



# Moving Toward Integrated NOIRLab Data Services

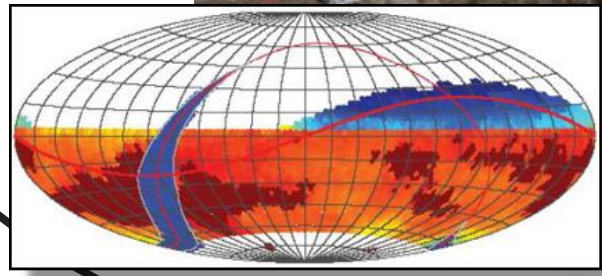
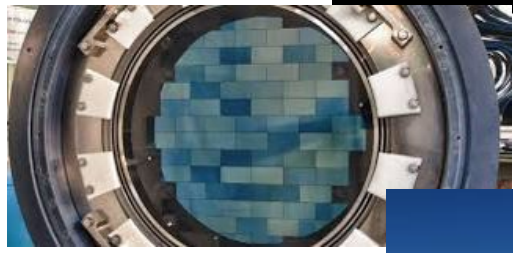
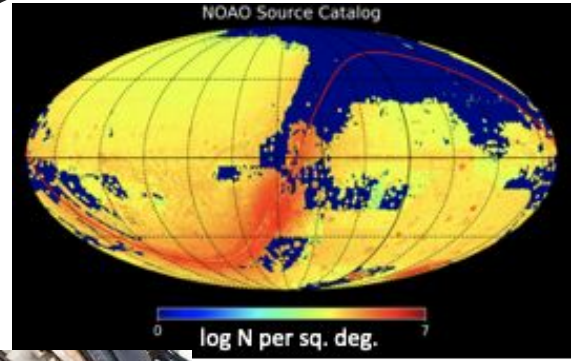
*Dara Norman*

NSF's NOIRLab/CSDC  
Jan 11, 2021

*Discovering Our Universe  
Together*



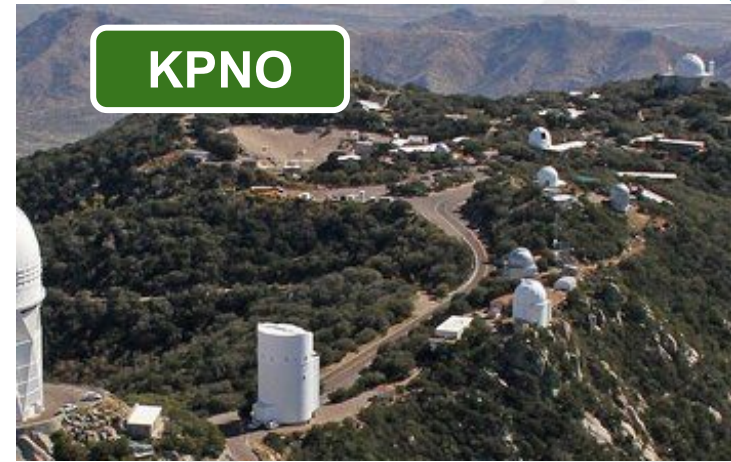
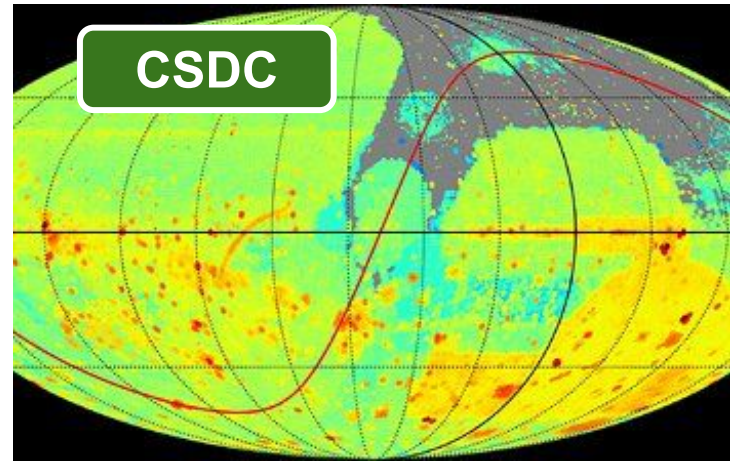
# Two paradigm shifting trends...



Research  
Inclusion  
through  
Access

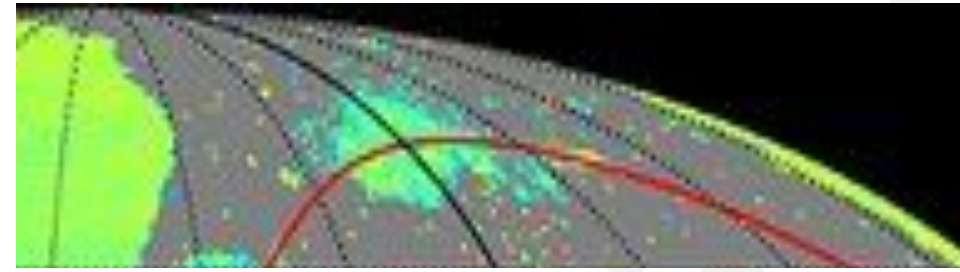


# Community Science and Data Center within NOIRLab

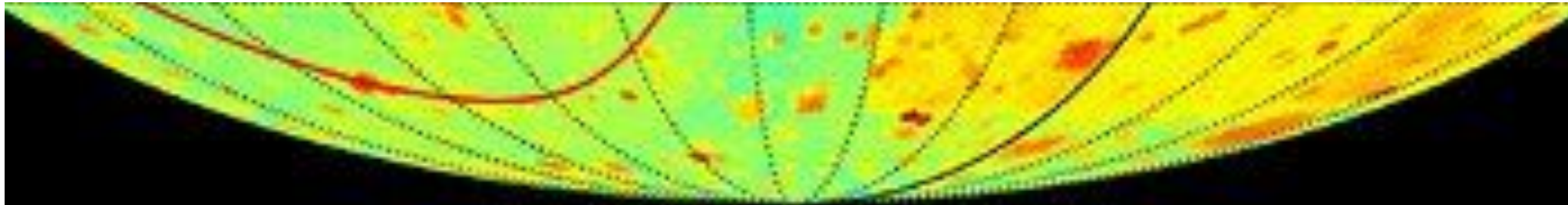


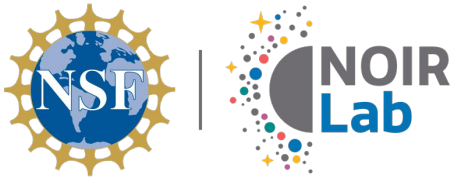


# CSDC supports the NOIRLab Data Mission



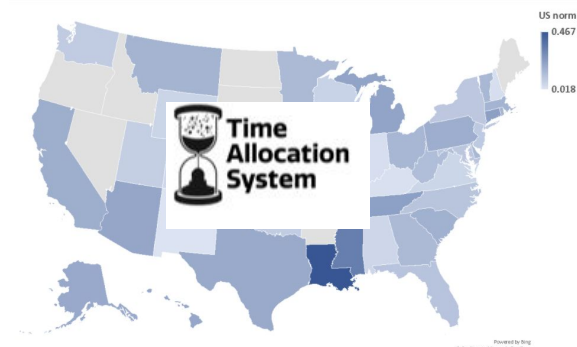
- CSDC's role in the NOIRLab mission
  - Collector of community needs/requests/priorities
  - Provide open telescope and data access to the broadest astronomy community
  - Provide user support services and advanced data products for the broad astronomical community
  - Provide leadership in the expanding role of data in science discovery
- Broadening community participation through Research Inclusion is part of everything we do





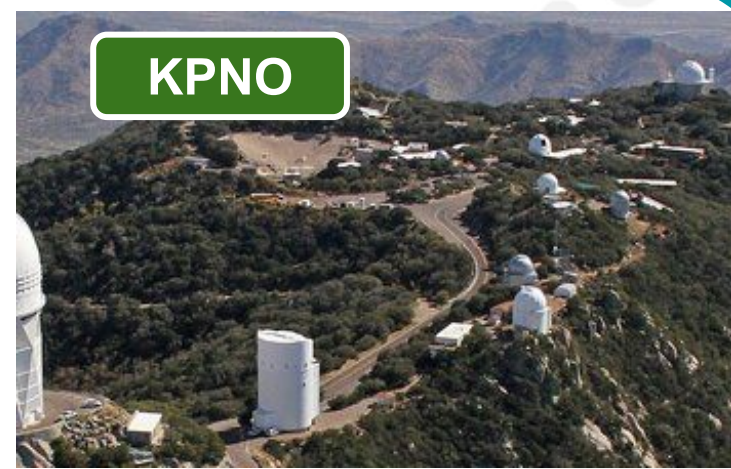
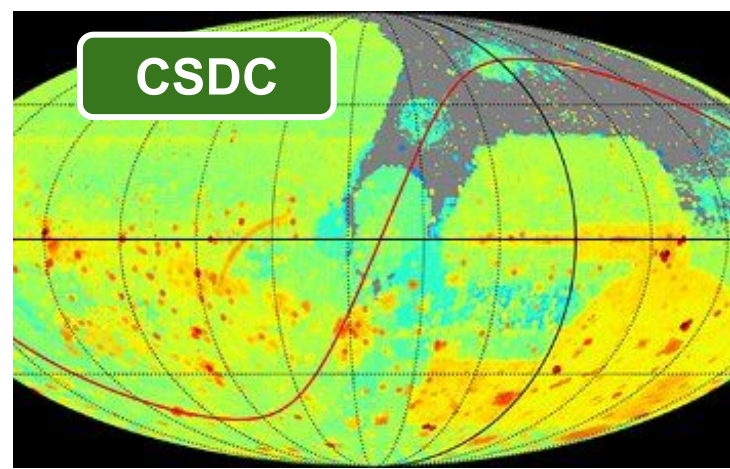
# CSDC Flagship Tools and Services

Provide tools and user services to democratize data and science access



Discovering Our Universe Together

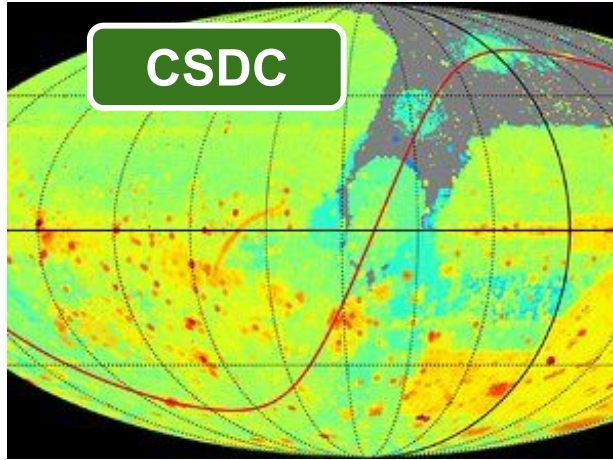
# Community Science and Data Center within NOIRLab's Data Mission



### CTIO

Enable community science with NOIRLab's archives of wide-field surveys, e.g. **DECam community-driven surveys.**

### CSDC



### KPNO

New services for survey-scale spectroscopy

- Serving public SDSS optical spectra
- **Preparing for 40+ million spectra from DESI**
- First DESI data release expected in early 2022

### Gemini

Data publication & analysis support

- Gemini **GOGREEN survey data products** hosted in Astro Data Lab;
- New Gemini data reduction example notebooks from US-NGO team (IRAF, DRAGONS)

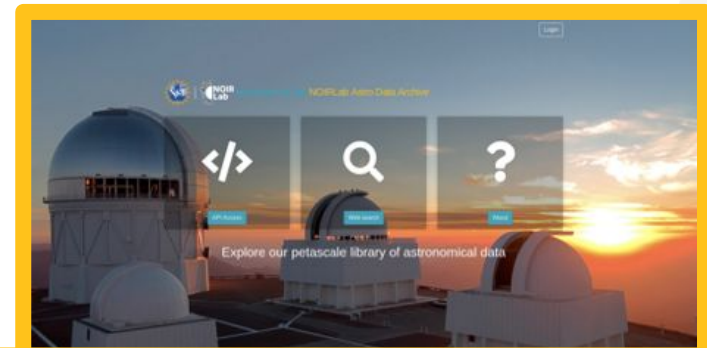
### Rubin

ANTARES: an **open-access community event broker** operating for ZTF and scalable to Rubin-LSST rate and volume





# Modern Web Interfaces



gp12.datalab.noao.edu/user/daranorman/lab?

File Edit View Run Kernel Tabs Settings Help

How\_to\_use\_the\_File\_x How\_to\_use\_the\_Simr\_x O2\_GettingStartedWit How\_to\_use\_the\_Data GOGREENdr1s

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### GOGREEN DR1 at Data Lab - Simple Image Access (SIA)

Author: Robert Nikutta <nikutta@noao.edu>

## Archives, Time Allocation, User Support Services

Time Allocation System | NOIRLab

PROPOSAL EDITOR: Settings General Essay Investigators Runs Targets Attachments

2020B-874834

NSF's NOIRLab  
Date Received: 2020-09-28  
Standard Thesis  
Panel: High Z Galaxies  
Category: High Z Galaxies

### Example Standard Proposal

Abstract of Scientific Justification (will be made publicly available for accepted proposals):

Summary of observing runs requested for this project

Run	Semester	Telescope	Instrument	Obs. Mode	No. Nights	Moon	Optimal Mo.	Accept. Mo.
1	2020B	SOAR	TSpec	C	56.0	dark	-	-
2								
3								
4								
5								
6								

youtube.com/watch?v=OGvccNQ4WPU

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ANTARES

Explore Favorites Filters Tags Watch Lists Catalogs Pipeline Properties

Showing 1-10 of 80000

ID	ZTF ID	RA	Dec	Latest Mag	Brightest Mag	# Alerts	Latest Alert	First Alert	Actions
ANT2020wh00	ZTF2020bmyd	338.88	39.07	19.43	19.43	1	2020-08-12 08:52:57	2020-08-12 08:52:57	...
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ANT2020wh09	ZTF2020bmye	338.97	58.10	18.33	18.33	1	2020-08-12 08:46:53	2020-08-12 08:46:53	...

### ANTARES Usage

Using the ANTARES Alert Broker

US National Gemini Office

Users Support Portal

The US NGO main goal is to support US Gemini Users in the phases of the astronomical observing cycle, from proposal preparation through data analysis. This page is the main portal to all information needed in the different phases, explaining and connecting to specific Gemini web pages, where users can find definitive contents on instruments and modes. In addition, this page contains tools for data reduction and analysis for the entire Gemini community.

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vmplacco Update README.md 1fb7995 on Dec 8, 2020 35 commits

F2\_IM\_WISEJ0413-4750.ipynb F2 notebook uploaded 3 months ago

About

Jupyter Notebook examples of data reduction with DRAGONS

Readme





# Tutorial Notebooks



gp12.datalab.noao.edu/user/daranorman/lab?

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## Data Product availability and Data Reduction

Time Allocation System | NOIRLab

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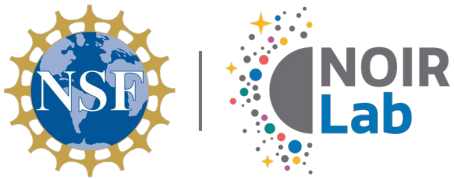
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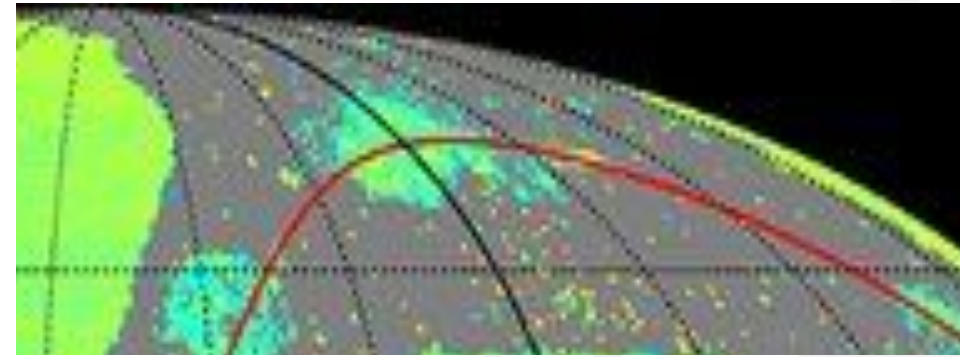
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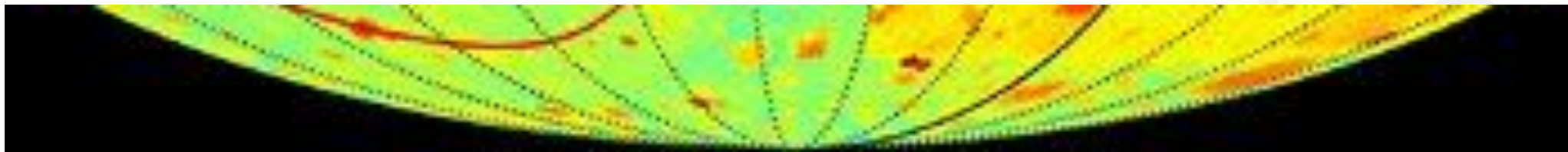


# The Foundation for Science Access Through the 2020s...



NOIRLab through CSDC will be a foundation for Research Inclusion:

- Supporting opportunities for scientific networking and collaboration building
- Providing broad and open access to data and data products
- Continuing to provide technical infrastructure to search petascale data volumes and flexible online science platform analysis
- Expanding and coordinating training for science platform/tools for scientists at all career stages.



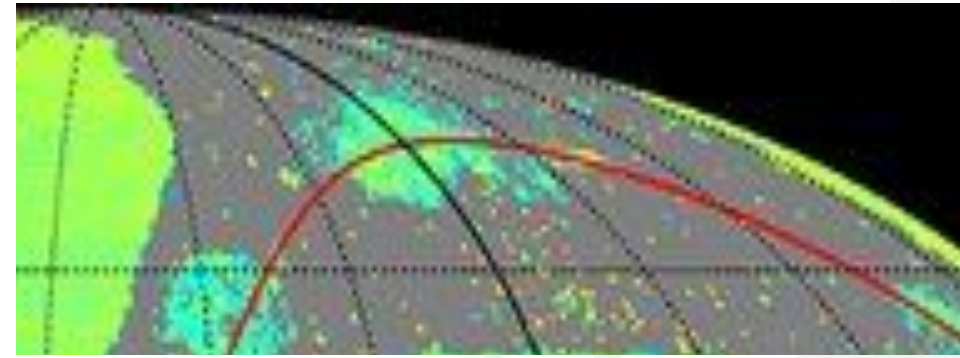


THANK YOU!  
QUESTIONS?



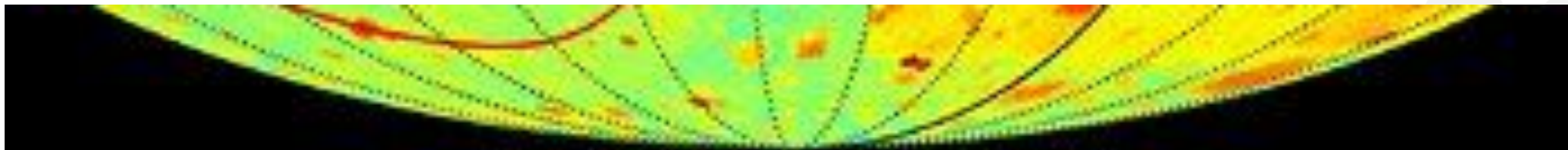


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Continue Research Inclusion by:

- Reinforcing policies and procedures that support mutually beneficial partnerships
- Supporting opportunities for scientific networking and collaboration building
- Continuing to provide technical infrastructure that enables broad participation
- Expanding and coordinating training for science platform/tools for scientists at all career stages.



*Discovering Our Universe  
Together*



7 min (8min max)

## **AAS #237 Special Session**

### **The Data Lab Science Platform and Open-Data Ecosystem at NSF's NOIRLab**

#### **224.02. Moving Toward Integrated NOIRLab Data Services**

Two potentially paradigm-shifting trends are taking place in astronomical research. The first is the move towards the use of surveys, large datasets and catalogs that enable a wide range of topics to be studied. The second is the recognition that the astronomical and astrophysical community of researchers must become more inclusive in order to realize the best scientific innovation and productivity. The NSF's National Optical and Infrared Research Laboratory has been established to maximize support for both these trends through data services. I will discuss how the Community Science and Data Center (CSDC) at NOIRLab is well positioned to be a foundation for these efforts into the 2020s and beyond.