

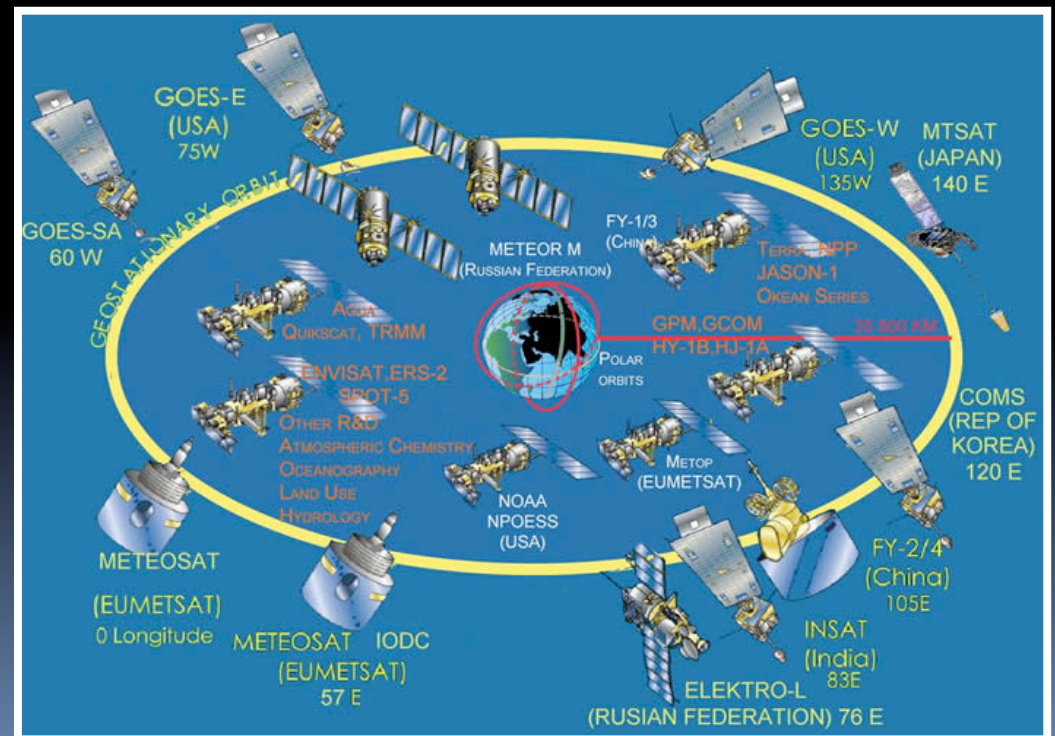
METEOROLOGICAL SATELLITE STATUS REPORT

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Outline

- Geostationary Satellite Status
- Polar Orbiting Satellite Status
- Antarctic Composite Status
- Future Launches
 - Geostationary
 - Polar Orbiting
- Miscellaneous
 - Argos system
 - Solar Sail
 - Molinya
 - Frequency Issues





Current Status & Launch Plans

Geostationary Status

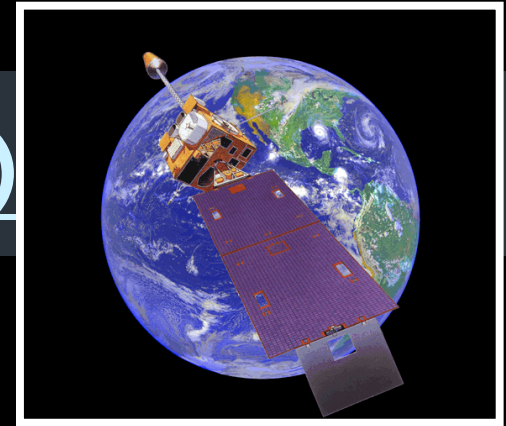
- GOES
- Meteosat
- MTSAT-1R/MTSAT-2
- FY-2D/FY-2E
- Kalpana-1
- COMS
- Elektro-L (GOMS-2)

Polar Orbiting Status

- NOAA
- DMSP
- Aqua/Terra
- FY-1/FY-3
- Metop-A
- Meteor-M

Caveat Emptor....

US Geostationary (GOES)



GOES-East

- GOES-13
- Operational at 75° West
- No 12.0 μm (13.3 μm instead)

GOES-West

- GOES-11
- Operational at 135 West

GOES-South America

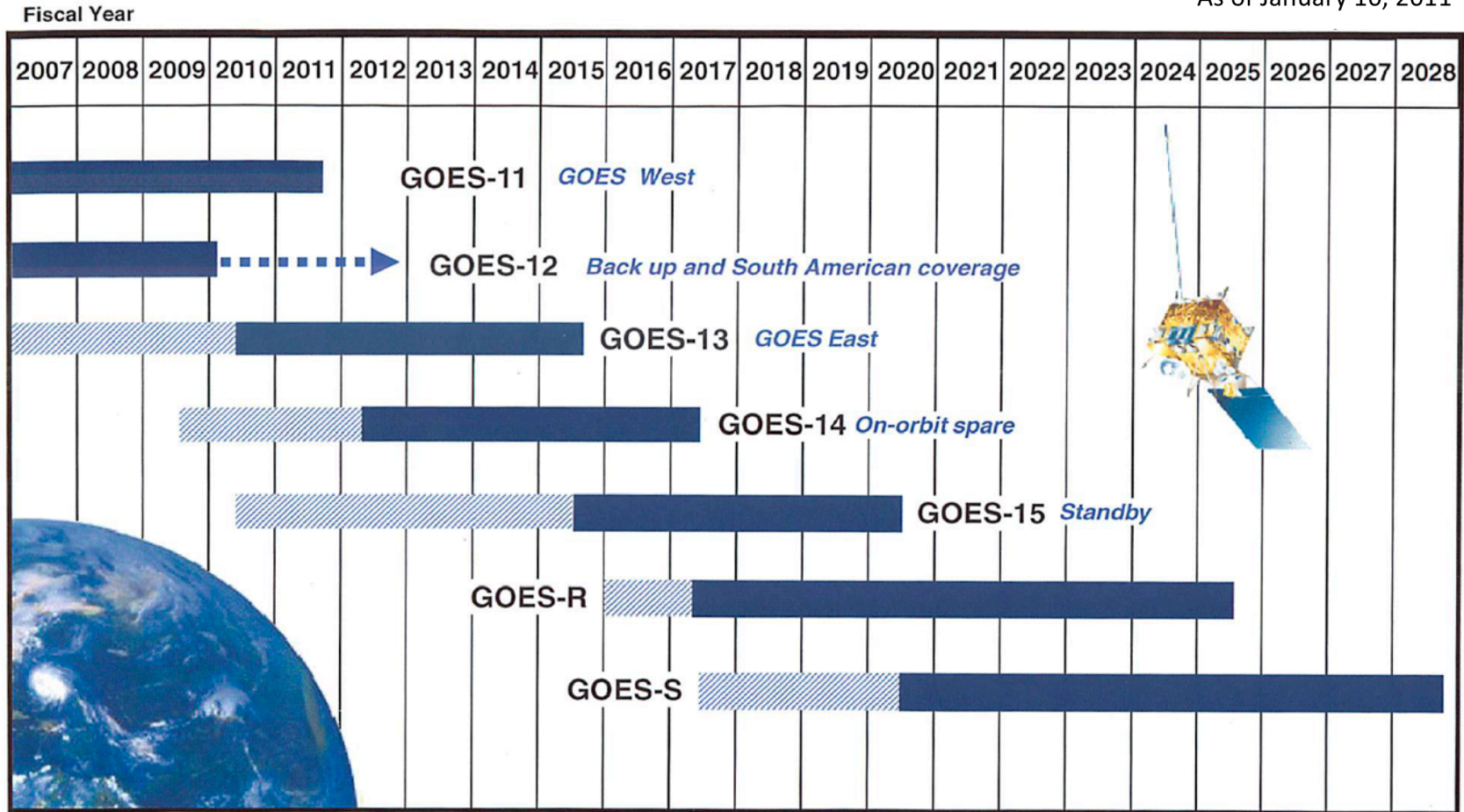
- GOES-12
- Operational at 60° West
- No 12.0 μm (13.3 μm instead)

GOES on storage

- GOES-14
- Stored at 105° West
- No 12.0 μm (13.3 μm instead)


Continuity of GOES Operational Satellite Programs

As of January 10, 2011



Approved: *Abigail Hays*
Deputy Assistant Administrator
for Systems

Satellite is operational beyond design life
 Operational
 On-orbit GOES storage



US Polar-Orbiting

NOAA

- NOAA-15 – O.k.
- NOAA-16 – Mixed data quality - AVHRR
- NOAA-17 – No useable AVHRR
- NOAA-18 - Good
- NOAA-19 – Good
- No more NOAA satellites
- Interference issues – Meteor M N1 LRPT with NOAA-19 APT
- Couple of tumbling old satellites causing minor issues...

DMSP

- DMSP F-13 – Operating ?
- DMSP F-14 – “
- DMSP F-15 – “
- DMSP F-16 – “
- DMSP F-17 – “
- DMSP F-18 – “

NASA

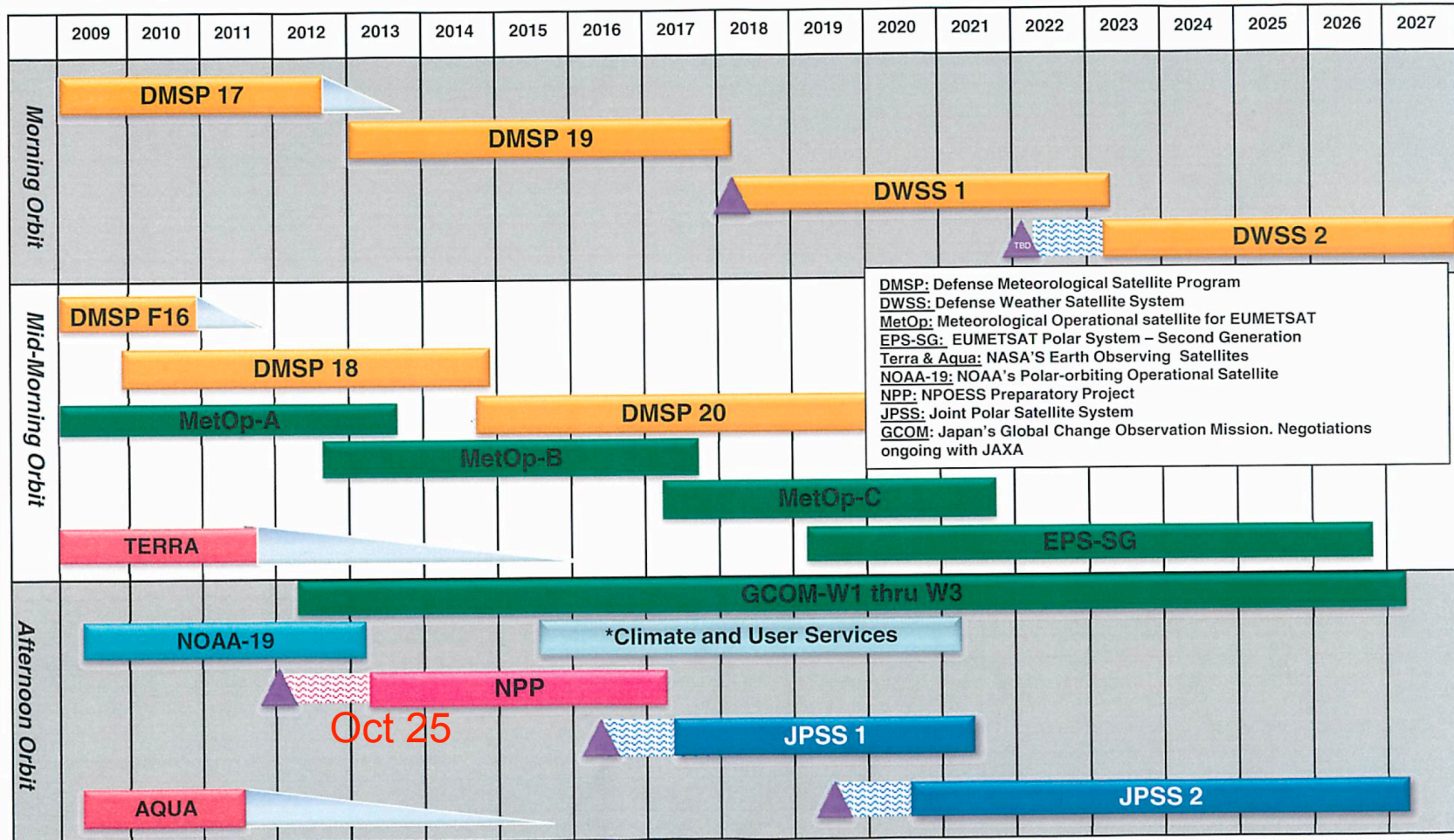
- Terra – Operating beyond lifespan
- Aqua – Operating beyond lifespan



Continuity of Polar Operational Satellite Programs

Fiscal Year

As of February 14, 2011

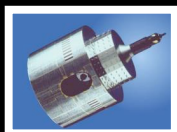


Approved: *May E. Key*
 Assistant Administrator for
 Satellite and Information Services



Meteosat/Metop-A

Current Status



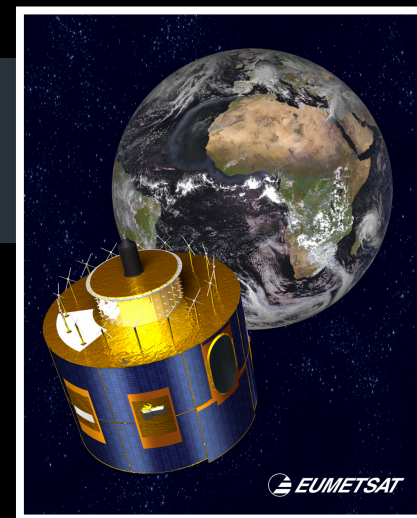
- Meteosat-6
 - Graveyard orbit April 15, 2011
- Meteosat-7
 - Operational at 57.5° East
- Meteosat-8
 - Operational at 9.5° East
- Meteosat-9
 - Operational at 0° East
- Metop-A
 - Operational Polar-Orbital

Future - Meteosat Third Generation

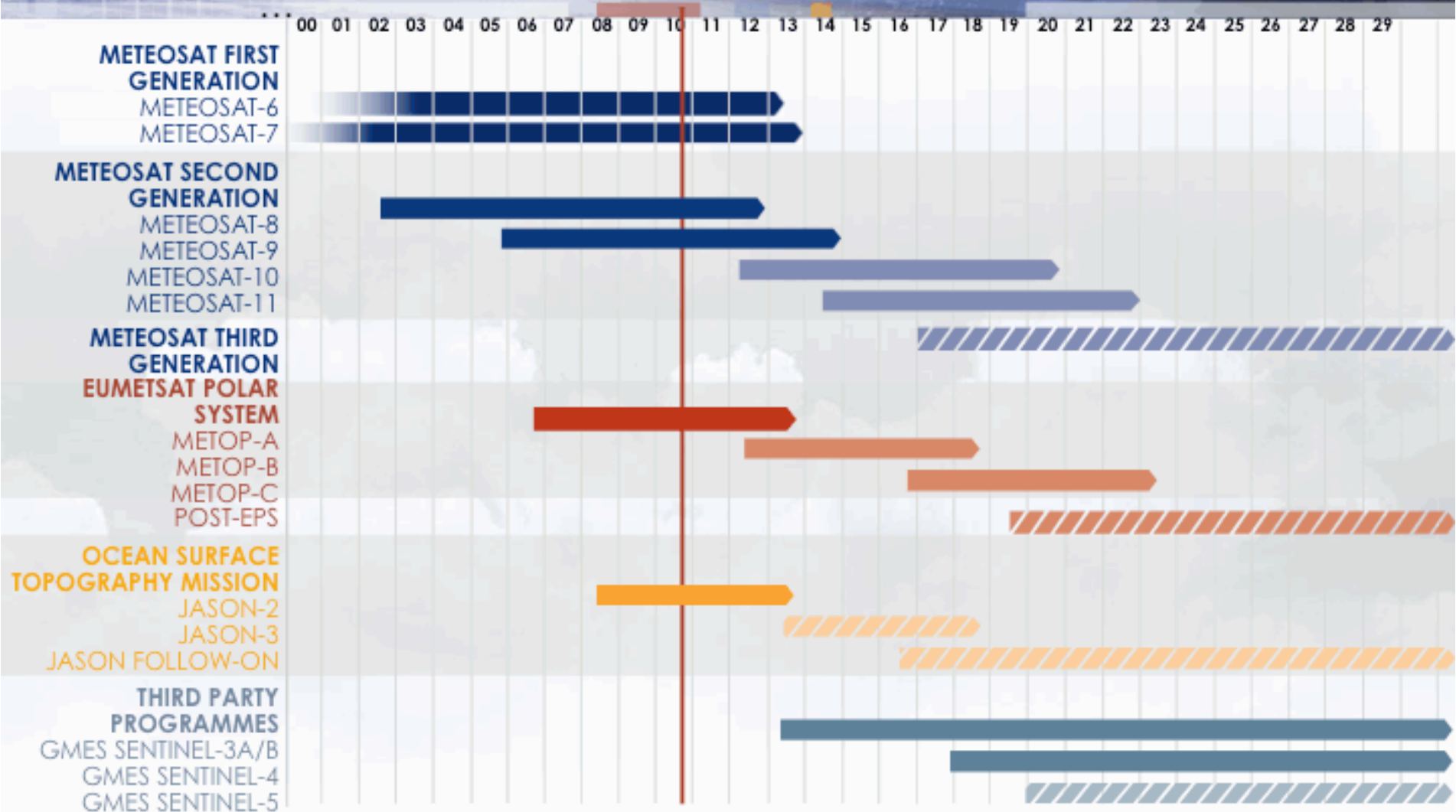
- MTG-Imager
 - Launch 2017
- MTG-Sounder
 - Launch 2018

Metop-A

- AHPRT only over Europe/North America
- FRAC data available at Wisconsin via NOAA/NESDIS from EUMETSAT
- Antarctica Data Acquisition (ADA)



EUMETSAT Space Segment





MTSAT - Japan

Current Status

- Geostationary
- MTSAT-1R
 - Standby mode at 140° East
- MTSAT-2
 - Operational at 145° East

Future Launches

- MTSAT-3
 - 2014?



FY (Feng Yun) - China

Current Status

Geostationary....

- FY-2D
 - Operational at 86.5° East
- FY-2E
 - Operational at 104° East

Polar Orbiting....

- FY-1D off the air...??
 - Reported from the Amateur satellite community....
- FY-3A - Launched 12 Jan 2009
- FY-3B - Launched 4 November 2010
 - Not CGMS standard....

Future Launches

Geostationary....

- FY-2 F and G ?
 - 2011? 2013?
- FY-4
 - 2015?

Polar Orbiting....

- FY-3
 - C through F?



COMS – South Korea

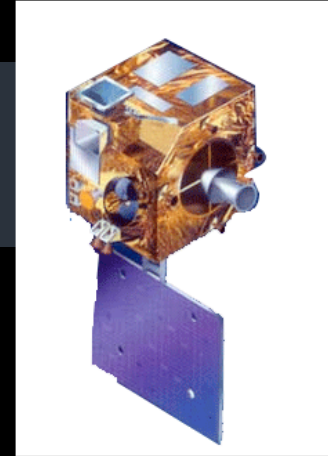
Current Status

- Geostationary
- Communications, Ocean, and Meteorological Satellite
- Launched June 26, 2010
- In commissioning at 128.2° East

Future Launches

- COMS-2
- Launch 2013 ?

Kalpana/INSAT - India



Current

- Geostationary
- Kalpana-1
 - Launched 12 September 2002
 - Operational at 74° East
- INSAT-3A
 - Launched 2003
 - Operational at 93.5° East

Future

- INSAT-3D
- INSAT-3D R
- GEO-HR
- Microwave Temperature Sounder



Elektro & Meteor - Russia

Elektro-L/GOMS-2

- Russian Geostationary Operational Meteorological Satellite
- N₁ Launched 20 January 2011
- On station at 76° East
- Future Launches:
 - N₂
 - N₃

Meteor-M

- Polar Orbiting
- Meteor-M N₁ – Sporadic
 - Carrier interference with NOAA-19
 - Not CGMS standard....
 - Future Launches:
 - N₂

Argos

Concerns:

- Argos – will NOT be on:
 - NPP
 - JPSS-1
- Argos – will LIKELY NOT be on:
 - DWSS series
- Real-time data a worry
- Situation under discussion... (CLS & NOAA)
- Still on: NOAA, Metop



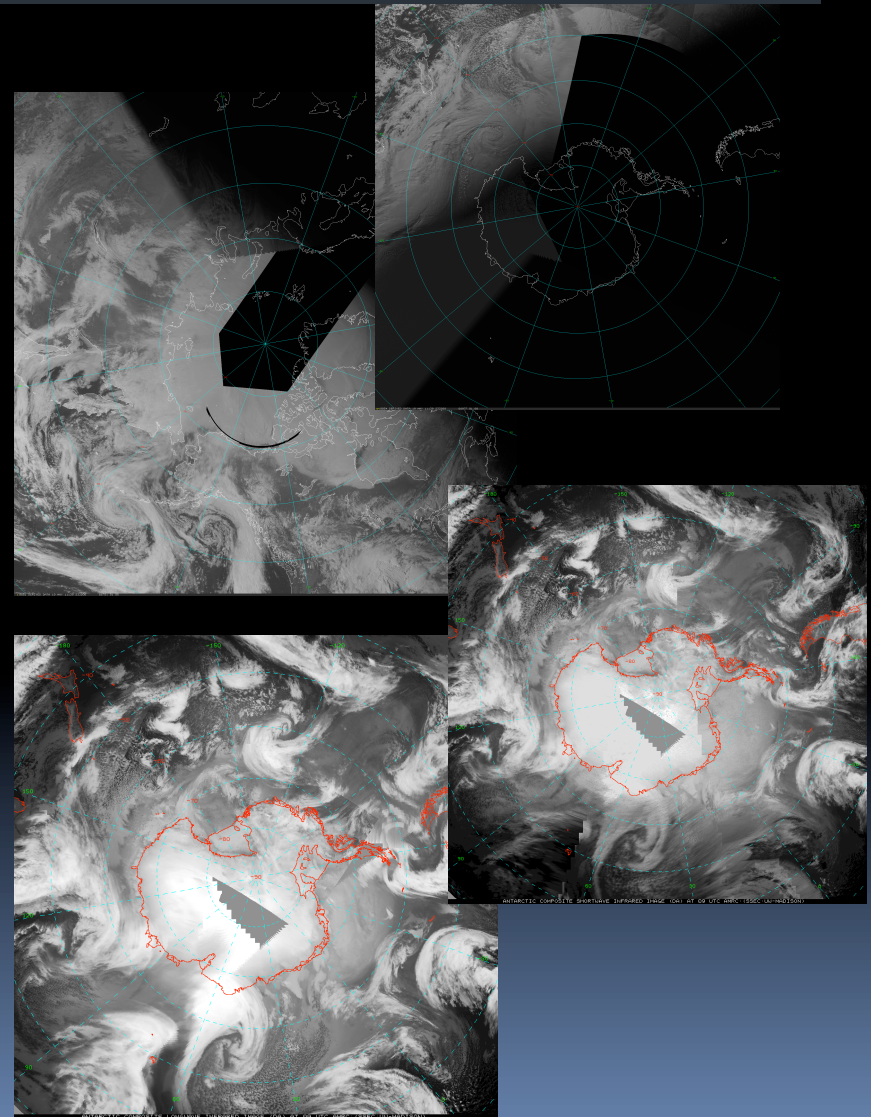
SARAL:

- Satellite with Argos and ALtiKa
- Joint mission:
 - India – France
- Launch date: 2011 ?
- Argos on board
- ALtiKa altimeter, DORIS, Laser Retro-reflector Array (LRA)

Antarctic (& Arctic) Composites

Improvements...

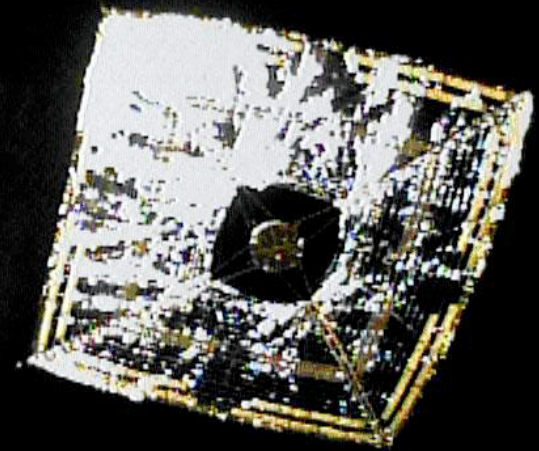
- 3 new channels...5 total:
 - "Real" Visible
 - Shortwave Infrared (~3.8 μm)
 - Longwave Infrared (~12.0 μm)
 - Arctic matches...
- Arctic composites on track to be an official NOAA product (most of it...)
 - Will continue full Arctic composite at SSEC Data Center at UW/SSEC...



Solar Sail

IKAROS

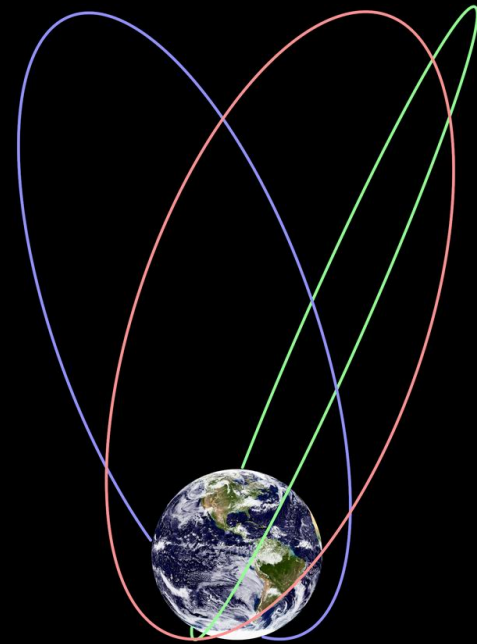
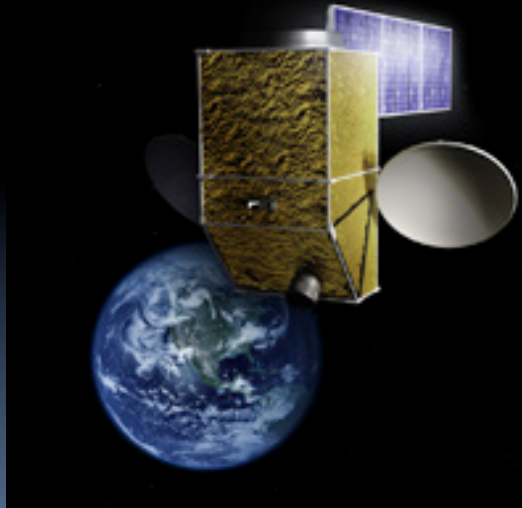
- Japan - Interplanetary Kite-craft Accelerated by Radiation Of the Sun
- Launched May 21, 2010
- First solar sailing spacecraft!
 - NanoSail-D2 Jan 2011
 - More coming:
 - LightSail-1
 - Icarus
- Sailed passed Venus on December 8, 2010
- Gives rise to the reality of Pole Sitter (Lazzara et al 2011)



Molniya (Highly Elliptic Orbit)

Canada

- Polar communications and weather mission (PCW)
 - Weather imaging
 - Communications
- Planned 2016?
- Two Satellites
 - 6 Year lifespan





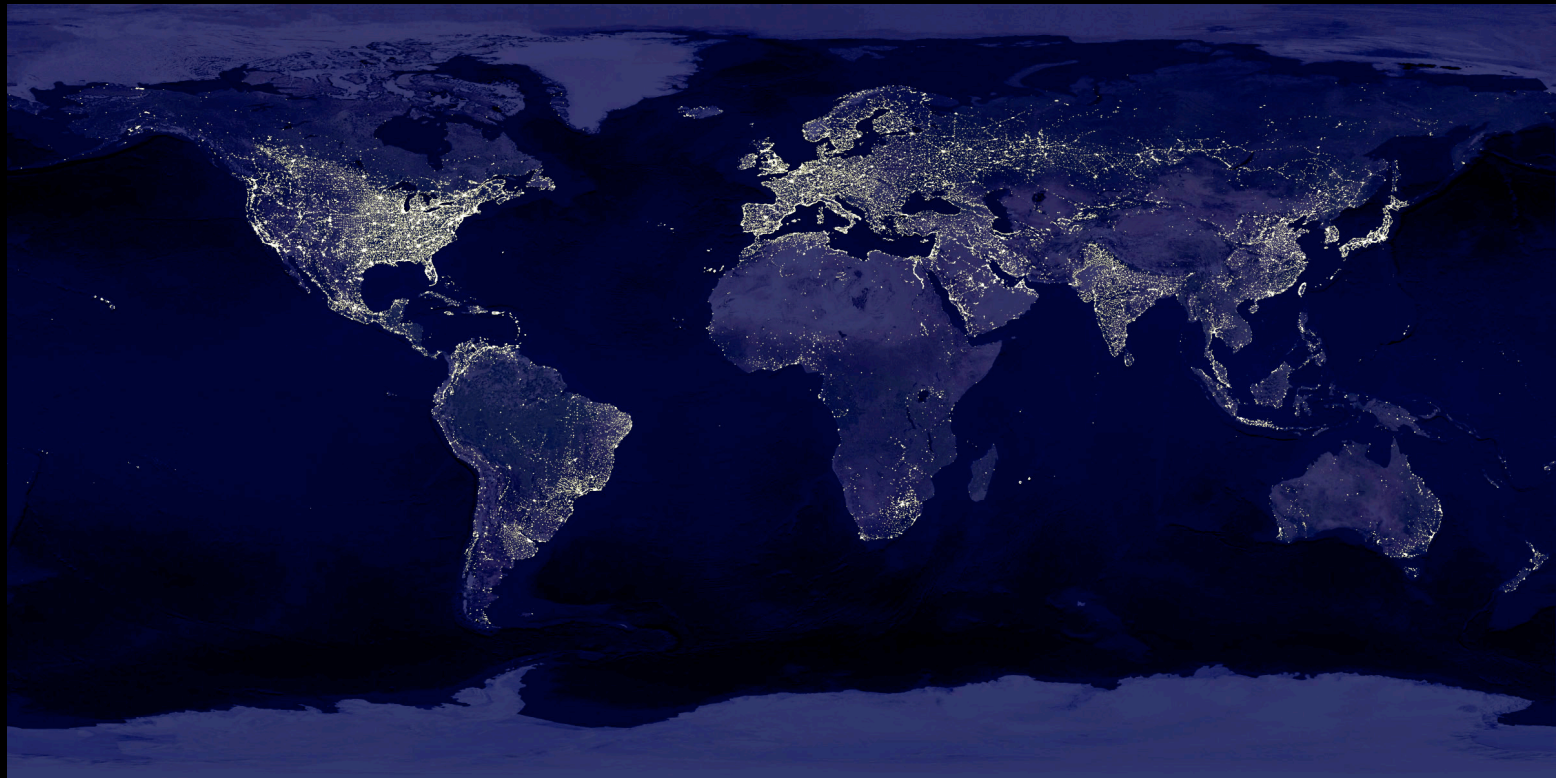
Frequency/Spectrum Issues

USA - FCC – Whitehouse

- Re-allocation of 1675-1710 Mhz band
 - And other bands....
 - For Wireless Broadband
- Will impact the HRPT reception...
- Not clear if it will or will not be re-allocated.
- One round of public input has been taken:
 - Lots of opposition...
 - Maybe a lost cause...or a matter of time..

What's next?

- NTIA recommended reallocation
 - Potentially in 5 to 10 years...
- Funding recommend to go with that to alternative operations.
- Next step....??
- Will impact satellite reception systems...
 - Data relay...



THANK YOU!

QUESTIONS?

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