

## Release Notes:

Date: May 24th, 2017

Field: 20-AurPer-I-2016

## General Notes:

Abbreviations: QCT: Quality Control Team (led by Bert Pablo),  
RK - Rainer Kuschnig (Satellite Operation Center),  
APo - Adam Popowicz (reductions).  
Satellites: BAb - BRITE-Austria, UBr - UniBRITE, BTr - BRITE-Toronto,  
BLb - Lem, BHR - Heweliusz.

Observing Telescopes: BLb, BTr

We refer to time in JD not HJD and we use truncated JD (TJD) = JD - 2457000.0. That's because JD is the same for all stars (HJD is not).

BTr observations of that field were conducted with 2 types of setups, one for the brightest 2(3) stars to avoid saturation and the other setups for the fainter objects. Some stars appear in both short and long exposure time setups.

- Bright Stars: BTr1, BTr3, BTr6,
- Faint Stars: BTr2, BTr4, BTr5, BTr7

This is one (of many) fields where the moon gets close enough at least one part of the field to cause (~28d) regular increases in background and to some degree superimposed on the star signal as a slight bump.

## Setup Notes:

BLb1: Short setup (13 orbits). No clear effects.

BLb3: Large gap (692 - 789) due to inability to achieve fine pointing. Increase in chopping distance to accommodate stars with extended PSFs. Eclipse-like event for all stars at 662.166 (can be decorrelated?). strong variation starting around 660 and going to 680 which occurs in several stars.

BLb4: Setup change needed because all stars have drifted to close to the raster edges over time - caused by a longterm centre pointing drift.

BTr1: initial setup on brightest 5 stars with a short 0.2 sec integration time.

BTr2: initial setup for the fainter stars with 3 sec exposure time.

Severe issues with stability of BTr pointing during this setups. This results in many outliers for the whole range but the beginning (first 10 orbits) and the end (after 665.6). Orbits between 665.9

and 657.6 should be rejected. Also those between 665.3 and 665.6.

BTr3: Exposure time reduced to 0.15 sec and the number of star to 3, as the other two stars did not have adequate S/N at this setting.

BTr4: Increase of brightness for 680.2 - 682.3, best pronounced for HD 33641 but visible for almost all stars. This is Moon effect. Exposure time 3 seconds.

BTr5: Faint star setup. A very similar effect to this seen in BTr4, but in the range 707.8 - 709.8. Offset in magnitude and increase of scatter for two stars: HD 25940 after  $t = 726$ , and for HD 27396 after 723. I have tried decorrelations for one stars and I see that decorrelations do not account for this effect. THIS IS MOON EFFECT !

BTr6: Bright Star setup. Reduced number of stars from 2 to 3 due due to data download rate.

BTr7: Faint Star Setup. Moon effect, this time at three epochs: 735.0 - 737.2, 762.8 - 764.1 (gap), 790 - 792. Final part (after 819) with larger number of outliers and jump for HD 27396. Number of stars reduced due to data rate constraints.

Individual Stars:

The five columns following star name denote:

- (1) satellite
- (2) setup,
- (3) data points after reduction
- (4) original number of frames,
- (5) (in per cent)
- (6) ROIxpos
- (7) ROIypos
- (8) ROIxsiz
- (9) ROIysiz

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STAR: HD 22928 (Delta Per)

BLb setup1	39	1079	3.6	609	2345	48	28
BLb setup3	1072	33453	3.2	607	2348	48	28
BLb setup4	12540	14489	86.5	607	2348	48	28
BTr setup2	7549	11480	65.8	483	2189	48	28
BTr setup4	10327	11696	88.3	483	2189	48	28
BTr setup5	9113	15110	60.3	483	2189	48	28
BTr setup7	25431	36404	69.9	483	2189	48	28

COMMENTS FOR USERS:

BLb: Setups 1 & 3 with very small efficiency, BLb1 with large scatter (reject?), offset between BLb3 & 4.

BTr: Many outliers in BTr2 likely due to poor pointing performance. All setups can be merged (the same raster position).

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STAR: HD 23230 (v Per)

BTr setup2	6129	11480	53.4	375	1526	48	28
BTr setup4	7008	11696	59.9	375	1526	48	28

COMMENTS FOR USERS:

BTr: Many outliers in BTr2. Both setups can be merged (the same raster position).

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STAR: HD 24398 (Zeta Per)

BLb setup1	794	1079	73.6	537	341	48	28
BLb setup3	22811	33453	68.2	537	338	48	32
BLb setup4	14455	14489	99.8	537	338	48	32

COMMENTS FOR USERS:

BLb: offsets between setups.

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STAR: HD 24760 (Epsilon Per)

BLb setup1	788	1079	73.0	702	1329	48	28
BLb setup3	22717	33453	67.9	702	1334	52	28
BLb setup4	14455	14489	99.8	702	1334	52	28
BTr setup1	121	162	74.7	593	1143	48	28
BTr setup2	7592	11480	66.1	593	1143	48	28
BTr setup4	9788	11696	83.7	593	1143	48	28
BTr setup5	8462	15110	56.0	593	1143	48	28
BTr setup7	22218	36404	61.0	593	1143	48	28

COMMENTS FOR USERS:

BLb: Offsets between setups.

BTr: Setup 1 looks unusable. Many outliers in BTr2. Larger scatter (and offset) for BTr7 starting from 815.3. The BTr1 and BTr2 overlap. All setups can be merged (the same raster position).

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STAR: HD 24912 (Xi Per)

BLb setup1	791	1079	73.3	665	781	48	28
BLb setup3	22779	33453	68.1	667	785	52	28
BLb setup4	14455	14489	99.8	667	785	52	28
BTr setup2	7747	11480	67.5	552	597	48	28
BTr setup4	10923	11696	93.4	552	597	48	28
BTr setup5	9538	15110	63.1	552	597	48	28
BTr setup7	26245	36404	72.1	552	597	48	28

COMMENTS FOR USERS:

BLb: BLb s3/s4 different flux dependent on chopping position.

BTr: Many outliers in BTr2. All setups can be merged (the same raster position).

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STAR: HD 25642 (Lambda Per)

BTr setup4	9775	11696	83.6	1011	2444	48	28
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COMMENTS FOR USERS:

BTr: s4 the two pointings give fluxes of different dispersion and level ("parallel light curves")

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STAR: HD 25940 (48 c Per)

BLb setup1	791	1079	73.3	1101	2294	48	28
BLb setup3	22763	33453	68.0	1099	2300	48	28
BLb setup4	14455	14489	99.8	1099	2300	48	28
BTr setup2	6416	11480	55.9	993	2108	48	28
BTr setup4	8597	11696	73.5	993	2108	48	28
BTr setup5	7735	15110	51.2	993	2108	48	28
BTr setup7	26997	36404	74.2	993	2108	48	28

COMMENTS FOR USERS:

BLb: Offset between BLb3 and BLb4, but this could be real variability

BTr: Many outliers in BTr2. Jump by ~0.5 mag at 726 in BTr5, after the jump all BTr7 at the same level. Larger scatter after jump.

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STAR: HD 26630 (Mu Per)

BTr setup2	7485	11480	65.2	1139	2185	48	28
BTr setup4	10238	11696	87.5	1139	2185	48	28

COMMENTS FOR USERS:

BTr: Many outliers in BTr2. Both setups can be merged (the same raster position). BTr s4 the two pointings give fluxes of different dispersion and level ("parallel light curves").

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STAR: HD 26673 (52 Per)

BTr setup4	10937	11696	93.5	1004	1142	48	28
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COMMENTS FOR USERS:

BTr: OK.

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STAR: HD 26961 (b Per)

BTr setup4	10864	11696	92.9	1244	2419	48	28
BTr setup5	9575	15110	63.4	1244	2419	48	28
BTr setup7	26809	36404	73.6	1244	2419	48	28

COMMENTS FOR USERS:

BTr: OK. All setups can be merged (the same raster position).

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STAR: HD 27396 (53 Per)

BLb setup1	533	1079	49.4	1357	2121	48	28
BLb setup3	19833	33453	59.3	1357	2126	48	28
BLb setup4	13702	14489	94.6	1357	2126	48	28
BTr setup2	8296	11480	72.3	1249	1922	48	28
BTr setup4	10936	11696	93.5	1249	1922	48	28
BTr setup5	9605	15110	63.6	1249	1922	48	28
BTr setup7	26230	36404	72.1	1249	1922	48	28

COMMENTS FOR USERS:

BLb: Offsets between setups.

BTr: Many outliers in BTr2. Jump by ~0.5 mag at 723 in BTr5, after the larger scatter. Also jump at the end of BTr7 (after 819.8).

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STAR: HD 31398 (Iota Aur)

BLb setup1	791	1079	73.3	2204	326	48	28
BLb setup3	22733	33453	68.0	2206	334	48	28
BLb setup4	14448	14489	99.7	2206	334	48	28
BTr setup1	120	162	74.1	2073	119	48	28
BTr setup2	8041	11480	70.0	2073	119	48	28
BTr setup3	22060	27653	79.8	2070	119	52	28
BTr setup4	10924	11696	93.4	2073	119	48	28
BTr setup5	9610	15110	63.6	2073	119	48	28
BTr setup7	26835	36404	73.7	2073	119	48	28

COMMENTS FOR USERS:

BLb: Offsets between setups.

BTr: Many outliers in BTr2. BTr1 overlaps with BTr2. BTr3 overlaps with BTr 2/4/5. BTr 2,4,5, and 7 can be merged.

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STAR: HD 31964 (Epsilon Aur)

BLb setup1	791	1079	73.3	2298	1752	48	28
BLb setup3	22754	33453	68.0	2300	1759	48	28
BLb setup4	14455	14489	99.8	2300	1759	48	28
BTr setup2	8138	11480	70.9	2185	1532	48	28
BTr setup4	10807	11696	92.4	2185	1532	48	28
BTr setup5	9536	15110	63.1	2185	1532	48	28
BTr setup7	26821	36404	73.7	2185	1532	48	28

COMMENTS FOR USERS:

BLb: Offsets between setups.

BTr: Many outliers in BTr2. All setups can be merged (the same raster position).

Moon effect very well seen!

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STAR: HD 32068 (Zeta Aur)

BLb setup1	651	1079	60.3	2323	1383	48	28
BLb setup3	22614	33453	67.6	2325	1390	48	28
BLb setup4	8979	14489	62.0	2325	1390	48	28
BTr setup2	8063	11480	70.2	2207	1164	48	28
BTr setup4	10907	11696	93.3	2207	1164	48	28
BTr setup5	9637	15110	63.8	2207	1164	48	28
BTr setup7	26917	36404	73.9	2207	1164	48	28

COMMENTS FOR USERS:

BLb: No clear offsets between setups.

BTr: Possible jump at 665.6 in BTr2. All setups can be merged (the same raster position).

Moon effect very well seen!

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STAR: HD 32537 (9 Aur)

BTr setup2	8220	11480	71.6	2253	2555	48	28
BTr setup4	10835	11696	92.6	2253	2555	48	28
BTr setup5	9559	15110	63.3	2253	2555	48	28
BTr setup7	26783	36404	73.6	2253	2555	48	28

COMMENTS FOR USERS:

BTr: OK. All setups can be merged (the same raster position).

Moon effect seen.

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STAR: HD 32630 (Eta Aur)

BLb setup1	791	1079	73.3	2426	1408	48	28
BLb setup3	22785	33453	68.1	2428	1416	48	28
BLb setup4	14457	14489	99.8	2428	1416	48	28
BTr setup2	8046	11480	70.1	2308	1189	48	28
BTr setup4	10882	11696	93.0	2308	1189	48	28
BTr setup5	9591	15110	63.5	2308	1189	48	28
BTr setup7	26732	36404	73.4	2308	1189	48	28

COMMENTS FOR USERS:

BLb: No clear offsets between setups. Scatter in setup 3 is very high, possibly unusable. Drop at end of setup 4 around 805.

BTr: Many outliers in BTr2. All setups can be merged (the same raster position).

Moon effect well seen.

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STAR: HD 33641 (Mu Aur)

BTr setup4	10937	11696	93.5	2501	827	48	28
BTr setup5	9610	15110	63.6	2501	827	48	28

COMMENTS FOR USERS:

BTr: Both setups can be merged (the same raster position).

Moon effect very well seen.

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STAR: HD 33959 (14 Aur)

BLb setup1	791	1079	73.3	2711	297	48	28
BLb setup3	22672	33453	67.8	2713	304	50	28
BLb setup4	14455	14489	99.8	2713	304	50	28
BTr setup2	7889	11480	68.7	2581	82	48	28
BTr setup4	10928	11696	93.4	2581	82	48	28
BTr setup5	9606	15110	63.6	2581	82	48	28
BTr setup7	26828	36404	73.7	2581	82	48	28

COMMENTS FOR USERS:

BLb: Offsets between setups. Would not use setup 1.

BTr: Many outliers in BTr2. All setups can be merged (the same raster position).

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STAR: HD 34029 (Alpha Aur)

BLb setup1	791	1079	73.3	2623	2055	48	28
BLb setup3	22757	33453	68.0	2623	2062	52	28
BLb setup4	14463	14489	99.8	2623	2062	52	28
BTr setup1	123	162	75.9	2521	1837	48	28
BTr setup3	21897	27653	79.2	2517	1842	48	28
BTr setup6	14717	19710	74.7	2517	1842	48	28

COMMENTS FOR USERS:

BLb: No clear offsets between setups.

BTr: BTr3 and 6 can be merged (the same raster position).

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STAR: HD 34452 (IQ Aur)

BTr setup4	10949	11696	93.6	2673	223	48	28
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COMMENTS FOR USERS:

BTr: BTr s4 the two pointings give qualitatively different light curves.

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STAR: HD 34759 (Rho Aur)

BLb setup1	791	1079	73.3	2796	1510	48	28
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COMMENTS FOR USERS:

BLb: Short data (13 orbits). Likely very little scientific value.

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STAR: HD 36371 (Chi Aur)

BTr setup2	7889	11480	68.7	3048	78	48	28
BTr setup4	10928	11696	93.4	3048	78	48	28
BTr setup5	9603	15110	63.6	3048	78	48	28

BTr setup7 26823 36404 73.7 3048 78 48 28

COMMENTS FOR USERS:

BTr: OK, all setups can be merged (the same raster position).

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STAR: HD 38944 (Upsilon Aur)

BTr setup4 10921 11696 93.4 3455 795 48 28

COMMENTS FOR USERS:

BTr: HD38944 BTr s4 larger dispersion in one of the pointings.

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STAR: HD 39003 (Nu Aur)

BTr setup2 8050 11480 70.1 3438 1033 48 28

BTr setup4 10917 11696 93.3 3438 1033 48 28

BTr setup5 9587 15110 63.4 3438 1033 48 28

BTr setup7 26740 36404 73.5 3438 1033 48 28

COMMENTS FOR USERS:

BTr: Many outliers in BTr2. Jump in BTr7 at 784.

Moon effect visible.

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STAR: HD 40183 (Beta Aur)

BLb setup1 25 1079 2.3 3539 2015 48 28

BLb setup3 769 33453 2.3 3537 2023 48 28

BLb setup4 14433 14489 99.6 3537 2023 48 28

BTr setup1 122 162 75.3 3485 1812 48 28

BTr setup2 5621 11480 49.0 3485 1812 48 28

BTr setup3 22116 27653 80.0 3480 1818 48 28

BTr setup6 14779 19710 75.0 3480 1818 48 28

COMMENTS FOR USERS:

BLb: Large offsets between setups. Only BLb3 seems to be usable.

BTr: Many outliers in BTr2. Offsets between setups. Setup 3 is overlapping 1 and 2 at a significantly lower flux. It looks unusable.

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STAR: HD 40312 (Theta Aur)

BLb setup1 791 1079 73.3 3719 1061 48 28

BLb setup3 22779 33453 68.1 3721 1068 48 28

BLb setup4 14466 14489 99.8 3721 1068 48 28

BTr setup1 113 162 69.8 3651 830 48 28

BTr setup2 7756 11480 67.6 3651 830 48 28

BTr setup4 10911 11696 93.3 3651 830 48 28

BTr setup5 9526 15110 63.0 3651 830 48 28

BTr setup7 26286 36404 72.2 3651 830 48 28



COMMENTS FOR USERS:

BLb:Offsets between setups.

BTr: Many outliers in BTr2. Offsets between setups. BTr2, 5 and 7  
can be probably merged. setup 1 over laps setup2 at much lower flux and should be treated  
carefully.

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