

KIC 005952366

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})
005952366-01	OBS	3947.01	0.905671	132.200532	1168.9	1.470	26.1	33.5	1.00	5780	4.10	2978.37
005952366-02	OBS	3947.02	22.735887	144.062623	5862.2	59.056	16.1	55.7	1.00	5780	8.81	40.52

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005952366-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
005952366-02	OBS	FP	0.00	0	1	1	0	MOD_ODDEVEN_DV—CENT_RESOLVED_OFFSET

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 005952366-01

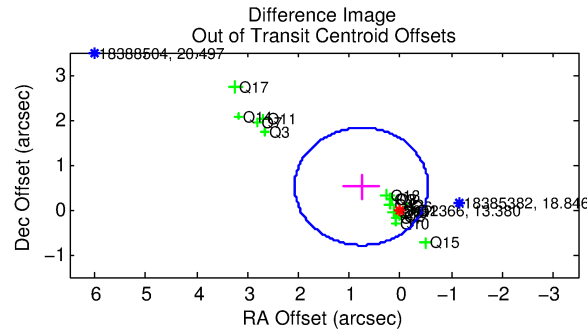
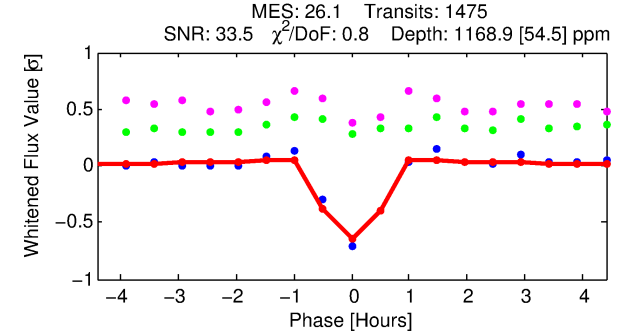
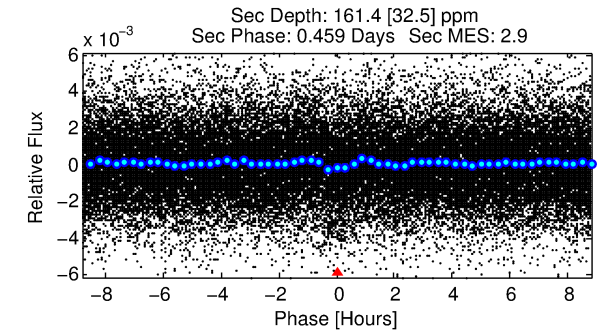
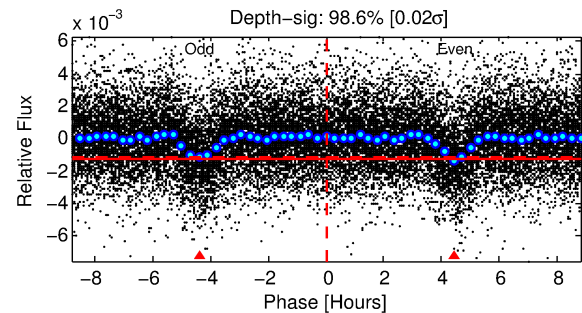
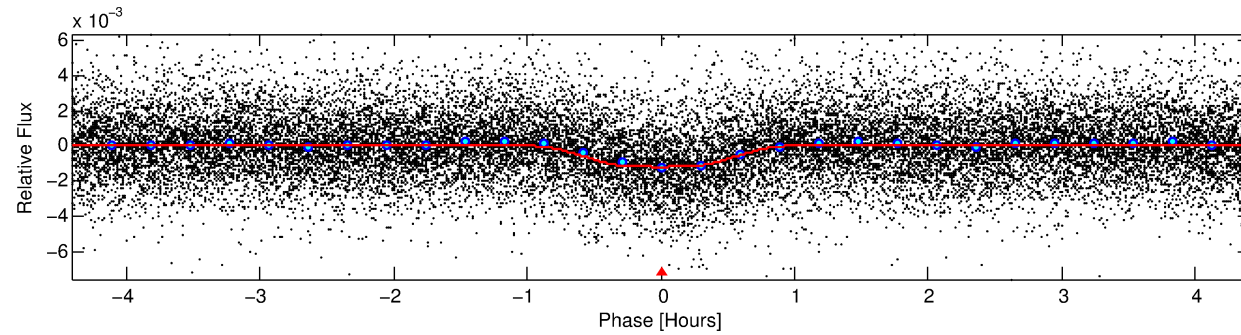
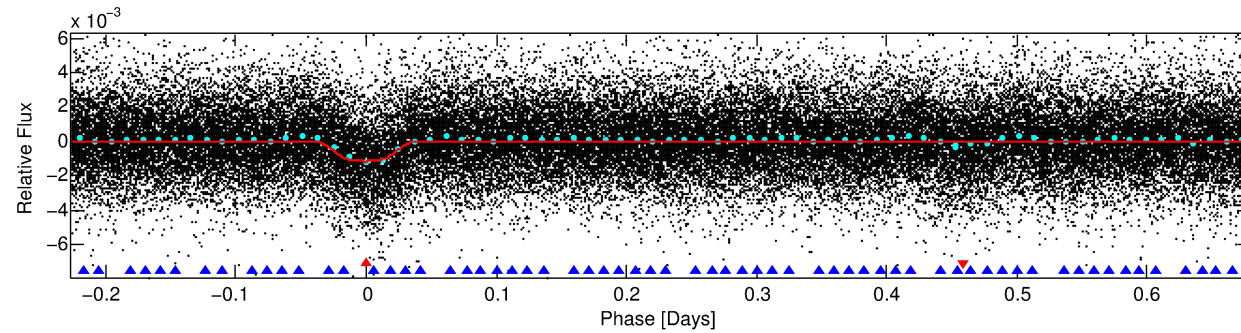
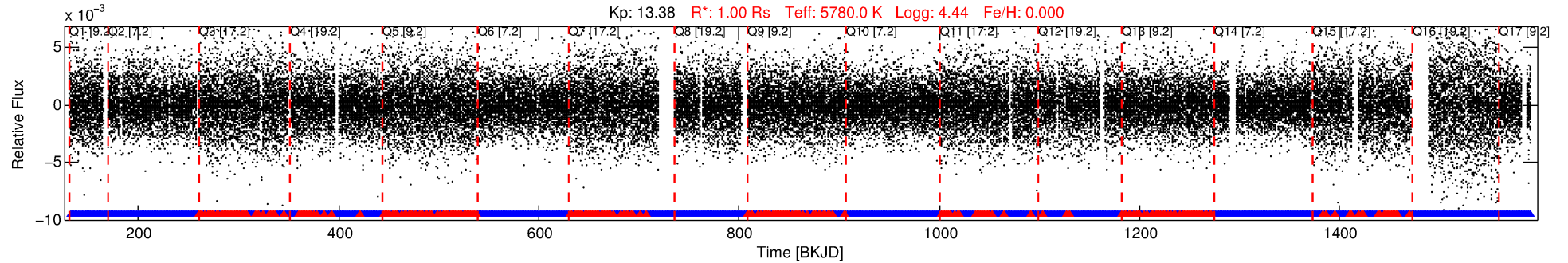
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	ΔRow	ΔCol	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
005952366-01	5952366	6139.01	5952403	1:1	34.5	0	9	6.97	13.38	2.83	Direct-PRF	0	0.74	0.19

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol 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: 5952366 Candidate: 1 of 2 Period: 0.906 d

KOI: K03947.01 Corr: 0.831



DV Fit Results:

Period = 0.90567 [0.00000] d
Epoch = 132.2005 [0.0006] BKJD
Rp/R* = 0.0375 [0.0040]
a/R* = 2.60 [0.99]
b = 0.90 [0.10]
Seff = 2978.37 [0.01]
Teq = 1884 [0] K
Rp = 4.10 [0.44] Re
a = 0.0183 [0.0000] AU
Ag = 1.78 [0.52] [1.49σ]
Teffp = 3363 [246] K [6.01σ]

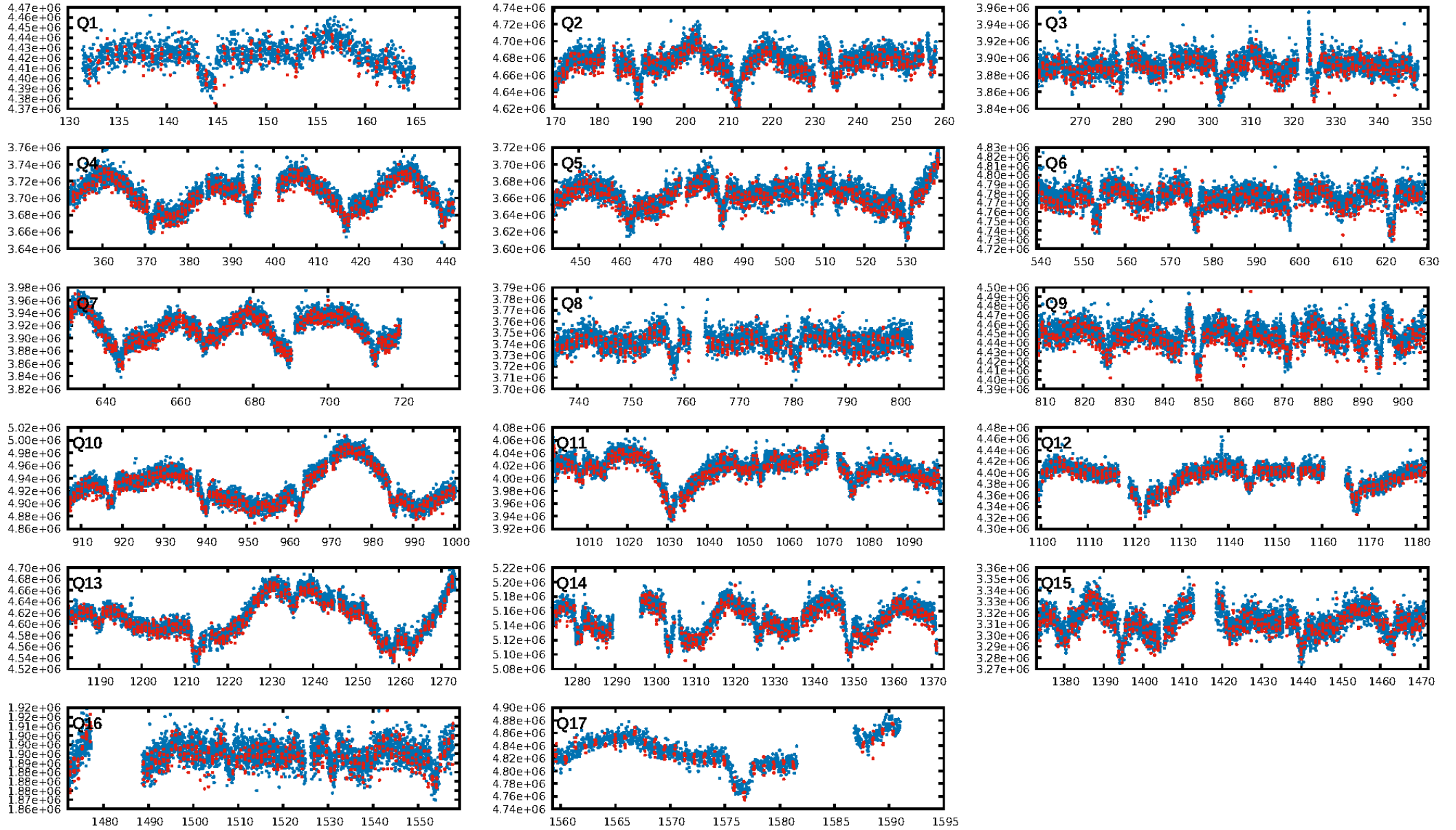
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [8.87σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.51e-140
RollingBand-figt: 0.75 [1060/1409]
GhostDiagnostic-chr: 0.225
Centroid-sig: 0.1%
Centroid-so: 2.587 arcsec [8.14σ]
OotOffset-rm: 0.919 arcsec [2.11σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 9.796 arcsec [17.82σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.47 [8/17]
DiffImageOverlap-fno: 1.00 [17/17]

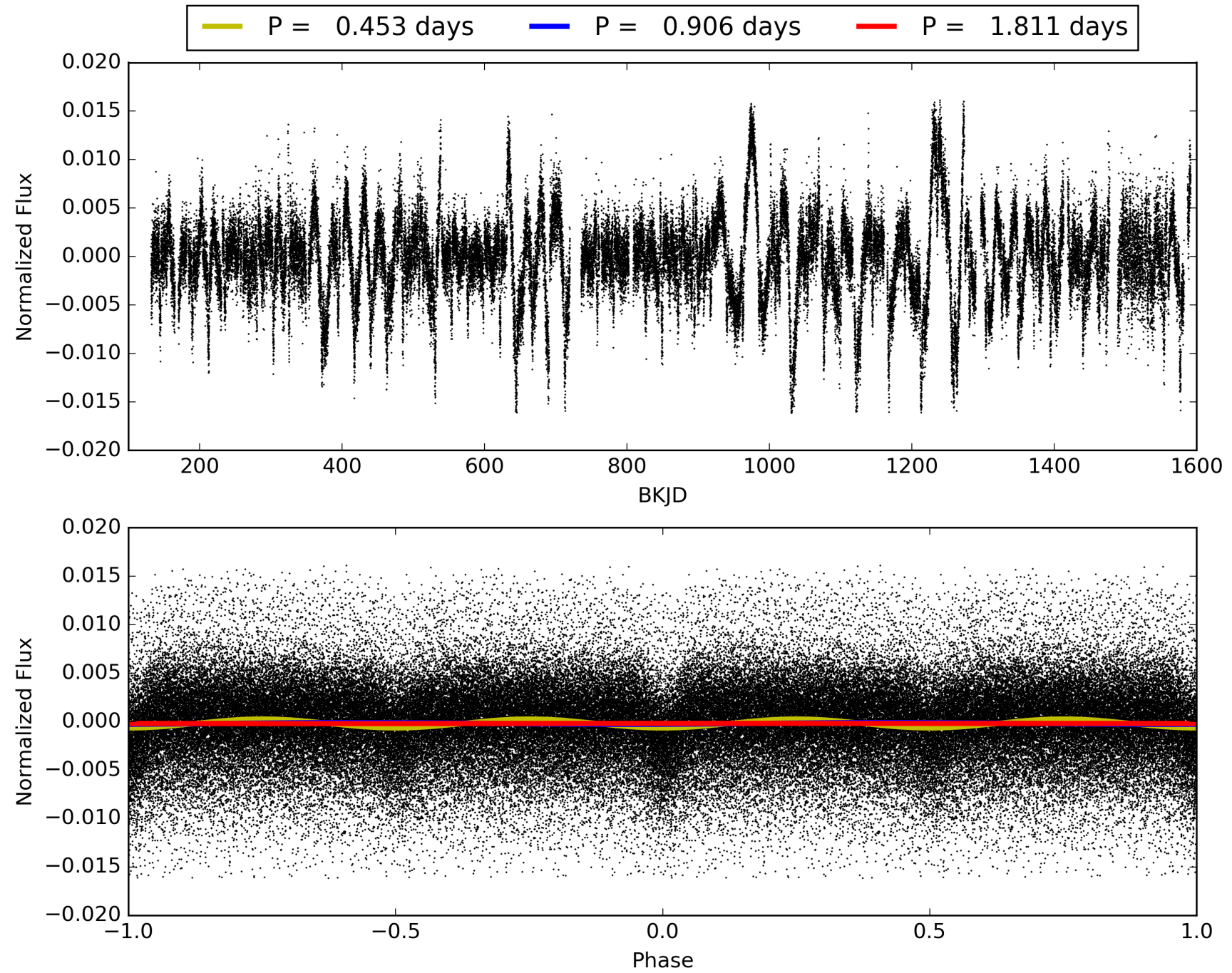
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 08:50:43 Z

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

TCE 005952366-01, PDC Light Curves

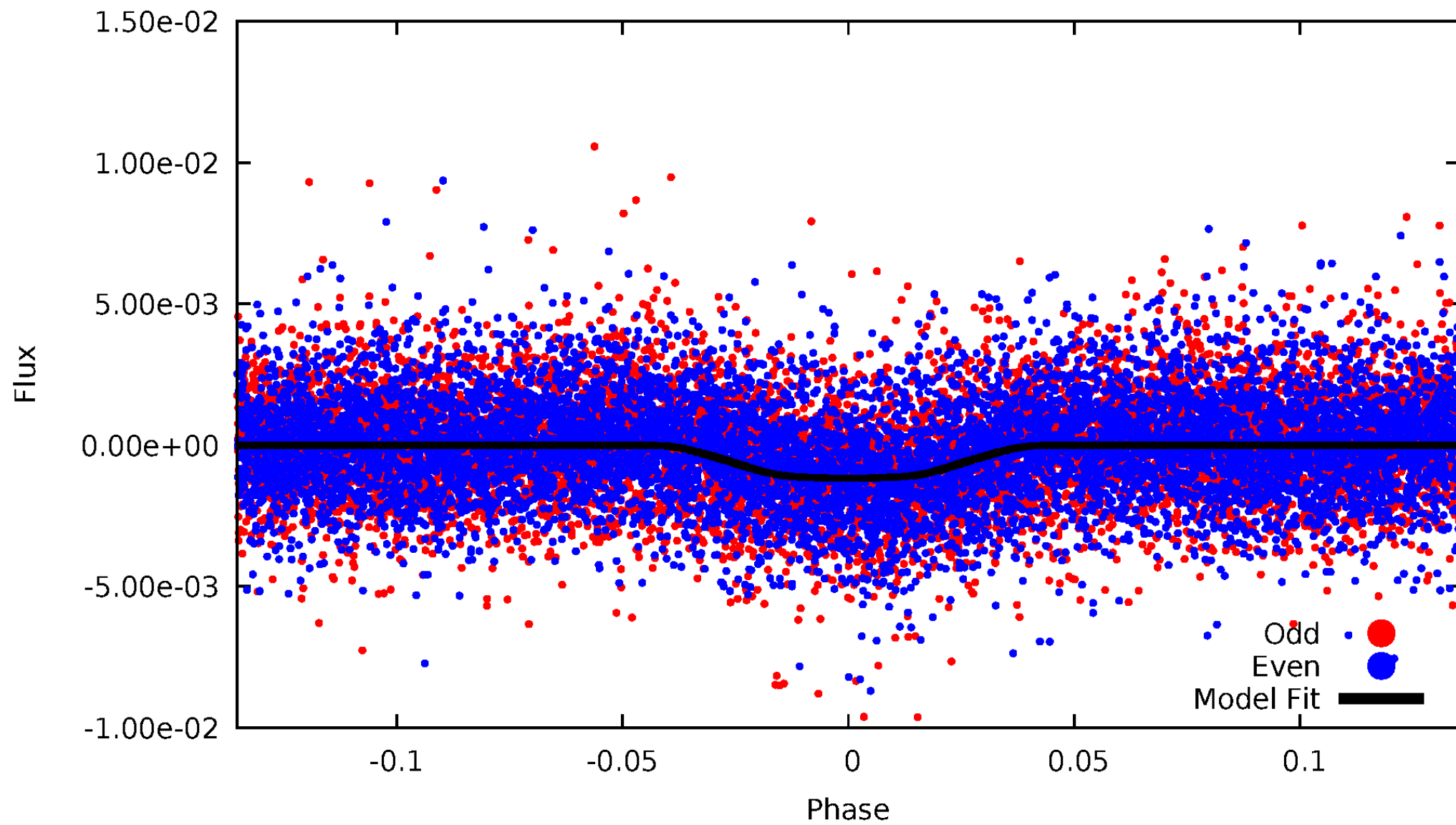


TCE 005952366-01



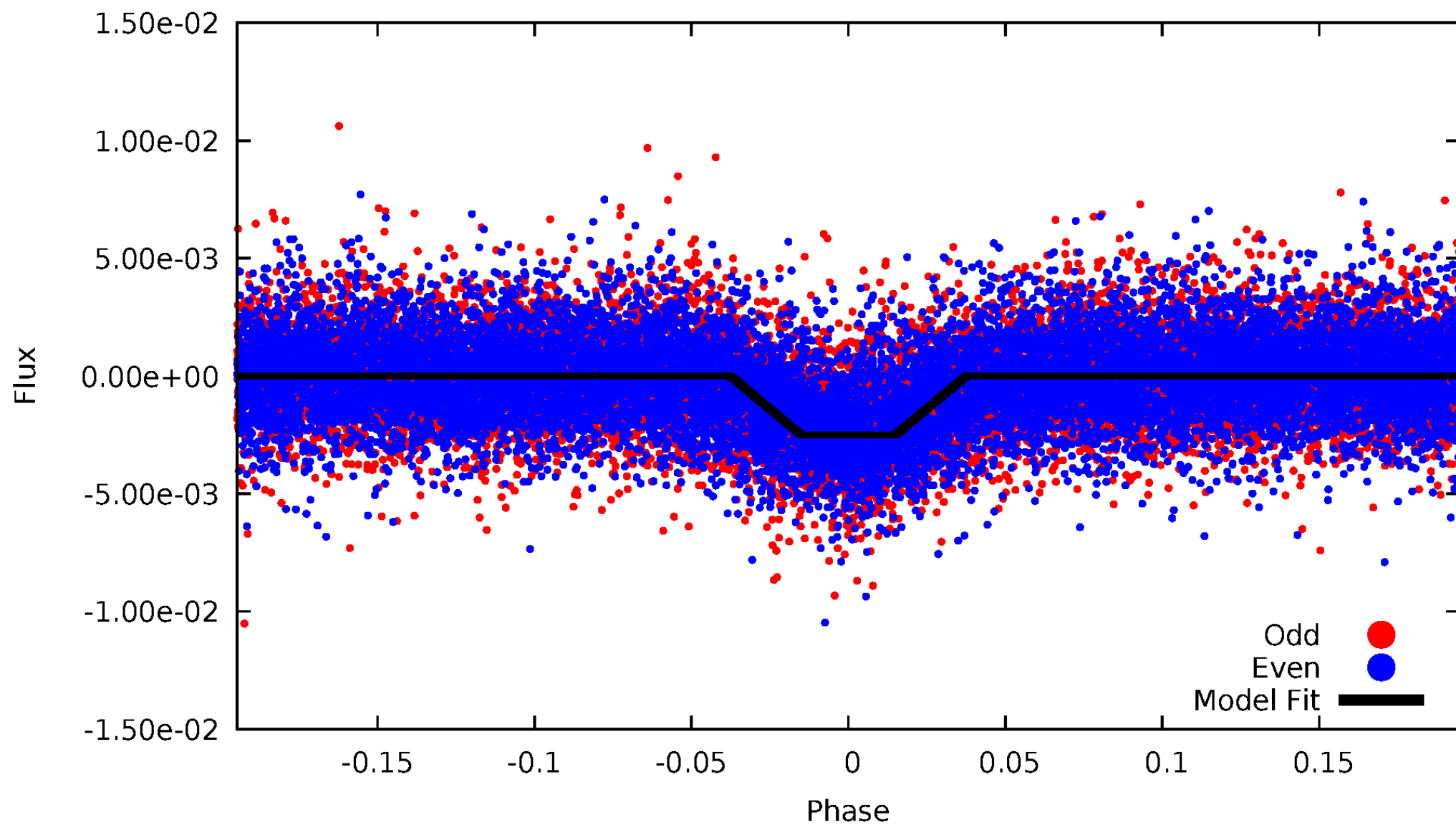
DV Odd/Even

TCE 005952366-01

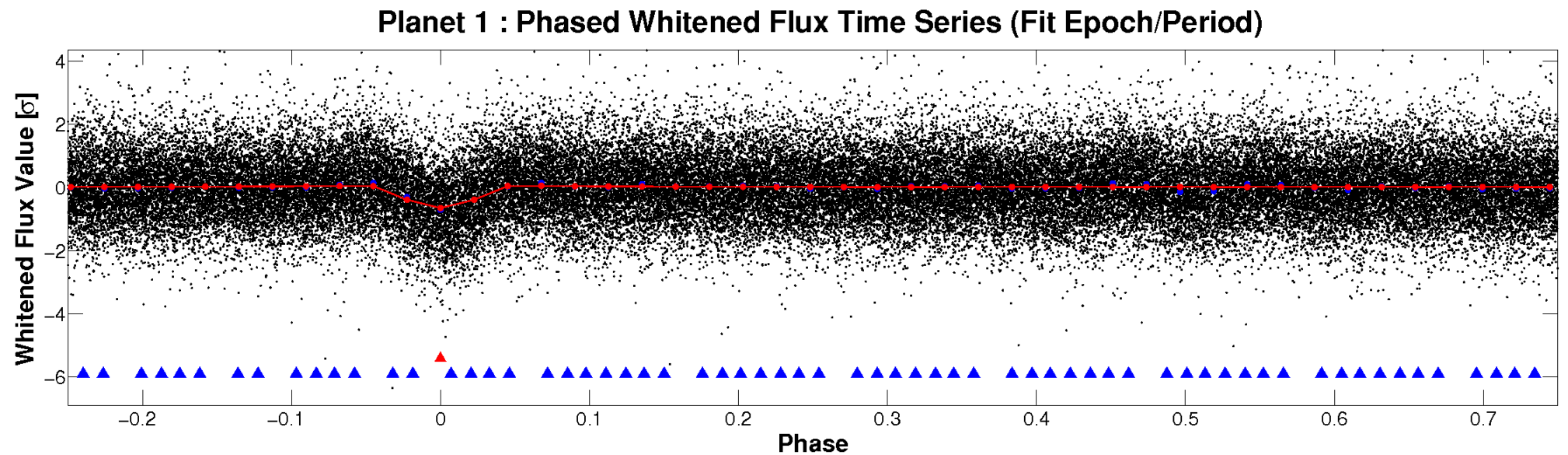
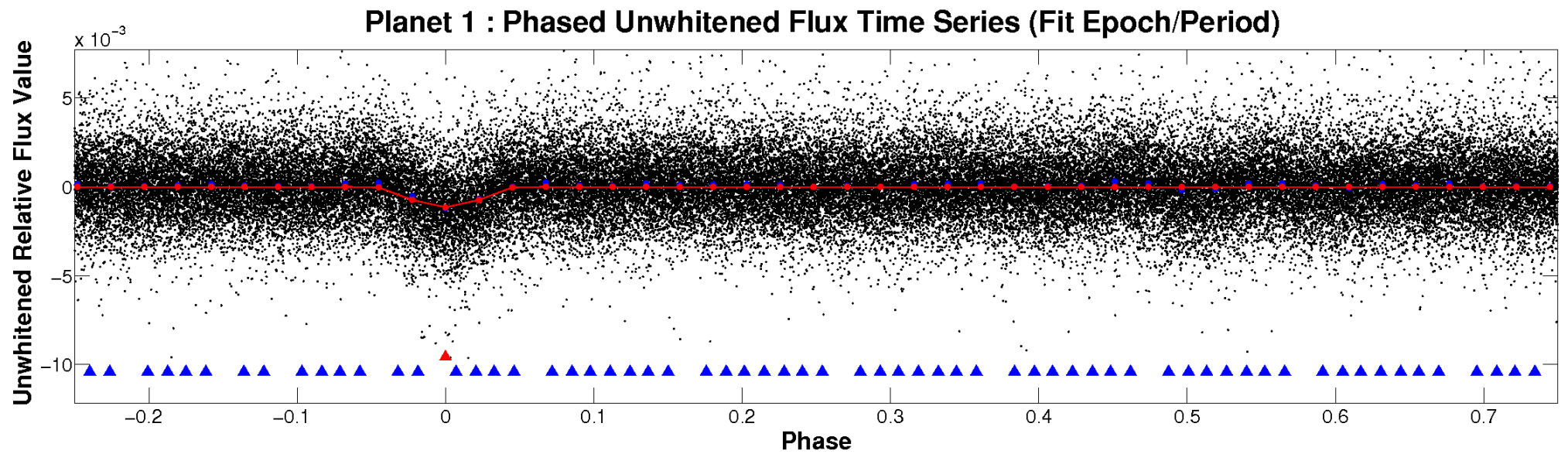


ALT Odd/Even

TCE 005952366-01

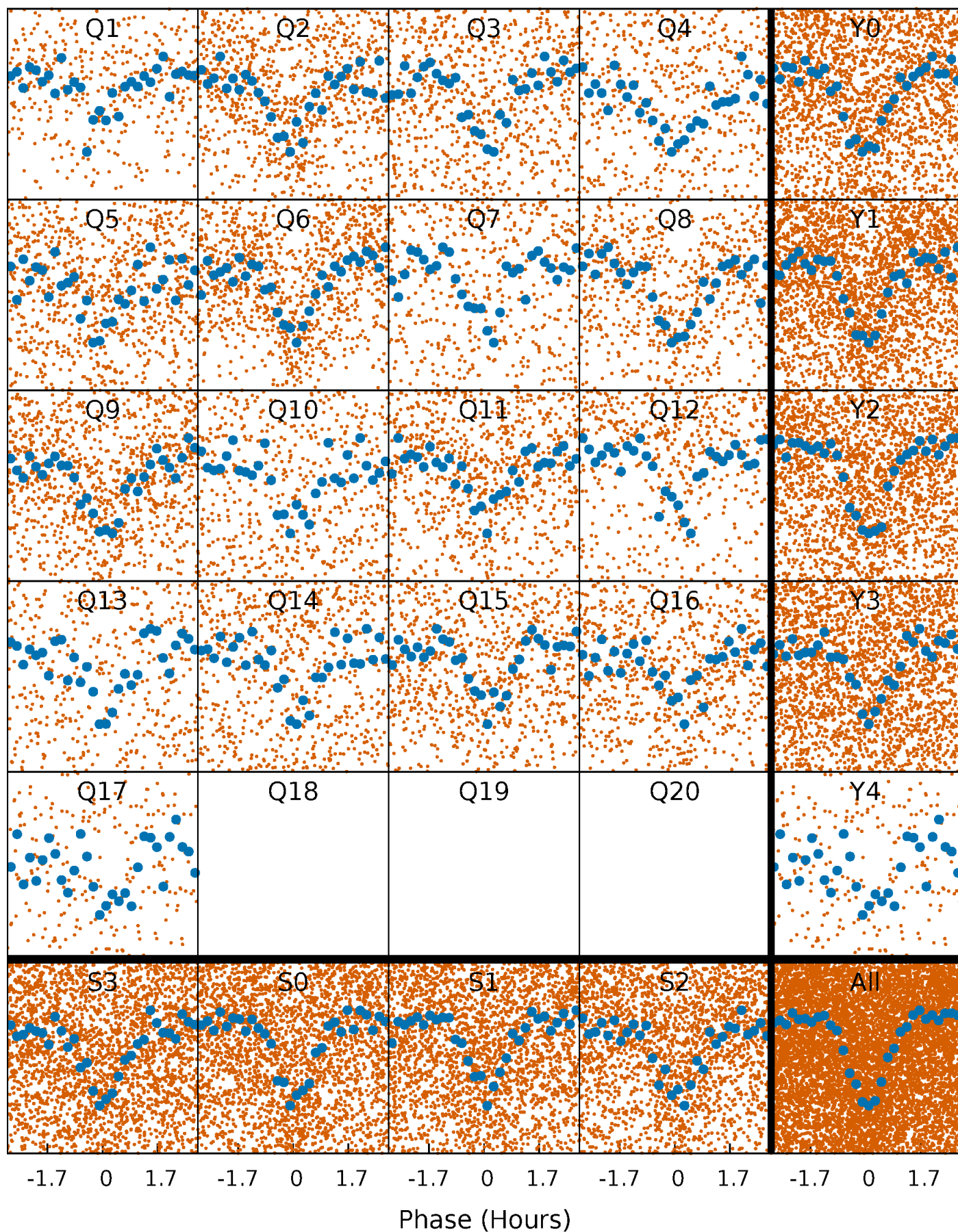


Non-Whitened Vs. Whitened Light Curve



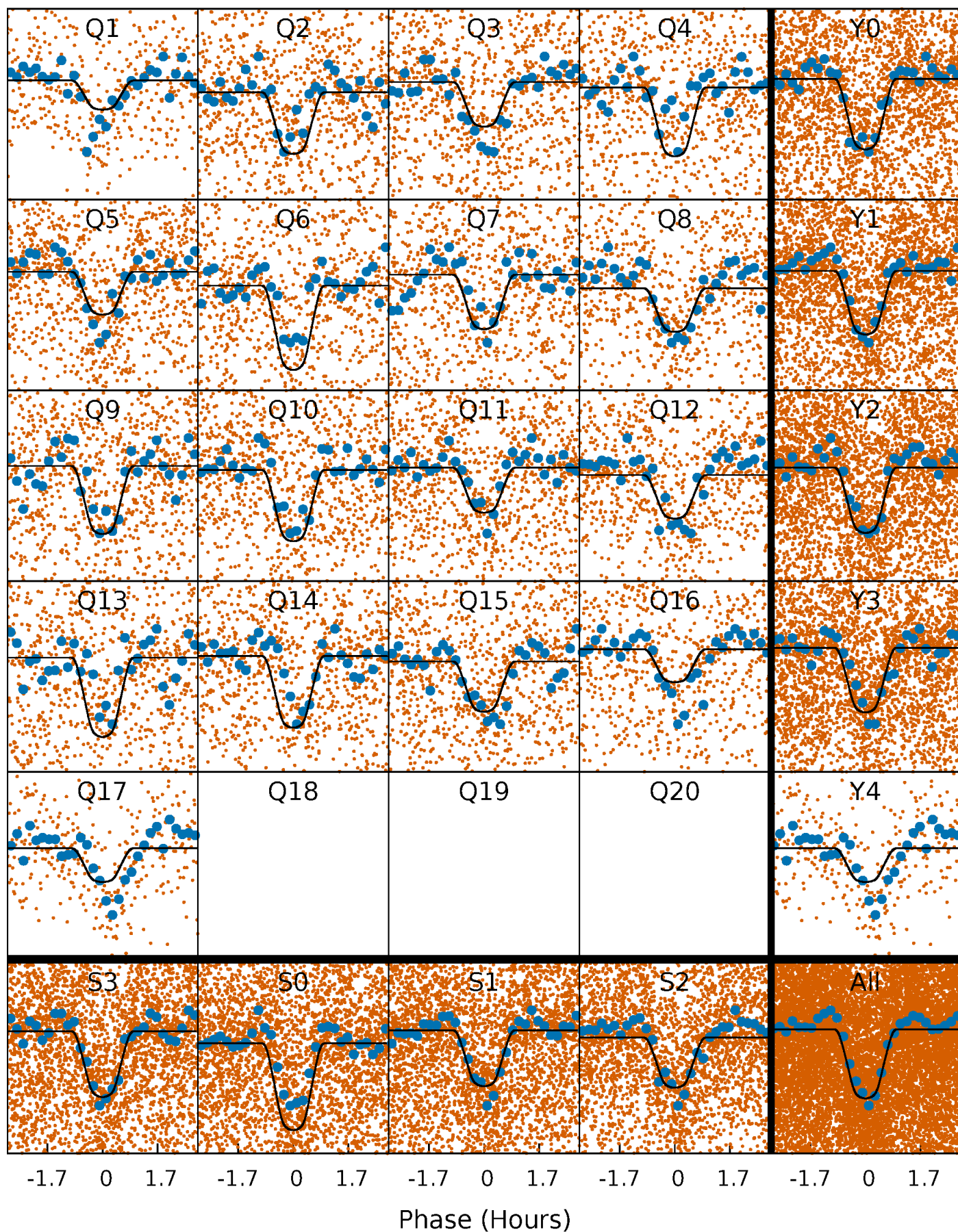
PDC Quarter-Phased Transit Curves

TCE 005952366-01 P= 0.905671 Days $T_0=132.200532$ (BKJD)



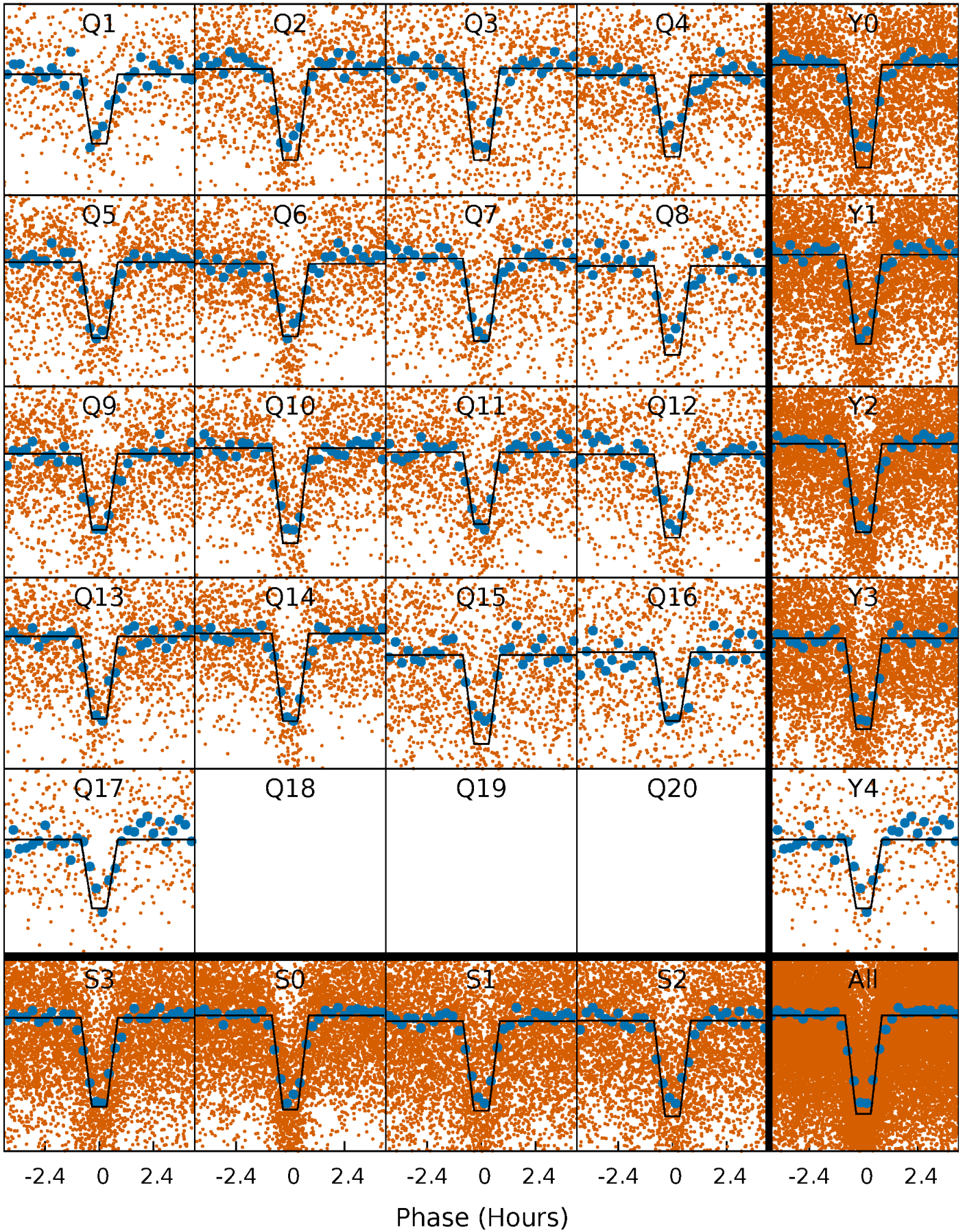
DV Quarter-Phased Transit Curves

TCE 005952366-01 P= 0.905671 Days $T_0=132.200532$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

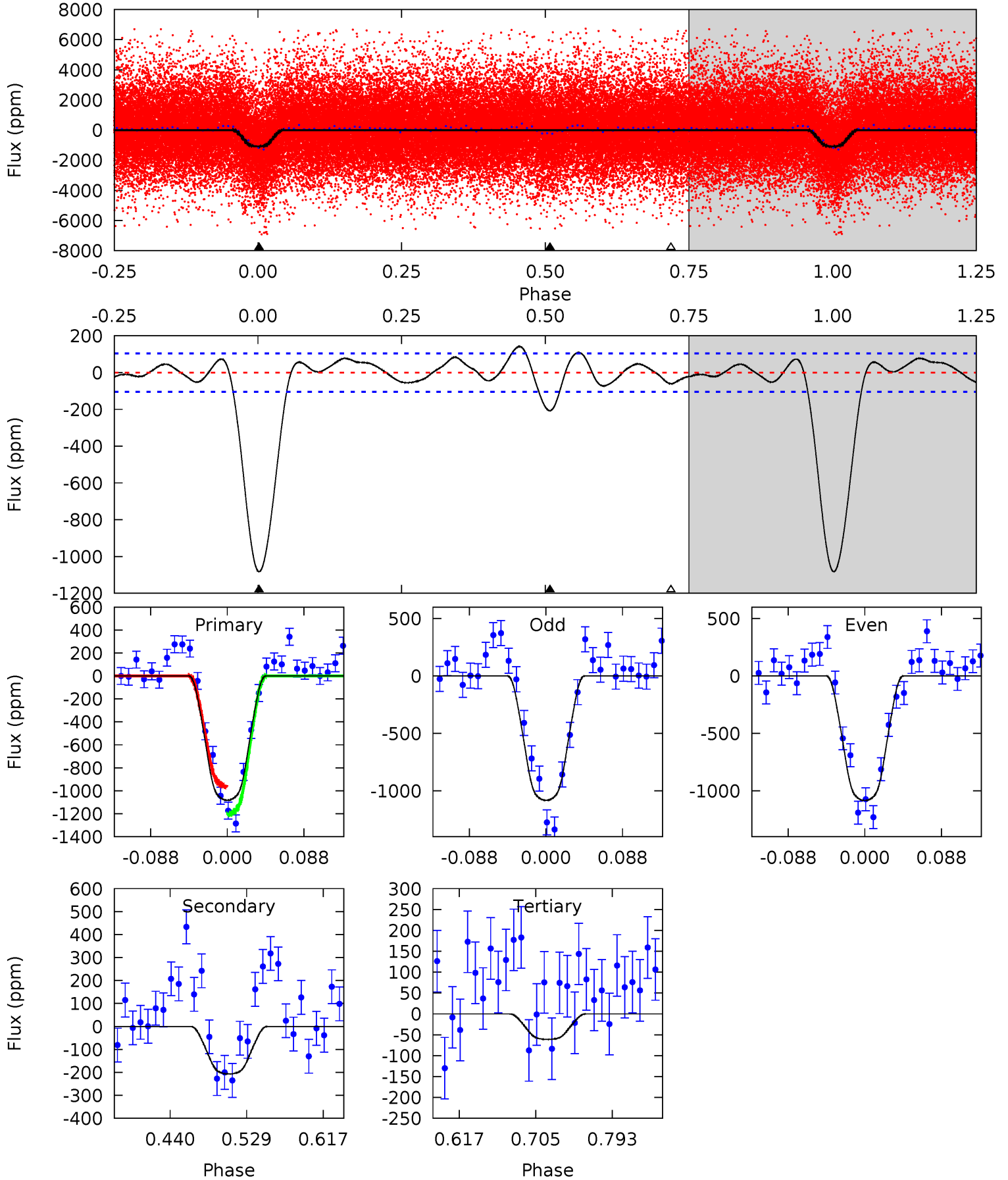
TCE 005952366-01 P= 0.905677 Days $T_0=132.198673$ (BKJD)



DV Model-Shift Uniqueness Test

005952366-01, P = 0.905671 Days, E = 131.294861 Days

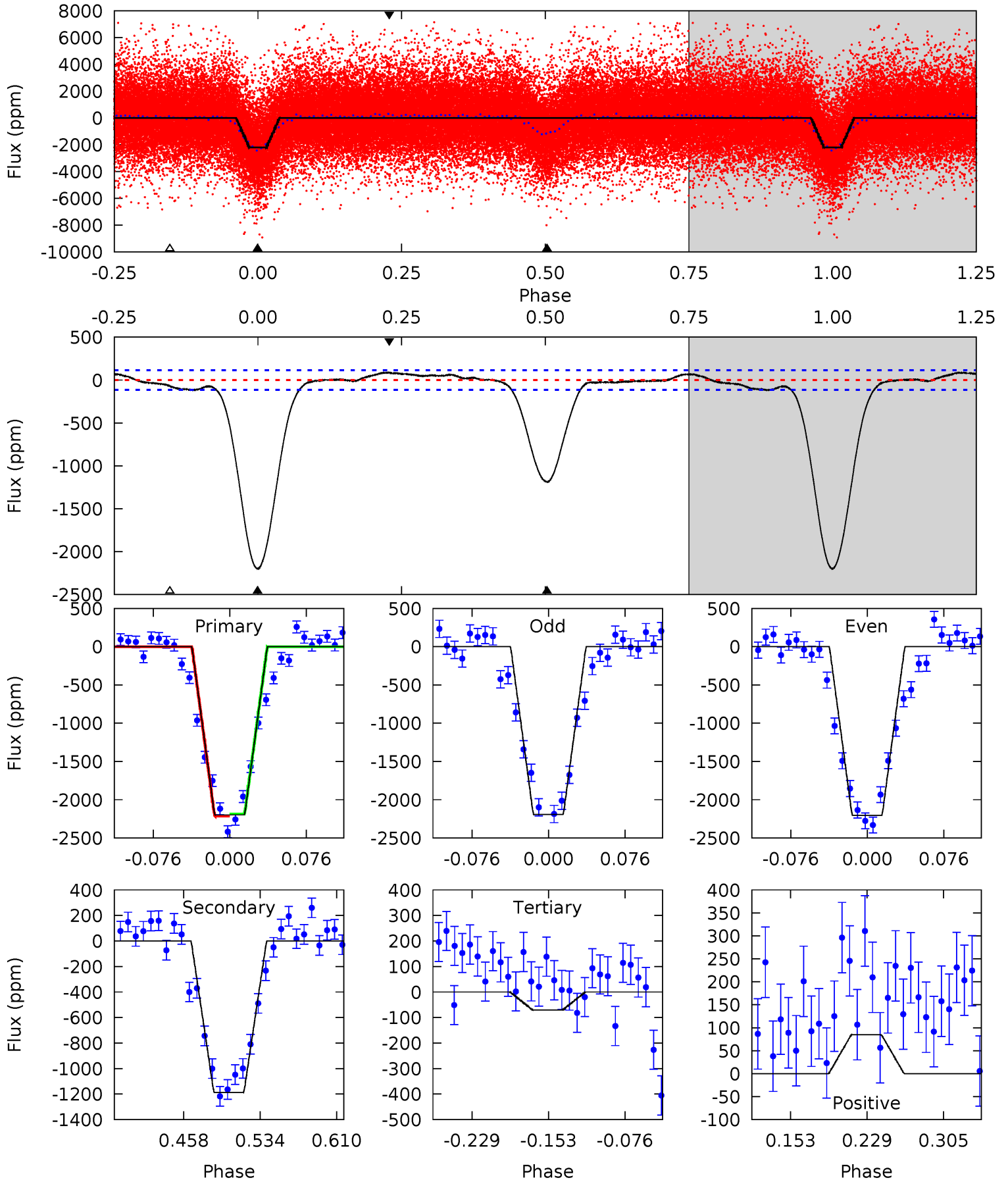
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.6	9.10	2.68	0	4.59	1.71	1.77	44.9	47.6	6.42	9.10	0.02	0.98	0.12	5.35



Alt Model-Shift Uniqueness Test

005952366-01, P = 0.905677 Days, E = 131.292996 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
88.8	48.0	2.84	3.43	4.62	1.77	2.02	86.0	85.4	45.1	44.5	0.23	0.99	0.04	0.53



Stellar Parameters For KIC 005952366

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5780^{+1}_{-1}	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

Secondary Eclipse Parameters for KIC 005952366-01 / KOI 3947.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-207 ± 23	$4.08^{+0.58}_{-0.52}$	2631^{+121}_{-121}	3826^{+205}_{-208}	$2.275^{+0.773}_{-0.536}$
Alt.	-1187 ± 25	$5.47^{+0.57}_{-0.55}$	2636^{+127}_{-117}	4856^{+243}_{-216}	$7.356^{+1.686}_{-1.313}$

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 $A_{obs} \gg 1.0$

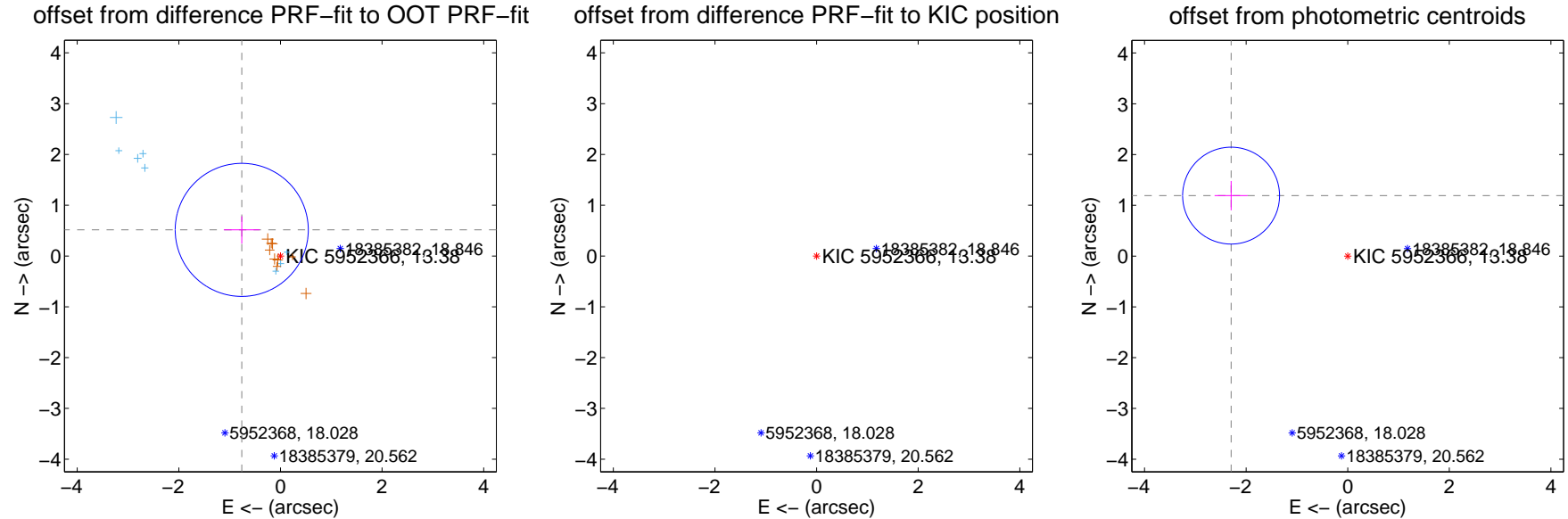
DV Centroid Data

Supplemental centroid analysis for 005952366-01. Kepler magnitude: 13.38. Transit SNR 33.47

There are 8 quarters with good PRF difference image offsets

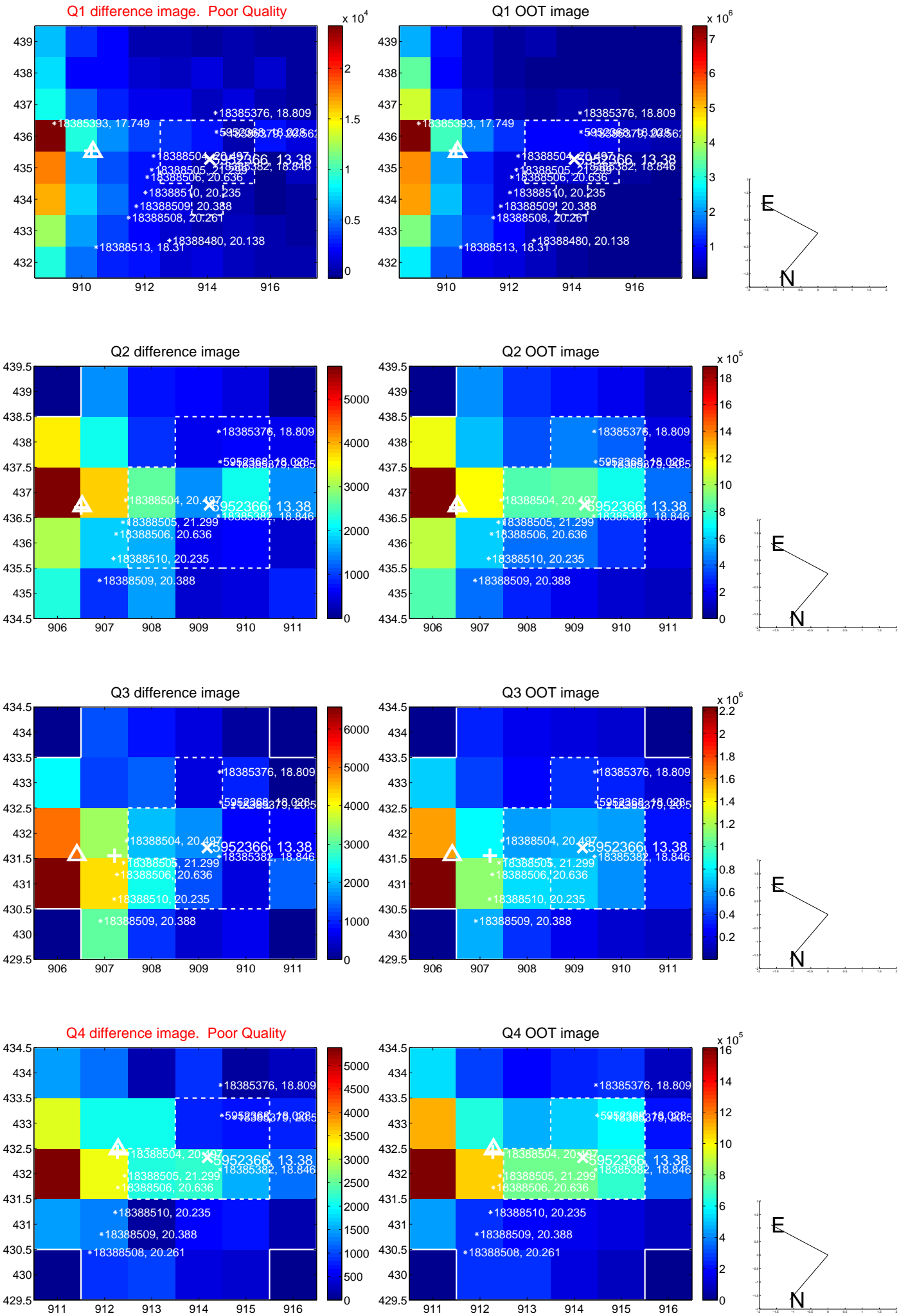
The OOT PRF centroid is offset from the target star catalog position by about 6.46 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.919 ± 0.437	2.11	0.762 ± 0.353	0.515 ± 0.269
PRF-fit source offset from KIC position	9.796 ± 0.550	17.82	8.067 ± 0.422	5.557 ± 0.398
photometric centroid source offset	2.59 ± 0.32	8.14	2.30 ± 0.33	1.19 ± 0.29

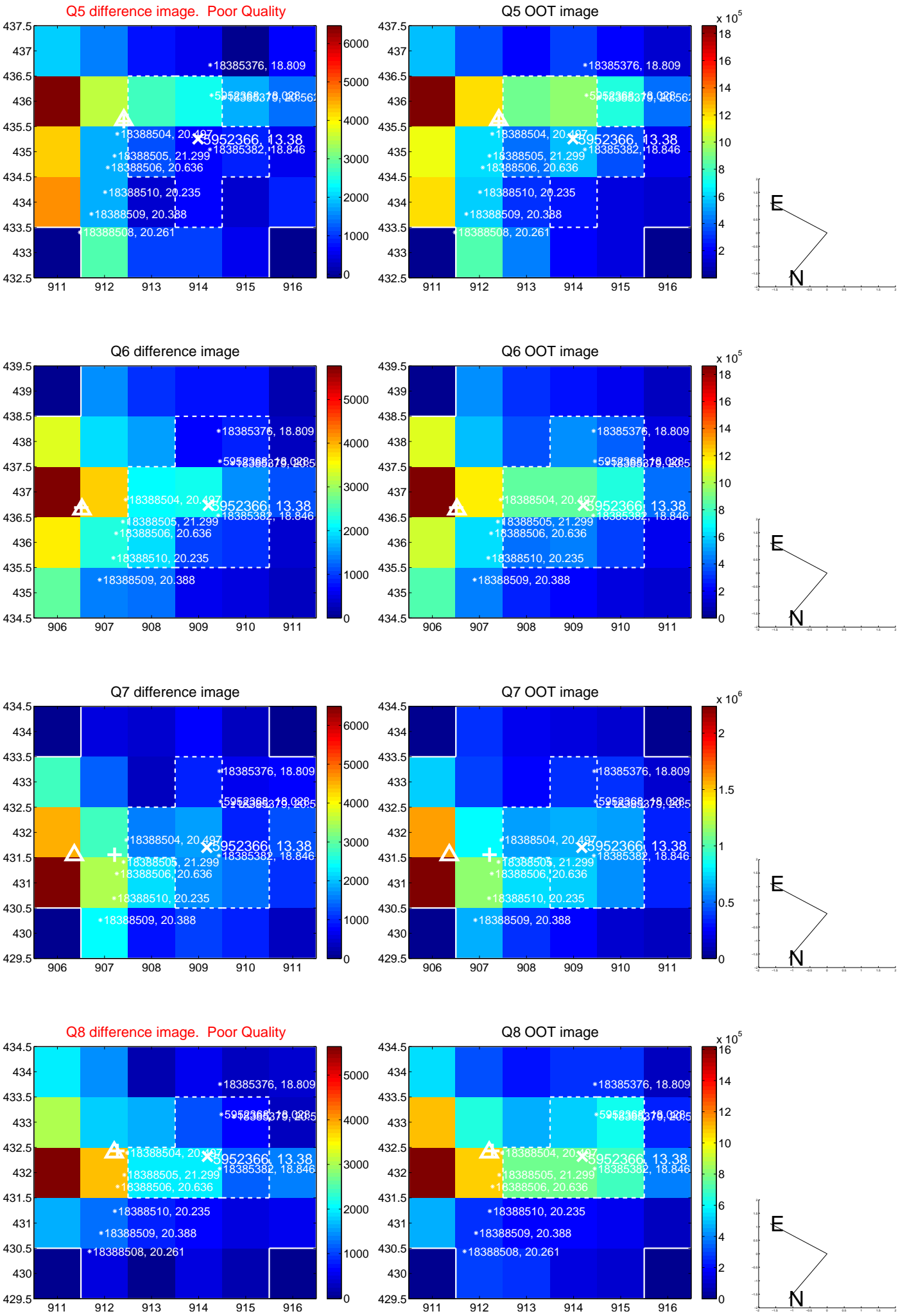


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

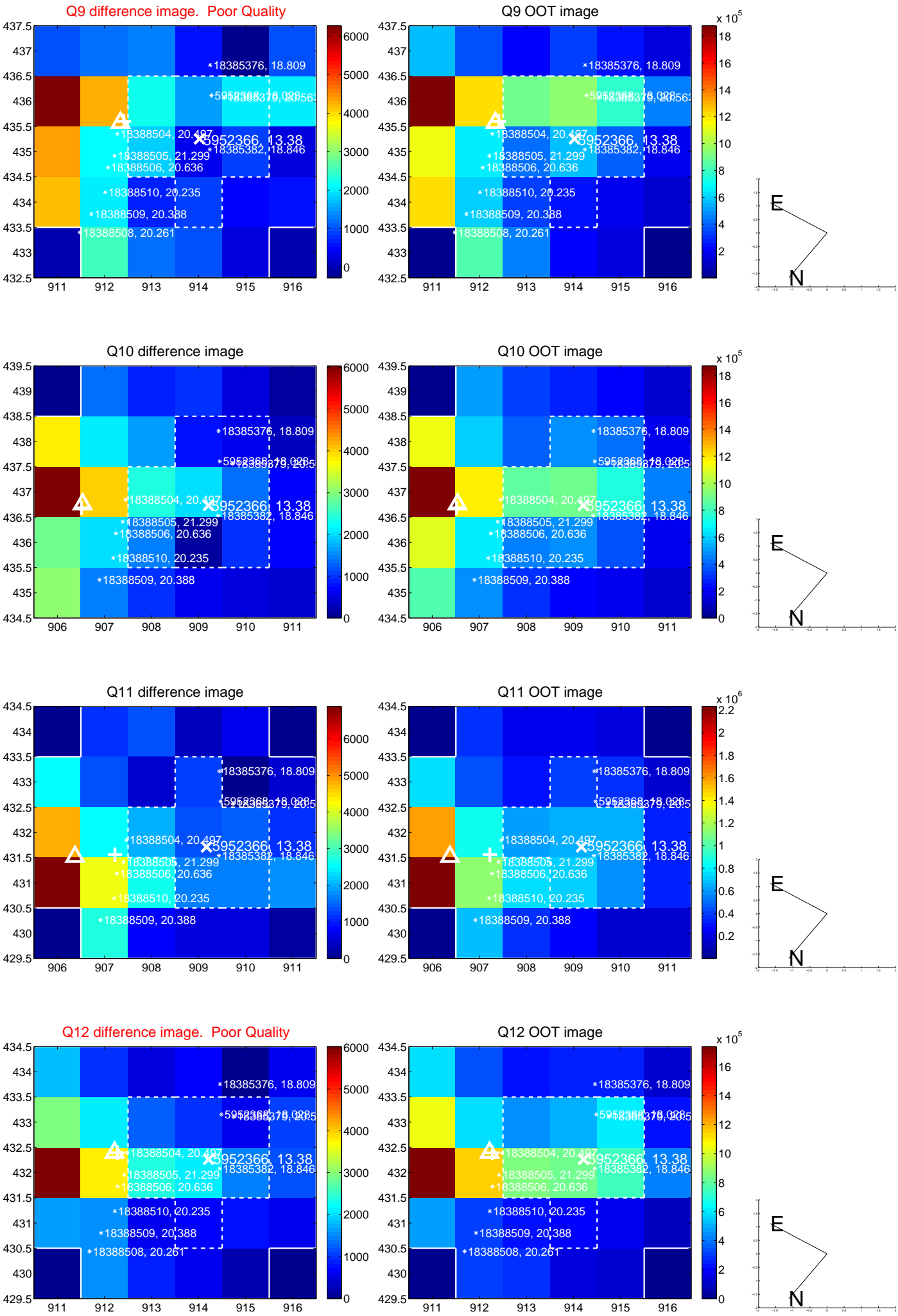
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



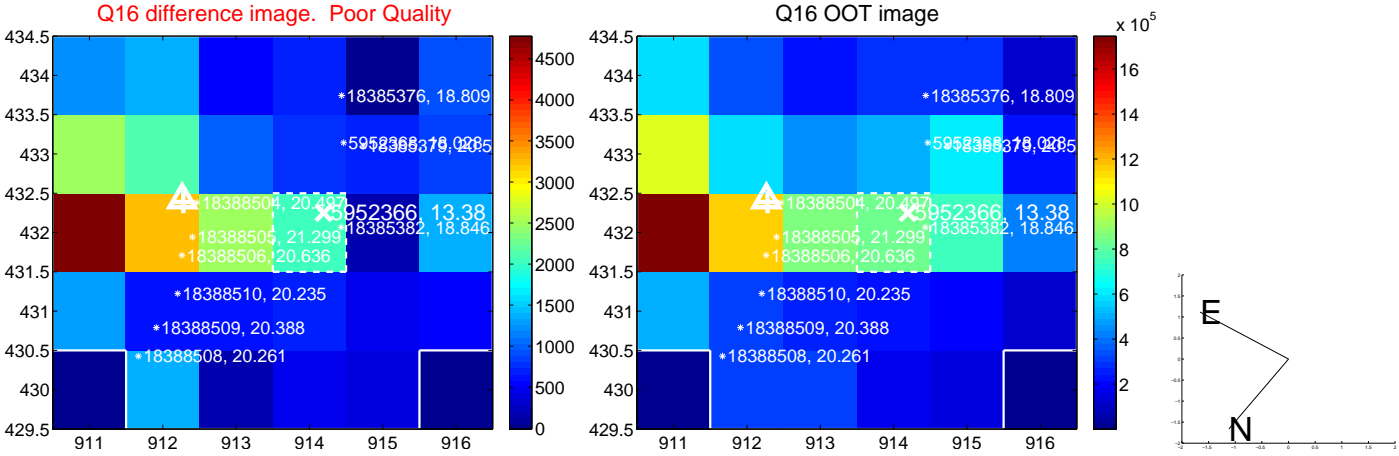
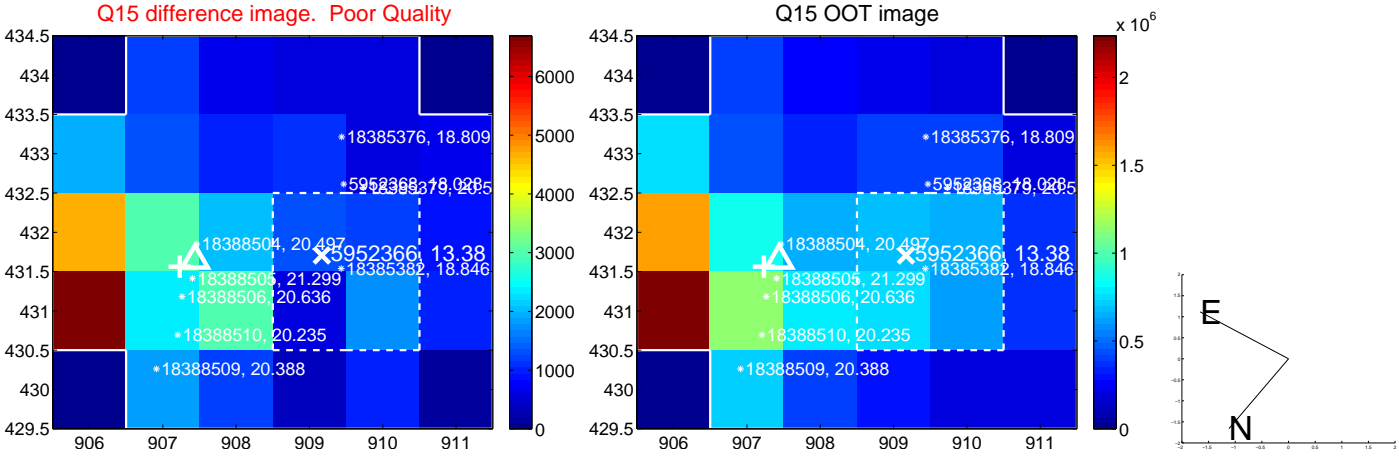
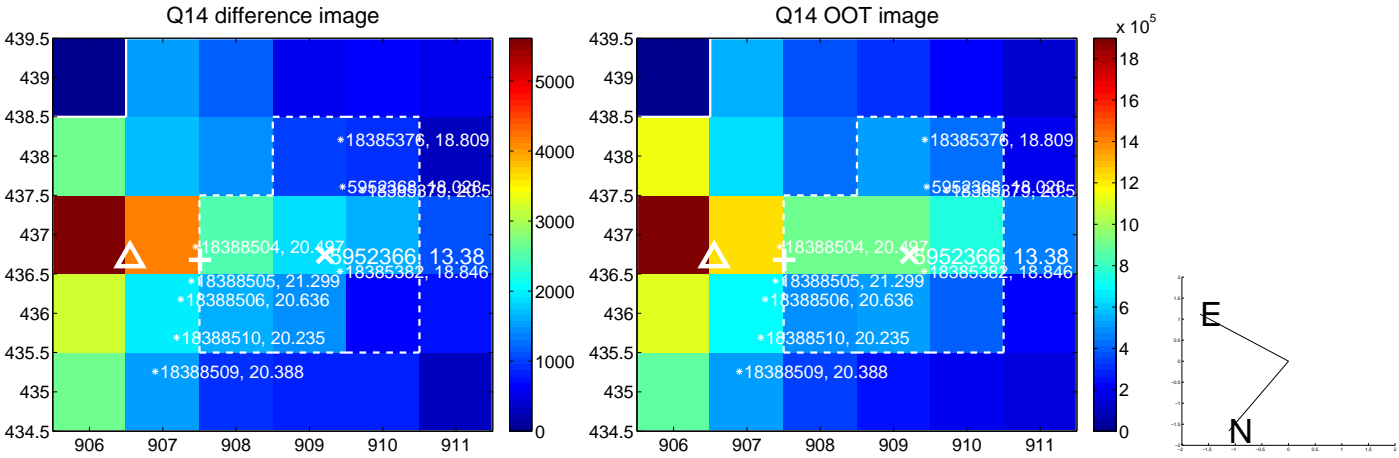
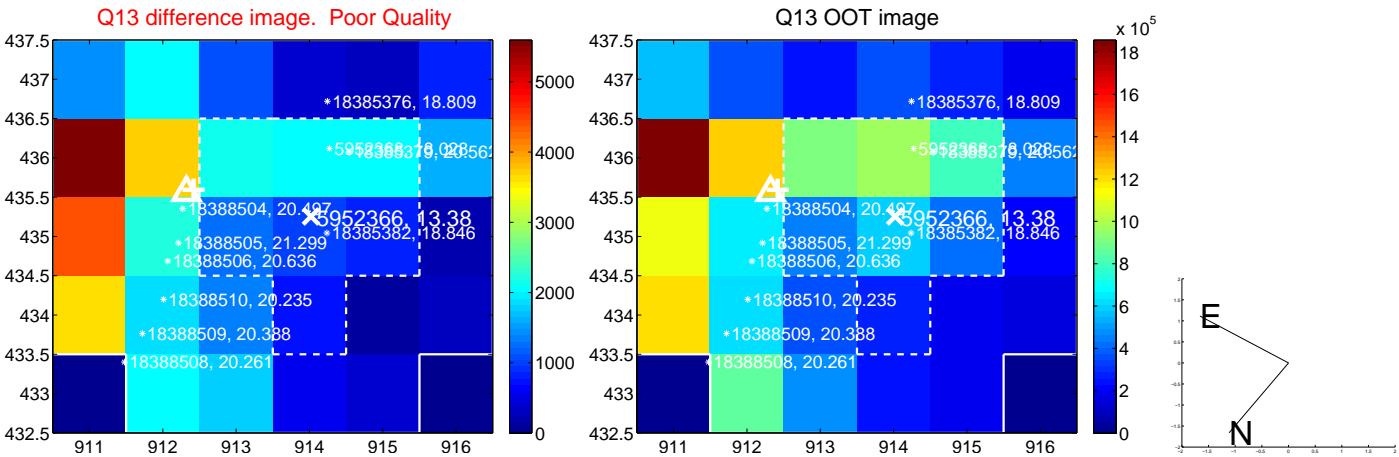
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



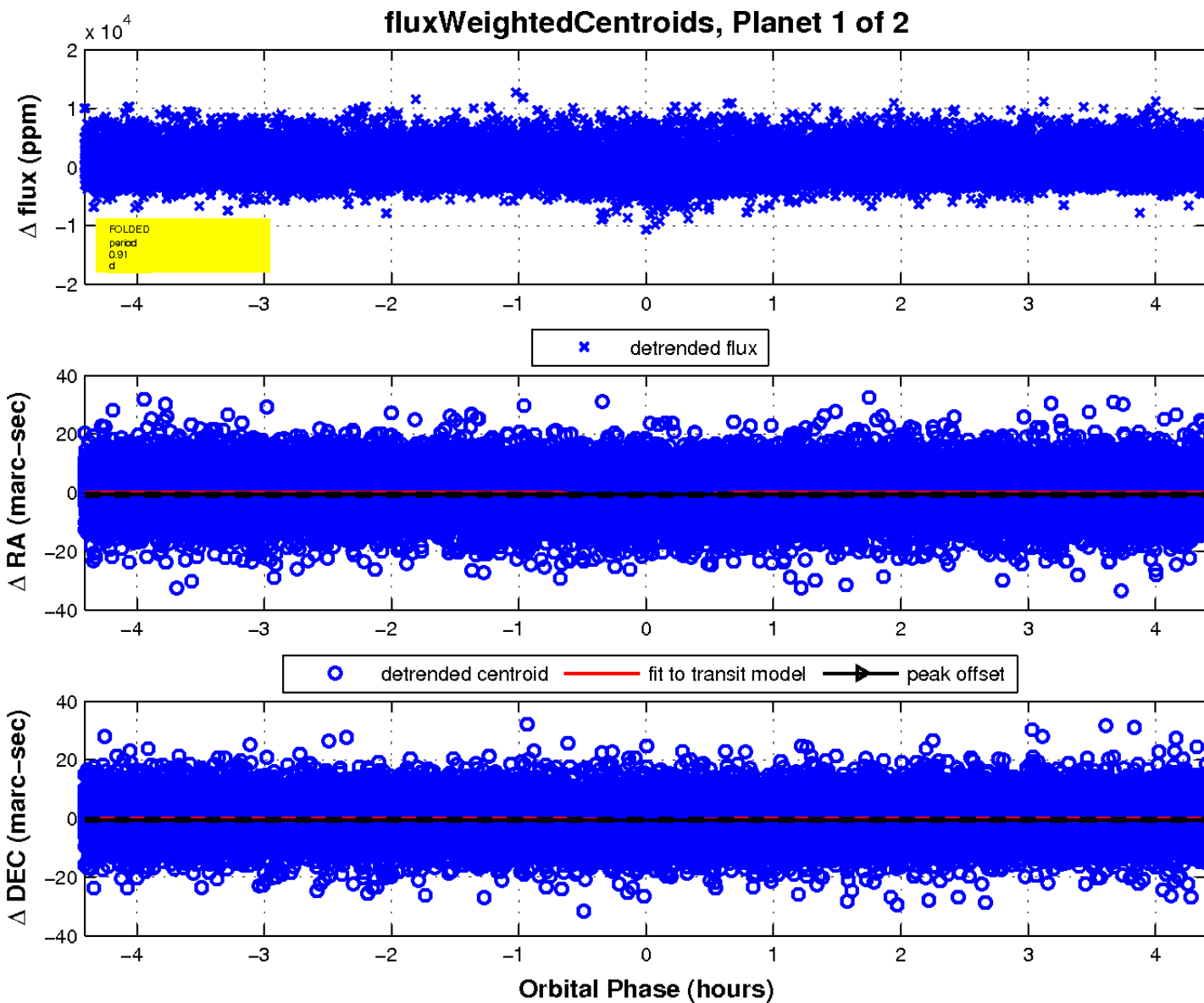
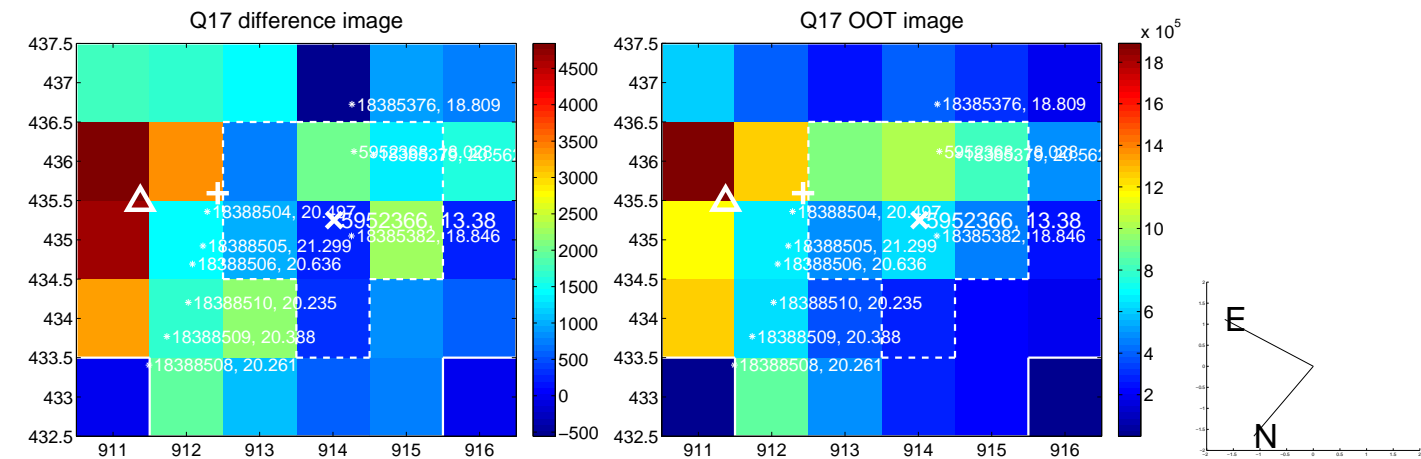
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



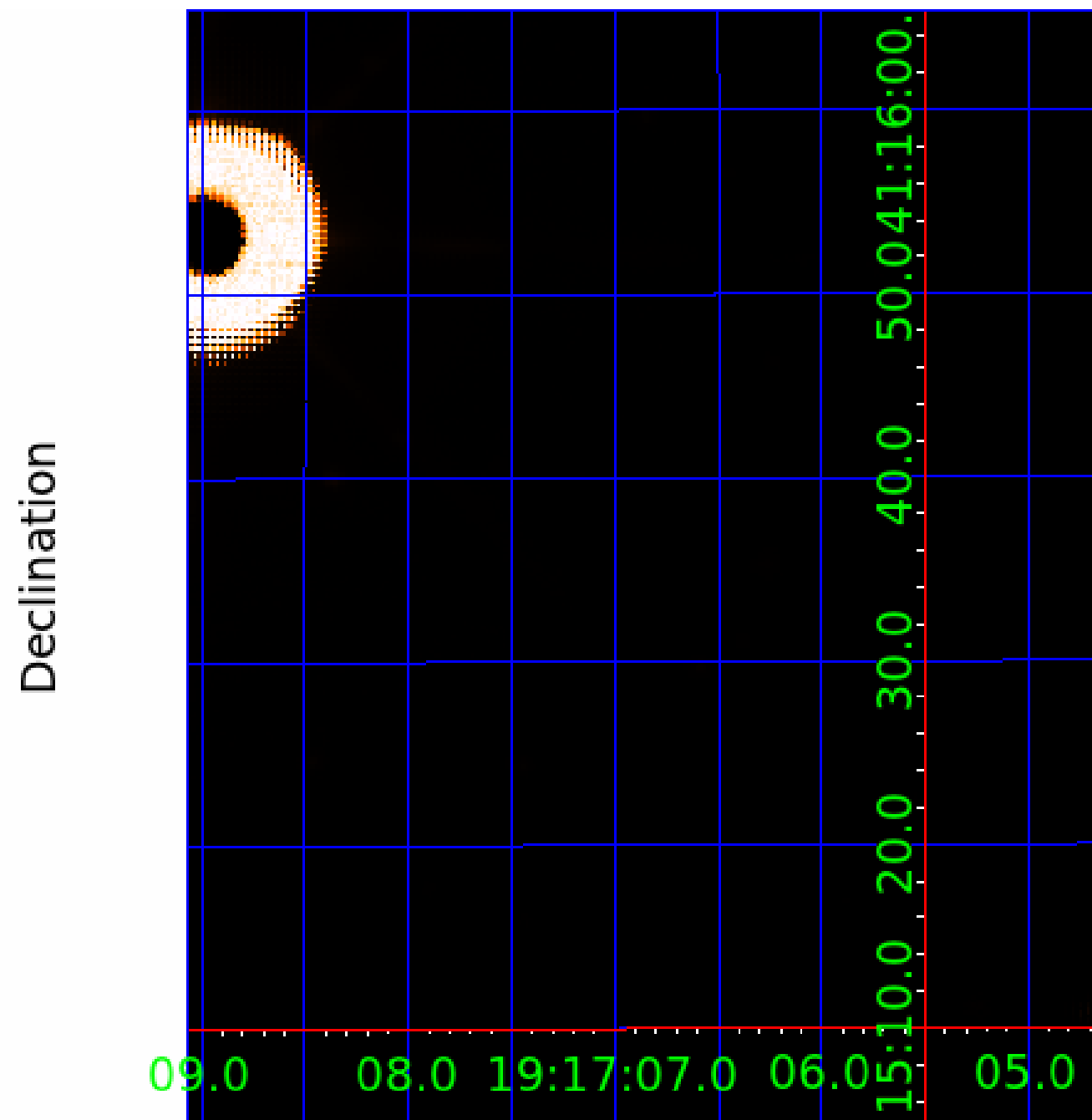
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 005952366

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})
005952366-01	OBS	3947.01	0.905671	132.200532	1168.9	1.470	26.1	33.5	1.00	5780	4.10	2978.37
005952366-02	OBS	3947.02	22.735887	144.062623	5862.2	59.056	16.1	55.7	1.00	5780	8.81	40.52

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005952366-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
005952366-02	OBS	FP	0.00	0	1	1	0	MOD_ODDEVEN_DV—CENT_RESOLVED_OFFSET

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 005952366-02

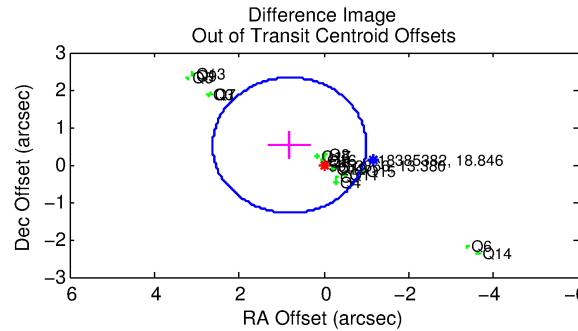
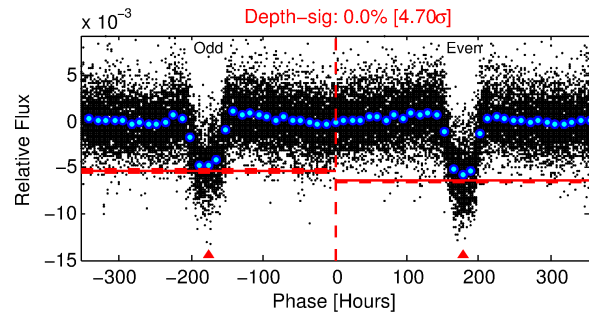
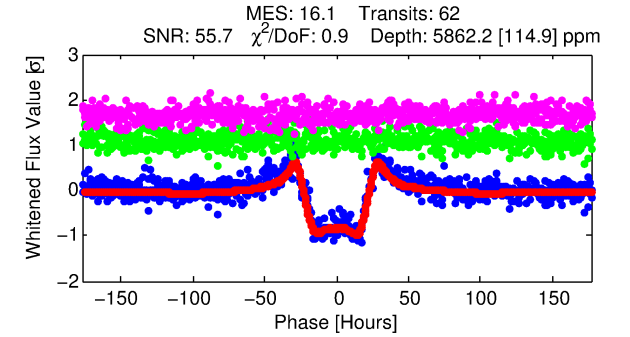
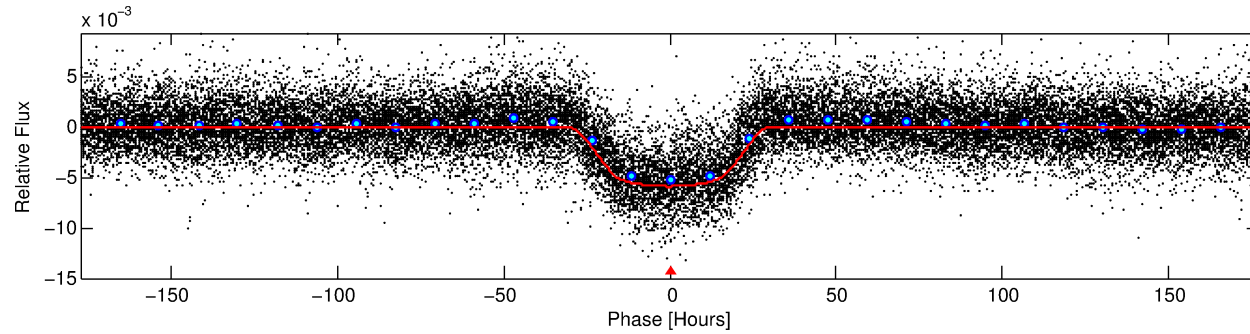
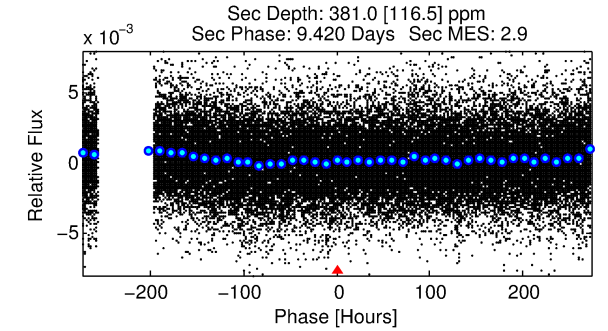
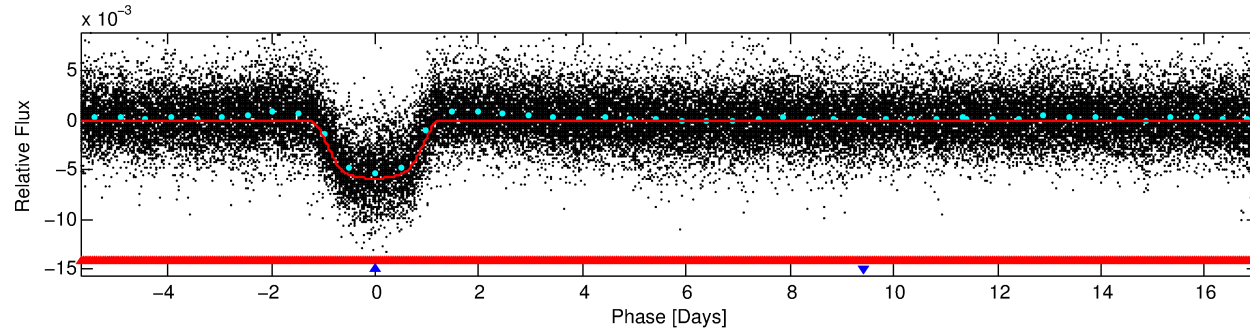
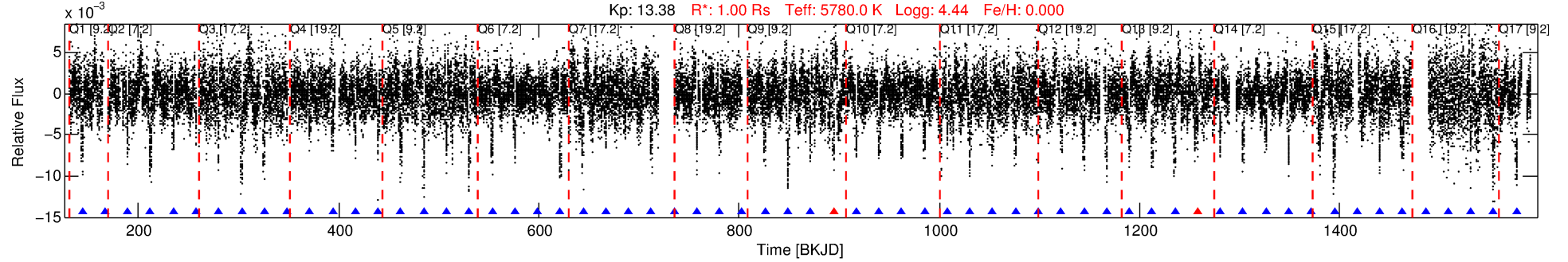
No Significant Match Found

DV One-Page Summary

KIC: 5952366 Candidate: 2 of 2 Period: 22.736 d

KOI: K03947 Corr: No Ephemeris Match

Kp: 13.38 R*: 1.00 Rs Teff: 5780.0 K Logg: 4.44 Fe/H: 0.000



DV Fit Results:

Period = 22.73589 [0.00040] d
Epoch = 144.0626 [0.0142] BKJD
Rp/R* = 0.0808 [0.0010]
a/R* = 2.15 [0.03]
b = 0.86 [0.01]
Seff = 40.52 [0.00]
Teq = 643 [0] K
Rp = 8.81 [0.10] Re
a = 0.1571 [0.0000] AU
Ag = 66.62 [20.44] [3.21σ]
Teffp = 2842 [218] K [10.09σ]

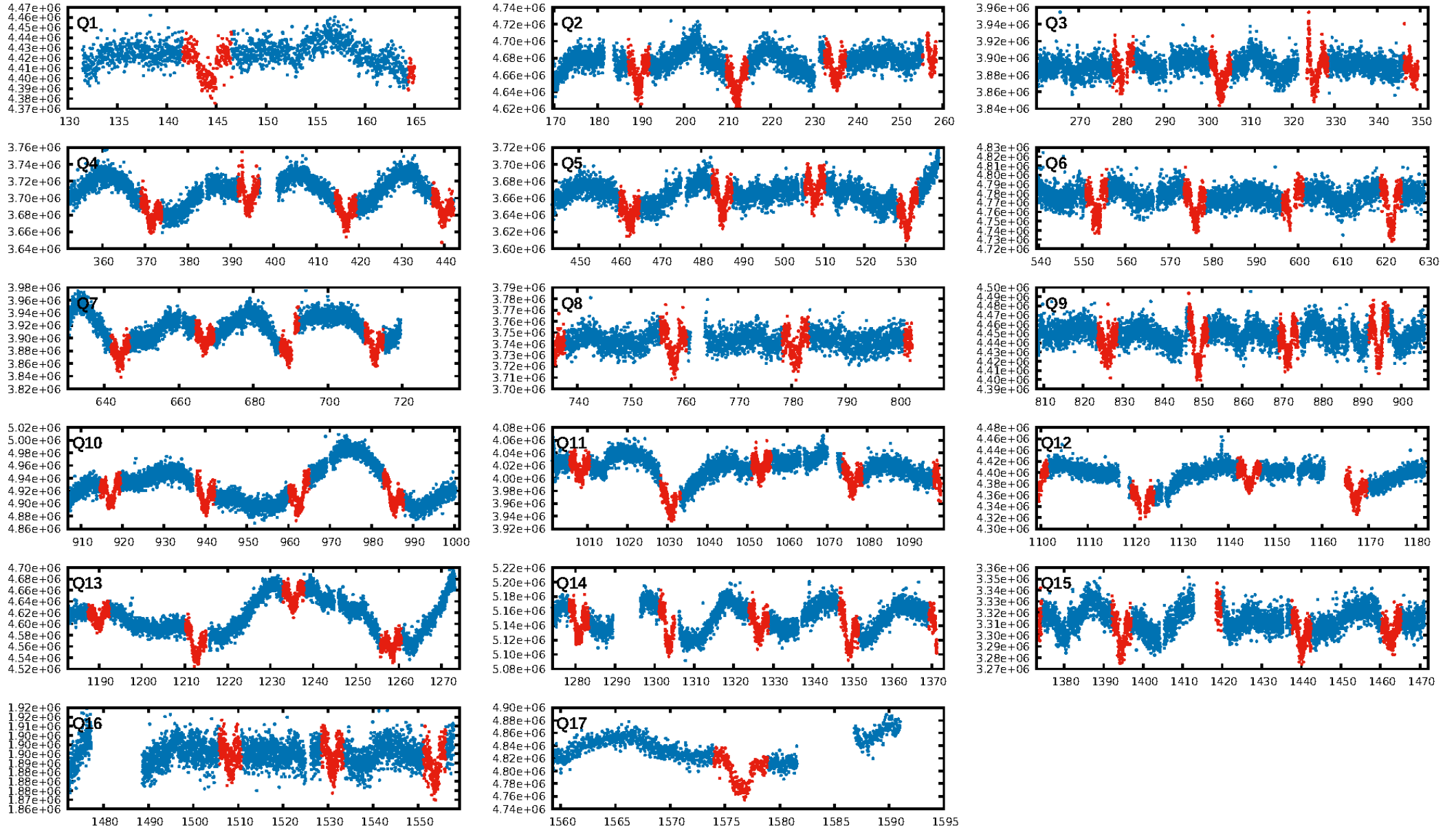
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [8.87σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.19e-55
RollingBand-fgt: 0.97 [58/60]
GhostDiagnostic-chr: 0.3799
Centroid-sig: 0.0%
Centroid-so: 2.313 arcsec [25.77σ]
OotOffset-rm: 0.960 arcsec [1.59σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 9.774 arcsec [17.60σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.35 [6/17]
DiffImageOverlap-fno: 0.00 [0/17]

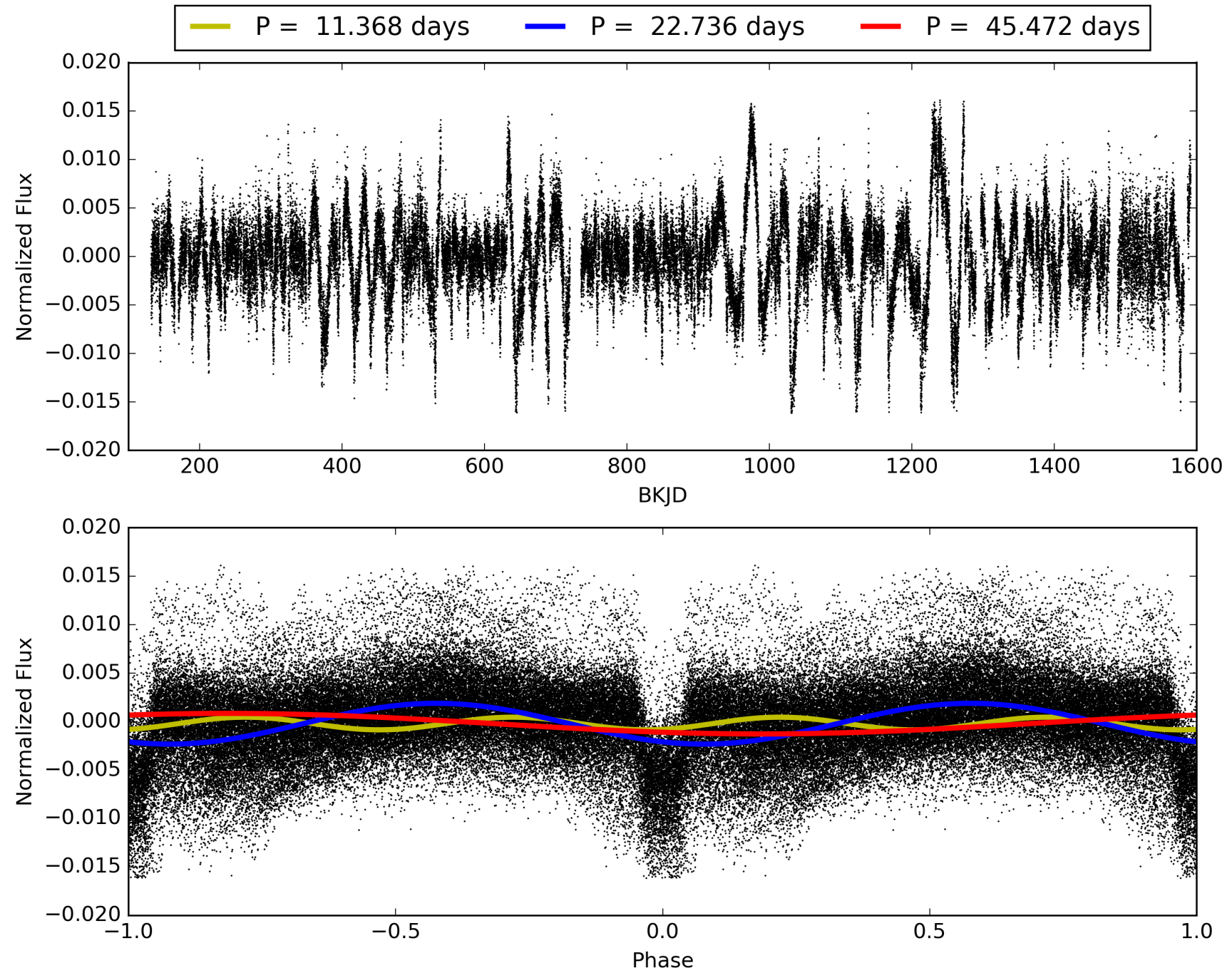
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 08:50:56 Z

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

TCE 005952366-02, PDC Light Curves

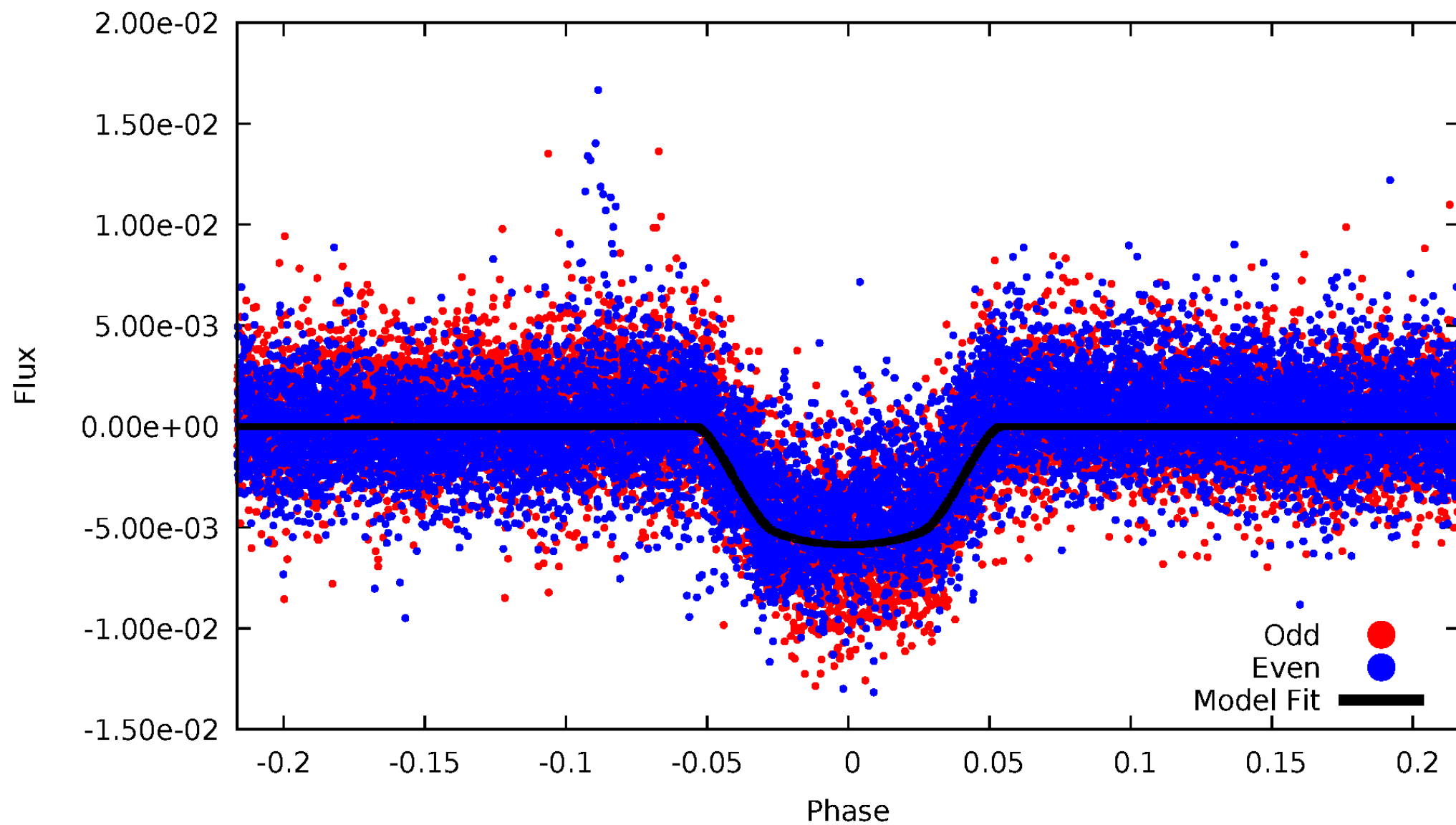


TCE 005952366-02



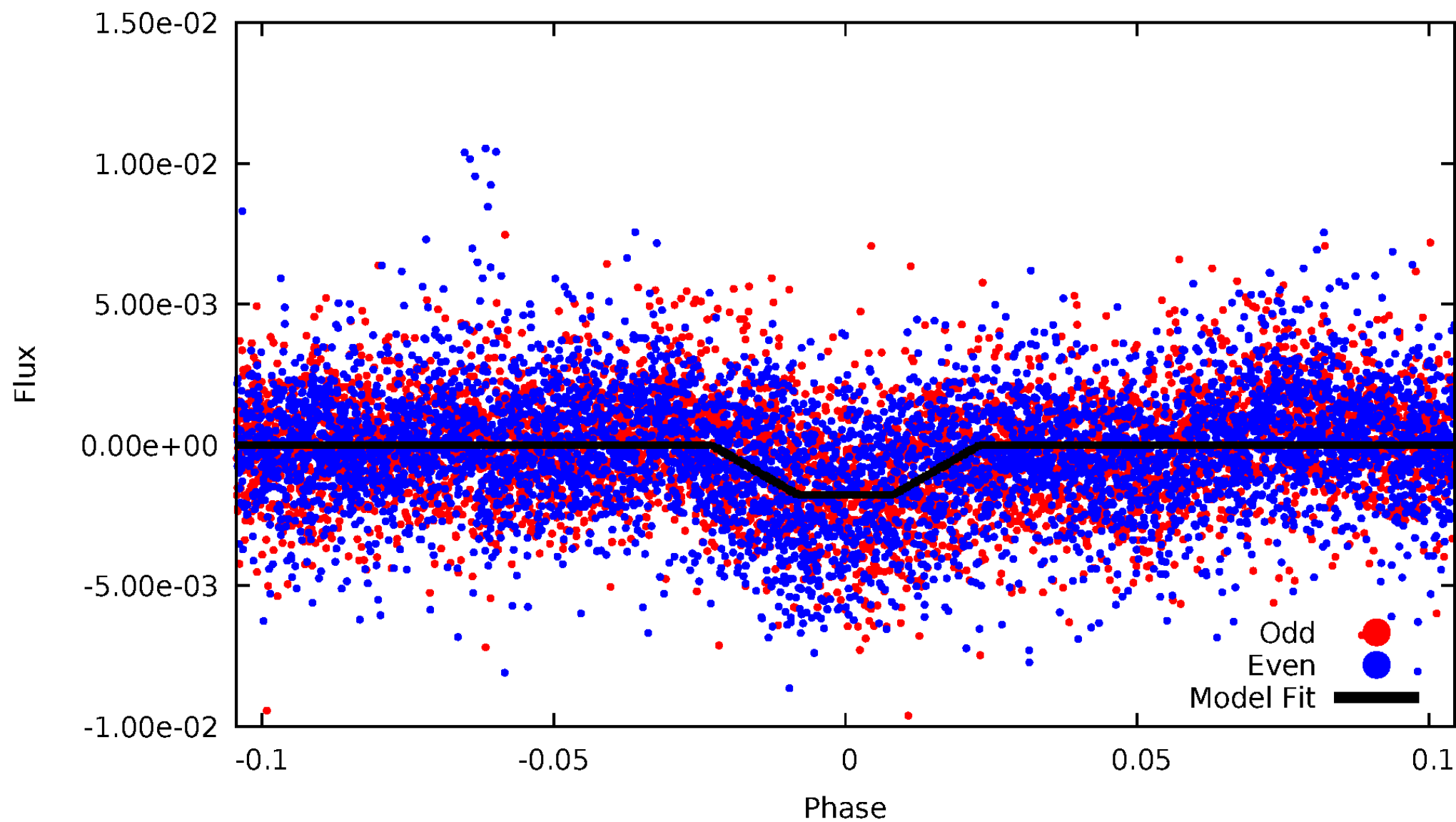
DV Odd/Even

TCE 005952366-02



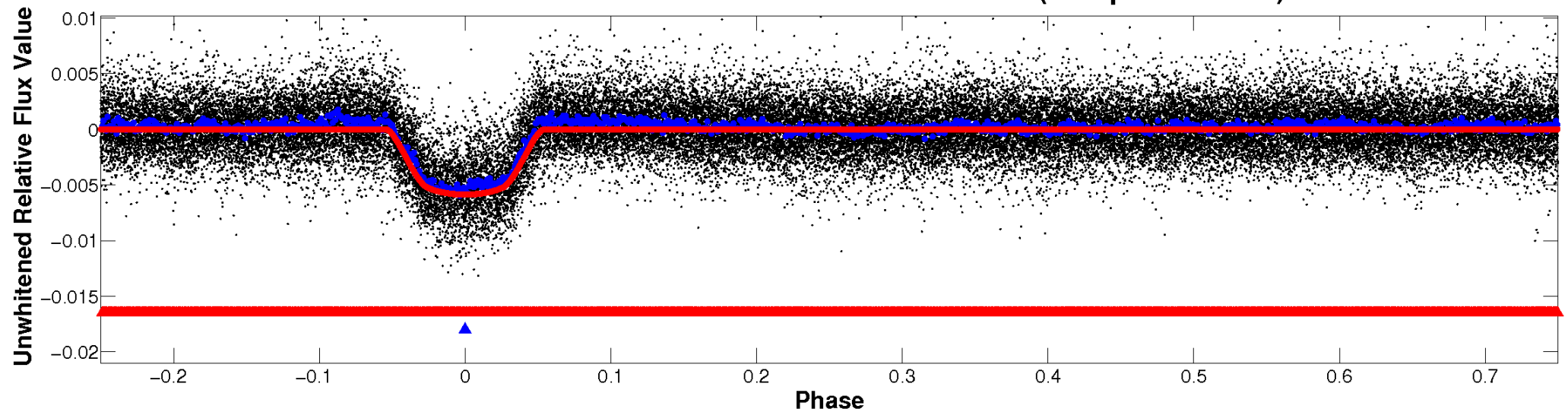
ALT Odd/Even

TCE 005952366-02

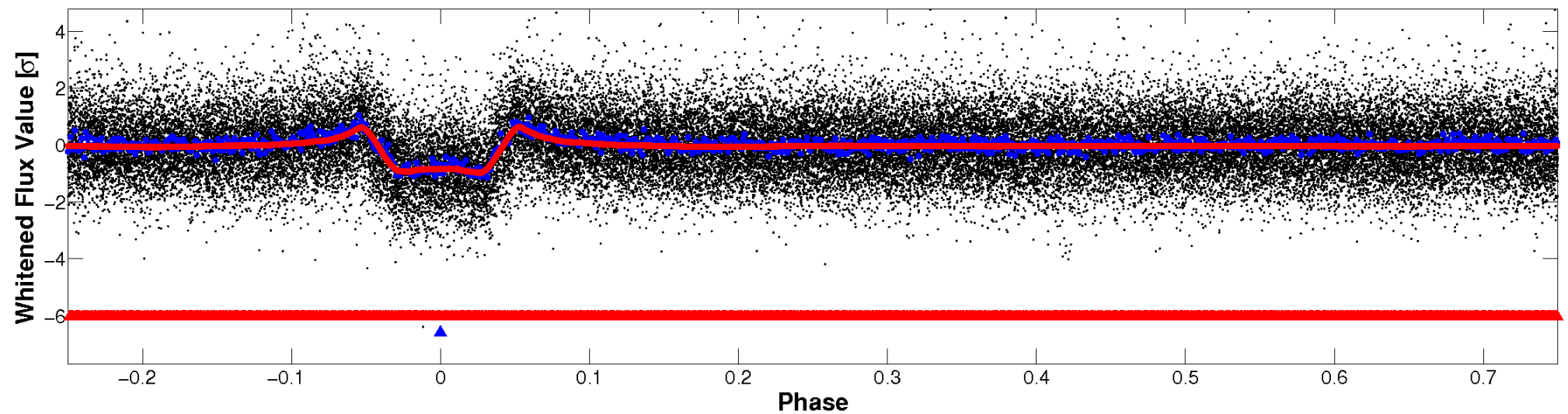


Non-Whitened Vs. Whitened Light Curve

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

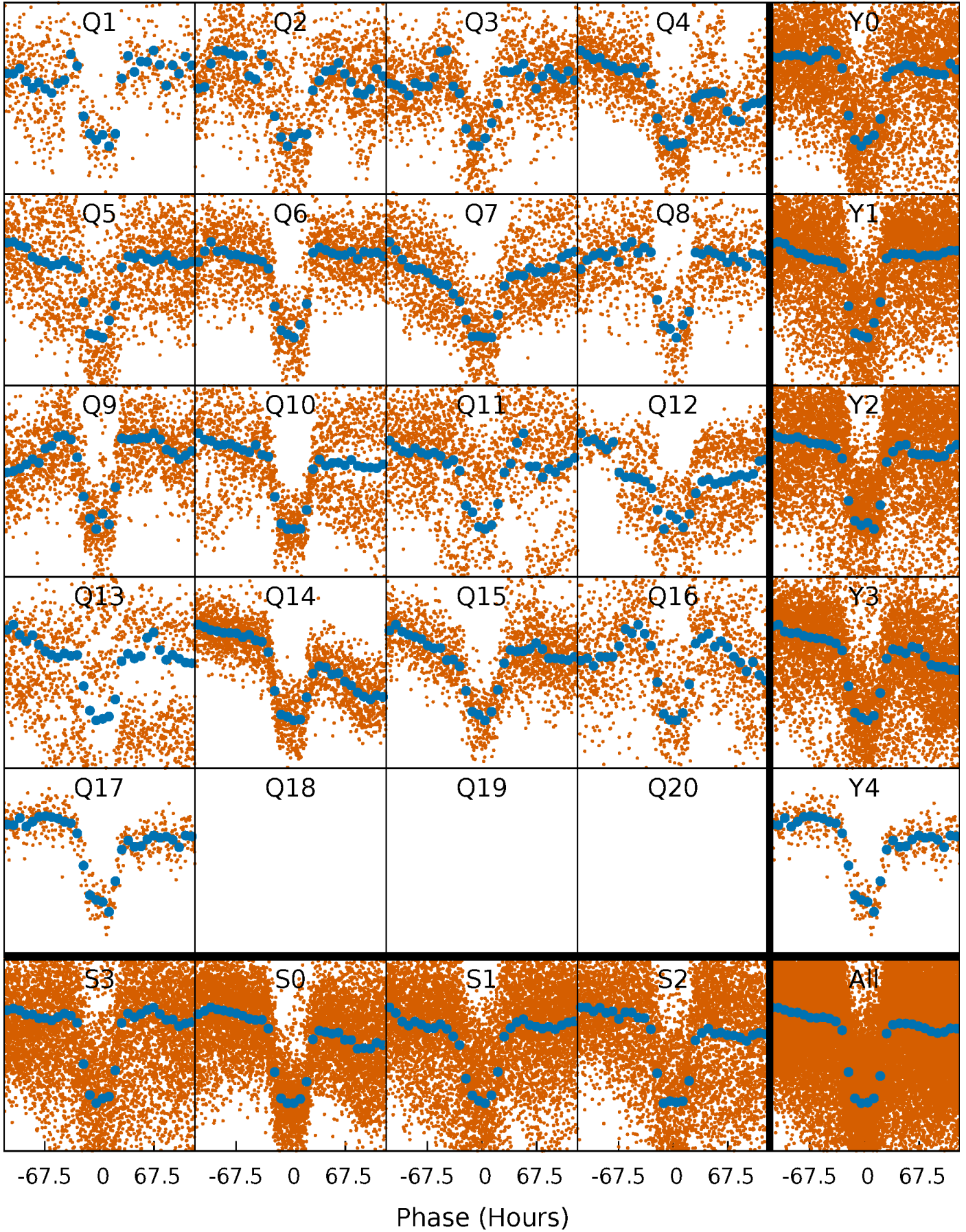


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



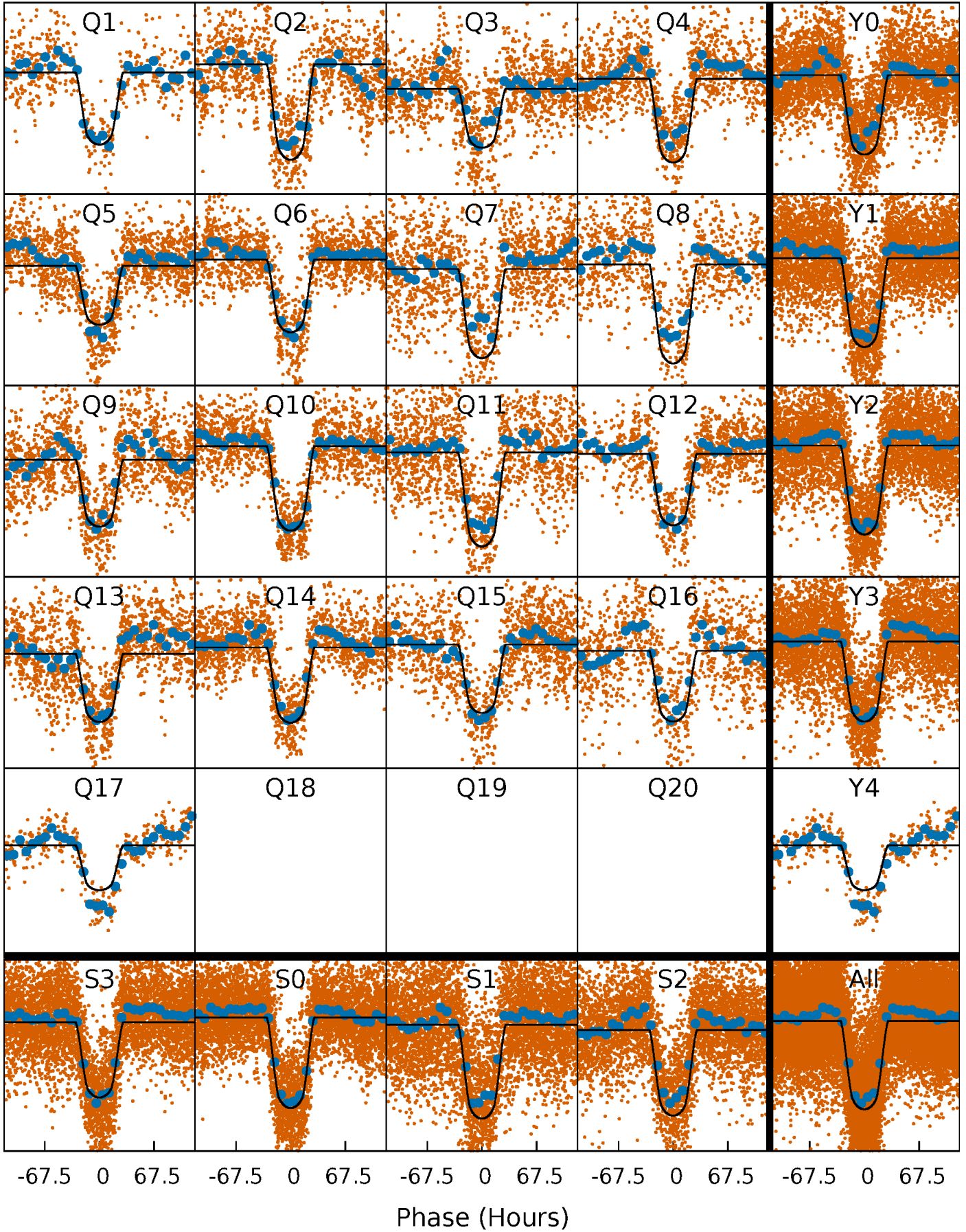
PDC Quarter-Phased Transit Curves

TCE 005952366-02 P= 22.735887 Days $T_0=144.062623$ (BKJD)



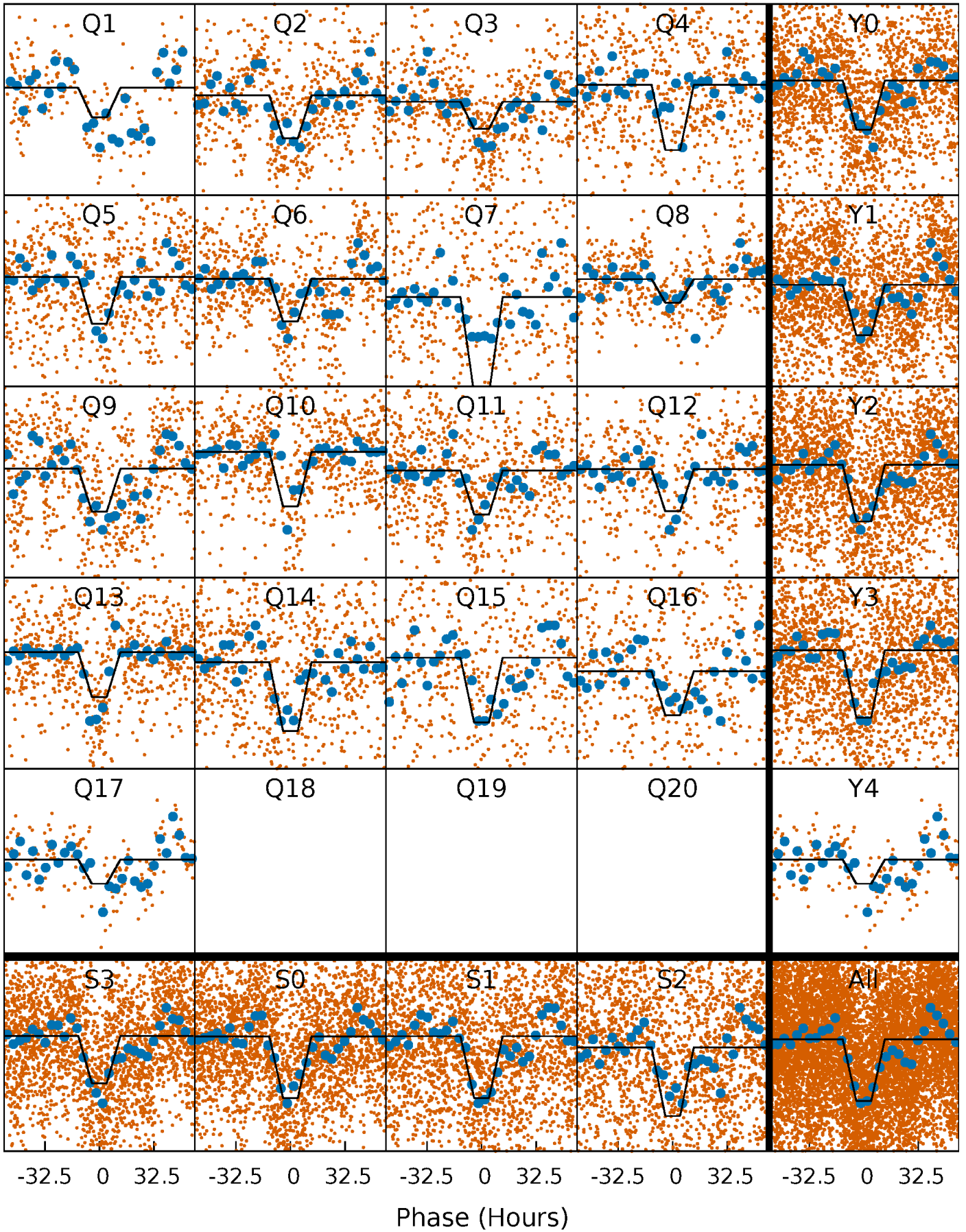
DV Quarter-Phased Transit Curves

TCE 005952366-02 P= 22.735887 Days $T_0=144.062623$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

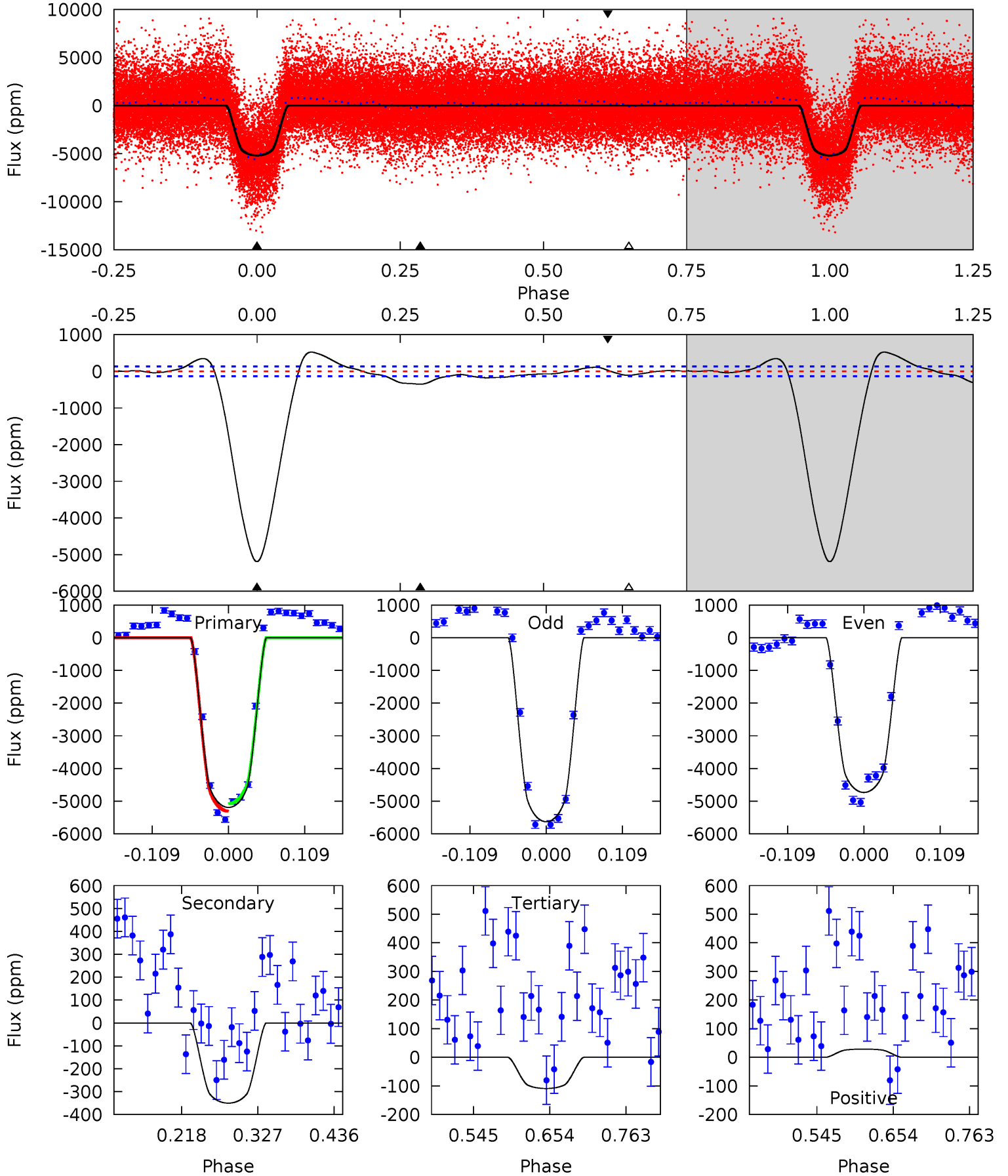
TCE 005952366-02 P= 22.735902 Days $T_0=143.550749$ (BKJD)



DV Model-Shift Uniqueness Test

005952366-02, P = 22.735887 Days, E = 121.326736 Days

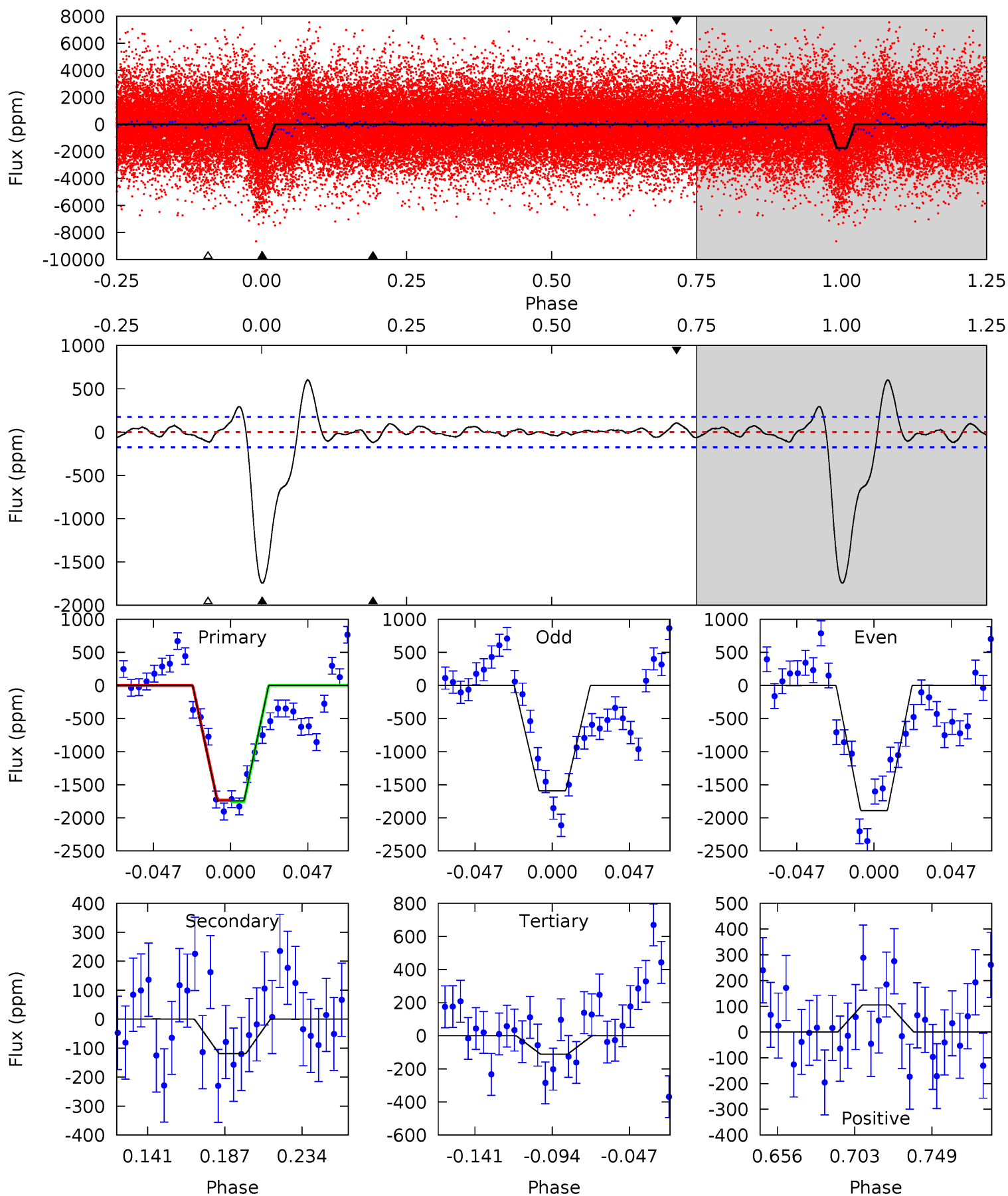
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
177.0	11.9	3.72	0.97	4.55	1.60	4.16	173.2	176.0	8.22	11.0	15.3	1.06	0.09	3.89



Alt Model-Shift Uniqueness Test

005952366-02, P = 22.735902 Days, E = 120.814847 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
46.8	3.19	3.01	2.83	4.72	1.99	2.91	43.8	44.0	0.18	0.37	4.06	1.13	0.26	0.29



Stellar Parameters For KIC 005952366

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5780^{+1}_{-1}	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

Secondary Eclipse Parameters for KIC 005952366-02 / KOI 3947.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-350 ± 29	$8.84^{+0.66}_{-0.64}$	898^{+45}_{-42}	3322^{+82}_{-85}	61^{+11}_{-9}
Alt.	-119 ± 37	$4.60^{+0.34}_{-0.30}$	901^{+41}_{-45}	3438^{+169}_{-184}	76^{+26}_{-24}

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

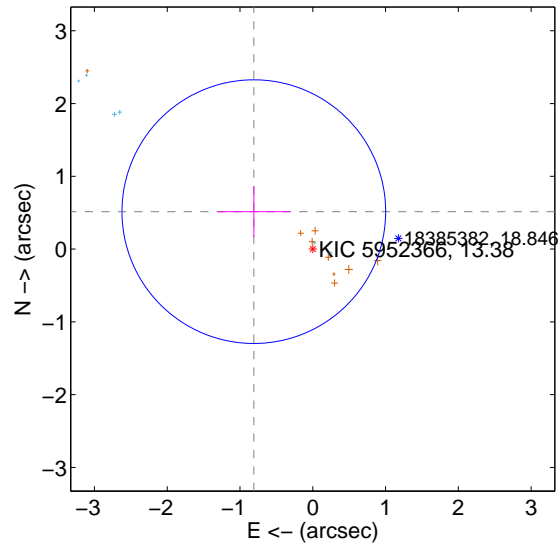
Supplemental centroid analysis for 005952366-02. Kepler magnitude: 13.38. Transit SNR 55.73

There are 6 quarters with good PRF difference image offsets

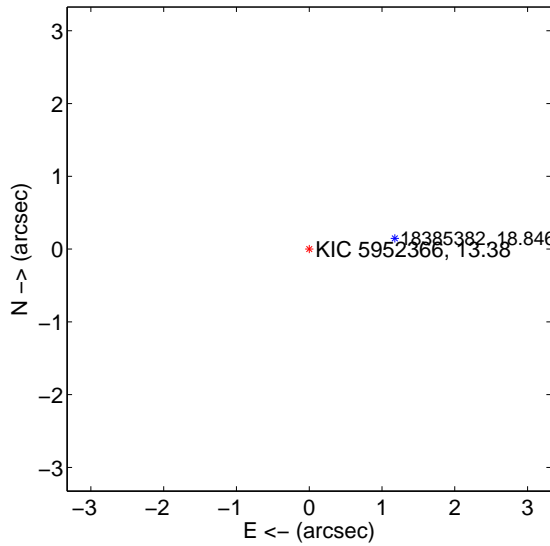
The OOT PRF centroid is offset from the target star catalog position by about 6.44 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.960 ± 0.604	1.59	0.810 ± 0.498	0.515 ± 0.350
PRF-fit source offset from KIC position	9.774 ± 0.555	17.60	8.274 ± 0.493	5.204 ± 0.320
photometric centroid source offset	2.31 ± 0.09	25.77	1.91 ± 0.09	1.30 ± 0.08

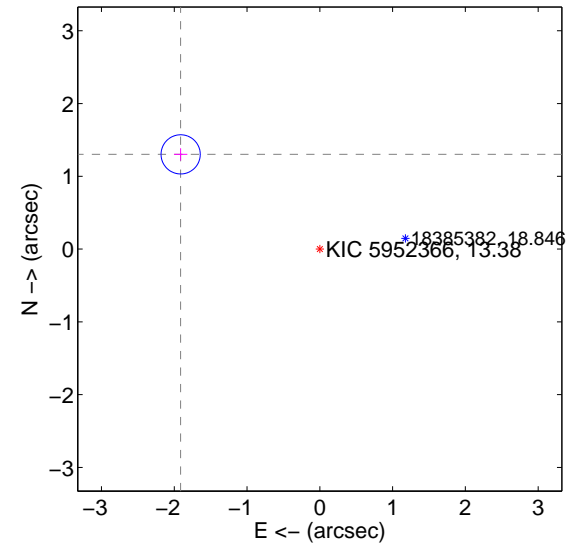
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

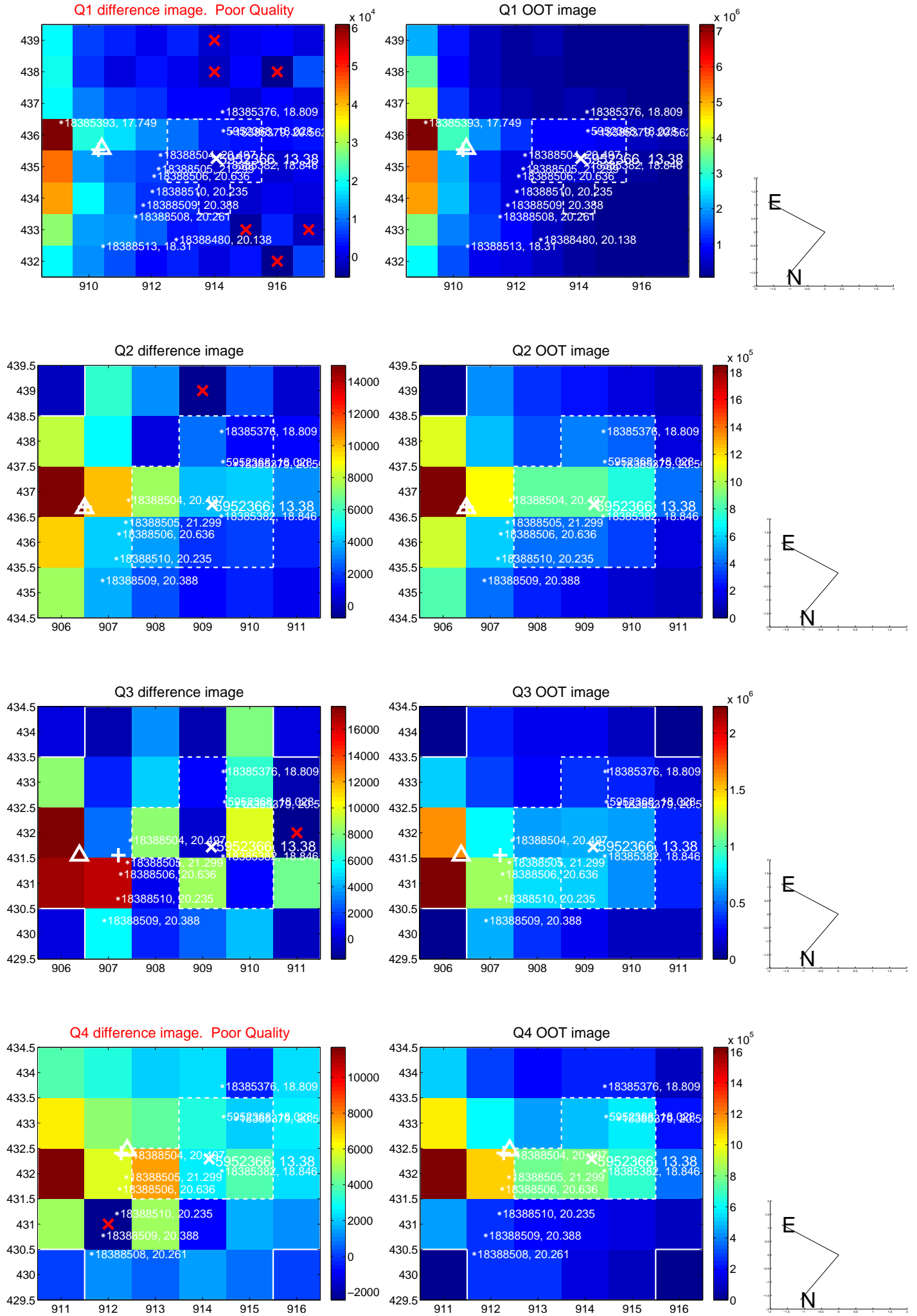


offset from photometric centroids

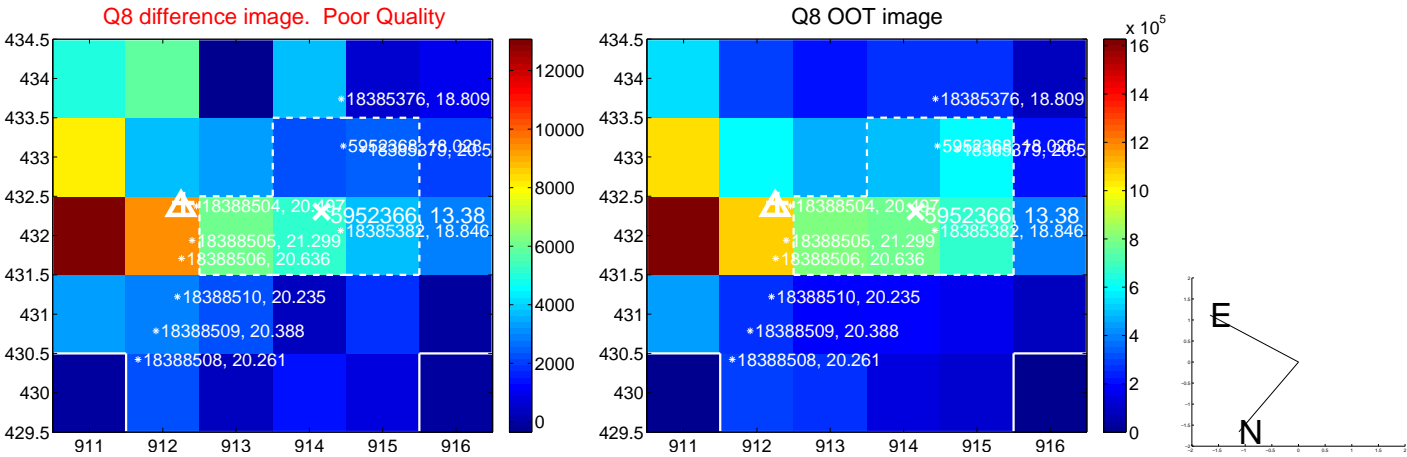
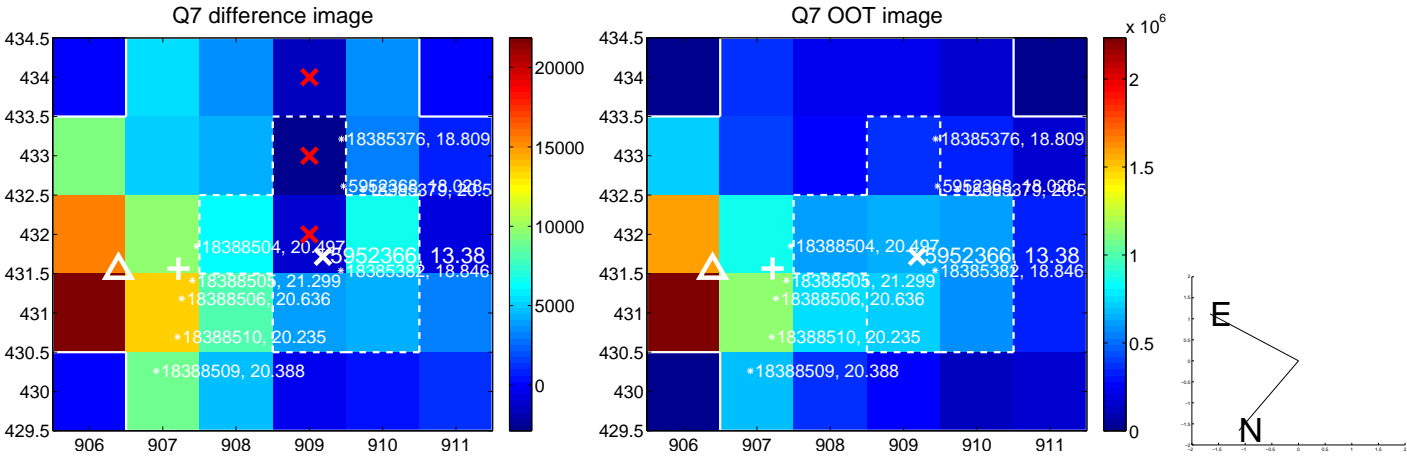
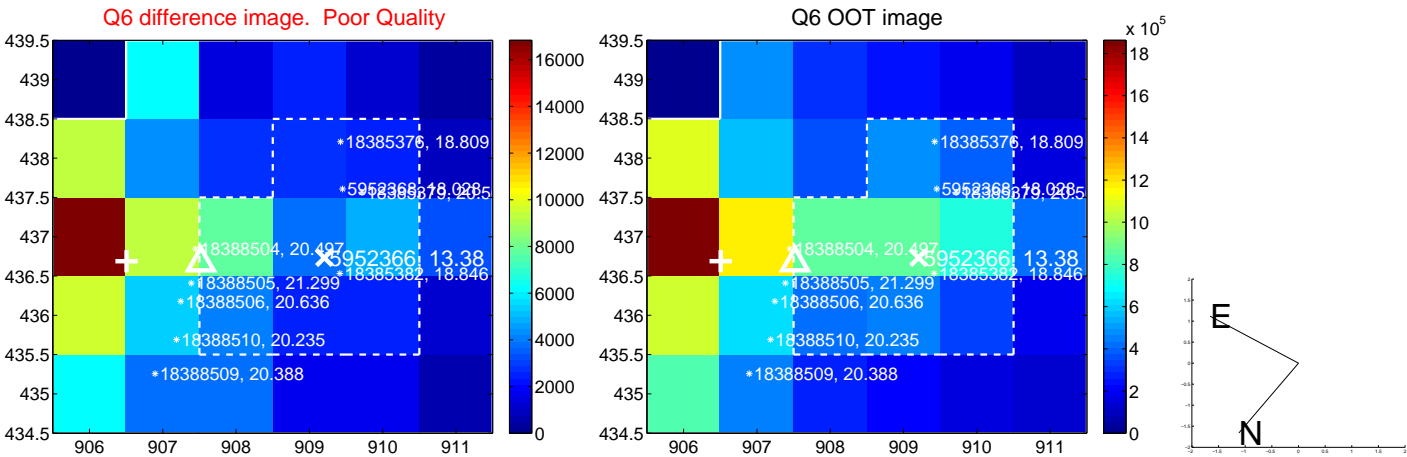
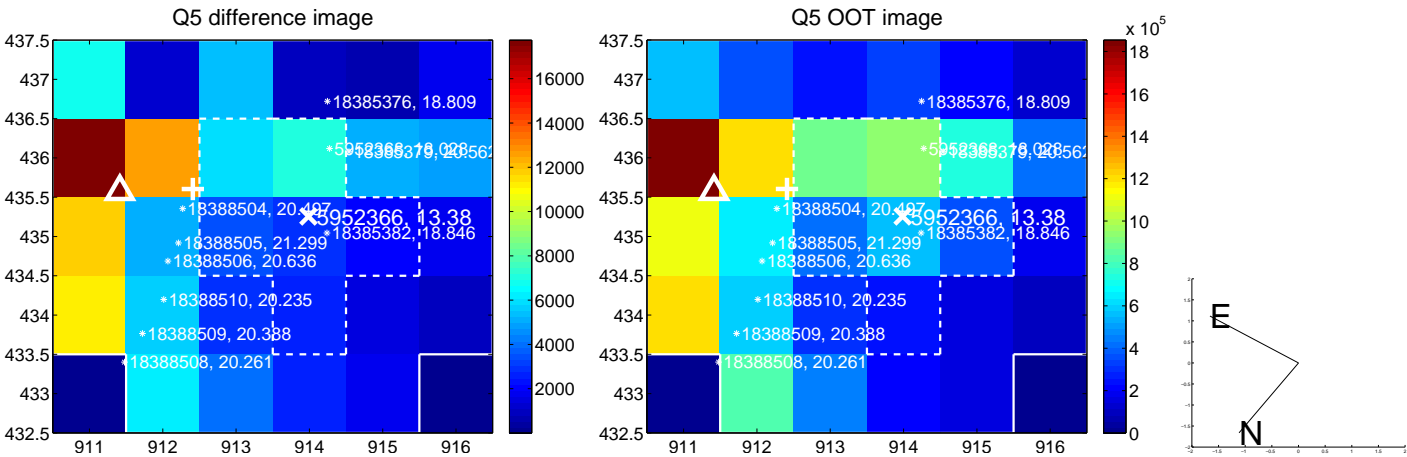


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

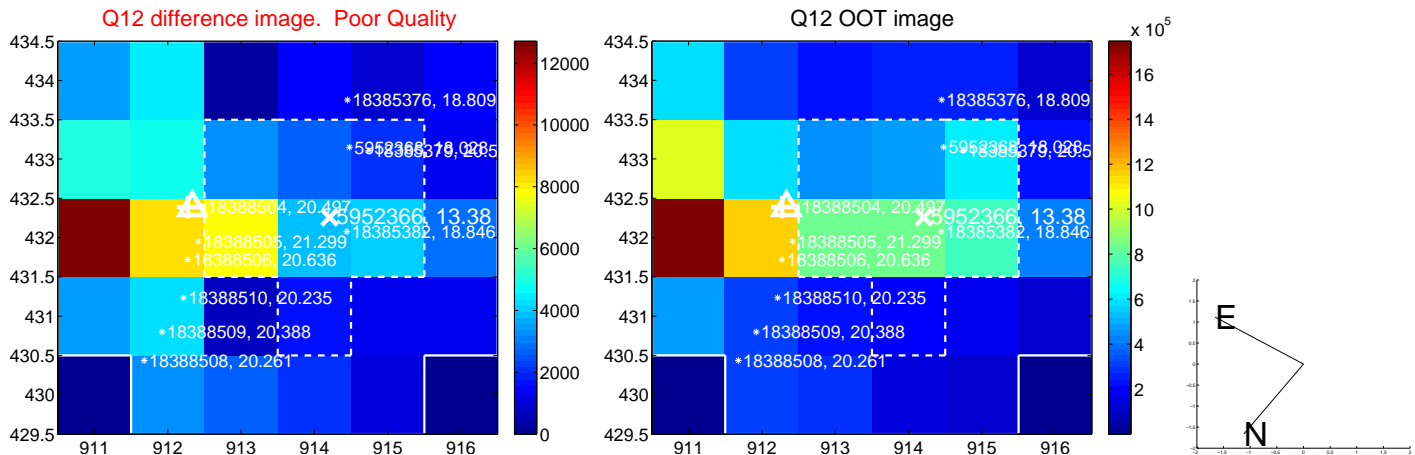
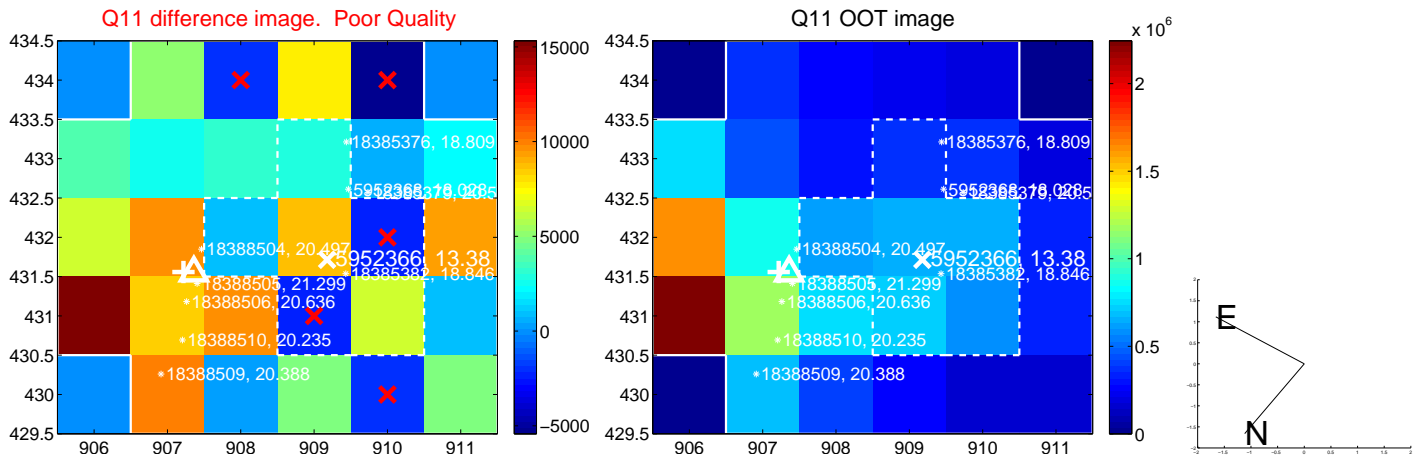
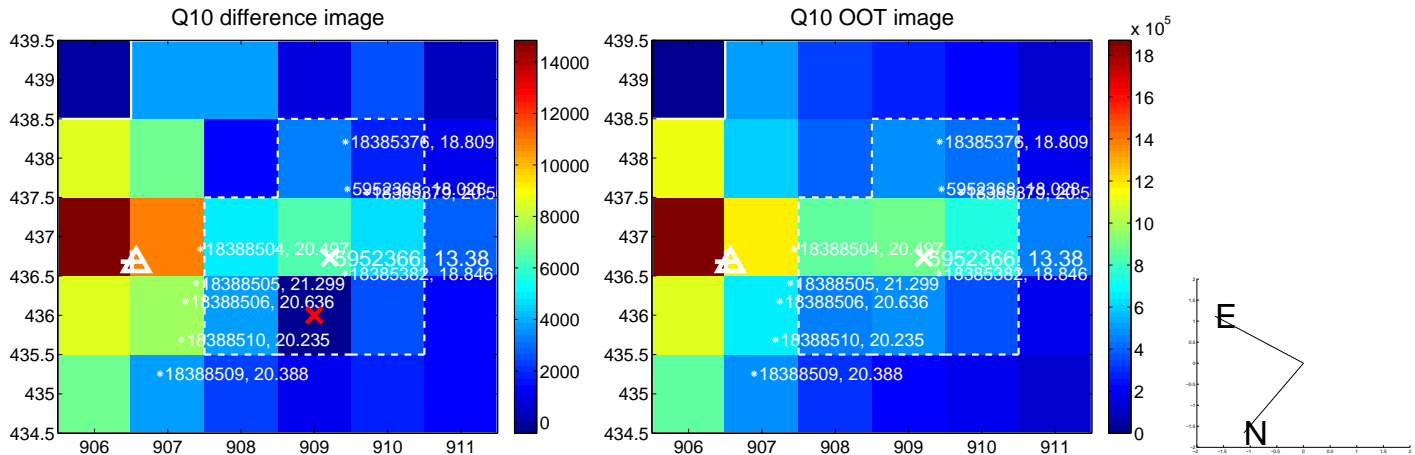
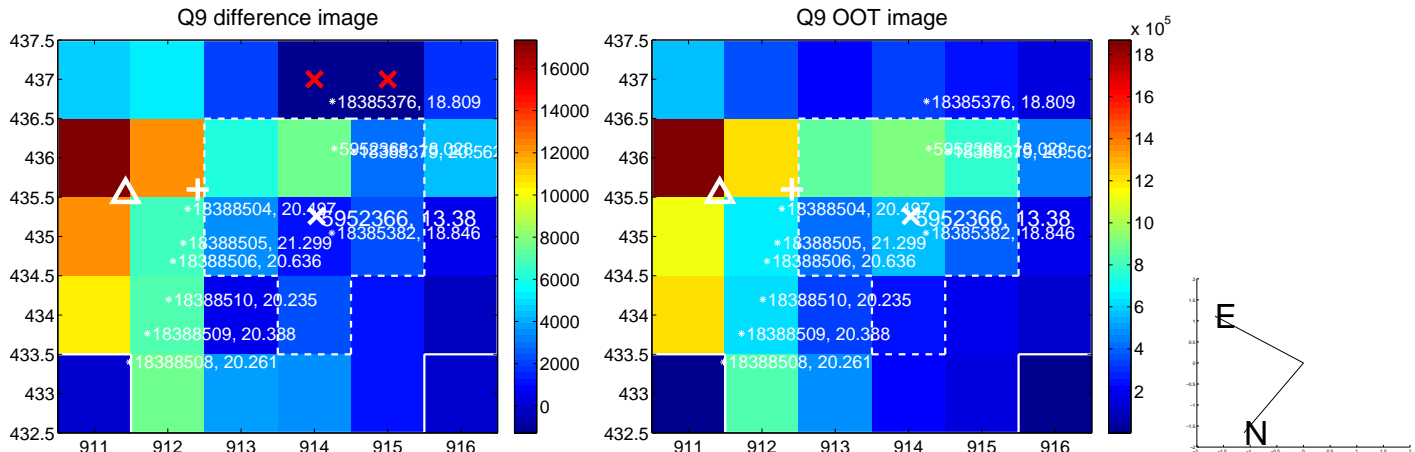
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



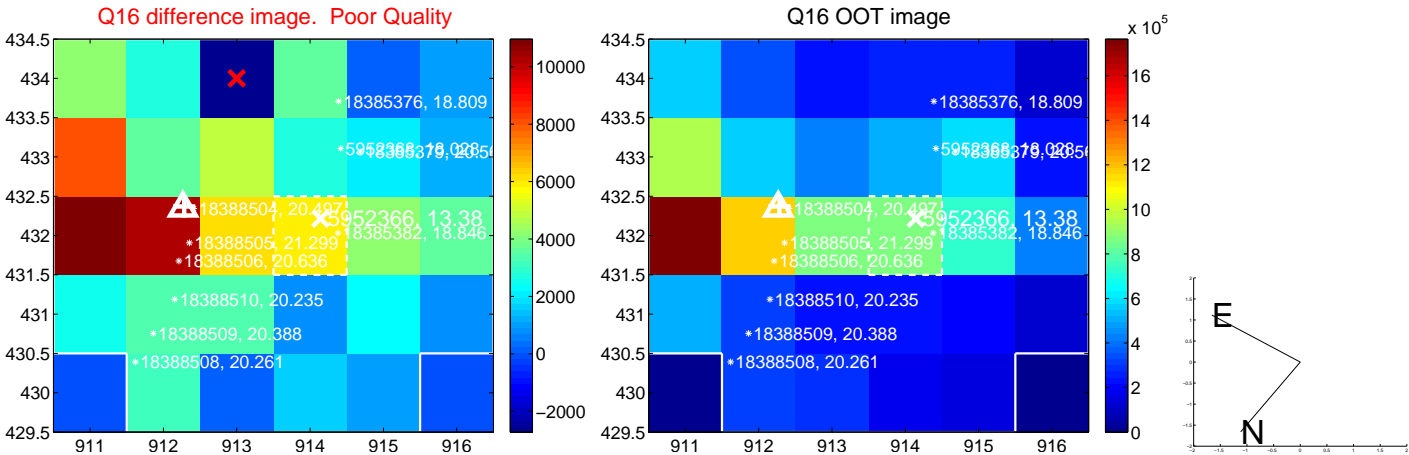
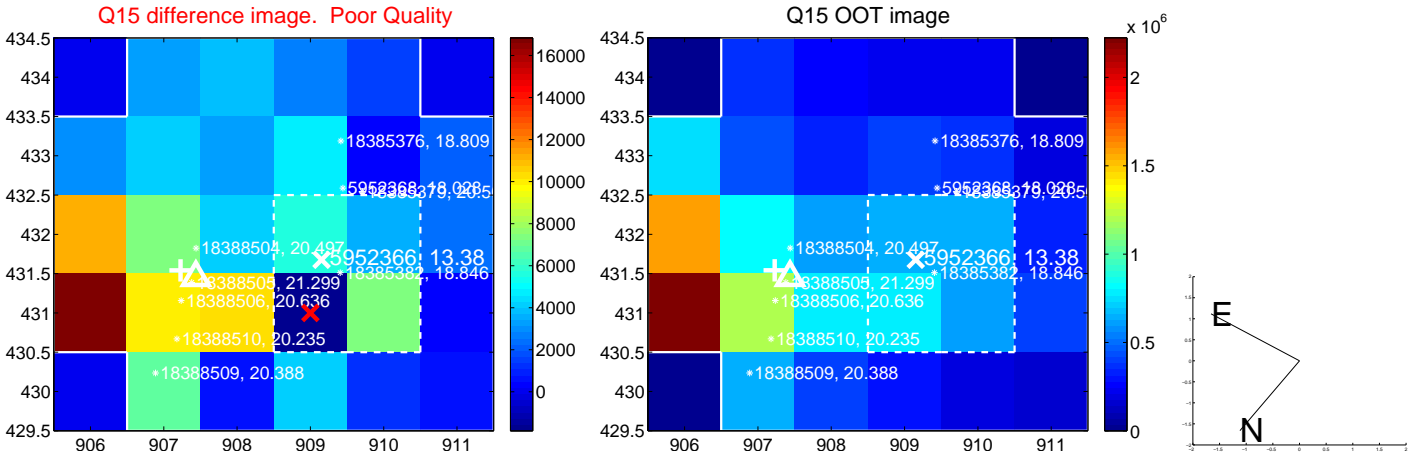
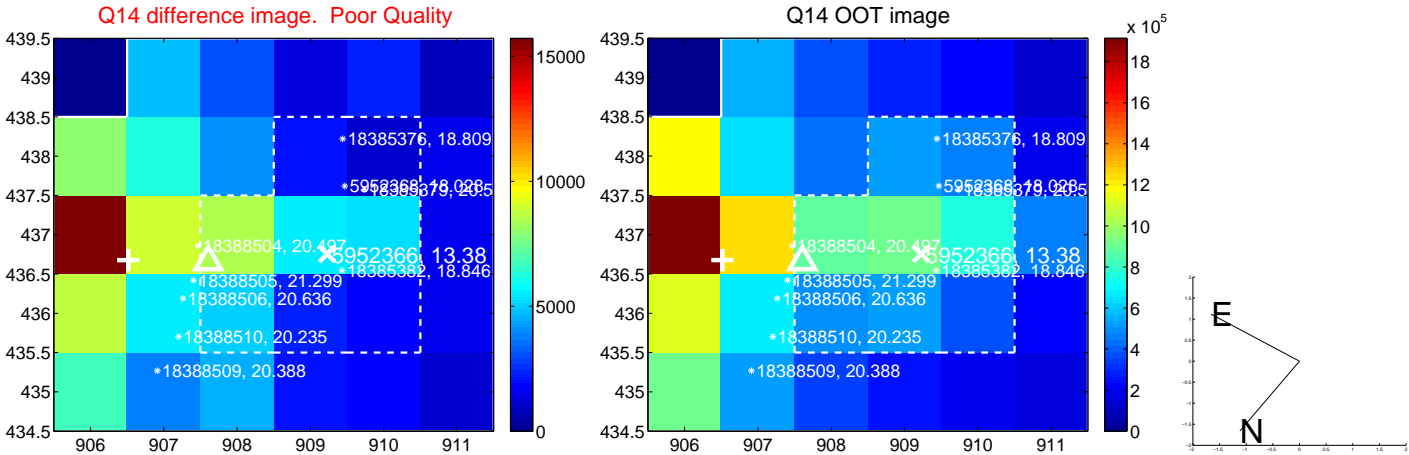
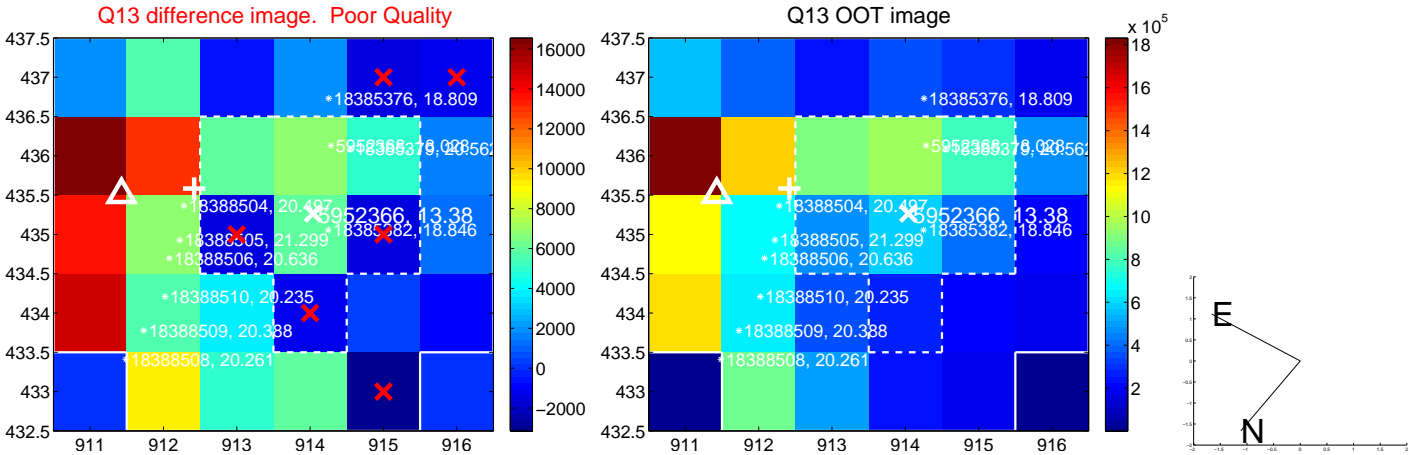
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



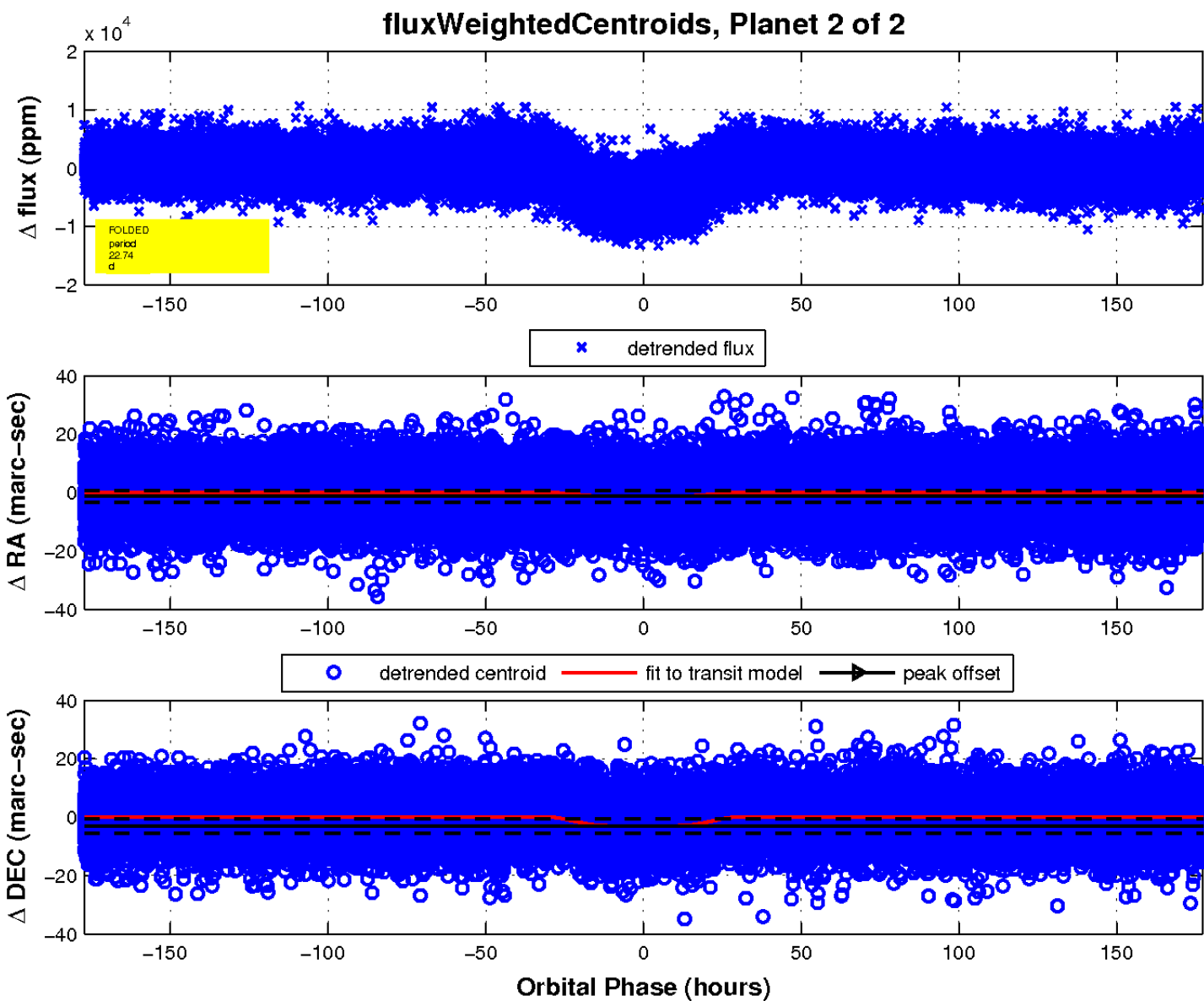
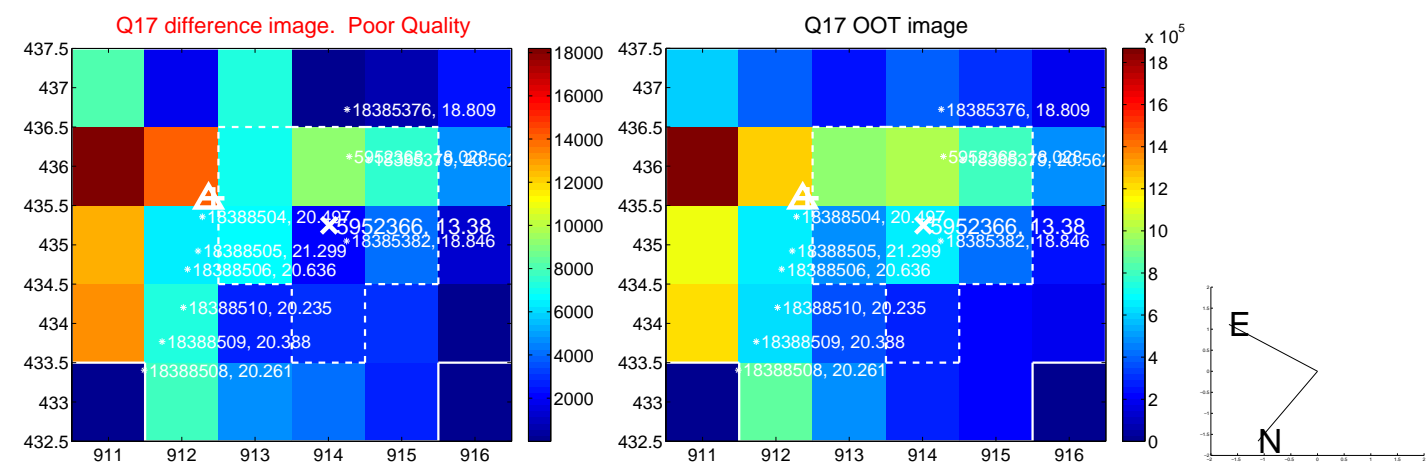
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

