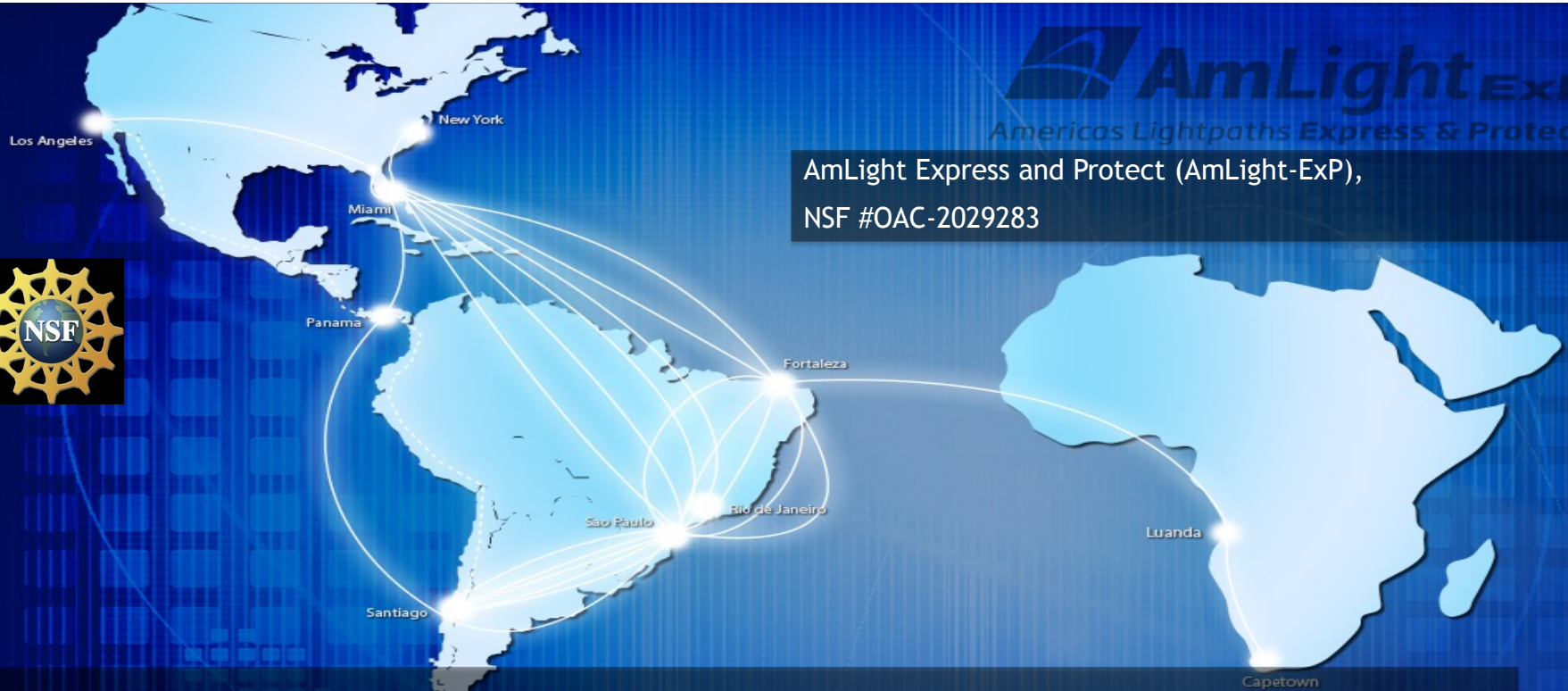




Americas Lightpaths Express & Protect

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

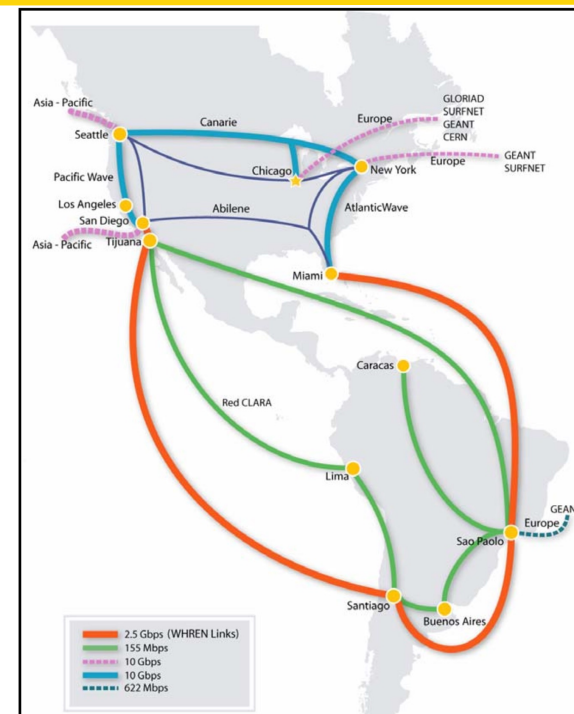
Chris Smith (NOAO/CTIO) & Jim Kennedy (Gemini Observatory)

SAACC Meeting January 10, 2012

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

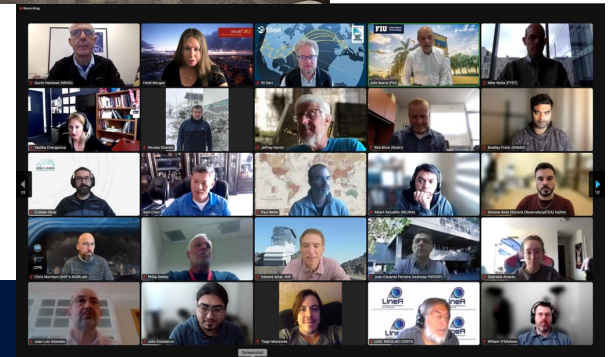
219th AAS Meeting — Austin, TX

January 10, 2012 5:30 – 8:30 PM



About SA3CC

- SA3CC is in its 14th 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



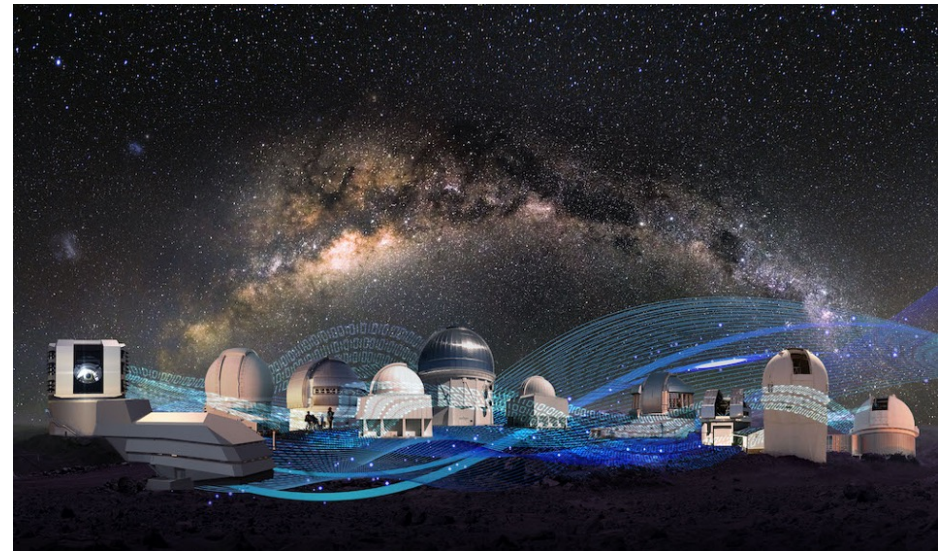
2024 SA3CC Meeting

- 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

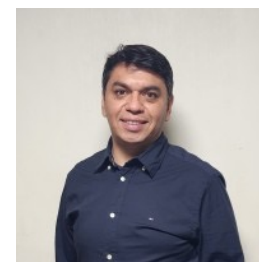
2025 SA3CC Program Committee



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

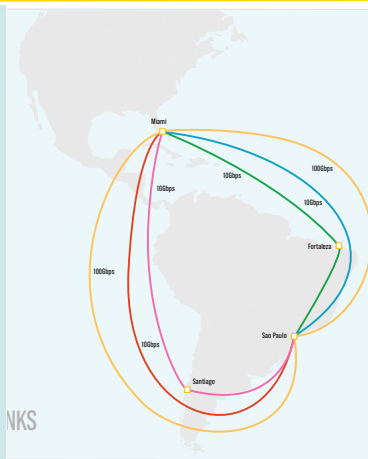
More slides follow

Evolution of AmLight: 2010 - 2024



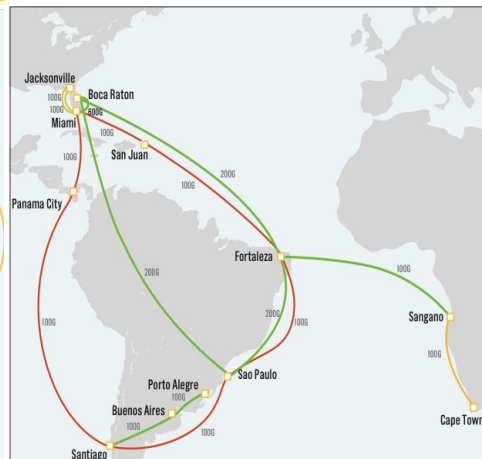
2011

Leased Capacity,
2x10G East
1x1G Central
1x10G West,
Connections to
RedClara and RENs.



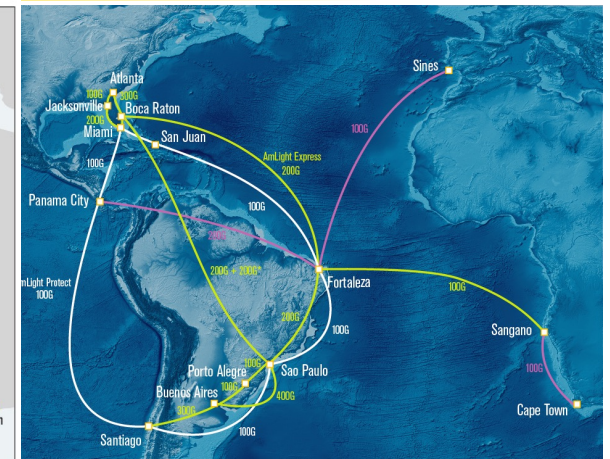
2016

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

