

KIC 007618364

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})
007618364-01	OBS	7844.01	1.302077	132.556063	241.5	0.595	13.4	37.6	2.78	7757	5.25	29636.66
007618364-02	OBS	No	0.544930	131.978445	27.0	0.621	8.7	6.8	2.78	7757	1.58	94672.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007618364-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—CENT_UNRESOLVED_OFFSET
007618364-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT

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

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

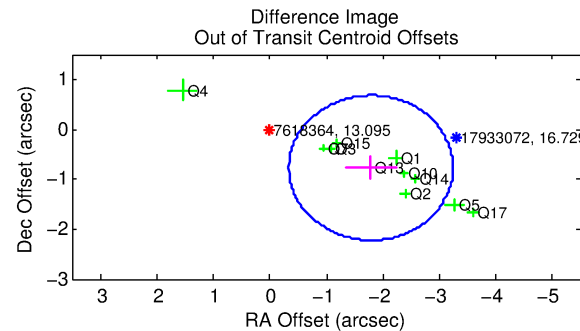
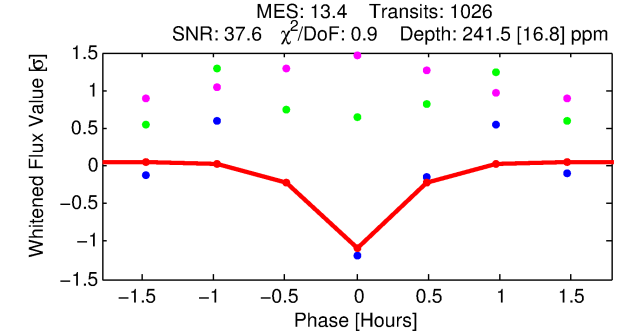
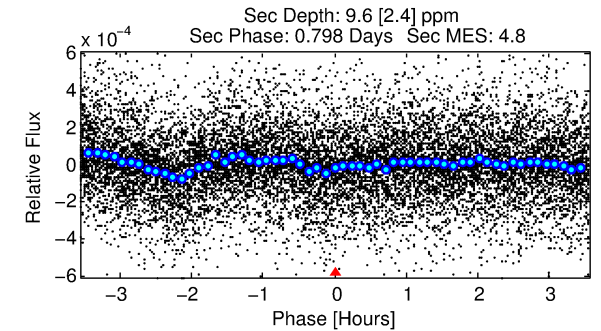
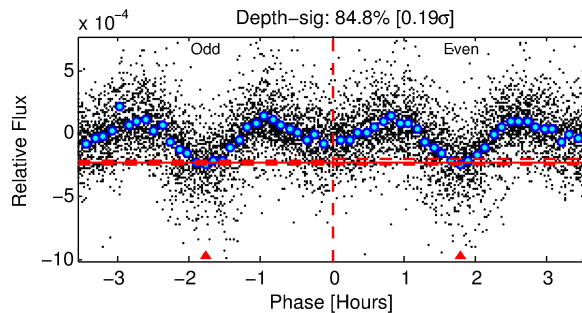
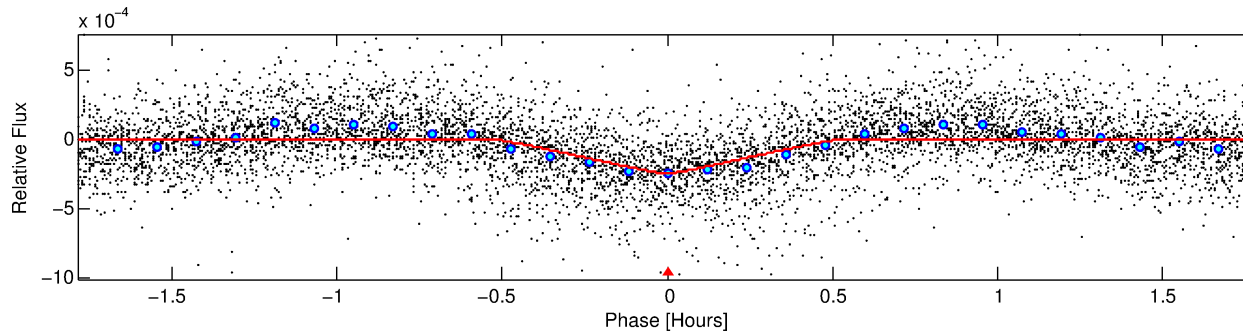
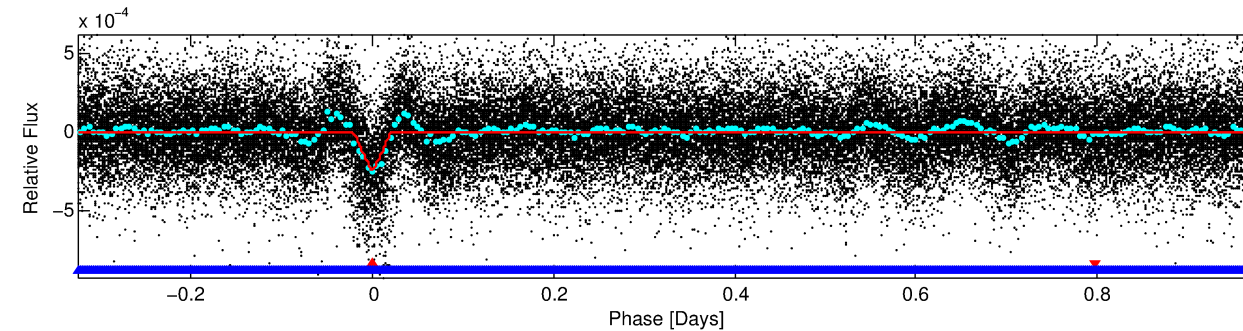
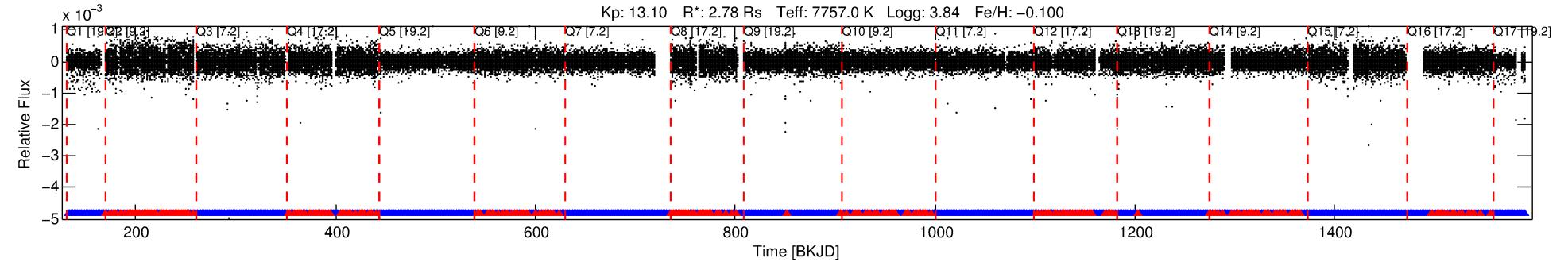
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007618364-01

No Significant Match Found

DV One-Page Summary

KIC: 7618364 Candidate: 1 of 2 Period: 1.302 d



DV Fit Results:

Period = 1.30208 [0.00000] d
Epoch = 132.5561 [0.0004] BKJD
Rp/R* = 0.0173 [0.0024]
a/R* = 7.32 [5.80]
b = 0.92 [0.14]
Seff = 29636.66 [18243.59]
Teq = 3346 [515] K
Rp = 5.25 [2.25] Re
a = 0.0291 [0.0110] AU
Ag = 0.16 [0.11] [-7.33 σ]
Teffp = 3287 [335] K [-0.10 σ]

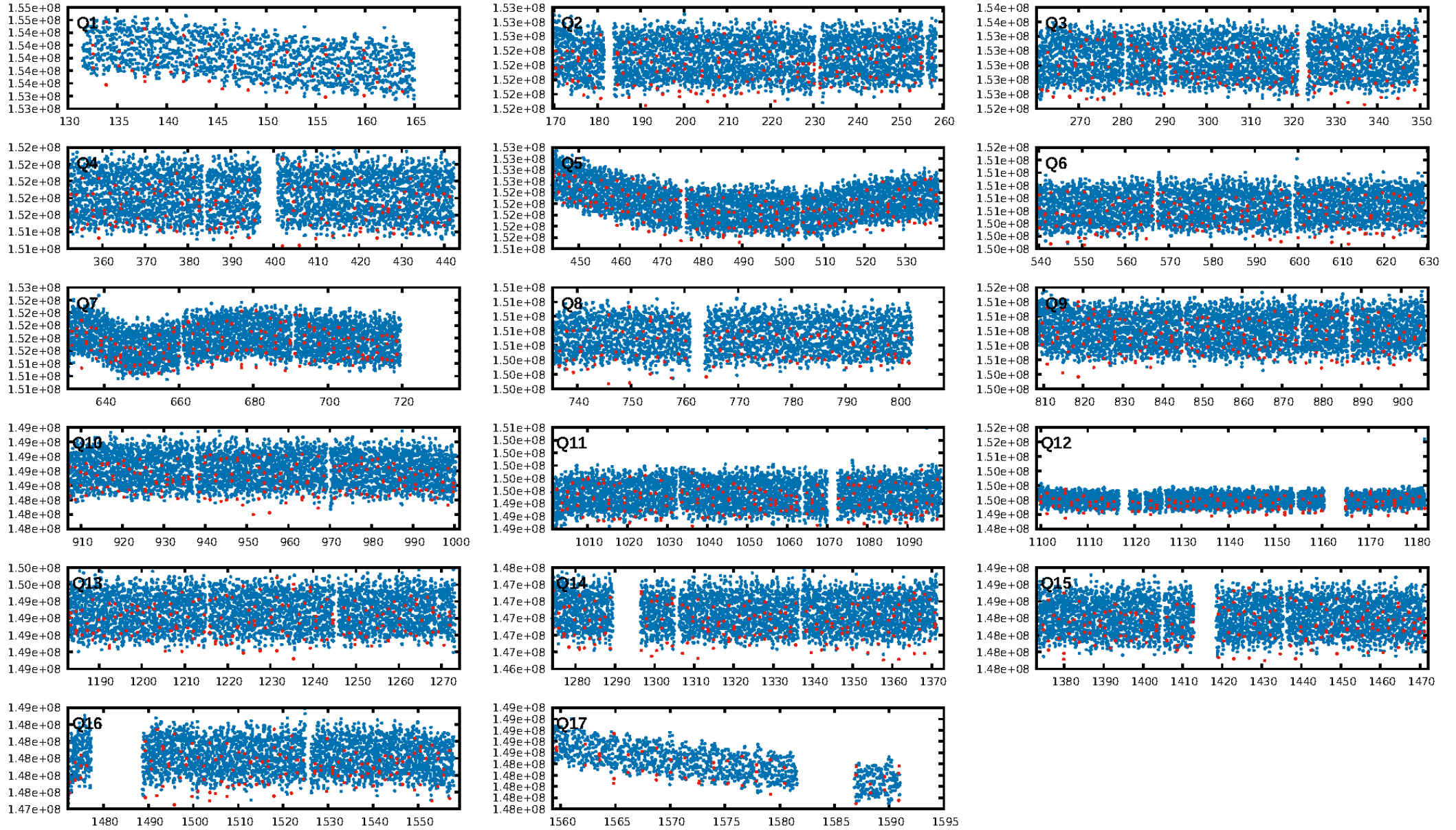
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [21.13 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.71e-38
RollingBand-fgt: 0.72 [702/980]
GhostDiagnostic-chr: 1.284
Centroid-sig: 0.0%
Centroid-so: 14.463 arcsec [78.89 σ]
OotOffset-rm: 1.946 arcsec [4.02 σ]
KicOffset-rm: 1.977 arcsec [4.52 σ]
OotOffset-st: 3/3/1/4 [11]
KicOffset-st: 3/3/1/4 [11]
DiffImageQuality-fgm: 0.91 [10/11]
DiffImageOverlap-fno: 0.93 [13/14]

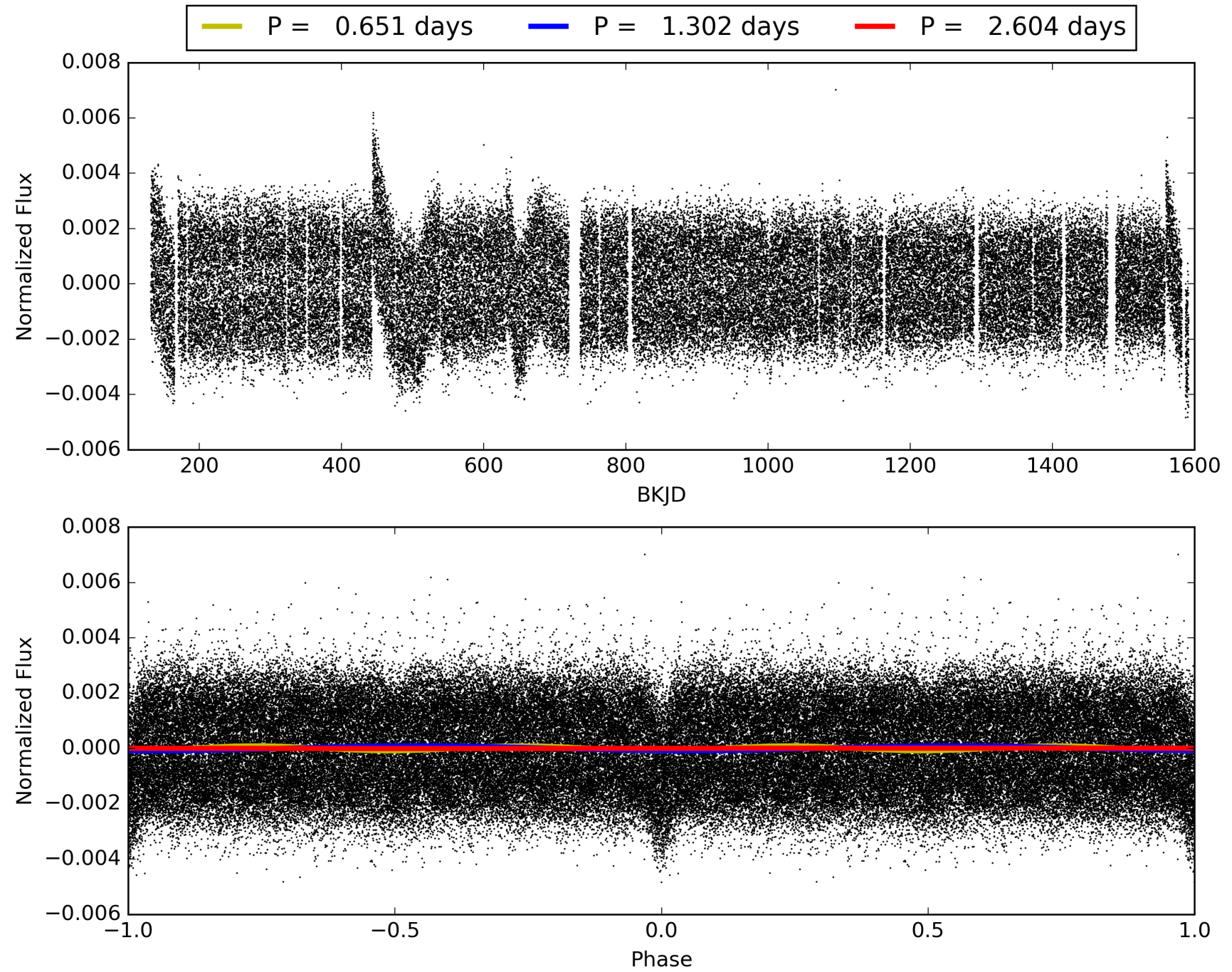
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:18:21 Z

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

TCE 007618364-01, PDC Light Curves

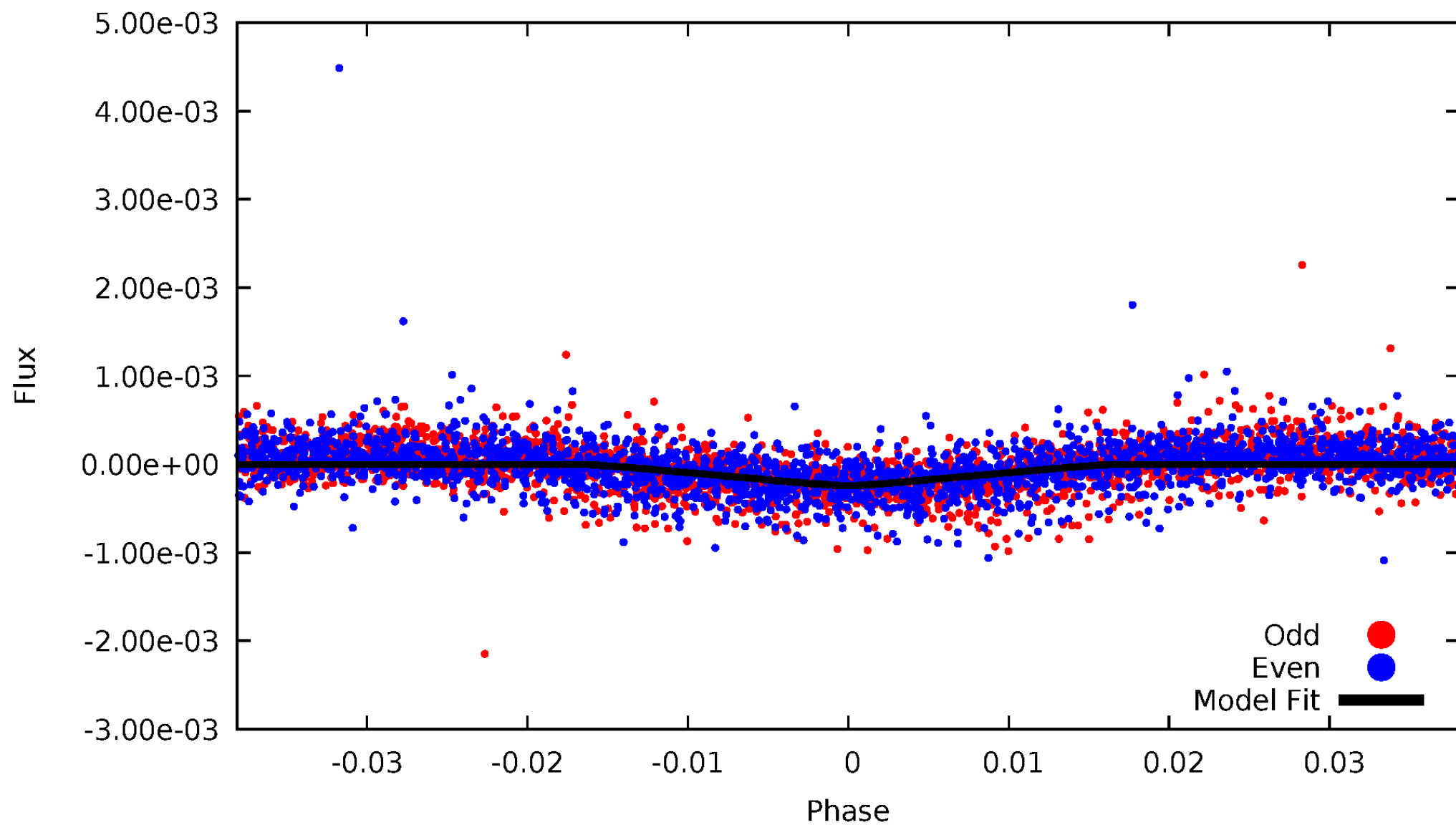


TCE 007618364-01



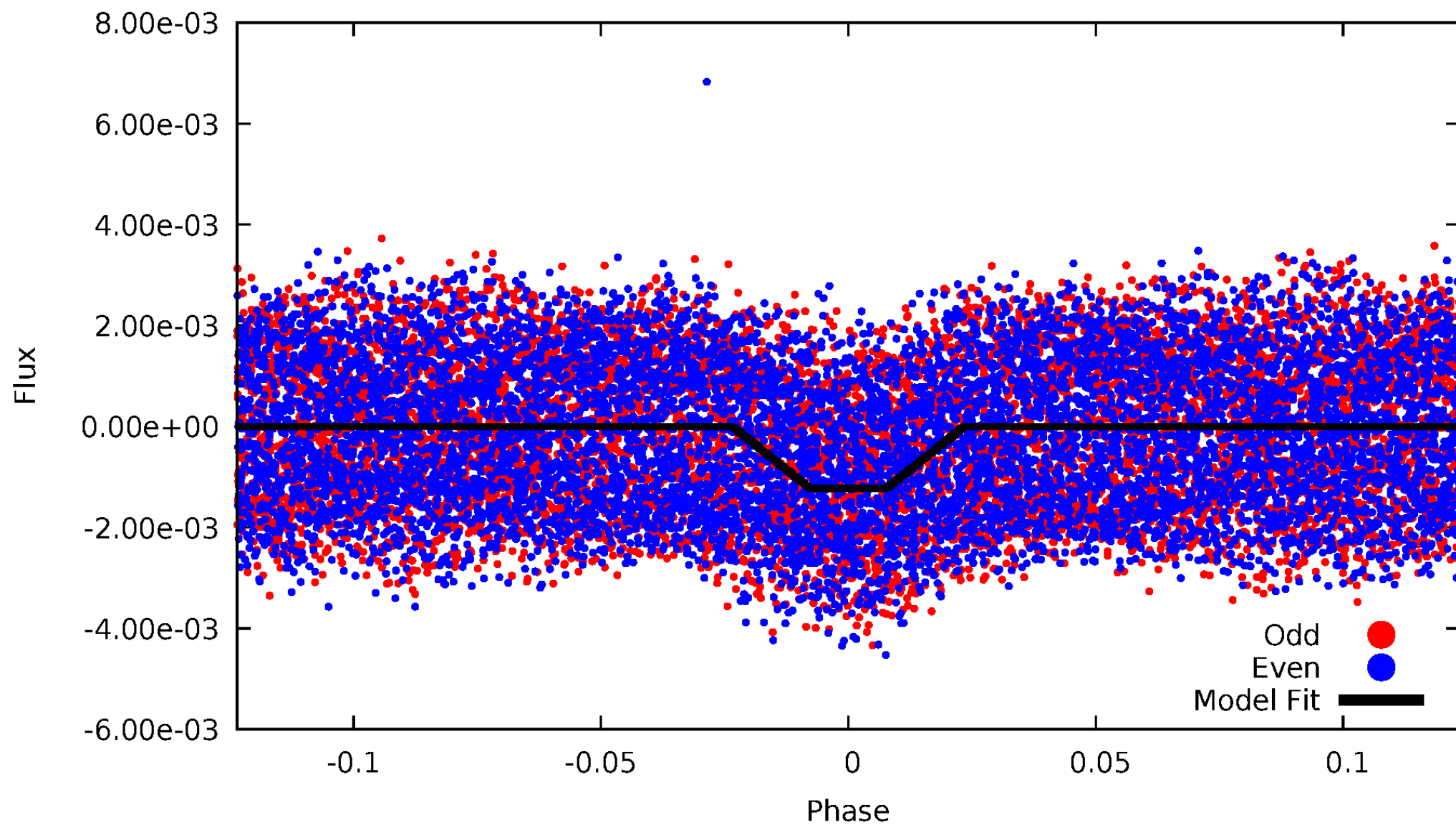
DV Odd/Even

TCE 007618364-01

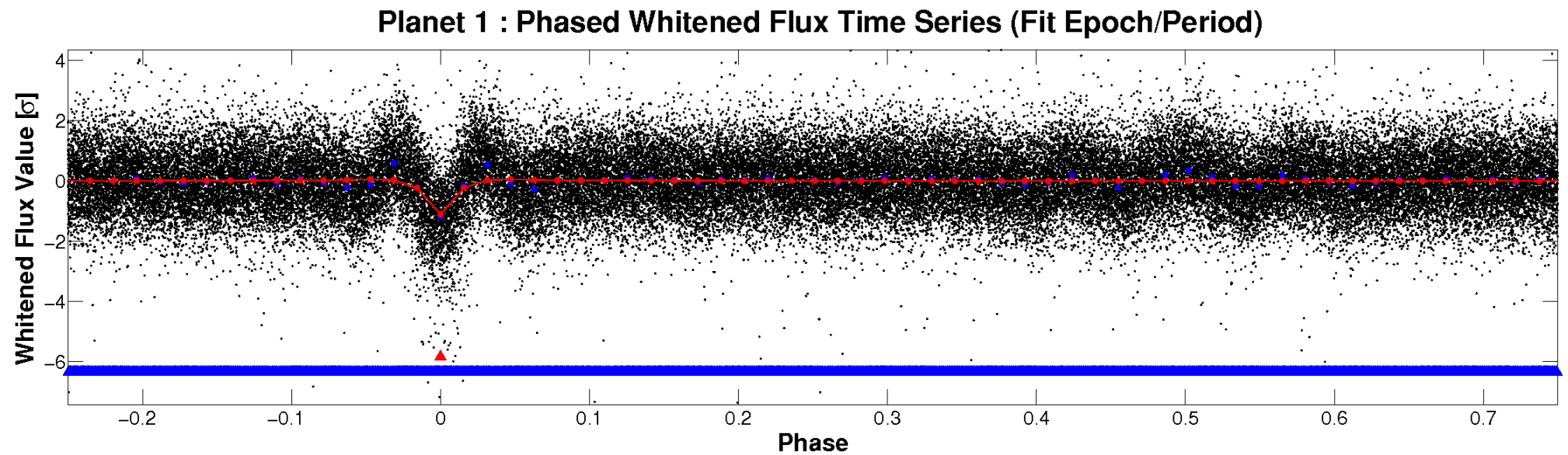
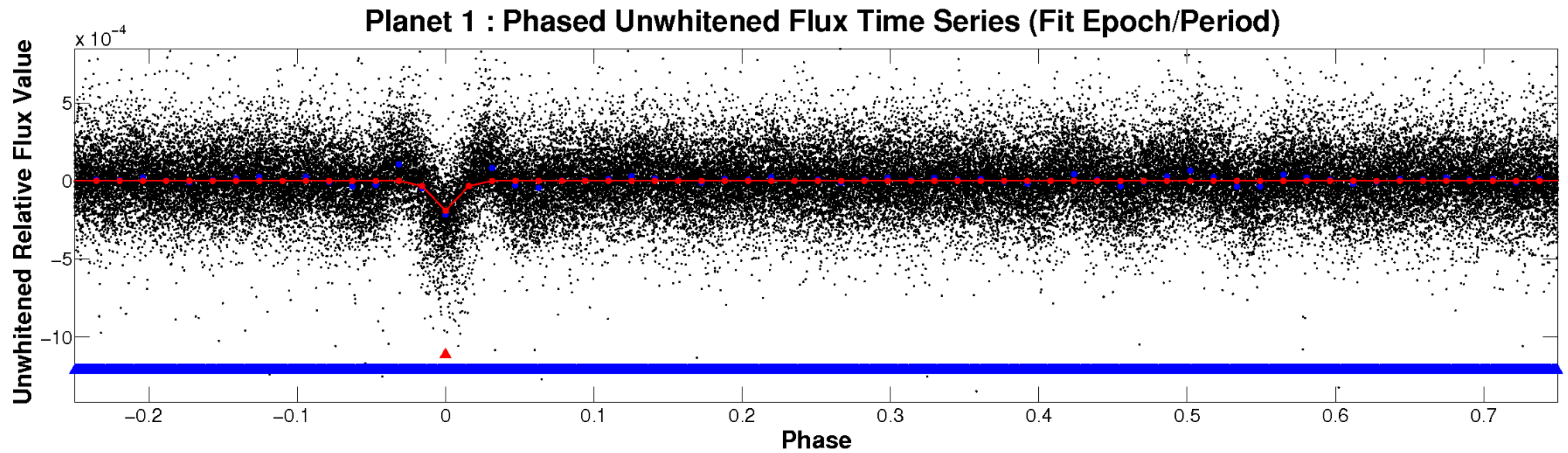


ALT Odd/Even

TCE 007618364-01

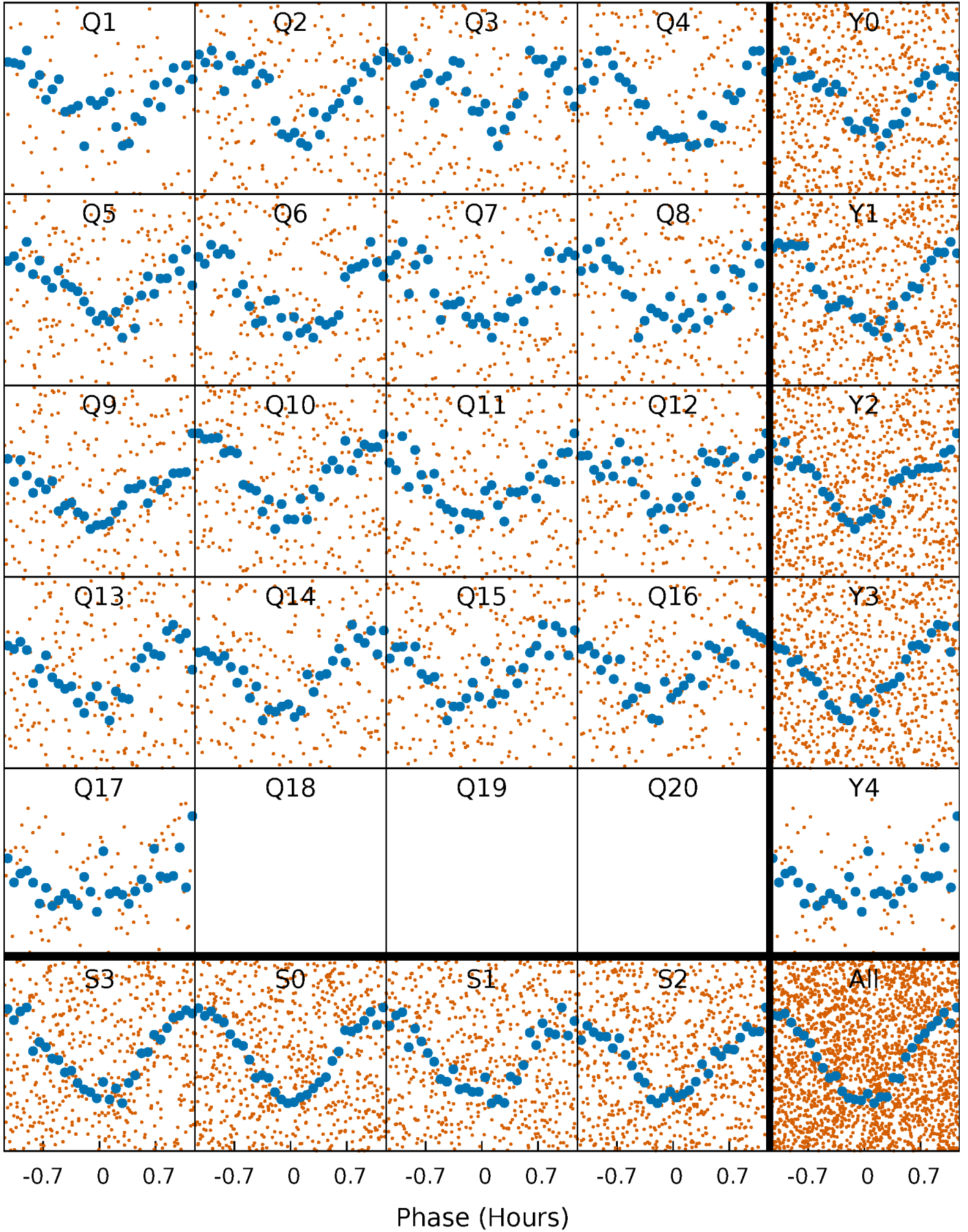


Non-Whitened Vs. Whitened Light Curve



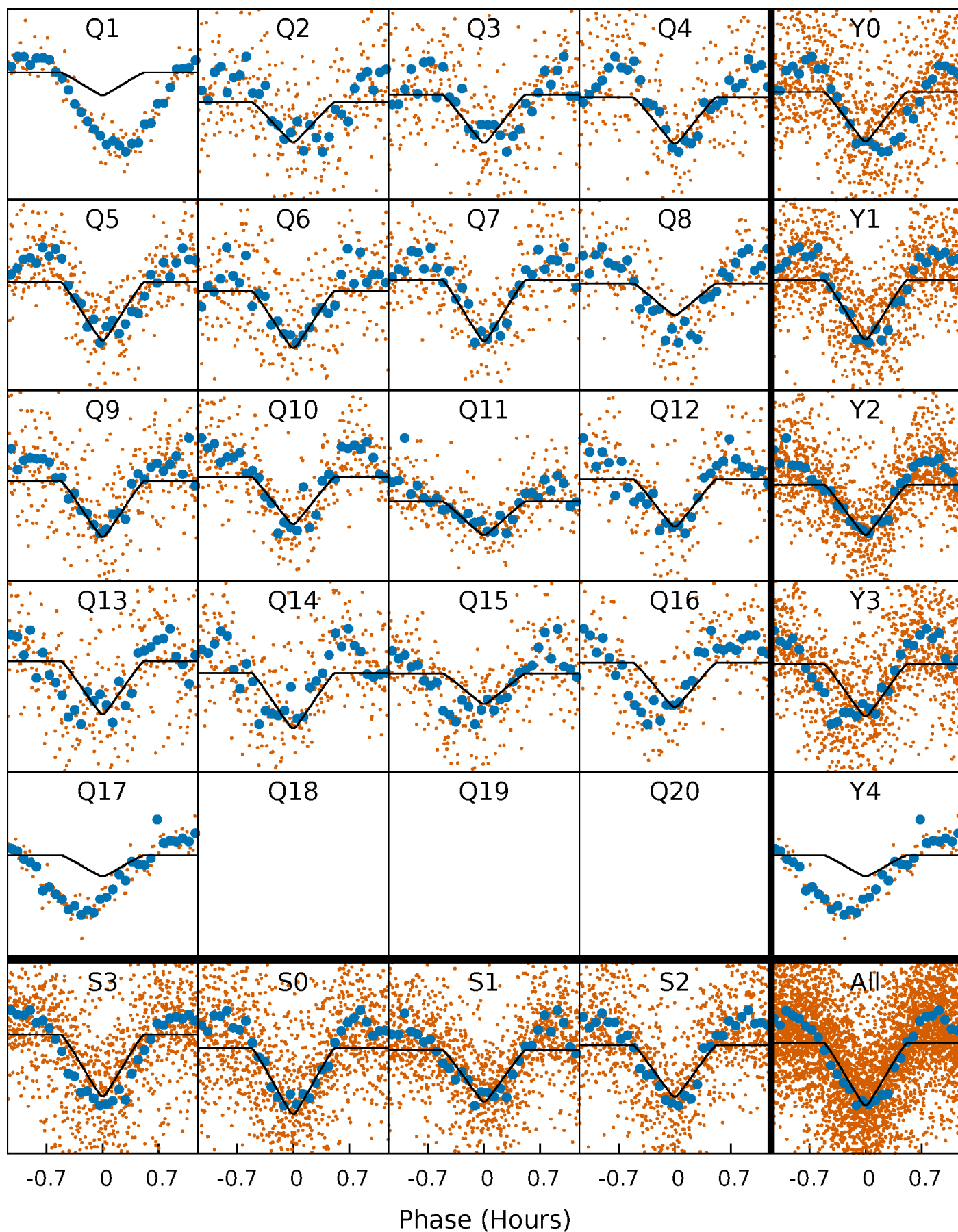
PDC Quarter-Phased Transit Curves

TCE 007618364-01 P= 1.302077 Days $T_0=132.556063$ (BKJD)



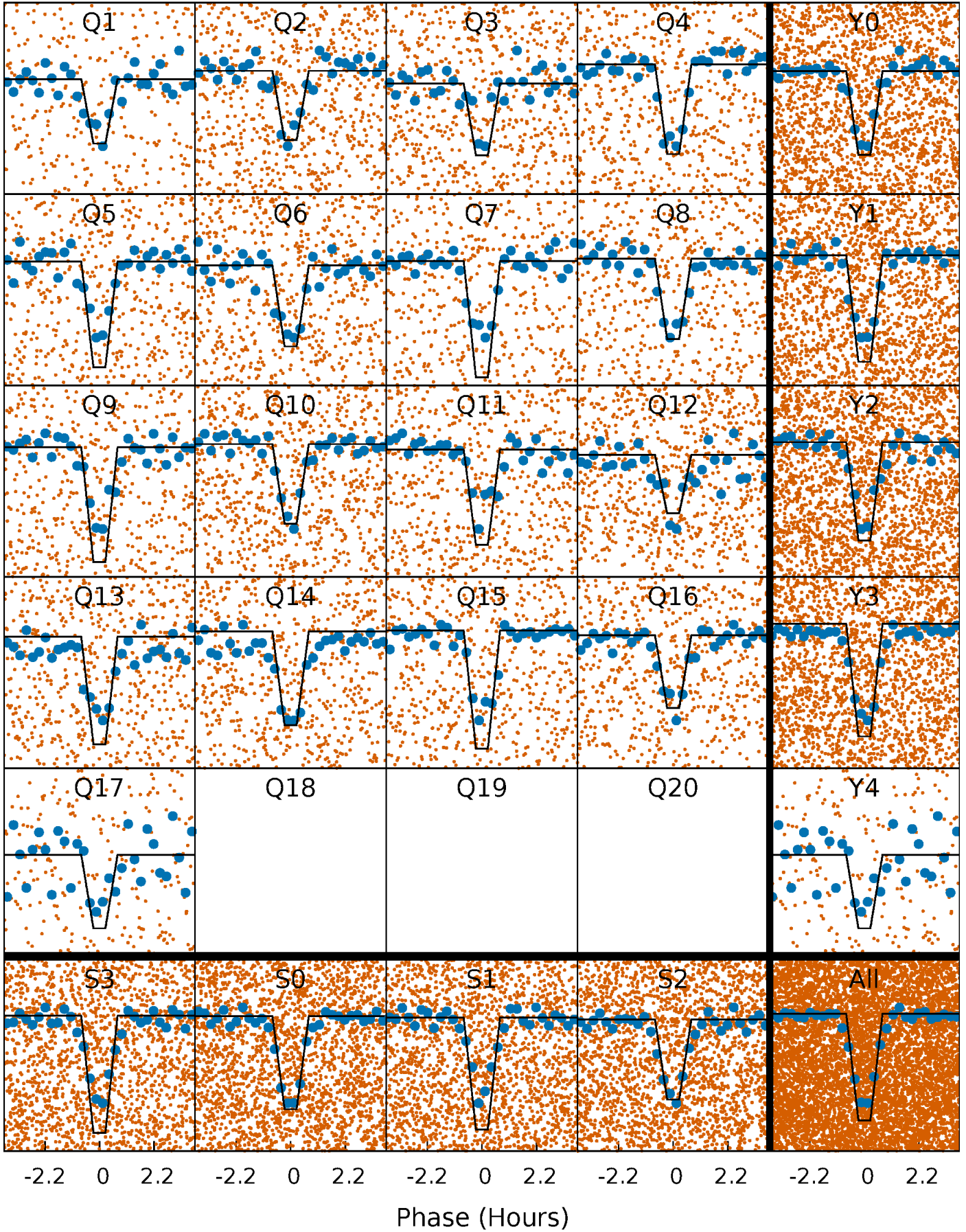
DV Quarter-Phased Transit Curves

TCE 007618364-01 P= 1.302077 Days $T_0=132.556063$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

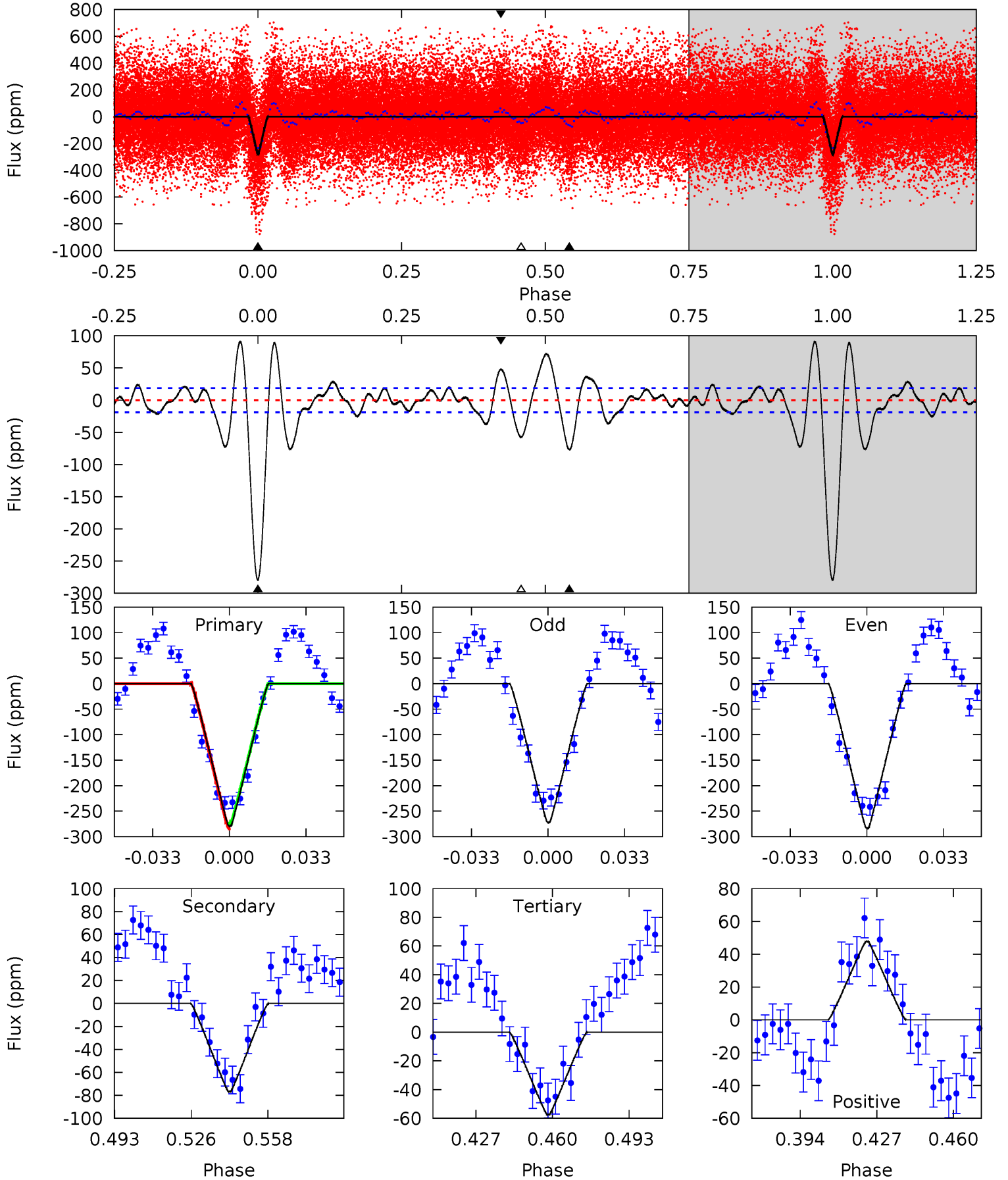
TCE 007618364-01 P= 1.302058 Days $T_0=132.566536$ (BKJD)



DV Model-Shift Uniqueness Test

007618364-01, P = 1.302077 Days, E = 131.253986 Days

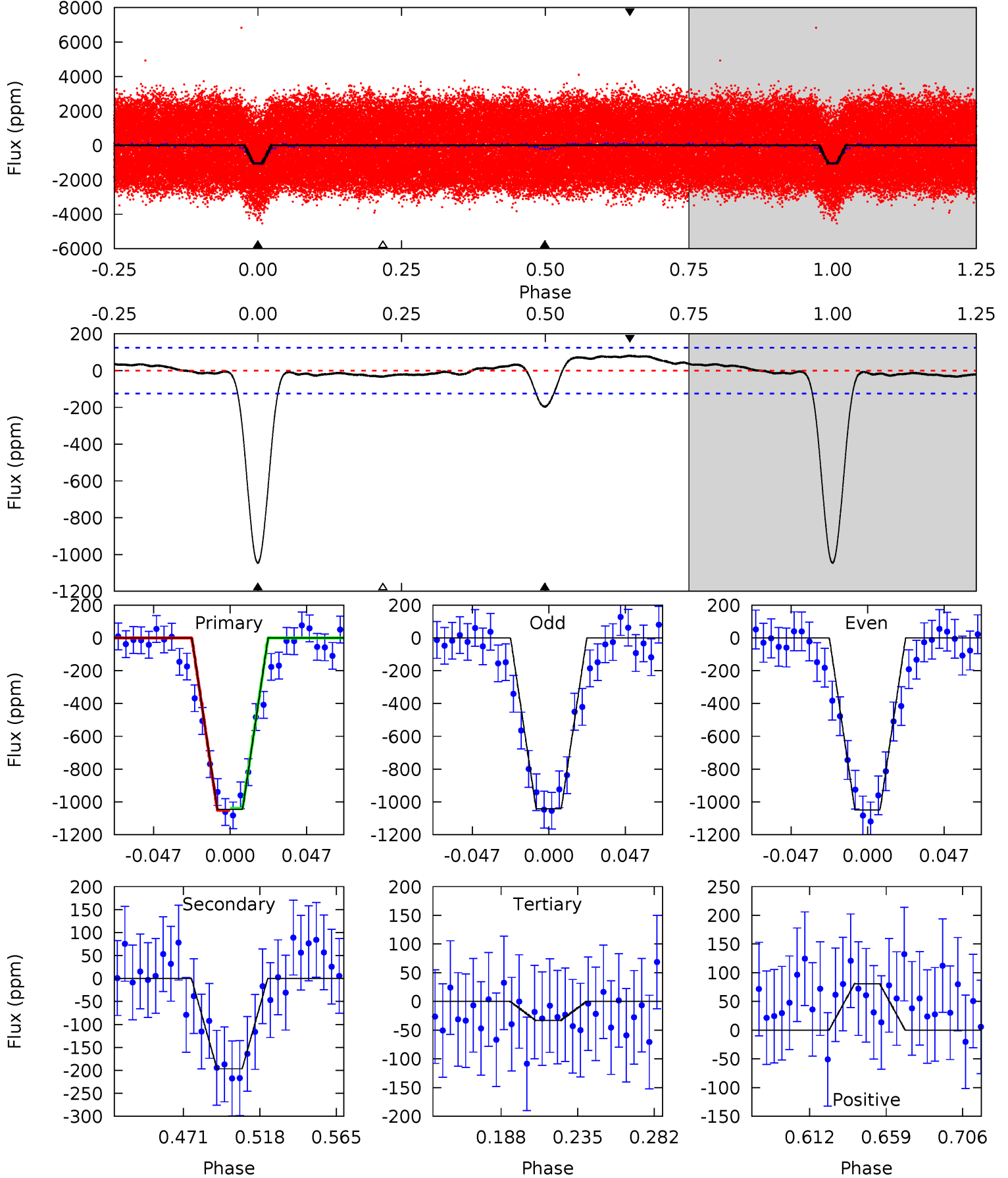
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
71.2	19.6	14.7	12.2	4.79	2.13	6.42	56.5	59.0	4.92	7.39	1.45	1.09	0.25	1.36



Alt Model-Shift Uniqueness Test

007618364-01, P = 1.302058 Days, E = 131.264478 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
39.7	7.45	1.25	3.07	4.72	1.99	1.36	38.4	36.6	6.20	4.38	0.13	0.99	0.07	0.21



Stellar Parameters For KIC 007618364

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7757^{+211}_{-316}	$3.837^{+0.344}_{-0.108}$	$-0.100^{+0.200}_{-0.350}$	$2.783^{+0.377}_{-1.132}$	$1.941^{+0.088}_{-0.496}$	$0.127^{+0.340}_{-0.035}$
	+3%/-4%	+9%/-3%	+200%/-350%	+14%/-41%	+5%/-26%	+268%/-27%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007618364-01 / KOI 7844.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-77 ± 4	$4.90^{+1.11}_{-1.12}$	4589^{+291}_{-449}	5159^{+445}_{-414}	$1.438^{+0.887}_{-0.467}$
Alt.	-196 ± 26	$10.21^{+1.45}_{-2.16}$	4593^{+297}_{-450}	4513^{+277}_{-309}	$0.882^{+0.446}_{-0.233}$

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 $A_{obs} \gg 1.0$

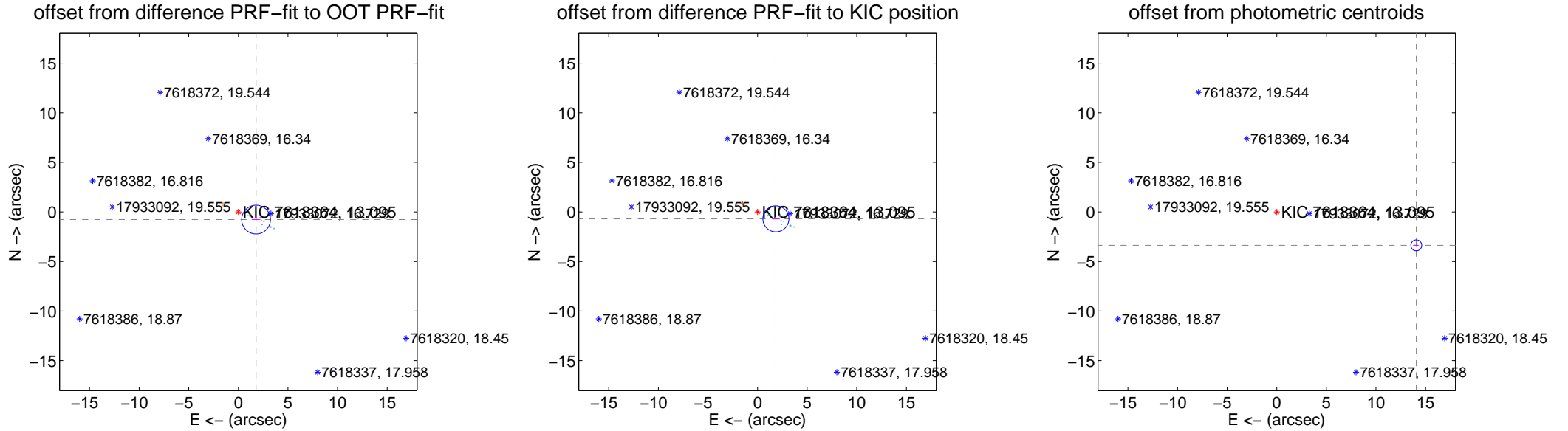
DV Centroid Data

Supplemental centroid analysis for 007618364-01. Kepler magnitude: 13.10. Transit SNR 37.59

There are 10 quarters with good PRF difference image offsets

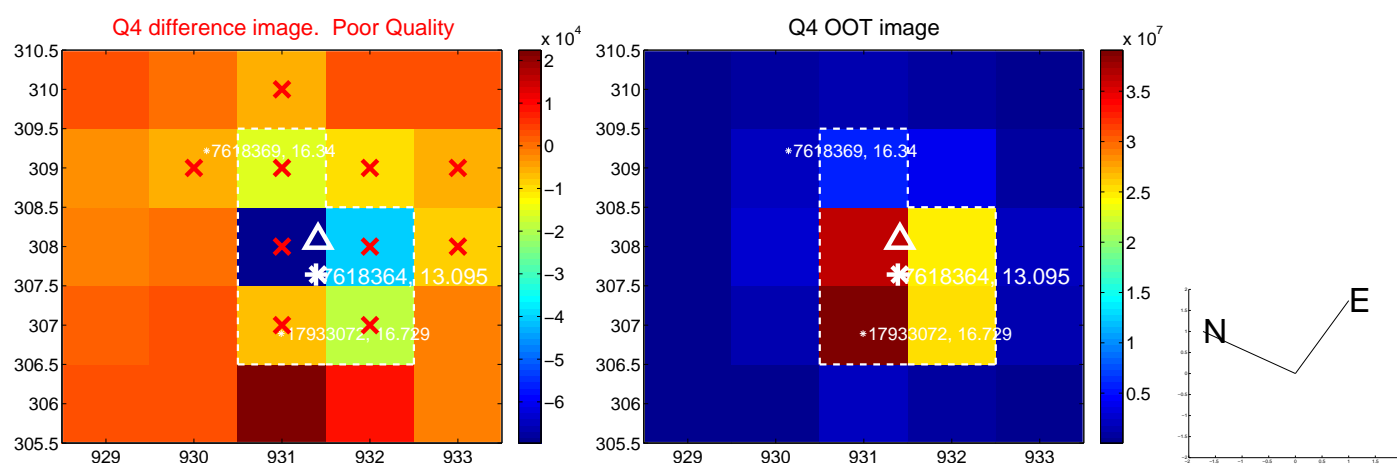
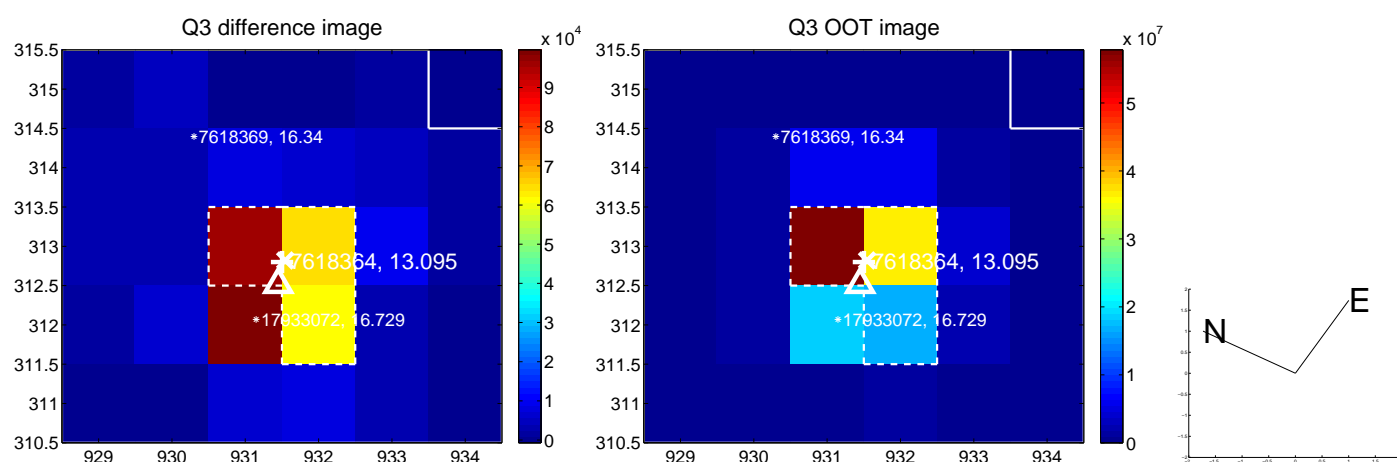
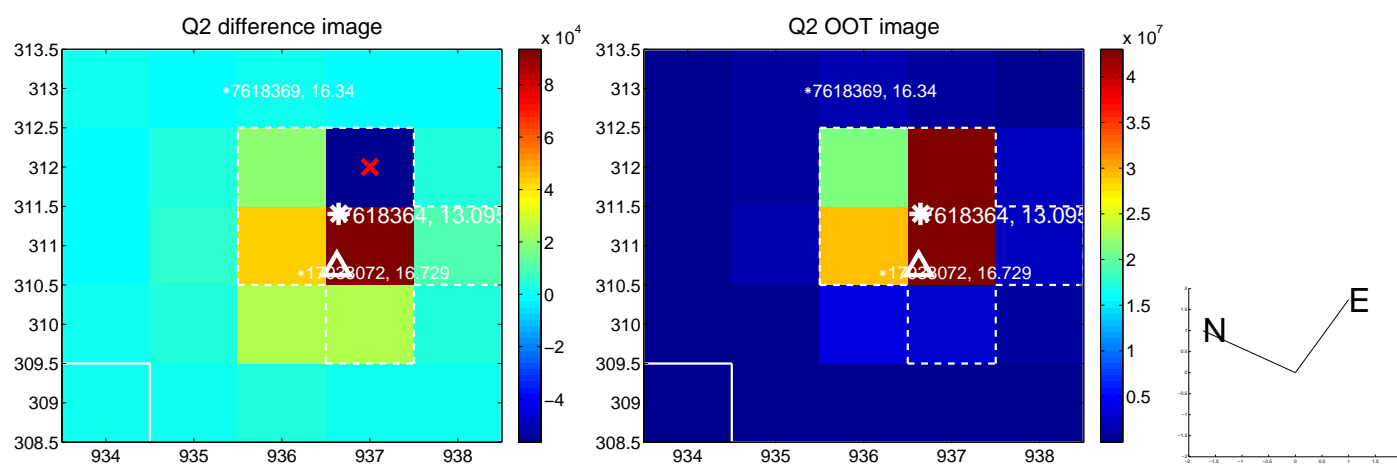
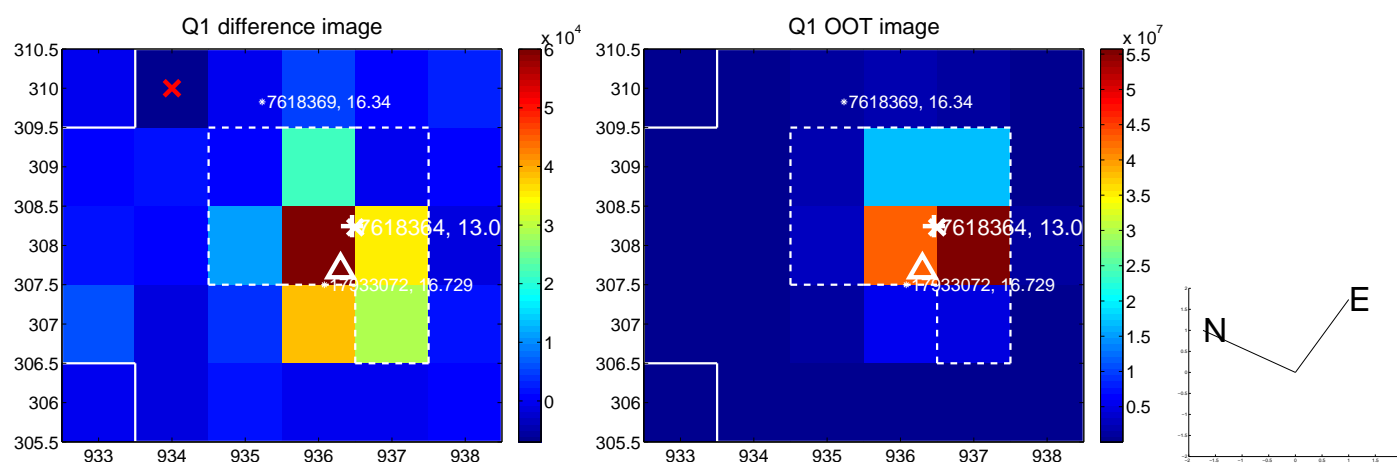
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.946 ± 0.484	4.02	-1.786 ± 0.439	-0.774 ± 0.218
PRF-fit source offset from KIC position	1.977 ± 0.438	4.52	-1.849 ± 0.400	-0.699 ± 0.199
photometric centroid source offset	14.46 ± 0.18	78.89	-14.06 ± 0.18	-3.37 ± 0.16

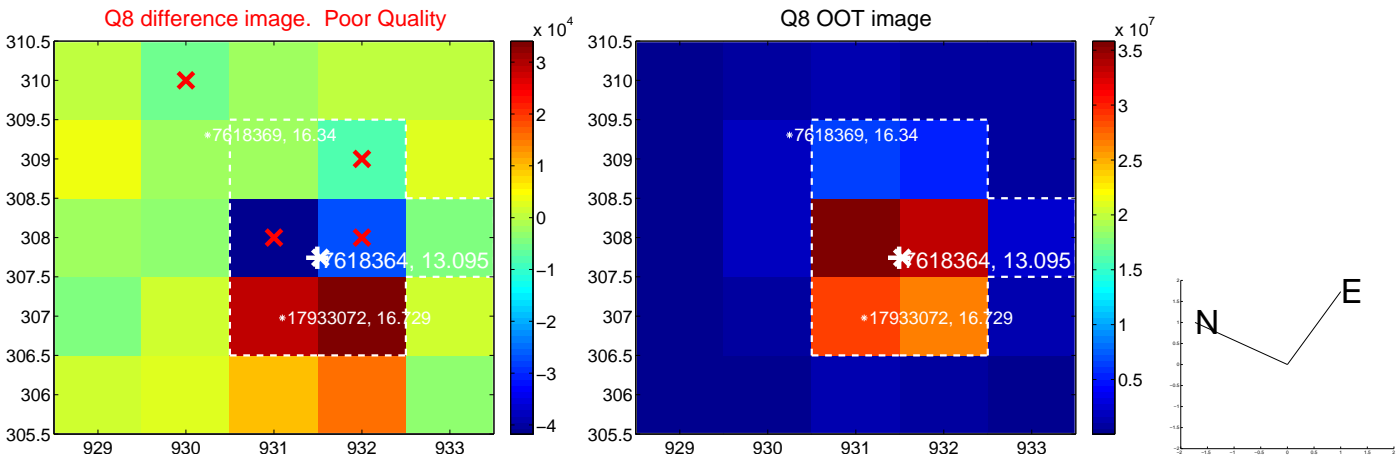
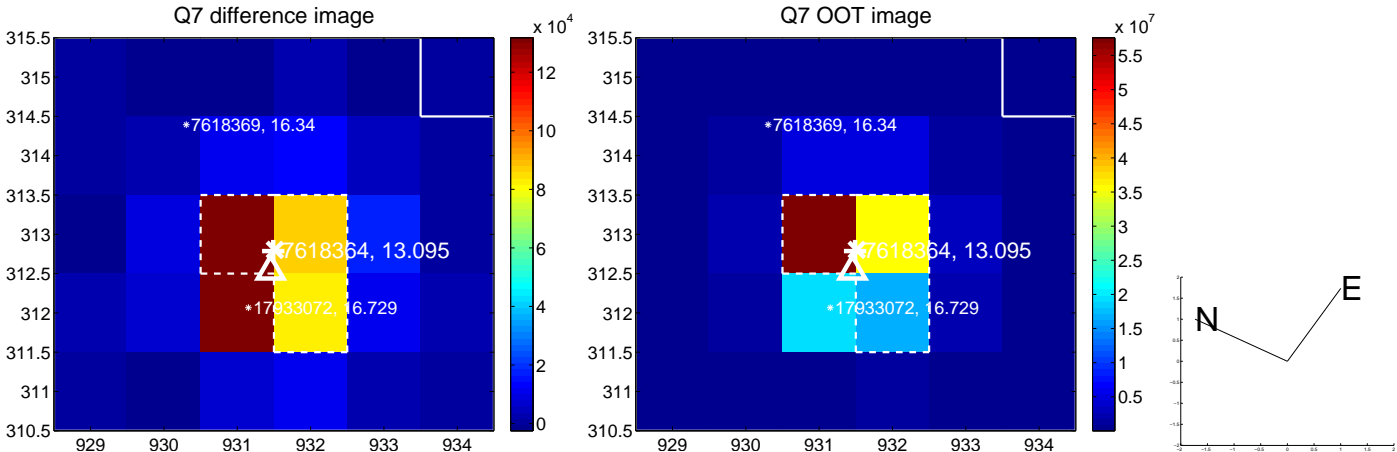
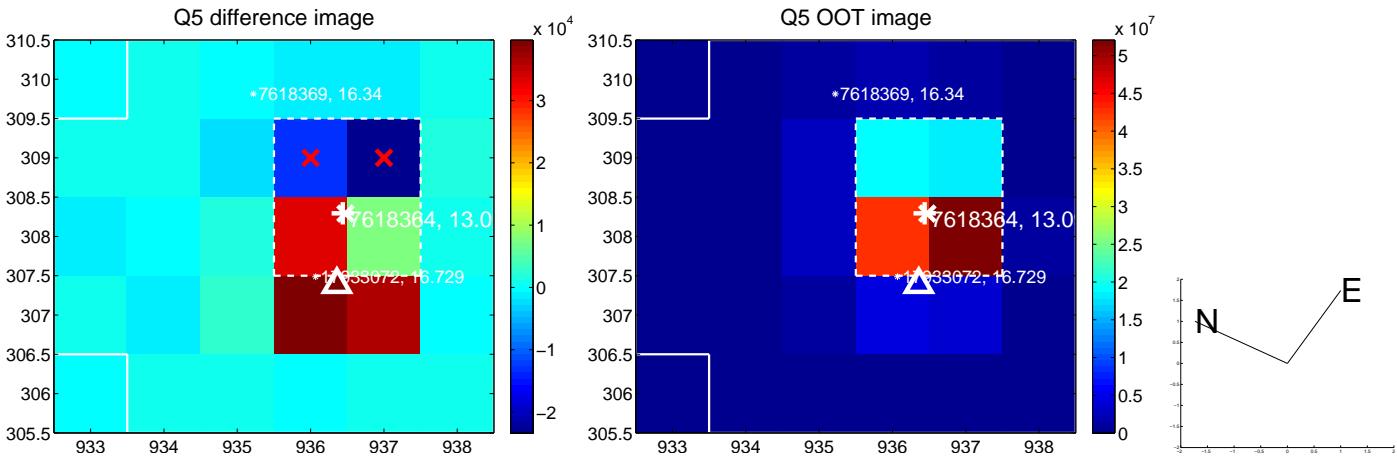


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

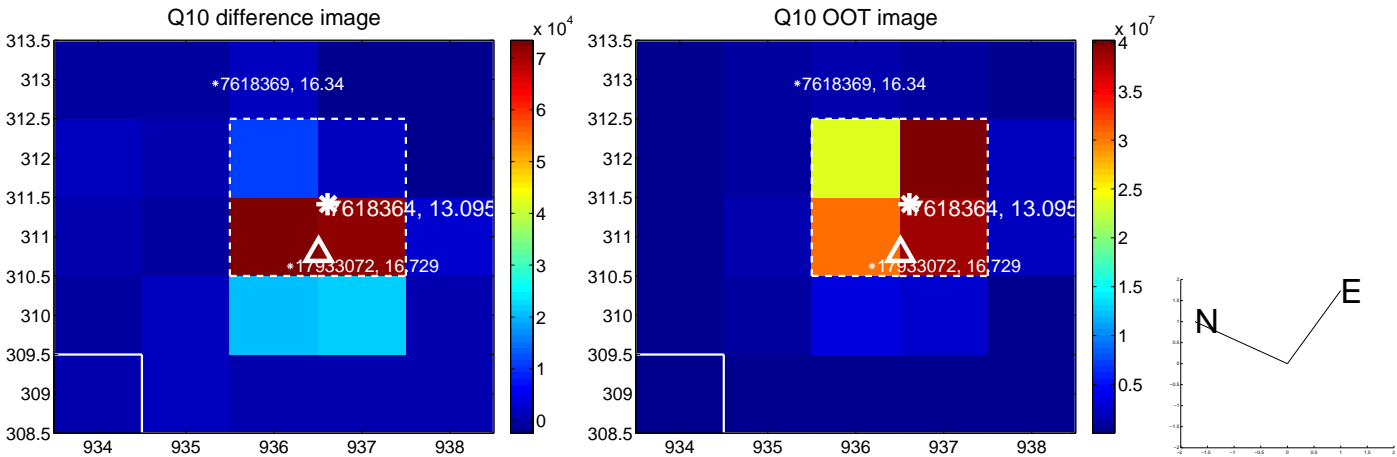
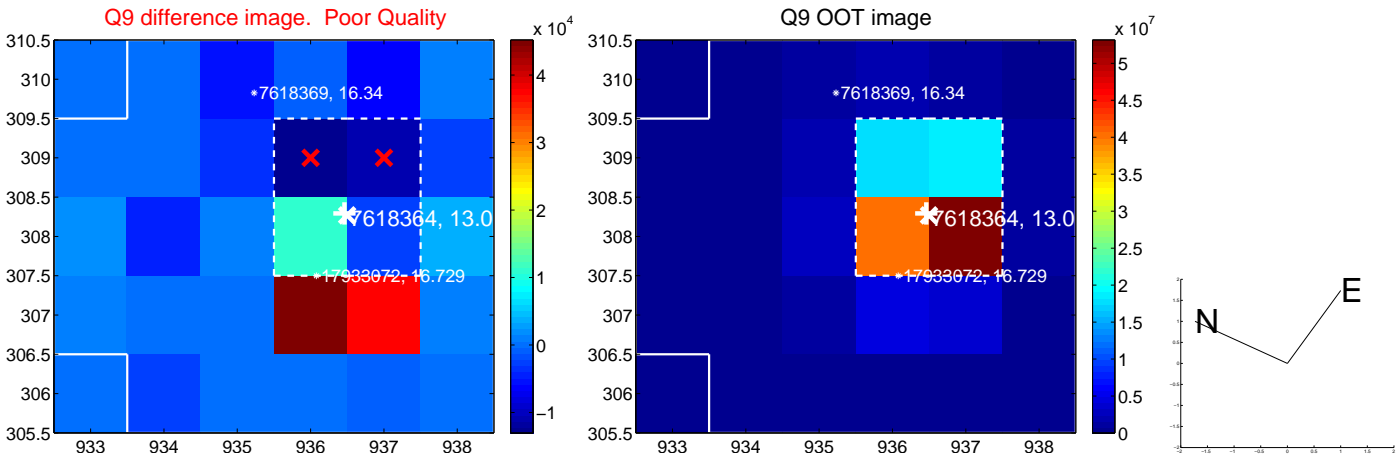
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



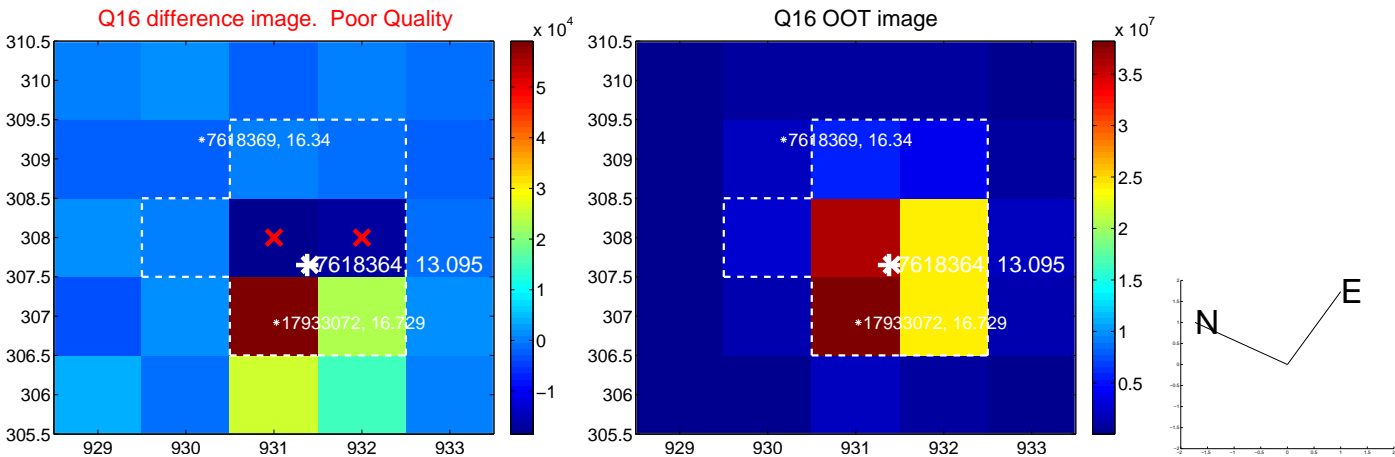
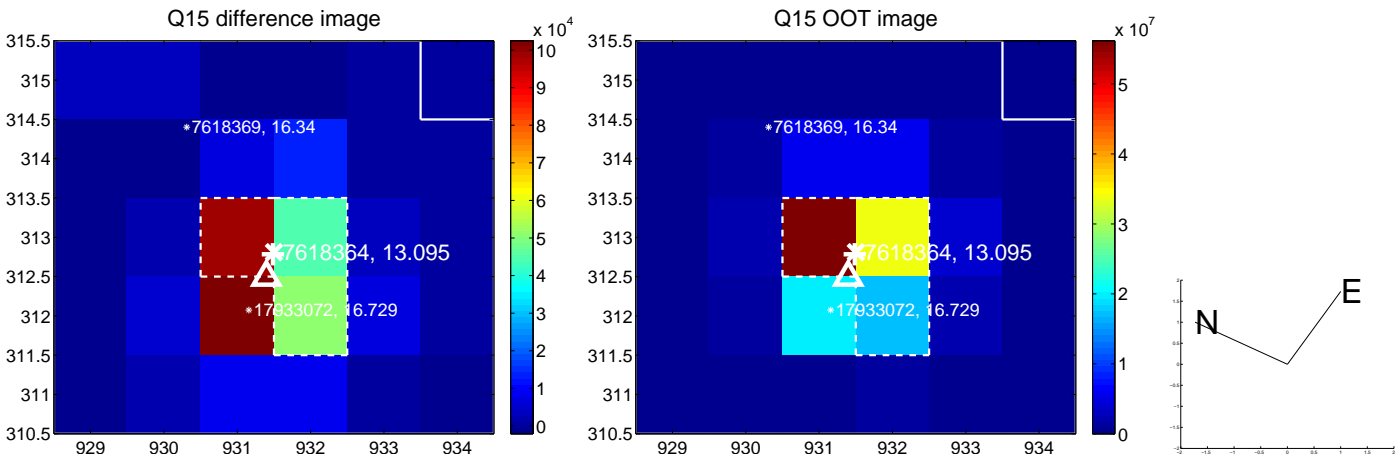
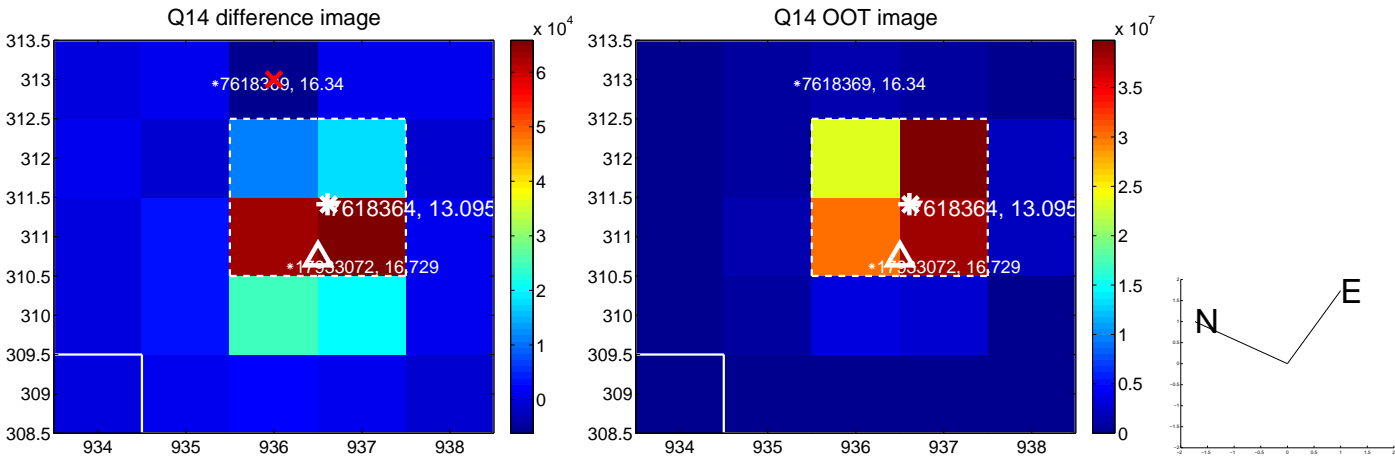
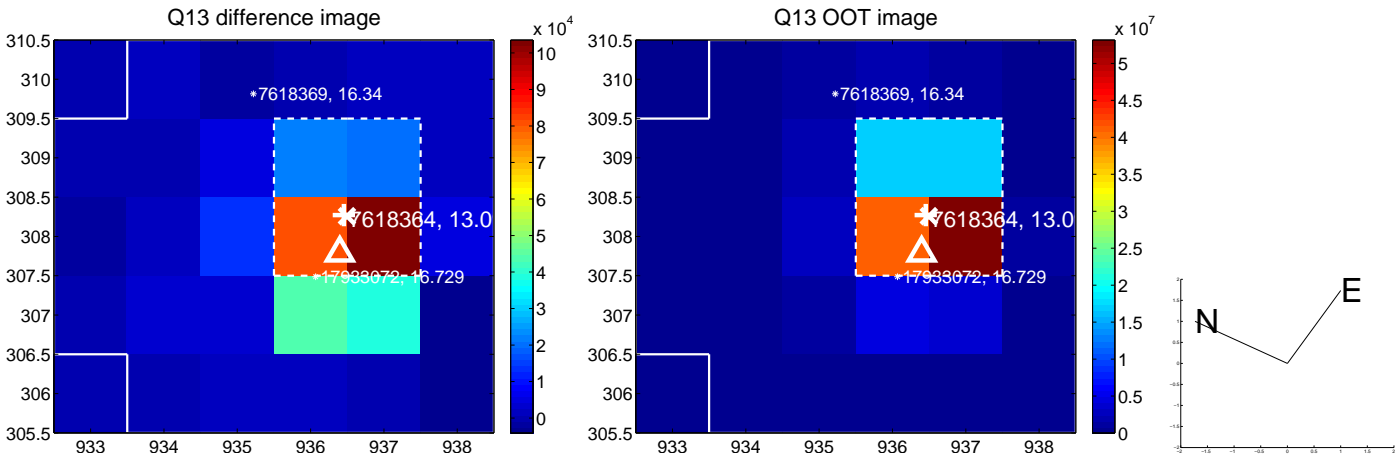
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



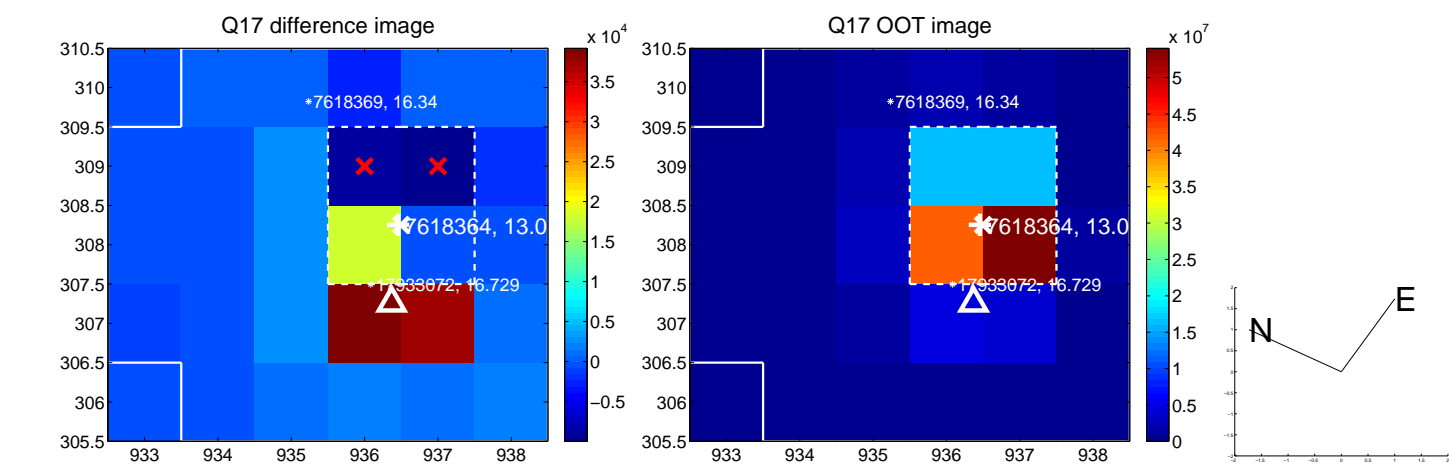
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



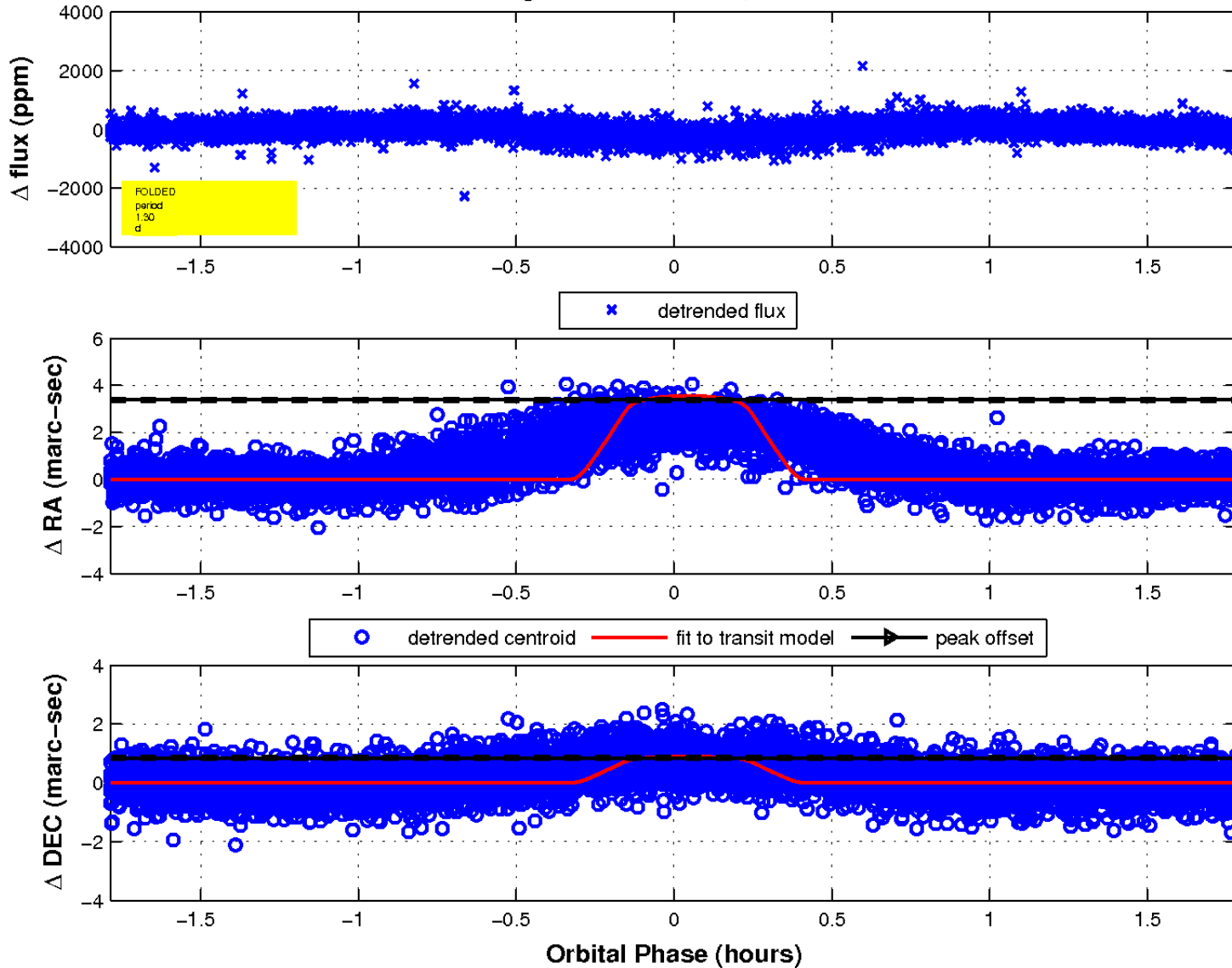
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

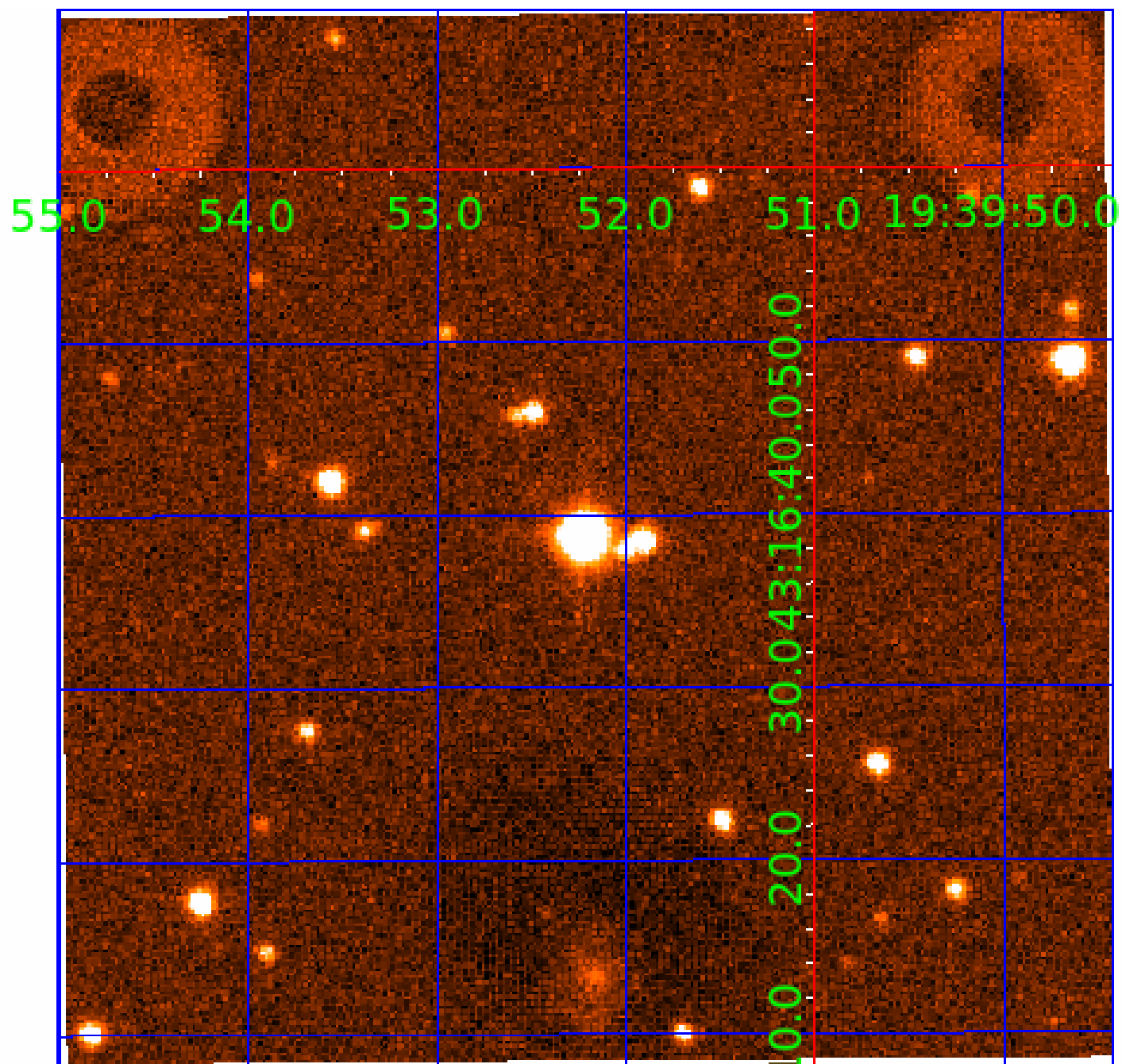


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 007618364

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})
007618364-01	OBS	7844.01	1.302077	132.556063	241.5	0.595	13.4	37.6	2.78	7757	5.25	29636.66
007618364-02	OBS	No	0.544930	131.978445	27.0	0.621	8.7	6.8	2.78	7757	1.58	94672.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007618364-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—CENT_UNRESOLVED_OFFSET
007618364-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT

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

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

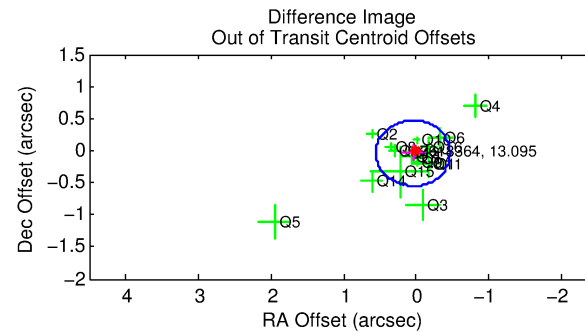
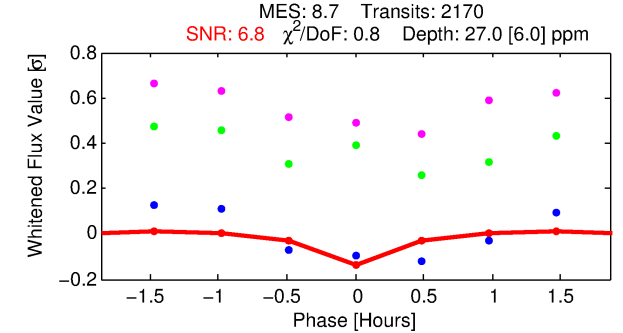
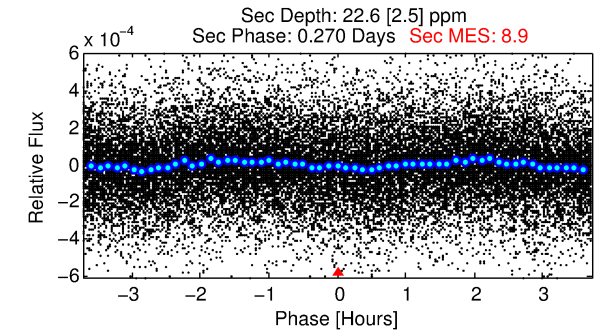
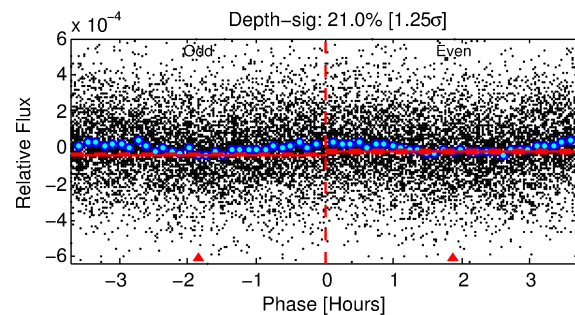
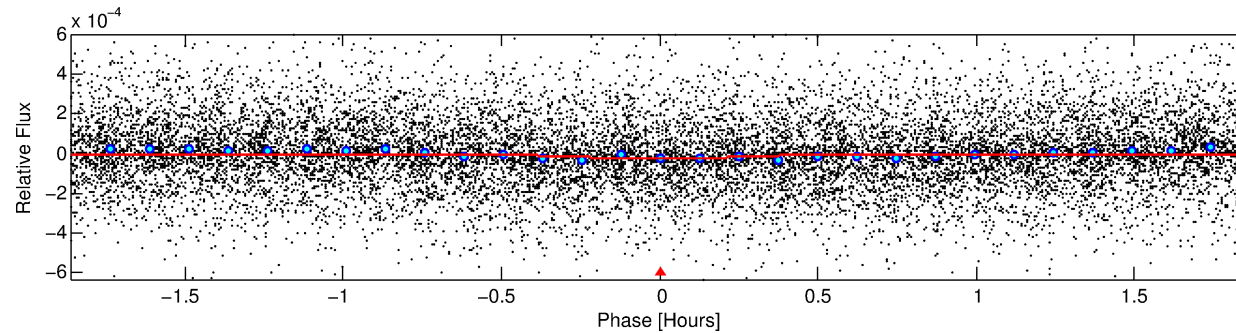
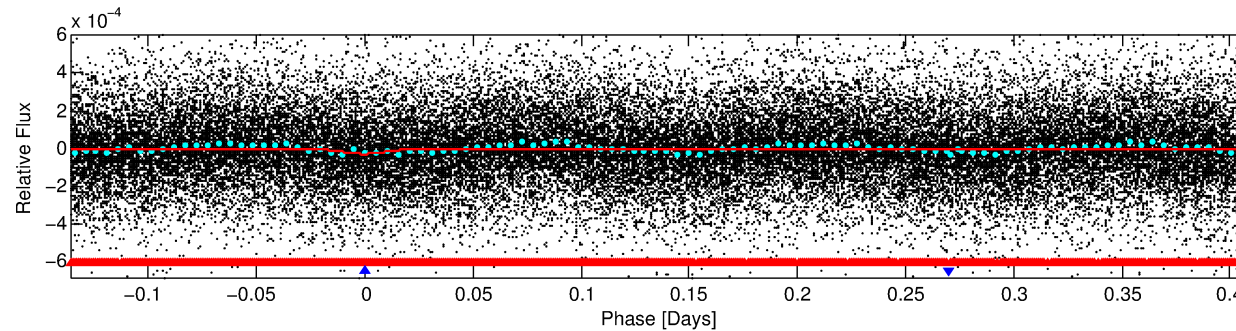
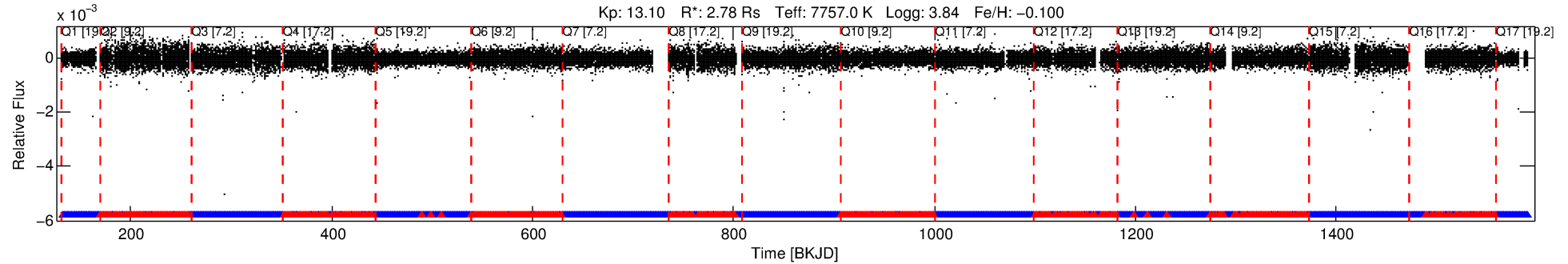
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007618364-02

No Significant Match Found

DV One-Page Summary

KIC: 7618364 Candidate: 2 of 2 Period: 0.545 d



DV Fit Results:

Period = 0.54493 [0.00002] d
Epoch = 131.9784 [0.0020] BKJD
Rp/R* = 0.0052 [0.0014]
a/R* = 4.89 [7.14]
b = 0.70 [1.10]
Seff = 94672.62 [58278.11]
Teq = 4473 [688] K
Rp = 1.58 [0.78] Re
a = 0.0163 [0.0062] AU
Ag = 1.32 [1.08] [0.30 σ]
Teffp = 7409 [1080] K [2.29 σ]

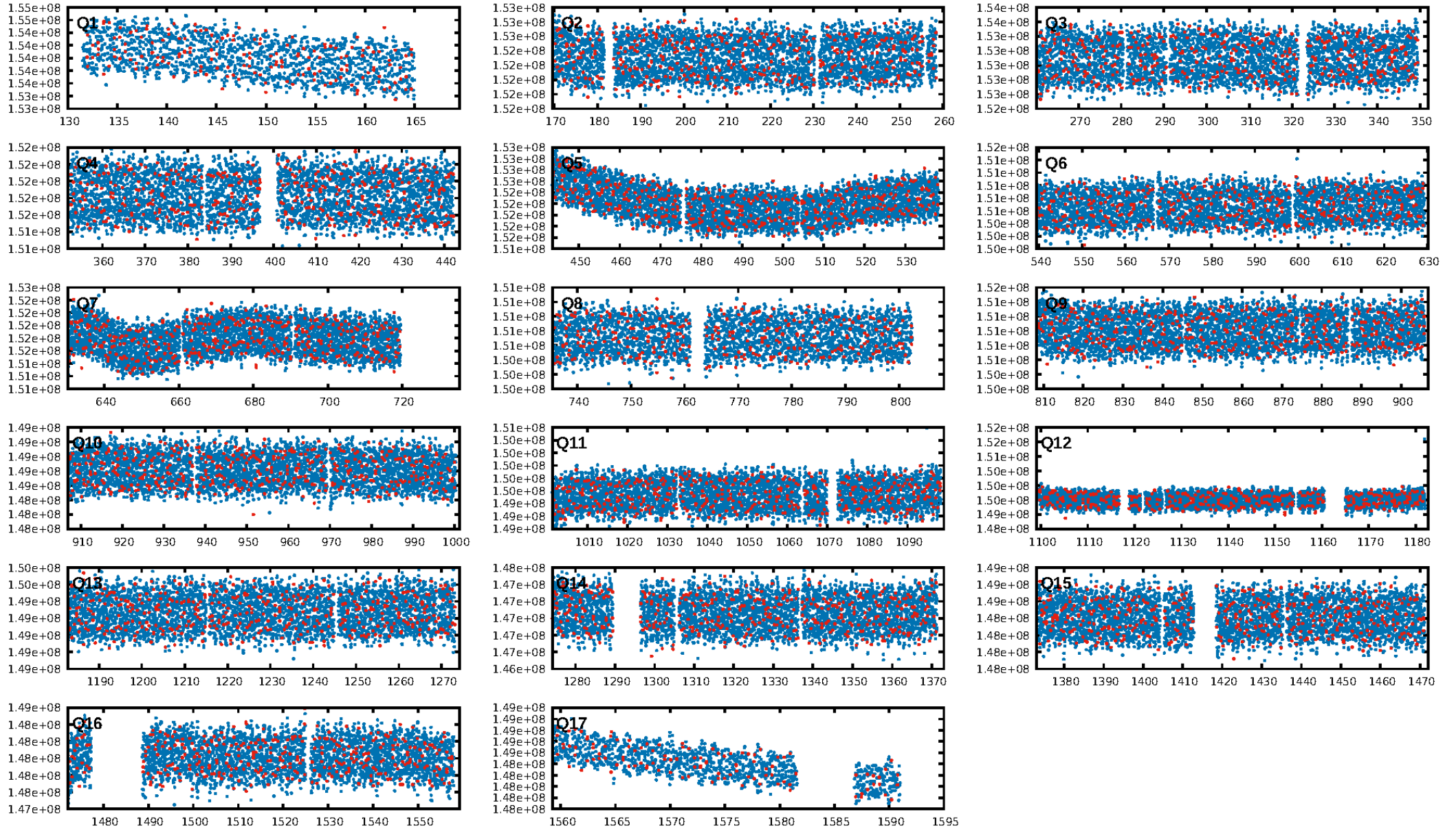
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [21.13 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.63e-16
RollingBand-fgt: 0.70 [1451/2073]
GhostDiagnostic-chr: 0.8924
Centroid-sig: 30.6%
Centroid-so: 0.813 arcsec [1.00 σ]
OotOffset-rm: 0.060 arcsec [0.35 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.082 arcsec [0.71 σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.47 [8/17]
DiffImageOverlap-fno: 1.00 [17/17]

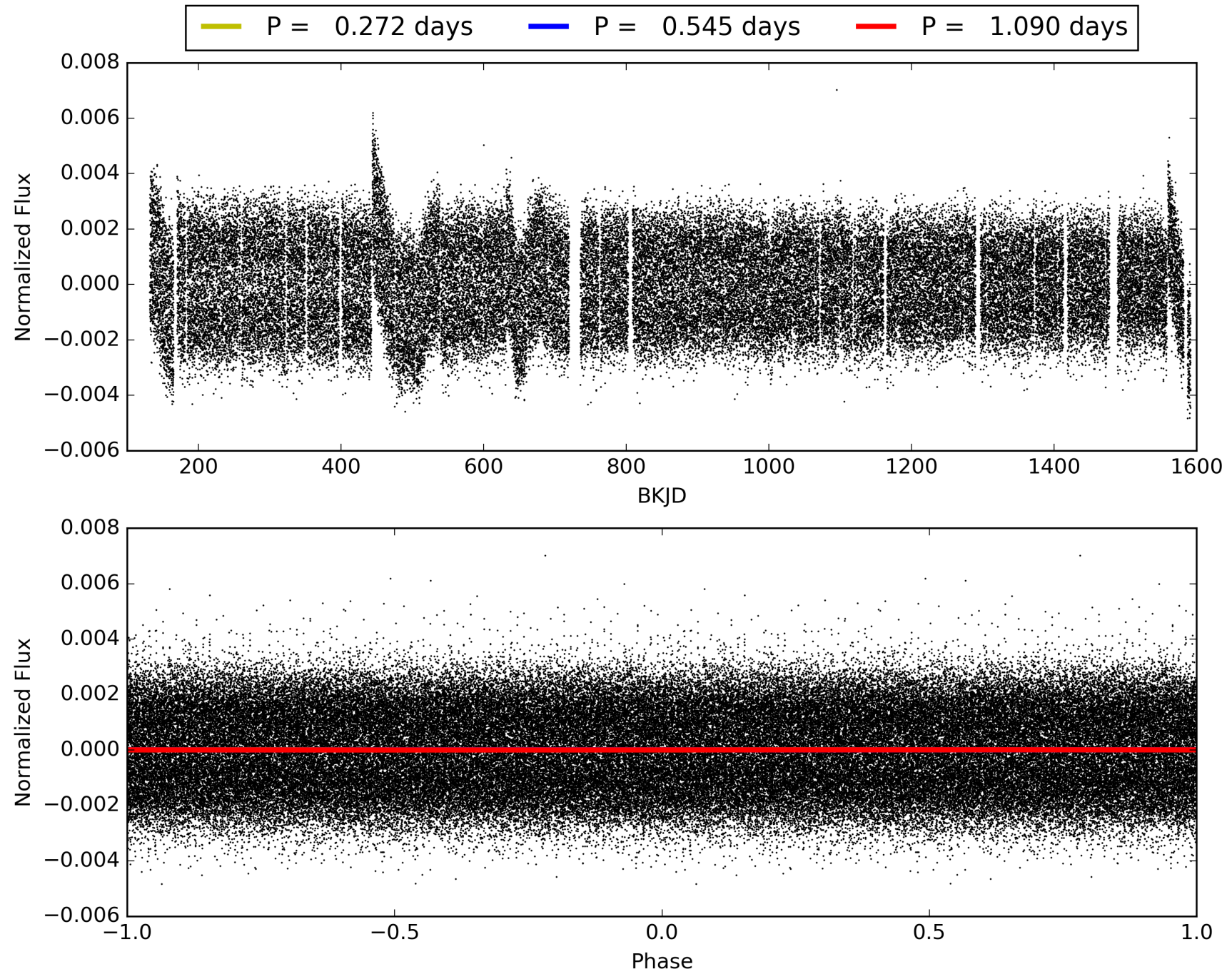
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:18:29 Z

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

TCE 007618364-02, PDC Light Curves

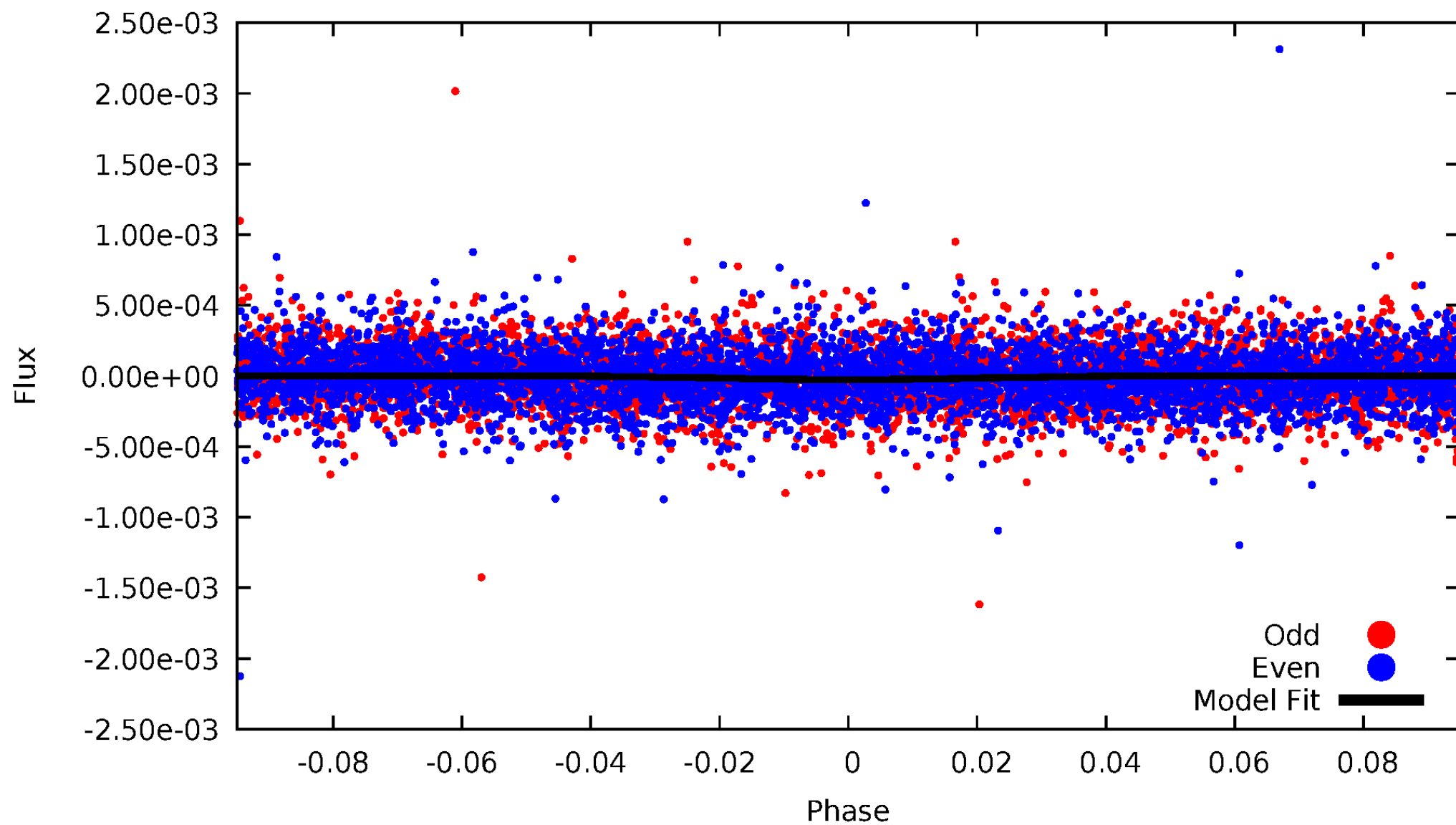


TCE 007618364-02



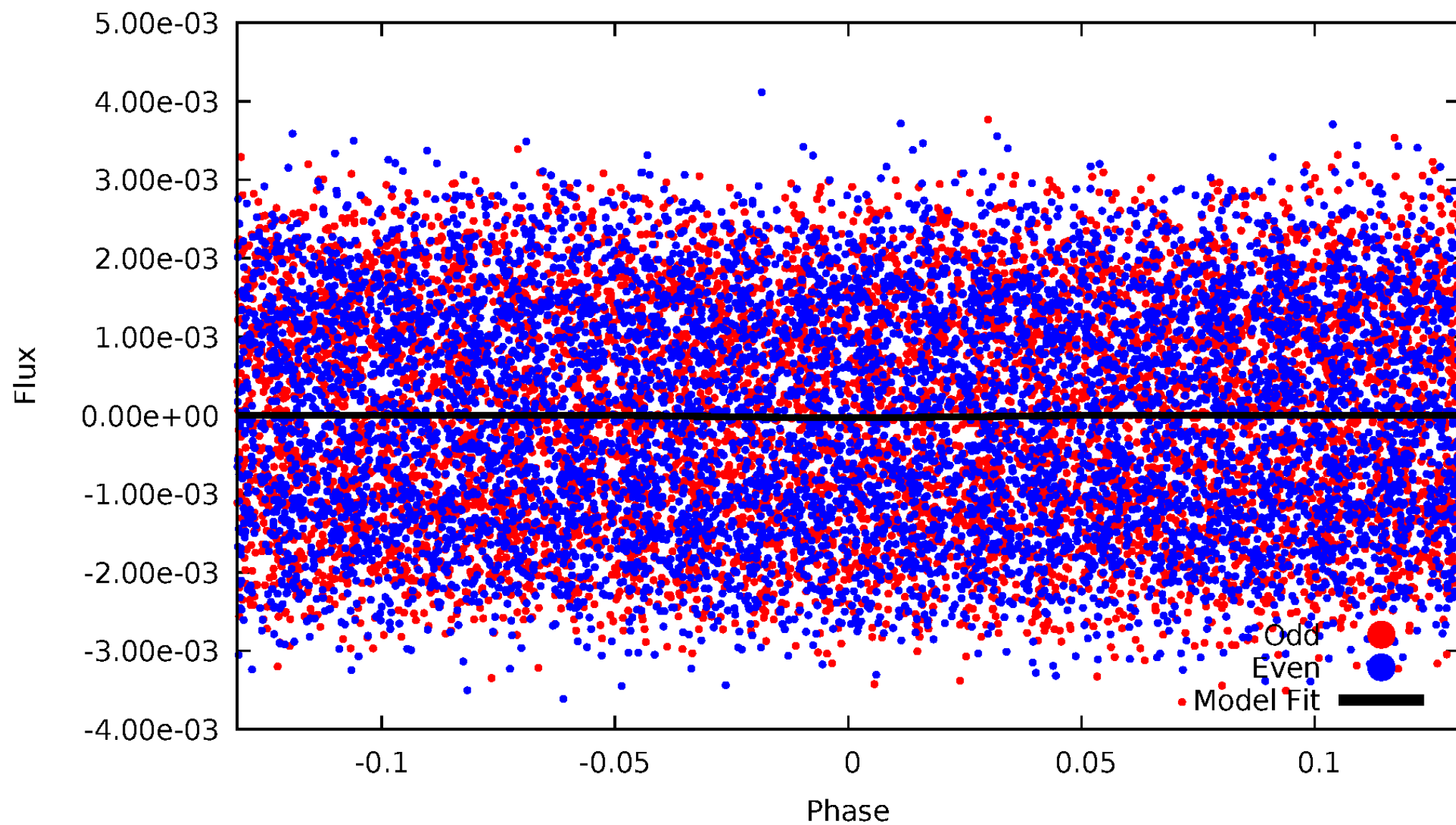
DV Odd/Even

TCE 007618364-02



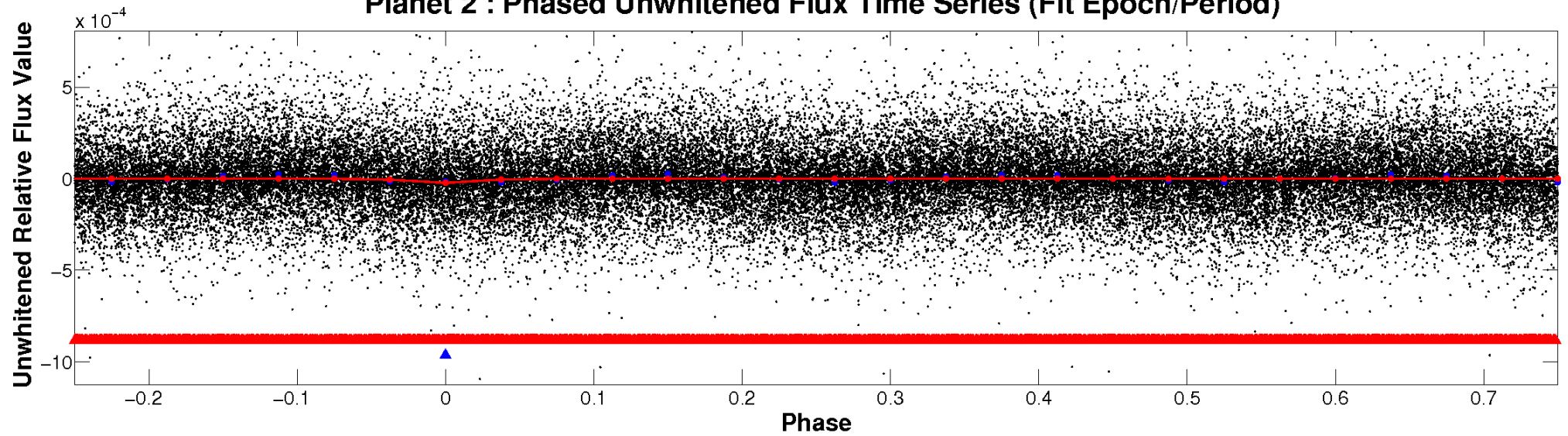
ALT Odd/Even

TCE 007618364-02

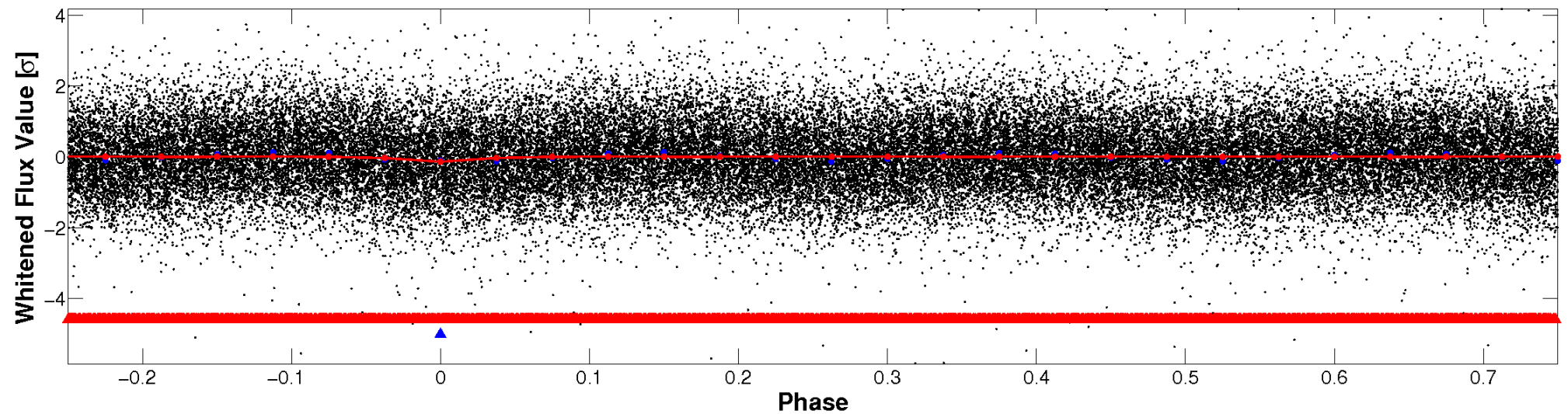


Non-Whitened Vs. Whitened Light Curve

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

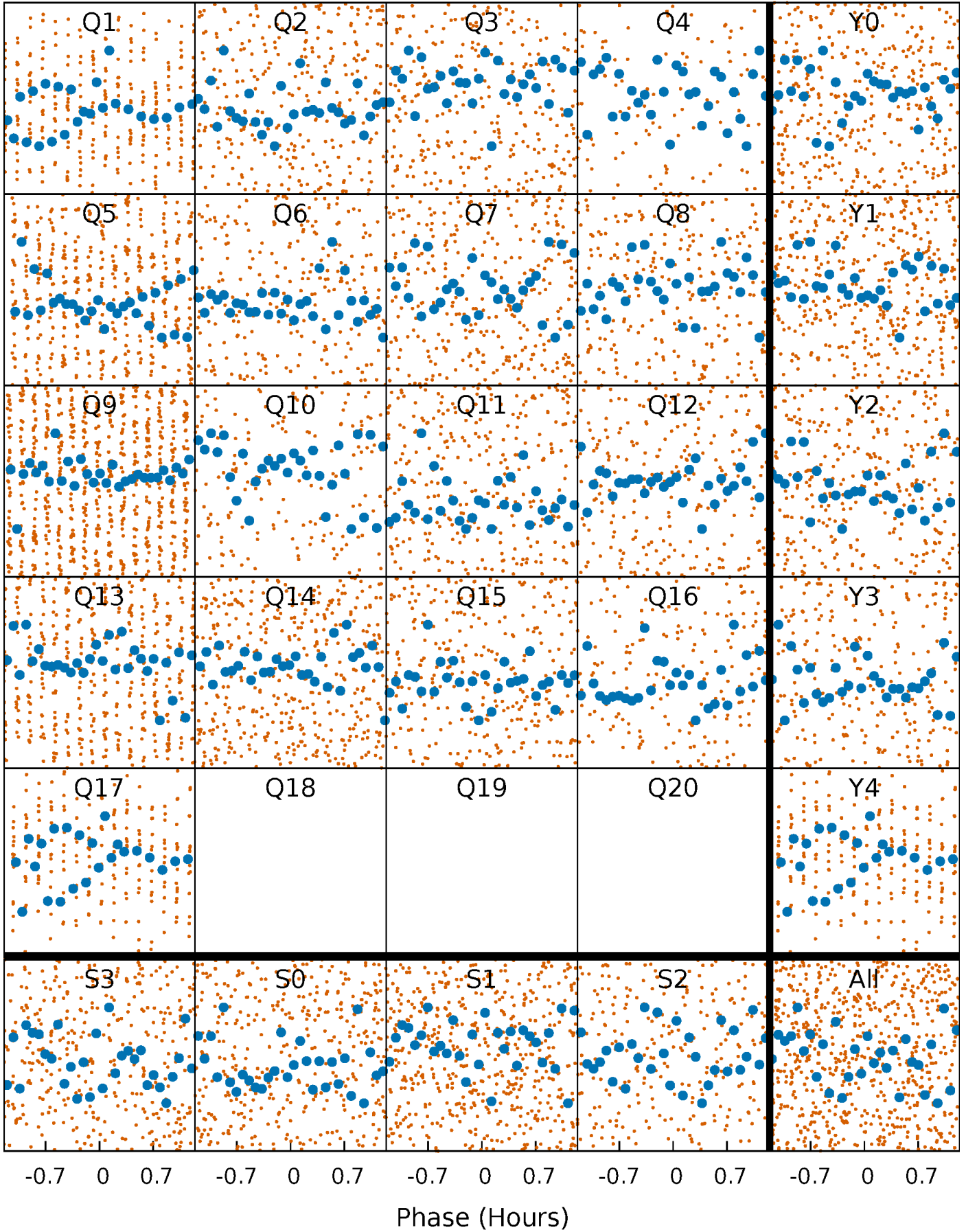


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



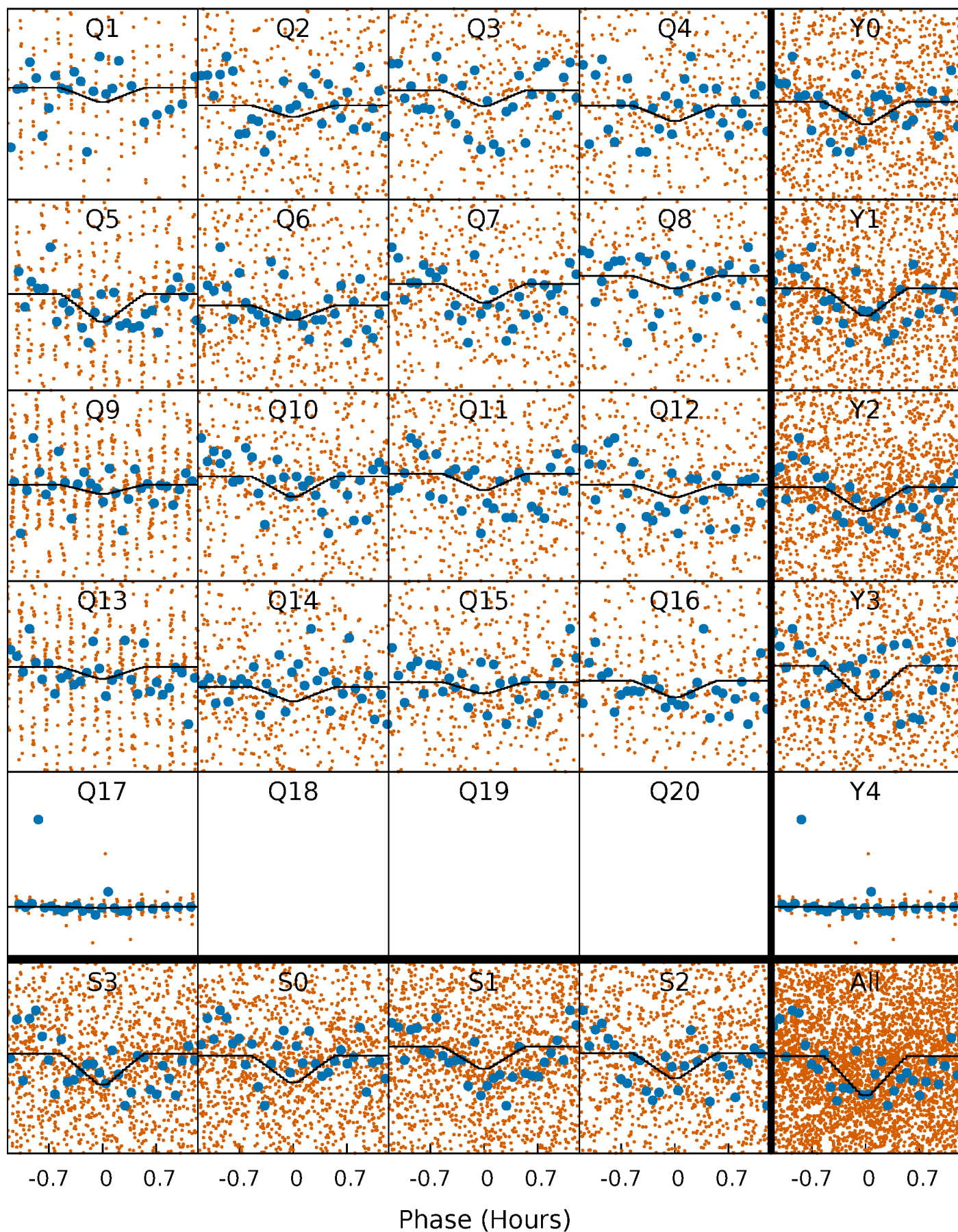
PDC Quarter-Phased Transit Curves

TCE 007618364-02 P= 0.544930 Days $T_0=131.978445$ (BKJD)



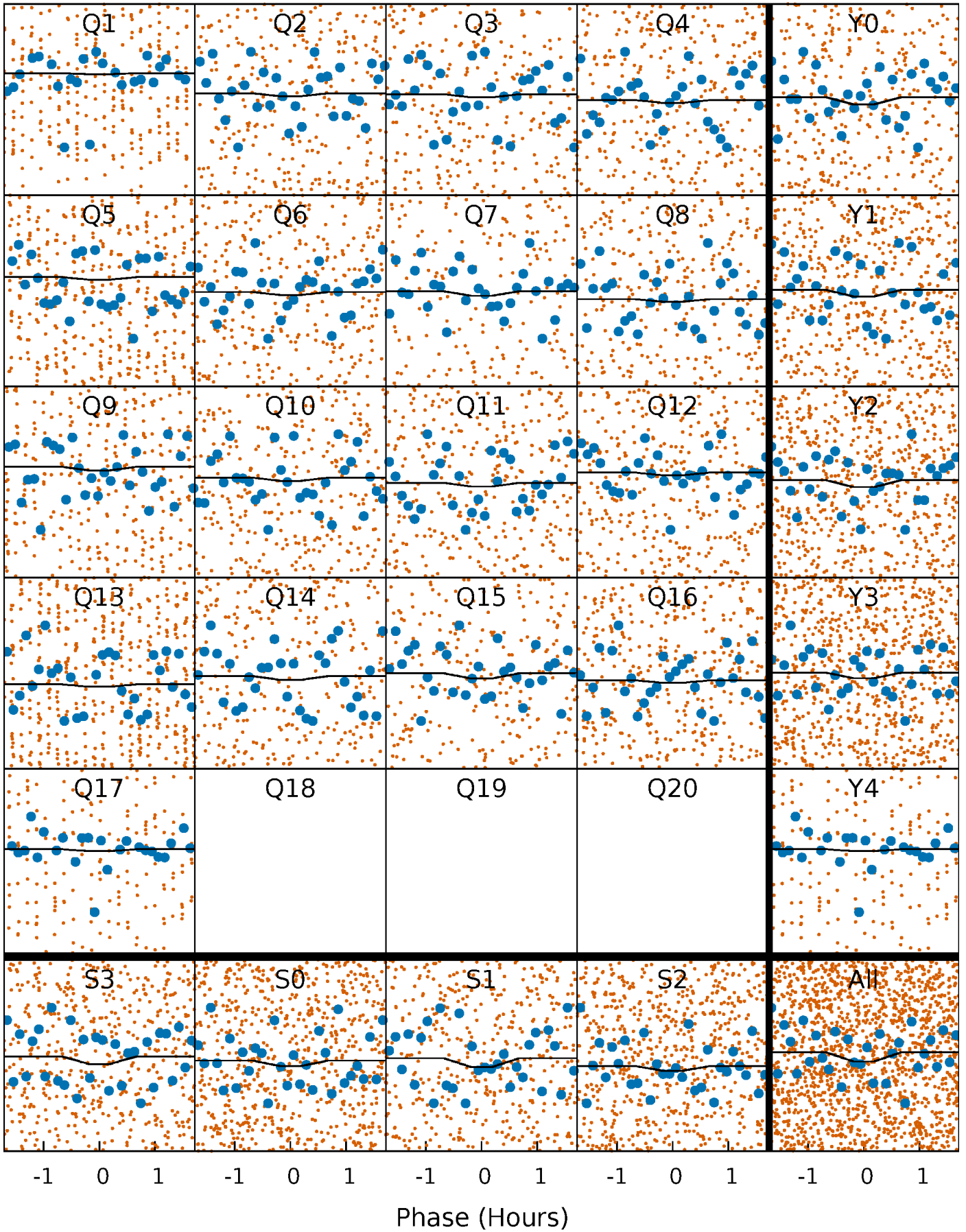
DV Quarter-Phased Transit Curves

TCE 007618364-02 P= 0.544930 Days $T_0=131.978445$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

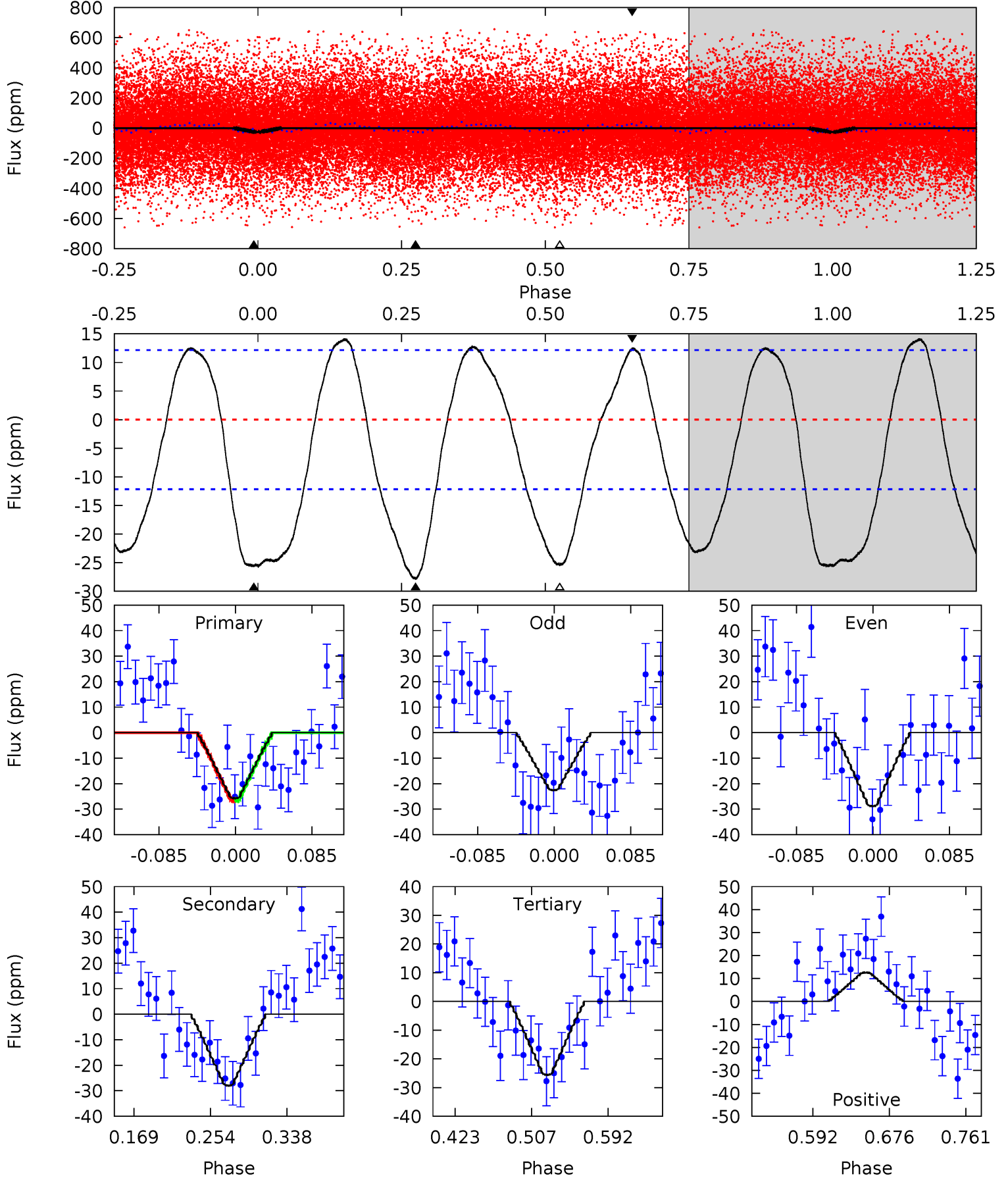
TCE 007618364-02 P= 0.544930 Days $T_0=131.977918$ (BKJD)



DV Model-Shift Uniqueness Test

007618364-02, P = 0.544930 Days, E = 131.433515 Days

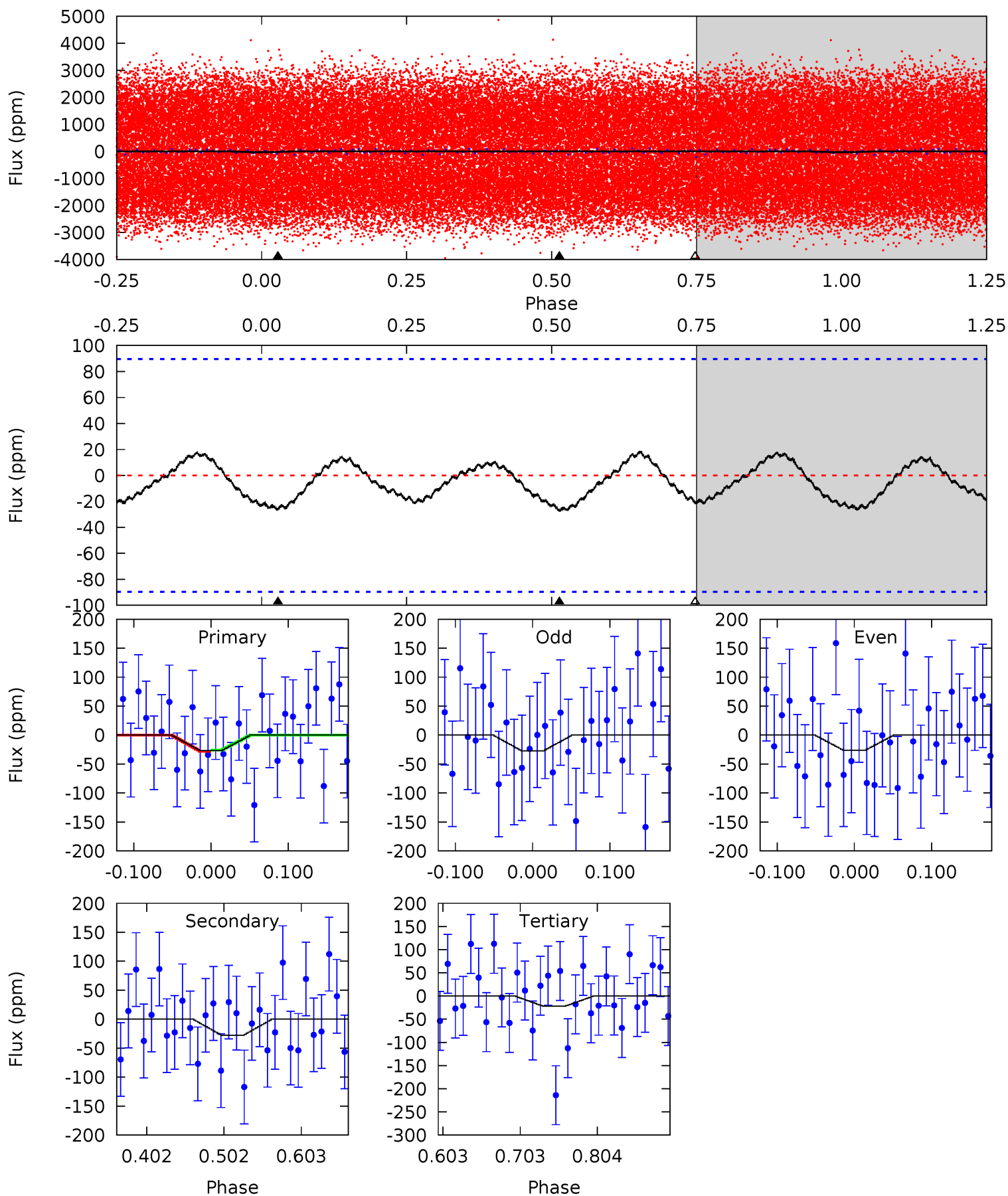
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.74	10.6	9.68	4.76	4.60	1.72	4.89	0.06	4.98	0.91	5.83	1.19	0.91	0.34	0.01



Alt Model-Shift Uniqueness Test

007618364-02, P = 0.544930 Days, E = 131.432988 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.37	1.42	1.13	0	4.56	1.64	0.60	0.24	1.37	0.29	1.42	0.03	0.88	0.40	0.05



Stellar Parameters For KIC 007618364

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7757^{+211}_{-316}	$3.837^{+0.344}_{-0.108}$	$-0.100^{+0.200}_{-0.350}$	$2.783^{+0.377}_{-1.132}$	$1.941^{+0.088}_{-0.496}$	$0.127^{+0.340}_{-0.035}$
	+3%/-4%	+9%/-3%	+200%/-350%	+14%/-41%	+5%/-26%	+268%/-27%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007618364-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-28 ± 3	$1.44^{+0.52}_{-0.44}$	6129^{+393}_{-593}	7458^{+1918}_{-1257}	$1.905^{+2.034}_{-0.883}$
Alt.	-28 ± 20	$1.46^{+0.50}_{-0.43}$	6135^{+399}_{-580}	7325^{+2751}_{-2678}	$1.801^{+2.718}_{-1.293}$

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

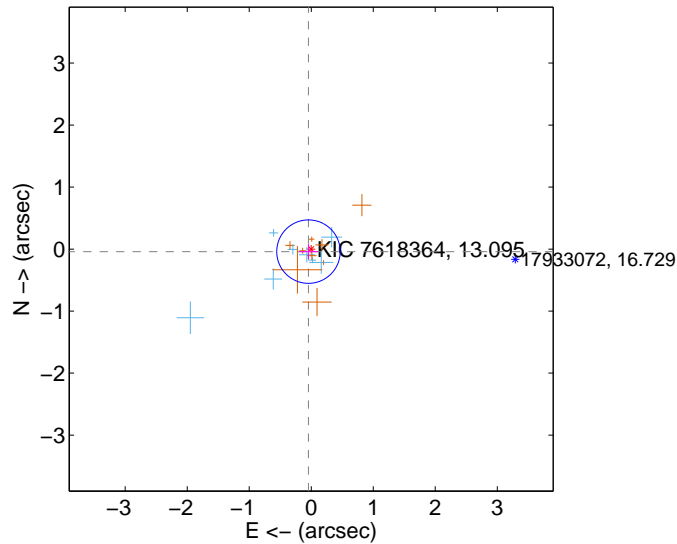
Supplemental centroid analysis for 007618364-02. Kepler magnitude: 13.10. Transit SNR 6.84

There are 8 quarters with good PRF difference image offsets

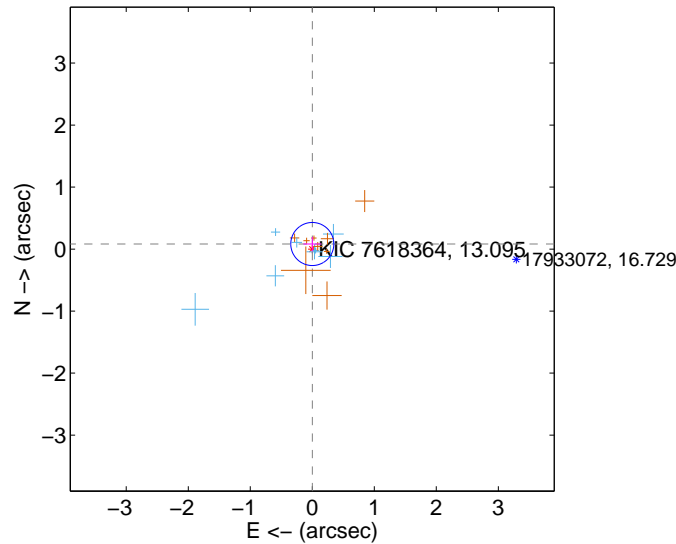
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.060 ± 0.171	0.35	0.045 ± 0.154	-0.041 ± 0.120
PRF-fit source offset from KIC position	0.082 ± 0.116	0.71	-0.000 ± 0.143	0.082 ± 0.116
photometric centroid source offset	0.81 ± 0.81	1.00	-0.26 ± 0.79	0.77 ± 0.82

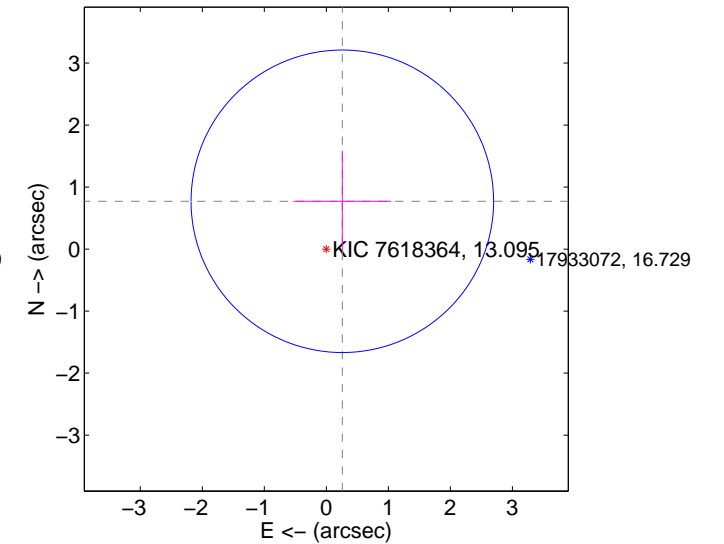
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

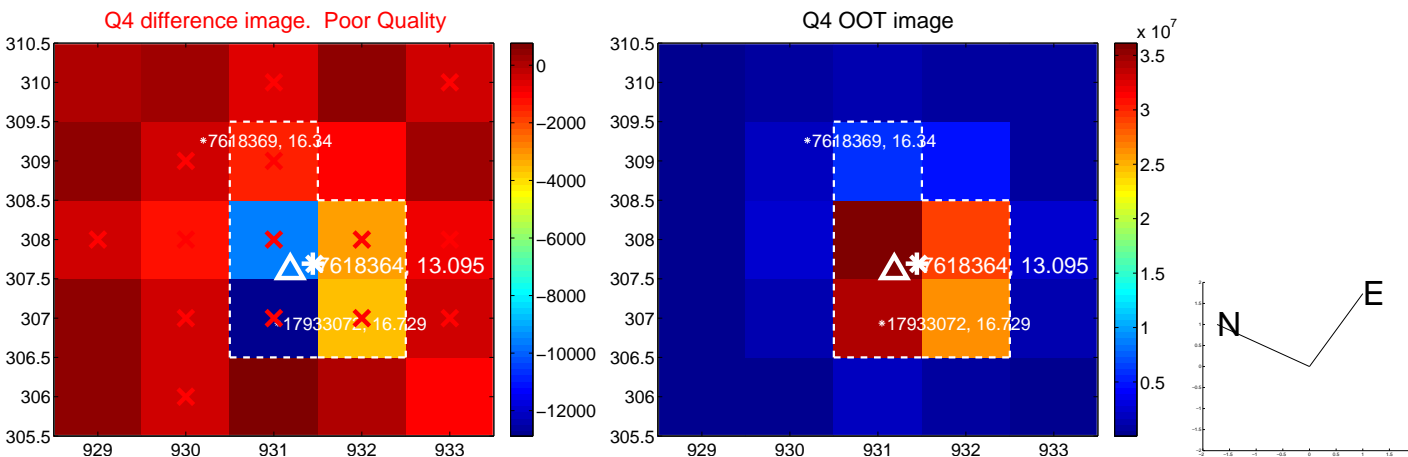
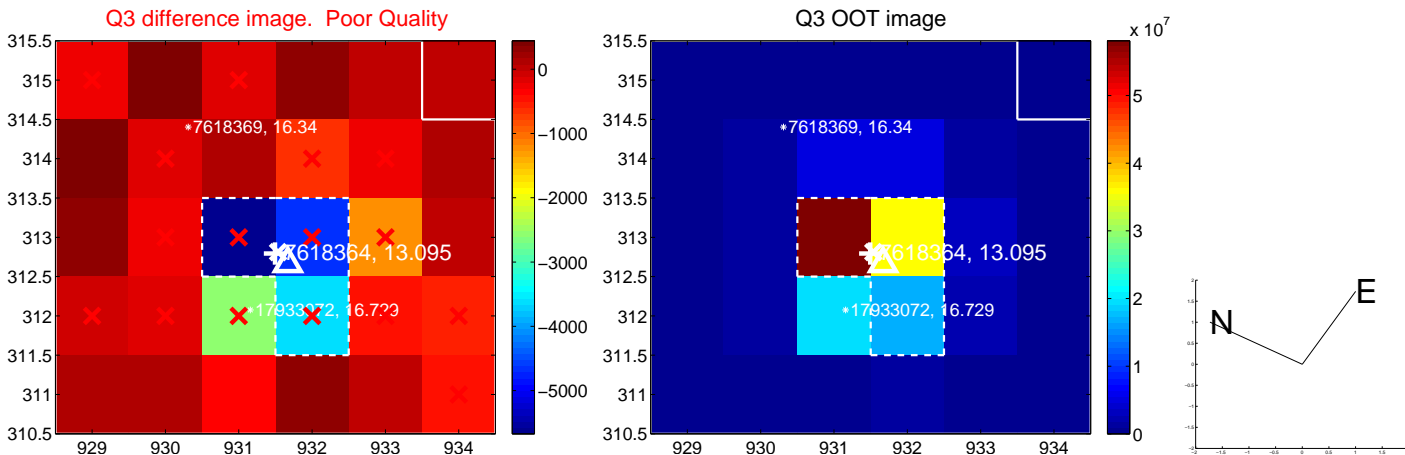
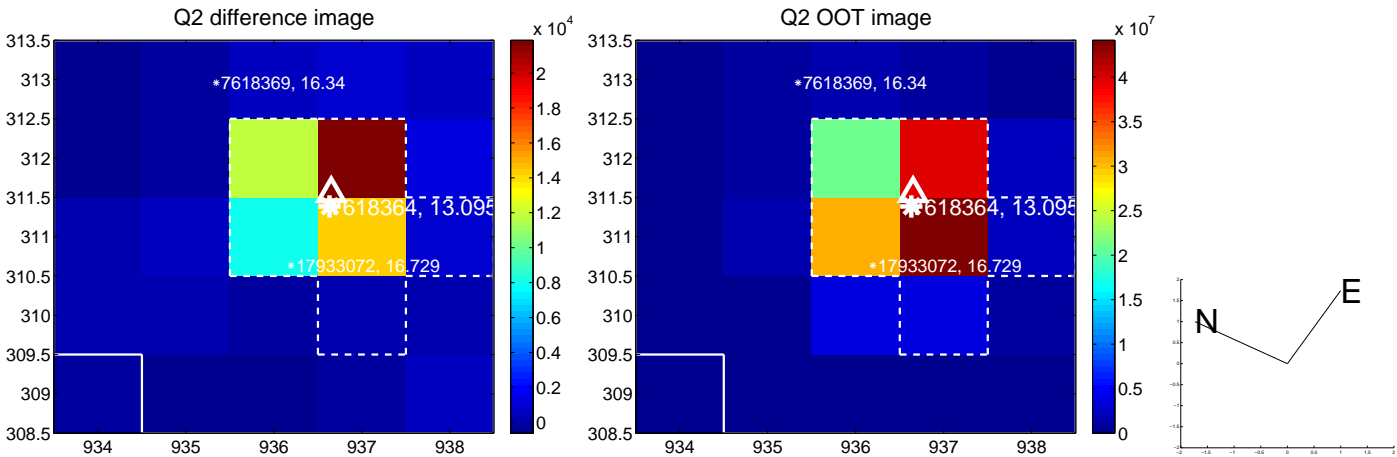
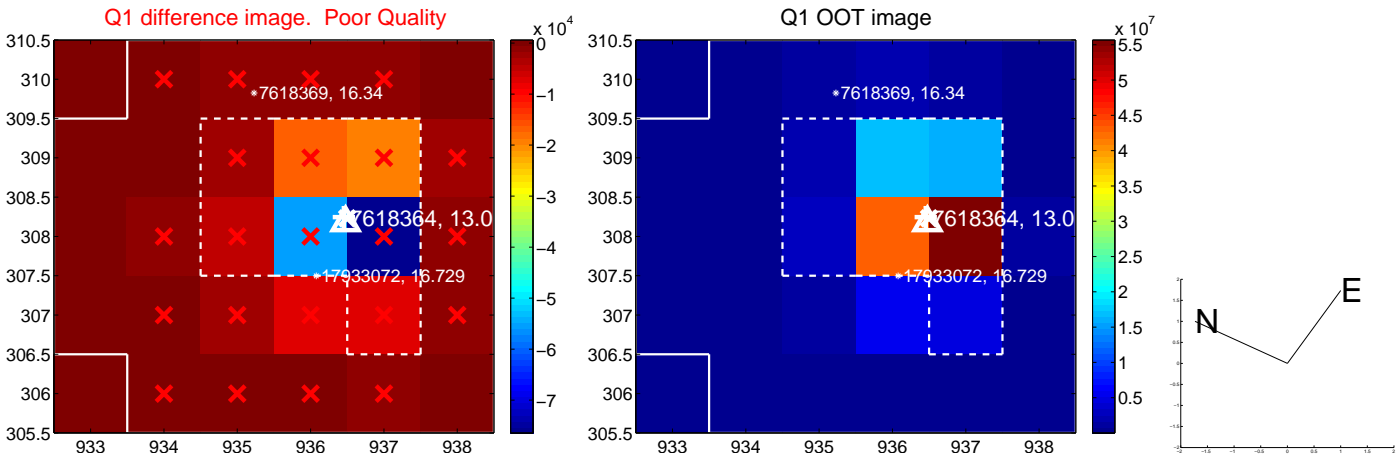


offset from photometric centroids

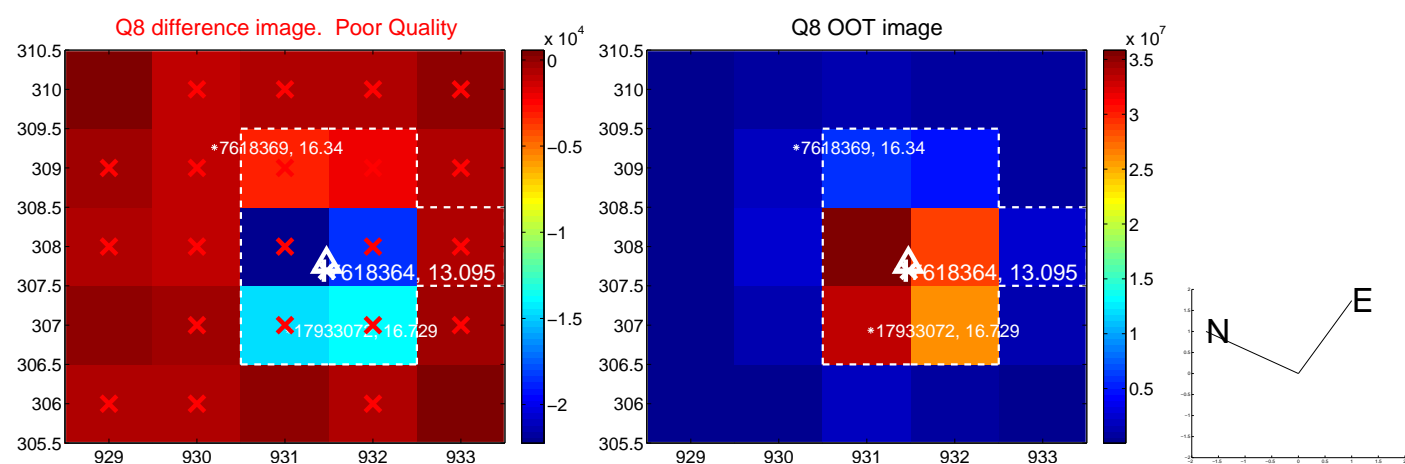
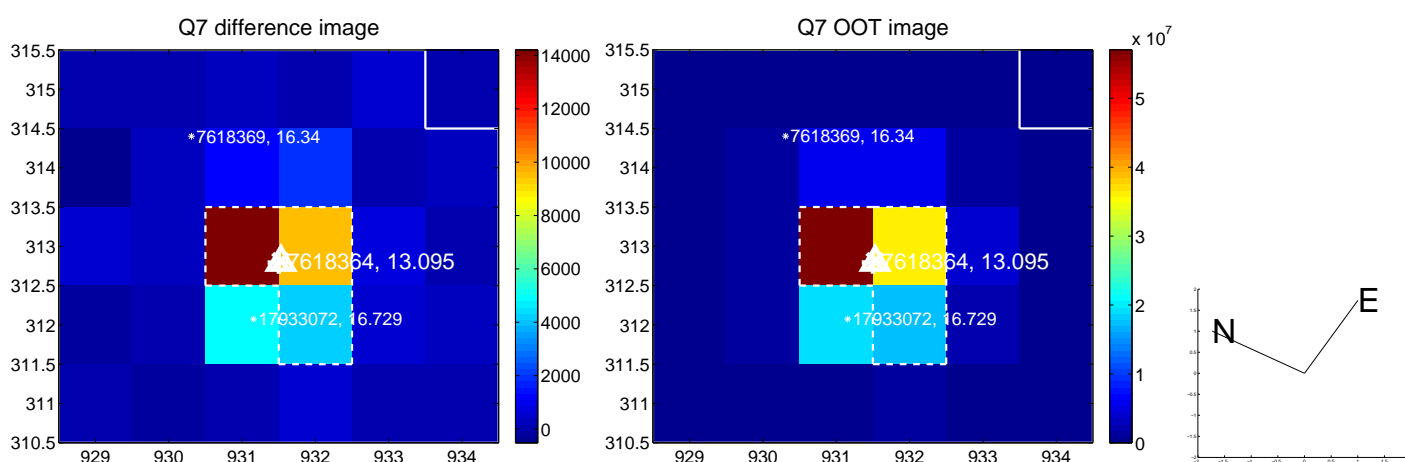
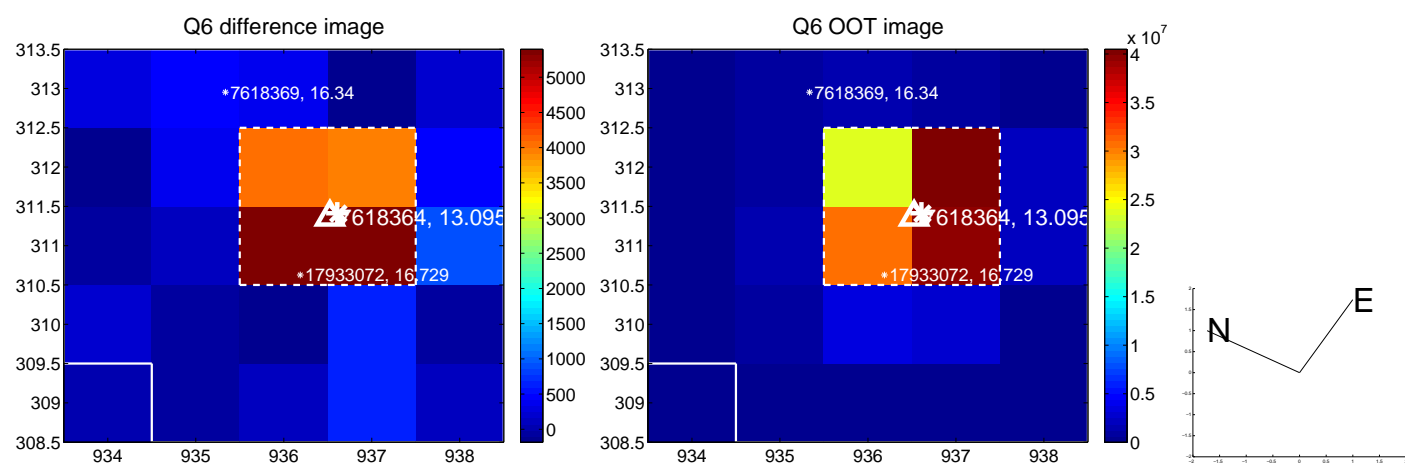
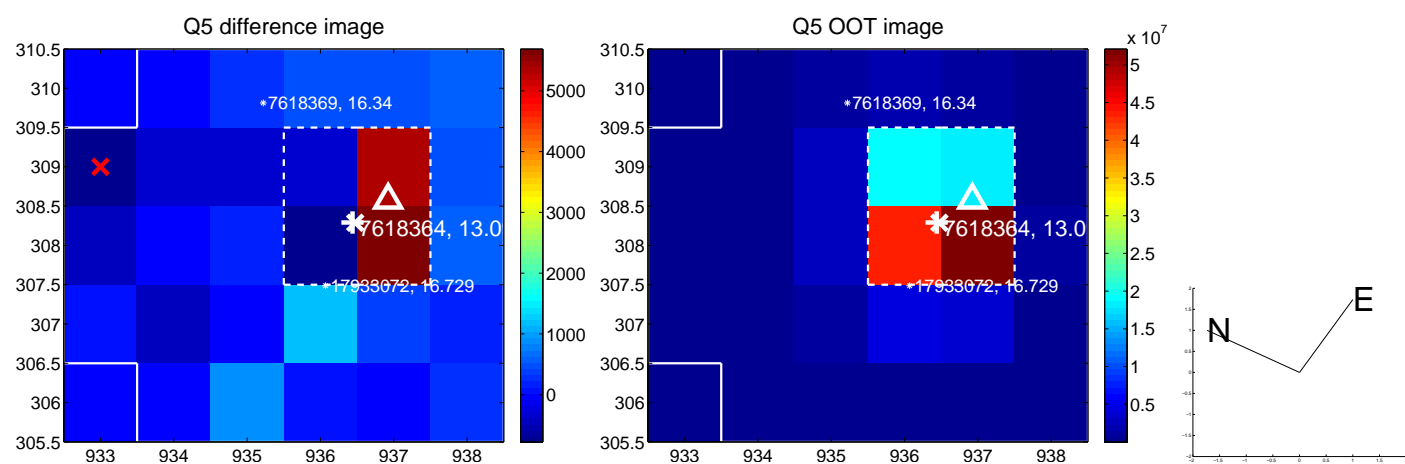


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

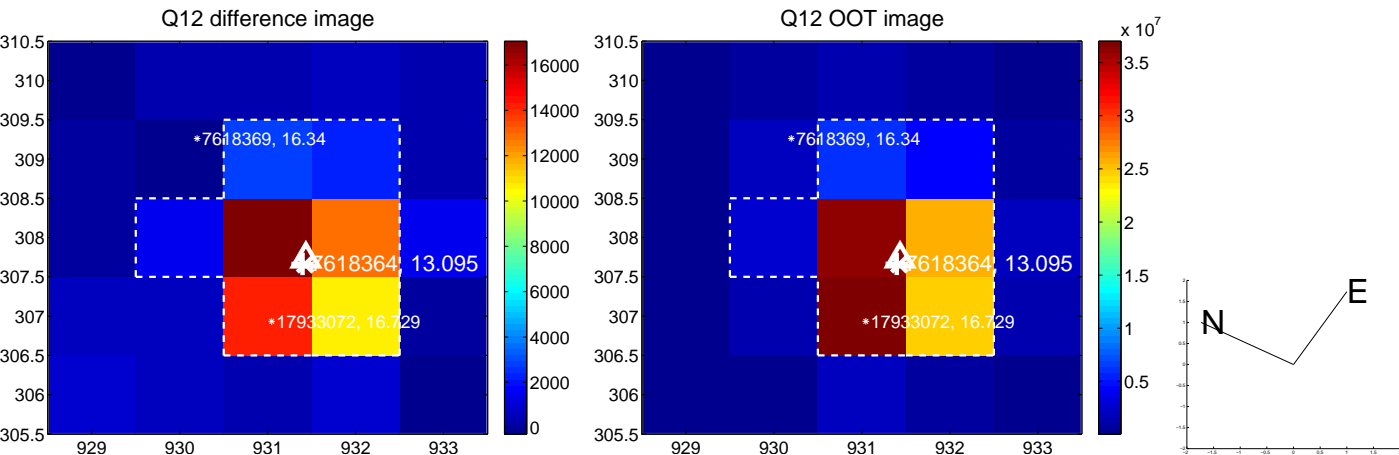
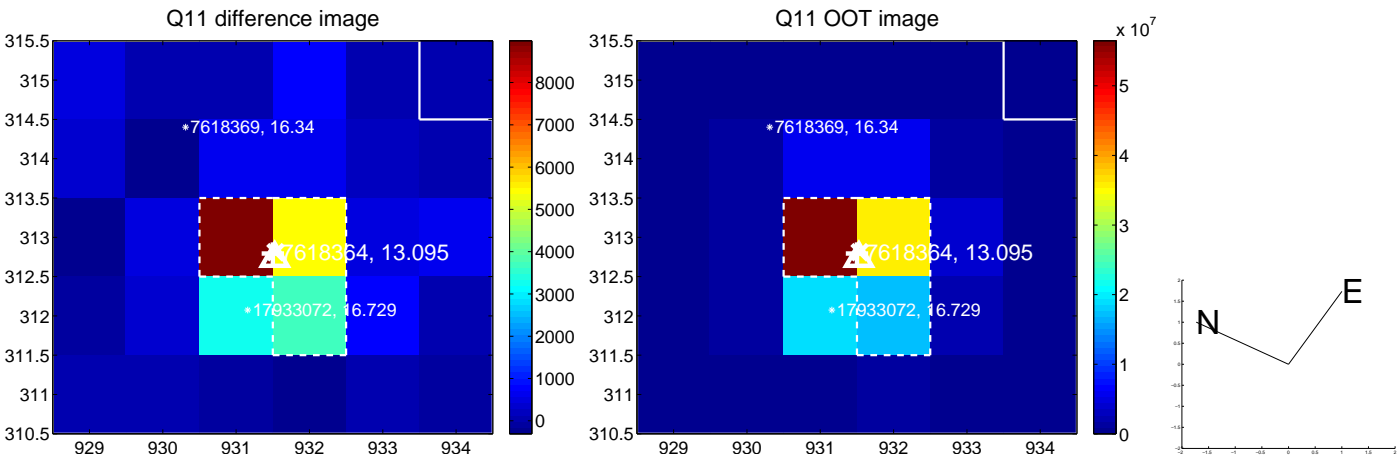
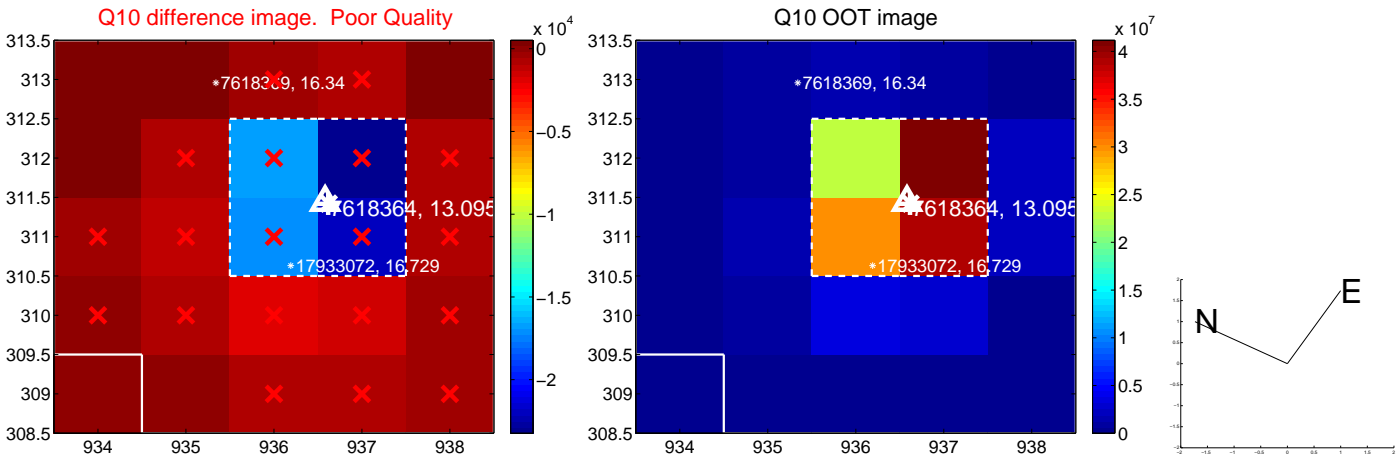
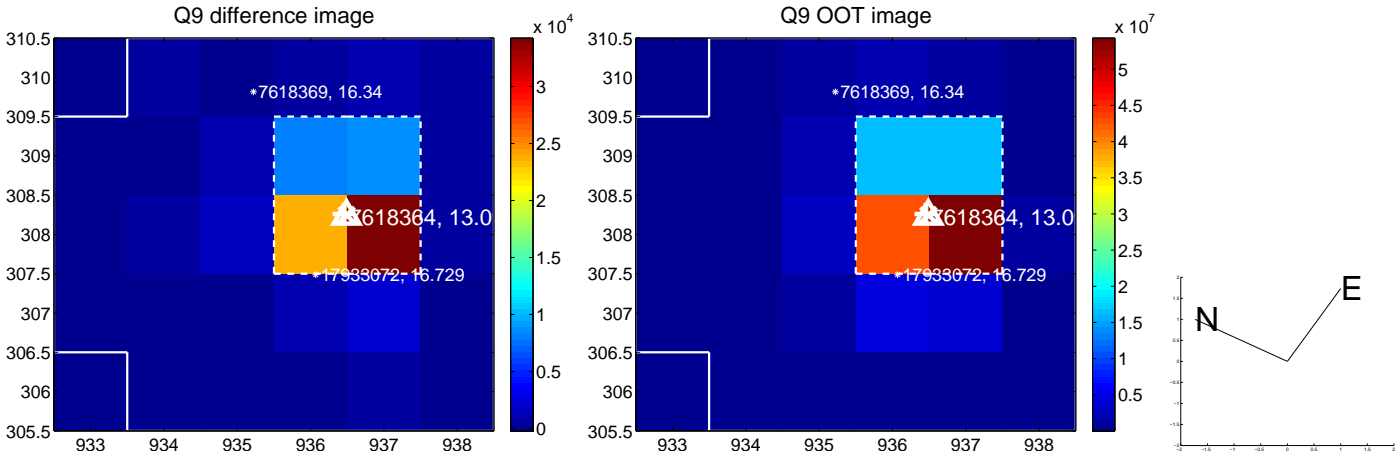
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



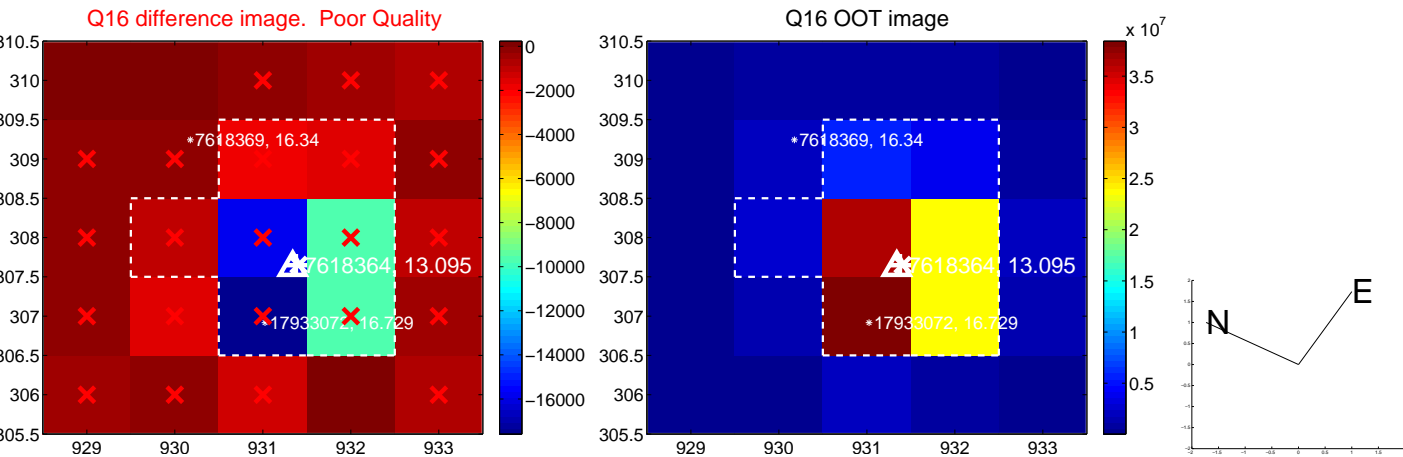
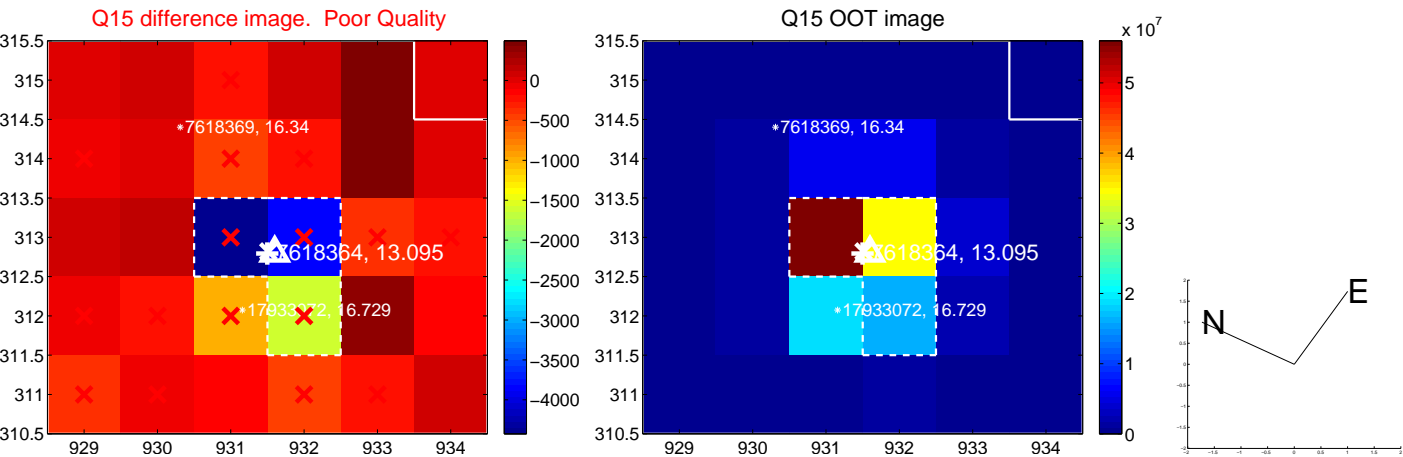
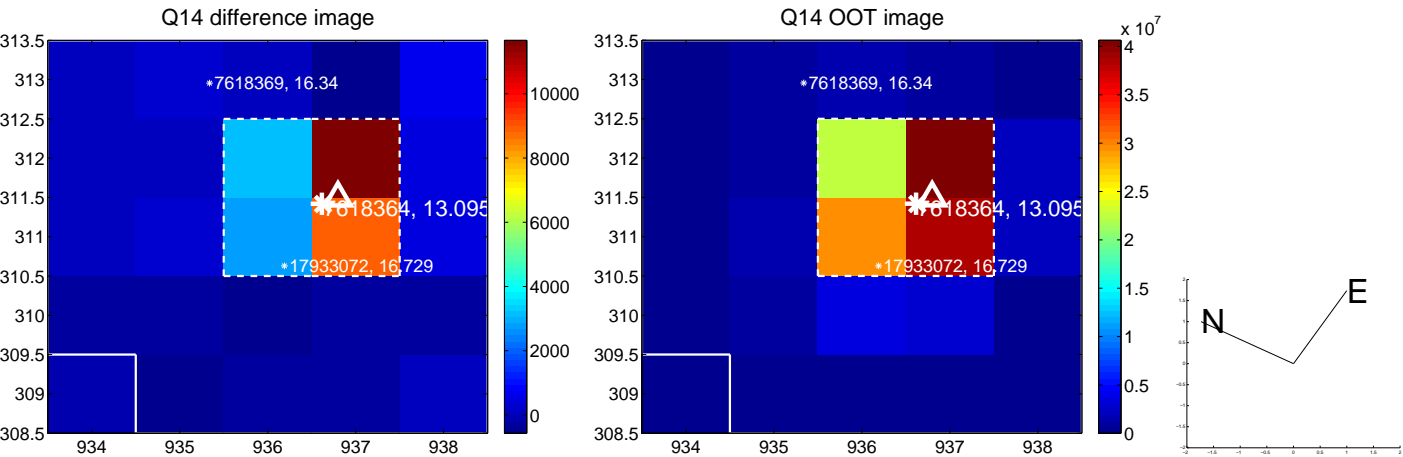
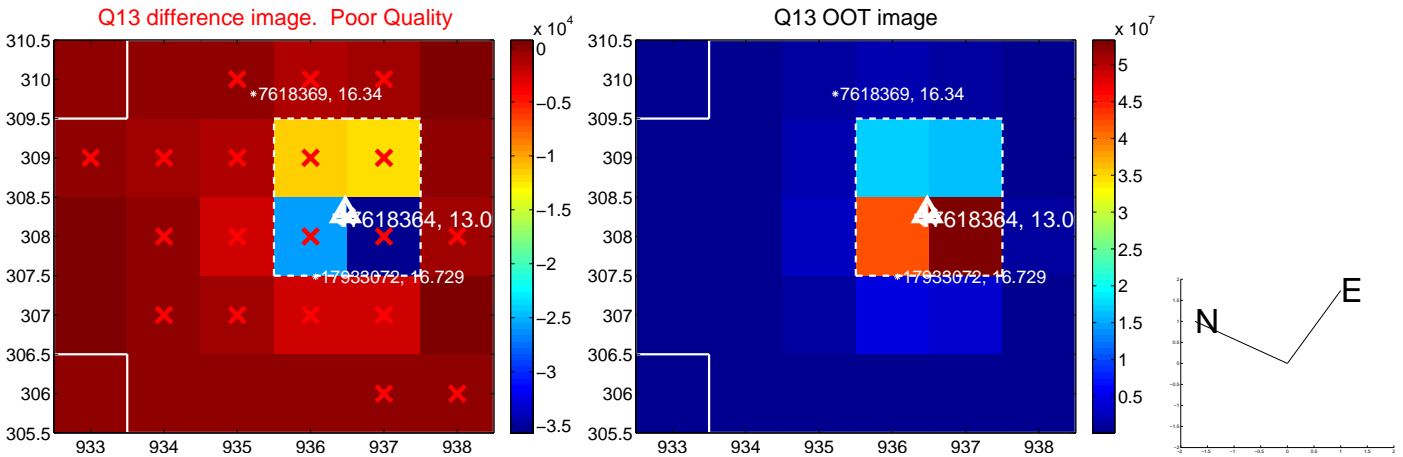
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



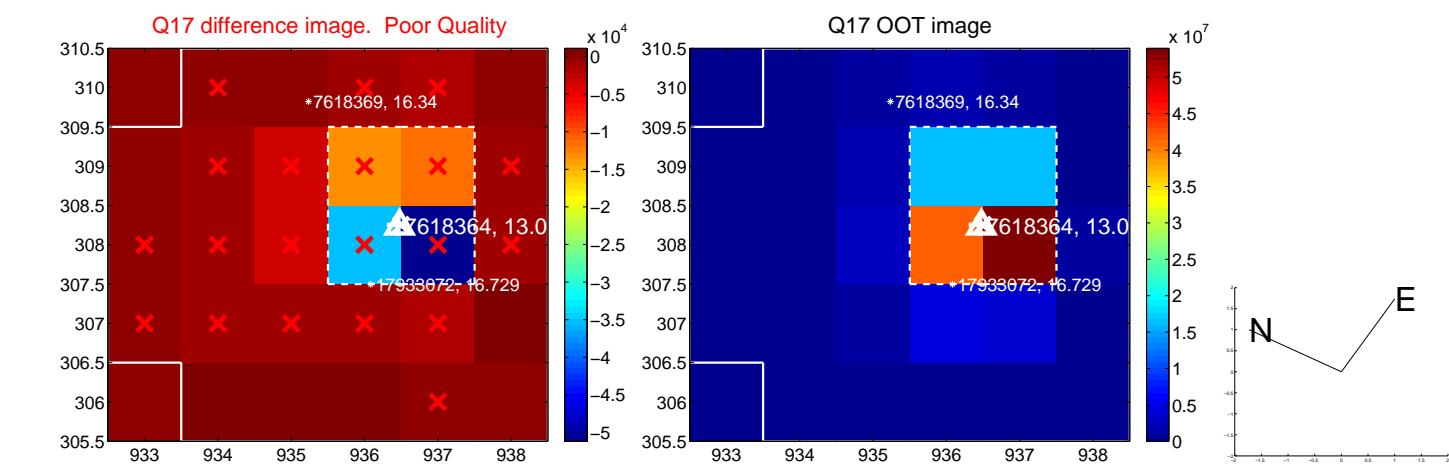
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



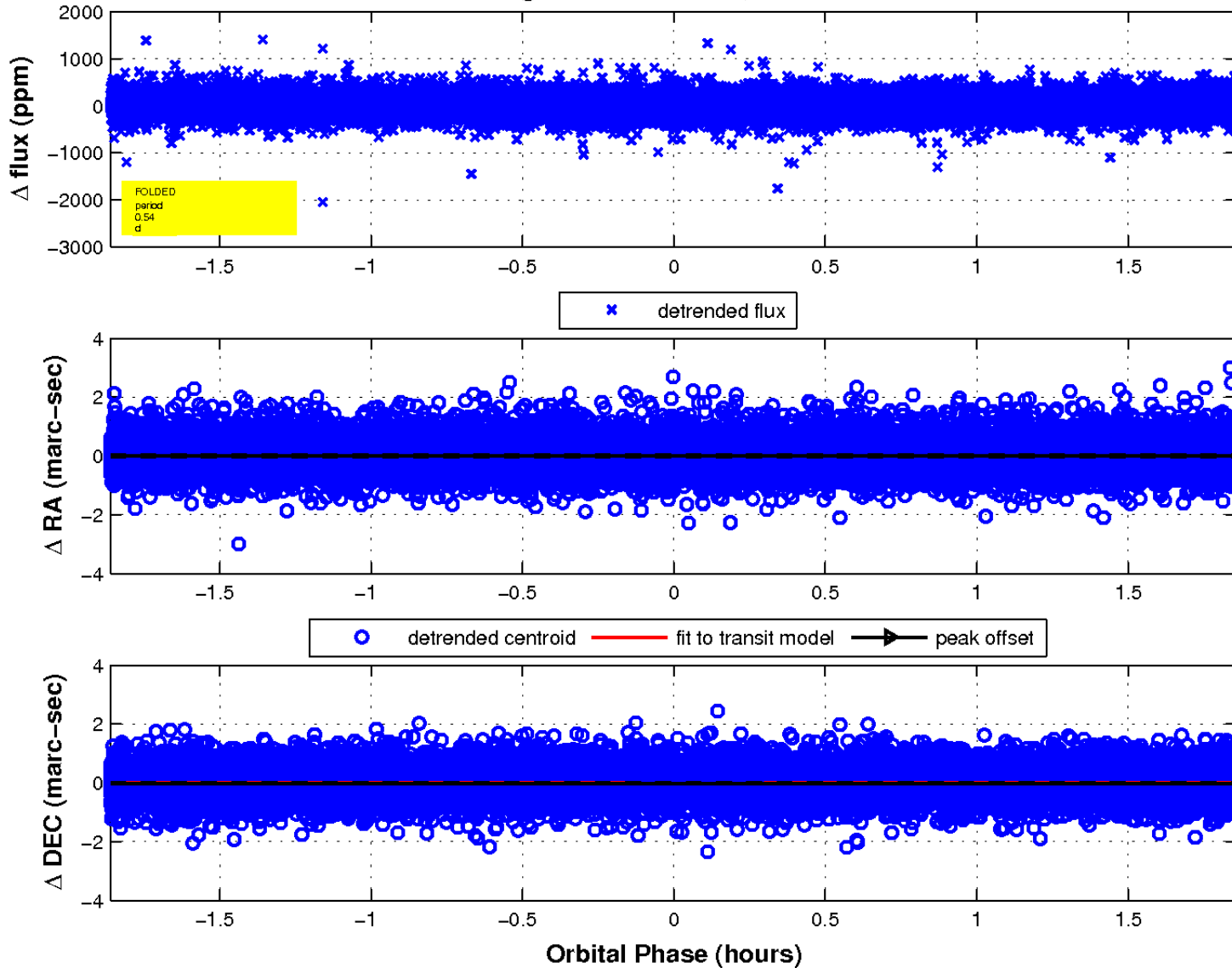
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

