

KIC 007032524

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})
007032524-01	OBS	No	0.566771	131.832513	32.9	3.621	9.9	6.3	0.75	5559	0.43	3035.03
007032524-02	OBS	No	69.564919	183.141678	772.0	2.270	7.3	9.2	0.75	5559	2.06	4.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007032524-01	OBS	FP	0.00	1	0	0	1	LPP_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—EPHEM_MATCH
007032524-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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.

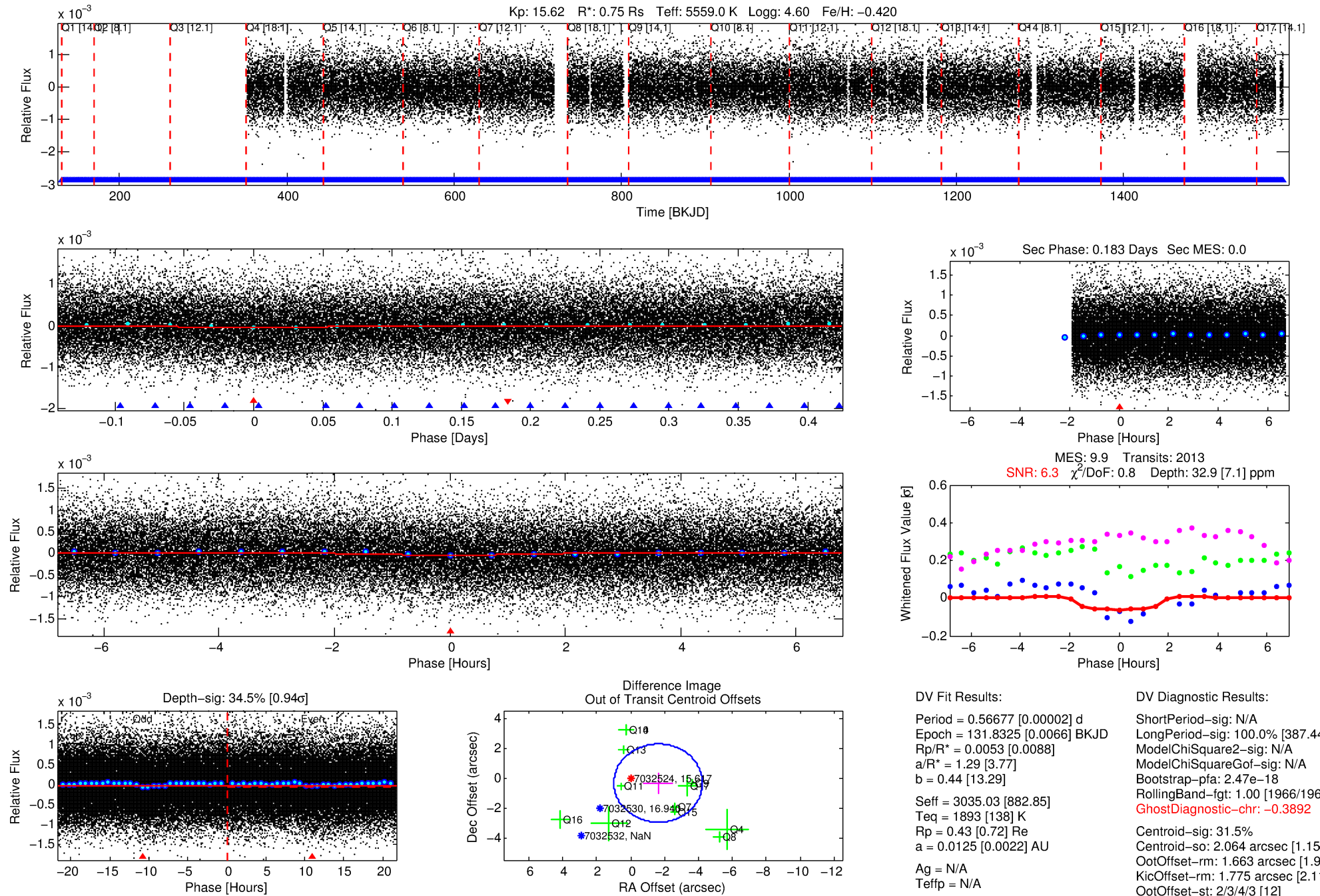
Ephemeris Match Information For 007032524-01

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
007032524-01	7032524	RR-Lyr-pri	7198959	1:1	919.9	219	-74	7.86	15.62	18888.00	Direct-PRF	0	4.72	24.84

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: 7032524 Candidate: 1 of 2 Period: 0.567 d



DV Fit Results:

Period = 0.56677 [0.00002] d
Epoch = 131.8325 [0.0066] BKJD
Rp/R* = 0.0053 [0.0088]
a/R* = 1.29 [3.77]
b = 0.44 [13.29]
Seff = 3035.03 [882.85]
Teff = 1893 [138] K
Rp = 0.43 [0.72] Re
a = 0.0125 [0.0022] AU
Ag = N/A
Teffp = N/A

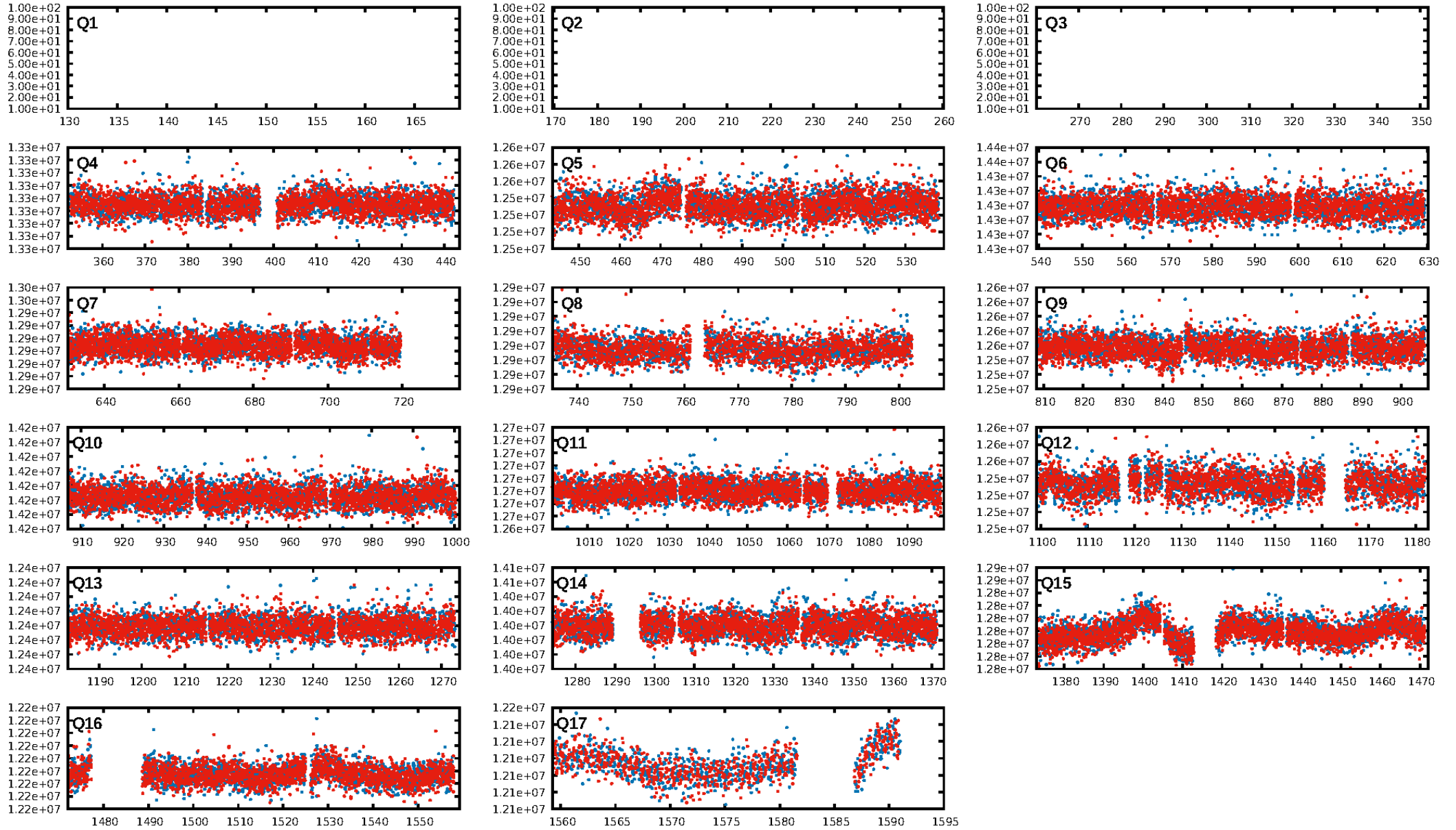
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [387.44 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.47e-18
RollingBand-fgt: 1.00 [1966/1966]
GhostDiagnostic-chr: -0.3892
Centroid-sig: 31.5%
Centroid-so: 2.064 arcsec [1.15 σ]
OotOffset-rm: 1.663 arcsec [1.91 σ]
KicOffset-rm: 1.775 arcsec [2.11 σ]
OotOffset-st: 2/3/4/3 [12]
KicOffset-st: 2/3/4/3 [12]
DiffImageQuality-fgm: 0.08 [1/12]
DiffImageOverlap-fno: 1.00 [14/14]

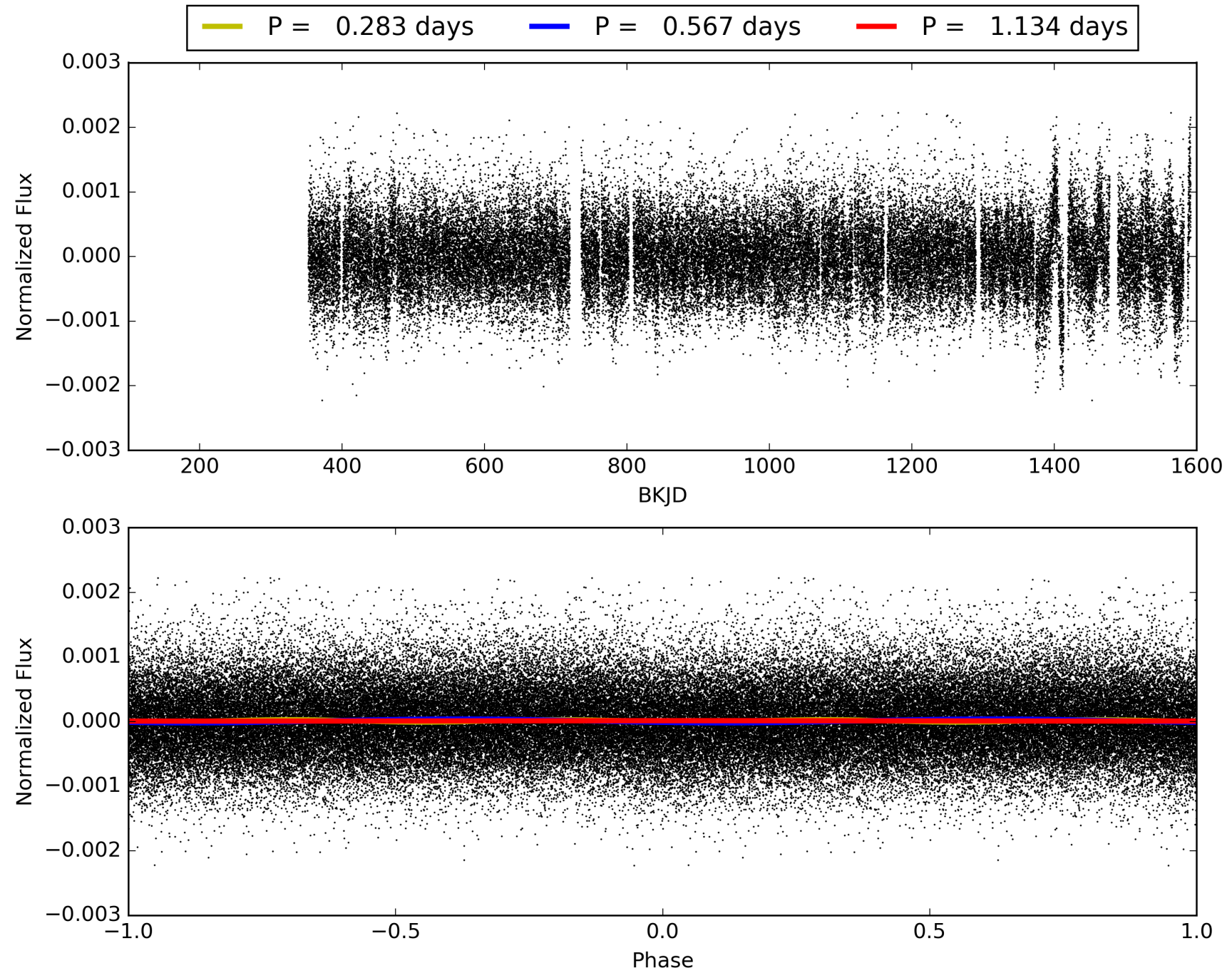
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 16:11:44 Z

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

TCE 007032524-01, PDC Light Curves

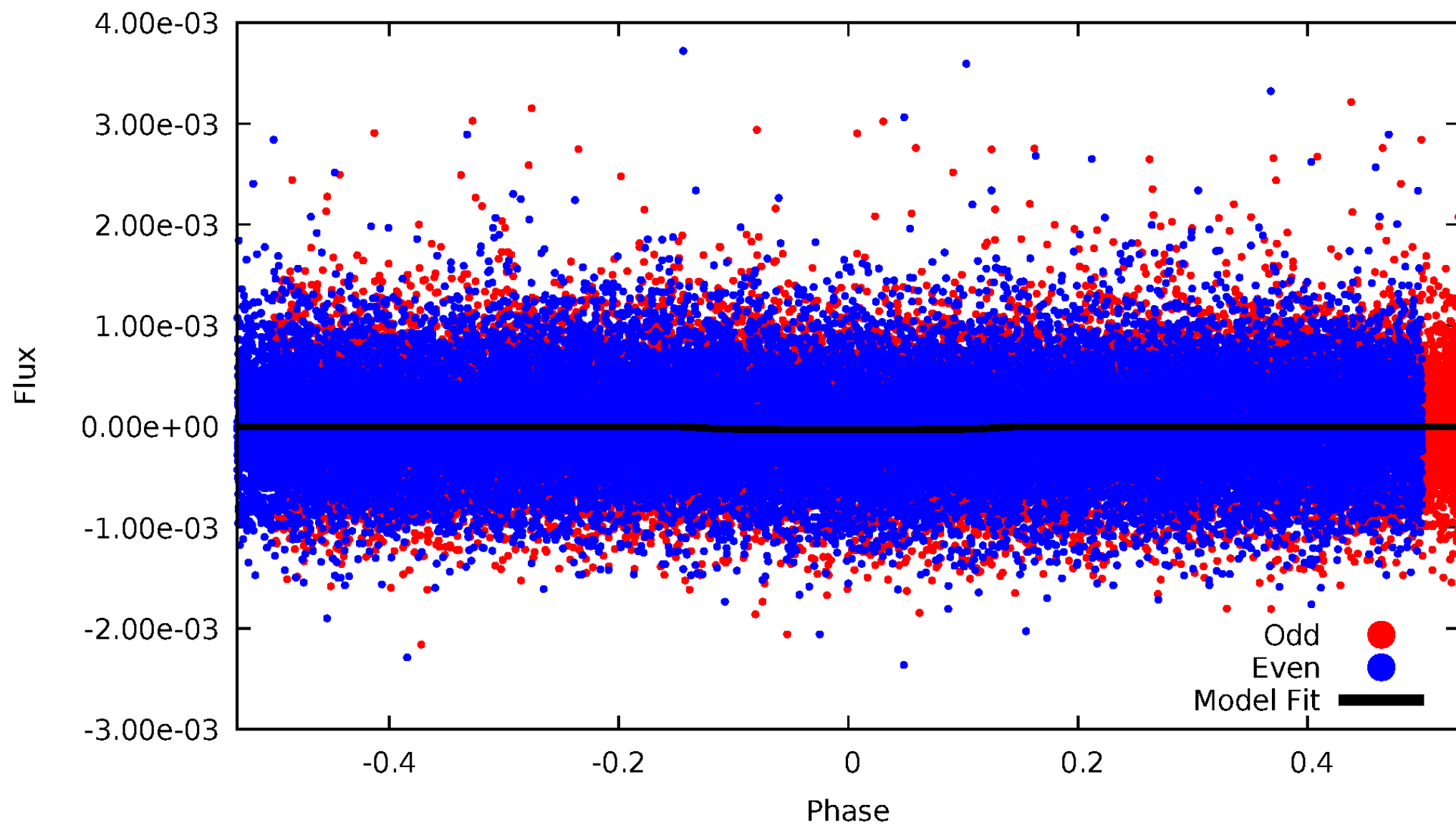


TCE 007032524-01



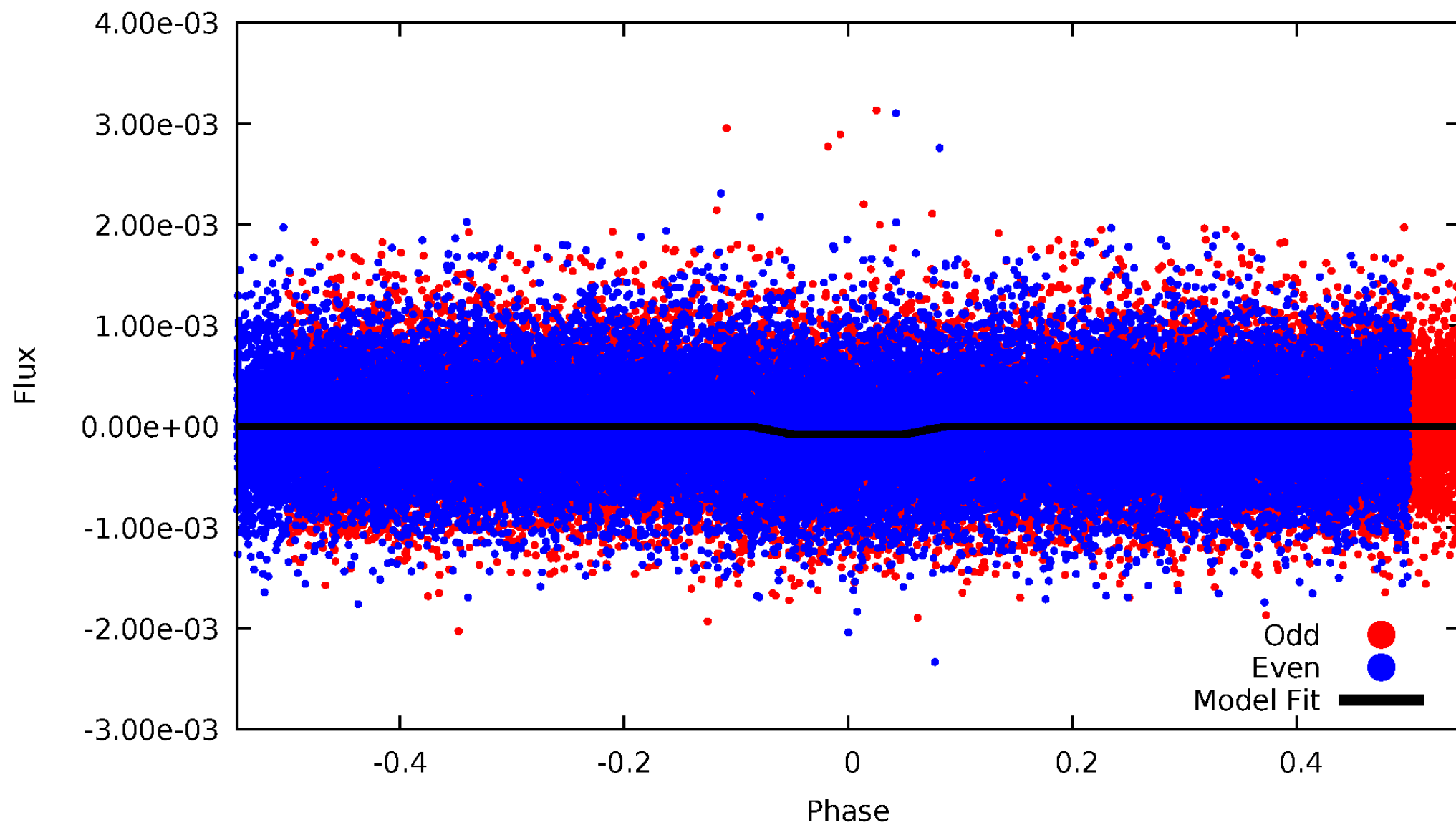
DV Odd/Even

TCE 007032524-01

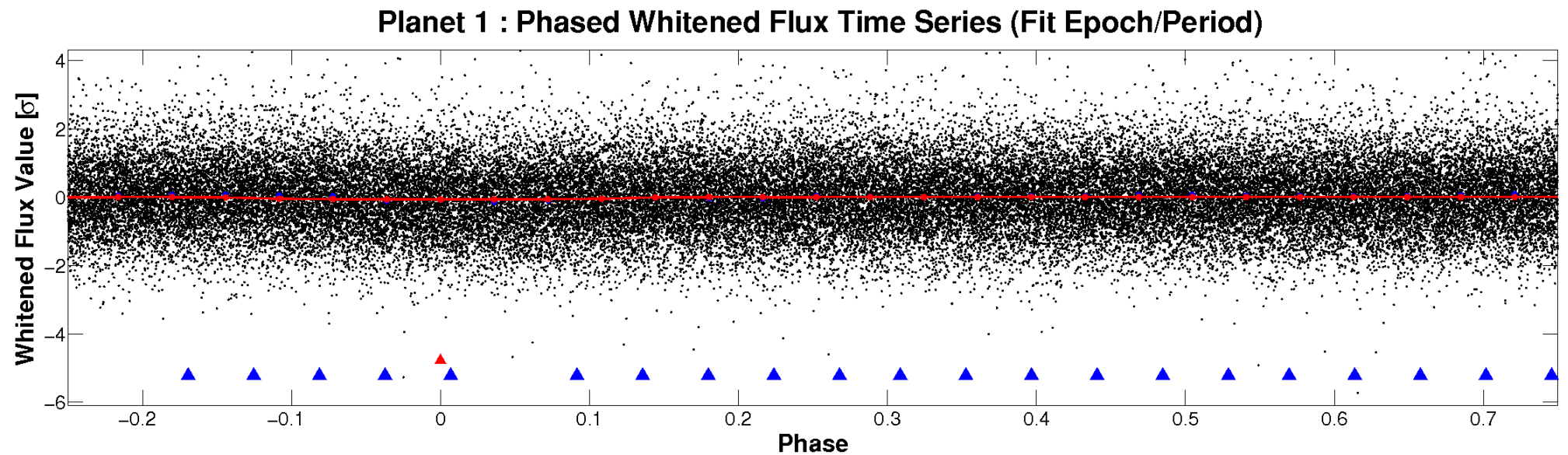
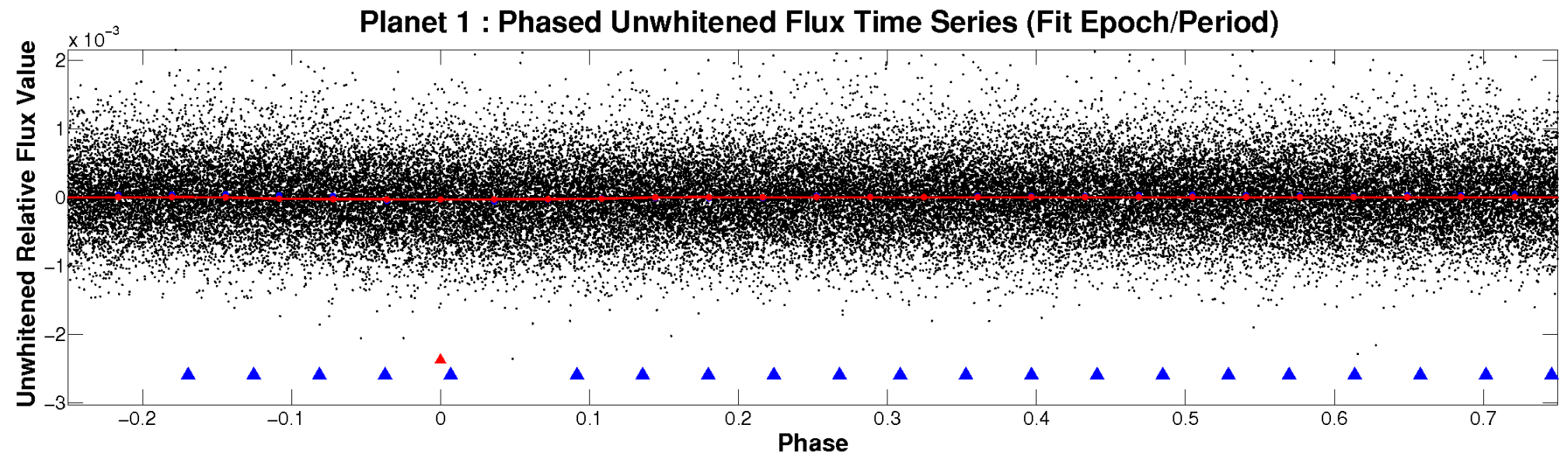


ALT Odd/Even

TCE 007032524-01

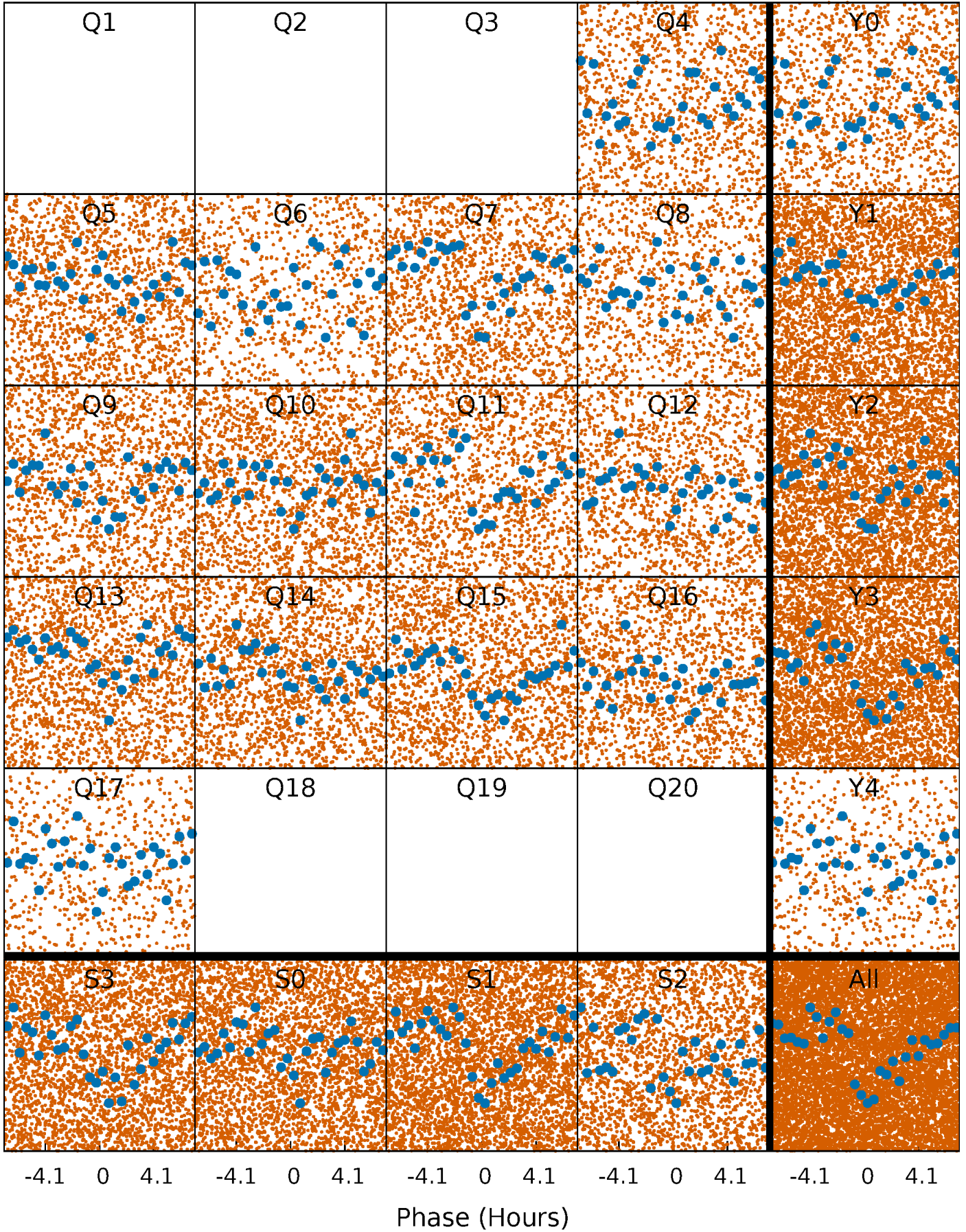


Non-Whitened Vs. Whitened Light Curve



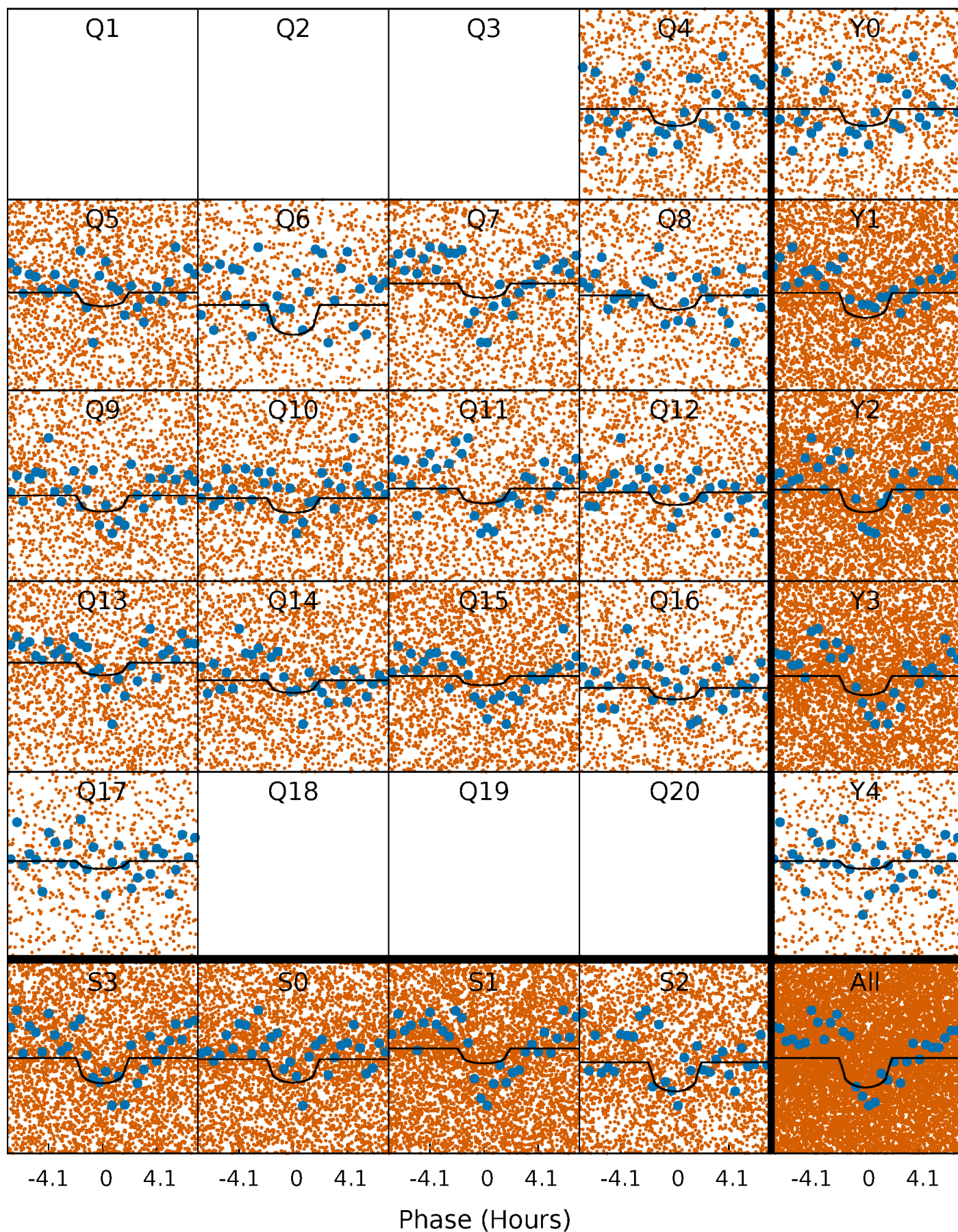
PDC Quarter-Phased Transit Curves

TCE 007032524-01 P= 0.566771 Days $T_0=131.832513$ (BKJD)



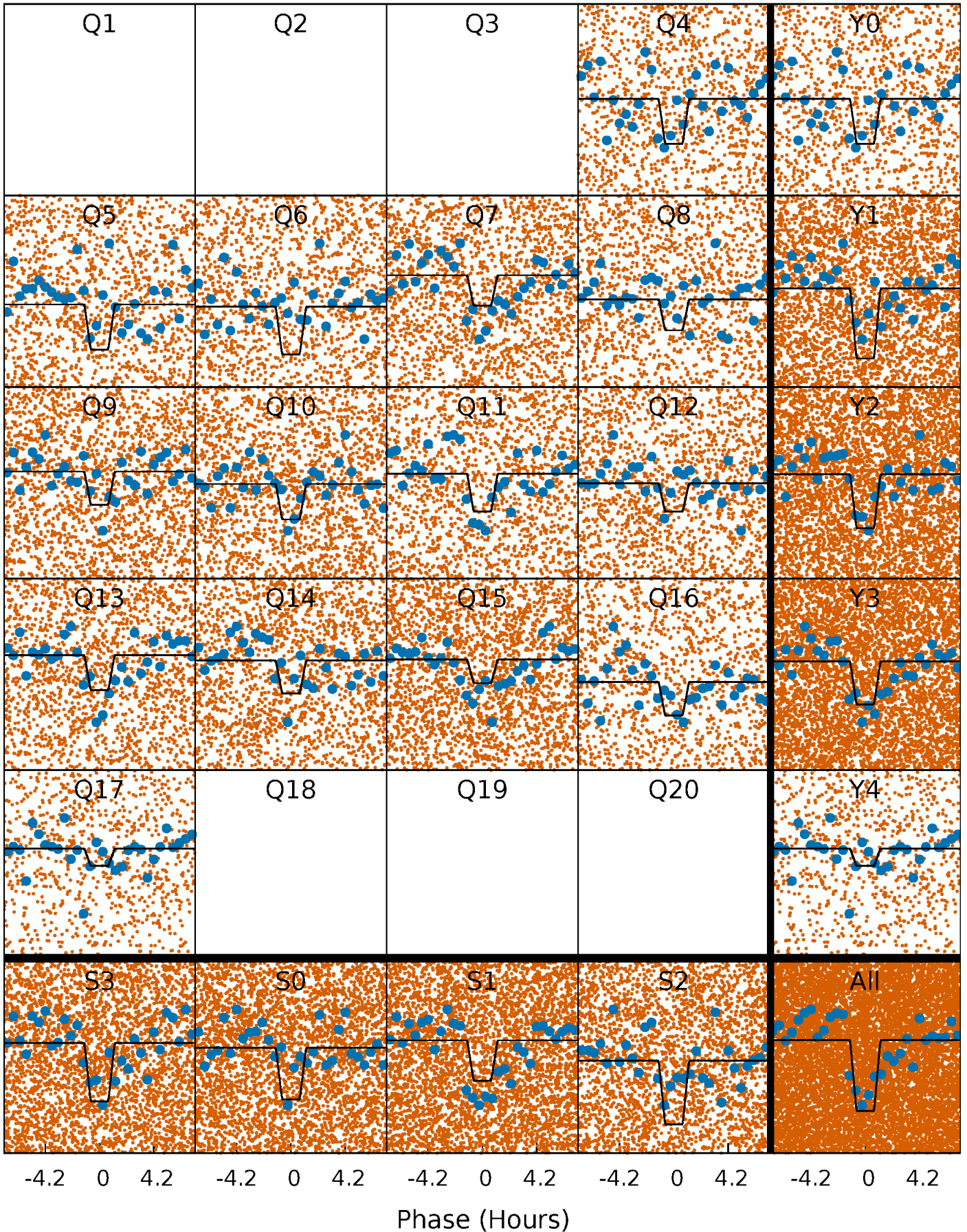
DV Quarter-Phased Transit Curves

TCE 007032524-01 P= 0.566771 Days $T_0=131.832513$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

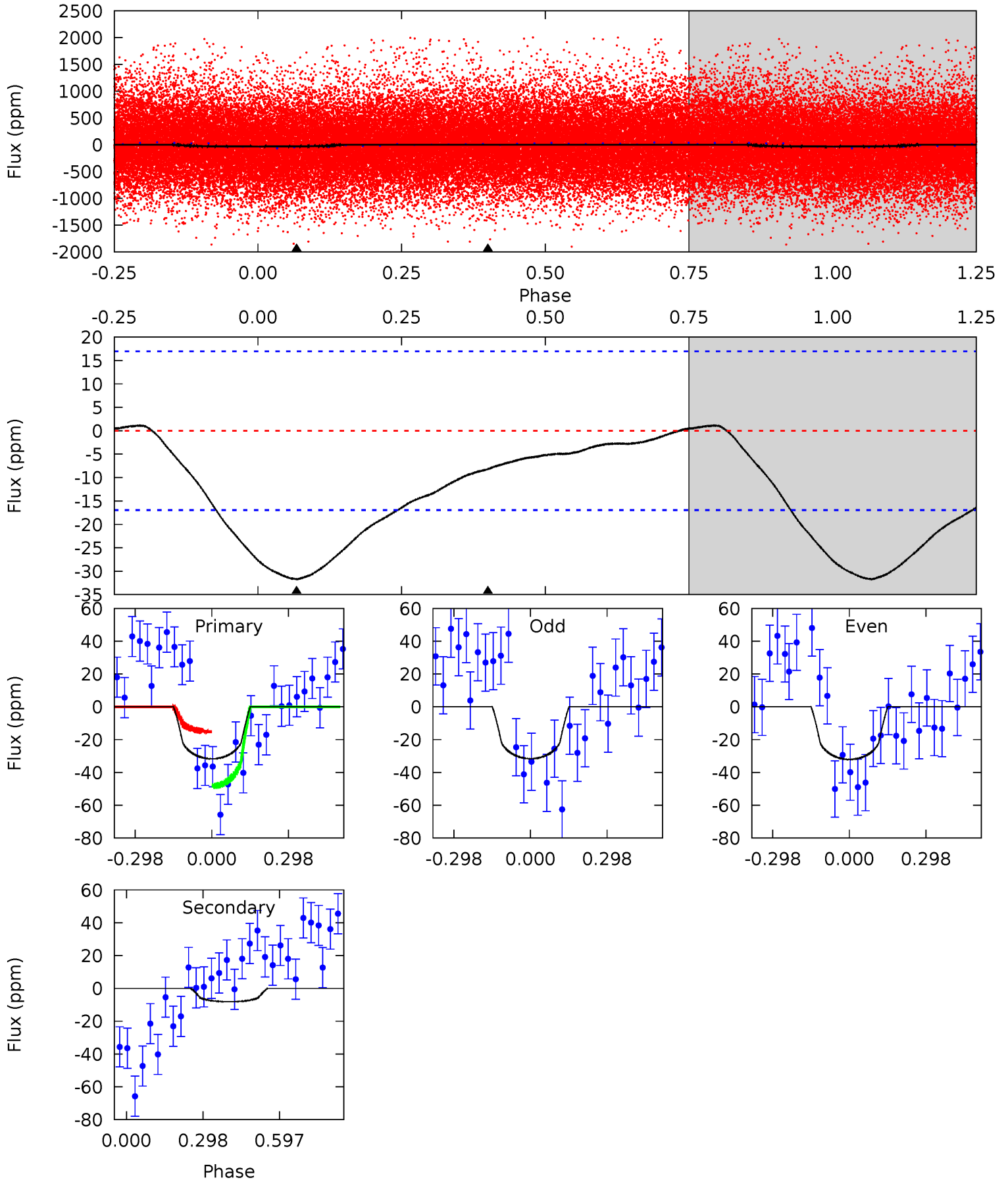
TCE 007032524-01 P= 0.566801 Days $T_0=131.803428$ (BKJD)



DV Model-Shift Uniqueness Test

007032524-01, P = 0.566771 Days, E = 131.832513 Days

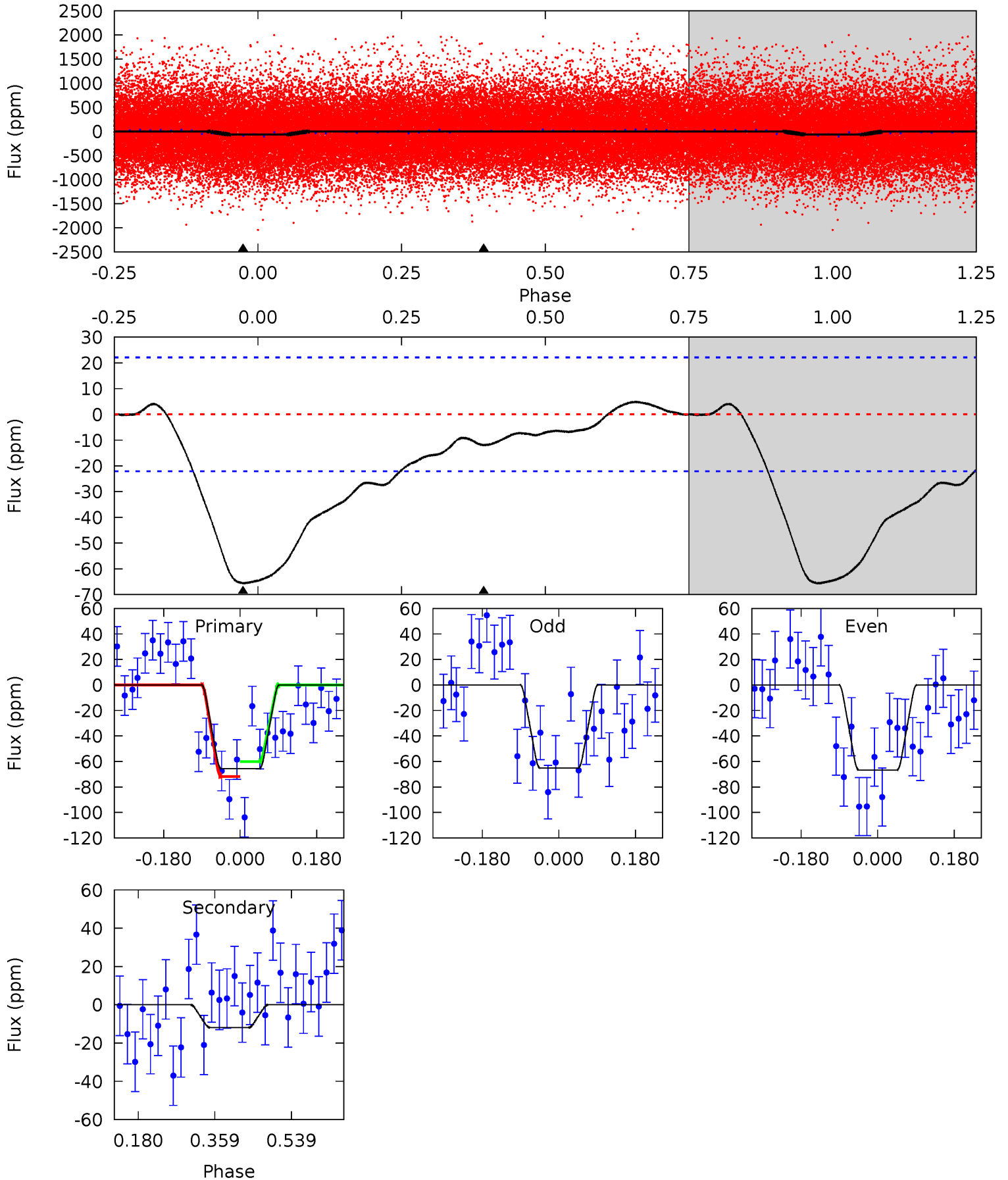
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.09	2.09	0	0	4.33	1.04	0.23	8.09	8.09	2.09	2.09	0.06	1.23	0.03	4.24



Alt Model-Shift Uniqueness Test

007032524-01, P = 0.566801 Days, E = 131.803428 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	2.40	0	0	4.44	1.34	2.46	13.2	13.2	2.40	2.40	0.17	0.98	0.07	1.18



Stellar Parameters For KIC 007032524

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5559^{+200}_{-183}	$4.604^{+0.036}_{-0.135}$	$-0.420^{+0.300}_{-0.300}$	$0.746^{+0.162}_{-0.065}$	$0.818^{+0.088}_{-0.080}$	$2.773^{+0.501}_{-1.087}$
	+4%/-3%	+1%/-3%	+71%/-71%	+22%/-9%	+11%/-10%	+18%/-39%
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 007032524-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-8 ± 4	$0.76^{+0.63}_{-0.50}$	2698^{+143}_{-120}	3326^{+1970}_{-5334}	$1.045^{+8.754}_{-0.758}$
Alt.	-12 ± 5	$0.89^{+0.75}_{-0.55}$	2692^{+148}_{-118}	3416^{+1769}_{-1285}	$1.166^{+7.714}_{-0.844}$

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 $A_{obs} \gg 1.0$

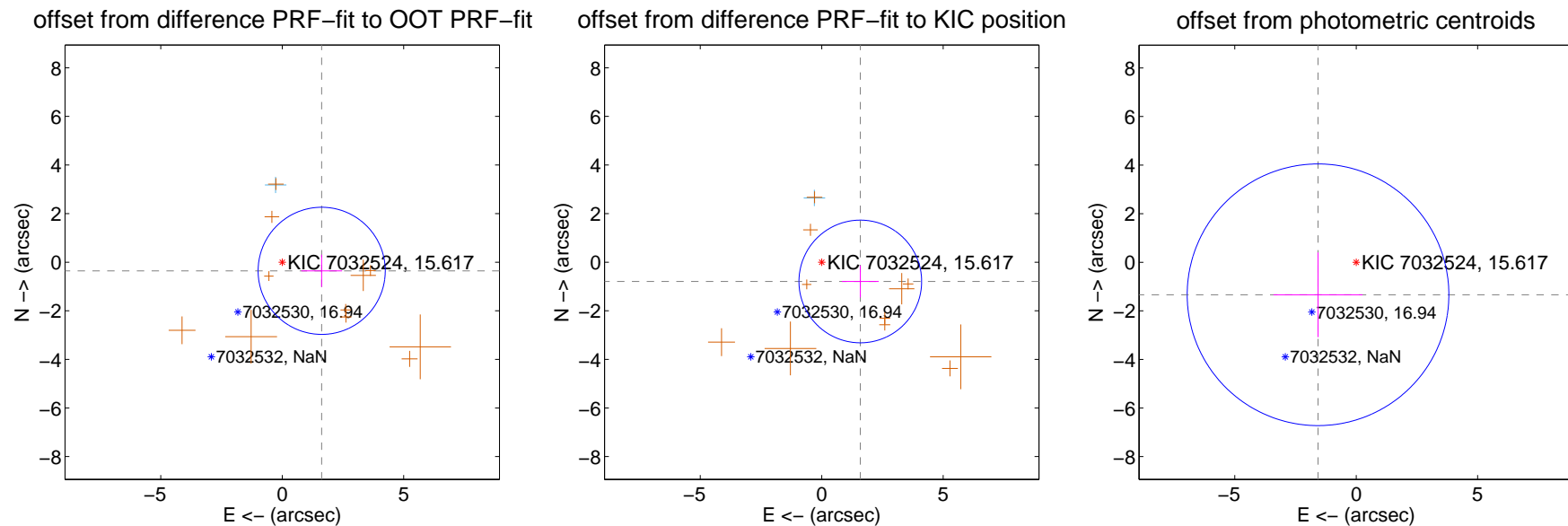
DV Centroid Data

Supplemental centroid analysis for 007032524-01. Kepler magnitude: 15.62. Transit SNR 6.34

There are 1 quarters with good PRF difference image offsets

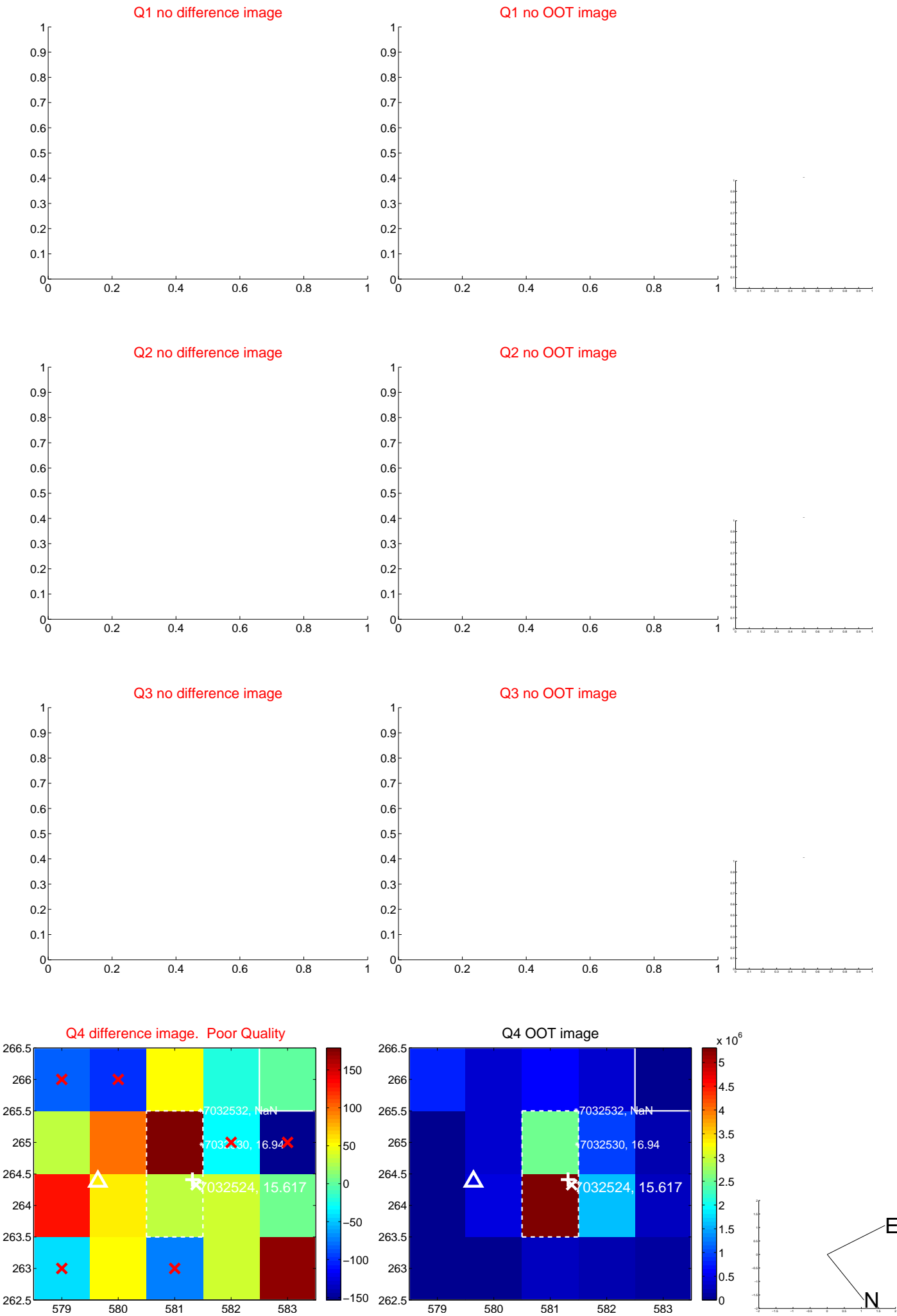
The direct PRF centroid is offset from the target star catalog position by about 0.55 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.663 ± 0.872	1.91	-1.624 ± 0.841	-0.355 ± 0.663
PRF-fit source offset from KIC position	1.775 ± 0.842	2.11	-1.588 ± 0.759	-0.793 ± 0.655
photometric centroid source offset	2.06 ± 1.80	1.15	1.57 ± 1.83	-1.34 ± 1.74

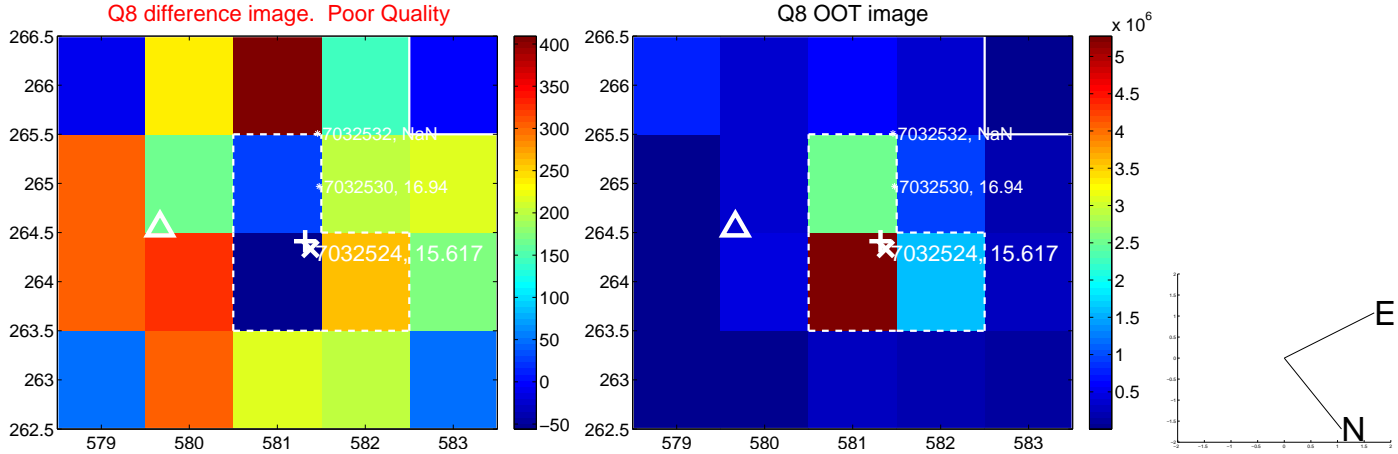
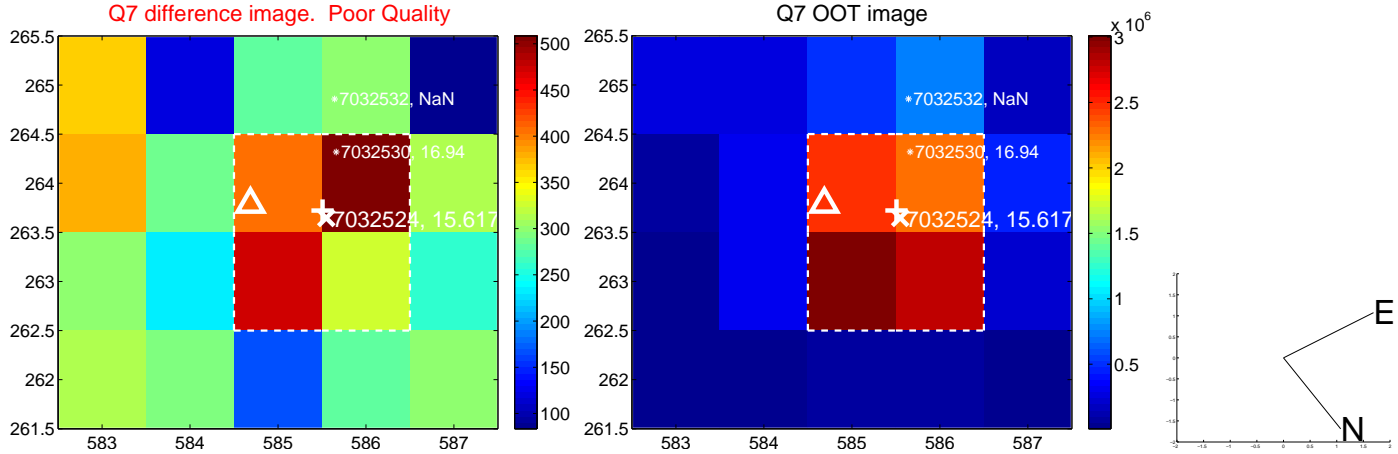
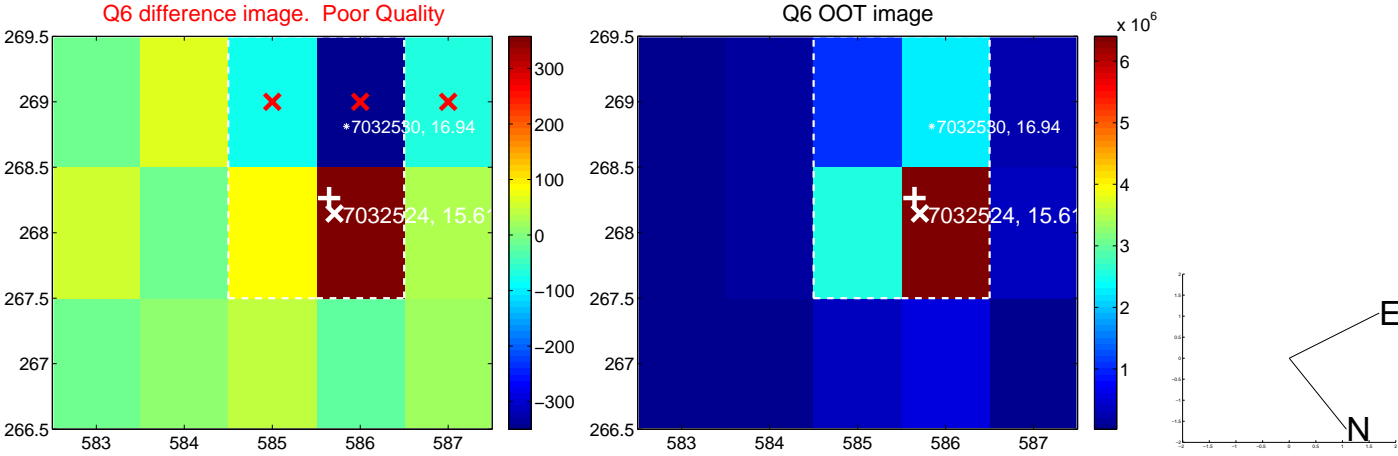
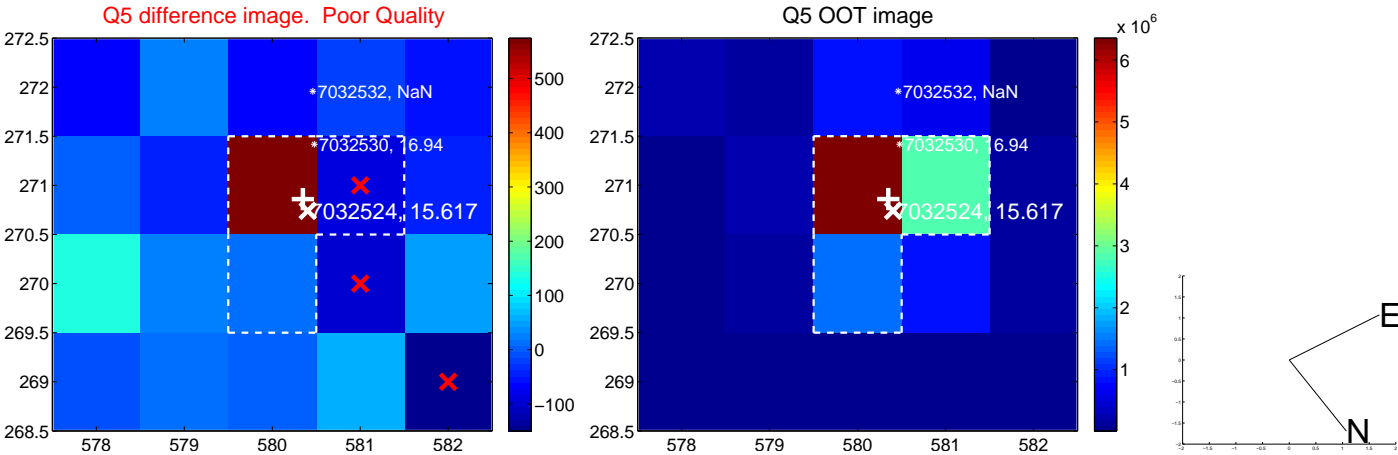


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

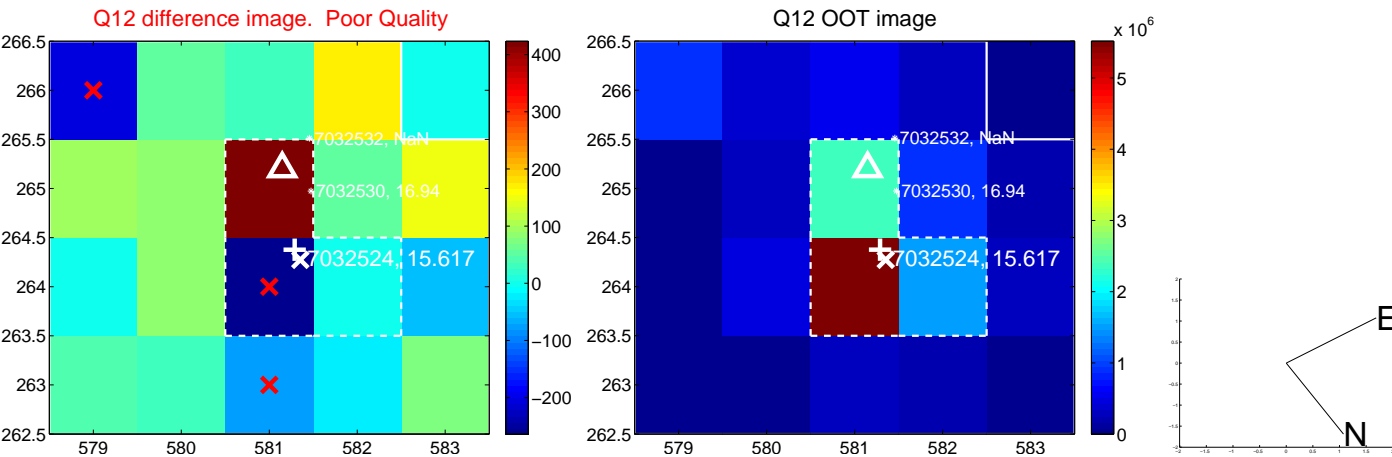
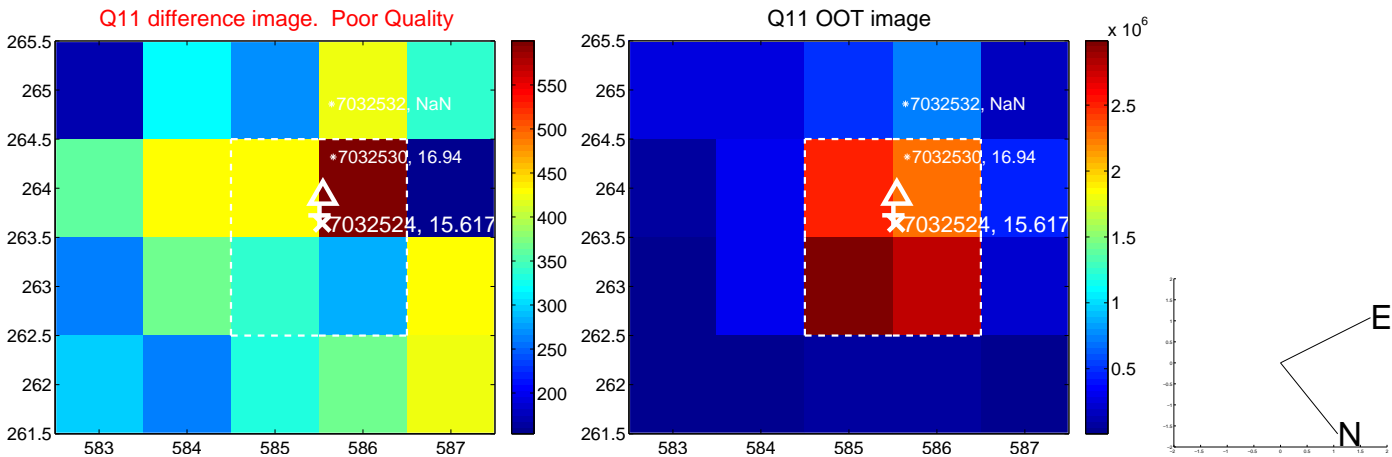
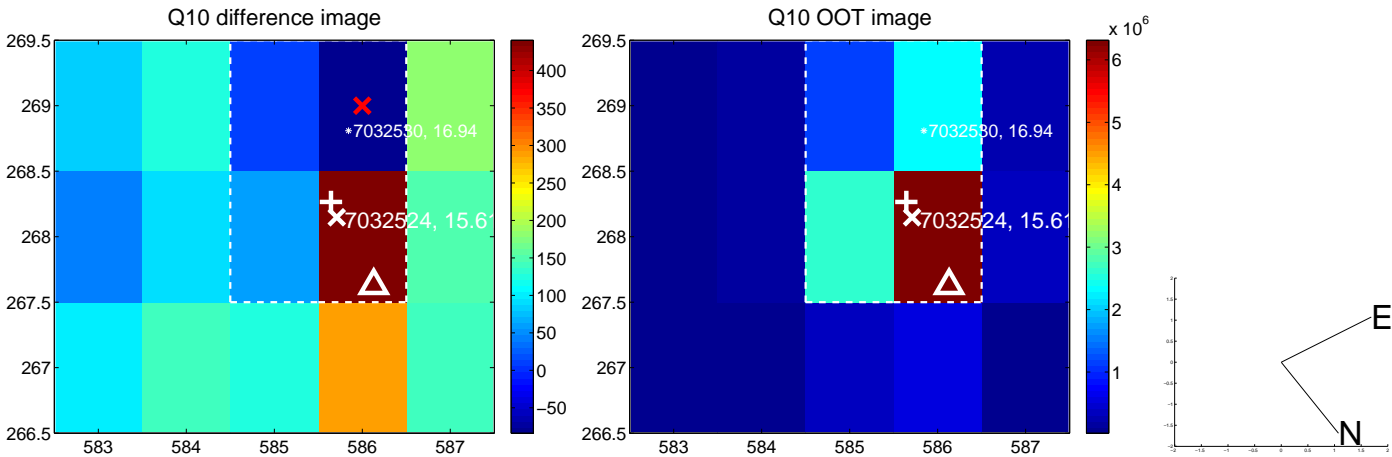
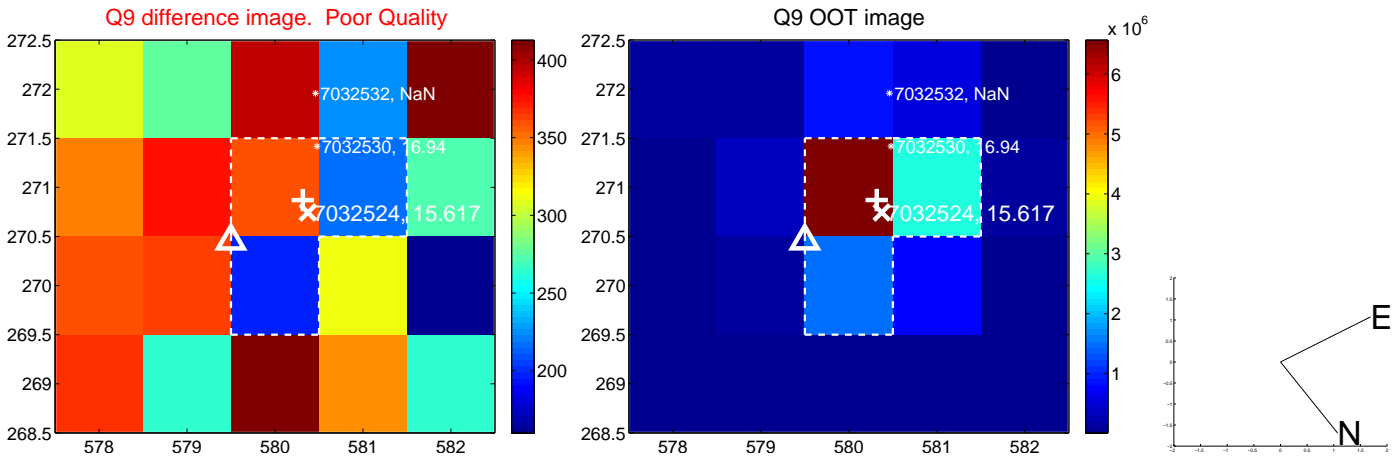
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



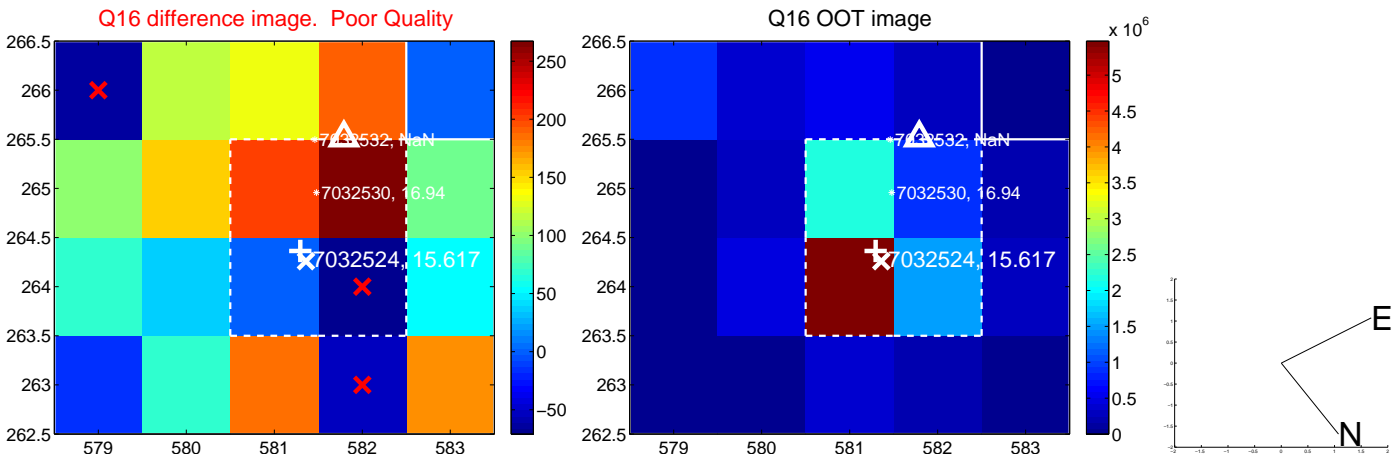
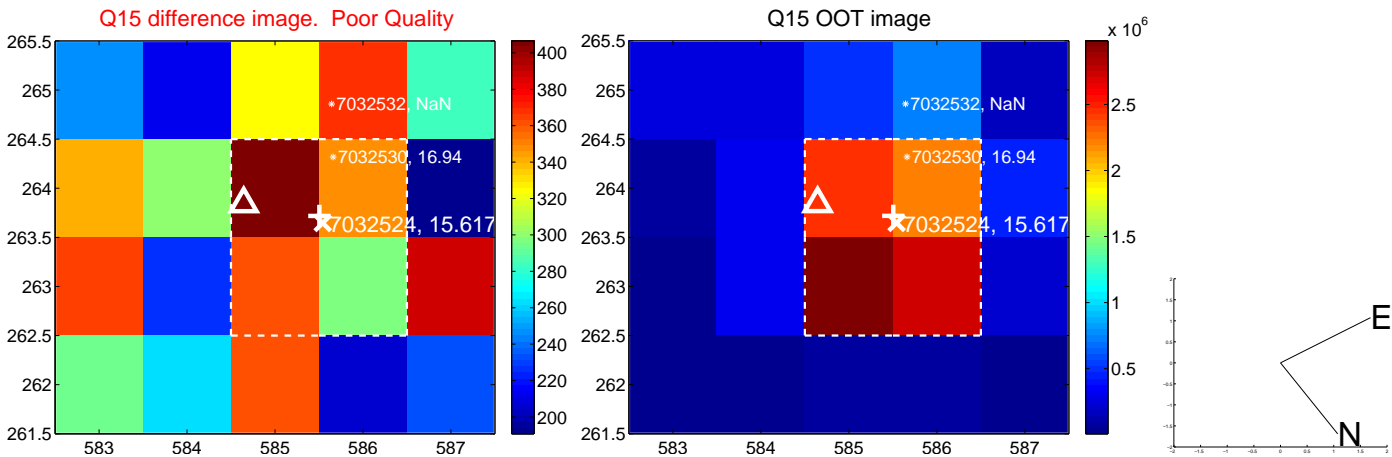
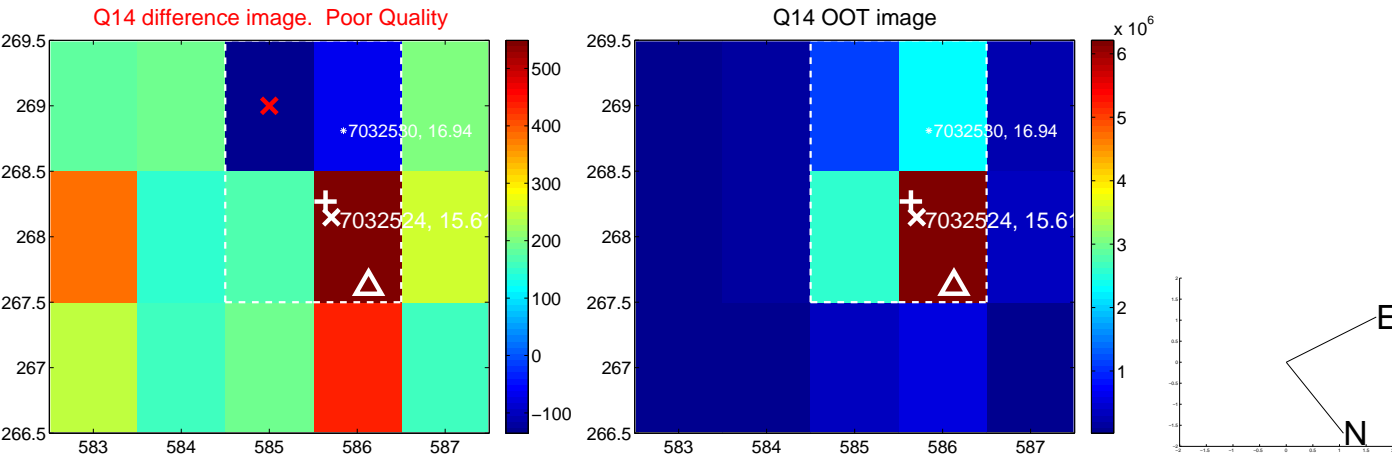
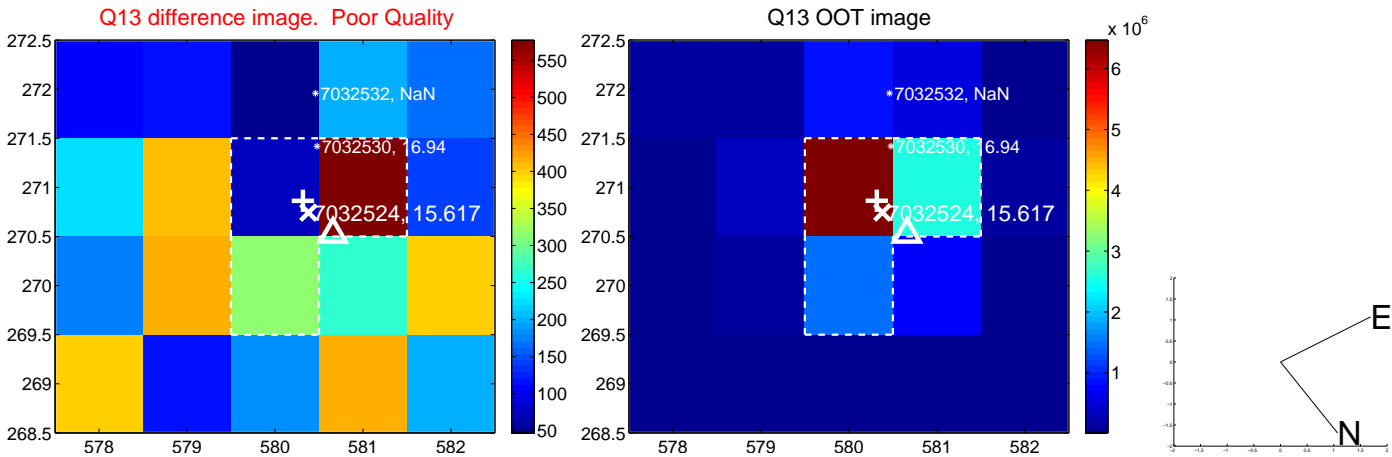
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



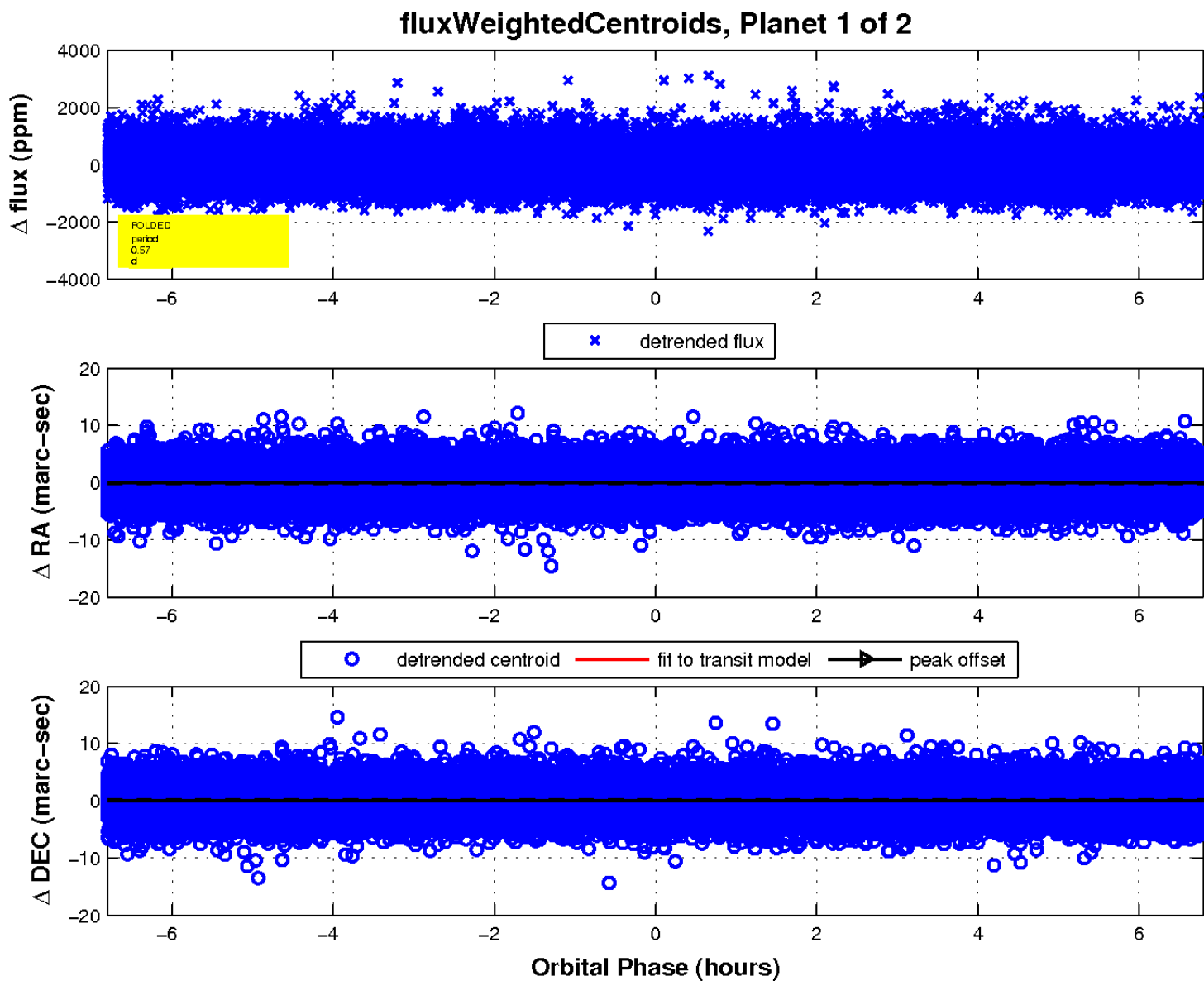
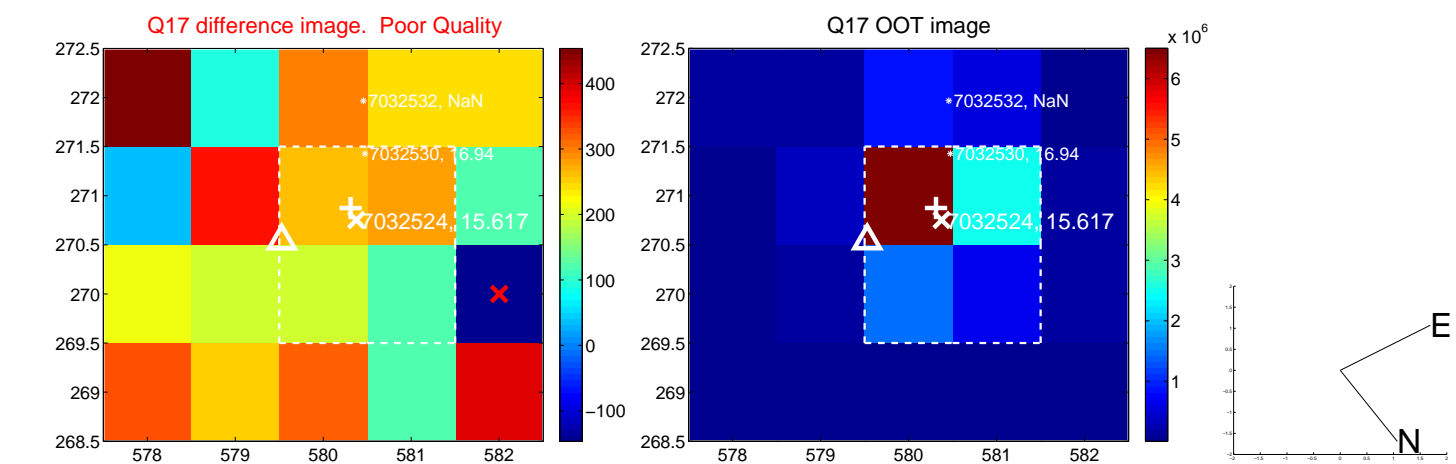
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

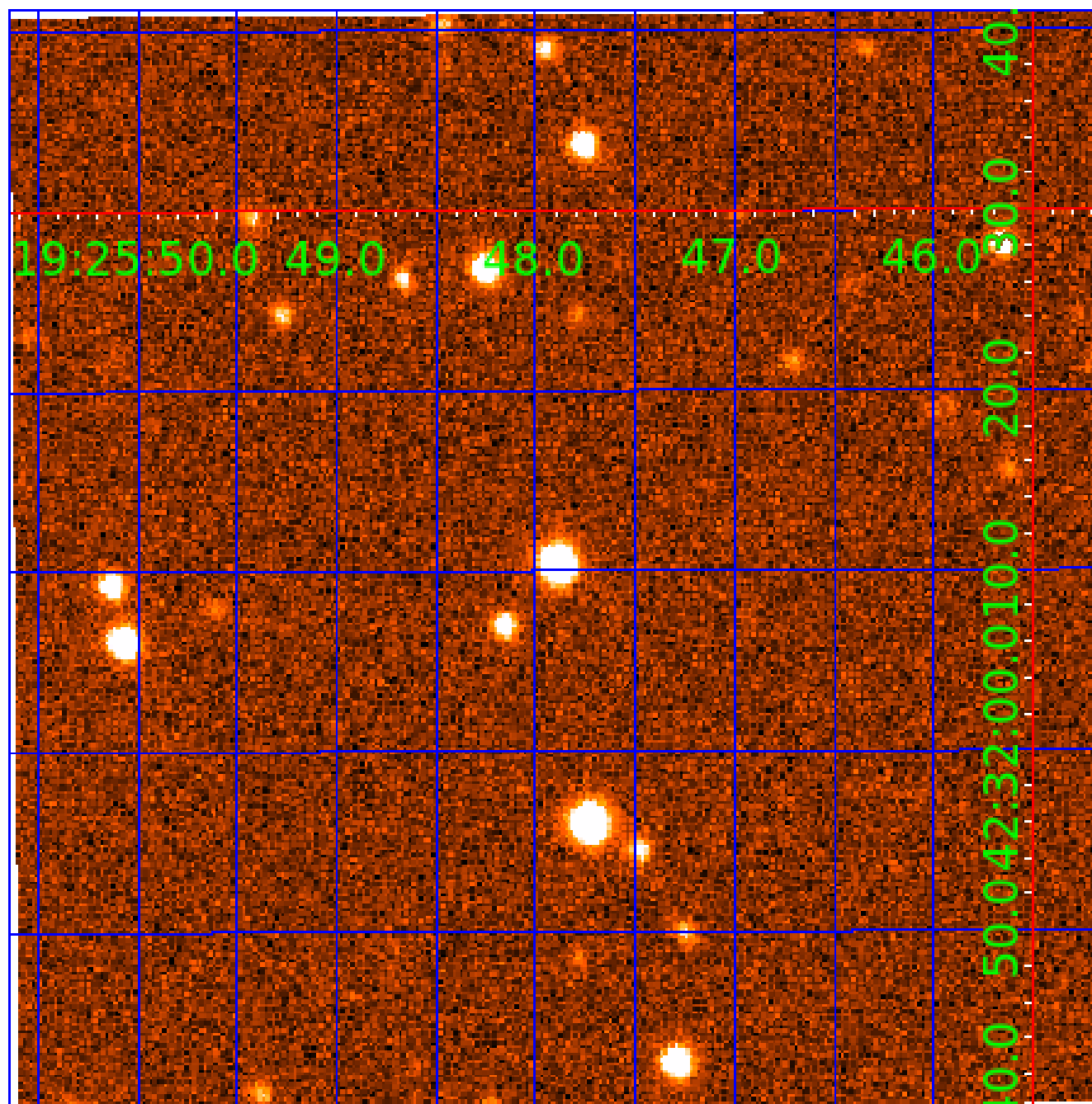


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007032524

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})
007032524-01	OBS	No	0.566771	131.832513	32.9	3.621	9.9	6.3	0.75	5559	0.43	3035.03
007032524-02	OBS	No	69.564919	183.141678	772.0	2.270	7.3	9.2	0.75	5559	2.06	4.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007032524-01	OBS	FP	0.00	1	0	0	1	LPP_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—EPHEM_MATCH
007032524-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

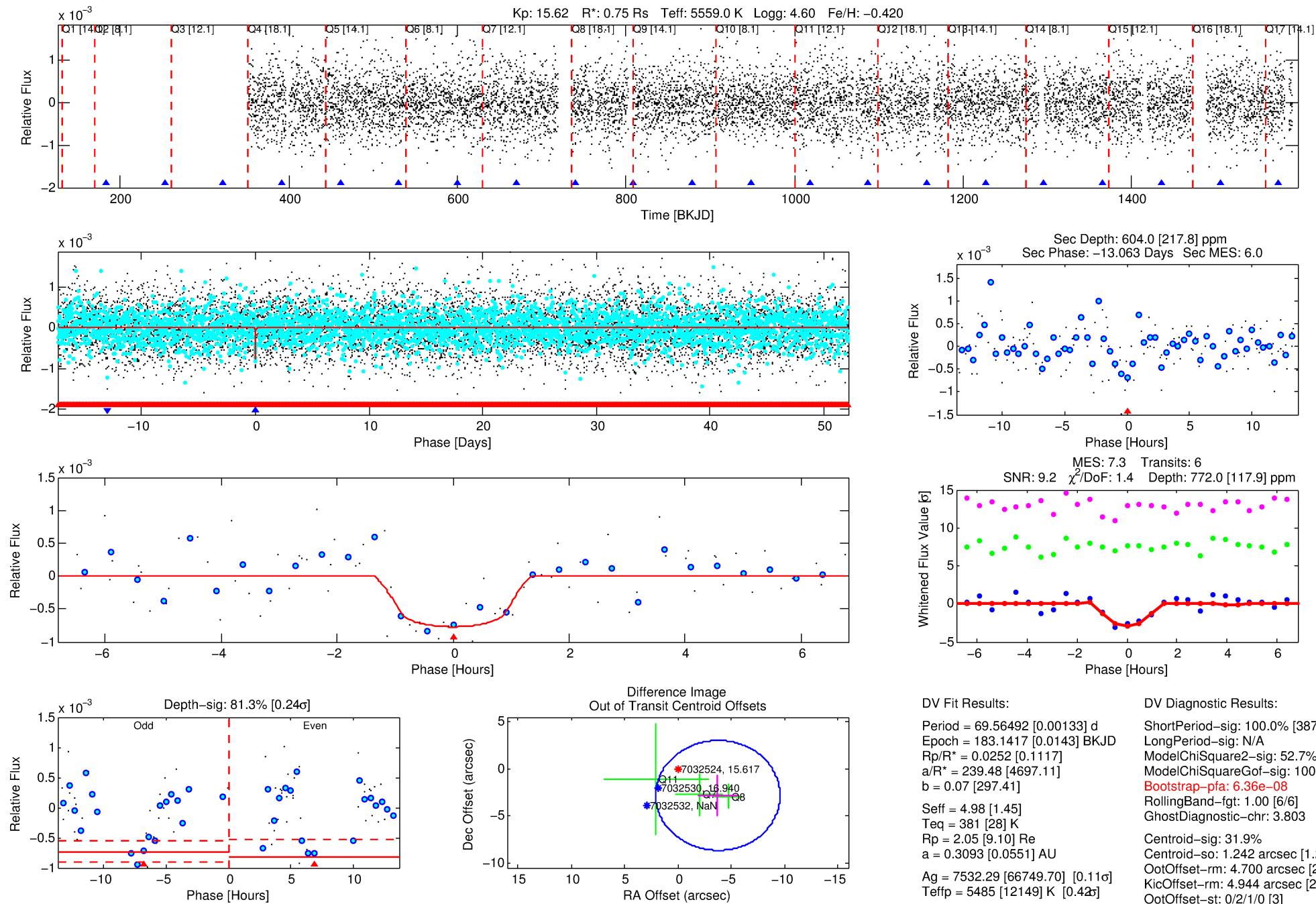
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007032524-02

No Significant Match Found

DV One-Page Summary

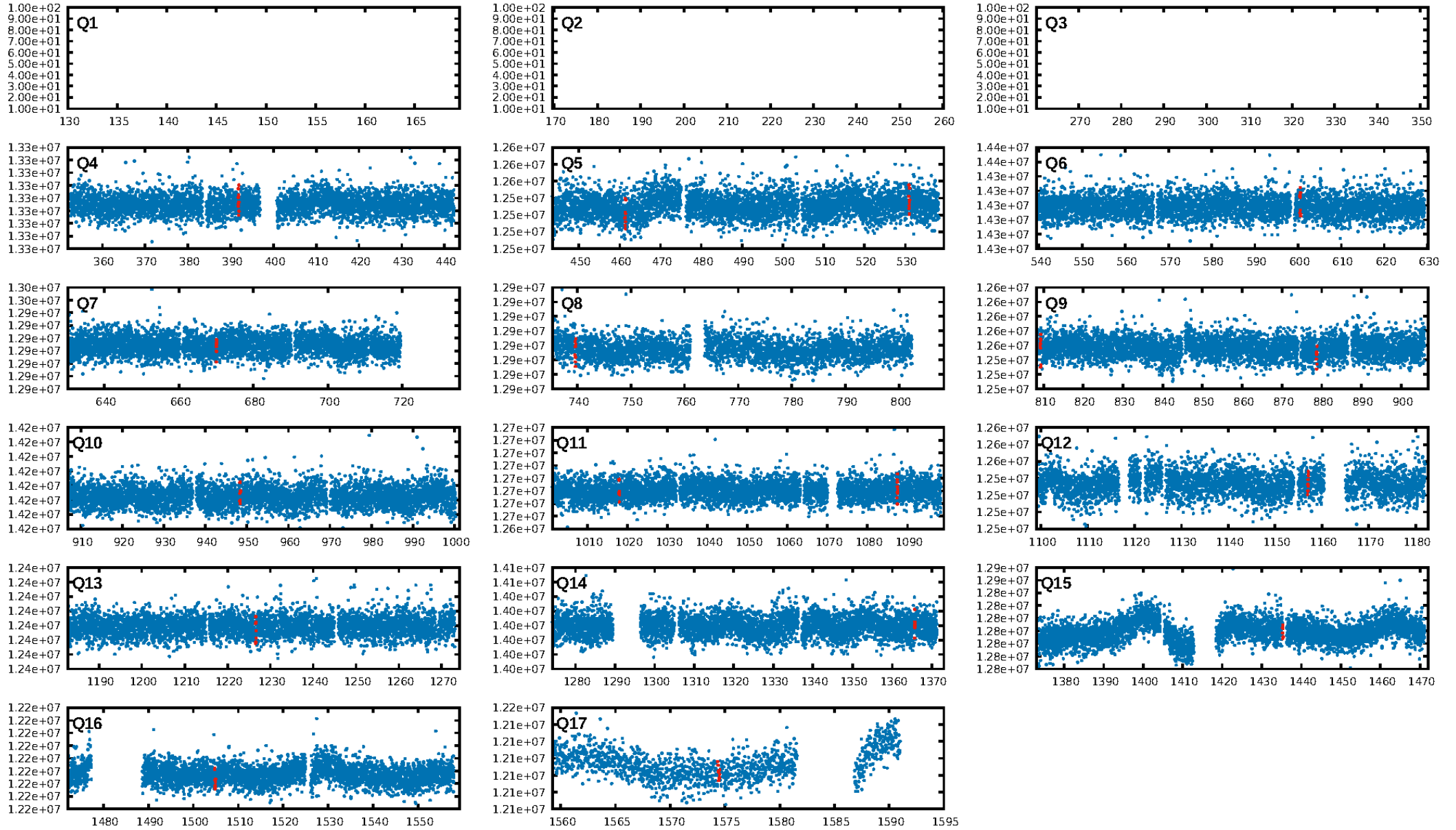
KIC: 7032524 Candidate: 2 of 2 Period: 69.565 d



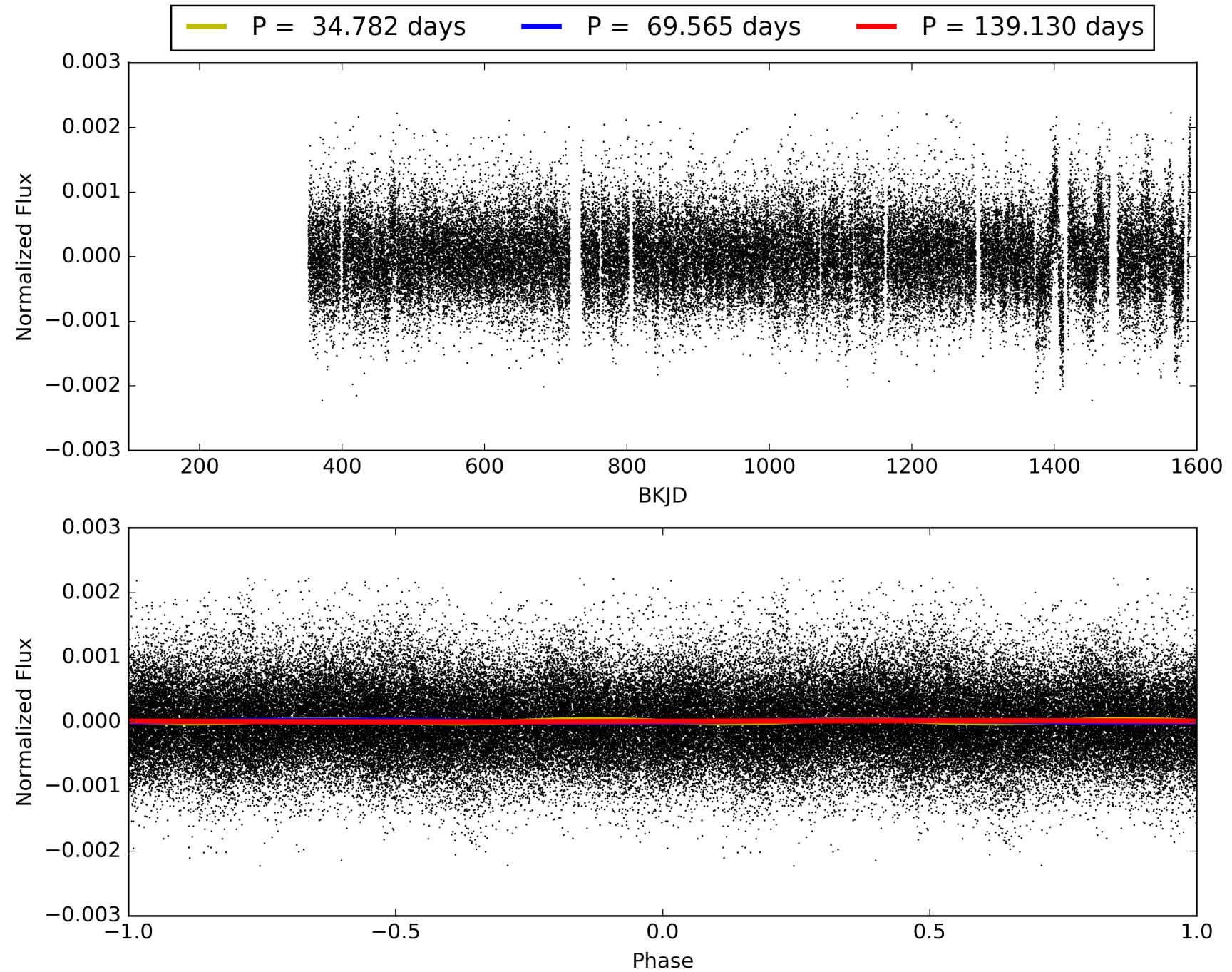
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 16:11:54 Z

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

TCE 007032524-02, PDC Light Curves

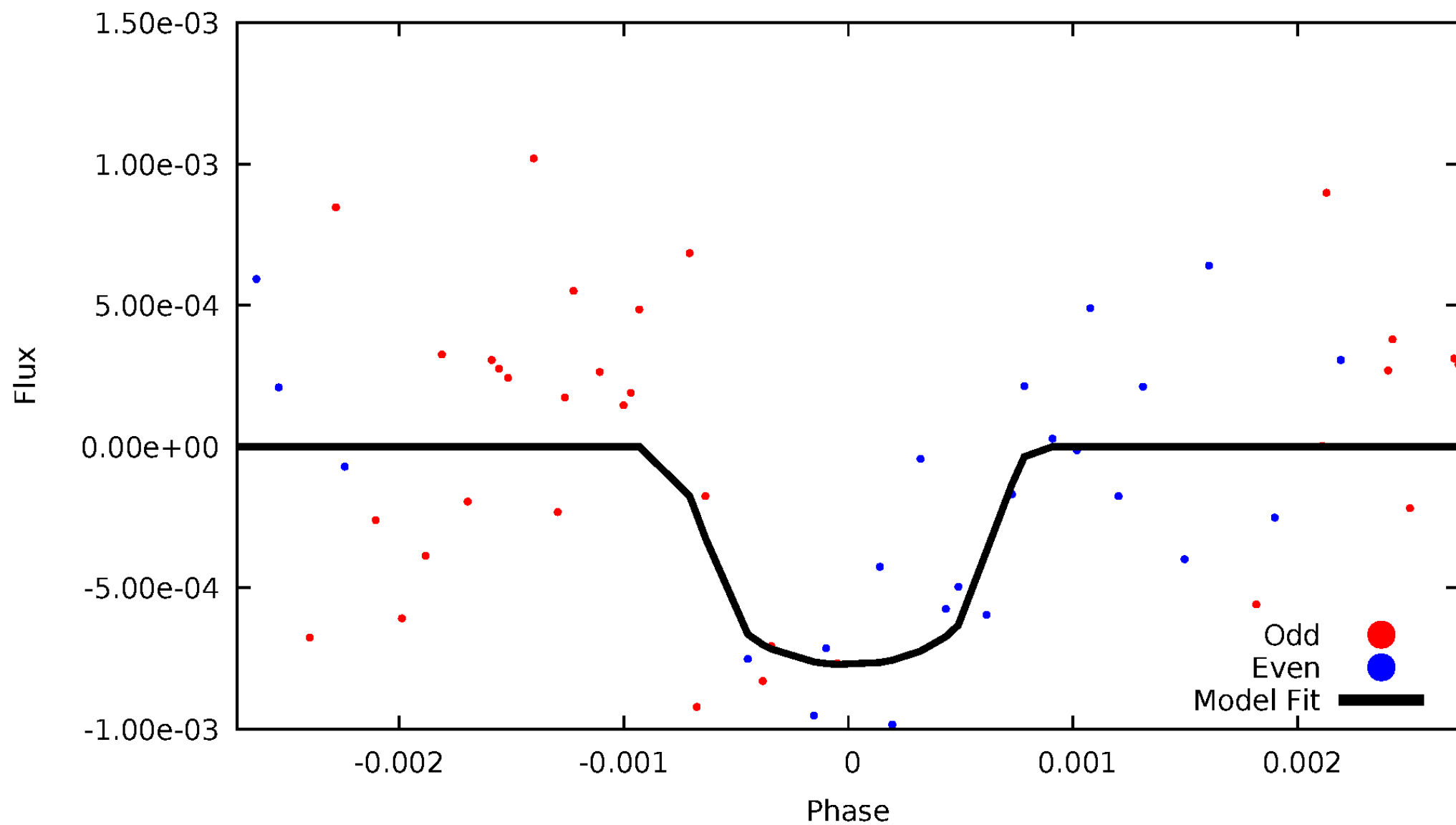


TCE 007032524-02



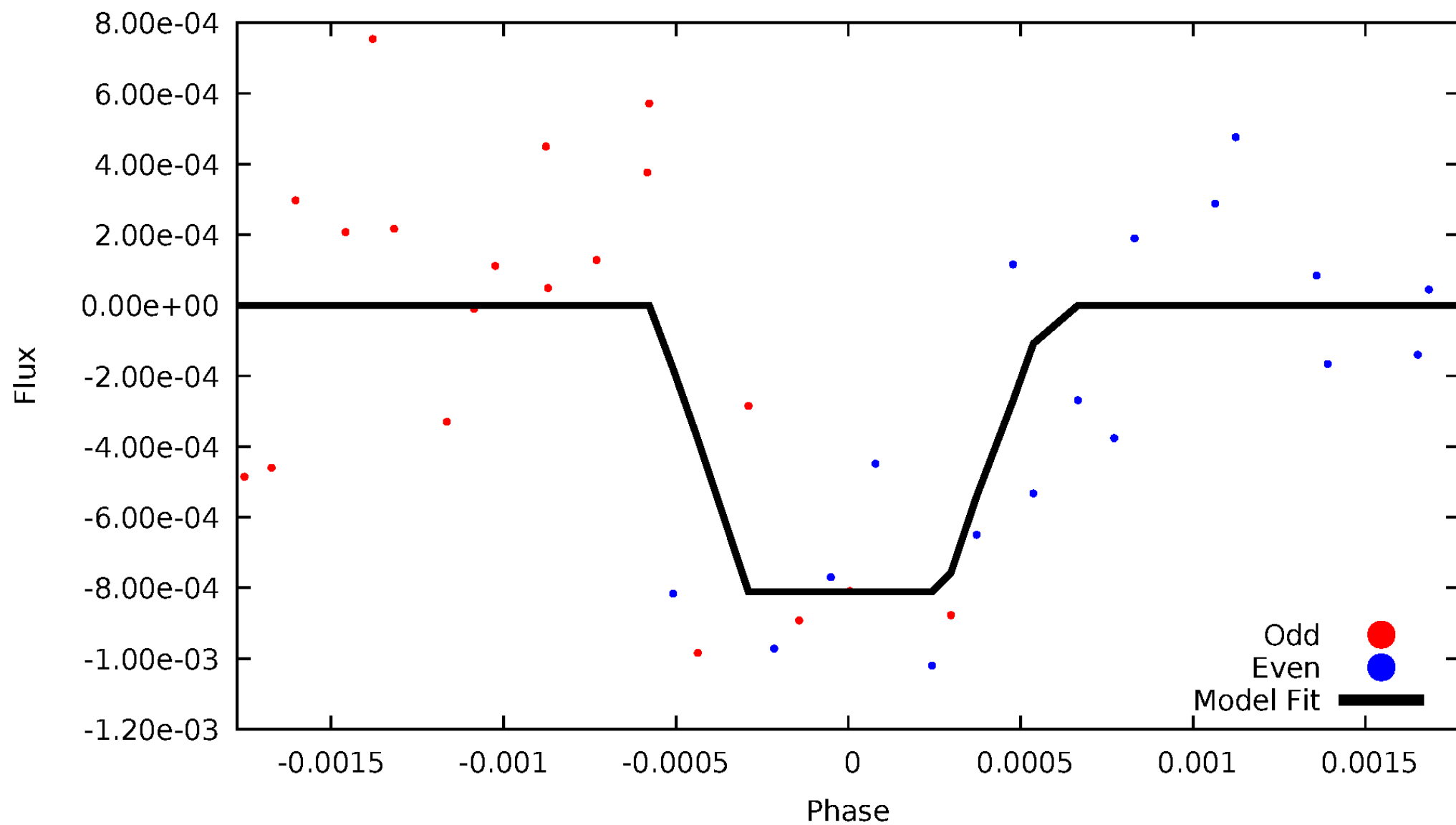
DV Odd/Even

TCE 007032524-02



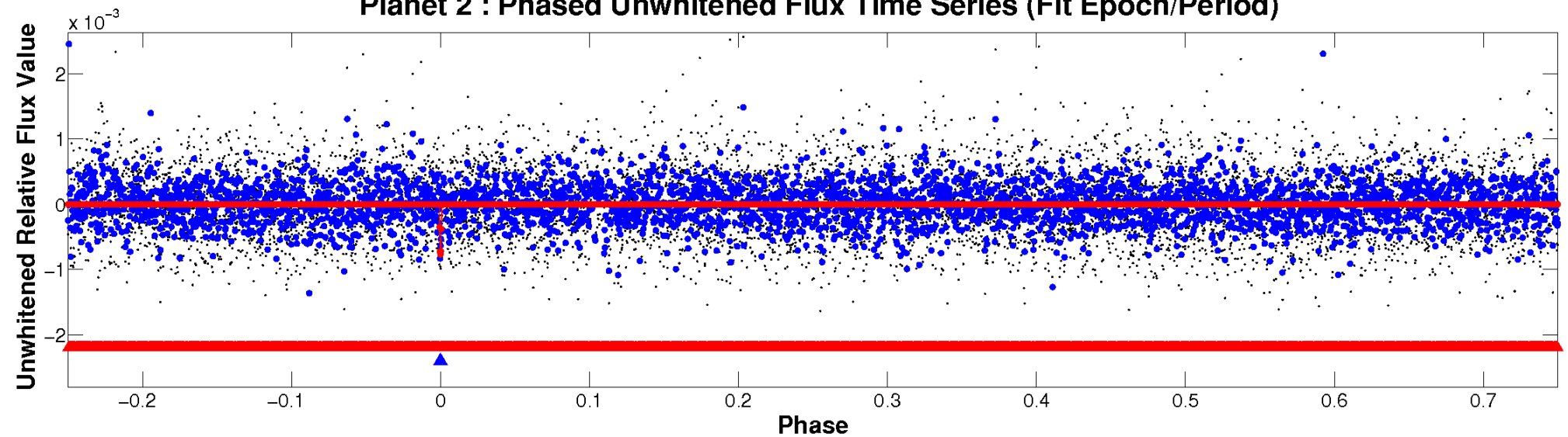
ALT Odd/Even

TCE 007032524-02

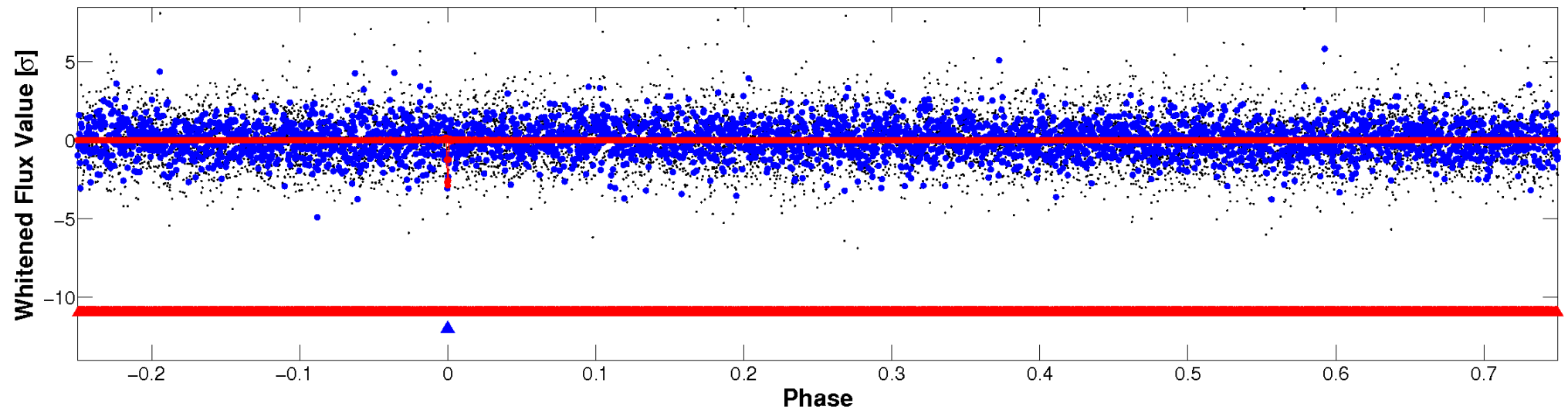


Non-Whitened Vs. Whitened Light Curve

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

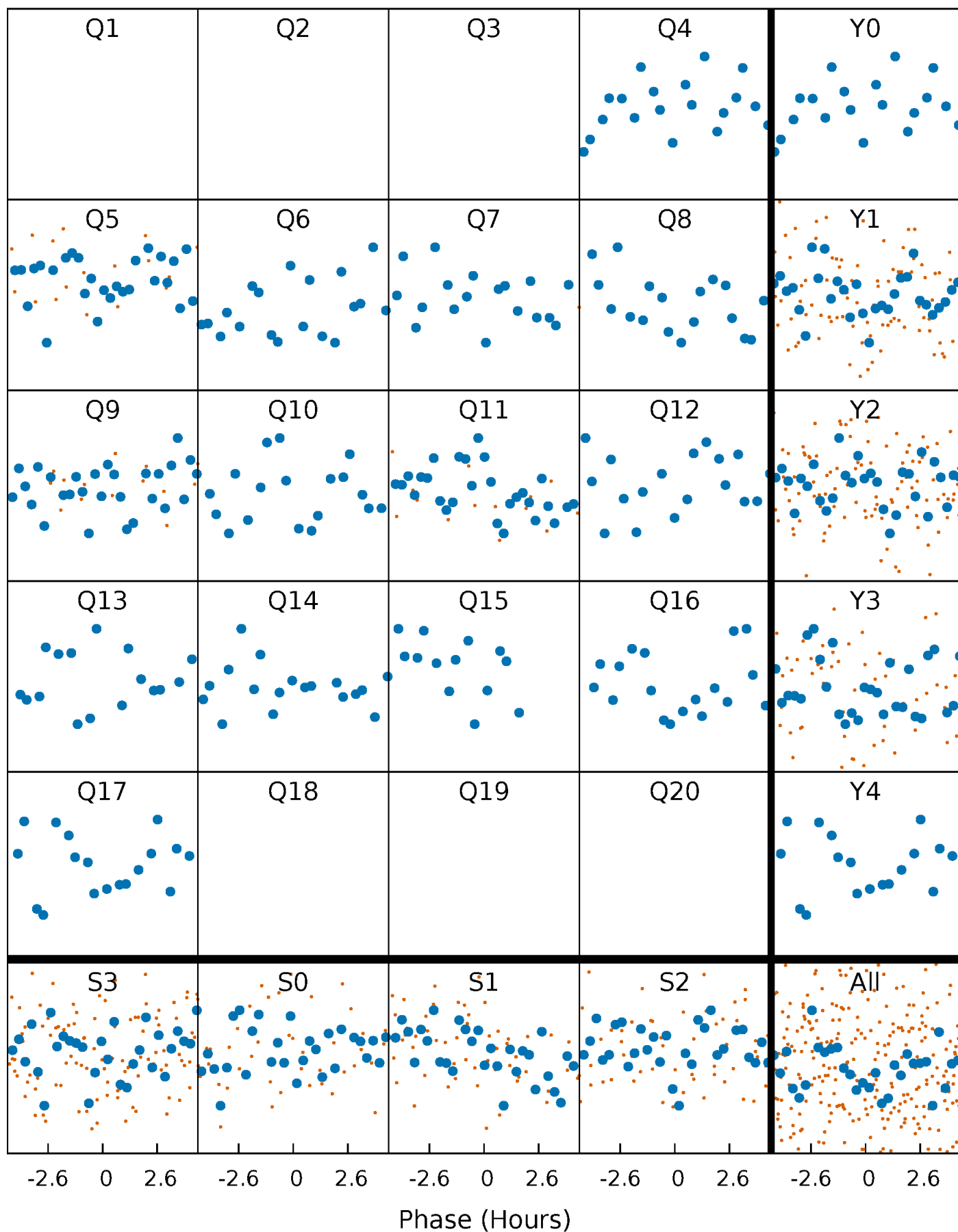


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



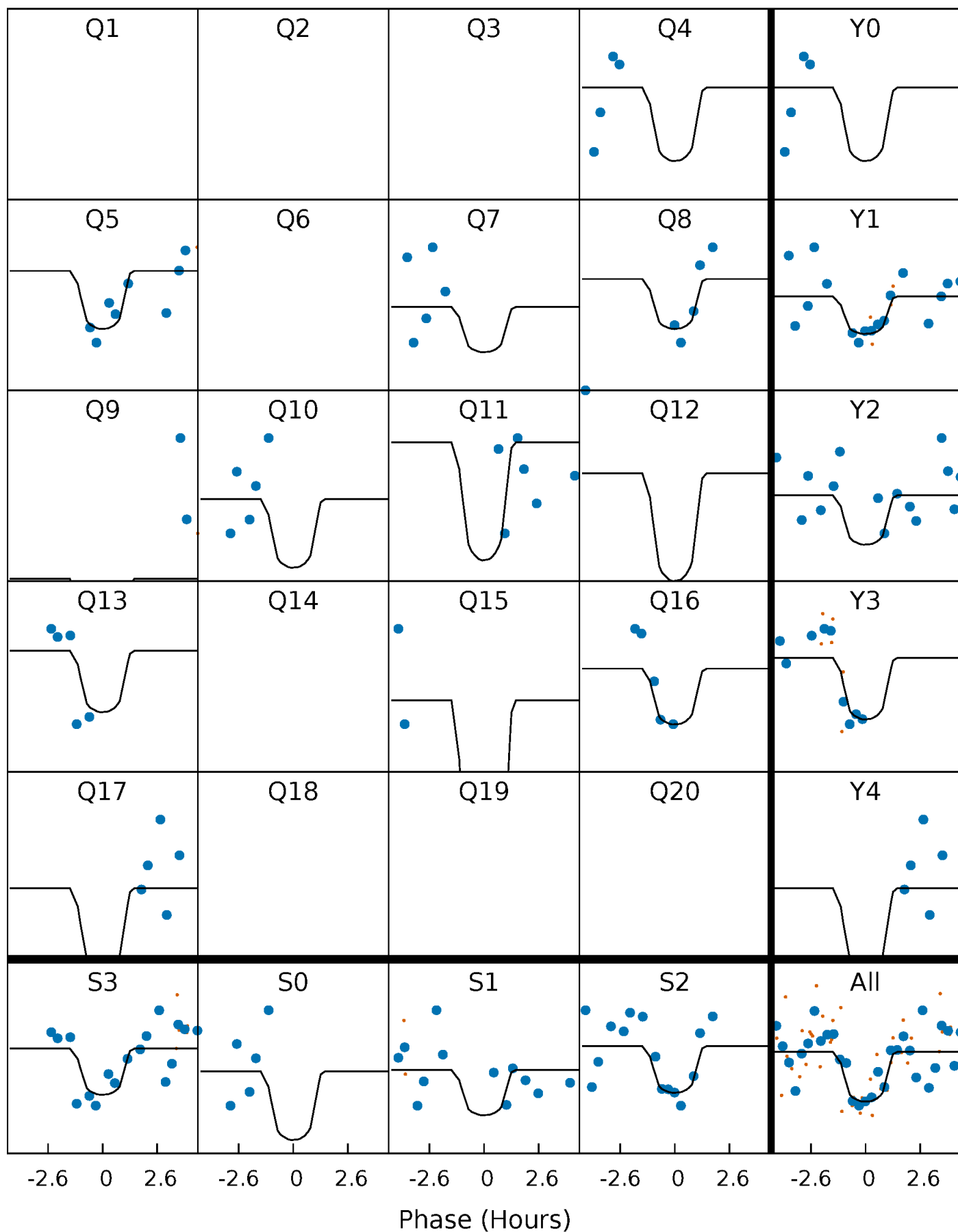
PDC Quarter-Phased Transit Curves

TCE 007032524-02 P= 69.564919 Days $T_0=183.141678$ (BKJD)



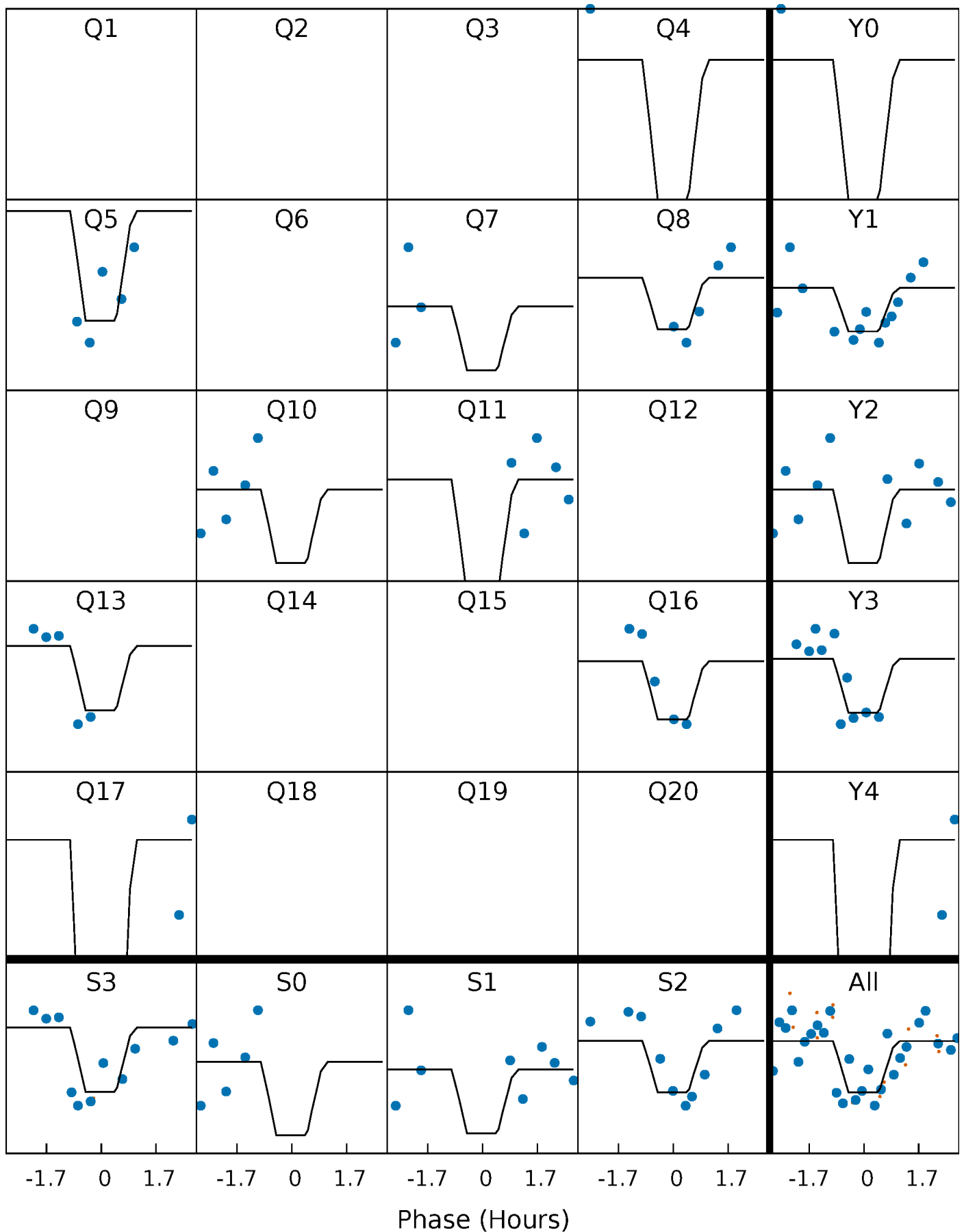
DV Quarter-Phased Transit Curves

TCE 007032524-02 P= 69.564919 Days $T_0=183.141678$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

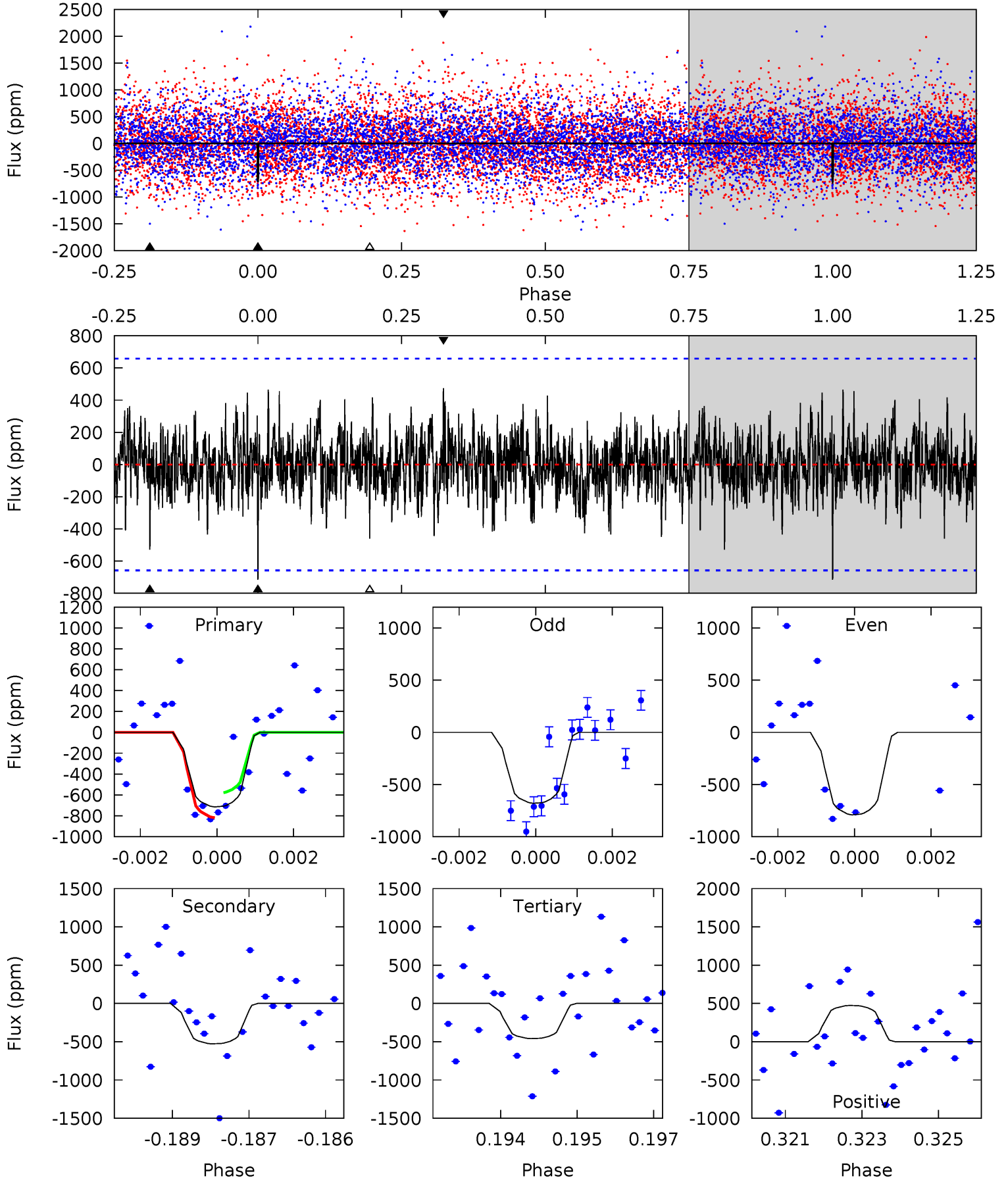
TCE 007032524-02 P= 69.563027 Days $T_0=183.153537$ (BKJD)



DV Model-Shift Uniqueness Test

007032524-02, P = 69.564919 Days, E = 183.141678 Days

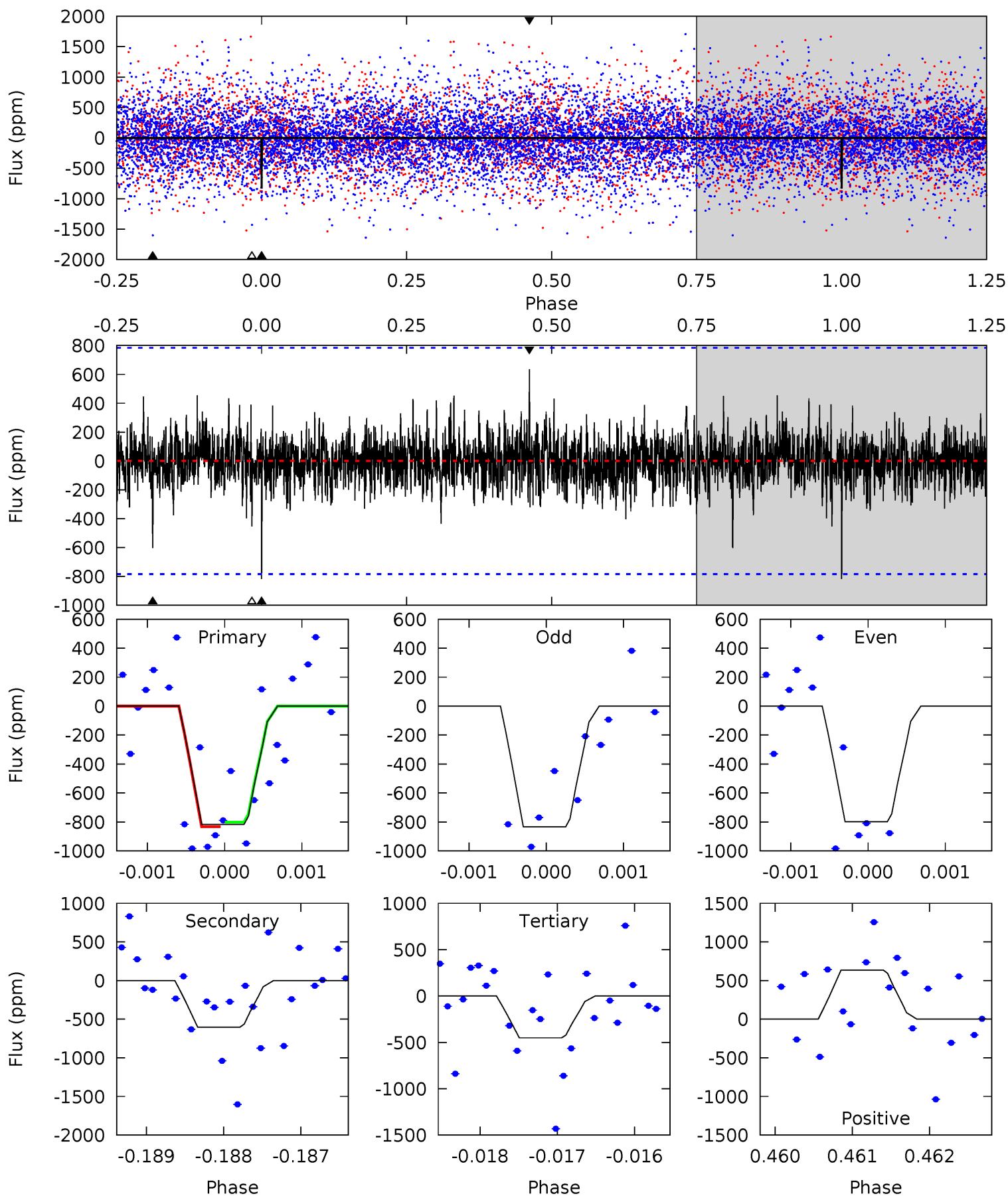
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.82	4.30	3.74	3.86	5.37	3.15	1.16	2.08	1.96	0.56	0.44	0.42	1.00	0.40	0.98



Alt Model-Shift Uniqueness Test

007032524-02, P = 69.563027 Days, E = 183.153537 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.69	4.20	3.15	4.43	5.46	3.30	0.90	2.54	1.26	1.06	-0.22	0.12	1.01	0.44	0.11



Stellar Parameters For KIC 007032524

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5559^{+200}_{-183}	$4.604^{+0.036}_{-0.135}$	$-0.420^{+0.300}_{-0.300}$	$0.746^{+0.162}_{-0.065}$	$0.818^{+0.088}_{-0.080}$	$2.773^{+0.501}_{-1.087}$
	+4%/-3%	+1%/-3%	+71%/-71%	+22%/-9%	+11%/-10%	+18%/-39%
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 007032524-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-528 ± 123	$7.35^{+7.64}_{-5.04}$	541^{+31}_{-24}	3367^{+1780}_{-628}	507^{+4616}_{-391}
Alt.	-604 ± 144	$7.17^{+7.60}_{-4.87}$	540^{+31}_{-23}	3453^{+1833}_{-661}	609^{+5255}_{-470}

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

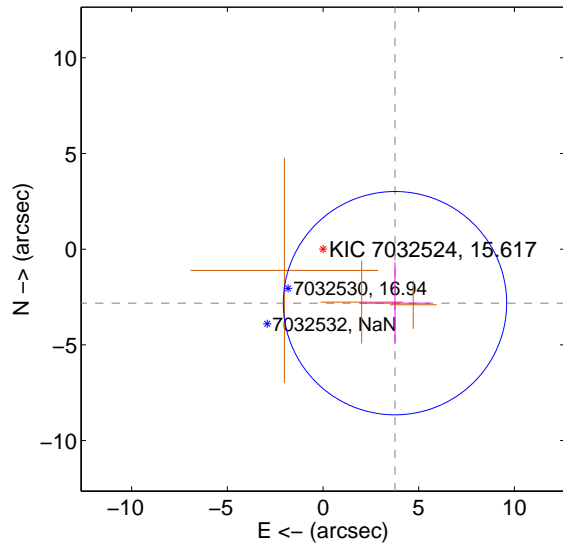
Supplemental centroid analysis for 007032524-02. Kepler magnitude: 15.62. Transit SNR 9.20

There are 0 quarters with good PRF difference image offsets

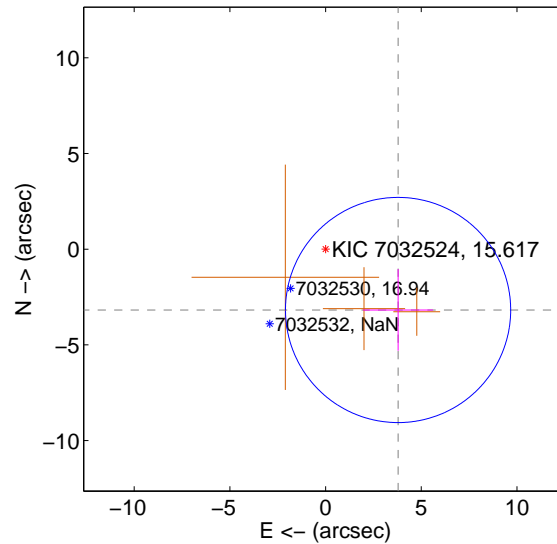
The direct PRF centroid is offset from the target star catalog position by about 0.37 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.700 ± 1.945	2.42	-3.759 ± 1.830	-2.822 ± 2.133
PRF-fit source offset from KIC position	4.944 ± 1.961	2.52	-3.787 ± 1.830	-3.178 ± 2.133
photometric centroid source offset	1.24 ± 1.01	1.23	0.12 ± 1.11	-1.24 ± 1.01

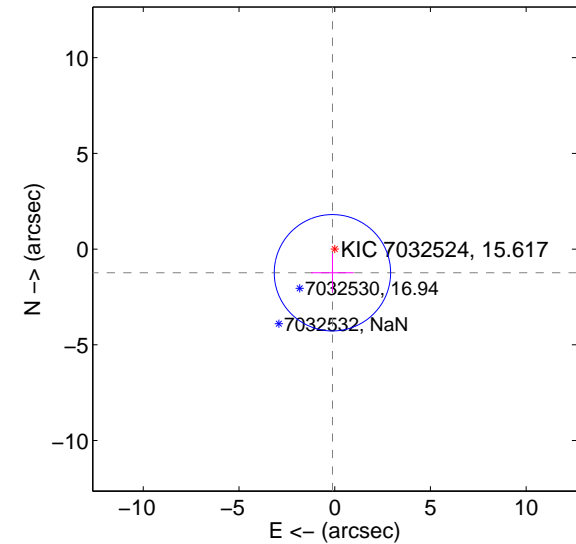
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

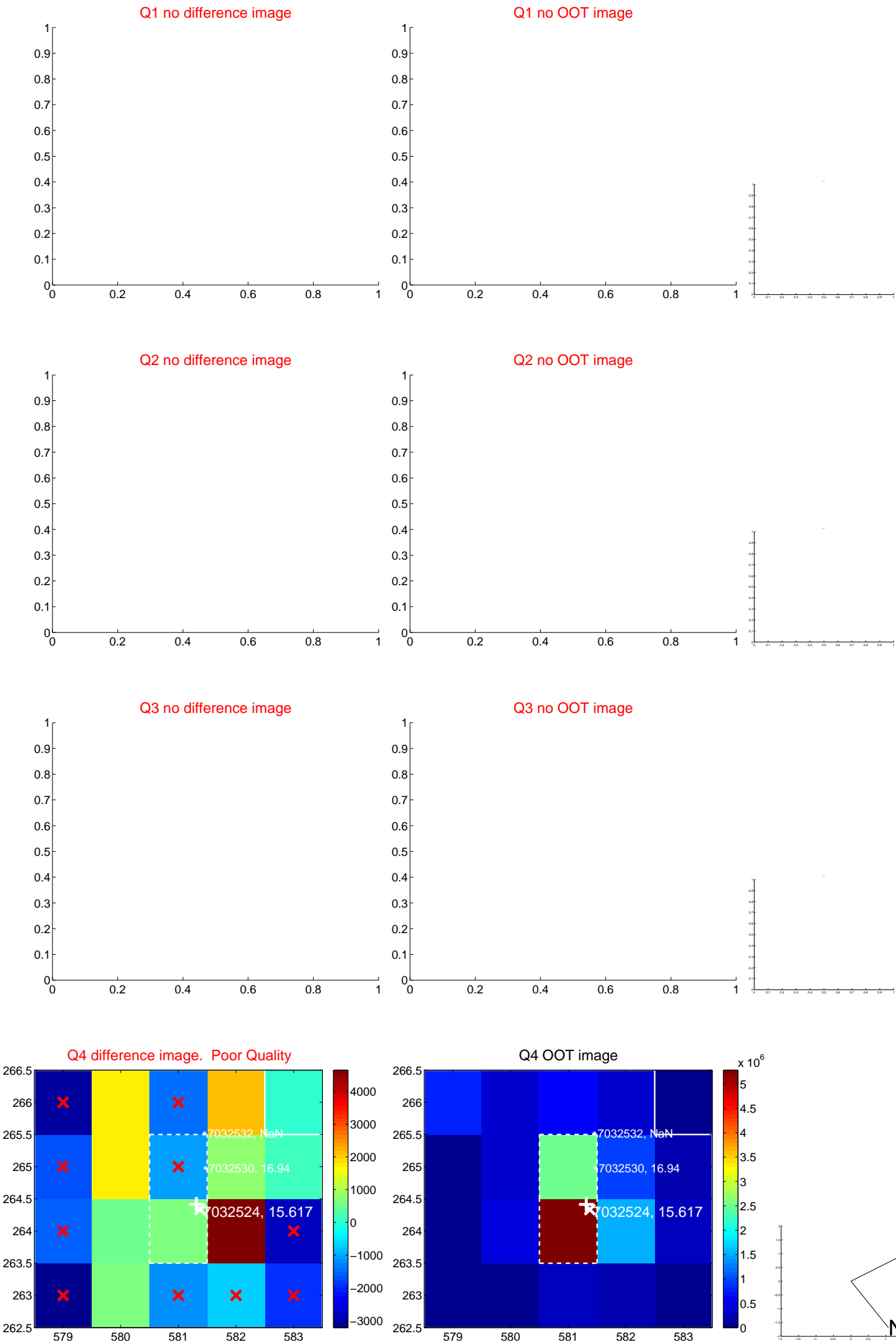


offset from photometric centroids

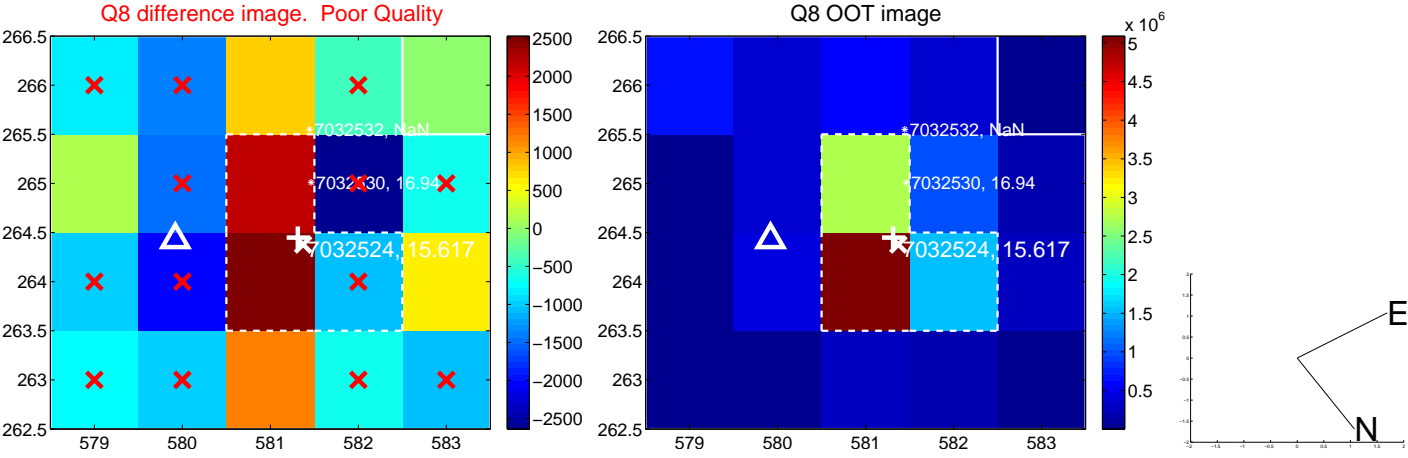
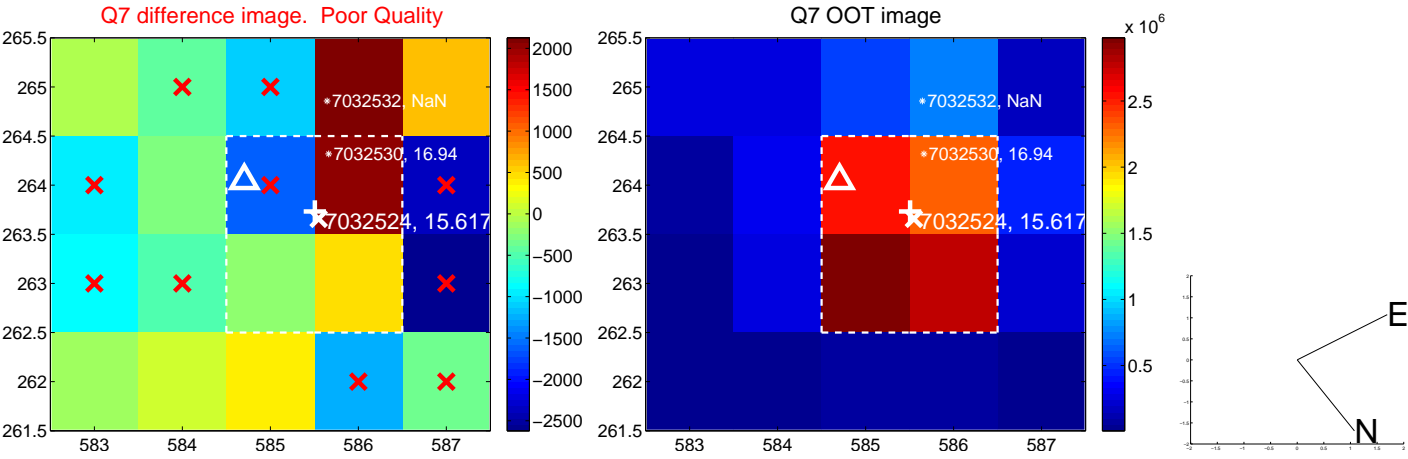
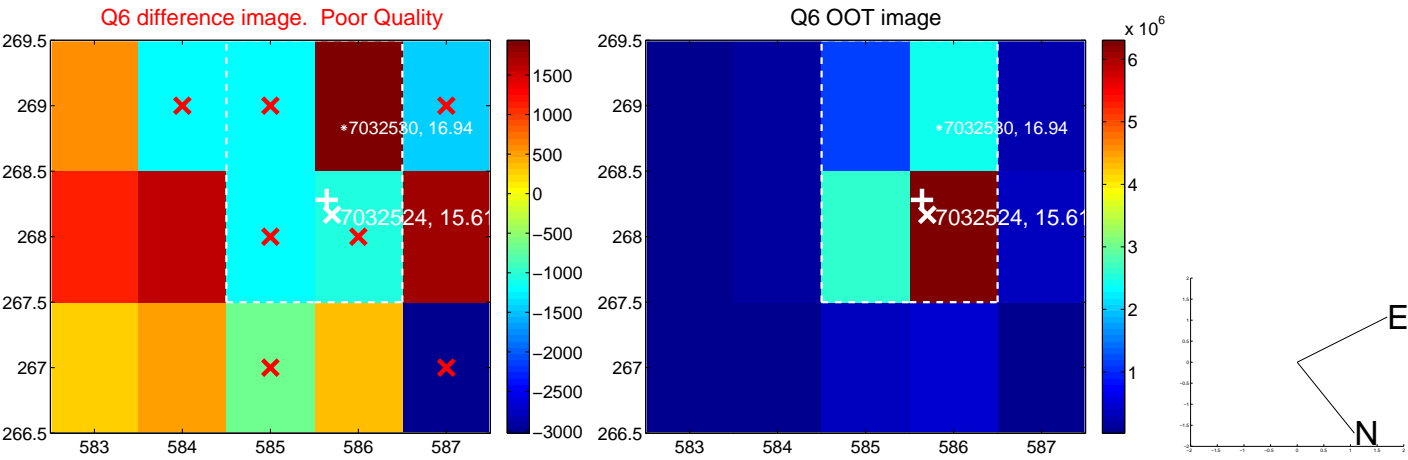
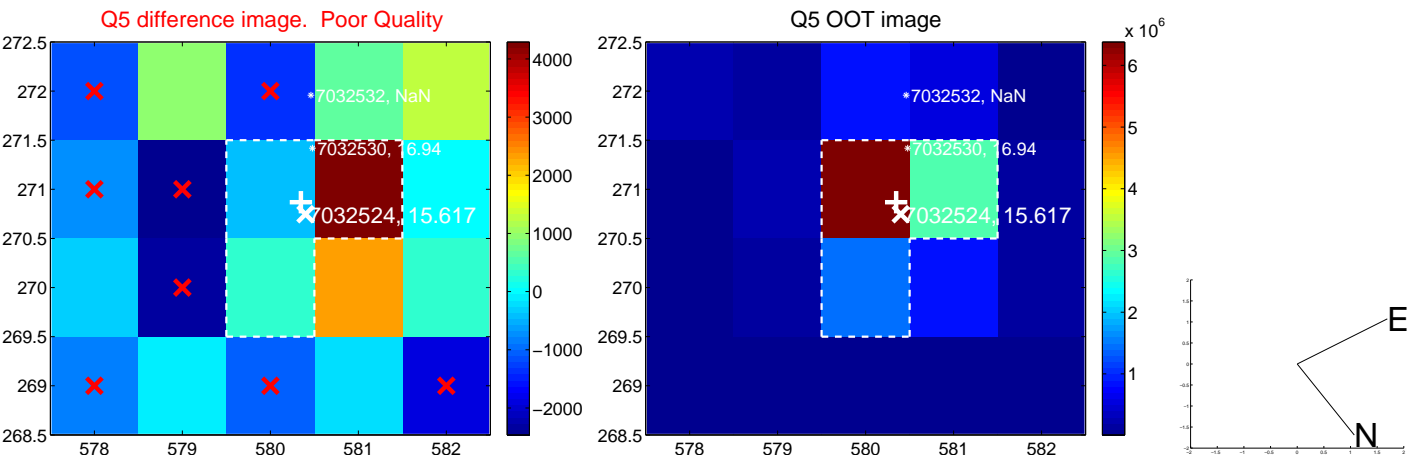


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

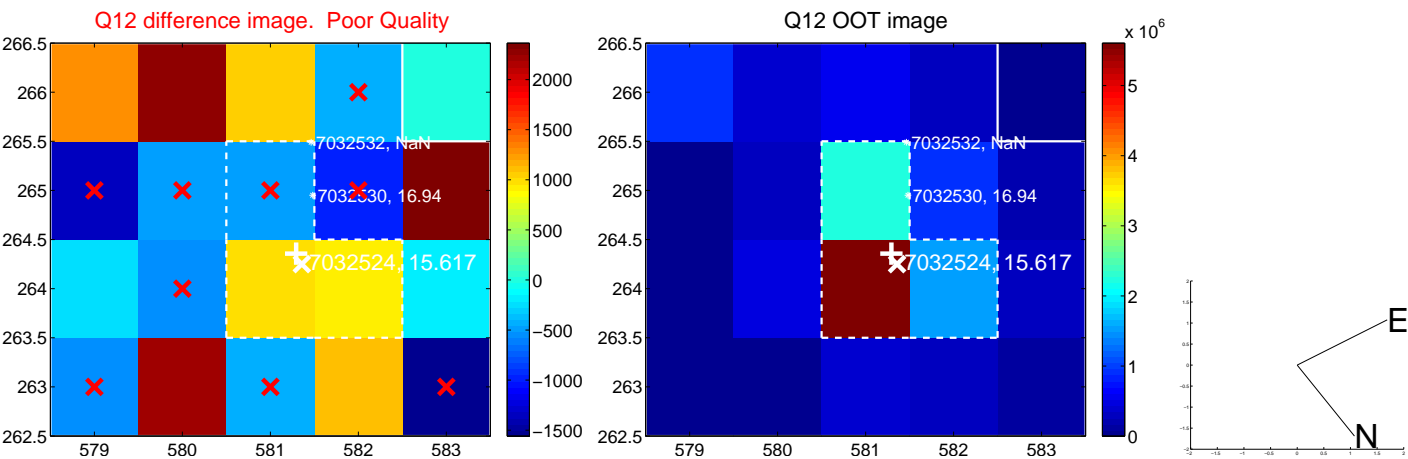
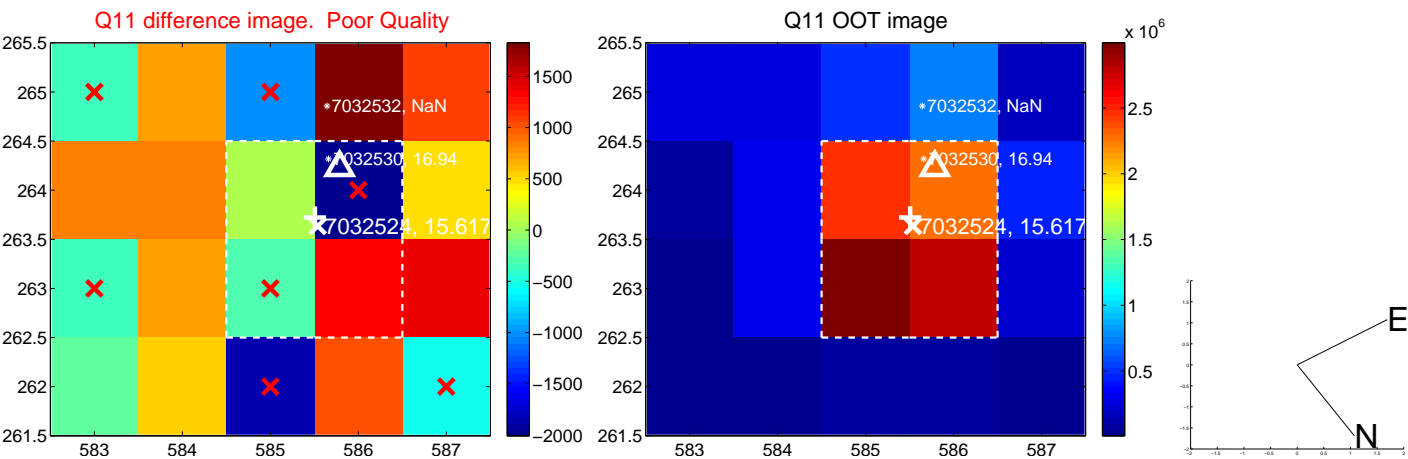
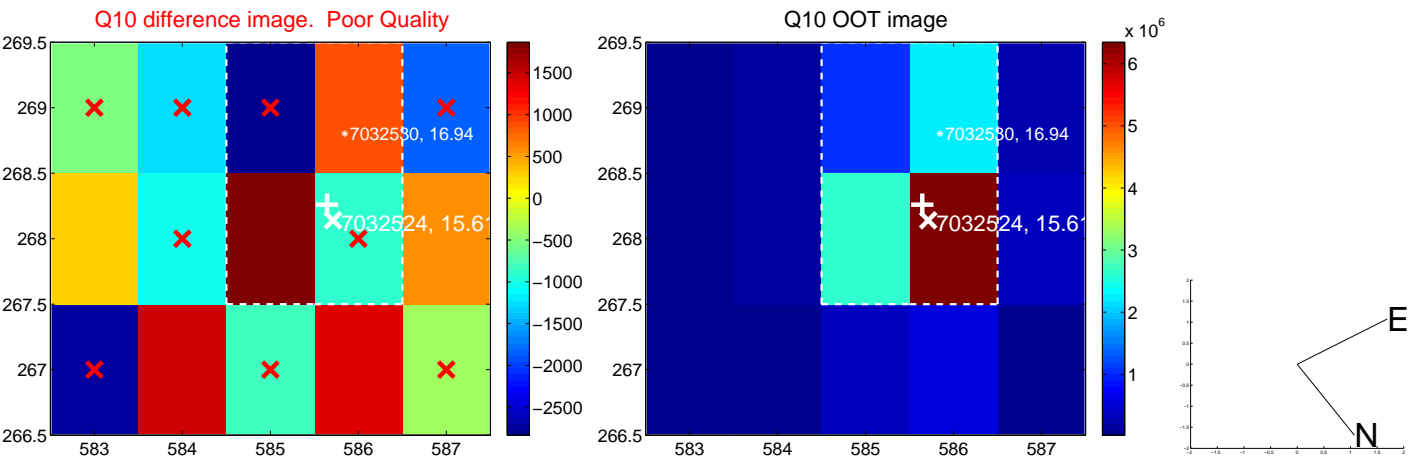
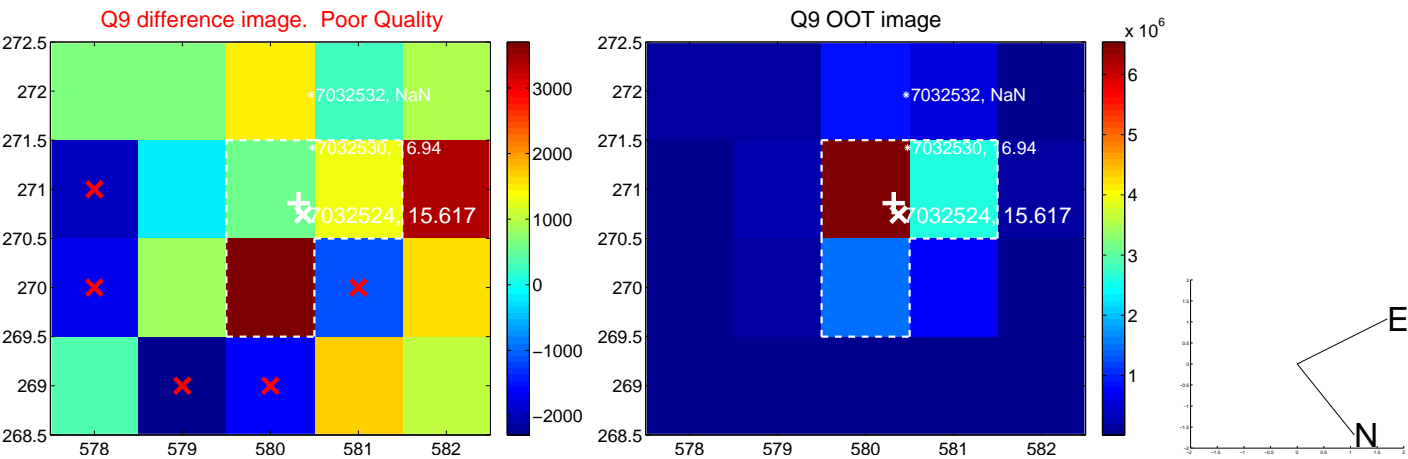
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



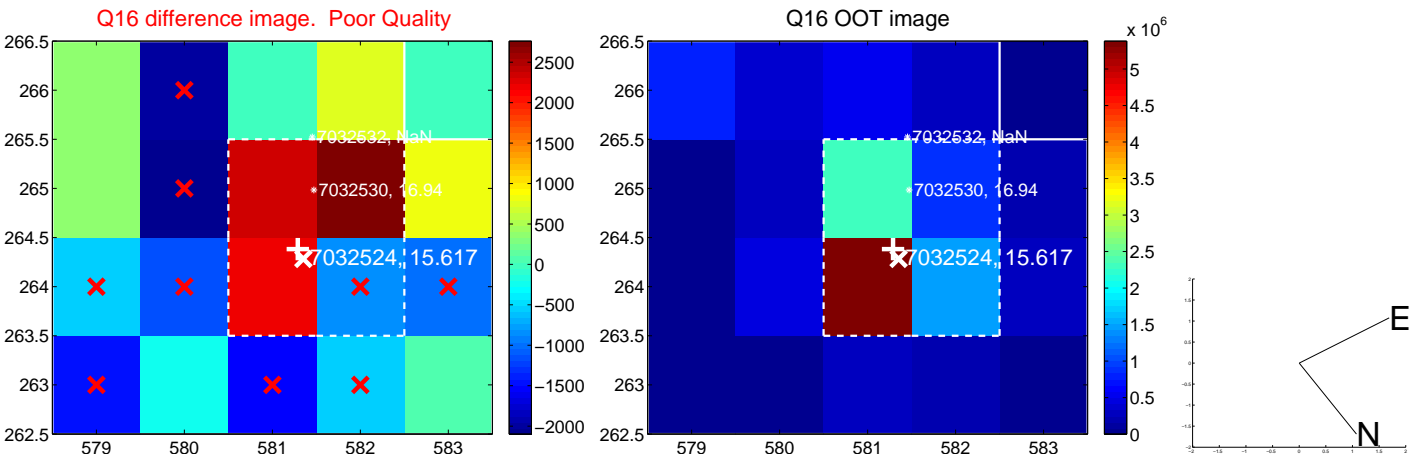
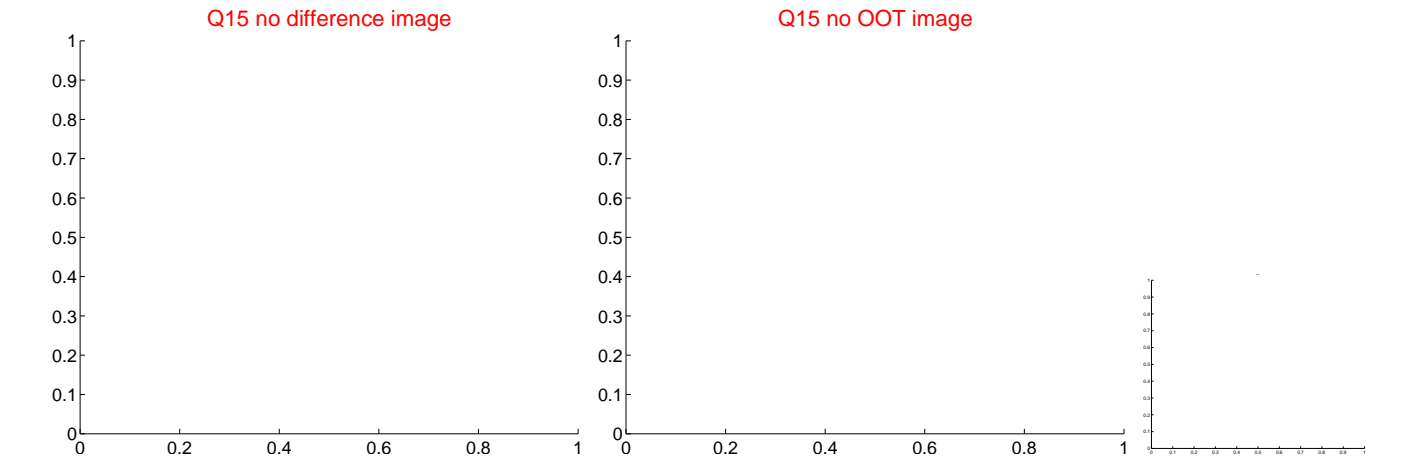
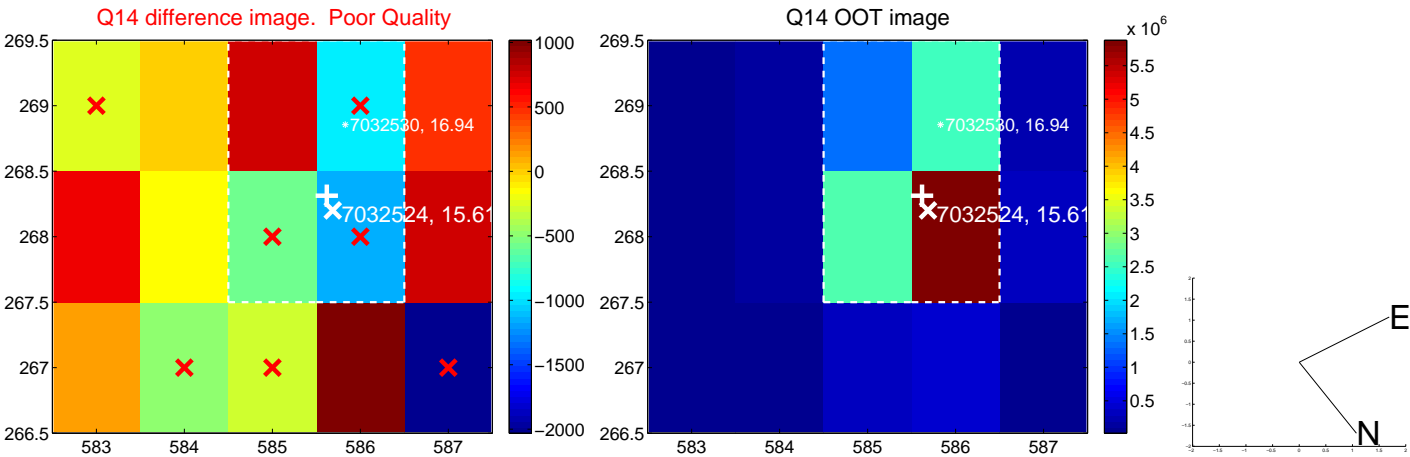
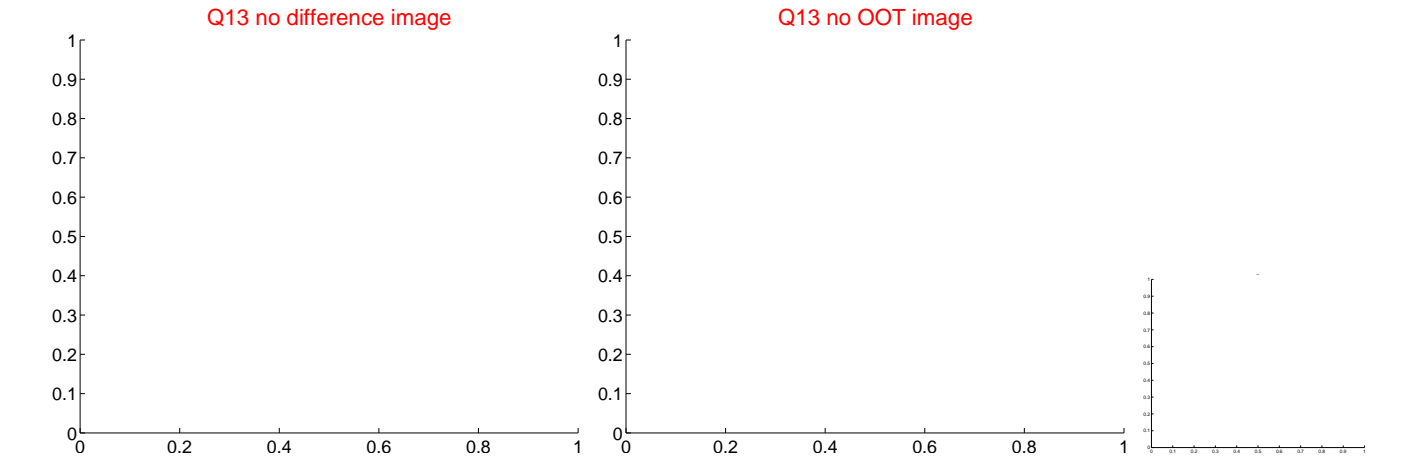
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



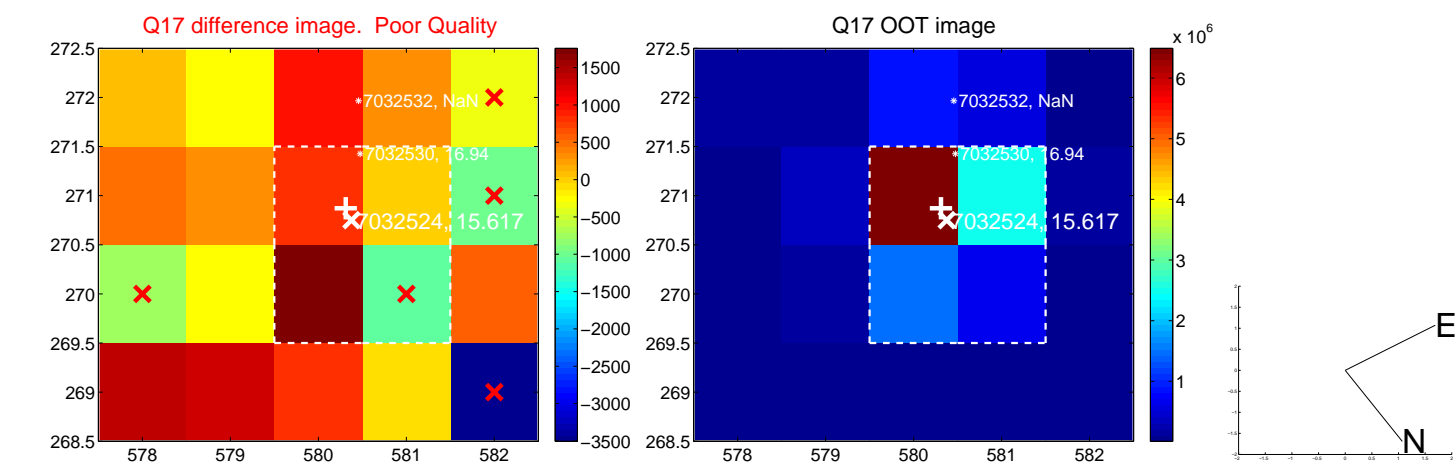
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



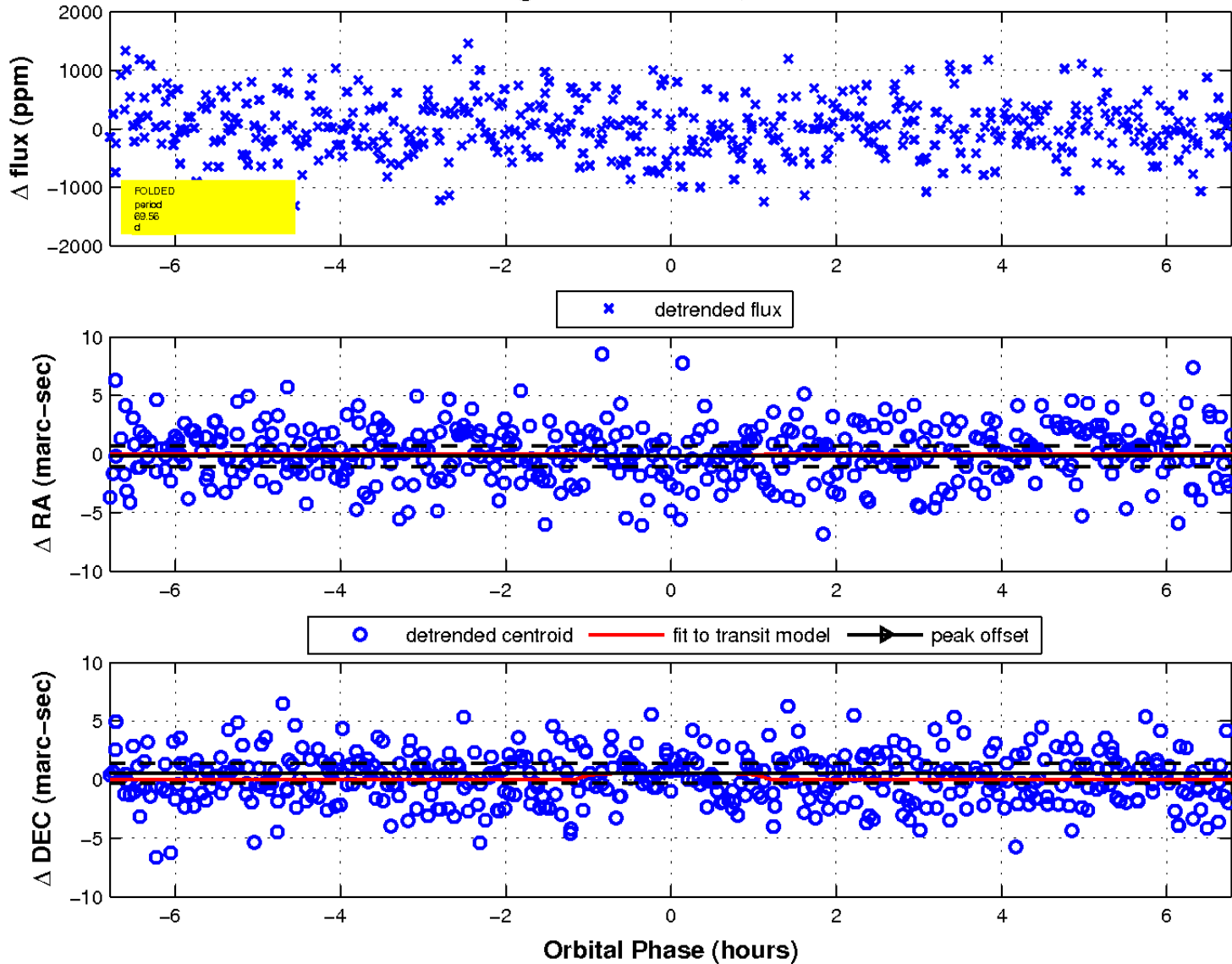
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

