

KIC 008570117

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})
008570117-01	OBS	No	0.748466	131.534124	141.2	2.921	12.0	8.6	2.27	8009	3.14	48683.00
008570117-02	OBS	No	0.748499	131.730534	50.7	5.777	13.1	4.0	2.27	8009	1.73	48680.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008570117-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008570117-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_FEW_MEAS

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

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

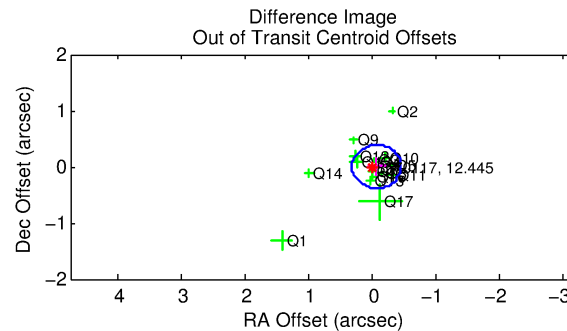
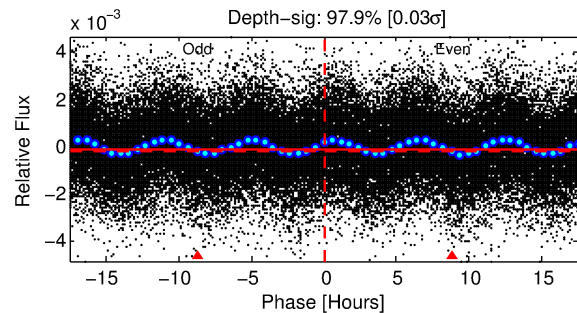
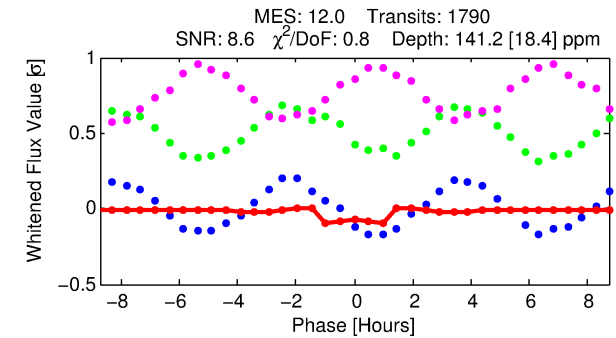
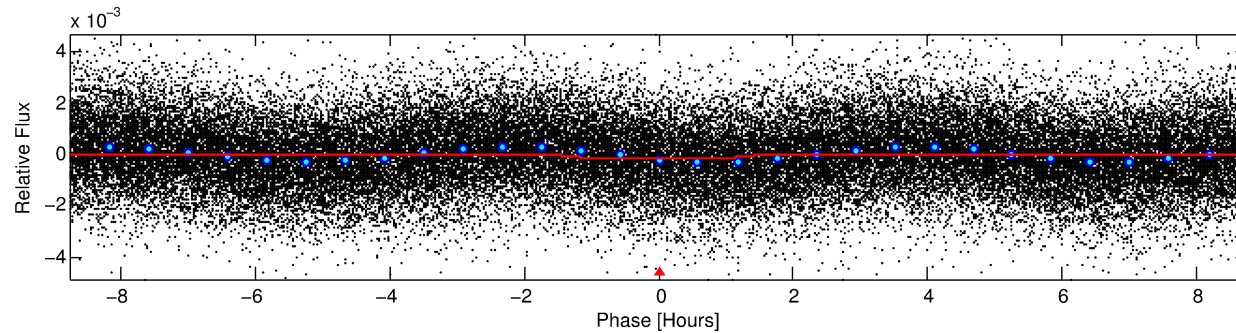
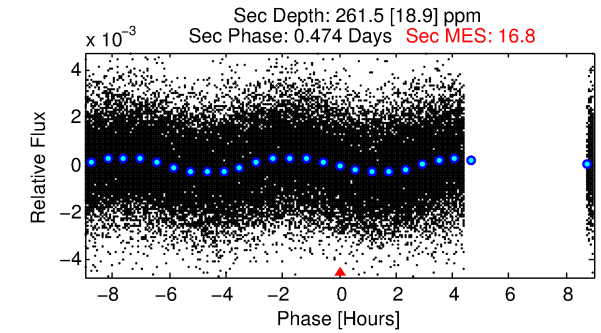
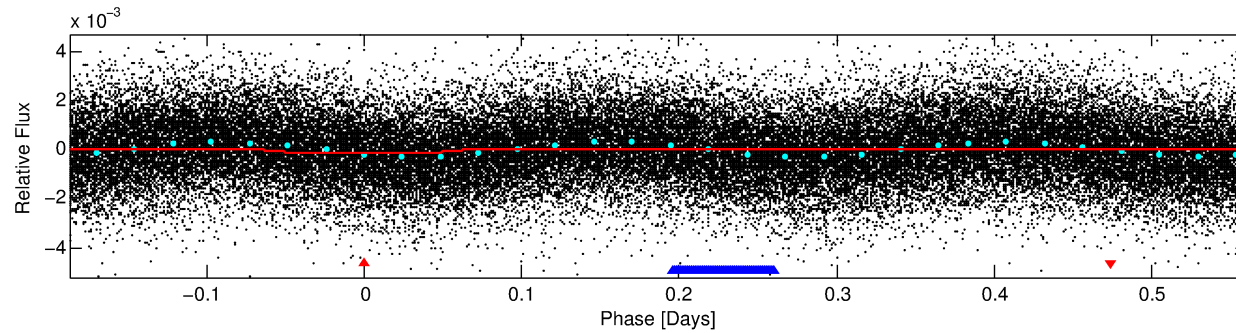
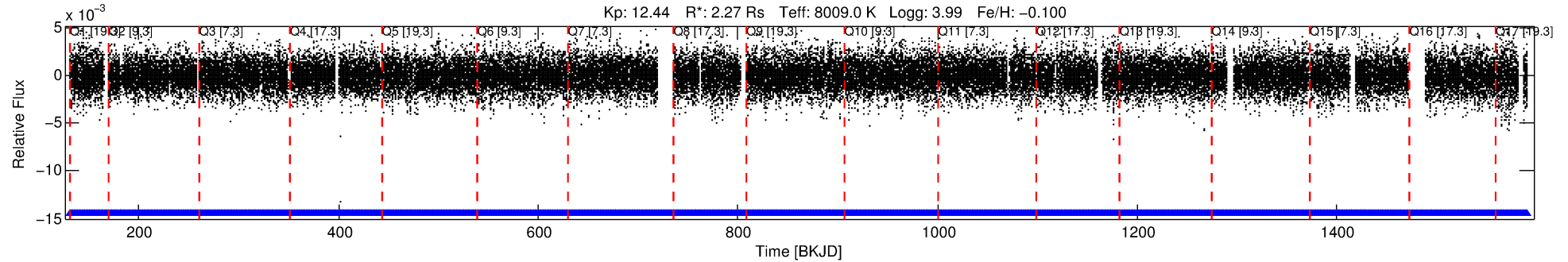
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008570117-01

No Significant Match Found

DV One-Page Summary

KIC: 8570117 Candidate: 1 of 2 Period: 0.748 d



DV Fit Results:

Period = 0.74847 [0.00001] d
Epoch = 131.5341 [0.0025] BKJD
Rp/R* = 0.0127 [0.0036]
a/R* = 1.31 [0.94]
b = 0.90 [0.37]
Seff = 48683.00 [19452.51]
Teq = 3788 [378] K
Rp = 3.14 [1.24] Re
a = 0.0198 [0.0048] AU
Ag = 5.71 [3.87] [1.22σ]
Teffp = 9052 [1351] K [3.75σ]

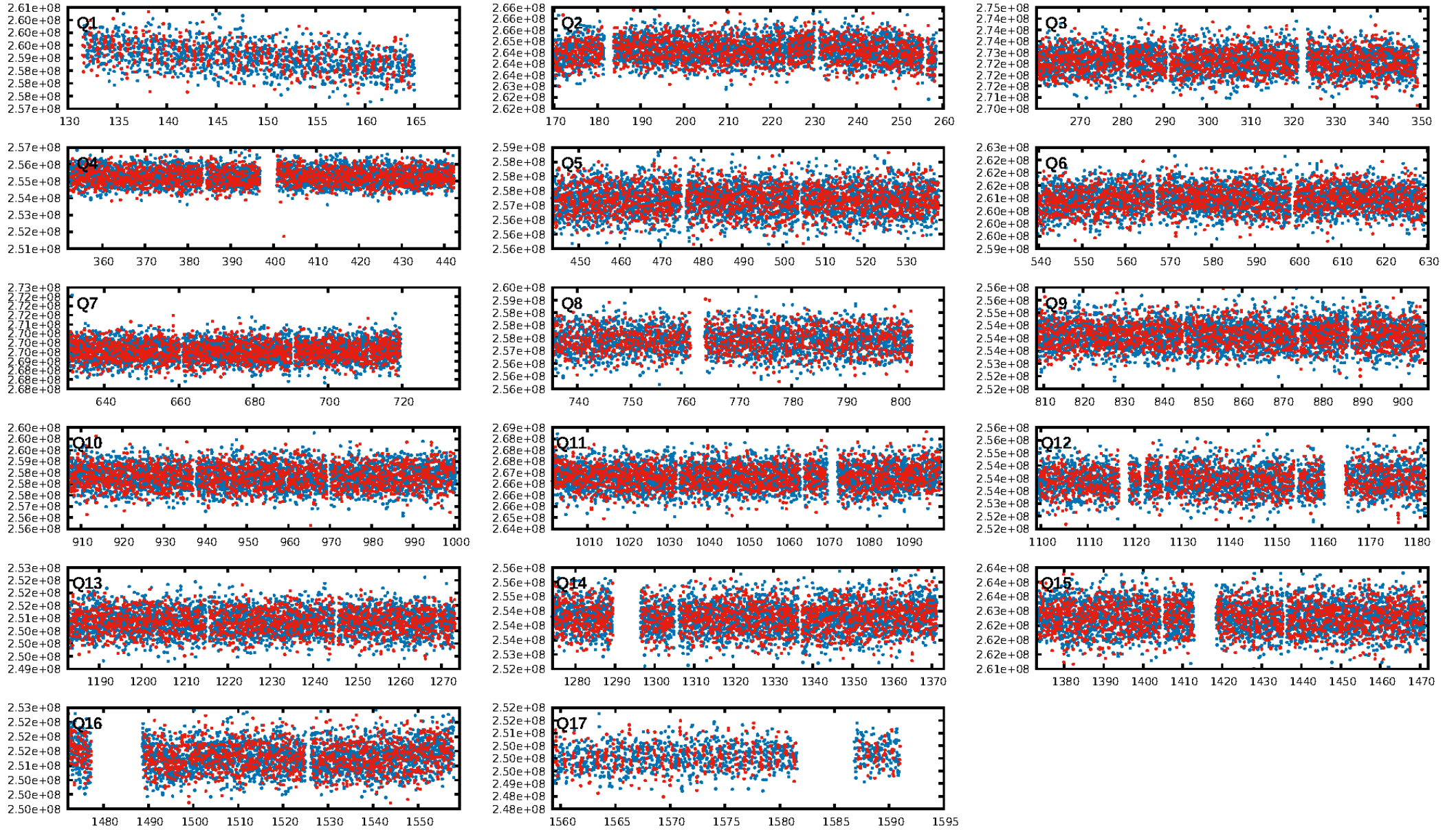
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGo-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1709/1709]
GhostDiagnostic-chr: 5.443
Centroid-sig: 94.7%
Centroid-so: 0.237 arcsec [3.21σ]
OotOffset-rm: 0.064 arcsec [0.50σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.296 arcsec [2.68σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.88 [15/17]
DiffImageOverlap-fno: 0.00 [0/17]

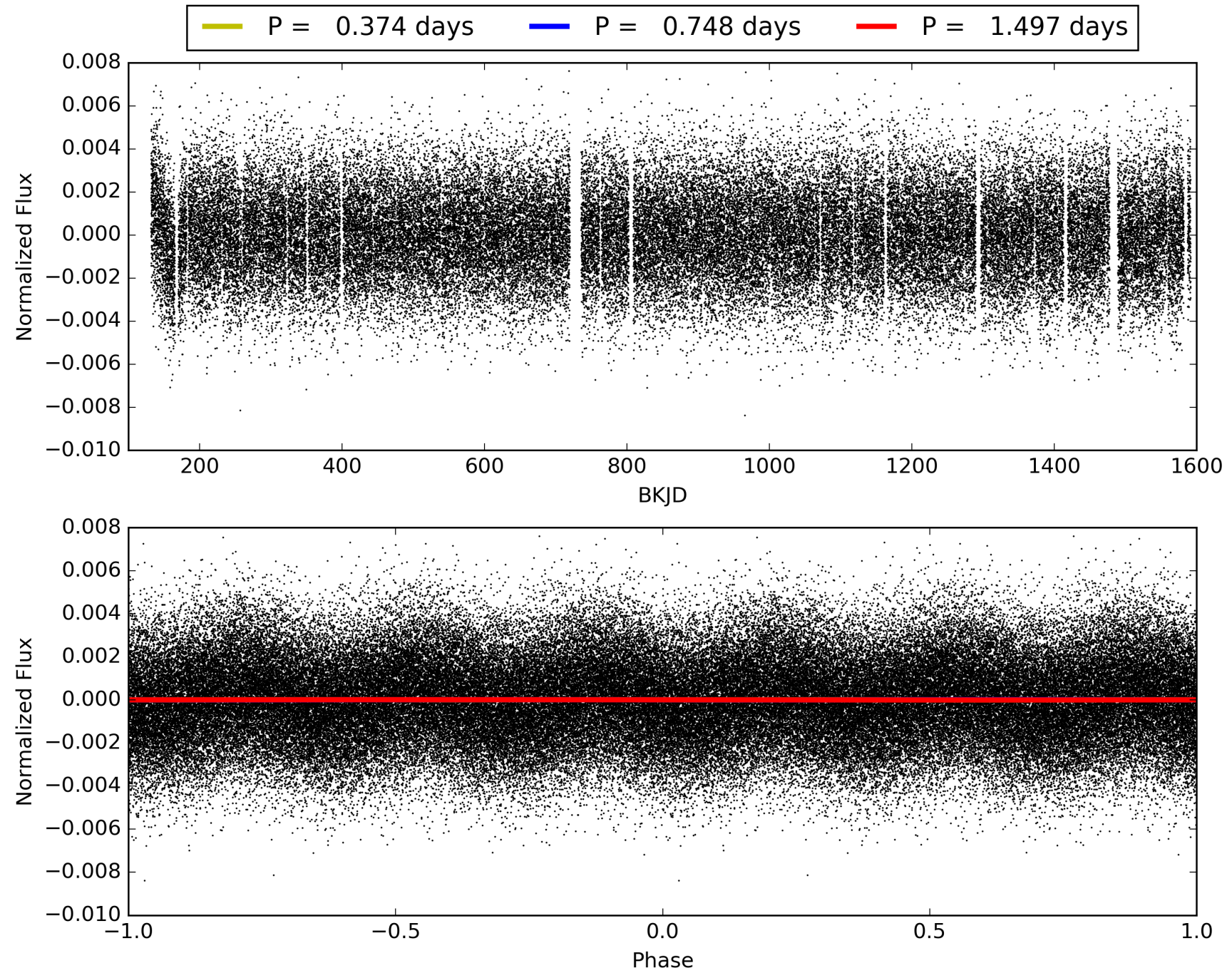
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 13:53:56 Z

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

TCE 008570117-01, PDC Light Curves

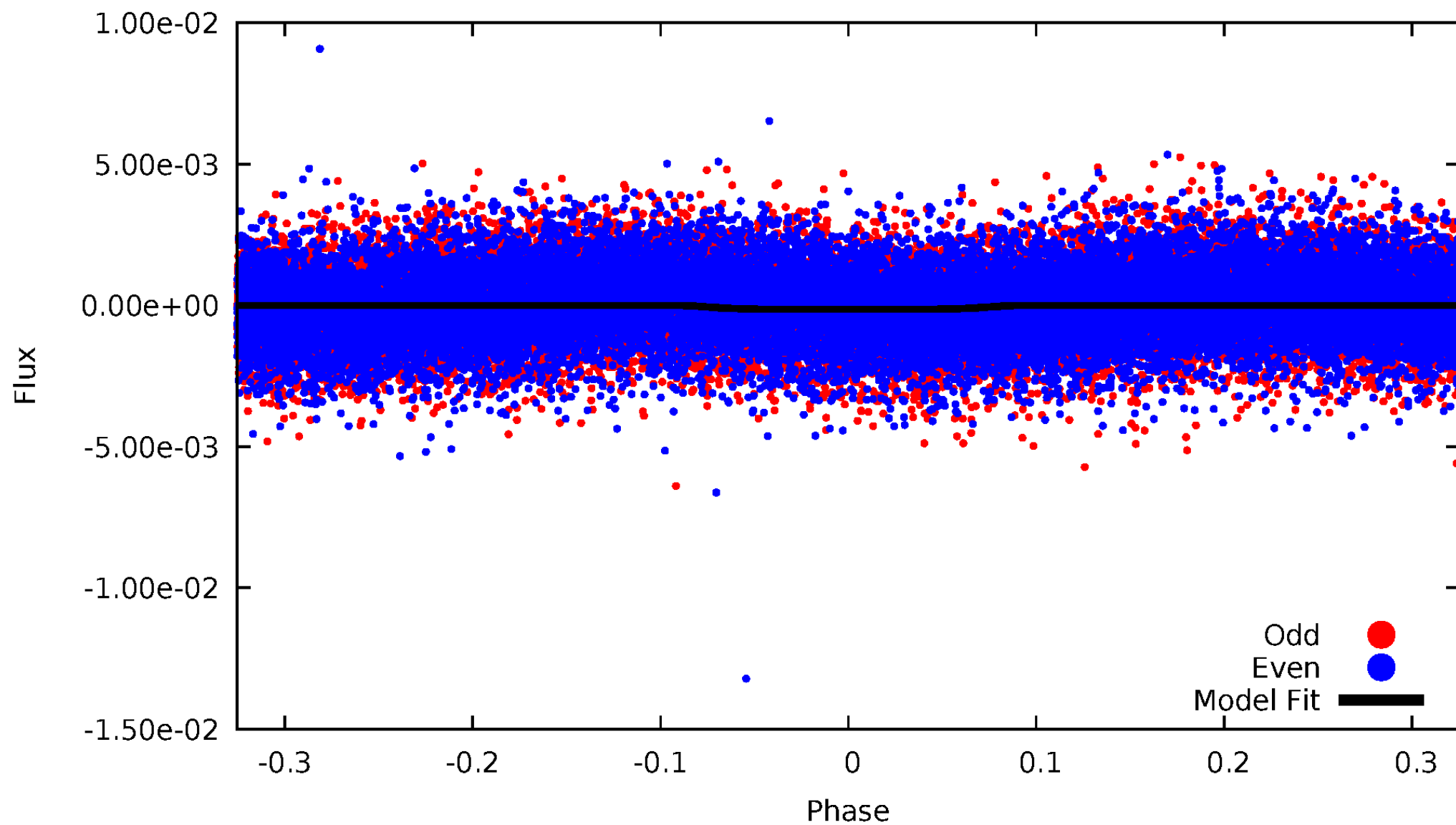


TCE 008570117-01



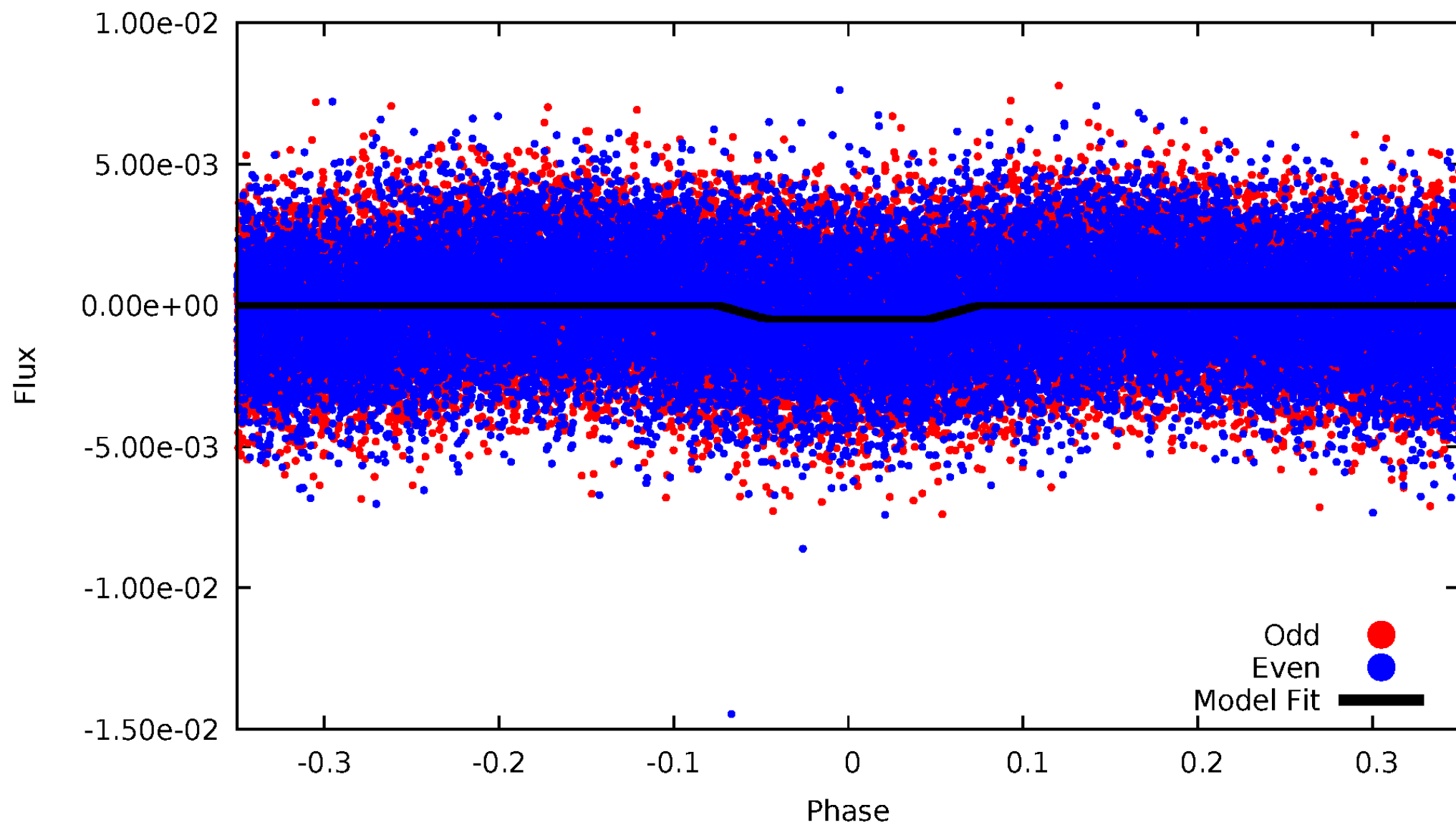
DV Odd/Even

TCE 008570117-01

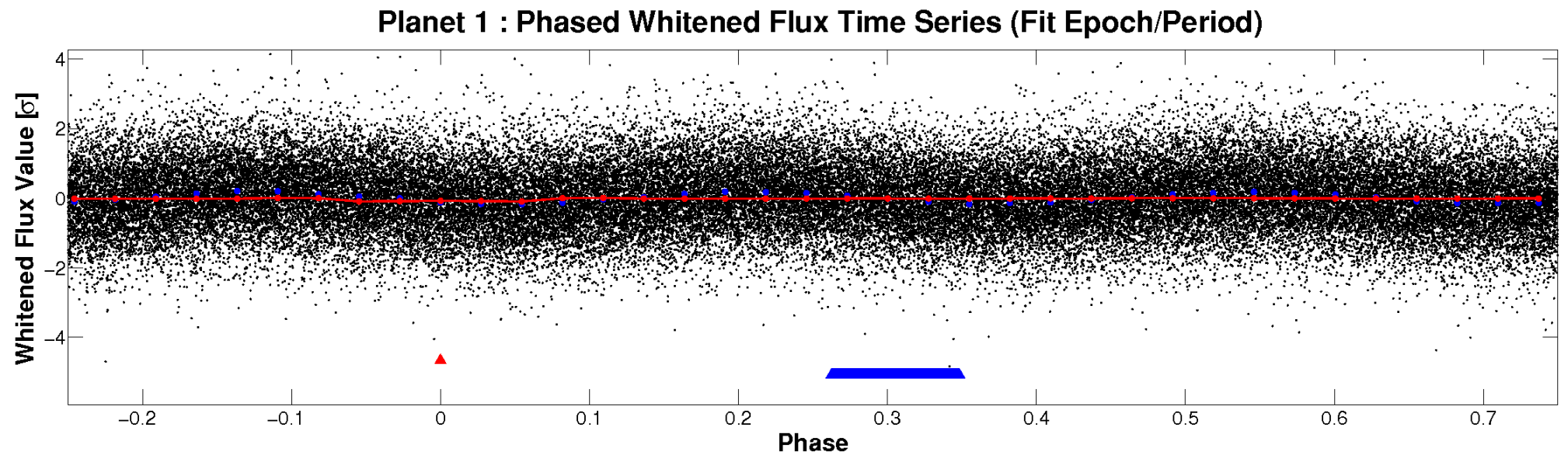
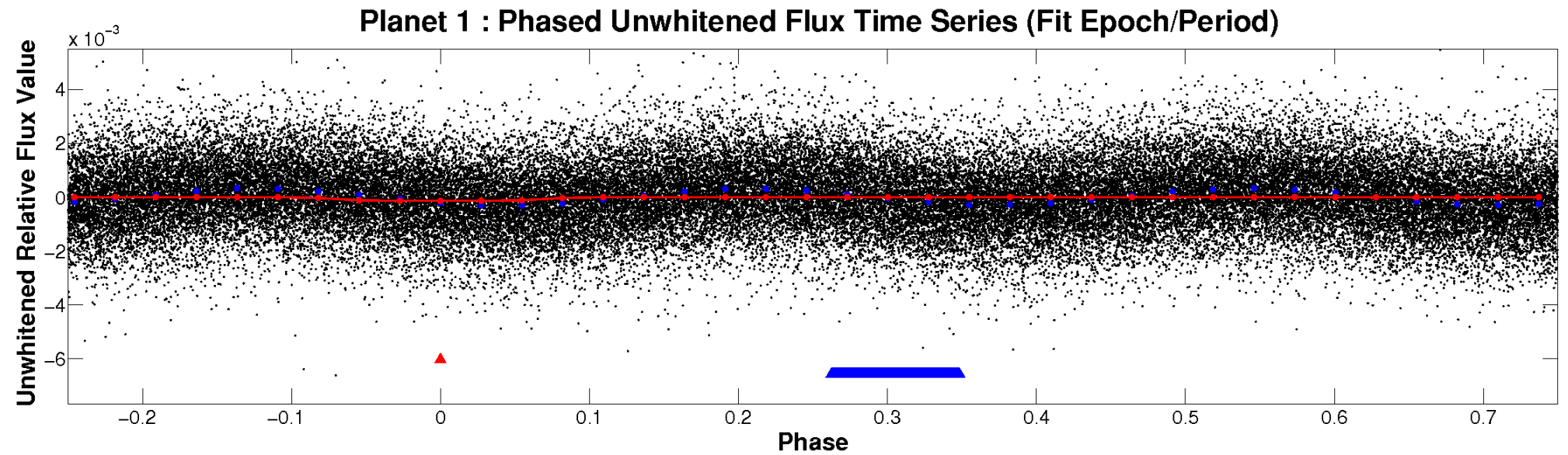


ALT Odd/Even

TCE 008570117-01

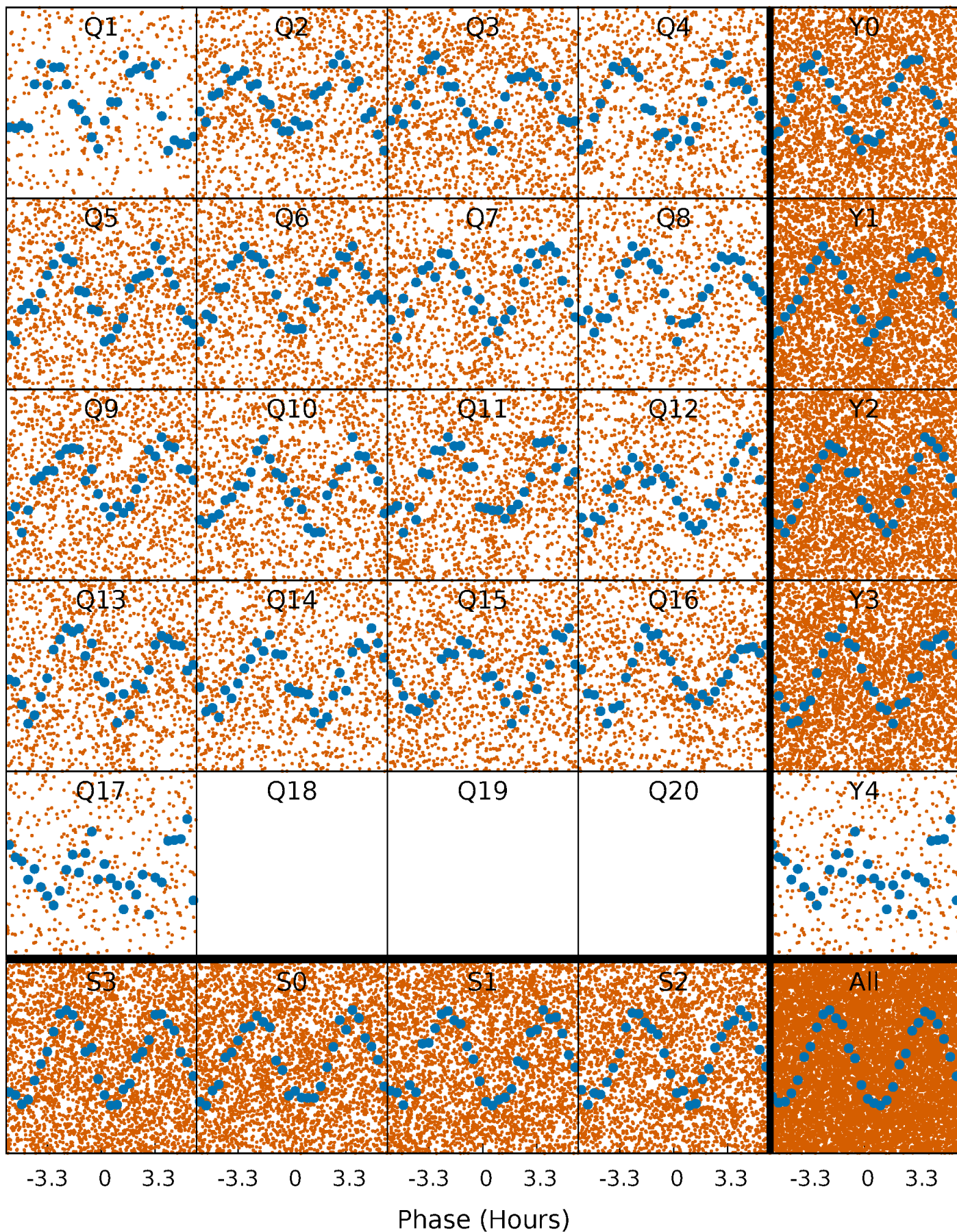


Non-Whitened Vs. Whitened Light Curve



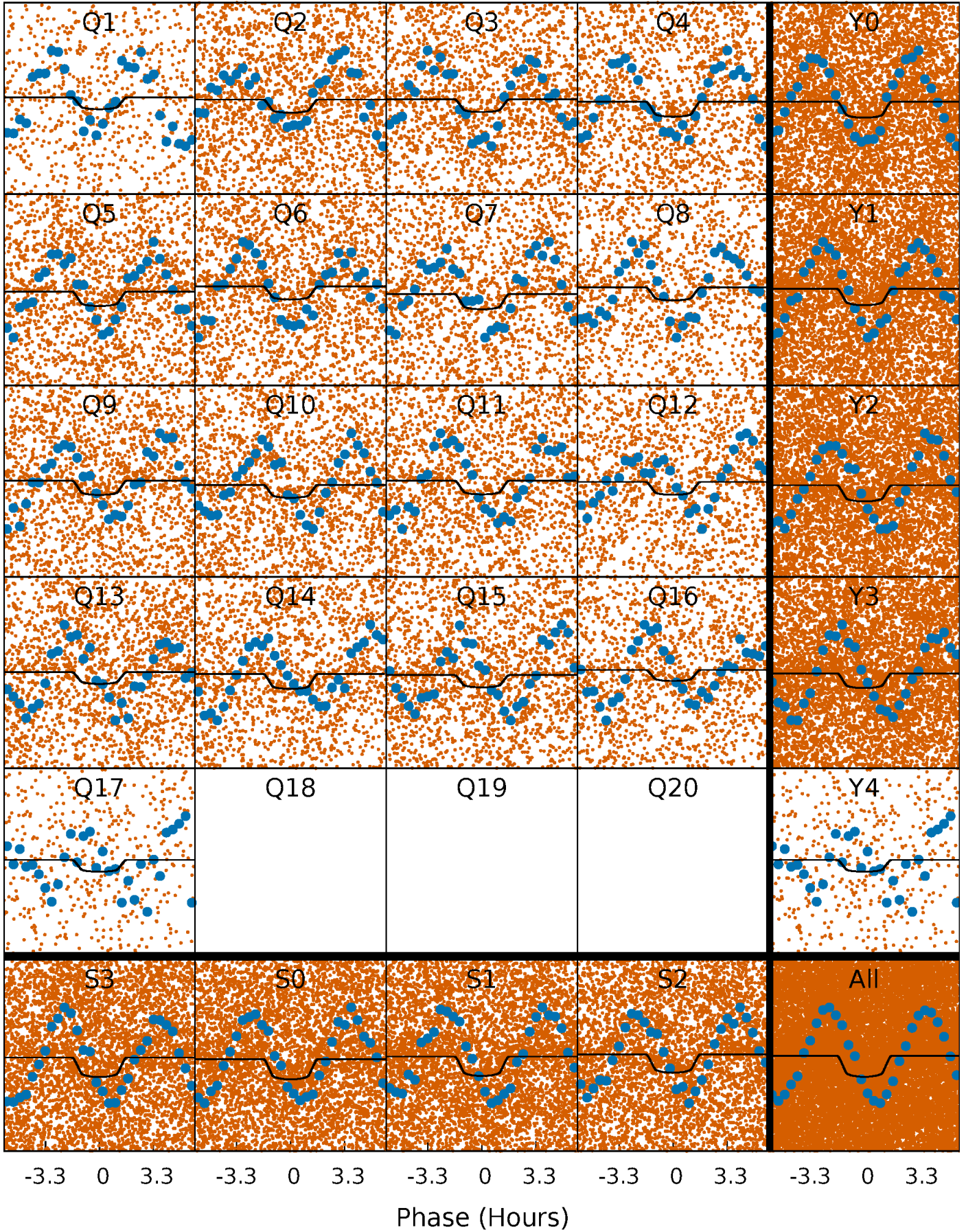
PDC Quarter-Phased Transit Curves

TCE 008570117-01 P= 0.748466 Days $T_0=131.534124$ (BKJD)



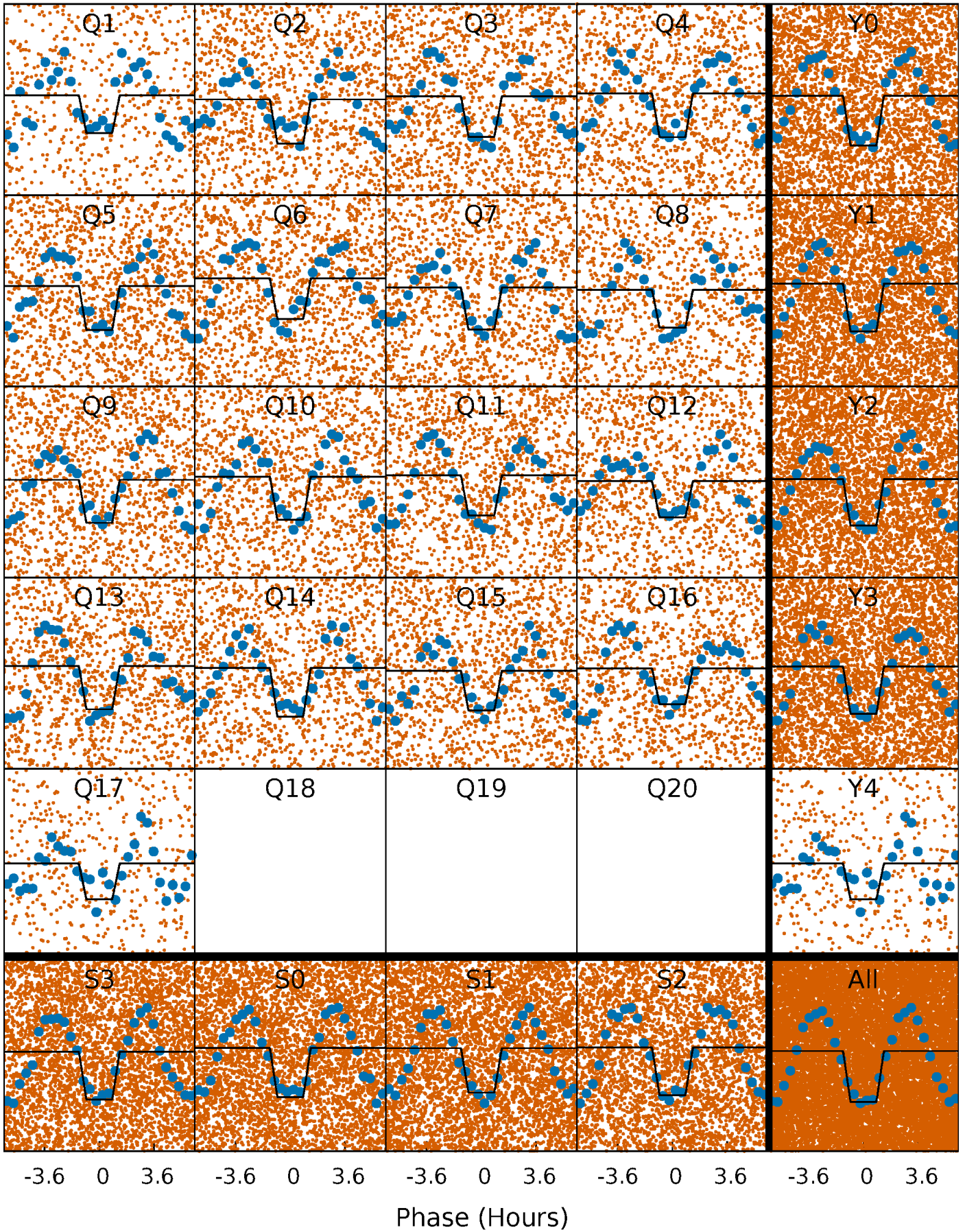
DV Quarter-Phased Transit Curves

TCE 008570117-01 P= 0.748466 Days $T_0=131.534124$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

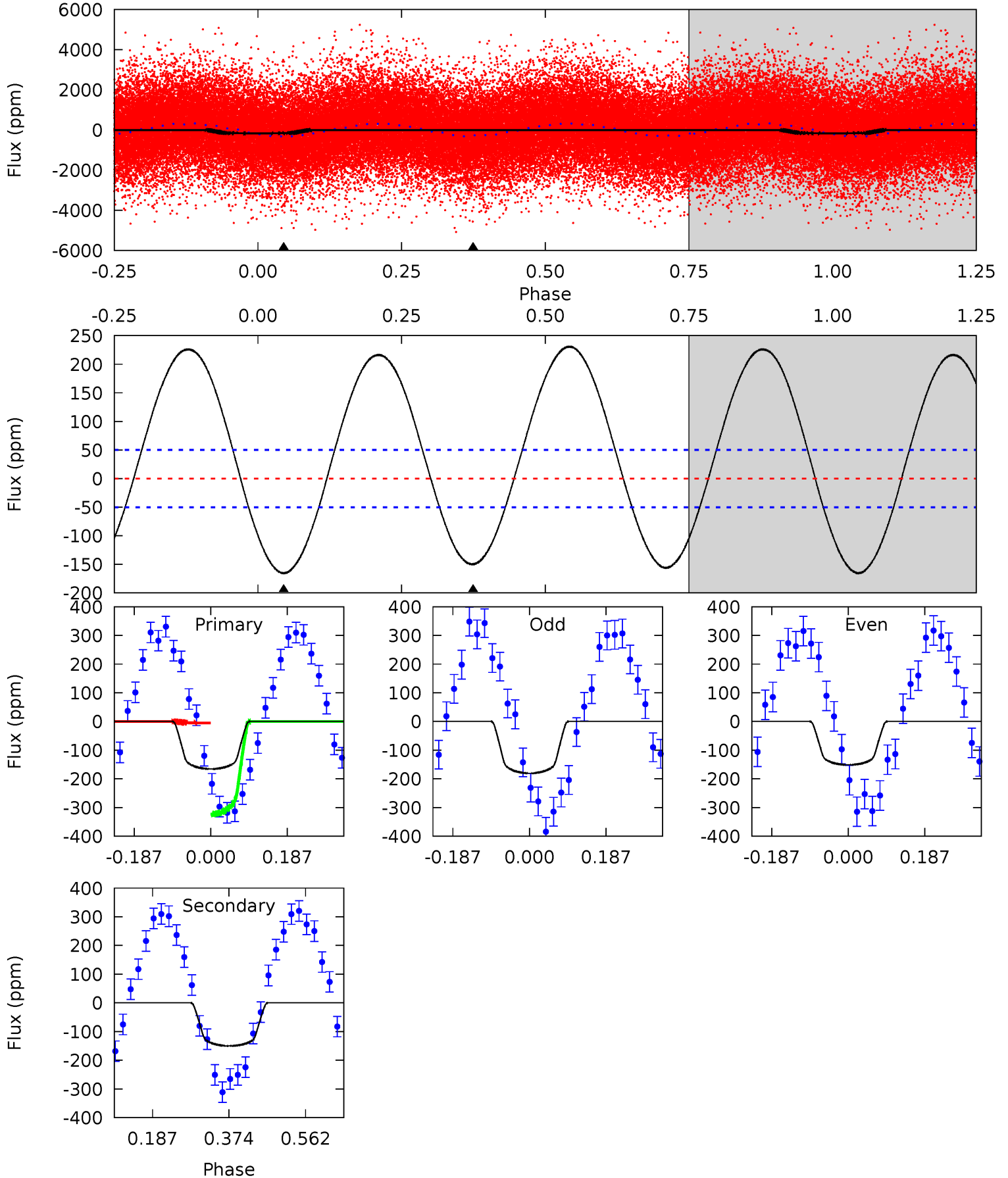
TCE 008570117-01 P= 0.748510 Days $T_0=131.527942$ (BKJD)



DV Model-Shift Uniqueness Test

008570117-01, P = 0.748466 Days, E = 130.785658 Days

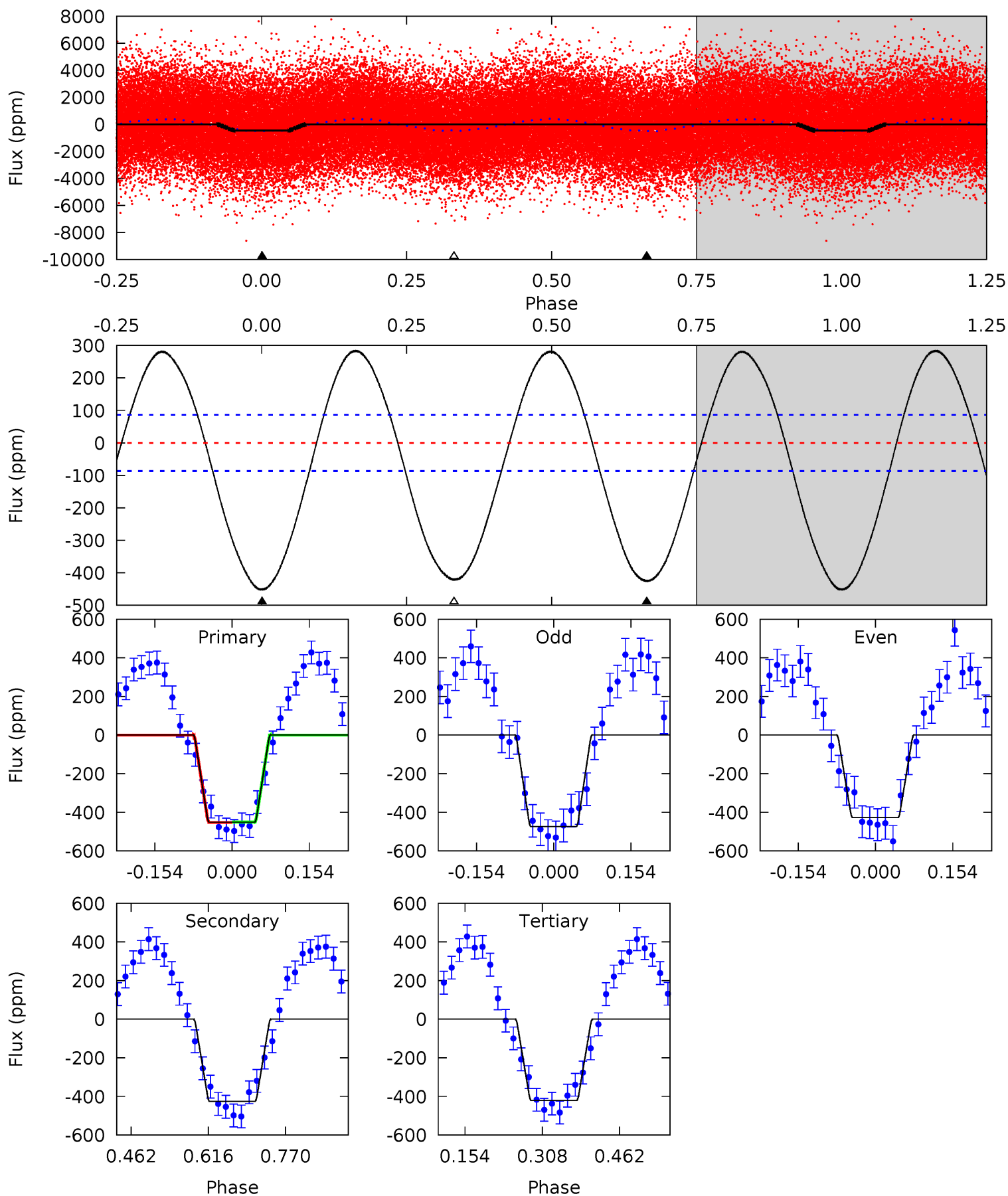
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.6	13.2	0	0	4.43	1.32	11.0	14.6	14.6	13.2	13.2	1.29	1.16	0.58	14.1



Alt Model-Shift Uniqueness Test

008570117-01, P = 0.748510 Days, E = 130.779432 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.3	22.0	21.8	0	4.47	1.43	13.4	1.57	23.3	0.22	22.0	1.19	1.04	0.39	0.06



Stellar Parameters For KIC 008570117

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8009^{+223}_{-335}	$3.990^{+0.204}_{-0.136}$	$-0.100^{+0.200}_{-0.300}$	$2.273^{+0.455}_{-0.625}$	$1.841^{+0.142}_{-0.331}$	$0.221^{+0.266}_{-0.092}$
	+3%/-4%	+5%/-3%	+200%/-300%	+20%/-27%	+8%/-18%	+120%/-42%
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 008570117-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-150 ± 11	$3.06^{+1.02}_{-0.91}$	5231^{+374}_{-412}	7544^{+1799}_{-1120}	$3.392^{+3.329}_{-1.471}$
Alt.	-425 ± 19	$5.30^{+1.12}_{-1.12}$	5251^{+342}_{-396}	7467^{+992}_{-707}	$3.244^{+1.877}_{-1.048}$

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 $A_{obs} \gg 1.0$

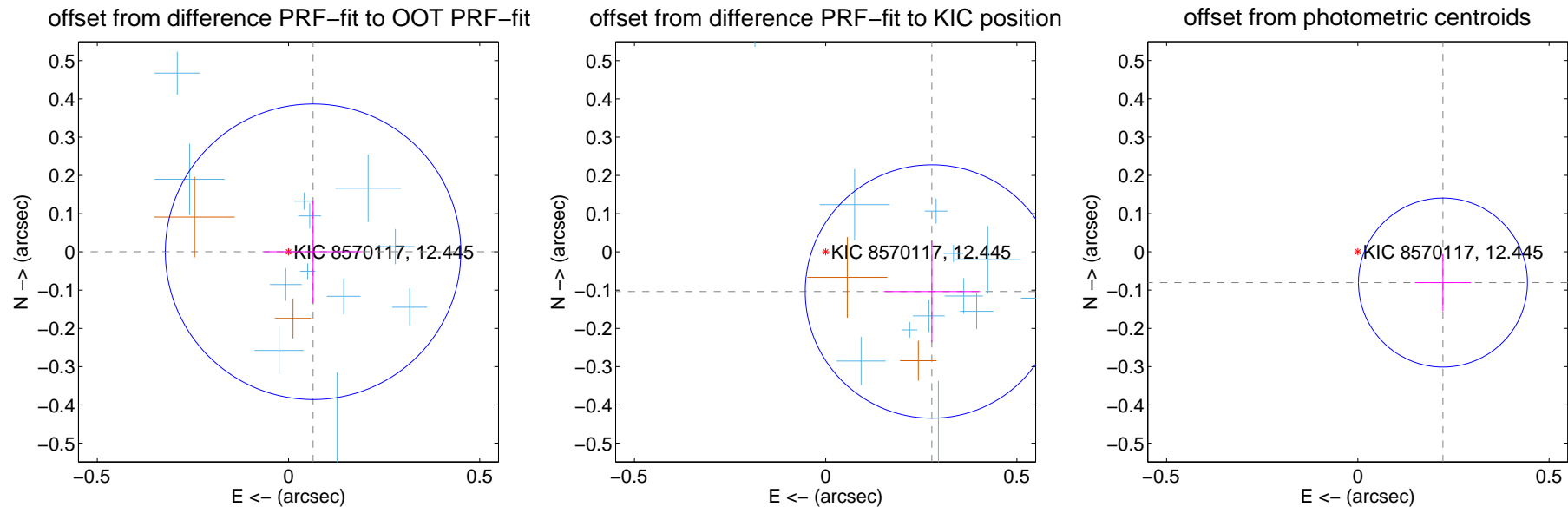
DV Centroid Data

Supplemental centroid analysis for 008570117-01. Kepler magnitude: 12.45. Transit SNR 8.60

There are 15 quarters with good PRF difference image offsets

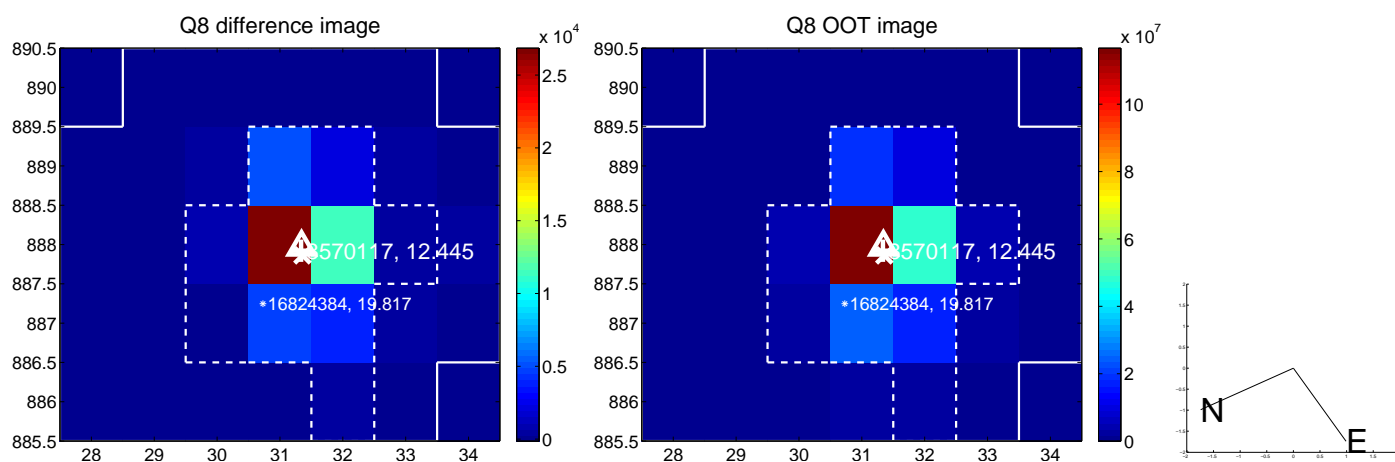
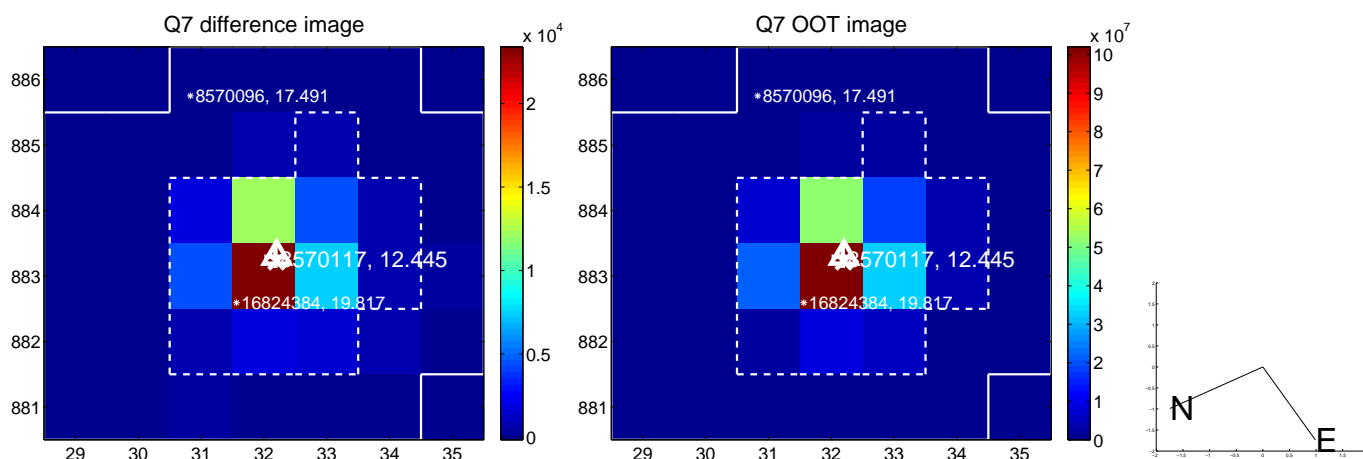
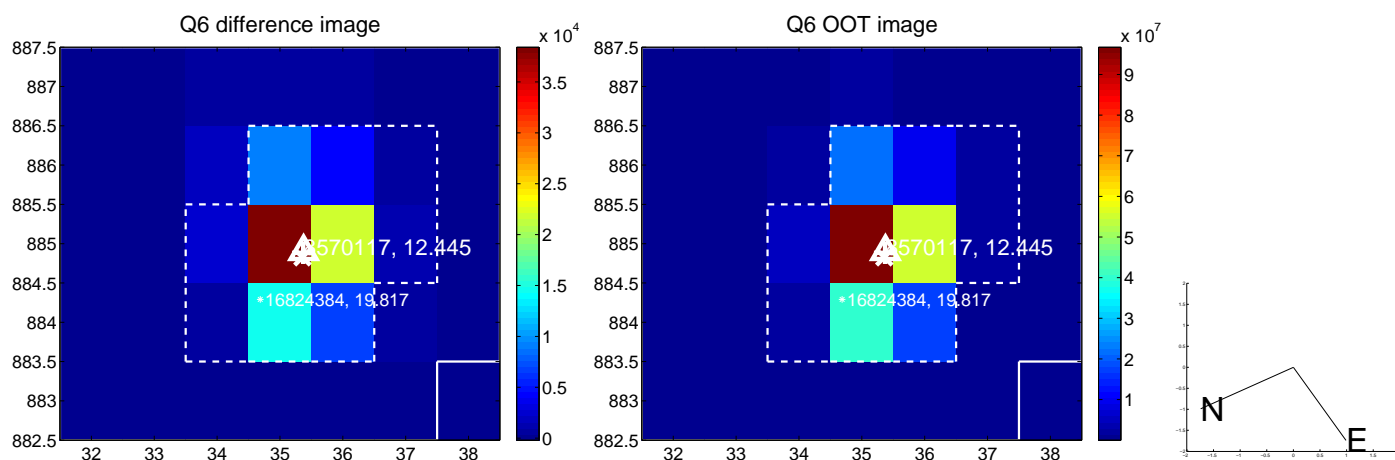
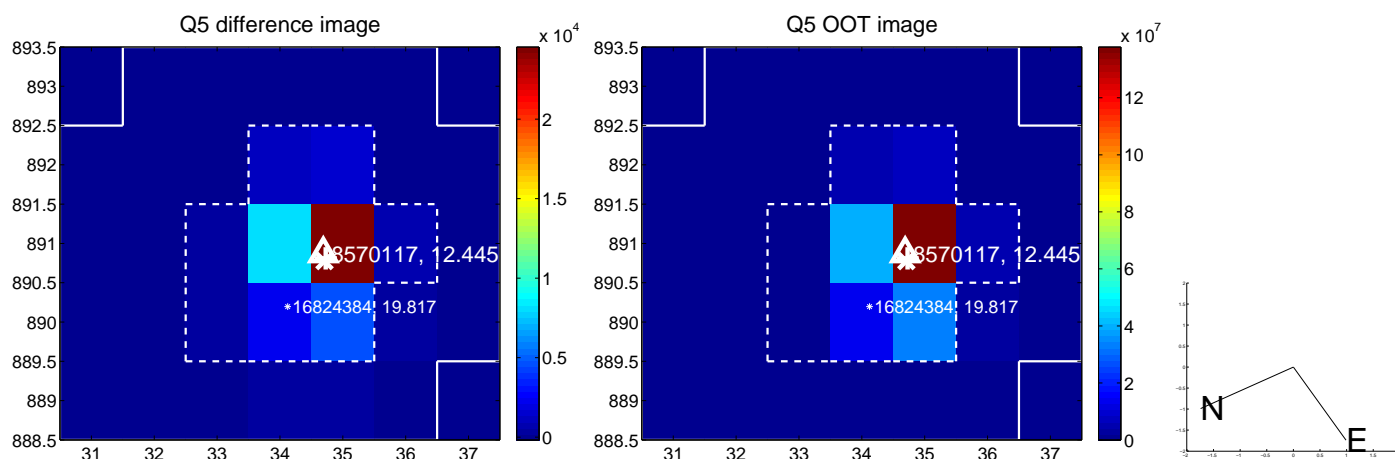
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.064 ± 0.129	0.50	-0.064 ± 0.128	0.000 ± 0.134
PRF-fit source offset from KIC position	0.296 ± 0.110	2.68	-0.278 ± 0.126	-0.104 ± 0.133
photometric centroid source offset	0.24 ± 0.07	3.21	-0.22 ± 0.07	-0.08 ± 0.07

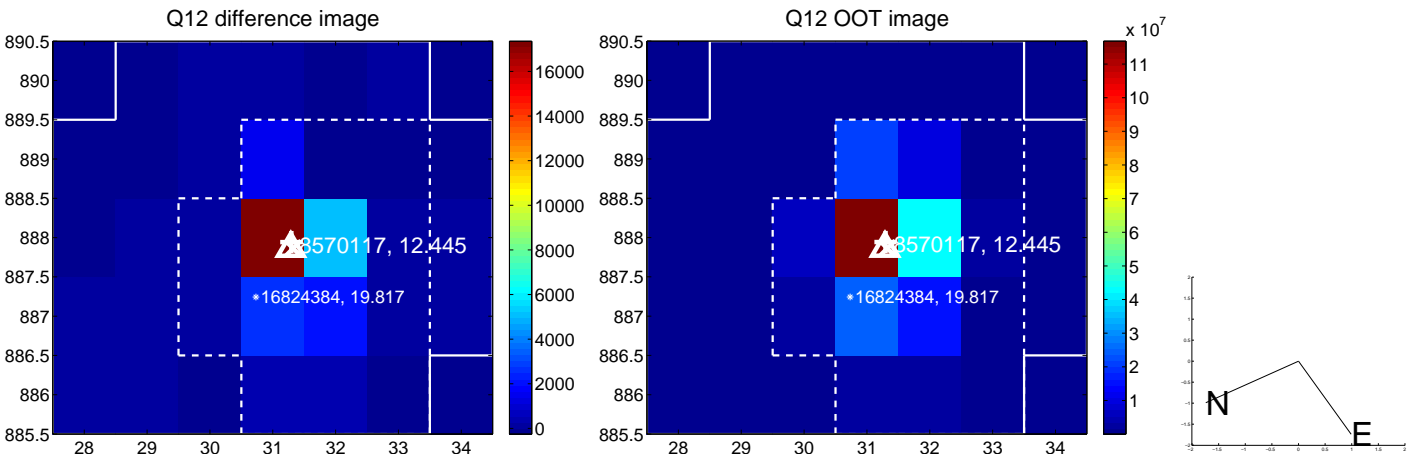
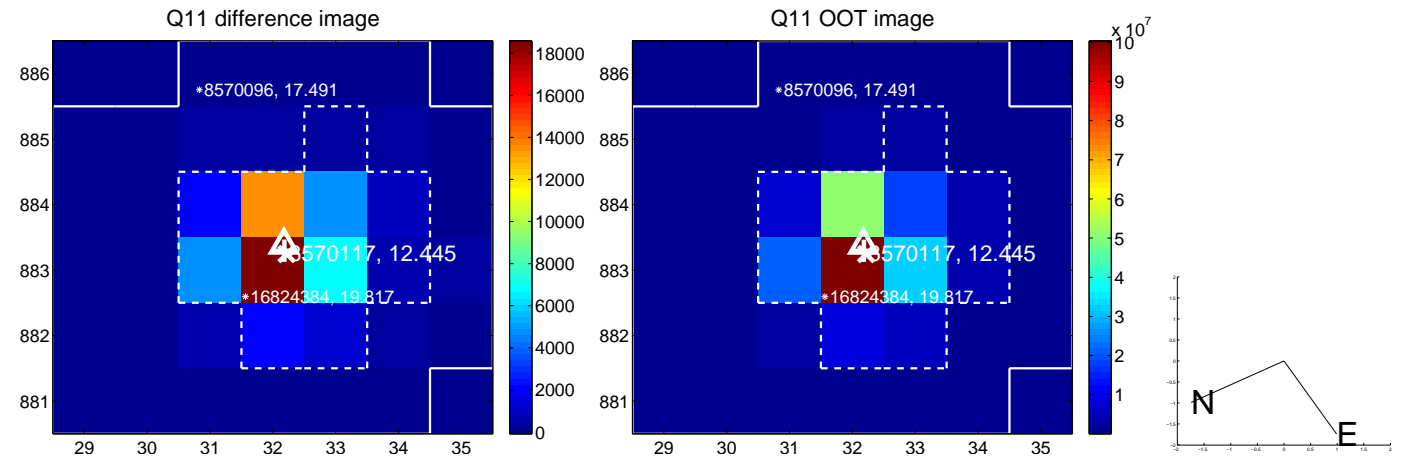
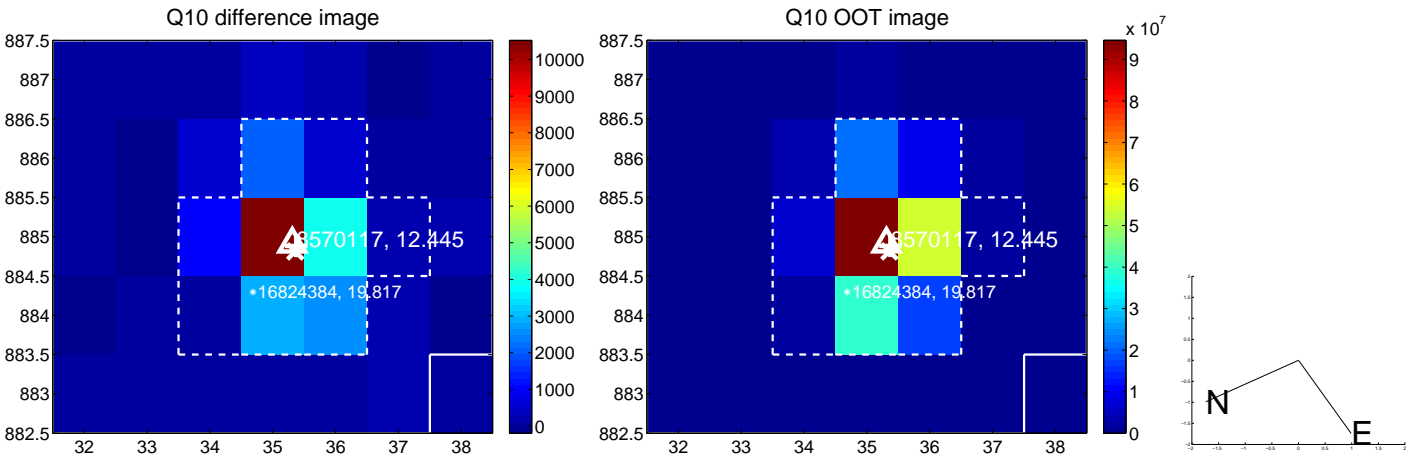
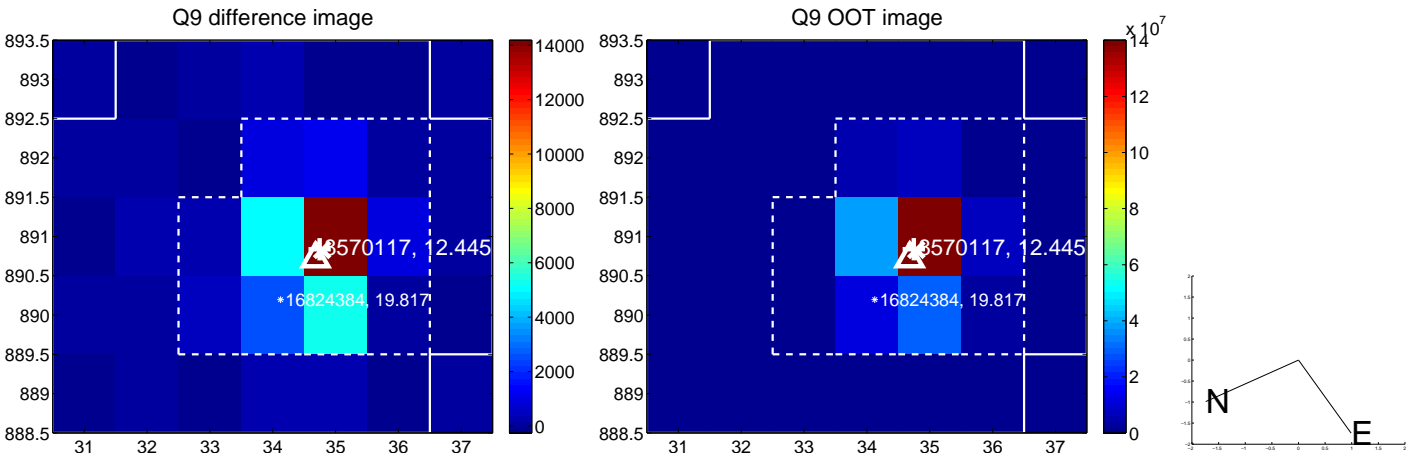


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

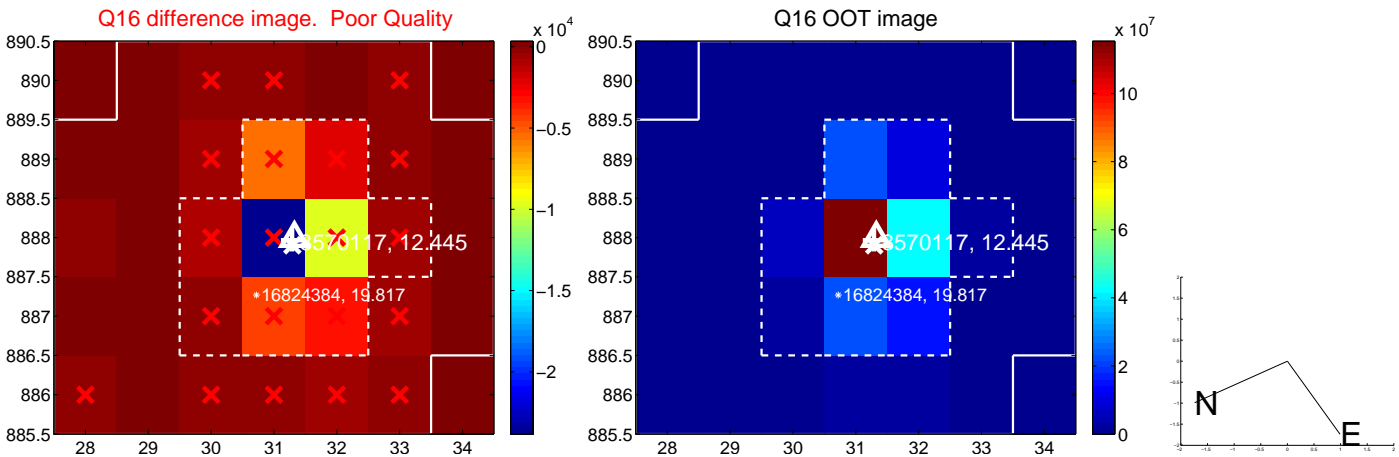
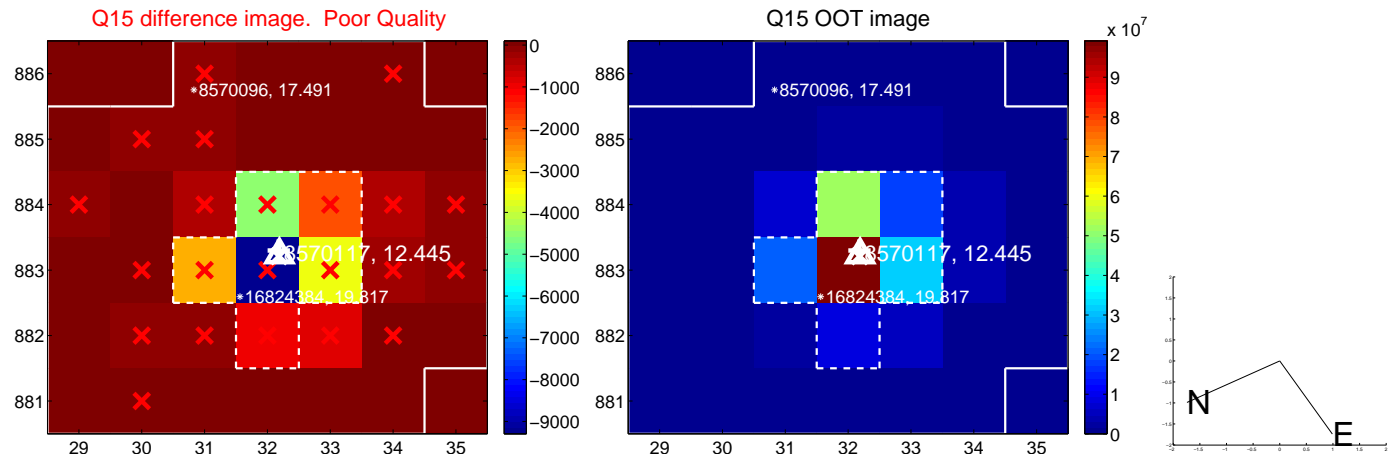
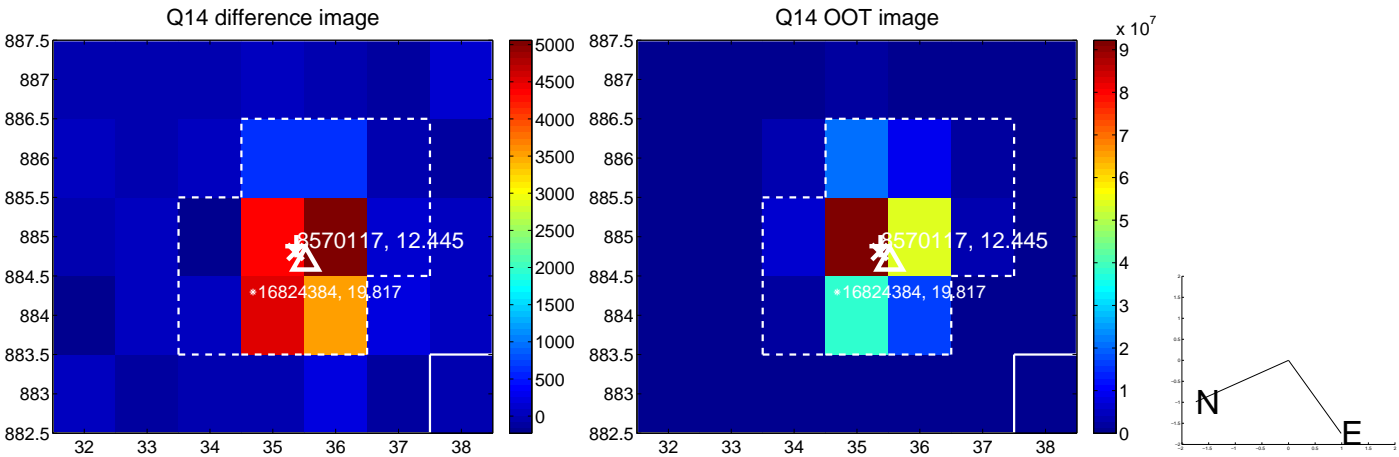
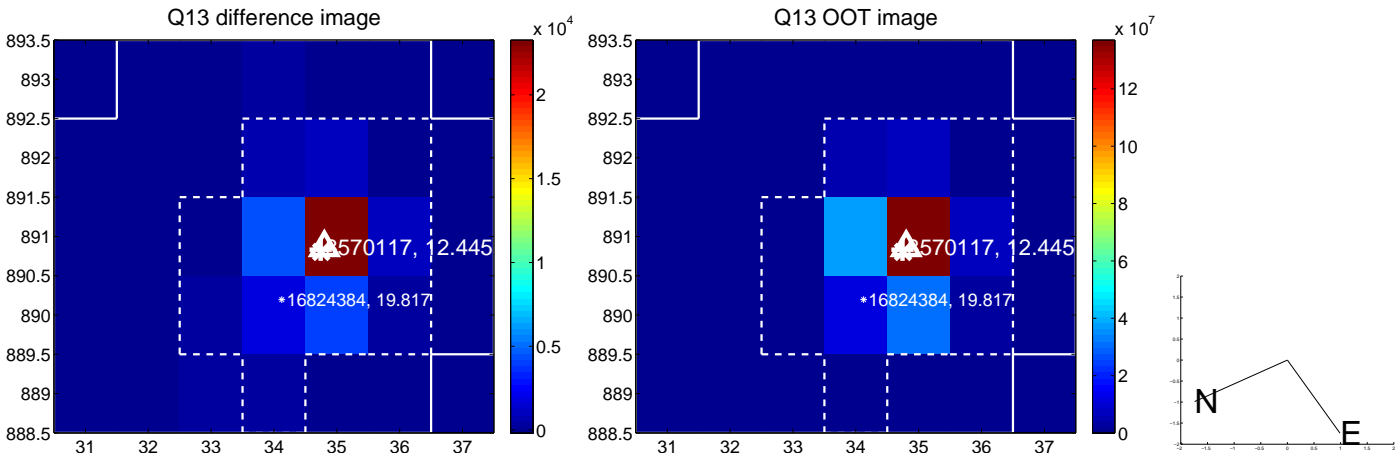
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



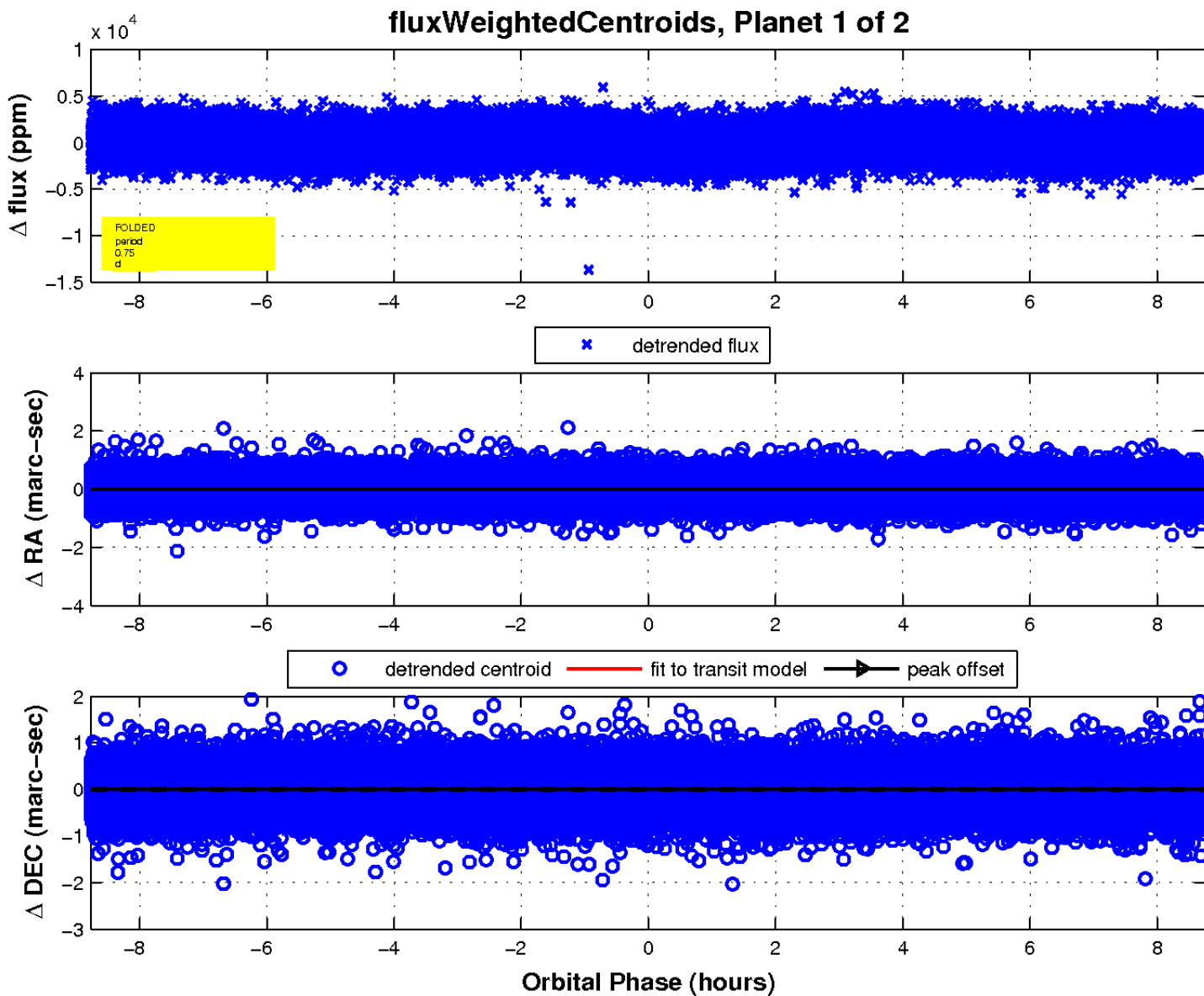
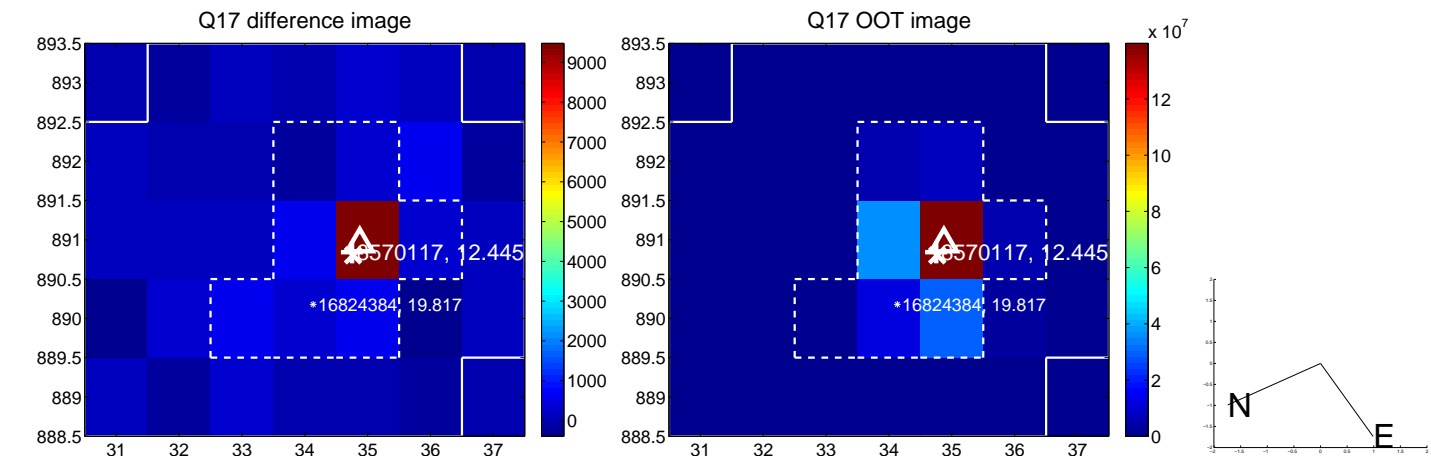
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

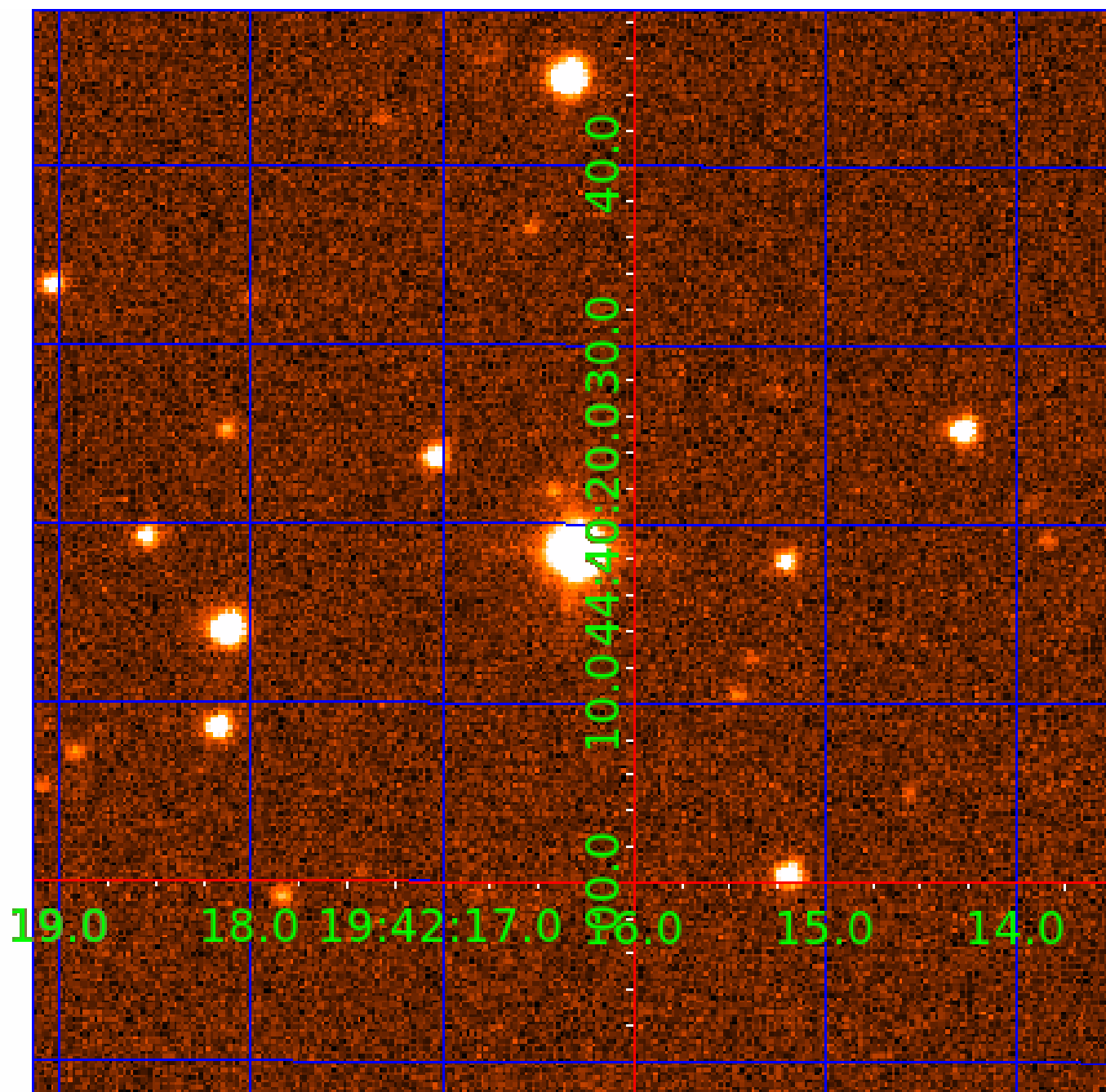


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008570117

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})
008570117-01	OBS	No	0.748466	131.534124	141.2	2.921	12.0	8.6	2.27	8009	3.14	48683.00
008570117-02	OBS	No	0.748499	131.730534	50.7	5.777	13.1	4.0	2.27	8009	1.73	48680.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008570117-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008570117-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_FEW_MEAS

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

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

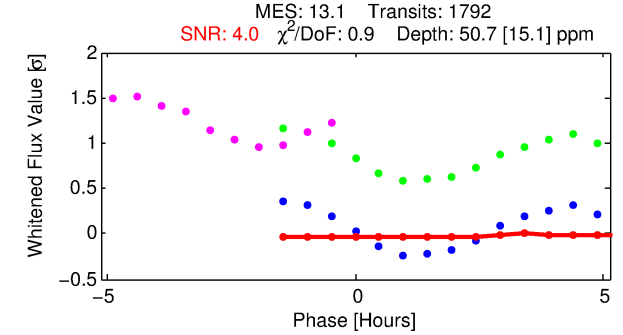
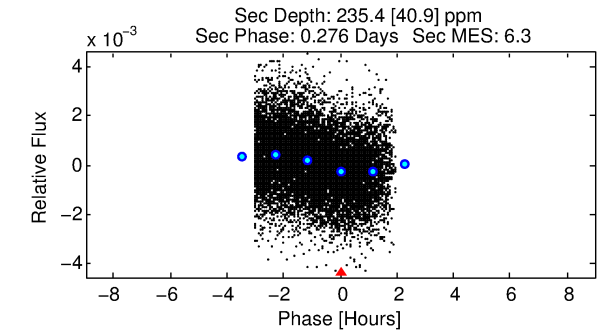
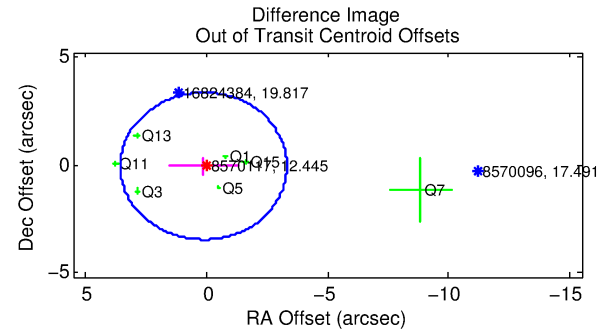
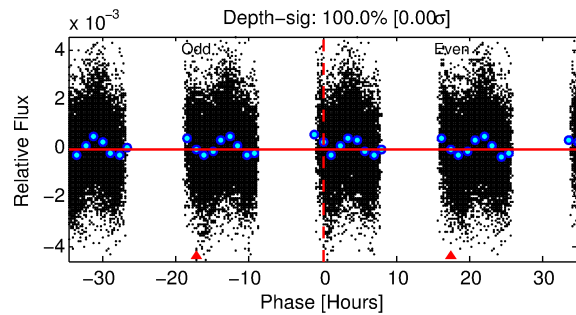
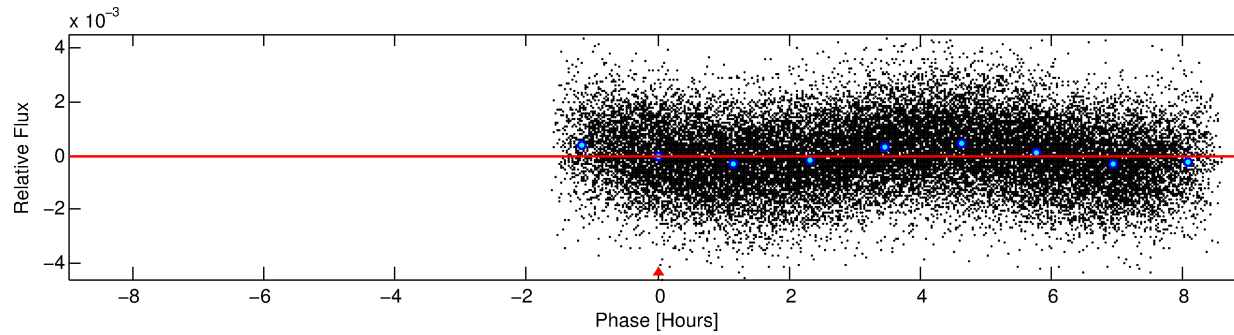
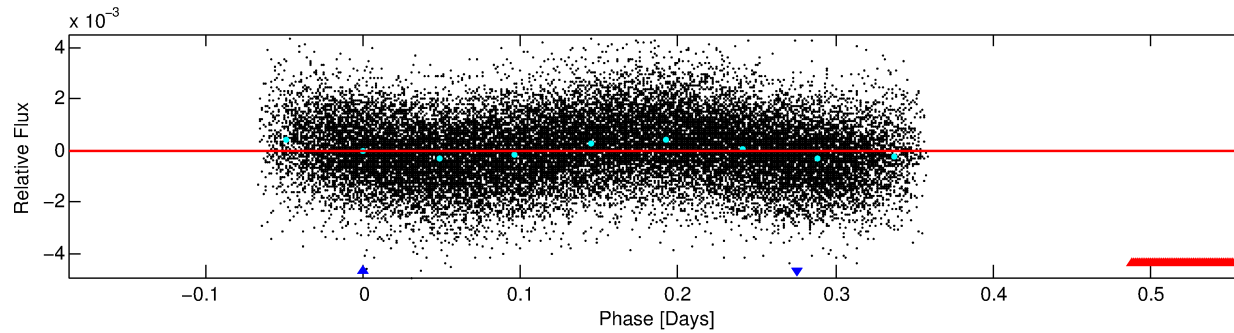
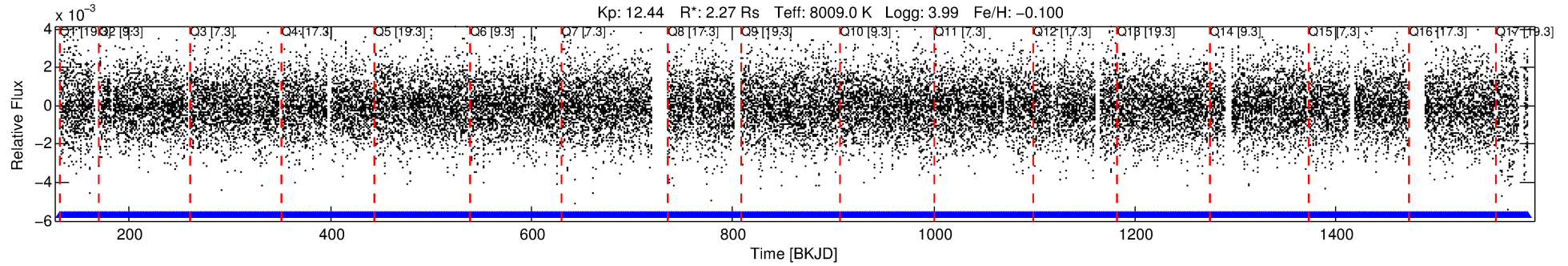
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008570117-02

No Significant Match Found

DV One-Page Summary

KIC: 8570117 Candidate: 2 of 2 Period: 0.748 d



DV Fit Results:

Period = 0.74850 [0.00003] d
Epoch = 131.7305 [0.0448] BKJD
Rp/R* = 0.0070 [0.0171]
a/R* = 1.10 [3.00]
b = 0.70 [10.90]
Seff = 48680.14 [19451.37]
Teq = 3788 [378] K
Rp = 1.73 [4.26] Re
a = 0.0198 [0.0048] AU
Ag = 16.85 [82.47] [0.19σ]
Teffp = 11864 [14488] K [0.56σ]

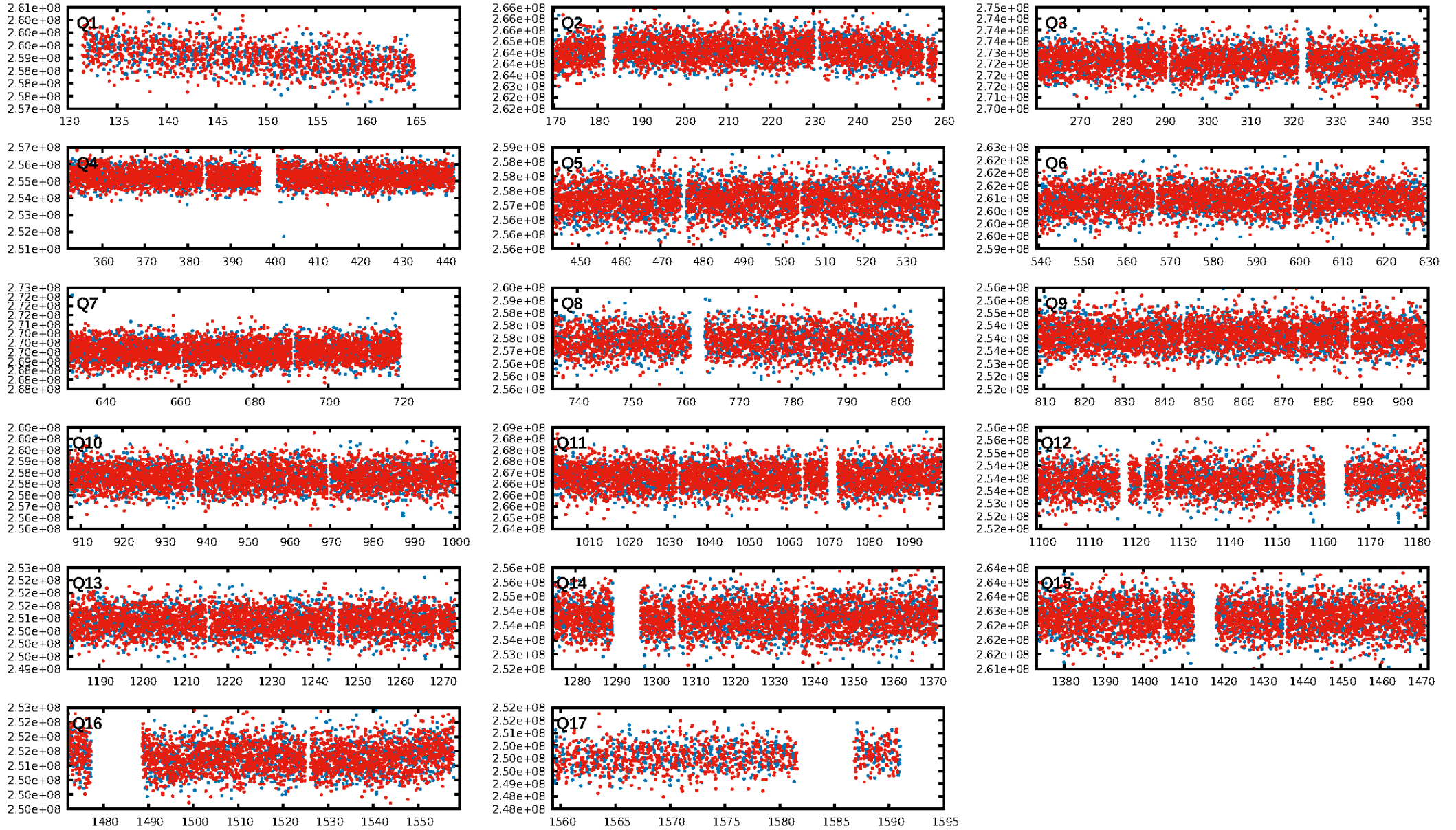
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1710/1710]
GhostDiagnostic-chr: -30.86
Centroid-sig: 24.0%
Centroid-so: 0.391 arcsec [2.61σ]
OotOffset-rm: 0.135 arcsec [0.12σ]
OotOffset-st: 0/4/0/3 [7]
KicOffset-rm: 0.122 arcsec [0.29σ]
KicOffset-st: 0/4/0/3 [7]
DiffImageQuality-fgm: 0.29 [2/7]
DiffImageOverlap-fno: 0.00 [0/17]

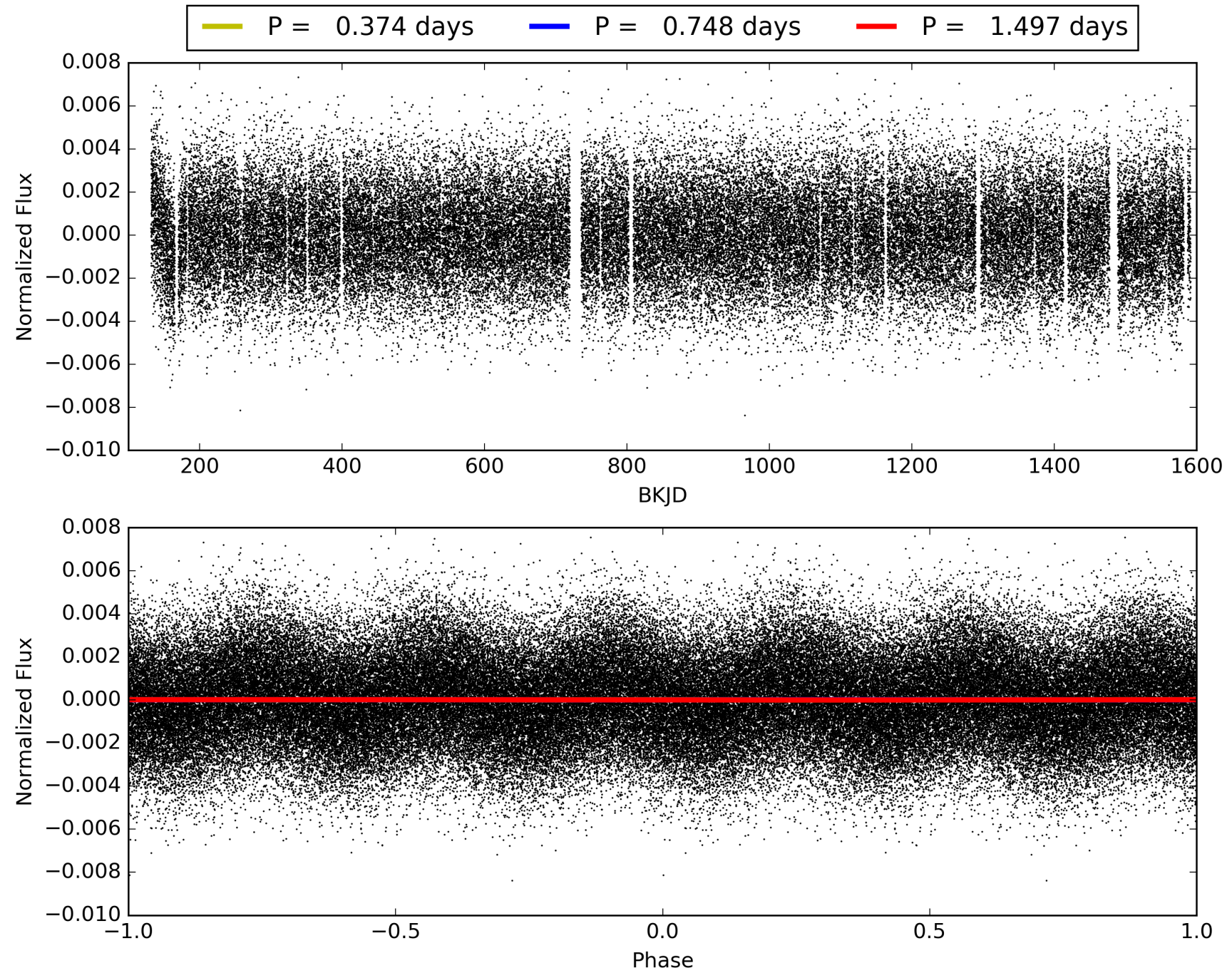
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 13:54:11 Z

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

TCE 008570117-02, PDC Light Curves

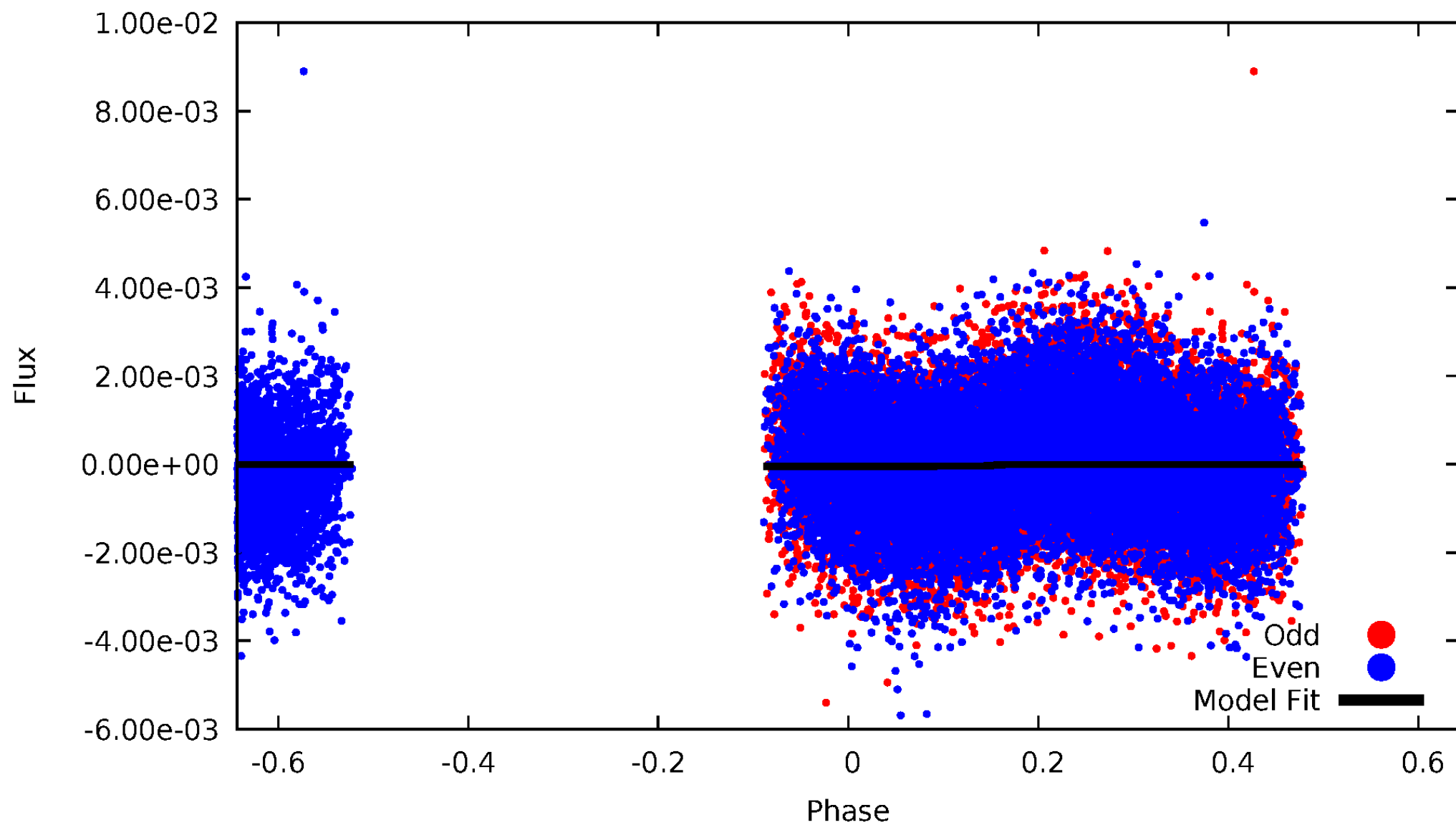


TCE 008570117-02



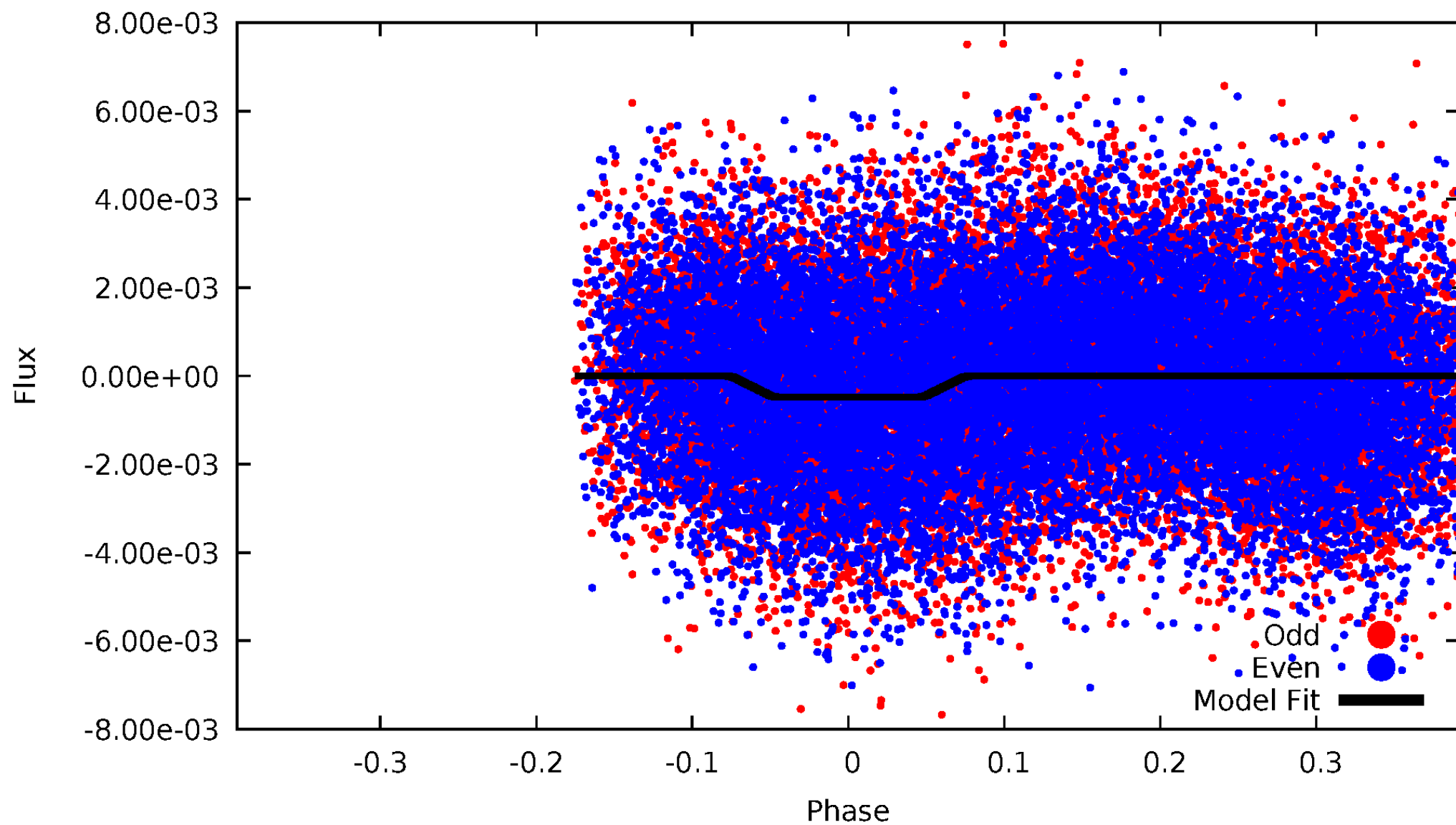
DV Odd/Even

TCE 008570117-02



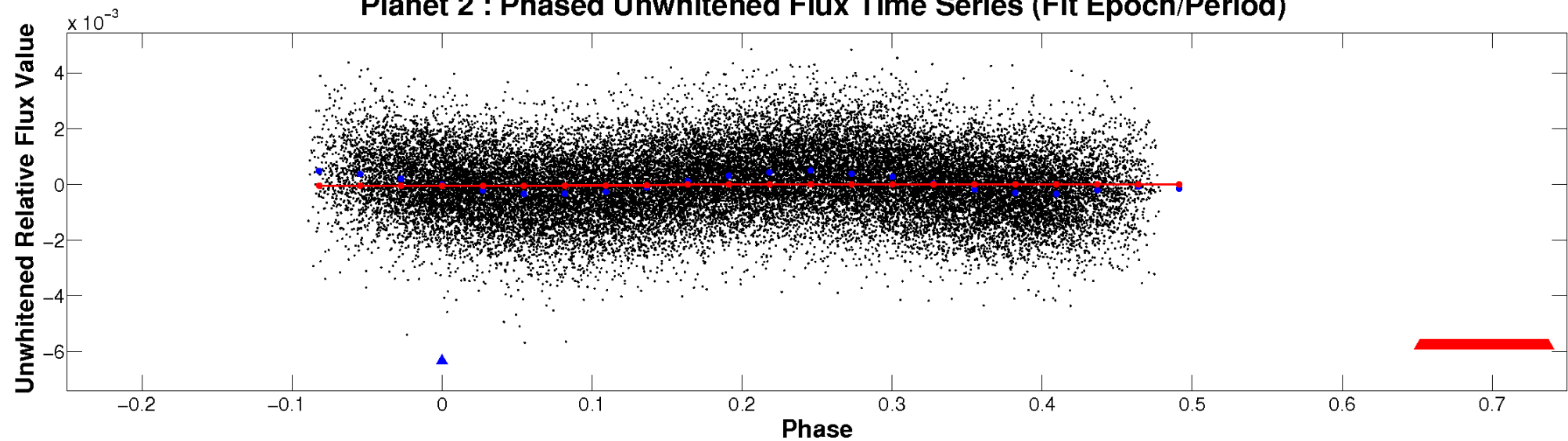
ALT Odd/Even

TCE 008570117-02

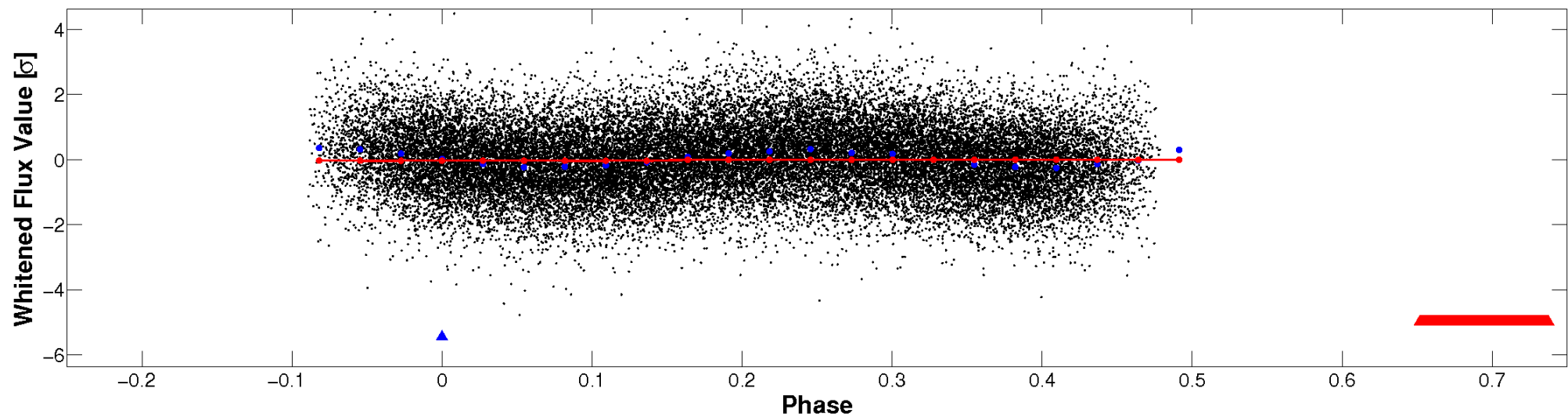


Non-Whitened Vs. Whitened Light Curve

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

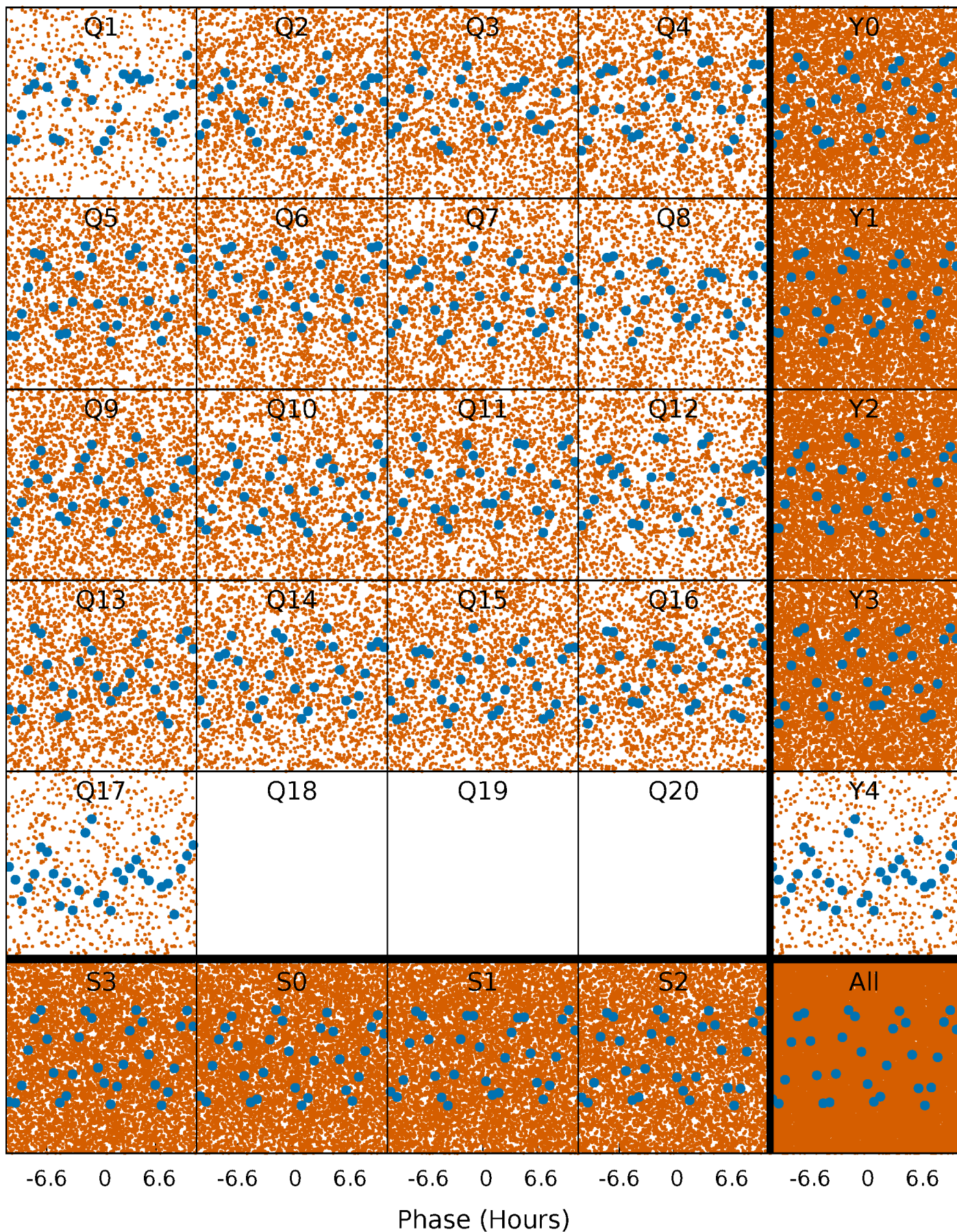


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



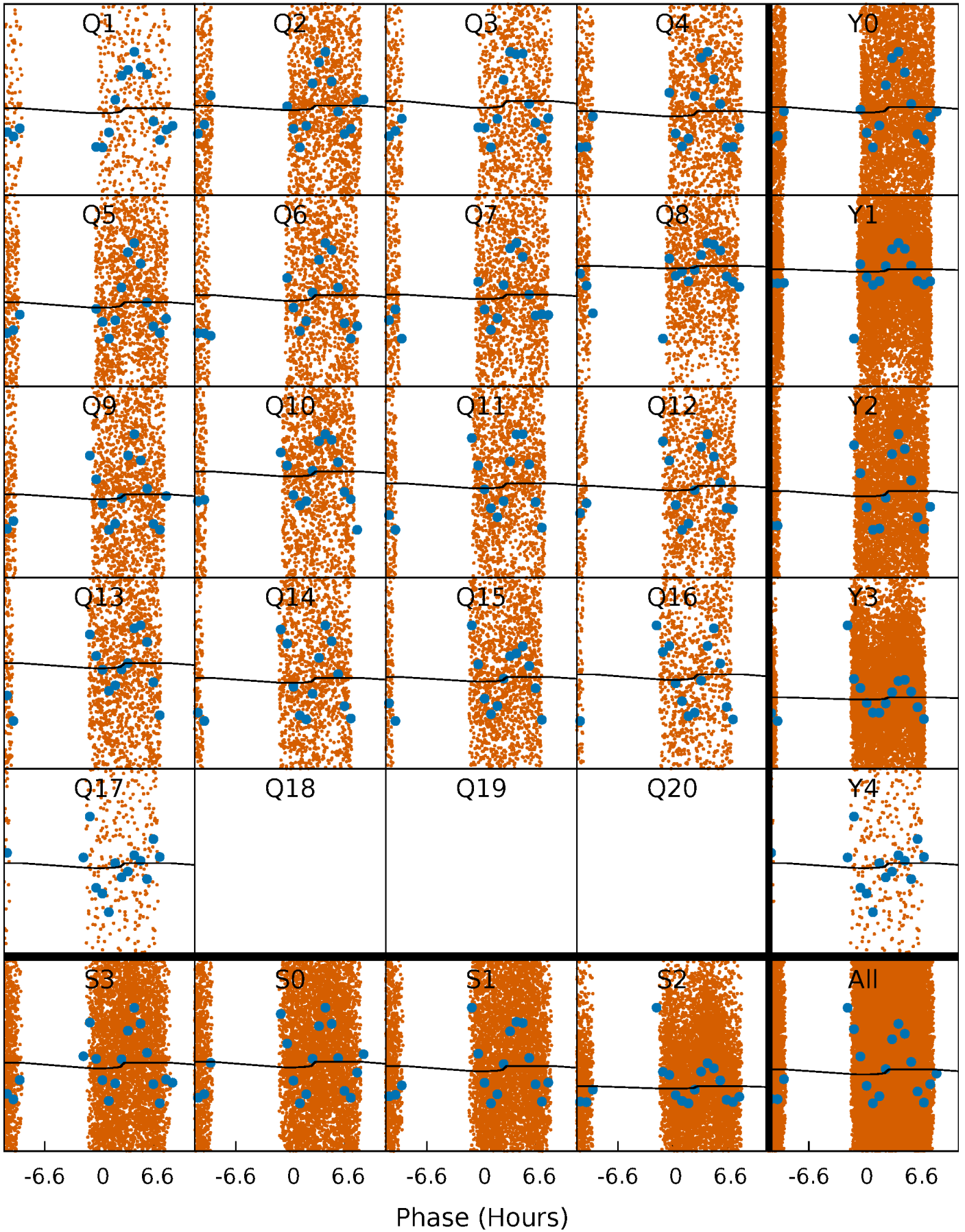
PDC Quarter-Phased Transit Curves

TCE 008570117-02 P= 0.748499 Days $T_0=131.730534$ (BKJD)



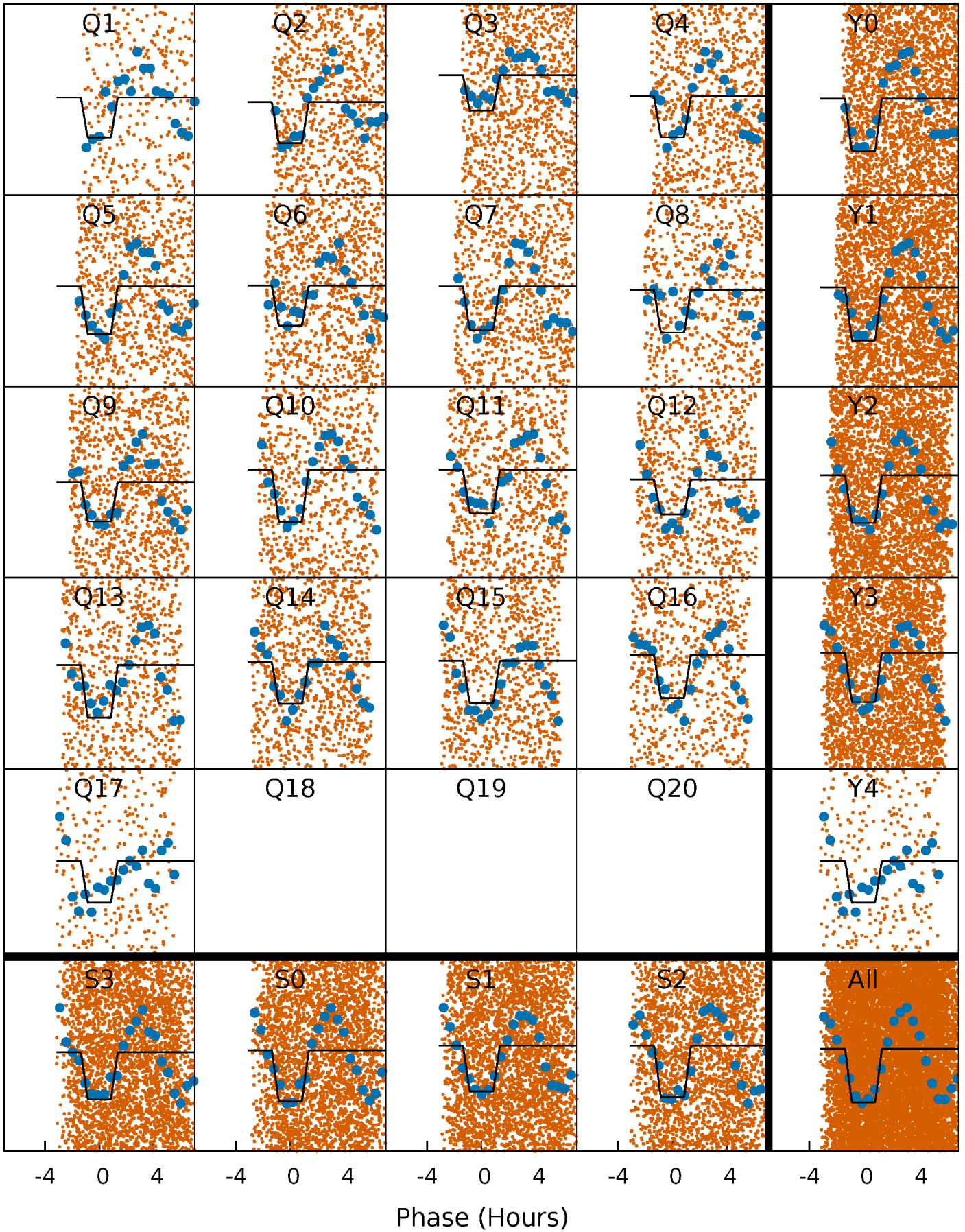
DV Quarter-Phased Transit Curves

TCE 008570117-02 P= 0.748499 Days $T_0=131.730534$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

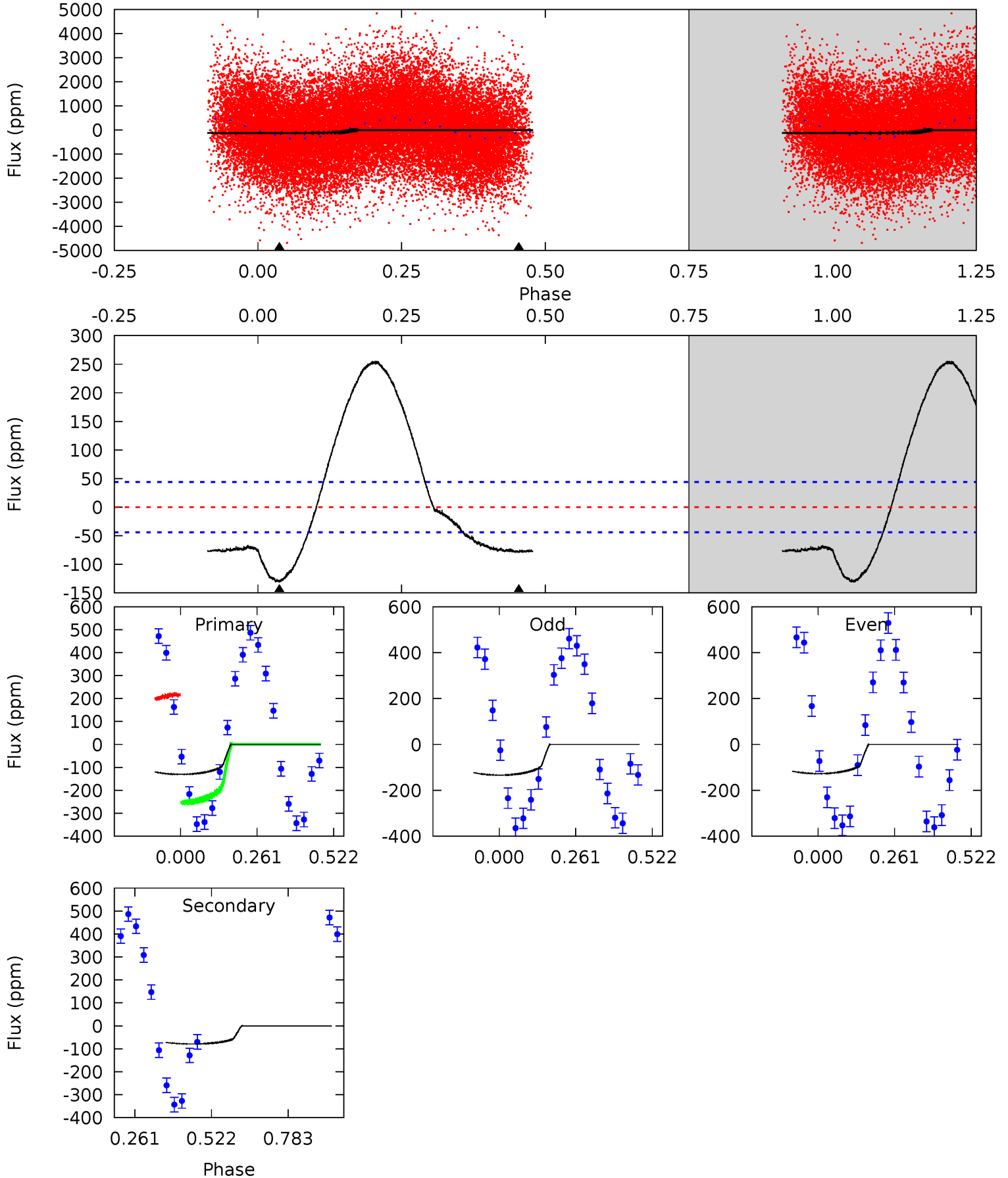
TCE 008570117-02 P= 0.748510 Days $T_0=131.775609$ (BKJD)



DV Model-Shift Uniqueness Test

008570117-02, P = 0.748499 Days, E = 131.730534 Days

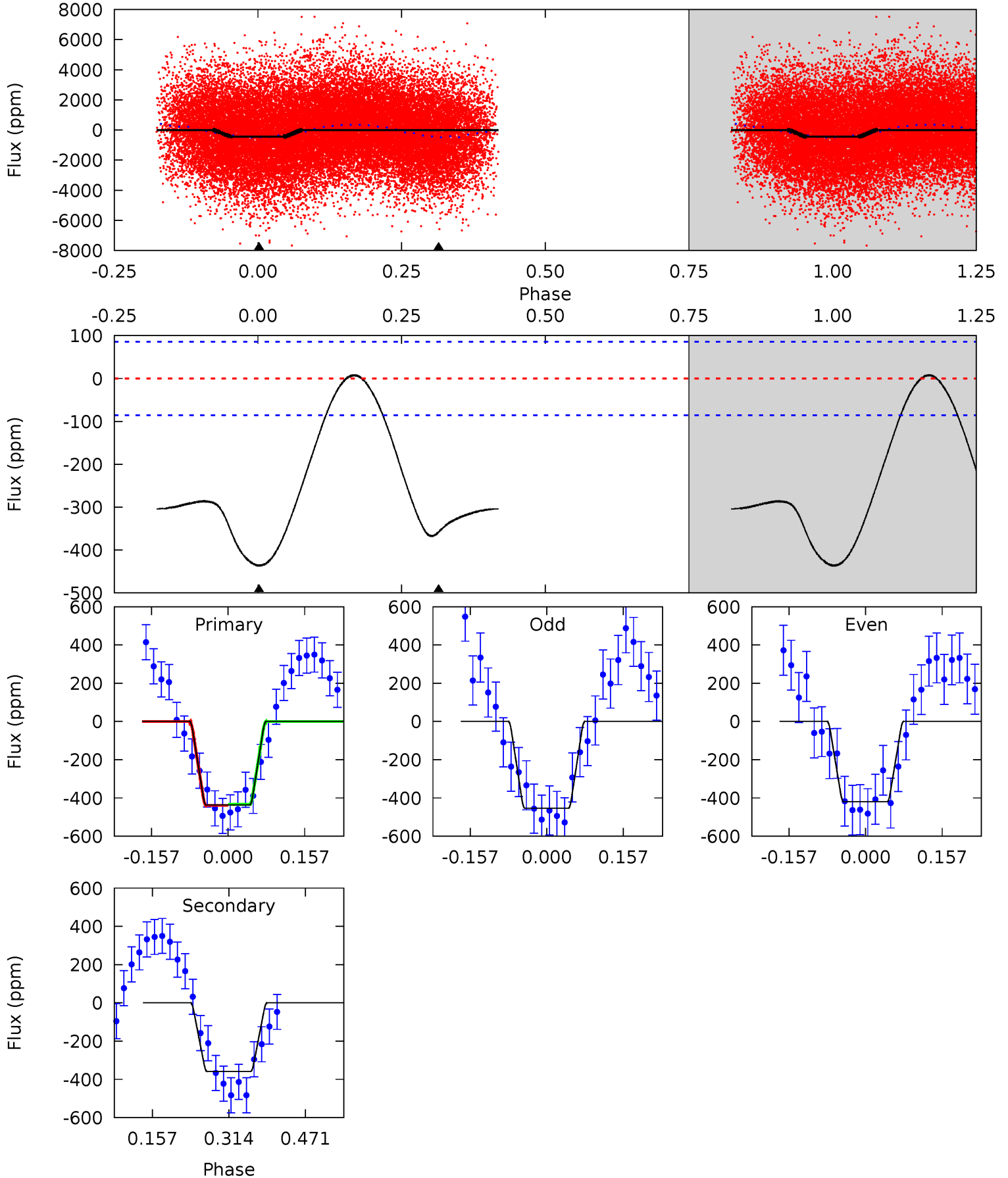
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	7.83	0	0	4.36	1.12	3.03	13.0	13.0	7.83	7.83	0.32	1.16	0.66	1.39



Alt Model-Shift Uniqueness Test

008570117-02, P = 0.748510 Days, E = 131.027099 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.8	18.7	0	0	4.47	1.41	5.85	22.8	22.8	18.7	18.7	0.88	1.11	0.02	0.15



Stellar Parameters For KIC 008570117

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8009^{+223}_{-335}	$3.990^{+0.204}_{-0.136}$	$-0.100^{+0.200}_{-0.300}$	$2.273^{+0.455}_{-0.625}$	$1.841^{+0.142}_{-0.331}$	$0.221^{+0.266}_{-0.092}$
	+3%/-4%	+5%/-3%	+200%/-300%	+20%/-27%	+8%/-18%	+120%/-42%
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 008570117-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-79 ± 10	$3.56^{+3.45}_{-2.36}$	5257^{+376}_{-397}	5657^{+6217}_{-2550}	$1.311^{+10.411}_{-0.974}$
Alt.	-358 ± 19	$5.86^{+4.23}_{-3.21}$	5252^{+360}_{-402}	6628^{+4969}_{-1788}	$2.189^{+9.133}_{-1.426}$

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 $A_{obs} \gg 1.0$

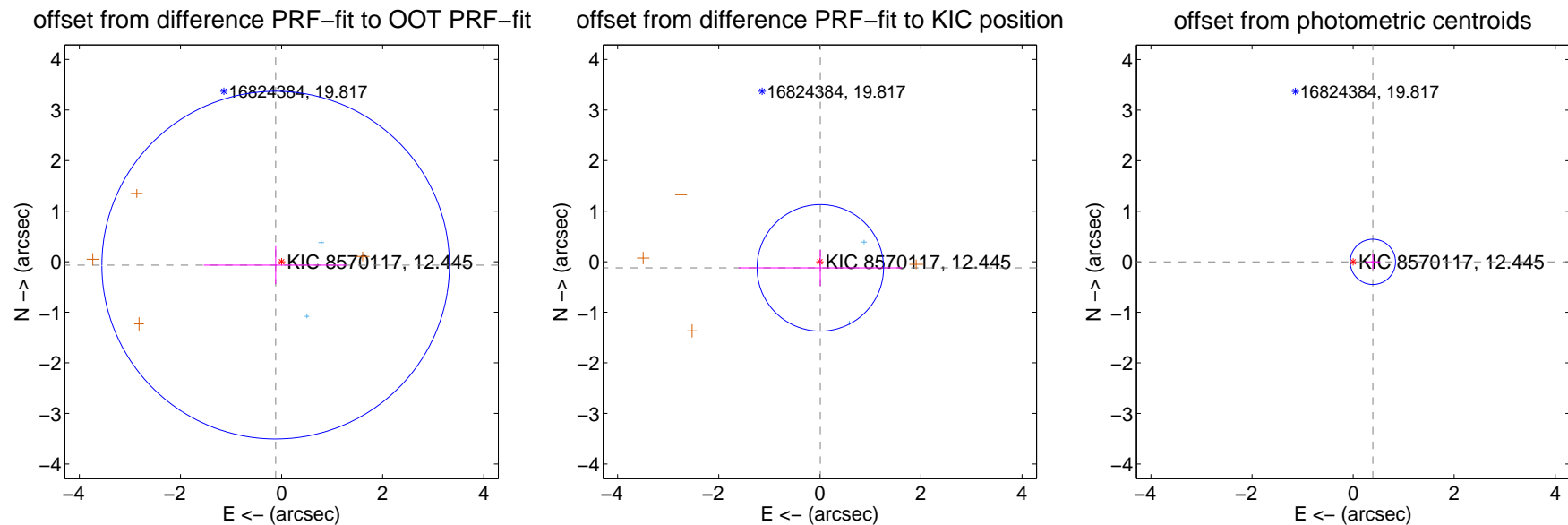
DV Centroid Data

Supplemental centroid analysis for 008570117-02. Kepler magnitude: 12.45. Transit SNR 4.04

There are 2 quarters with good PRF difference image offsets

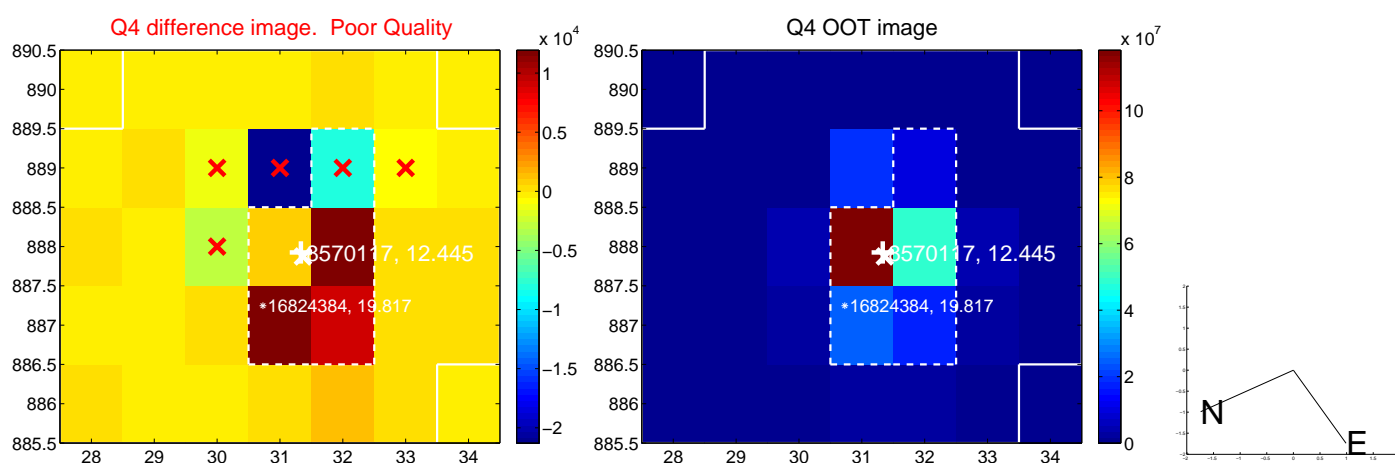
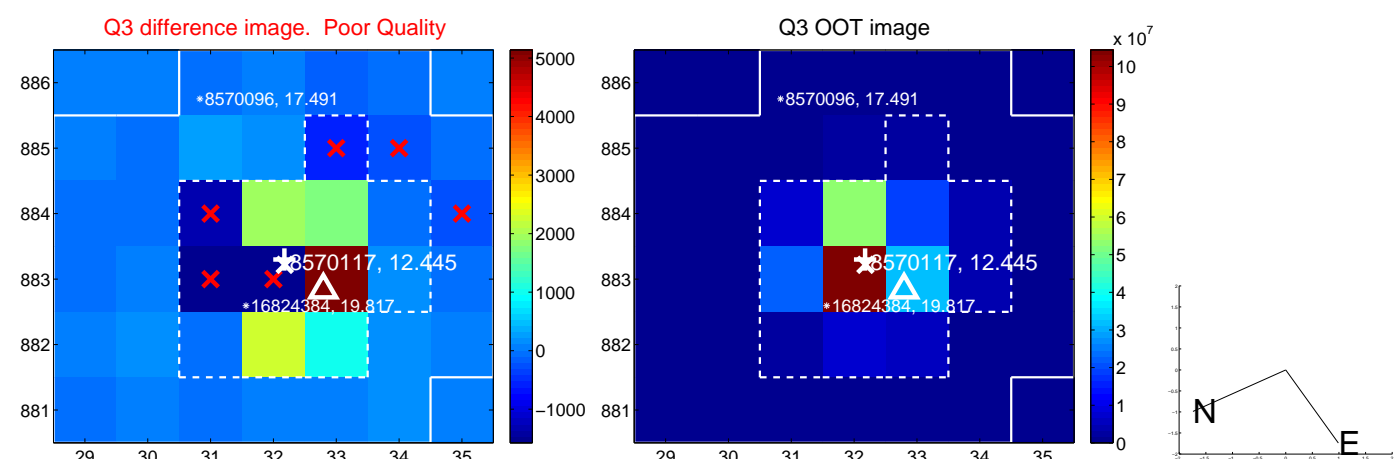
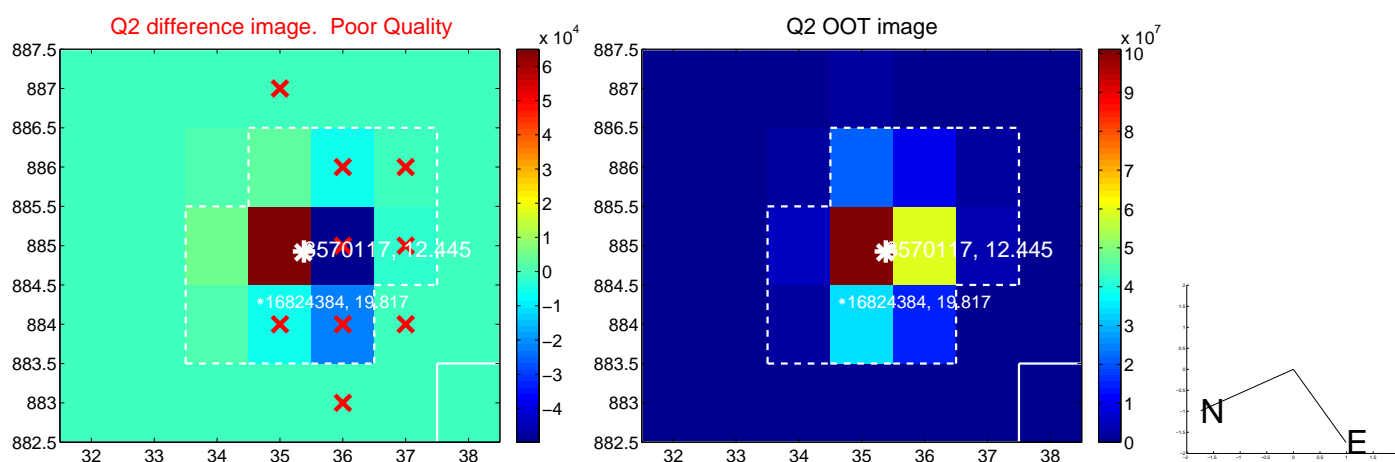
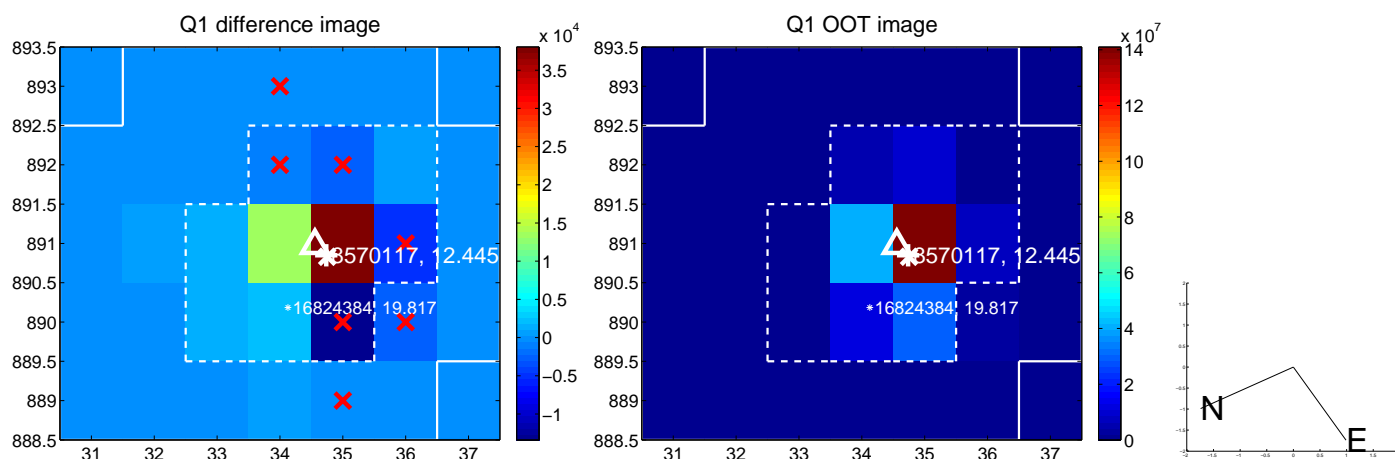
The direct PRF centroid is offset from the target star catalog position by about 0.34 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.135 ± 1.146	0.12	0.117 ± 1.422	-0.067 ± 0.377
PRF-fit source offset from KIC position	0.122 ± 0.417	0.29	-0.009 ± 1.617	-0.122 ± 0.358
photometric centroid source offset	0.39 ± 0.15	2.61	-0.39 ± 0.15	-0.00 ± 0.15

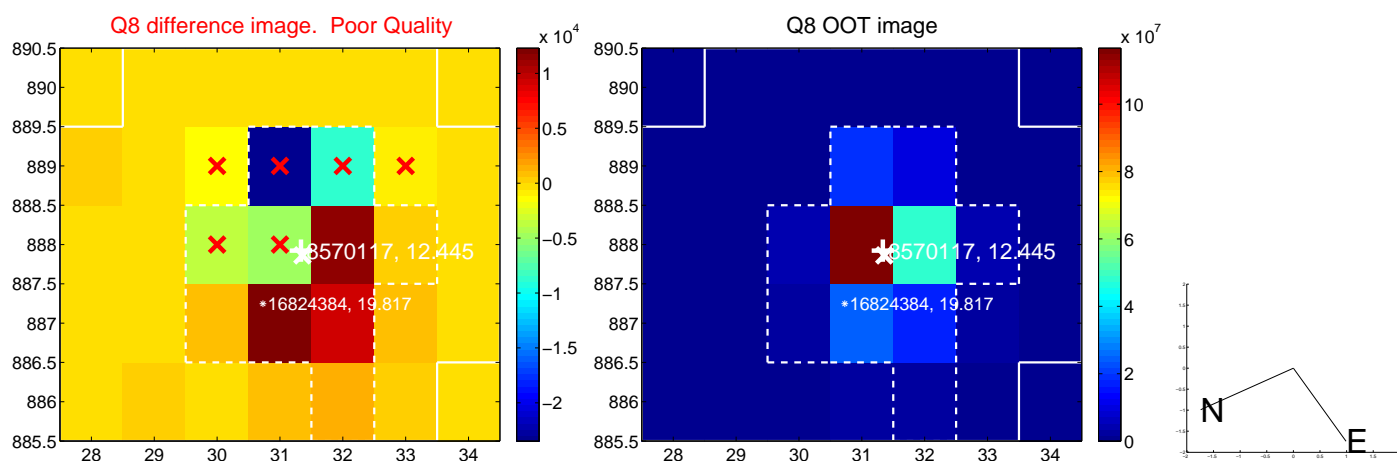
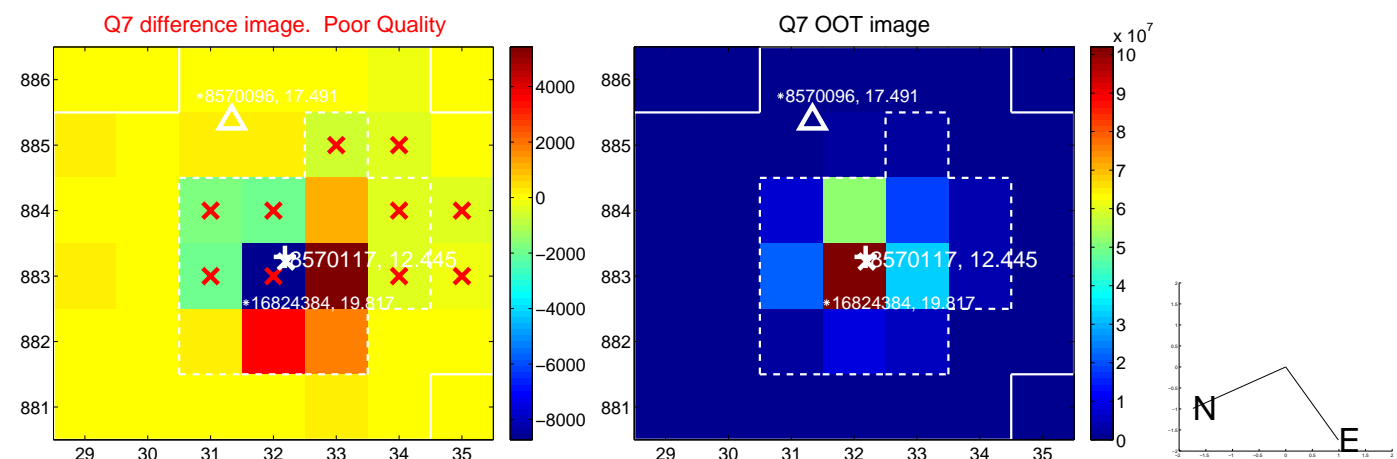
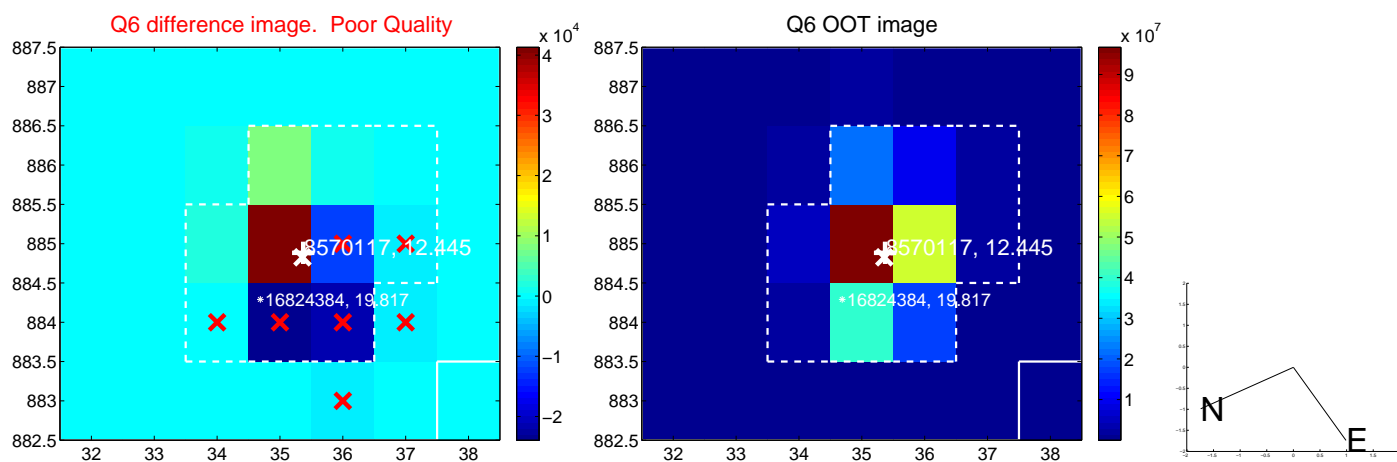
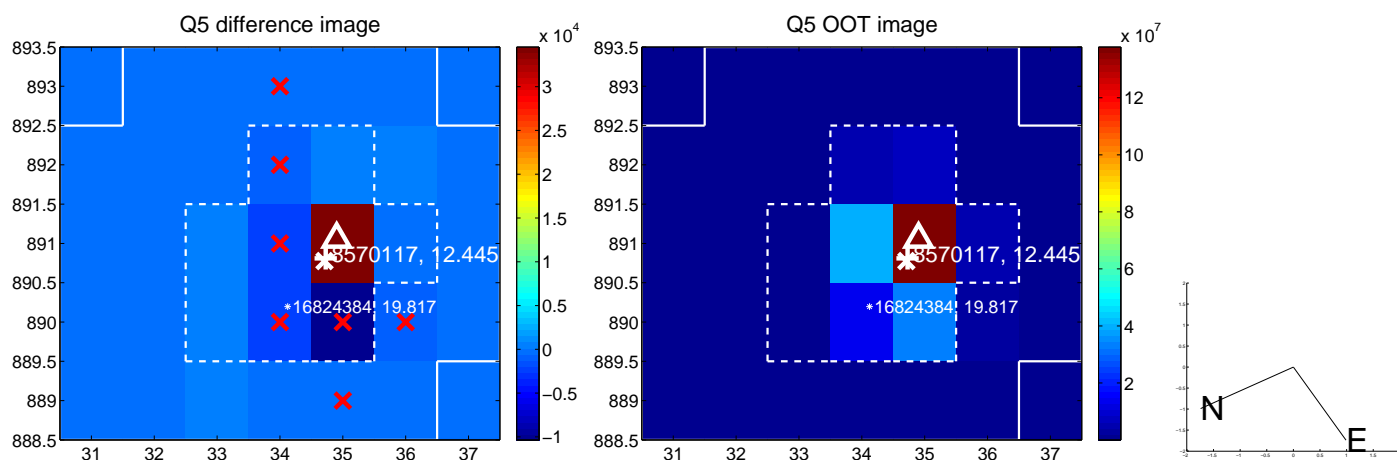


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

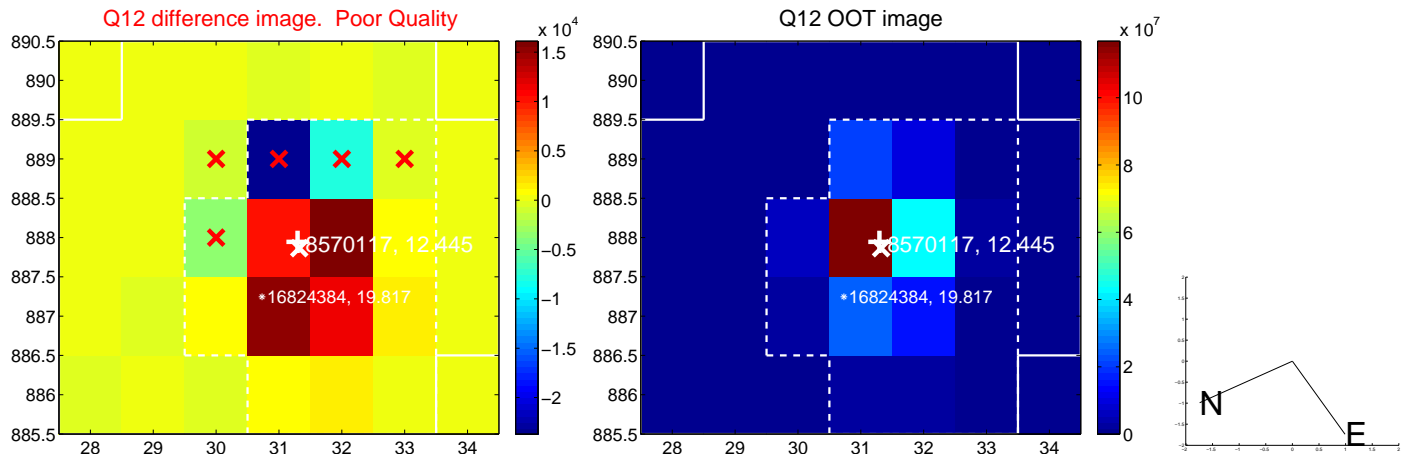
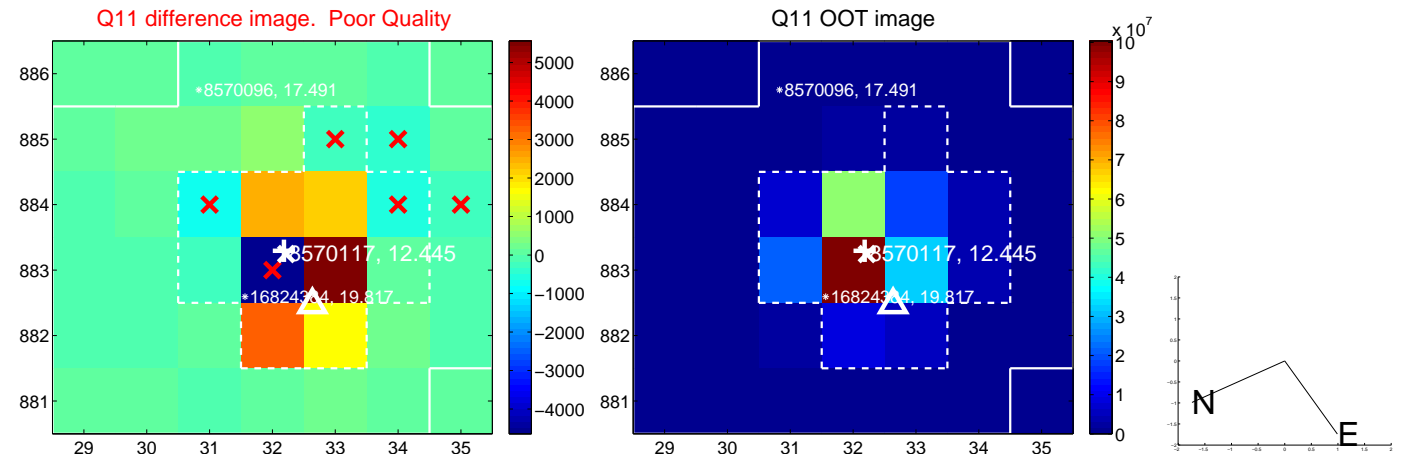
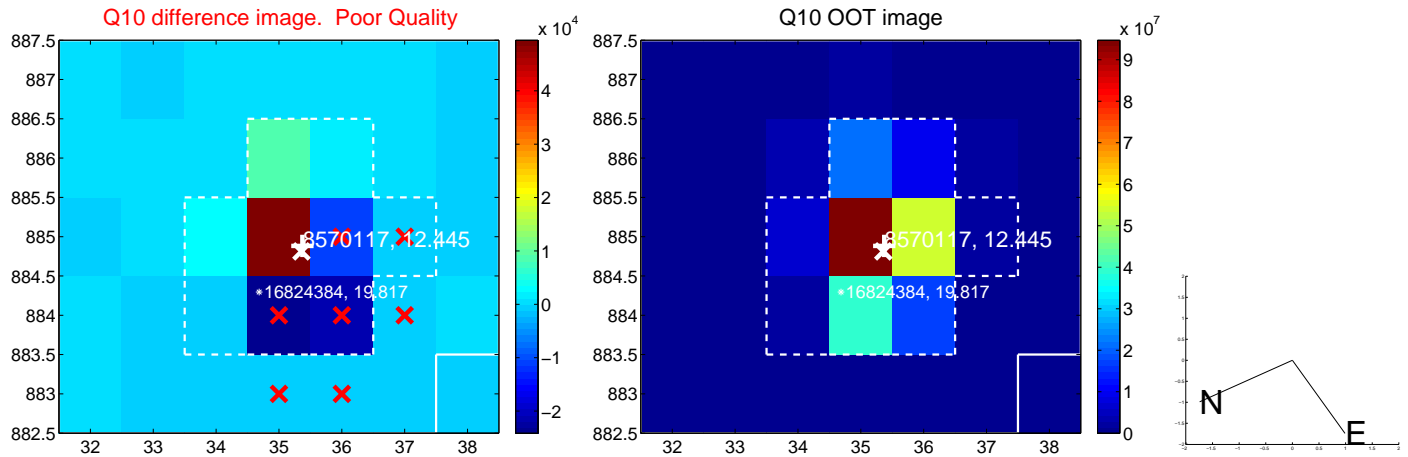
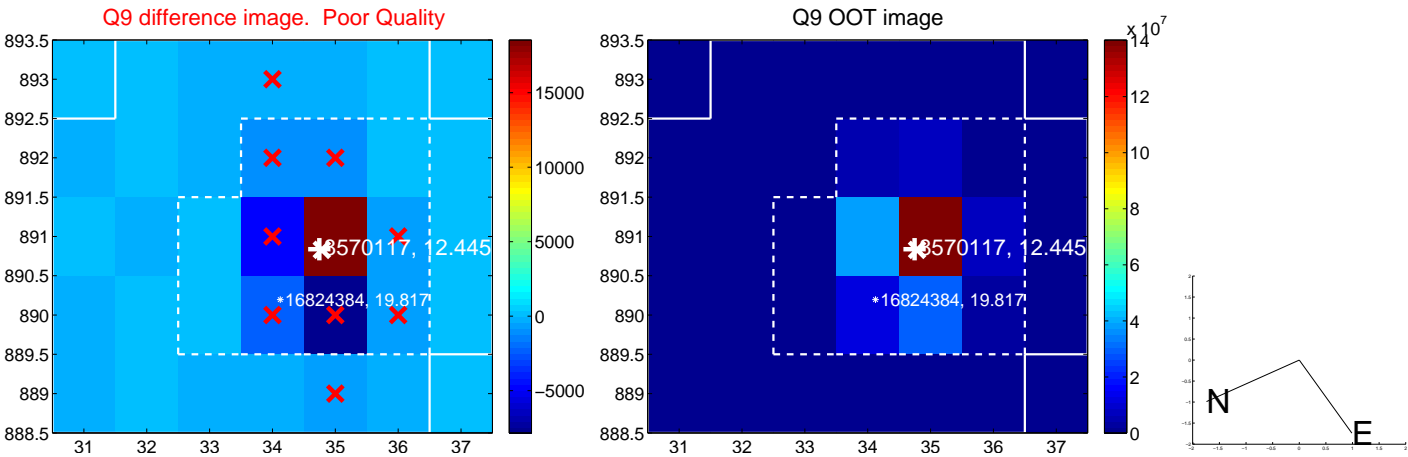
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



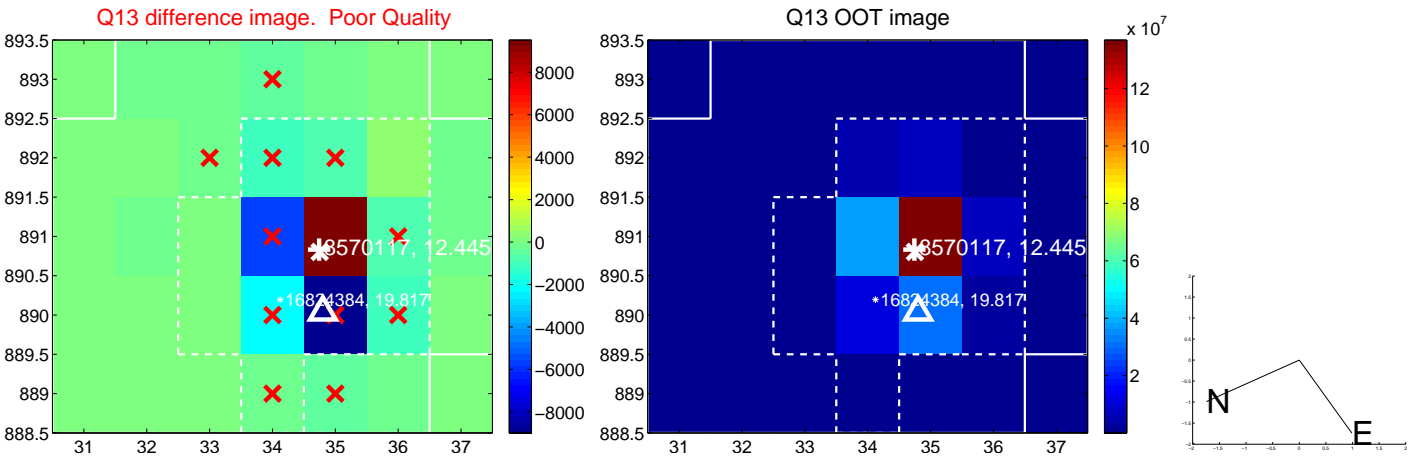
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



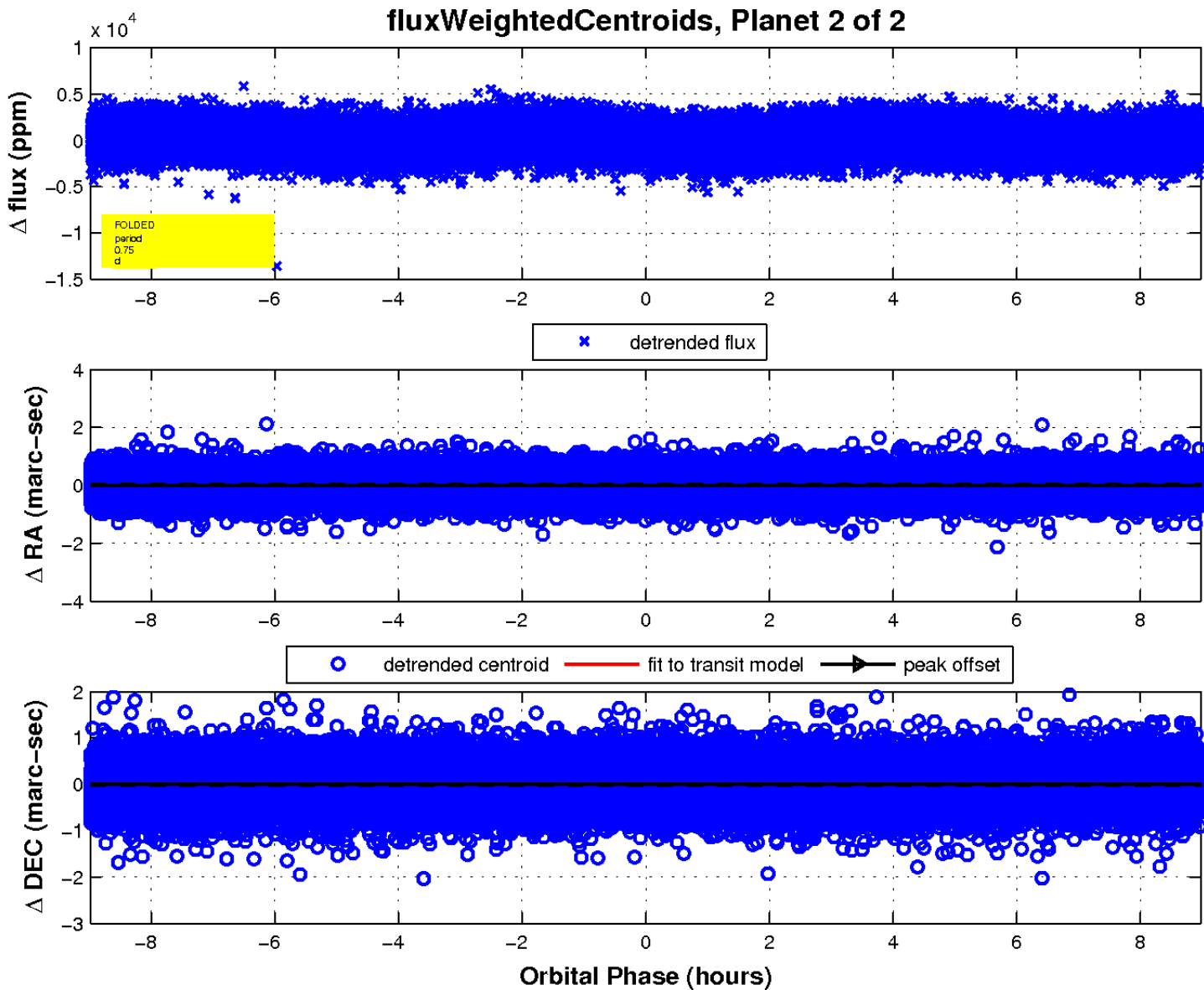
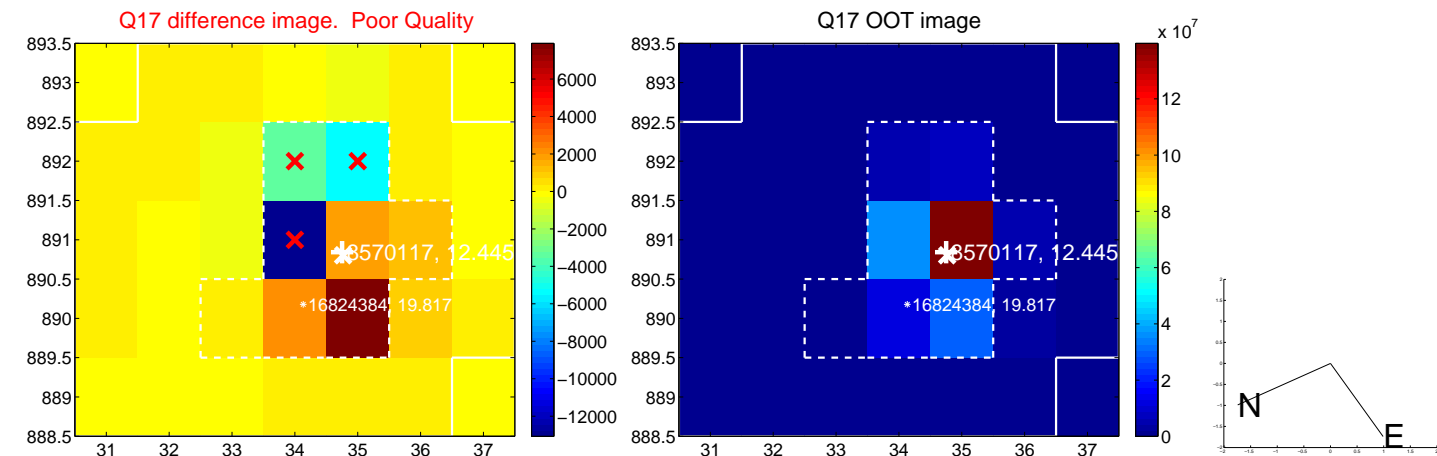
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

