



VLBI OBSERVATION STATUS AT JCMT

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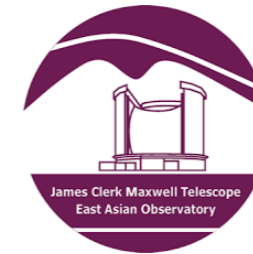
JCMT

- Maunakea Summit, altitude 4092m
- Largest Sub-mm meter radio telescope (Diameter:15m)
- Mainly Single dish Observation
- VLBI Observation only couple of week
 - EHT, East Asia VLBI high



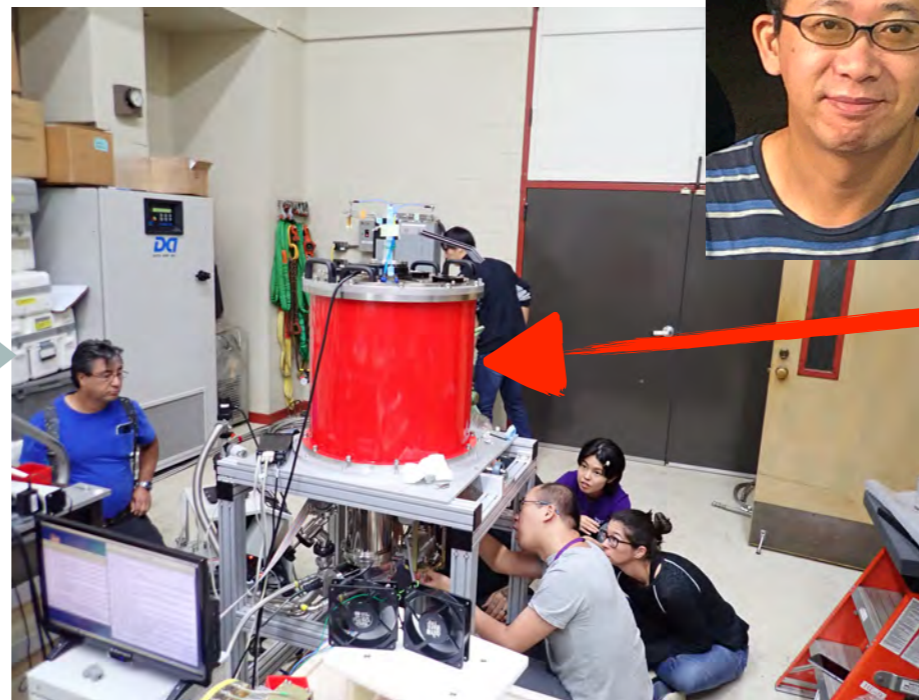
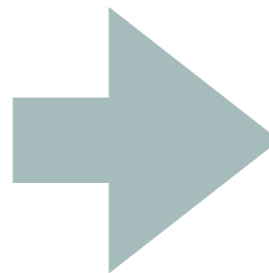
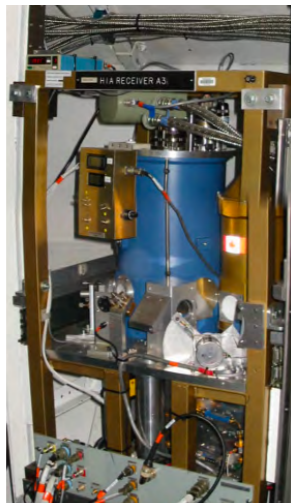
The JCMT. Image Credit: William Montgomerie

NAKAMANUI INTRODUCTION

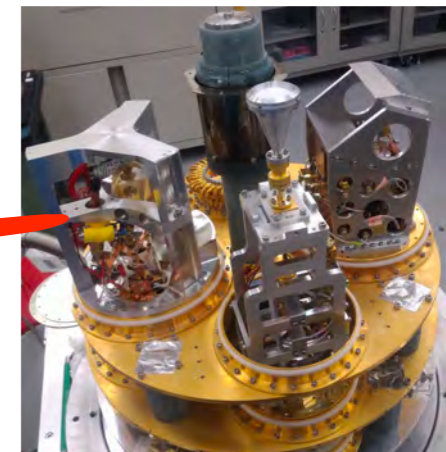


- GLT spare
- ALMA Type receiver assembled by Johson (Chih-Chiang Han) Team

RXA

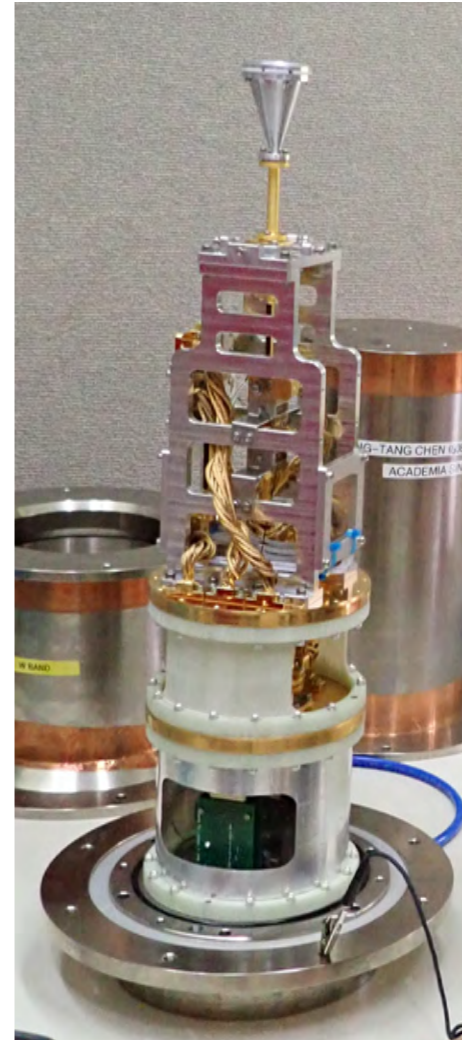
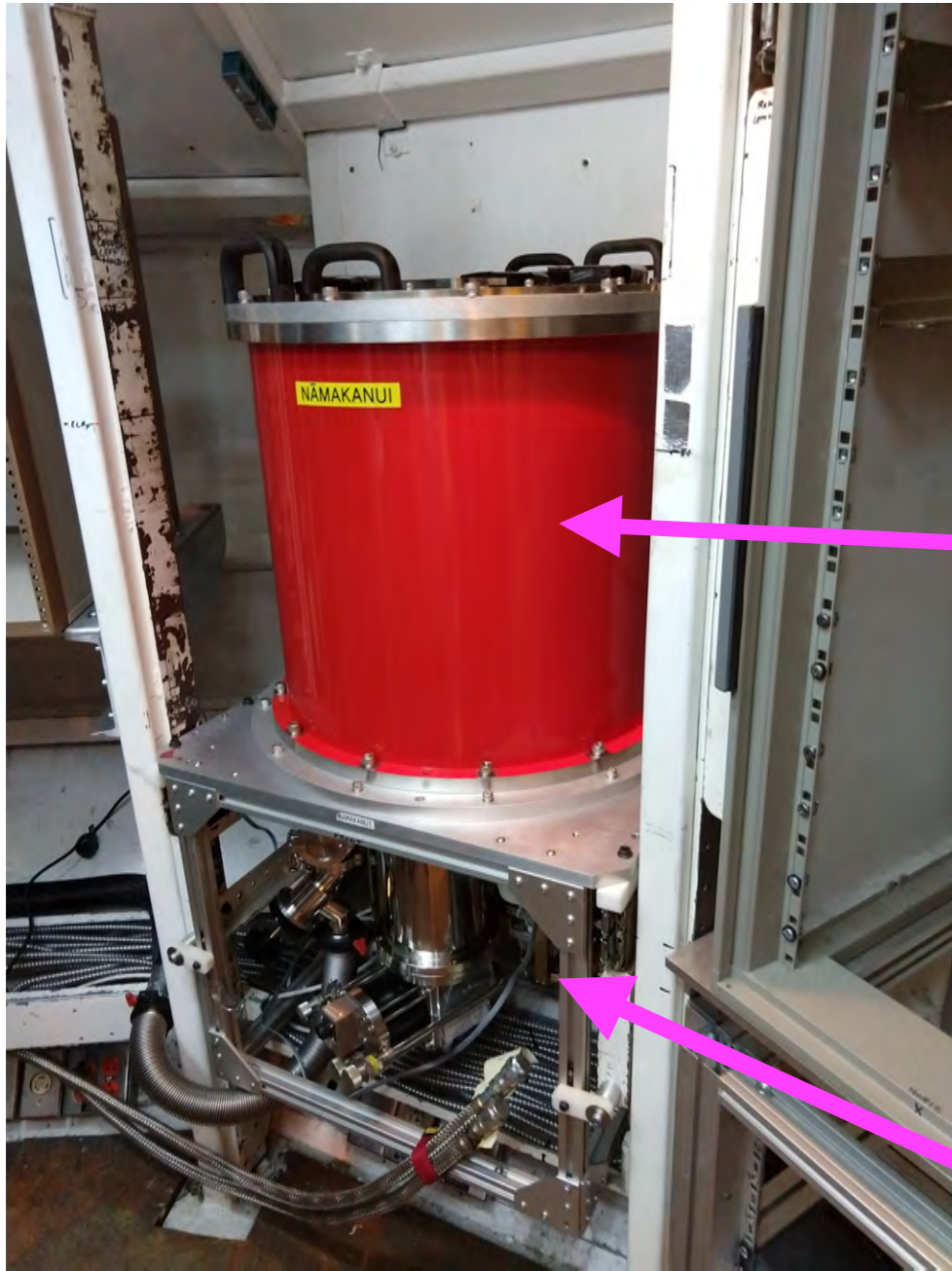


Inside

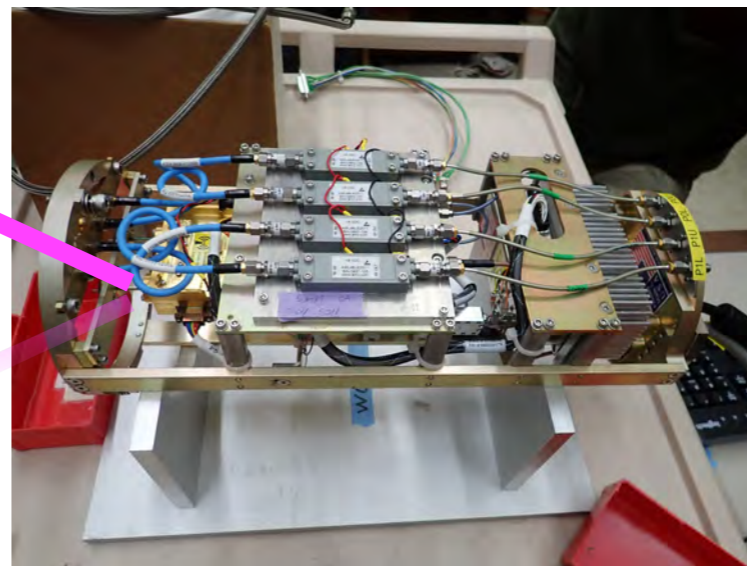


	RXA	Namakanui
Status	Retired	Commissioning
Band	230	86, 230, 345
Polarization	Single	Dual

WHAT IS ALMA TYPE RECEIVER



Cold Cartridge



Warm Cartridge
LO signal oscillator
IF Amplifier

NAME OF NAMAKANUI

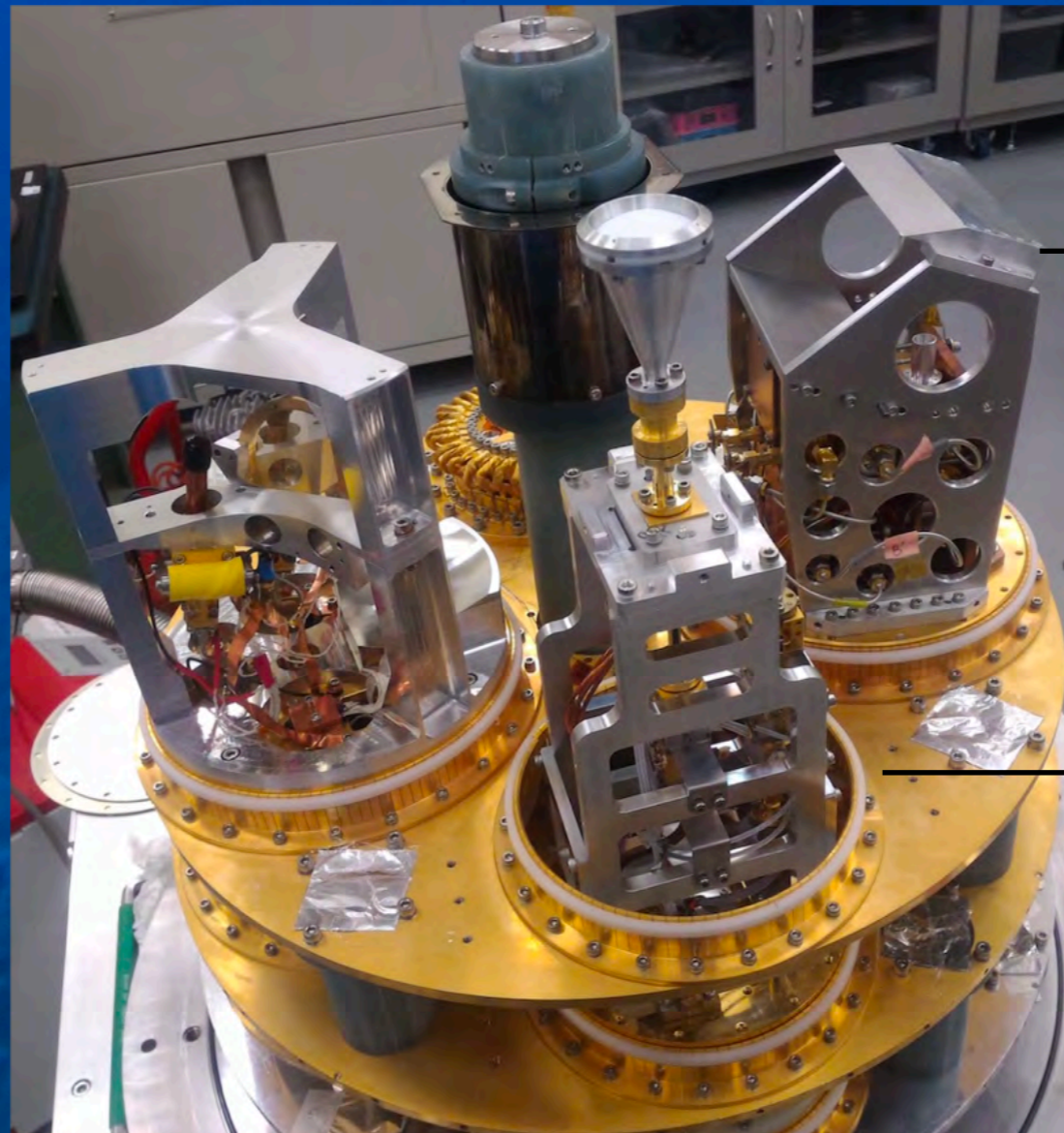
► NAMAKANUI: Big Eyes



*Hawaiian Language associate professor:
Larry Kimura*



*'Aweoweo
345GHz*



*U'U
230GHz*



*'Ala'ihī
86GHz*

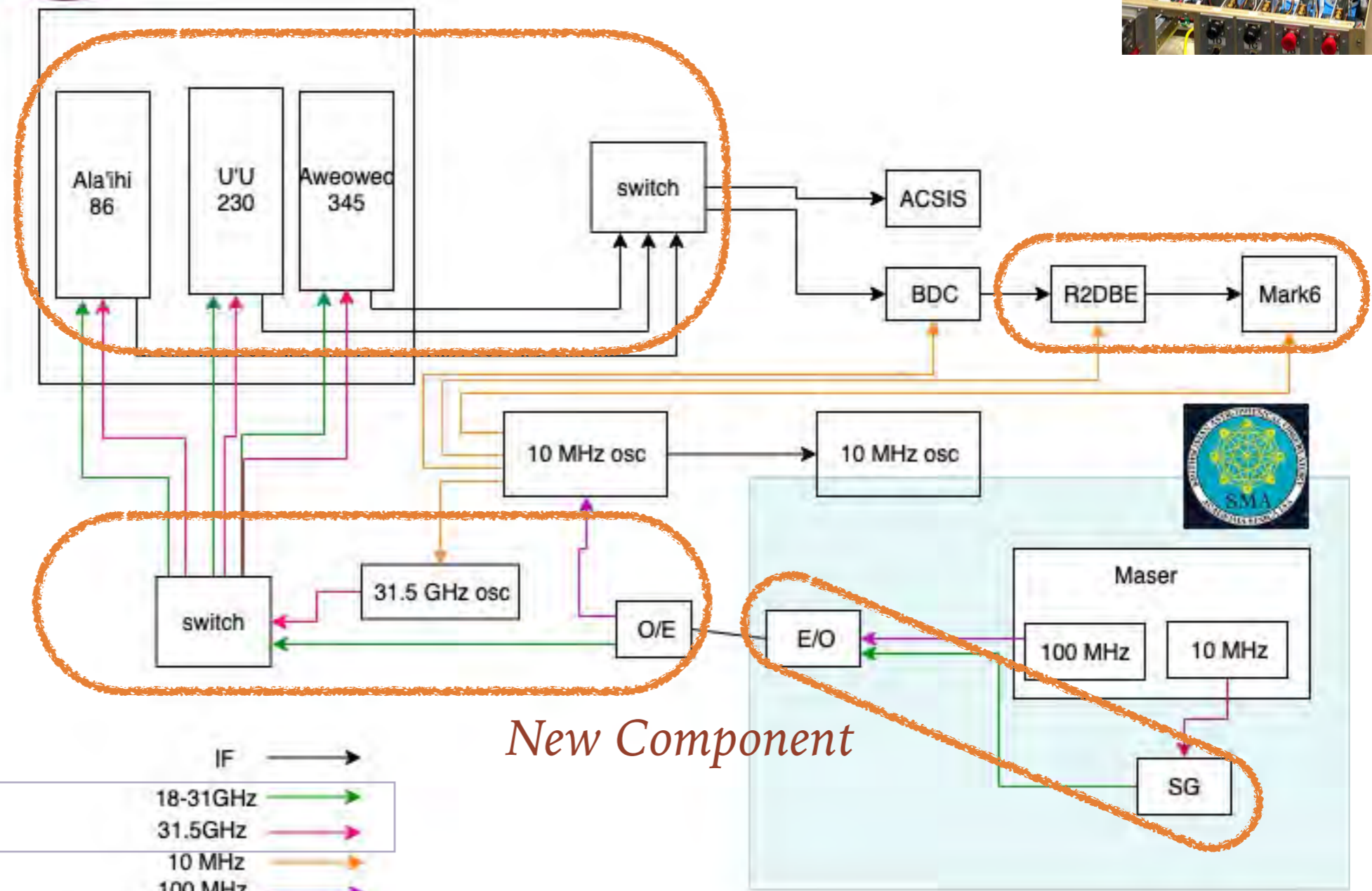


VLBI CONFIGURATION

Optical transmission system (O/E, E/O) was tested and ready to install

Replacing cables for 18-31 GHz

Waiting additional R2DBEs arrival

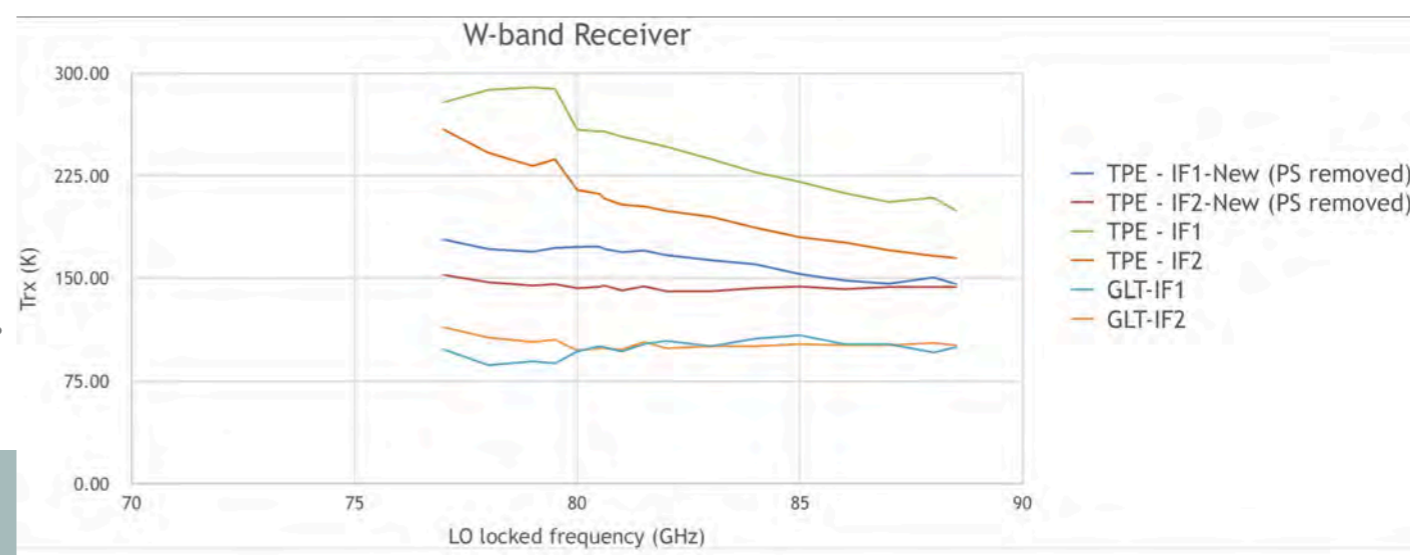


Reference of LO signal

- IF →
- 18-31GHz →
- 31.5GHz →
- 10 MHz →
- 100 MHz →

New Component

NAMAKANUI SPECIFICATION



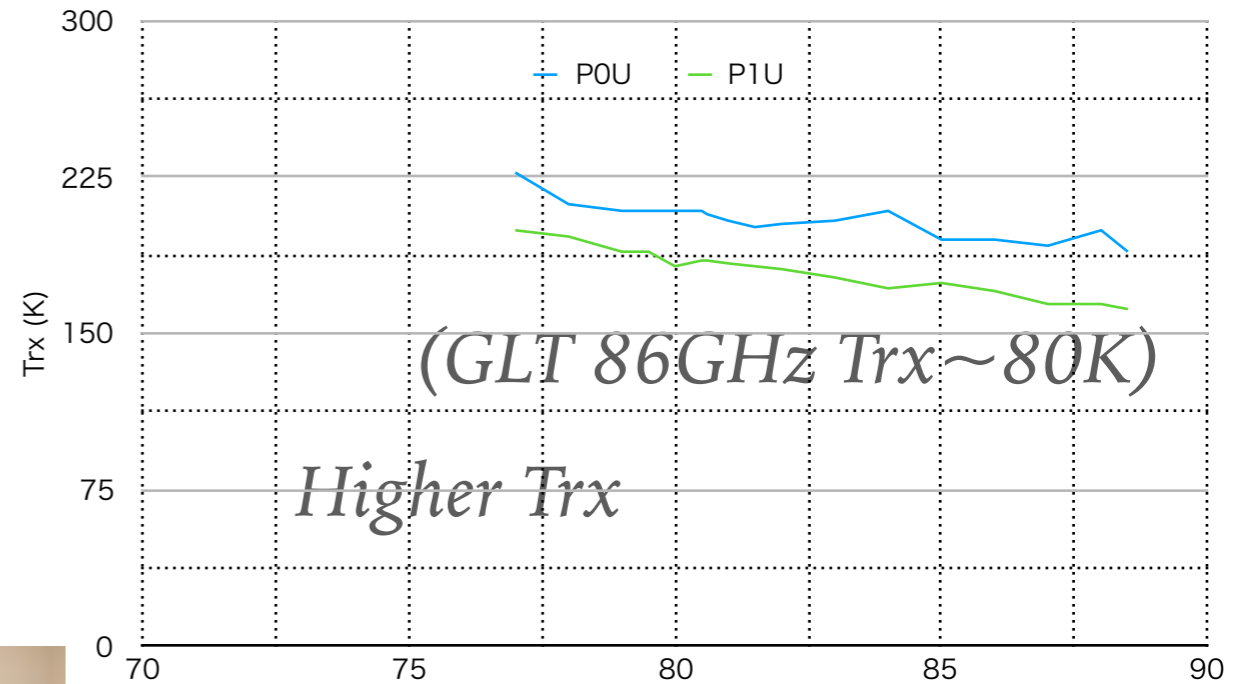
	LO Frequency (GHz)	Band Width	Polarization	Sideband	Trx (K)
Ala'ihī 86 GHz	80-88	8 (IF 5-9, 2pol)	Dual Linear polarization (+waveplate)	SSB	160-230
U'U 230 GHz	221-264	8 (IF 5-9, 2pol)	Dual Linear polarization +waveplate	2SB	55-105
Aweoweo 345 GHz	280-367	8 (IF 5-9, 2pol)	Dual Linear polarization +waveplate	2SB	50-70

TRX (RECEIVER NOISE TEMPERATURE)

Ala'ihī (86 GHz)

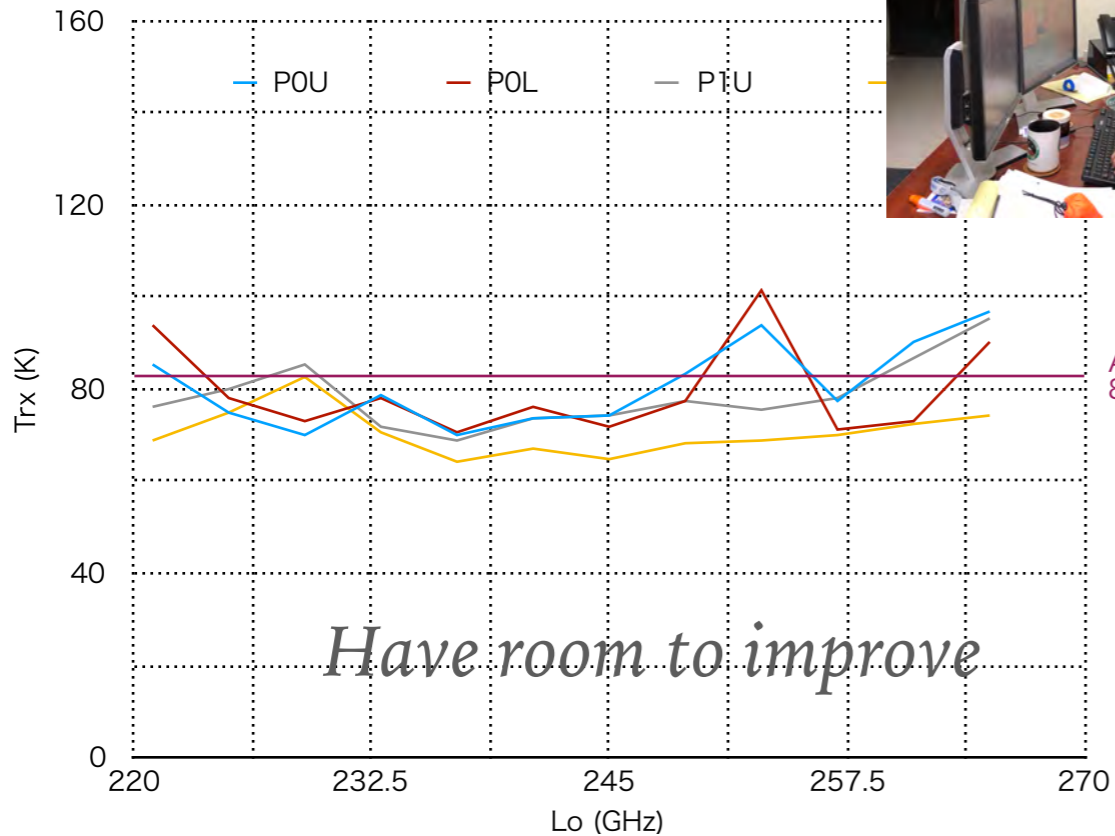


20190828_trx_Band3_summit

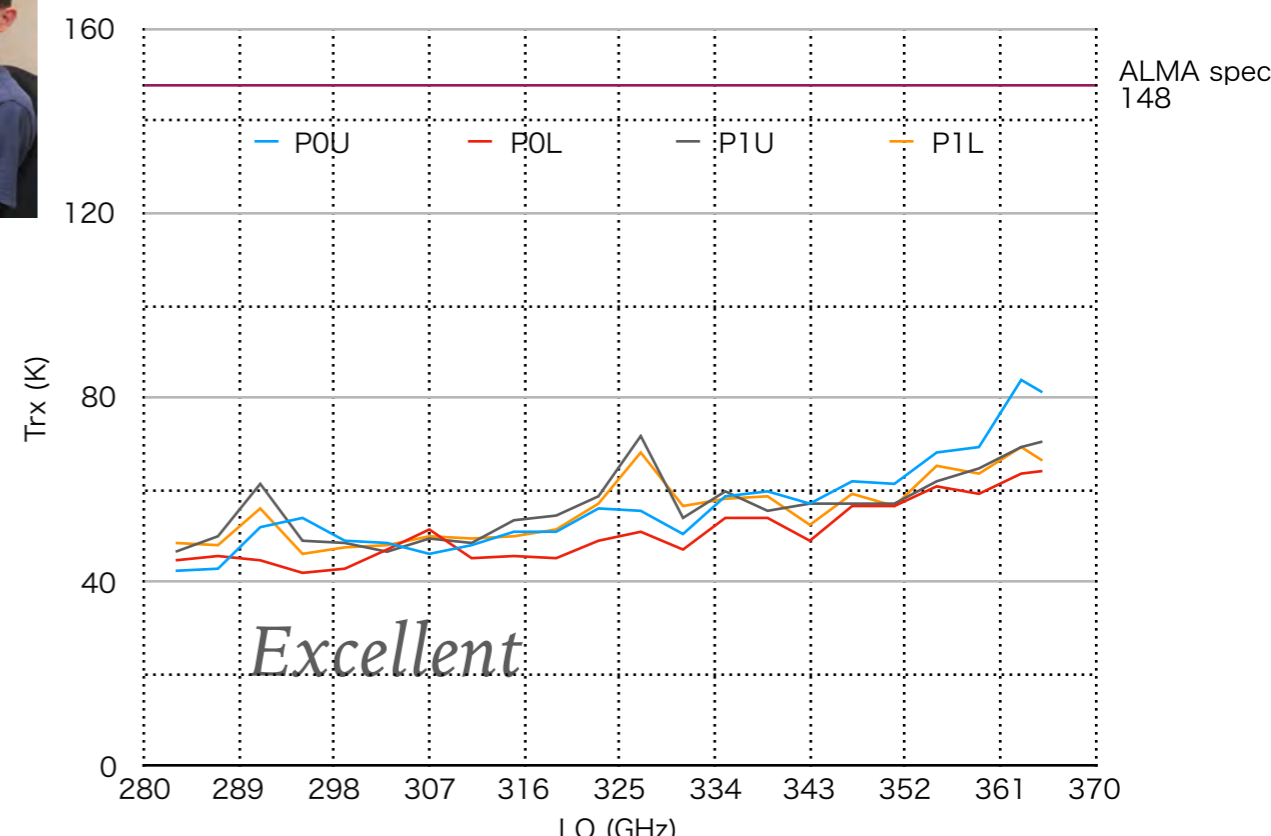


U'U (230 GHz)

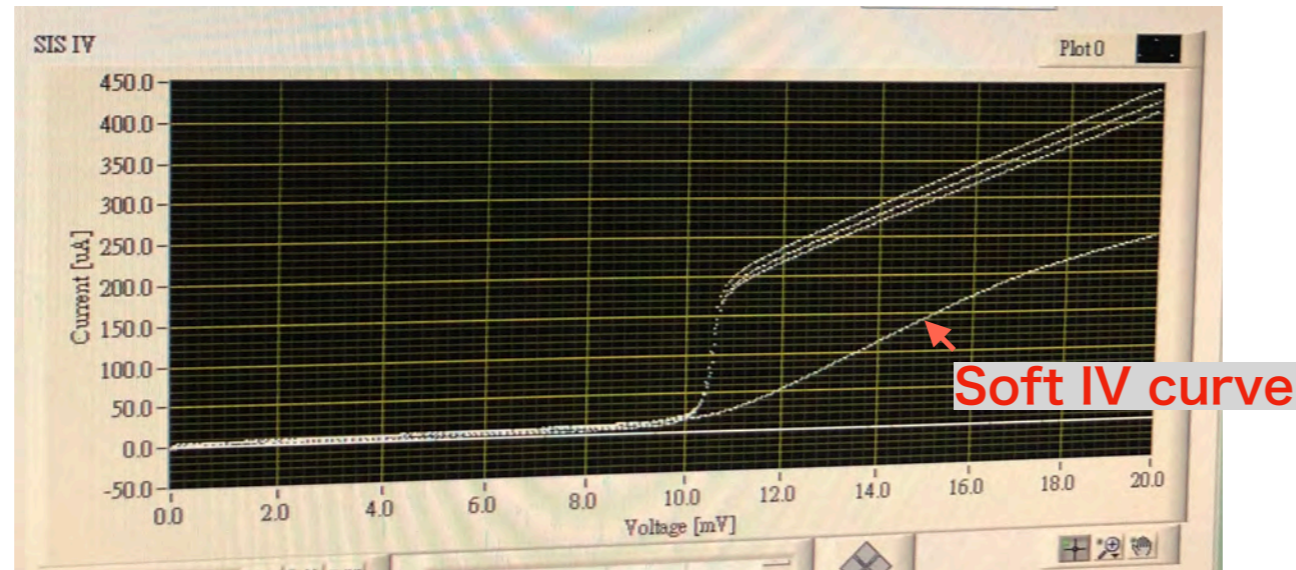
20190828_trx_Band6_summit



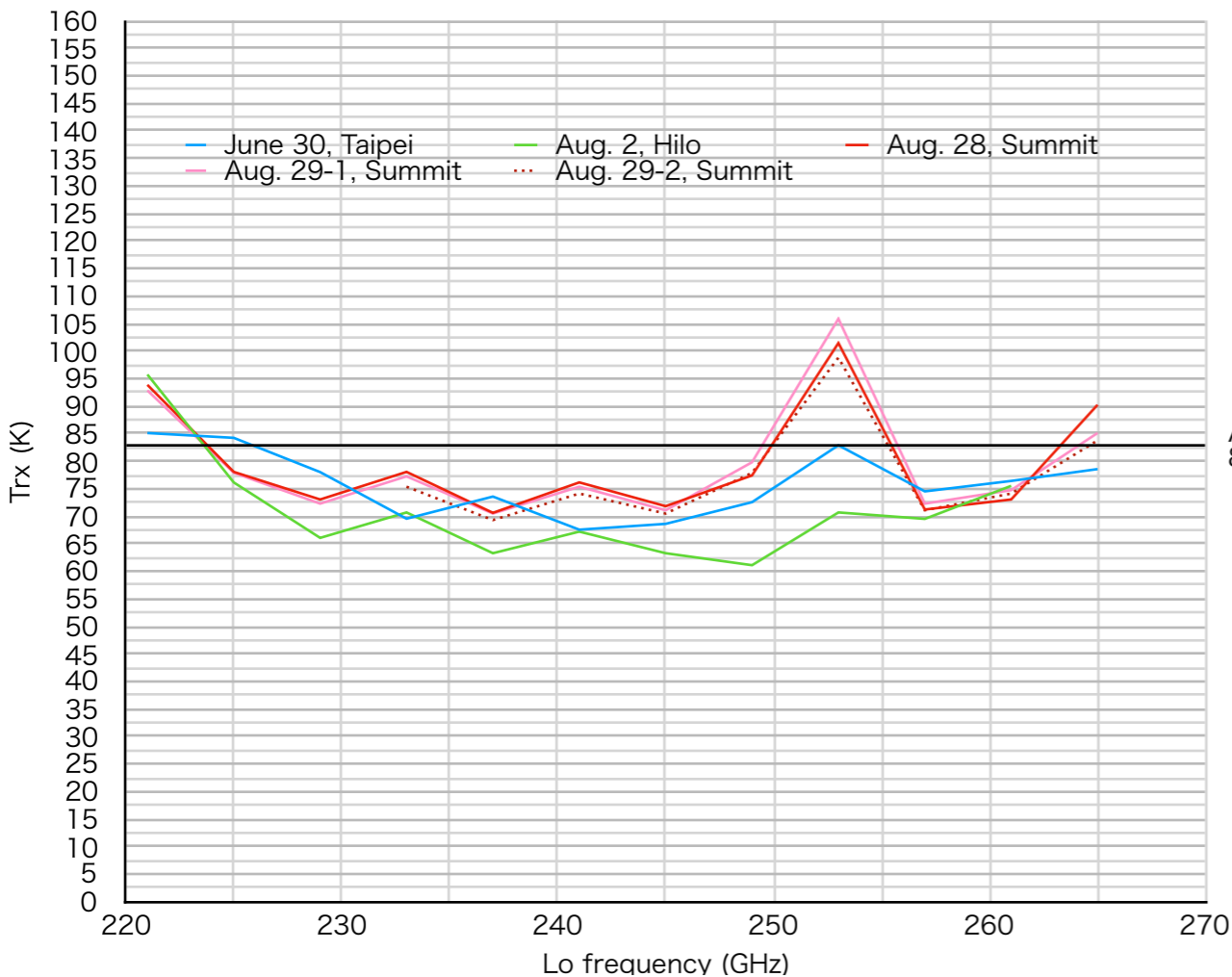
Aweoweo (345 GHz)



IV CURVE ISSUE FOR U'U (230 GHZ)



Band6 Pol0 LSB



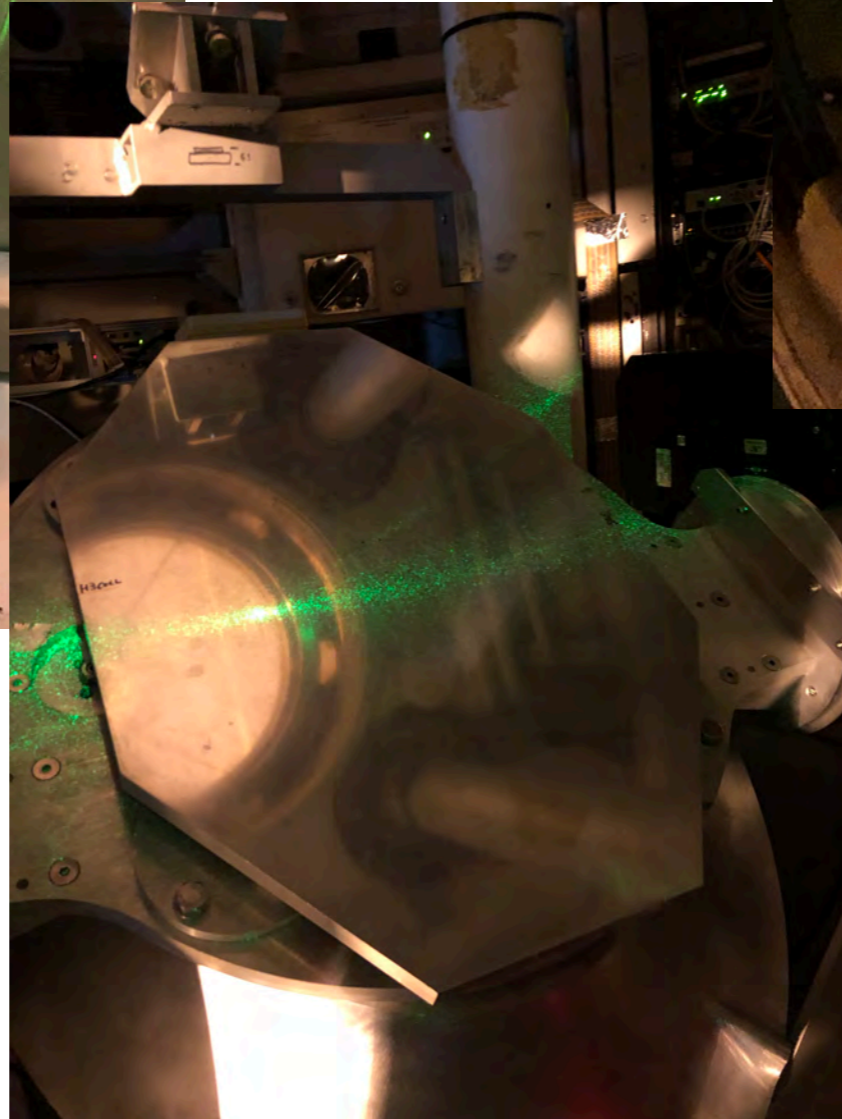
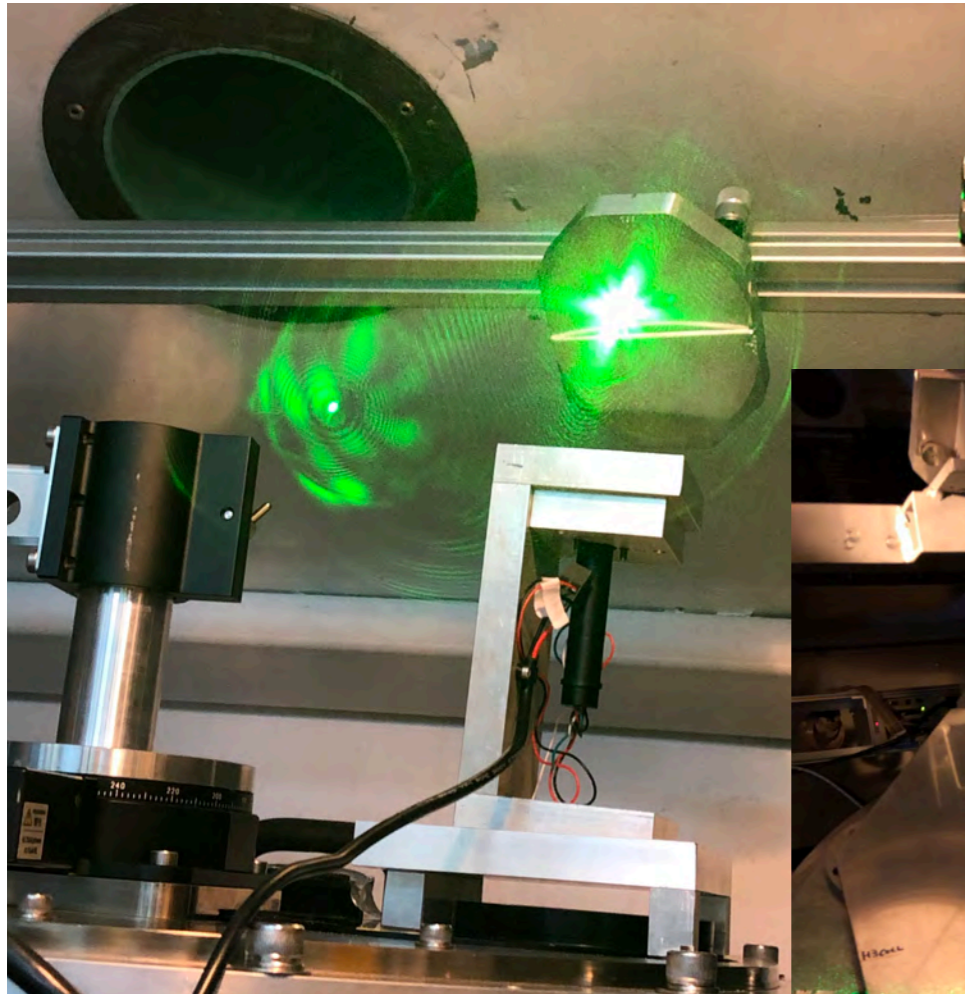
ALMA Spec
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Trx value characteristic vary every thermal cycle

Problematic mixer will be changed.

Check side band separate ratio

MIRROR ALIGNMENT FOR U'U (230 GHZ)



SUMMARY

- Nakamanui commissioning on going
- VLBI Backend : updating
- Ala'ihi 86 GHz: Higher Trx, need prepare wave-guide
- Aweoweo 345 GHz: good trx values
- U'U 230 GHz: bias table updating, side band separation ration will be checked, mirror was attached, close to go SKY

JCMT COMMISSIONING TEAM

