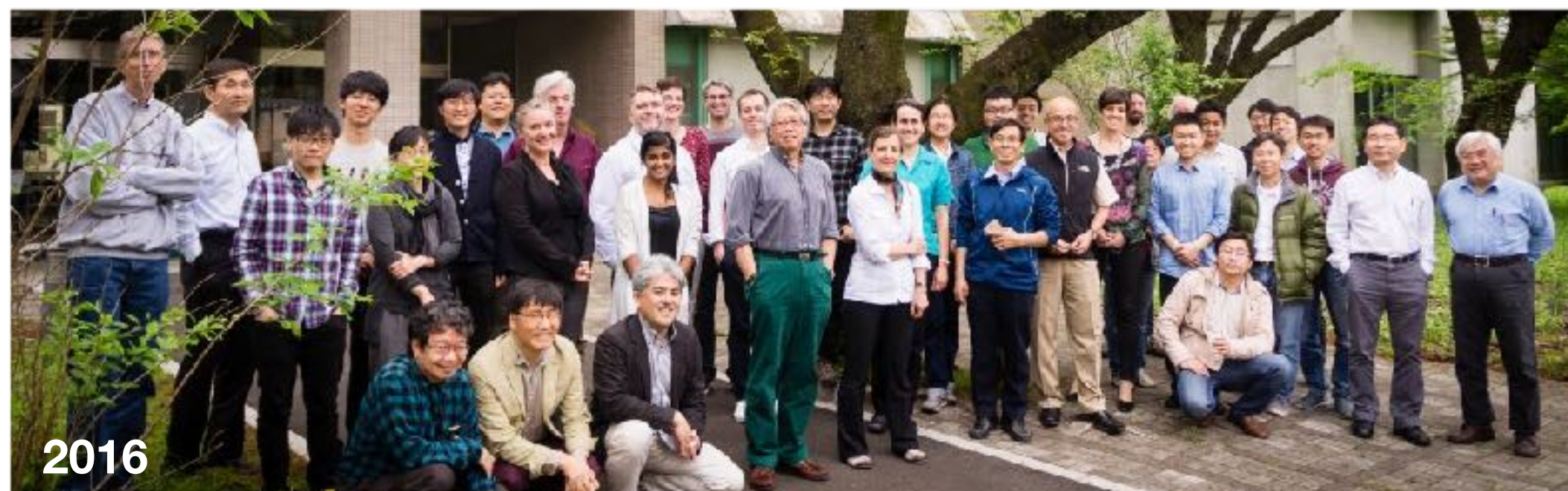


JCMT Observatory Update

2019 JCMT Users Meeting



Image credit: Jason Fleck



Sub-mm science Maunakea



Image credit: Rita Morris

The Black Hole Image Pōwehi



The Black Hole Image Pōwehi



EAO staff are now gearing up for the 2020 EHT campaign.

JCMT and SMA staff celebrate the Black Hole image achievement



EHT Collaboration wins the 2020 Breakthrough award

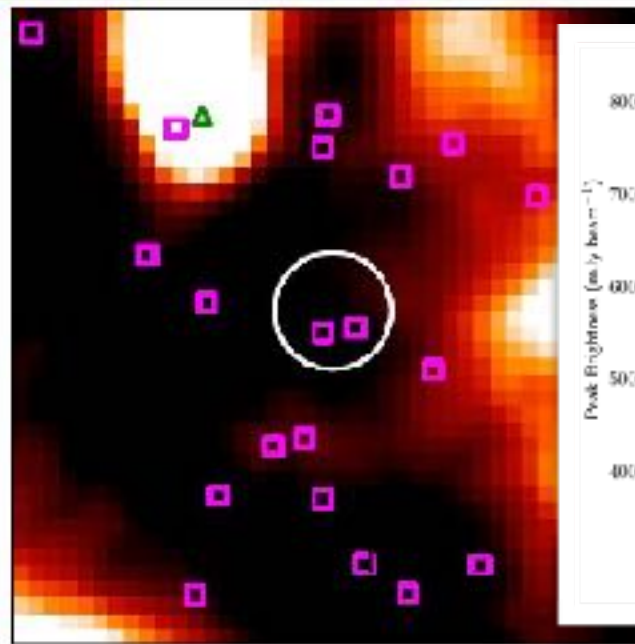
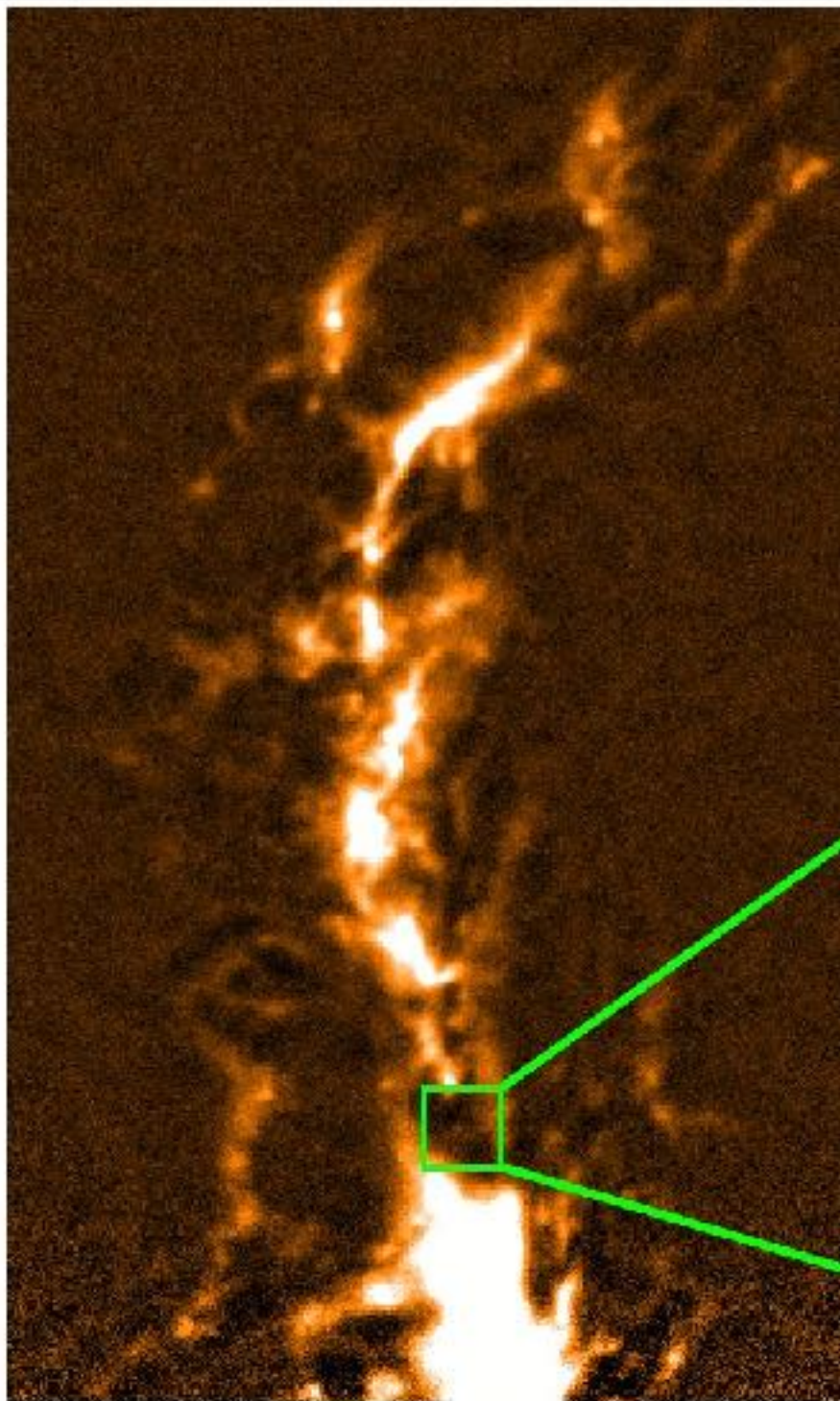
Award recognizes JCMT and SMA staff.



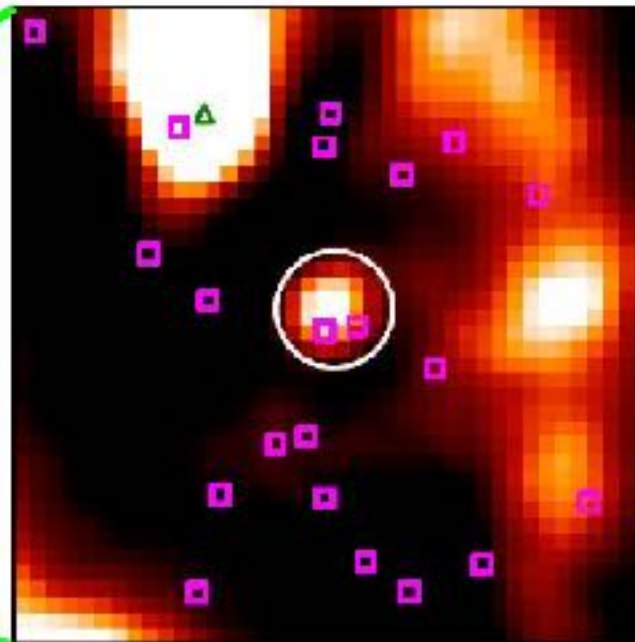
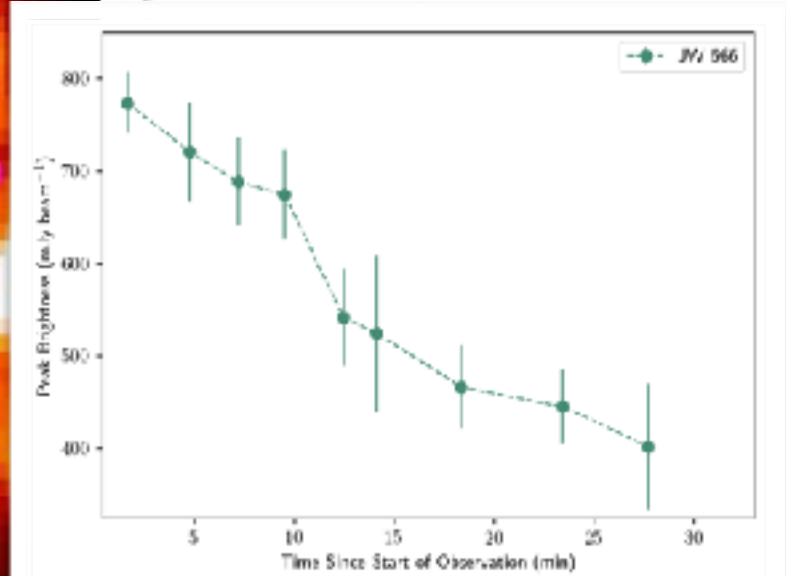
Credit: Fumie Tazaki

Event Horizon Telescope Collaboration

Brightest sub-mm flare event



2016-11-20

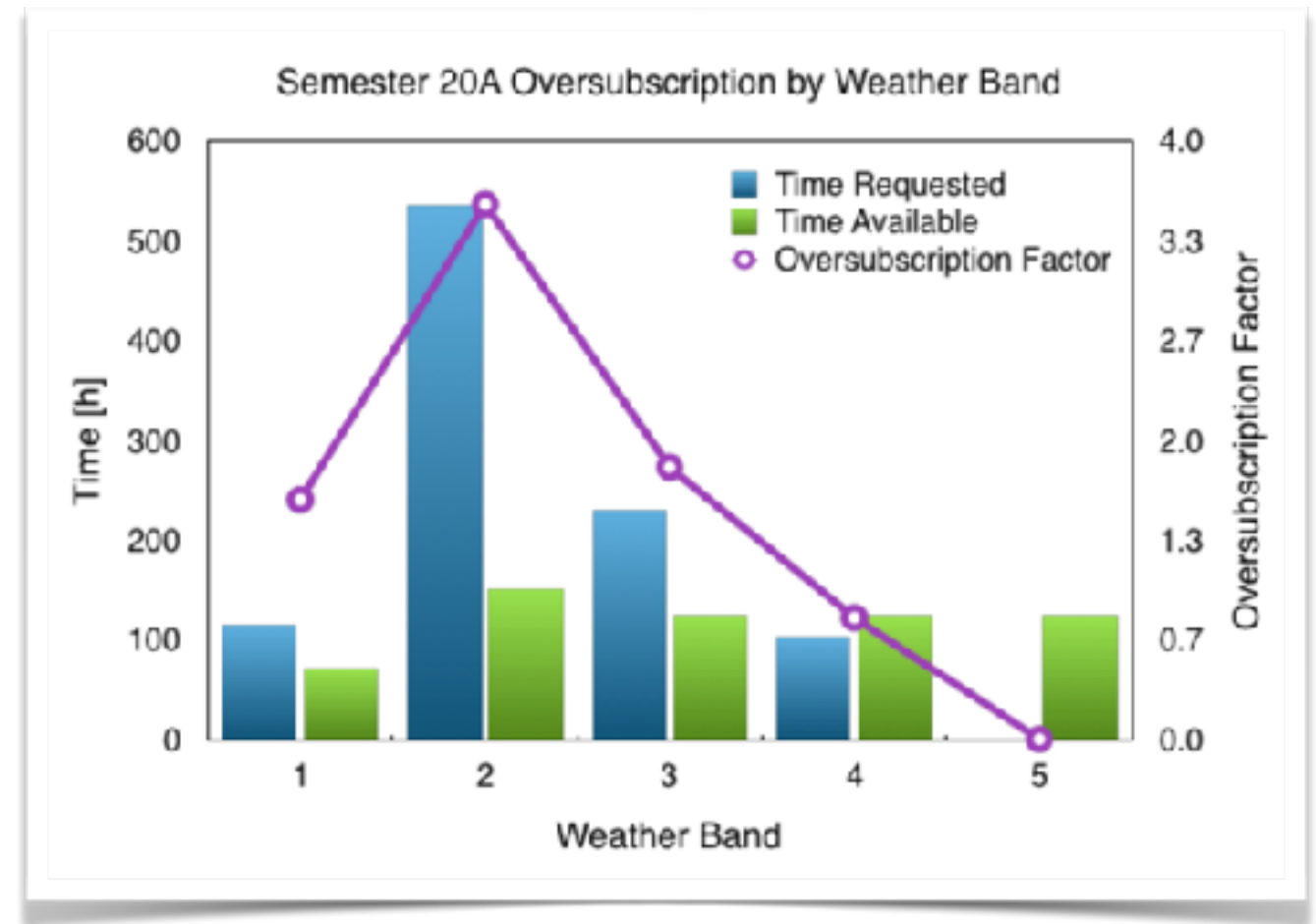
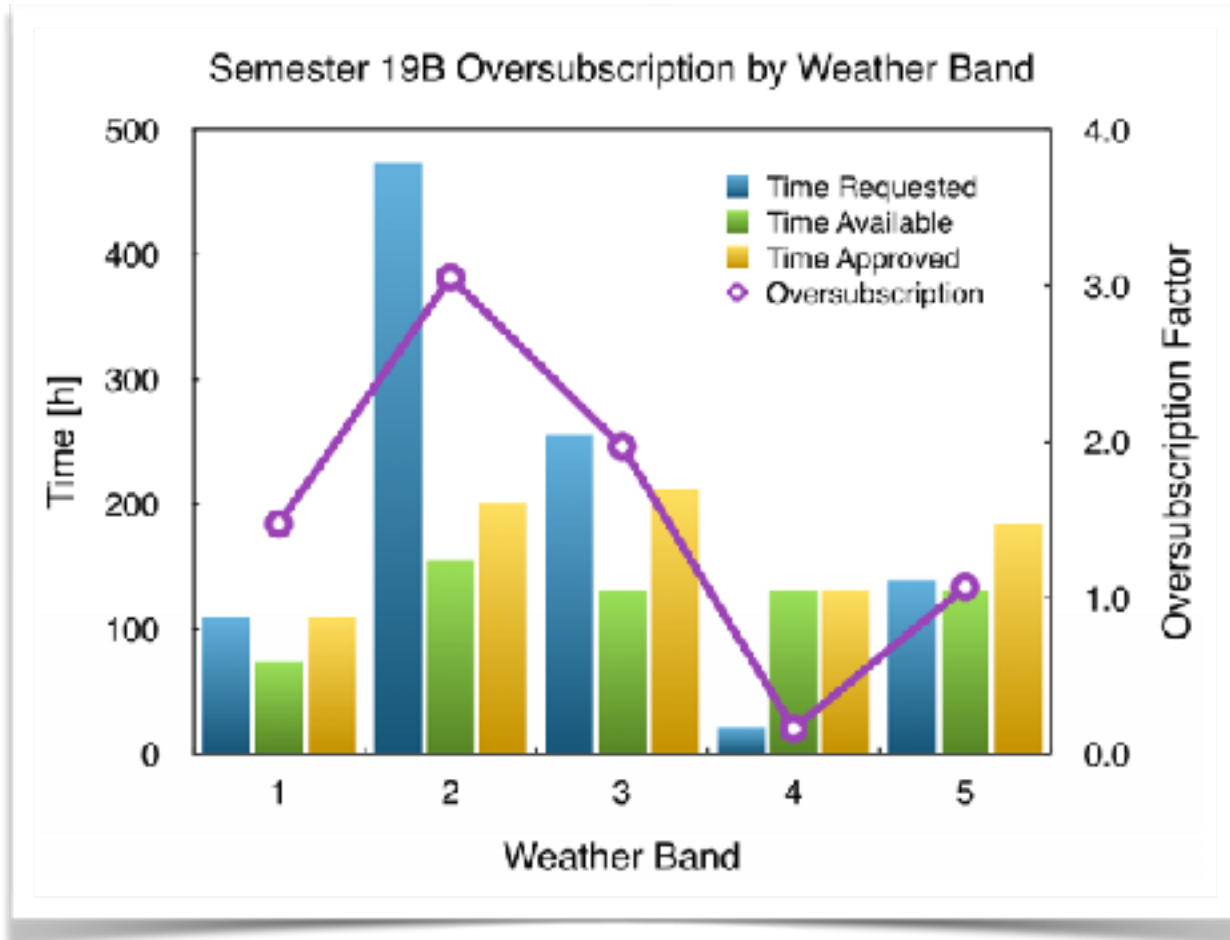


2016-11-26



**From baby stars to baby Luke,
Dr Steve Mairs is current on a
new adventure.**

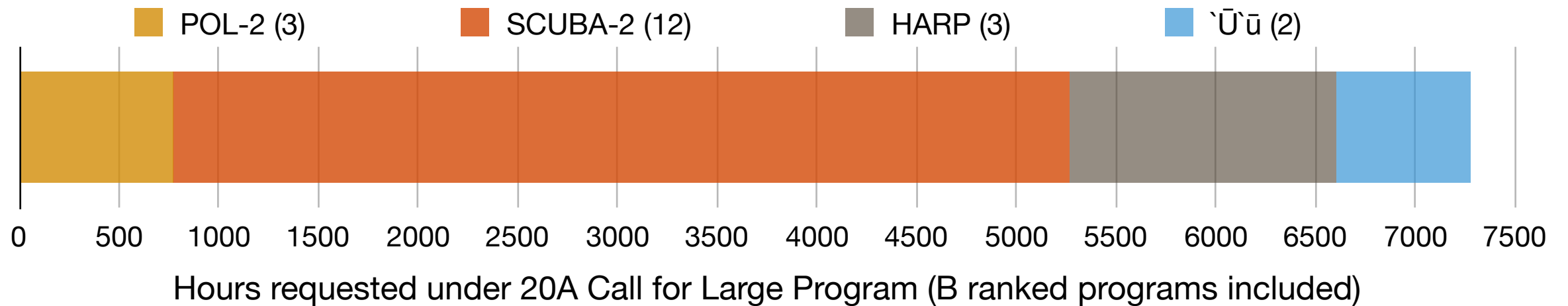
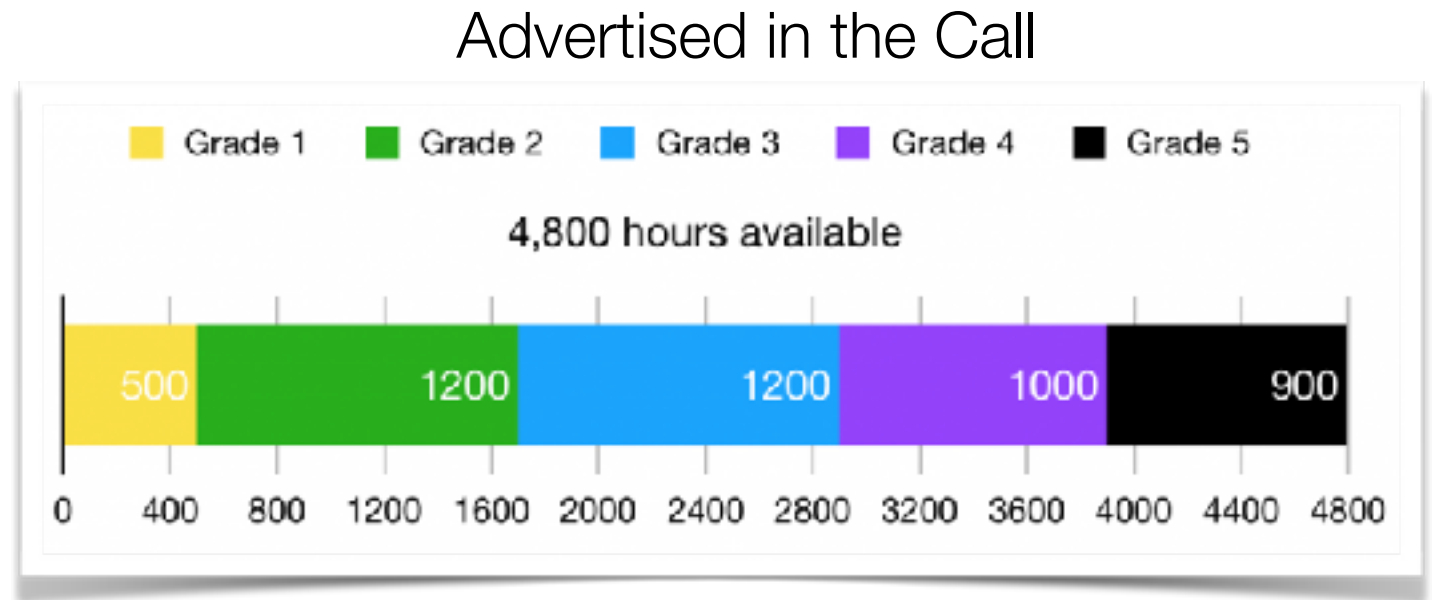
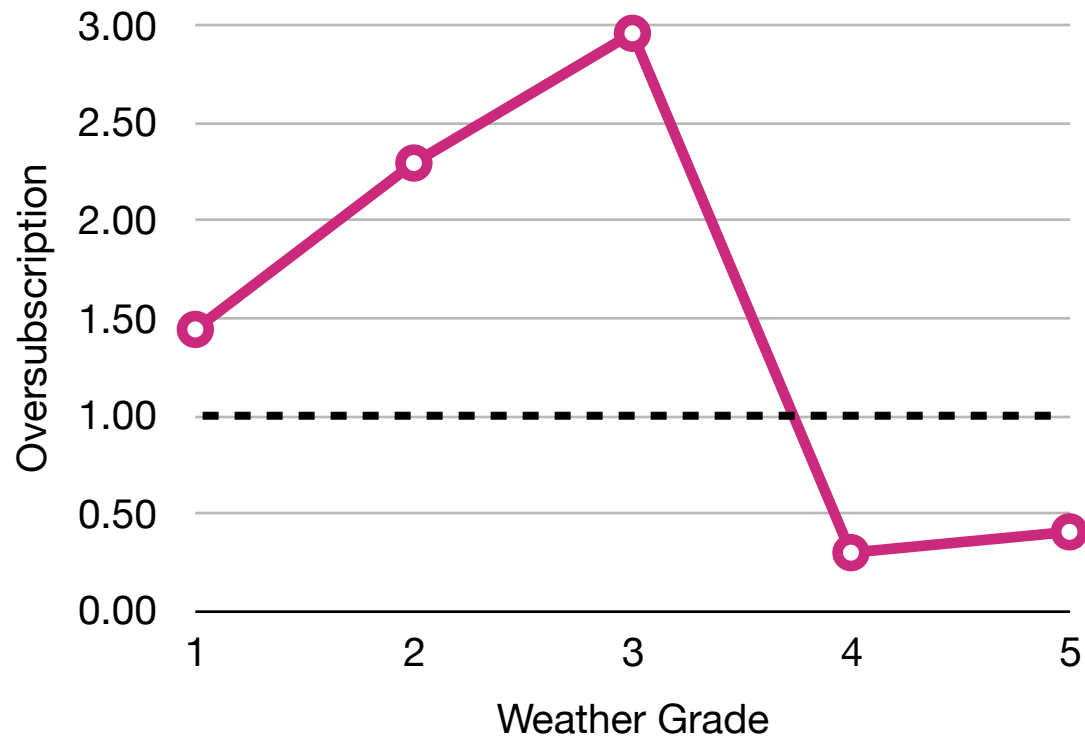
PI Queue and 20A Call



The JCMT Time Allocation Committee (TAC) will meet and review all 20A proposals in Hilo, Hawaii, November 16-18 2019

Large Program Queue and Call

The 20A Call for Large Programs

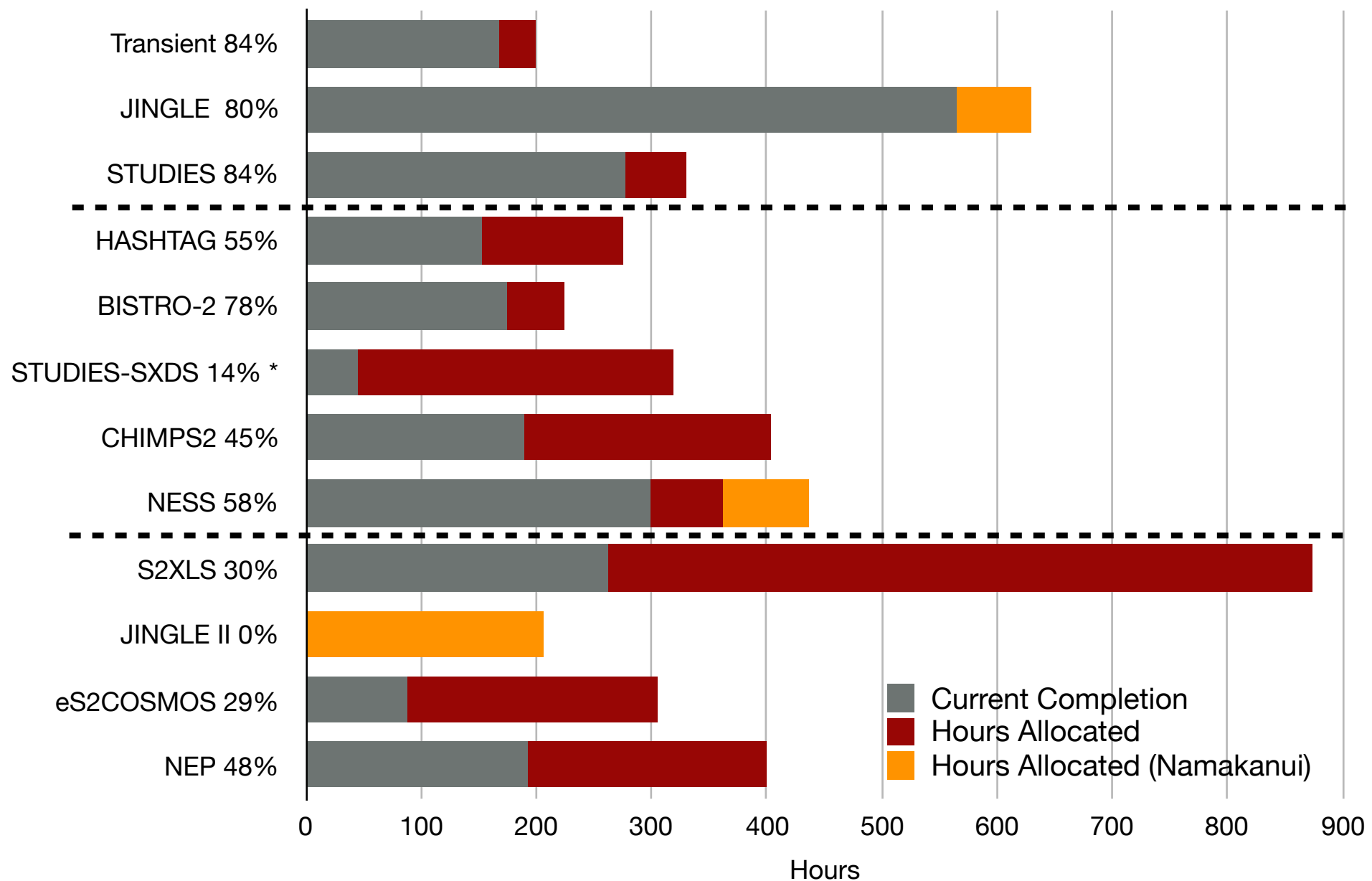


The JCMT board will meet to review all Large Programs (existing and requested)
November 19/20, Hilo, Hawaii

Large Program Queue and Call

The Status of Current Programs

Completed: S2COSMOS, SCOPE, MALATANG & BISTRO



Large Programs Publications: <https://ui.adsabs.harvard.edu/public-libraries/gd1aj27oTHWBRaYWmeX-YA>

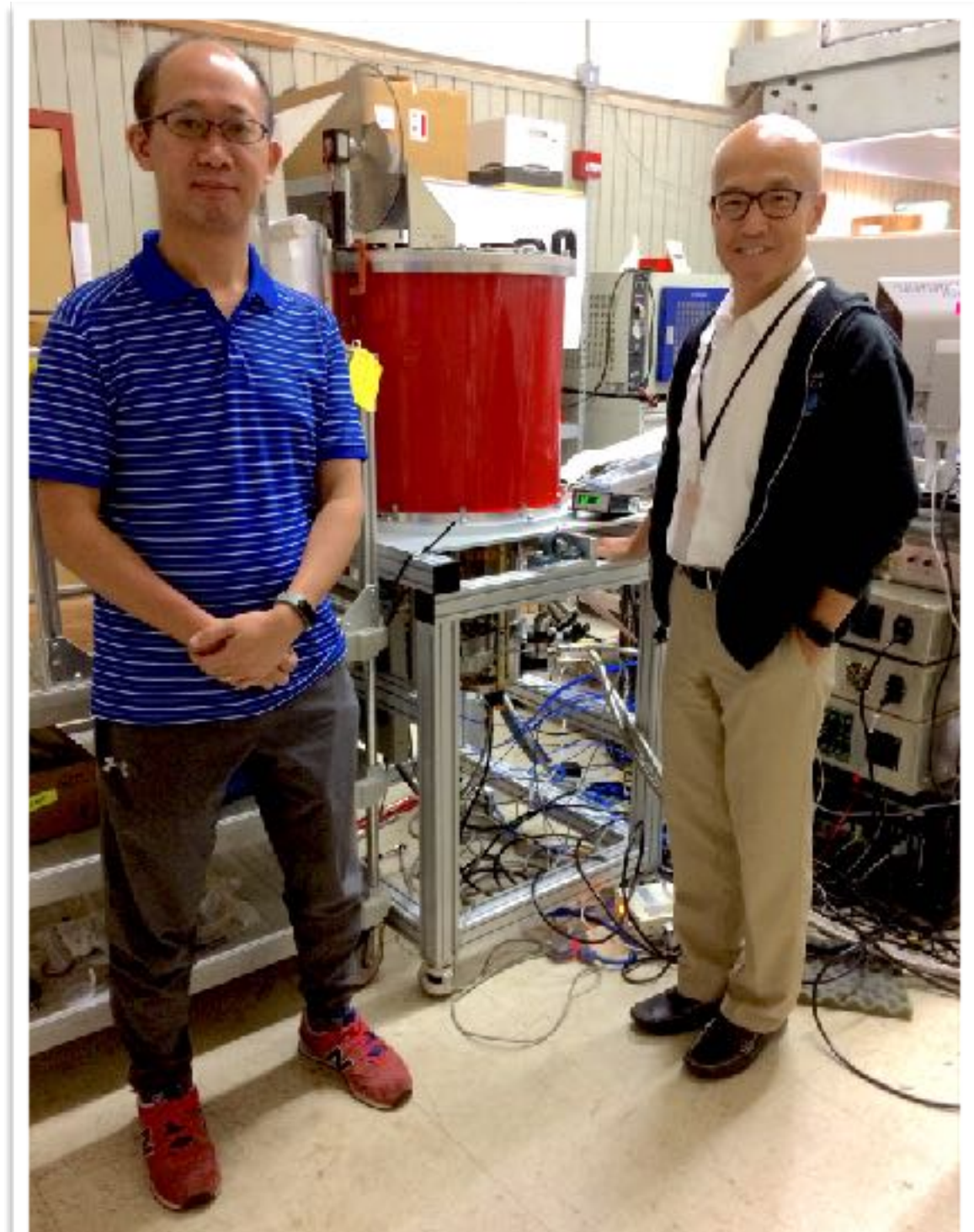
Maunakea Restricted Access

Restricted access caused JCMT to be closed for a total of 27 nights (2019/06/16 - 2019/08/12).



Nāmakanui

- Nāmanaknui is the spare receiver for the GLT. It was built by, and is on loan from, ASIAA.
 - `Ala`ihi = Band 3 = 86GHz
 - `Ū`ū = Band 6 = 230GHz
 - `Āweoweo = Band 7 = 345GHz
- Nāmanakui arrived in **Hilo: 2019/07/22**



Nāmakanui

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- `Ala`ihi = Band 3 = 86GHz
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- `Āweoweo = Band 7 = 345GHz
- Nāmanakui arrived at **JCMT: 2019/08/14**



Nāmakanui

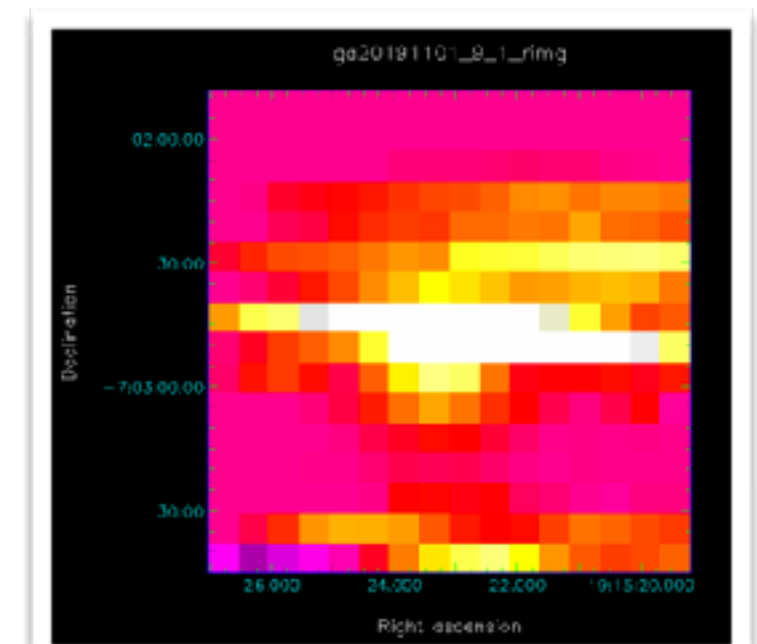
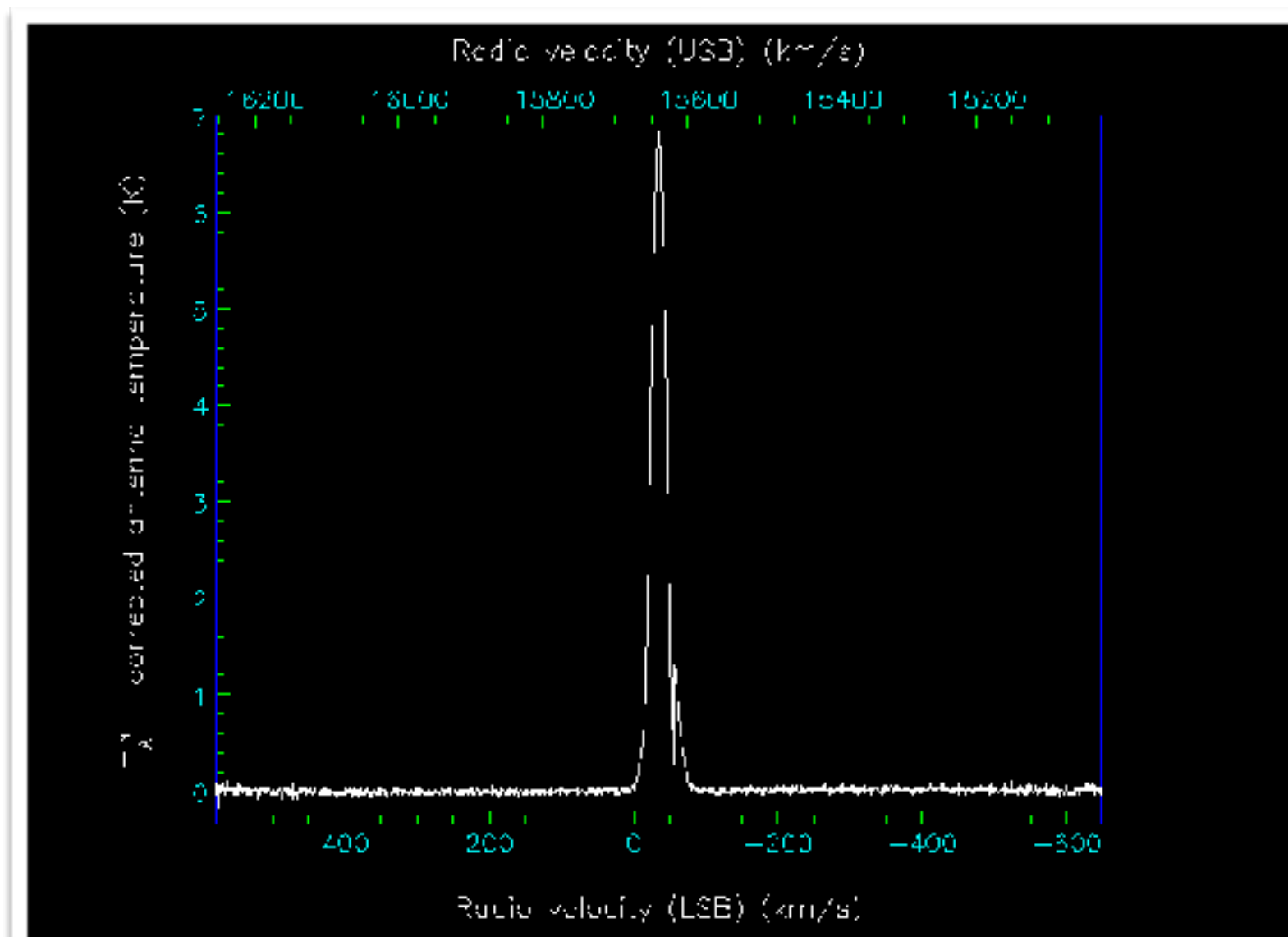
- Nāmanaknui is the spare receiver for the GLT. It was built by, and is on loan from, ASIAA.
- `Ala`ihi = Band 3 = 86GHz
- `Ū`ū = Band 6 = 230GHz
- `Āweoweo = Band 7 = 345GHz
- `Ū`ū first light: **12CO of CRL2688 2019/10/05**

`Ū`ū:

One polarization channel has been lost and so time estimates should be doubled to compensate for the loss in expected sensitivity.

Only 2 sub-bands are available for use at this moment

Right now we are working on tuning and amplitude issues.



NESS raster observation

2019/11/01

Nāmakanui

Event Horizon Telescope (EHT)

A Global Network of Radio Telescopes

2018 Observatories



Work is ongoing to ensure JCMT is ready for the next EHT run in 2020 and an East Asian VLBI run

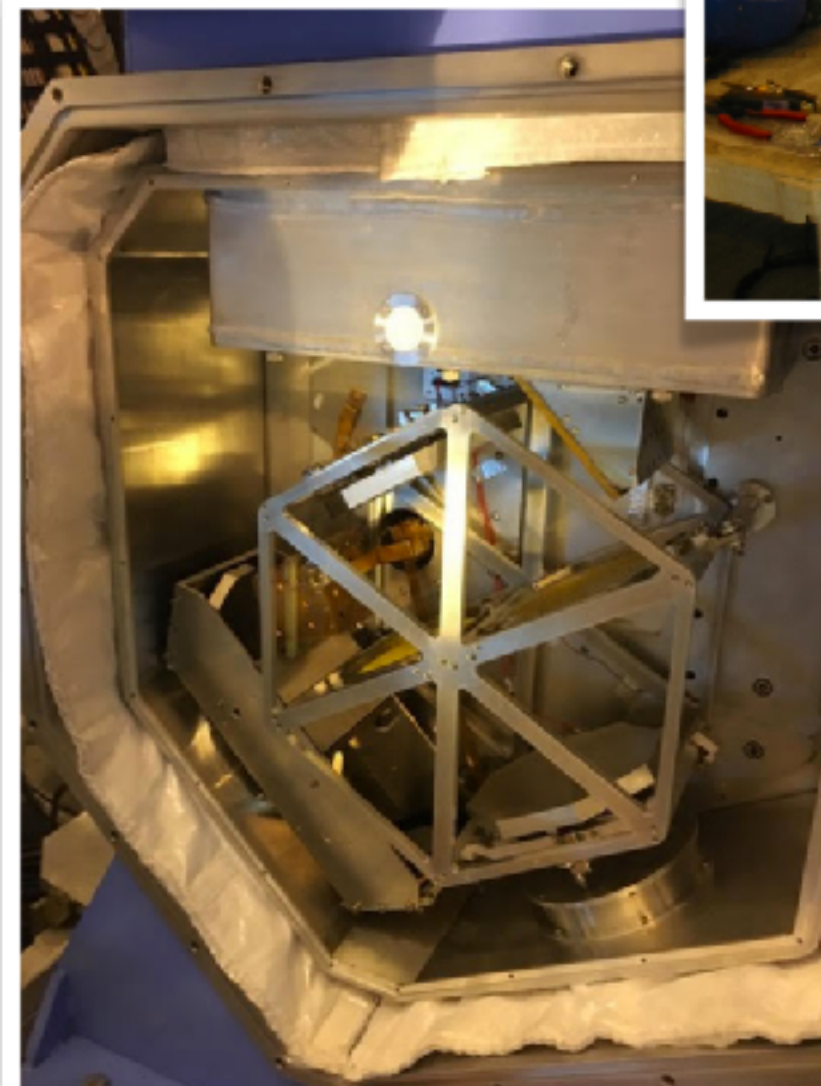
SMA fringe testing upcoming with Nāmanakui at 230GHz.

Hardware currently needed for 86GHz and 345GHz: relay mirror (345GHz) and wave plate (86GHz)

325 – 375 GHz 16 detector
SSB SIS array receiver

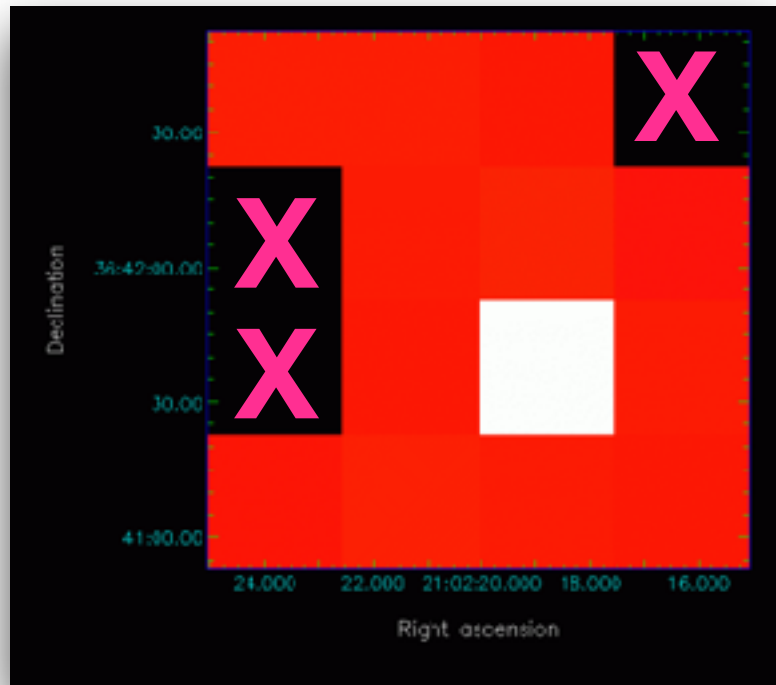
HARP

- Vacuum issues in early 2019, HARP warmed up July 28th,
- During warm up the LO window imploded
- New LO window - *Cardiff University*
- New mixers - *ASIAA*
- 3 of the 16 HARP mixers blocks were replaced (H04, H13 and H14)
- HARP at operational temperature once more 2019/10/08



Above: HARP on the right Nasmyth platform.
Far left: the MLI provided protection when the HARP LO had issues. Left: checking out the inside of HARP after the LO failure.

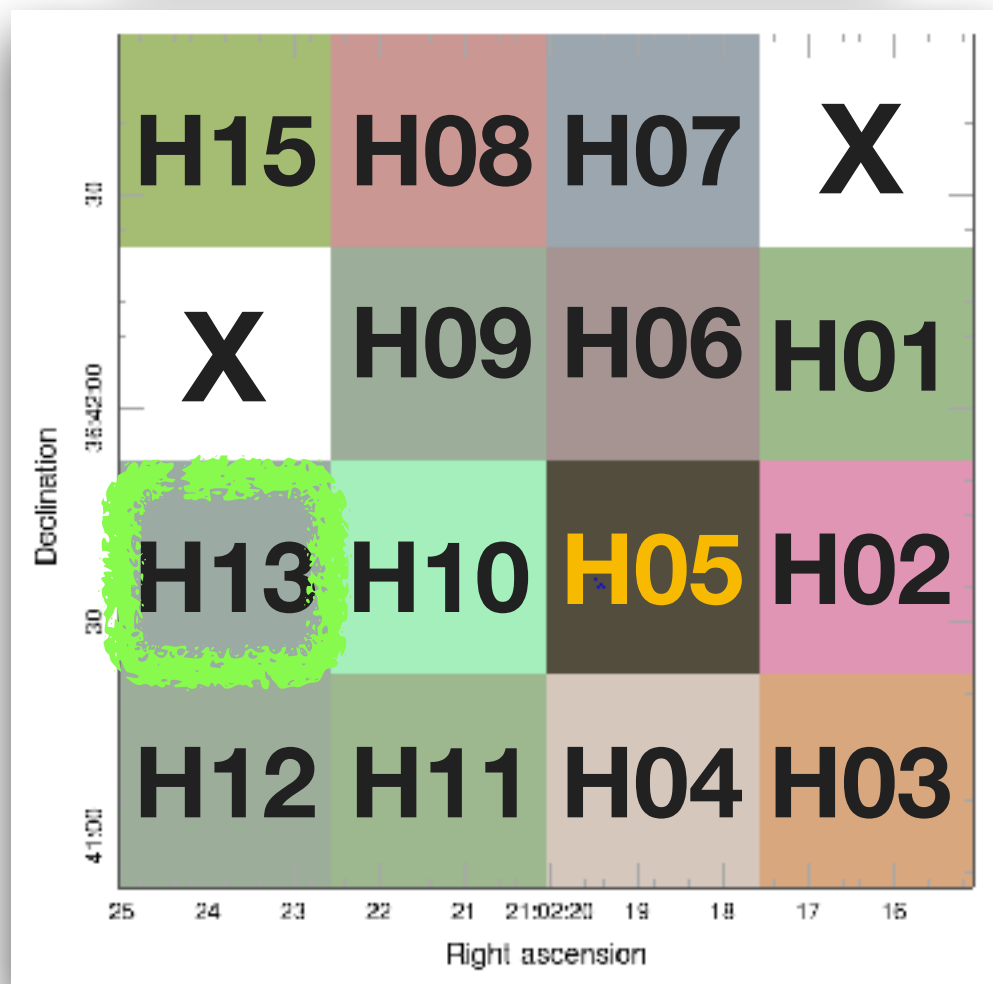
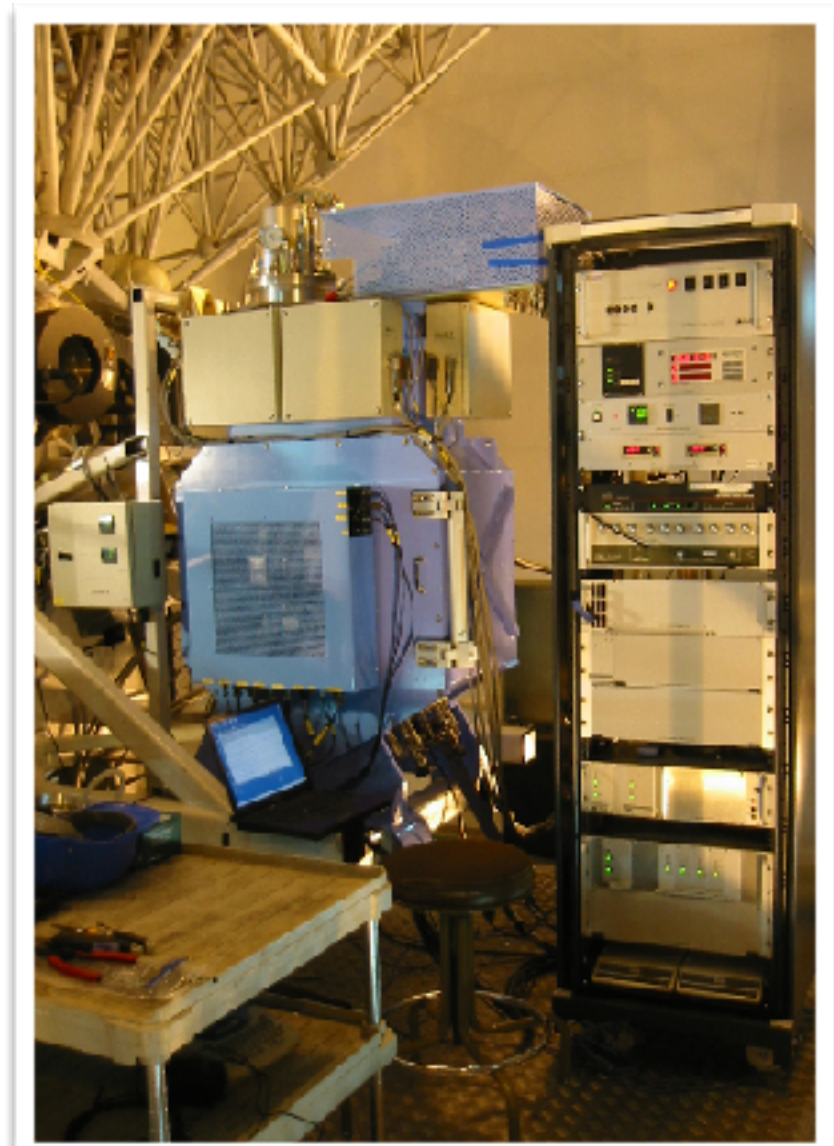
325 – 375 GHz 16 detector
SSB SIS array receiver



HARP

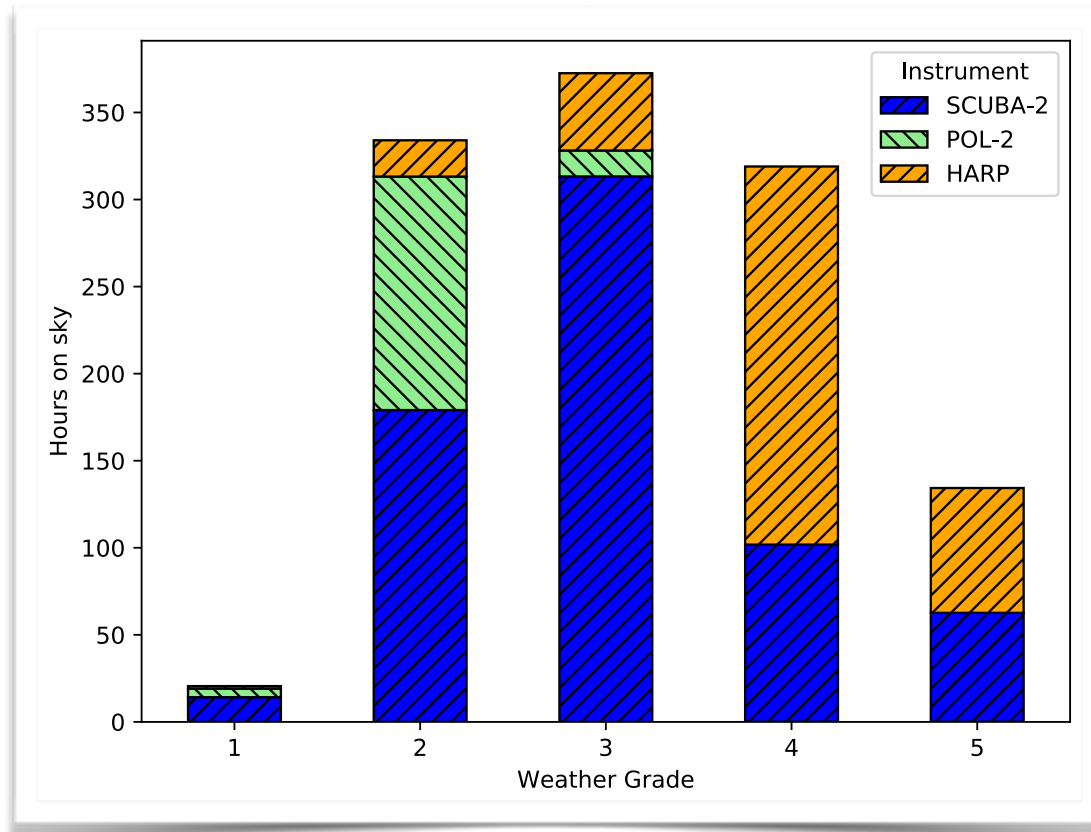
Current Status

HARP pre summer 2019 work



- H04, H13 and H14 mixers were replaced
- H00 and H14 remain with no LO power
- Receptor H13 is now operational
- H04 no longer seeing oscillations below 332 GHz
- H05 remains our pointing receptor

SCUBA-2 & POL-2

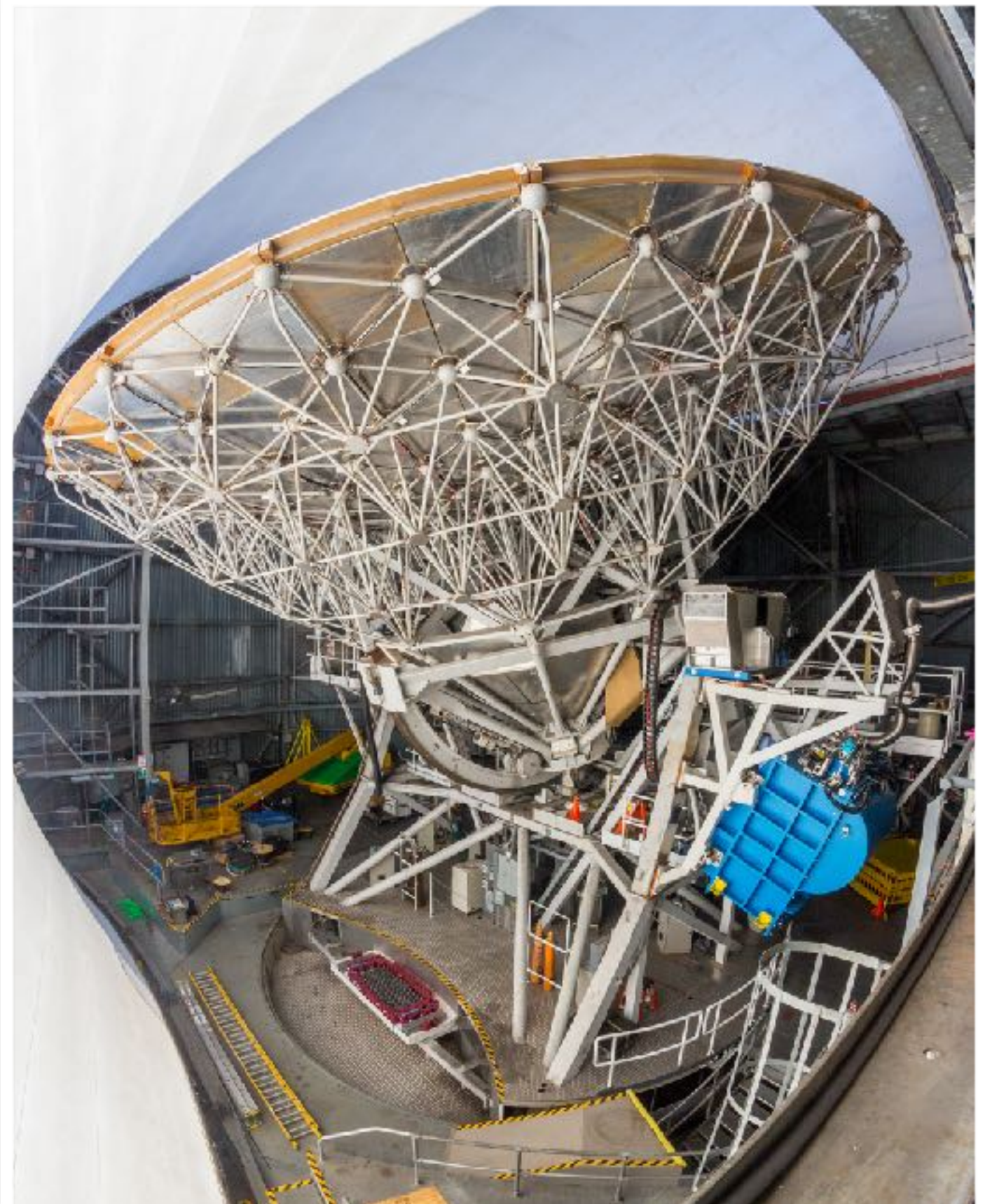


hours spent over the past six month period (April - September 2019) in various weather Grades by instrument.

SCUBA-2/POL-2 Continues to work well and produce fantastic science.

POL-2 now commissioned at 450micron

Calibration updates have almost been finalized and should be realized in the next Starlink update with a publication out soon.



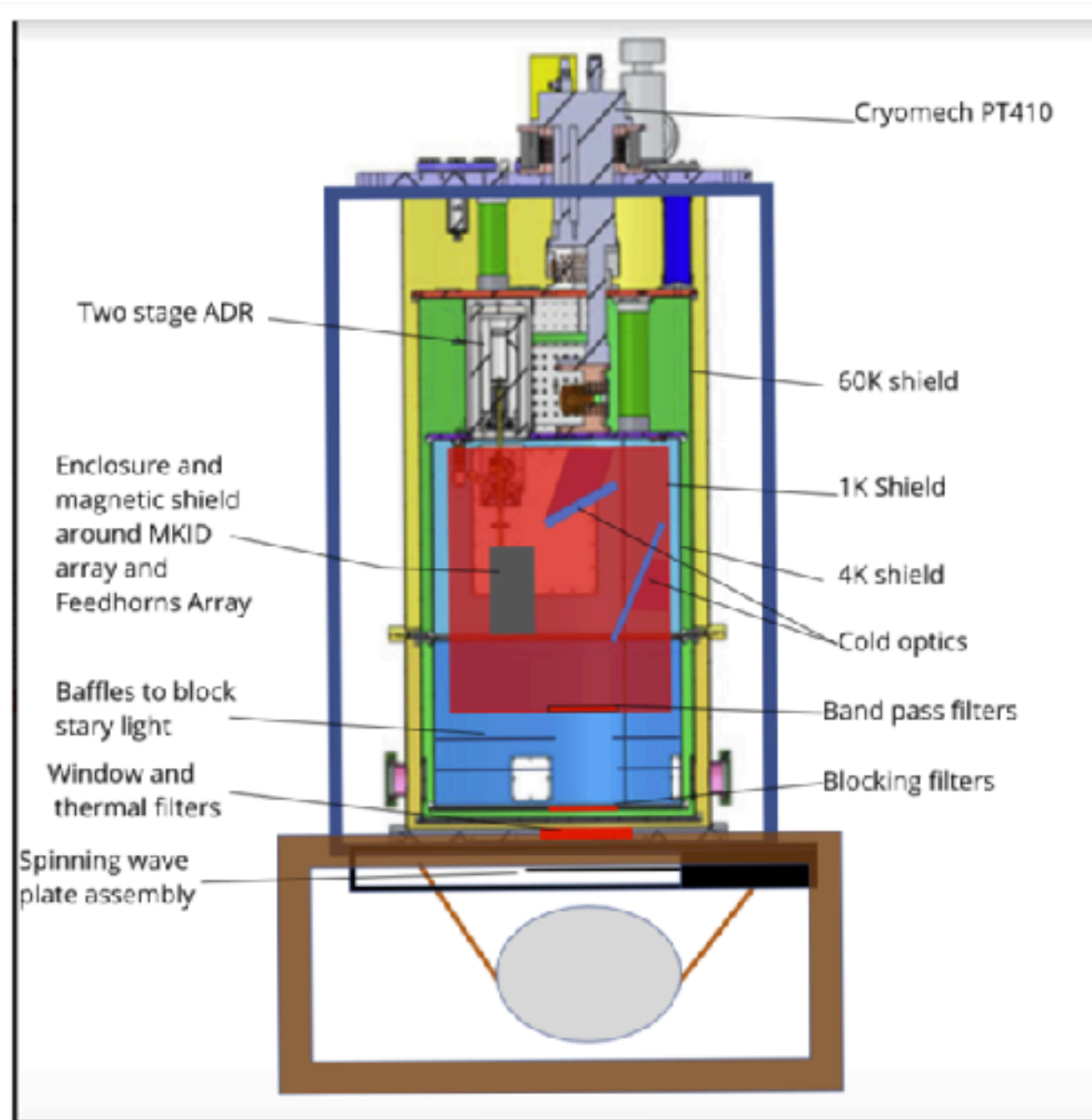
Future instrumentation



meeting webpages: www.eaobservatory.org/jcmt/science/futures-2019/
wiki pages: www.eao.hawaii.edu/EAO-Futures-Discussion-2019/

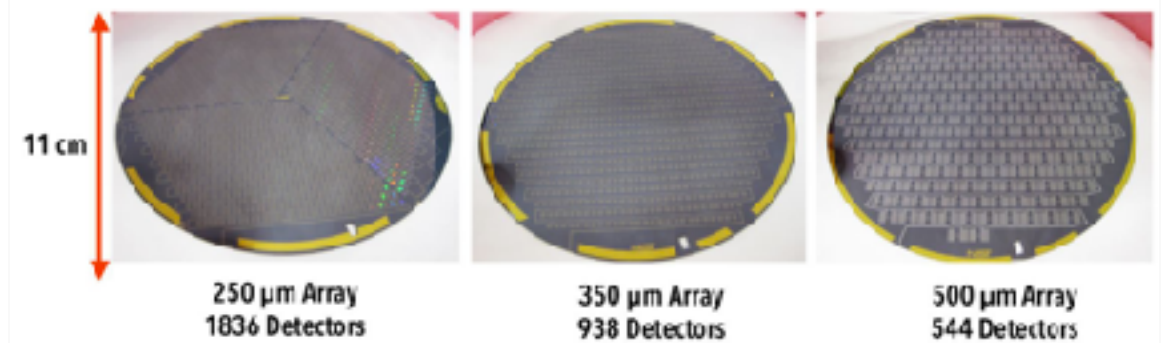
Future instrumentation

New 850 micron camera for JCMT



The NIST MKID Array

Will be based on existing designs, adapted for 850um and JCMT

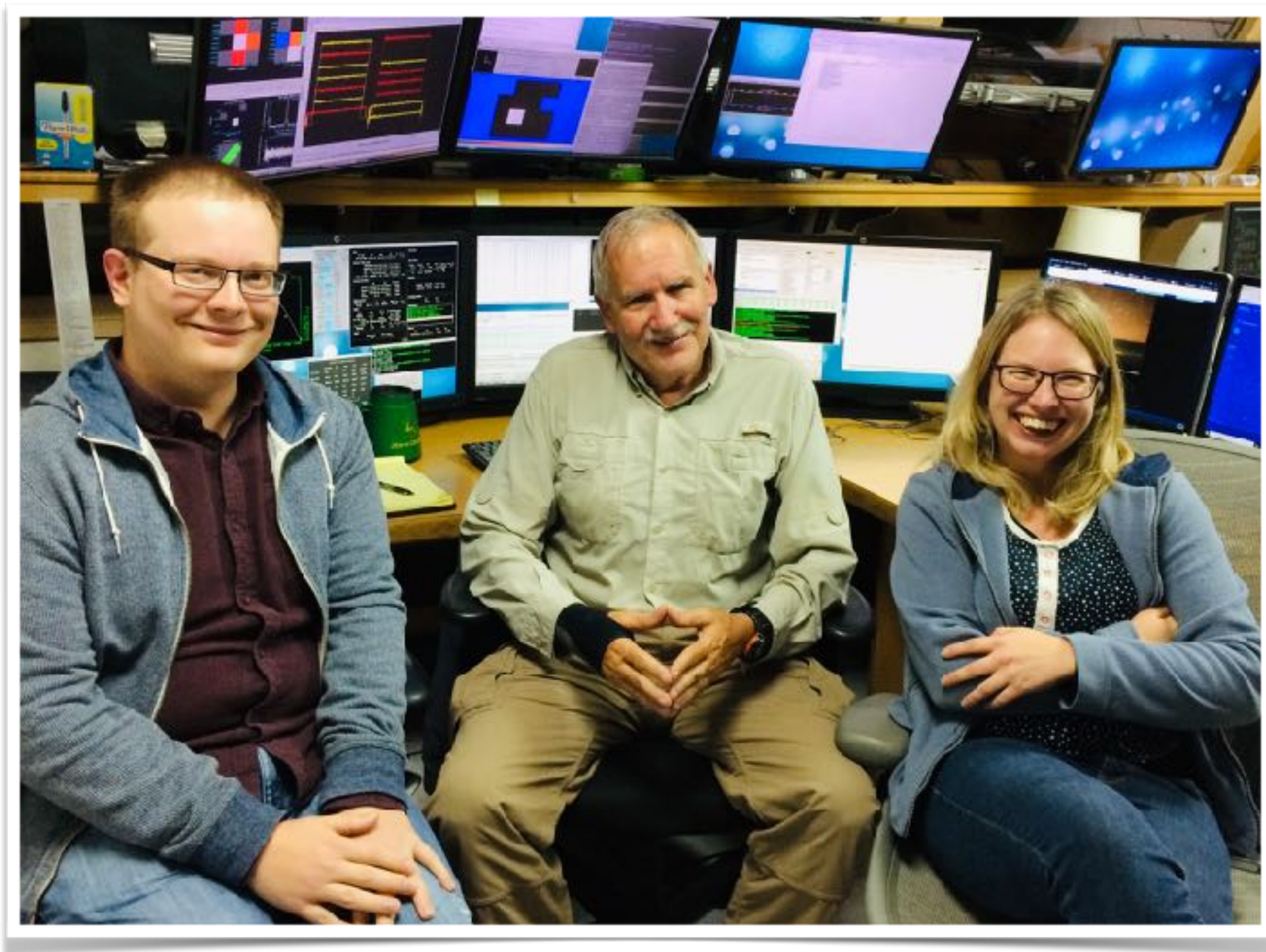


- 12' FOV
- 3,636 pixels (7,272 detectors)
- Each pixel is comprised of two detectors, that measure orthogonal linear polarization
- On Sky October 2022

Guaranteed mapping speed increase	10x compact ¹ , 10x large ² maps	20x for polarimetry mapping
Aspirational mapping speed increase	20x large maps	40x for large polarimetry maps

Remote Operations

A new era for the JCMT



The last summit shift at the JCMT - NESS observers Sascha Zeegers and Chris Clark along with telescope operator Jim Hoge.

Remote Operations

A new era for JCMT users: 2019/11/01



New flex email to alert users of data collection

The JCMT operator accepted an MSB (title=NGC2071) from your project M16AL001 tonight (2019-11-01). If you want to follow tonight's observing, please go to the remote eavesdropping link in your OMP project page at

<http://omp.eao.hawaii.edu/cgi-bin/utprojlog.pl?urlprojid=M16AL001&utdate=2019-11-01>.

You should be sent a summary of all of your observations taken tonight within 24 hours of the end of shift.

Remote Operations

End of an era as long time telescope operator Jim retires



07:00:00 HST: Jim Hoge

This completes 19 Years, 170 Days as a JCMT TSS. My final night as an EAO employee and EAO's final night of summit observations prior to shifting to full remote operations.

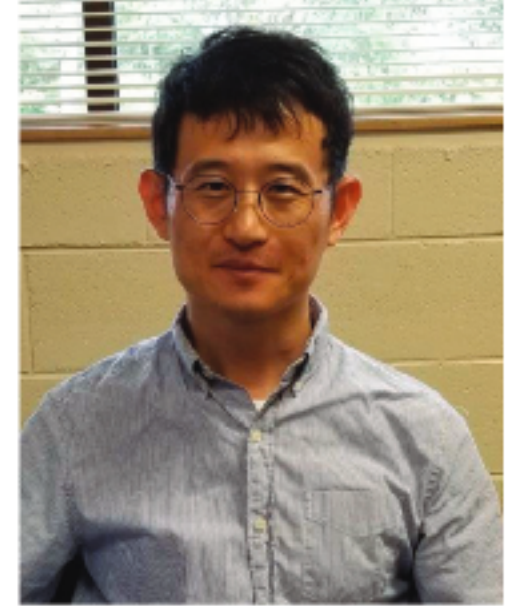
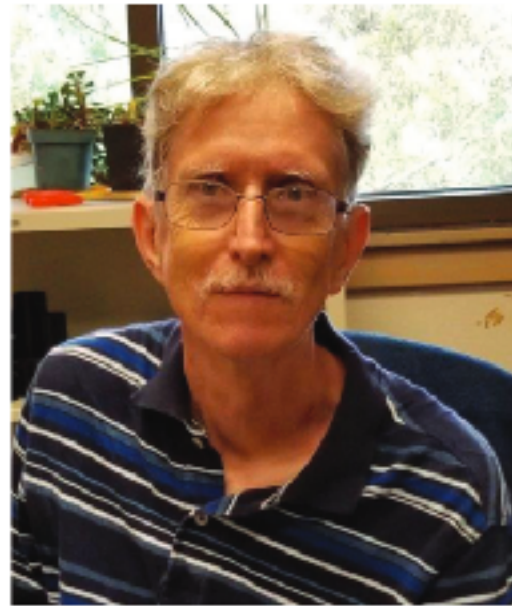
START DATE with Joint Astronomy Centre 15 MAY 2000

End Date with East Asian Observatory 01 NOVEMBER 2019

Total: 19 Years, 170 Days

More than 2,300 nights observing on Maunakea

Leaving EAO



Left to right: Systems Administrator, Henry Stilmack; Electronics/Electrical Technician, Simeon Johnson; Support Astronomer, Jan Wouterloot Electronic and Instrument Systems Engineer, Tim Chuter; Researcher and EACOA fellow, Tie Liu

New EAO Staff/visiting Researchers

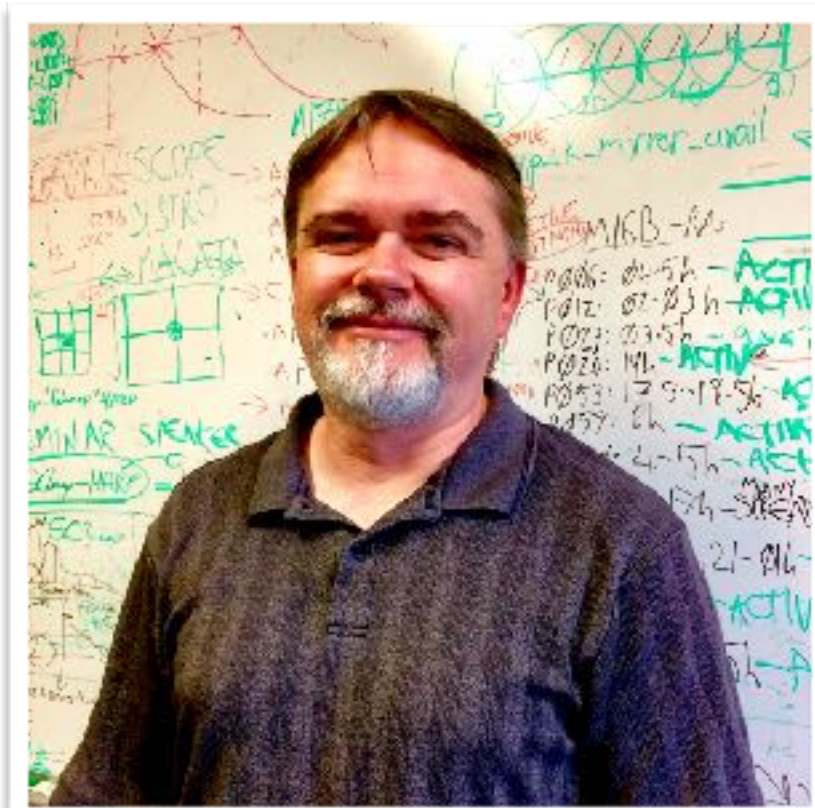


Left to right: Telescope System Specialist, Alexis Acohido; EAO Fellow, Dr. Alex Tetarenko; System Ad-ministrator, Devin-Jacob Estrada; Telescope System Specialist, Miriam Fuchs; Instrumentation Intern, Taishi Nam-mato; Visiting Researcher, Hongjun Ma; Electronics Technician, Jason Fleck

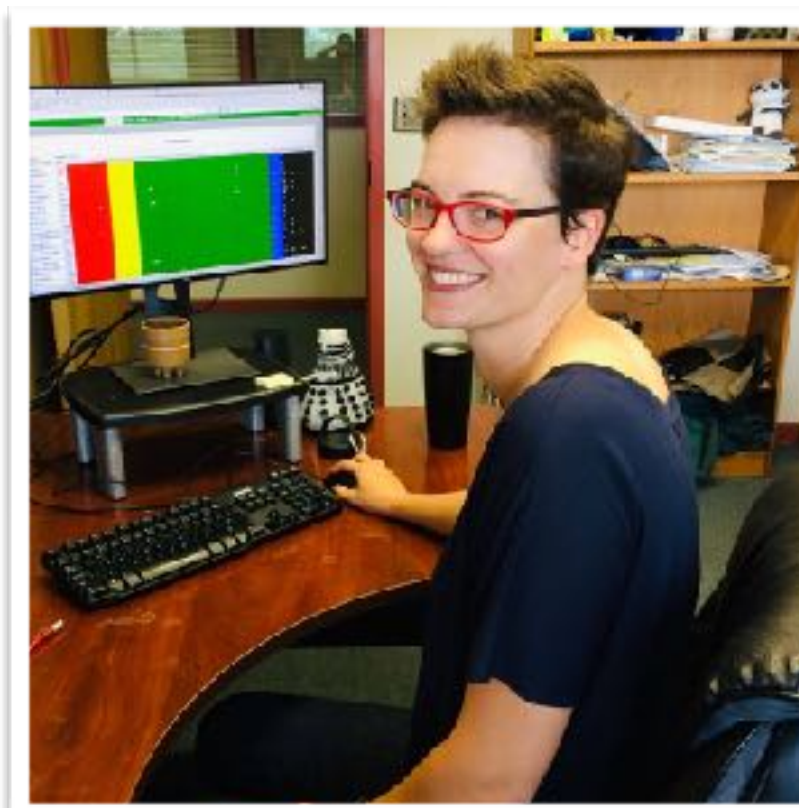


Left to right: New faces at EAO in Hilo:Skye and Summer Matulonis; Luke Ezekiel Mairs Emma Li

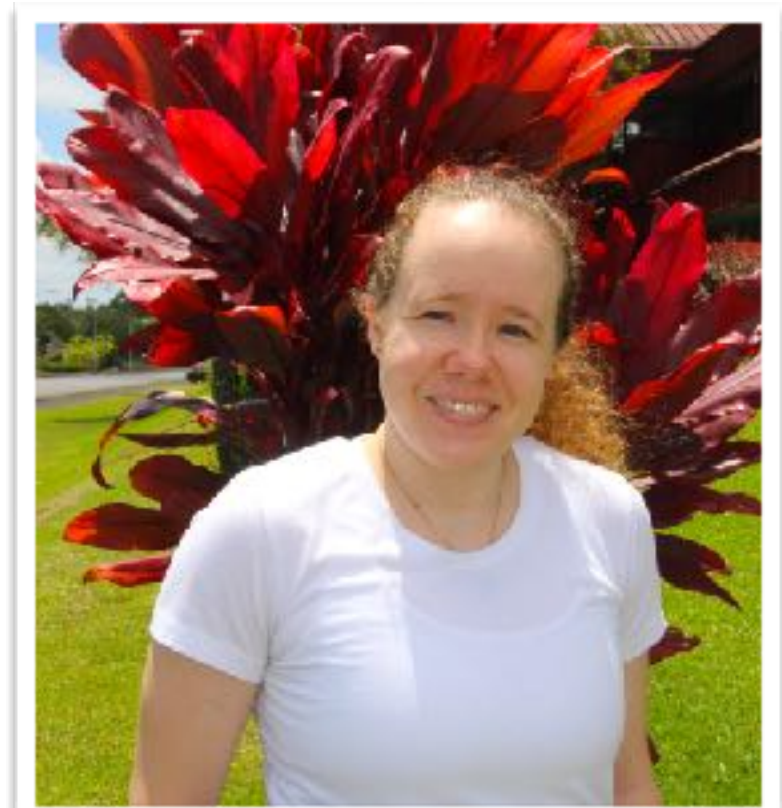
JCMT staff at this meeting



Mark Rawlings
Telescope Scheduler



Sarah Graves
Scientific Programmer



Alex Tetarenko
EAO Fellow

