

KIC 007199060

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})
007199060-01	OBS	4152.01	64.190661	191.619631	534.6	7.202	16.2	18.4	2.76	6951	6.74	117.18
007199060-02	OBS	No	0.566791	131.645540	28.2	5.609	11.8	12.4	2.76	6951	1.49	64206.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007199060-01	OBS	PC	0.97	0	0	0	0	NO_COMMENT
007199060-02	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH

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 007199060-01

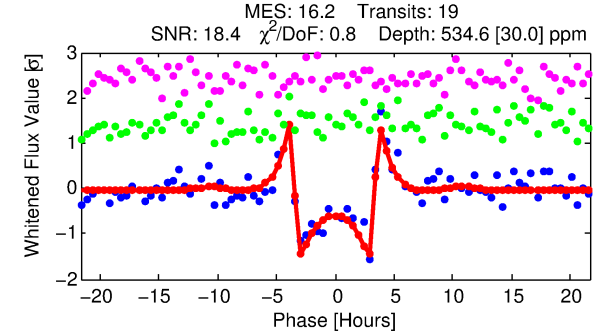
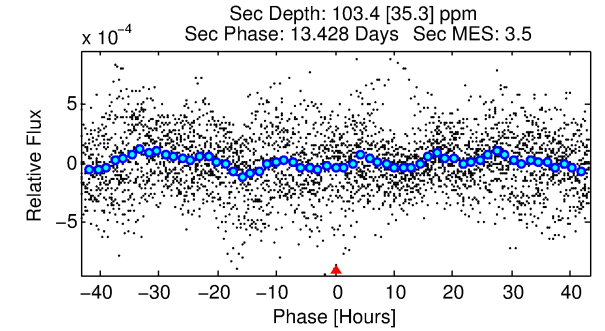
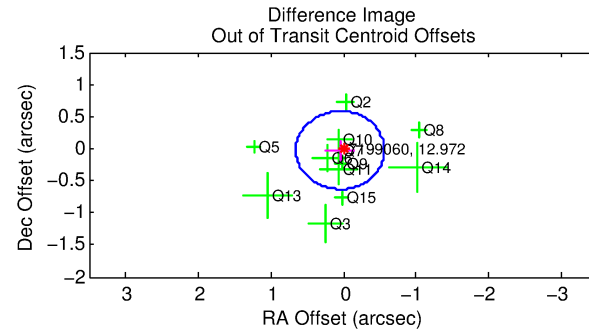
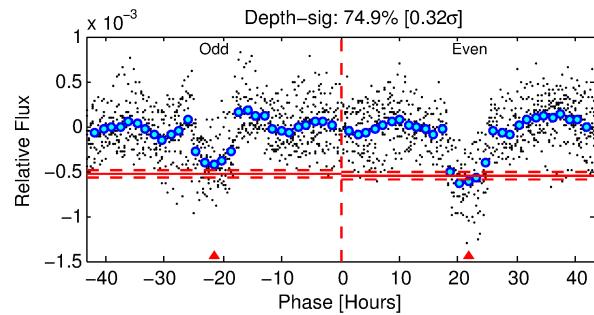
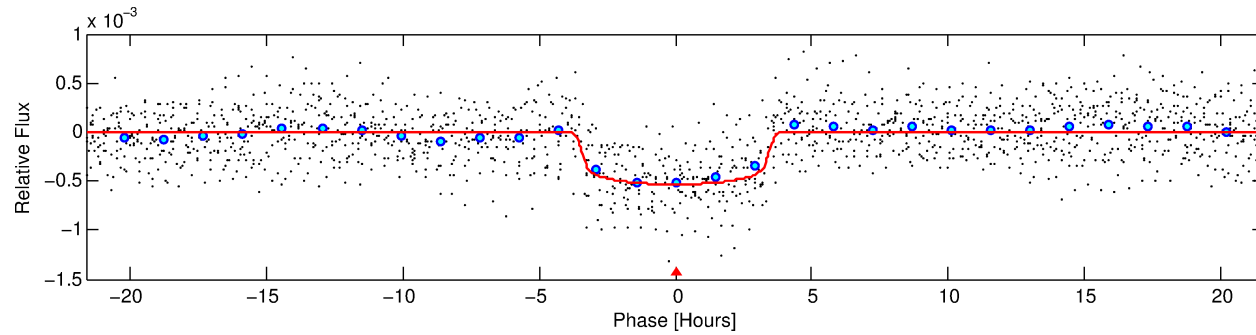
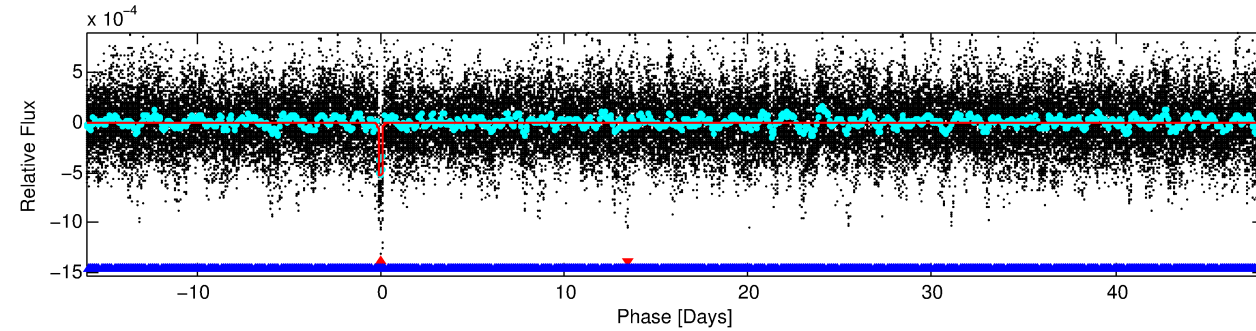
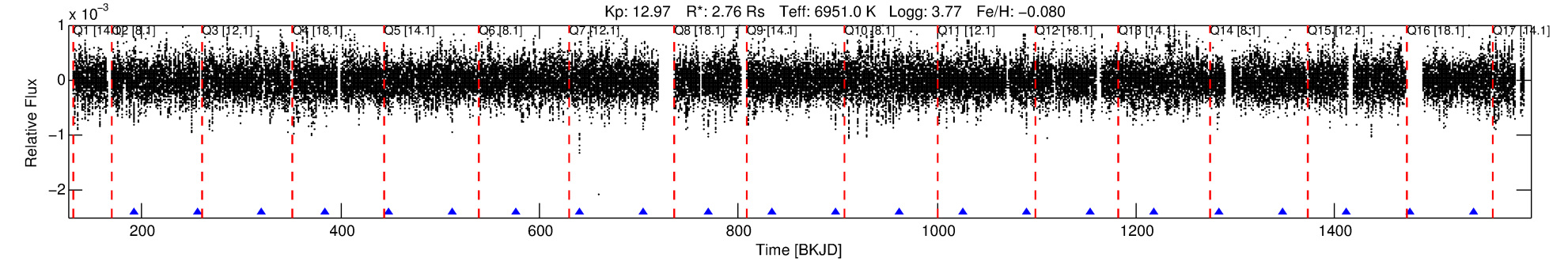
No Significant Match Found

DV One-Page Summary

KIC: 7199060 Candidate: 1 of 2 Period: 64.191 d

KOI: K04152.01 Corr: 0.856

Kp: 12.97 R*: 2.76 Rs Teff: 6951.0 K Logg: 3.77 Fe/H: -0.080



DV Fit Results:

Period = 64.19066 [0.00020] d
Epoch = 191.6196 [0.0026] BKJD
Rp/R* = 0.0224 [0.0021]
a/R* = 54.41 [26.40]
b = 0.64 [0.45]
Seff = 117.18 [59.92]
Teq = 839 [107] K
Rp = 6.74 [2.35] Re
a = 0.3685 [0.1154] AU
Ag = 169.96 [106.66] [1.58σ]
Teffp = 4683 [486] K [7.73σ]

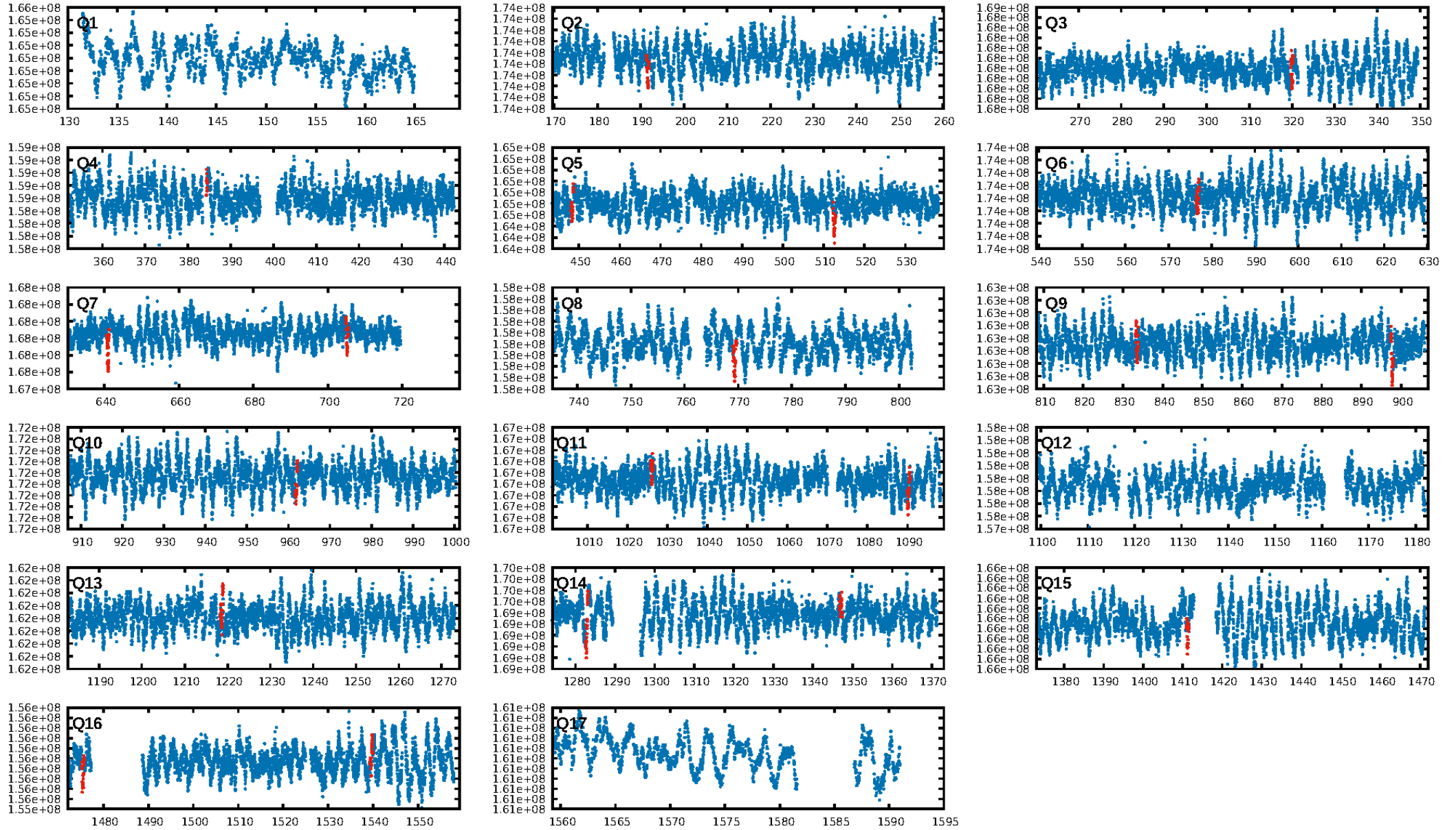
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [167.28σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 25.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [19/19]
GhostDiagnostic-chr: 9.283
Centroid-sig: 1.0%
Centroid-so: 0.242 arcsec [1.32σ]
OotOffset-rm: 0.054 arcsec [0.26σ]
KicOffset-rm: 0.102 arcsec [0.51σ]
OotOffset-st: 4/4/1/3 [12]
KicOffset-st: 4/4/1/3 [12]
DiffImageQuality-fgm: 0.92 [11/12]
DiffImageOverlap-fno: 0.00 [0/13]

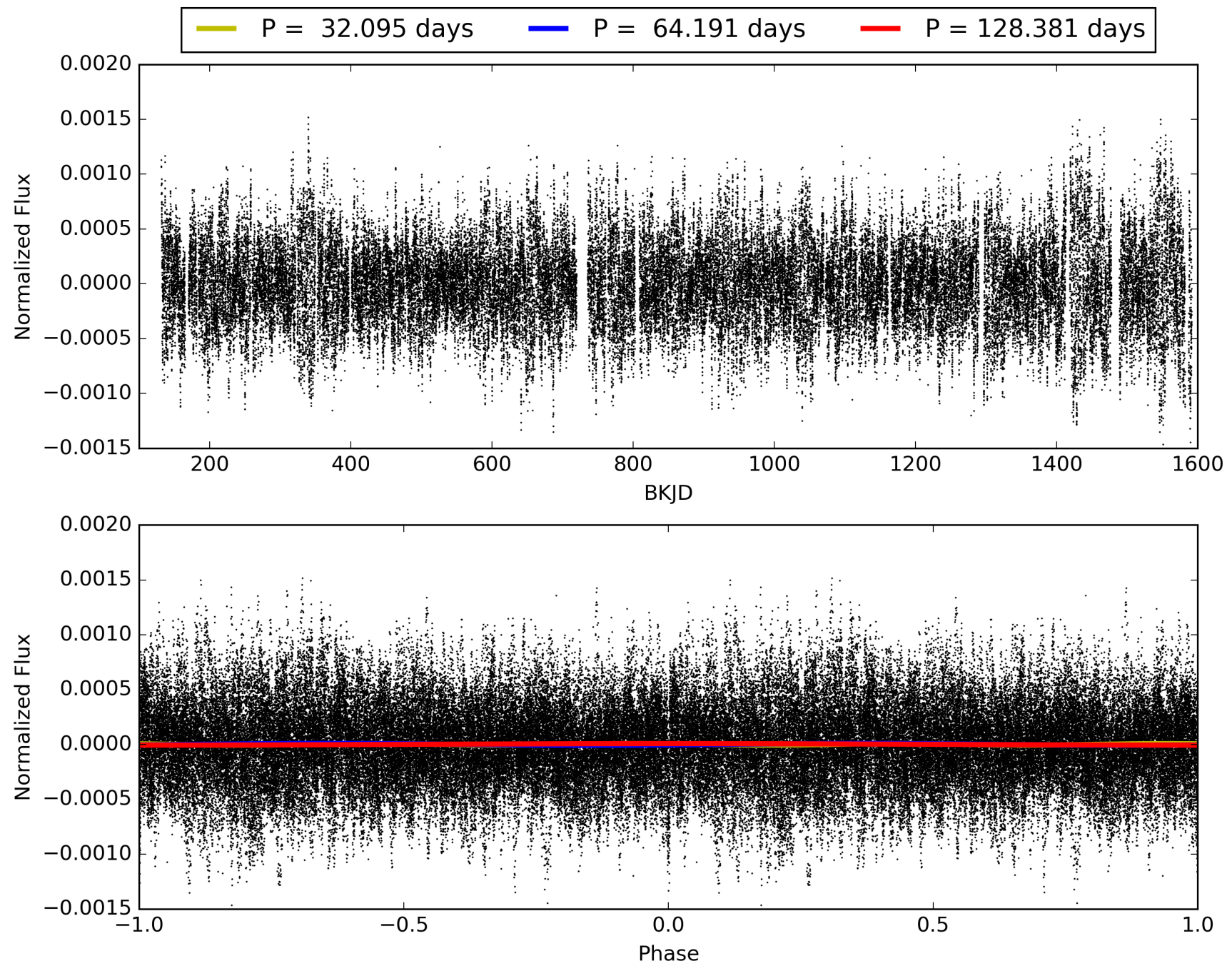
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 17:36:48 Z

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

TCE 007199060-01, PDC Light Curves

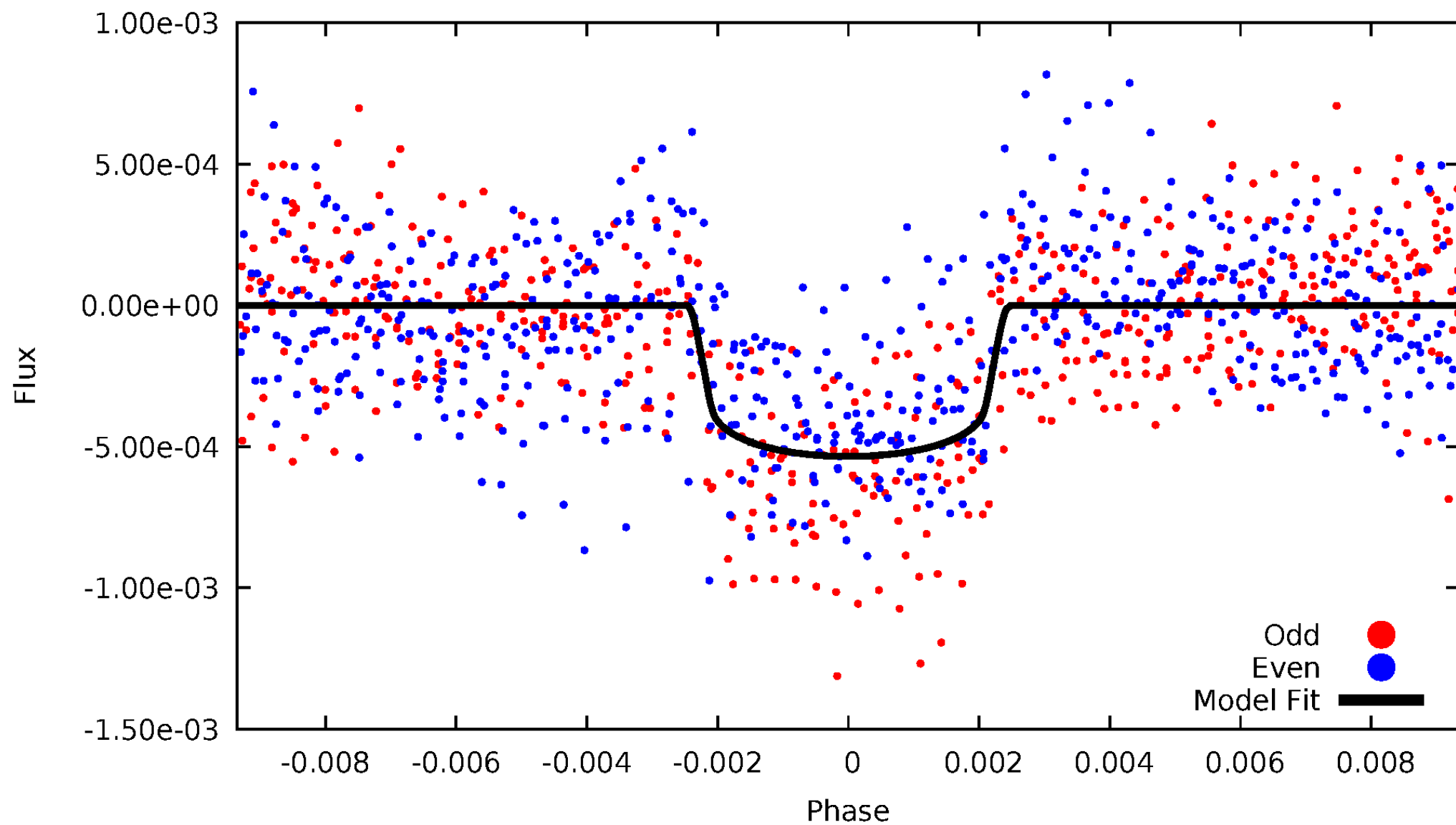


TCE 007199060-01



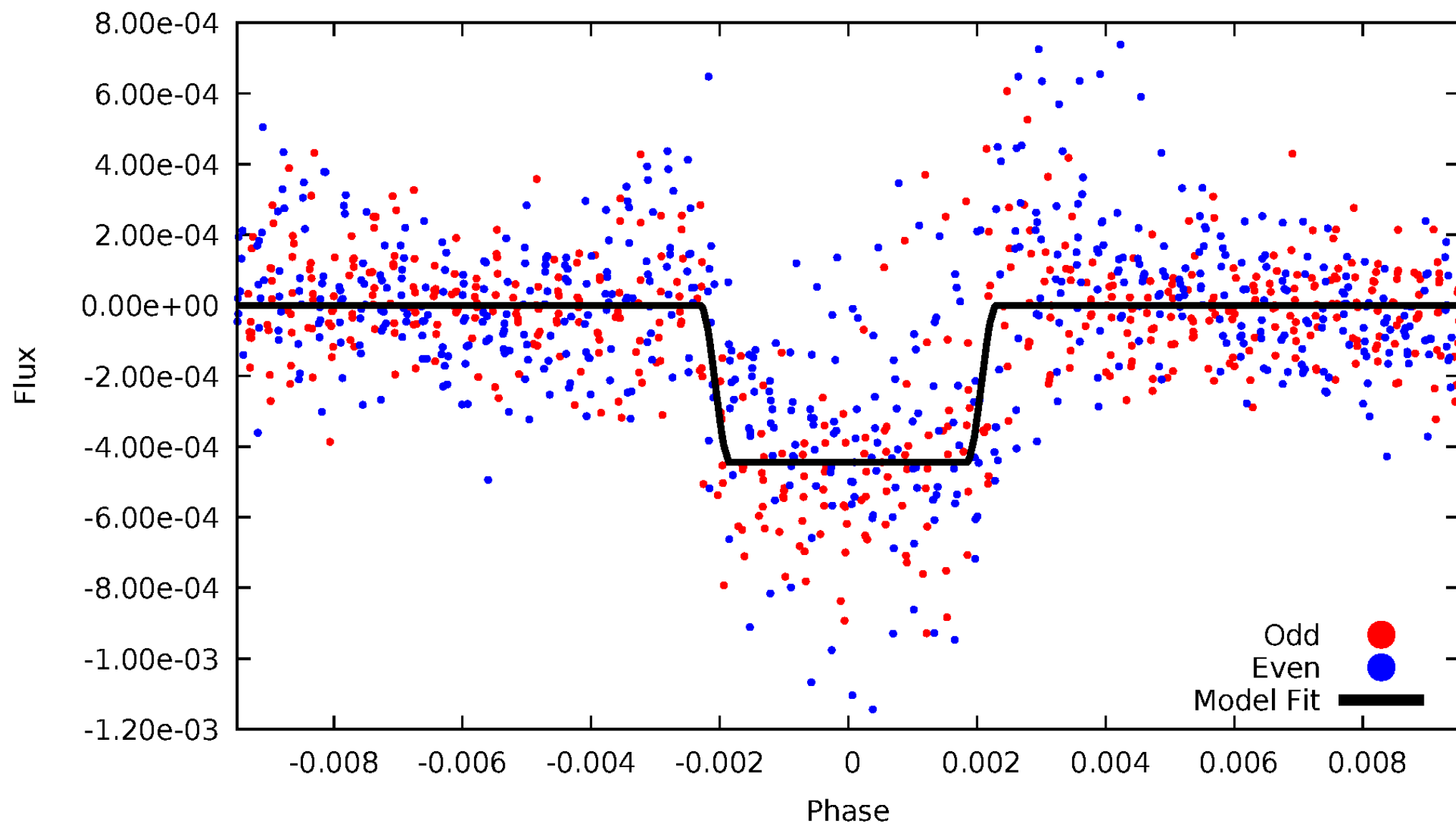
DV Odd/Even

TCE 007199060-01

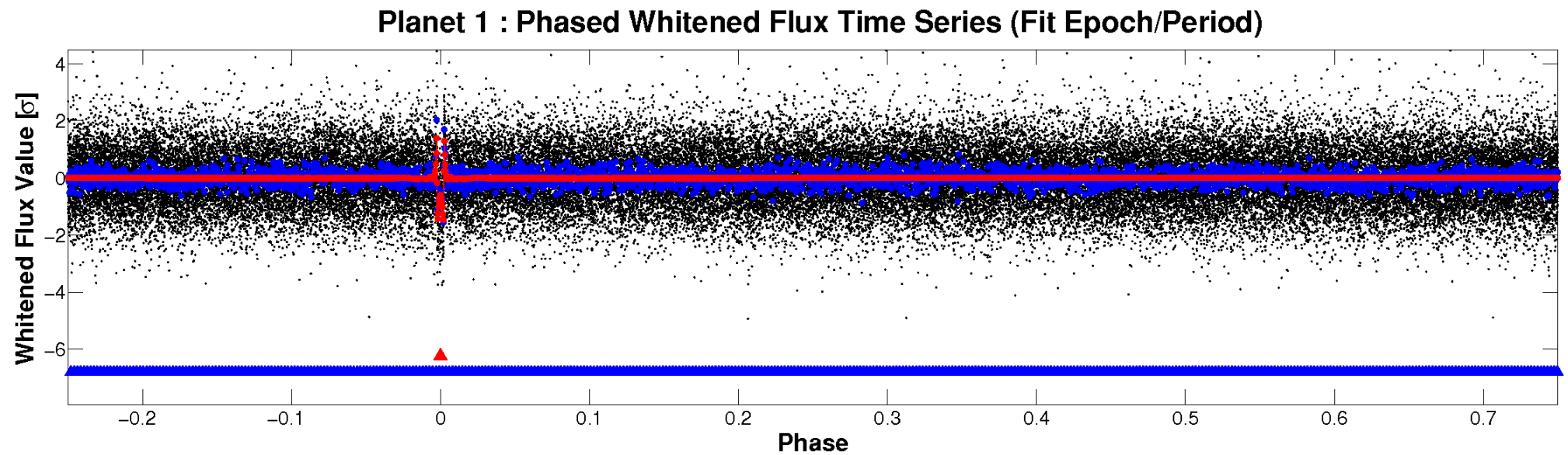
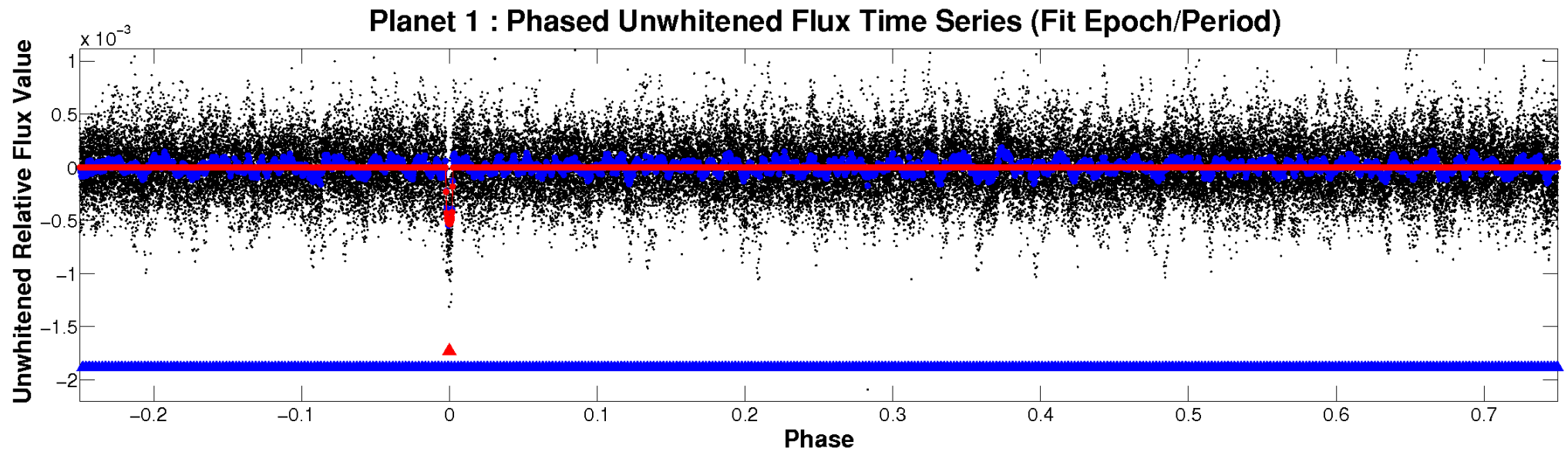


ALT Odd/Even

TCE 007199060-01

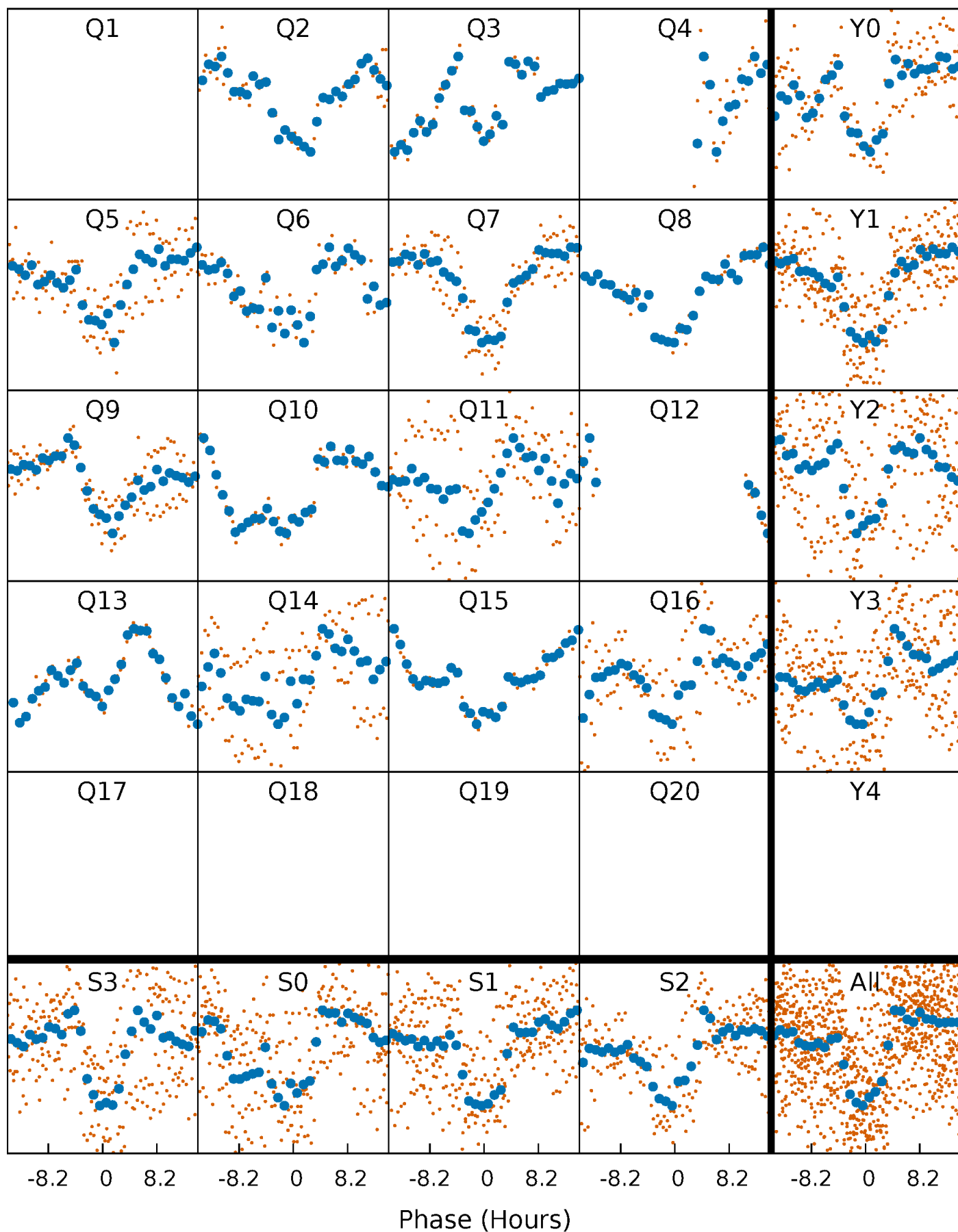


Non-Whitened Vs. Whitened Light Curve



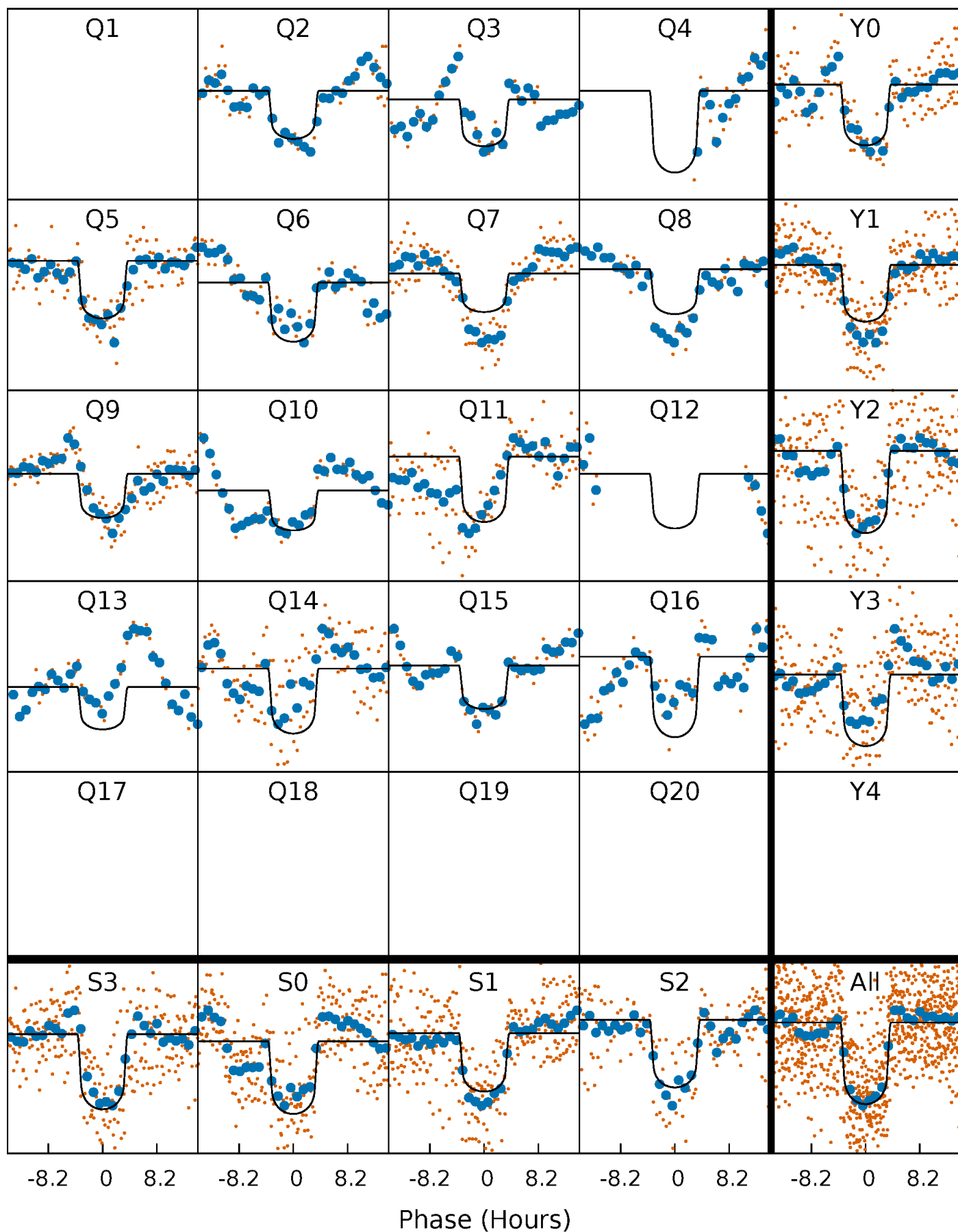
PDC Quarter-Phased Transit Curves

TCE 007199060-01 P= 64.190661 Days $T_0=191.619631$ (BKJD)



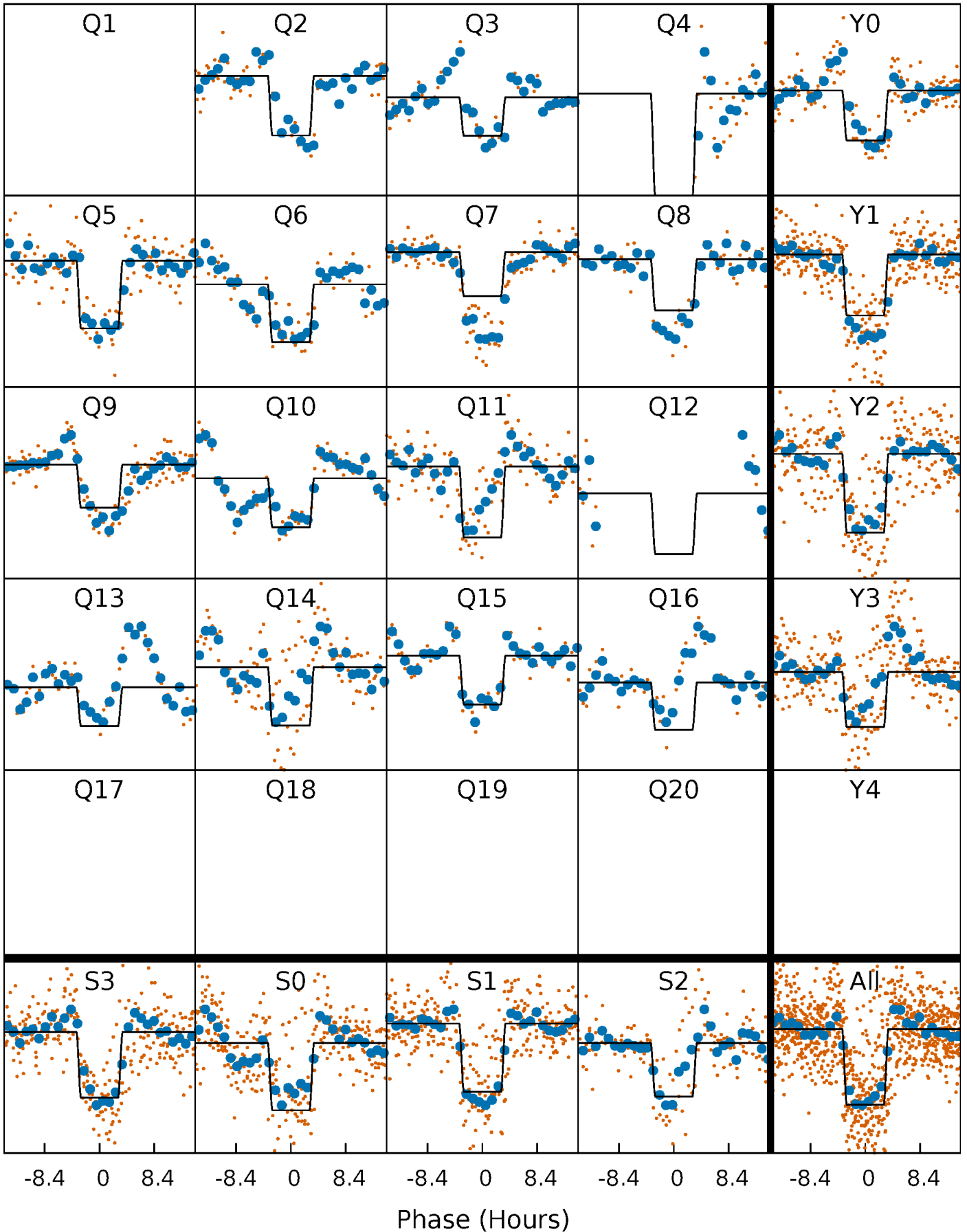
DV Quarter-Phased Transit Curves

TCE 007199060-01 P= 64.190661 Days $T_0=191.619631$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

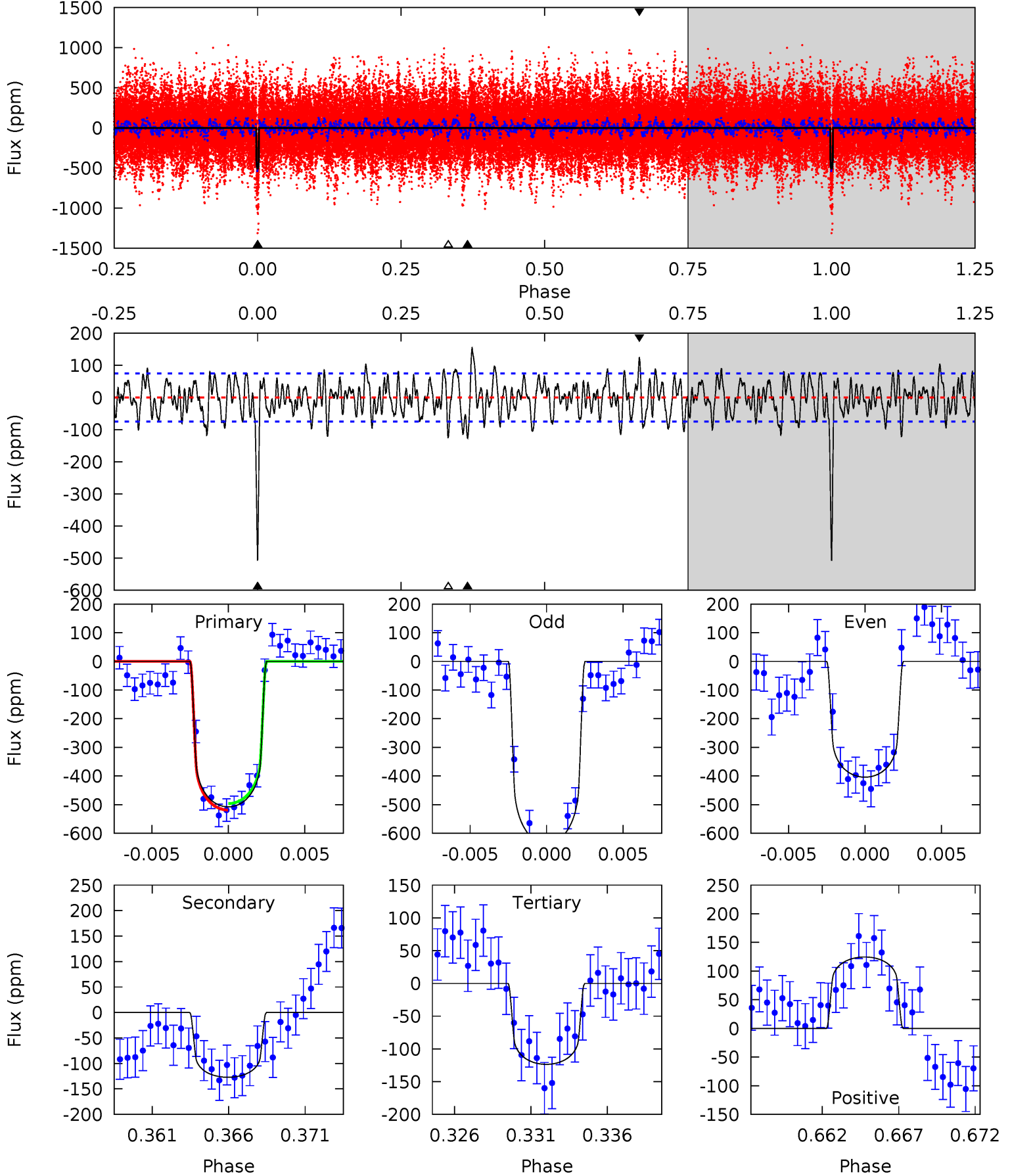
TCE 007199060-01 P= 64.191974 Days $T_0=191.603270$ (BKJD)



DV Model-Shift Uniqueness Test

007199060-01, P = 64.190661 Days, E = 127.428970 Days

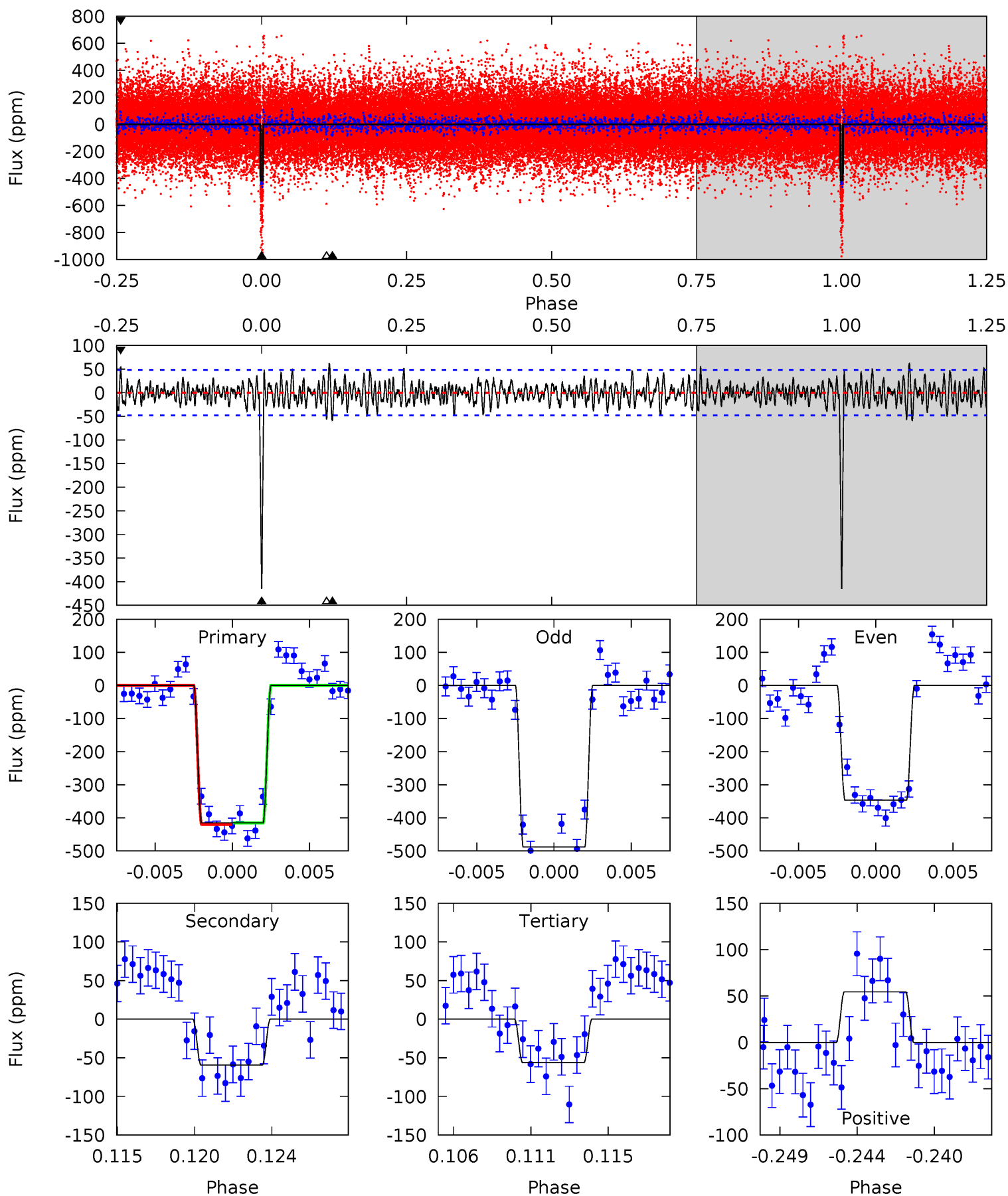
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.0	8.77	8.53	8.60	5.16	2.81	3.19	26.5	26.4	0.24	0.17	7.97	0.88	0.23	0.78



Alt Model-Shift Uniqueness Test

007199060-01, P = 64.191974 Days, E = 127.411296 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44.7	6.38	6.05	5.86	5.17	2.83	1.89	38.6	38.8	0.34	0.52	7.62	1.04	0.13	0.24



Stellar Parameters For KIC 007199060

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6951^{+184}_{-245}	$3.766^{+0.285}_{-0.095}$	$-0.080^{+0.250}_{-0.300}$	$2.758^{+0.499}_{-0.927}$	$1.618^{+0.219}_{-0.267}$	$0.109^{+0.209}_{-0.032}$
	+3%/-4%	+8%/-3%	+312%/-375%	+18%/-34%	+14%/-17%	+192%/-30%
Source	PHO1	FLK73	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 007199060-01 / KOI 4152.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-127 ± 14	$6.47^{+1.09}_{-1.14}$	1146^{+67}_{-88}	4978^{+267}_{-241}	227^{+110}_{-58}
Alt.	-59 ± 9	$6.09^{+0.99}_{-1.12}$	1147^{+74}_{-88}	4371^{+259}_{-227}	120^{+56}_{-36}

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 $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

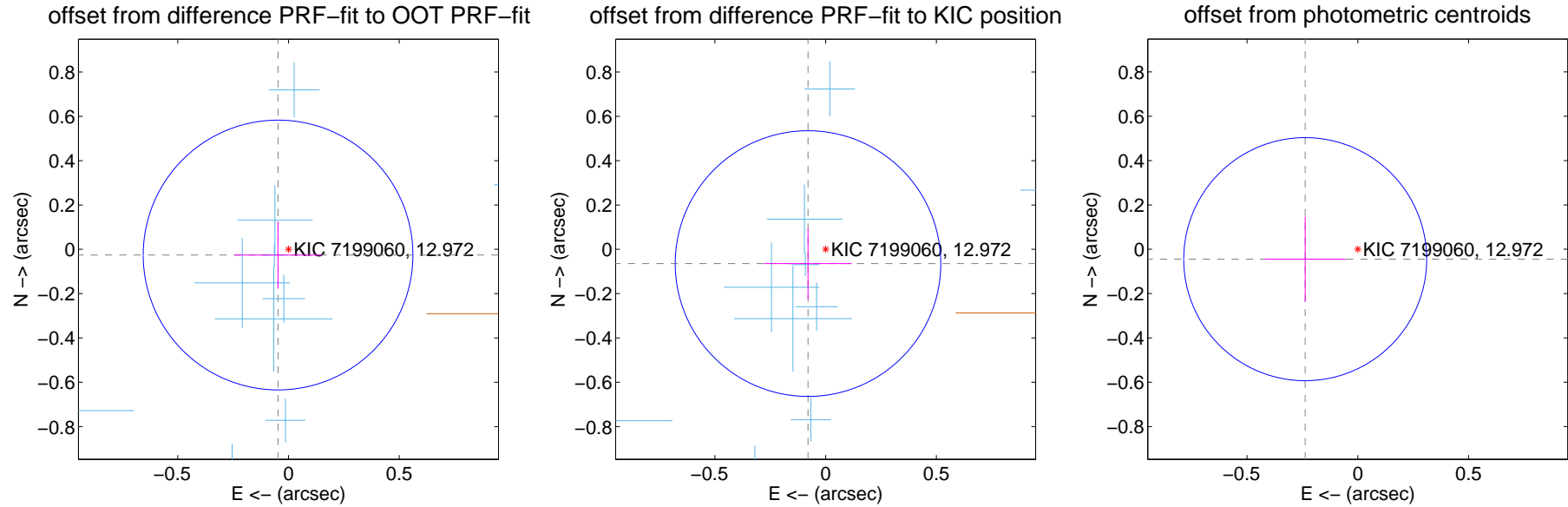
DV Centroid Data

Supplemental centroid analysis for 007199060-01. Kepler magnitude: 12.97. Transit SNR 18.41

There are 11 quarters with good PRF difference image offsets

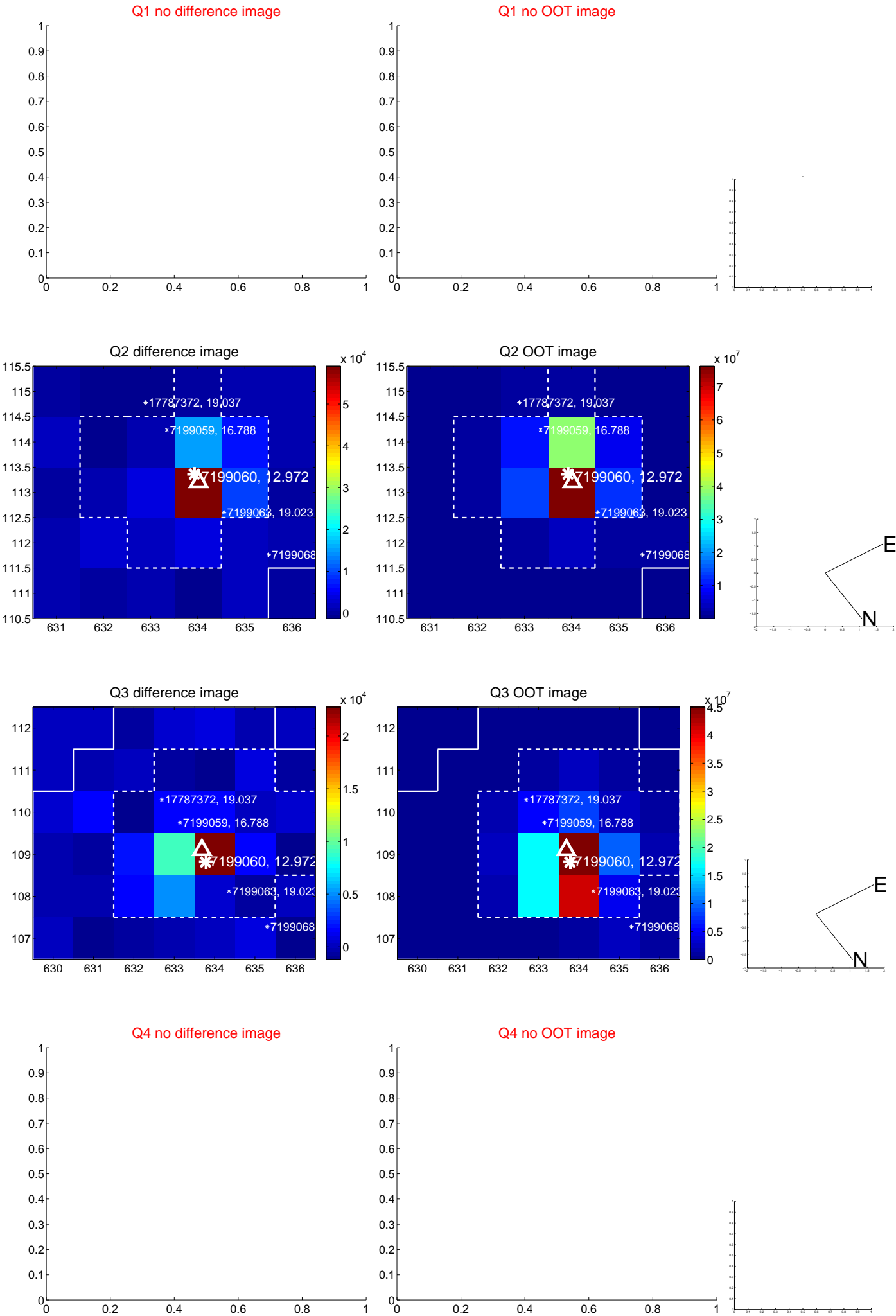
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.054 ± 0.203	0.26	0.047 ± 0.197	-0.026 ± 0.152
PRF-fit source offset from KIC position	0.102 ± 0.200	0.51	0.080 ± 0.198	-0.064 ± 0.158
photometric centroid source offset	0.24 ± 0.18	1.32	0.24 ± 0.18	-0.04 ± 0.19

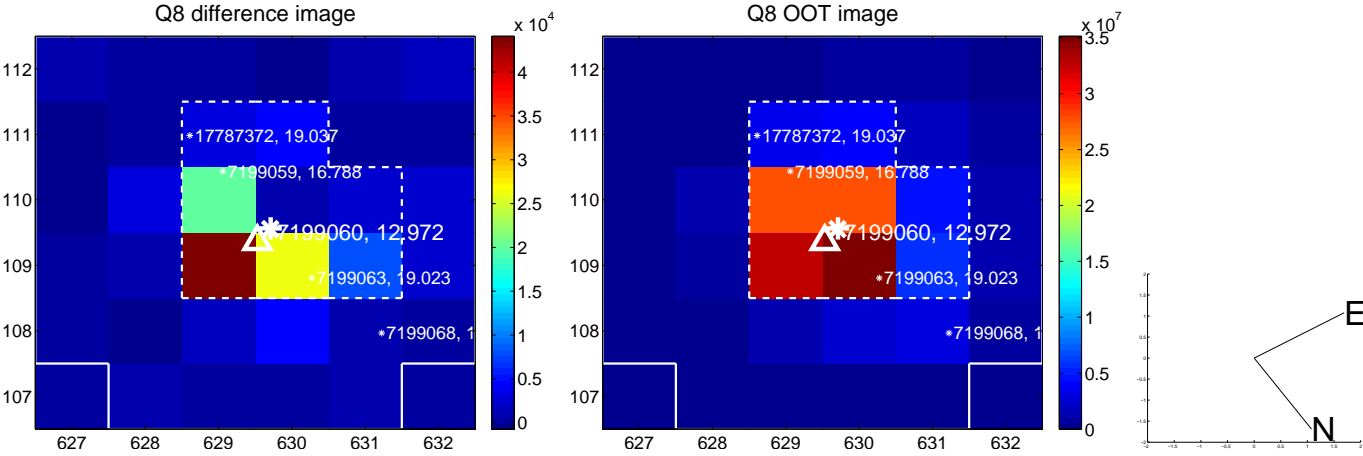
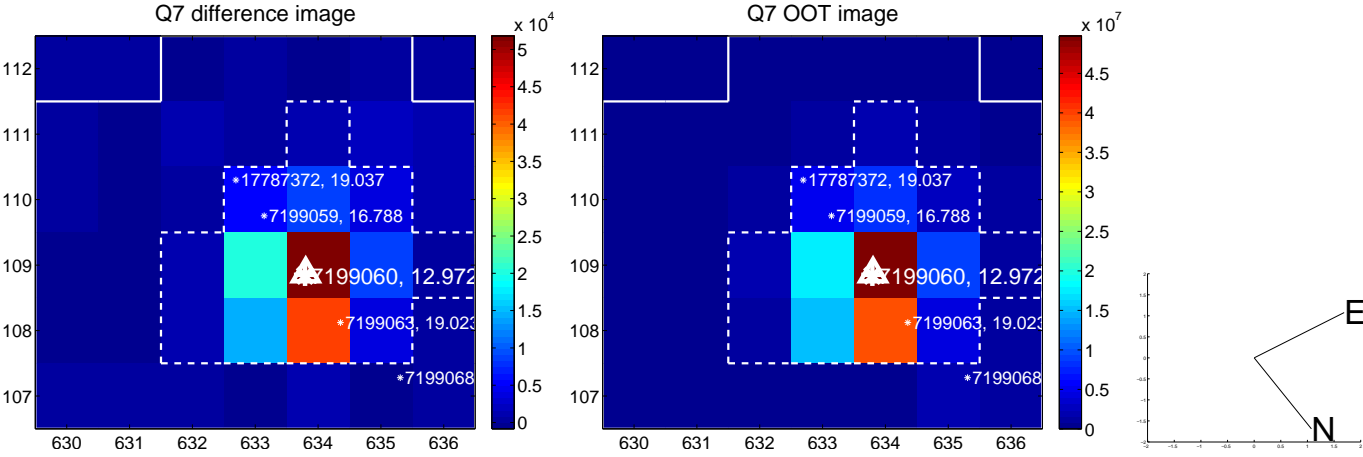
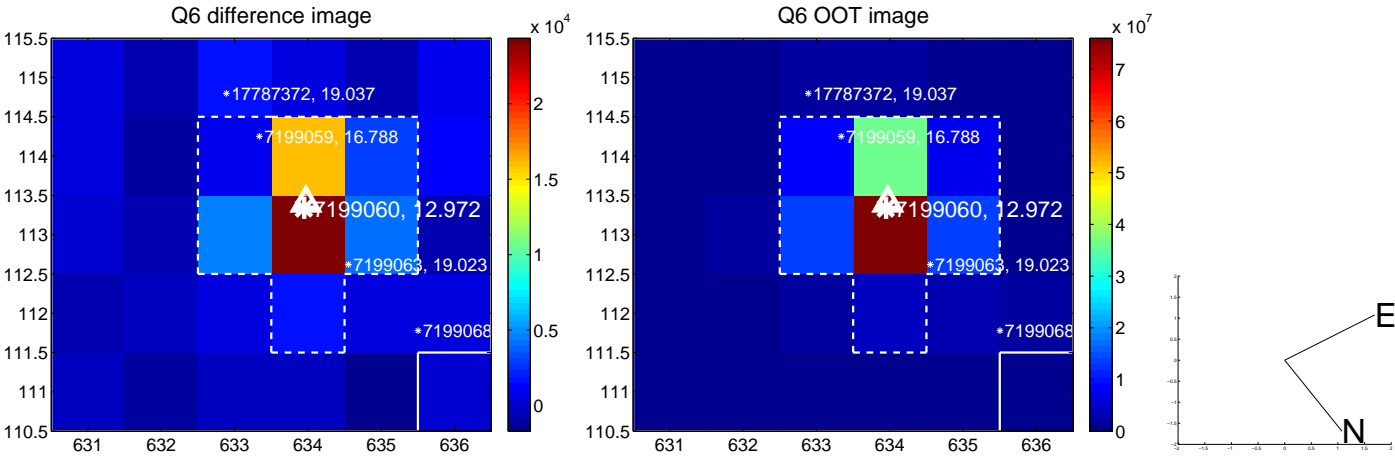
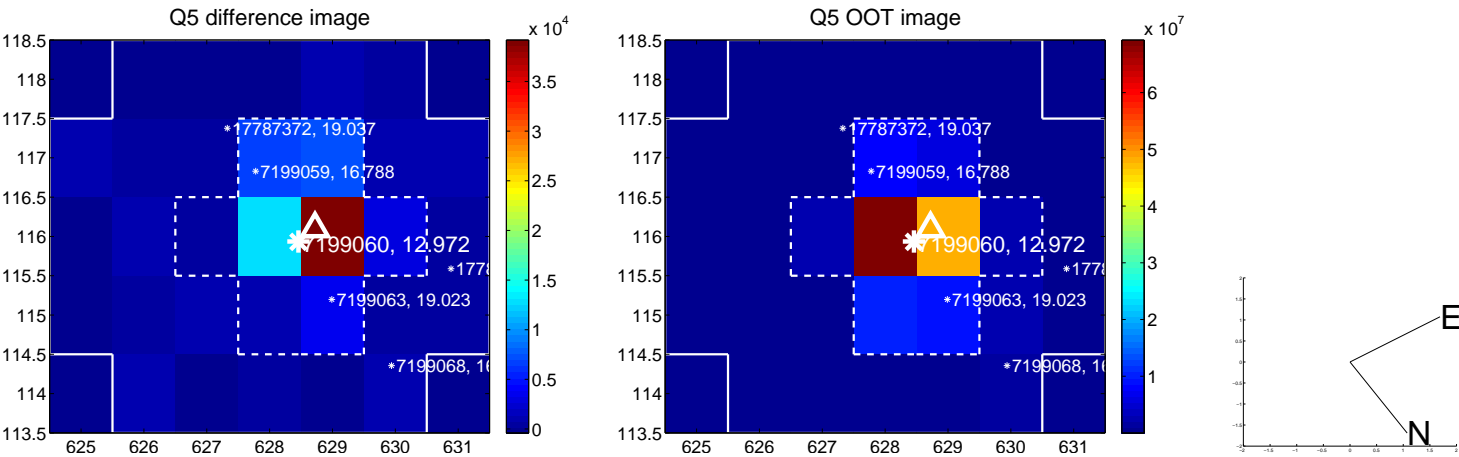


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- 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.

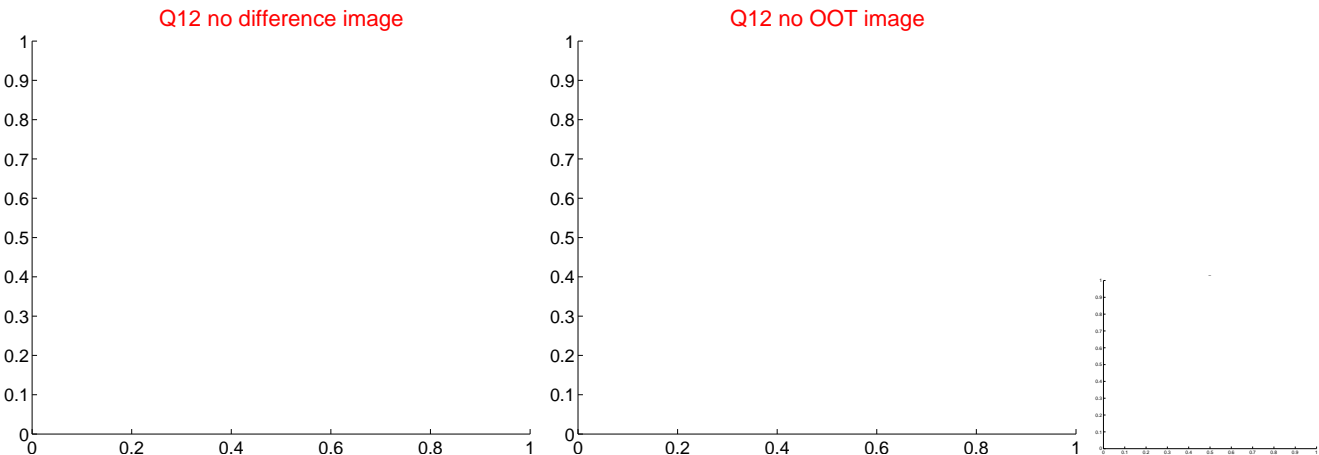
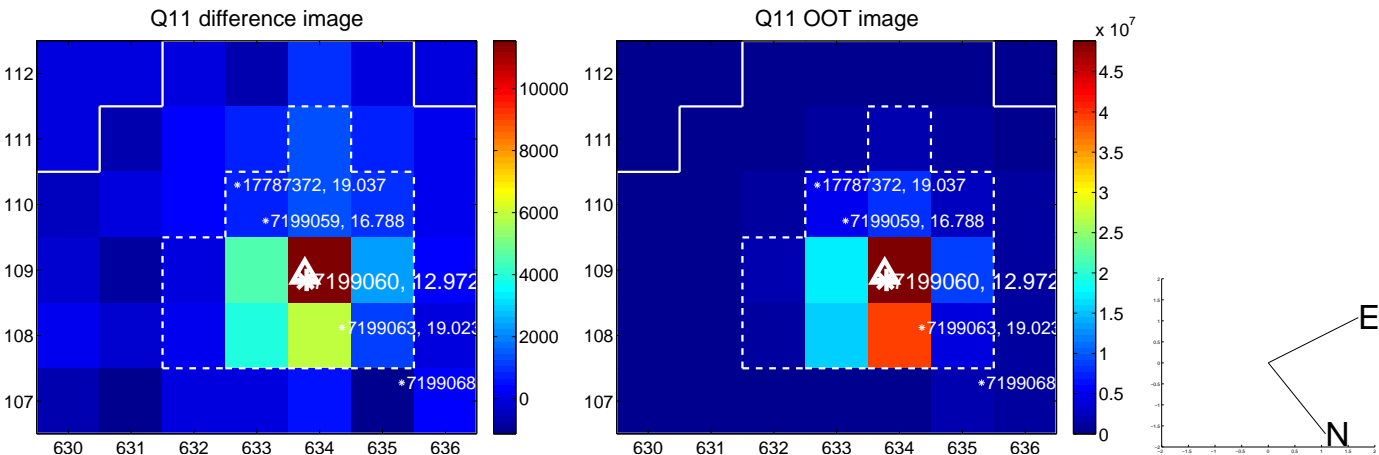
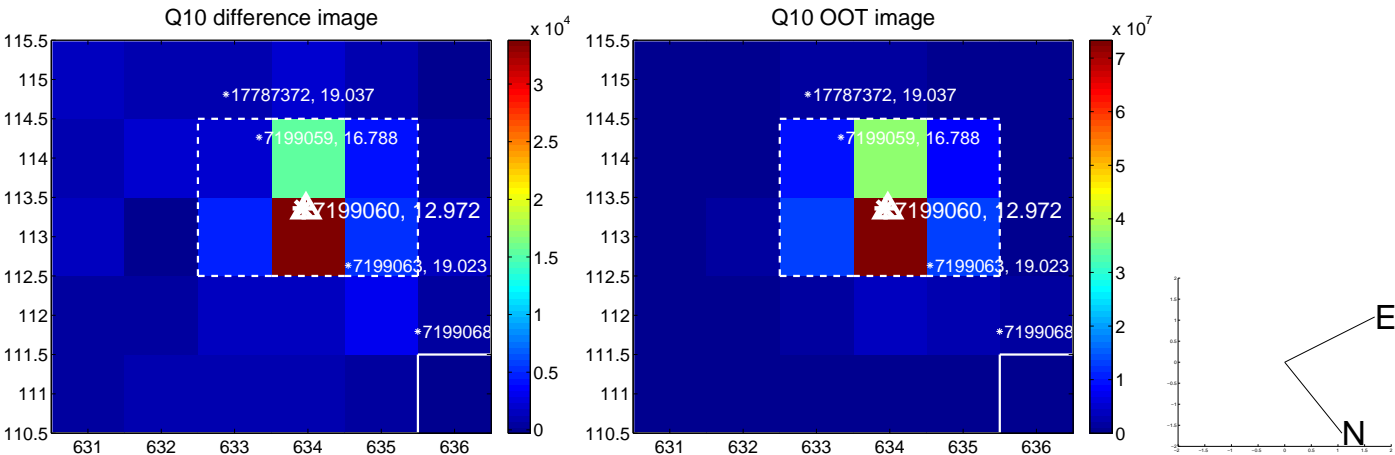
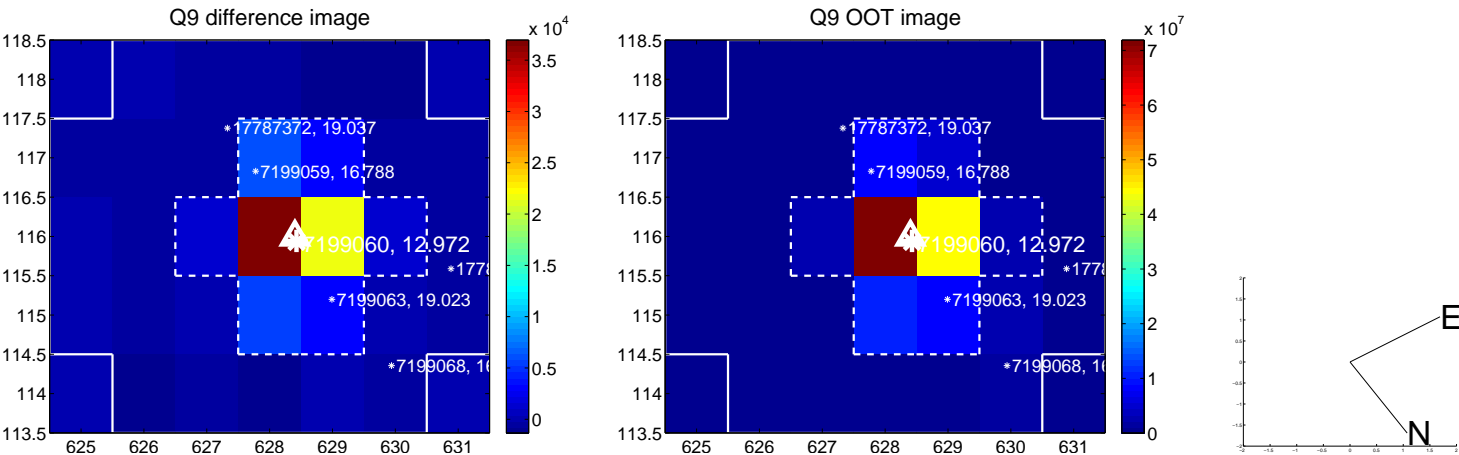
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



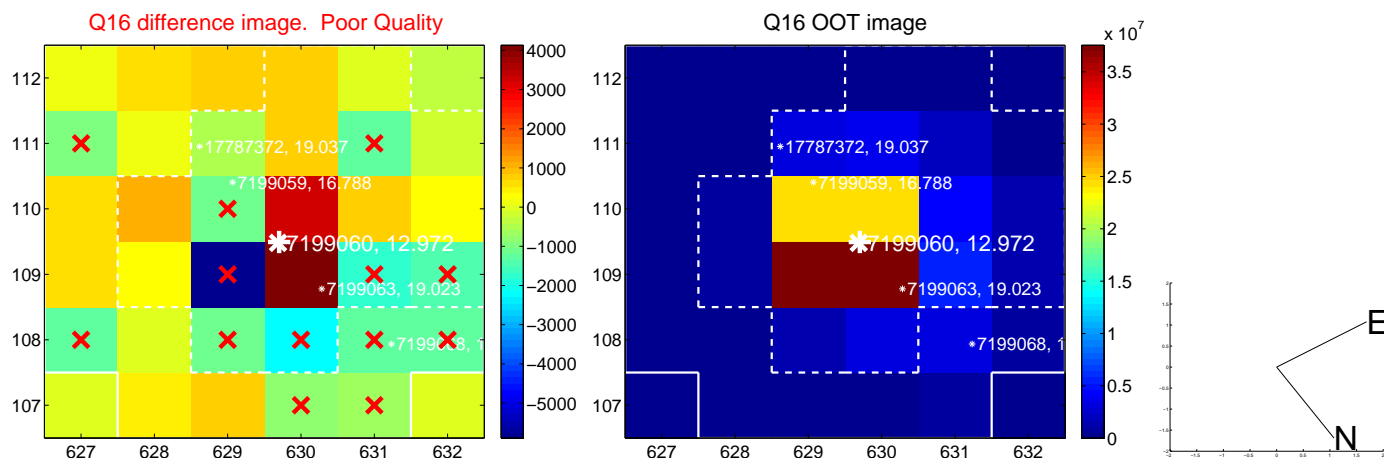
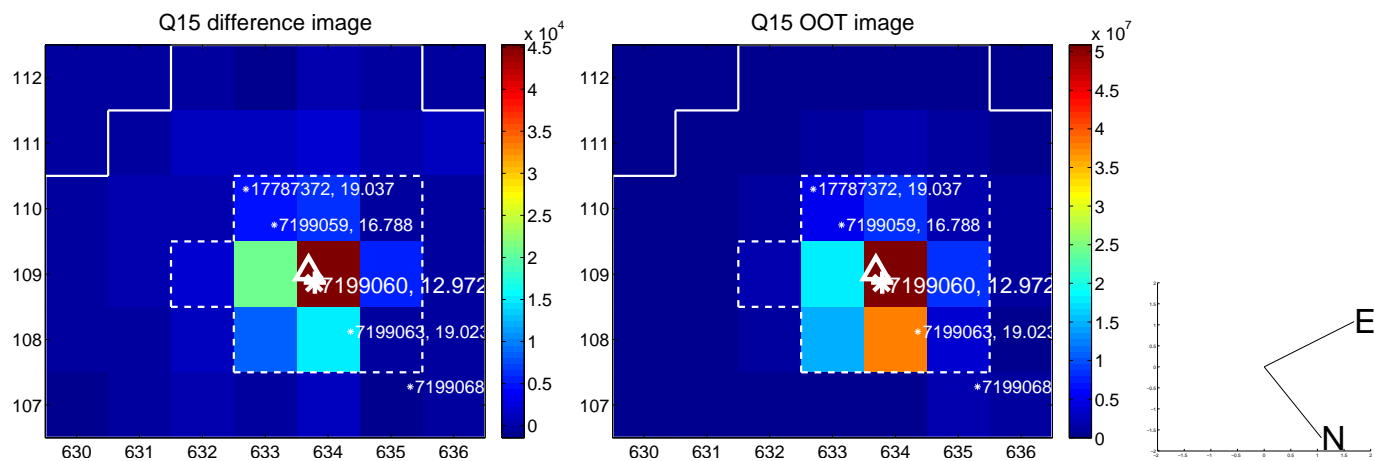
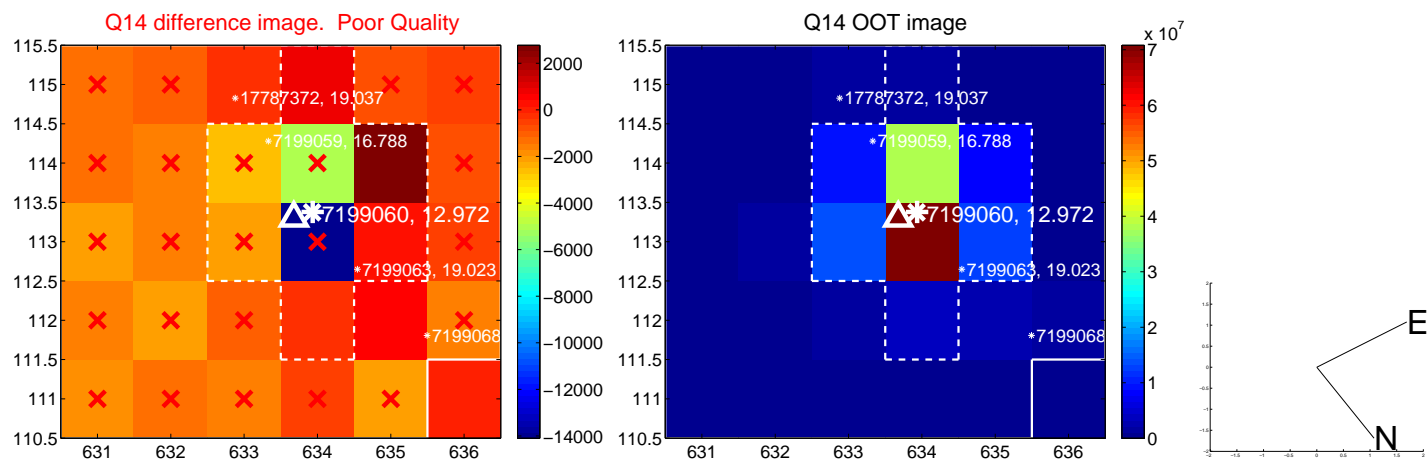
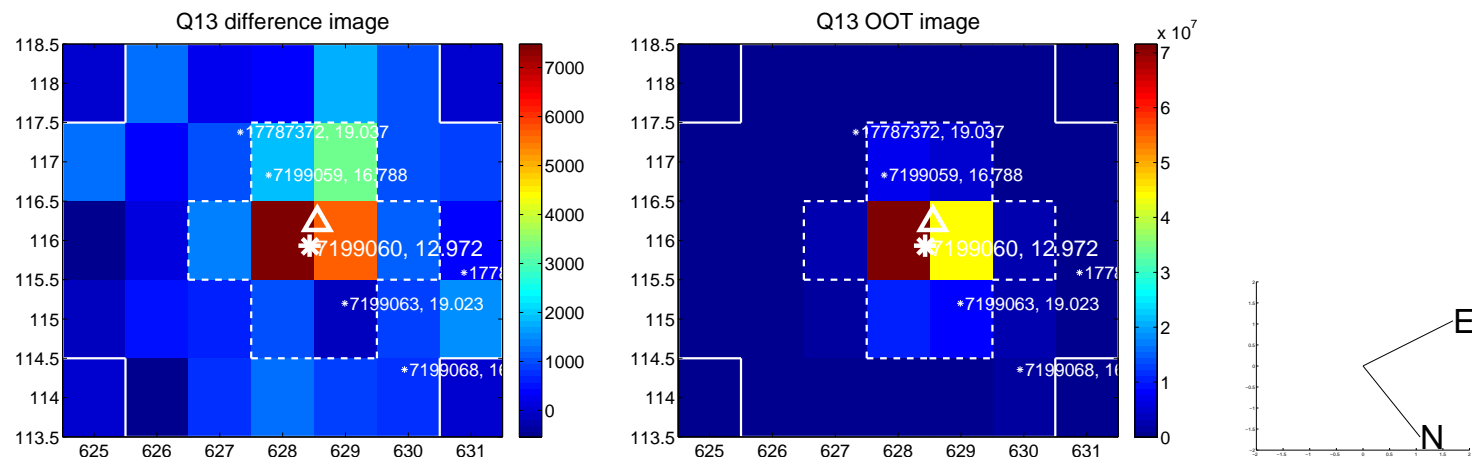
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



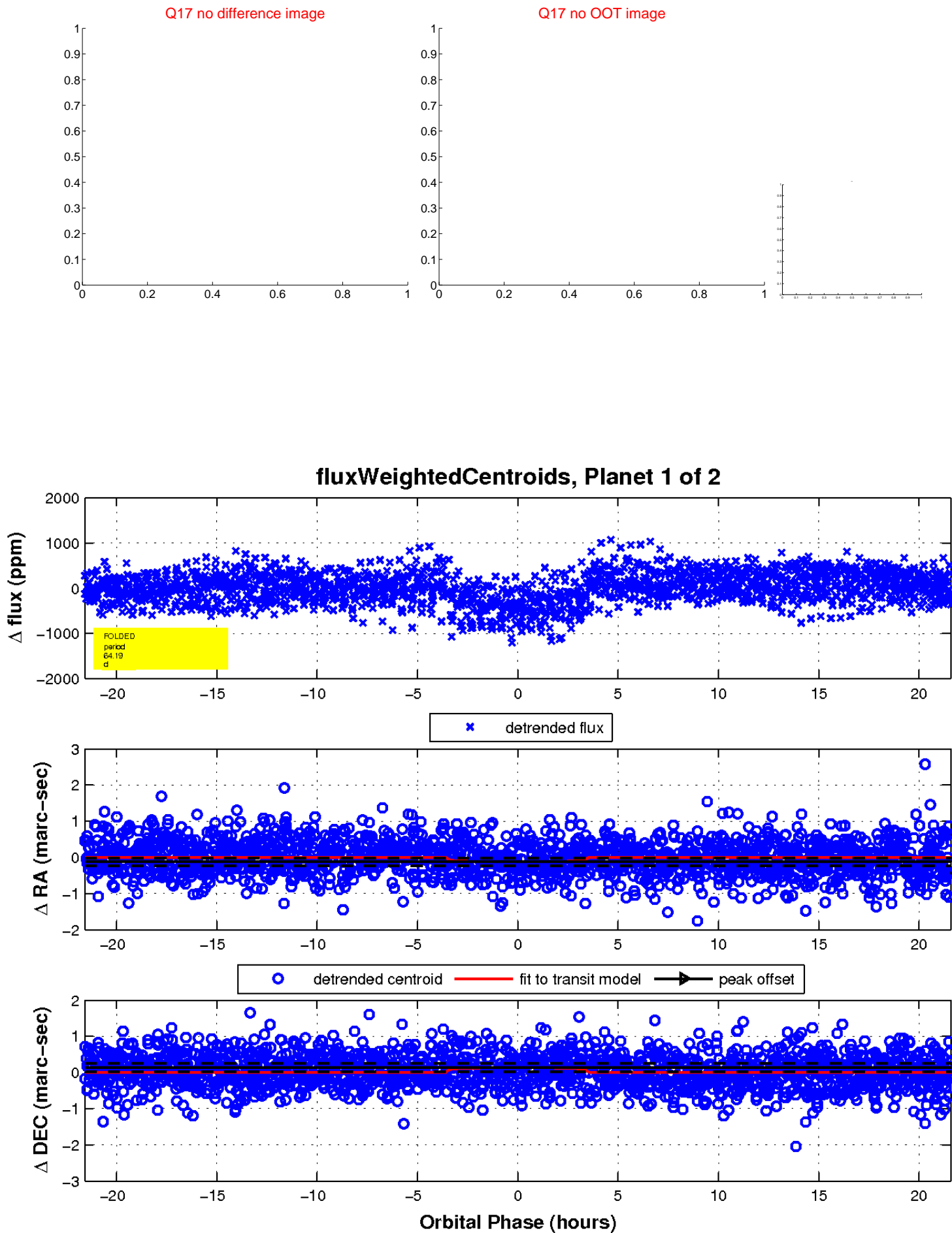
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

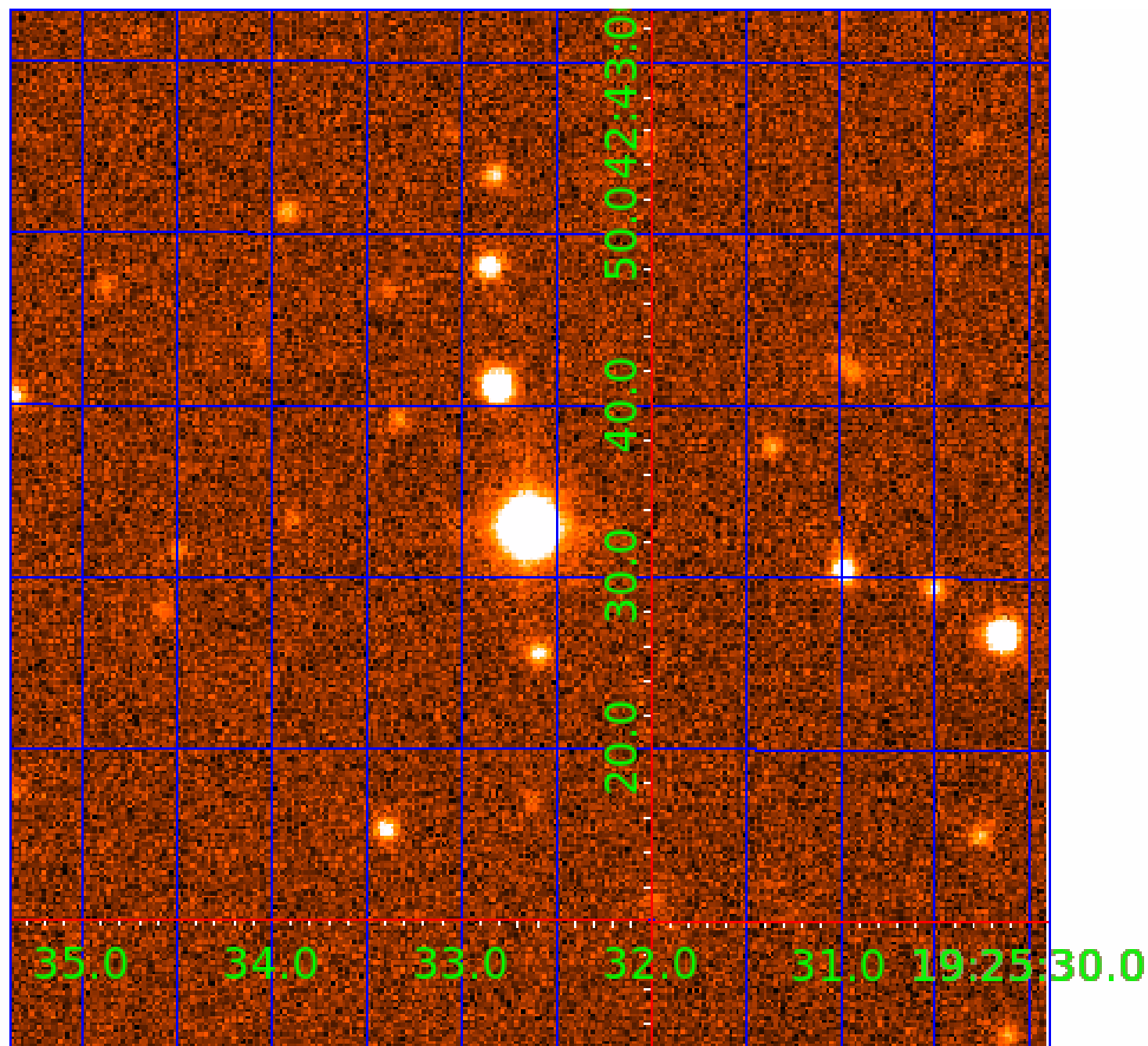


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007199060

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})
007199060-01	OBS	4152.01	64.190661	191.619631	534.6	7.202	16.2	18.4	2.76	6951	6.74	117.18
007199060-02	OBS	No	0.566791	131.645540	28.2	5.609	11.8	12.4	2.76	6951	1.49	64206.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007199060-01	OBS	PC	0.97	0	0	0	0	NO_COMMENT
007199060-02	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH

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 007199060-02

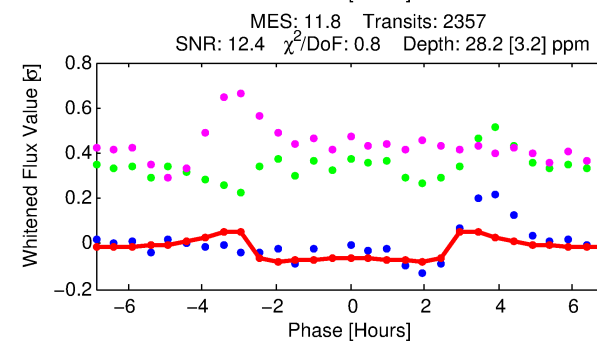
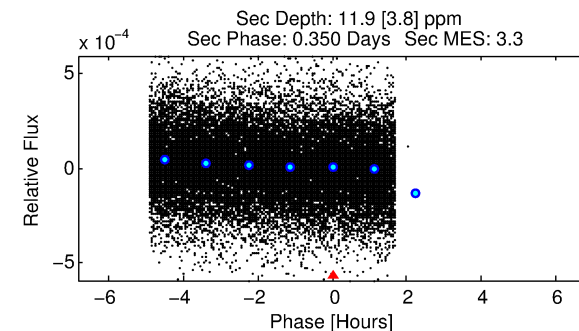
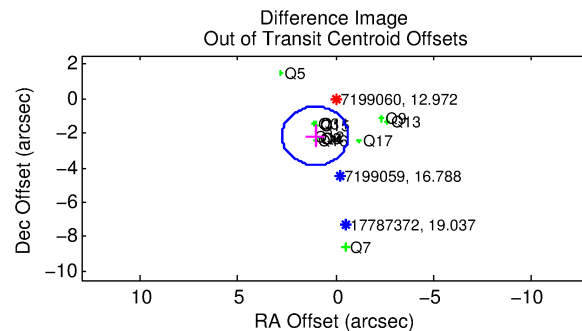
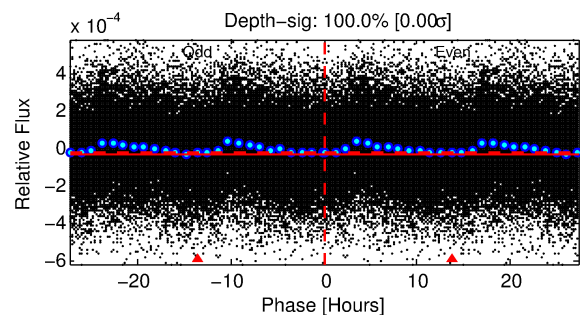
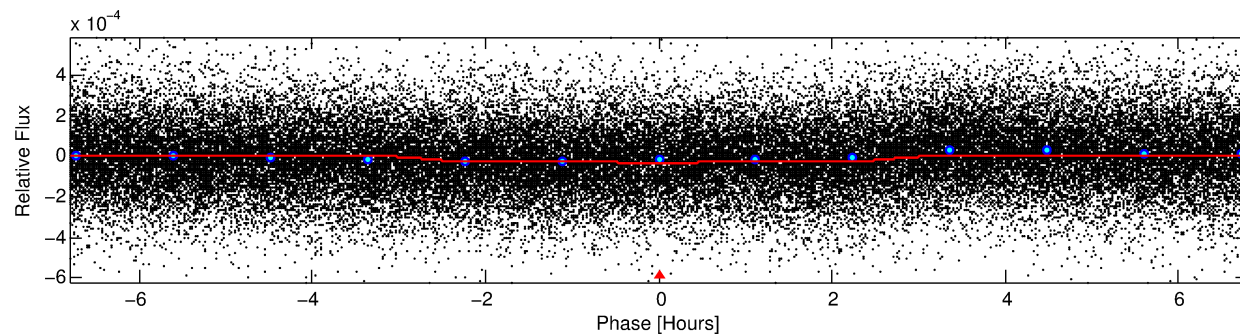
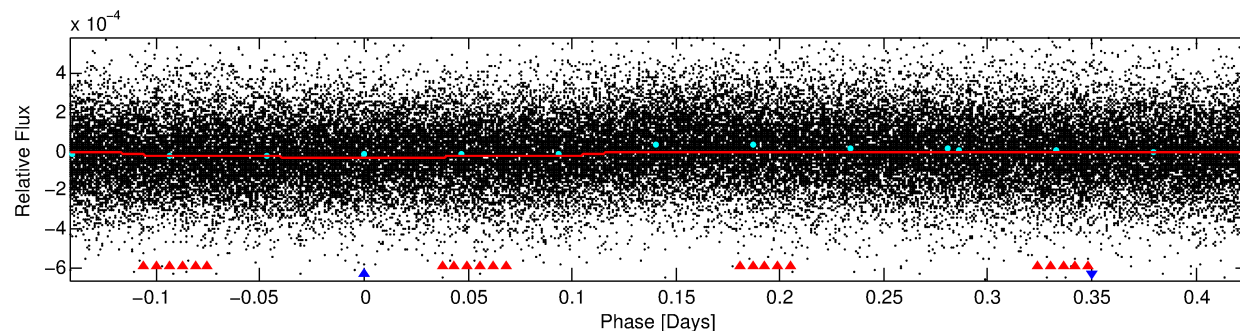
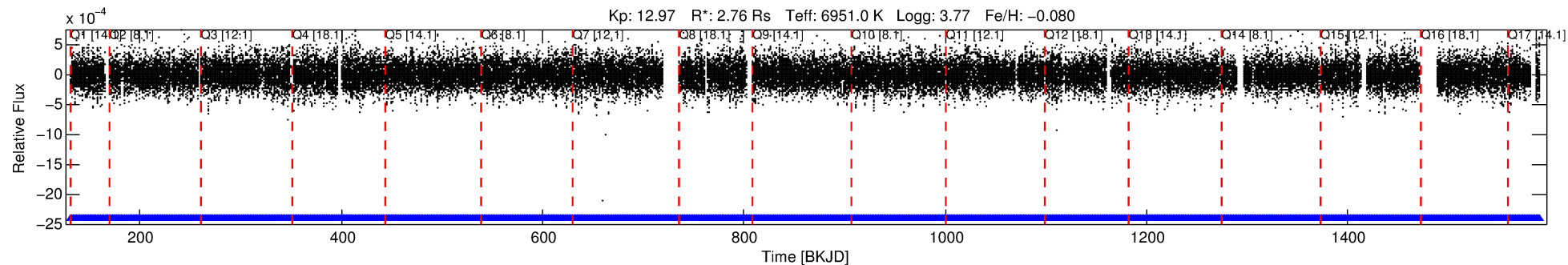
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
007199060-02	7199060	RR-Lyr-pri	7198959	1:1	275.8	64	-26	7.86	12.97	22261.00	Direct-PRF	0	1.28	15.63

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 7199060 Candidate: 2 of 2 Period: 0.567 d

KOI: K04152 Corr: No Ephemeris Match



DV Fit Results:

Period = 0.56679 [0.00001] d
Epoch = 131.6455 [0.0019] BKJD
Rp/R* = 0.0050 [0.0019]
a/R* = 1.04 [0.17]
b = 0.30 [6.65]
Seff = 64206.93 [32832.64]
Teq = 4059 [519] K
Rp = 1.49 [0.75] Re
a = 0.0157 [0.0049] AU
Ag = 0.73 [0.69] [-0.39 σ]
Teff = 5799 [1197] K [1.33 σ]

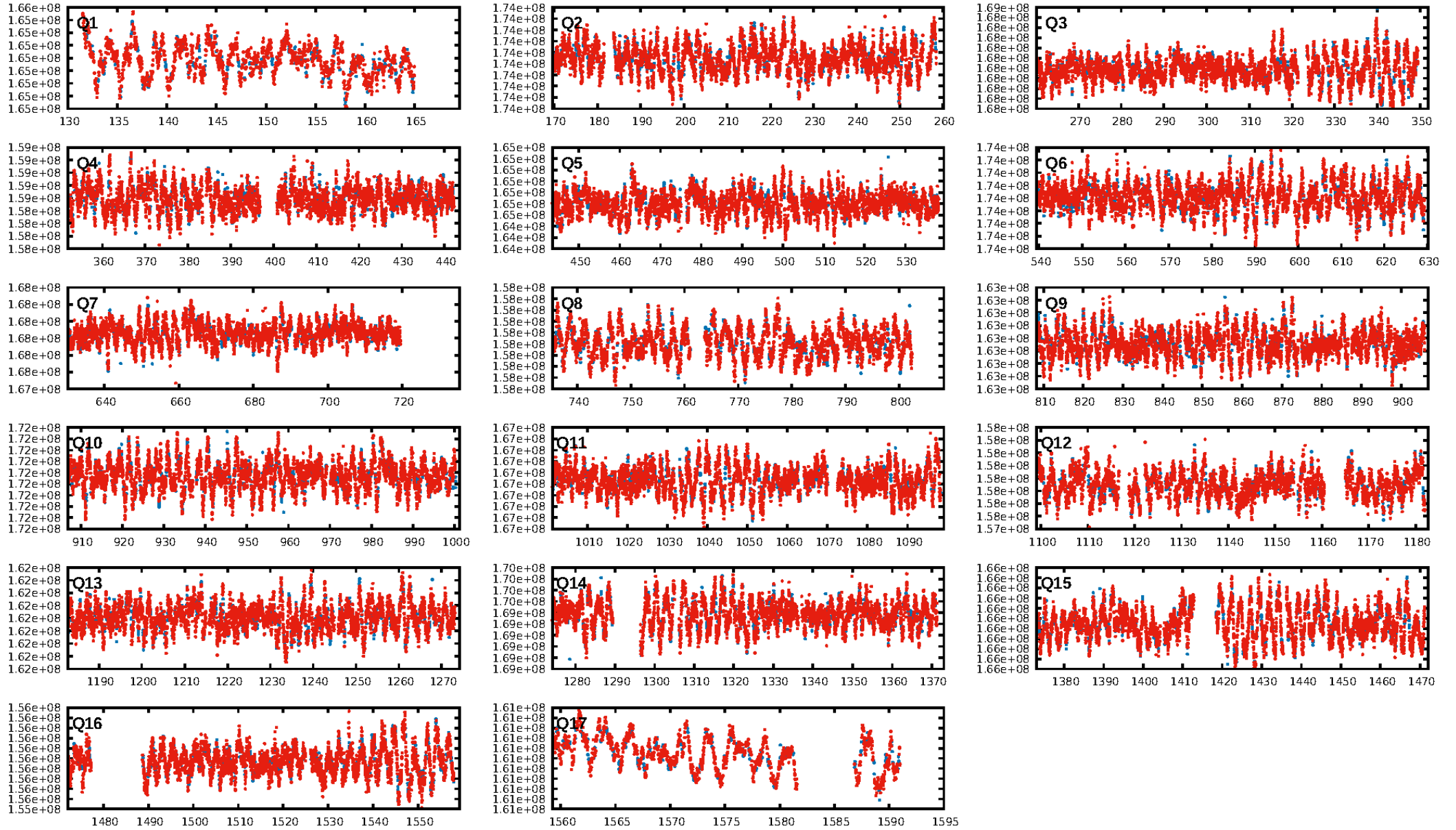
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [167.28 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2250/2250]
GhostDiagnostic-chr: 0.2234
Centroid-sig: 25.1%
Centroid-so: 0.413 arcsec [1.21 σ]
OotOffset-rm: 2.402 arcsec [4.25 σ]
KicOffset-rm: 2.447 arcsec [4.26 σ]
OotOffset-st: 0/4/4/4 [12]
KicOffset-st: 0/4/4/4 [12]
DiffImageQuality-fgm: 0.67 [8/12]
DiffImageOverlap-fno: 1.00 [17/17]

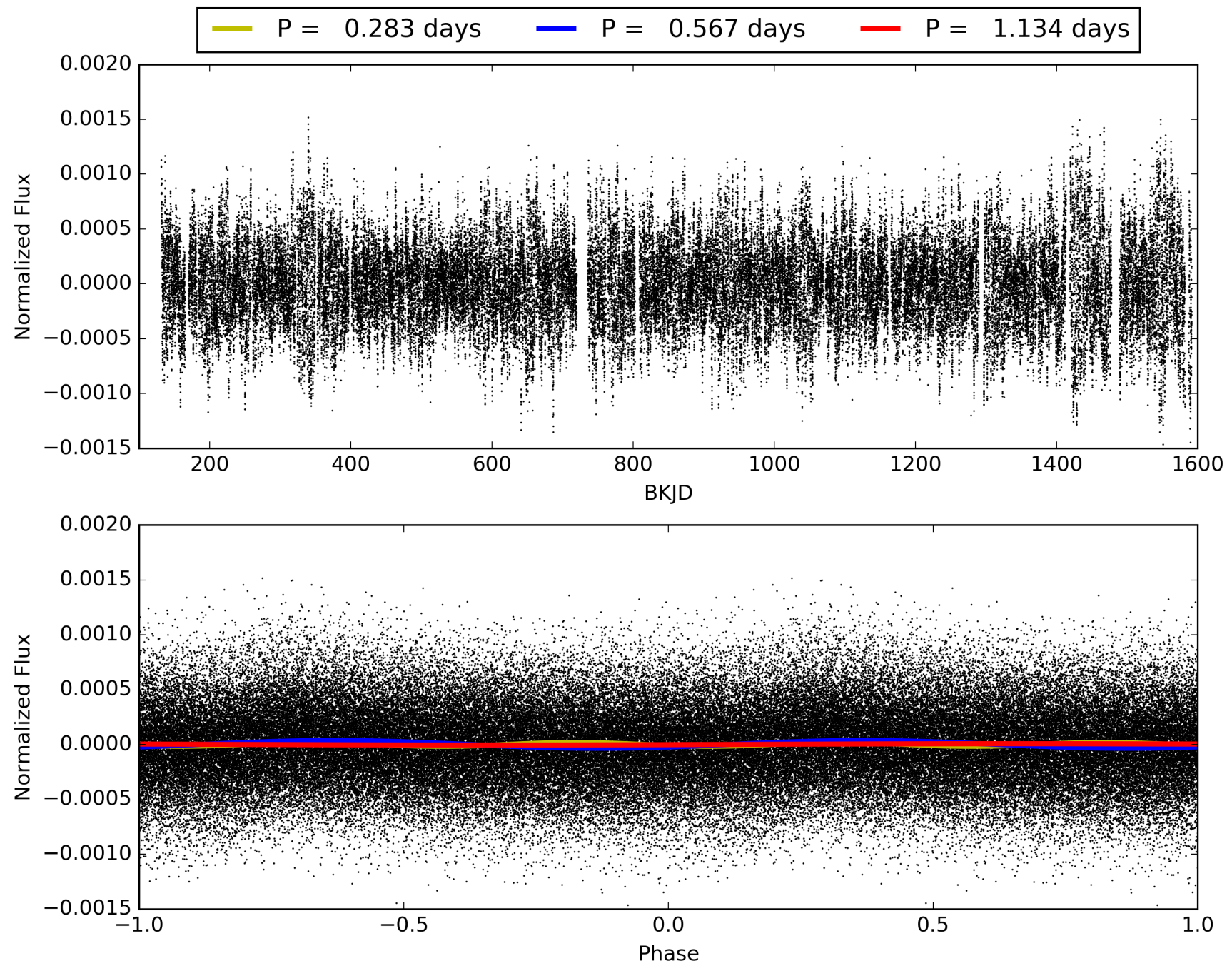
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 17:37:04 Z

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

TCE 007199060-02, PDC Light Curves

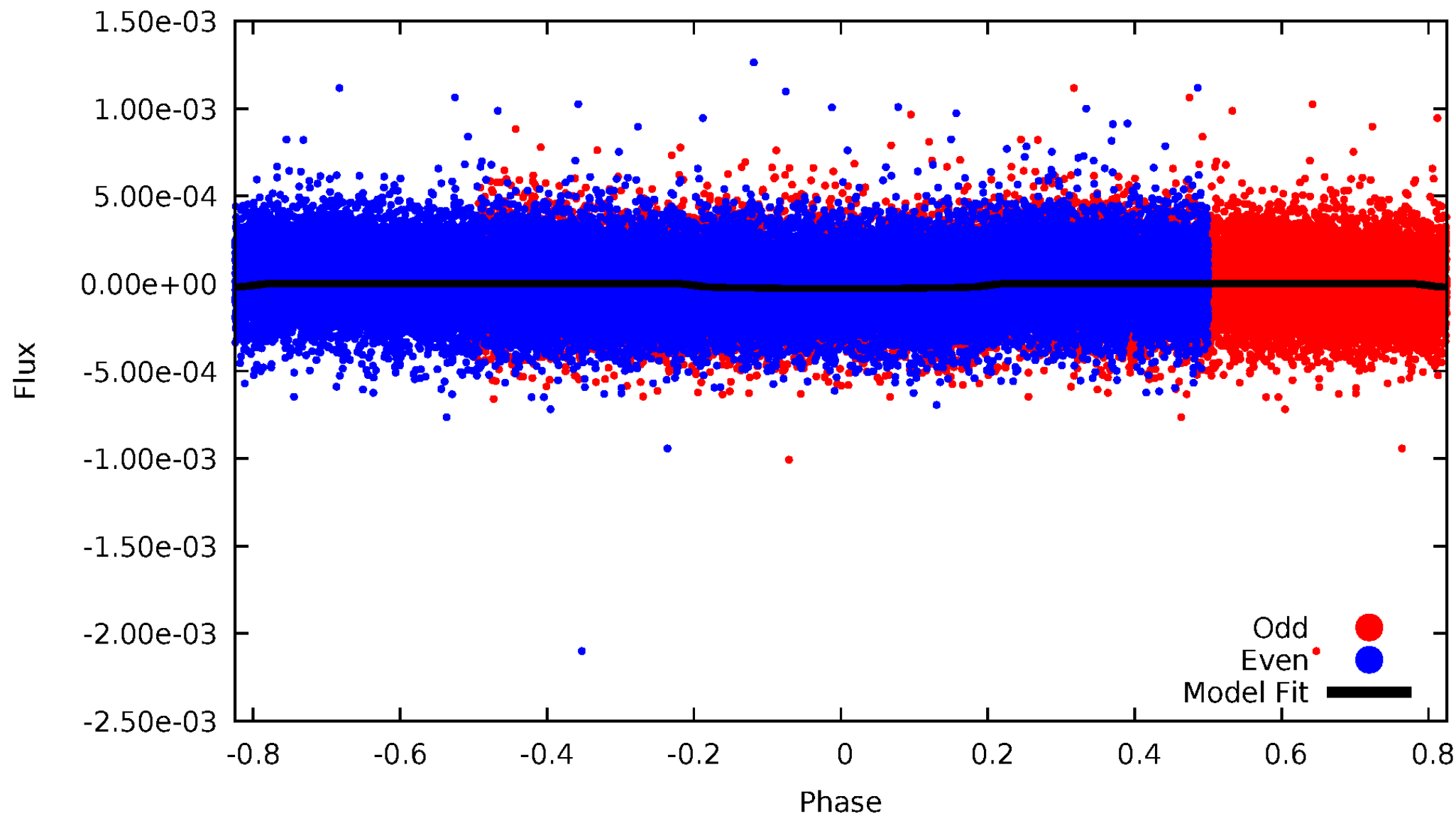


TCE 007199060-02



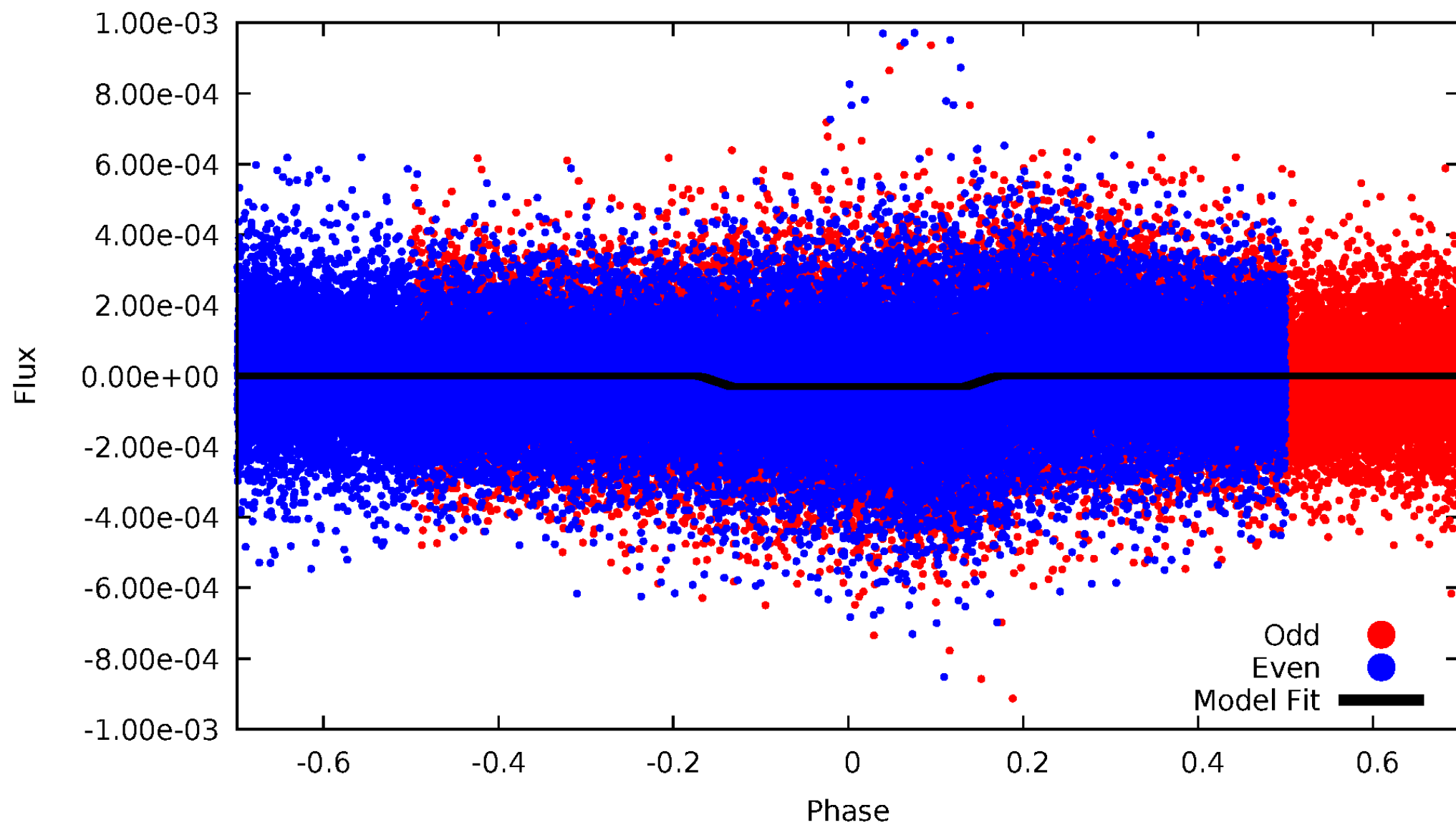
DV Odd/Even

TCE 007199060-02



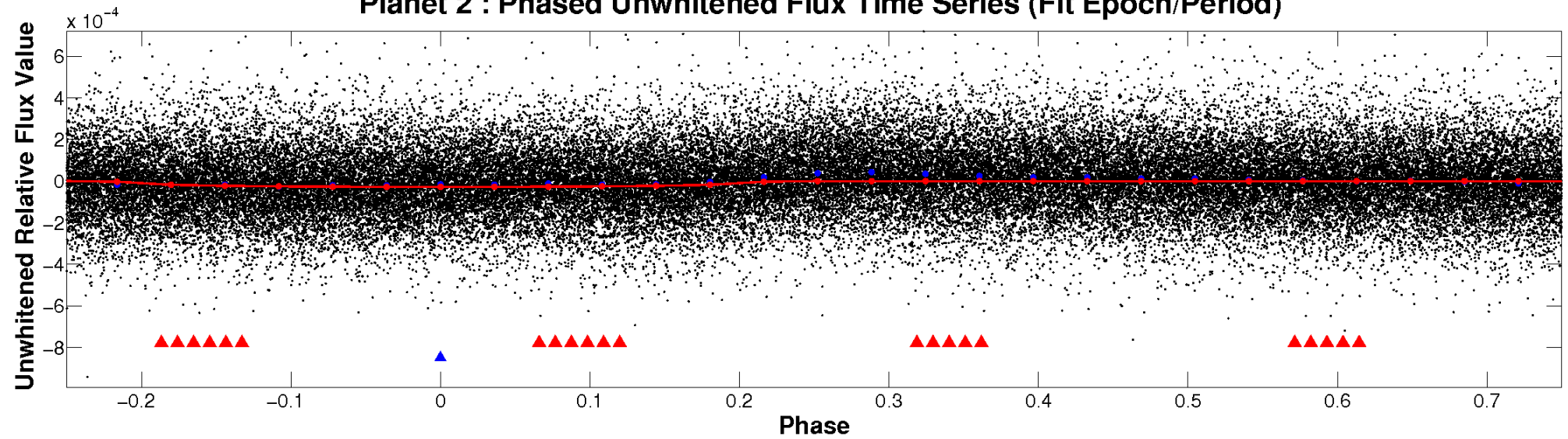
ALT Odd/Even

TCE 007199060-02

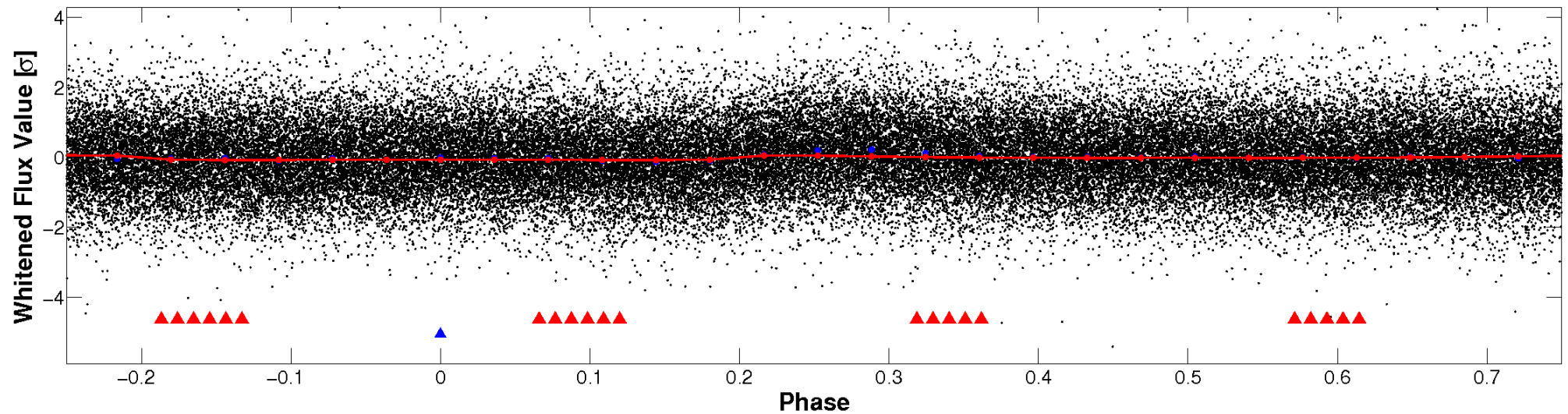


Non-Whitened Vs. Whitened Light Curve

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

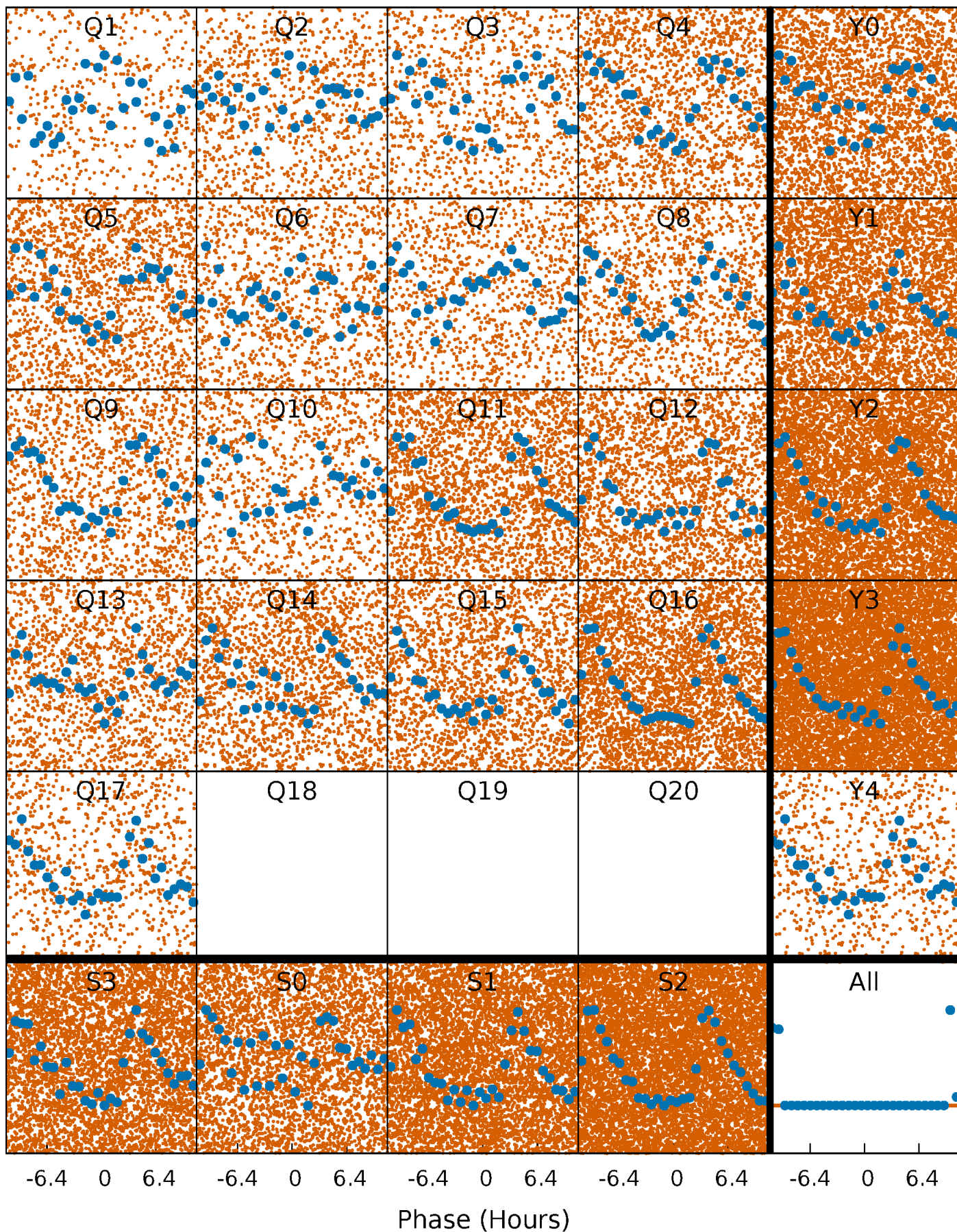


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



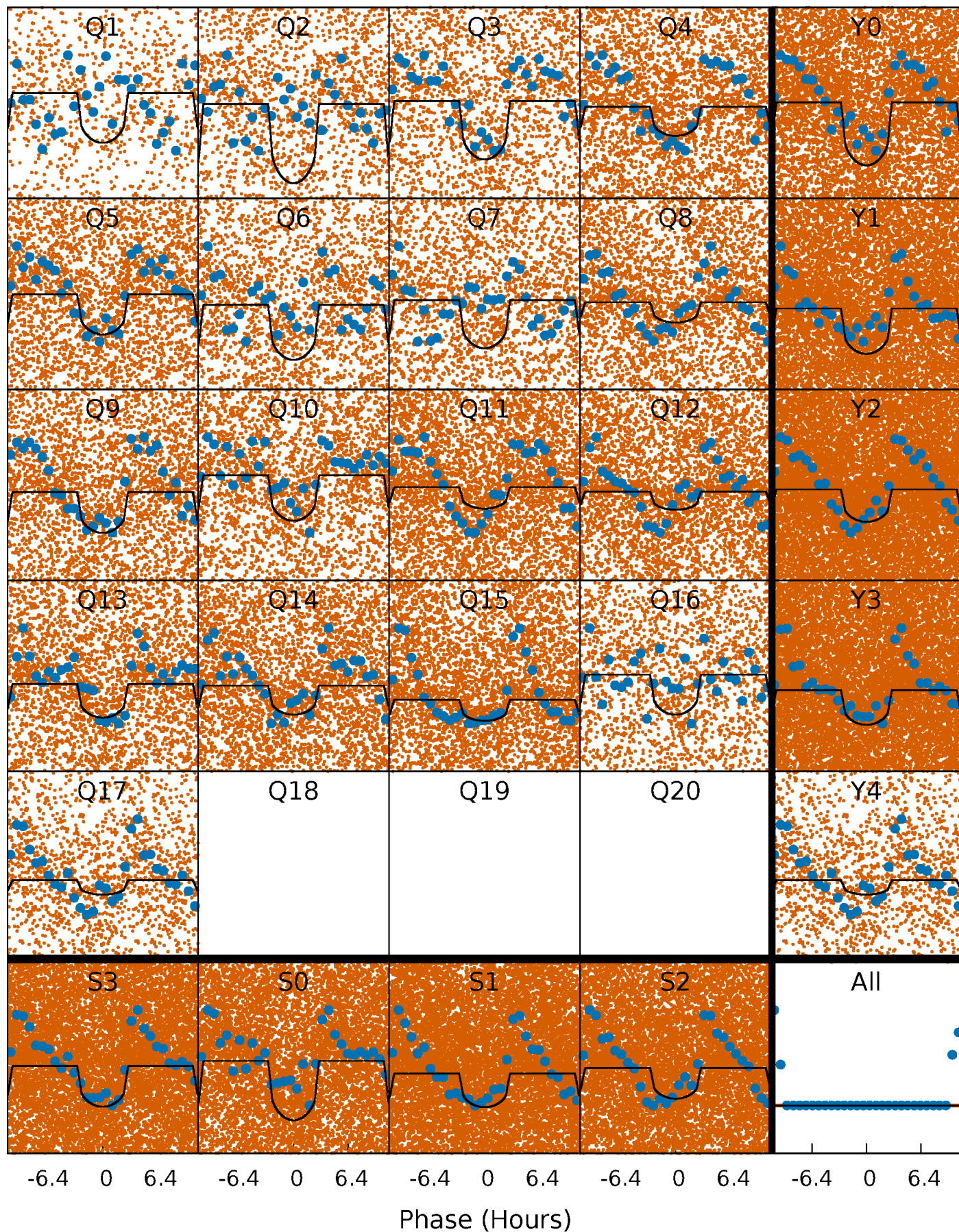
PDC Quarter-Phased Transit Curves

TCE 007199060-02 P= 0.566791 Days $T_0=131.645540$ (BKJD)



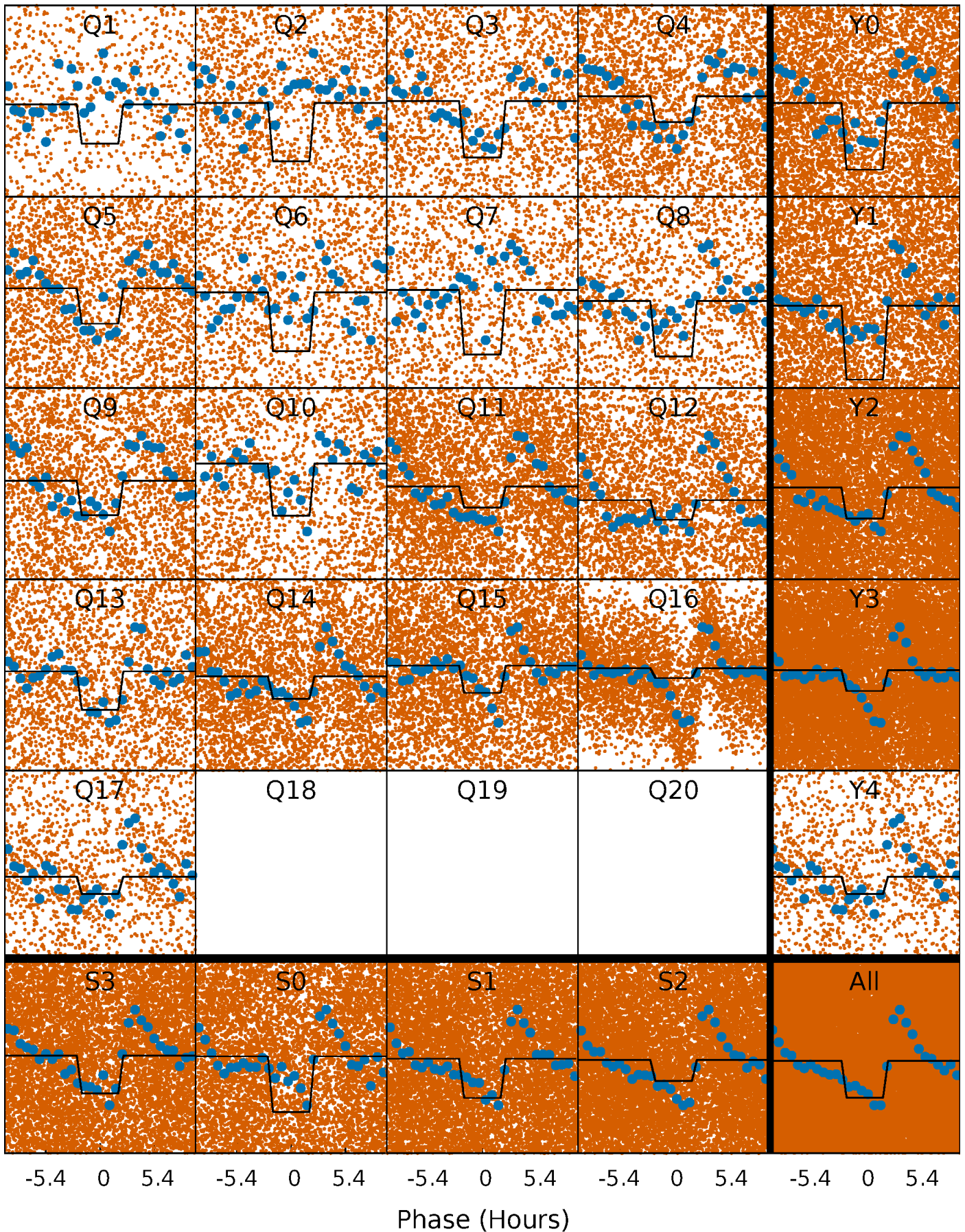
DV Quarter-Phased Transit Curves

TCE 007199060-02 P= 0.566791 Days $T_0=131.645540$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

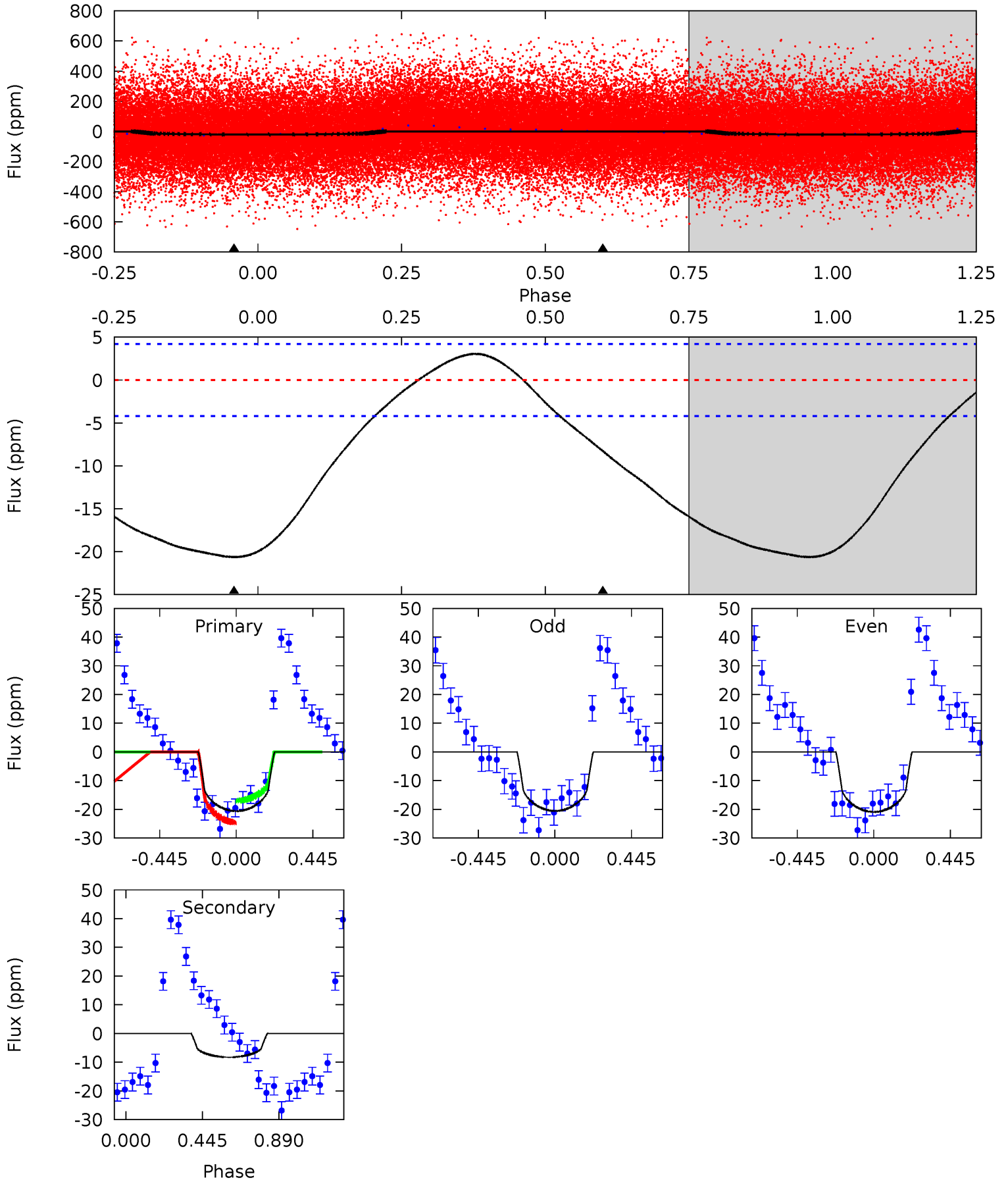
TCE 007199060-02 P= 0.566801 Days $T_0=131.648321$ (BKJD)



DV Model-Shift Uniqueness Test

007199060-02, P = 0.566791 Days, E = 131.078749 Days

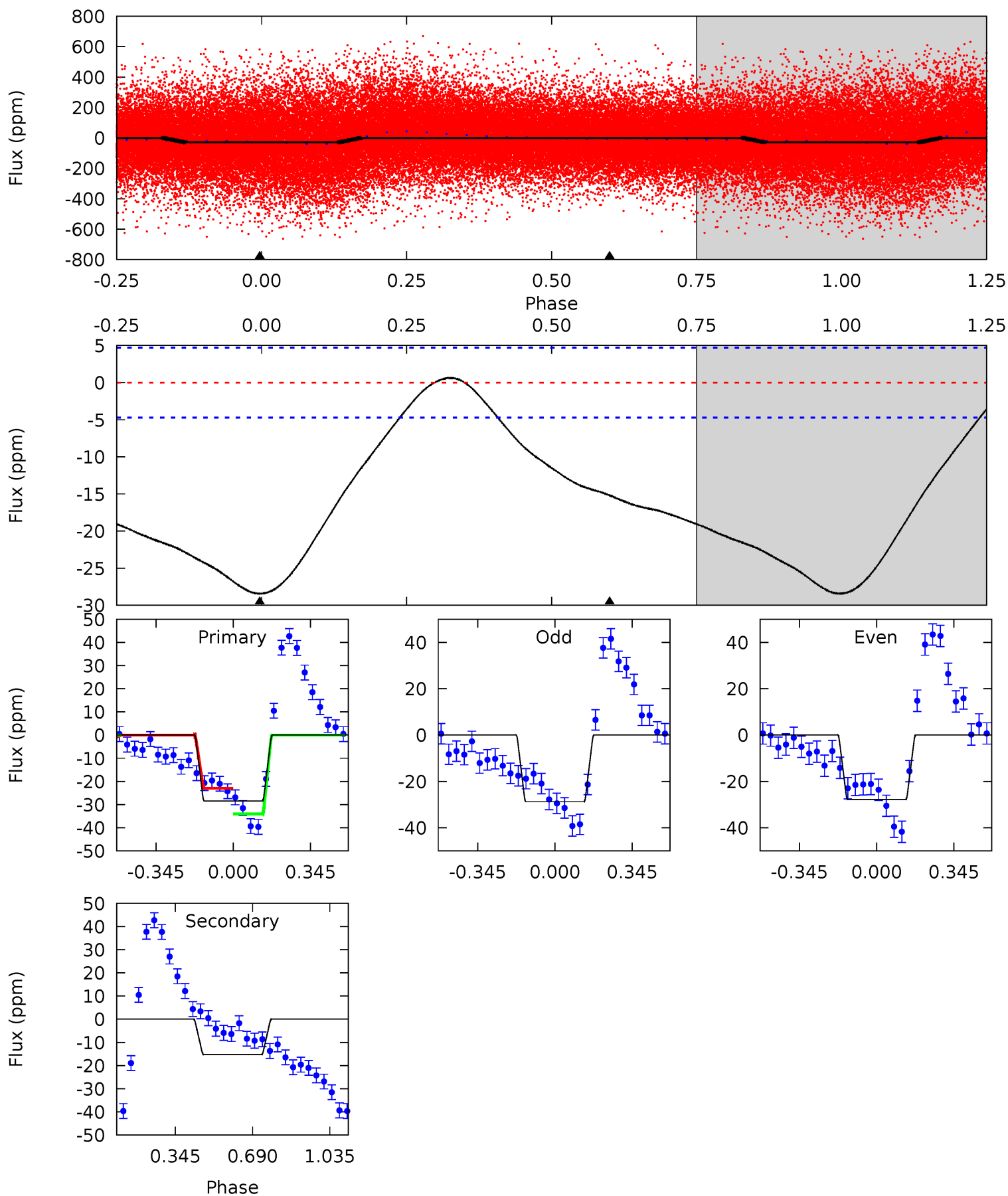
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.9	8.38	0	0	4.24	0.76	1.42	20.9	20.9	8.38	8.38	0.17	1.02	0.13	4.02



Alt Model-Shift Uniqueness Test

007199060-02, P = 0.566801 Days, E = 131.081520 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.9	13.8	0	0	4.30	0.94	1.22	25.9	25.9	13.8	13.8	0.46	0.98	0.02	4.93



Stellar Parameters For KIC 007199060

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6951^{+184}_{-245}	$3.766^{+0.285}_{-0.095}$	$-0.080^{+0.250}_{-0.300}$	$2.758^{+0.499}_{-0.927}$	$1.618^{+0.219}_{-0.267}$	$0.109^{+0.209}_{-0.032}$
	+3%/-4%	+8%/-3%	+312%/-375%	+18%/-34%	+14%/-17%	+192%/-30%
Source	PHO1	FLK73	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 007199060-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-8 ± 1	$1.43^{+0.59}_{-0.56}$	5558^{+340}_{-446}	4487^{+1681}_{-7523}	$0.561^{+0.957}_{-0.283}$
Alt.	-15 ± 1	$1.57^{+0.63}_{-0.59}$	5570^{+333}_{-486}	5233^{+1820}_{-1204}	$0.862^{+1.353}_{-0.433}$

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 $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

DV Centroid Data

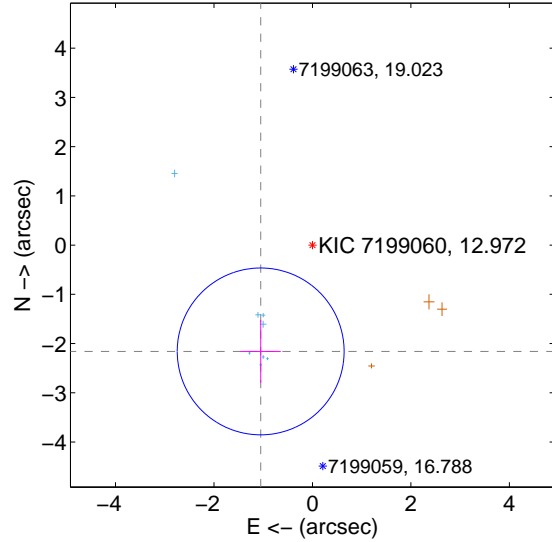
Supplemental centroid analysis for 007199060-02. Kepler magnitude: 12.97. Transit SNR 12.38

There are 8 quarters with good PRF difference image offsets

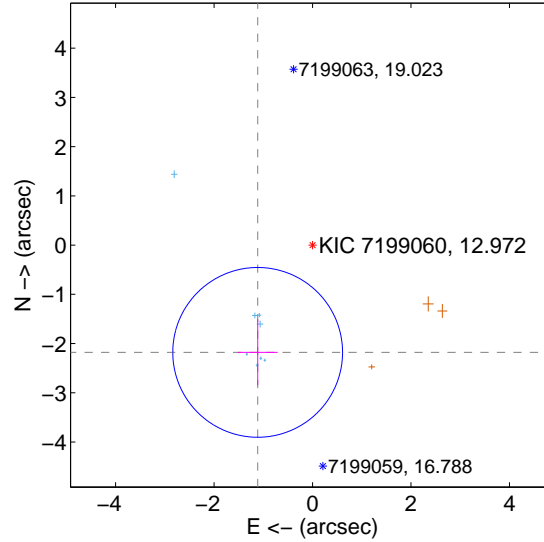
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.402 ± 0.565	4.25	1.051 ± 0.408	-2.159 ± 0.638
PRF-fit source offset from KIC position	2.447 ± 0.575	4.26	1.114 ± 0.407	-2.179 ± 0.670
photometric centroid source offset	0.41 ± 0.34	1.21	-0.39 ± 0.34	0.13 ± 0.34

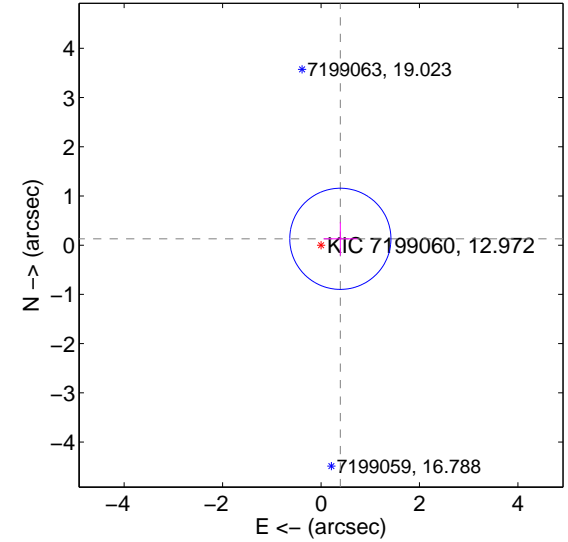
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

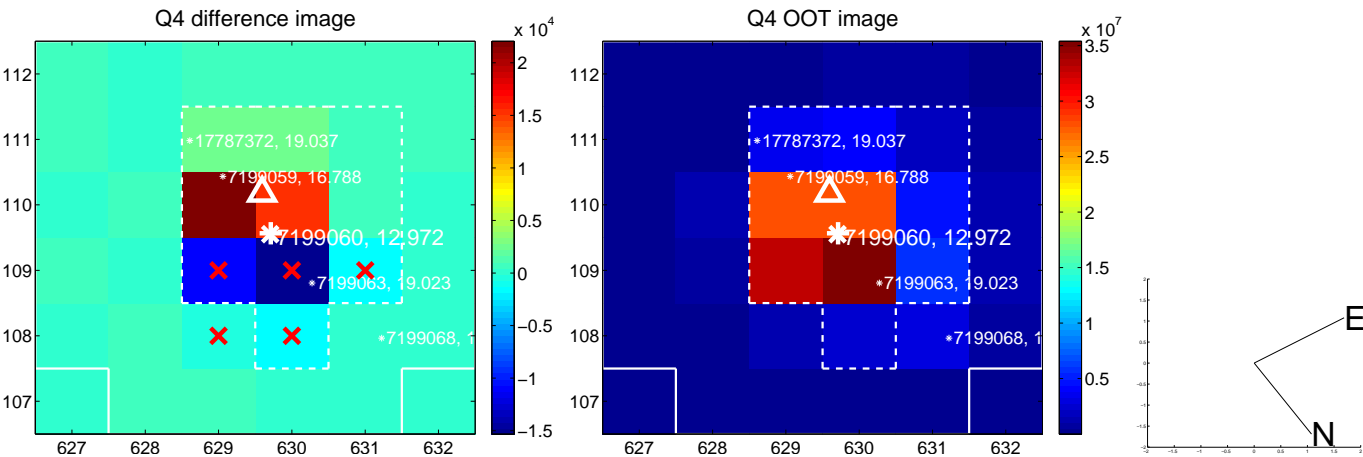
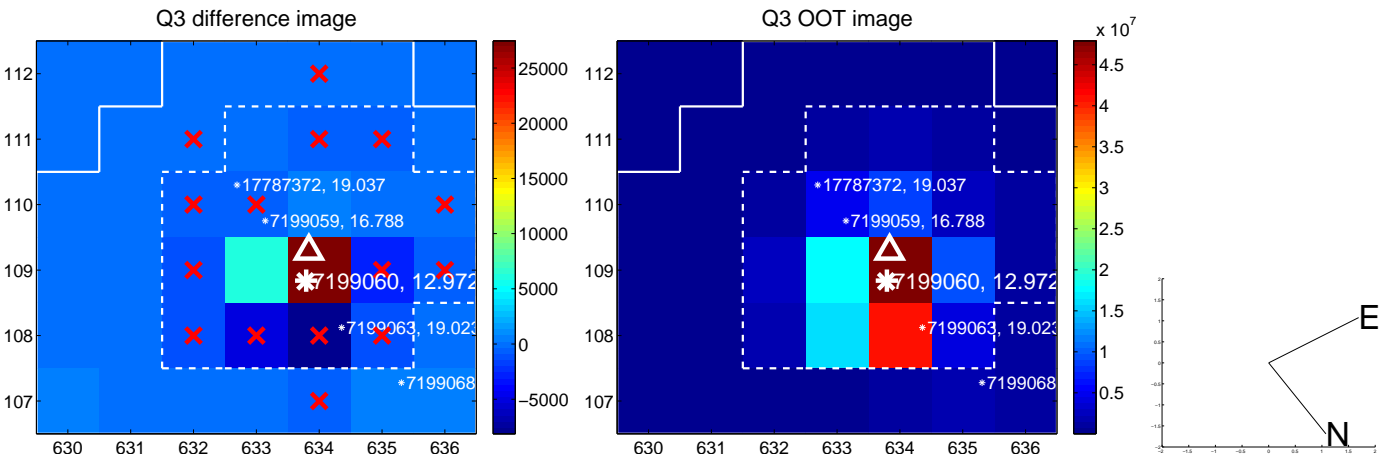
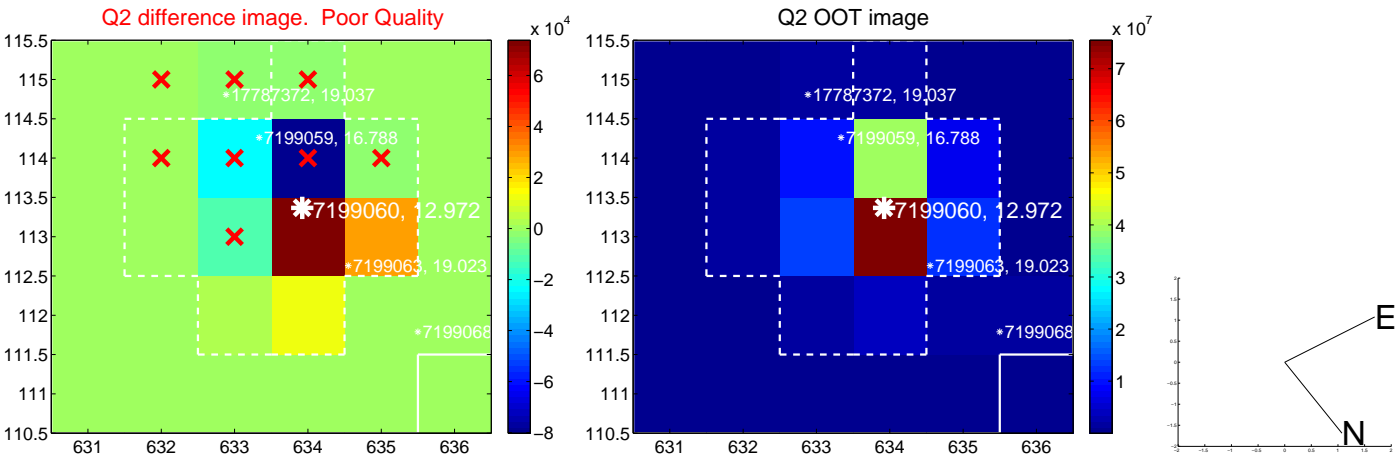
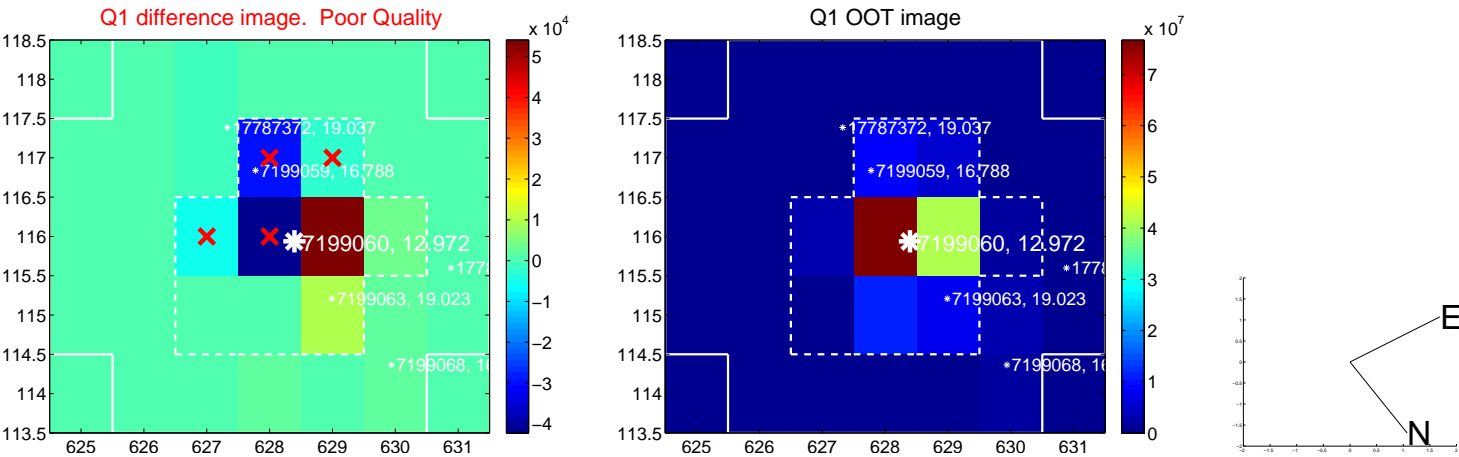


offset from photometric centroids

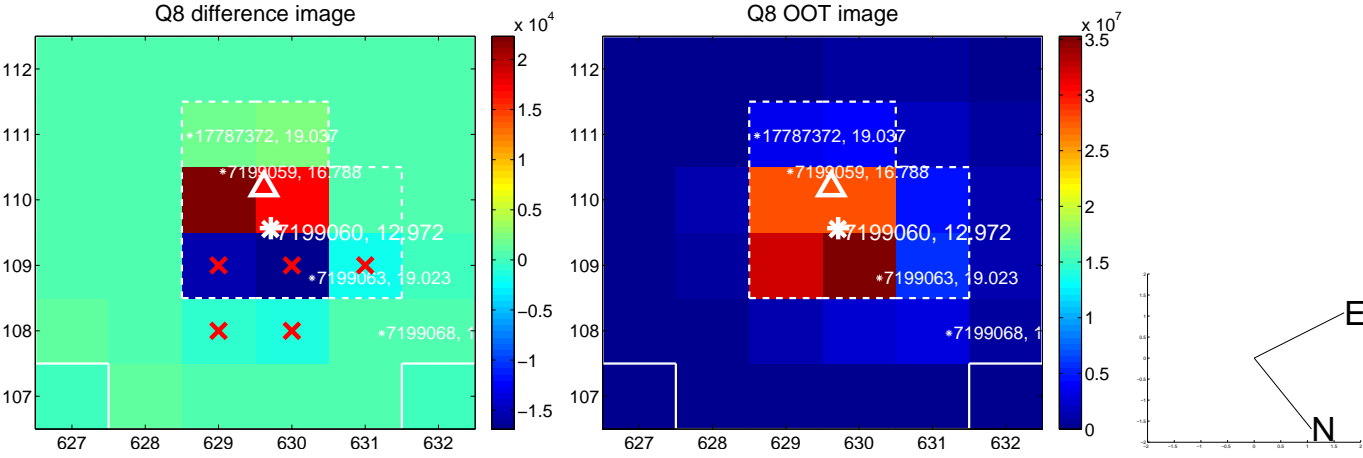
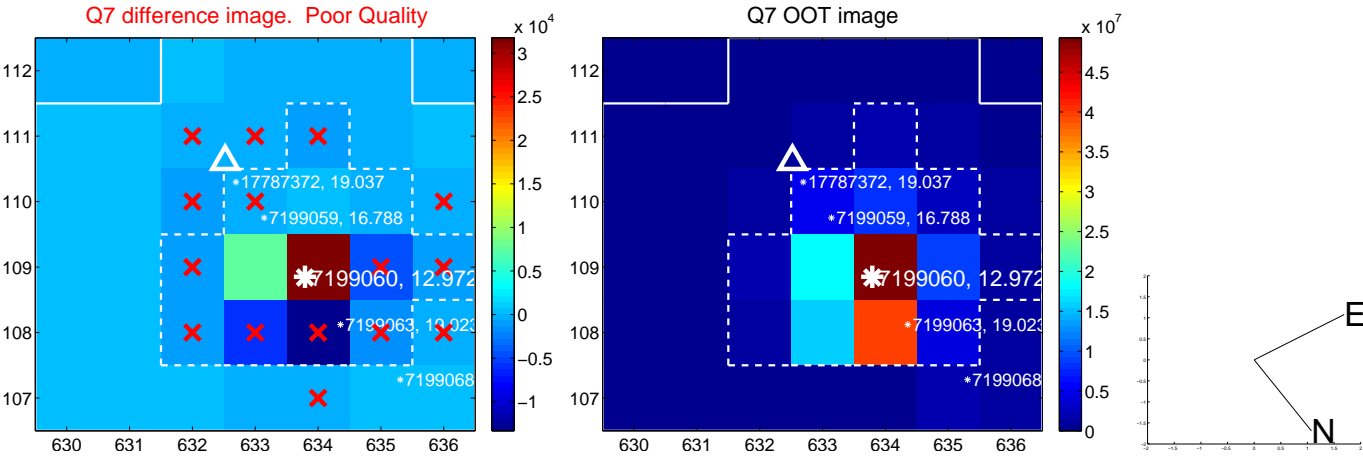
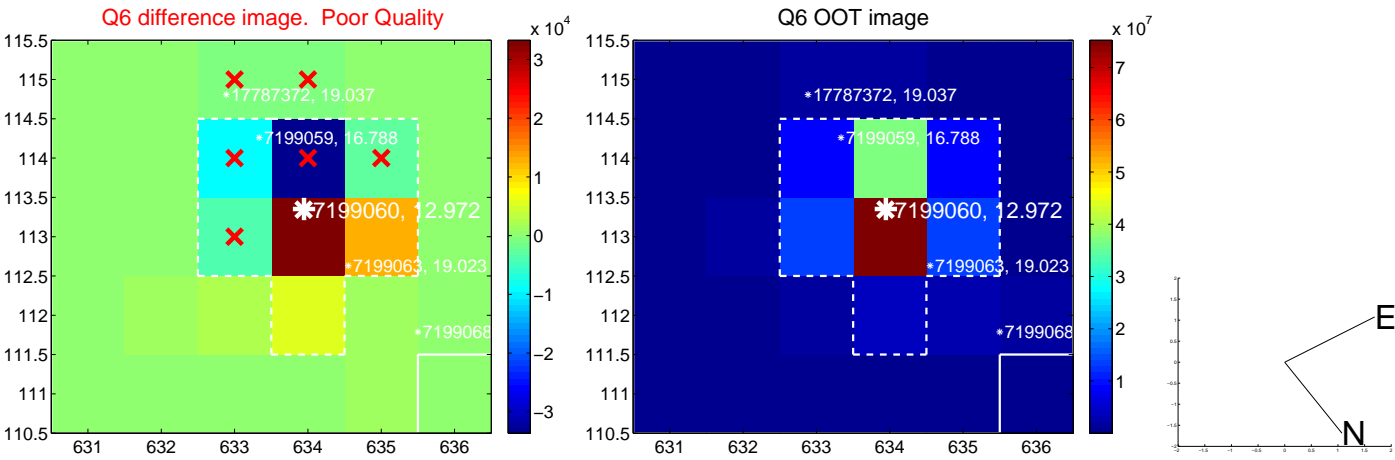
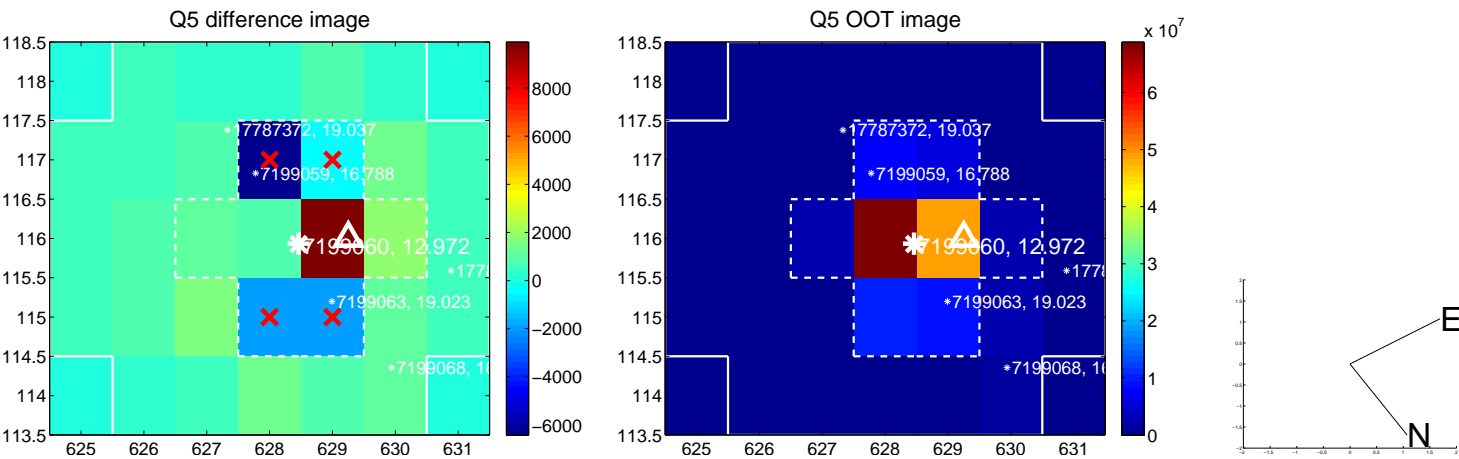


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- 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.

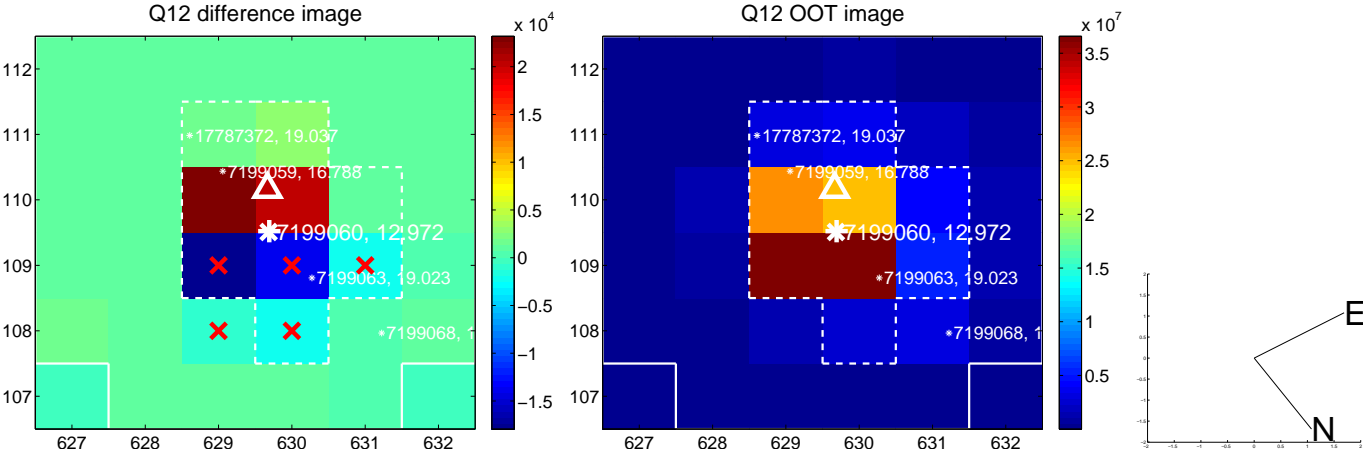
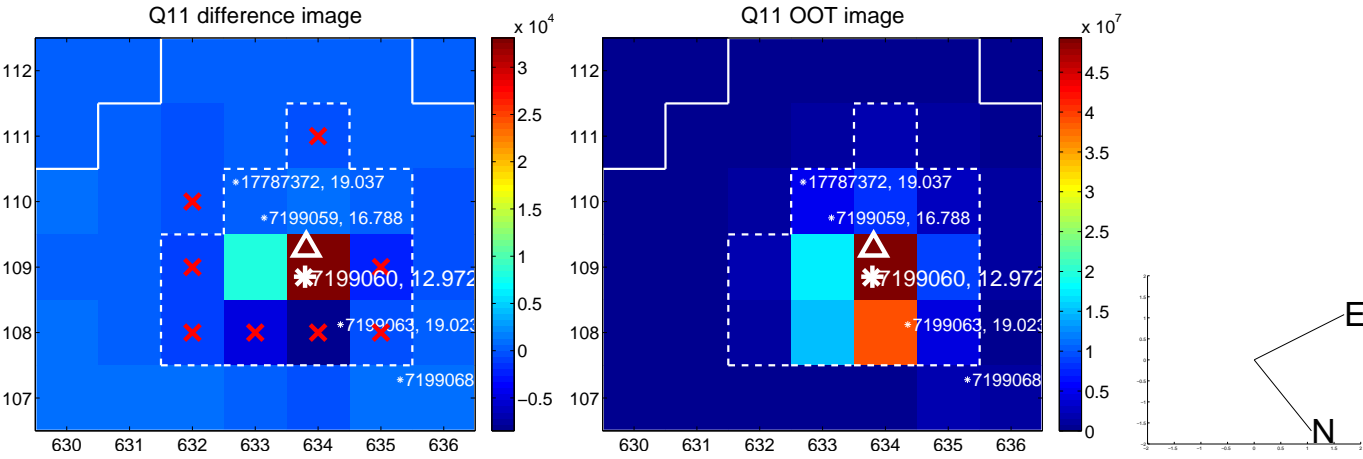
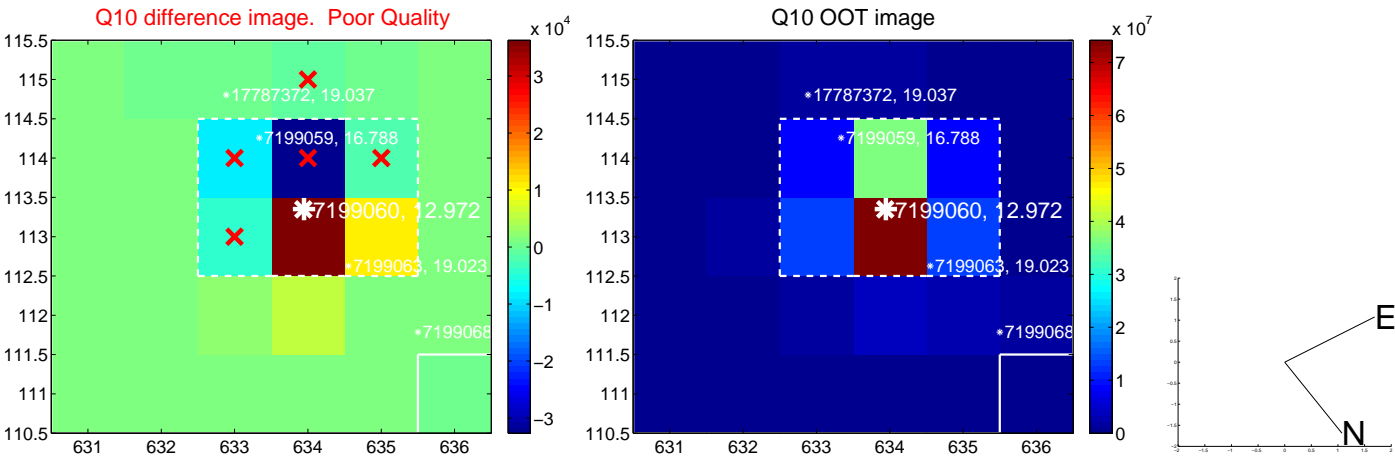
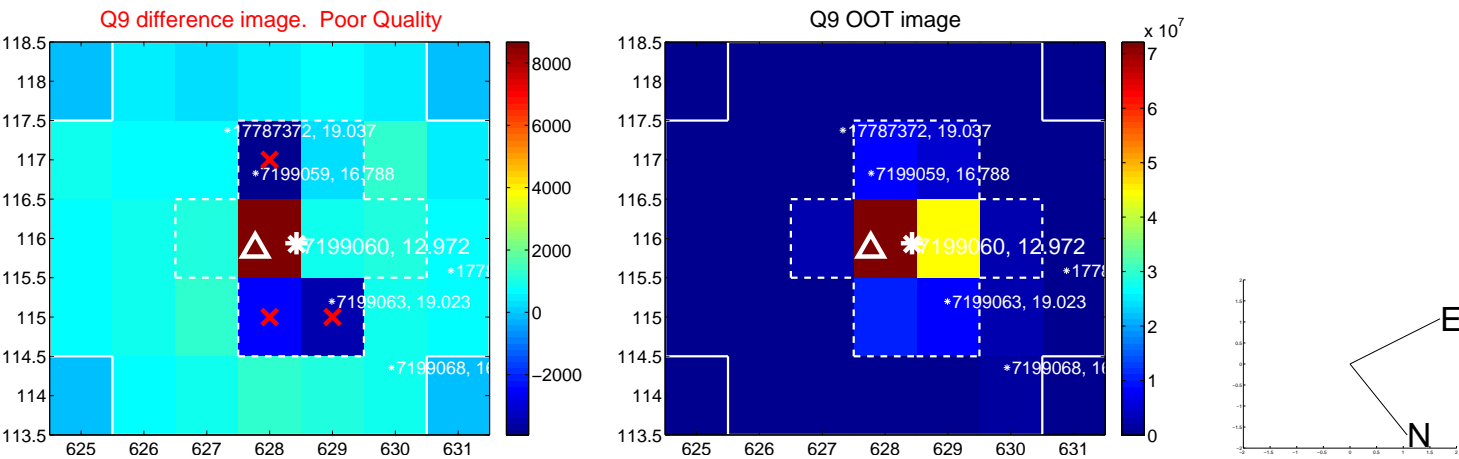
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



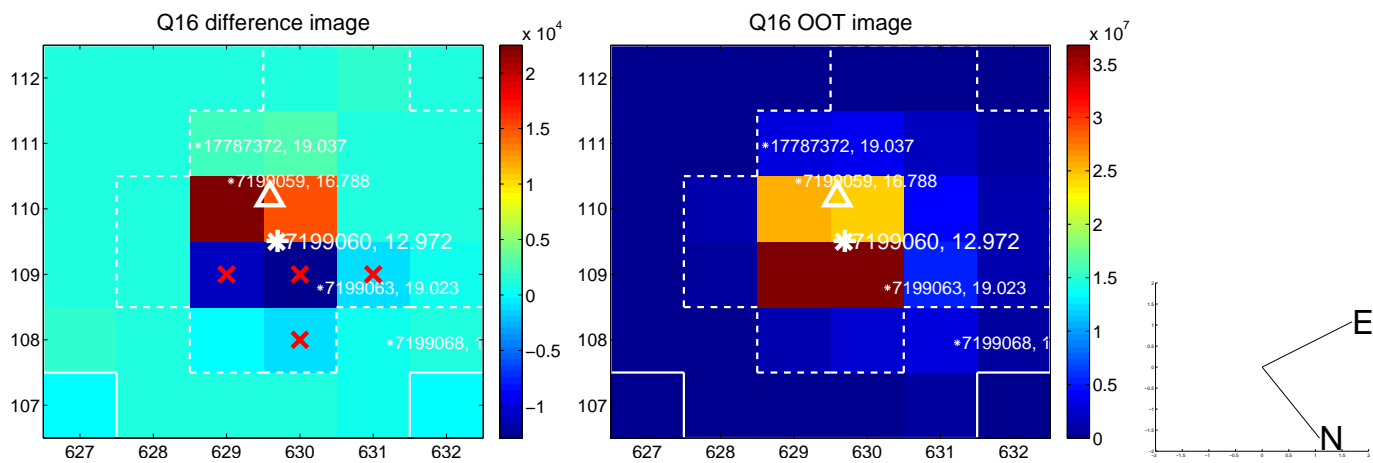
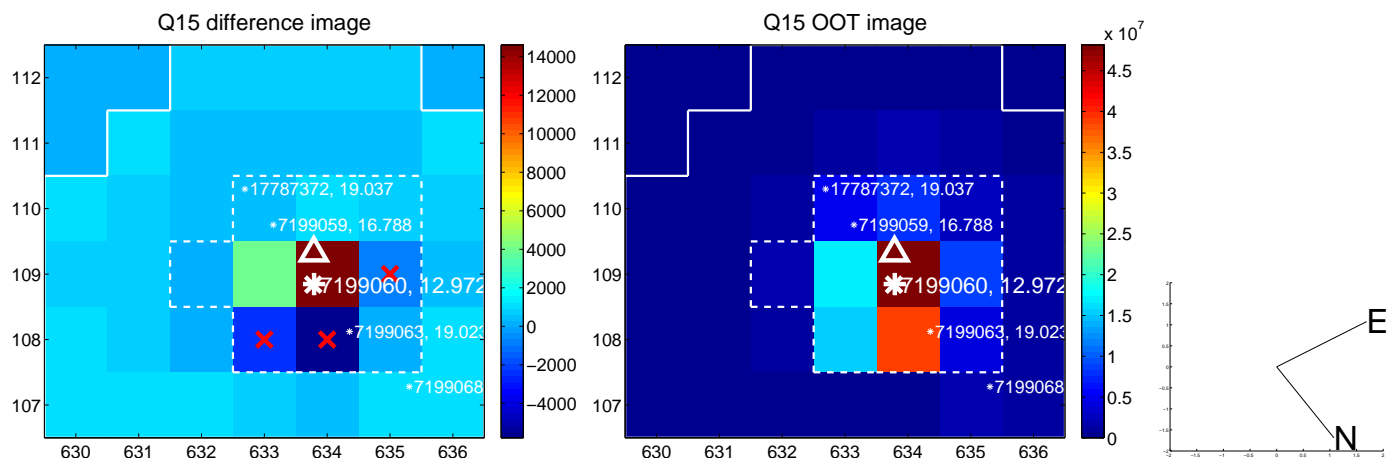
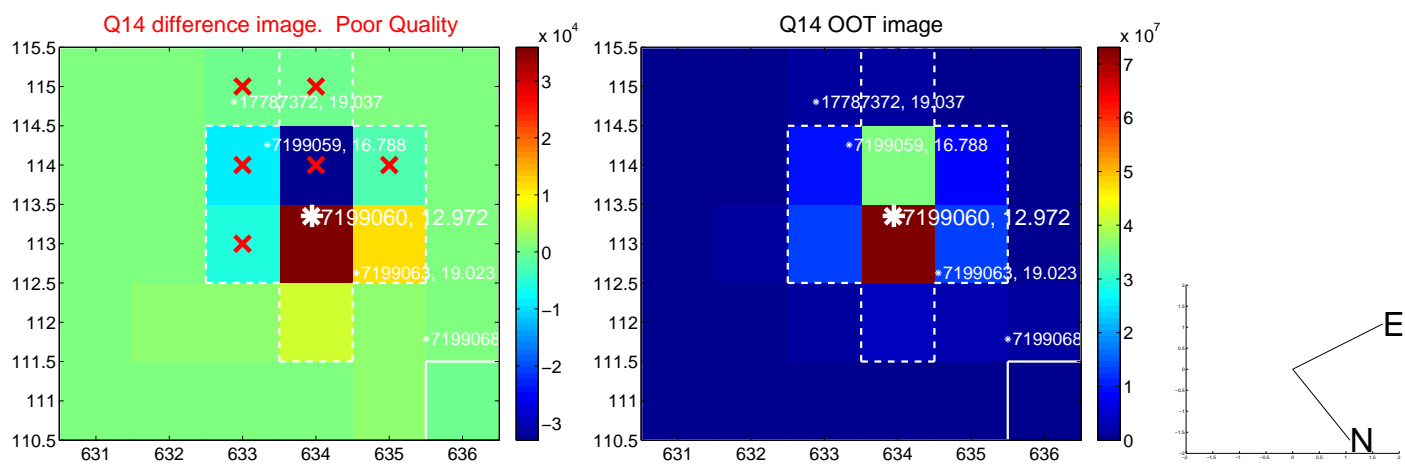
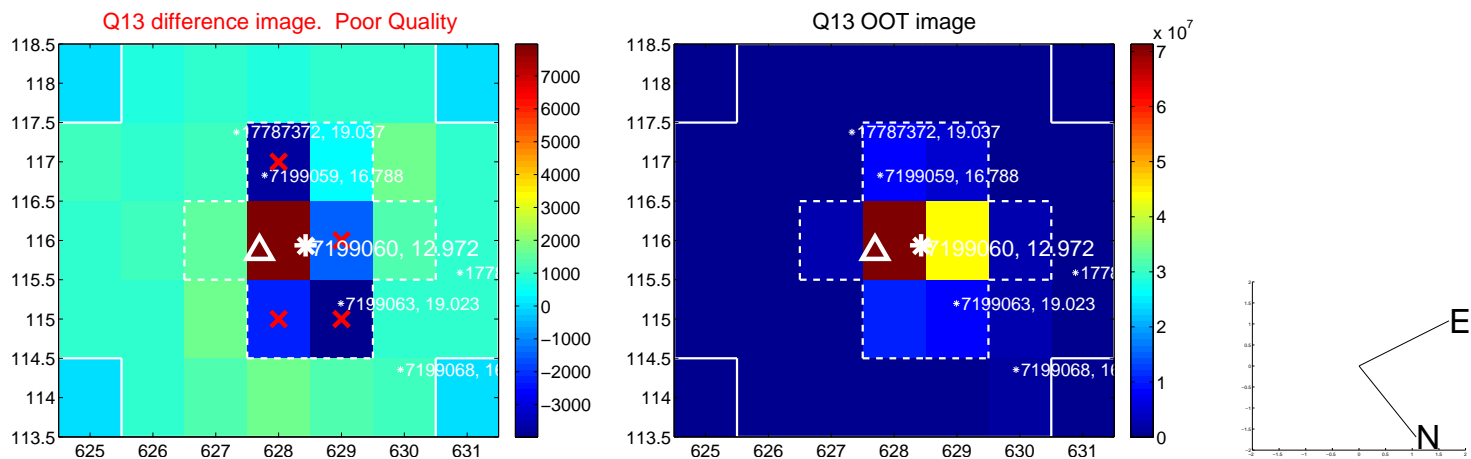
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

