

The *Arcus* Astrophysics Probe Explorer Community Science Meeting

May 4-5, 2023



Exploring the Formation and Evolution
of Clusters, Galaxies, and Stars

Why Arcus?

Order-of-Magnitude Improvements in X-ray & FUV High-Resolution Spectroscopy

- Astro2020: *“In the next decade, spectroscopy will be the dominant discovery tool for astronomy.”*
- No planned mission has high-resolution ($R > 2500$) soft X-ray or FUV grating spectra.

Baseline Science Objectives

- **G1**: *Cosmic Ecosystems*: What powers the black hole winds that impact galaxies and clusters?
- **G2**: *Unveiling the Drivers of Galaxy Growth*: How does matter cycle in and out of galaxies?
- **G3**: *Worlds and Suns in Context*: How do stars & circumstellar disks form, evolve and die?

Goals & notes for today



1. Let the community know about *Arcus's* capabilities.
 2. Get community ideas for General Observer Science possibilities.
 3. Learn some interesting science!
- We will record both days and with the speaker's permission make them available online.
 - When not speaking, please mute and turn your camera off to avoid accidental distractions.
 - Use the chat or raise hand feature for questions; the chair will call on you.
 - Feel free to use the chat to also suggest additional science opportunities inspired by the speakers.

Expert and committed *Arcus* team



- SAO: X-ray Instruments and Science Operations
- NASA ARC/GSFC: Mission Operations / Archives
- NG: Probe-class Spacecraft and Booms
- LASP: Far-UV spectrometer
- MIT & LL: CCDs and Gratings
- MPE & Cosine: Silicon Pore Optics, Optical Structures
- Copernicus: FPGA programming
- PSU & SwRI: X-ray instrument control and photon analysis

NORTHROP GRUMMAN



PENNSYLVANIA STATE UNIVERSITY



Ames Research Center



Smithsonian
Astrophysical Observatory

The *Arcus* team represents organizations and individuals who bring world-class capability to perform cutting-edge science