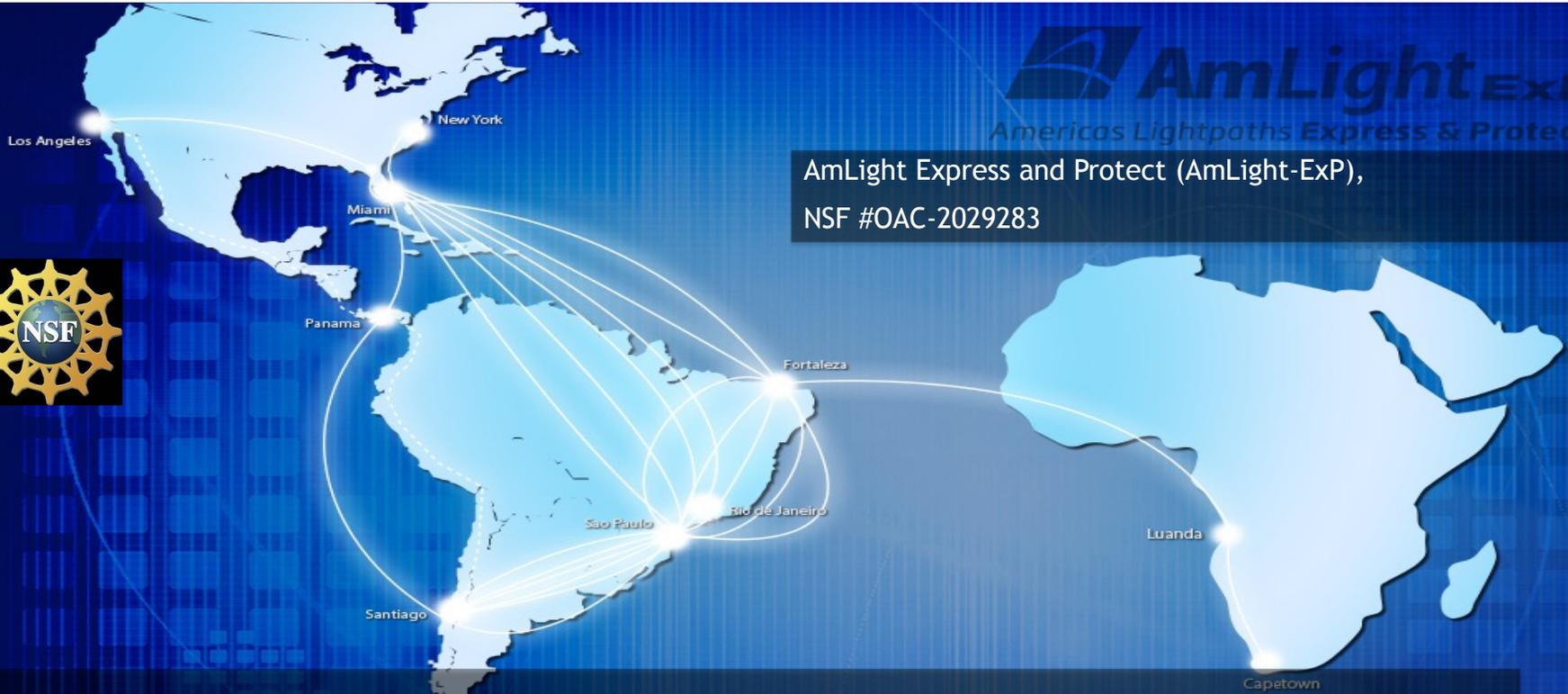




AmLight Express and Protect (AmLight-ExP),  
NSF #OAC-2029283



*South American-African Astronomy  
Coordination Committee Meeting (SA3CC):  
Welcome and Introduction  
May 6-7, 2025*

Julio Ibarra  
Principal Investigator  
Florida International University

# Visit to the Vera Rubin Observatory



# 20+ Years of Partnership

## International Research Network Connections (IRNC)

### Program Solicitation

NSF 04-560

Replaces Document NSF 97-106



National Science Foundation  
Directorate for Computer and Information Science and Engineering  
Division of Shared Cyberinfrastructure

## Data Management and Bandwidth for US Affiliated Observatories in Chile

### Full Proposal Target Date(s):

June 07, 2004

Update May 2005: Transition in AURA Connectivity  
Version 4 — May 5, 2005

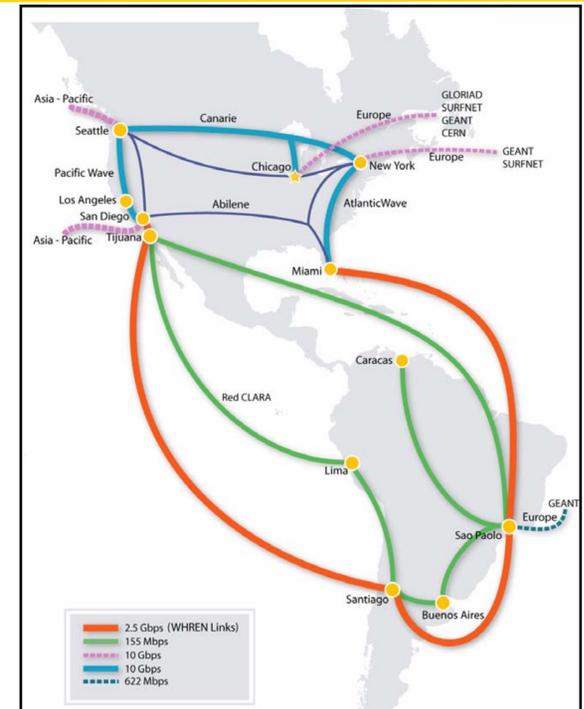
Chris Smith (NOAO/CTIO) & Jim Kennedy (Gemini Observatory)

SAACC Meeting January 10, 2012

[AmLight South American Astronomy Coordination Committee \(SAACC\)](#)

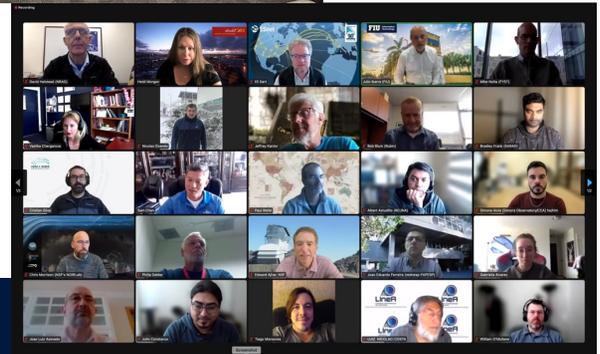
219th AAS Meeting — Austin, TX

January 10, 2012 5:30 – 8:30 PM



# About SA3CC

- SA3CC is in its 14<sup>th</sup> year!
- SA3CC is comprised of representatives from the various
  - Major Facilities operating observatories in South America and South Africa
  - The AmLight project, and operators of the Research and Education Networks (RENs) in South America, Africa and in the U.S.
- SA3CC Goals
  - To provide input and advice to AmLight and RENs on program and network needs
  - To serve as a venue for coordinating the network needs of astronomy projects and institutions
  - To improve the resource planning and implementation of operational connections between distant facilities and users in the continental US



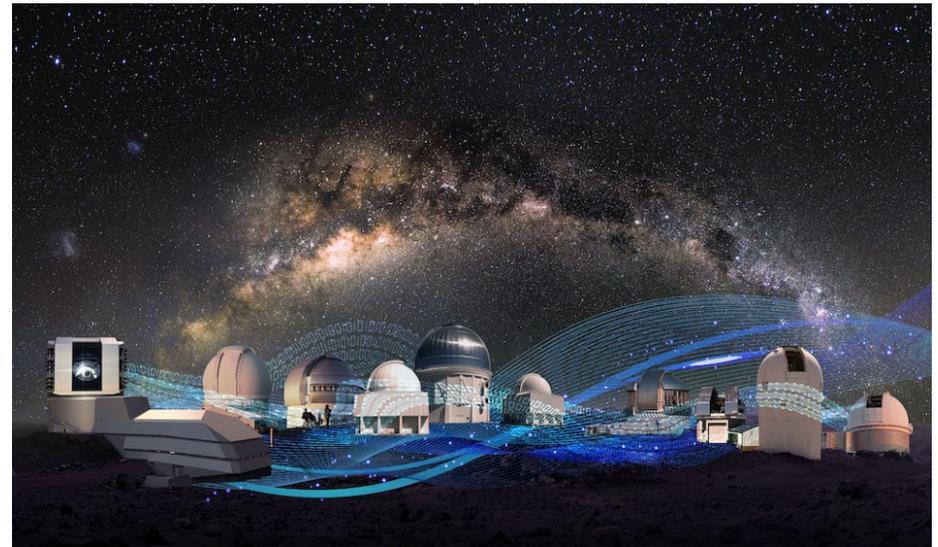
# 2024 SA3CC Meeting

- Location: Menlo Park, CA
- Hosted by Vera Rubin and SLAC
- Venue: SLAC
- Date: April 30 - May 1, 2024



# 2024 SA3CC Report

- The [2024 SA3CC meeting report](#) is available at the AmLight project website
- Thank you to everyone who contributed to the report
- Special thanks to Dr. Vasilka Chergarova and Erick Gonzalez-Vega for leading the report writing effort



# Meeting Logistics

- SA3CC Agenda
  - <https://www.amlight.net/?p=6016>
- Presentations
  - For Presenters, VERY IMPORTANT, please provide a copy of your slides
  - Copy your slides to a folder Vasilka will provide
- Hold questions until after each presentation
  - Zoom participants, use the Raise Hand feature

# 2025 SA3CC Program Committee



Bob Blum  
Vera Rubin



Ranpal Gill  
Vera Rubin



Albert Astudillo  
REUNA



Vasilka Chergarova  
FIU - AmLight



Heidi Morgan  
USC - AmLight



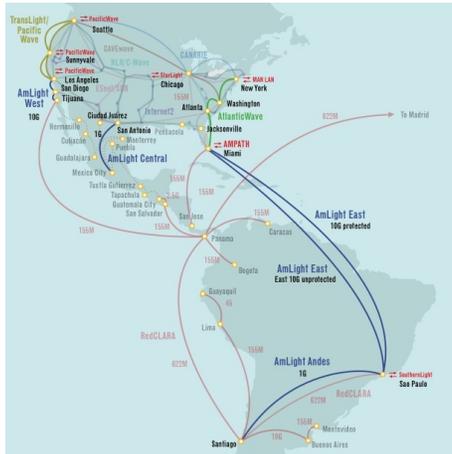
Julio Ibarra  
FIU - AmLight

# Thank You!

- Presenters and Participants:
  - Thank you for taking time in your busy schedules to participate in the SA3CC
- Hosts:
  - Vera Rubin for the tour of the observatory and hosting the lunch
  - Vera Rubin for hosting the SA3CC at the Recinto
  - REUNA for sponsoring breaks and lunches, the social dinner, and transportation
- Logistics and Local Arrangements:
  - Special thanks to Vasilka and her team for coordinating the presenters, venue and many logistical details
  - Extra special thanks for Ranpal Gill, Albert Astudillo, and Bob Blum for all the local logistics and arrangements

More slides follow

# Evolution of AmLight: 2010 - 2024



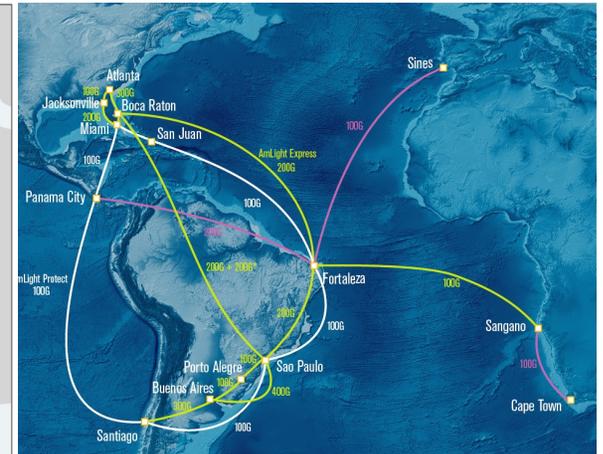
**2011**  
 Leased Capacity,  
 2x10G East  
 1x1G Central  
 1x10G West,  
 Connections to  
 RedClara and RENS.



**2016**  
 Leased Capacity  
 (linear),  
 2x100G Ring  
 4x10G Ring,  
 SDN infrastructure,  
 RedClara and RENS.



**2021**  
 Spectrum & Leased Capacity,  
 2x200G Express  
 2x100G Protect,  
 Multiple rings,  
 SDN infrastructure,  
 RedClara and RENS.



**2024**  
 Spectrum & Leased Capacity,  
 2x200G (+200G +400G) Express,  
 2x100G Protect,  
 Multiple rings\*,  
 SDN infrastructure,  
 Deep programmability,  
 Highly instrumented,  
 RedClara and RENS.

# 2025 SA3CC Agenda

- Tuesday, May 6, 2025
- 9:00 - 9:10 Welcome
- Session I: Science Requirements & Activities Updates
  - 9:10 - 10:30 Project Updates (part 1)
  - 10:30 - 11:00 Refreshment Break
  - 11:00 - 12:20 Project Updates (part 2)
- 12:20 - 13:50 Lunch sponsored by REUNA
- 13:50 - 15:10 Project Updates (part 3)
- 15:10 - 15:40 Refreshment Break
- 15:40 - 16:20 Project Updates (part 4)
- 16:20 - 16:40 Open Discussion
- 17:00 Shuttle bus pick up from the Recinto back to the Hotel Club La Serena
- 19:30 - 21:30 TBD Social Dinner

- Wednesday, May 7, 2025
- 9:00-9:10 Welcome
- Session II: Network Provider updates
  - 9:10 - 10:30 Network infrastructure and services updates (part 1)
  - 10:30 - 11:00 Refreshment Break
  - 11:00 - 12:20 Network infrastructure and services updates (part 2)
- 12:20 -13:50 Lunch sponsored by REUNA
- 13:50 - 15:10 Network infrastructure and services updates (part 3)
- 15:10 - 15:40 Refreshment Break
- 15:40 - 17:00 Network infrastructure and services updates (part 4)
- 17:00 - 17:20 Open discussion
- 17:20 Shuttle bus pick up from the Recinto back to the Hotel Club La Serena
- Dinner on your own. See AmLight 2025 SA3CC website for suggestions

# AmLight Express and Protect Network

- AmLight Express and Protect (AmLight-ExP) interconnects the U.S. to key aggregation points in South and Central America, and Africa (Brazil, Chile, Panama, and Cape Town)
- AmLight-ExP is a 5-year award (OAC-2029283) from the U.S. National Science Foundation (NSF) to FIU, USC-ISI and Vanderbilt University
- Cooperative and collaborative partnerships with Rednesp, RNP, CLARA, REUNA, AURA, Vera Rubin Observatory, Florida LambdaRail, and Internet2



# About AmLight

- AmLight is purpose-built to support the major facilities and their science requirements
  - 2.1+ Tbps of international connectivity
  - AmLight will reach 5+ Tbps of total capacity by 2025
  - Dark fiber, spectrum, waves, and lit services
- AmLight supports experimentation and innovation
  - Deeply programmable across the network stack, using Software-Defined networking technologies
  - Programmable Control Plane and Data Plane
  - Testbeds to support experimentation and to foster innovation
- AmLight is highly-instrumented for deep visibility
  - Measures network phenomena that could impact network services
    - E.g. microbursts or signal loss
  - Collects fine-grained network measurement data to interpret the state of the network
    - 96TB of network telemetry data per day
  - Performs self-management operations to maintain network services
    - E.g., responding to SLA requirements

