

SMA Operations

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SMA Hawai'i operations

- Operate array
- Reconfigure array
- Maintain and upgrade instrumentation
- IT infrastructure
- Facilities

- Outreach
- Hawai'i relations

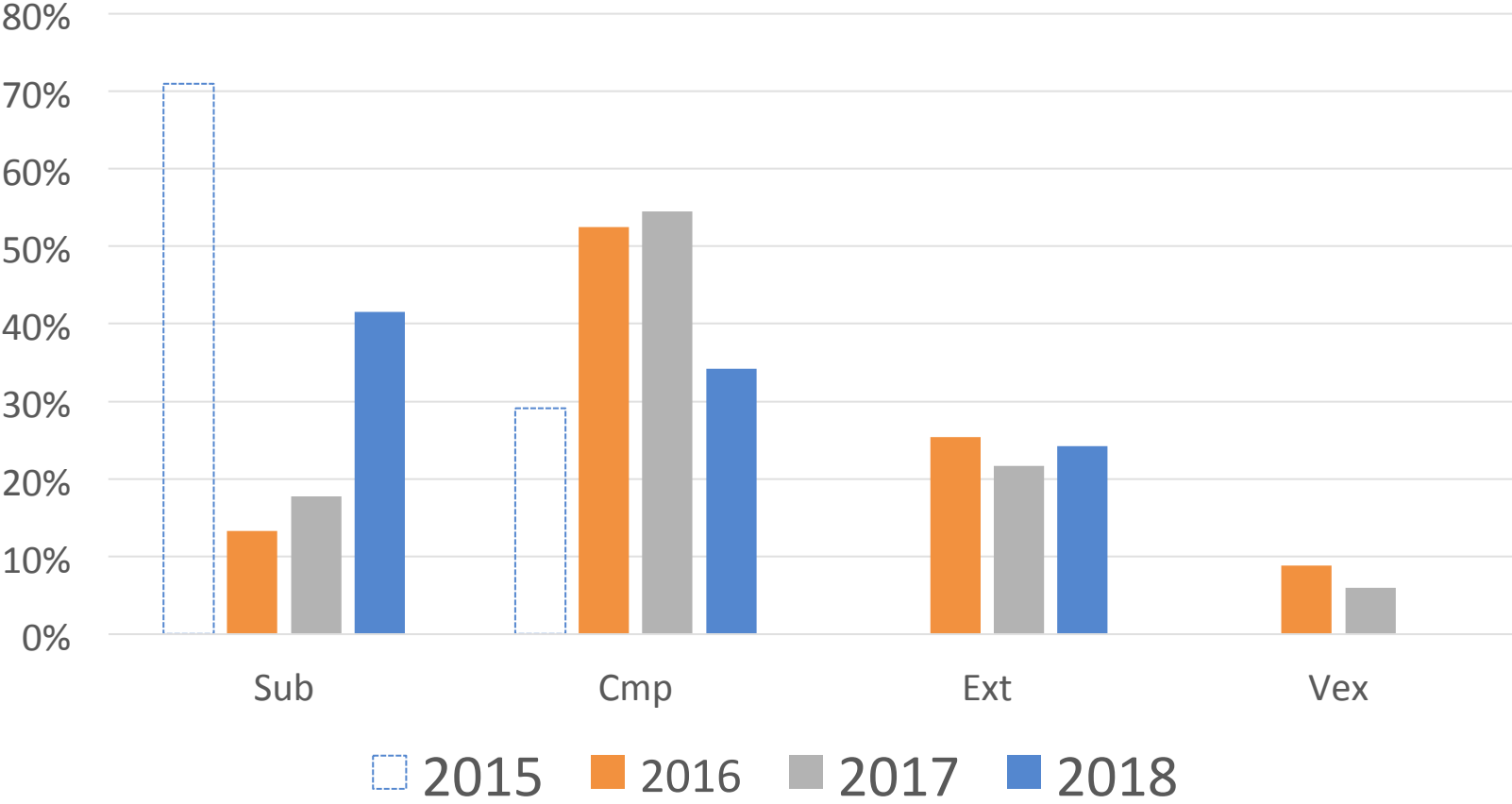
Technical activities

- Antenna drive system maintenance and overhauls
- Array reconfiguration; transporter maintenance
- He compressor and H₂O chiller maintenance and repair
- Receiver cryostat maintenance and overhauls
- Receiver insert swaps and upgrades
- Receiver optics alignment; beam patterns; holography
- LO and electronics adjustments, repairs, and upgrades
- ASIC maintenance & removal; SWARM installation
- IT infrastructure maintenance and updates
- AC maintenance; facility maintenance
- Snow removal

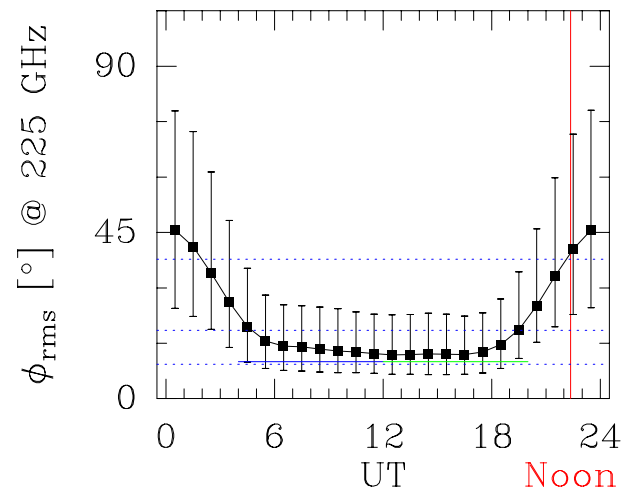
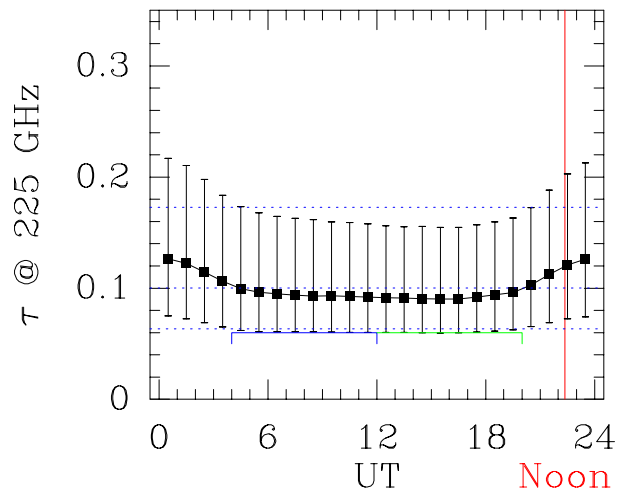
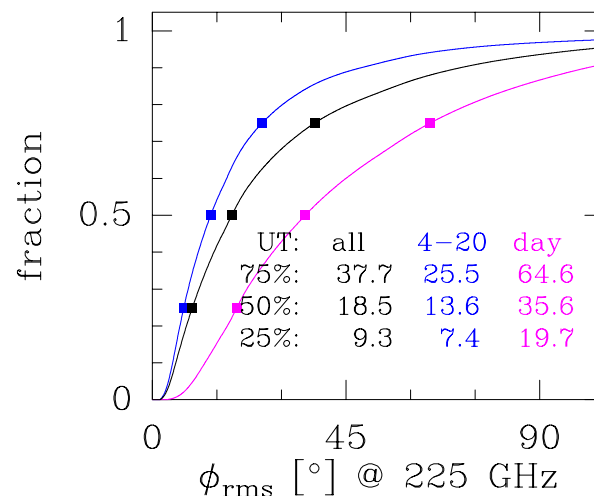
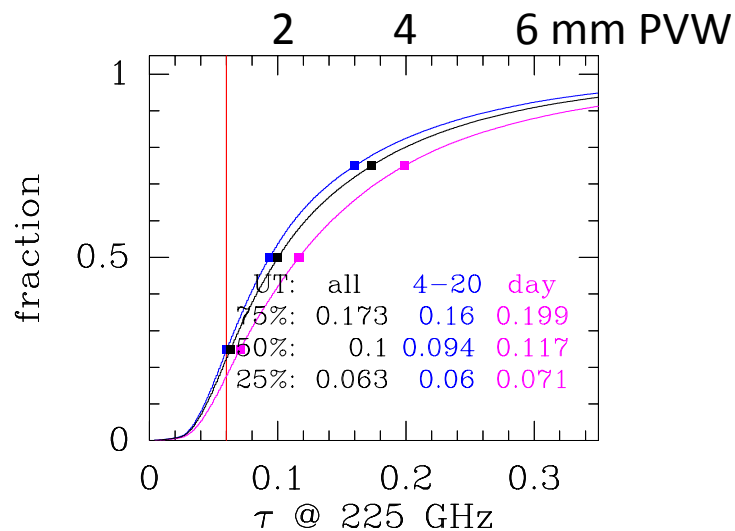
Safety

- Positive annual reviews by SI OSHEM METR team
- 2016 1 injury
- 2017 0 injuries
- 2018 0 injuries
- Contingent duty safety coordinator 2016-2017
- Acting safety coordinator (SR) 2018

Configuration usage



MK observing conditions



Scheduled observations

- 5 nights Sun-Thu 18 – 10 HST
- 2 nights Fri, Sat 18 – 6 HST
- total 104 h wk⁻¹ 62%
- Matched to diurnal weather conditions
- Constraints: technical work, security
- On site Maunakea 46%
- Remote Cambridge, Hilo, or Taipei 54%

Expanded observations

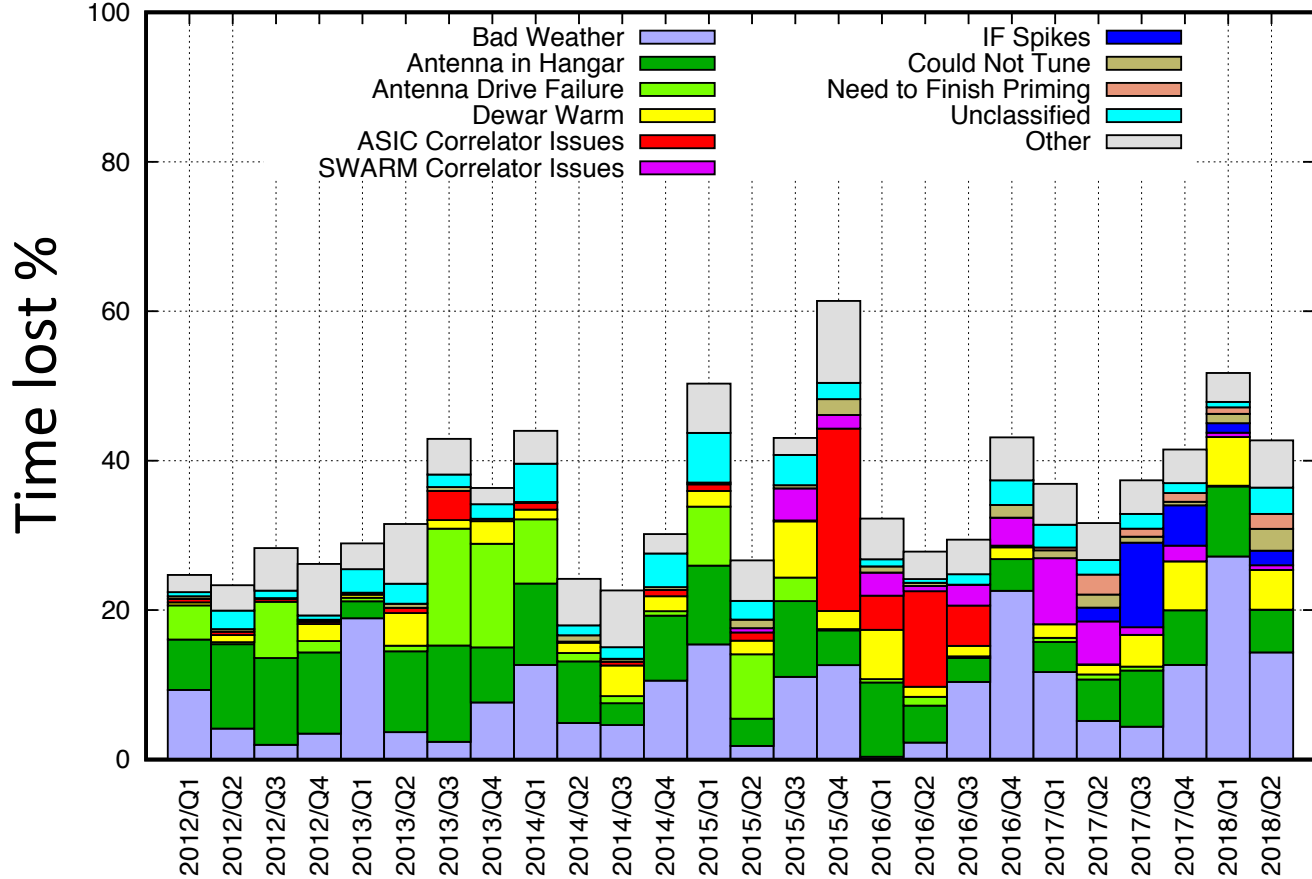
Present: 104 hr wk⁻¹ (62%)

UT	HST						
	Sun	Mon	Tue	Wed	Thu	Fri	Sat
0		Tech	Tech	Tech	Tech	Tech	
1							
2	Prime	Prime	Prime	Prime	Prime	Prime	
3	MK	Hilo	MK	MK	Hilo	MK	Pr MK
4							
5	Obs	Obs	Obs	Obs	Obs		
6	MK	MK	Hilo	Hilo	MK		
7	8 hr	8 hr	8 hr	8 hr	8 hr	Obs	Obs
8						MK	MK
9	Oper & Visitor	Oper & Visitor	Oper	Oper	Oper & Visitor	12 hr	12 hr
10							
11						Oper & Visitor	Oper & Visitor
12							
13							
14	Obs	Obs	Obs	Obs	Obs		
15	Camb	Camb	Camb	Camb	Taipei		
16	8 hr	8 hr	8 hr	8 hr	8 hr		
17							
18	Oper	Oper	Oper	Oper	Oper		
19							
20							
21	Tech	Tech	Tech	Tech	Tech		
22							
23							

Proposed: 124 hr wk⁻¹ (74%)

UT	HST						
	Sun	Mon	Tue	Wed	Thu	Fri	Sat
0		Tech	Tech	Tech	Tech	Tech	
1							
2	Prime	Prime	Prime	Prime	Prime	Prime	Prime
3	HP/MK	Hilo	MK	MK	Hilo	HP/MK	HP/MK
4							
5	Obs	Obs	Obs	Obs	Obs	Obs	Obs
6	MK	MK	Hilo	Hilo	MK	MK	MK
7	8 hr	8 hr	8 hr	8 hr	8 hr	8 hr	8 hr
8							
9	Oper & Visitor	Oper & Visitor	Oper	Oper	Oper & Visitor	Op1 & Vis1	Op1 & Vis1
10							
11							
12							
13							
14	Obs	Obs	Obs	Obs	Obs	Obs	Obs
15	Camb	Camb	Camb	Camb	Taipei	MK	MK
16	8 hr	8 hr	8 hr	8 hr	8 hr	9 hr	9 hr
17							
18	Oper	Oper	Oper	Oper	Oper	Op2 & Vis2	Op2 & Vis2
19							
20							
21	2 hr	2 hr	2 hr	2 hr	2 hr		
22							
23	Tech	Tech	Tech	Tech	Tech		

Causes



Antennas deployed: 7.6 in 2016, 7.4 in 2017, 7.4 in 2018 ytd;
 SWARM performance improving; IF spikes only partial loss;
 Rx cryo upsets mostly due to power glitches; more bad weather in 2018 ytd than all of 2017

Science Observations

Semester	Observed	Accepted		CfA (85%) ²	ASIAA	UH
				72.25%	15% x 85% 12.75%	15%
2016B	11/16 - 5/15	181	113	62%	67%	
2017A	5/16 - 11/15	176	112	64%	78%	12%
2017B	11/16 - 5/15	160	66	41%	68%	14%
2018A	5/16 - 7/9	48	27	56%	70%	11%
2016-7	average	172	97	56%	71%	12%

2018A 21 tracks not accepted (44%):

13 bad weather, 3 hardware, 2 software, 3 admin

Science observations

- 2016B–2018A
 - 345 GHz 23%
 - 230 GHz 77%

- Polarization 9% overall
 - 21% of 345 GHz observations
 - 5% of 230 GHz observations

Staffing

- SAO 14 + 5 vacancies
 - 3 + 1 operators
 - 9 + 3 technical
 - 2 + 1 administration and management
- ASIAA 3.x
 - 3 technical
 - .x administration and management
- Anticipate some retirements in coming years

Outreach

- Community events: connect residents with MK obs activities
- Encourage STEM interest
- School visits K-12
- Undergraduate observing opportunity
- Summer interns



Hawai'i relations

- Maunakea is the focus of community attention
 - TMT is catalyst of concern but not only factor
- UH manages MK under master lease thru 2033
- SAO has sublease and op agreement with UH
- UH management of MK under scrutiny
- SMA concerns
 - Change of MK management, early sublease terminat'n?
 - Master lease renewal beyond 2033
 - New terms for op agreement and sublease

