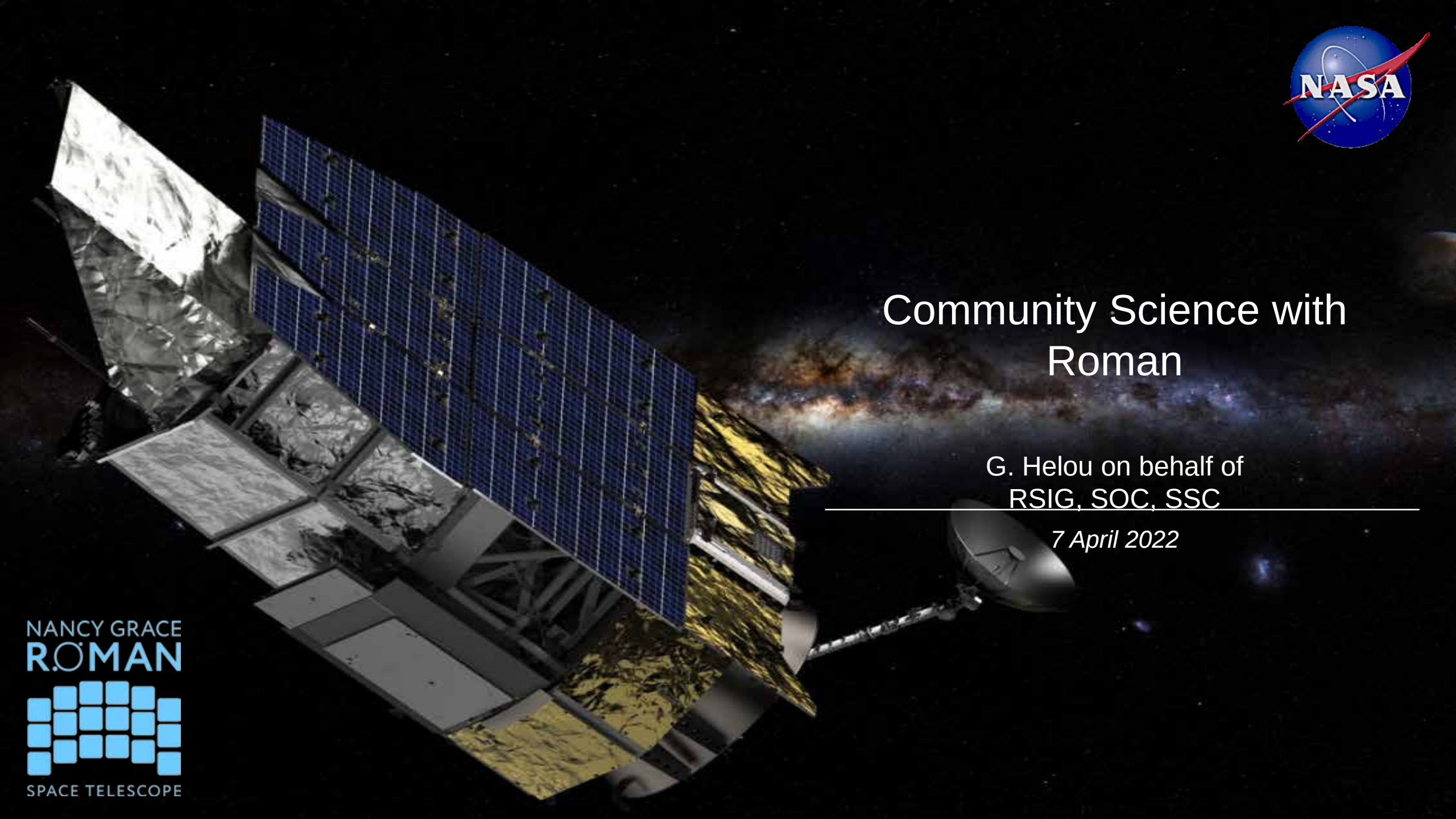


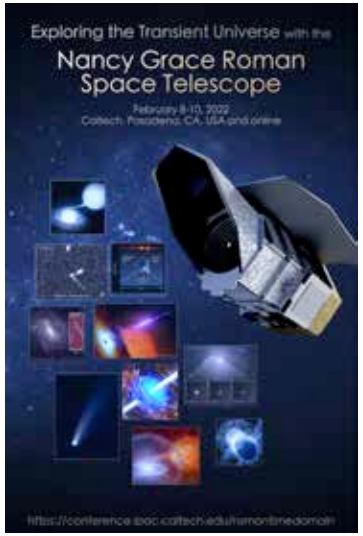
Community Science with Roman

G. Helou on behalf of
RSIG, SOC, SSC

7 April 2022

(1) General Astrophysics with Roman (1/2)

- The general astrophysics landscape for Roman, both through use of the core surveys and the peer-reviewed proposal opportunities, is wide ranging and exciting.
- Over the past ~6yrs, the SSC and the SOC have directly engaged the community through a series of workshops, AAS splinter sessions, etc. to increase awareness of the capabilities and potential of Roman for cutting edge astrophysics in the 2020s.
  - *"Testing Hierarchical Models of Galaxy Evolution with the Roman Space Telescope" AAS 240 splinter session, June 2022*
  - *"Exploring the Transient Universe with the Roman Space Telescope" February 2022*
  - *"Galaxy Formation and Evolution in the Era of the Nancy Grace Roman Space Telescope" October 2020*
  - *"Science in Our Own Backyard: Exploring the Galaxy and the Local Group with WFIRST" June 2019*
  - *"Astronomy in the 2020's: Synergies with WFIRST" June 2017*
  - *"Community Astrophysics with WFIRST" Feb. 2016*
- The community is eager to do science with Roman in areas including the Solar System, star formation, Galactic structure, galactic evolution, AGN, time domain phenomena, reionization and cosmic dawn, etc.
  - *Talks & slides from workshops are available on SOC and SSC websites*



(1) General Astrophysics with Roman (2/2)

- Community participation in planning the core surveys, in discussing operational modes and in engaging with peer-reviewed proposal opportunities will undoubtedly generate new and unexpected ideas on how to enhance Roman science.

- Experience with the Great Observatories has clearly shown that some of the most exciting and highest impact science was not envisioned during early mission planning.
  - This new science is enabled by science centers and projects being responsive to changing scientific landscapes while actively keeping the community engaged in how the observatory, and the archives, are used most effectively as the mission evolves
  - E.g. transiting exoplanet studies with Spitzer started after launch, became an enduring legacy
  - E.g. combining Hubble and Spitzer data led to the identification and characterization of galaxy candidates at z~10
  - For Roman, one example of enhanced capability that was not available when the core surveys were designed, but could be extremely valuable, is the K-band filter

- Similarly, innovative data analysis by the community extracts unanticipated results from survey projects, both ground and space-based
  - The same will be true for the data collected by Roman Core Surveys

End of Agenda Item #1