SAACC
South American Astronomy Coordination Committee
(of AmLight)

Julio Ibarra, PI, AmLight

R. Chris Smith, Chair, SAACC

SAACC April 2015

Strategic Goals
(why are we here today?)

- **Goal 1:** bring key U.S. Astronomy (and Physics) users together to discuss the needs of this community in South America over the next 5,10,15,20 years

- **Goal 2:** Create a bridge between the U.S. network planning (AmLight and partners), the Regional RENs (CLARA, GEANT) and local RENs (REUNA and equivalents in Brazil and Argentina, if not others)

- **Goal 3:** create a venue for international coordination of astronomical networking needs in the South American region.
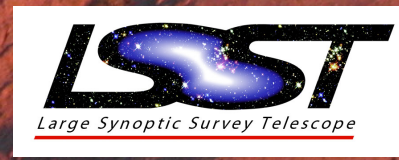
AURA Networking Update
April 2016

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

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URA report Apr2016

AURA Network Backbone

- ## Three segments
  - ### Summits (Tololo+Pachón) to Base (La Serena)
    - Currently: Microwave link @ 2 x 155 Mbps
    - Traffic has outgrown this solution
    - Plus Two additional Radio Links
      - Cambium 300Mbps, Ubiquity 300-400 Mbps
    - Eagerly awaiting fiber links
  - ### La Serena to Santiago
    - Currently: REUNA @ 1Gbps
  - ### Santiago to U.S. RENs
    - Currently: AmLight+LAUREN @ 1Gbps (up to 10Gbps)

AURA Backbone Users & Use

- Large users
  - NOAO/CTIO
  - Gemini (Remote ops!)
  - SOAR
  - **LSST**

  - Carnegie (La Serena)
  - NRAO/ALMA (Santiago)

  - GMT (pending)

- Smaller Users
  - SMARTS
  - PROMPT (x8 now)
  - GONG
  - ALO
  - WHAM
  - LCOGTN
  - KASI/KMTnet
  - mEarth (Harvard)
  - "EvryScope"/Prompt
  - T80S (Brazil)

New Links for AURA/LSST:

- Outline of solutions
  - "Segment 1" = Mountain-La Serena
    - At least 300Gbps
  - "Segment 2" = La Serena-Santiago
    - At least 140Gbps (4Gbps NOW, 100+40Gbps soon)
  - "Segment 3" = Santiago-U.S.A.
  - Equipment
    - Evaluation of options
  - Operations
    - Shared operations model

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Network Operations Planning

- Segment 1: Mountain-La Serena
  - Standard maintenance of fiber links by Telefonica through REUNA contract
  - Light paths and traffic managed by AURA, in coordination with REUNA

- Segment 2: La Serena-Santiago
  - Standard maintenance of fiber links by Telefonica through REUNA contract
  - Light paths managed by REUNA, with 1 lambda dedicated to LSST traffic (up to 9 more reserved)

- **END-TO-END** Operations actively managed by Network Management group (AURA/LSST, FIU, REUNA, NCSA, +)

Key Features of Solutions

- Meets demanding requirements for LSST Operations

- Meets AURA facilities current needs, with significant room for expansion (including those of affiliates like Carnegie, GMT, etc.)

- Meets AURA's commitment to Chileans to make best effort to invest in bandwidth through Chilean research and educational network infrastructure

and

- Provides REUNA an important segment in its national high-speed network strategy, including possible links to northern international observatories