



AURA Networking & Astroinformatics

R. Chris Smith & Ron Lambert
AURA Observatory in Chile
CTIO/Gemini/SOAR/LSST

1

AURA Backbone Users & Use

- Large users
 - NOAO/CTIO (DECam!)
 - Gemini (Remote ops!)
 - SOAR (Remote observing)
 - **LSST (BIG DATA)**
 - Carnegie (La Serena)
 - NRAO/ALMA (Santiago)
 - GMT (pending)
- Smaller Users
 - SMARTS
 - PROMPT (x8 now)
 - GONG
 - ALO
 - WHAM
 - LCOGTN
 - KASI/KMTnet
 - ASAS-SN
 - mEarth (Harvard)
 - “EvryScope”/Prompt
 - T80S (Brazil)

Key Use Cases: (see previous meeting slides)

- #1 = Data Transfer: High Bandwidth
- #2 = Remote Observing: High QoS
- #3 = Robotic Telescopes: High Reliability
- #4 = Coordination, Real-time and other: QoS
- #5 = Data Access @ Archives: Bandwidth+QoS
- #6 = Distributed Processing & Analysis
- But these are only the **technical** needs...

Bottom Line: Outstanding Science

- **Changing the way we look at our universe**
 - Dark Energy (2011 Nobel Prize)
 - Gravitational Waves (2017 Nobel Prize)
 - Discovery & Study of Exoplanets
 - Discovery of Life on other planets?
- **Changing the way we look at our own world**

Astroinformatics in Chile

- Solid Cross-disciplinary Foundations
 - Center for Mathematical Modeling (CMM)
 - National Laboratory for High Performance Computing (NLHPC)
- New initiatives!
 - University of La Serena “Big Data Initiative”
 - **Ministry of Economy/CORFO: Astroinformatics Initiative**, possible Institute for Astroinformatics & Economic Development



Preparing the Next Generation

LA SERENA SCHOOL FOR DATA SCIENCE 2018 2017-2021

Applied Tools for
Data-driven Sciences

August 20-29, 2018

AURA Campus
La Serena - Chile

2017-2021

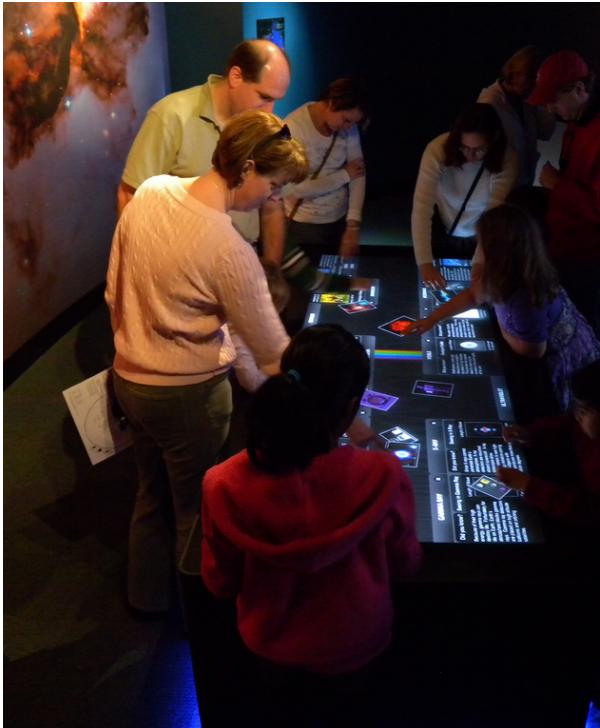
Astronomy
+ Bioinformatics

www.aura-o.aura-astronomy.org/winter_school/



- *Training the next generation of scientists (in fields of astronomy, bioinformatics, mathematics, computer science, ++) in the tools and techniques of massive data*
- *International program: funding for students from Chile and the U.S.*
- *Target students: senior undergraduate and beginning graduate students*
- *Leaders: Chris Smith, Eduardo Vera, Steffen Hartel*

LSST Outreach Data will be used in classrooms, science museums, and online



Classroom Emphasis on:

- Data-enabled research experiences
- Citizen Science
- College curriculum
- Collaboration through Social Networking

Ambassadors Jan2018

So long (not really!),
And Thanks for all the Bits!

