

KIC 005774557

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})
005774557-01	OBS	No	0.834656	131.593409	69.0	3.342	10.6	13.0	2.07	7262	2.00	25856.08
005774557-02	OBS	No	0.834827	131.868904	87.2	2.534	11.3	14.9	2.07	7262	2.24	25849.03

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005774557-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005774557-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

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

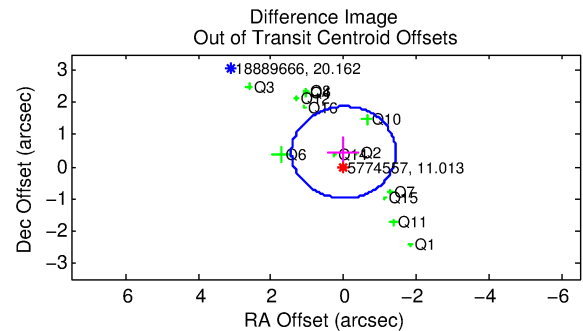
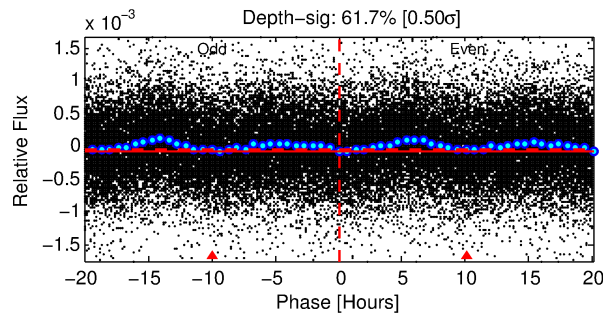
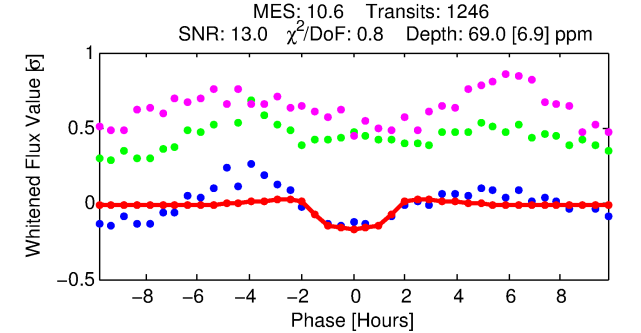
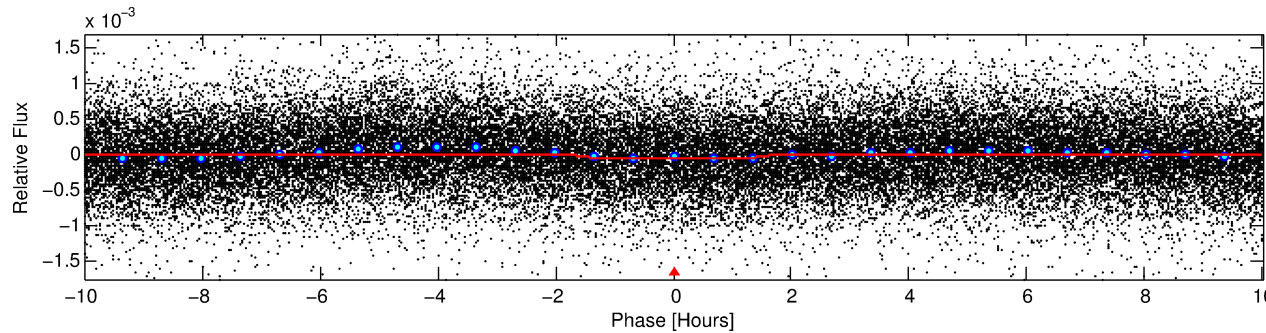
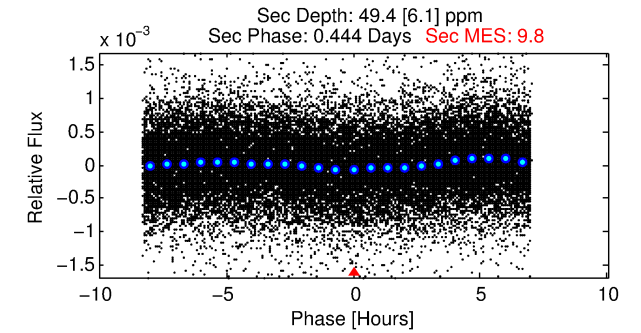
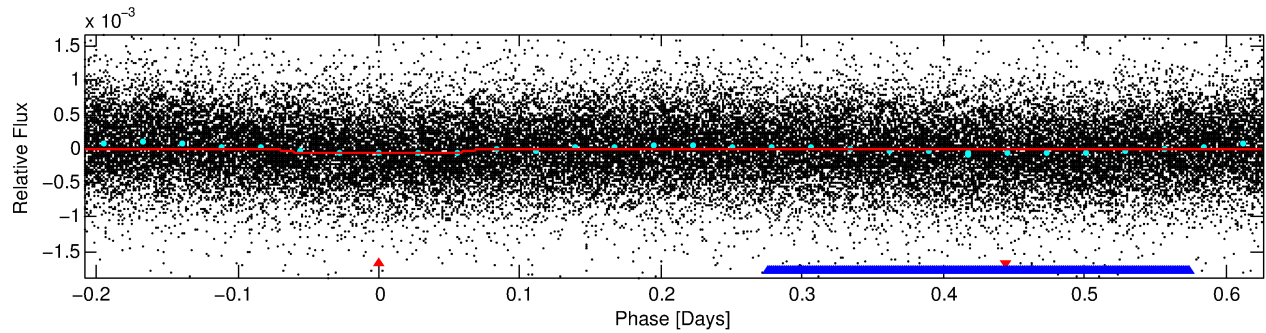
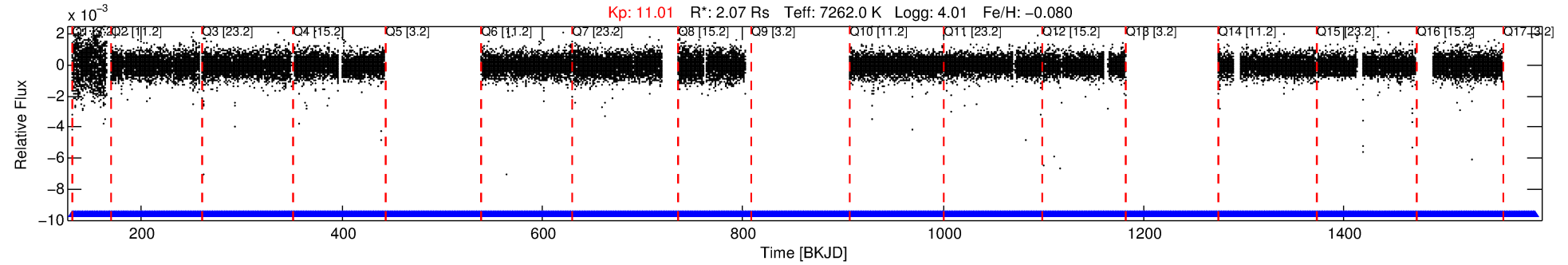
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005774557-01

No Significant Match Found

DV One-Page Summary

KIC: 5774557 Candidate: 1 of 2 Period: 0.835 d



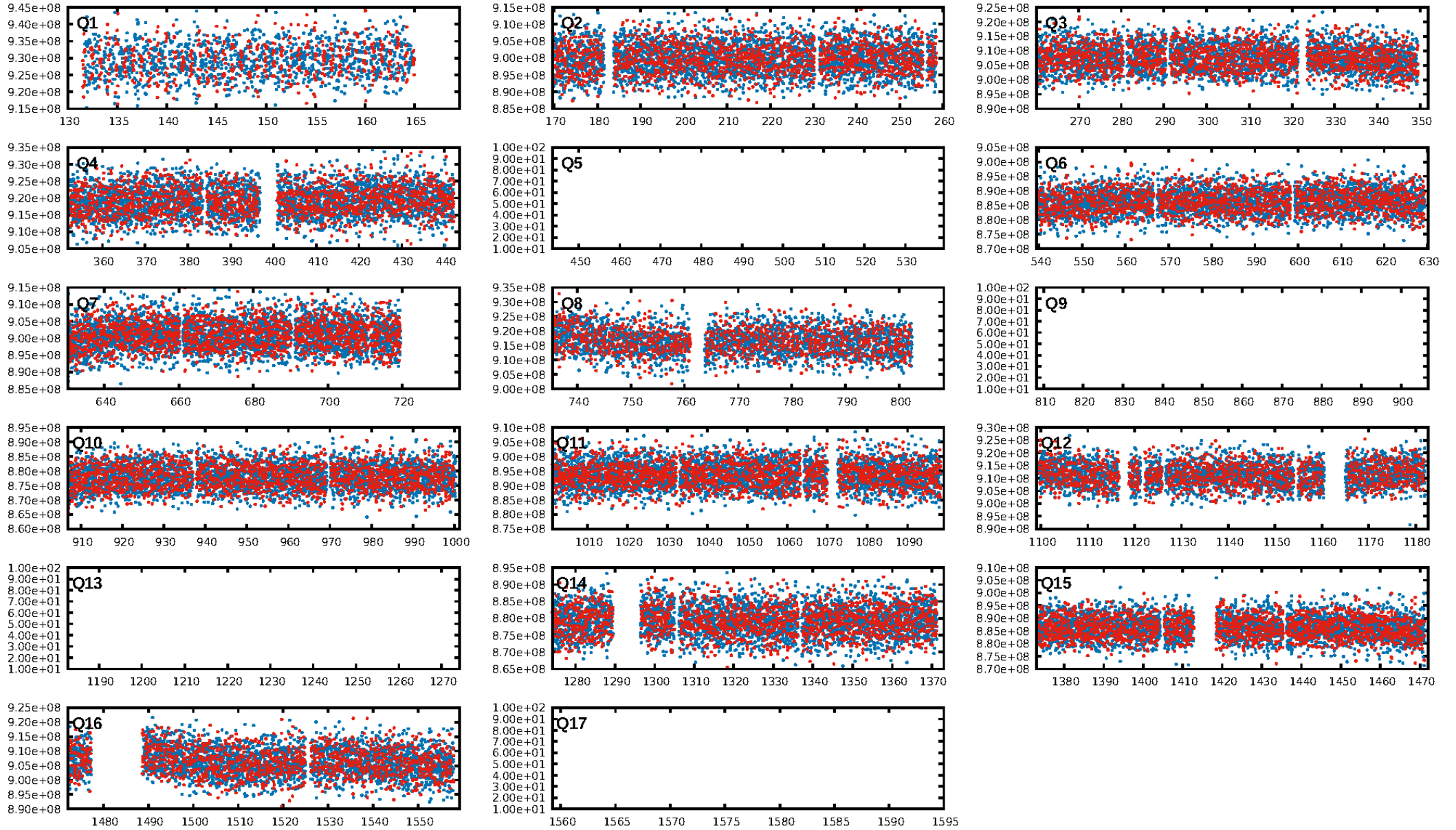
DV Fit Results:

Period = 0.83466 [0.00001] d
Epoch = 131.5934 [0.0030] BKJD
Rp/R* = 0.0088 [0.0039]
a/R* = 1.28 [1.37]
b = 0.90 [0.58]
Seff = 25856.09 [10660.44]
Teq = 3233 [333] K
Rp = 2.00 [1.03] Re
a = 0.0203 [0.0050] AU
Ag = 2.82 [2.70] [0.68σ]
Teffp = 6479 [1456] K [2.17σ]

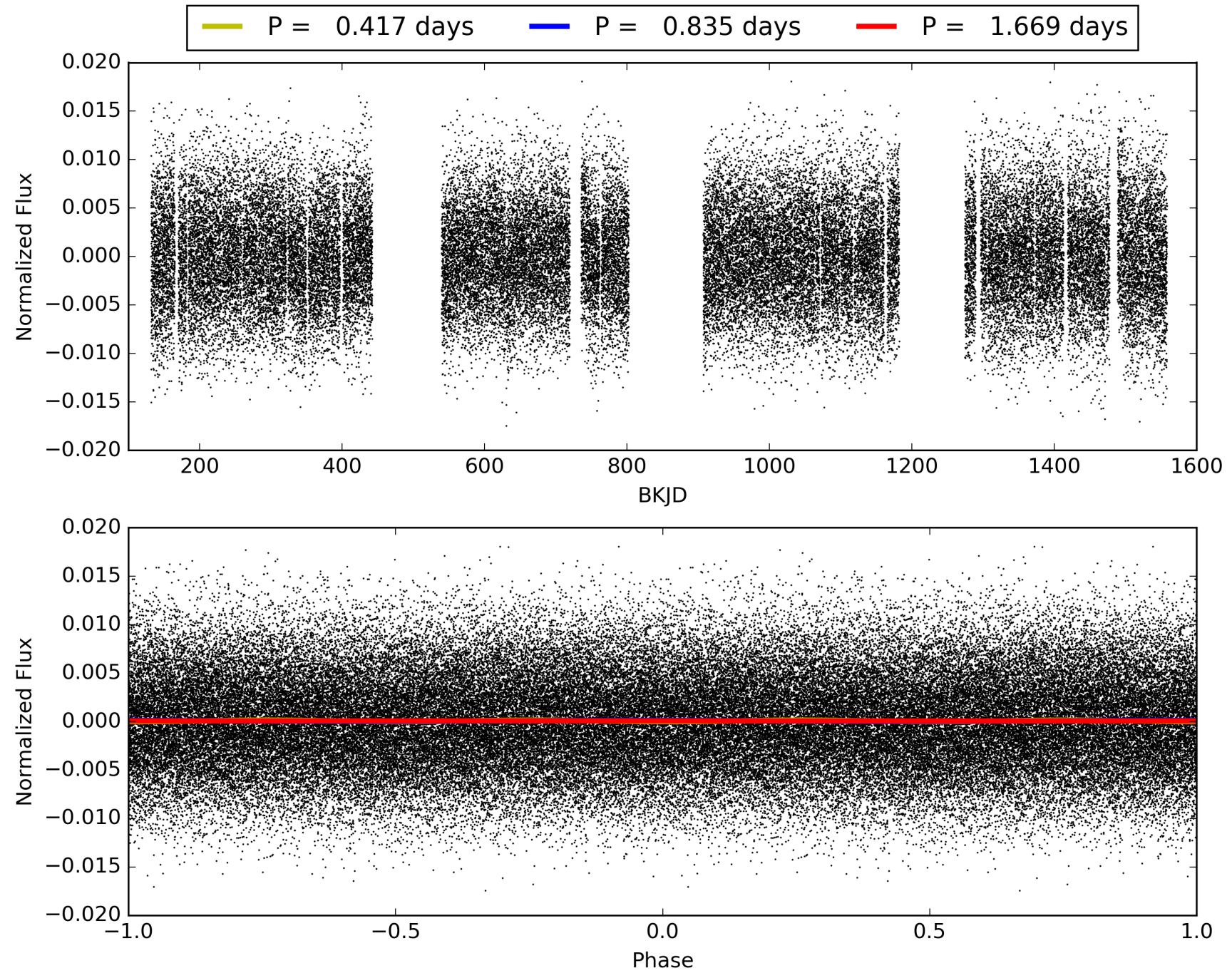
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.13e-71
RollingBand-fgt: 1.00 [1205/1205]
GhostDiagnostic-chr: 1.223
Centroid-sig: 4.3%
Centroid-so: 0.413 arcsec [2.37σ]
OotOffset-rm: 0.443 arcsec [0.93σ]
KicOffset-rm: 0.571 arcsec [1.04σ]
OotOffset-st: 4/4/4/1 [13]
KicOffset-st: 4/4/4/1 [13]
DiffImageQuality-fgm: 0.54 [7/13]
DiffImageOverlap-fno: 0.23 [3/13]

TCE 005774557-01, PDC Light Curves

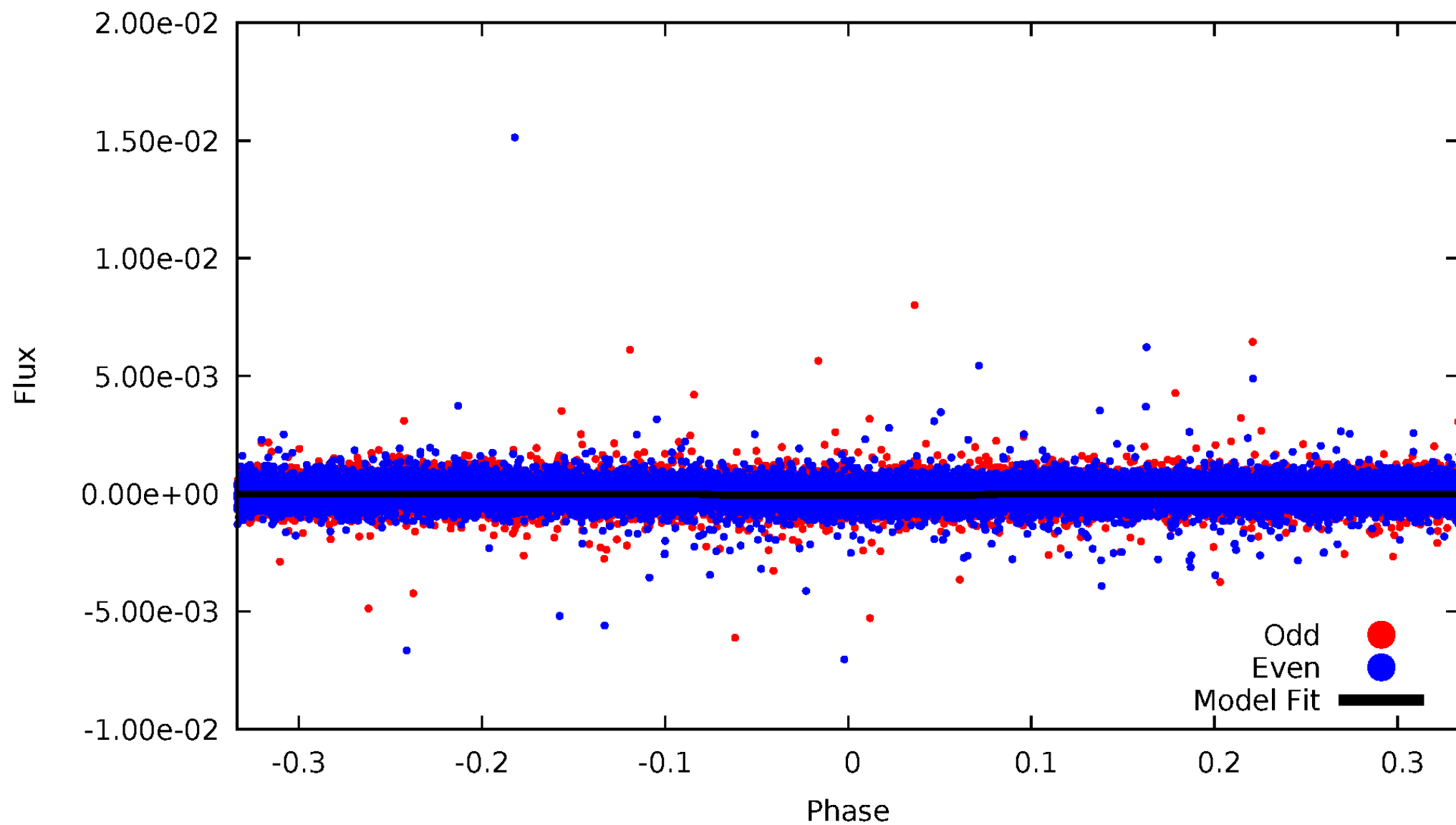


TCE 005774557-01



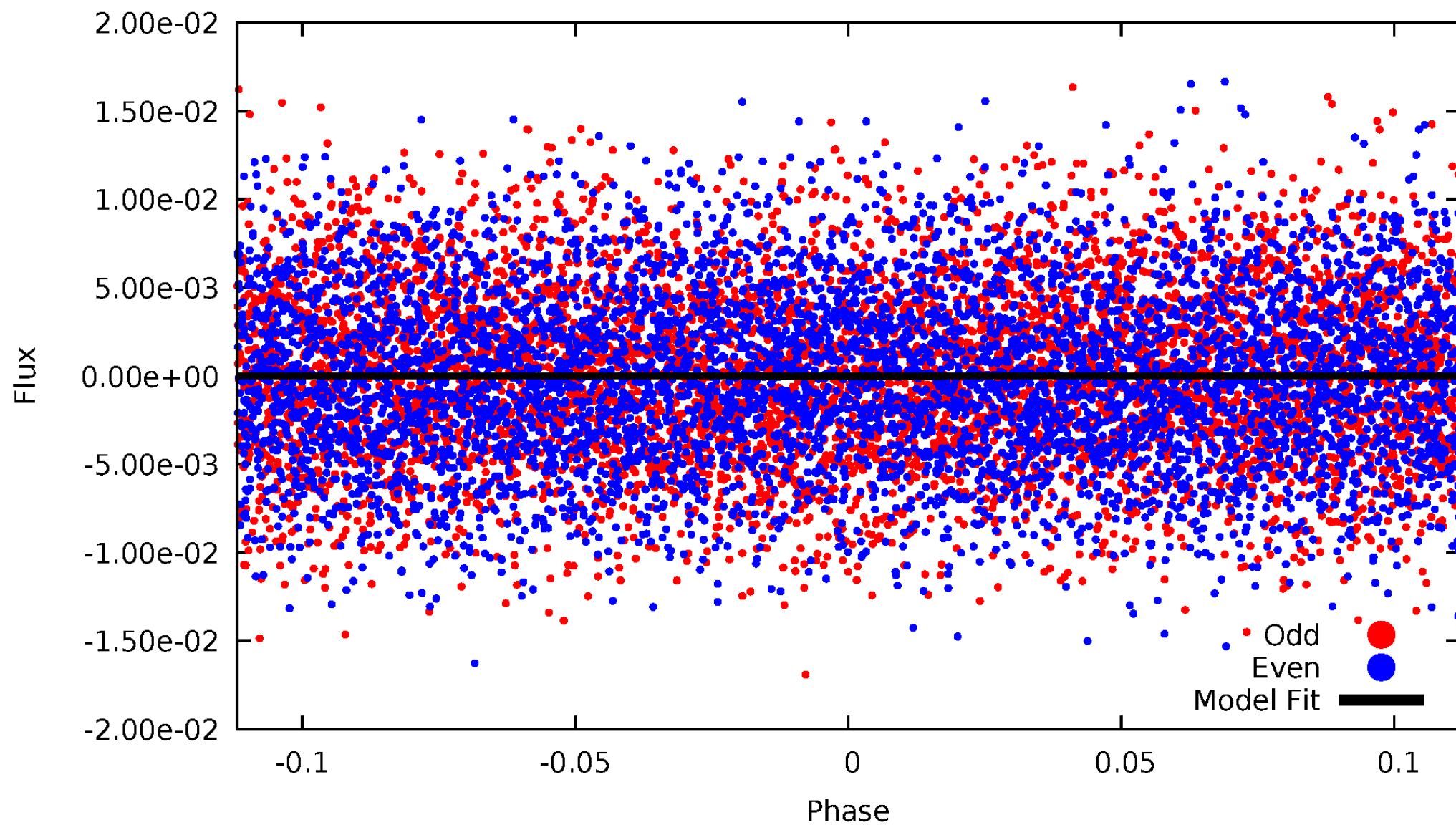
DV Odd/Even

TCE 005774557-01



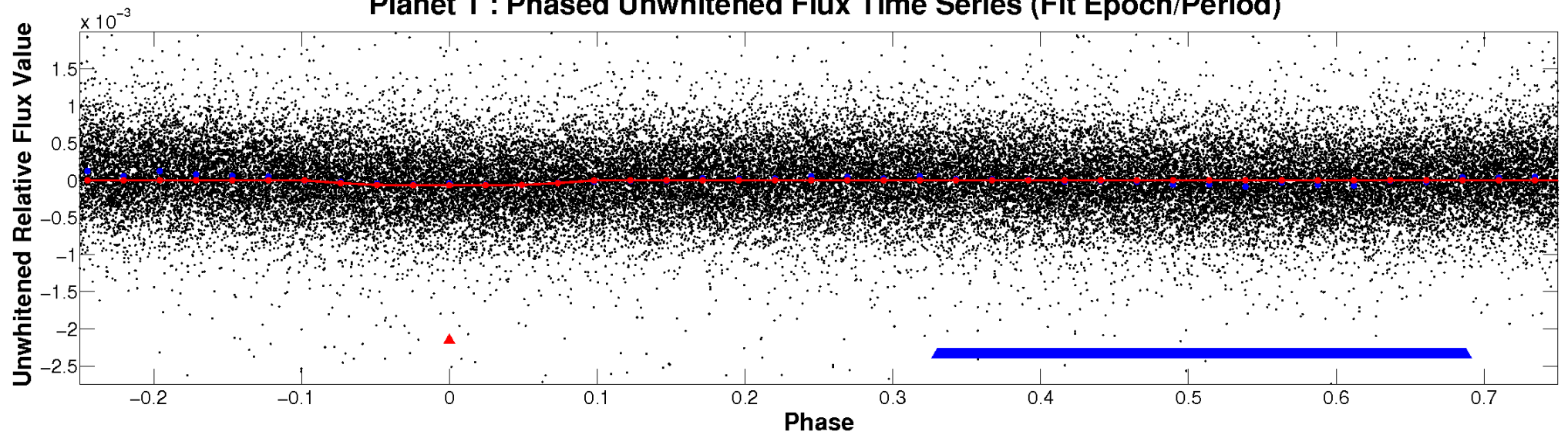
ALT Odd/Even

TCE 005774557-01

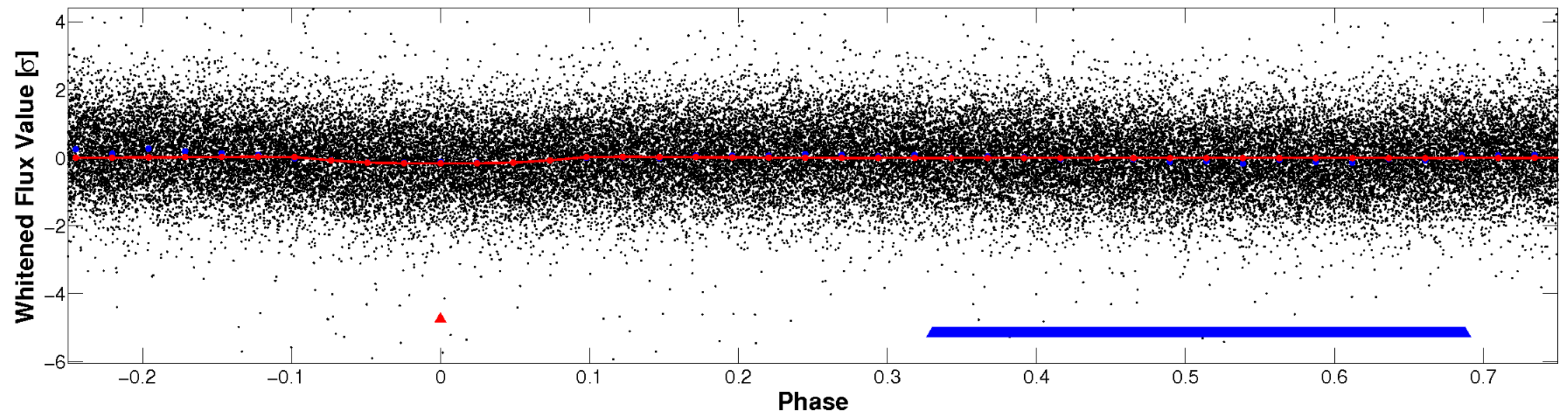


Non-Whitened Vs. Whitened Light Curve

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

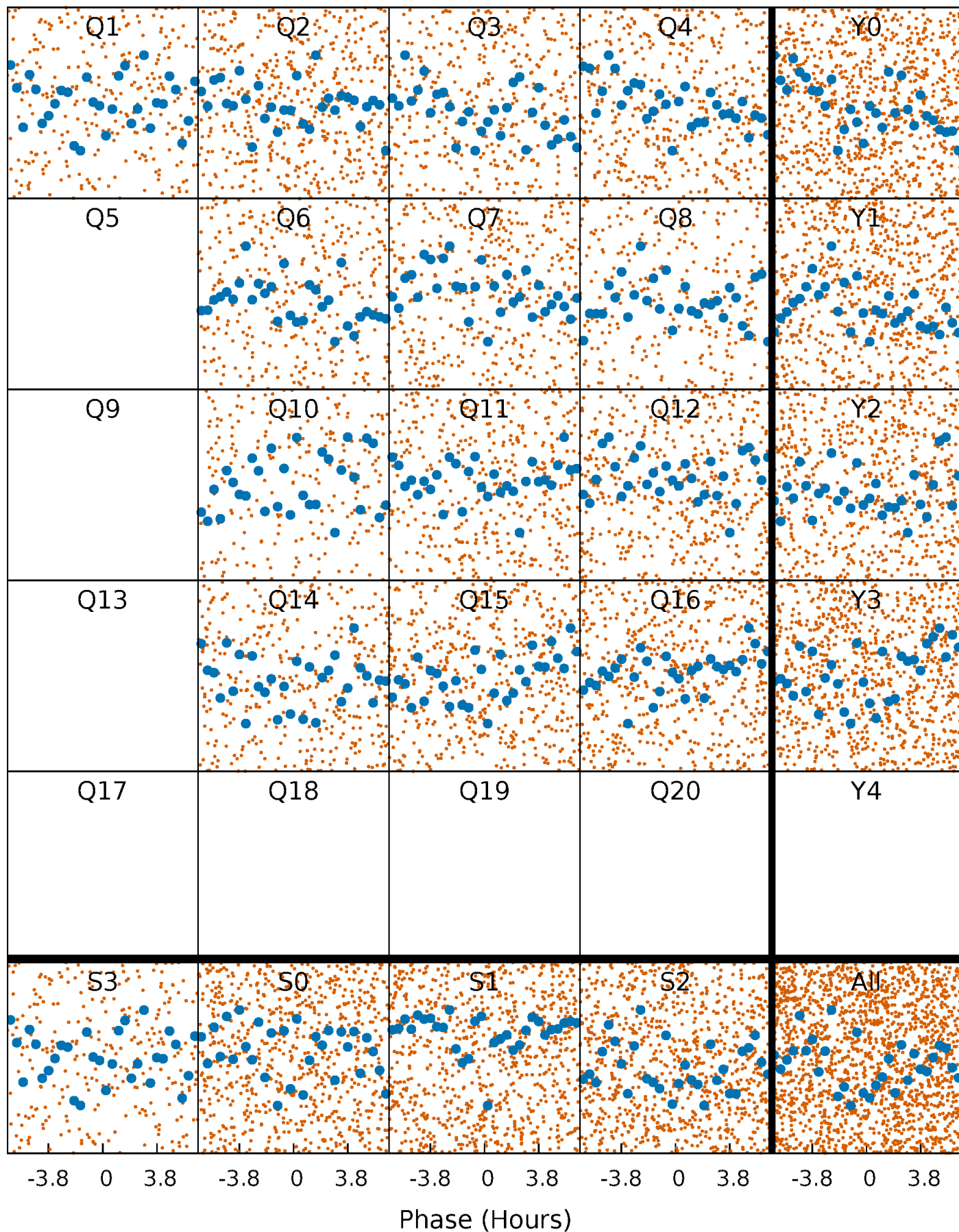


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



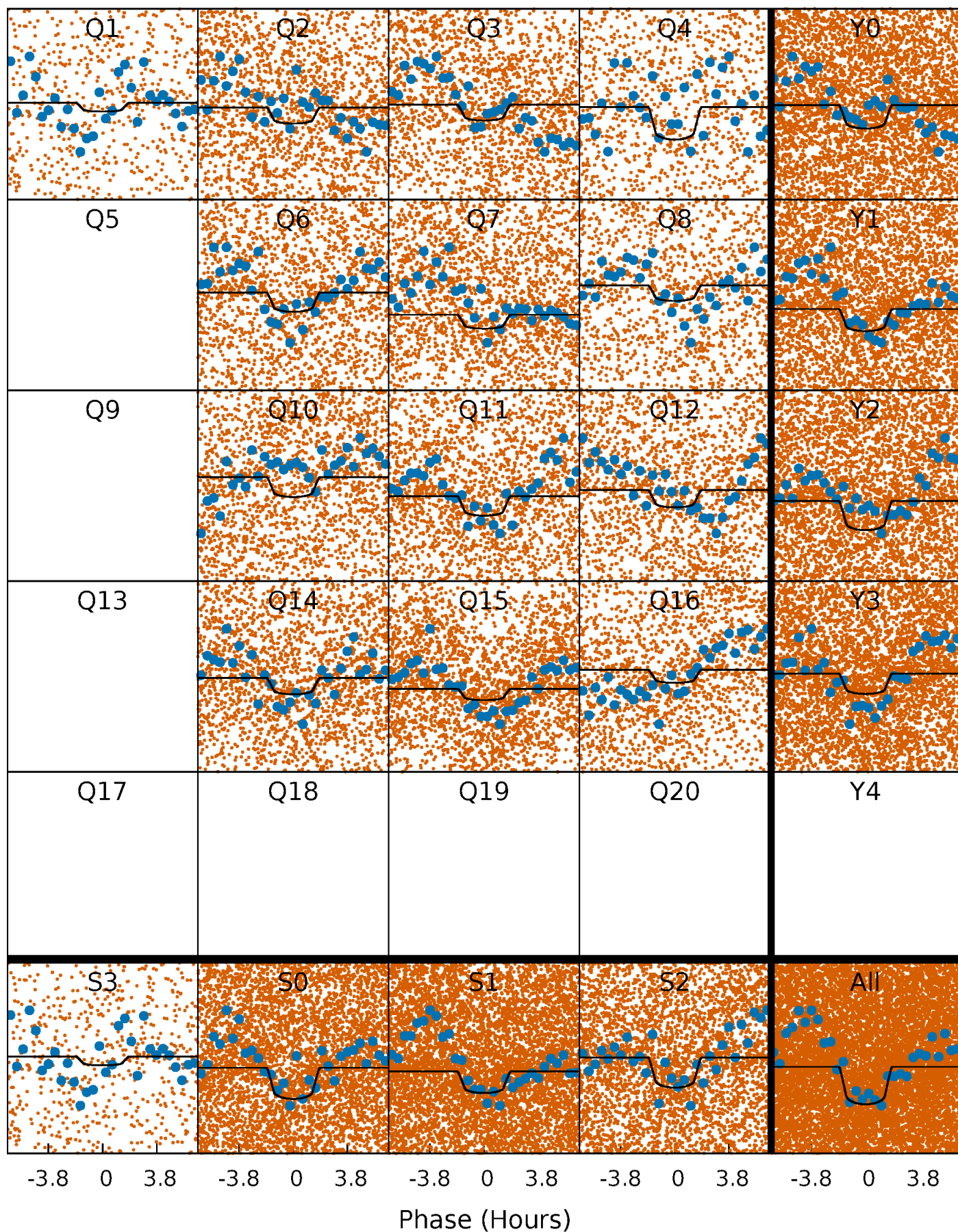
PDC Quarter-Phased Transit Curves

TCE 005774557-01 P= 0.834656 Days $T_0=131.593409$ (BKJD)



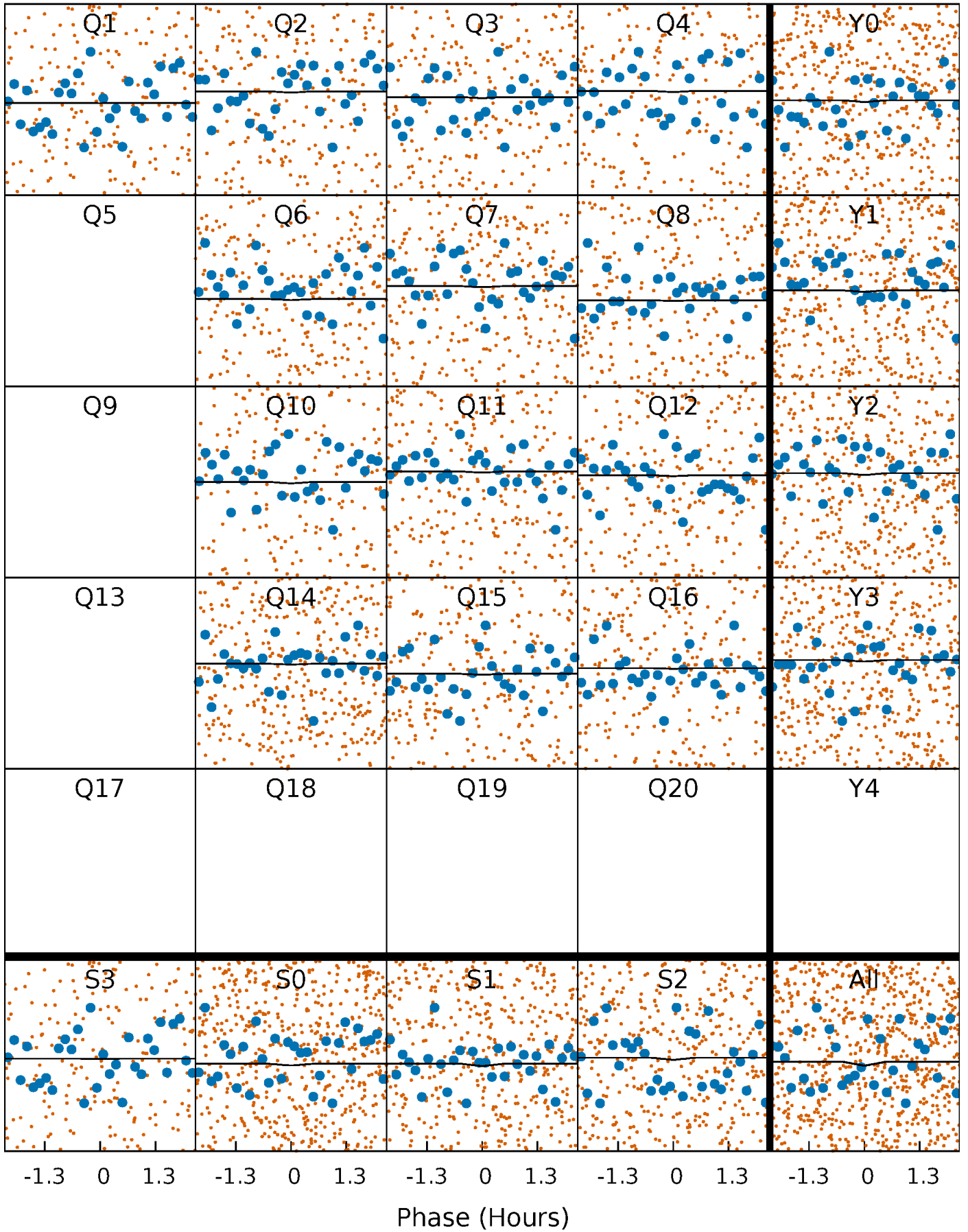
DV Quarter-Phased Transit Curves

TCE 005774557-01 P= 0.834656 Days $T_0=131.593409$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

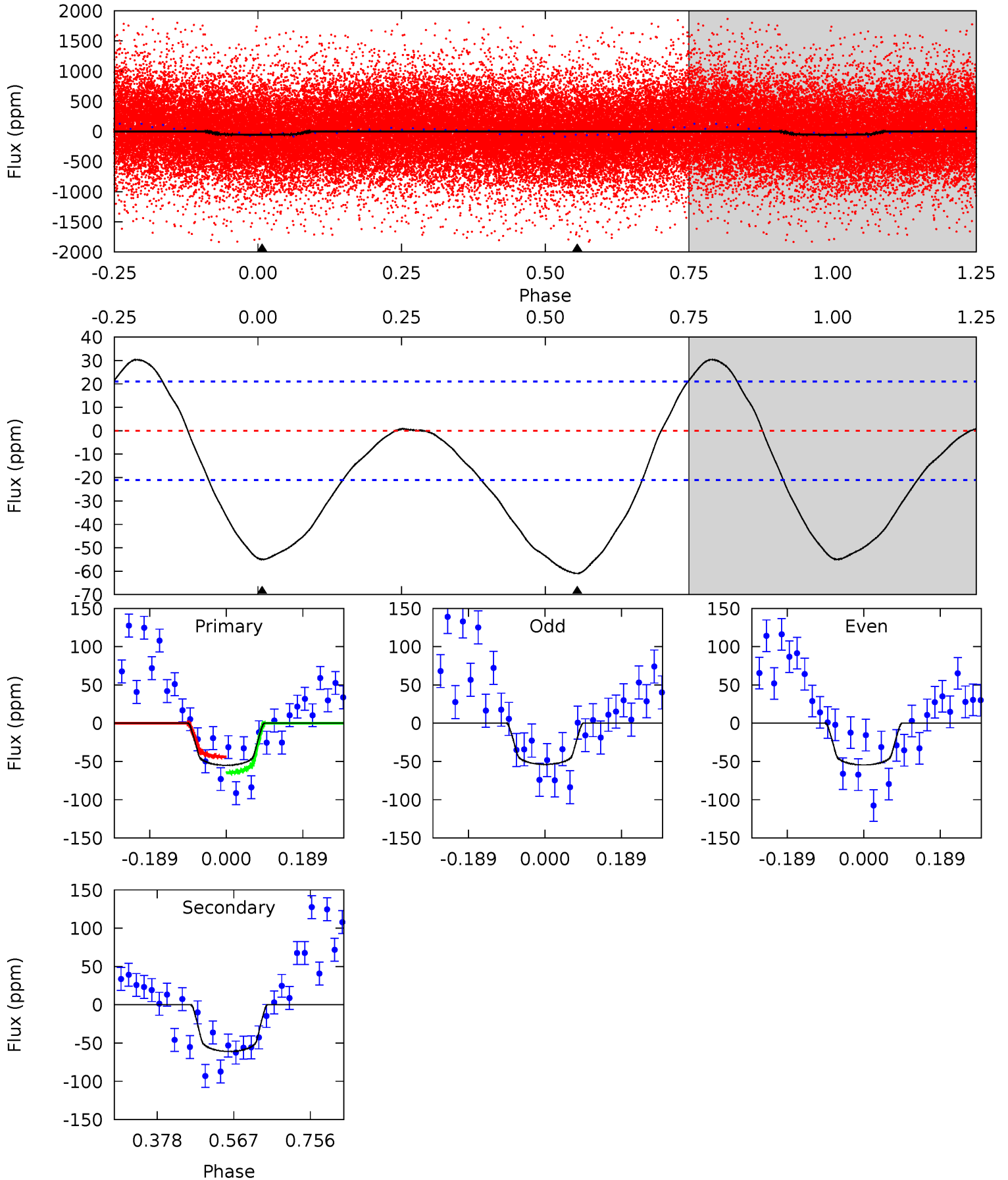
TCE 005774557-01 P= 0.834692 Days $T_0=131.579146$ (BKJD)



DV Model-Shift Uniqueness Test

005774557-01, P = 0.834656 Days, E = 130.758753 Days

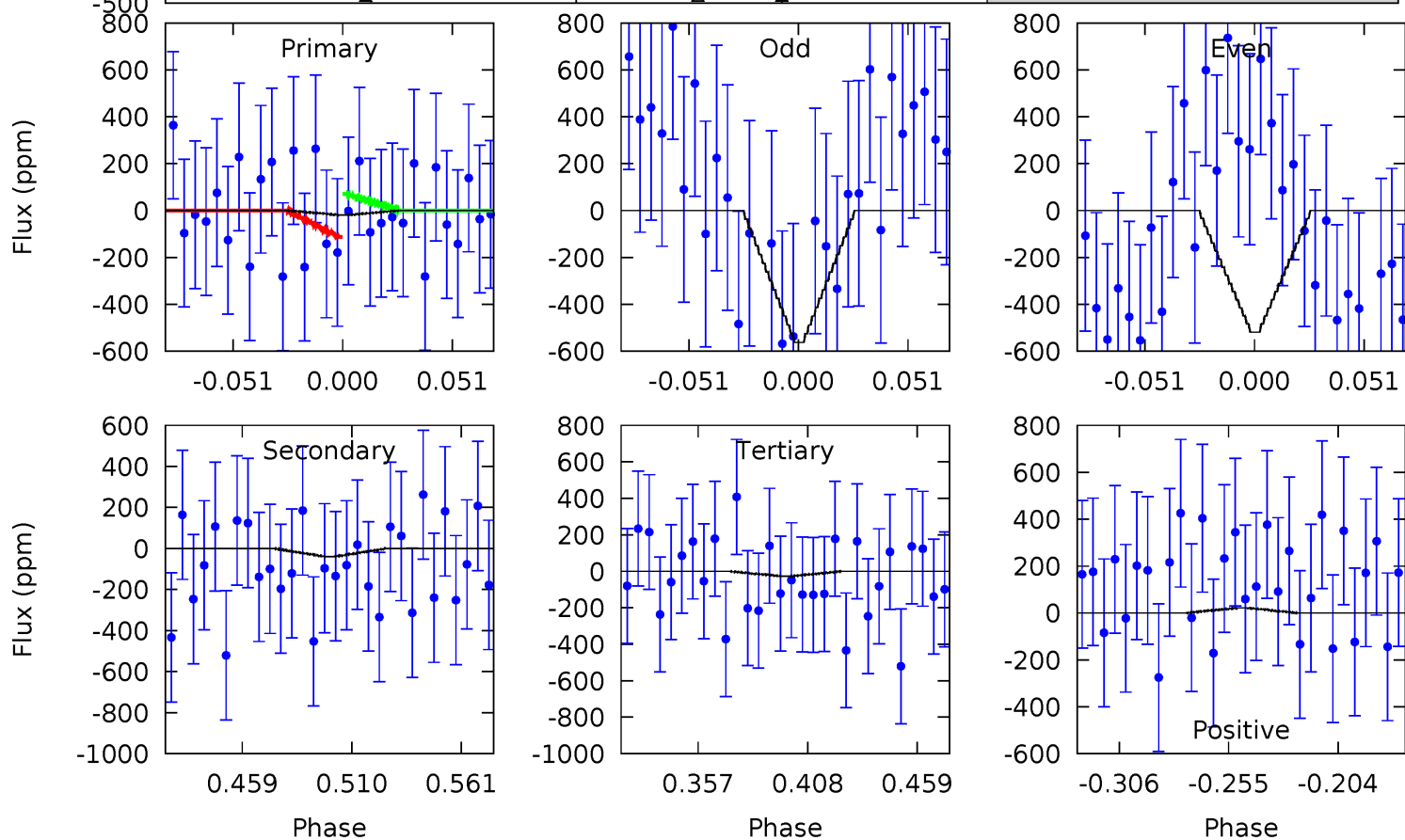
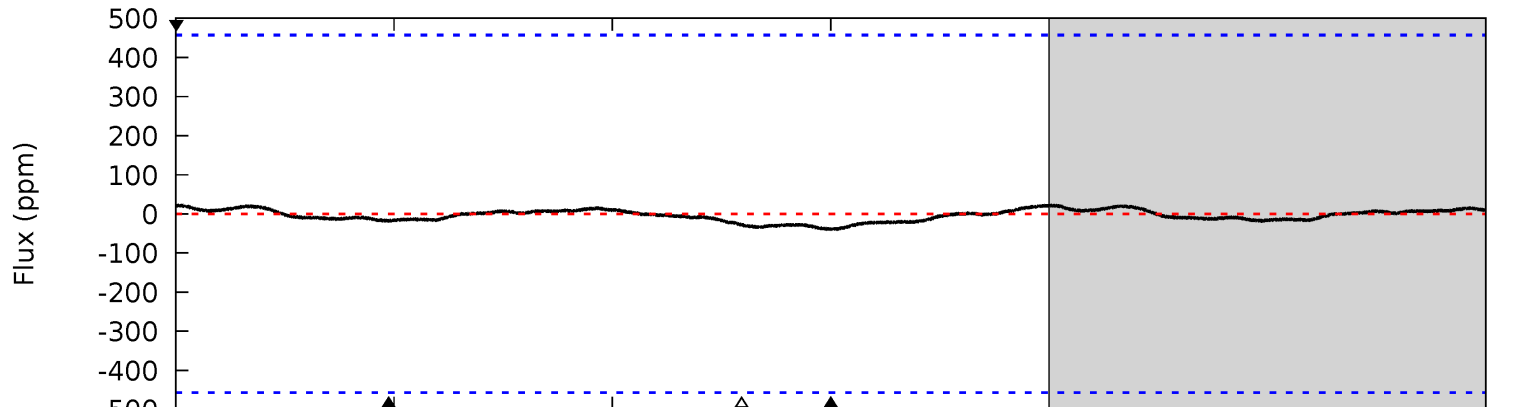
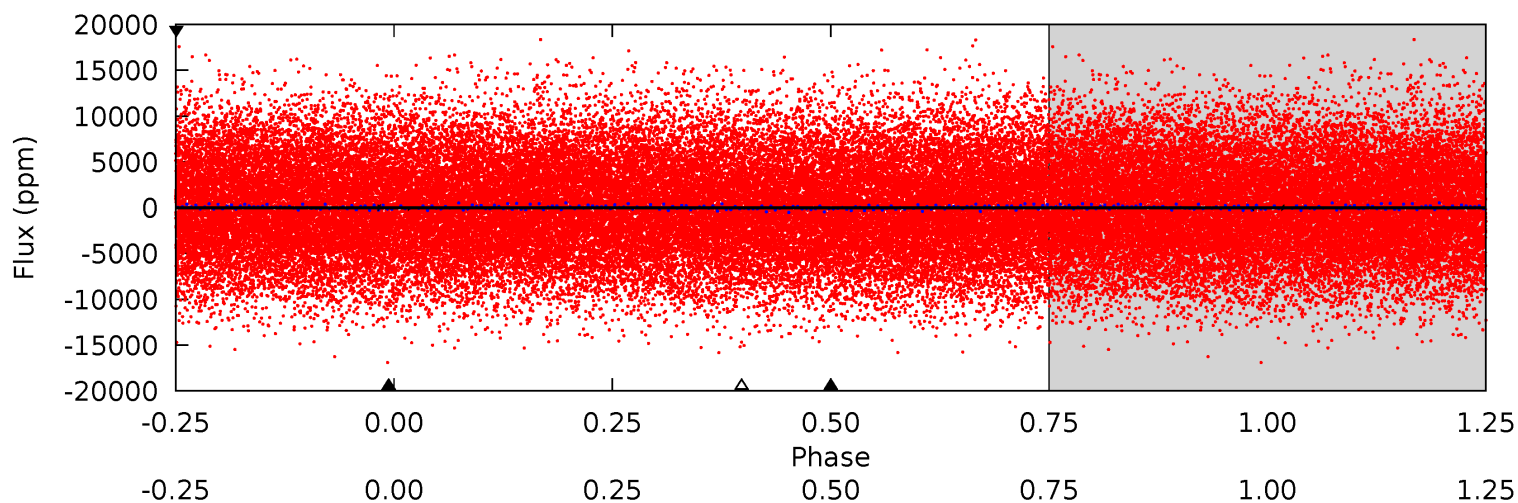
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.6	12.8	0	0	4.43	1.31	3.11	11.6	11.6	12.8	12.8	0.08	1.02	0.33	2.25



Alt Model-Shift Uniqueness Test

005774557-01, P = 0.834692 Days, E = 130.744454 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.20	0.41	0.28	0.23	4.70	1.95	0.14	-0.09	-0.03	0.13	0.19	0.23	-0.10	0.35	0.22



Stellar Parameters For KIC 005774557

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7262^{+226}_{-327}	$4.012^{+0.209}_{-0.171}$	$-0.080^{+0.250}_{-0.350}$	$2.071^{+0.578}_{-0.578}$	$1.605^{+0.200}_{-0.300}$	$0.255^{+0.340}_{-0.119}$
	+3%/-5%	+5%/-4%	+312%/-438%	+28%/-28%	+12%/-19%	+133%/-47%
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 005774557-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-61 ± 5	$1.92^{+0.98}_{-0.82}$	4492^{+335}_{-357}	6632^{+2771}_{-1265}	$3.734^{+7.464}_{-2.093}$
Alt.	-40 ± 97	$1.04^{+0.85}_{-0.63}$	4489^{+368}_{-365}	7241^{+11462}_{-17406}	$4.567^{+47.861}_{-16.293}$

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 $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

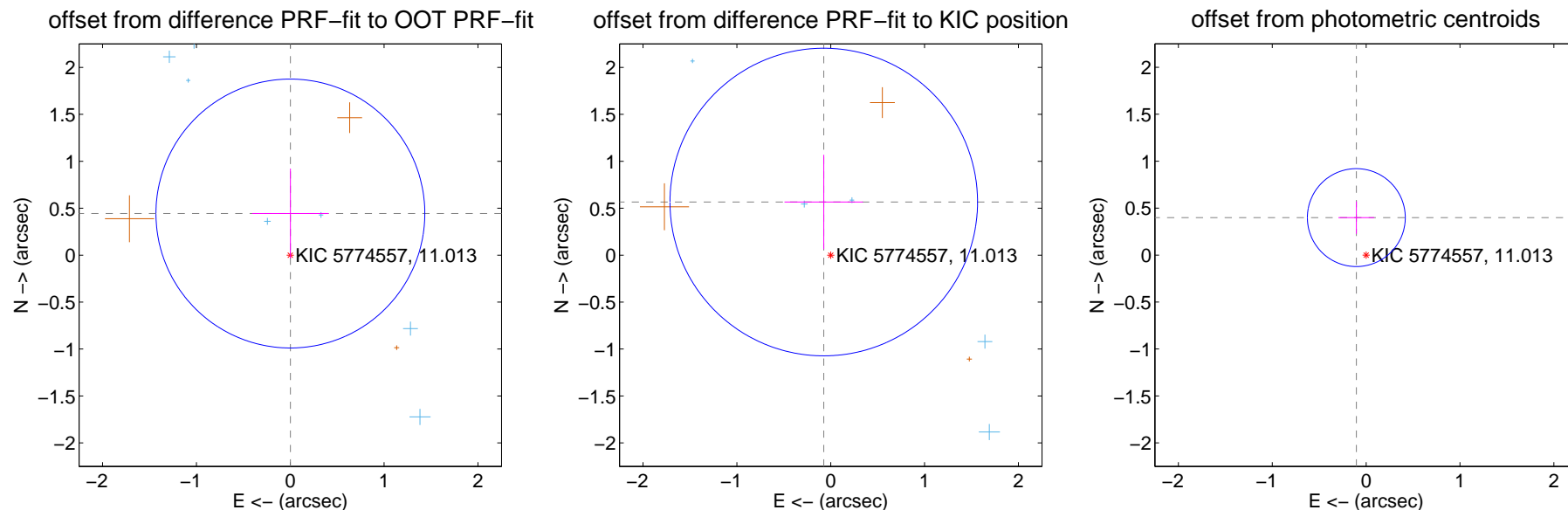
DV Centroid Data

Supplemental centroid analysis for 005774557-01. **Kepler magnitude: 11.01.** Transit SNR 12.96

There are 7 quarters with good PRF difference image offsets

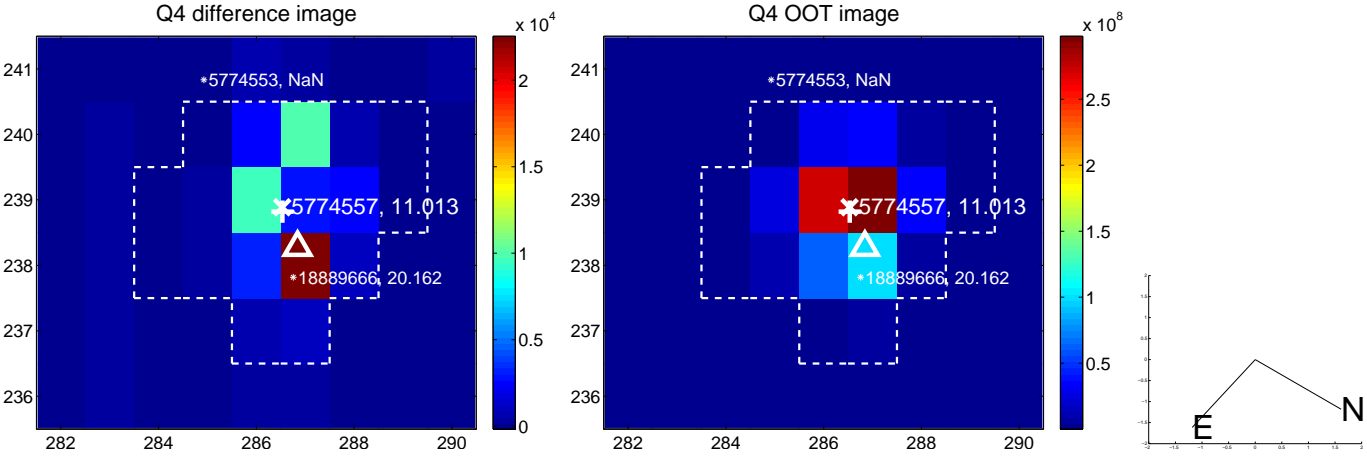
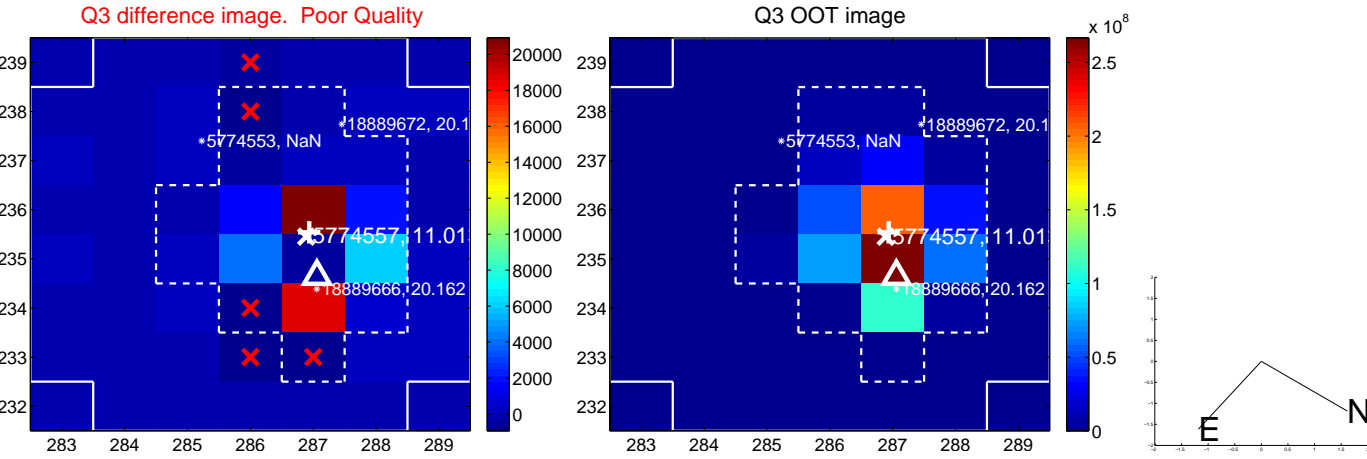
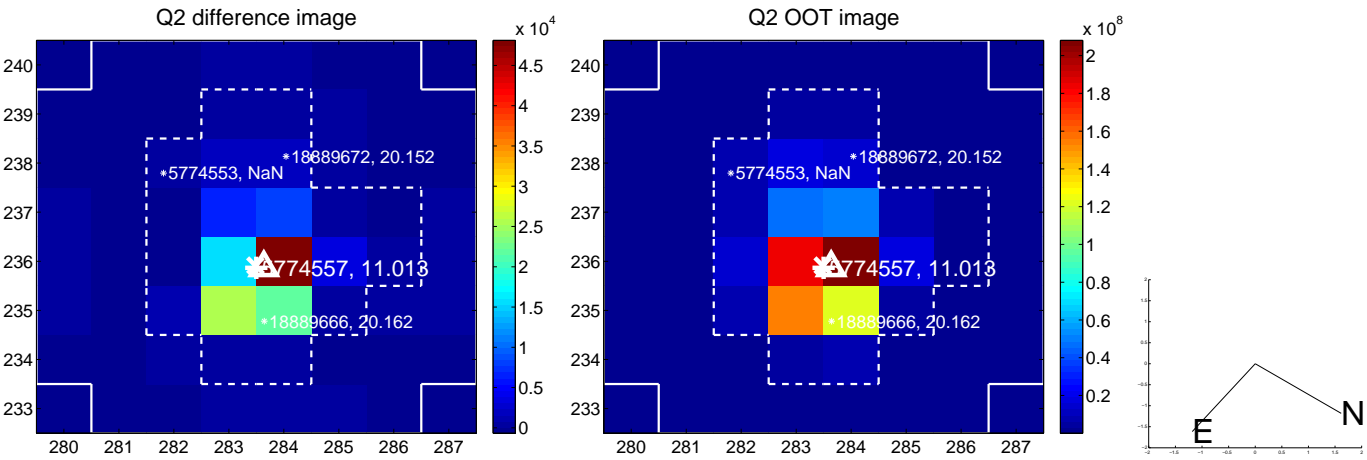
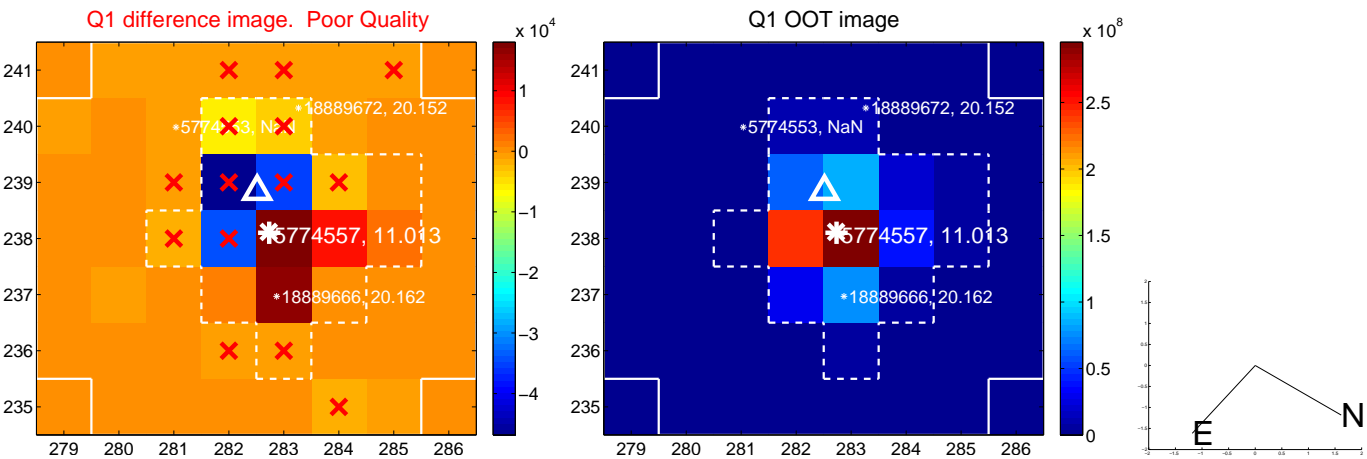
The direct PRF centroid is offset from the target star catalog position by about 0.44 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.443 ± 0.477	0.93	-0.001 ± 0.407	0.443 ± 0.478
PRF-fit source offset from KIC position	0.571 ± 0.546	1.04	0.074 ± 0.418	0.566 ± 0.503
photometric centroid source offset	0.41 ± 0.17	2.37	0.10 ± 0.19	0.40 ± 0.17

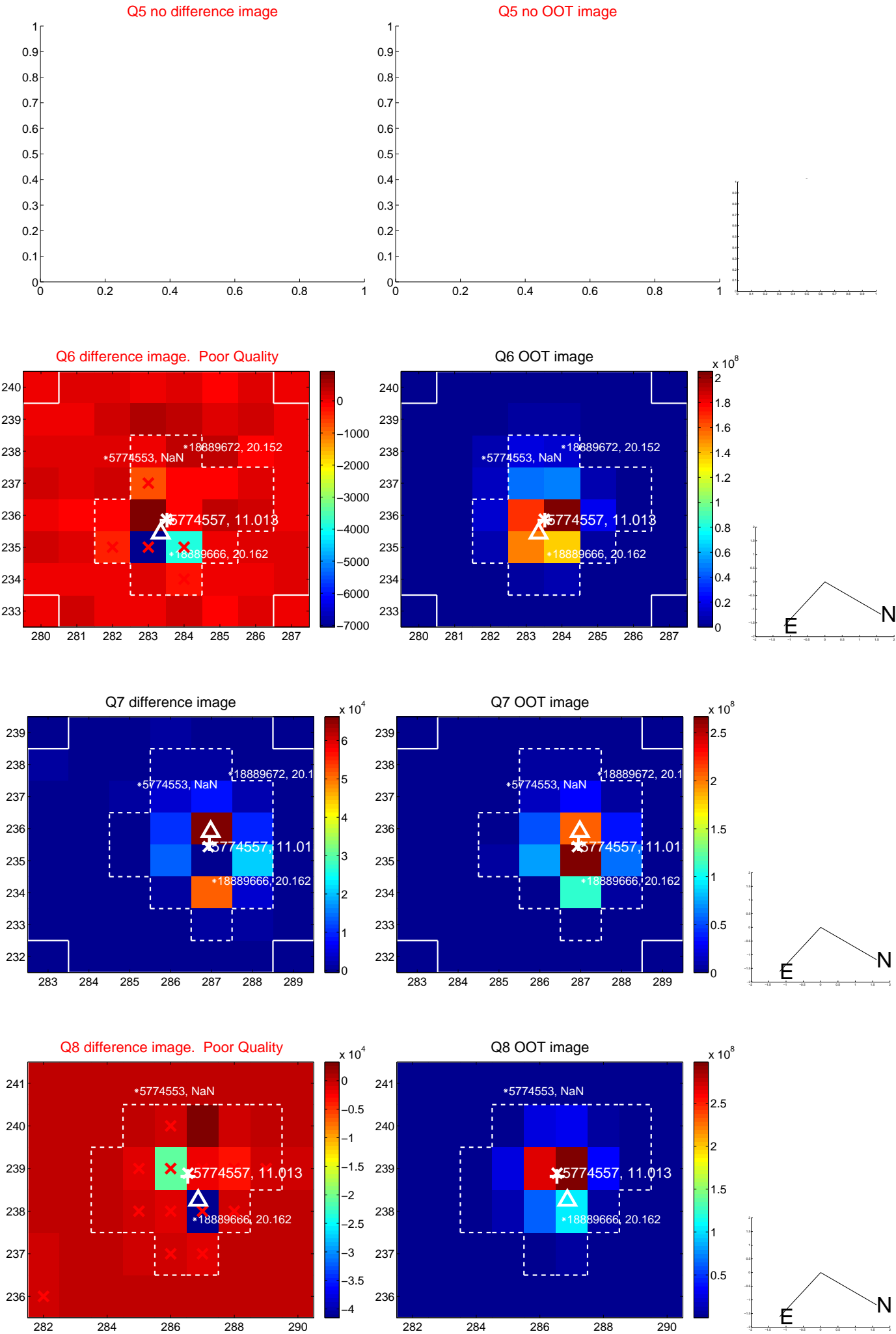


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

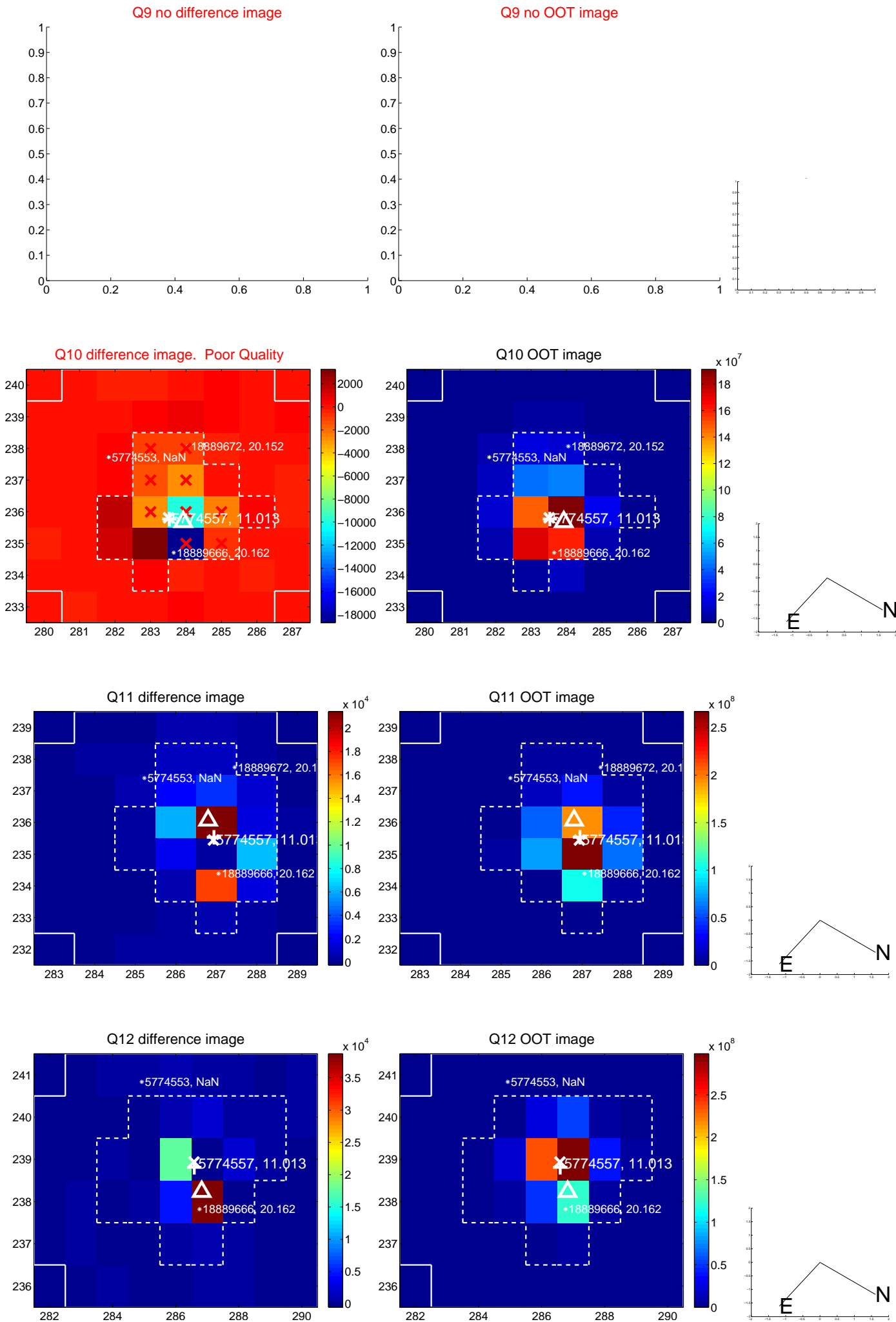
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



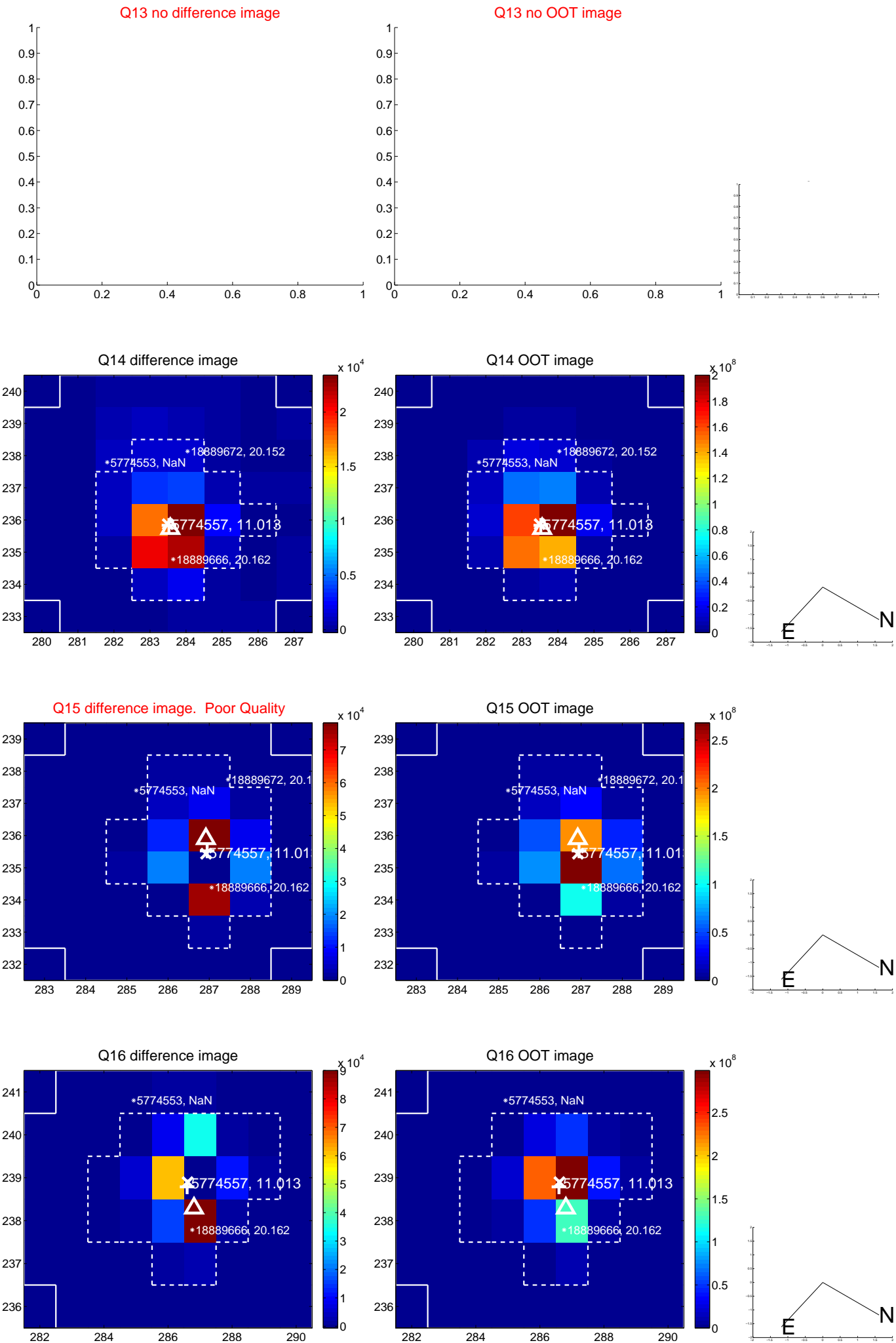
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



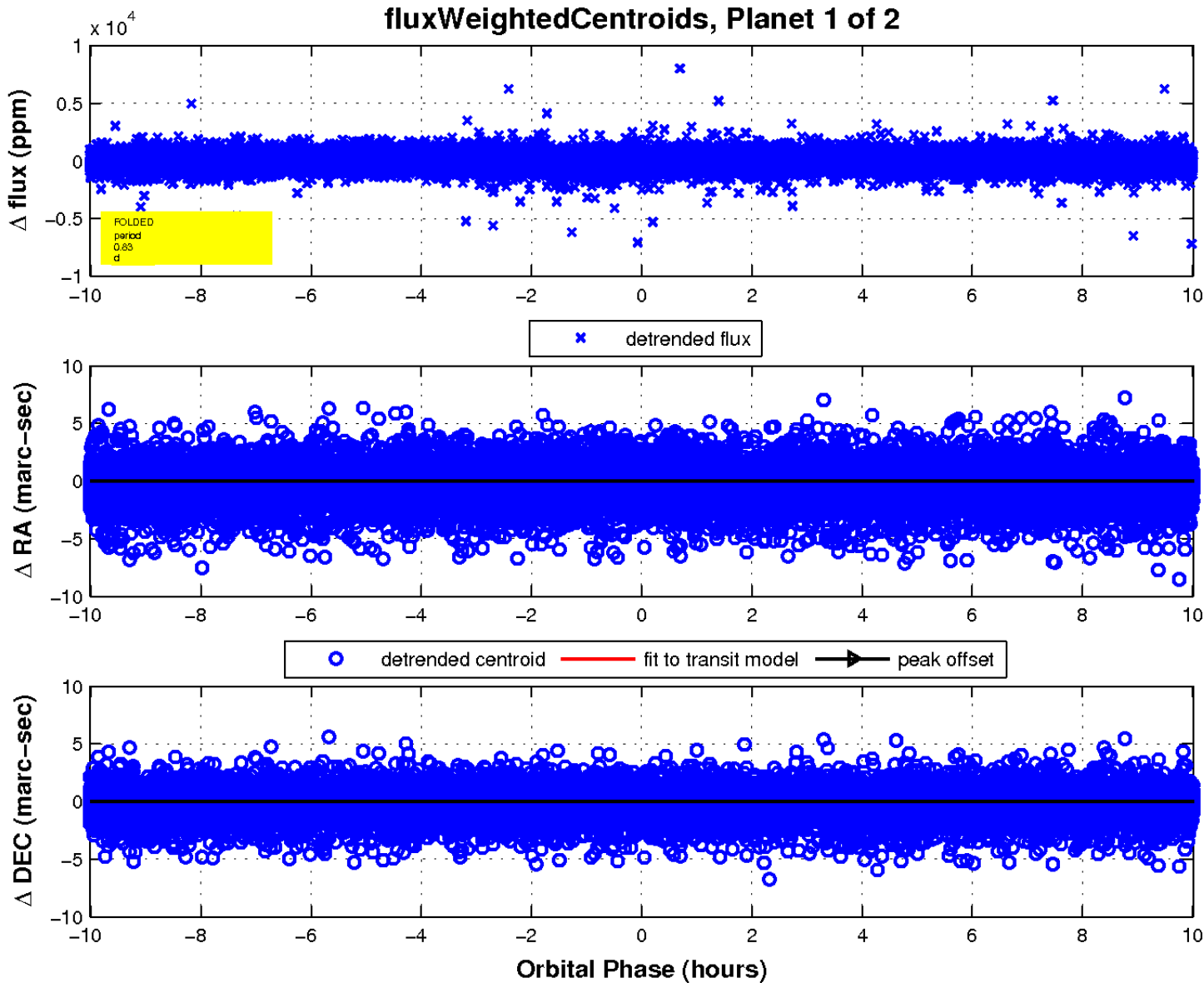
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

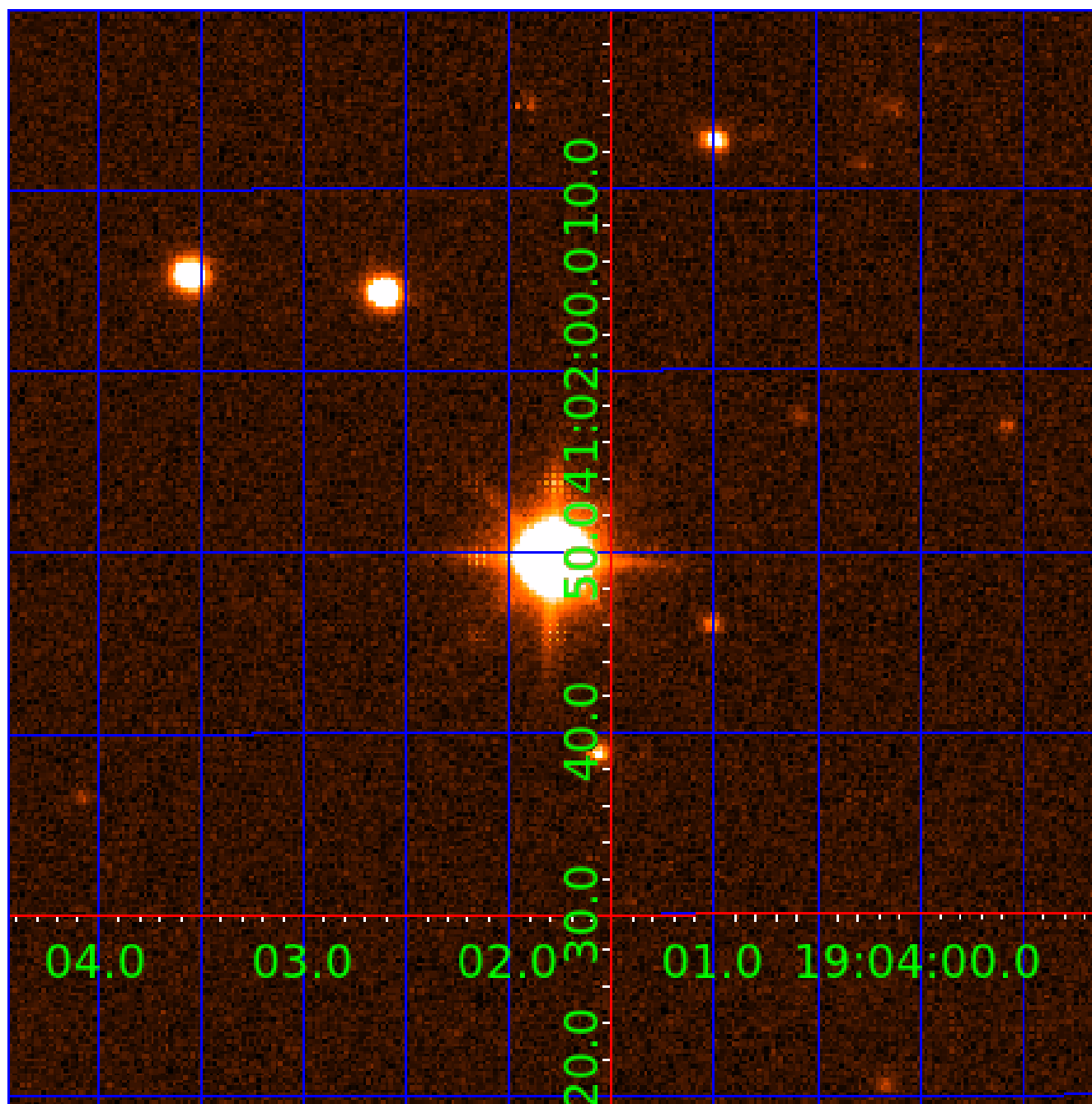
Q17 no difference image

Q17 no OOT image



UKIRT Image

Declination



KIC 005774557

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})
005774557-01	OBS	No	0.834656	131.593409	69.0	3.342	10.6	13.0	2.07	7262	2.00	25856.08
005774557-02	OBS	No	0.834827	131.868904	87.2	2.534	11.3	14.9	2.07	7262	2.24	25849.03

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005774557-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005774557-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

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

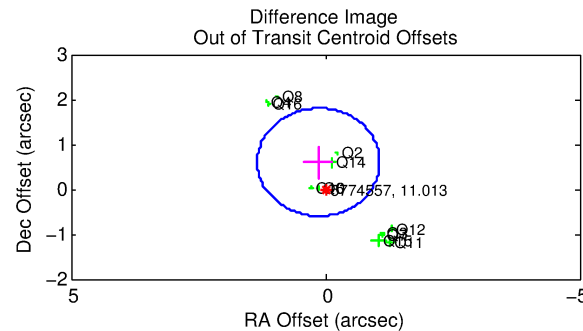
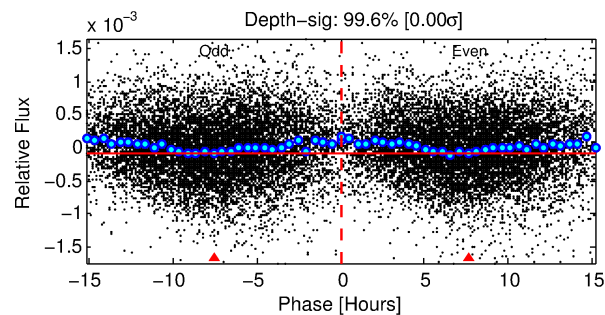
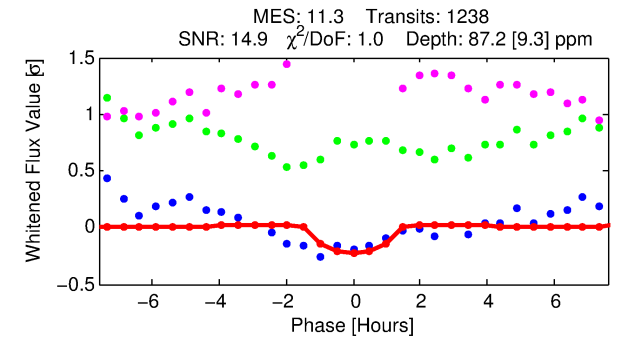
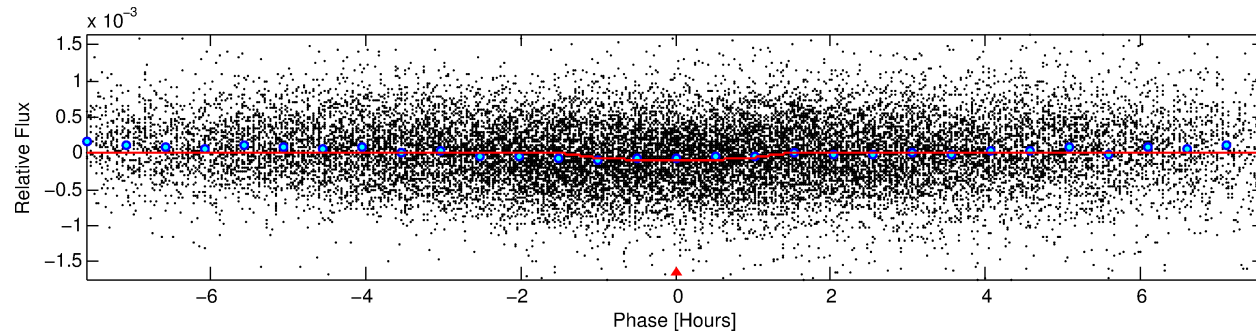
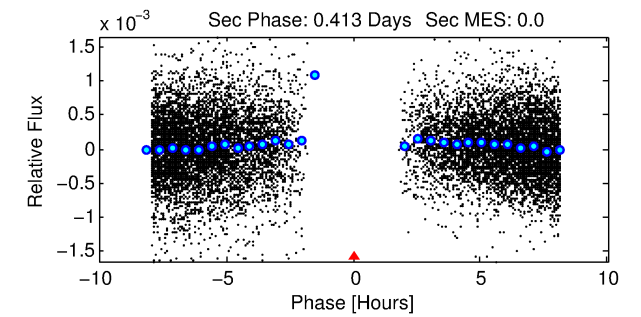
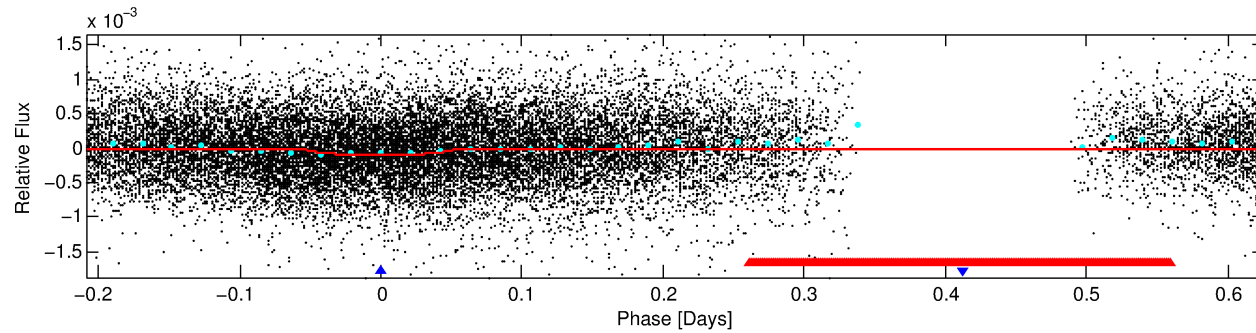
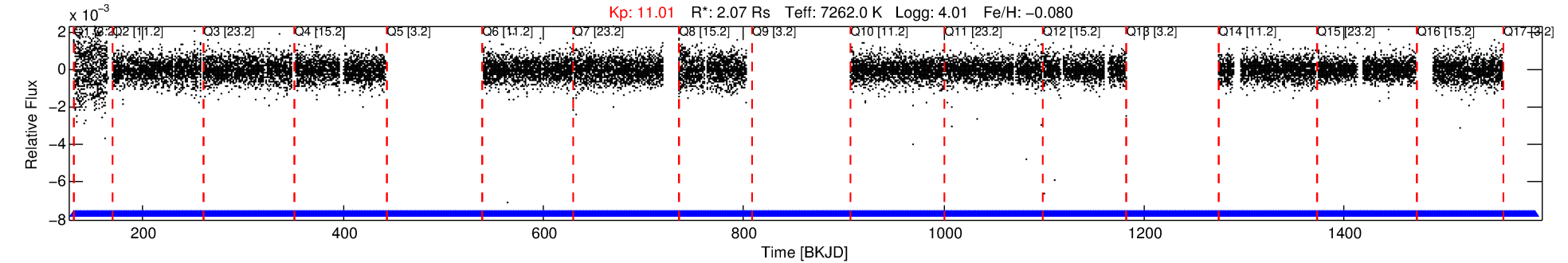
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005774557-02

No Significant Match Found

DV One-Page Summary

KIC: 5774557 Candidate: 2 of 2 Period: 0.835 d



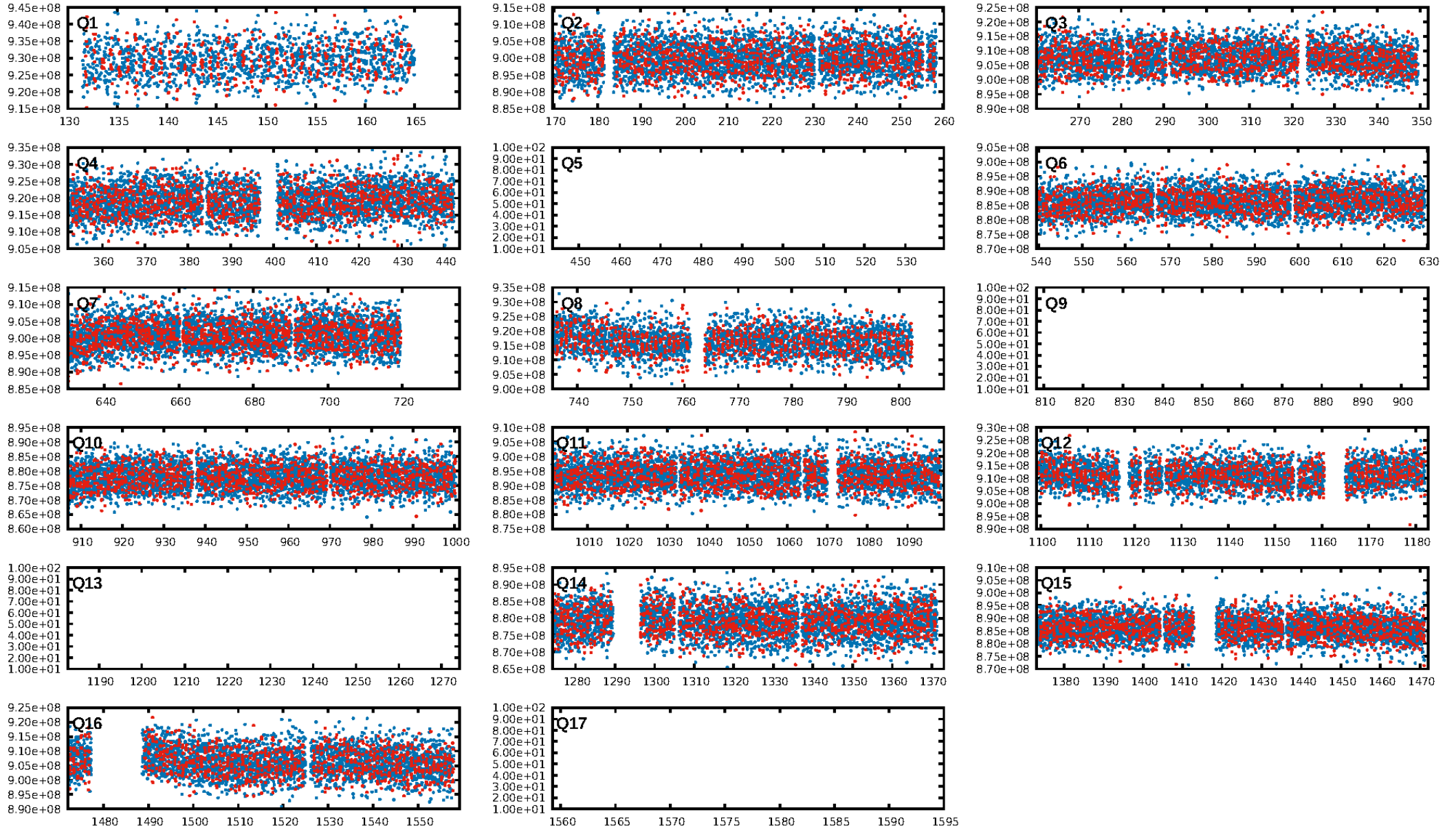
DV Fit Results:

Period = 0.83483 [0.00001] d
Epoch = 131.8689 [0.0024] BKJD
Rp/R* = 0.0099 [0.0039]
a/R* = 1.49 [2.04]
b = 0.90 [0.54]
Seff = 25849.03 [10657.53]
Teff = 3233 [333] K
Rp = 2.24 [1.09] Re
a = 0.0203 [0.0050] AU
Ag = N/A
Teffp = N/A

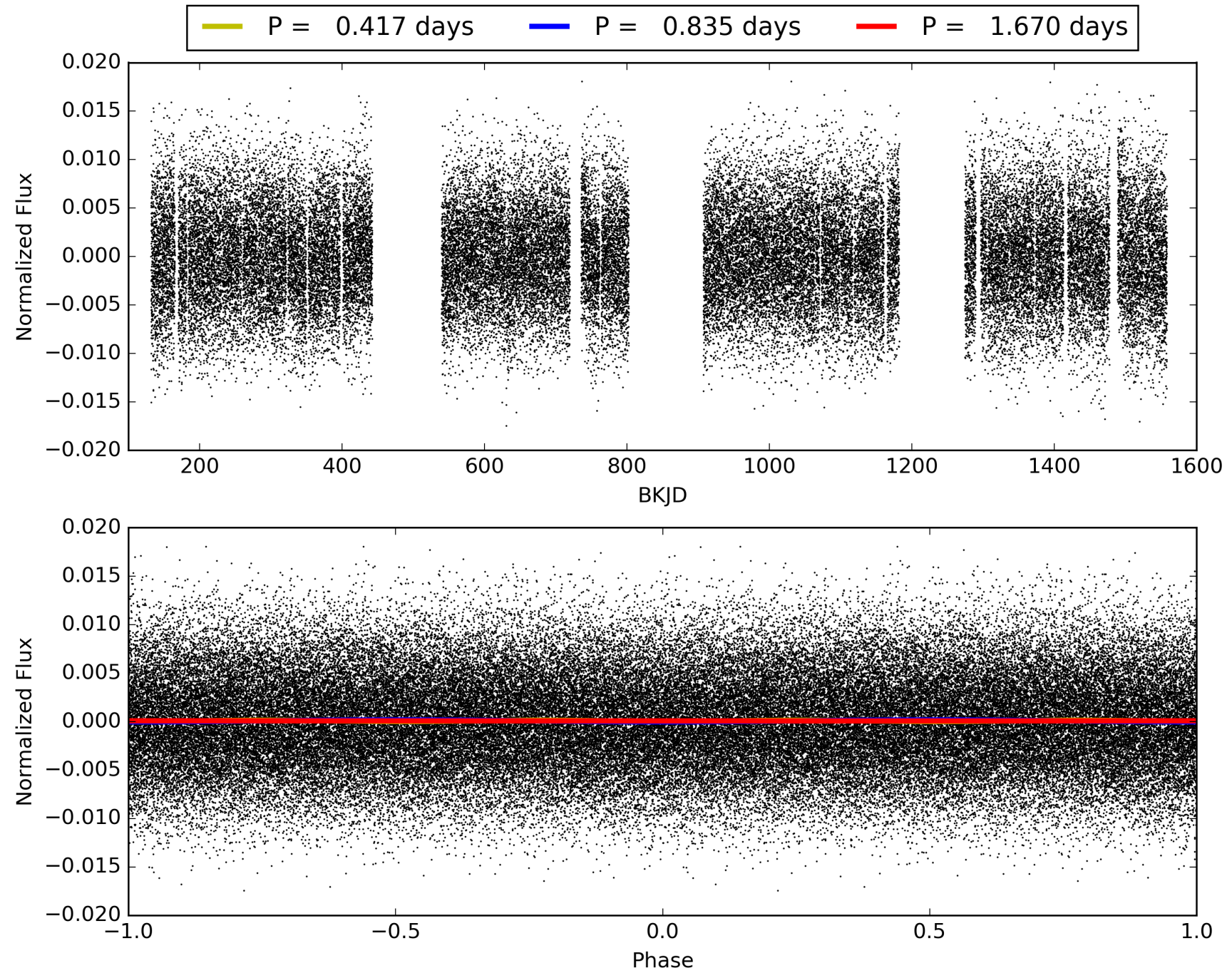
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.08e-77
RollingBand-fgt: 1.00 [1198/1198]
GhostDiagnostic-chr: 1.804
Centroid-sig: 58.1%
Centroid-so: 0.232 arcsec [1.52σ]
OotOffset-rm: 0.615 arcsec [1.54σ]
KicOffset-rm: 0.761 arcsec [1.67σ]
OotOffset-st: 4/4/4/0 [12]
KicOffset-st: 4/4/4/0 [12]
DiffImageQuality-fgm: 0.67 [8/12]
DiffImageOverlap-fno: 0.46 [6/13]

TCE 005774557-02, PDC Light Curves

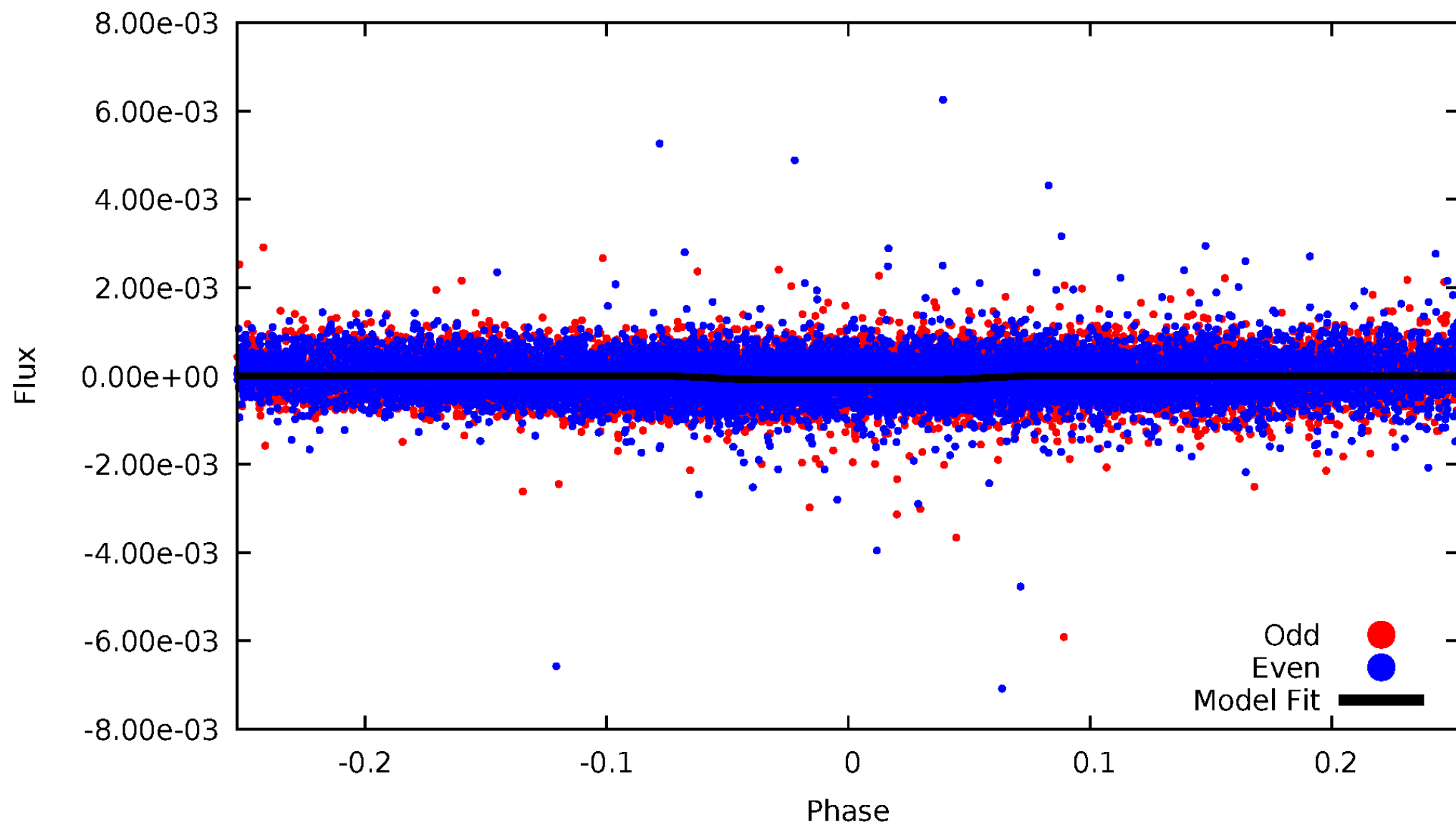


TCE 005774557-02



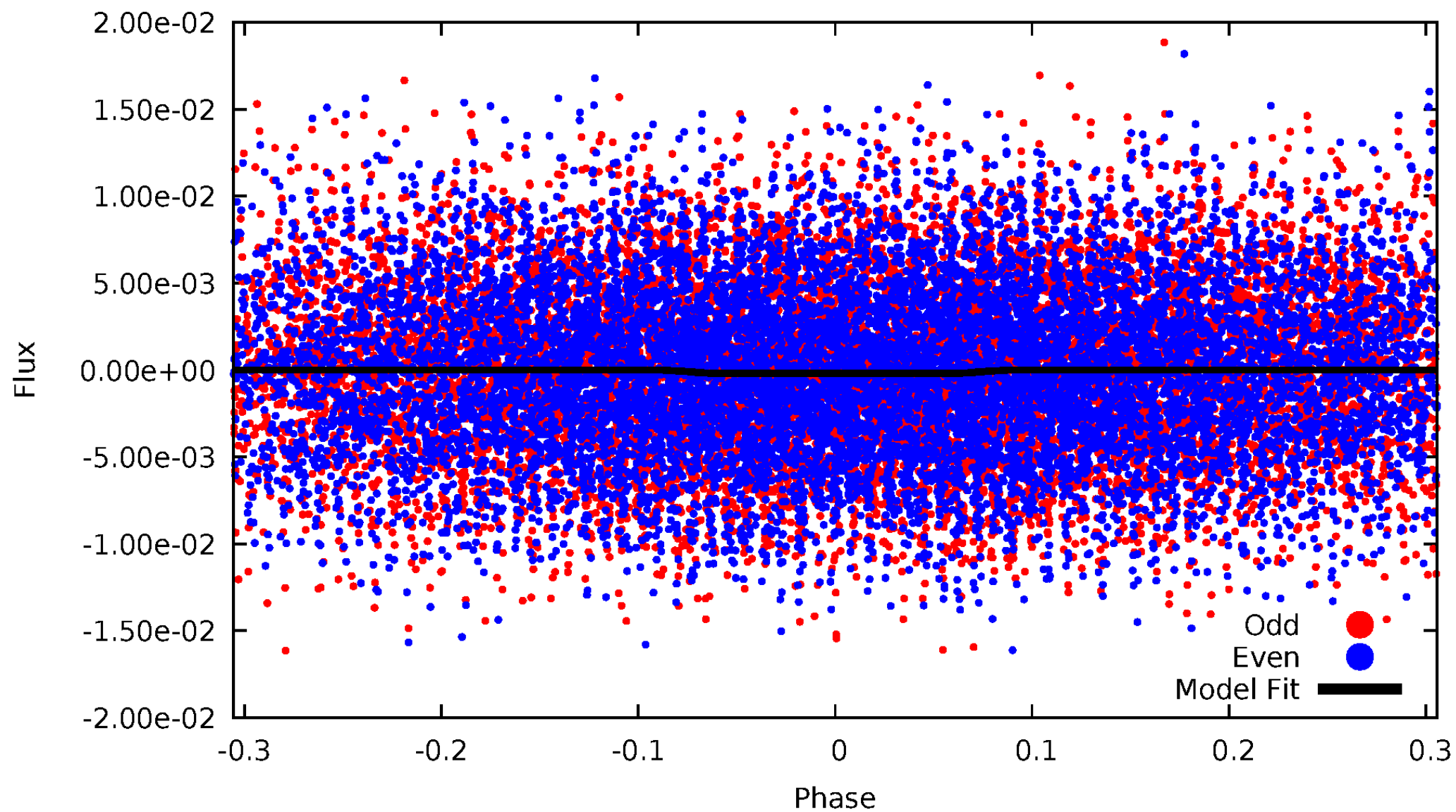
DV Odd/Even

TCE 005774557-02



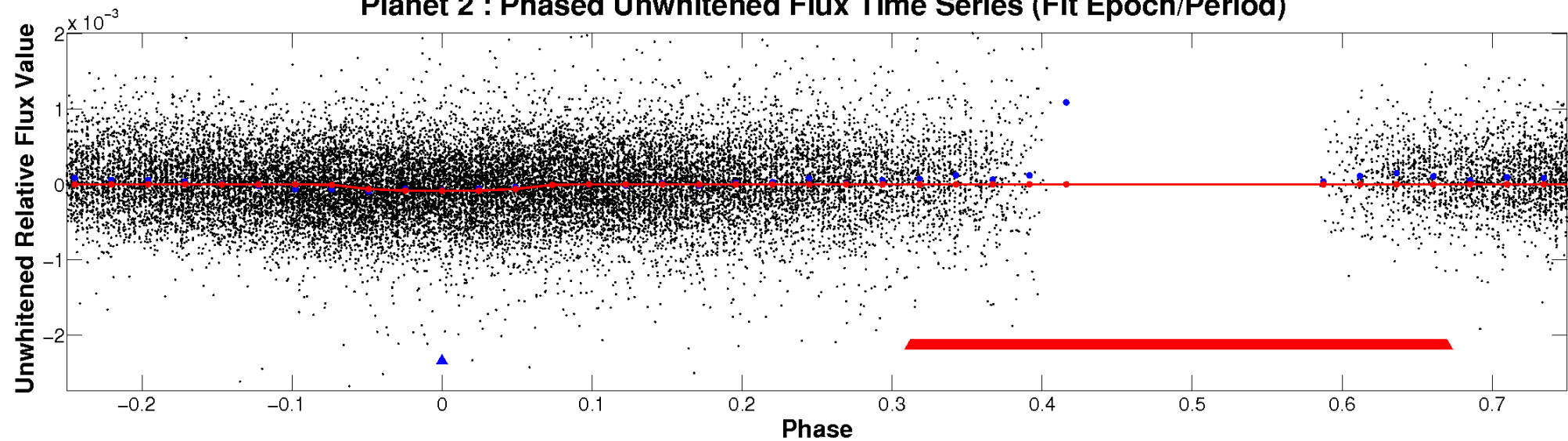
ALT Odd/Even

TCE 005774557-02

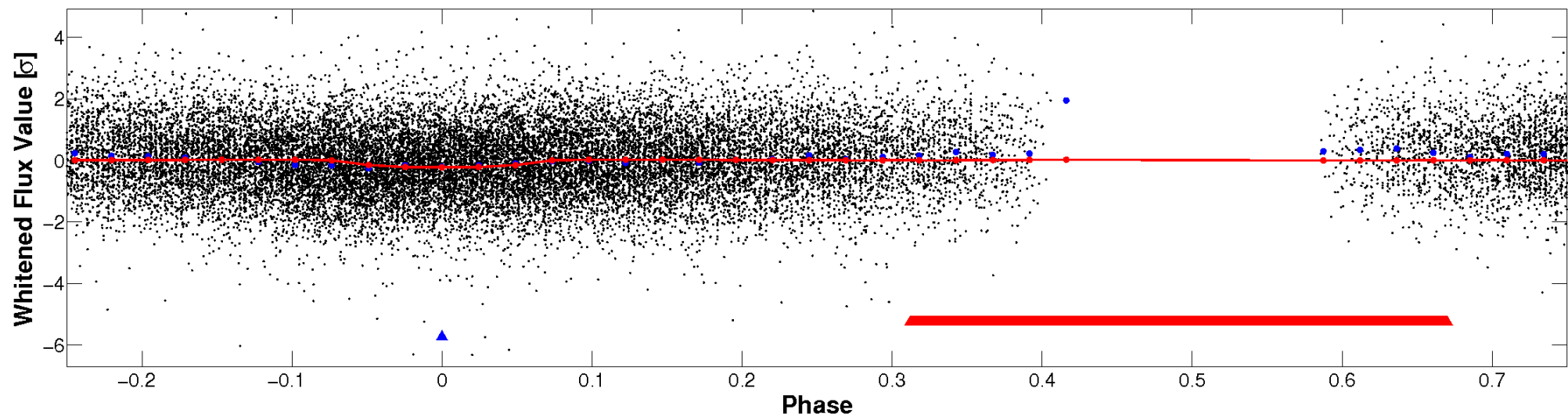


Non-Whitened Vs. Whitened Light Curve

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

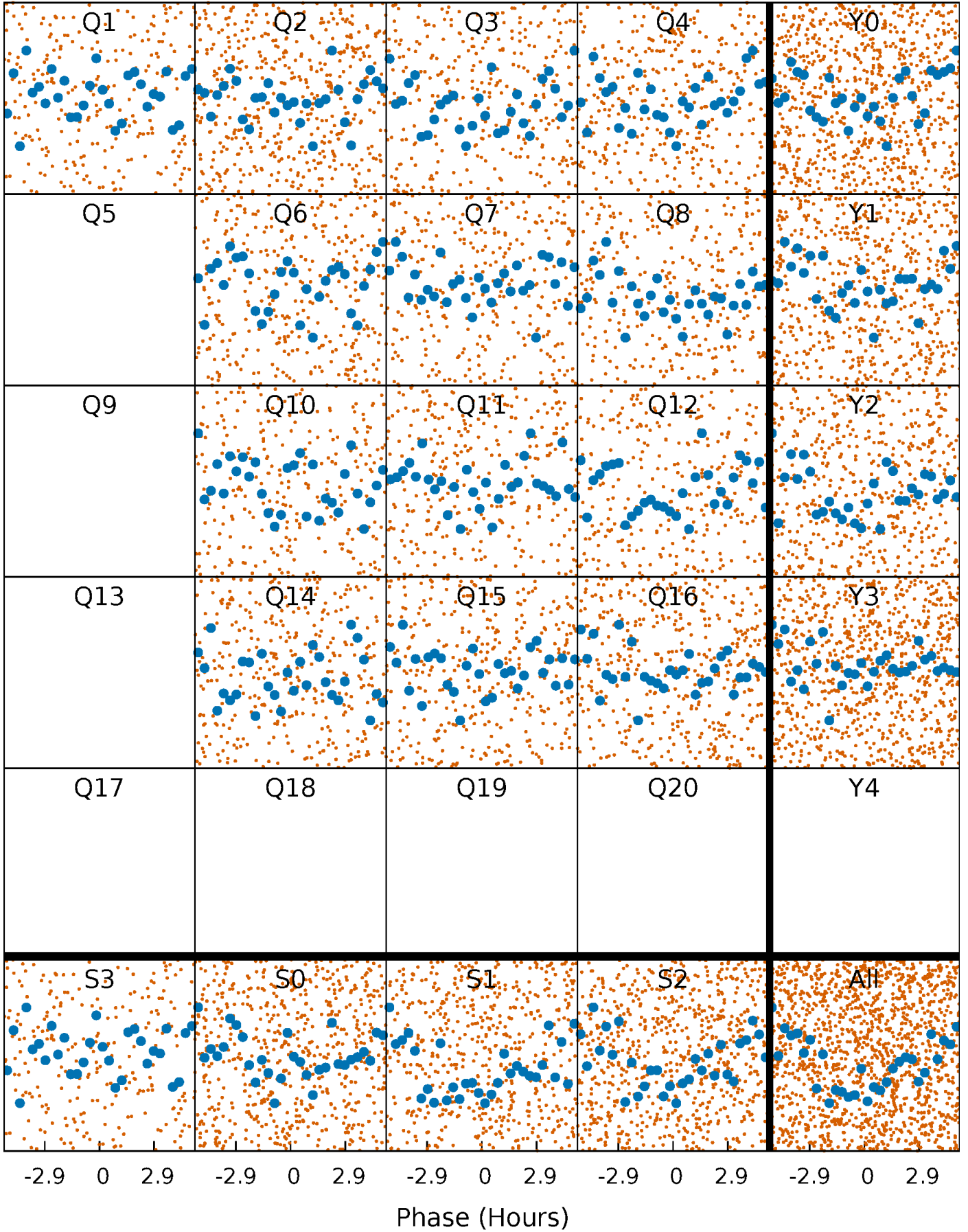


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



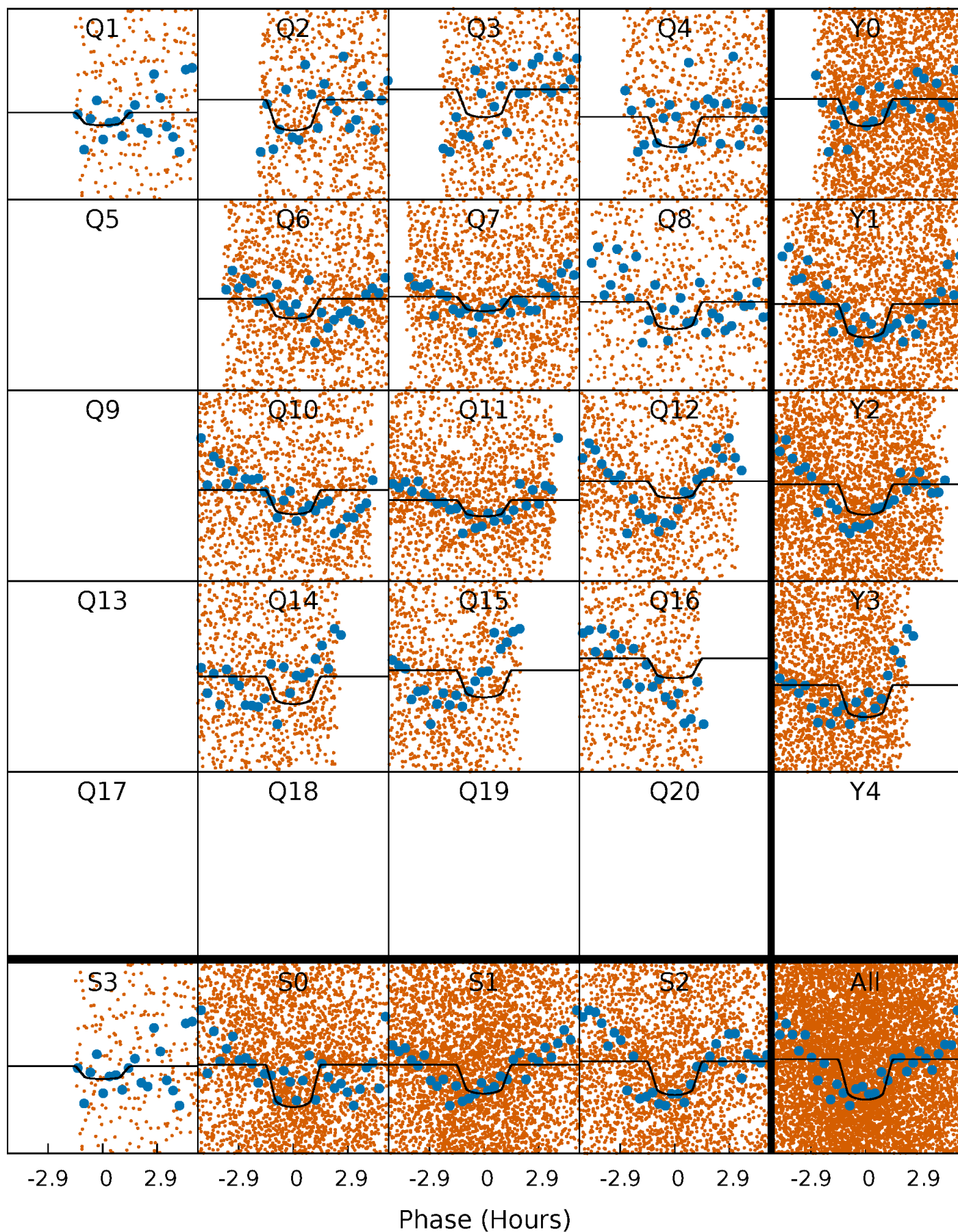
PDC Quarter-Phased Transit Curves

TCE 005774557-02 P= 0.834827 Days $T_0=131.868904$ (BKJD)



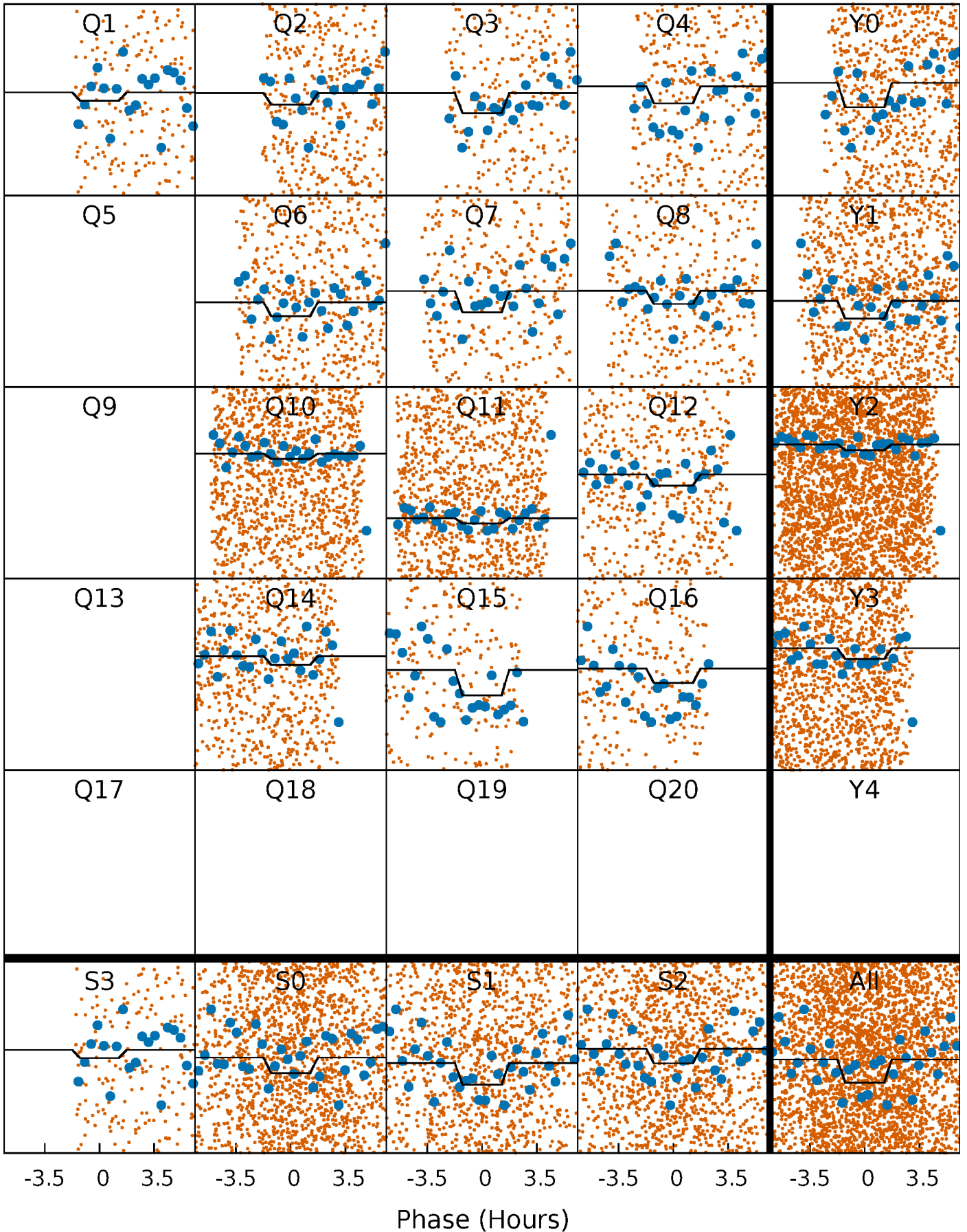
DV Quarter-Phased Transit Curves

TCE 005774557-02 P= 0.834827 Days $T_0=131.868904$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

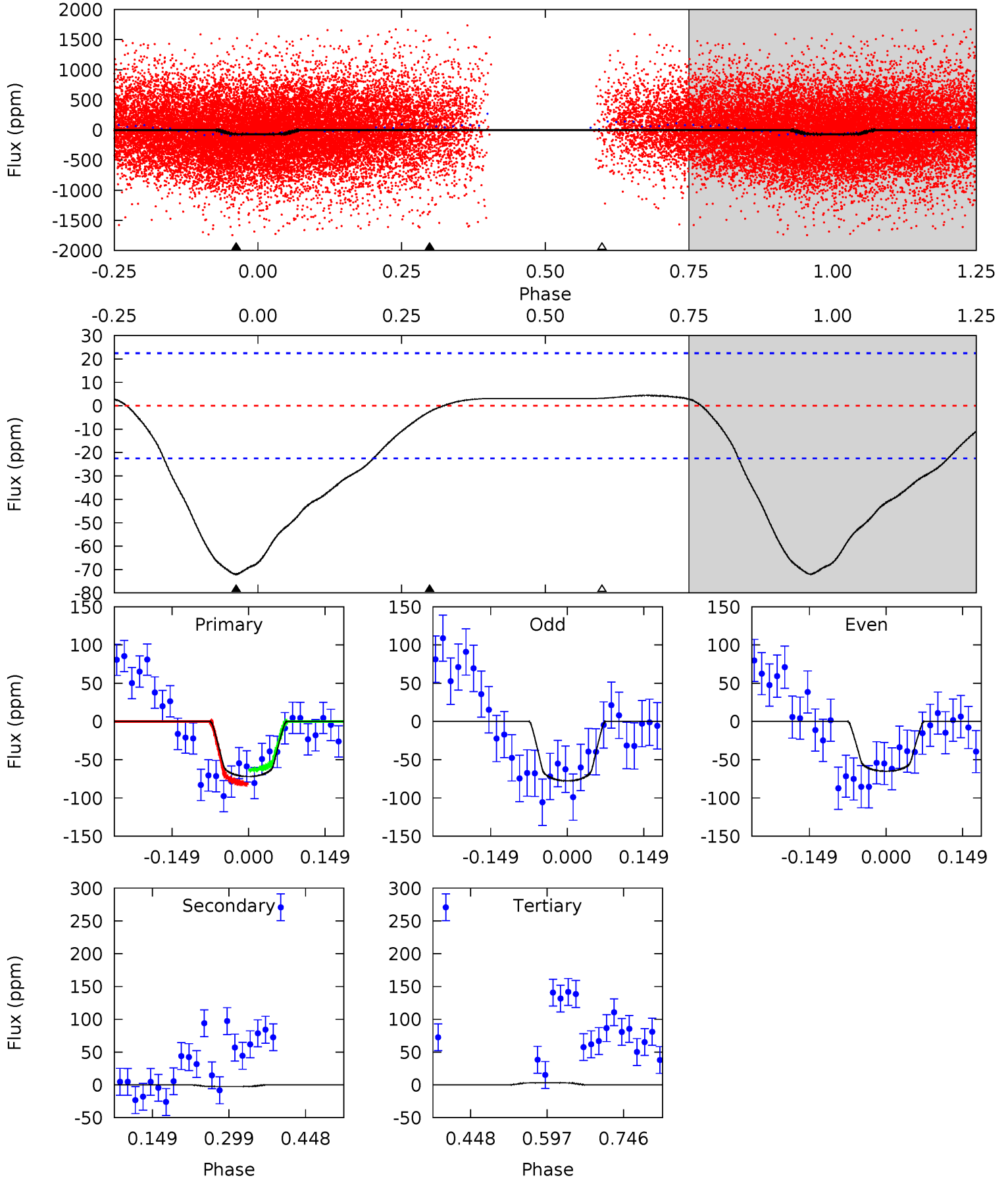
TCE 005774557-02 P= 0.834807 Days $T_0=131.872221$ (BKJD)



DV Model-Shift Uniqueness Test

005774557-02, P = 0.834827 Days, E = 131.034077 Days

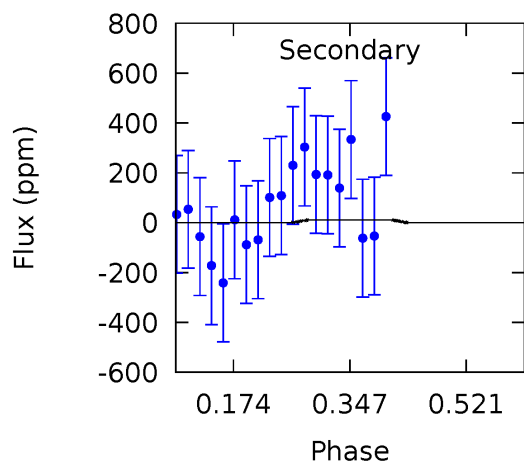
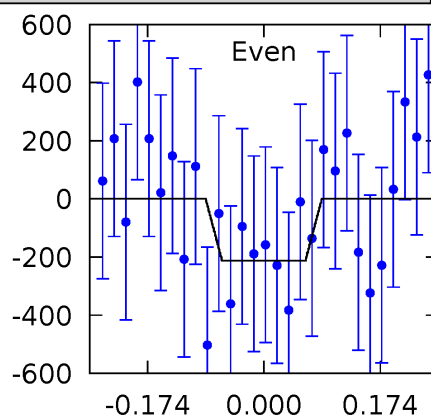
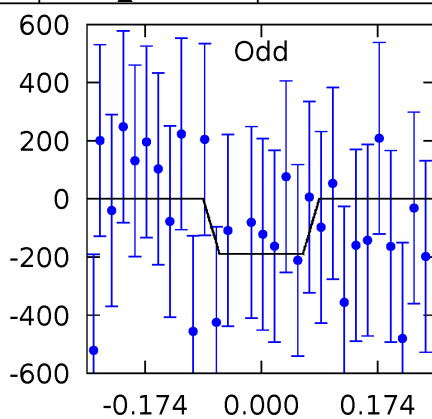
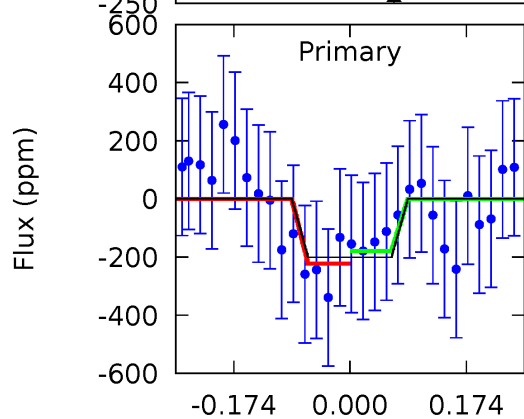
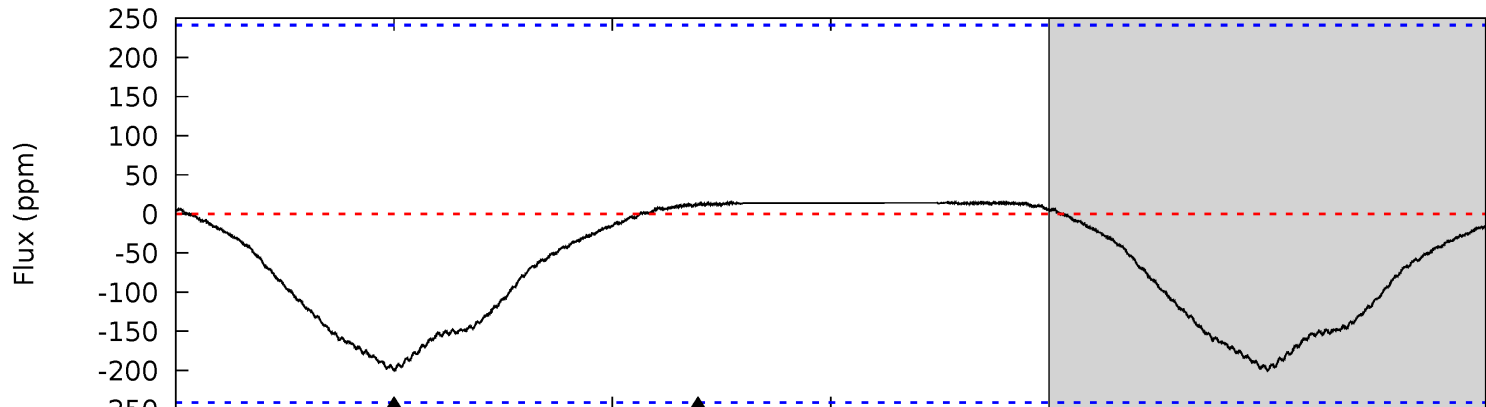
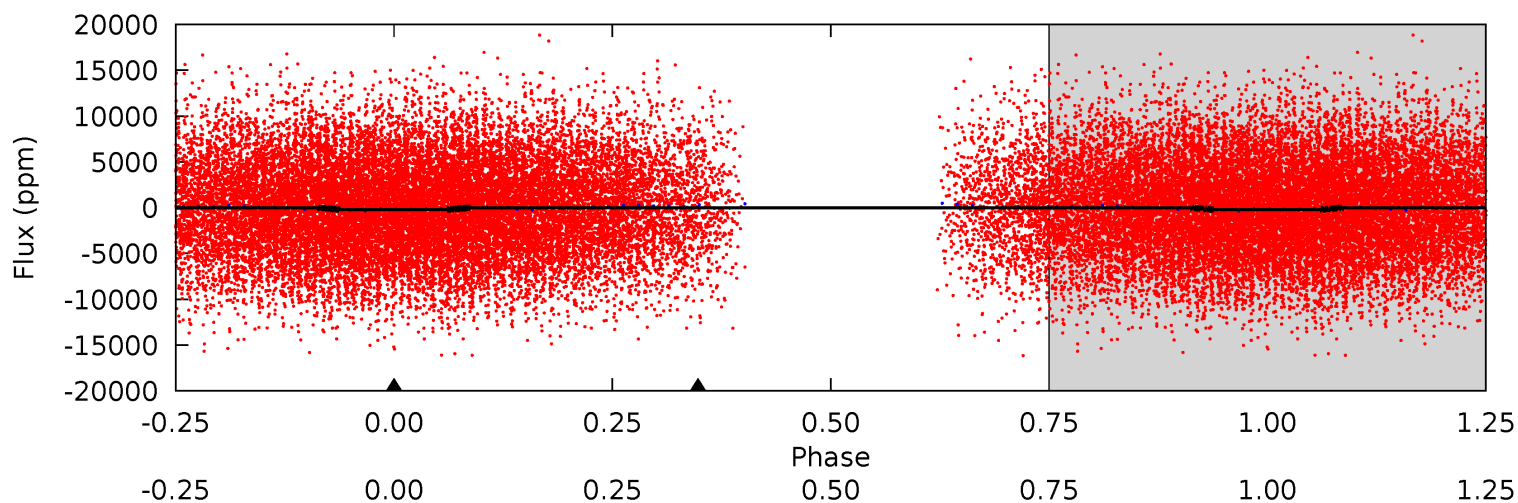
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.4	0.51	-0.64	0	4.48	1.44	3.30	15.0	14.4	1.14	0.51	1.27	1.08	0.06	1.72



Alt Model-Shift Uniqueness Test

005774557-02, P = 0.834807 Days, E = 131.037414 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.70	-0.20	0	0	4.45	1.36	0.31	3.70	3.70	-0.20	-0.20	0.22	0.98	0.07	0.40



Stellar Parameters For KIC 005774557

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7262^{+226}_{-327}	$4.012^{+0.209}_{-0.171}$	$-0.080^{+0.250}_{-0.350}$	$2.071^{+0.578}_{-0.578}$	$1.605^{+0.200}_{-0.300}$	$0.255^{+0.340}_{-0.119}$
	+3%/-5%	+5%/-4%	+312%/-438%	+28%/-28%	+12%/-19%	+133%/-47%
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 005774557-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3 ± 5	$2.24^{+0.99}_{-0.84}$	4467^{+359}_{-354}	-3695^{+7208}_{-564}	$0.105^{+0.336}_{-0.212}$
Alt.	11 ± 54	$3.14^{+0.98}_{-0.89}$	4481^{+370}_{-373}	-4390^{+9001}_{-1458}	$-0.187^{+1.258}_{-1.549}$

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

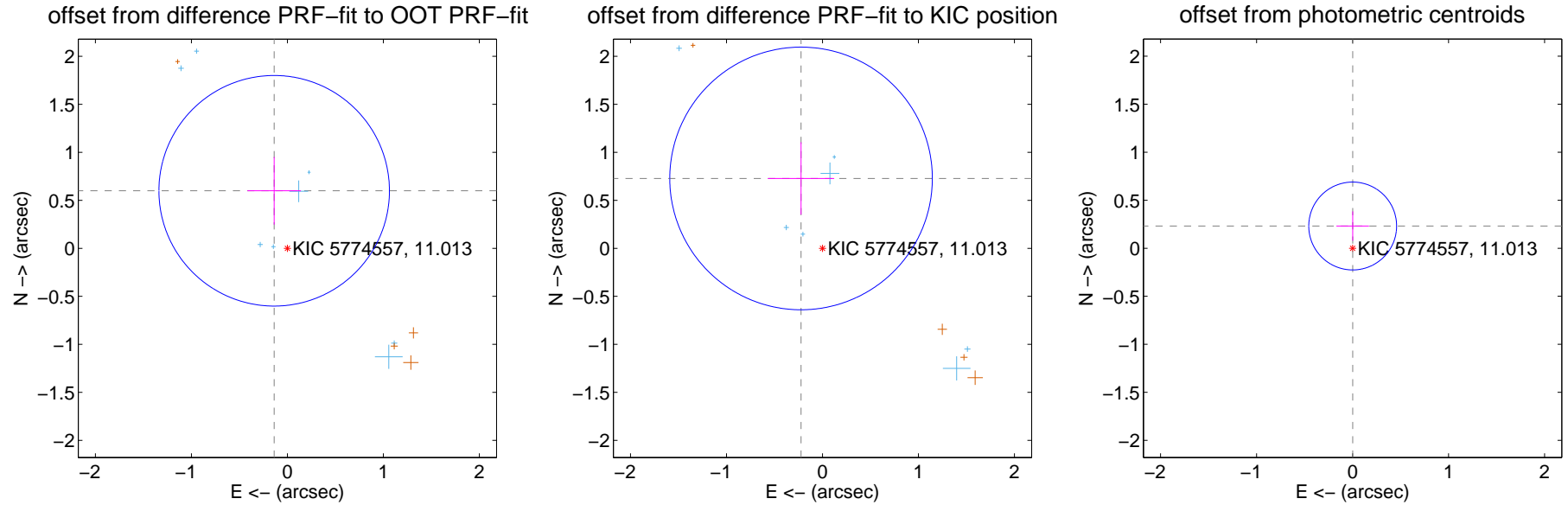
DV Centroid Data

Supplemental centroid analysis for 005774557-02. **Kepler magnitude: 11.01.** Transit SNR 14.90

There are 8 quarters with good PRF difference image offsets

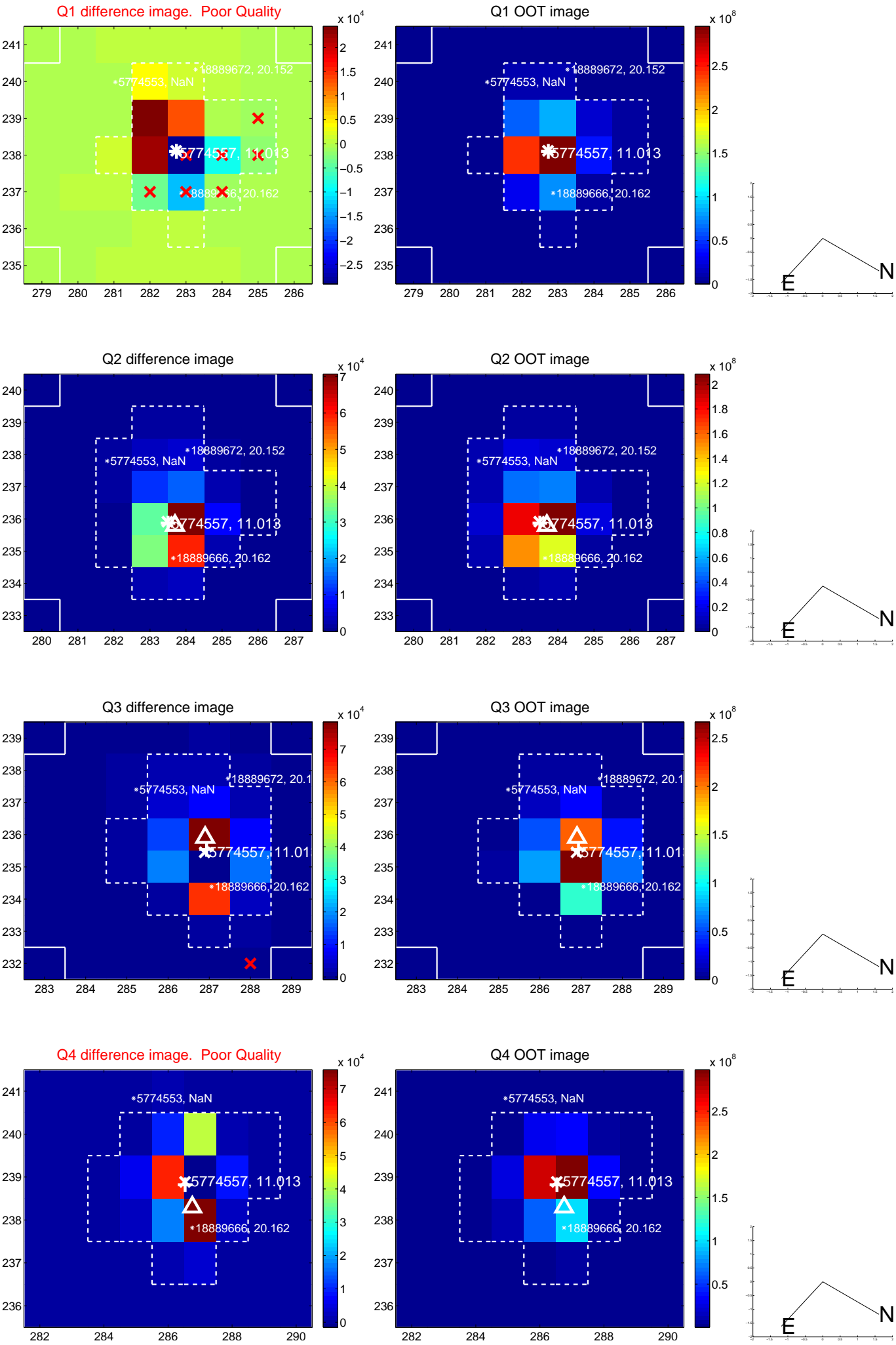
The direct PRF centroid is offset from the target star catalog position by about 0.44 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.615 ± 0.400	1.54	0.138 ± 0.278	0.599 ± 0.352
PRF-fit source offset from KIC position	0.761 ± 0.456	1.67	0.223 ± 0.345	0.728 ± 0.377
photometric centroid source offset	0.23 ± 0.15	1.52	-0.00 ± 0.17	0.23 ± 0.15

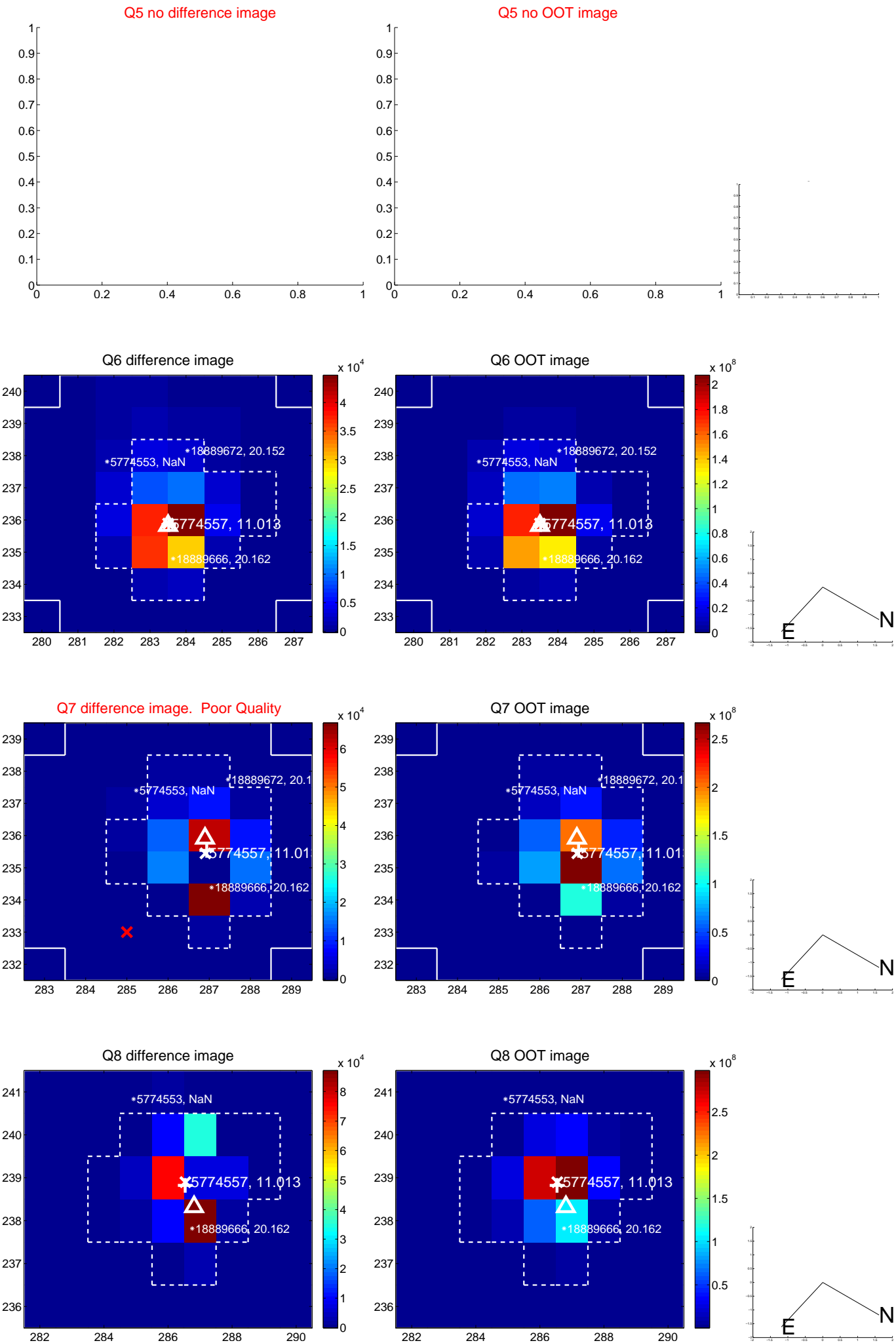


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

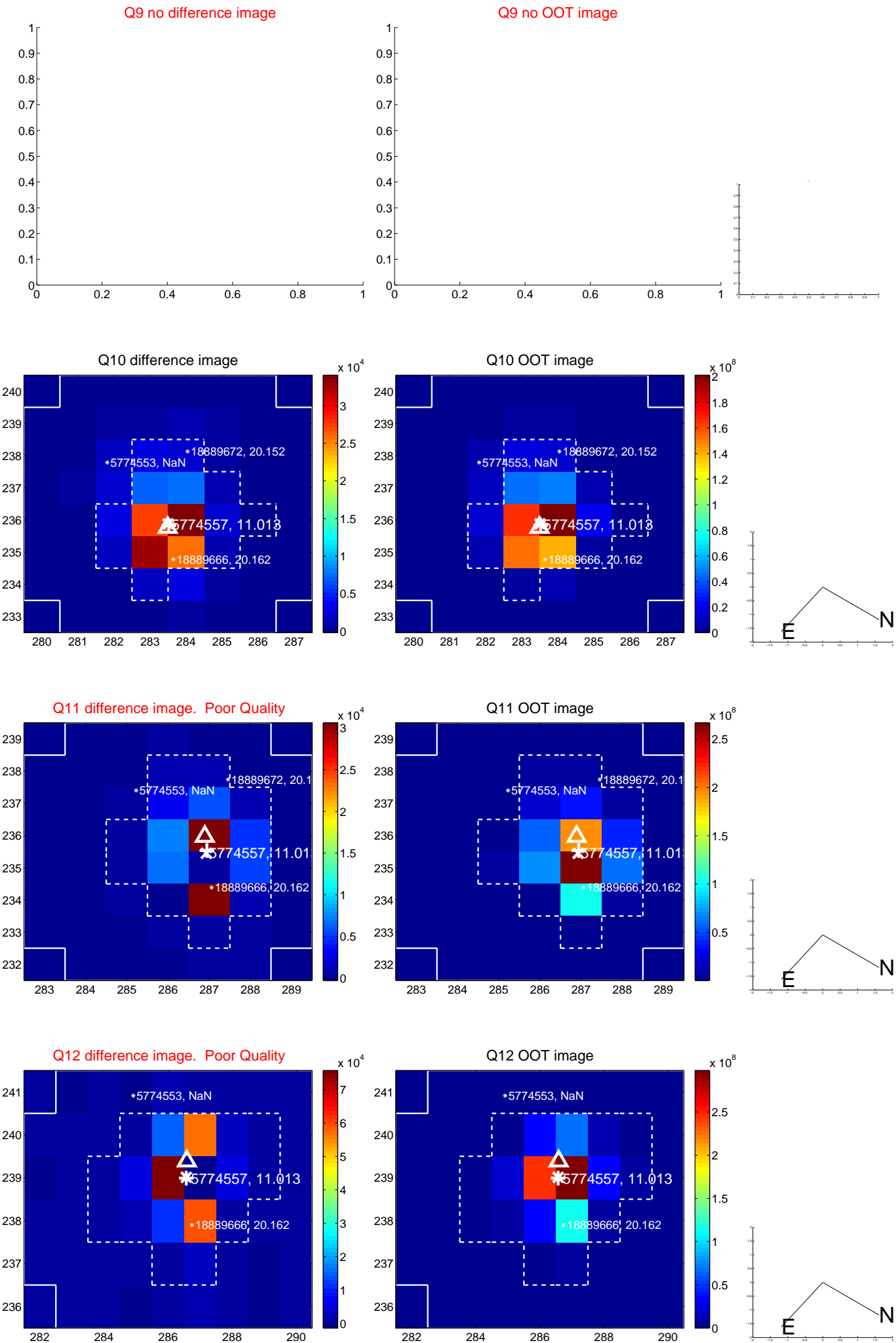
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



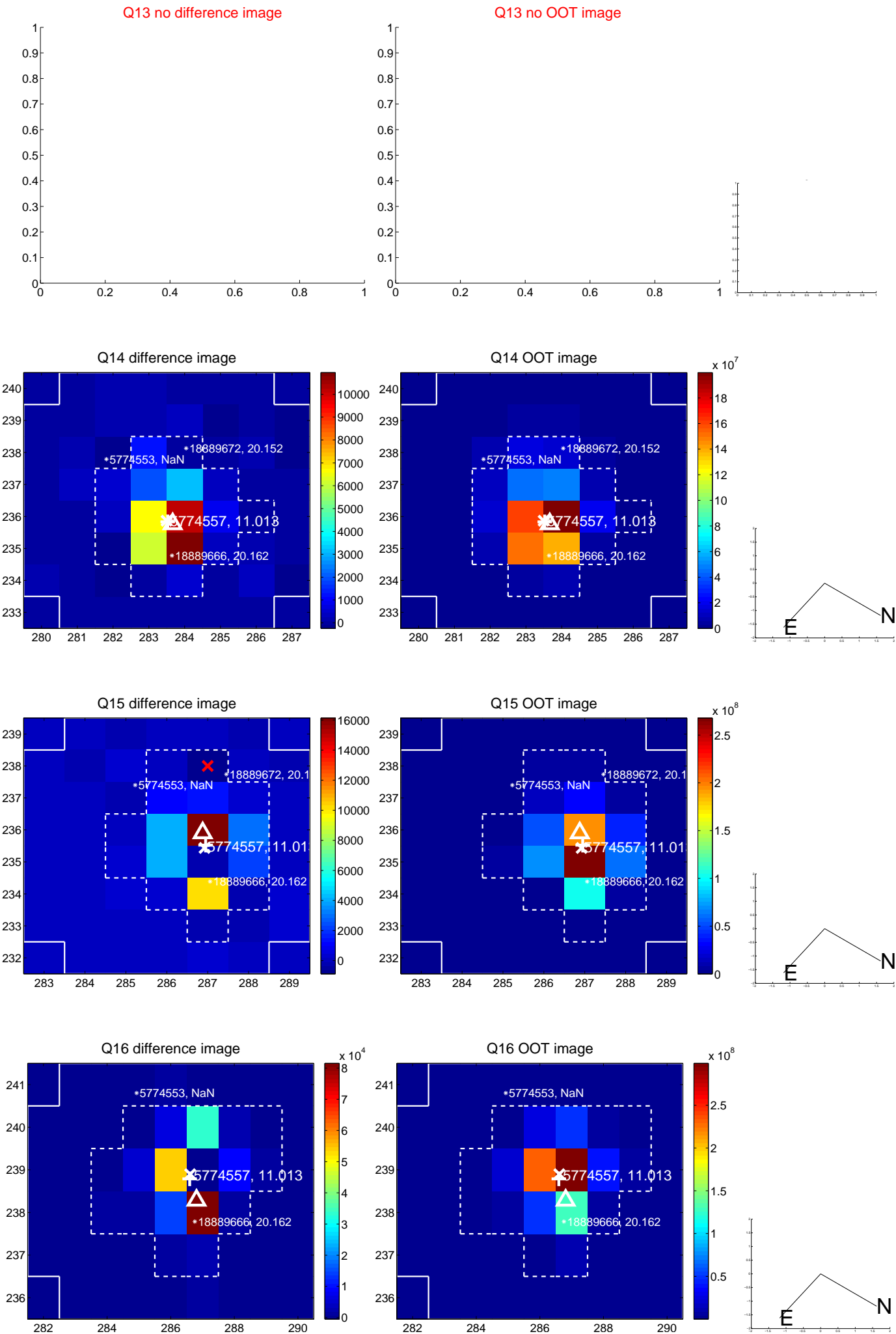
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



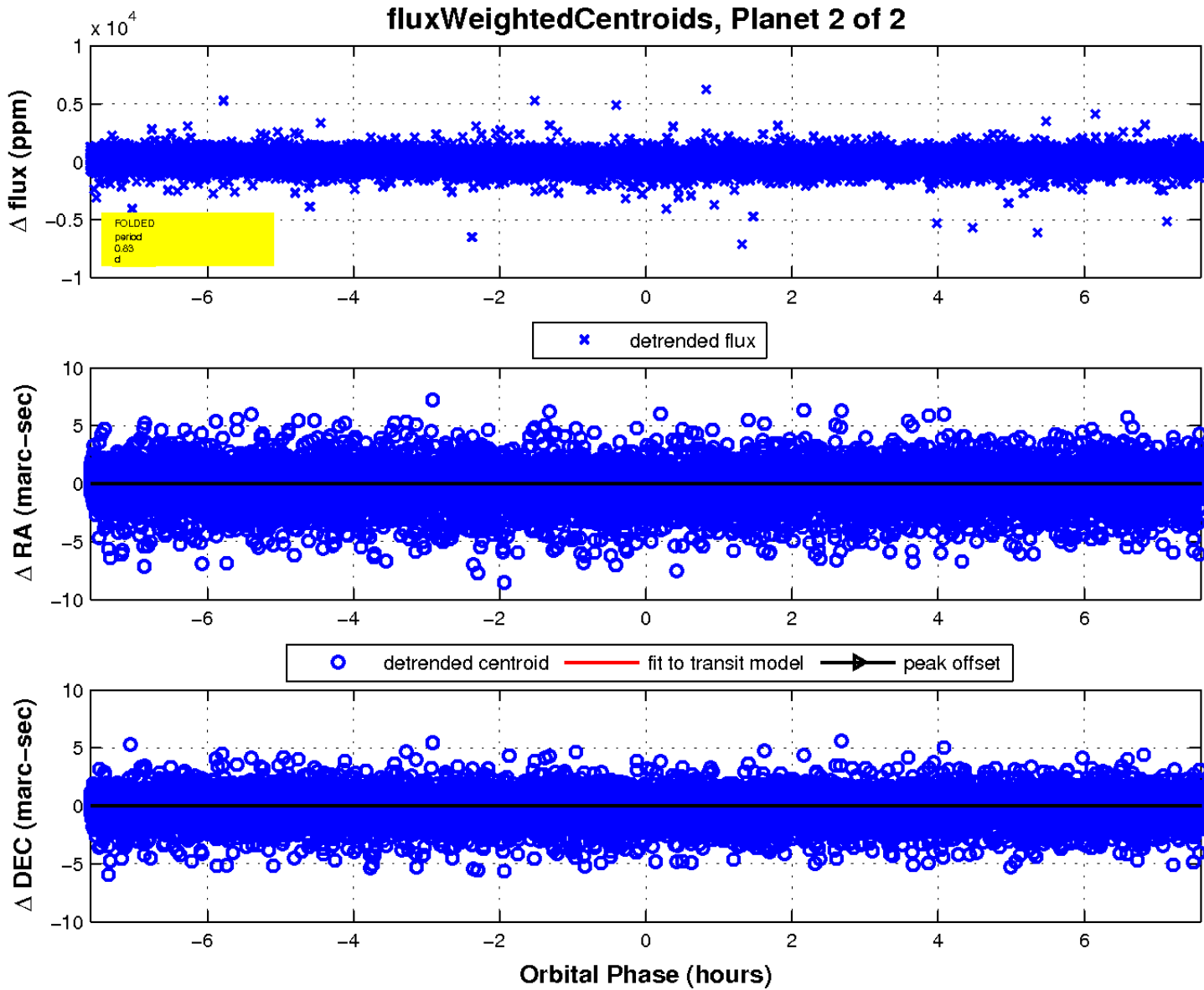
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

Q17 no difference image

Q17 no OOT image



UKIRT Image

Declination

