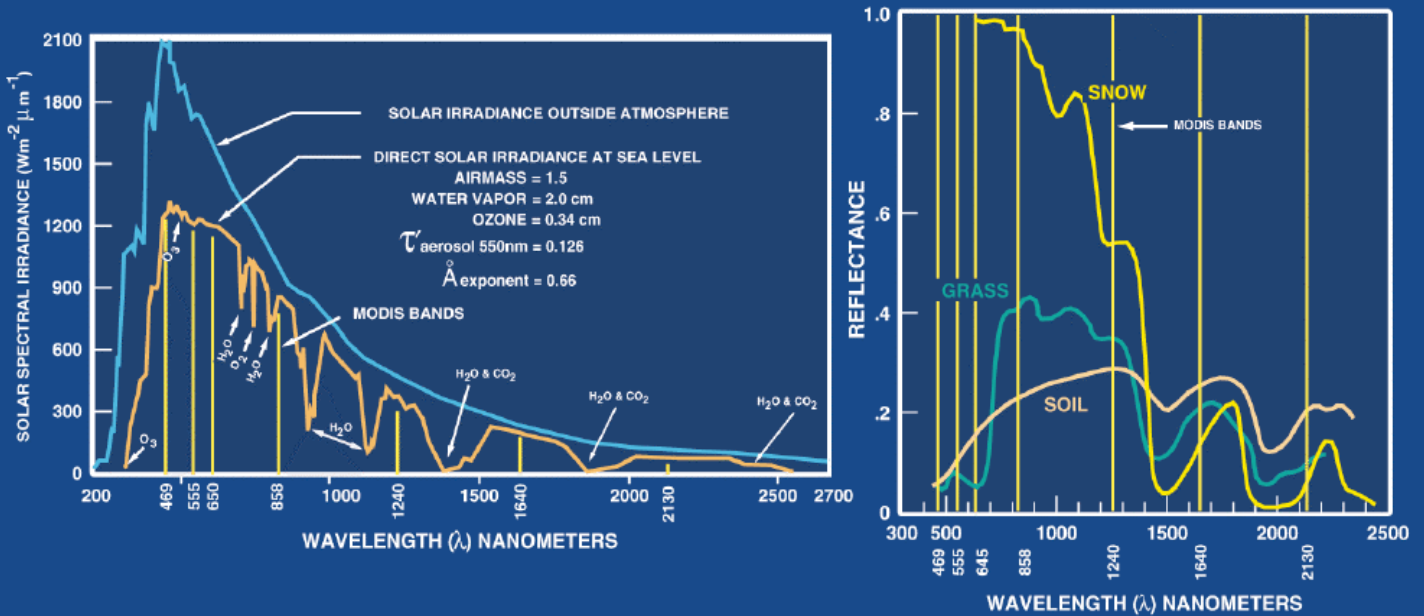
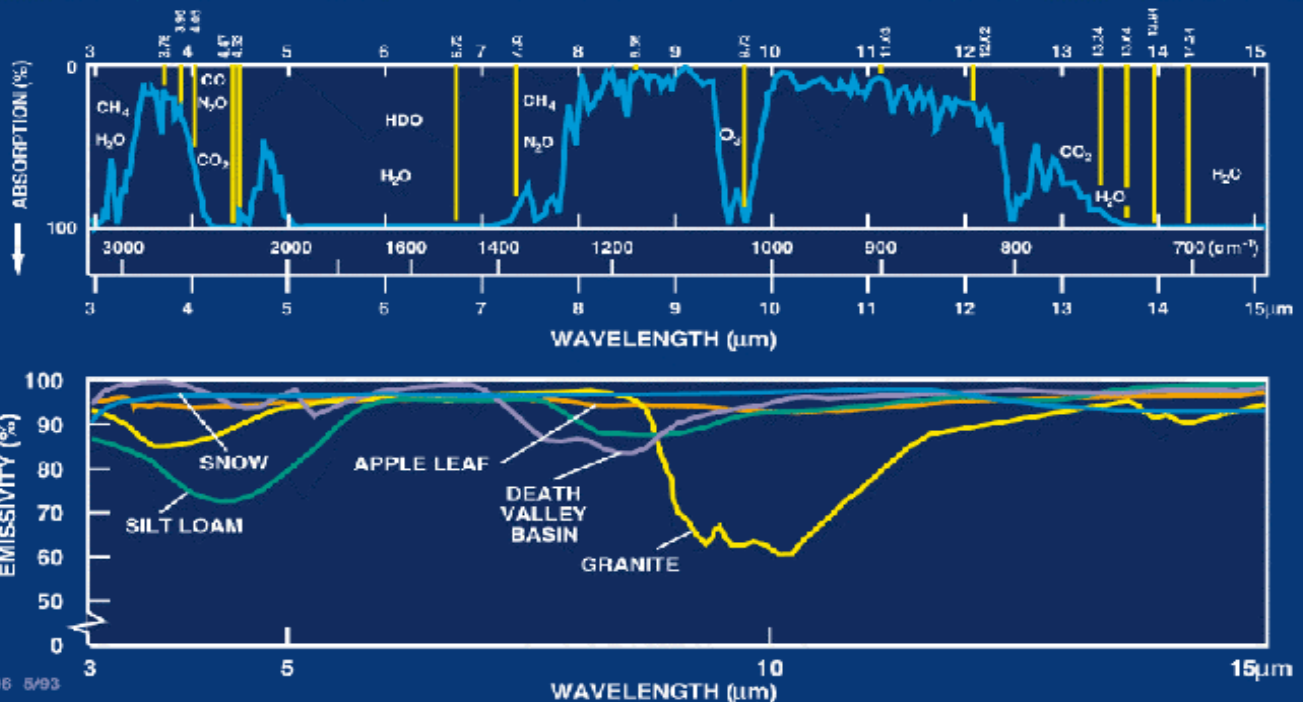


MODIS Instrument Characteristics

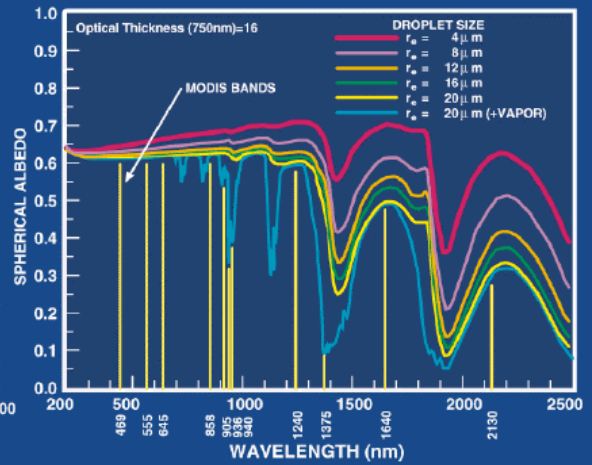
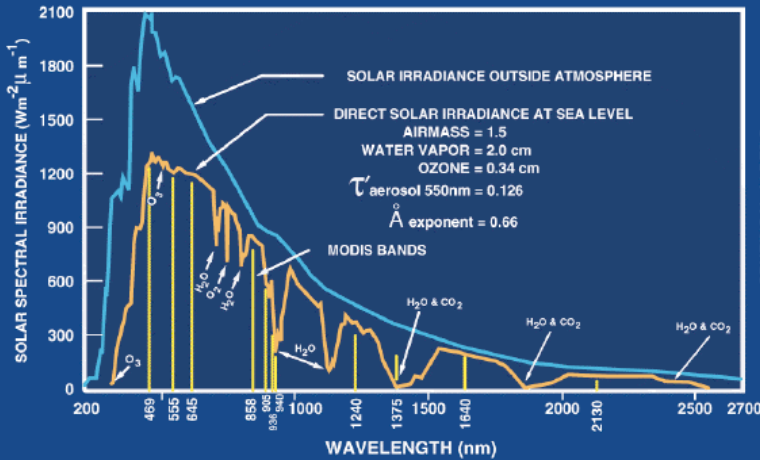
LAND-SOLAR RADIATION



LAND - THERMAL RADIATION

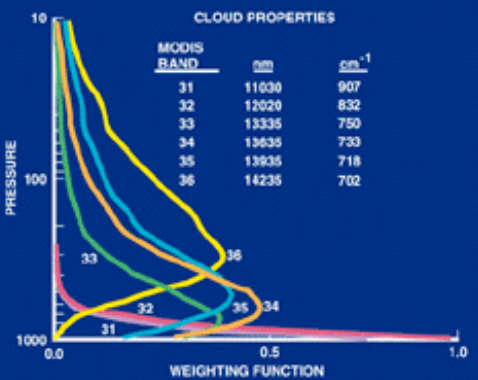
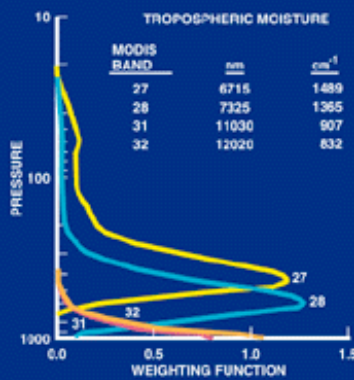
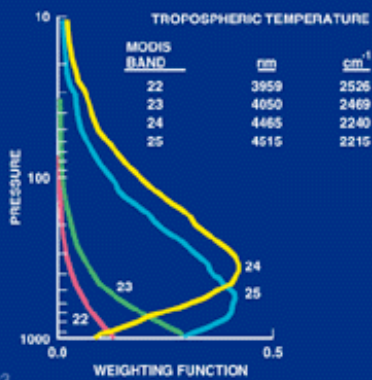
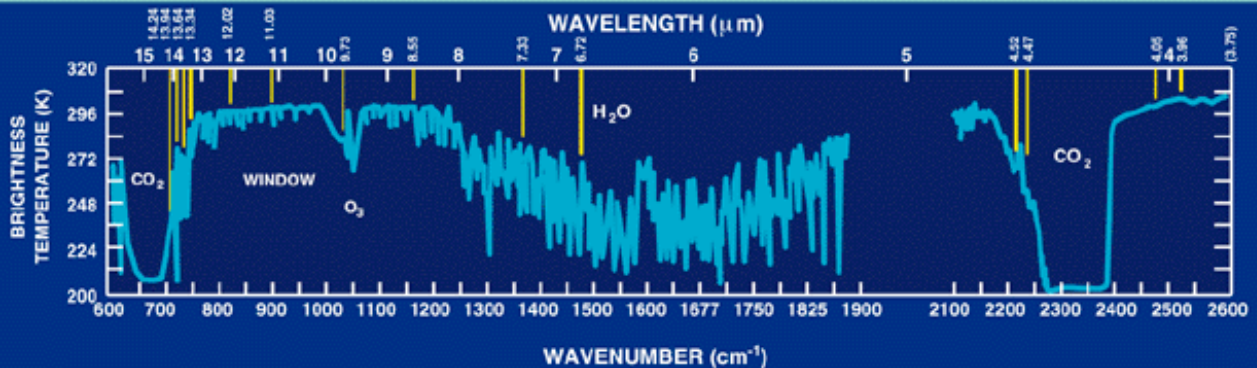


ATMOSPHERE-SOLAR RADIATION



C351.008 5/93

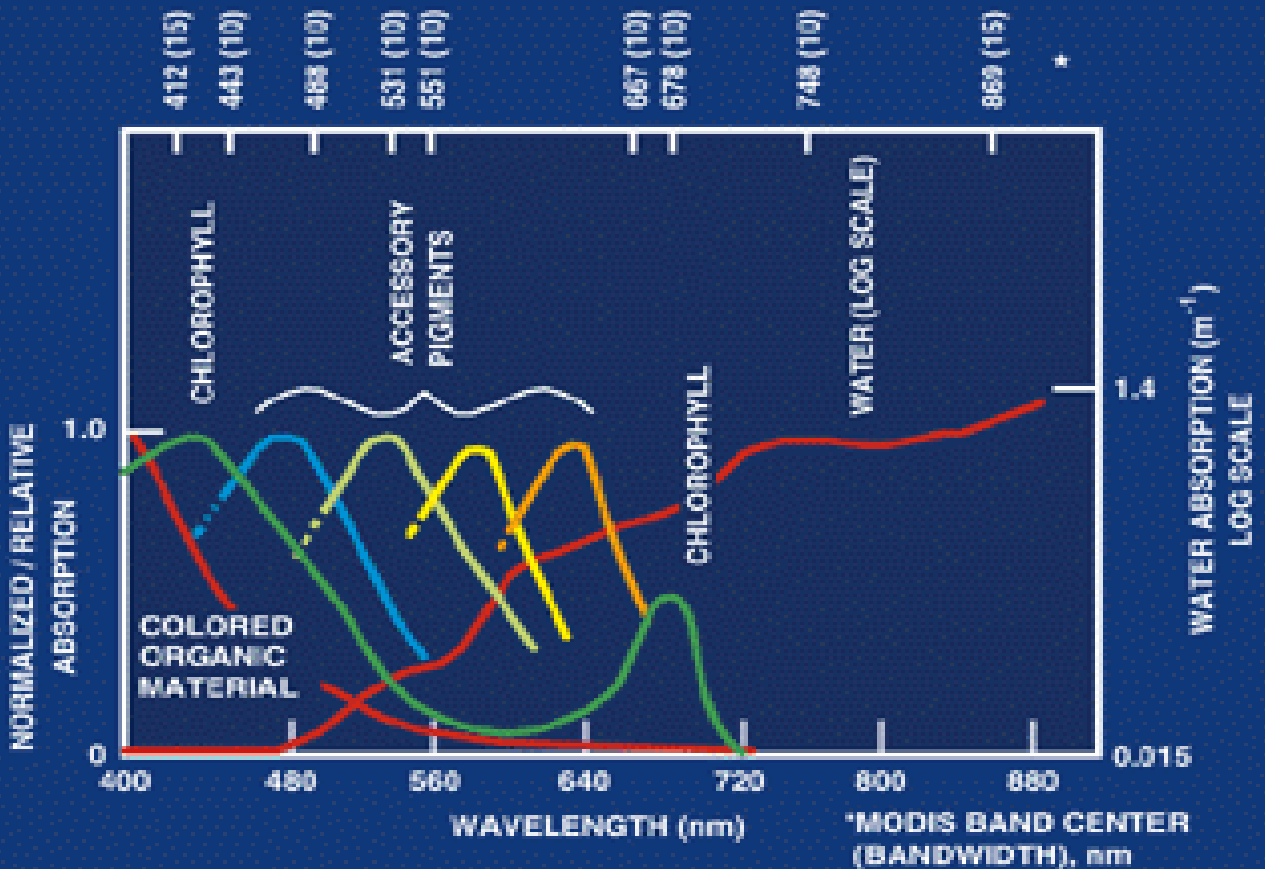
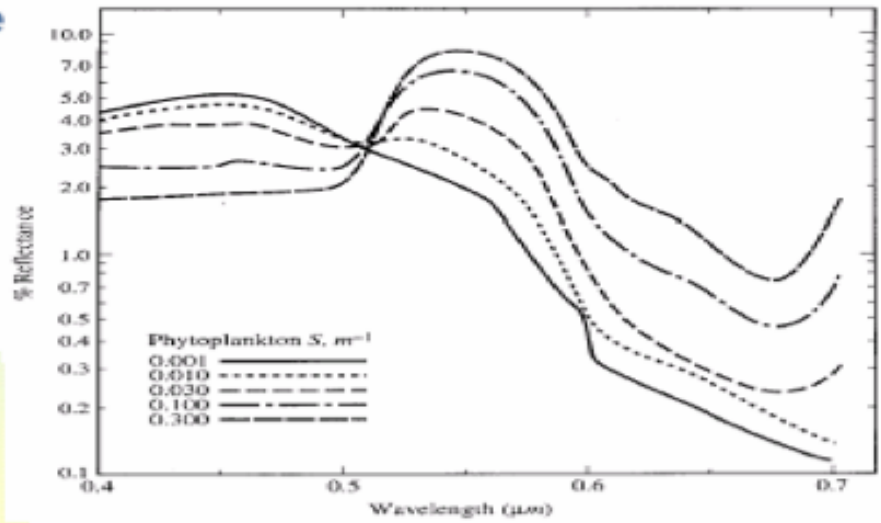
ATMOSPHERE - THERMAL RADIATION



C351.002 5/93

Reflectance of ocean water

Calculated change in bulk reflectance of ocean water with increasing concentration of phytoplankton.



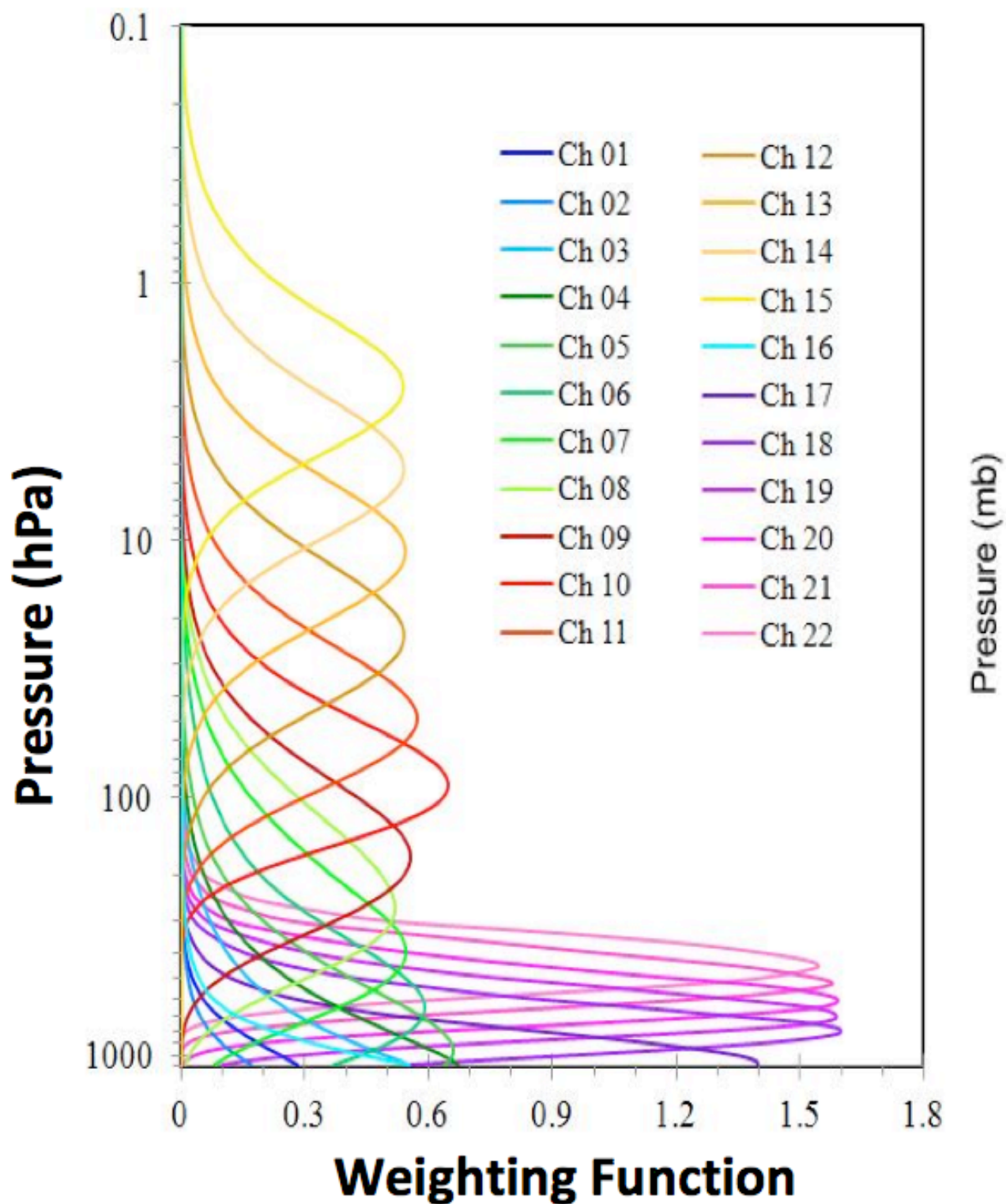
VIIRS Instrument Characteristics

	Band No.	Wave-length (μm)	Horiz Sample Interval (km Downtrack x Crosstrack)		Driving EDRs	Radiance Range	Ltyp or Ttyp	Signal to Noise Ratio (dimensionless) or NEΔT (Kelvins)		
			Nadir	End of Scan				Required	Predicted	Margin
VIS/NIR FPA Silicon PIN Diodes	M1	0.412	0.742 x 0.259	1.60 x 1.58	Ocean Color Aerosols	Low High	44.9 155	352 316	441 807	25% 155%
	M2	0.445	0.742 x 0.259	1.60 x 1.58	Ocean Color Aerosols	Low High	40 146	380 409	524 926	38% 126%
	M3	0.488	0.742 x 0.259	1.60 x 1.58	Ocean Color Aerosols	Low High	32 123	416 414	542 730	30% 76%
	M4	0.555	0.742 x 0.259	1.60 x 1.58	Ocean Color Aerosols	Low High	21 90	362 315	455 638	26% 102%
	I1	0.640	0.371 x 0.387	0.80 x 0.789	Imagery	Single	22	119	146	23%
	M5	0.672	0.742 x 0.259	1.60 x 1.58	Ocean Color Aerosols	Low High	10 68	242 360	298 522	23% 45%
	M6	0.746	0.742 x 0.776	1.60 x 1.58	Atmospheric Corr'n	Single	9.6	199	239	20%
	I2	0.865	0.371 x 0.387	0.80 x 0.789	NDVI	Single	25	150	225	50%
	M7	0.865	0.742 x 0.259	1.60 x 1.58	Ocean Color Aerosols	Low High	6.4 33.4	215 340	388 494	81% 45%
CCD	DNB	0.7	0.742 x 0.742	0.742 x 0.742	Imagery	Var.	6.70E-05	6	5.7	-5%
S/MWIR PV HgCdTe (HCT)	M8	1.24	0.742 x 0.776	1.60 x 1.58	Cloud Particle Size	Single	5.4	74	98	32%
	M9	1.378	0.742 x 0.776	1.60 x 1.58	Cirrus/Cloud Cover	Single	6	83	155	88%
	I3	1.61	0.371 x 0.387	0.80 x 0.789	Binary Snow Map	Single	7.3	6.0	97	1523%
	M10	1.61	0.742 x 0.776	1.60 x 1.58	Snow Fraction	Single	7.3	342	439	28%
	M11	2.25	0.742 x 0.776	1.60 x 1.58	Clouds	Single	0.12	10	17	66%
	I4	3.74	0.371 x 0.387	0.80 x 0.789	Imagery Clouds	Single	270 K	2.500	0.486	415%
	M12	3.70	0.742 x 0.776	1.60 x 1.58	SST	Single	270 K	0.396	0.218	82%
	M13	4.05	0.742 x 0.259	1.60 x 1.58	SST Fires	Low High	300 K 380 K	0.107 0.423	0.063 0.334	69% 27%
LWIR PV HCT	M14	8.55	0.742 x 0.776	1.60 x 1.58	Cloud Top Properties	Single	270 K	0.091	0.075	22%
	M15	10.763	0.742 x 0.776	1.60 x 1.58	SST	Single	300 K	0.070	0.038	85%
	I5	11.450	0.371 x 0.387	0.80 x 0.789	Cloud Imagery	Single	210 K	1.500	0.789	90%
	M16	12.013	0.742 x 0.776	1.60 x 1.58	SST	Single	300 K	0.072	0.051	42%

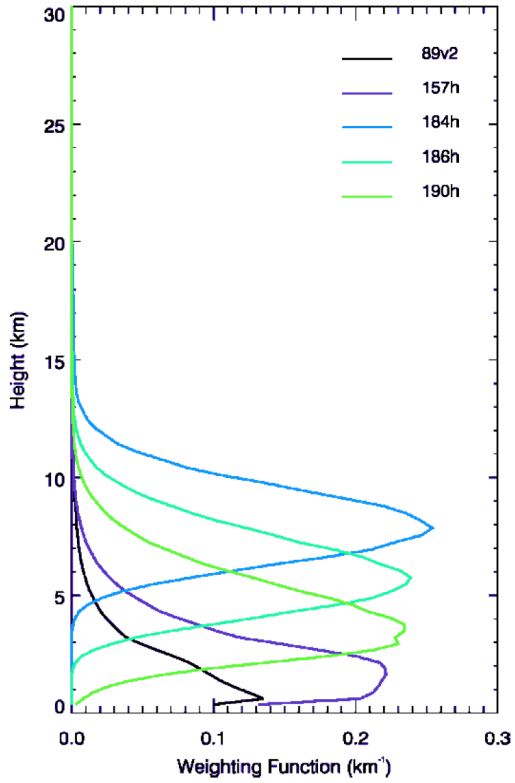
ATMS Instrument Characteristics

Channel	Center frequency (GHz)	Max. bandwidth (GHz)	Center frequency stability (MHz)	Temp. sensitivity NE Δ T (K)	Calibration accuracy (K)	Static beamwidth (°)	Quasi polarization	Characterization at nadir (reference only)
1	23.8	0.27	10	0.9	2.0	5.2	QV	Window-water Vapor 100 mm
2	31.4	0.18	10	0.9	2.0	5.2	QV	Window-water Vapor 500 mm
3	50.3	0.18	10	1.20	1.5	2.2	QH	Window-surface Emissivity
4	51.76	0.40	5	0.75	1.5	2.2	QH	Window-surface Emissivity
5	52.8	0.40	5	0.75	1.5	2.2	QH	Surface air
6	53.596 ± 0.115	0.17	5	0.75	1.5	2.2	QH	4 km ~ 700 mb
7	54.40	0.40	5	0.75	1.5	2.2	QH	9 km ~ 400 mb
8	54.94	0.40	10	0.75	1.5	2.2	QH	11 km ~ 250 mb
9	55.50	0.33	10	0.75	1.5	2.2	QH	13 km ~ 180 mb
10	57.290344	0.33	0.5	0.75	1.5	2.2	QH	17 km ~ 90 mb
11	57.290344 ± 0.217	0.078	0.5	1.20	1.5	2.2	QH	19 km ~ 50 mb
12	57.290344 ± 0.3222 ± 0.048	0.036	1.2	1.20	1.5	2.2	QH	25 km ~ 25 mb
13	57.290344 ± 0.3222 ± 0.022	0.016	1.6	1.50	1.5	2.2	QH	29 km ~ 10 mb
14	57.290344 ± 0.3222 ± 0.010	0.008	0.5	2.40	1.5	2.2	QH	32 km ~ 6 mb
15	57.290344 ± 0.3222 ± 0.0045	0.003	0.5	3.60	1.5	2.2	QH	37 km ~ 3 mb
16	87-91	2.0	200	0.5	2.0	2.2	QV	Window H ₂ O 150 mm
17	166.31	2.0	200	0.6	2.0	1.1	QH	H ₂ O 18 mm
18	183.31 ± 7.0	2.0	100	0.8	2.0	1.1	QH	H ₂ O 8 mm
19	183.31 ± 4.5	2.0	100	0.8	2.0	1.1	QH	H ₂ O 4.5 mm
20	183.31 ± 3.0	1.0	50	0.8	2.0	1.1	QH	H ₂ O 2.5 mm
21	183.31 ± 1.8	1.0	50	0.8	2.0	1.1	QH	H ₂ O 1.2 mm
22	183.31 ± 1.0	0.5	30	0.9	2.0	1.1	QH	H ₂ O 0.5 mm

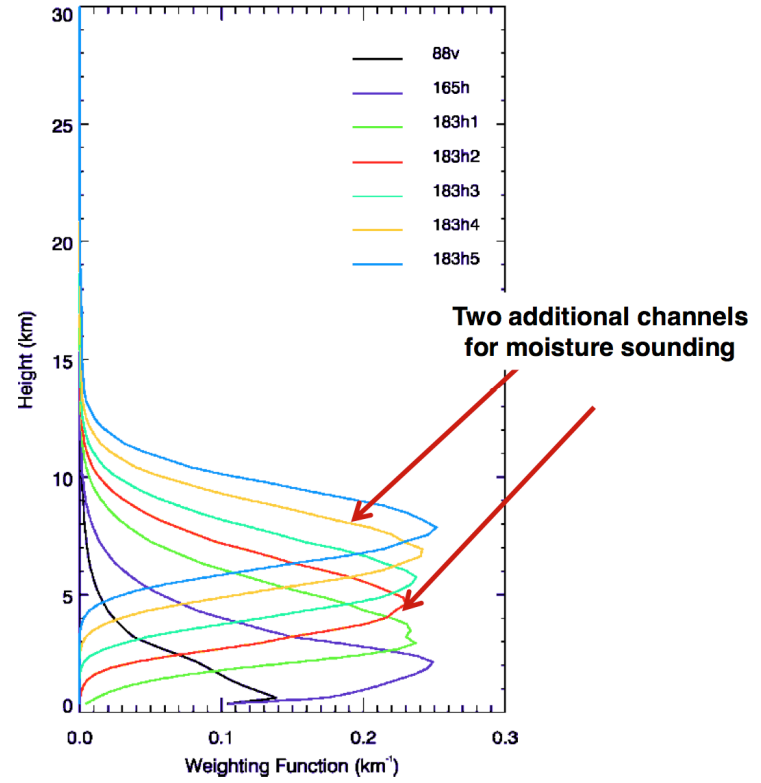
ATMS WF (U.S. Standard Atmosphere)



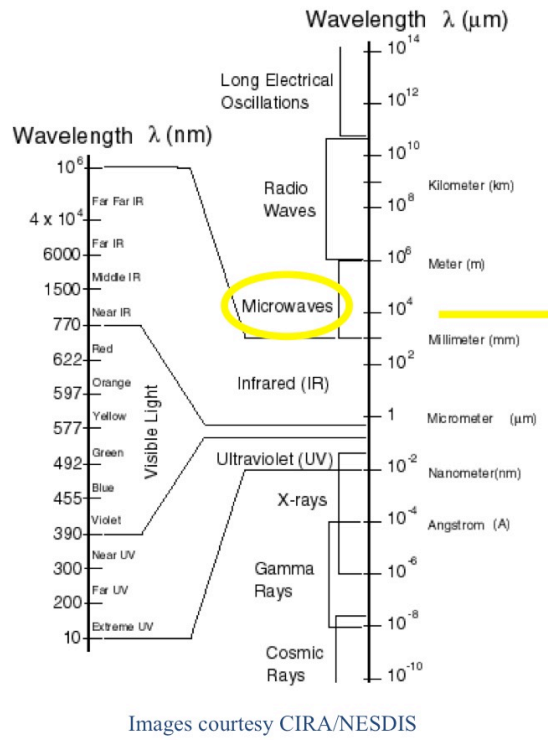
MHS Weighting Functions



ATMS Weighting Functions



Frequencies and wavelengths of interest for MW analysis



Images courtesy CIRA/NESDIS

