

KIC 007366036

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})
007366036-01	OBS	6867.01	0.566818	131.803114	6.7	3.082	11.7	8.7	1.11	6398	0.31	10130.30
007366036-02	OBS	No	198.439027	194.344735	216.9	9.735	10.3	6.3	1.11	6398	3.19	4.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007366036-01	OBS	FP	0.00	1	0	0	1	LPP_DV—CENT_FEW_DIFFS—EPHEM_MATCH
007366036-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— INCONSISTENT_TRANS—CENT_FEW_MEAS

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.

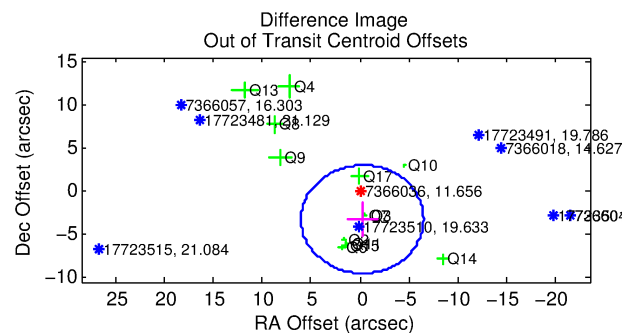
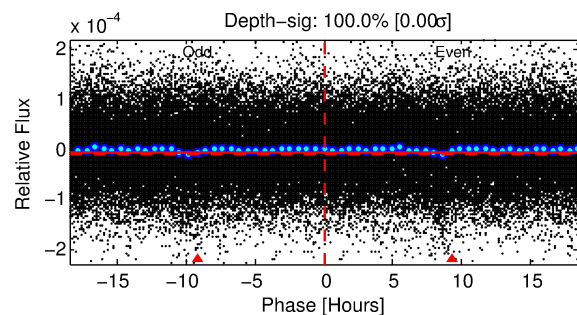
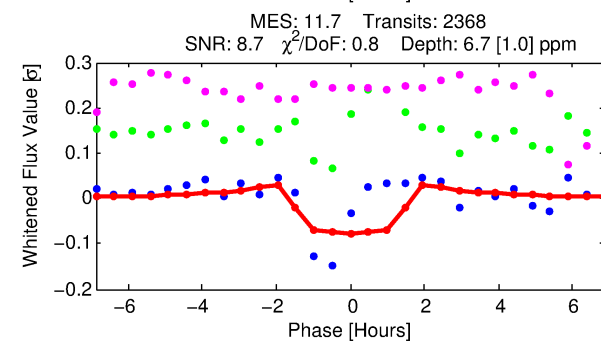
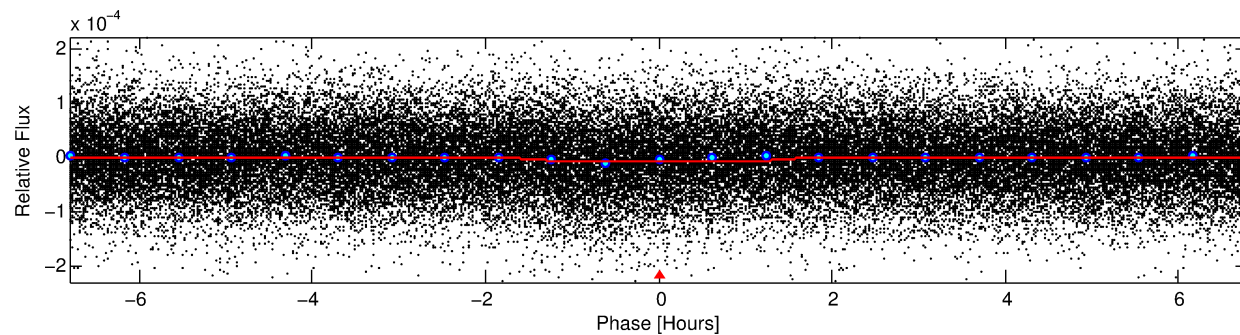
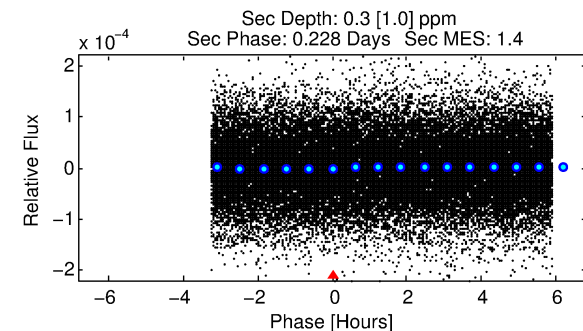
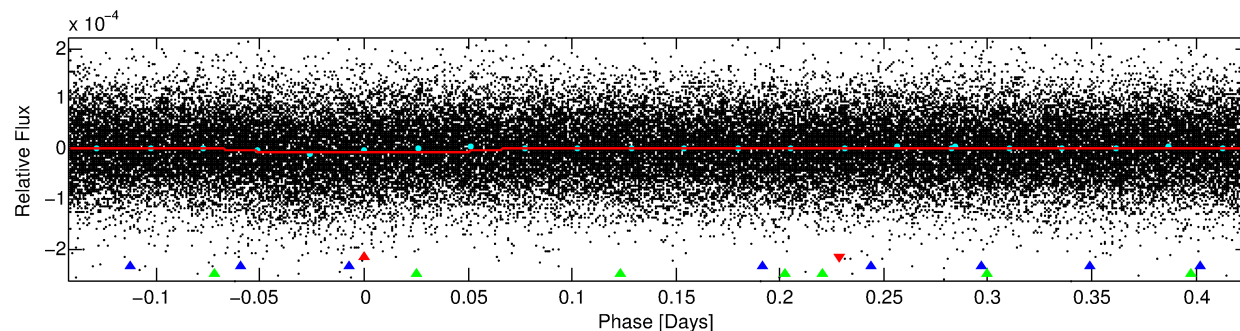
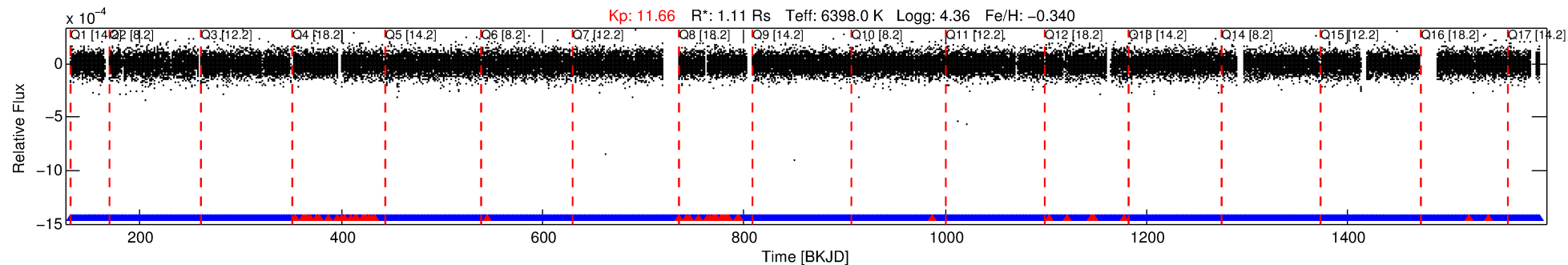
Ephemeris Match Information For 007366036-01

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
007366036-01	7366036	RR-Lyr-pri	7198959	1:1	3852.6	346	-1	7.86	11.65	89042.00	Col-Anomaly	0	1.91	23.46

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: 7366036 Candidate: 1 of 3 Period: 0.567 d
KOI: K06867 Corr: No Ephemeris Match



DV Fit Results:

Period = 0.56682 [0.00001] d
Epoch = 131.8031 [0.0031] BKJD
Rp/R* = 0.0025 [0.0005]
a/R* = 1.30 [0.50]
b = 0.70 [0.68]
Seff = 10130.30 [2812.96]
Teq = 2558 [178] K
Rp = 0.31 [0.09] Re
a = 0.0135 [0.0024] AU
Ag = 0.31 [1.03] [-0.66σ]
Teffp = 2962 [2422] K [0.17σ]

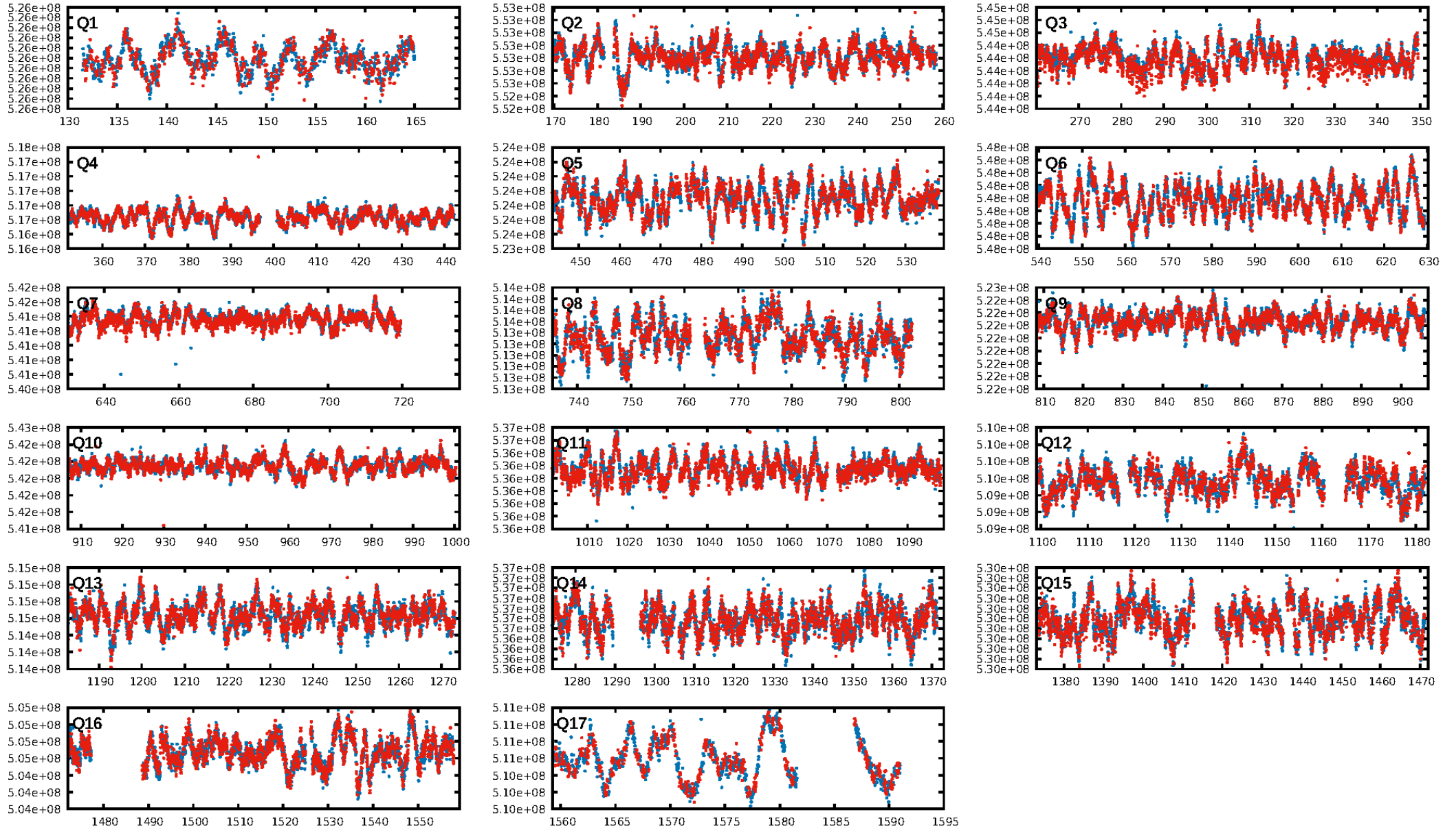
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [465.06σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.02e-30
RollingBand-fgt: 0.98 [2207/2262]
GhostDiagnostic-chr: 0.8969
Centroid-sig: 1.6%
Centroid-so: 2.013 arcsec [1.99σ]
OotOffset-rm: 3.263 arcsec [1.56σ]
KicOffset-rm: 3.434 arcsec [1.73σ]
OotOffset-st: 4/4/2/3 [13]
KicOffset-st: 4/4/2/3 [13]
DiffImageQuality-fgm: 0.00 [0/13]
DiffImageOverlap-fno: 1.00 [17/17]

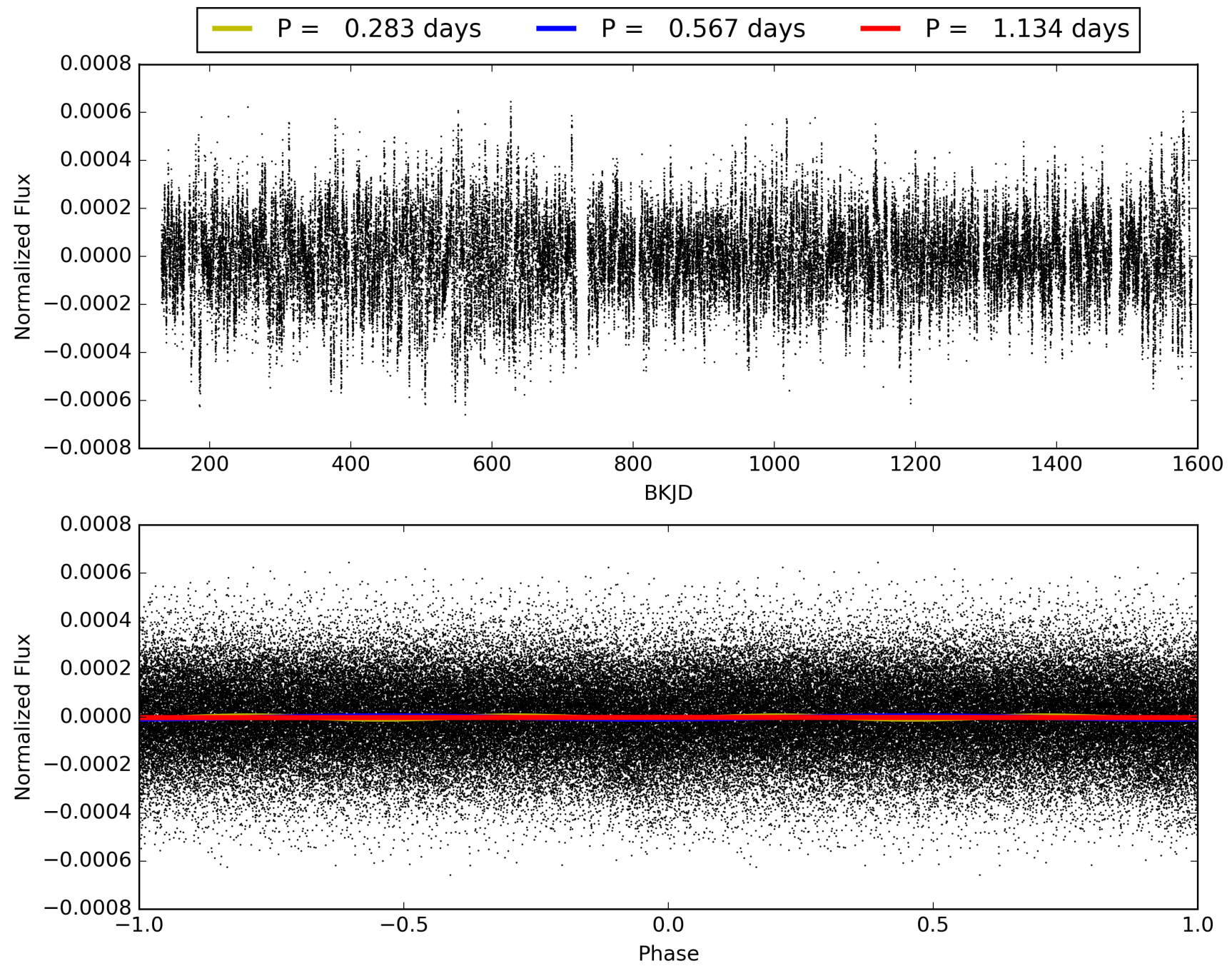
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:45:57 Z

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

TCE 007366036-01, PDC Light Curves

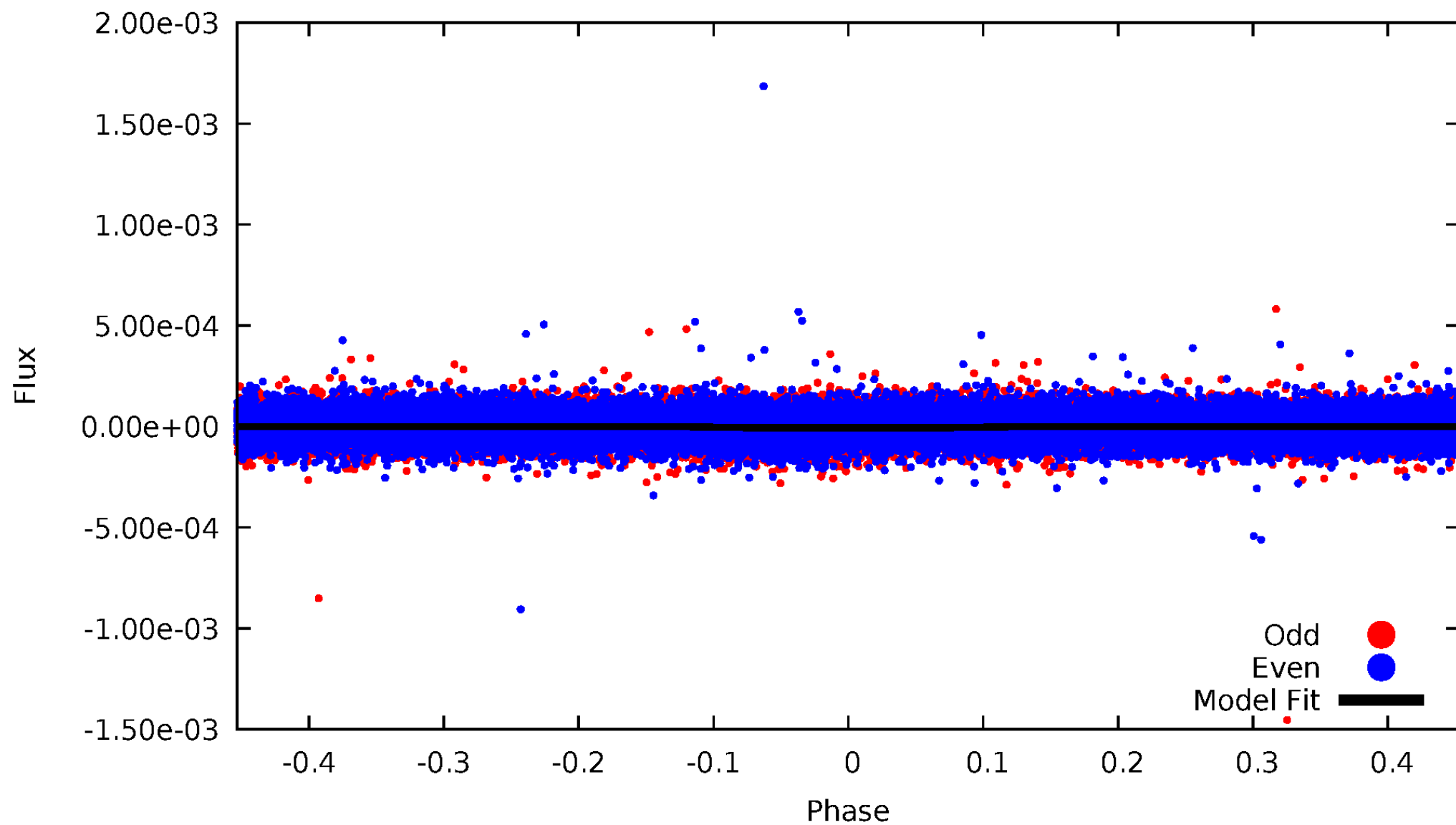


TCE 007366036-01



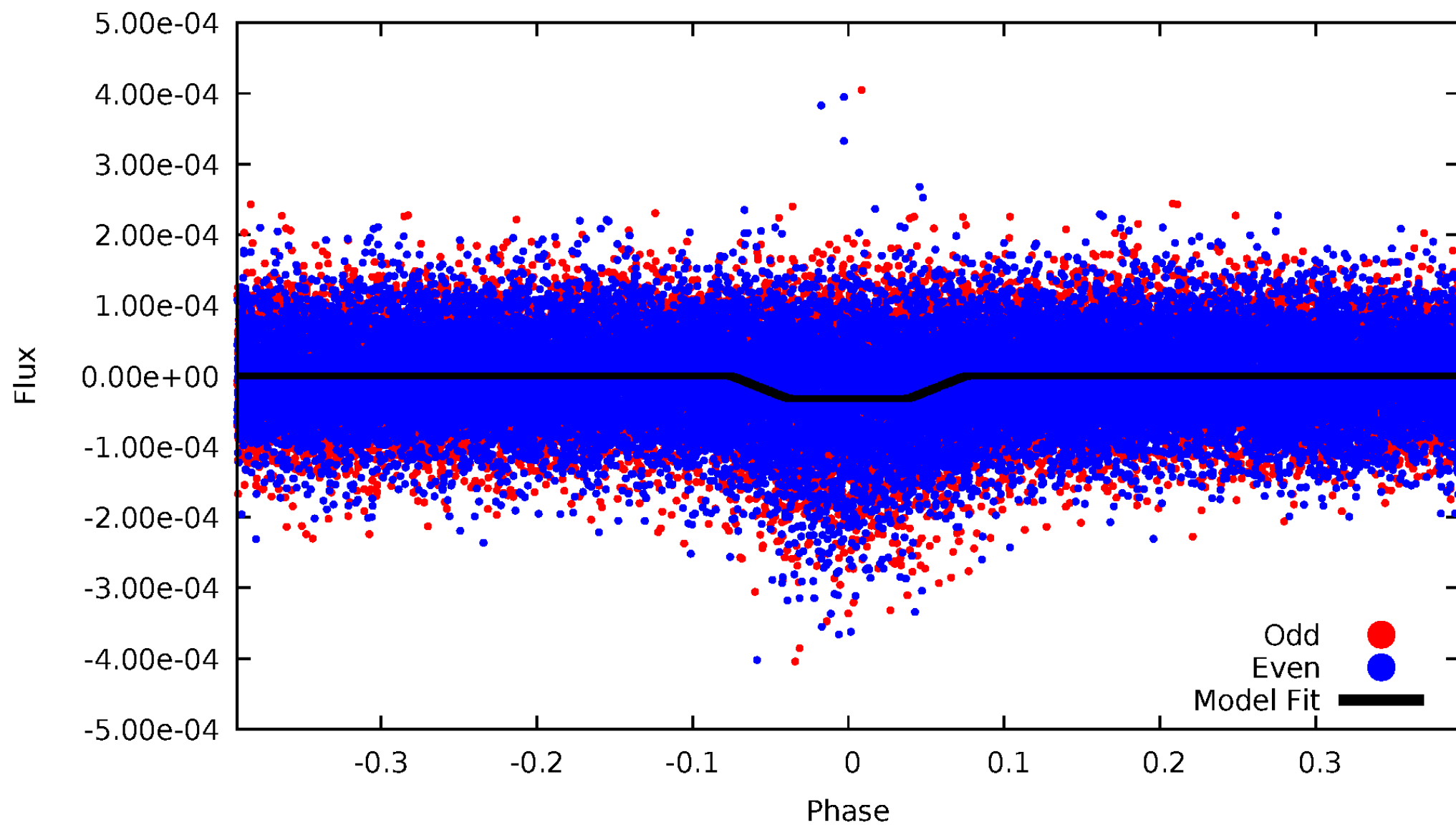
DV Odd/Even

TCE 007366036-01

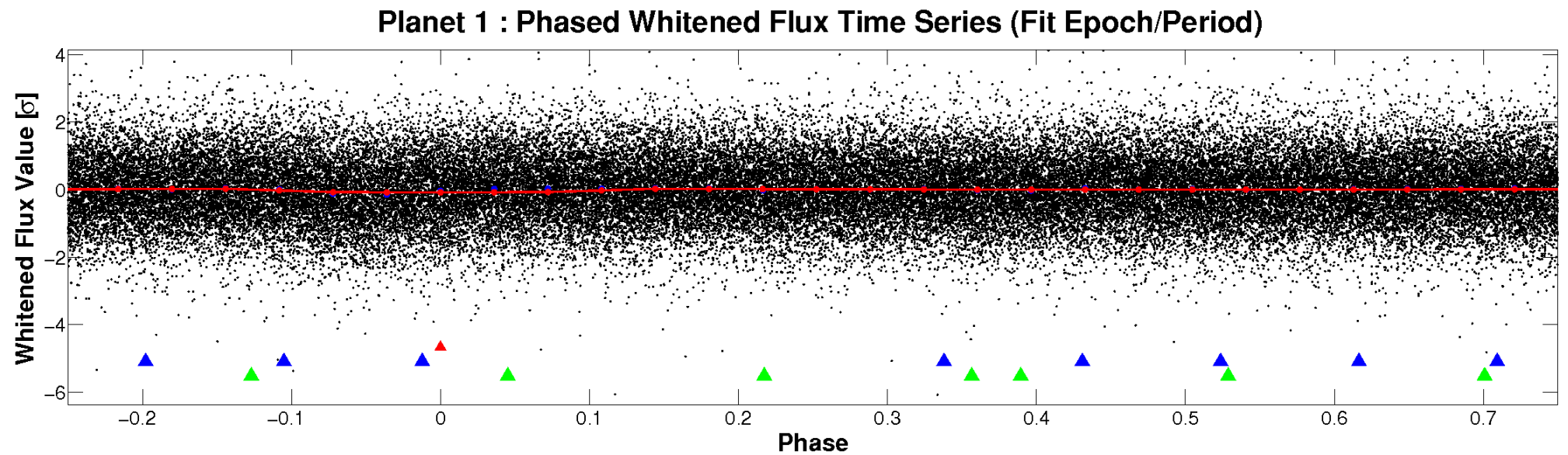
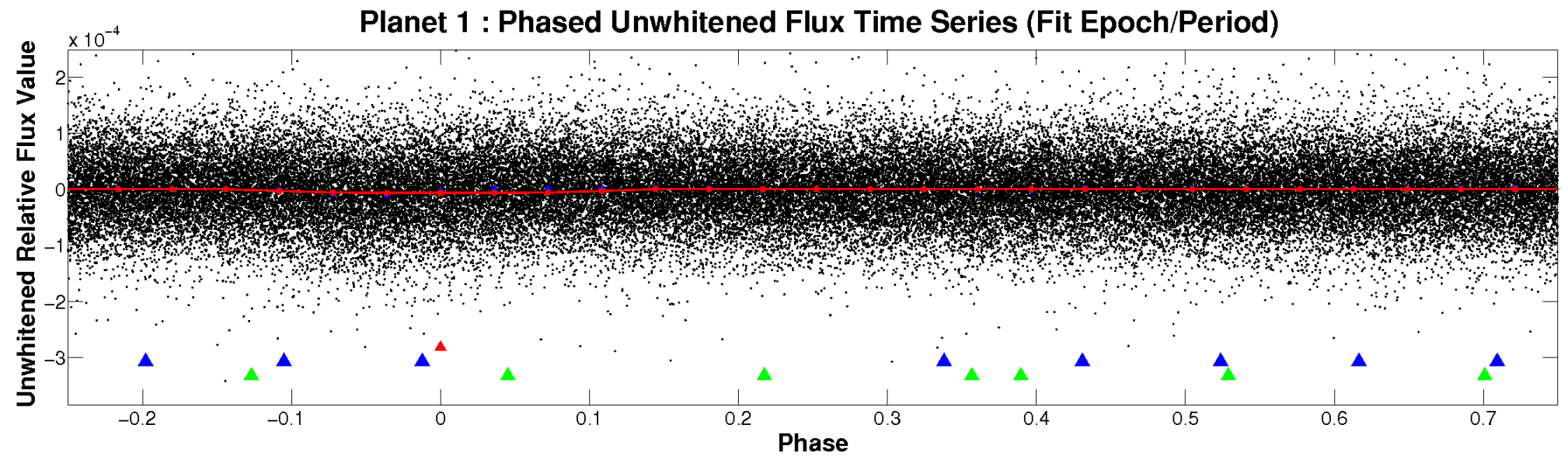


ALT Odd/Even

TCE 007366036-01

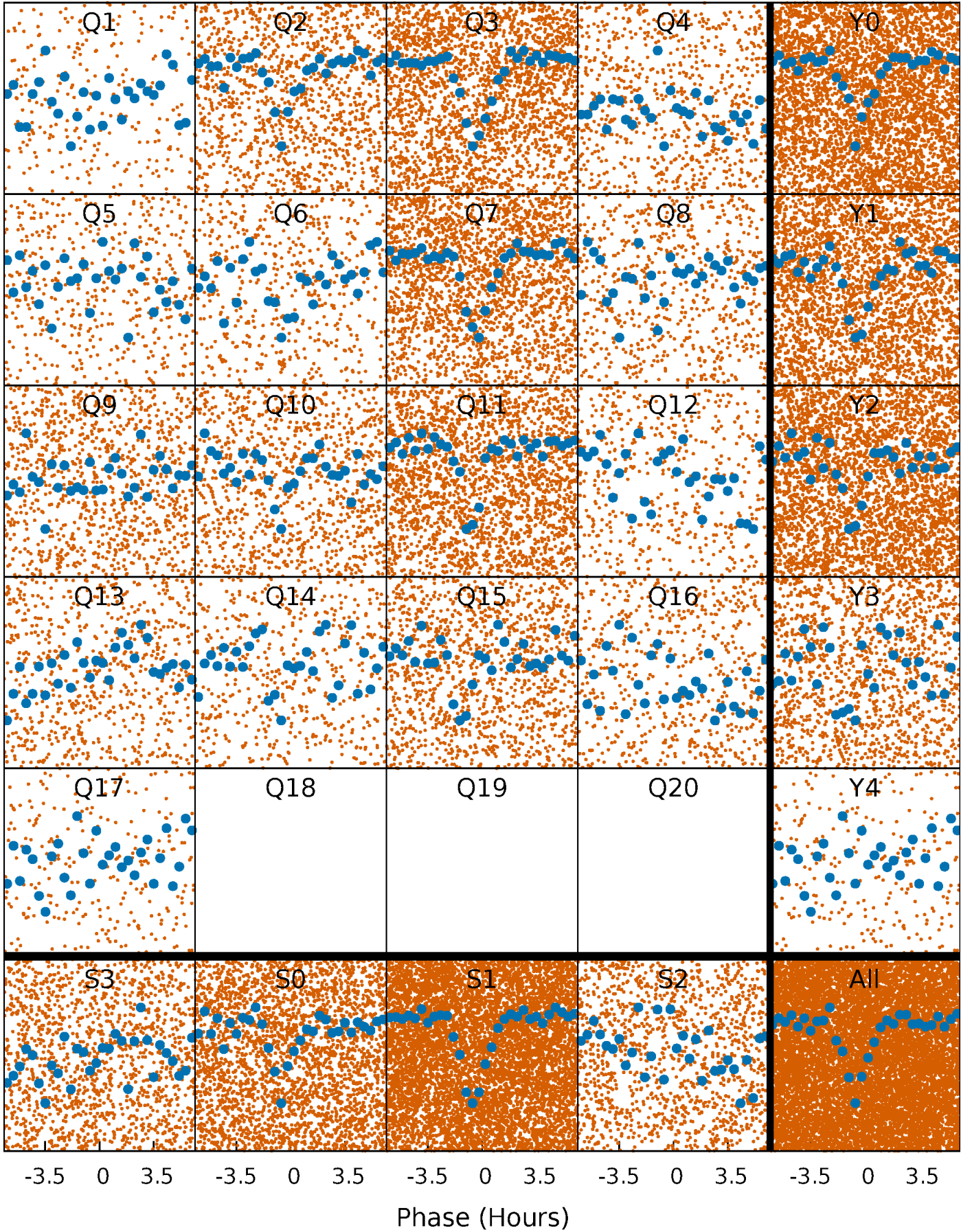


Non-Whitened Vs. Whitened Light Curve



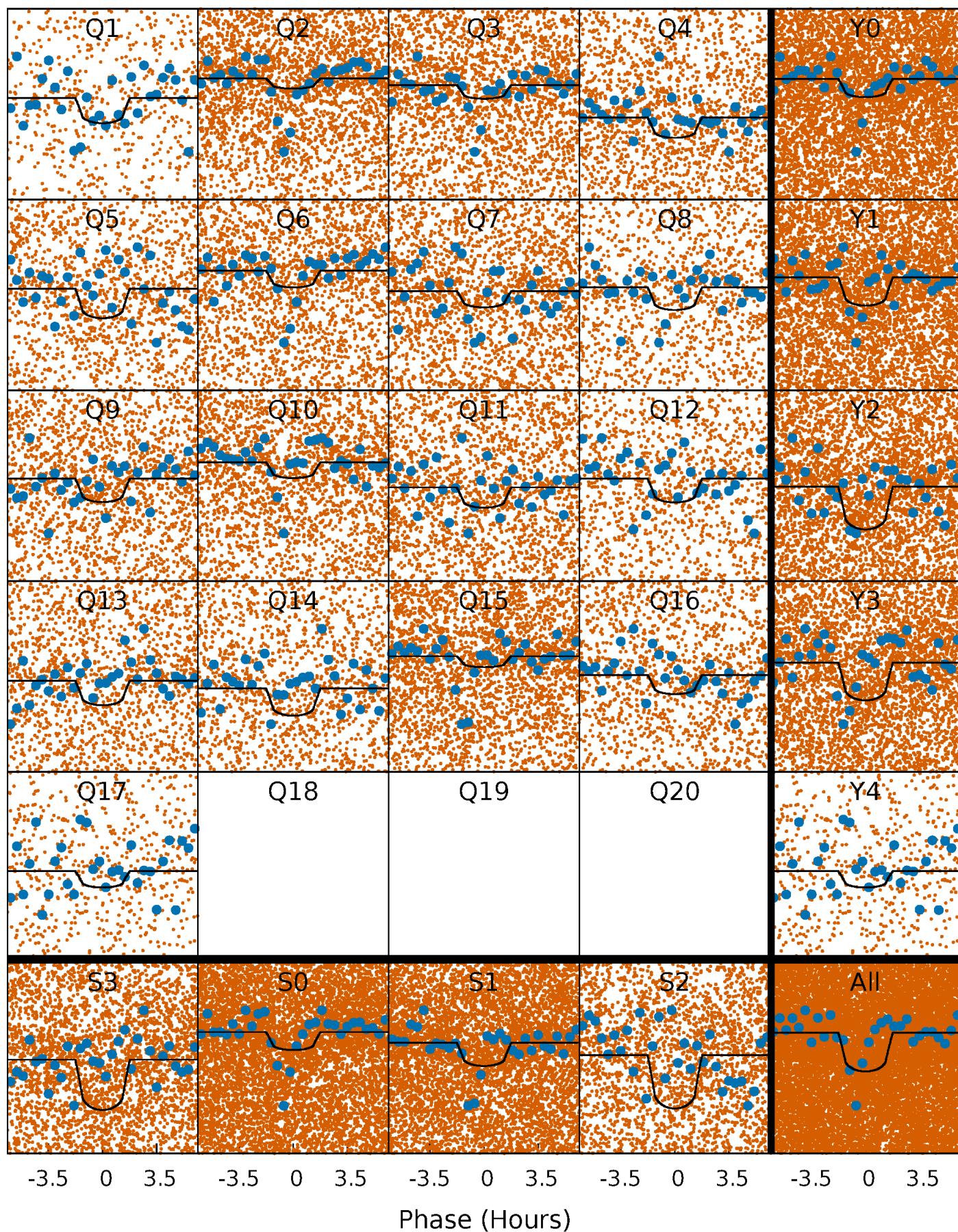
PDC Quarter-Phased Transit Curves

TCE 007366036-01 P= 0.566818 Days $T_0=131.803114$ (BKJD)



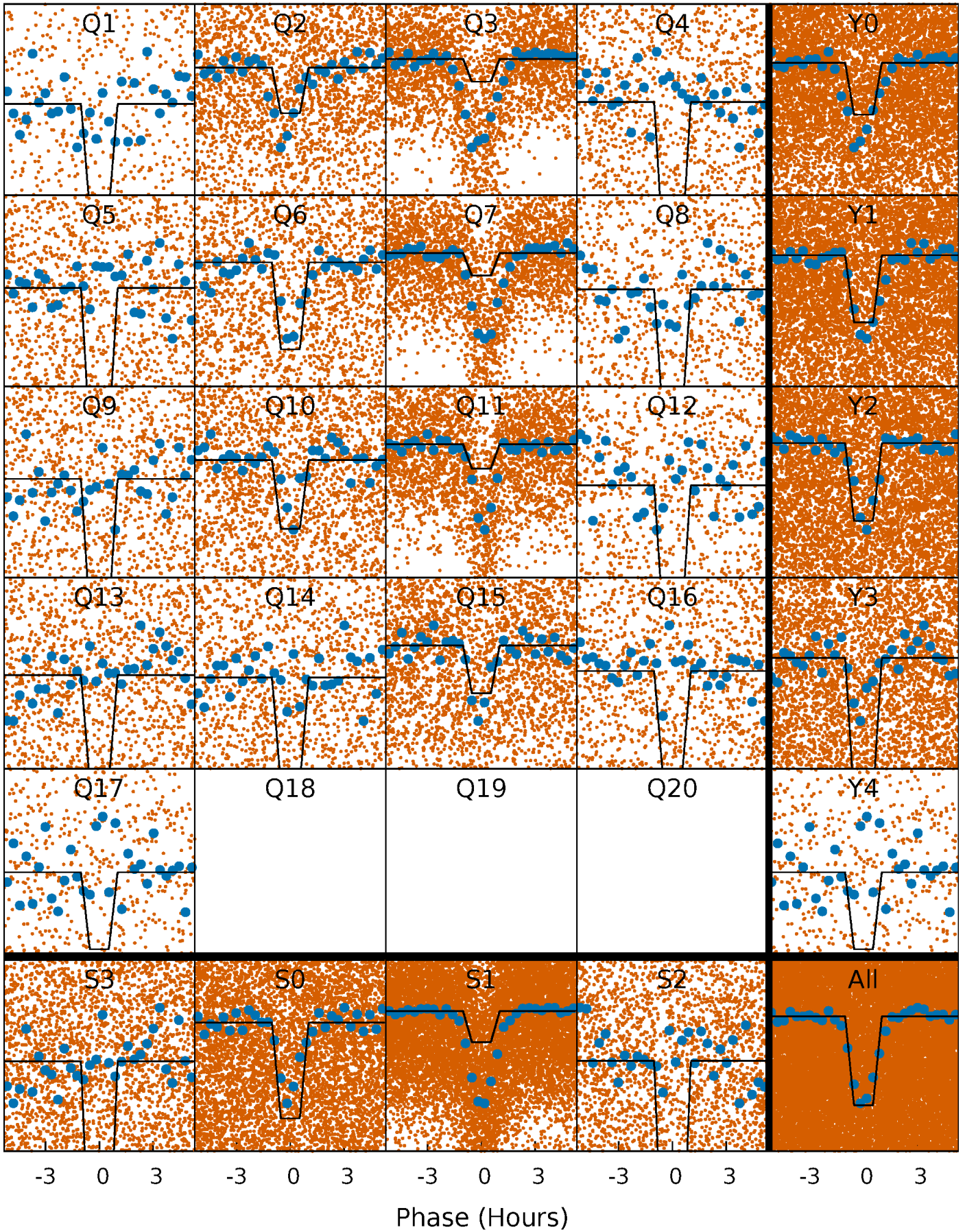
DV Quarter-Phased Transit Curves

TCE 007366036-01 P= 0.566818 Days $T_0=131.803114$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

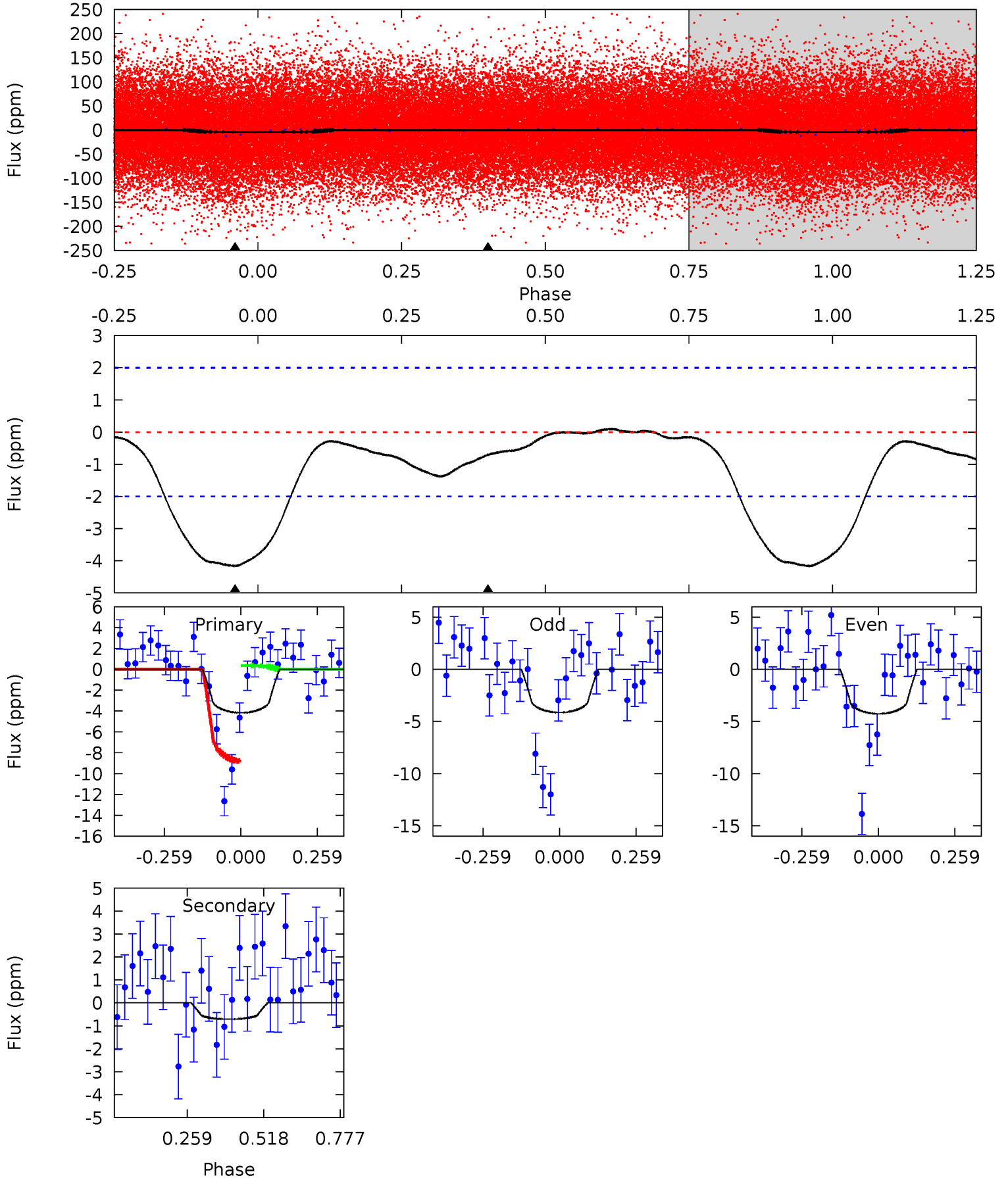
TCE 007366036-01 P= 0.566798 Days $T_0=131.799269$ (BKJD)



DV Model-Shift Uniqueness Test

007366036-01, P = 0.566818 Days, E = 131.236296 Days

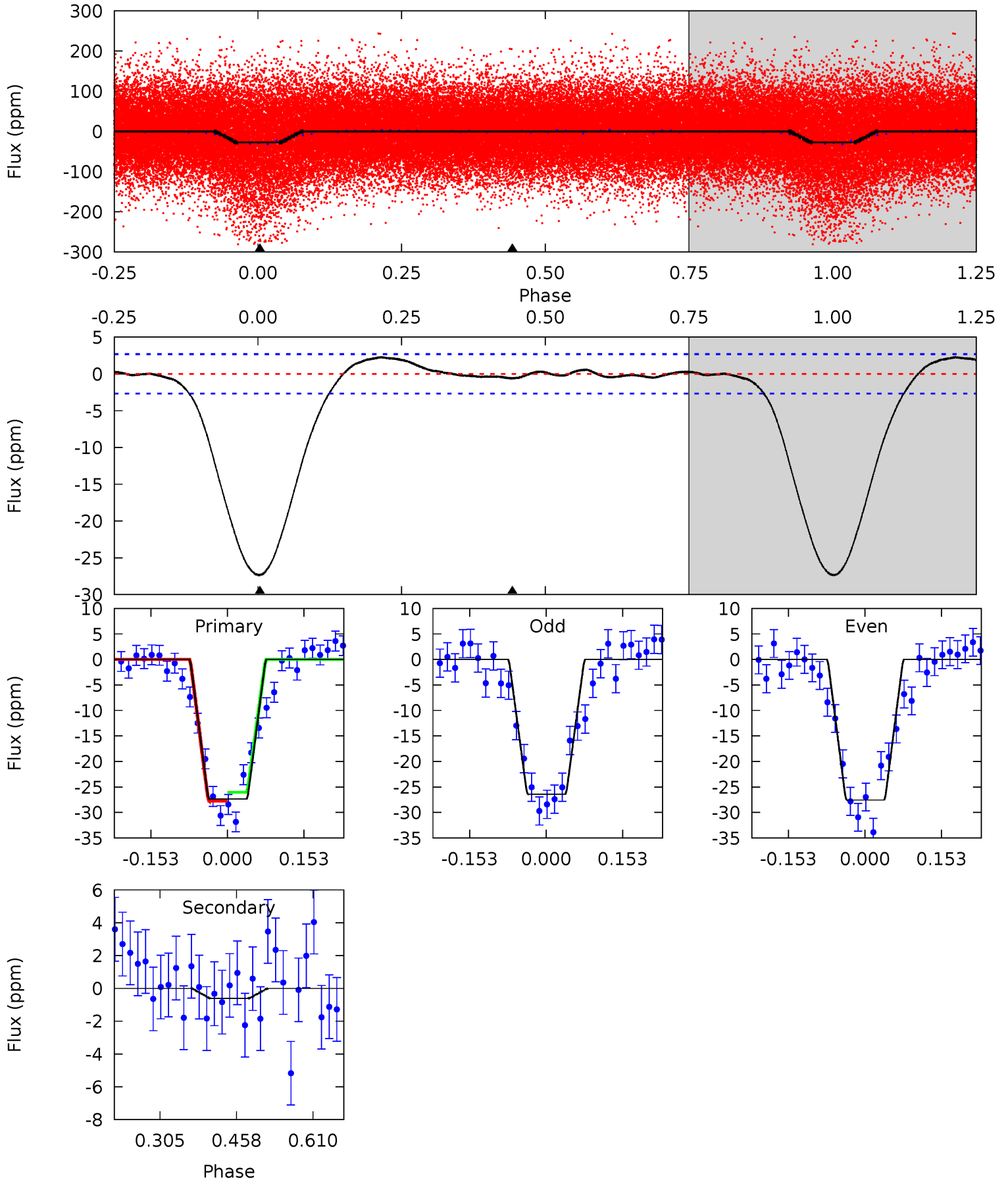
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.09	1.55	0	0	4.36	1.13	0.18	9.09	9.09	1.55	1.55	0.13	1.13	0.02	9.23



Alt Model-Shift Uniqueness Test

007366036-01, P = 0.566798 Days, E = 131.232471 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
45.7	1.02	0	0	4.48	1.43	1.58	45.7	45.7	1.02	1.02	1.00	1.29	0.08	1.44



Stellar Parameters For KIC 007366036

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6398^{+158}_{-174}	$4.358^{+0.092}_{-0.138}$	$-0.340^{+0.250}_{-0.300}$	$1.111^{+0.238}_{-0.146}$	$1.023^{+0.145}_{-0.106}$	$1.051^{+0.421}_{-0.415}$
	+2%/-3%	+2%/-3%	+74%/-88%	+21%/-13%	+14%/-10%	+40%/-40%
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 007366036-01 / KOI 6867.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1 ± 0	$0.31^{+0.07}_{-0.06}$	3600^{+176}_{-164}	3690^{+634}_{-6443}	$0.739^{+0.719}_{-0.496}$
Alt.	-1 ± 1	$0.70^{+0.09}_{-0.07}$	3601^{+184}_{-167}	-3164^{+580}_{-304}	$0.130^{+0.130}_{-0.132}$

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

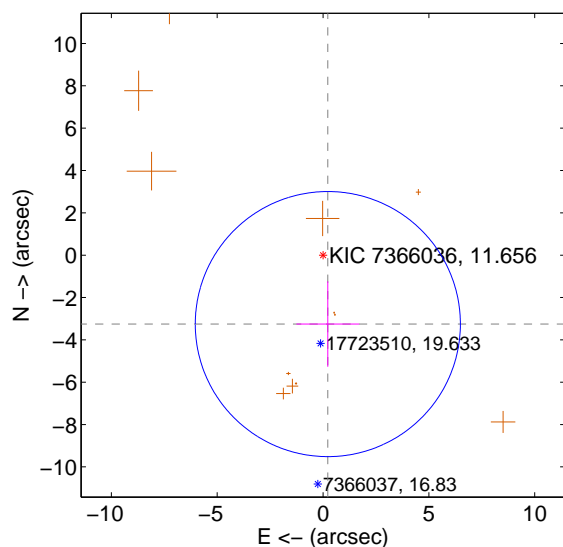
Supplemental centroid analysis for 007366036-01. **Kepler magnitude: 11.66.** Transit SNR 8.69

There are 0 quarters with good PRF difference image offsets

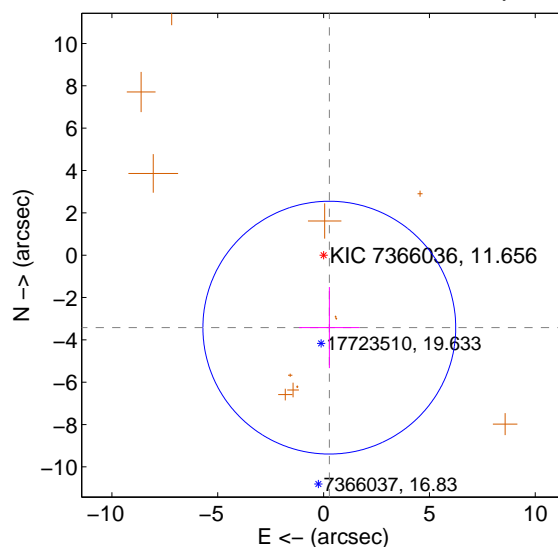
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.263 ± 2.087	1.56	-0.226 ± 1.484	-3.255 ± 2.018
PRF-fit source offset from KIC position	3.434 ± 1.990	1.73	-0.271 ± 1.427	-3.423 ± 1.915
photometric centroid source offset	2.01 ± 1.01	1.99	-1.76 ± 1.04	-0.98 ± 0.89

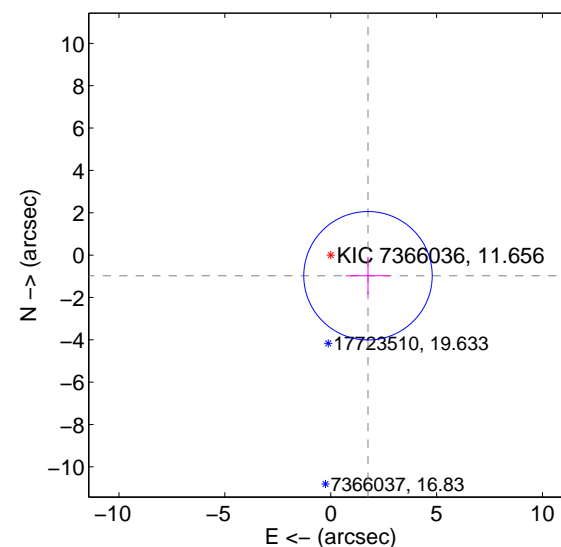
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

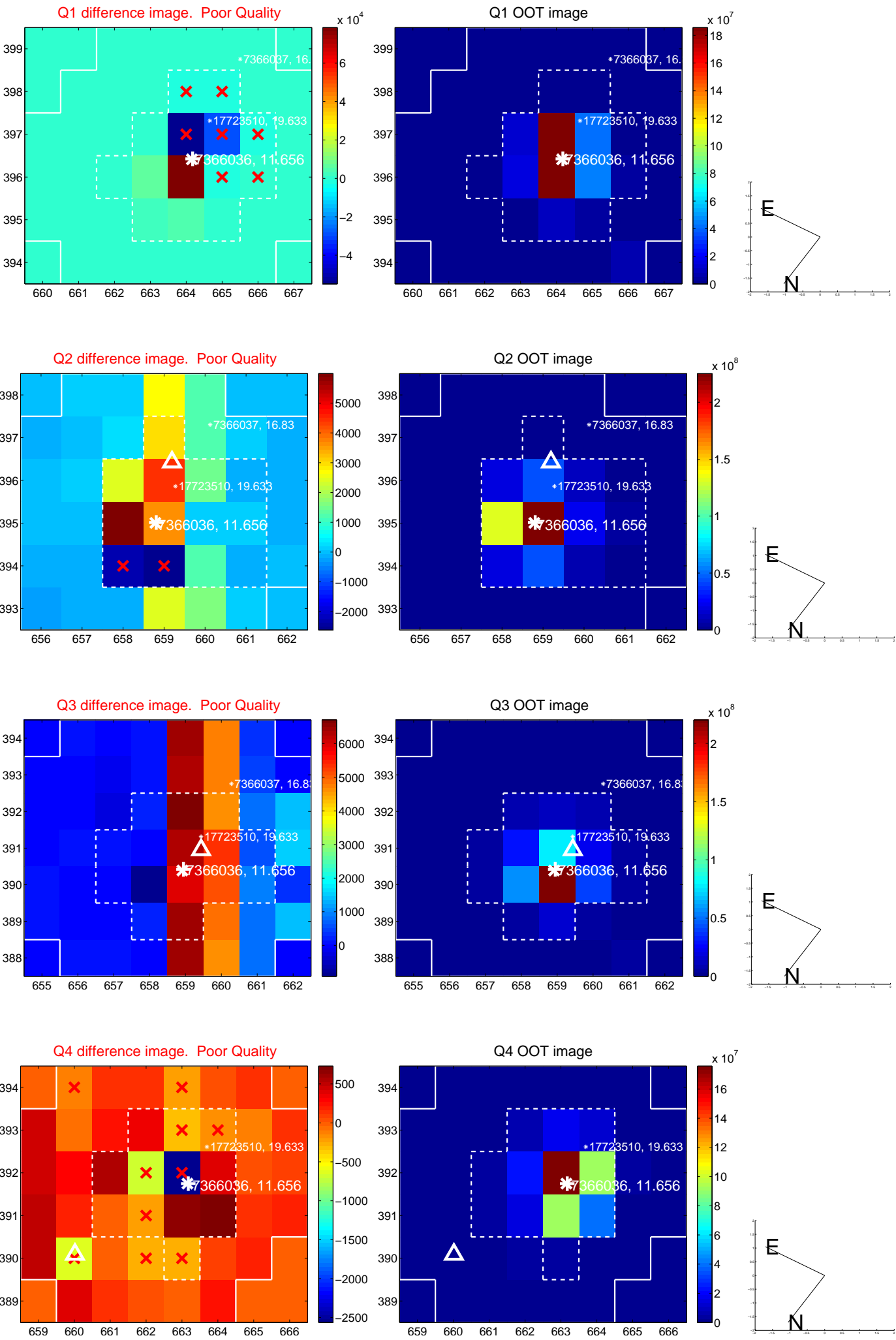


offset from photometric centroids

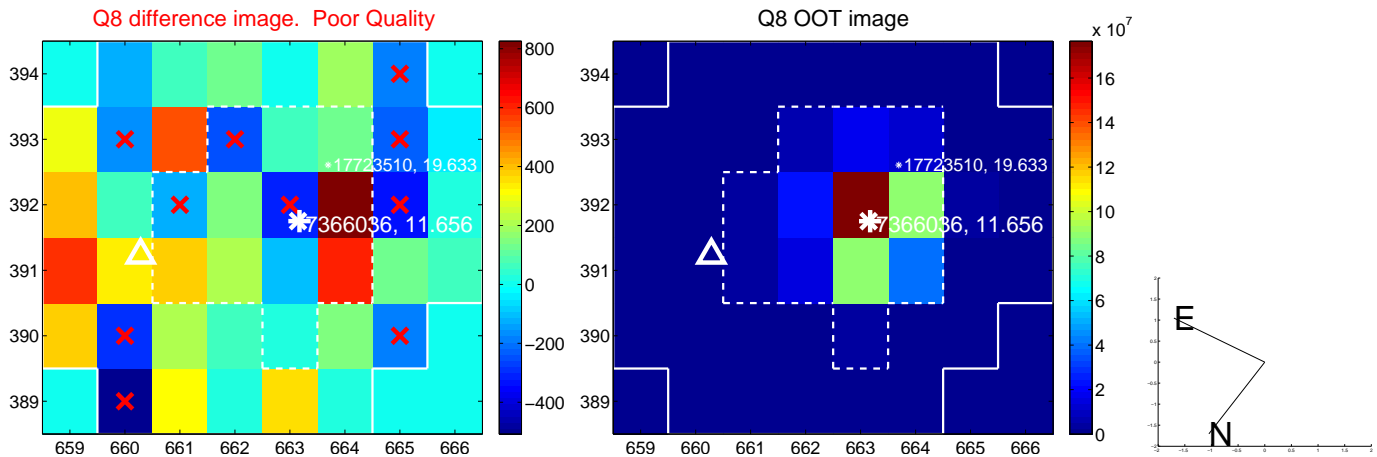
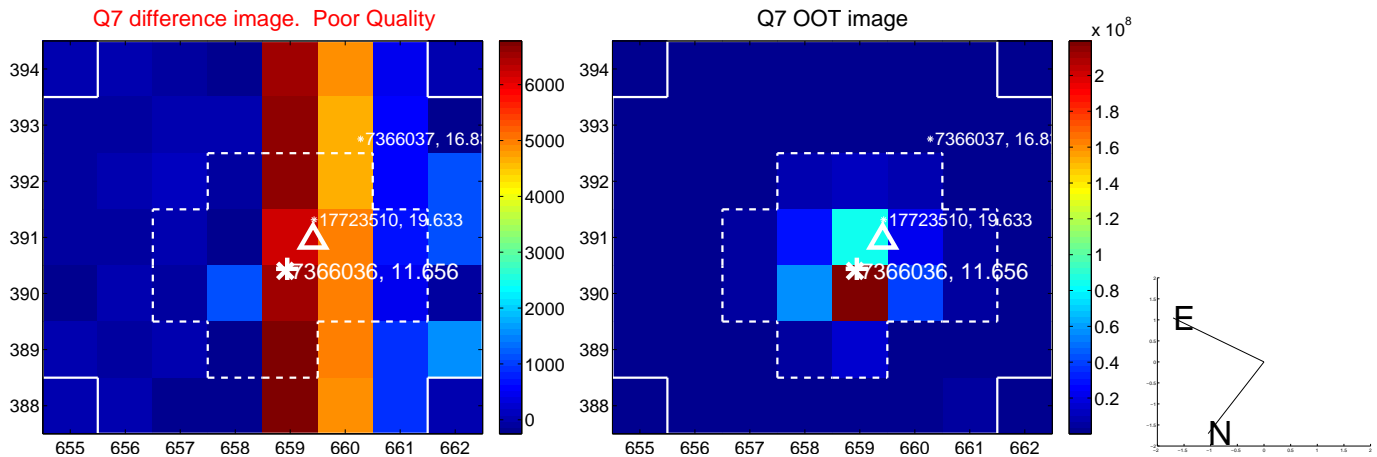
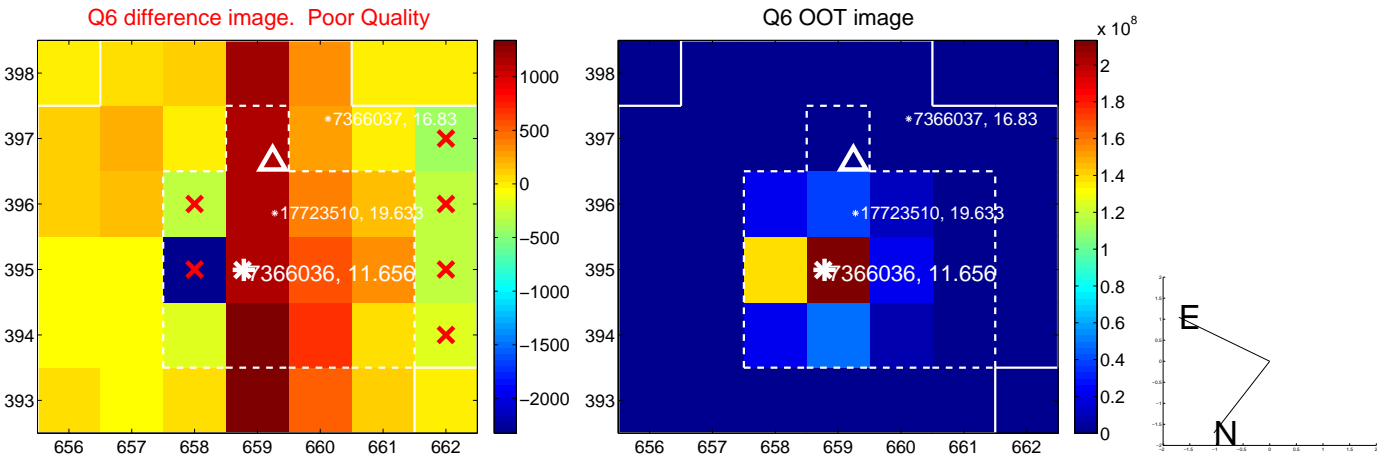
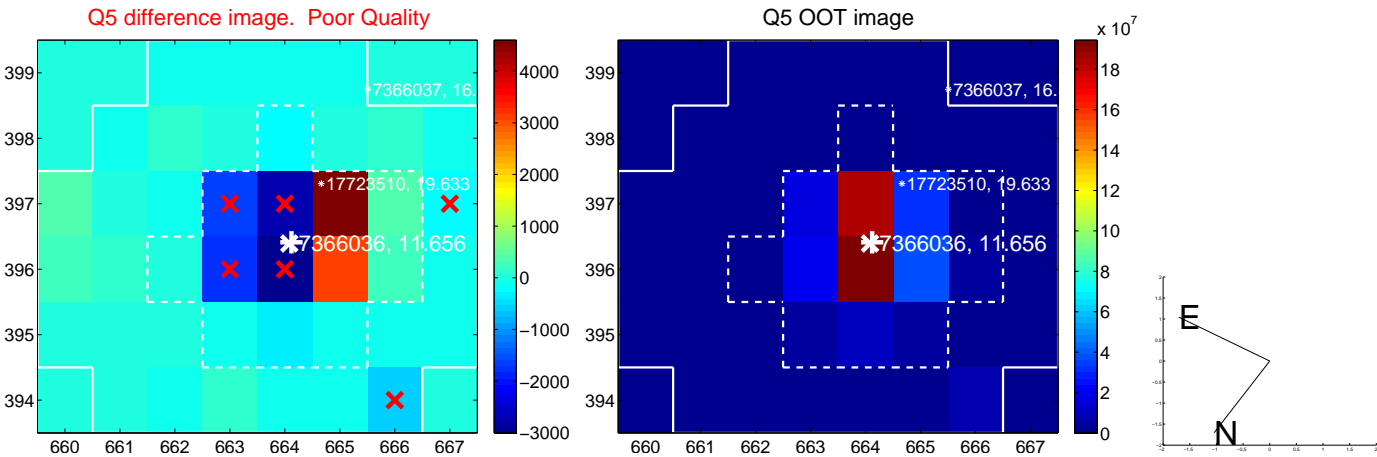


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

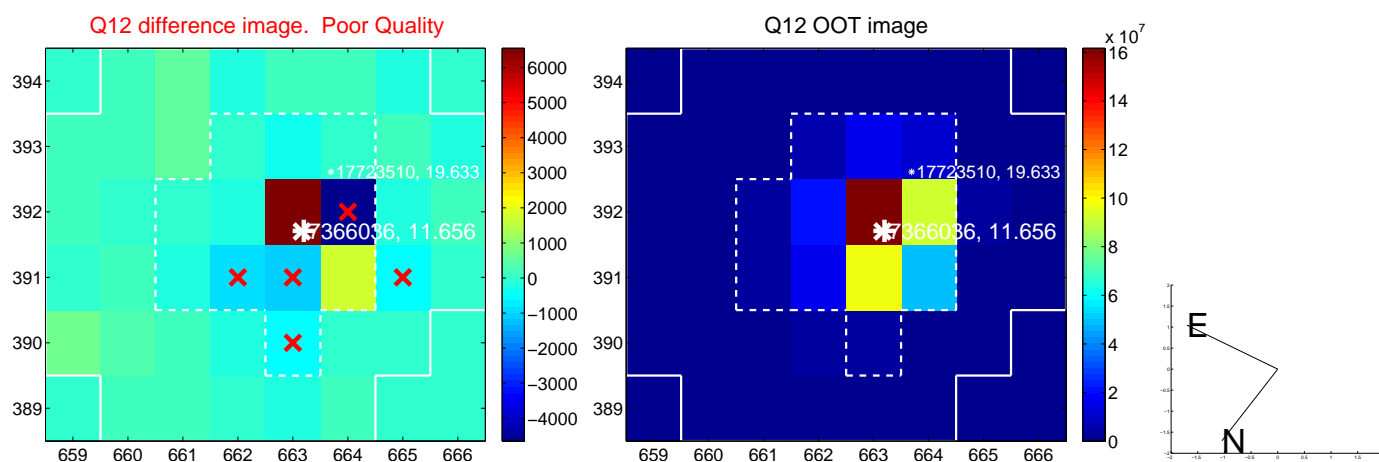
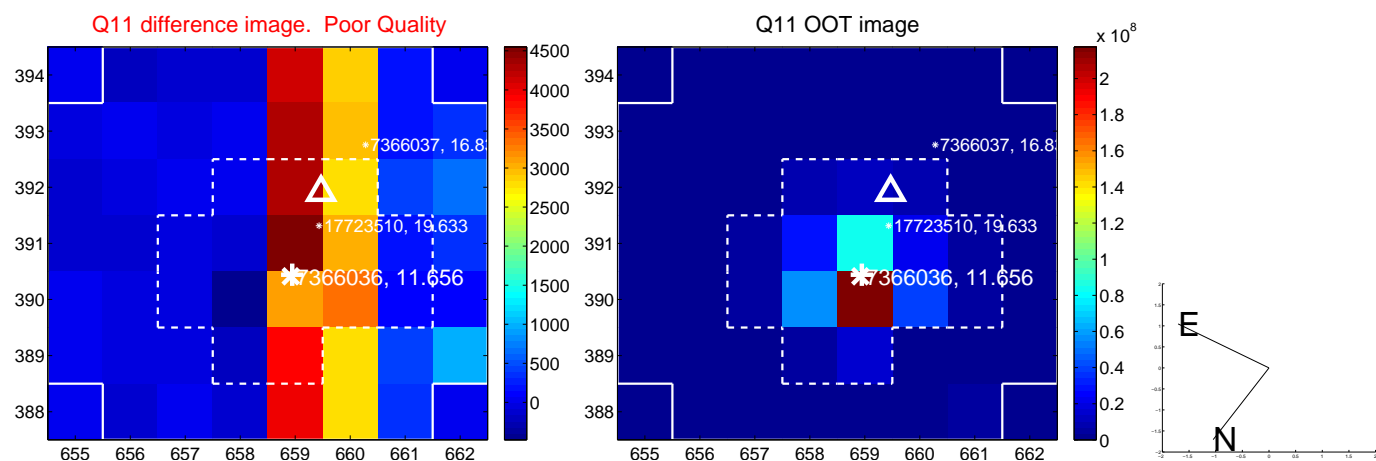
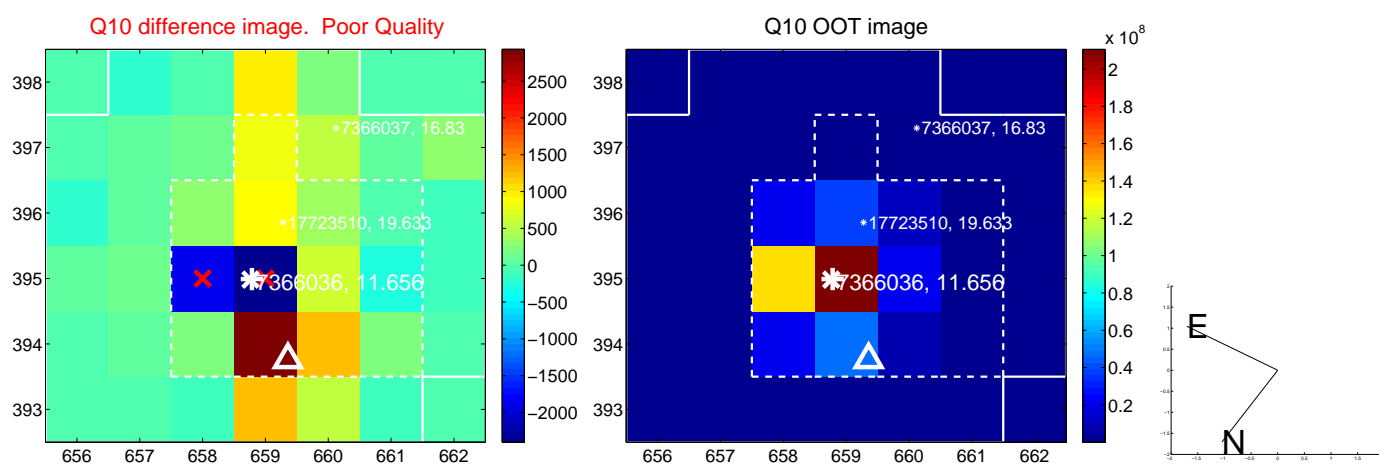
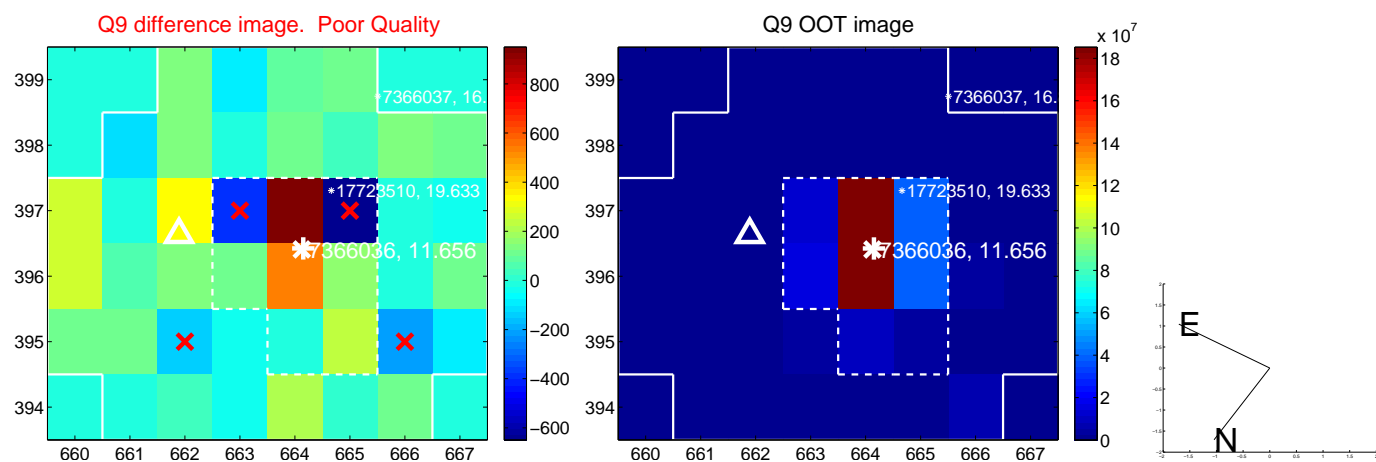
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



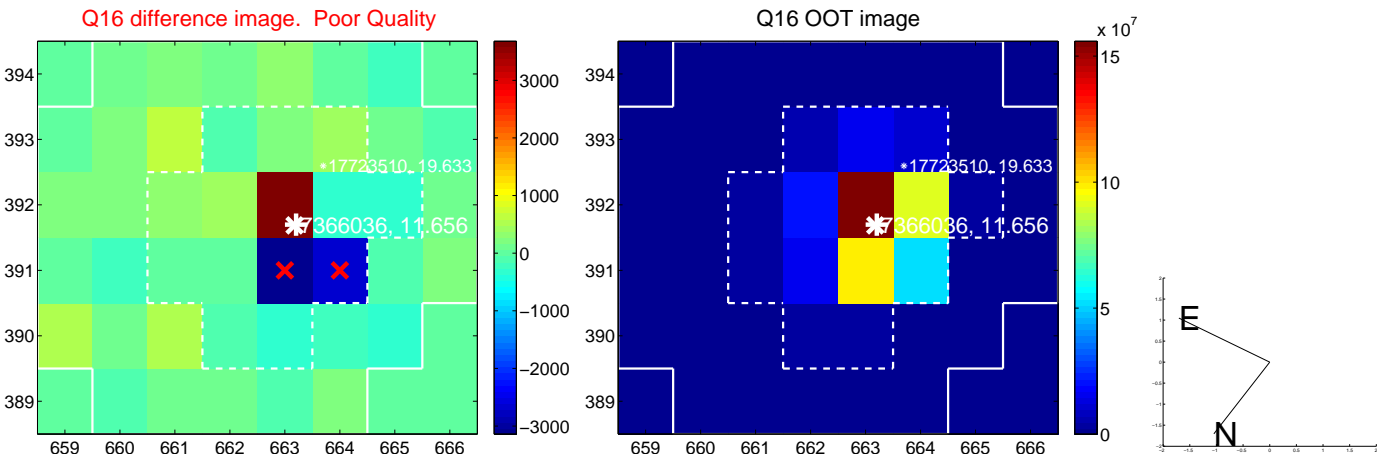
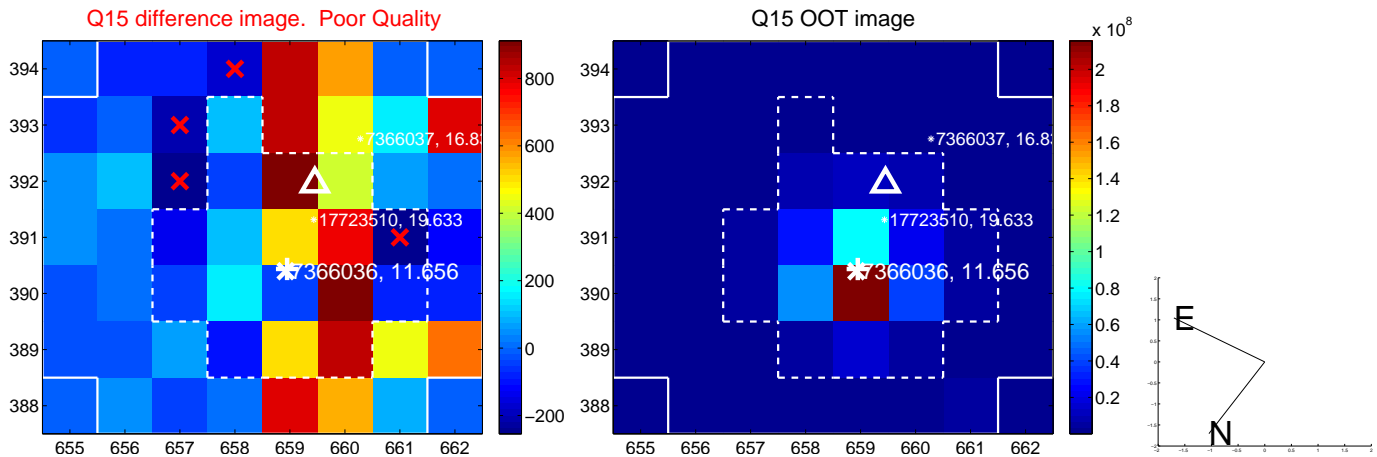
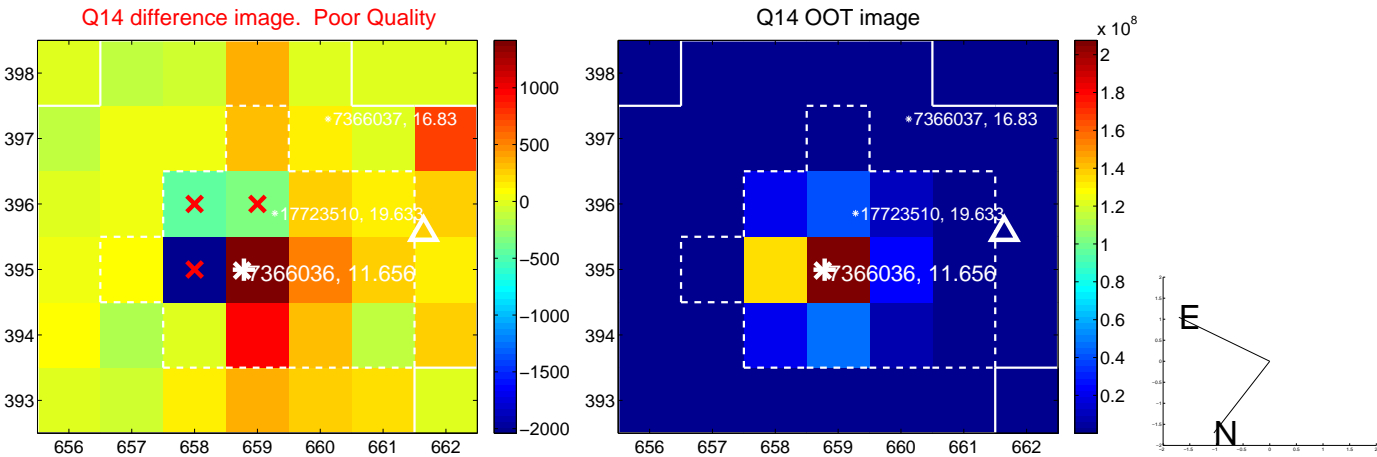
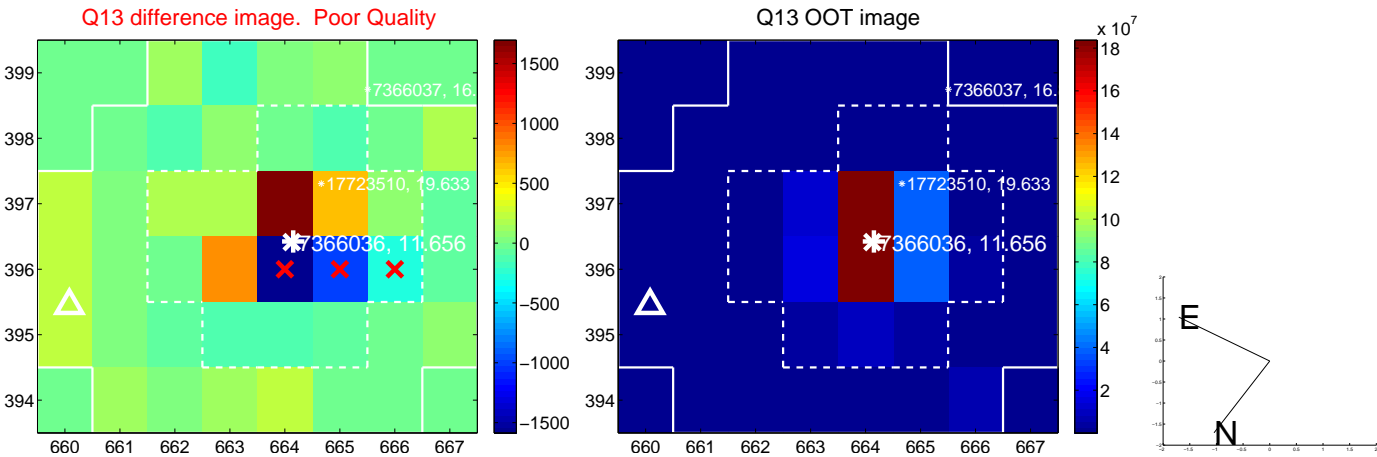
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



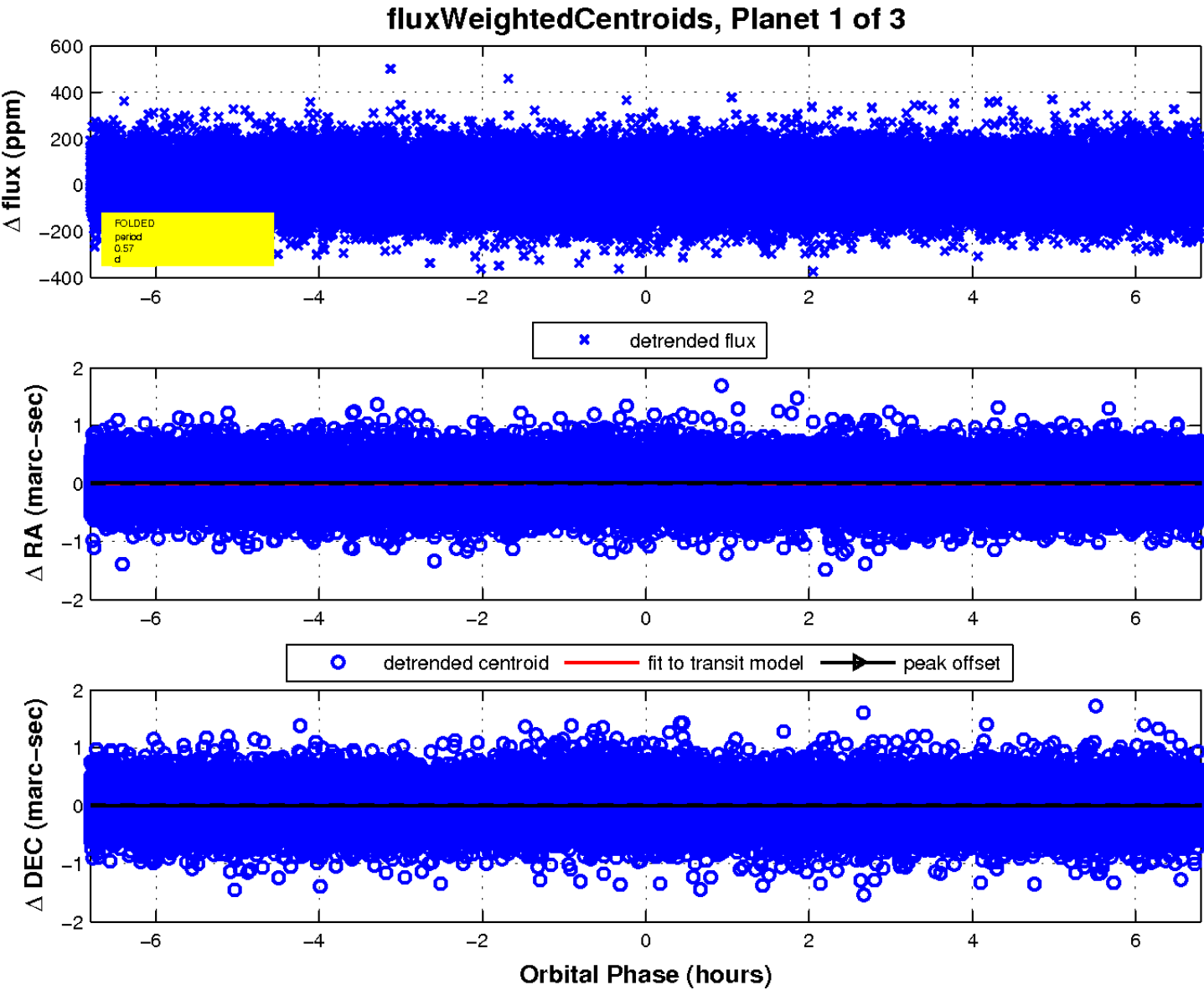
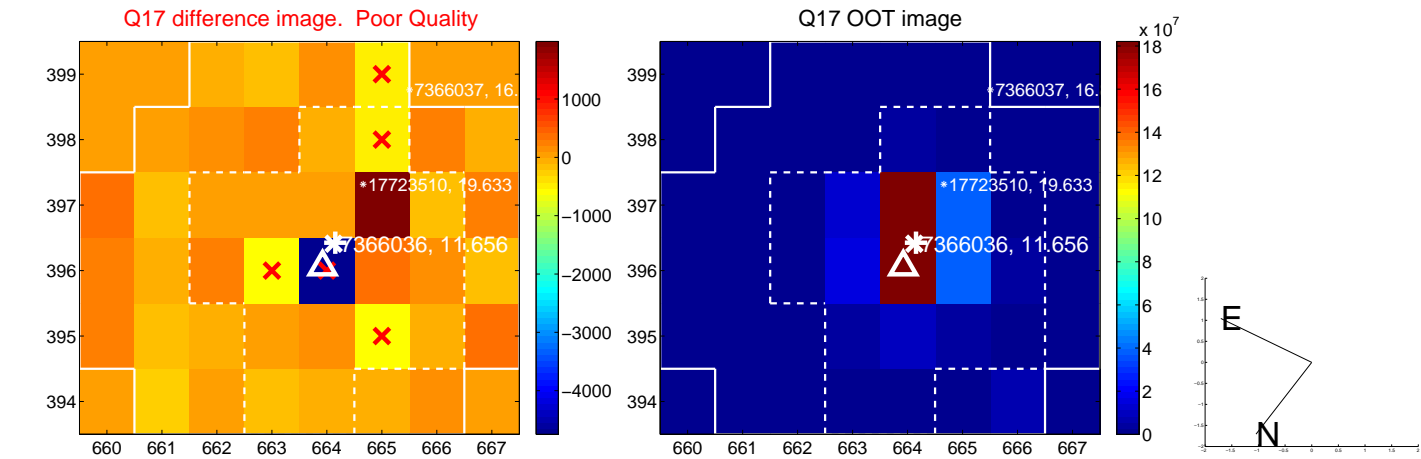
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

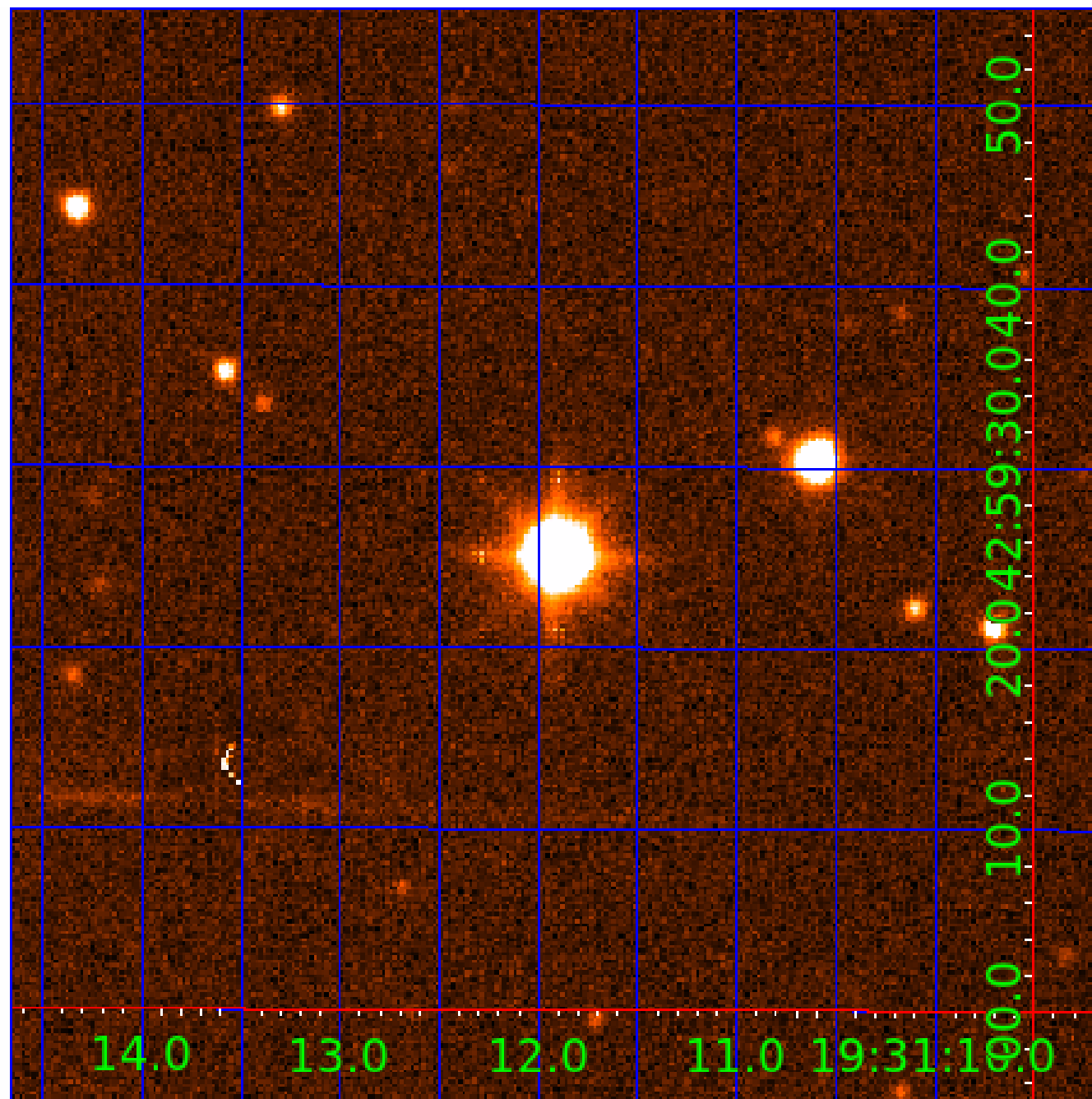


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007366036

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})
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007366036-01	OBS	FP	0.00	1	0	0	1	LPP_DV—CENT_FEW_DIFFS—EPHEM_MATCH
007366036-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— INCONSISTENT_TRANS—CENT_FEW_MEAS

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

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

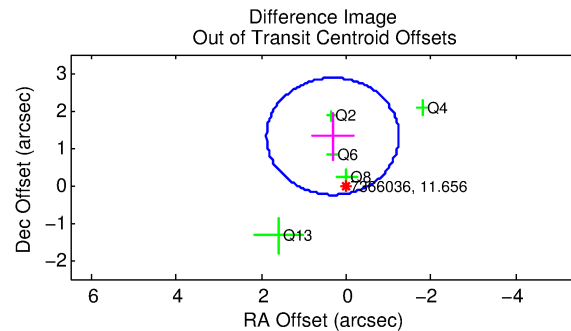
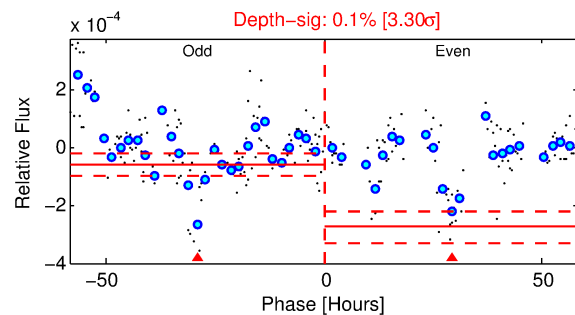
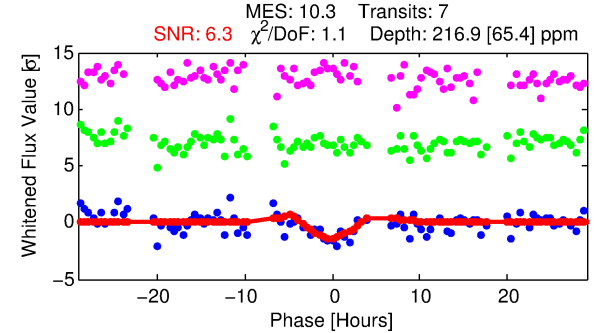
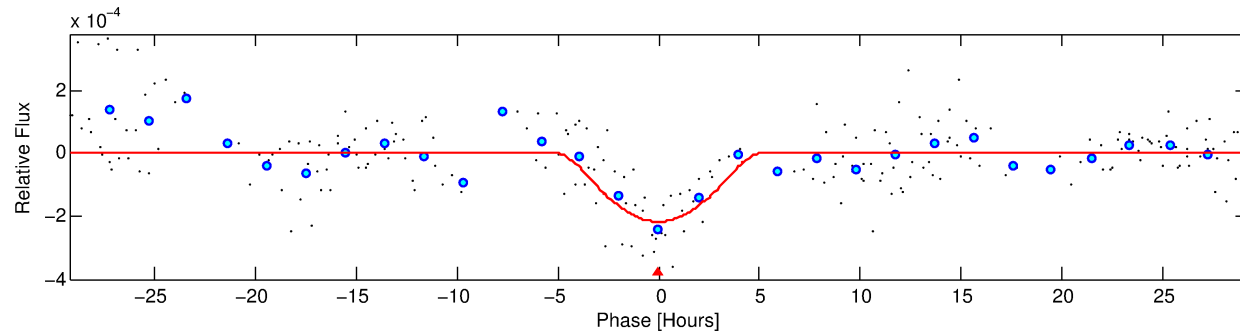
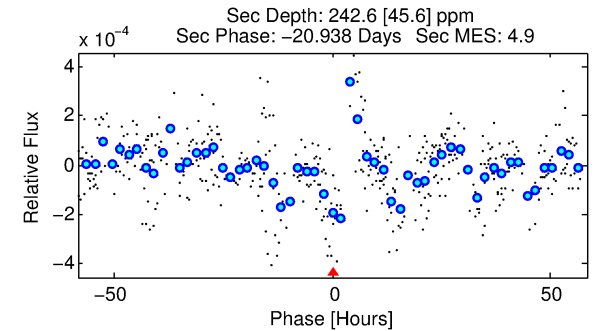
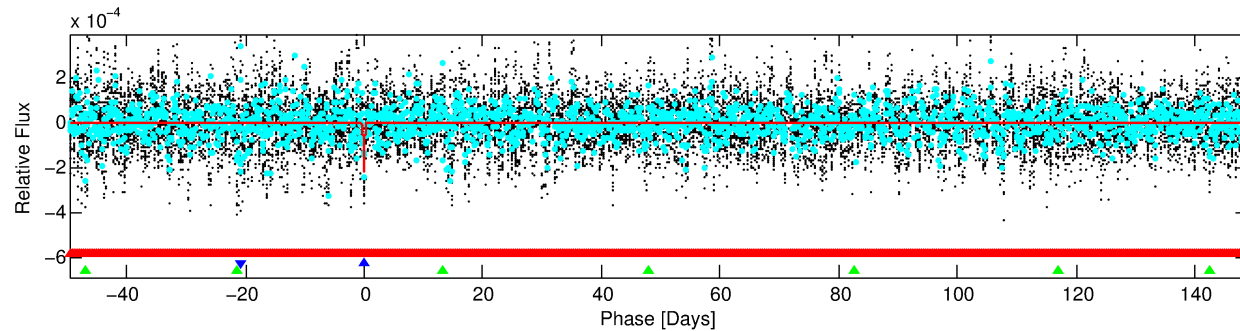
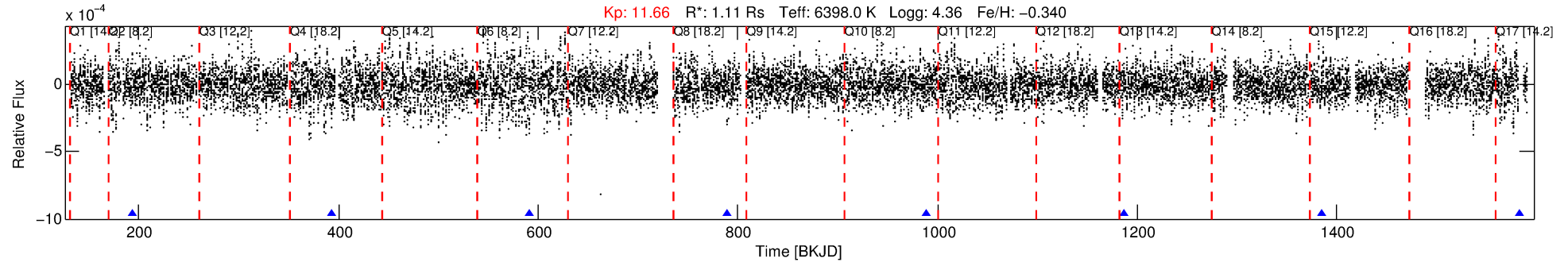
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007366036-02

No Significant Match Found

DV One-Page Summary

KIC: 7366036 Candidate: 2 of 3 Period: 198.439 d
KOI: K06867 Corr: No Ephemeris Match



DV Fit Results:

Period = 198.43903 [0.01606] d
Epoch = 194.3447 [0.0421] BKJD
 $R_p/R^* = 0.0263$ [0.0793]
 $a/R^* = 36.29$ [32.03]
 $b = 1.00$ [0.12]
 $\text{Seff} = 4.11$ [1.14]
 $T_{\text{eq}} = 363$ [25] K
 $R_p = 3.19$ [9.63] R_e
 $a = 0.6718$ [0.1195] AU
 $A_g = 5913.82$ [35661.52] [0.17σ]
 $T_{\text{eff}} = 4921$ [7414] K [0.61σ]

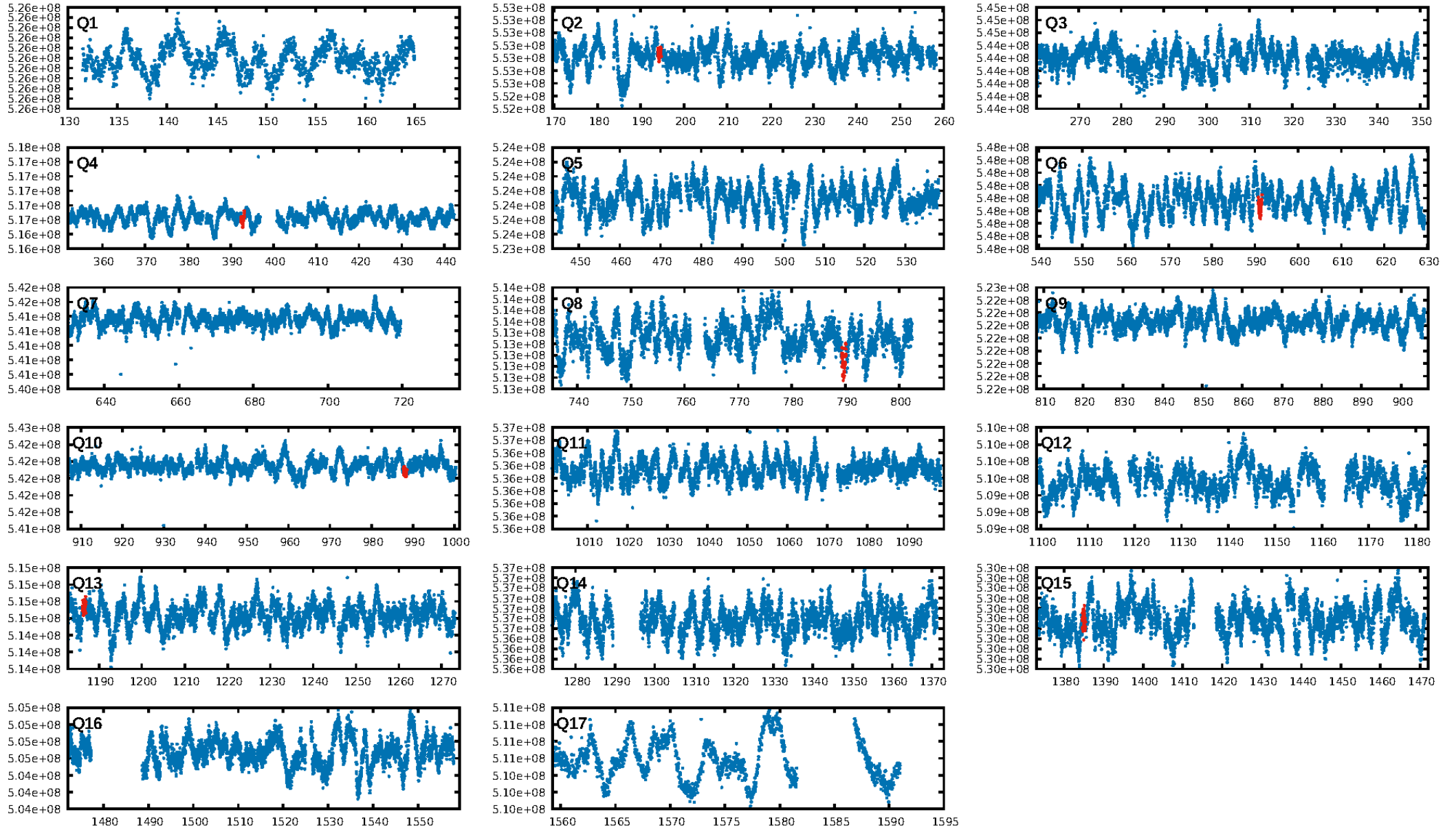
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [465.06σ]
LongPeriod-sig: 100.0% [55.17σ]
ModelChiSquare2-sig: 0.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.09e-17
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 0.9696
Centroid-sig: 86.8%
Centroid-so: 0.157 arcsec [0.32σ]
OotOffset-rm: 1.344 arcsec [2.58σ]
OotOffset-st: 2/0/2/1 [5]
KicOffset-rm: 1.268 arcsec [2.81σ]
KicOffset-st: 2/0/2/1 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 0.00 [0/7]

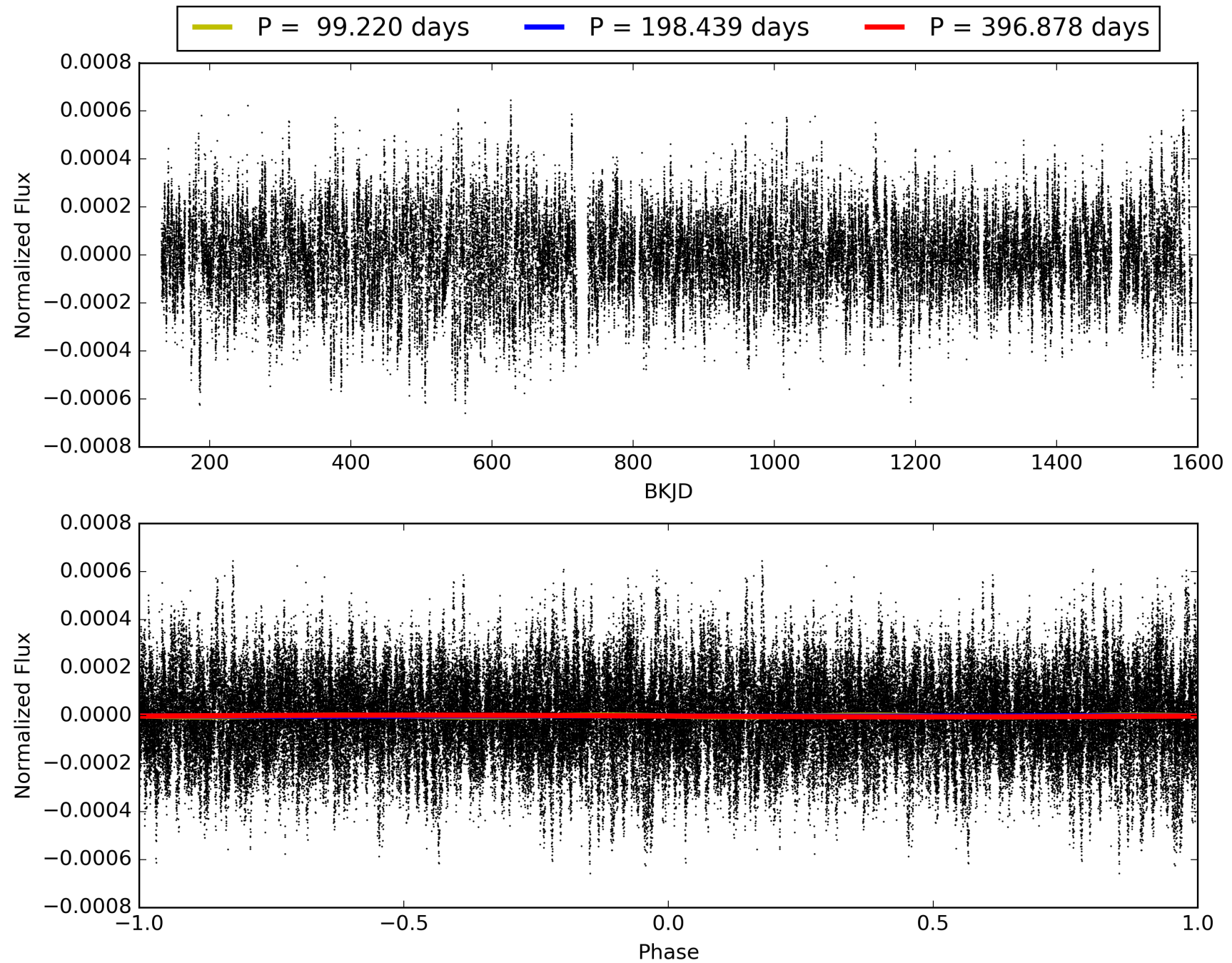
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:46:08 Z

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

TCE 007366036-02, PDC Light Curves

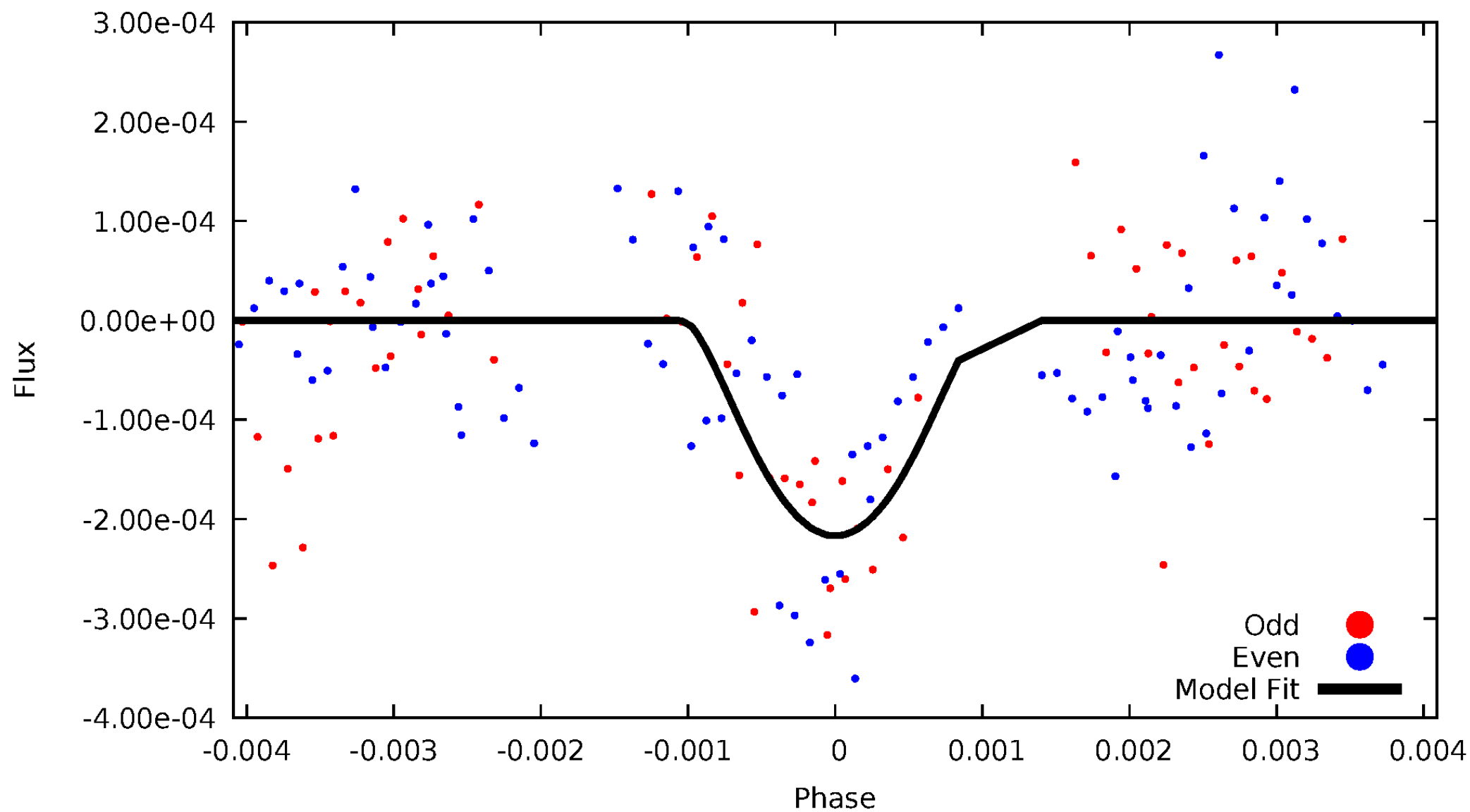


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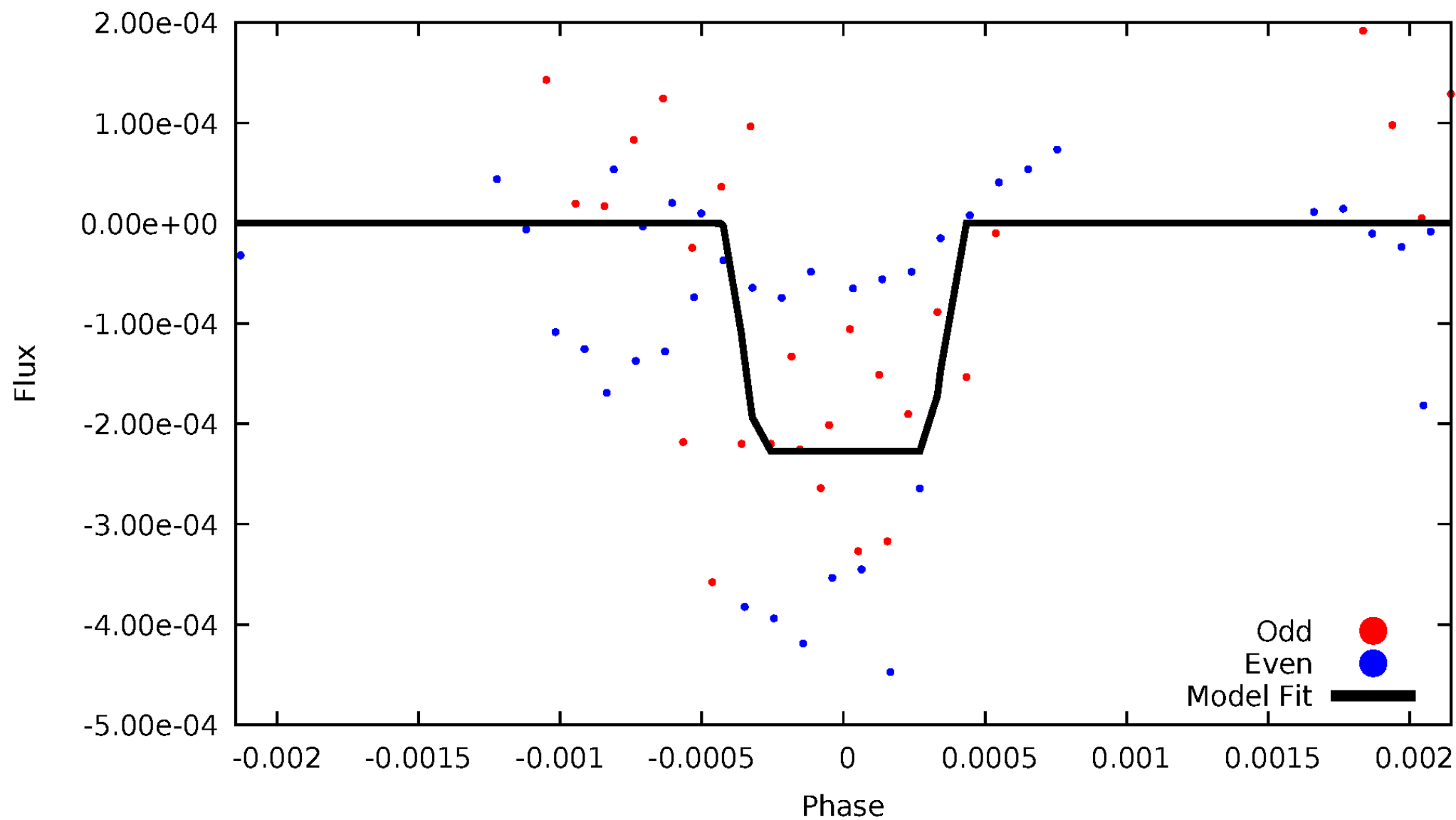
DV Odd/Even

TCE 007366036-02



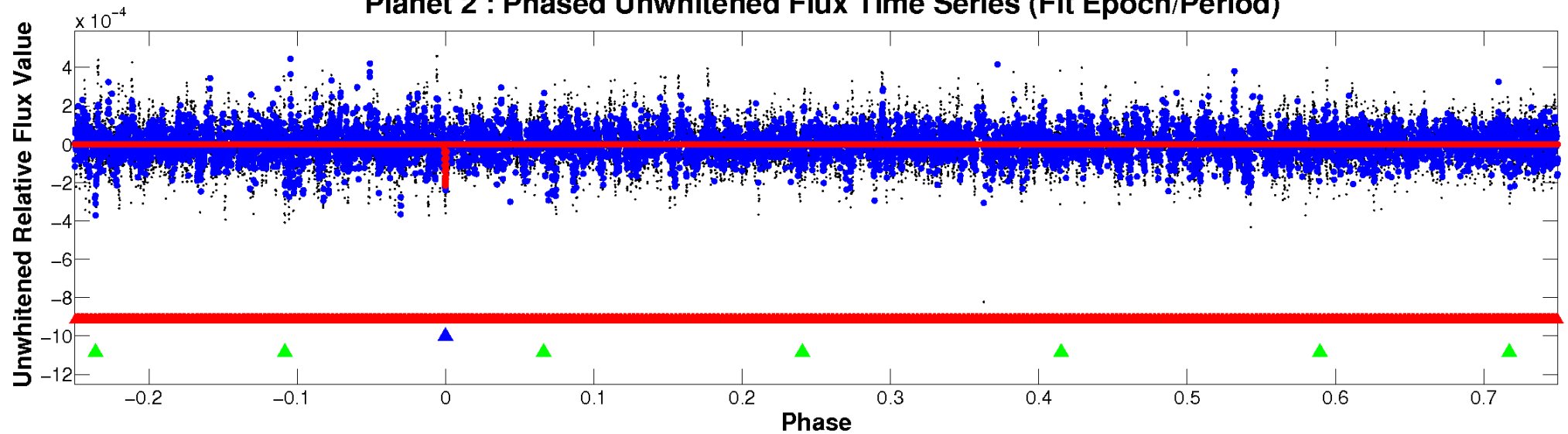
ALT Odd/Even

TCE 007366036-02

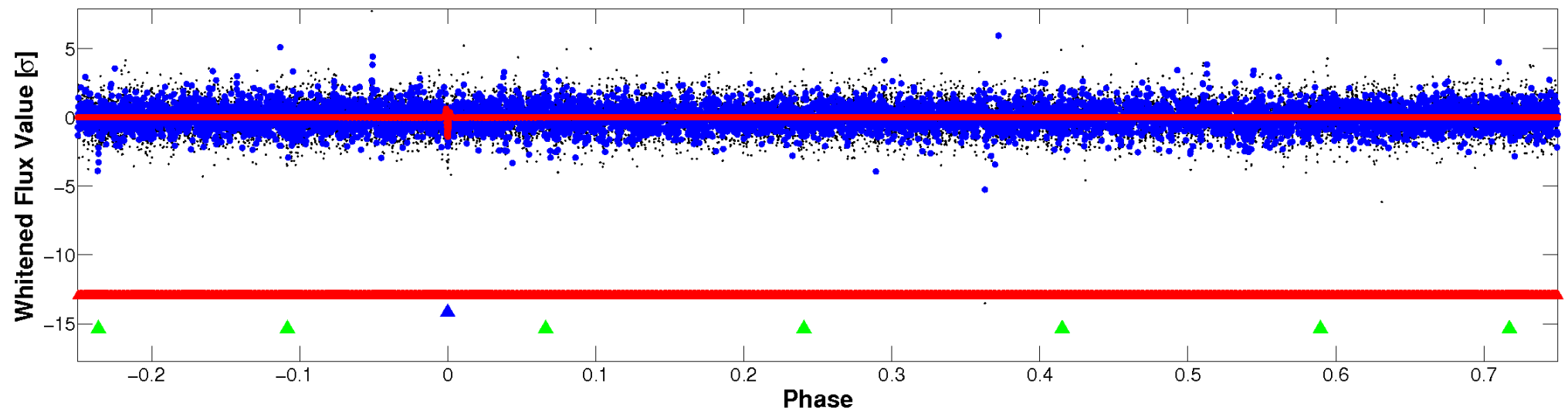


Non-Whitened Vs. Whitened Light Curve

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

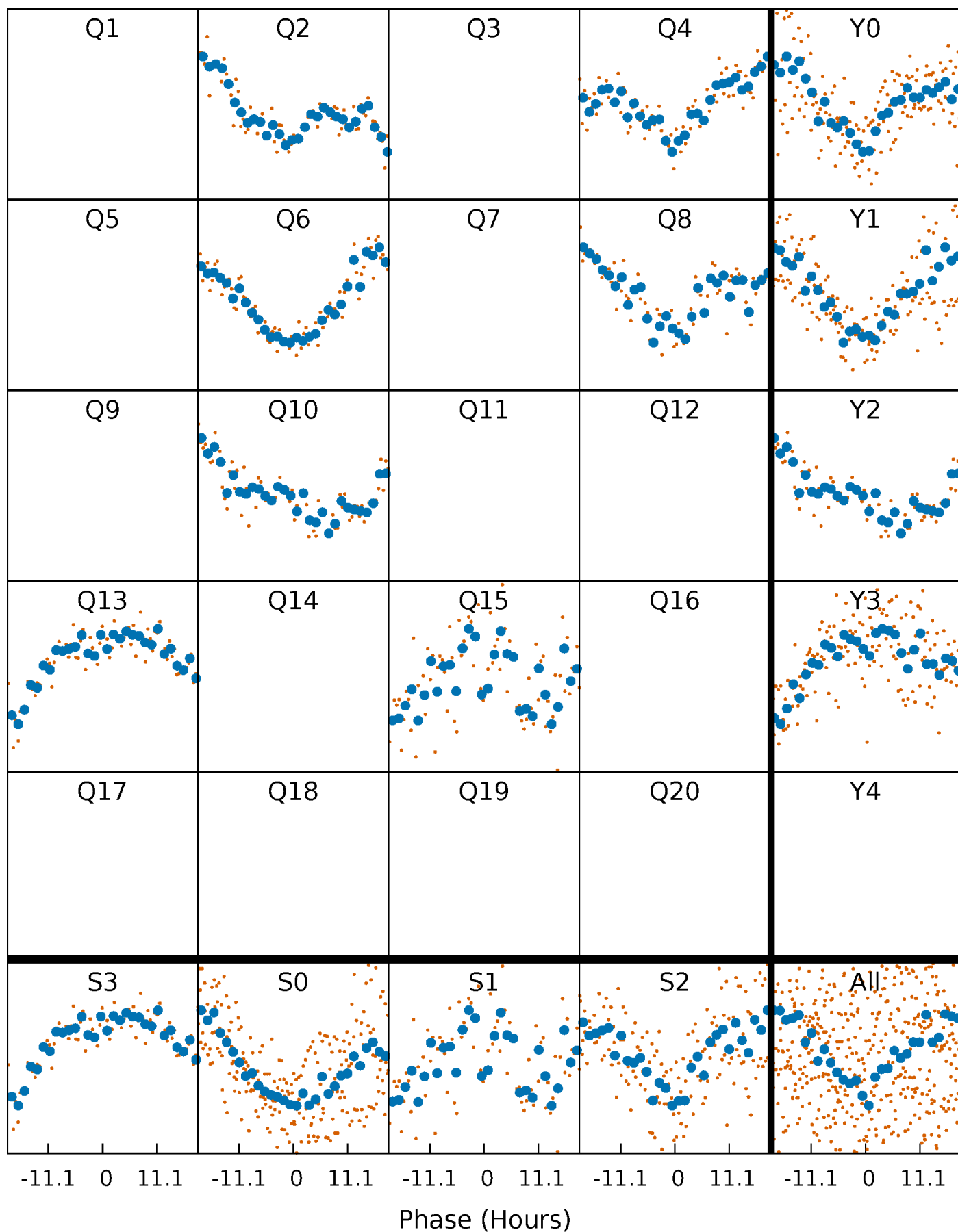


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



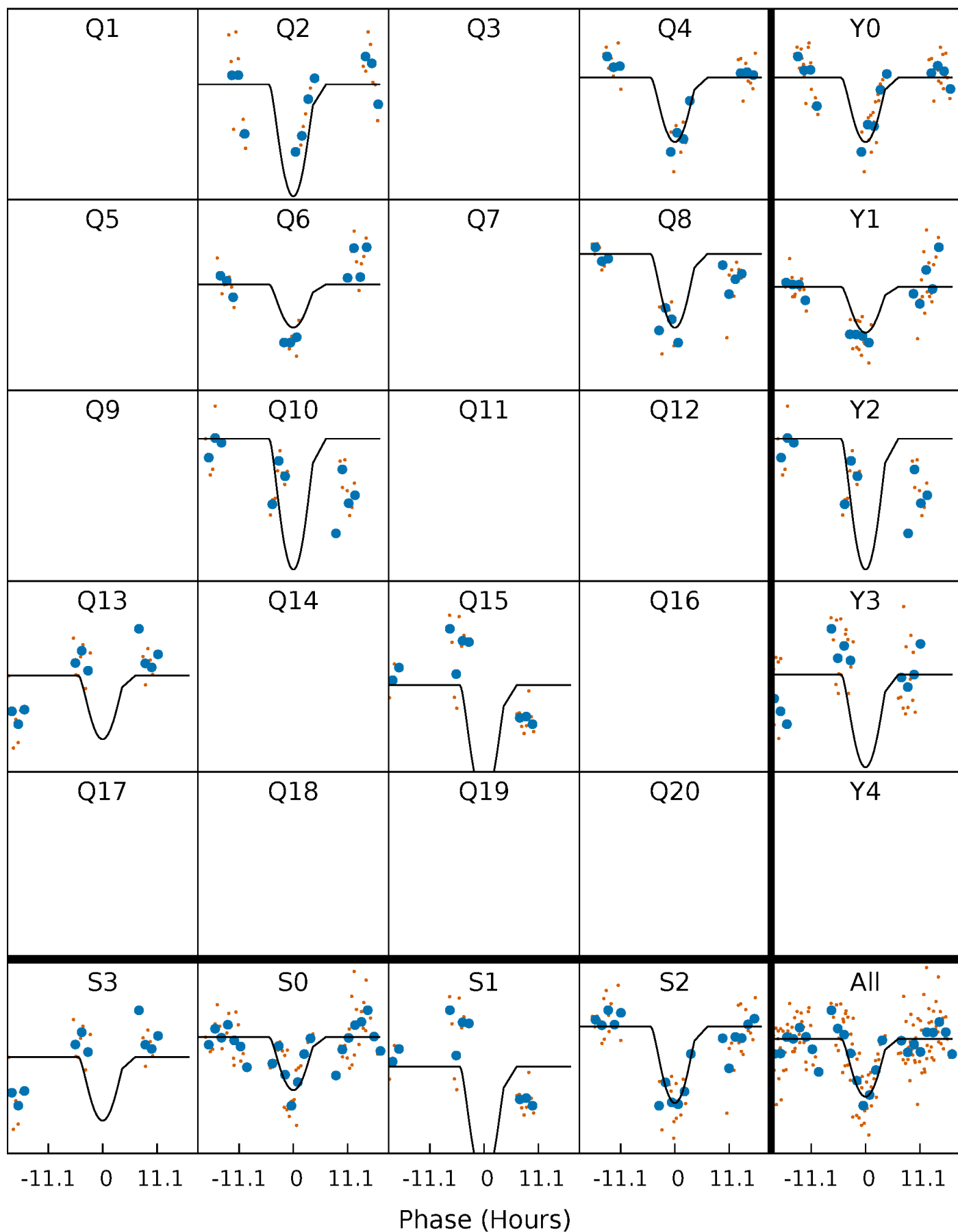
PDC Quarter-Phased Transit Curves

TCE 007366036-02 $P=198.439027$ Days $T_0=194.344735$ (BKJD)



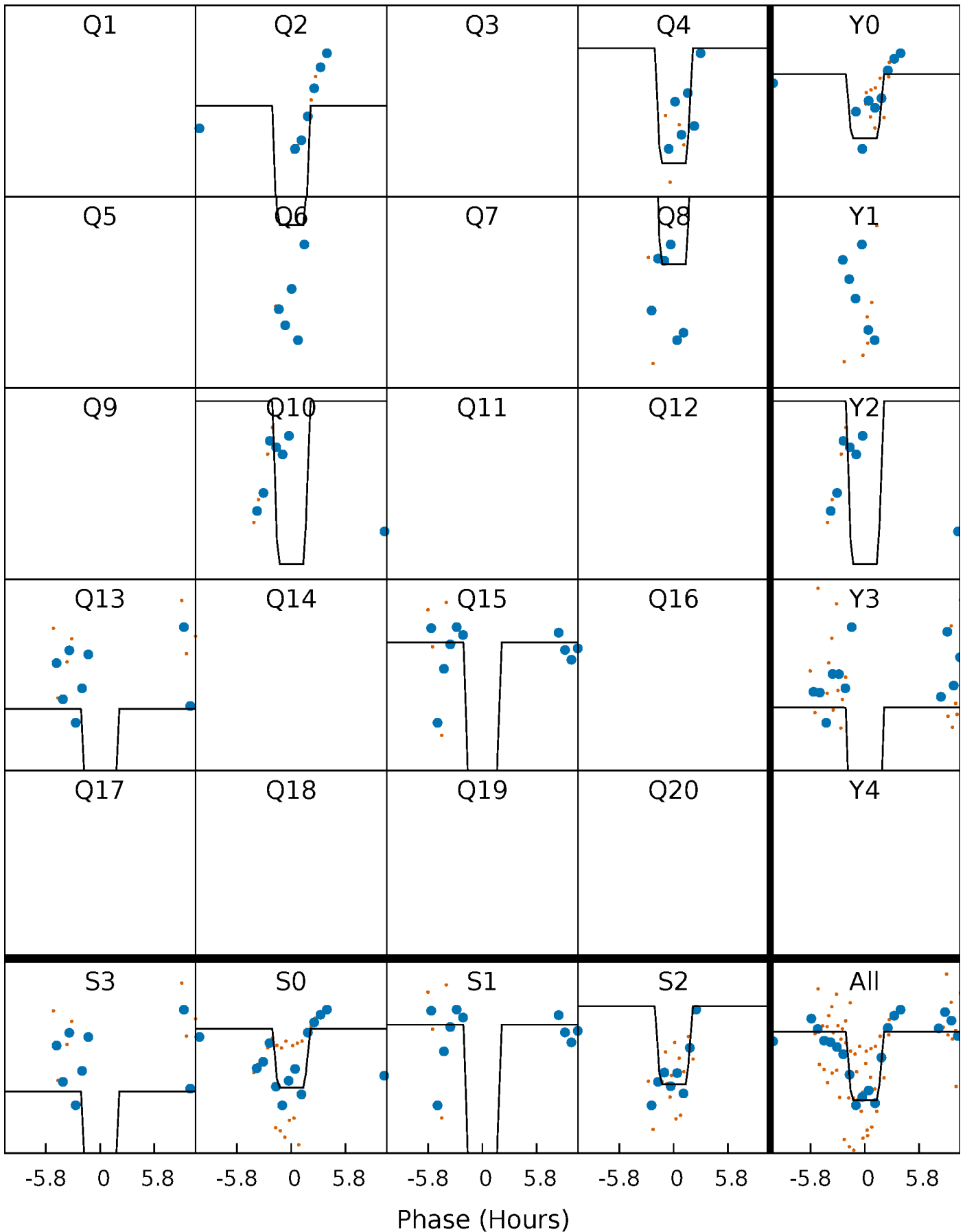
DV Quarter-Phased Transit Curves

TCE 007366036-02 P=198.439027 Days $T_0=194.344735$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

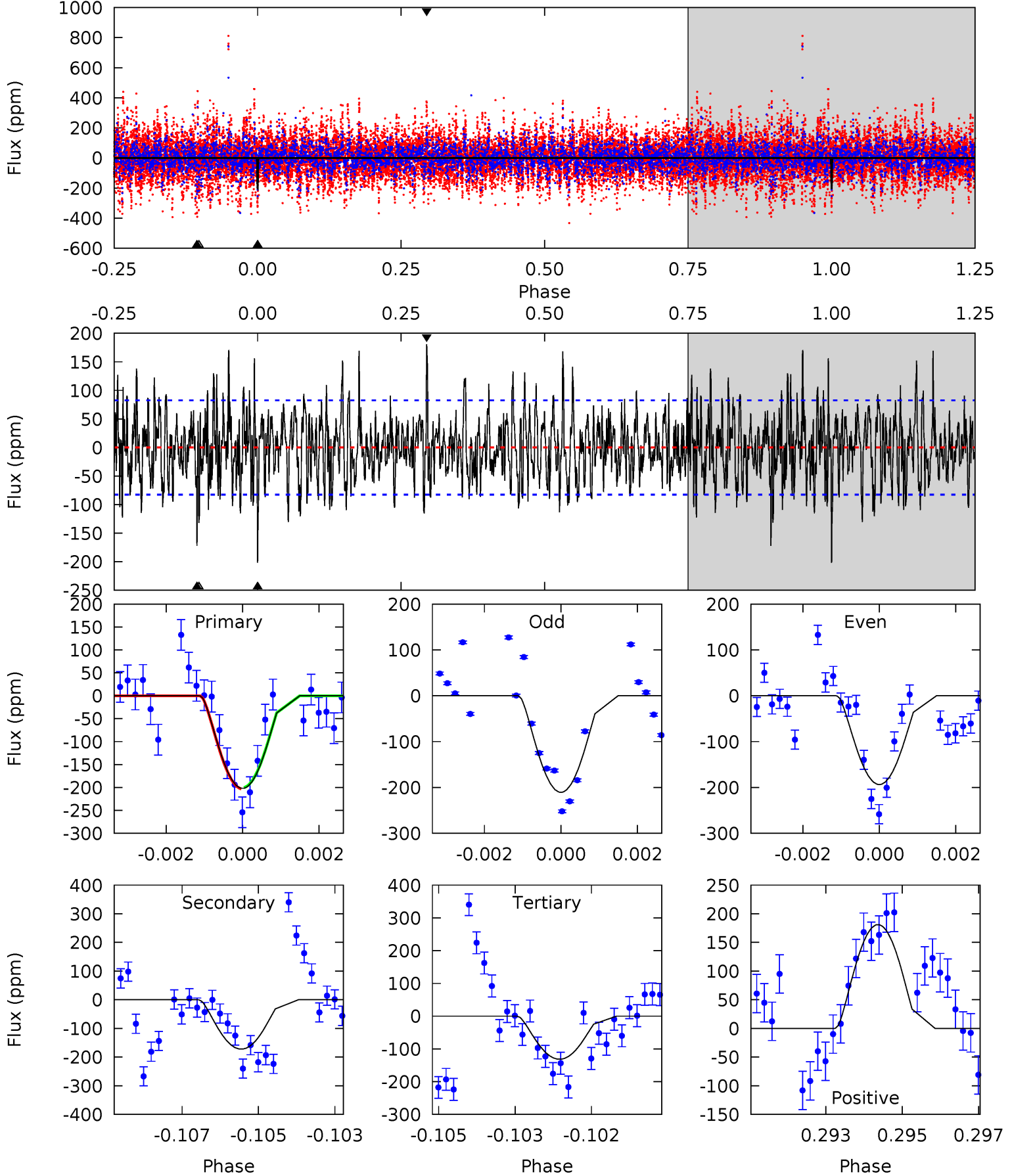
TCE 007366036-02 P=198.427821 Days $T_0=194.361193$ (BKJD)



DV Model-Shift Uniqueness Test

007366036-02, P = 198.439027 Days, E = 194.344735 Days

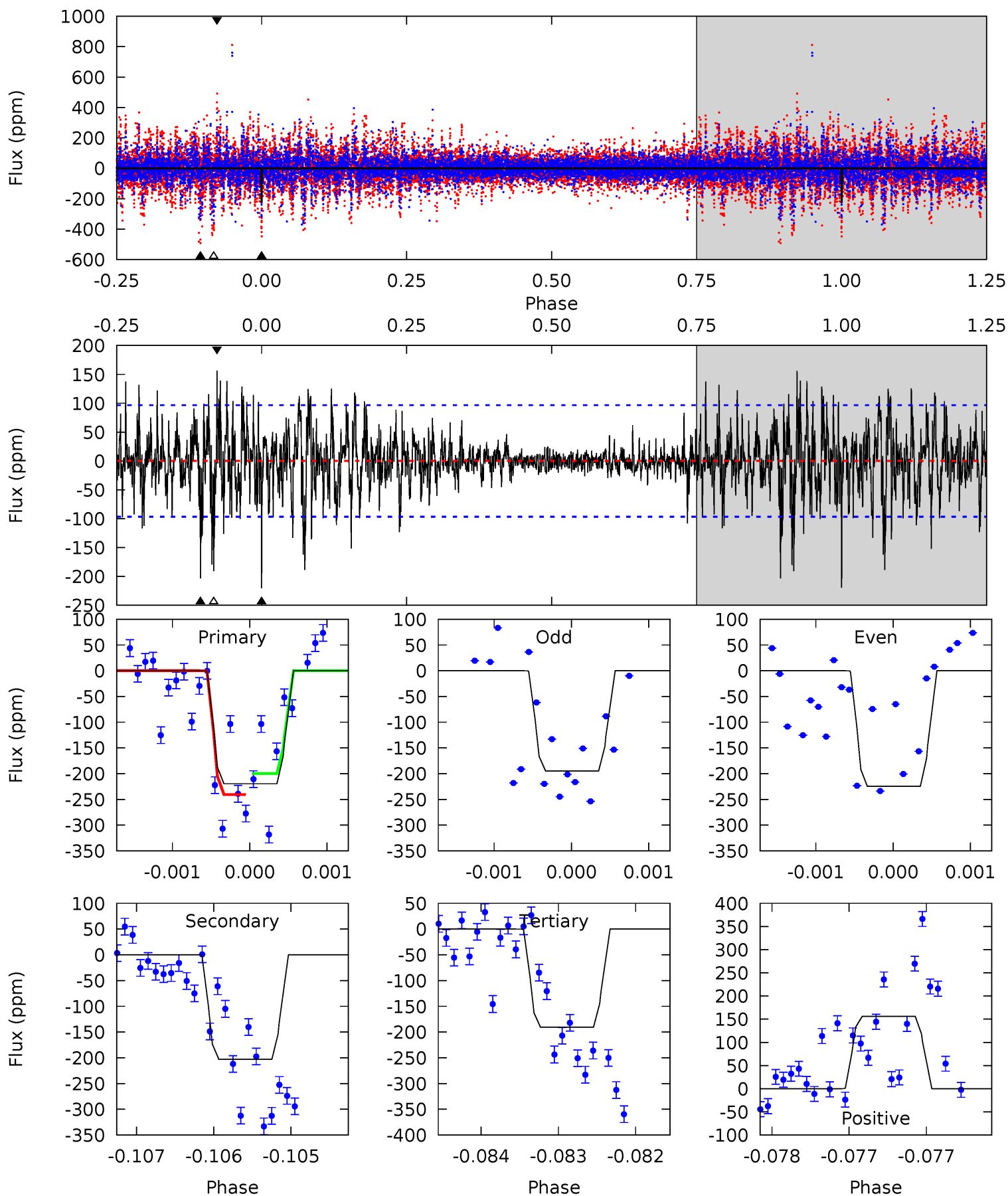
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	11.1	8.50	11.7	5.34	3.11	3.13	4.56	1.35	2.63	-0.57	0.55	0.64	0.47	0.09



Alt Model-Shift Uniqueness Test

007366036-02, P = 198.427821 Days, E = 194.361193 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	11.6	10.8	8.88	5.50	3.36	2.12	1.64	3.60	0.70	2.67	0.85	1.18	0.42	1.18



Stellar Parameters For KIC 007366036

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6398^{+158}_{-174}	$4.358^{+0.092}_{-0.138}$	$-0.340^{+0.250}_{-0.300}$	$1.111^{+0.238}_{-0.146}$	$1.023^{+0.145}_{-0.106}$	$1.051^{+0.421}_{-0.415}$
	+2%/-3%	+2%/-3%	+74%/-88%	+21%/-13%	+14%/-10%	+40%/-40%
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 007366036-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-172 ± 15	$8.06^{+8.21}_{-5.30}$	510^{+26}_{-24}	3394^{+1638}_{-631}	666^{+4900}_{-506}
Alt.	-203 ± 18	$6.85^{+7.98}_{-4.84}$	510^{+27}_{-22}	3657^{+2291}_{-740}	1048^{+11256}_{-820}

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 $A_{\text{obs}} \gg 1.0$

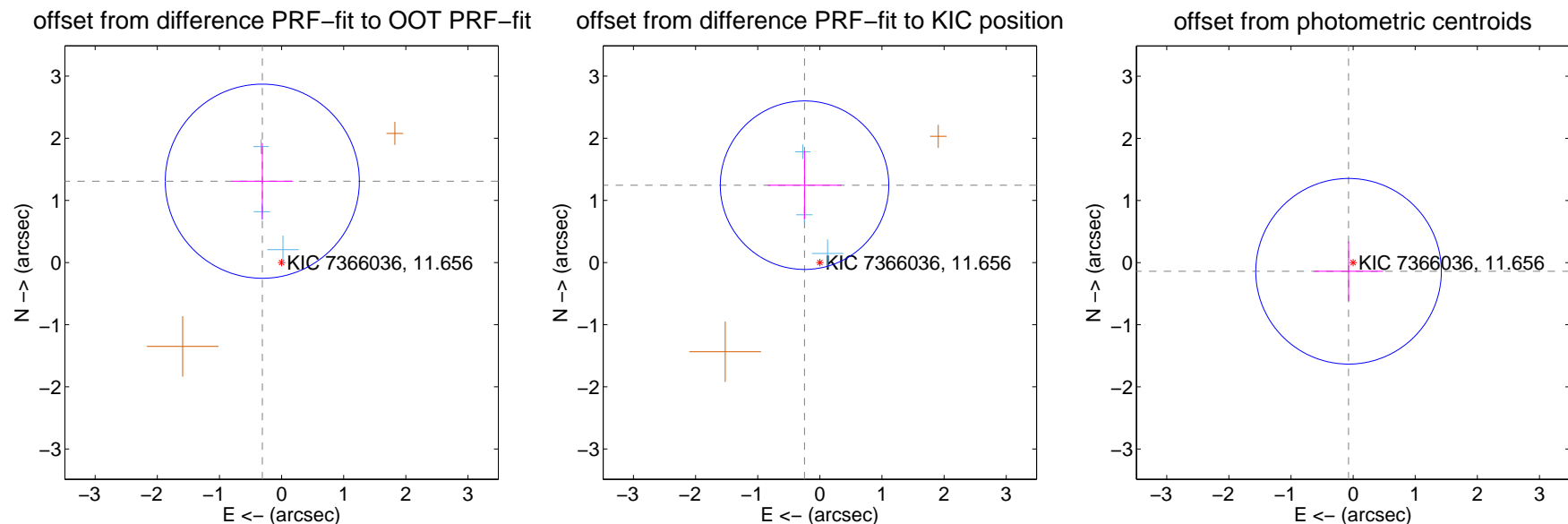
DV Centroid Data

Supplemental centroid analysis for 007366036-02. **Kepler magnitude: 11.66.** Transit SNR 6.32

There are 3 quarters with good PRF difference image offsets

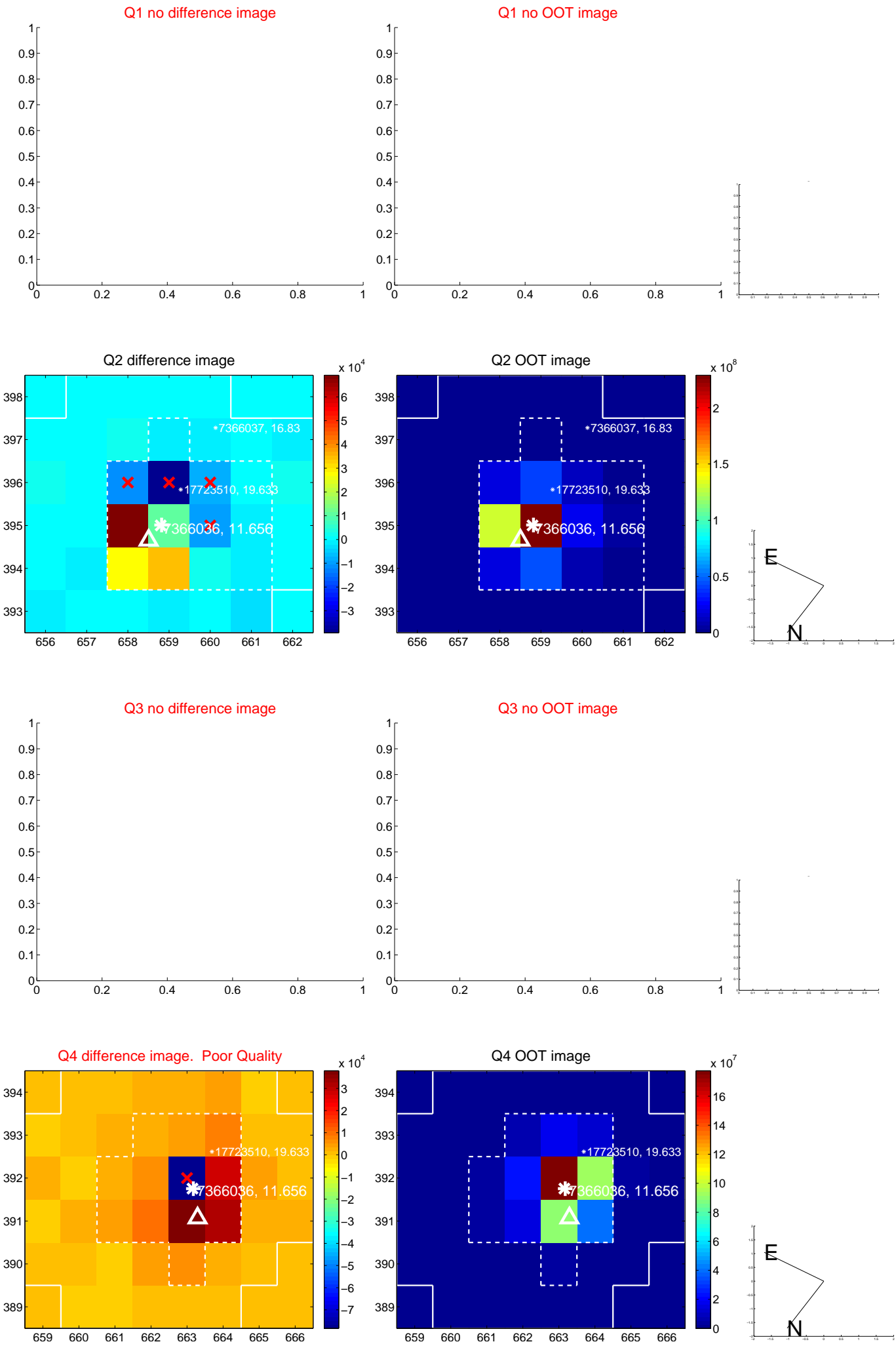
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.344 ± 0.520	2.58	0.310 ± 0.496	1.308 ± 0.615
PRF-fit source offset from KIC position	1.268 ± 0.452	2.81	0.246 ± 0.595	1.244 ± 0.548
photometric centroid source offset	0.16 ± 0.50	0.32	0.07 ± 0.56	-0.14 ± 0.48

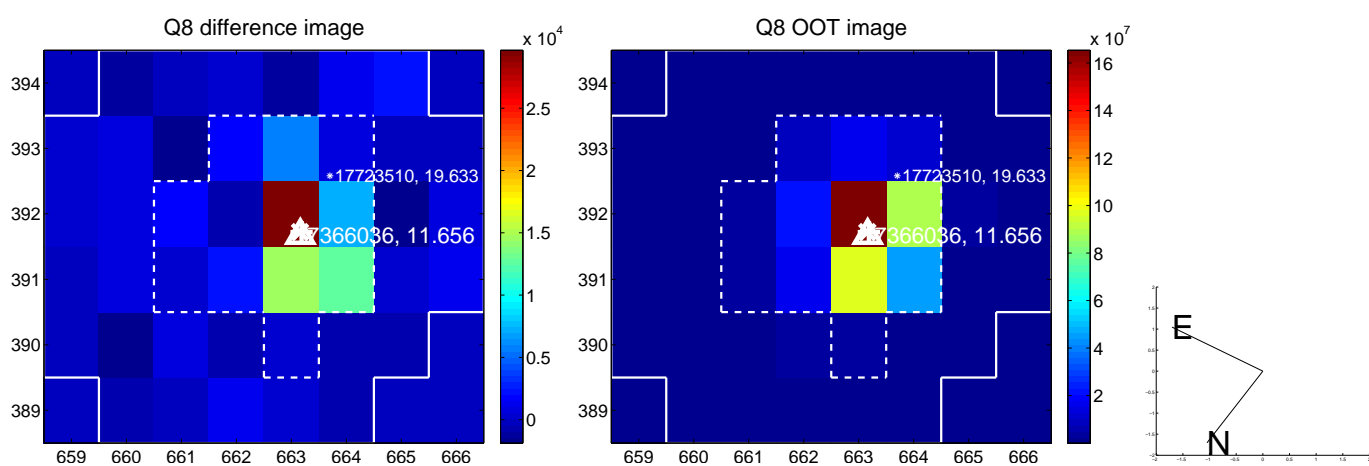
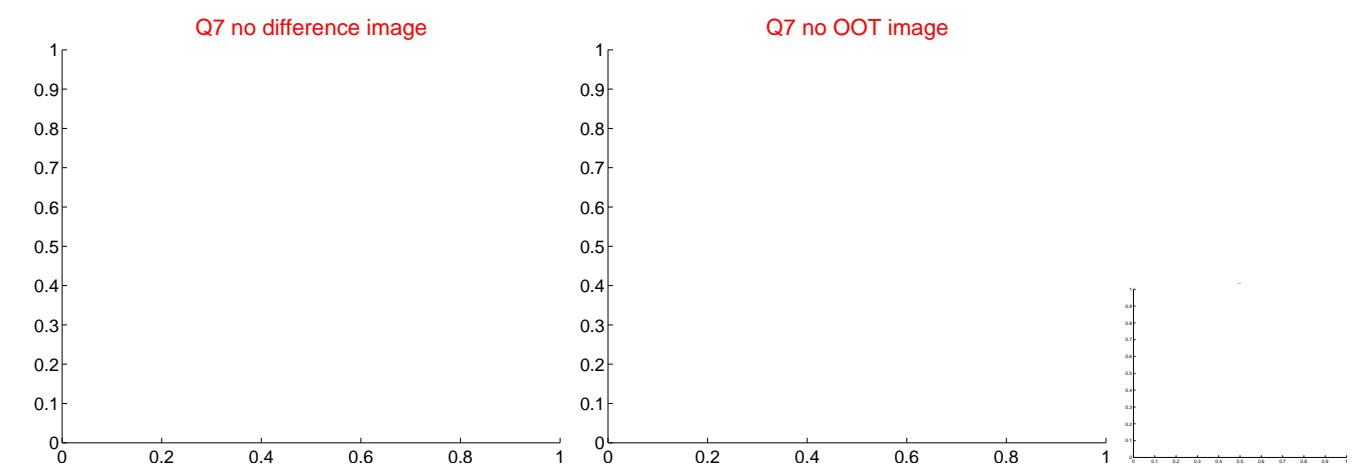
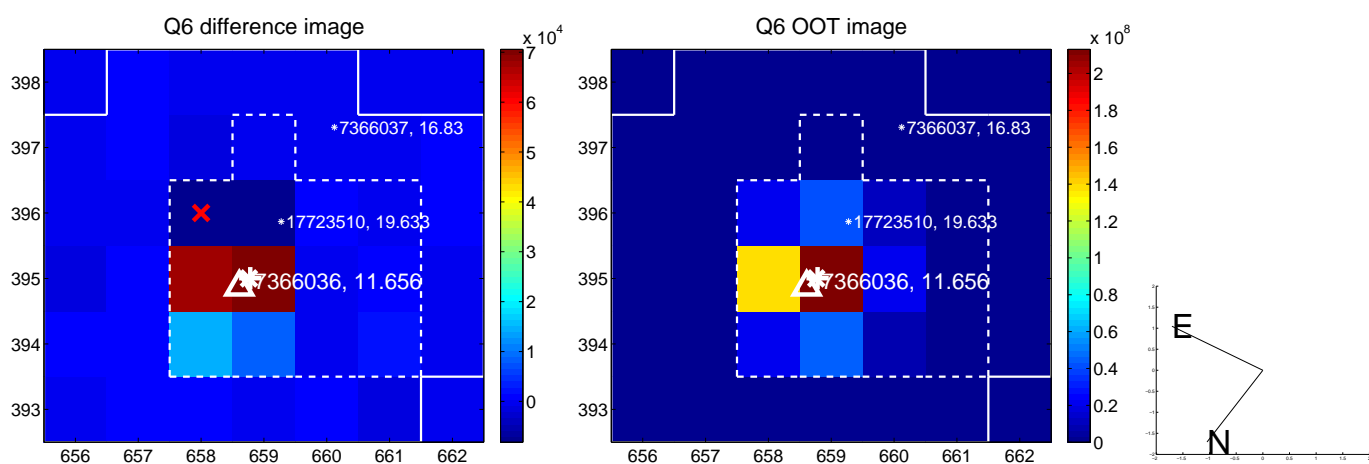
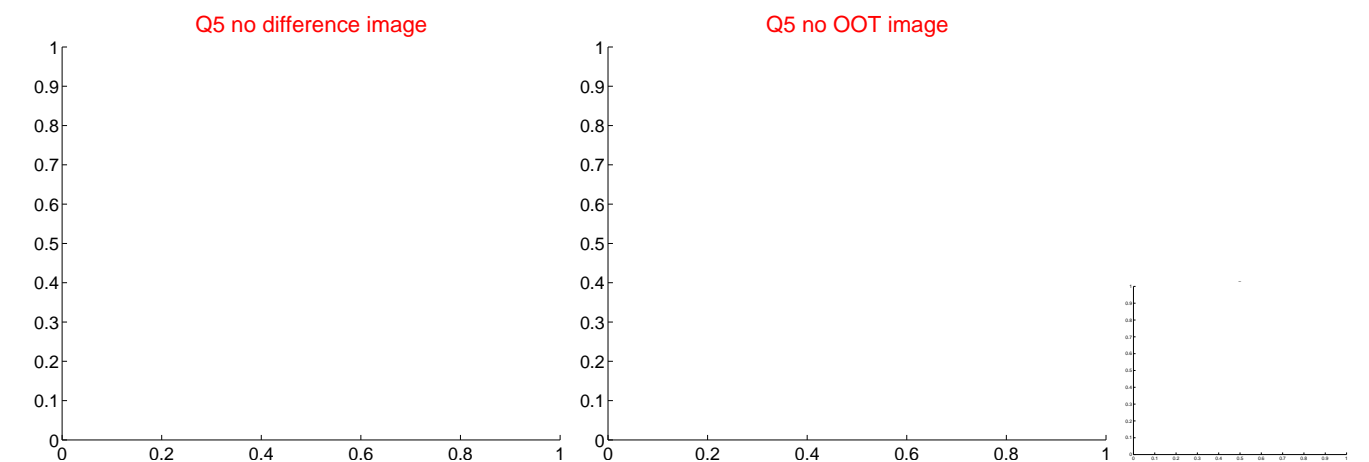


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

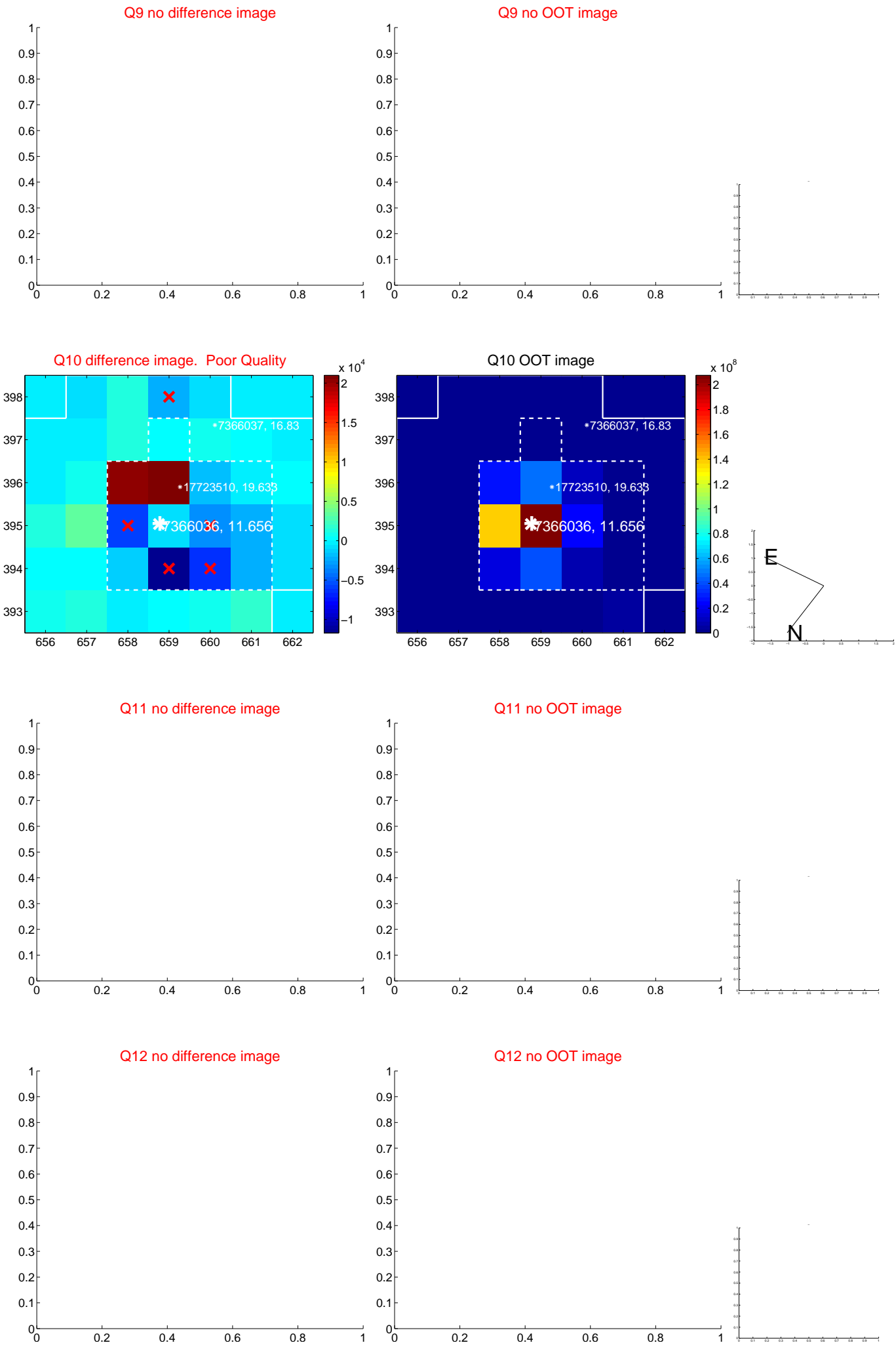
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



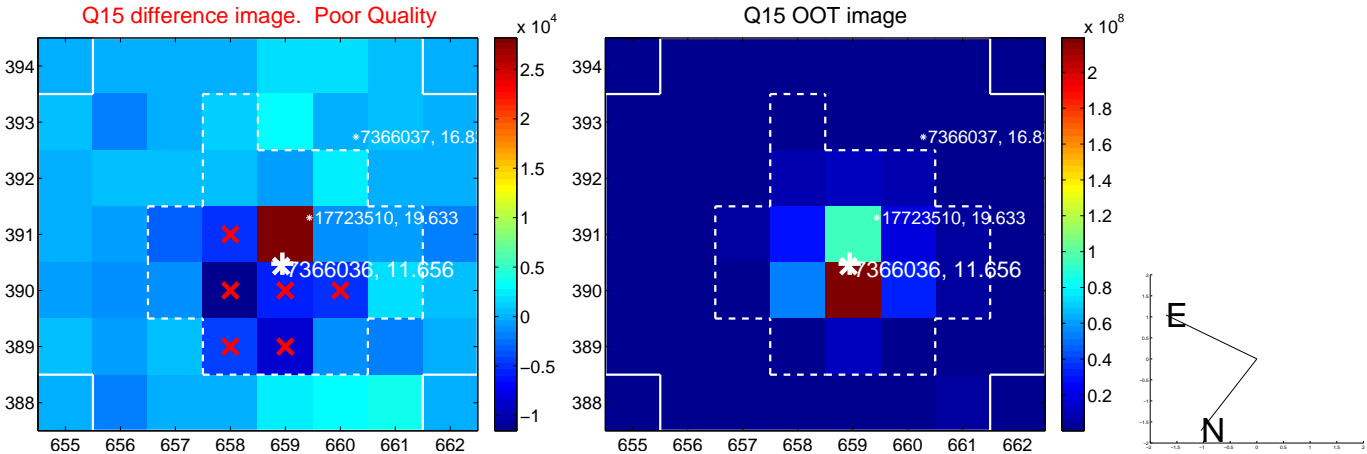
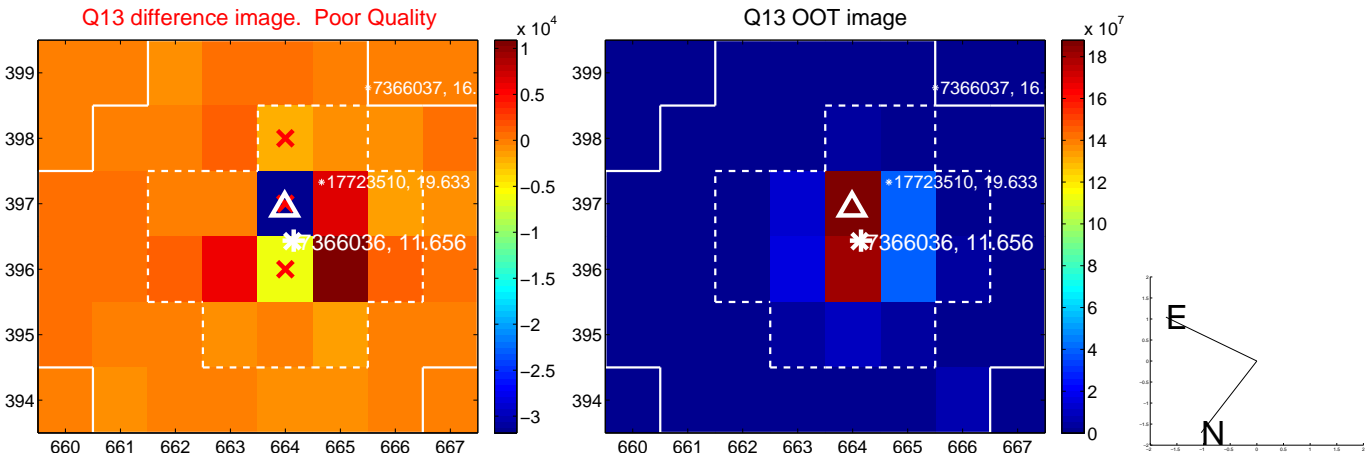
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



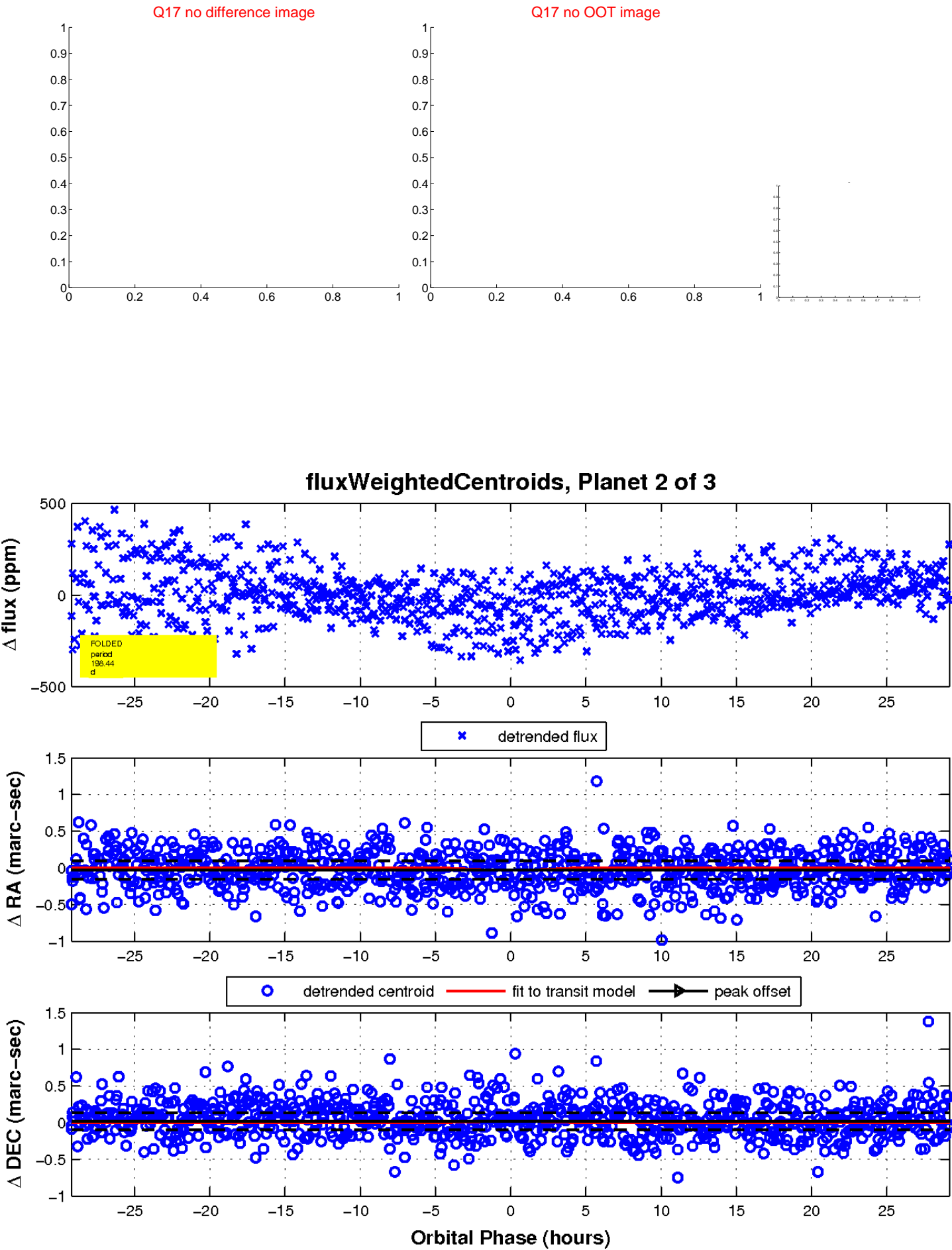
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

