



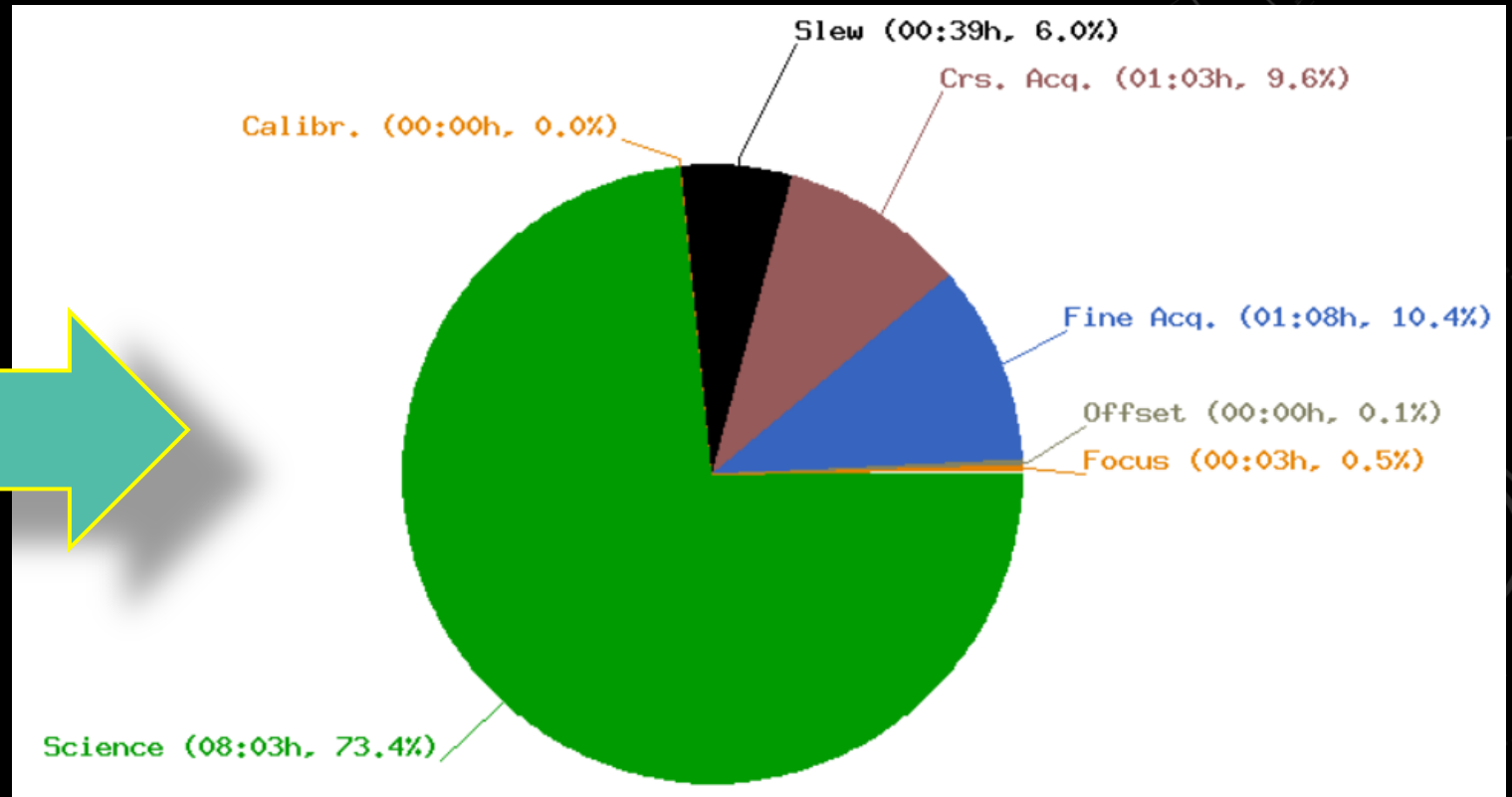
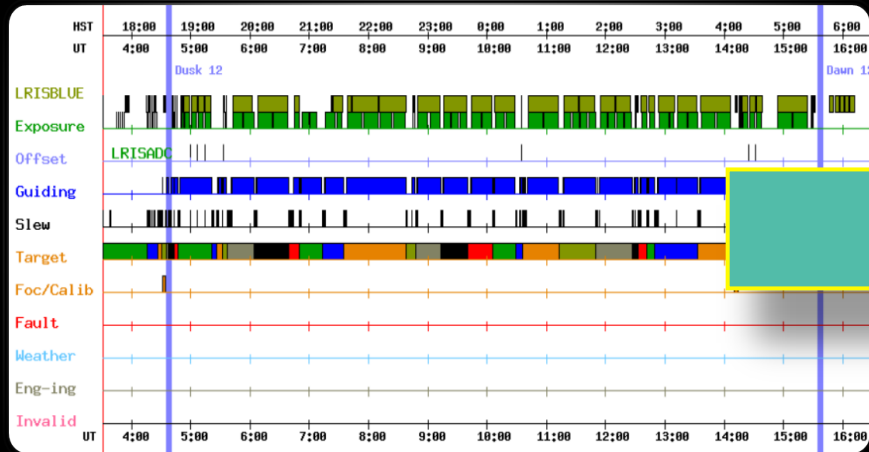
Performance Metrics Keck Observatory

Shui Hung Kwok

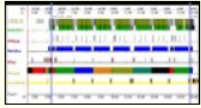
12/8/2016

Duty-Cycle Metrics

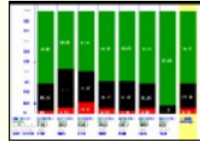
- From Events to Activities



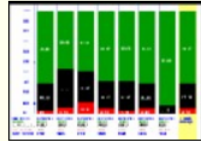
Telescope Telemetry Data



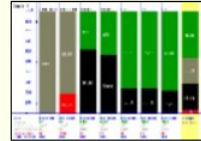
[Metrics 2](#)



[Tickets Stats](#)



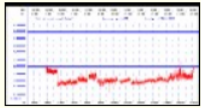
[4 Wks Tickets](#)



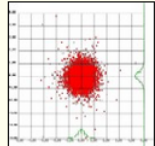
[Day by day](#)



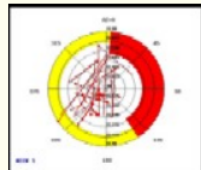
[Seeing Histogram](#)



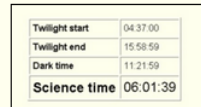
[FWHM](#)



[Guider / Centroids](#)
[TrackErr1 / TrackErr2](#)



[Slew targets](#)



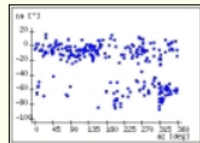
[Science Time](#)



[Top Performers](#)



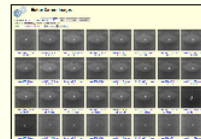
[Servo Error](#)
[Overview / Mtr Currs](#)



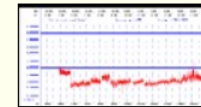
[CA/CE Chart / Histograms](#)



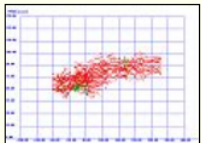
[MAGIQ Status](#)



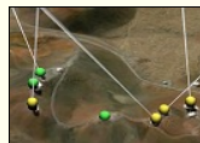
[Guider Images](#)
[Webcam Images](#) [Videos](#)



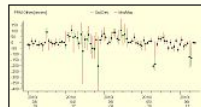
[Met Logs](#)



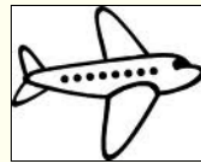
[PRMO vs AZ / PRMO vs EL](#)



[LTCS Logs](#)



[PRMO Stats](#)



[Air Traffic / Stats](#)
[Flightaware Live](#)



[K1 AO Laser Log](#)

Example: Pointing Performance and Metrics

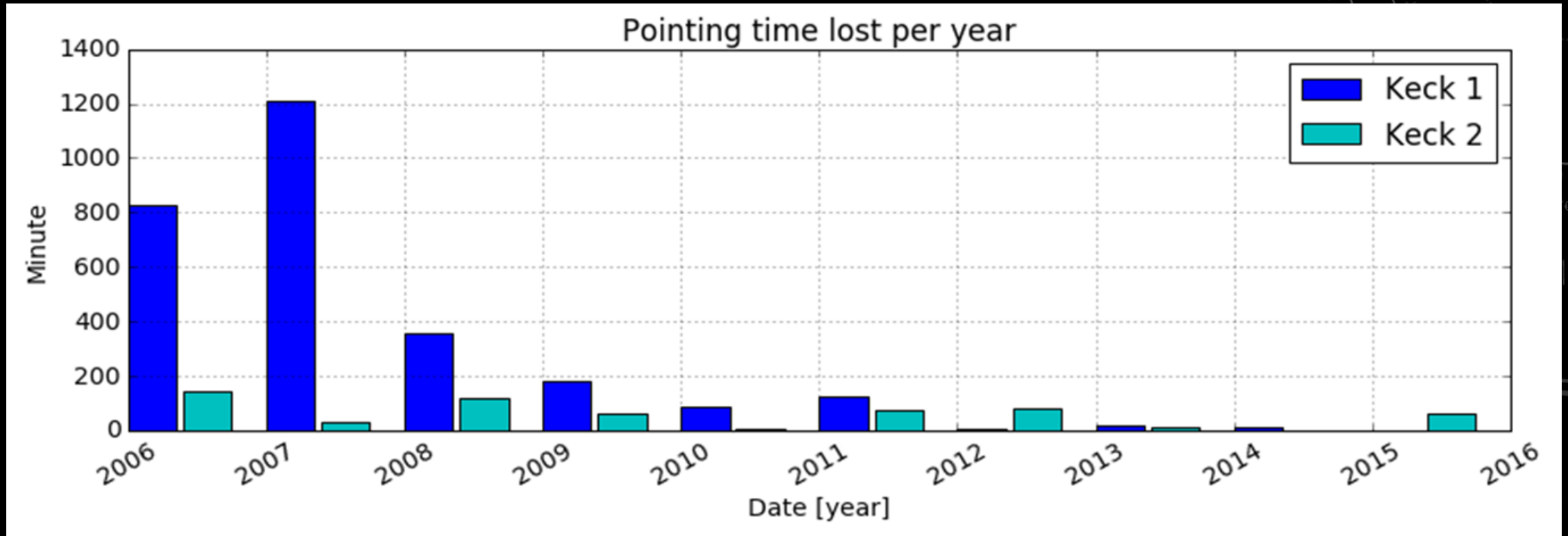
How to measure the pointing performance?

User feedback:
how many
complaints

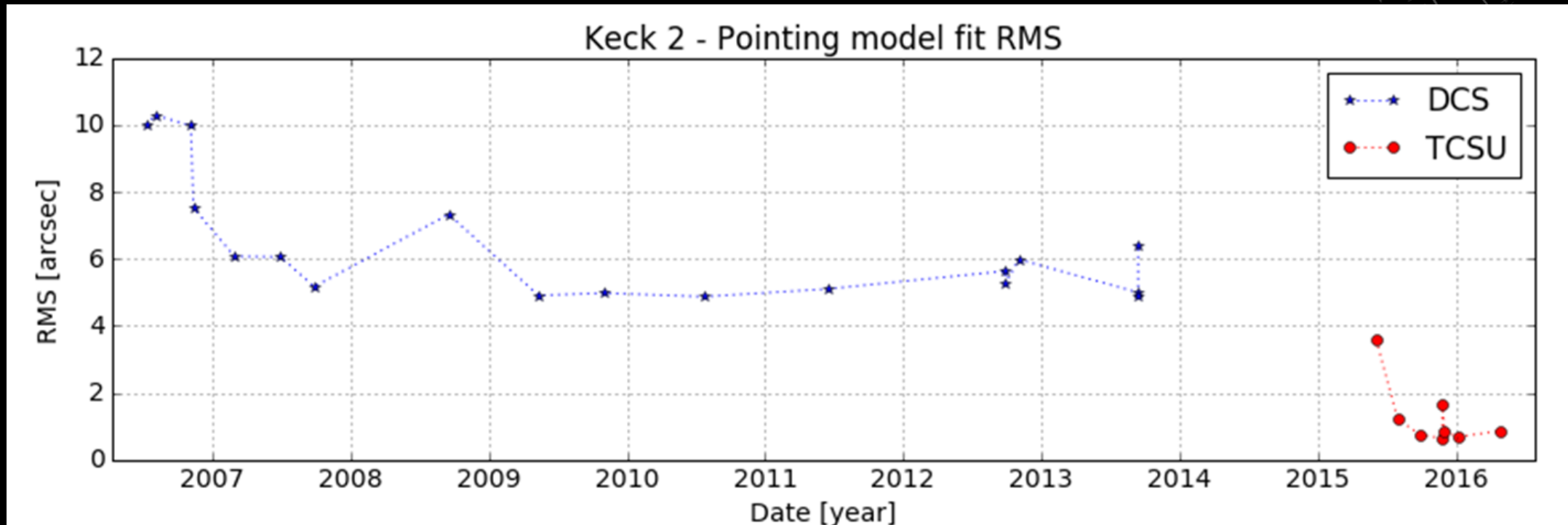
Direct
measurement:
pointing test

Indirect
measurement:
time spent on
pointing

User feedback: Time lost tickets



Direct measurement: Pointing tests



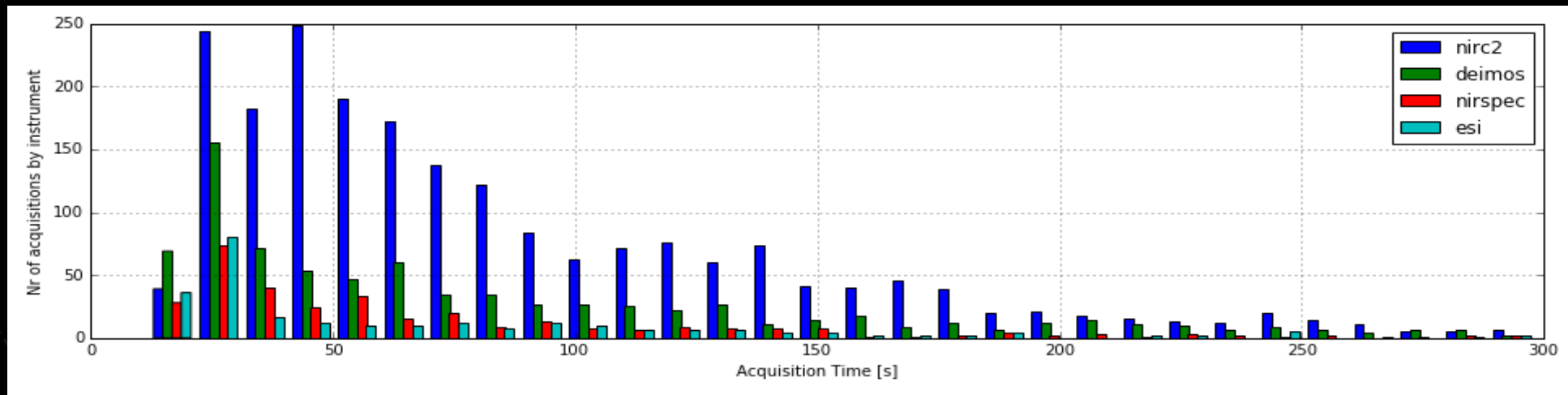
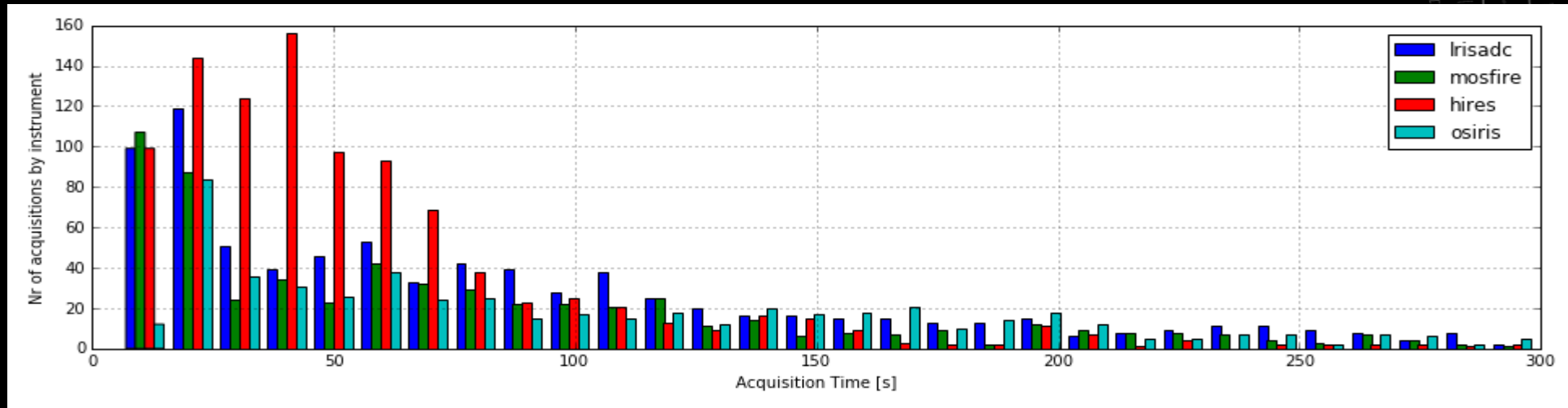
Indirect measurement:

- How much time spent on pointing?
 - Let's count the number of pointing stars

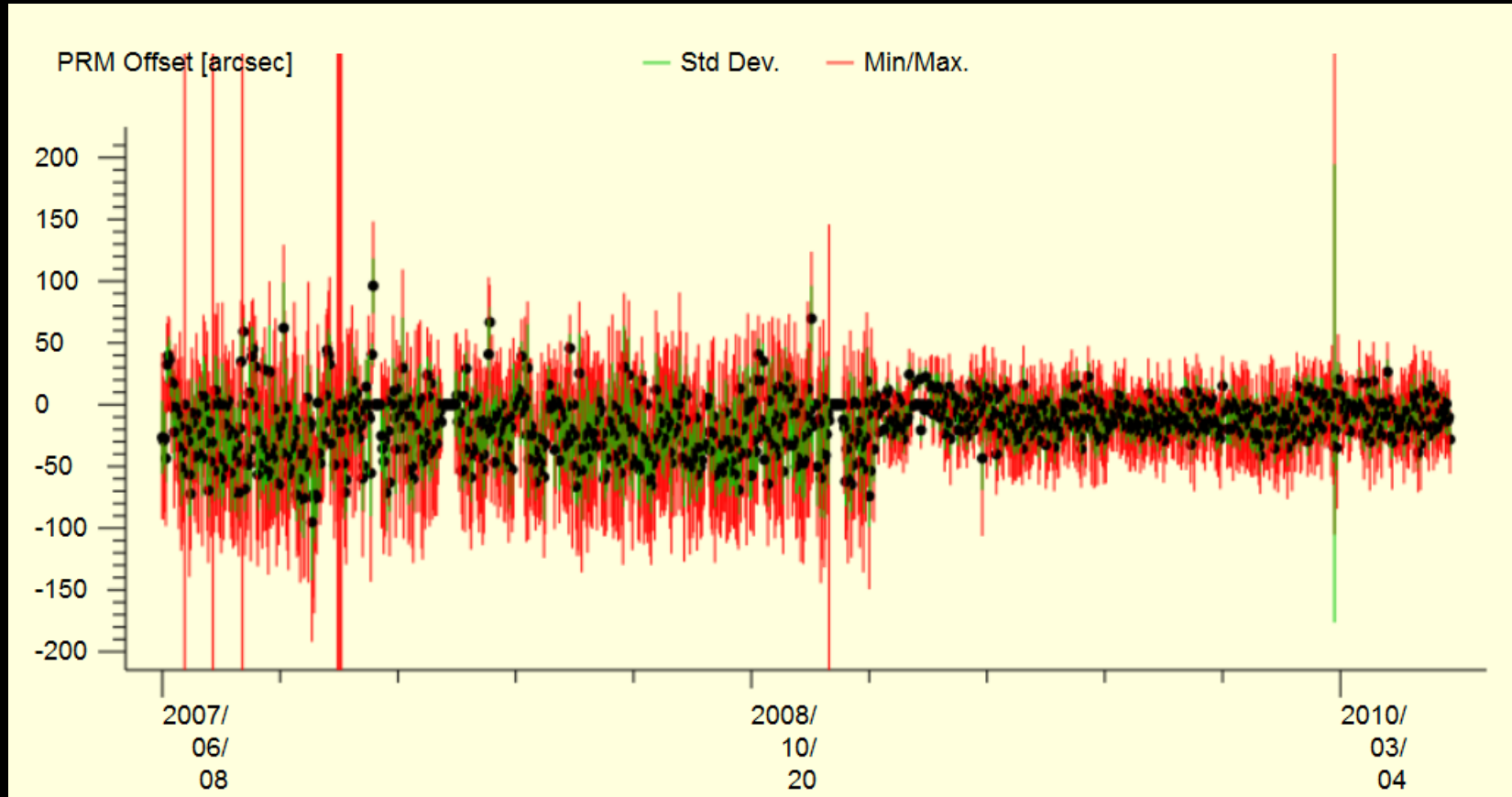
How many pointing checks (2014 and 2015)?

Telescope	Instrument	Pnt Stars	Sci Targets	Ratio
Keck 1	LRISADC	1610	2934	0.55
Keck 1	MOSFIRE	1487	2111	0.70
Keck 1	HIRES	898	7281	0.12
Keck 1	OSIRIS	177	1043	0.17
Keck 2	DEIMOS	1910	3245	0.59
Keck 2	ESI	528	928	0.57
Keck 2	NIRSPEC	1228	2000	0.61
Keck 2	NIRC2	1065	5918	0.18

Acquisition Times Keck 1 and Keck 2



Example: PRM Offsets



Example: ACS Actuator Monitoring

Act.#	Seg.#	Avg from Reset Day Avg Last 7 days	Diff -	Reset Date	Reset
92	31	187063.325 158769.333	28293.992	09/10/2014	Reset
93	31	223523.921 197783.667	25740.254	09/10/2014	Reset
26	9	193466.805 216674.000	23207.1948	06/23/2016	Reset
13	5	198793.274 179378.333	19414.9404	09/10/2014	Reset
91	31	158000.897 140574.833	17426.0639	09/10/2014	Reset
54	18	140828.806 125754.167	15074.6389	07/09/2014	Reset
50	17	183043.115 168484.000	14559.1145	06/28/2012	Reset
49	17	200248.067 187444.333	12803.7338	08/15/2014	Reset
15	5	109321.984 96917.833	12404.1507	09/10/2014	Reset
85	29	180946.923 170296.333	10650.5895	10/31/2012	Reset
17	6	213424.653 202706.833	10627.8195	09/26/2012	Reset

Raw Science Data Rate

