



Weather, Seeing, and Computer Upgrades

Nils Turner

18 March 2019 / CHARA Winter Meeting, Flagstaff



Weather Station Uptime

	Cum.	2015	2016	2017	2018
E1	95.5	95.9	95.2	97.3	95.2
E2	82.8	3.4	65.0	96.5	95.9
S1	94.8	94.3	95.1	97.3	96.9
S2	93.5	97.0	93.3	84.5	98.3
W1	95.8	98.2	95.0	97.3	92.8
W2	97.8	98.0	92.1	97.2	97.5
L1	67.6	99.7	99.4	63.1	69.6

Table: Weather station uptimes as a percentage of time.



Weather Station Upgrades



Original Anemometer



PRO Anemometer



Cross-year Vital Stats

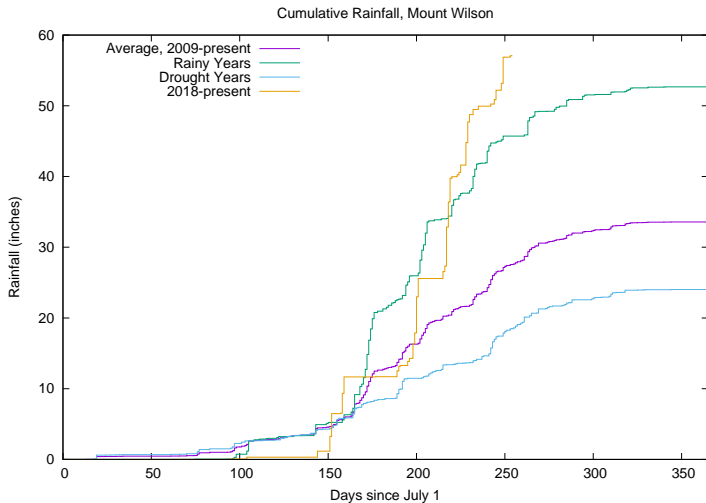
	2013	2014	2015	2016	2017	2018
Measurable Wind	27.5	11.4	14.3	50.8	63.7	55.3
High Wind [†]	0.3	0.2	0.2	0.3	0.4	0.2
High Humidity [‡]	13.5	16.0	17.5	17.4	18.6	15.0

Table: Table entries are percentages of time. Values quoted are the largest of the six bunker weather stations. † High wind is defined as being above 20 kph. ‡ High Humidity is defined as being above 90%.



Rainfall

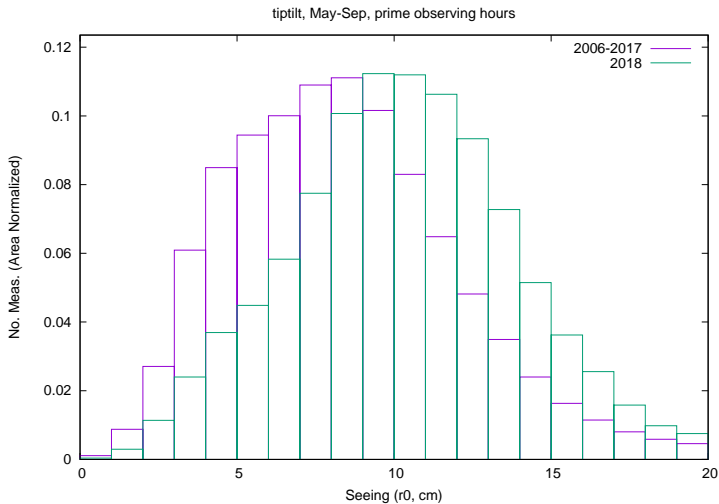
data courtesy of L. Webster





Seeing

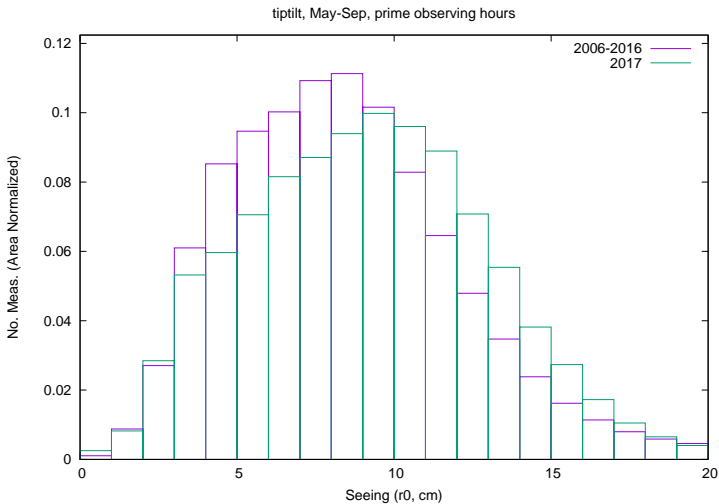
r_0 values





Seeing

r_0 values, last year

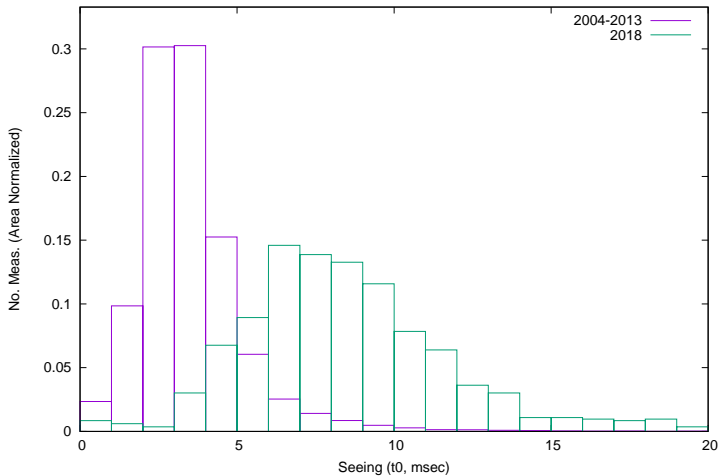




Seeing

t_0 values

2004-2013 data vs. 2018, Classic

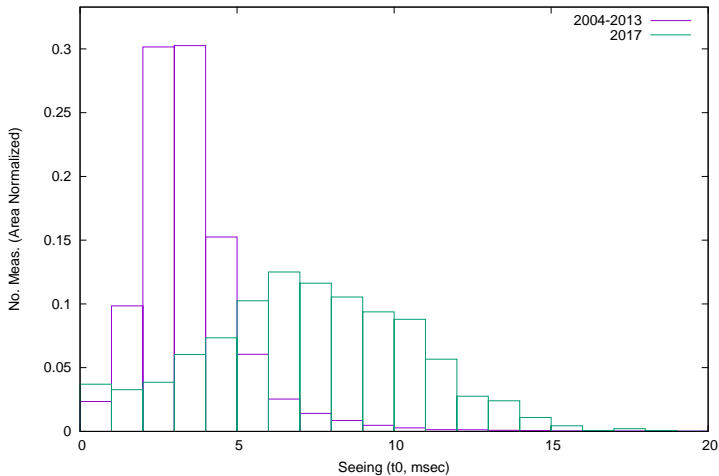




Seeing

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Computers and Control System

Status

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 - ▶ CPU temperatures
 - ▶ Cooling fan health



Computers and Control System

New Stuff – New and improved *Lurk Mode*

astro.gsu.edu/~weather/chara_scopes.html

Gmail NWS LA/Oxnard CLARS - Mt. Wilson Towercam, MTW HPWREN Latest Earthquakes Maps CHARA TELESCOPE ... CalFire LA Cnty Roads

CHARA TELESCOPE STATUS

WEATHER

Mean Seeing Every 10 Minutes

CHARA ALL-SKY Camera Movie

Click on any image for a full-size version [Most recent All Sky Camera Movie](#)

E1: HD 155763 2019/03/13 5:45:41 RA: 1 59 15.7 Dec: +34 8 55.6 Az = 55.9 El = 90.0	E2: HD 155763 2019/03/13 5:45:01 RA: 1 59 3.9 Dec: +34 9 14.6 Az = 55.9 El = 90.0	S1: NOSTAR 2019/03/12 18:23:25 RA: 1 58 57.0 Dec: +34 15 7.3 Az = 82.0 El = 90.0	S2: NOSTAR 2019/03/12 23:53:21 RA: 1 58 32.8 Dec: +34 8 30.8 Az = 82.0 El = 90.0	W1: HD 62509 2019/03/12 22:12:21 RA: 6 39 53.8 Dec: + 2 32 11.9 Az = 99.3 El = 17.9	W2: HD 155763 2019/03/13 5:44:41 RA: 1 59 21.4 Dec: +33 59 17.8 Az = 99.3 El = 90.0

Page last generated: 2019/03/13 15:27:31 [CHARA Array Home Page](#) [GSU Astronomy Home](#)



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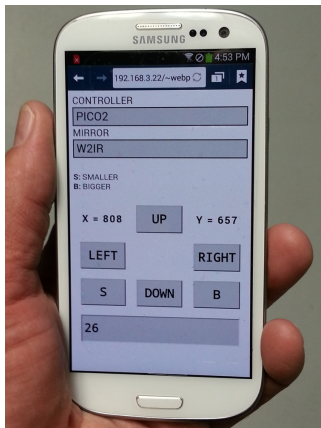
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- ▶ Minimal use of DropBox (no longer supported on older Linux file systems)
- ▶ On-demand features such as humidity and temperature plots to be added
- ▶ Modifications needed for new aspect ratios of finder and acquisition cameras



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New Stuff – PICO Web interface

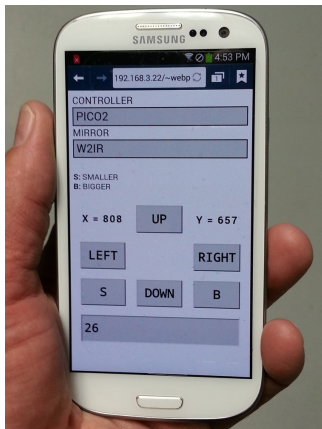


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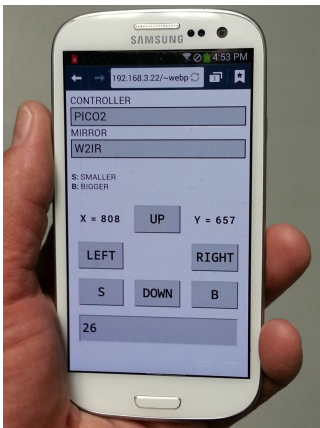


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- ▶ Works with any browser so long as you are connected to the CHARA Lab internal wifi network



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- ▶ Currently only controls PICO motors, but investigating feasibility of adding other motion controls such as zabers