

KIC 006380593

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})
006380593-01	OBS	No	1.022120	131.568725	12.6	5.998	8.5	7.8	2.00	6643	1.01	16212.38
006380593-02	OBS	No	61.781262	184.834688	161.7	4.514	9.3	7.9	2.00	6643	2.85	68.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006380593-01	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—CENT_UNRESOLVED_OFFSET—EPHEM_MATCH
006380593-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—HALO_GHOST

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.

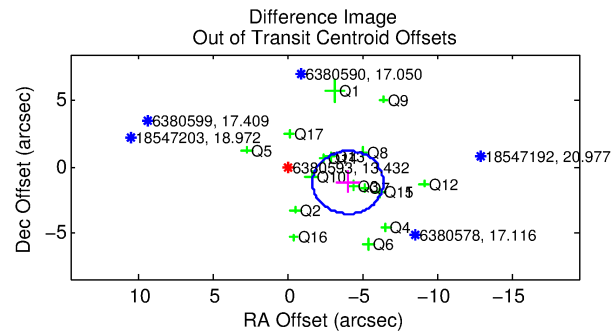
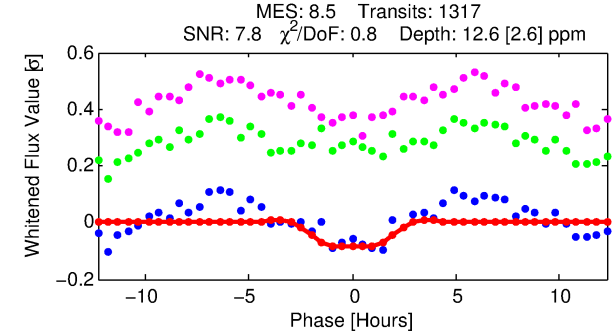
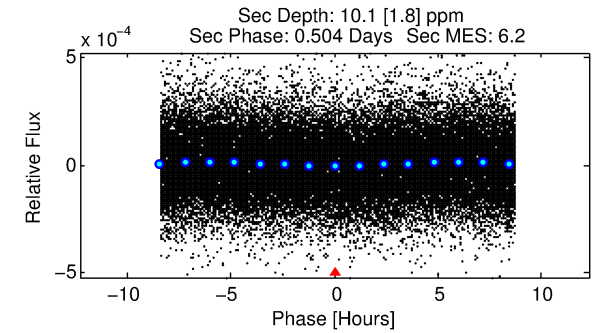
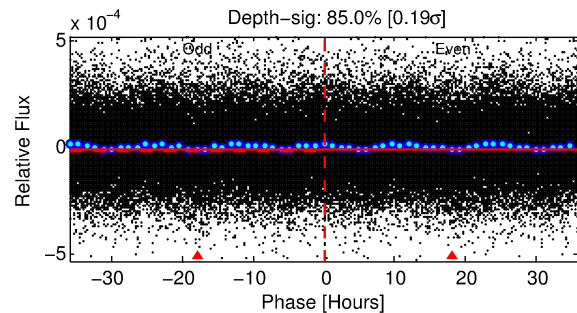
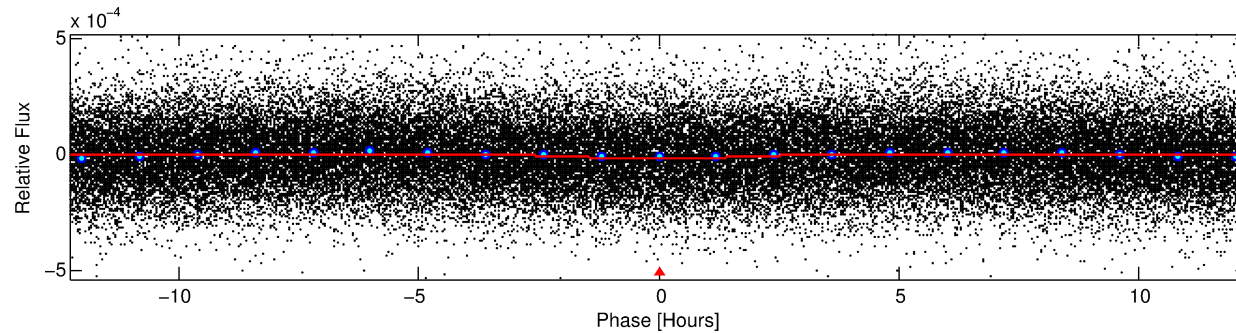
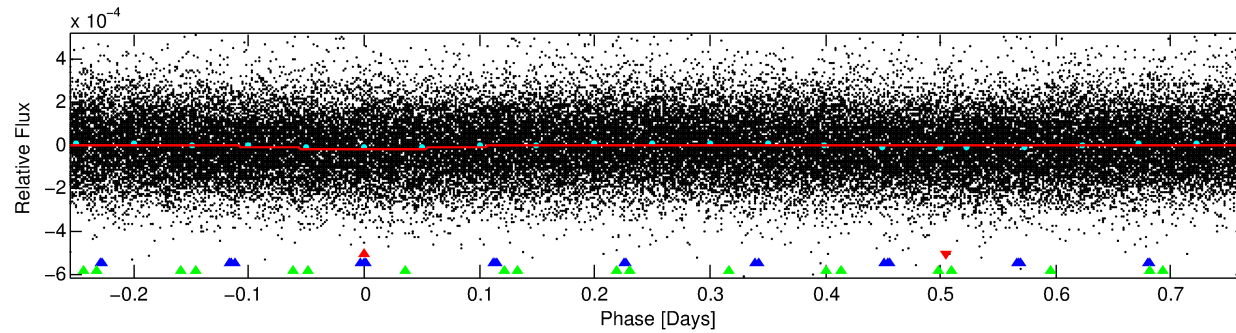
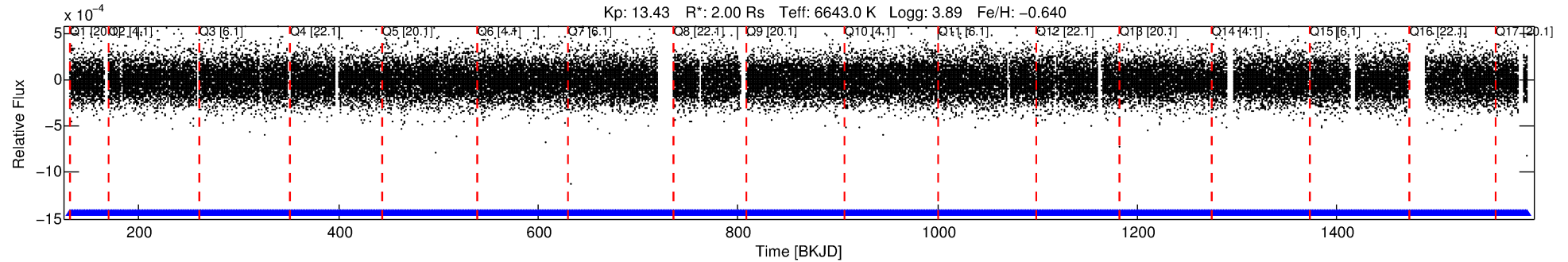
Ephemeris Match Information For 006380593-01

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
006380593-01	6380593	006380765-01	6380765	1:1	97.9	-10	-23	14.85	13.44	2.46	Direct-PRF	1	3.85	4.38

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: 6380593 Candidate: 1 of 3 Period: 1.022 d



DV Fit Results:

Period = 1.02212 [0.00002] d
Epoch = 131.5687 [0.0112] BKJD
Rp/R* = 0.0046 [0.0006]
a/R* = 1.02 [0.01]
b = 0.99 [0.00]
Seff = 16212.38 [9183.14]
Teq = 2877 [407] K
Rp = 1.01 [0.37] Re
a = 0.0208 [0.0071] AU
Ag = 2.33 [1.47] [0.91σ]
Teffp = 5496 [448] K [4.32σ]

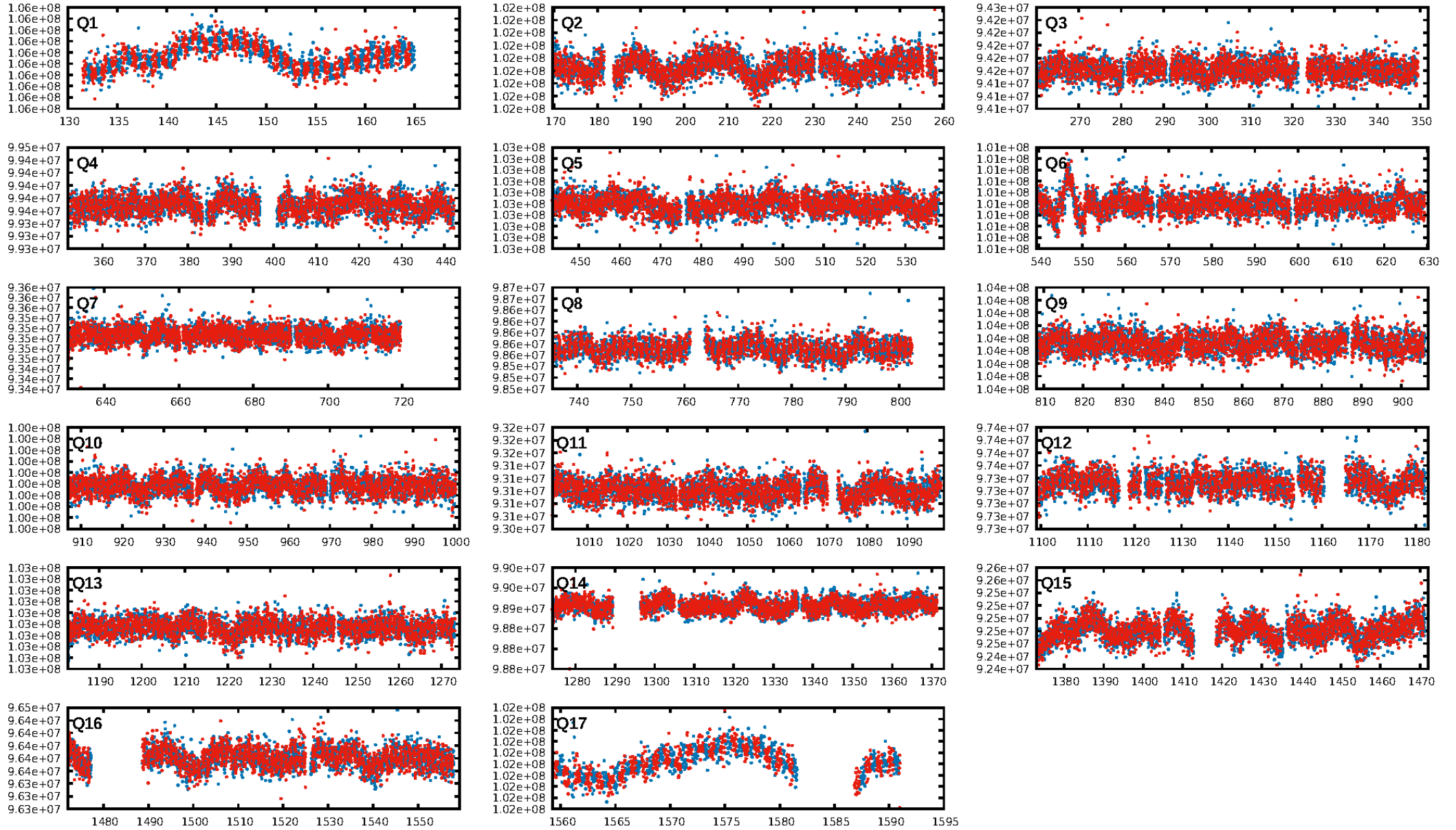
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [194.25σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.77e-11
RollingBand-fgt: 1.00 [1258/1258]
GhostDiagnostic-chr: 0.4615
Centroid-sig: 0.0%
Centroid-so: 5.187 arcsec [3.08σ]
OotOffset-rm: 4.224 arcsec [5.34σ]
KicOffset-rm: 4.133 arcsec [5.23σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.06 [1/17]
DiffImageOverlap-fno: 1.00 [17/17]

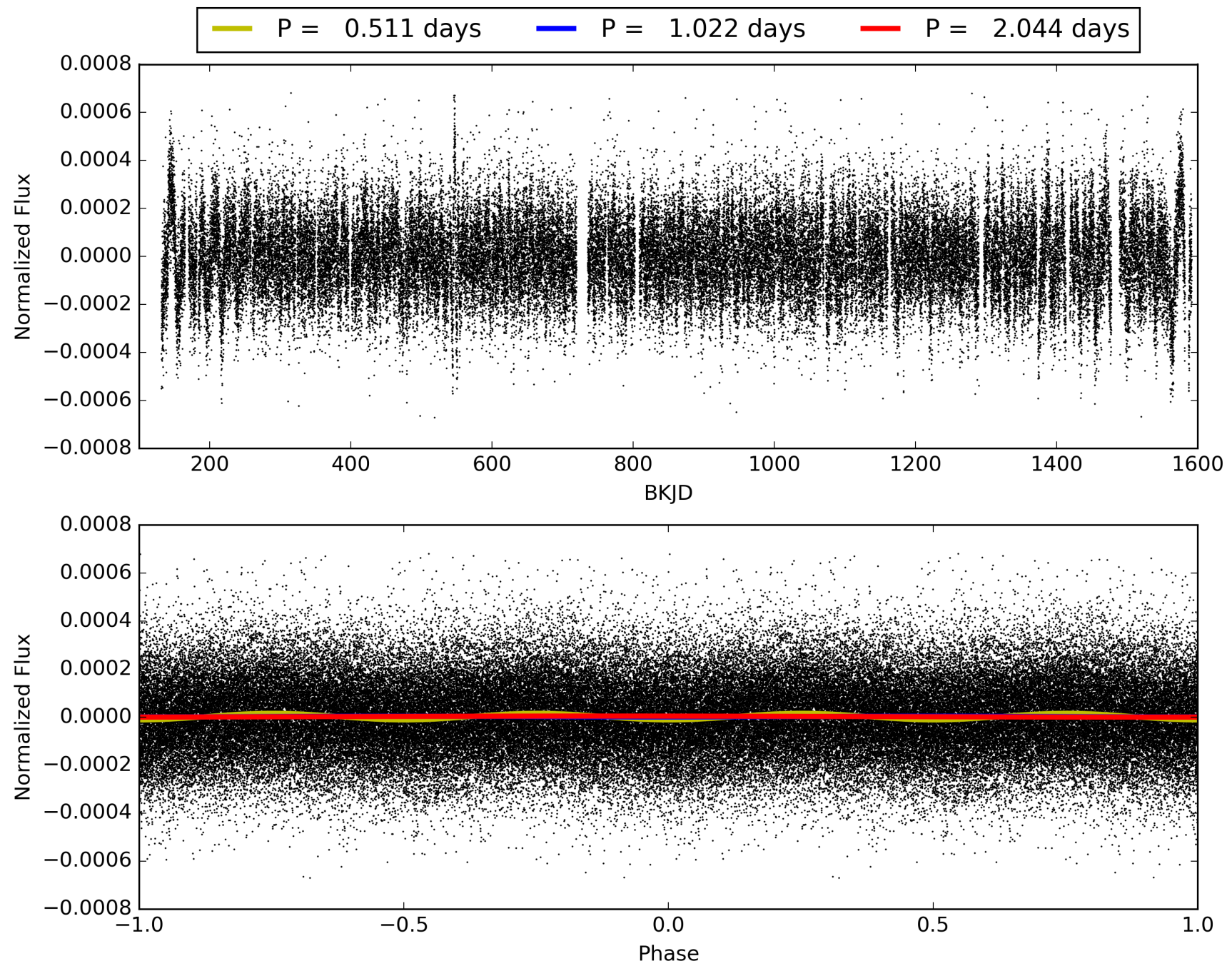
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:44:34 Z

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

TCE 006380593-01, PDC Light Curves

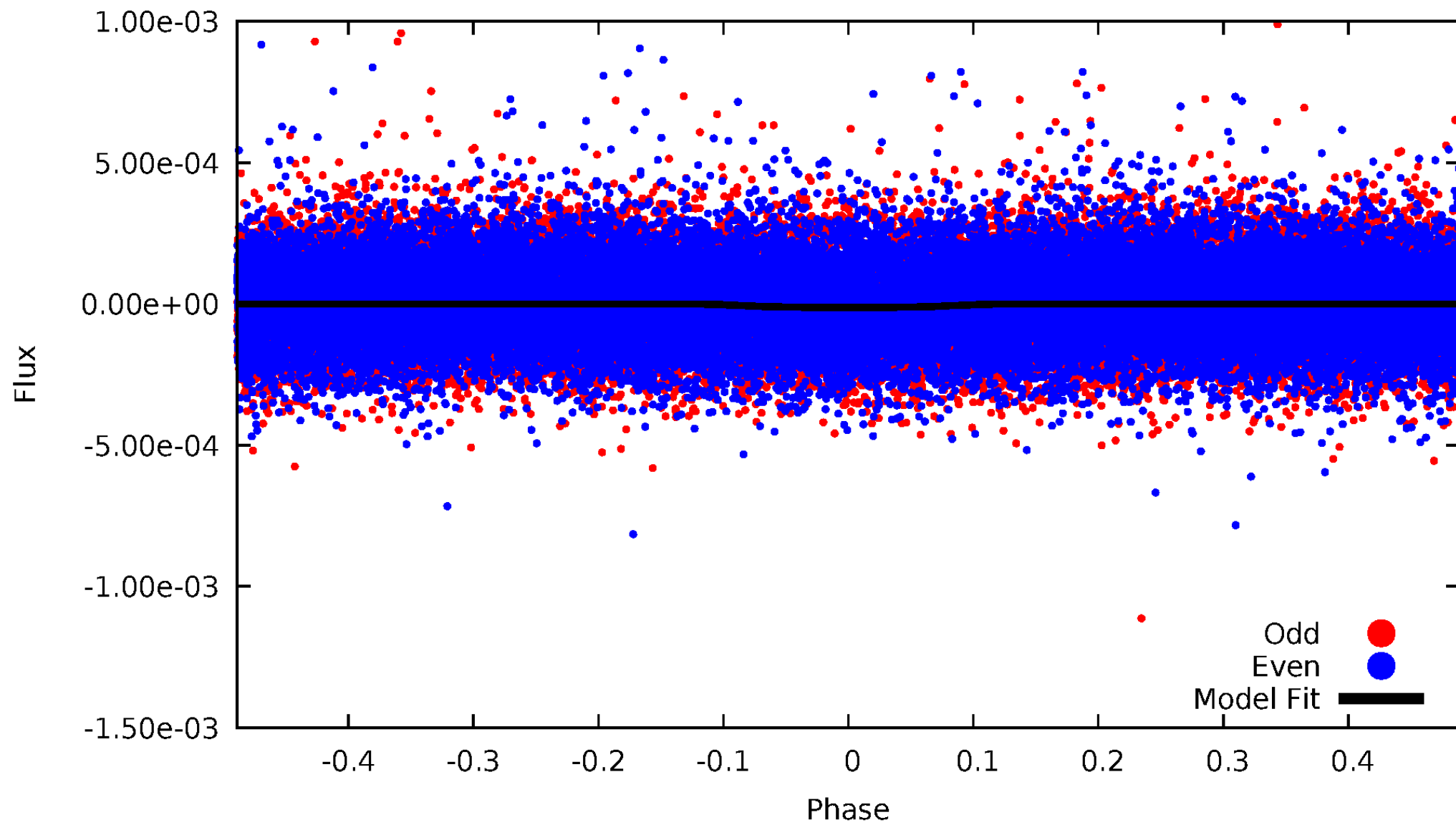


TCE 006380593-01



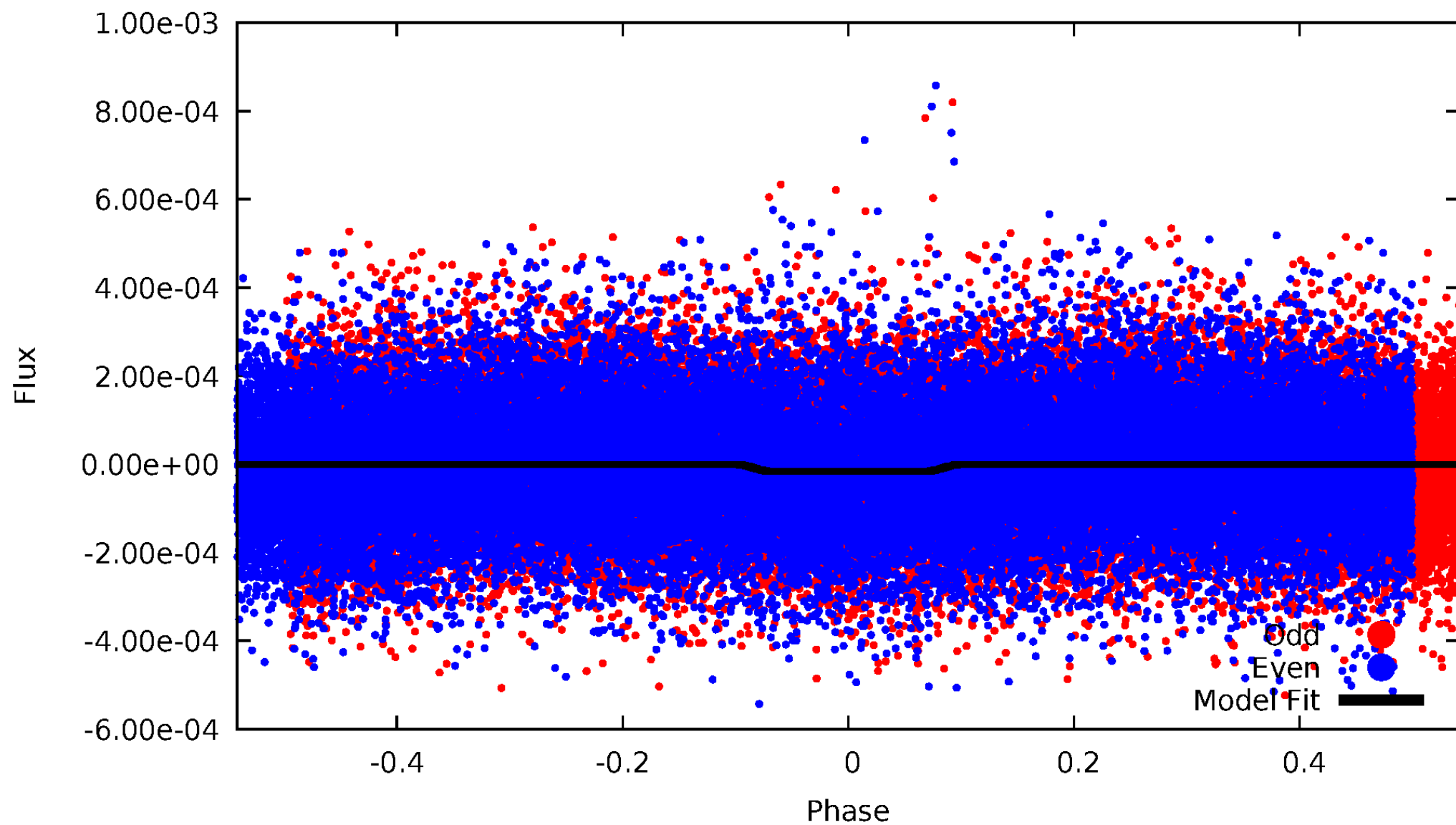
DV Odd/Even

TCE 006380593-01



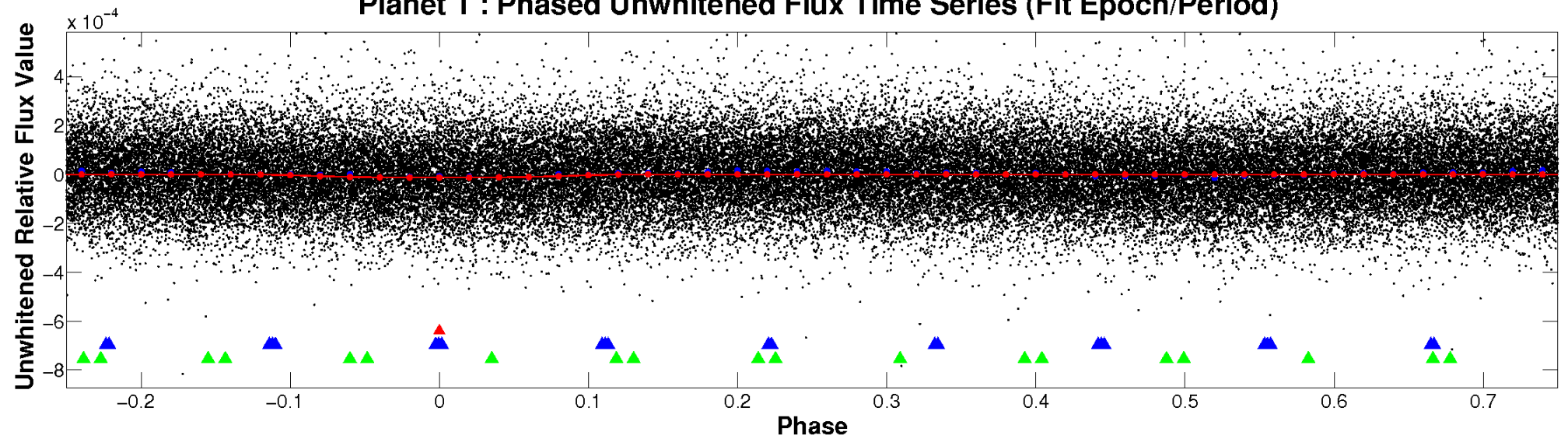
ALT Odd/Even

TCE 006380593-01

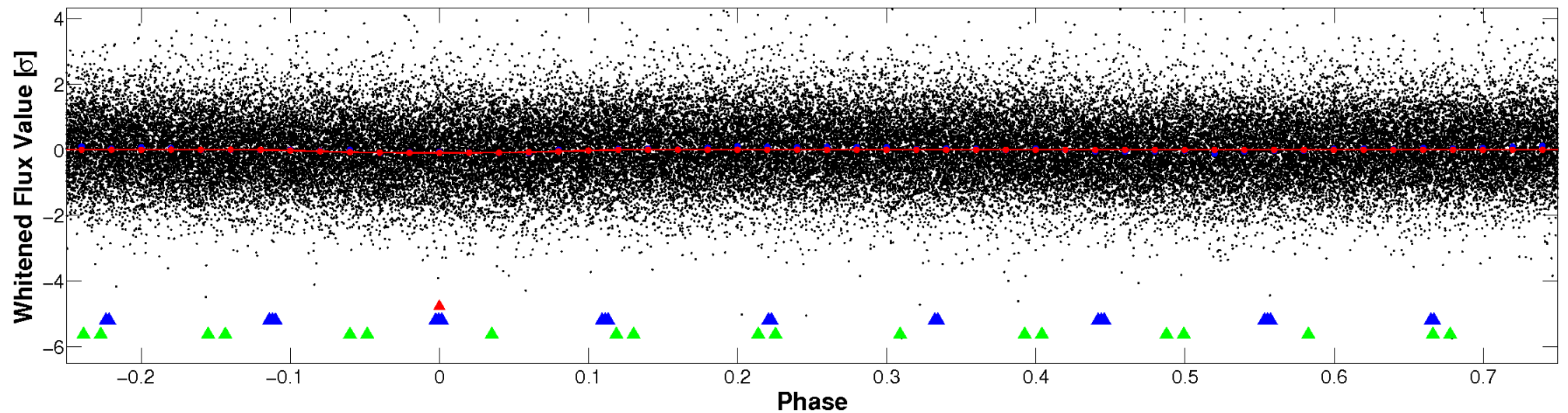


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

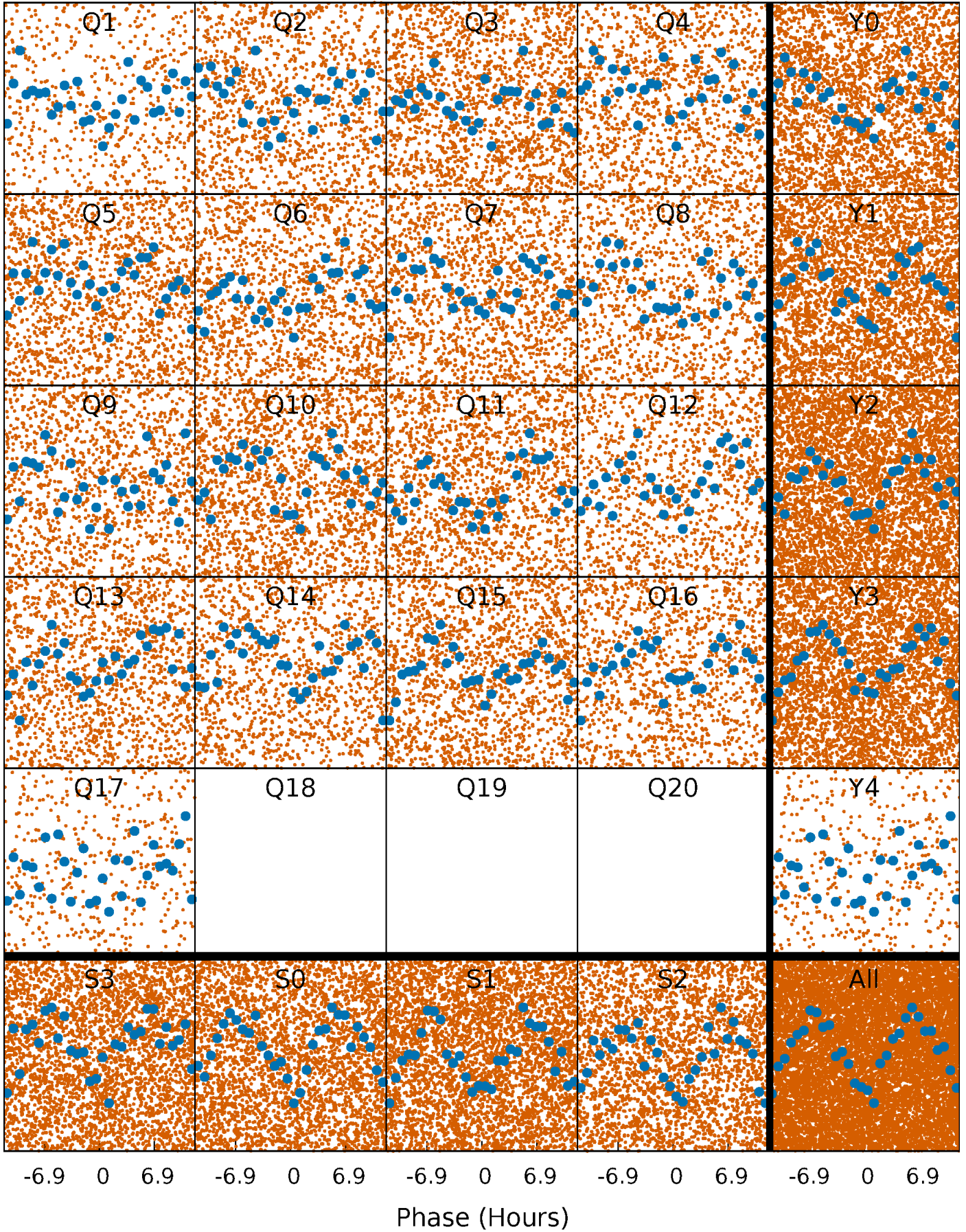


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



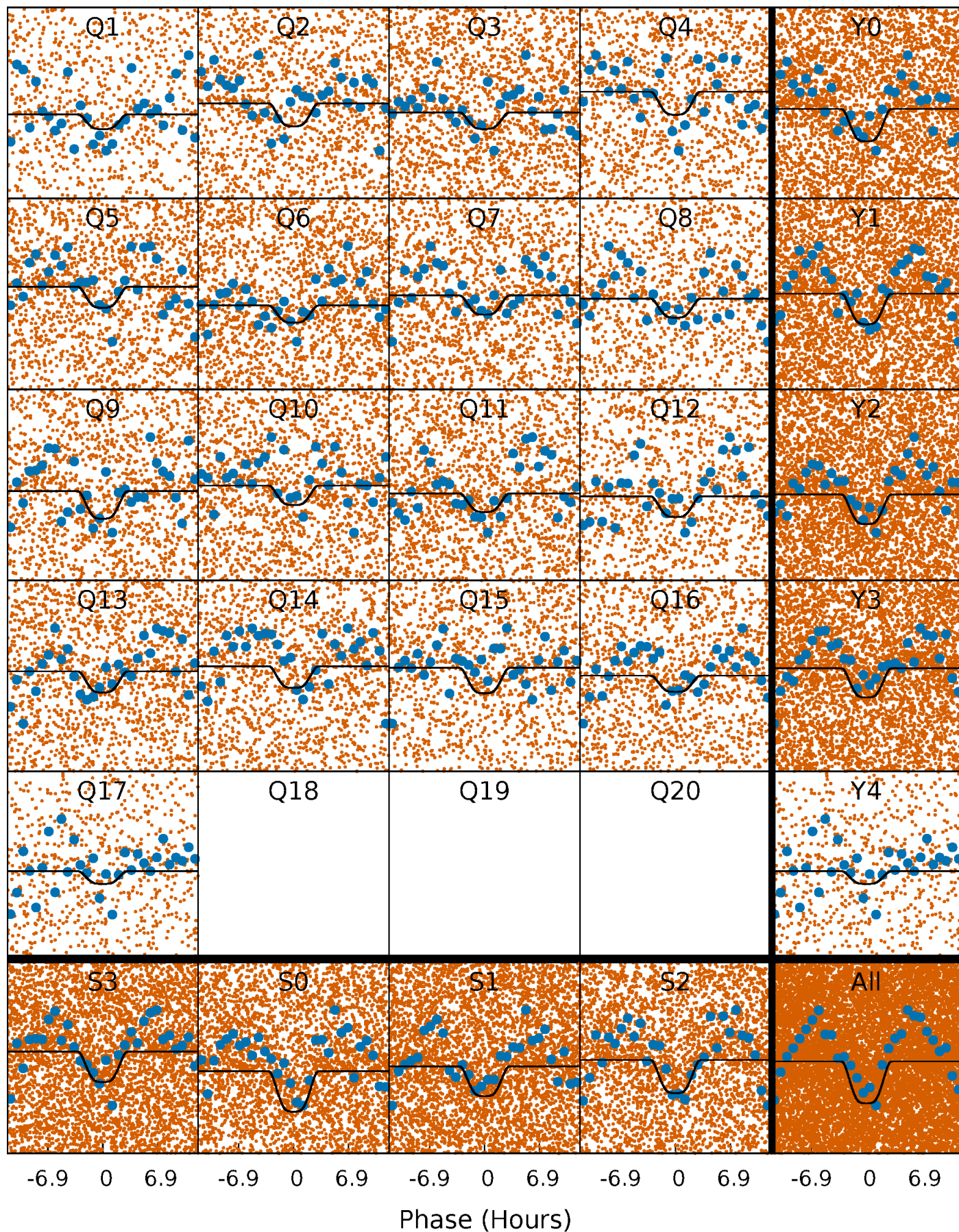
PDC Quarter-Phased Transit Curves

TCE 006380593-01 P= 1.022120 Days $T_0=131.568725$ (BKJD)



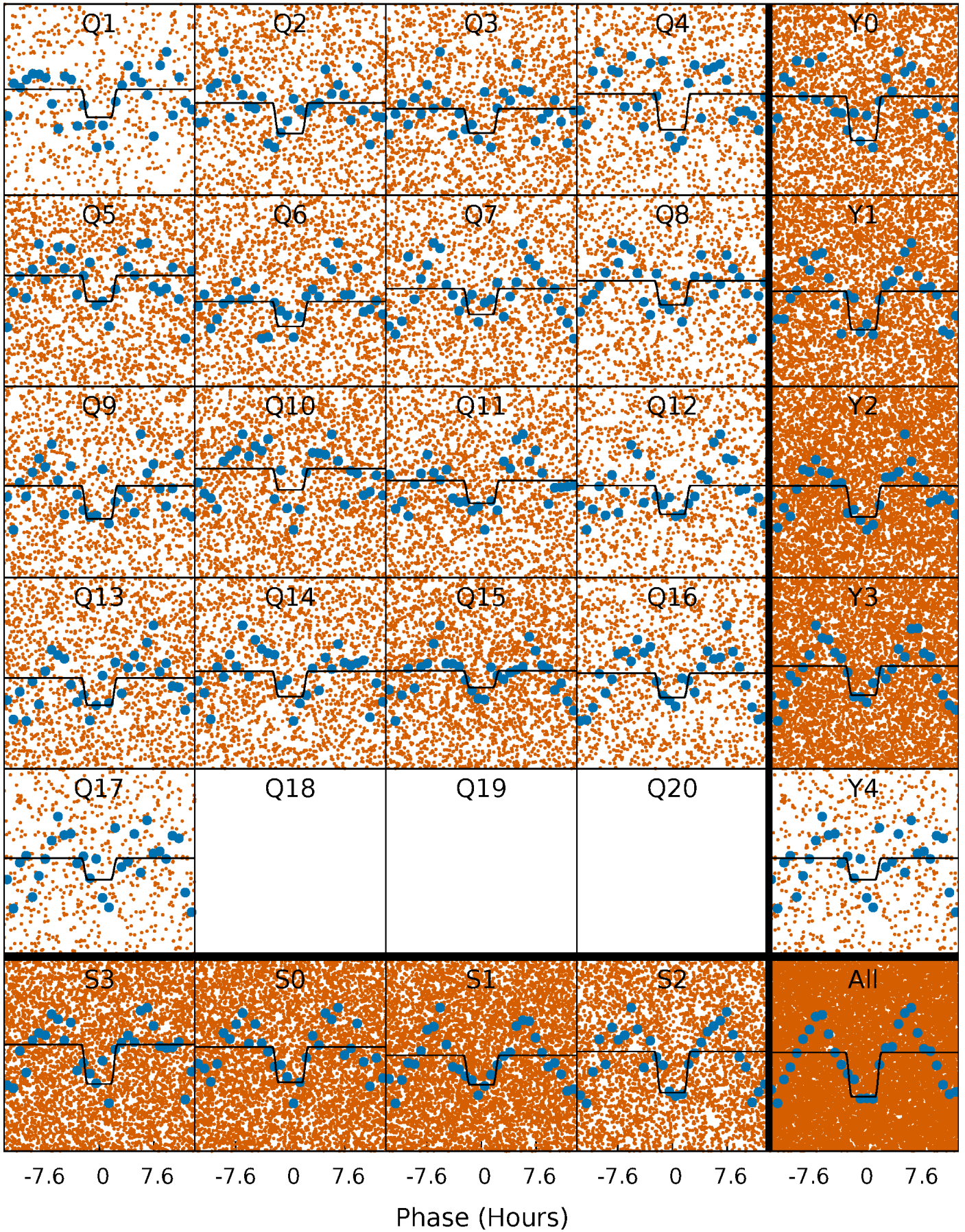
DV Quarter-Phased Transit Curves

TCE 006380593-01 P= 1.022120 Days $T_0=131.568725$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

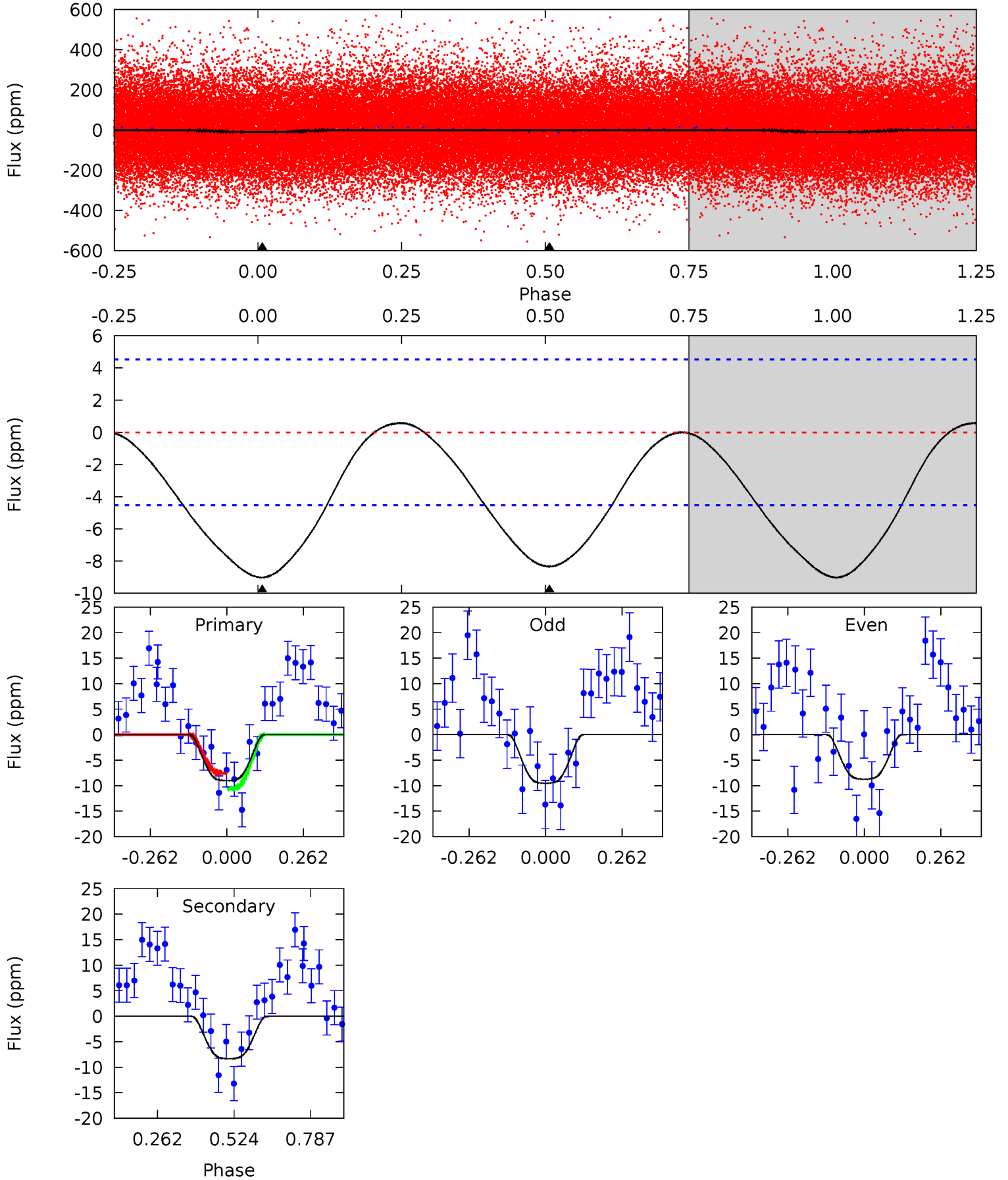
TCE 006380593-01 P= 1.022141 Days $T_0=131.559005$ (BKJD)



DV Model-Shift Uniqueness Test

006380593-01, P = 1.022120 Days, E = 130.546605 Days

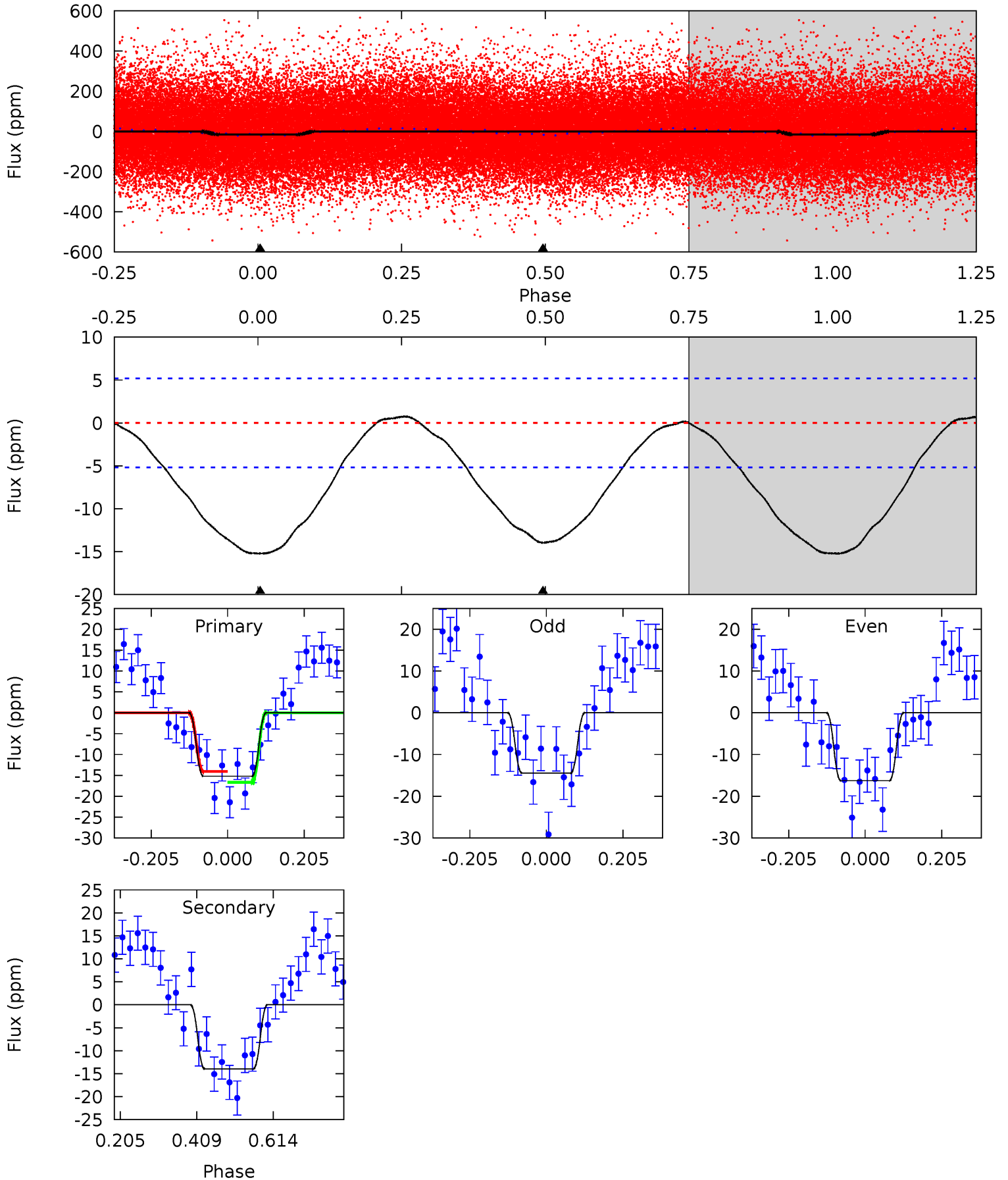
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.67	8.01	0	0	4.36	1.12	0.38	8.67	8.67	8.01	8.01	0.39	1.03	0.06	1.45



Alt Model-Shift Uniqueness Test

006380593-01, P = 1.022141 Days, E = 130.536864 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.9	11.9	0	0	4.41	1.27	0.60	12.9	12.9	11.9	11.9	0.76	0.99	0.05	1.10



Stellar Parameters For KIC 006380593

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6643^{+183}_{-203}	$3.893^{+0.328}_{-0.103}$	$-0.640^{+0.350}_{-0.300}$	$2.001^{+0.370}_{-0.687}$	$1.142^{+0.190}_{-0.171}$	$0.201^{+0.427}_{-0.064}$
	+3%/-3%	+8%/-3%	+55%/-47%	+18%/-34%	+17%/-15%	+213%/-32%
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 006380593-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-8 ± 1	$0.98^{+0.18}_{-0.20}$	3931^{+283}_{-364}	5108^{+368}_{-357}	$2.124^{+1.217}_{-0.642}$
Alt.	-14 ± 1	$0.85^{+0.16}_{-0.17}$	3938^{+263}_{-338}	6296^{+541}_{-478}	$4.793^{+2.446}_{-1.474}$

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

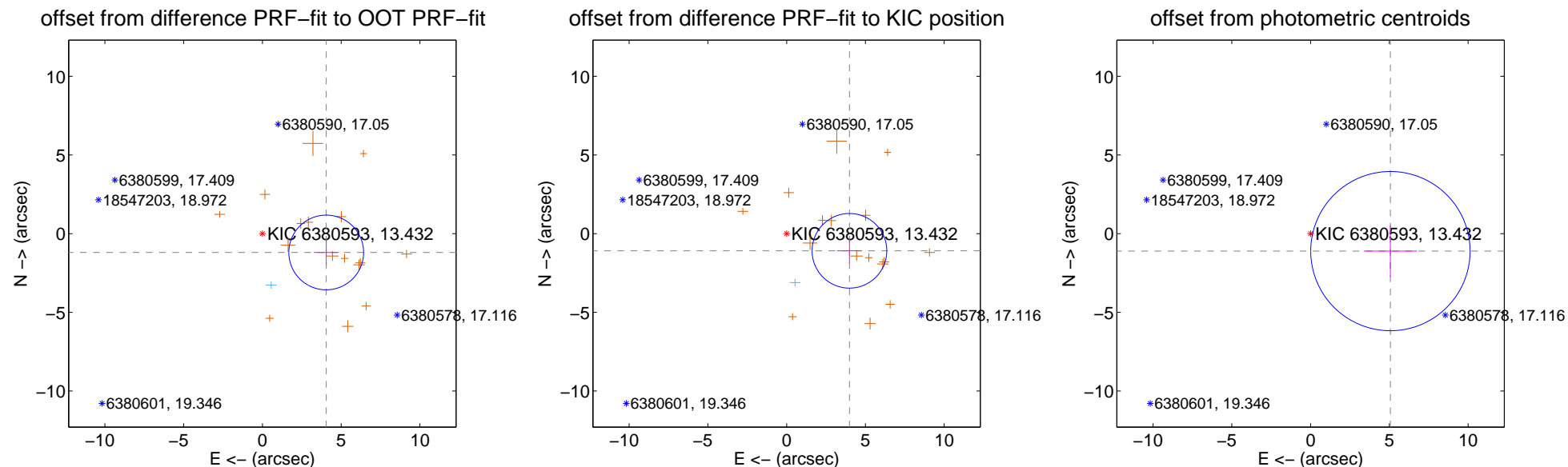
DV Centroid Data

Supplemental centroid analysis for 006380593-01. Kepler magnitude: 13.43. Transit SNR 7.76

There are 1 quarters with good PRF difference image offsets

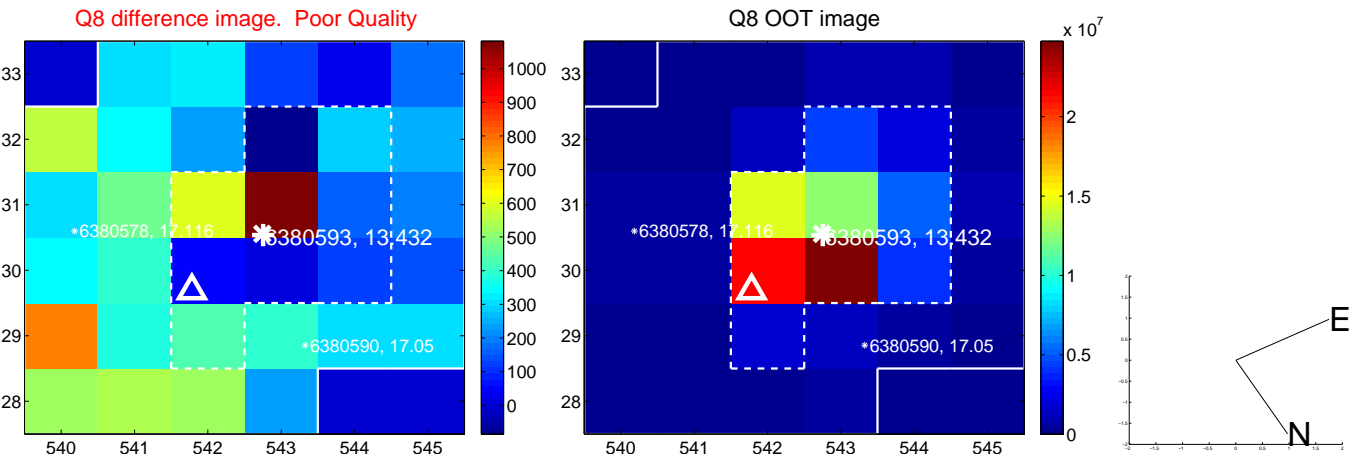
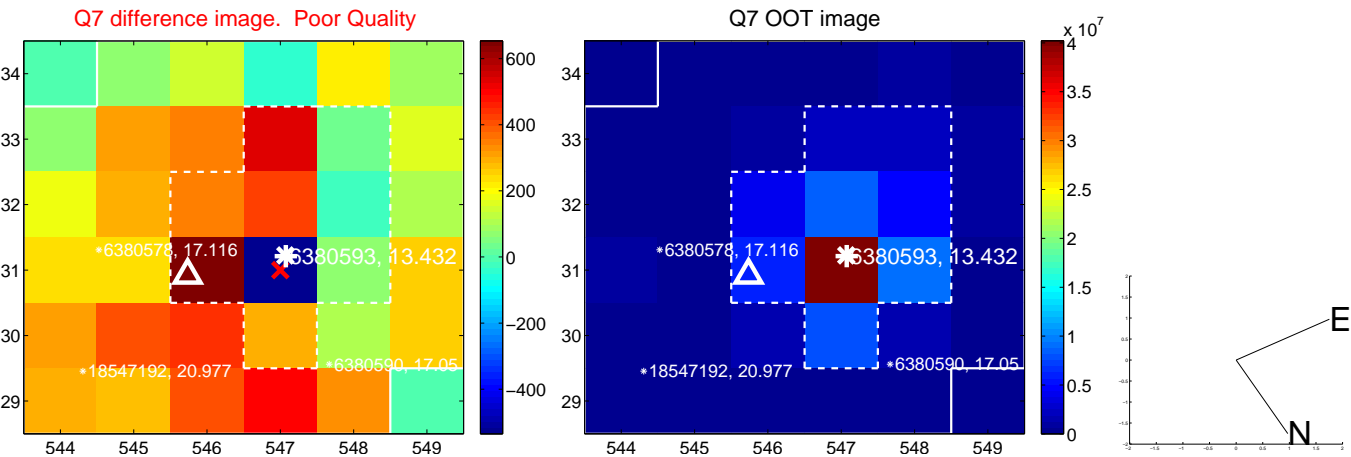
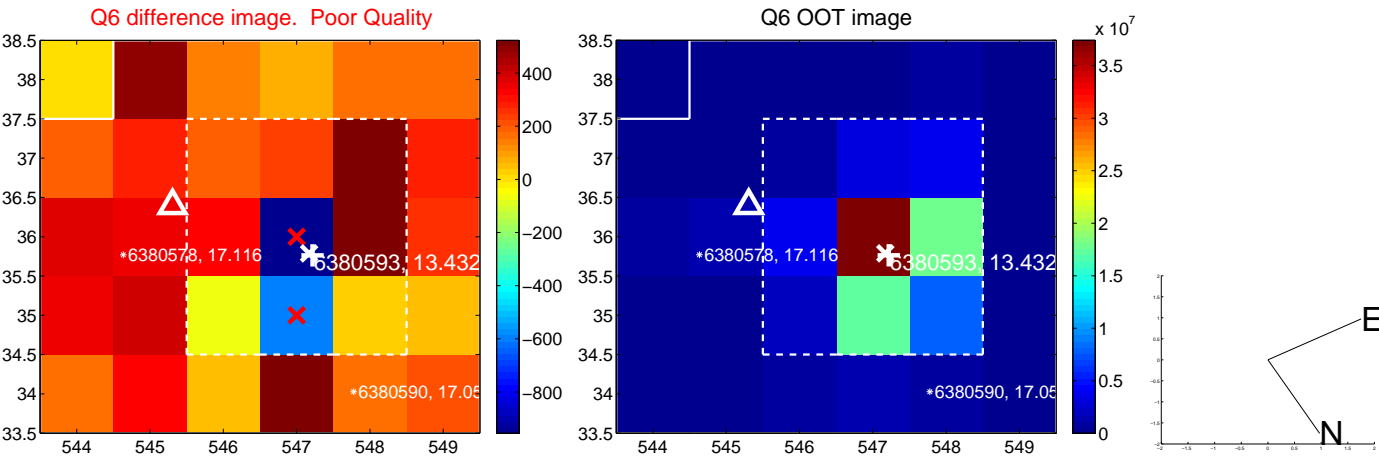
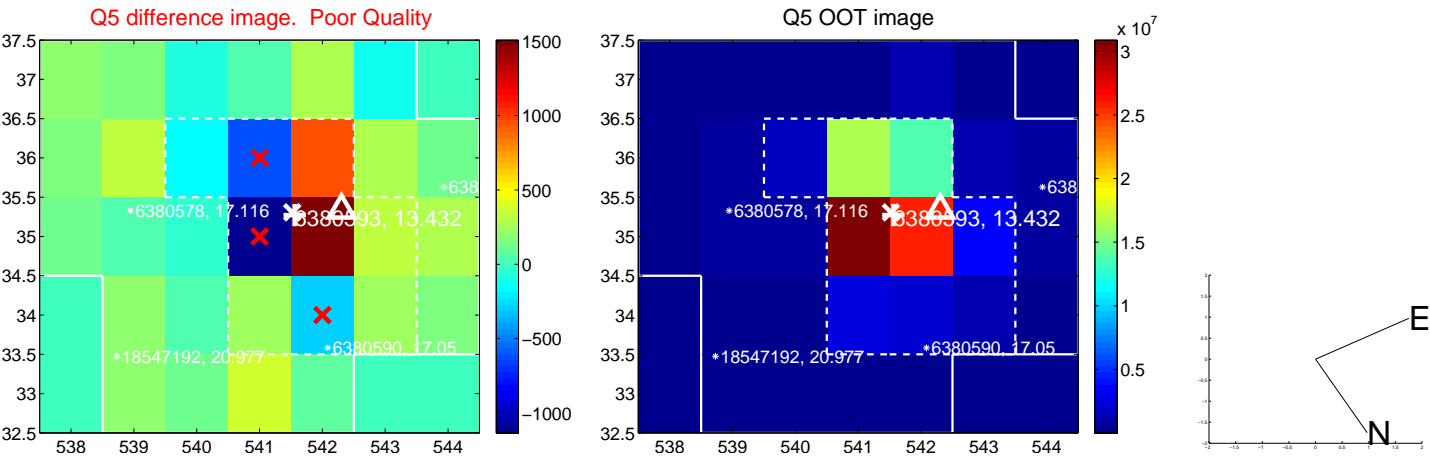
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.224 ± 0.791	5.34	-4.051 ± 0.792	-1.196 ± 0.782
PRF-fit source offset from KIC position	4.133 ± 0.790	5.23	-3.986 ± 0.791	-1.091 ± 0.787
photometric centroid source offset	5.19 ± 1.69	3.08	-5.07 ± 1.69	-1.11 ± 1.64

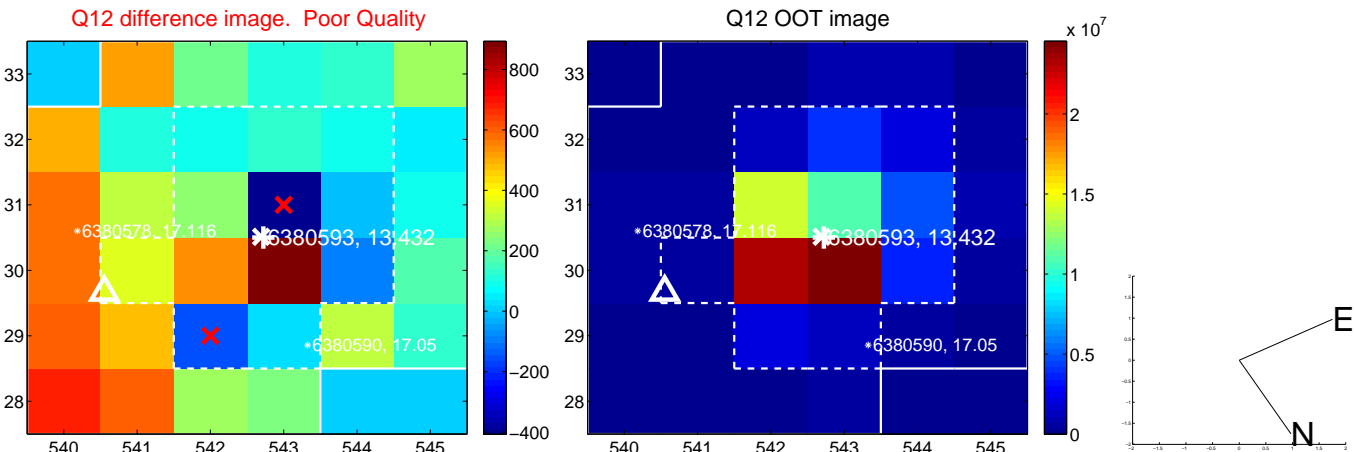
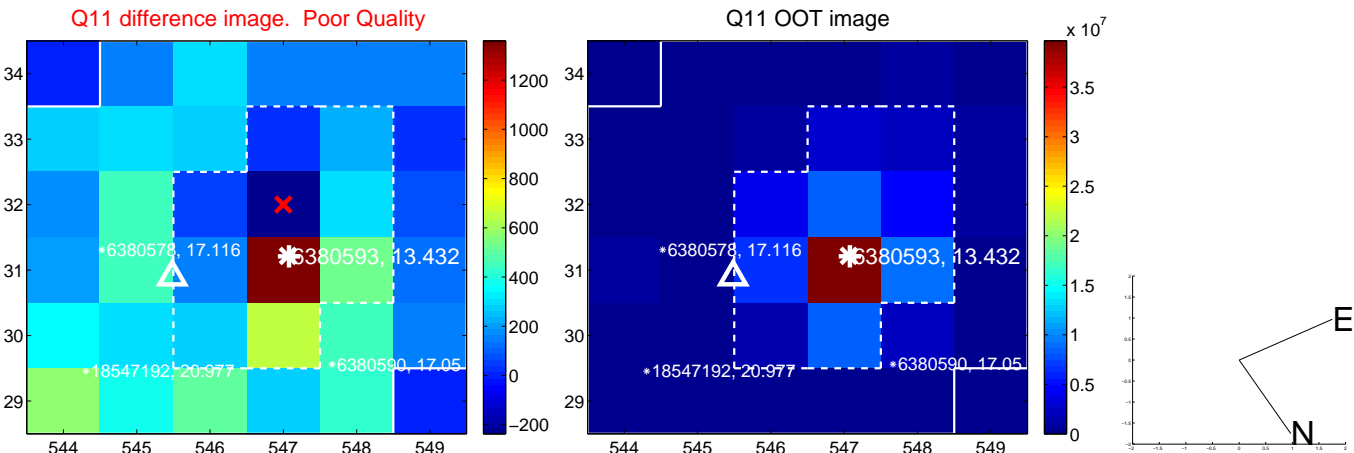
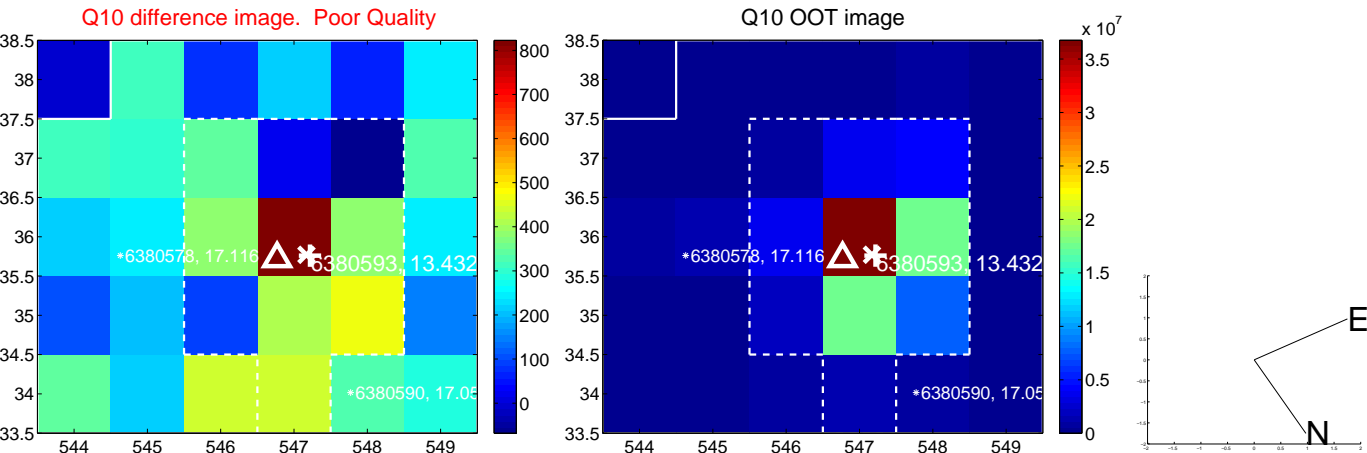
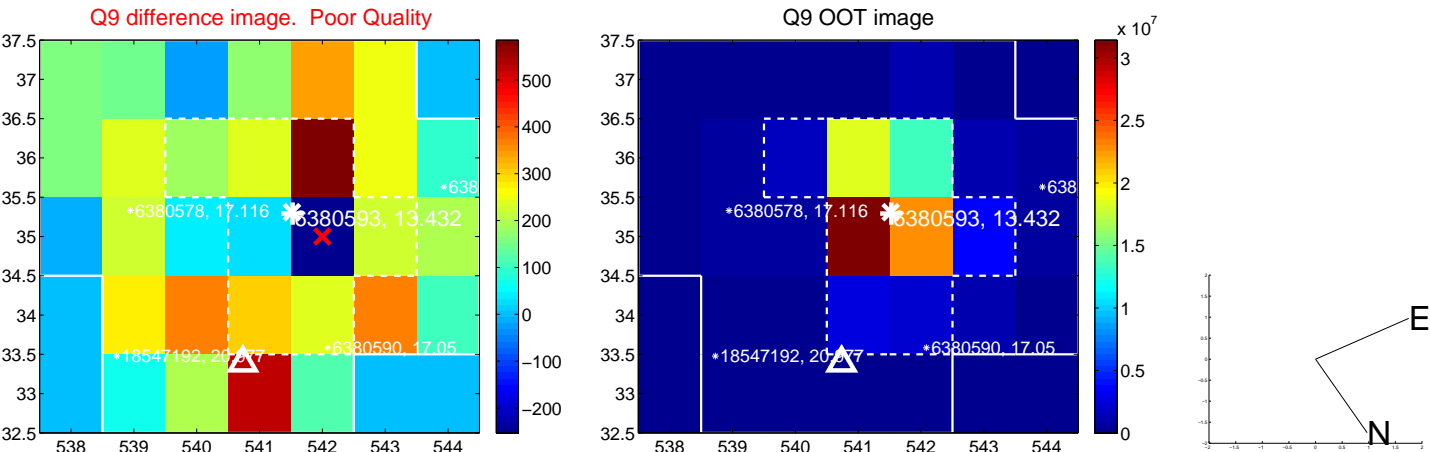


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

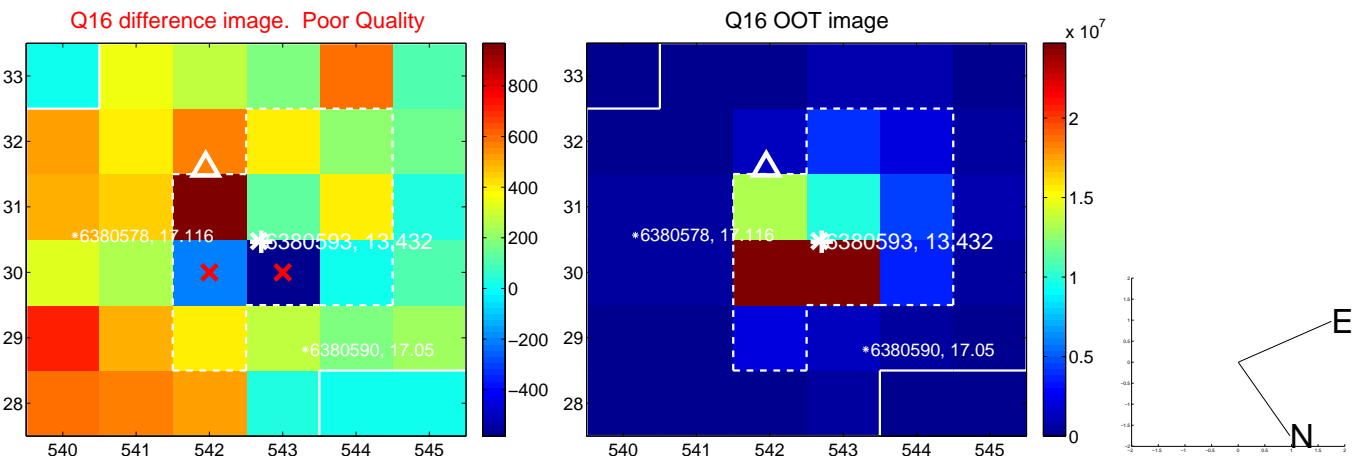
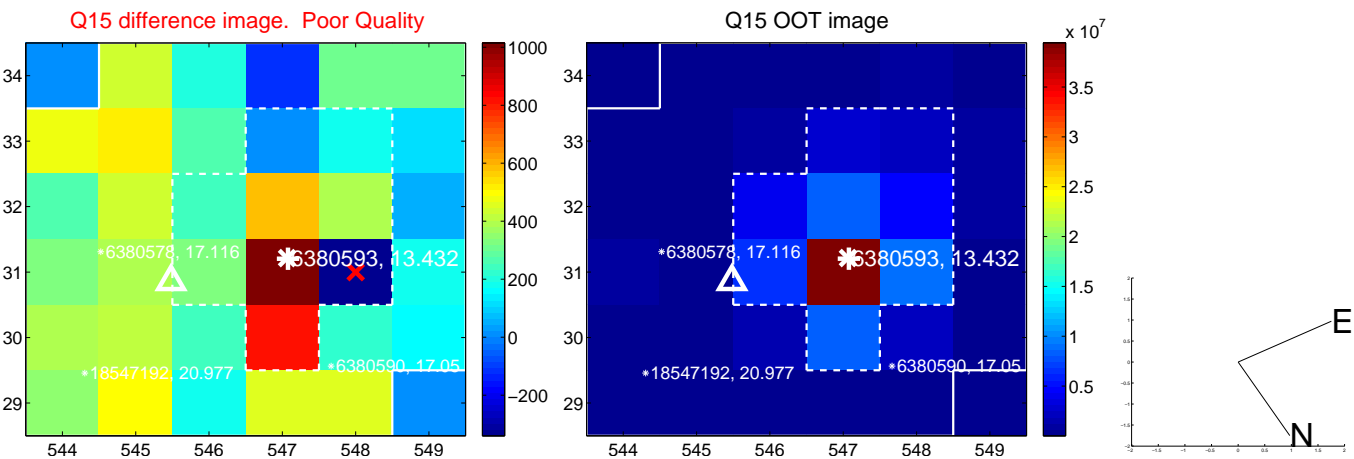
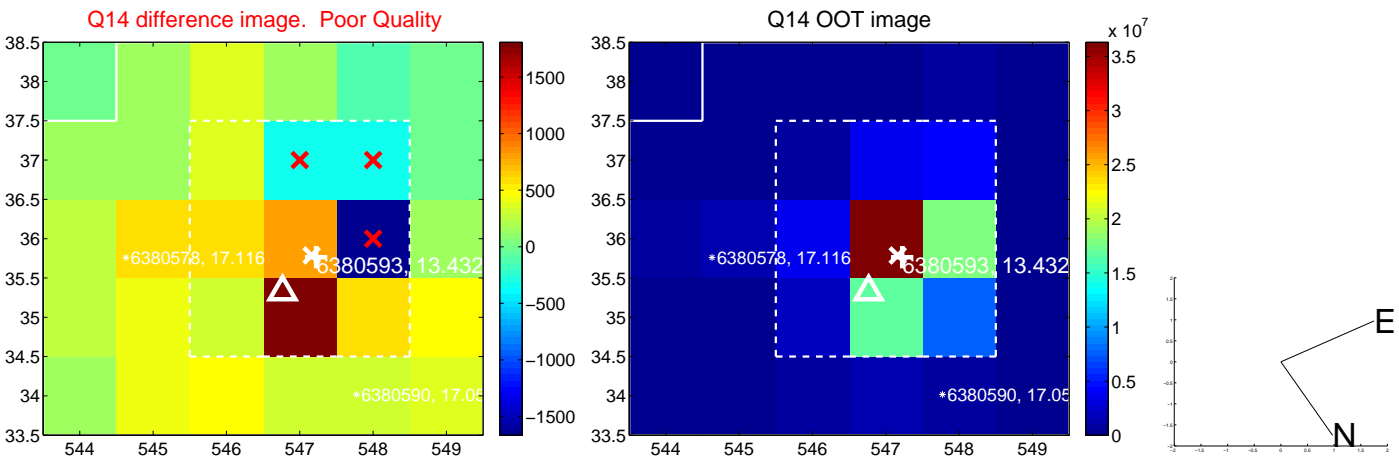
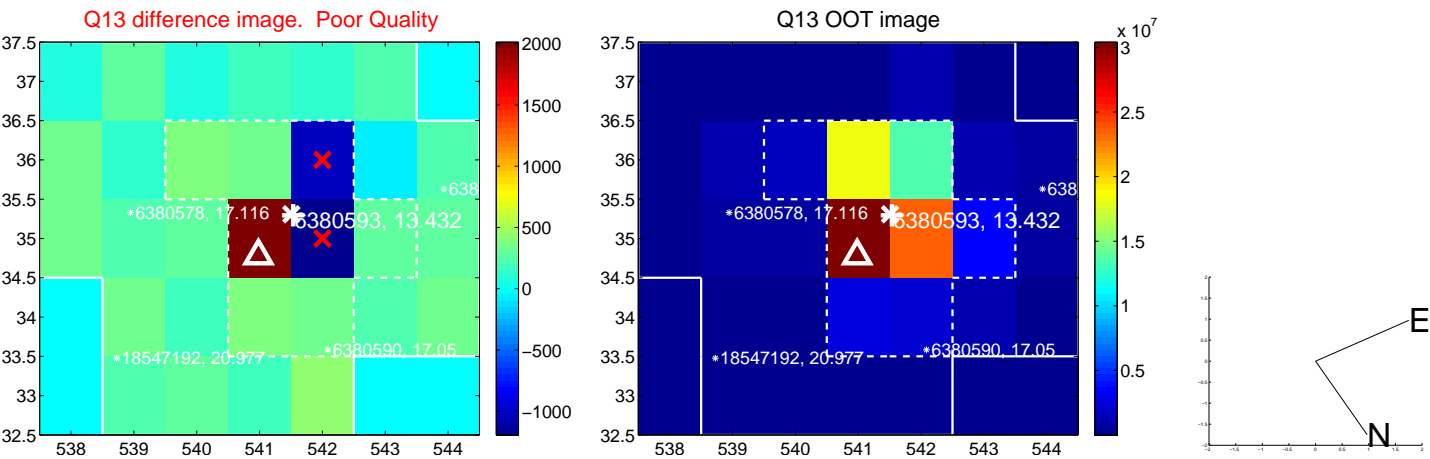
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



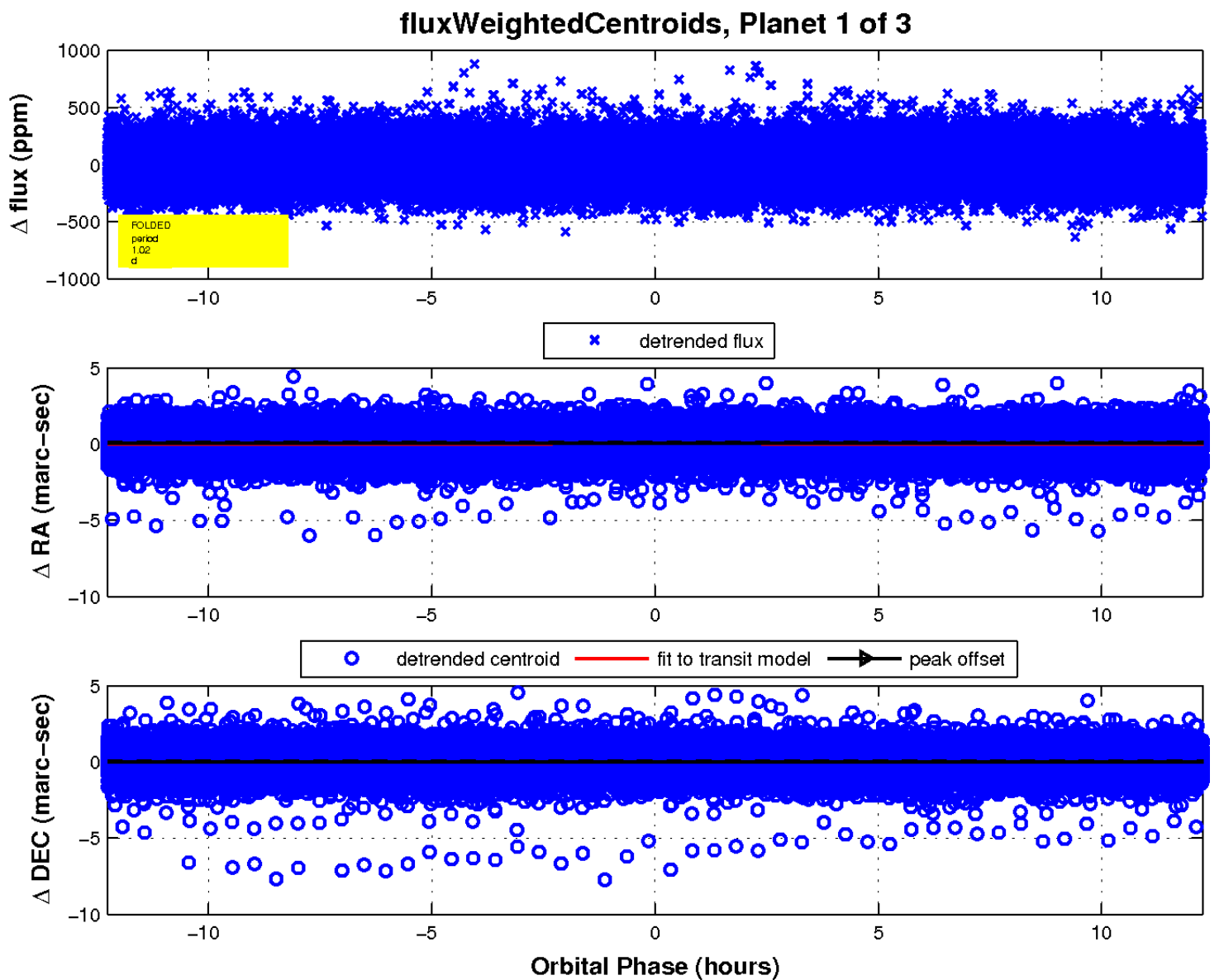
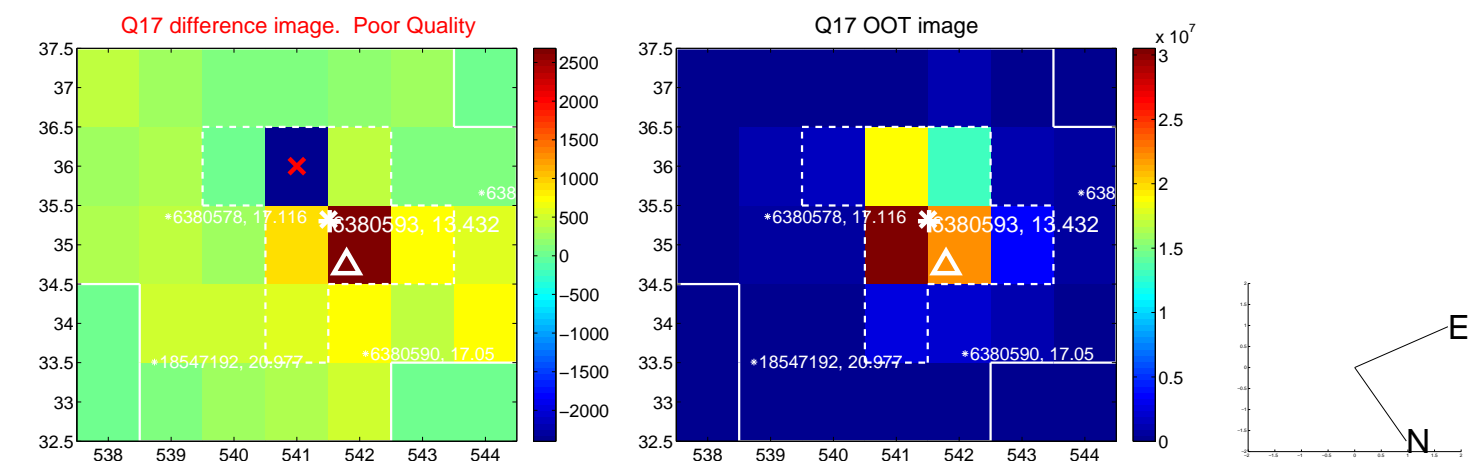
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

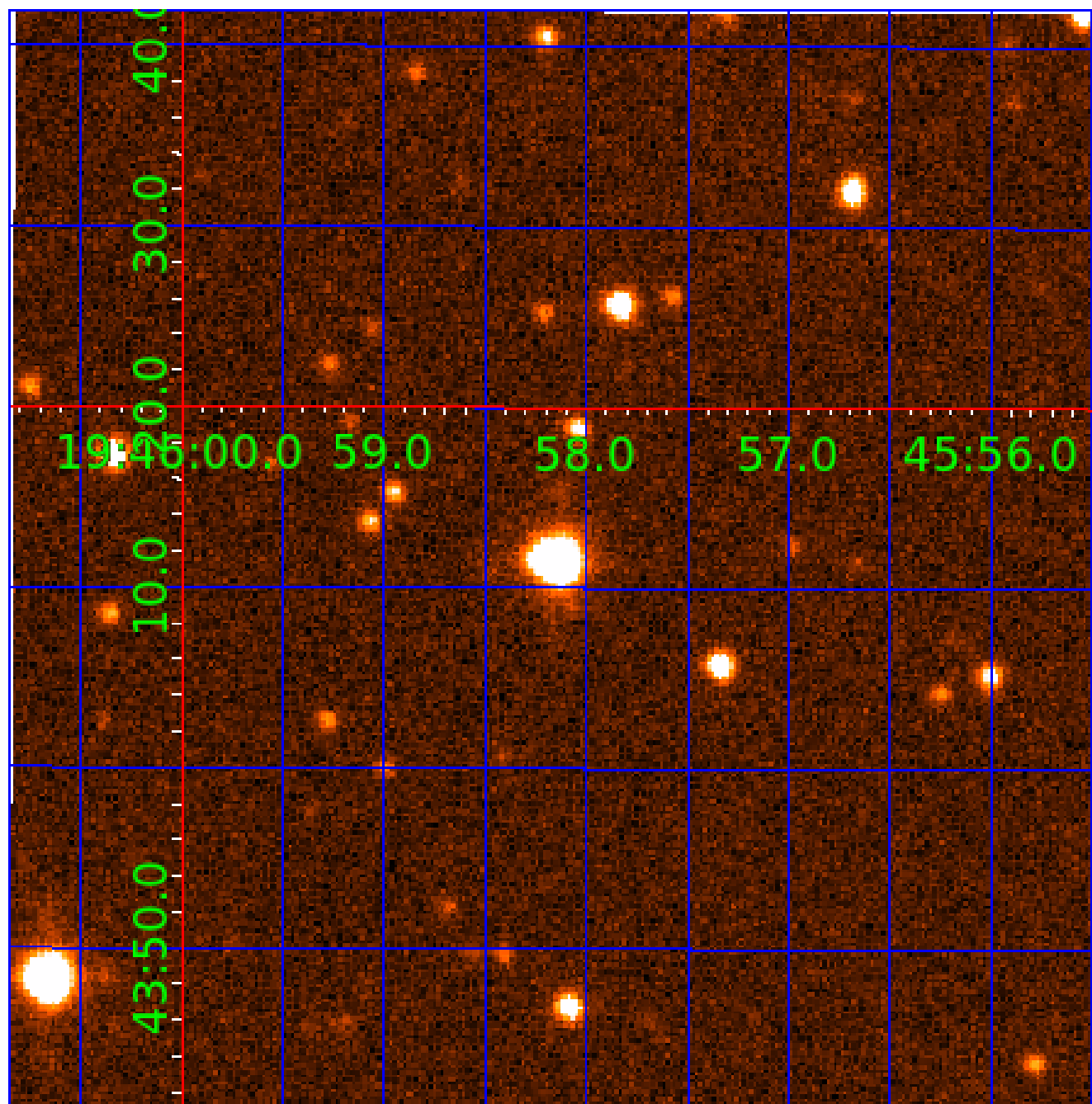


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006380593

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})
006380593-01	OBS	No	1.022120	131.568725	12.6	5.998	8.5	7.8	2.00	6643	1.01	16212.38
006380593-02	OBS	No	61.781262	184.834688	161.7	4.514	9.3	7.9	2.00	6643	2.85	68.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006380593-01	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—CENT_UNRESOLVED_OFFSET—EPHEM_MATCH
006380593-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—HALO_GHOST

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

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

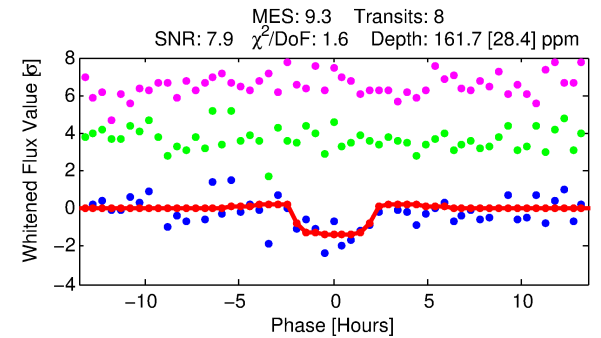
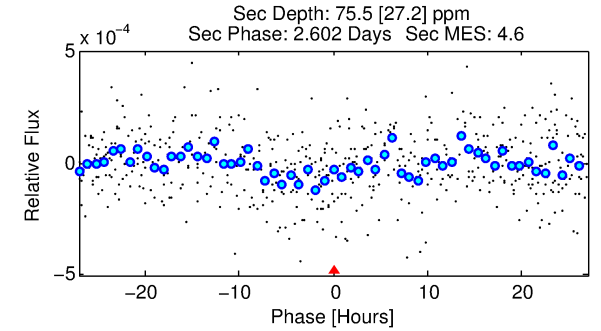
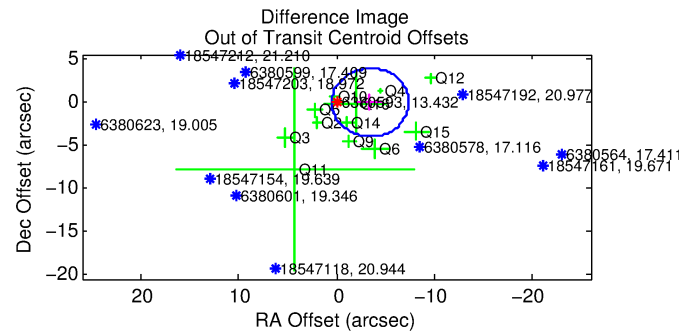
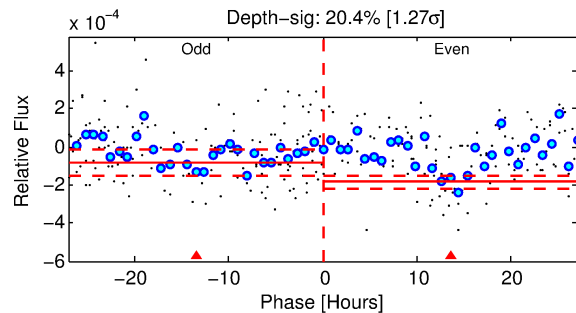
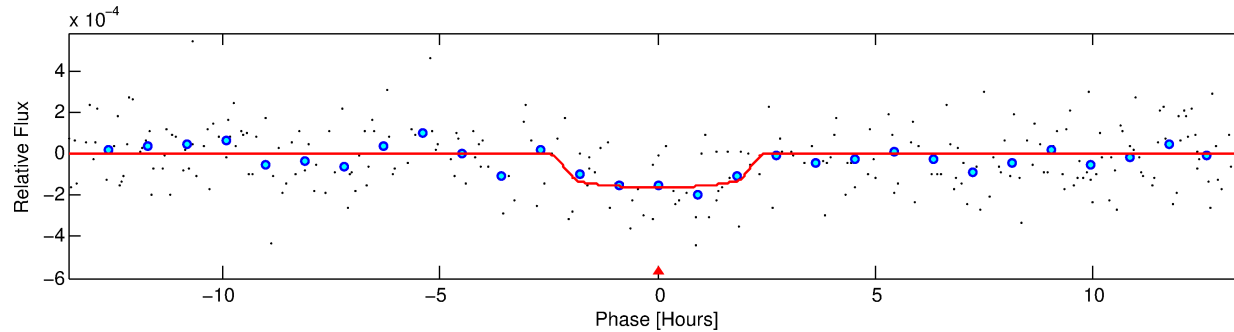
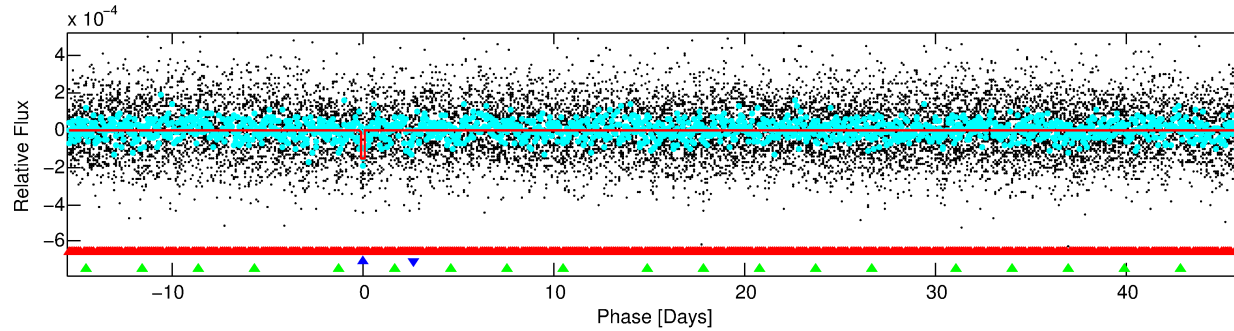
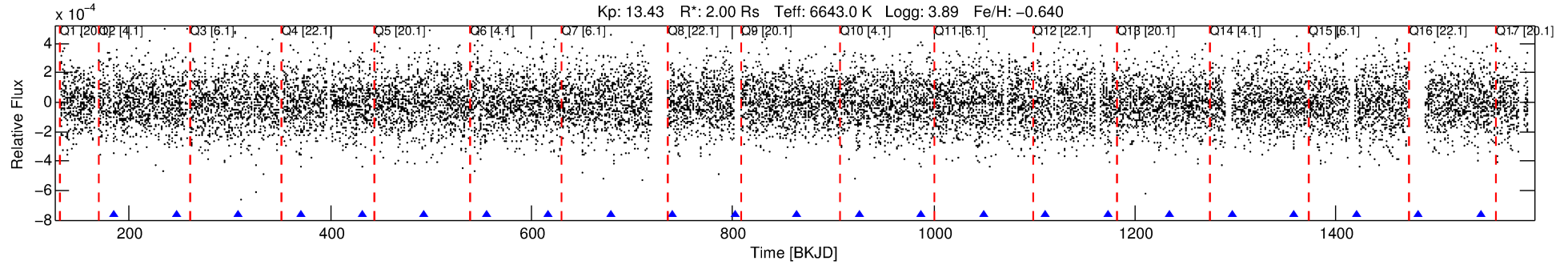
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006380593-02

No Significant Match Found

DV One-Page Summary

KIC: 6380593 Candidate: 2 of 3 Period: 61.781 d



DV Fit Results:

Period = 61.78126 [0.00137] d
Epoch = 184.8347 [0.0166] BKJD
Rp/R* = 0.0130 [0.0096]
a/R* = 60.36 [254.92]
b = 0.83 [1.57]
Seff = 68.35 [38.71]
Teff = 733 [104] K
Rp = 2.85 [2.31] Re
a = 0.3197 [0.1088] AU
Ag = 523.56 [843.37] [0.62 σ]
Teffp = 5422 [2058] K [2.28 σ]

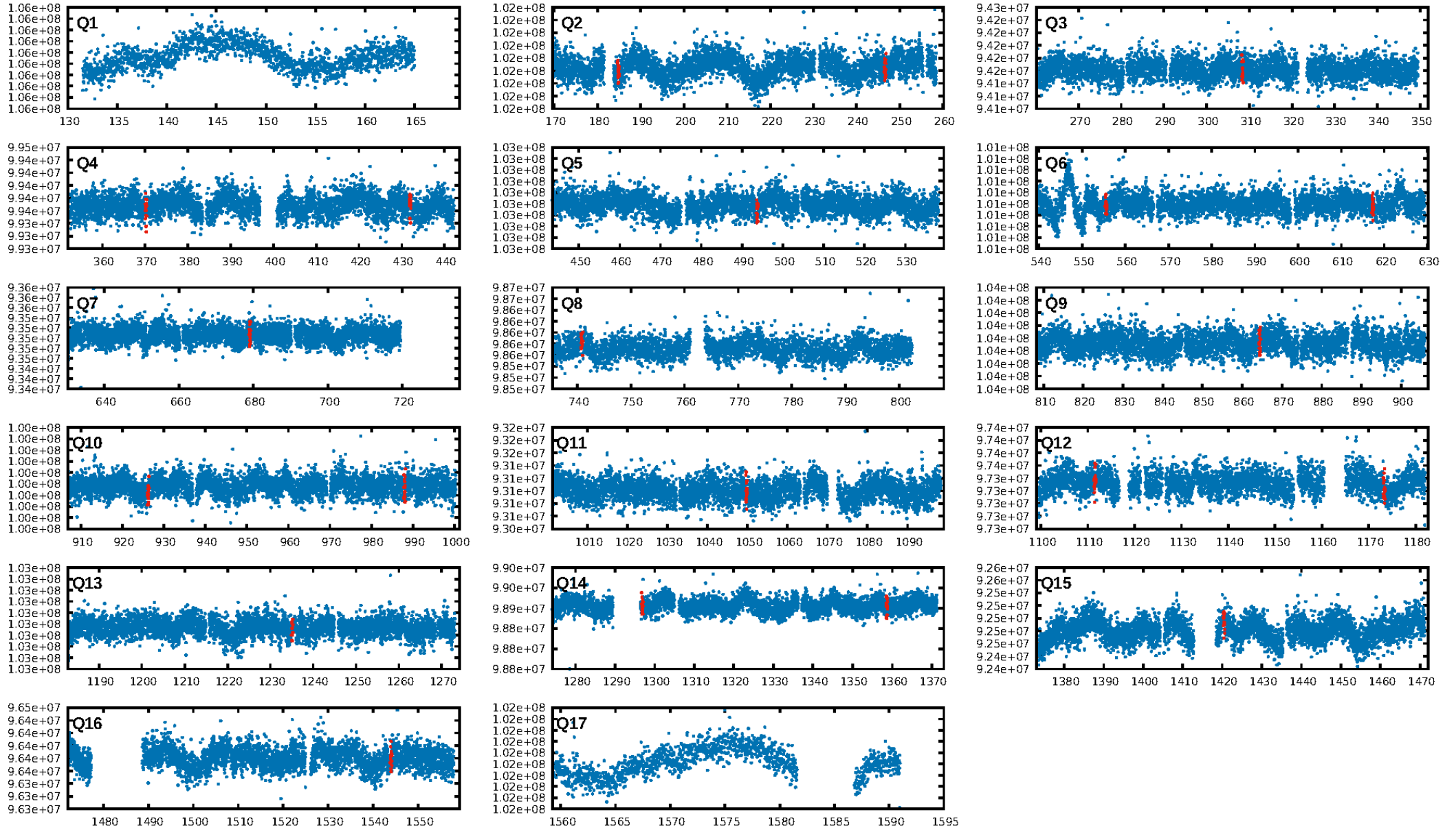
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [194.25 σ]
LongPeriod-sig: 100.0% [48.19 σ]
ModelChiSquare2-sig: 6.7%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 1.58e-12
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 0.04427
Centroid-sig: 1.8%
Centroid-so: 1.726 arcsec [1.68 σ]
OotOffset-rm: 3.442 arcsec [2.62 σ]
OotOffset-st: 4/3/3/2 [12]
KicOffset-rm: 3.383 arcsec [2.59 σ]
KicOffset-st: 4/3/3/2 [12]
DiffImageQuality-fgm: 0.08 [1/12]
DiffImageOverlap-fno: 0.00 [0/15]

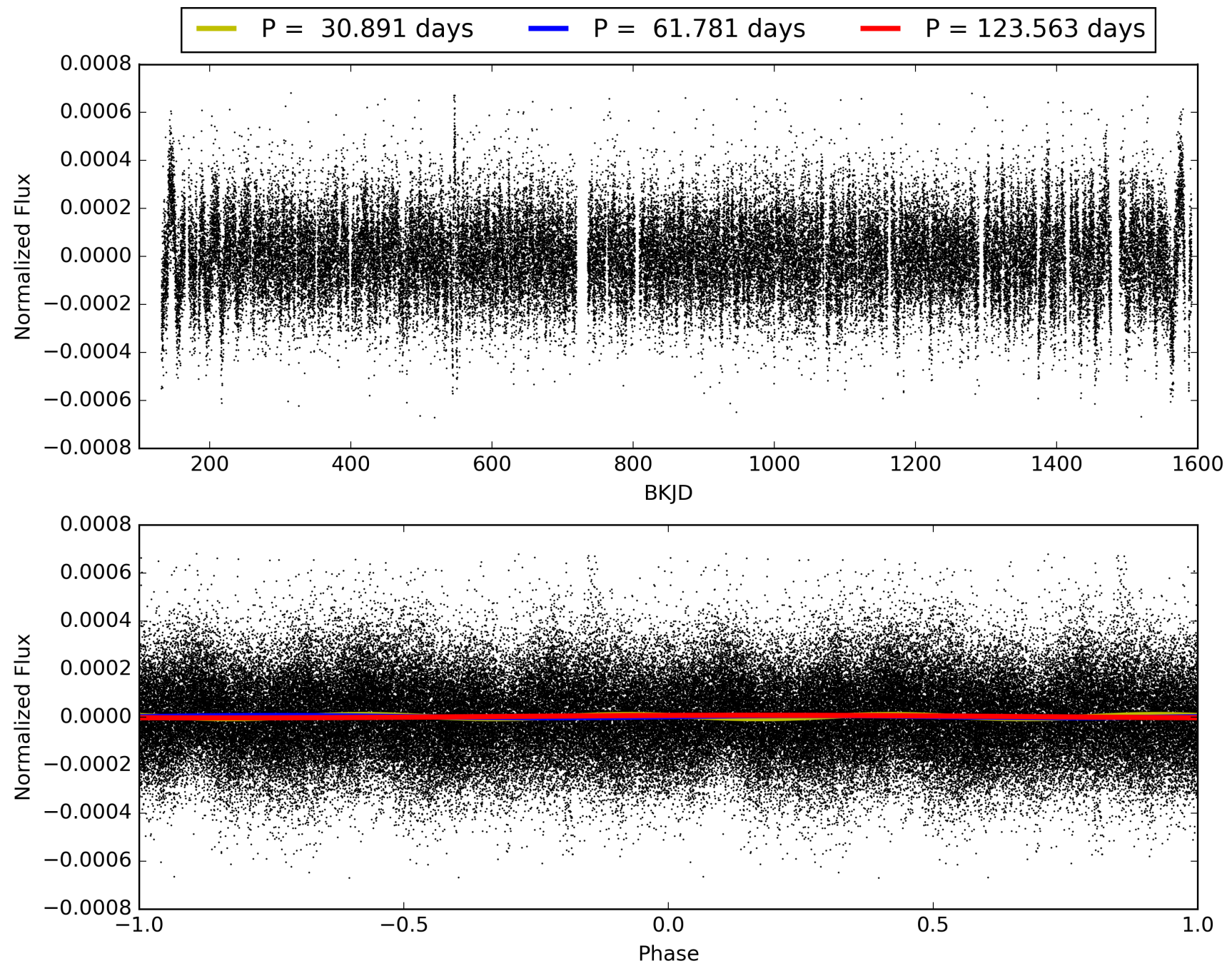
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:44:45 Z

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

TCE 006380593-02, PDC Light Curves

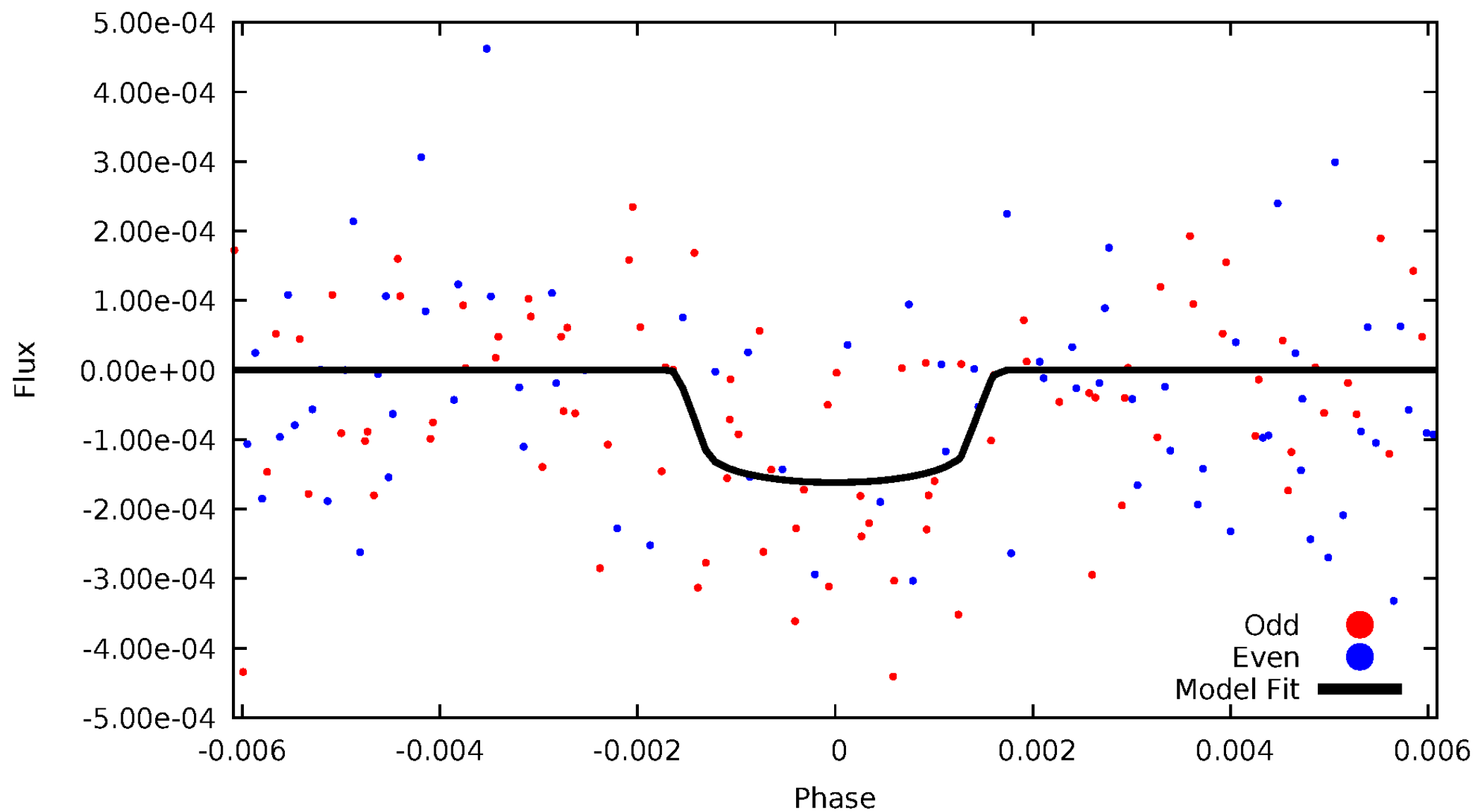


TCE 006380593-02



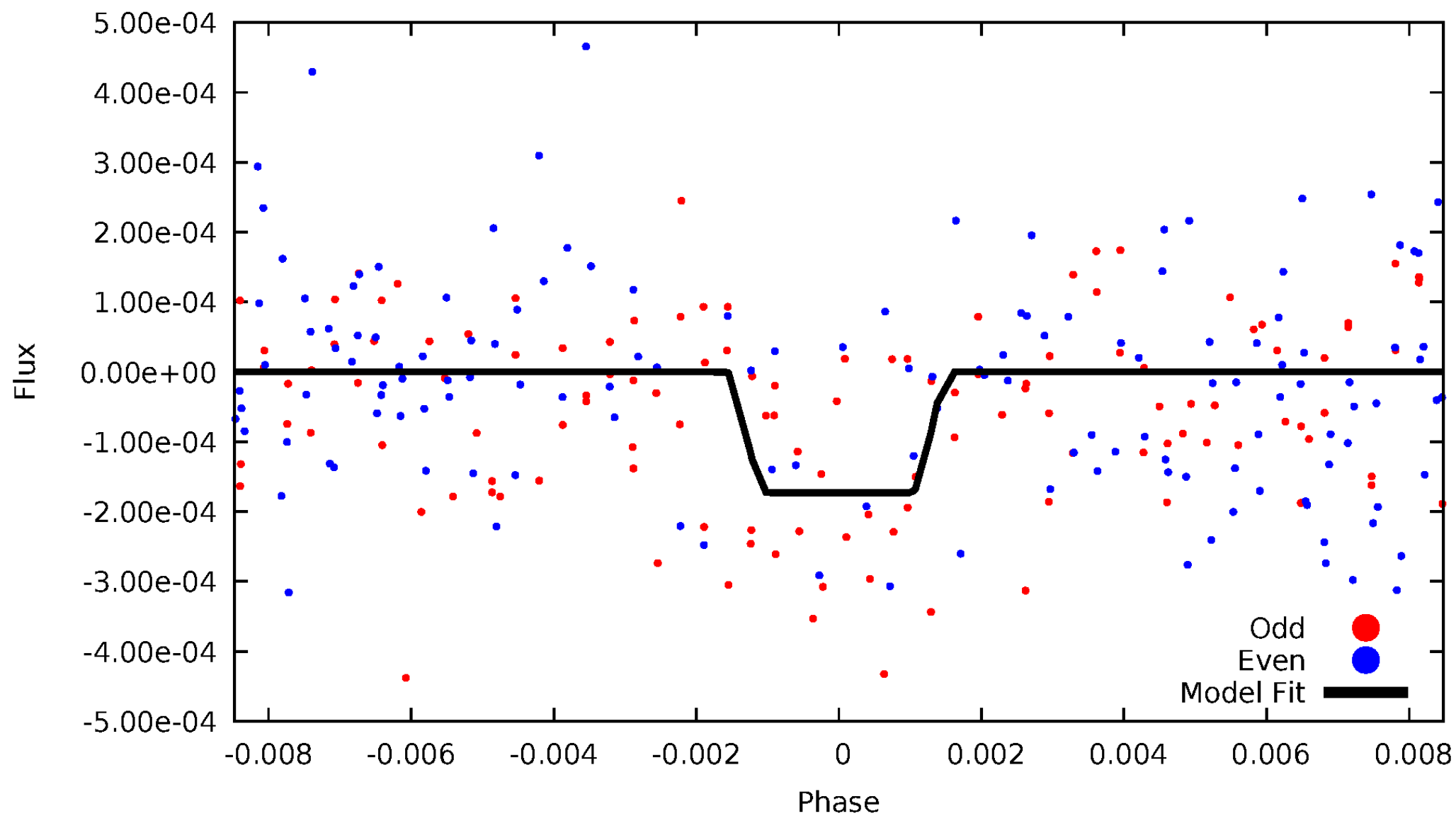
DV Odd/Even

TCE 006380593-02



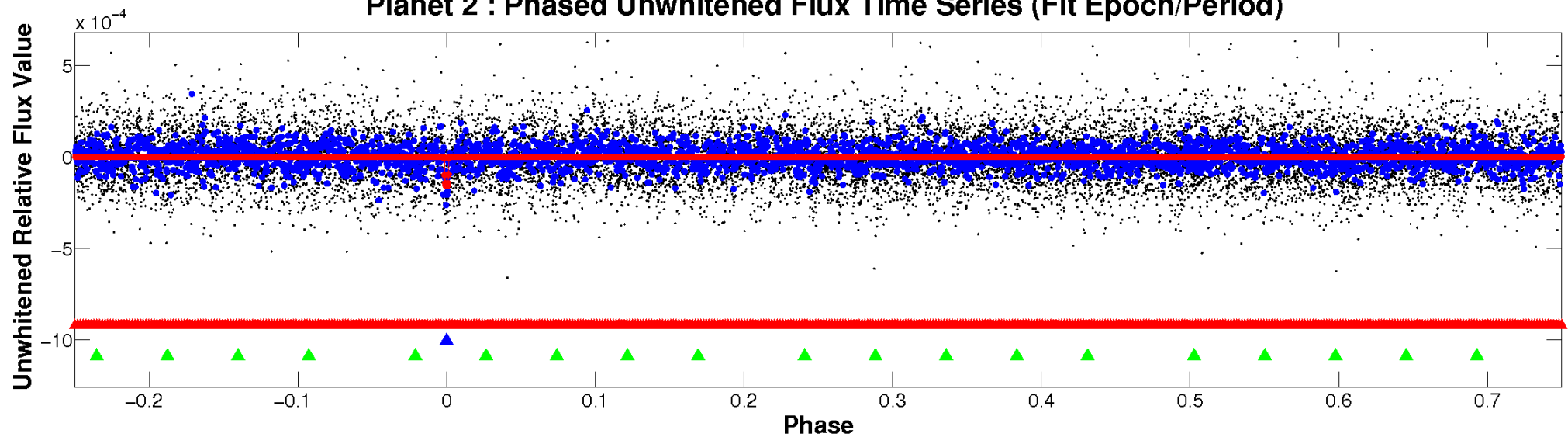
ALT Odd/Even

TCE 006380593-02

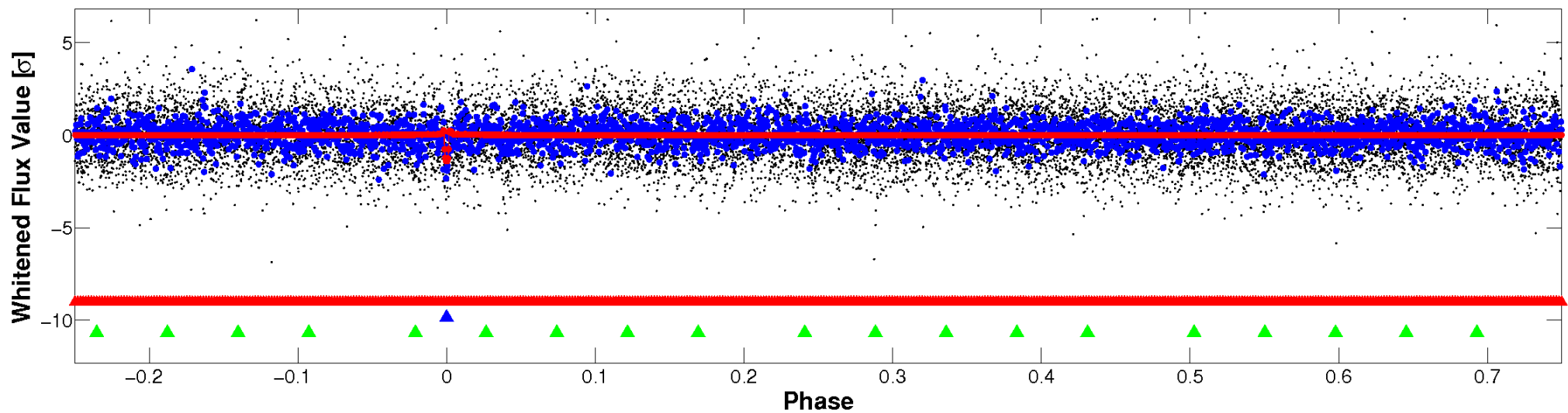


Non-Whitened Vs. Whitened Light Curve

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

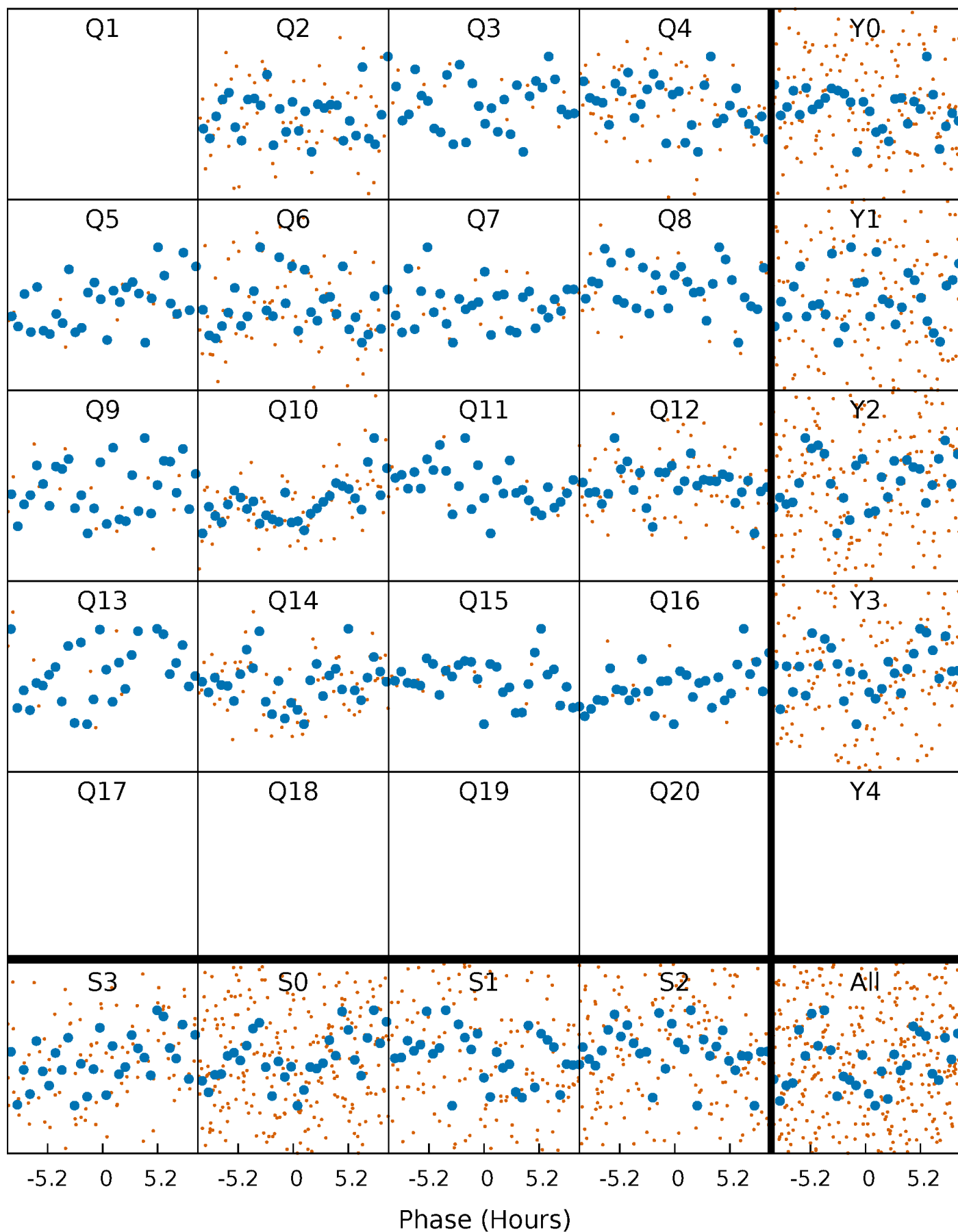


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



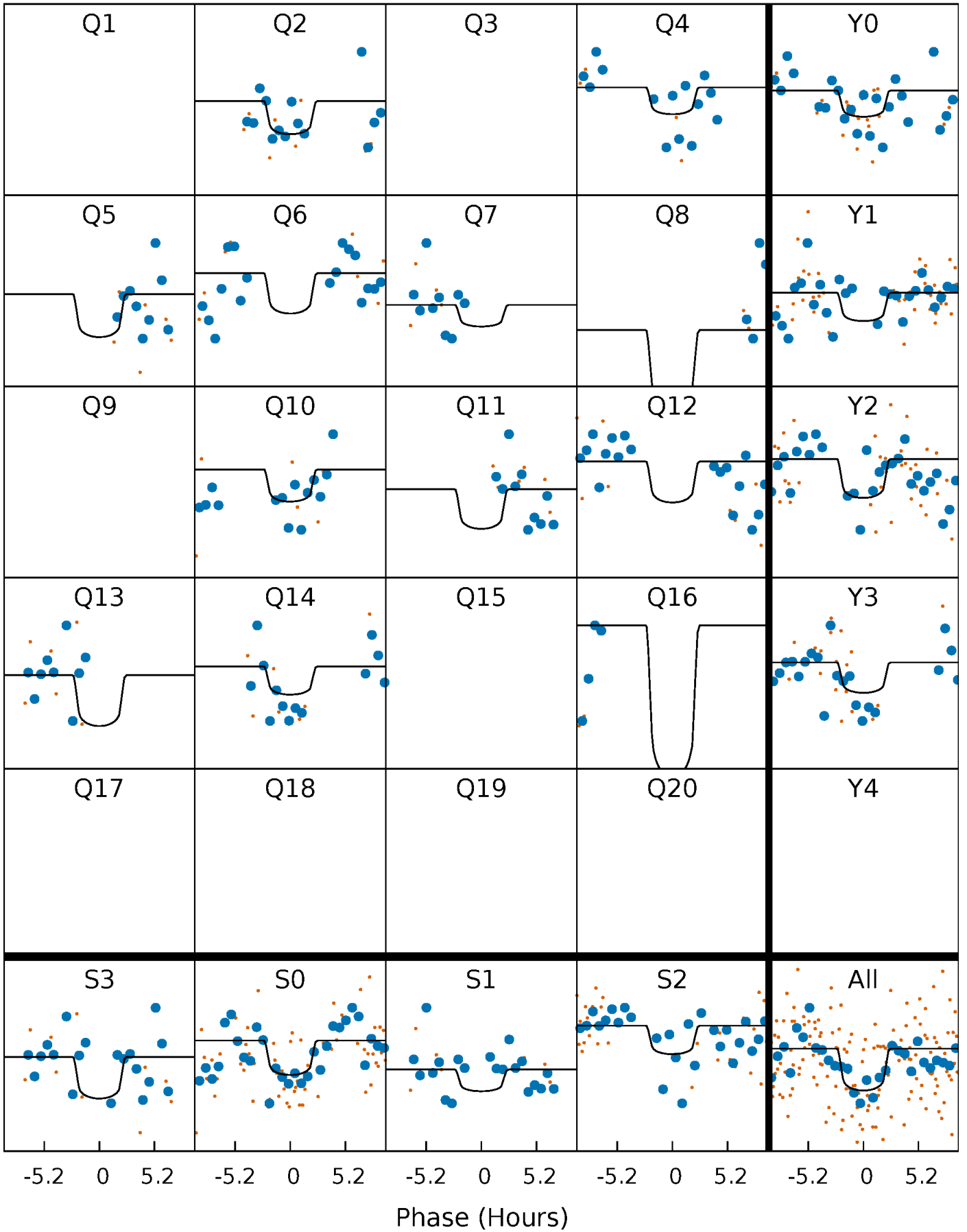
PDC Quarter-Phased Transit Curves

TCE 006380593-02 P= 61.781262 Days $T_0=184.834688$ (BKJD)



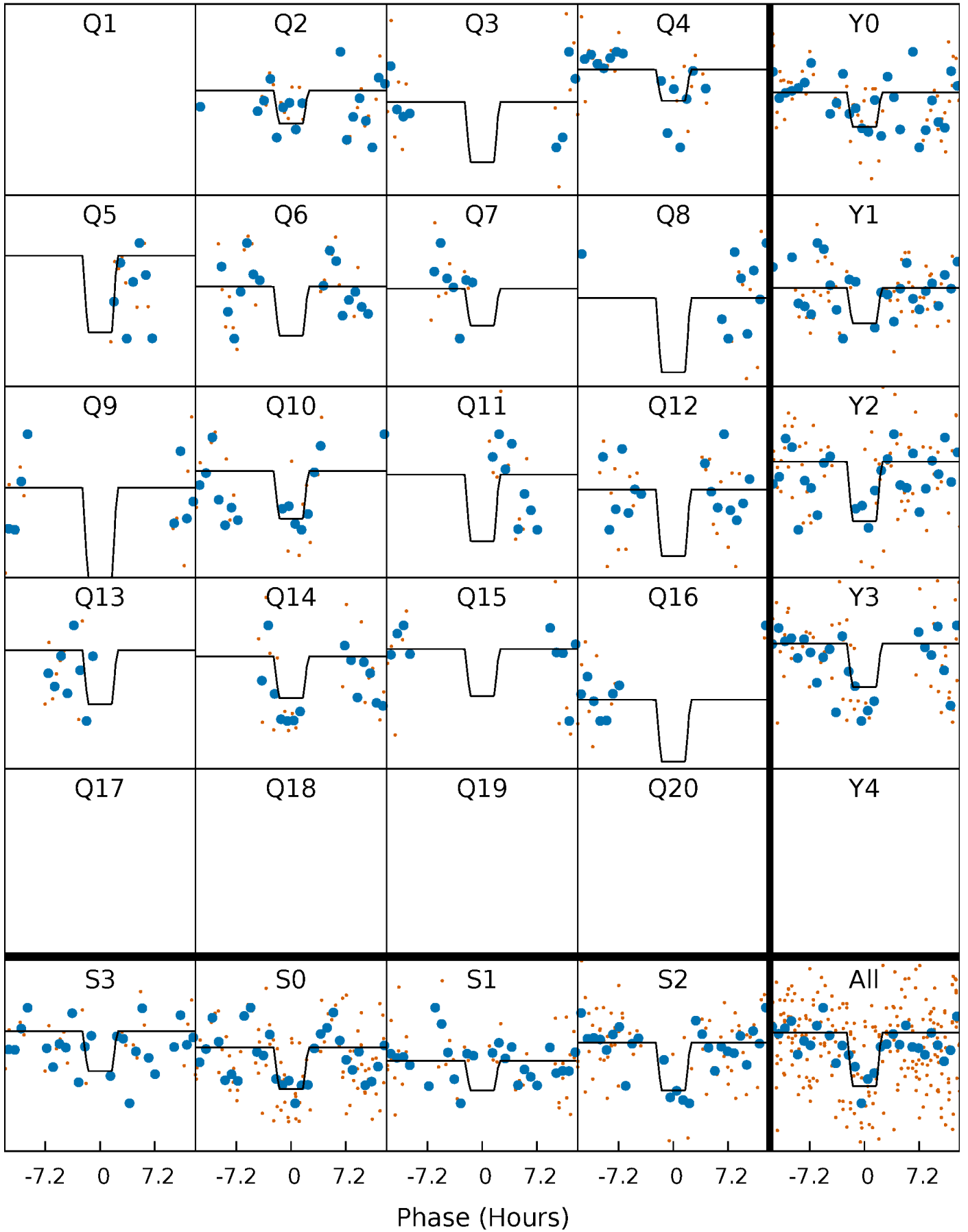
DV Quarter-Phased Transit Curves

TCE 006380593-02 P= 61.781262 Days $T_0=184.834688$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

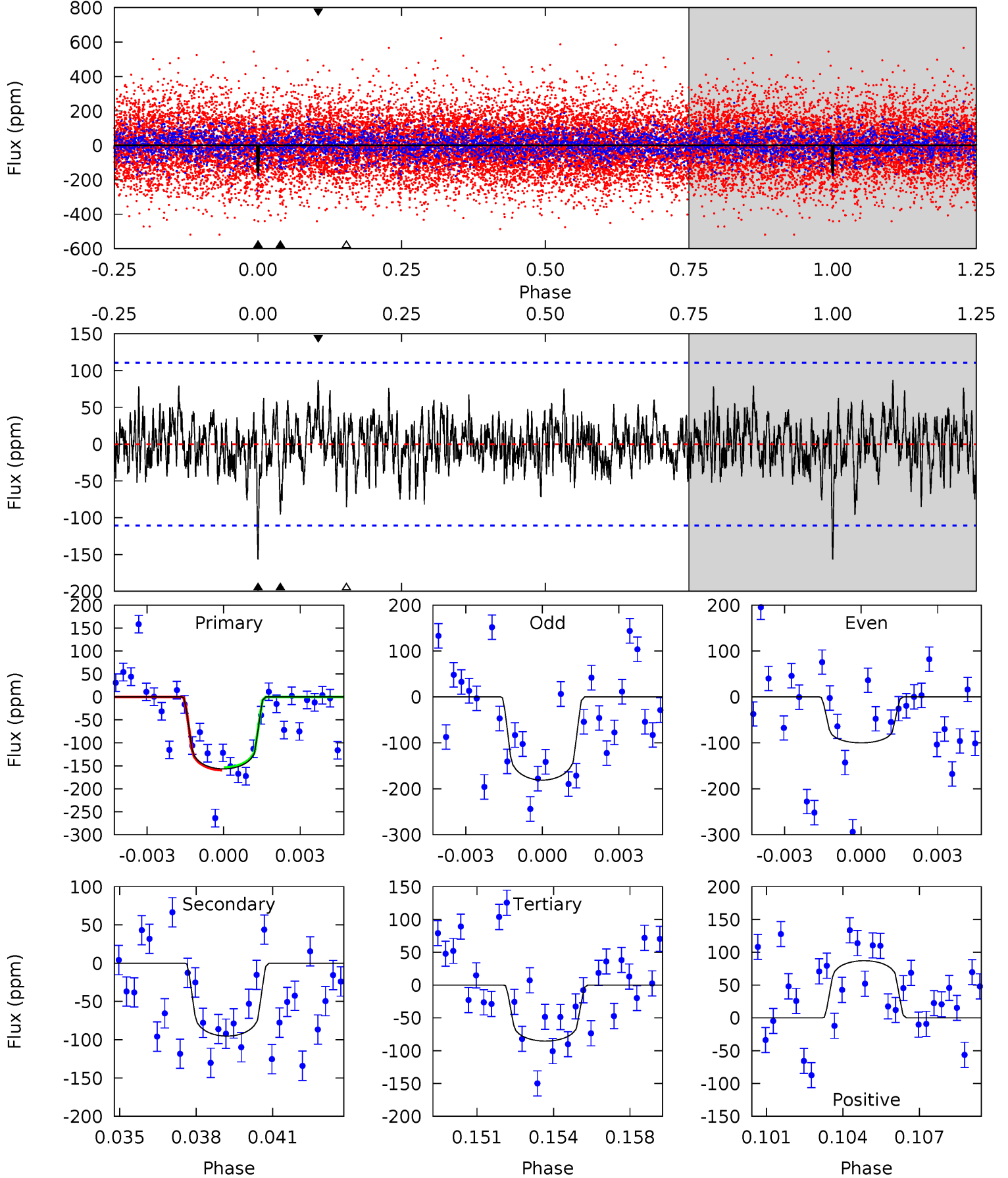
TCE 006380593-02 P= 61.782052 Days $T_0=184.829498$ (BKJD)



DV Model-Shift Uniqueness Test

006380593-02, P = 61.781262 Days, E = 123.053426 Days

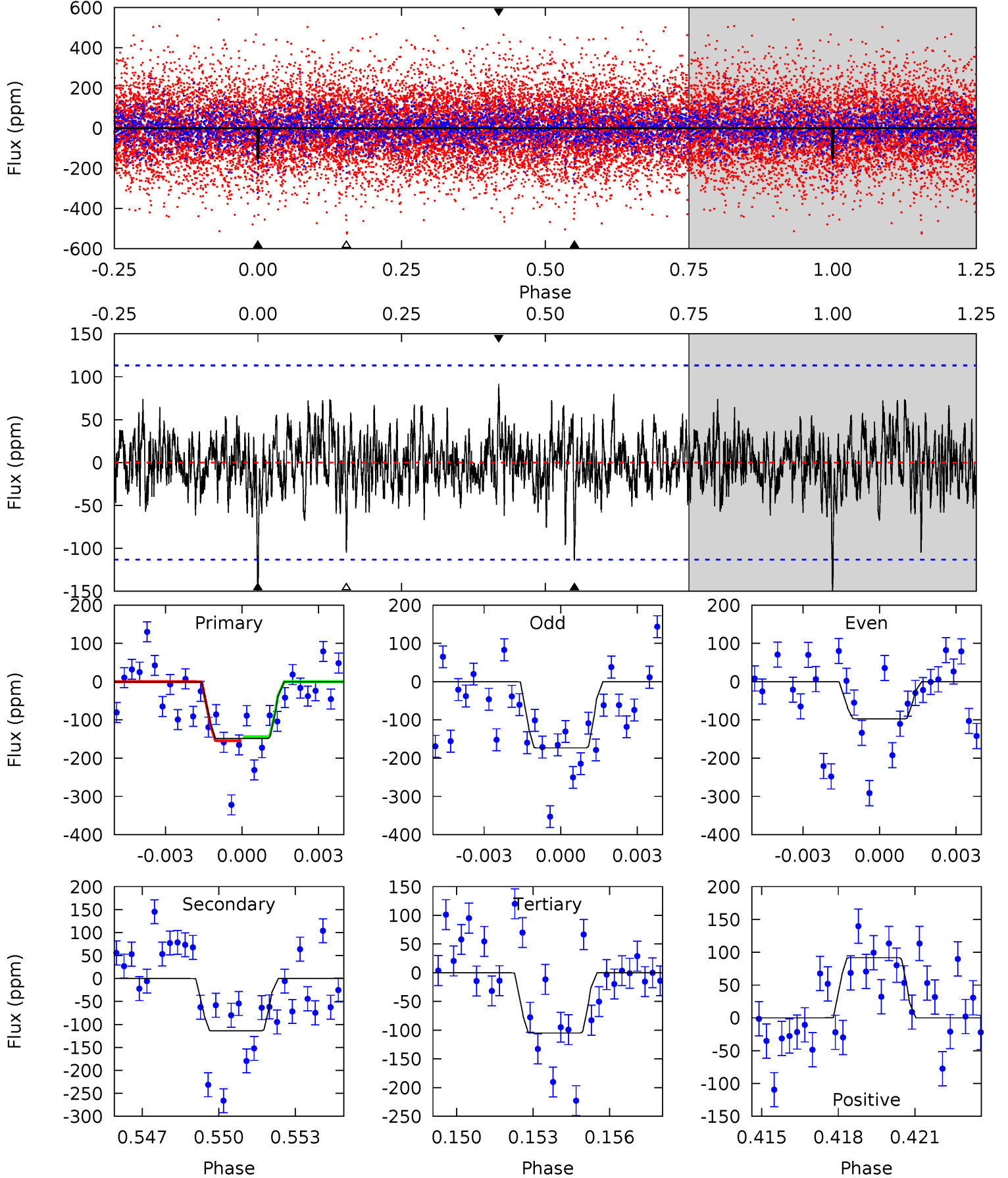
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.42	4.51	4.04	4.12	5.24	2.95	1.23	3.37	3.29	0.47	0.39	1.77	0.83	0.36	0.13



Alt Model-Shift Uniqueness Test

006380593-02, P = 61.782052 Days, E = 123.047446 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.92	5.29	4.88	4.26	5.26	2.97	1.19	2.04	2.66	0.41	1.03	1.62	0.83	0.38	0.24



Stellar Parameters For KIC 006380593

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6643^{+183}_{-203}	$3.893^{+0.328}_{-0.103}$	$-0.640^{+0.350}_{-0.300}$	$2.001^{+0.370}_{-0.687}$	$1.142^{+0.190}_{-0.171}$	$0.201^{+0.427}_{-0.064}$
	+3%/-3%	+8%/-3%	+55%/-47%	+18%/-34%	+17%/-15%	+213%/-32%
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 006380593-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-95 ± 21	$2.81^{+1.97}_{-1.64}$	1007^{+63}_{-89}	5588^{+3534}_{-1102}	668^{+3209}_{-438}
Alt.	-114 ± 22	$2.84^{+2.08}_{-1.64}$	1001^{+71}_{-89}	5775^{+3664}_{-1194}	804^{+3657}_{-546}

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 $A_{obs} \gg 1.0$

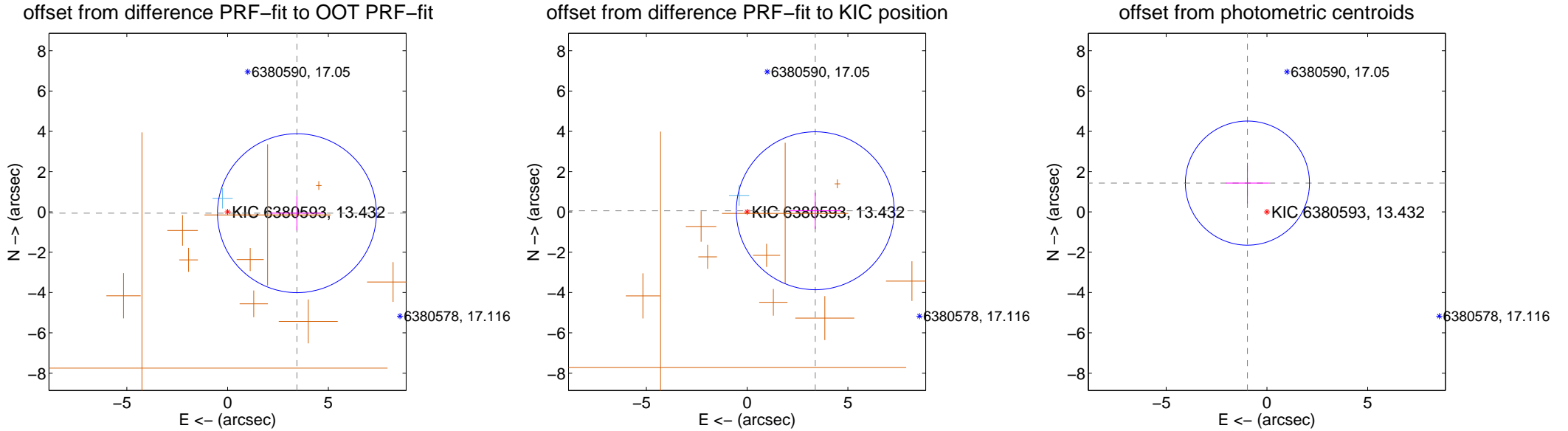
DV Centroid Data

Supplemental centroid analysis for 006380593-02. Kepler magnitude: 13.43. Transit SNR 7.94

There are 1 quarters with good PRF difference image offsets

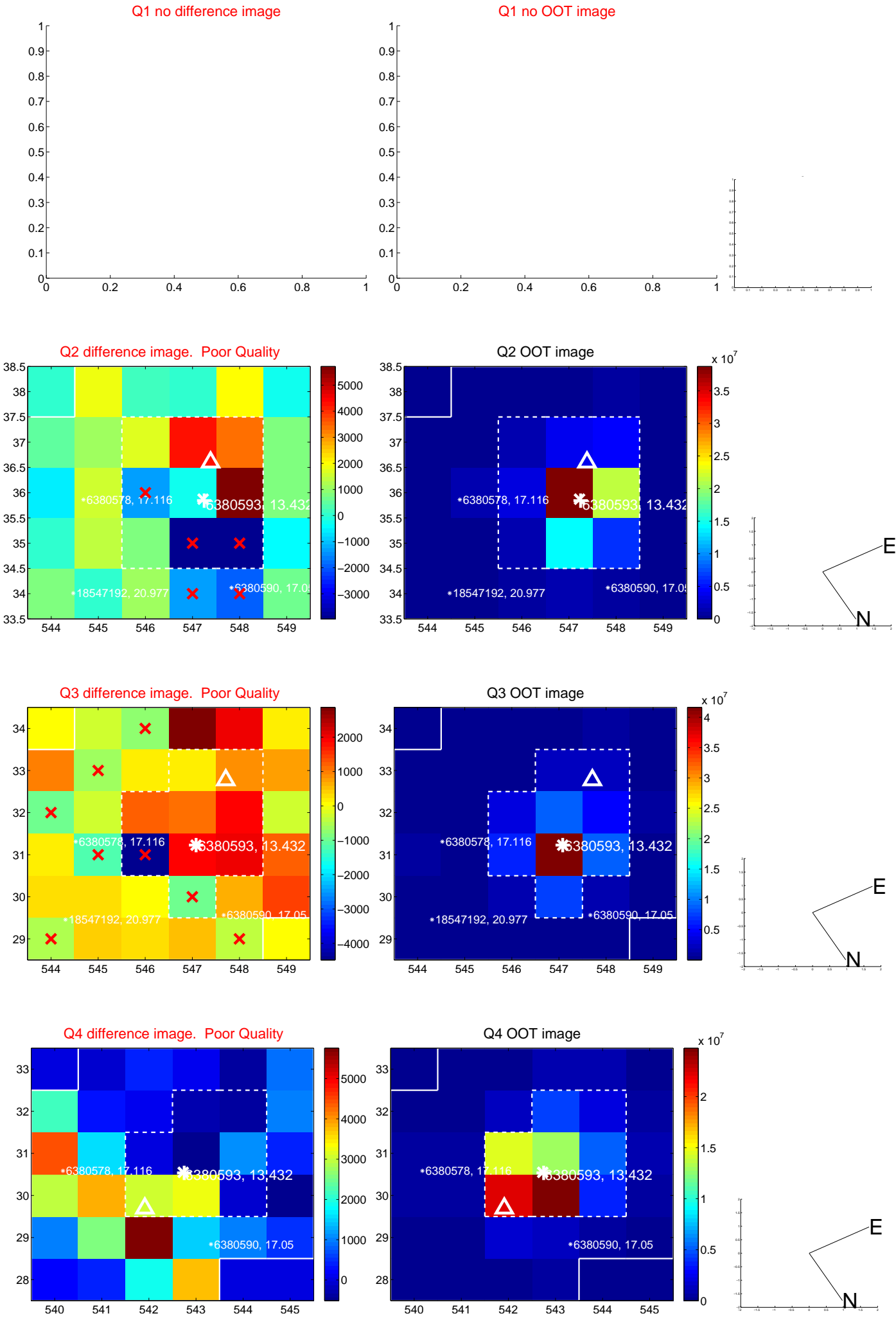
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.442 ± 1.314	2.62	-3.441 ± 1.320	-0.063 ± 0.855
PRF-fit source offset from KIC position	3.383 ± 1.306	2.59	-3.382 ± 1.299	0.059 ± 0.901
photometric centroid source offset	1.73 ± 1.03	1.68	0.97 ± 1.07	1.43 ± 1.01

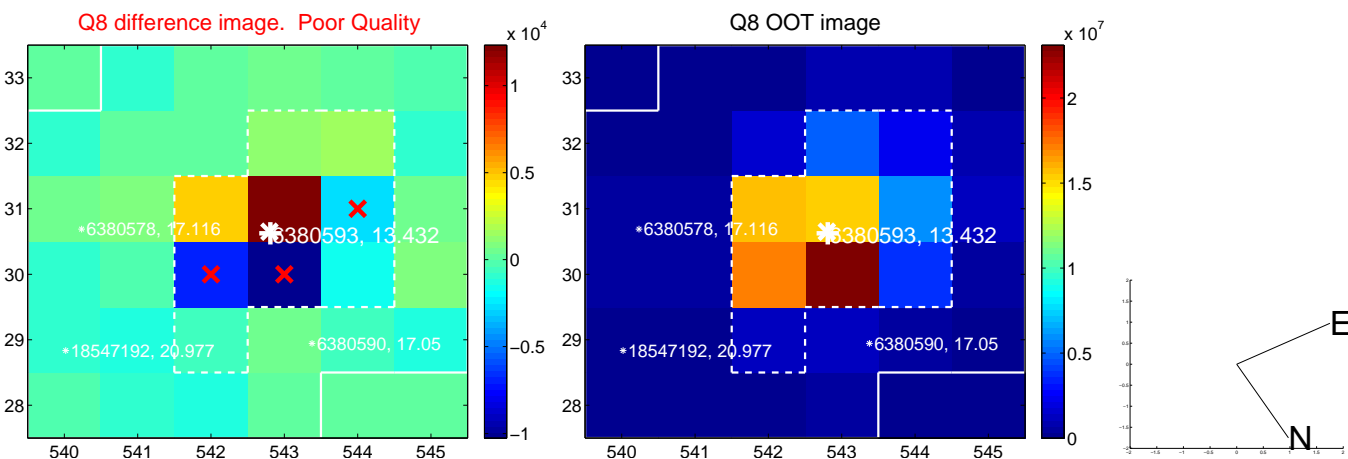
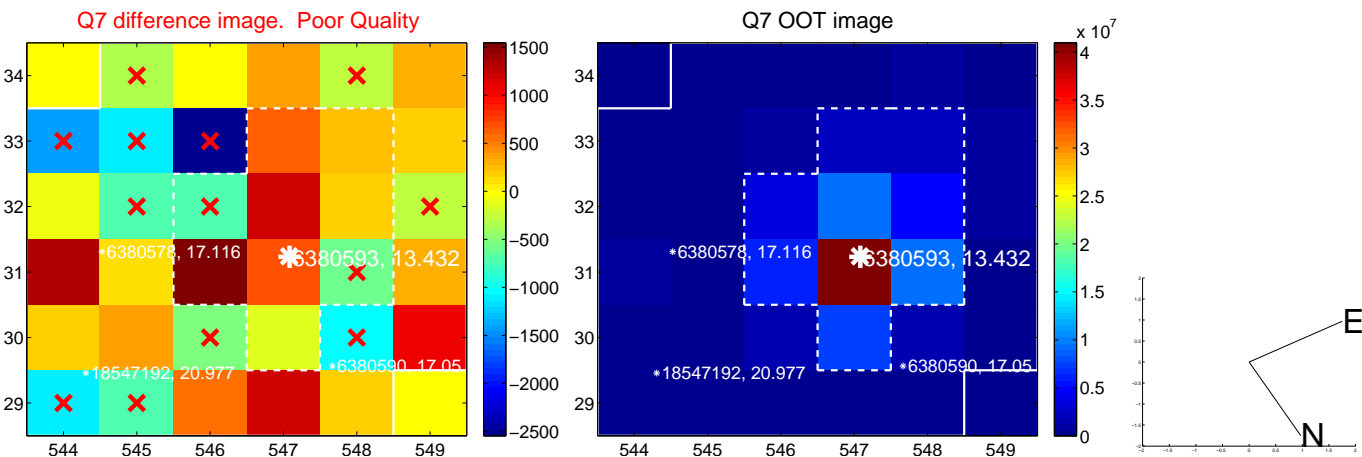
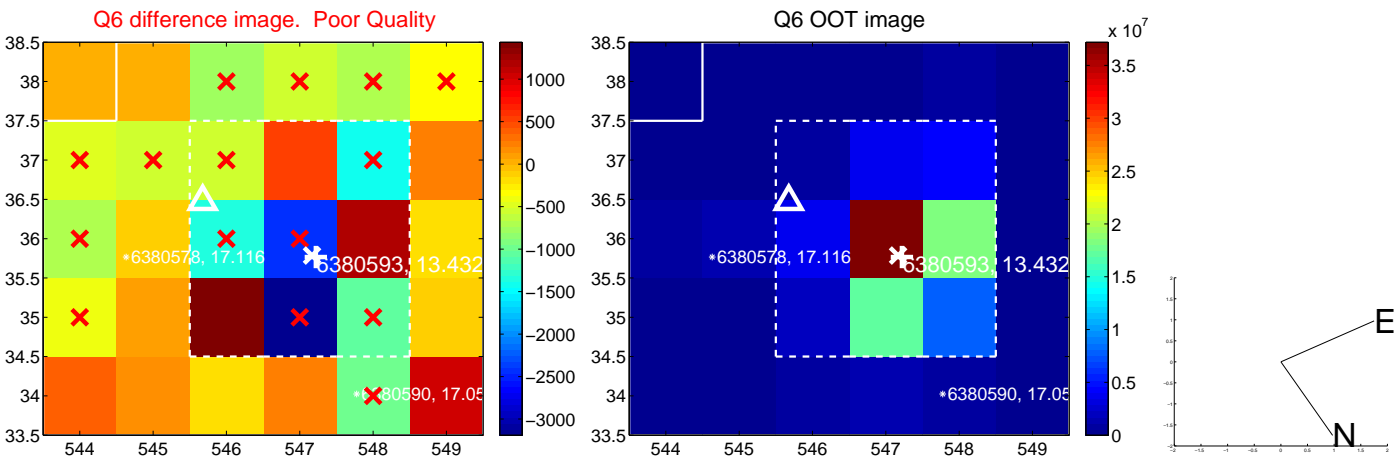
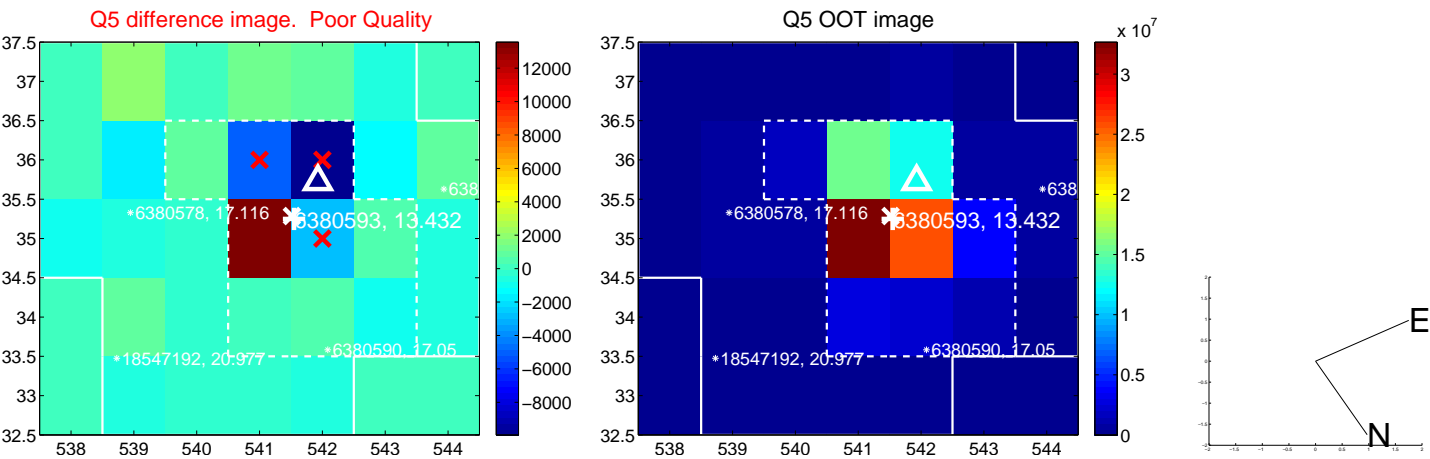


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

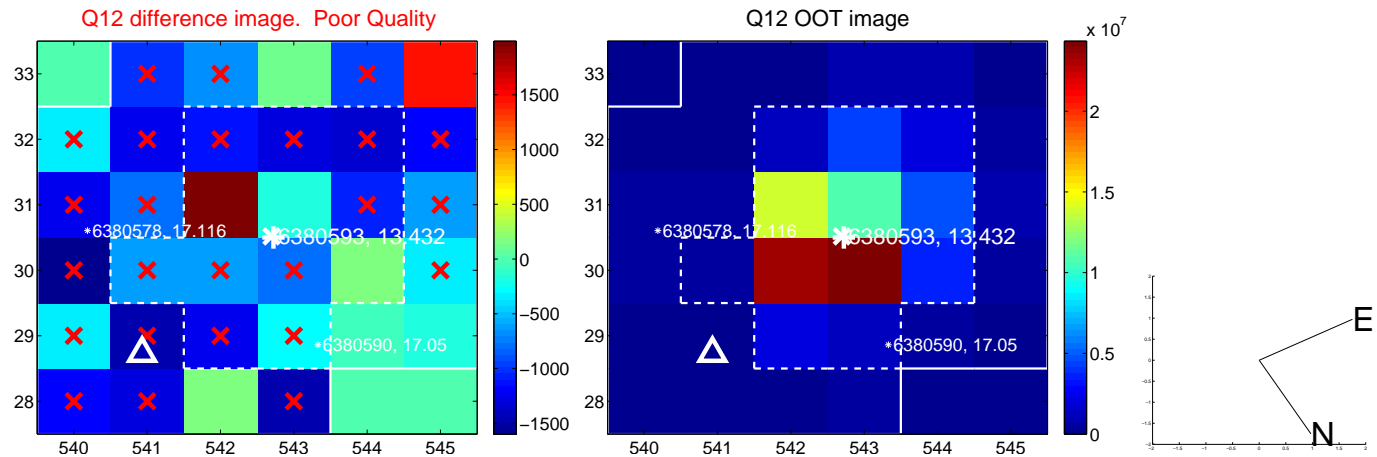
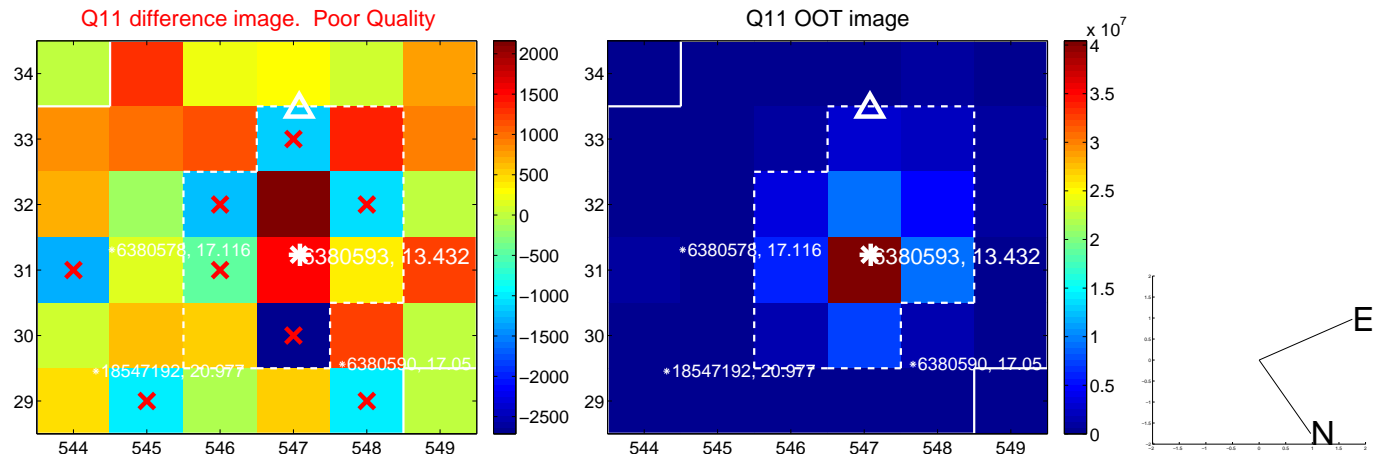
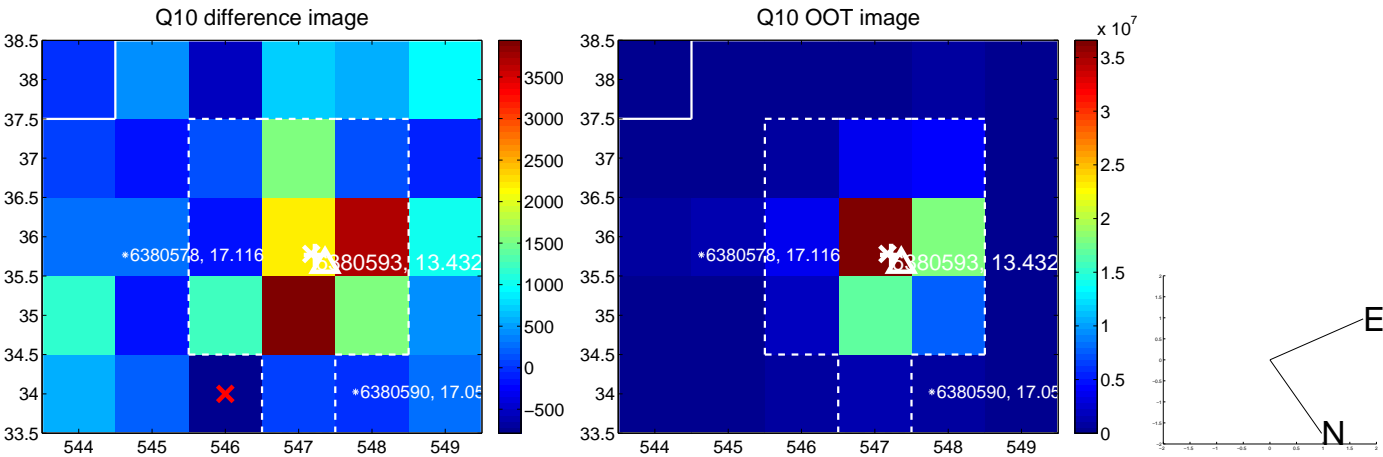
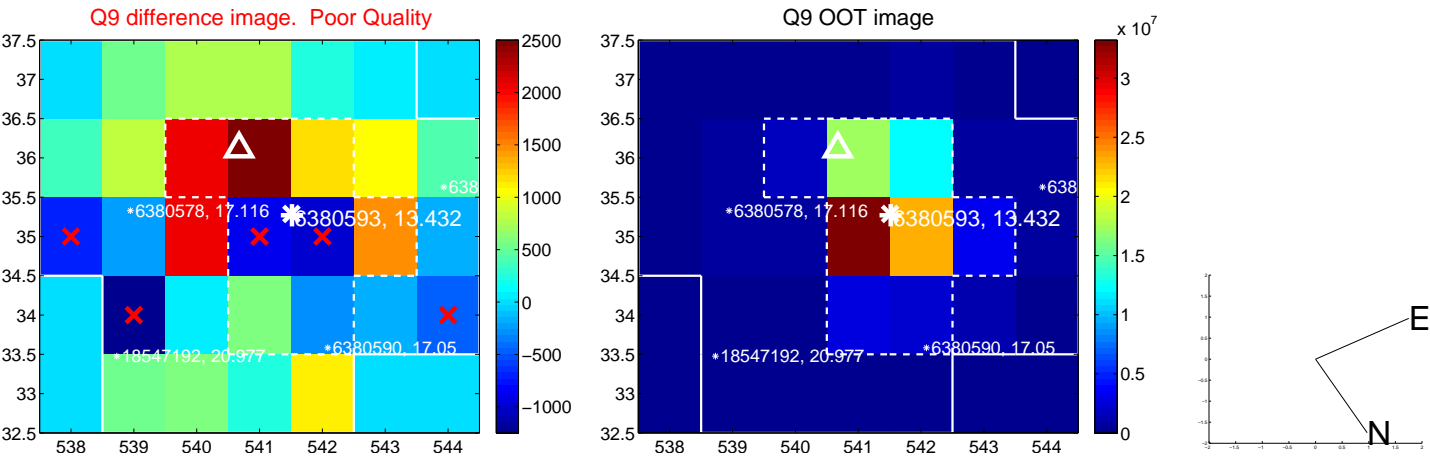
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



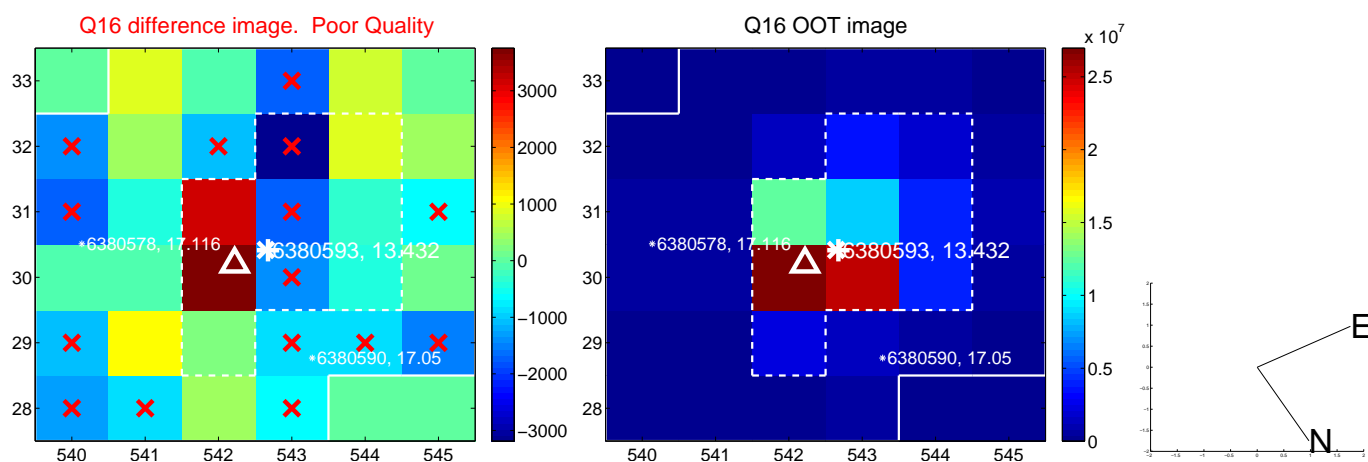
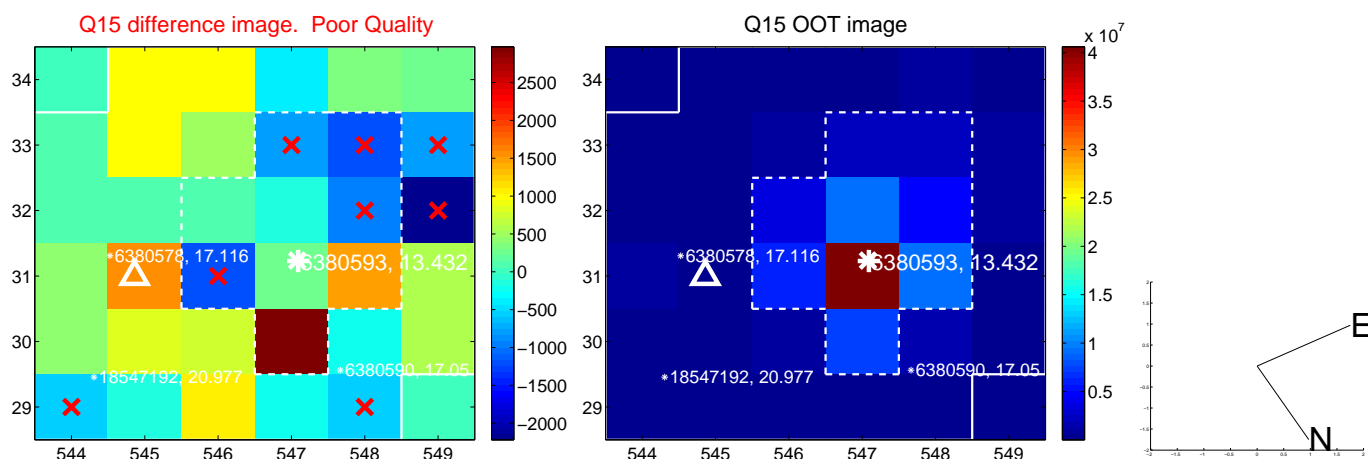
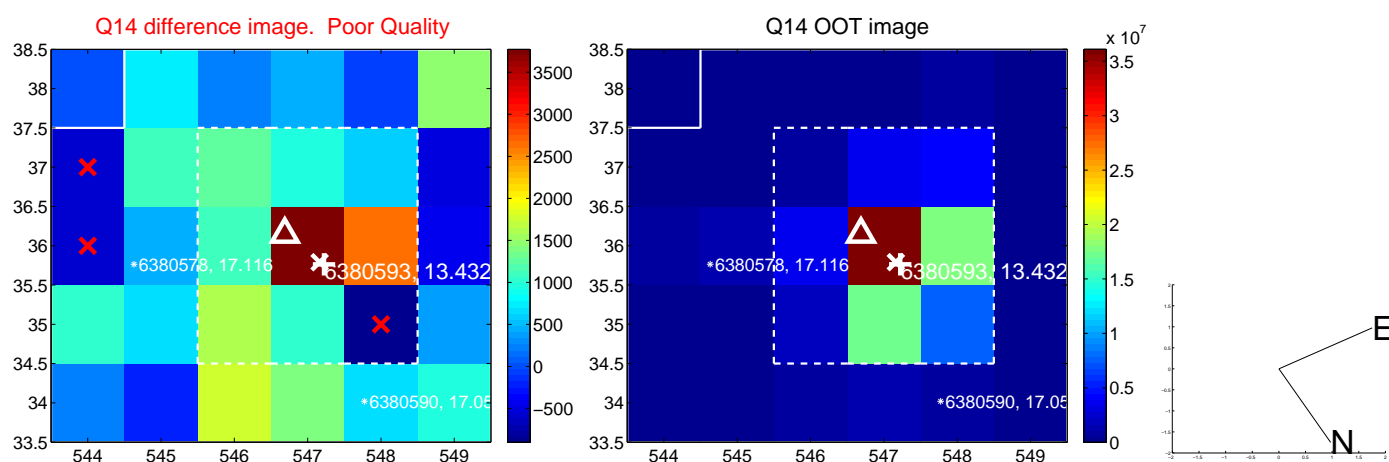
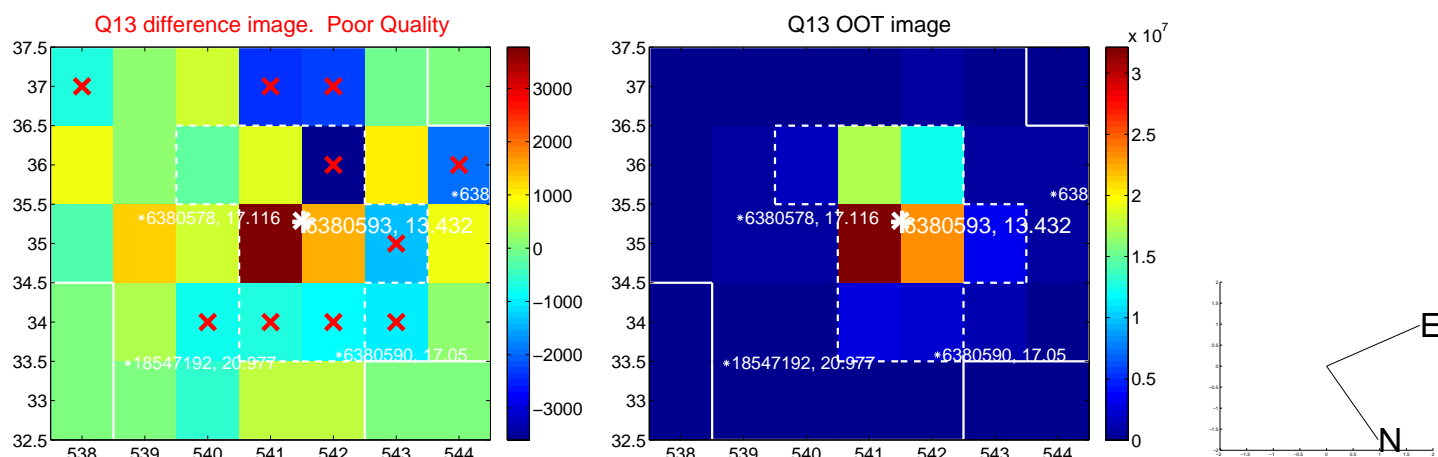
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



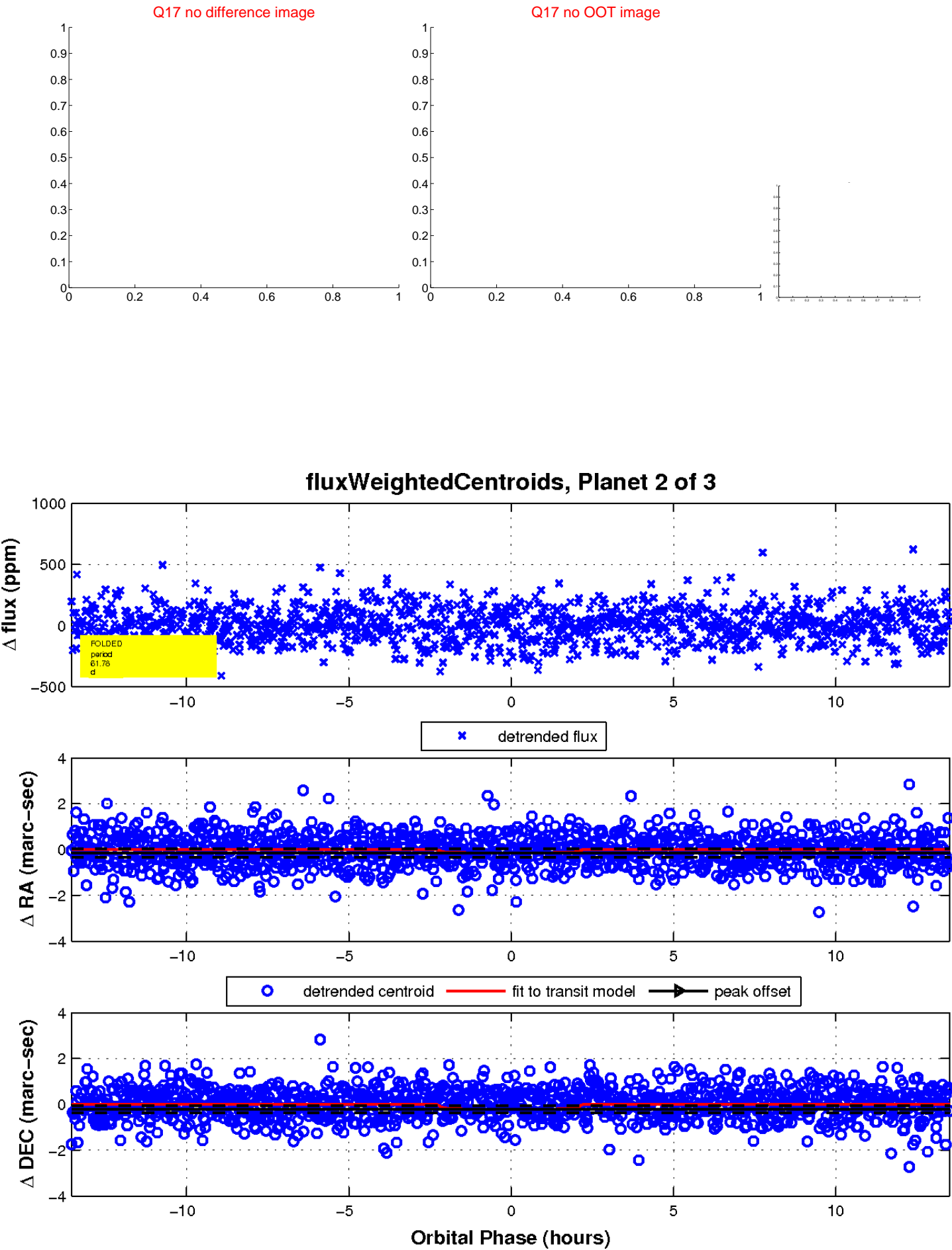
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

