

ETA AQUARIIDS 2011

Thomas Weiland - Felix Bettonvil

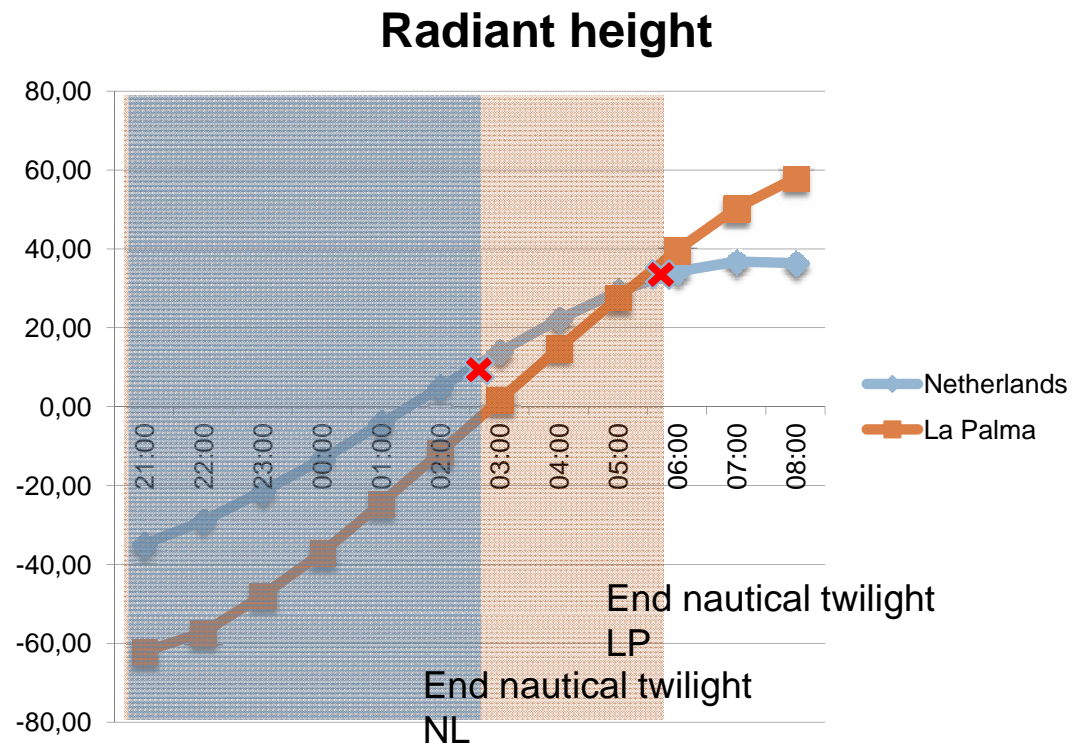
Introduction



- How to observe the Eta-Aquariids
- Observing campaign 2011
- Results
- Future work

Observing the Eta-Aquariids

- Southern Hemisphere: major annual stream (ZHR 45-80)
- Difficult to observe from mid northern latitudes
- *Go south!*



La Palma

- 28.75° N
- High, volcanic, dark clear skies
- Astronomical observatory



2011 Observing campaign

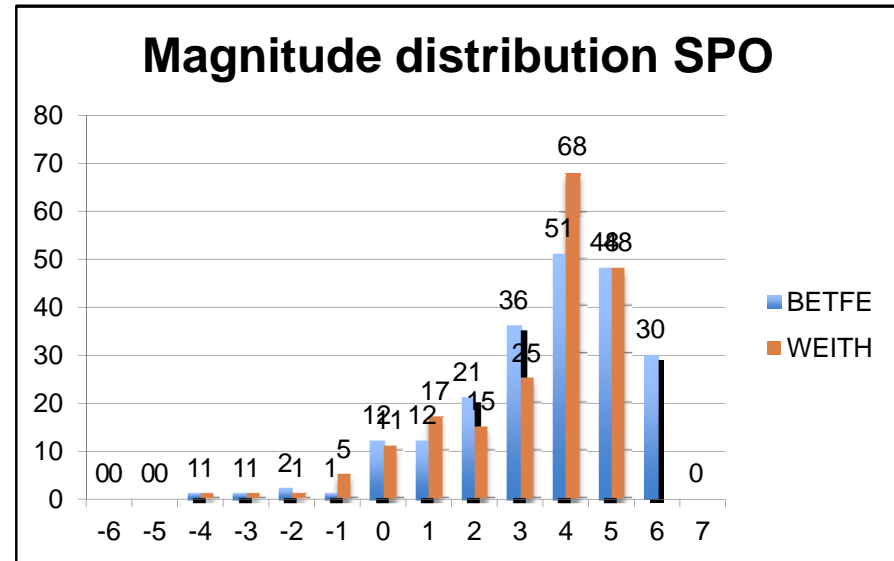
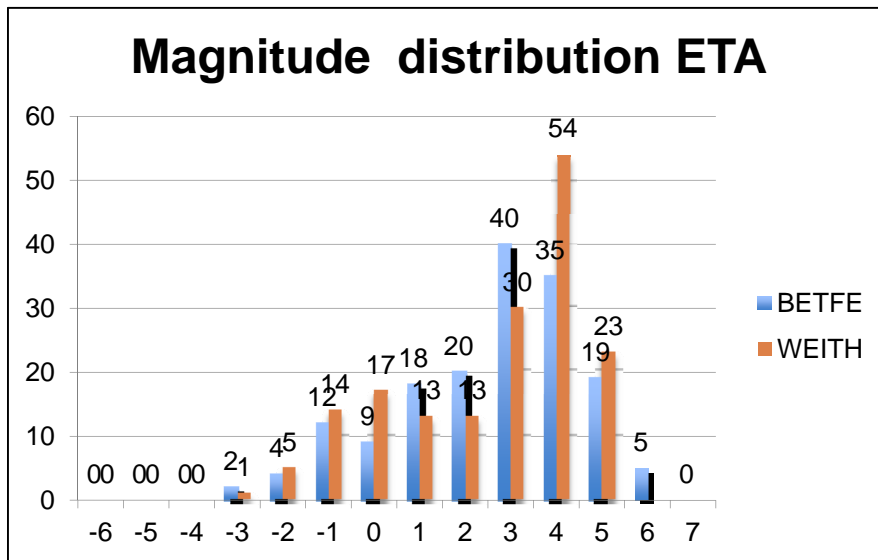


- May 03/04 to 09/10
- New Moon May 03, First Quarter May 10
- Observers WEITH, BETFE
- Visual
- 7 nights, 33 hrs effective observing time
- Lm 6.30-6.94 (before beginning of twilight)
- 354 ETAs (including twilight)

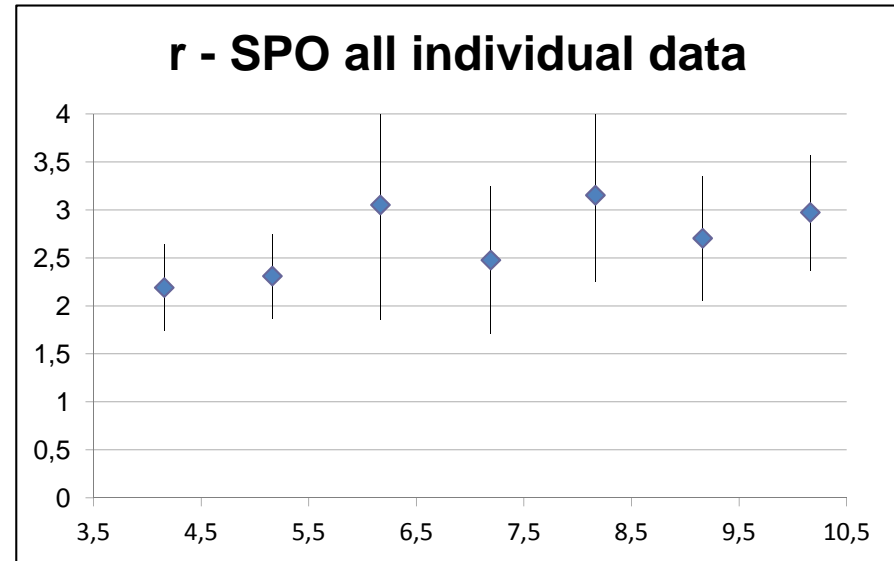
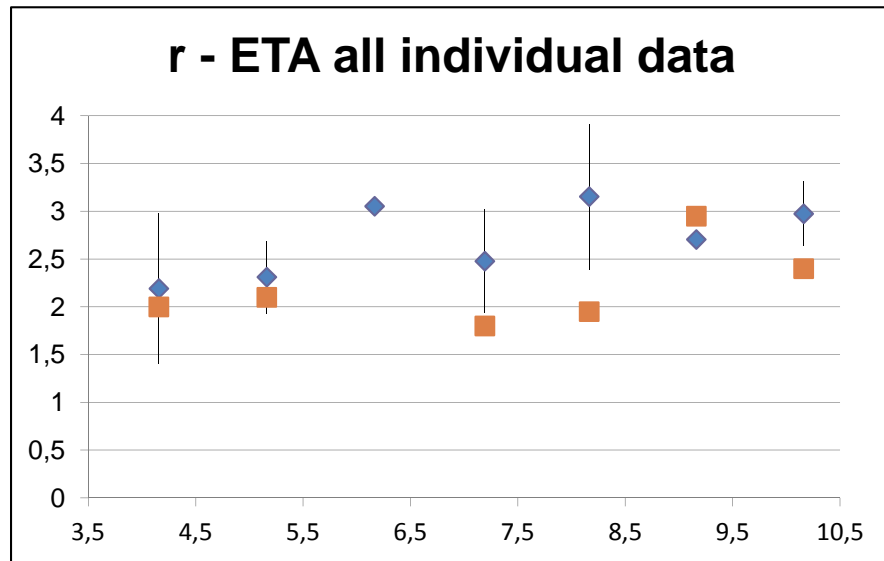
Results - Statistics

Date	UT	T _{eff}	Im	-4	-3	-2	-1	0	+1	+2	+3	+4	+5	+6	Σ	Observer
03./04.	02:30-05:00	2,50	6,94	0	0	1	0	0	2	1	6	2	2	0	14	BETFE
	02:30-05:00	2,45	6,39	0	0	2	0	2	1	1	2	5	2	0	15	WEITH
04./05.	02:30-05:14	2,73	6,86	0	0	0	2	1	4	1	7	3	2	1	21	BETFE
	02:30-05:15	2,68	6,30	0	0	0	2	3	3	3	3	3	4	0	21	WEITH
06./07.	03:47-05:24	1,62	6,51	0	1	3	4	1	1	3	5	7	2	1	28	BETFE
	02:40-05:15	2,47	6,39	0	1	3	5	4	2	2	6	8	4	0	35	WEITH
07./08.	02:30-05:22	2,87	6,71	0	0	0	3	2	6	6	7	8	3	0	35	BETFE
	02:30-05:15	2,64	6,39	0	0	0	4	3	6	2	7	8	3	0	33	WEITH
08./09.	02:30-05:15	2,18	6,74	0	1	0	0	2	1	2	4	7	3	2	22	BETFE
	02:30-05:15	2,65	6,37	0	0	0	1	2	0	3	6	17	7	0	36	WEITH
09./10.	02:30-05:15	2,57	6,58	0	0	0	2	1	3	4	7	6	4	0	27	BETFE
	02:30-05:15	2,65	6,33	0	0	0	2	3	1	2	6	13	3	0	30	WEITH
Σ		14,47		0	2	4	11	7	17	17	36	33	16	4	147	BETFE
		15,54		0	1	5	14	17	13	13	30	54	23	0	170	WEITH

Results - Magnitude distribution



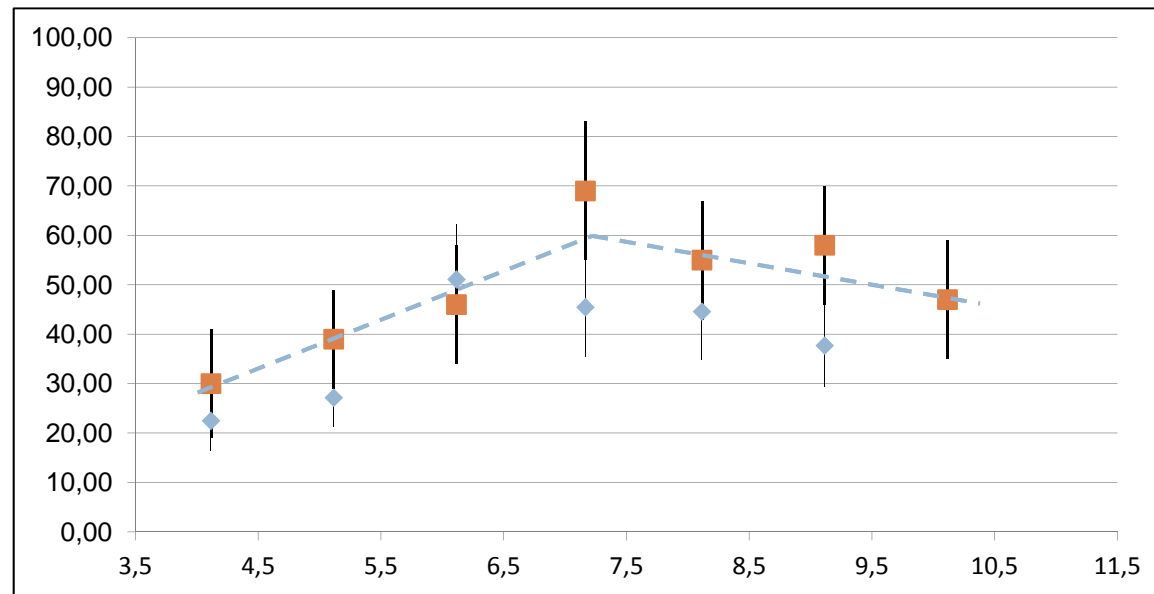
Results - Population index



Blue – BETFE; Red - WEITH

Results - ZHR

ZHR – average all data per night



Blue – BETFE; Red – WEITH

Results – General Appearance

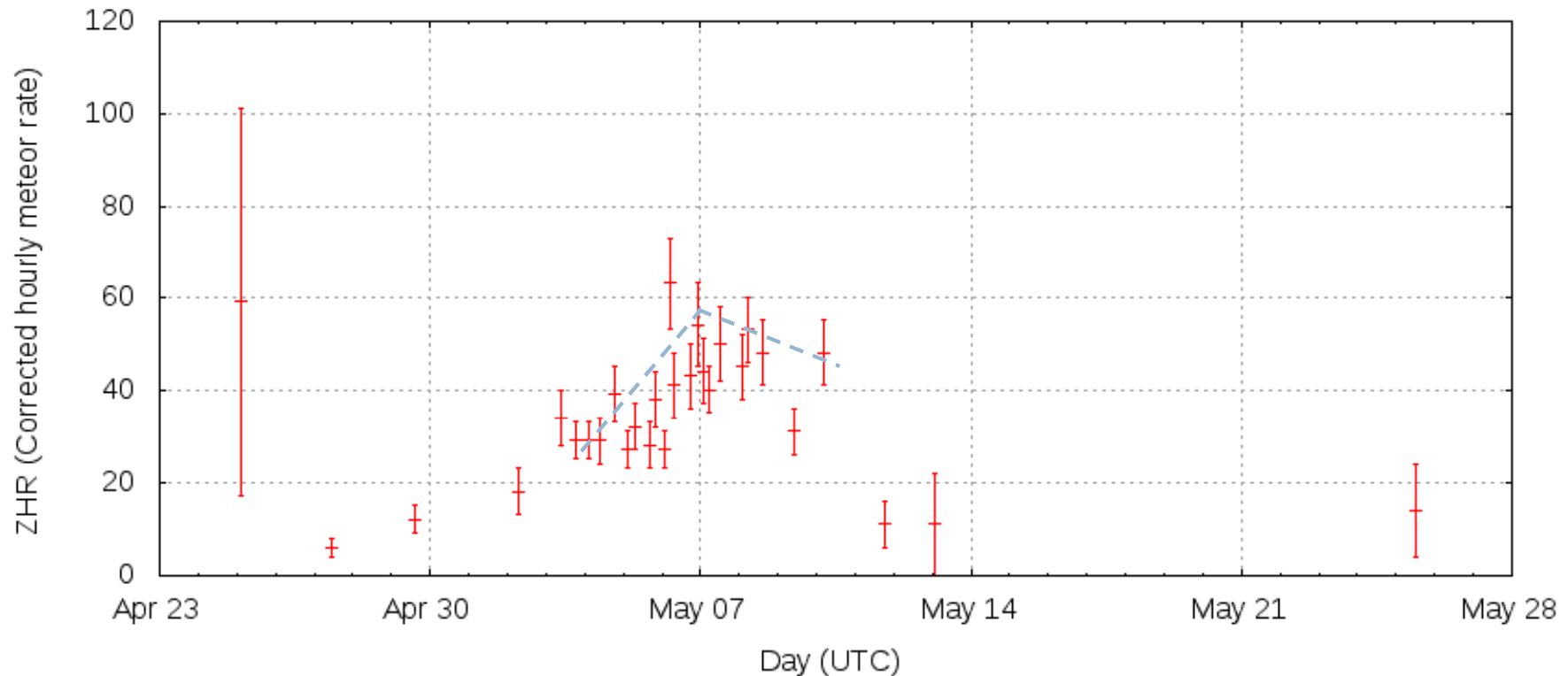


- Trains: 28 % leave train (78% of bright, 15% of faint ETAs)
- Colours mainly yellow and orange, few blue, white and green hues
- Earth grazers: 2 (May 06, May 07)



Results - Comparison

- IMO live ZHR graph: Increase beyond 30 after May 03, followed by flat maximum (40-60) from May 06/07 onwards until May 10.



Results - Conclusion



- r and ZHR comparable with previous returns
(*Cooper, 1996; Rendtel & Arlt, 2009*)
- Skew maximum. Not untypical.
- Maximum around May 06/07?
 - ▣ Bigger particles
 - ▣ Earth grazers

Future work



- Next time even more south? Namibia?
- 2019, 2021 and 2022 excellent choices (moon phase, Jupiter)