

KIC 005966322

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})
005966322-01	OBS	0303.01	60.928316	173.370918	745.9	6.499	81.4	78.7	1.02	5638	3.03	11.29
005966322-02	OBS	No	295.114089	235.976767	181.2	12.224	8.6	7.5	1.02	5638	1.56	1.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005966322-01	OBS	PC	0.99	0	0	0	0	CENT_KIC_POS
005966322-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—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.

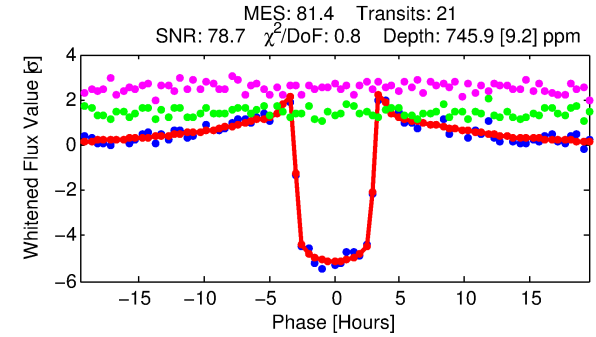
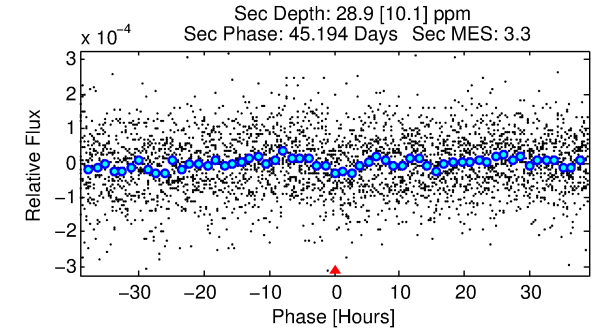
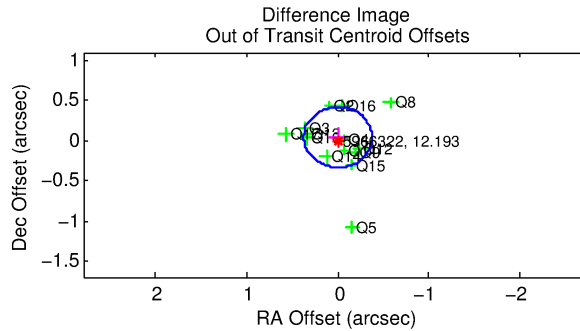
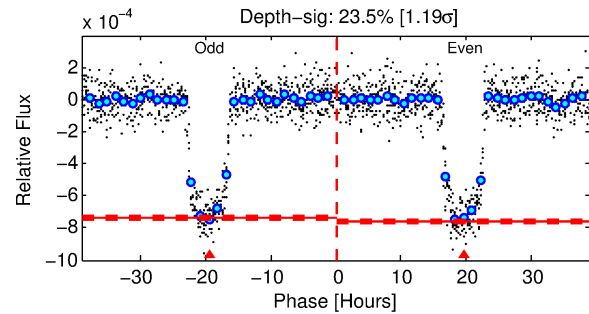
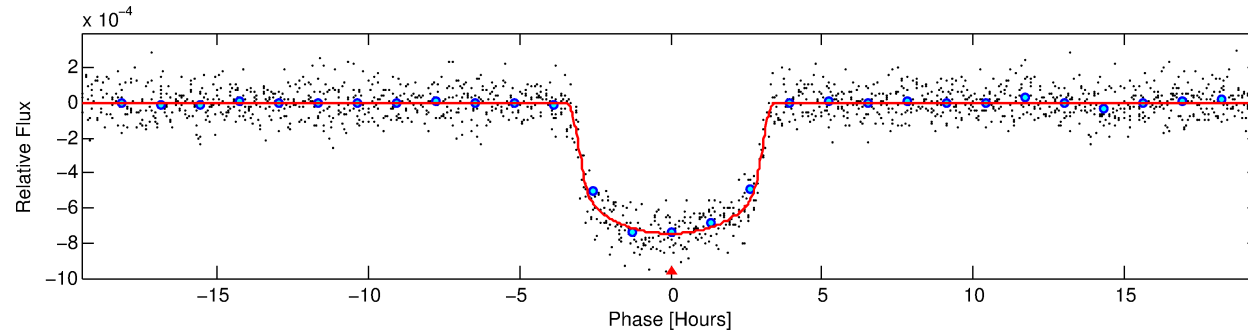
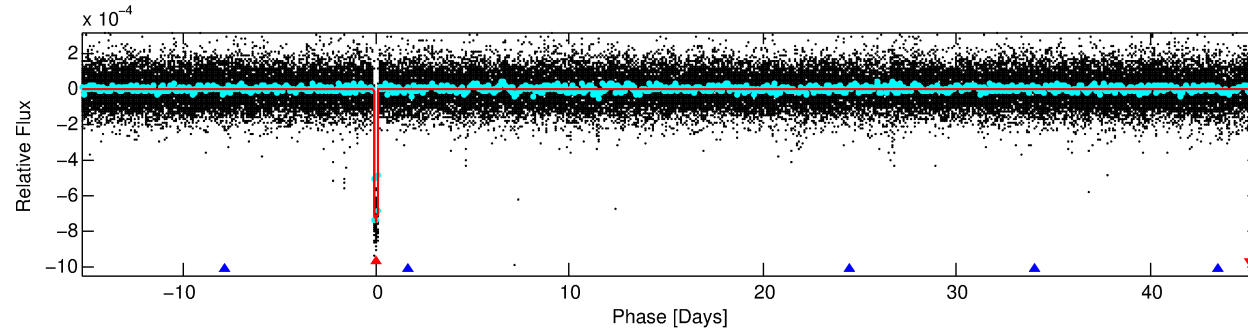
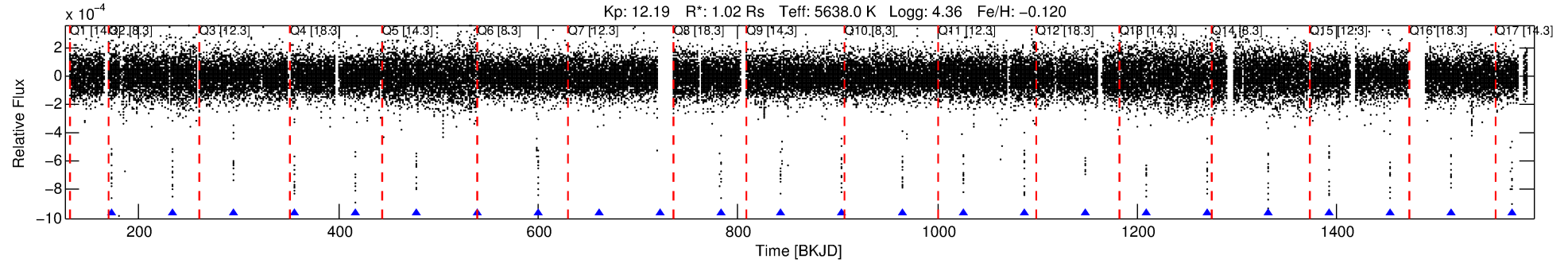
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005966322-01

No Significant Match Found

DV One-Page Summary

KIC: 5966322 Candidate: 1 of 2 Period: 60.928 d
KOI: K00303.01 Corr: 0.986



DV Fit Results:

Period = 60.92832 [0.00008] d
Epoch = 173.3709 [0.0011] BKJD
Rp/R* = 0.0272 [0.0011]
a/R* = 50.38 [8.38]
b = 0.75 [0.10]
Seff = 11.29 [2.67]
Teq = 467 [28] K
Rp = 3.03 [0.44] Re
a = 0.2896 [0.0397] AU
Ag = 144.73 [61.15] [2.35σ]
Teffp = 2507 [231] K [8.78σ]

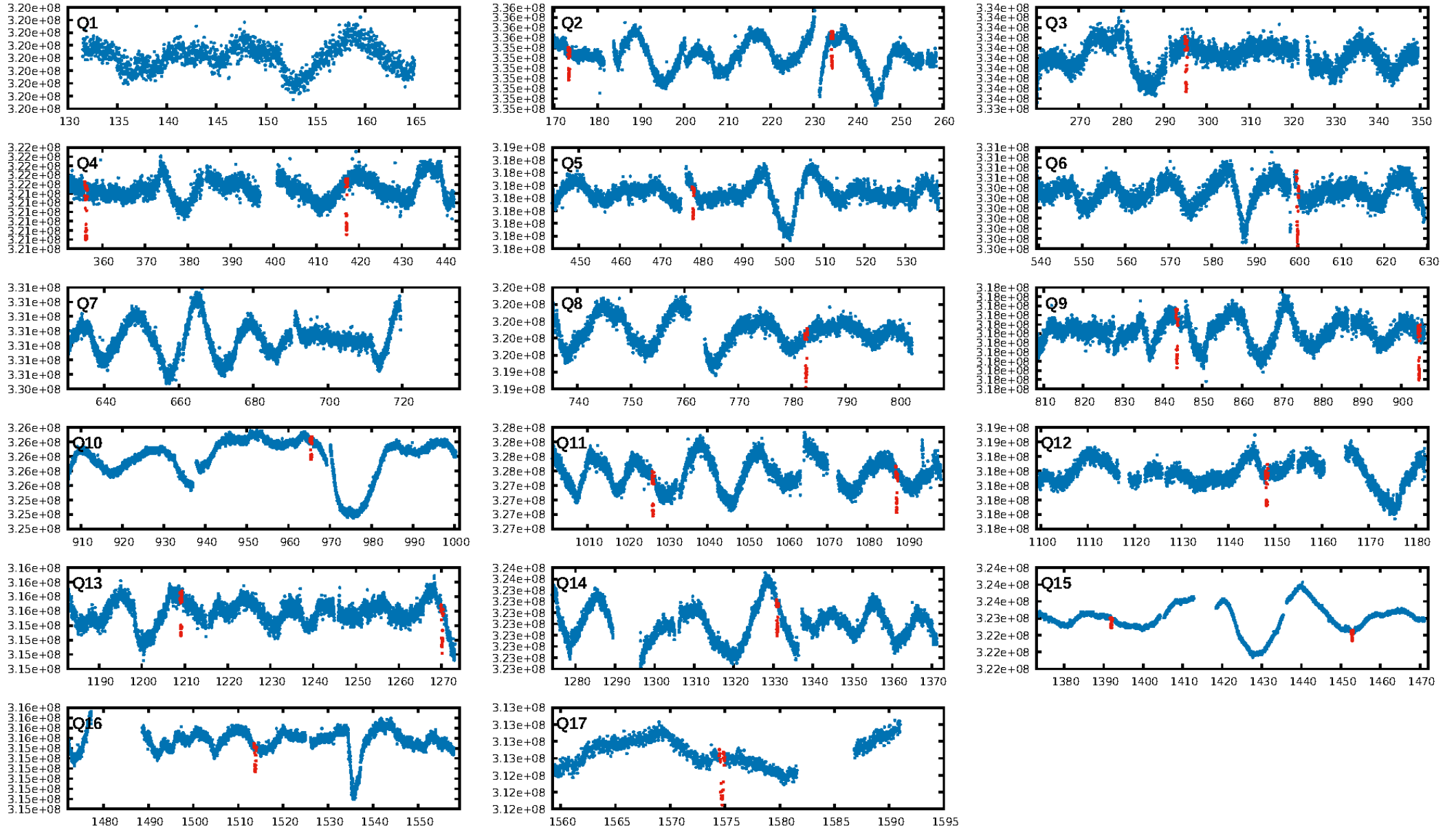
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [405.98σ]
ModelChiSquare2-sig: 97.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [20/20]
GhostDiagnostic-chr: 9.255
Centroid-sig: 0.0%
Centroid-so: 0.534 arcsec [5.90σ]
OotOffset-rm: 0.041 arcsec [0.32σ]
KicOffset-rm: 0.427 arcsec [3.88σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

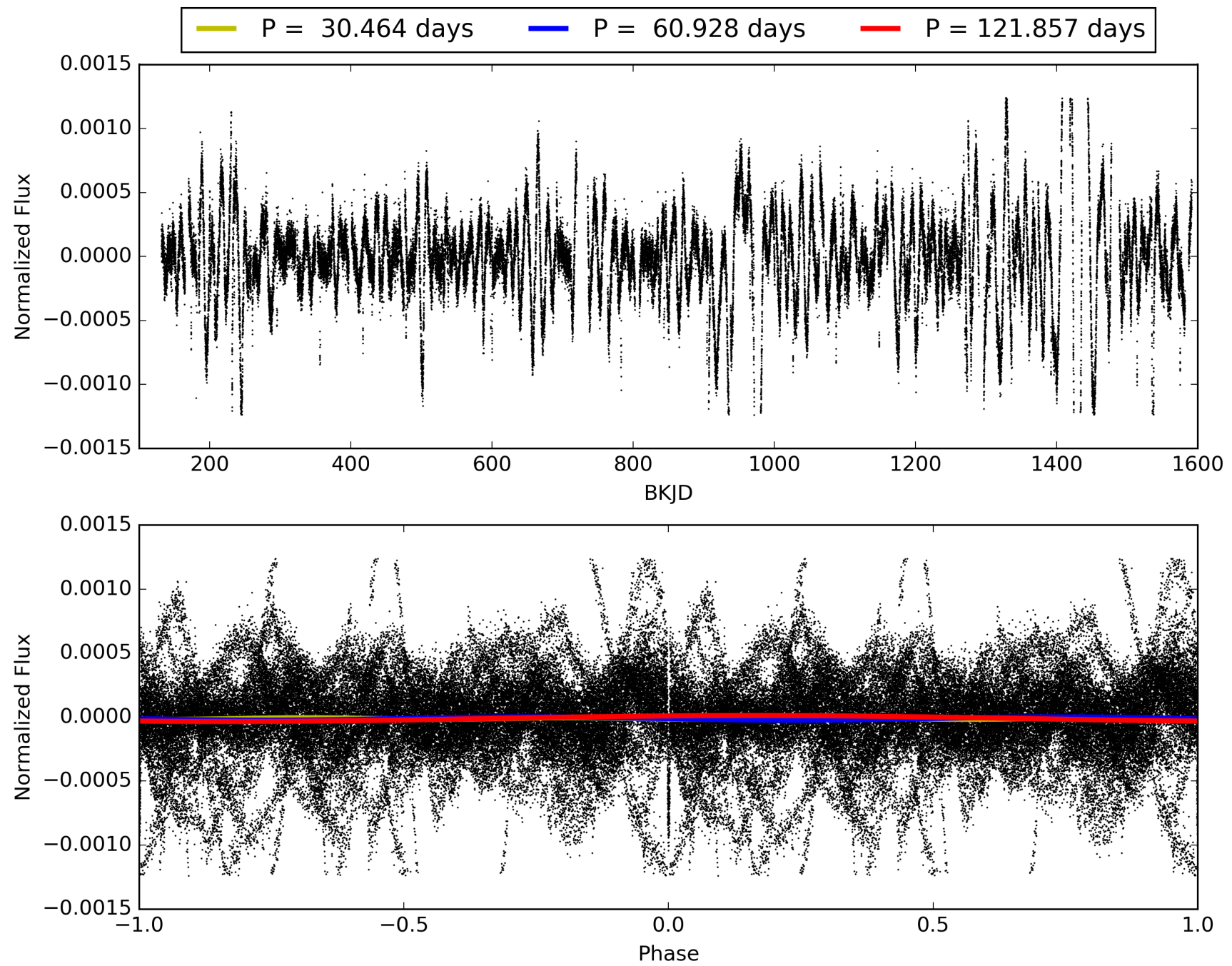
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:42:58 Z

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

TCE 005966322-01, PDC Light Curves

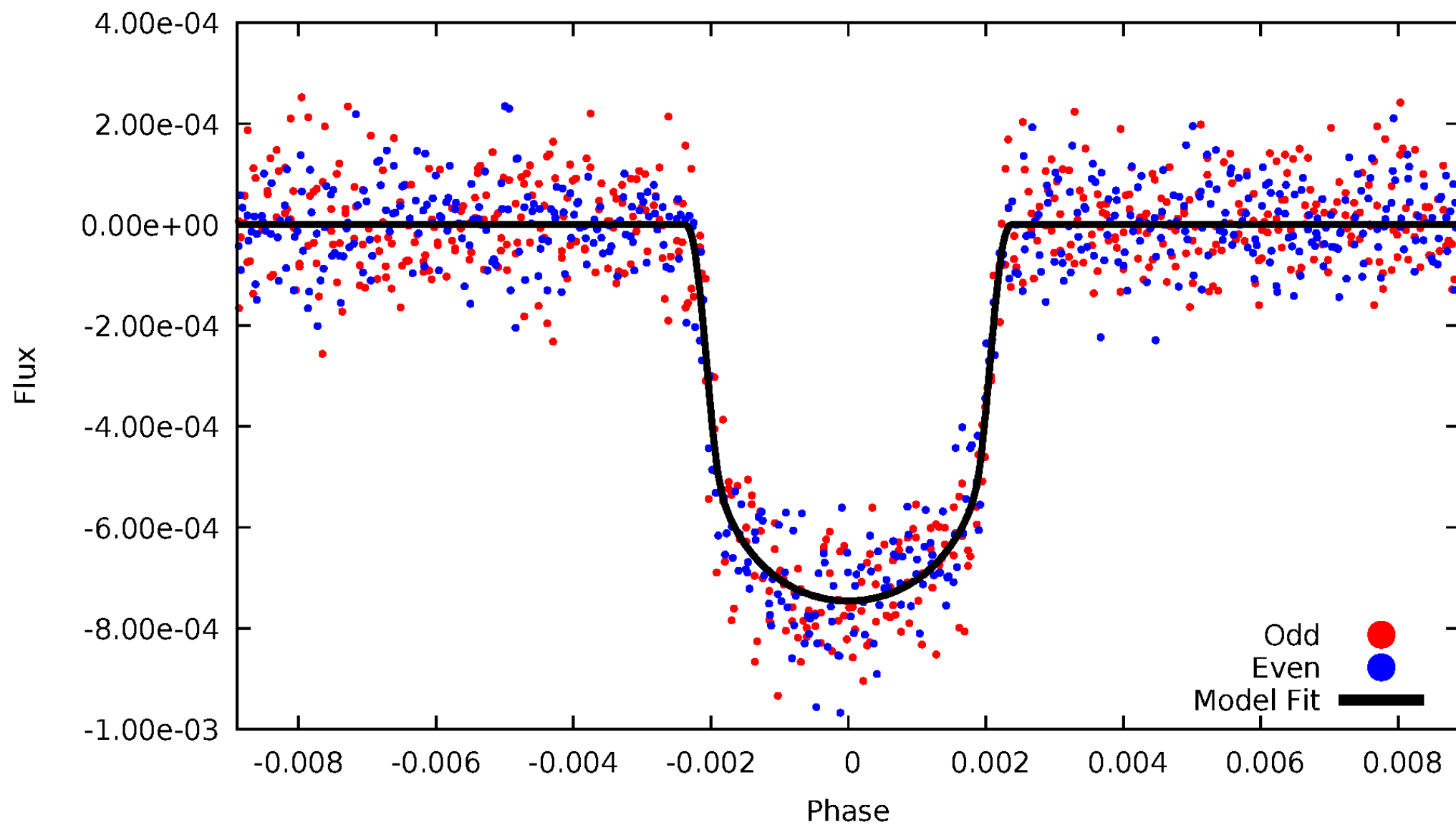


TCE 005966322-01



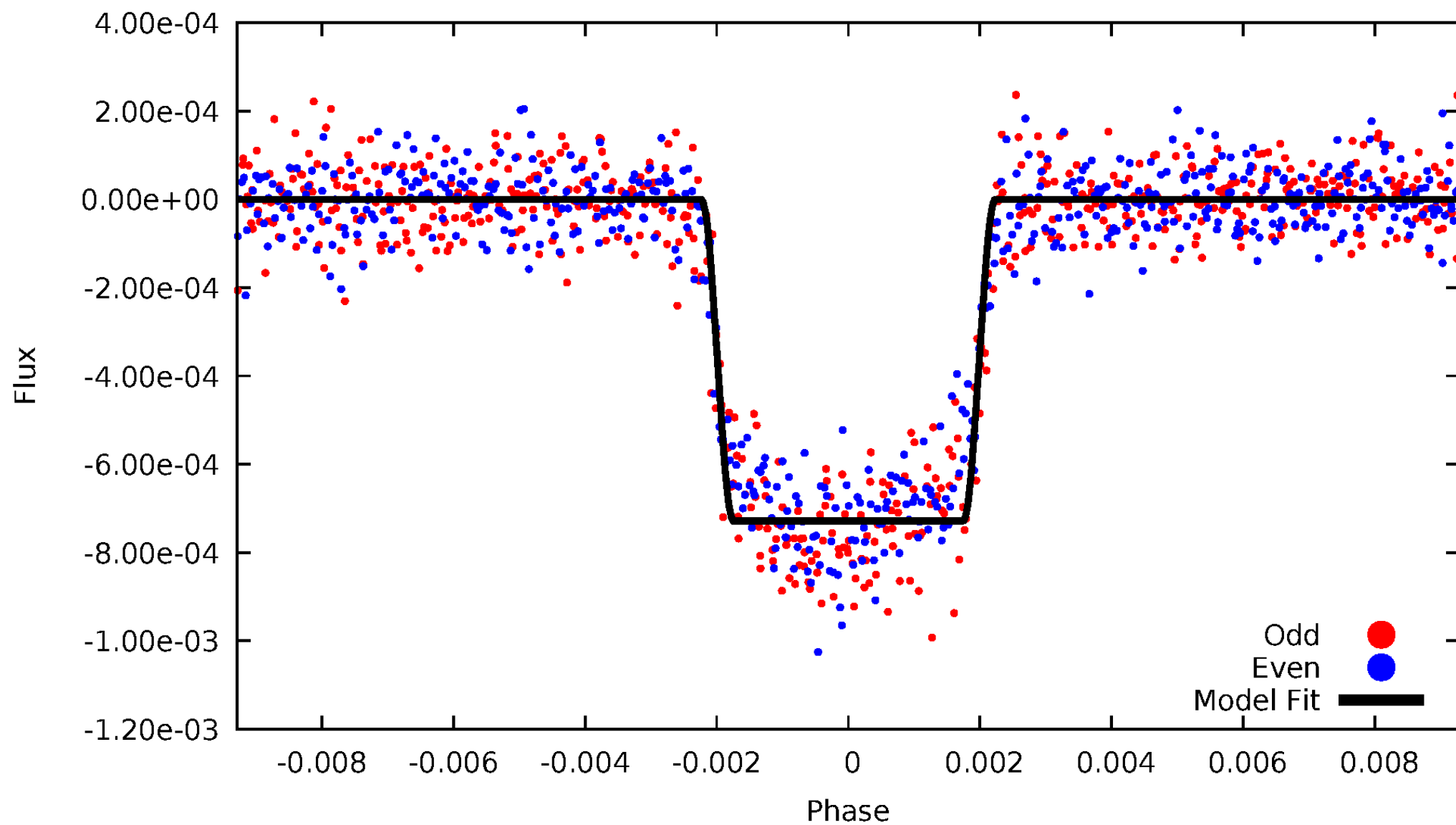
DV Odd/Even

TCE 005966322-01



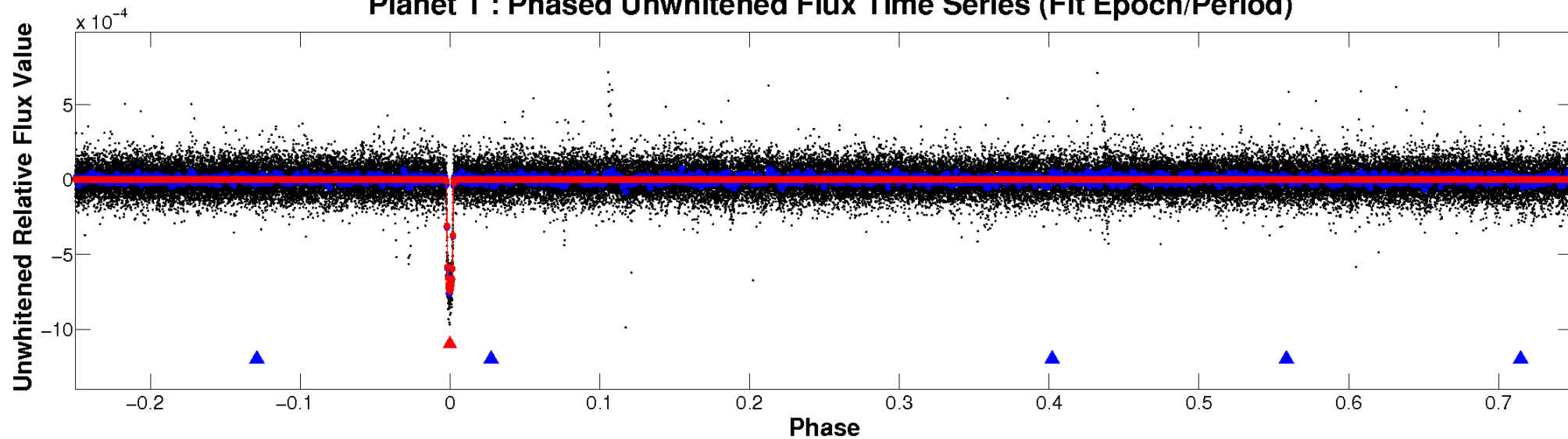
ALT Odd/Even

TCE 005966322-01

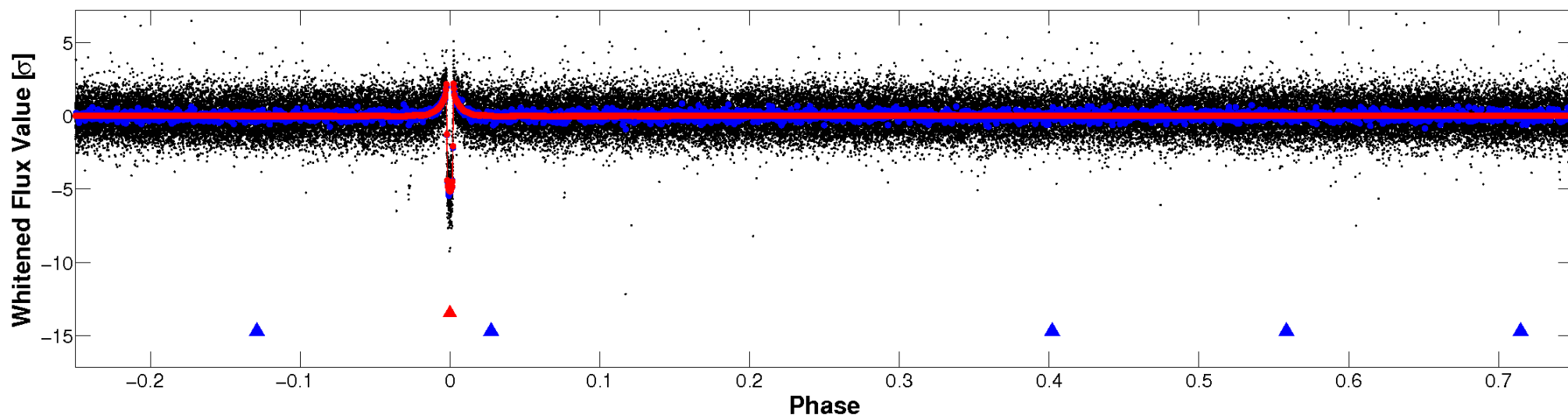


Non-Whitened Vs. Whitened Light Curve

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

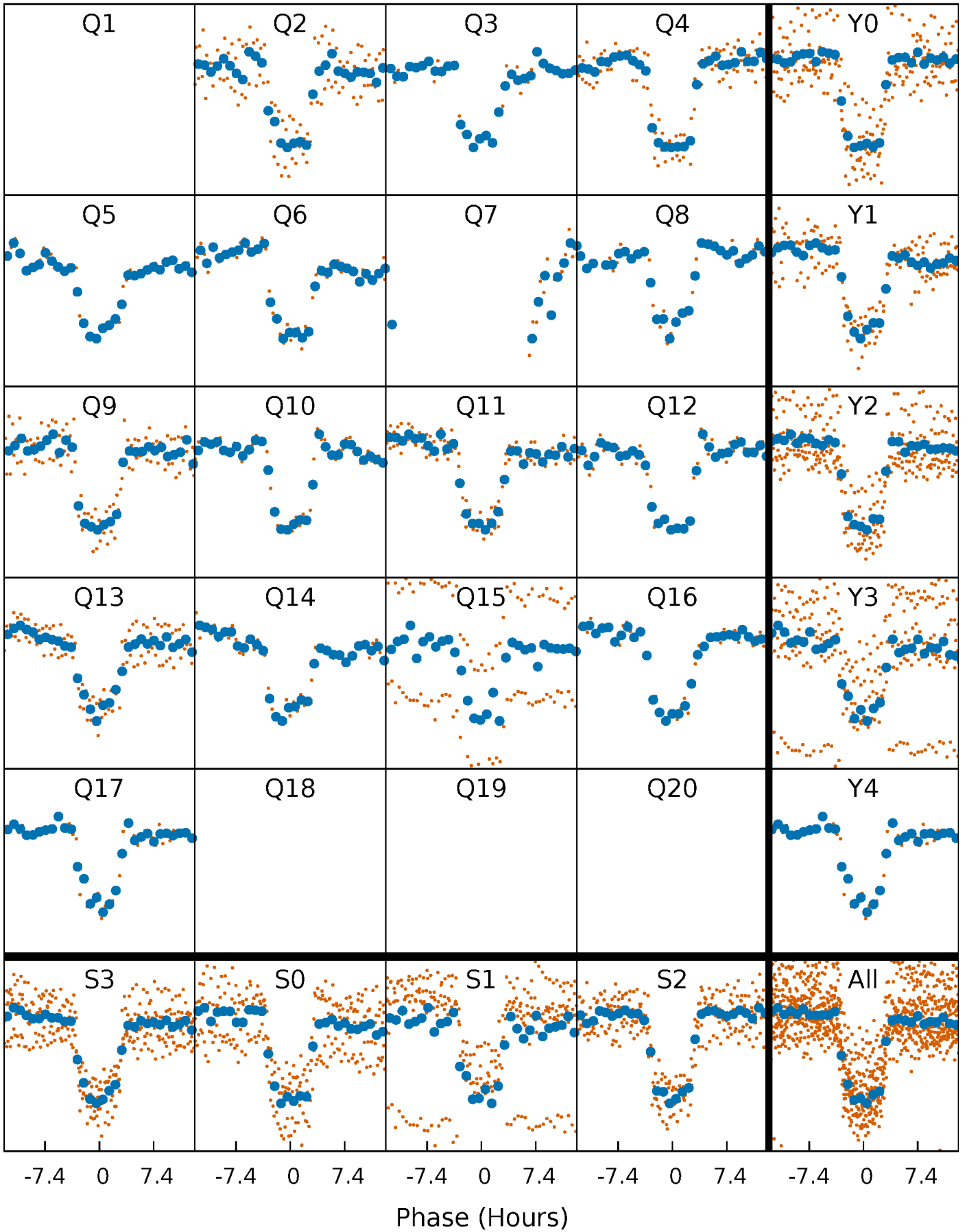


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



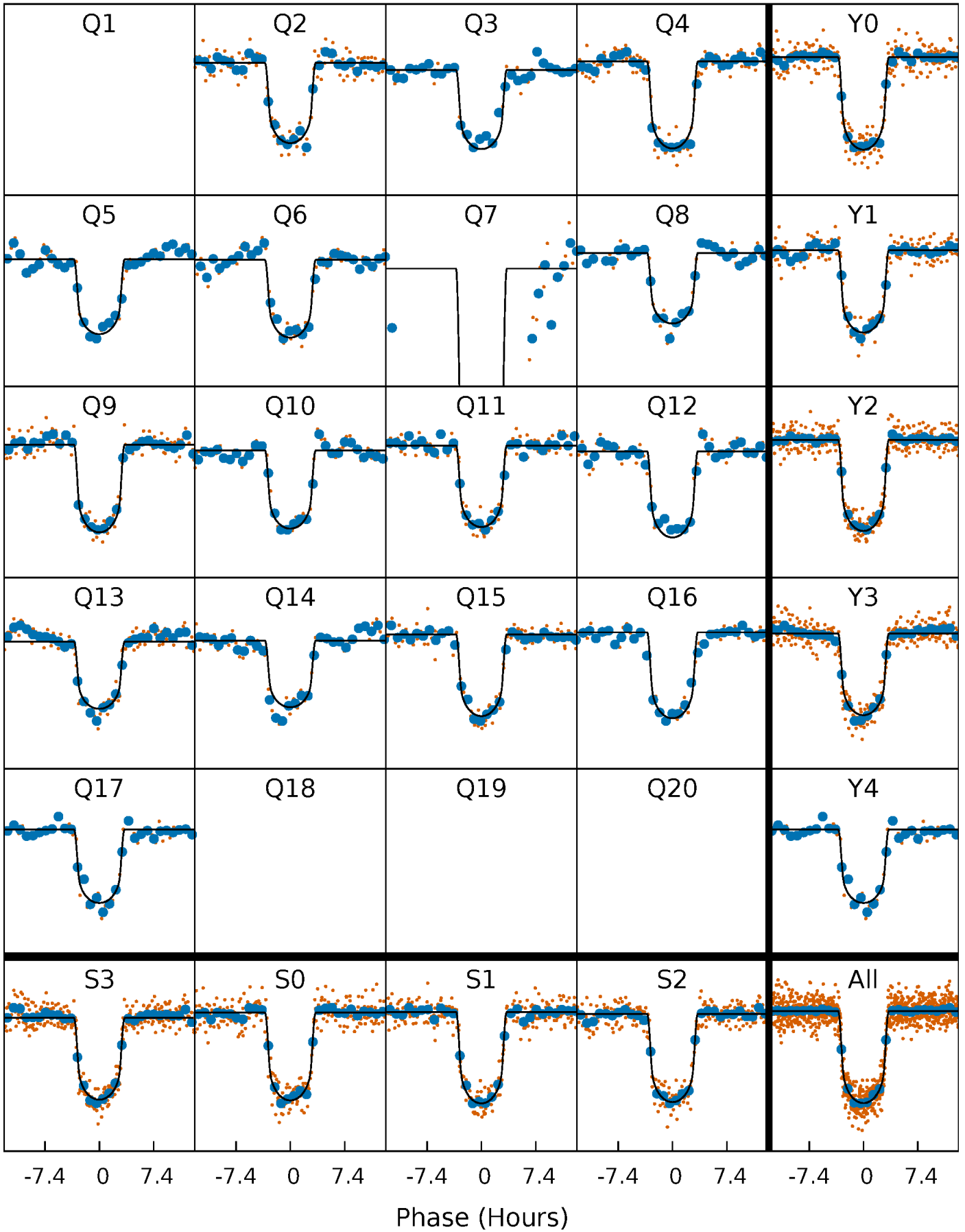
PDC Quarter-Phased Transit Curves

TCE 005966322-01 P= 60.928316 Days $T_0=173.370918$ (BKJD)



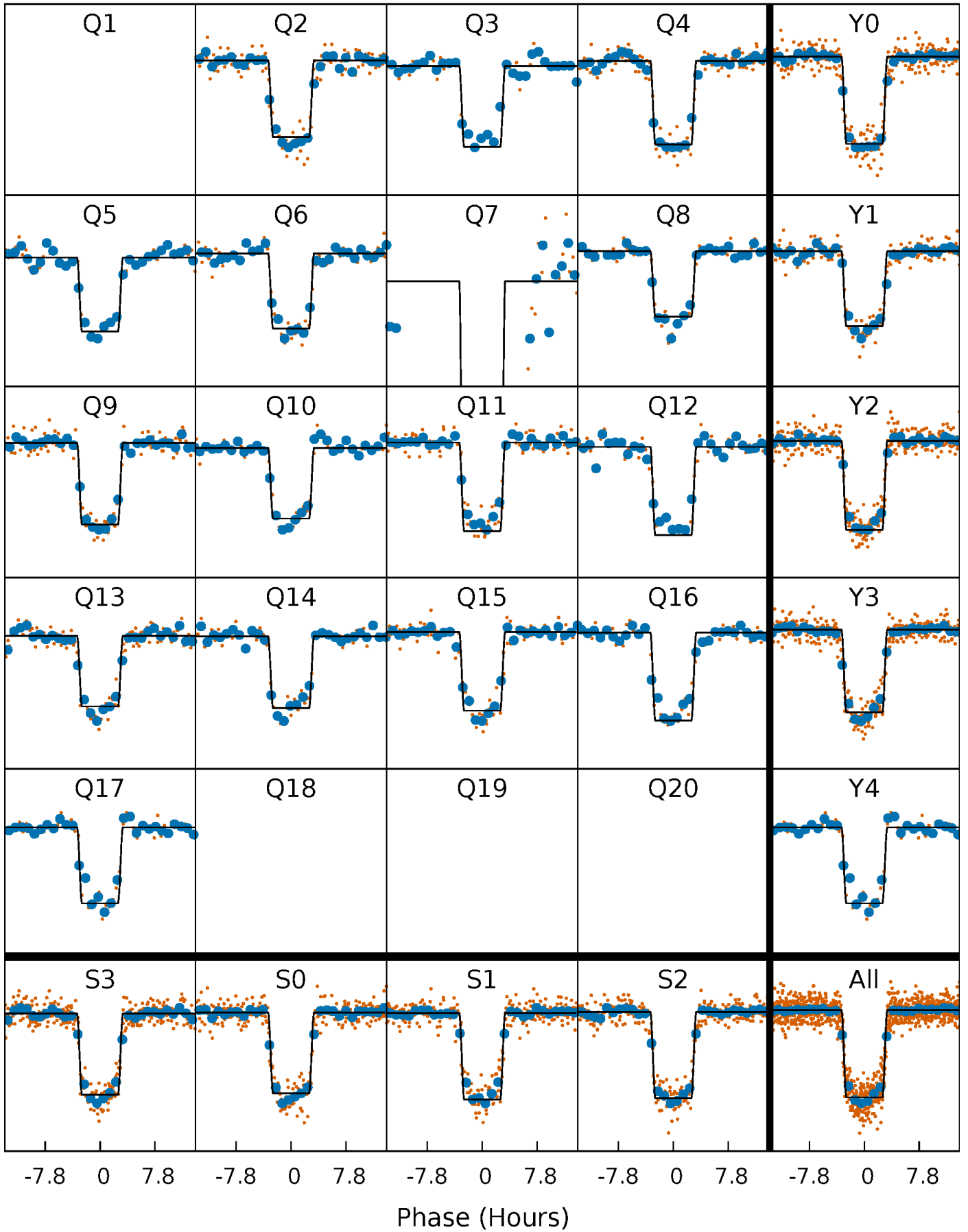
DV Quarter-Phased Transit Curves

TCE 005966322-01 P= 60.928316 Days $T_0=173.370918$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

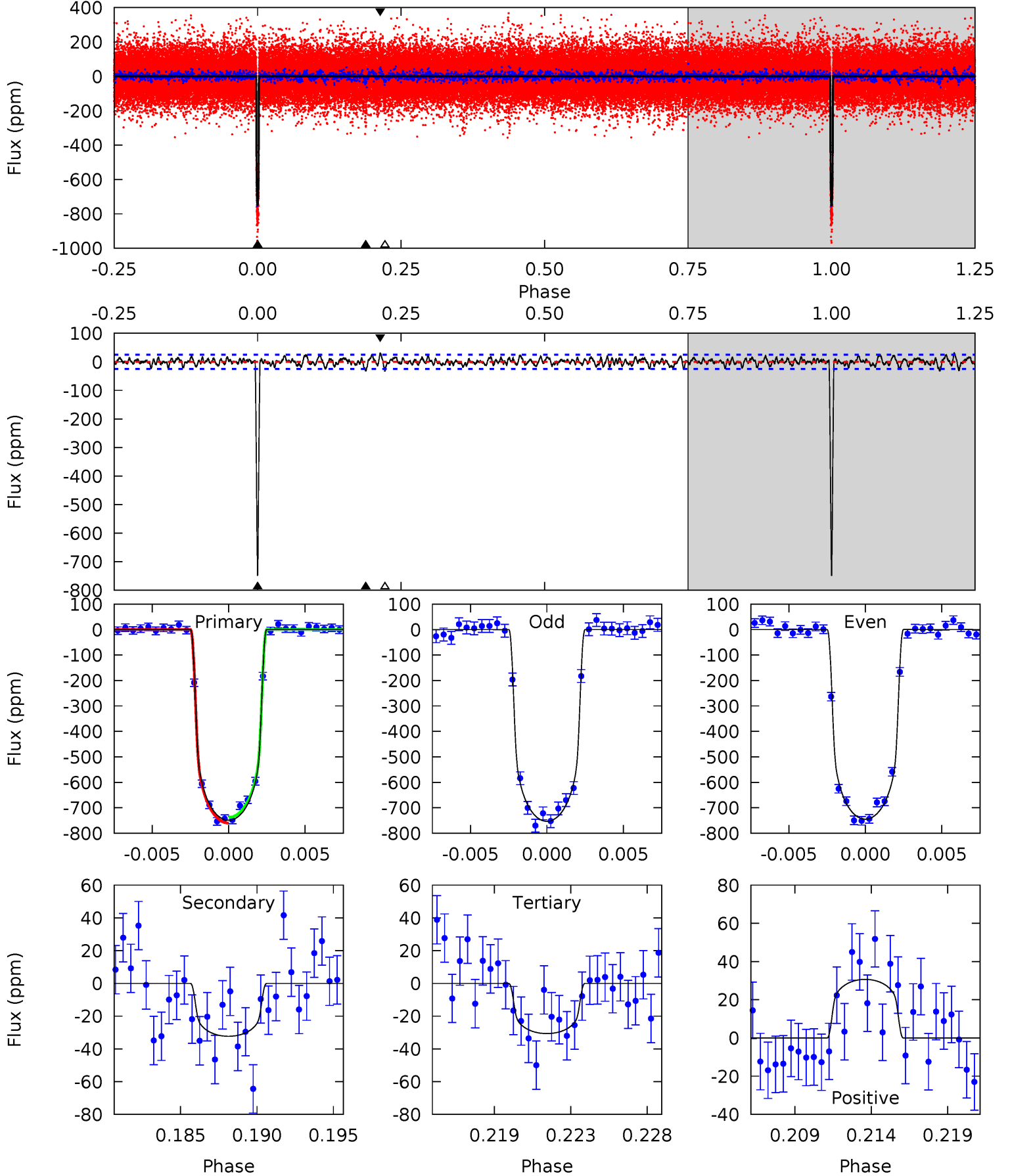
TCE 005966322-01 P= 60.928224 Days $T_0=173.371559$ (BKJD)



DV Model-Shift Uniqueness Test

005966322-01, $P = 60.928316$ Days, $E = 112.442602$ Days

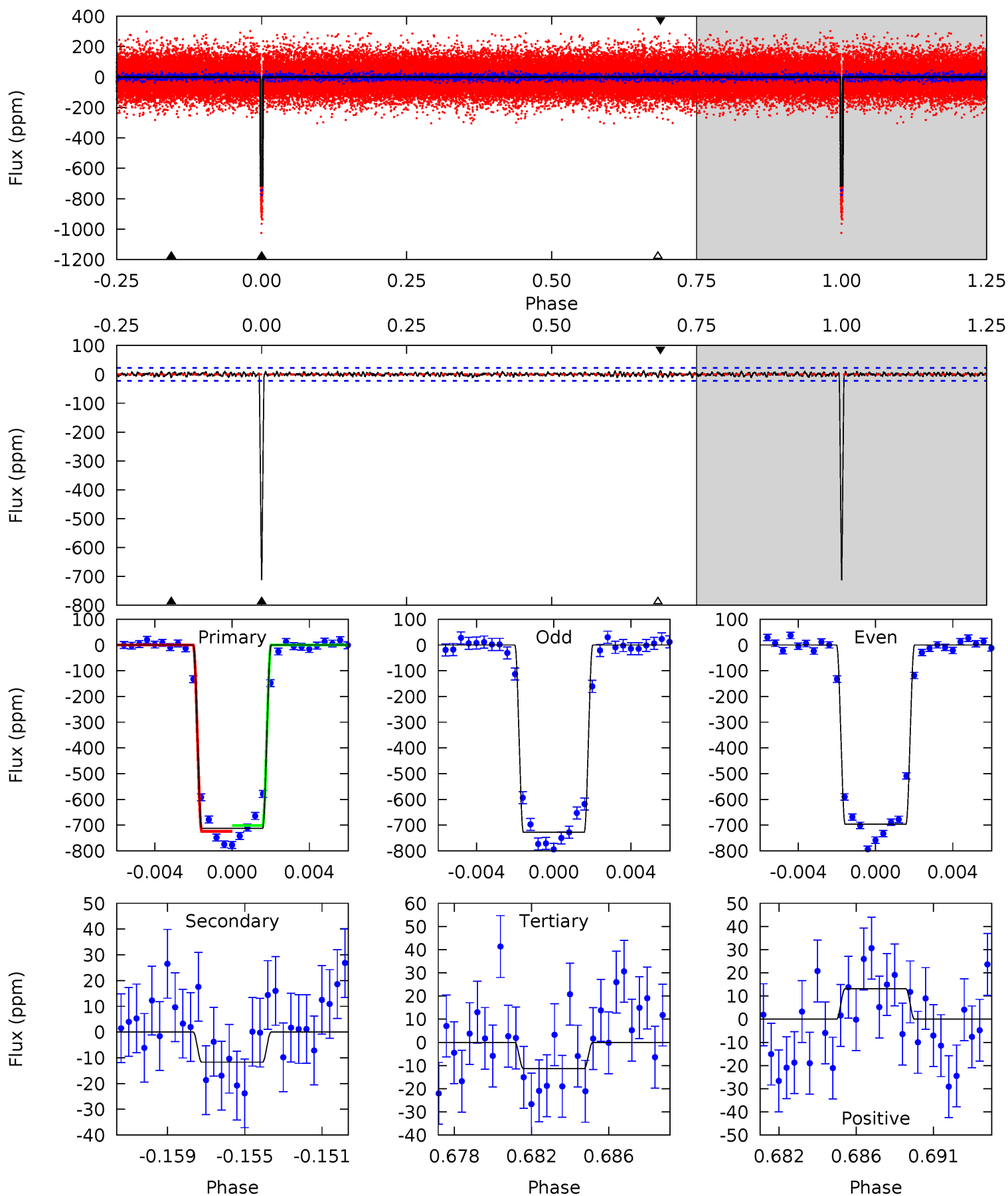
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
154.1	6.65	6.31	6.31	5.17	2.82	1.85	147.8	147.8	0.34	0.34	0.87	0.99	0.04	2.31



Alt Model-Shift Uniqueness Test

005966322-01, P = 60.928224 Days, E = 112.443335 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
162.8	2.67	2.58	3.00	5.18	2.85	0.86	160.2	159.8	0.09	-0.32	3.57	1.00	0.02	2.57



Stellar Parameters For KIC 005966322

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5638^{+113}_{-101}	$4.359^{+0.132}_{-0.096}$	$-0.120^{+0.150}_{-0.150}$	$1.023^{+0.142}_{-0.142}$	$0.871^{+0.071}_{-0.043}$	$1.147^{+0.675}_{-0.360}$
	+2%/-2%	+3%/-2%	+125%/-125%	+14%/-14%	+8%/-5%	+59%/-31%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 005966322-01 / KOI 0303.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-32 ± 5	$3.01^{+0.29}_{-0.25}$	652^{+27}_{-28}	3175^{+90}_{-86}	166^{+41}_{-35}
Alt.	-12 ± 4	$3.00^{+0.29}_{-0.30}$	652^{+27}_{-31}	2763^{+130}_{-175}	60^{+28}_{-25}

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

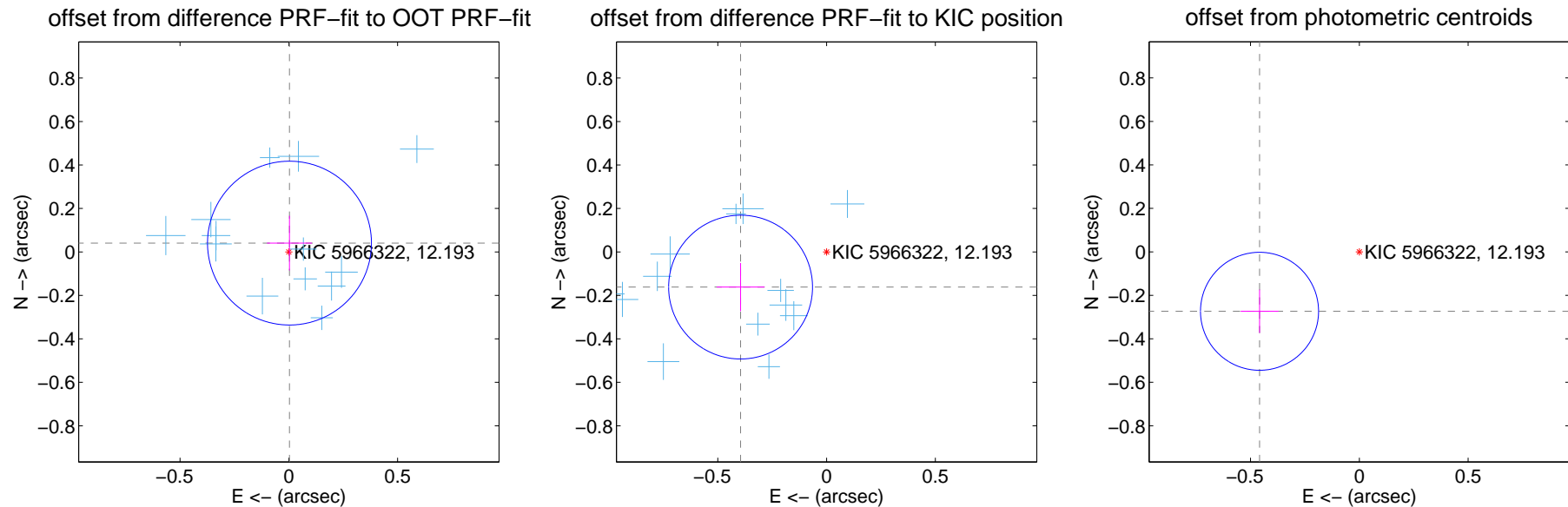
DV Centroid Data

Supplemental centroid analysis for 005966322-01. Kepler magnitude: 12.19. Transit SNR 78.67

There are 14 quarters with good PRF difference image offsets

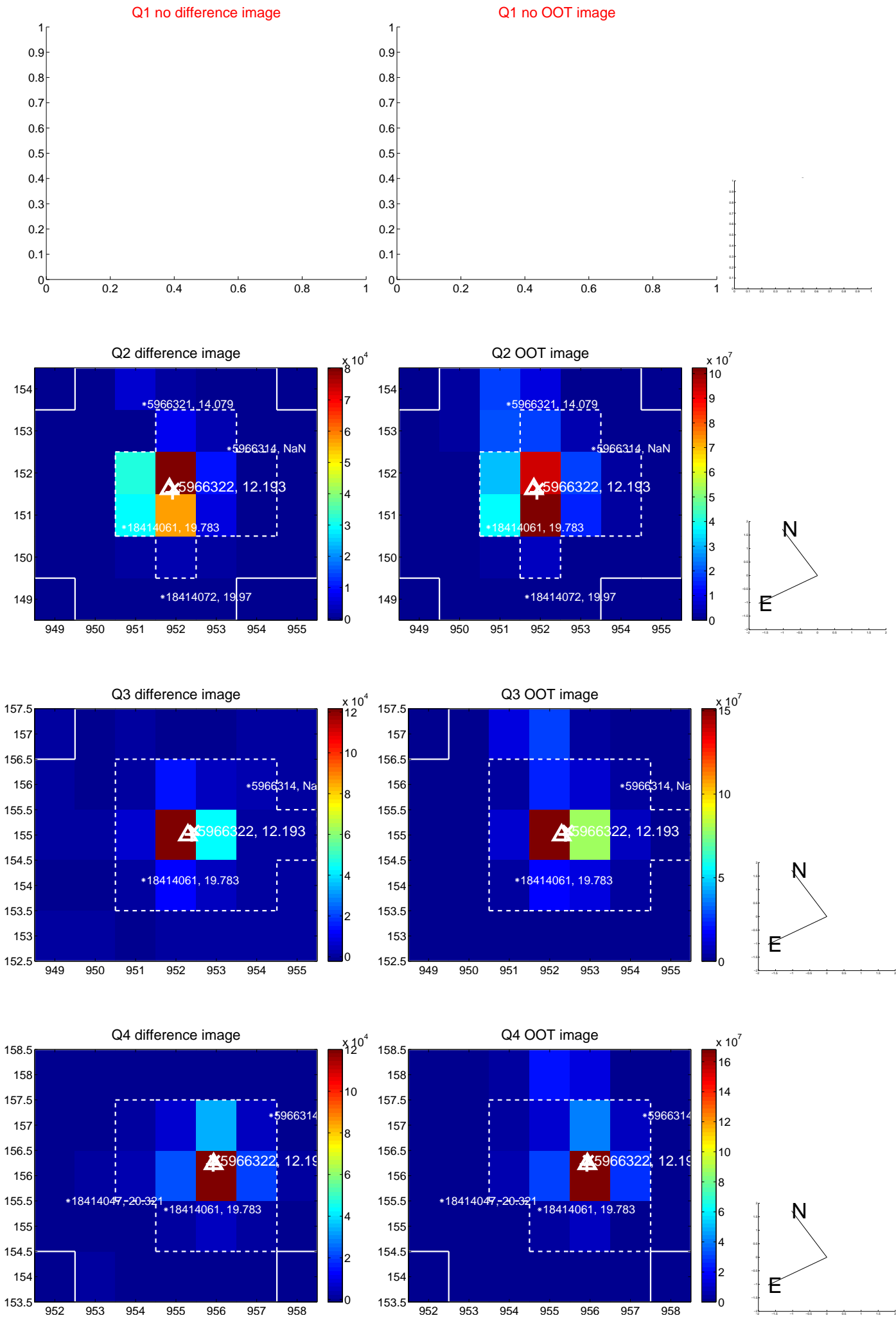
The direct PRF centroid is offset from the target star catalog position by about 0.53 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.041 ± 0.126	0.32	-0.003 ± 0.104	0.041 ± 0.126
PRF-fit source offset from KIC position	0.427 ± 0.110	3.88	0.395 ± 0.110	-0.162 ± 0.111
photometric centroid source offset	0.53 ± 0.09	5.90	0.46 ± 0.09	-0.27 ± 0.10

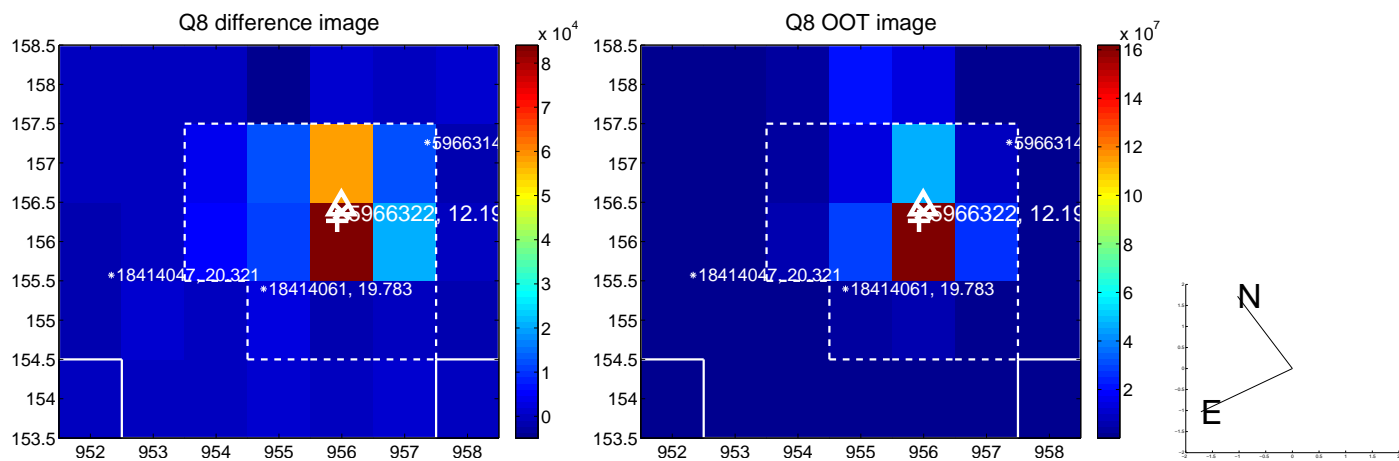
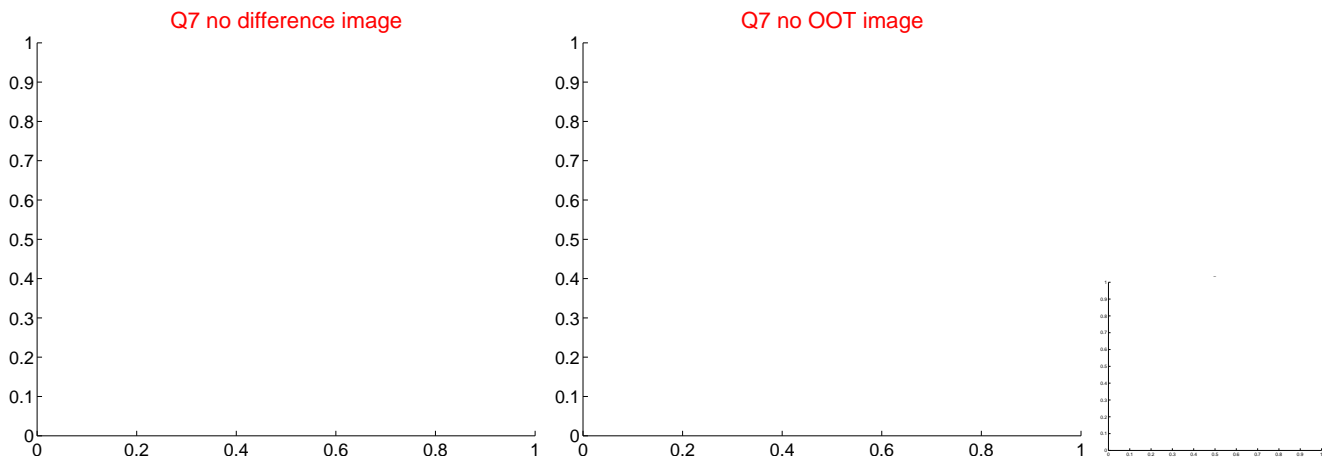
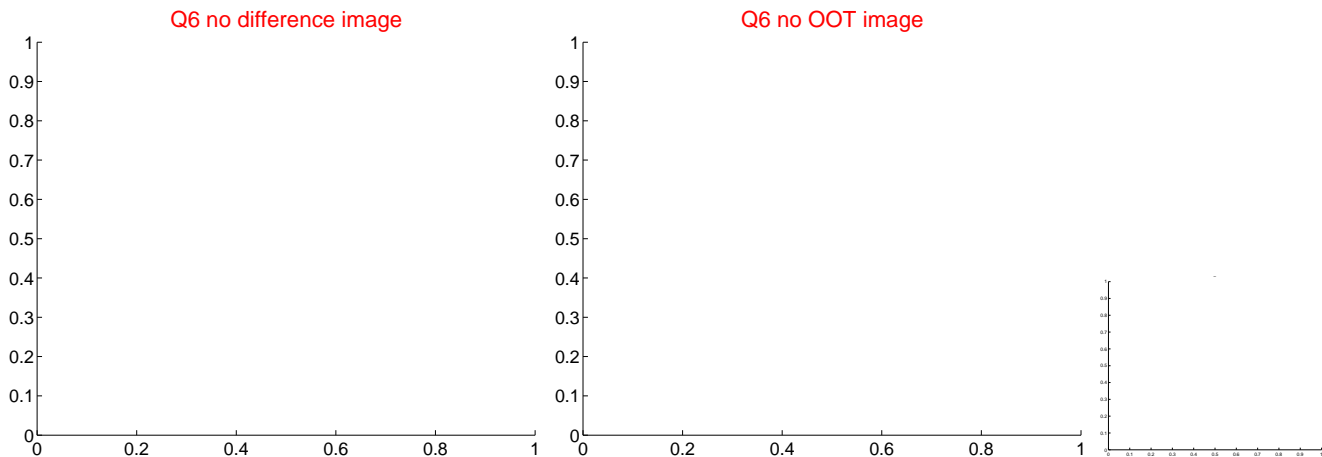
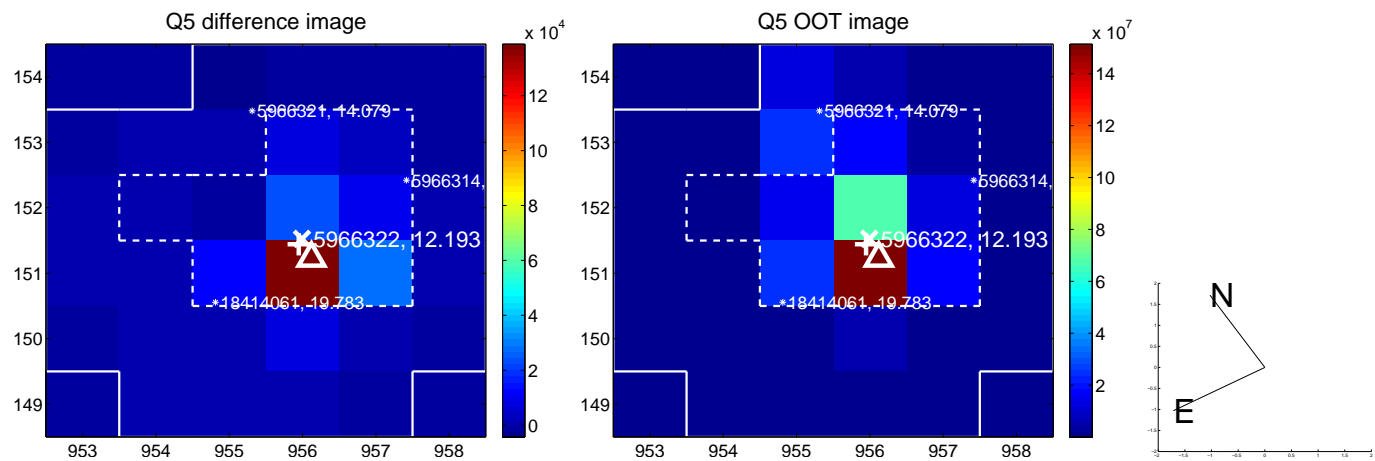


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

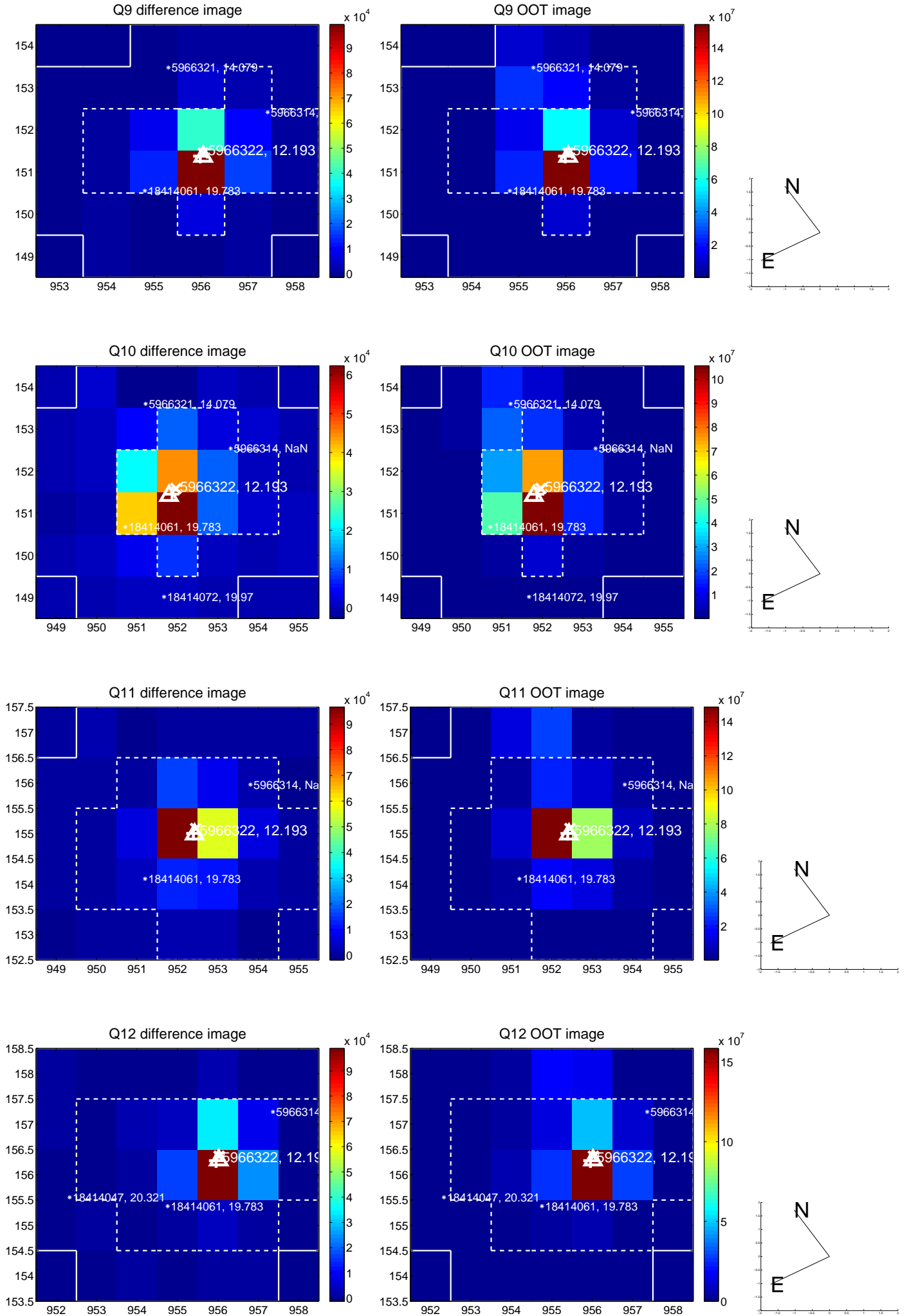
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



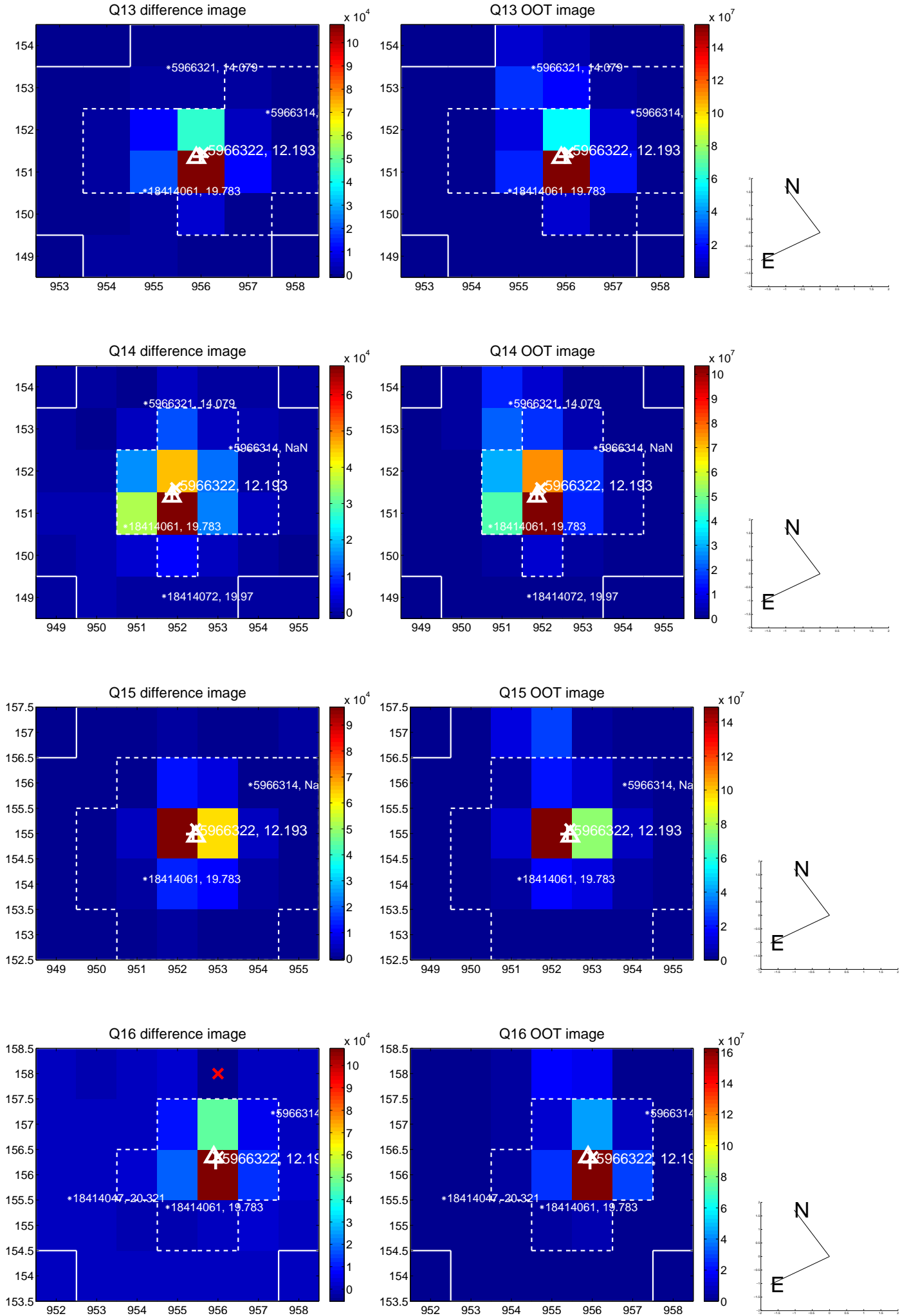
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



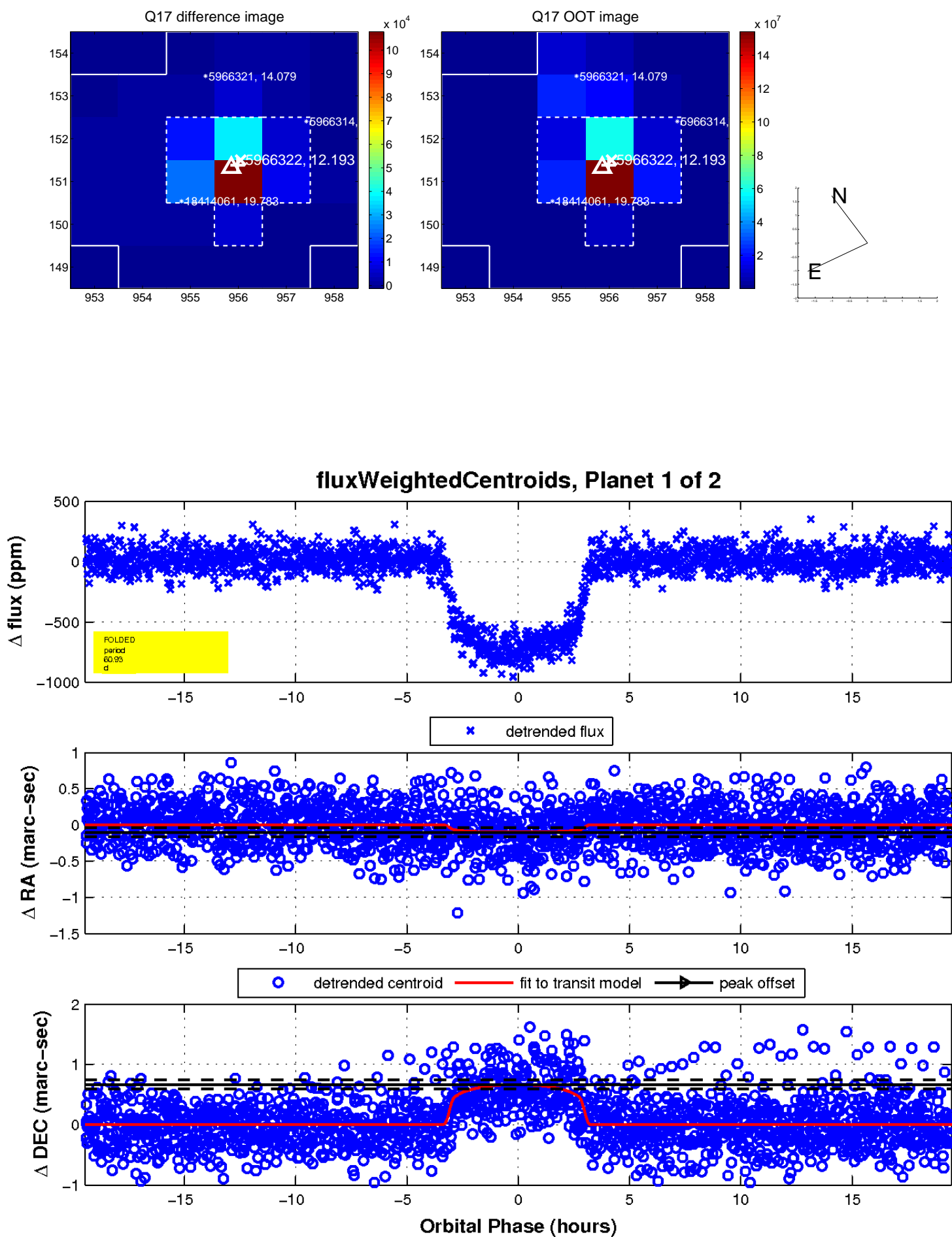
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

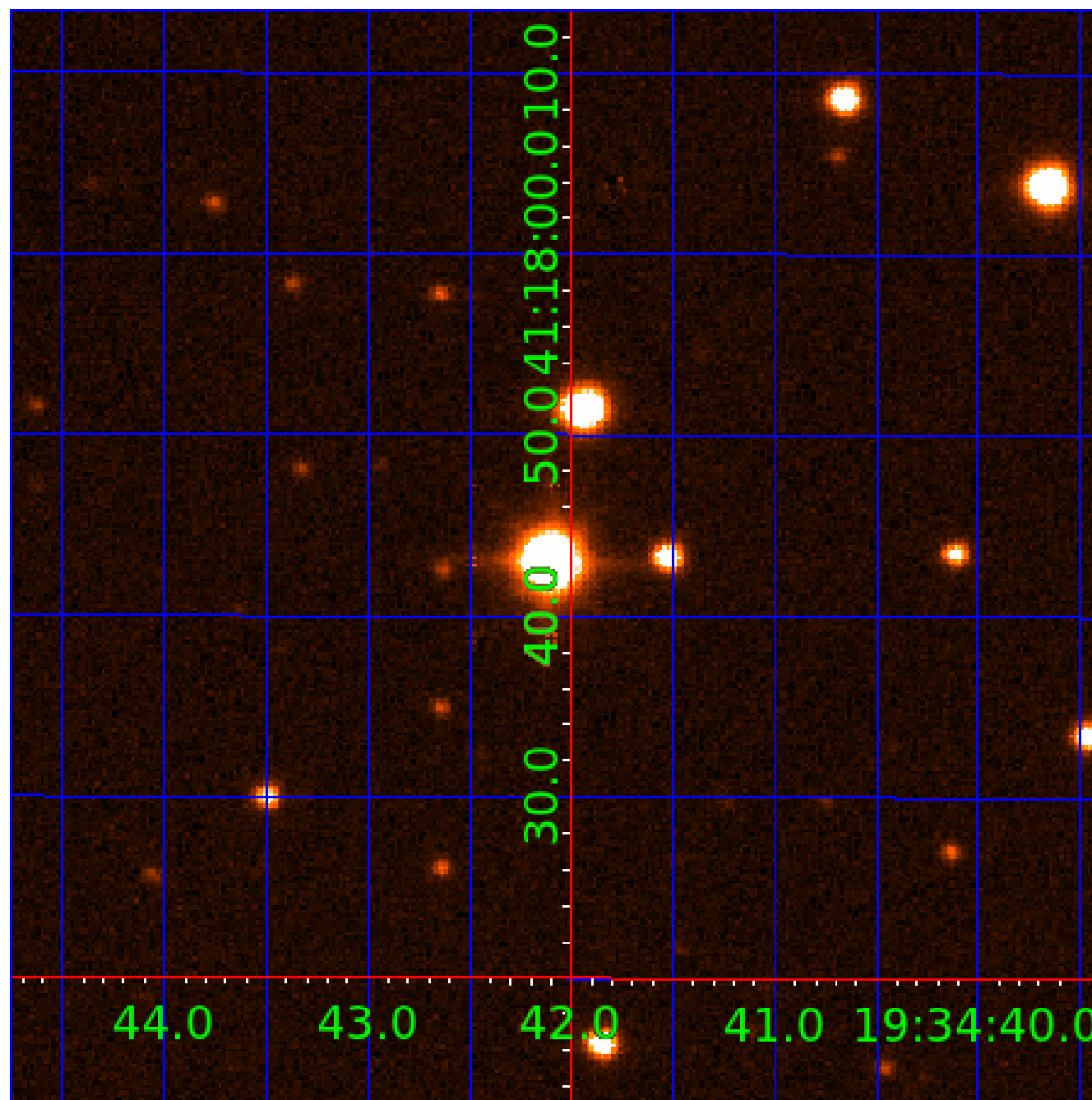


white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005966322

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})
005966322-01	OBS	0303.01	60.928316	173.370918	745.9	6.499	81.4	78.7	1.02	5638	3.03	11.29
005966322-02	OBS	No	295.114089	235.976767	181.2	12.224	8.6	7.5	1.02	5638	1.56	1.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005966322-01	OBS	PC	0.99	0	0	0	0	CENT_KIC_POS
005966322-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—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.

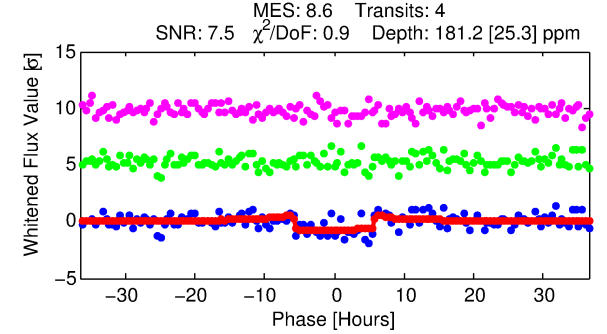
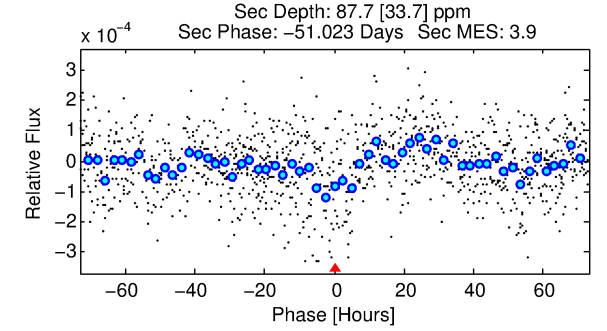
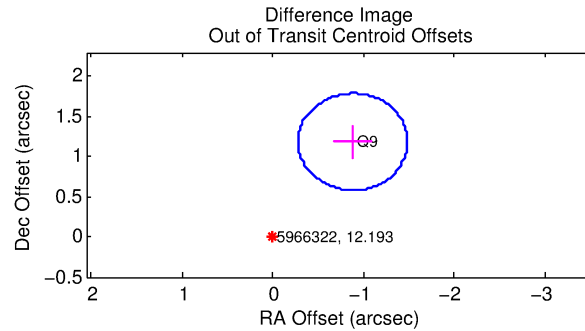
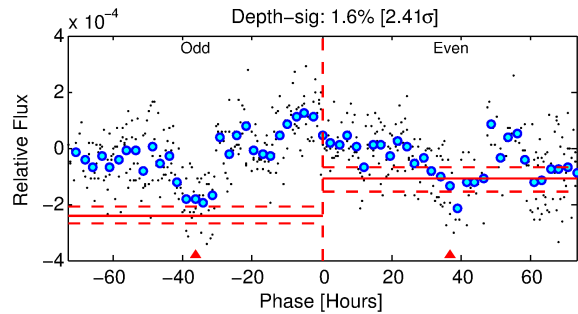
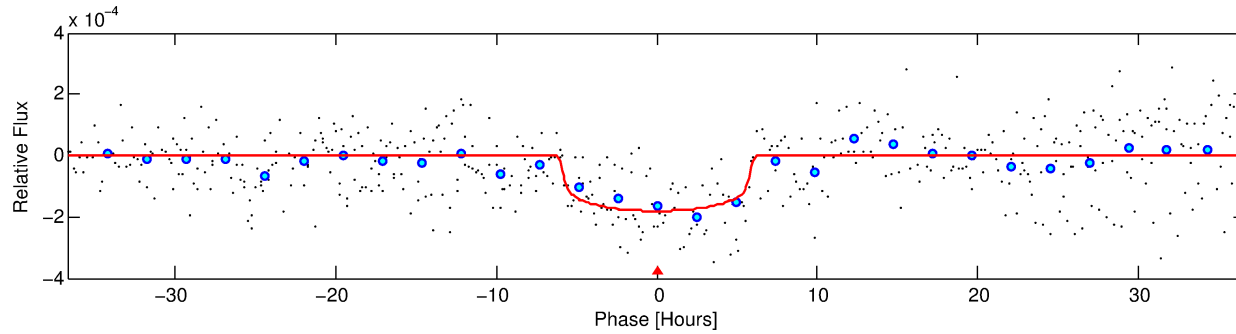
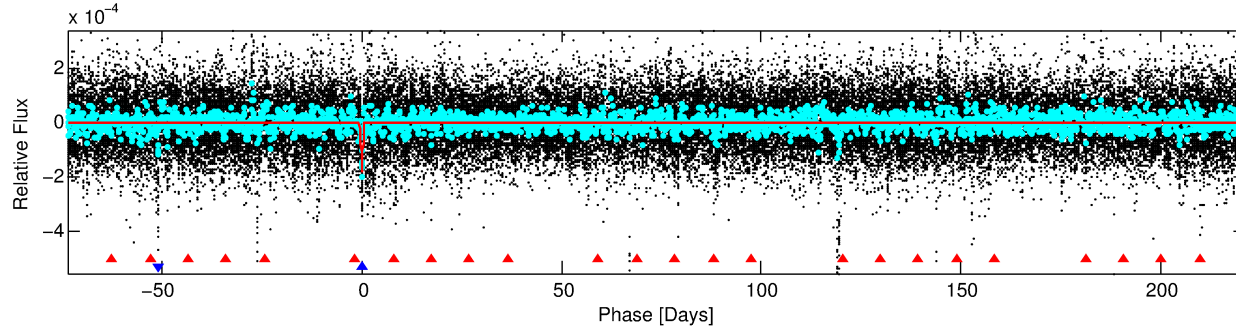
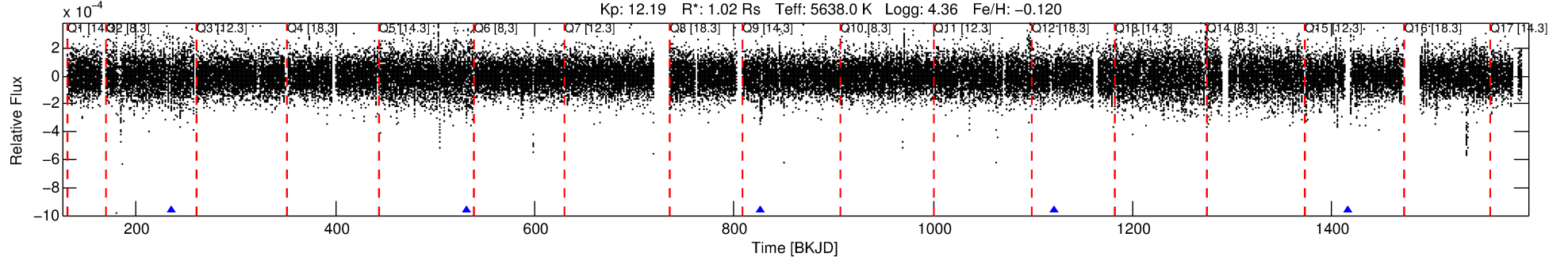
Ephemeris Match Information For 005966322-02

No Significant Match Found

DV One-Page Summary

KIC: 5966322 Candidate: 2 of 2 Period: 295.114 d
KOI: K00303 Corr: No Ephemeris Match

Kp: 12.19 R*: 1.02 Rs Teff: 5638.0 K Logg: 4.36 Fe/H: -0.120



DV Fit Results:

Period = 295.11409 [0.00778] d
Epoch = 235.9768 [0.0127] BKJD
Rp/R* = 0.0140 [0.0025]
a/R* = 104.55 [75.28]
b = 0.84 [0.25]
Seff = 1.38 [0.33]
Teq = 276 [16] K
Rp = 1.56 [0.36] Re
a = 0.8291 [0.1138] AU
Ag = 13554.65 [7751.03] [1.75σ]
Teffp = 4609 [614] K [7.06σ]

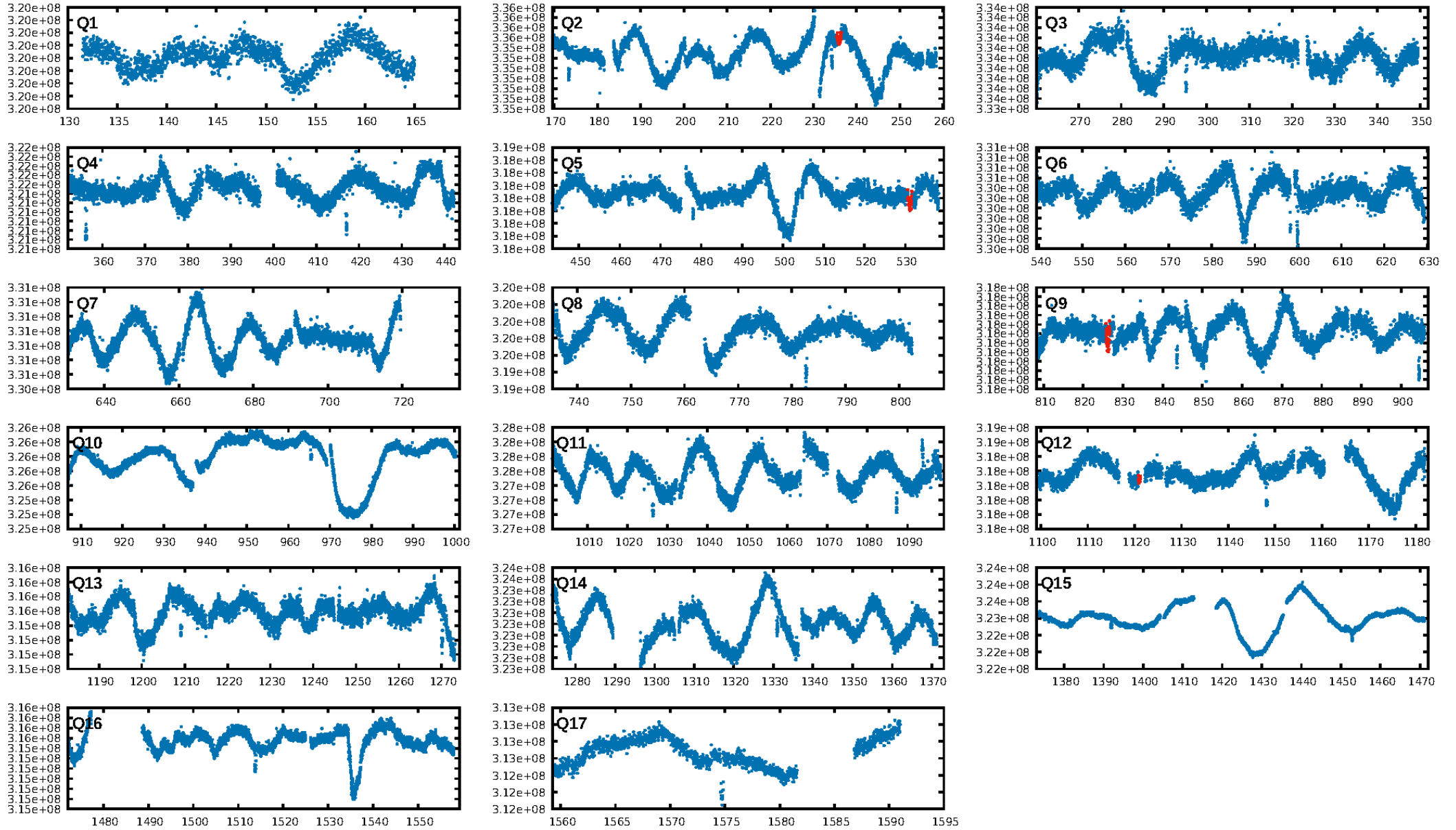
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [405.98σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 3.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 9.83e-11
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.162
Centroid-sig: 79.2%
Centroid-so: 1.071 arcsec [1.04σ]
OotOffset-rm: 1.477 arcsec [7.34σ]
KicOffset-rm: 1.163 arcsec [5.81σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
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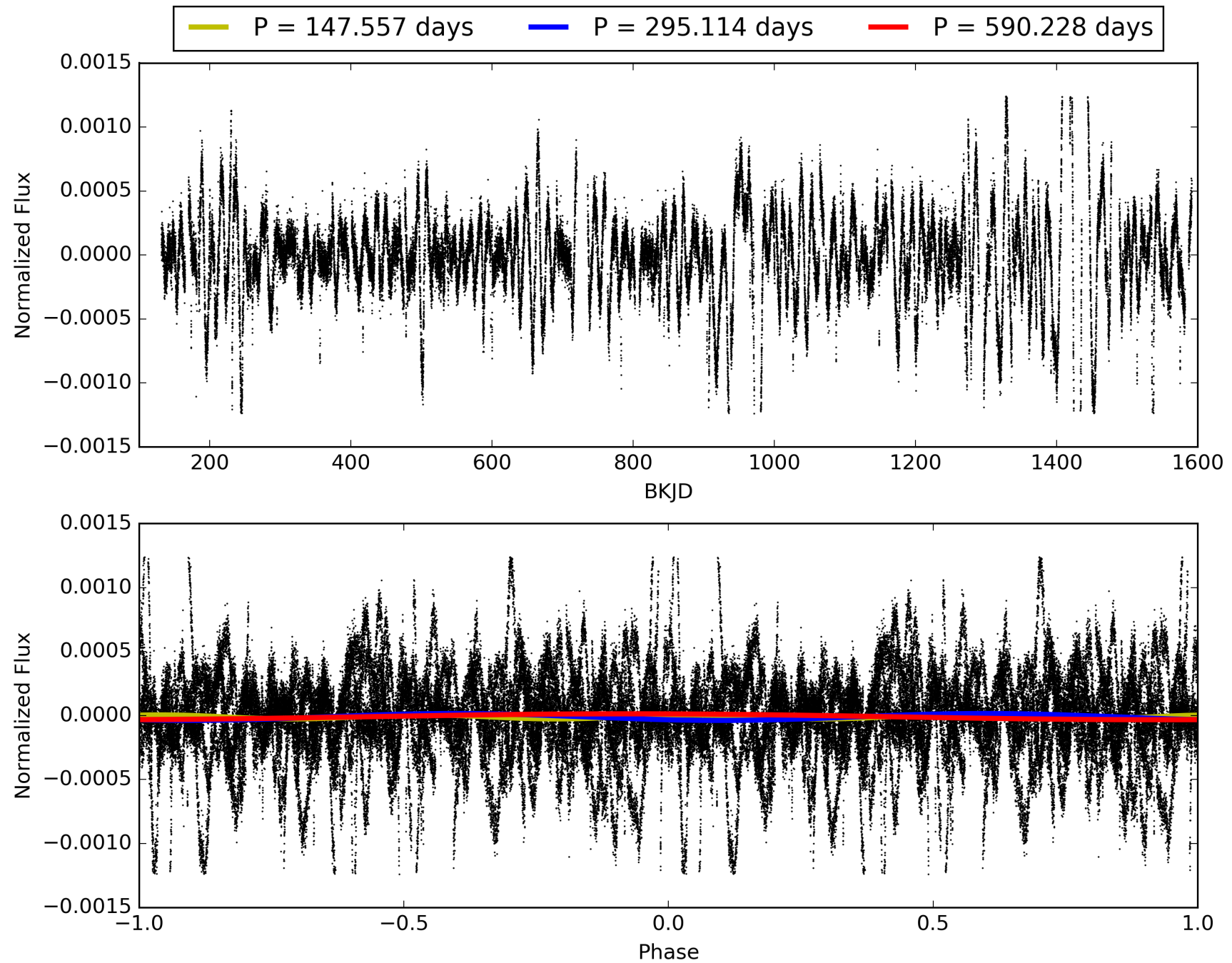
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005966322-02, PDC Light Curves

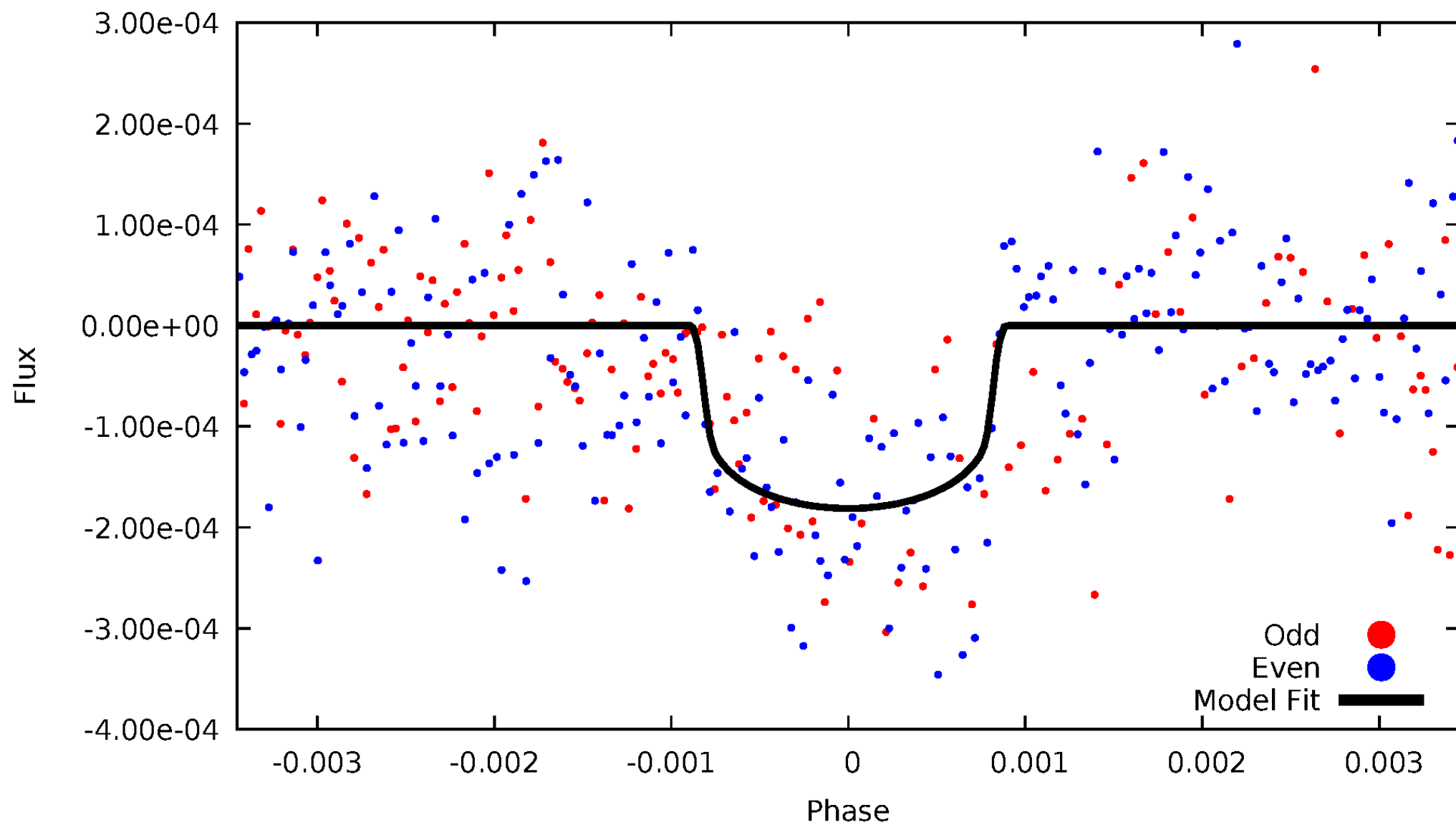


TCE 005966322-02



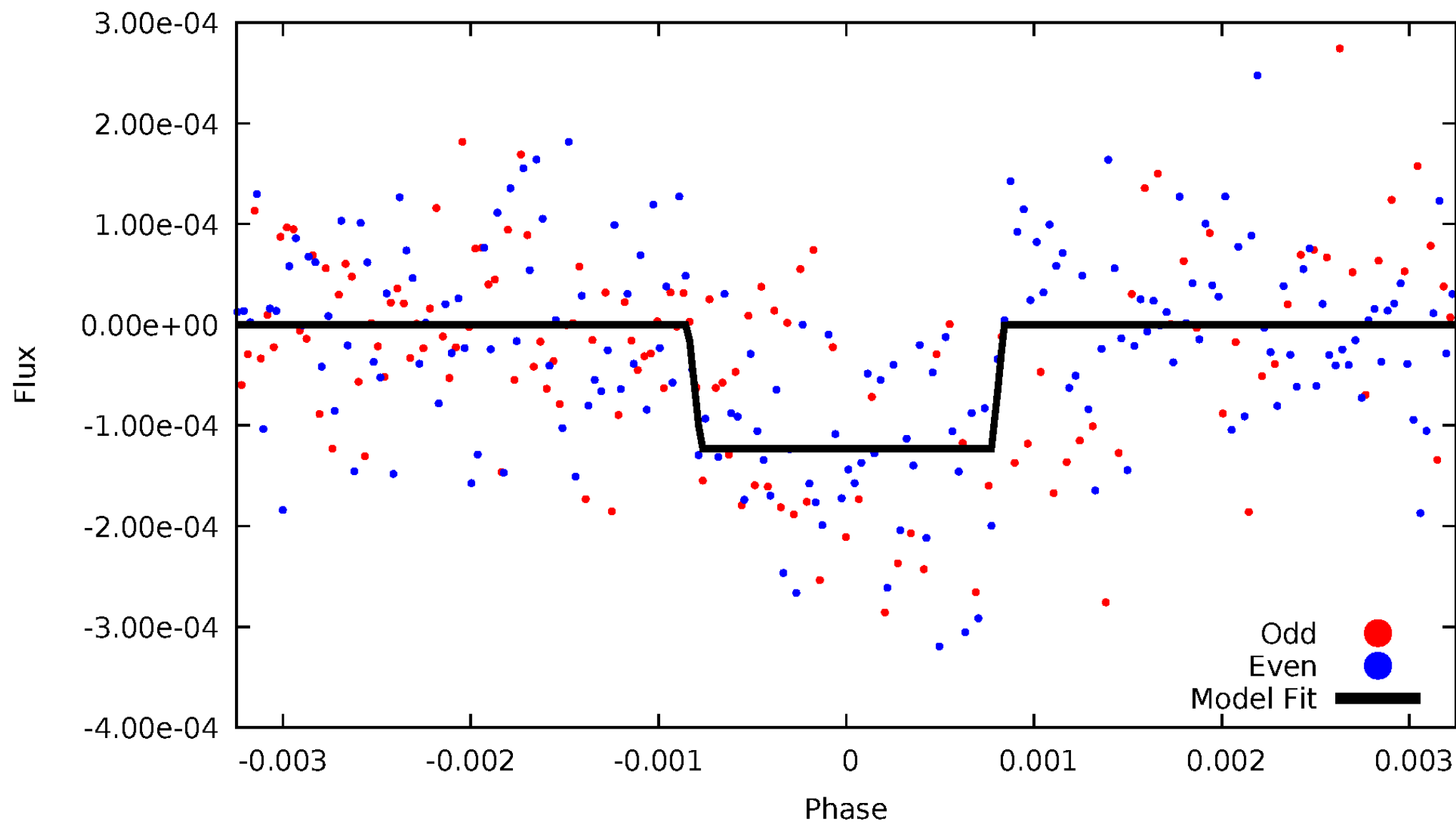
DV Odd/Even

TCE 005966322-02



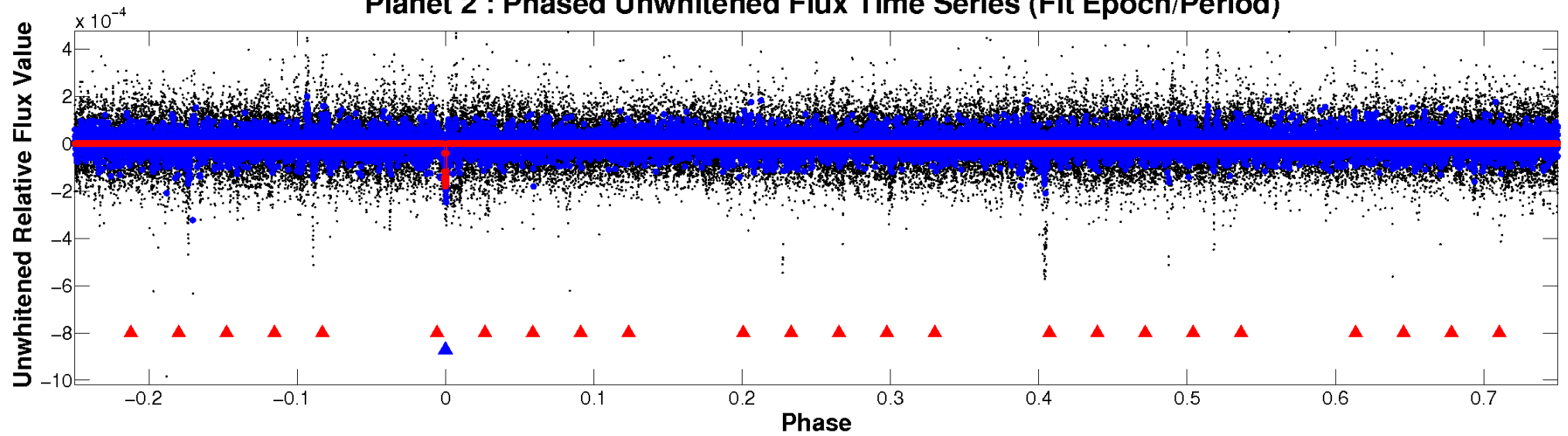
ALT Odd/Even

TCE 005966322-02

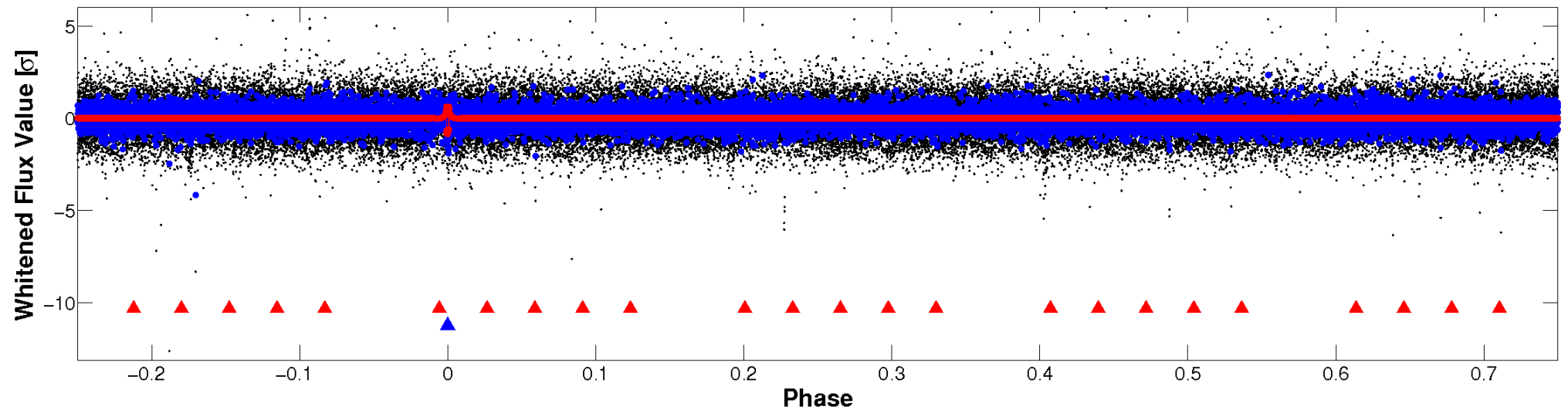


Non-Whitened Vs. Whitened Light Curve

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

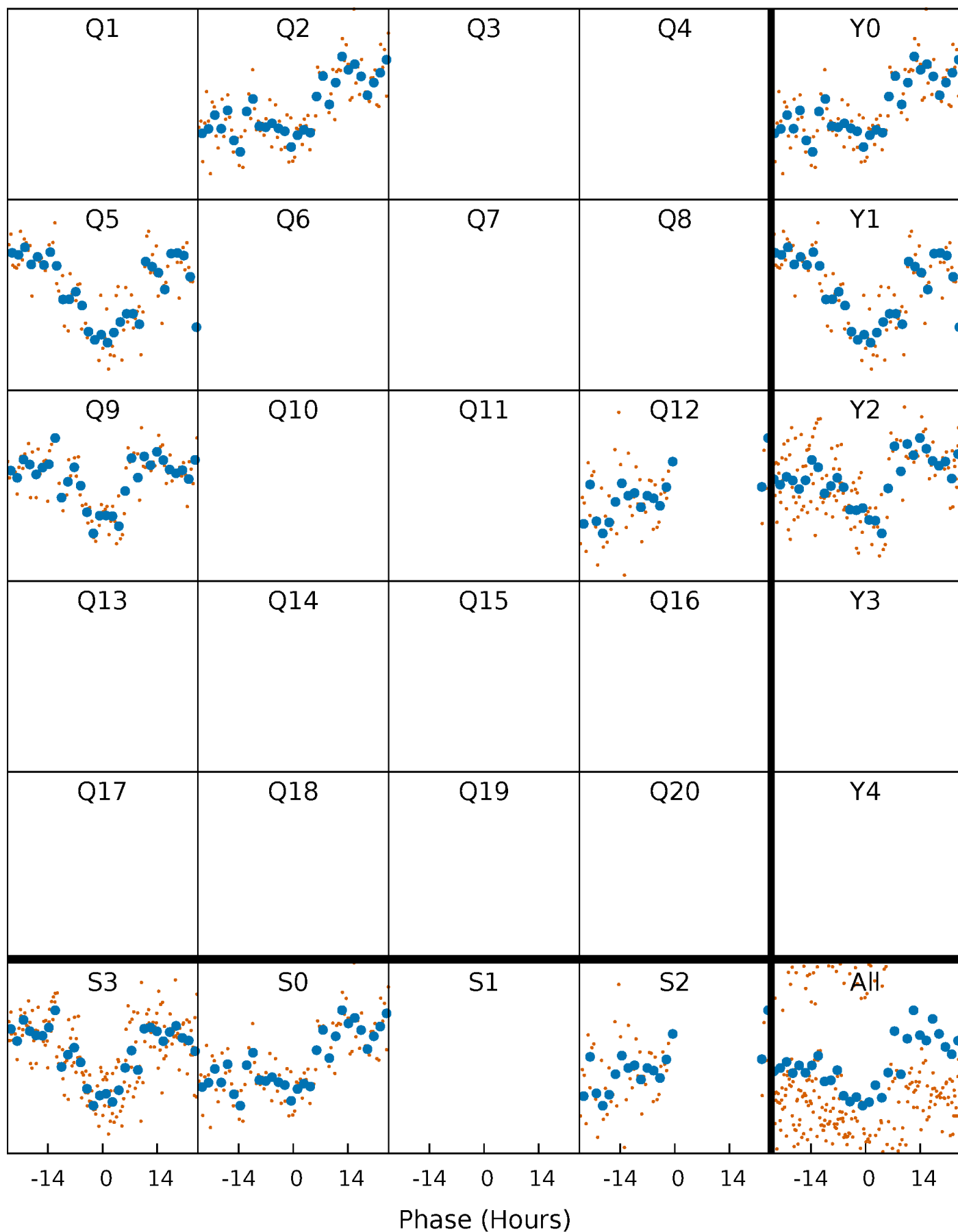


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 005966322-02 $P=295.114089$ Days $T_0=235.976767$ (BKJD)



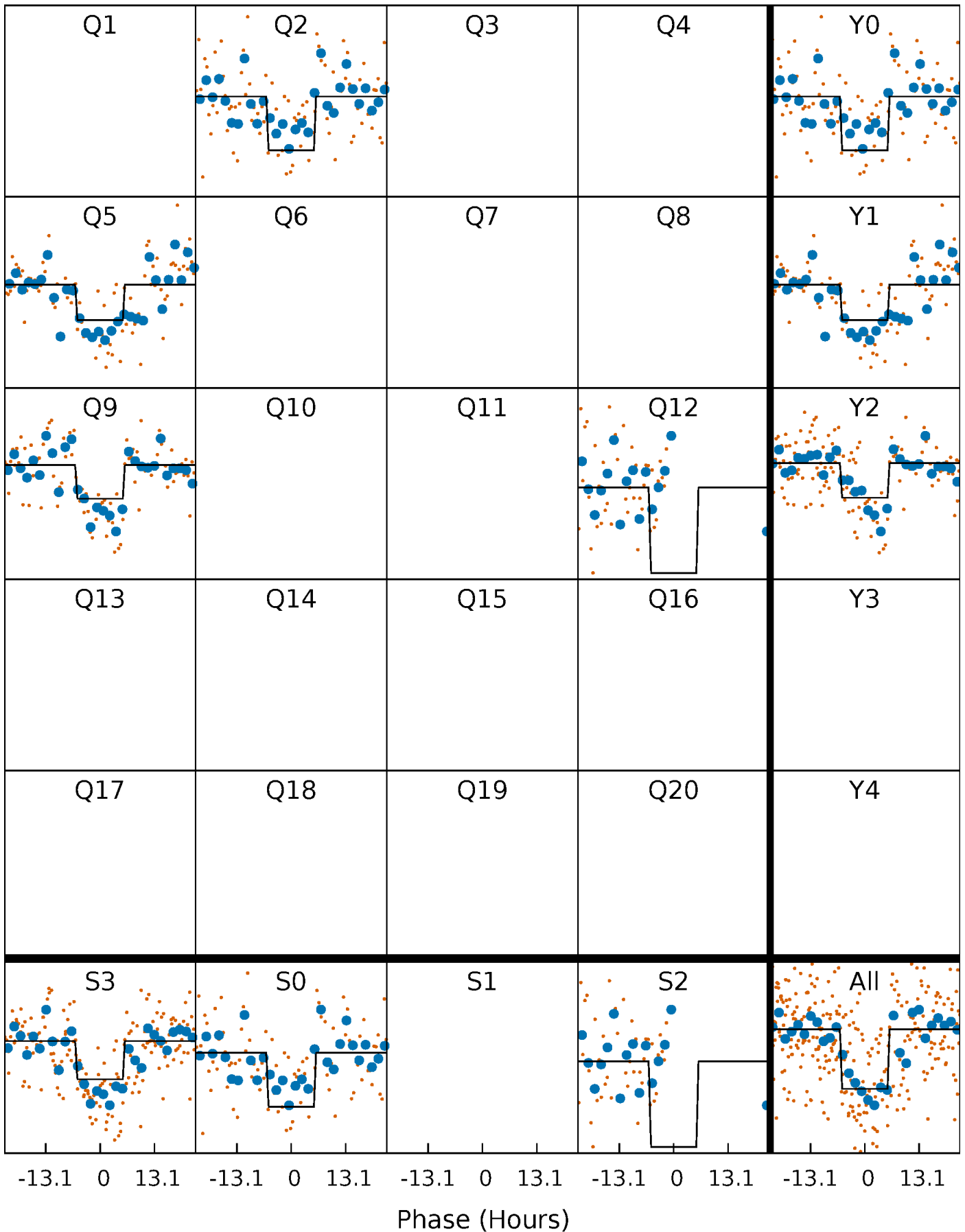
DV Quarter-Phased Transit Curves

TCE 005966322-02 P=295.114089 Days $T_0=235.976767$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

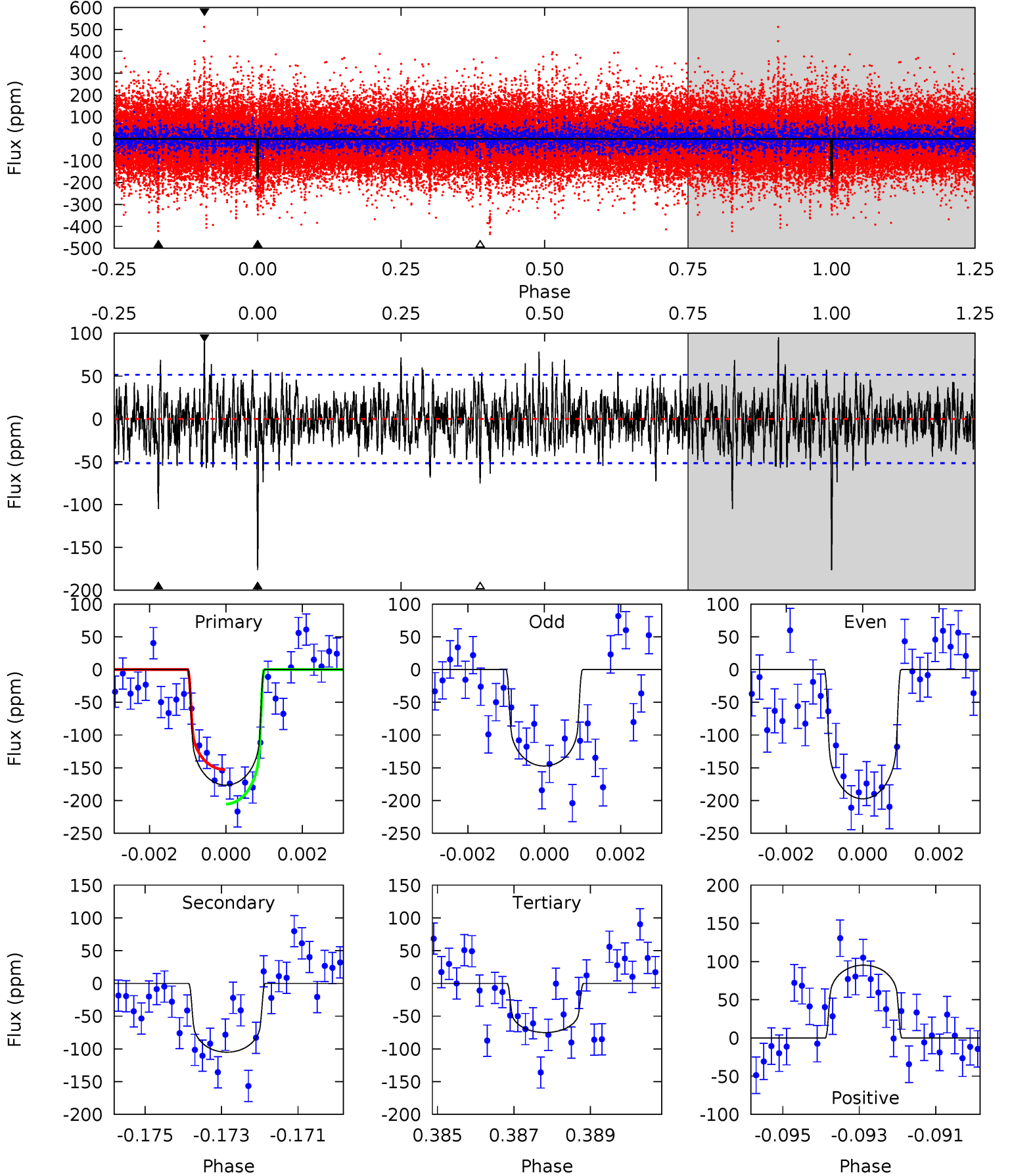
TCE 005966322-02 P=295.115096 Days $T_0=235.978212$ (BKJD)



DV Model-Shift Uniqueness Test

005966322-02, $P = 295.114089$ Days, $E = 235.976767$ Days

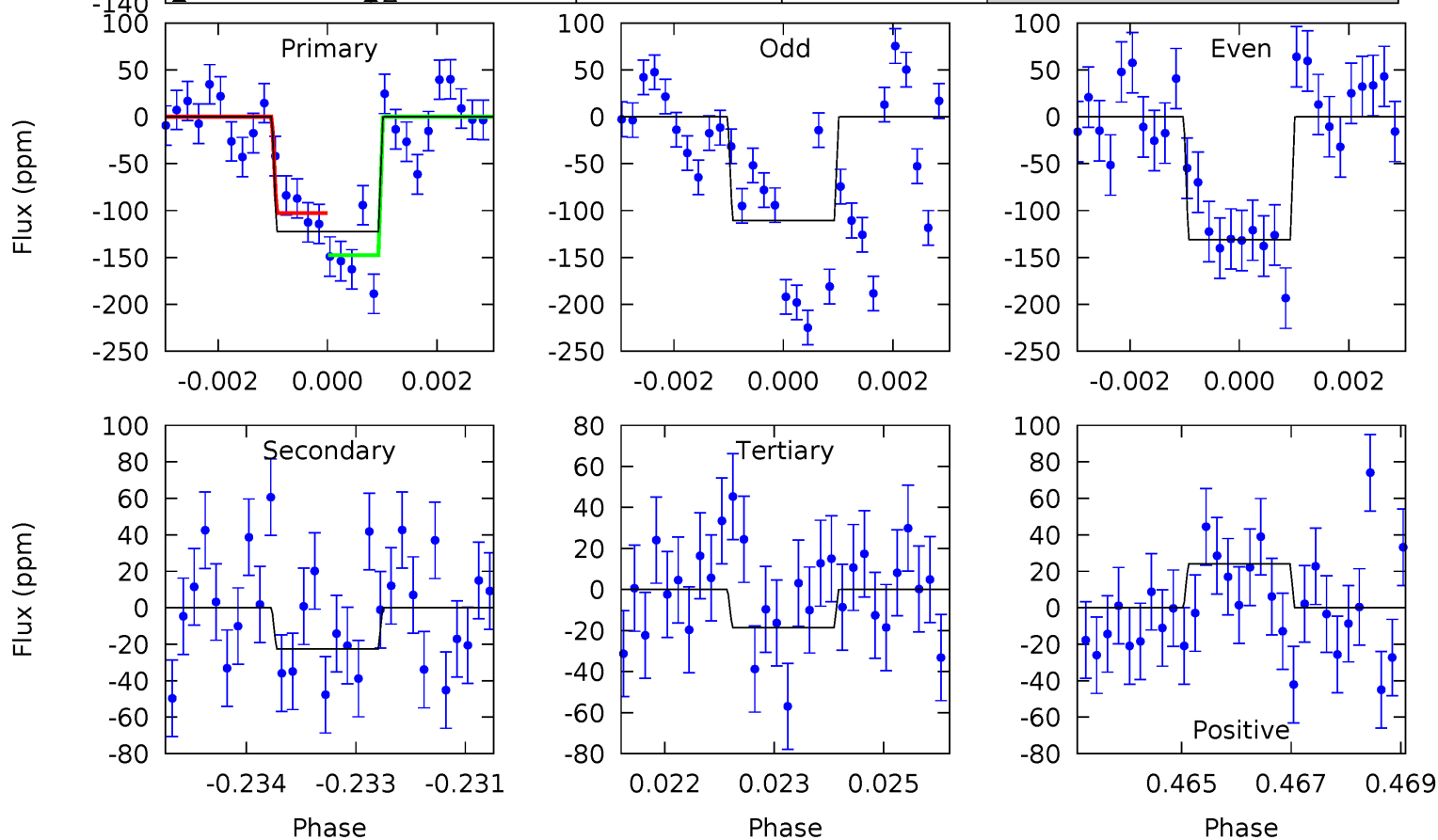
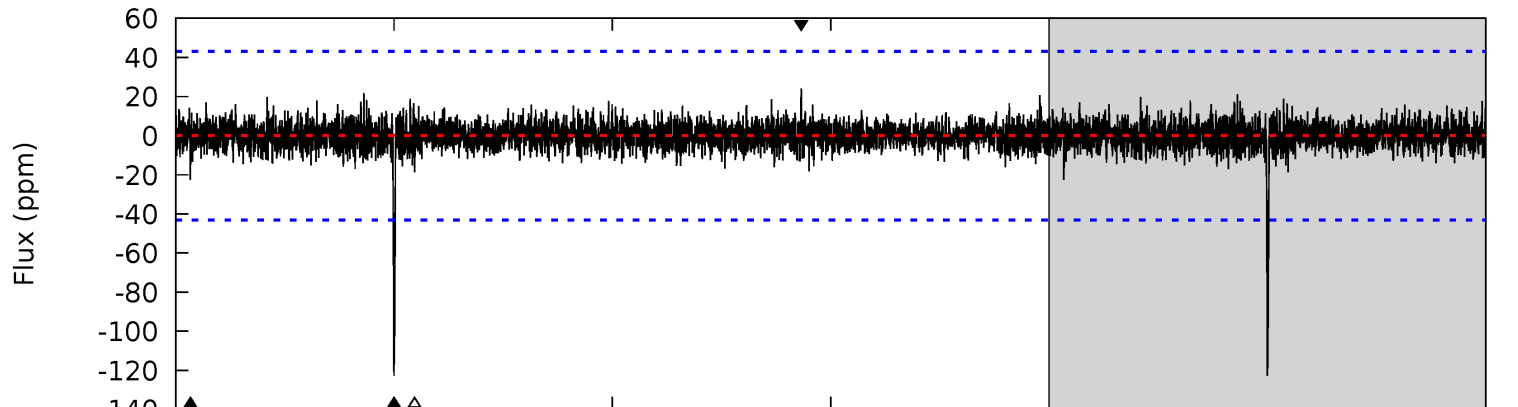
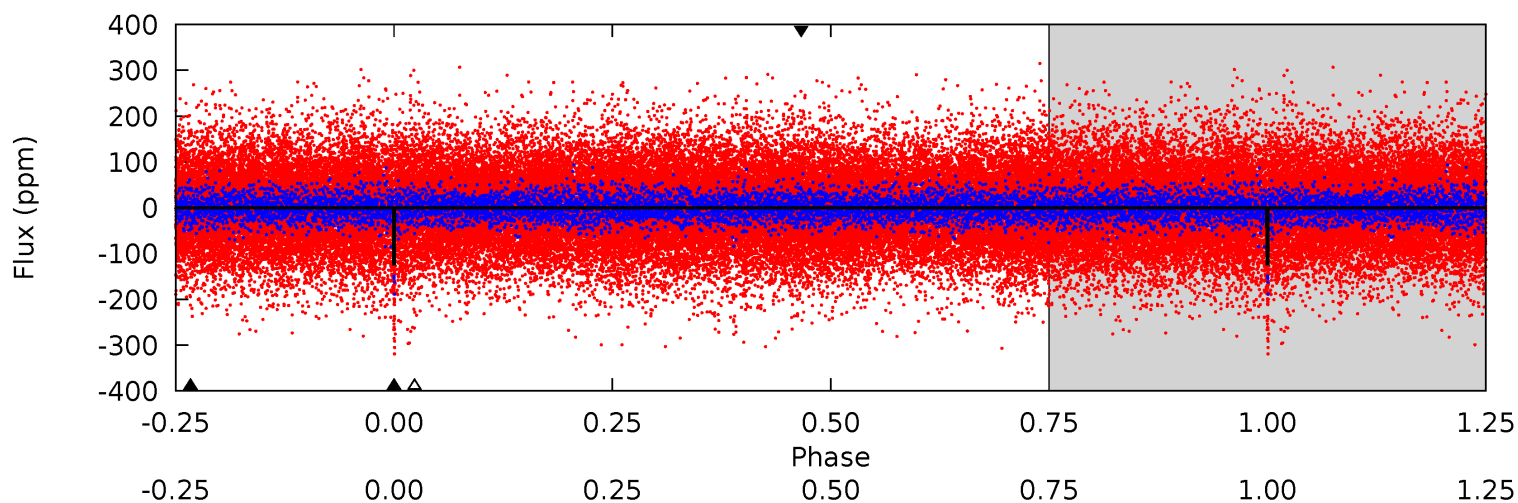
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.3	10.9	7.79	9.89	5.35	3.12	2.25	10.5	8.44	3.12	1.02	2.55	0.91	0.35	2.71



Alt Model-Shift Uniqueness Test

005966322-02, $P = 295.115096$ Days, $E = 235.978212$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.2	2.81	2.31	2.99	5.36	3.14	0.63	12.9	12.3	0.50	-0.18	1.24	0.87	0.16	2.78



Stellar Parameters For KIC 005966322

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5638^{+113}_{-101}	$4.359^{+0.132}_{-0.096}$	$-0.120^{+0.150}_{-0.150}$	$1.023^{+0.142}_{-0.142}$	$0.871^{+0.071}_{-0.043}$	$1.147^{+0.675}_{-0.360}$
	+2%/-2%	+3%/-2%	+125%/-125%	+14%/-14%	+8%/-5%	+59%/-31%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 005966322-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-105 ± 10	$1.56^{+0.31}_{-0.32}$	386^{+16}_{-18}	4923^{+507}_{-344}	16570^{+9658}_{-5056}
Alt.	-23 ± 8	$1.21^{+0.34}_{-0.26}$	386^{+16}_{-17}	4018^{+461}_{-388}	5656^{+4854}_{-2637}

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

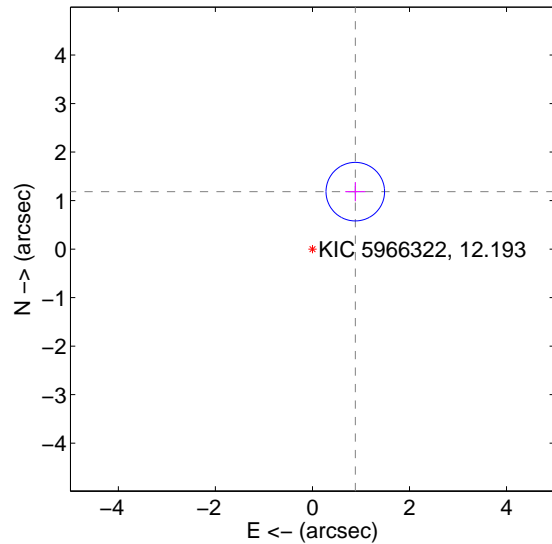
Supplemental centroid analysis for 005966322-02. Kepler magnitude: 12.19. Transit SNR 7.47

There are 1 quarters with good PRF difference image offsets

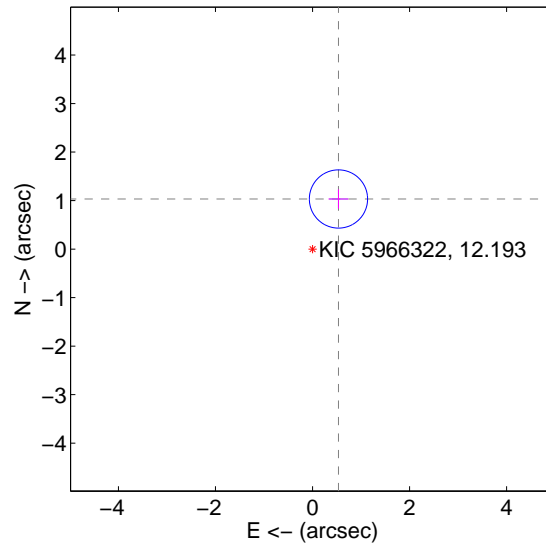
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.477 ± 0.201	7.34	-0.883 ± 0.206	1.184 ± 0.198
PRF-fit source offset from KIC position	1.163 ± 0.200	5.81	-0.535 ± 0.206	1.033 ± 0.198
photometric centroid source offset	1.07 ± 1.03	1.04	0.38 ± 0.78	1.00 ± 1.06

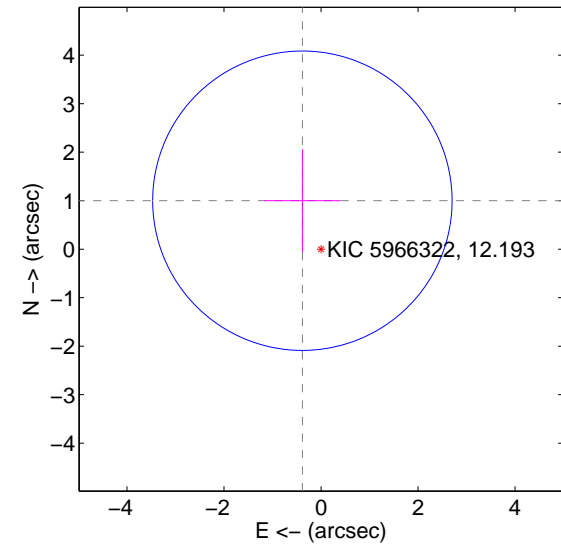
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

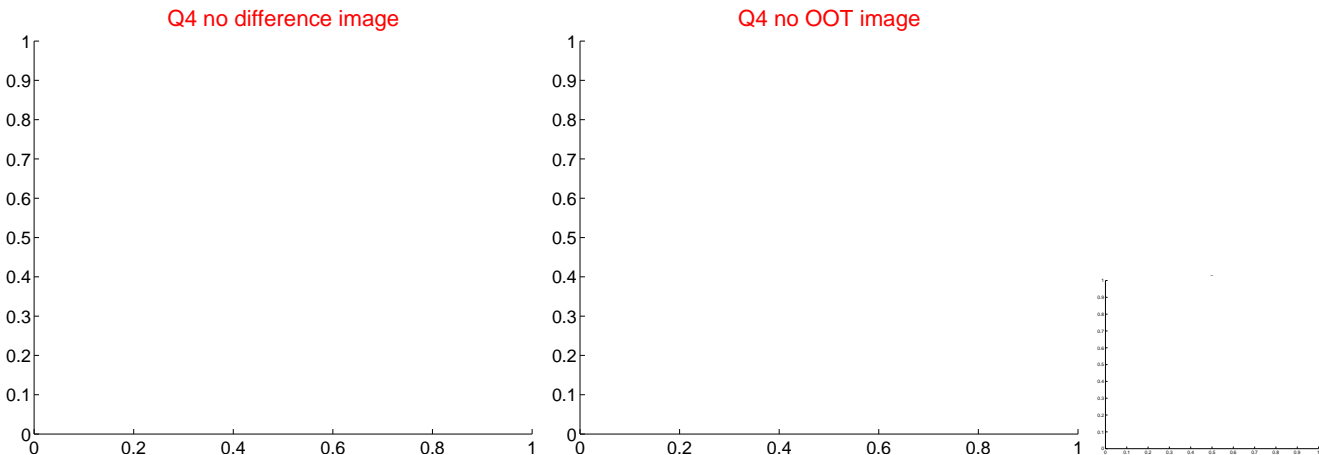
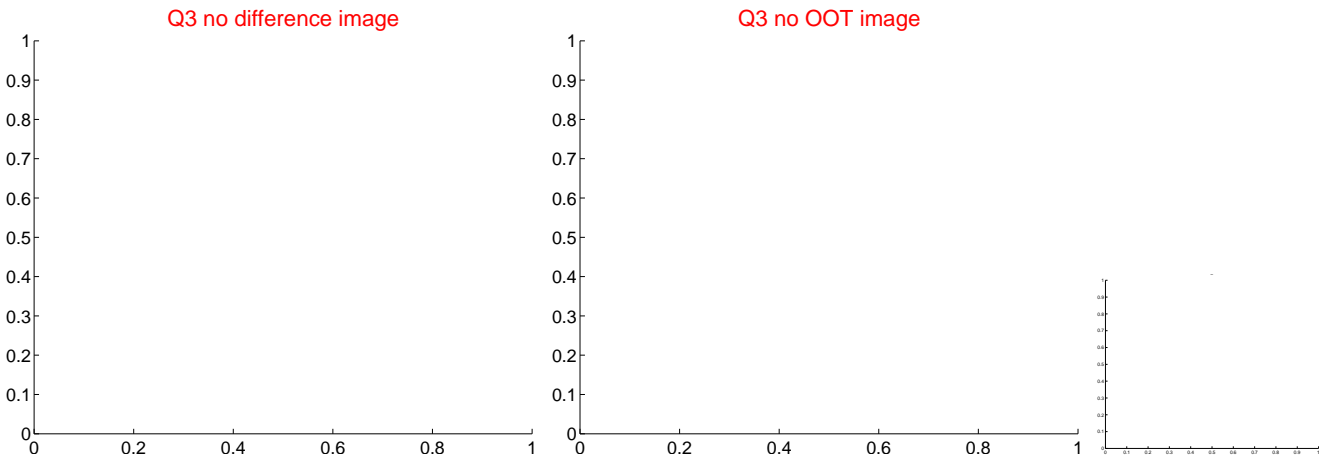
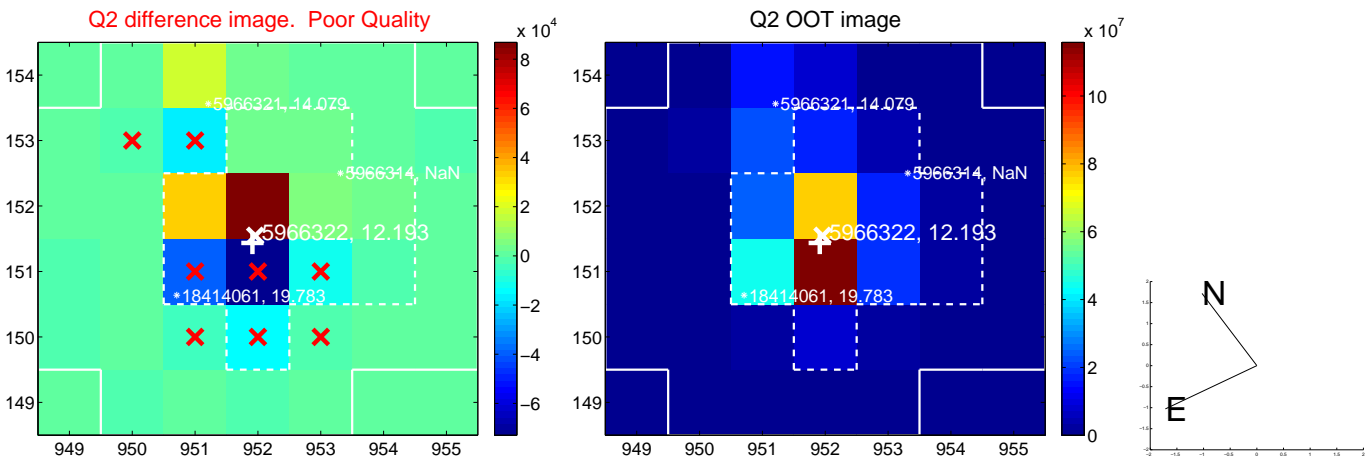
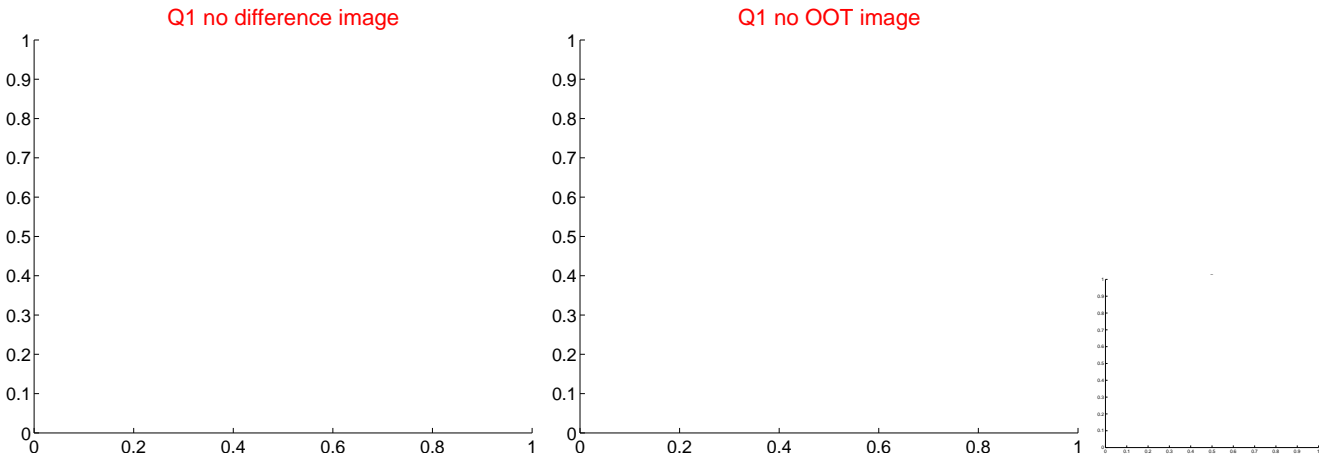


offset from photometric centroids

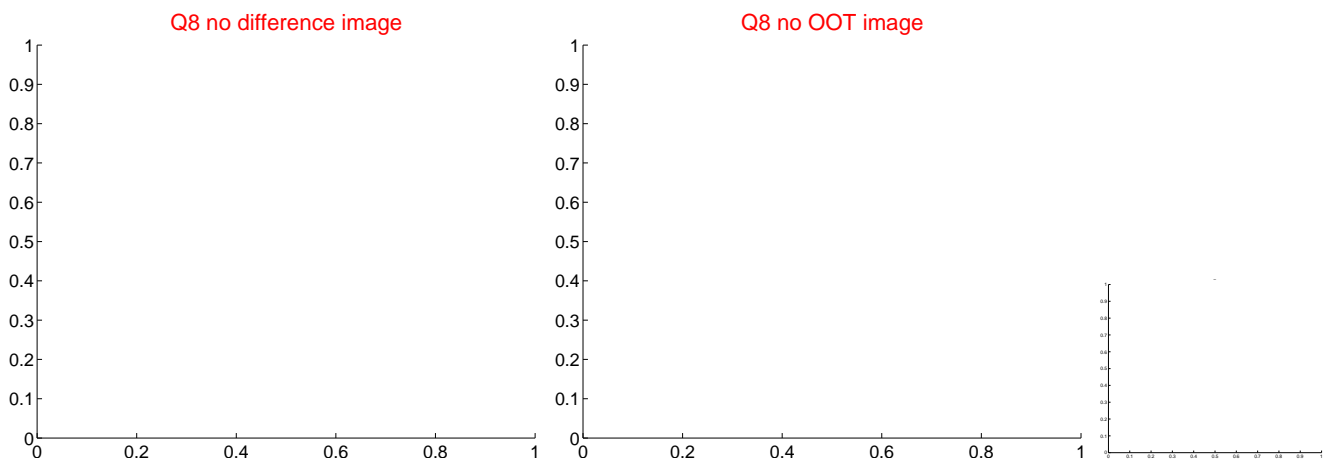
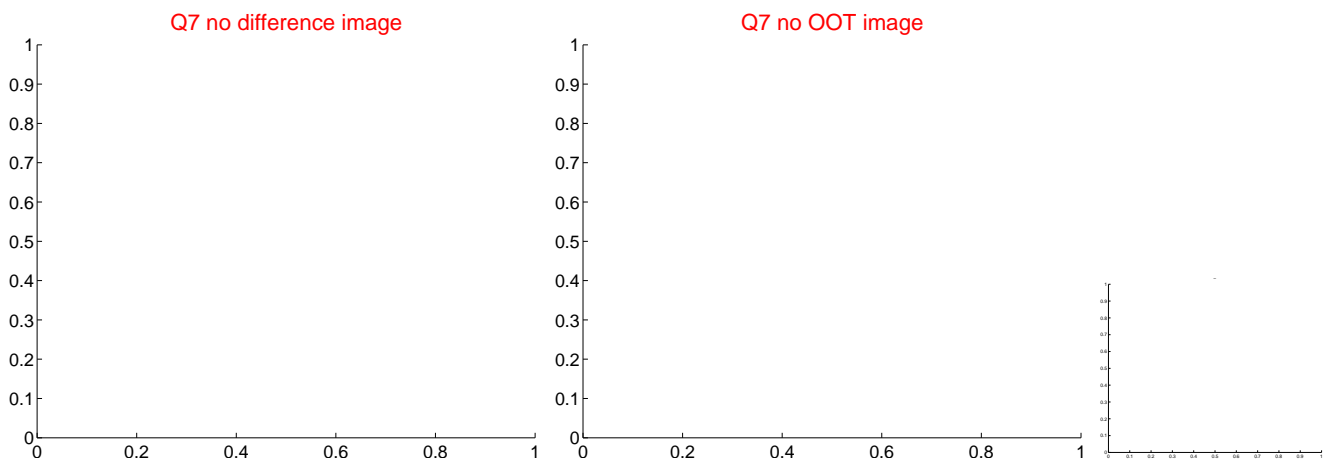
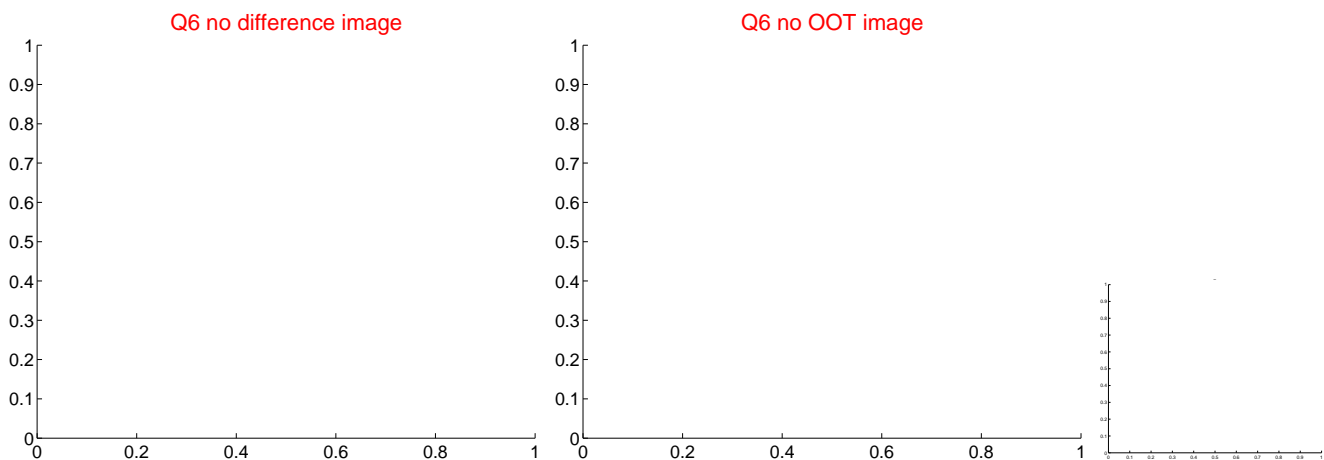
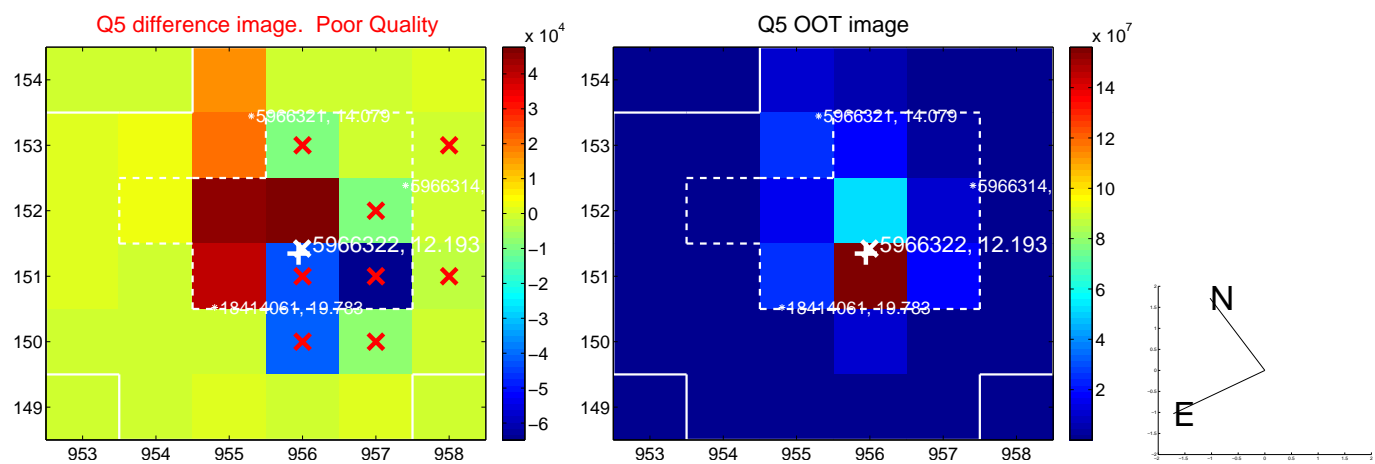


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

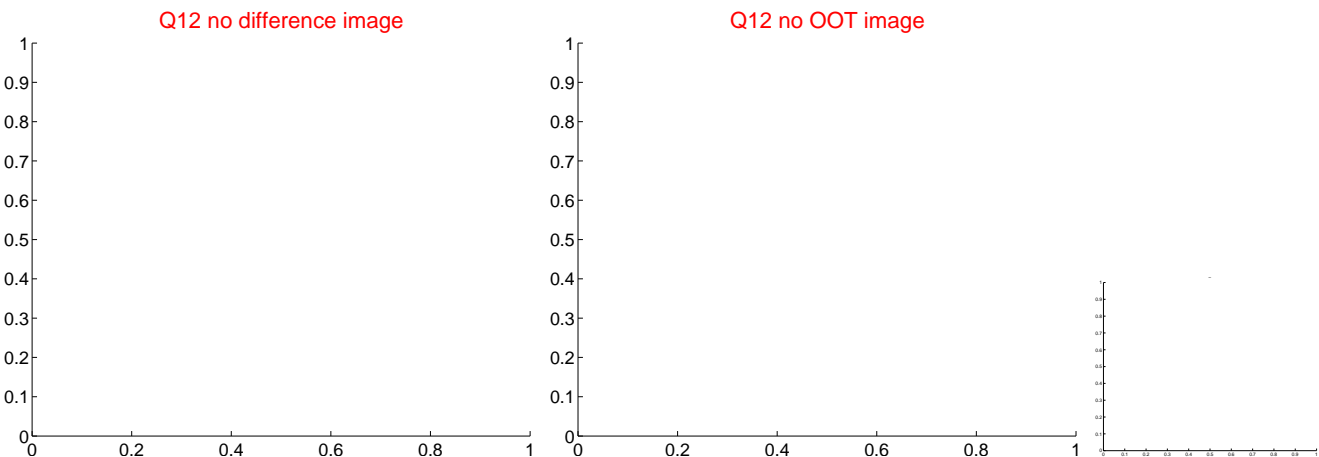
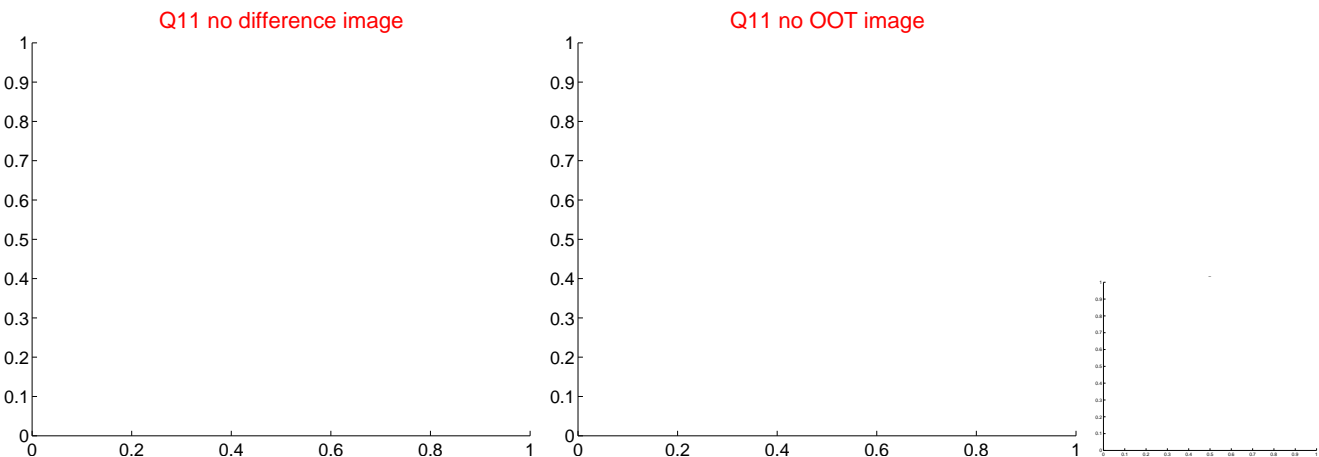
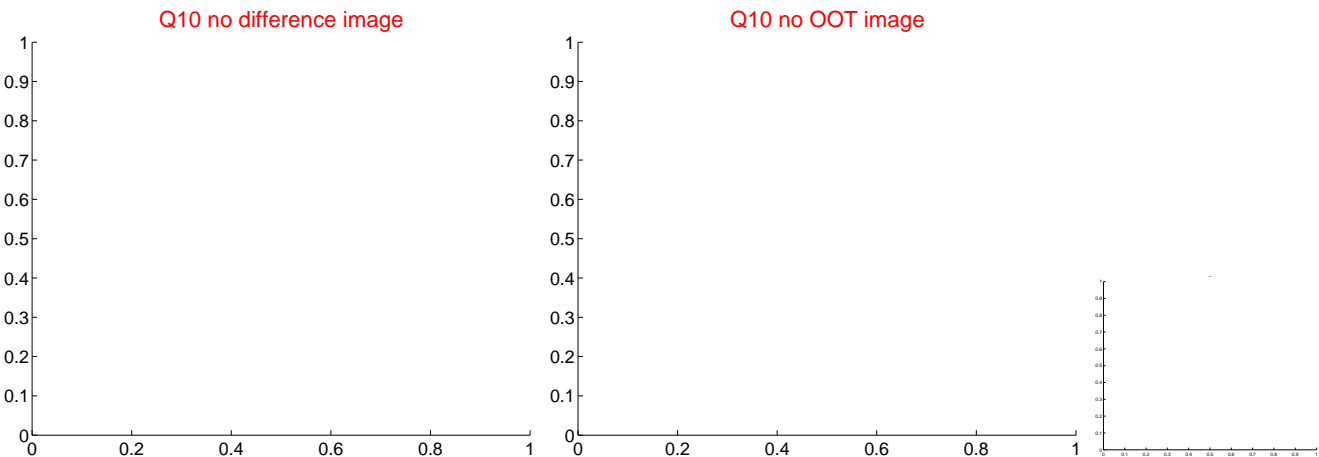
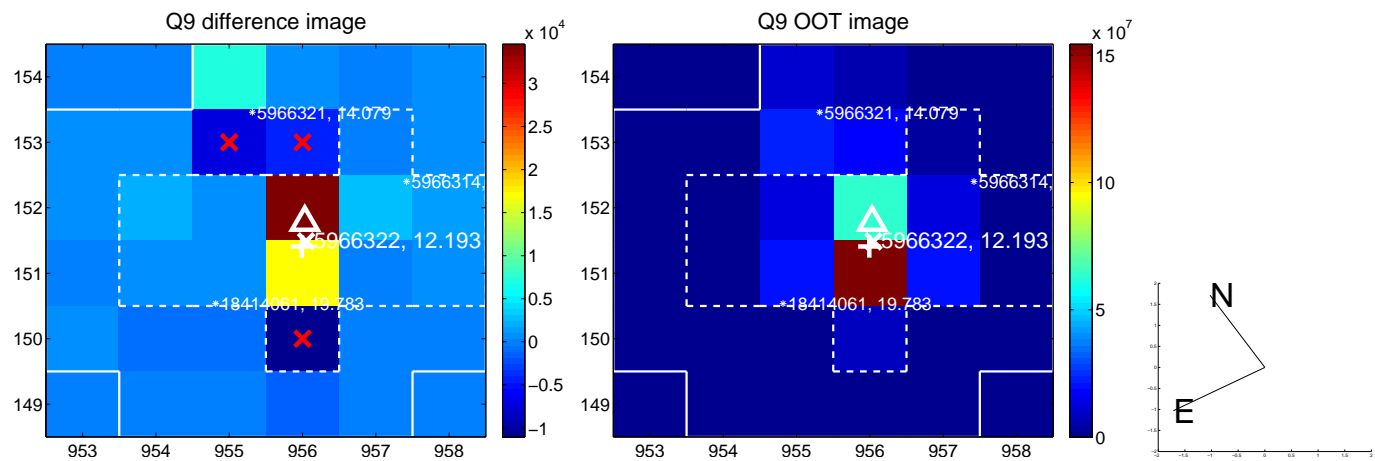
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



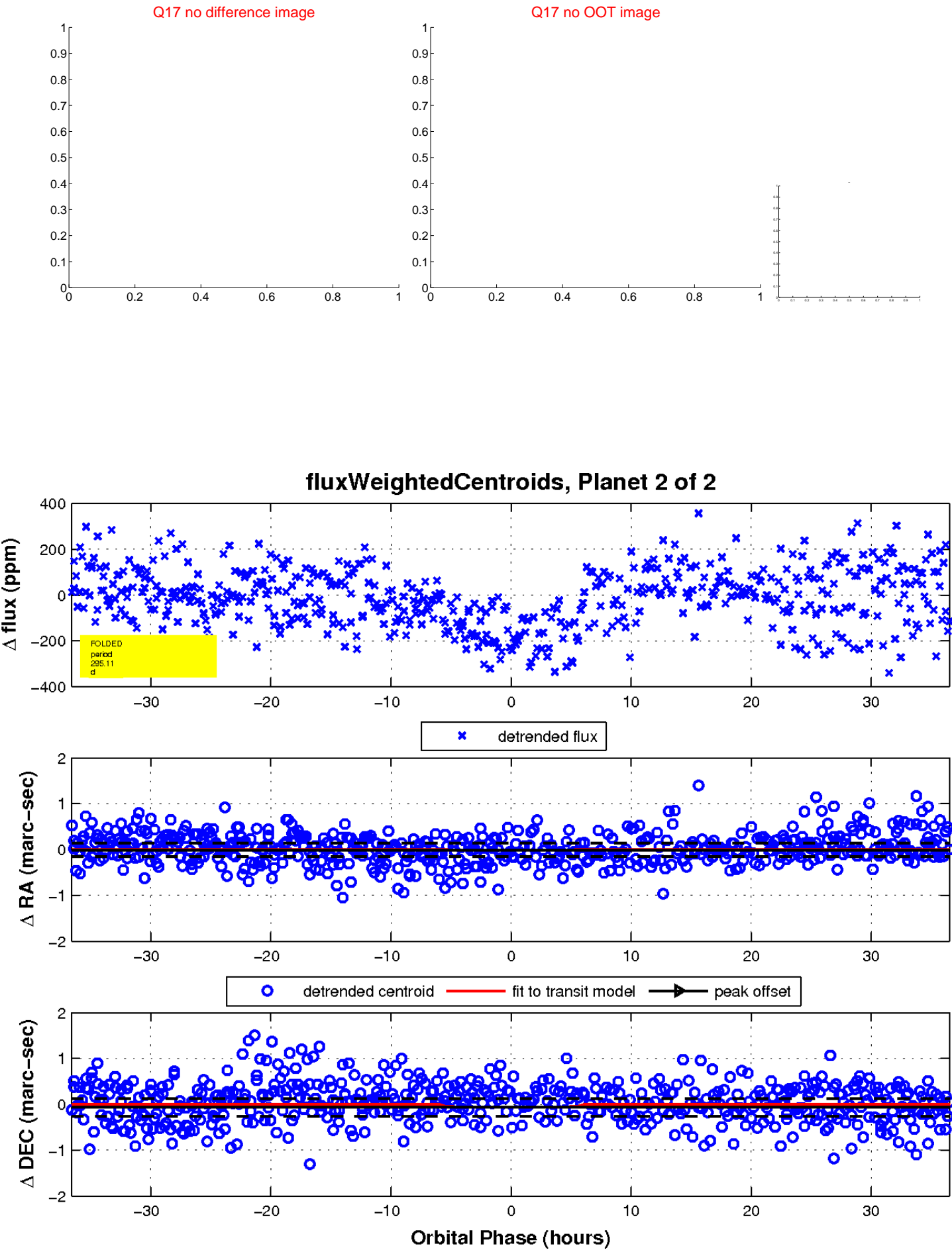
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

