



Data Management and Software

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*Discovering Our Universe
Together*



Agenda



- Our Opportunity
- Key Highlights
- Agile Methodology
- Challenges
- Next Steps
- Q&A



Our Opportunity





Our Opportunity



Transform NOIRLab

- From an organization that operates telescopes...
- ...into an enterprise where software and data play a central role





Our Opportunity



Consolidate DMS talent across NOIRLab

- ✦ Improve efficiency and reduce duplication
- ✦ Harness the full potential of the professional staff
- ✦ Build for the future

Build on Rubin & DataLab platforms as a foundation

- ⚙️ Build, share and deploy tools to maximize scientific impact and extend our capabilities
- ⚙️ Leverage the skills and experience from the Rubin and Gemini teams
- ⚙️ Build a unified NOIRLab Program Platform





Our Opportunity



Provide all programs:



- Efficient solutions that reuse knowledge as well as code from other programs, services and tools
- A more collaborative environment to synergize on existing solutions via modular code, shared components, etc

Provide the community:



- Tools that provide value beyond direct application to our telescopes and data
- Streamlined environments that enable scientists to focus on astrophysics, not technical complexity



NOIRLab Program Platform

3 Notifications

Active Team: 12 Members
ELT Summer Research

Logged In as
Charles G



Recently Published

Soumagnac, M.T., et al.
The MOST Hosts Survey: Spectroscopic Observation...

Sánchez, B.O., et al.
The Dark Energy Survey Supernova Program: Light...

Kalari, V.M., et al.
GHOST at Gemini South: Instrument Performance ...

Breuval, L., et al.
Cepheid Light Curves in Nearby Galaxies: Gemini...

Narayan, G., et al.
Chasing Extremely Young Transients

Méndez, R., et al.
Southern binary stars in the Gaia era: Speckle path to...

Active Programs



Welcome to the NOIRLab Program Platform!

Please choose from the applications listed below to discover what best suits your immediate needs



Cooperate



Prepare



Explore



Allocate



Analyze



Publish



Our Opportunity



Enable interoperability and collaborative science across organizations



Open-source code strategy to enable broad community participation



Maximize scientific return via cross-organization alignment

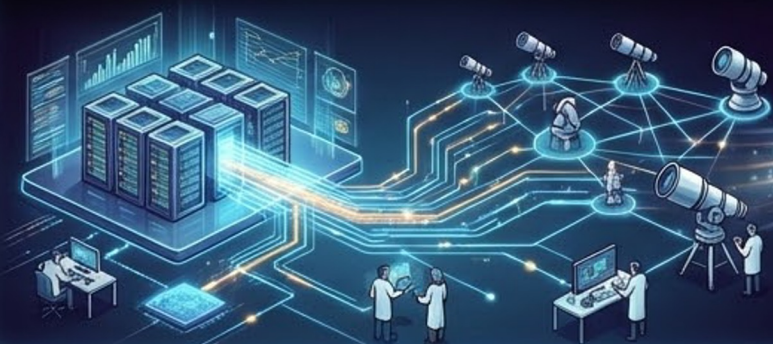


A New Era of Scientific Productivity



Mission

Transform NOIRLab into a high-performance, software- and data-centric organization powered by robust IT infrastructure to empower world-class astronomical research.



Vision

Modernize astronomy software and data infrastructure to accelerate discovery and shape the future of astronomical research.





Key Highlights





Key Highlights



Team building and change management

- Numerous team meetings and 1:1s
- With technical and non-technical staff
- Proactive outreach to gather input and feedback



Alignment with Rubin who is supportive

- Discussions on the DMS concept and overall direction

Friction and pushback have decreased, more individuals are now supportive, engaged and open minded toward DMS



Key Highlights



DMS Project Execution Plan Completed



- ★ Finalized organizational design and formation approach
- ★ Defined governance model and key processes
- ★ Identified foundational work
- ★ Aligned on a single, cohesive plan

Approved by Stakeholders & NSF



Organizational structure, governance and strategic plans reviewed and approved



Key Highlights



DMS Foundational work started



- ★ Software inventory in progress
- ★ Assessing software processes for work estimation, software project management, resource allocation in progress
- ★ Defining roles and responsibilities in progress
- ★ Aligning hiring expectations with DMS expectations and accountabilities

Investigations underway to inform broader improvements



- ★ Technical, procedural, operational and organizational improvements



Key Highlights



DMS All Hands with staff in Chile



- ★ Positive feedback and strong reception to DMS
- ★ Engaged discussions and thoughtful questions
- ★ Broad support for DMS and addressing key direction and strategy
- ★ First large team meeting in Spanish



- ★ Brought multiple teams together to foster cross-observatory collaboration, align on goals and build momentum for upcoming initiatives



Key Highlights



Agile methodology rollout underway

Introducing Key
Concepts, Roles &
Responsibilities

Updating Tools
& Processes

Increased
Visibility, Focus &
Accountability

CSDC Pilot
Team

Transition
to Monthly
Deliverables
(Other Teams)

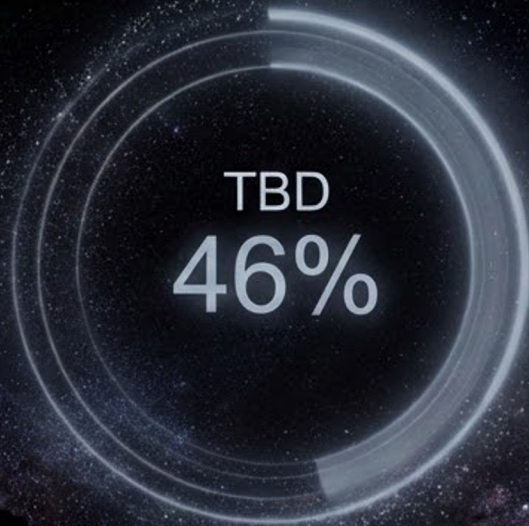
Foundational concepts, tools and processes are being introduced across teams to support a phased transition



Key Highlights



Agile Adoption





Agile Methodology



Agile Methodology



Benefits of agile in CSDC (FY25 Q4)



Agile Backlog of major CSDC investments documented



Engineering sprints launched with global CSDC priorities



CSDC resource allocation aligned to priorities



Resources reallocated to ANTARES to accelerate progress and reduce risk



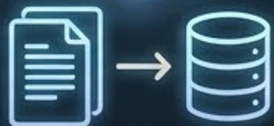
Shifting Product Owners to focus on the “what”, Engineering on the “how”



Agile Methodology



Benefits of agile in Gemini (FY25 Q4)



Completed first end-to-end GPP integration (proposal -> archive delivery)



Completed three scientific modes



Gemini Scheduler E2E operational and core GPP components validated



Clear, time-bound goals driving focused execution, with monthly end-to-end test cycles established



GPP roadmap in progress

Benefits of agile in ITOps (FY25 Q3)



Centralized Portfolio

Annual dashboard visibility for all projects.



Strategic Deliverables

Tied to quarterly/monthly goals.



Aligned Resource Allocation

Via centralized tracking.



Improved Transparency

Through ITOps dashboards and accountability.



Global Priority Alignment

Lack of global priorities causes misalignment and delays.





Challenges





Challenges



Culture & People

- Some resistance to adopting a modern software culture
- Misalignment or misunderstanding of global priorities
- Gaps in people management and technical leadership
- Inconsistent titles, levels, expectations across DMS



Process & Execution

- Execution and accountability standards need to be raised
- Tooling and process gaps impacting software delivery
- Gaps in planning, scoping, work estimation
- Requirements gathering needs improvement
- Design and architectural decisions unclear and inconsistent



Communication & Change

- Allowing time for organizational and cultural transformation
- Communication gaps impacting alignment, decision-making
- Common terminology and concept



Next Steps



Next Steps



Agile & Delivery

- Continue agile rollout and expand to additional teams
- Establish monthly cadence for DMS deliverables
- Continue delivering Program specific work using agile



Integration & Planning

- Begin technical alignment with science plans currently under definition
- Define scope of GMT work and integrate into existing plans
- Begin DMS architecture and design investigations



Improvement & Action

- Clean up/update Jira to support agile software development
- Continue focused investments and actions to resolve the key challenges outlined previously



Q&A

