

KIC 005217891

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})
005217891-01	OBS	3036.01	161.242130	189.165456	1085.9	24.772	18.8	19.5	0.83	5514	3.49	1.77
005217891-02	OBS	No	0.839080	132.016289	32.7	7.401	8.2	6.1	0.83	5514	0.46	1966.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005217891-01	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL_SKYE—CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
005217891-02	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 005217891-01

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
005217891-01	5217891	005217733-pri	5217733	1:1	98.9	-18	-17	7.39	15.65	92.91	Direct-PRF	0	0.86	0.38

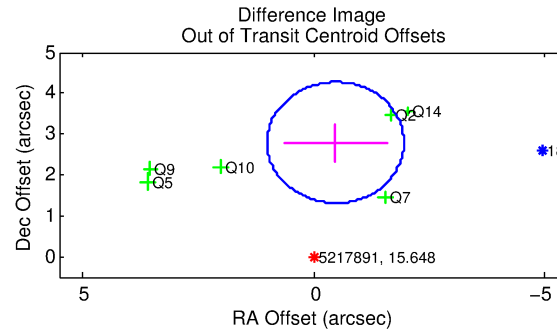
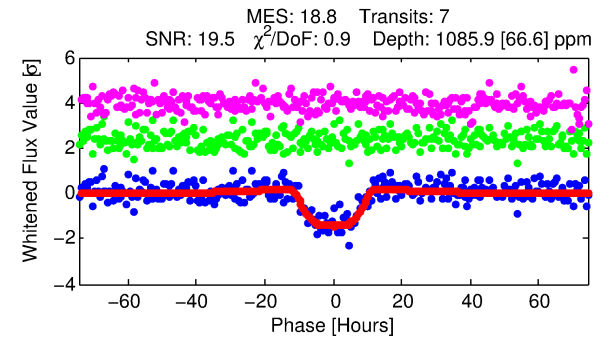
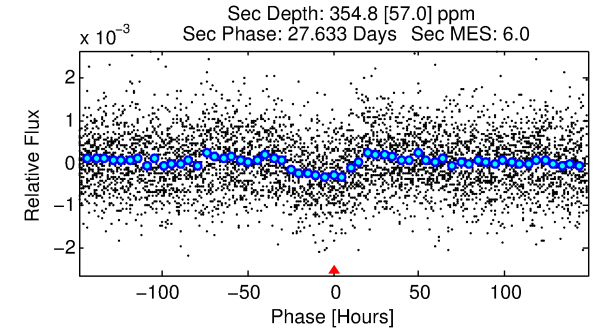
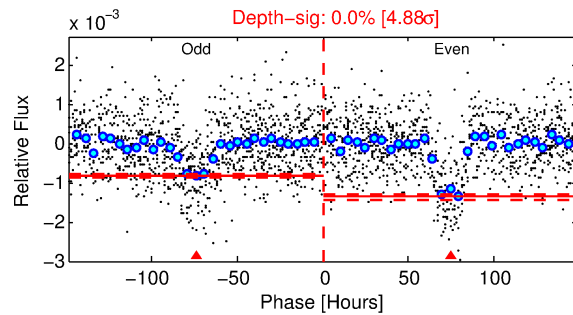
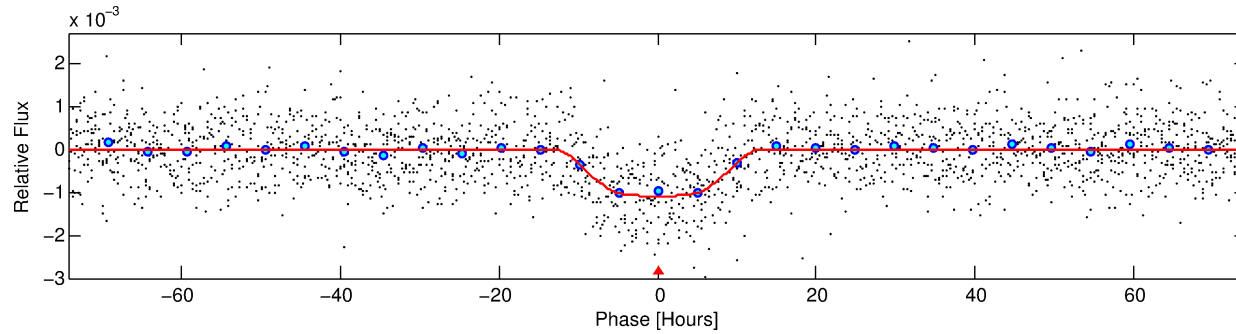
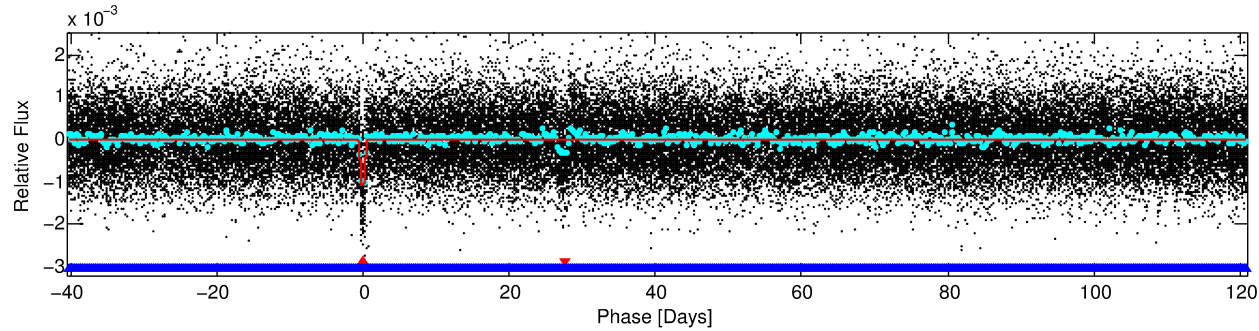
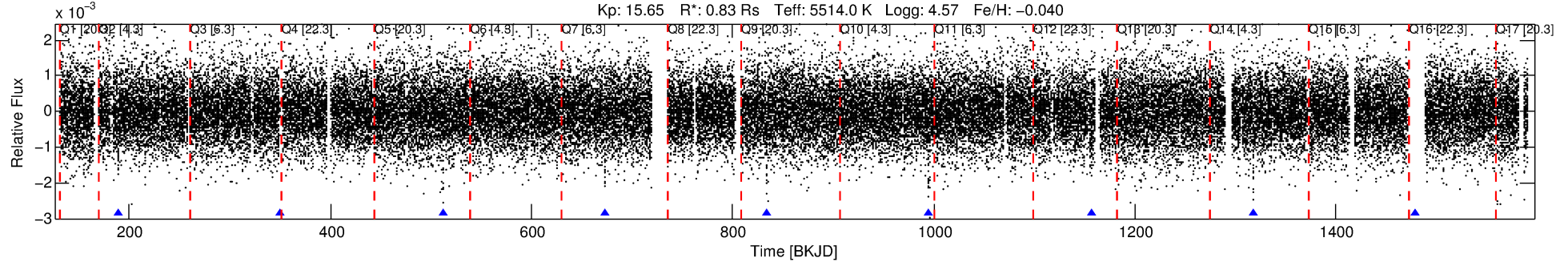
Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match 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: 5217891 Candidate: 1 of 2 Period: 161.242 d

KOI: K03036.01 Corr: 0.977

Kp: 15.65 R*: 0.83 Rs Teff: 5514.0 K Logg: 4.57 Fe/H: -0.040



DV Fit Results:

Period = 161.24213 [0.00628] d
Epoch = 189.1655 [0.0274] BKJD
Rp/R* = 0.0387 [0.0019]
a/R* = 21.19 [2.39]
b = 0.95 [0.01]
Seff = 1.77 [0.55]
Teq = 294 [23] K
Rp = 3.49 [0.81] Re
a = 0.5645 [0.1080] AU
Ag = 5101.66 [1713.41] [2.98σ]
Teffp = 3845 [221] K [16.00σ]

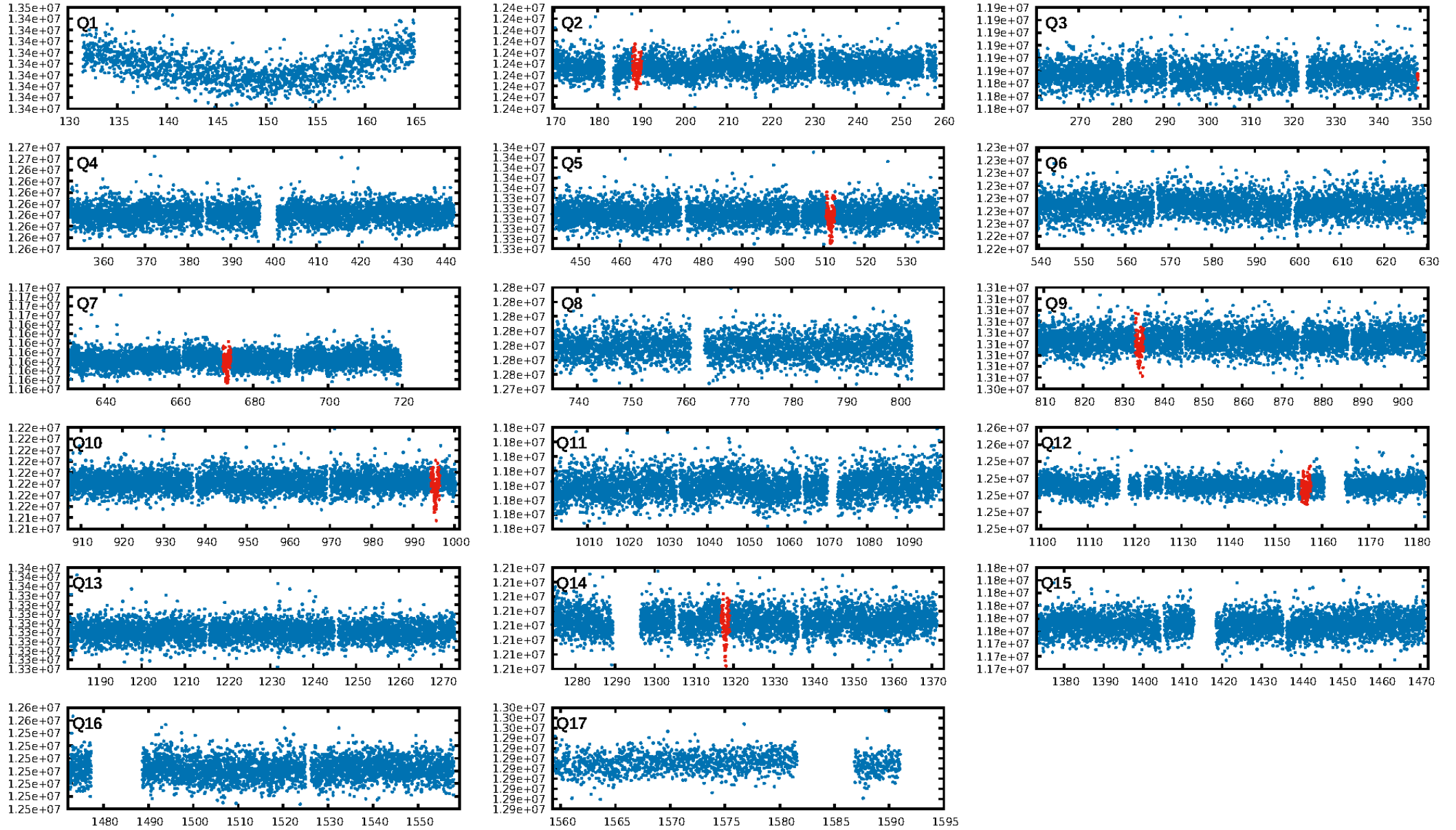
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [148.90σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 0.06735
Centroid-sig: 0.0%
Centroid-so: 2.930 arcsec [4.73σ]
OotOffset-rm: 2.831 arcsec [5.74σ]
KicOffset-rm: 2.951 arcsec [6.15σ]
OotOffset-st: 3/1/0/2 [6]
KicOffset-st: 3/1/0/2 [6]
DiffImageQuality-fgm: 0.50 [3/6]
DiffImageOverlap-fno: 0.00 [0/6]

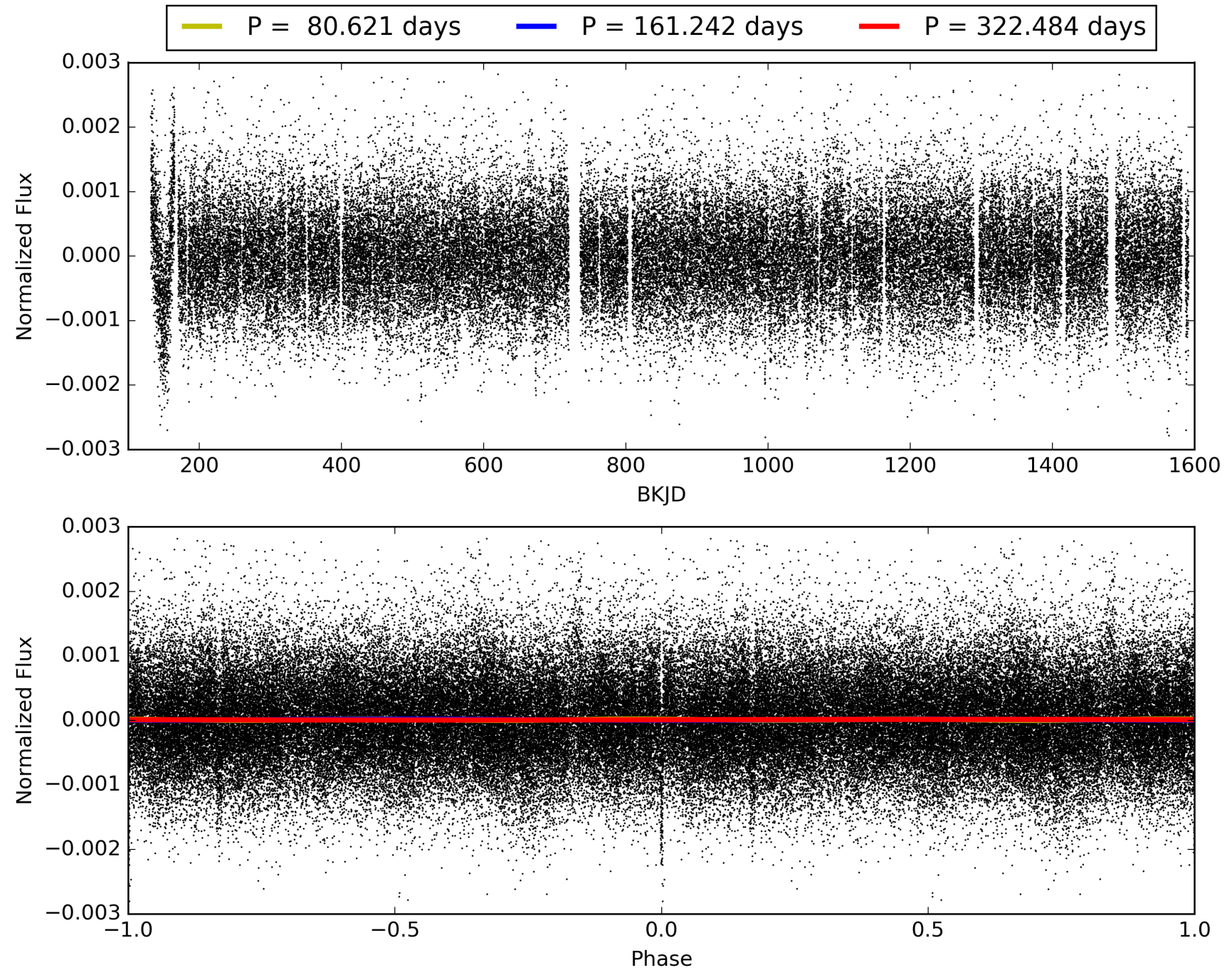
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 15:24:32 Z

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

TCE 005217891-01, PDC Light Curves

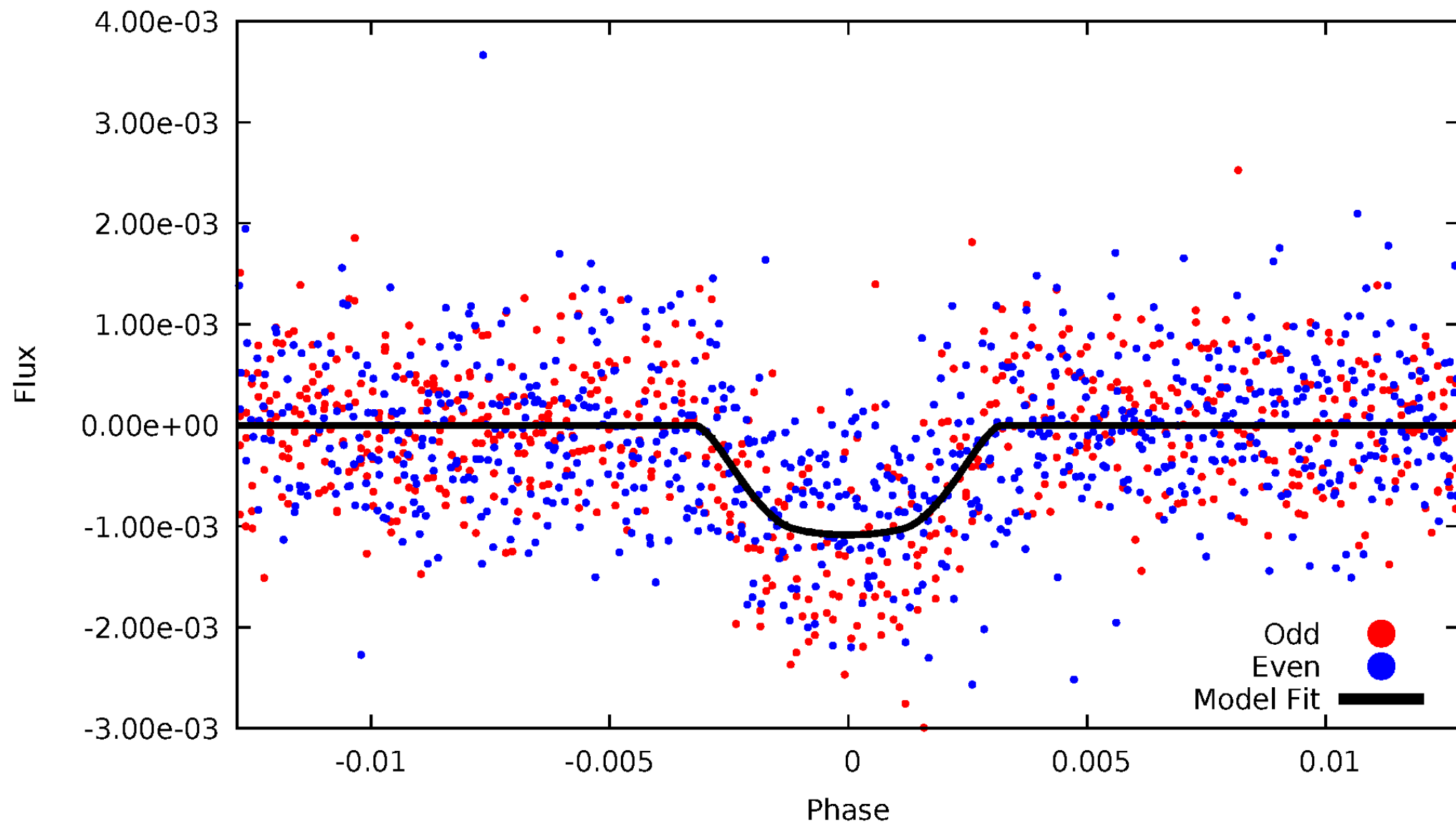


TCE 005217891-01



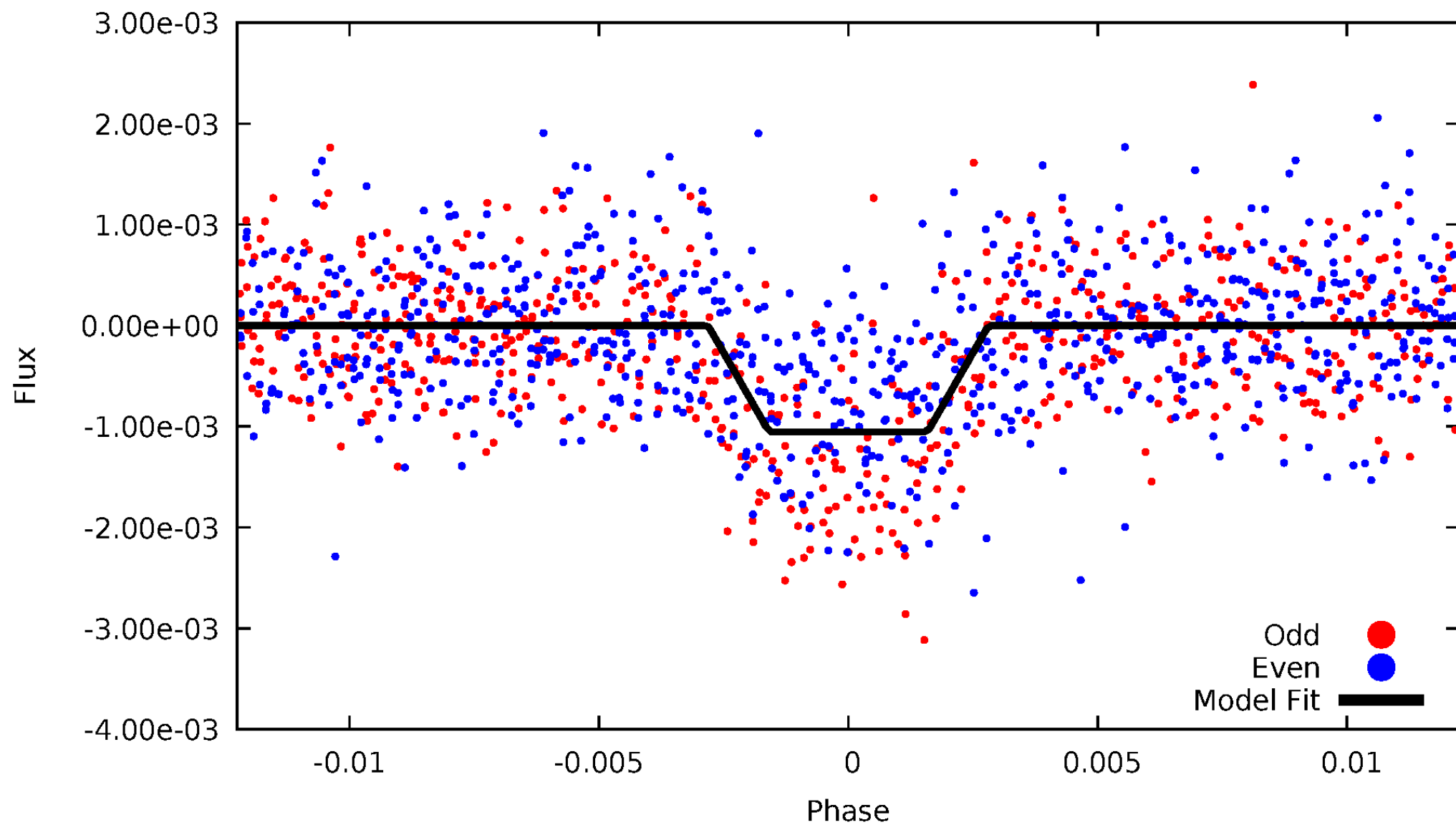
DV Odd/Even

TCE 005217891-01



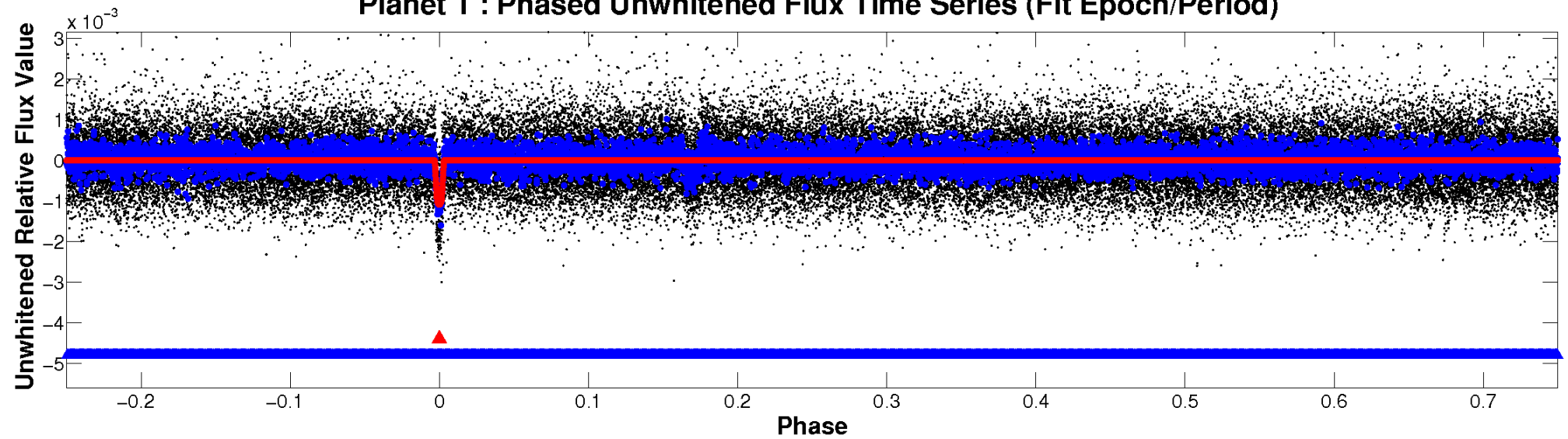
ALT Odd/Even

TCE 005217891-01

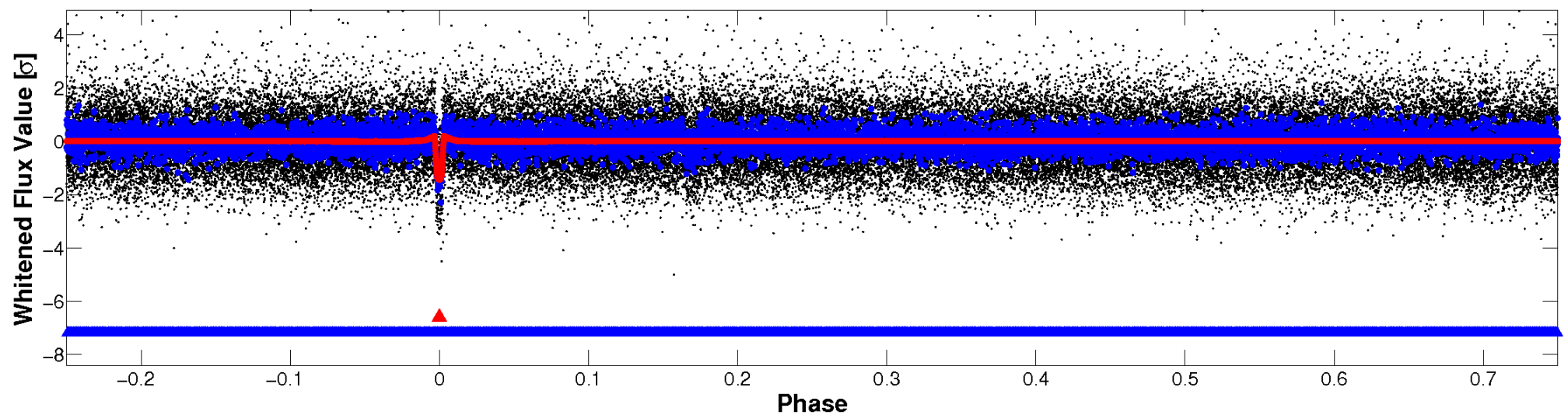


Non-Whitened Vs. Whitened Light Curve

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

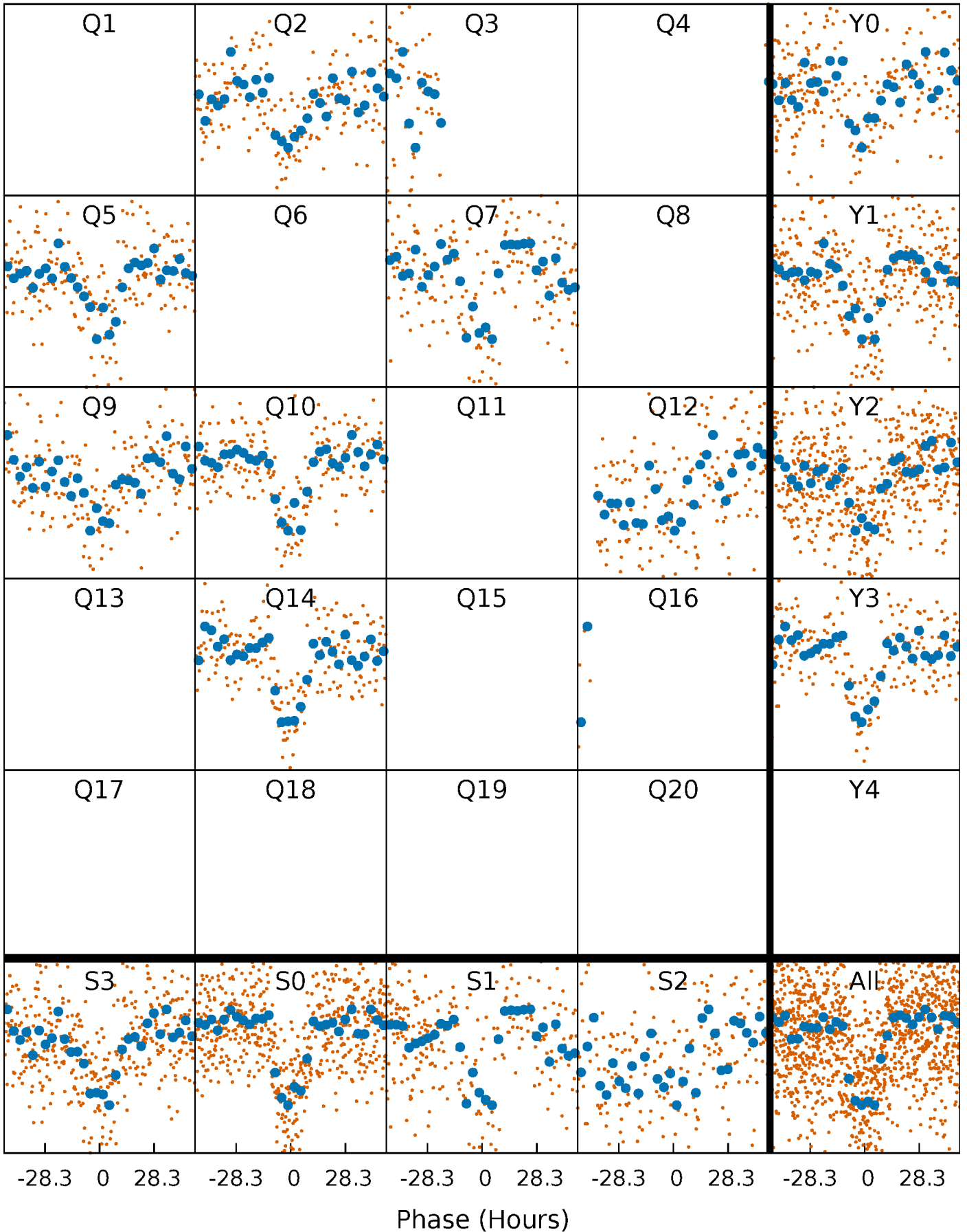


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



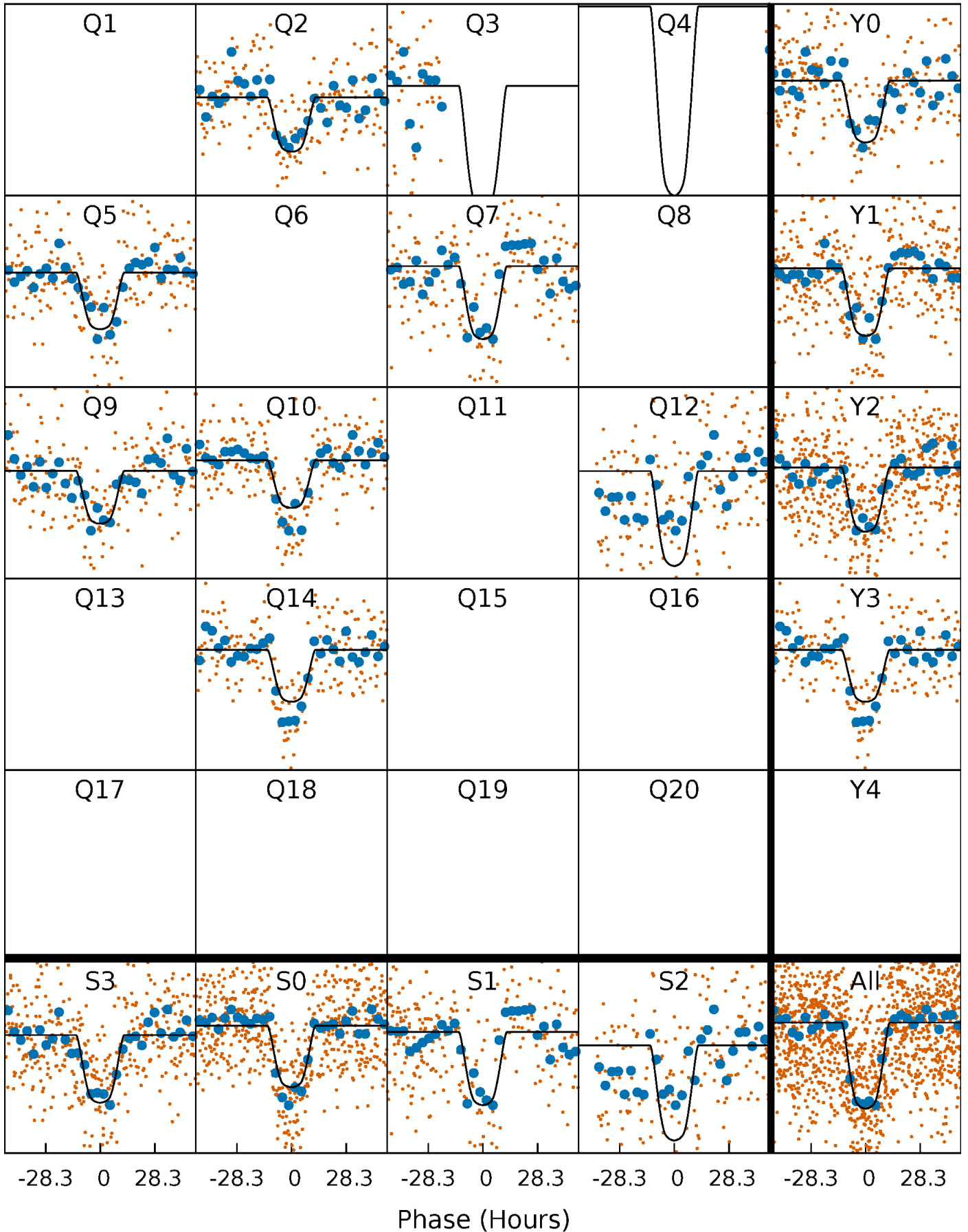
PDC Quarter-Phased Transit Curves

TCE 005217891-01 P=161.242130 Days $T_0=189.165456$ (BKJD)



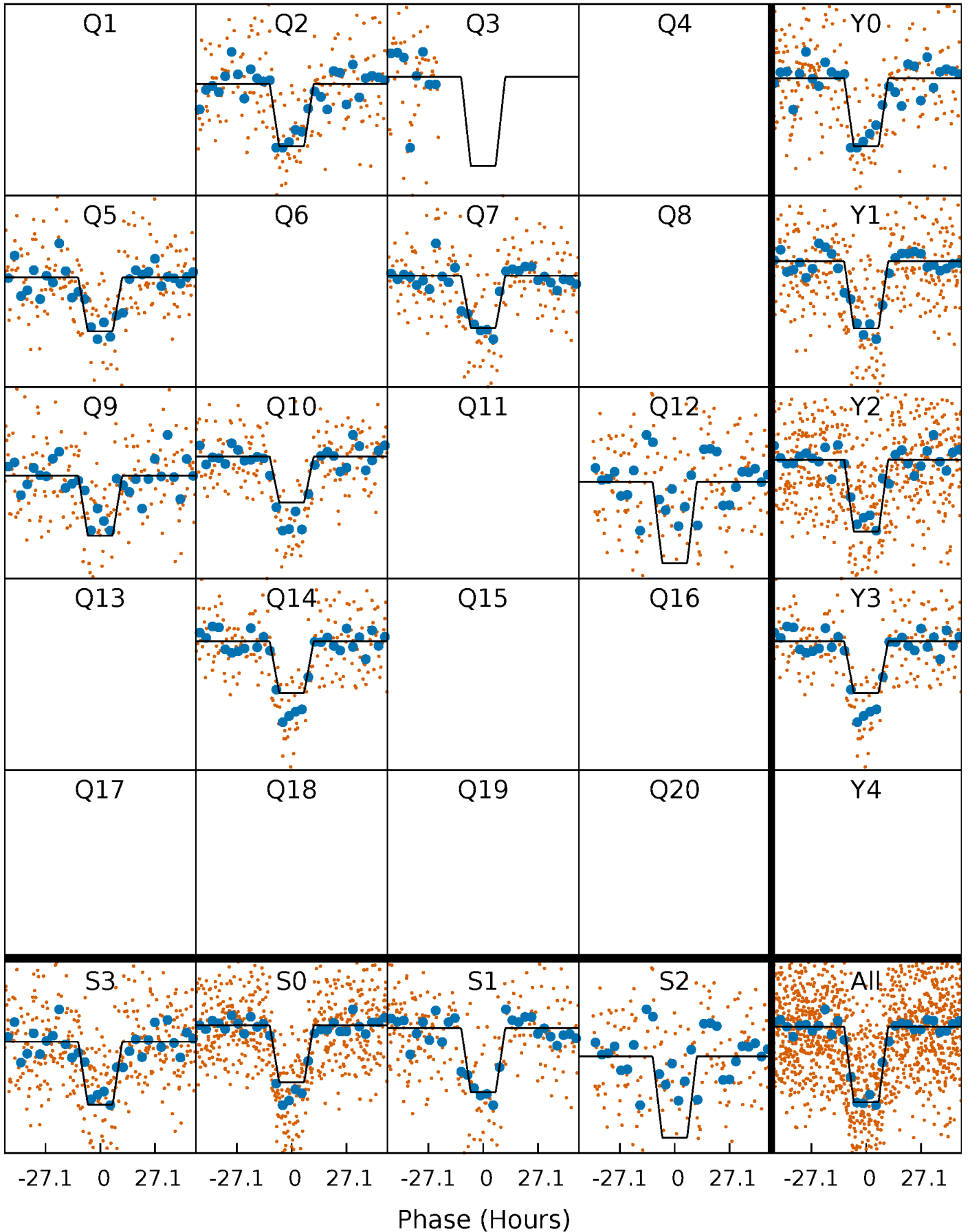
DV Quarter-Phased Transit Curves

TCE 005217891-01 P=161.242130 Days $T_0=189.165456$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

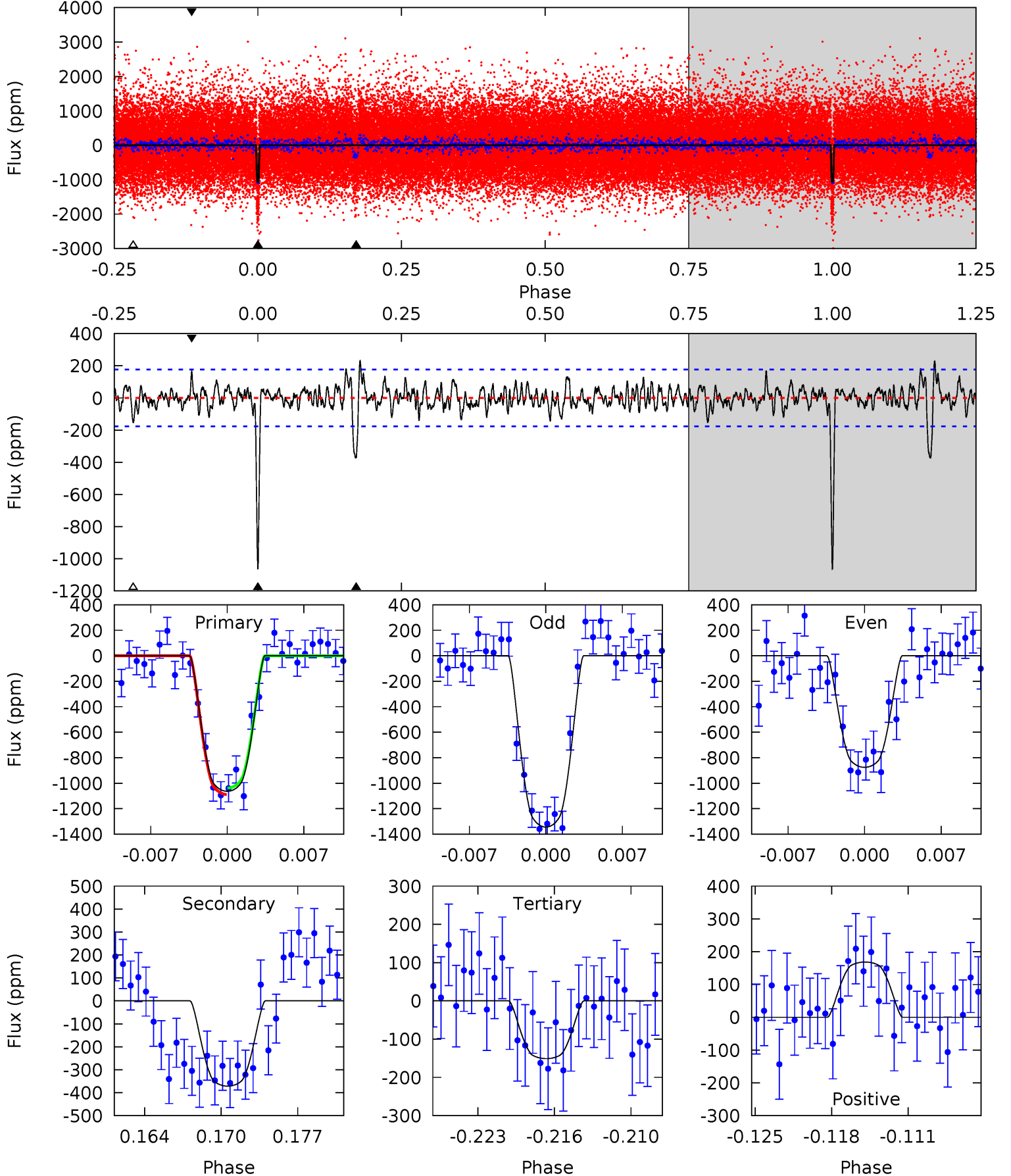
TCE 005217891-01 P=161.241222 Days $T_0=189.179691$ (BKJD)



DV Model-Shift Uniqueness Test

005217891-01, $P = 161.242130$ Days, $E = 27.923326$ Days

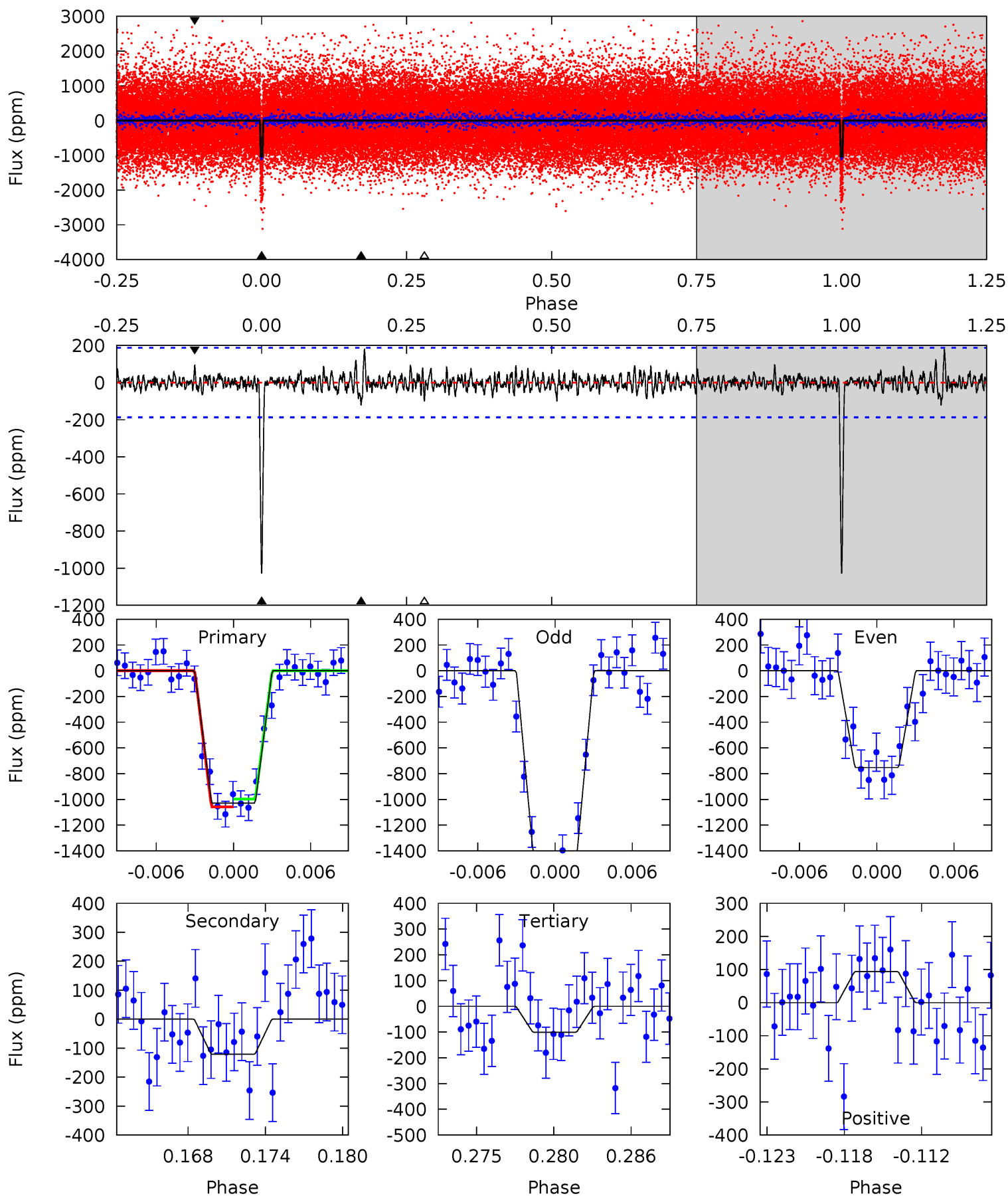
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.8	10.8	4.37	4.88	5.11	2.72	1.55	26.4	25.9	6.38	5.88	6.72	1.07	0.18	0.73



Alt Model-Shift Uniqueness Test

005217891-01, P = 161.241222 Days, E = 27.938469 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.2	3.33	2.76	2.56	5.14	2.77	0.85	25.4	25.6	0.57	0.76	9.12	0.99	0.15	0.85



Stellar Parameters For KIC 005217891

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5514^{+182}_{-182}	$4.569^{+0.038}_{-0.152}$	$-0.040^{+0.300}_{-0.300}$	$0.826^{+0.188}_{-0.075}$	$0.926^{+0.083}_{-0.111}$	$2.312^{+0.457}_{-0.970}$
	+3%/-3%	+1%/-3%	+750%/-750%	+23%/-9%	+9%/-12%	+20%/-42%
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 005217891-01 / KOI 3036.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-371 ± 35	$3.58^{+0.40}_{-0.28}$	419^{+23}_{-19}	4146^{+149}_{-144}	4940^{+967}_{-955}
Alt.	-121 ± 36	$3.02^{+0.40}_{-0.29}$	421^{+25}_{-20}	3632^{+191}_{-212}	2237^{+855}_{-757}

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

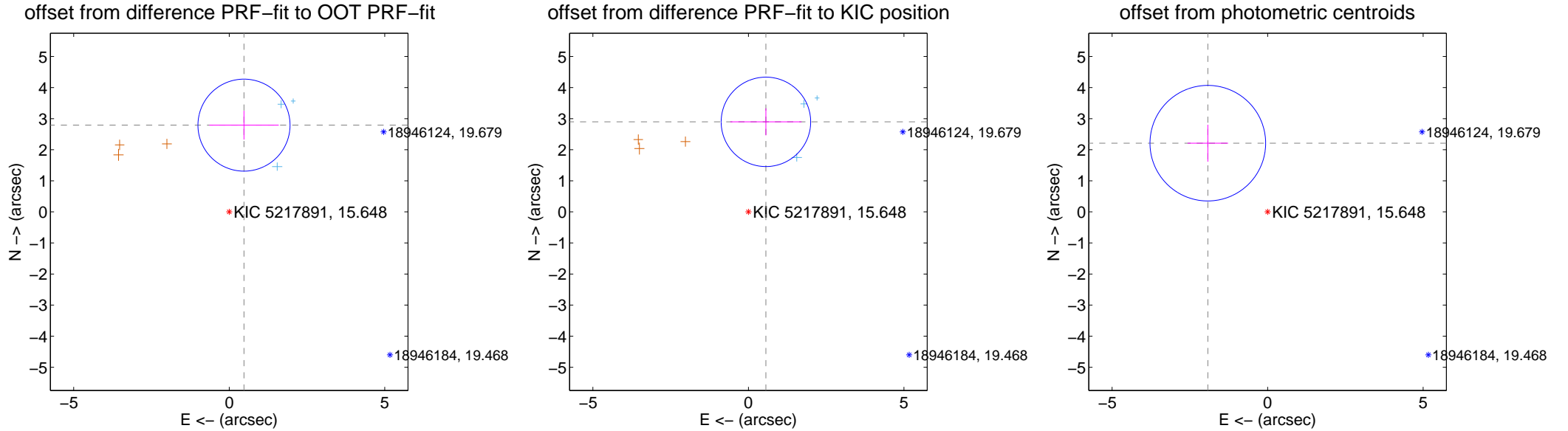
DV Centroid Data

Supplemental centroid analysis for 005217891-01. Kepler magnitude: 15.65. Transit SNR 19.52

There are 3 quarters with good PRF difference image offsets

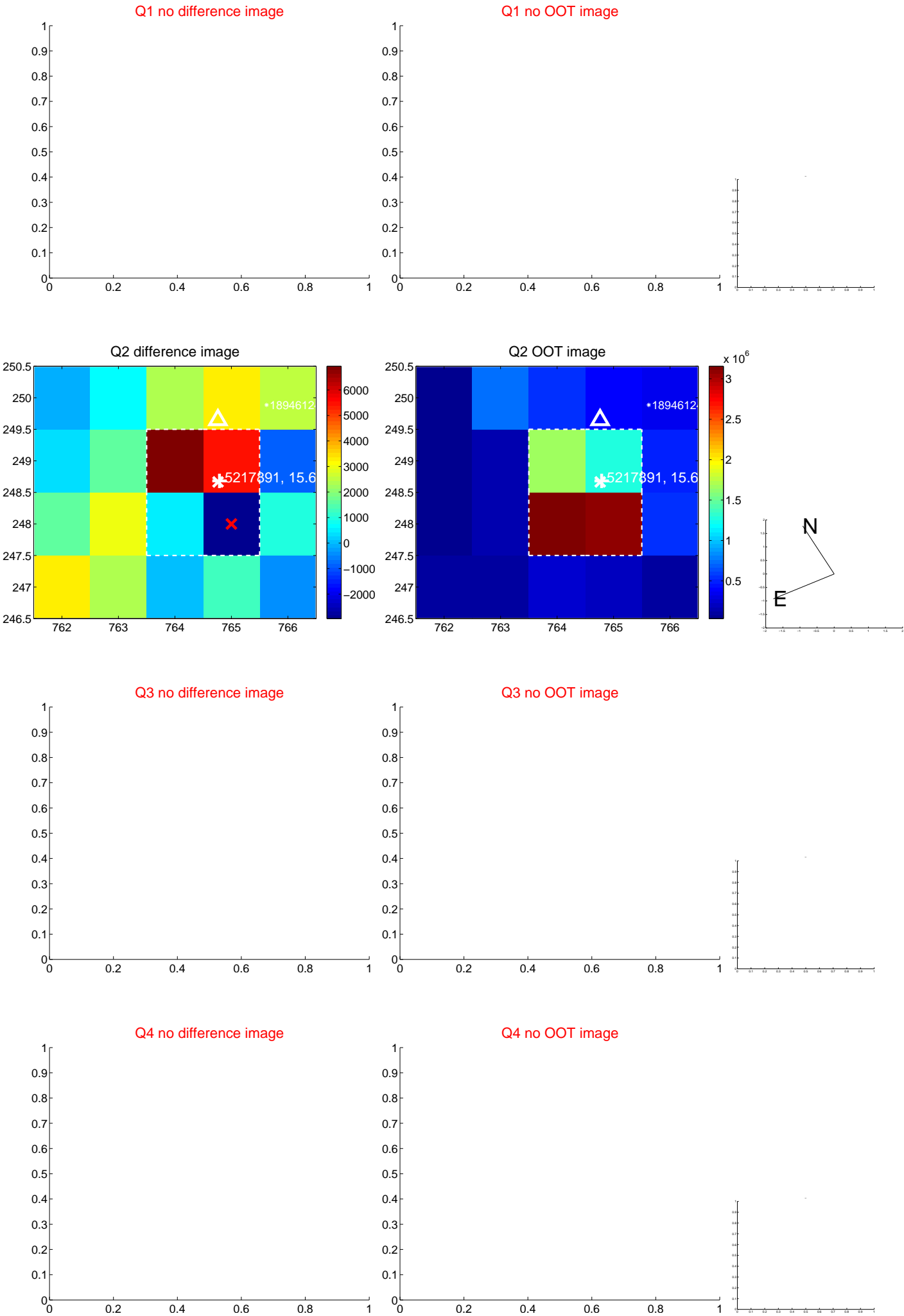
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.831 ± 0.493	5.74	-0.475 ± 1.117	2.791 ± 0.463
PRF-fit source offset from KIC position	2.951 ± 0.480	6.15	-0.563 ± 1.145	2.897 ± 0.435
photometric centroid source offset	2.93 ± 0.62	4.73	1.92 ± 0.65	2.21 ± 0.60

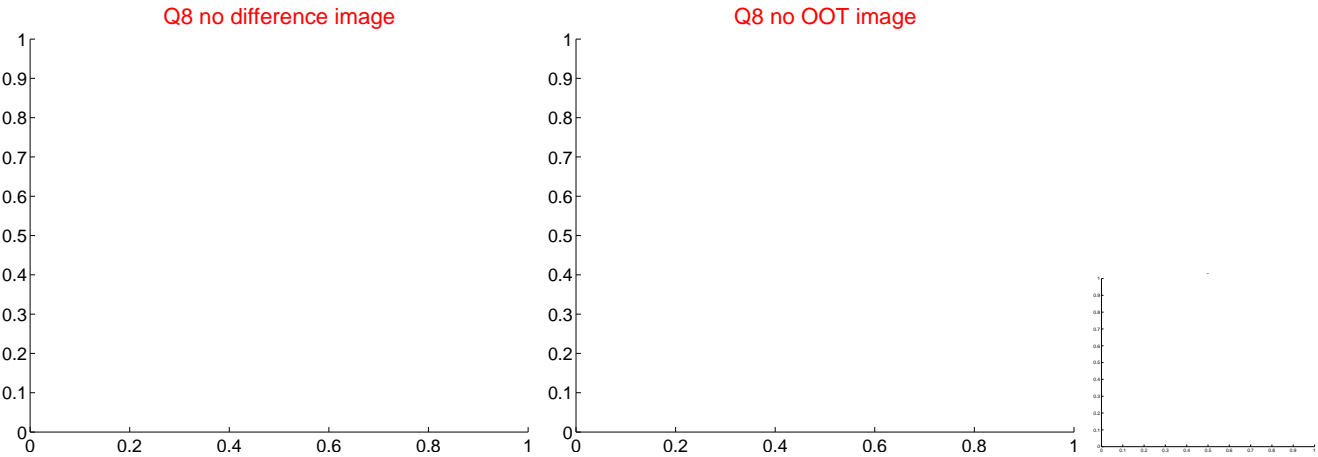
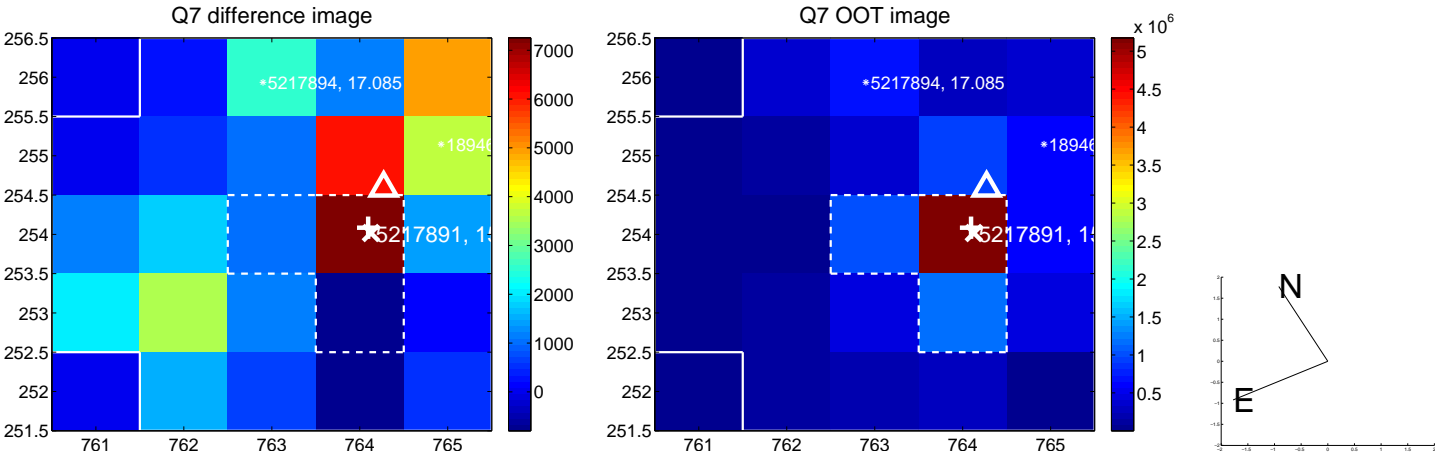
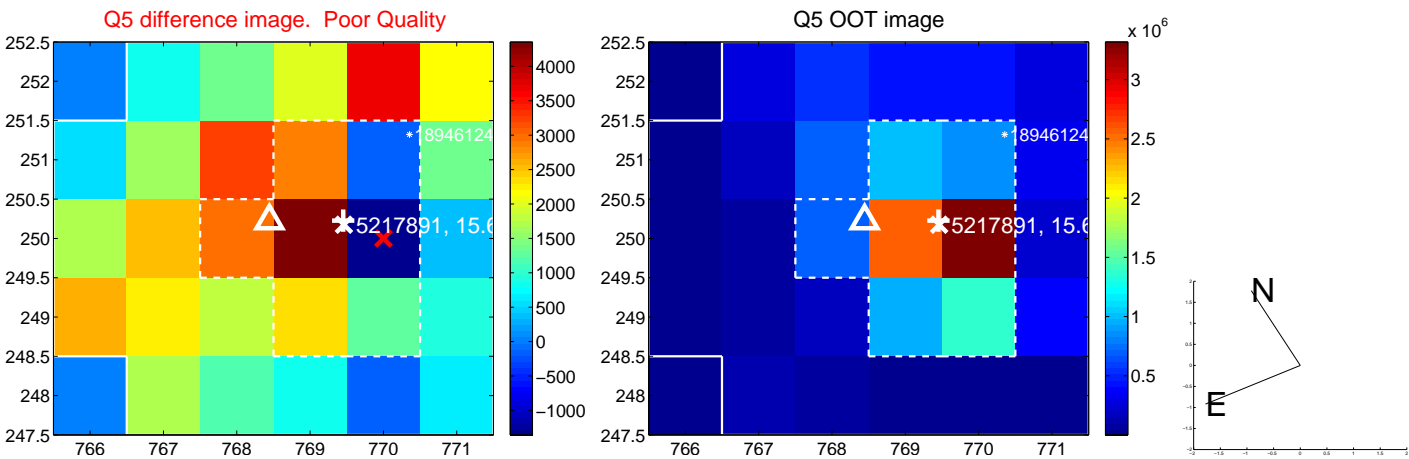


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

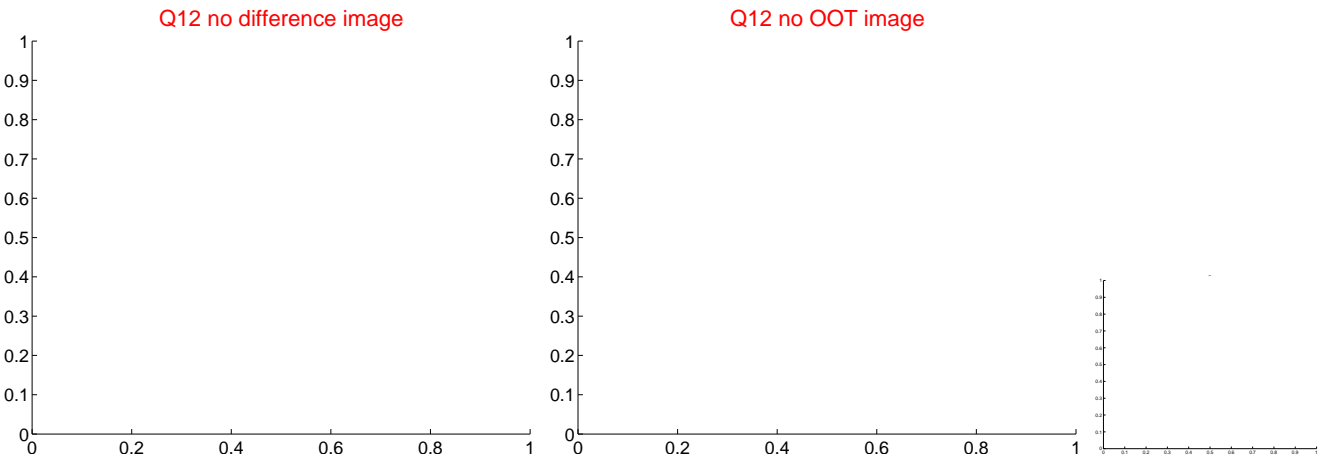
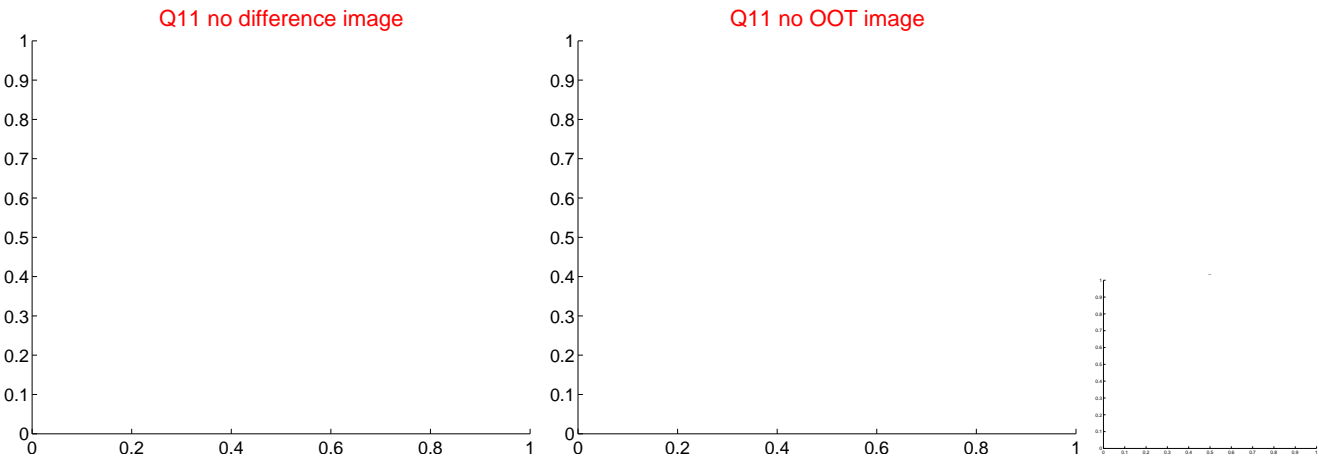
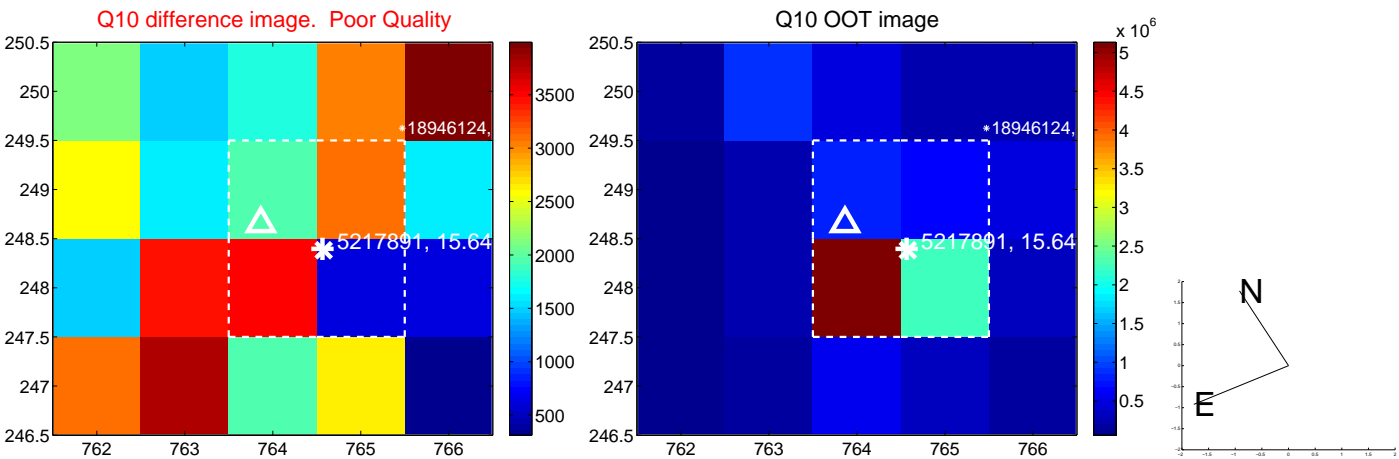
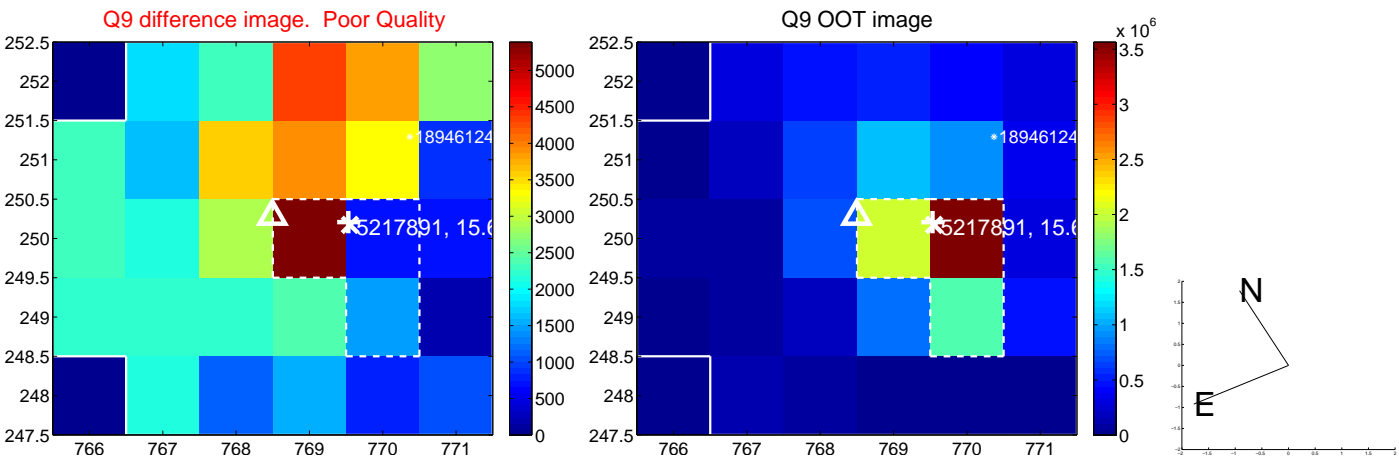
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.

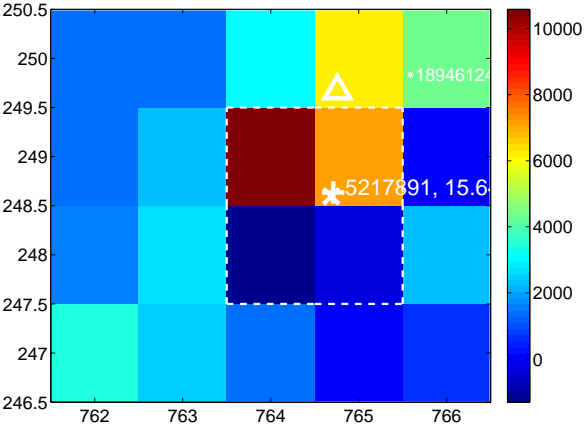
Q13 no difference image



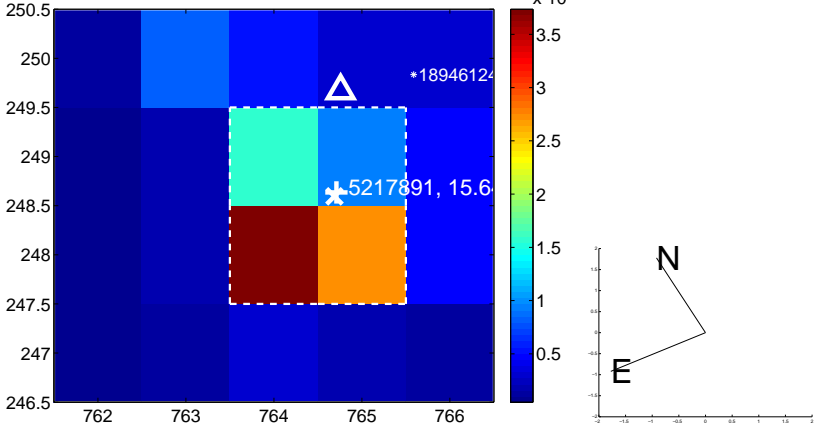
Q13 no OOT image



Q14 difference image



Q14 OOT image



Q15 no difference image



Q15 no OOT image



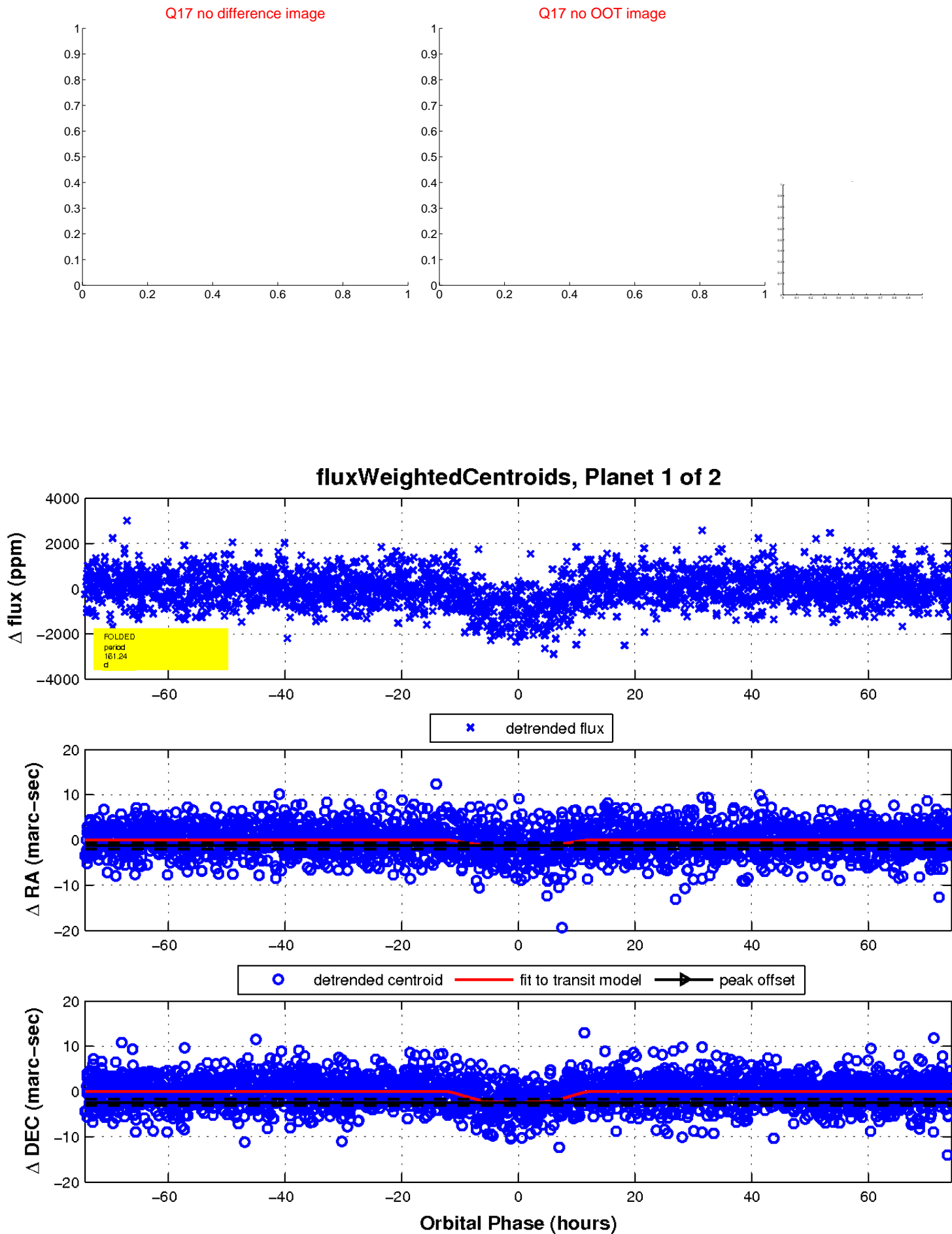
Q16 no difference image



Q16 no OOT image

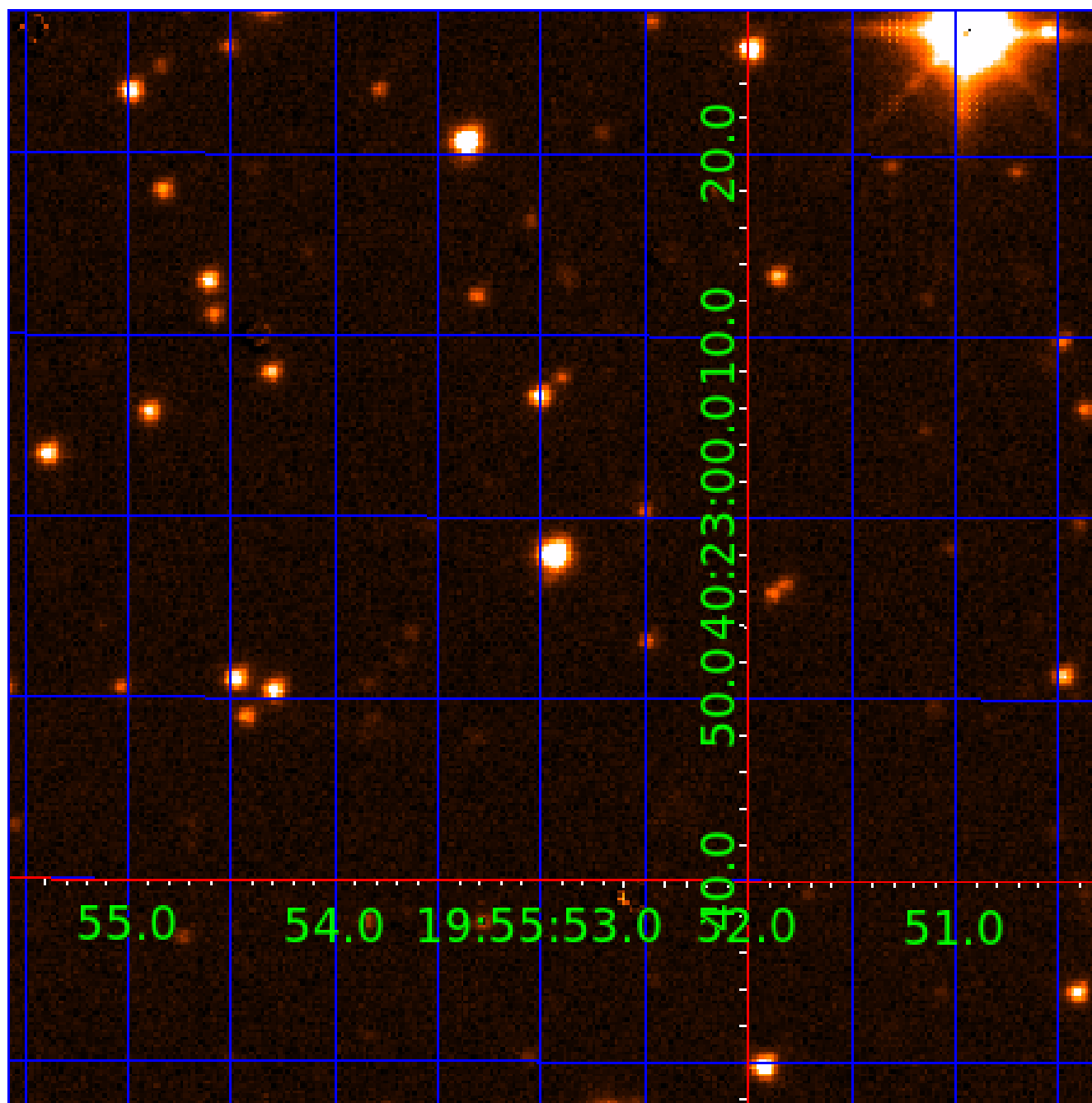


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005217891

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})
005217891-01	OBS	3036.01	161.242130	189.165456	1085.9	24.772	18.8	19.5	0.83	5514	3.49	1.77
005217891-02	OBS	No	0.839080	132.016289	32.7	7.401	8.2	6.1	0.83	5514	0.46	1966.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005217891-01	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL_SKYE—CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
005217891-02	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.

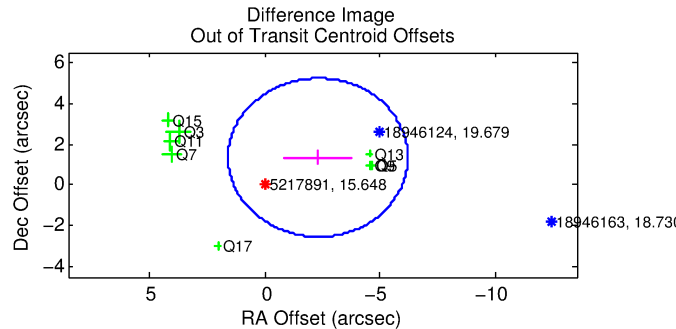
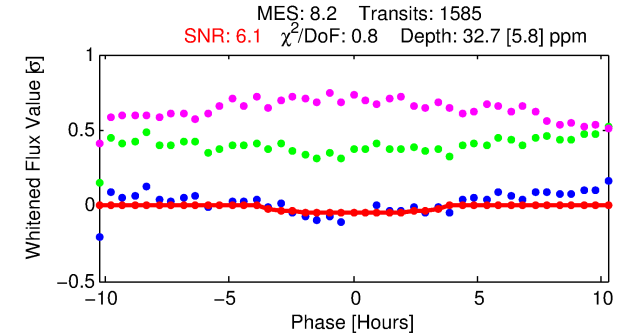
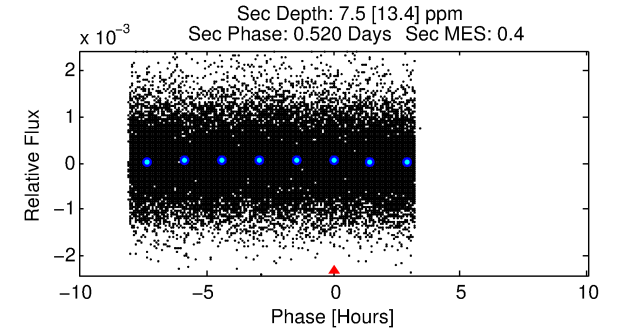
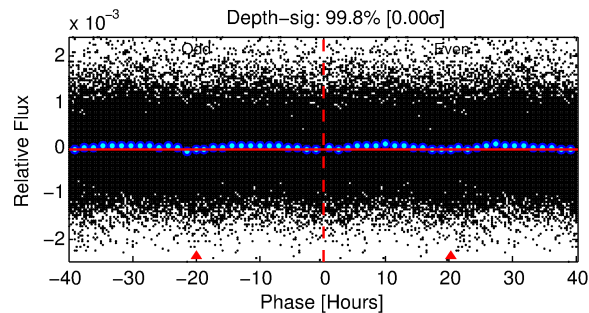
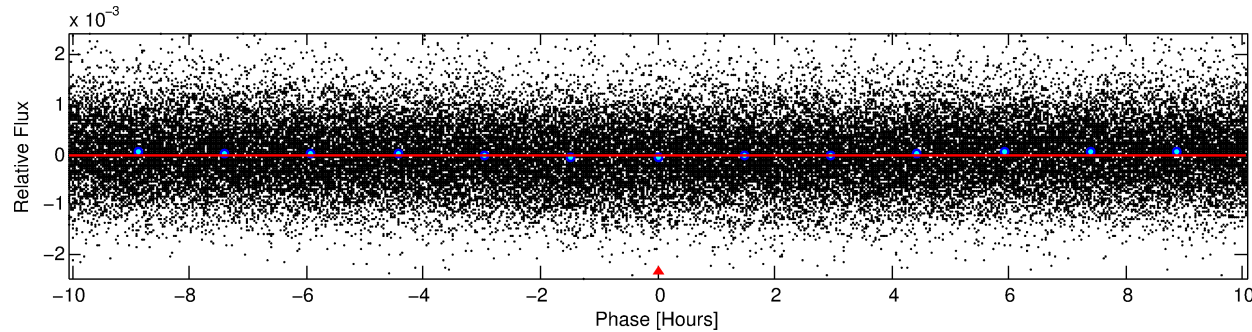
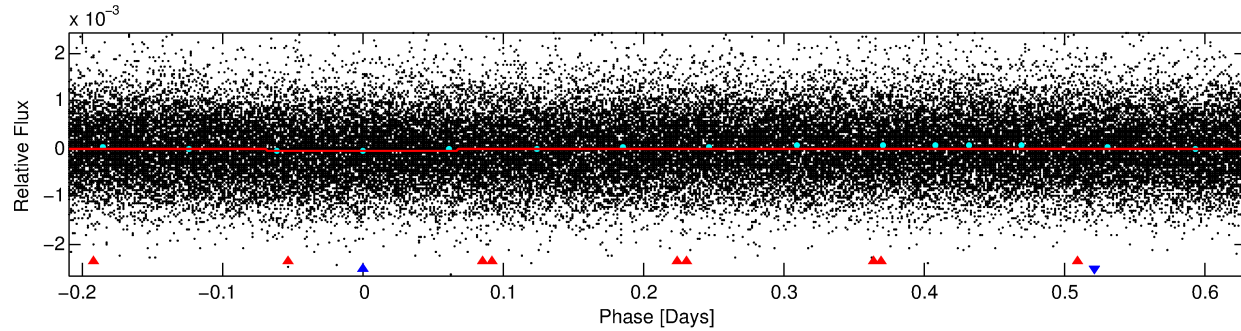
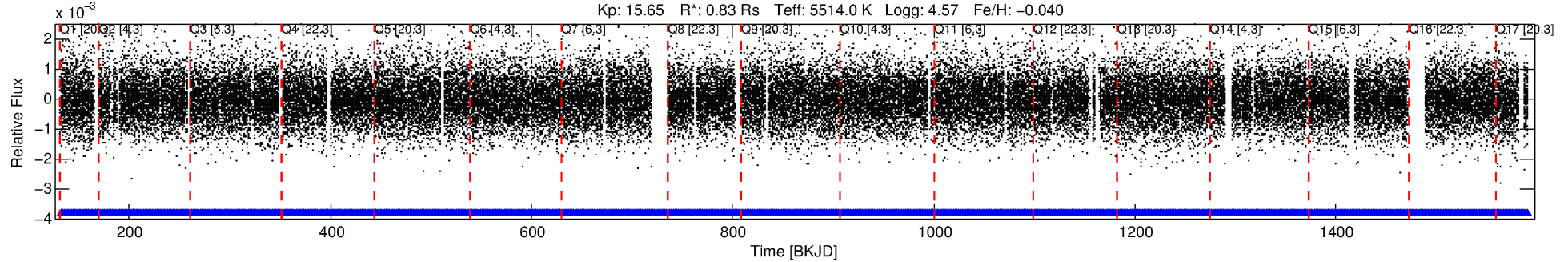
Ephemeris Match Information For 005217891-02

No Significant Match Found

DV One-Page Summary

KIC: 5217891 Candidate: 2 of 2 Period: 0.839 d
KOI: K03036 Corr: No Ephemeris Match

Kp: 15.65 R*: 0.83 Rs Teff: 5514.0 K Logg: 4.57 Fe/H: -0.040



DV Fit Results:

Period = 0.83908 [0.00003] d
Epoch = 132.0163 [0.0137] BKJD
Rp/R* = 0.0052 [0.0118]
a/R* = 1.10 [1.73]
b = 0.05 [175.39]
Seff = 1966.42 [605.76]
Teq = 1698 [131] K
Rp = 0.46 [1.07] Re
a = 0.0170 [0.0032] AU
Ag = 5.50 [27.12] [0.17σ]
Teff = 4021 [4950] K [0.47σ]

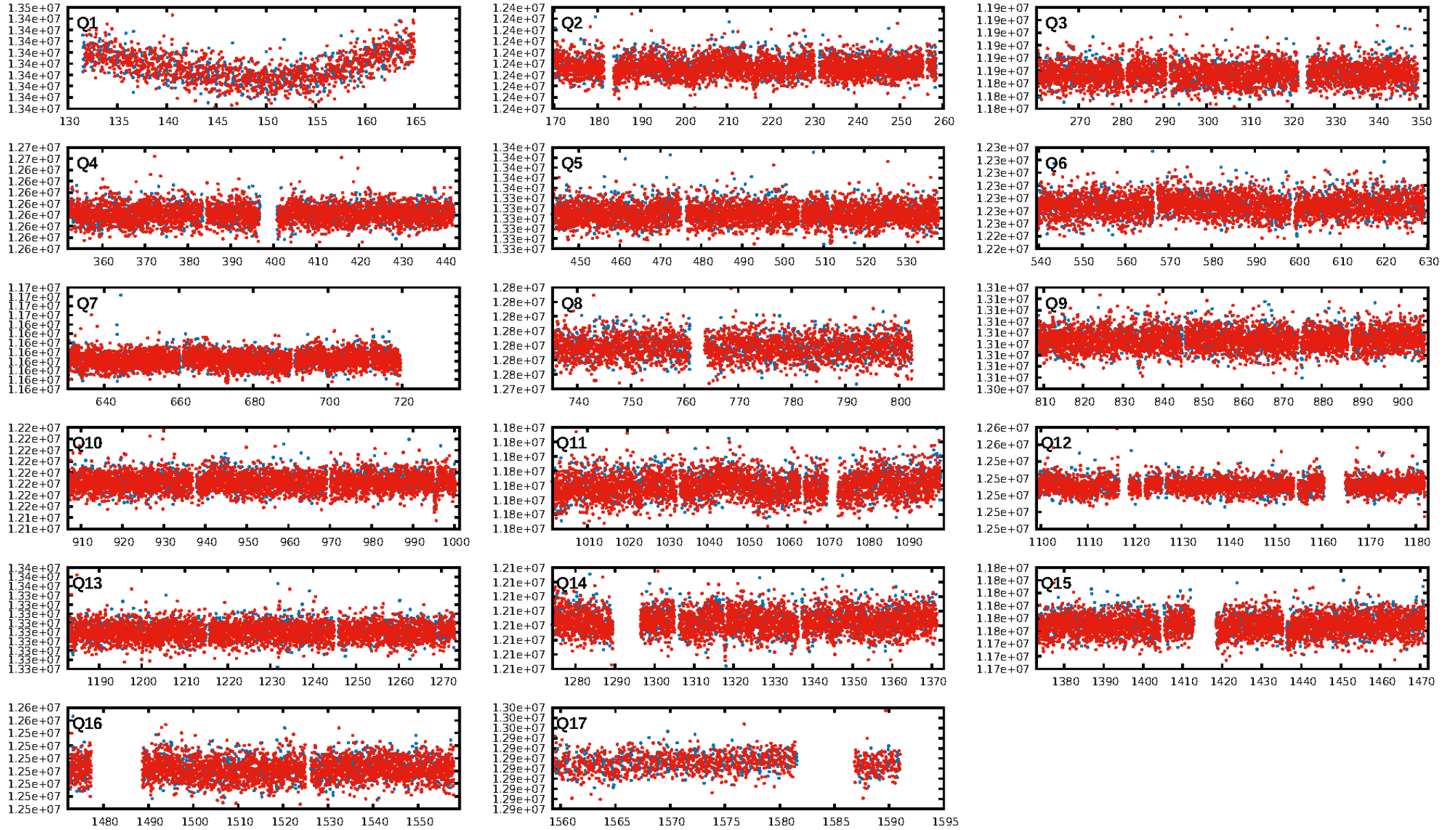
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [148.90σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1513/1513]
GhostDiagnostic-chr: -0.4424
Centroid-sig: 0.0%
Centroid-so: 8.166 arcsec [3.53σ]
OotOffset-rm: 2.667 arcsec [2.06σ]
KicOffset-rm: 2.785 arcsec [2.23σ]
OotOffset-st: 0/4/0/4 [8]
KicOffset-st: 0/4/0/4 [8]
DiffImageQuality-fgm: 0.00 [0/8]
DiffImageOverlap-fno: 1.00 [17/17]

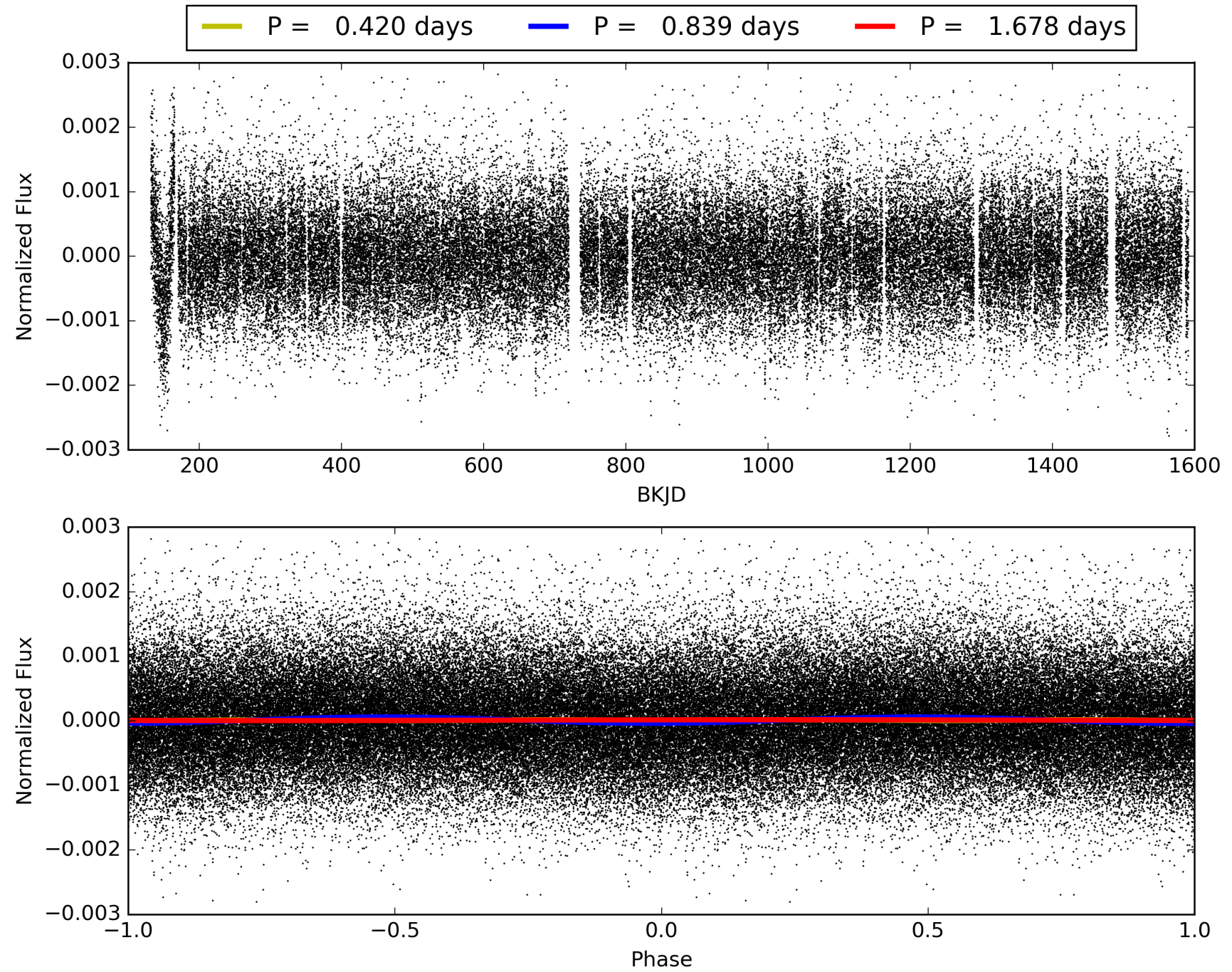
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 15:24:48 Z

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

TCE 005217891-02, PDC Light Curves

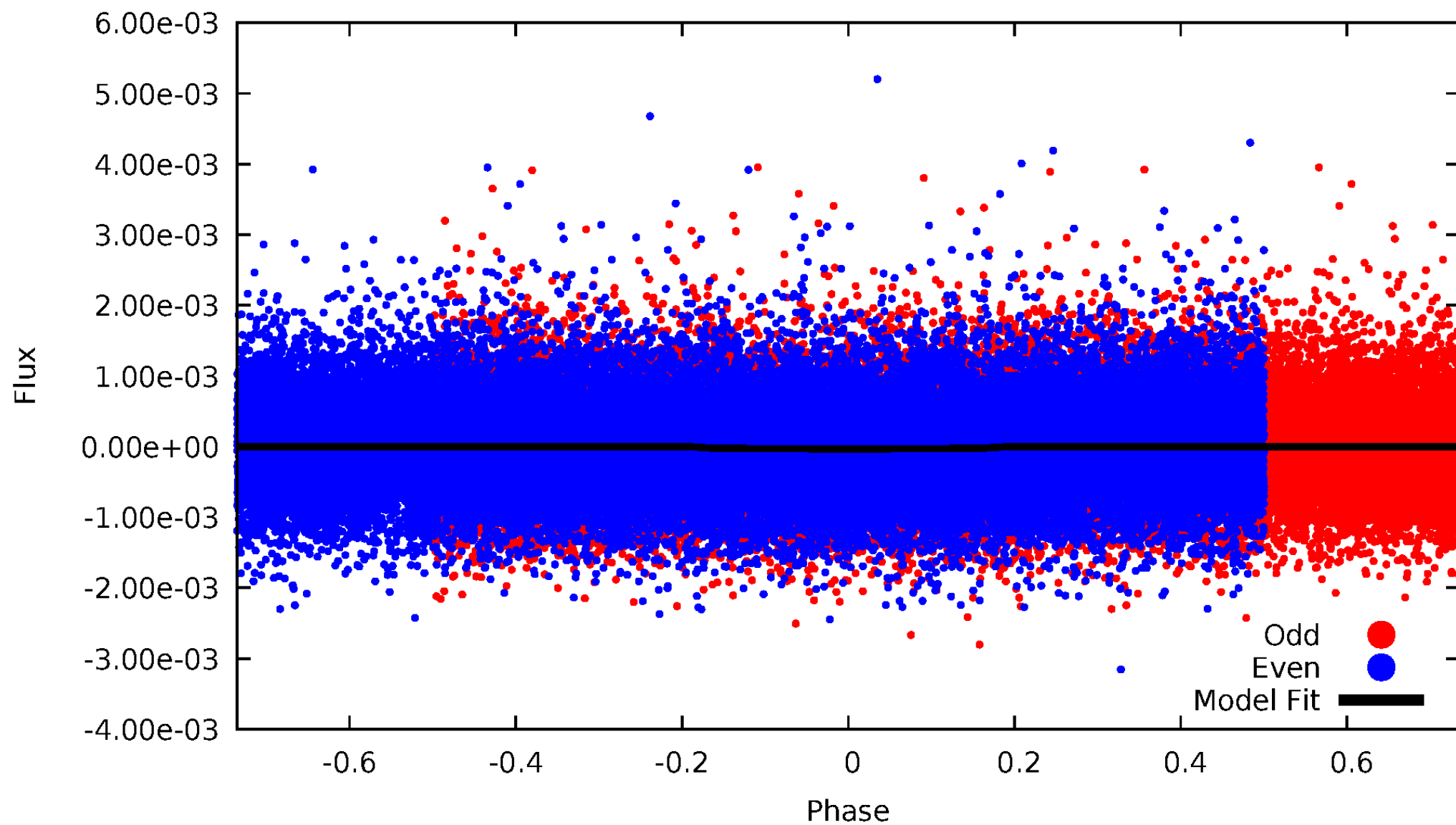


TCE 005217891-02



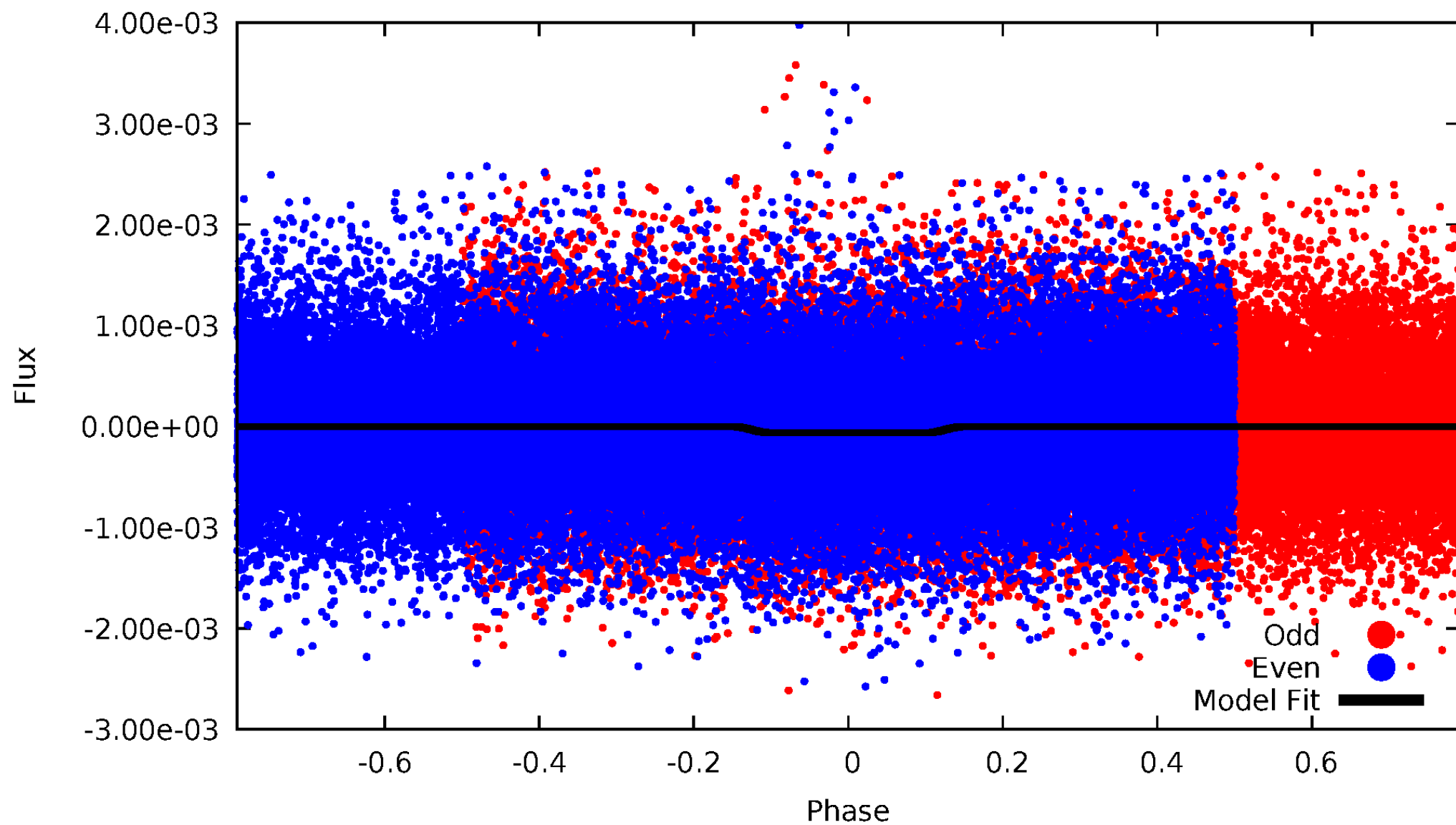
DV Odd/Even

TCE 005217891-02



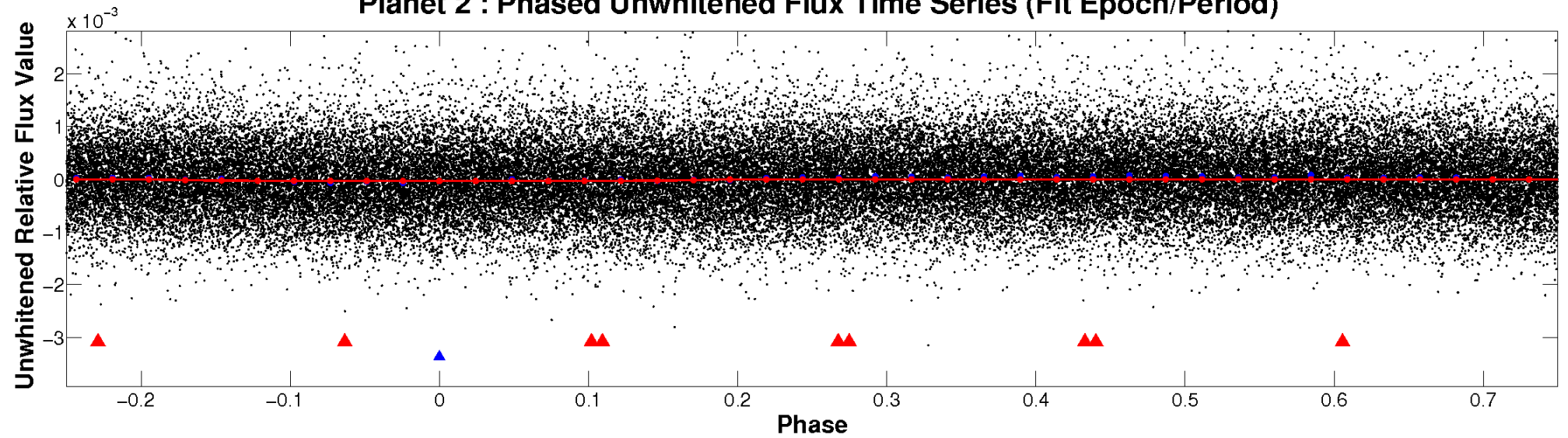
ALT Odd/Even

TCE 005217891-02

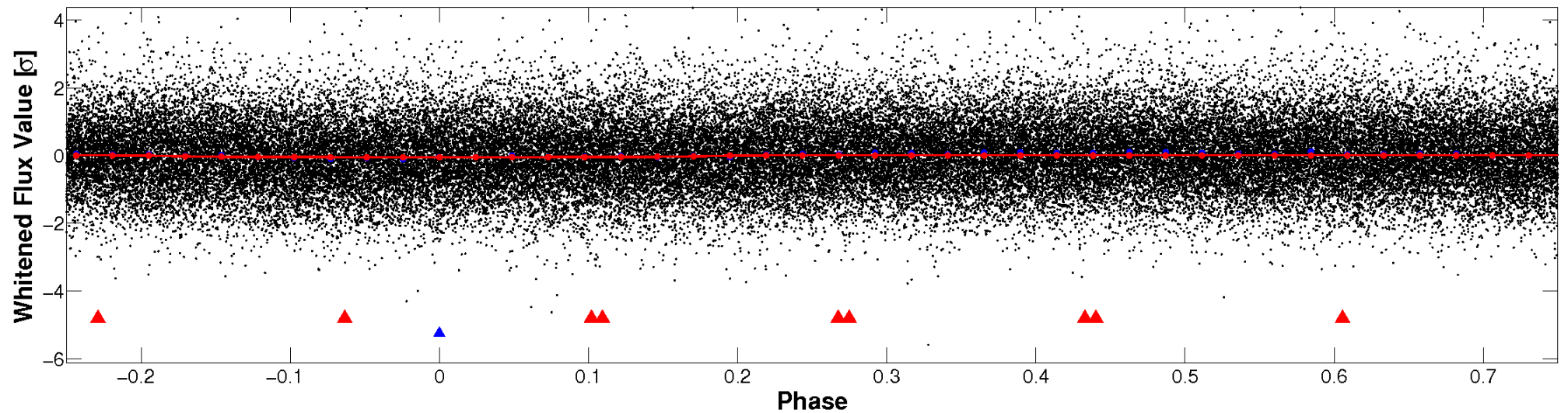


Non-Whitened Vs. Whitened Light Curve

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

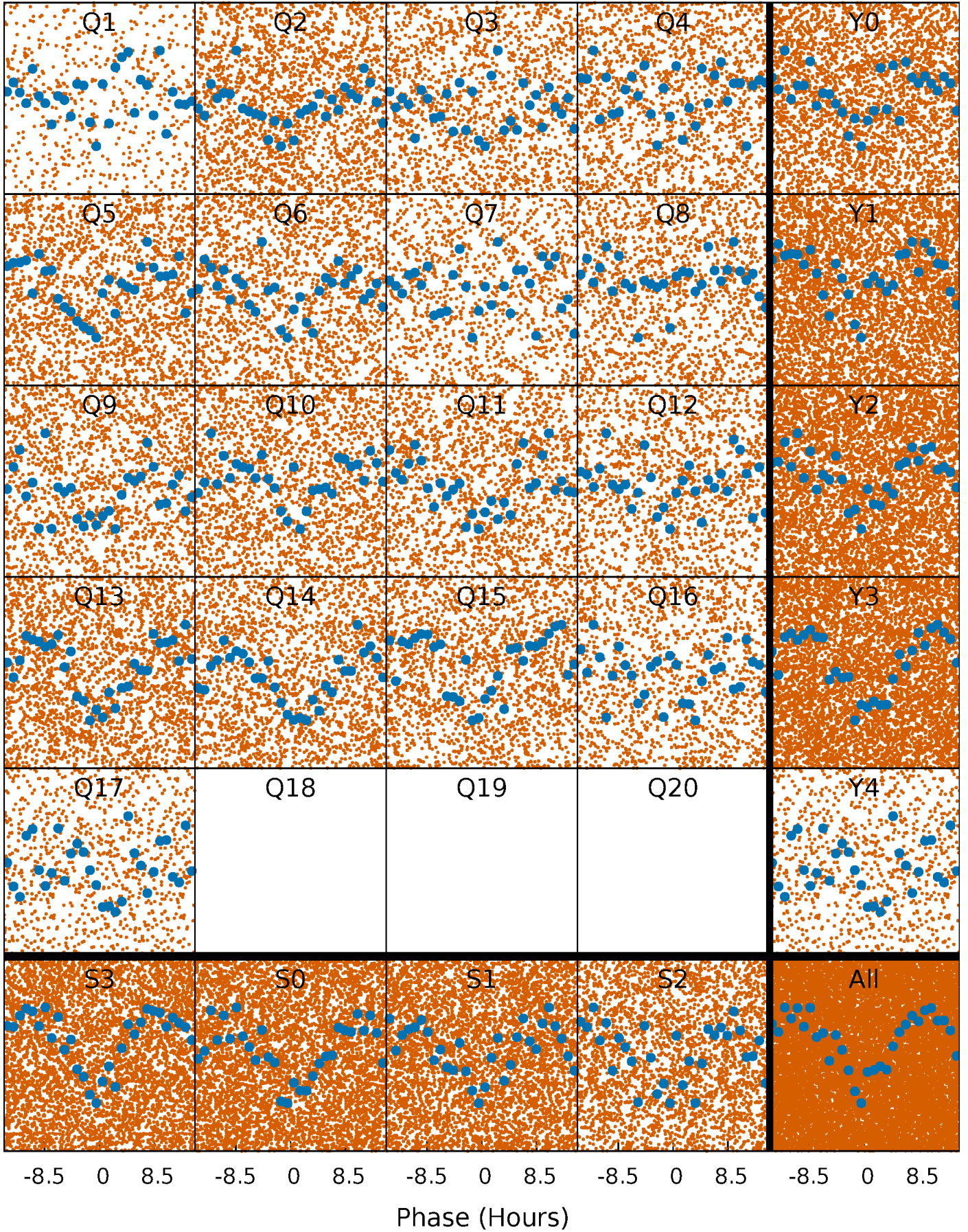


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



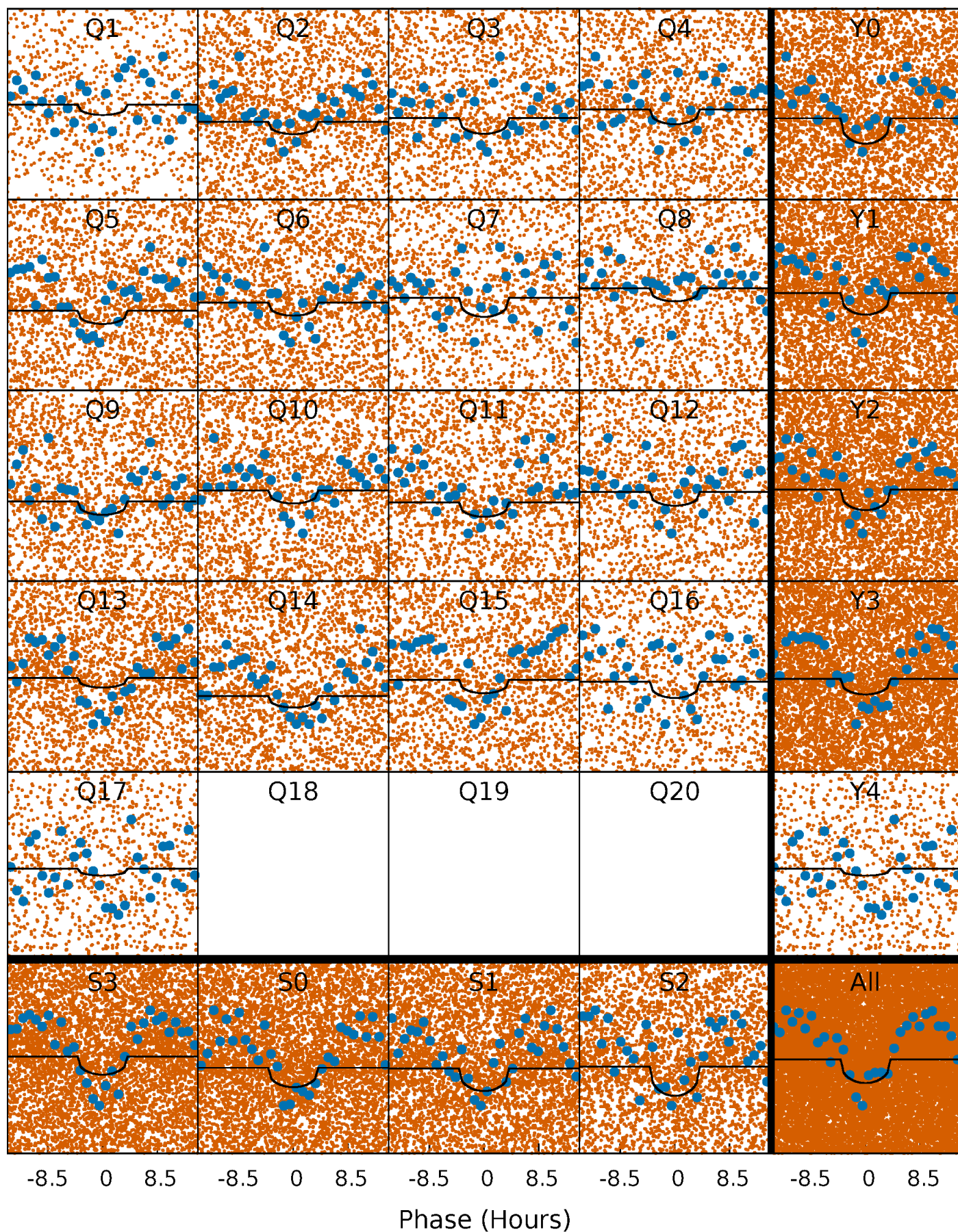
PDC Quarter-Phased Transit Curves

TCE 005217891-02 P= 0.839080 Days $T_0=132.016289$ (BKJD)



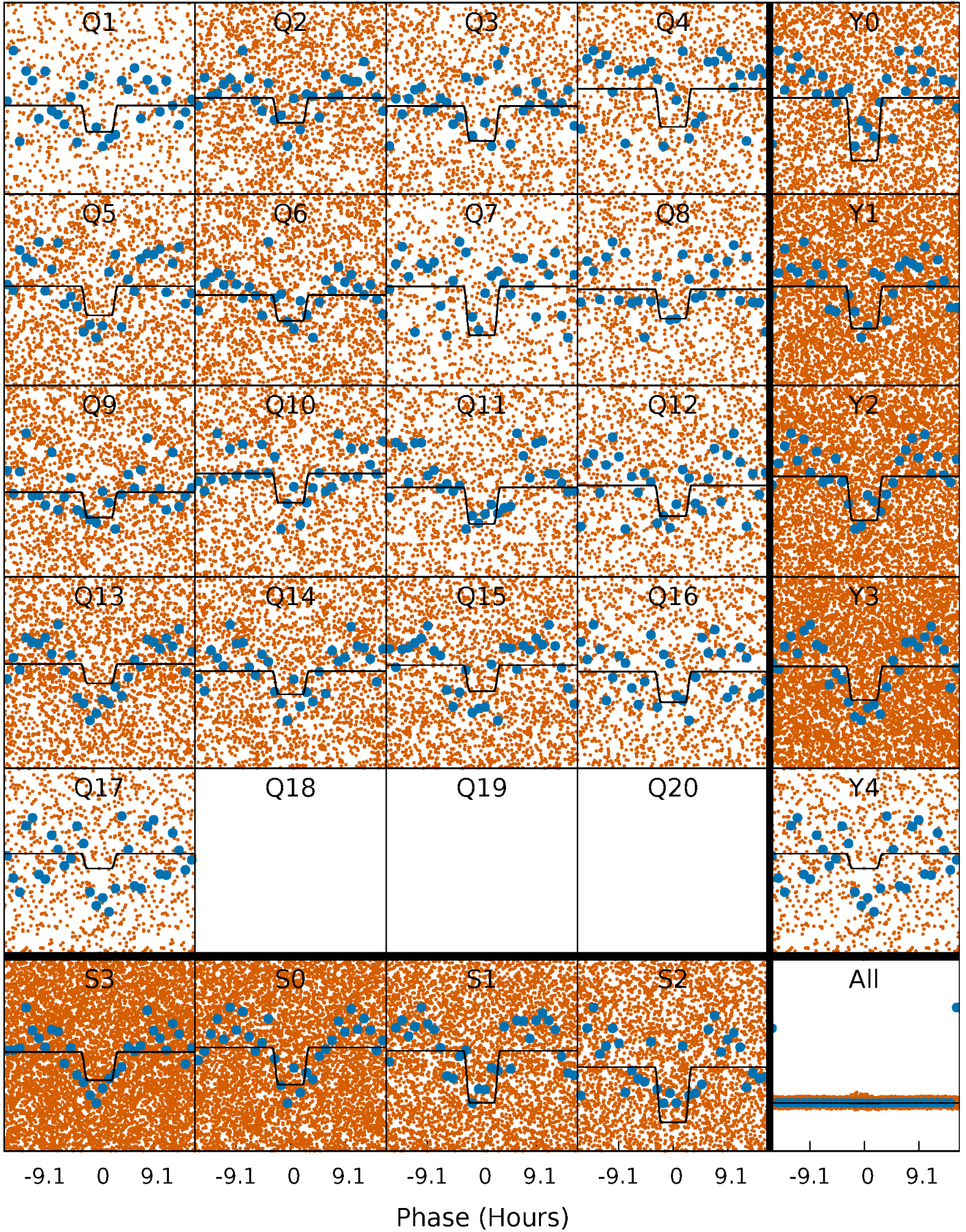
DV Quarter-Phased Transit Curves

TCE 005217891-02 P= 0.839080 Days $T_0=132.016289$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

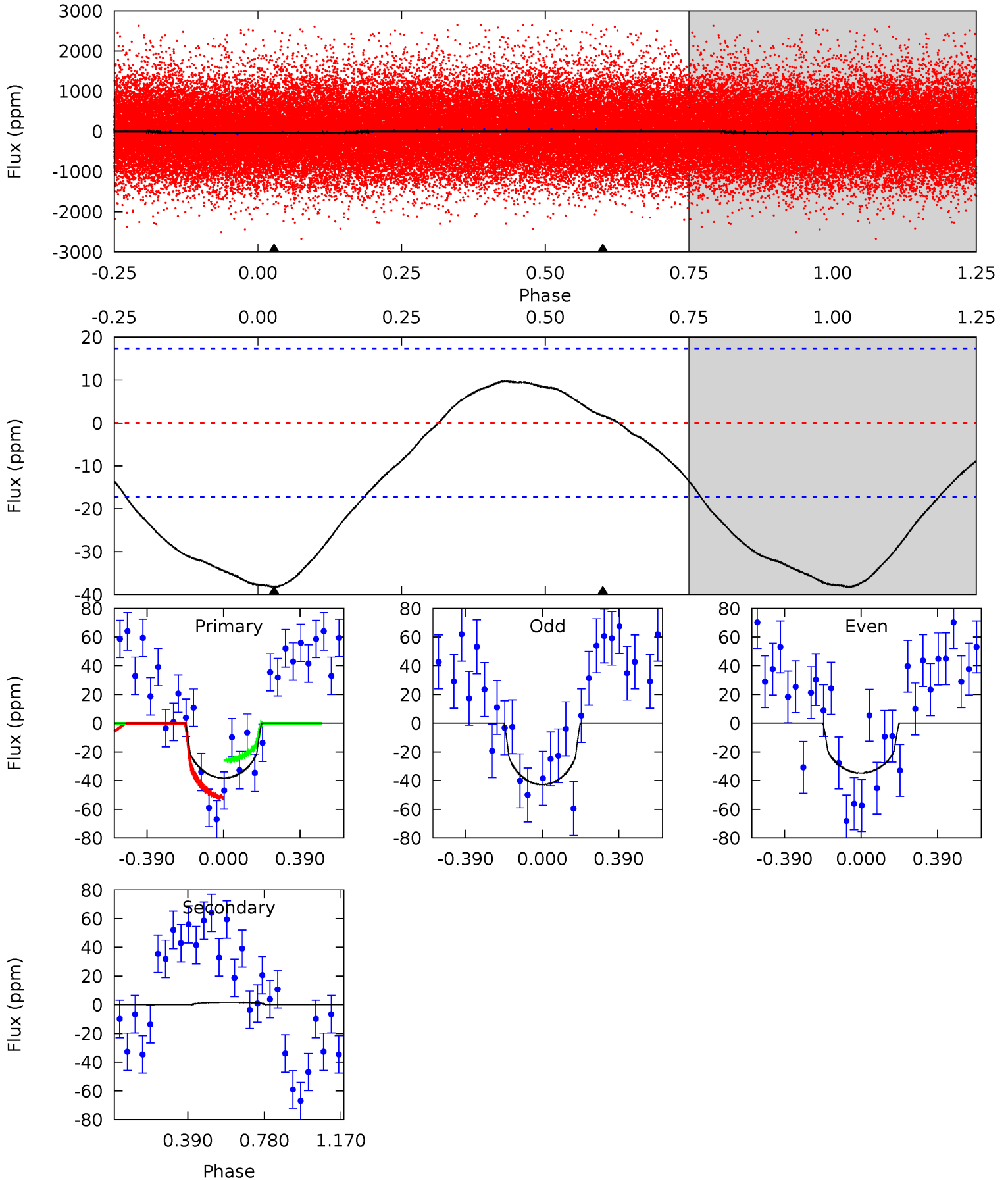
TCE 005217891-02 P= 0.839135 Days $T_0=131.958030$ (BKJD)



DV Model-Shift Uniqueness Test

005217891-02, $P = 0.839080$ Days, $E = 131.177209$ Days

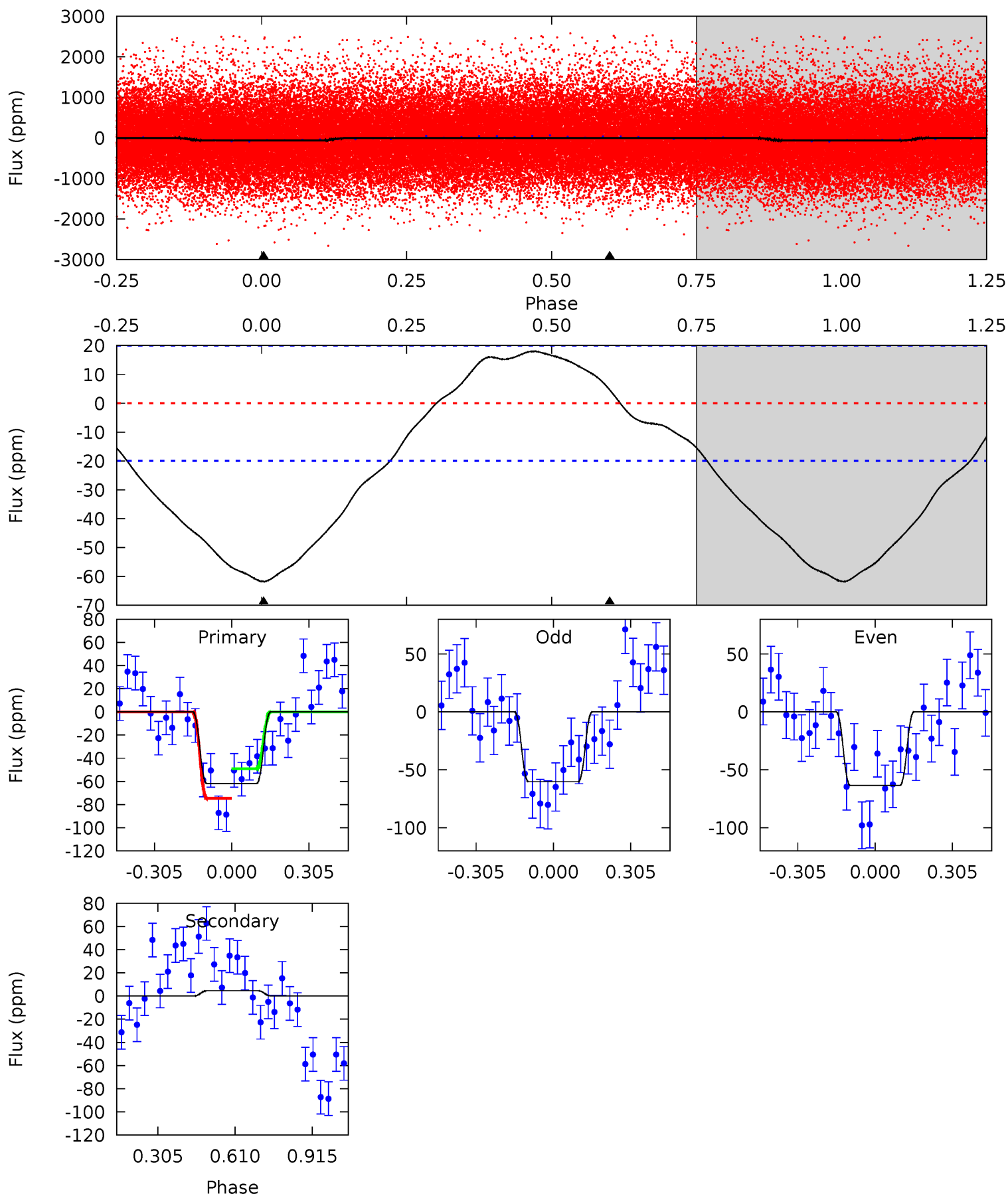
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.46	-0.42	0	0	4.27	0.86	0.99	9.46	9.46	-0.42	-0.42	1.00	0.66	0.20	3.09



Alt Model-Shift Uniqueness Test

005217891-02, P = 0.839135 Days, E = 131.118895 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.4	-1.01	0	0	4.33	1.03	1.21	13.4	13.4	-1.01	-1.01	0.34	0.87	0.23	2.81



Stellar Parameters For KIC 005217891

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5514^{+182}_{-182}	$4.569^{+0.038}_{-0.152}$	$-0.040^{+0.300}_{-0.300}$	$0.826^{+0.188}_{-0.075}$	$0.926^{+0.083}_{-0.111}$	$2.312^{+0.457}_{-0.970}$
	+3%/-3%	+1%/-3%	+750%/-750%	+23%/-9%	+9%/-12%	+20%/-42%
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 005217891-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	2 ± 4	$0.94^{+0.89}_{-0.63}$	2419^{+129}_{-106}	-2901^{+5410}_{-993}	$-0.157^{+0.611}_{-2.515}$
Alt.	5 ± 5	$1.11^{+0.97}_{-0.72}$	2420^{+132}_{-105}	-3141^{+391}_{-977}	$-0.462^{+0.441}_{-3.462}$

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

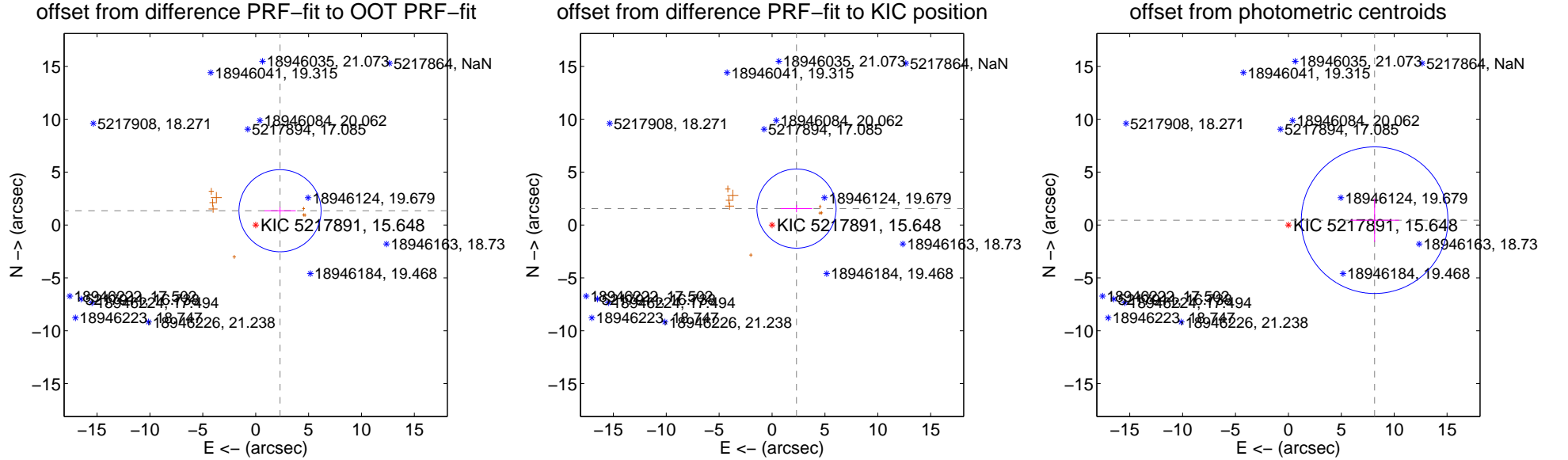
DV Centroid Data

Supplemental centroid analysis for 005217891-02. Kepler magnitude: 15.65. Transit SNR 6.08

There are 0 quarters with good PRF difference image offsets

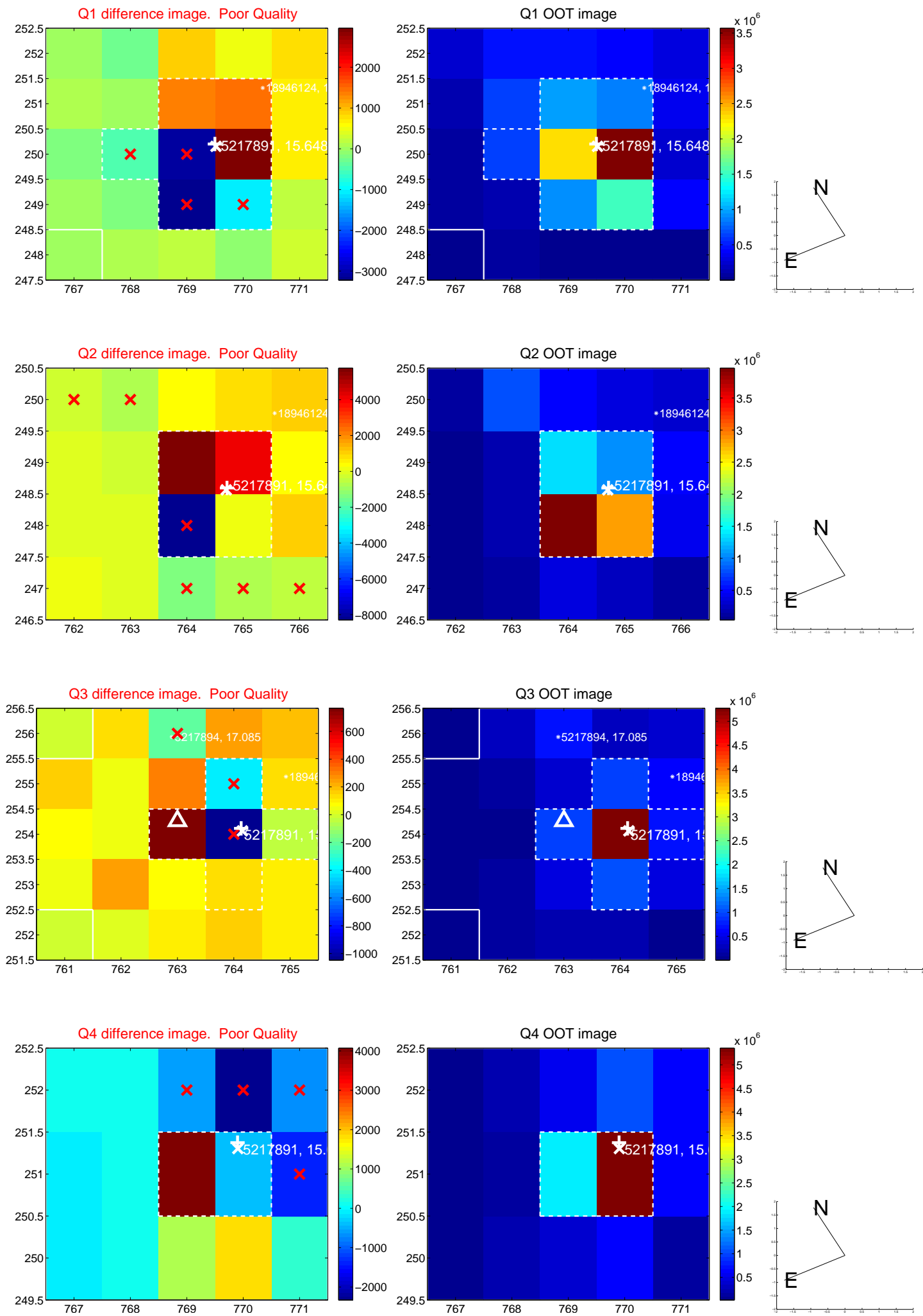
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.667 ± 1.294	2.06	-2.302 ± 1.487	1.348 ± 0.342
PRF-fit source offset from KIC position	2.785 ± 1.248	2.23	-2.313 ± 1.485	1.552 ± 0.346
photometric centroid source offset	8.17 ± 2.31	3.53	-8.15 ± 2.31	0.45 ± 2.05

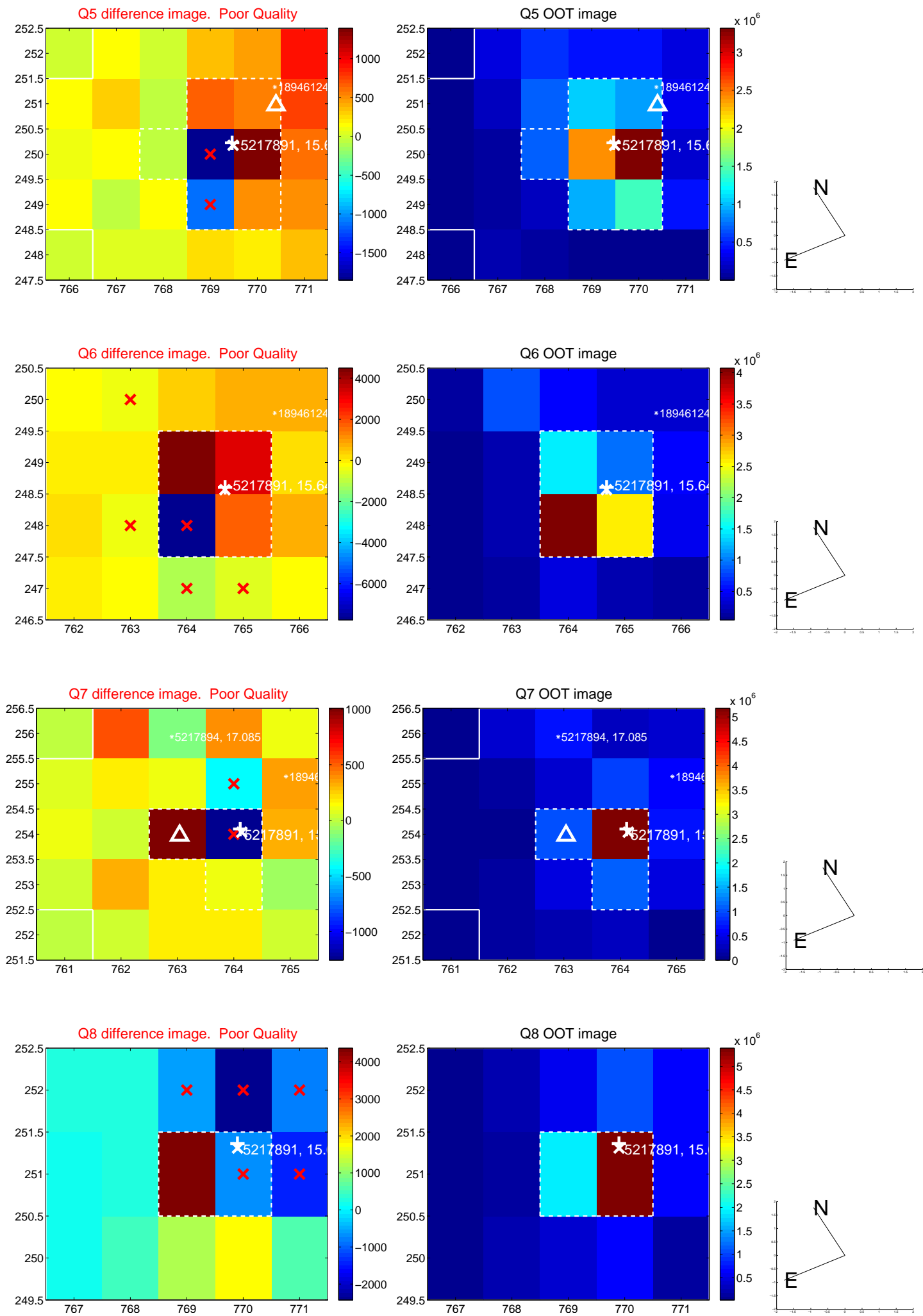


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

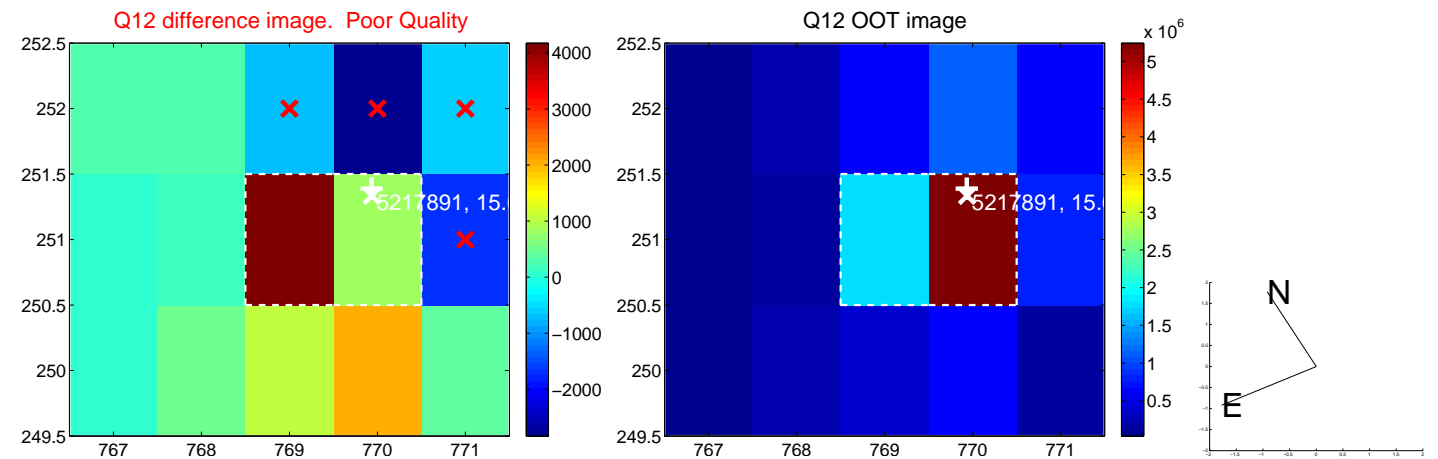
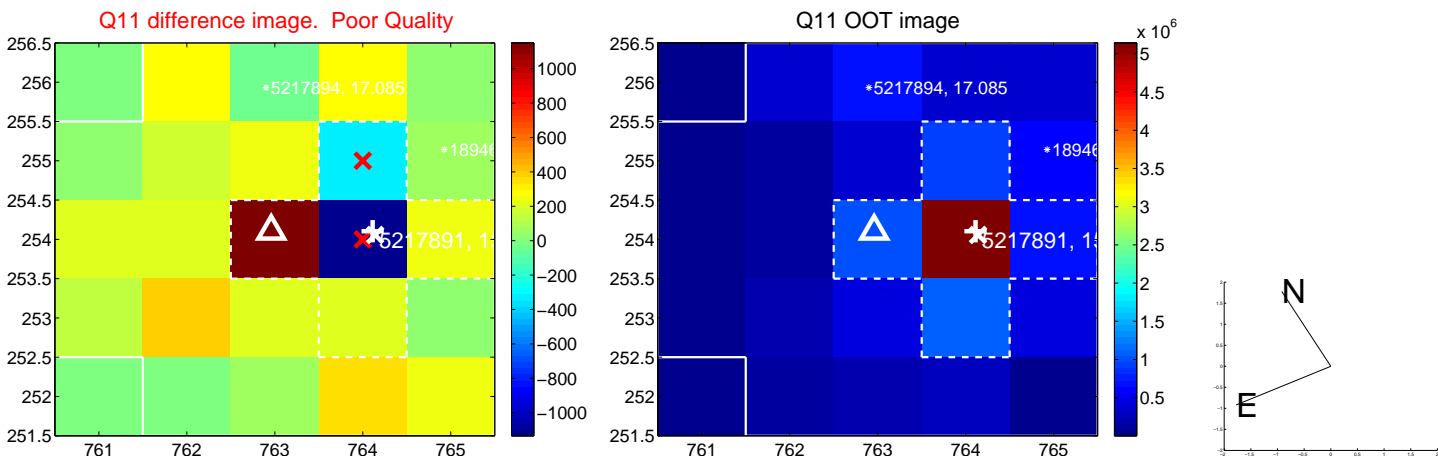
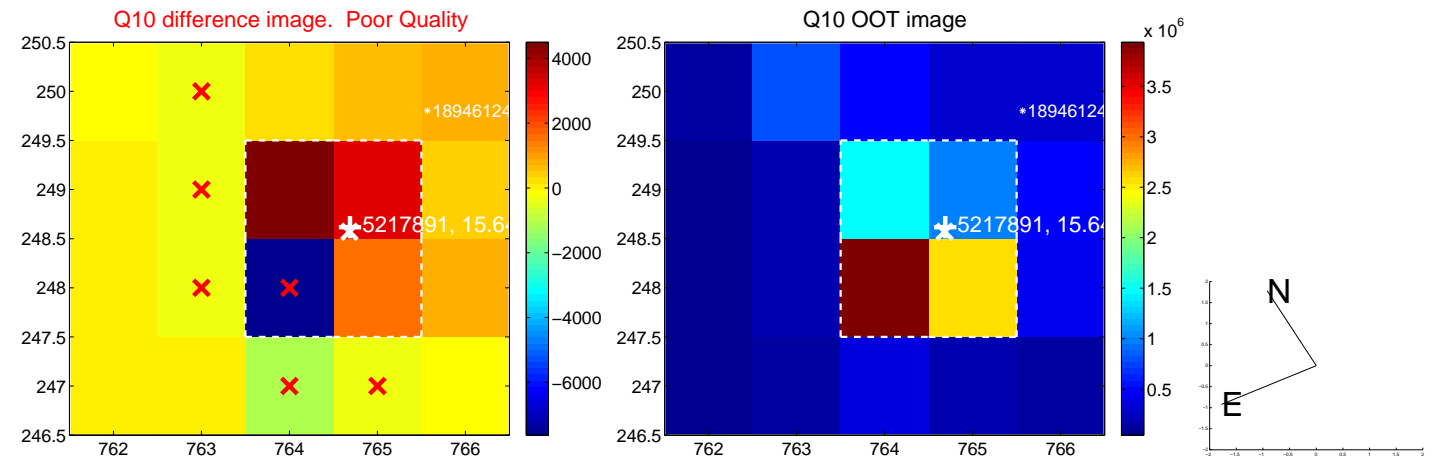
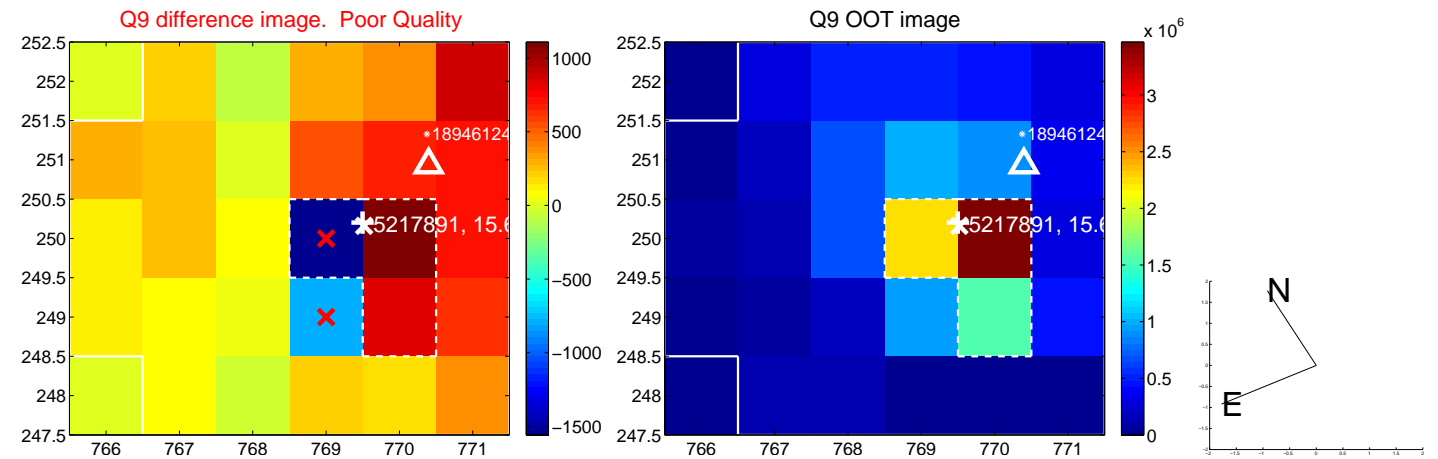
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



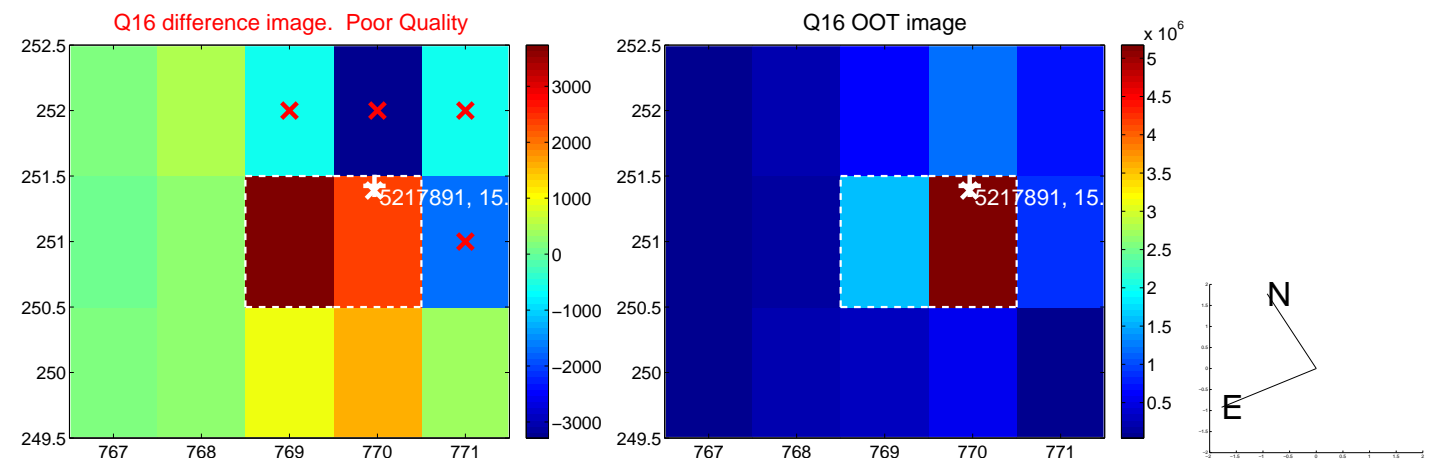
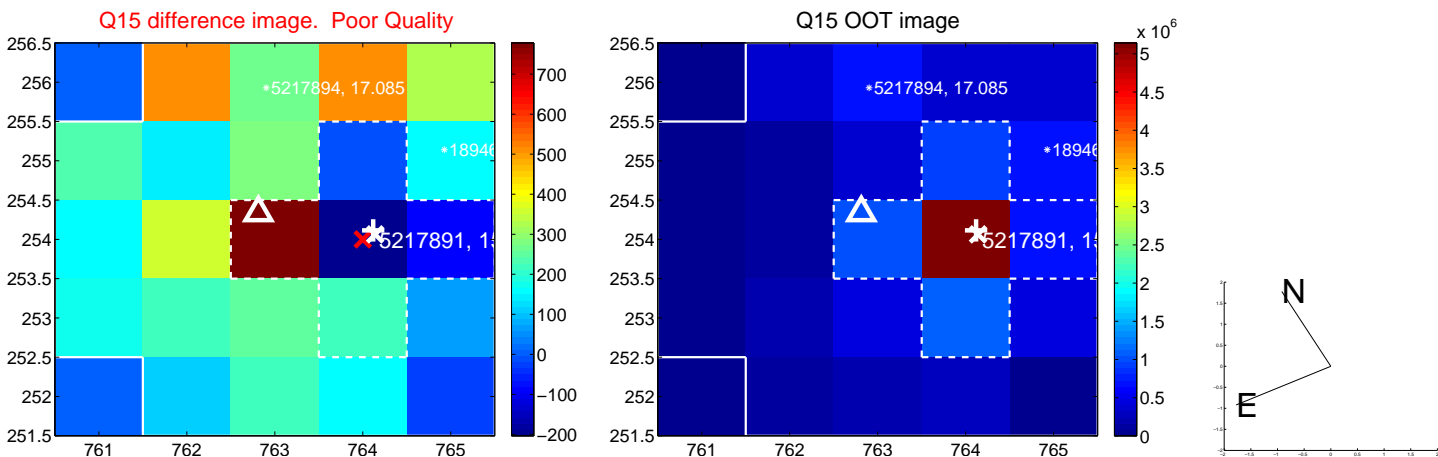
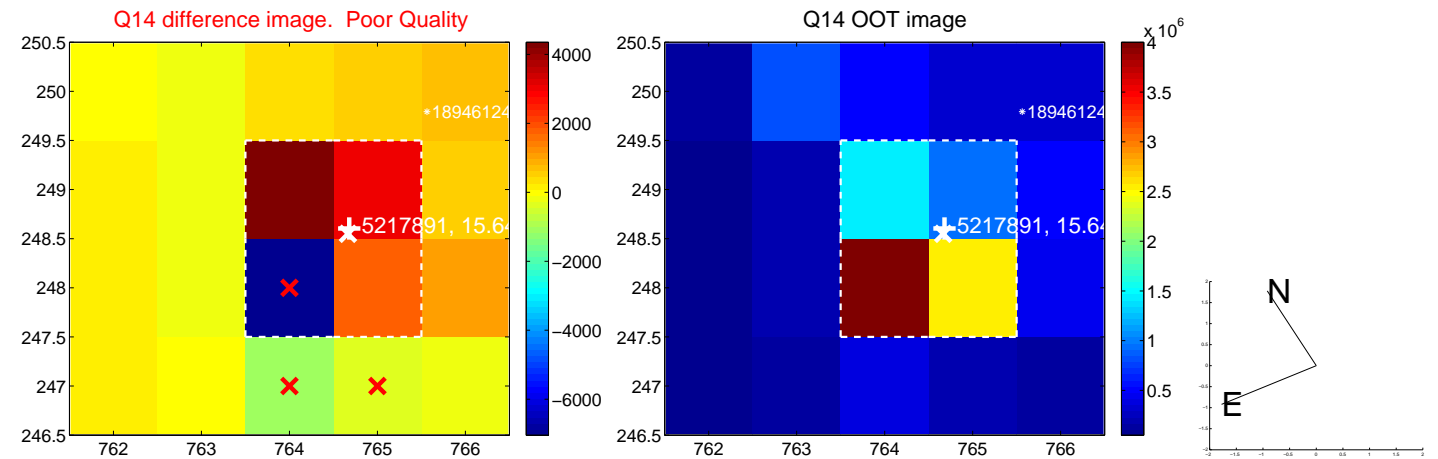
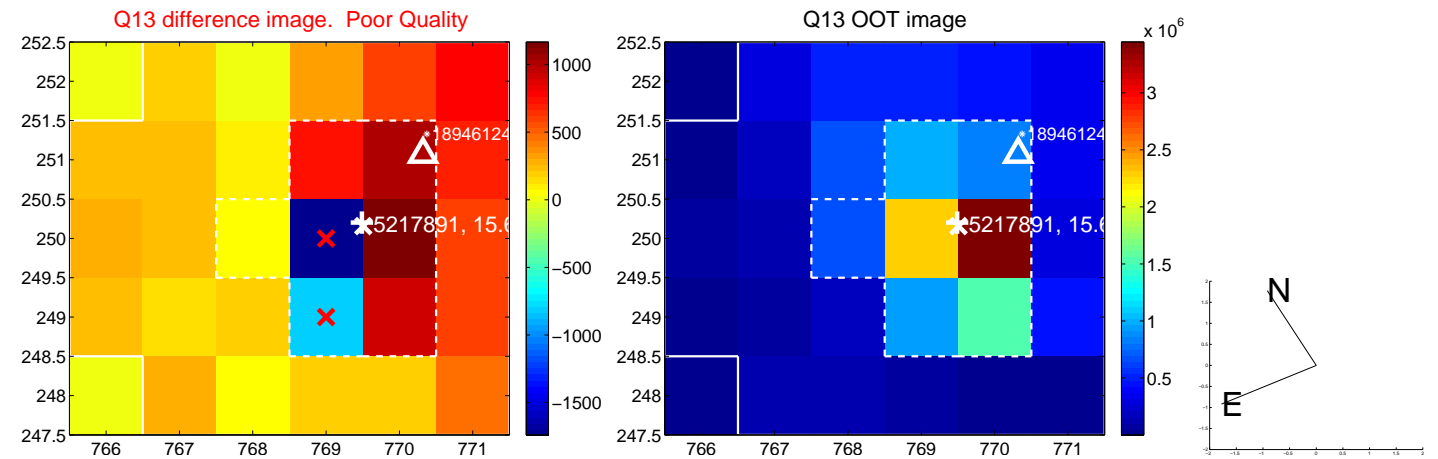
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



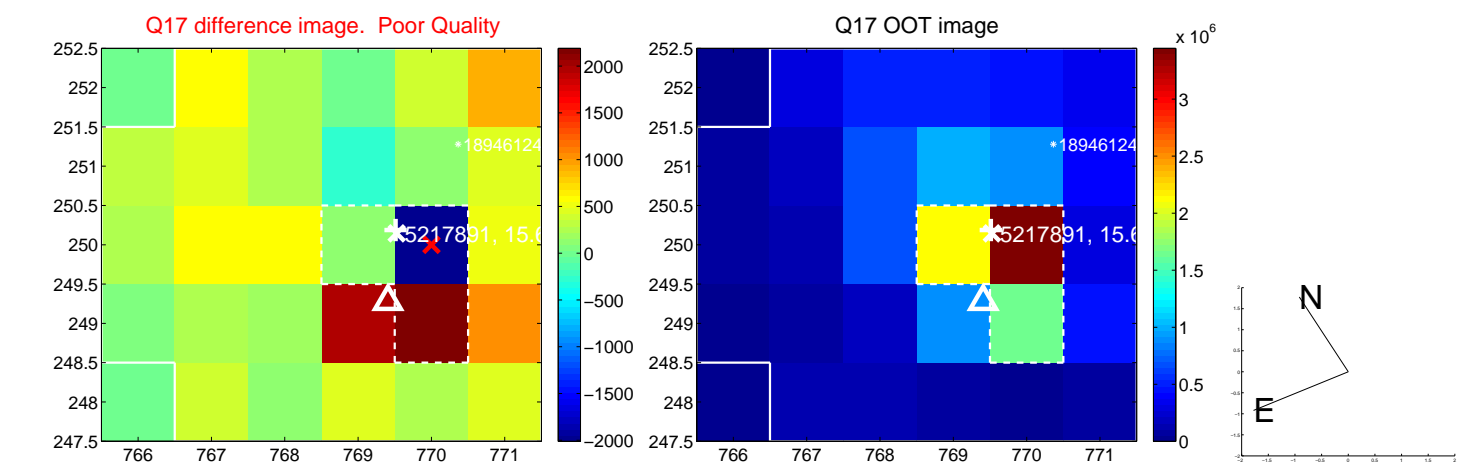
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



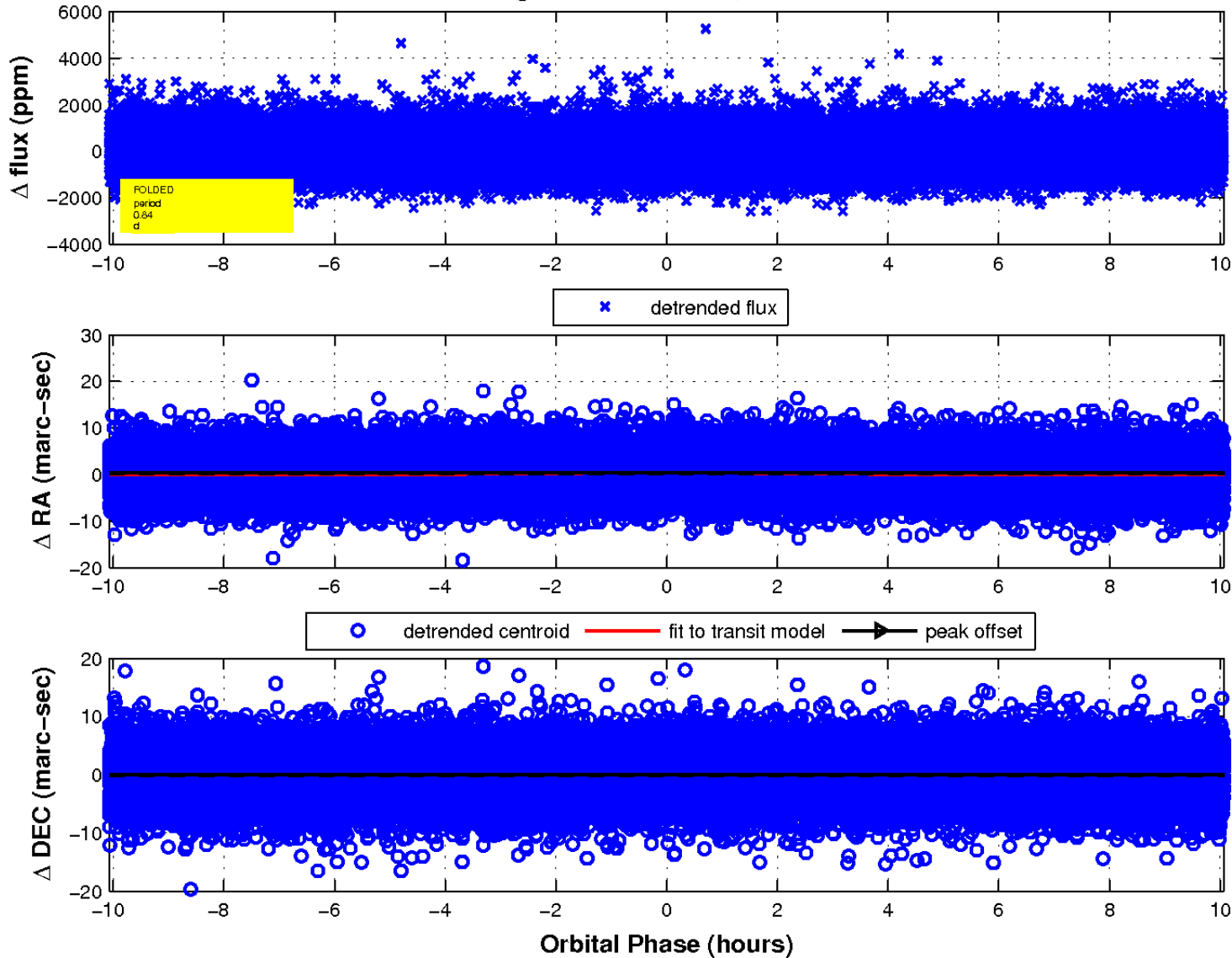
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

