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

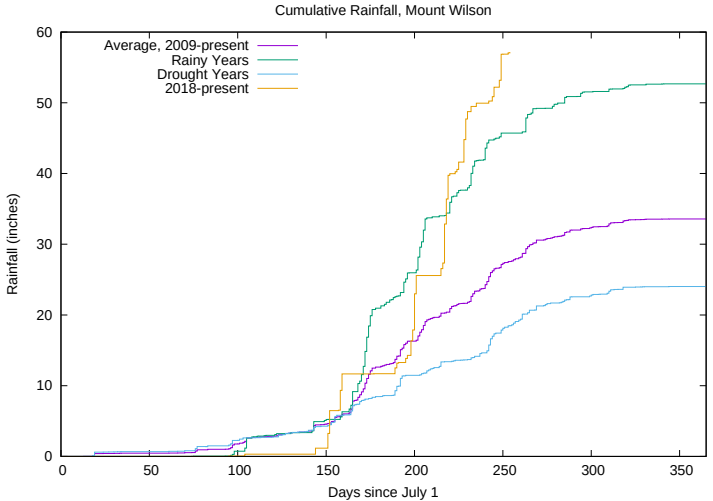
Cross-year Vital Stats

	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%.

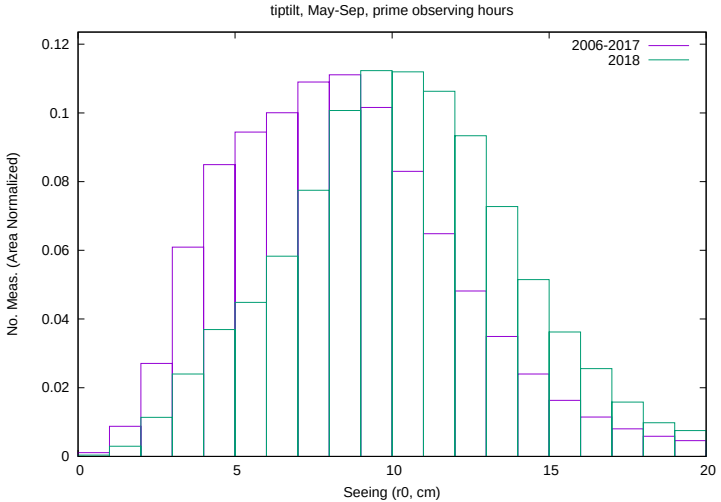
Rainfall

data courtesy of L. Webster



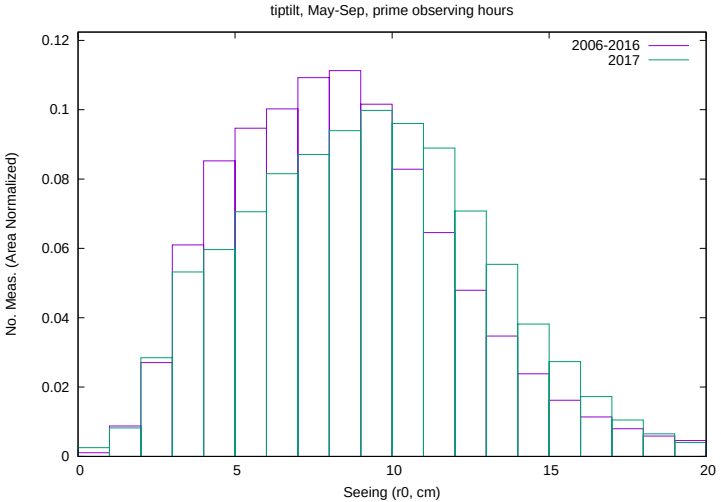
Seeing

r_0 values



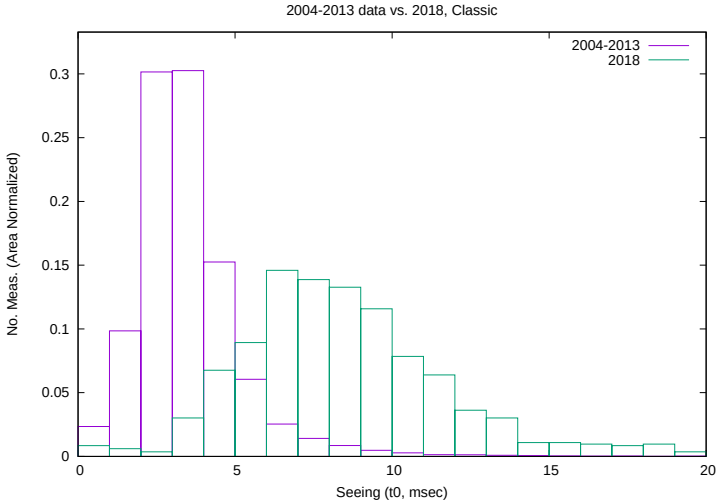
Seeing

r_0 values, last year



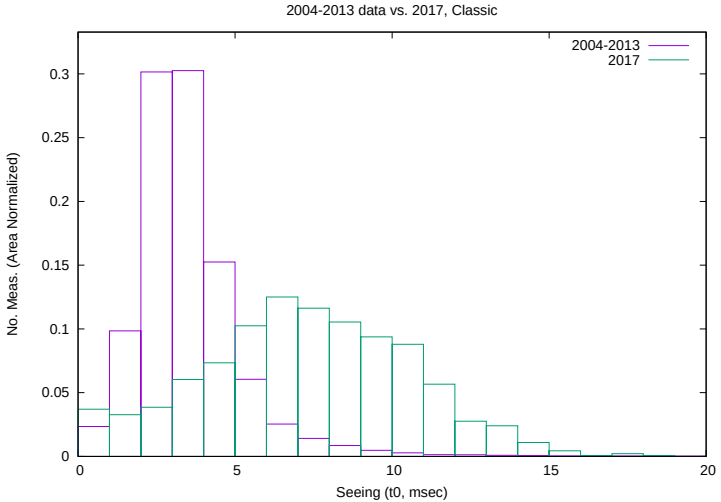
Seeing

t_0 values



Seeing

t_0 values, last year



Computers and Control System

Status

- Ubuntu Studio (with backported 4.4 kernel) installed with a few exceptions

Computers and Control System

Status

- Ubuntu Studio (with backported 4.4 kernel) installed with a few exceptions
  - `tiptilt` computer still using 2.4.4 kernel (RedHat 7.1).

Computers and Control System

Status

- Ubuntu Studio (with backported 4.4 kernel) installed with a few exceptions
  - `tiptilt` computer still using 2.4.4 kernel (RedHat 7.1). To be supplanted by tiptilt at the telescopes

Computers and Control System

Status

- Ubuntu Studio (with backported 4.4 kernel) installed with a few exceptions
  - `tiptilt` computer still using 2.4.4 kernel (RedHat 7.1). To be supplanted by tiptilt at the telescopes
  - `pavo` computer still using 2.6.23 (Fedora 8).

Computers and Control System

Status

- Ubuntu Studio (with backported 4.4 kernel) installed with a few exceptions
  - `tiptilt` computer still using 2.4.4 kernel (RedHat 7.1). To be supplanted by tiptilt at the telescopes
  - `pavo` computer still using 2.6.23 (Fedora 8). Required to run the previous generation Andor camera

Computers and Control System

Status

- Ubuntu Studio (with backported 4.4 kernel) installed with a few exceptions
  - `tiptilt` computer still using 2.4.4 kernel (RedHat 7.1). To be supplanted by tiptilt at the telescopes
  - `pavo` computer still using 2.6.23 (Fedora 8). Required to run the previous generation Andor camera
- Enabling/building hardware monitoring utilities to increase system reliability

Computers and Control System

Status

- Ubuntu Studio (with backported 4.4 kernel) installed with a few exceptions
  - `tiptilt` computer still using 2.4.4 kernel (RedHat 7.1). To be supplanted by tiptilt at the telescopes
  - `pavo` computer still using 2.6.23 (Fedora 8). Required to run the previous generation Andor camera
- Enabling/building hardware monitoring utilities to increase system reliability
  - UPS units

Computers and Control System

Status

- Ubuntu Studio (with backported 4.4 kernel) installed with a few exceptions
  - `tiptilt` computer still using 2.4.4 kernel (RedHat 7.1). To be supplanted by tiptilt at the telescopes
  - `pavo` computer still using 2.6.23 (Fedora 8). Required to run the previous generation Andor camera
- Enabling/building hardware monitoring utilities to increase system reliability
  - UPS units
  - CPU temperatures

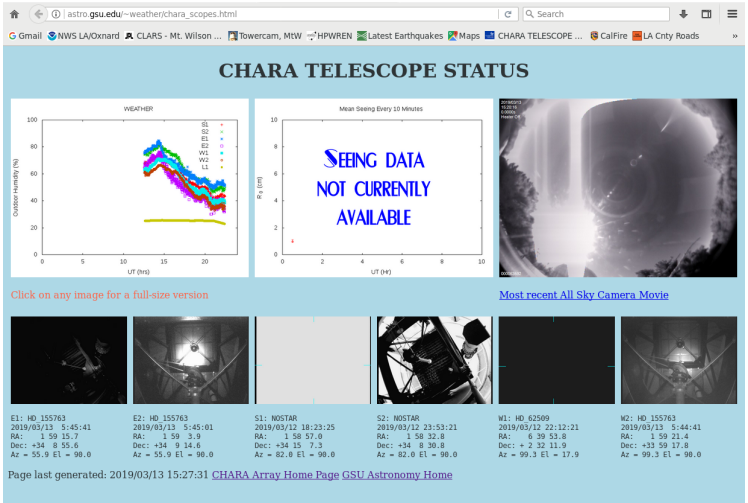
Computers and Control System

Status

- Ubuntu Studio (with backported 4.4 kernel) installed with a few exceptions
  - `tiptilt` computer still using 2.4.4 kernel (RedHat 7.1). To be supplanted by tiptilt at the telescopes
  - `pavo` computer still using 2.6.23 (Fedora 8). Required to run the previous generation Andor camera
- Enabling/building hardware monitoring utilities to increase system reliability
  - UPS units
  - CPU temperatures
  - Cooling fan health

Computers and Control System

New Stuff – New and improved *Lurk Mode*



Computers and Control System

New Stuff – New and improved *Lurk Mode*

- Can be found at:

  `http://astro.gsu.edu/~weather/chara_scopes.html`

Computers and Control System

New Stuff – New and improved *Lurk Mode*

- Can be found at:

  `http://astro.gsu.edu/~weather/chara_scopes.html`

- Minimal use of DropBox (no longer supported on older Linux file systems)

Computers and Control System

New Stuff – New and improved *Lurk Mode*

- Can be found at:

  `http://astro.gsu.edu/~weather/chara_scopes.html`

- Minimal use of DropBox (no longer supported on older Linux file systems)
- On-demand features such as humidity and temperature plots to be added

Computers and Control System

New Stuff – New and improved *Lurk Mode*

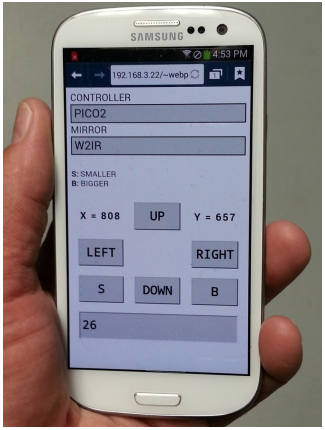
- Can be found at:

  `http://astro.gsu.edu/~weather/chara_scopes.html`

- 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

Computers and Control System

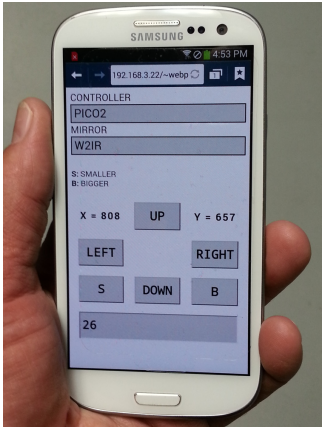
New Stuff – PICO Web interface



- Developed for us by a summer intern, Andrew Backer

Computers and Control System

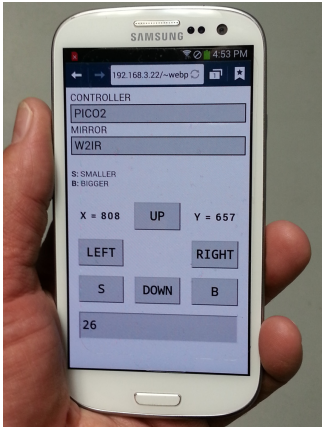
New Stuff – PICO Web interface



- Developed for us by a summer intern, Andrew Backer
- Works with any browser so long as you are connected to the CHARA Lab internal wifi network

Computers and Control System

New Stuff – PICO Web interface



- Developed for us by a summer intern, Andrew Backer
- Works with any browser so long as you are connected to the CHARA Lab internal wifi network
- Currently only controls PICO motors, but investigating feasibility of adding other motion controls such as zabers