

KIC 006697609

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
006697609-01	OBS	No	0.570924	131.586608	57.5	2.221	13.3	13.9	1.66	7290	1.46	28683.22
006697609-02	OBS	No	1.645371	131.755720	100.5	4.656	10.1	9.3	1.66	7290	1.93	6993.81
006697609-03	OBS	No	0.903278	132.257004	112.9	6.206	8.5	11.8	1.66	7290	1.89	15558.60
006697609-04	OBS	No	52.816284	156.763799	854.8	2.020	9.5	10.0	1.66	7290	5.26	68.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006697609-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
006697609-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—HALO_GHOST
006697609-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT
006697609-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

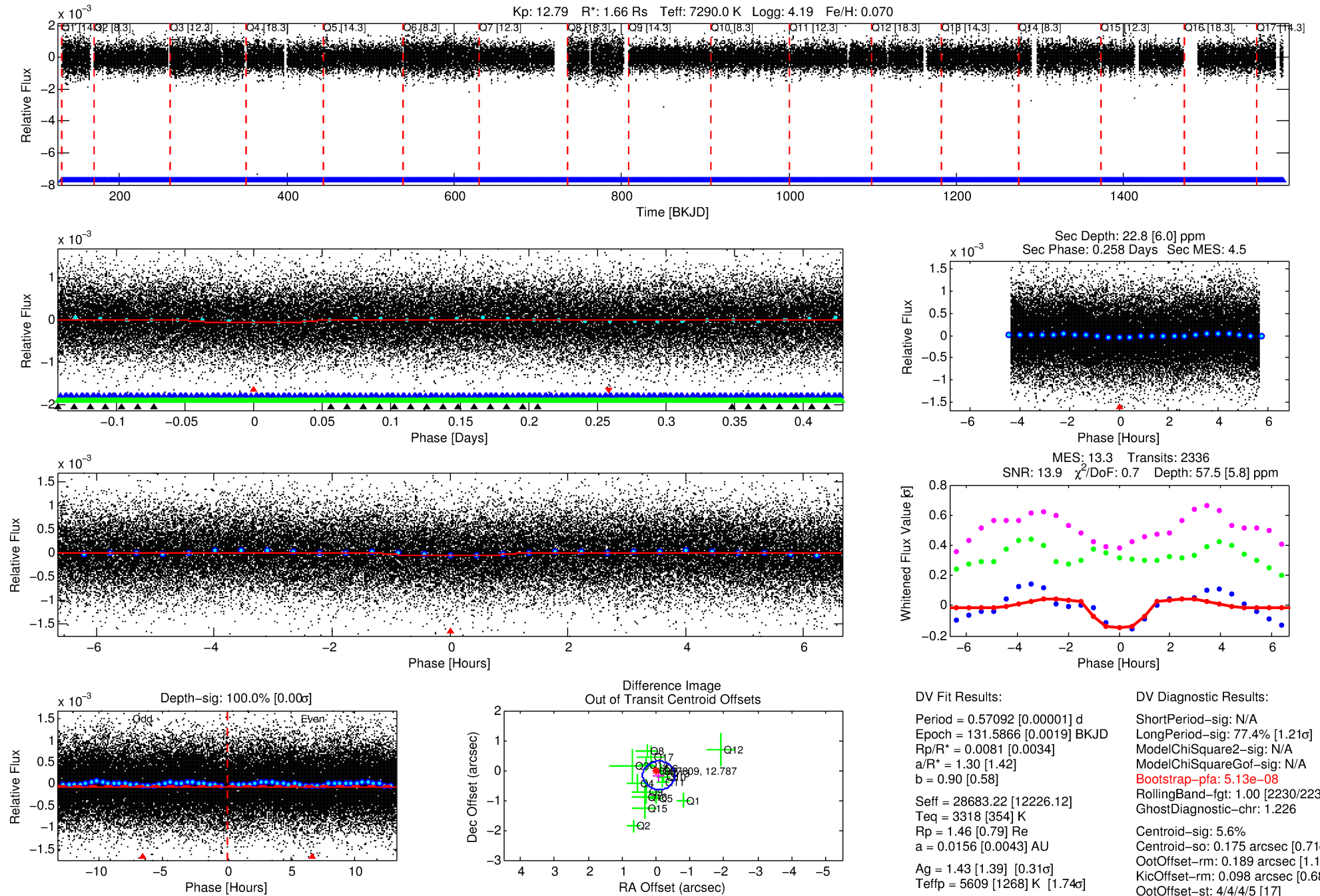
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006697609-01

No Significant Match Found

DV One-Page Summary

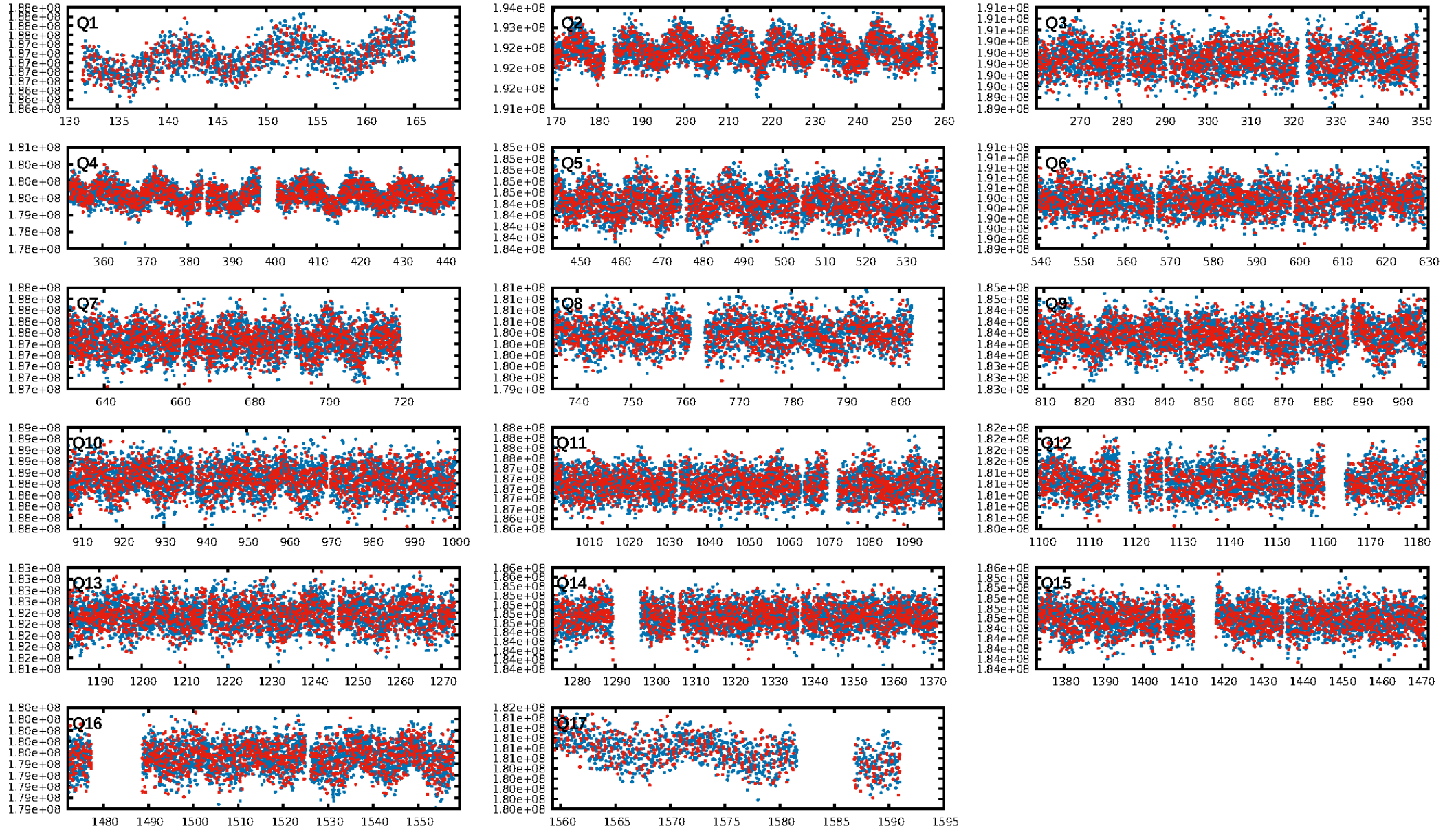
KIC: 6697609 Candidate: 1 of 4 Period: 0.571 d



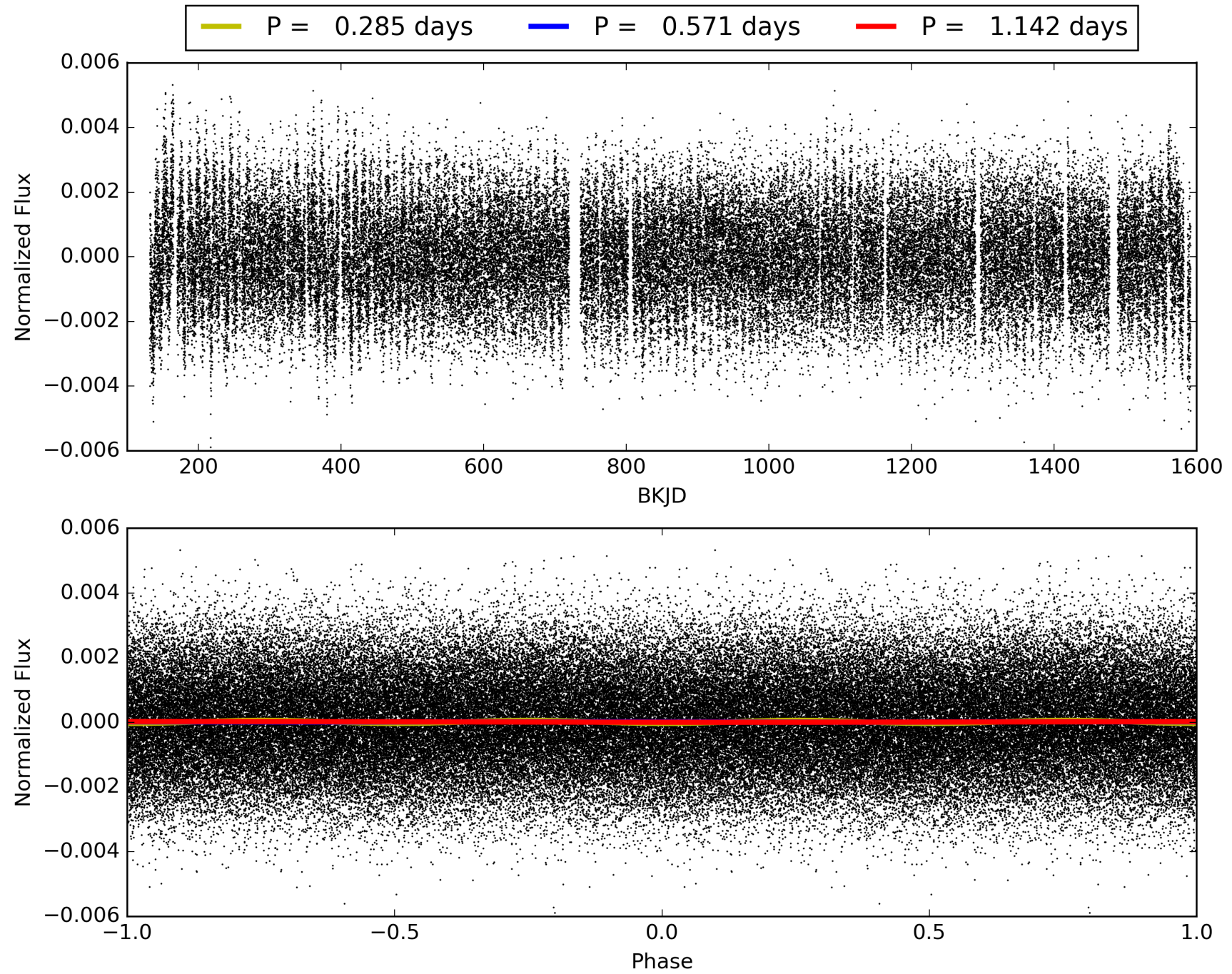
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 07:44:03 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006697609-01, PDC Light Curves

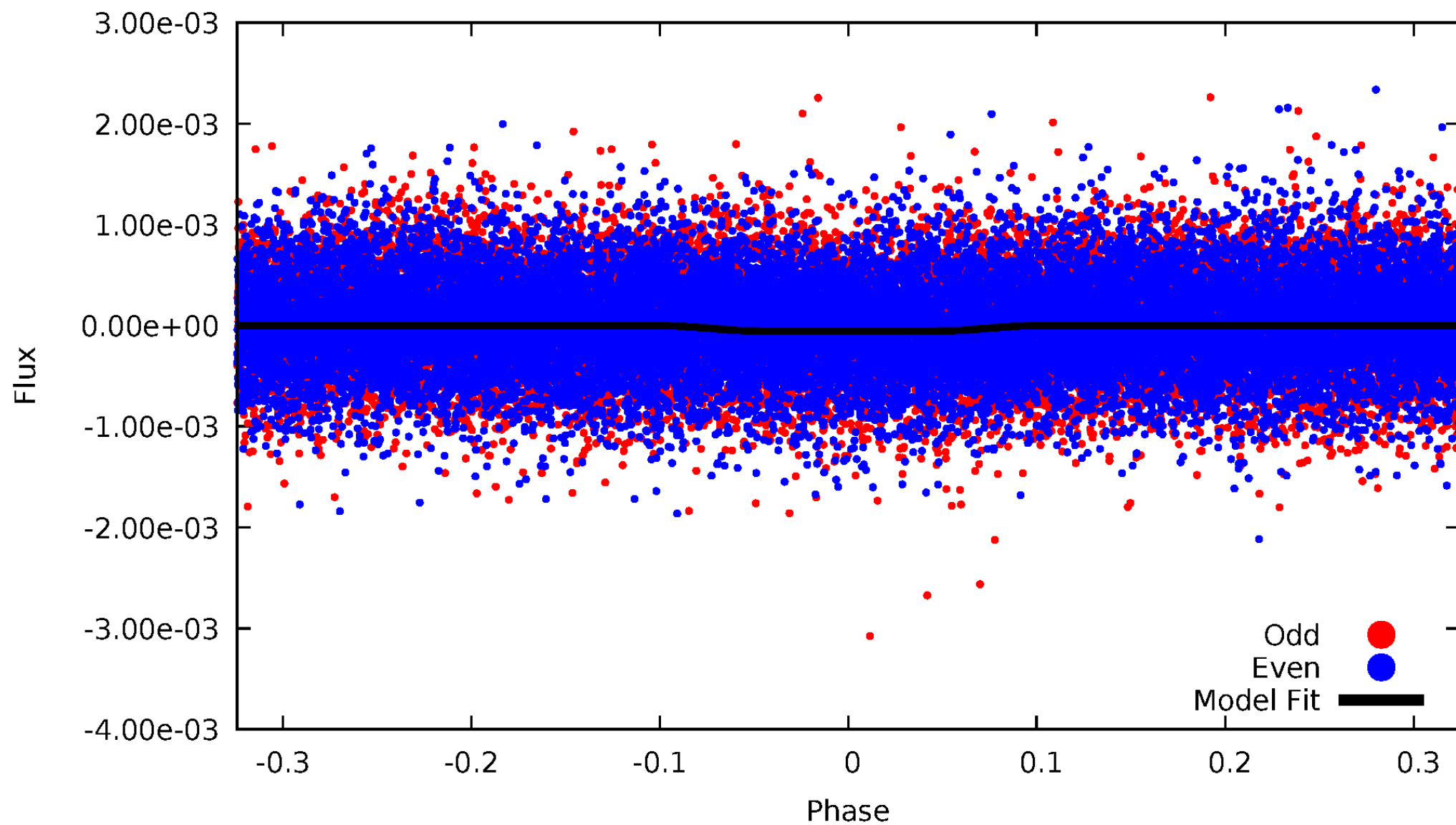


TCE 006697609-01



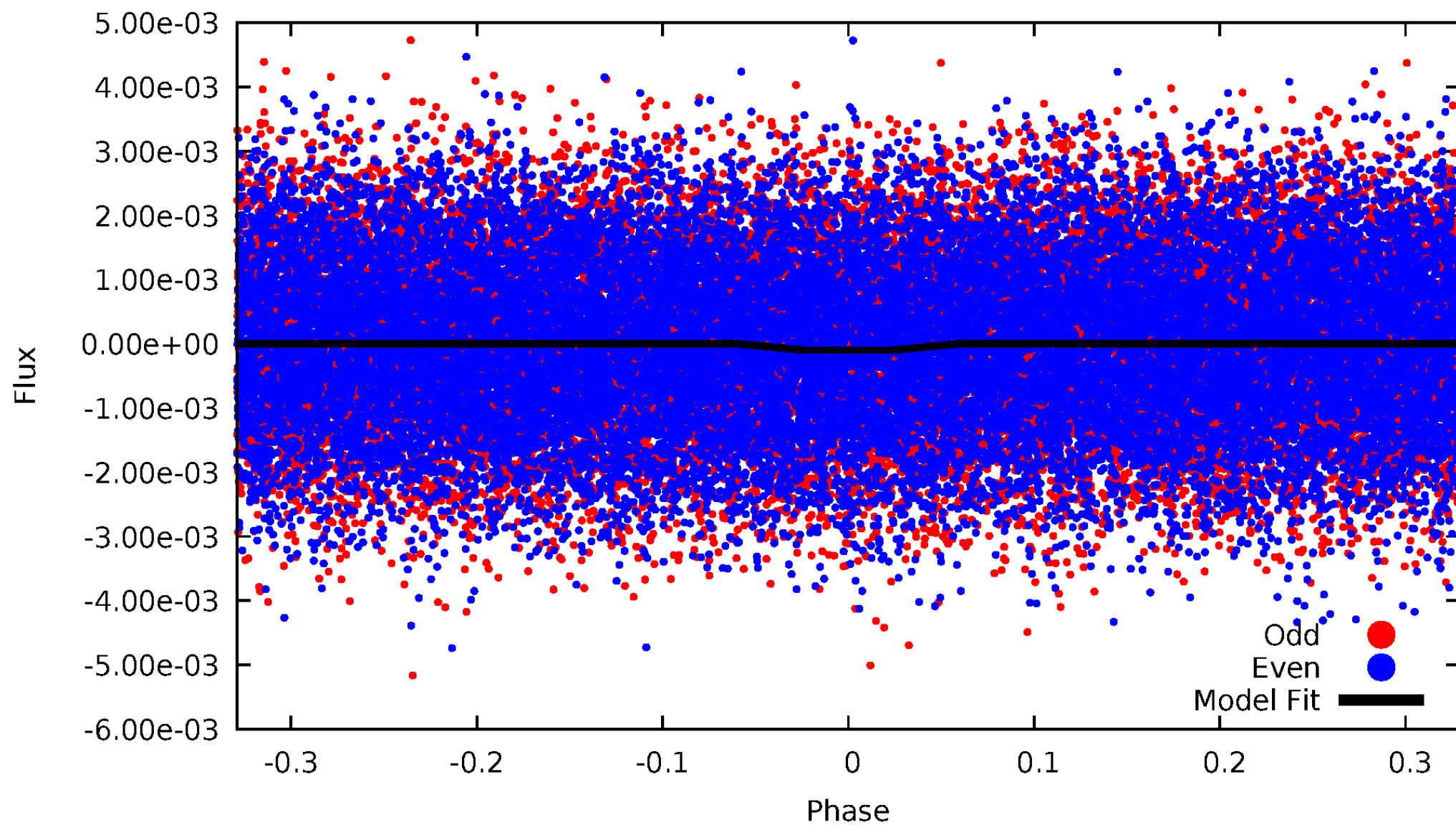
DV Odd/Even

TCE 006697609-01

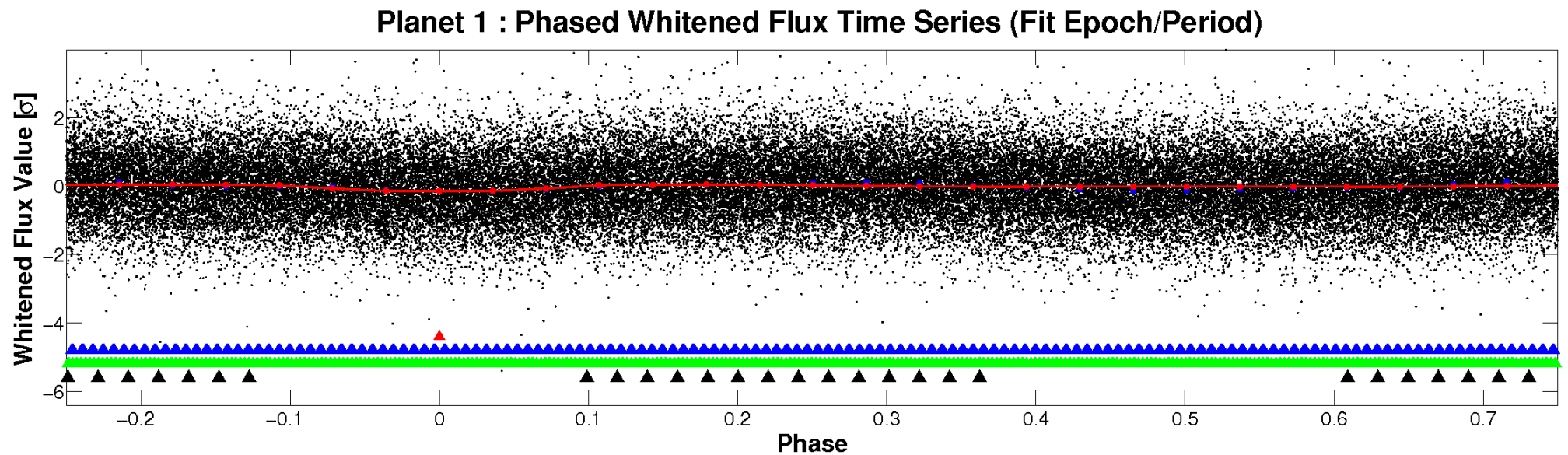
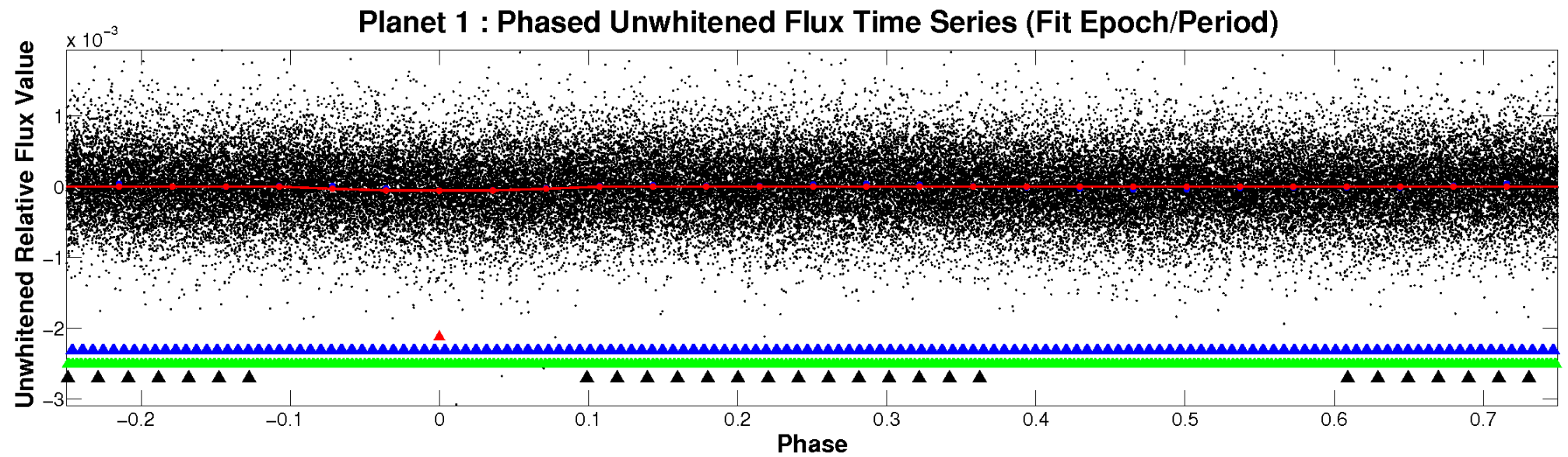


ALT Odd/Even

TCE 006697609-01

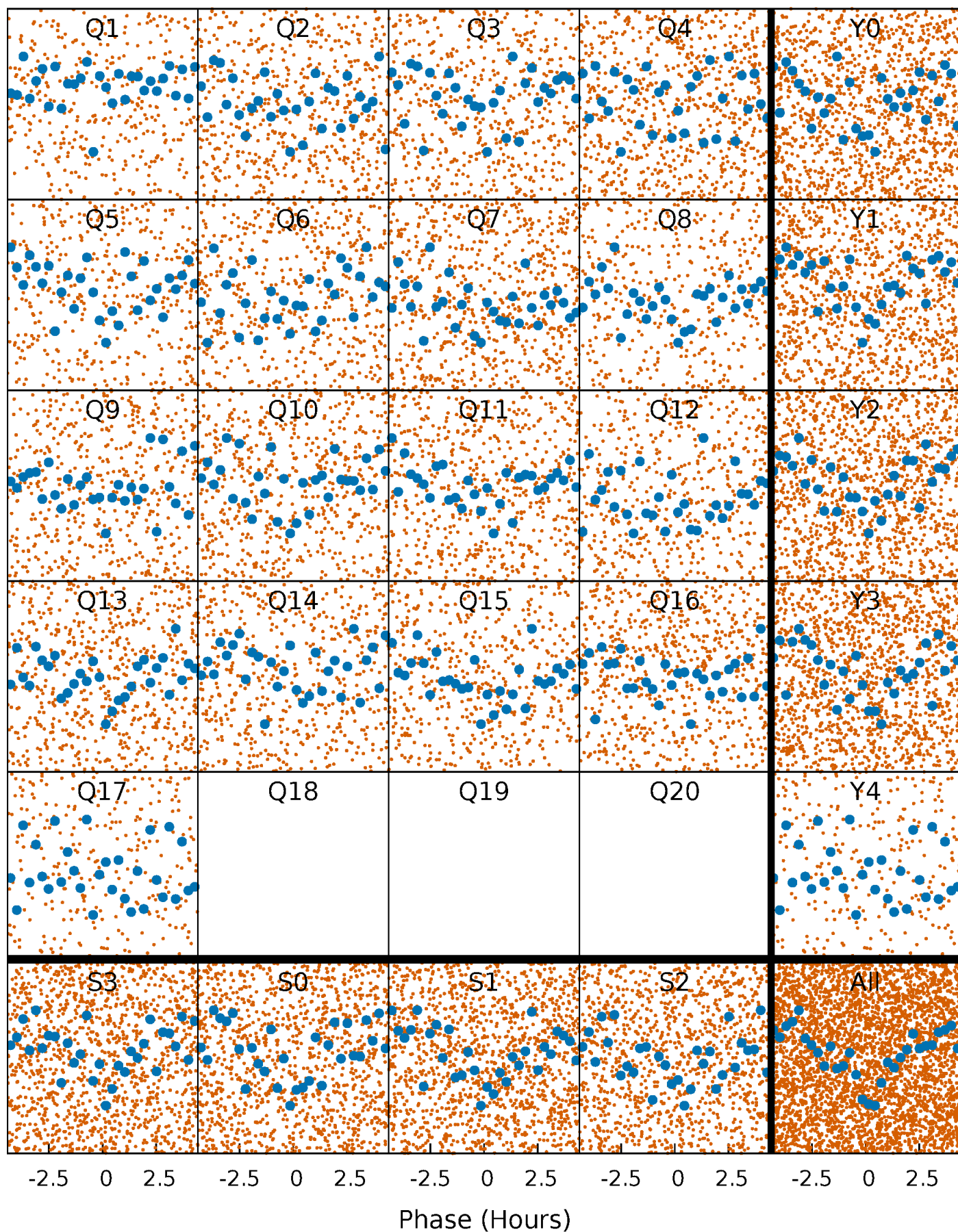


Non-Whitened Vs. Whitened Light Curve



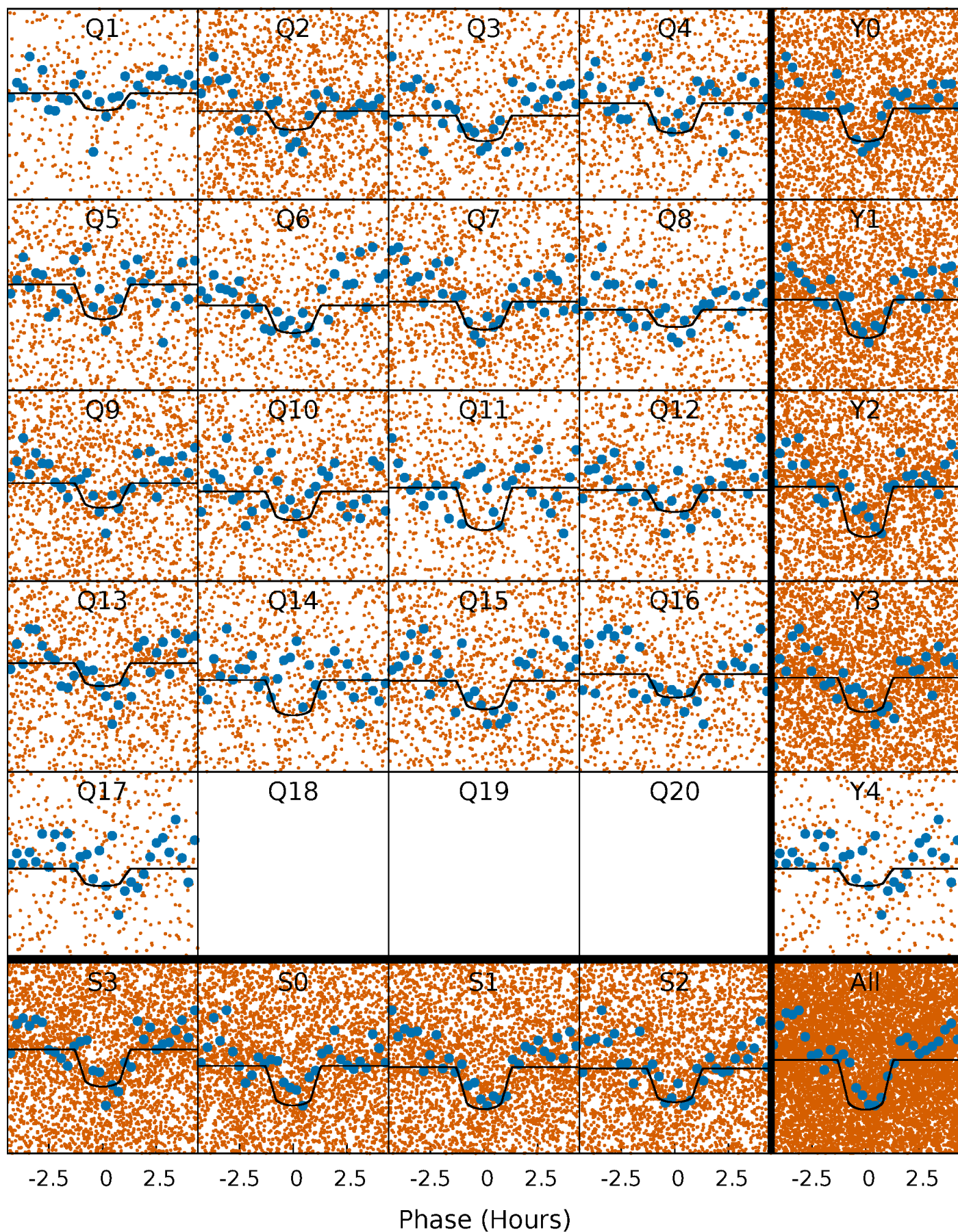
PDC Quarter-Phased Transit Curves

TCE 006697609-01 P= 0.570924 Days $T_0=131.586608$ (BKJD)



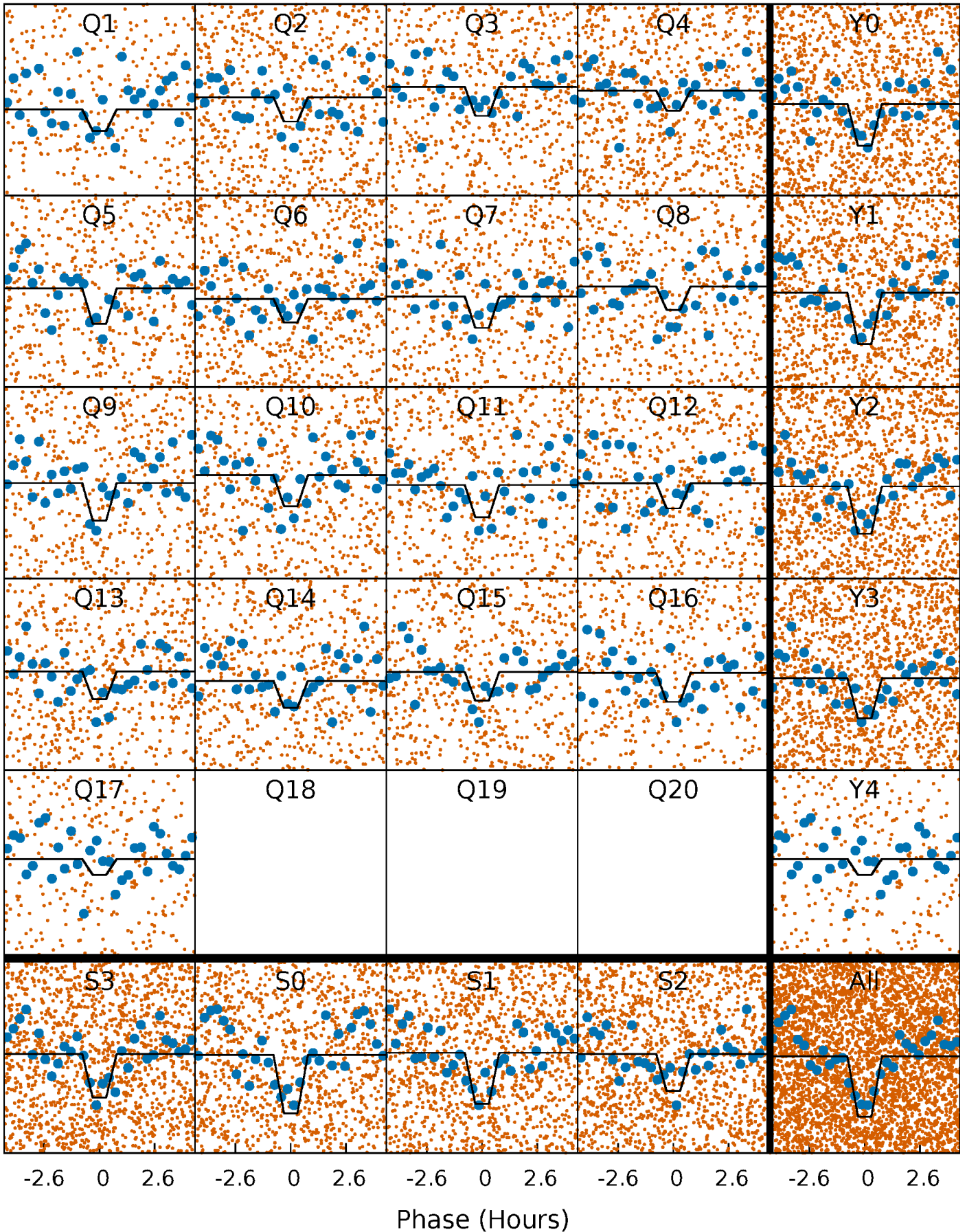
DV Quarter-Phased Transit Curves

TCE 006697609-01 P= 0.570924 Days $T_0=131.586608$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

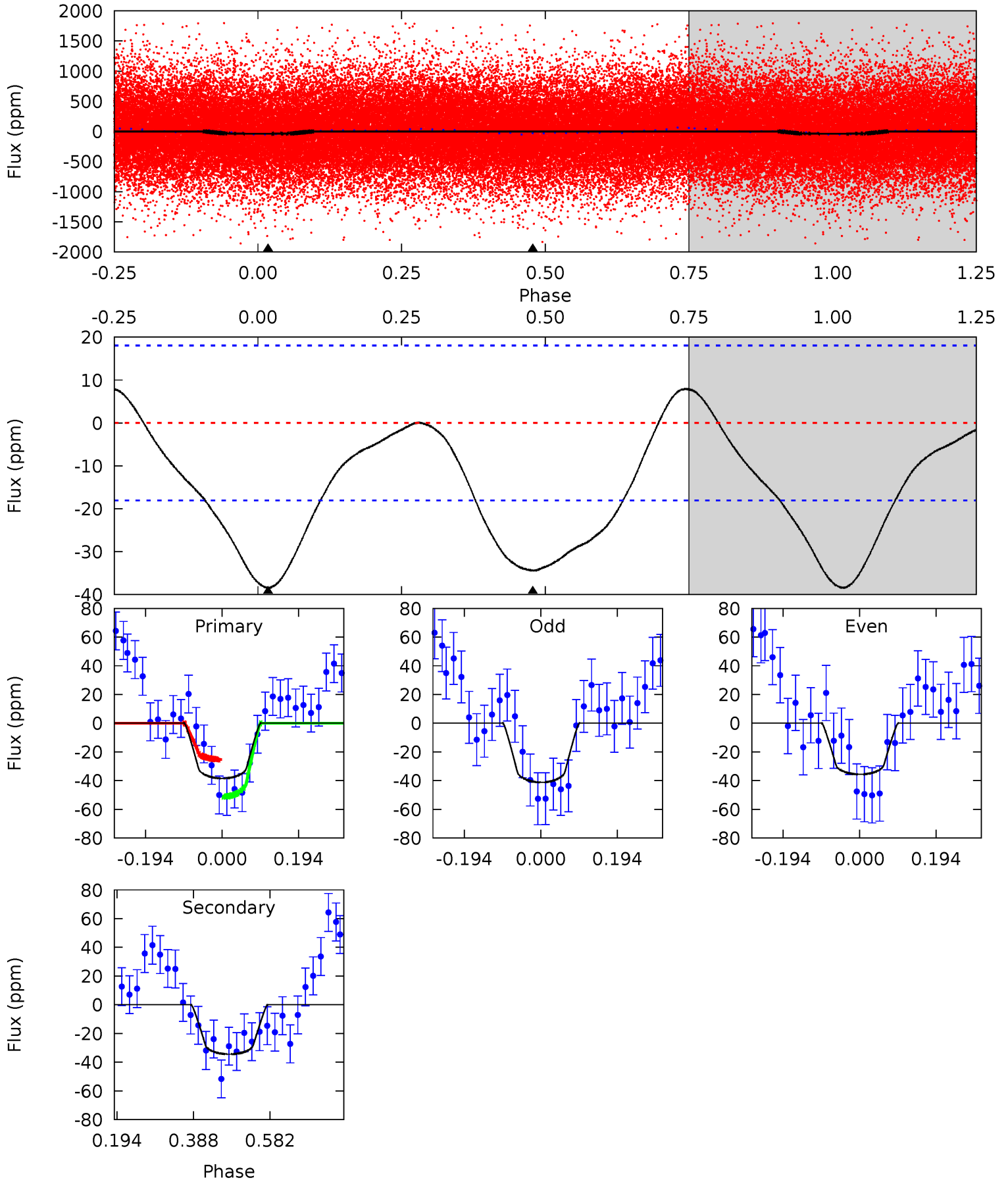
TCE 006697609-01 P= 0.570932 Days $T_0=131.588439$ (BKJD)



DV Model-Shift Uniqueness Test

006697609-01, P = 0.570924 Days, E = 131.015684 Days

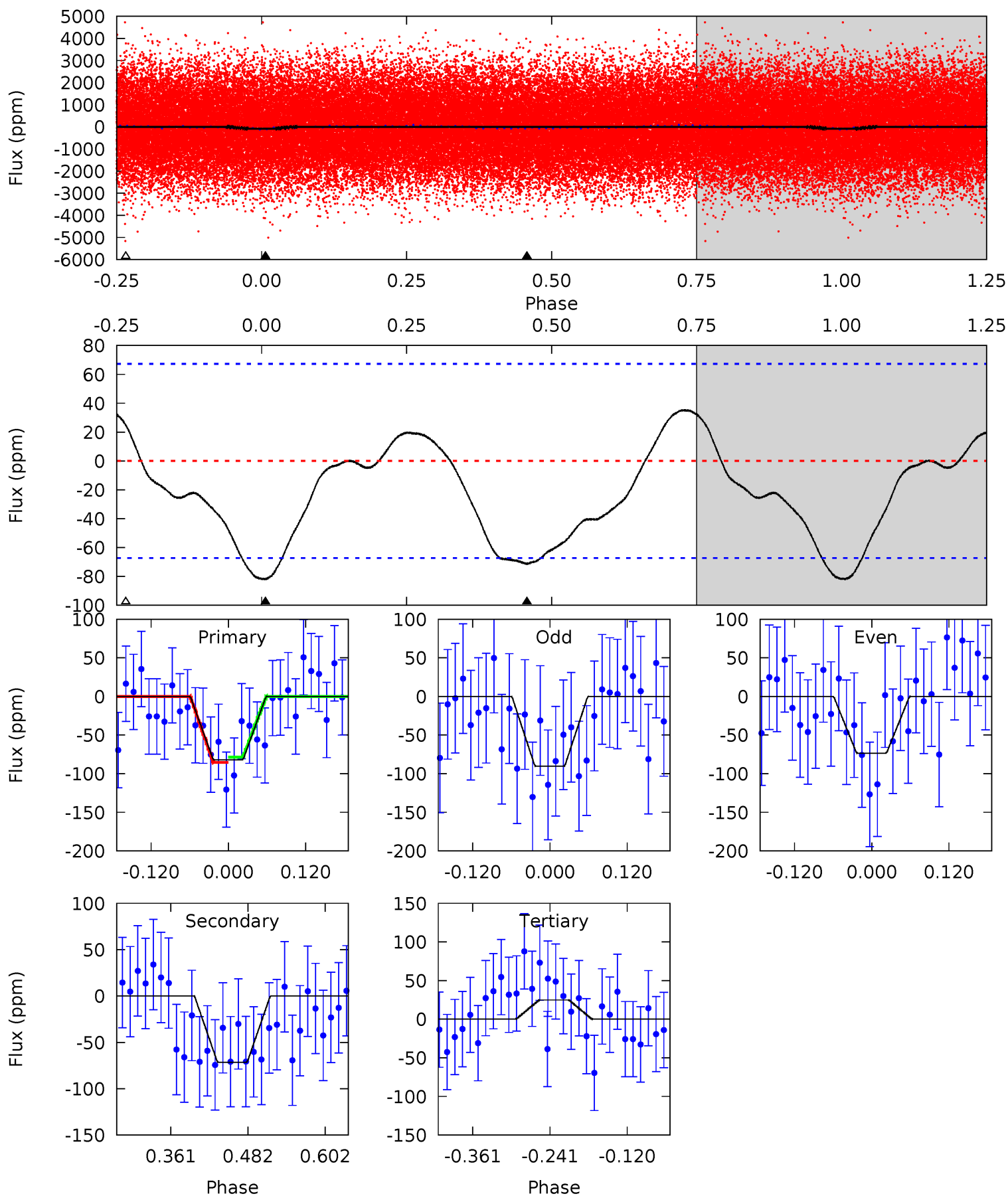
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.43	8.44	0	0	4.42	1.30	1.04	9.43	9.43	8.44	8.44	0.68	1.22	0.17	3.16



Alt Model-Shift Uniqueness Test

006697609-01, P = 0.570932 Days, E = 131.017507 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.52	4.81	-1.67	0	4.53	1.55	1.36	7.19	5.52	6.48	4.81	0.56	1.01	0.30	0.23



Stellar Parameters For KIC 006697609

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7290^{+200}_{-314}	$4.189^{+0.090}_{-0.210}$	$0.070^{+0.200}_{-0.350}$	$1.663^{+0.547}_{-0.252}$	$1.559^{+0.211}_{-0.211}$	$0.477^{+0.198}_{-0.268}$
	+3%/-4%	+2%/-5%	+286%/-500%	+33%/-15%	+14%/-14%	+41%/-56%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 006697609-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-34±4	$1.54^{+0.64}_{-0.61}$	4679^{+388}_{-289}	5837^{+2047}_{-1030}	$1.899^{+3.546}_{-0.927}$
Alt.	-71±15	$1.92^{+0.72}_{-0.64}$	4688^{+402}_{-276}	6335^{+1636}_{-1068}	$2.519^{+3.261}_{-1.248}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming A=0.3)

A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

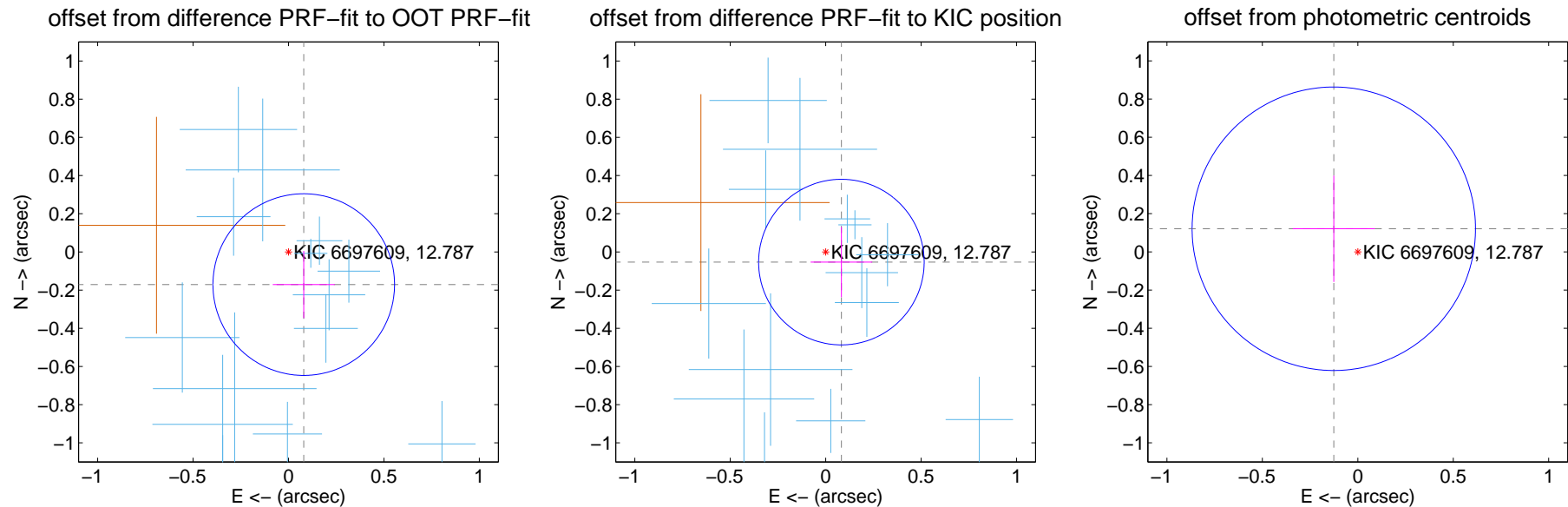
DV Centroid Data

Supplemental centroid analysis for 006697609-01. Kepler magnitude: 12.79. Transit SNR 13.85

There are 15 quarters with good PRF difference image offsets

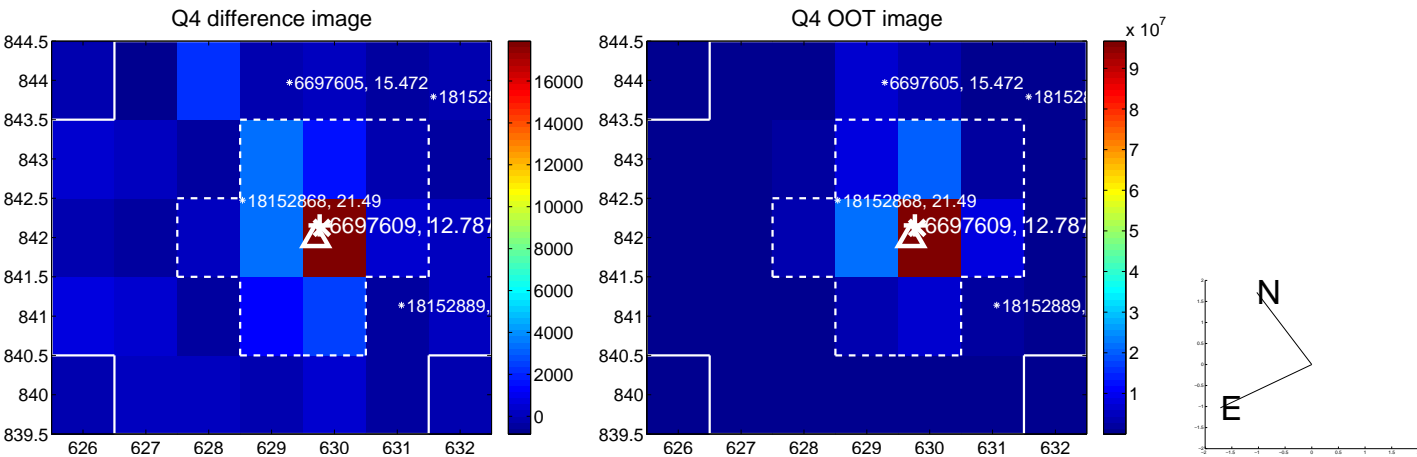
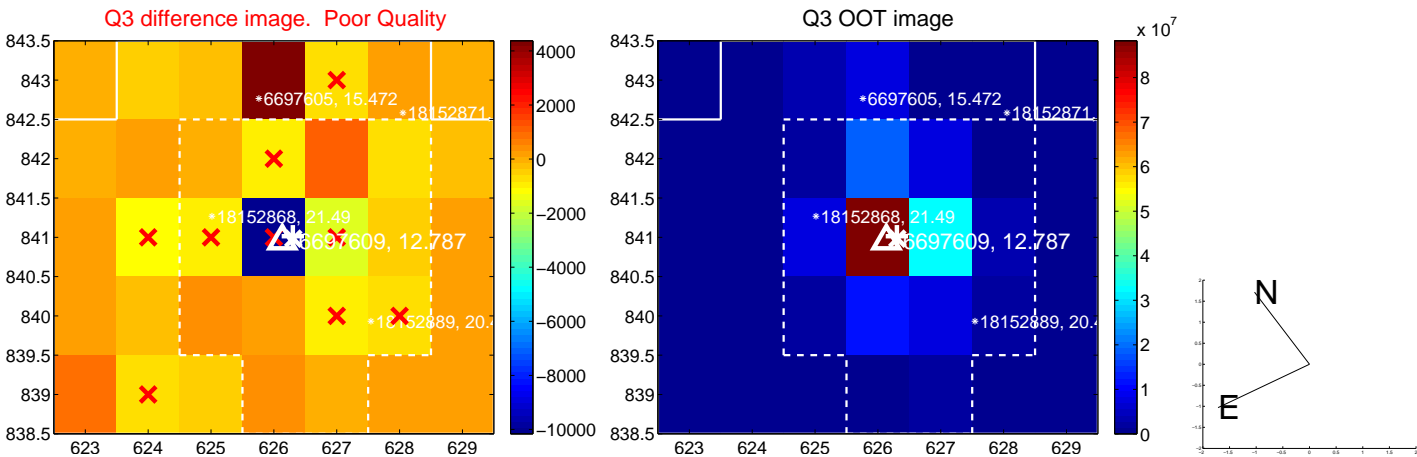
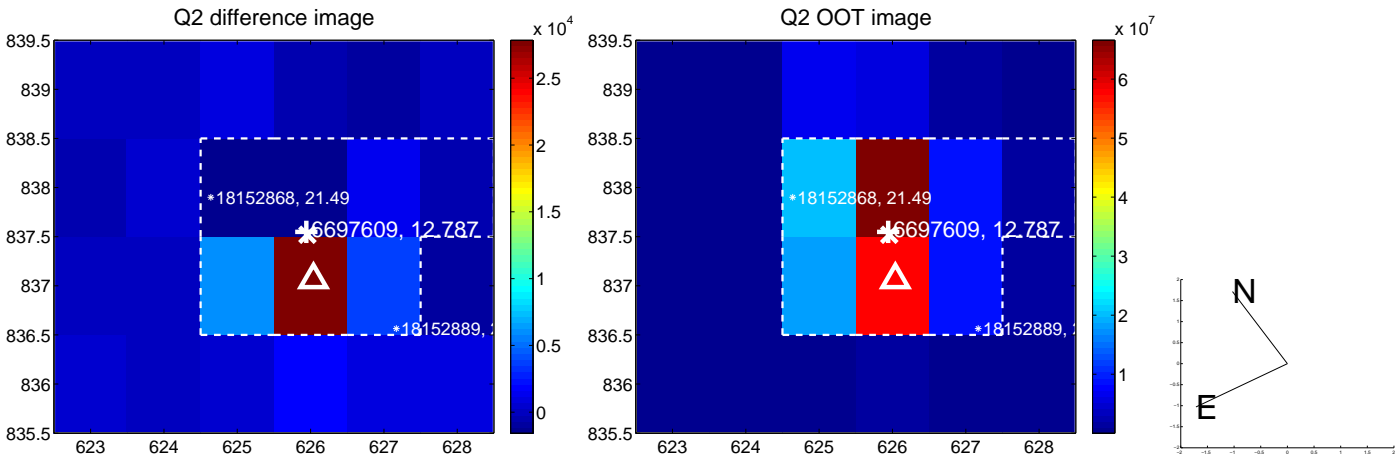
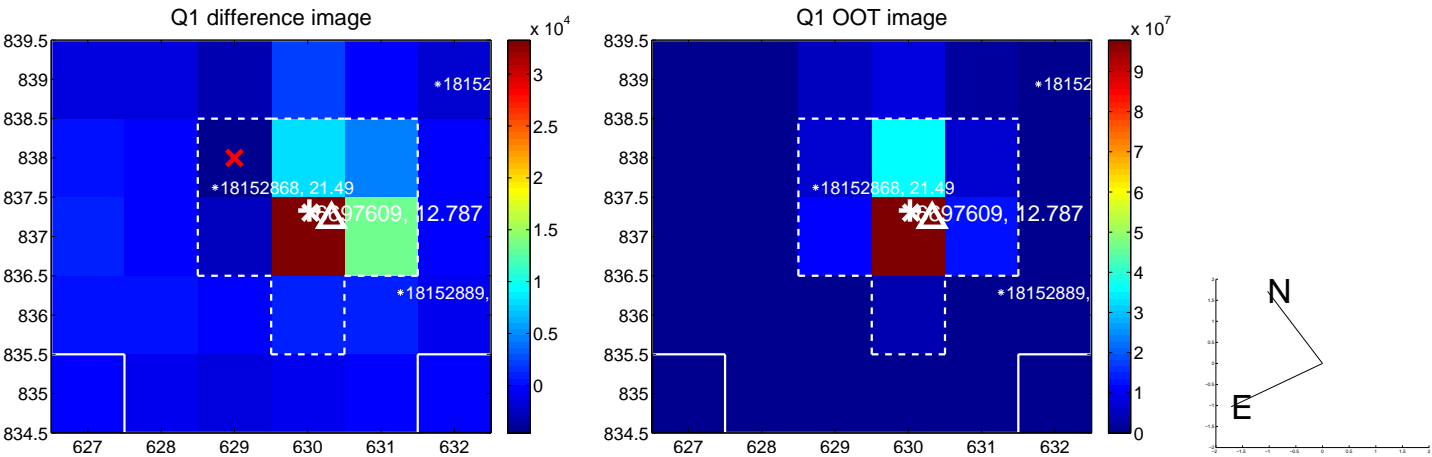
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.189 ± 0.159	1.19	-0.080 ± 0.162	-0.171 ± 0.176
PRF-fit source offset from KIC position	0.098 ± 0.145	0.68	-0.082 ± 0.161	-0.053 ± 0.184
photometric centroid source offset	0.17 ± 0.25	0.71	0.13 ± 0.22	0.12 ± 0.28

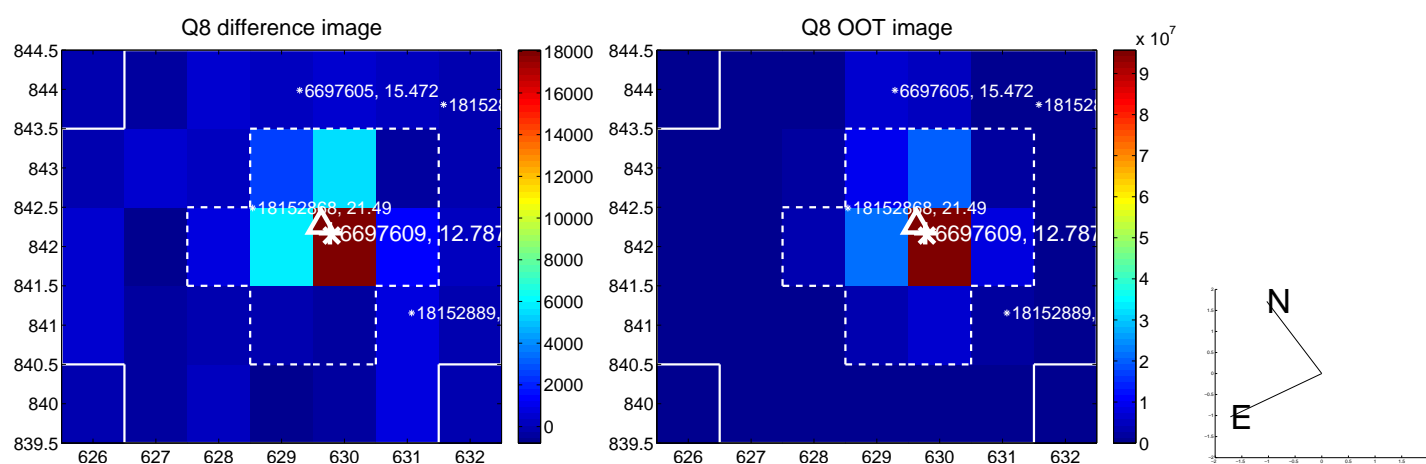
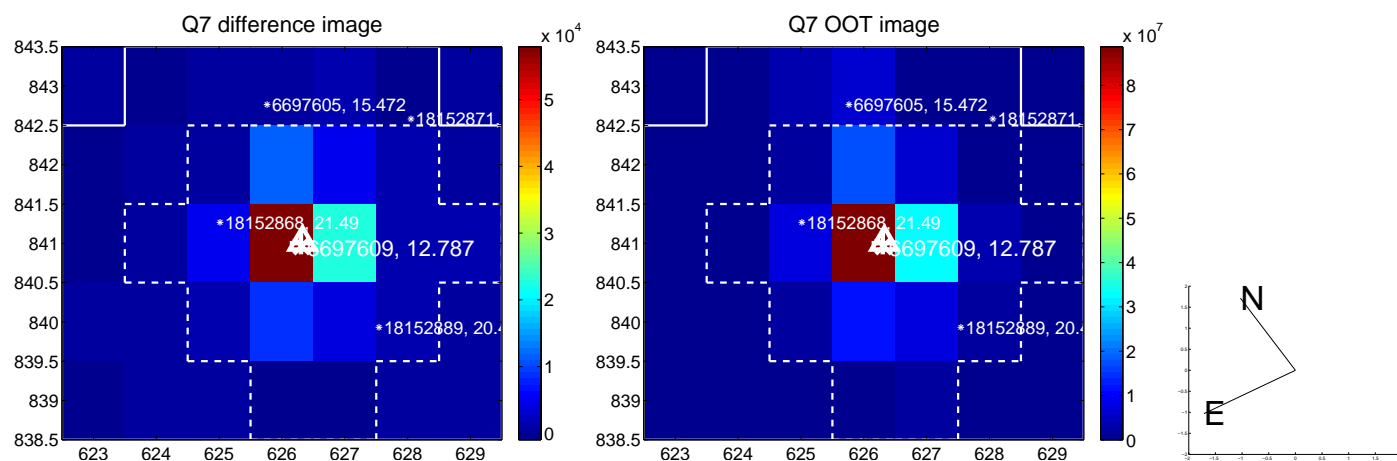
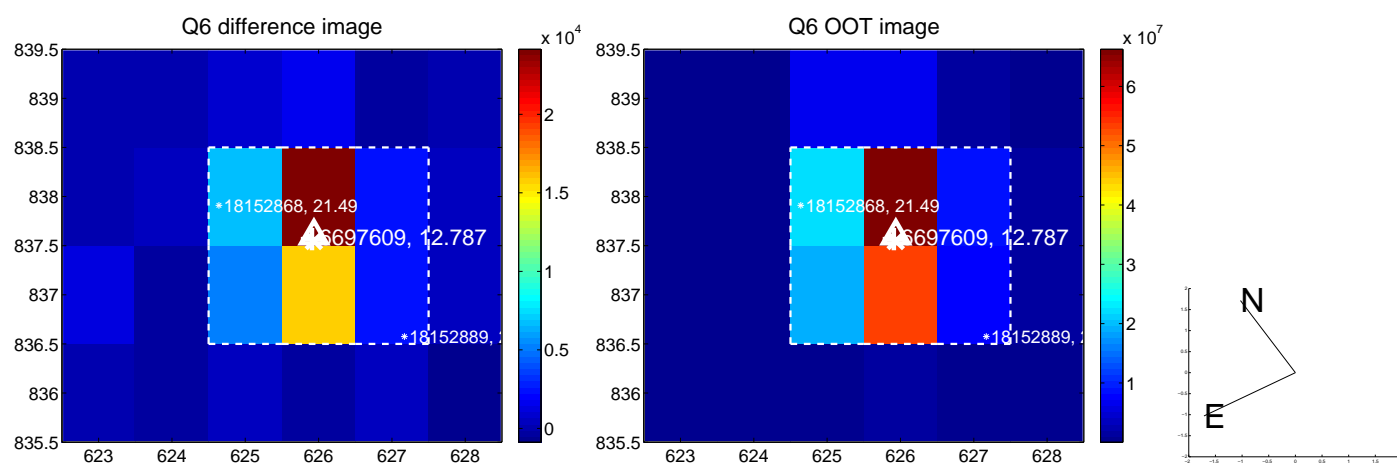
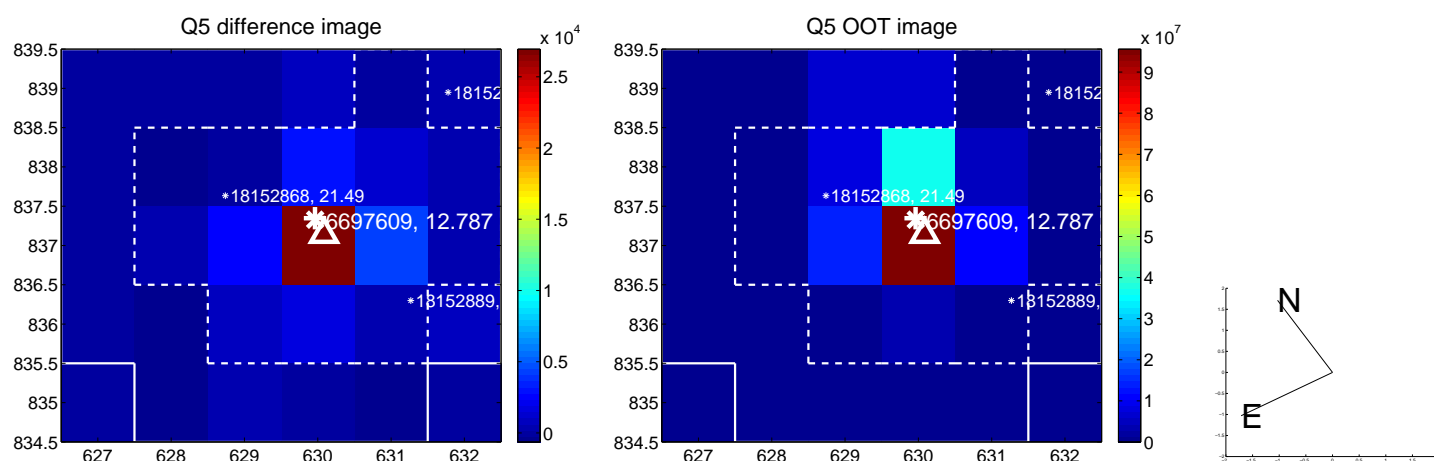


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

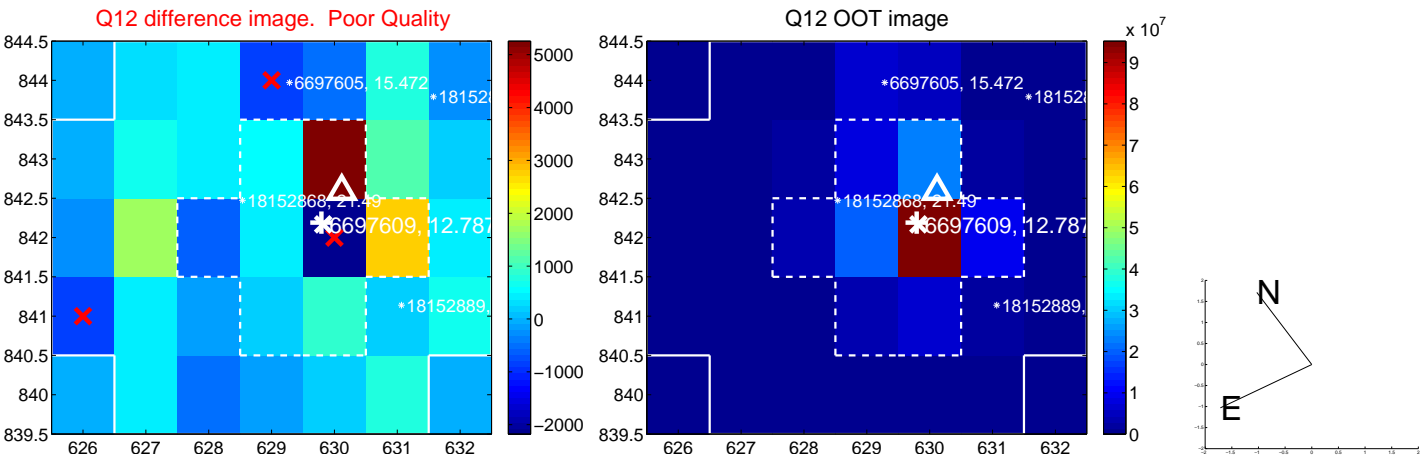
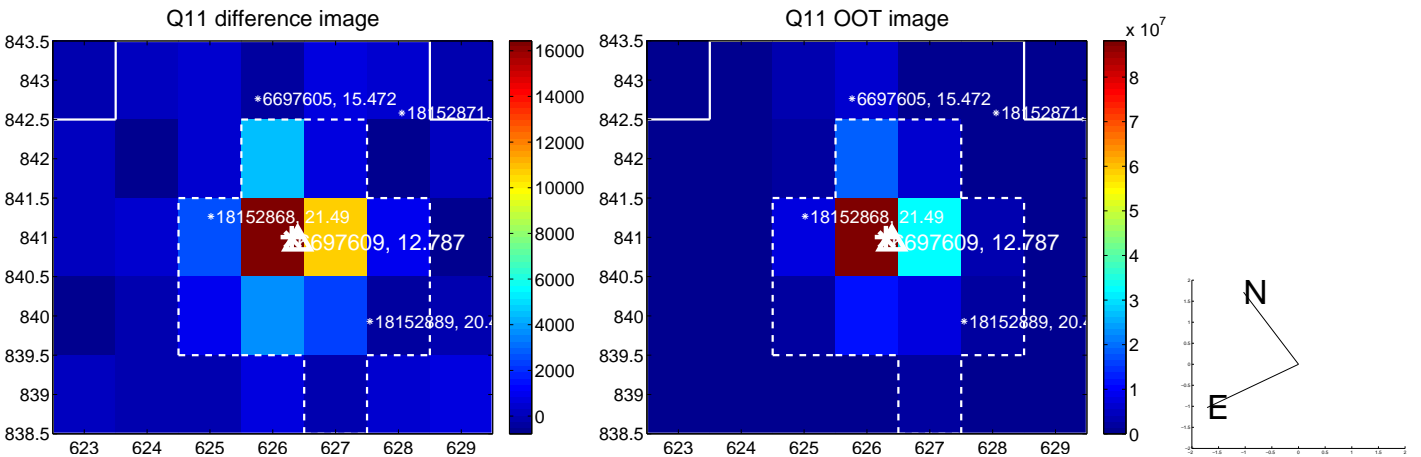
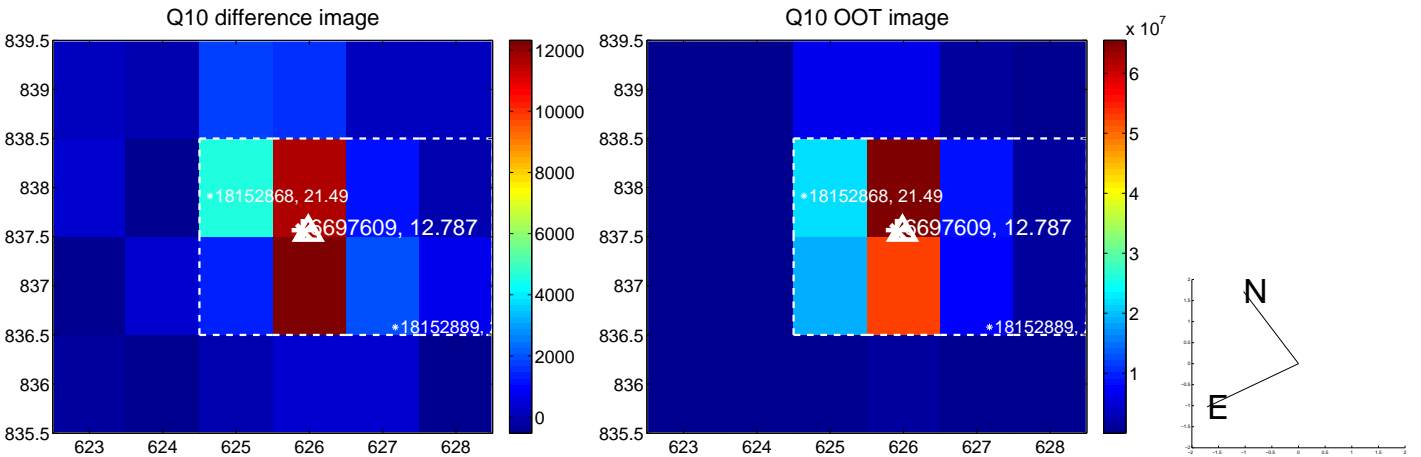
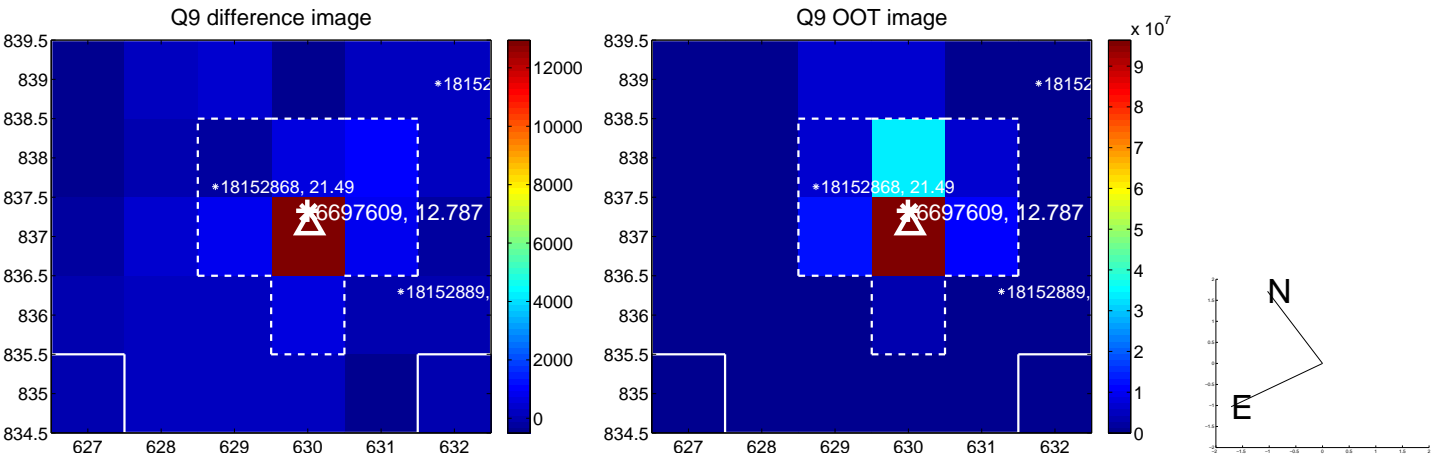
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



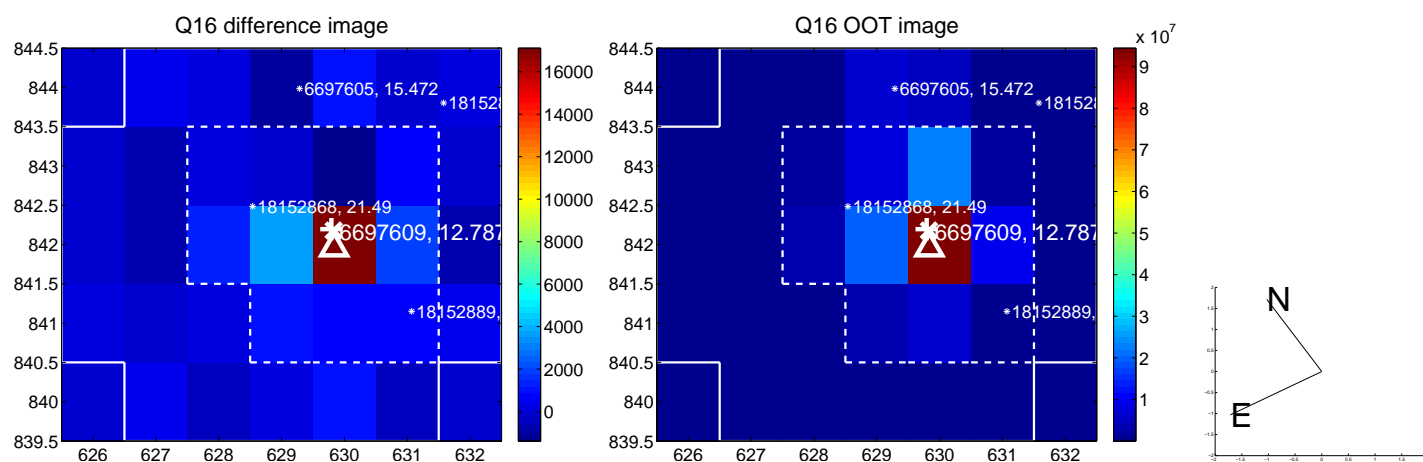
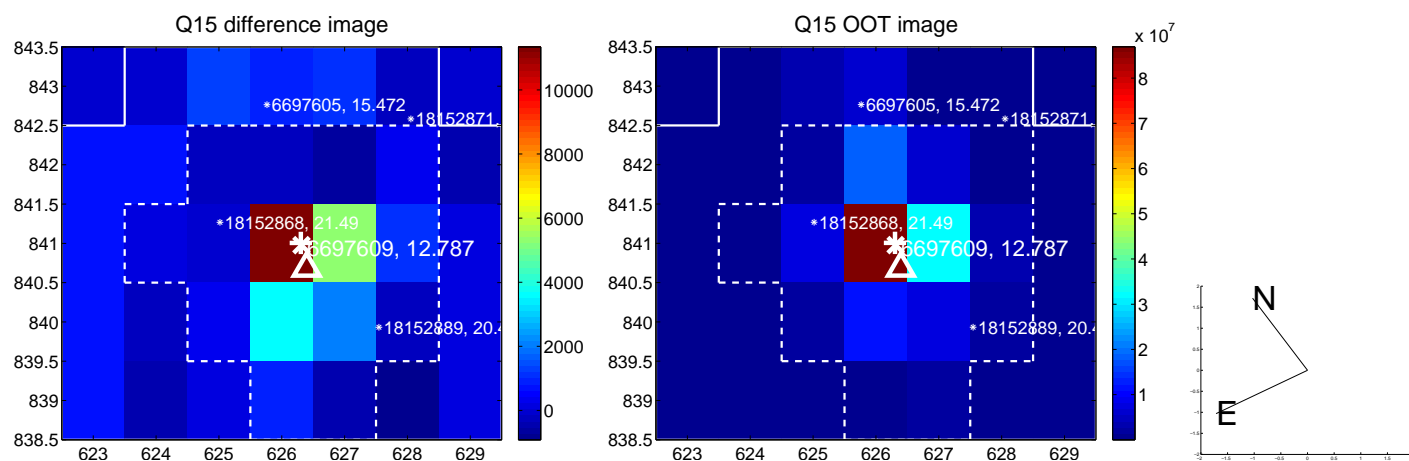
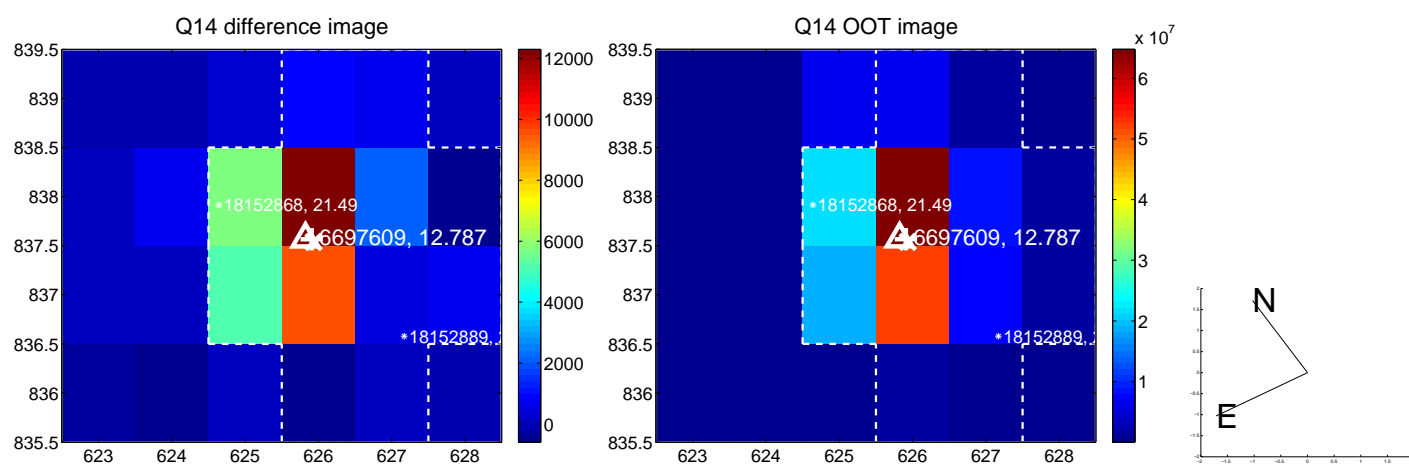
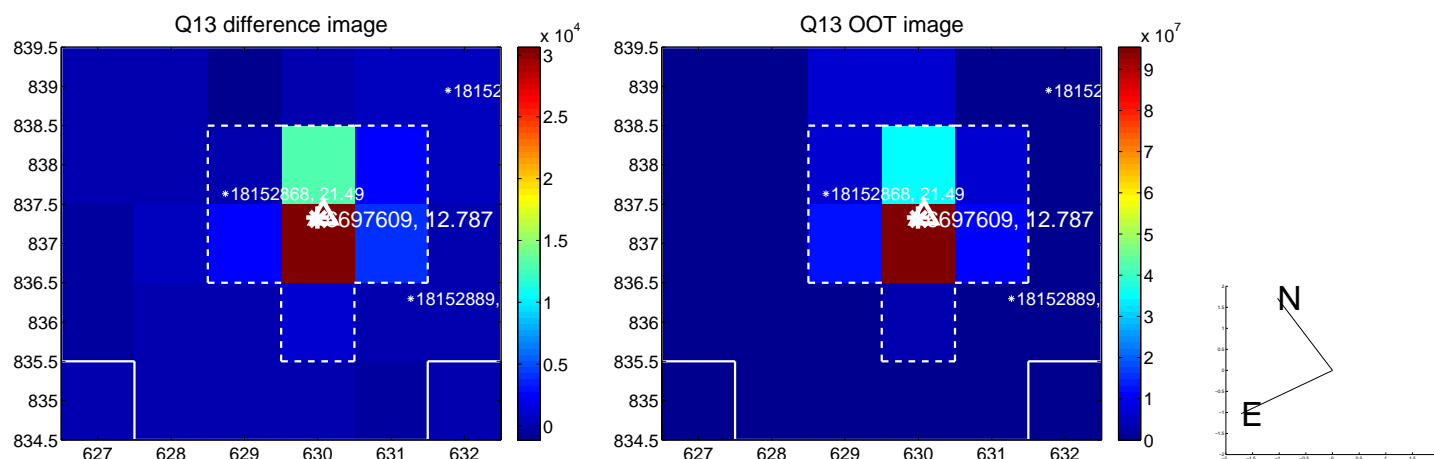
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



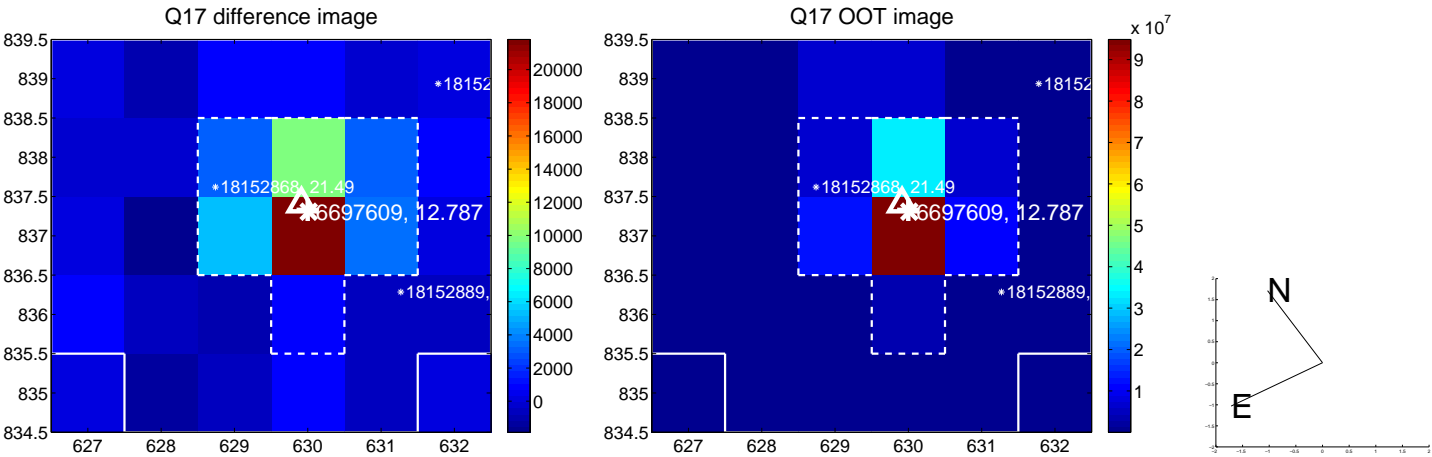
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



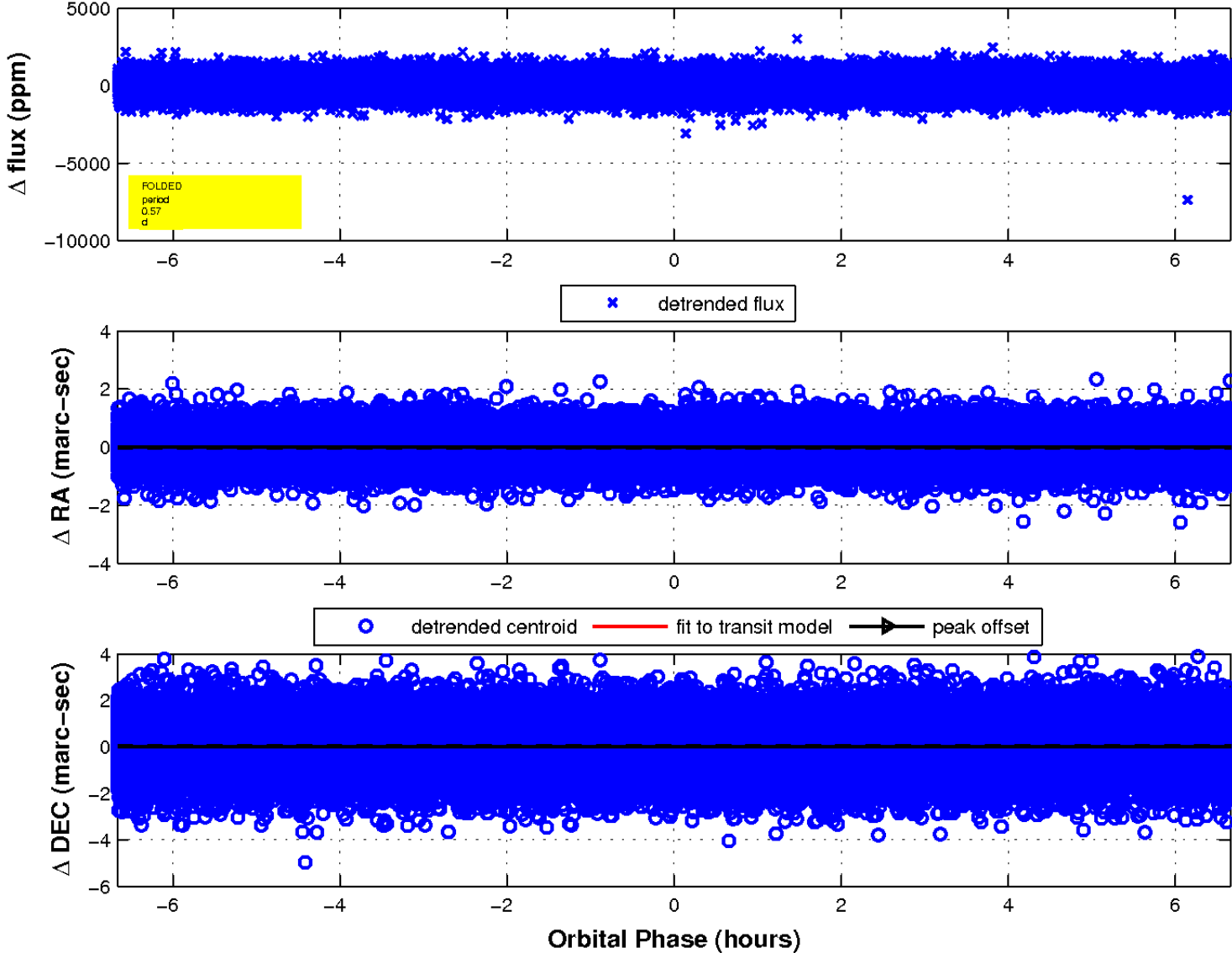
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

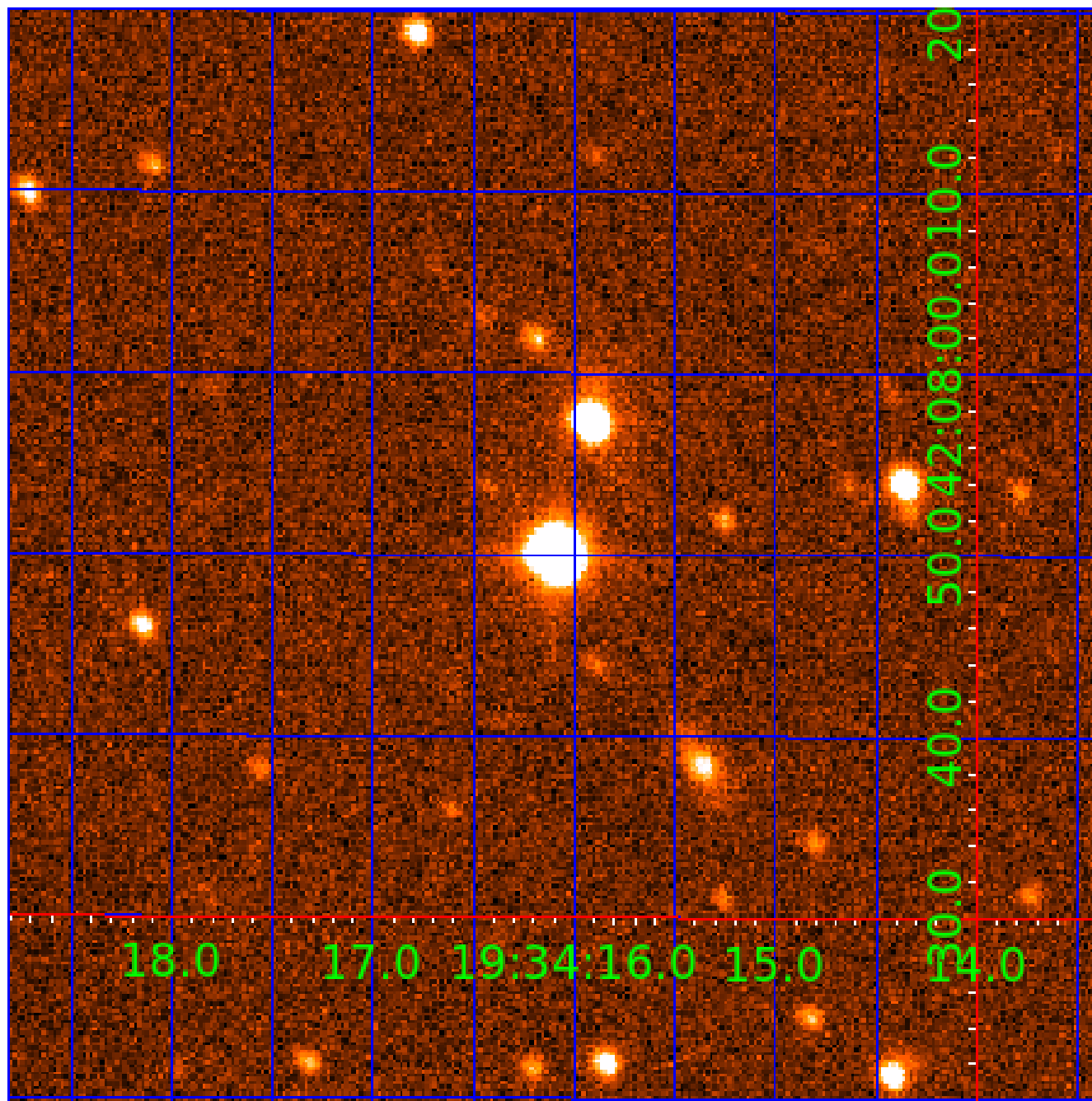


fluxWeightedCentroids, Planet 1 of 4



UKIRT Image

Declination



KIC 006697609

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
006697609-01	OBS	No	0.570924	131.586608	57.5	2.221	13.3	13.9	1.66	7290	1.46	28683.22
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006697609-03	OBS	No	0.903278	132.257004	112.9	6.206	8.5	11.8	1.66	7290	1.89	15558.60
006697609-04	OBS	No	52.816284	156.763799	854.8	2.020	9.5	10.0	1.66	7290	5.26	68.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006697609-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
006697609-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—HALO_GHOST
006697609-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT
006697609-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

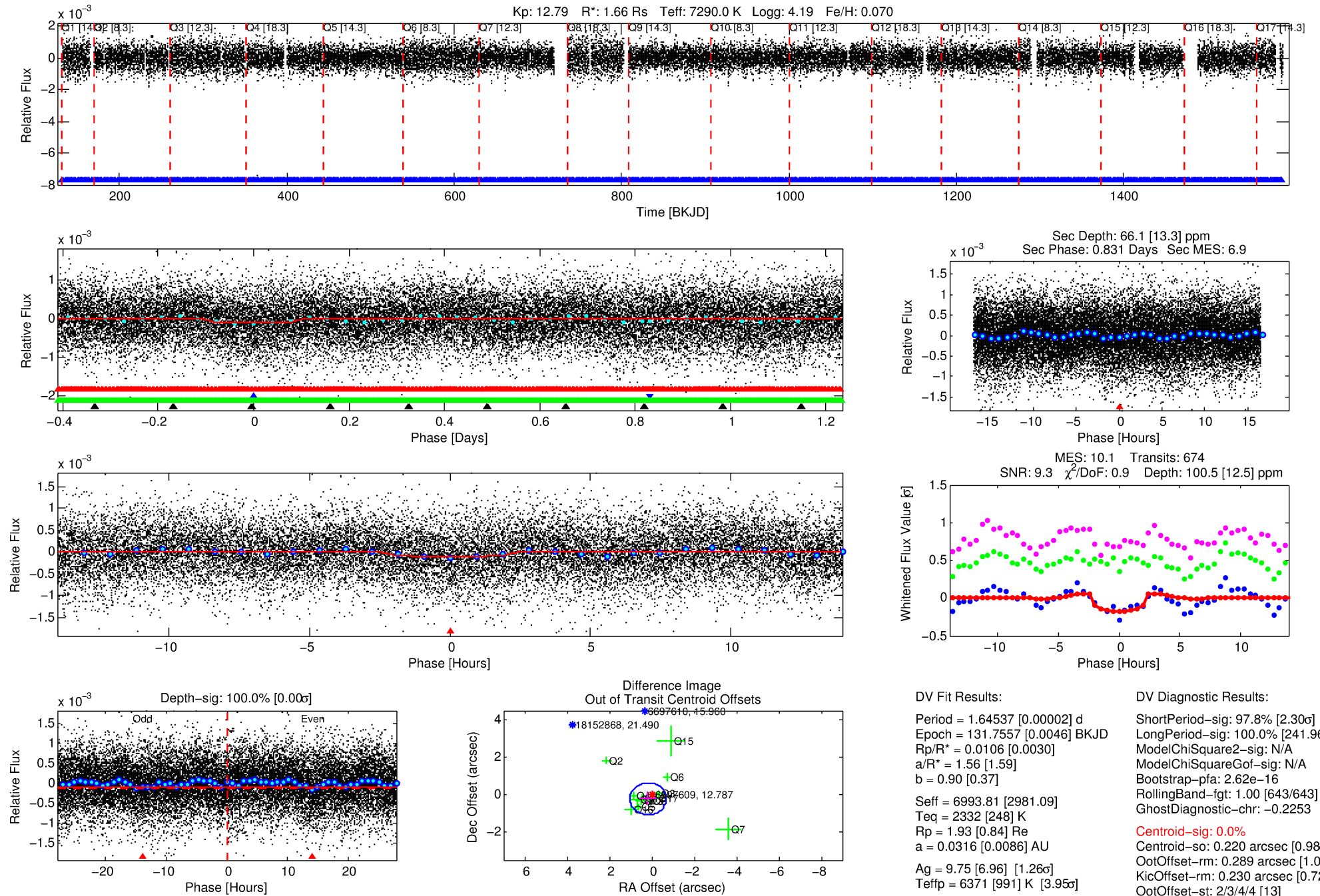
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006697609-02

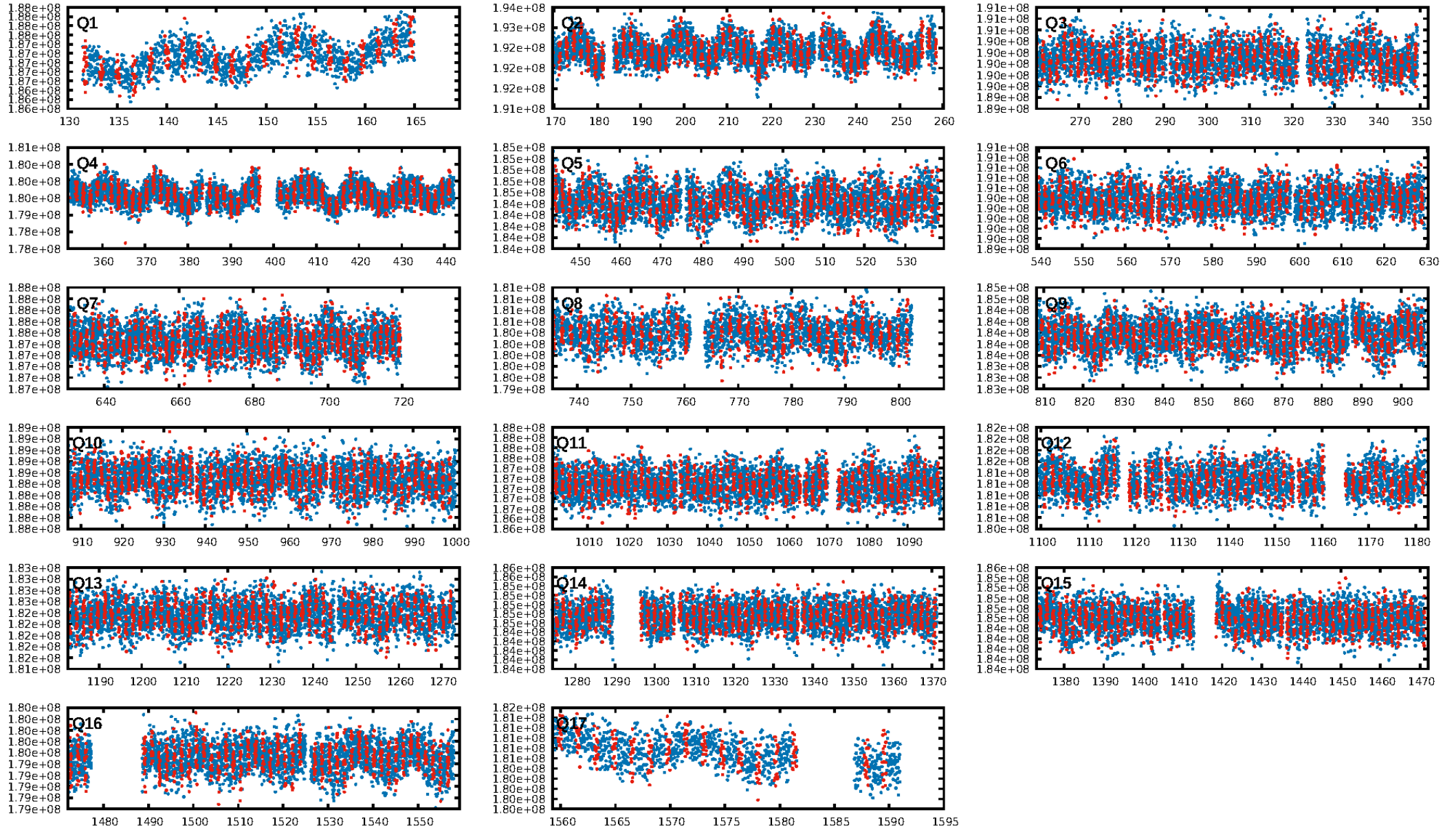
No Significant Match Found

DV One-Page Summary

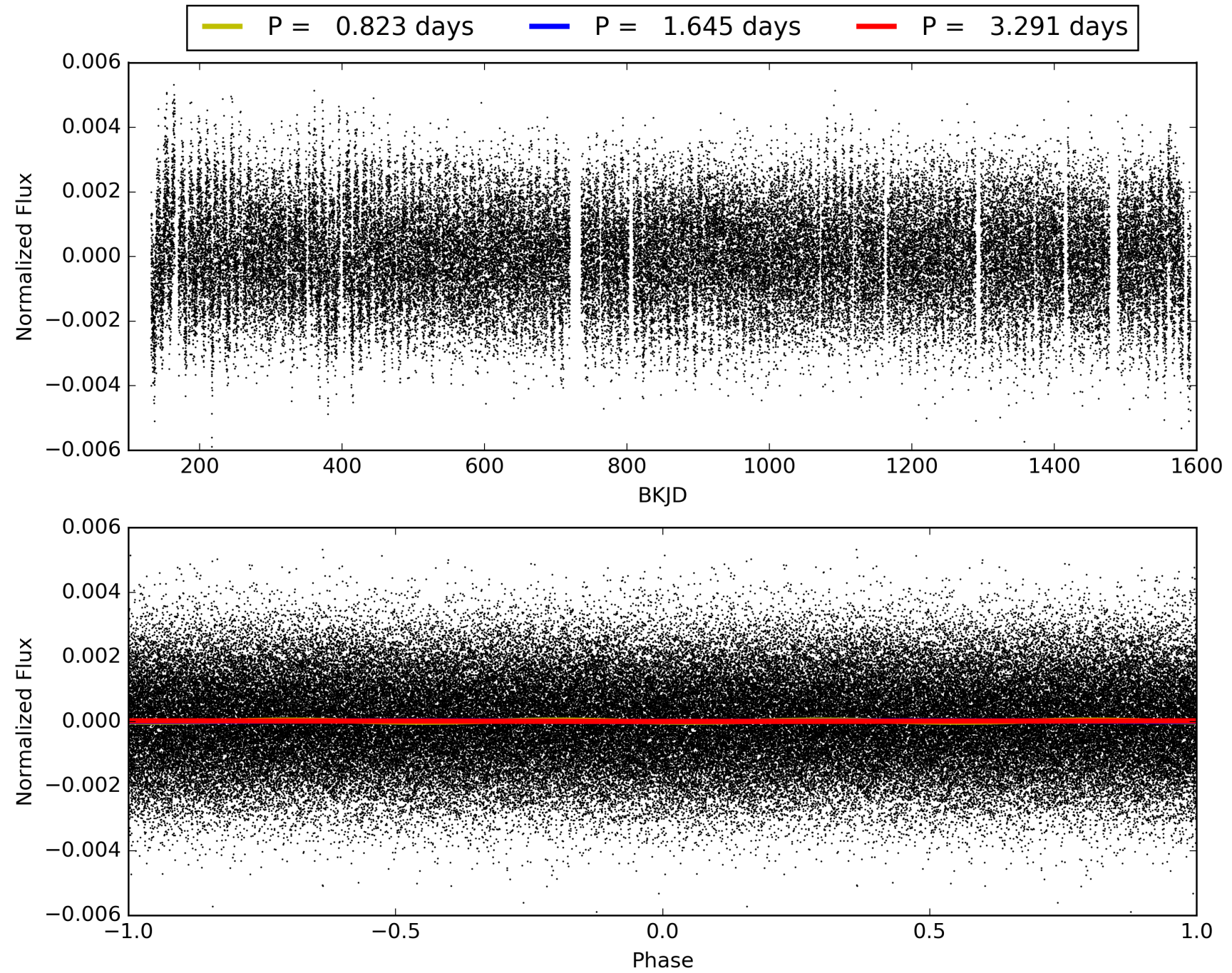
KIC: 6697609 Candidate: 2 of 4 Period: 1.645 d



TCE 006697609-02, PDC Light Curves

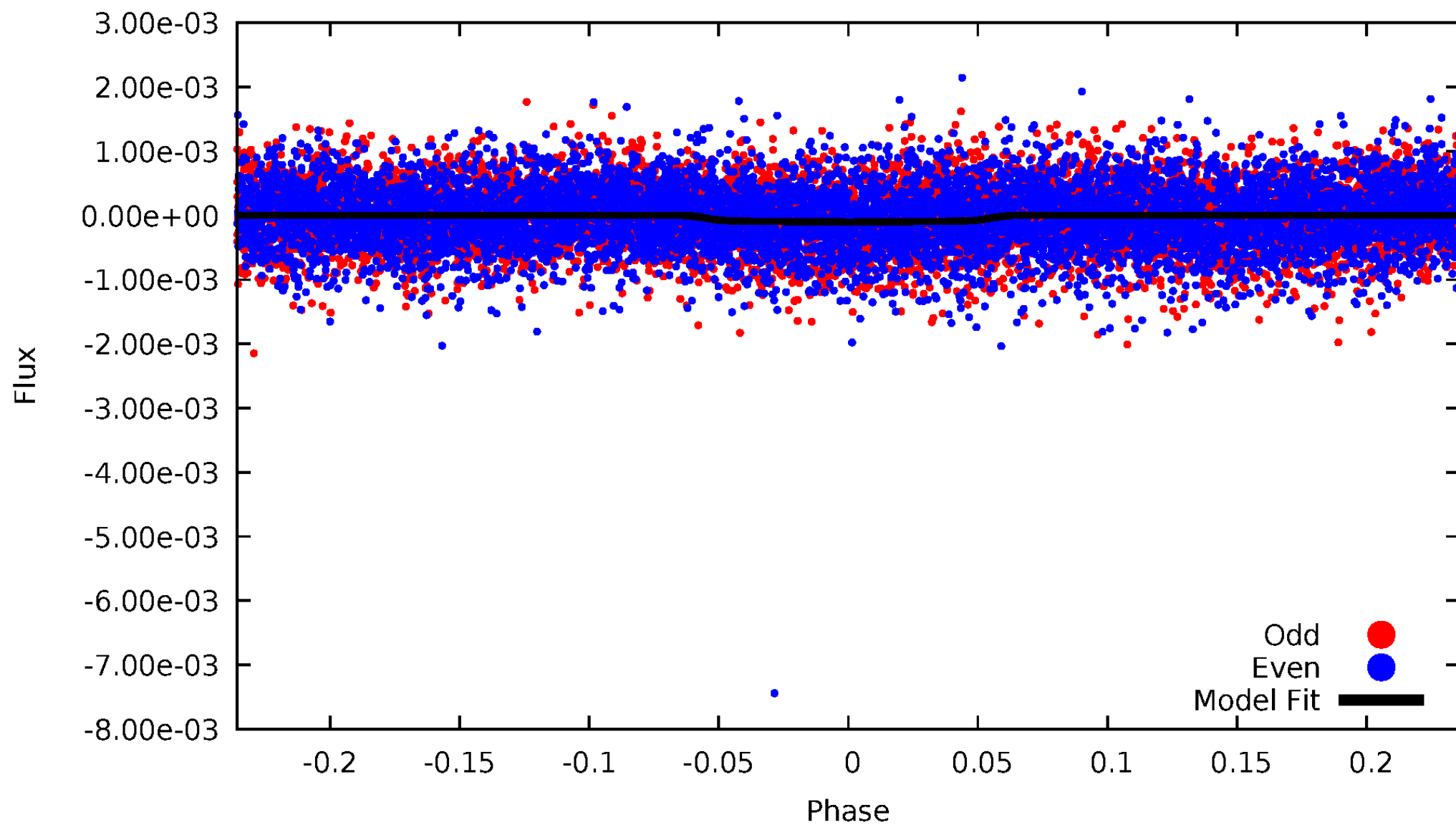


TCE 006697609-02



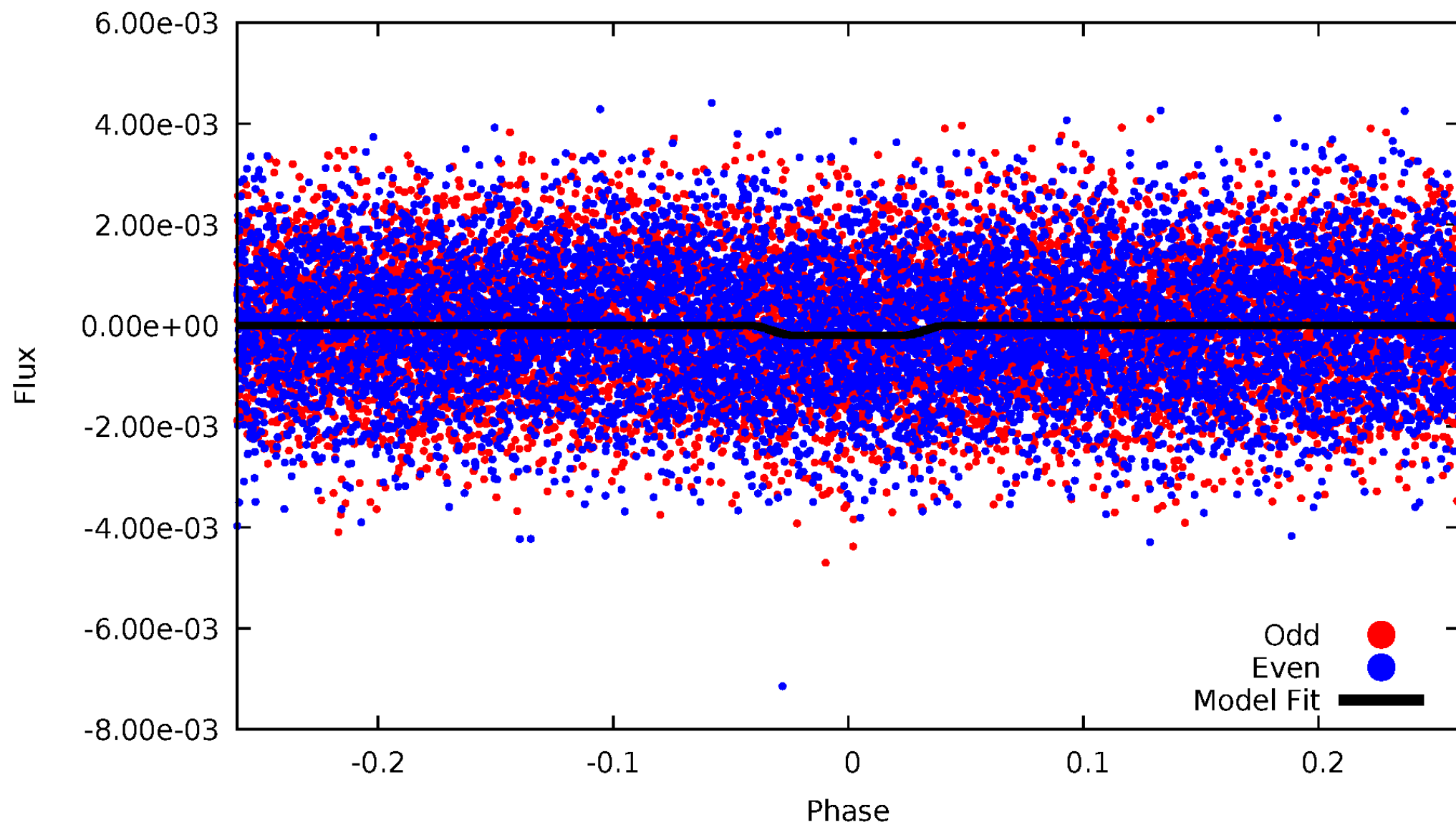
DV Odd/Even

TCE 006697609-02



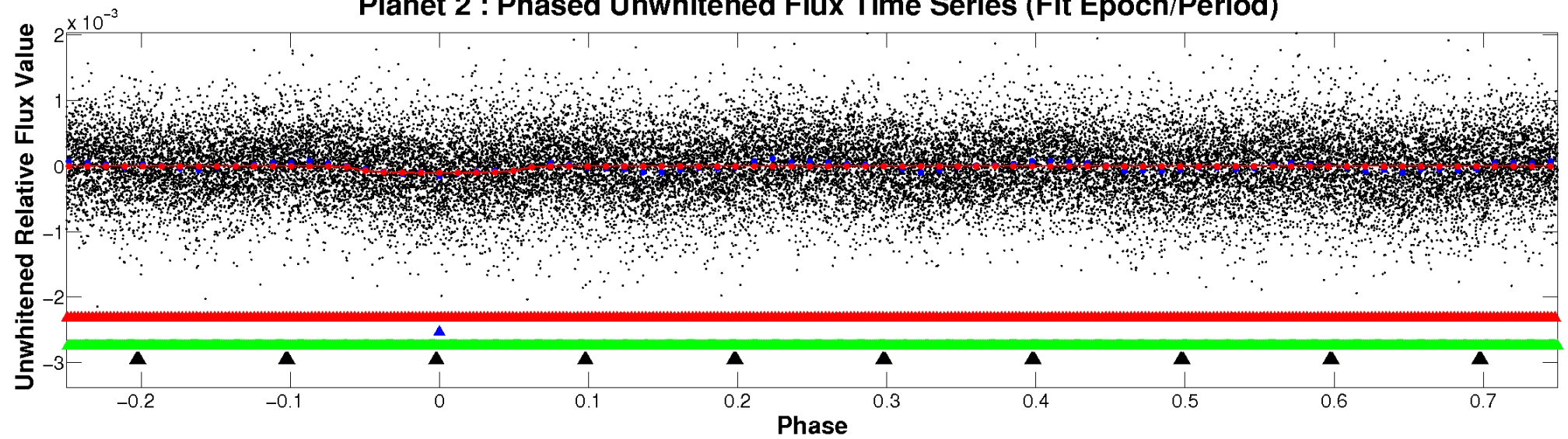
ALT Odd/Even

TCE 006697609-02

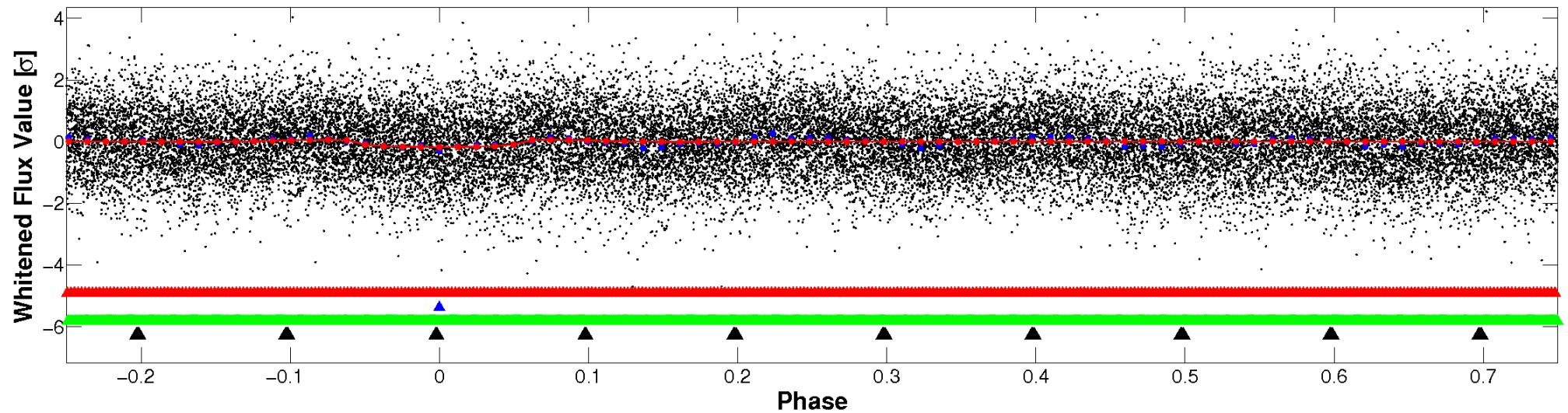


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

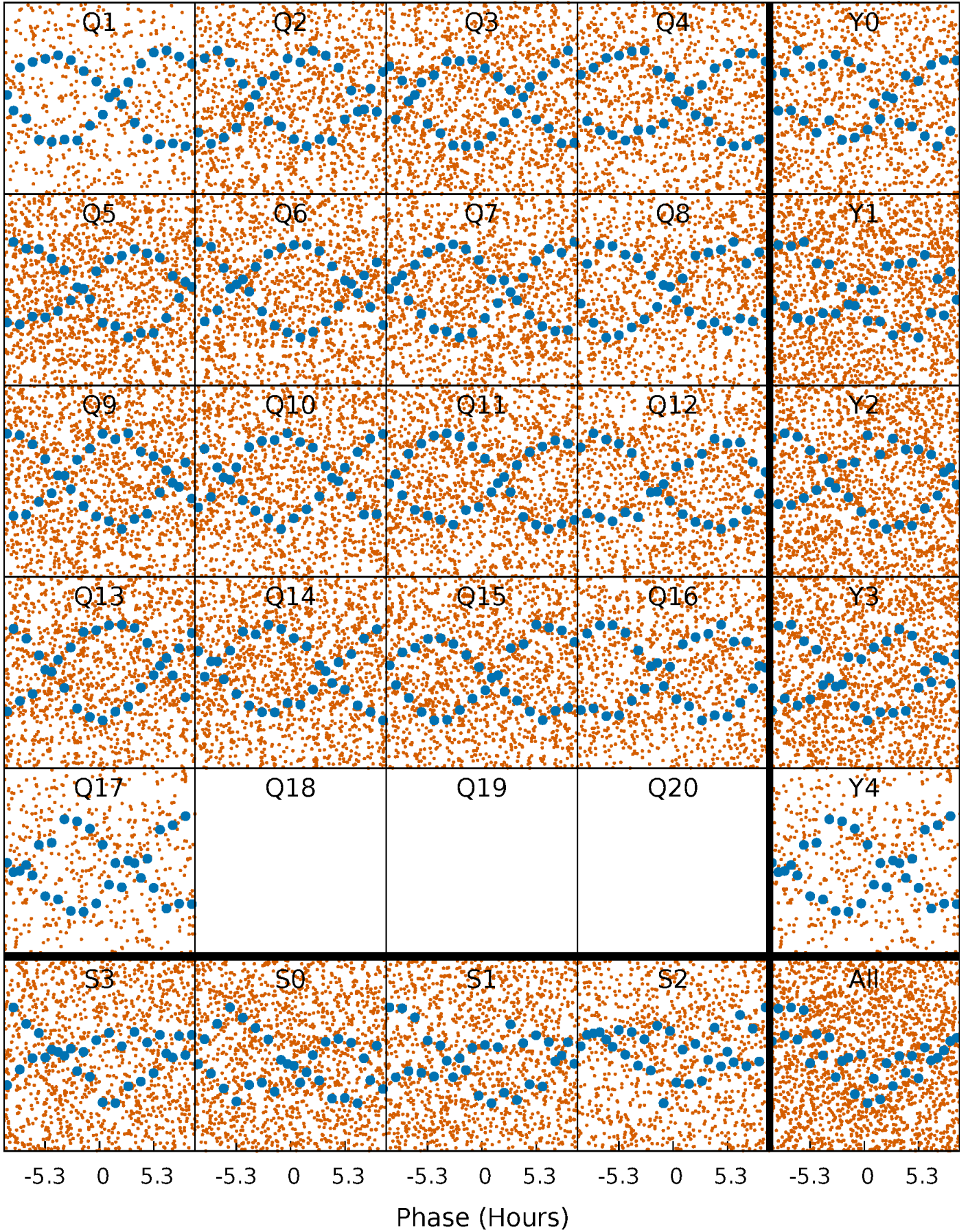


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



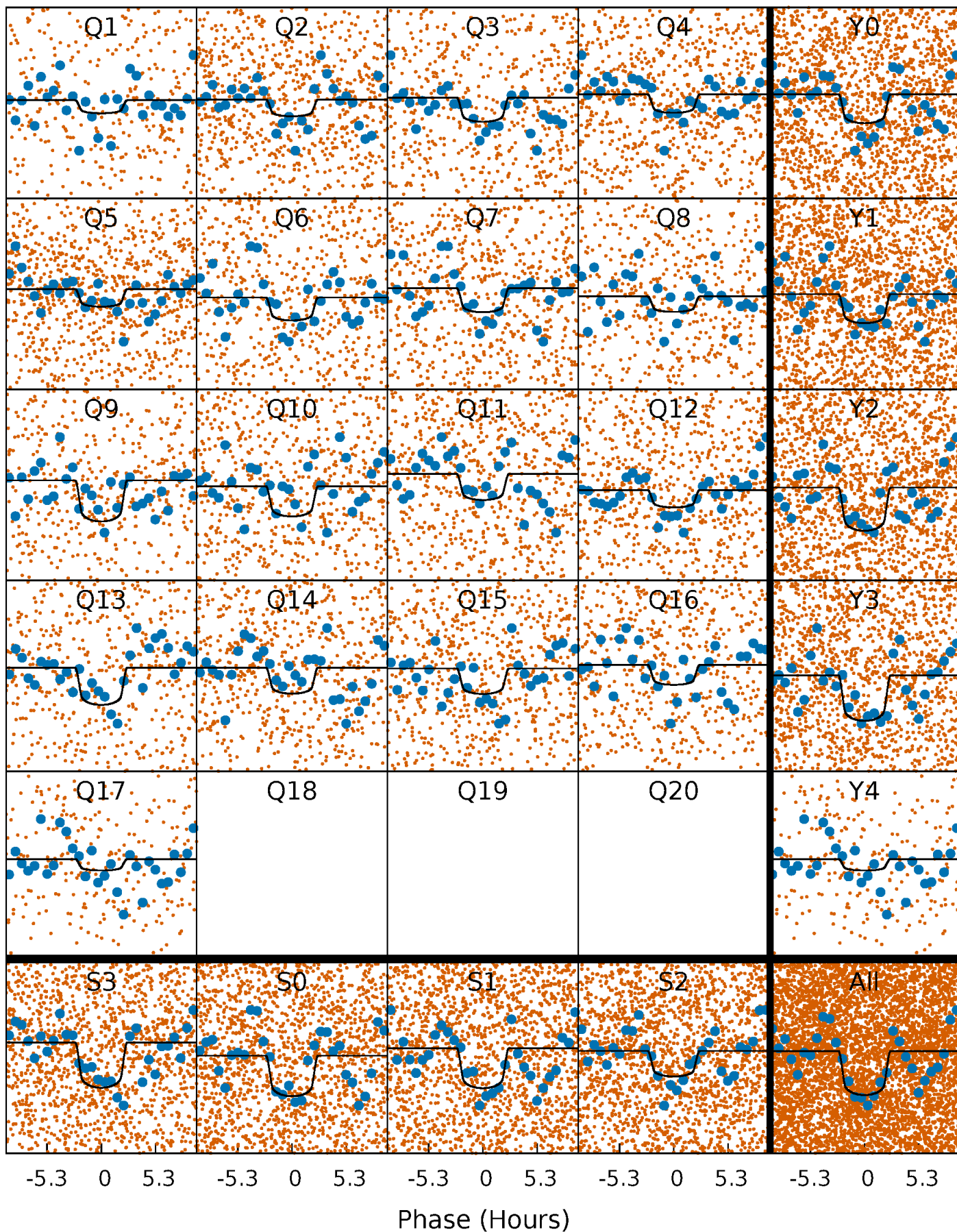
PDC Quarter-Phased Transit Curves

TCE 006697609-02 P= 1.645371 Days $T_0=131.755720$ (BKJD)



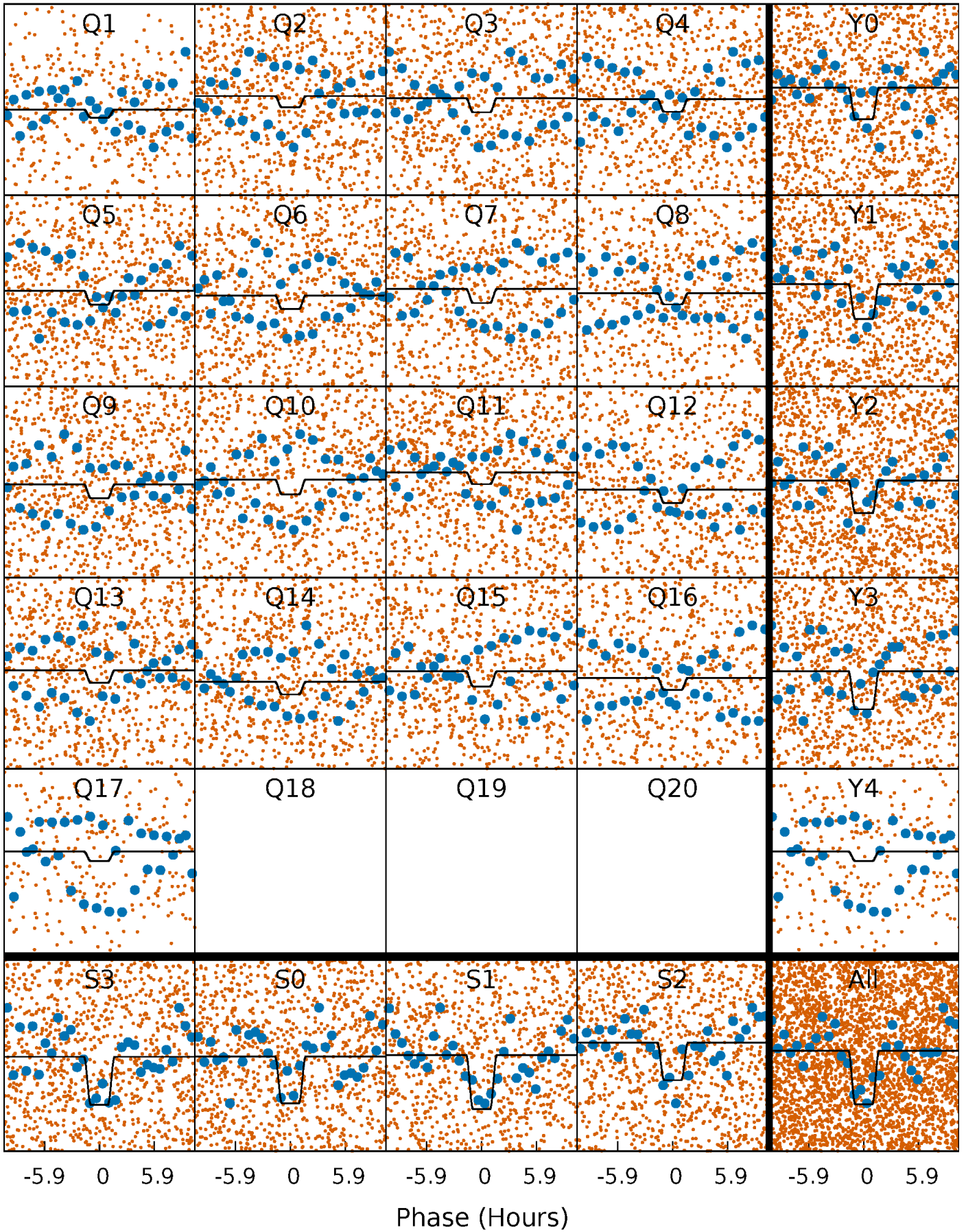
DV Quarter-Phased Transit Curves

TCE 006697609-02 P= 1.645371 Days $T_0=131.755720$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

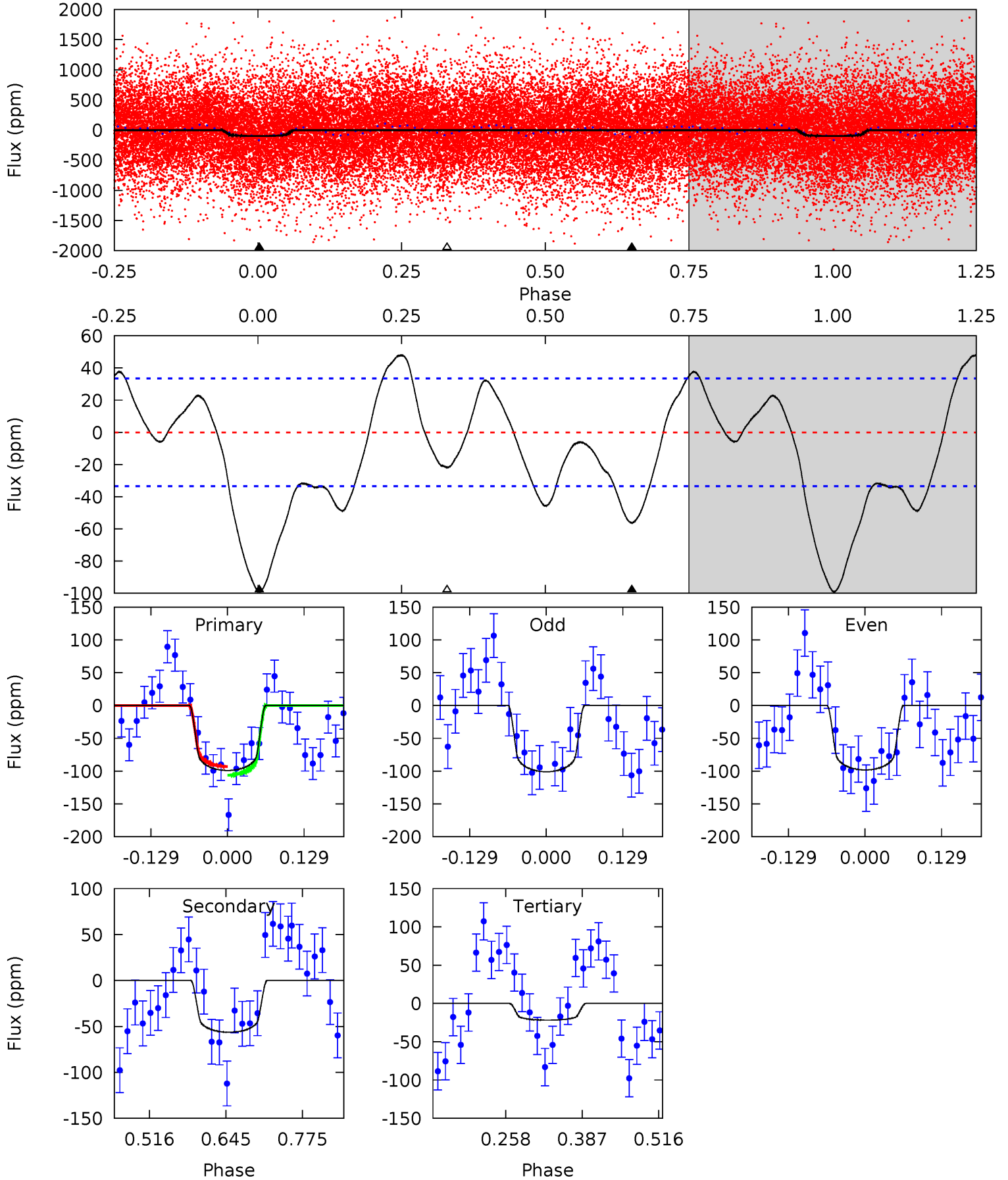
TCE 006697609-02 P= 1.645378 Days $T_0=131.753986$ (BKJD)



DV Model-Shift Uniqueness Test

006697609-02, P = 1.645371 Days, E = 130.110349 Days

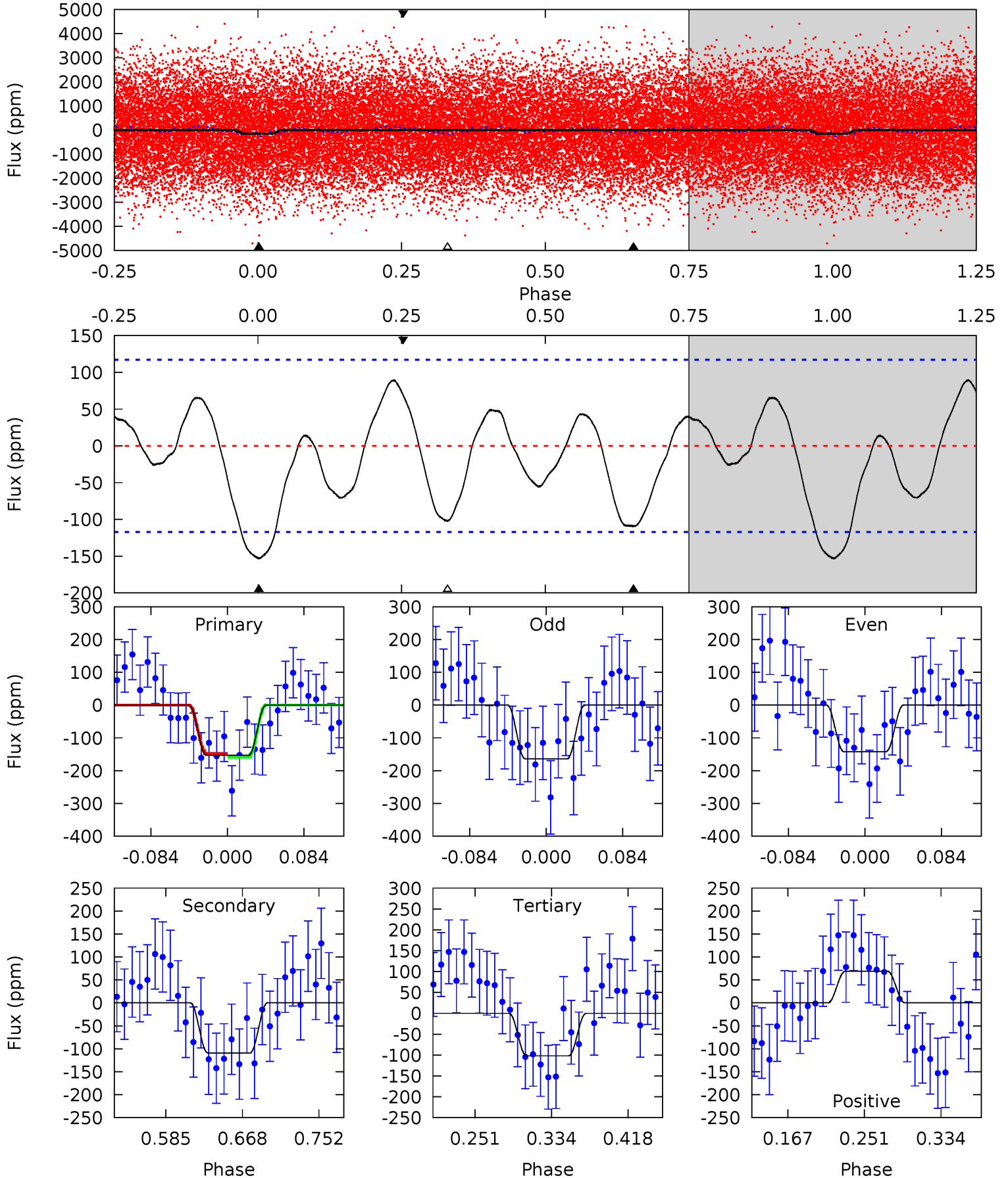
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.4	7.59	2.94	0	4.51	1.52	3.57	10.4	13.4	4.65	7.59	0.19	1.15	0.33	0.88



Alt Model-Shift Uniqueness Test

006697609-02, P = 1.645378 Days, E = 130.108608 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.01	4.29	4.01	2.71	4.60	1.73	1.90	2.00	3.30	0.28	1.59	0.42	1.18	0.37	0.22



Stellar Parameters For KIC 006697609

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7290^{+200}_{-314}	$4.189^{+0.090}_{-0.210}$	$0.070^{+0.200}_{-0.350}$	$1.663^{+0.547}_{-0.252}$	$1.559^{+0.211}_{-0.211}$	$0.477^{+0.198}_{-0.268}$
	+3%/-4%	+2%/-5%	+286%/-500%	+33%/-15%	+14%/-14%	+41%/-56%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 006697609-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-56 ± 7	$2.04^{+0.64}_{-0.62}$	3294^{+252}_{-177}	5882^{+1207}_{-636}	$7.393^{+7.052}_{-3.139}$
Alt.	-109 ± 25	$2.61^{+0.71}_{-0.62}$	3290^{+269}_{-188}	6128^{+957}_{-705}	$8.582^{+6.751}_{-3.583}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

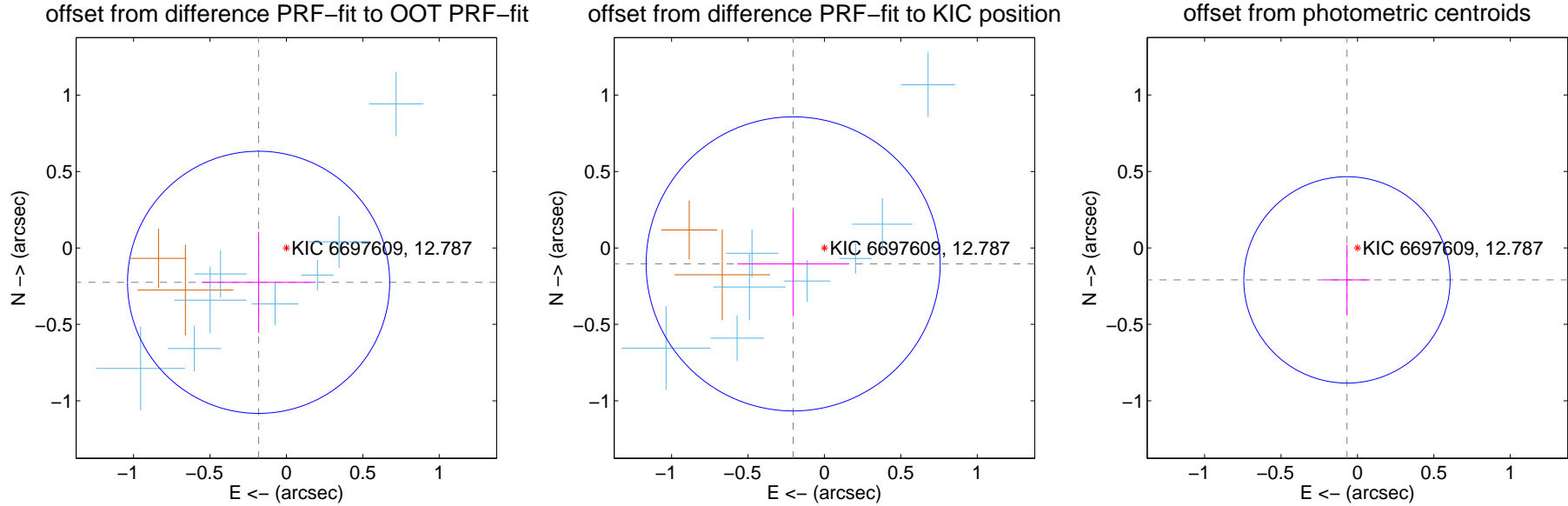
DV Centroid Data

Supplemental centroid analysis for 006697609-02. Kepler magnitude: 12.79. Transit SNR 9.32

There are 10 quarters with good PRF difference image offsets

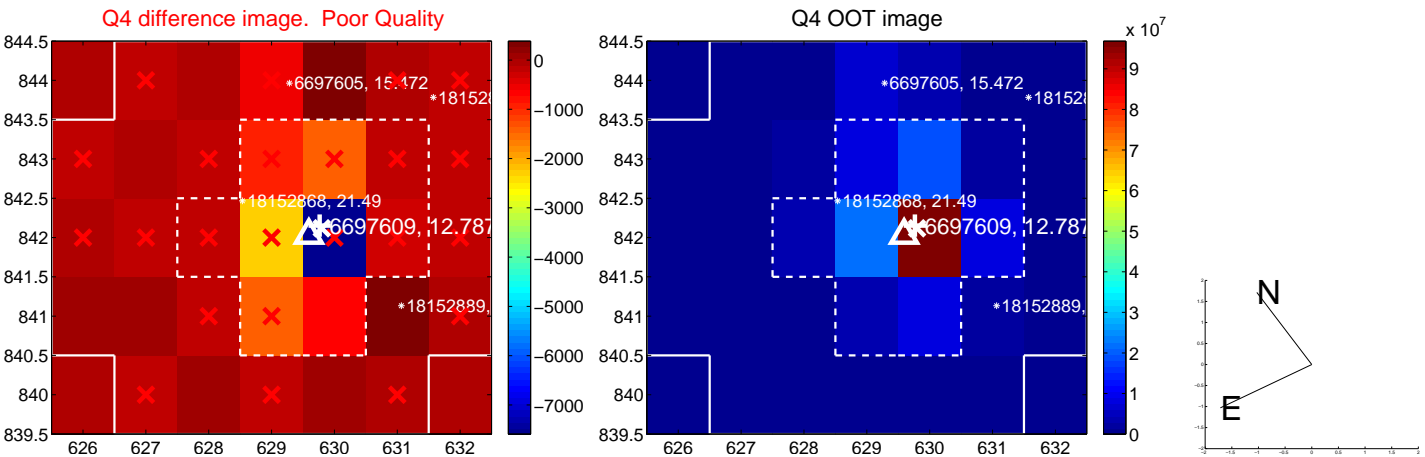
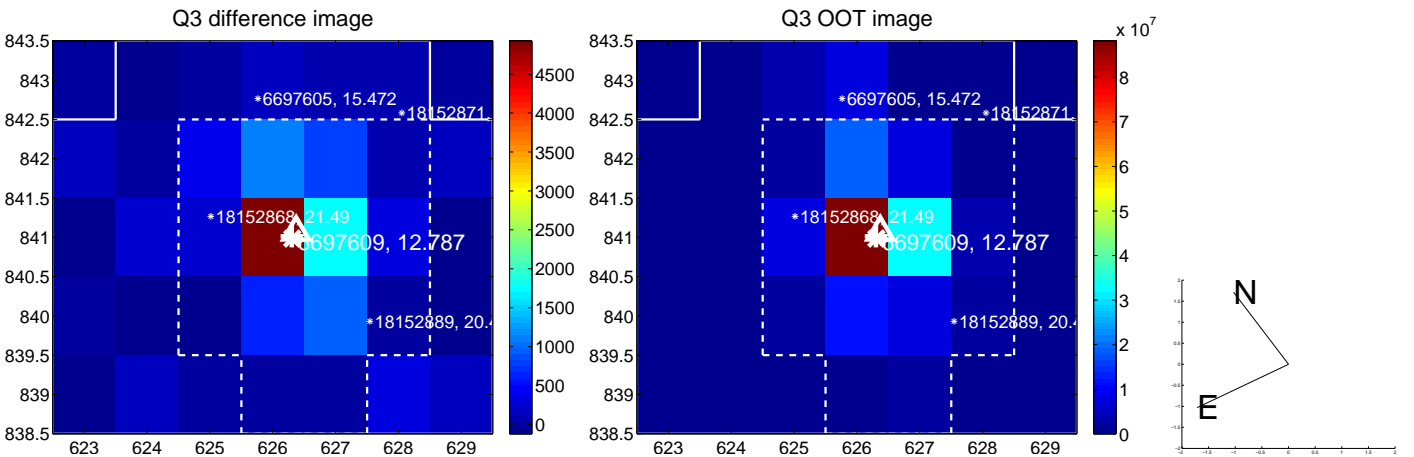
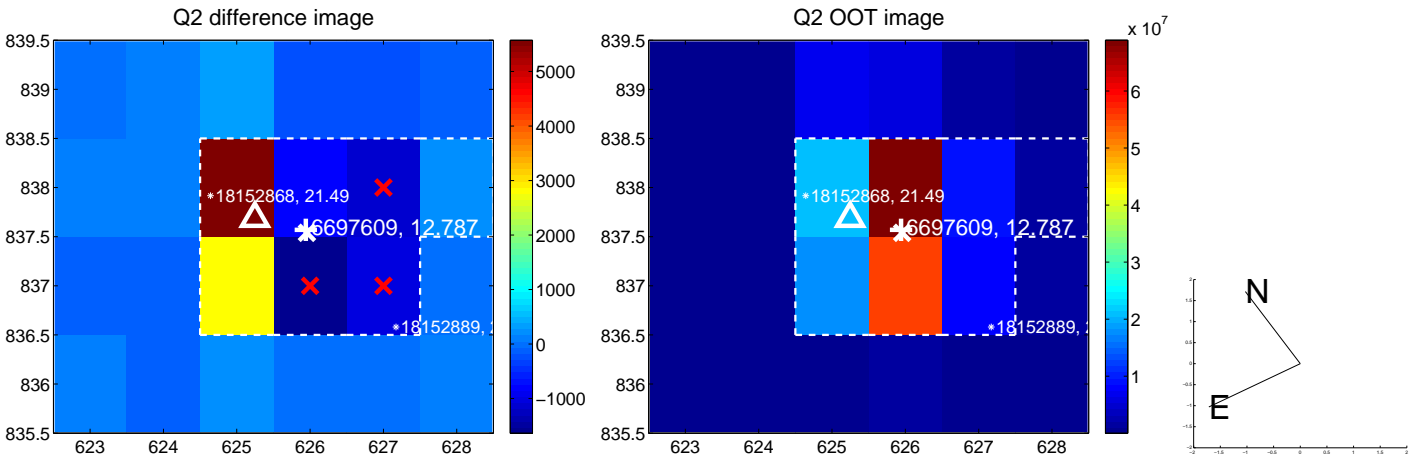
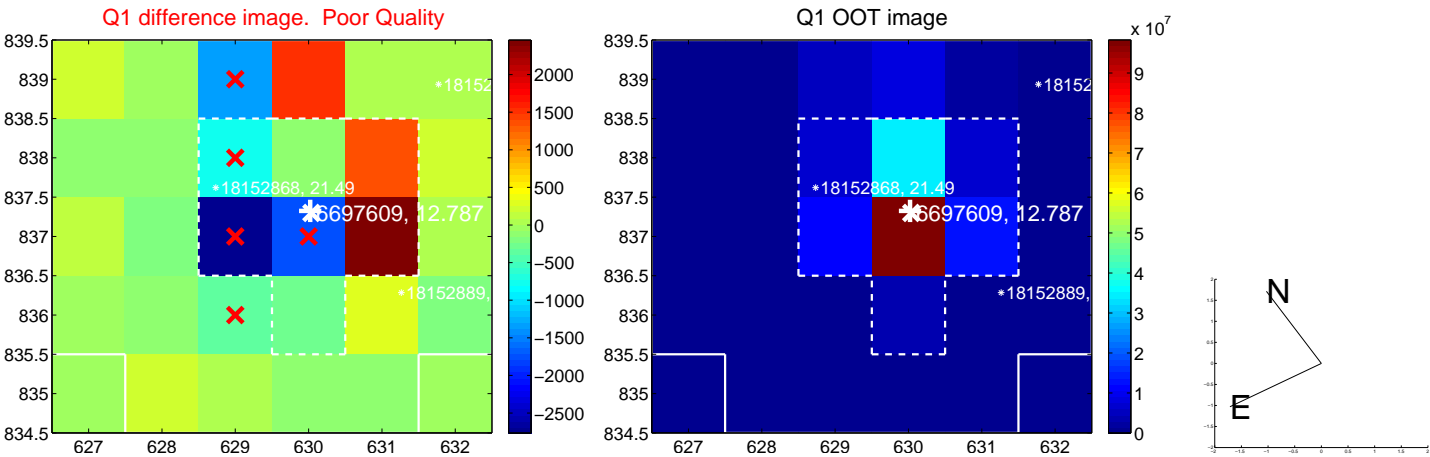
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.289 ± 0.286	1.01	0.182 ± 0.373	-0.225 ± 0.330
PRF-fit source offset from KIC position	0.230 ± 0.321	0.72	0.205 ± 0.366	-0.104 ± 0.342
photometric centroid source offset	0.22 ± 0.22	0.98	0.07 ± 0.15	-0.21 ± 0.23

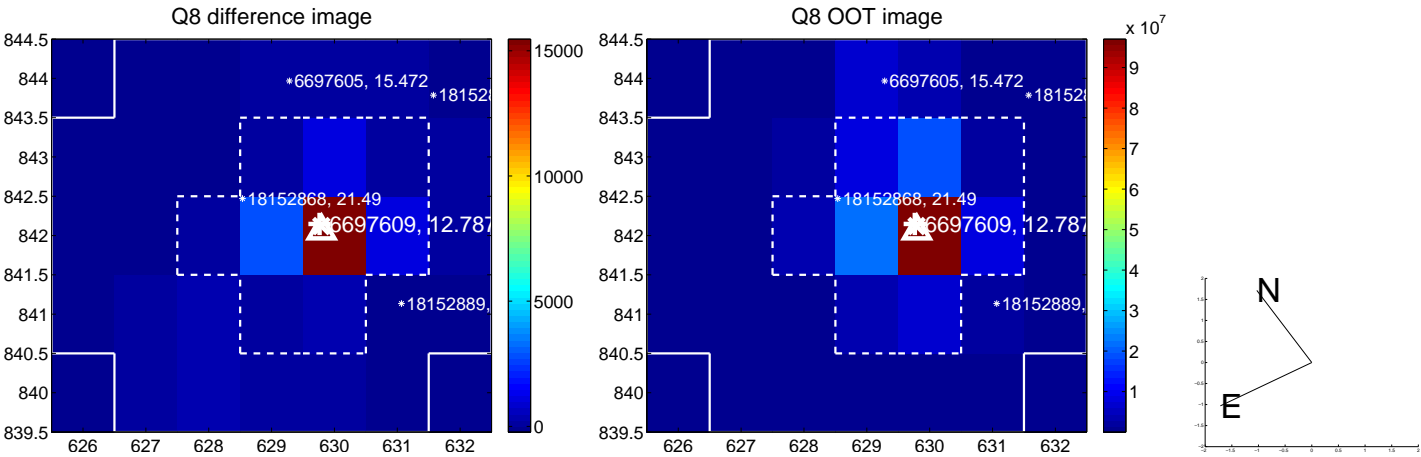
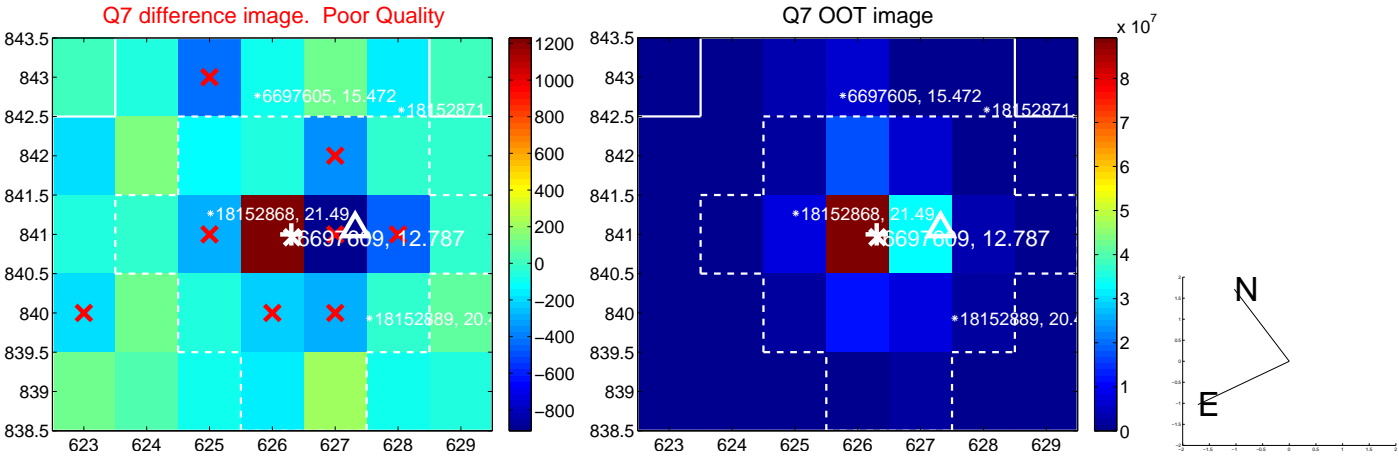
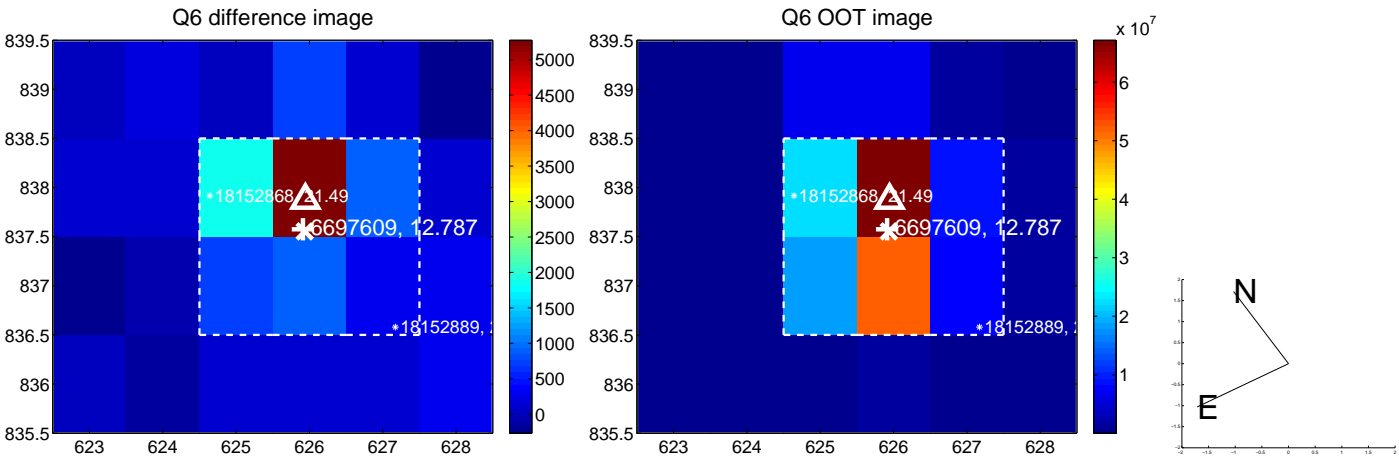
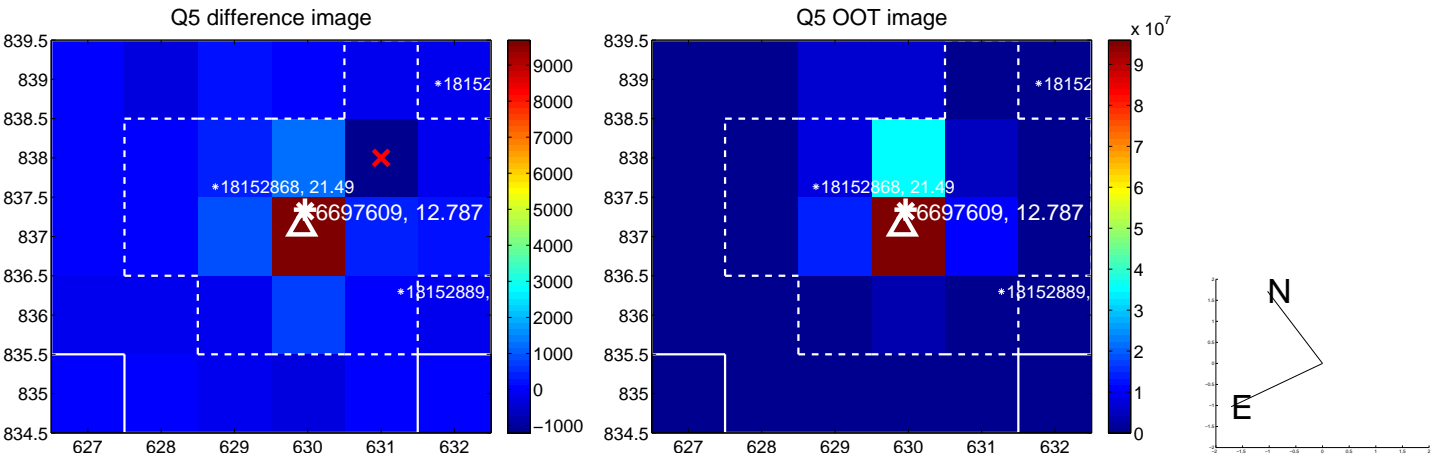


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

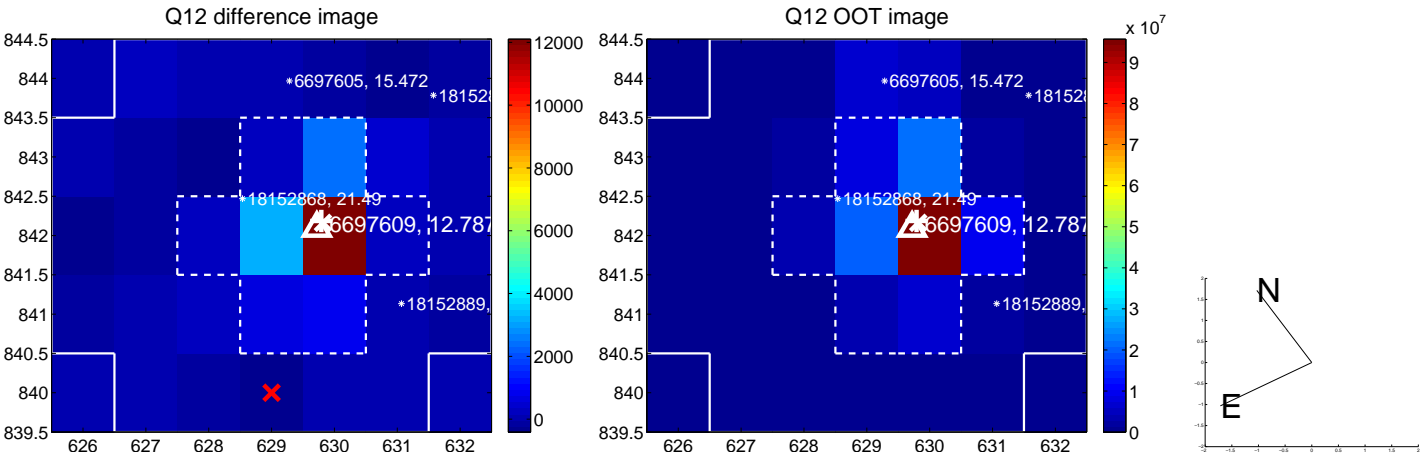
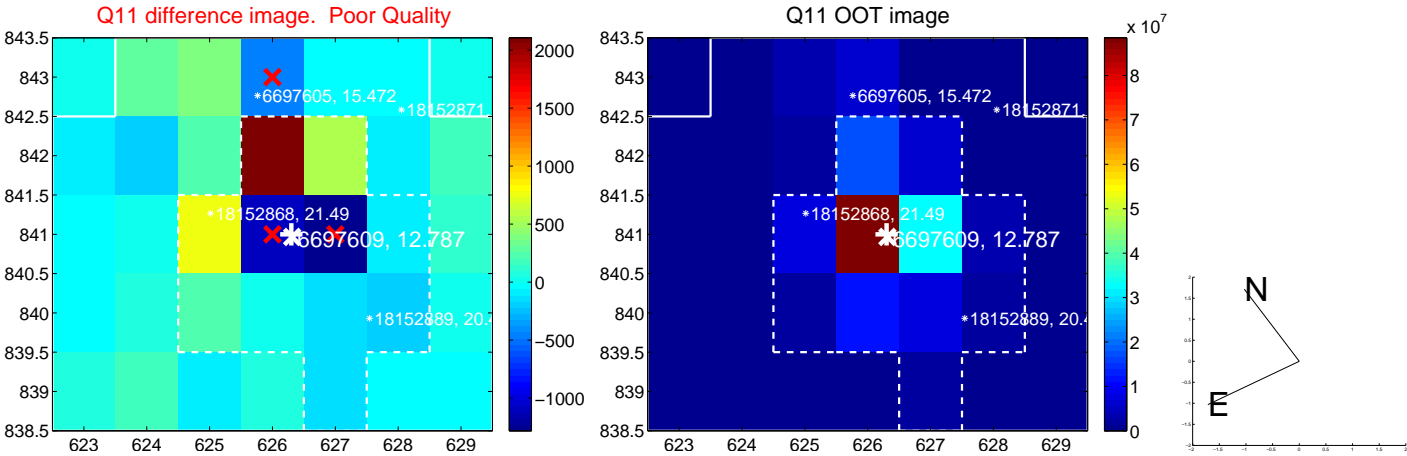
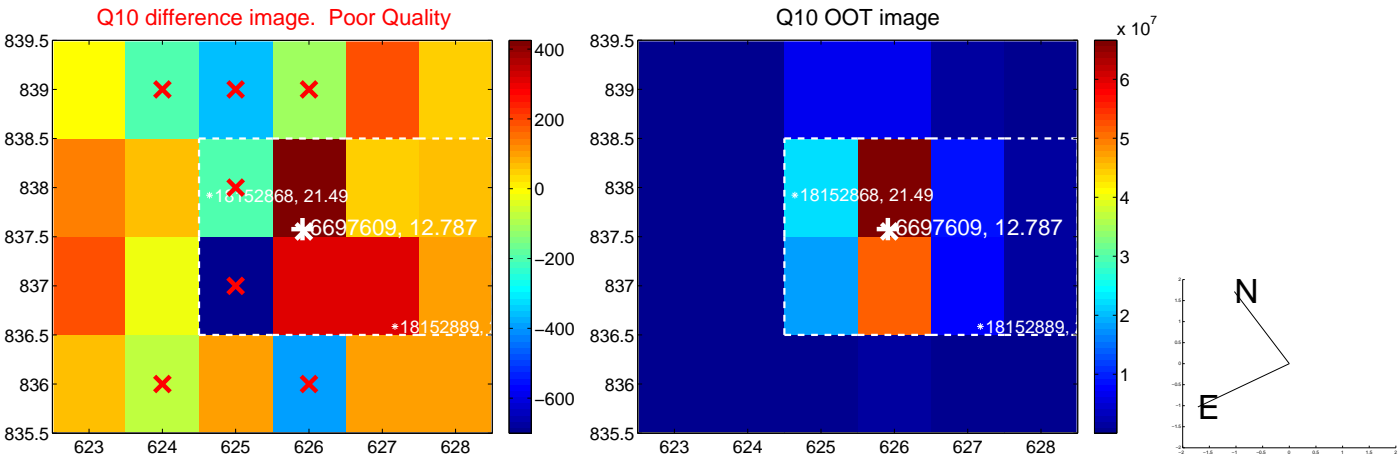
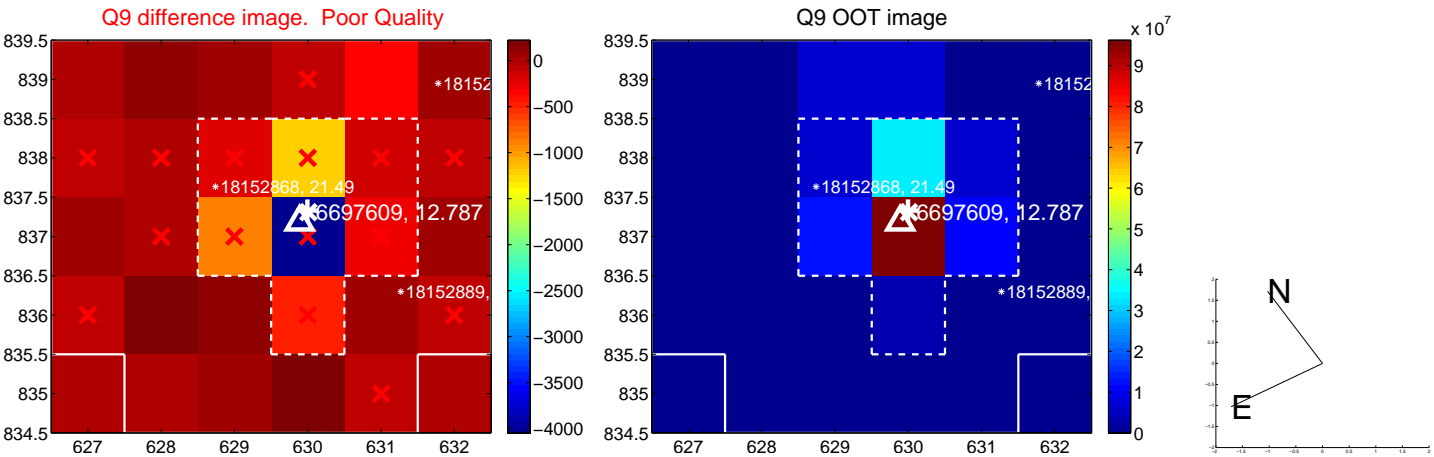
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



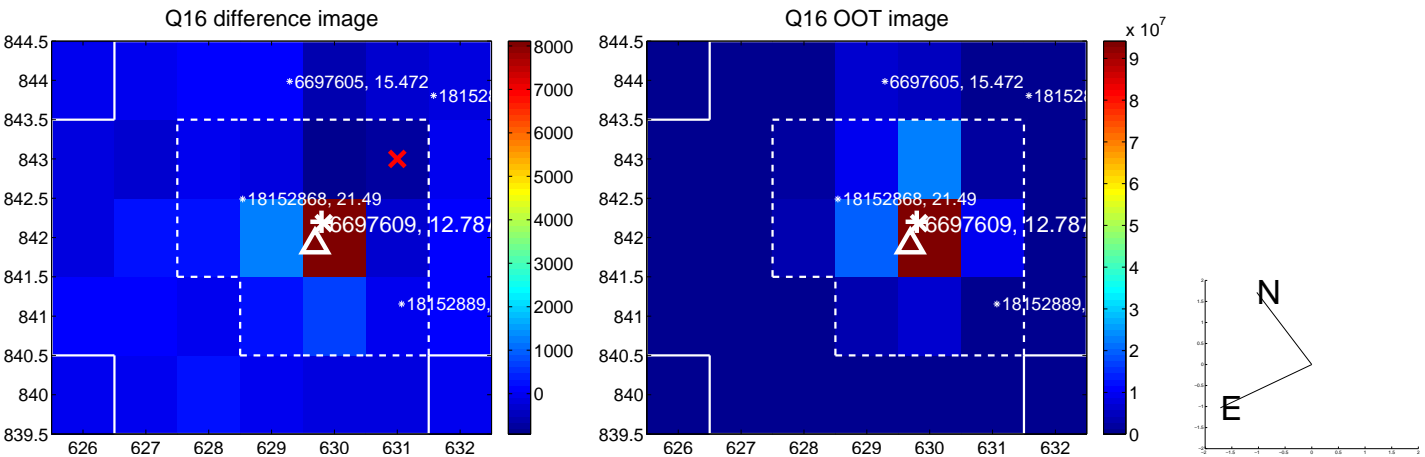
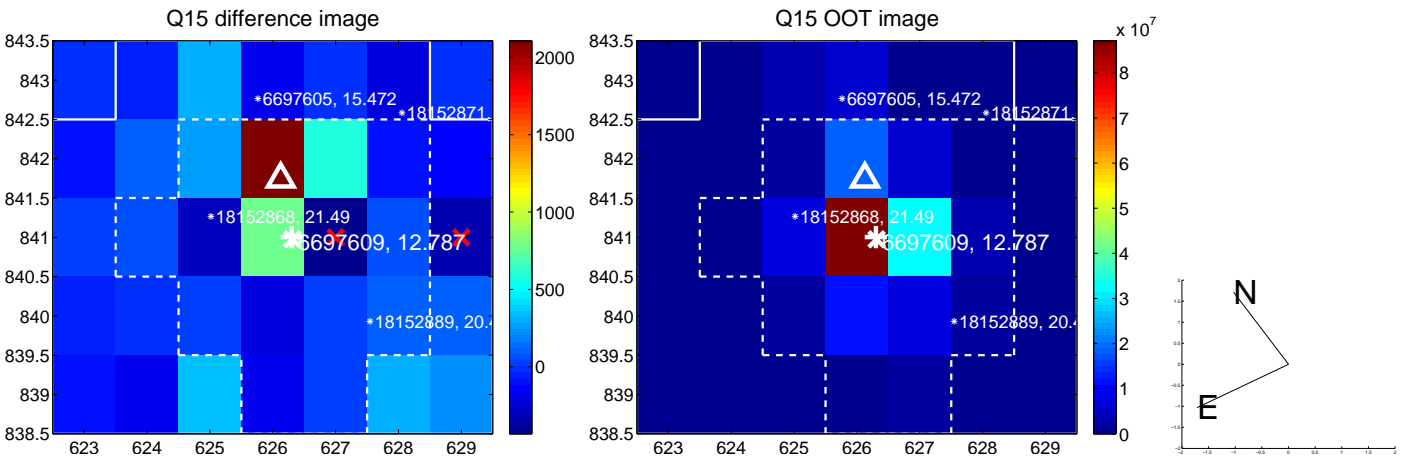
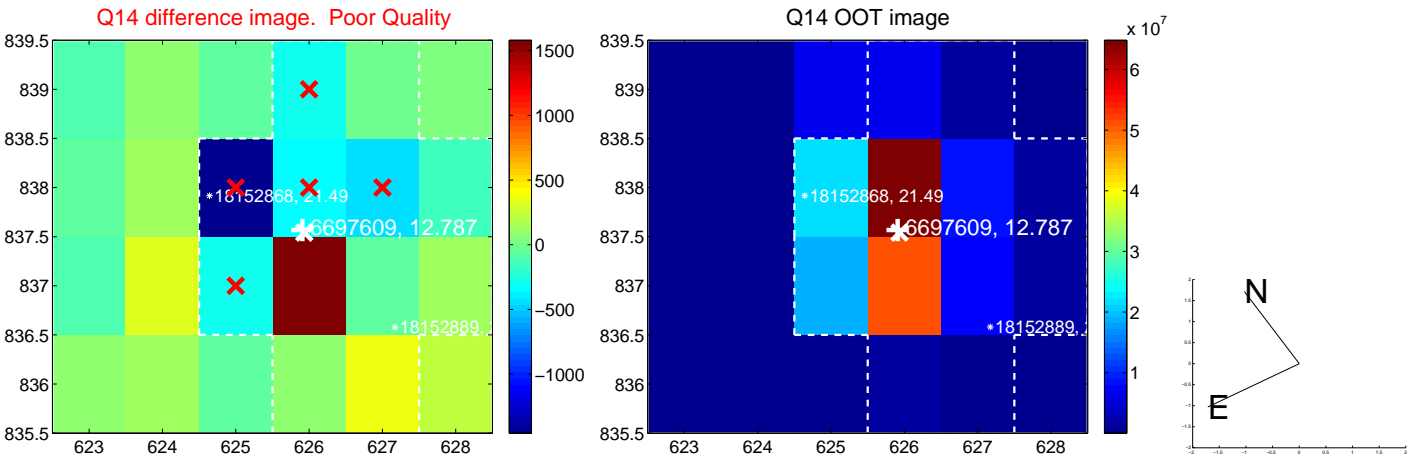
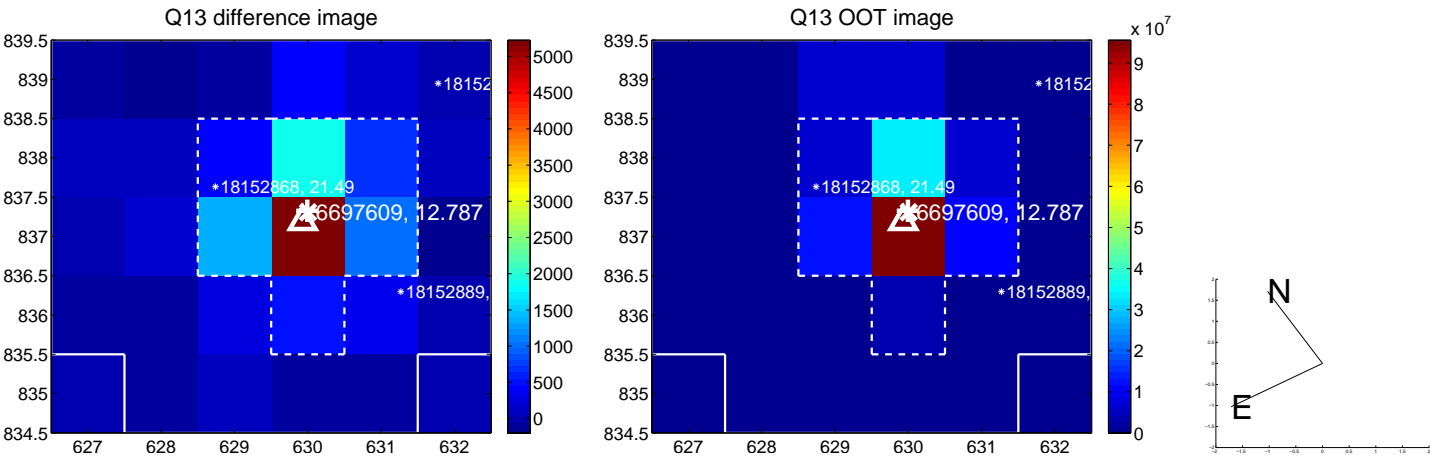
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

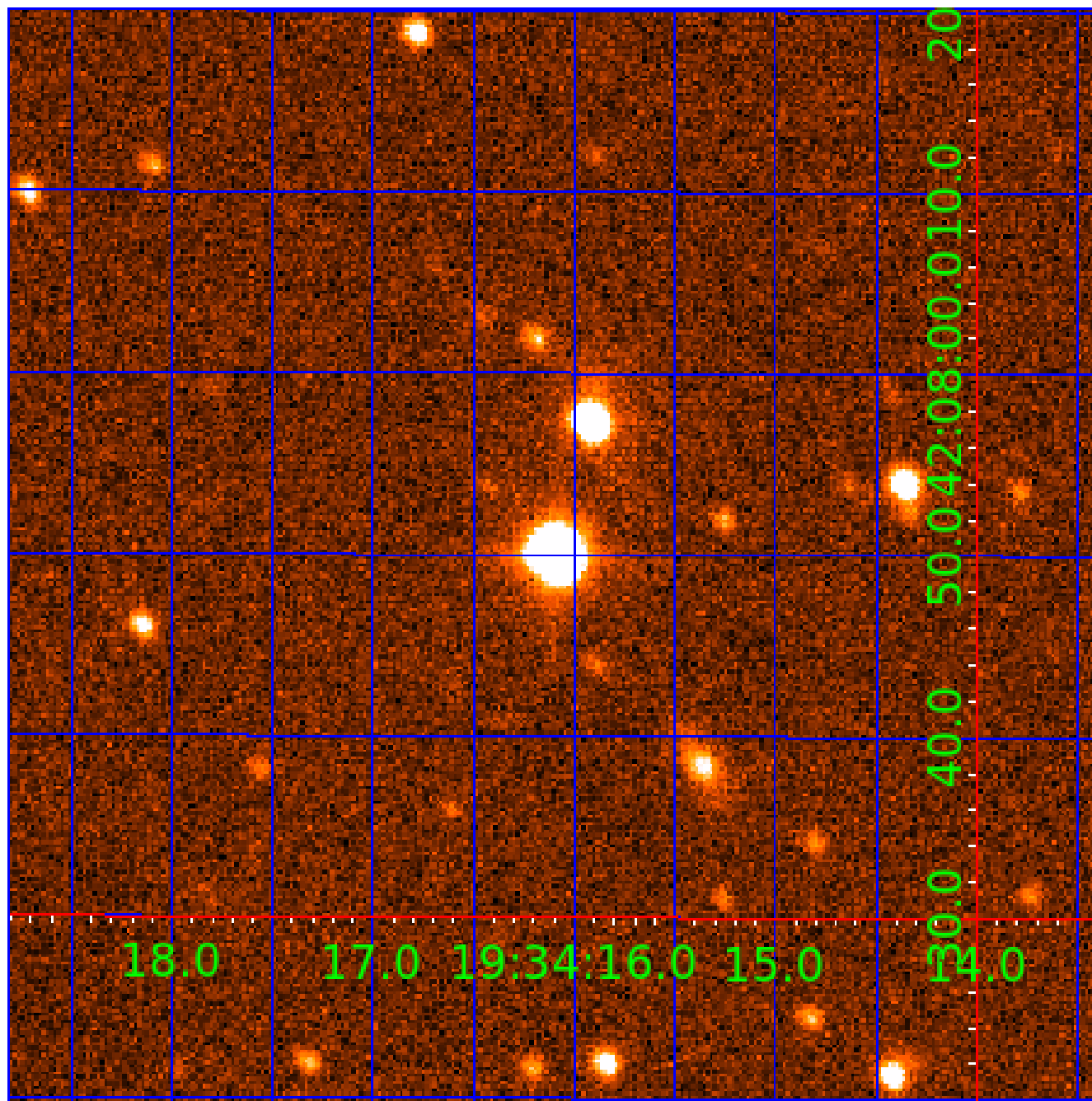


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006697609

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
006697609-01	OBS	No	0.570924	131.586608	57.5	2.221	13.3	13.9	1.66	7290	1.46	28683.22
006697609-02	OBS	No	1.645371	131.755720	100.5	4.656	10.1	9.3	1.66	7290	1.93	6993.81
006697609-03	OBS	No	0.903278	132.257004	112.9	6.206	8.5	11.8	1.66	7290	1.89	15558.60
006697609-04	OBS	No	52.816284	156.763799	854.8	2.020	9.5	10.0	1.66	7290	5.26	68.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006697609-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
006697609-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—HALO_GHOST
006697609-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT
006697609-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

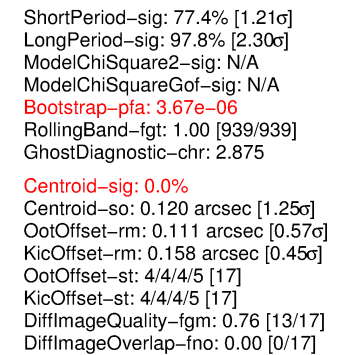
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

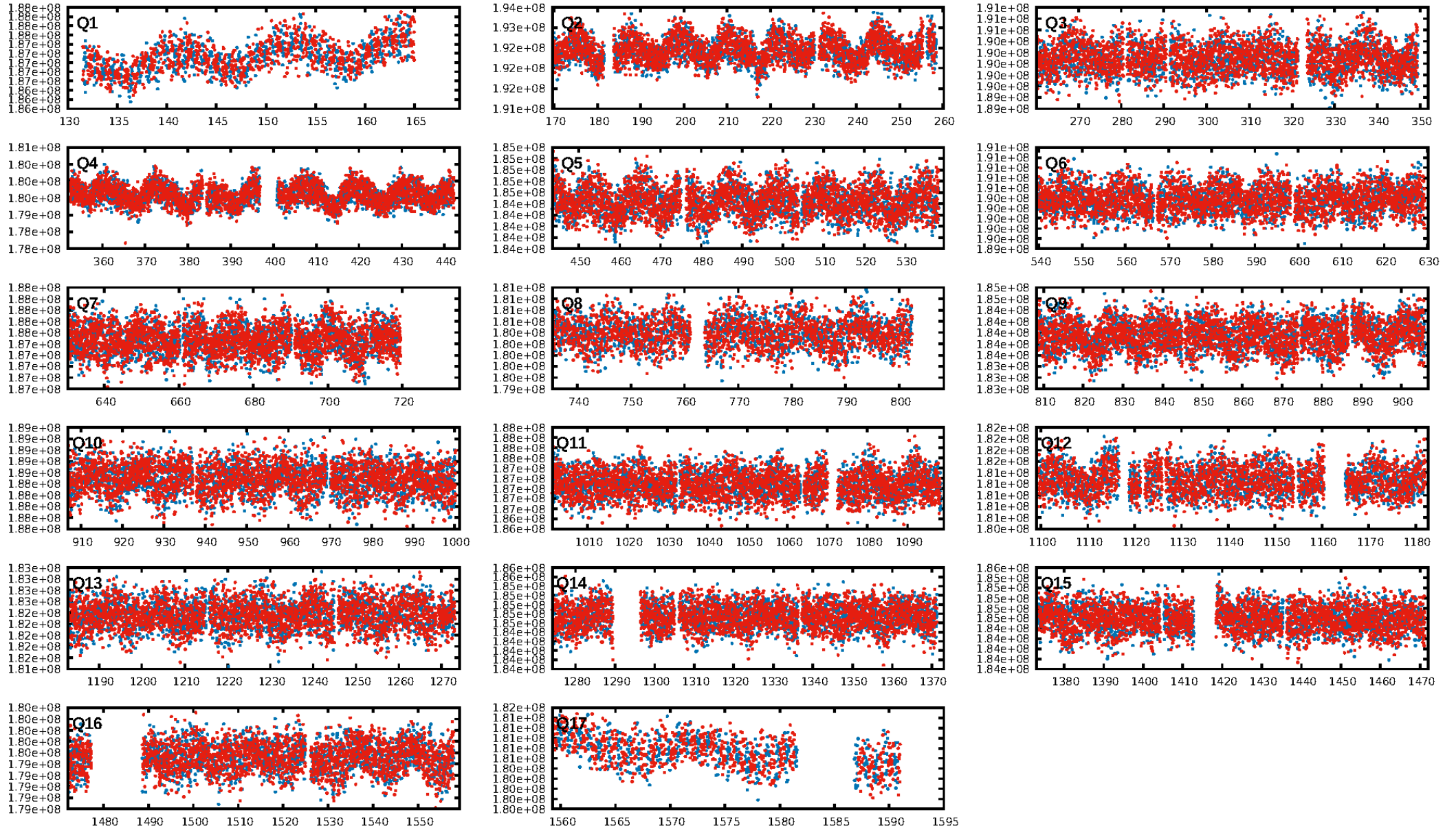
Ephemeris Match Information For 006697609-03

No Significant Match Found

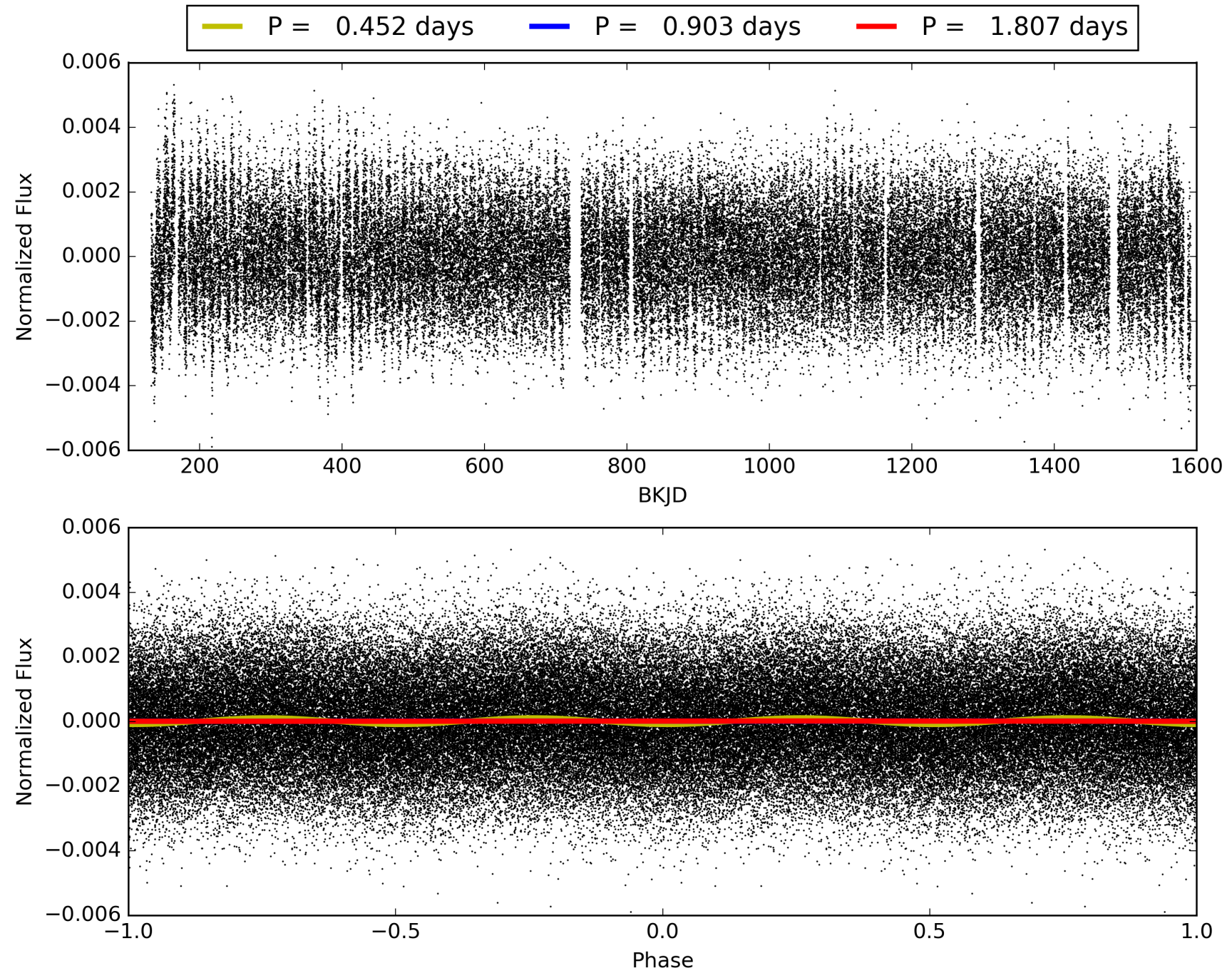
KIC: 6697609 Candidate: 3 of 4 Period: 0.903 d



TCE 006697609-03, PDC Light Curves

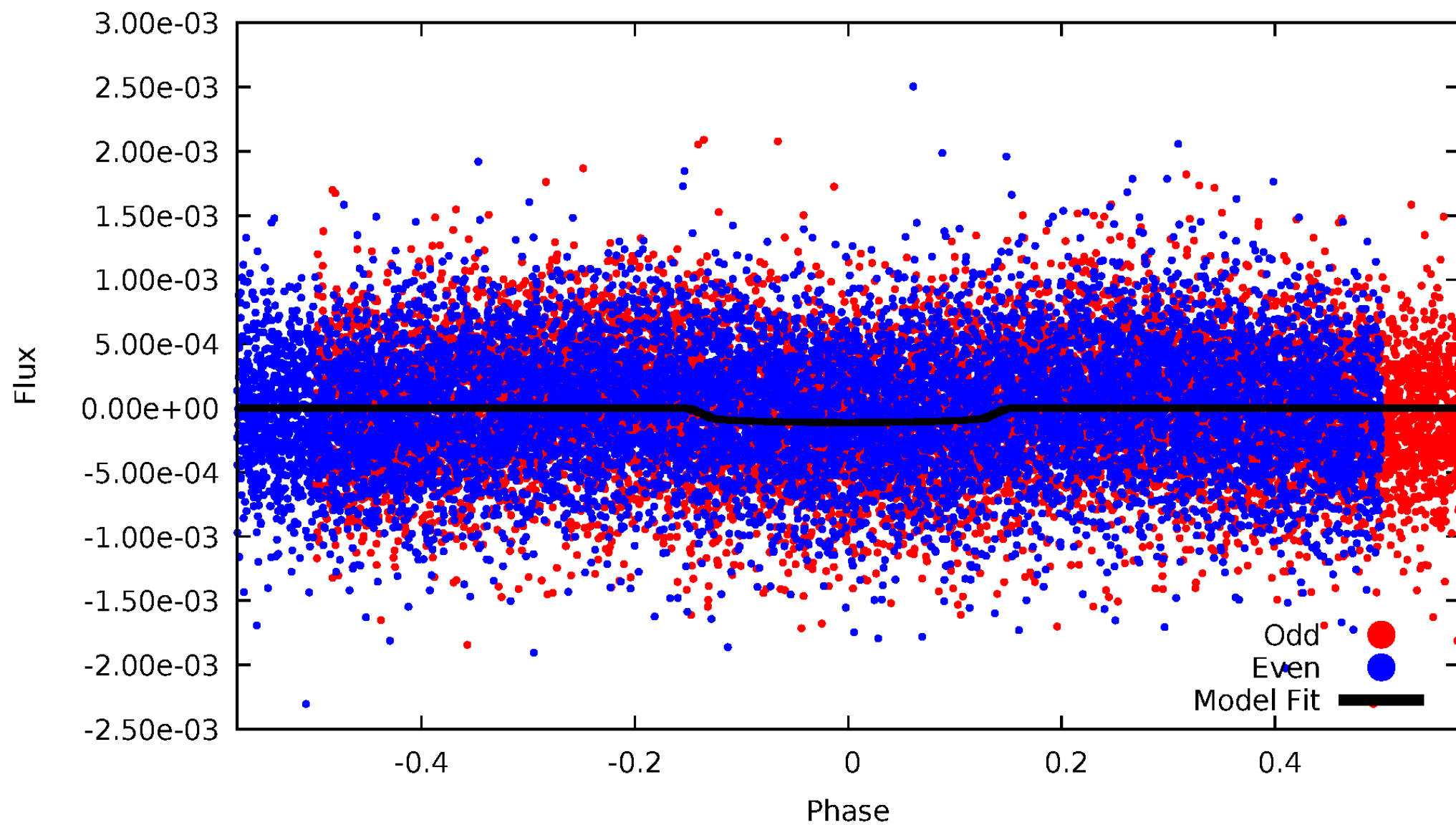


TCE 006697609-03



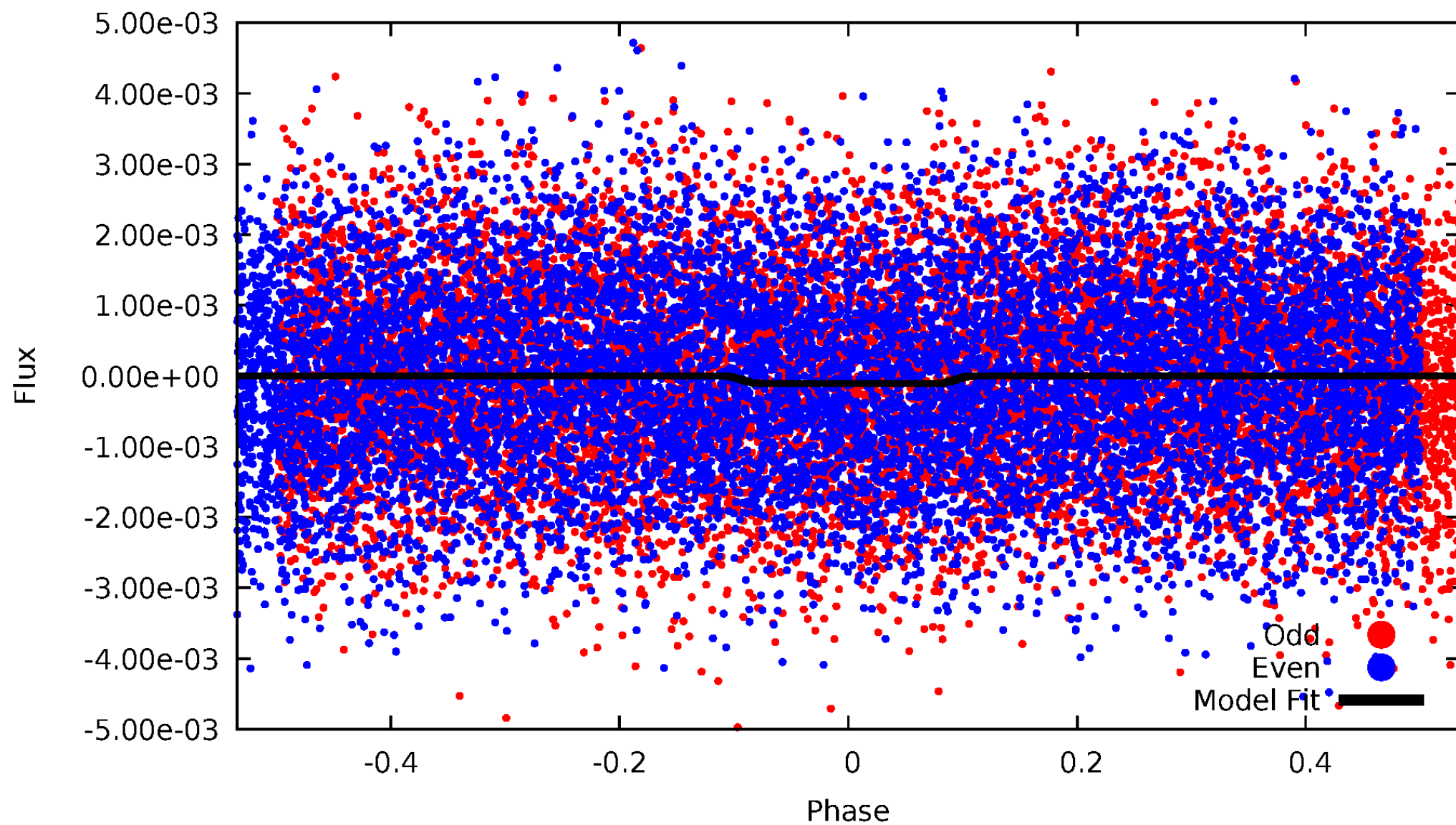
DV Odd/Even

TCE 006697609-03



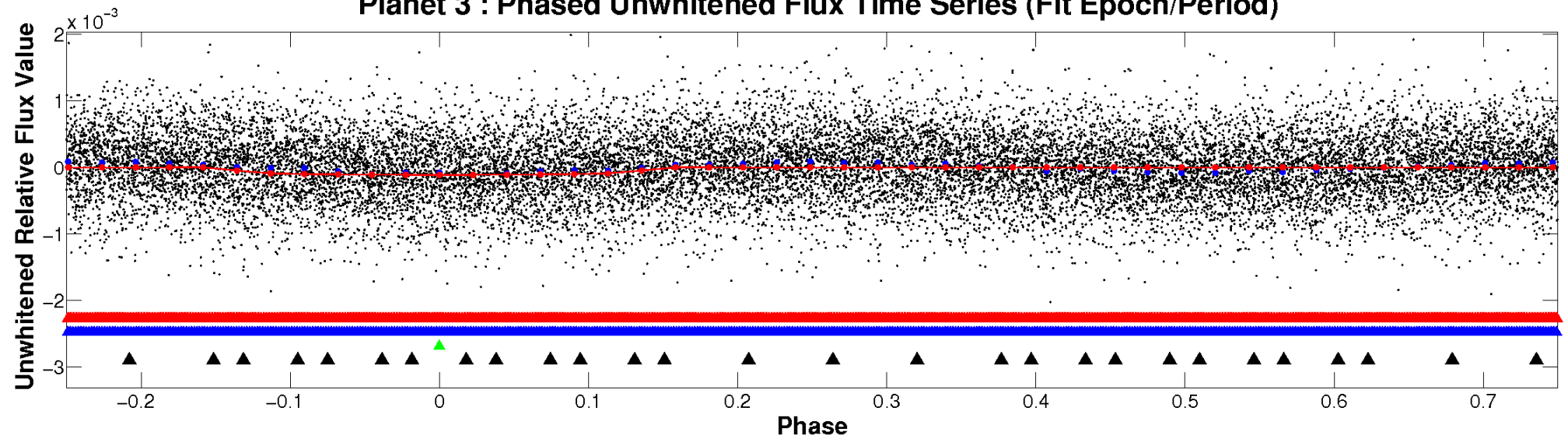
ALT Odd/Even

TCE 006697609-03

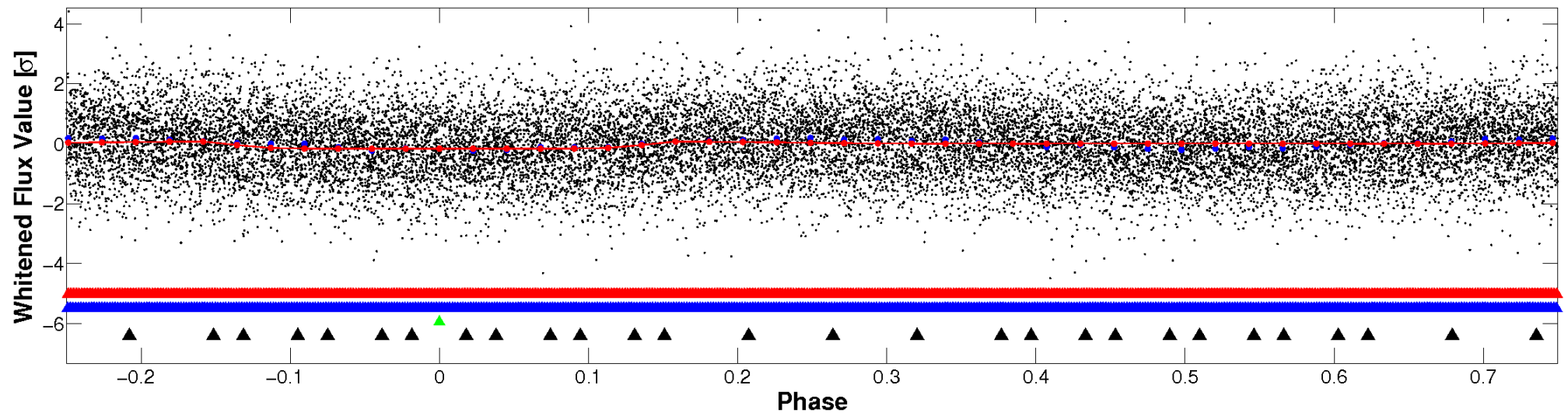


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

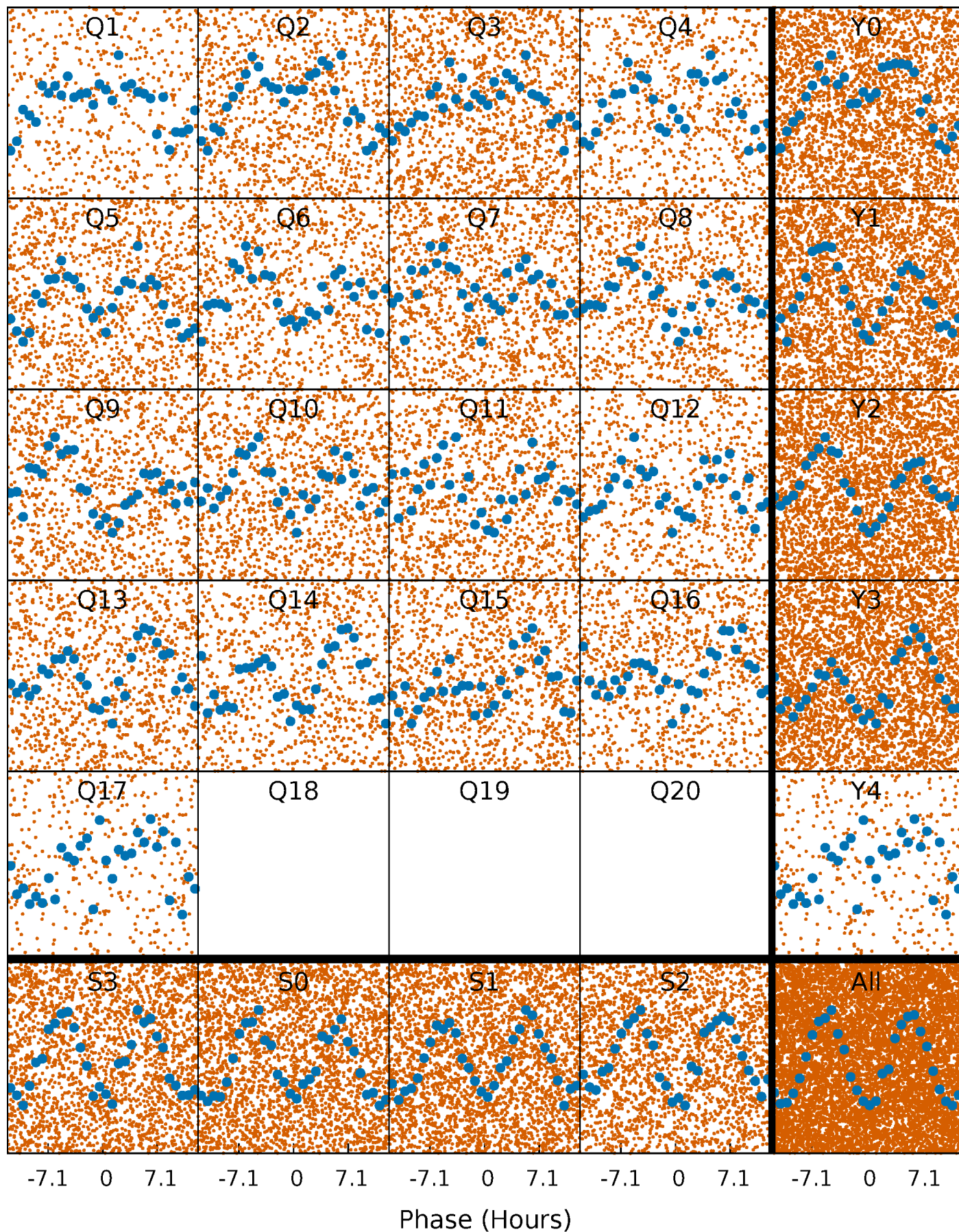


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



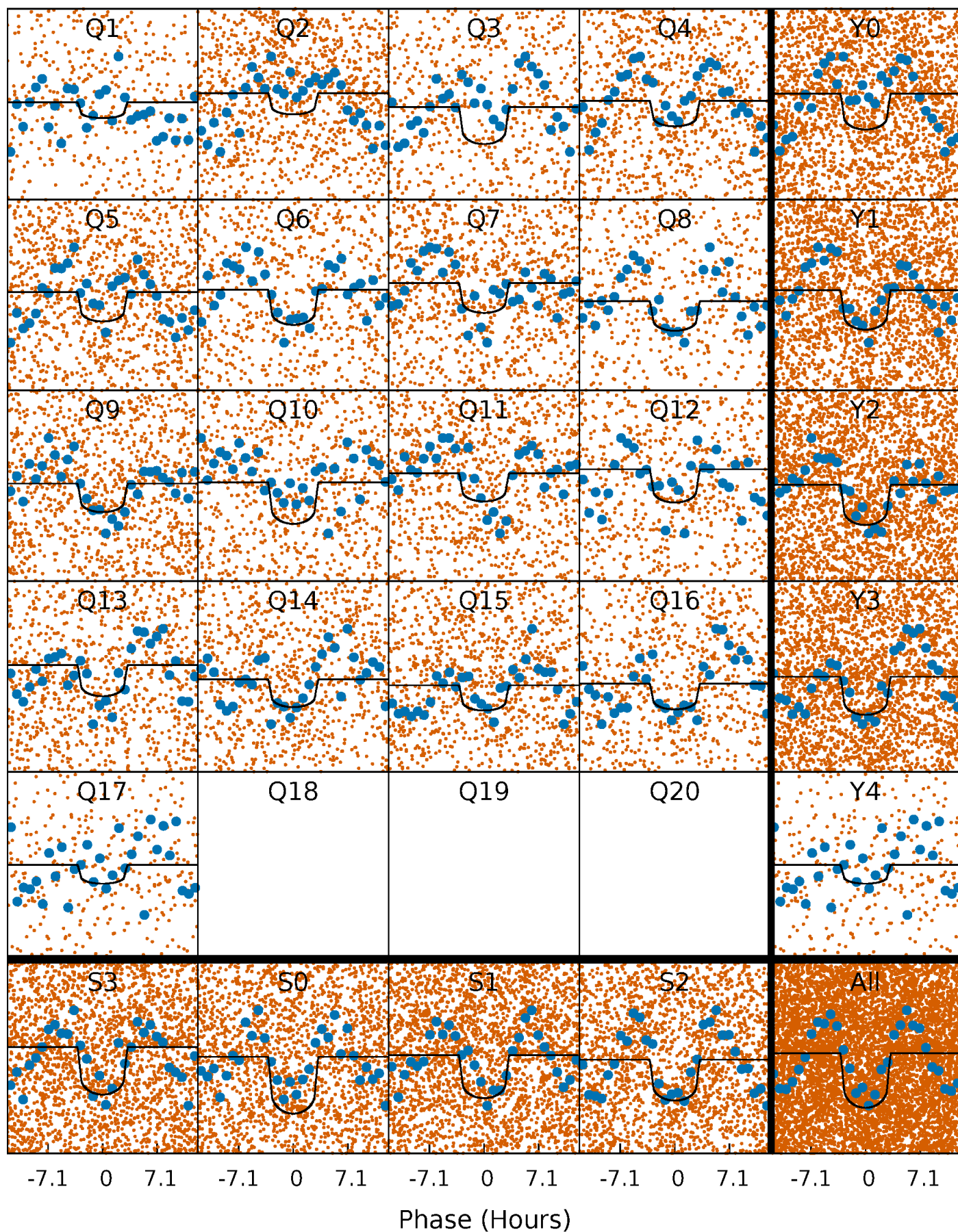
PDC Quarter-Phased Transit Curves

TCE 006697609-03 P= 0.903278 Days $T_0=132.257004$ (BKJD)



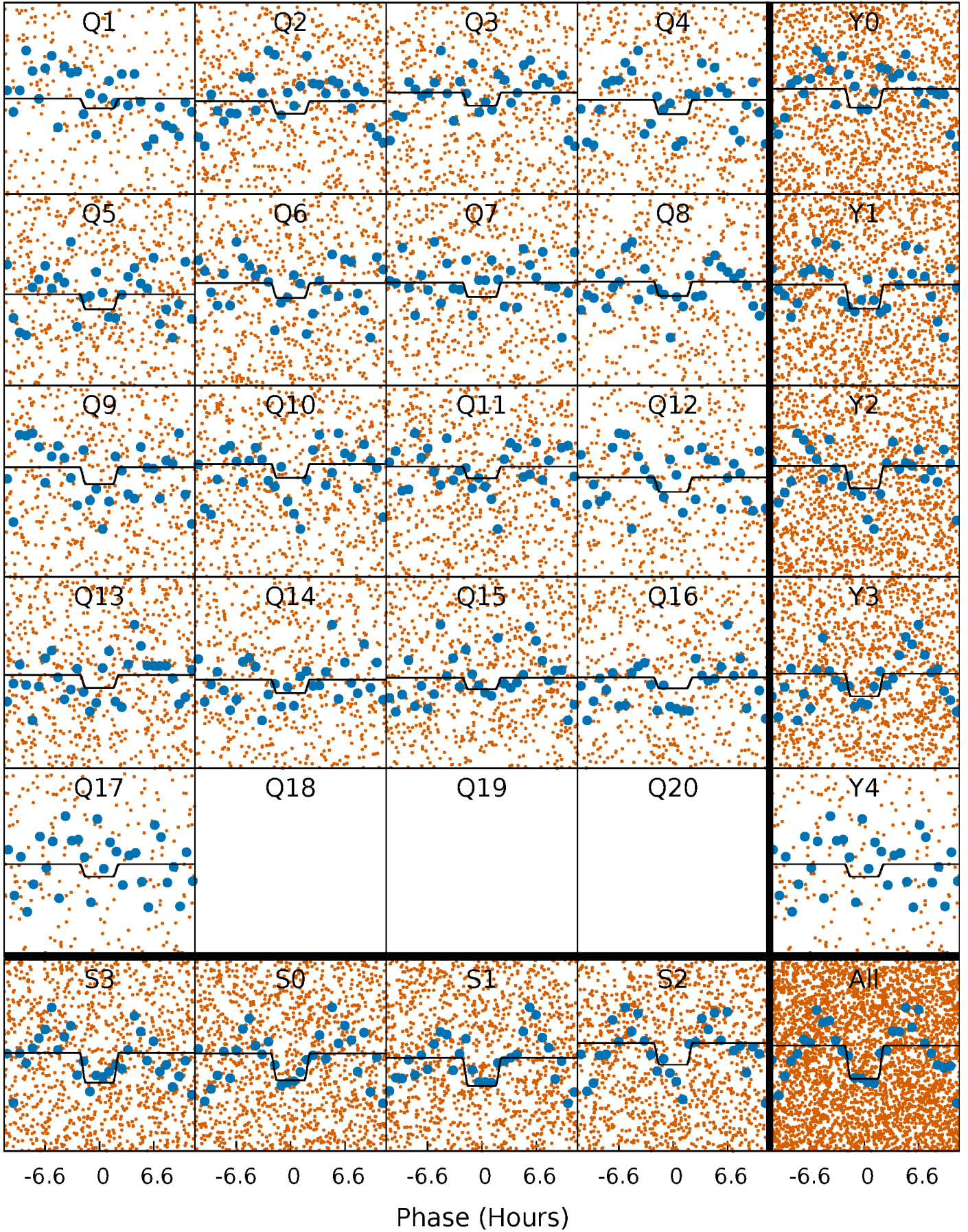
DV Quarter-Phased Transit Curves

TCE 006697609-03 $P = 0.903278$ Days $T_0 = 132.257004$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

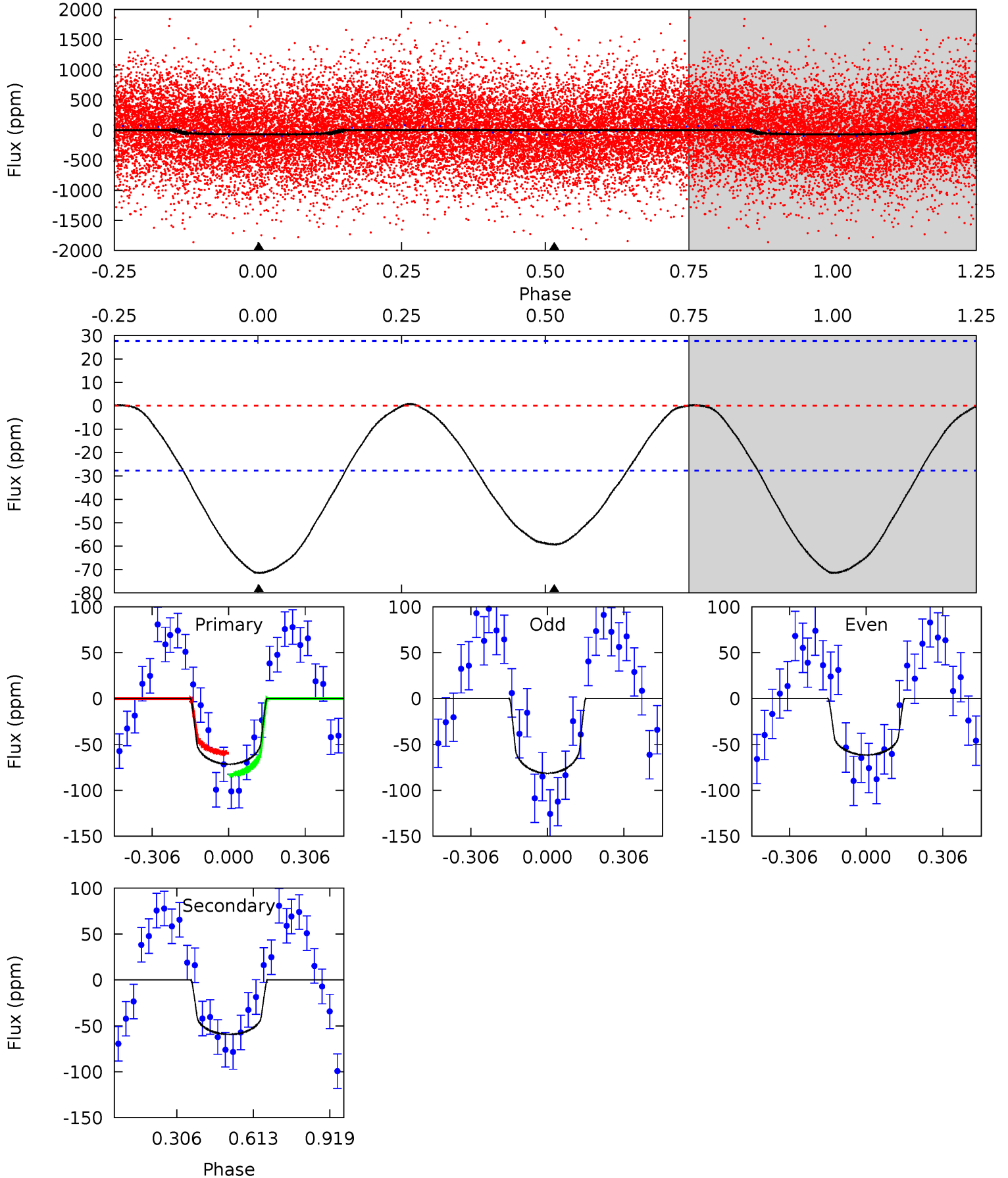
TCE 006697609-03 P= 0.903301 Days $T_0=132.246070$ (BKJD)



DV Model-Shift Uniqueness Test

006697609-03, P = 0.903278 Days, E = 132.257004 Days

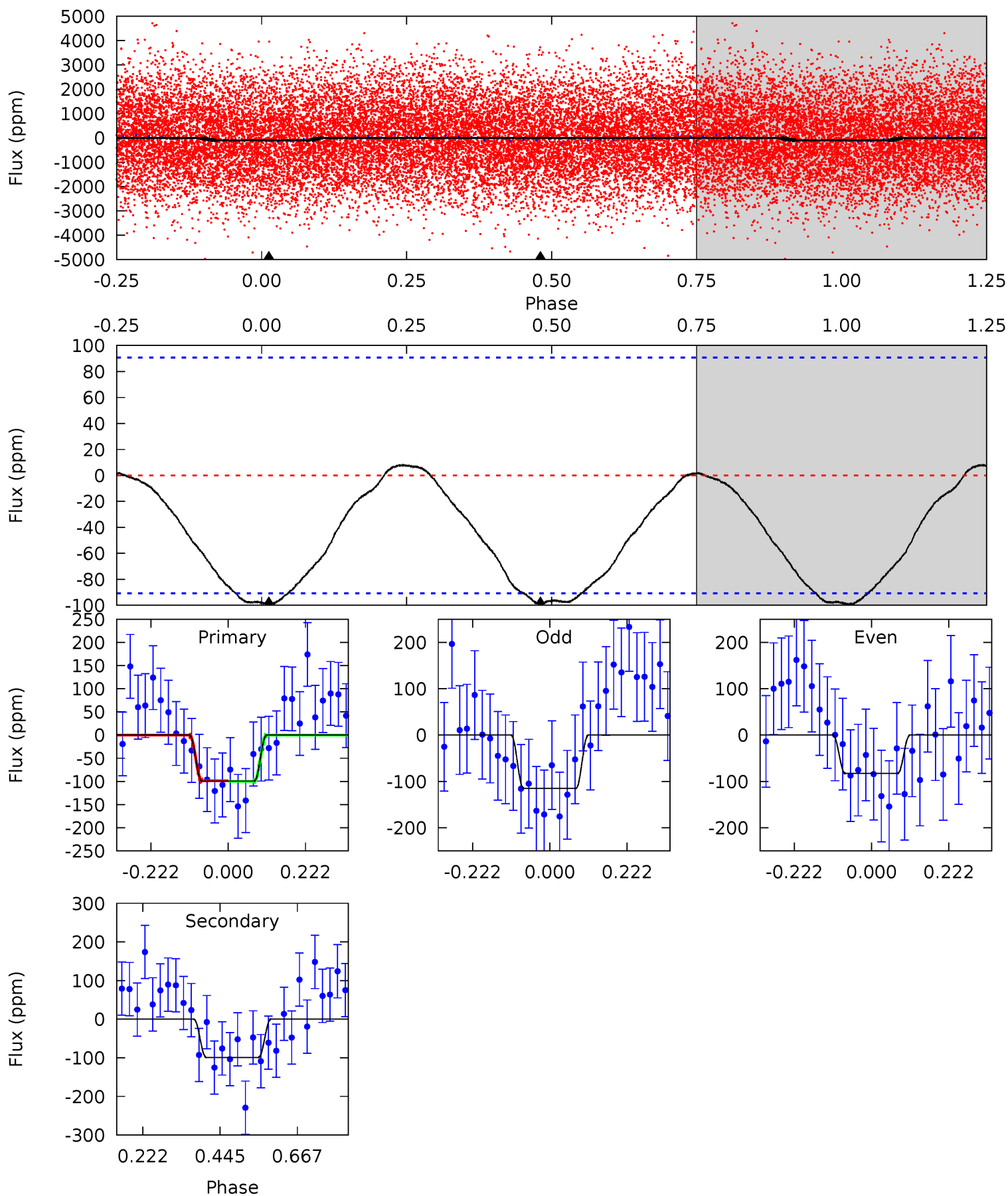
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	9.27	0	0	4.32	1.02	0.16	11.2	11.2	9.27	9.27	1.56	1.12	0.01	1.88



Alt Model-Shift Uniqueness Test

006697609-03, P = 0.903301 Days, E = 132.246070 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.81	4.79	0	0	4.39	1.22	0.25	4.81	4.81	4.79	4.79	0.79	1.51	0.07	0.02



Stellar Parameters For KIC 006697609

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7290^{+200}_{-314}	$4.189^{+0.090}_{-0.210}$	$0.070^{+0.200}_{-0.350}$	$1.663^{+0.547}_{-0.252}$	$1.559^{+0.211}_{-0.211}$	$0.477^{+0.198}_{-0.268}$
	+3%/-4%	+2%/-5%	+286%/-500%	+33%/-15%	+14%/-14%	+41%/-56%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 006697609-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-59 ± 6	$1.95^{+1.26}_{-0.99}$	4017^{+311}_{-250}	5942^{+3272}_{-1238}	$3.767^{+12.653}_{-2.369}$
Alt.	-99 ± 21	$2.03^{+1.24}_{-1.05}$	4032^{+306}_{-254}	6776^{+4599}_{-1573}	$5.890^{+20.152}_{-3.714}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

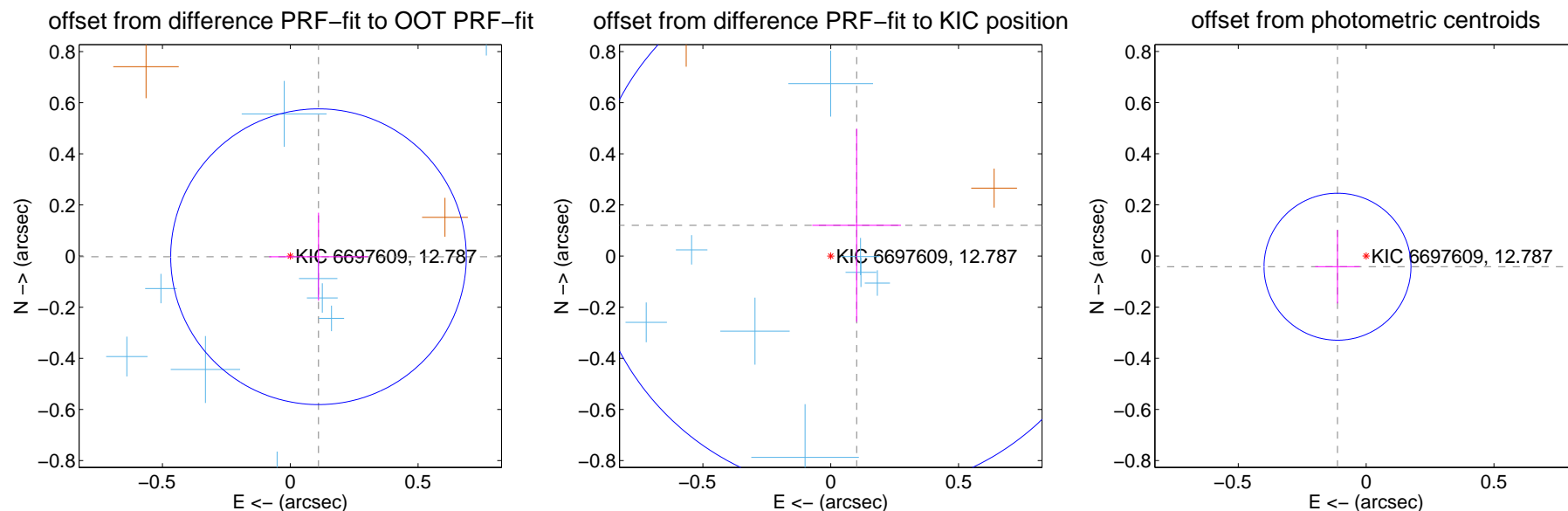
DV Centroid Data

Supplemental centroid analysis for 006697609-03. Kepler magnitude: 12.79. Transit SNR 11.78

There are 13 quarters with good PRF difference image offsets

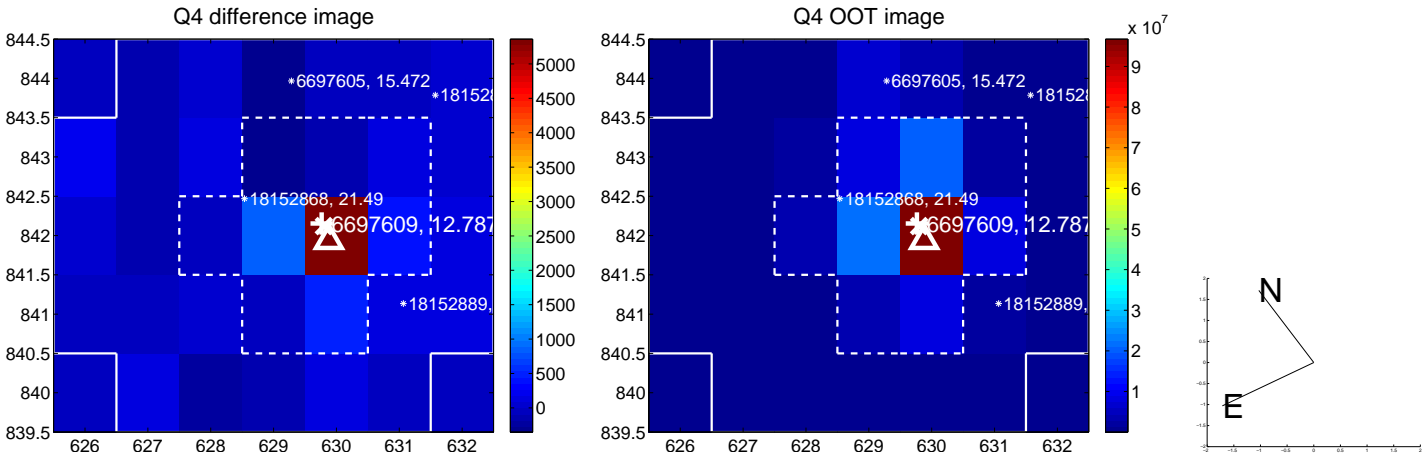
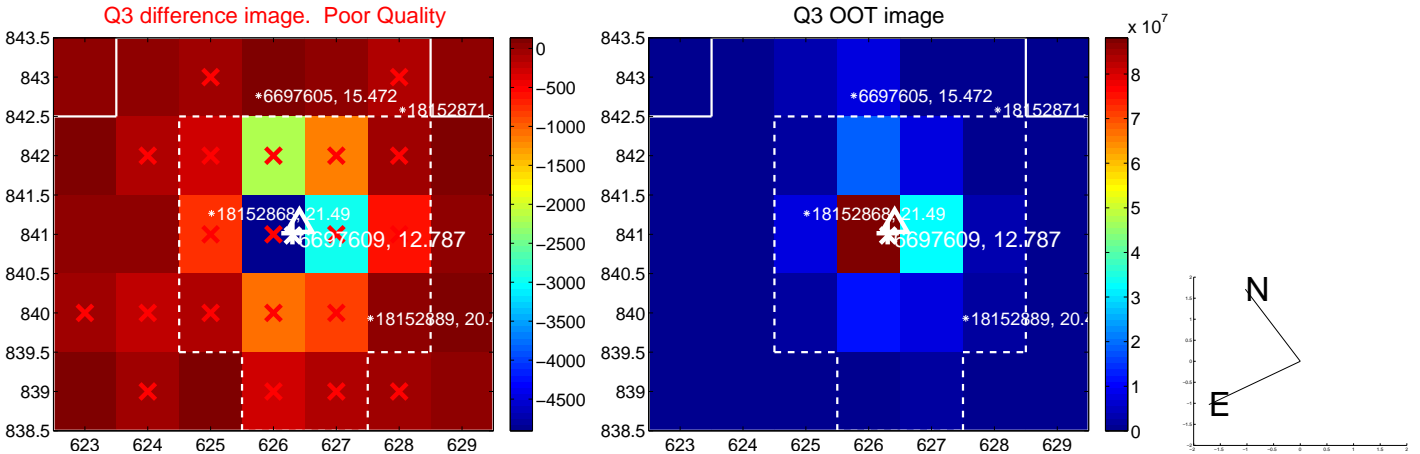
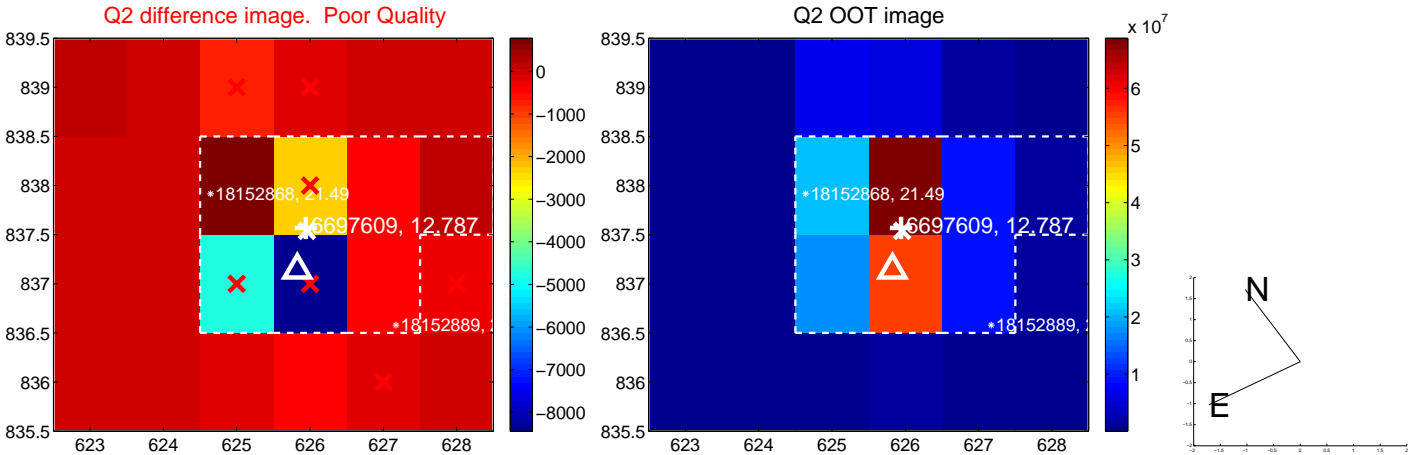
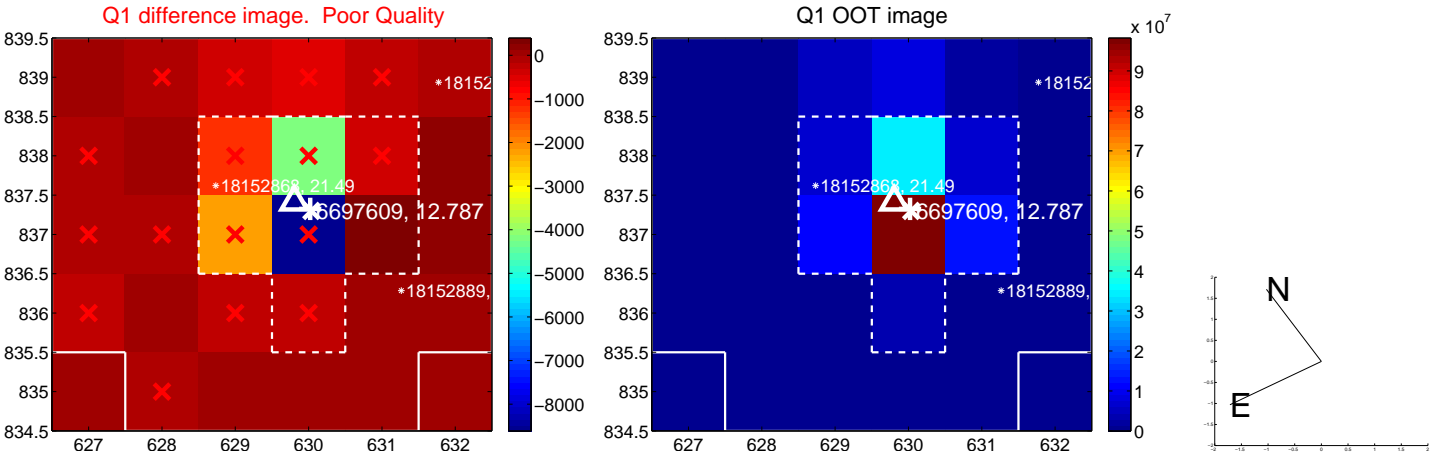
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.111 ± 0.193	0.57	-0.110 ± 0.193	-0.002 ± 0.172
PRF-fit source offset from KIC position	0.158 ± 0.350	0.45	-0.101 ± 0.174	0.120 ± 0.378
photometric centroid source offset	0.12 ± 0.10	1.25	0.11 ± 0.09	-0.04 ± 0.14

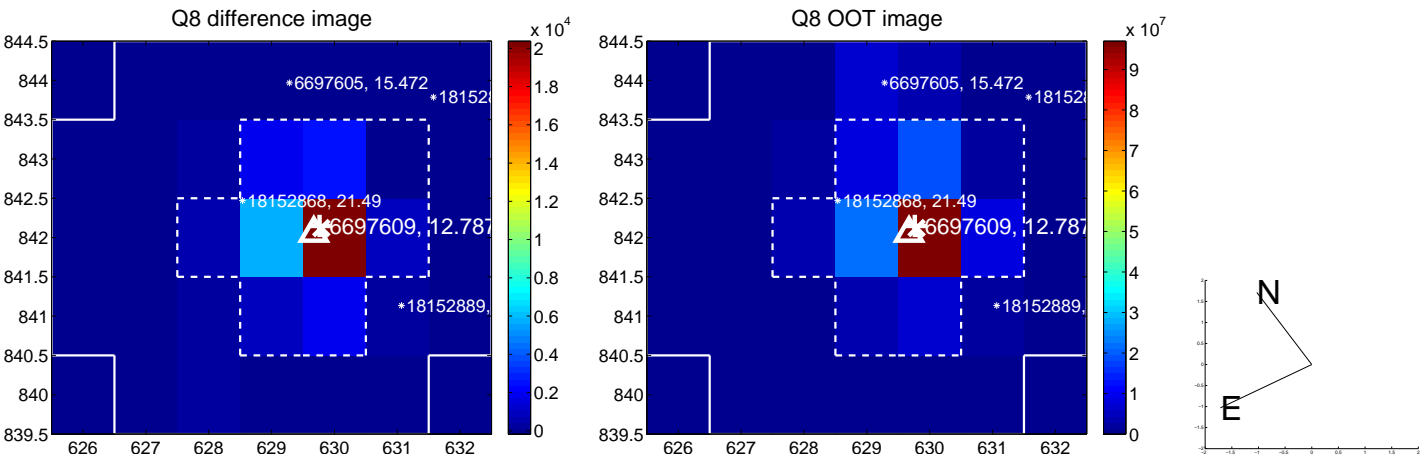
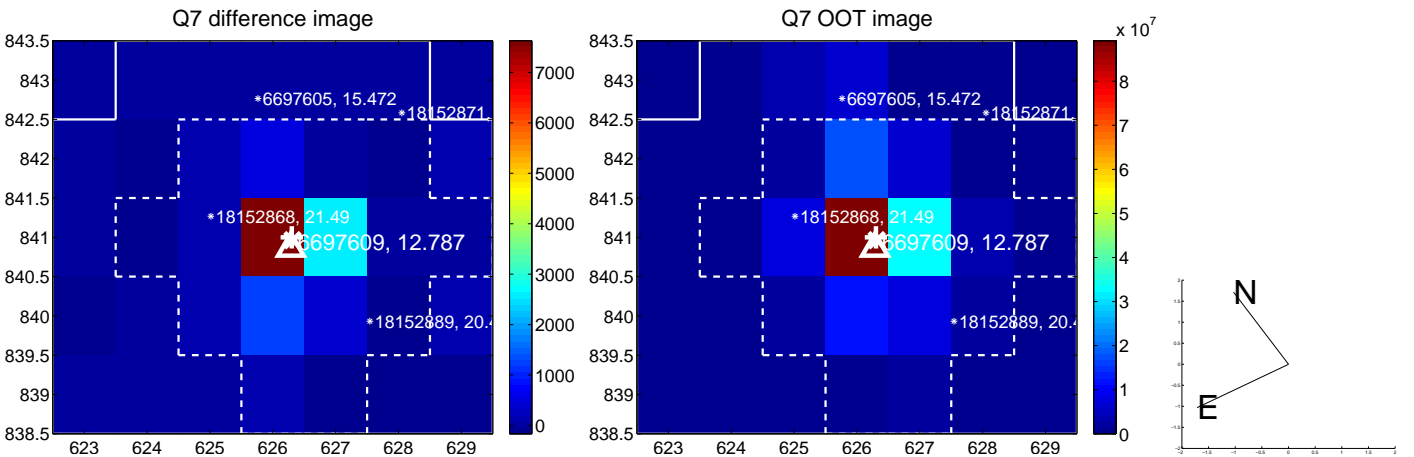
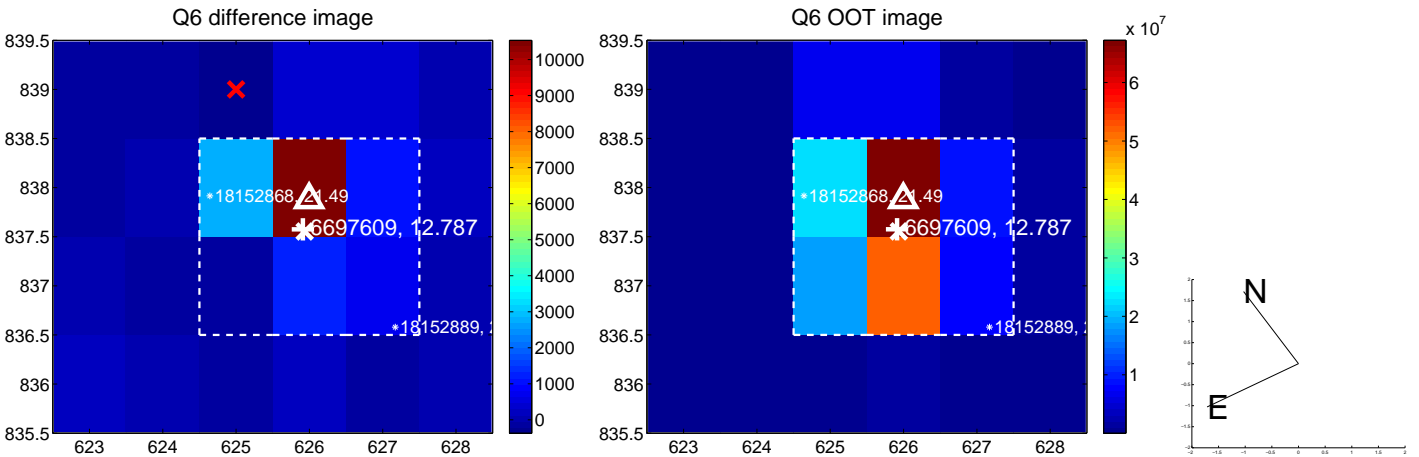
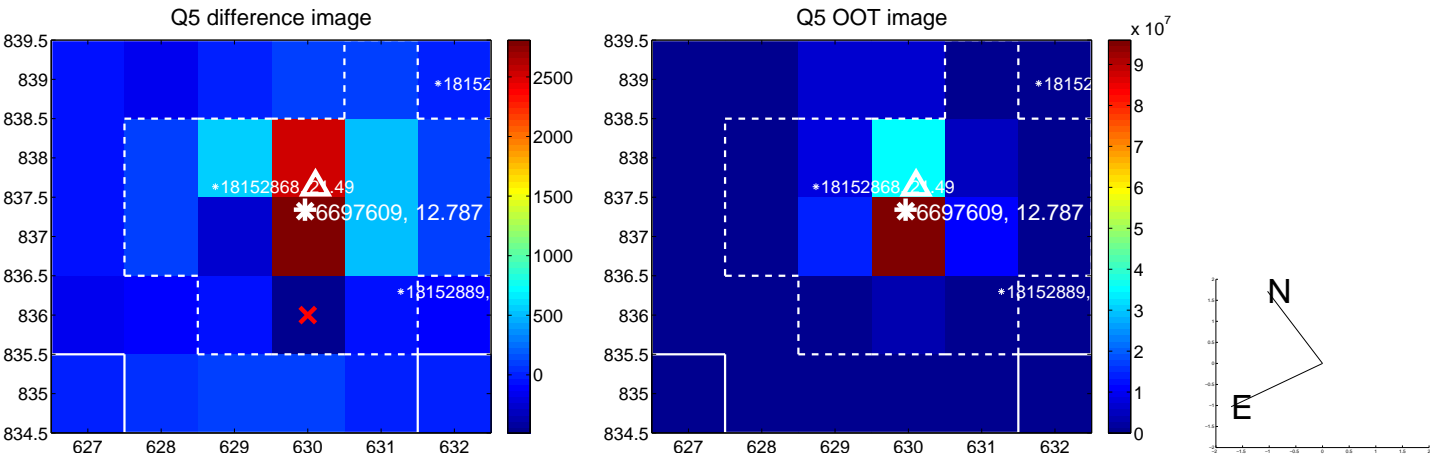


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

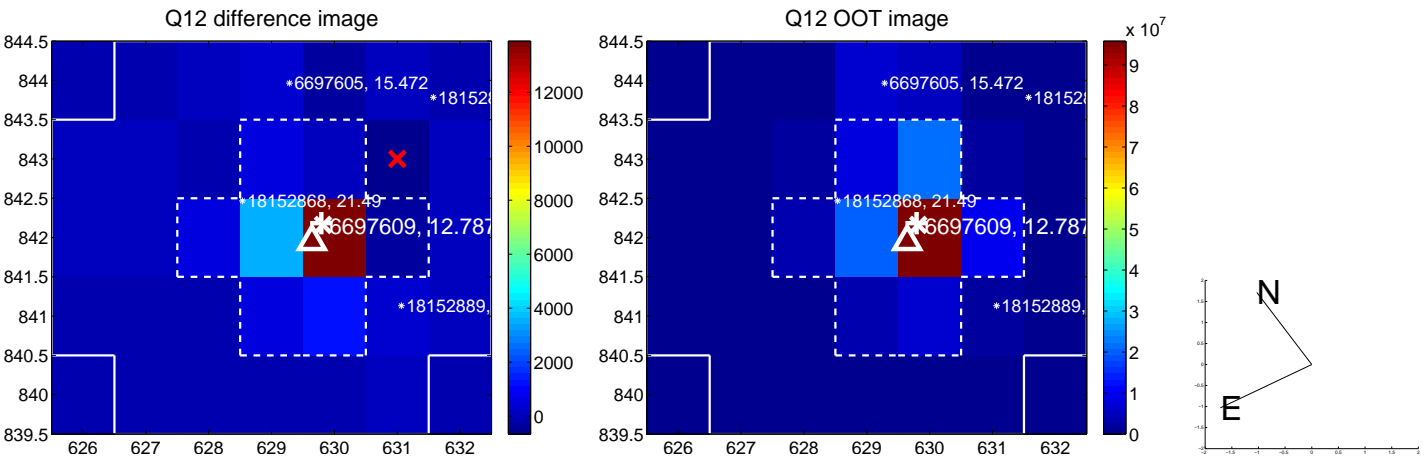
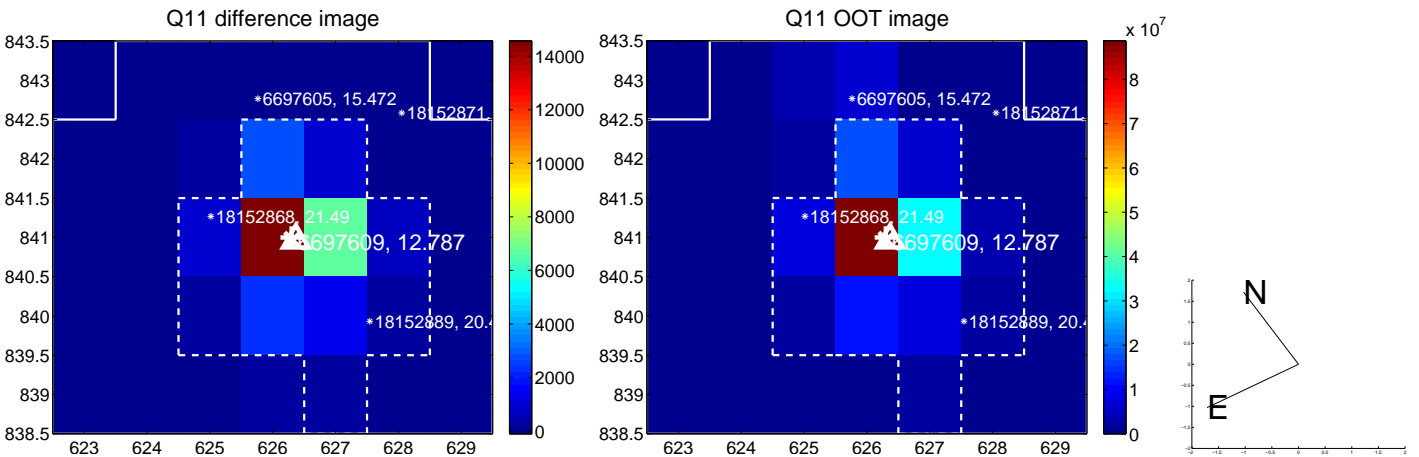
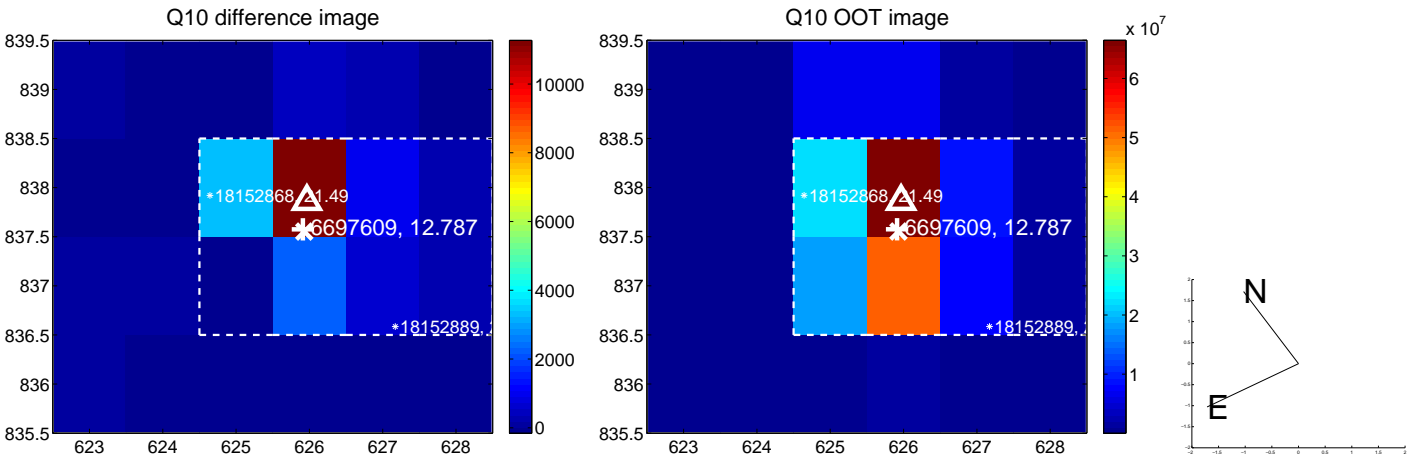
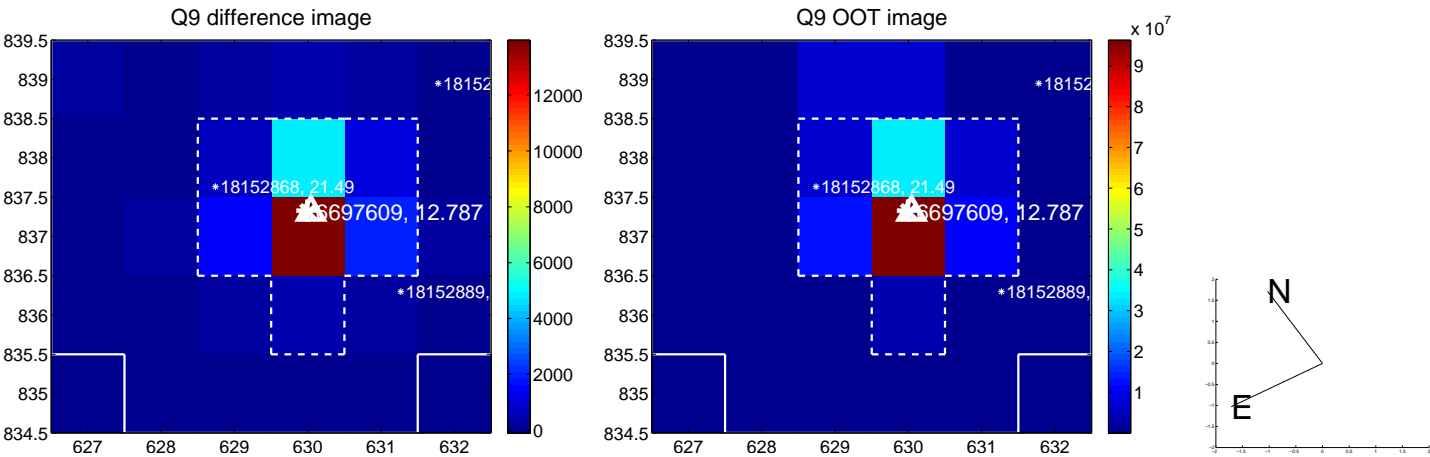
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



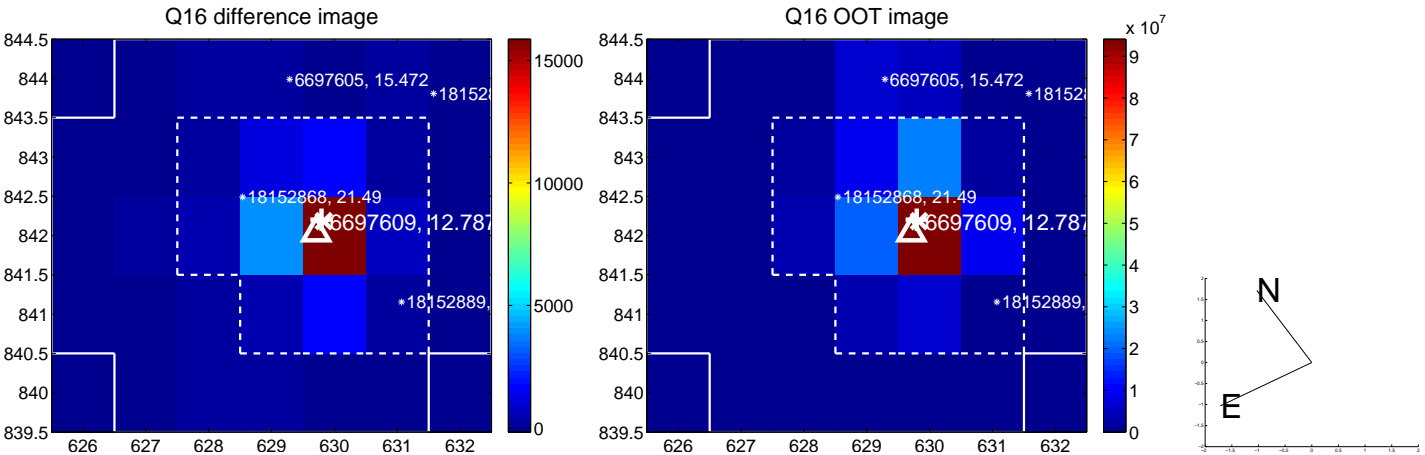
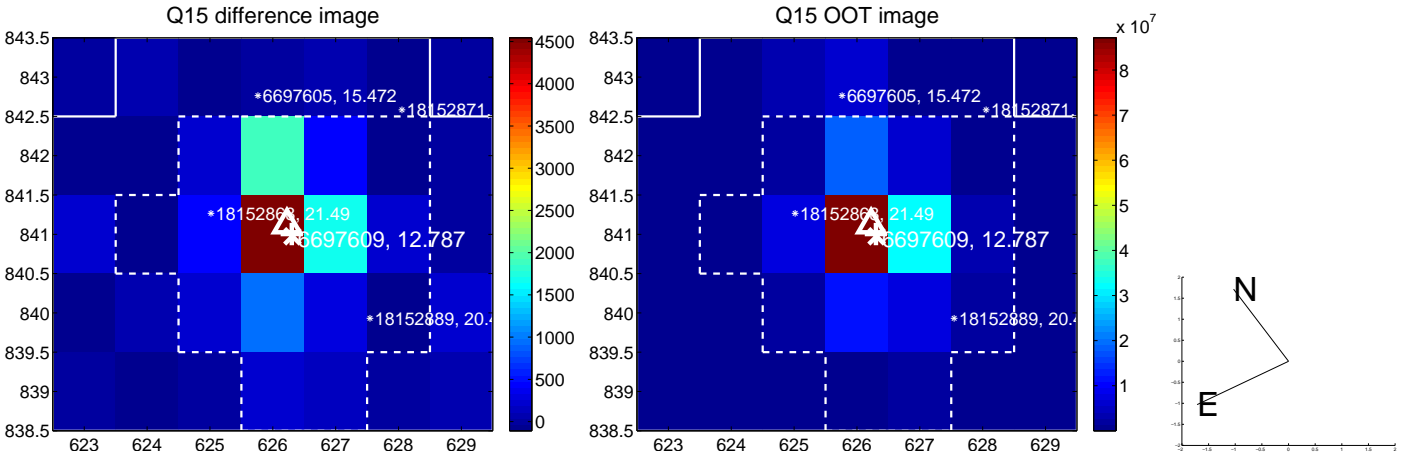
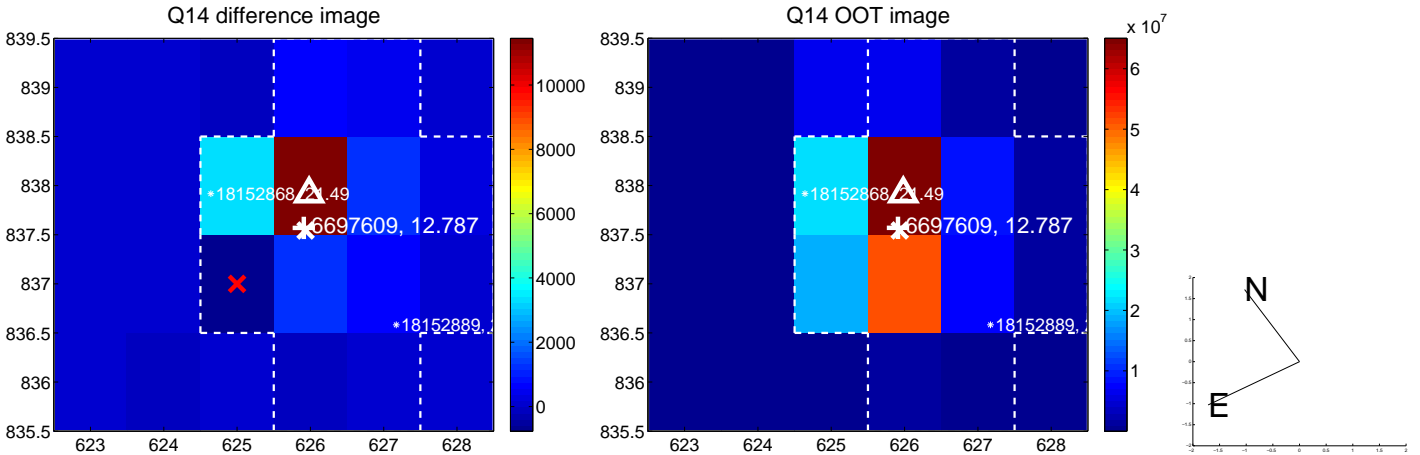
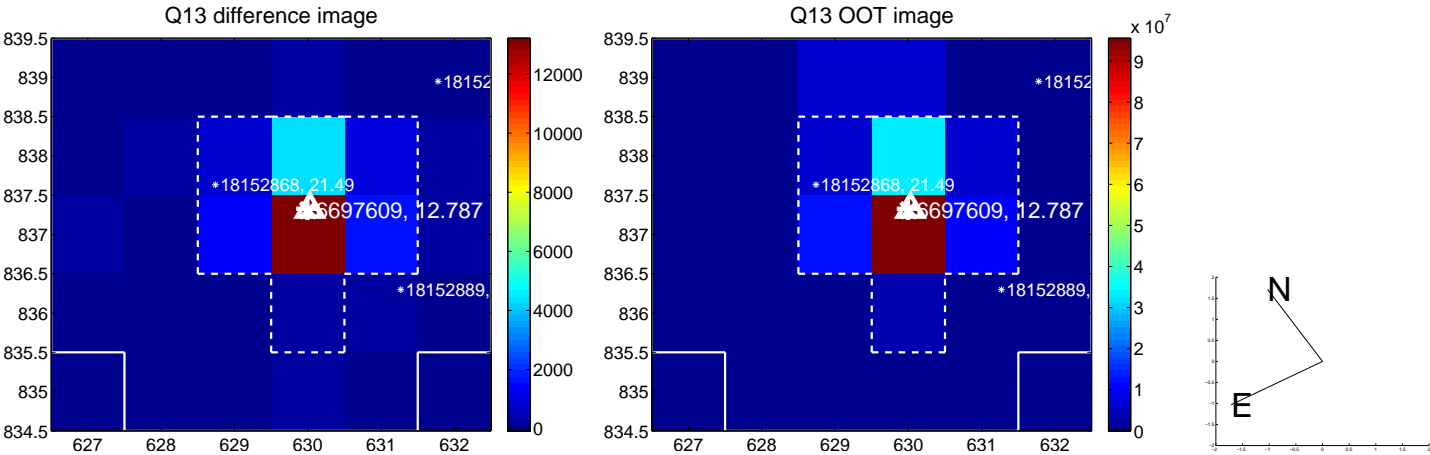
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



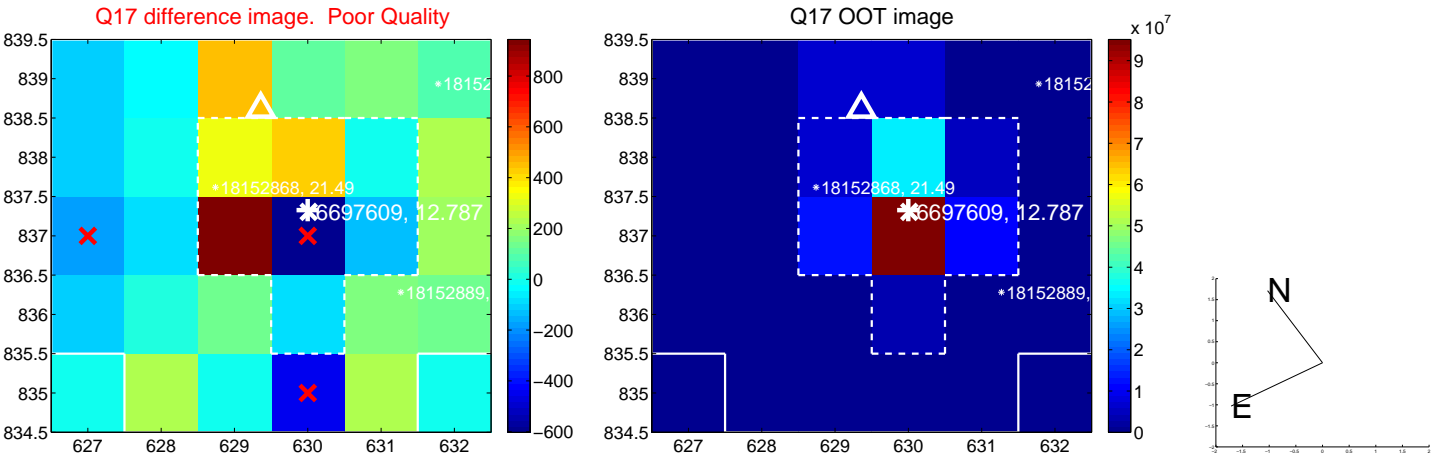
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



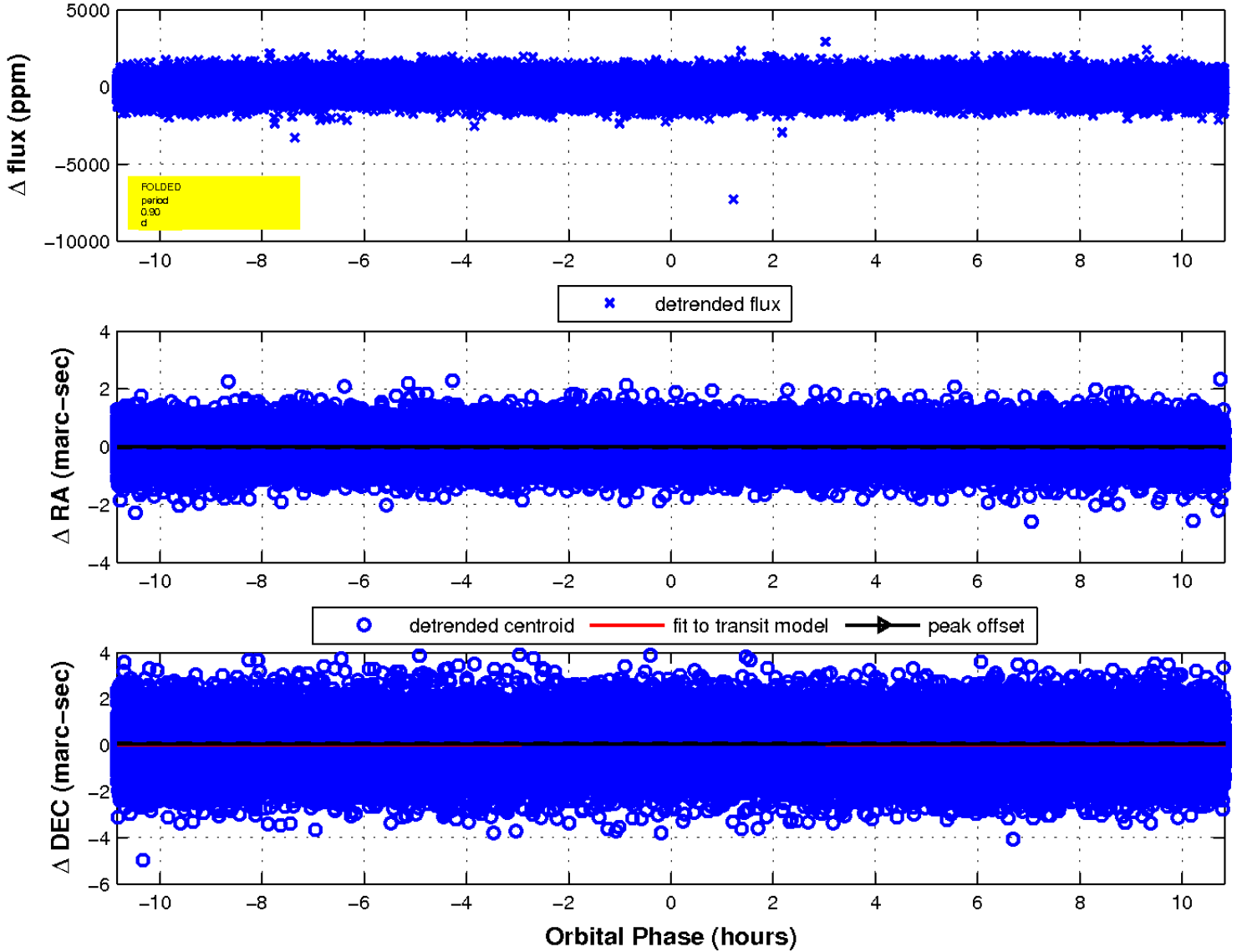
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

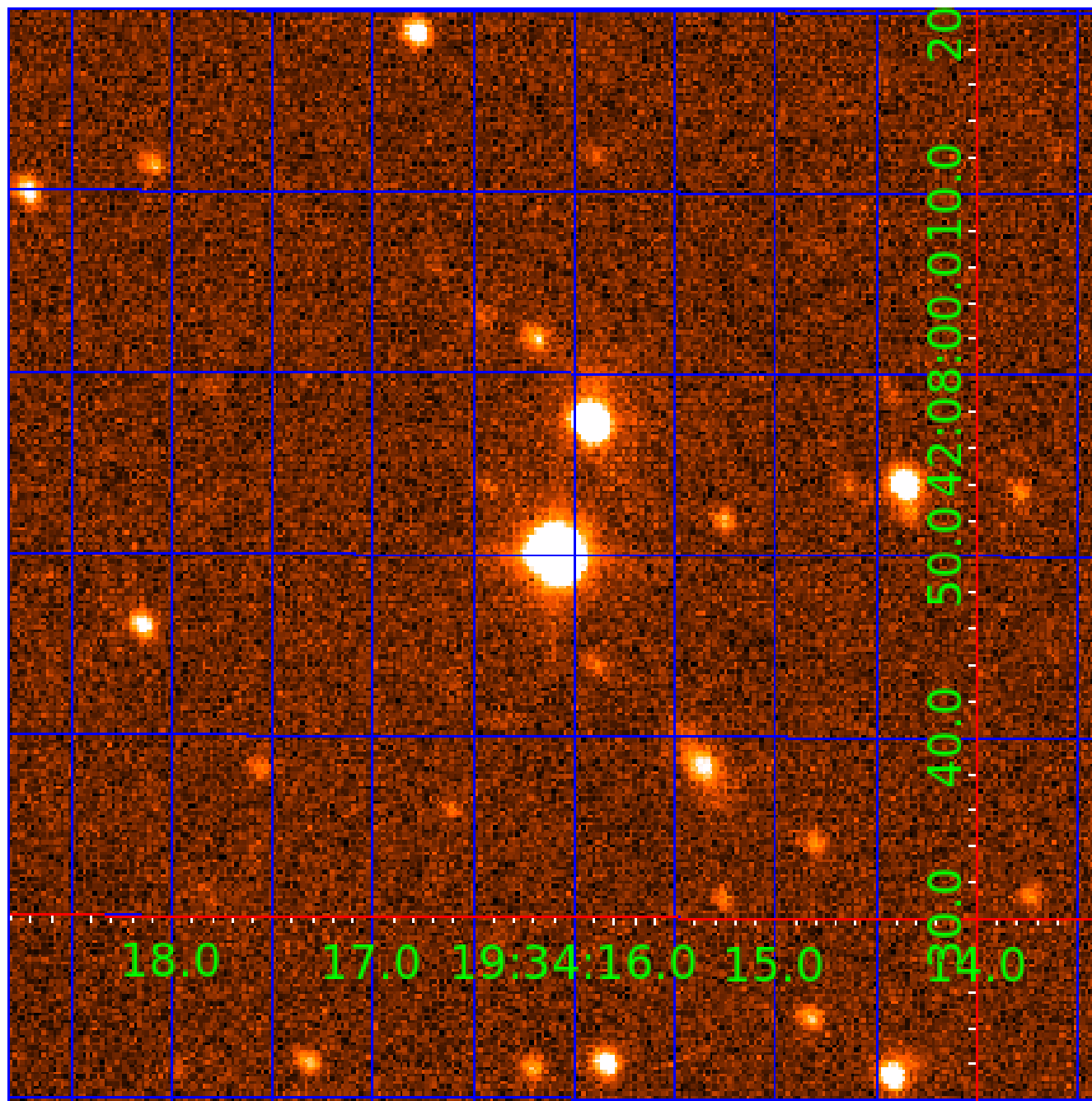


fluxWeightedCentroids, Planet 3 of 4



UKIRT Image

Declination



KIC 006697609

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
006697609-01	OBS	No	0.570924	131.586608	57.5	2.221	13.3	13.9	1.66	7290	1.46	28683.22
006697609-02	OBS	No	1.645371	131.755720	100.5	4.656	10.1	9.3	1.66	7290	1.93	6993.81
006697609-03	OBS	No	0.903278	132.257004	112.9	6.206	8.5	11.8	1.66	7290	1.89	15558.60
006697609-04	OBS	No	52.816284	156.763799	854.8	2.020	9.5	10.0	1.66	7290	5.26	68.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006697609-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
006697609-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—HALO_GHOST
006697609-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT
006697609-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

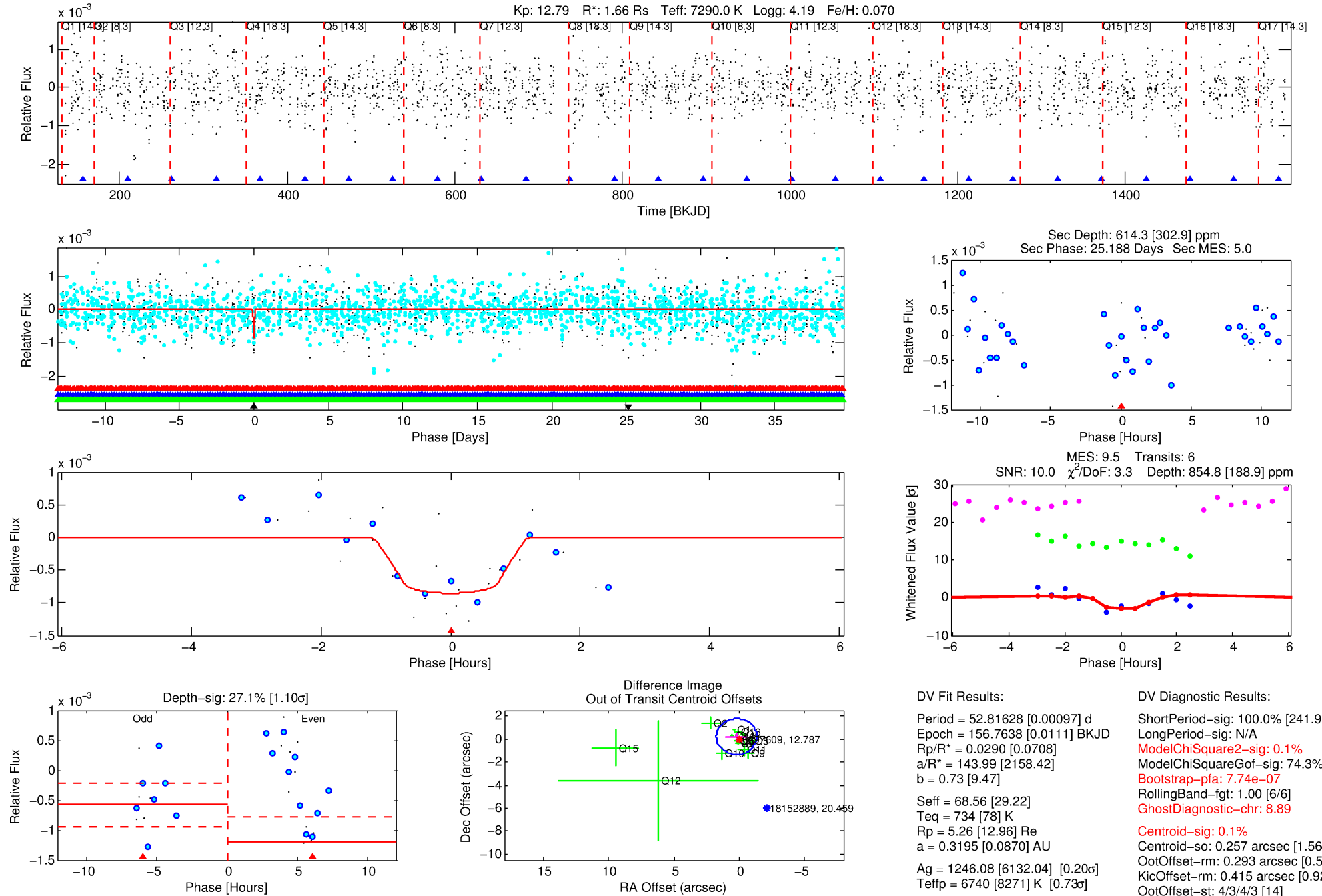
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006697609-04

No Significant Match Found

DV One-Page Summary

KIC: 6697609 Candidate: 4 of 4 Period: 52.816 d



DV Fit Results:

Period = 52.81628 [0.00097] d
Epoch = 156.7638 [0.0111] BKJD
Rp/R* = 0.0290 [0.0708]
a/R* = 143.99 [2158.42]
b = 0.73 [9.47]
Seff = 68.56 [29.22]
Teff = 734 [78] K
Rp = 5.26 [12.96] Re
a = 0.3195 [0.0870] AU
Ag = 1246.08 [6132.04] [0.20 σ]
Teffp = 6740 [8271] K [0.73 σ]

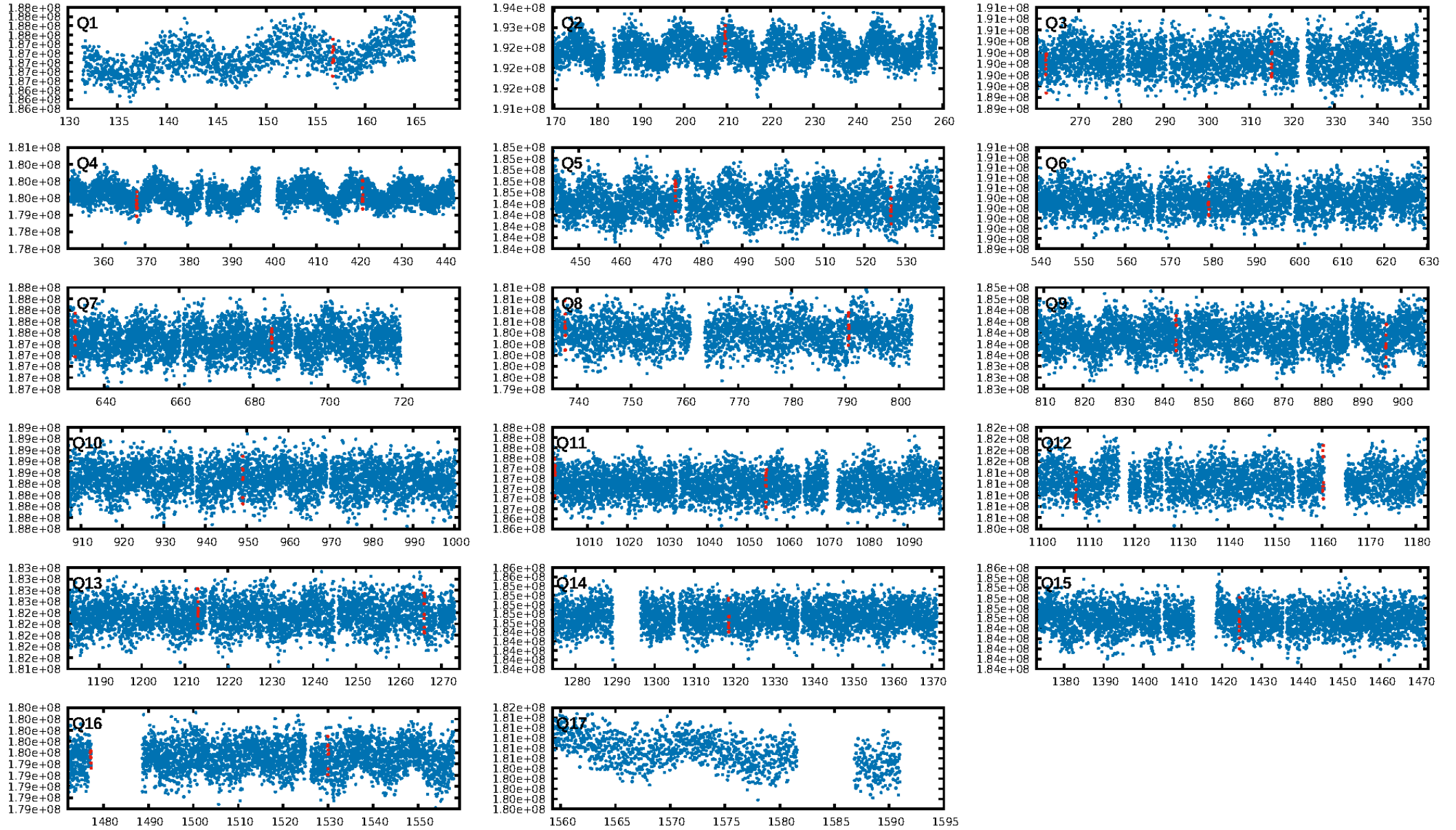
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [241.96 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 74.3%
Bootstrap-pfa: 7.74e-07
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 8.89
Centroid-sig: 0.1%
Centroid-so: 0.257 arcsec [1.56 σ]
OotOffset-rm: 0.293 arcsec [0.57 σ]
KicOffset-rm: 0.415 arcsec [0.92 σ]
OotOffset-st: 4/3/4/3 [14]
KicOffset-st: 4/3/4/3 [14]
DiffImageQuality-fgm: 0.50 [7/14]
DiffImageOverlap-fno: 0.00 [0/16]

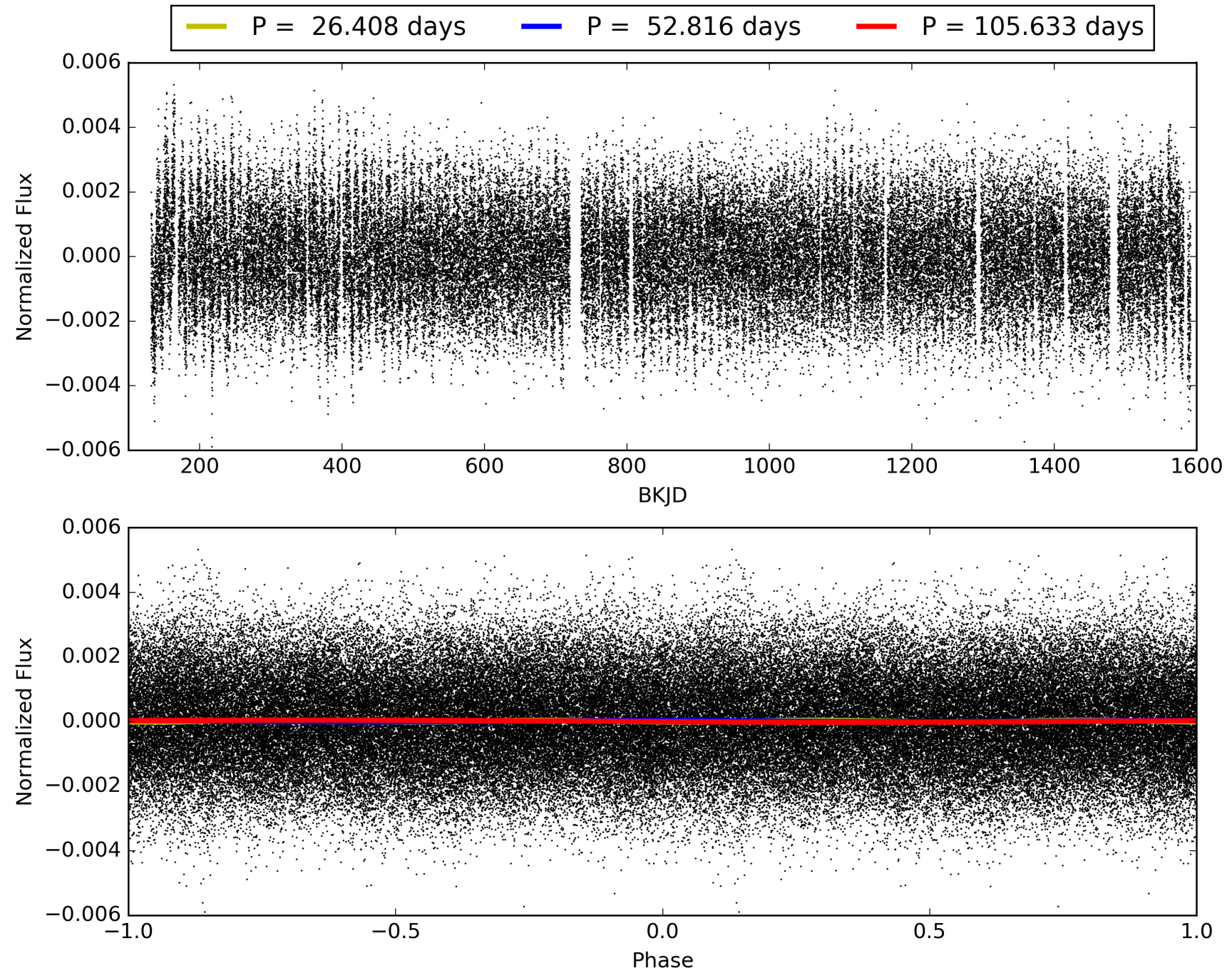
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 07:44:32 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006697609-04, PDC Light Curves

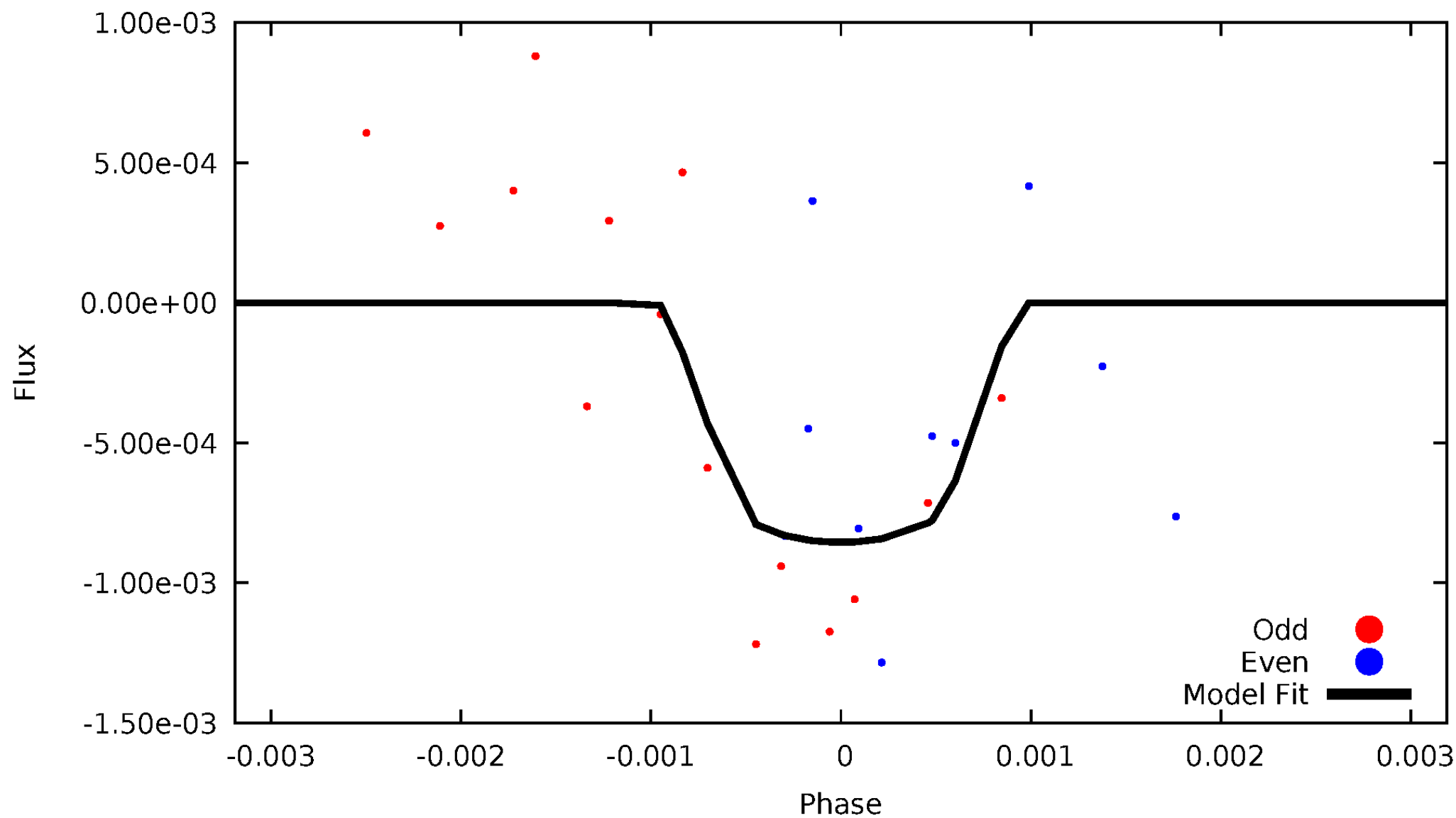


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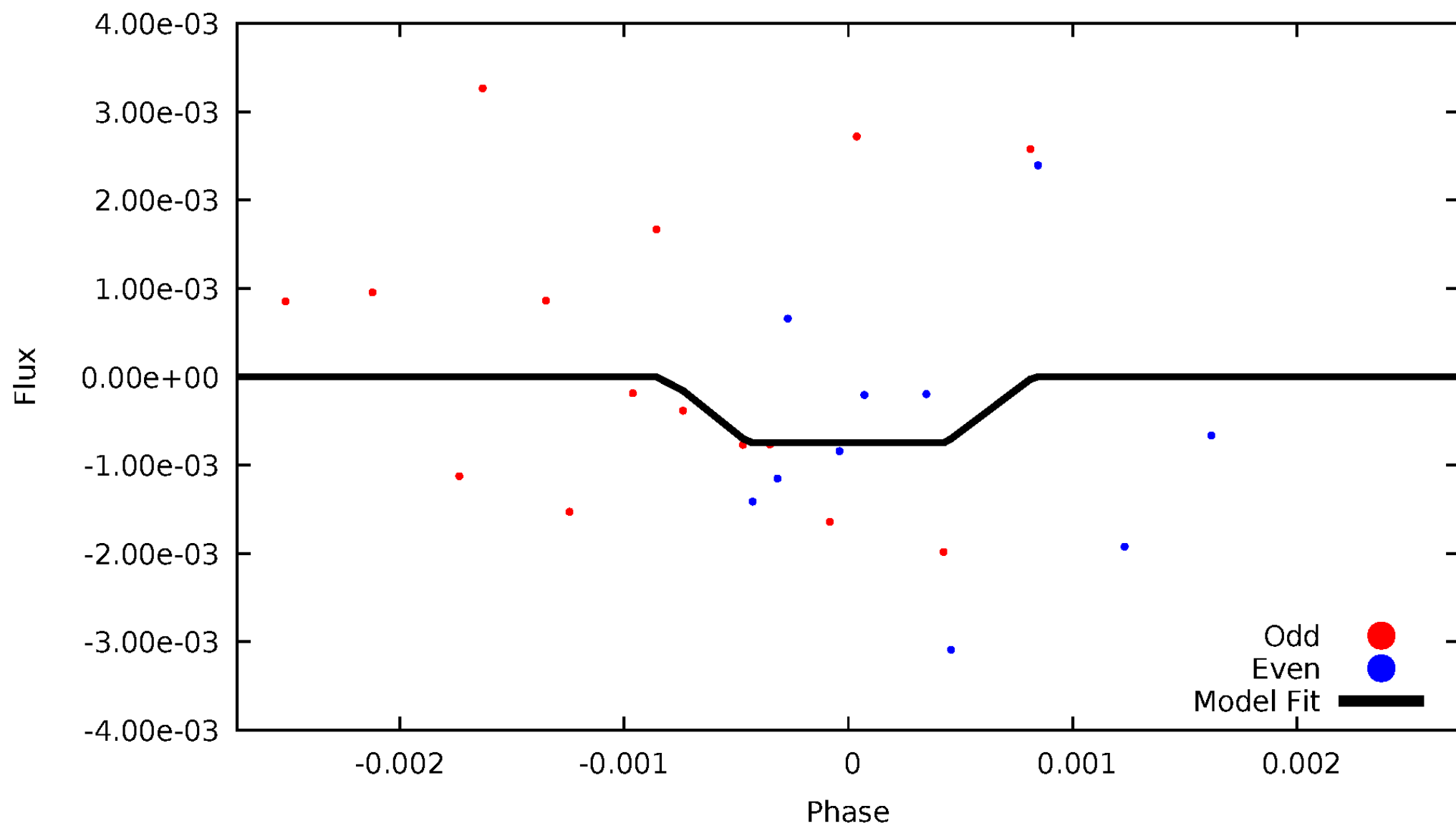
DV Odd/Even

TCE 006697609-04



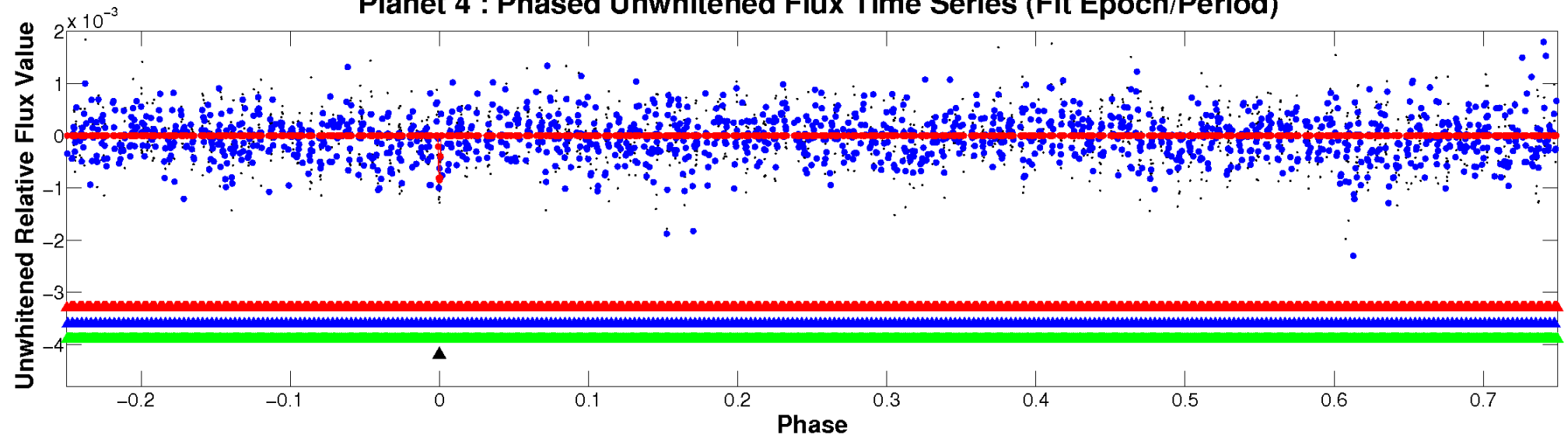
ALT Odd/Even

TCE 006697609-04

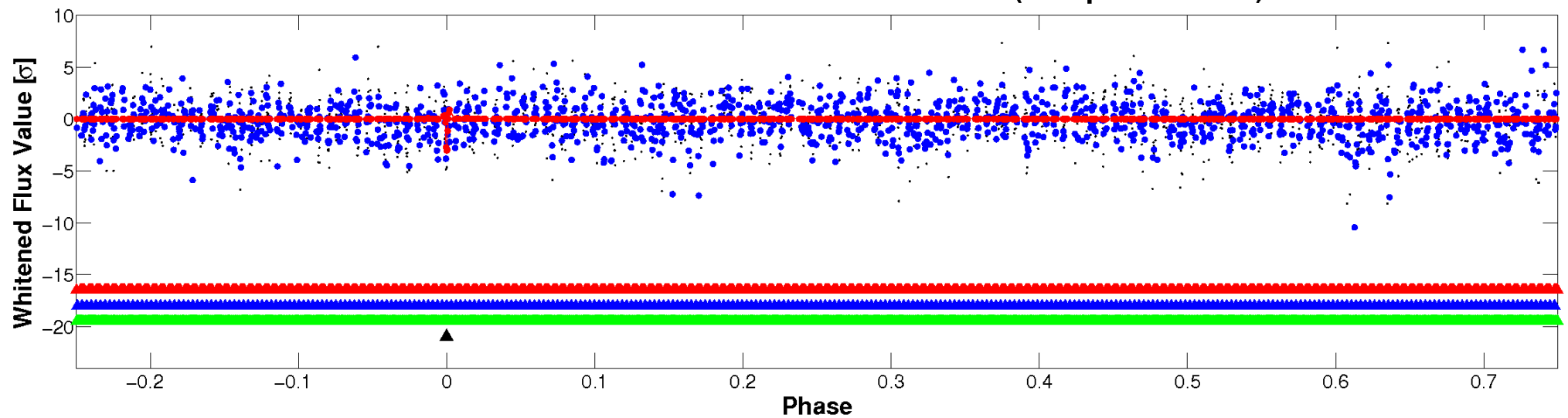


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

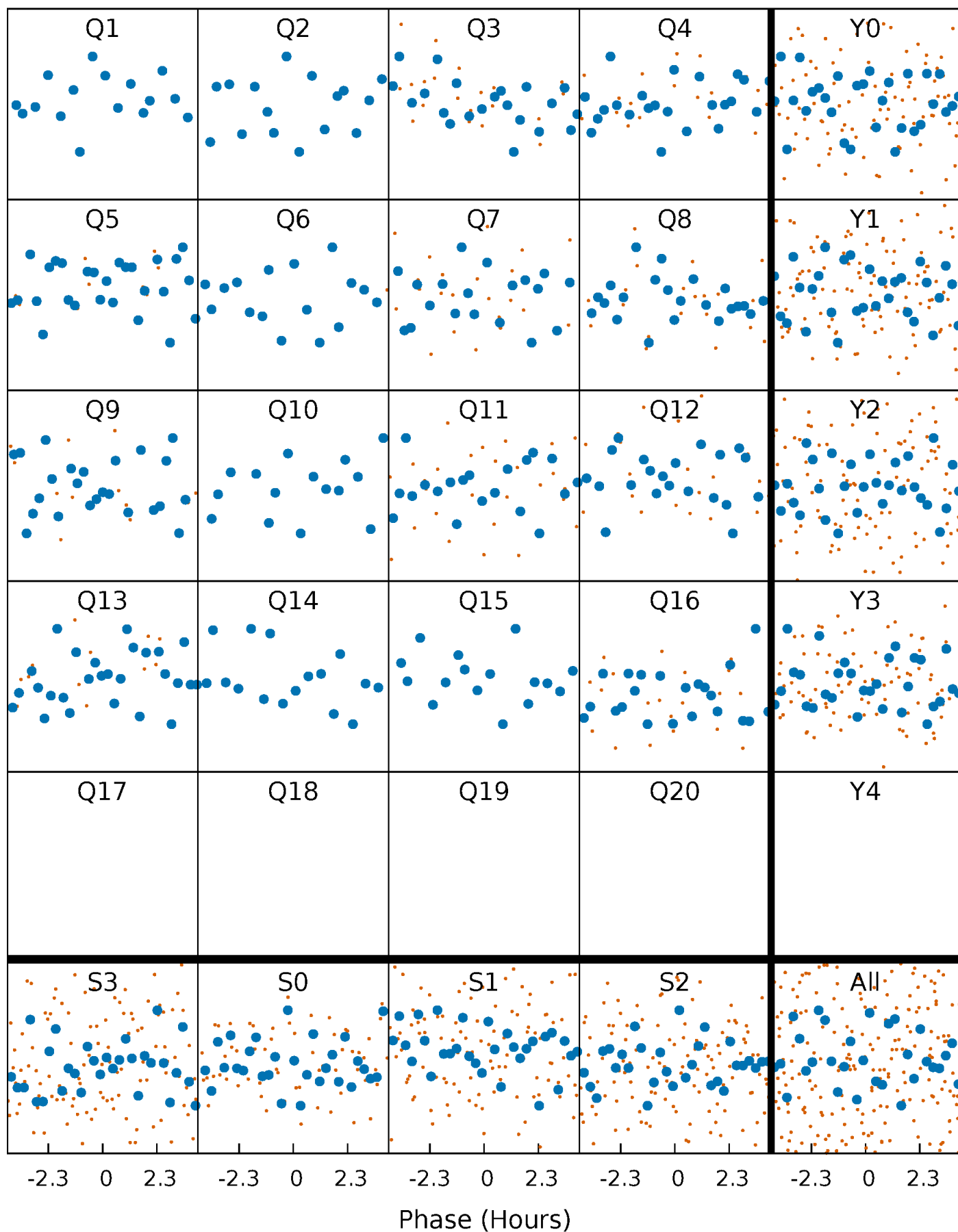


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



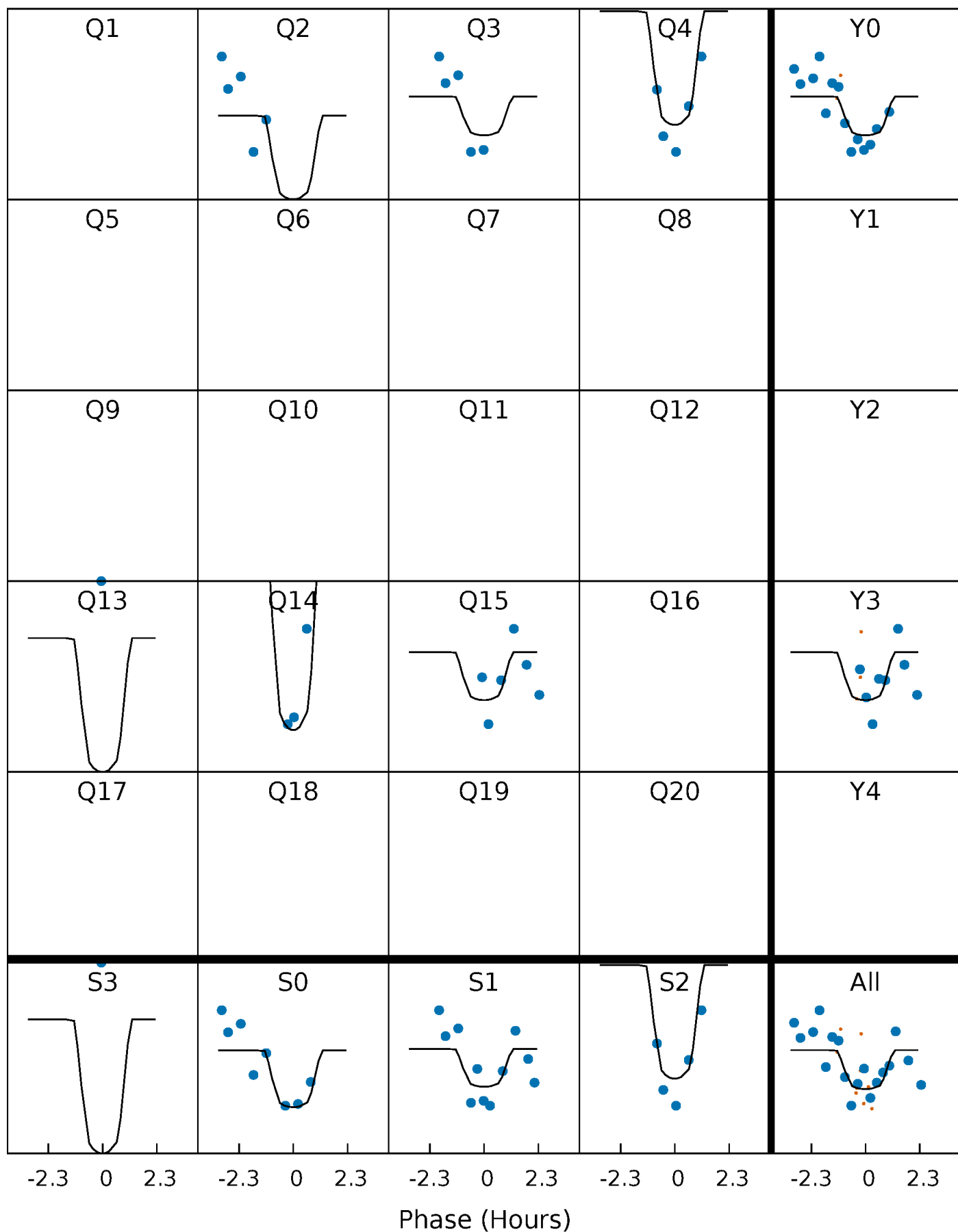
PDC Quarter-Phased Transit Curves

TCE 006697609-04 P= 52.816284 Days $T_0=156.763799$ (BKJD)



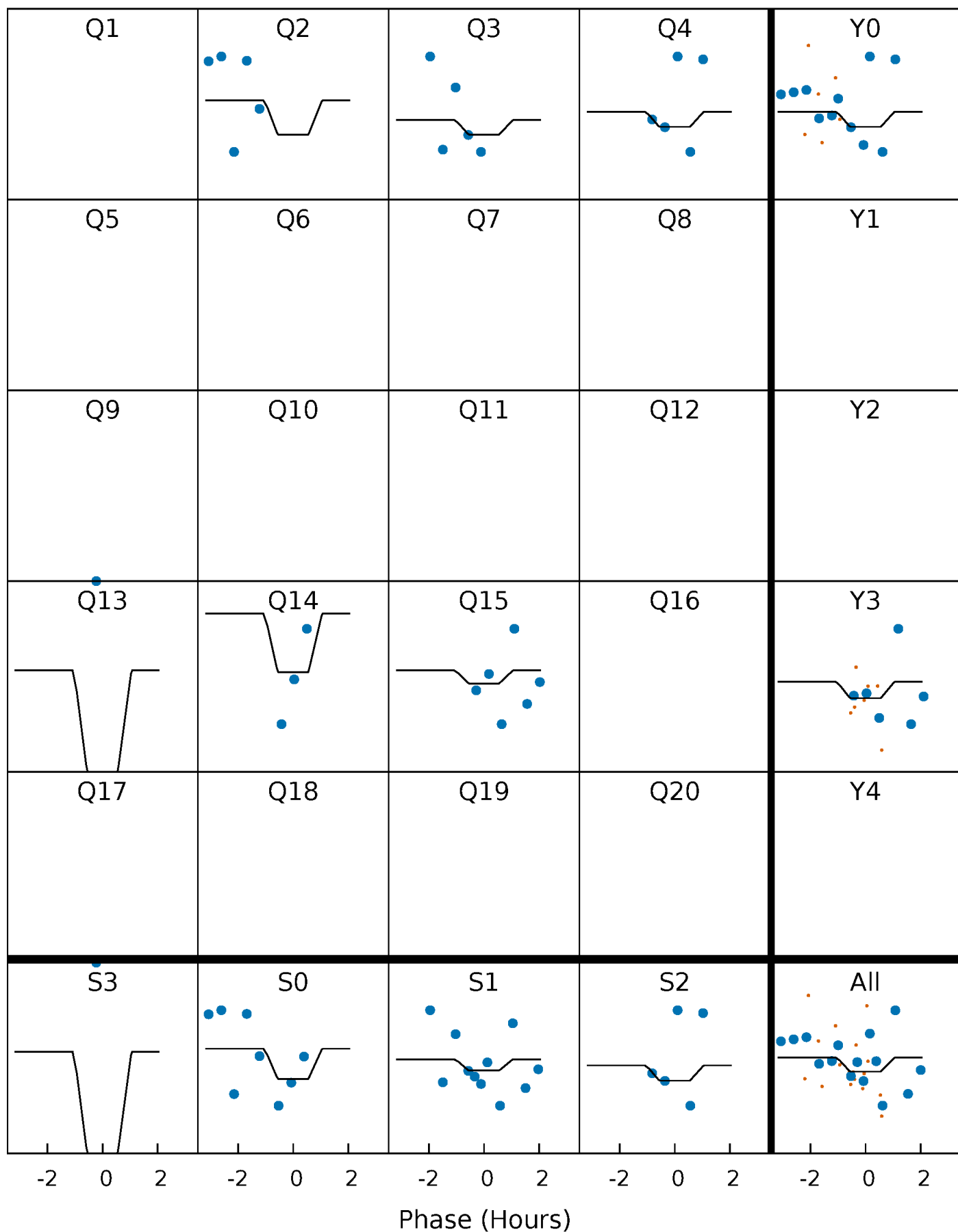
DV Quarter-Phased Transit Curves

TCE 006697609-04 P= 52.816284 Days $T_0=156.763799$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

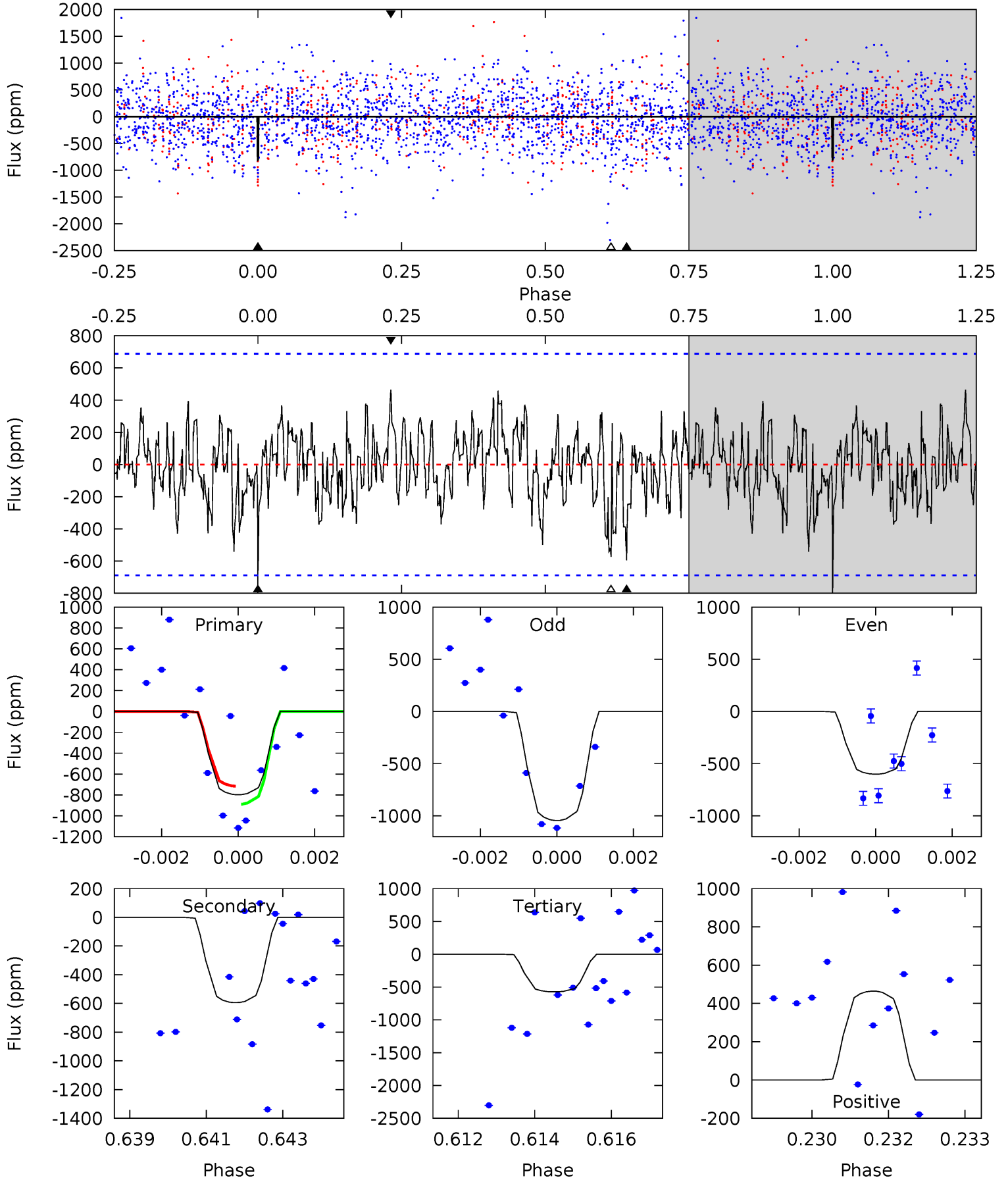
TCE 006697609-04 P= 52.816589 Days $T_0=156.764095$ (BKJD)



DV Model-Shift Uniqueness Test

006697609-04, P = 52.816284 Days, E = 103.947515 Days

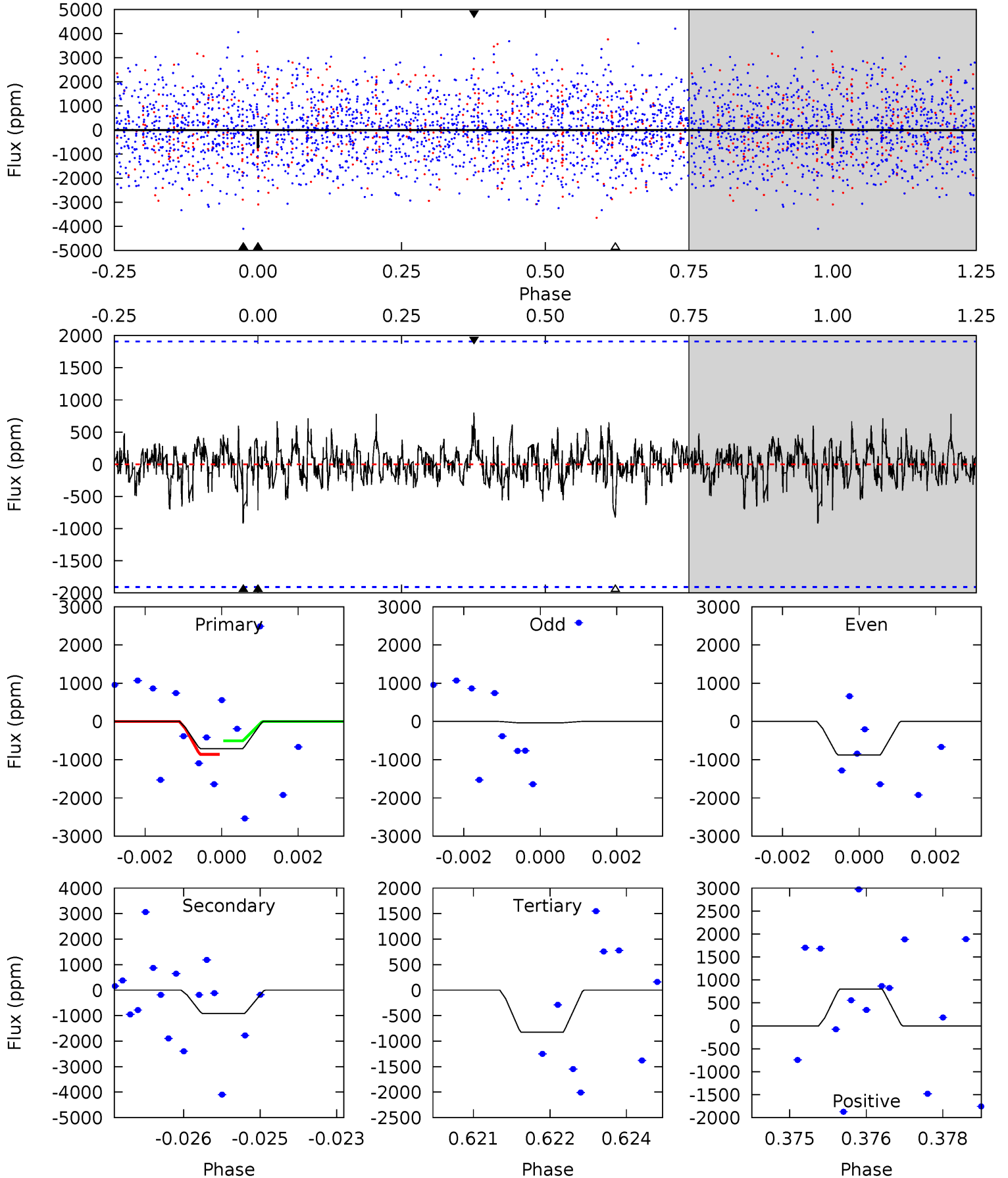
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.19	4.61	4.45	3.60	5.35	3.12	1.41	1.74	2.59	0.16	1.01	1.74	1.03	0.37	0.68



Alt Model-Shift Uniqueness Test

006697609-04, P = 52.816589 Days, E = 103.947506 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.01	2.59	2.33	2.26	5.37	3.17	0.64	-0.32	-0.25	0.26	0.33	1.00	0.86	0.47	0.50



Stellar Parameters For KIC 006697609

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7290^{+200}_{-314}	$4.189^{+0.090}_{-0.210}$	$0.070^{+0.200}_{-0.350}$	$1.663^{+0.547}_{-0.252}$	$1.559^{+0.211}_{-0.211}$	$0.477^{+0.198}_{-0.268}$
	+3%/-4%	+2%/-5%	+286%/-500%	+33%/-15%	+14%/-14%	+41%/-56%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 006697609-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-594±129	$11.13^{+11.11}_{-7.37}$	1038^{+79}_{-59}	4661^{+3394}_{-965}	248^{+2114}_{-185}
Alt.	-919±355	$10.77^{+11.19}_{-7.47}$	1035^{+86}_{-63}	5228^{+4772}_{-1326}	414^{+3643}_{-322}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming A=0.3)

A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

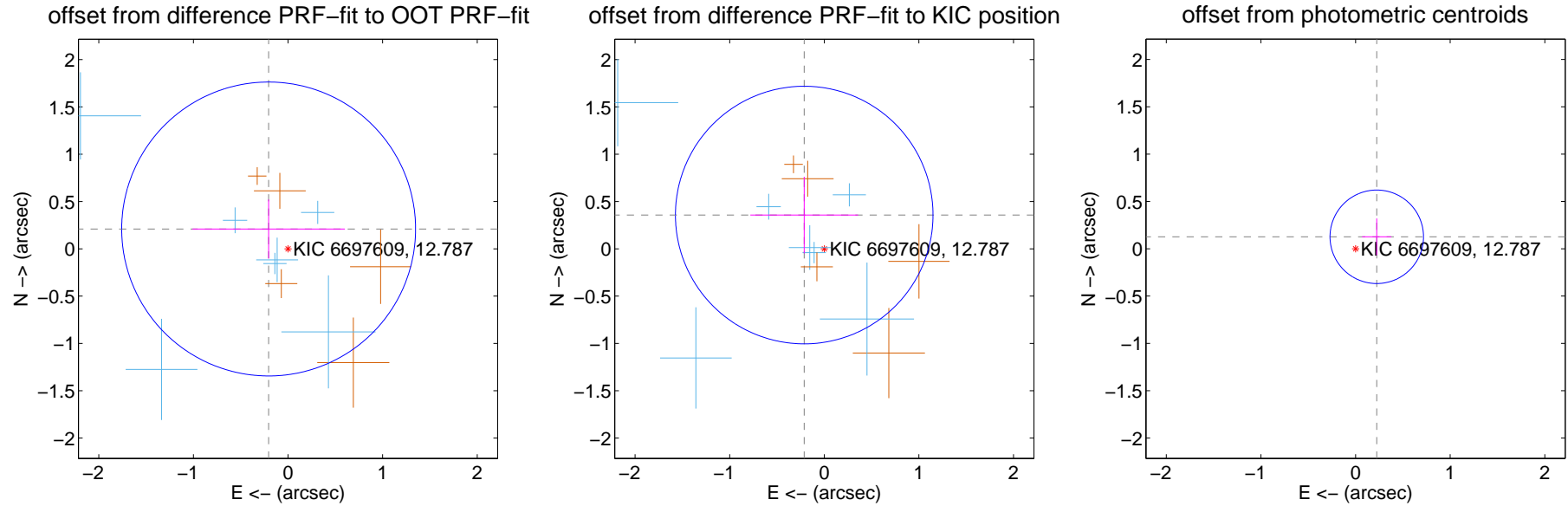
DV Centroid Data

Supplemental centroid analysis for 006697609-04. Kepler magnitude: 12.79. Transit SNR 10.03

There are 7 quarters with good PRF difference image offsets

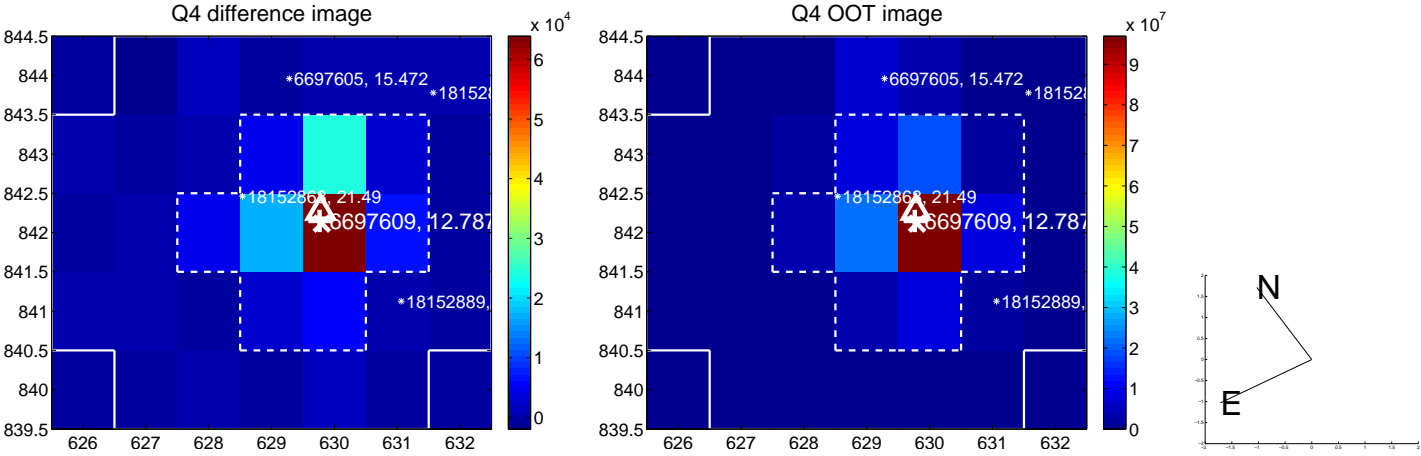
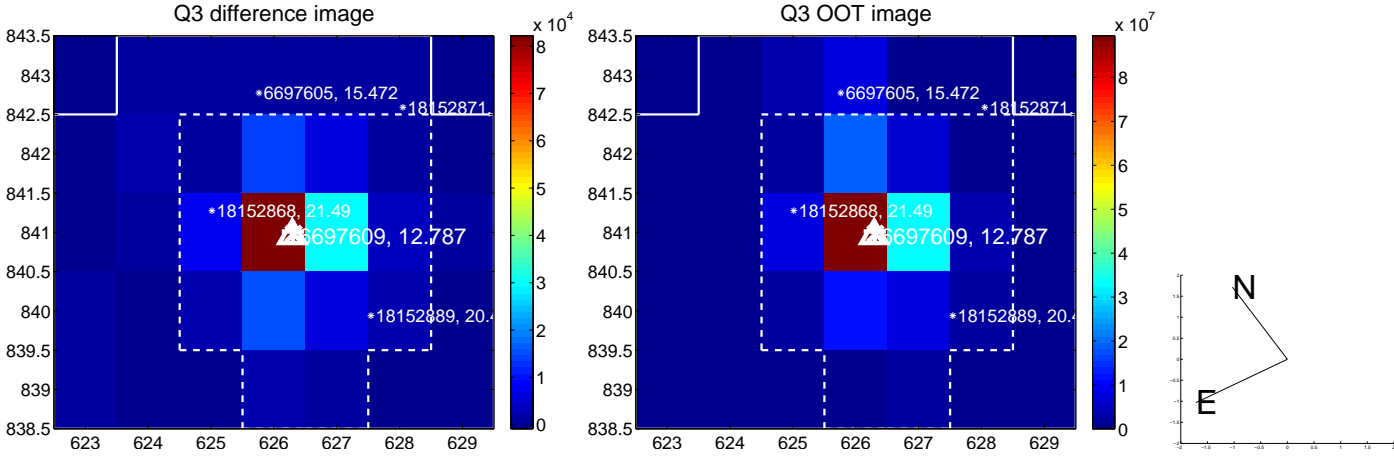
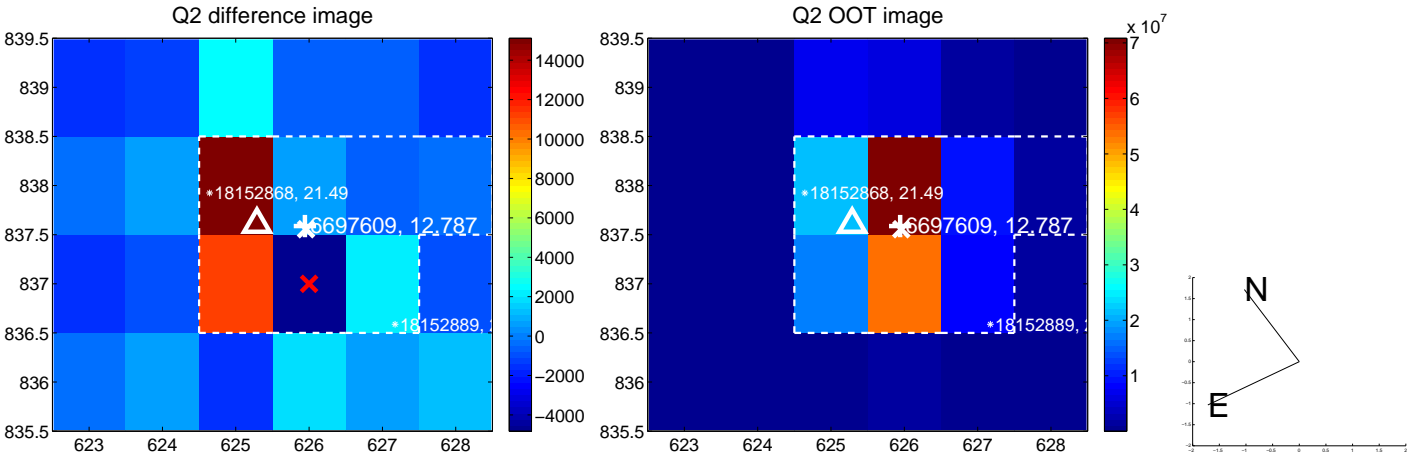
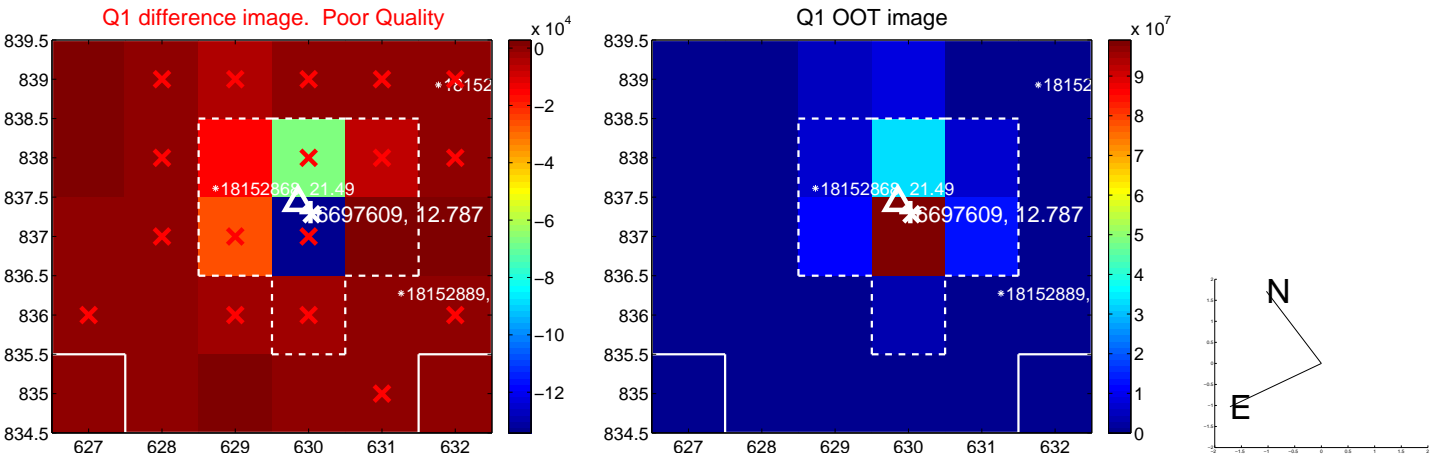
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.293 ± 0.518	0.57	0.205 ± 0.806	0.210 ± 0.312
PRF-fit source offset from KIC position	0.415 ± 0.454	0.92	0.212 ± 0.570	0.357 ± 0.405
photometric centroid source offset	0.26 ± 0.16	1.56	-0.22 ± 0.15	0.13 ± 0.19

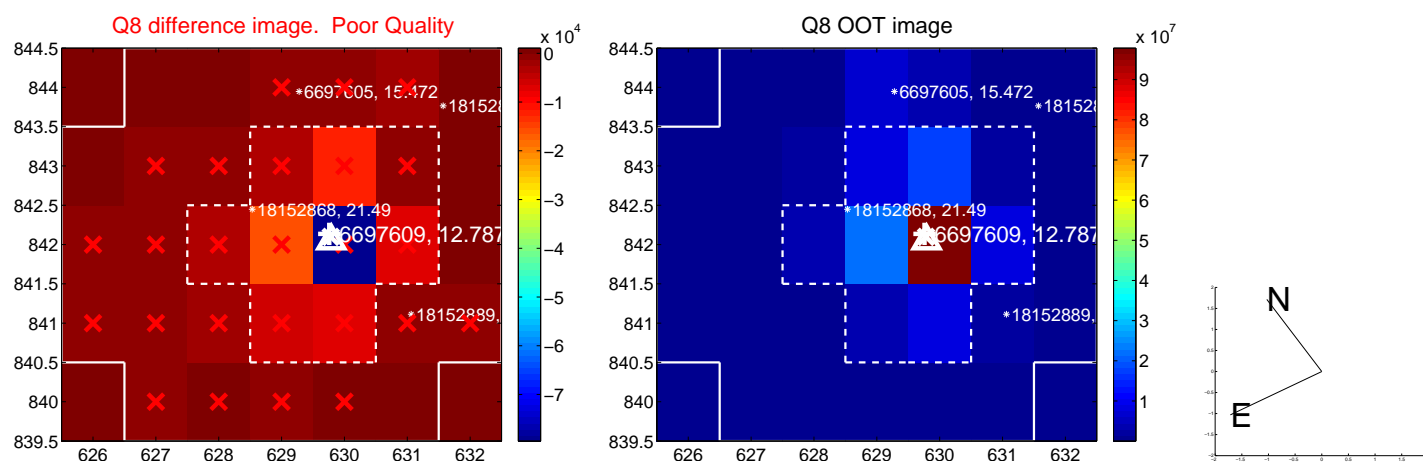
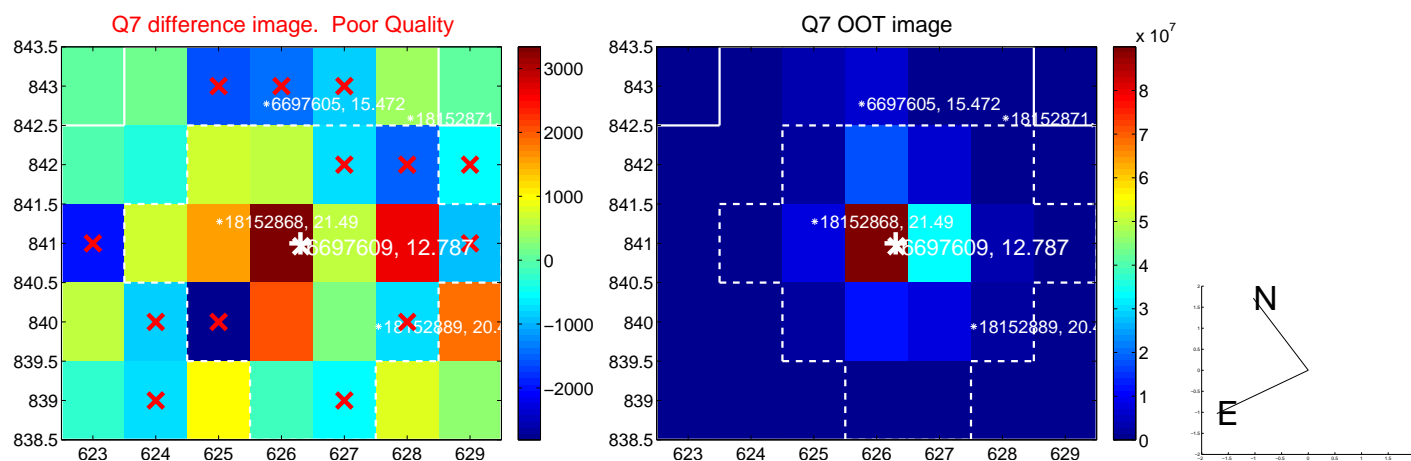
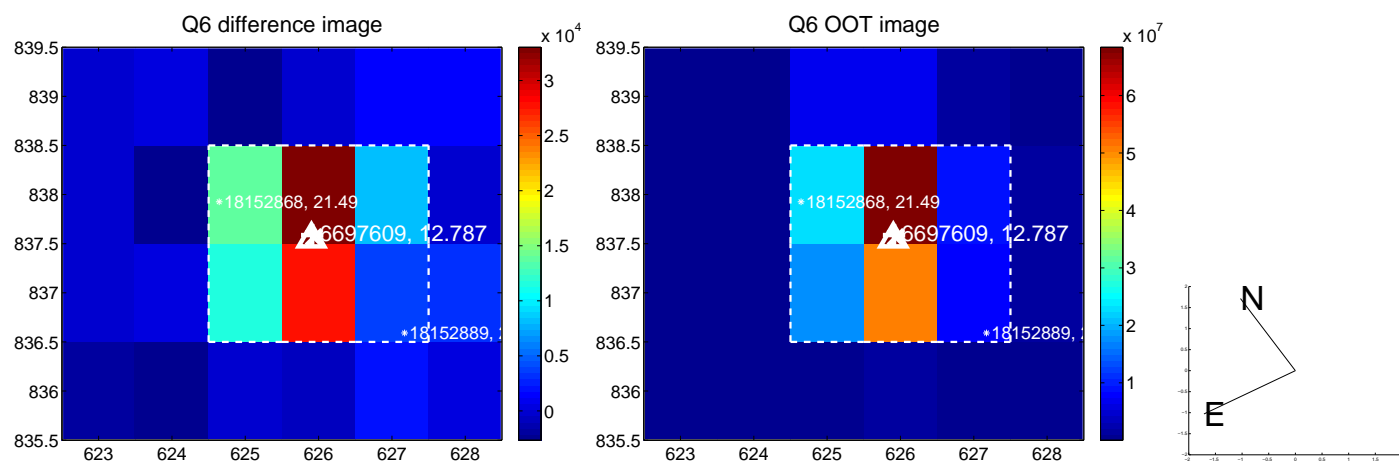
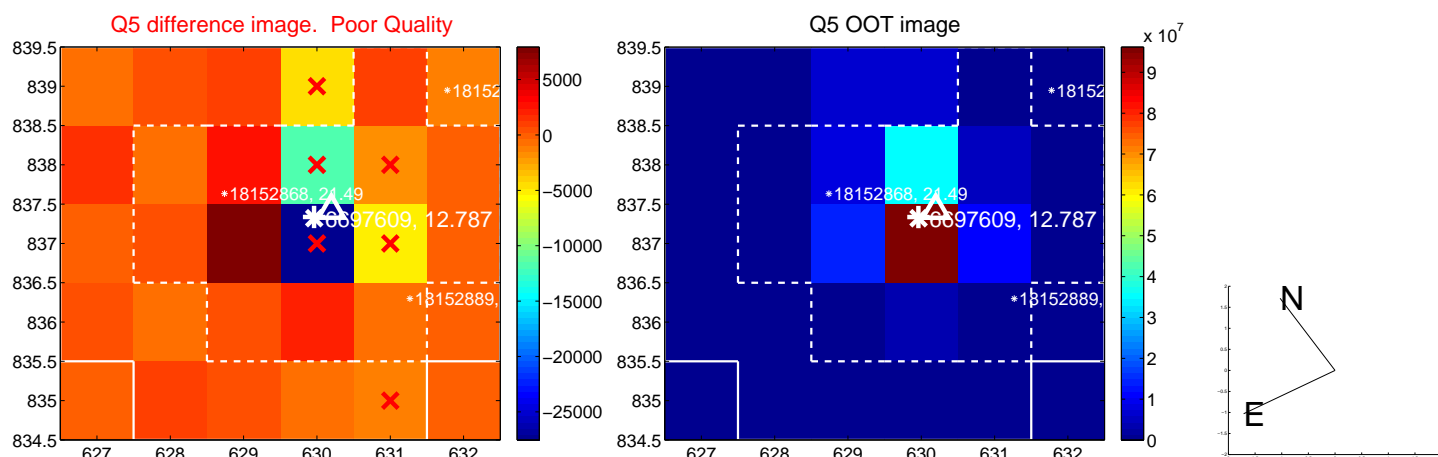


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

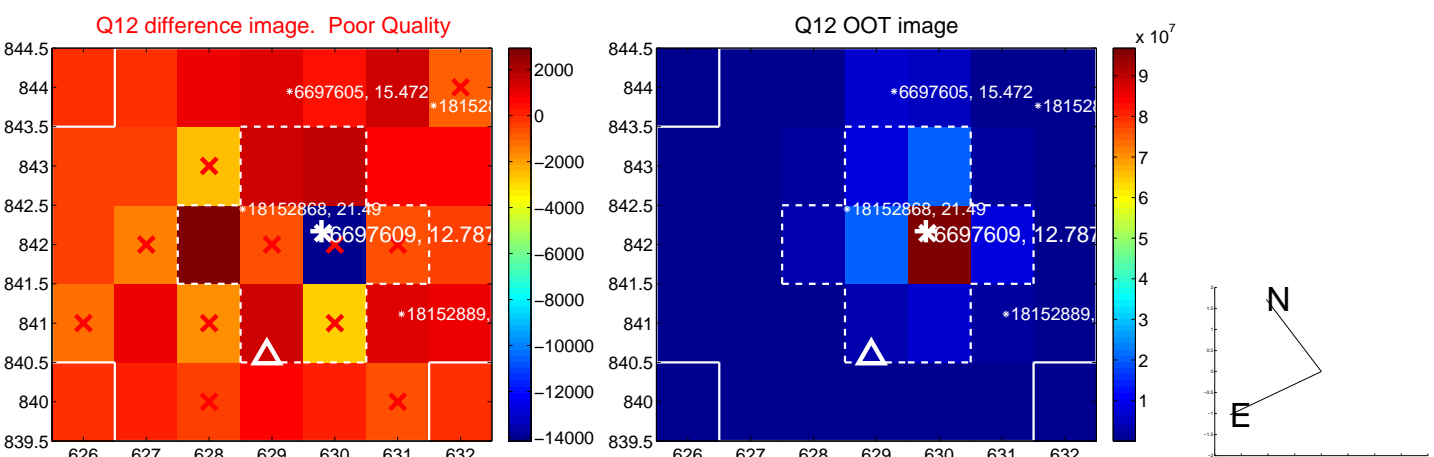
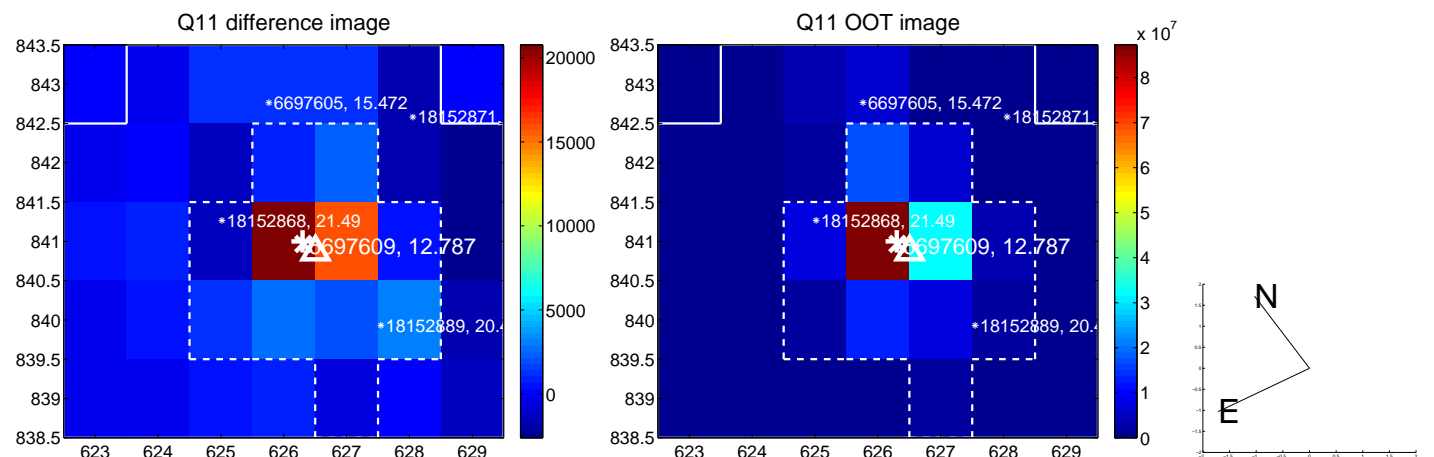
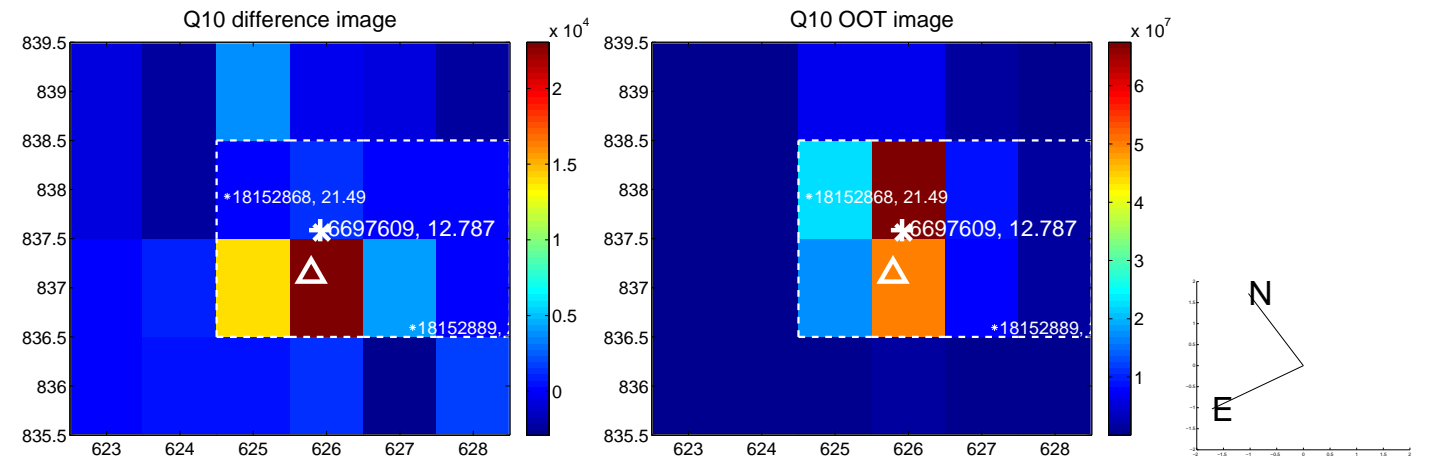
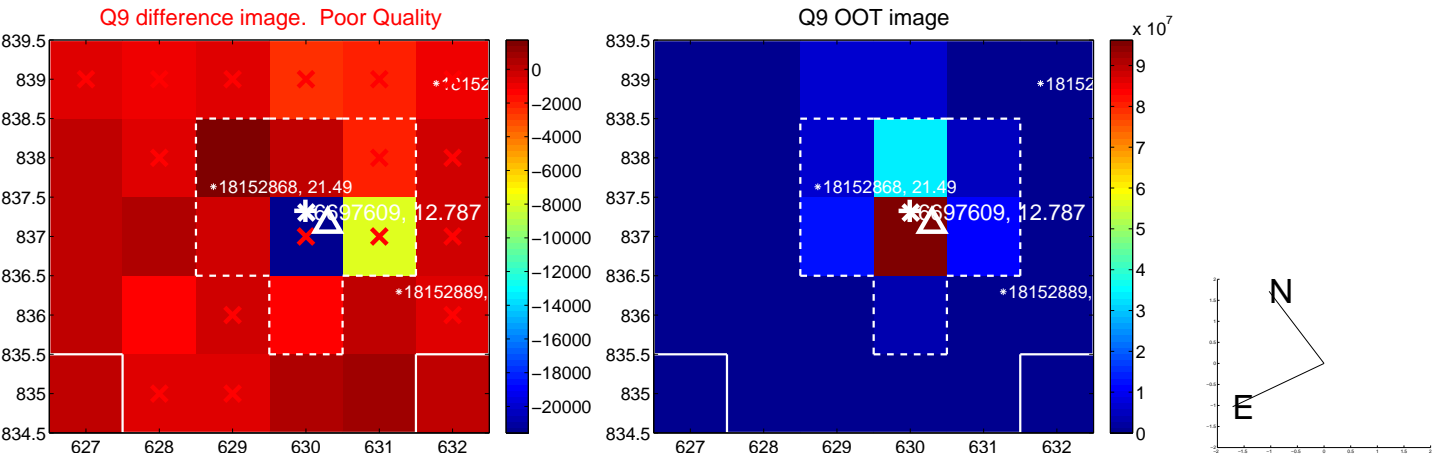
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



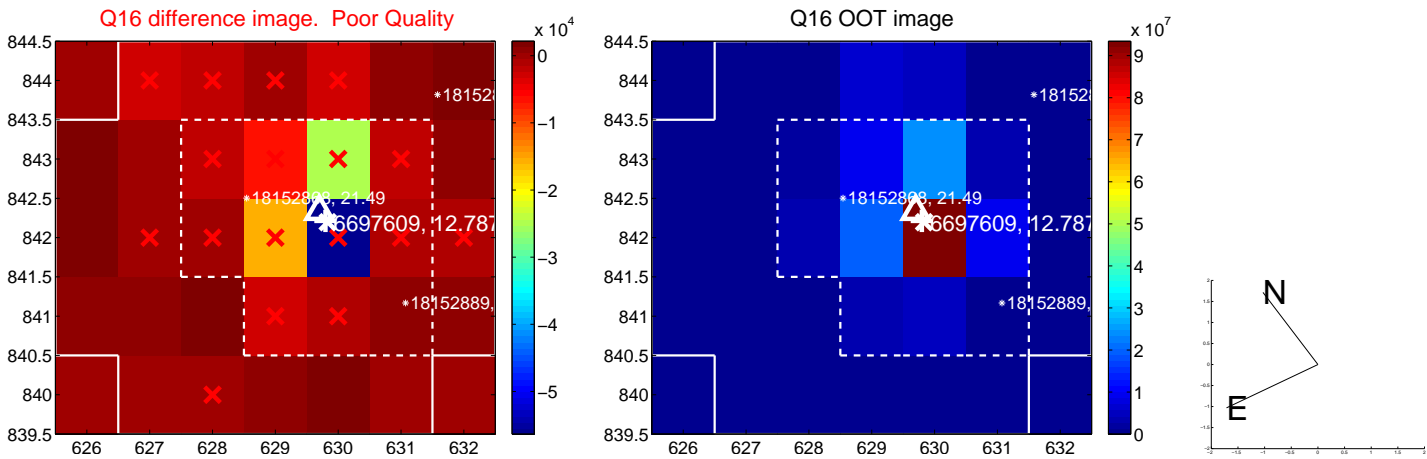
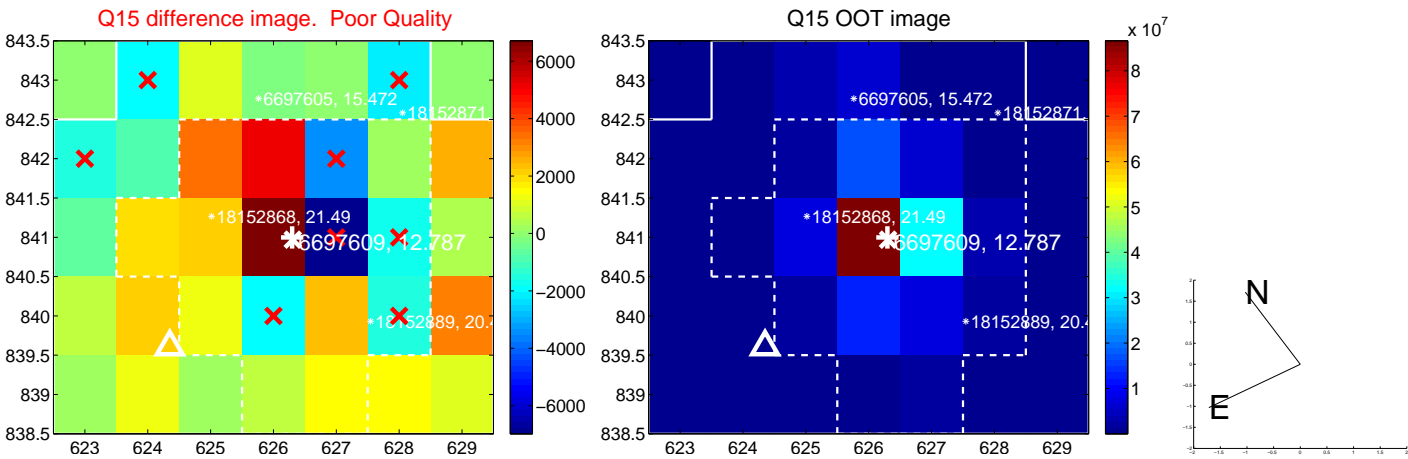
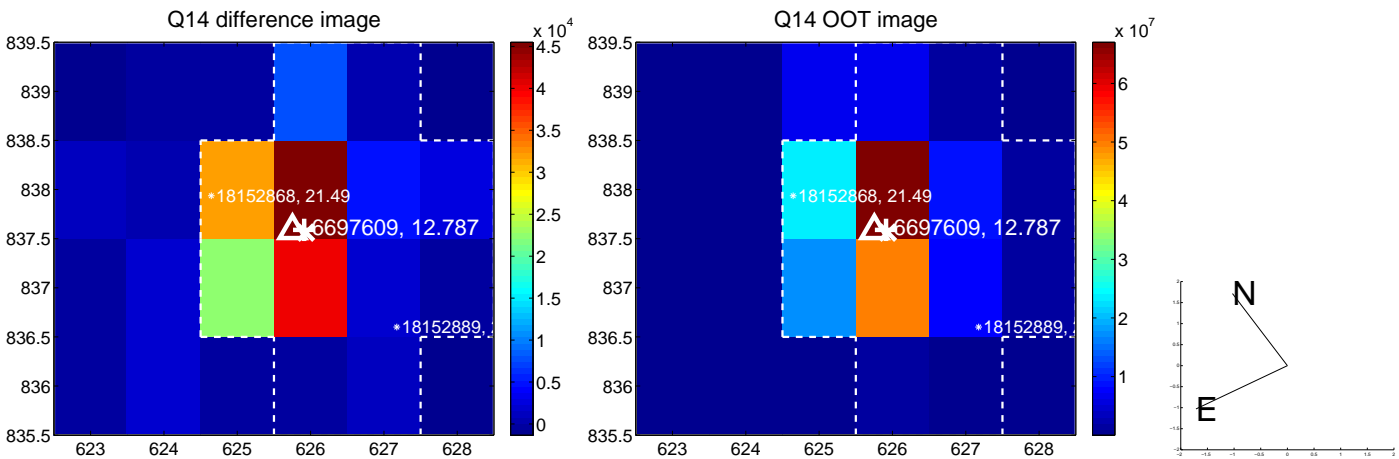
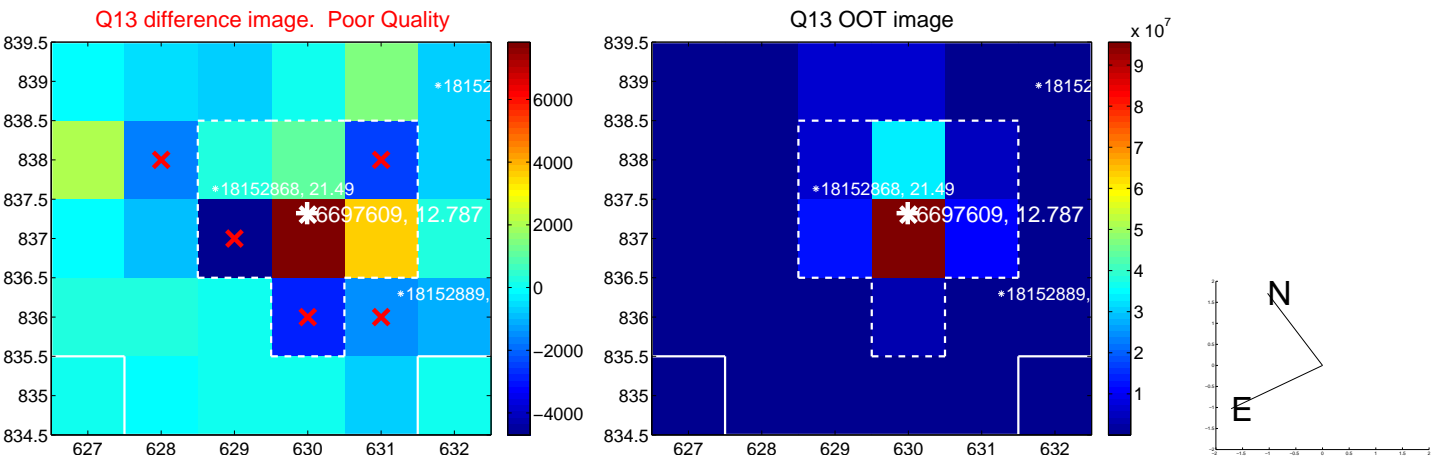
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



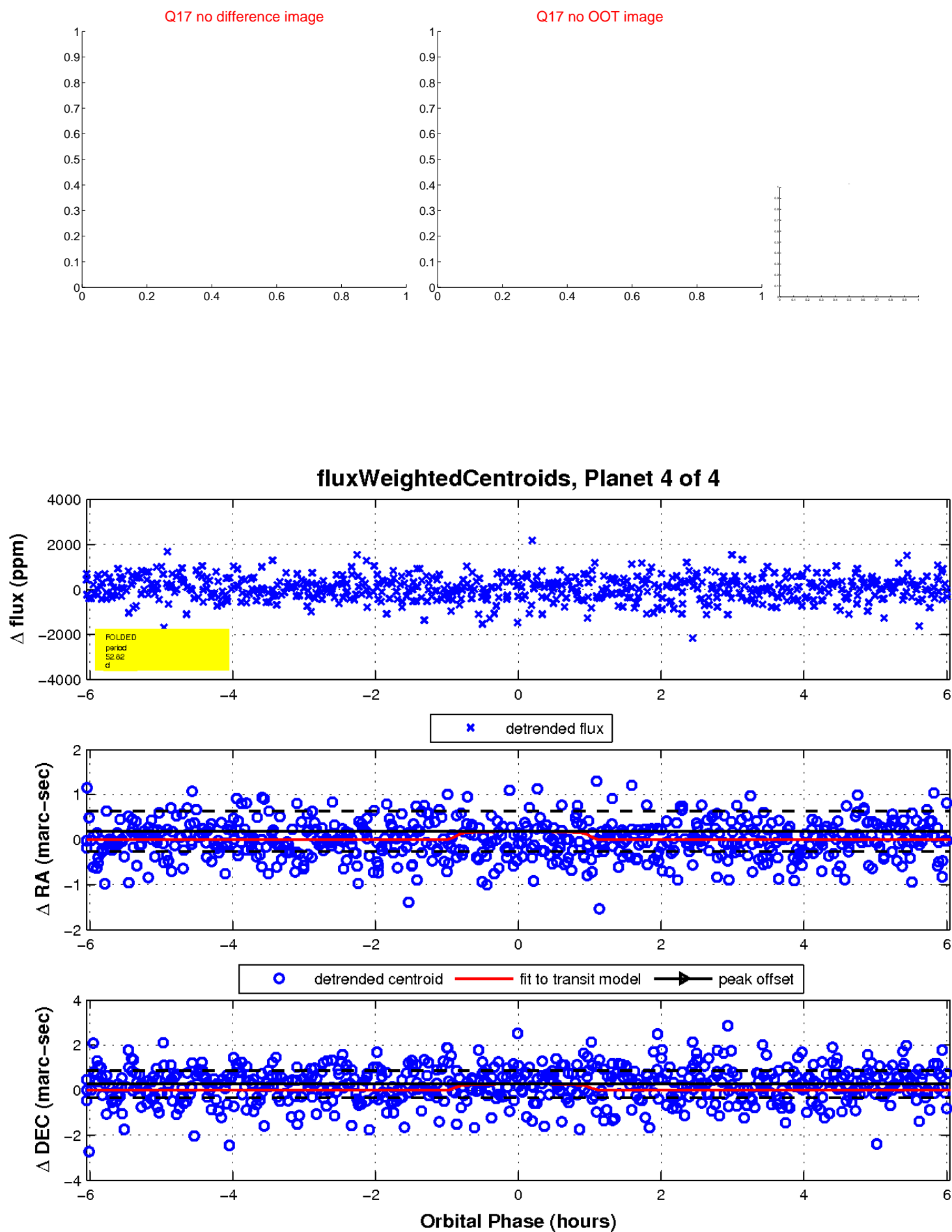
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

