

# National Center for Optical-Infrared Astronomy

## NCOA

### *Status Report*

Presentation to CAA

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# THE BEGINNING

- **The National Optical Astronomy Observatory (NOAO) was created in 1984 by combining NSF's optical astronomy assets: Kitt Peak National Observatory (KPNO), Cerro Tololo Inter-American Observatory (CTIO), & the National Solar Observatory (NSO).**
- **NSO was split off in 2009 due to divergent missions.**
- **In late 2015, NSF advised AURA\* that LSST operations not be stand-alone and to exploit synergies with NOAO capabilities and expertise.**
- **With AURA continuing to manage the Gemini Observatory, and with LSST operations pending, a restructure of NSF-funded OIR assets is needed now.**
- **NCOA is in response to 15 years of advisory reports about inefficiencies in the complex of NSF-funded observatories.**

\*Association of Universities for Research in Astronomy





## ***WHAT IS NCOA?***

**NCOA is the integration of Gemini Observatory, LSST operations, and NOAO under a single framework, unified by themes of data-enabled science and OIR System optimization.**

- **NCOA is not a merger, and it is not a new center; it is a restructuring of the NSF-funded OIR portfolio.**
  - The reorganization will not interrupt continuing operations nor require additional NSF funds for existing components.
- **NCOA will succeed NOAO as the FFRDC for OIR astronomy, sponsored by NSF, which sets the purpose, mission, and scope.**
- **NCOA will be designed to ensure autonomy for science programs, governance, and funding of Gemini Observatory and LSST with full accountability to the partners in those organizations.**
- **NCOA will be operated by a single managing organization, currently AURA.**



## ***WHY NCOA?***

**Integration of operational entities yields significant benefits for all stakeholders in science return, programmatic and operational efficiencies, and uniform business, financial, and personnel practices.**

### **Expected outcomes:**

- **NSF OIR assets collectively well positioned for scientific leadership in era of LSST and data-intensive astronomy, into 2020s and beyond;**
- **U.S. competitive in OIR astronomy with unified strategic planning, data-science mission, and OIR System community engagement;**
- **A national focal point to attract international & philanthropic collaborations;**
- **Cost efficiencies through integration of facility operations in Chile, Hawaii, & Arizona;**
- **Long term stability to retain and develop essential scientific and technical staff;**



## ***WHY NCOA NOW?***

- Recommended for some time but triggered by LSST operations.
- **LSST operations are integrated from inception to maximize synergies.**
- In 2018 the Gemini Observatory partners must decide on their involvement beyond 2021, and must be sure of the future operating environment.
- **NCOA needs to be in place by full LSST operations (2022) for complete exploitation of all available synergies.**
  - **Implementing NCOA with minimal disruption will take several years.**
- **NCOA needs to be in place prior to full start of the astronomy and astrophysics decadal survey to be a strong and coherent interface for the OIR community.**



## TIMELINE

Milestone	Target Date
NSF Guidance to AURA on NCOA Planning	8 Sep 2016
NSF and AURA updates to Gemini Board on NCOA planning	Nov 2016; May 2017
AURA submits to NSF final NCOA Plan & Transition/Implementation Plan	30 June 2017
AURA submits proposal for LSST operations	30 June 2017
NSF evaluates NCOA Plan & Transition/Implementation Plan	~Aug to Nov 2017
NSF & DOE conduct review of LSST operations proposal	~Aug to Dec 2017
Final Gemini Board consultation	~Nov 2017
NSF Director and National Science Board (NSB) approval of NCOA	~Feb 2018
NSF approves NCOA Plan & Transition/Implementation Plan	~Mar 2018
NSB authorizes an award for LSST operations	~May 2018
NCOA operation begins (formally)	1 Oct 2018
Implementation of NCOA continues	FY 2019



## ***NSF VISION FOR NCOA***

- **NCOA** will be the ***foundational hub*** of the U.S. OIR System in the era of LSST and data intensive science.
- **NCOA** will be the ***preeminent*** U.S. national center for ground-based, nighttime, OIR astronomy, serving the astronomical community and facilitating domestic and international collaborations.
- **NCOA** will provide ***strategic leadership*** for the federal and non-federal OIR System.

**The need for NCOA has been emphasized in many reports and reviews; the opportunity exists now to make it happen.**