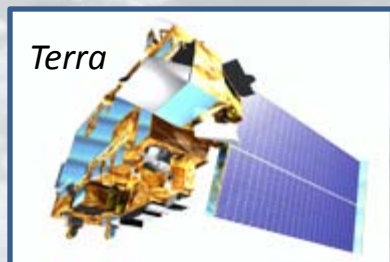
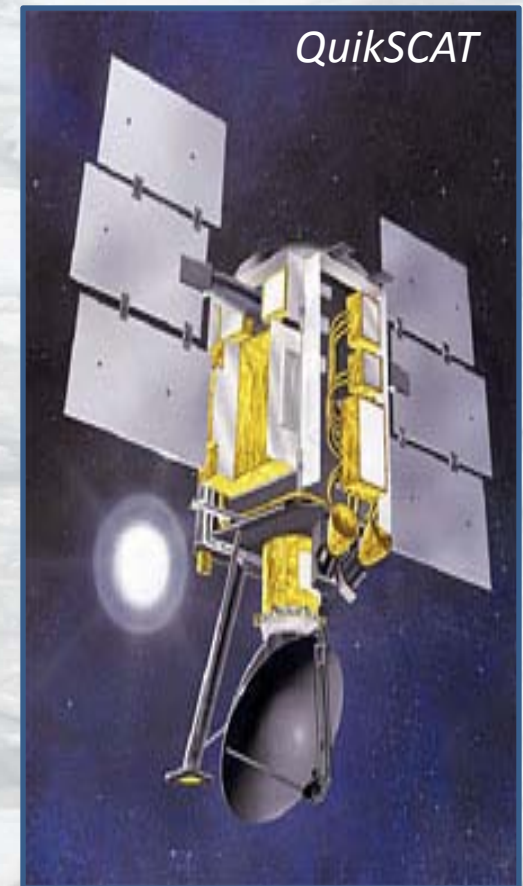
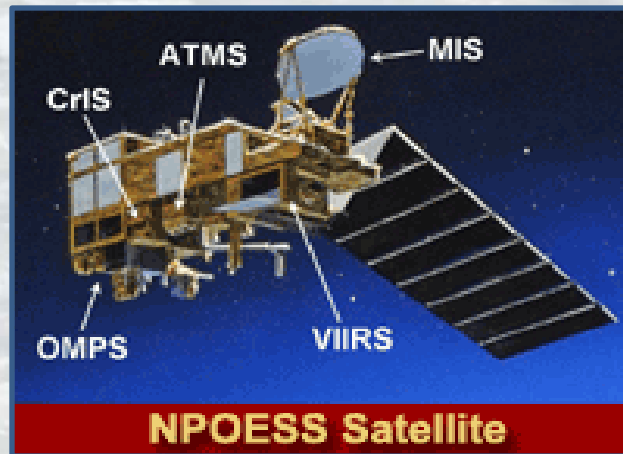
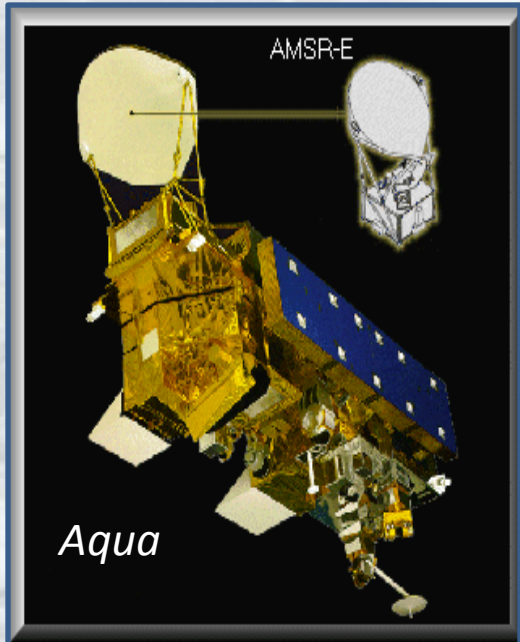




National / Naval Ice Center (NIC) QuikSCAT - AMSR-E /MODIS - AVHRR Mission Update



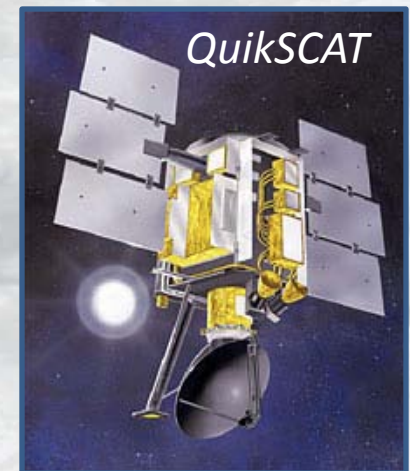
*Caryn Panowicz
Operations Technical Advisor
National/Naval Ice Center
October 2008*



QuikSCAT

- Replaced the capability of the NASA scatterometer instrument on Japan's Midori Satellite which lost power 9 months after its launch (1997).
- Built in 12 months, launched in June 1999 on Titan II rocket from Vandenberg AFB.
- Mission managed by JPL.
 - Designed to last 2-3 years.
 - Operating on a back-up transmitter.
 - Not meant to be used operationally – experimental.
 - Replacement originally scheduled for 2009 launch – set back to 2016. Doubtful.

NOAA Proposed Extended Ocean Vector Winds (XOVW)
May launch on Japanese Spacecraft.

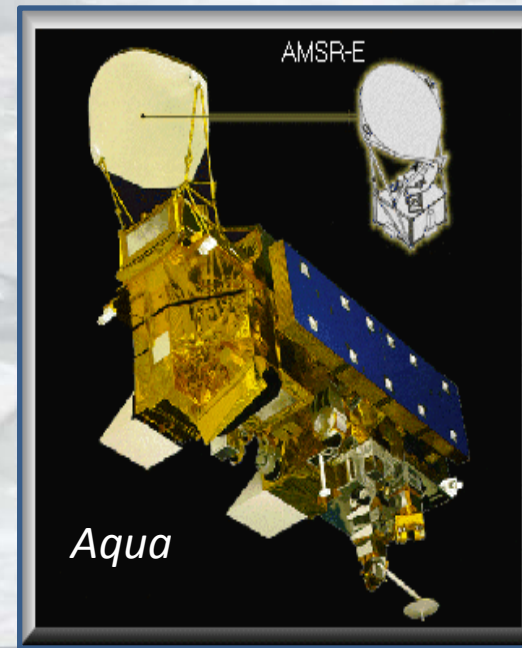
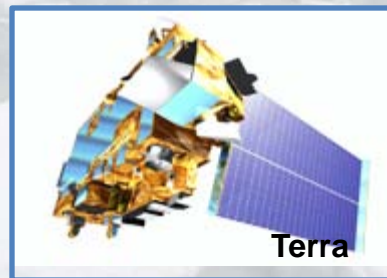




MODIS

MODIS (Moderate Resolution Imaging Spectroradiometer)

- Operating on both the Terra and Aqua spacecraft (NASA)
- Terra launch – Dec 1999
- Aqua launch – May 2002
- Life span 5 years
- Still going strong, no plans to discontinue until it “gives out”.

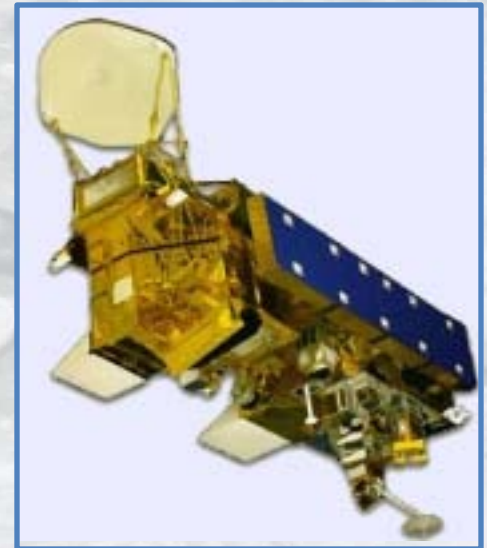




AMSR - E

The Advanced Microwave Scanning Radiometer (AMSR-E)

- Provided by the National Space Development Agency of Japan (NASDA) for launch on NASA craft
- Launched May 2002
- Onboard NASA's Aqua spacecraft.
 - Next launch 2011 onboard Japanese spacecraft.





NPP/NPOESS

NPP/NPOESS next-generation U.S. operational polar satellite constellation.

NPP – NPOESS Preparatory Project

- Launch 2010 as precursor to NPOESS
- Early validation of operational instrument and algorithms

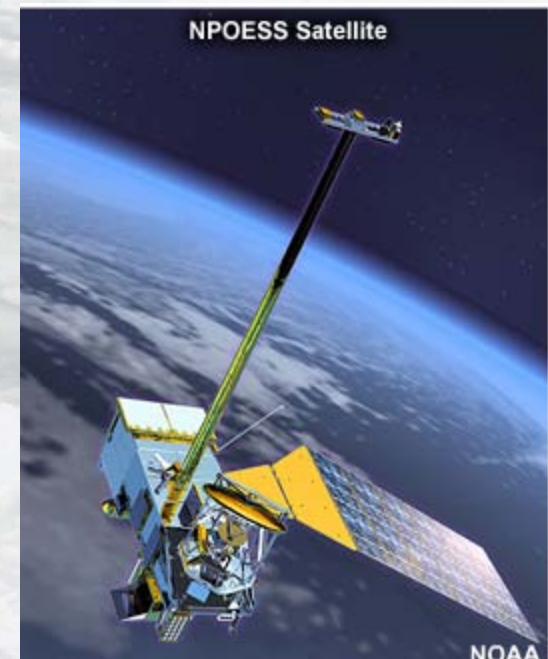
DMSP/AVHRR still operate another 7-10 years.

NPOESS – National Polar-orbiting Operational Environmental Satellite System

Operational satellite to replace DMSP and AVHRR for the DoD and DoC. Also replace MODIS.

- Launch 2013

Sensor – Visible/Infrared Imager/Radiometer Suite (VIIRS)



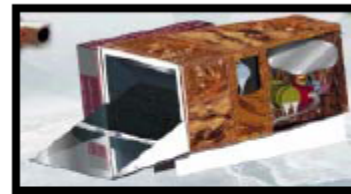


VIIRS Sensor

Visual sensor replacing OLS and AVHRR

- Sophisticated downlink and relay system, VIIRS latencies will be 30 min or less around the globe, improving the timeliness and therefore the operational usefulness of the images.
- With 22 channels, VIIRS will offer many more products than its predecessors.
- VIIRS images will have improved quality. Through a unique pixel aggregation strategy, VIIRS pixels will not expand rapidly toward the edge of a scan like those of MODIS or AVHRR. Data will retain nearly the same resolution at the edge of the swath as at nadir.

VIIRS Key Characteristics and Performance



Spectral Bands:

- Visible/ Near IR: 9 plus Day/Night Band
- Mid - Wave IR: 8
- Long - Wave IR: 4

Imaging Optics: 19.1 cm Aperture, 114 cm Focal Length

Band - to - Band Registration (All Bands, Entire Scan)
> 80% per Axis

Orbital Average Power: 134 Watts (55% Margin)

Mass: 199 Kg



VIIRS Sensor

For our efforts – information becomes available as soon as CAL/VAL efforts completed for NPP.

BUT – NPP not designed for operational use – so “use at own risk”

NPOESS – must meet operational requirements

NIC considering any participation in validation of NPP.



QUESTIONS



References

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