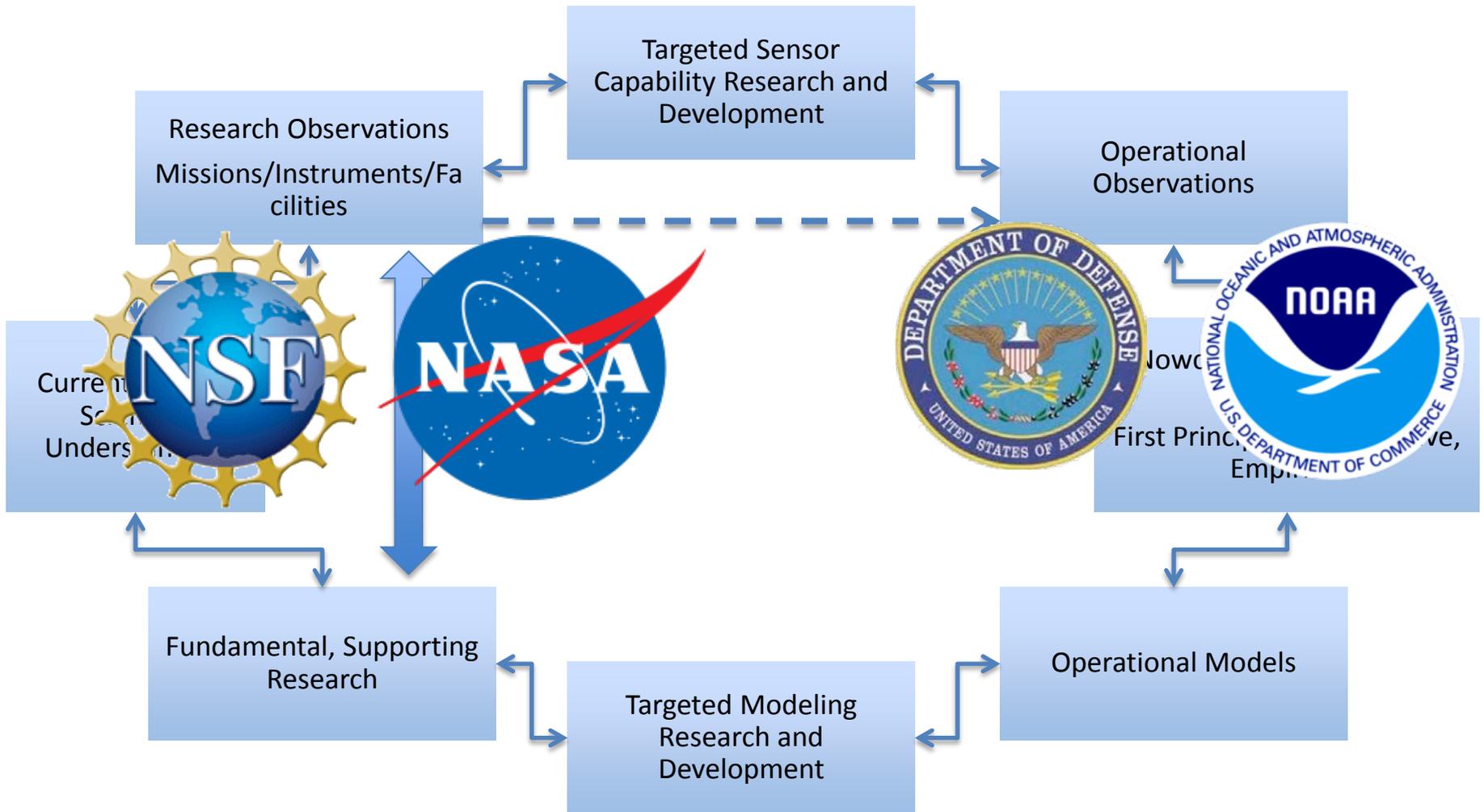




Heliophysics

*NASA Perspective on R2O and O2R
Operations-to-Research Workshop
16 August 2016
Steven W. Clarke, Director
NASA Headquarters*

Elements of R2O & O2R System





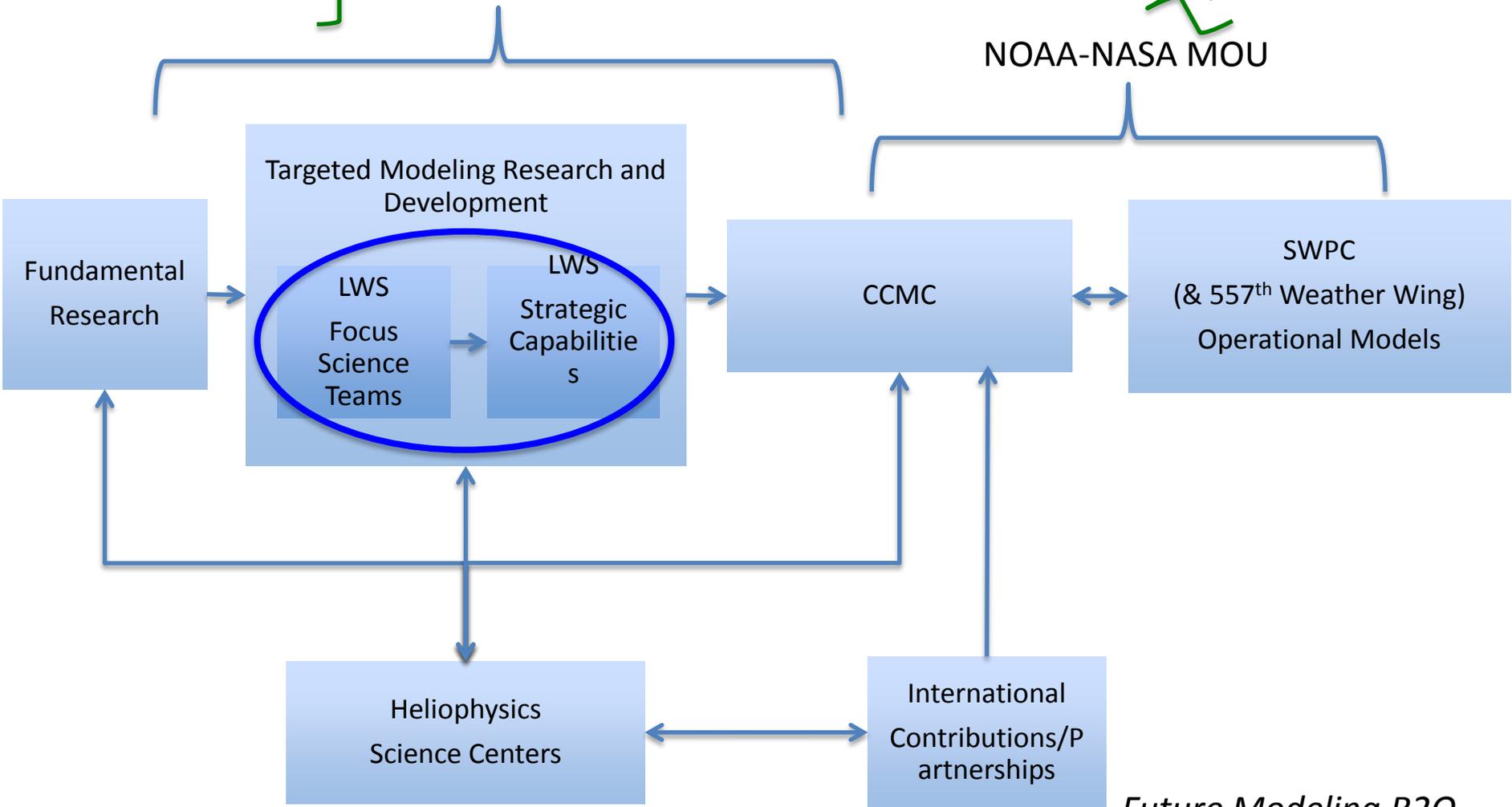
Future modeling R2O Concept of Operations

In Review by Agencies
Draft annex in review

• Draft in development

NSF-NASA MOU

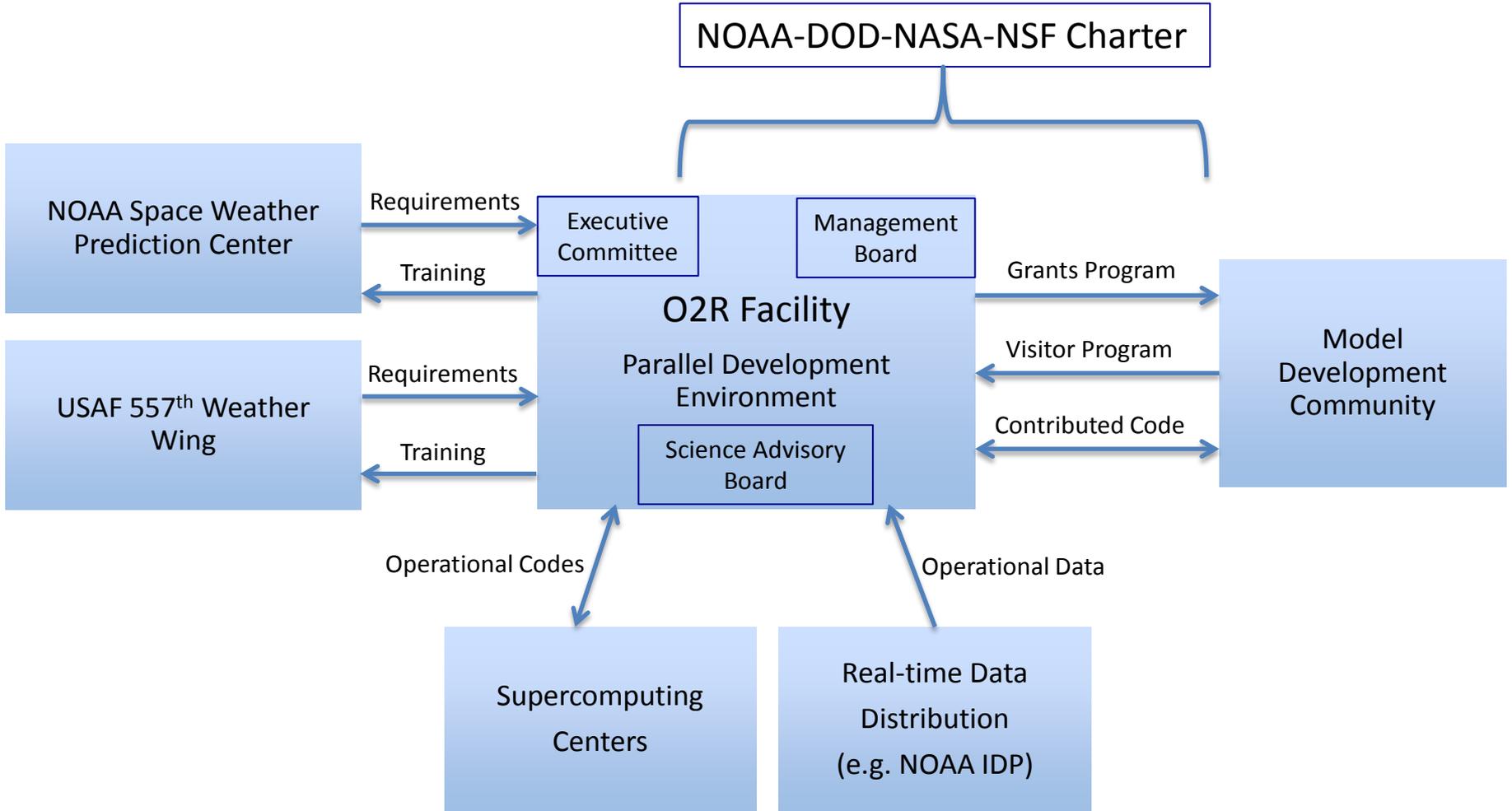
NOAA-NASA MOU





Modeling O2R

Notional Concept of Operations





Workshop Goals



- Develop an [executable plan](#) to meet the requirements of SWAP Action 5.6.2:
 - DOC and DOD, in collaboration with NASA and NSF, will *develop a plan* (which may include a center) that will ensure the improvement, testing, and maintenance of operational forecasting models. This action will *leverage existing capabilities in academia and the private sector and enable feedback from operations to research* to improve operational space-weather forecasting.
 - Deliverable: *Complete plan* for improving, testing, and maintaining operational forecasting models and enabling operations-to-research feedback
 - Timeline: *Within 6 months of the publication of this Action Plan*



Workshop Goals



Questions to be answered:

- How is this different or complementary to existing efforts and infrastructure?
- What operational model/research model interfaces need to be enhanced or developed?
- What operational platforms are collecting space environment data that the research community could use to mature their space weather models for a better closed-loop space weather forecasting approach?
 - Example: Energetic particle data from GPS combined x-ray and burst detection dosimeters
 - Other platforms (e.g., GOES, POESS, DMSP, etc.)?
- What are the major roadblocks and how do we overcome them?



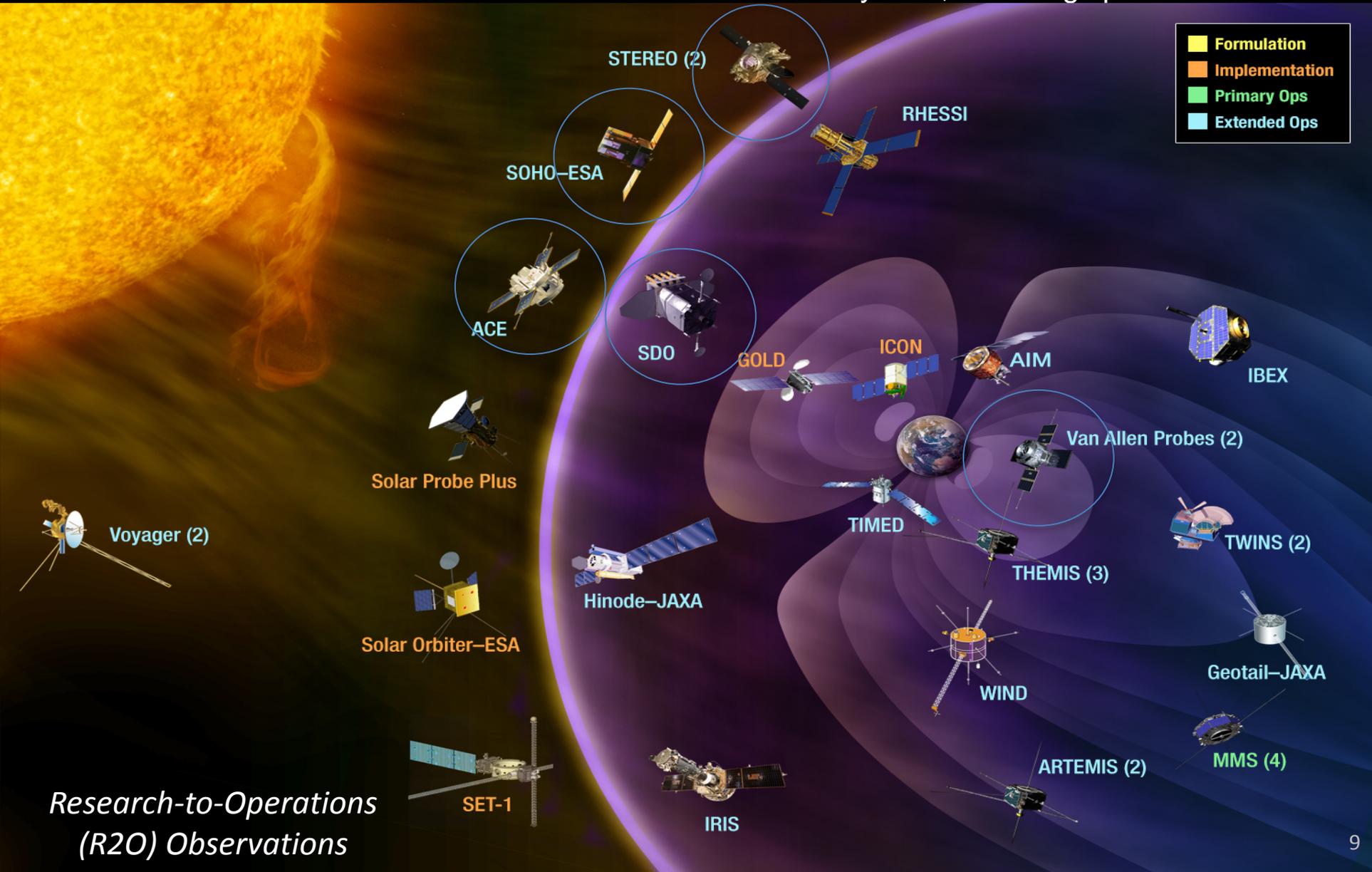
Thank You!



BACKUP

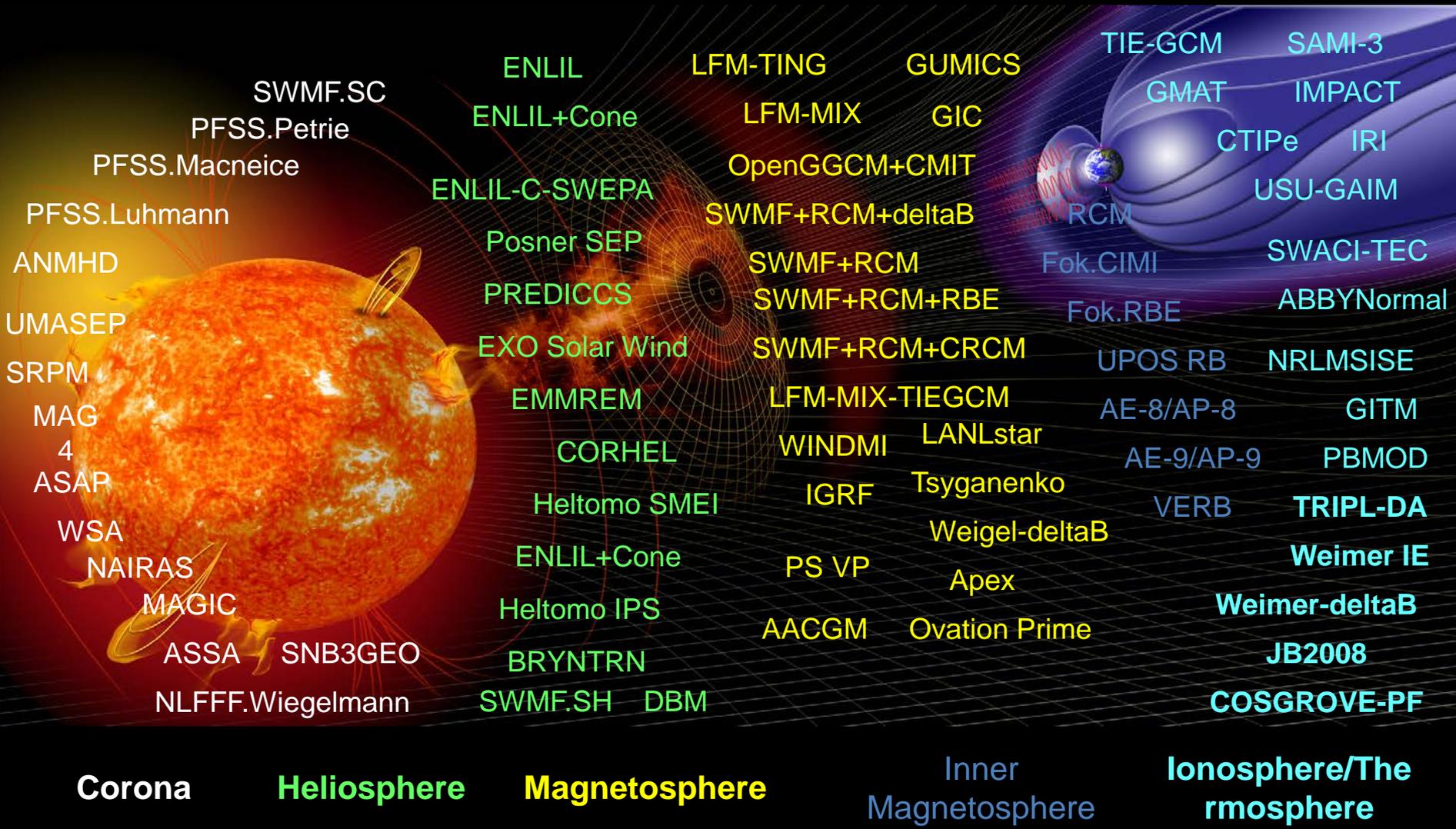
Heliophysics System Observatory

A coordinated and complementary fleet of spacecraft to understand the Sun and its interactions with Earth and the solar system, including space weather



Numerous Community Research Models

[List of those hosted at Community Coordinated Modeling Center (CCMC)]



Focus is on research - despite quantity of excellent models few are applicable to operational needs.