Weather, Seeing, and Other Sundries

Nils Turner

14 March 2016 / CHARA Winter Meeting, Nice
### Weather Station Uptime

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>E1</td>
<td>95.4</td>
<td>97.3</td>
<td>99.9</td>
<td>99.7</td>
<td>95.9</td>
</tr>
<tr>
<td>E2</td>
<td>82.0</td>
<td>97.7</td>
<td>93.0</td>
<td>62.2</td>
<td>3.4</td>
</tr>
<tr>
<td>S1</td>
<td>94.3</td>
<td>99.0</td>
<td>99.7</td>
<td>79.8</td>
<td>94.3</td>
</tr>
<tr>
<td>S2</td>
<td>93.9</td>
<td>92.8</td>
<td>91.7</td>
<td>98.5</td>
<td>97.0</td>
</tr>
<tr>
<td>W1</td>
<td>96.1</td>
<td>98.8</td>
<td>93.3</td>
<td>97.9</td>
<td>98.2</td>
</tr>
<tr>
<td>W2</td>
<td>98.5</td>
<td>98.8</td>
<td>92.3</td>
<td>99.6</td>
<td>98.0</td>
</tr>
<tr>
<td>L1</td>
<td>71.1</td>
<td>30.5</td>
<td>12.9</td>
<td>99.7</td>
<td>99.4</td>
</tr>
</tbody>
</table>

**Table:** Weather station uptimes as a percentage of time.
## Cross-year Vital Stats

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurable Wind</td>
<td>23.2</td>
<td>30.4</td>
<td>35.6</td>
<td>27.5</td>
<td>11.4</td>
<td>14.3</td>
</tr>
<tr>
<td>High Wind†</td>
<td>0.7</td>
<td>0.5</td>
<td>0.3</td>
<td>0.3</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>High Humidity‡</td>
<td>21.6</td>
<td>18.2</td>
<td>15.6</td>
<td>13.5</td>
<td>16.0</td>
<td>17.5</td>
</tr>
</tbody>
</table>

### 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

Cumulative Rainfall, Mount Wilson

Average, 2009-2016
Rainy Years
Drought Years
2015-2016
Rainfall amount per storm

Storm amounts, 2010-2011

No. Meas. (Area Normalized -- 56 Meas. Total)
Rainfall (inches per storm)
Rainfall amount per storm

Storm amounts, 2011-2012

No. Meas. (Area Normalized -- 35 Meas. Total)

Rainfall (inches per storm)
Rainfall amount per storm

Storm amounts, 2012-2013

No. Meas. (Area Normalized -- 47 Meas. Total)

Rainfall (inches per storm)
Rainfall amount per storm

Storm amounts, 2013-2014

No. Meas. (Area Normalized -- 28 Meas. Total)

Rainfall (inches per storm)
Rainfall amount per storm

Storm amounts, 2014-2015

Rainfall (inches per storm)

No. Meas. (Area Normalized -- 37 Meas. Total)
Seeing

$r_0$ values

tiptilt, May-Sep, prime observing hours

2006-2014

2015
$r_0$ values, last year

tiptilt, May-Sep, prime observing hours

2006-2013

2014
Seeing $t_0$ values

2004-2013 data vs. 2015, Classic

No. Meas. (Area Normalized)

Seeing ($t_0$, msec)

2004-2013 vs. 2015, Classic
Seeing $t_0$ values

2004-2013 data vs. 2015, CLIMB

No. Meas. (Area Normalized)

Seeing ($t_0$, msec)

2004-2013 data vs. 2015, CLIMB
Control System

Status

- Nearly completed CVS-to-git transition
Control System

Status

- Nearly completed CVS-to-git transition – just pavo to go, and to sift through some older source code
Control System

Status

- Nearly completed CVS-to-git transition – just pavo to go, and to sift through some older source code
- VPN services to be retired in favor of ssh-tunnel
Control System

Status

- Nearly completed CVS-to-git transition – just pavo to go, and to sift through some older source code
- VPN services to be retired in favor of ssh-tunnel
- Transition to Linux Mint
Control System

Linux Mint
Control System

- Ubuntu variant

Linux Mint

▶ – with simplified update schedule
▶ – XFCE desktop – still to figure out per-computer icon layout
▶ – Installs quickly, about 45 minutes per machine
▶ – Will be installed throughout by start of observing season
Control System

Linux Mint

- Ubuntu variant – with simplified update schedule
Control System

Linux Mint

- Ubuntu variant – with simplified update schedule
- XFCE desktop
Control System

Linux Mint

- Ubuntu variant – with simplified update schedule
- XFCE desktop – still to figure out per-computer icon layout
Control System

Linux Mint

- Ubuntu variant – with simplified update schedule
- XFCE desktop – still to figure out per-computer icon layout
- Installs quickly, about 45 minutes per machine
Control System

Linux Mint

- Ubuntu variant – with simplified update schedule
- XFCE desktop – still to figure out per-computer icon layout
- Installs quickly, about 45 minutes per machine
- Will be installed throughout by start of observing season