

KIC 010340228

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})
010340228-01	OBS	7312.01	0.933681	131.577120	60.1	3.948	8.2	8.7	0.87	5436	0.66	1720.92
010340228-02	OBS	No	165.511070	201.691130	596.0	14.116	10.5	6.2	0.87	5436	2.23	1.73

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010340228-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—EPHEM_MATCH
010340228-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQU_ALT—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.

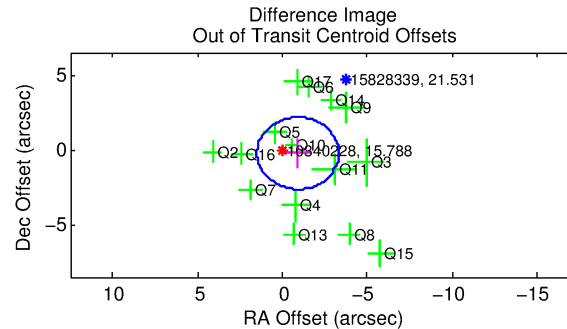
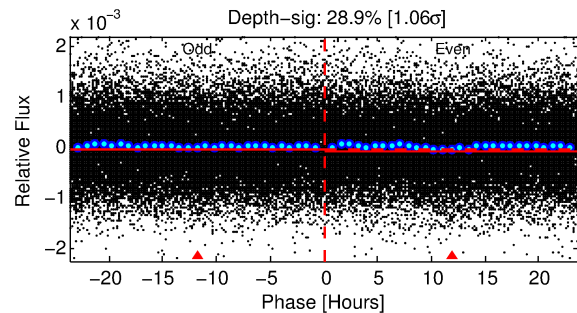
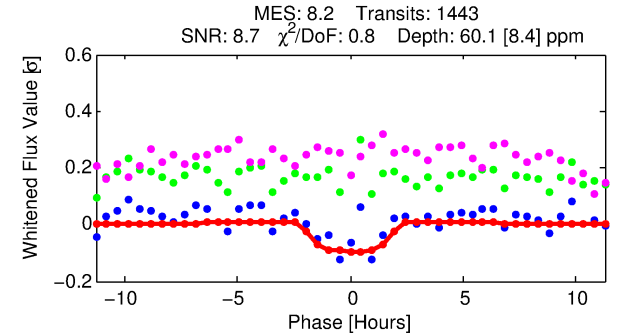
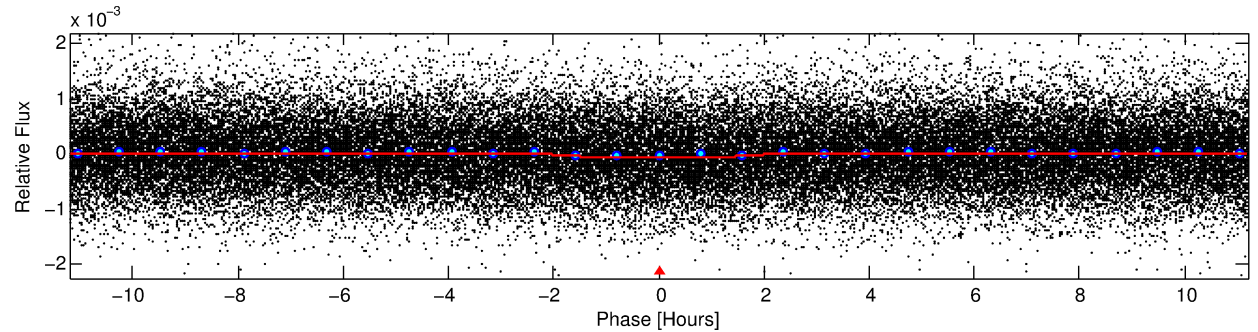
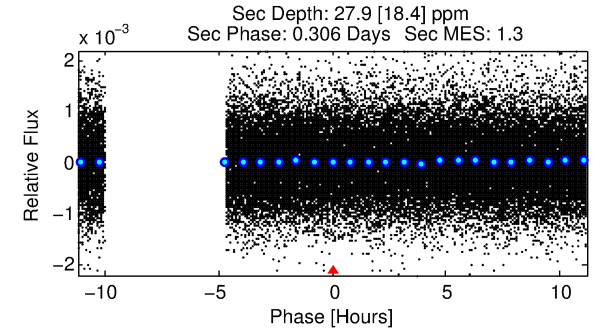
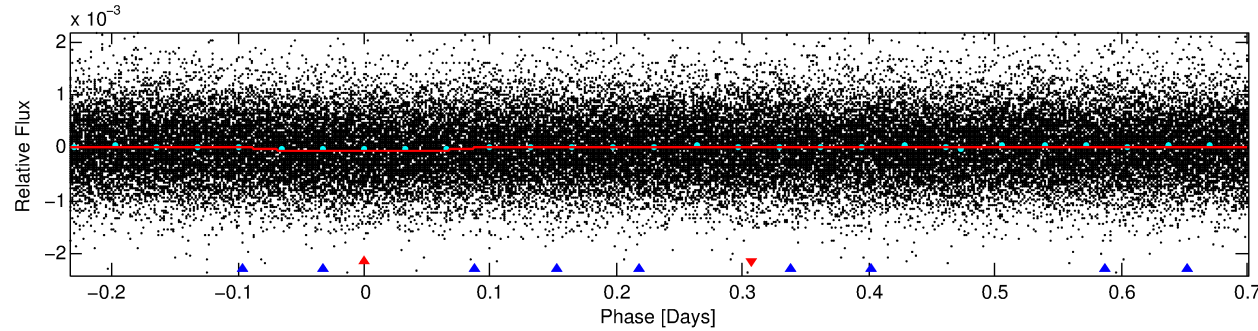
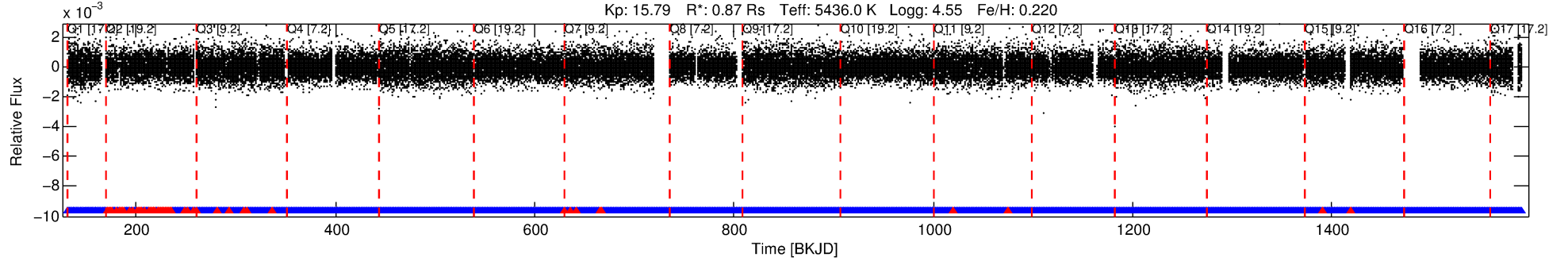
Ephemeris Match Information For 010340228-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist (")	ΔRow	ΔCol	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
010340228-01	10340228	V2083-Cyg-pri	10342012	1:2	1699.4	228	-362	6.90	15.79	3305.40	Direct-PRF	0	1.53	2.33

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol 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: 10340228 Candidate: 1 of 2 Period: 0.934 d
KOI: K07312.01 Corr: 0.886



DV Fit Results:

Period = 0.93368 [0.00001] d
Epoch = 131.5771 [0.0055] BKJD
Rp/R* = 0.0070 [0.0140]
a/R* = 1.91 [10.54]
b = 0.12 [64.16]
Seff = 1720.92 [560.83]
Teff = 1642 [134] K
Rp = 0.66 [1.33] Re
a = 0.0185 [0.0037] AU
Ag = 12.10 [49.37] [0.22σ]
Teffp = 4736 [4819] K [0.64σ]

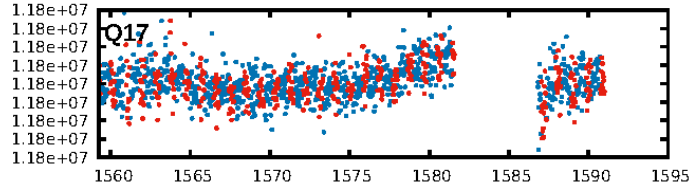
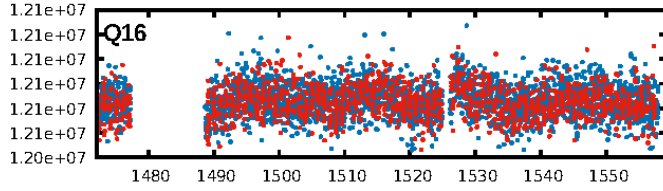
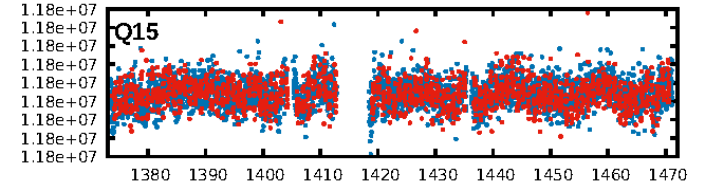
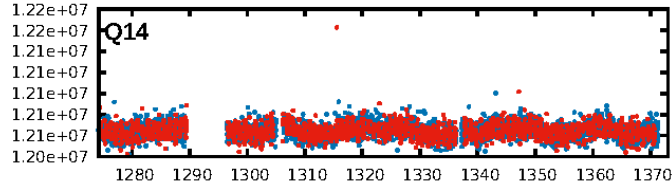
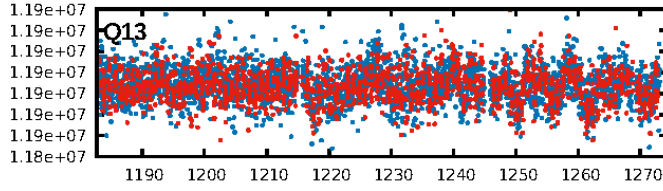
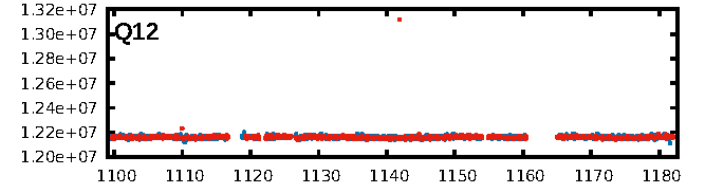
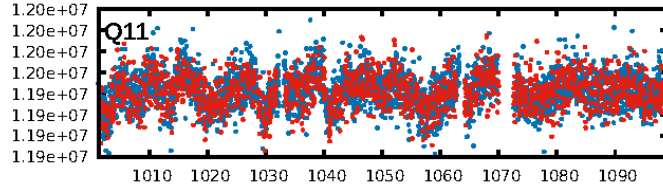
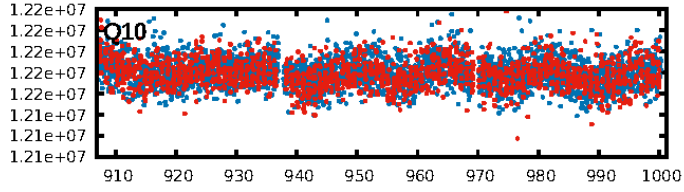
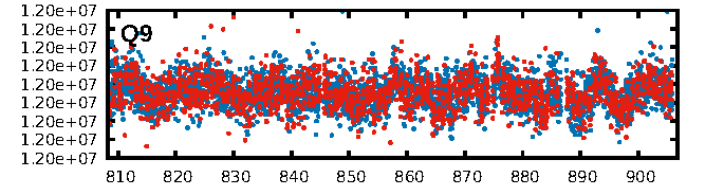
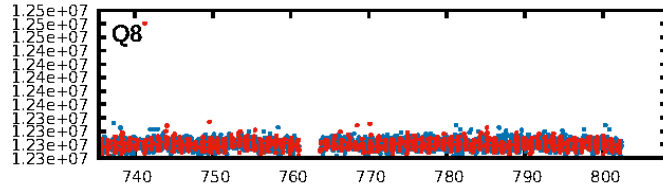
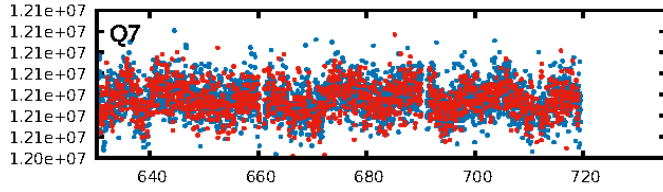
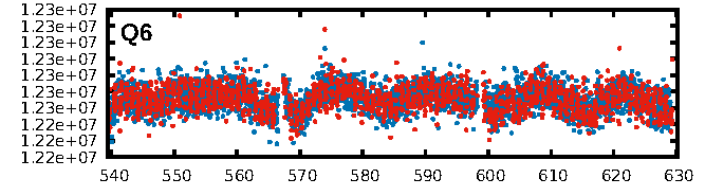
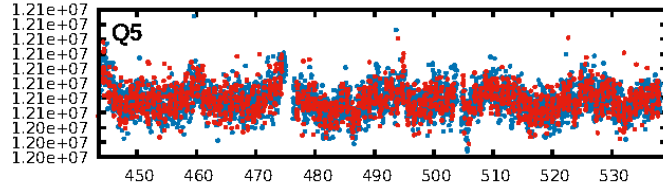
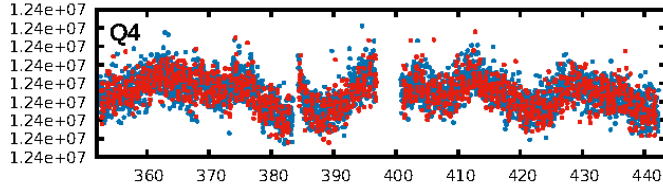
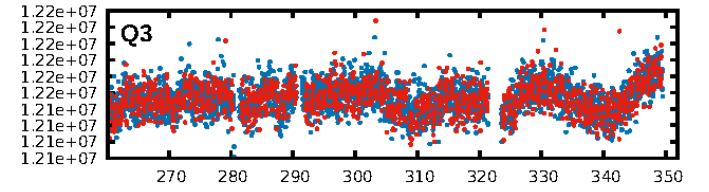
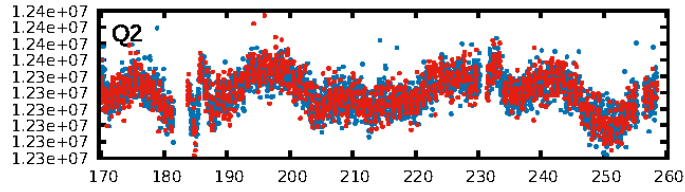
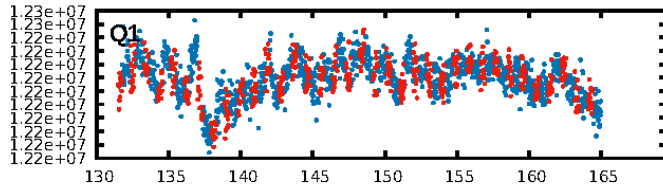
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [269.48σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.75e-15
RollingBand-fgt: 0.96 [1320/1377]
GhostDiagnostic-chr: 0.3167
Centroid-sig: 7.5%
Centroid-so: 2.510 arcsec [1.37σ]
OotOffset-rm: 0.953 arcsec [1.19σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-rm: 0.963 arcsec [1.25σ]
KicOffset-st: 4/4/3/4 [15]
DiffImageQuality-fgm: 0.00 [0/15]
DiffImageOverlap-fno: 1.00 [17/17]

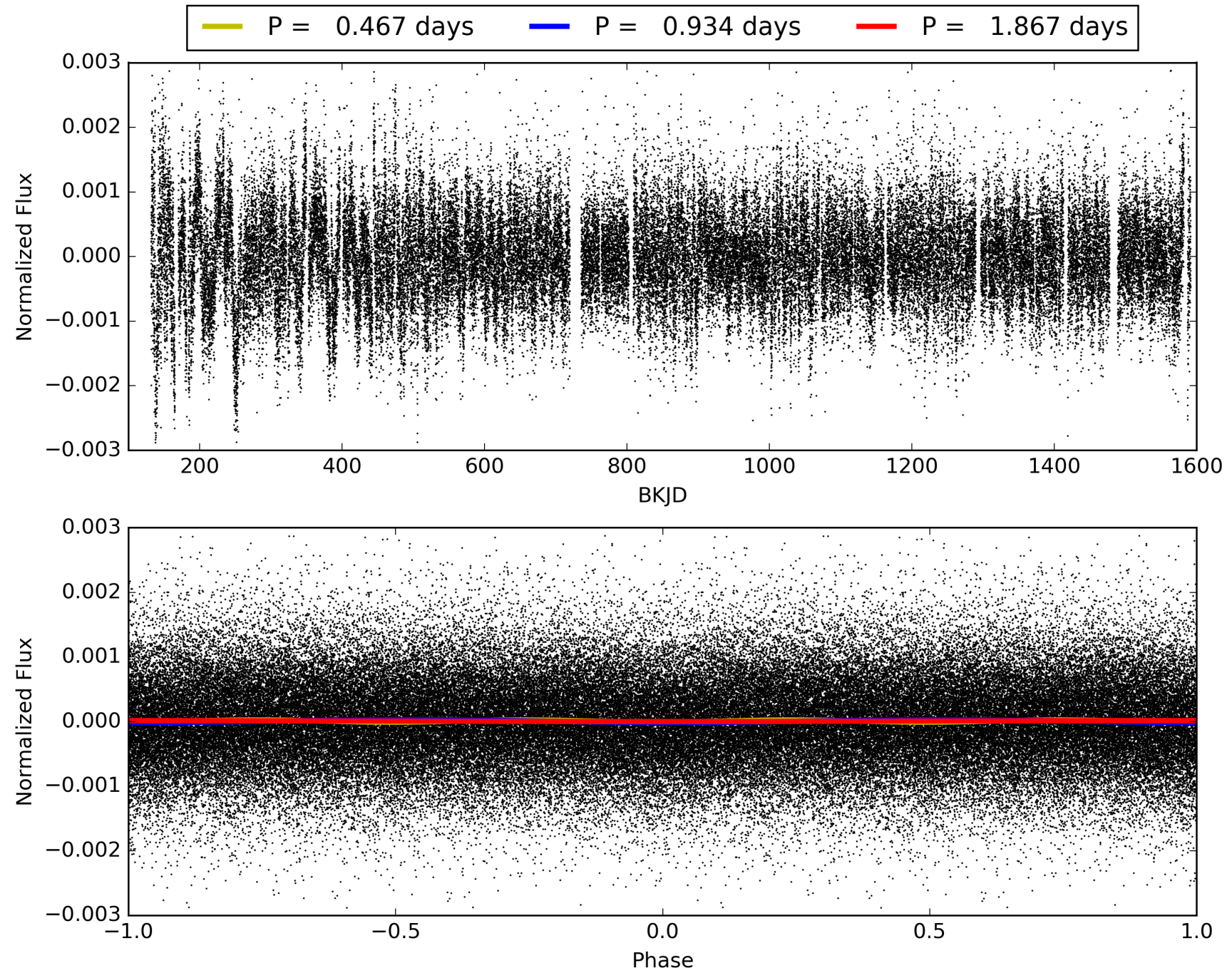
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010340228-01, PDC Light Curves

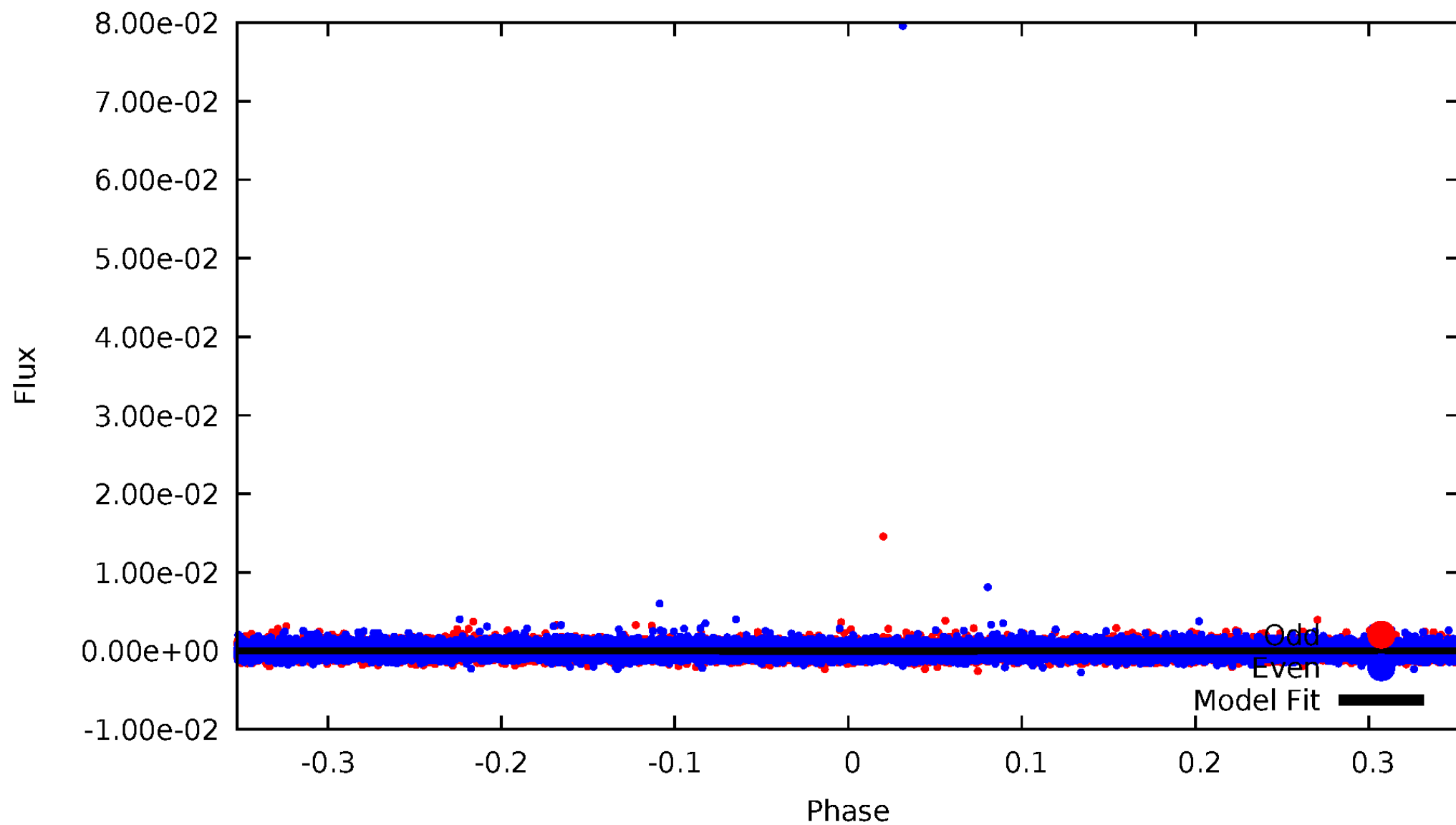


TCE 010340228-01



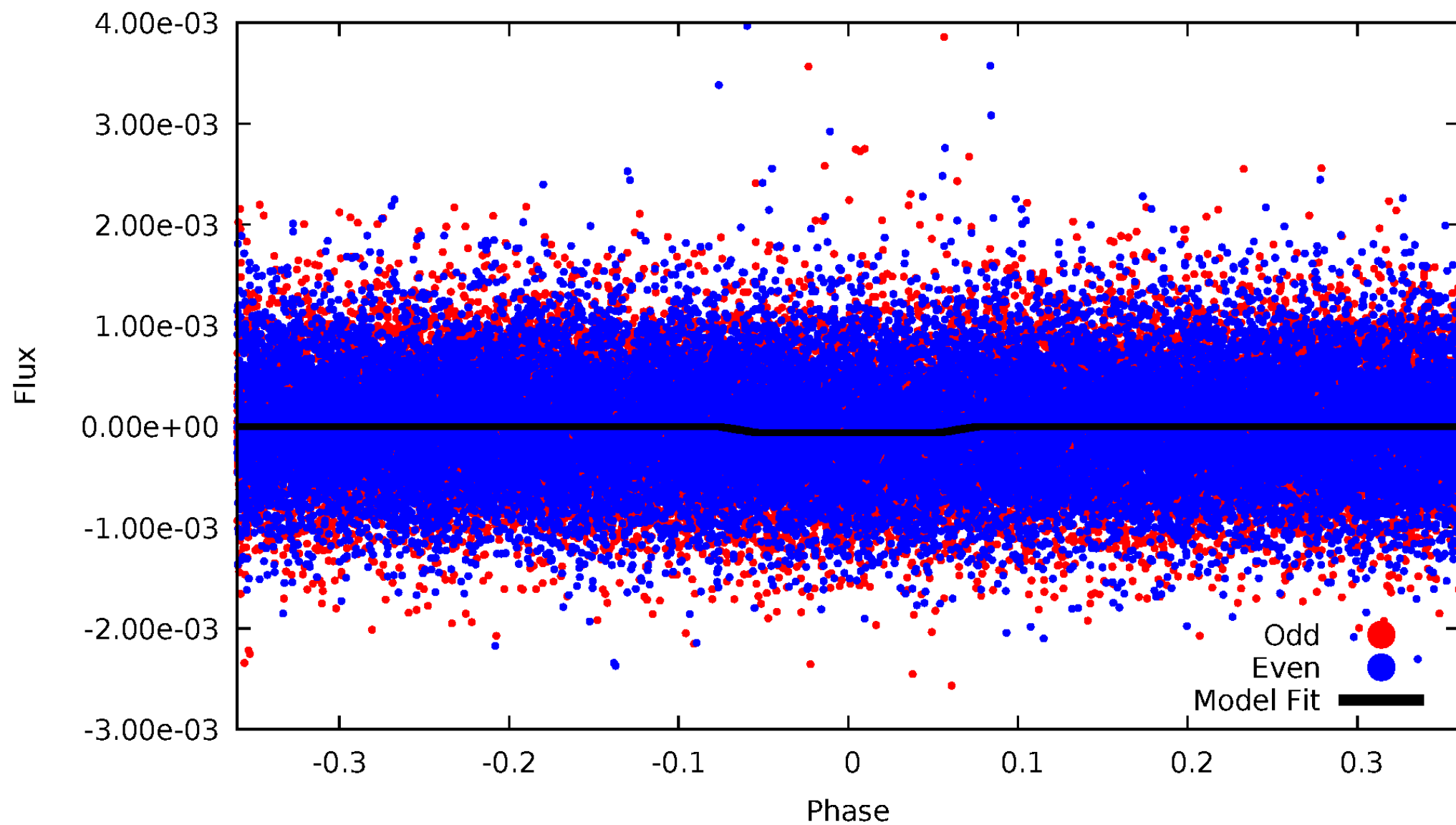
DV Odd/Even

TCE 010340228-01



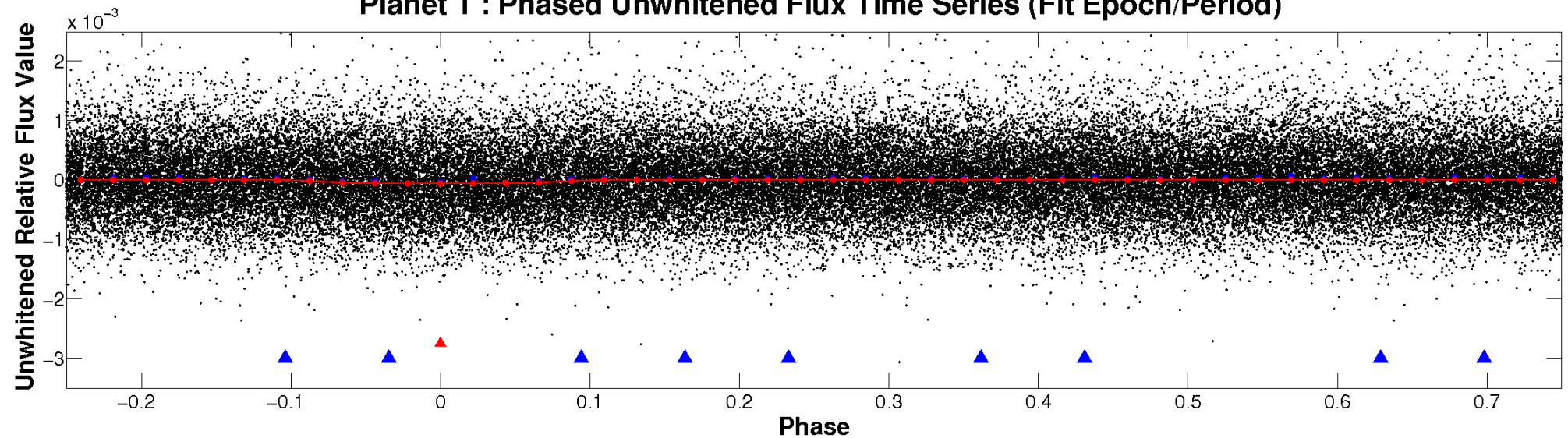
ALT Odd/Even

TCE 010340228-01

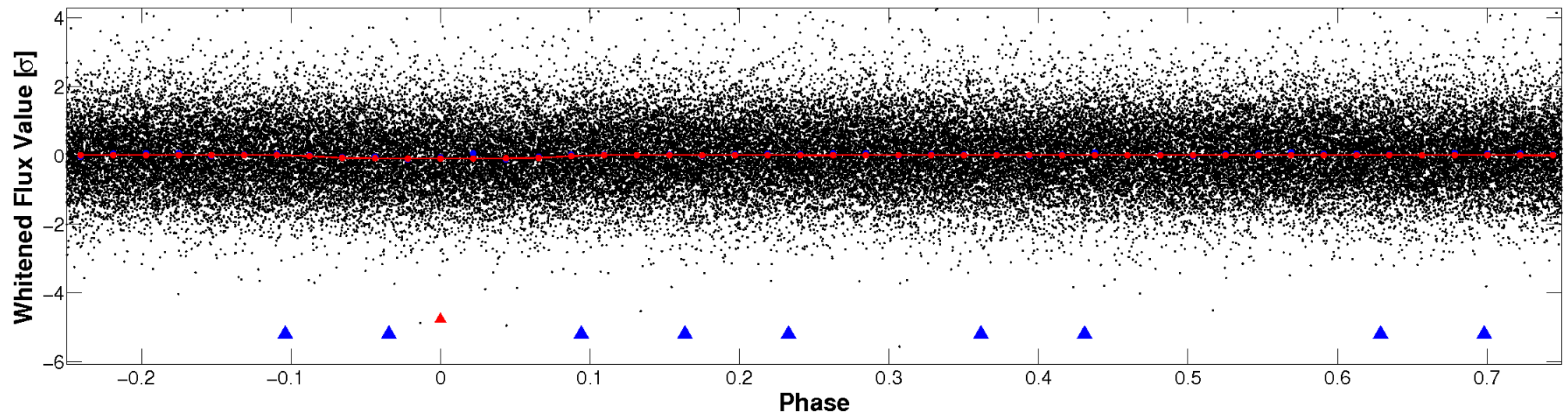


Non-Whitened Vs. Whitened Light Curve

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

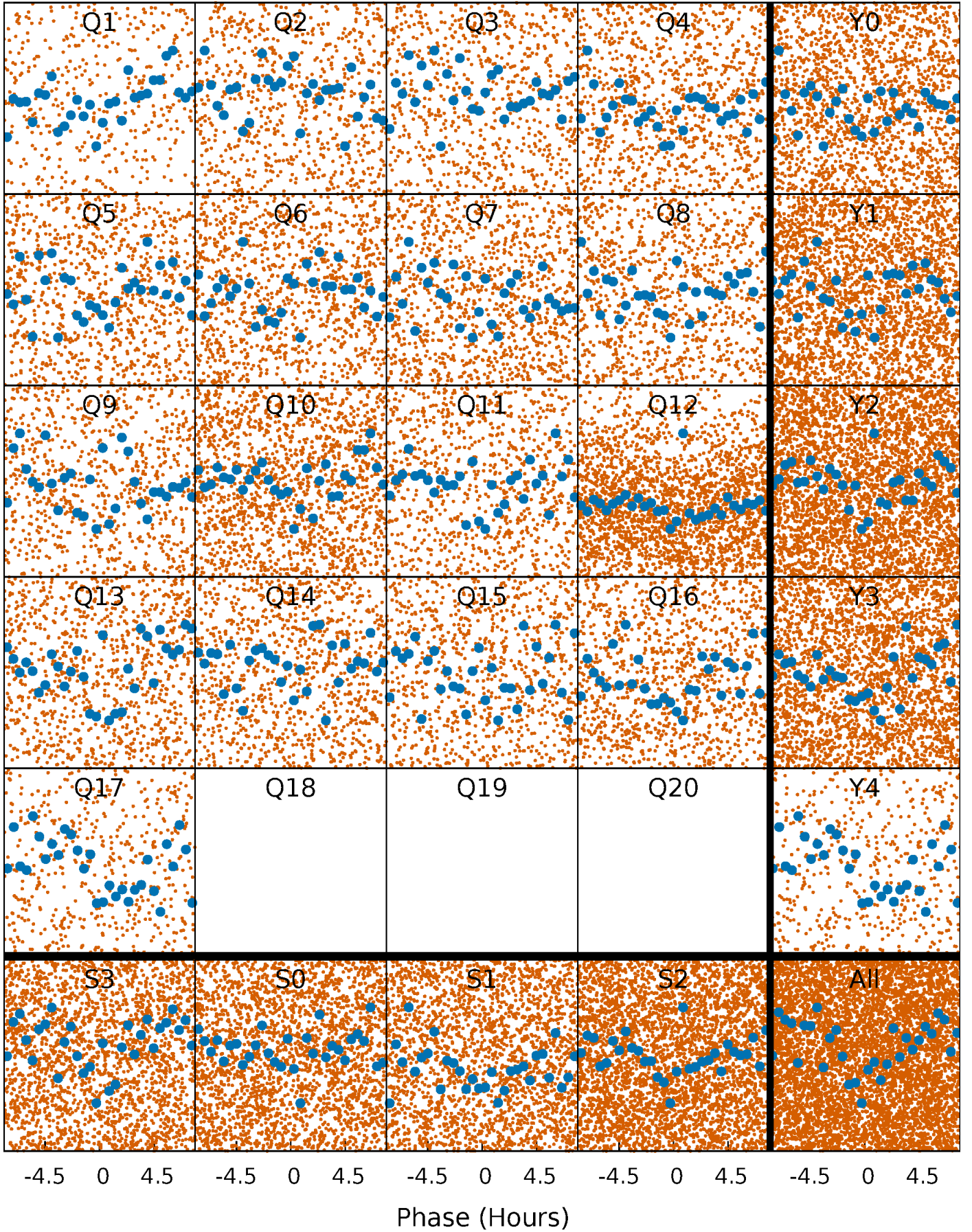


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



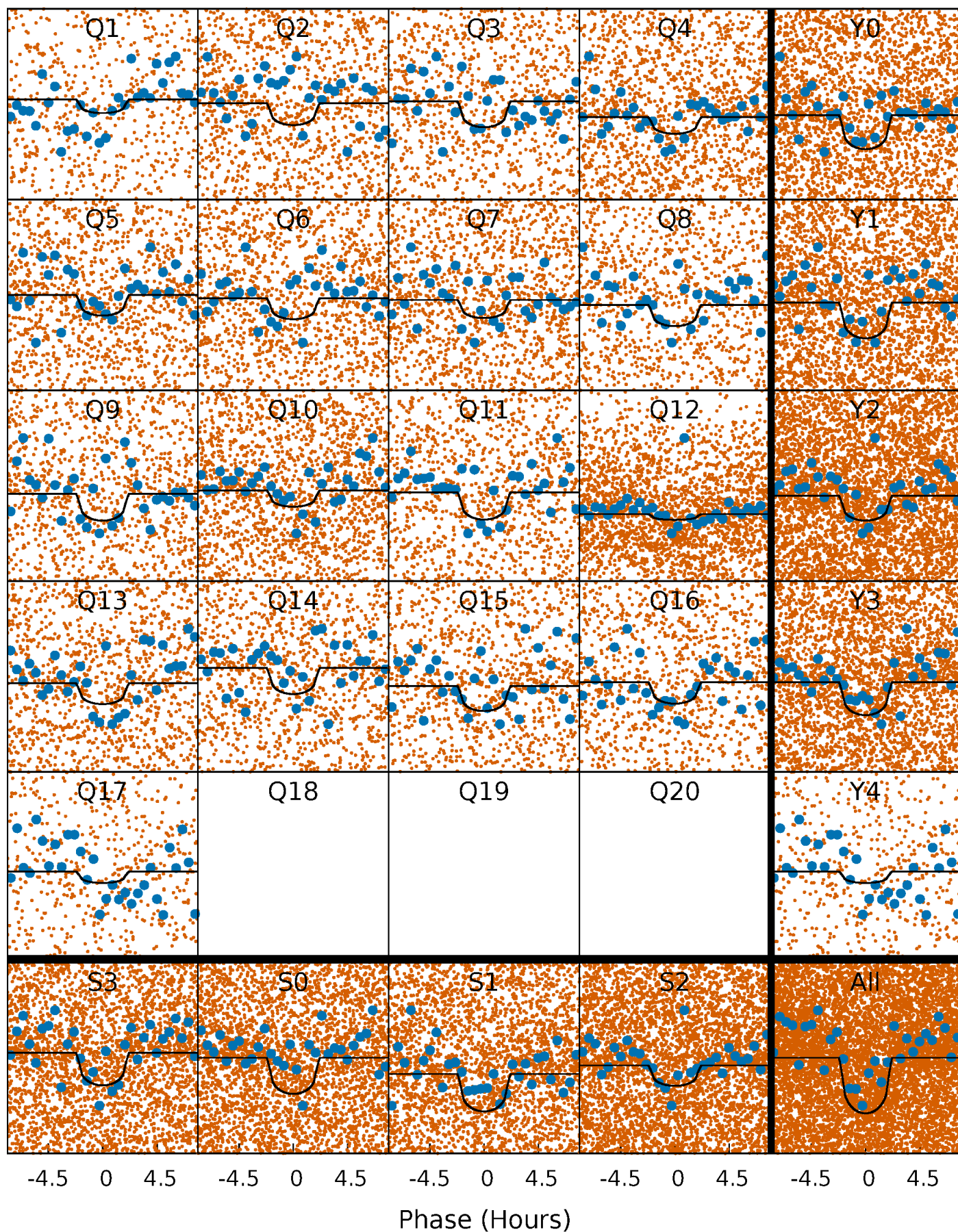
PDC Quarter-Phased Transit Curves

TCE 010340228-01 P= 0.933681 Days $T_0=131.577120$ (BKJD)



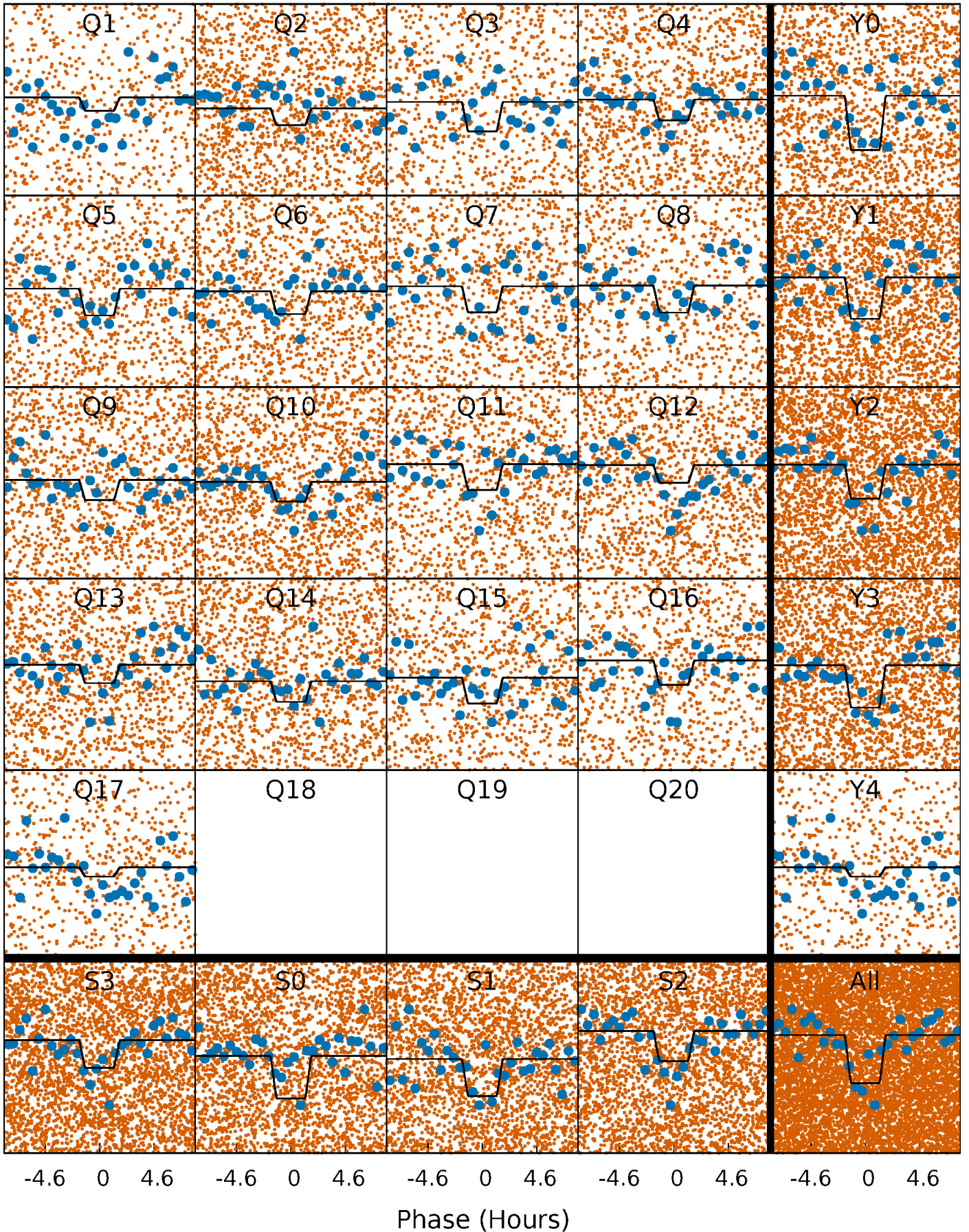
DV Quarter-Phased Transit Curves

TCE 010340228-01 P= 0.933681 Days $T_0=131.577120$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

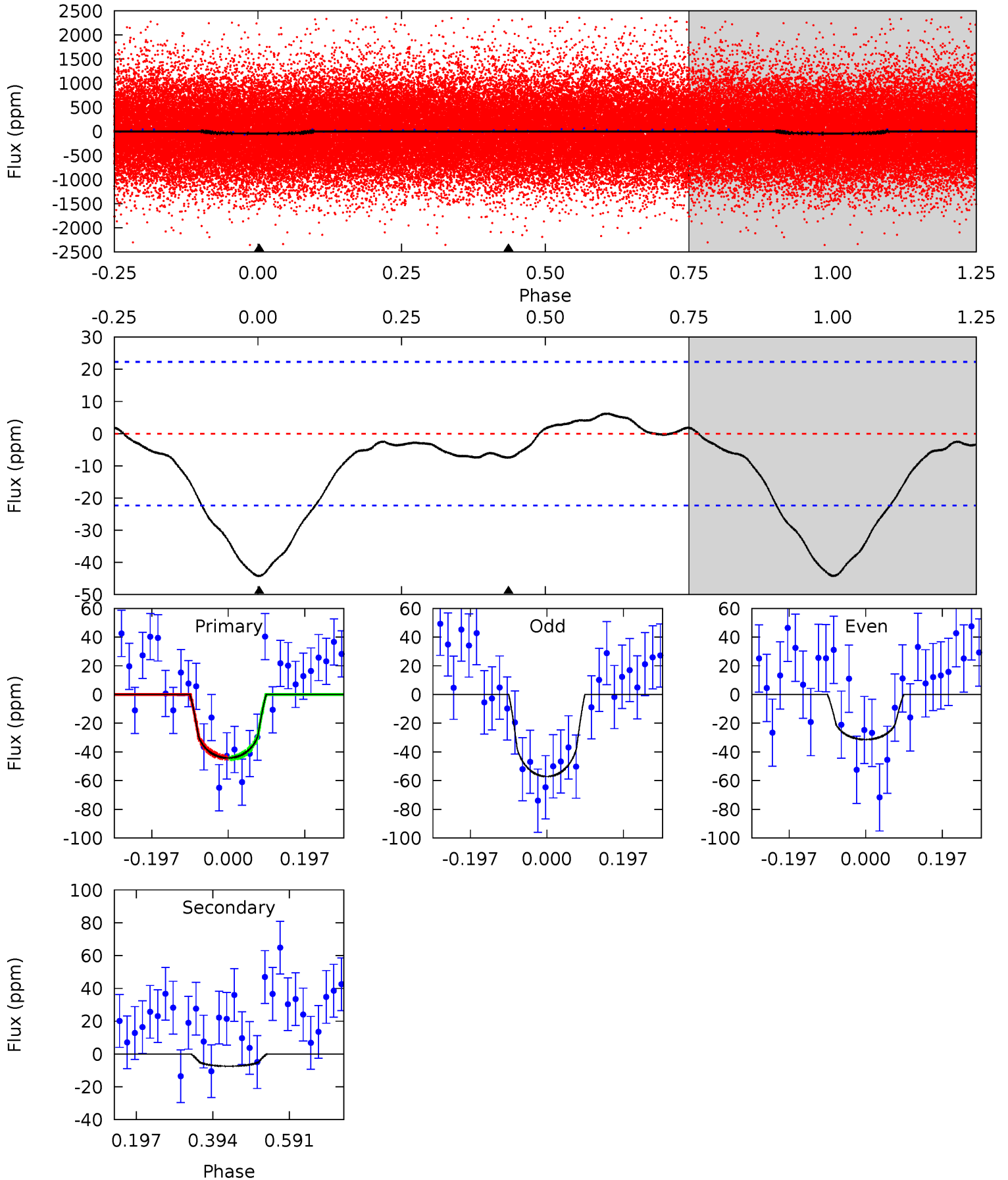
TCE 010340228-01 P= 0.933700 Days $T_0=131.567892$ (BKJD)



DV Model-Shift Uniqueness Test

010340228-01, P = 0.933681 Days, E = 130.643439 Days

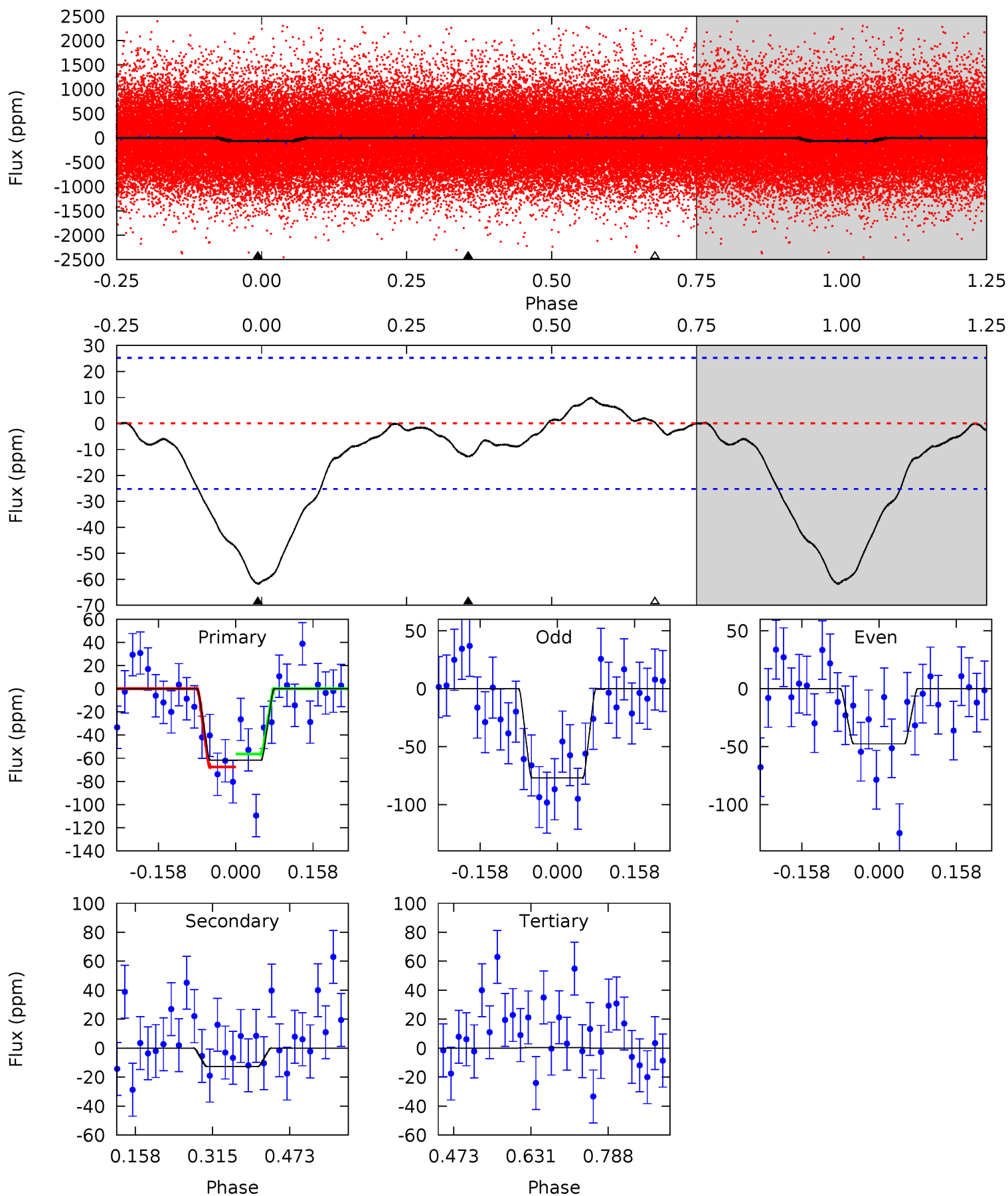
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.77	1.48	0	0	4.42	1.29	0.49	8.77	8.77	1.48	1.48	2.54	0.79	0.12	0.05



Alt Model-Shift Uniqueness Test

010340228-01, P = 0.933700 Days, E = 130.634192 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	2.25	-0.07	0	4.47	1.41	0.97	11.0	10.9	2.32	2.25	2.62	0.97	0.14	1.00



Stellar Parameters For KIC 010340228

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5436^{+164}_{-164}	$4.548^{+0.030}_{-0.170}$	$0.220^{+0.200}_{-0.300}$	$0.869^{+0.200}_{-0.067}$	$0.973^{+0.065}_{-0.098}$	$2.090^{+0.323}_{-0.917}$
	+3%/-3%	+1%/-4%	+91%/-136%	+23%/-8%	+7%/-10%	+15%/-44%
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 010340228-01 / KOI 7312.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-7 ± 5	$1.16^{+1.06}_{-0.77}$	2354^{+134}_{-106}	2851^{+1739}_{-5372}	$0.756^{+8.323}_{-0.628}$
Alt.	-13 ± 6	$1.28^{+1.14}_{-0.88}$	2341^{+132}_{-96}	3230^{+1696}_{-1187}	$1.364^{+11.060}_{-1.037}$

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 $A_{obs} \gg 1.0$

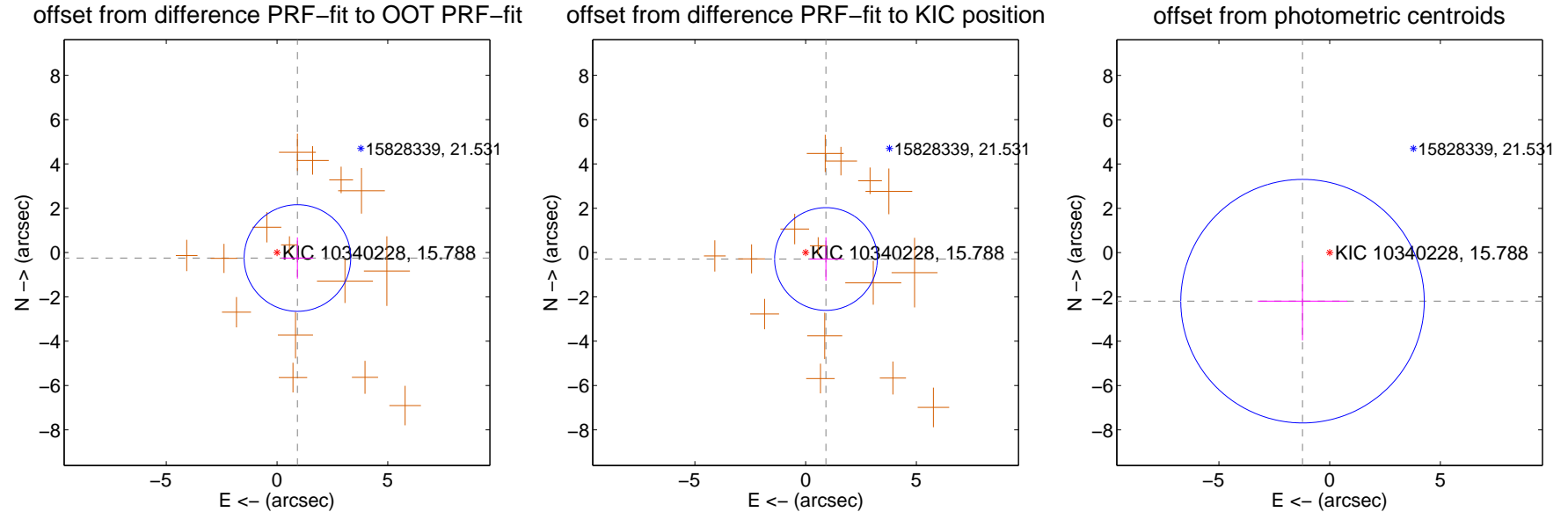
DV Centroid Data

Supplemental centroid analysis for 010340228-01. Kepler magnitude: 15.79. Transit SNR 8.67

There are 0 quarters with good PRF difference image offsets

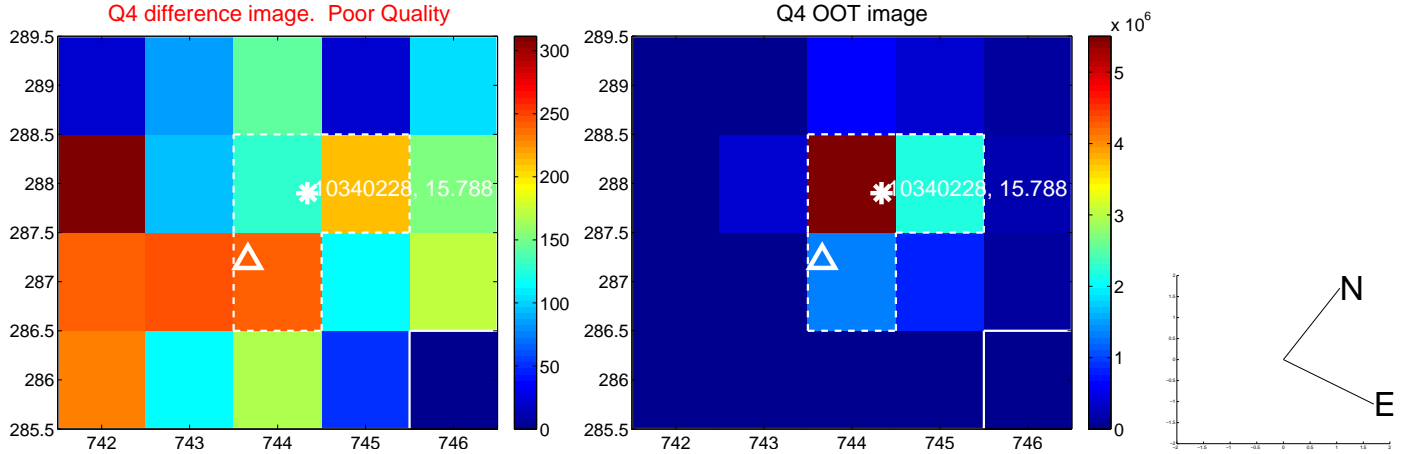
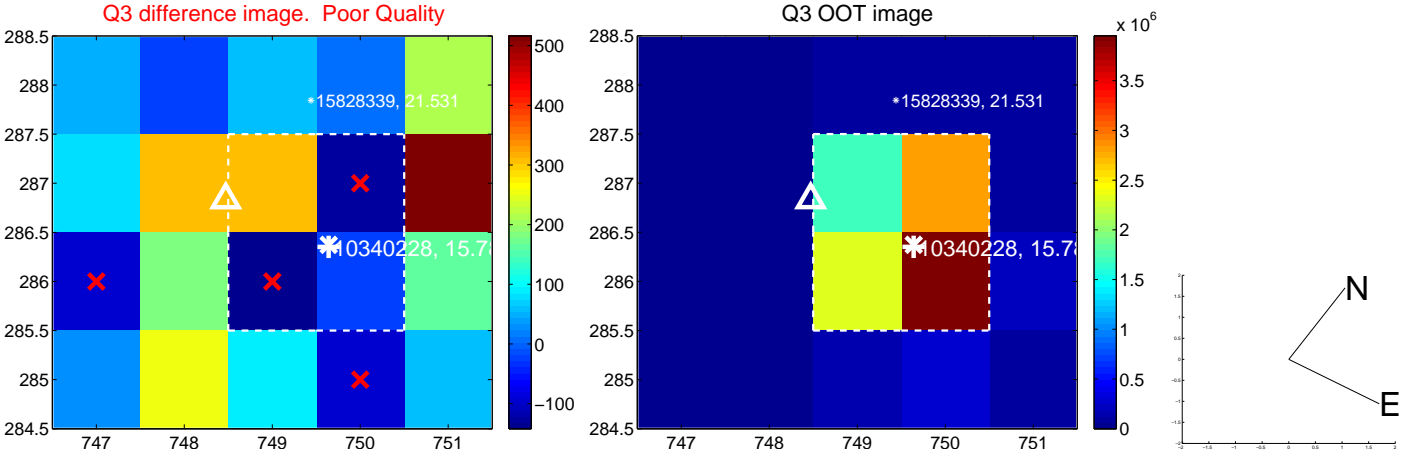
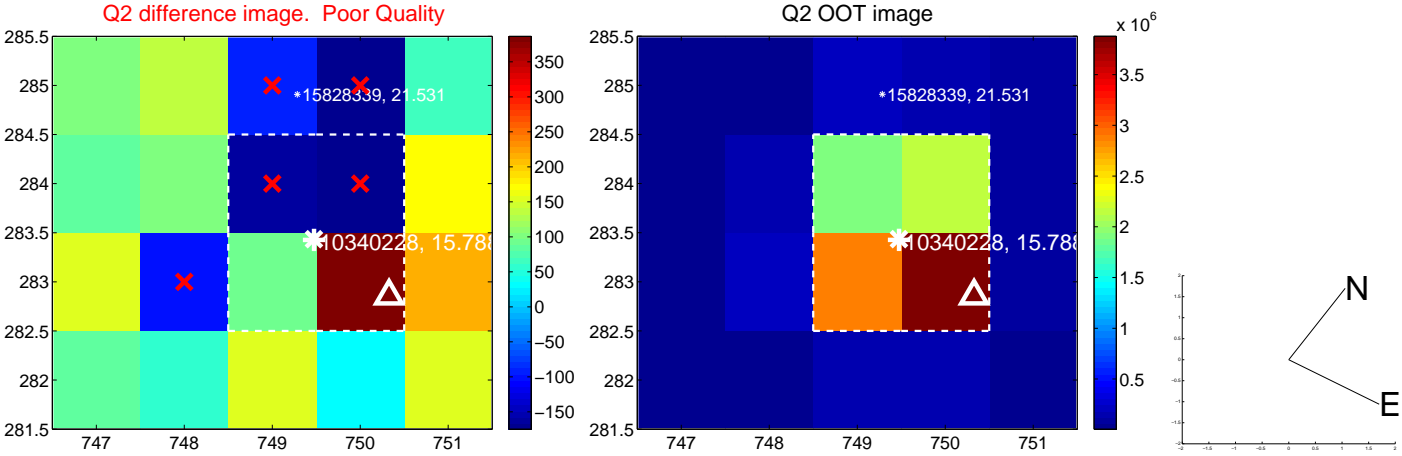
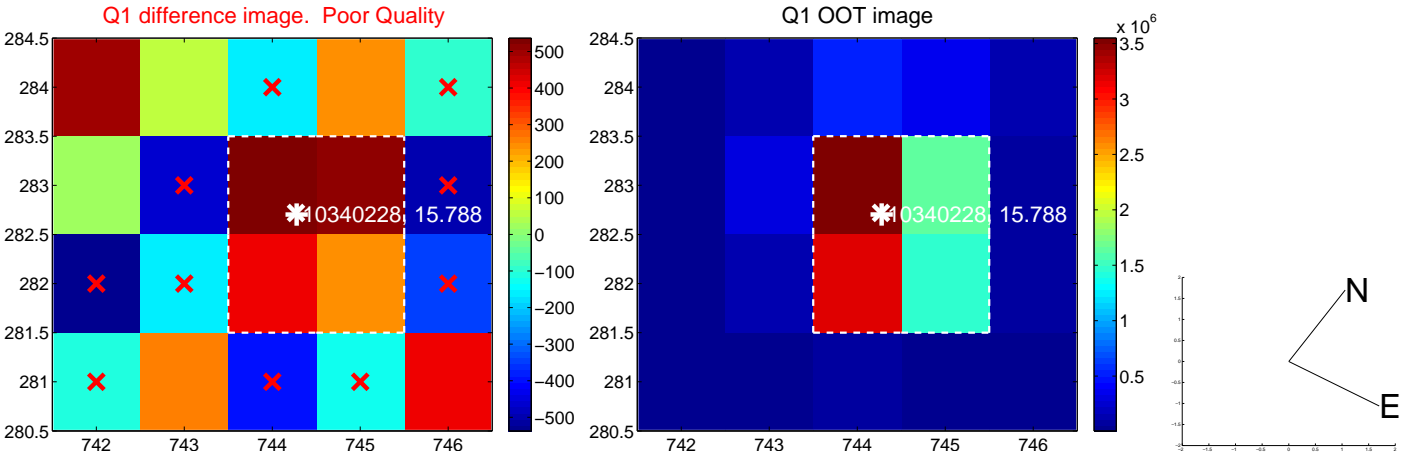
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.953 ± 0.802	1.19	-0.921 ± 0.711	-0.246 ± 0.931
PRF-fit source offset from KIC position	0.963 ± 0.773	1.25	-0.918 ± 0.749	-0.291 ± 0.980
photometric centroid source offset	2.51 ± 1.83	1.37	1.22 ± 2.02	-2.19 ± 1.77

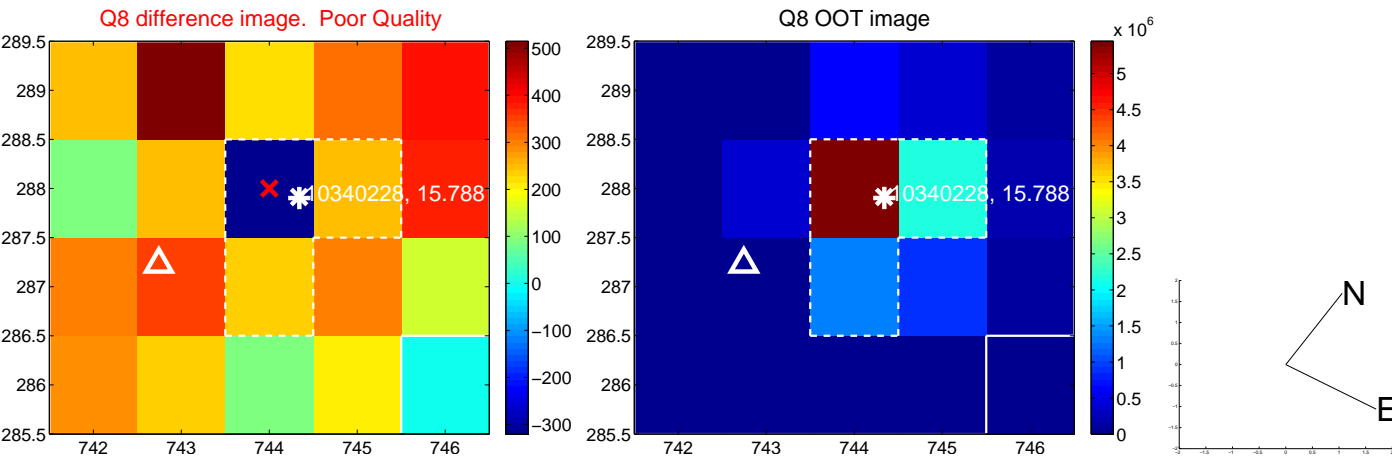
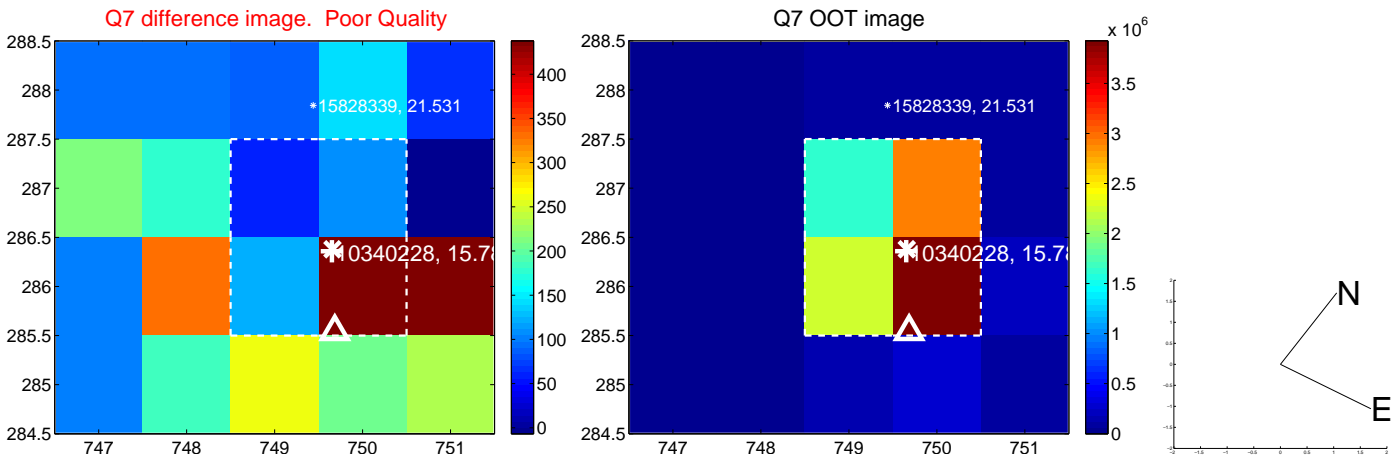
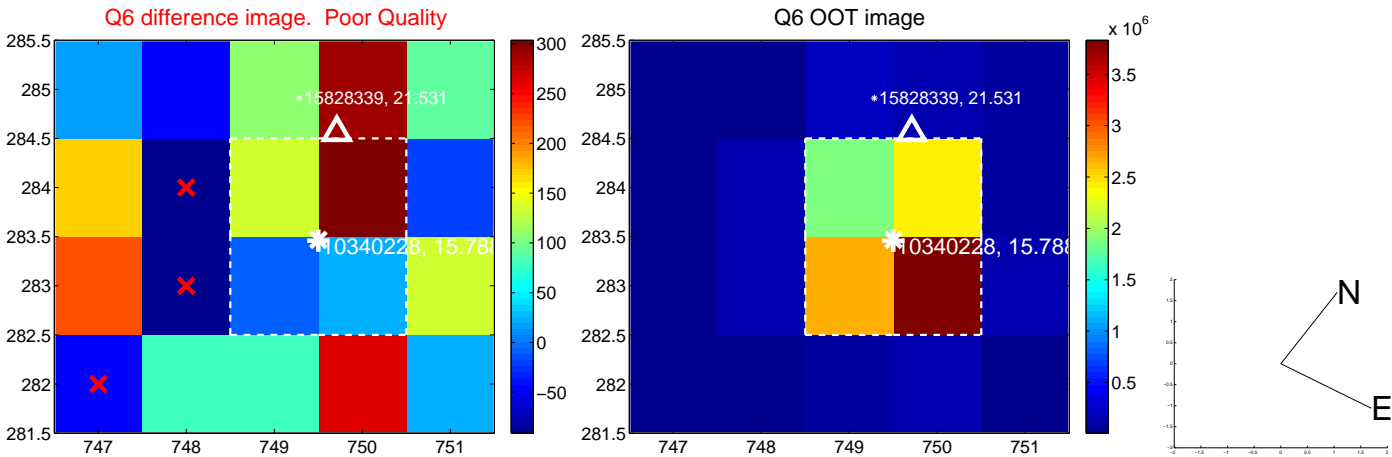
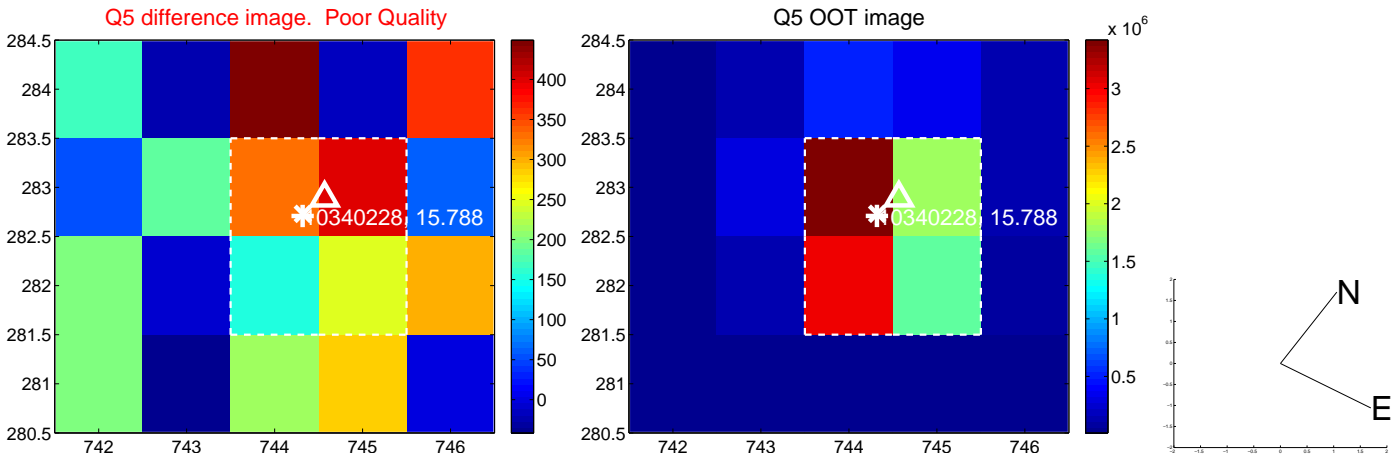


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

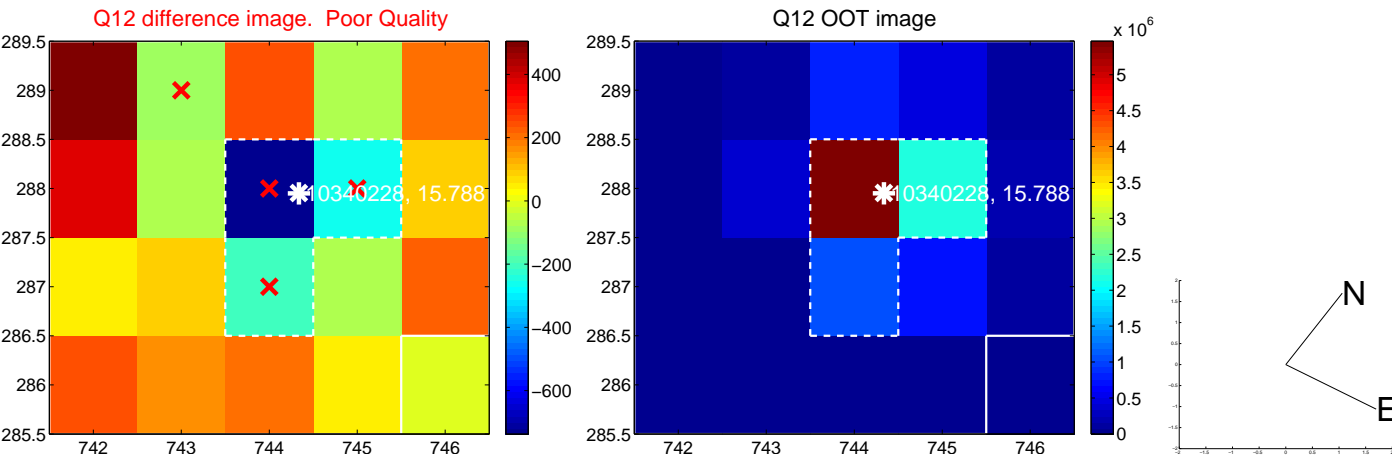
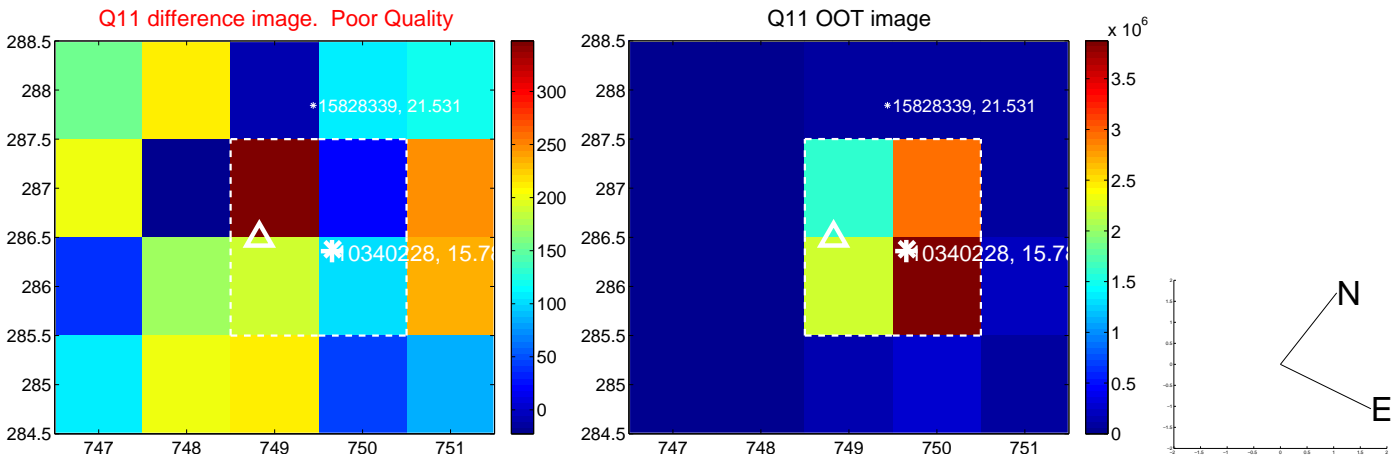
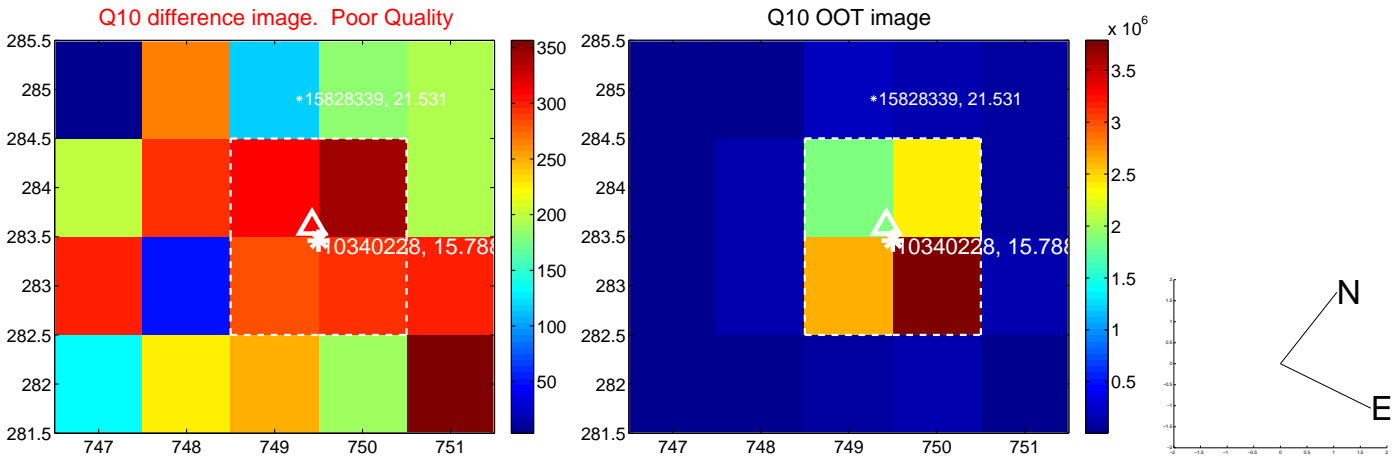
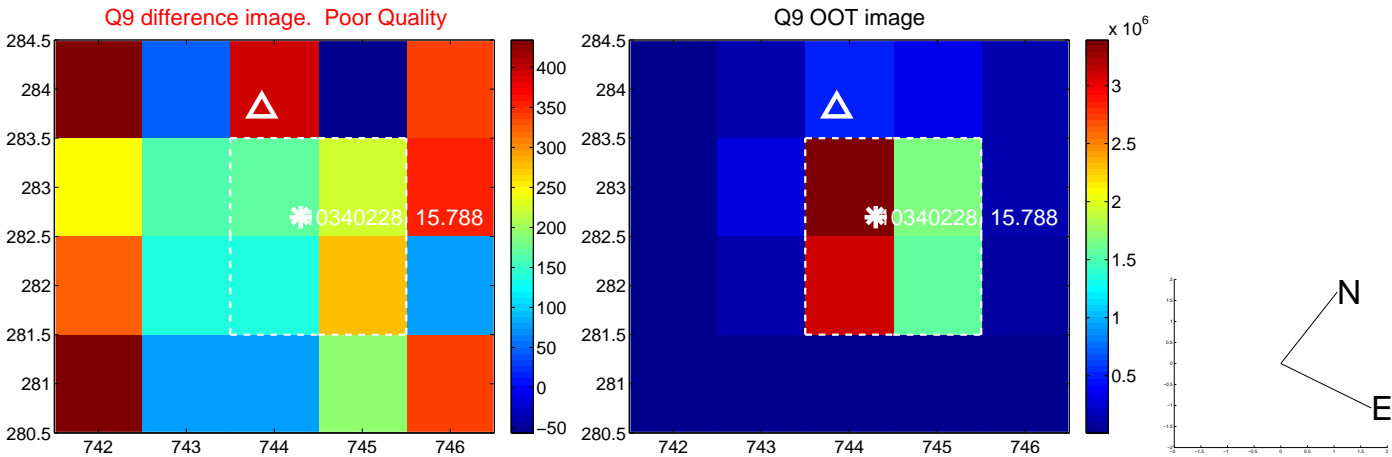
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



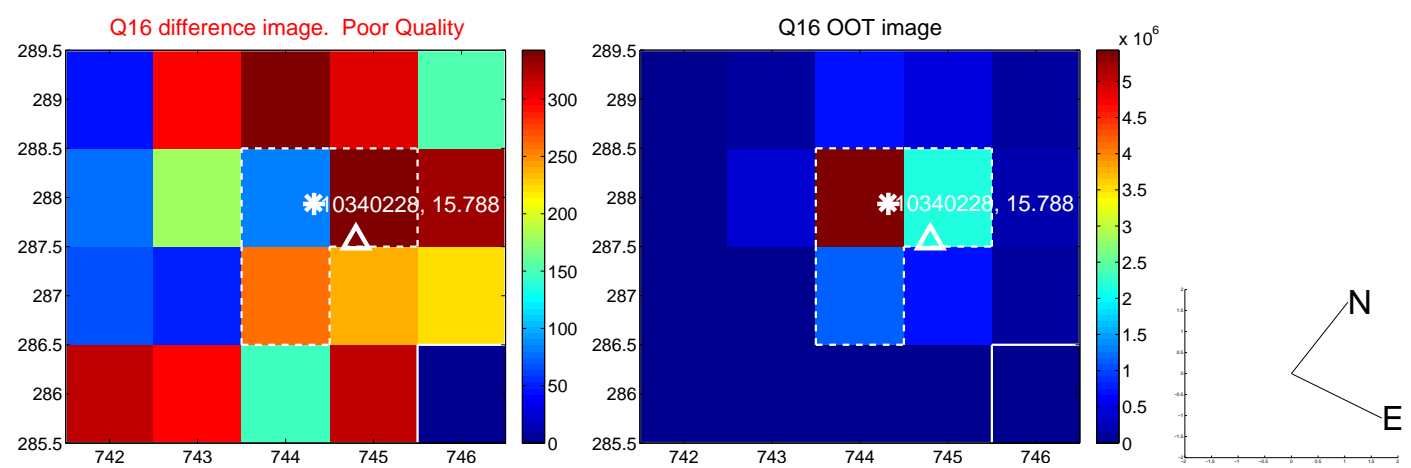
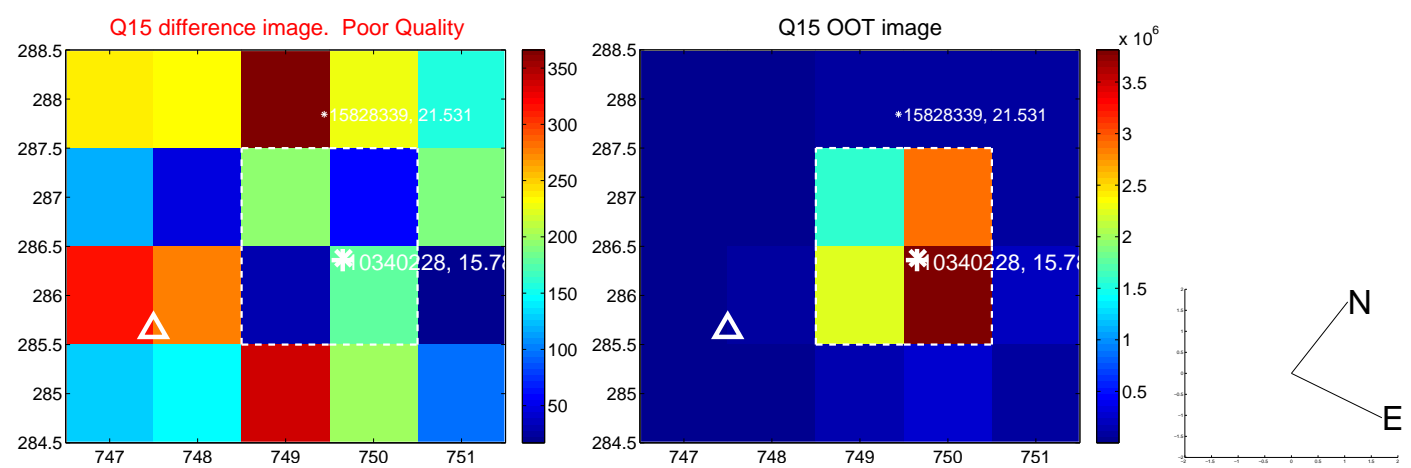
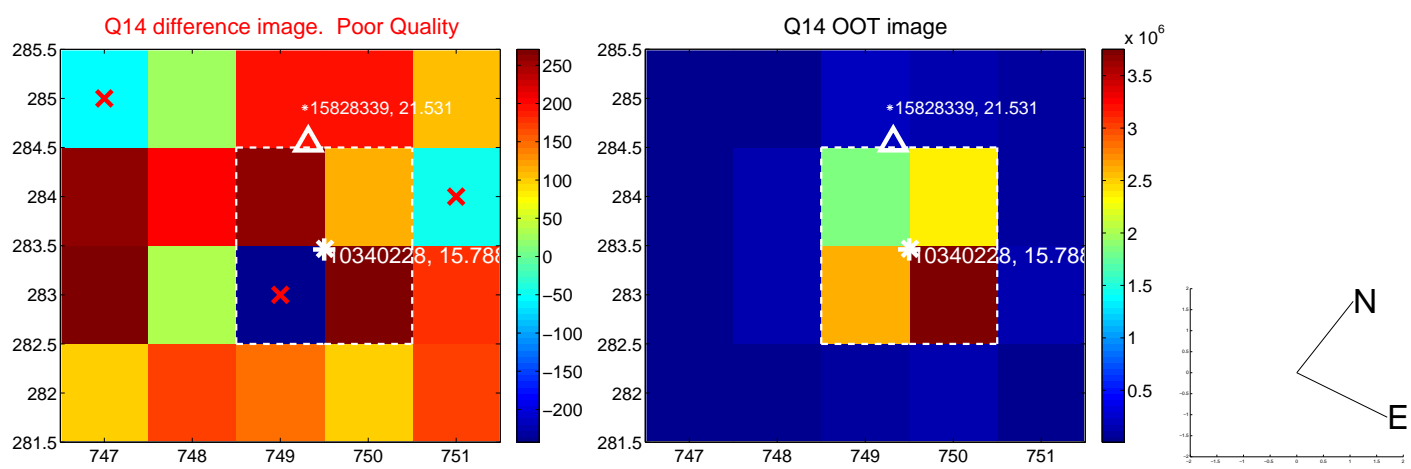
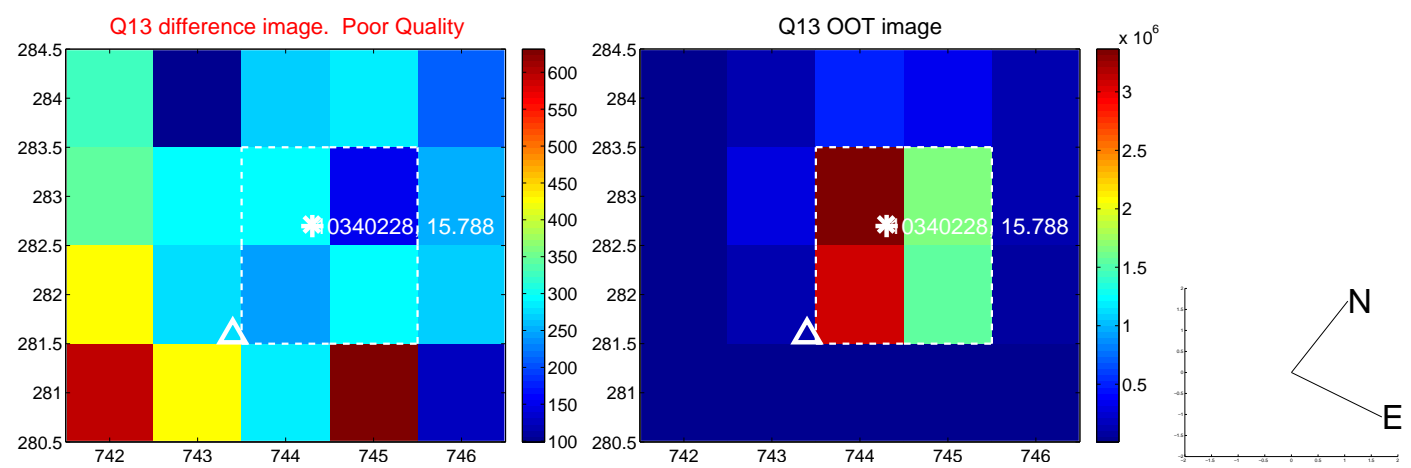
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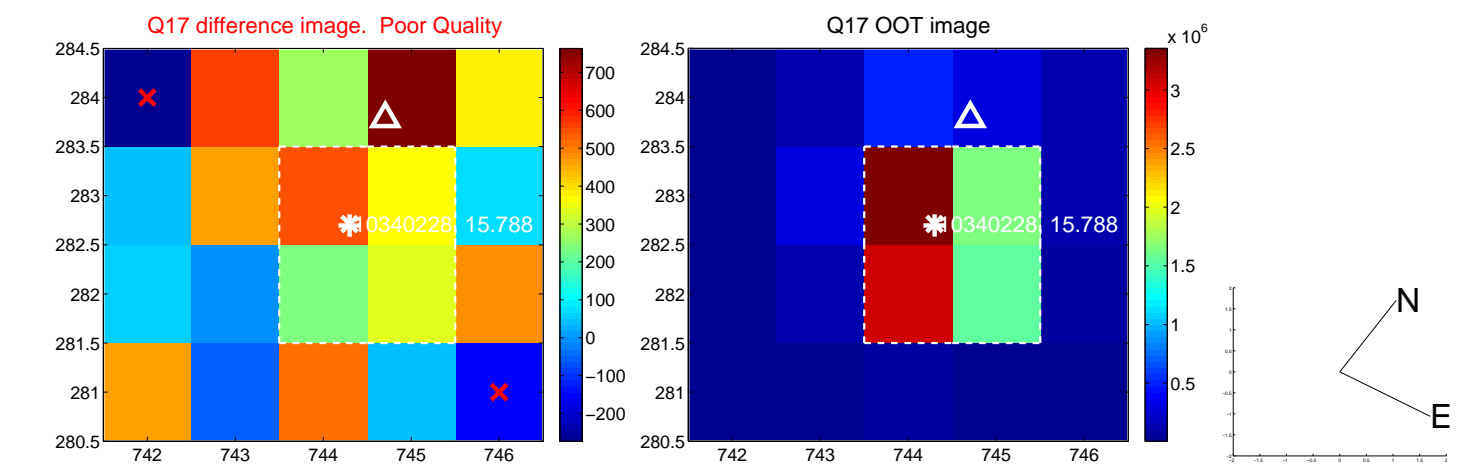
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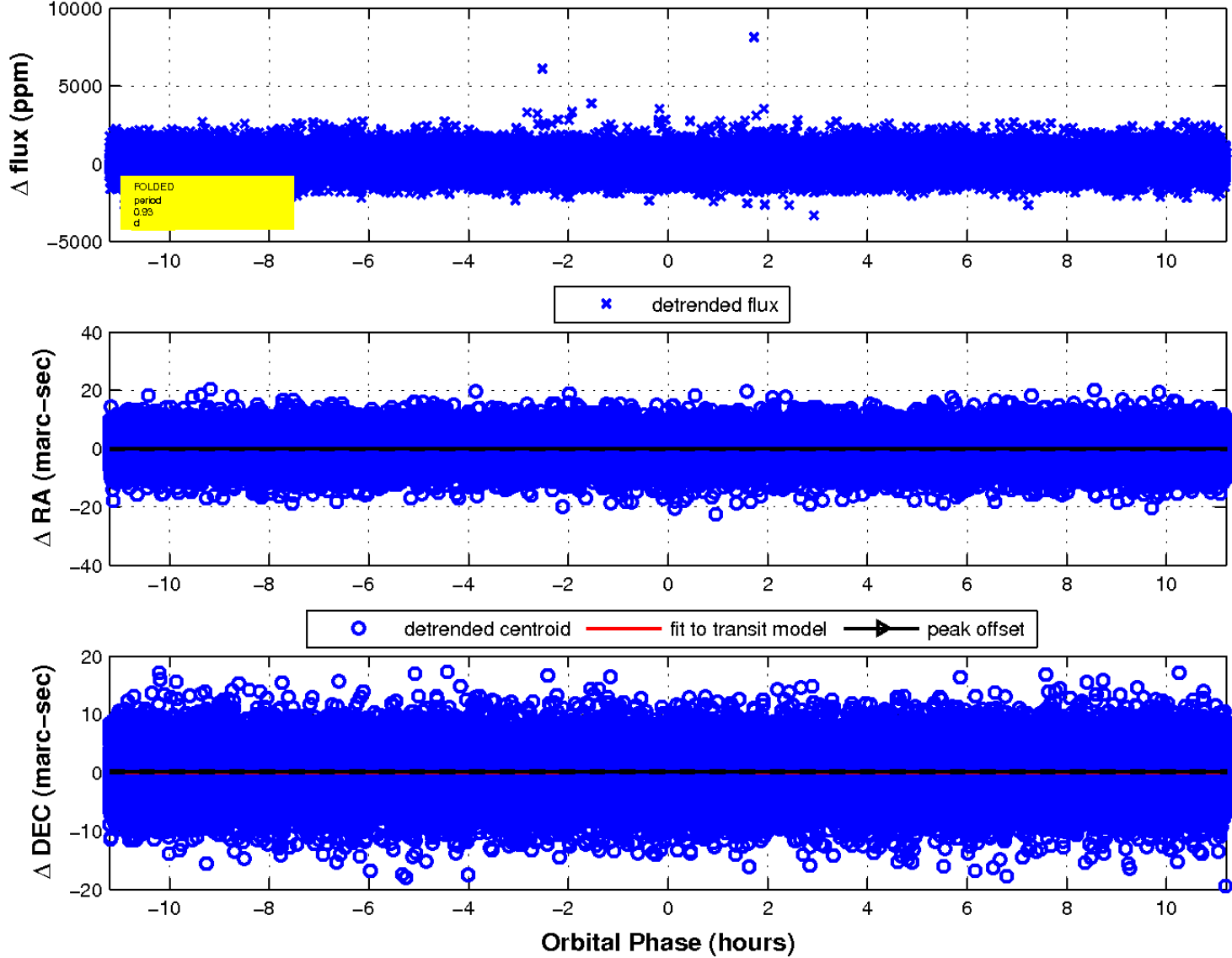
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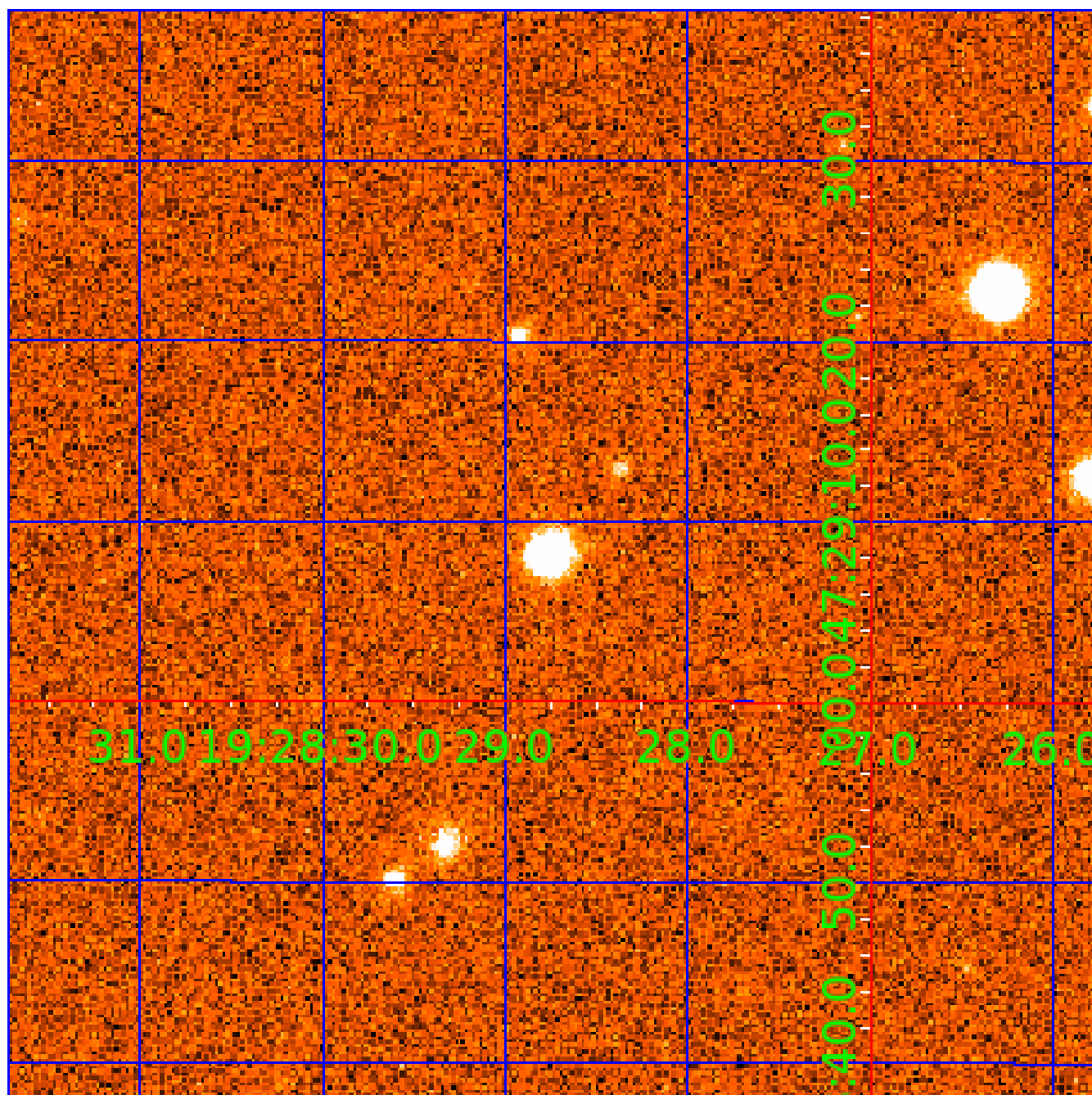


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 010340228

Q1-17 DR25 TCE Parameters

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010340228-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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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.

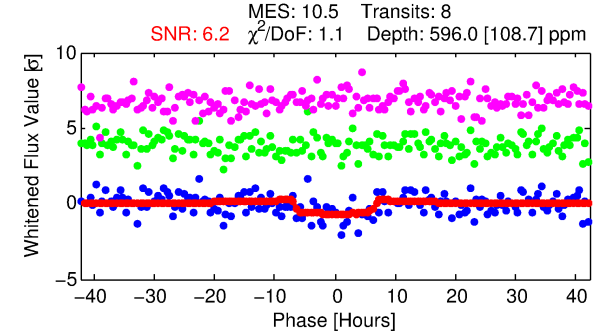
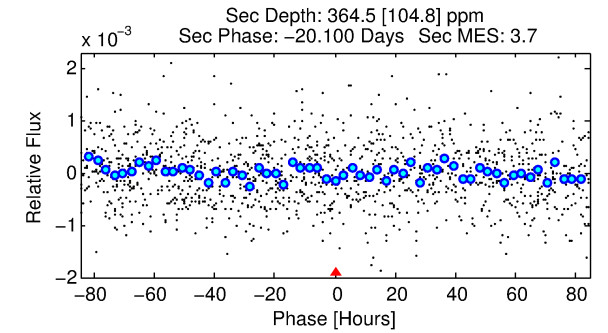
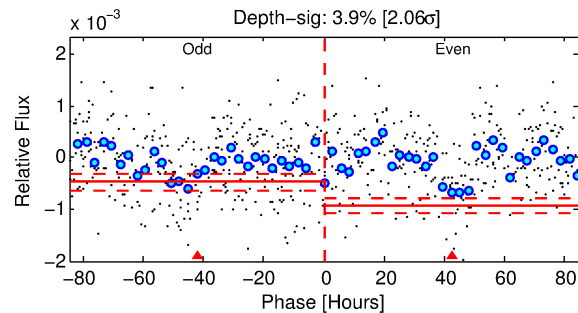
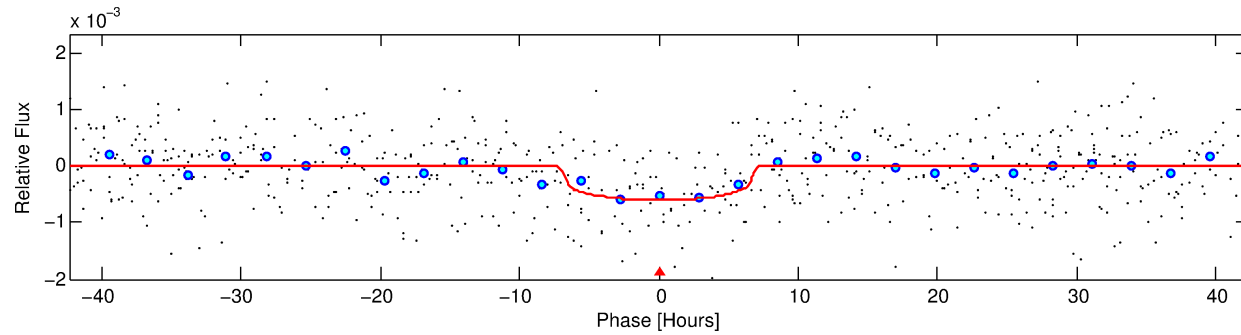
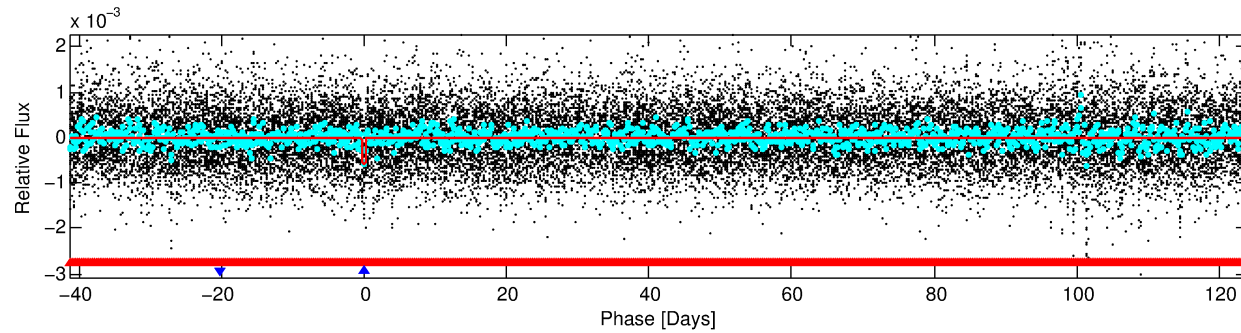
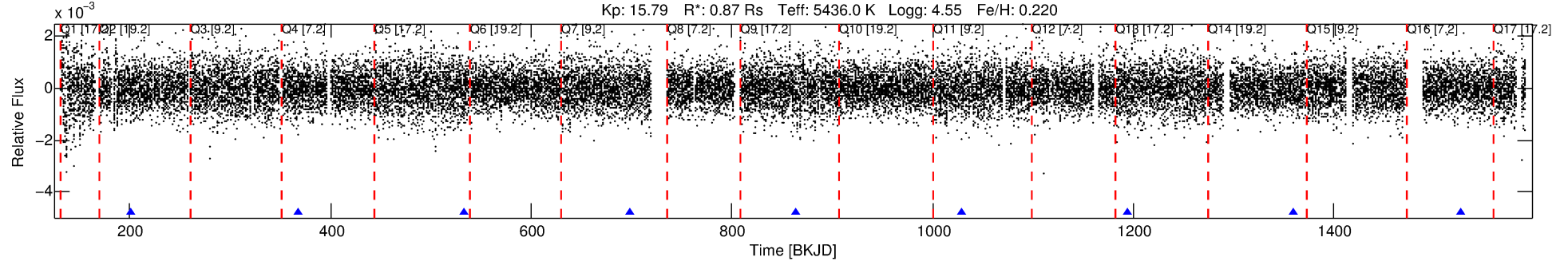
Ephemeris Match Information For 010340228-02

No Significant Match Found

DV One-Page Summary

KIC: 10340228 Candidate: 2 of 2 Period: 165.511 d
KOI: K07312 Corr: No Ephemeris Match

Kp: 15.79 R*: 0.87 Rs Teff: 5436.0 K Logg: 4.55 Fe/H: 0.220



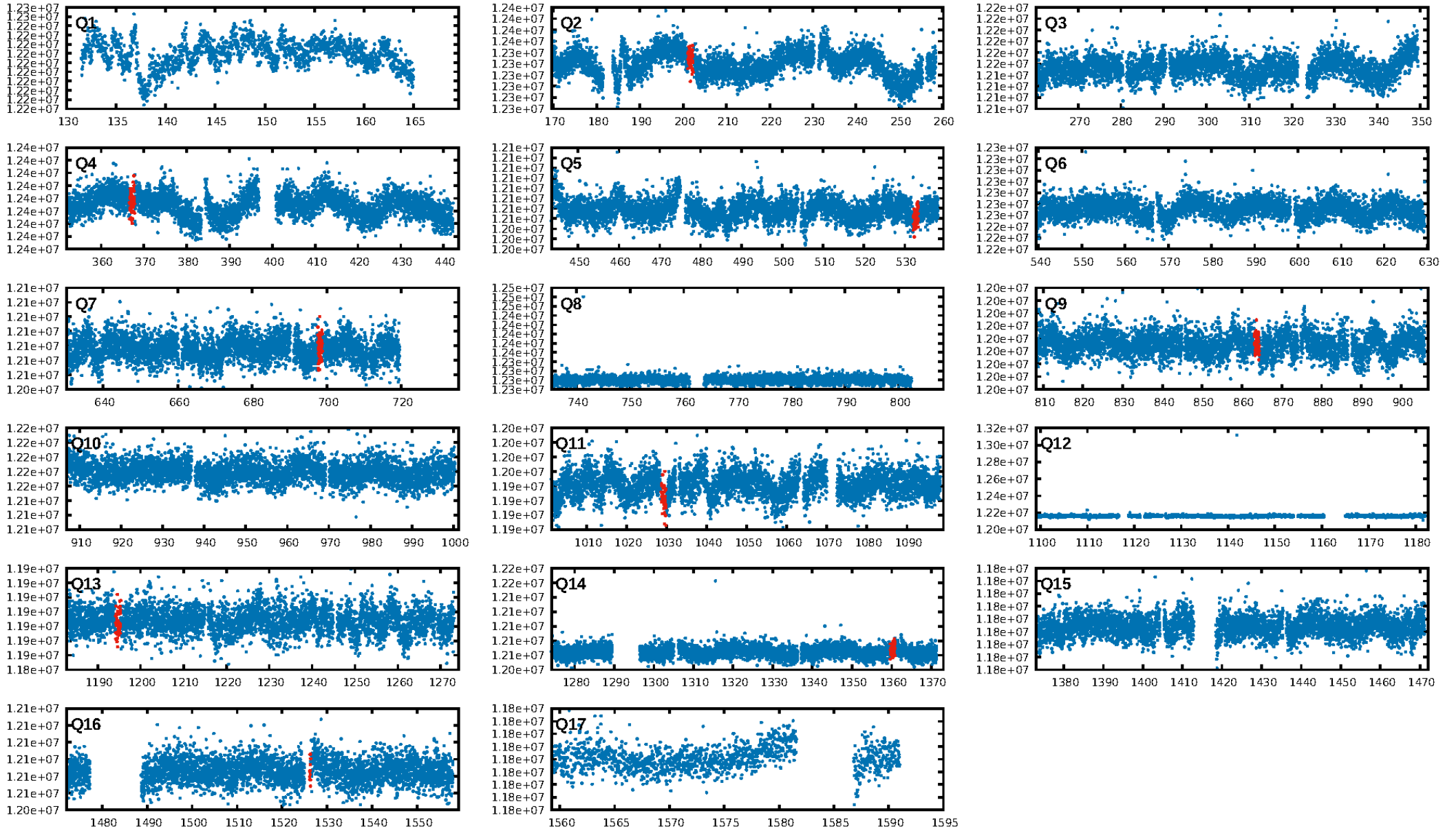
DV Fit Results:

Period = 165.51107 [0.00819] d
Epoch = 201.6911 [0.0316] BKJD
Rp/R* = 0.0235 [0.0139]
a/R* = 70.10 [159.20]
b = 0.66 [1.95]
Seff = 1.73 [0.56]
Teq = 292 [24] K
Rp = 2.23 [1.42] Re
a = 0.5847 [0.1178] AU
Ag = 13749.87 [17262.34] [0.80σ]
Teffp = 4895 [1498] K [3.07σ]

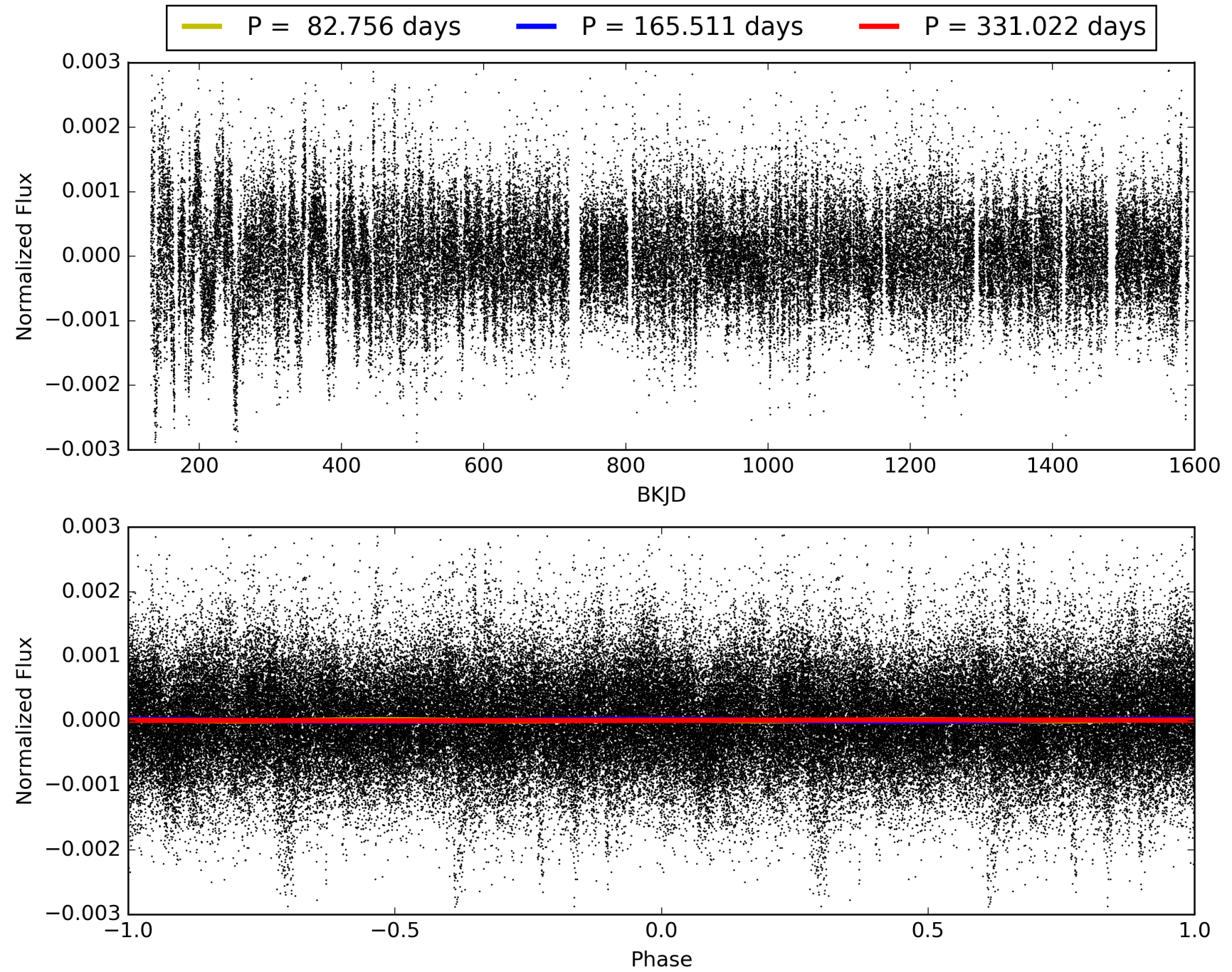
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [269.48σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 4.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.12e-14
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: -0.722
Centroid-sig: 3.6%
Centroid-so: 2.365 arcsec [1.46σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 0.00 [0/6]

TCE 010340228-02, PDC Light Curves

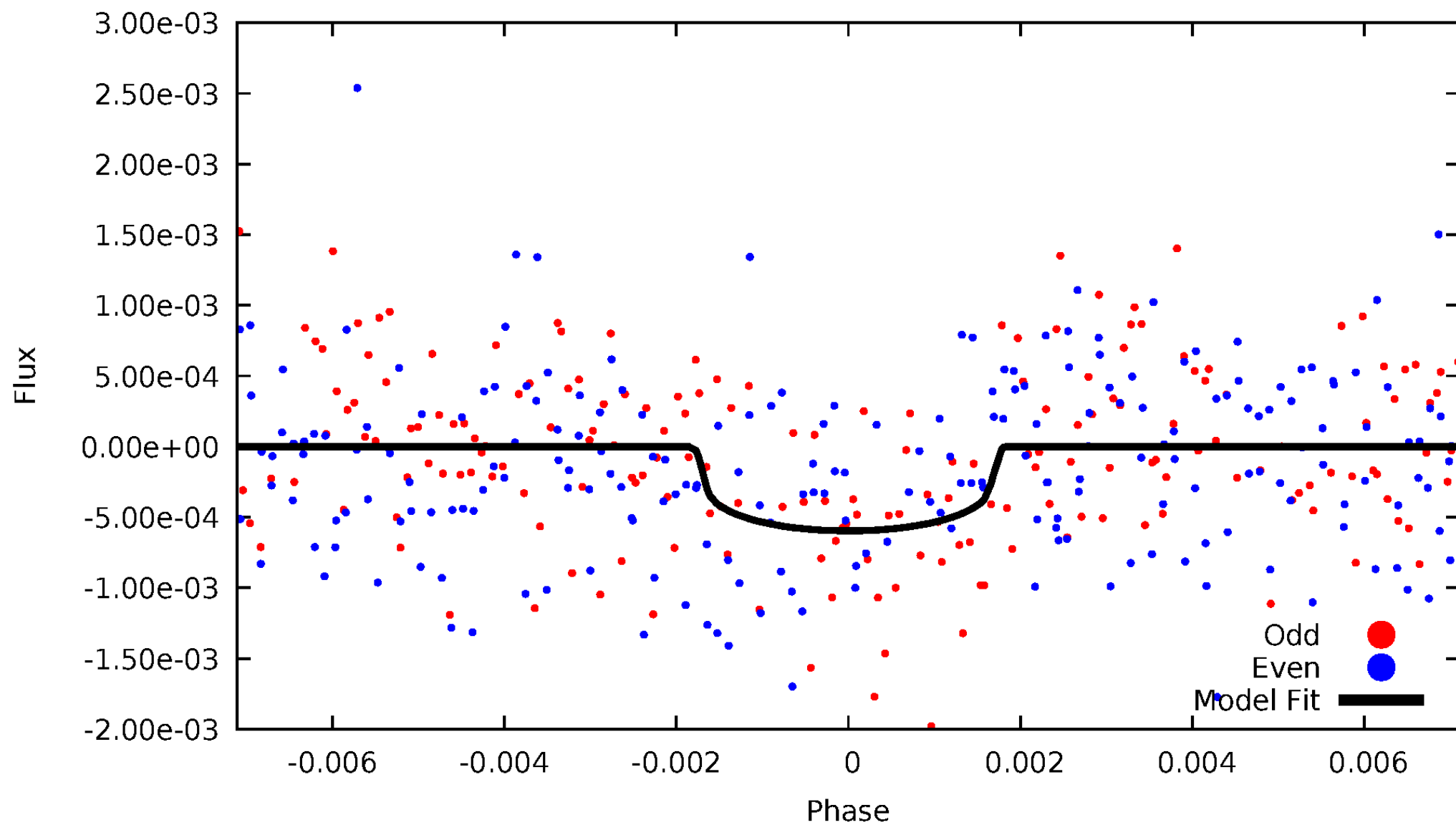


TCE 010340228-02



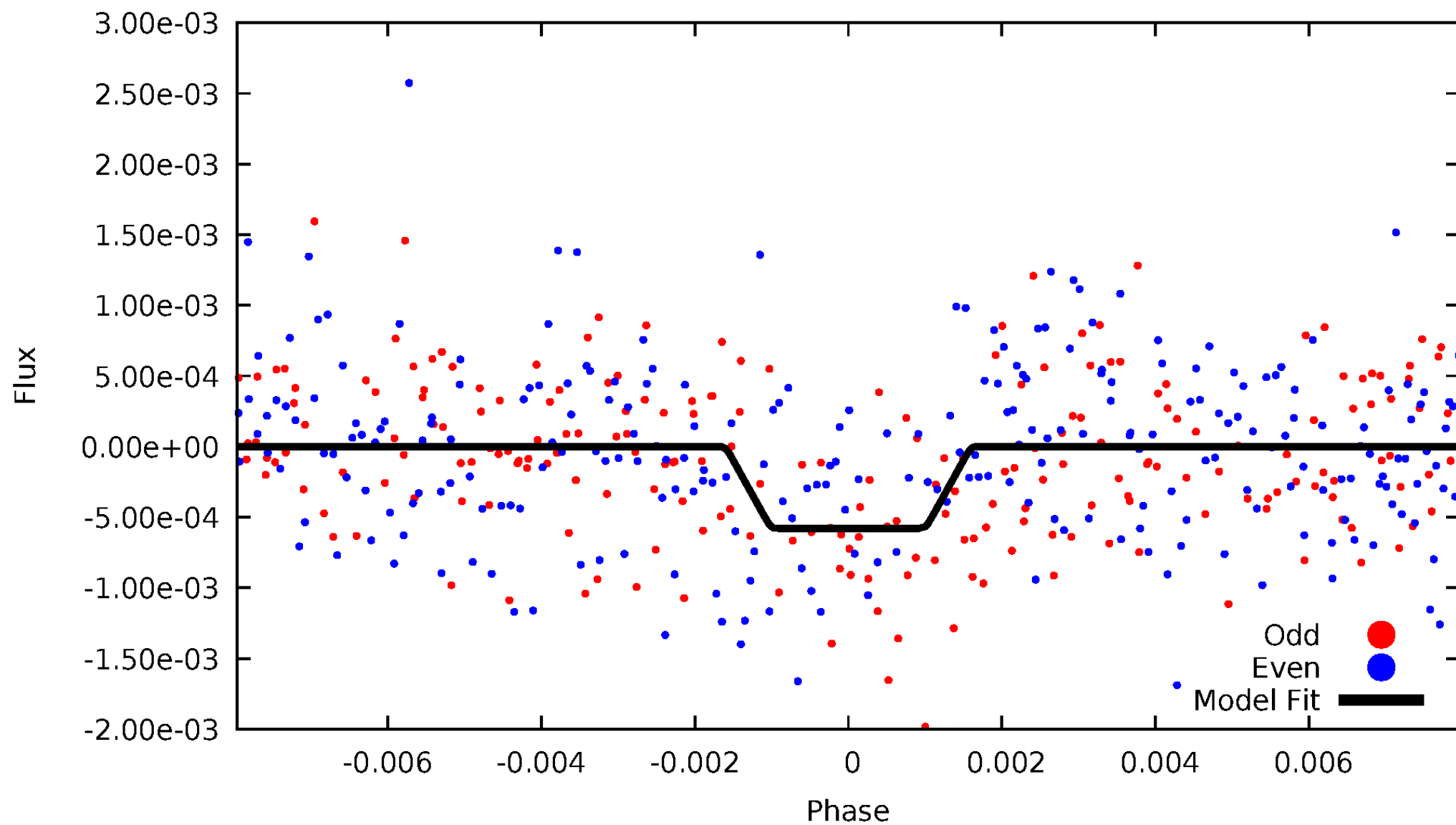
DV Odd/Even

TCE 010340228-02



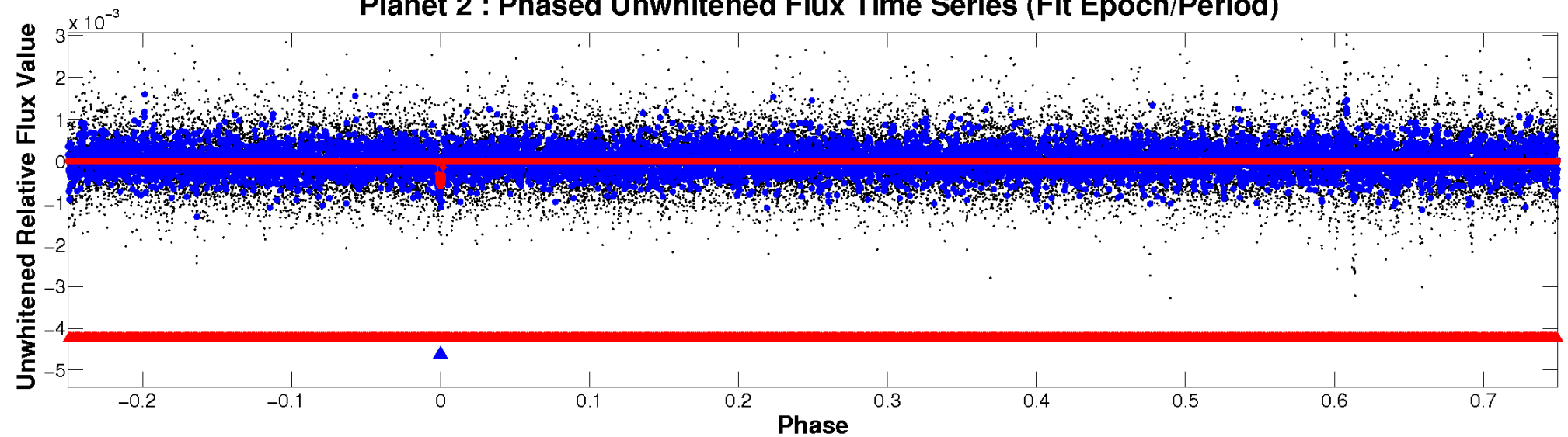
ALT Odd/Even

TCE 010340228-02

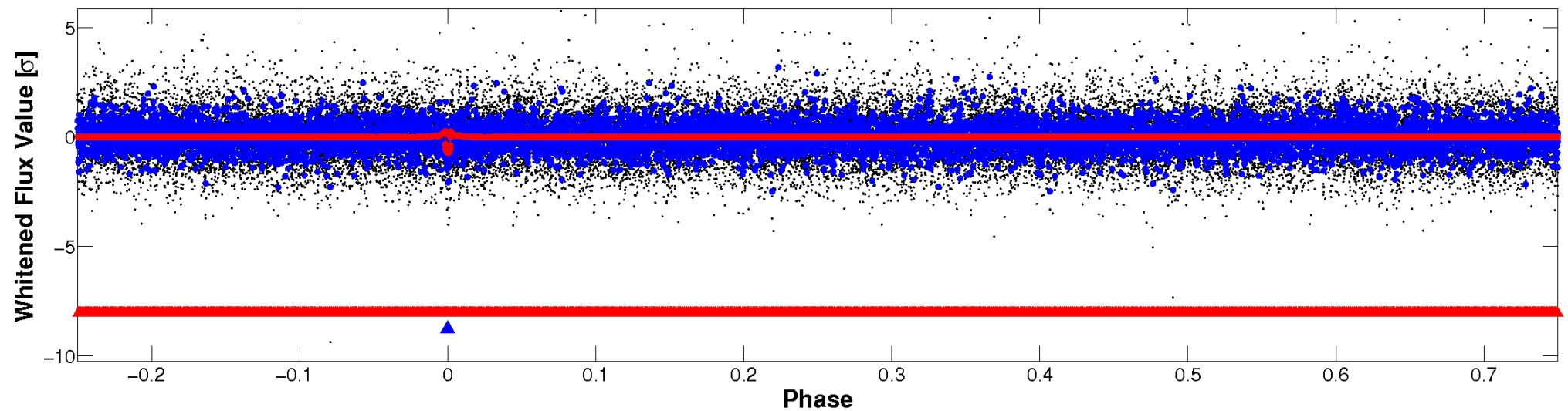


Non-Whitened Vs. Whitened Light Curve

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

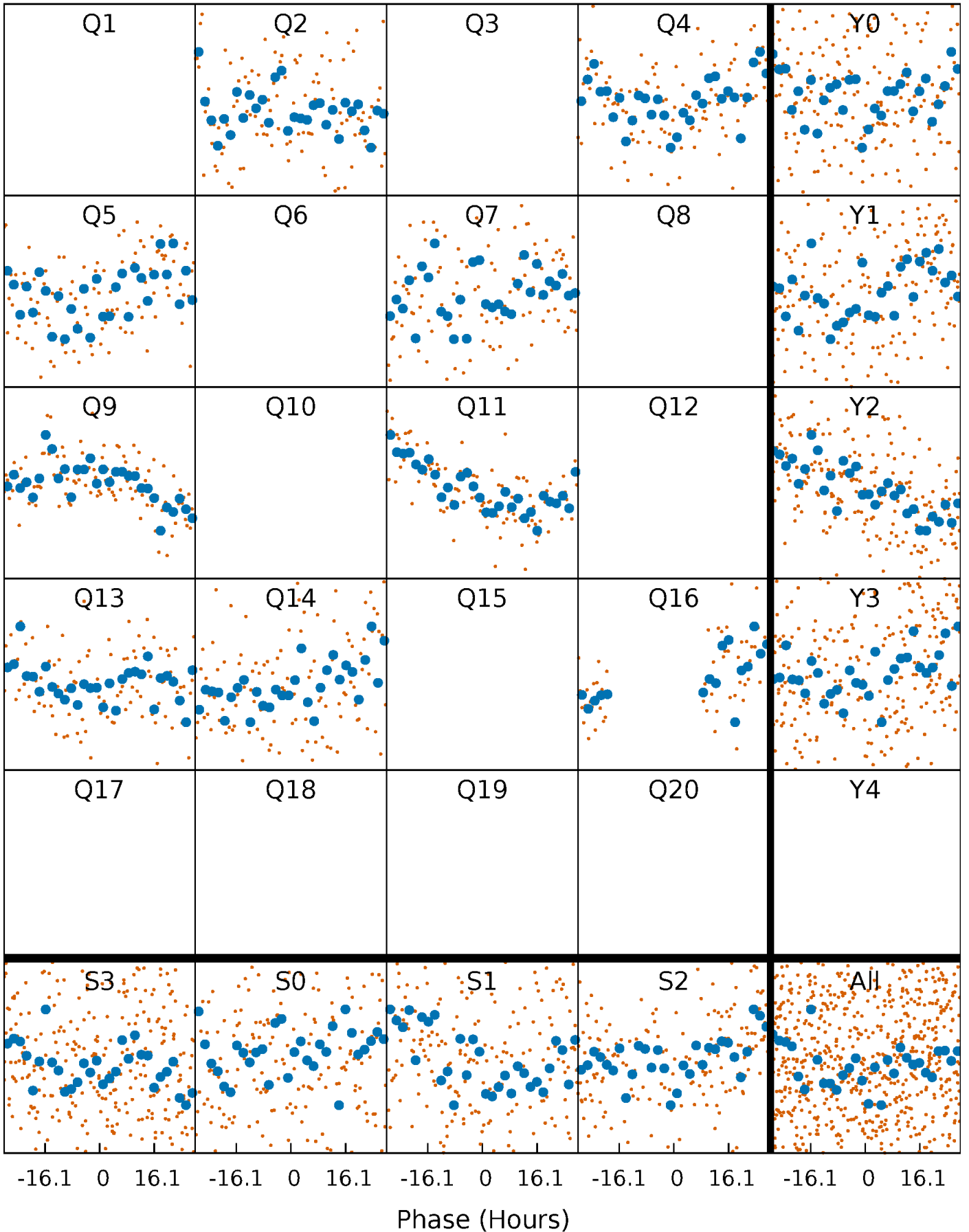


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



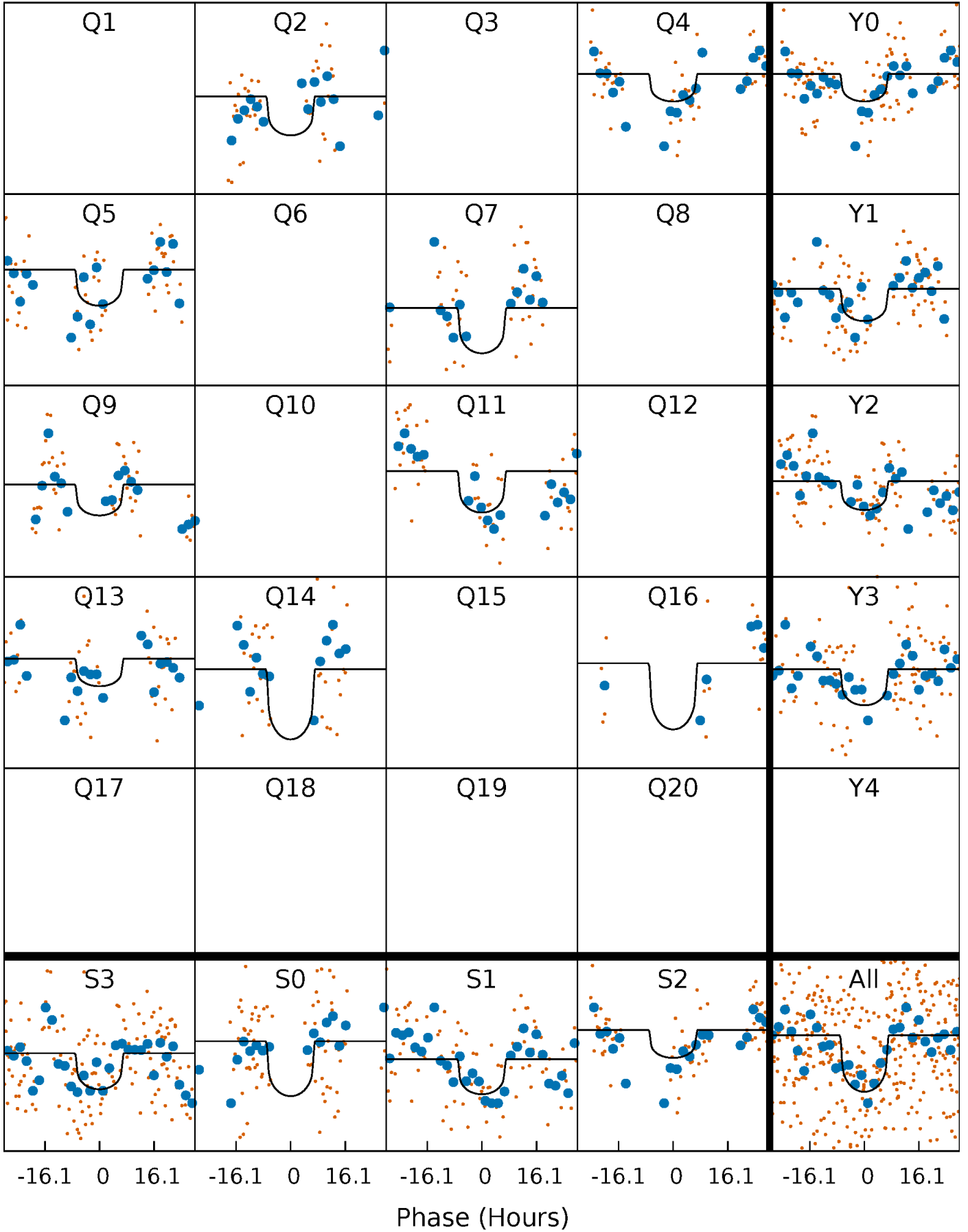
PDC Quarter-Phased Transit Curves

TCE 010340228-02 P=165.511070 Days $T_0=201.691131$ (BKJD)



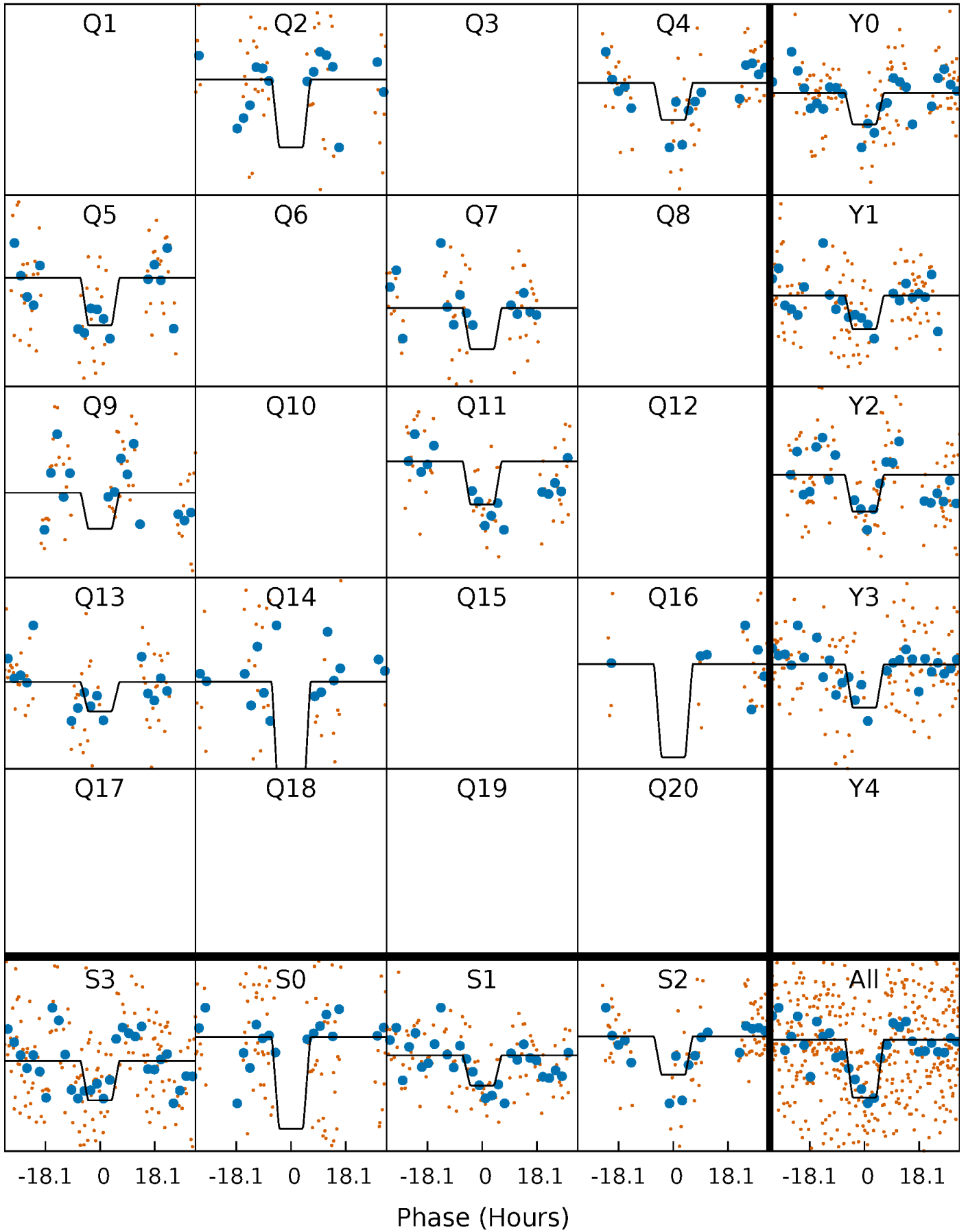
DV Quarter-Phased Transit Curves

TCE 010340228-02 $P=165.511070$ Days $T_0=201.691131$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

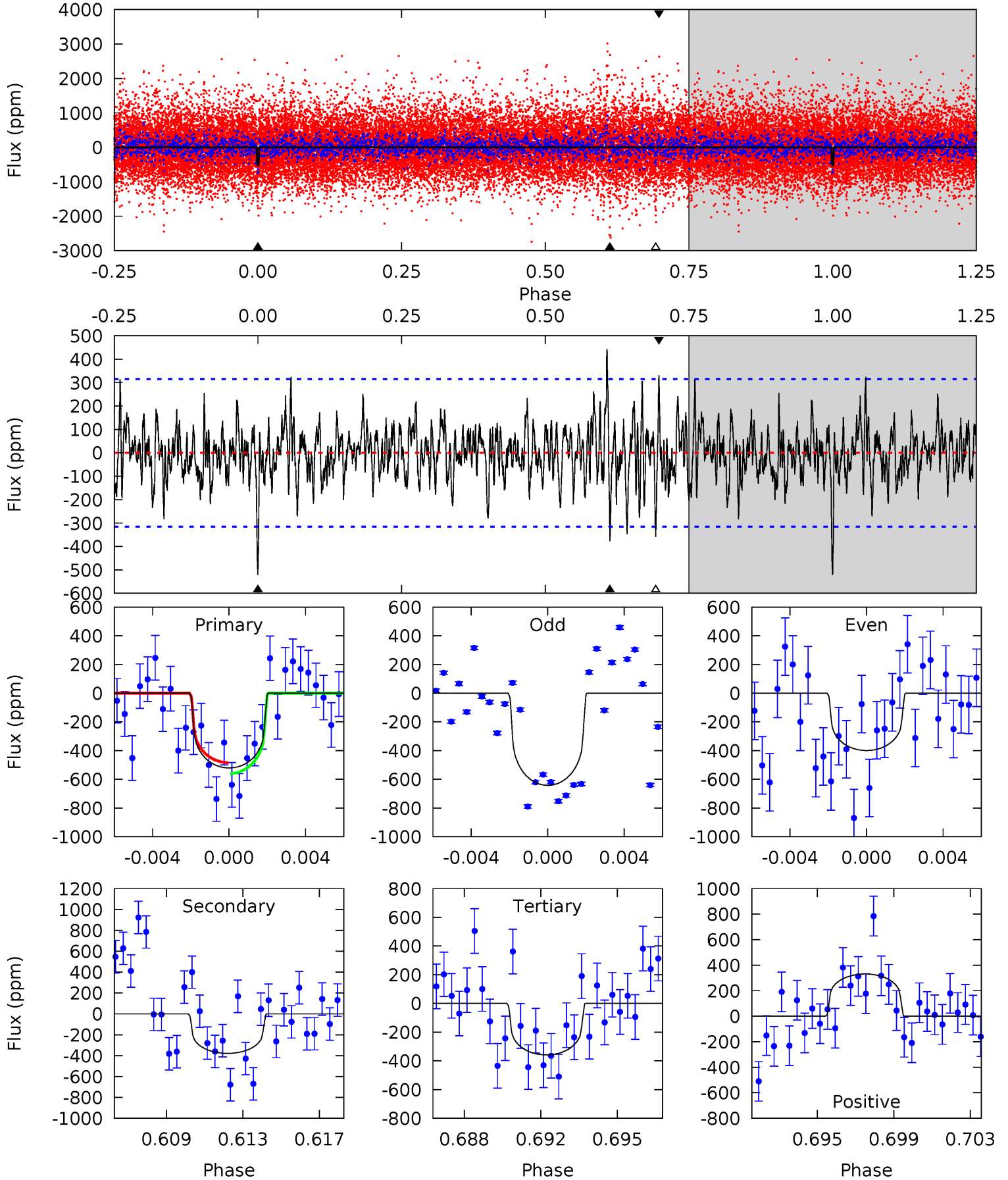
TCE 010340228-02 P=165.518647 Days $T_0=201.646912$ (BKJD)



DV Model-Shift Uniqueness Test

010340228-02, $P = 165.511070$ Days, $E = 36.180061$ Days

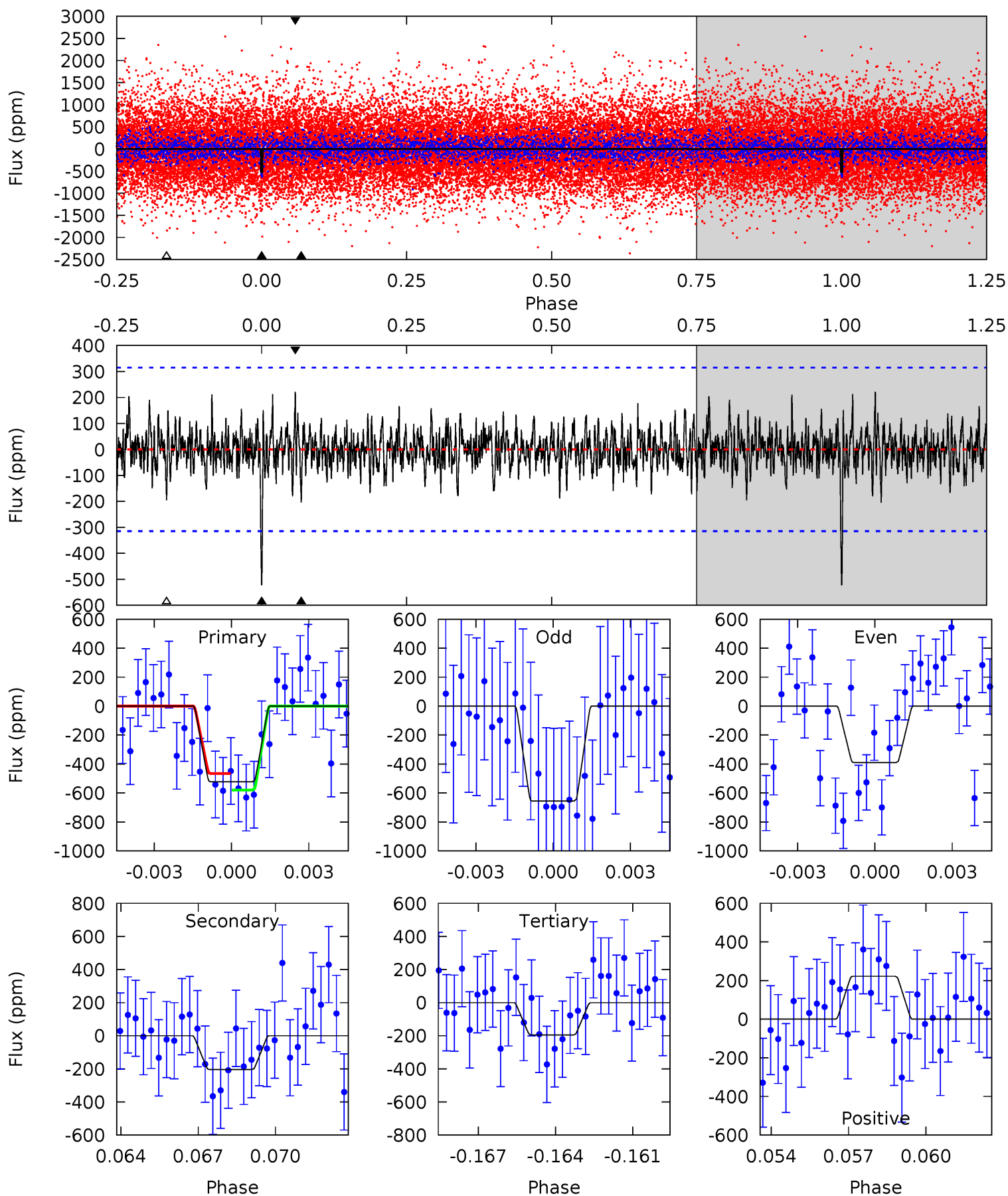
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.61	6.25	5.92	5.47	5.22	2.91	1.63	2.69	3.14	0.33	0.78	2.01	0.92	0.46	0.63



Alt Model-Shift Uniqueness Test

010340228-02, P = 165.518647 Days, E = 36.128265 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.68	3.39	3.24	3.69	5.23	2.93	0.99	5.44	4.99	0.15	-0.30	2.22	0.76	0.30	0.95



Stellar Parameters For KIC 010340228

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5436^{+164}_{-164}	$4.548^{+0.030}_{-0.170}$	$0.220^{+0.200}_{-0.300}$	$0.869^{+0.200}_{-0.067}$	$0.973^{+0.065}_{-0.098}$	$2.090^{+0.323}_{-0.917}$
	+3%/-3%	+1%/-4%	+91%/-136%	+23%/-8%	+7%/-10%	+15%/-44%
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 010340228-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-378 ± 60	$2.40^{+1.27}_{-1.19}$	417^{+26}_{-18}	4959^{+1991}_{-794}	12293^{+38082}_{-7161}
Alt.	-204 ± 60	$2.51^{+1.34}_{-1.35}$	419^{+24}_{-19}	4313^{+1655}_{-657}	5989^{+21060}_{-3647}

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

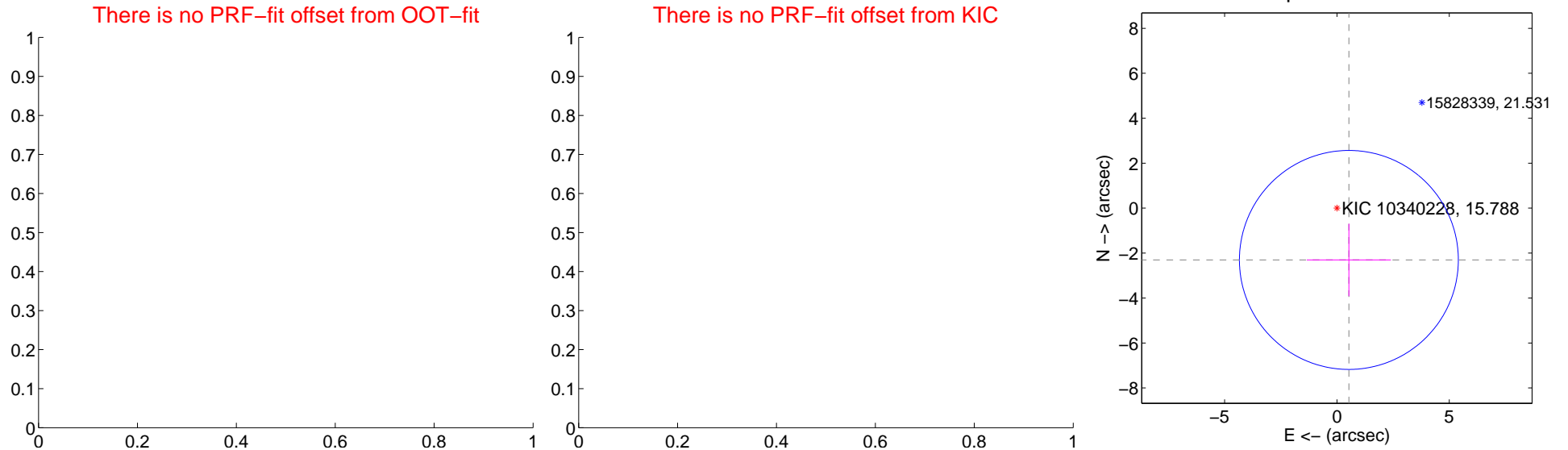
DV Centroid Data

Supplemental centroid analysis for 010340228-02. Kepler magnitude: 15.79. Transit SNR 6.16

There are 0 quarters with good PRF difference image offsets

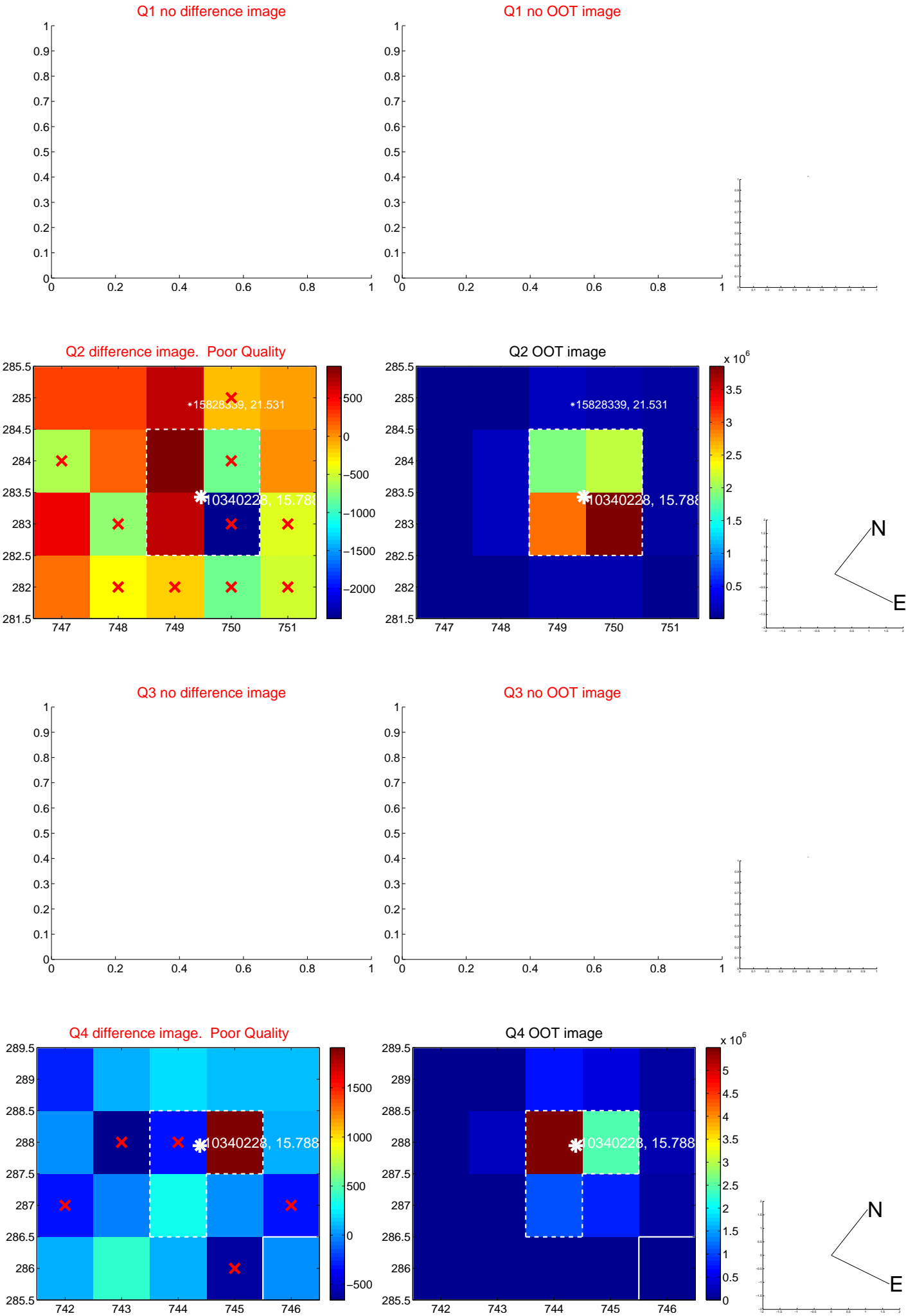
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	2.36 ± 1.62	1.46	-0.53 ± 1.87	-2.30 ± 1.61

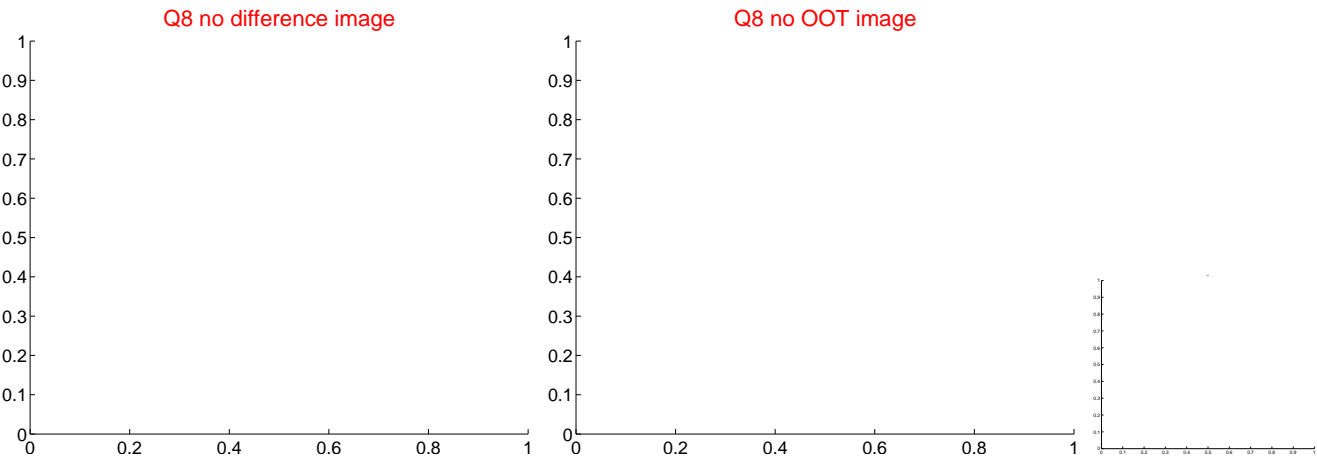
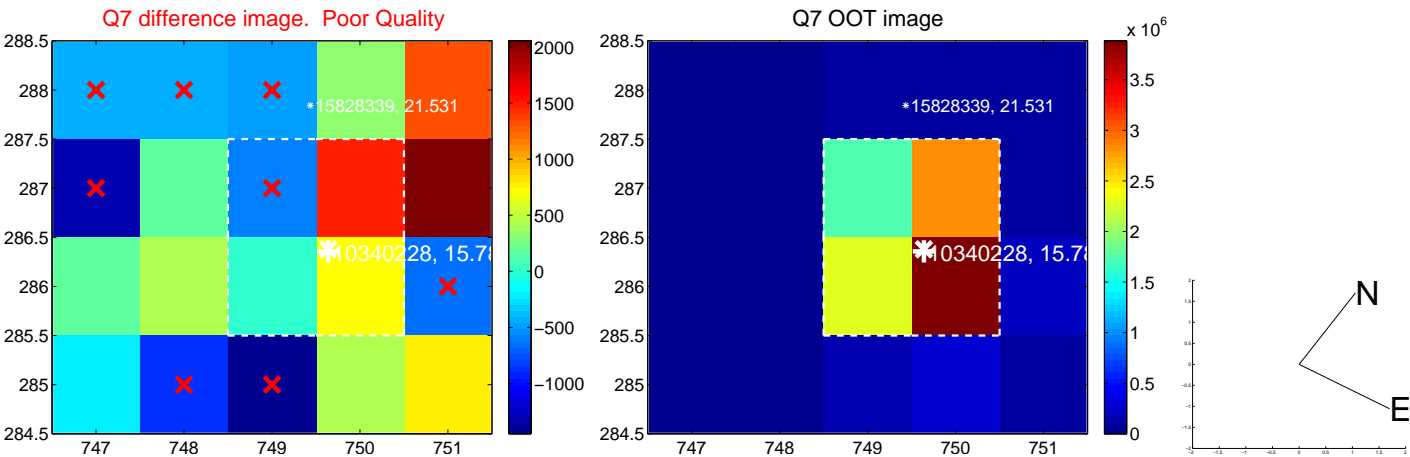
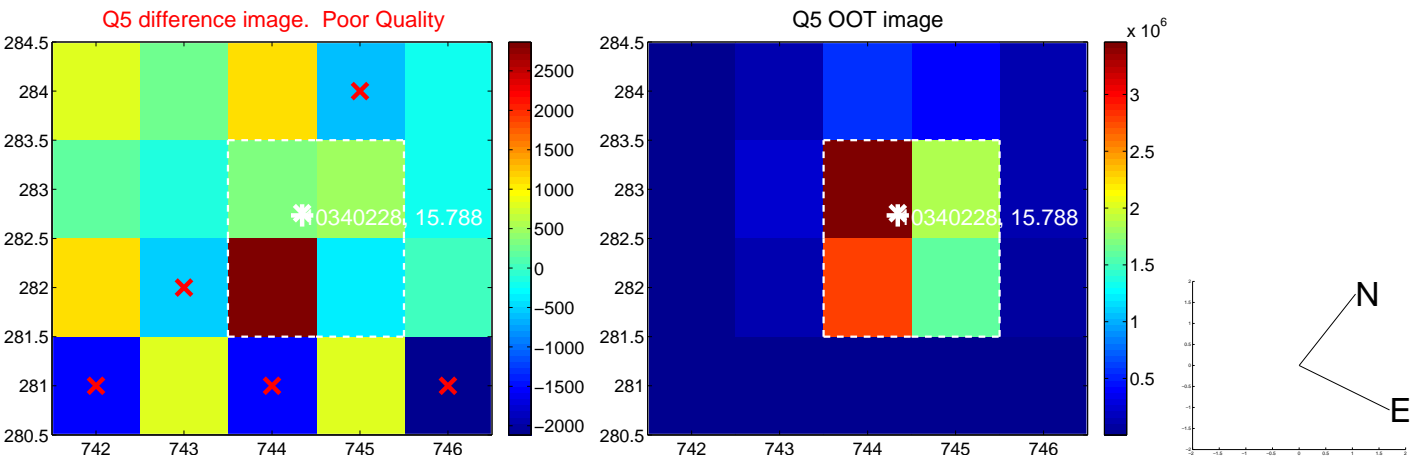


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

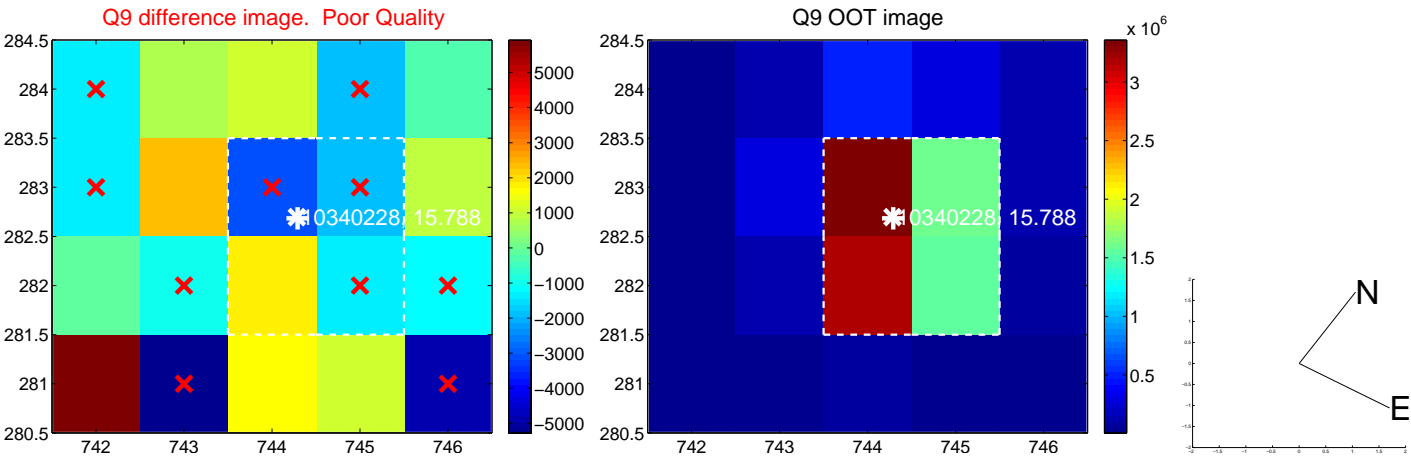
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



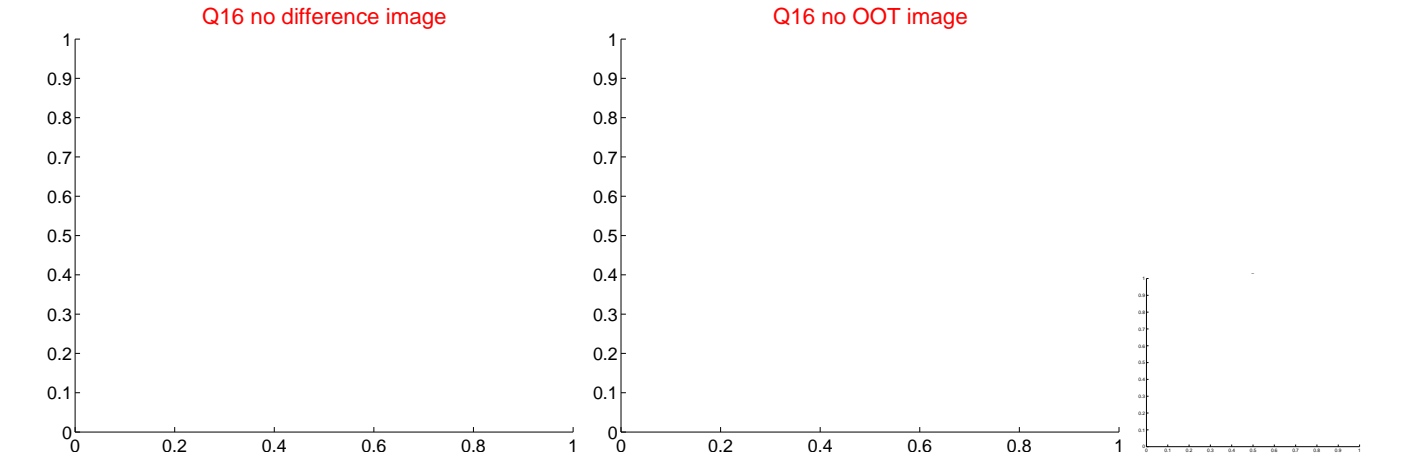
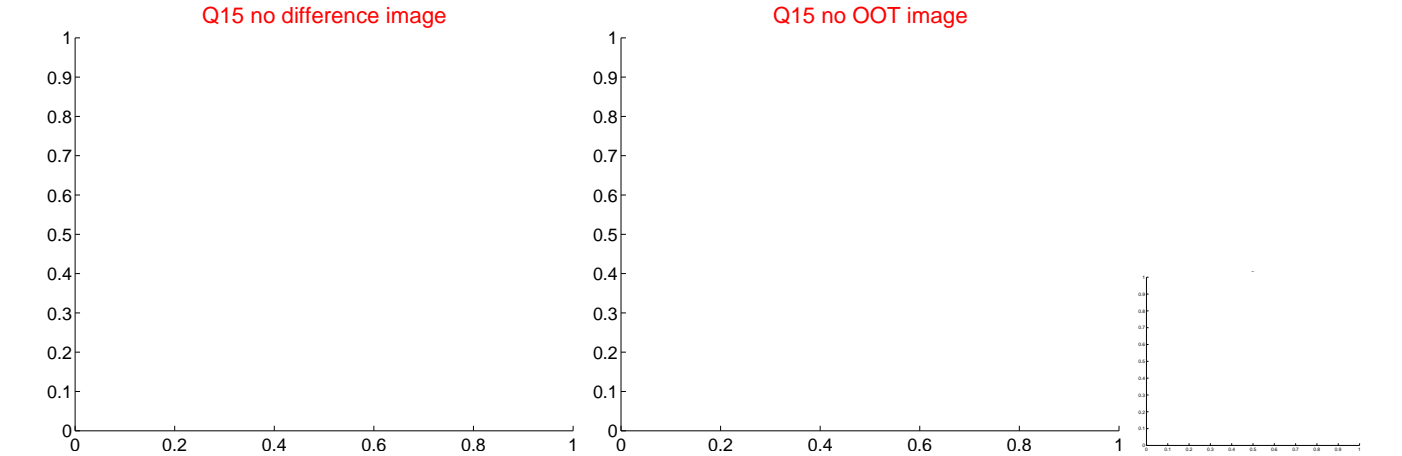
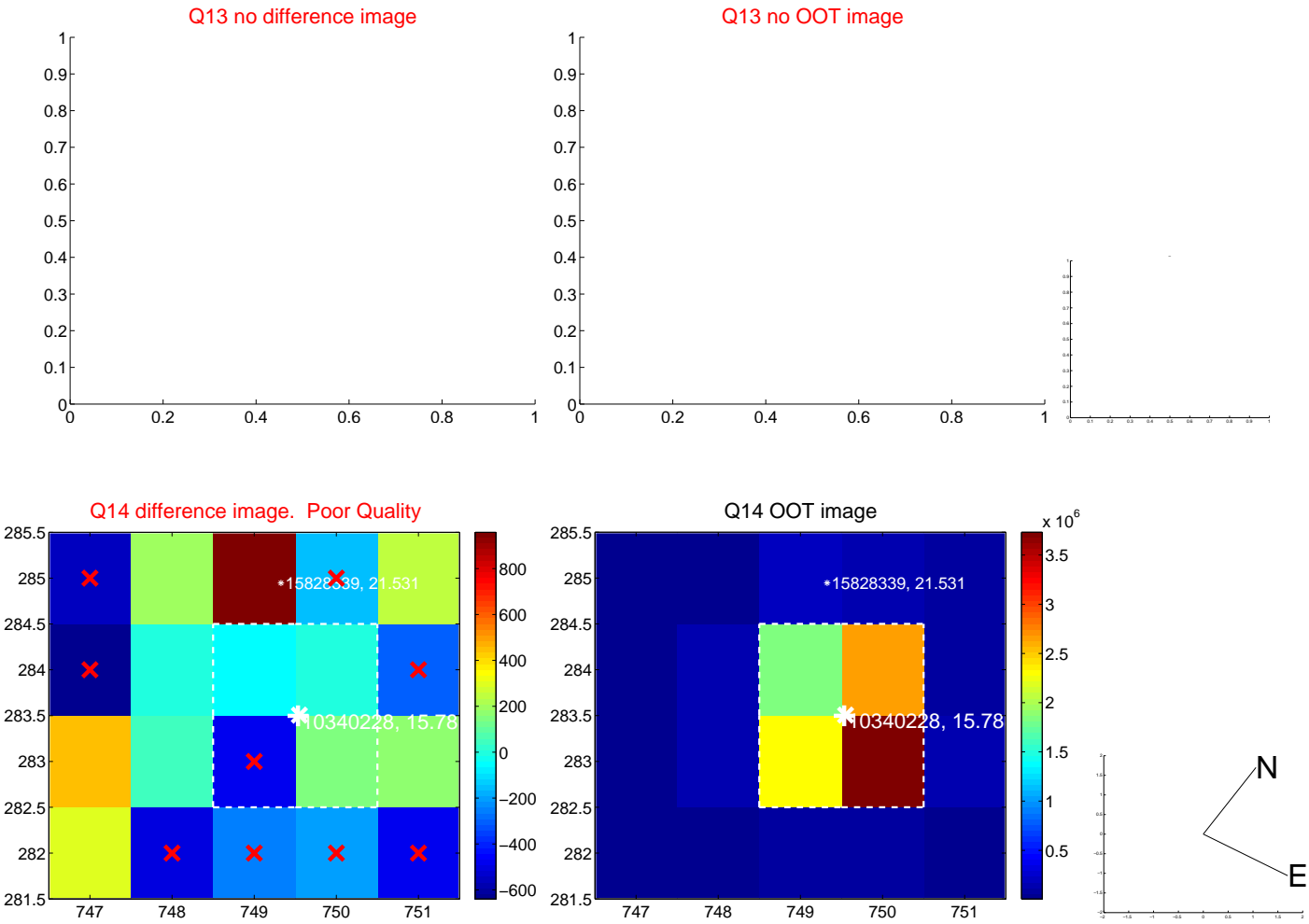
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



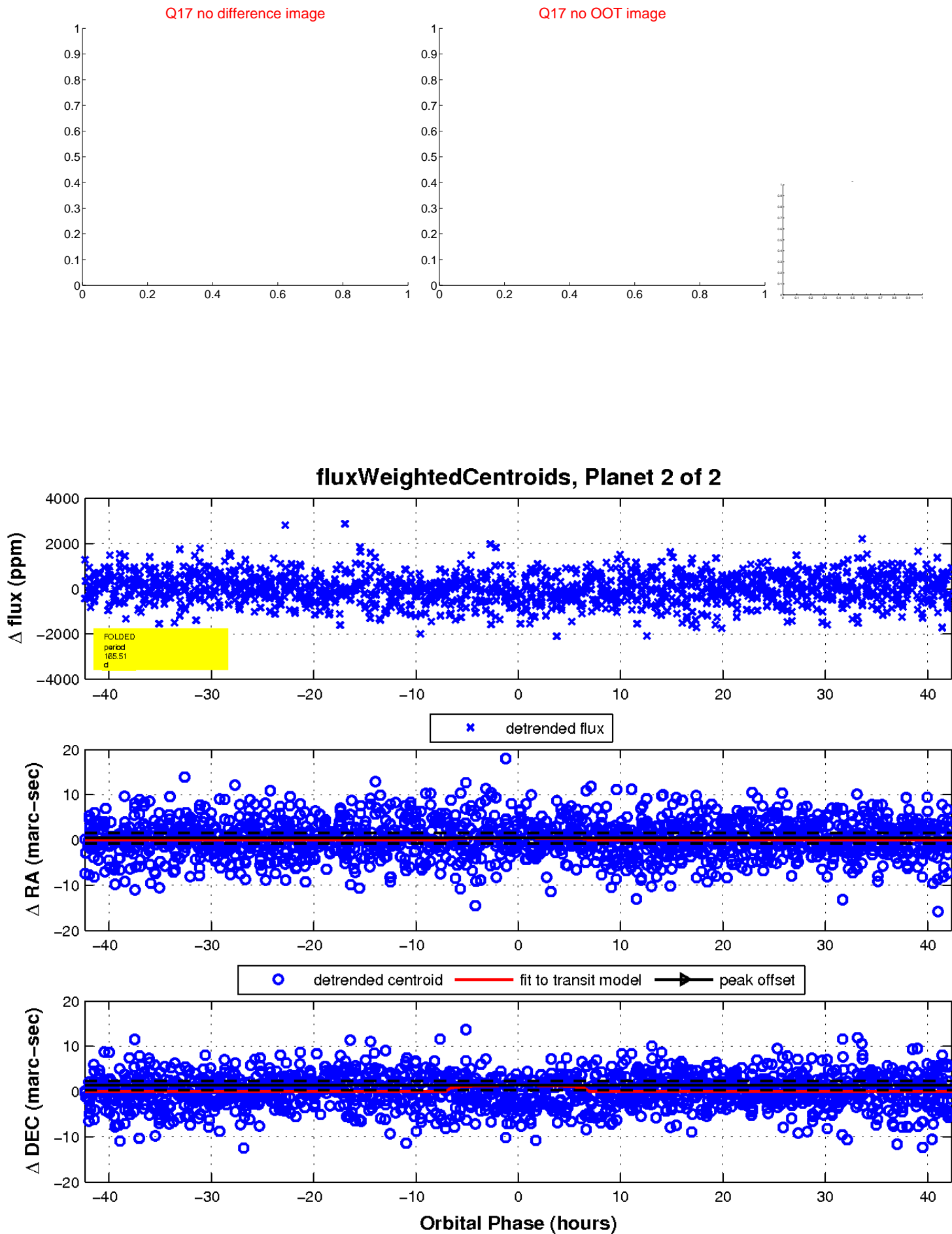
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

