

KIC 003758520

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})
003758520-01	OBS	No	11.792838	141.490520	48.7	21.797	9.5	8.9	2.08	6963	1.54	658.99
003758520-02	OBS	No	3.928955	132.800672	2.8	35.745	8.3	0.9	2.08	6963	0.40	2853.22

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003758520-01	OBS	FP	0.00	1	0	0	0	LPP_DV
003758520-02	OBS	FP	0.00	1	0	0	0	LPP_DV—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.

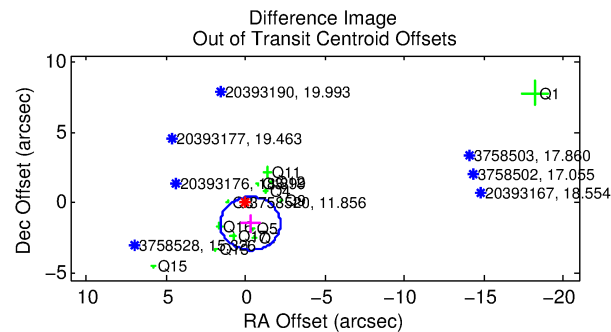
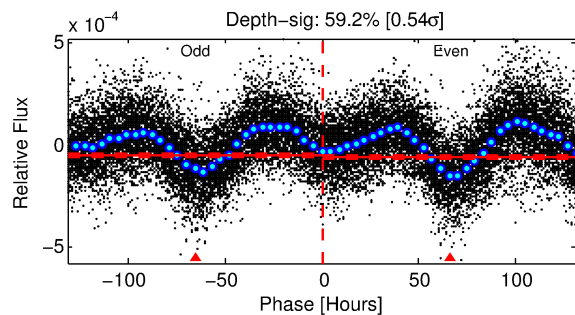
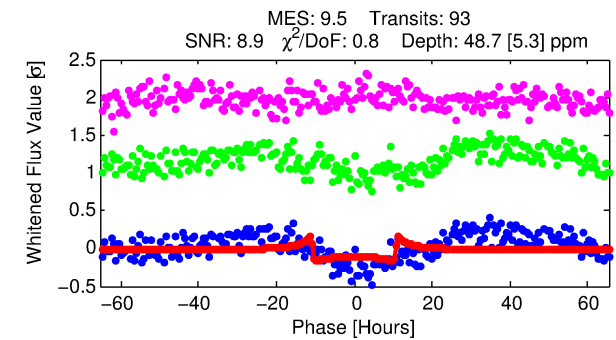
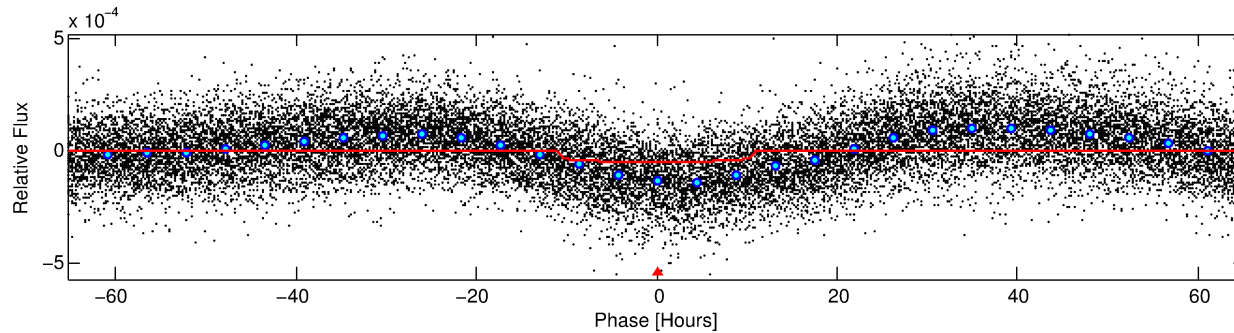
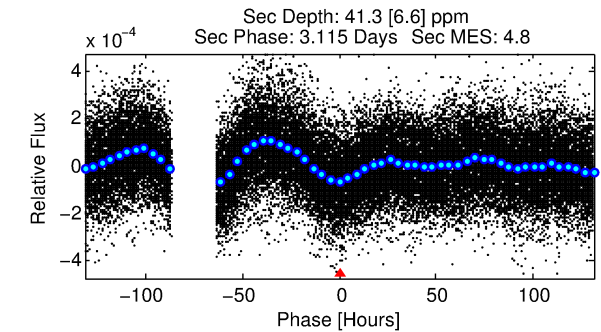
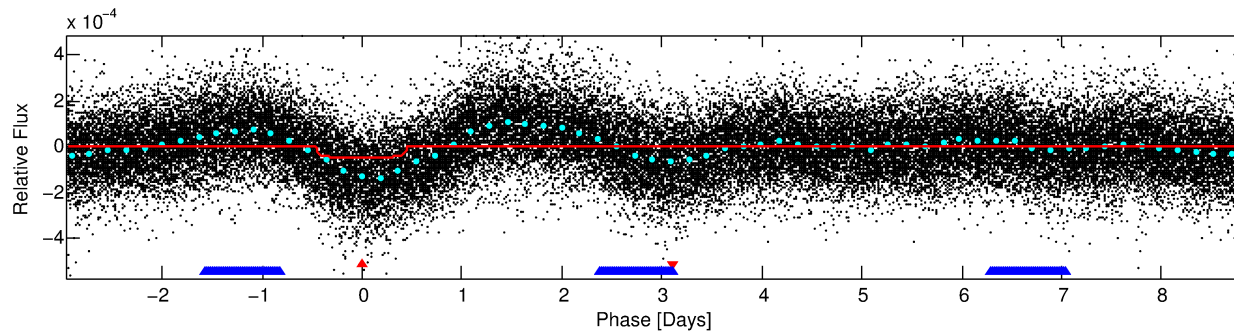
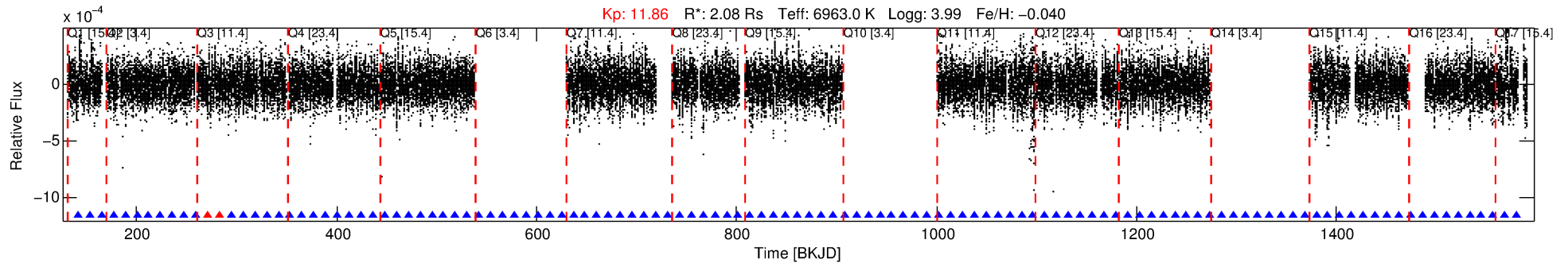
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003758520-01

No Significant Match Found

DV One-Page Summary

KIC: 3758520 Candidate: 1 of 2 Period: 11.793 d



DV Fit Results:

Period = 11.79284 [0.00014] d
Epoch = 141.4905 [0.0093] BKJD
Rp/R* = 0.0068 [0.0008]
a/R* = 3.20 [1.77]
b = 0.67 [0.50]
Seff = 658.99 [310.50]
Teq = 1292 [152] K
Rp = 1.54 [0.53] Re
a = 0.1174 [0.0337] AU
Ag = 131.64 [68.91] [1.90σ]
Teffp = 6766 [580] K [9.13σ]

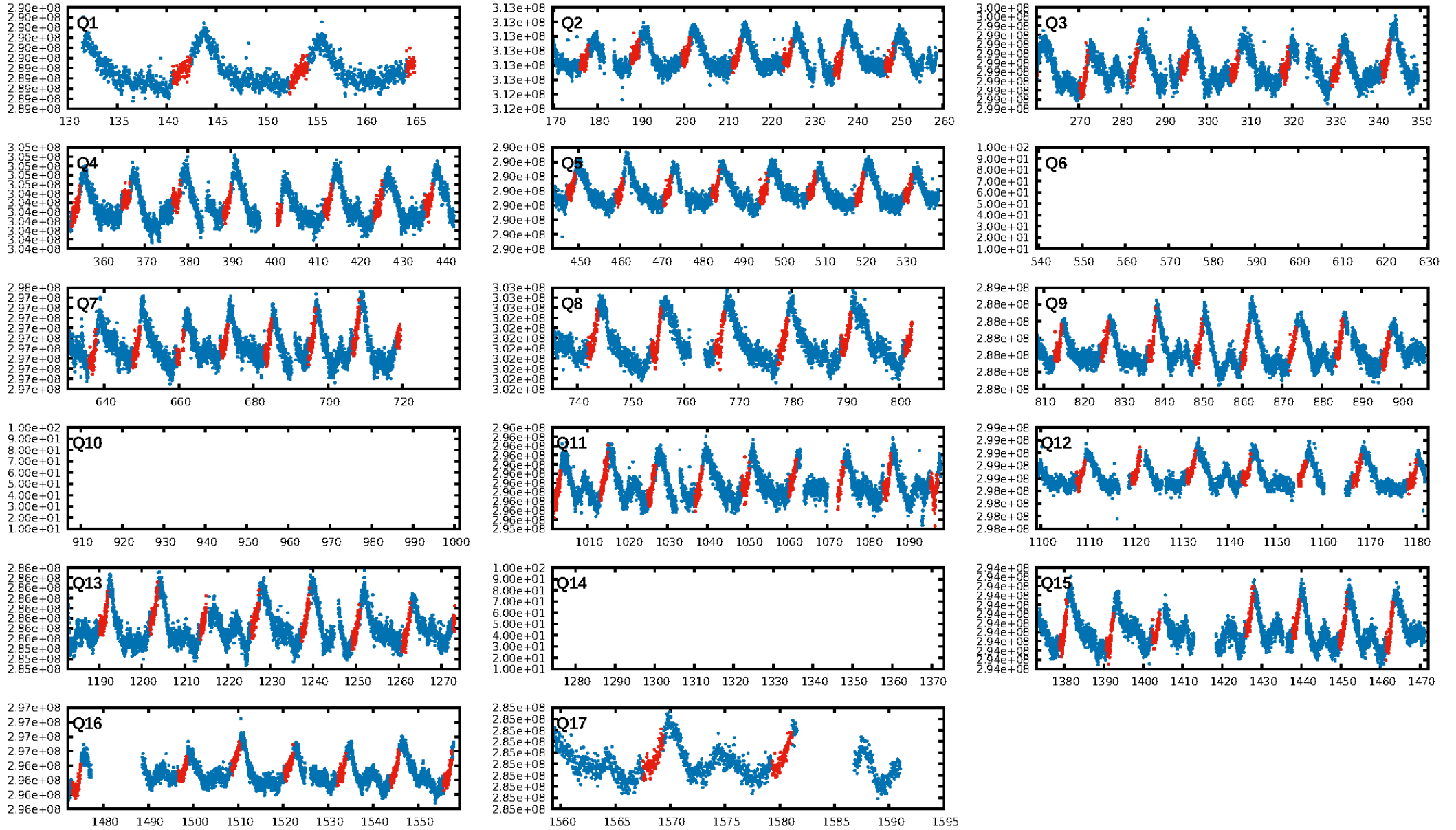
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.51σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 98.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.98 [86/88]
GhostDiagnostic-chr: 1.455
Centroid-sig: 44.3%
Centroid-so: 1.408 arcsec [1.57σ]
OotOffset-rm: 1.513 arcsec [2.40σ]
KicOffset-rm: 1.547 arcsec [2.37σ]
OotOffset-st: 0/4/4/5 [13]
KicOffset-st: 0/4/4/5 [13]
DiffImageQuality-fgm: 0.77 [10/13]
DiffImageOverlap-fno: 0.00 [0/14]

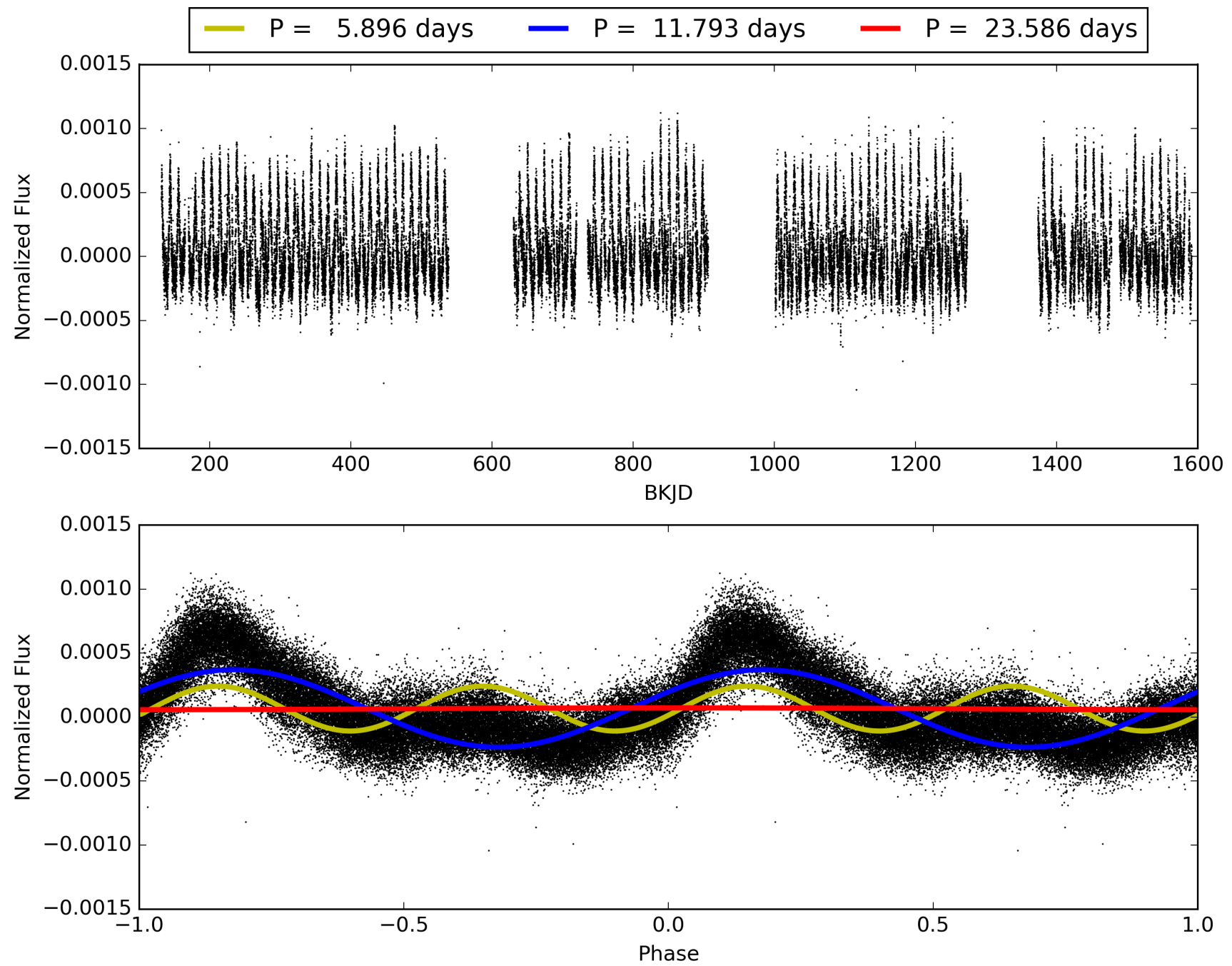
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:53:54 Z

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

TCE 003758520-01, PDC Light Curves

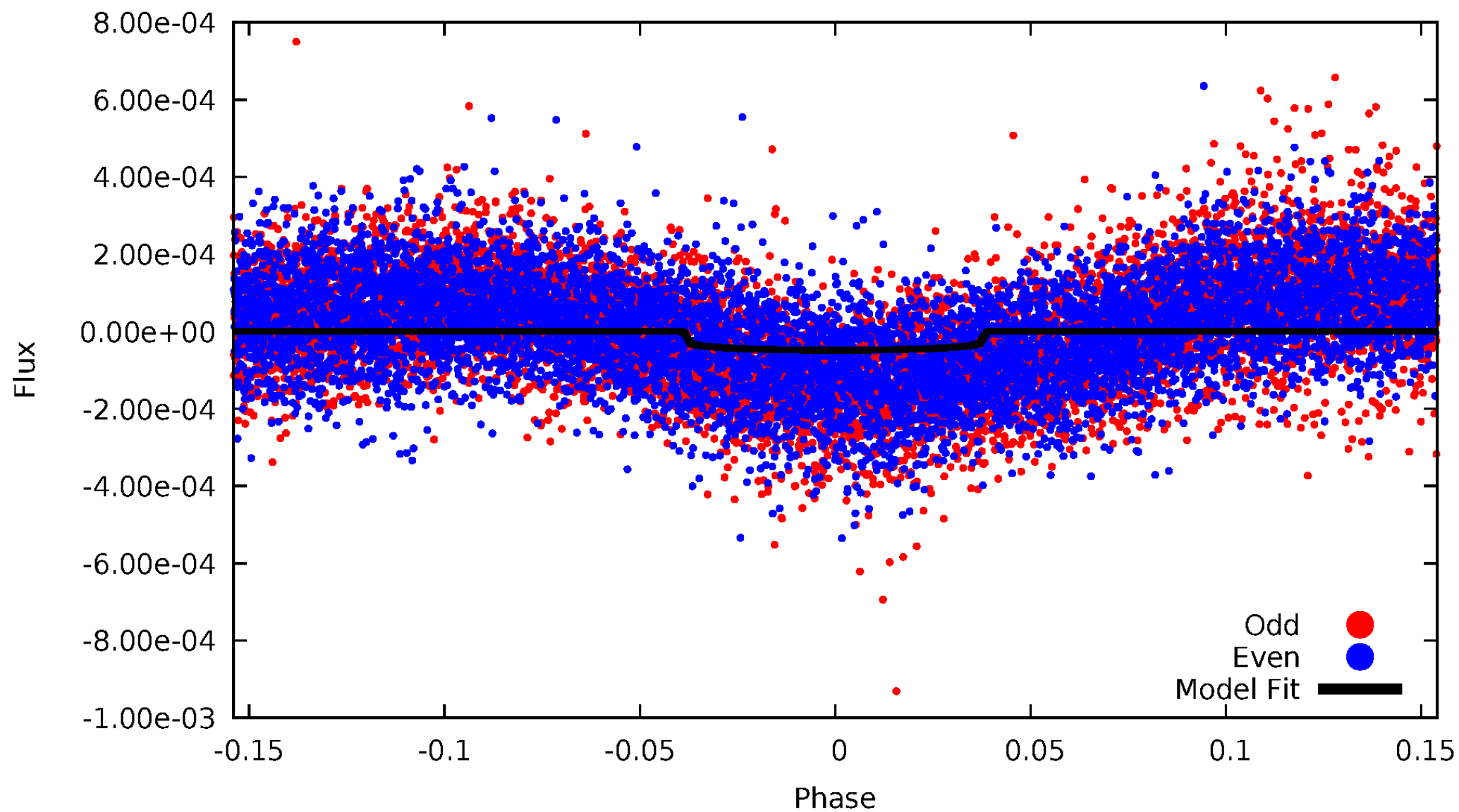


TCE 003758520-01



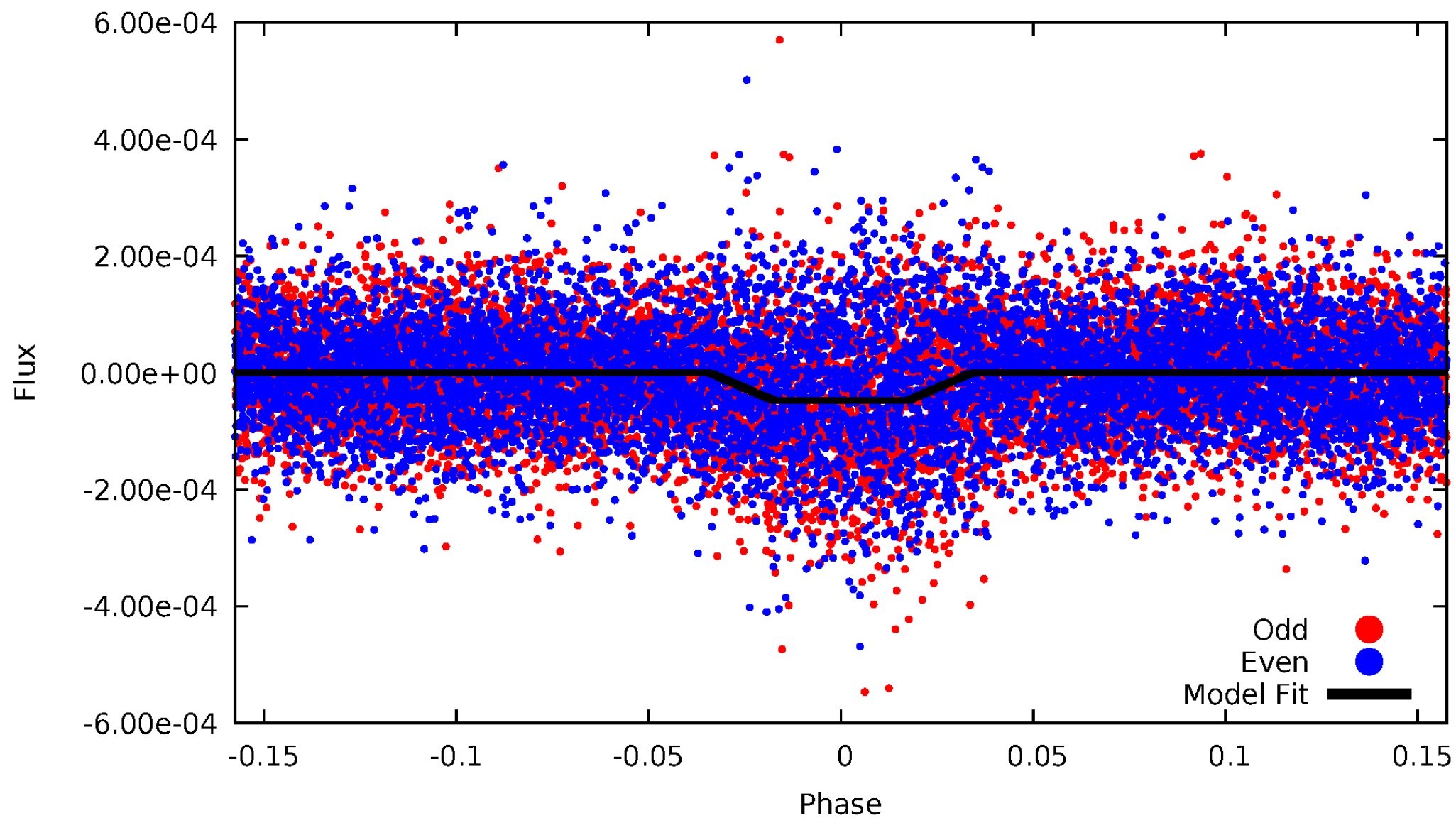
DV Odd/Even

TCE 003758520-01



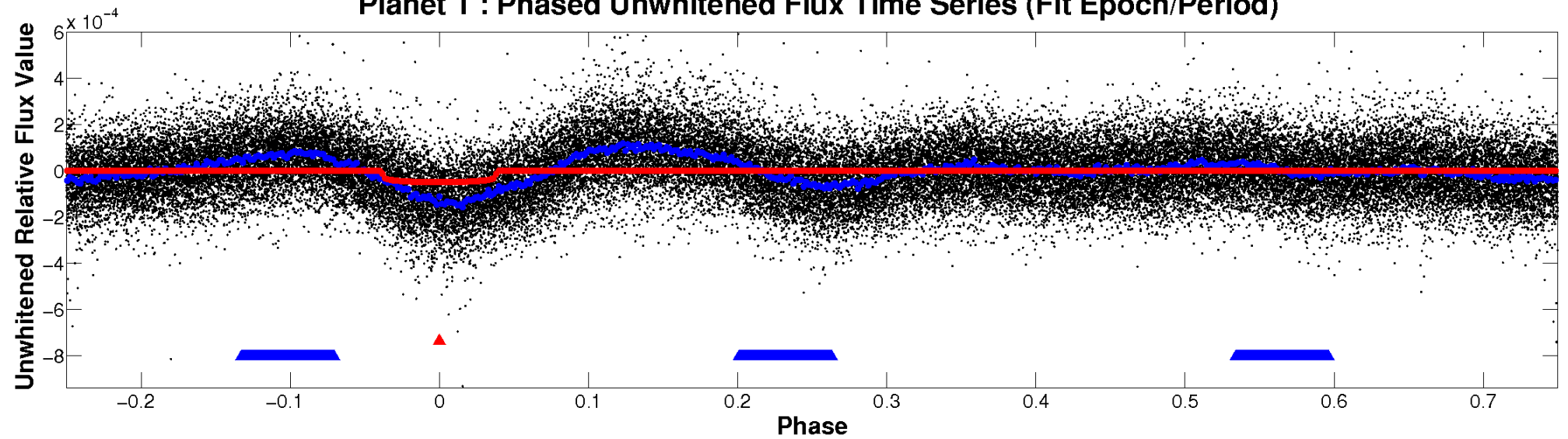
ALT Odd/Even

TCE 003758520-01

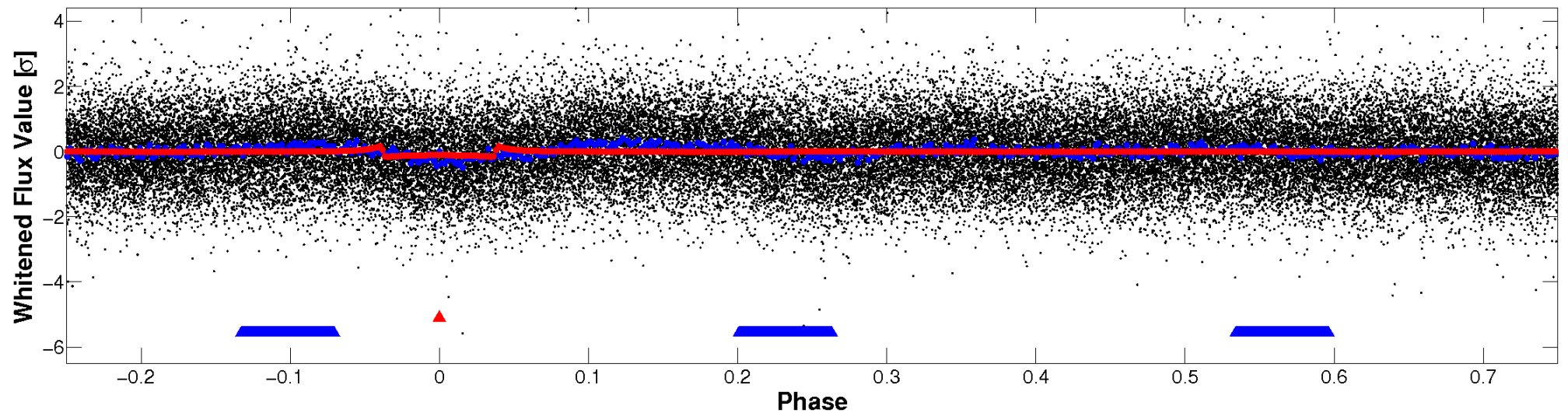


Non-Whitened Vs. Whitened Light Curve

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

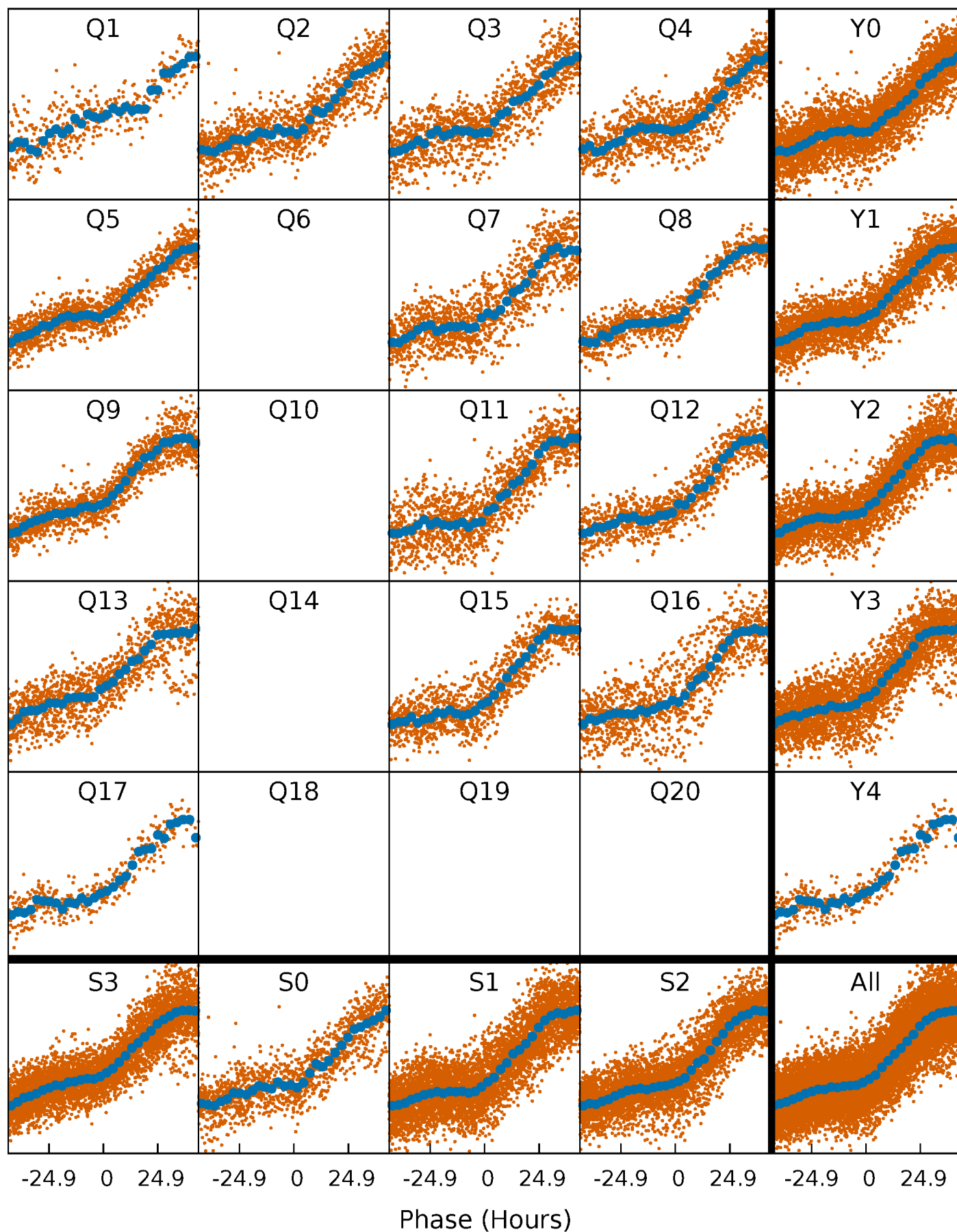


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



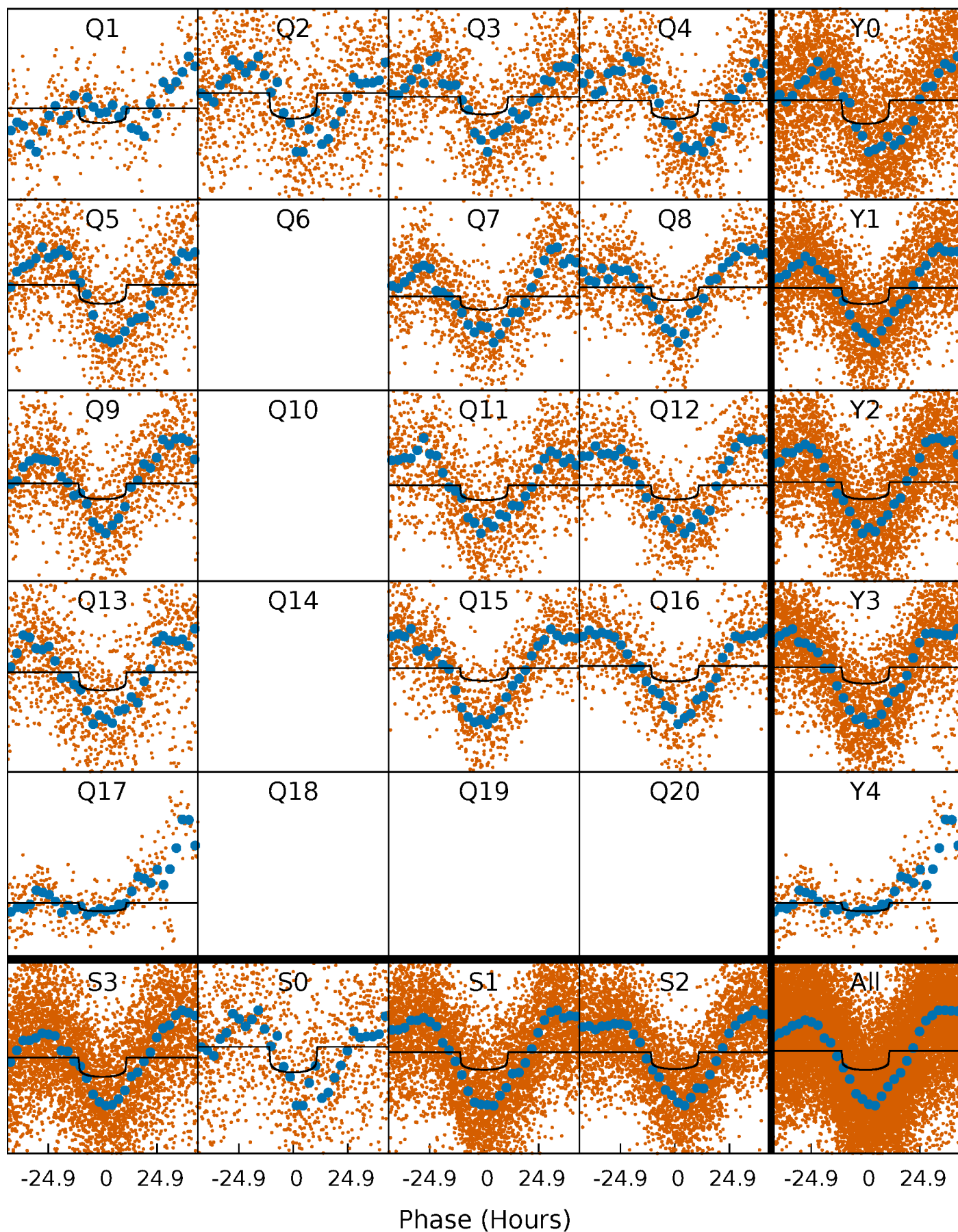
PDC Quarter-Phased Transit Curves

TCE 003758520-01 P= 11.792838 Days $T_0=141.490520$ (BKJD)



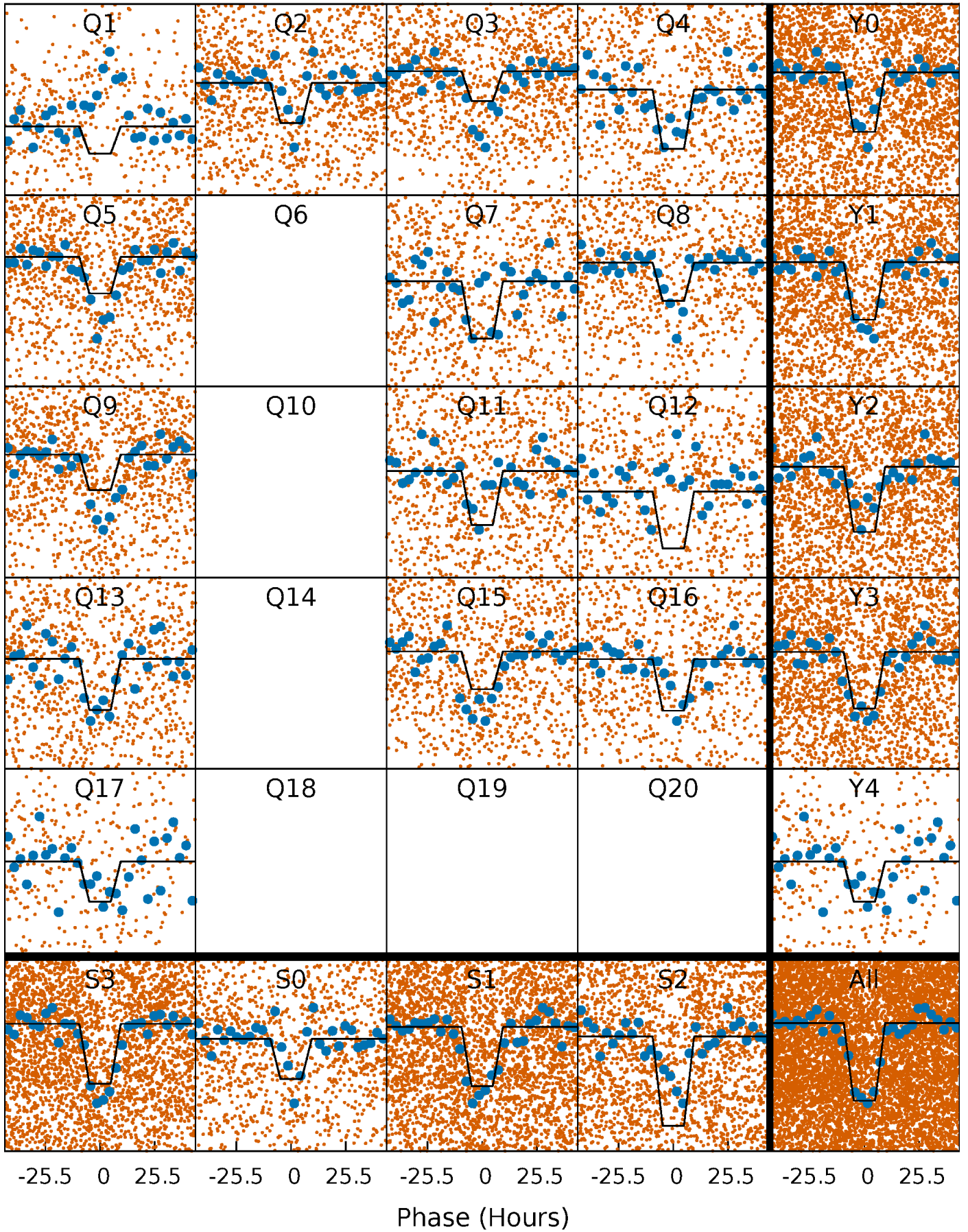
DV Quarter-Phased Transit Curves

TCE 003758520-01 P= 11.792838 Days $T_0=141.490520$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

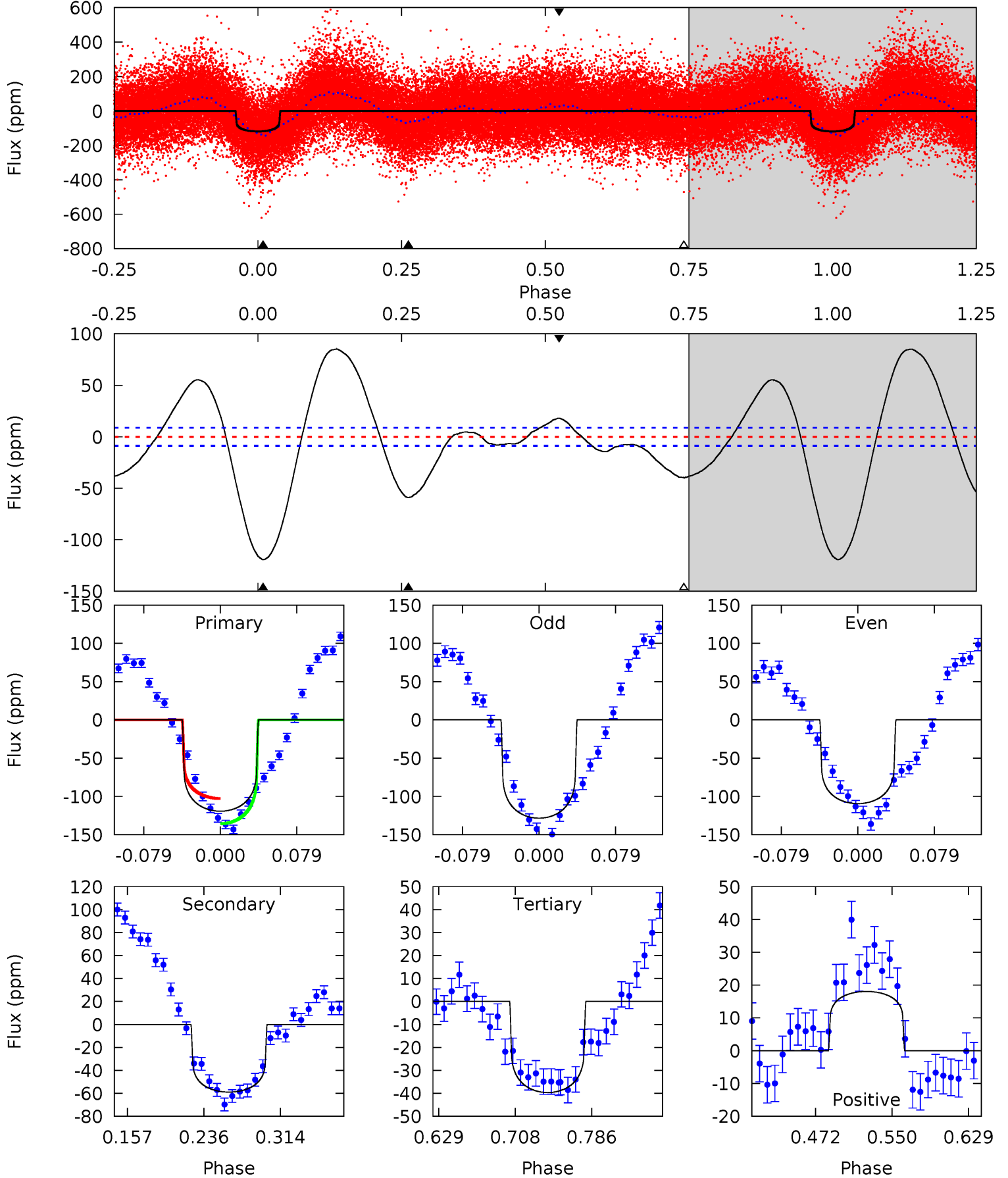
TCE 003758520-01 P= 11.792703 Days $T_0=141.498329$ (BKJD)



DV Model-Shift Uniqueness Test

003758520-01, P = 11.792838 Days, E = 129.697682 Days

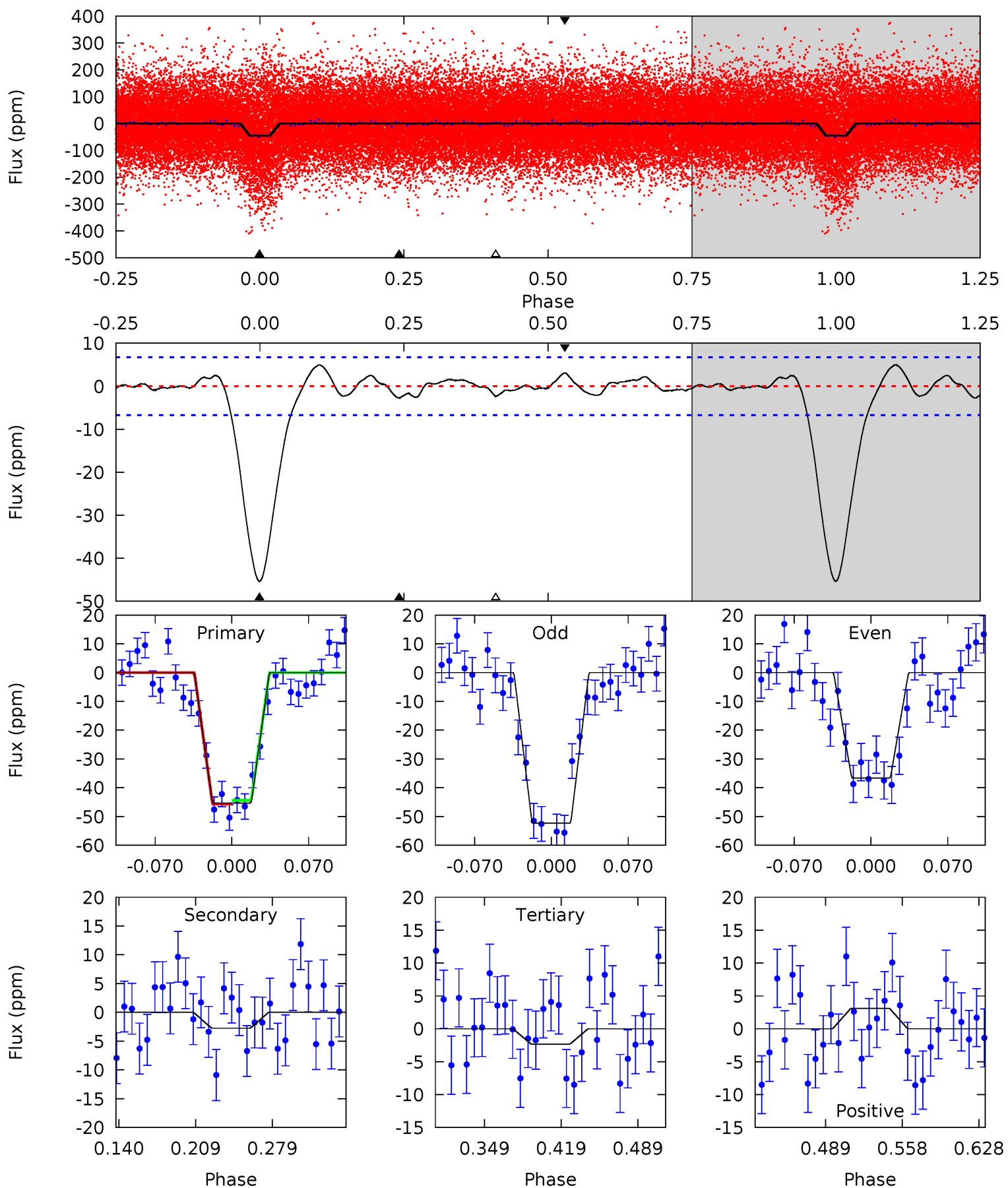
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
62.7	31.0	20.8	9.49	4.62	1.76	17.2	41.9	53.2	10.1	21.5	4.99	1.07	0.42	8.52



Alt Model-Shift Uniqueness Test

003758520-01, P = 11.792703 Days, E = 129.705626 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.3	1.90	1.61	2.15	4.64	1.81	1.01	29.7	29.1	0.29	-0.25	5.39	1.08	0.10	0.45



Stellar Parameters For KIC 003758520

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6963^{+194}_{-315}	$3.994^{+0.246}_{-0.164}$	$-0.040^{+0.250}_{-0.300}$	$2.077^{+0.612}_{-0.673}$	$1.552^{+0.221}_{-0.295}$	$0.244^{+0.371}_{-0.112}$
	+3%/-5%	+6%/-4%	+625%/-750%	+29%/-32%	+14%/-19%	+152%/-46%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 003758520-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-59 ± 2	$1.50^{+0.34}_{-0.28}$	1784^{+147}_{-160}	7389^{+635}_{-523}	197^{+95}_{-64}
Alt.	-3 ± 1	$1.51^{+0.31}_{-0.28}$	1778^{+147}_{-137}	3769^{+363}_{-466}	$9.206^{+6.795}_{-5.173}$

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

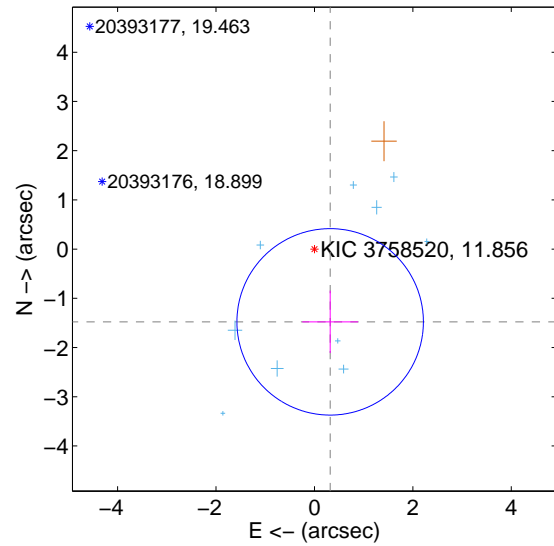
Supplemental centroid analysis for 003758520-01. **Kepler magnitude: 11.86.** Transit SNR 8.95

There are 10 quarters with good PRF difference image offsets

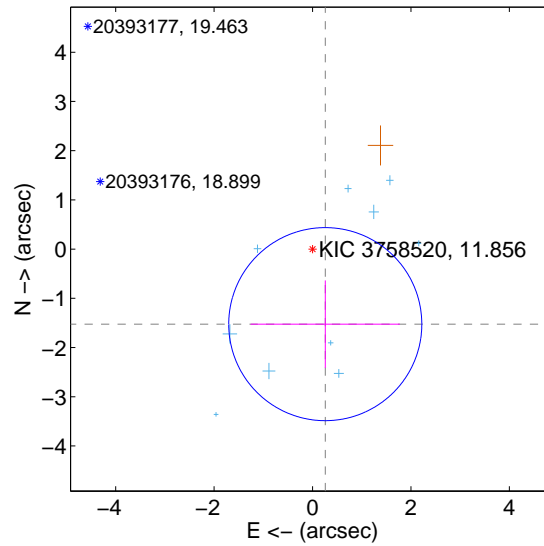
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.513 ± 0.631	2.40	-0.319 ± 0.568	-1.479 ± 0.634
PRF-fit source offset from KIC position	1.547 ± 0.654	2.37	-0.259 ± 1.516	-1.525 ± 0.889
photometric centroid source offset	1.41 ± 0.90	1.57	1.14 ± 0.93	-0.82 ± 0.82

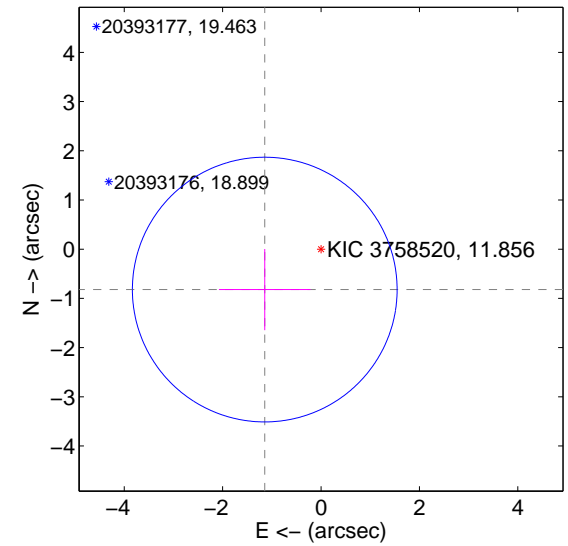
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

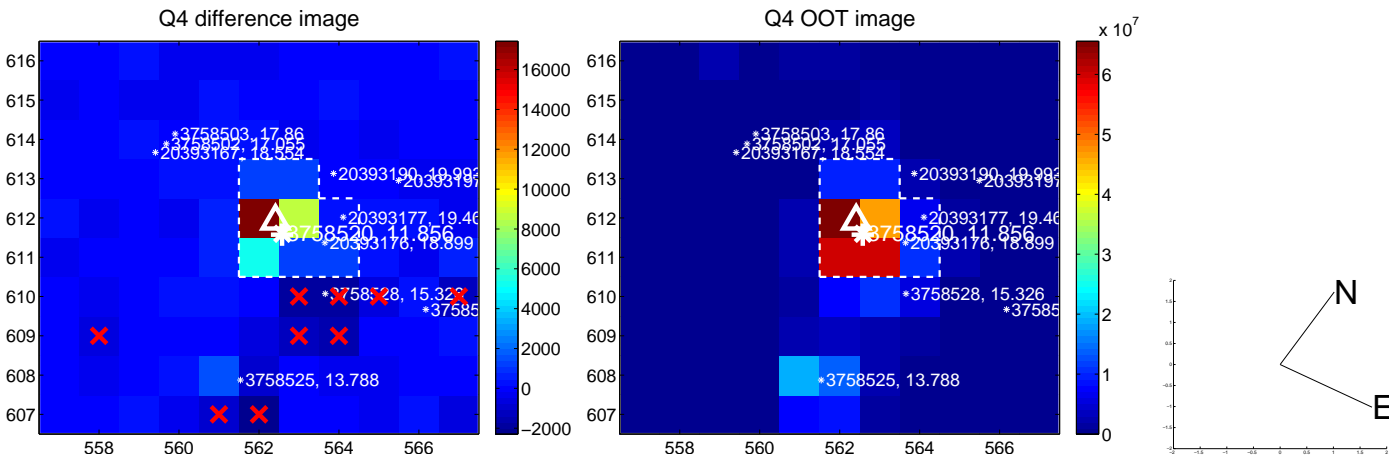
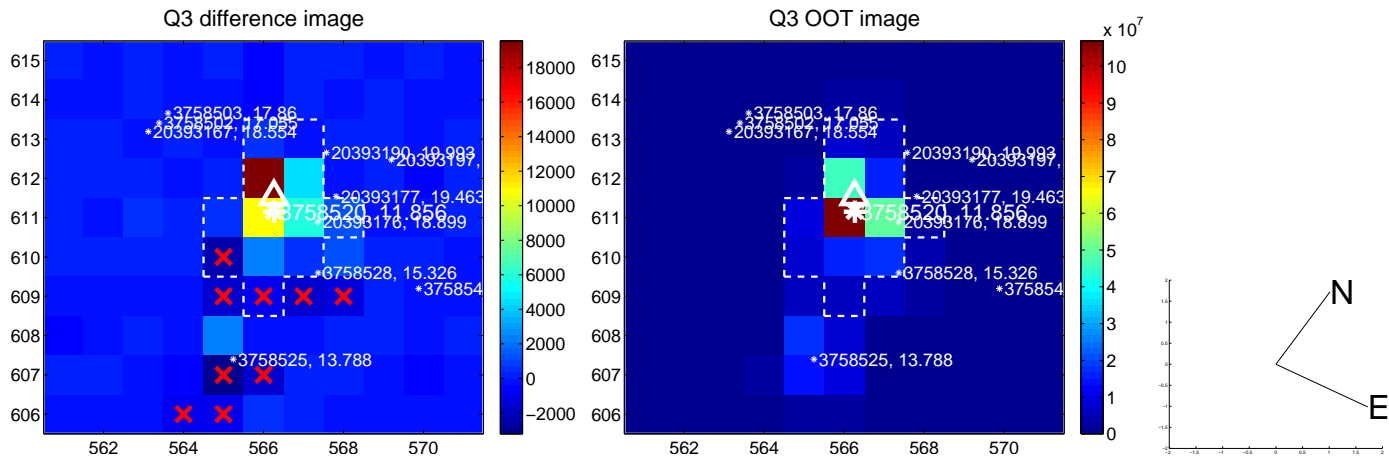
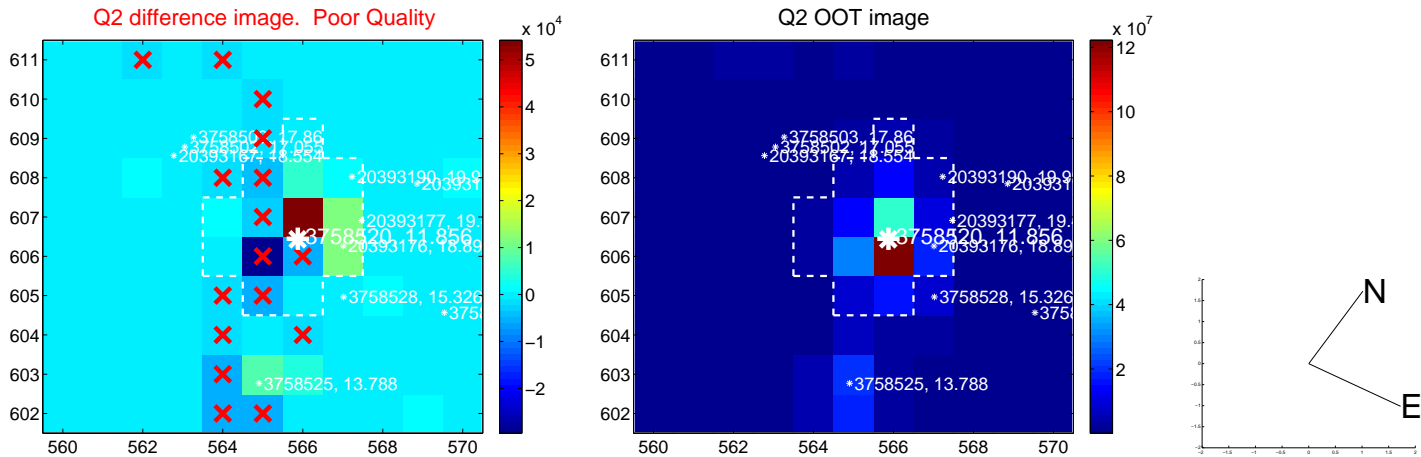
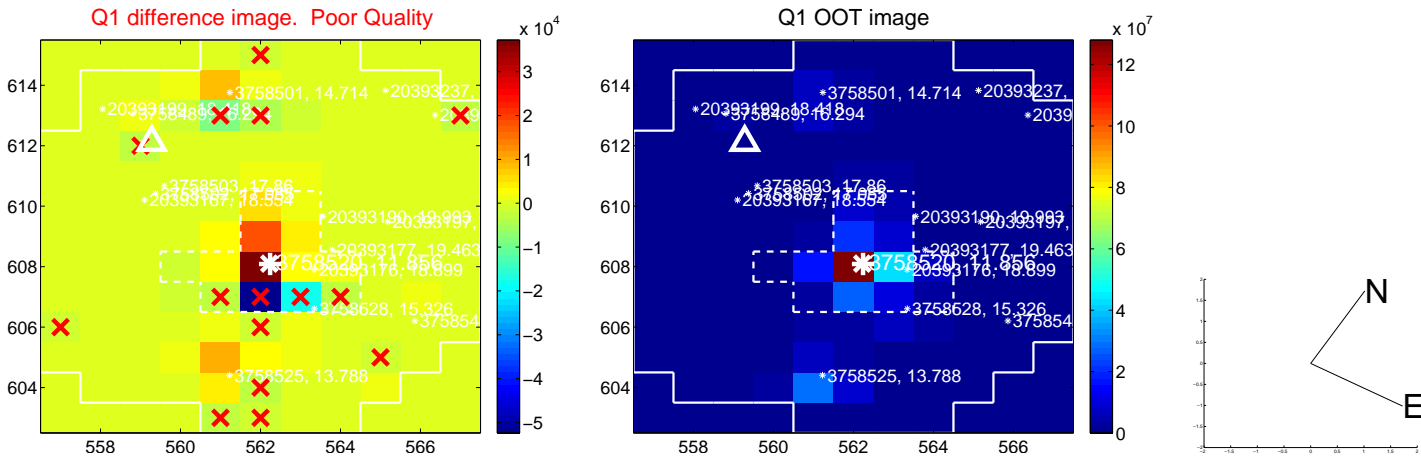


offset from photometric centroids

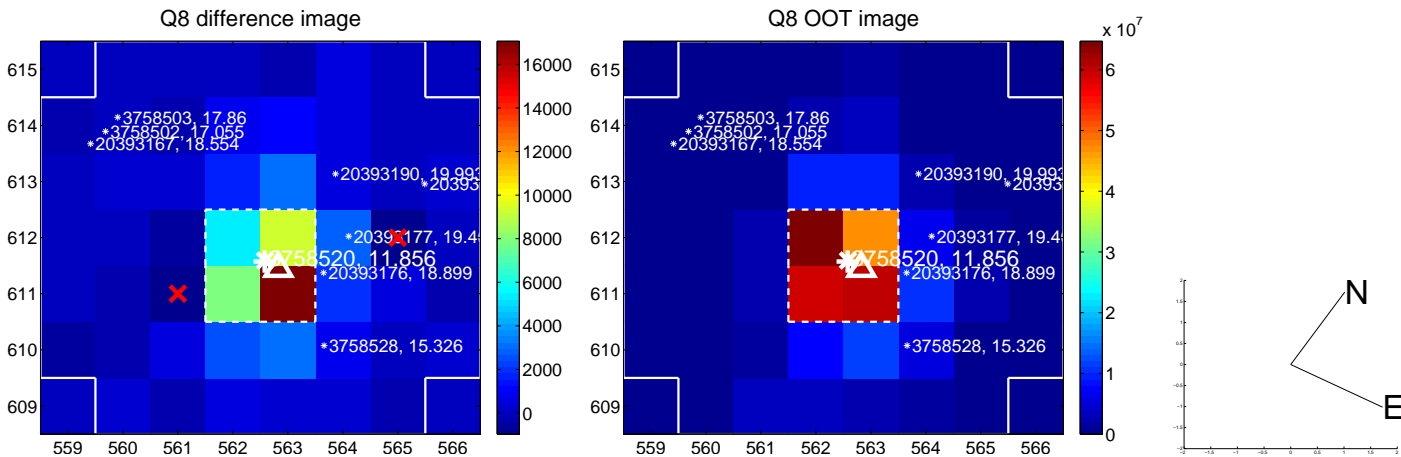
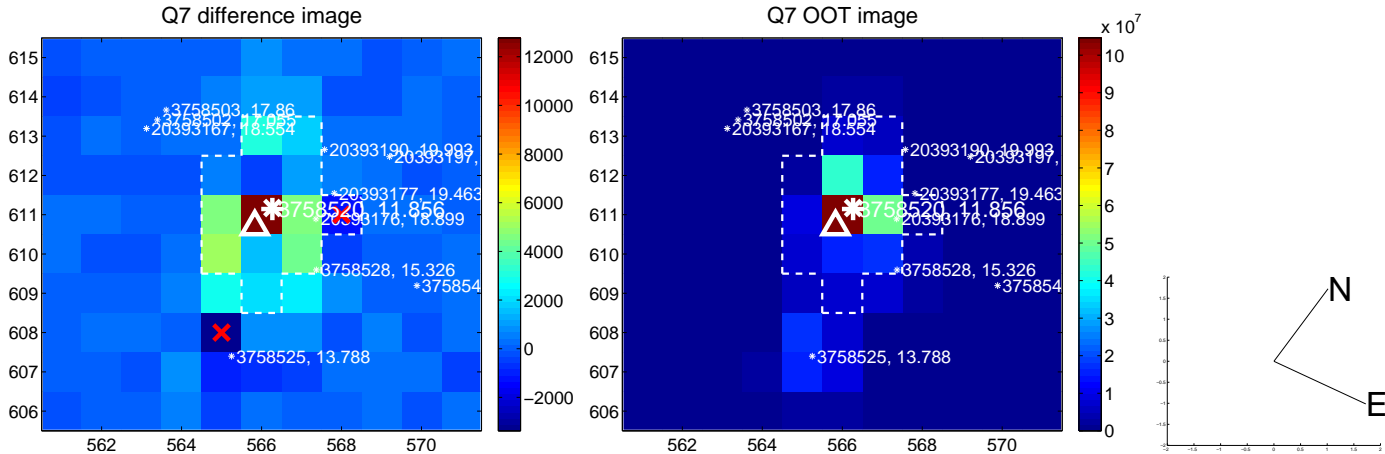
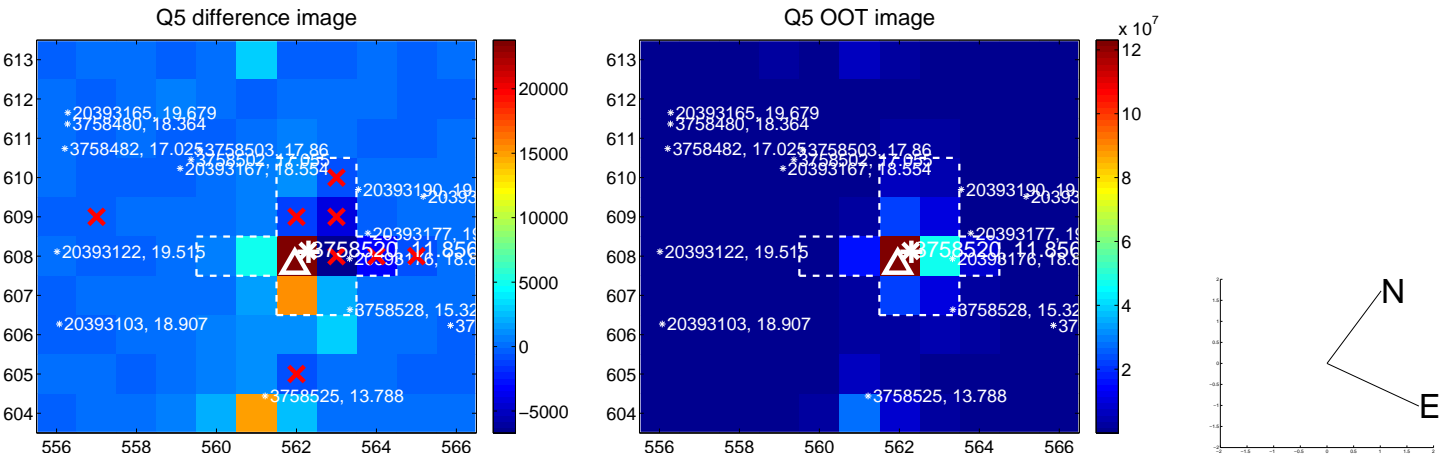


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

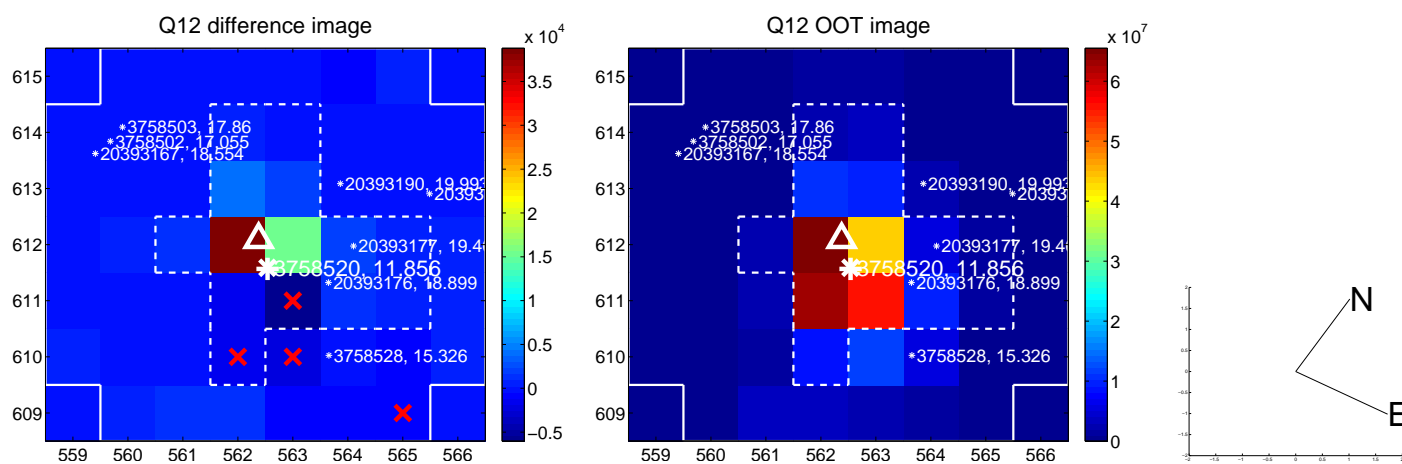
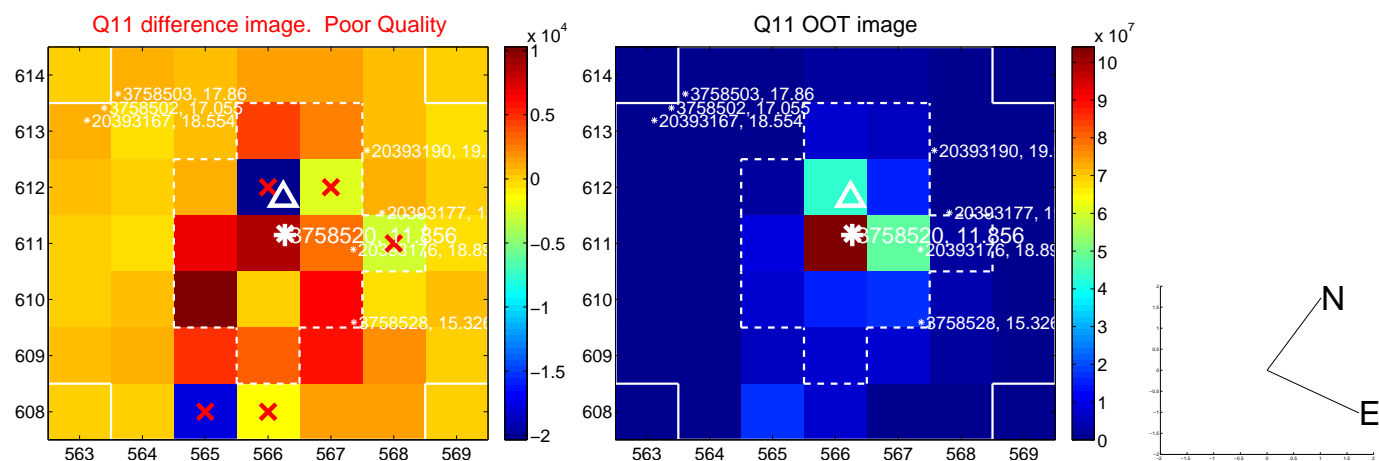
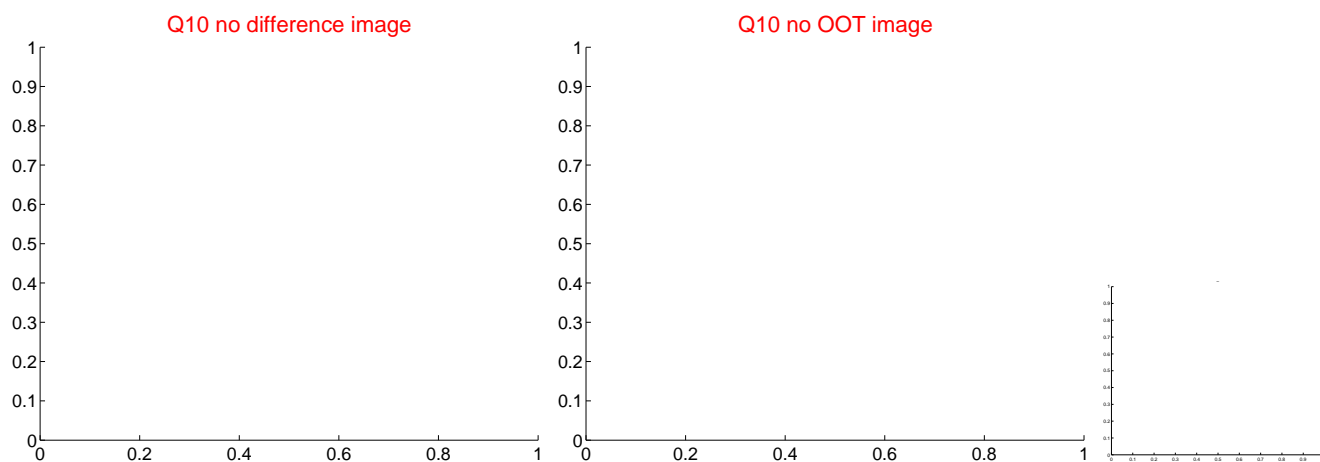
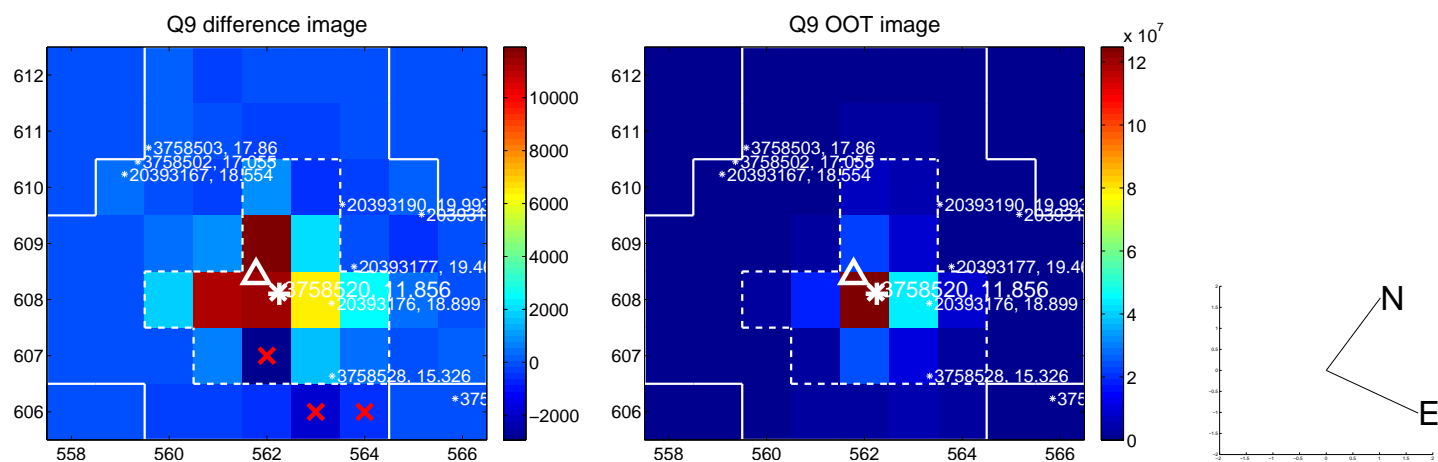
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



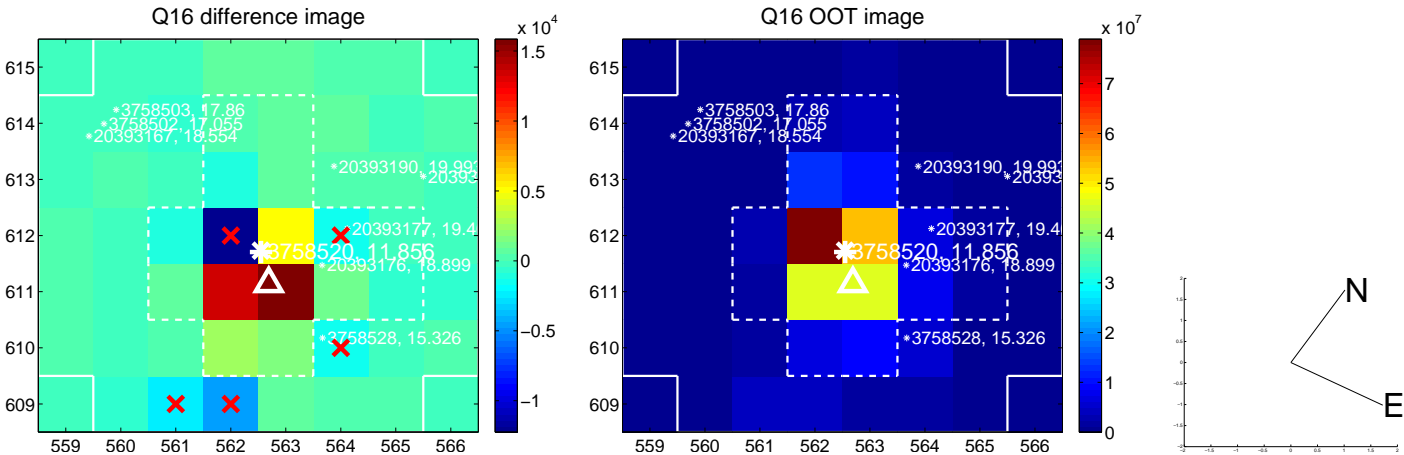
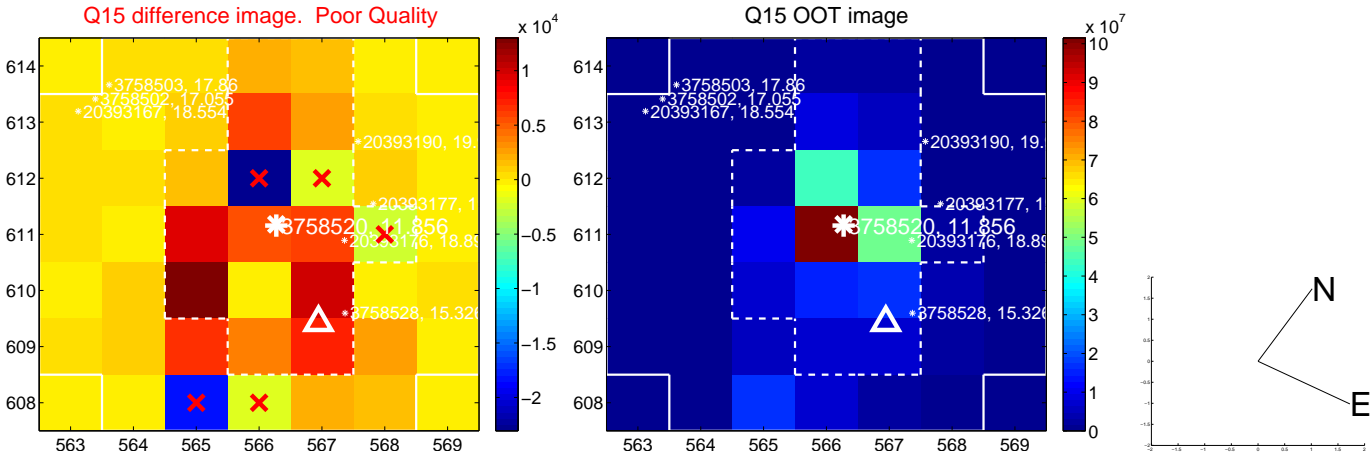
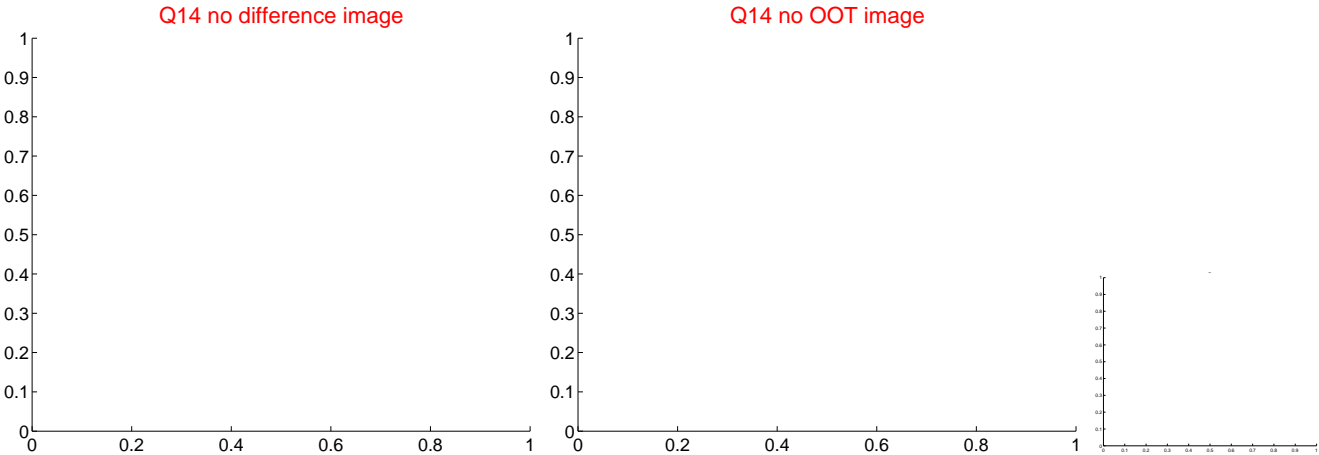
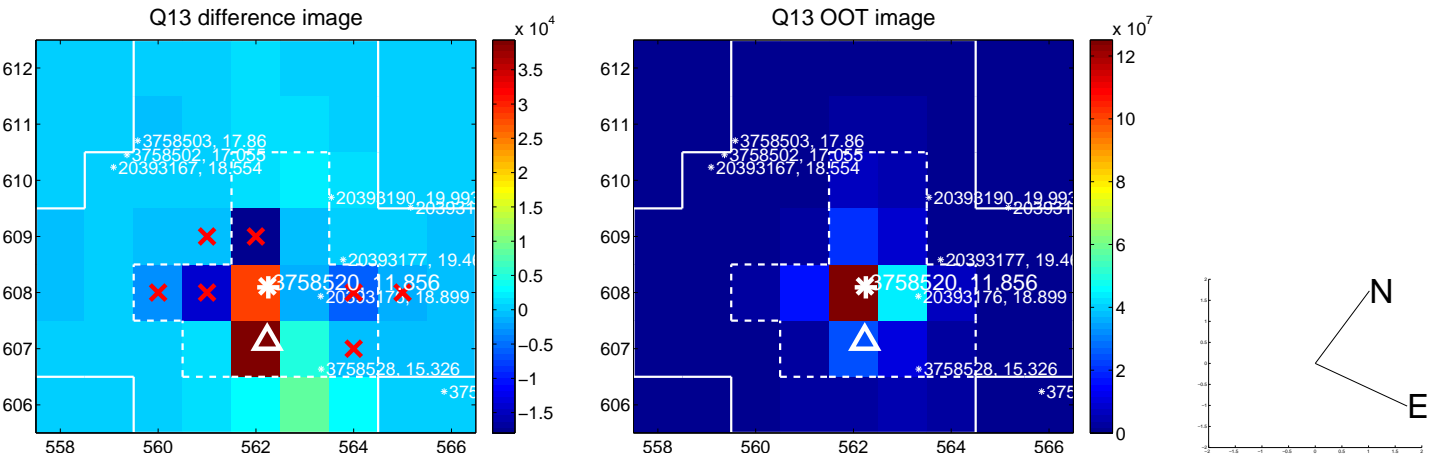
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



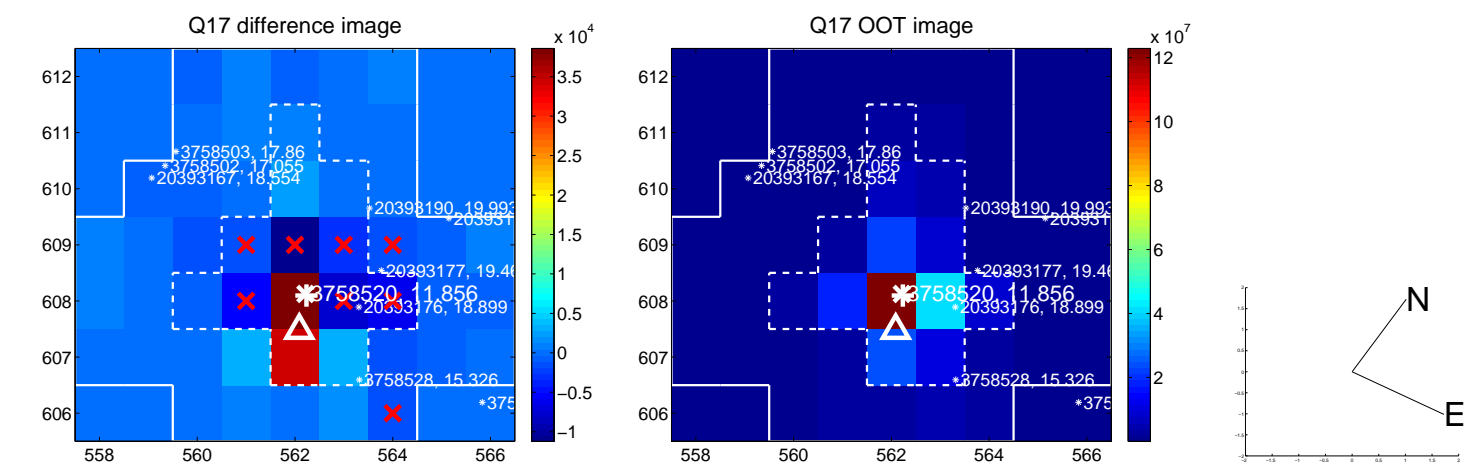
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



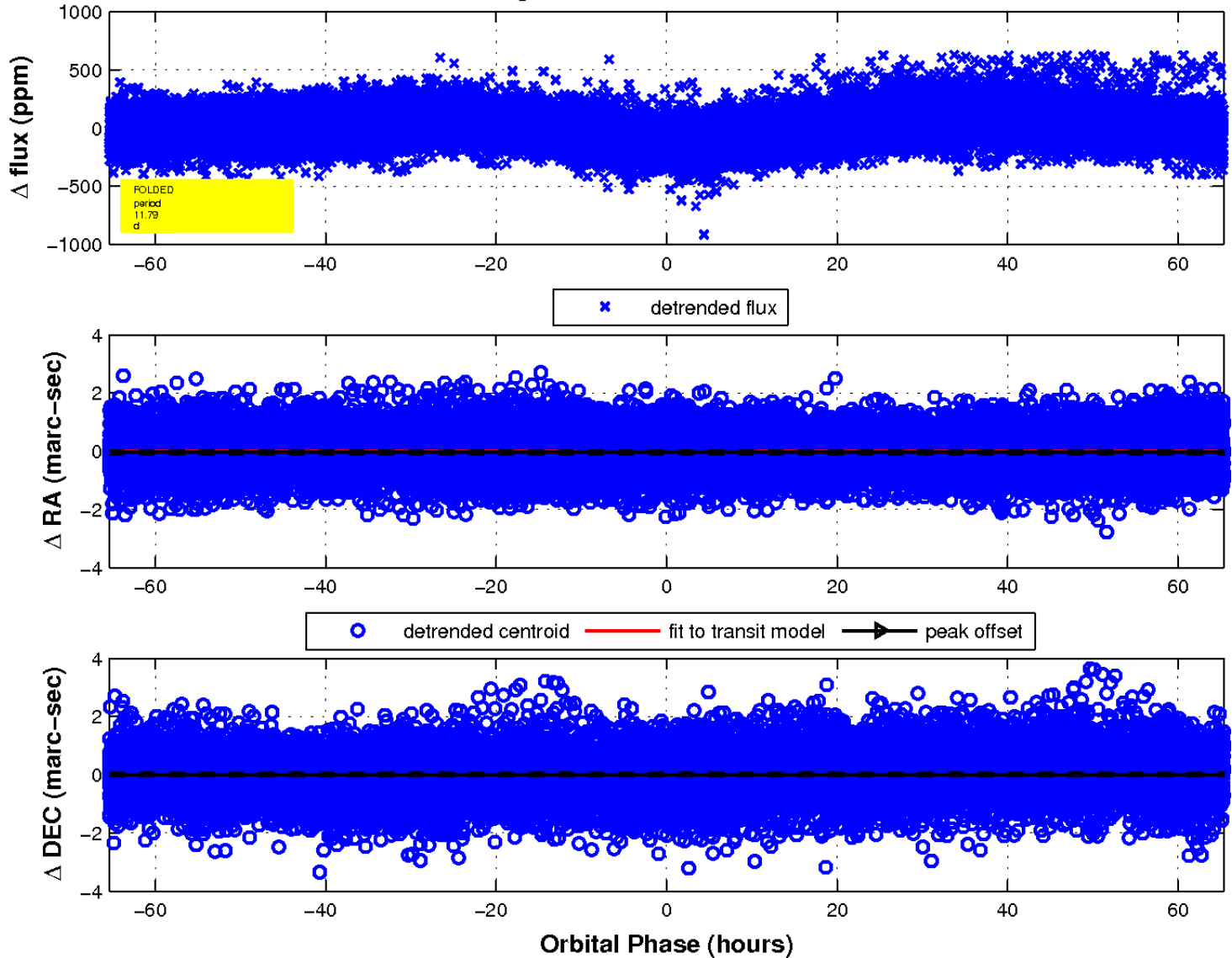
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



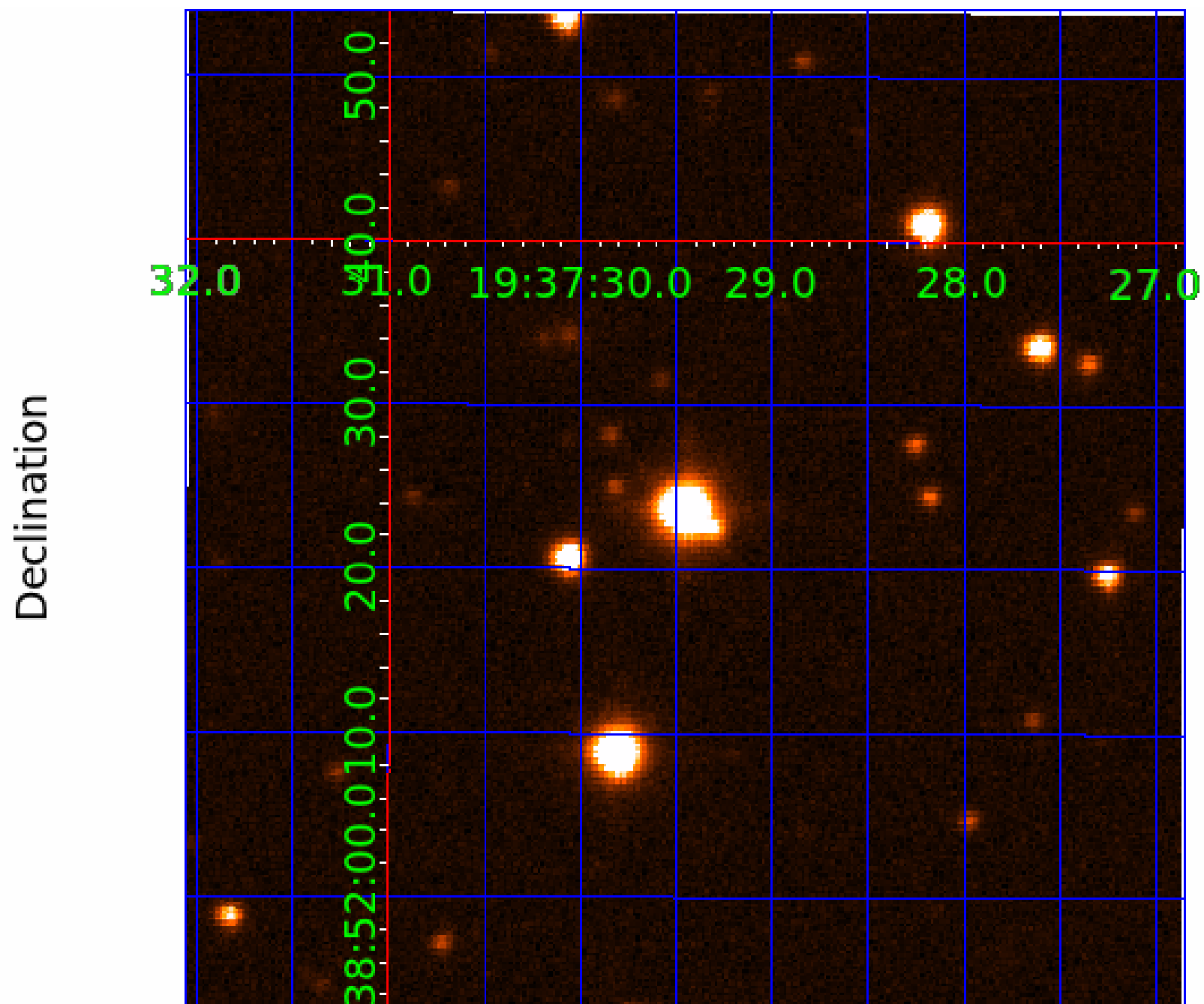
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 2



UKIRT Image



KIC 003758520

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})
003758520-01	OBS	No	11.792838	141.490520	48.7	21.797	9.5	8.9	2.08	6963	1.54	658.99
003758520-02	OBS	No	3.928955	132.800672	2.8	35.745	8.3	0.9	2.08	6963	0.40	2853.22

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003758520-01	OBS	FP	0.00	1	0	0	0	LPP_DV
003758520-02	OBS	FP	0.00	1	0	0	0	LPP_DV—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.

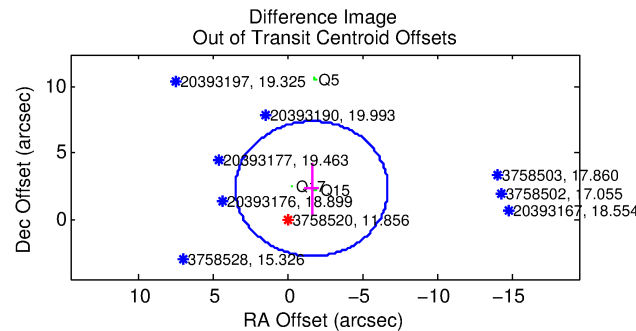
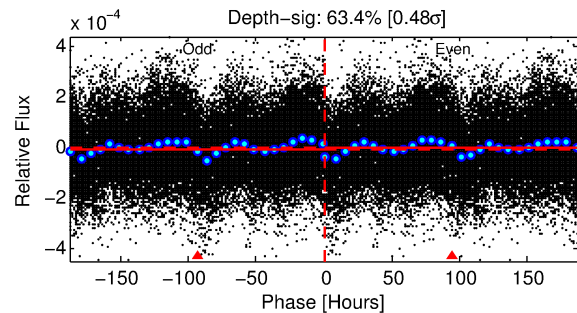
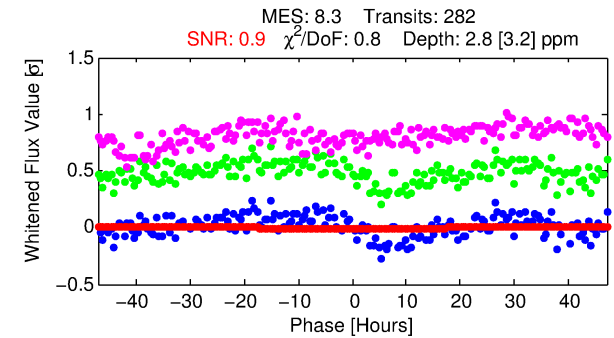
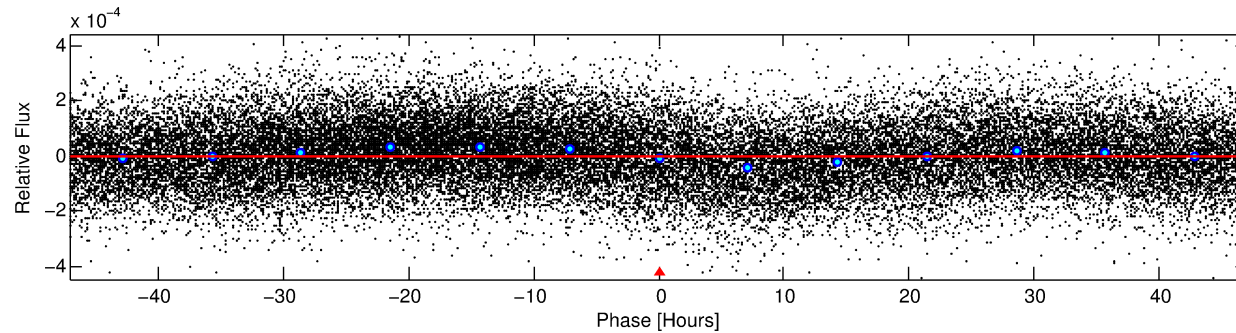
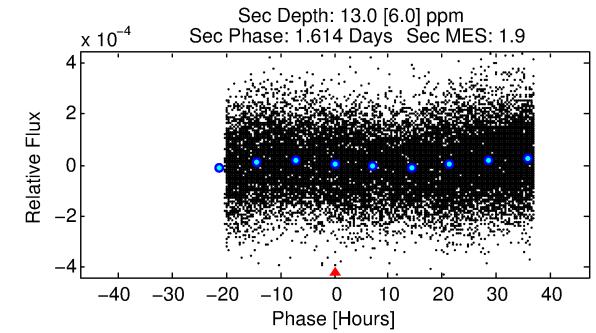
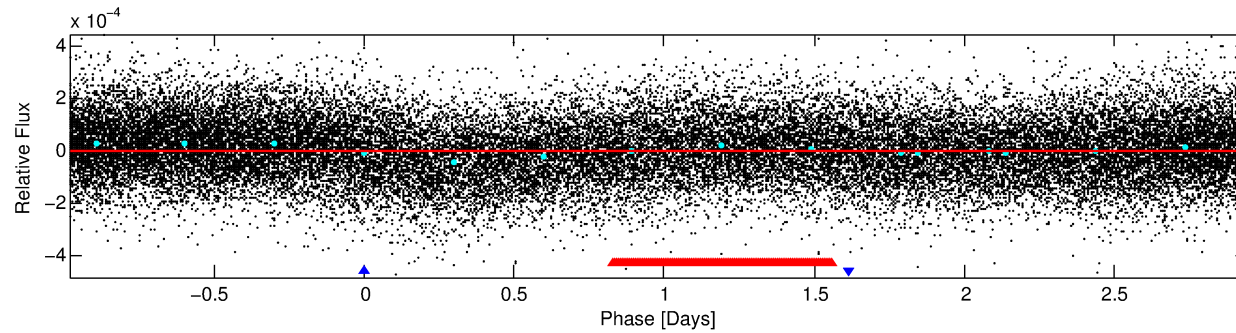
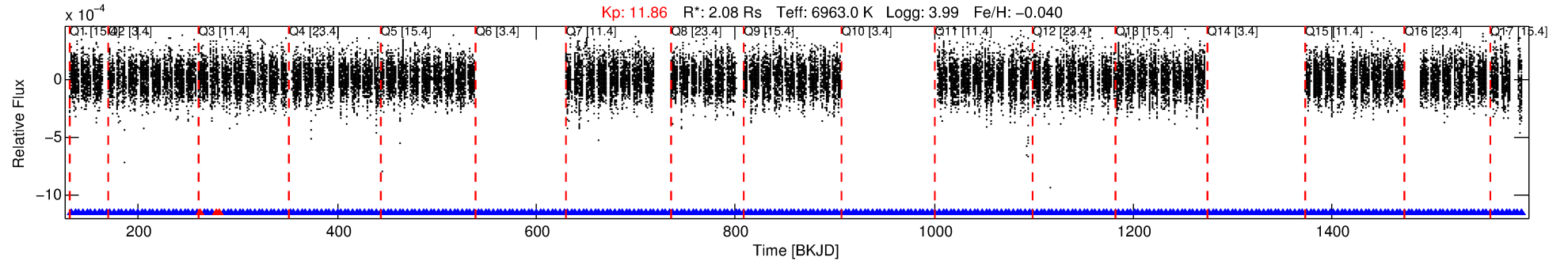
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003758520-02

No Significant Match Found

DV One-Page Summary

KIC: 3758520 Candidate: 2 of 2 Period: 3.929 d



DV Fit Results:

Period = 3.92895 [0.00057] d
Epoch = 132.8007 [0.0953] BKJD
 $R_p/R^* = 0.0018$ [0.0021]
 $a/R^* = 1.02$ [0.24]
 $b = 0.89$ [1.52]
 $S_{\text{eff}} = 2853.22$ [1344.37]
 $T_{\text{eq}} = 1864$ [220] K
 $R_p = 0.40$ [0.49] R_e
 $a = 0.0564$ [0.0162] AU
 $A_g = 140.51$ [344.97] [0.40σ]
 $T_{\text{eff}} = 9920$ [6009] K [1.34σ]

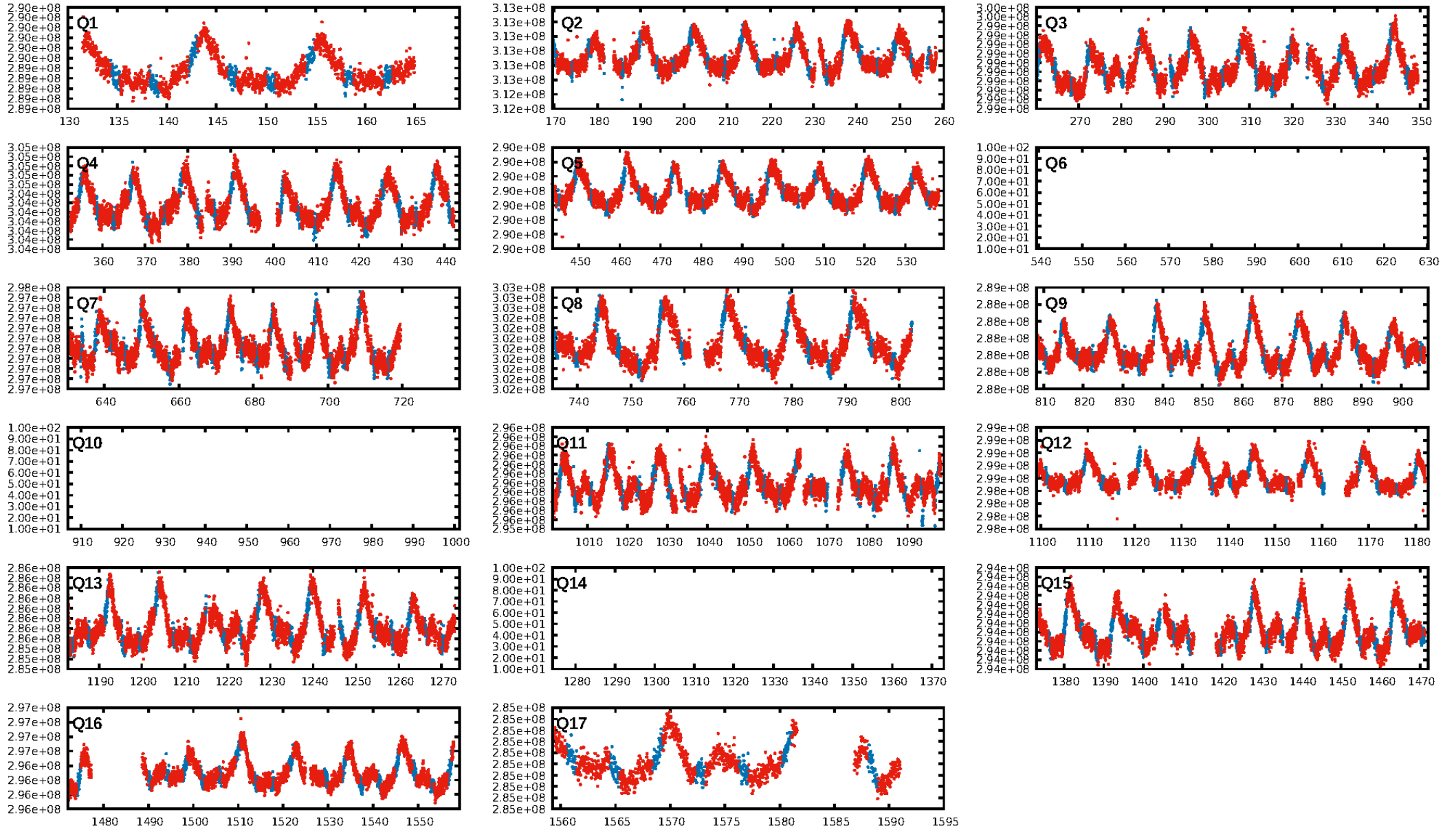
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [4.51σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [262/265]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 2.852 arcsec [1.68σ]
KicOffset-rm: 2.744 arcsec [1.44σ]
OotOffset-st: 0/1/0/2 [3]
KicOffset-st: 0/1/0/2 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 1.00 [14/14]

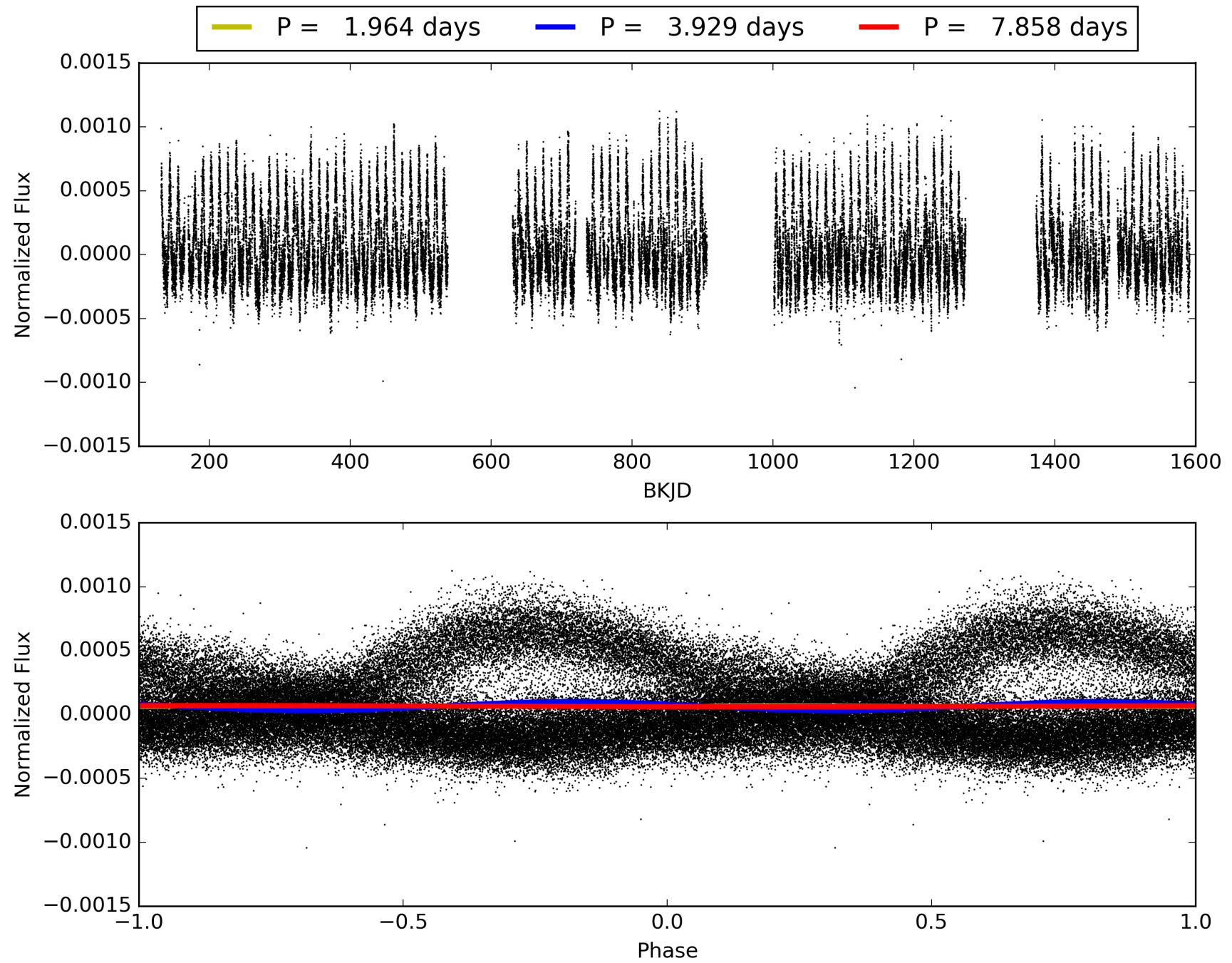
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:54:08 Z

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

TCE 003758520-02, PDC Light Curves

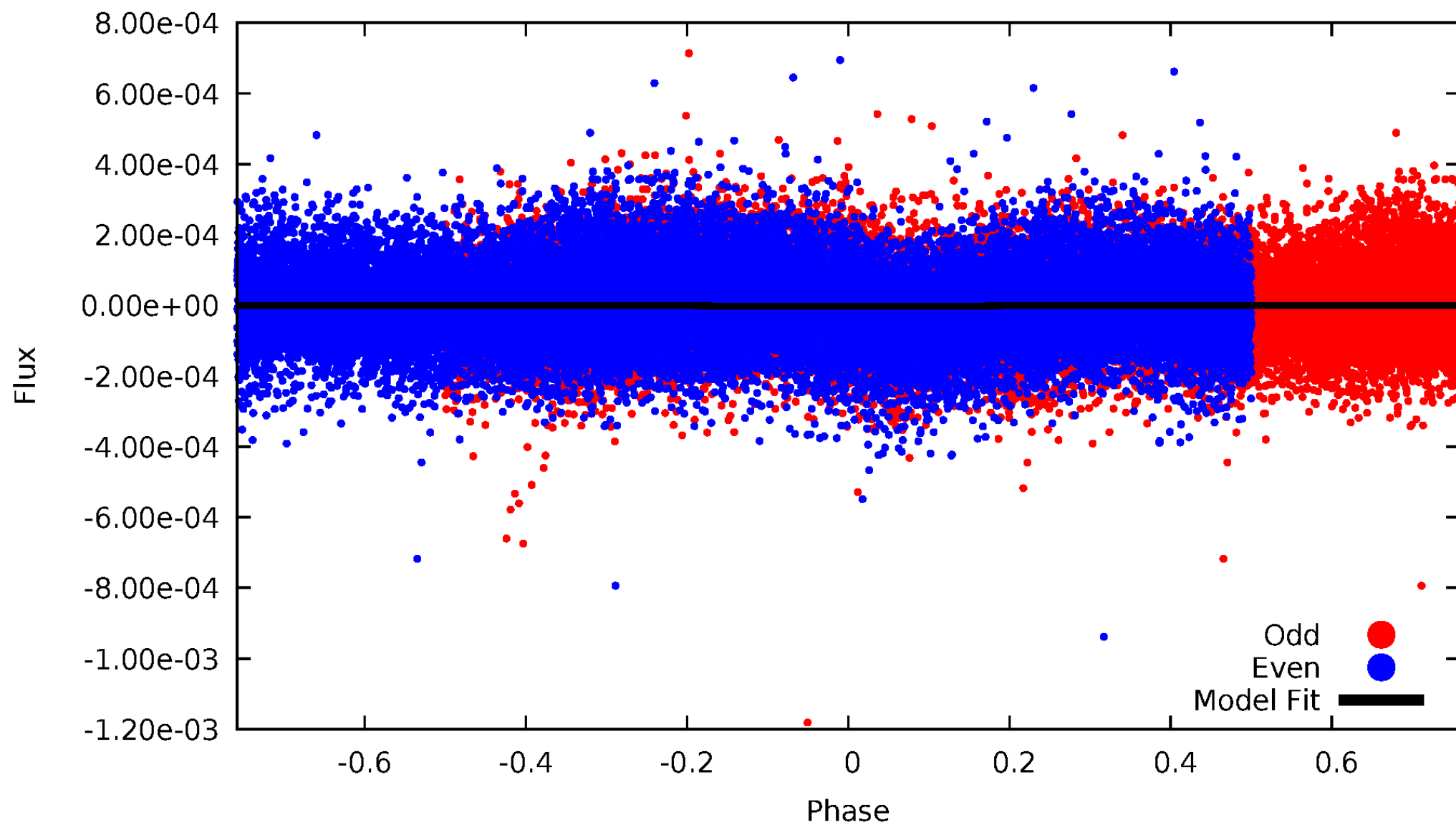


TCE 003758520-02



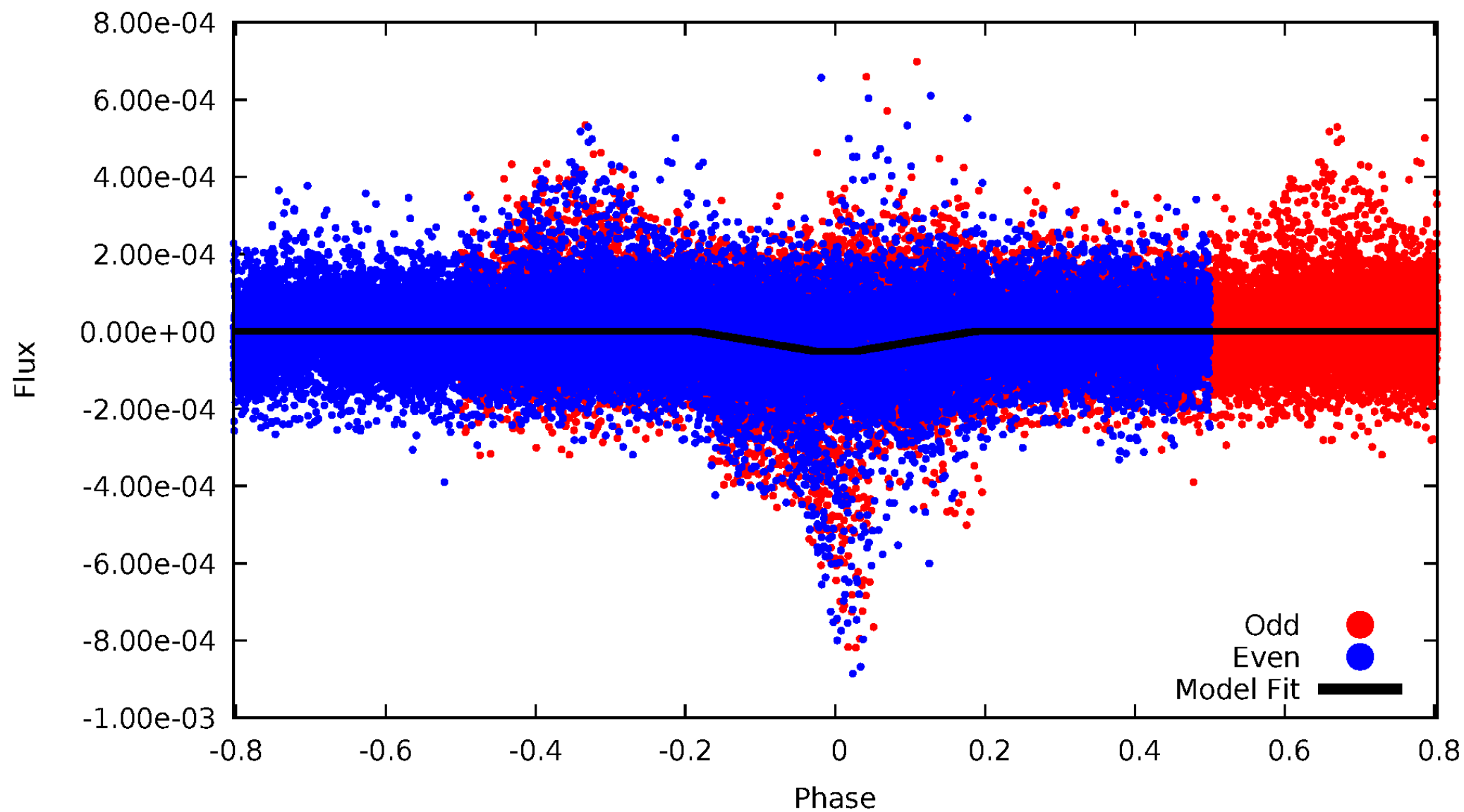
DV Odd/Even

TCE 003758520-02



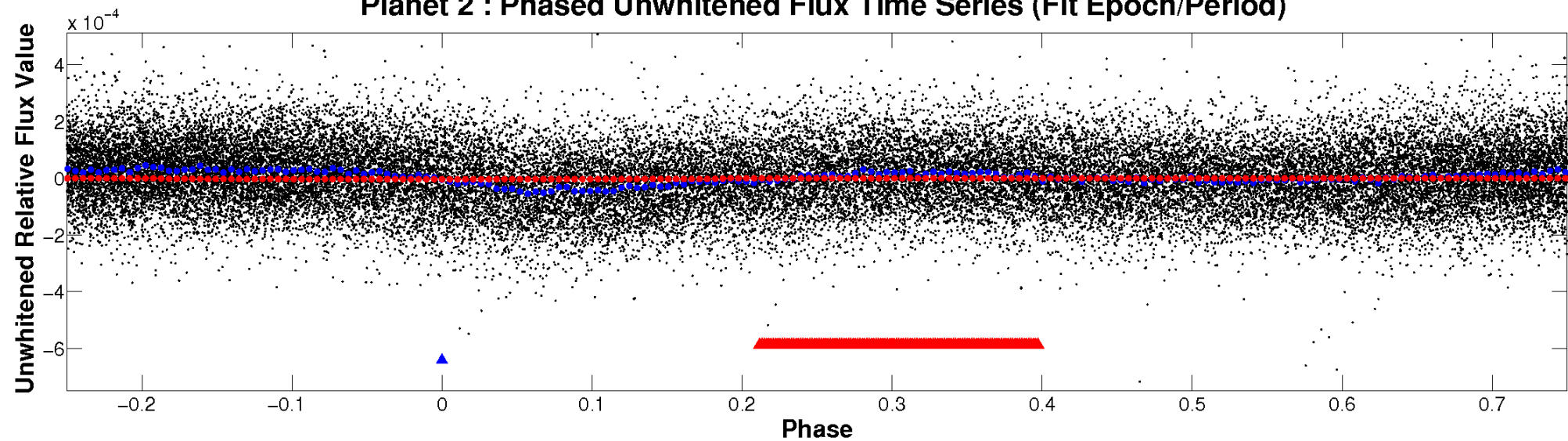
ALT Odd/Even

TCE 003758520-02

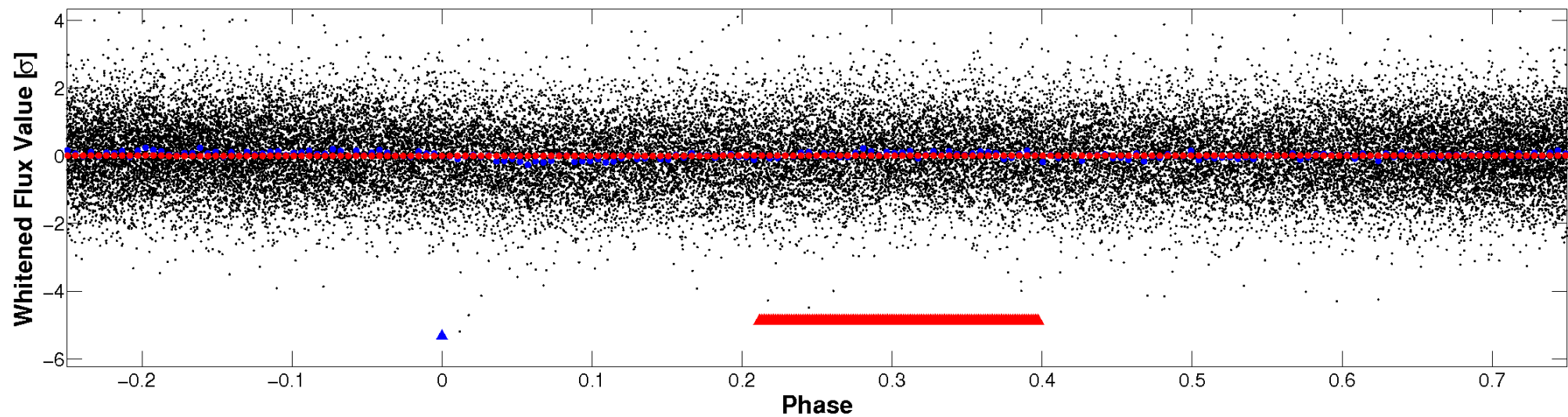


Non-Whitened Vs. Whitened Light Curve

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

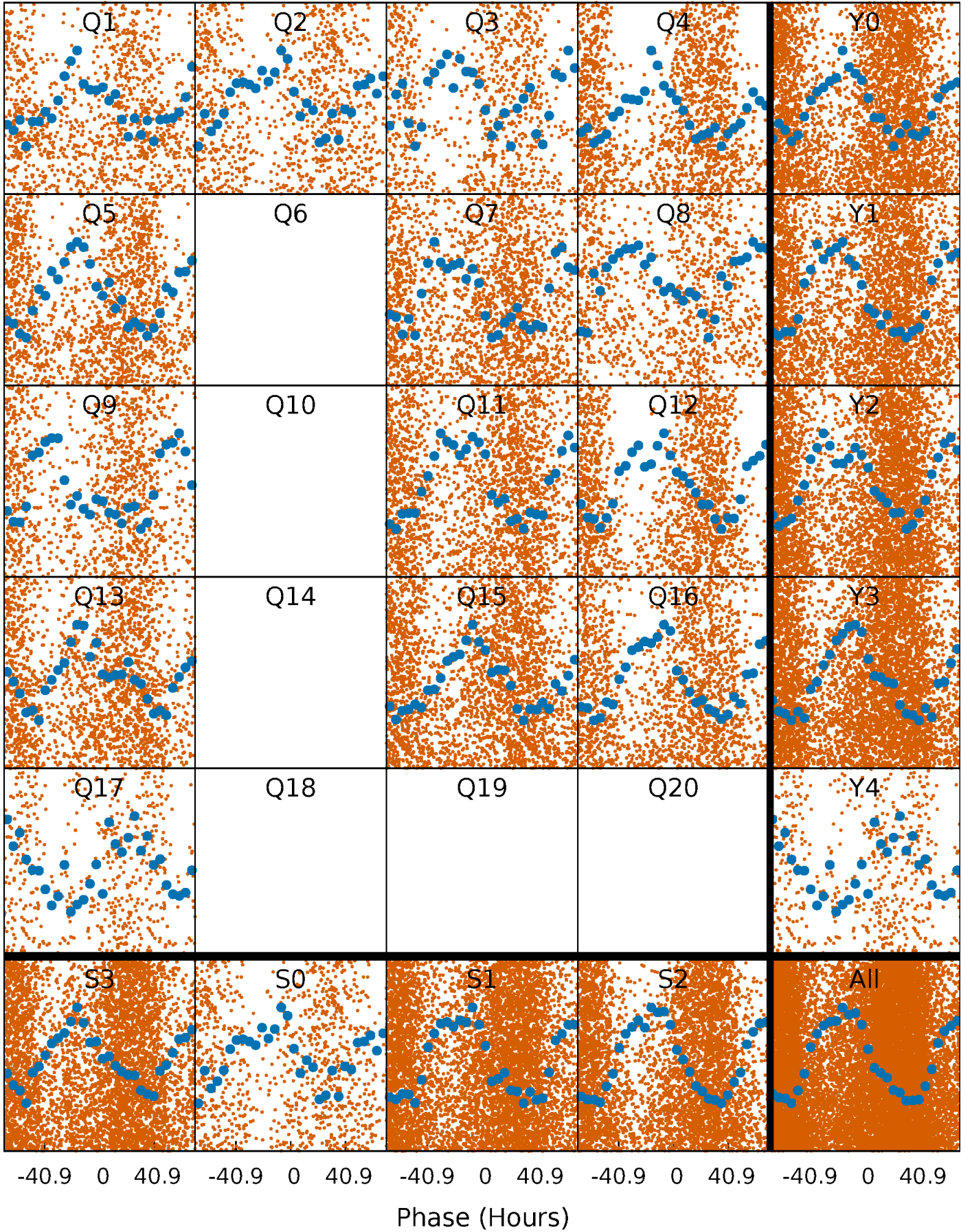


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



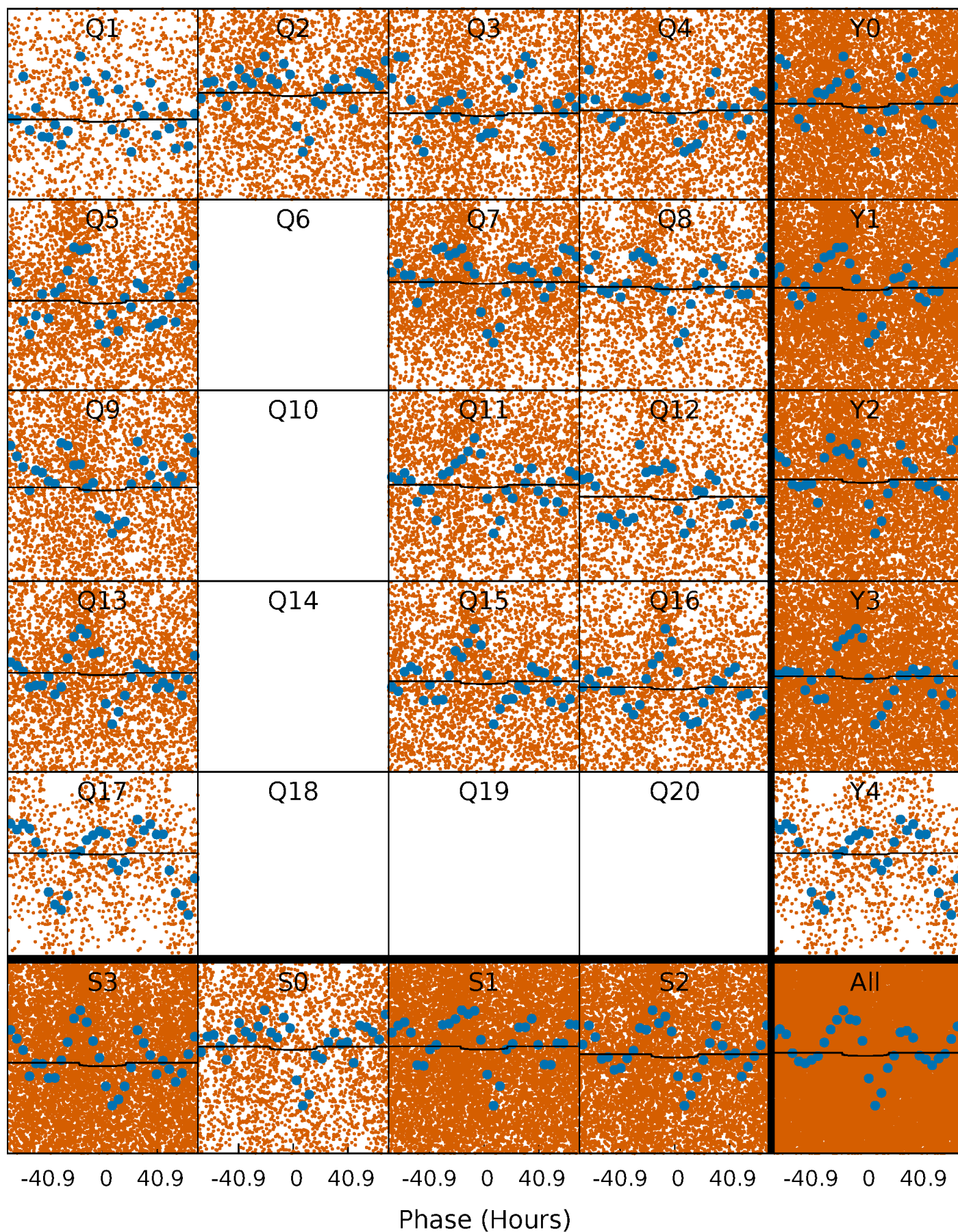
PDC Quarter-Phased Transit Curves

TCE 003758520-02 $P = 3.928955$ Days $T_0 = 132.800672$ (BKJD)



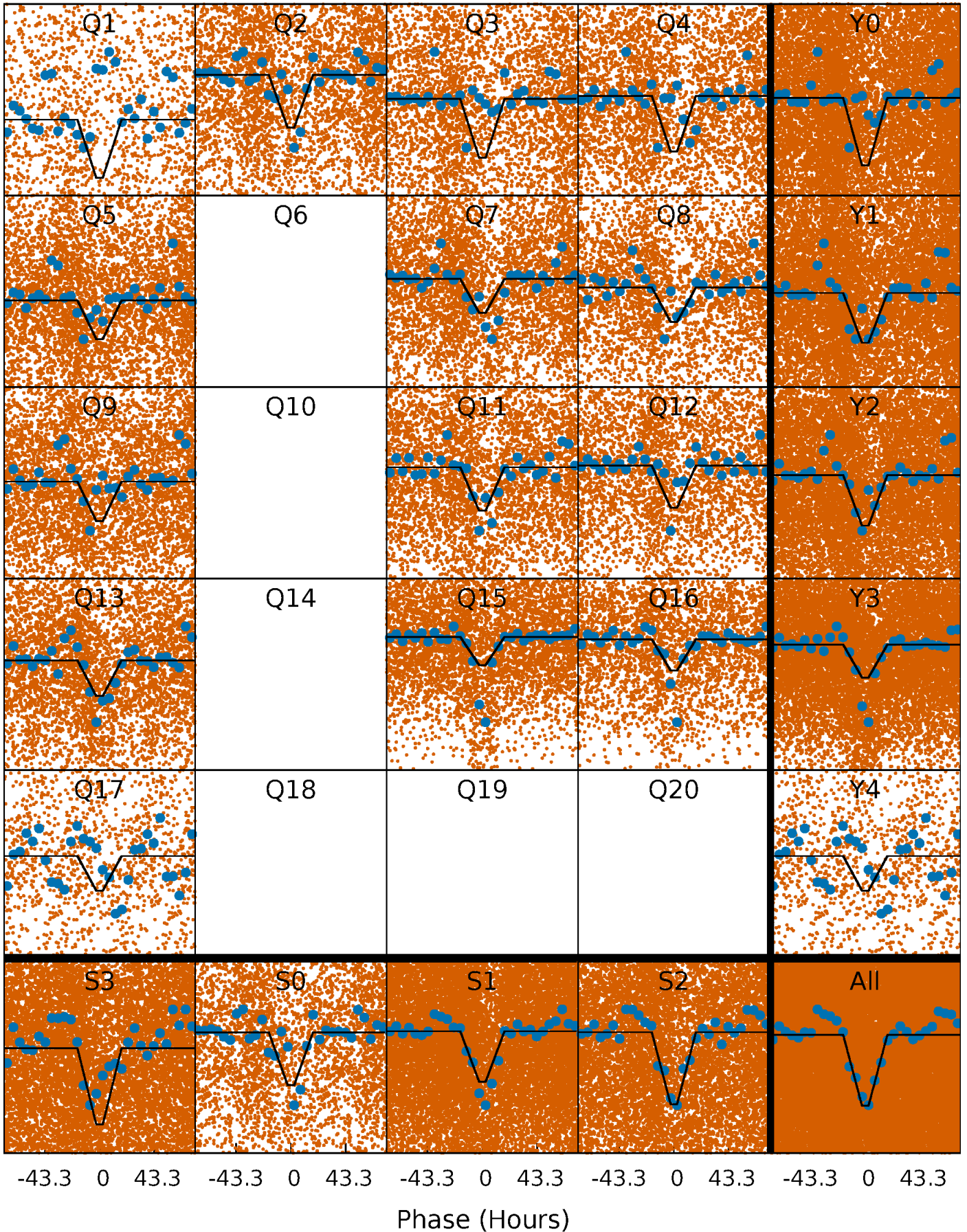
DV Quarter-Phased Transit Curves

TCE 003758520-02 P= 3.928955 Days $T_0=132.800672$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

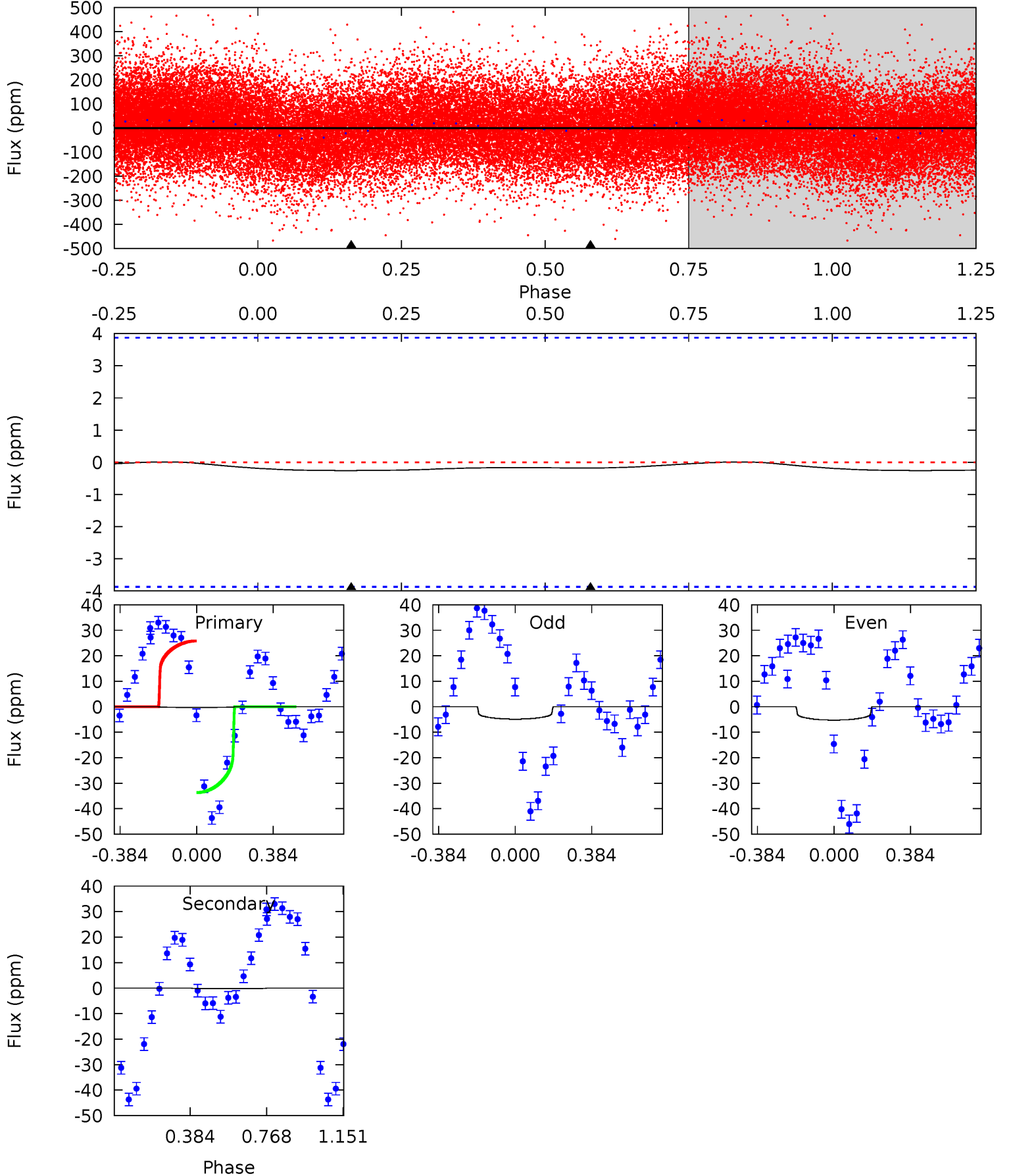
TCE 003758520-02 P= 3.928699 Days $T_0=132.846409$ (BKJD)



DV Model-Shift Uniqueness Test

003758520-02, P = 3.928955 Days, E = 128.871717 Days

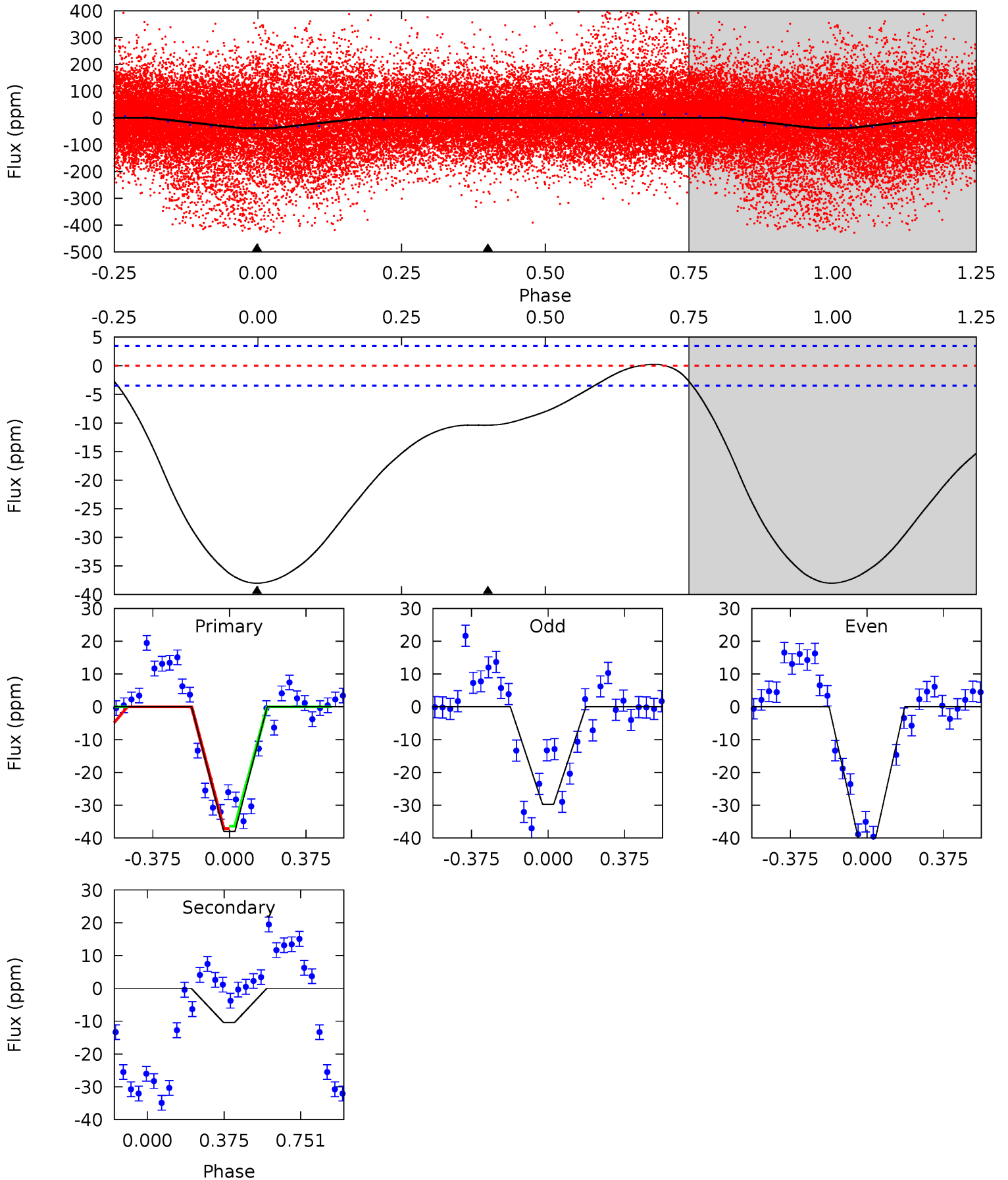
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.28	0.20	0	0	4.27	0.87	0.02	0.28	0.28	0.20	0.20	0.20	3.22	0.04	4.19



Alt Model-Shift Uniqueness Test

003758520-02, P = 3.928699 Days, E = 128.917710 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
46.7	12.8	0	0	4.28	0.89	0.65	46.7	46.7	12.8	12.8	8.96	3.27	0.01	0.50



Stellar Parameters For KIC 003758520

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6963^{+194}_{-315}	$3.994^{+0.246}_{-0.164}$	$-0.040^{+0.250}_{-0.300}$	$2.077^{+0.612}_{-0.673}$	$1.552^{+0.221}_{-0.295}$	$0.244^{+0.371}_{-0.112}$
	+3%/-5%	+6%/-4%	+625%/-750%	+29%/-32%	+14%/-19%	+152%/-46%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 003758520-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-0 ± 1	$0.52^{+0.43}_{-0.33}$	2575^{+214}_{-238}	2933^{+2350}_{-7570}	$0.697^{+11.307}_{-6.640}$
Alt.	-10 ± 1	$1.58^{+0.58}_{-0.55}$	2562^{+210}_{-211}	4722^{+789}_{-514}	$7.328^{+8.975}_{-3.509}$

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

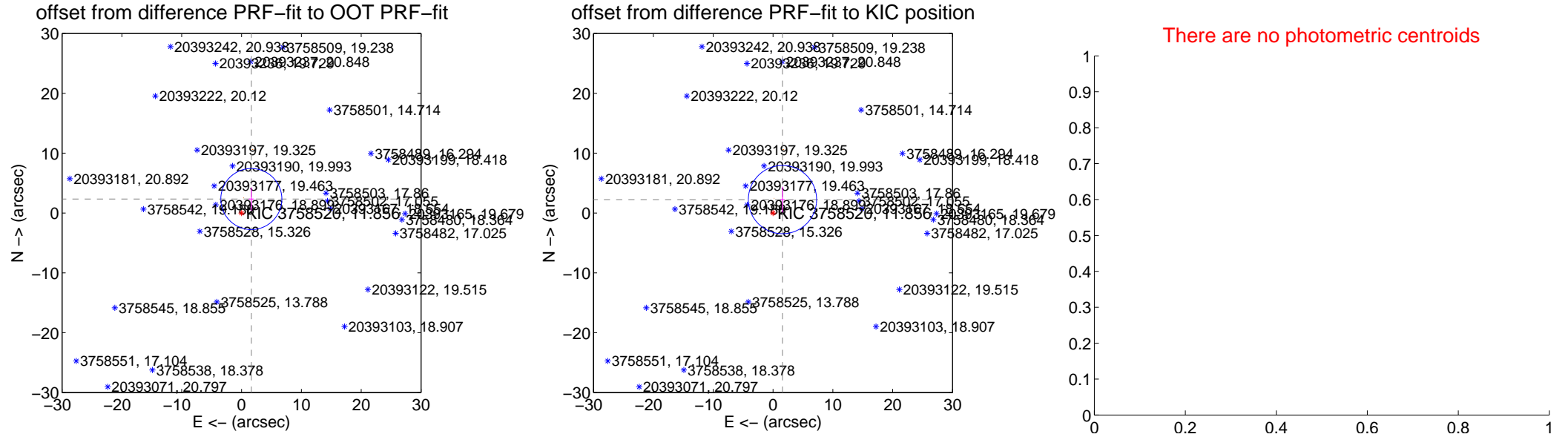
DV Centroid Data

Supplemental centroid analysis for 003758520-02. **Kepler magnitude: 11.86.** Transit SNR 0.87

There are 0 quarters with good PRF difference image offsets

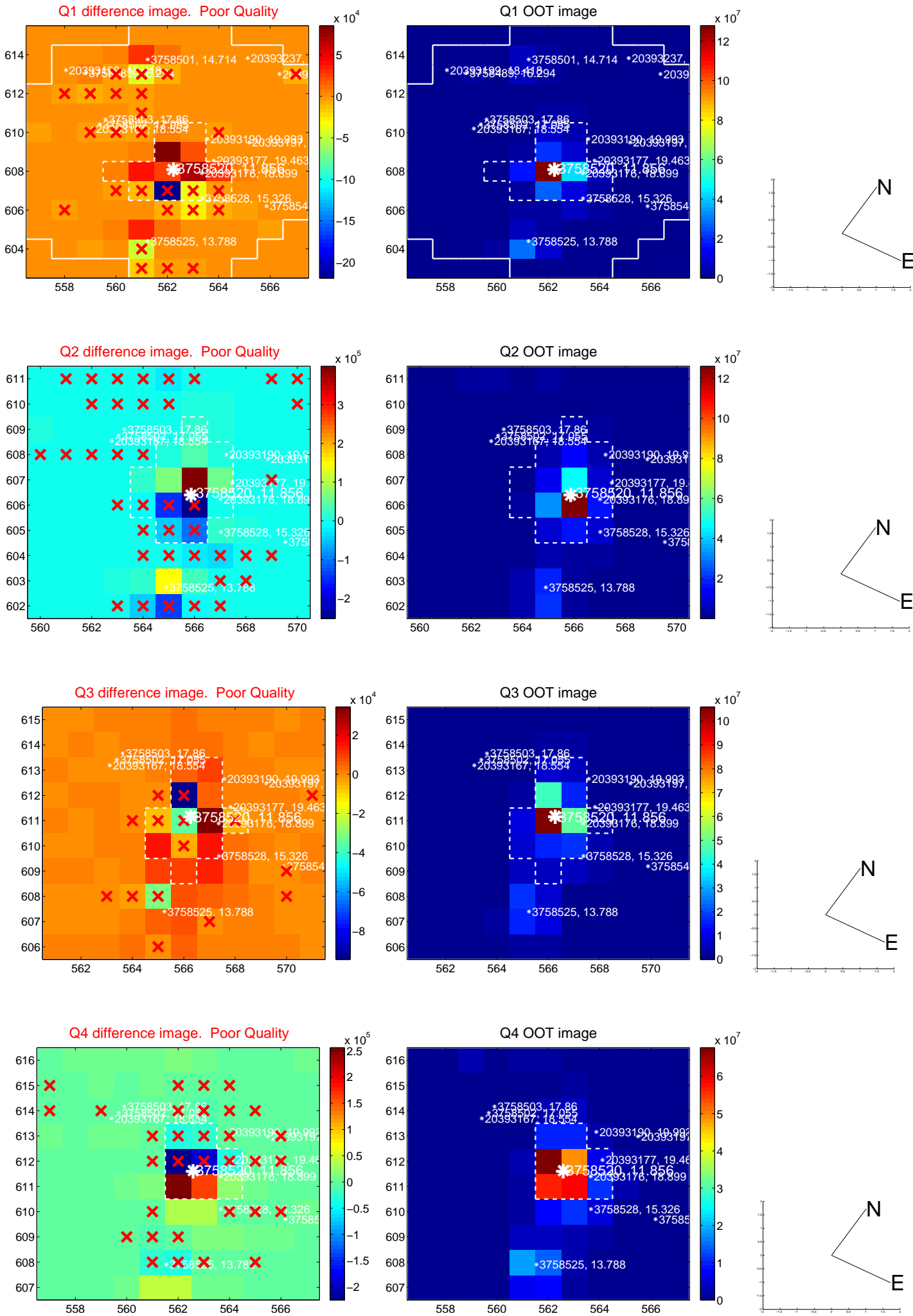
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.852 ± 1.700	1.68	-1.637 ± 0.435	2.335 ± 1.943
PRF-fit source offset from KIC position	2.744 ± 1.901	1.44	-1.582 ± 0.379	2.242 ± 2.153
photometric centroid source offset	—	—	—	—

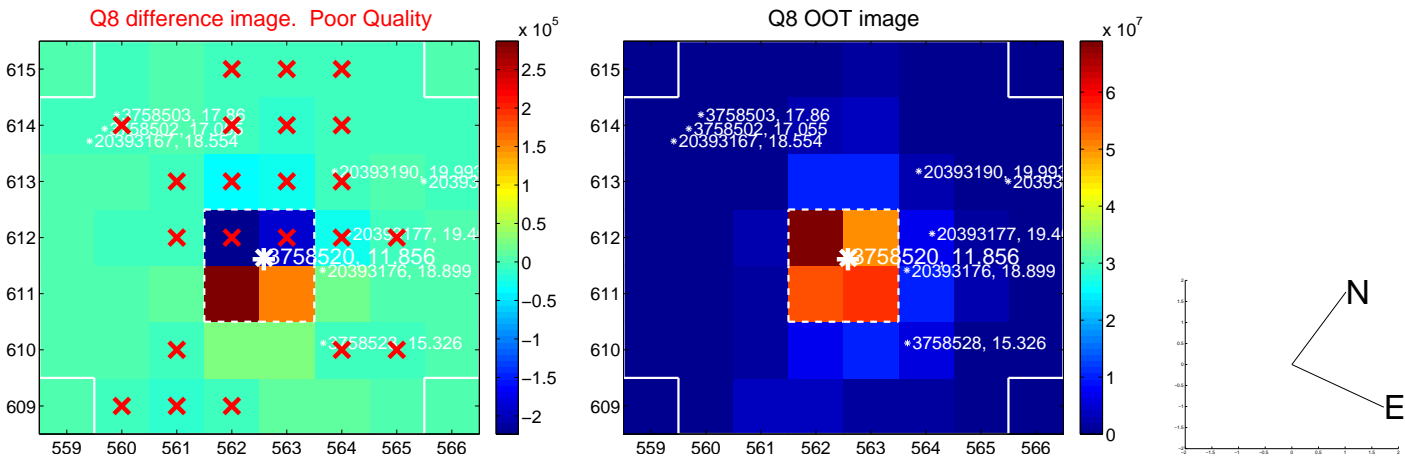
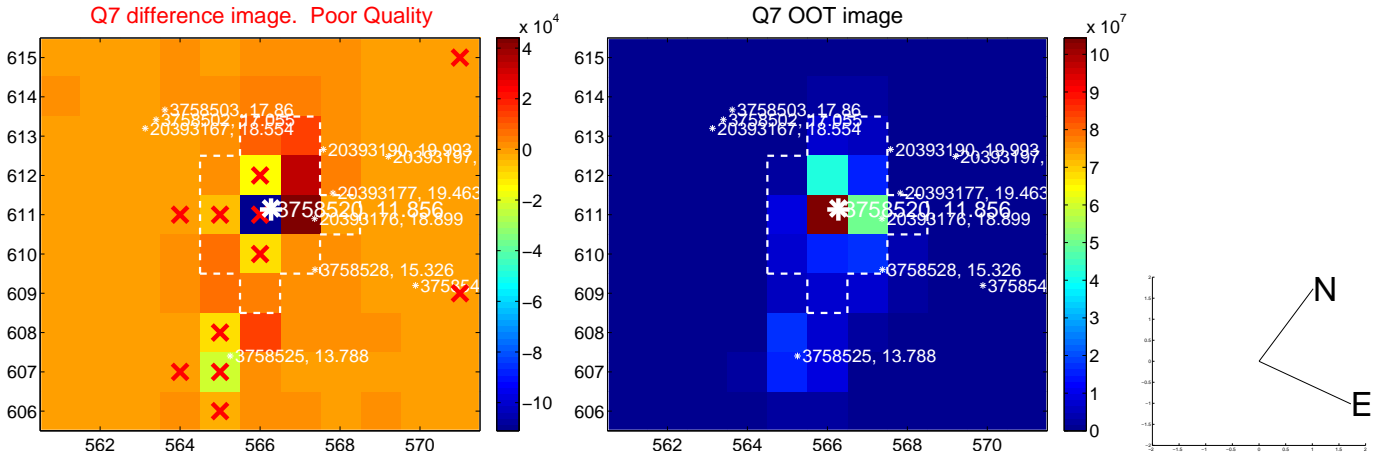
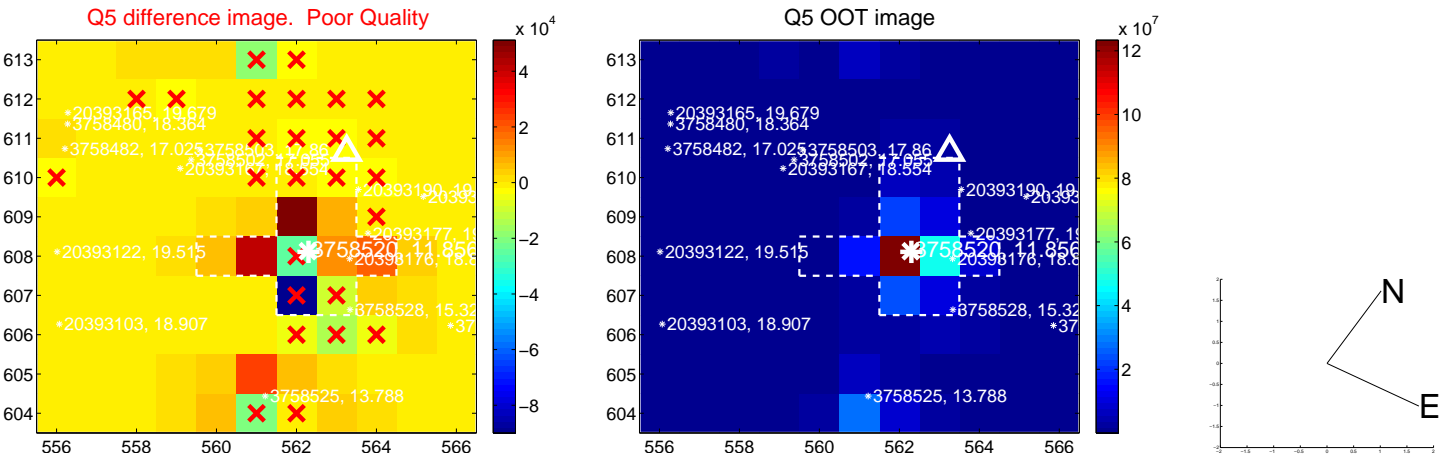


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

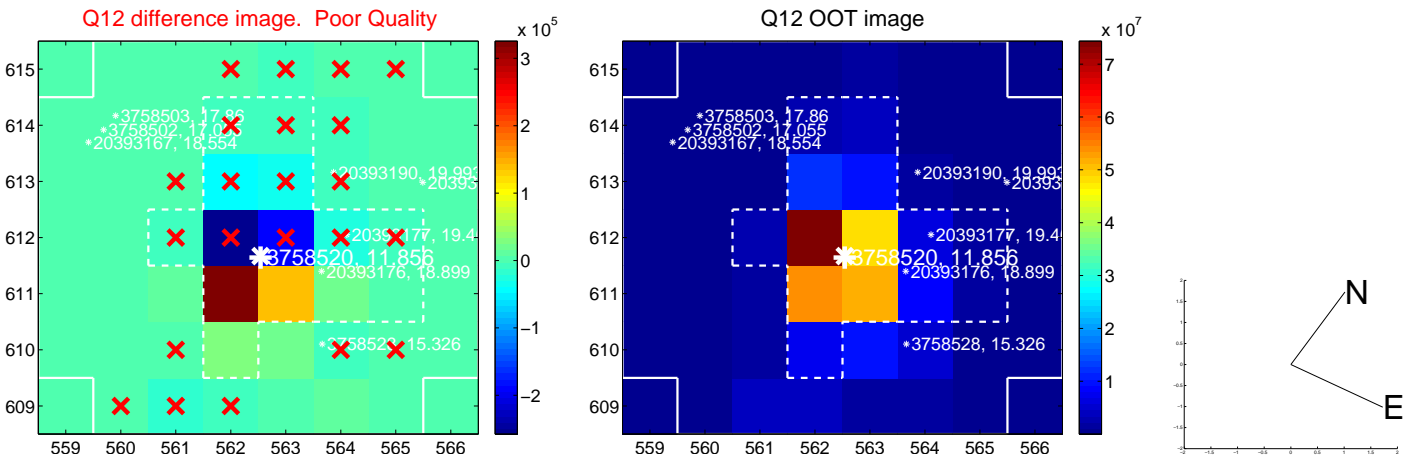
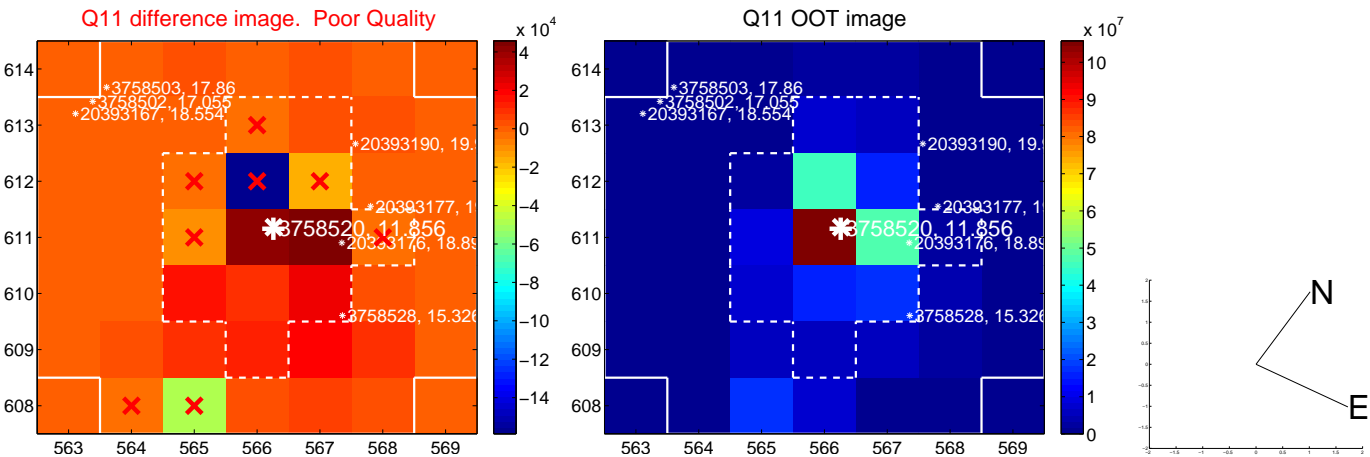
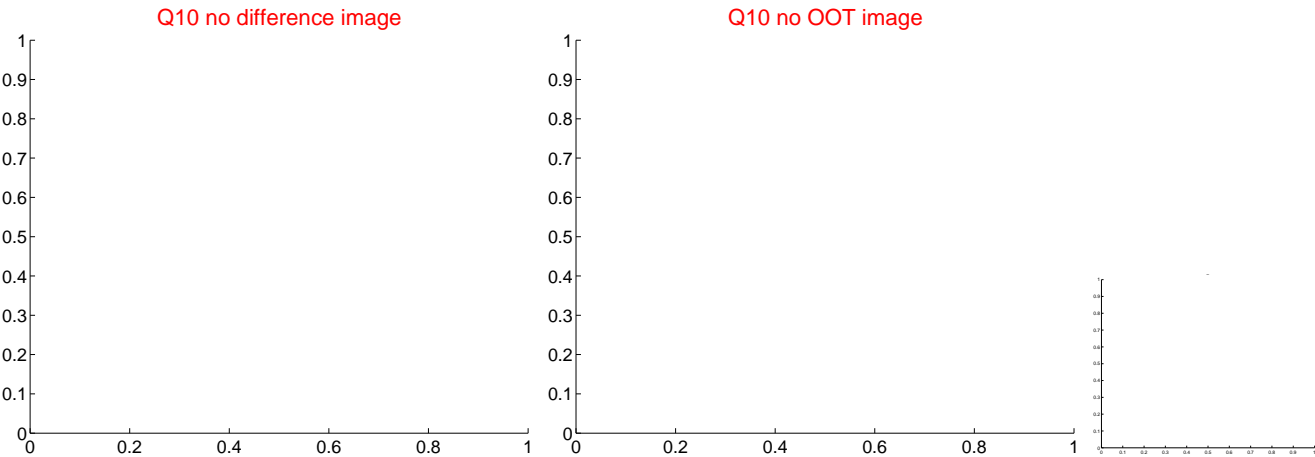
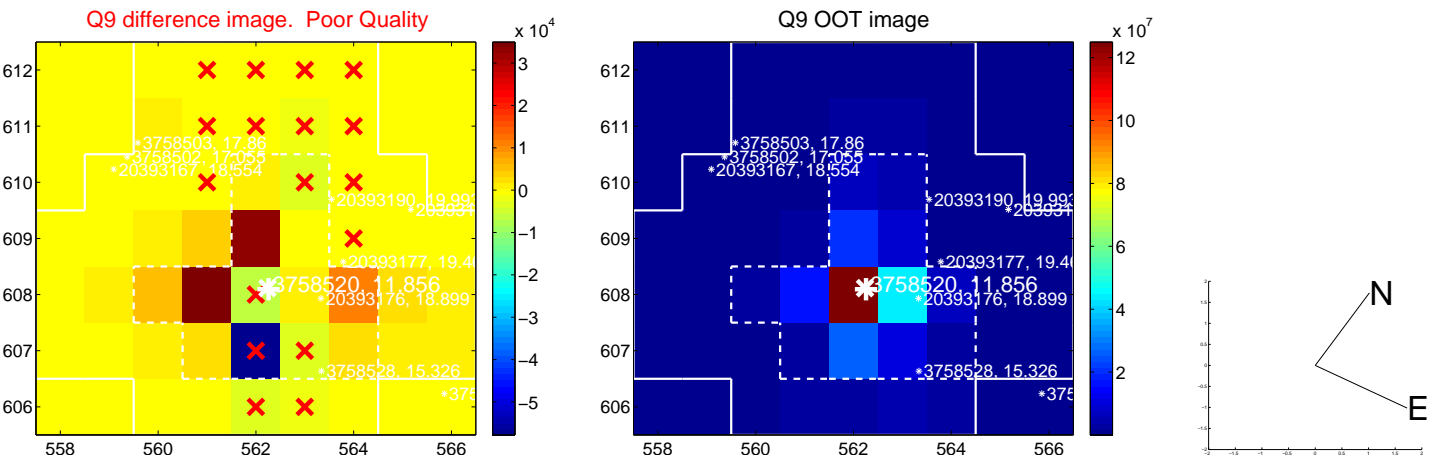
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



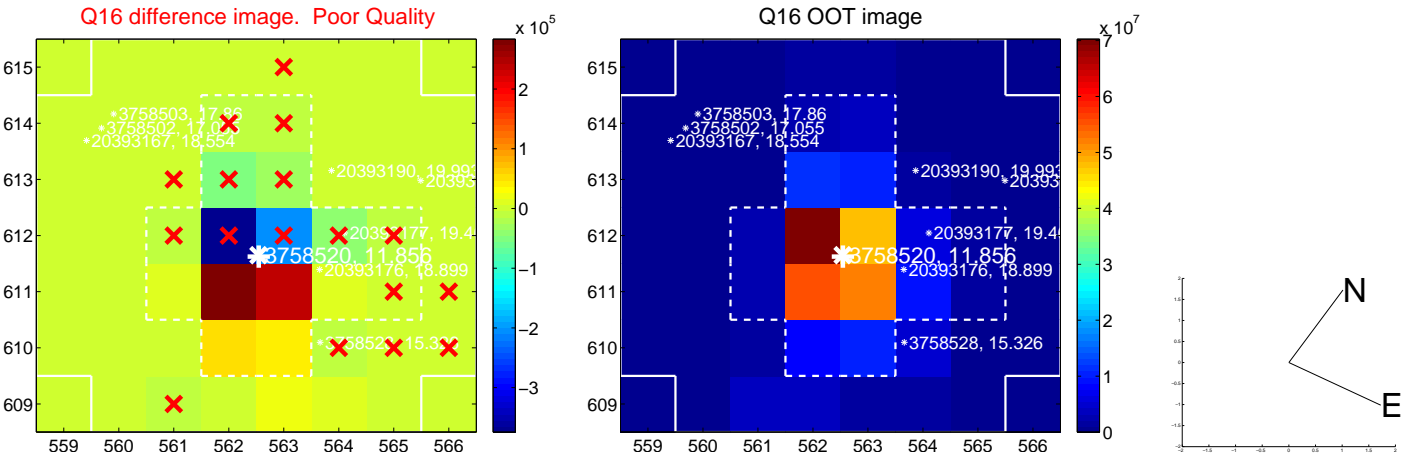
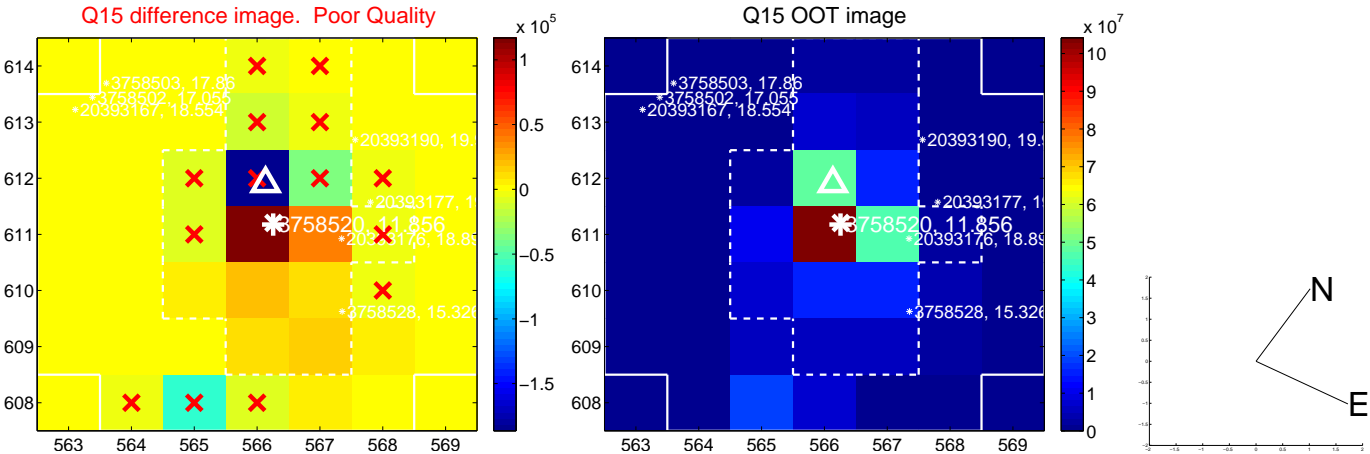
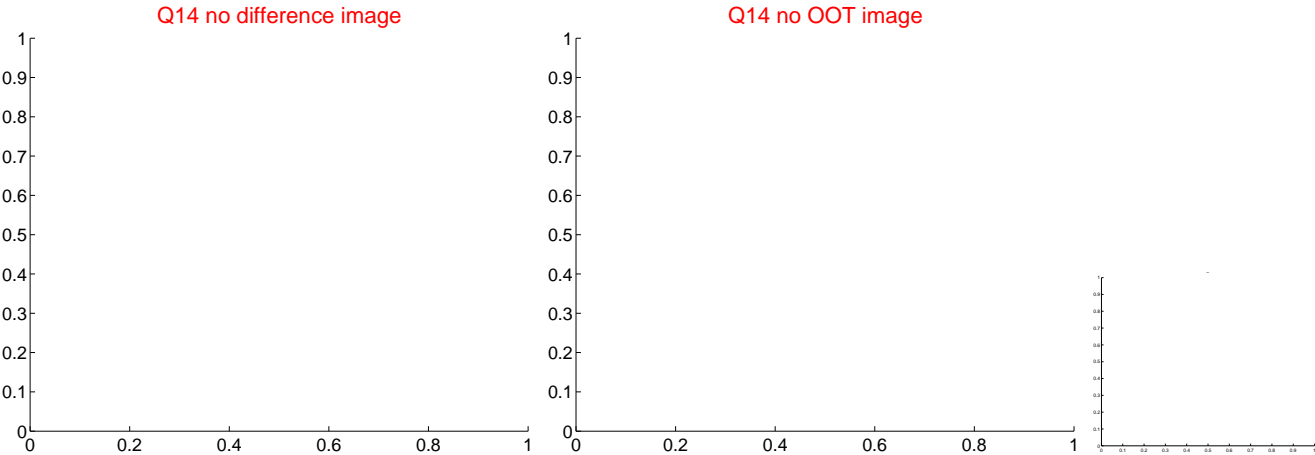
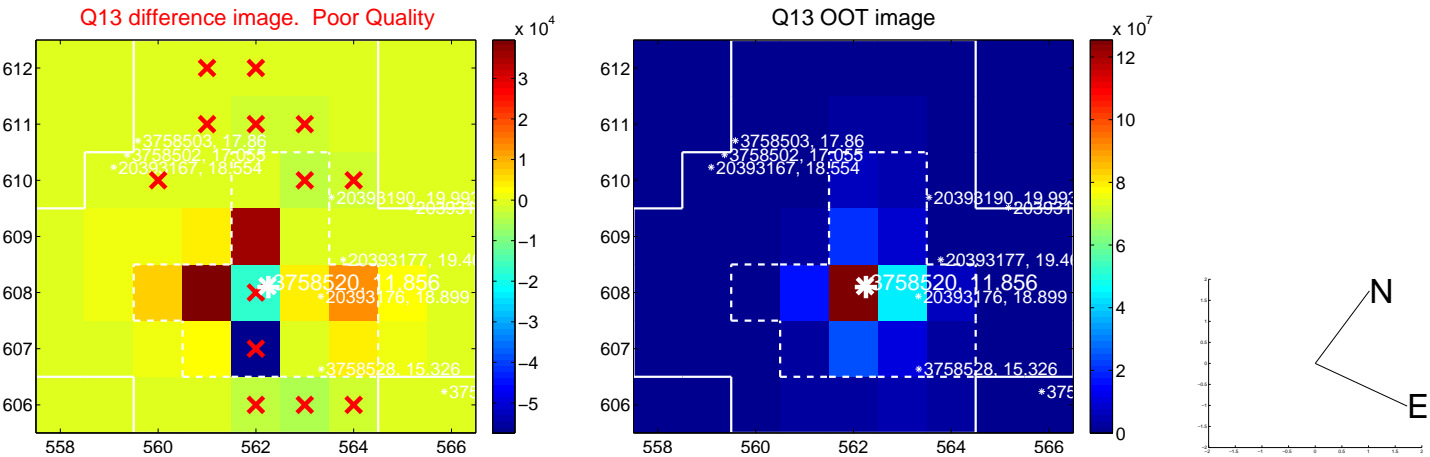
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



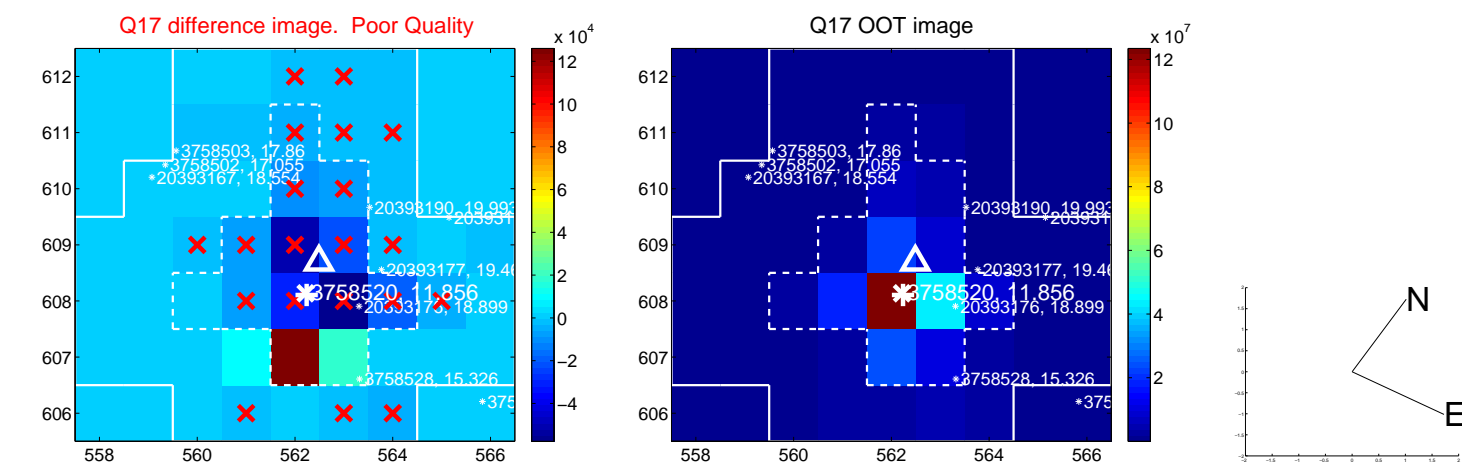
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



folded centroid time series figure for this object.

UKIRT Image

