

KIC 008382114

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})
008382114-01	OBS	No	2.517491	133.721411	50.6	8.935	7.2	8.4	1.00	6122	0.81	909.25
008382114-02	OBS	No	375.956699	236.212057	346.3	11.863	10.2	4.0	1.00	6122	2.14	1.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008382114-01	OBS	FP	0.00	1	0	0	1	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—EPHEM_MATCH
008382114-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_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.

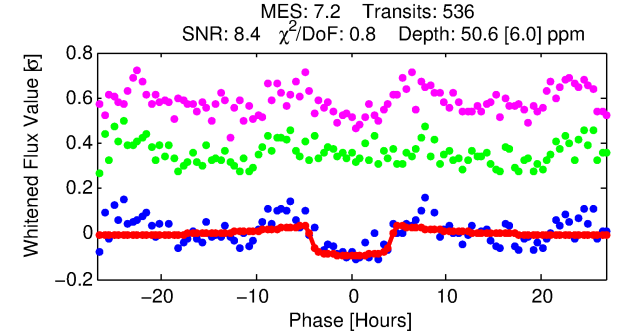
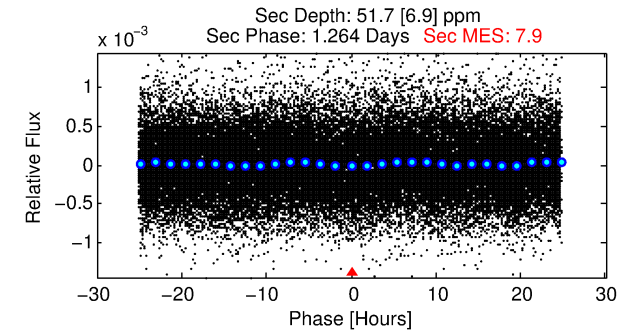
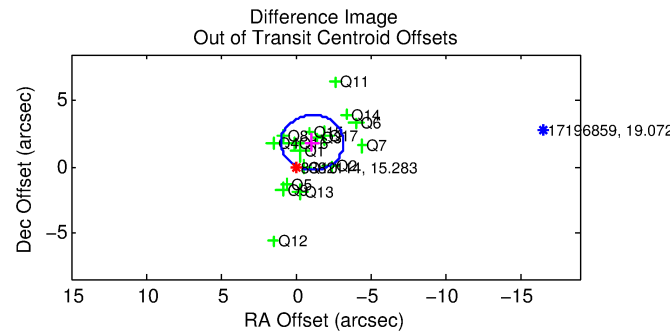
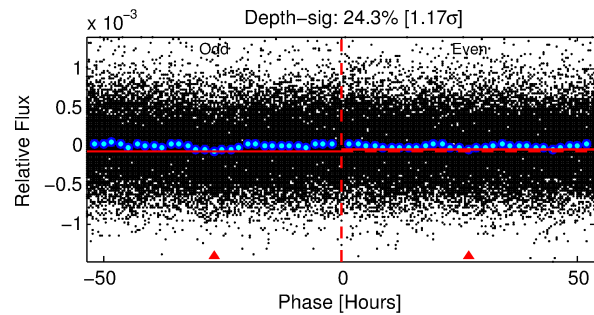
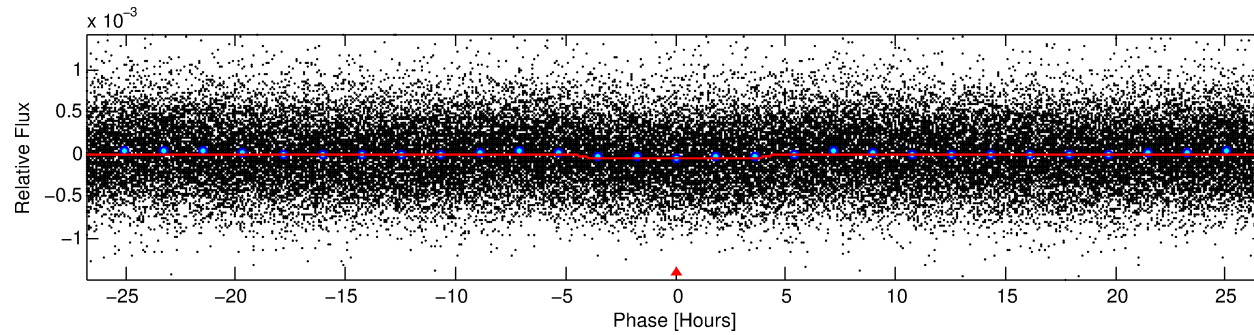
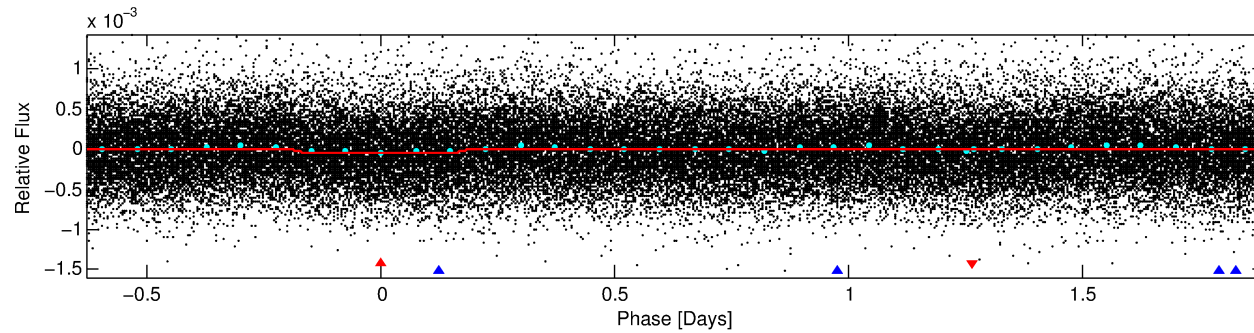
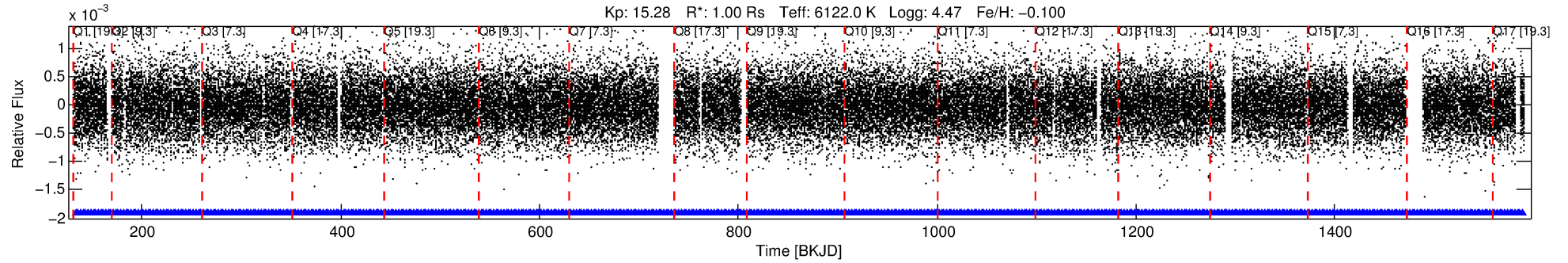
Ephemeris Match Information For 008382114-01

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
008382114-01	8382114	008382182-pri	8382182	2:1	57.8	7	-13	8.18	15.28	288.24	Direct-PRF	0	4.24	1.23

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: 8382114 Candidate: 1 of 2 Period: 2.517 d



DV Fit Results:

Period = 2.51749 [0.00004] d
Epoch = 133.7214 [0.0087] BKJD
Rp/R* = 0.0074 [0.0030]
a/R* = 1.47 [1.63]
b = 0.85 [0.67]
Seff = 909.25 [387.46]
Teff = 1400 [149] K
Rp = 0.81 [0.43] Re
a = 0.0371 [0.0105] AU
Ag = 60.06 [54.79] [1.08 σ]
Teffp = 6027 [1251] K [3.67 σ]

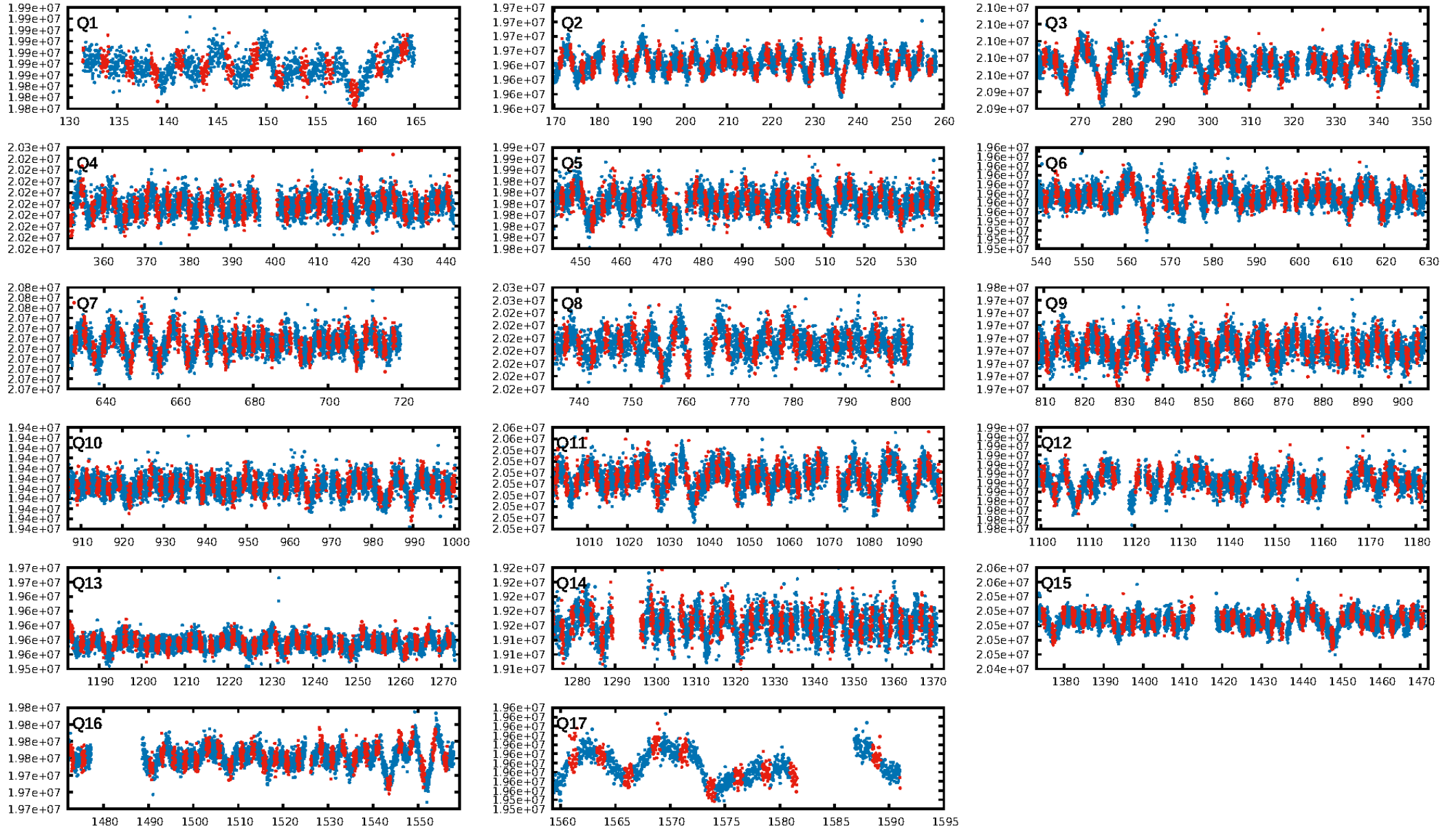
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [603.48 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.51e-11
RollingBand-fgt: 1.00 [513/513]
GhostDiagnostic-chr: 0.3746
Centroid-sig: 0.9%
Centroid-so: 2.508 arcsec [2.19 σ]
OotOffset-rm: 2.138 arcsec [3.08 σ]
KicOffset-rm: 2.109 arcsec [3.24 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.06 [1/17]
DiffImageOverlap-fno: 1.00 [17/17]

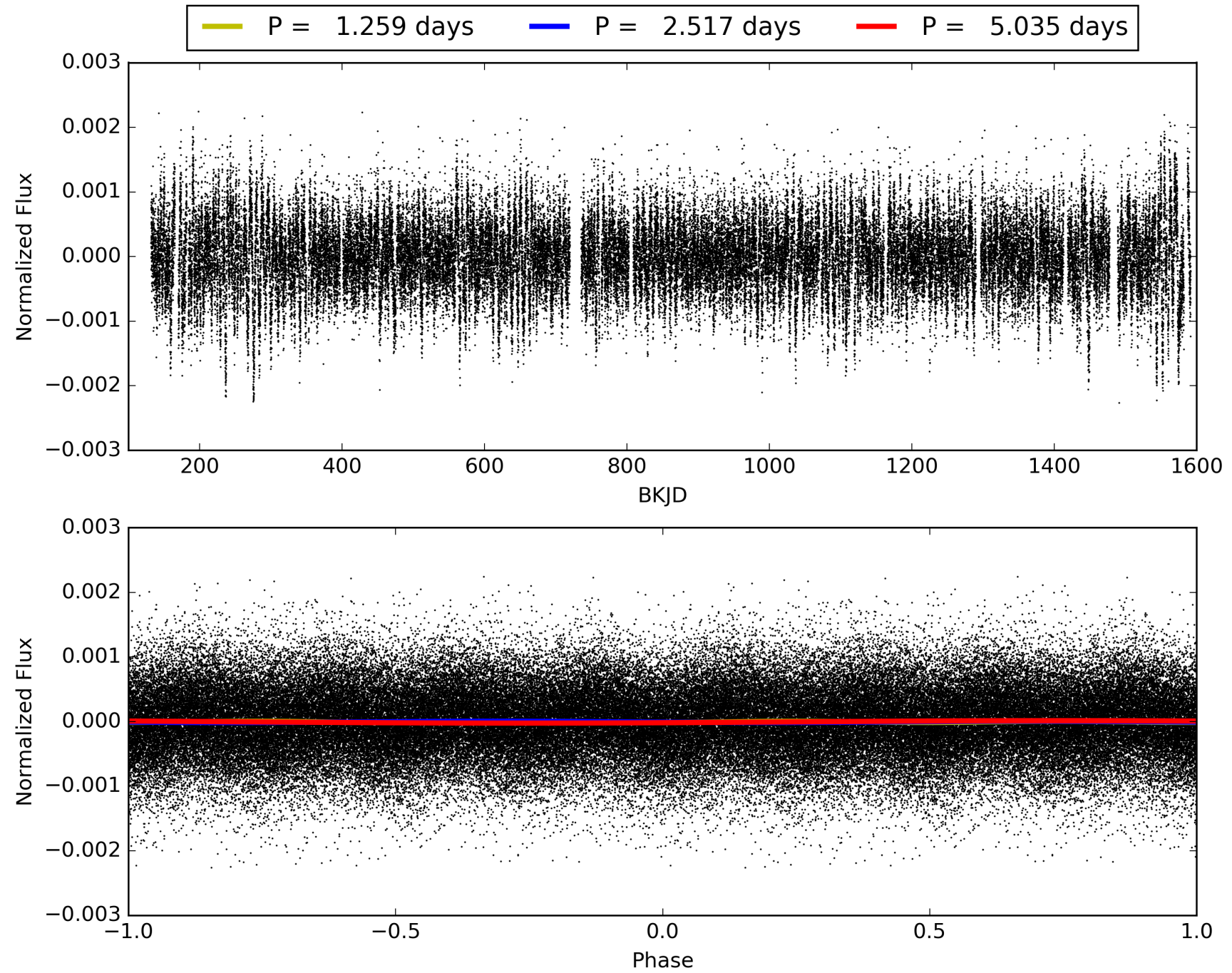
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:01:52 Z

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

TCE 008382114-01, PDC Light Curves

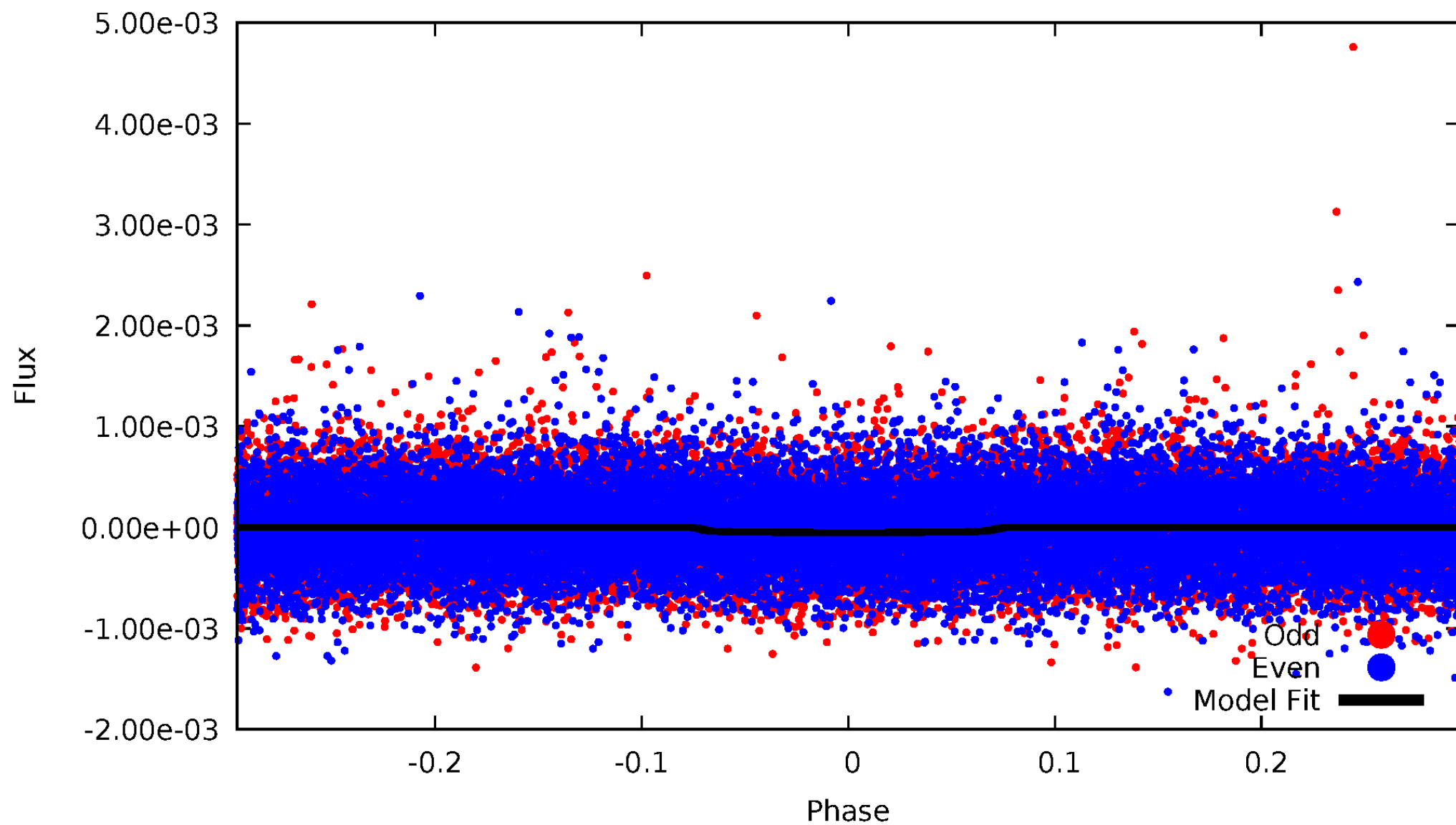


TCE 008382114-01



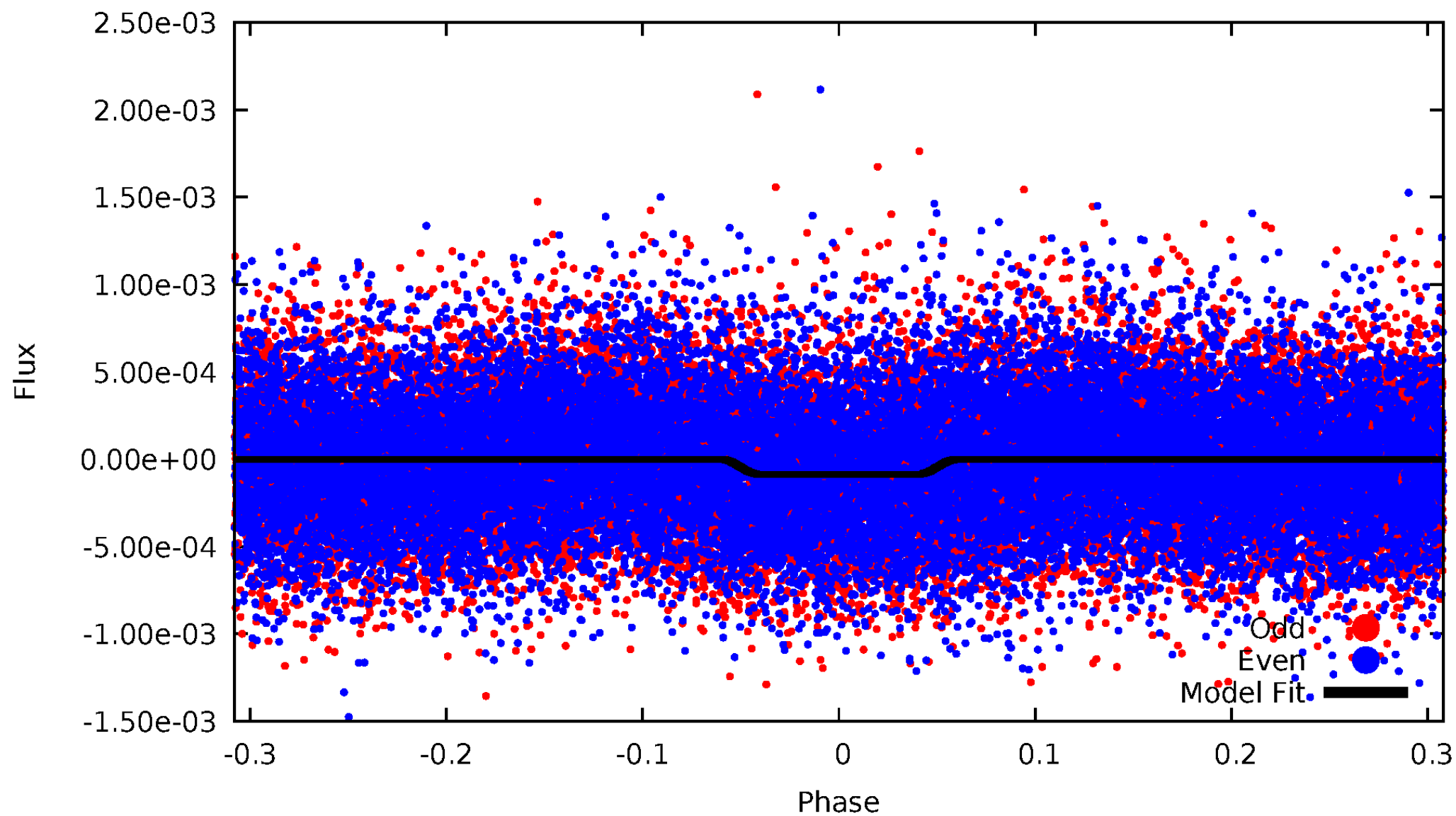
DV Odd/Even

TCE 008382114-01



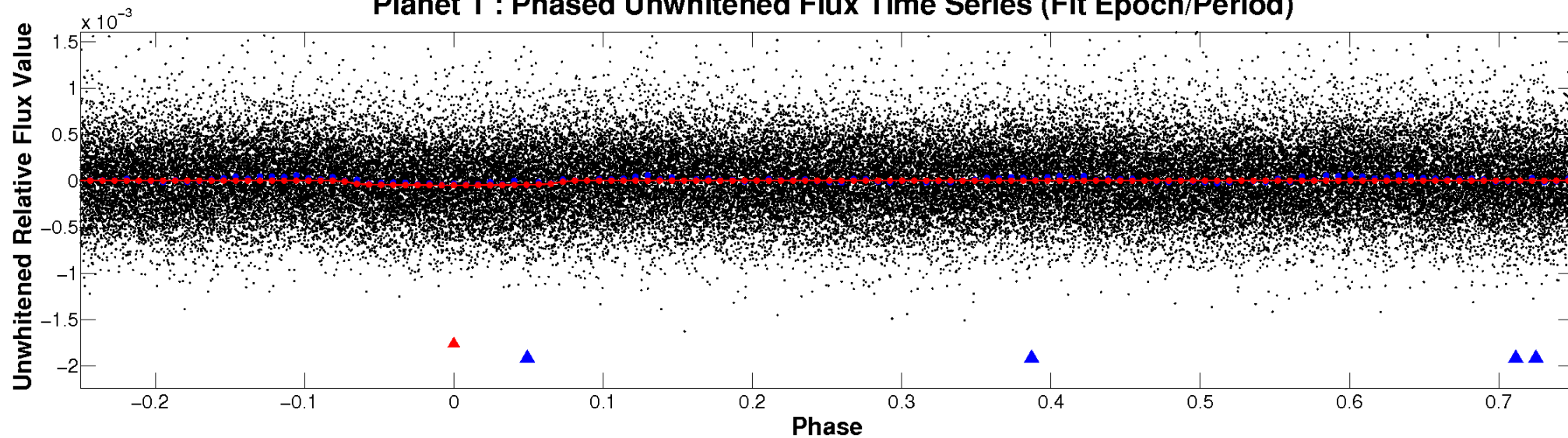
ALT Odd/Even

TCE 008382114-01

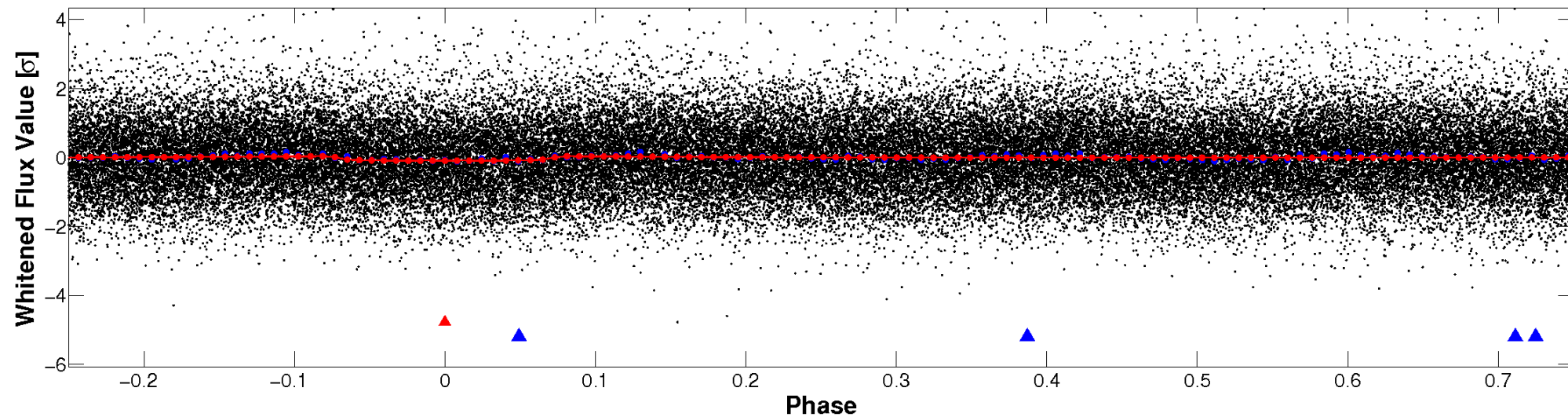


Non-Whitened Vs. Whitened Light Curve

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

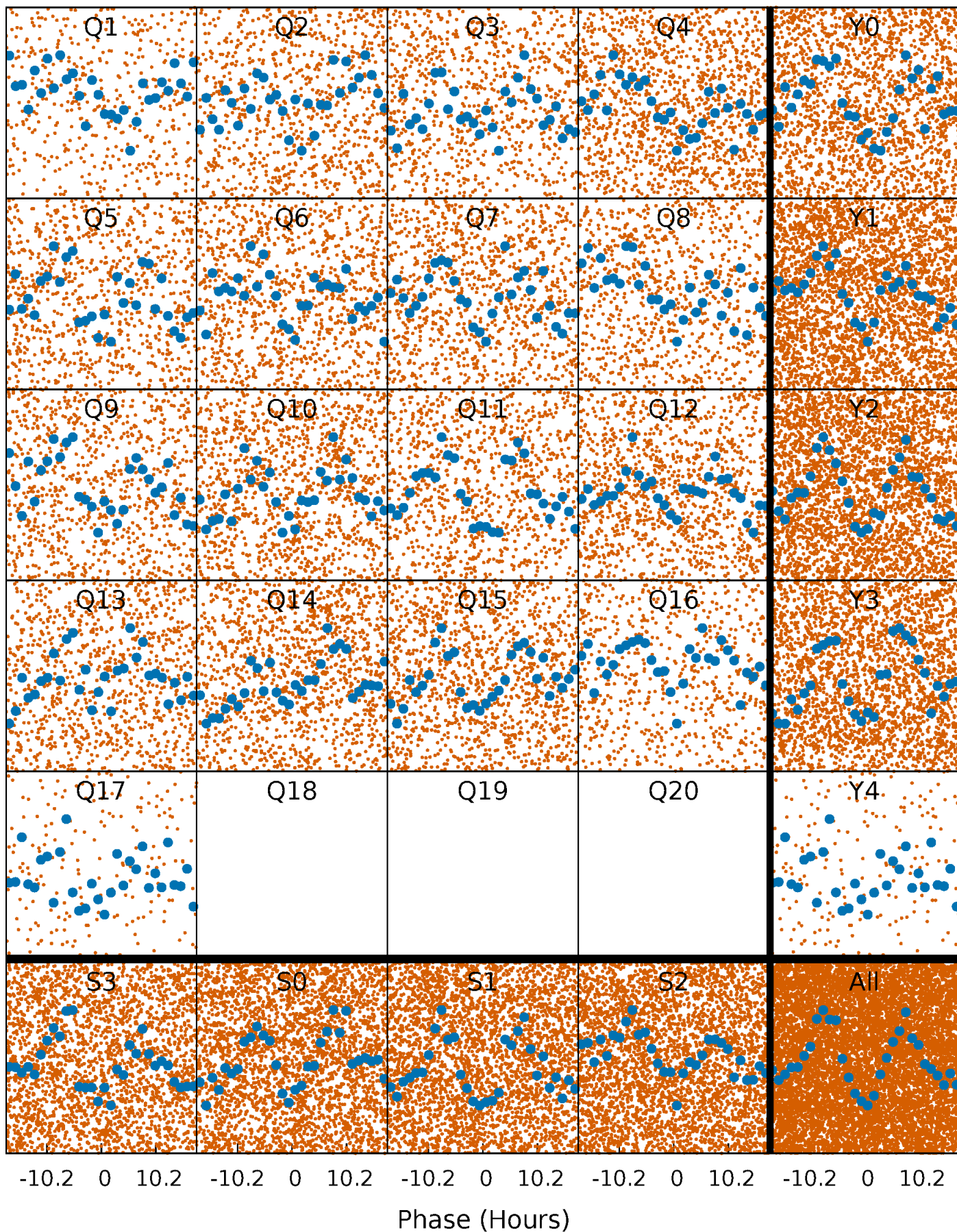


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



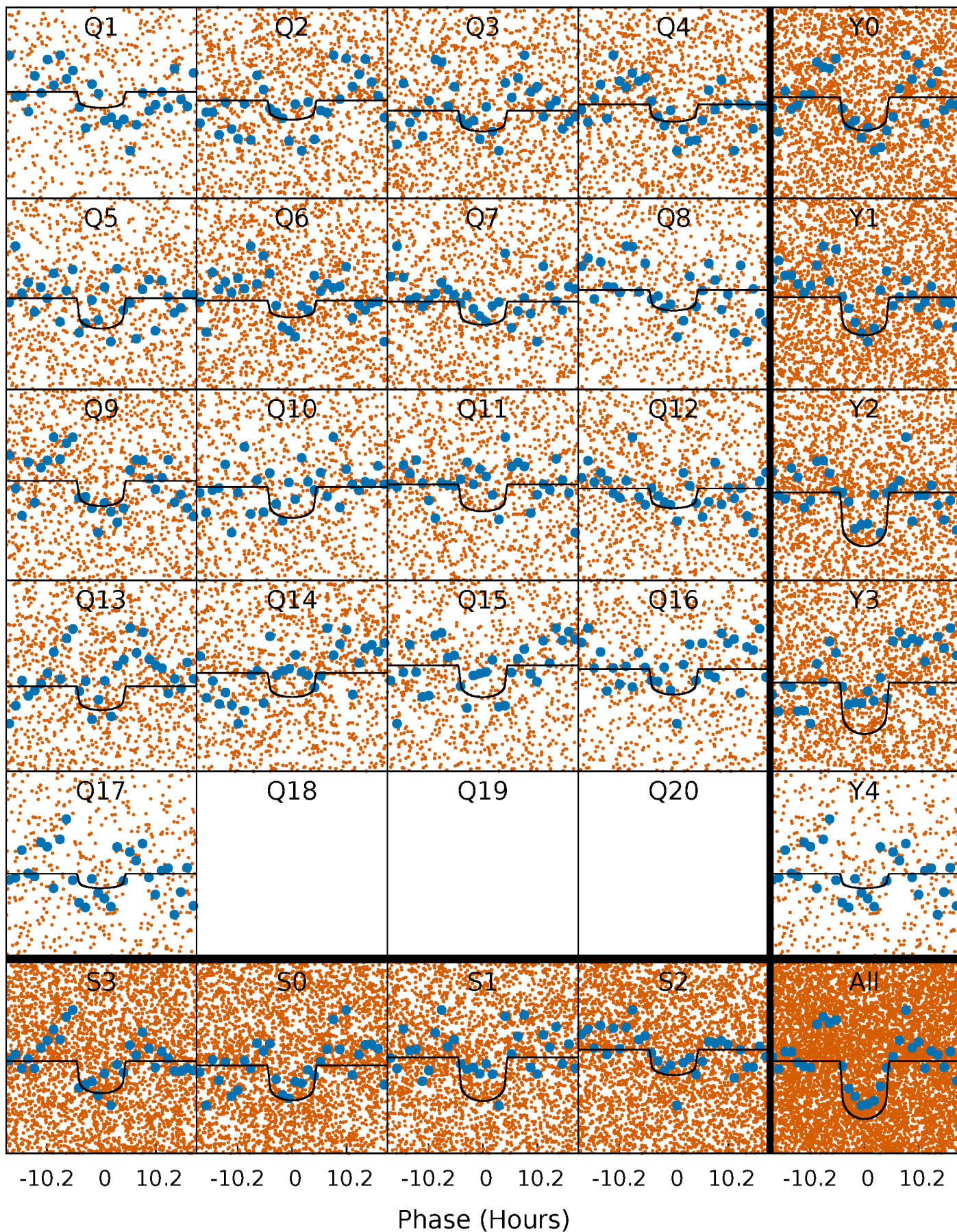
PDC Quarter-Phased Transit Curves

TCE 008382114-01 P= 2.517491 Days $T_0=133.721411$ (BKJD)



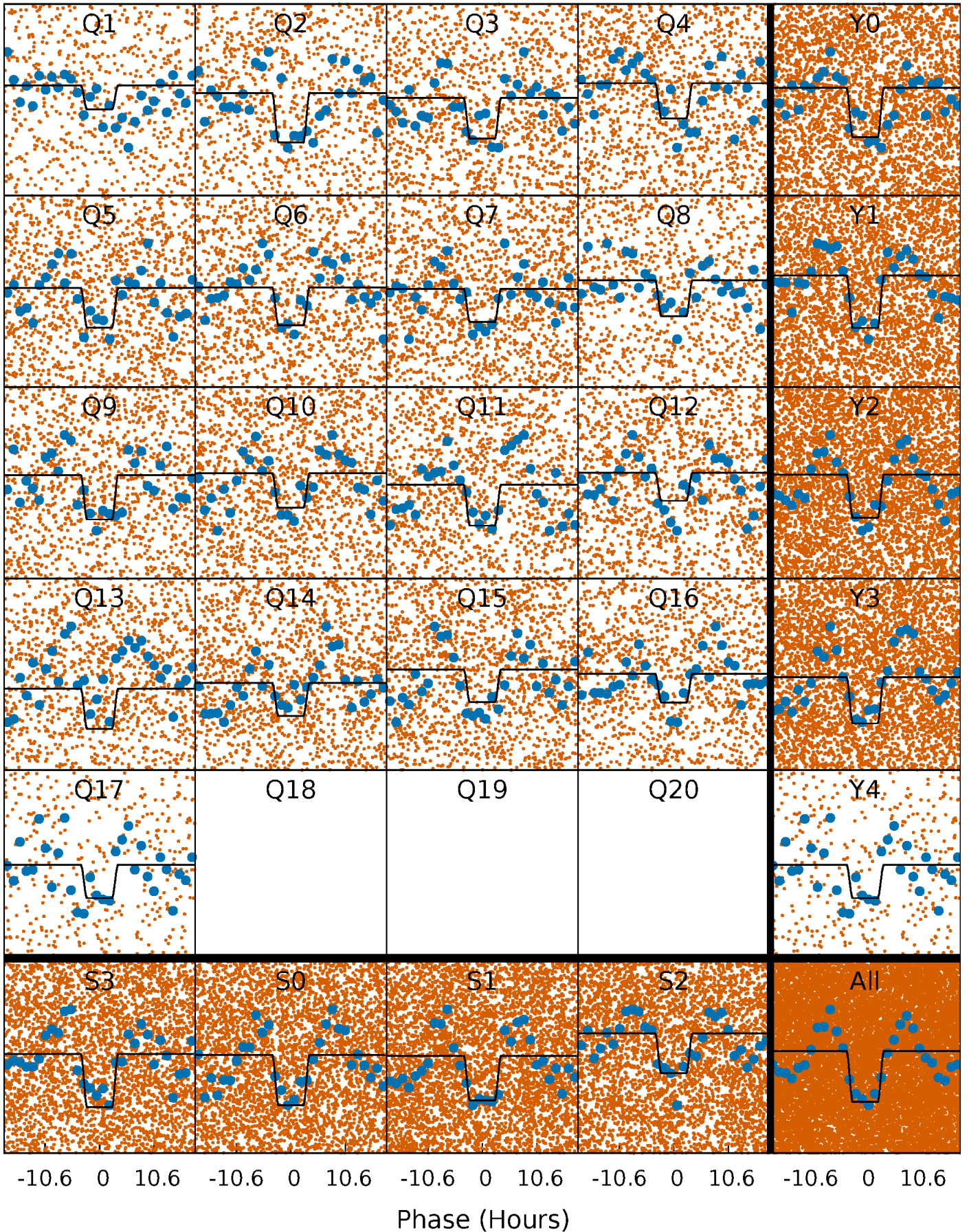
DV Quarter-Phased Transit Curves

TCE 008382114-01 P= 2.517491 Days $T_0=133.721411$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

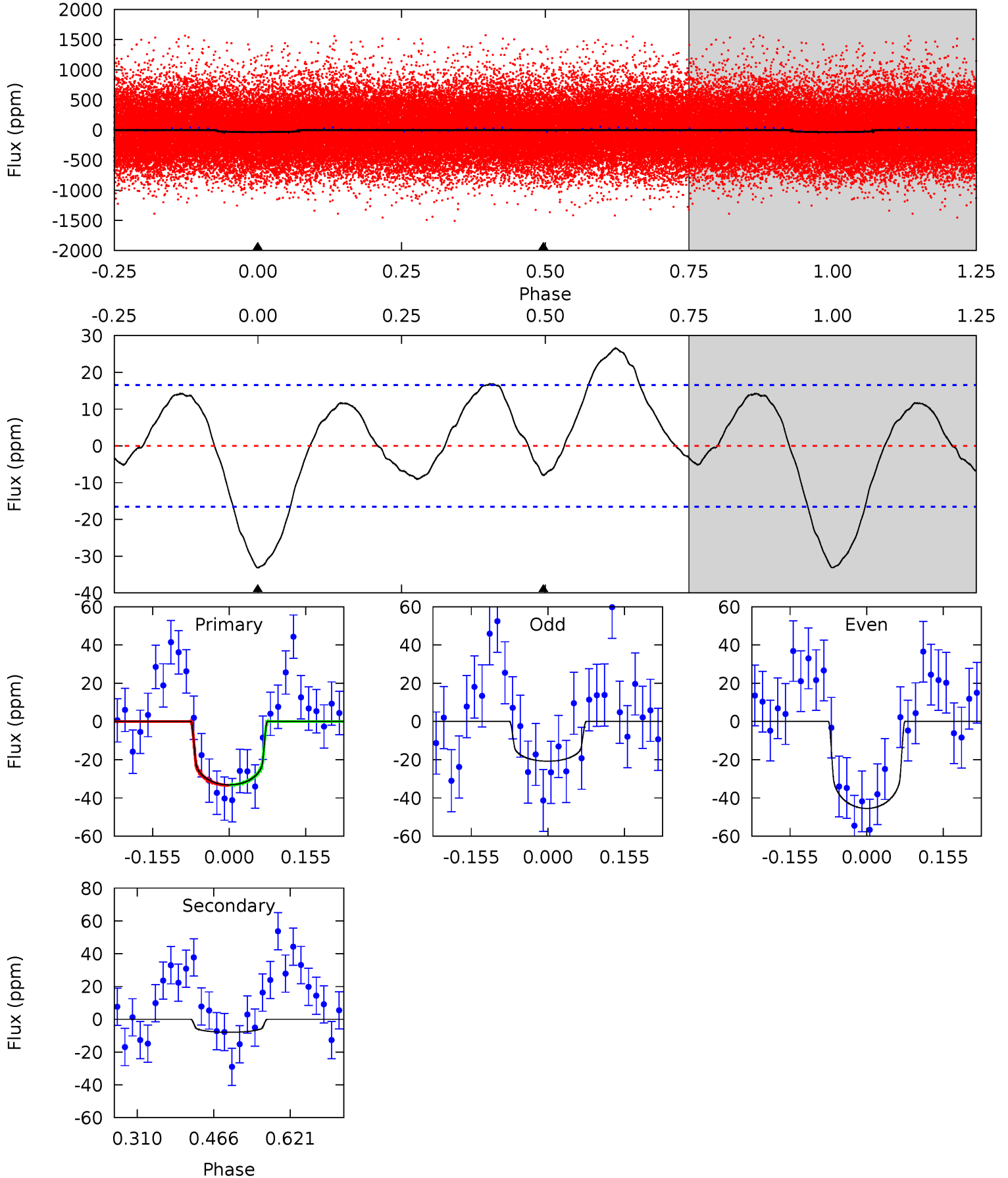
TCE 008382114-01 P= 2.517517 Days $T_0=133.711502$ (BKJD)



DV Model-Shift Uniqueness Test

008382114-01, P = 2.517491 Days, E = 131.203920 Days

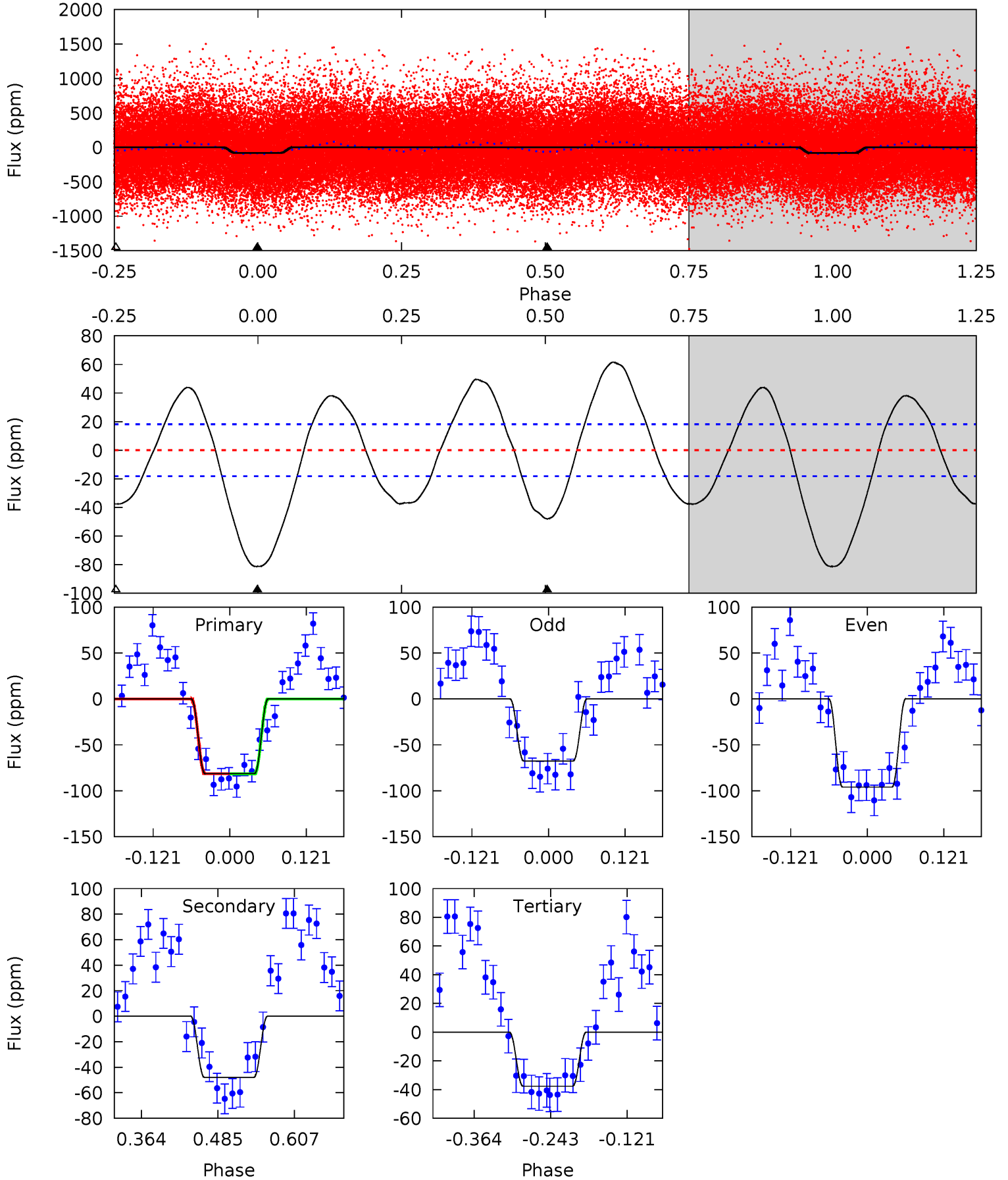
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.95	2.15	0	0	4.47	1.42	1.92	8.95	8.95	2.15	2.15	3.33	0.88	0.44	0.03



Alt Model-Shift Uniqueness Test

008382114-01, P = 2.517517 Days, E = 131.193985 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.3	11.9	9.39	0	4.52	1.55	7.59	10.9	20.3	2.56	11.9	3.55	0.91	0.43	0.02



Stellar Parameters For KIC 008382114

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6122^{+193}_{-214}	$4.471^{+0.054}_{-0.216}$	$-0.100^{+0.250}_{-0.350}$	$0.996^{+0.341}_{-0.114}$	$1.070^{+0.151}_{-0.151}$	$1.526^{+0.441}_{-0.806}$
	+3%/-3%	+1%/-5%	+250%/-350%	+34%/-11%	+14%/-14%	+29%/-53%
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 008382114-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-8 ± 4	$0.84^{+0.37}_{-0.36}$	2009^{+154}_{-116}	4014^{+1057}_{-633}	$8.006^{+17.226}_{-5.073}$
Alt.	-48 ± 4	$1.07^{+0.38}_{-0.36}$	2006^{+154}_{-109}	5307^{+1134}_{-631}	31^{+39}_{-14}

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 $A_{obs} \gg 1.0$

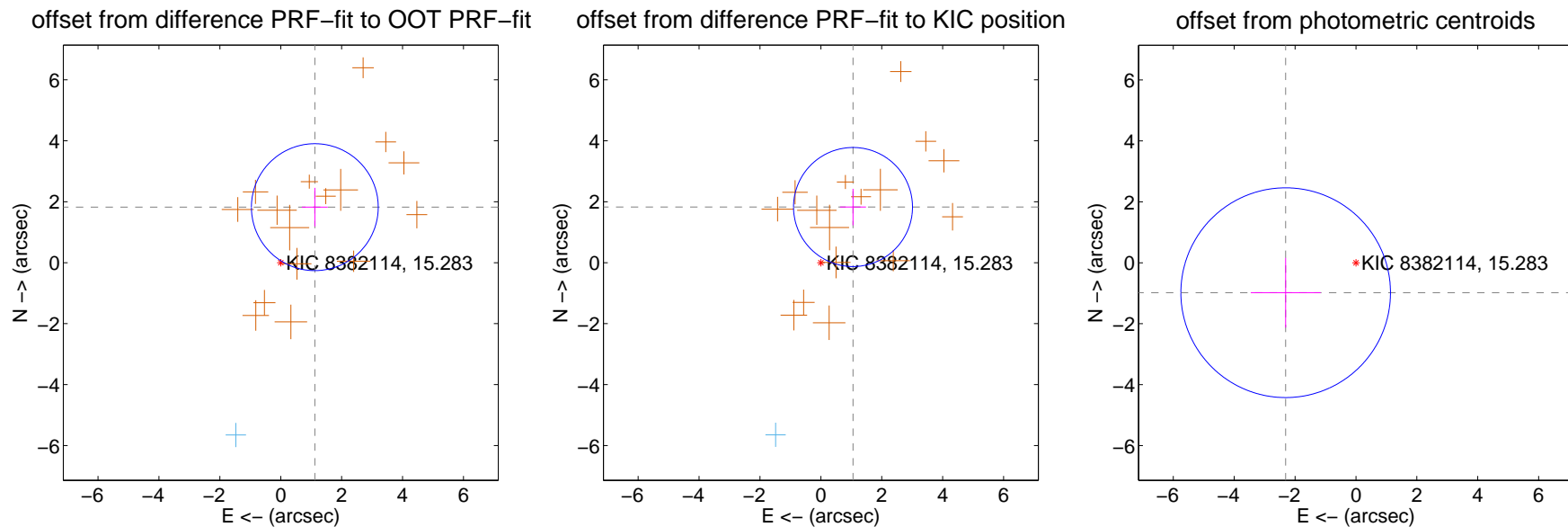
DV Centroid Data

Supplemental centroid analysis for 008382114-01. Kepler magnitude: 15.28. Transit SNR 8.43

There are 1 quarters with good PRF difference image offsets

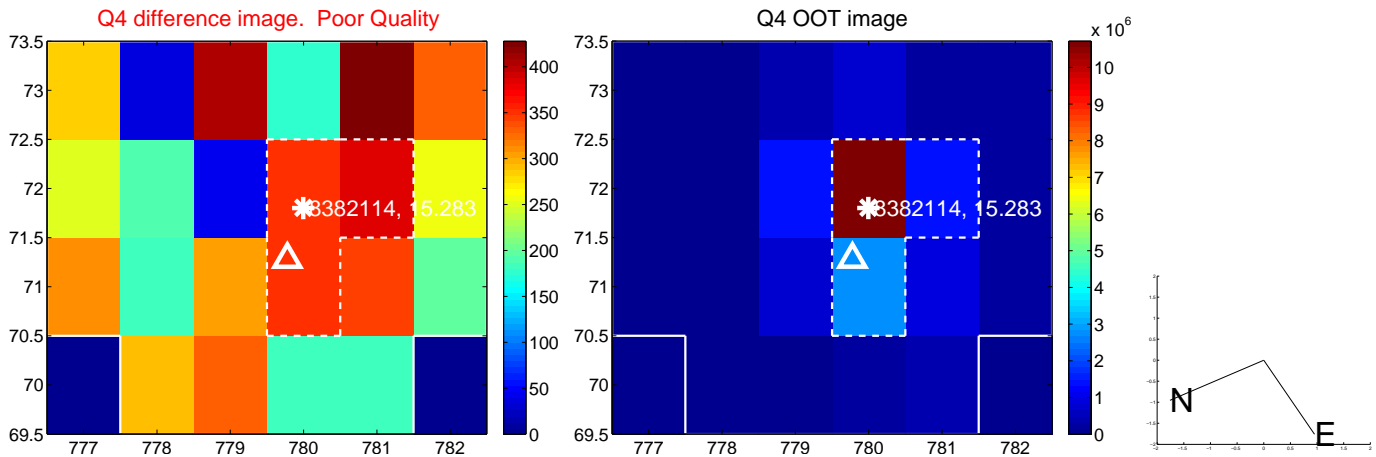
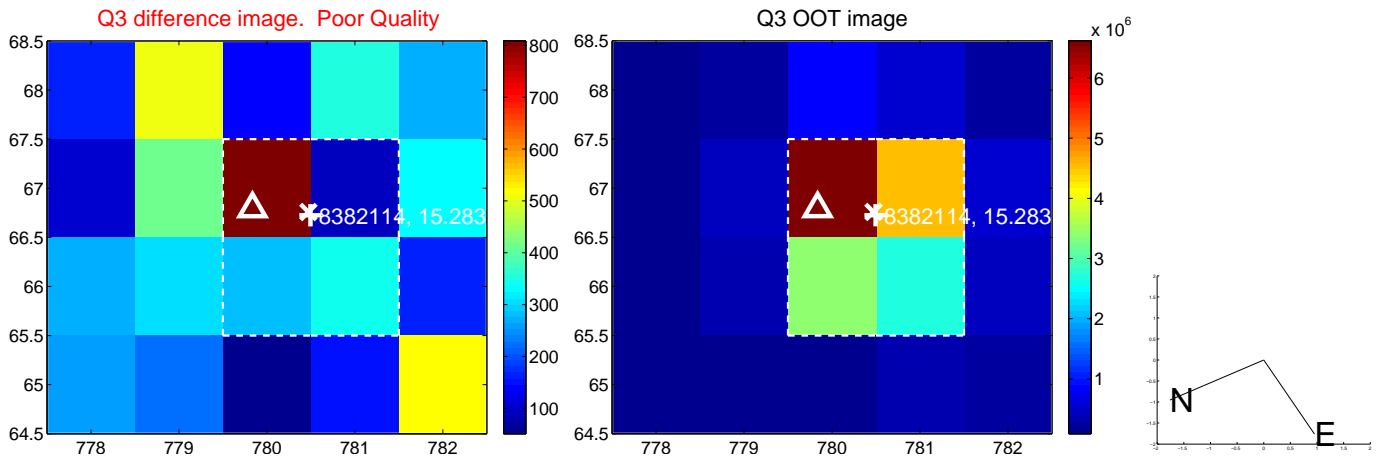
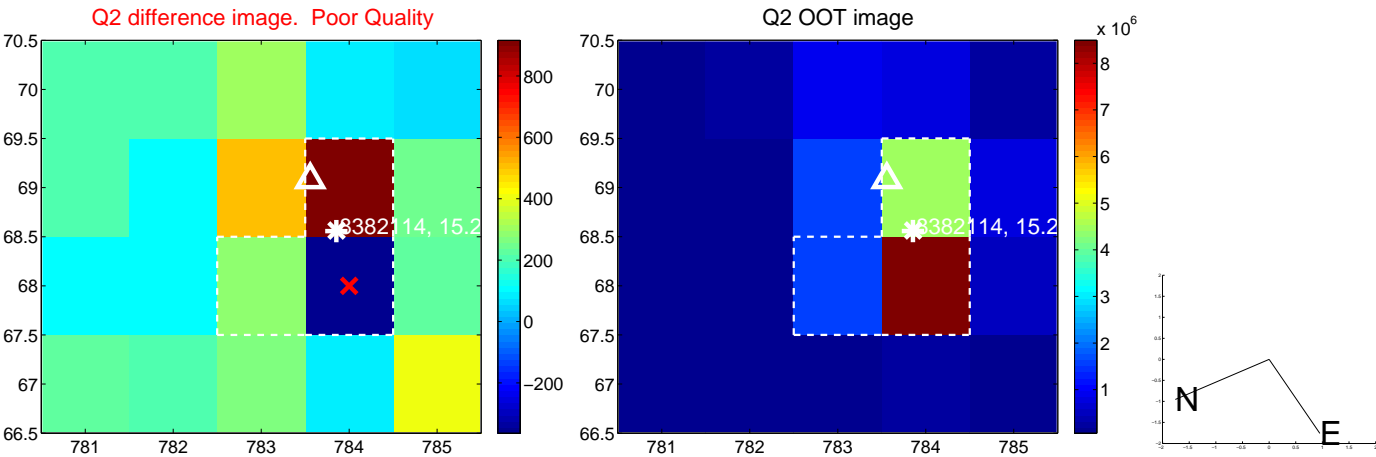
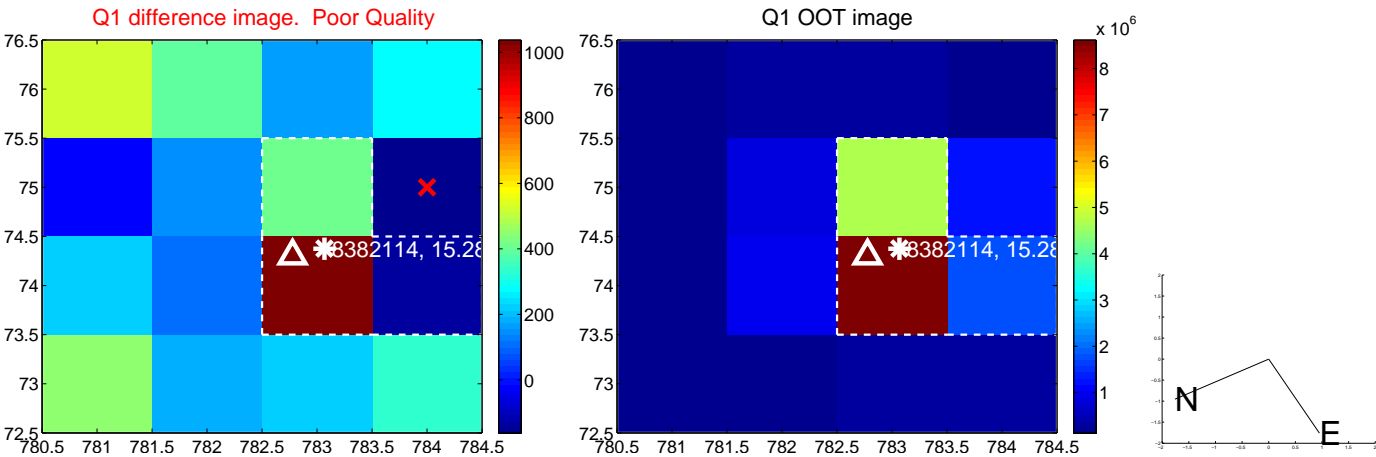
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.138 ± 0.694	3.08	-1.119 ± 0.425	1.822 ± 0.632
PRF-fit source offset from KIC position	2.109 ± 0.651	3.24	-1.055 ± 0.426	1.826 ± 0.597
photometric centroid source offset	2.51 ± 1.15	2.19	2.31 ± 1.15	-0.98 ± 1.14

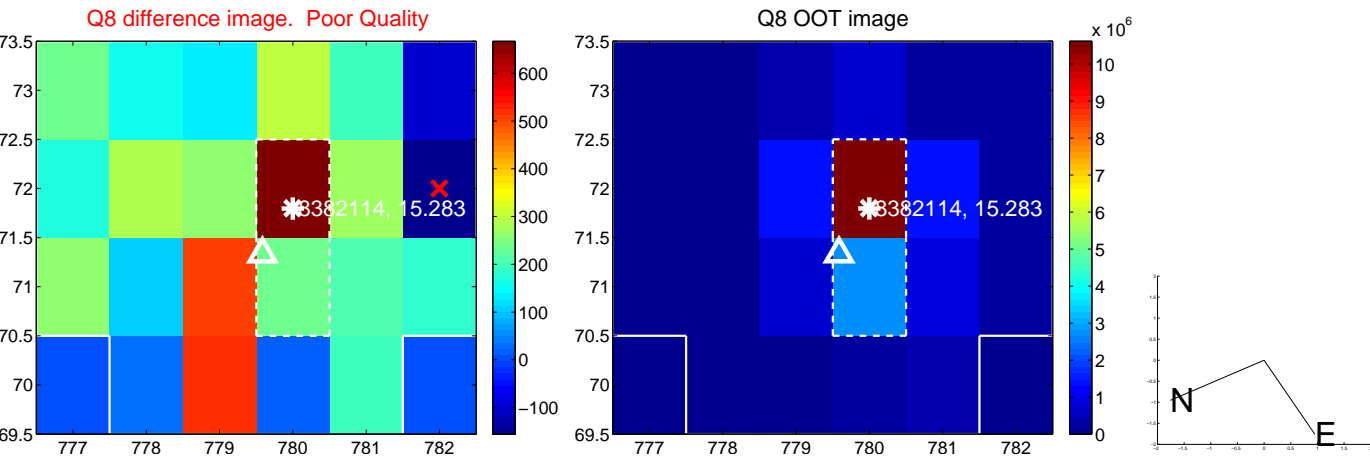
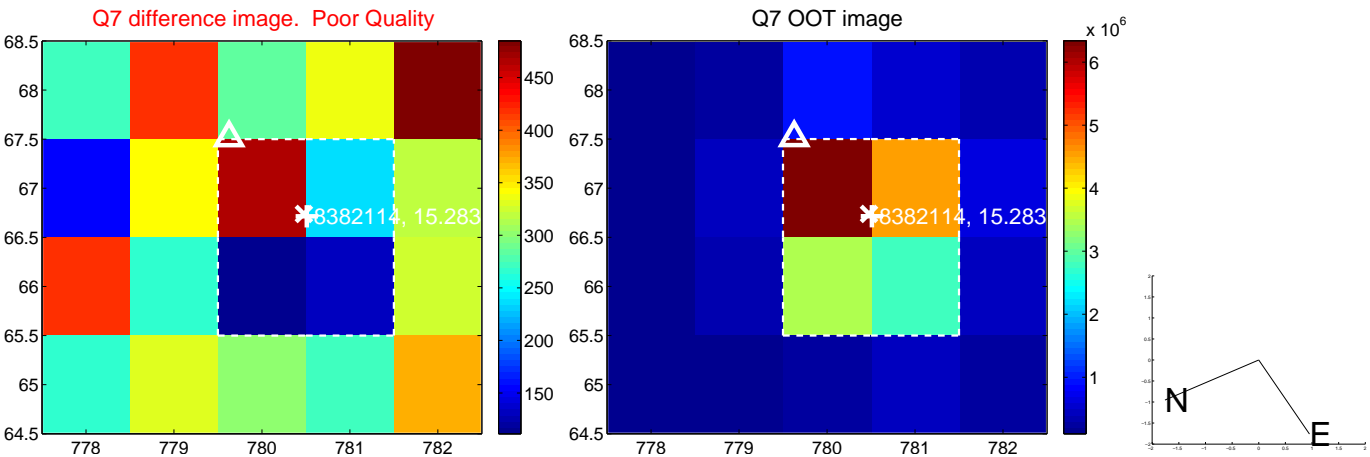
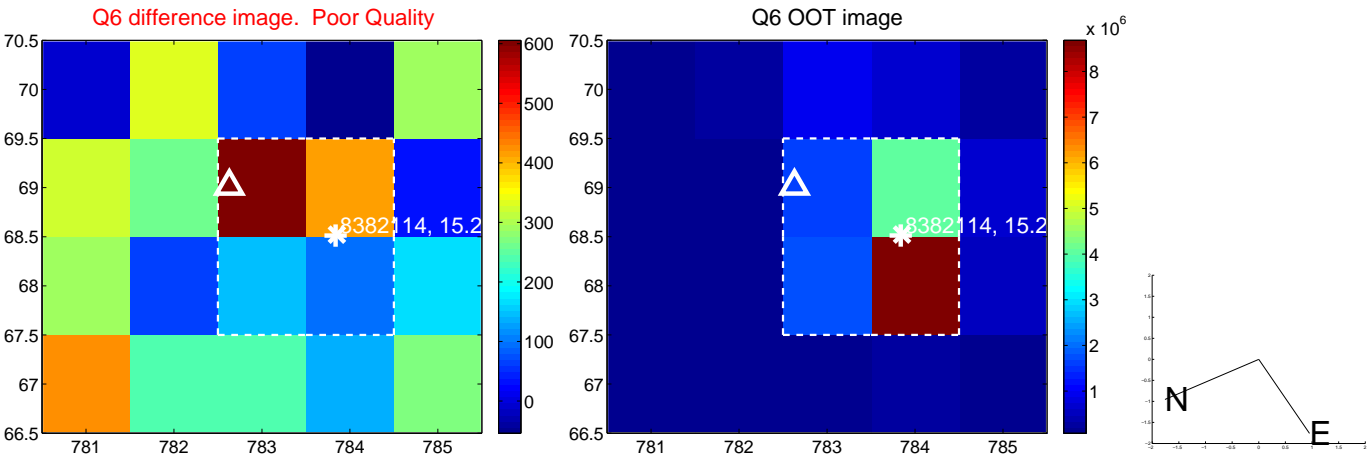
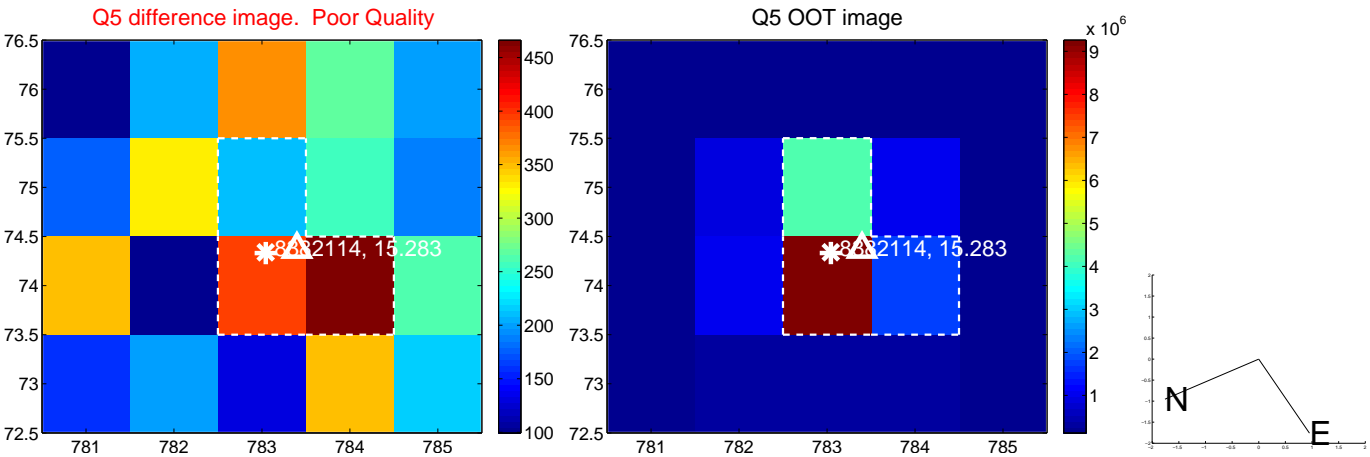


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

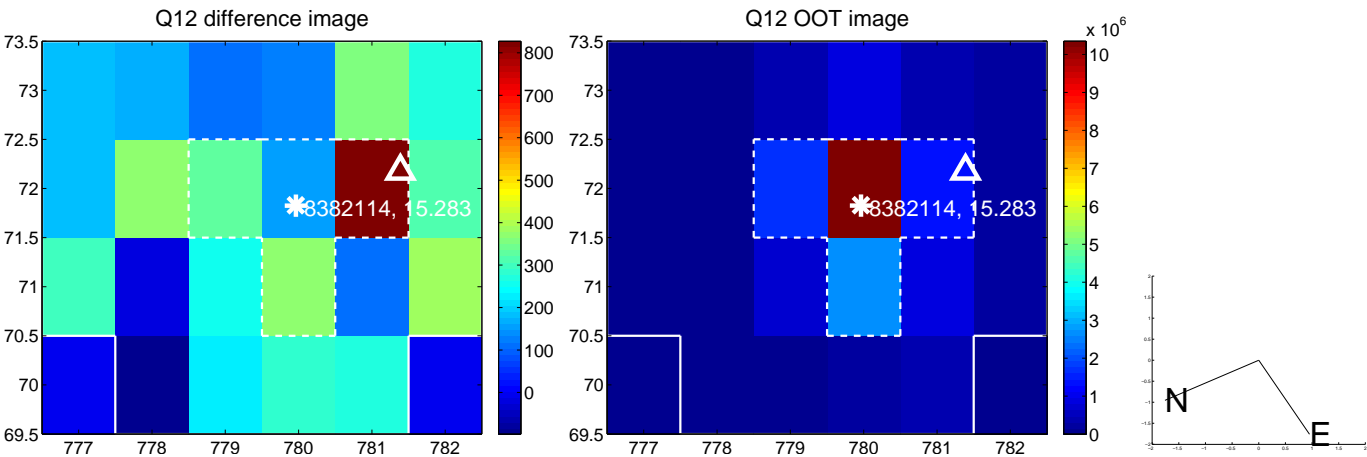
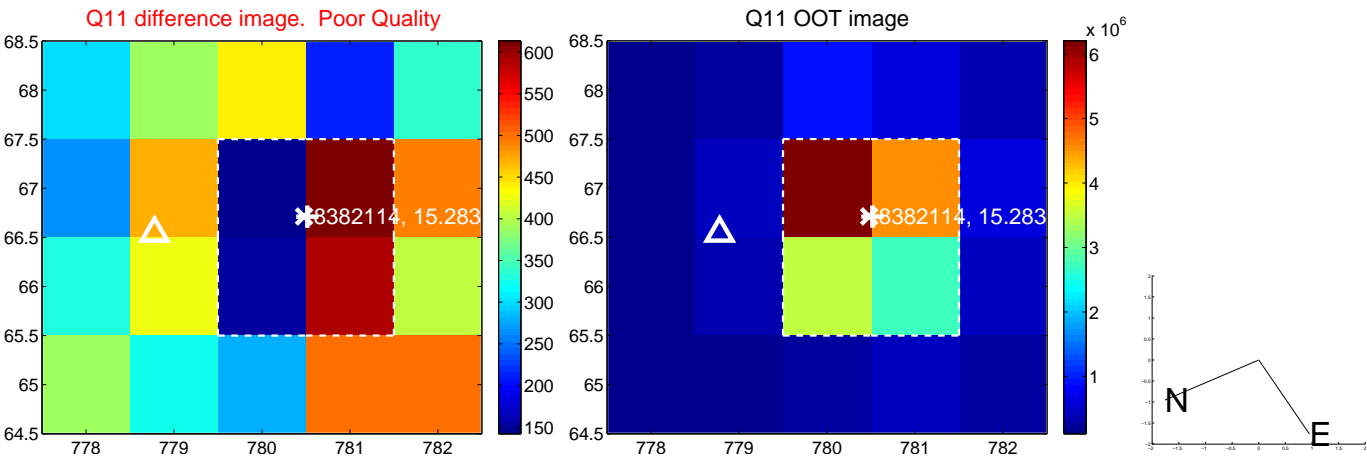
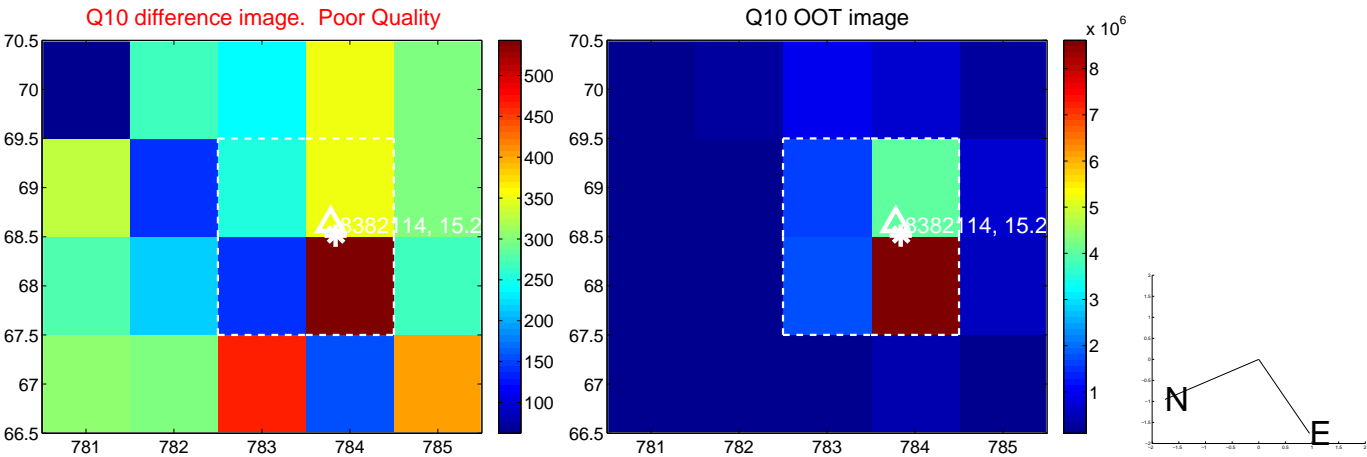
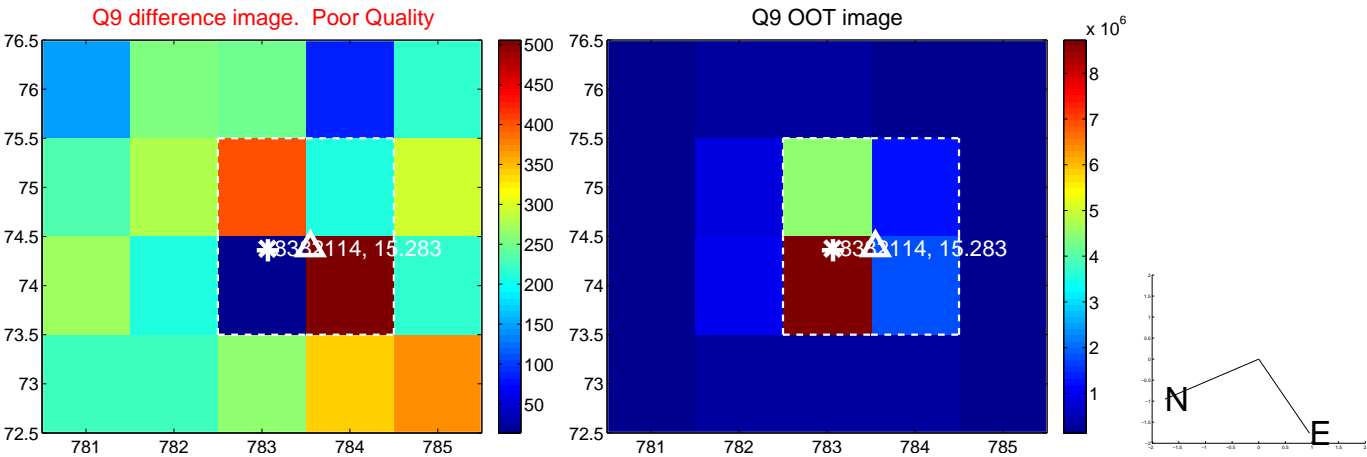
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



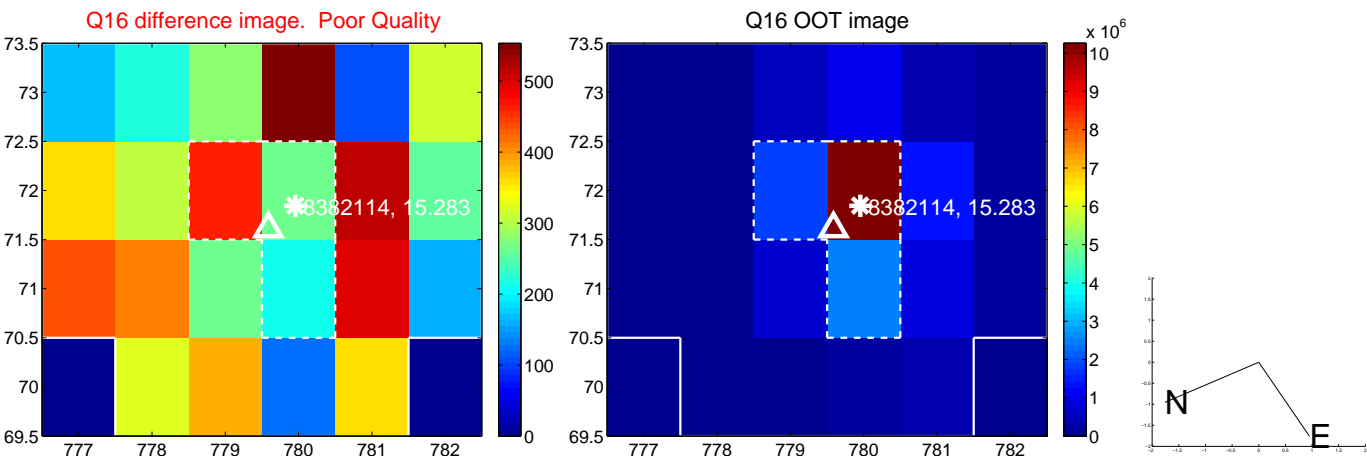
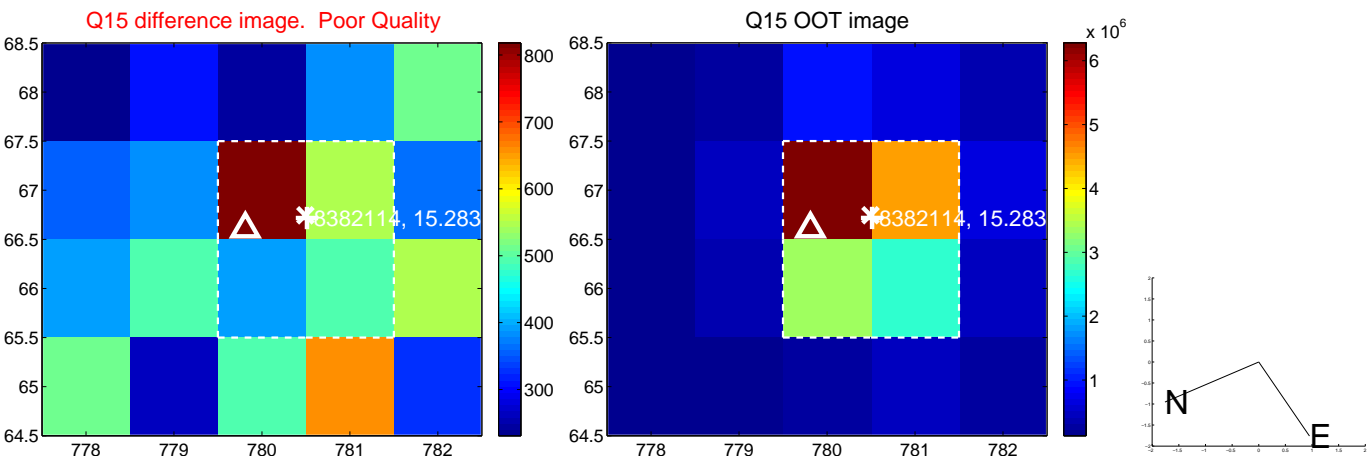
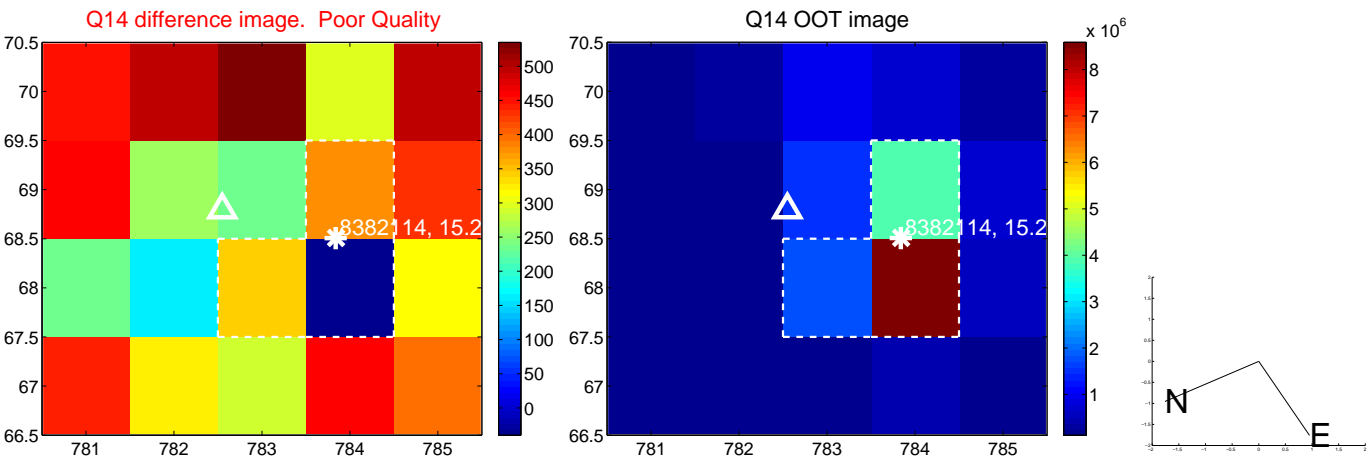
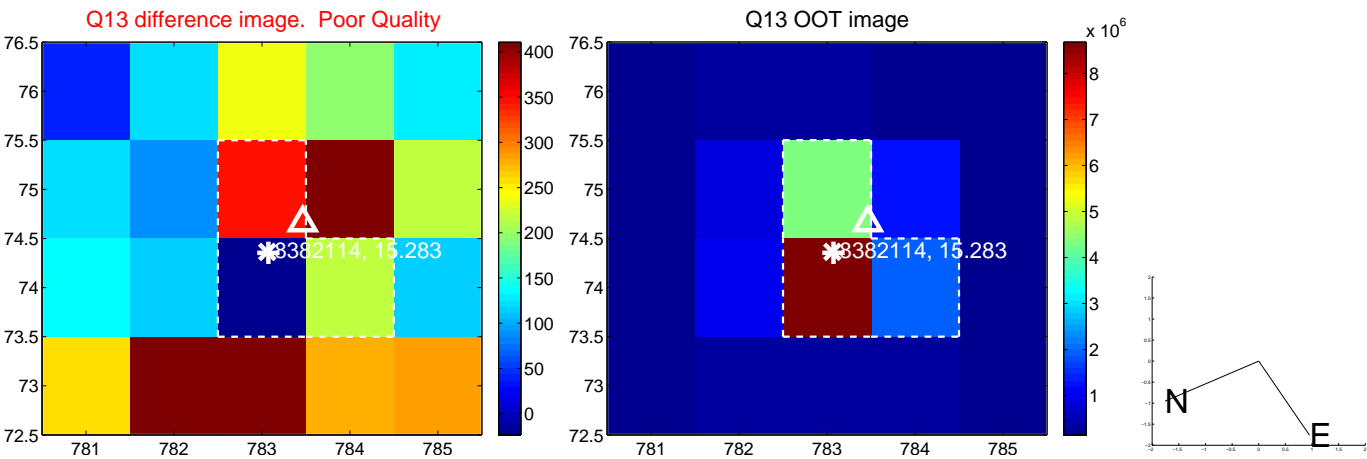
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



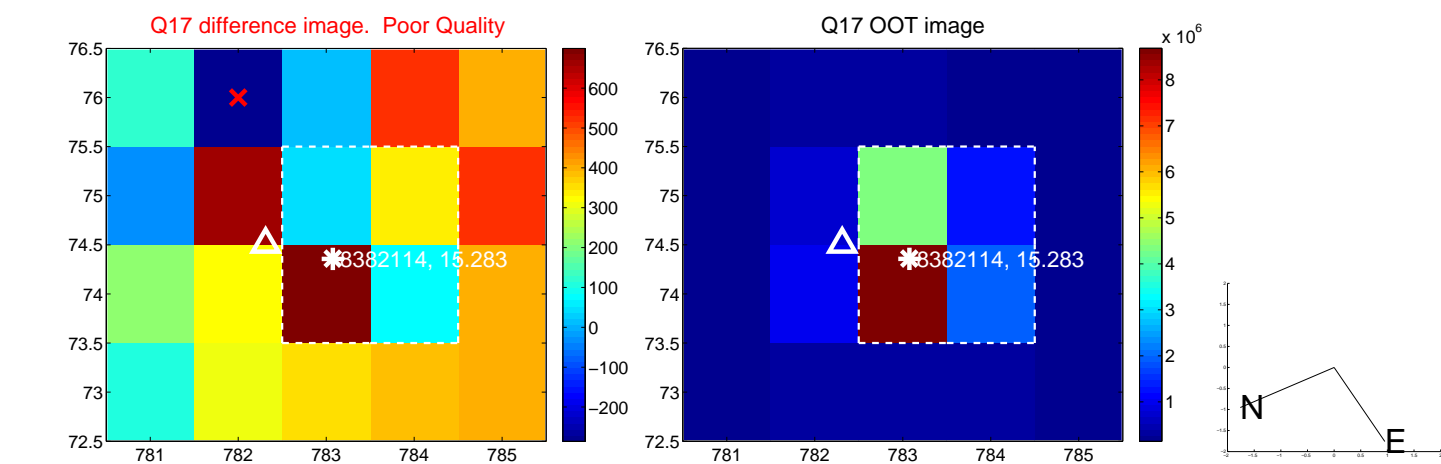
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



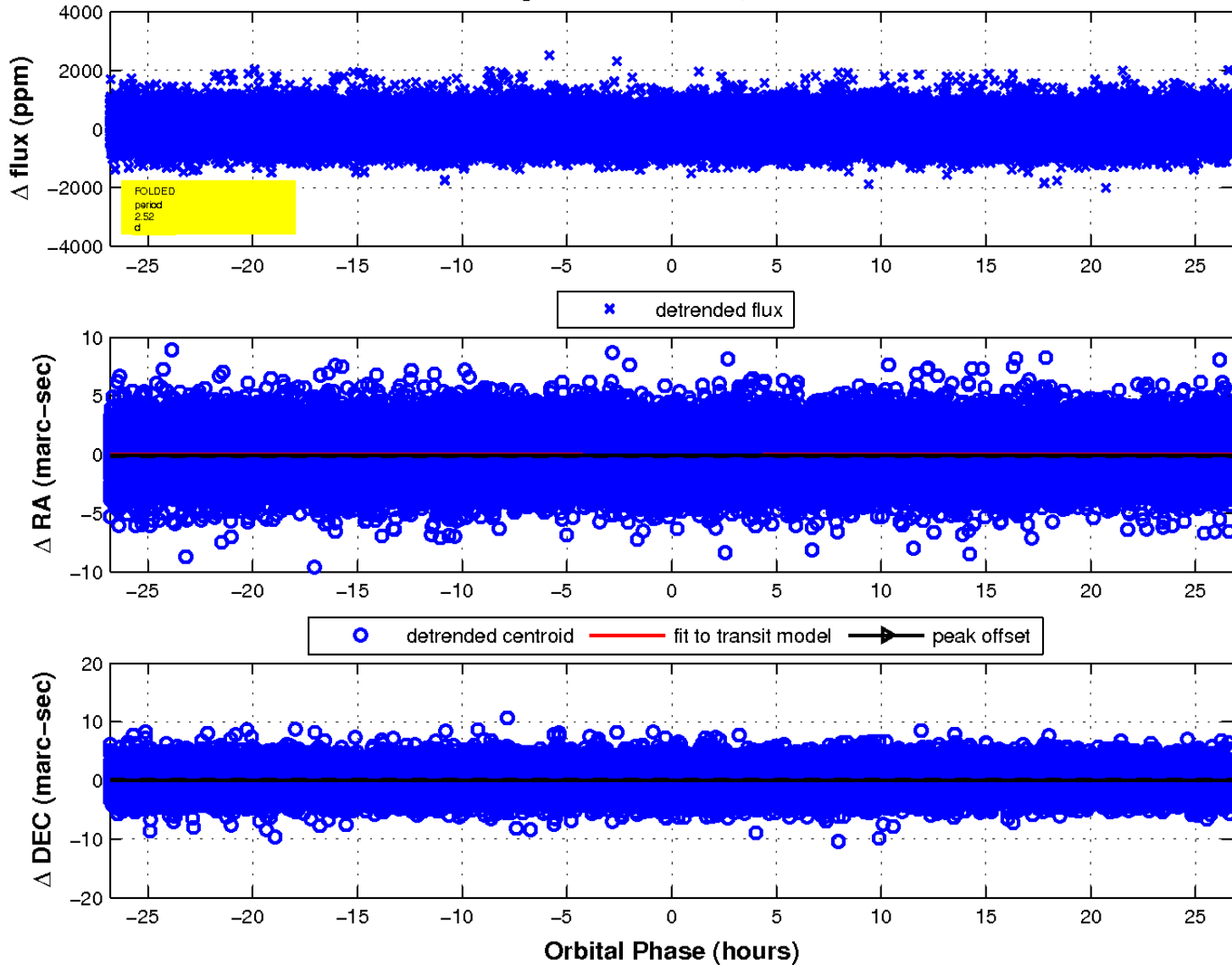
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

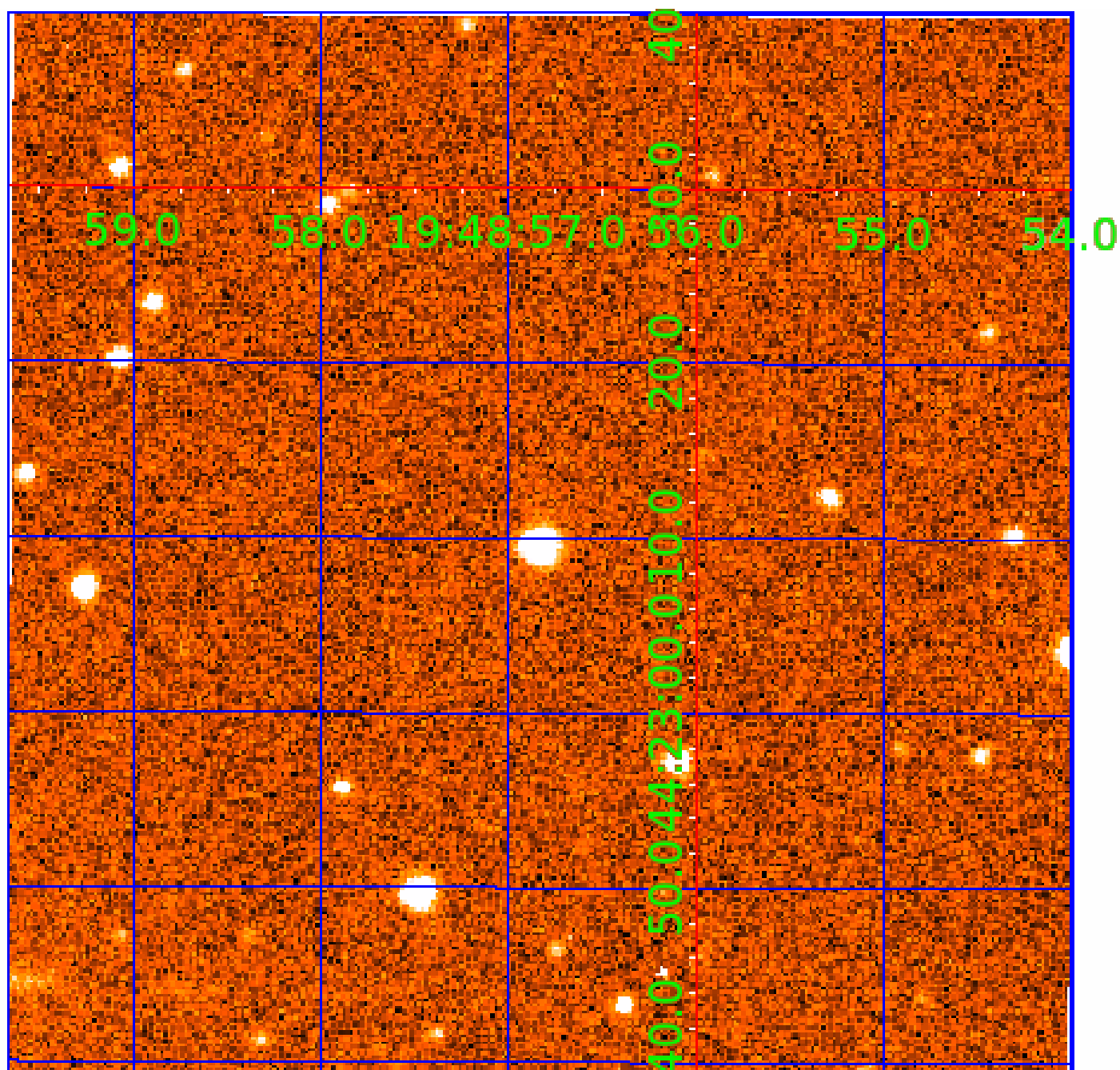


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 008382114

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})
008382114-01	OBS	No	2.517491	133.721411	50.6	8.935	7.2	8.4	1.00	6122	0.81	909.25
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008382114-01	OBS	FP	0.00	1	0	0	1	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—EPHEM_MATCH
008382114-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_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.

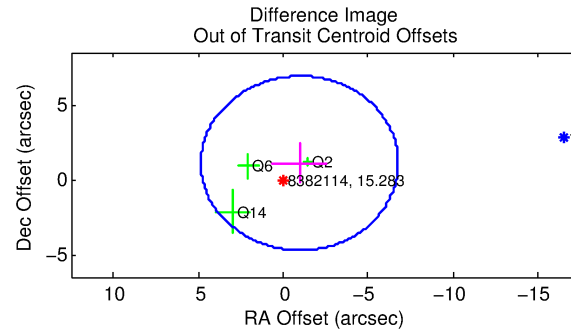
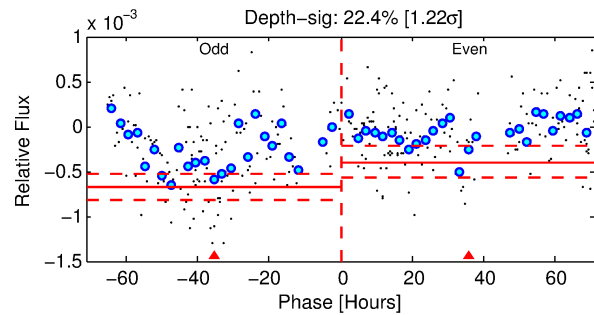
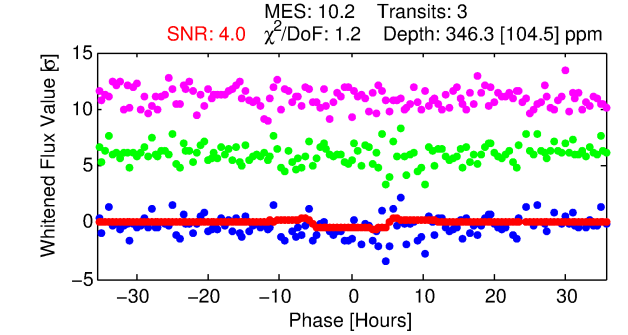
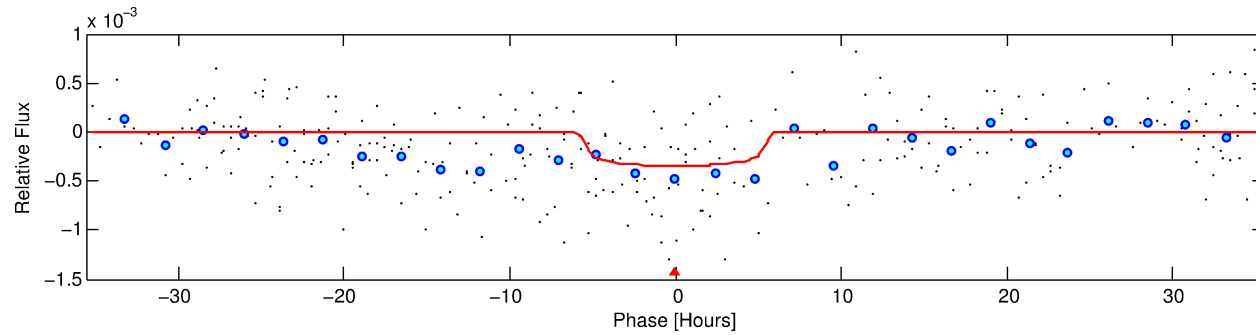
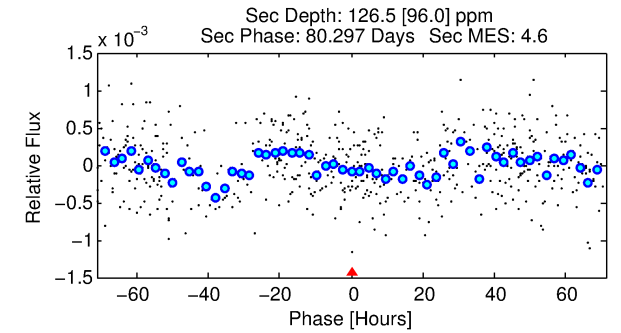
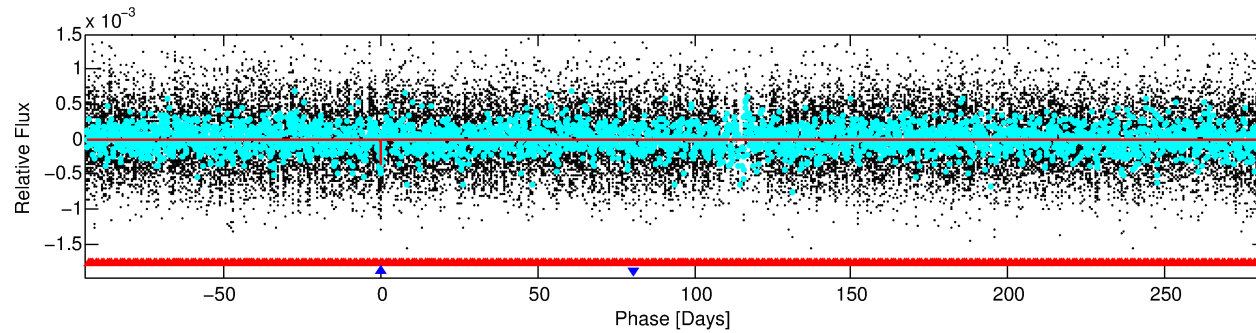
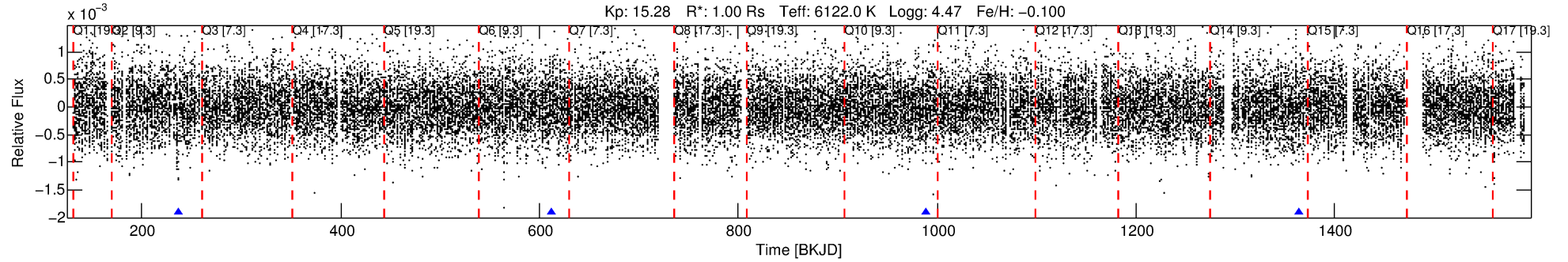
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008382114-02

No Significant Match Found

DV One-Page Summary

KIC: 8382114 Candidate: 2 of 2 Period: 375.957 d



DV Fit Results:

Period = 375.95670 [0.02112] d
Epoch = 236.2121 [0.0470] BKJD
Rp/R* = 0.0197 [0.0063]
a/R* = 126.97 [179.58]
b = 0.87 [0.39]
Seff = 1.15 [0.49]
Teff = 264 [28] K
Rp = 2.14 [1.00] Re
a = 1.0430 [0.2942] AU
Ag = 16573.23 [17793.08] [0.93 σ]
Teffp = 4630 [1163] K [3.75 σ]

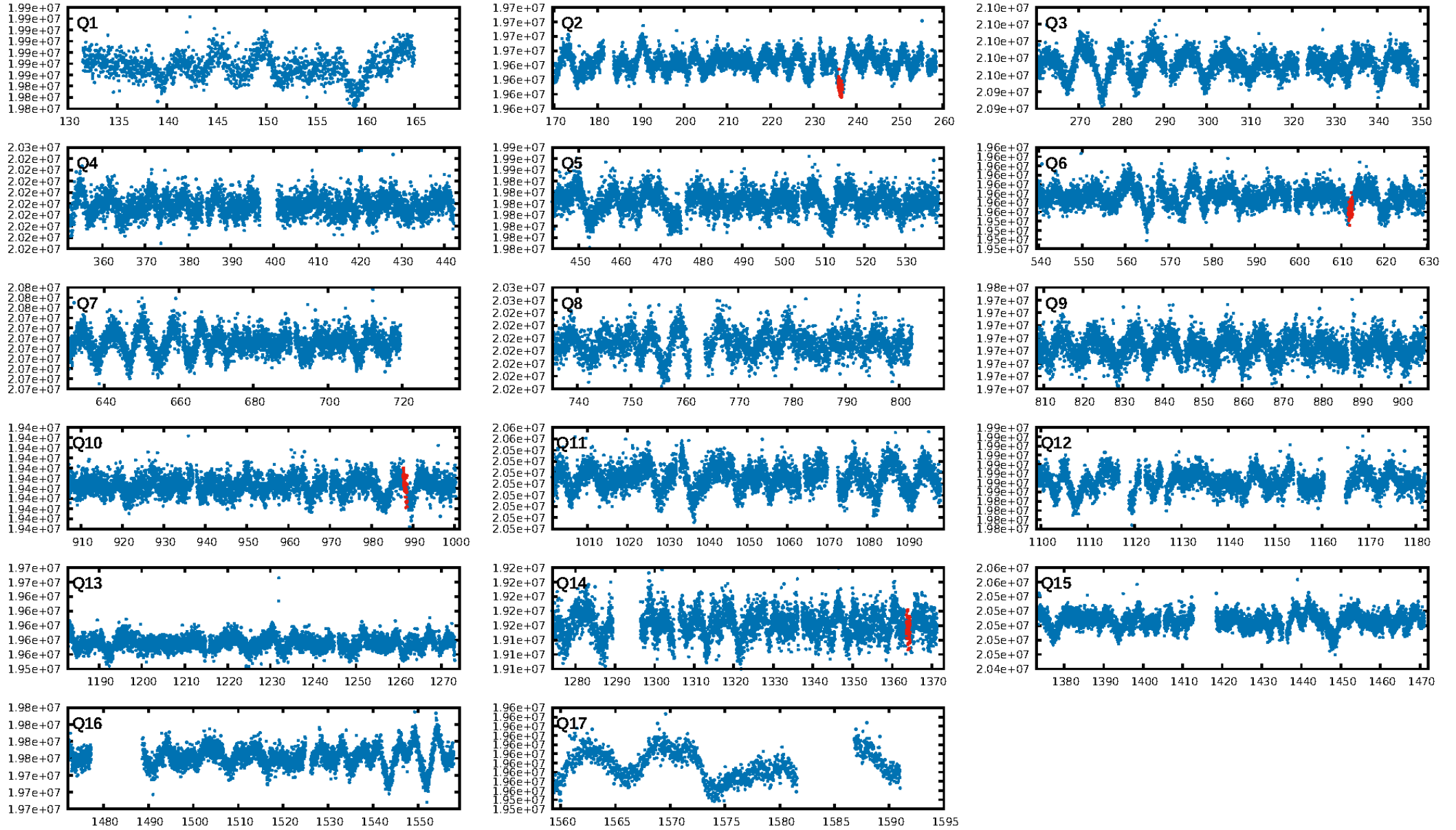
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [603.48 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 14.8%
ModelChiSquareGof-sig: 91.4%
Bootstrap-pfa: 9.08e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.4886
Centroid-sig: 36.9%
Centroid-so: 1.361 arcsec [0.77 σ]
OotOffset-rm: 1.466 arcsec [0.76 σ]
KicOffset-rm: 1.501 arcsec [1.02 σ]
OotOffset-st: 3/0/0/0 [3]
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.00 [0/4]

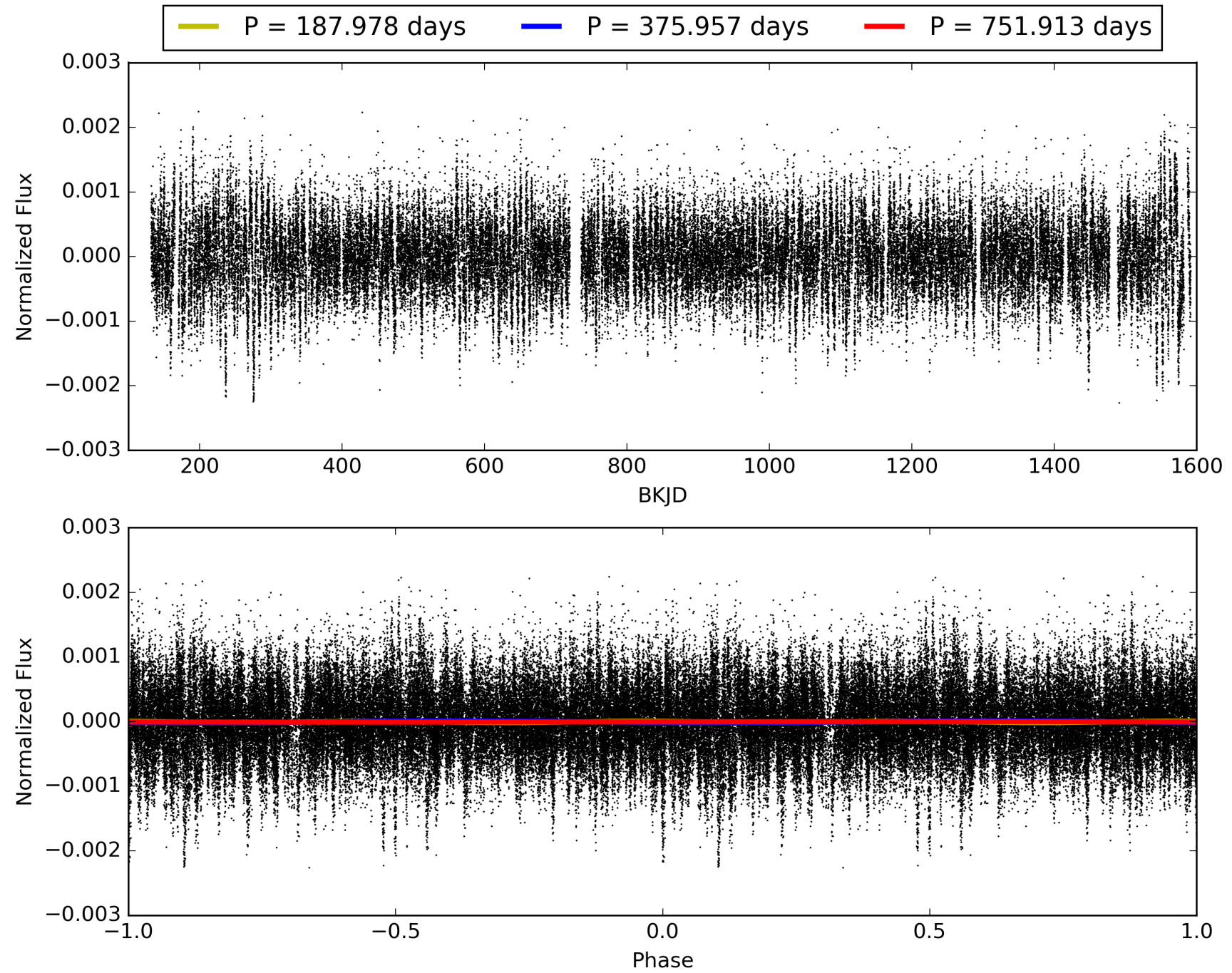
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:02:03 Z

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

TCE 008382114-02, PDC Light Curves

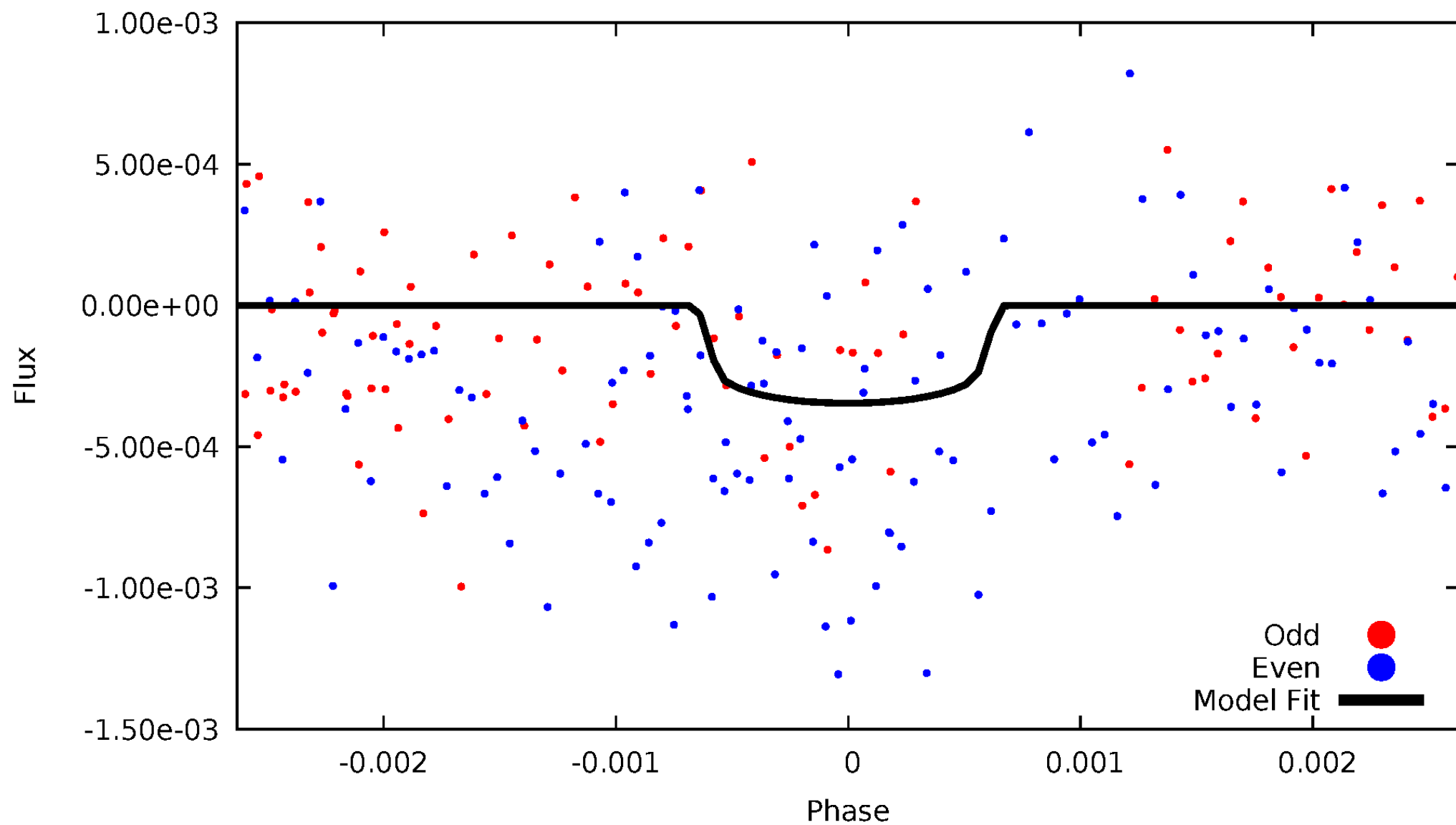


TCE 008382114-02



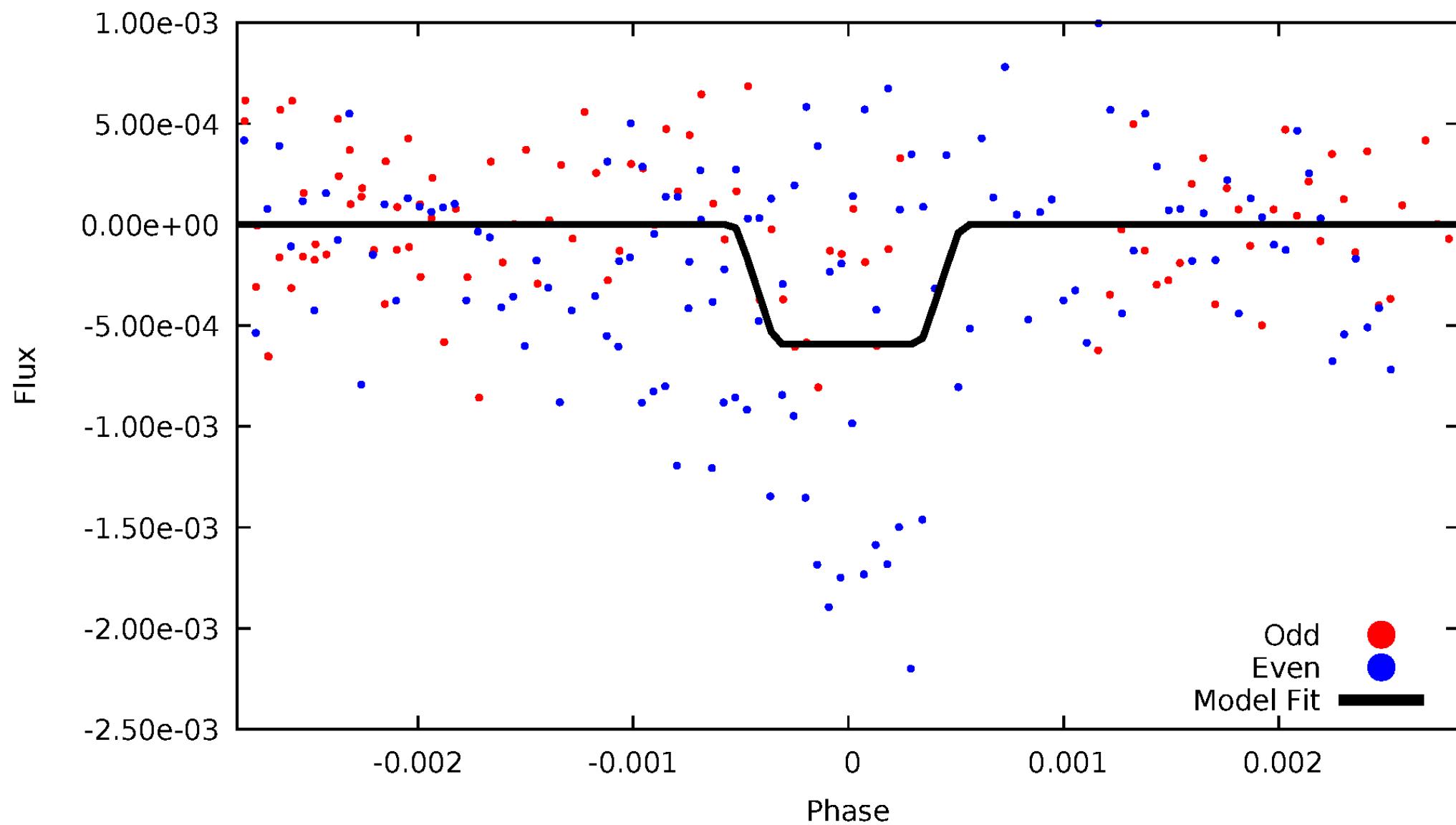
DV Odd/Even

TCE 008382114-02



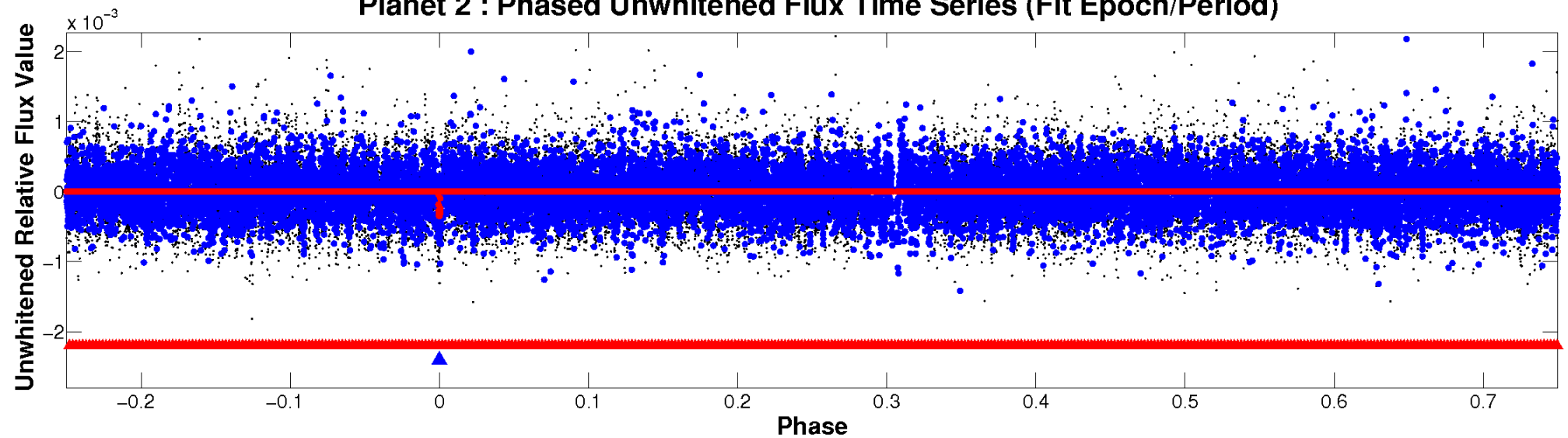
ALT Odd/Even

TCE 008382114-02

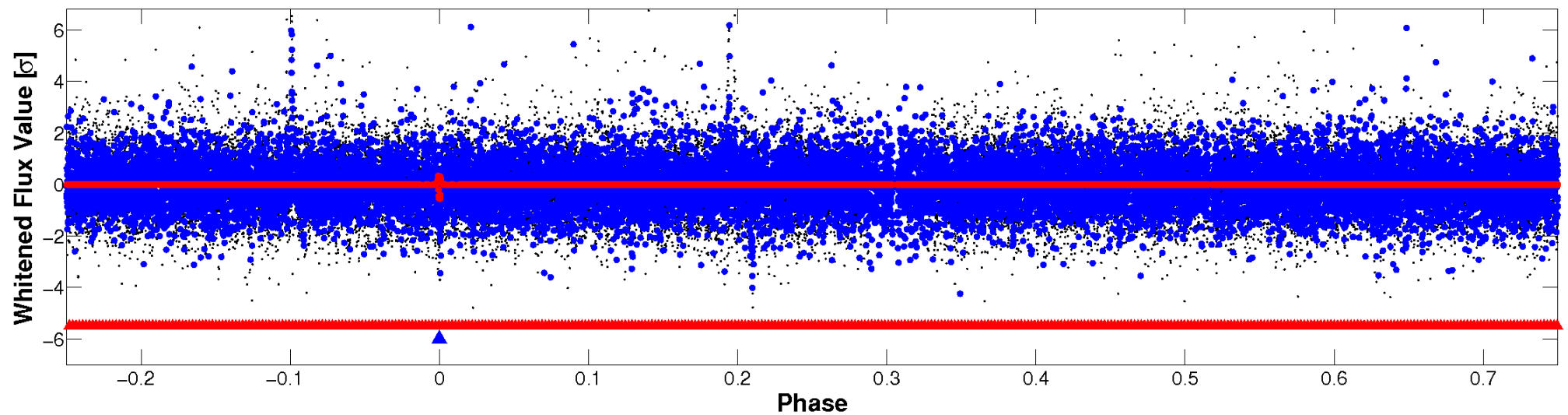


Non-Whitened Vs. Whitened Light Curve

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

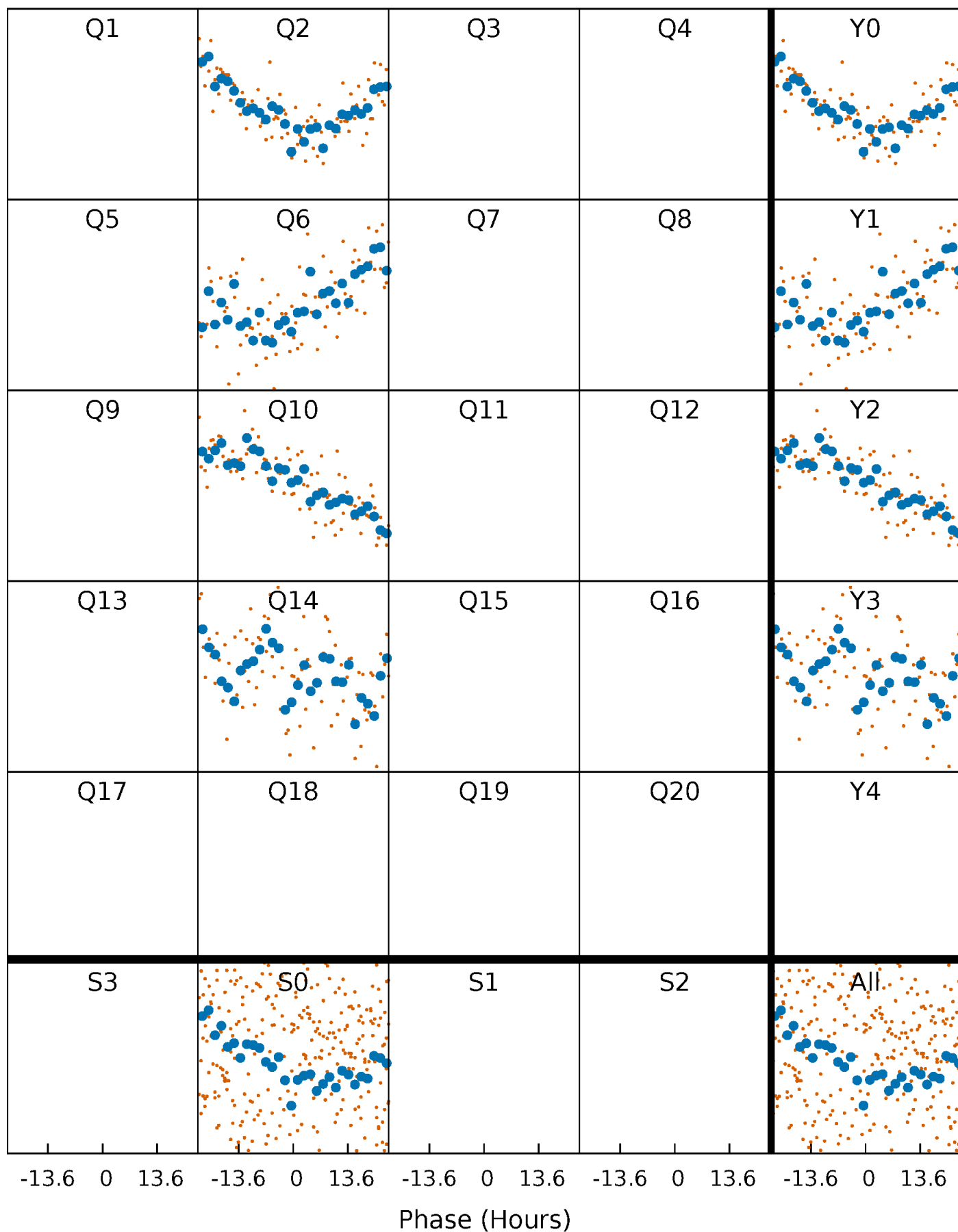


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



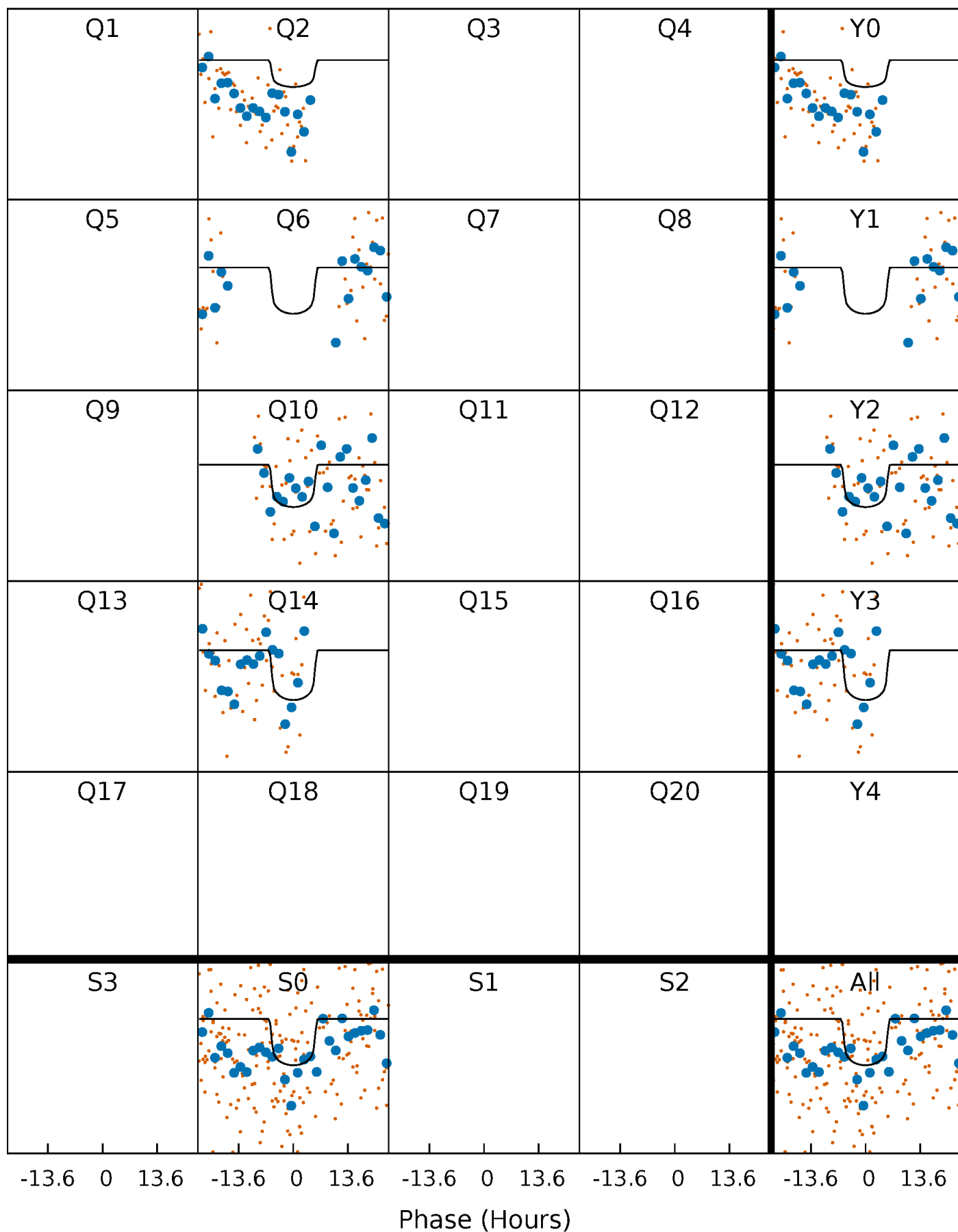
PDC Quarter-Phased Transit Curves

TCE 008382114-02 $P=375.956699$ Days $T_0=236.212057$ (BKJD)



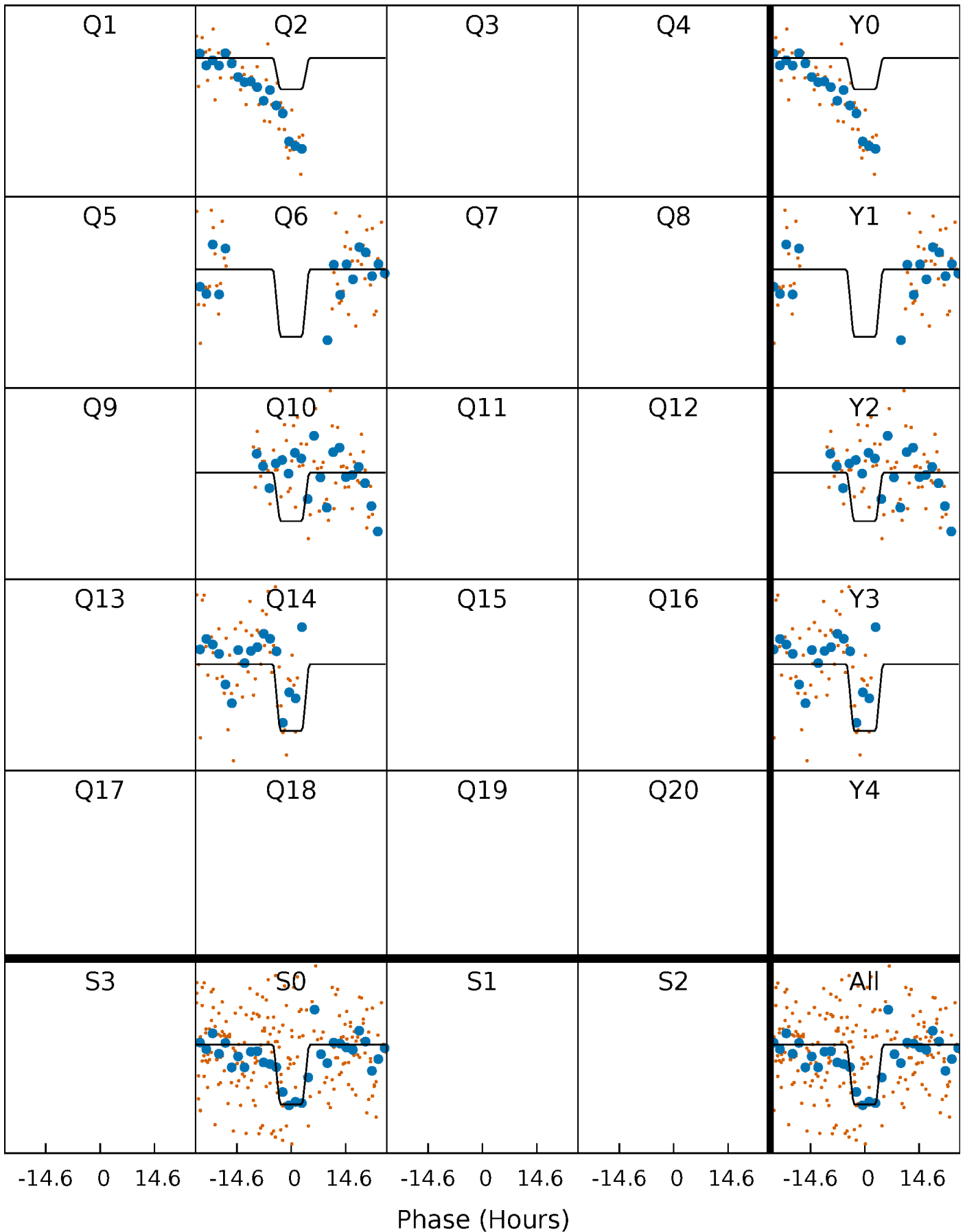
DV Quarter-Phased Transit Curves

TCE 008382114-02 $P=375.956699$ Days $T_0=236.212057$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

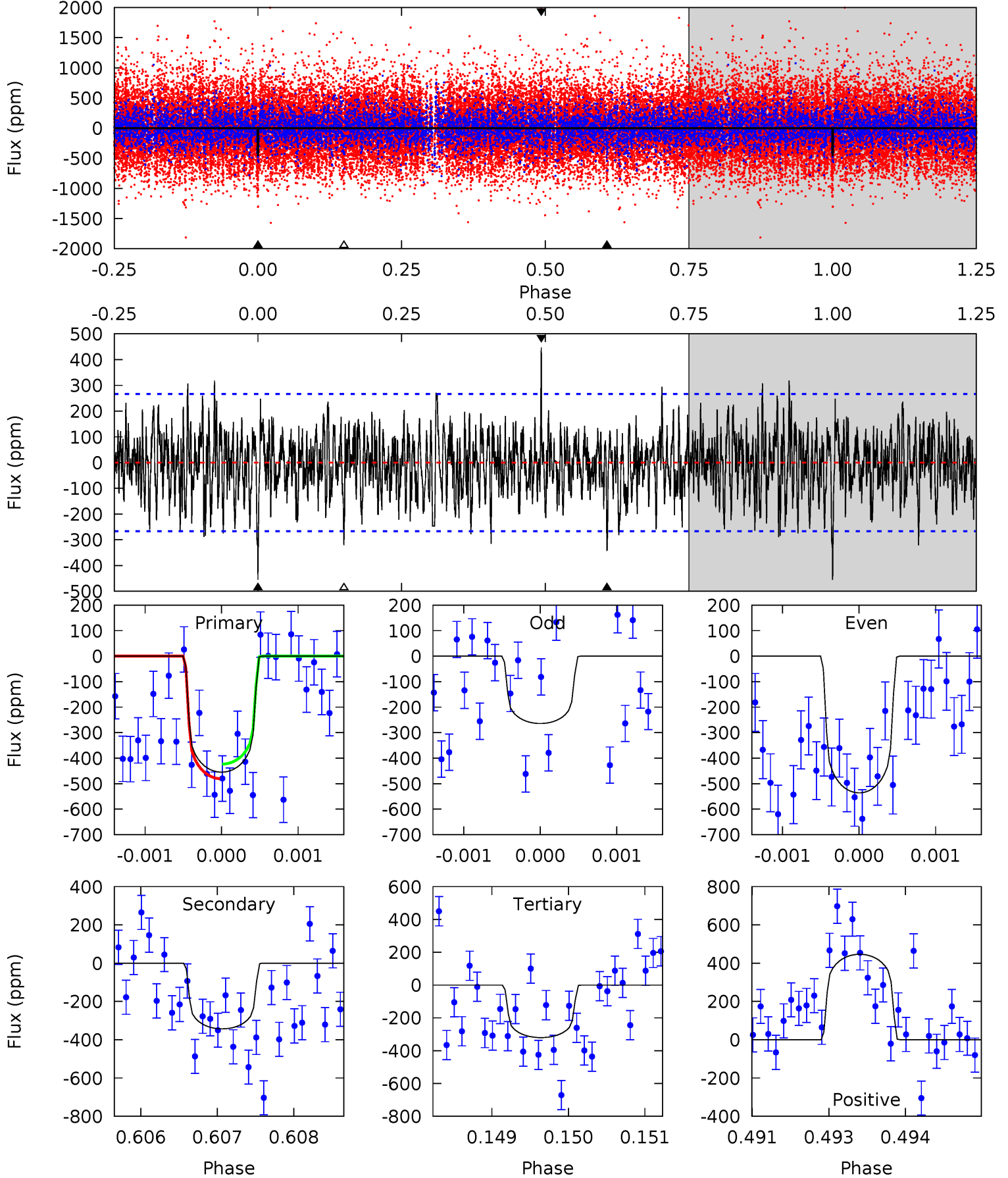
TCE 008382114-02 P=375.957070 Days $T_0=236.229746$ (BKJD)



DV Model-Shift Uniqueness Test

008382114-02, P = 375.956699 Days, E = 236.212057 Days

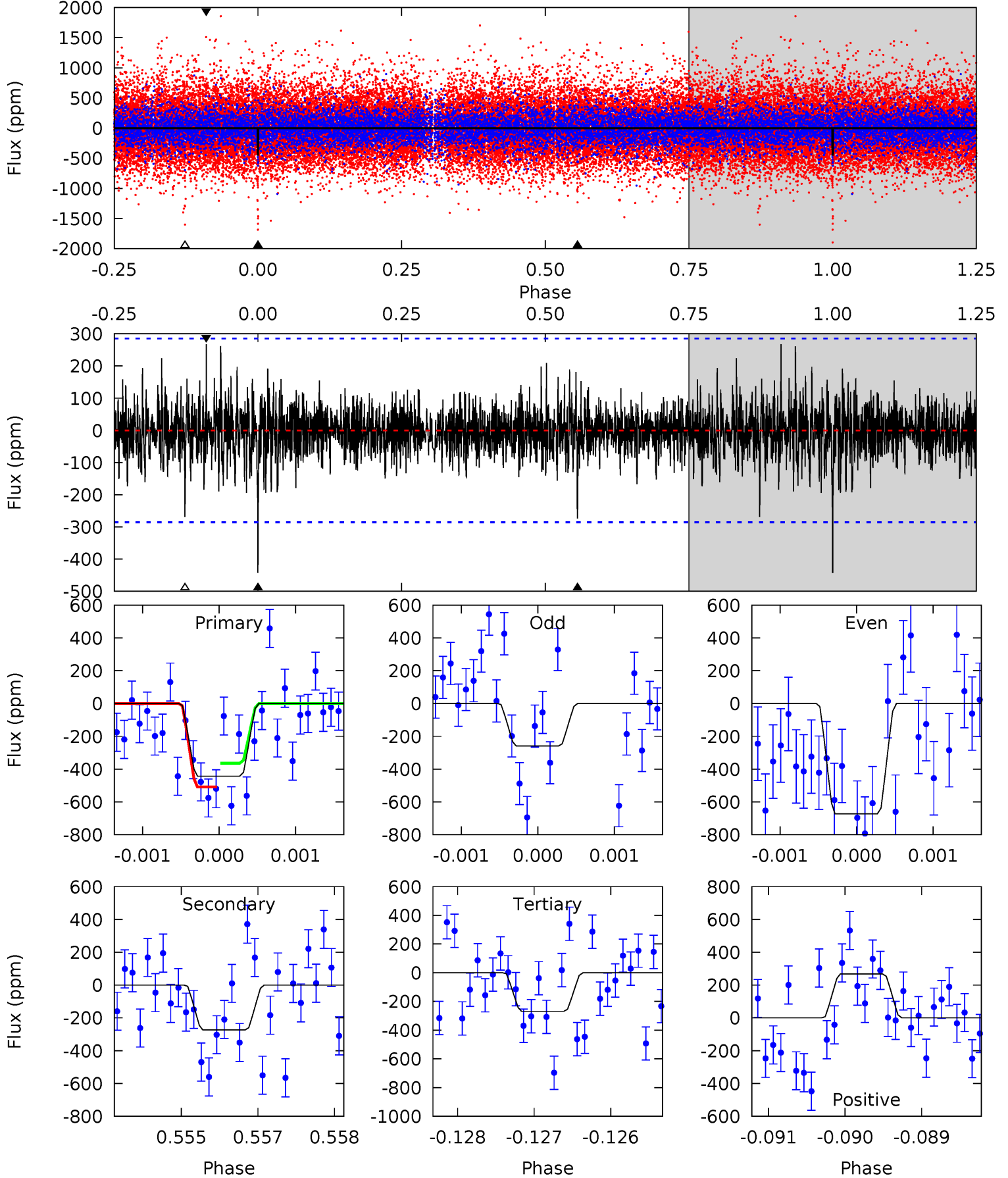
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.21	6.95	6.49	9.04	5.40	3.20	2.01	2.72	0.17	0.46	-2.09	2.51	1.62	0.50	0.58



Alt Model-Shift Uniqueness Test

008382114-02, $P = 375.957070$ Days, $E = 236.229746$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.44	5.21	5.11	5.09	5.44	3.27	1.08	3.32	3.34	0.10	0.12	3.75	2.11	0.38	1.37



Stellar Parameters For KIC 008382114

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6122^{+193}_{-214}	$4.471^{+0.054}_{-0.216}$	$-0.100^{+0.250}_{-0.350}$	$0.996^{+0.341}_{-0.114}$	$1.070^{+0.151}_{-0.151}$	$1.526^{+0.441}_{-0.806}$
	+3%/-3%	+1%/-5%	+250%/-350%	+34%/-11%	+14%/-14%	+29%/-53%
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 008382114-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-343 ± 49	$2.22^{+0.81}_{-0.74}$	378^{+29}_{-21}	6022^{+1351}_{-847}	40969^{+50203}_{-19095}
Alt.	-274 ± 53	$2.78^{+0.87}_{-0.82}$	376^{+30}_{-19}	5073^{+894}_{-525}	19959^{+21739}_{-8565}

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

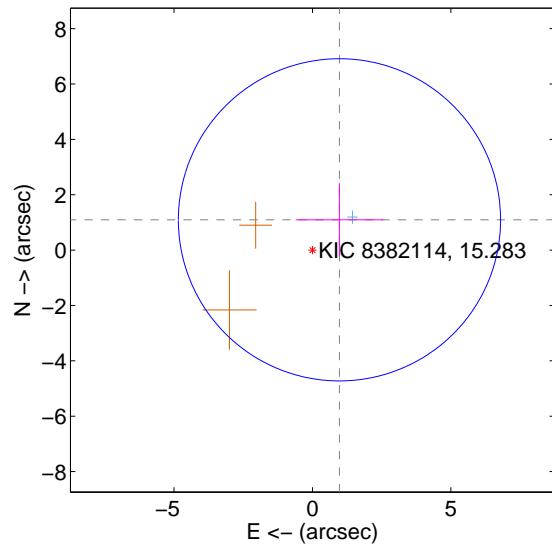
Supplemental centroid analysis for 008382114-02. Kepler magnitude: 15.28. Transit SNR 4.02

There are 1 quarters with good PRF difference image offsets

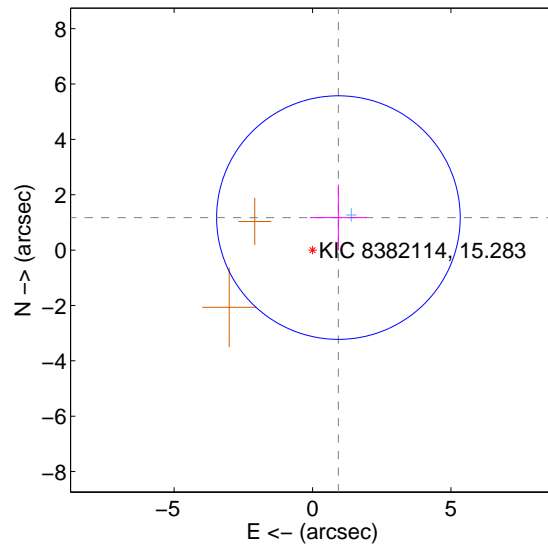
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.466 ± 1.939	0.76	-0.976 ± 1.579	1.093 ± 1.324
PRF-fit source offset from KIC position	1.501 ± 1.466	1.02	-0.935 ± 1.032	1.175 ± 1.184
photometric centroid source offset	1.36 ± 1.76	0.77	-0.02 ± 1.76	-1.36 ± 1.76

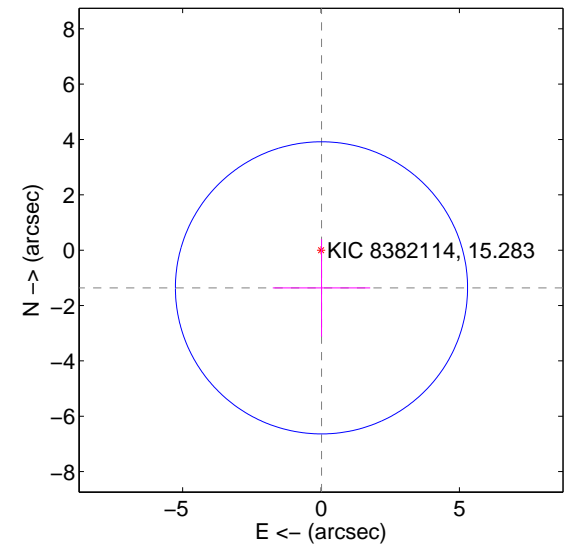
offset from difference PRF-fit to OOT PRF-fit



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.

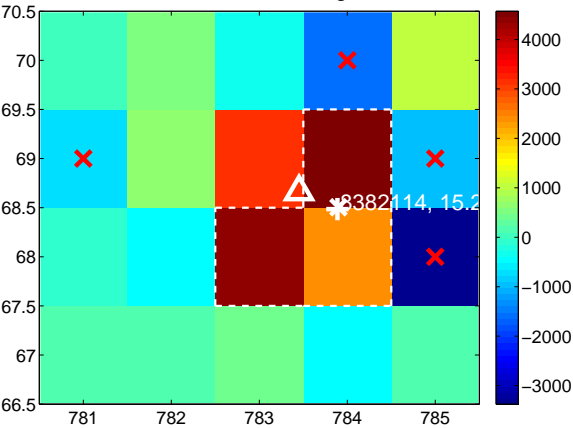
Q1 no difference image



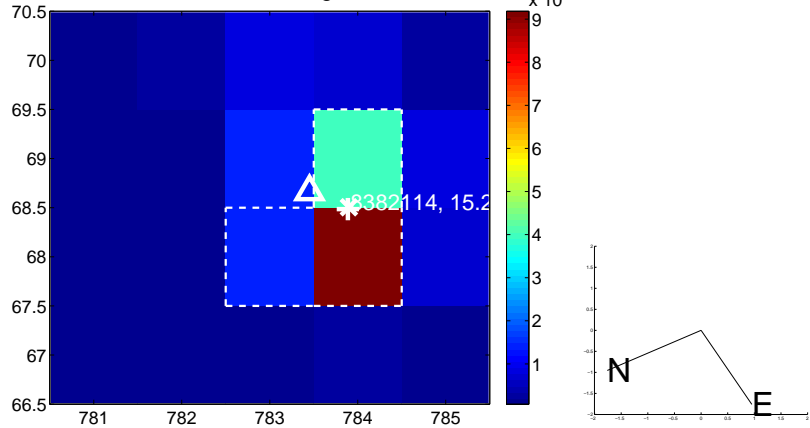
Q1 no OOT image



Q2 difference image



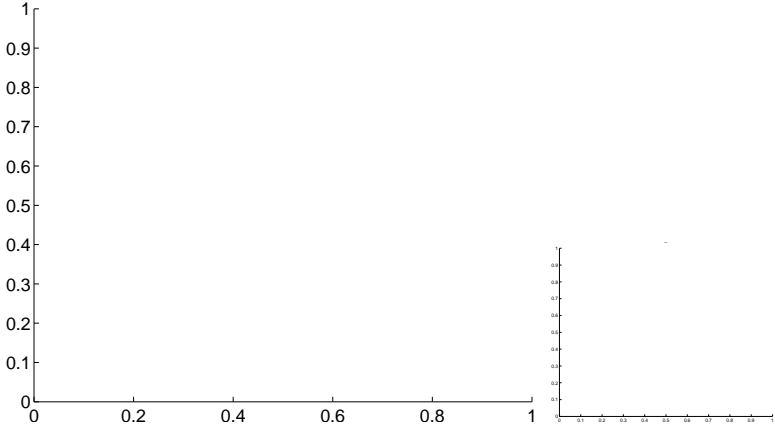
Q2 OOT image



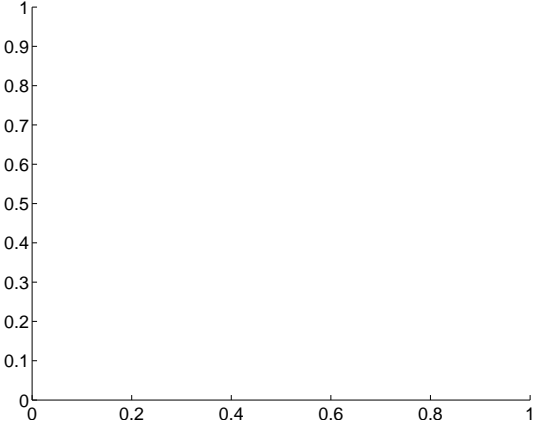
Q3 no difference image



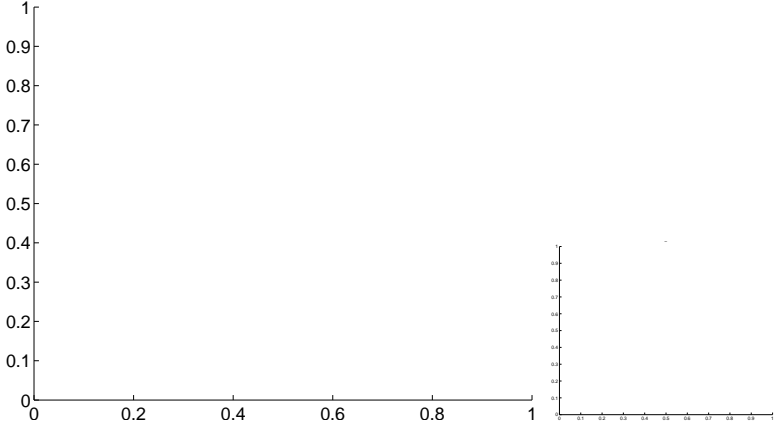
Q3 no OOT image



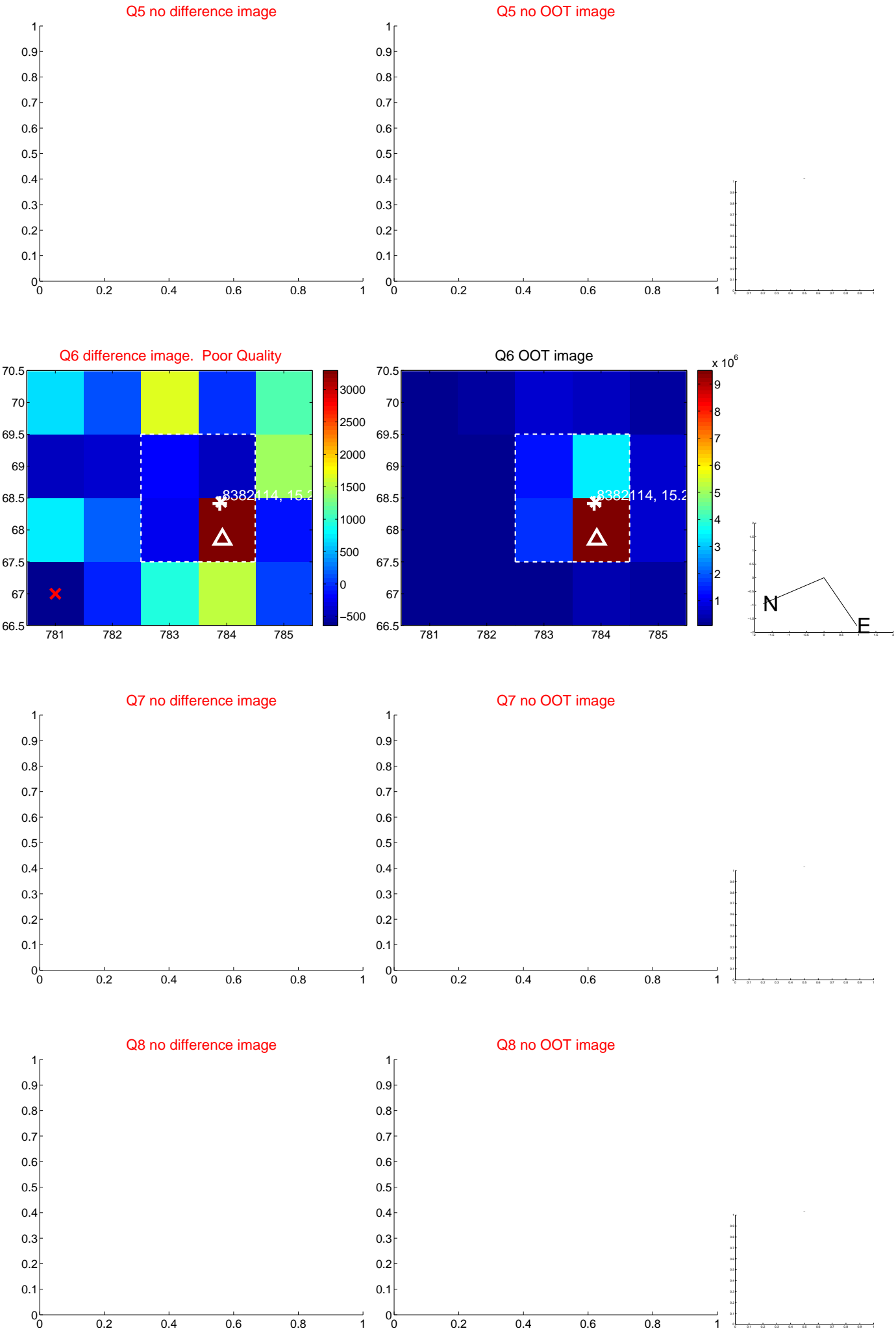
Q4 no difference image



Q4 no OOT image



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.

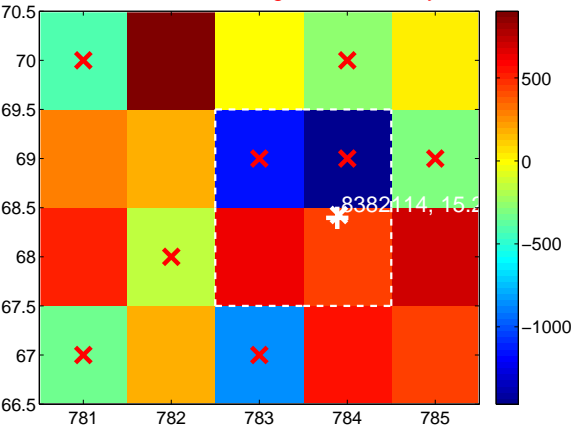
Q9 no difference image



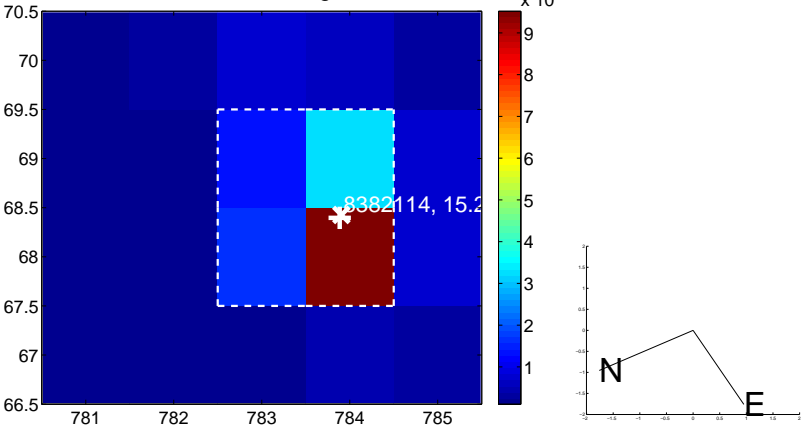
Q9 no OOT image



Q10 difference image. Poor Quality



Q10 OOT image



Q11 no difference image



Q11 no OOT image



Q12 no difference image



Q12 no OOT image



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

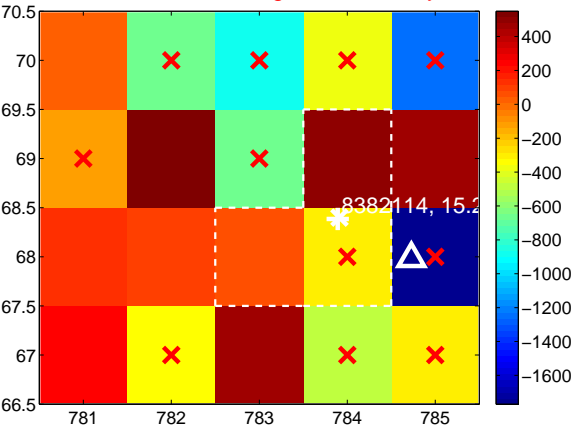
Q13 no difference image



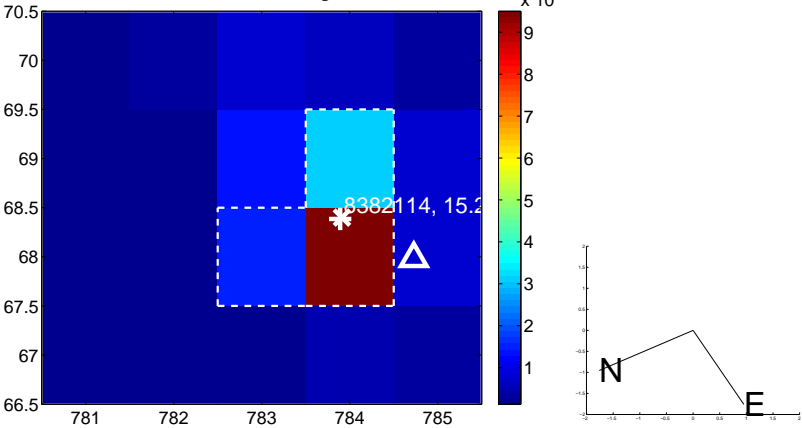
Q13 no OOT image



Q14 difference image. Poor Quality



Q14 OOT image



Q15 no difference image



Q15 no OOT image



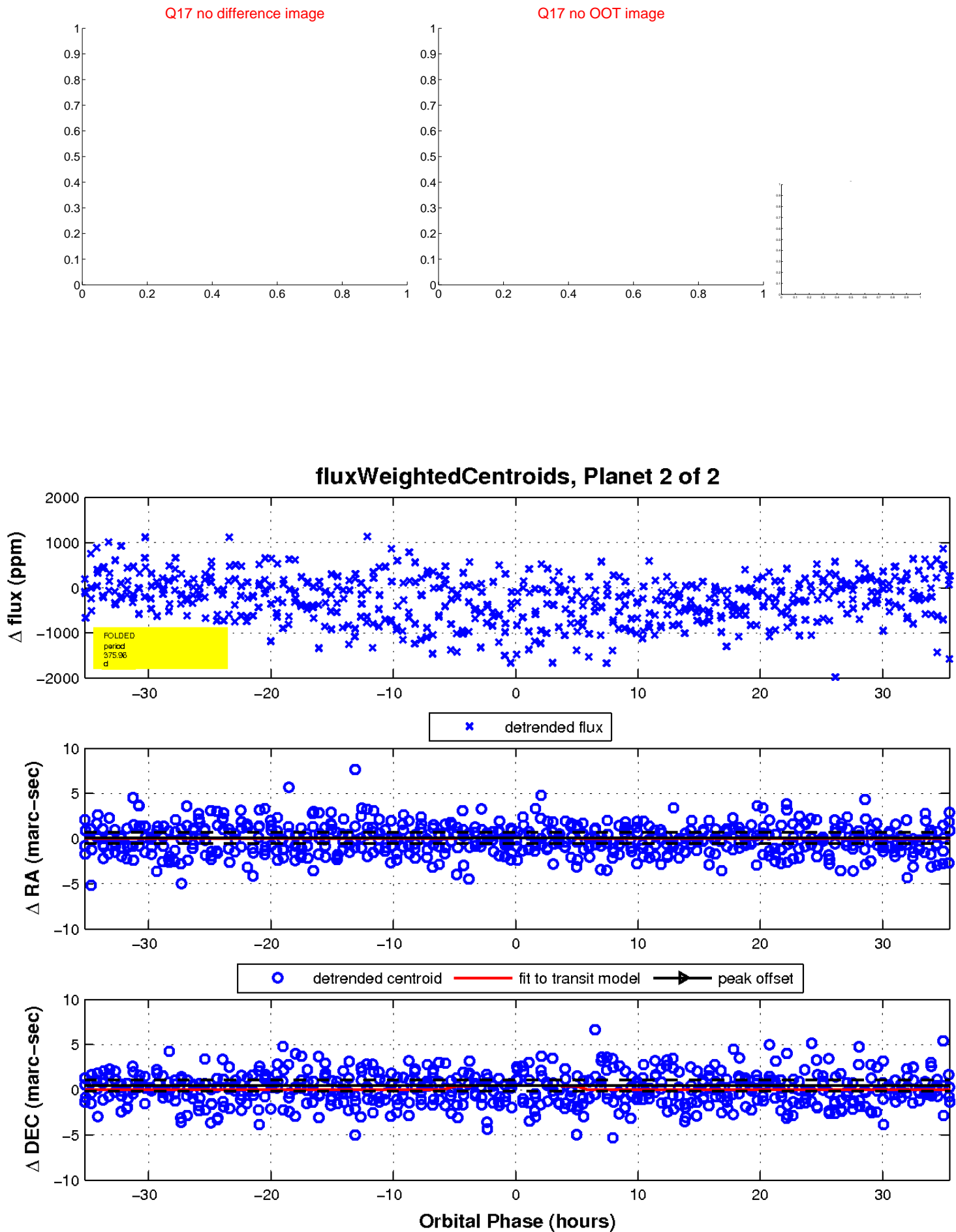
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

