O. G. L. E. 25 YEARS

Miguel Roth
GMTO Chile

OGLE 25

- An honor to be here.
- Hard to believe that it is already 25 years (How young we were!)
- A short (unofficial) history of OGLE
- Evolution of our mountain and update of GMT

The late 80's

- This is not a history class, but we need to remember that things in Europe changed drastically toward the late 80's:
- Gorbachov's Glasnost and Perestroika,
- CORRECTION!
- Solidarnosc
- Berlin Wall
- End of the Soviet Union

OGLE 25

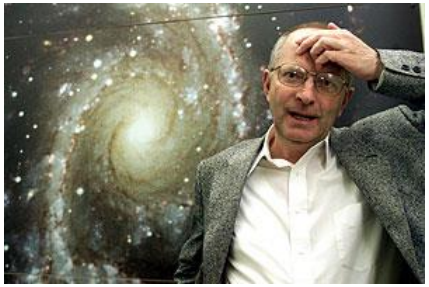
The long Polish astronomical tradition survived and revived after WWII and especially in the late 80’s

Nikolaus Kopernikus

Johannes and Elizabeth Hevelius

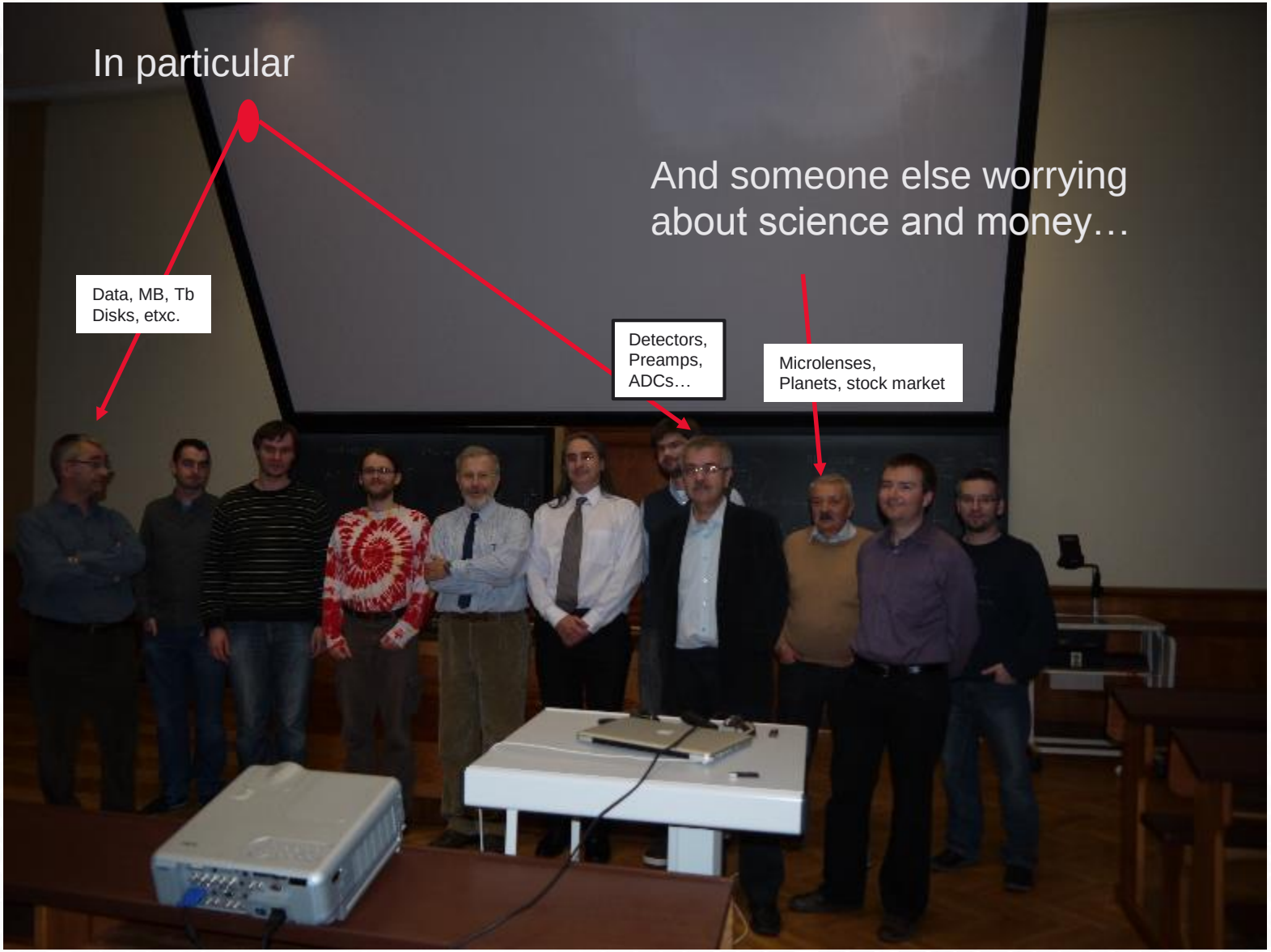
So this is a tribute to…

- **An amazing group of people, an incredible history of cultural resilience and success.**
- **The Warsaw – Carnegie connection (as I witnessed it) started somewhere and somehow with a Toronto component.**
- **Essential people:**
- **Dr. Bohdan Paczynski**
- **Dr. Leonard Searle**
- **Dr. Marcin Kubiak**
- **And continues**



with a new generation…

Some of the people



OGLE 25

- **Where it all started at Las Campanas.**

- **The Swope 1 m telescope.**

Canadian house
But didn't need to
Change the colors to
Become the Polish house

The early years…

- …saw Andrej, Michal and Marcin developing hardware and software, and observing on the 1 meter Swope telescope. Wojtek and Beata were frequently there too.

- Long nights and hard struggle.
- While we all know that from an observatory's perspective, life is easiest without users, the Warsaw group was remarkably self sufficient.
- Characteristics of the Warsaw team:
  - They learned Spanish at an amazing speed,
  - were excellent friends on the mountain and, since we had almost no IT support at LCO at the time (the term IT was developed much later), they frequently rescued us. (And Casa Polaca was always a fun place to visit)
  - Patiently spent weeks and weeks on the mountain rotating among them.

BUT…

…they had a PLAN:

AGREEMENT

FOR ERECTION AND OPERATION OF **1.3-METER TELESCOPE IN CHILE.**

THIS AGREEMENT made and entered into as of the **1st day of January, 1995**, by and between CARNEGIE INSTITUTION OF WASHINGTON (hereinafter "Carnegie"), WARSAW UNIVERSITY OBSERVATORY, Poland (hereinafter "Warsaw"), and PRINCETON UNIVERSITY, etc.

Carnegie is willing to permit warsaw (sic) and Princeton to occupy Observatory property and to construct and operate the Station on the terms hereinafter set forth.

...The term of this Agreement shall be from the date hereinabove set forth to December 31, 2004, subject to extension or earlier terminatjon (sic) as hereinafter set forth.

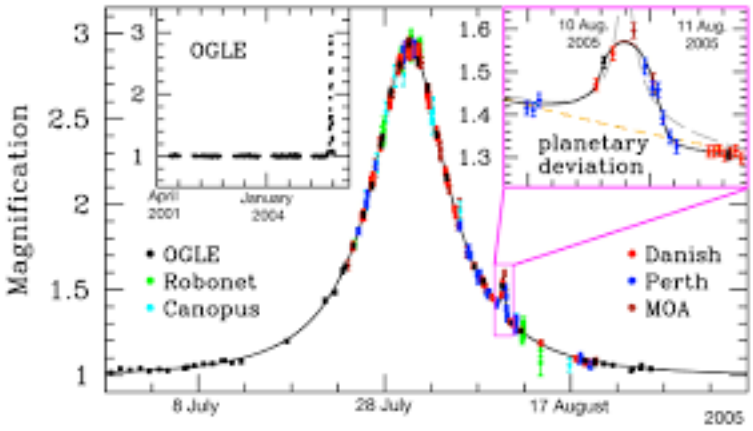
b) Carnegie **waives rent for the property** occupied for the Station and any charge for Observatory infrastructure costs attributable to its construction and operation. All parties recognize that by doing so, Carnegie is and will be making a significant unrecompensed economic contribution to the Station and the Program.

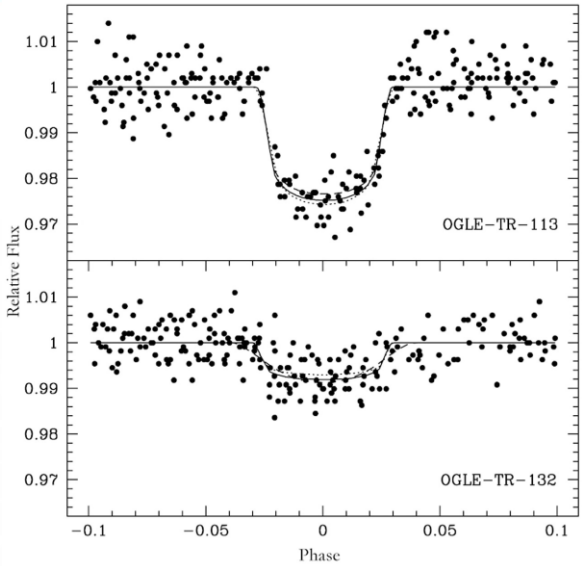
And the result of the plan:

The U. of Warsaw 1.3 meter Telescope on the famous “ridge” that runs from the Dupont telescope to the Magellans

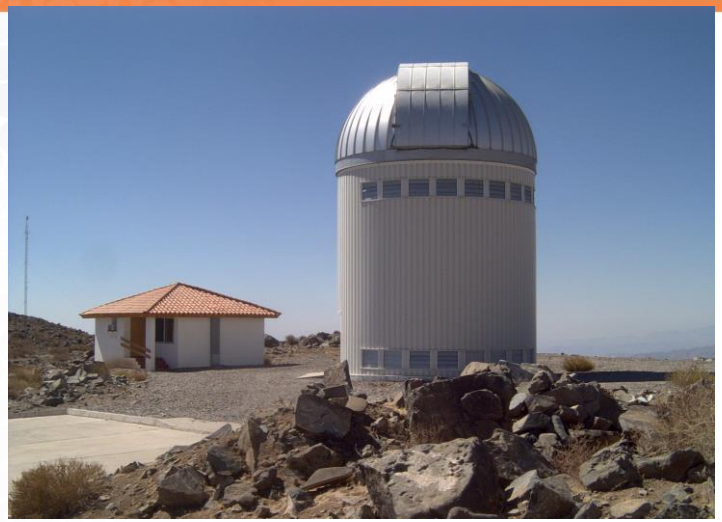
2 well known characters trying to hide behind a telescope.

Two beautiful examples:





- **The Early Warning System (EWS)** was designed for detection of microlensing events in progress and successfully implemented during the first phase of the OGLE experiment (Udalski *et al.* 1994, *Acta Astron.*, 44, 227). During 1994 and 1995 observing seasons, this system detected 8 events. On May 6, 1998, the EWS system was reimplemented for the second phase of the OGLE experiment: OGLE-II. In 1998-2000 observing seasons of OGLE-II, about 170 microlensing events were discovered by EWS



This was published in 2009 at the official web site:

- The Optical Gravitational Lensing Experiment (OGLE) is the most prestigious observational project of the Polish astronomy. The main scientific goals of this large scale sky survey include the search for extrasolar planets, studies of the dark matter with microlensing phenomena, studies of the Galactic structure and analysis of different time scale variability of hundred millions regularly observed objects. Scientific results of the OGLE project are impressive. In **1993 the OGLE project announced the discovery of the first microlensing events**. Since 1992 (when the OGLE project began regular observations) up to **May 2009 (when the third phase OGLE-III ended) the OGLE project detected:20 new extrasolar planets**

- more than 4000 microlensing events

- several hundred thousands new variable stars

In January 2005, a new agreement is signed

- **AGREEMENT FOR THE CONTINUED OPERATION OF A 1.3-METER TELESCOPE IN CHILE**

….

B- Warsaw has been operating a 1.3-meter optical telescope at the Observatory (hereinafter "the Station") over the period 1995- 2004, during which time it has conducted the Optical Gravitational Lens Experiment (hereinafter "OGLE"). This experiment has made fundamental contributions to the field of synoptic astronomy, including studies of gravitational lenses, extrasolar planets, and supernovae. OCIW desires to extend and further this collaboration with Warsaw.

… *Warsaw is willing to pay its share of mountain operating expenses, including consumable items and a proper share of the mountain infrastructure costs.*

And the free ride comes to an end as a consequence of new times, full accounting and partners.

Fortunately Warsaw is now in a position to cover these expenses and the project continues with the same intensity until now when we celebrate 25 years of it’s existence.

And while OGLE was “ogling” along

… discovering microlenses, exoplanets and anything else that varies, improving their telescope and their camera, other things were also happening at Las Campanas:

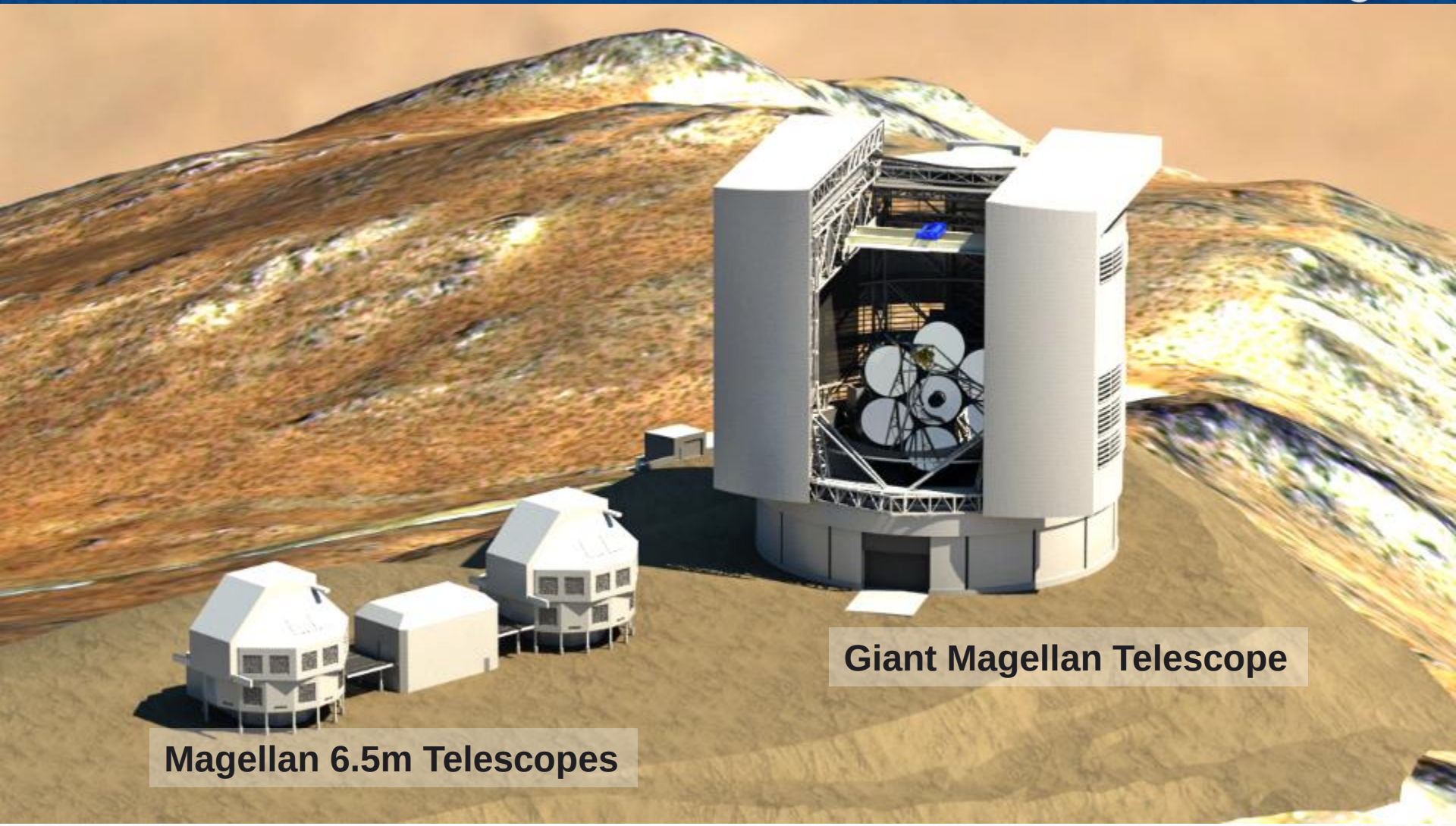
The Magellan telescopes:

- **HAT South**
- **ASAS**
- **The beginning of GMT**

Last time in Warsaw, November 2013. Several things have happened since.

GIANT MAGELLAN TELESCOPE

The Challenge



Initial (naive) work on the mountaintop

Evolution of the mountaintop

Evolution of the mountaintop

Infrastructure ready to start work on the mountaintop: Lodging, power water, roads and communication.

- 4 mirrors in various stages of completion
- Ground breaking
- RFP for the telescope structure
- New President
- Digging holes into the mountain

Link to video: https://ogle25.astrouw.edu.pl/presentations/OGLE25_MiguelRoth_video1.mp4

“Rock ringing” (aka groundbreaking)

GMT Founder Institutions

Korea

Smithsonian Institution

Sao Paulo, Brazil

HARVARD UNIVERSITY

Texas A&M

Australian National University

CARNEGIE SCIENCE

Arizona

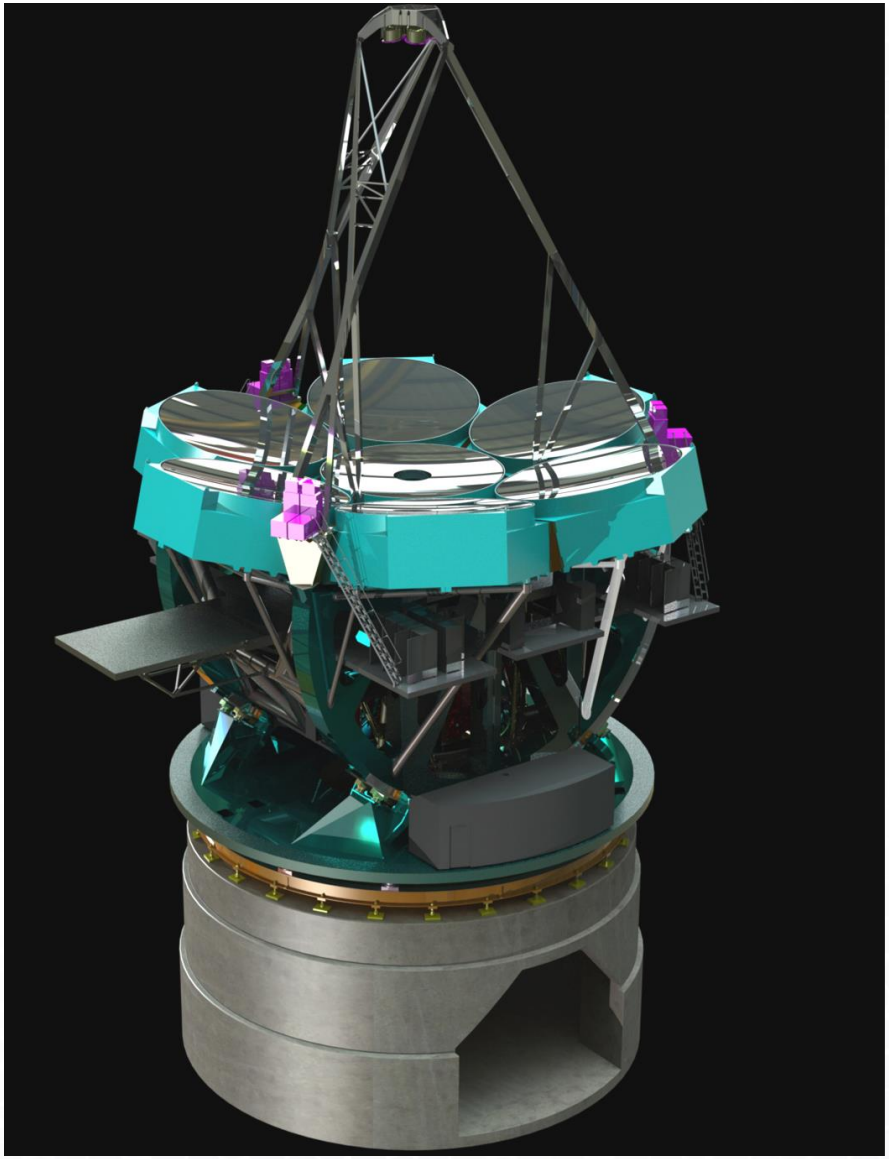
THE UNIVERSITY OF TEXAS AT AUSTIN

THE UNIVERSITY OF CHICAGO

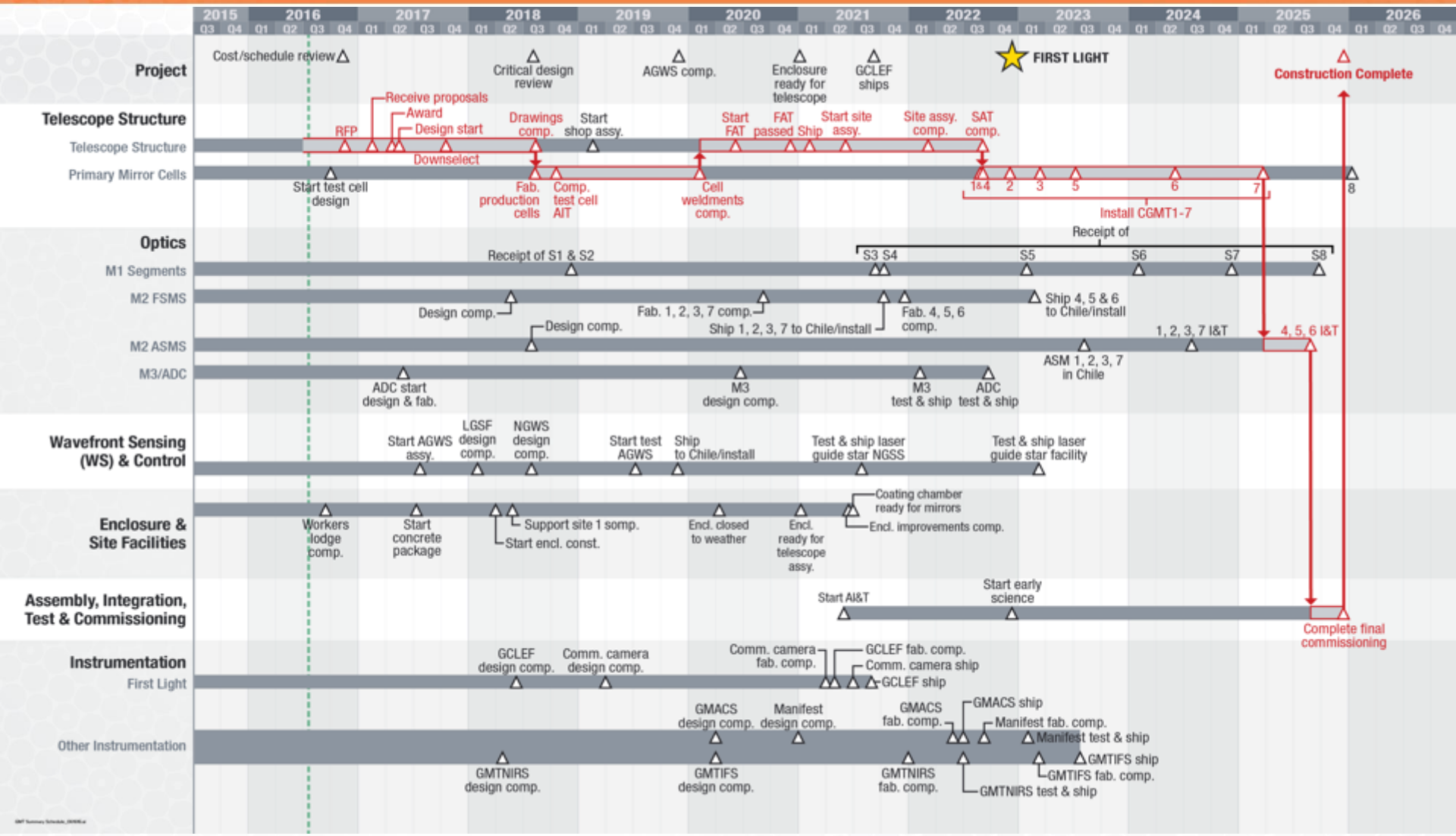
New partners are welcome

Mirror #1
Mirror #2

Just How Tall is the GMT?



Summary Schedule
(no schedule margin included)



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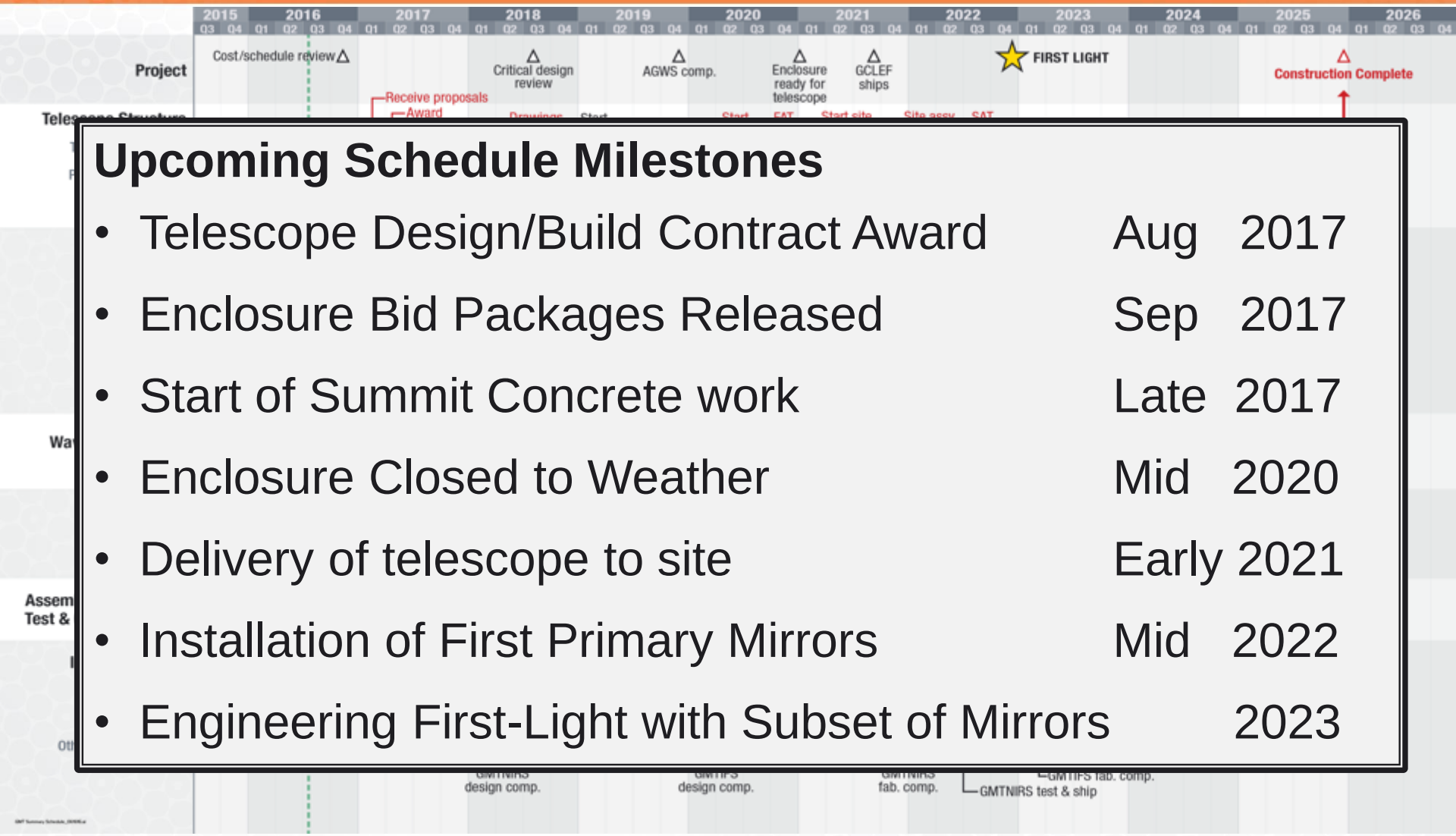


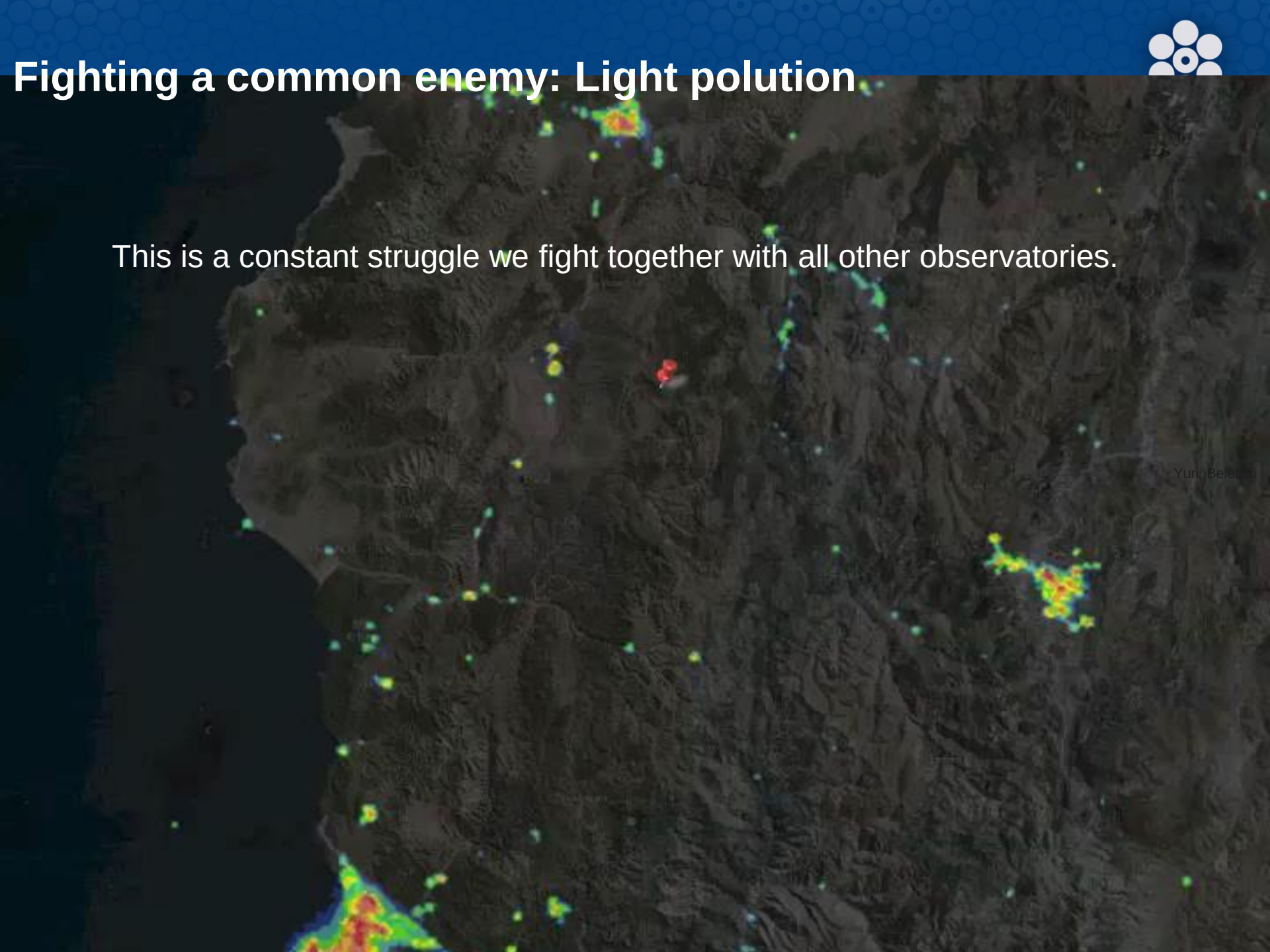
Upcoming Schedule Milestones

- Telescope Design/Build Contract Award — Aug 2017
- Enclosure Bid Packages Released — Sep 2017
- Start of Summit Concrete work — Late 2017
- Enclosure Closed to Weather — Mid 2020
- Delivery of telescope to site — Early 2021
- Installation of First Primary Mirrors — Mid 2022
- Engineering First-Light with Subset of Mirrors — 2023

Link to video: https://ogle25.astrouw.edu.pl/presentations/OGLE25_MiguelRoth_video2.mp4

Fighting a common enemy: Light polution

This is a constant struggle we fight together with all other observatories.



Fighting a common enemy: Light polution

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Congratulations OGLE and Thank You!

To sweeten the previous slide…