

KIC 007885558

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})
007885558-01	OBS	5439.01	0.864657	131.691047	63.1	3.466	13.3	13.5	0.85	5587	0.81	2072.23
007885558-02	OBS	No	645.676697	245.313338	457.1	23.284	12.1	4.0	0.85	5587	1.92	0.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007885558-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
007885558-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

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

Ephemeris Match Information For 007885558-01

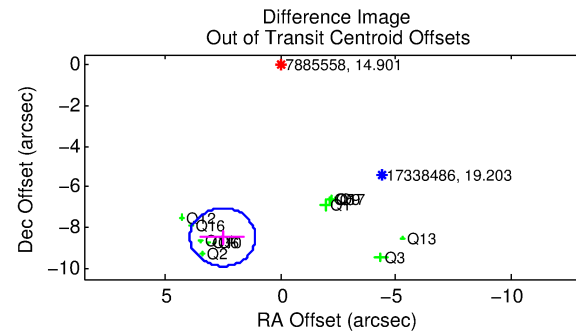
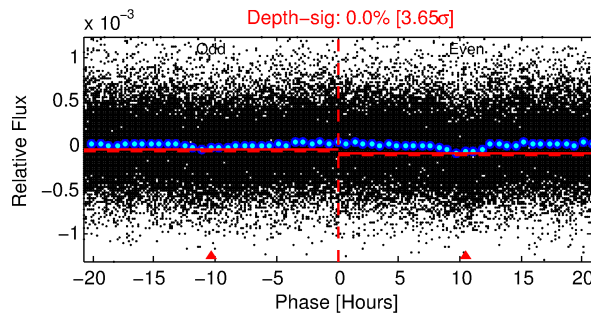
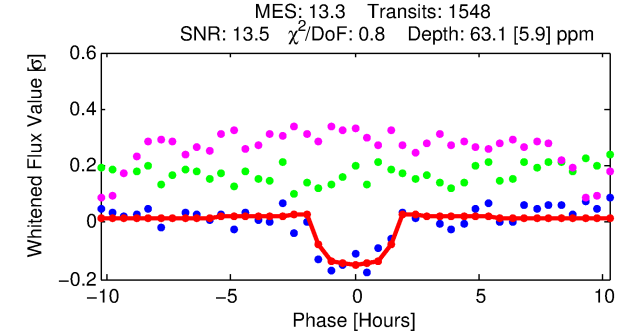
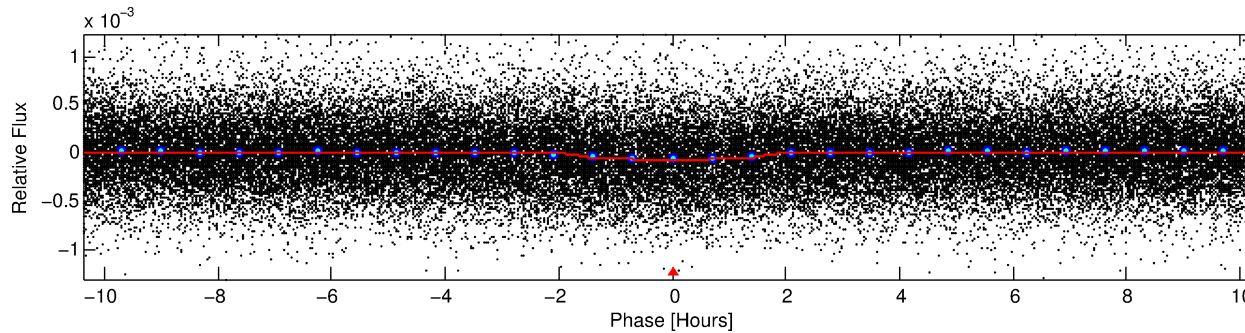
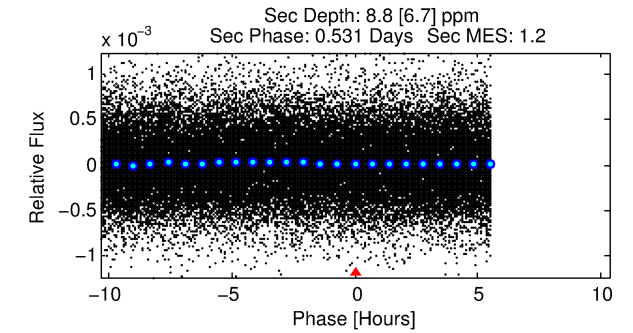
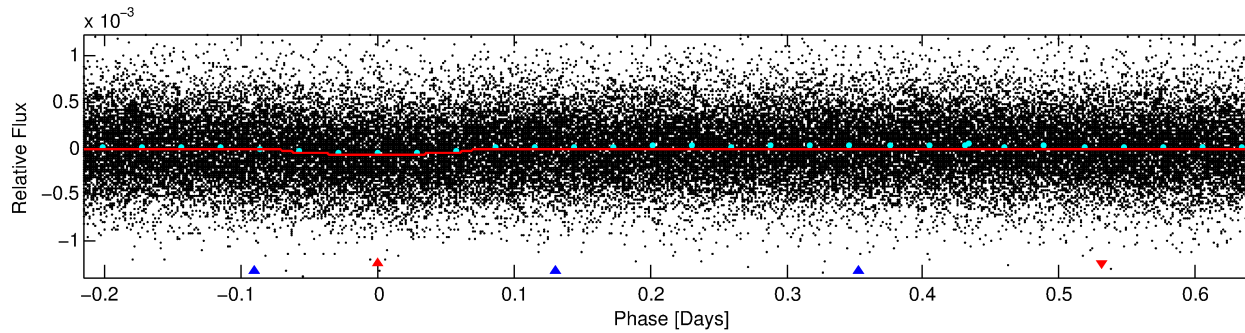
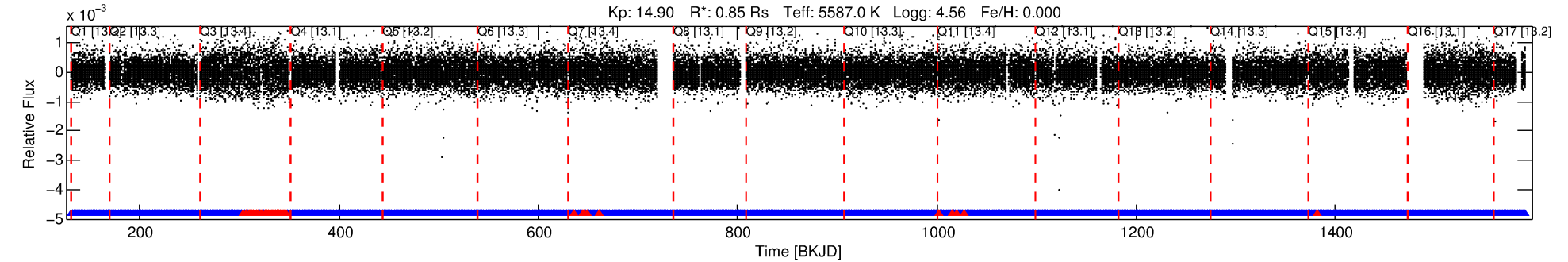
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
007885558-01	7885558	007885570-pri	7885570	1:2	31.4	2	8	11.68	14.90	2607.90	Direct-PRF	0	2.66	1.64

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 7885558 Candidate: 1 of 2 Period: 0.865 d

KOI: K05439.01 Corr: 0.978



DV Fit Results:

Period = 0.86466 [0.00001] d
Epoch = 131.6910 [0.0026] BKJD
Rp/R* = 0.0087 [0.0038]
a/R* = 1.28 [1.00]
b = 0.90 [0.43]
Seff = 2072.23 [726.71]
Teq = 1720 [151] K
Rp = 0.81 [0.41] Re
a = 0.0175 [0.0039] AU
Ag = 2.25 [2.71] [0.46σ]
Teffp = 3256 [951] K [1.60σ]

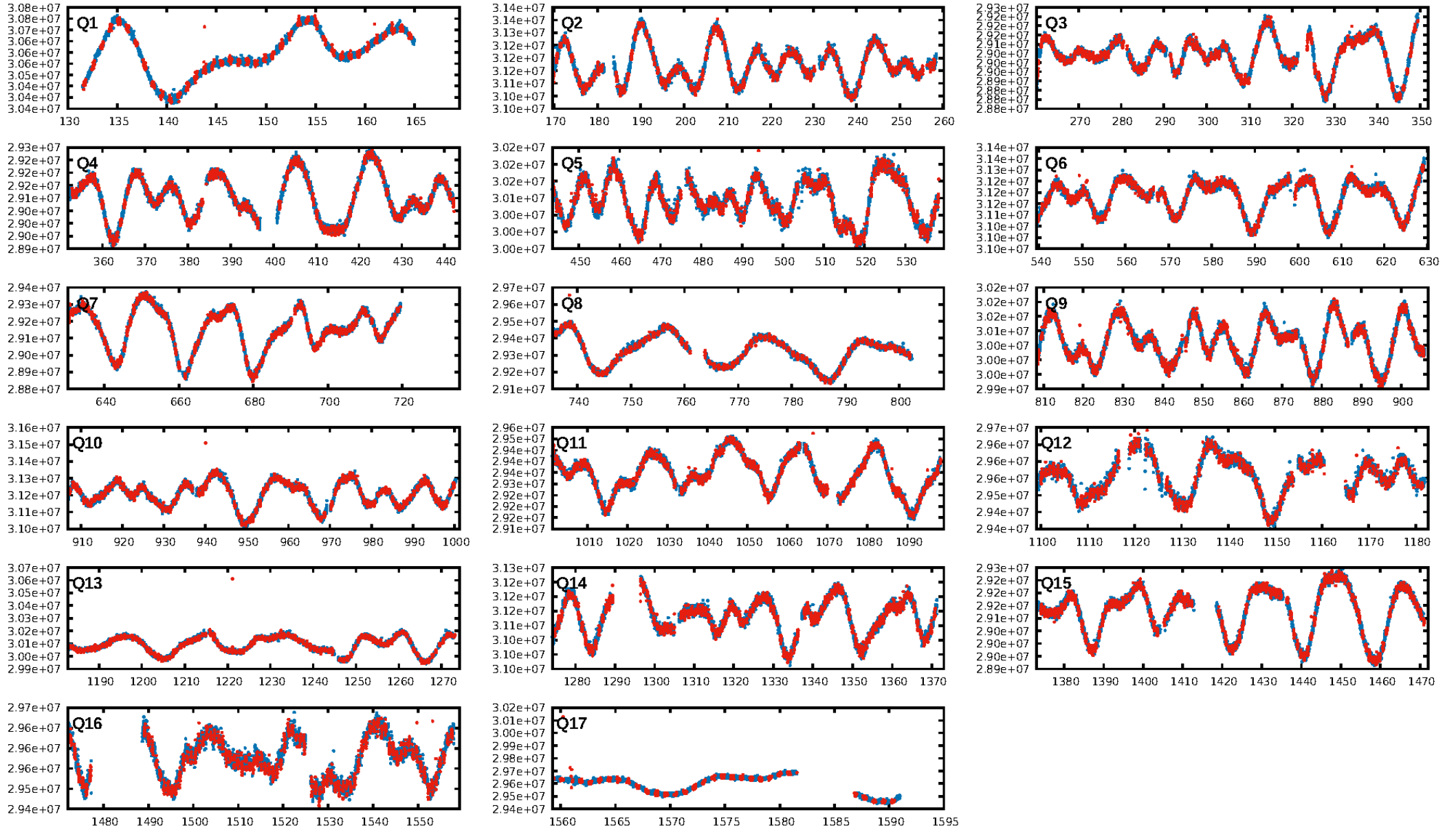
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [657.40σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.52e-37
RollingBand-fgt: 0.97 [1429/1478]
GhostDiagnostic-chr: -0.2121
Centroid-sig: 0.0%
Centroid-so: 5.308 arcsec [6.28σ]
OotOffset-rm: 8.816 arcsec [18.65σ]
KicOffset-rm: 8.843 arcsec [22.34σ]
OotOffset-st: 4/1/2/5 [12]
KicOffset-st: 4/1/2/5 [12]
DiffImageQuality-fgm: 0.33 [4/12]
DiffImageOverlap-fno: 1.00 [17/17]

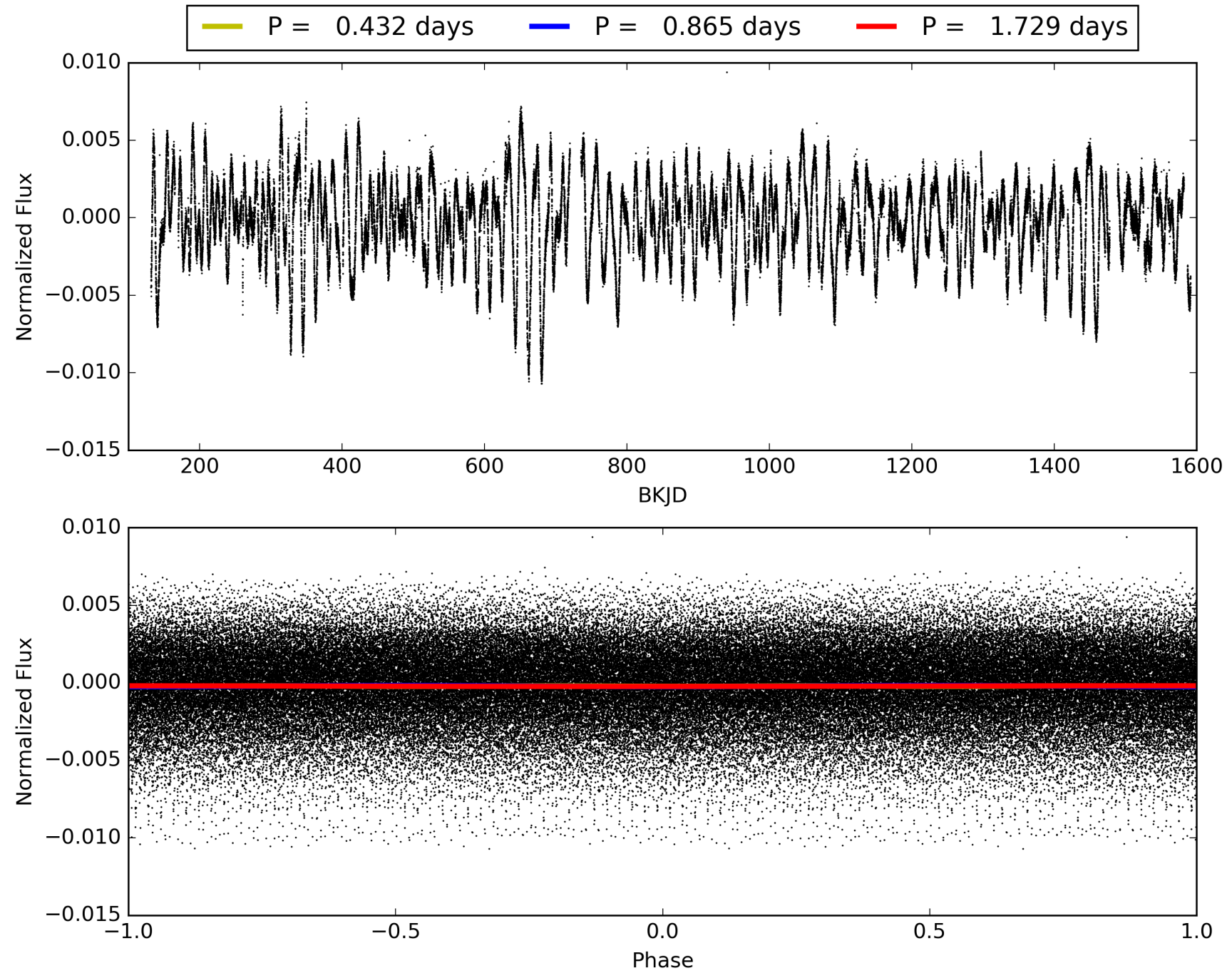
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:27:42 Z

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

TCE 007885558-01, PDC Light Curves

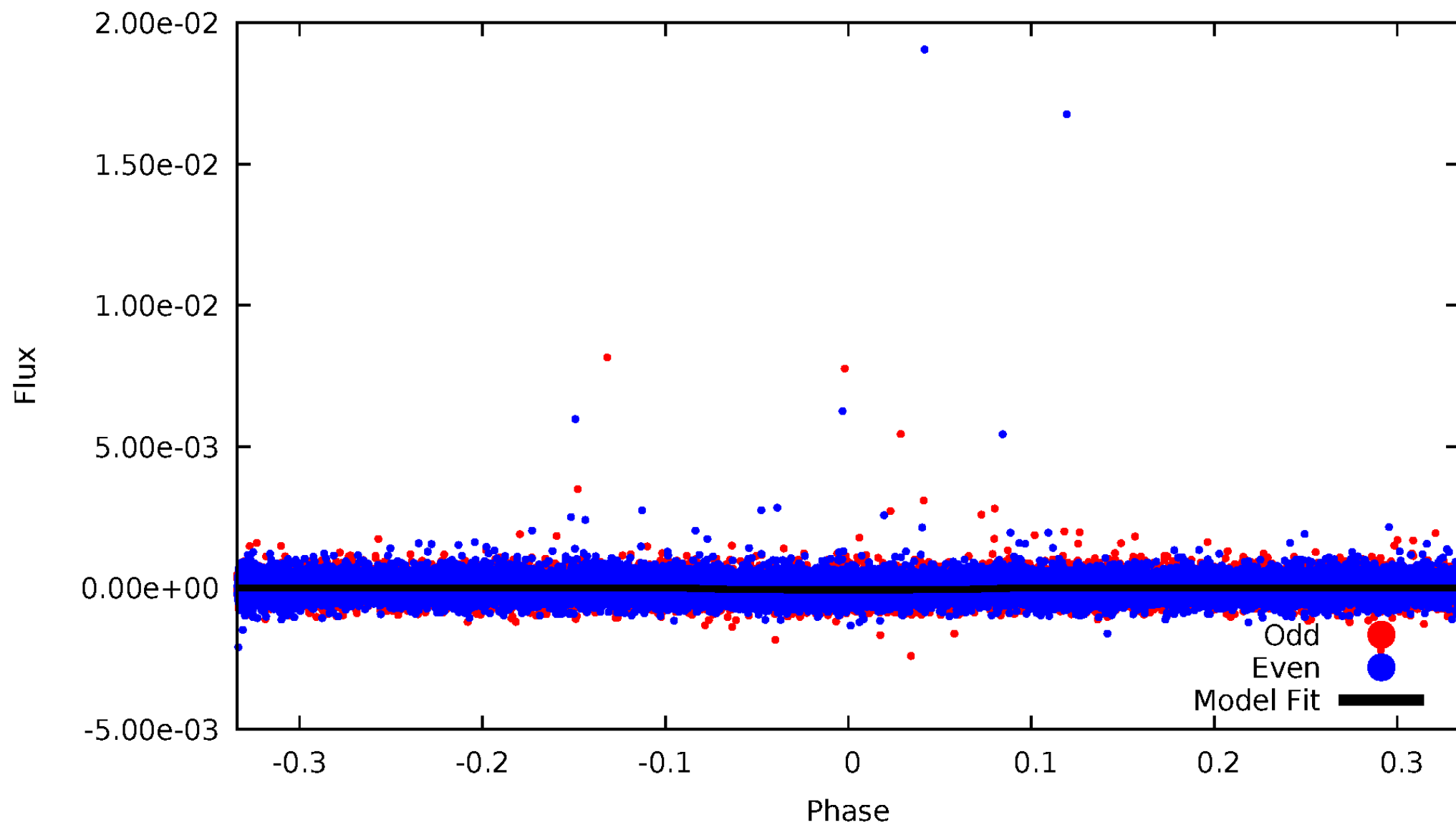


TCE 007885558-01



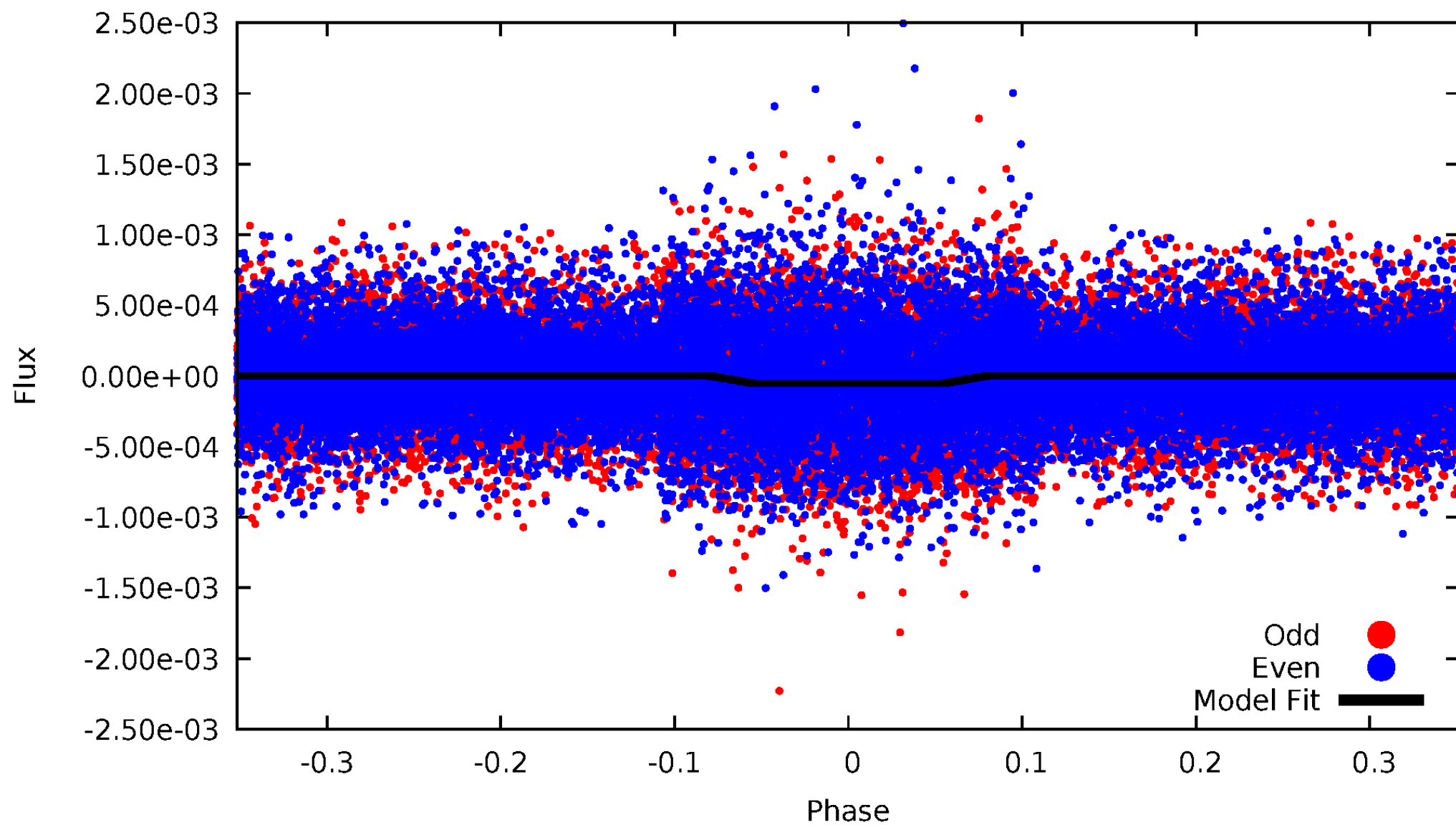
DV Odd/Even

TCE 007885558-01



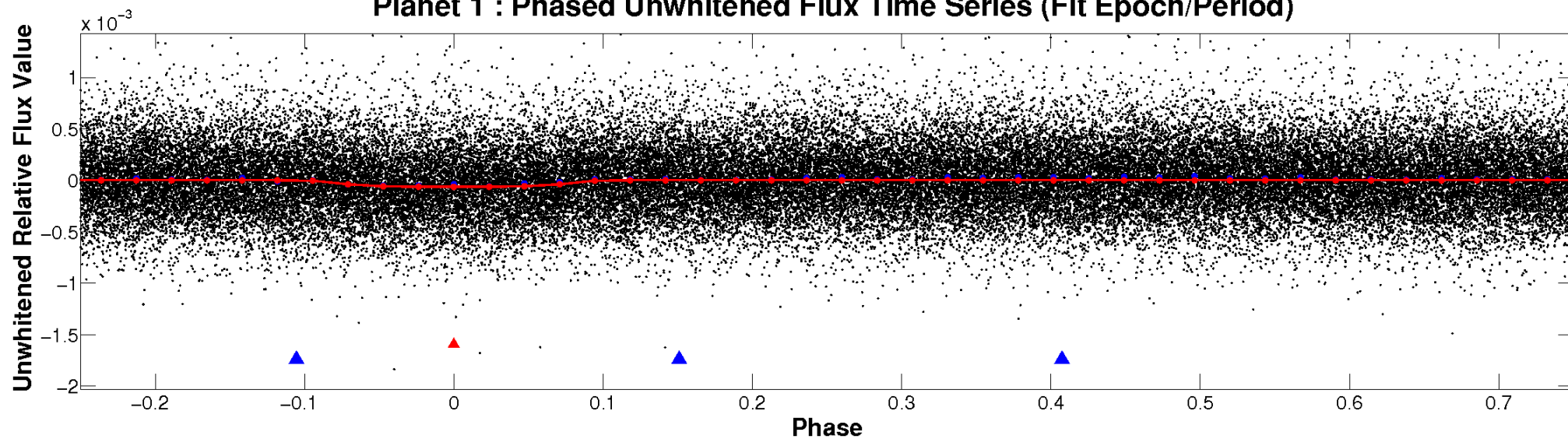
ALT Odd/Even

TCE 007885558-01

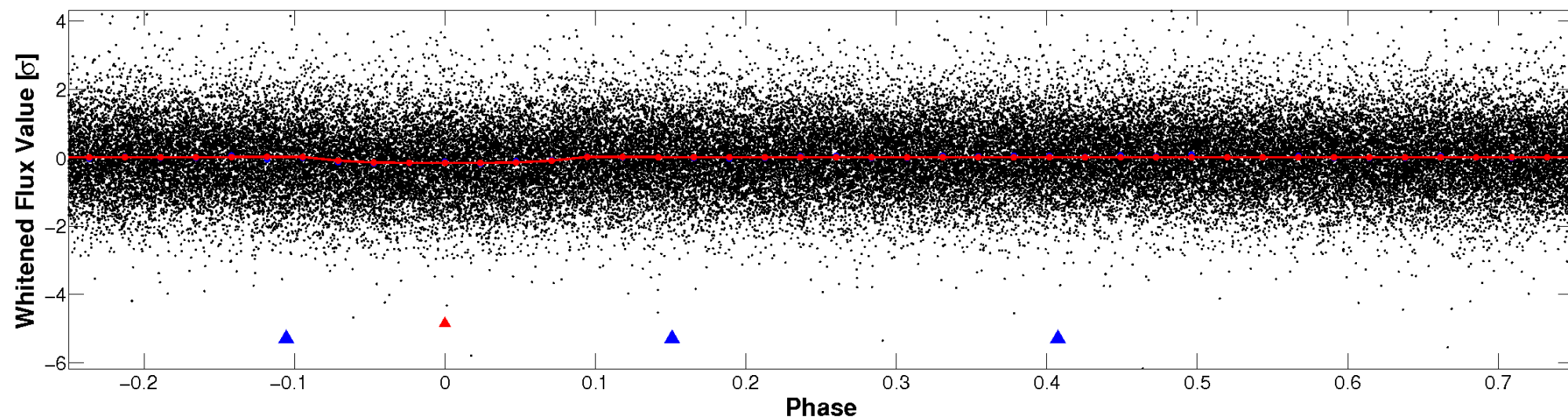


Non-Whitened Vs. Whitened Light Curve

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

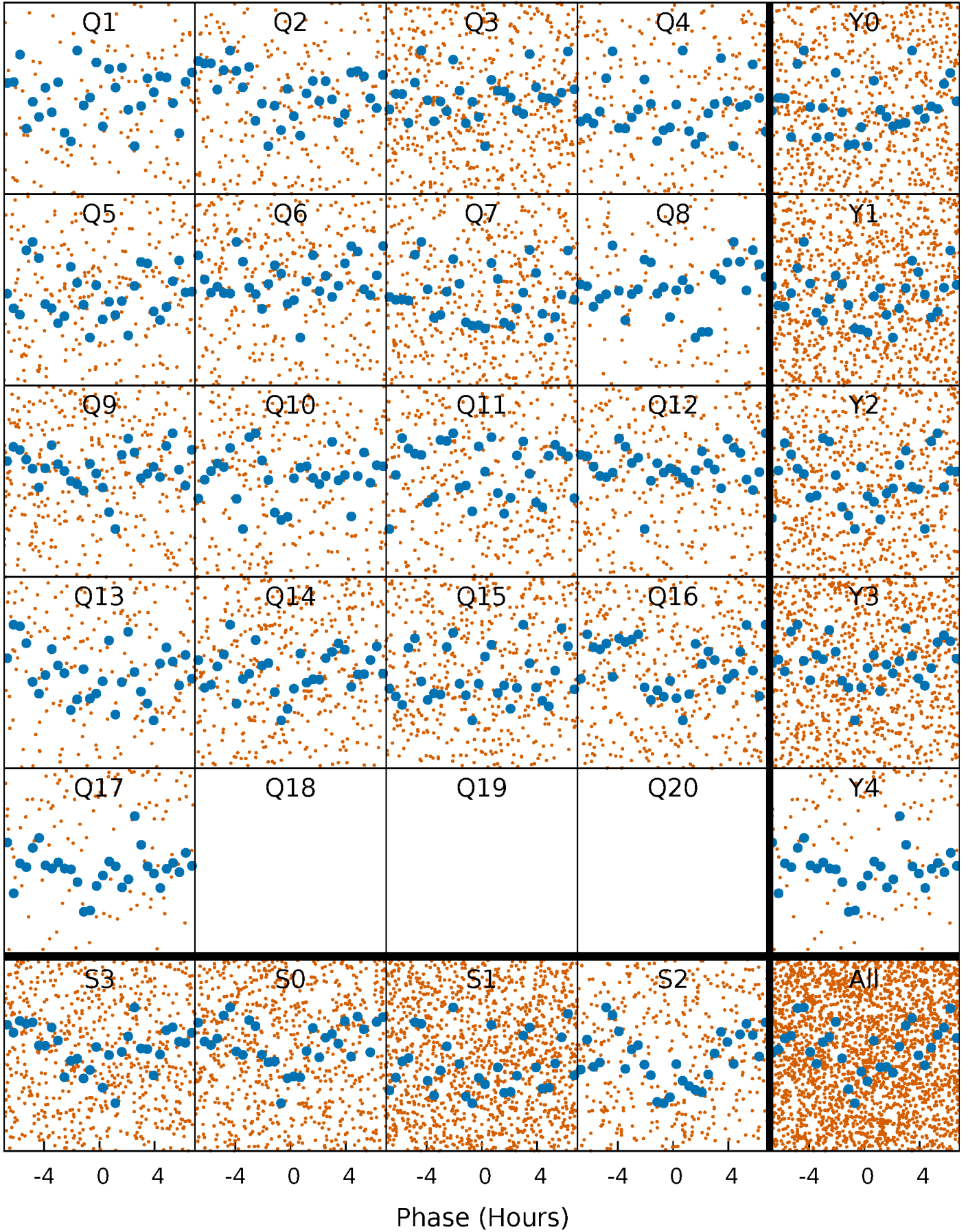


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



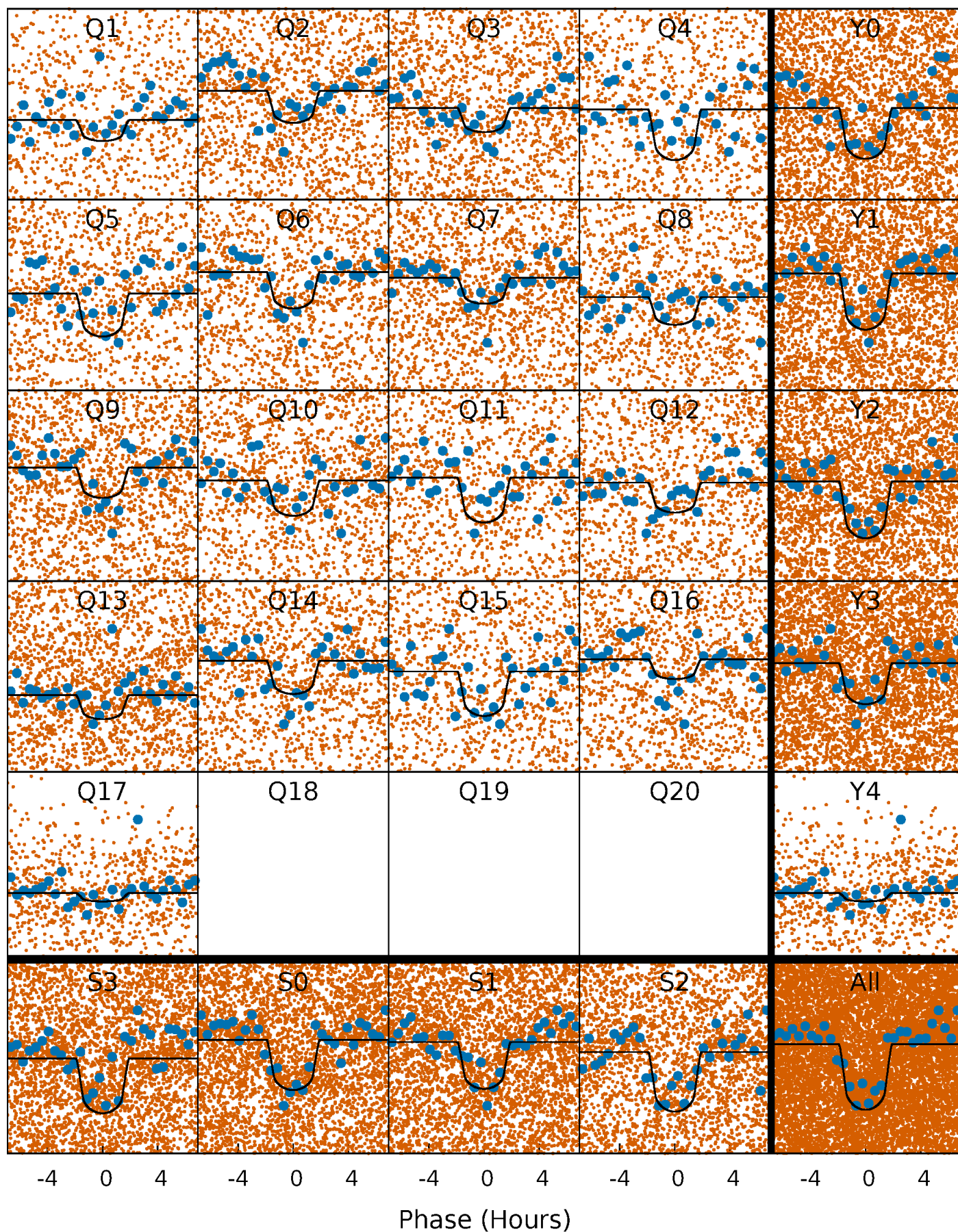
PDC Quarter-Phased Transit Curves

TCE 007885558-01 P= 0.864657 Days $T_0=131.691047$ (BKJD)



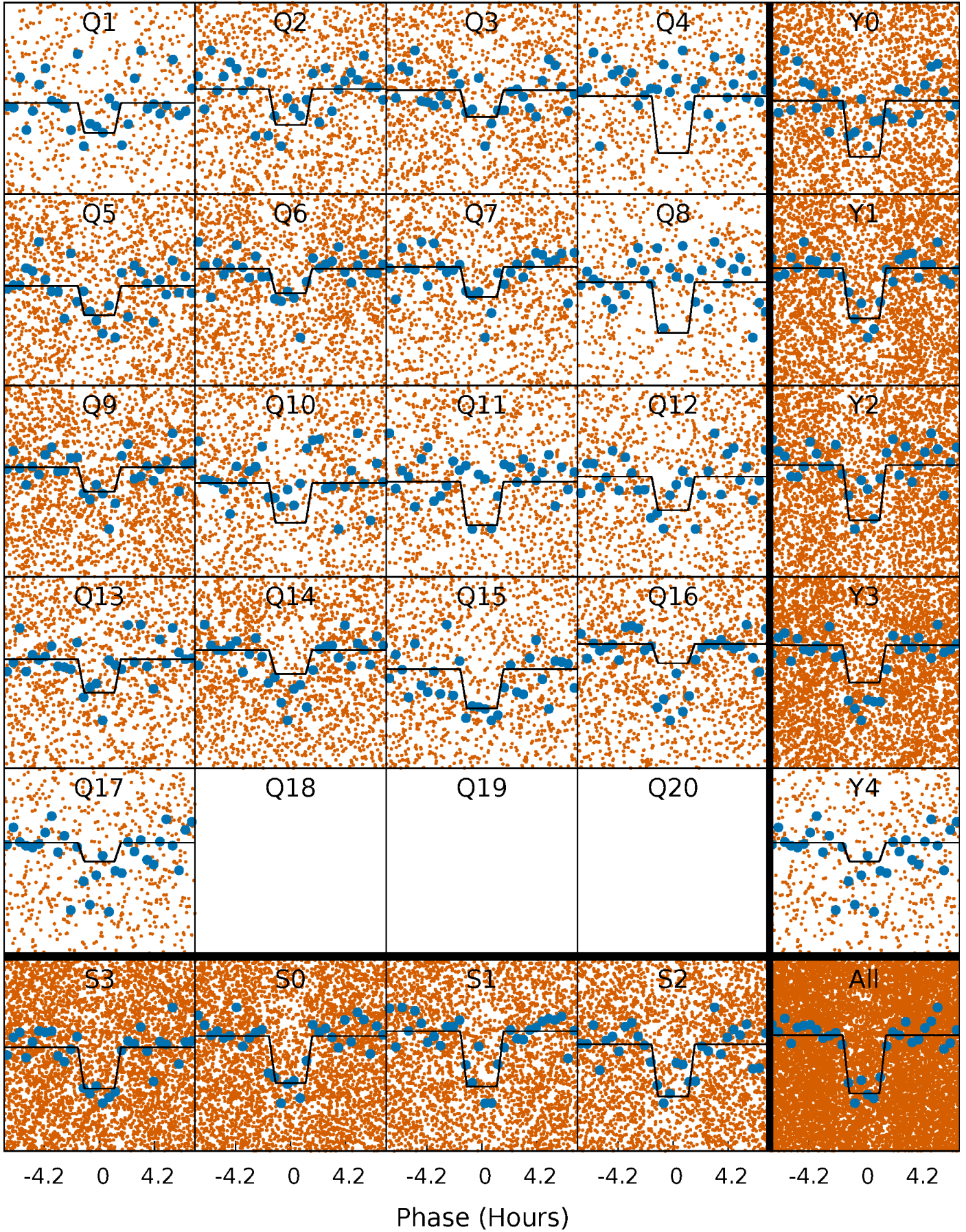
DV Quarter-Phased Transit Curves

TCE 007885558-01 P= 0.864657 Days $T_0=131.691047$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

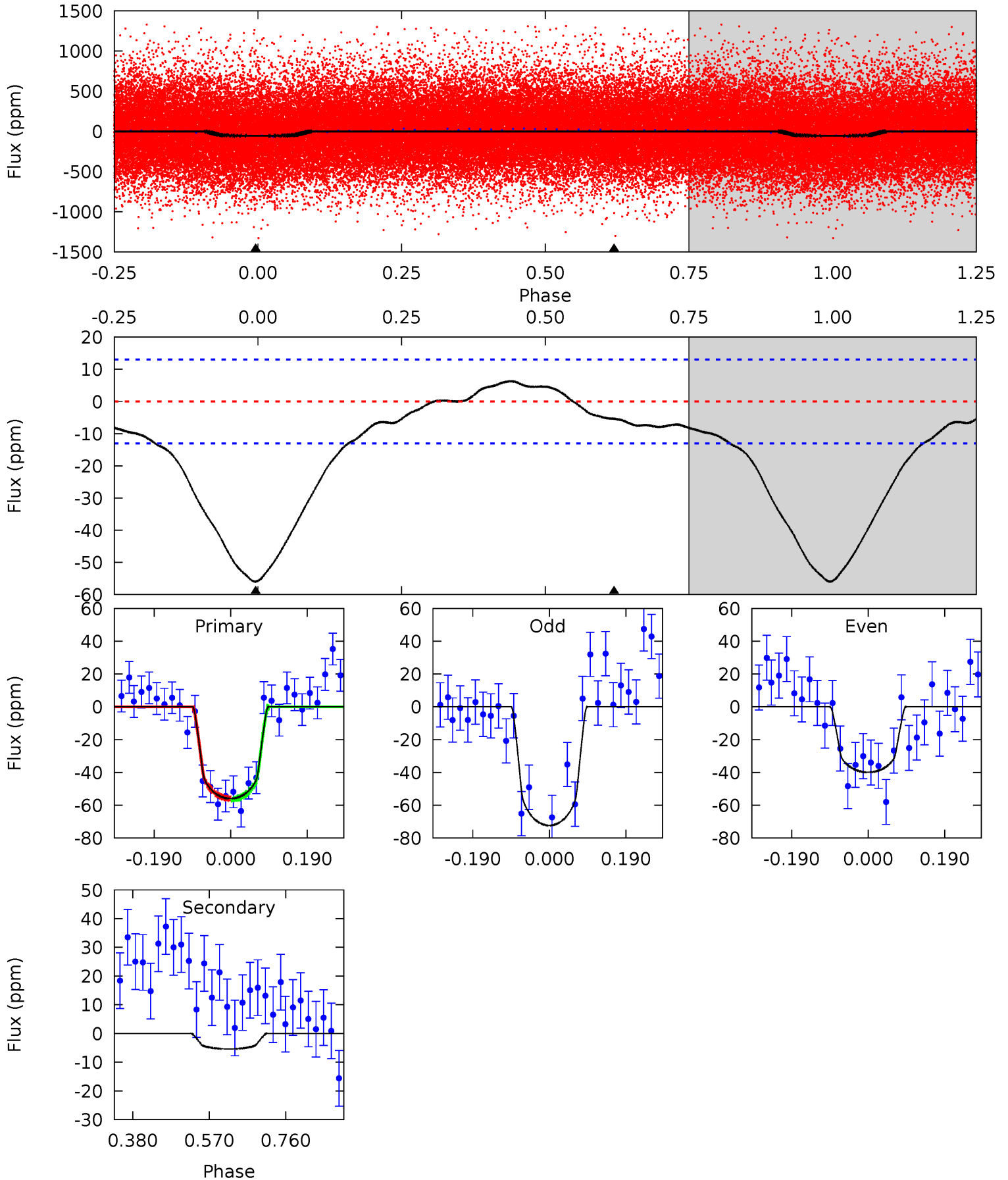
TCE 007885558-01 P= 0.864647 Days $T_0=131.696388$ (BKJD)



DV Model-Shift Uniqueness Test

007885558-01, $P = 0.864657$ Days, $E = 130.826390$ Days

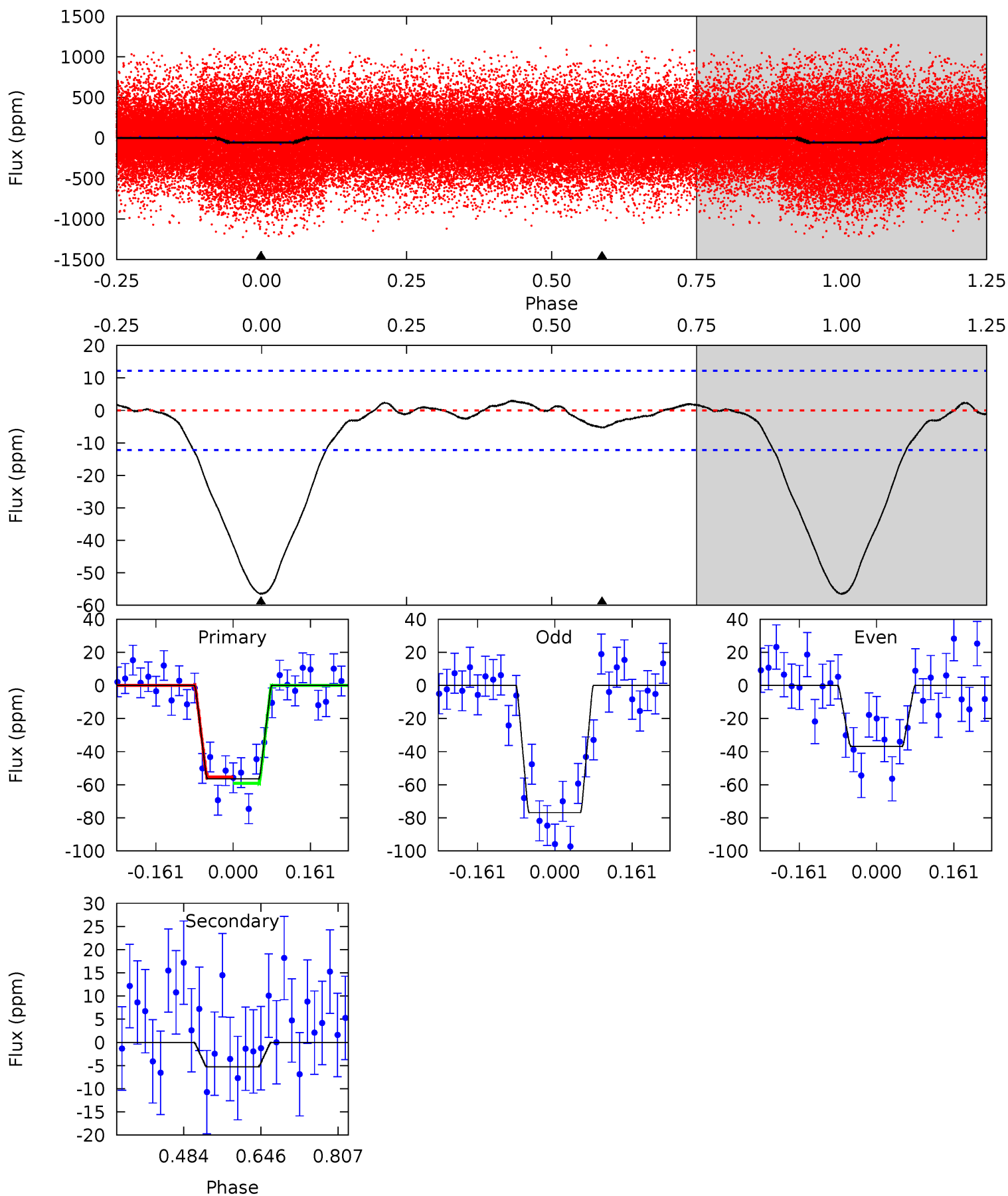
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.0	1.83	0	0	4.43	1.31	1.42	19.0	19.0	1.83	1.83	5.49	0.87	0.10	0.10



Alt Model-Shift Uniqueness Test

007885558-01, P = 0.864647 Days, E = 130.831741 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.7	1.93	0	0	4.46	1.40	0.49	20.7	20.7	1.93	1.93	7.33	0.83	0.05	0.71



Stellar Parameters For KIC 007885558

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5587^{+166}_{-182}	$4.556^{+0.031}_{-0.178}$	$0.000^{+0.250}_{-0.300}$	$0.851^{+0.226}_{-0.075}$	$0.952^{+0.091}_{-0.112}$	$2.174^{+0.380}_{-1.031}$
	+3%/-3%	+1%/-4%	+inf%/-inf%	+27%/-9%	+10%/-12%	+17%/-47%
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 007885558-01 / KOI 5439.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-5 ± 3	$0.87^{+0.36}_{-0.33}$	2462^{+154}_{-117}	3168^{+741}_{-752}	$1.077^{+2.086}_{-0.670}$
Alt.	-5 ± 3	$0.73^{+0.38}_{-0.36}$	2459^{+157}_{-112}	3409^{+1075}_{-752}	$1.558^{+5.272}_{-1.037}$

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 $A_{obs} \gg 1.0$

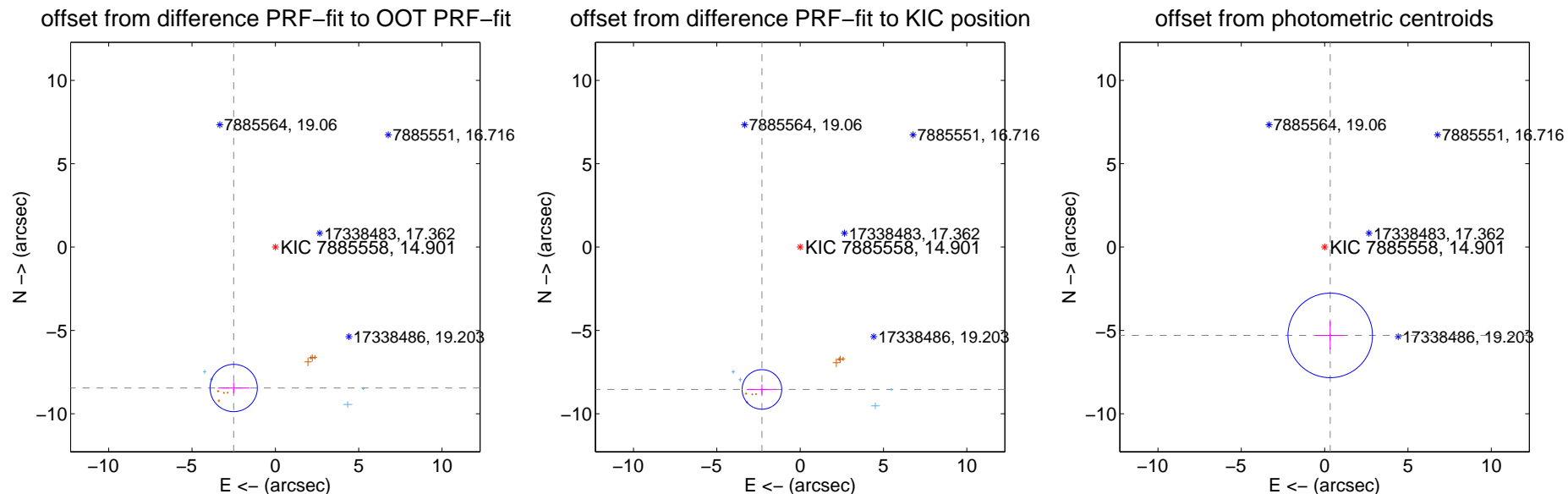
DV Centroid Data

Supplemental centroid analysis for 007885558-01. Kepler magnitude: 14.90. Transit SNR 13.47

There are 4 quarters with good PRF difference image offsets

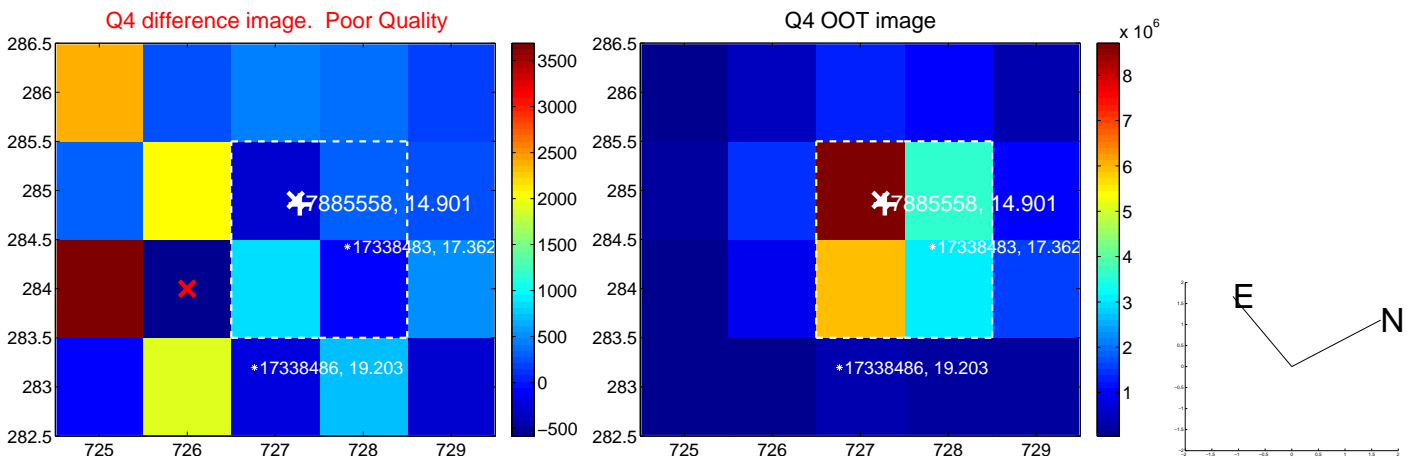
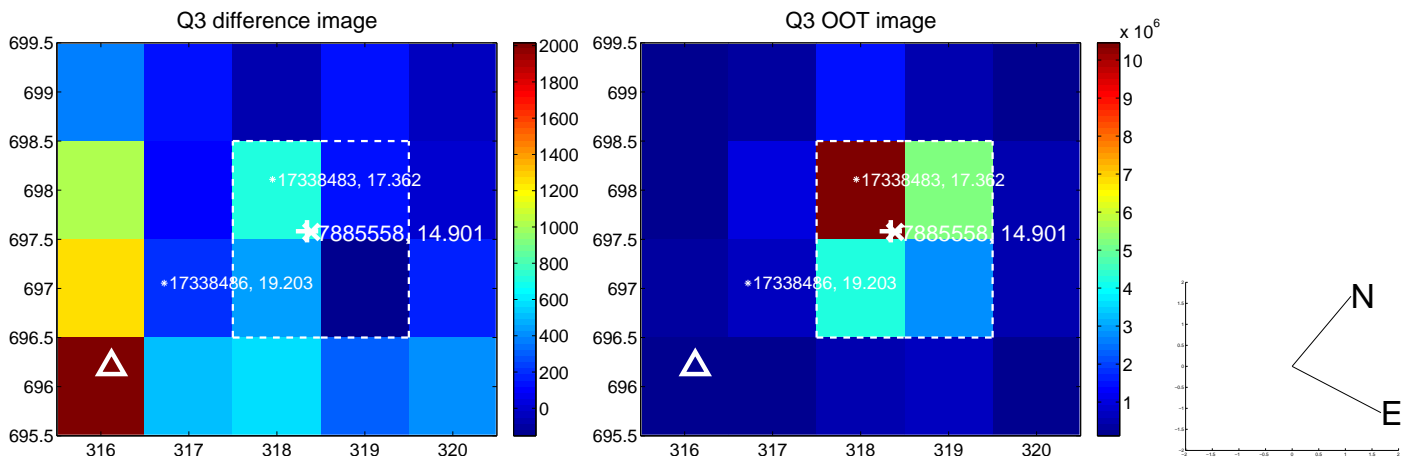
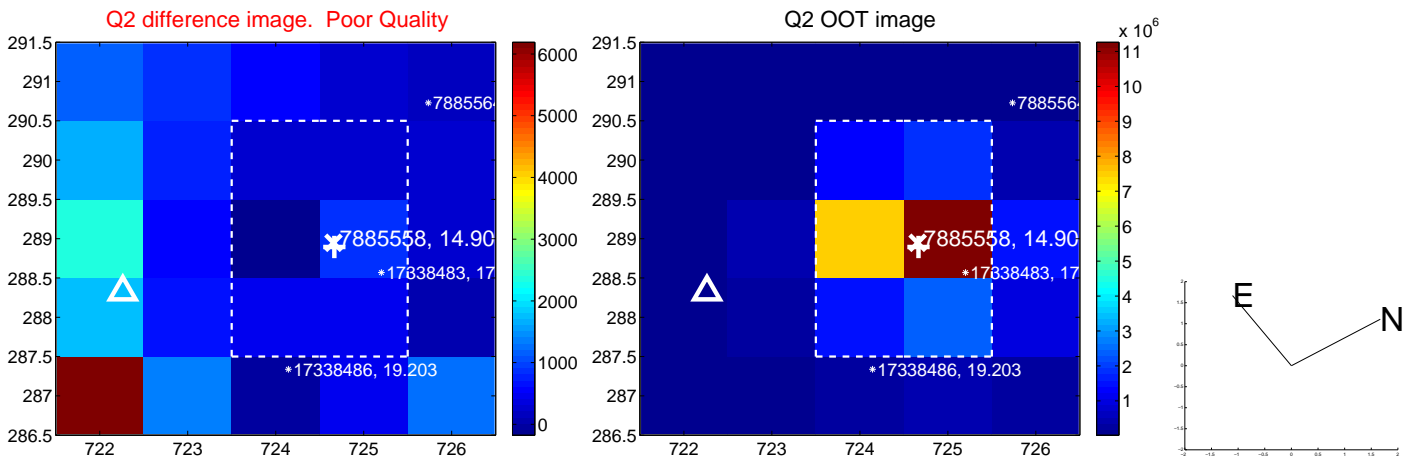
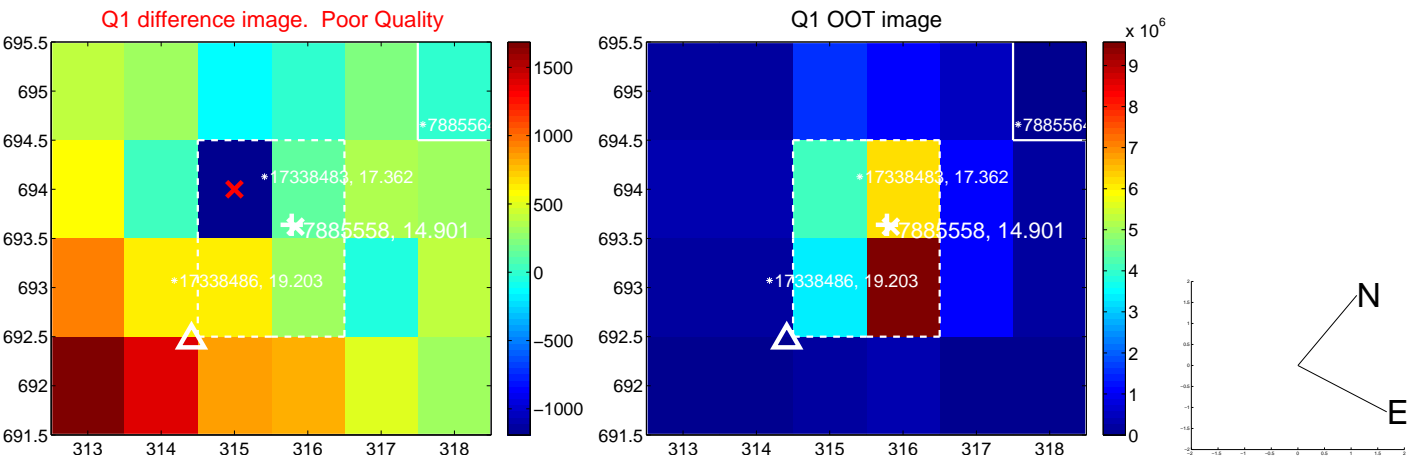
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.816 ± 0.473	18.65	2.500 ± 0.946	-8.453 ± 0.323
PRF-fit source offset from KIC position	8.843 ± 0.396	22.34	2.295 ± 0.875	-8.540 ± 0.300
photometric centroid source offset	5.31 ± 0.85	6.28	-0.34 ± 0.85	-5.30 ± 0.85

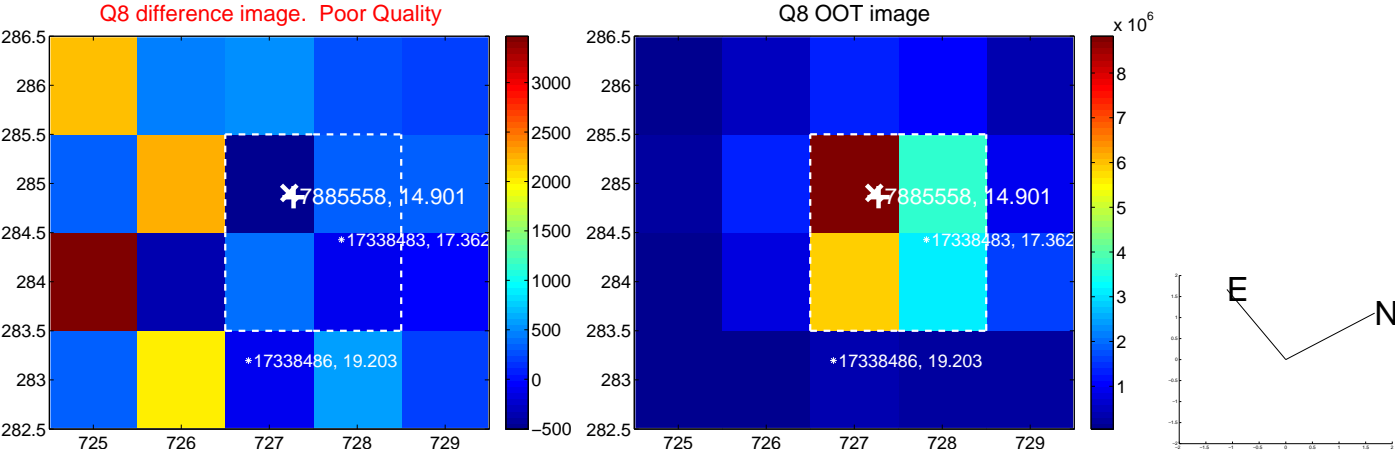
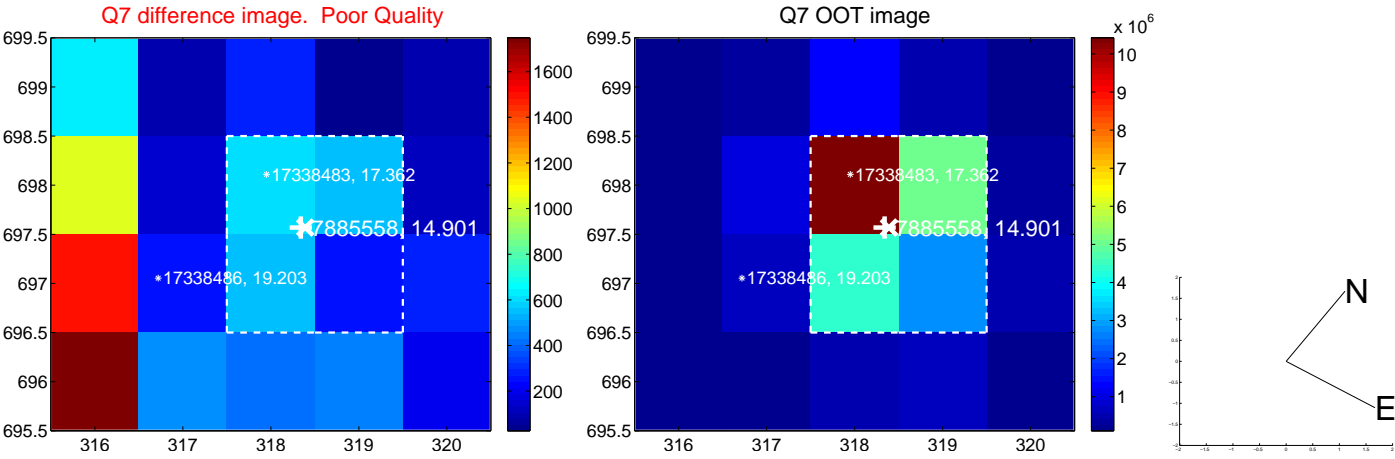
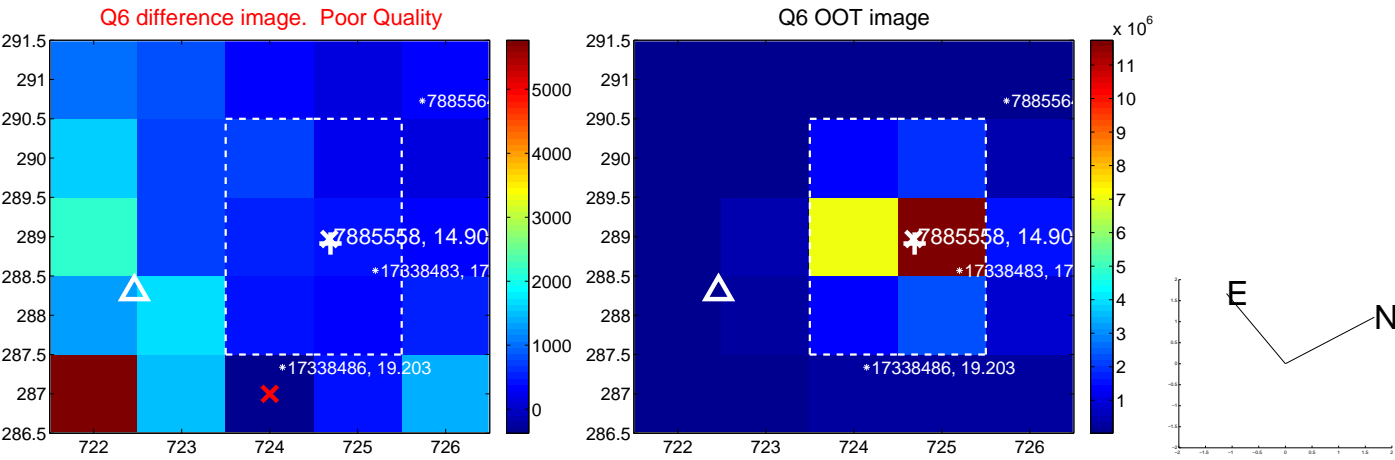
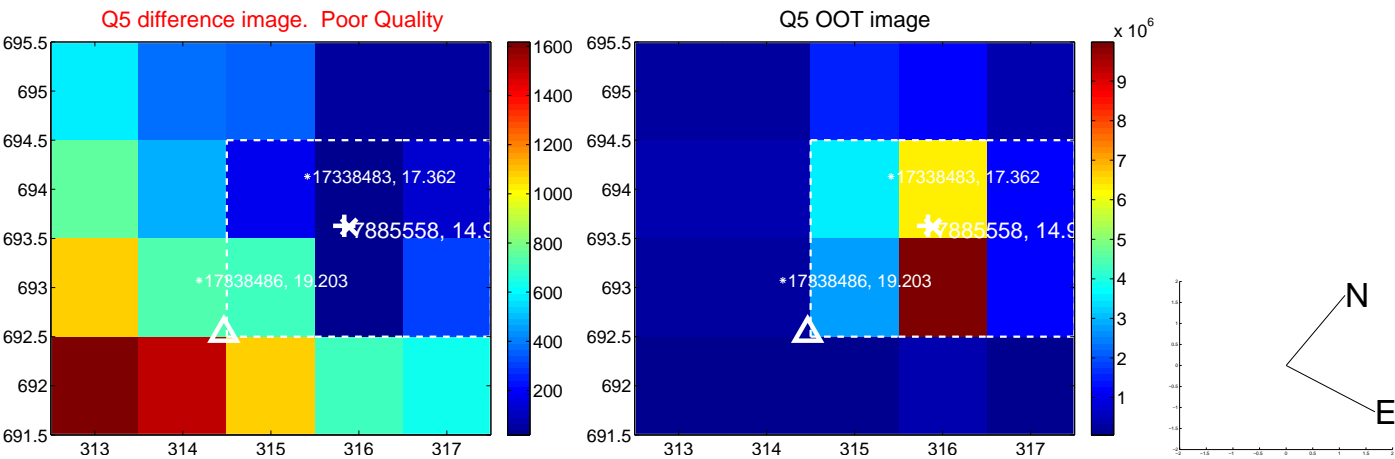


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

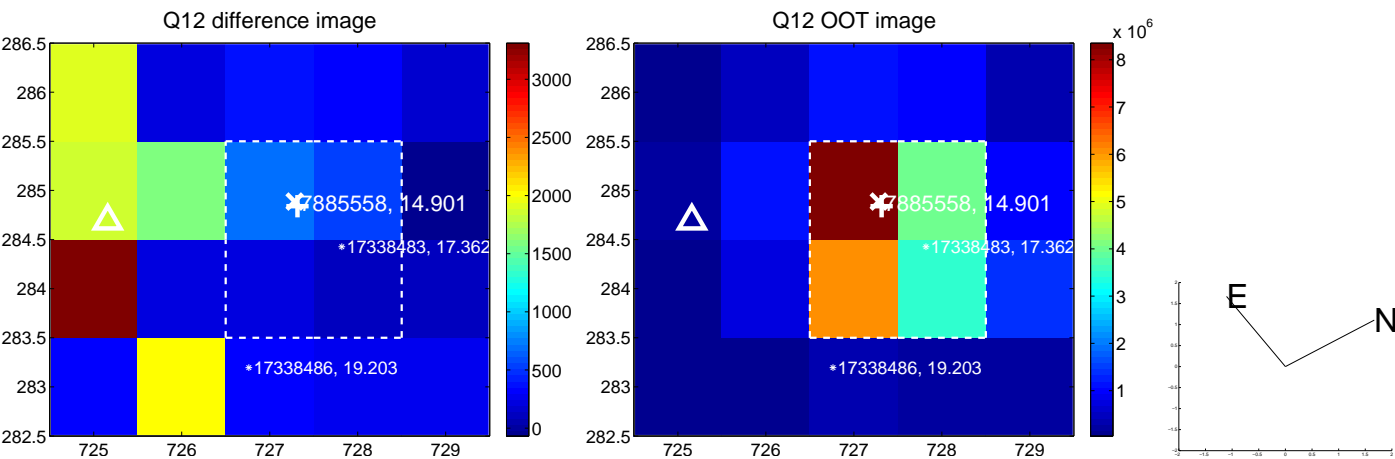
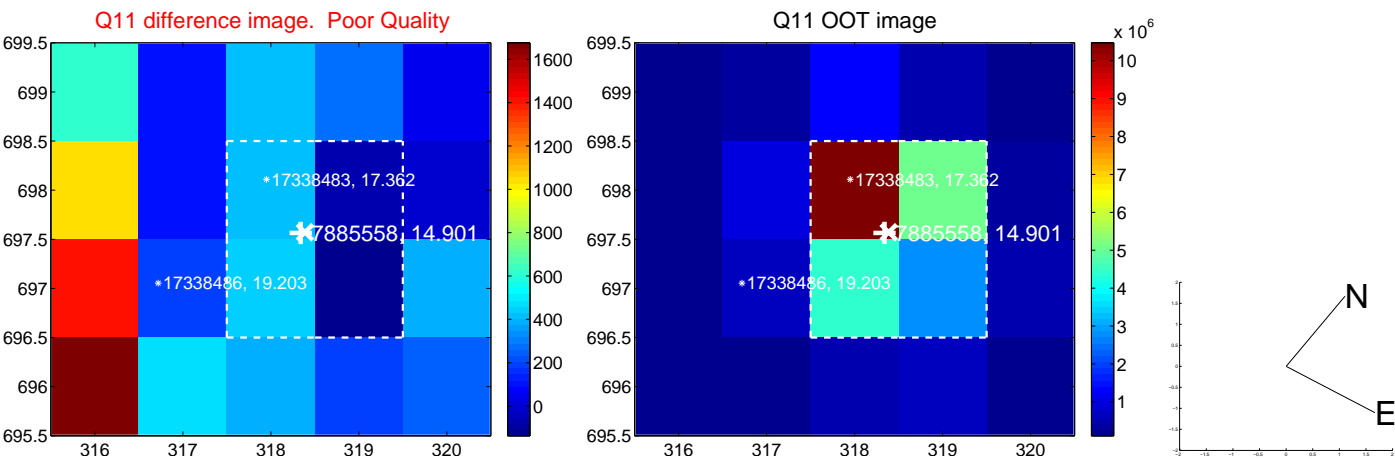
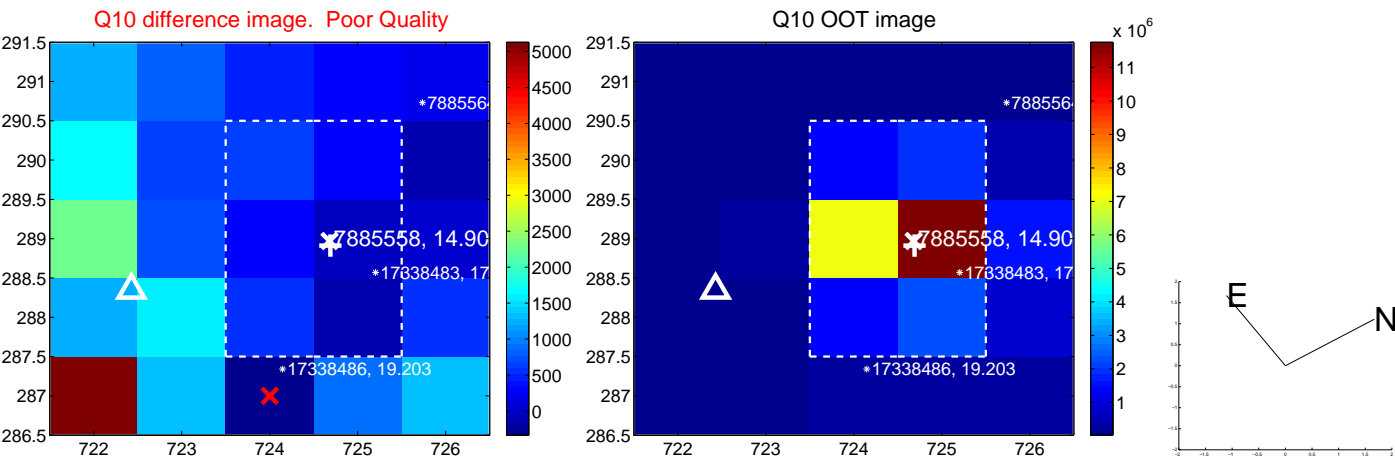
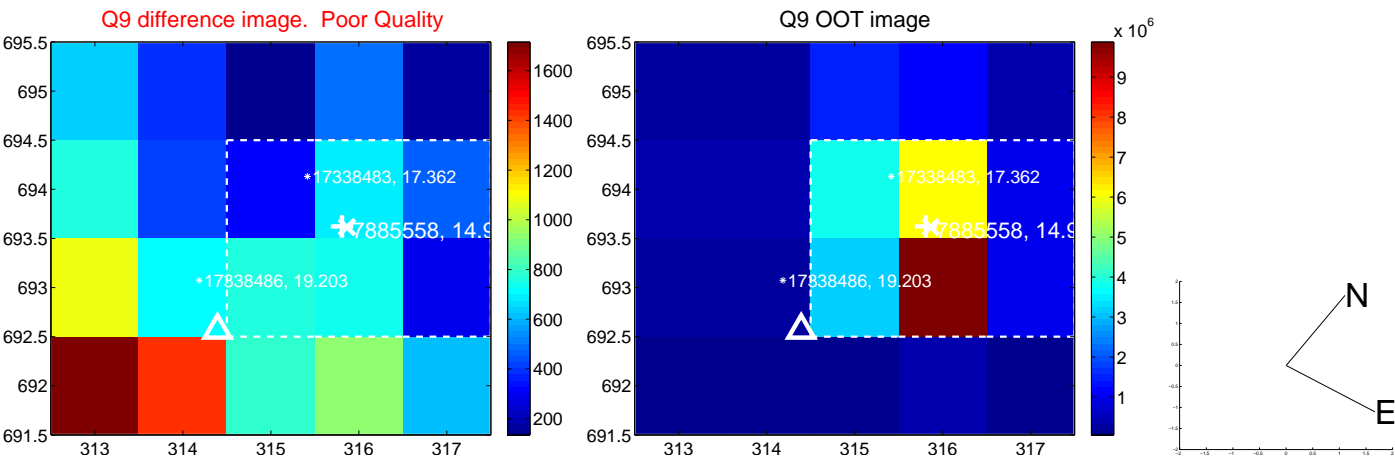
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



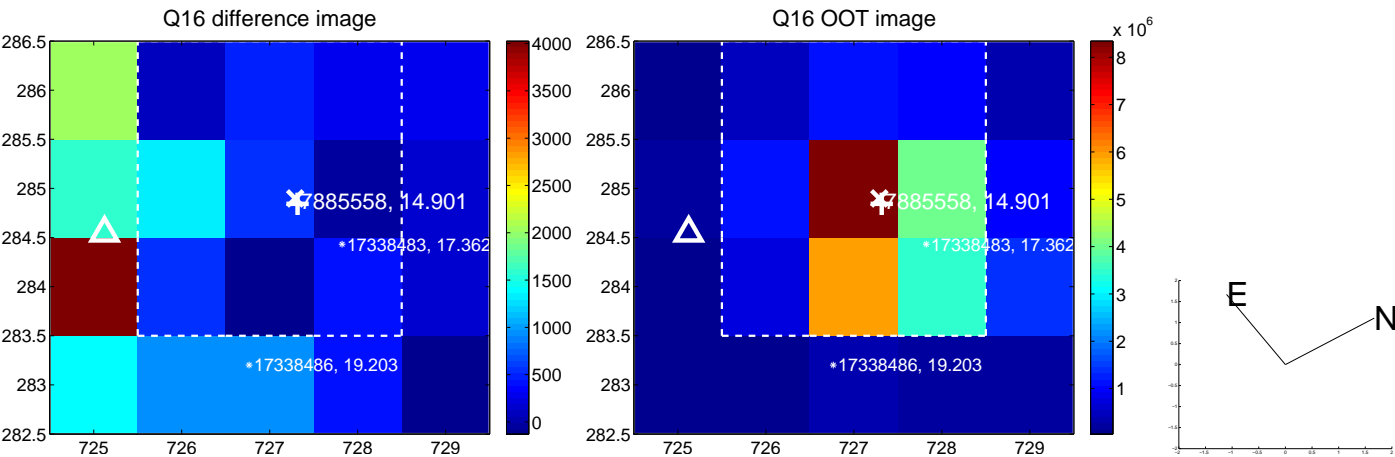
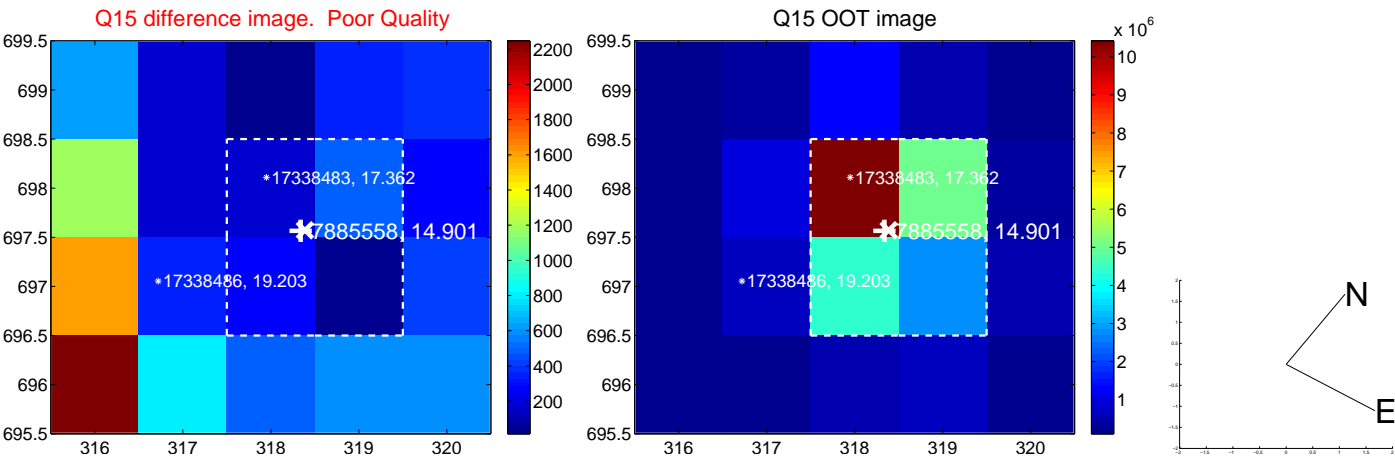
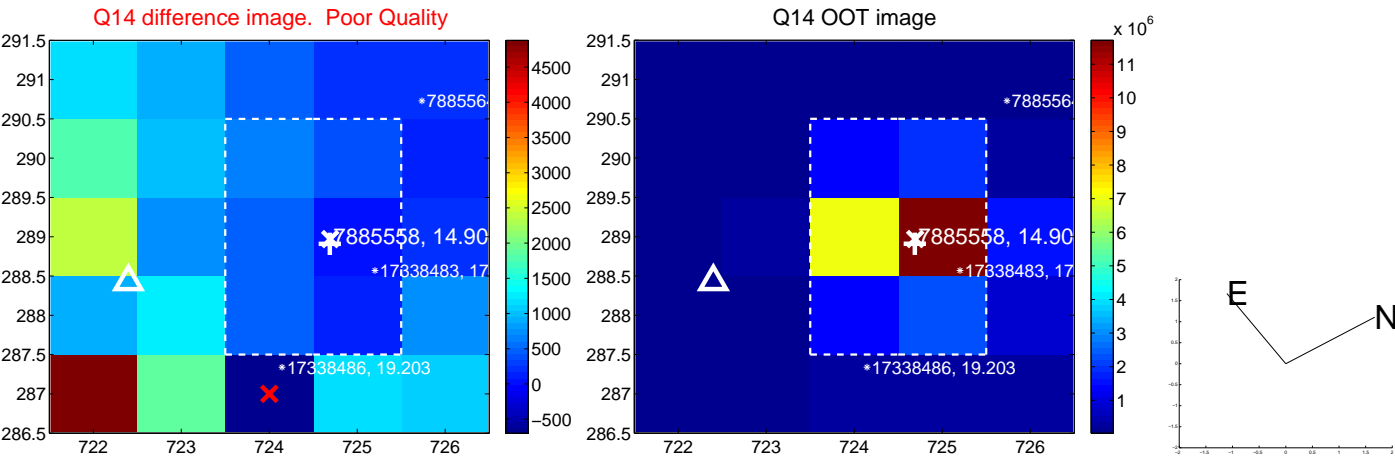
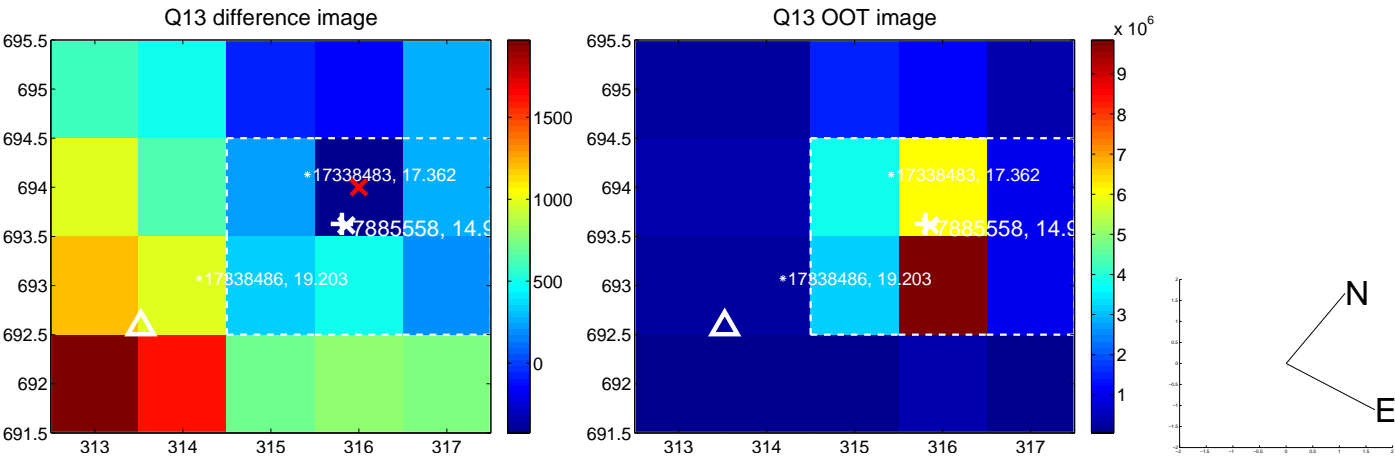
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



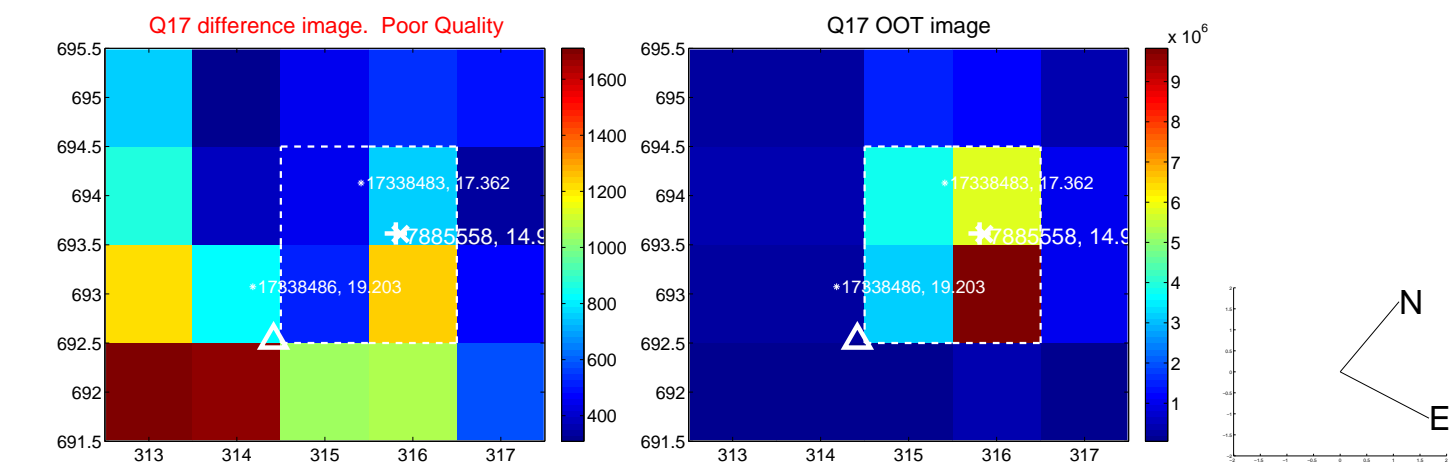
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



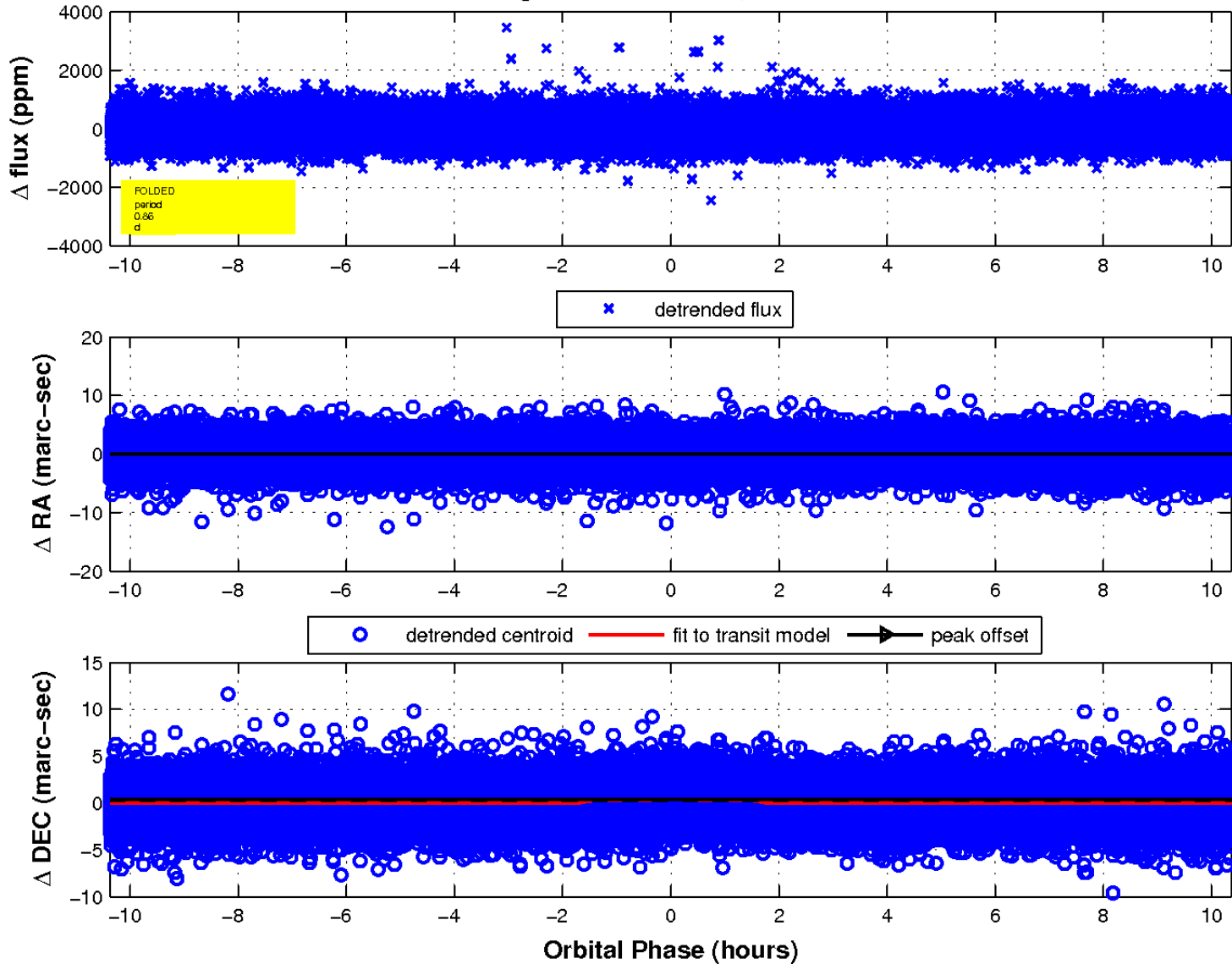
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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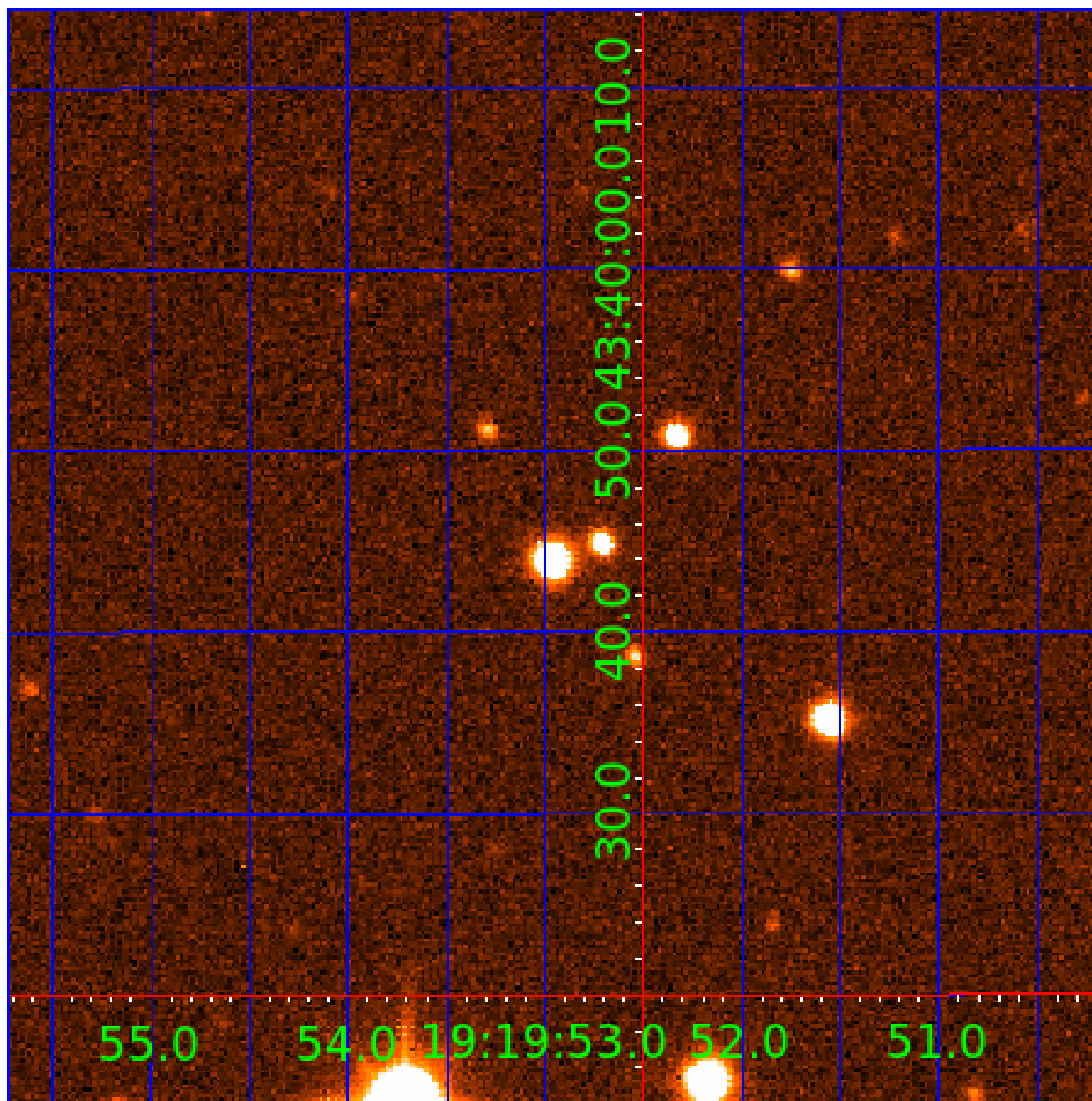


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 007885558

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

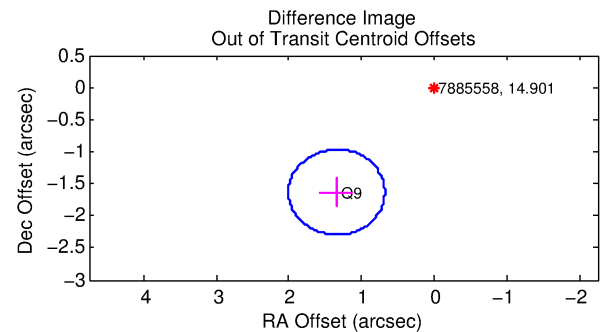
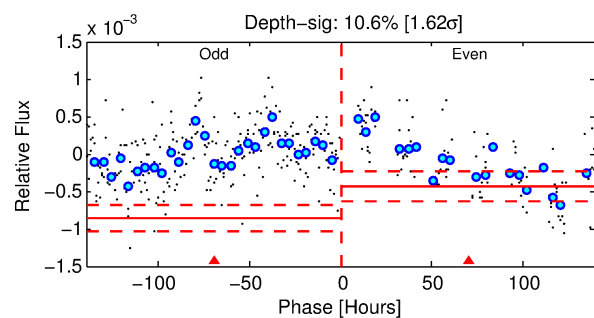
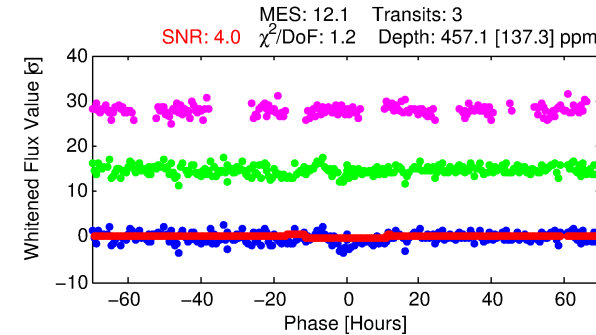
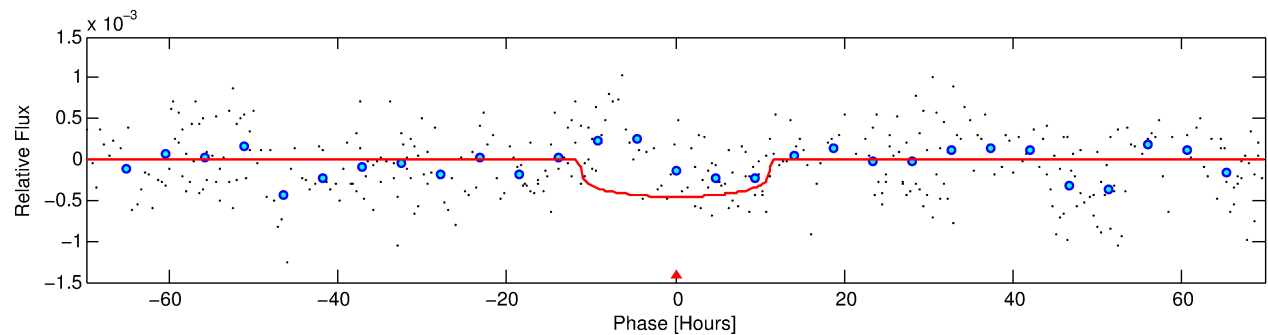
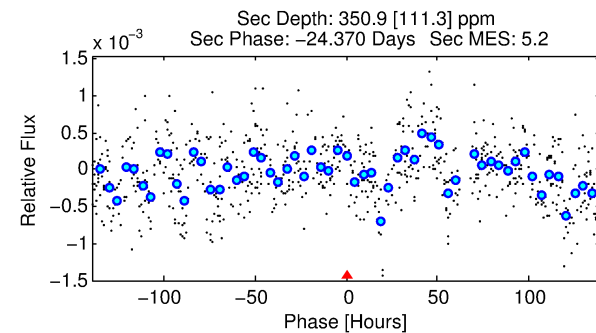
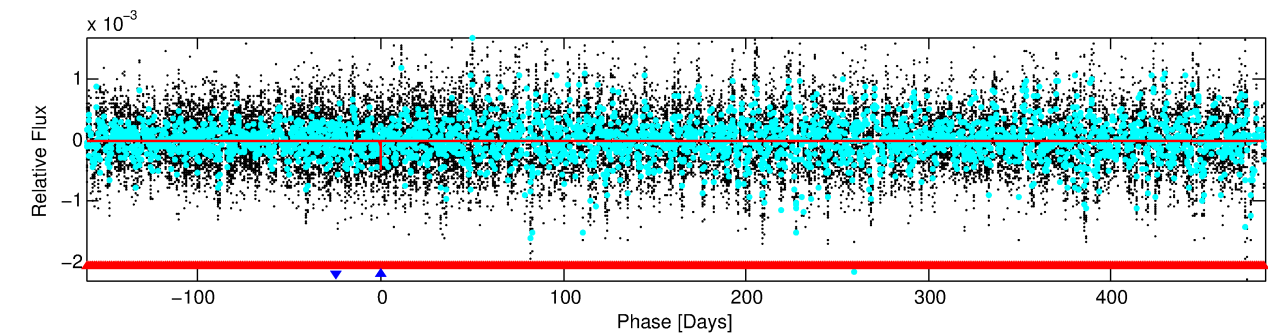
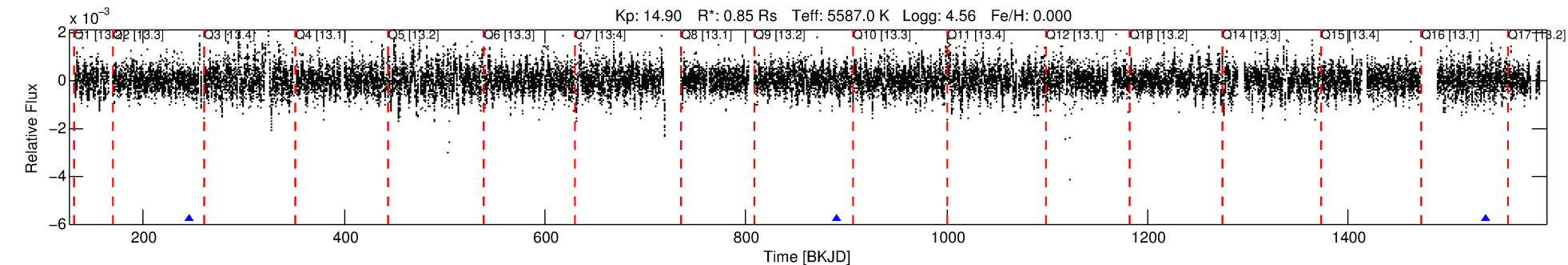
Ephemeris Match Information For 007885558-02

No Significant Match Found

DV One-Page Summary

KIC: 7885558 Candidate: 2 of 2 Period: 645.677 d
KOI: K05439 Corr: No Ephemeris Match

Kp: 14.90 R*: 0.85 Rs Teff: 5587.0 K Logg: 4.56 Fe/H: 0.000



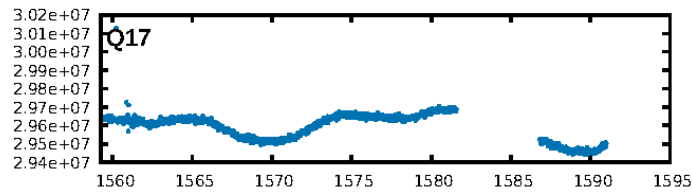
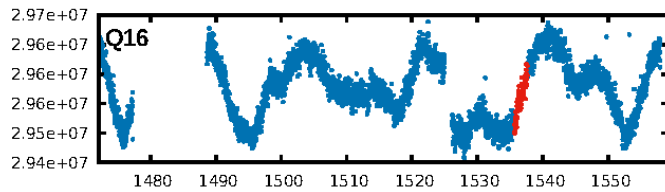
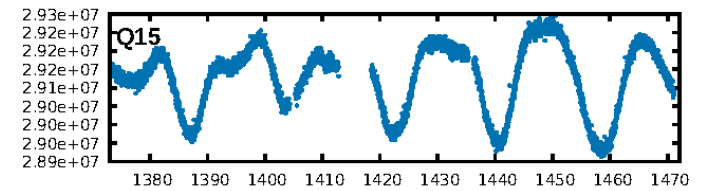
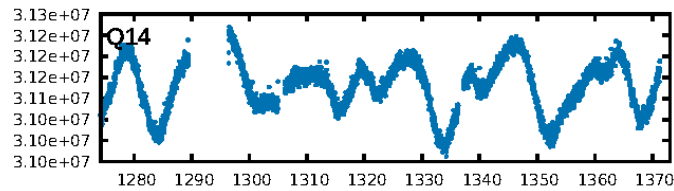
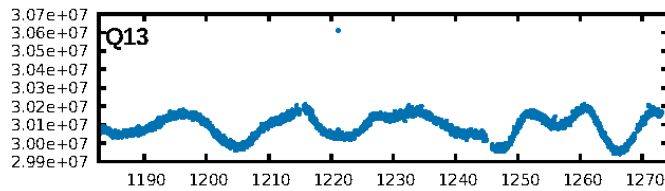
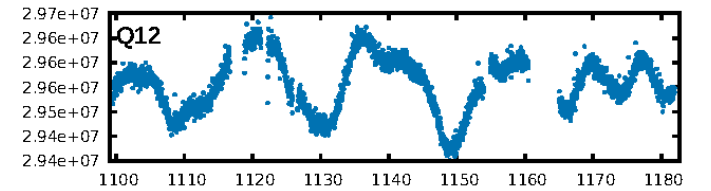
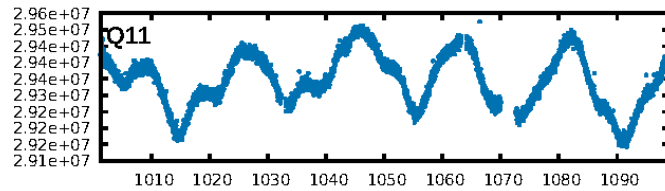
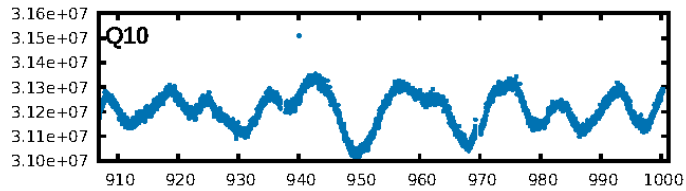
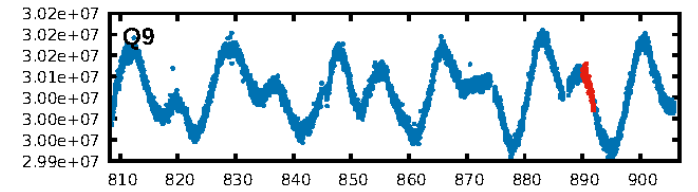
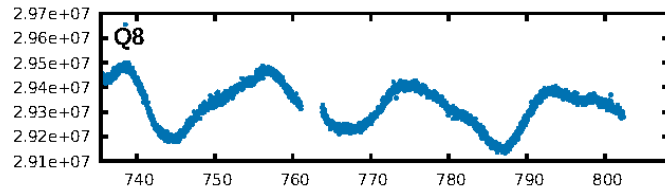
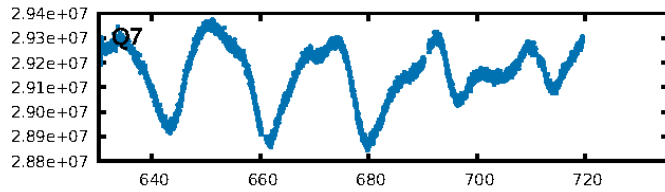
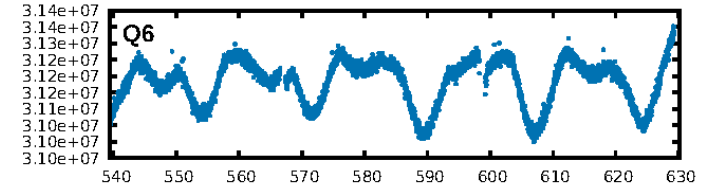
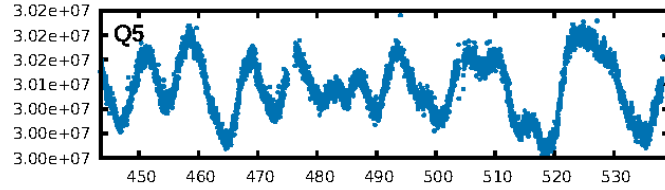
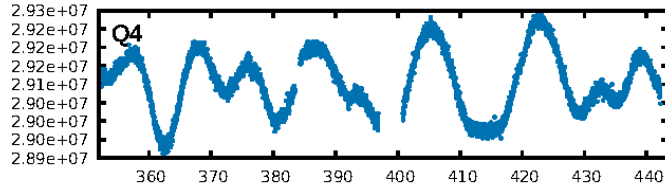
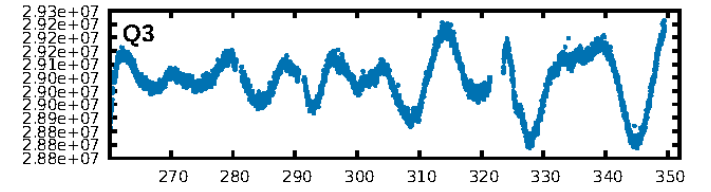
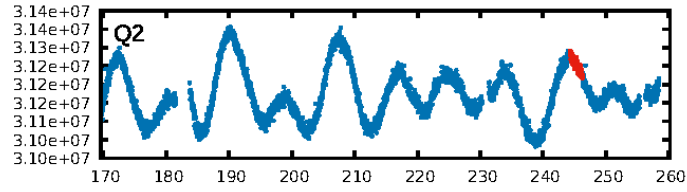
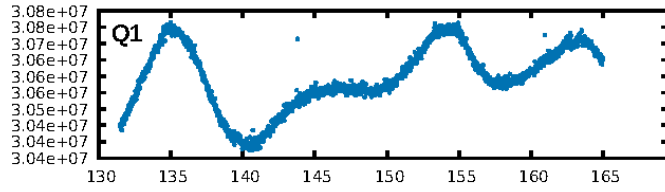
DV Fit Results:

Period = 645.67670 [0.03964] d
Epoch = 245.3133 [0.0583] BKJD
Rp/R* = 0.0207 [0.0091]
a/R* = 163.21 [269.76]
b = 0.67 [1.38]
Seff = 0.31 [0.11]
Teq = 190 [17] K
Rp = 1.92 [0.99] Re
a = 1.4377 [0.3215] AU
Ag = 107950.01 [106980.04] [1.01σ]
Teffp = 5314 [1256] K [4.08σ]

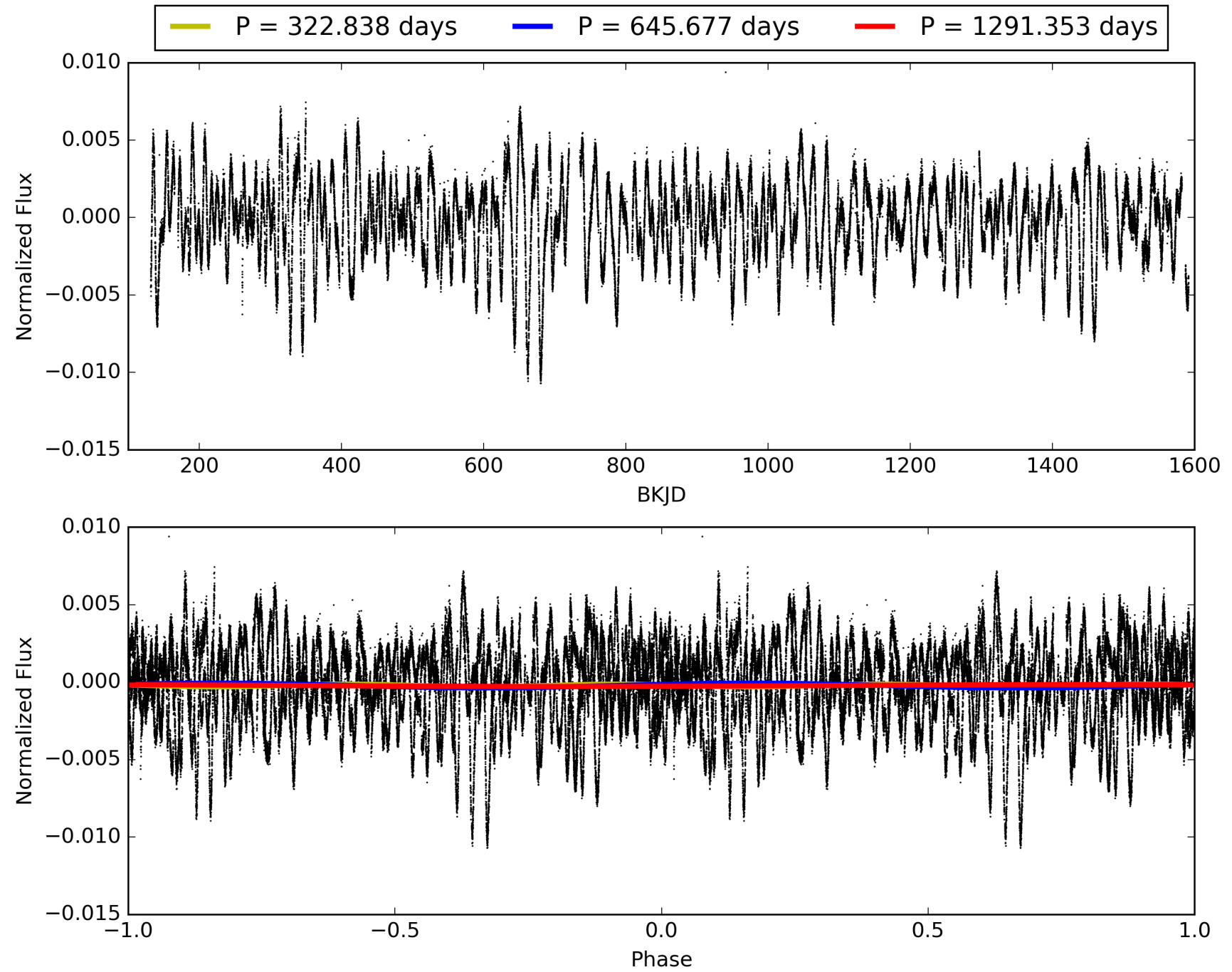
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [657.40σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.3%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 6.28e-14
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.6537
Centroid-sig: 1.0%
Centroid-so: 3.171 arcsec [1.98σ]
OotOffset-rm: 2.115 arcsec [9.55σ]
KicOffset-rm: 2.053 arcsec [9.22σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 0.00 [0/2]

TCE 00788558-02, PDC Light Curves

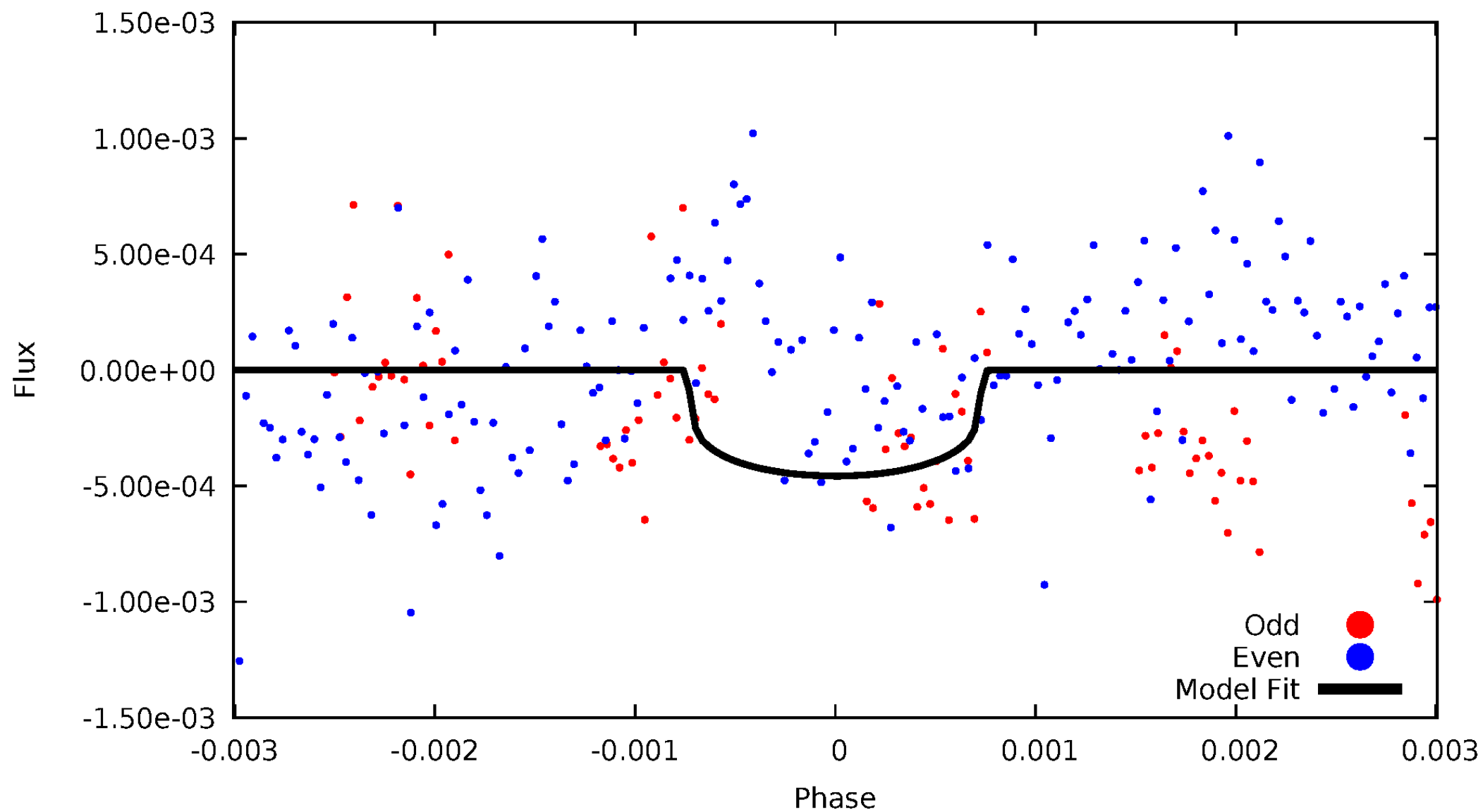


TCE 007885558-02



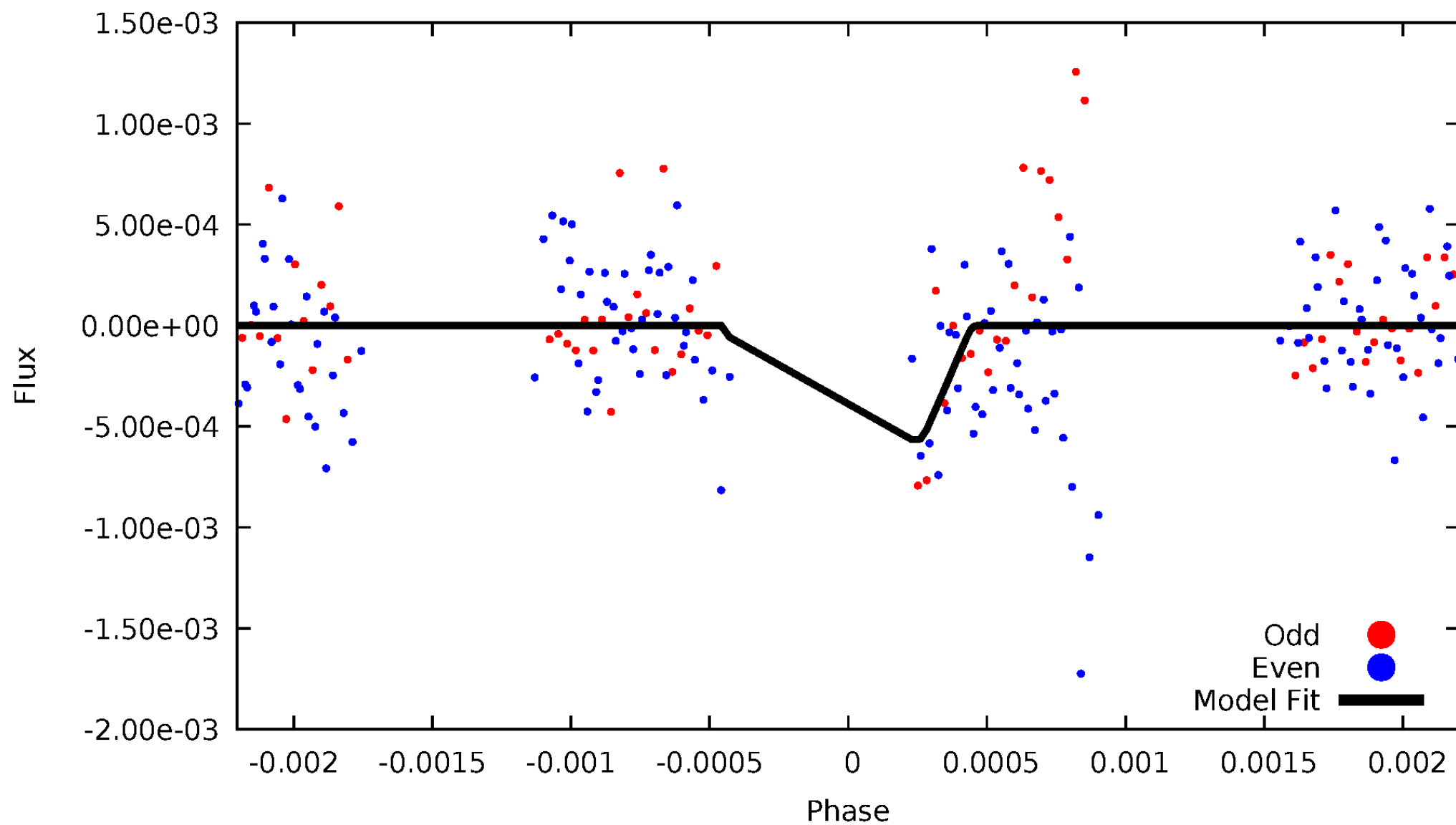
DV Odd/Even

TCE 00788558-02



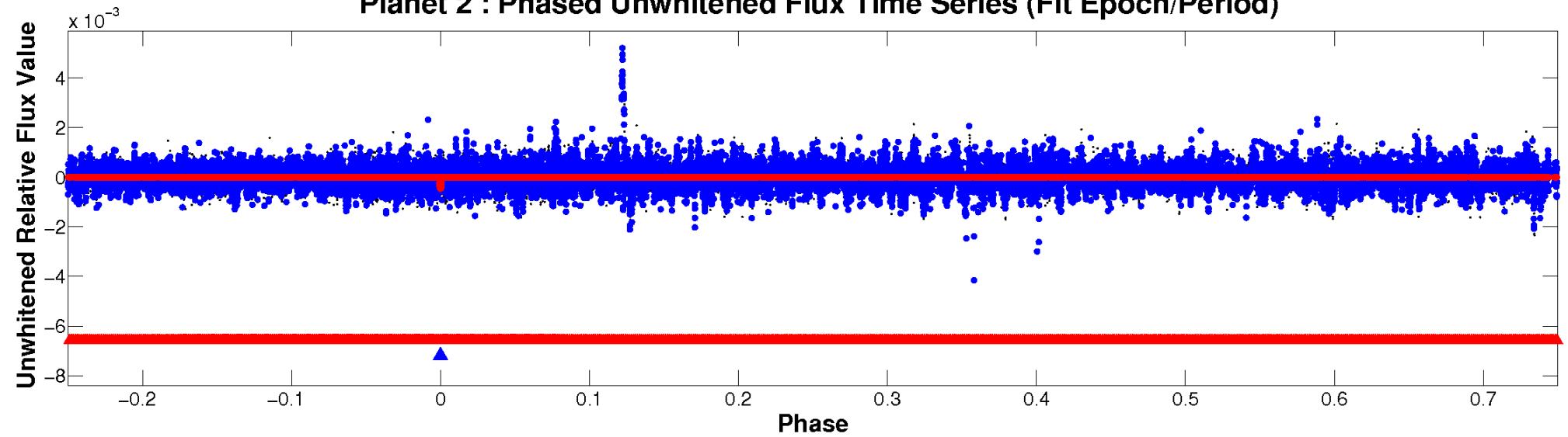
ALT Odd/Even

TCE 00788558-02

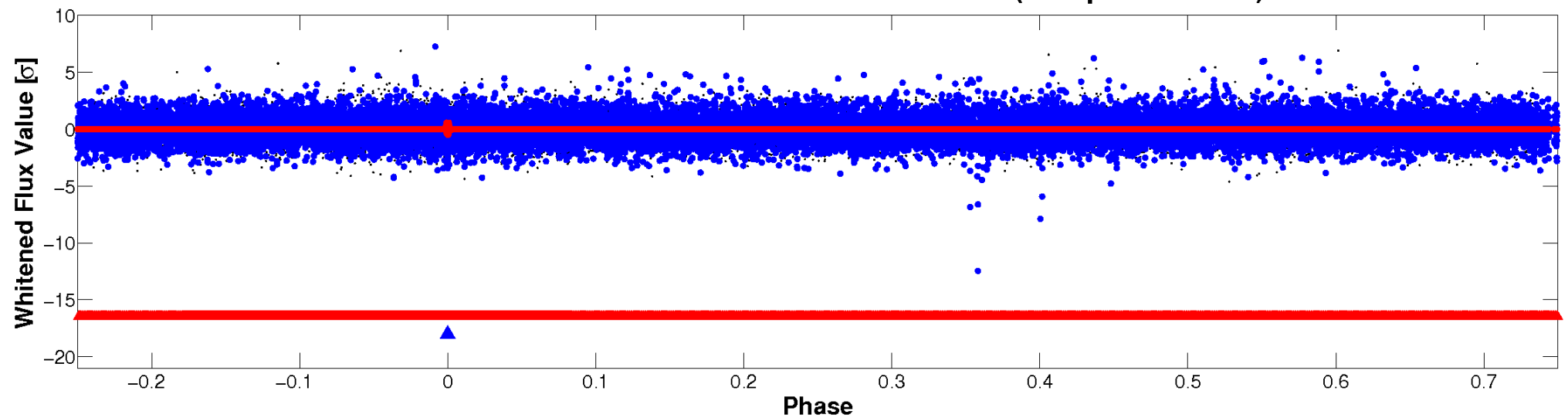


Non-Whitened Vs. Whitened Light Curve

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

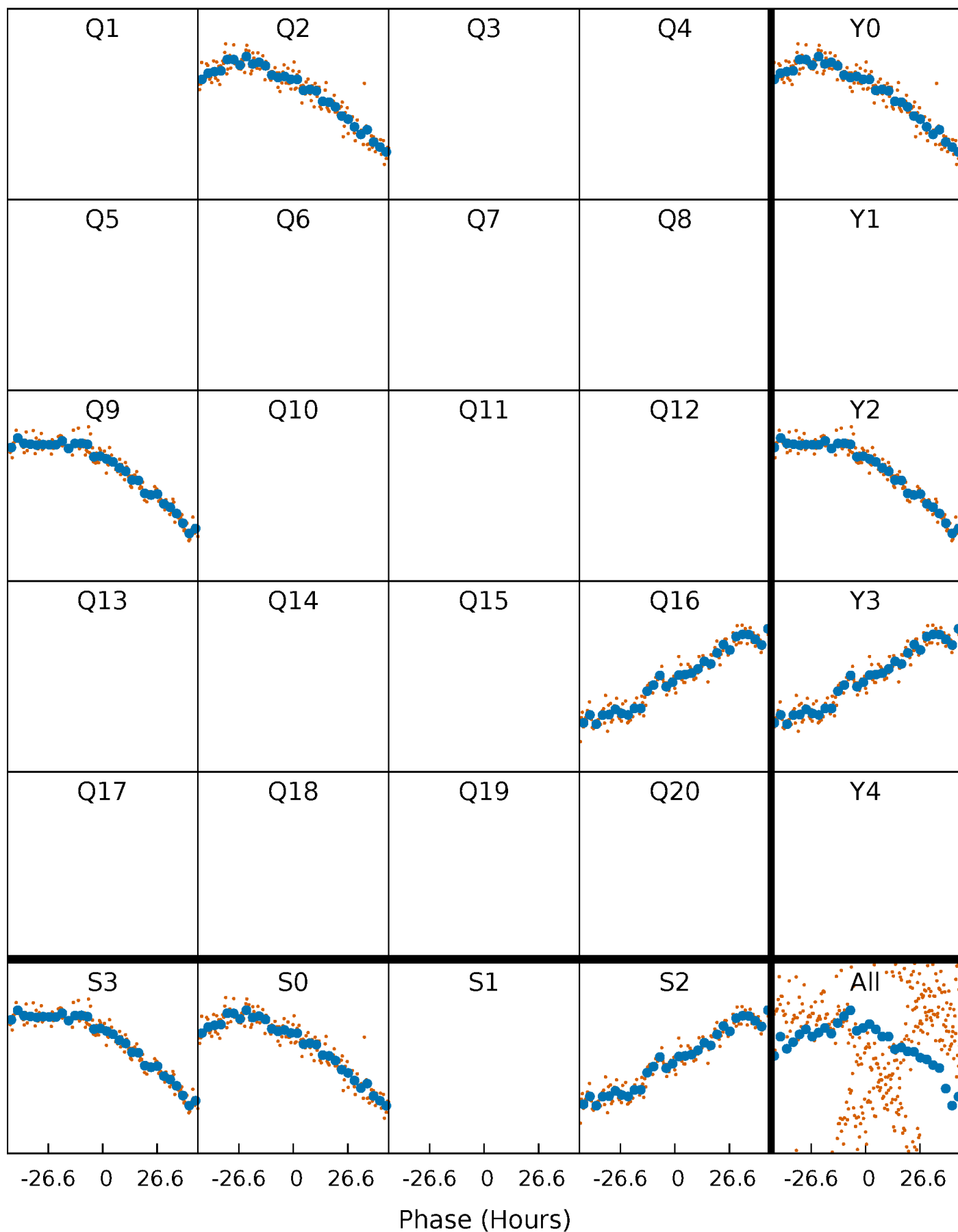


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



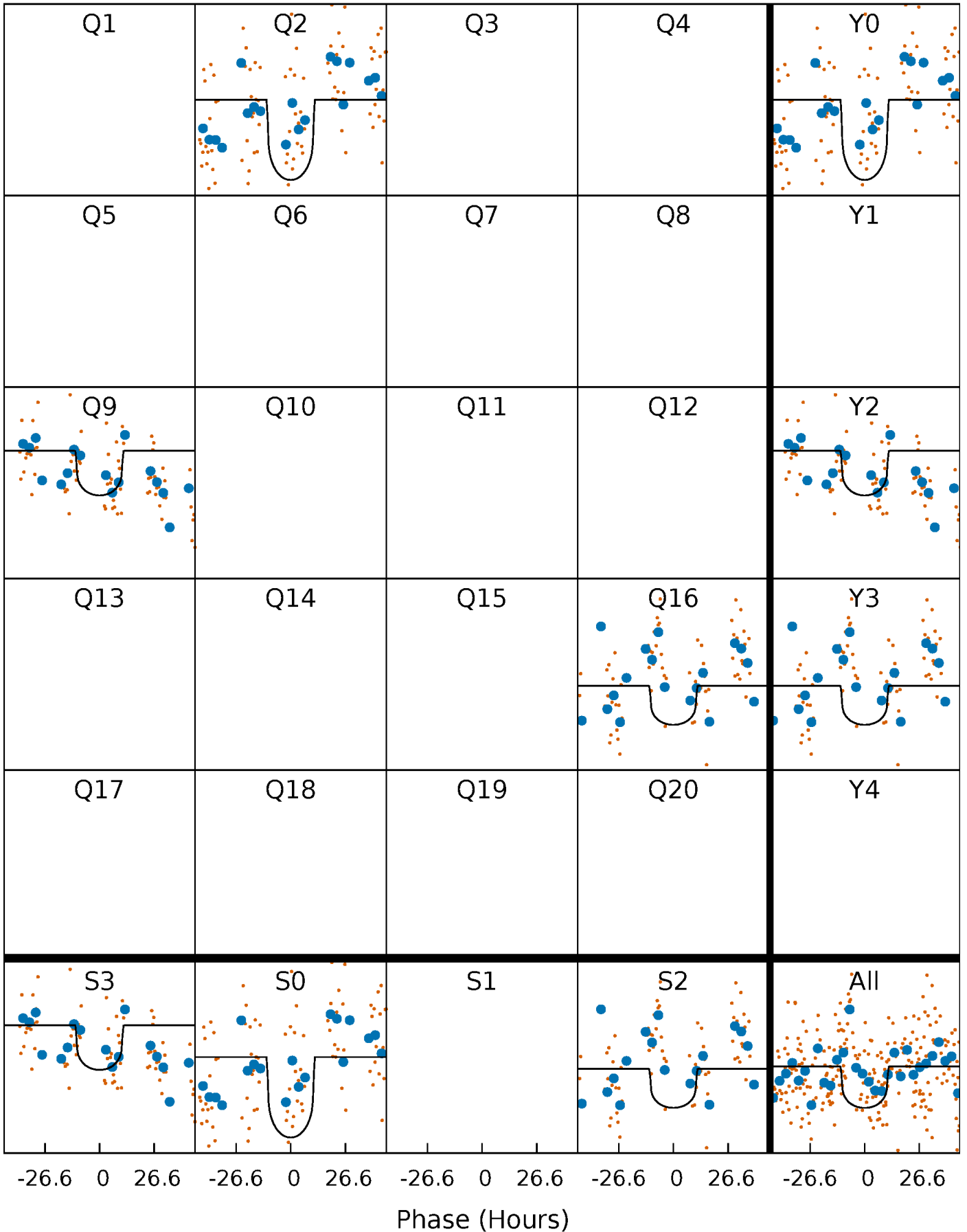
PDC Quarter-Phased Transit Curves

TCE 007885558-02 $P=645.676697$ Days $T_0=245.313338$ (BKJD)



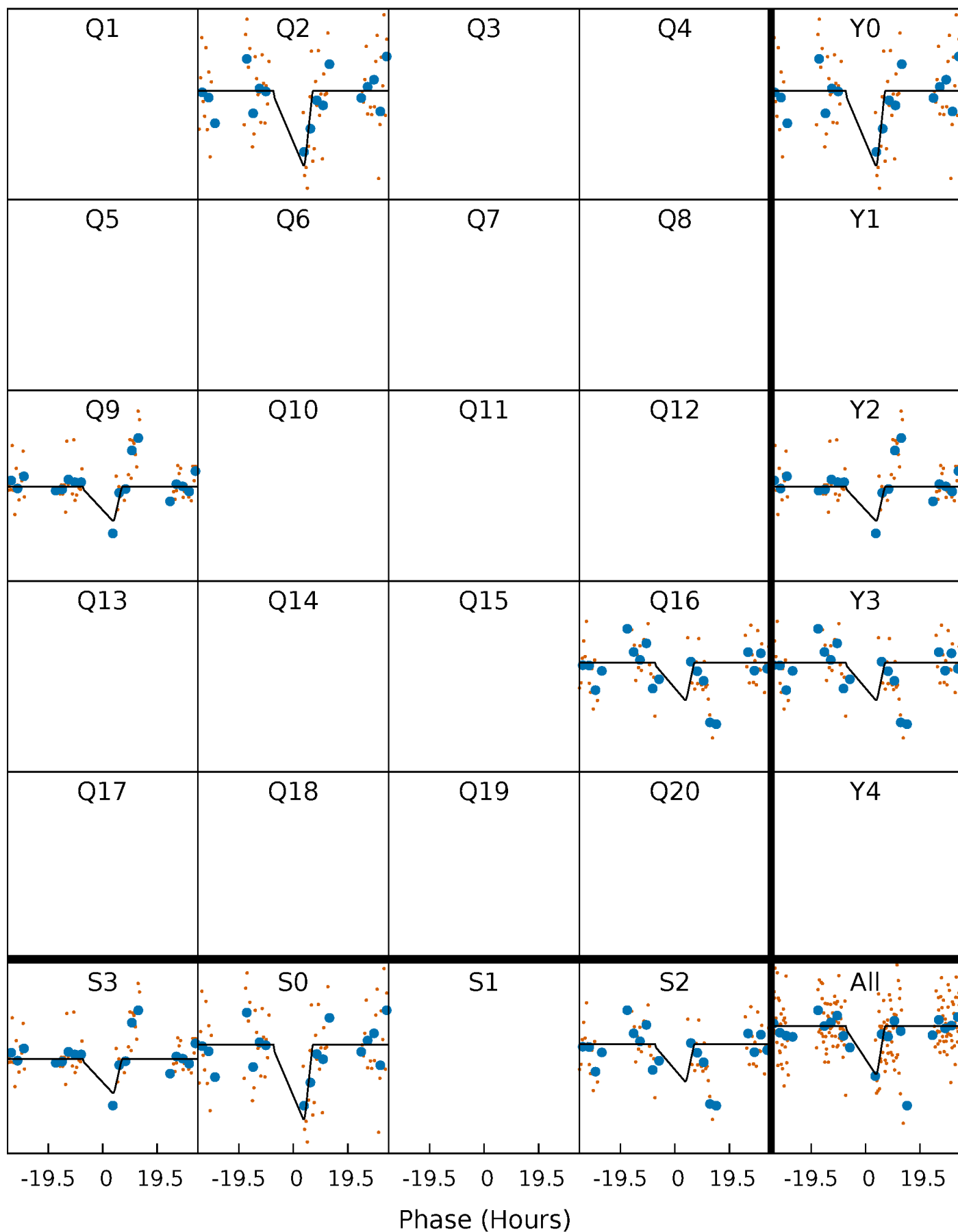
DV Quarter-Phased Transit Curves

TCE 007885558-02 P=645.676697 Days $T_0=245.313338$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

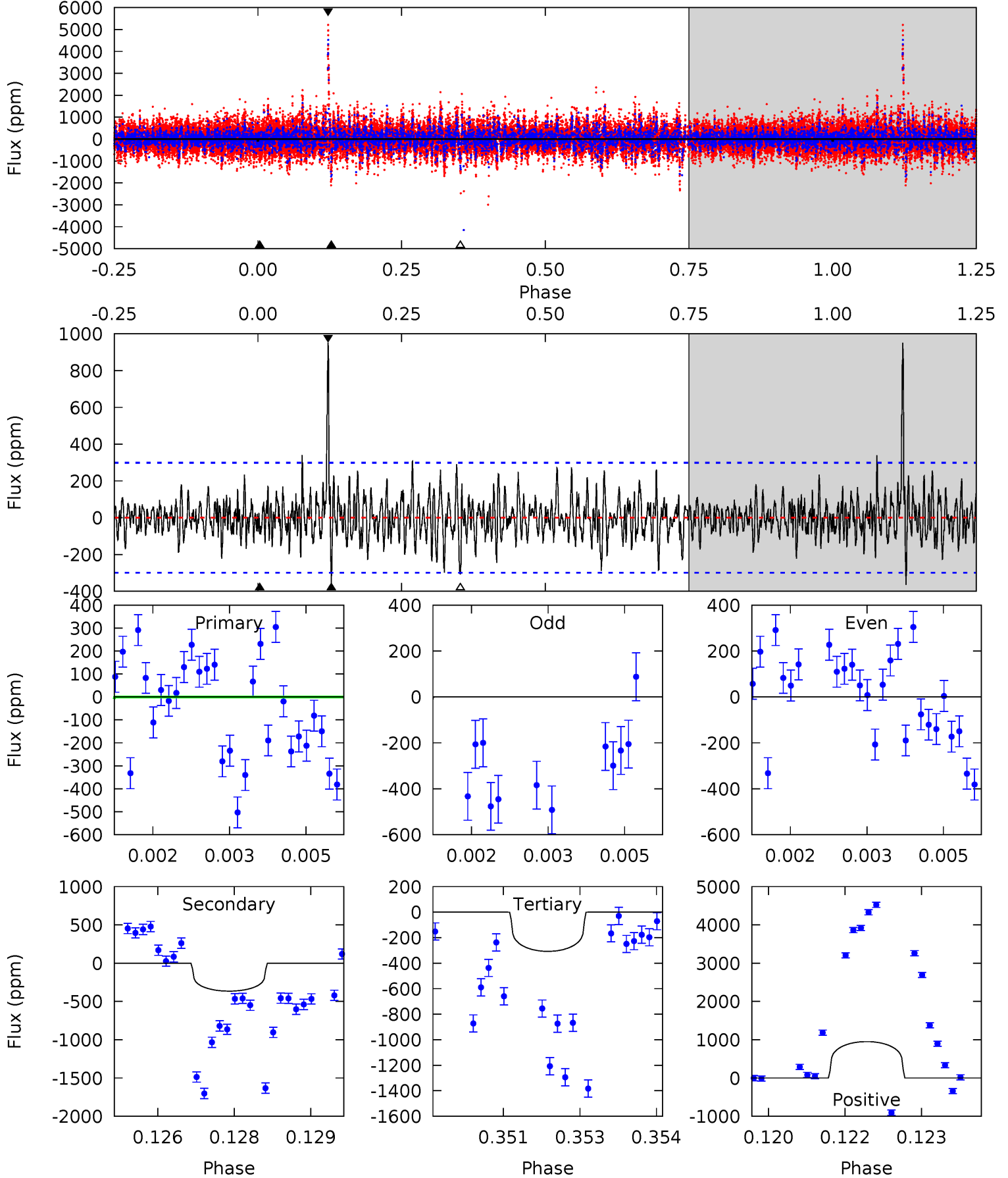
TCE 007885558-02 P=645.870776 Days $T_0=245.058200$ (BKJD)



DV Model-Shift Uniqueness Test

007885558-02, P = 645.676697 Days, E = 245.313338 Days

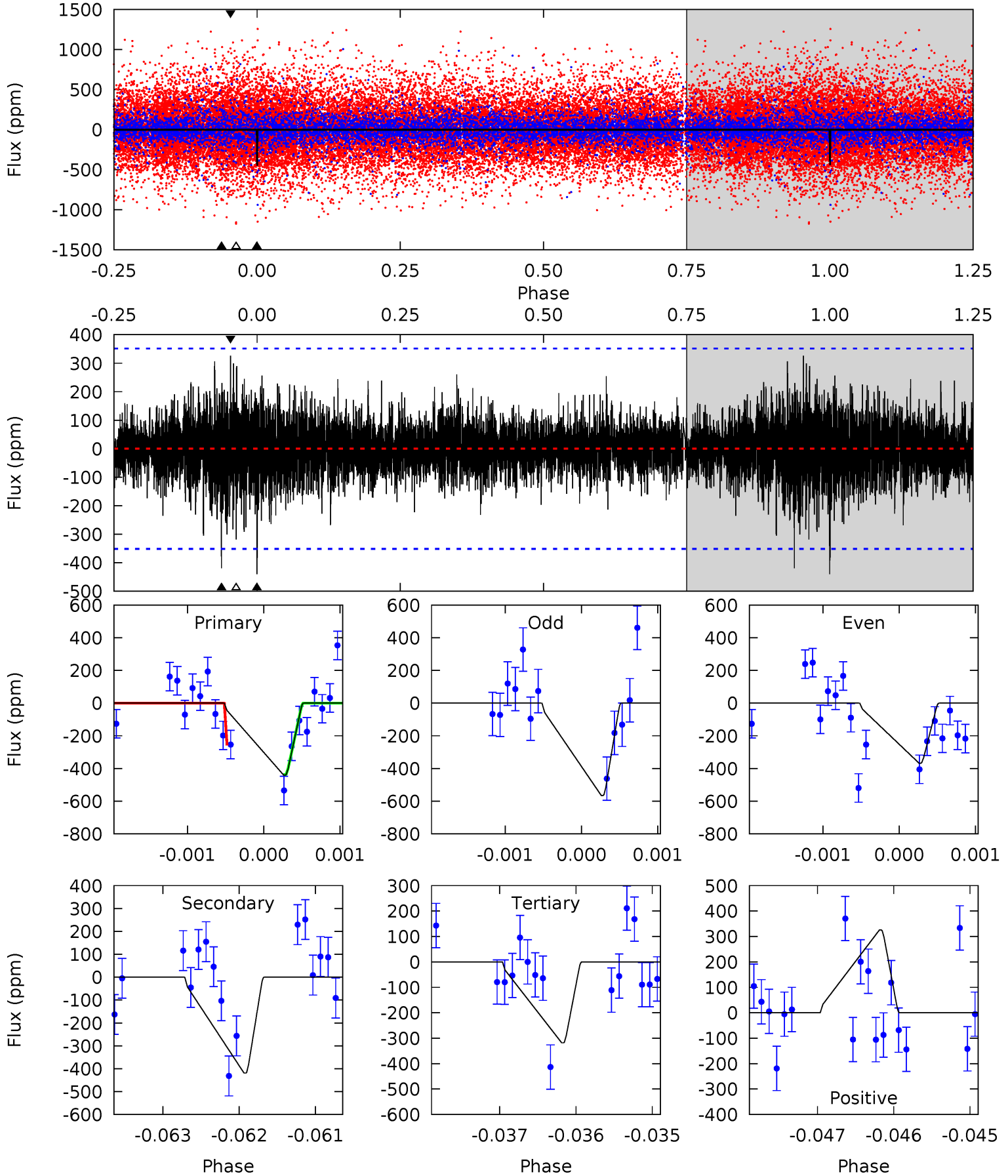
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.39	6.56	5.53	17.1	5.38	3.17	1.75	-4.14	-15.7	1.04	-10.5	2.56	0.52	0.72	0.61



Alt Model-Shift Uniqueness Test

007885558-02, P = 645.870776 Days, E = 245.058200 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.85	6.52	4.95	5.07	5.47	3.32	1.02	1.90	1.78	1.57	1.45	1.49	0.59	0.43	0.00



Stellar Parameters For KIC 007885558

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5587^{+166}_{-182}	$4.556^{+0.031}_{-0.178}$	$0.000^{+0.250}_{-0.300}$	$0.851^{+0.226}_{-0.075}$	$0.952^{+0.091}_{-0.112}$	$2.174^{+0.380}_{-1.031}$
	+3%/-3%	+1%/-4%	+inf%/-inf%	+27%/-9%	+10%/-12%	+17%/-47%
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 007885558-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-365 ± 56	$1.99^{+0.93}_{-0.82}$	271^{+15}_{-12}	5402^{+1667}_{-808}	$101093^{+191465}_{-53746}$
Alt.	-419 ± 64	$2.29^{+0.93}_{-0.87}$	271^{+17}_{-12}	5214^{+1311}_{-704}	$87149^{+139098}_{-44274}$

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

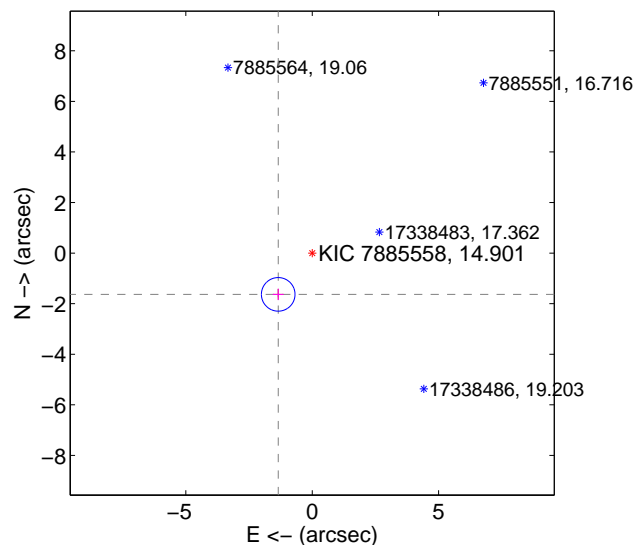
Supplemental centroid analysis for 007885558-02. Kepler magnitude: 14.90. Transit SNR 3.99

There are 0 quarters with good PRF difference image offsets

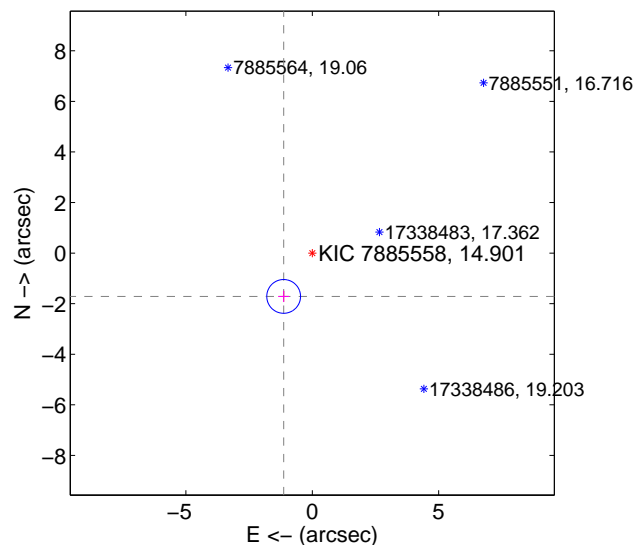
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.115 ± 0.221	9.55	1.345 ± 0.215	-1.632 ± 0.226
PRF-fit source offset from KIC position	2.053 ± 0.223	9.22	1.132 ± 0.215	-1.713 ± 0.226
photometric centroid source offset	3.17 ± 1.60	1.98	-2.70 ± 1.67	1.67 ± 1.40

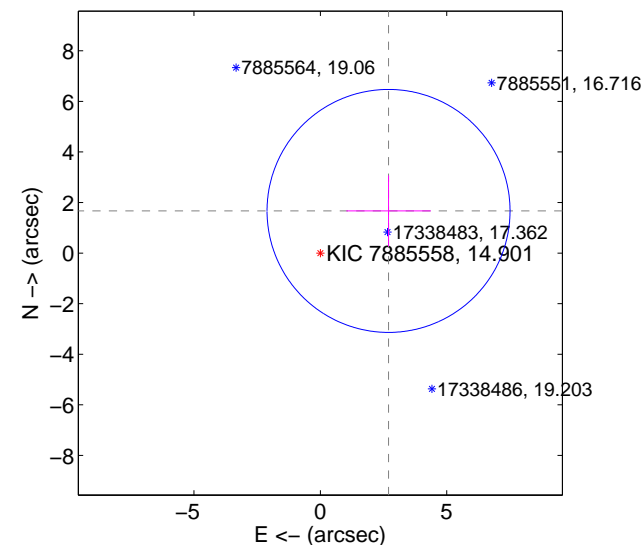
offset from difference PRF-fit to OOT PRF-fit



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.

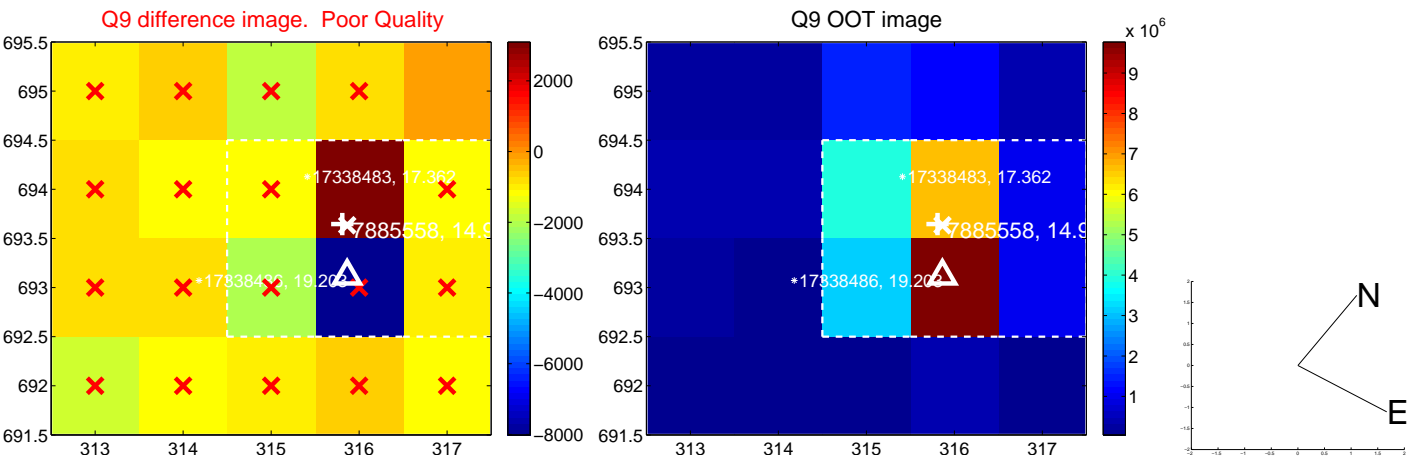
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



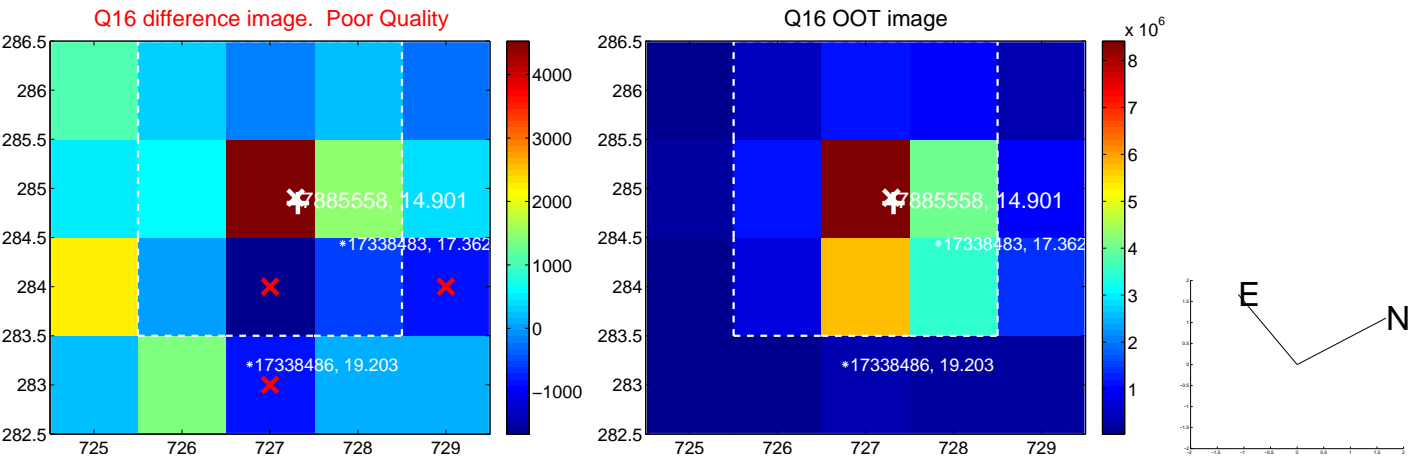
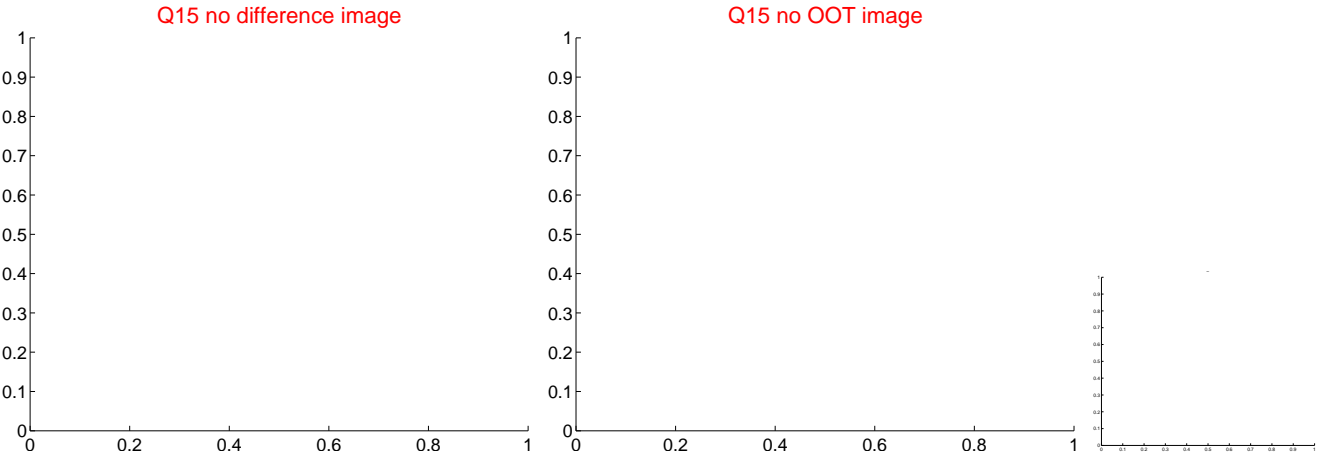
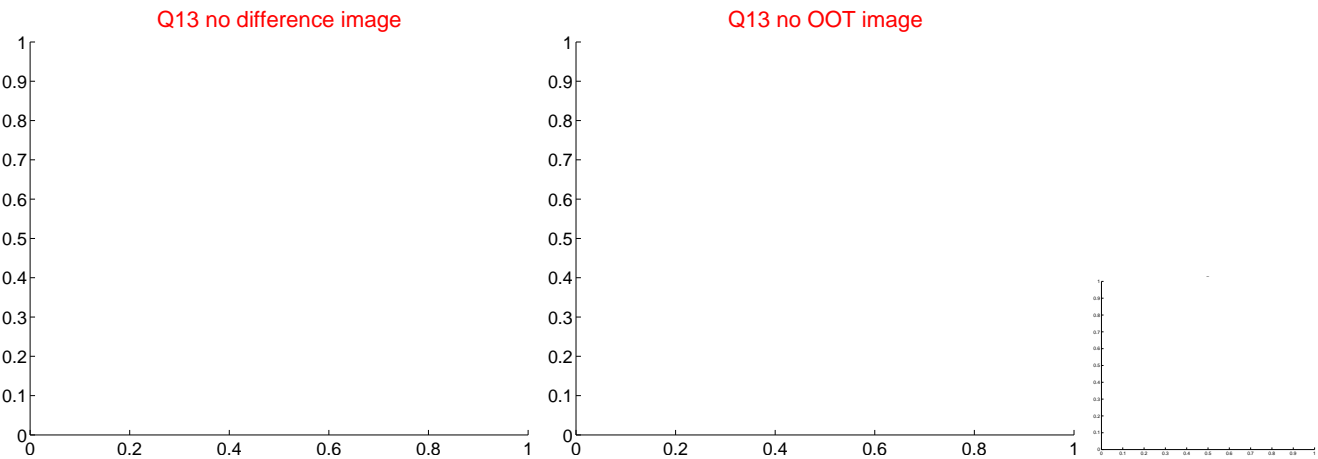
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



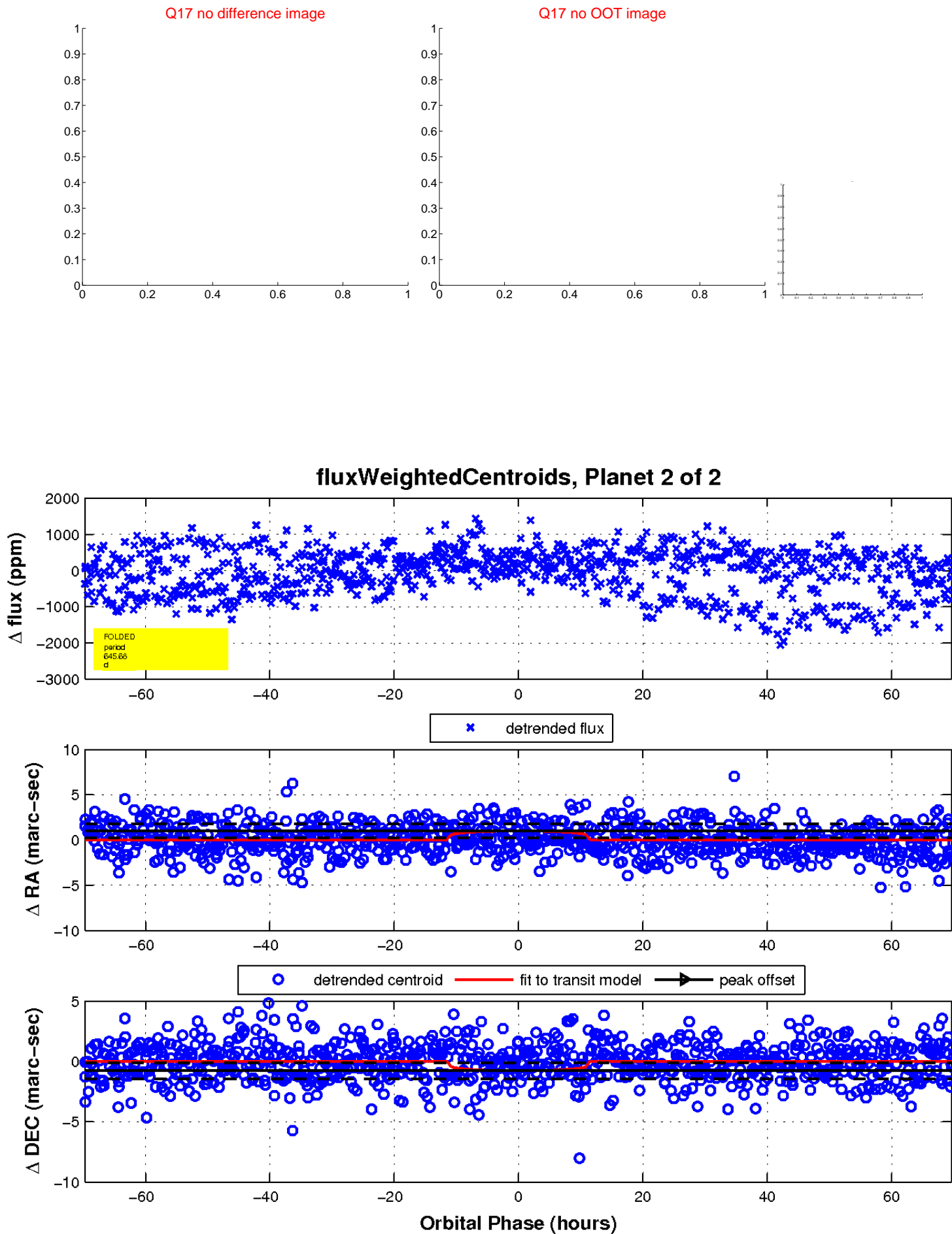
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

