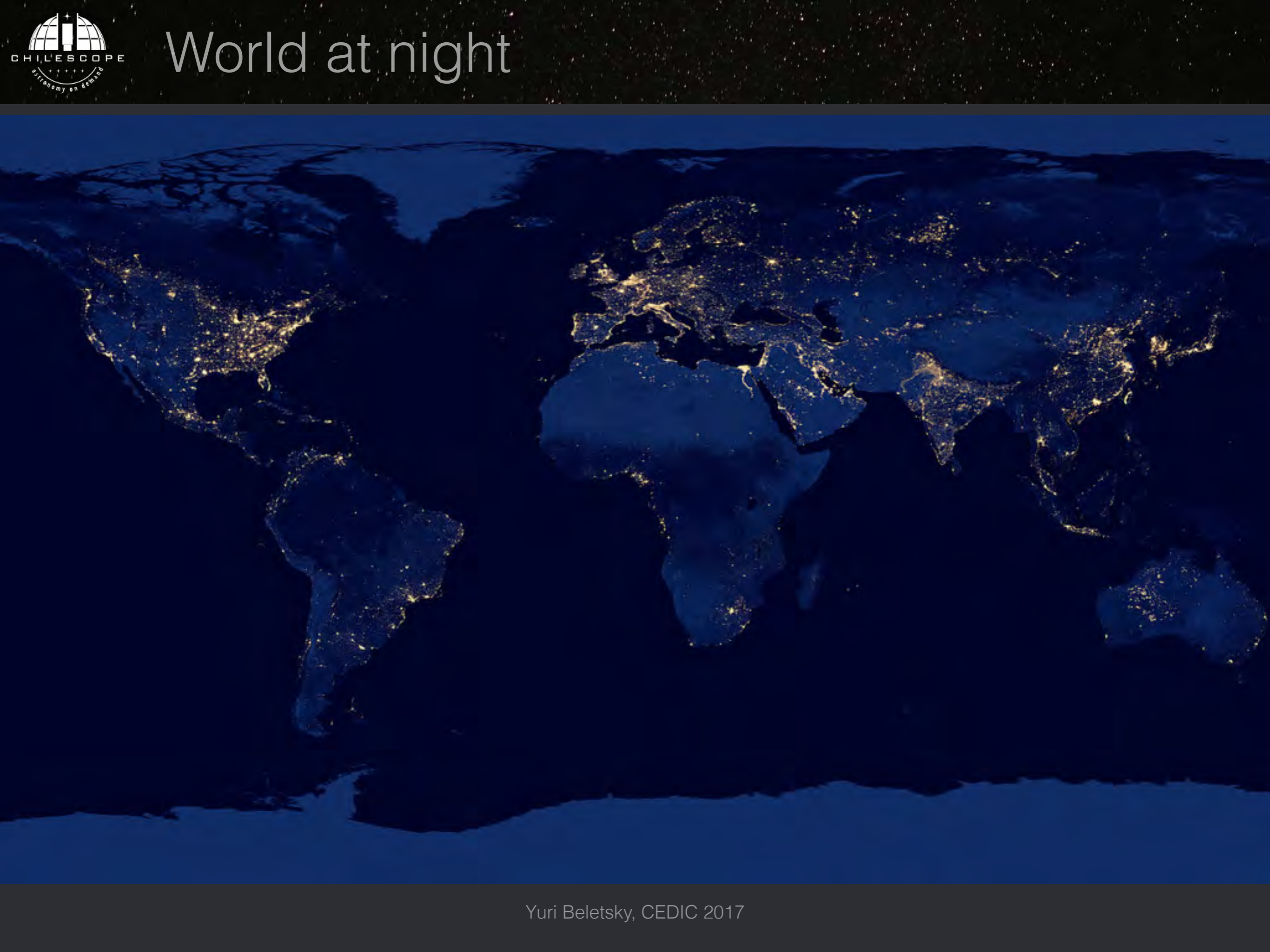




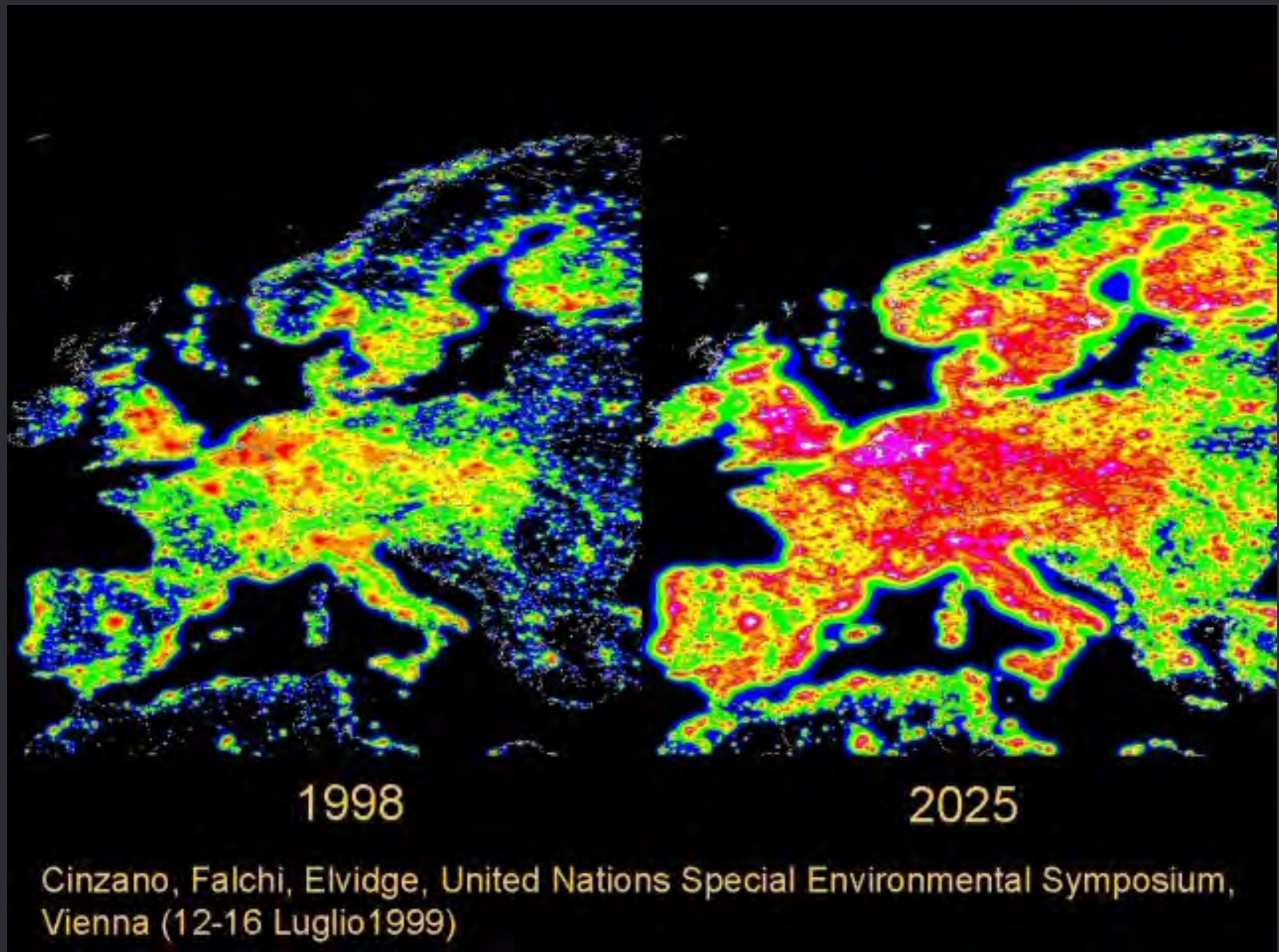
Chilescope

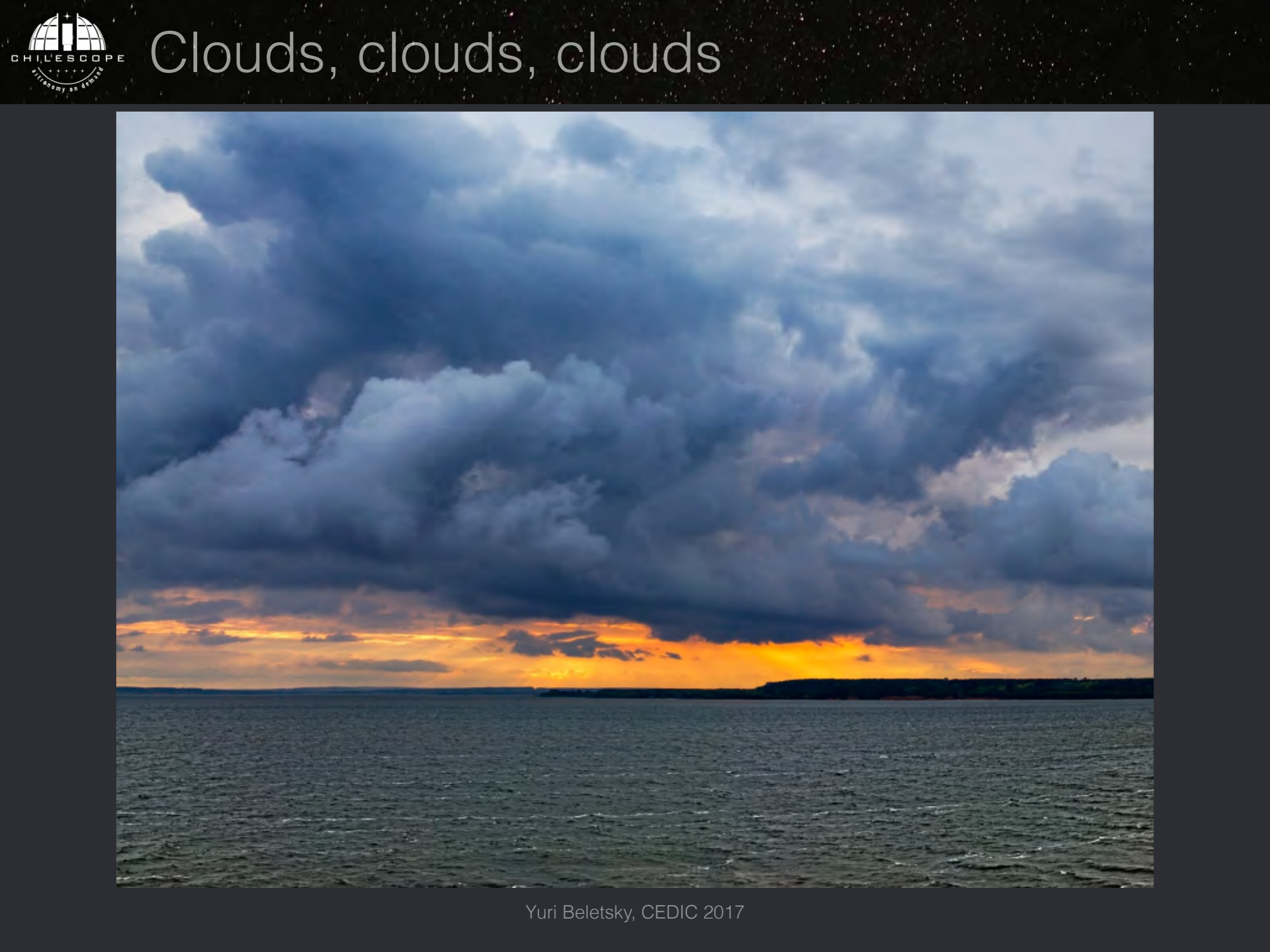
remote observatory for astrophotographers



World at night

Light pollution





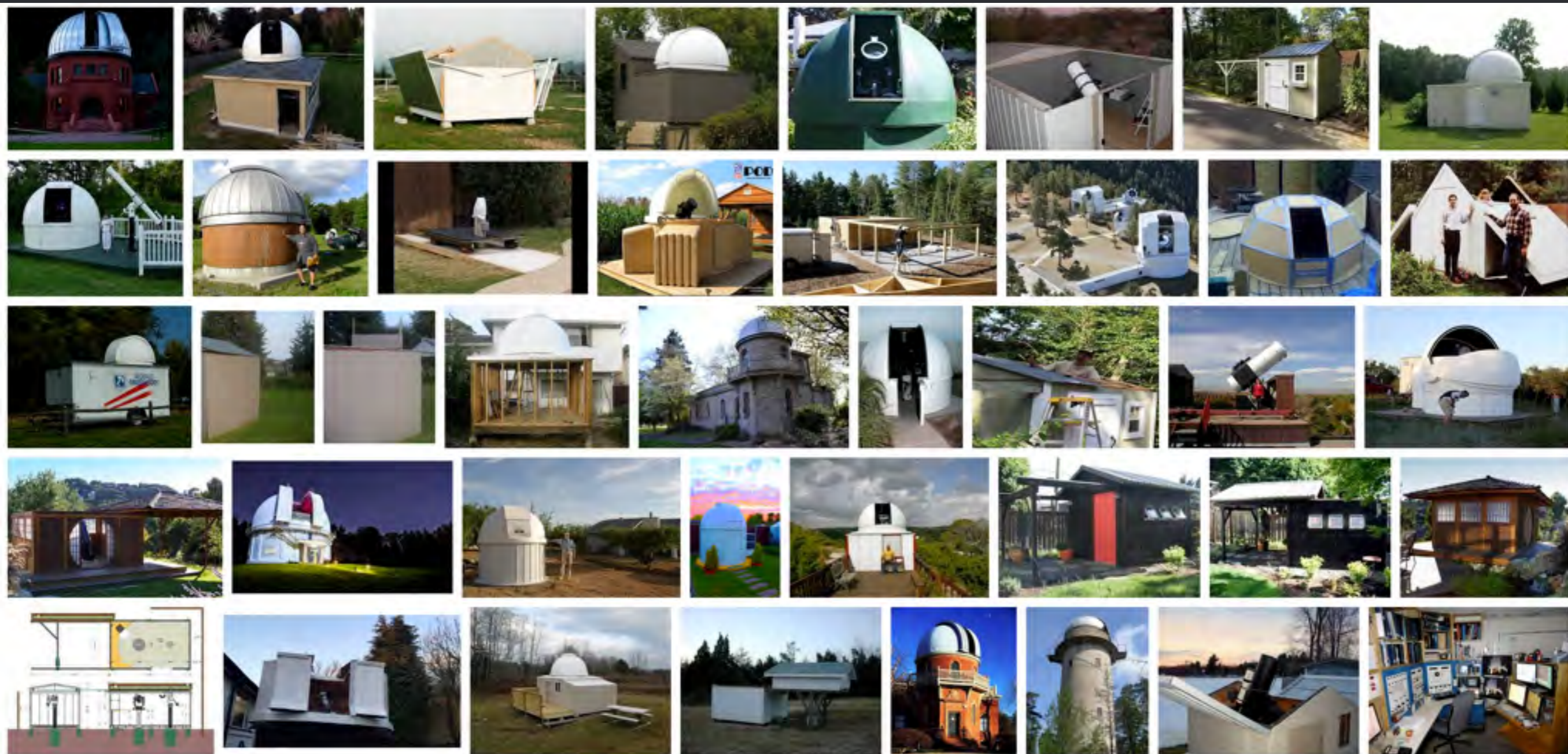
Clouds, clouds, clouds



Yuri Beletsky, CEDIC 2017



Backyard telescopes





What we want



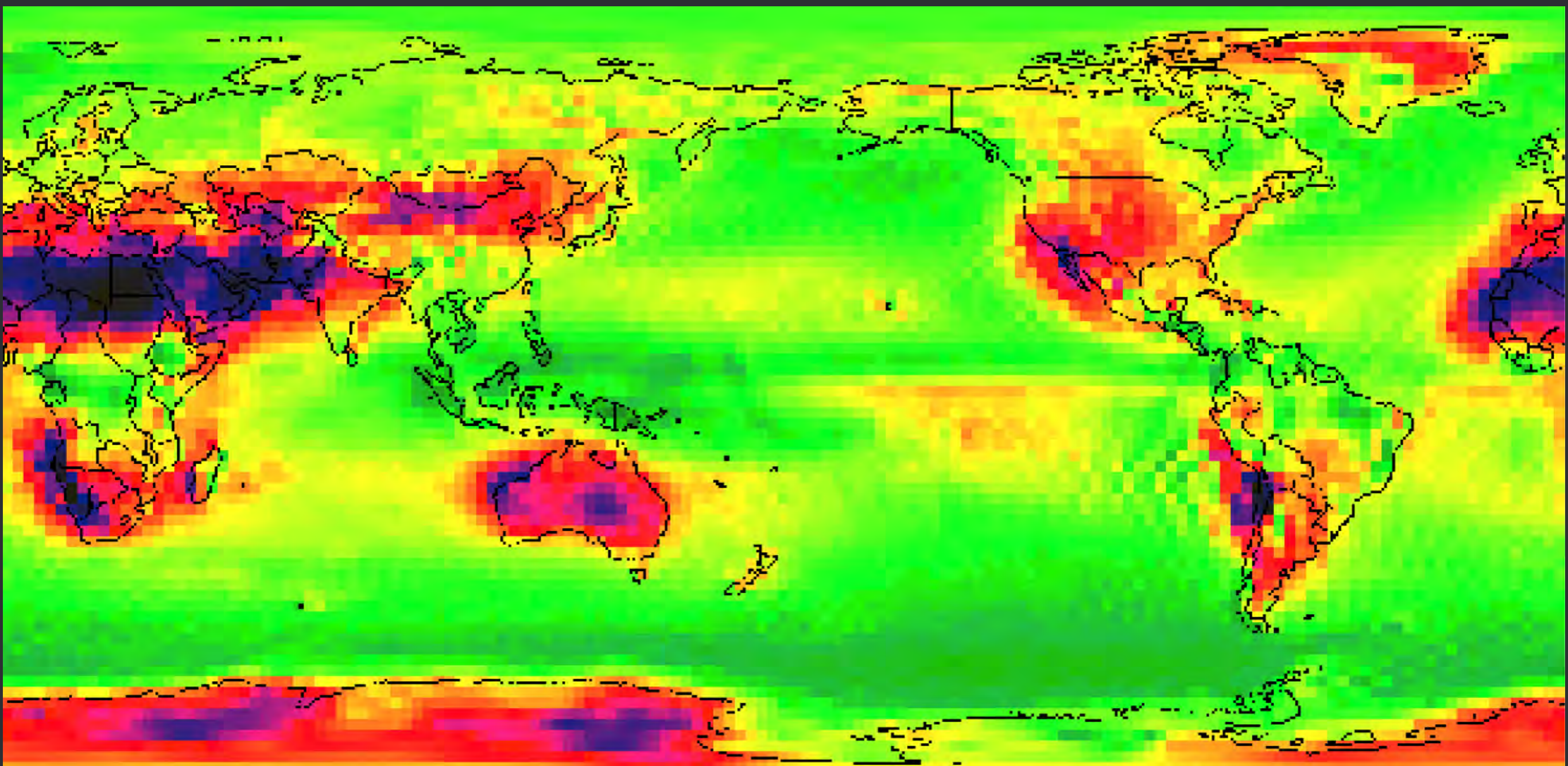
What we usually get



Going remote !



Cloud coverage



Site selection

Altitude
2.5x2.5 degree average
select: [1000,4000]m

AND

PWV
1948-2002 average
select < 10 mm H₂O

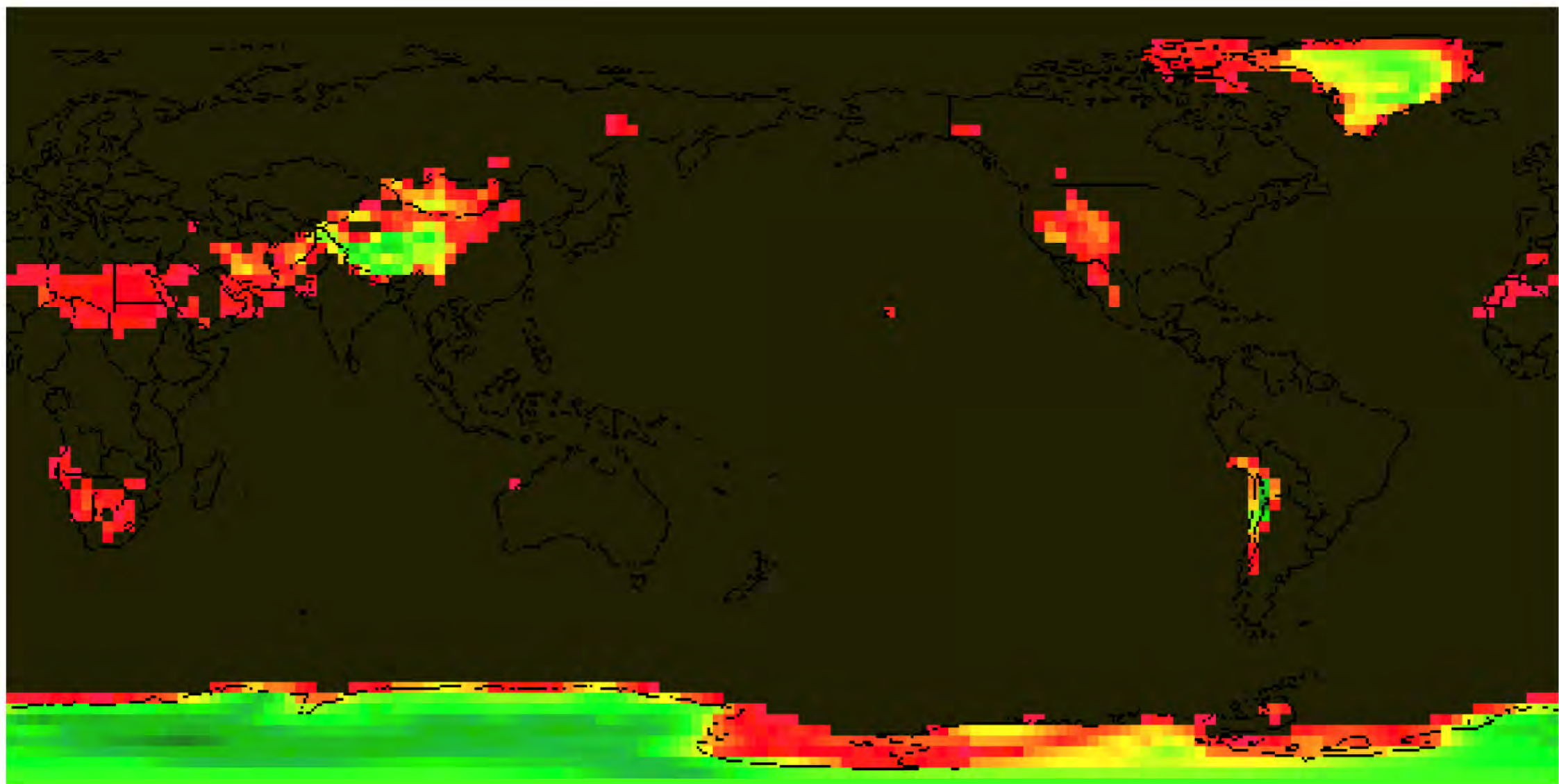
AND

Total Cloud Cover
1979-1993
Select Average < 40%

Weight

Weight

Weight





Remote observatories

However, not all remote
observatories are equal



What we want



What we usually get

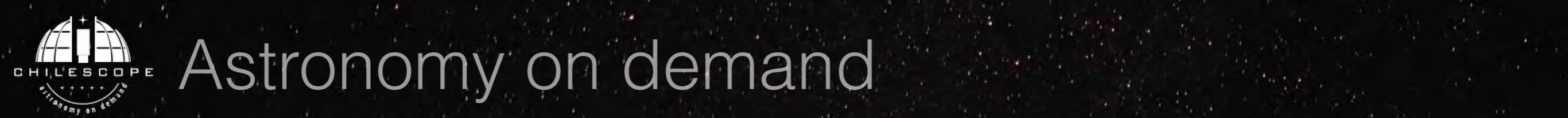


Chilescope

remote observatory for astrophotographers

<https://www.facebook.com/chilescope>

www.chilescope.com



Astronomy on demand

The main goal of the "CHILESCOPE" project is to provide astronomical society (both amateur and professional) with affordable access to high quality equipment under dark sky under sub second seeing conditions in the S



Southern sky

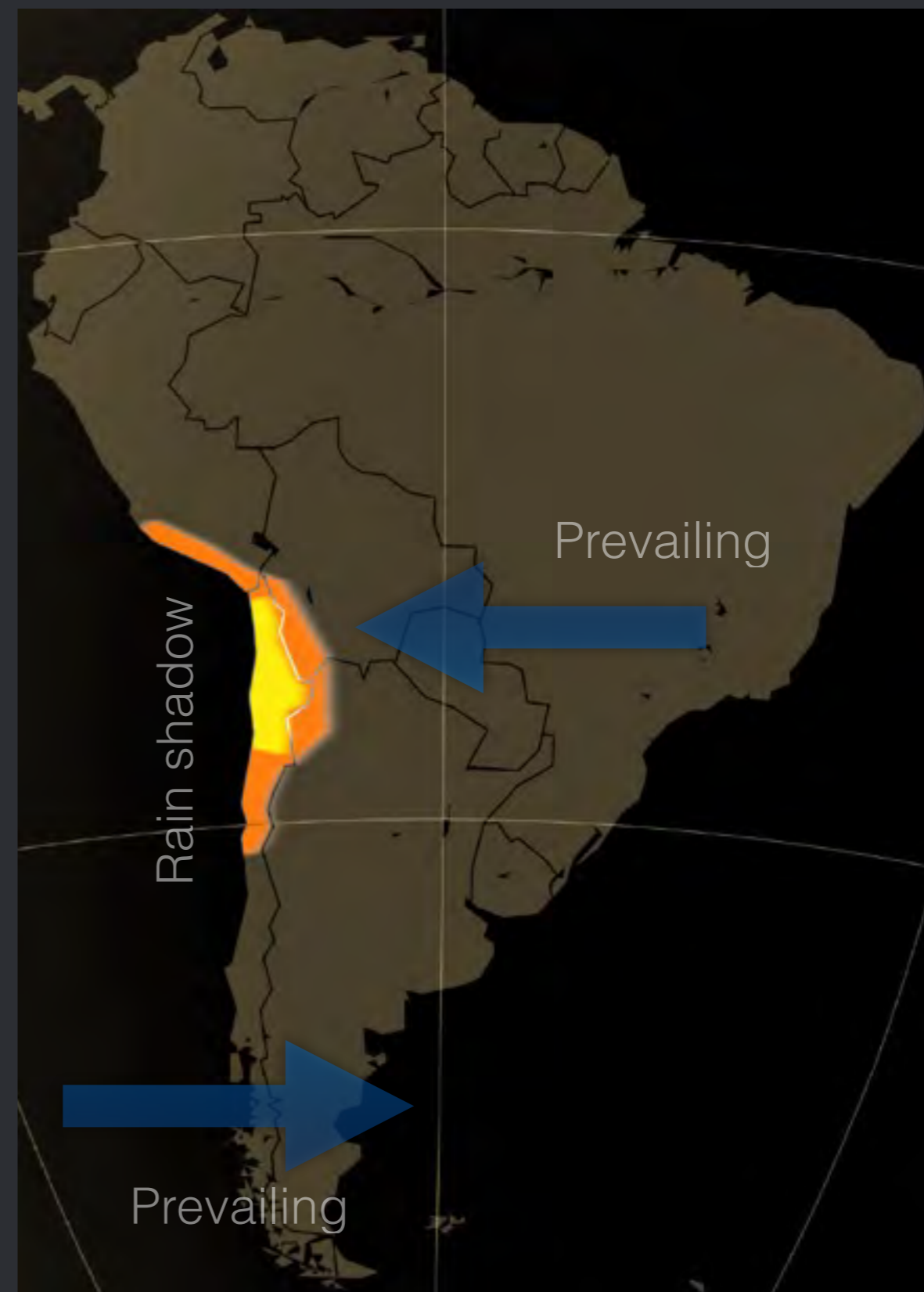


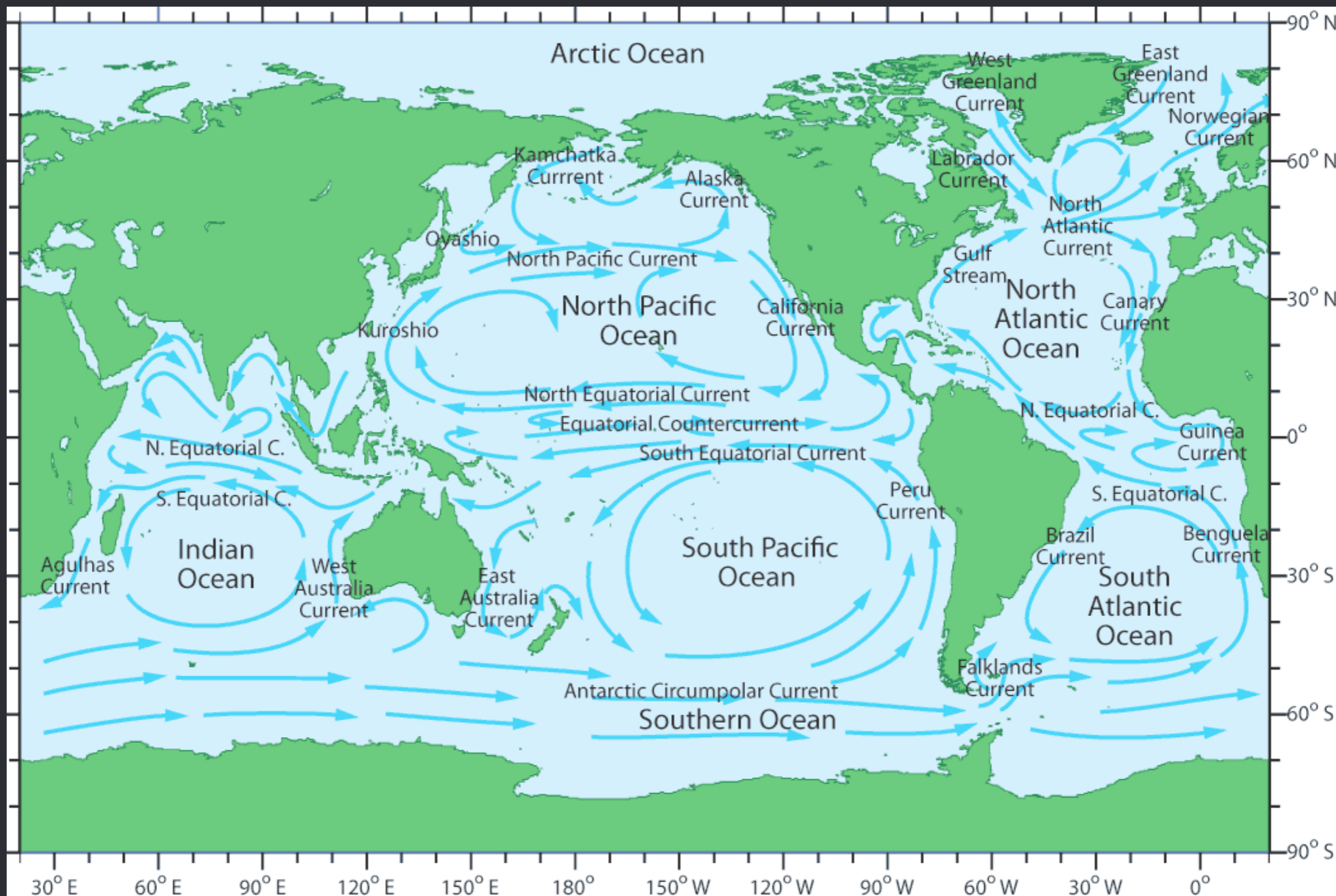
Yuri Beletsky, CEDIC 2017



Southern sky

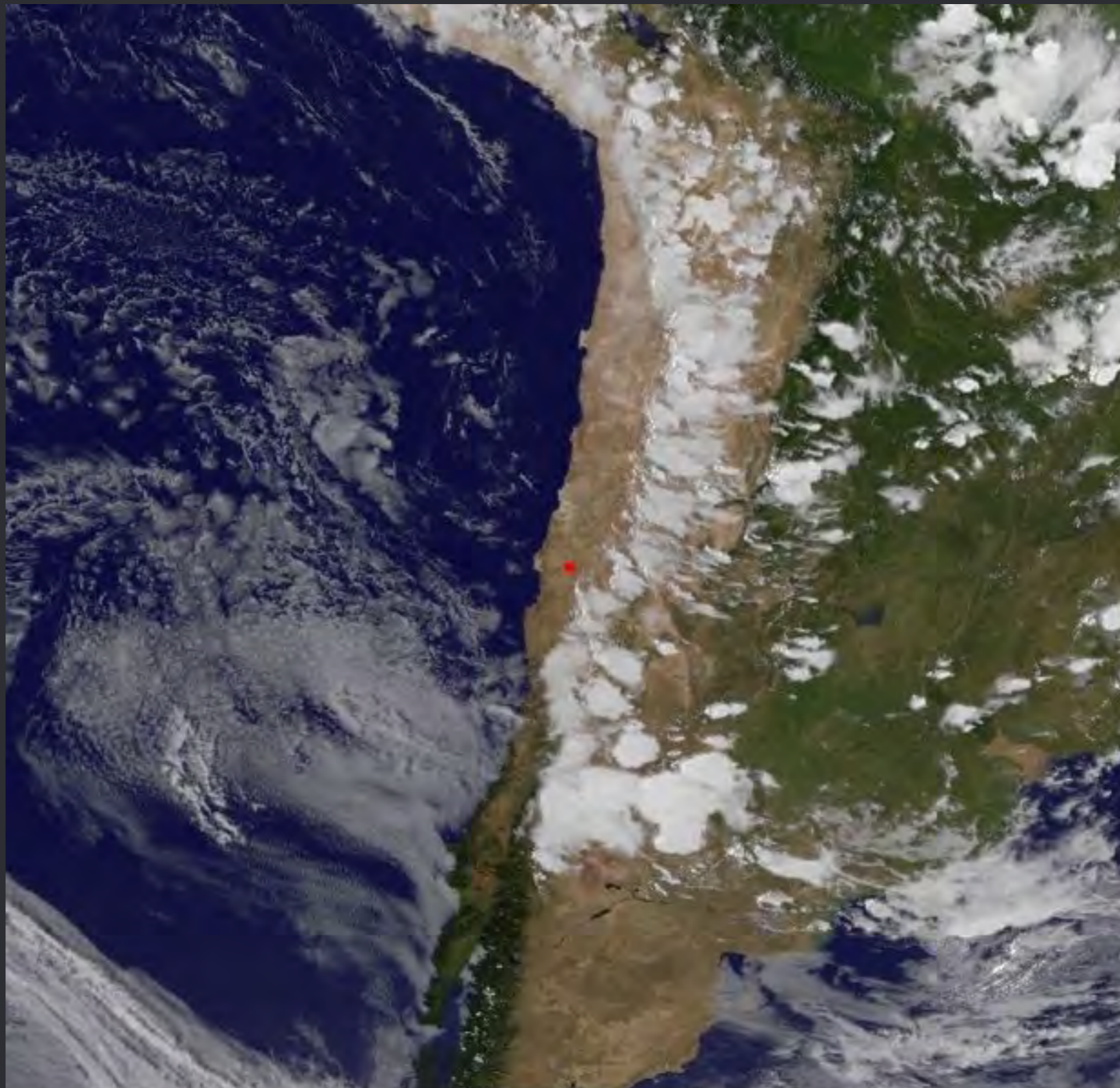
Atacama desert







Cloud cover



170224 2045 UTC

NASA GSFC GOES Project

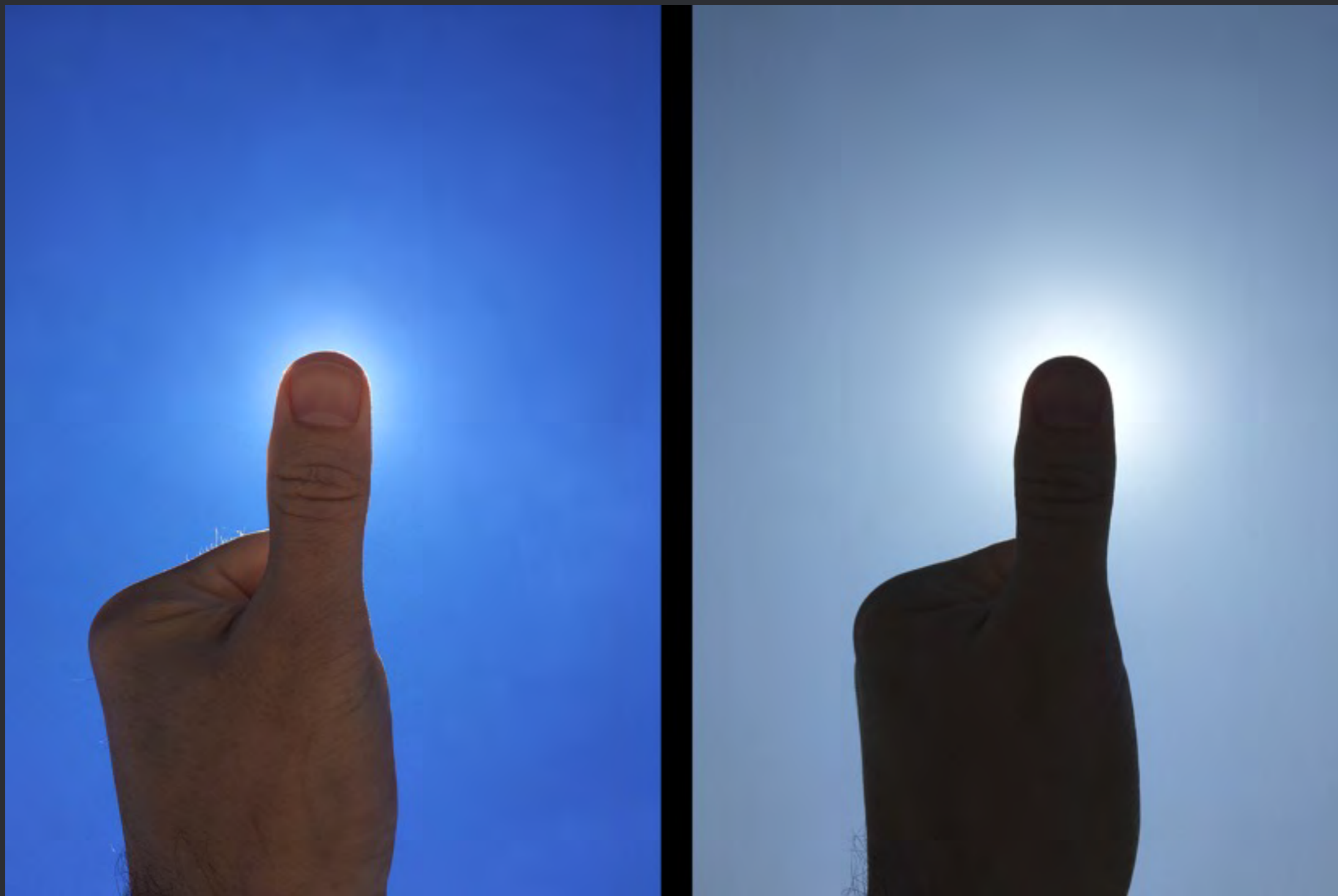
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Sky transparency

Atacama

Hong Kong





Site selection



Site selection

Great conditions !
Nightmare logistics ...





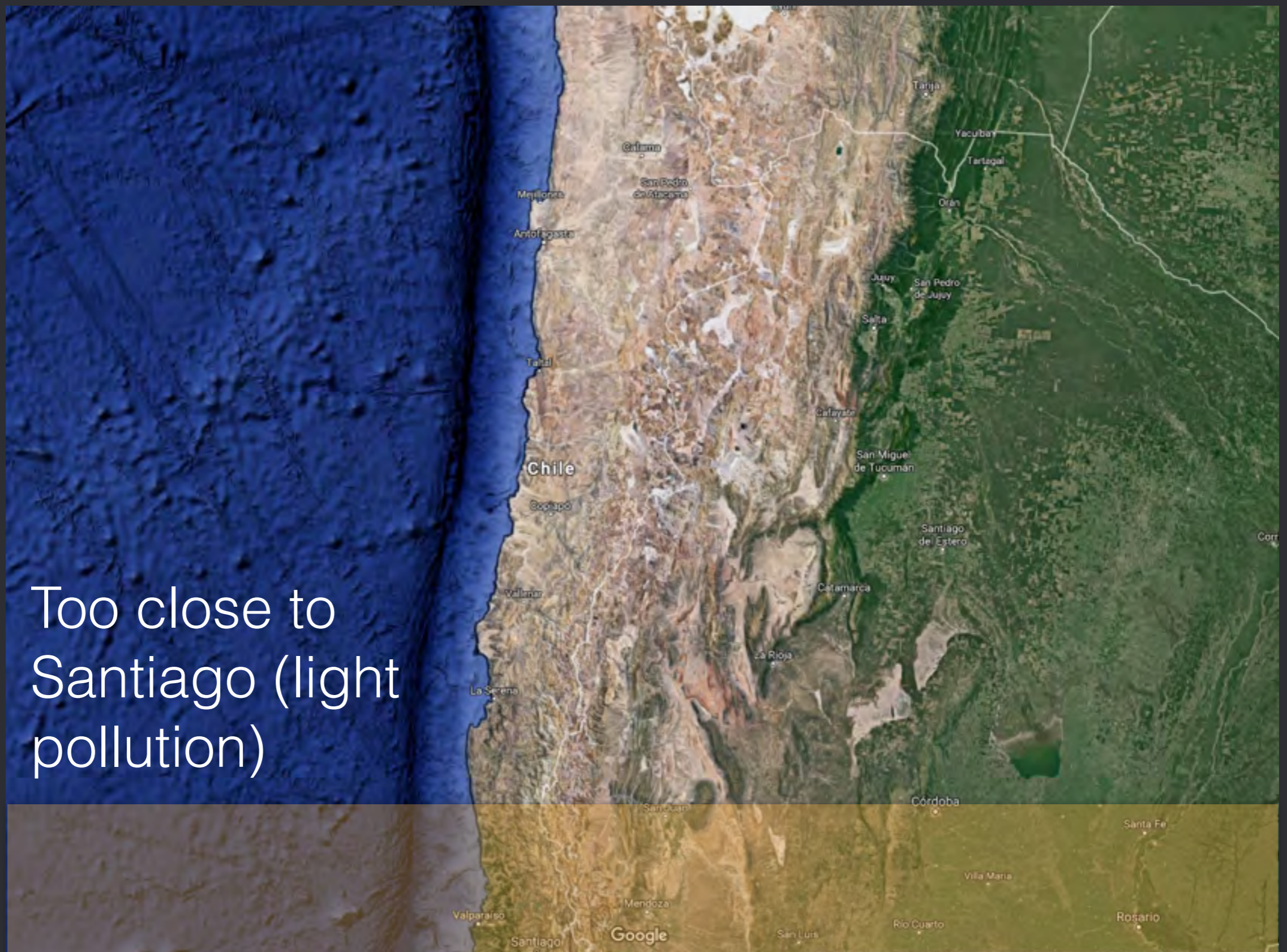
Site selection



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Site selection

Too close to
Santiago (light
pollution)



Site selection

Great conditions
Local infrastructure



Site selection



Gemini South observatory

Site selection - typical landscape



Site selection - looking for a mountain



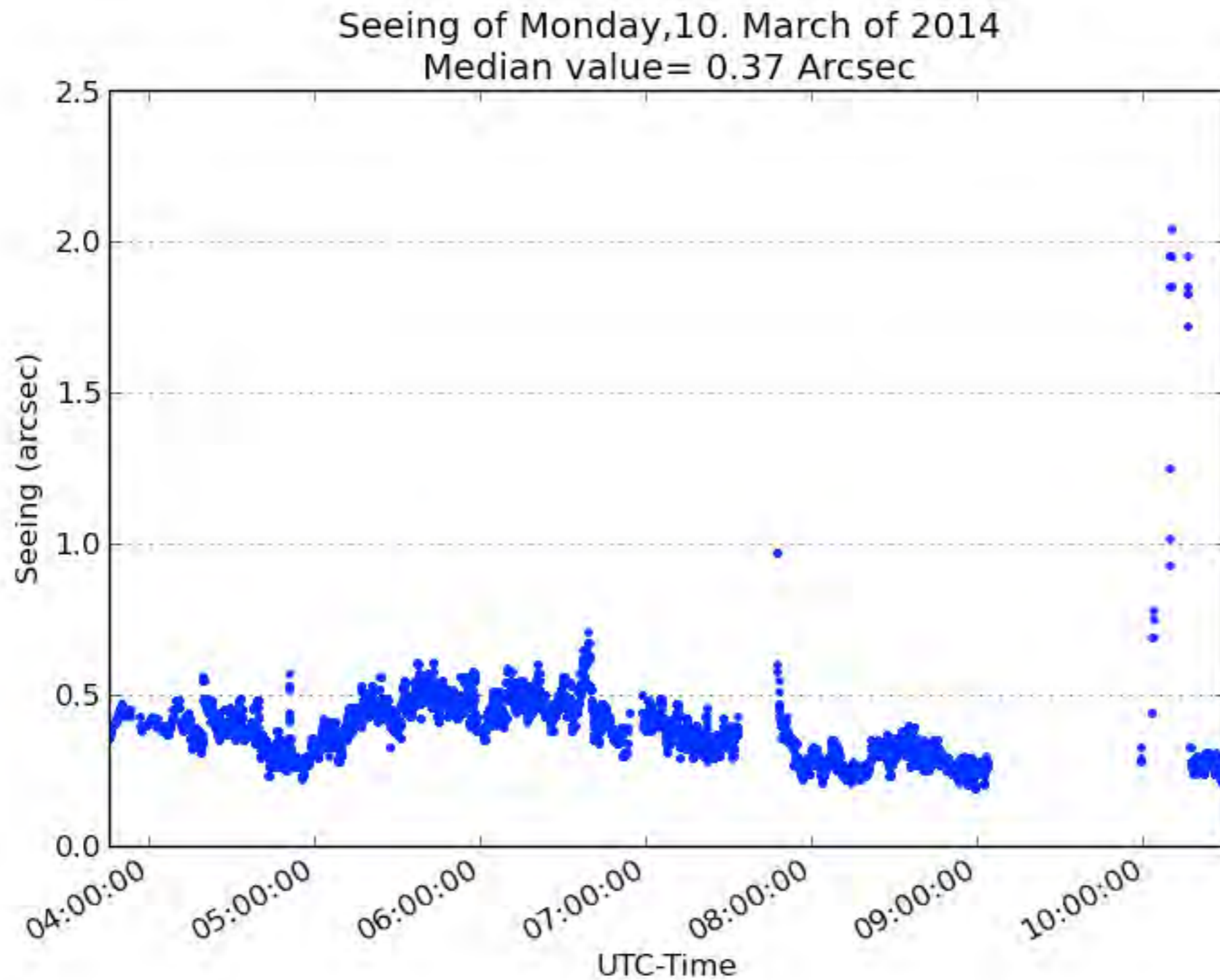
Site selection - looking for a mountain



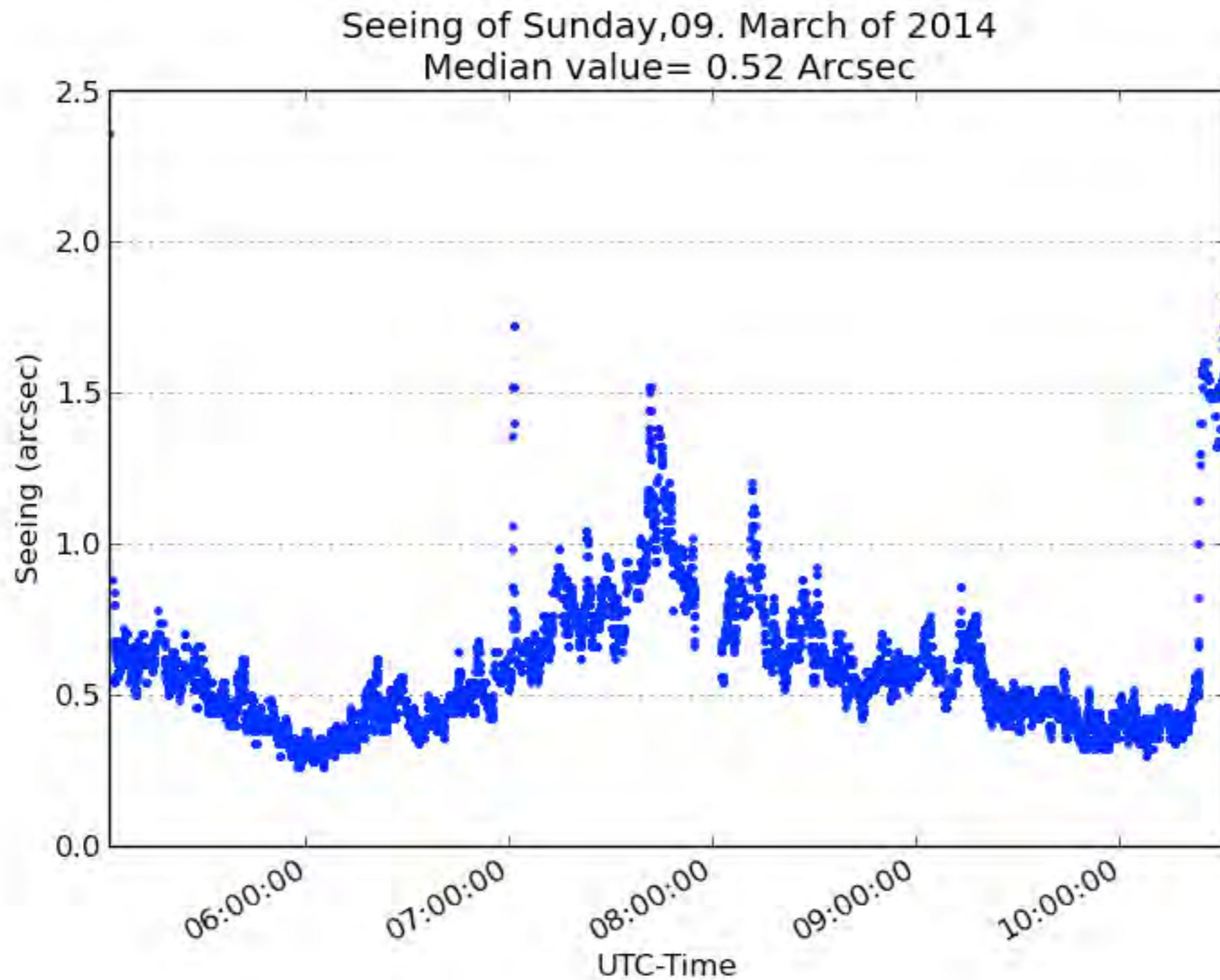
Seeing measurement campaign



Seeing measurement campaign



Seeing measurement campaign



Coordinates:

Lat: -30°

Lon: 70°

Alt: 1564m

Driving distance
from La Serena
airport: 2.5 - 3 h

Excellent road (up
to valle Hurtado),
then unpaved road
to the site



The





The



Equipment



ASA



2 x



Construction



Yuri Beletsky, CEDIC 2017









Construction









Solar power







ASA RC-1000



ASA RC-1000





ASA RC-1000

OPTICS

- Optikdesign by Dipl. Phys. Philipp Keller
- Optics by LOMO
- Ritchey Chretien f/8
- Diffraction limited field of view 41 arc minutes (with corrector)
- Image quality 80% < 0,4 arc sec
- Optical quality better than L/24 RMS wave front
- A1+SiO2 coating on all mirrors

OPTICAL TUBE ASSEMBLY:

- Open Truss Tube
- Lasalle main mirror support
- Focus Azimuthal: 2 x Nasmyth Focus
- Motorized main mirror covering (computer-controlled)
- Motorized secondary mirror focuser (computer-controlled)

MOUNT ALT-AZIMUTHAL:

- Forkmount
- Direct Drive Torque motors with 400NM Torque
- Slew rate - more as 10 degree per second
- Renishaw Resolute™ Encoders with absolute Position Readout, no homefind necessary
- Software: Autoslew
- Pointing: < 5" RMS at >20° altitude
- Tracking performance without guiding < 0,4" RMS/300 seconds



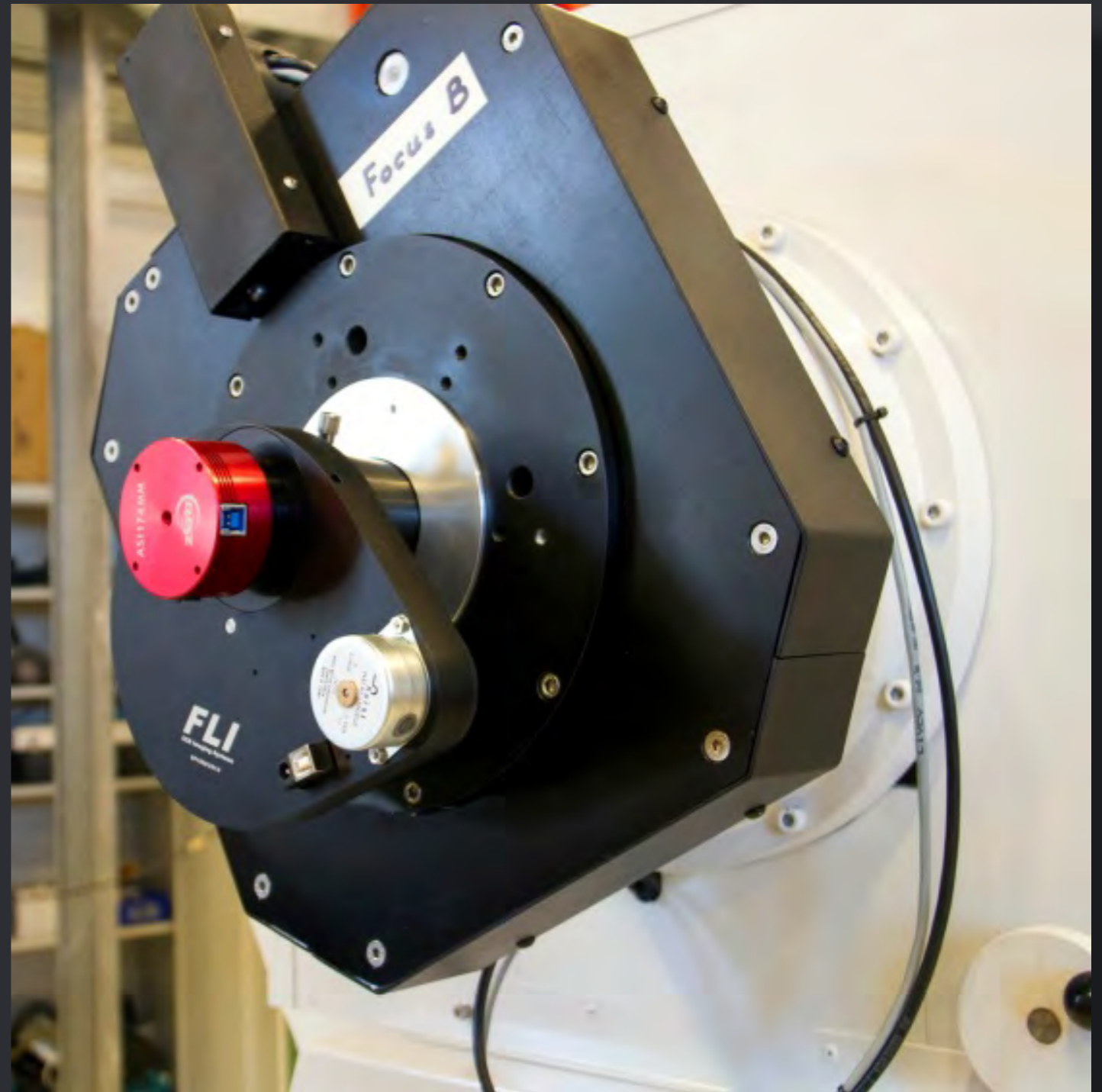
ASA RC-1000

- FLI Proline16803
- FLI CenterLine CL-1-10
- ASA focuser
- F/6.8 effective
- FOV 18.2' x 18.2'
- Filters:
 - ASTRODON
 - SII
 - OIII
 - H_alpha



ASA RC-1000

- f/16 with 2X Powermate
- FOV 2.4' x 1.5'
- ZWO ASI174MM
1/1.2" CMOS, USB3.0, 2.3Mega Pixels,
1936x1216, pixel size: 5.86µm
- FLI CFW-1-8
- Filters:
 - ASTRONOMIK PLANET IR PRO 742
 - BAADER IR-PASS 670NM FILTER - 1.25"
 - ASTRODON
 - BAADER 1.25" IR PASS FILTER
 - BAADER 1.25" U-FILTER



- ASA DDM85
- FLI Proline16803
- FLI CenterLine CL-1-10
- ASA focuser
- Filters:
 - ASTRODON
 - SII
 - OIII
 - H_alpha

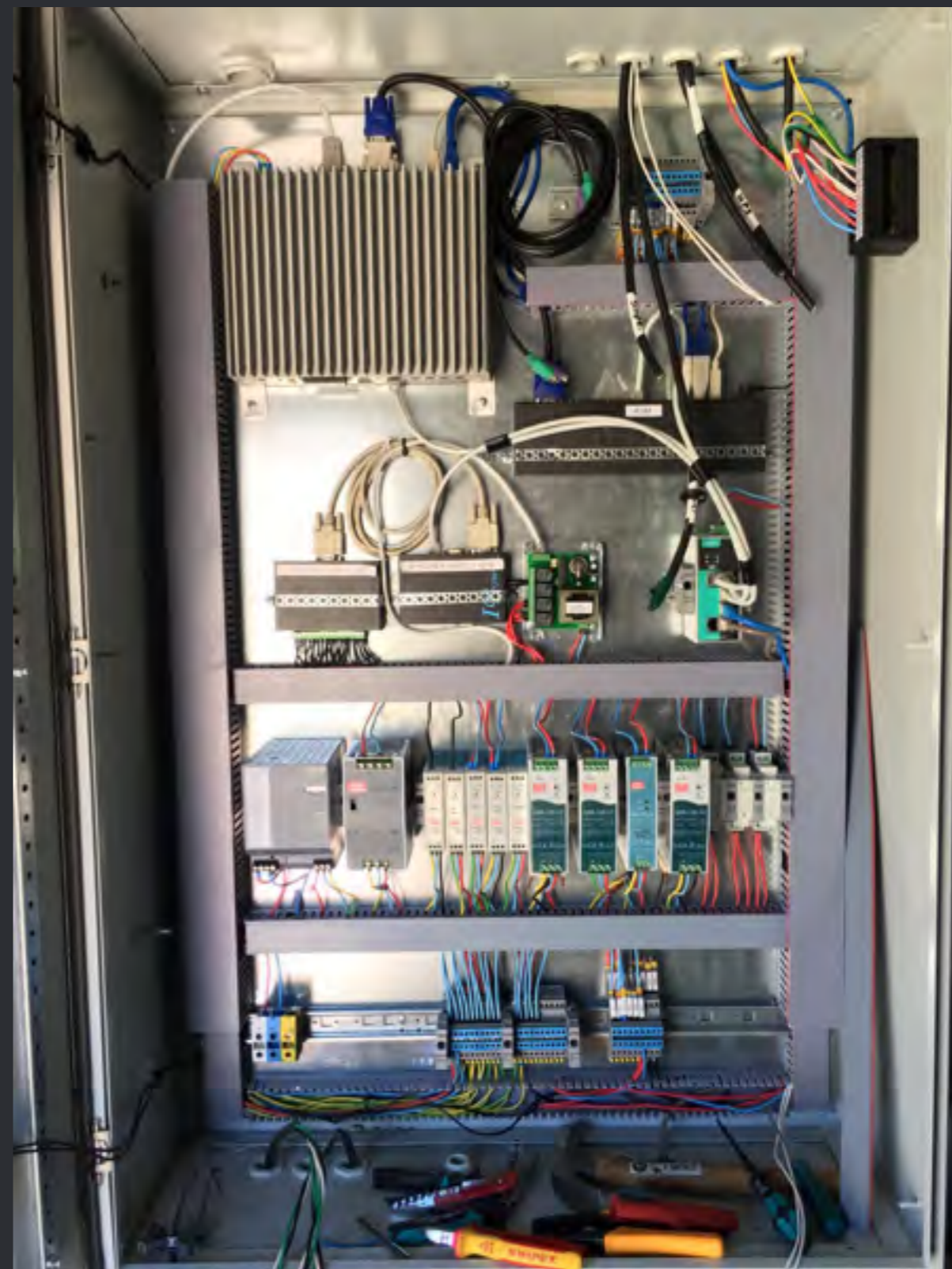




- ASA DDM85
- FLI Proline16803
- FLI CenterLine CL-1-10
- ASA focuser
- Filters:
 - ASTRODON
 - SII
 - OIII
 - H_alpha



Telescope control system



The first light



Ha = 180 min

The first light



L:R:G:B:Ha = 200:120:120:170:800 min

The first light



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The first light





The first light

FEBRUARY 25th, 2017

07:48:12 UTC

N
Lp

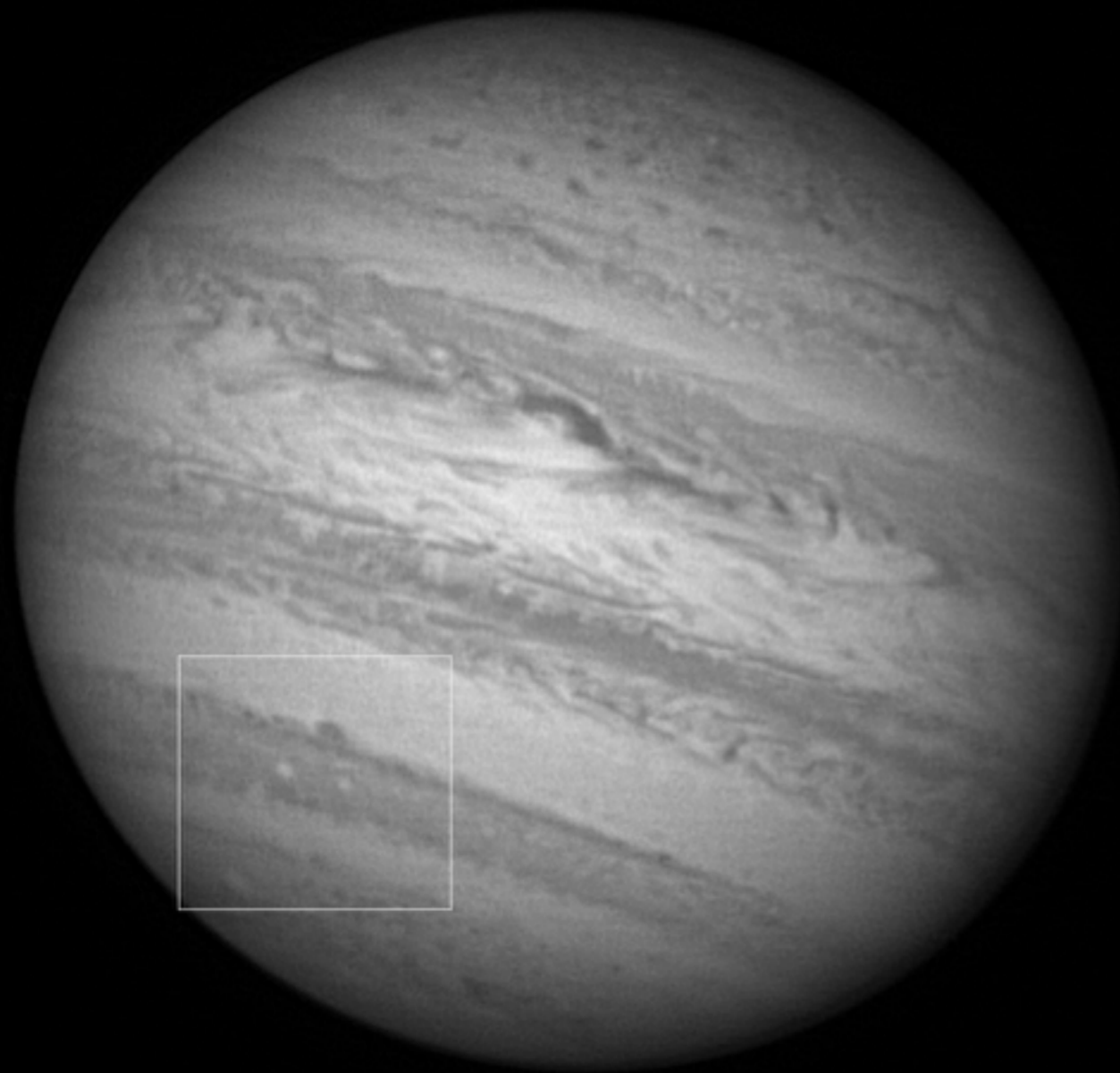


1m Cassegrain
[Facebook.com/Chilescope](https://www.facebook.com/Chilescope)

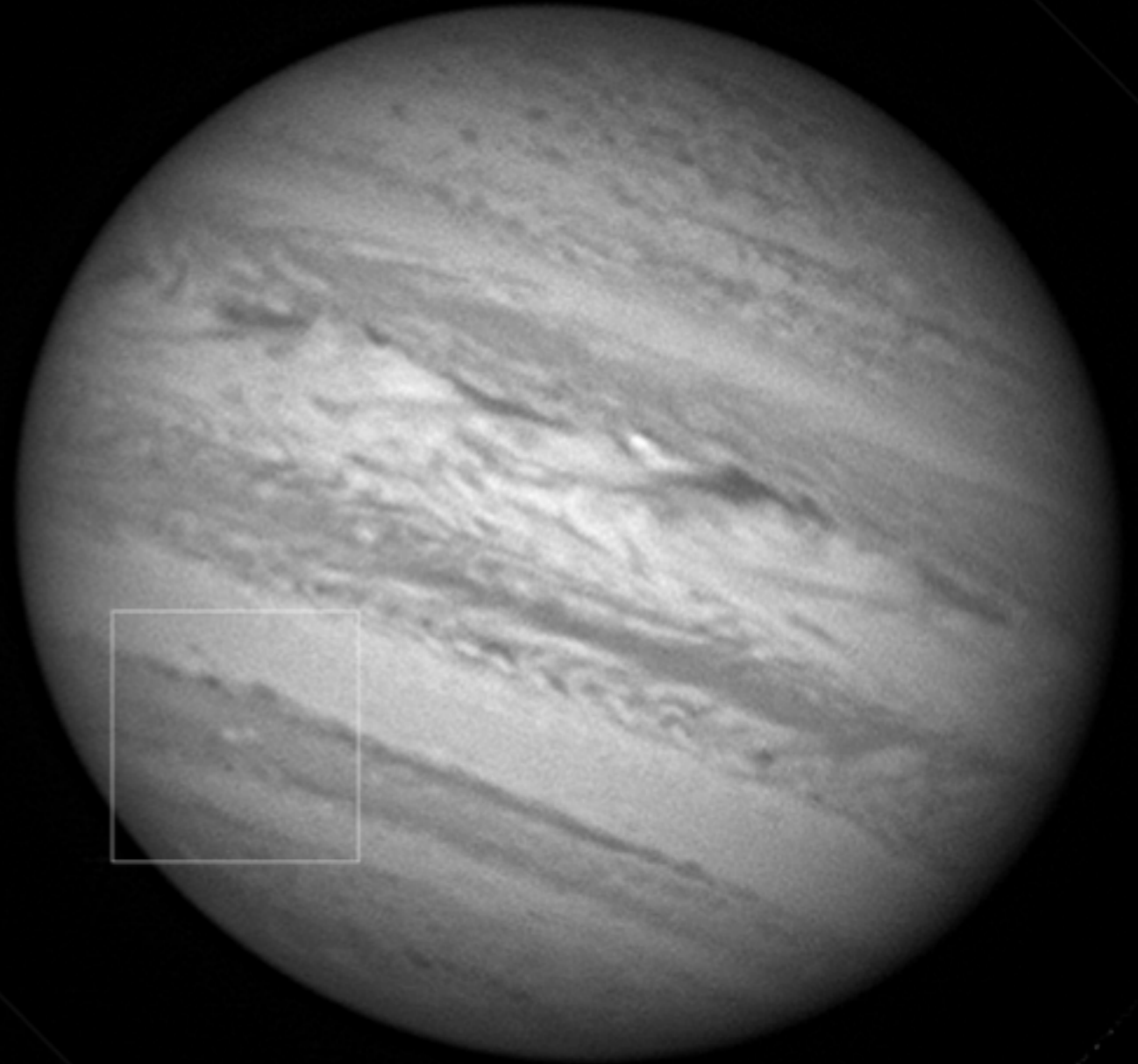
D. Peach/Chilescope team

Yuri Beletsky, CEDIC 2017

First science



FEBRUARY 26th



MARCH 5th

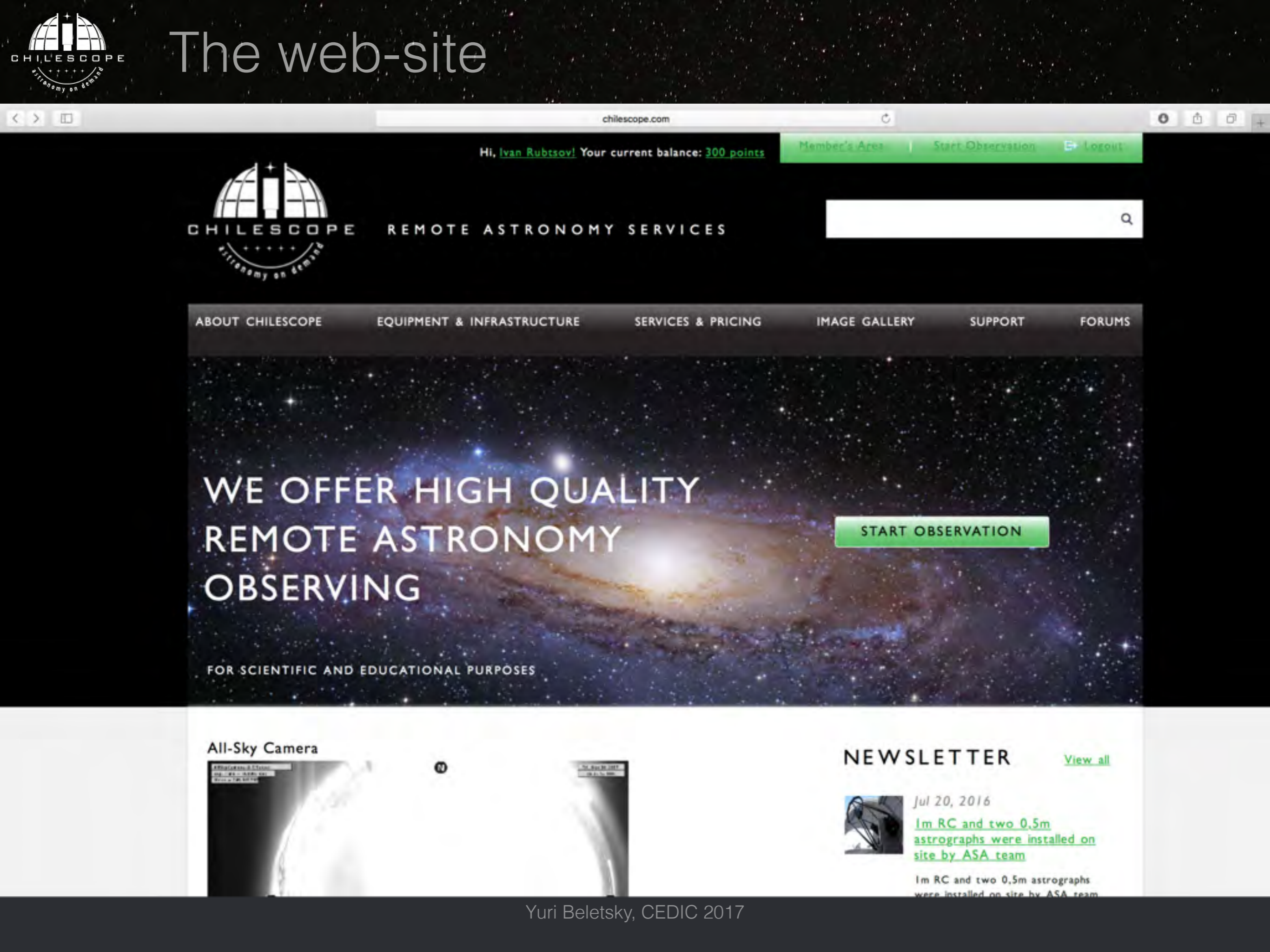
The first light

FEBRUARY 25th, 2017
09:11:48 UTC
S
L F



1m Cassegrain.
www.facebook.com/chilescope/

D. Peach/Chilescope team



The web-site



REMOTE ASTRONOMY SERVICES

ABOUT CHILESCOPE

EQUIPMENT & INFRASTRUCTURE

SERVICES & PRICING

IMAGE GALLERY

SUPPORT

FORUMS

WE OFFER HIGH QUALITY
REMOTE ASTRONOMY
OBSERVING

START OBSERVATION

FOR SCIENTIFIC AND EDUCATIONAL PURPOSES

All-Sky Camera



NEWSLETTER

[View all](#)



Jul 20, 2016

[1m RC and two 0.5m
astrographs were installed on
site by ASA team](#)

1m RC and two 0.5m astrographs
were installed on site by ASA team



The web-site

chilescope.com

HI, [user name]! Your current balance: 200 pts

CHILESCOPE REMOTE ASTRONOMY SERVICES

ABOUT CHILESCOPE

MEMBERSHIP

Sessions

Profile

Payment

Billing status

My files

Calibration

Current session

Weather

Telescope

Telescope

Telescope

FORUMS

ACTIONS

Creating a New Session

Session name

Alpha Centaurus

Telescope

Telescope 1

Duration

1 hrs 0 mins

Date

3/10/2017

Choose time of beginning (local Chile time)

03 : 13 am pm

Available time periods:

telescope_availability

3:13 PM 6:00 pm 9:00 pm 12:00 am 3:00 am 3:07 AM

Available time Scheduled sessions Your session Scheduled session intersects with existing

Session Duration	Telescope-1 Rate	Moonphase Discount	Total Price
1 hour 0 minutes	200 pts	50 %	100 pts

Continue to Add Plans Add Plans Later Exit without Saving

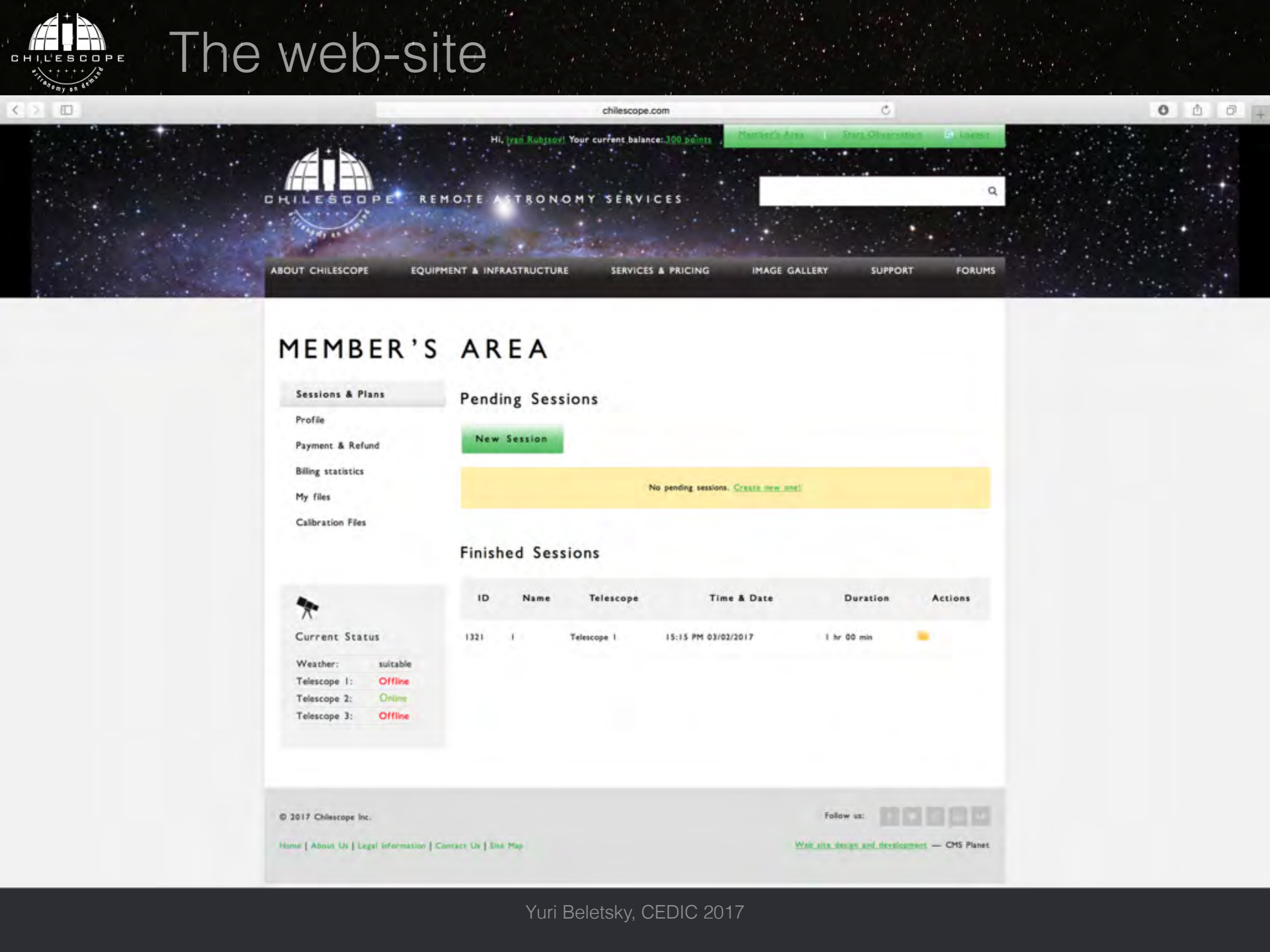
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The web-site

MEMBER'S AREA

Sessions & Plans

Profile

Payment & Refund

Billing statistics

My files

Calibration Files

Pending Sessions

New Session

No pending sessions. [Create new one!](#)

Finished Sessions

ID	Name	Telescope	Time & Date	Duration	Actions
1321	I	Telescope 1	15:15 PM 03/02/2017	1 hr 00 min	

Current Status

Weather: suitable
Telescope 1: Offline
Telescope 2: Online
Telescope 3: Offline

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Thank you !

