

Grand Challenge CONCERT: Coordinated Ground and Space-based Observations of the Ionosphere- Thermosphere System

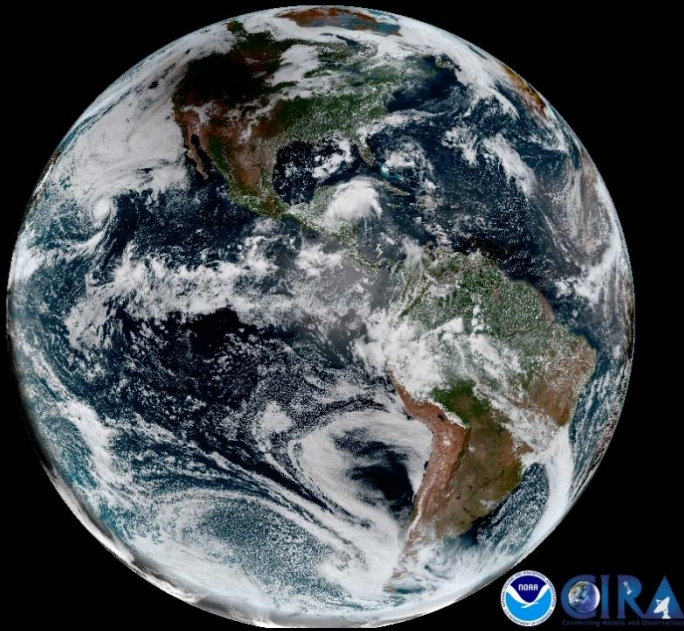
Katelynn Greer

Alan Burns, Scott England, Iurii Cherniak, Carlos Martinis, Wenbin Wang

Grand Challenge:

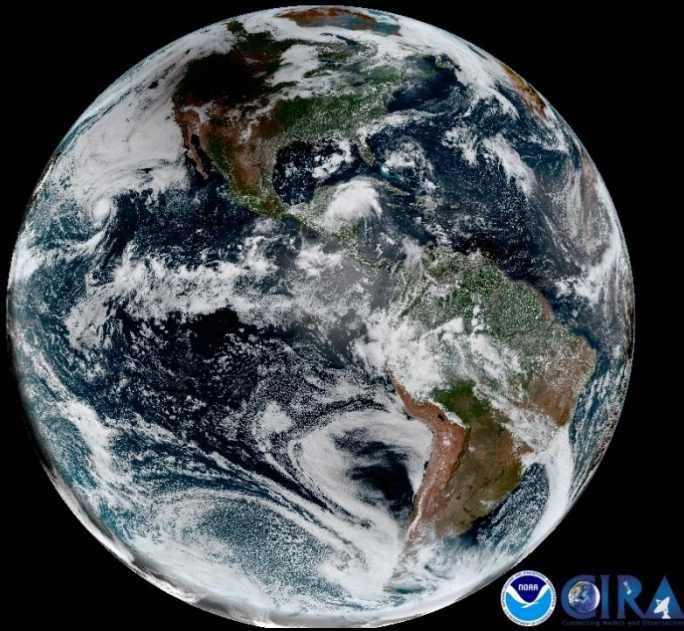
Integrate Different Views to Gain A Comprehensive Understanding

Year 1 Objectives: Initial sharing of current observation capabilities 2019



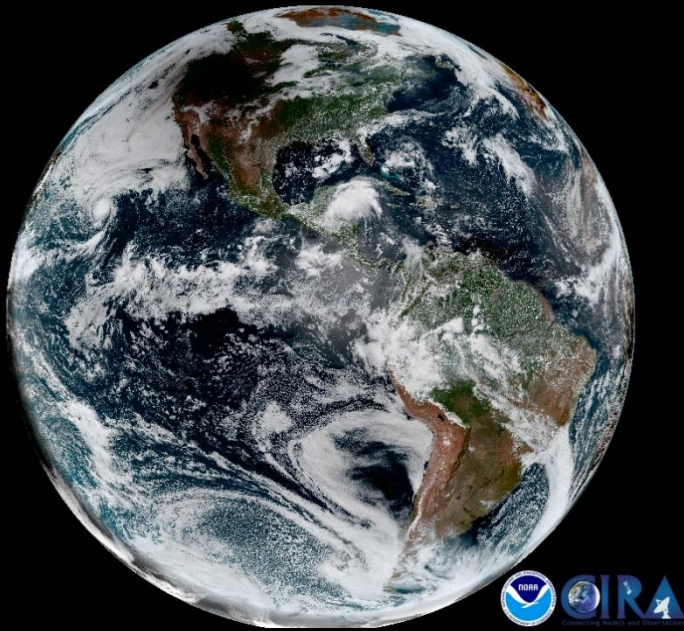
- **Survey of current**
 - ground-based instruments
 - space-based assets
 - models/data assimilations
- **Plan future coordinated campaigns**

Year 2.COVID Objectives: Initial Results 2020



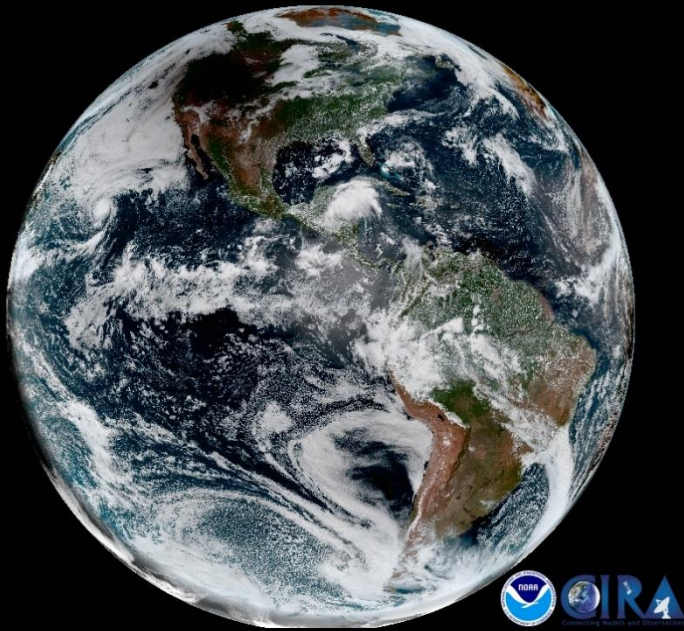
- **Initial Results**
 - Inter-comparisons of instruments
 - Model-data comparisons
- **New scientific results**
- **Planning/coordination of campaigns**

Year 2.COVID Objectives: New Findings 2021



- **Campaign Results**
- **Planning/coordination of campaigns**
- **Initial lessons learned from campaigns**

Year 3 Objectives: Lesson Learned 2022



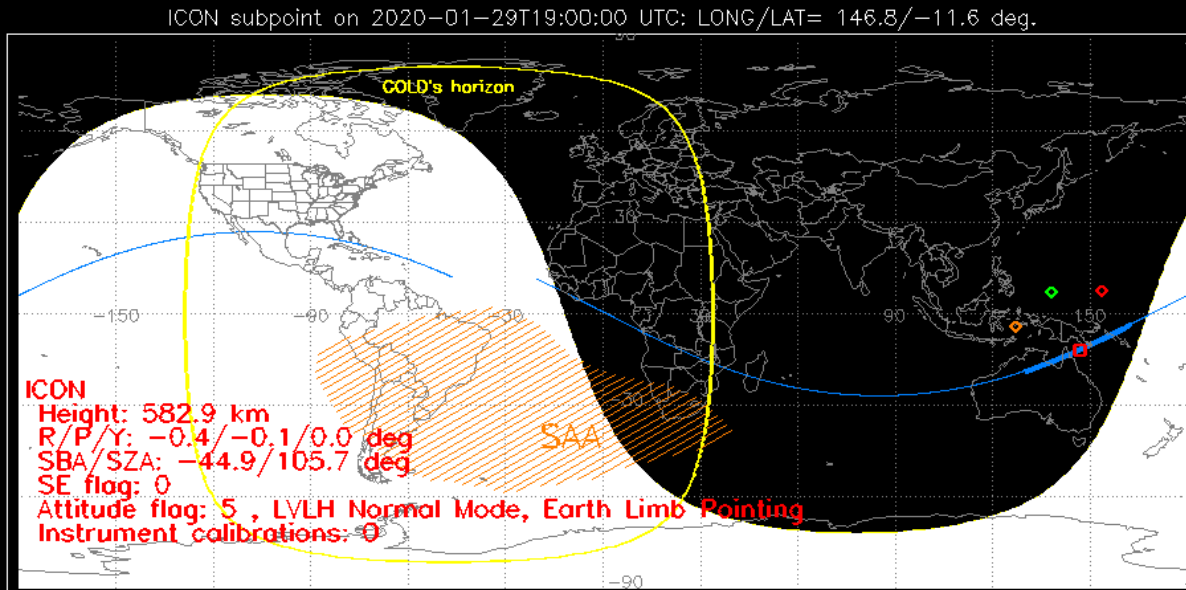
- **New Campaign Findings**
- **Lessons Learned**

CEDAR 2022: Austin Workshop

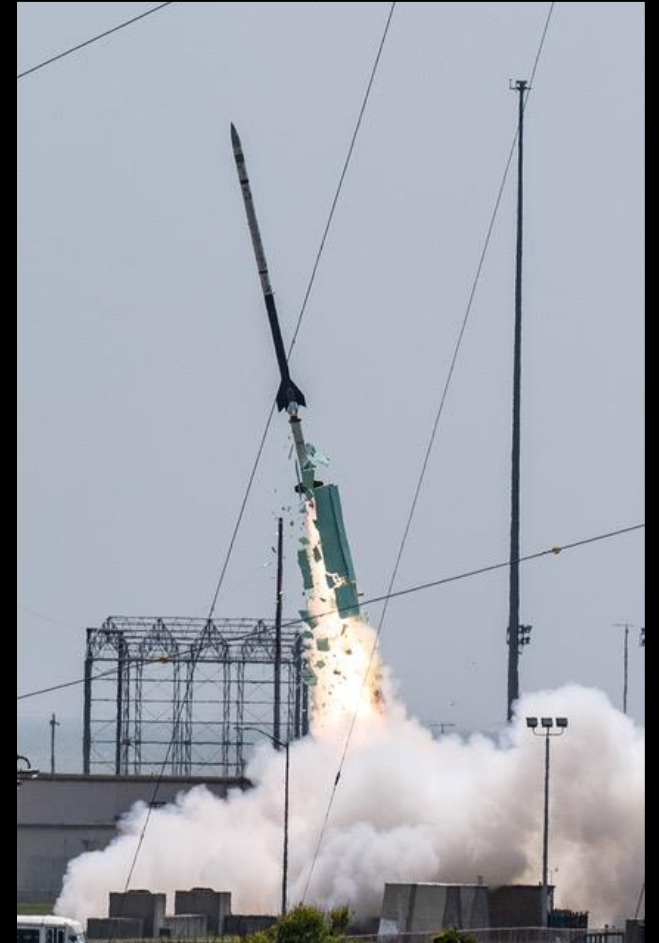


- Phil Erickson
- Rob Pfaff
- Saurav Aryal
- Jim Clemmons
- Aaron Ridley
- Richard Eastes
- Komal Kumari
- Jens Oberheide
- Qian Wu

CEDAR 2022: Highlights of Campaign Results



- **DYNAMO2 Rocket & ICON**
 - Winds & Temperature
- **ICON/GOLD/COSMIC-2**
 - Case Studies
 - Waves



CEDAR 2022: Lessons Learned in CONCERT Grand Challenge

- **Cal/Val is important, but...**
 - Requires investment, support, & planning of instruments and scientists
- **Are special operations needed?**
 - Requires more planning & lead time
- **Conjunction tools are helpful**
- **Frequent Discussions with instrument operators are crucial**
 - Here at CEDAR! Email!
- **Interagency Cooperation**

