Headquarters U.S. Air Force

Integrity - Service - Excellence

DoD User Applications

Mr. Ralph Stoffler
HQ USAF/A3W
28 April 2015

U.S. AIR FORCE

U.S. AIR FORCE

DoD Weather Satellite Programs

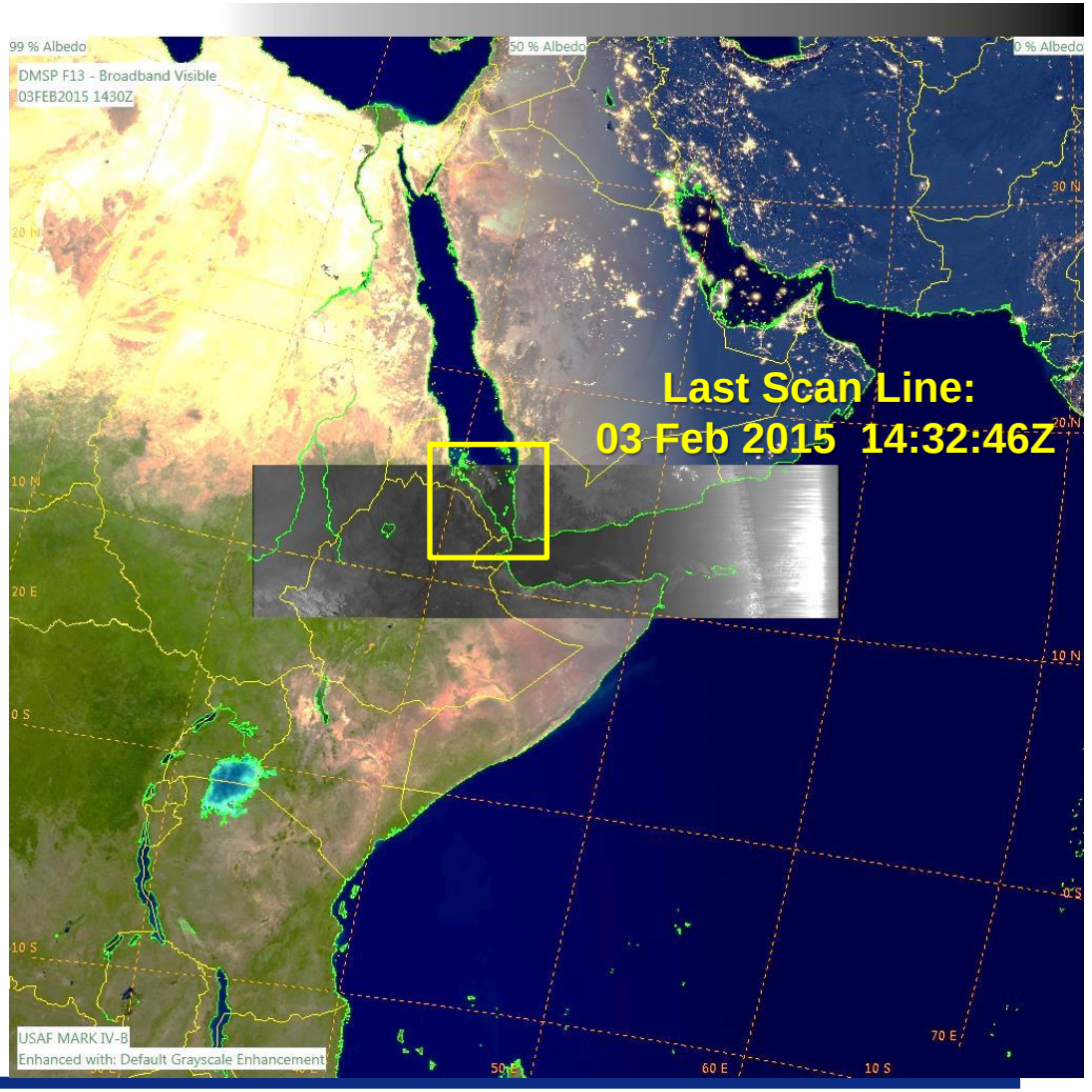
- **DMSP**
  - Continuous coverage since 1962
  - 6 satellites on-orbit
  - Visible/IR imager
  - Microwave imager/sounder
  - Space environmental suite
  - 1 satellite preparing for launch
- **Weather System Follow-on (WSF)**
  - Planned to launch ~2021
  - May include conical microwave imager

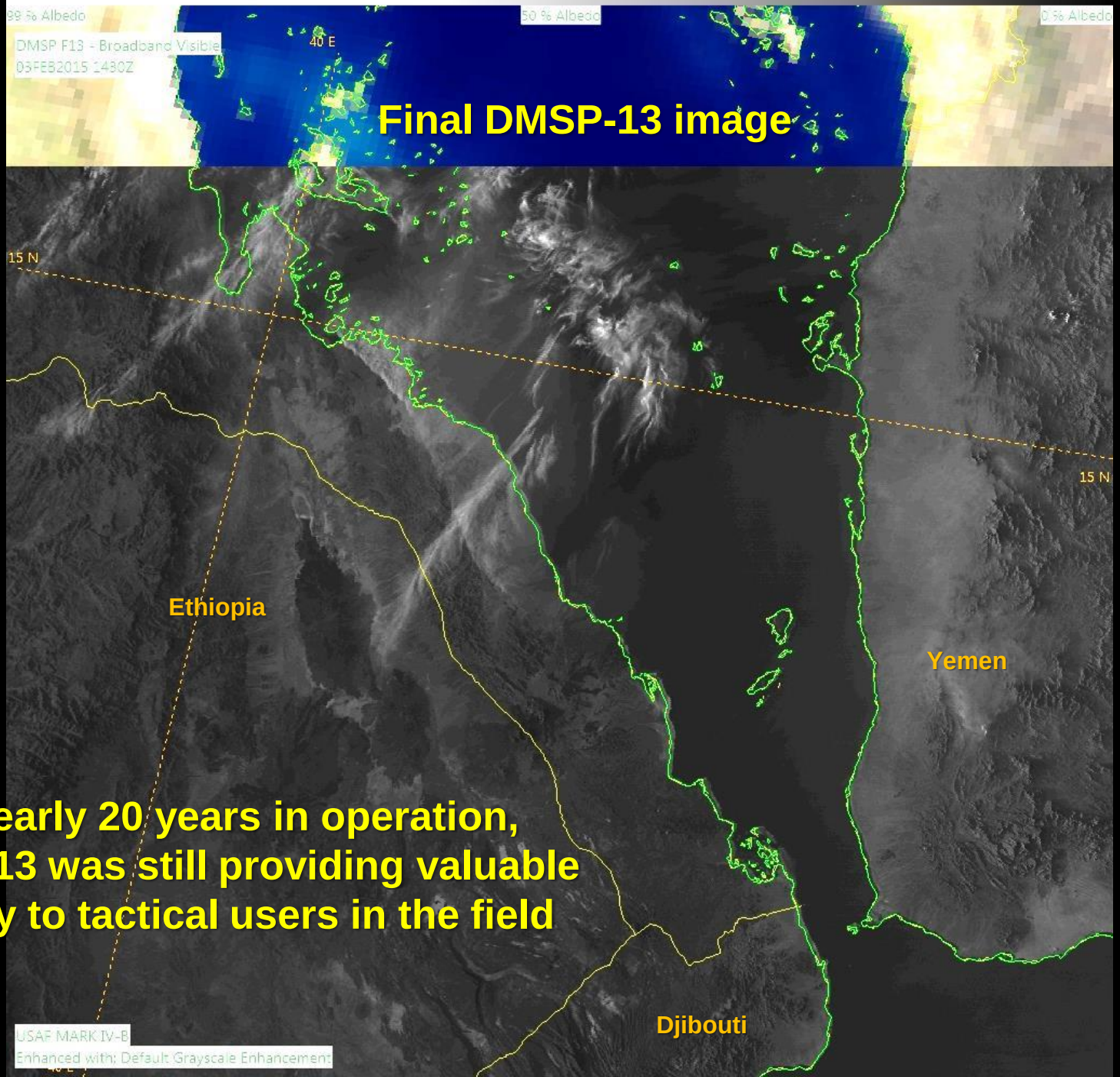
U.S. AIR FORCE

Final DMSP-13 image

DMSP-13

- Launched 24 Mar 1995
- Experienced an anomaly on 3 Feb 2015
- Last data received from our tactical site in Kuwait as the satellite ascended over the Arabian Peninsula
- Anomaly investigation results pending





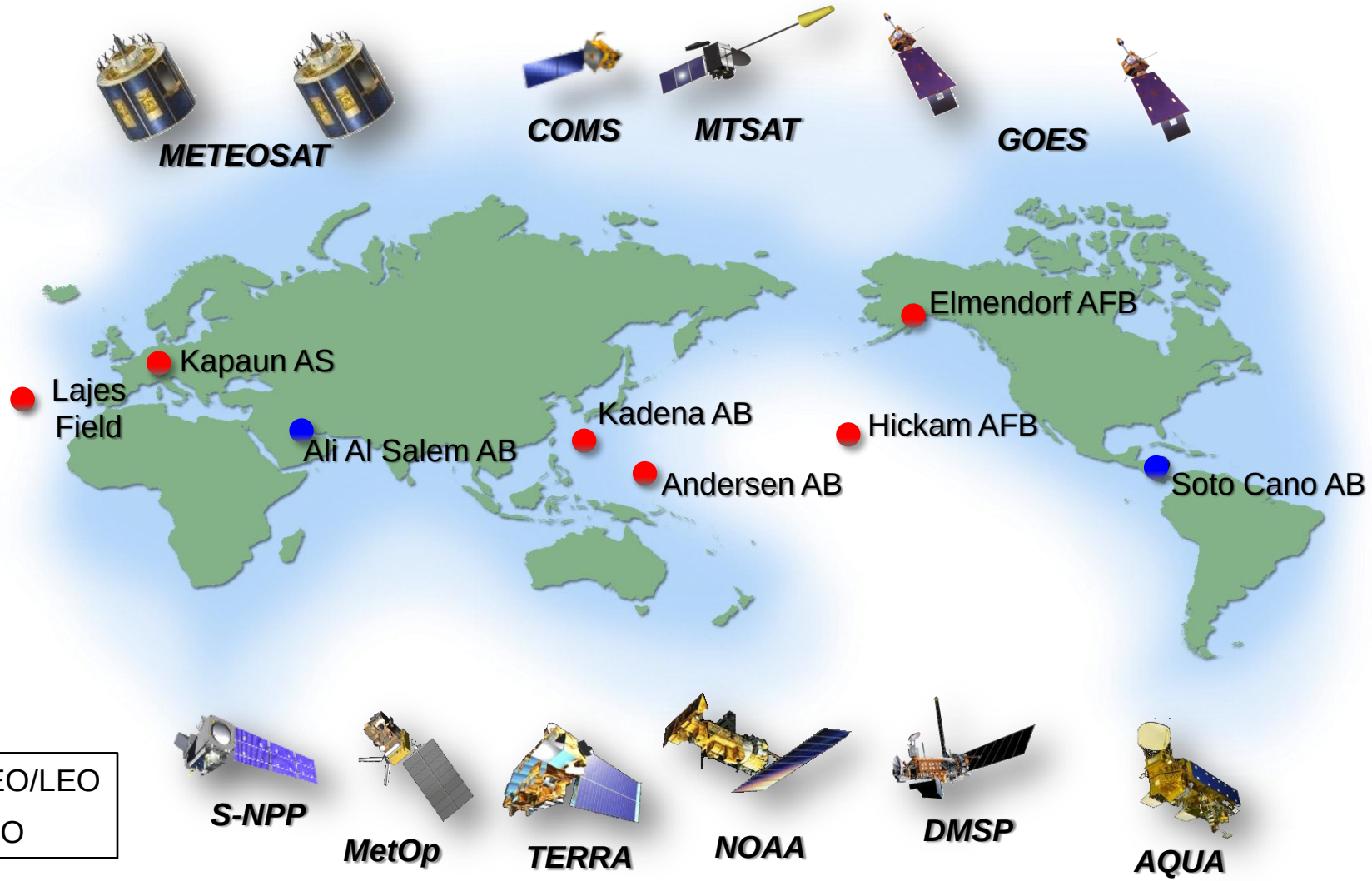
Final DMSP-13 image

After nearly 20 years in operation, DMSP-13 was still providing valuable imagery to tactical users in the field

U.S. AIR FORCE

Direct read-out capability

US Air Force MARK-IVB Network

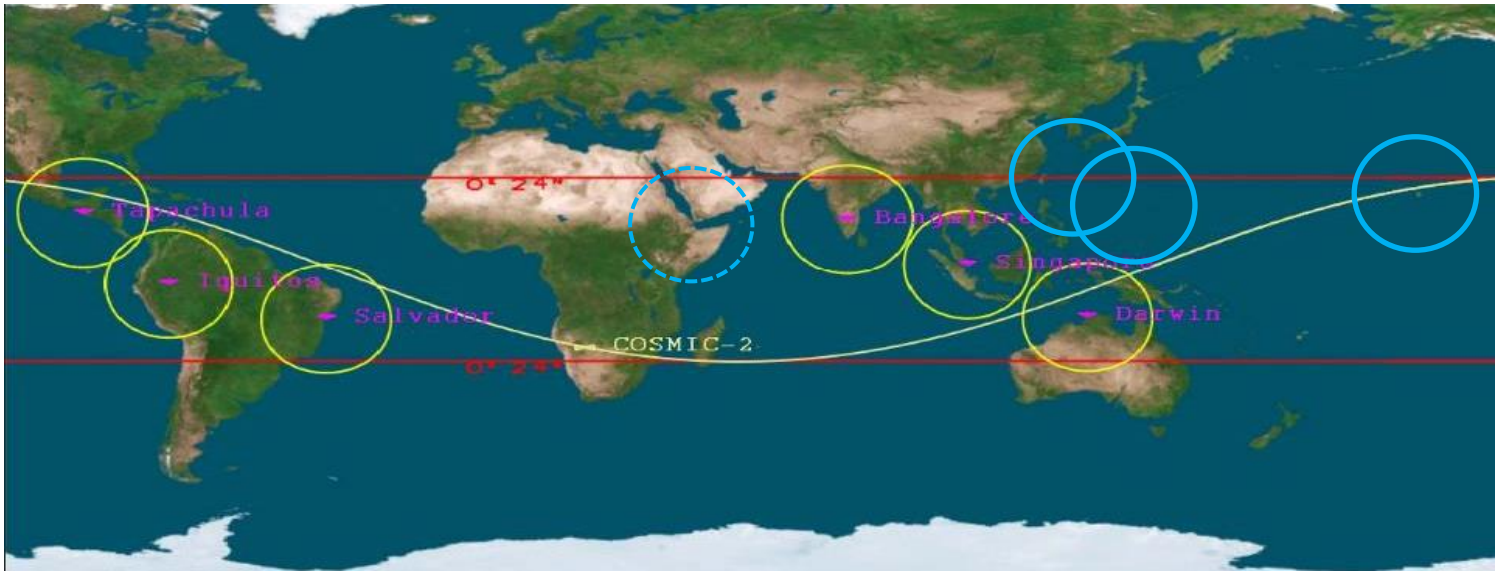


U.S. AIR FORCE

Direct read-out capability

US Air Force MARK-IVB Network

- **Prepared to receive Himawari-8 rebroadcast via 'HimawariCast'**
- **Completed GOES-R rebroadcast analysis – will require upgrades**
- **NOAA/USAF agreement to augment COSMIC-2 collection**



Yellow Circles: Candidate sites under NOAA consideration

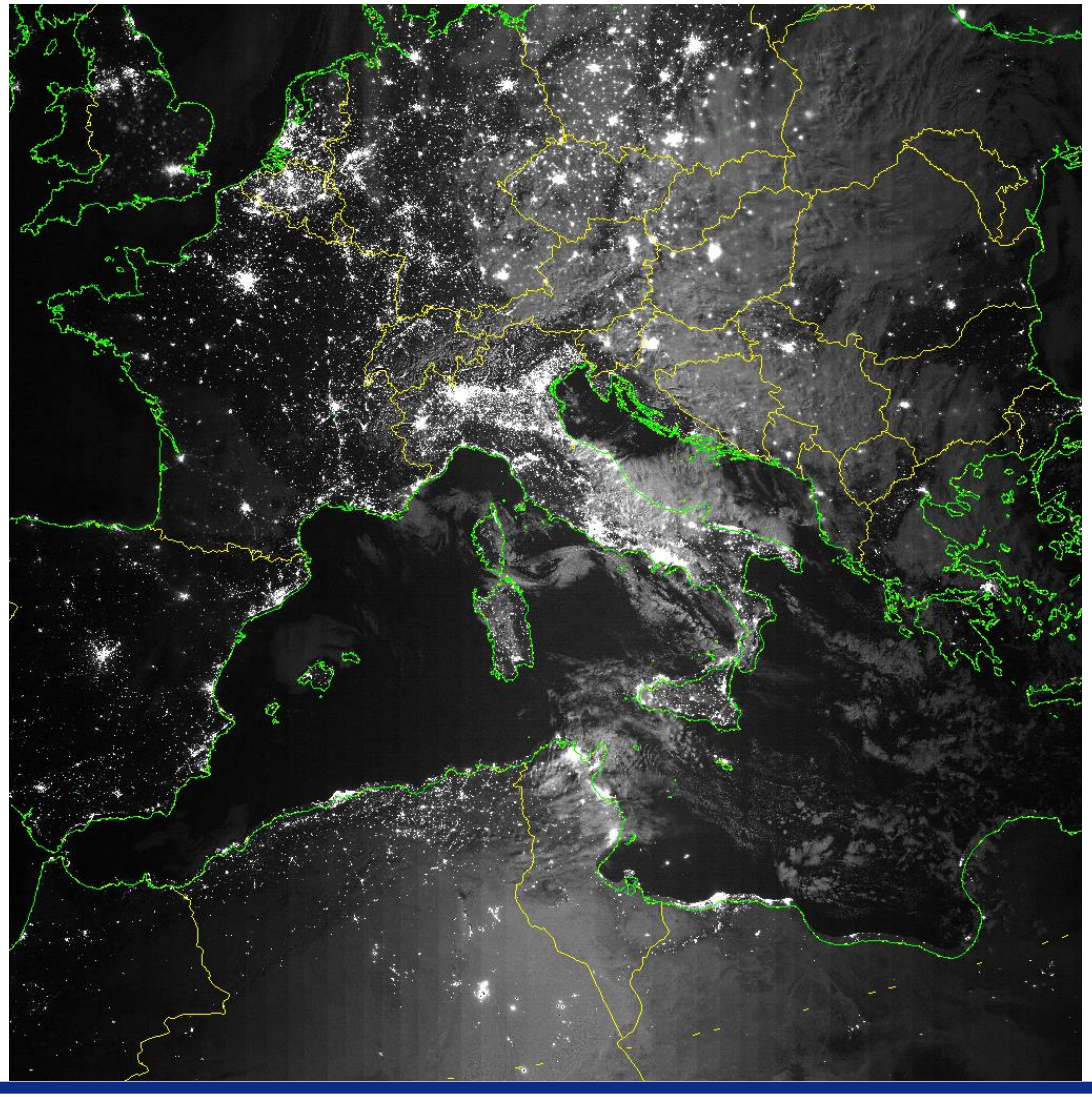
Blue Circles: Existing USAF MARK IV-B sites being modified for COSMIC-2

Dashed-Circle: Potential USAF MARK IV-B site

U.S. AIR FORCE

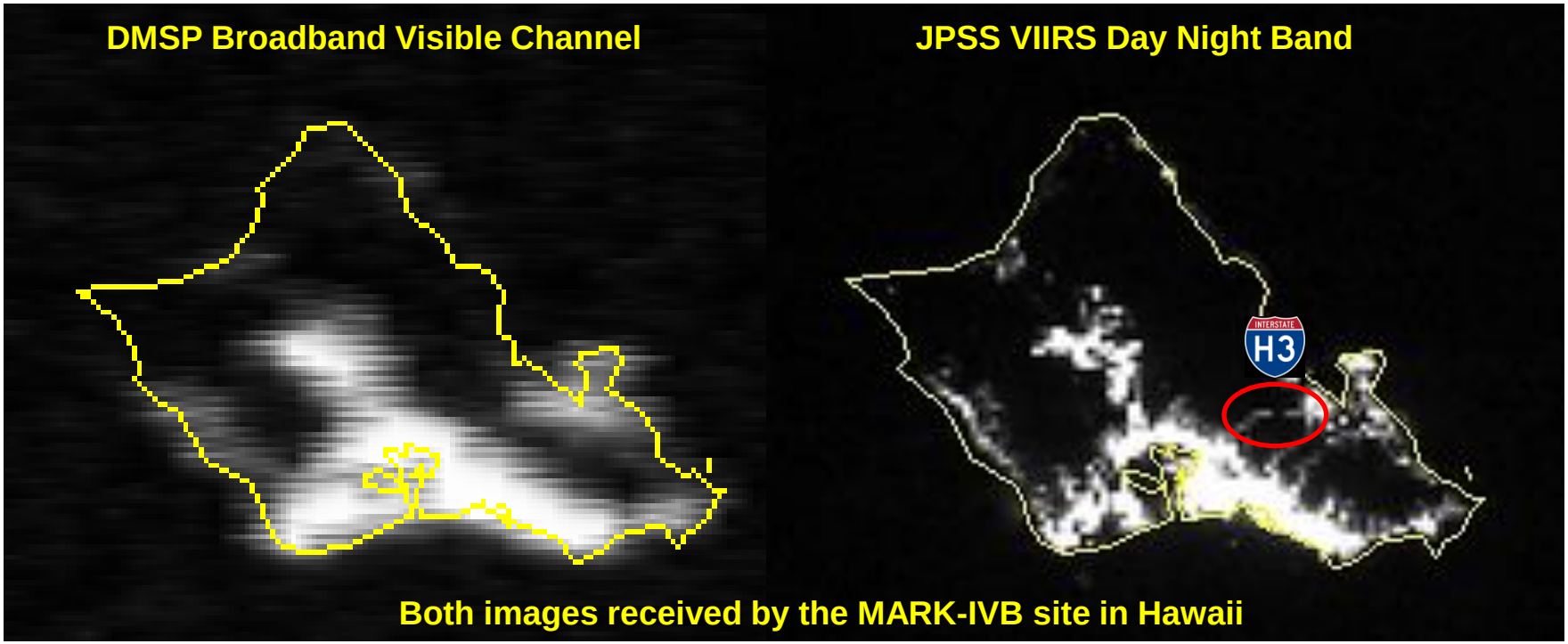
Day-Night Band

- Improves upon a legacy DMSP capability
- Enhances detection of low clouds at night
- Detection of threats to populations such as power disruptions and wild fires



U.S. AIR FORCE

Day-Night Band Example

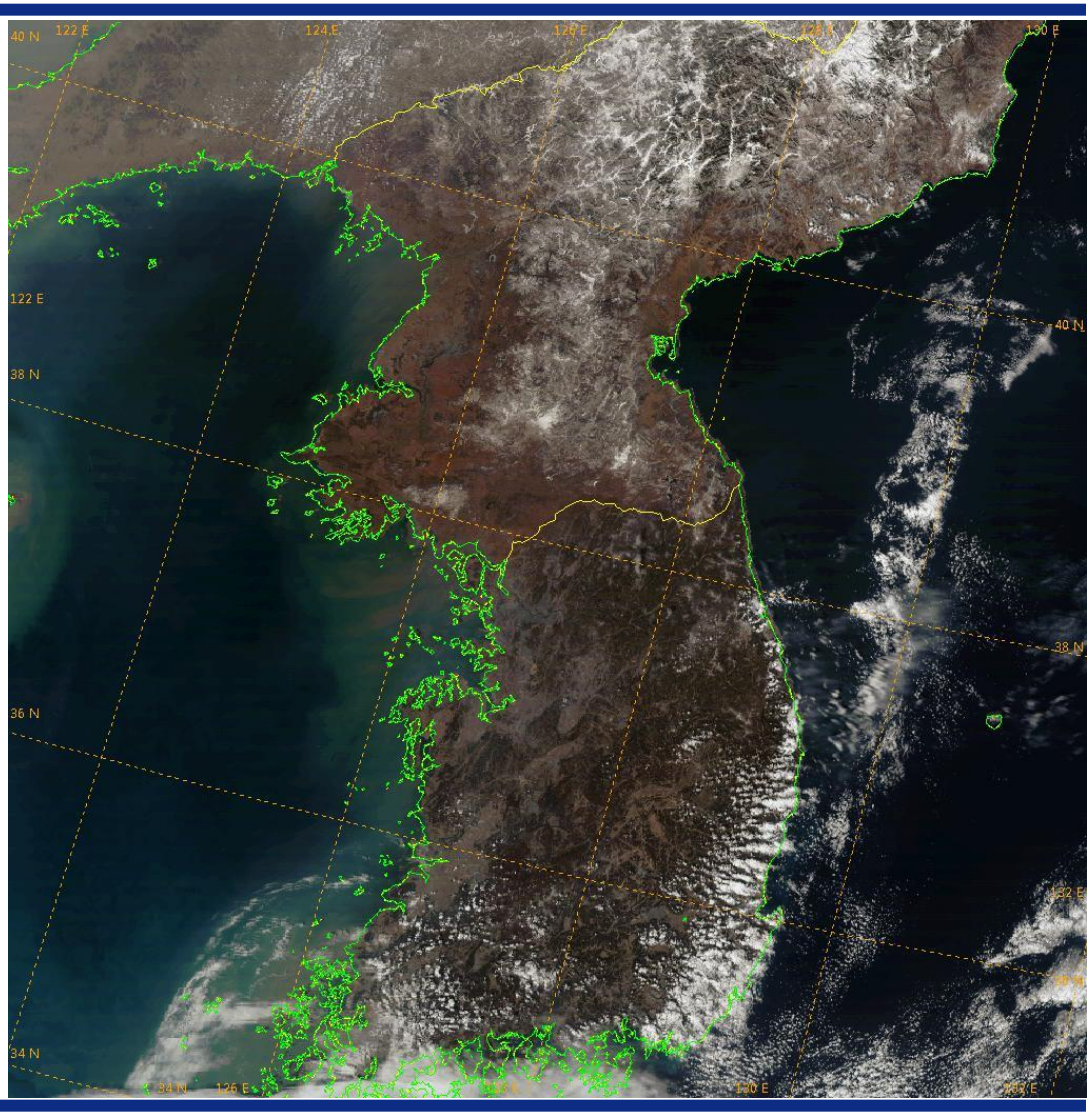


- Improved spatial resolution provides unprecedented details of nighttime activity
- NOTE: The mile-long tunnel on the John A. Burns Freeway appears as a break in the lights along H-3

U.S. AIR FORCE

Environmental Awareness

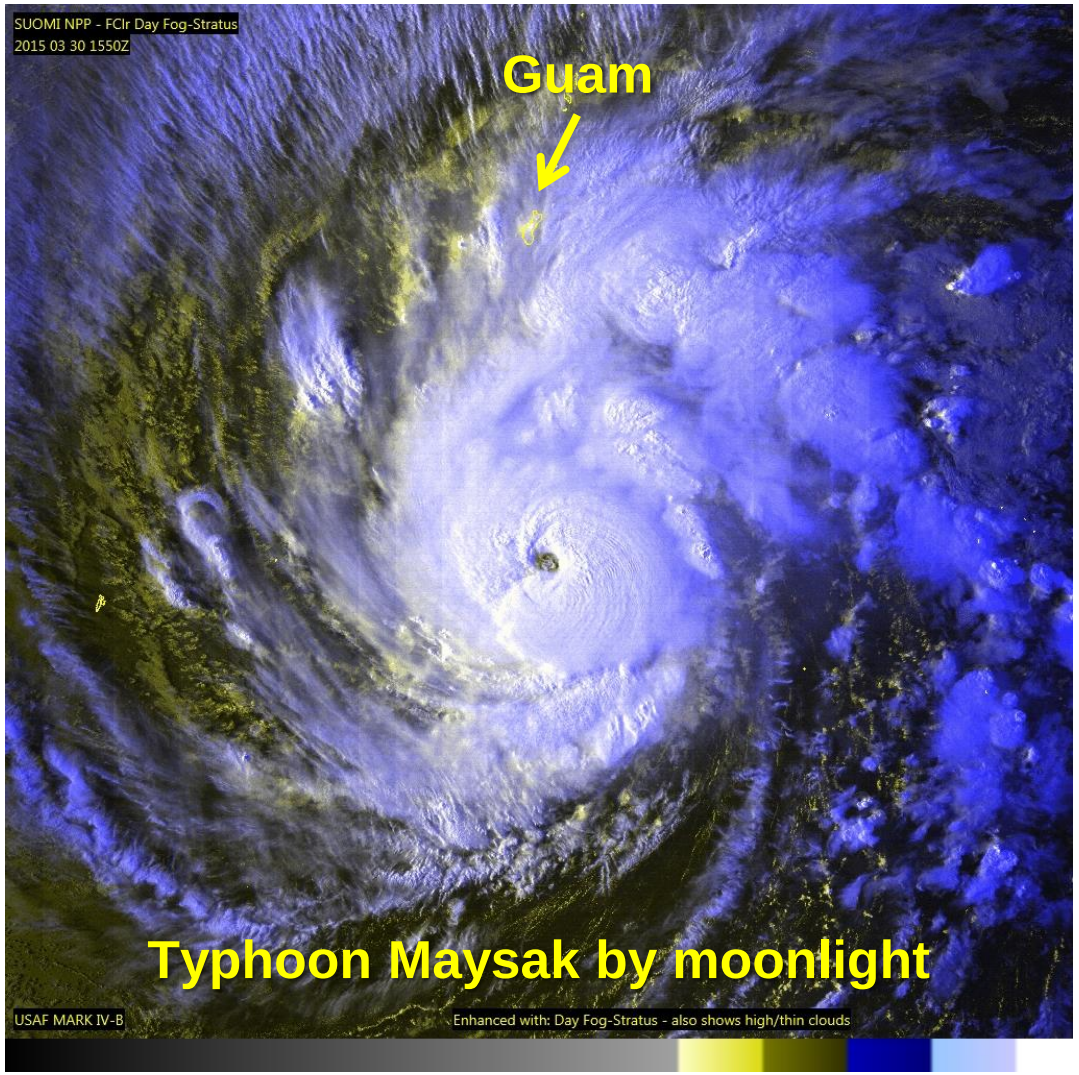
- Improves upon a legacy DMSP capability
- Enhances detection of relevant microscale features
- True color imagery enables monitoring of littoral environment
- Enhances support to humanitarian assistance and disaster relief operations



U.S. AIR FORCE

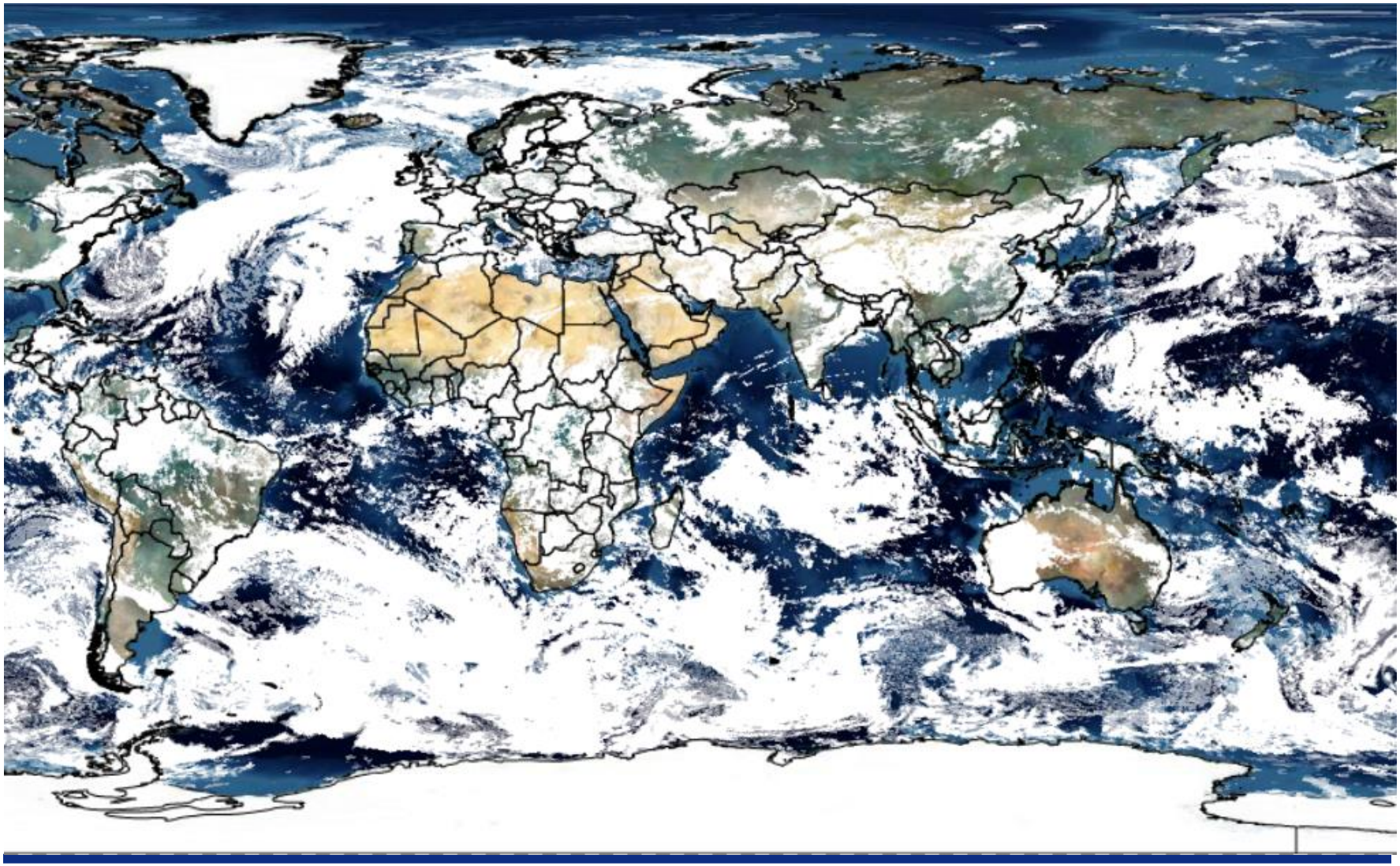
Tropical Cyclone Monitoring

- DoD's Joint Typhoon Warning Center routinely utilizes polar imagery in the Pacific and Indian Oceans
- Critical capability for determining tropical cyclone position and intensity fixing
- This is a DNB/infrared composite image generated from S-NPP data received by our MARK-IVB site on Guam on 30 Mar 2015



Global Cloud Analysis/Forecast

U.S. AIR FORCE



U.S. AIR FORCE

Conclusion

- DoD will continue to fly DMSP spacecraft well into the next decade; archived data available from NGDC
- Weather System Follow-on is early in the acquisition process
- Civil and International METSAT sources such as JPSS will continue to be critical components of DoD's environmental monitoring mission

Questions?