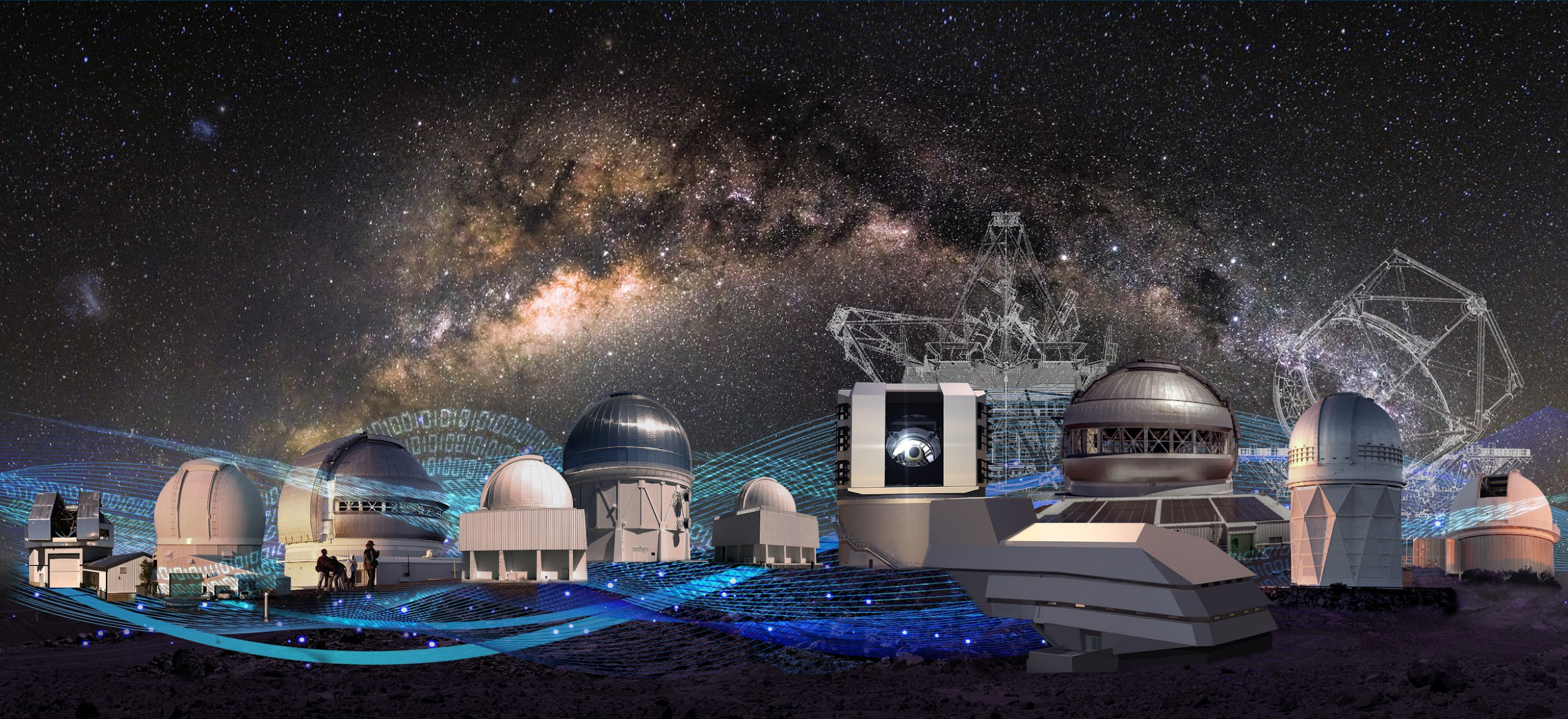


# NSF's NOIRLab welcomes you to Tucson!

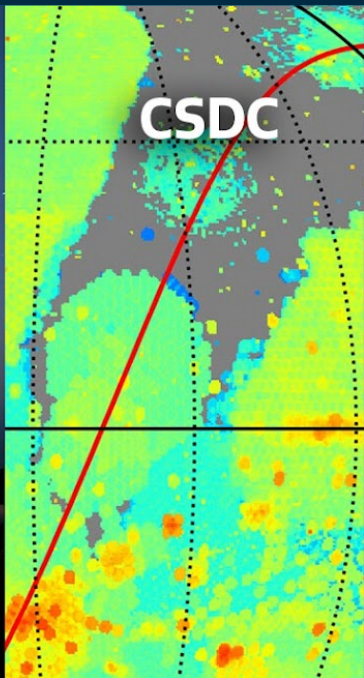


# NOIRLab's five Programs are...

**Kitt Peak**



**CSDC**



**Gemini**

*With our international partners*



**Cerro Tololo**



**Rubin Observatory Operations**

*An NSF-DOE Partnership*





# A diverse tool kit...



Rubin



Gemini S



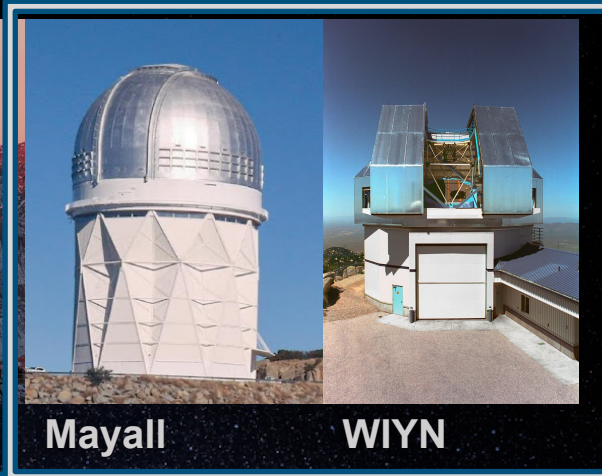
Gemini N



Blanco



SOAR

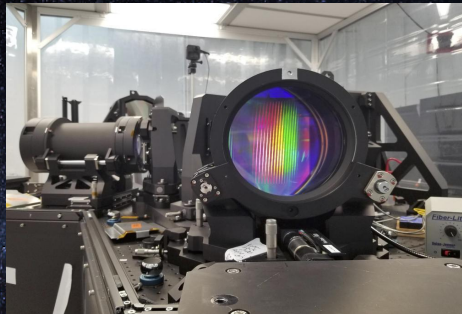


Mayall

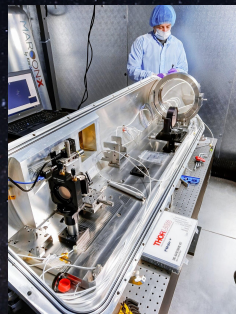
WIYN



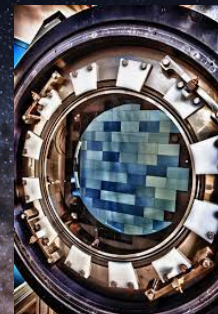
NEWFIRM  
NOAO  
@Blanco



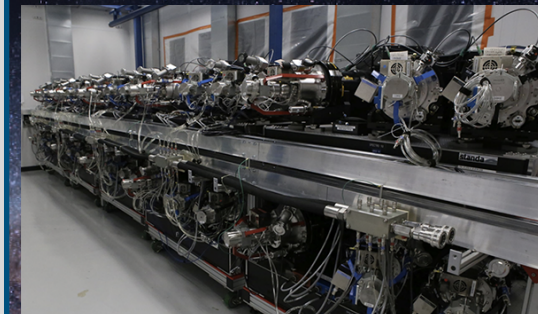
GHOST  
NRC/ANU/Macquarie  
@Gemini S.



MAROON-X  
U. Chicago  
@Gemini N.



DECAM  
FermiLab  
@Blanco



DESI  
LBNL  
@Mayall



NEID  
Penn State/NASA  
@WIYN



# A diverse tool kit...



Rubin



NEWFIRM  
NOAO  
@Blanco



GHRS  
NOAO  
@



*LSST Camera at Rubin Observatory!*

Disassembling our cameras together.

## NOIRLab's mission:

*Enabling and sharing breakthrough discoveries in astronomy and astrophysics with state-of-the-art ground-based observatories, data products, and services for a diverse and inclusive community.*



# RARE GEMS in BIG DATA

*Inaugural event in a new series of NOIRLab conferences!*

**Main topics:** Large surveys, time-domain & multi-messenger astrophysics, distant galaxies, cosmology, the Milky Way and nearby galaxies, stellar populations, exoplanets, Solar System bodies, and data analysis tools & techniques.

# RARE GEMS in BIG DATA

**Motivation:** to explore discovery space opened by ongoing and future surveys (DESI, Rubin/LSST, Roman, LIGO-Virgo-KAGRA O4/O5, etc.) and the tools & techniques needed to find **rare gems** in them, including anomaly detection, citizen science, and AI & machine learning.

Also wish to highlight the importance of spectroscopic & photometric follow-up observations, data archives, science platforms, & real-time data processing systems.

# RARE GEMS in BIG DATA

- The meeting features talks by experts in many fields to provide background and context, sessions designed for discussion and active engagement by participants, and live demos with opportunities to try out new techniques.
- The gems within the data are ready to shine brightly at this unparalleled gathering of astronomical minds.



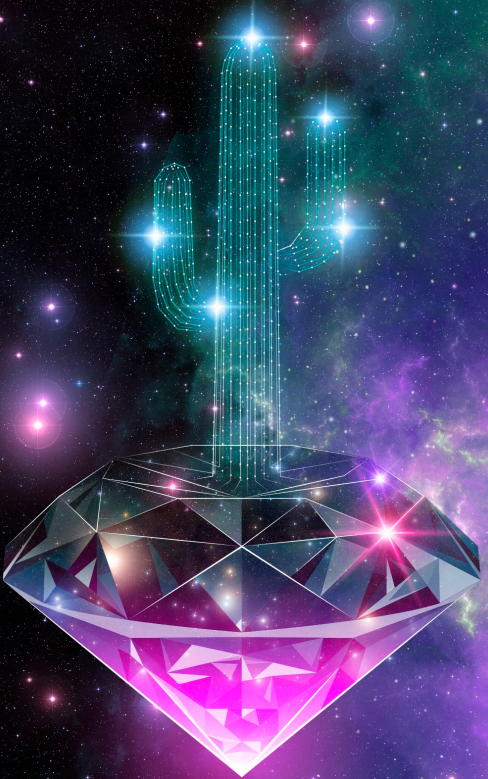
*Finally...*

*We encourage you to attend as many of the diverse plenary talks as possible!*

The wide range of science topics is designed to foster discussion of tools and techniques used to mine **rare and valuable gems** across all of astronomy, with the goal of inspiring attendees with new perspectives from advancements in other fields.



**RARE GEMS** in **BIG DATA**



**RARE GEMS** in **BIG DATA**

THE DISCOVERY POTENTIAL OF LARGE ASTROPHYSICAL SURVEYS:  
SCIENCE OPPORTUNITIES, TOOLS, AND TECHNIQUES

20-23 May 2024 | Tucson, AZ, USA | <https://noirlab.edu/gems> 