

KIC 008557474

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})
008557474-01	OBS	No	2.379389	131.929943	15.1	18.341	7.3	5.1	1.80	7309	0.72	5260.90
008557474-02	OBS	No	11.578352	133.114397	136.0	1.100	9.6	7.0	1.80	7309	2.44	638.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008557474-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
008557474-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

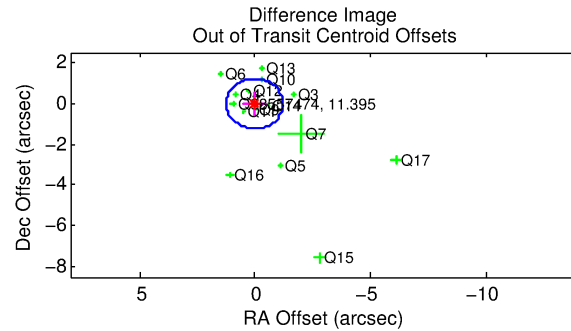
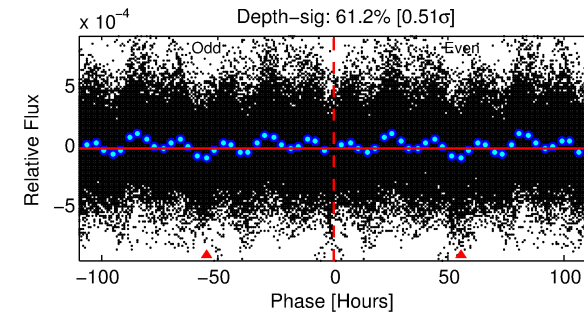
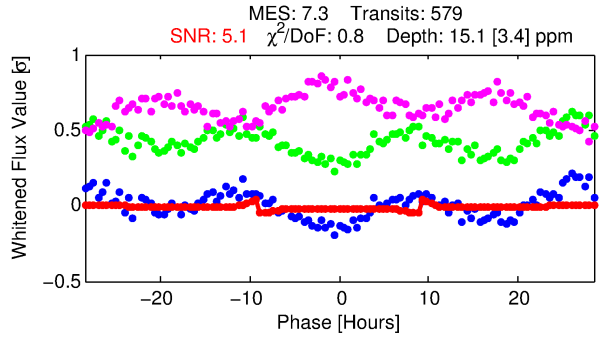
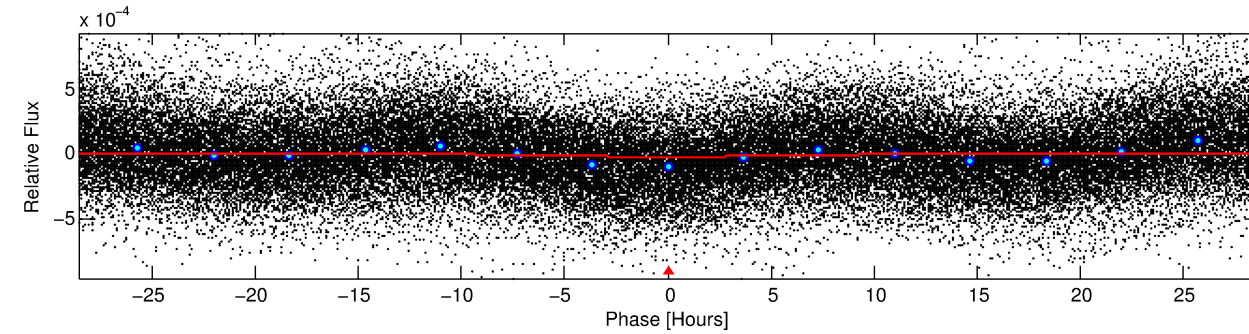
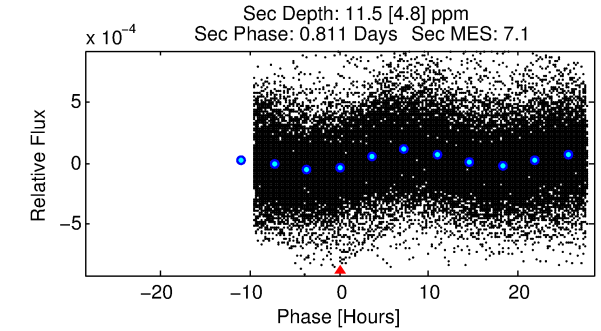
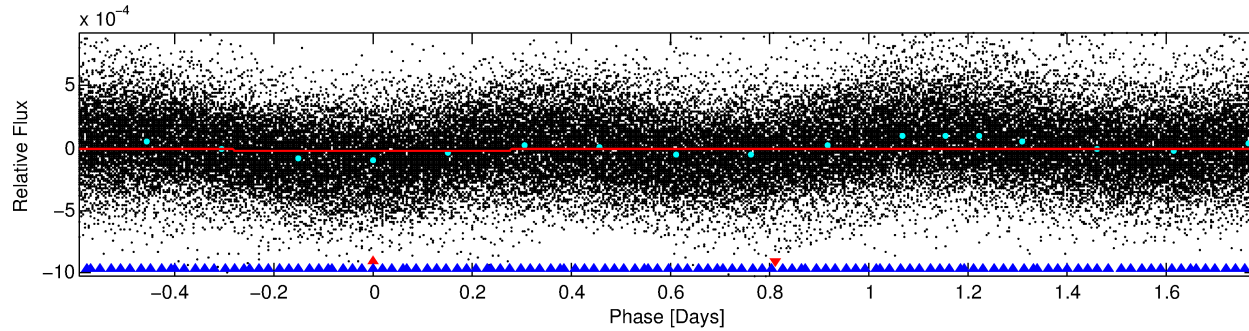
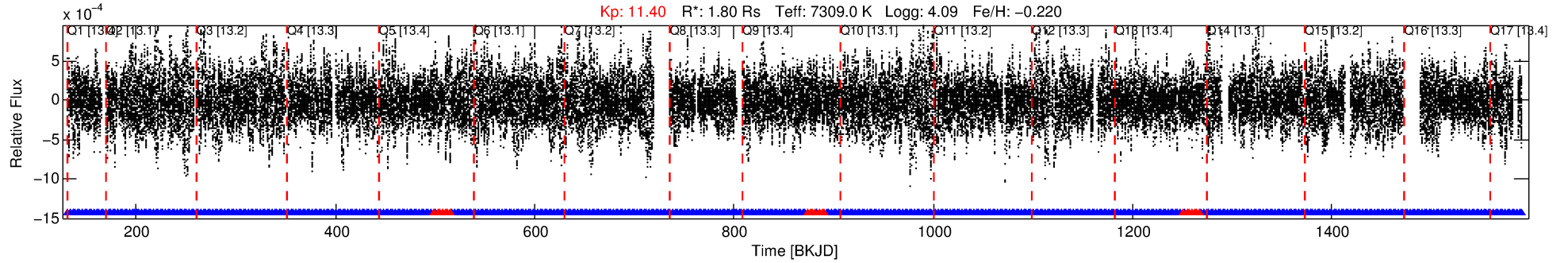
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008557474-01

No Significant Match Found

DV One-Page Summary

KIC: 8557474 Candidate: 1 of 2 Period: 2.379 d



DV Fit Results:

Period = 2.37939 [0.00003] d
Epoch = 131.9299 [0.0060] BKJD
Rp/R* = 0.0037 [0.0028]
a/R* = 1.16 [1.38]
b = 0.40 [9.97]
Seff = 5260.89 [1999.64]
Teq = 2172 [206] K
Rp = 0.72 [0.58] Re
a = 0.0397 [0.0096] AU
Ag = 19.31 [30.91] [0.59σ]
Teffp = 7039 [2768] K [1.75σ]

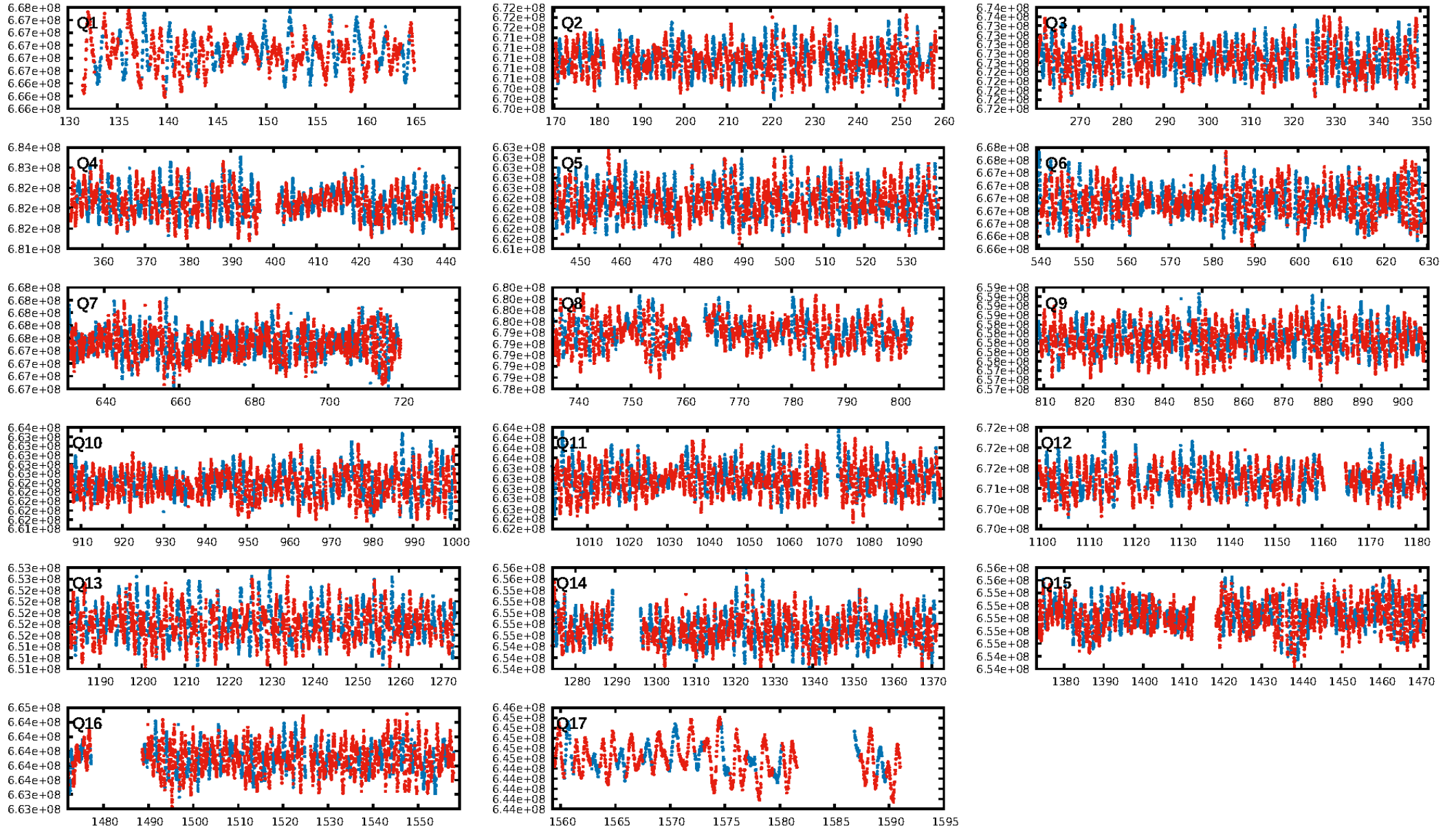
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [12.02σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.94e-61
RollingBand-fgt: 0.96 [531/552]
GhostDiagnostic-chr: 2.404
Centroid-sig: 6.7%
Centroid-so: 0.890 arcsec [1.51σ]
OotOffset-rm: 0.039 arcsec [0.10σ]
OotOffset-st: 3/4/4/4 [15]
KicOffset-rm: 0.172 arcsec [0.26σ]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 0.60 [9/15]
DiffImageOverlap-fno: 1.00 [17/17]

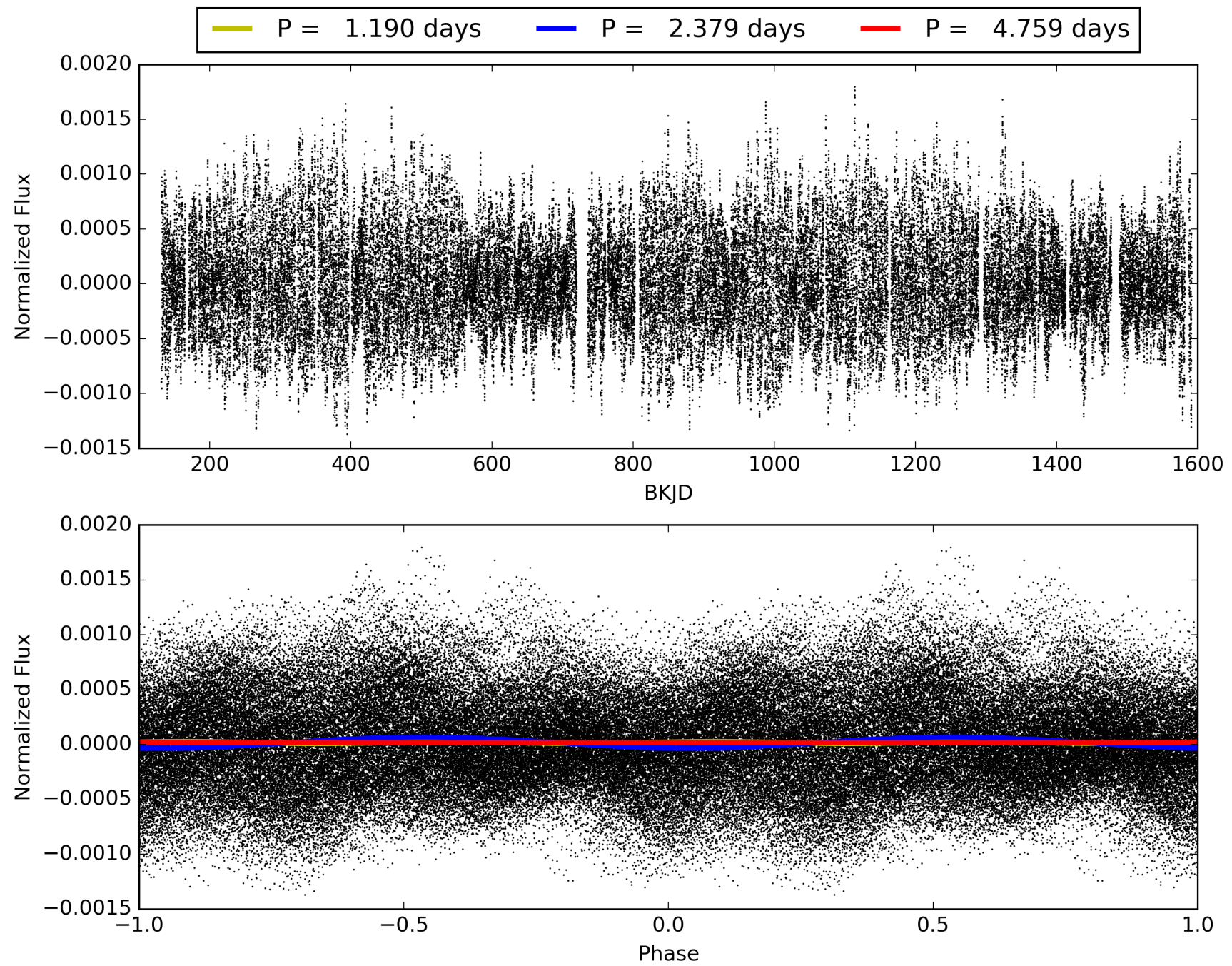
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:46:37 Z

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

TCE 008557474-01, PDC Light Curves

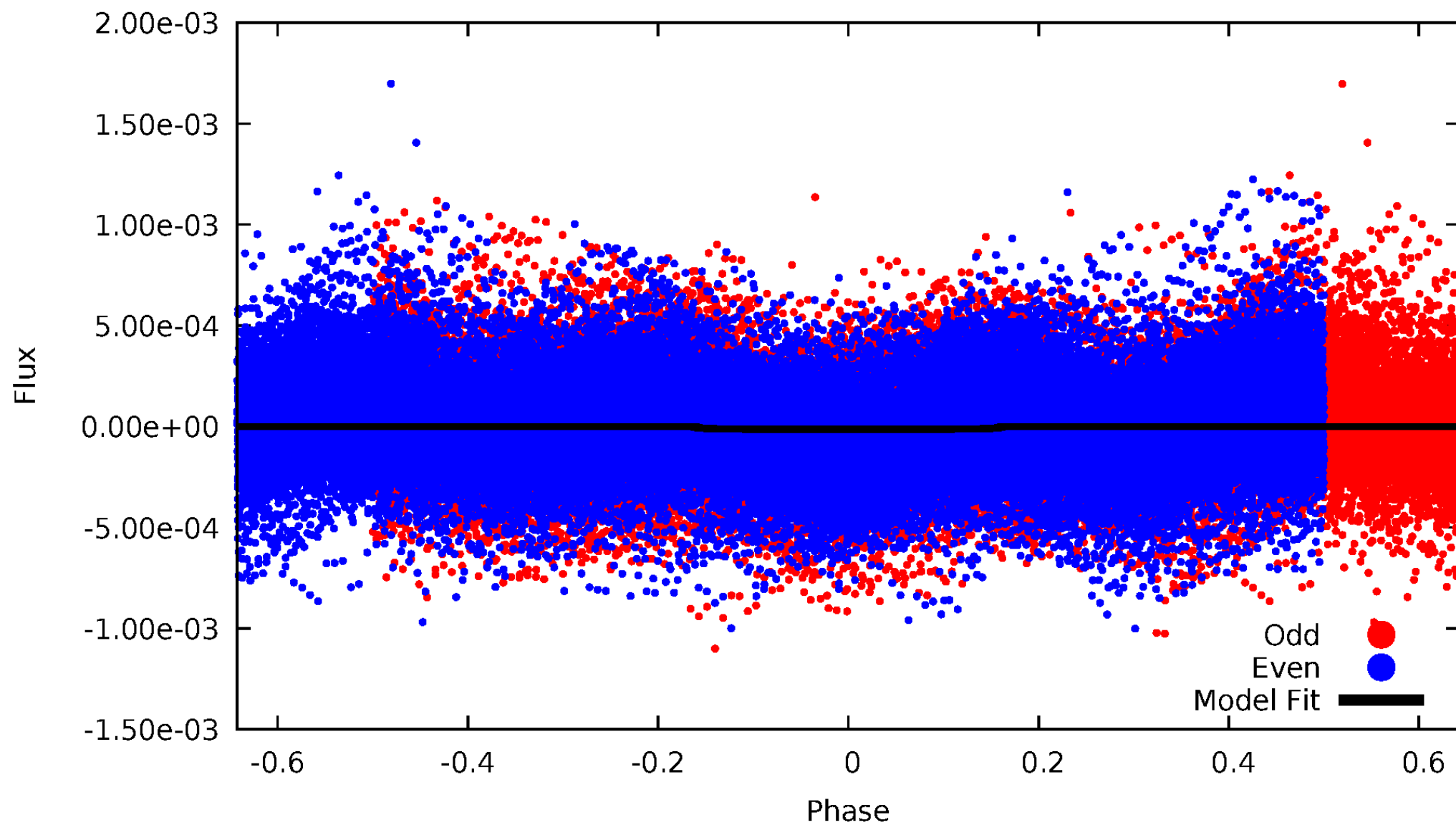


TCE 008557474-01



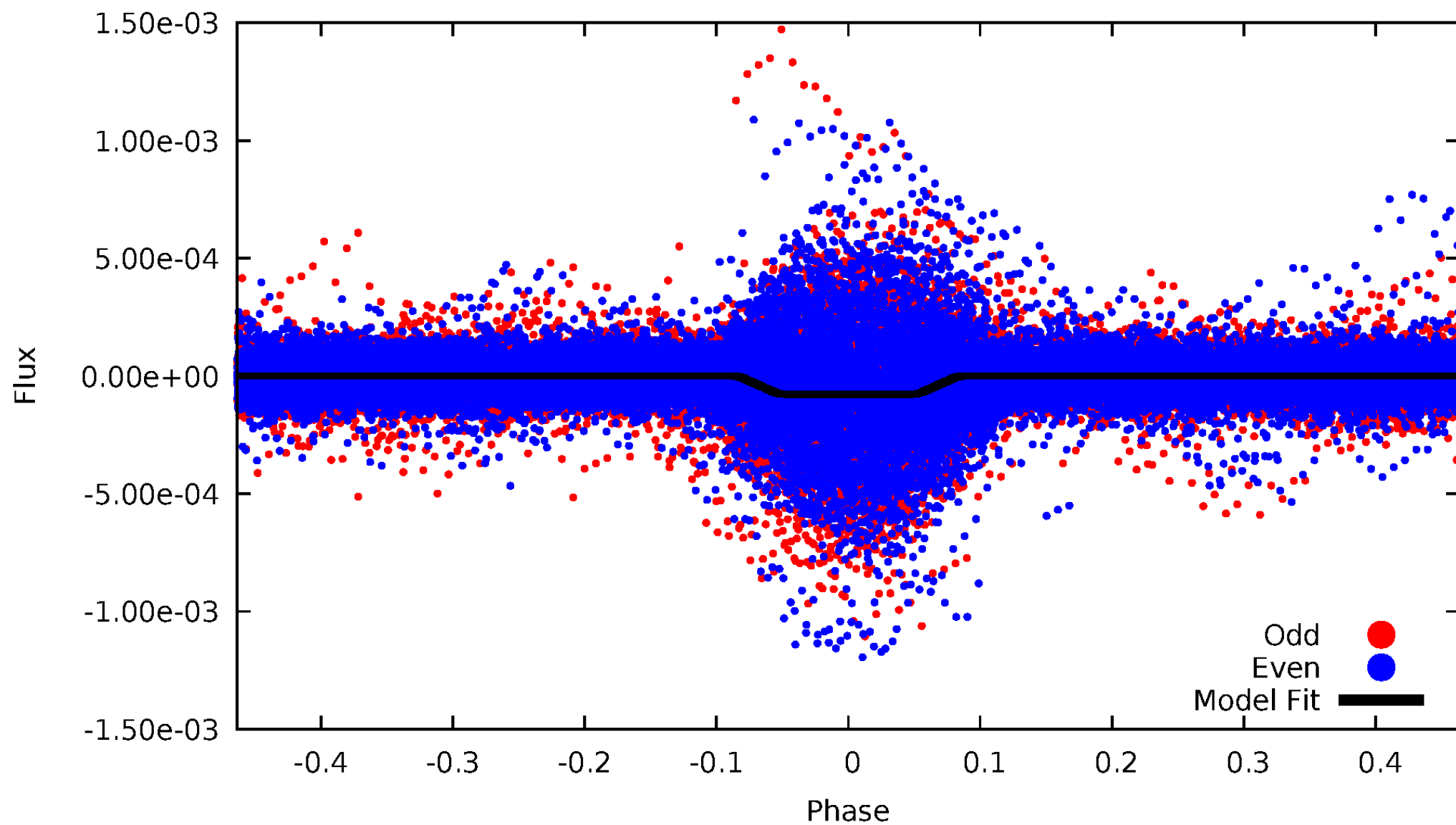
DV Odd/Even

TCE 008557474-01

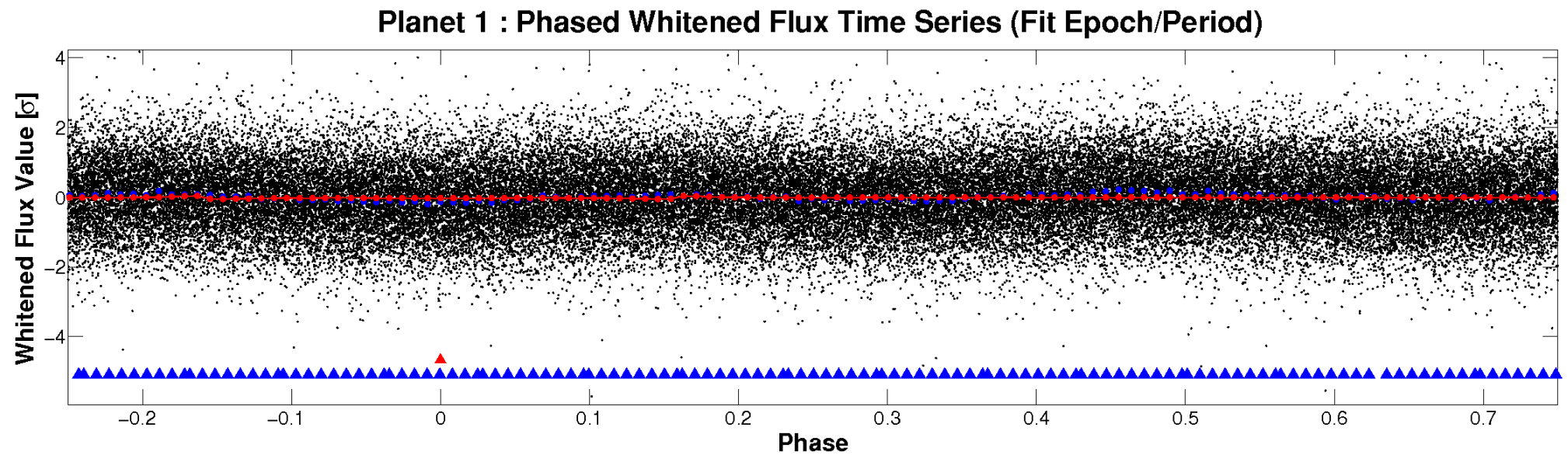
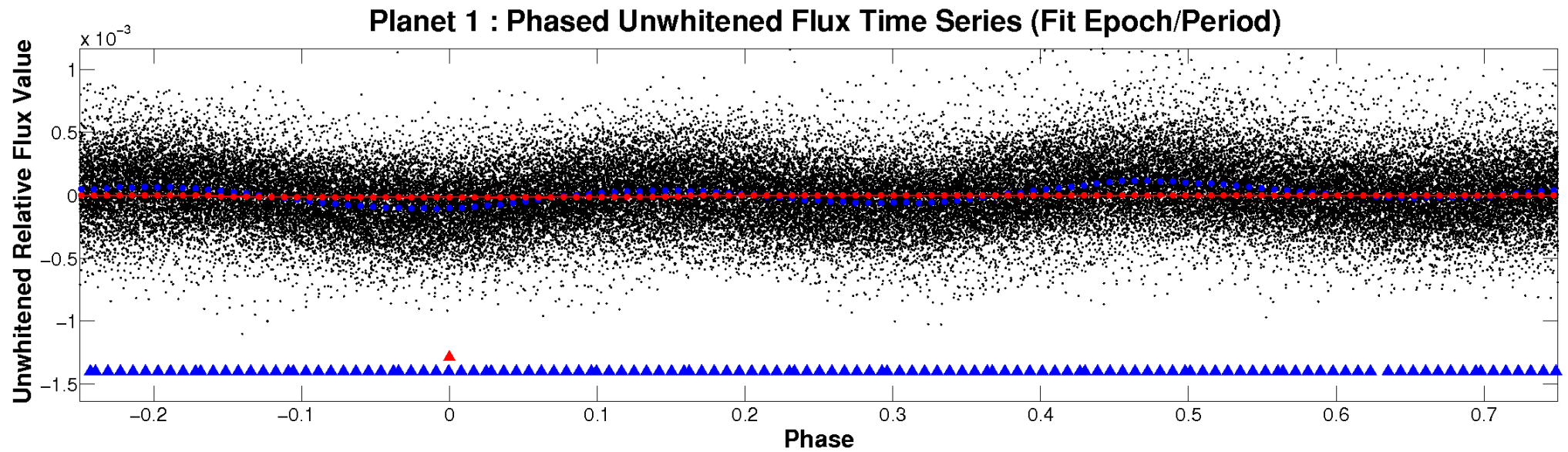


ALT Odd/Even

TCE 008557474-01

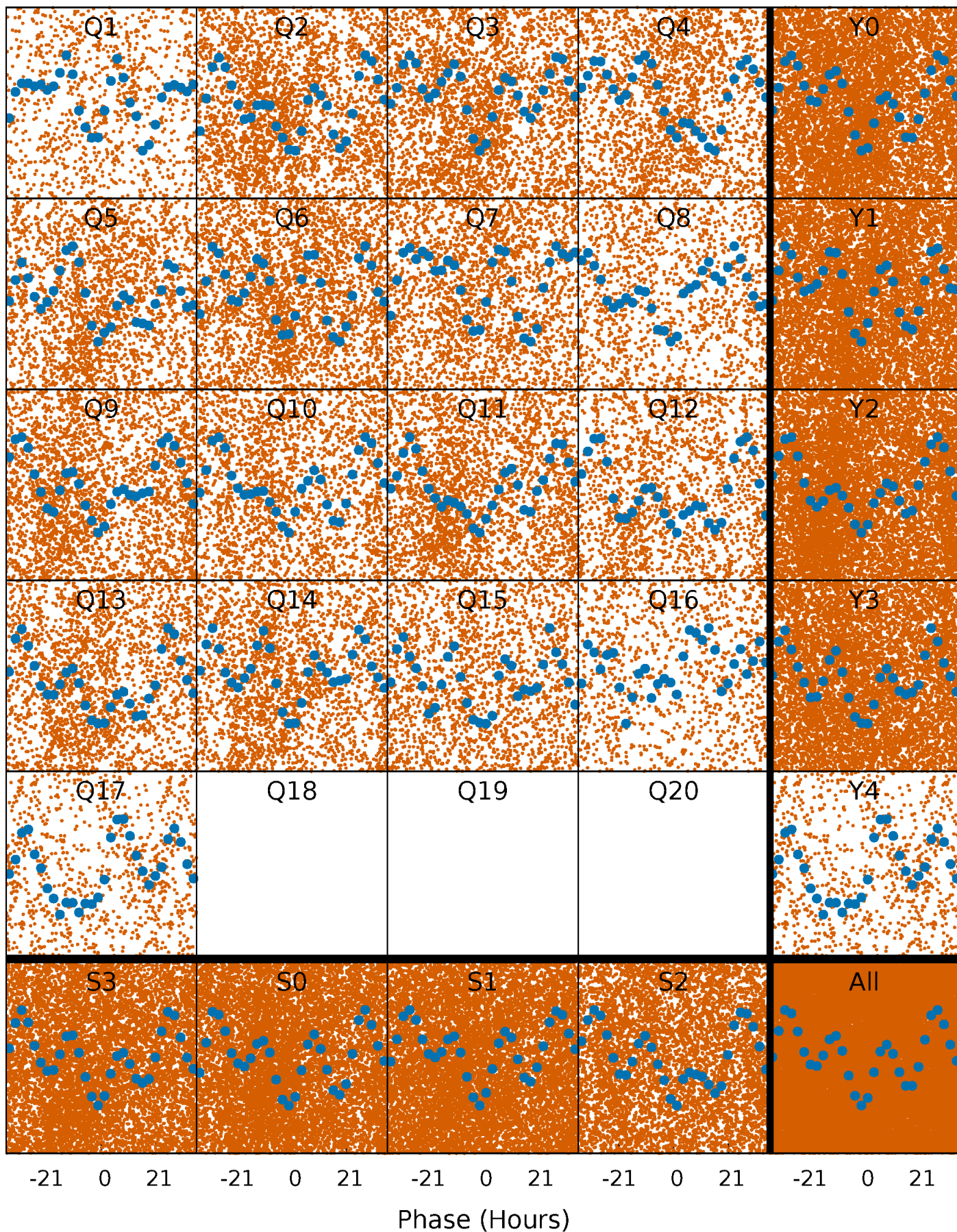


Non-Whitened Vs. Whitened Light Curve



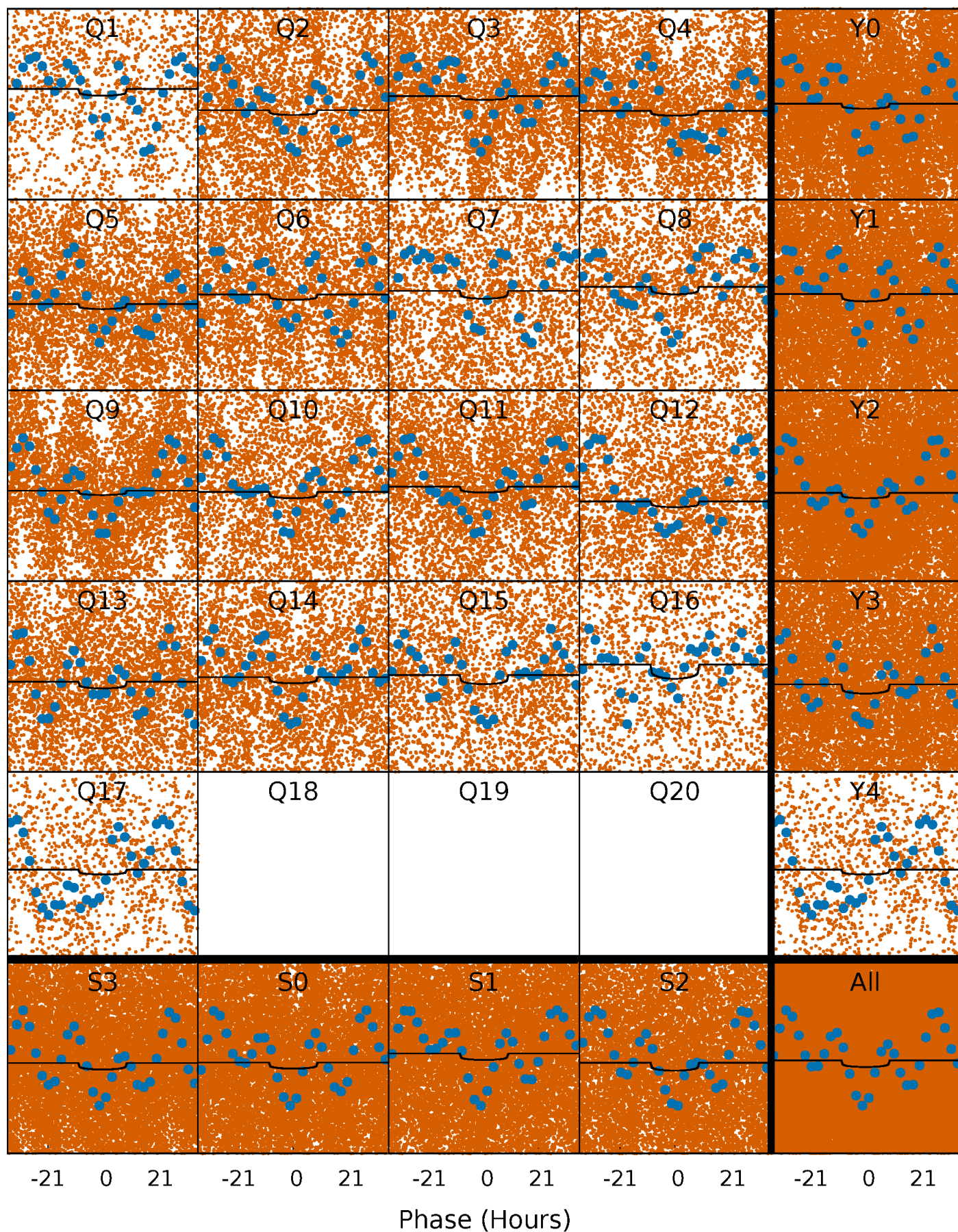
PDC Quarter-Phased Transit Curves

TCE 008557474-01 P= 2.379389 Days $T_0=131.929943$ (BKJD)



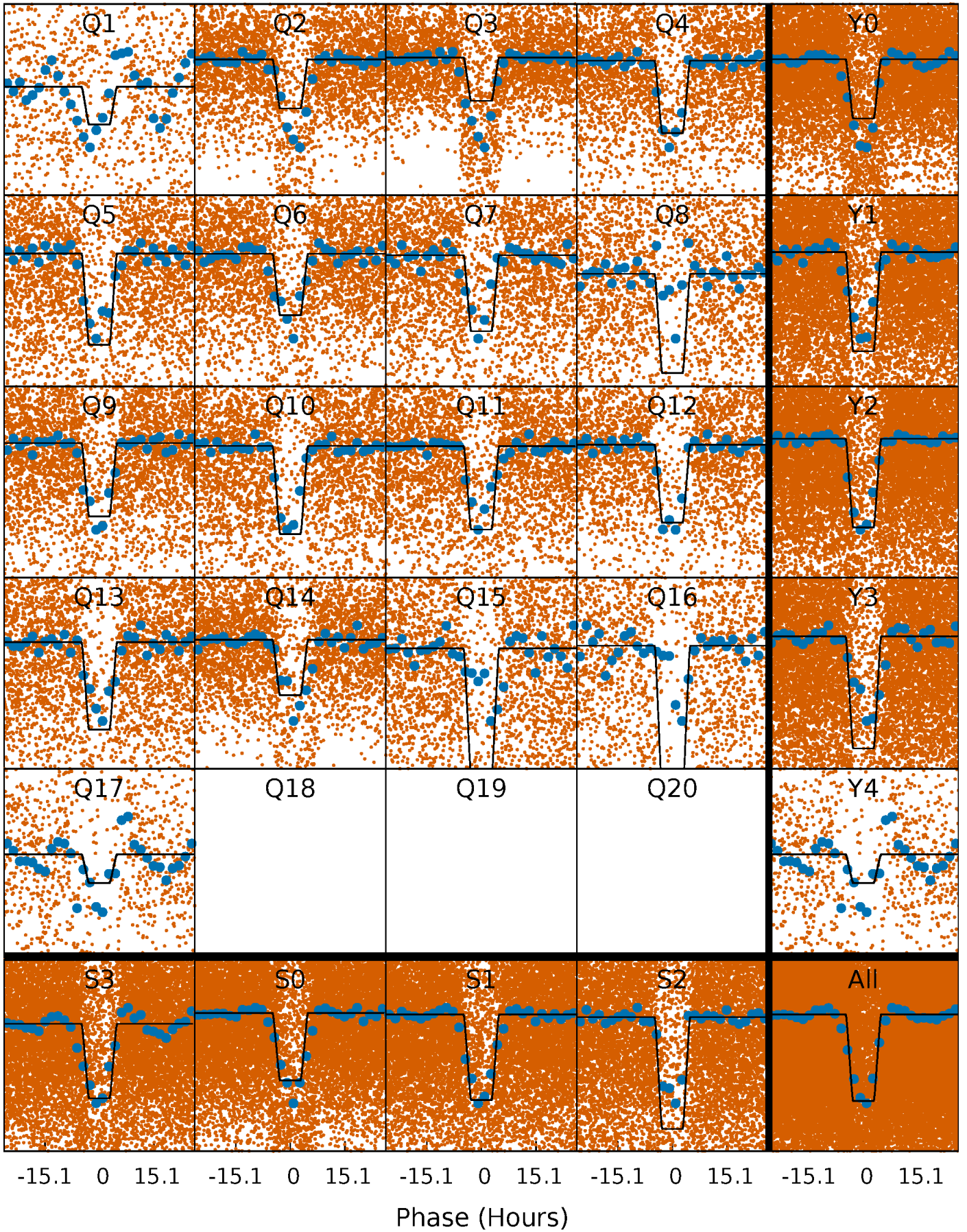
DV Quarter-Phased Transit Curves

TCE 008557474-01 P= 2.379389 Days $T_0=131.929943$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

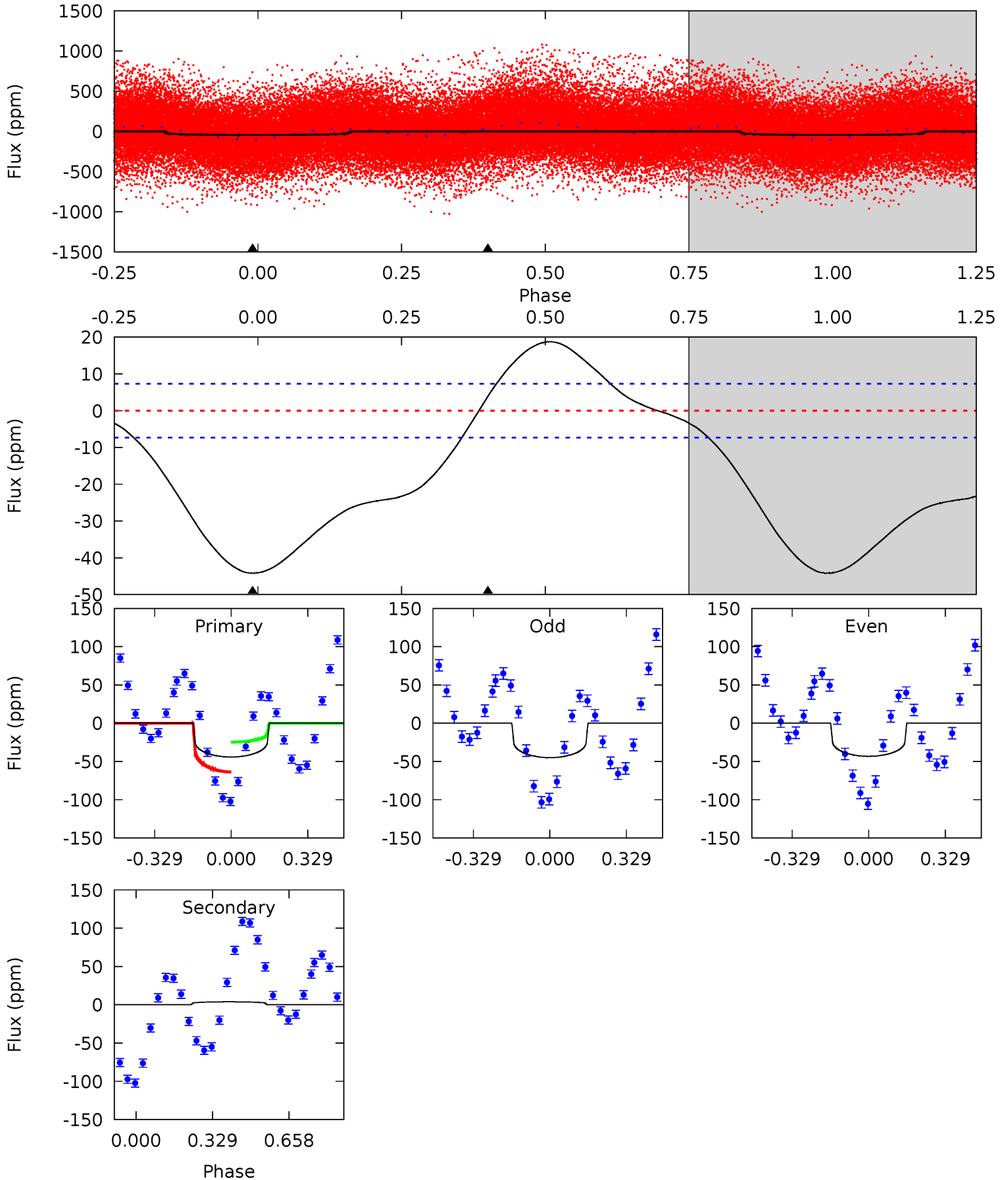
TCE 008557474-01 P= 2.379336 Days $T_0=131.927933$ (BKJD)



DV Model-Shift Uniqueness Test

008557474-01, P = 2.379389 Days, E = 129.550554 Days

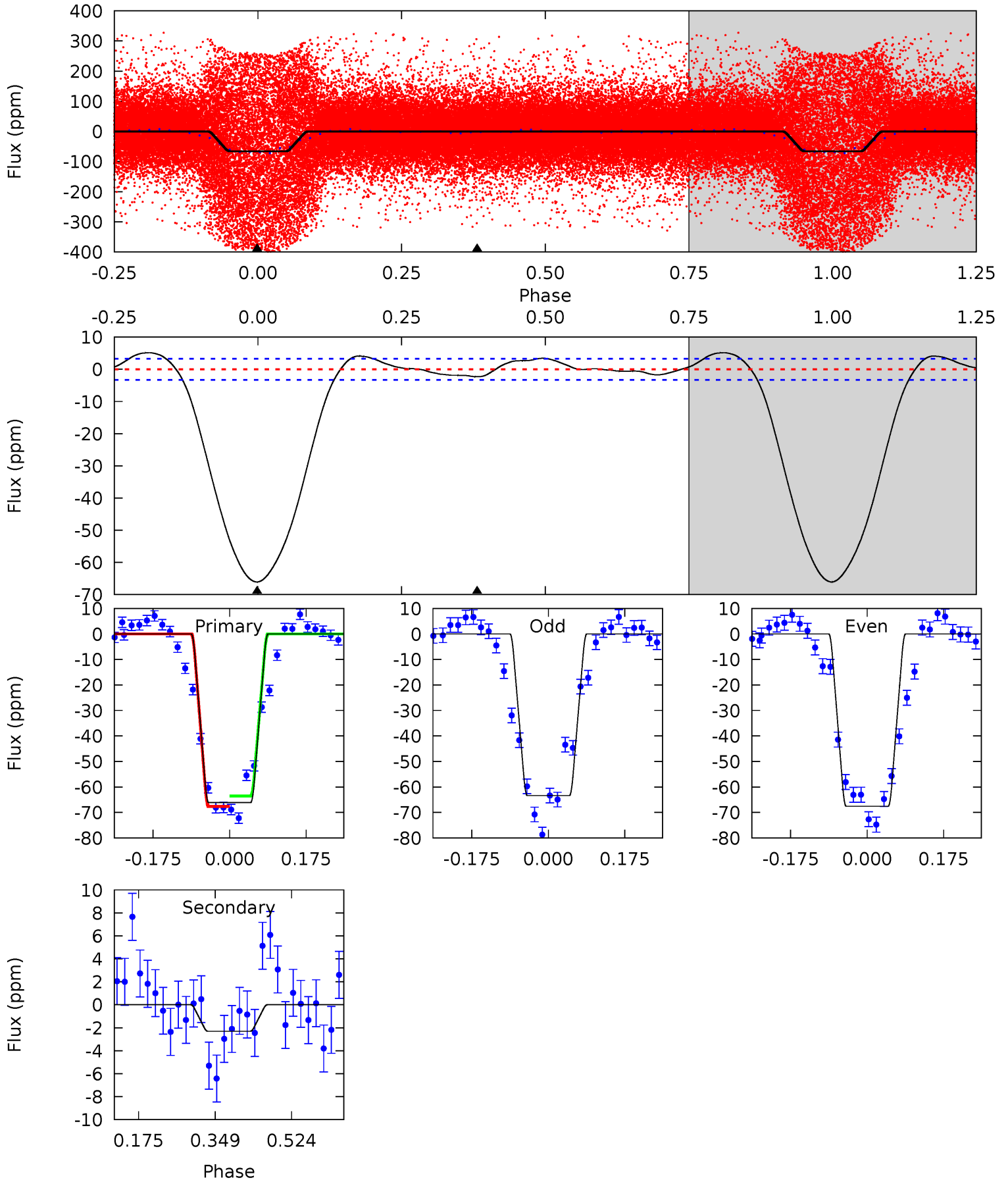
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.0	-2.27	0	0	4.31	0.98	1.02	26.0	26.0	-2.27	-2.27	0.52	1.41	0.30	11.9



Alt Model-Shift Uniqueness Test

008557474-01, P = 2.379336 Days, E = 129.548597 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
89.8	3.14	0	0	4.45	1.36	3.02	89.8	89.8	3.14	3.14	2.81	1.00	0.07	2.76



Stellar Parameters For KIC 008557474

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7309^{+205}_{-307}	$4.095^{+0.180}_{-0.180}$	$-0.220^{+0.250}_{-0.350}$	$1.799^{+0.539}_{-0.490}$	$1.469^{+0.209}_{-0.255}$	$0.355^{+0.350}_{-0.177}$
	+3%/-4%	+4%/-4%	+114%/-159%	+30%/-27%	+14%/-17%	+99%/-50%
Source	PHO1	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 008557474-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	4 ± 2	$0.77^{+0.53}_{-0.44}$	3046^{+231}_{-233}	-5245^{+1085}_{-2853}	$-5.530^{+3.988}_{-24.596}$
Alt.	-2 ± 1	$1.74^{+0.63}_{-0.58}$	3037^{+237}_{-250}	3127^{+704}_{-4985}	$0.620^{+0.910}_{-0.326}$

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

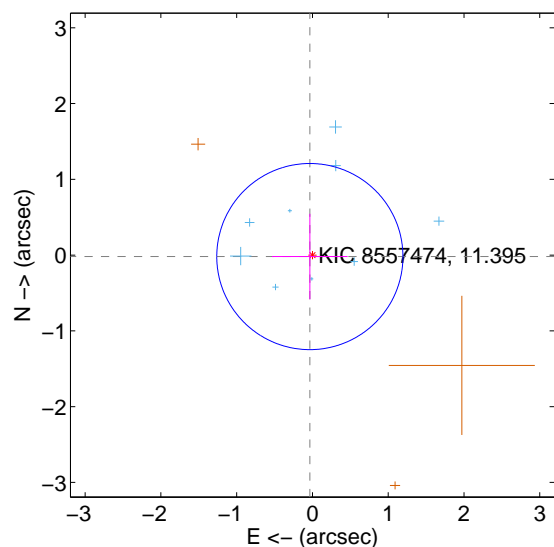
Supplemental centroid analysis for 008557474-01. **Kepler magnitude: 11.39.** Transit SNR 5.06

There are 9 quarters with good PRF difference image offsets

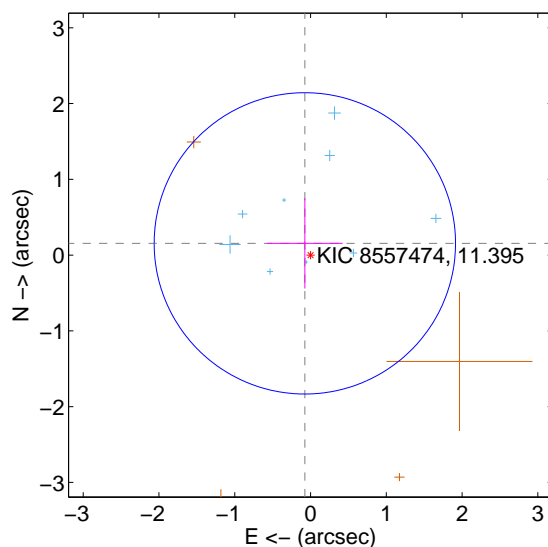
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.039 ± 0.409	0.10	0.034 ± 0.499	-0.019 ± 0.564
PRF-fit source offset from KIC position	0.172 ± 0.663	0.26	0.075 ± 0.499	0.155 ± 0.595
photometric centroid source offset	0.89 ± 0.59	1.51	-0.88 ± 0.59	-0.15 ± 0.55

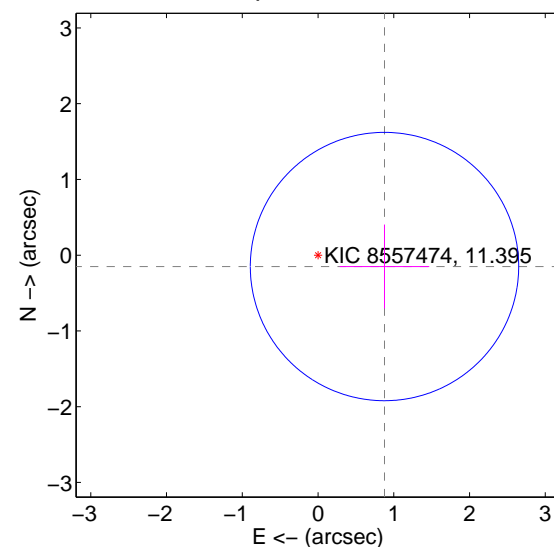
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

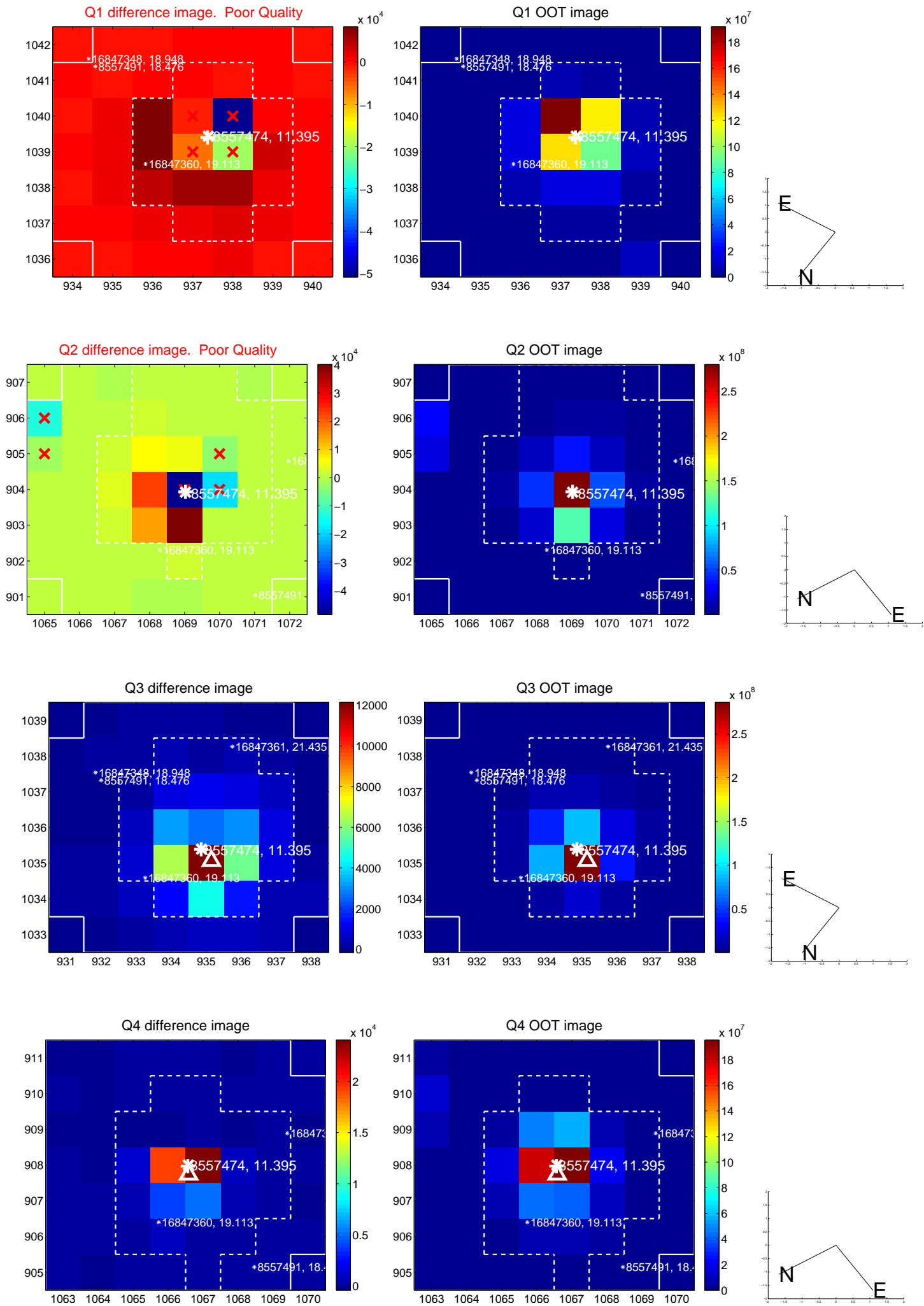


offset from photometric centroids

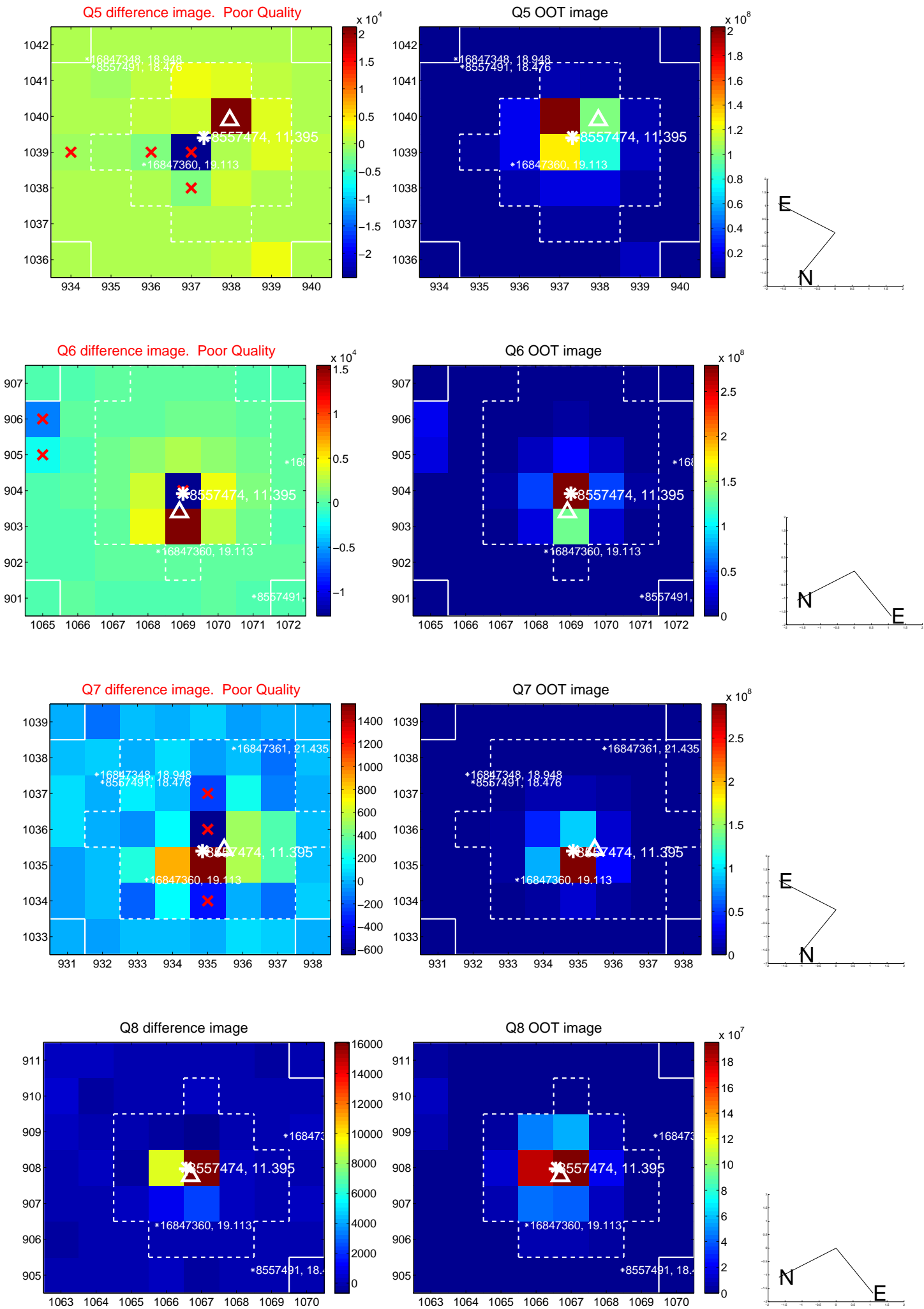


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

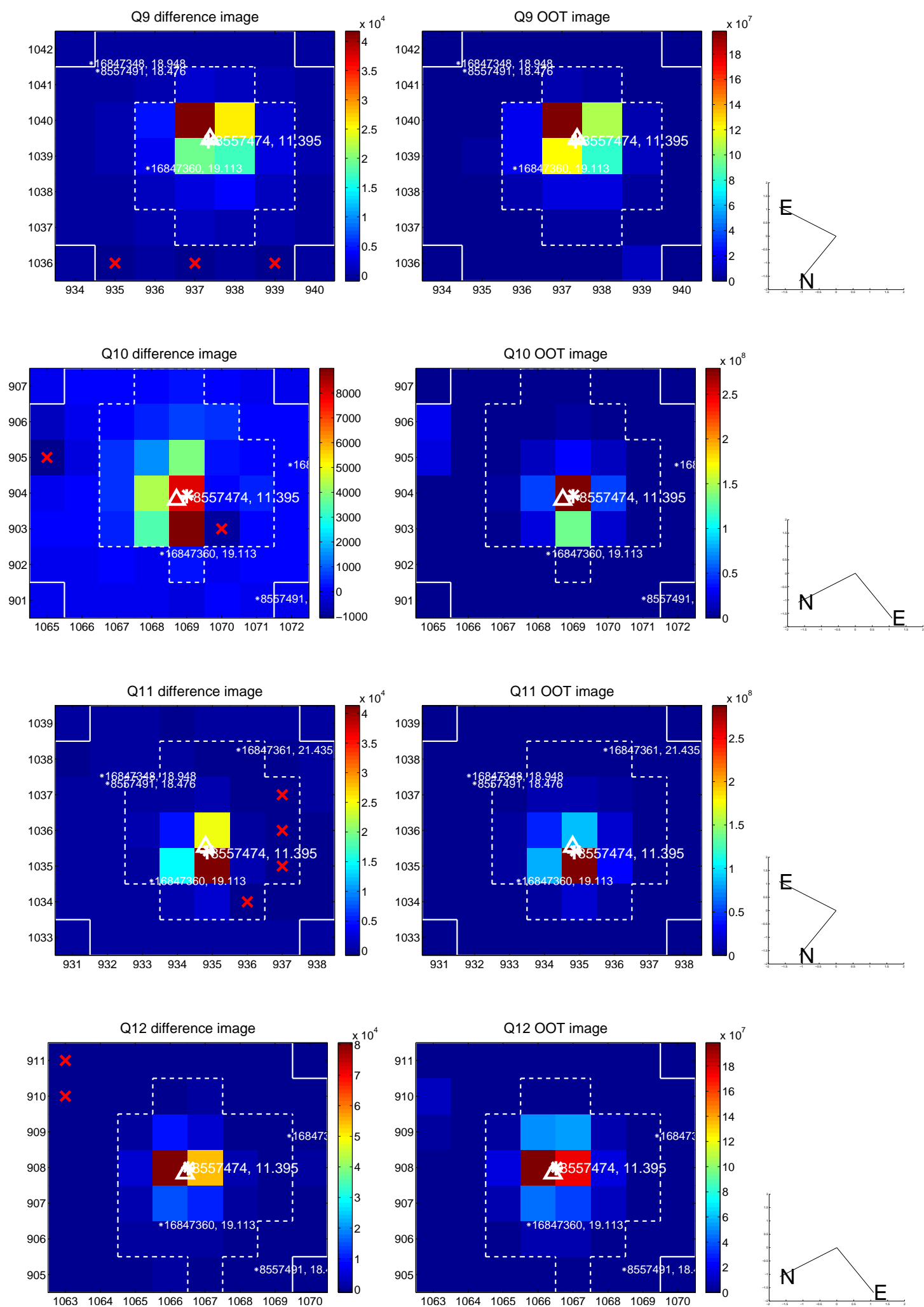
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



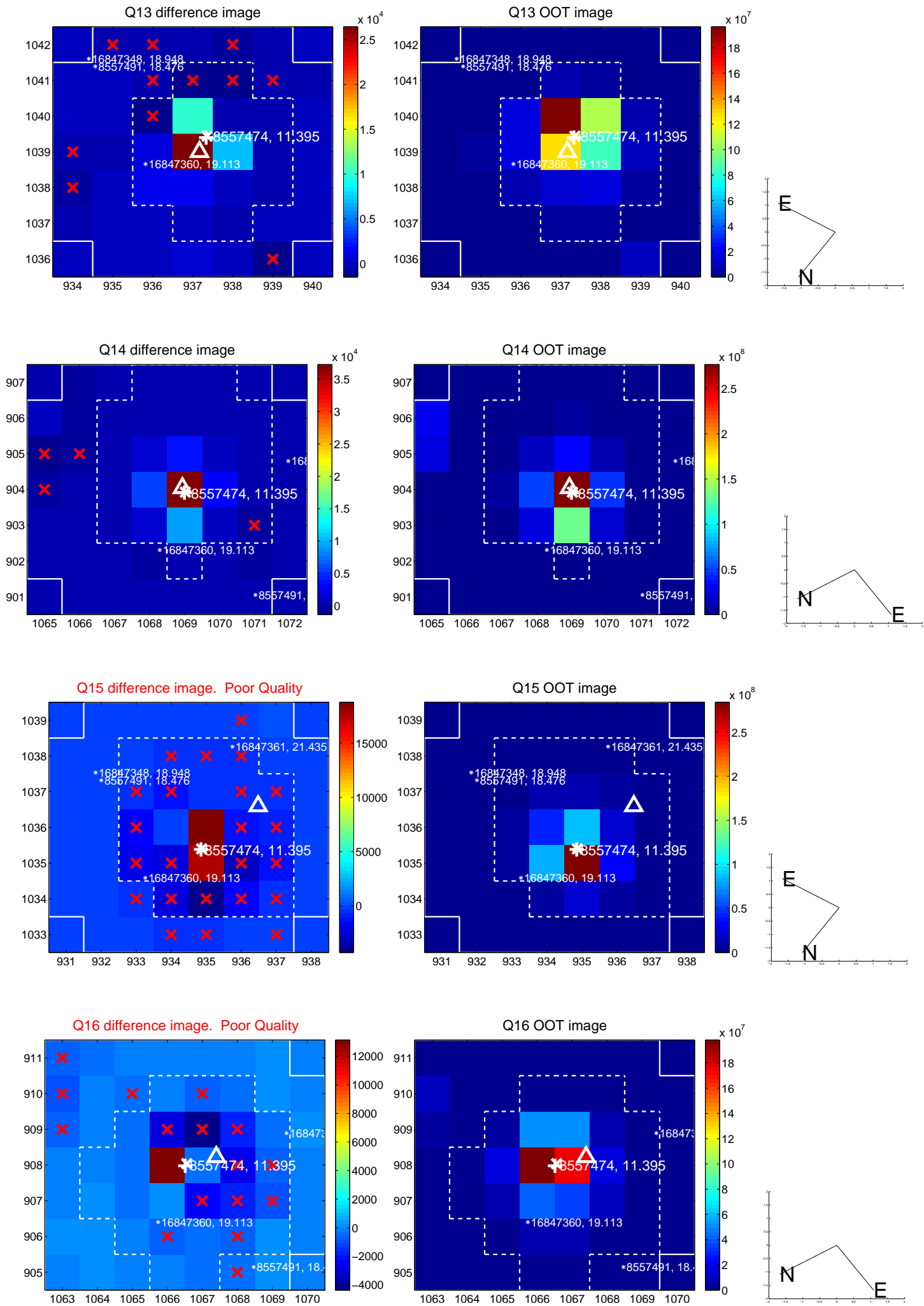
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



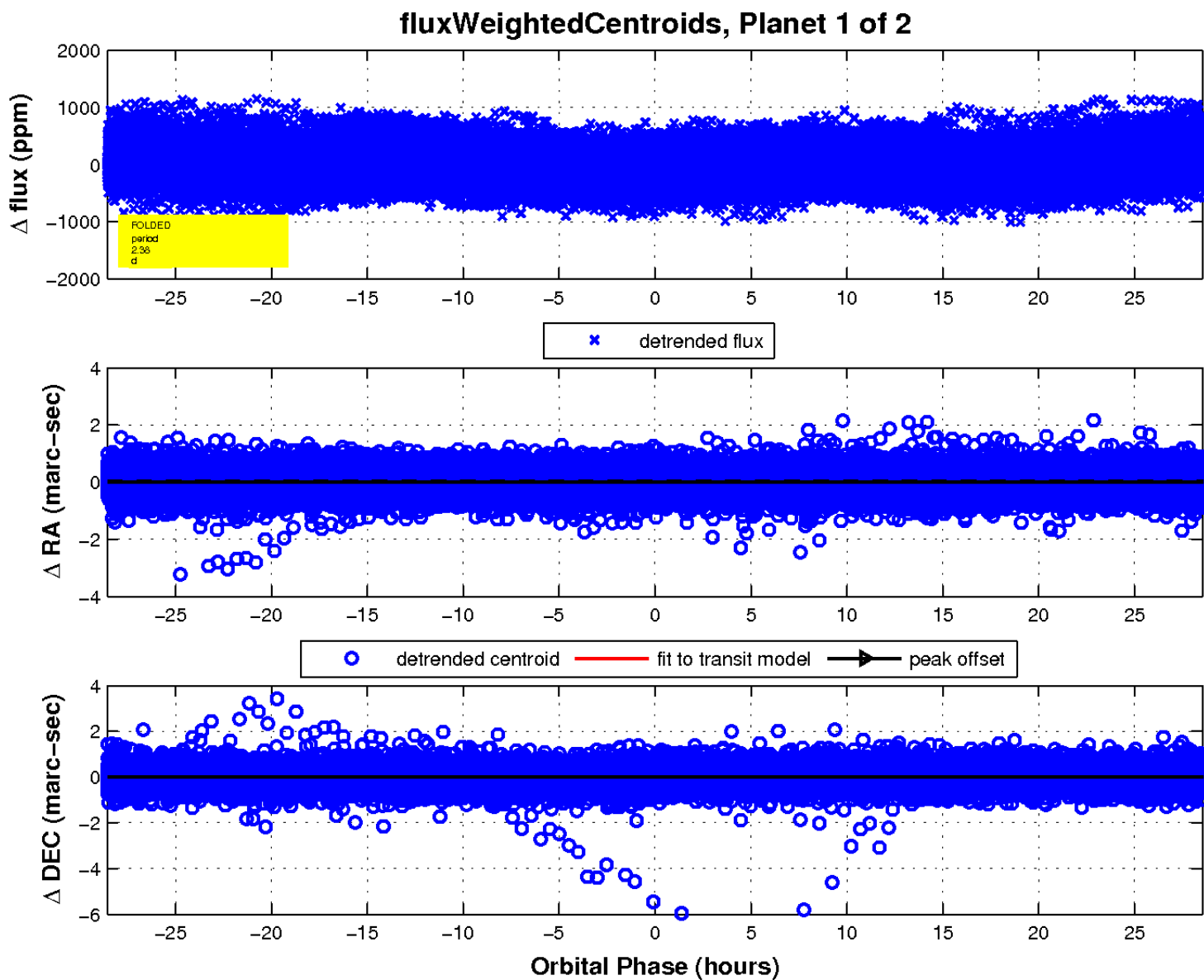
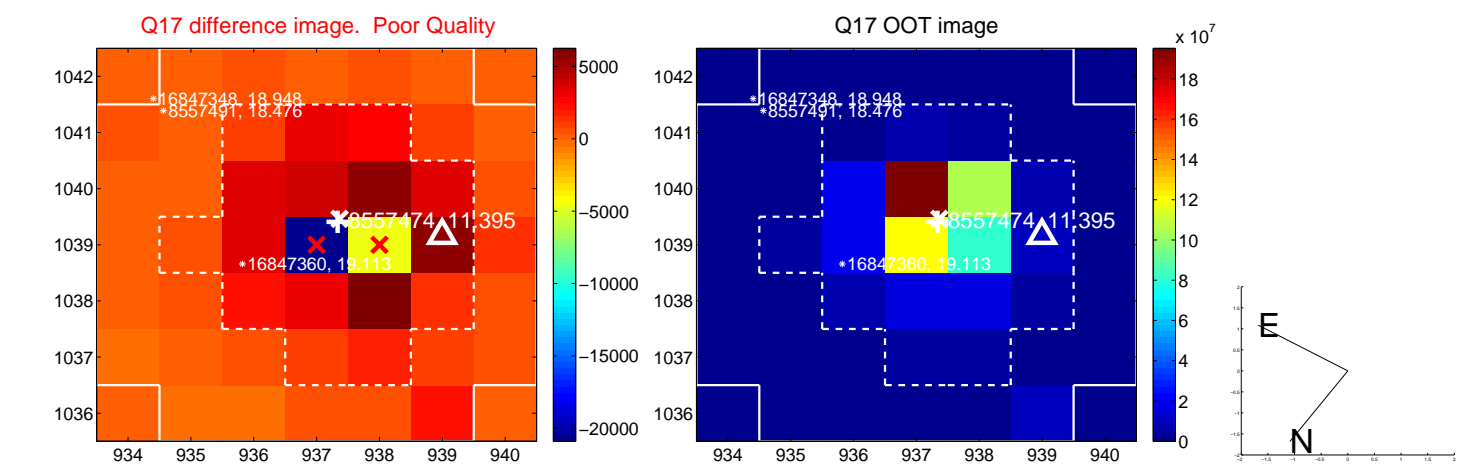
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

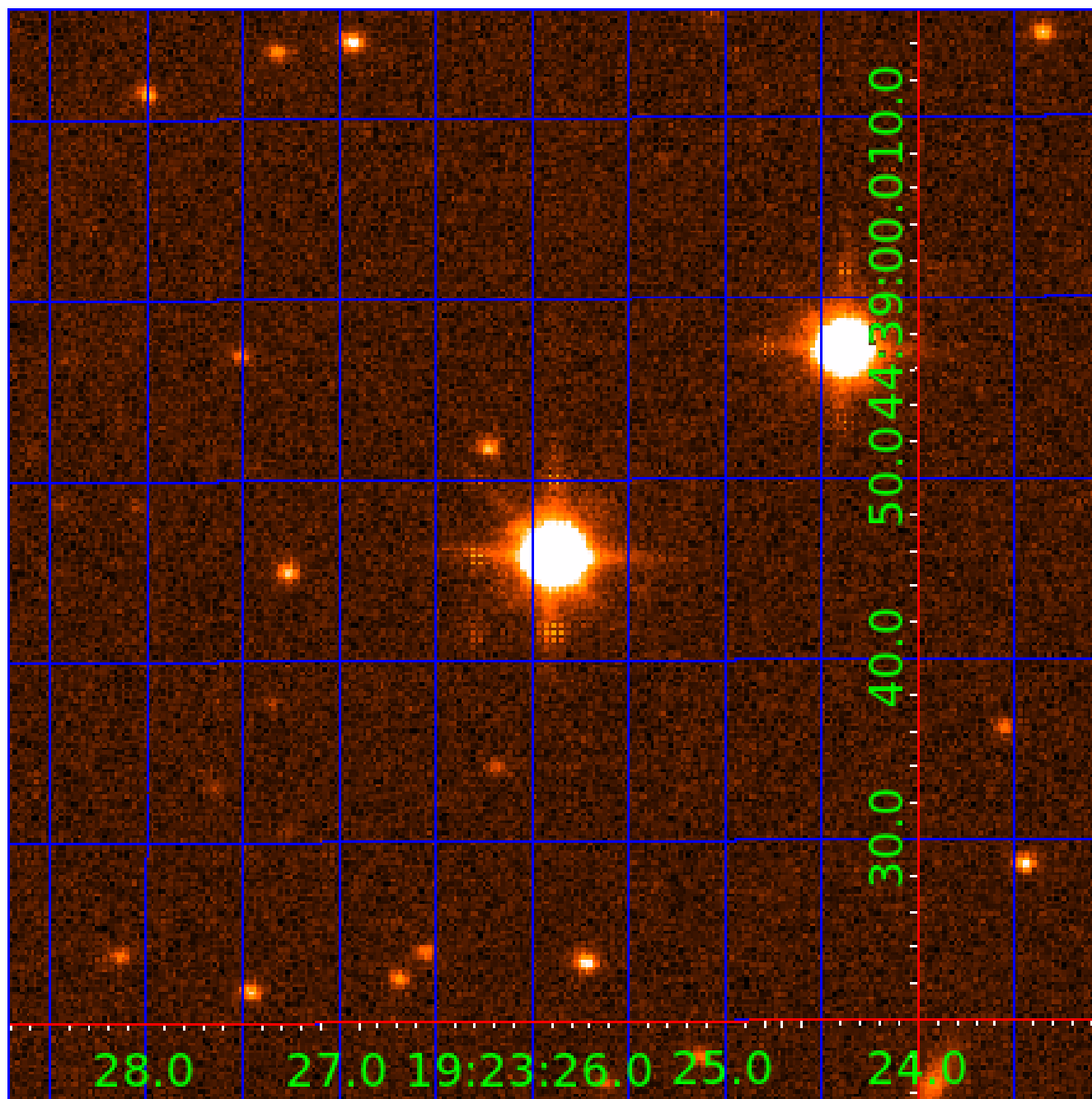


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008557474

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})
008557474-01	OBS	No	2.379389	131.929943	15.1	18.341	7.3	5.1	1.80	7309	0.72	5260.90
008557474-02	OBS	No	11.578352	133.114397	136.0	1.100	9.6	7.0	1.80	7309	2.44	638.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008557474-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
008557474-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

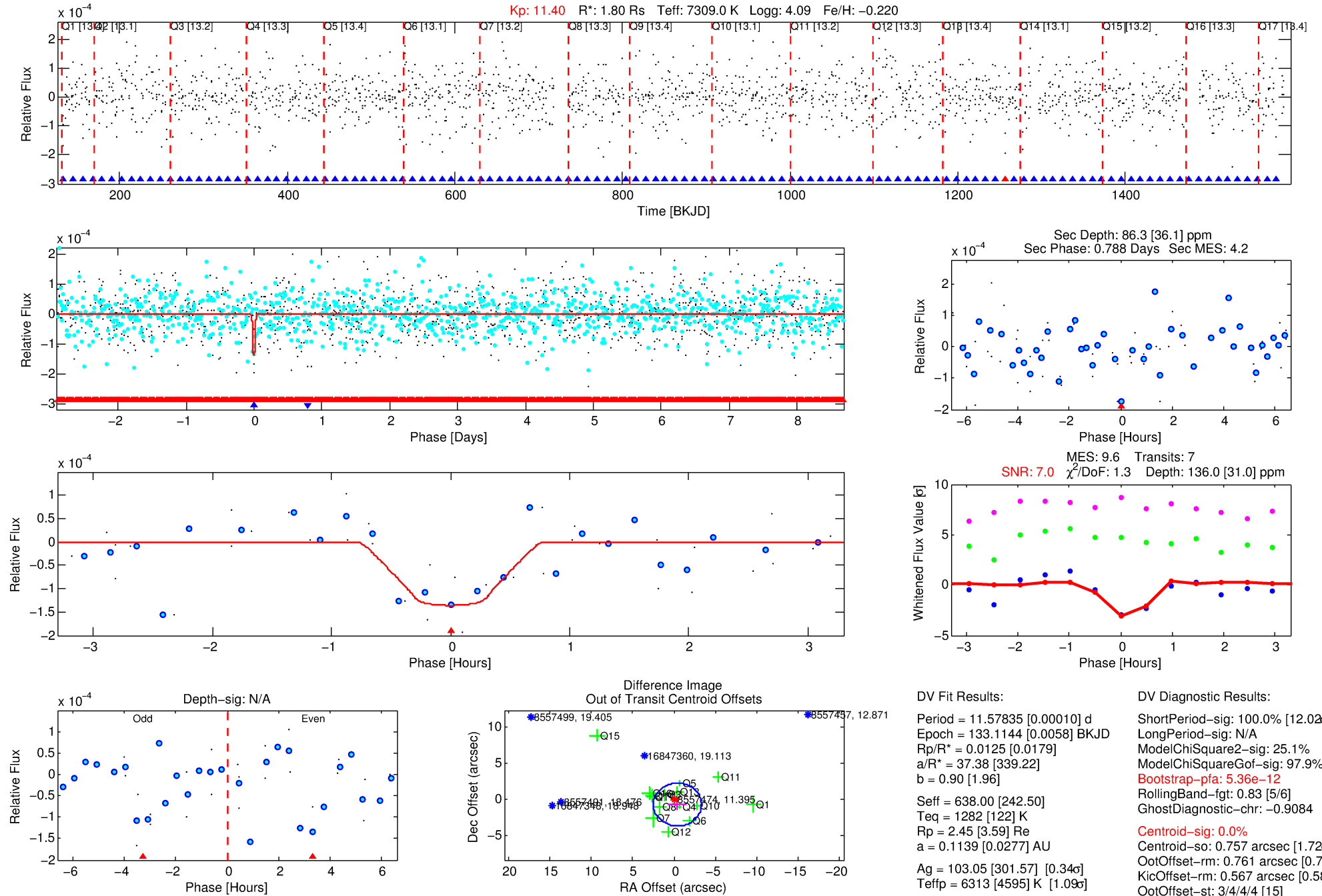
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008557474-02

No Significant Match Found

DV One-Page Summary

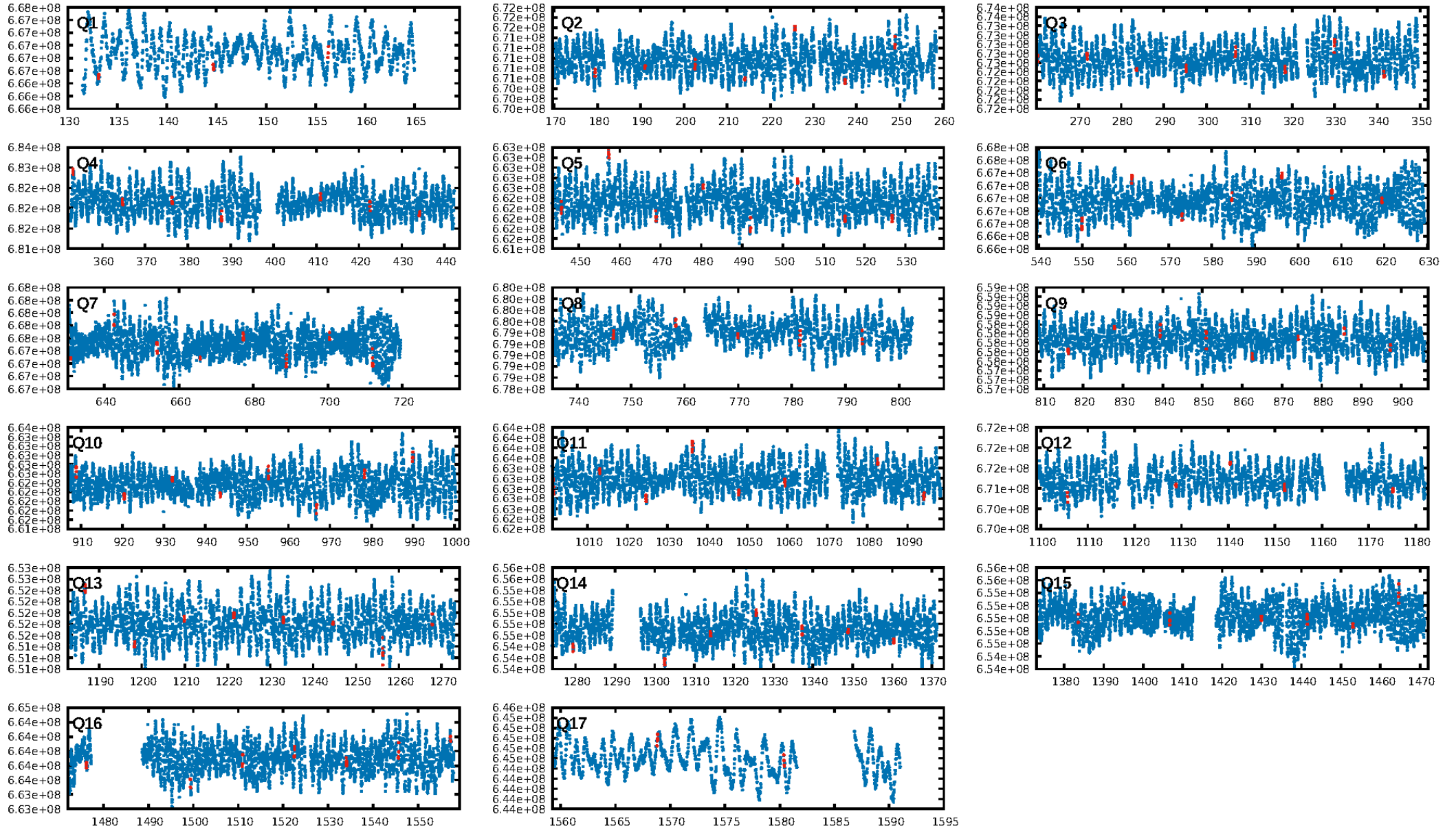
KIC: 8557474 Candidate: 2 of 2 Period: 11.578 d



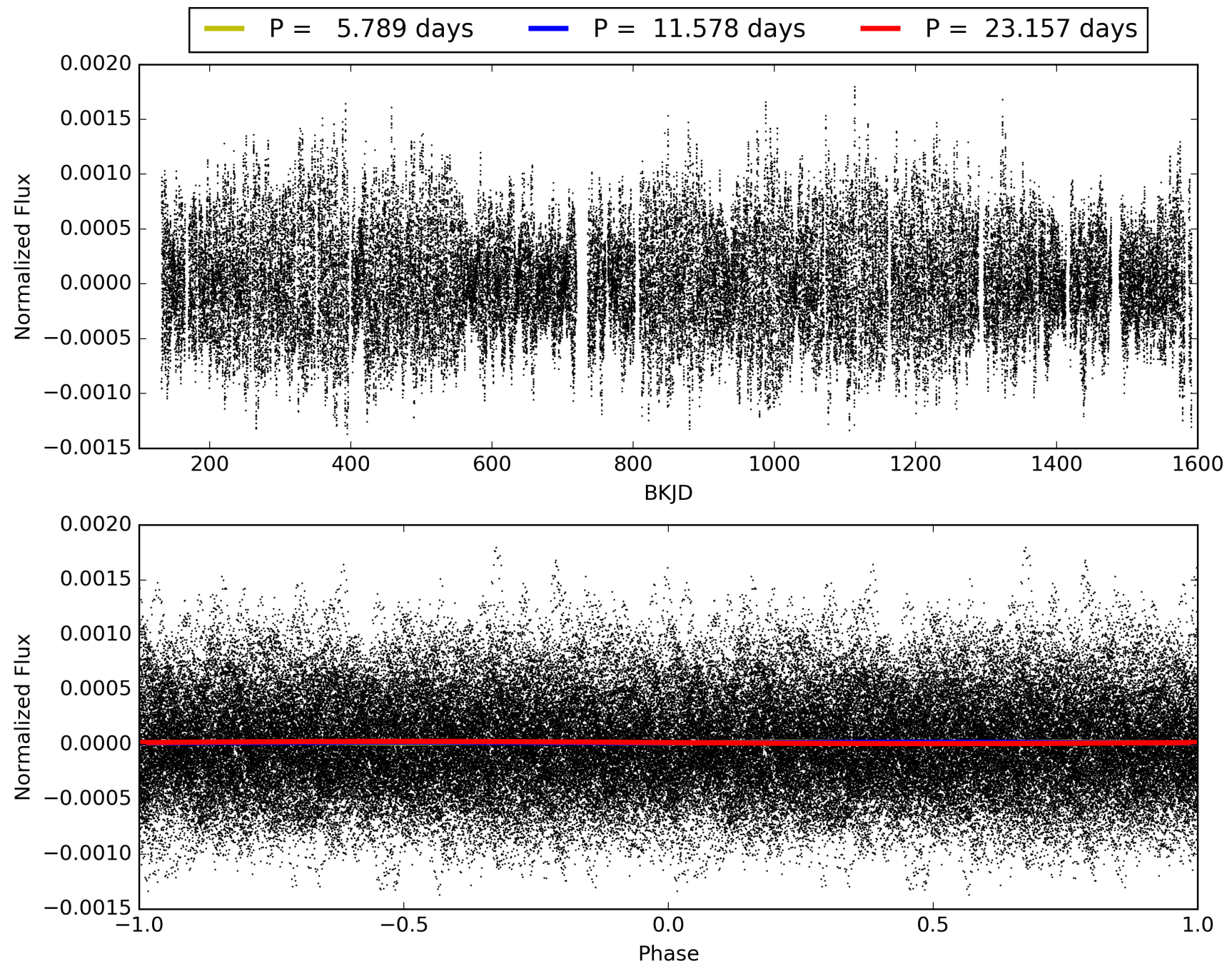
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:46:49 Z

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

TCE 008557474-02, PDC Light Curves

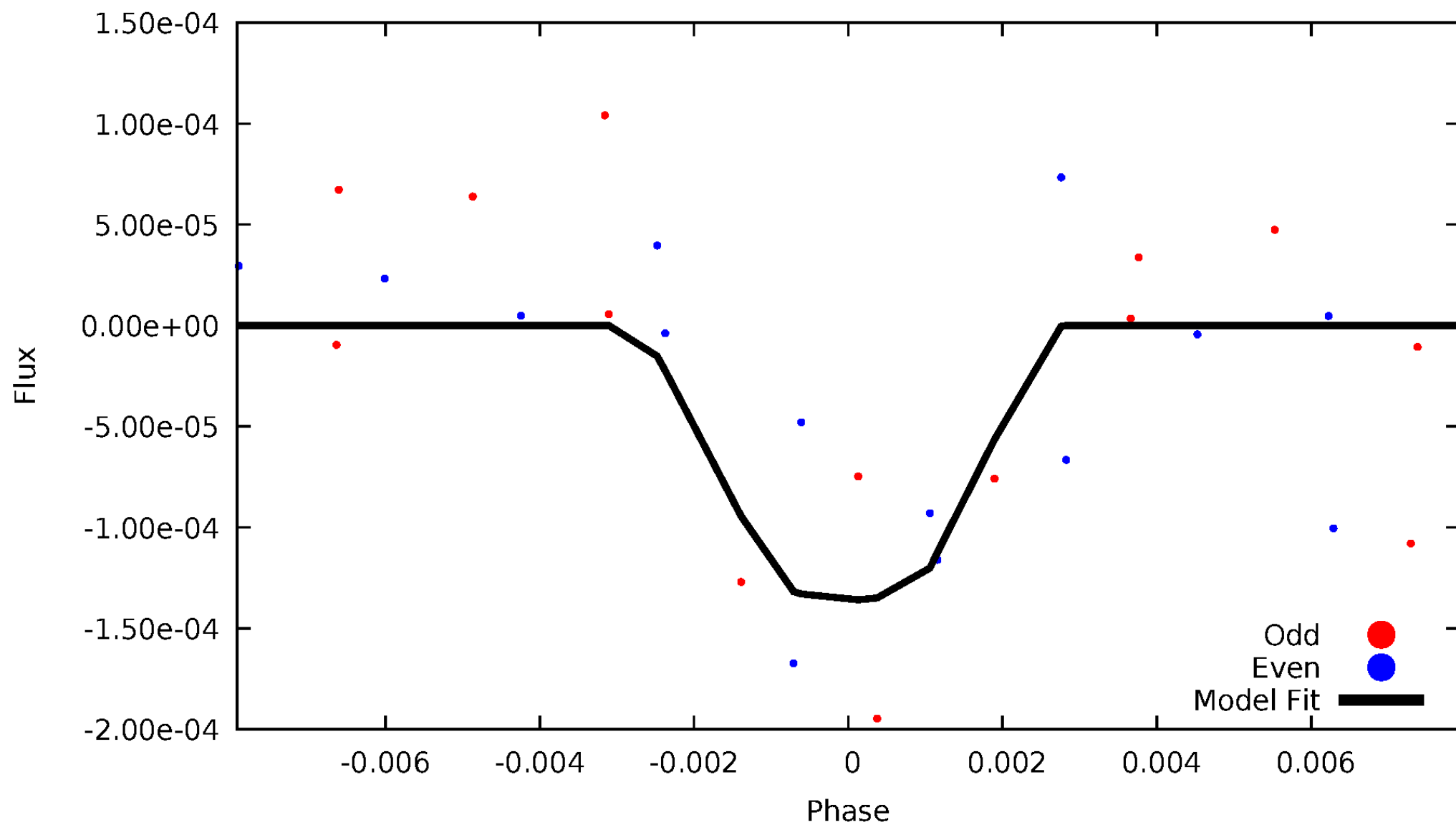


TCE 008557474-02



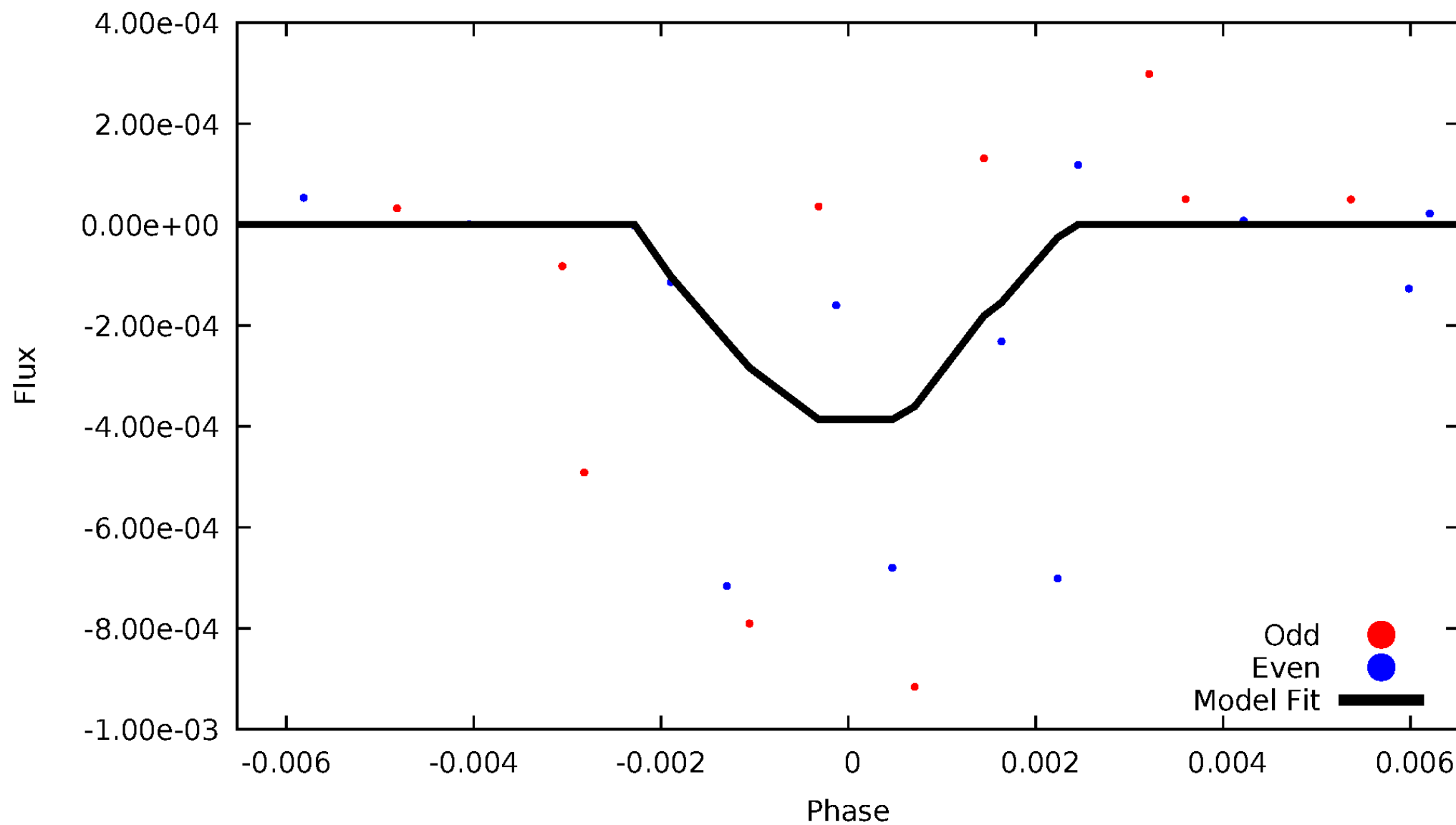
DV Odd/Even

TCE 008557474-02



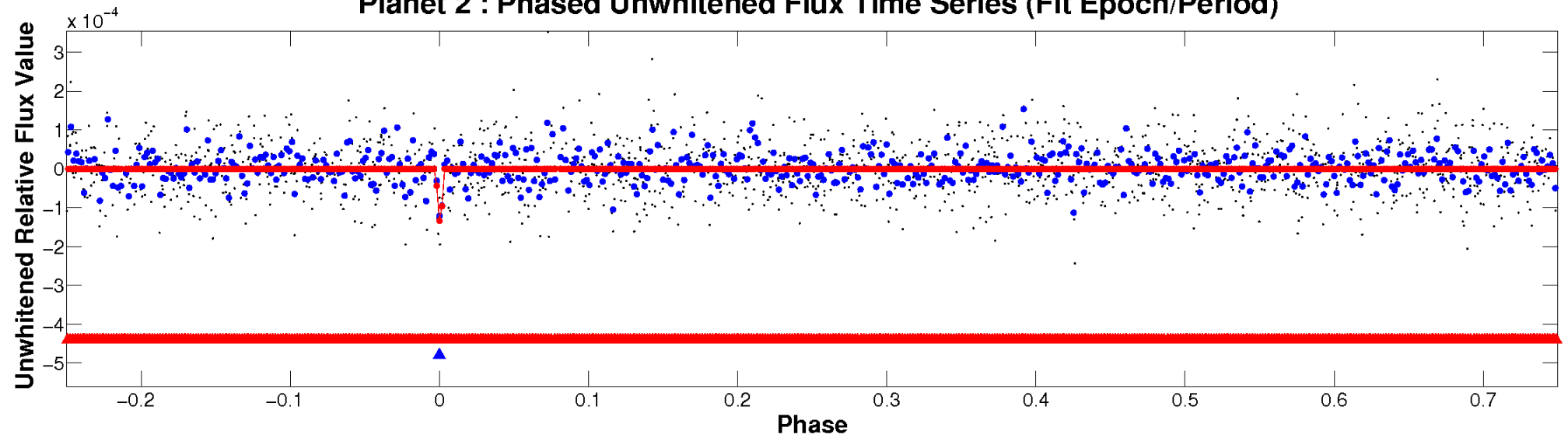
ALT Odd/Even

TCE 008557474-02

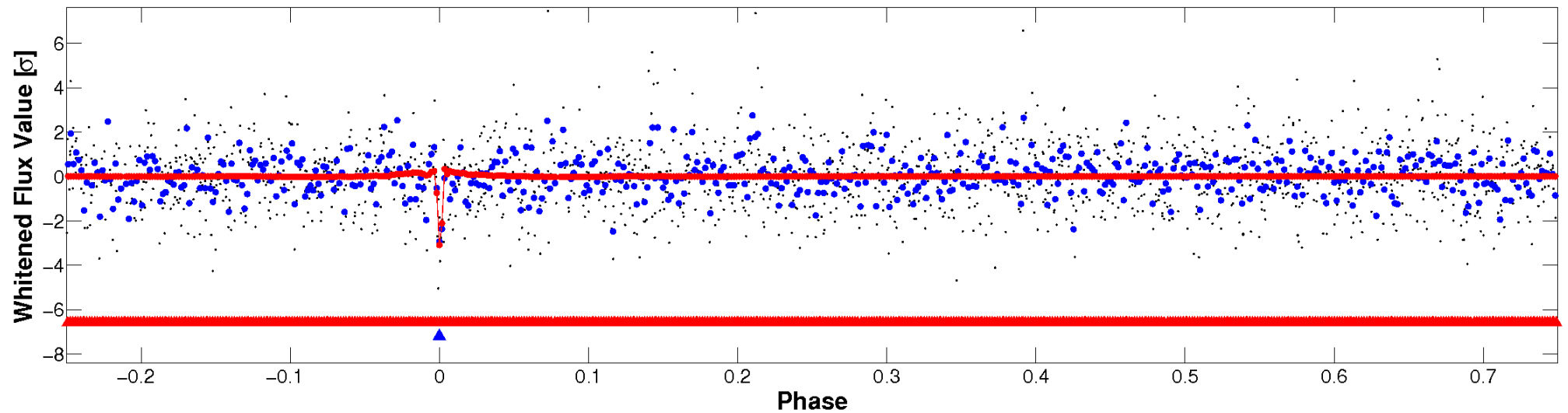


Non-Whitened Vs. Whitened Light Curve

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

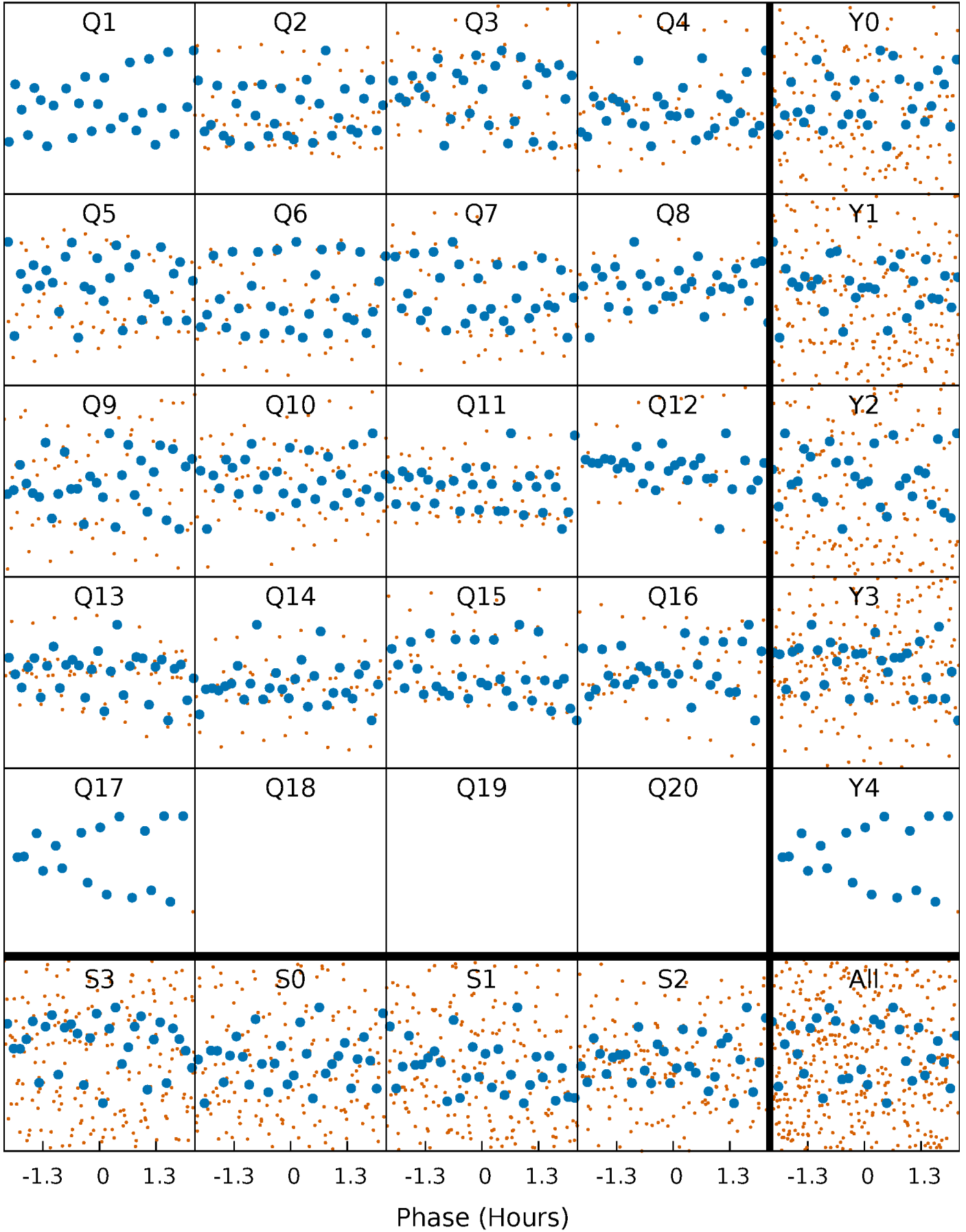


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



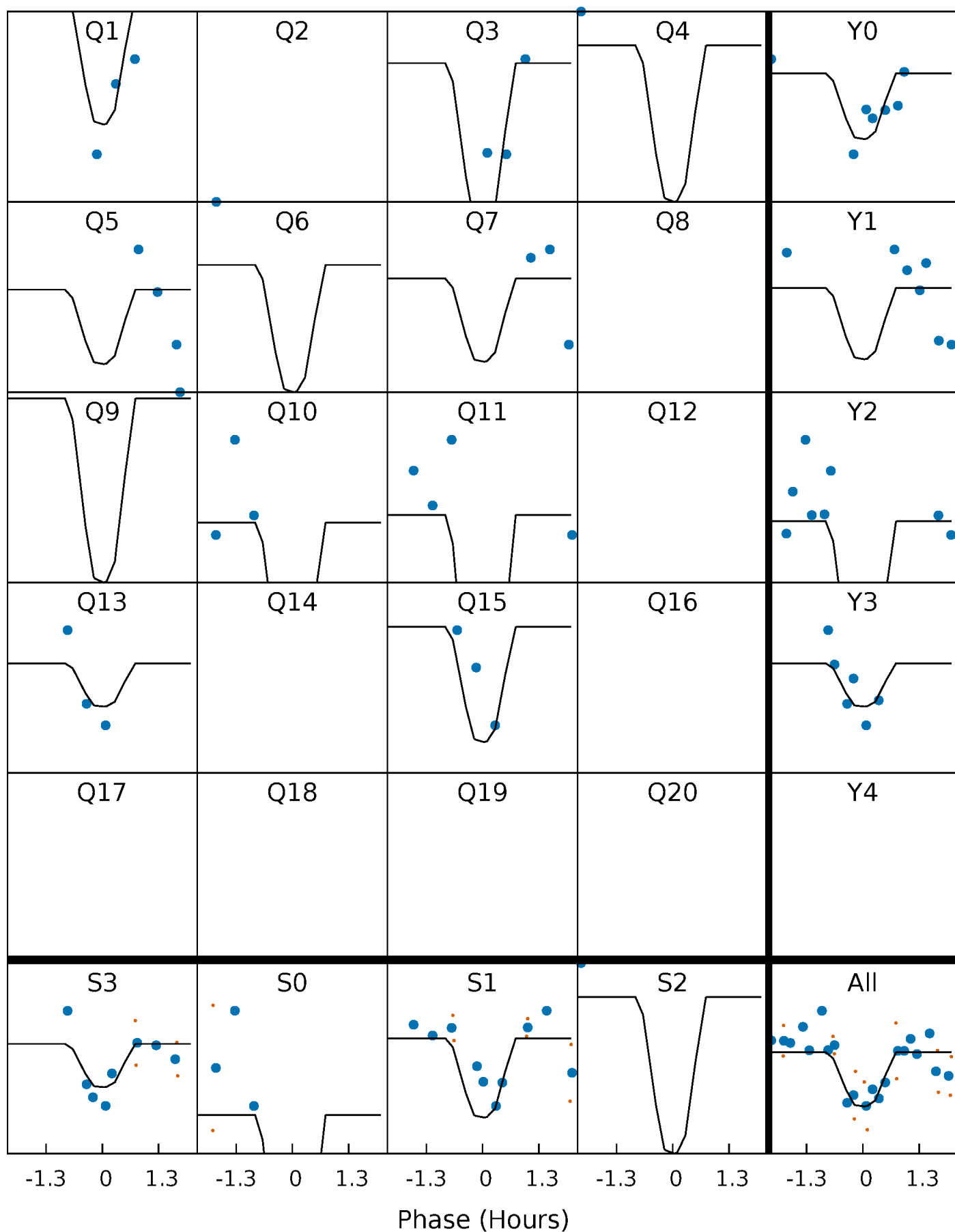
PDC Quarter-Phased Transit Curves

TCE 008557474-02 P= 11.578352 Days $T_0=133.114397$ (BKJD)



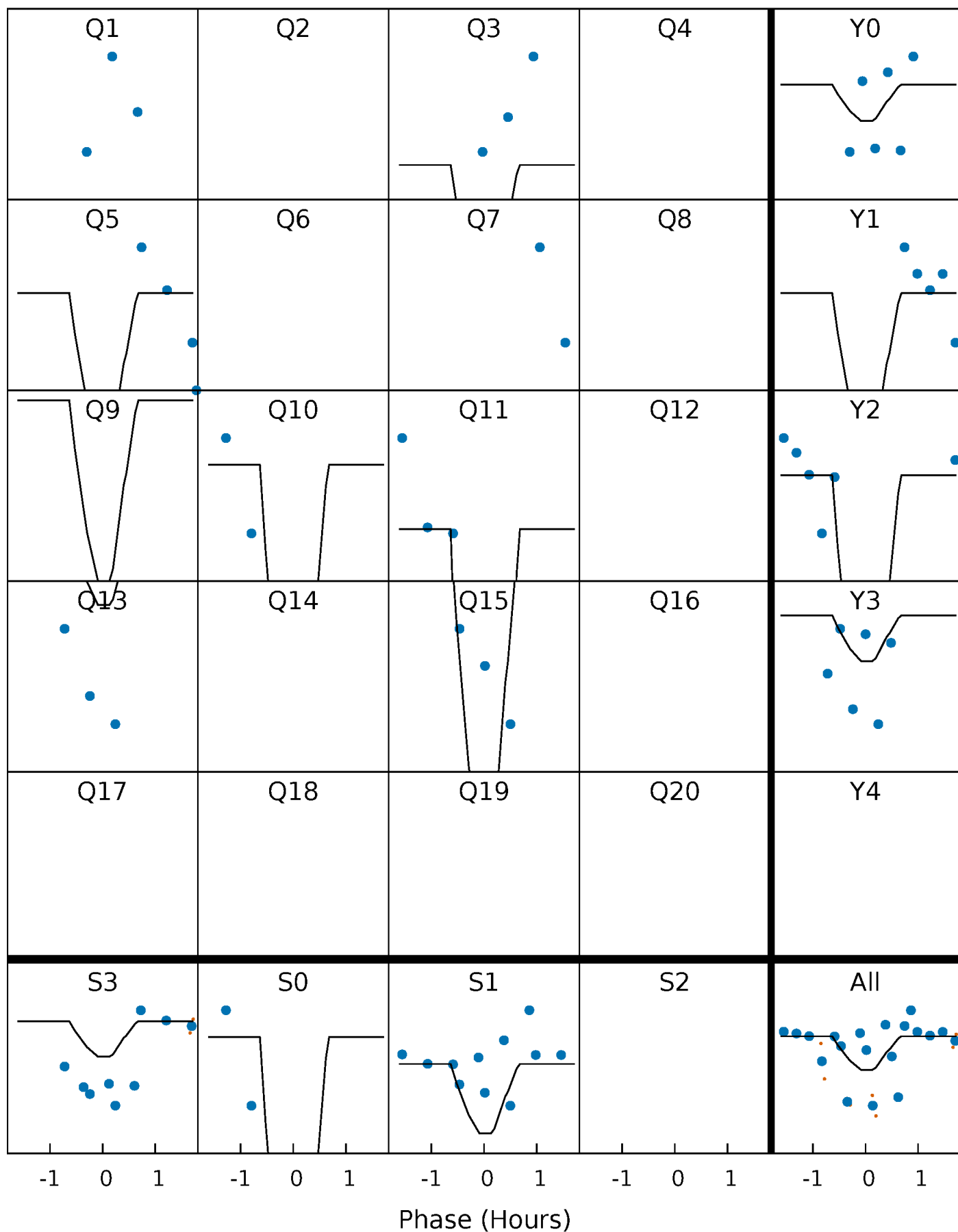
DV Quarter-Phased Transit Curves

TCE 008557474-02 P= 11.578352 Days $T_0=133.114397$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

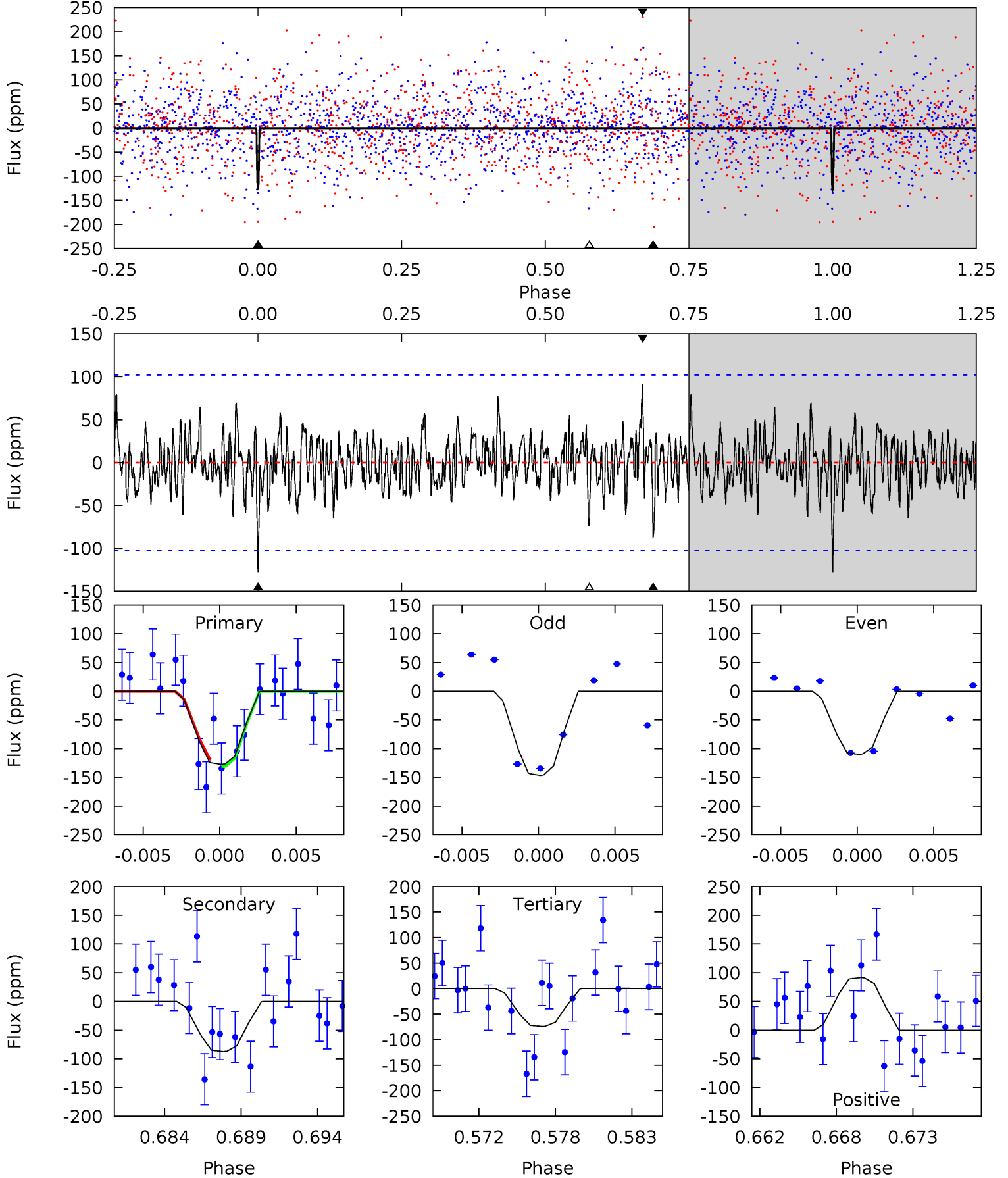
TCE 008557474-02 P= 11.578241 Days $T_0=133.121219$ (BKJD)



DV Model-Shift Uniqueness Test

008557474-02, P = 11.578352 Days, E = 121.536045 Days

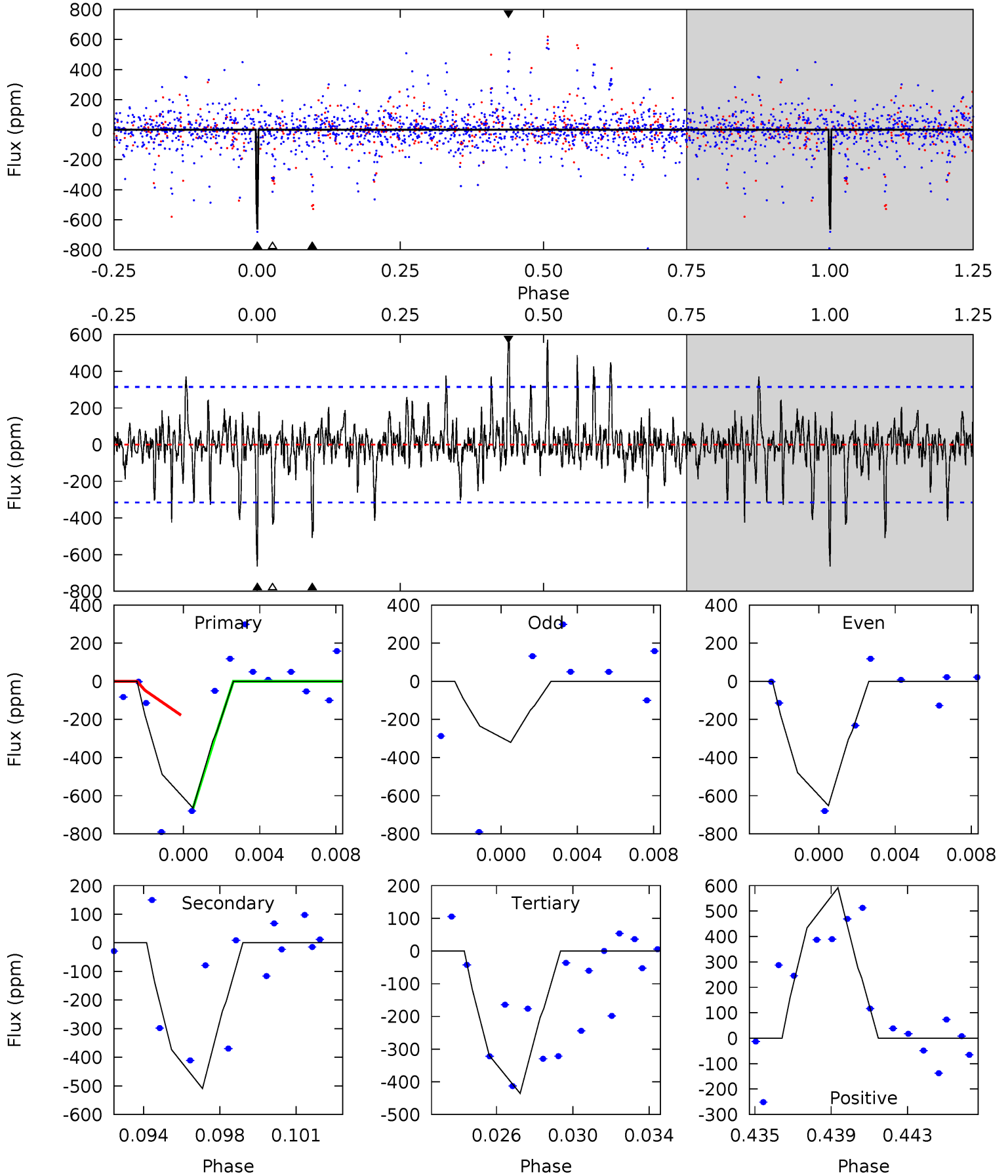
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.42	4.39	3.71	4.61	5.15	2.79	1.25	2.70	1.81	0.68	-0.22	0.90	1.10	0.42	0.32



Alt Model-Shift Uniqueness Test

008557474-02, P = 11.578241 Days, E = 121.542978 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	8.42	7.20	9.78	5.21	2.90	1.85	3.79	1.21	1.22	-1.36	1.98	0.94	0.47	3.37



Stellar Parameters For KIC 008557474

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7309^{+205}_{-307}	$4.095^{+0.180}_{-0.180}$	$-0.220^{+0.250}_{-0.350}$	$1.799^{+0.539}_{-0.490}$	$1.469^{+0.209}_{-0.255}$	$0.355^{+0.350}_{-0.177}$
	+3%/-4%	+4%/-4%	+114%/-159%	+30%/-27%	+14%/-17%	+99%/-50%
Source	PHO1	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 008557474-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-87 ± 20	$3.58^{+3.26}_{-2.49}$	1785^{+143}_{-124}	5204^{+4928}_{-1156}	50^{+476}_{-36}
Alt.	-509 ± 60	$4.51^{+3.30}_{-2.77}$	1789^{+142}_{-136}	7336^{+6613}_{-1820}	179^{+988}_{-120}

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 $A_{obs} \gg 1.0$

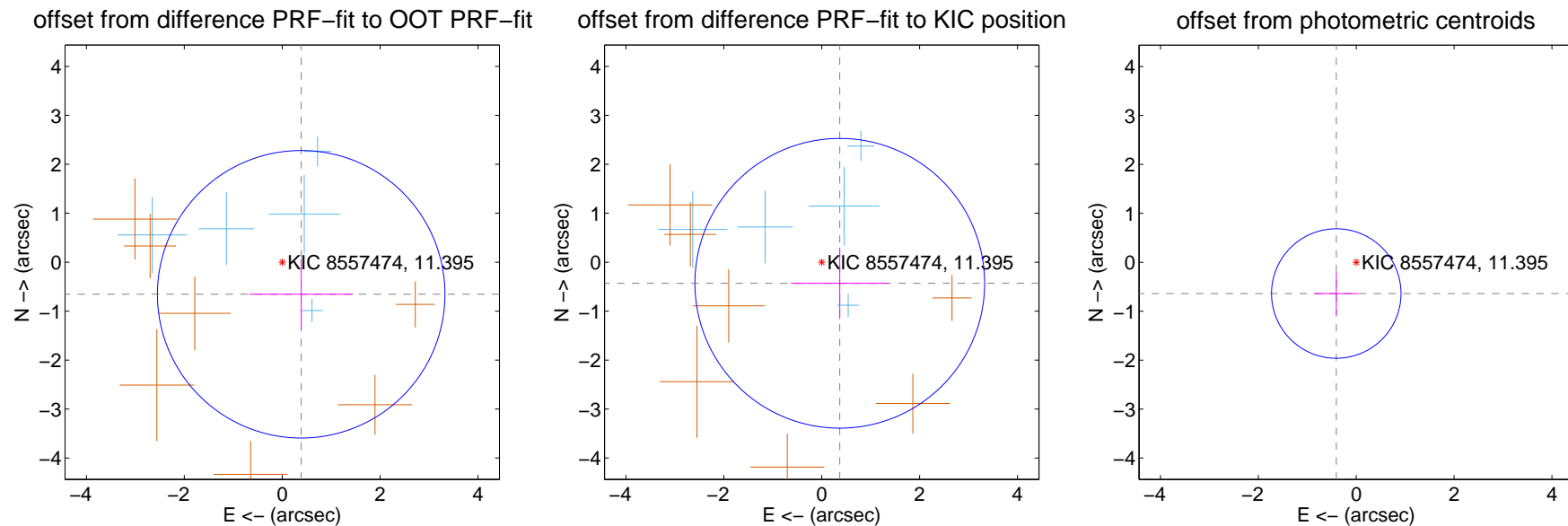
DV Centroid Data

Supplemental centroid analysis for 008557474-02. **Kepler magnitude: 11.39.** Transit SNR 6.95

There are 5 quarters with good PRF difference image offsets

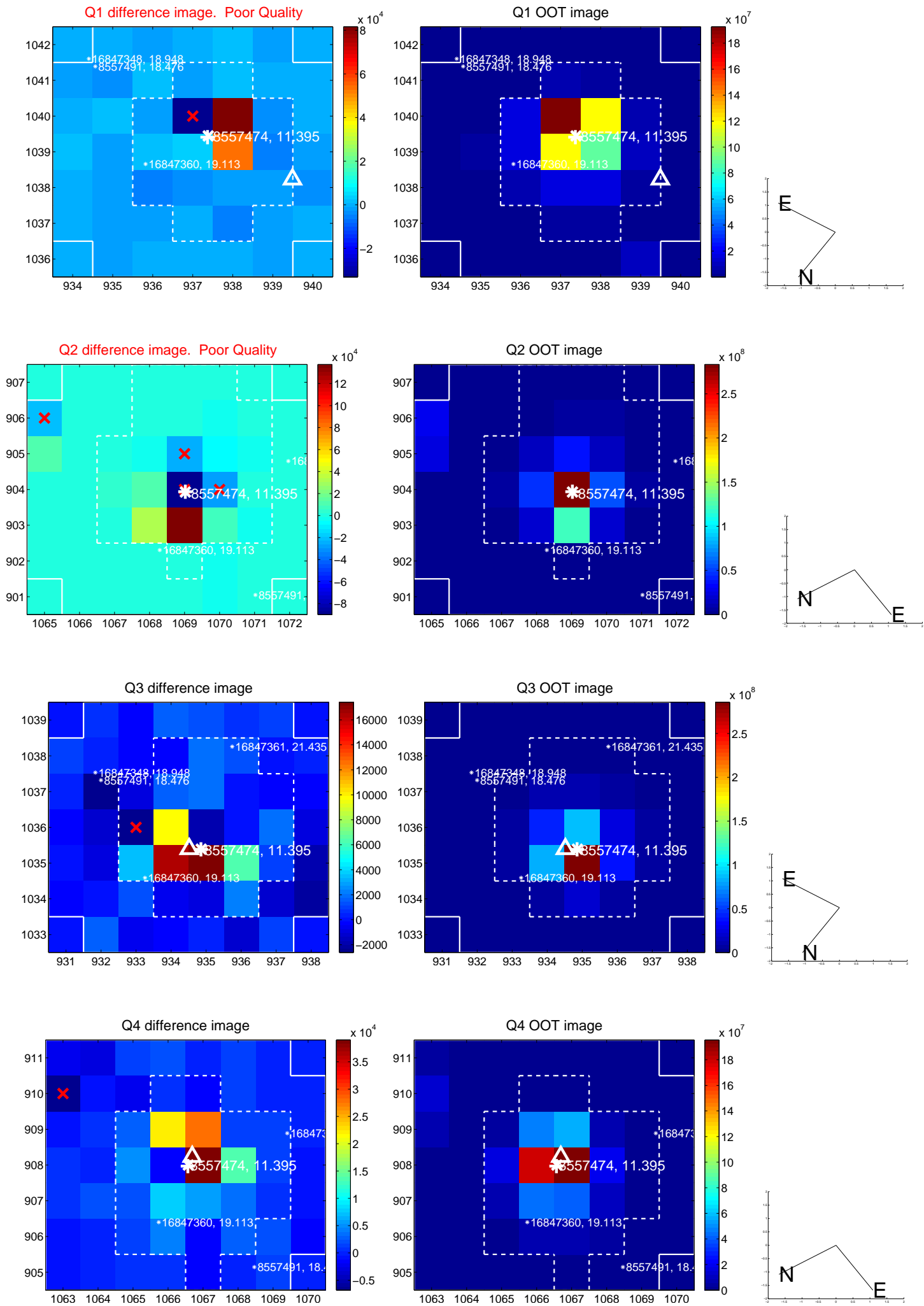
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.761 ± 0.979	0.78	-0.387 ± 1.061	-0.655 ± 0.724
PRF-fit source offset from KIC position	0.567 ± 0.987	0.58	-0.369 ± 1.001	-0.431 ± 0.731
photometric centroid source offset	0.76 ± 0.44	1.72	0.41 ± 0.45	-0.64 ± 0.44

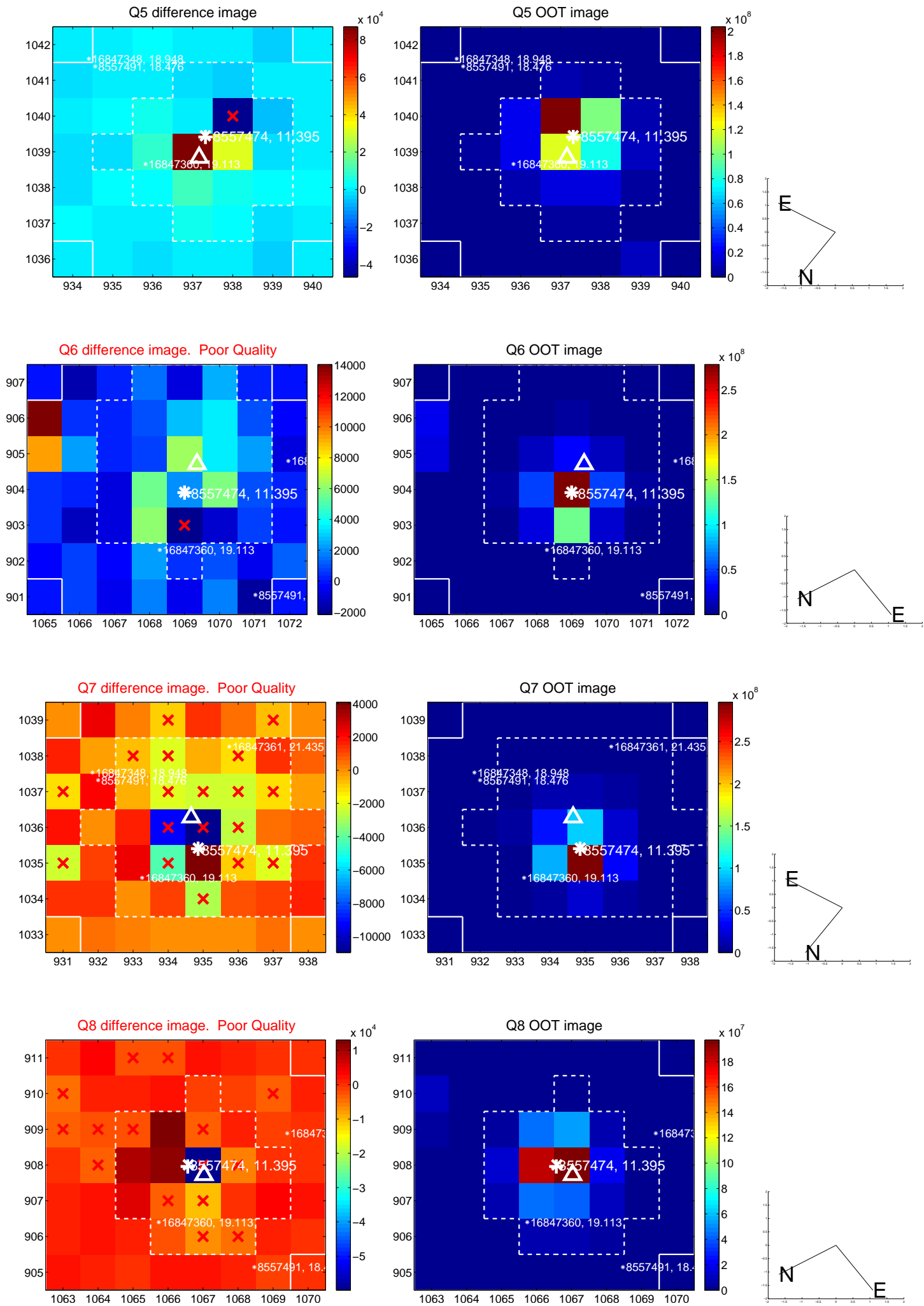


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

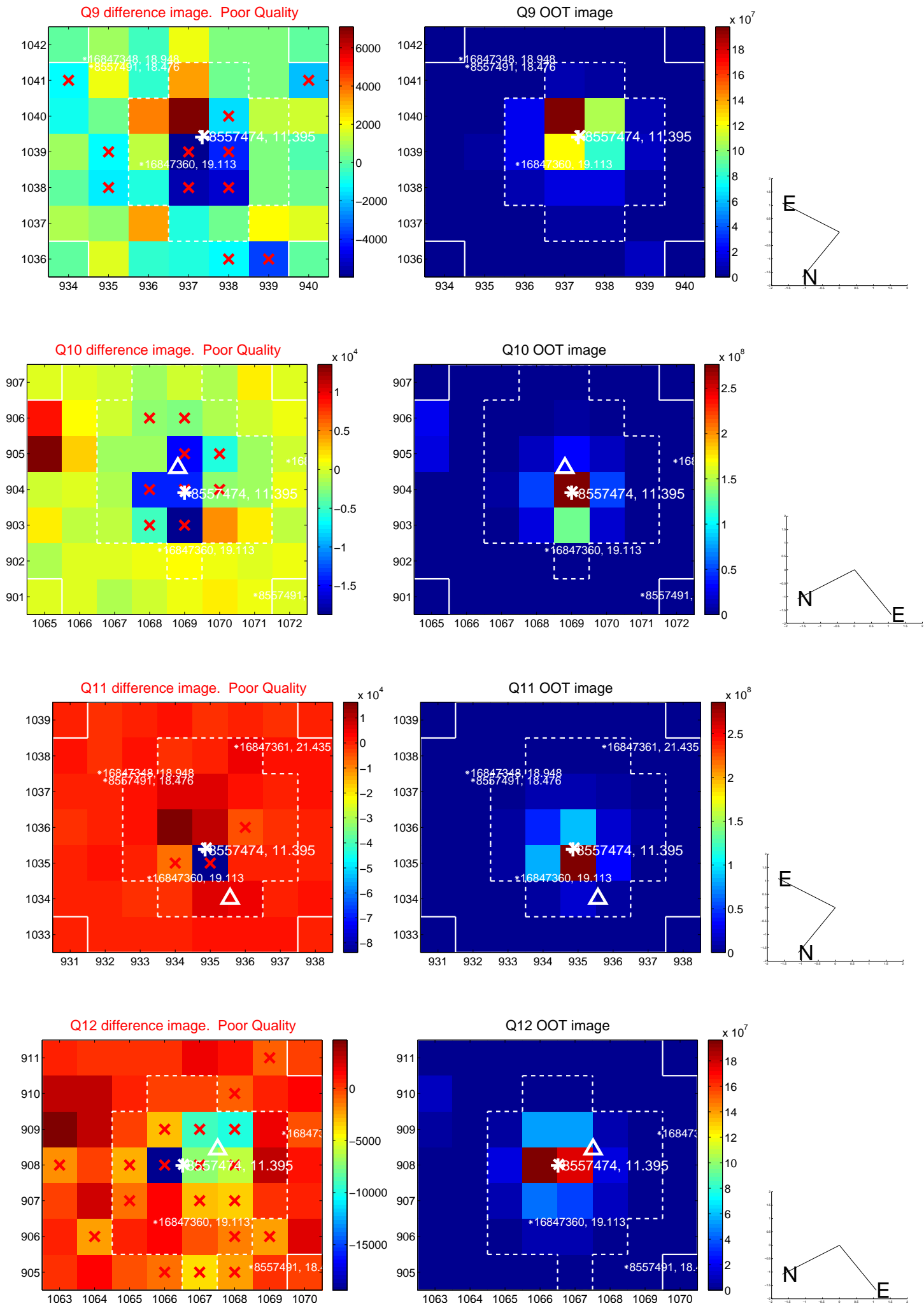
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



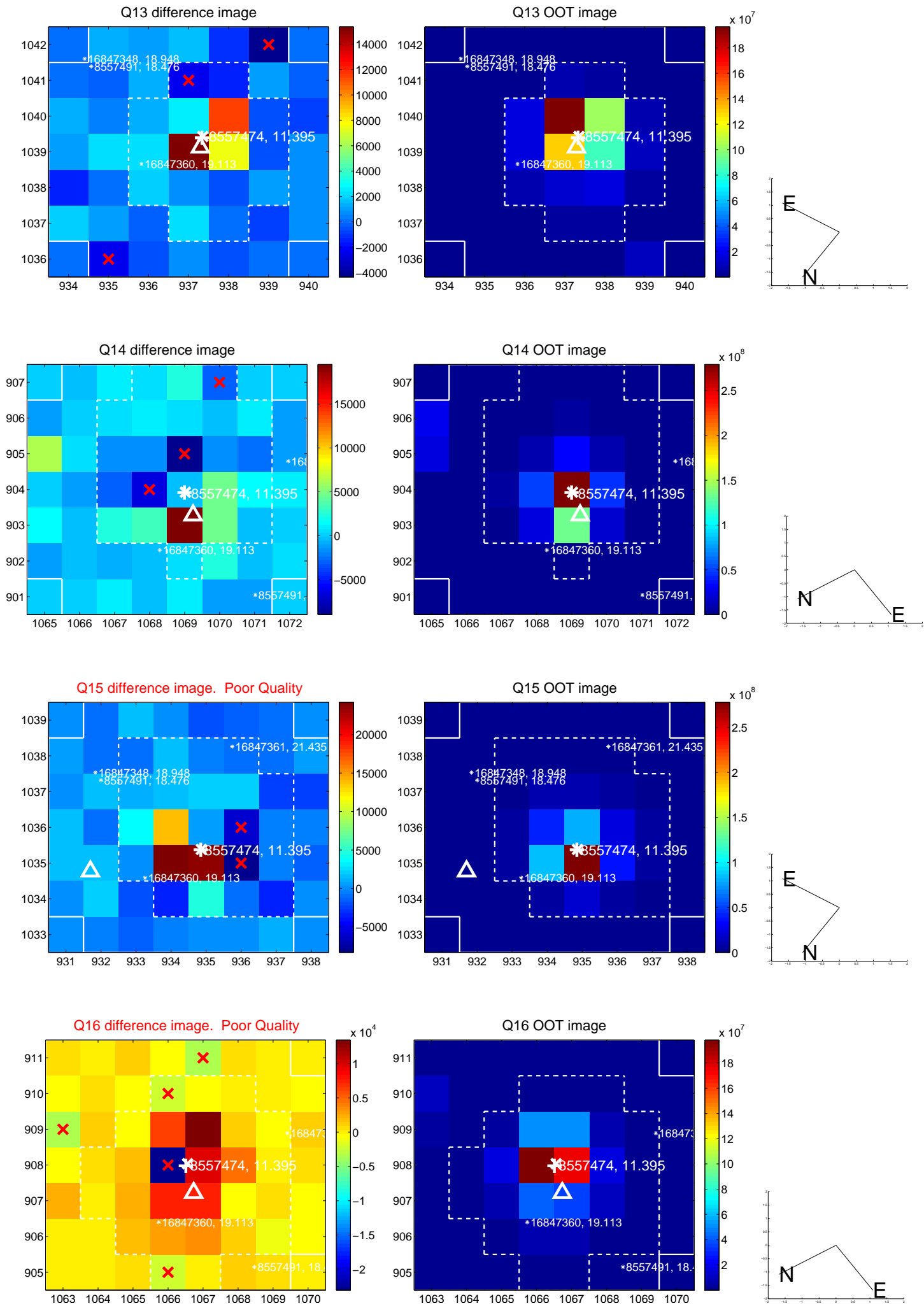
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



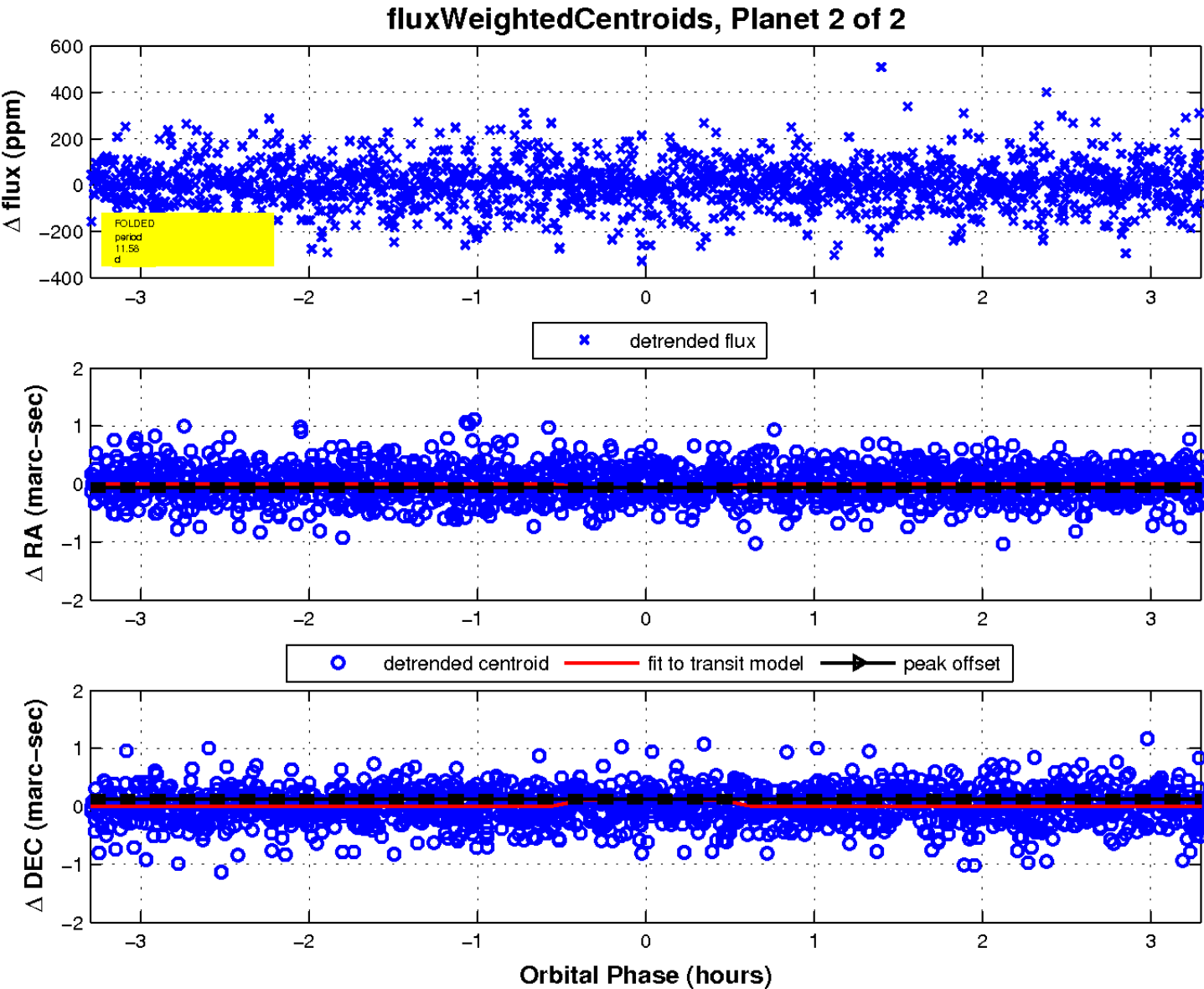
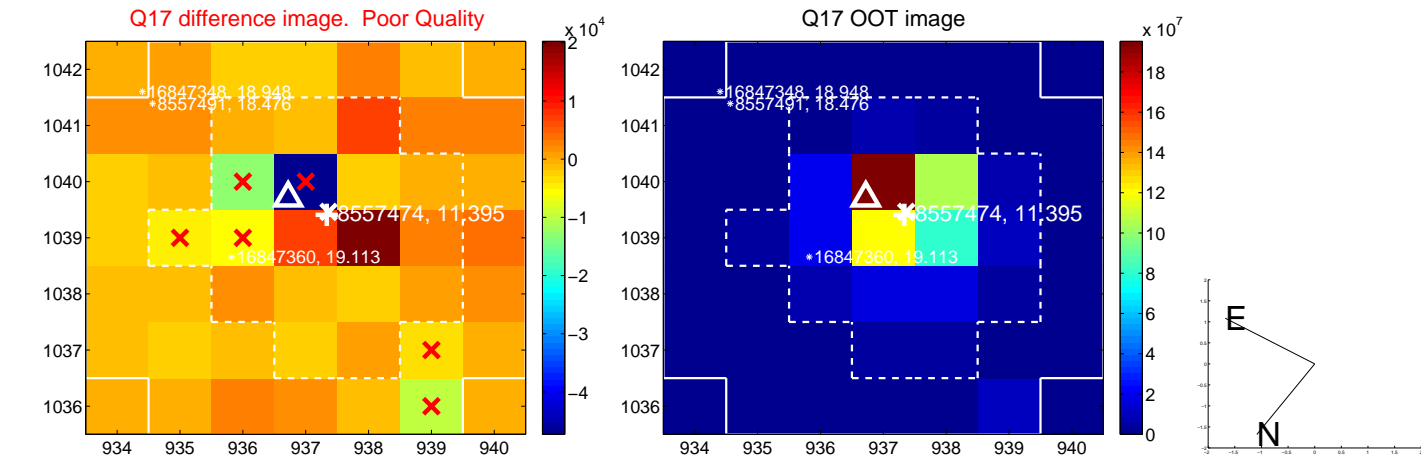
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

