

# “Observations Lead the Way”



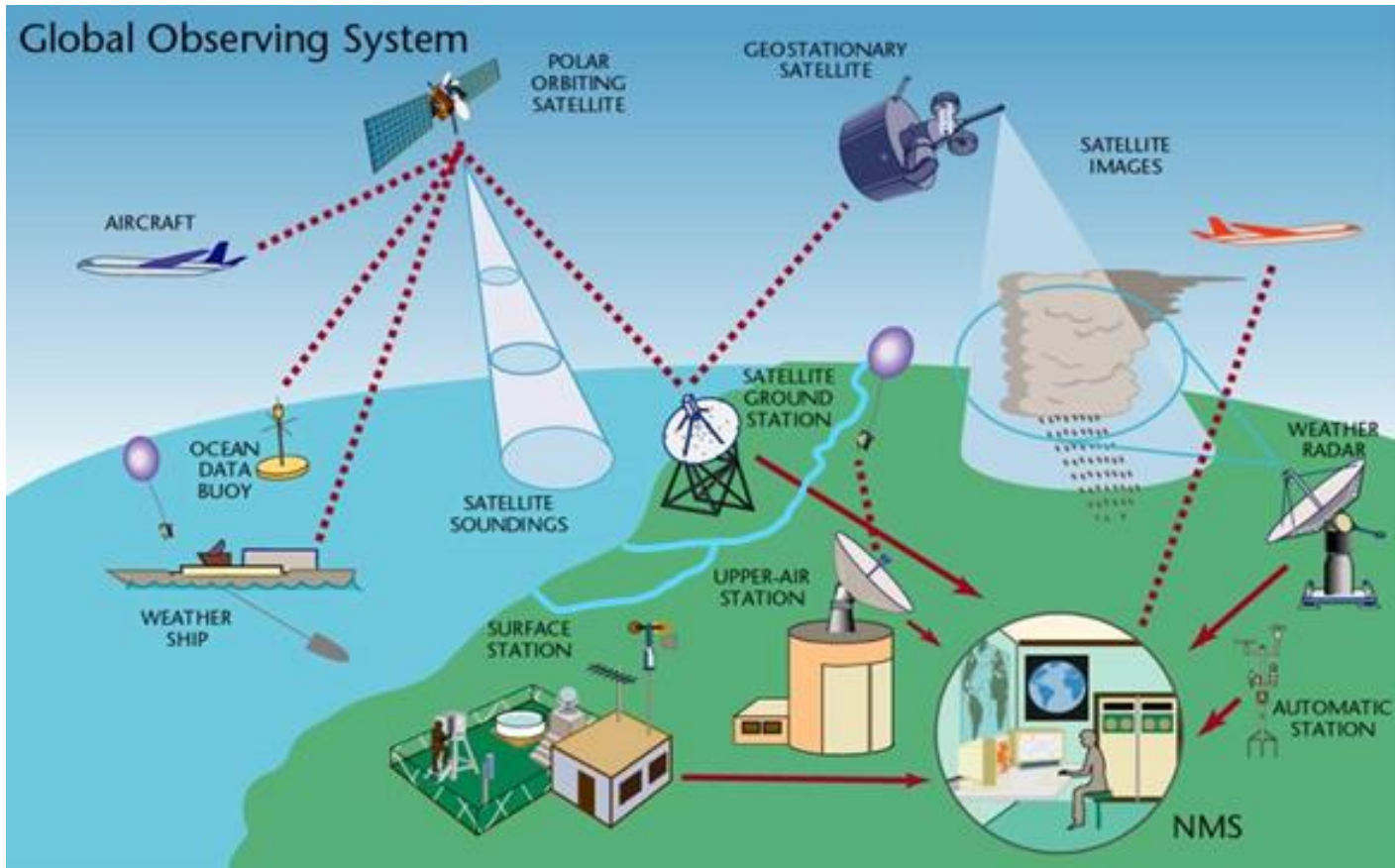
NWS Partners Meeting  
January 26, 2017

NWS Office of Observations



# Observations Portfolio

Responsible for the collection of space, atmosphere, water, and climate observational data owned or leveraged by the NWS



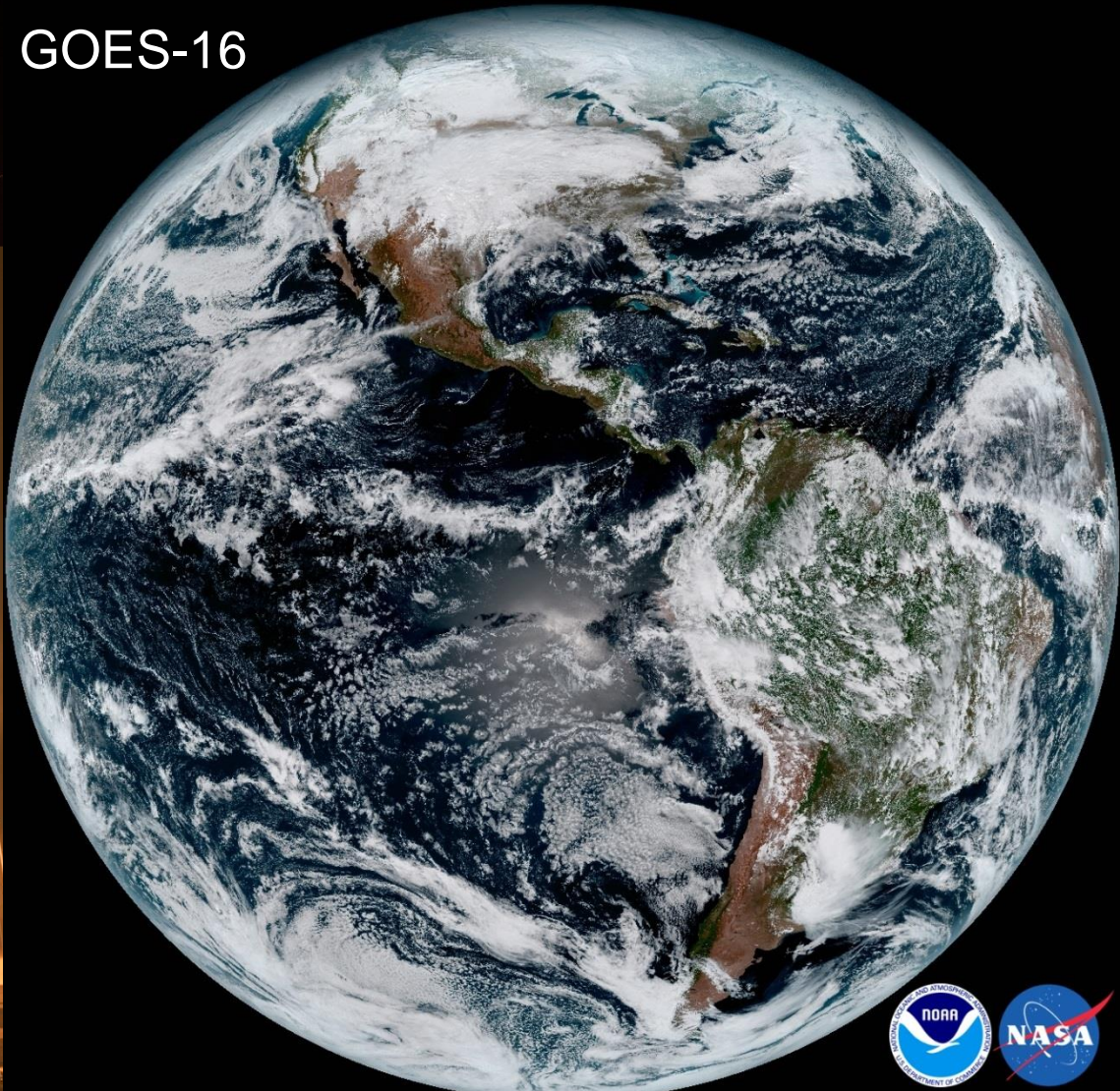


# Investing in Observation Infrastructure - Satellites

Launch of GOES-R



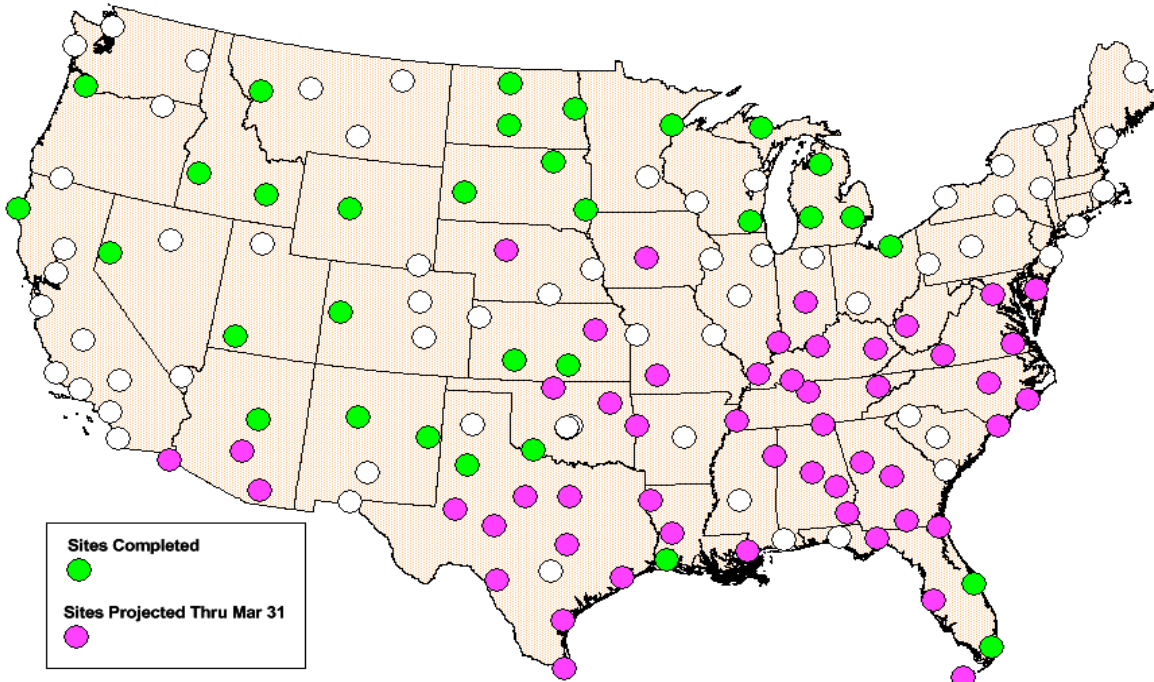
GOES-16





# Investing in Observation Infrastructure – NEXRAD SLEP

Signal Processor Tech Refresh (SLEP) Deployment



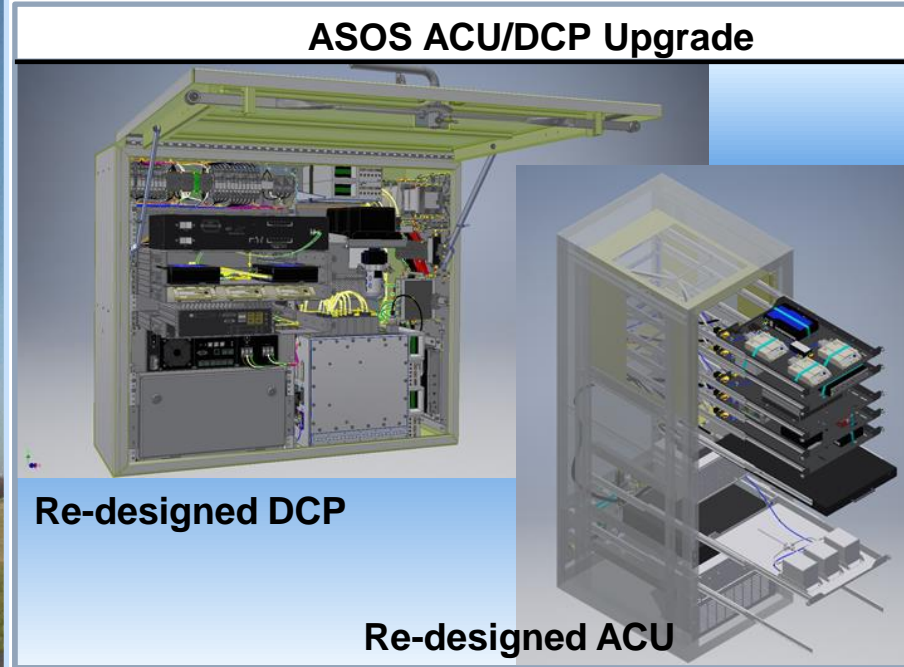
A/O Jan 6, 2017



- **NEXRAD Service Life Extension Program (SLEP)** ensures viability thru at least 2030
- Signal Processor Suite Technology Refresh scheduled to be complete in 2017
- Transmitter Refurbishment (second of 4 projects) has begun
- Overall, the project is ahead of schedule and under budget



# Investing in Observation Infrastructure – ASOS SLEP



**Automated Surface Observing System (ASOS) SLEP** includes the following:

- Acquisition Control Unit / Data Collection Platform (ACU/DCP) replacement
- Telecommunications upgrade
- Replacement of 3 sensors
  - All-Weather Precipitation Accumulation Gage
  - Wind sensor
  - Dew point sensor



# Investing in Observation Infrastructure – Radiosonde Network

**Radiosonde Autolauncher in Kodiak, AK**



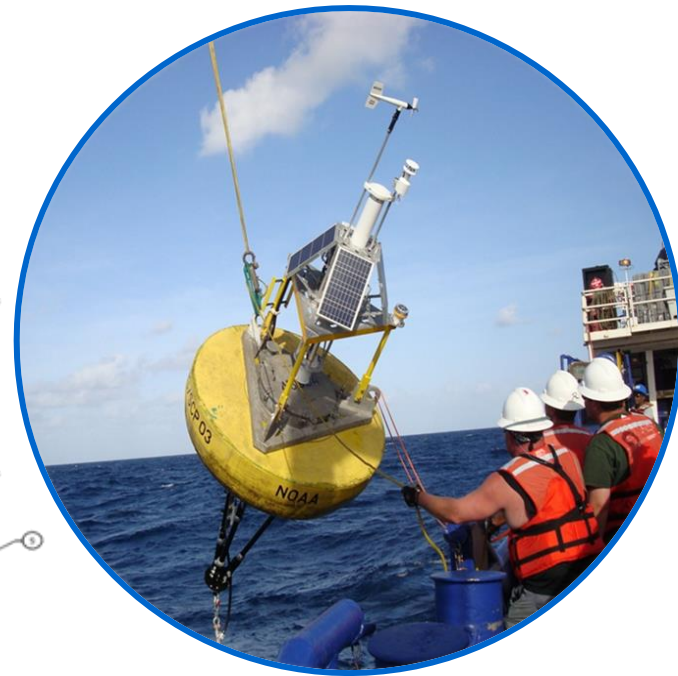
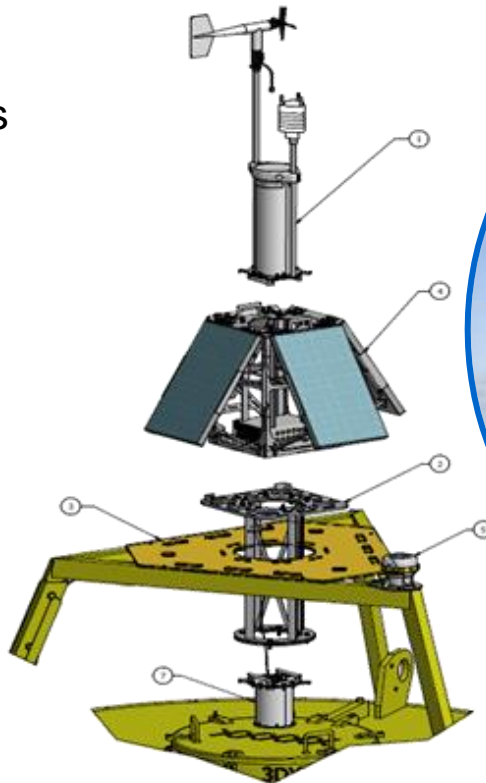
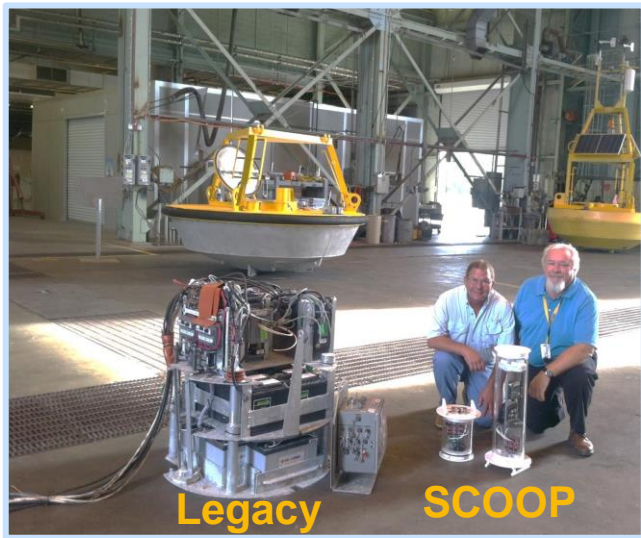
**Sterling, VA**

- Due to sale of “spectrum,” the **Radiosonde Frequency Migration Project** will move radiosondes from the 1680 MHz band to the 403 MHz band.
- Auto-launching technologies are being evaluated as preferred alternative.
- Funding from the spectrum sale is supporting this infrastructure investment.



## Self-Contained Ocean Observations Payload (SCOOP)

- Less labor intensive assembly
- Allows use of ships with less lift capacity
- At-sea servicing
- Requires less time on station
- Expanded observing capabilities

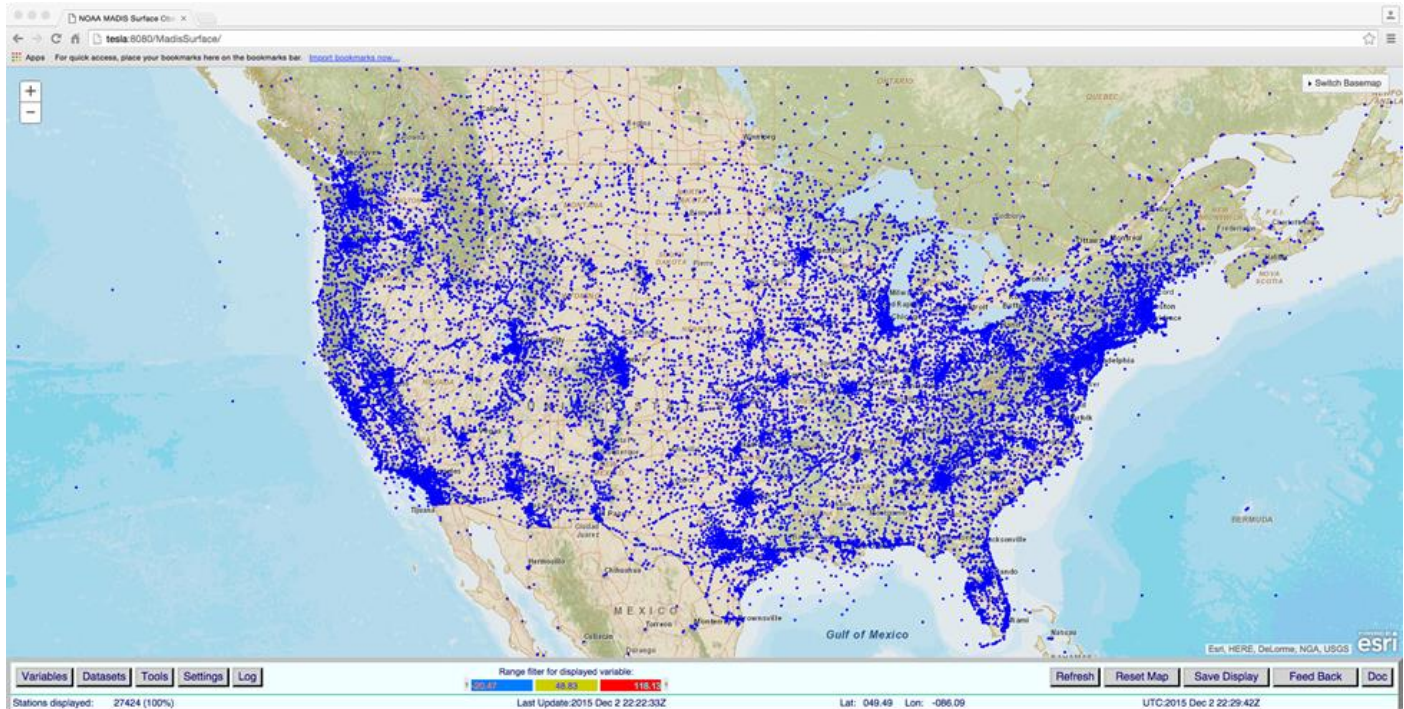


Increased reliability



# Leveraging Smart Data Buys

## National Mesonet Program -



- **Aircraft Based Observations (MDCRS, WVSS)**
- **Lightning Data**
- **GPS-Met**
- **Commercial Weather Data Pilot** – evaluating Radio Occultation data from commercial providers





# Managing the NOAA Observing System Portfolio





# NOAA Observing Portfolio Management – Guiding Principles

- **Vision:** NOAA's vision is to achieve and sustain an observing system portfolio that is *mission-effective*, *integrated*, *adaptable*, and *affordable*.
- **Superior Service and Reputation**
- **Adaptability**
- **Cost-Effectiveness, Affordability & Sustainability**
- **Integration**
- **Global Context and Commitments (*Data Sharing*)**
- **In-House Expertise**
- ***Well-governed, Understood & Trusted***

Ref. NOAA Administrative Order 212-6, Effective 11/1/2016



# NOAA's First Emerging Technologies Workshop

## NOAA's Observing Systems Council hosted the first **Emerging Technologies Workshop for Observations**:

- Provided a forum for NOAA to gather, share, and communicate technology, research, and development activities
- Integration of all of our observing systems and technologies
- Solid requirement processes and sound prioritization methods are needed for mission efficiency, integration, adaptability, and affordability
- Smaller, more targeted, and nimble technologies could improve the time needed for acquisition and development, while keeping costs down and maintaining pace with rapid technology advances
- We need to find and leverage technologies that allow NOAA to share its data more readily and to a larger range of users



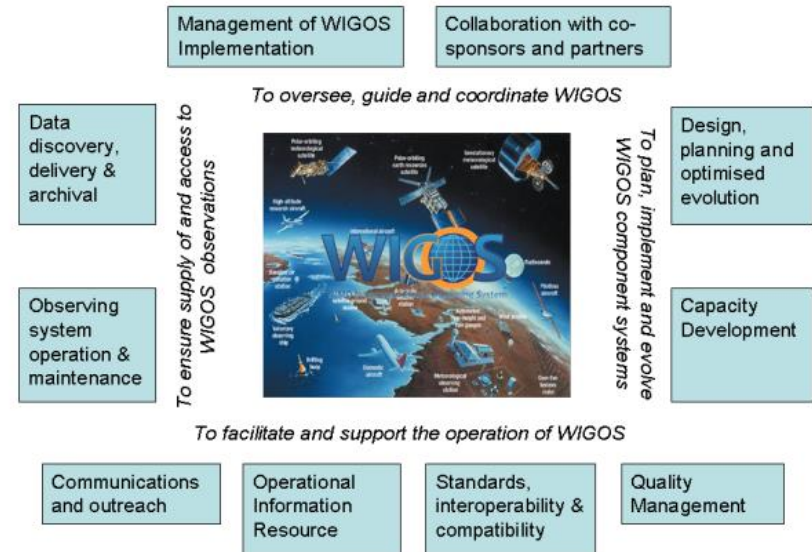
Saildrone USV developed by Saildrone Inc. & PMEL in the Aleutian Islands



## Engaging in WMO efforts to define “*Vision for the WMO Integrated Global Observing System (WIGOS) in 2040*”

- Autonomous observing systems
- Optimal mix of fixed and mobile platforms
- Emerging crowd-sourced information
- Miniaturization and commoditization of sensors
- Efficient and new, novel uses of communications technologies
- Expected roles and ownership of government and private sector observations

### WIGOS Framework: Key activity areas





## Open Questions

- ❖ How can NOAA and NWS better understand the observation needs of the broader weather enterprise?
  - Where are we well aligned?
  - Where are there gaps between NOAA and Partners?
- ❖ Where is it vital for the NWS and NOAA to continue to focus with regards to observations?
- ❖ Where do you recommend NWS and NOAA shift its focus with regard to observations?
- ❖ How can NOAA collaborate more effectively with Partners (research community, private industry, international, etc.) to develop better or new observation techniques for the future?
- ❖ Are there any observations innovations you are excited to see for the benefit of broader weather enterprise?
  - What do you, as Partners, see as your role for innovation?