

KIC 003642324

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})
003642324-01	OBS	No	0.508819	131.766284	16.6	1.944	7.1	4.6	1.34	5481	0.56	9744.72
003642324-02	OBS	No	155.031072	217.347742	338.0	4.026	8.5	4.3	1.34	5481	2.71	4.75

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003642324-01	OBS	FP	0.00	1	0	1	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET
003642324-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_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.

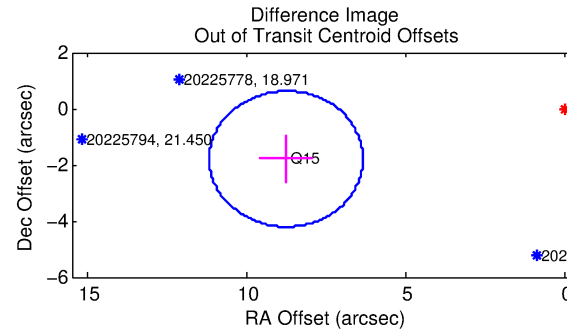
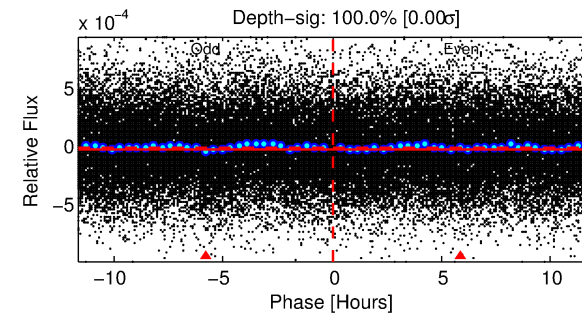
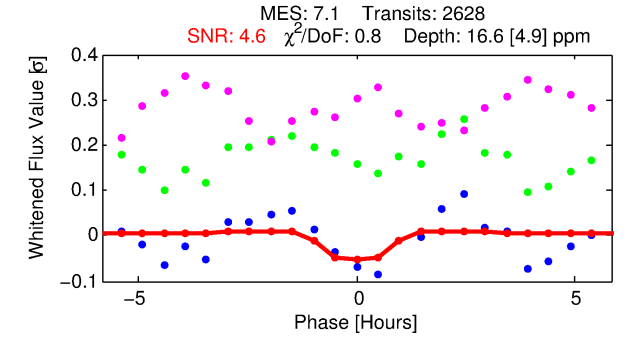
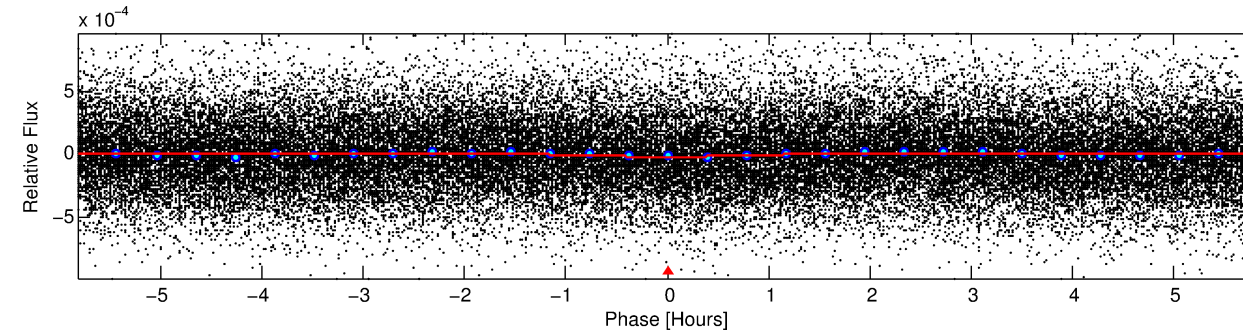
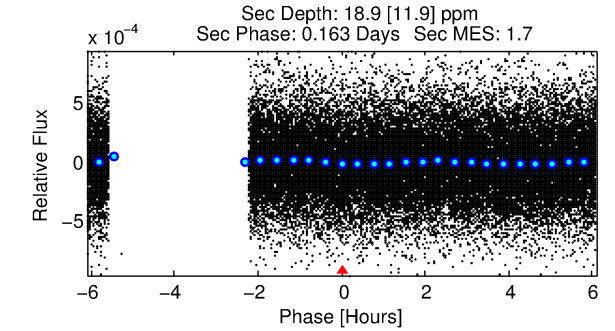
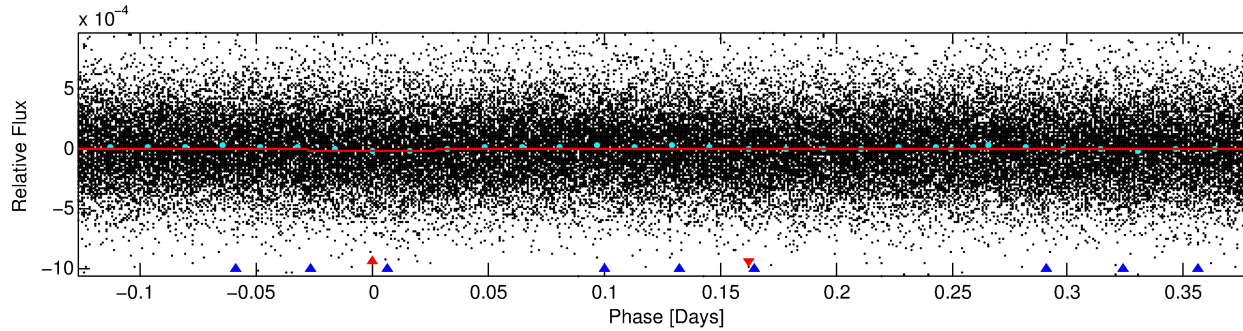
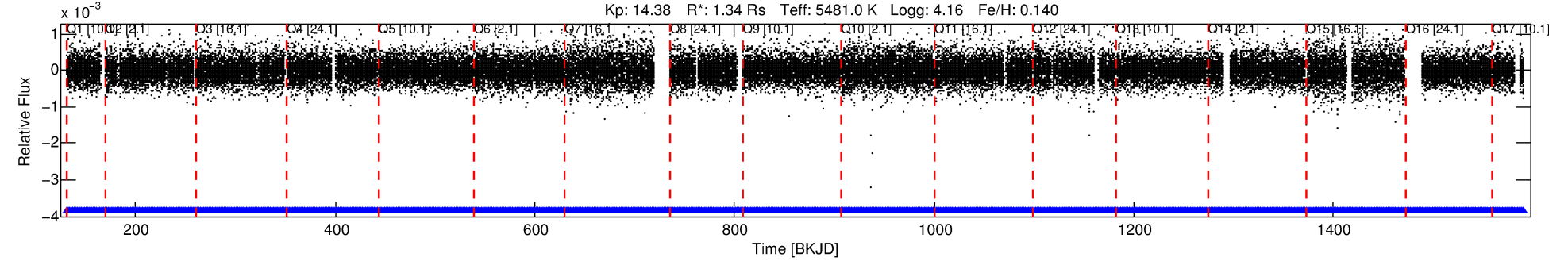
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003642324-01

No Significant Match Found

DV One-Page Summary

KIC: 3642324 Candidate: 1 of 2 Period: 0.509 d



DV Fit Results:

Period = 0.50882 [0.00002] d
Epoch = 131.7663 [0.0053] BKJD
Rp/R* = 0.0038 [0.0032]
a/R* = 1.84 [4.18]
b = 0.55 [4.15]
Seff = 9744.72 [5436.21]
Teq = 2533 [353] K
Rp = 0.56 [0.50] Re
a = 0.0122 [0.0040] AU
Ag = 4.93 [9.15] [0.43σ]
Teffp = 5837 [2594] K [1.26σ]

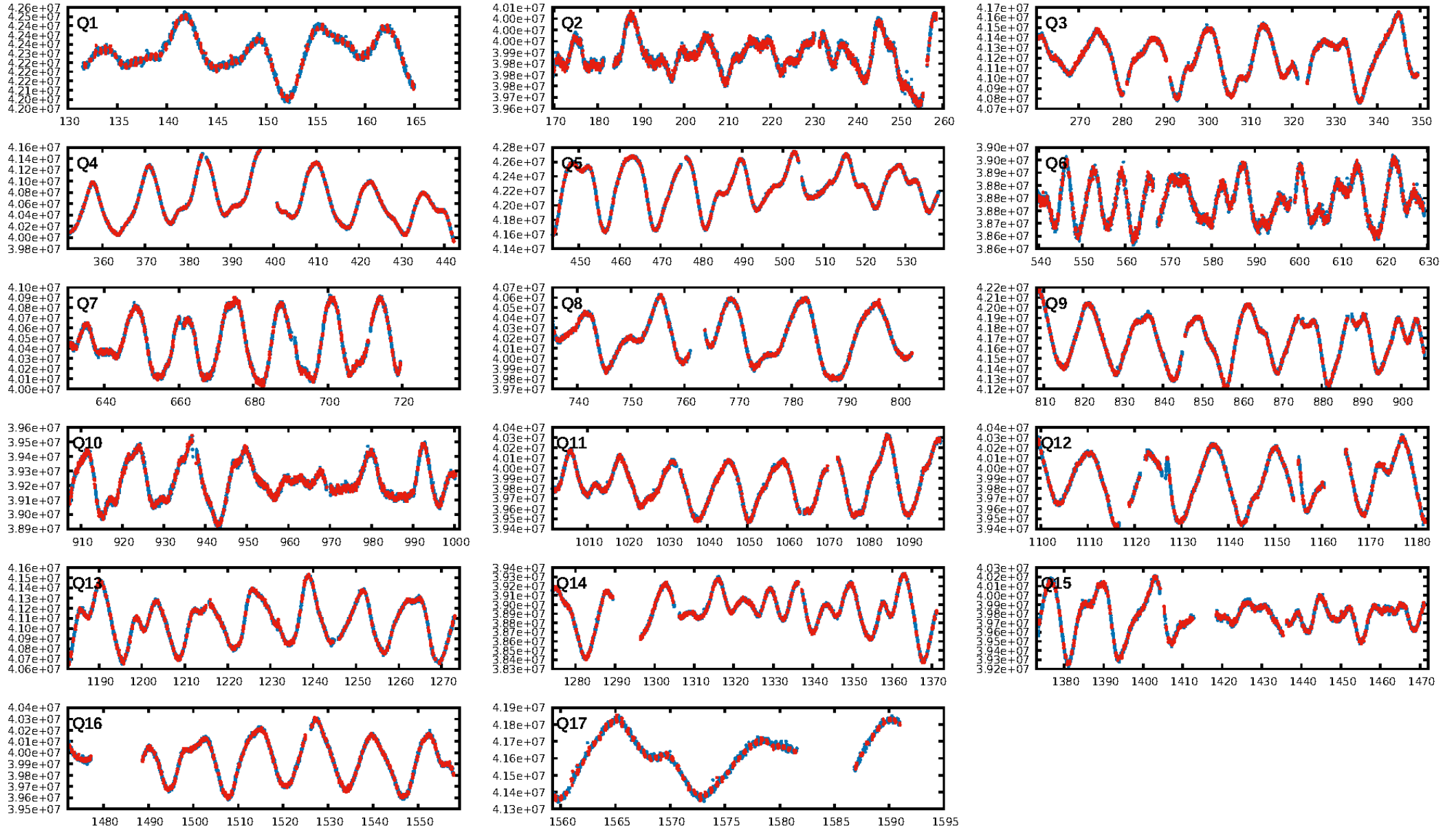
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [829.51σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.22e-12
RollingBand-fgt: 1.00 [2510/2510]
GhostDiagnostic-chr: 18.94
Centroid-sig: 14.1%
Centroid-so: 3.483 arcsec [1.21σ]
OotOffset-rm: 8.950 arcsec [11.11σ]
KicOffset-rm: 9.002 arcsec [11.17σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [17/17]

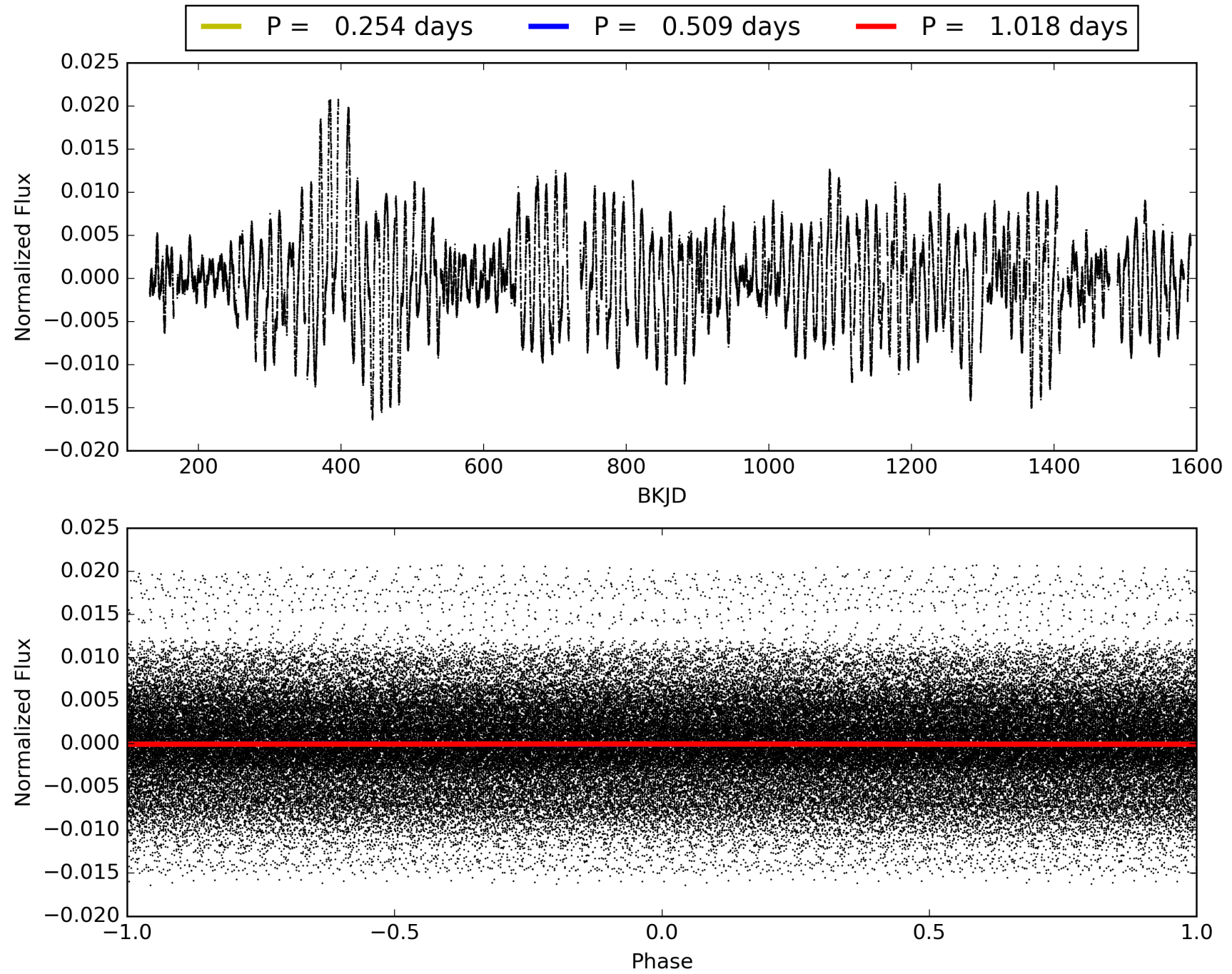
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:08:39 Z

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

TCE 003642324-01, PDC Light Curves

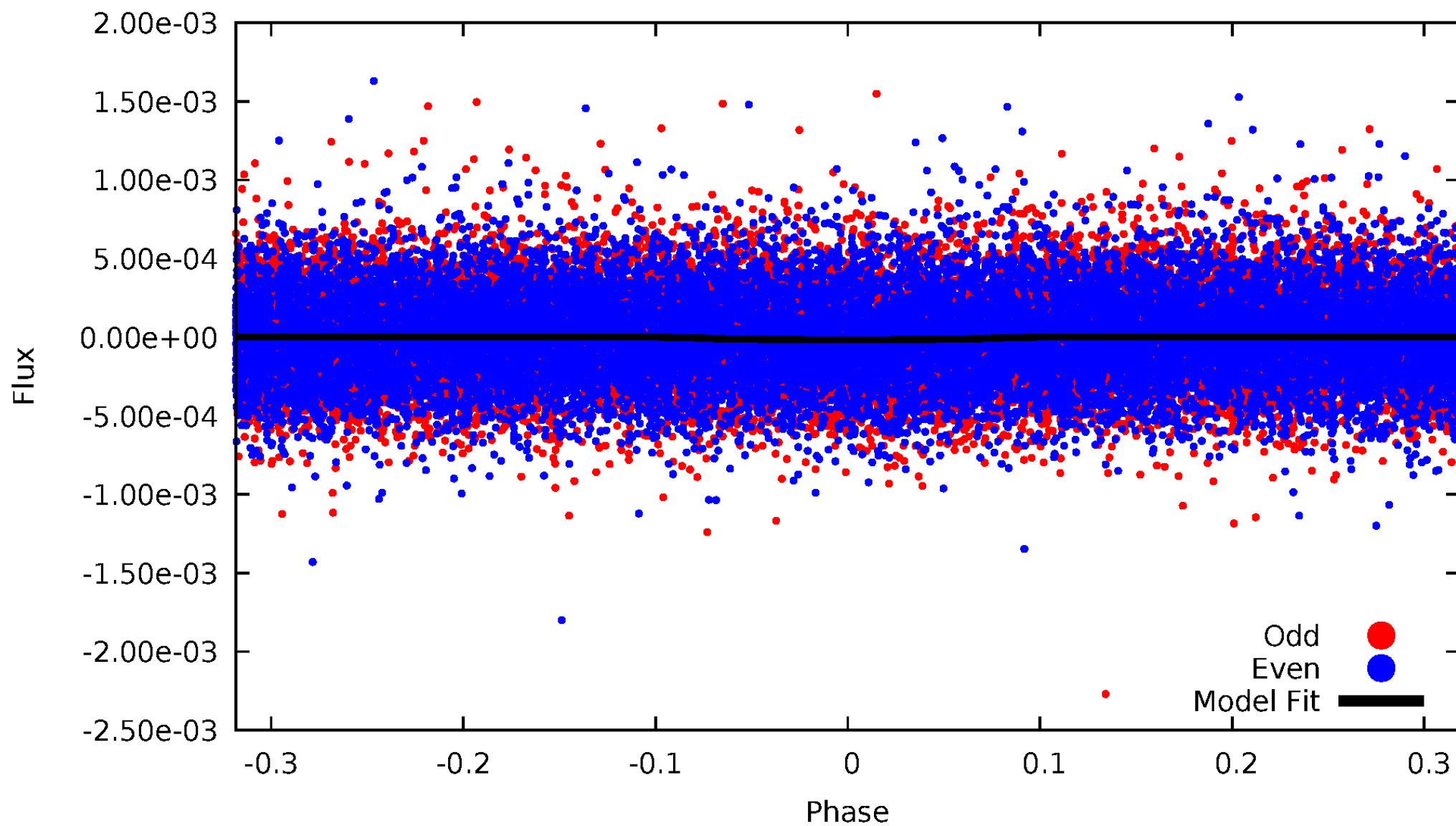


TCE 003642324-01



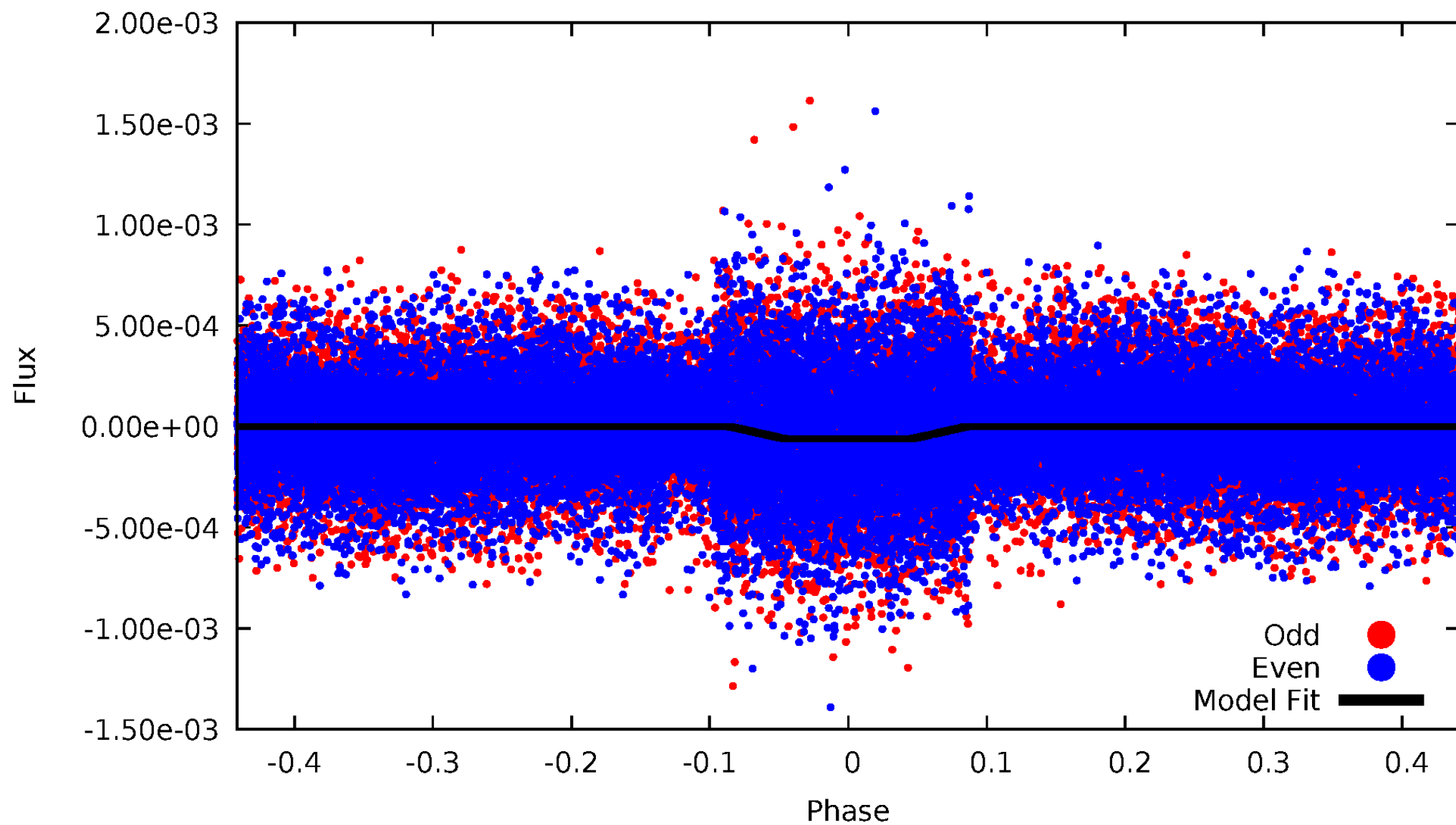
DV Odd/Even

TCE 003642324-01

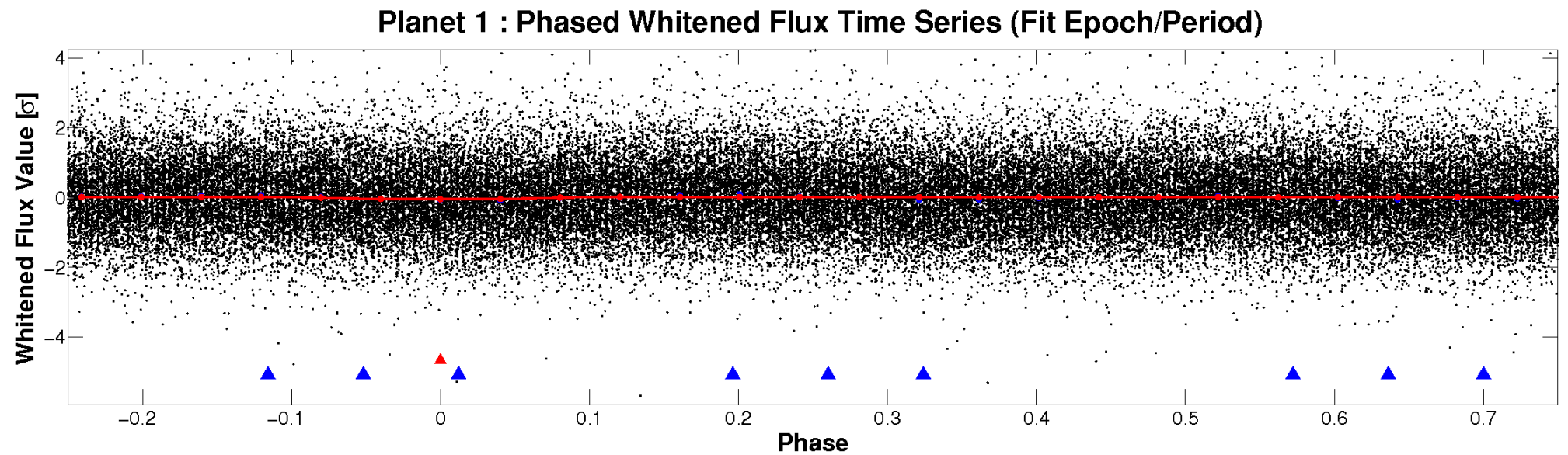
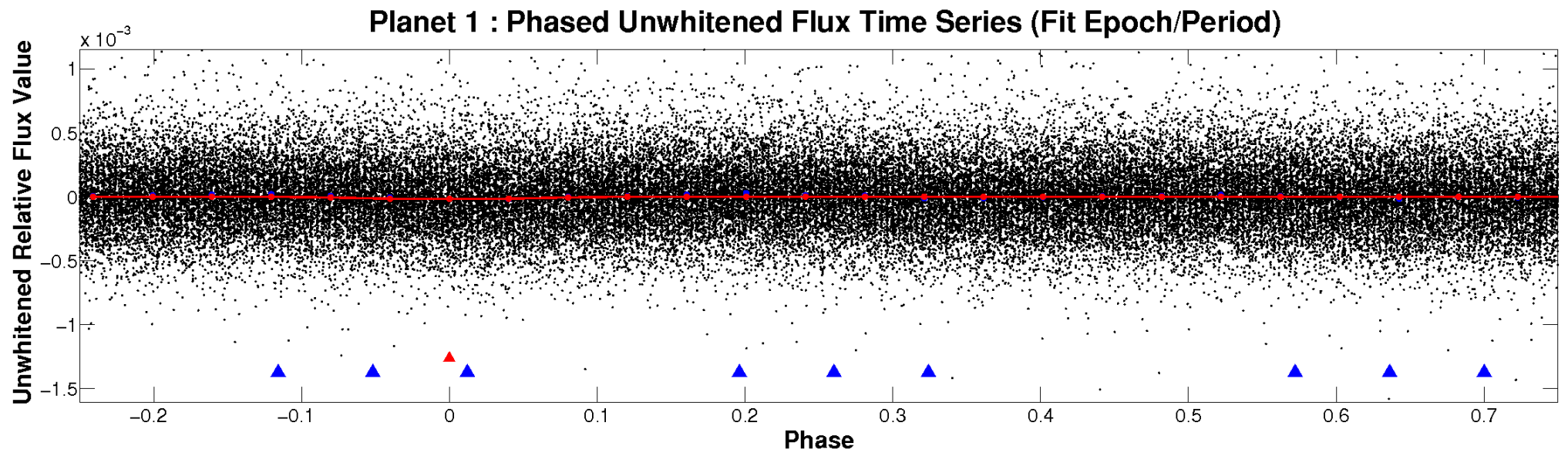


ALT Odd/Even

TCE 003642324-01

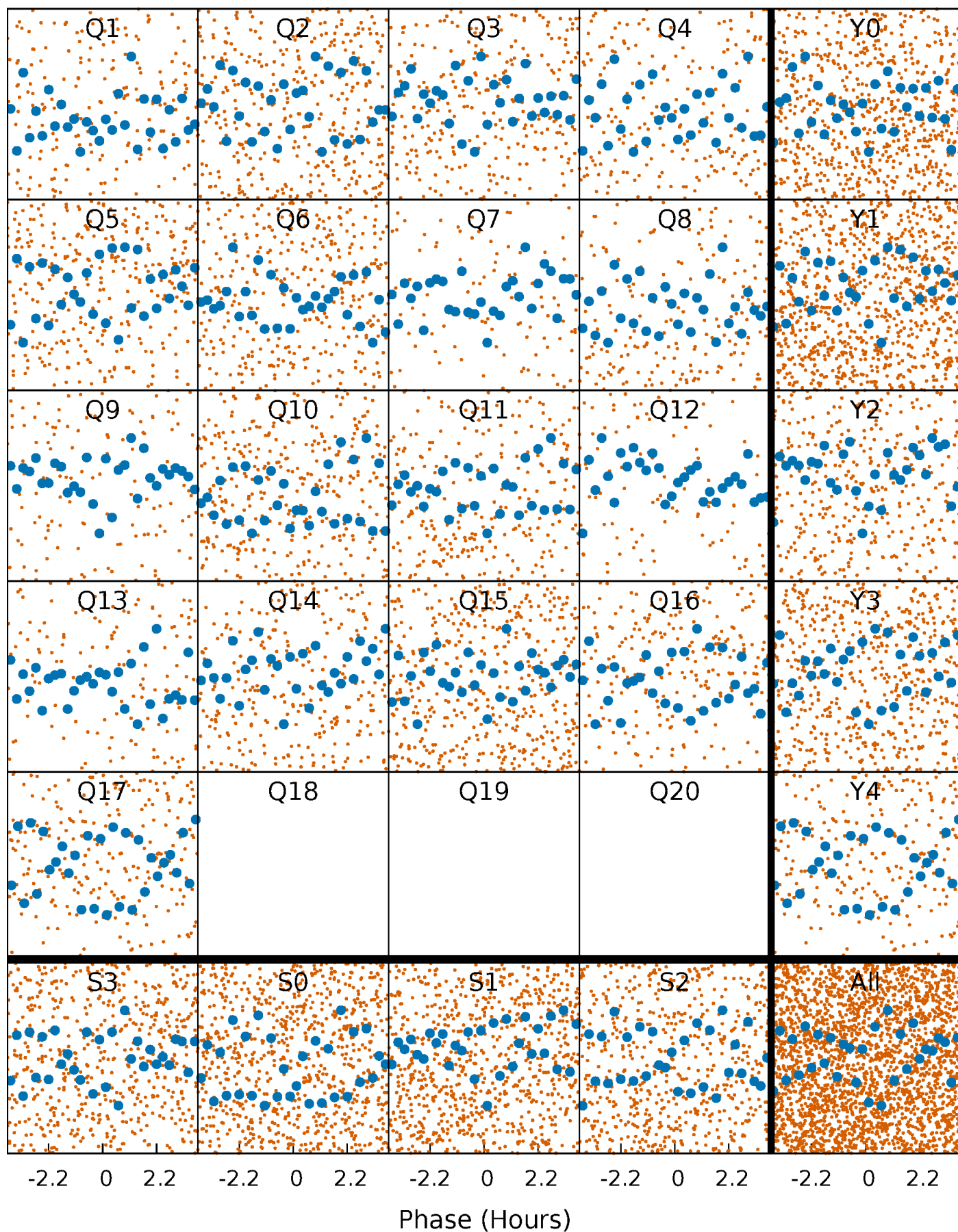


Non-Whitened Vs. Whitened Light Curve



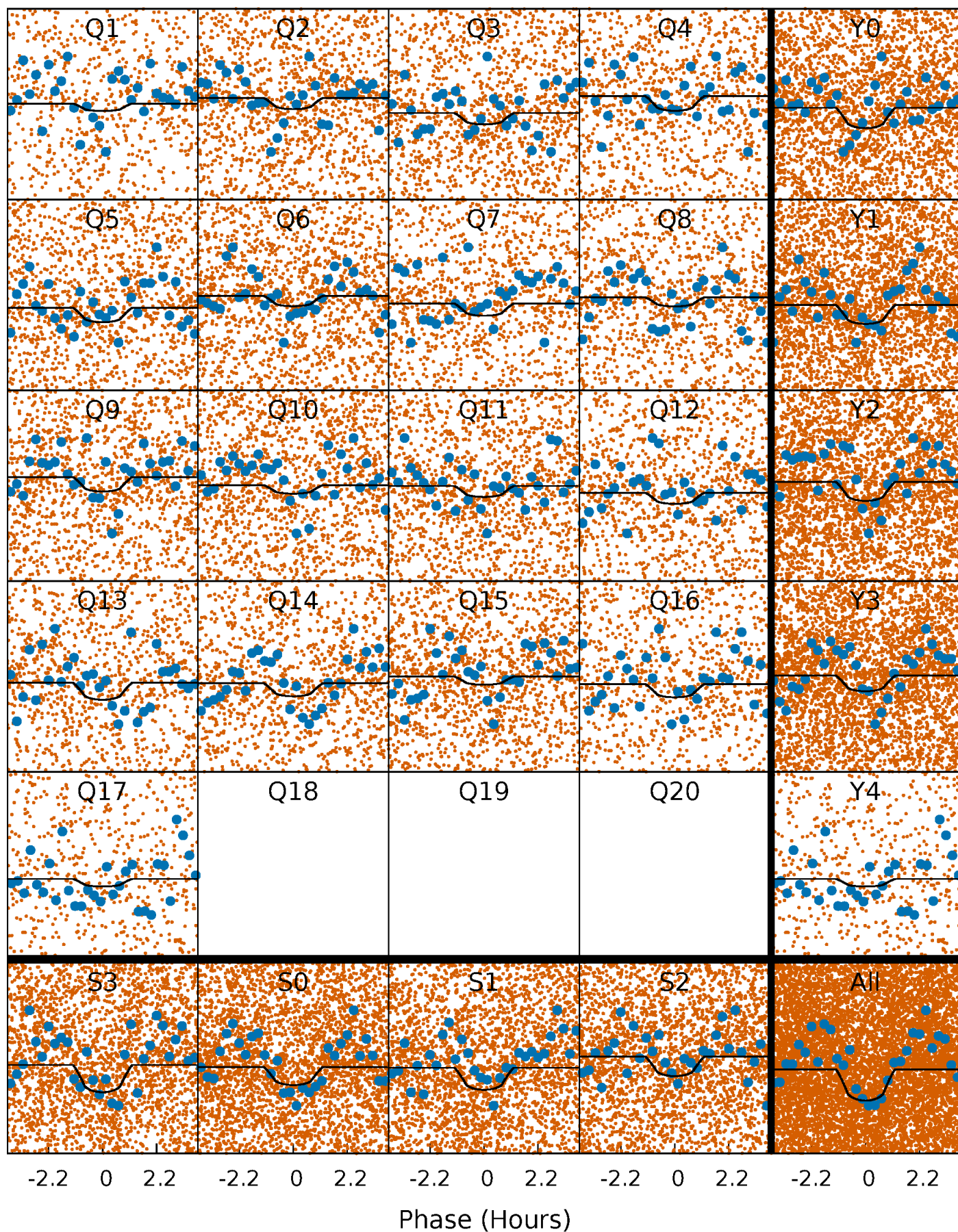
PDC Quarter-Phased Transit Curves

TCE 003642324-01 P= 0.508819 Days $T_0=131.766284$ (BKJD)



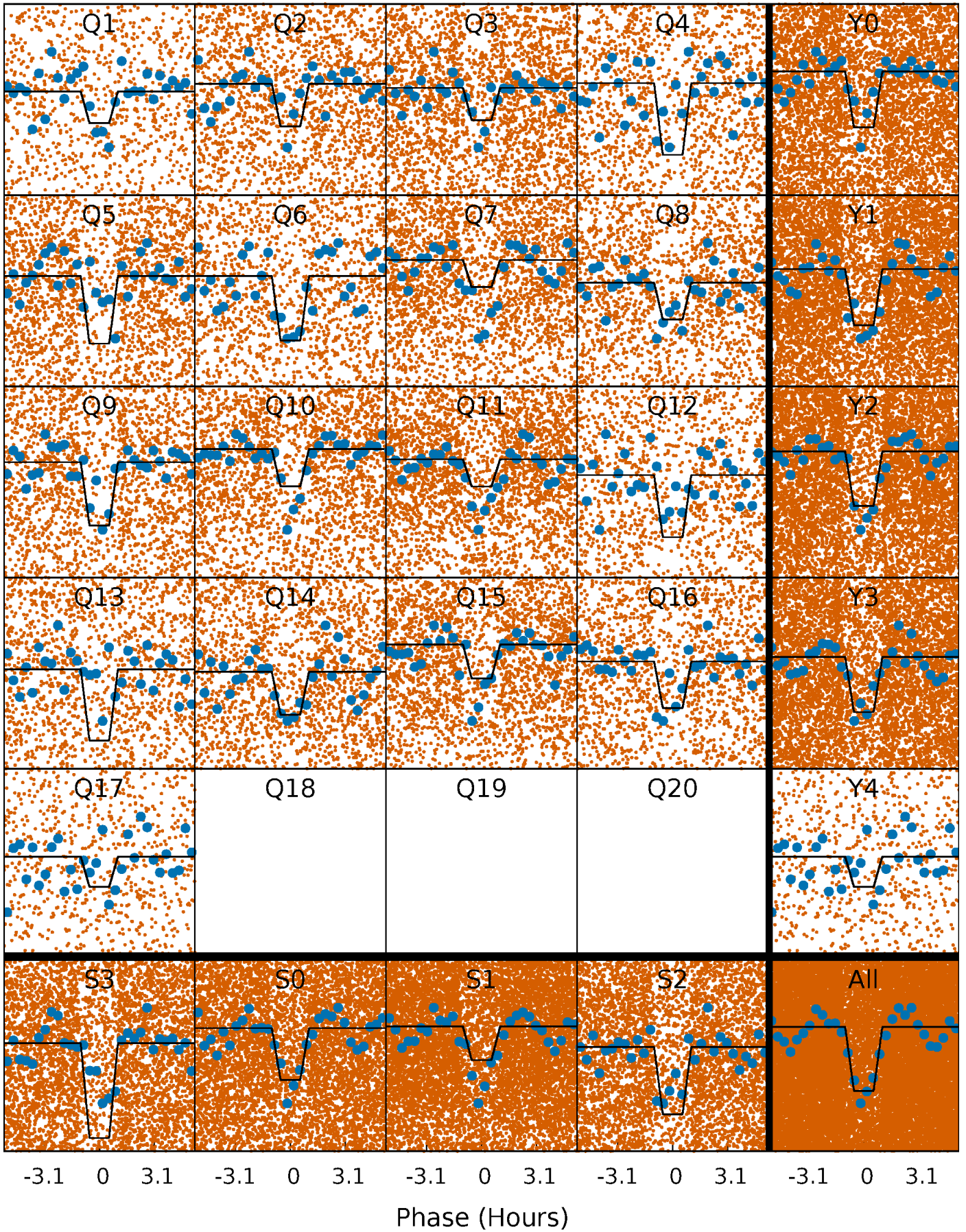
DV Quarter-Phased Transit Curves

TCE 003642324-01 P= 0.508819 Days $T_0=131.766284$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

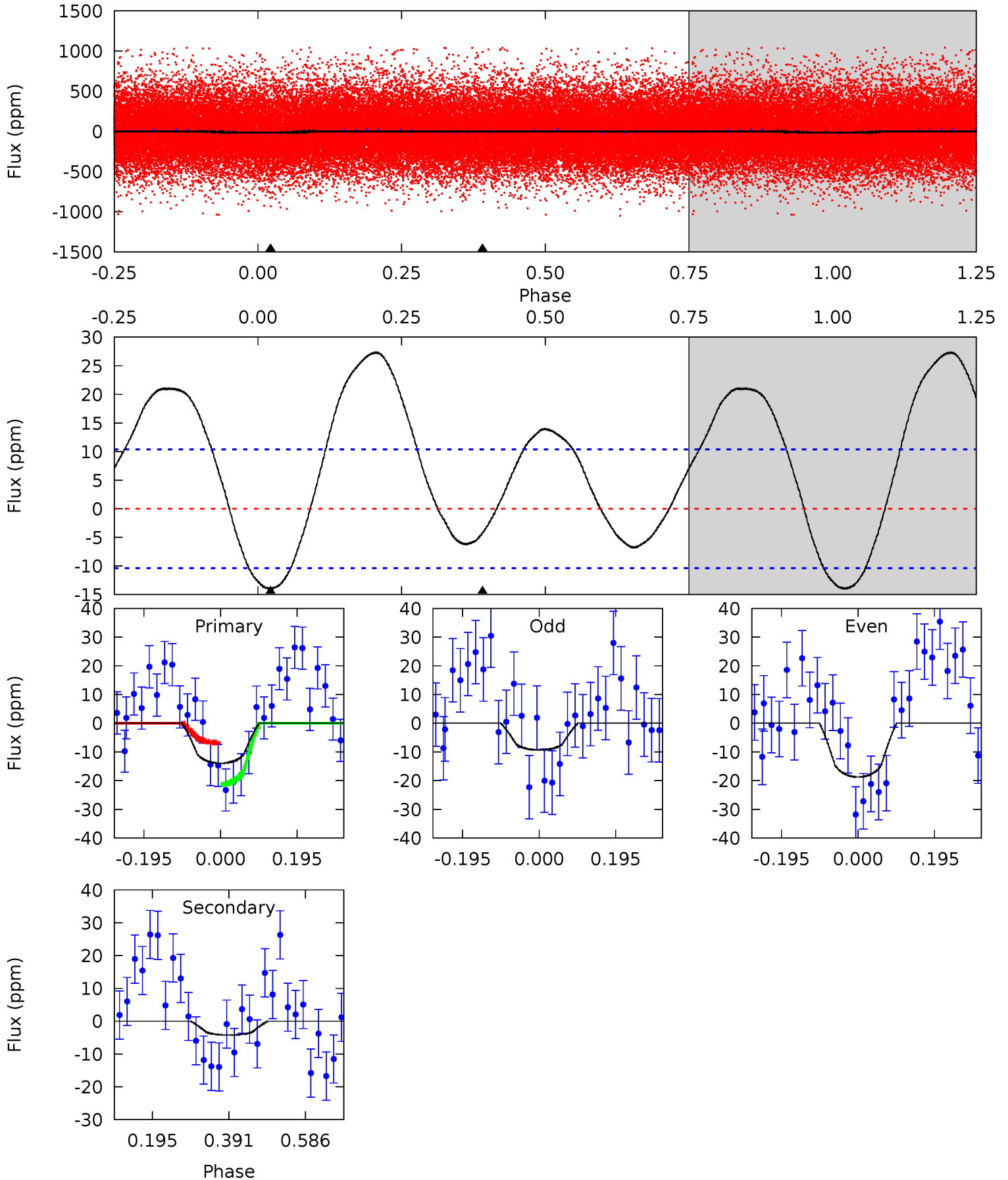
TCE 003642324-01 P= 0.508842 Days $T_0=131.739588$ (BKJD)



DV Model-Shift Uniqueness Test

003642324-01, P = 0.508819 Days, E = 131.257465 Days

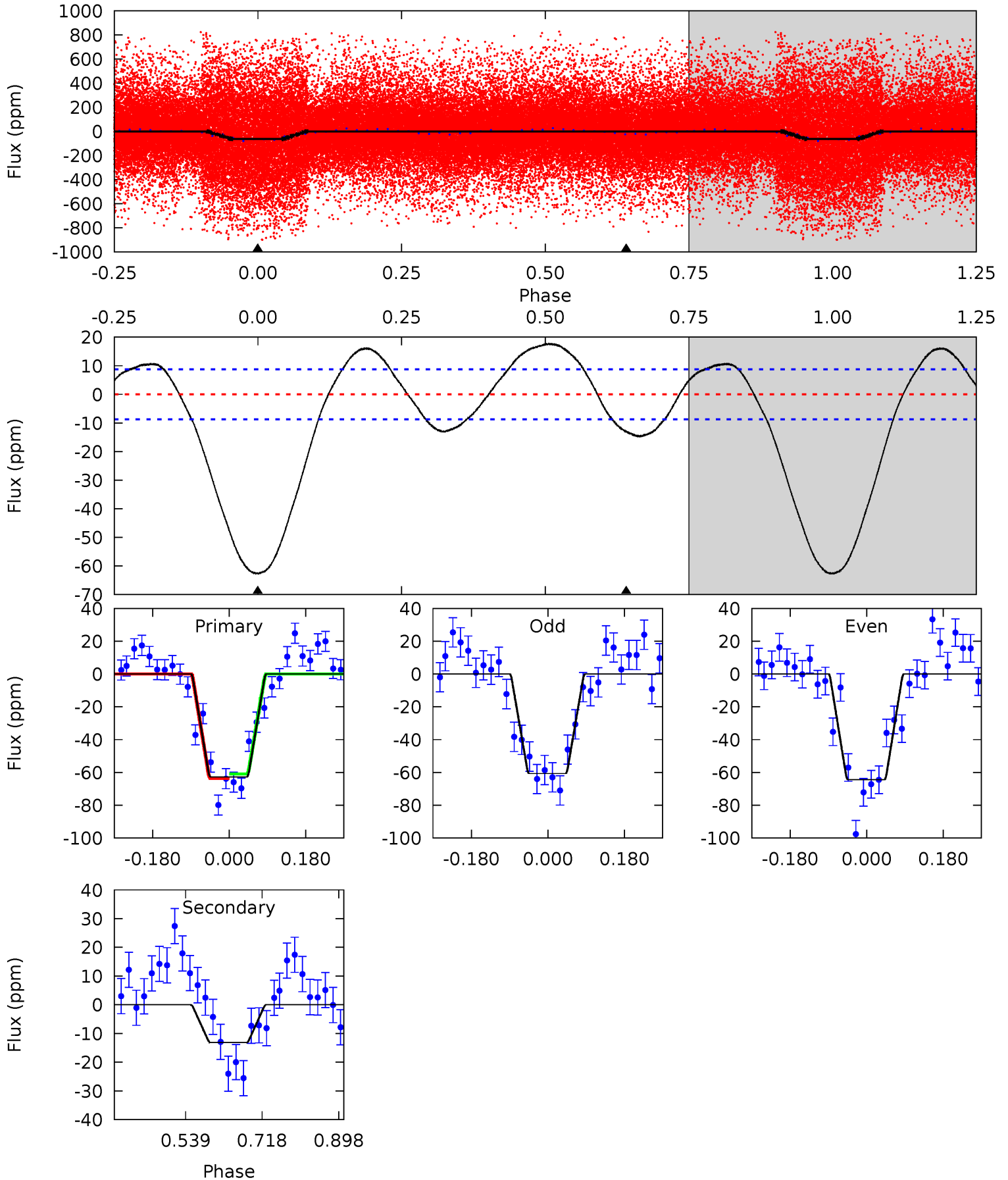
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.96	1.81	0	0	4.42	1.30	3.74	5.96	5.96	1.81	1.81	2.01	0.73	0.66	3.11



Alt Model-Shift Uniqueness Test

003642324-01, P = 0.508842 Days, E = 131.230746 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.9	6.68	0	0	4.44	1.34	4.95	31.9	31.9	6.68	6.68	0.97	0.99	0.22	0.68



Stellar Parameters For KIC 003642324

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5481^{+164}_{-147}	$4.155^{+0.325}_{-0.175}$	$0.140^{+0.250}_{-0.250}$	$1.339^{+0.360}_{-0.440}$	$0.934^{+0.101}_{-0.083}$	$0.548^{+1.172}_{-0.250}$
	+3%/-3%	+8%/-4%	+179%/-179%	+27%/-33%	+11%/-9%	+214%/-46%
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 003642324-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-4 ± 2	$0.61^{+0.43}_{-0.37}$	3511^{+271}_{-336}	3679^{+2135}_{-6557}	$0.834^{+5.088}_{-0.623}$
Alt.	-13 ± 2	$1.12^{+0.52}_{-0.45}$	3519^{+281}_{-340}	3691^{+989}_{-792}	$0.849^{+1.501}_{-0.452}$

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 $A_{obs} \gg 1.0$

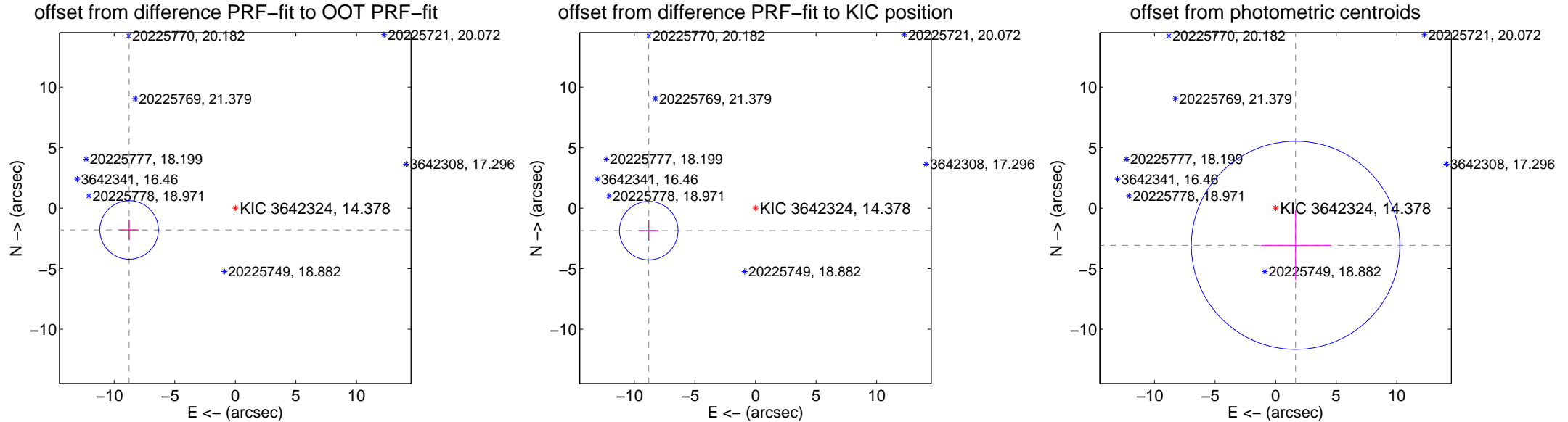
DV Centroid Data

Supplemental centroid analysis for 003642324-01. Kepler magnitude: 14.38. Transit SNR 4.59

There are 0 quarters with good PRF difference image offsets

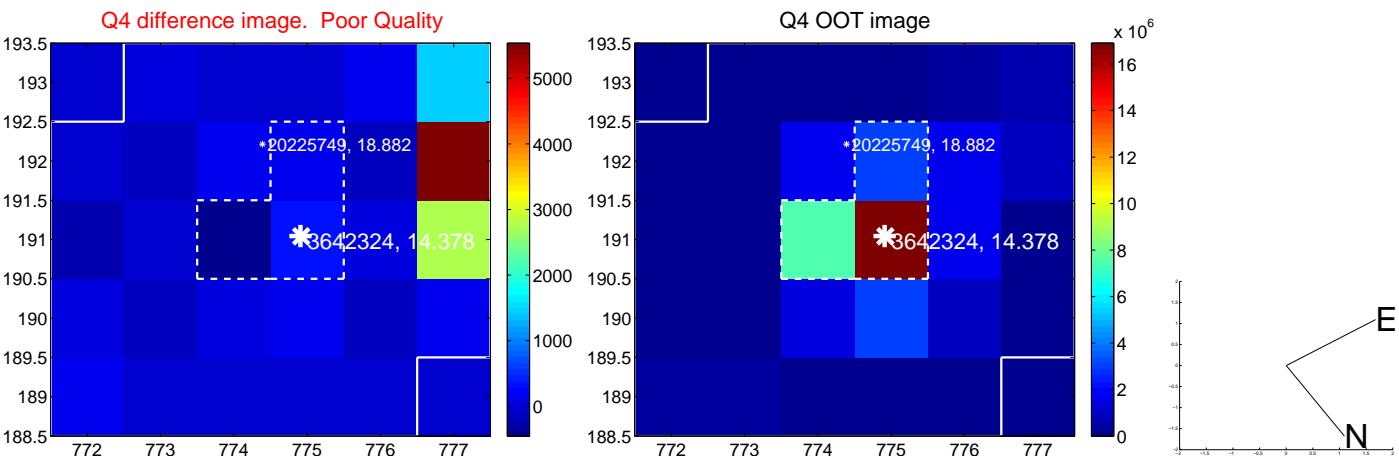
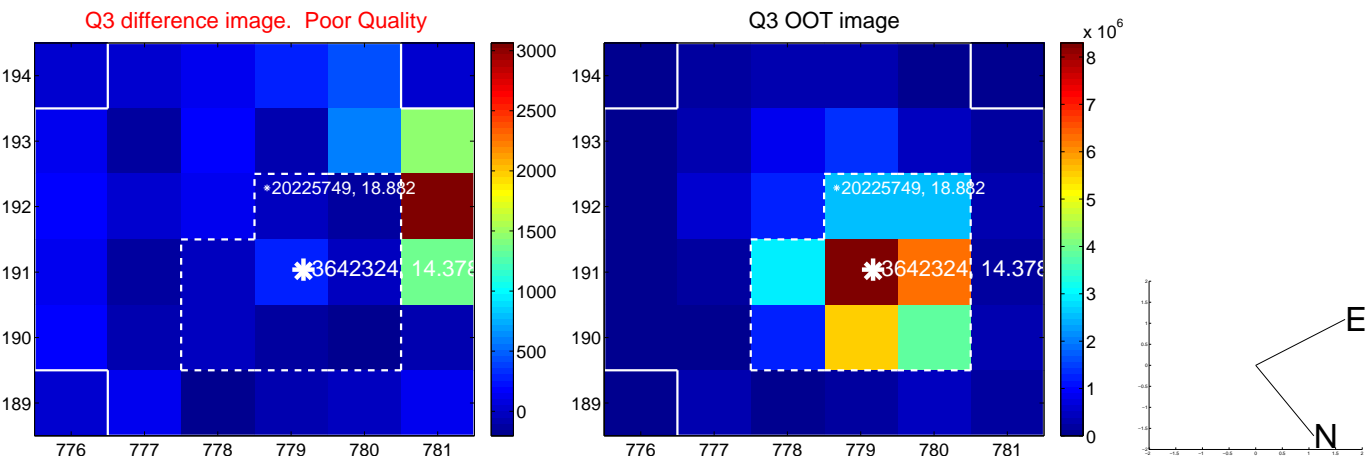
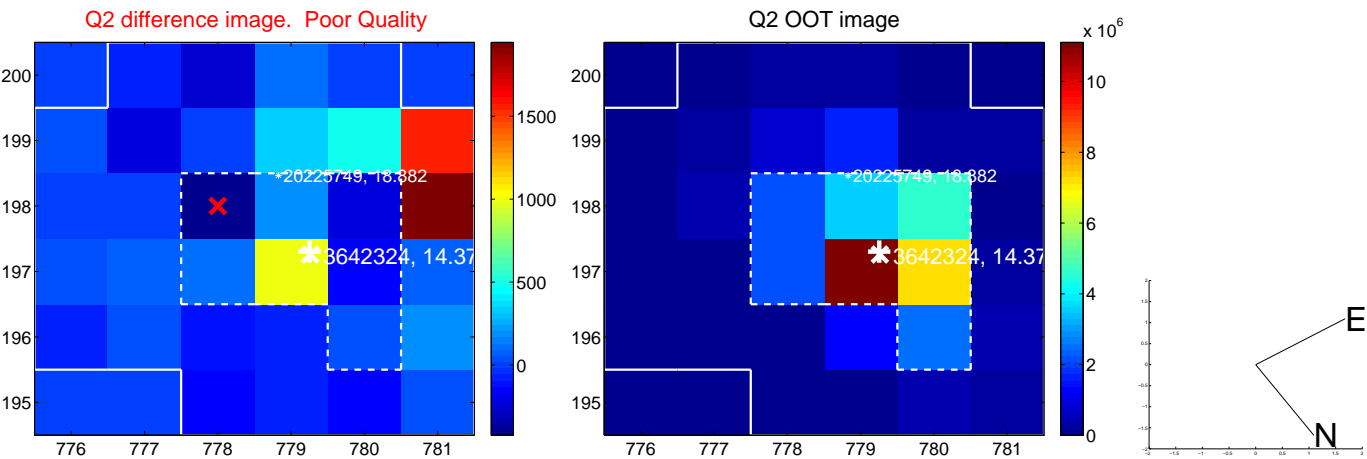
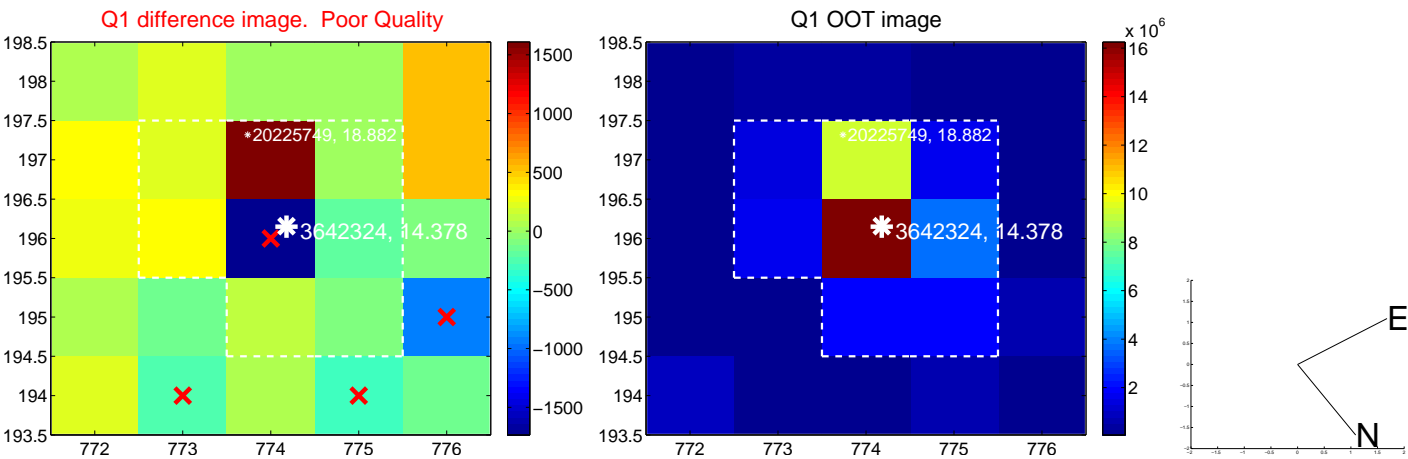
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.950 ± 0.806	11.11	8.767 ± 0.804	-1.798 ± 0.842
PRF-fit source offset from KIC position	9.002 ± 0.806	11.17	8.809 ± 0.804	-1.855 ± 0.842
photometric centroid source offset	3.48 ± 2.87	1.21	-1.65 ± 2.88	-3.07 ± 2.86

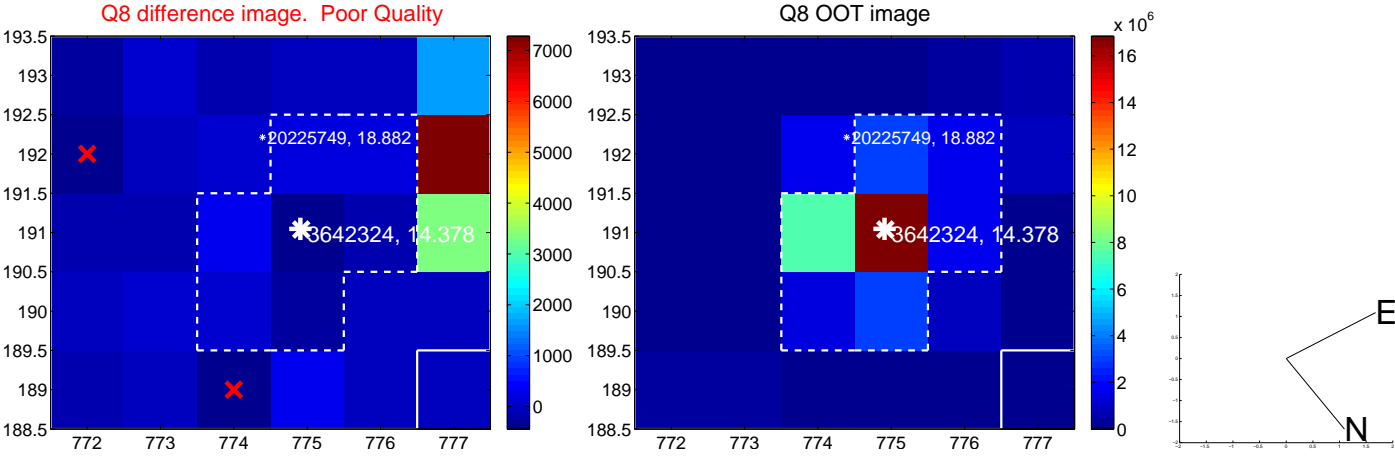
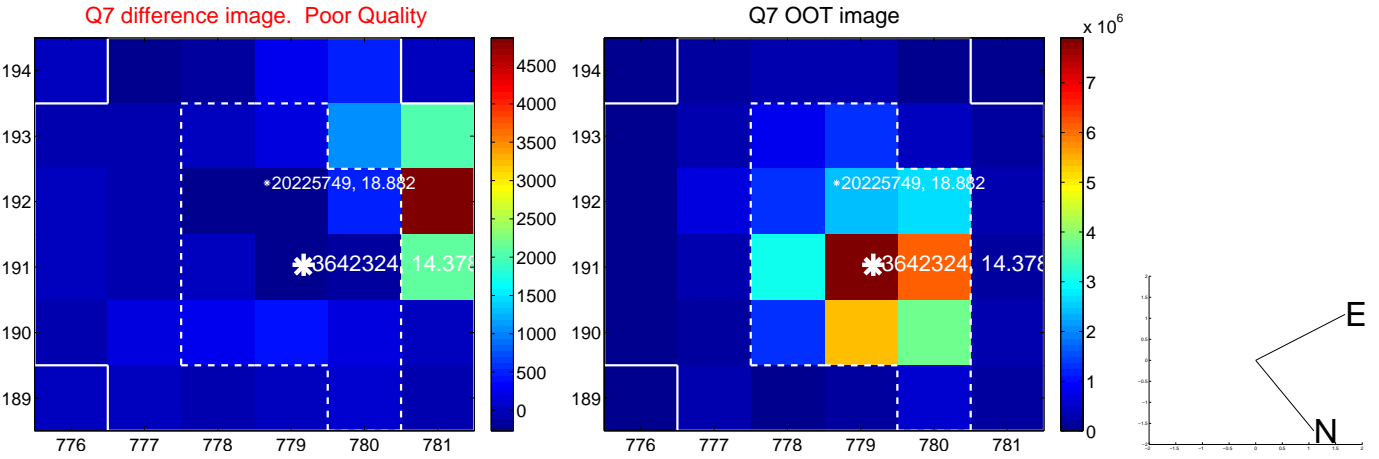
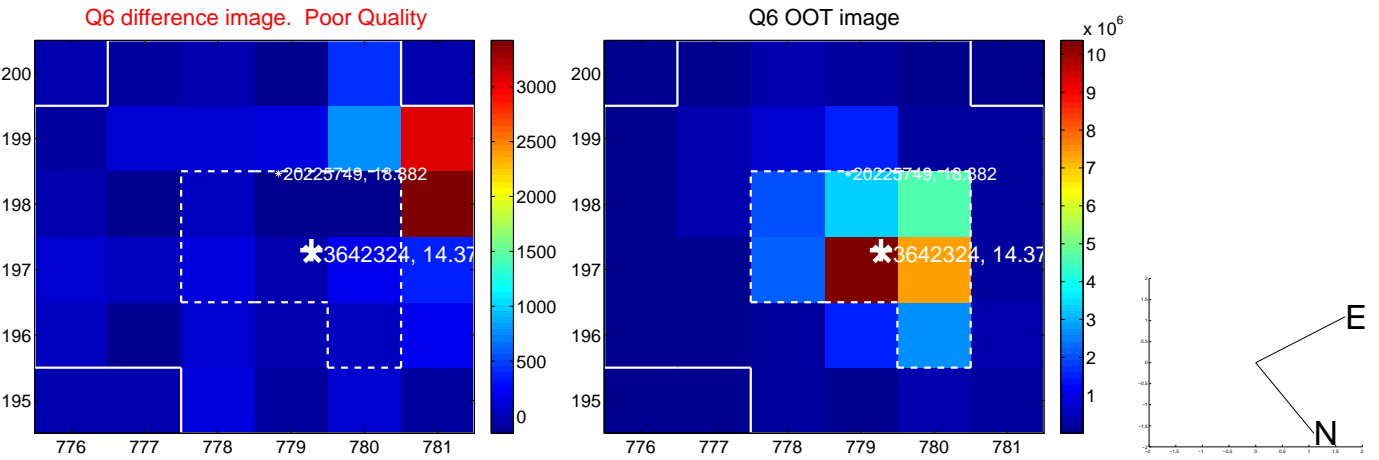
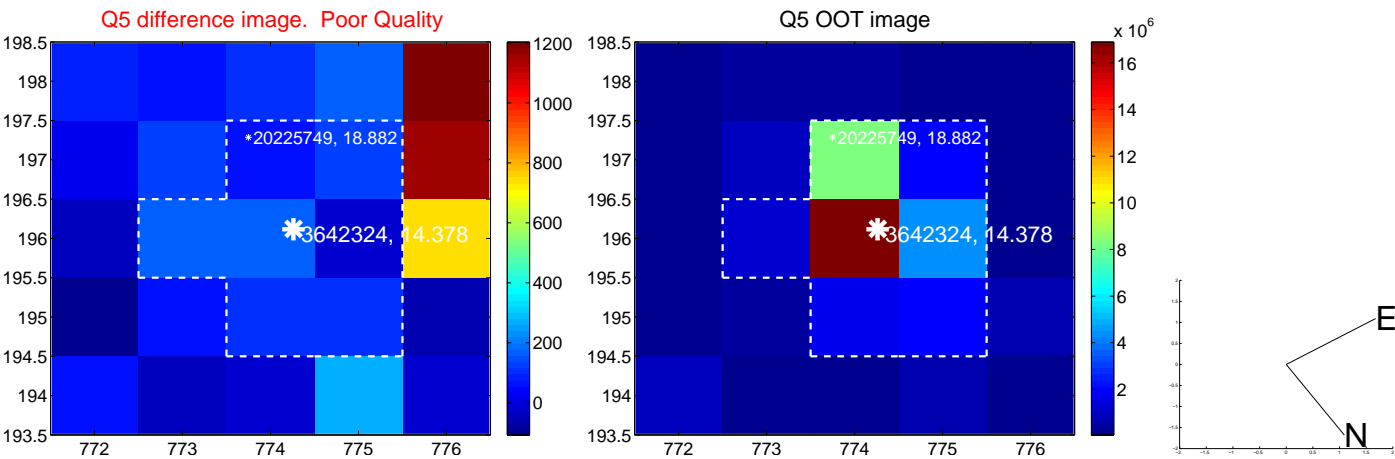


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

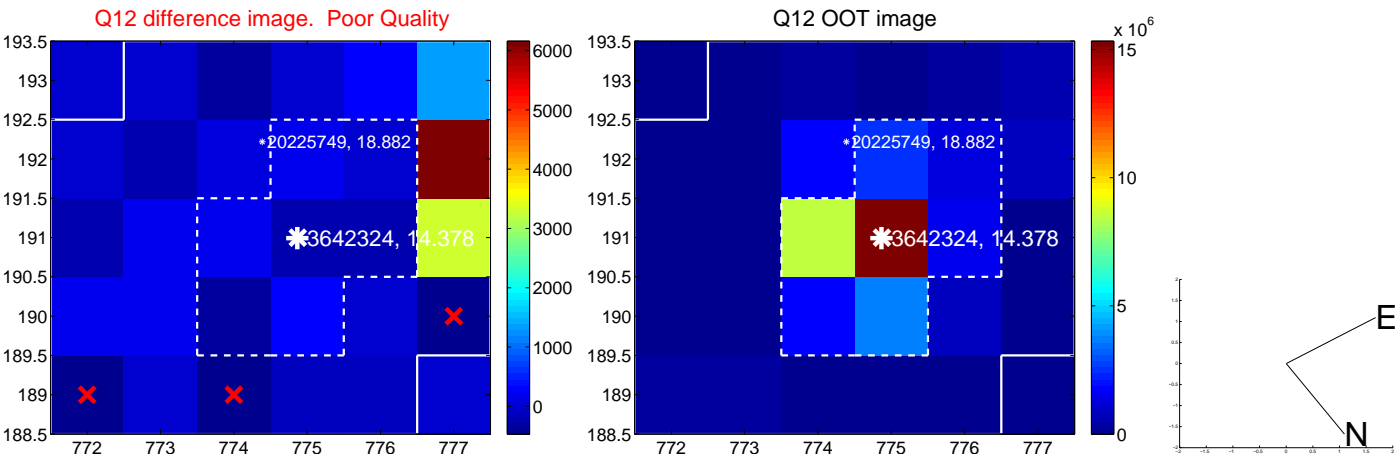
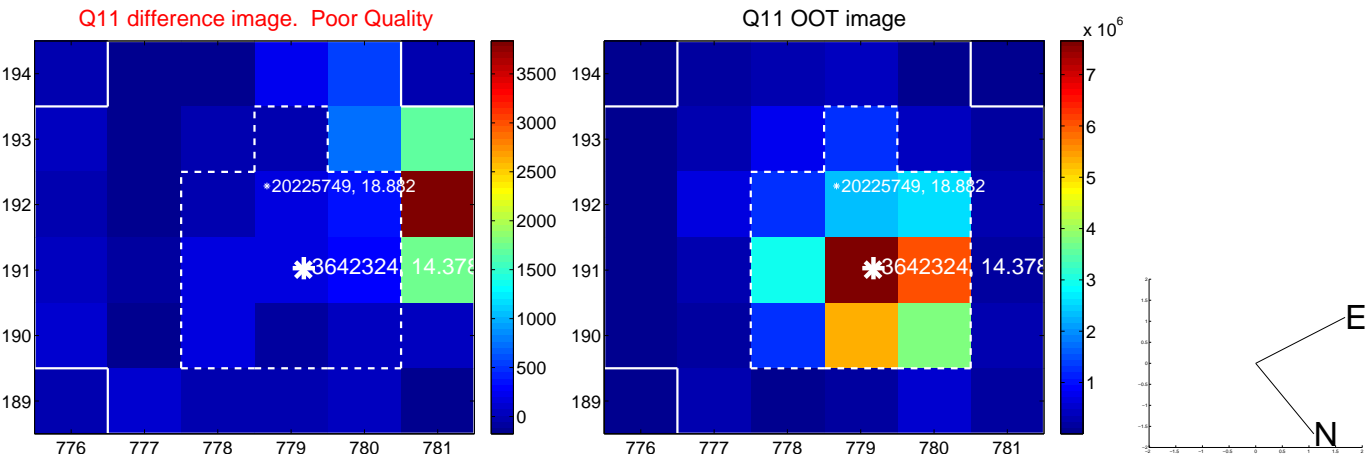
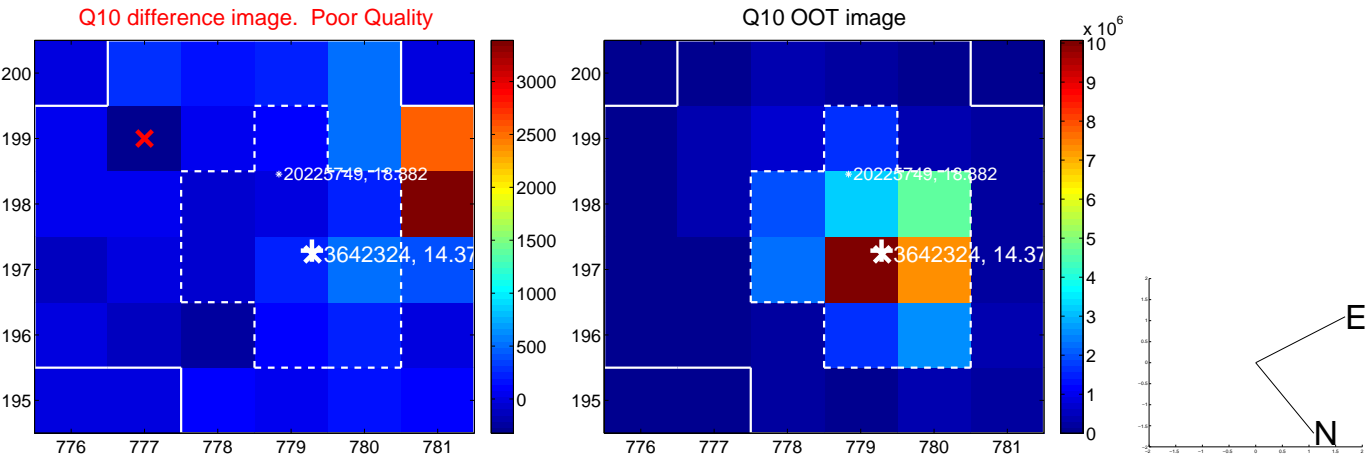
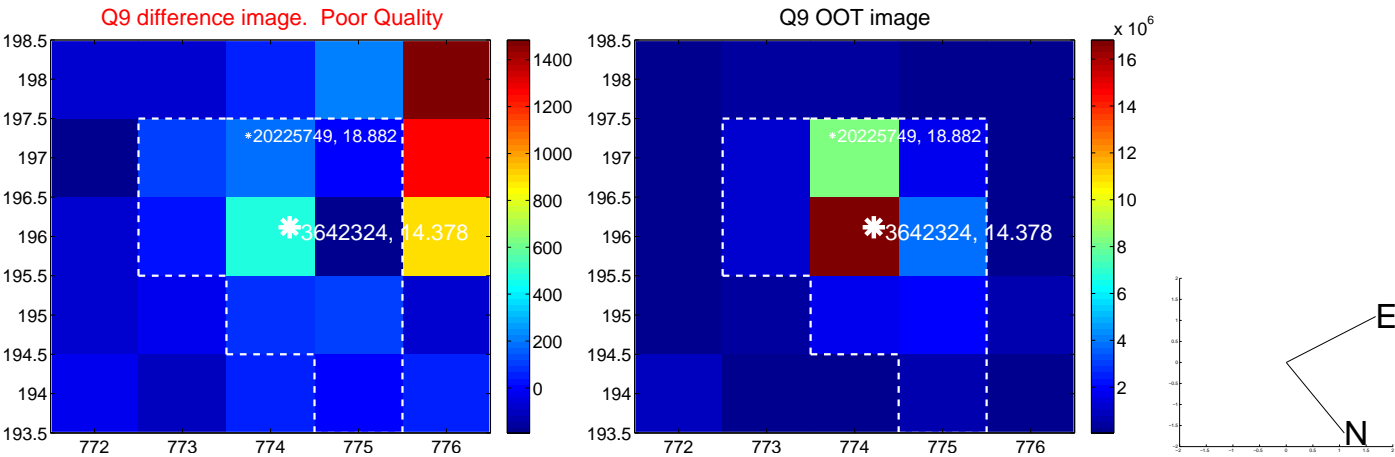
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



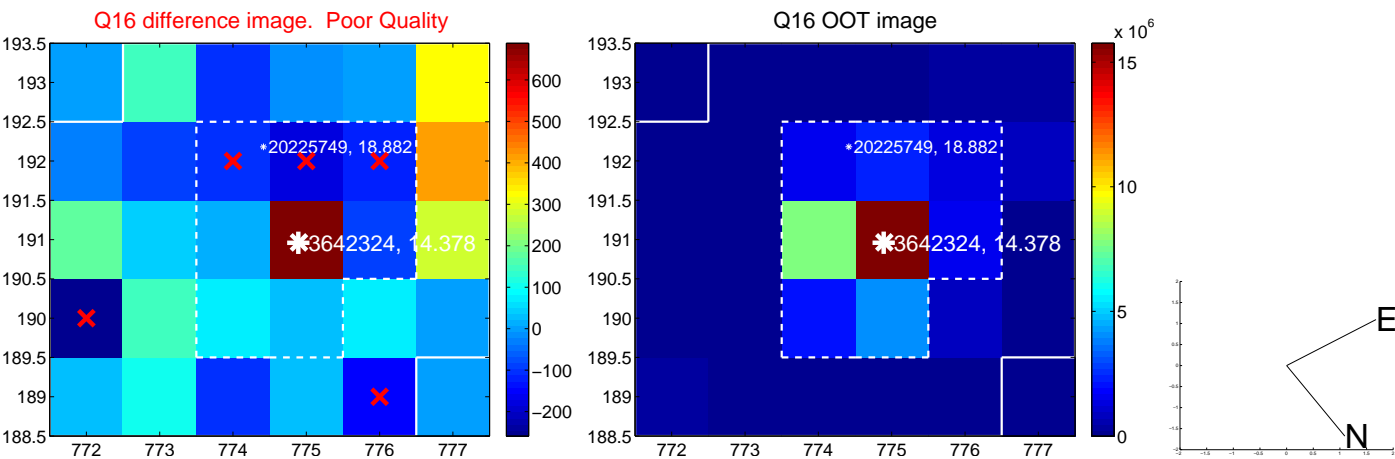
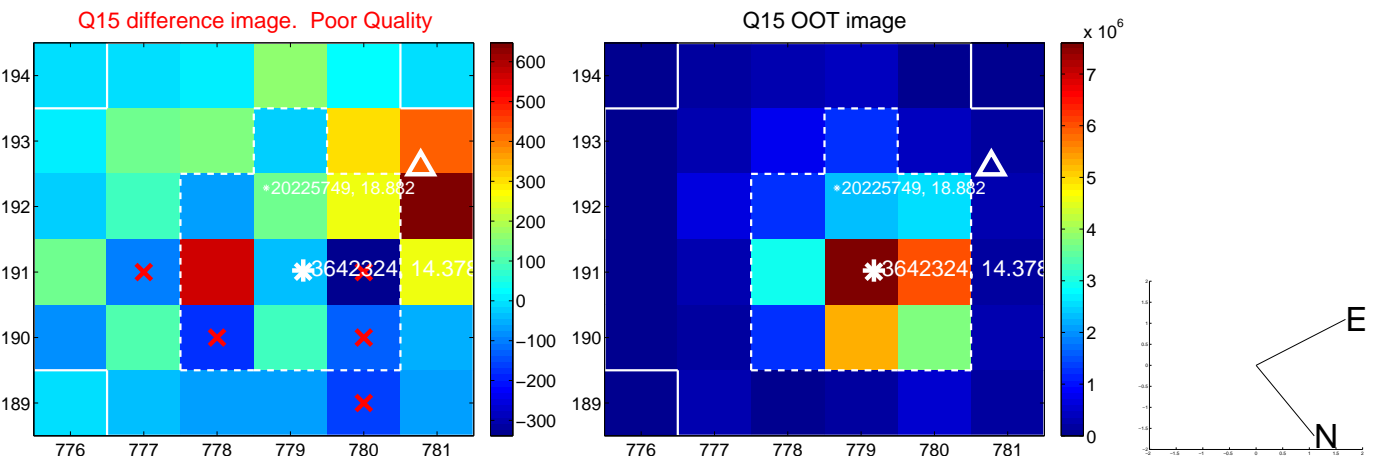
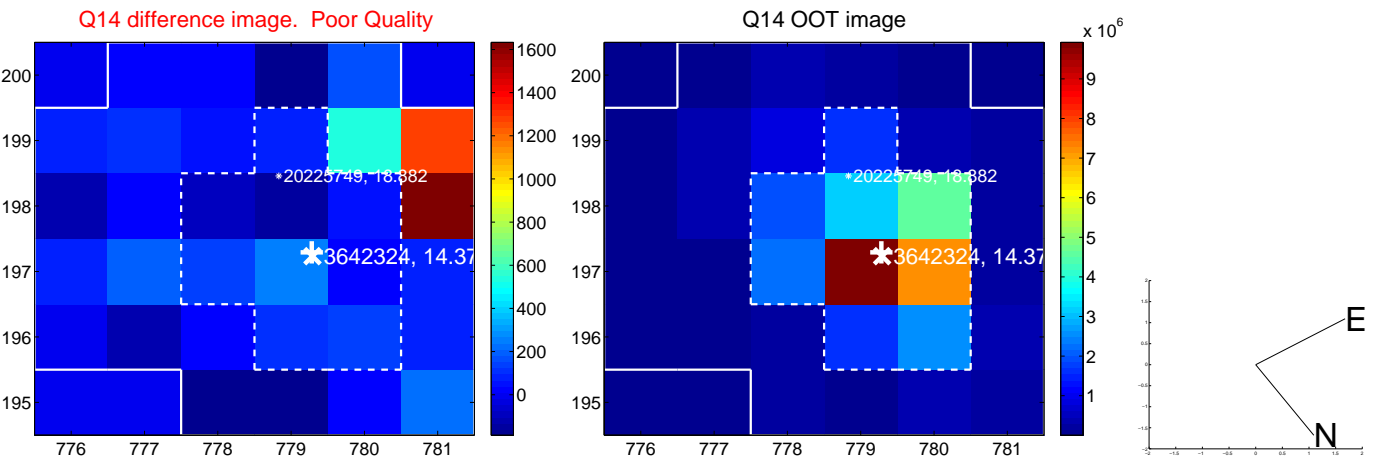
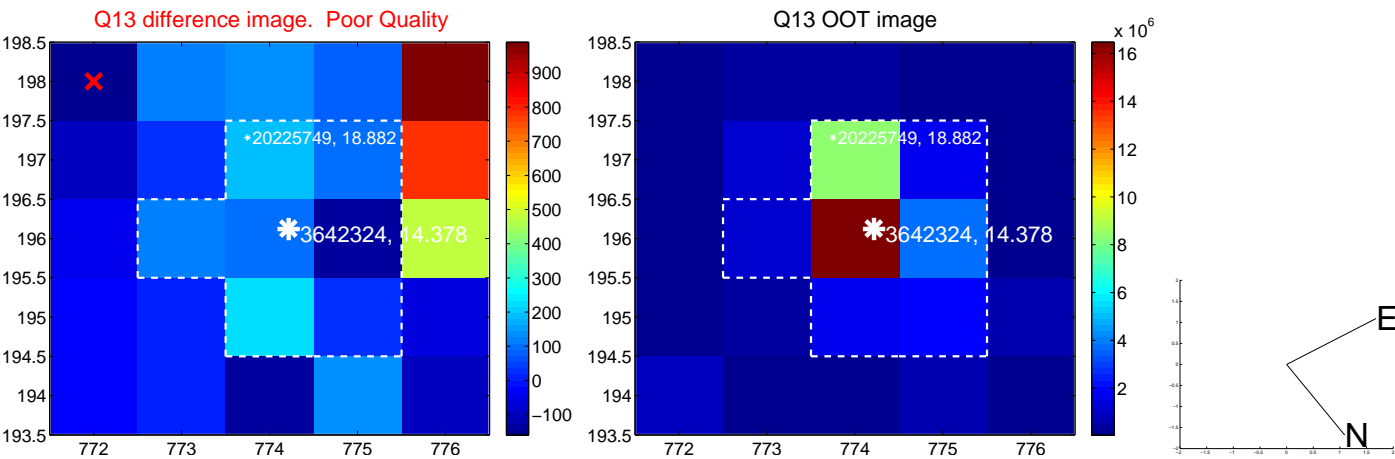
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



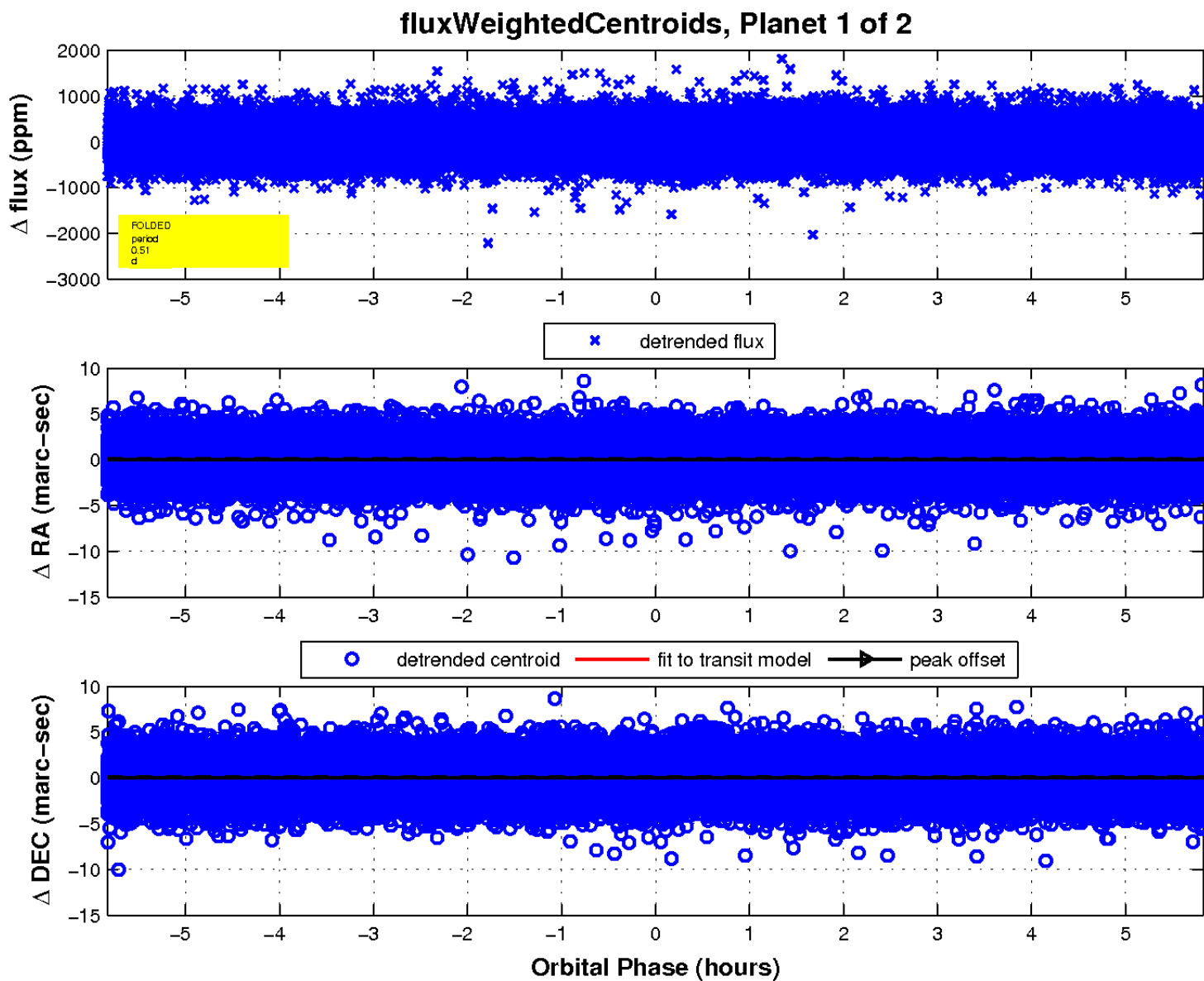
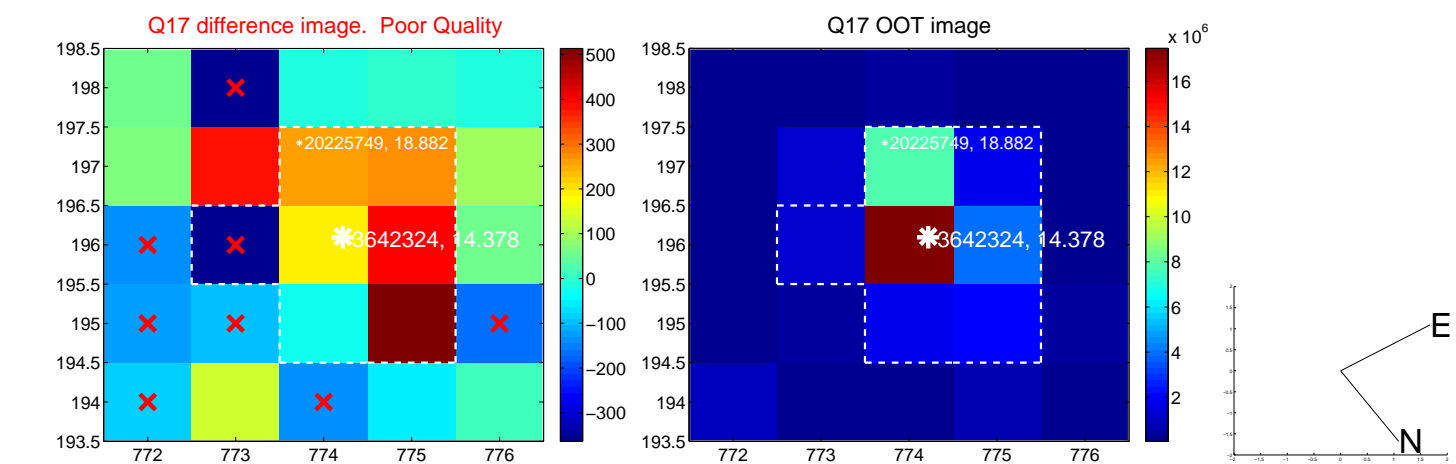
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

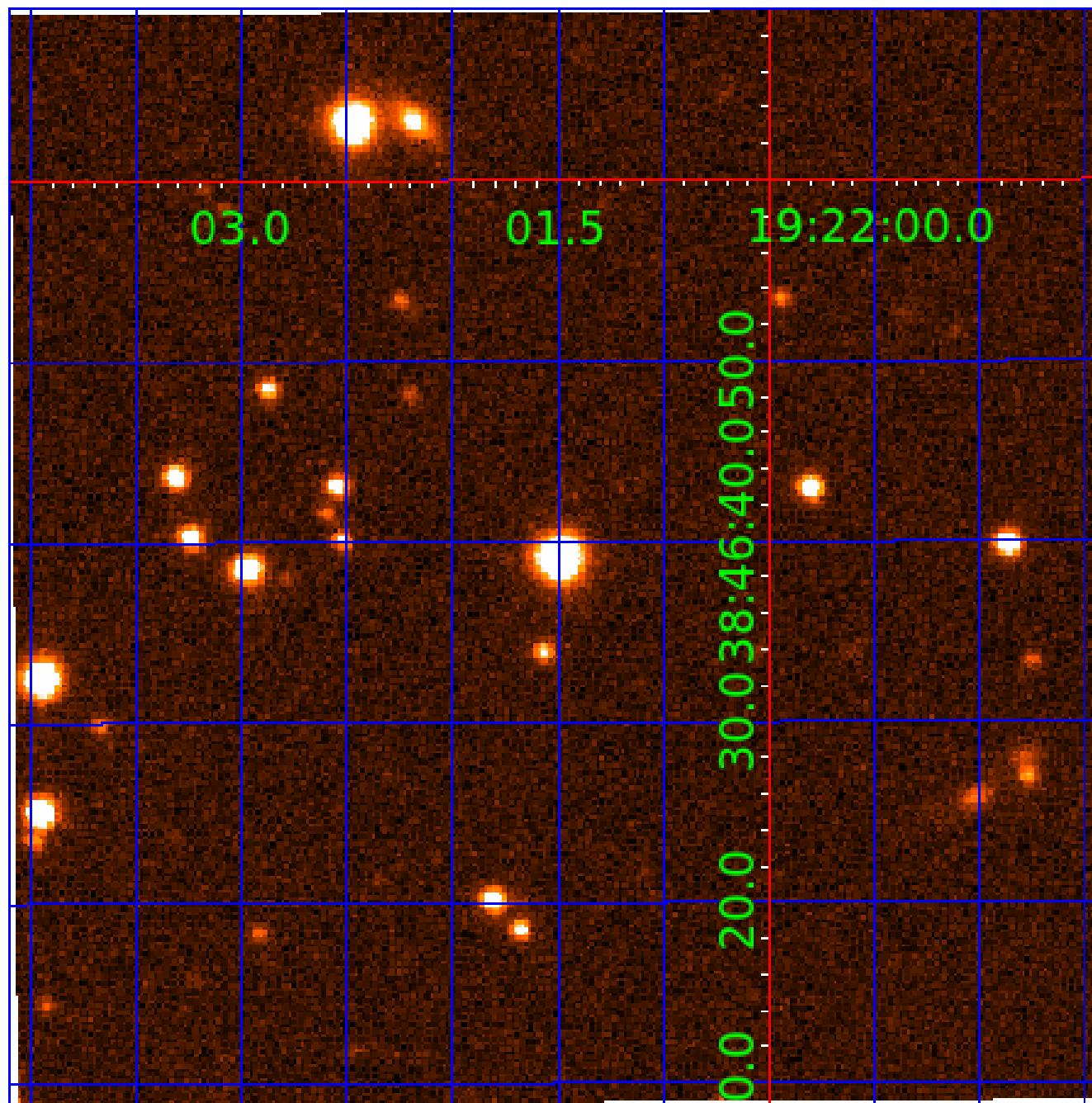


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003642324

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})
003642324-01	OBS	No	0.508819	131.766284	16.6	1.944	7.1	4.6	1.34	5481	0.56	9744.72
003642324-02	OBS	No	155.031072	217.347742	338.0	4.026	8.5	4.3	1.34	5481	2.71	4.75

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003642324-01	OBS	FP	0.00	1	0	1	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET
003642324-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_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.

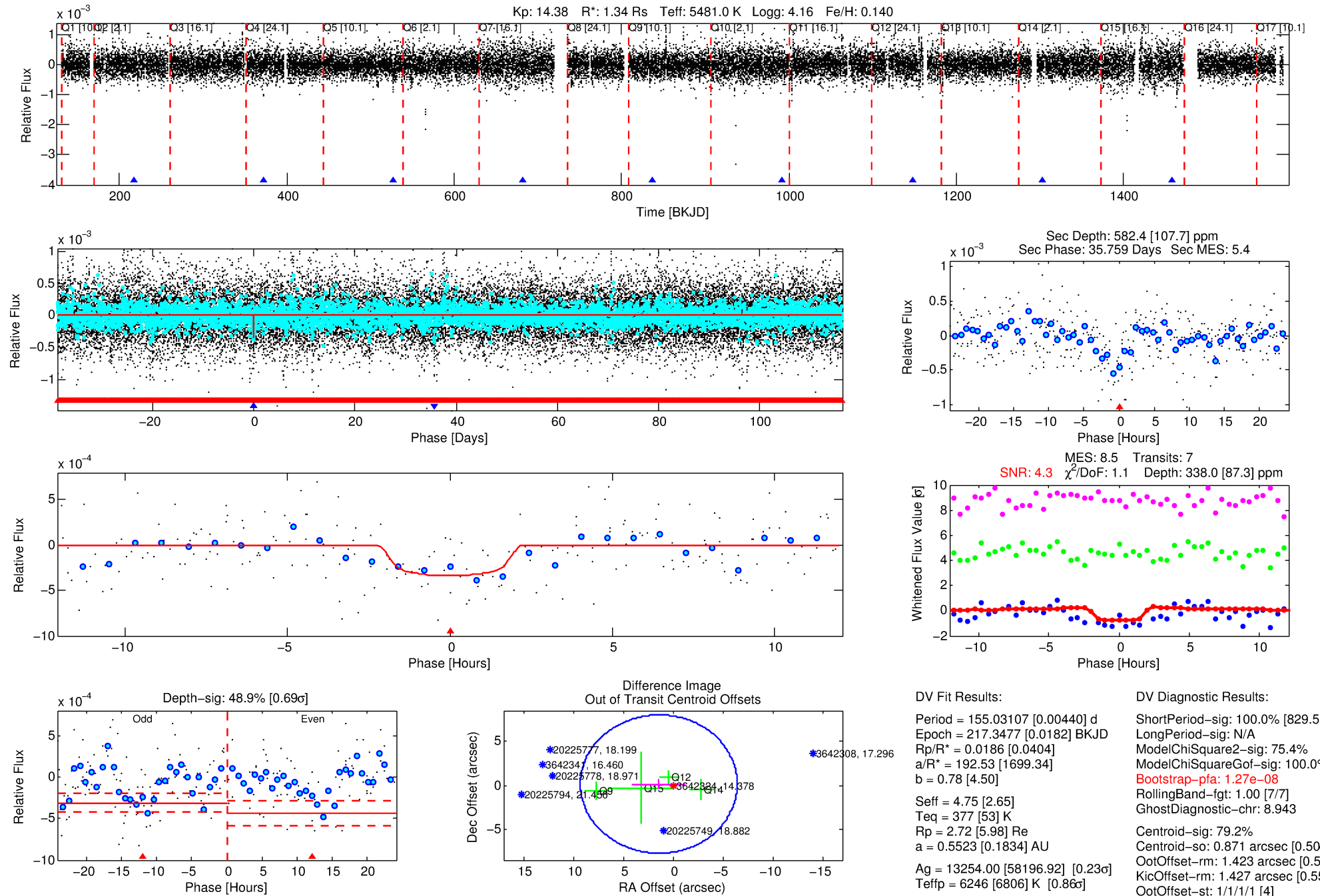
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003642324-02

No Significant Match Found

DV One-Page Summary

KIC: 3642324 Candidate: 2 of 2 Period: 155.031 d



DV Fit Results:

Period = 155.03107 [0.00440] d
Epoch = 217.3477 [0.0182] BKJD
Rp/R* = 0.0186 [0.0404]
a/R* = 192.53 [1699.34]
b = 0.78 [4.50]
Seff = 4.75 [2.65]
Teff = 377 [53] K
Rp = 2.72 [5.98] Re
a = 0.5523 [0.1834] AU
Ag = 13254.00 [58196.92] [0.23 σ]
Teffp = 6246 [6806] K [0.86 σ]

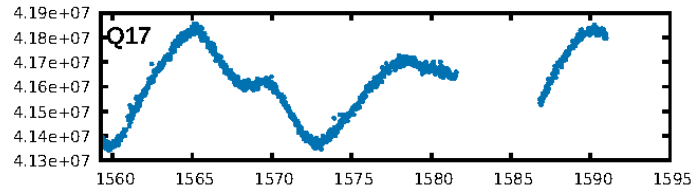
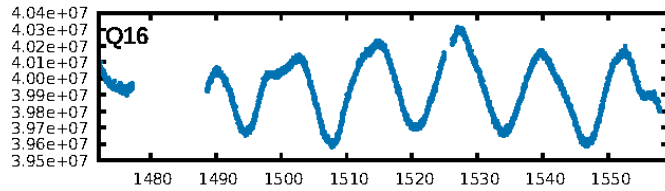
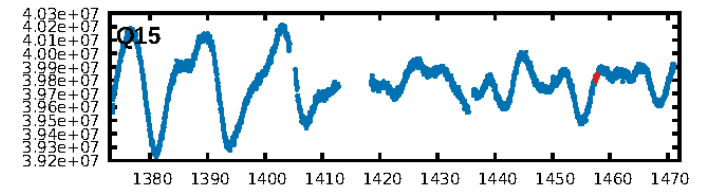
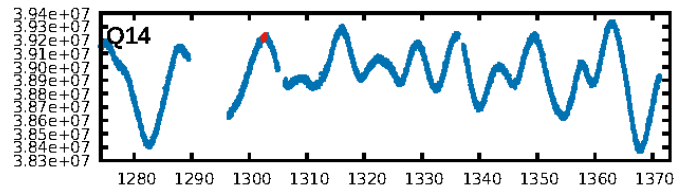
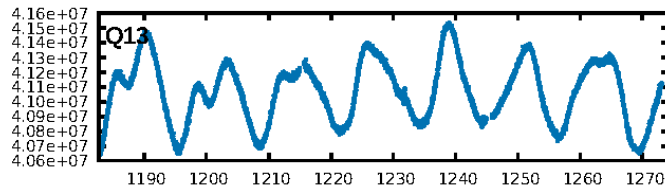
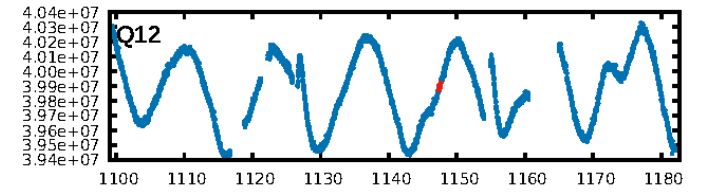
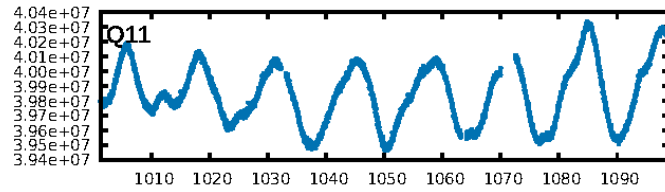
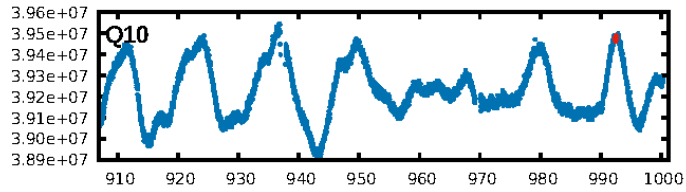
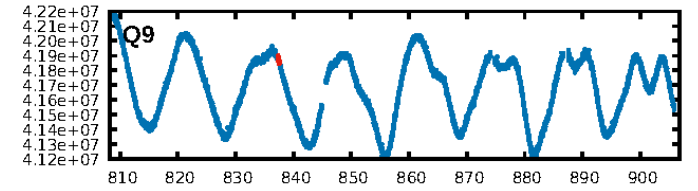
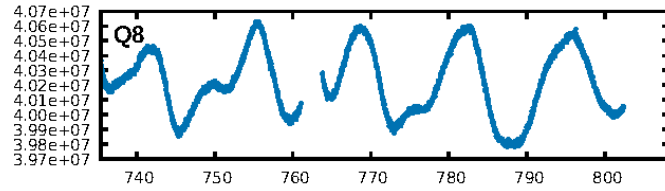
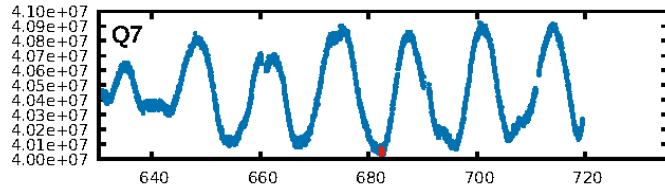
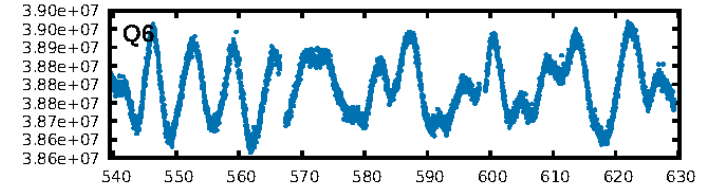
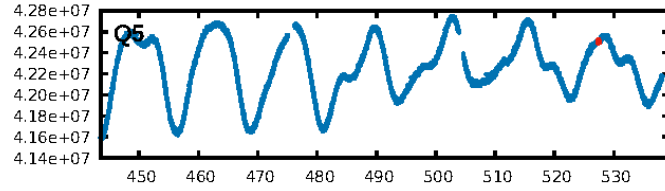
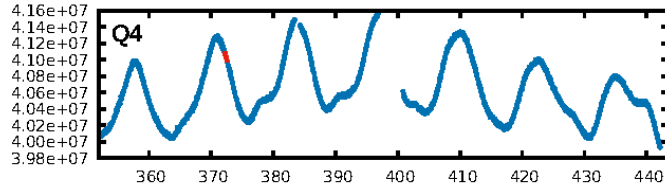
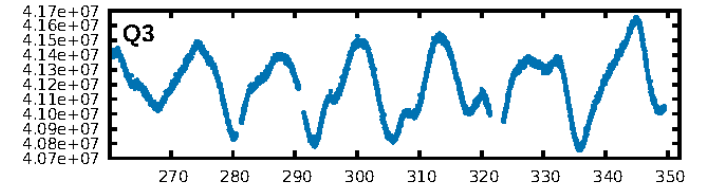
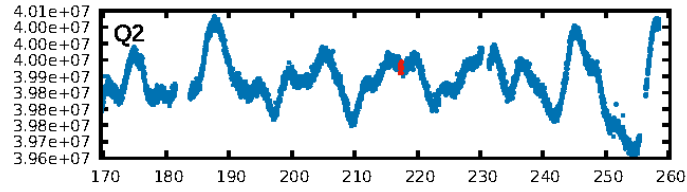
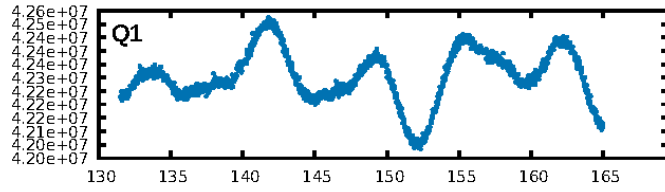
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [829.51 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 75.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.27e-08
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 8.943
Centroid-sig: 79.2%
Centroid-so: 0.871 arcsec [0.50 σ]
OotOffset-rm: 1.423 arcsec [0.54 σ]
KicOffset-rm: 1.427 arcsec [0.55 σ]
OotOffset-st: 1/1/1/1 [4]
KicOffset-st: 1/1/1/1 [4]
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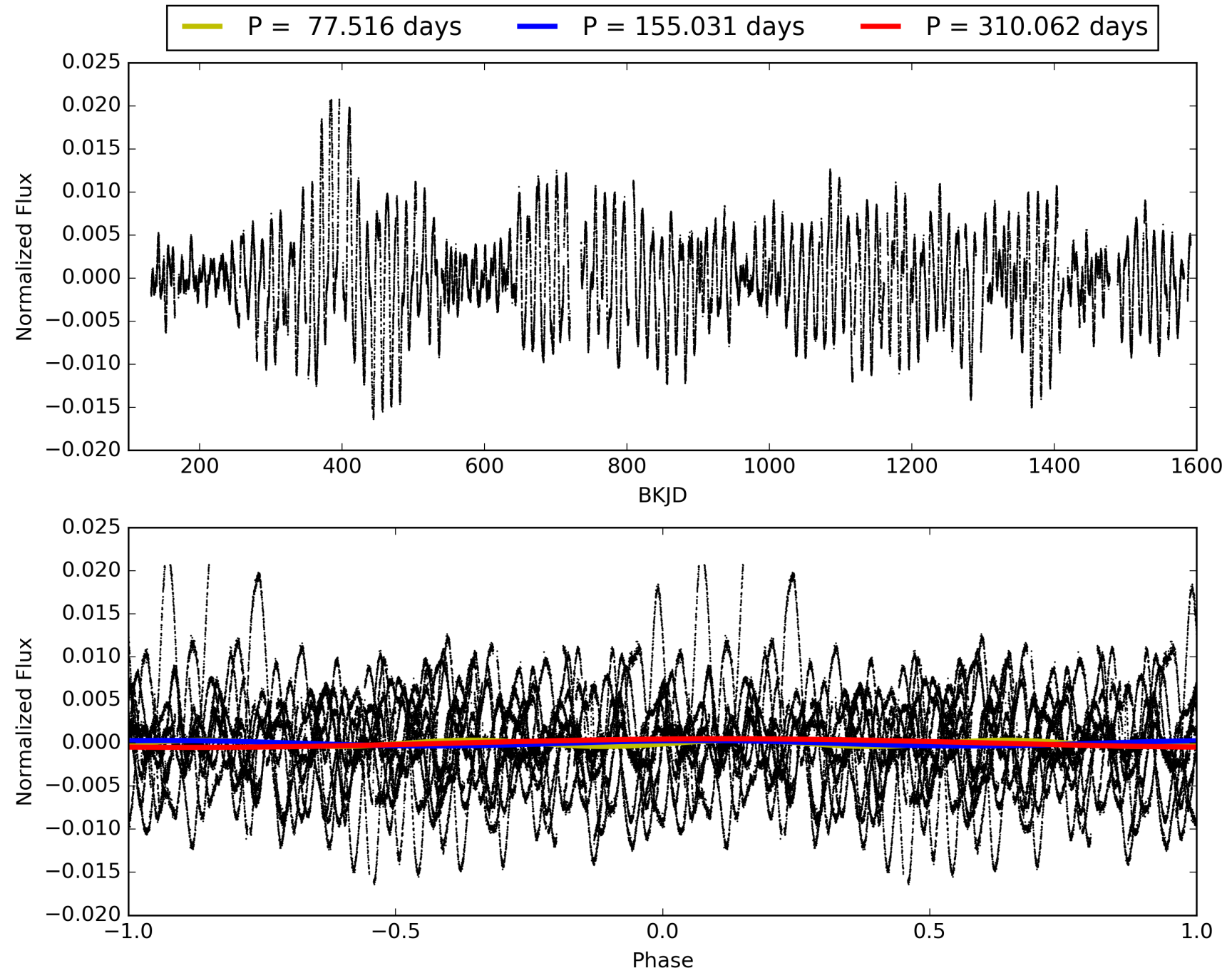
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:08:50 Z

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

TCE 003642324-02, PDC Light Curves

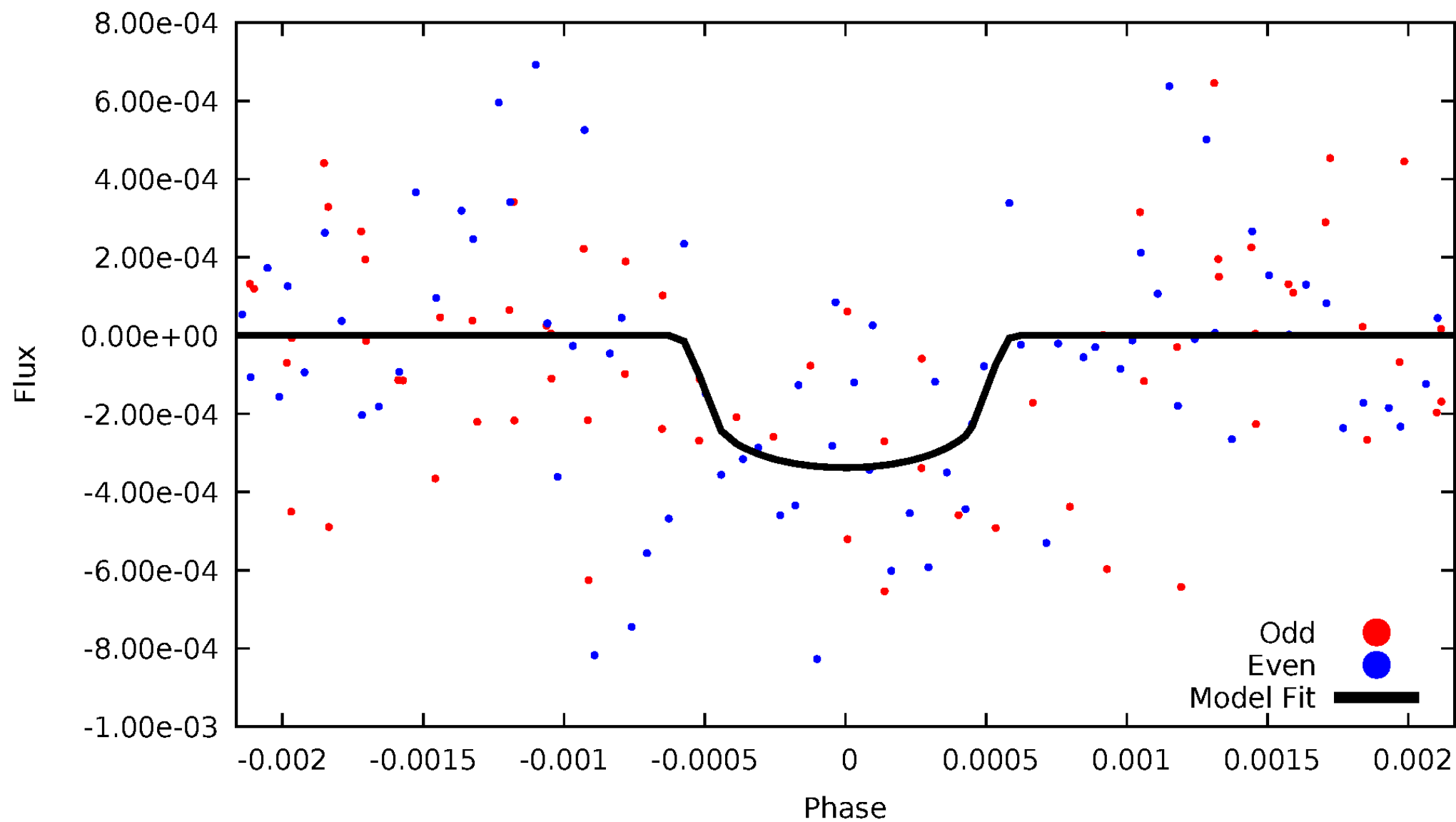


TCE 003642324-02



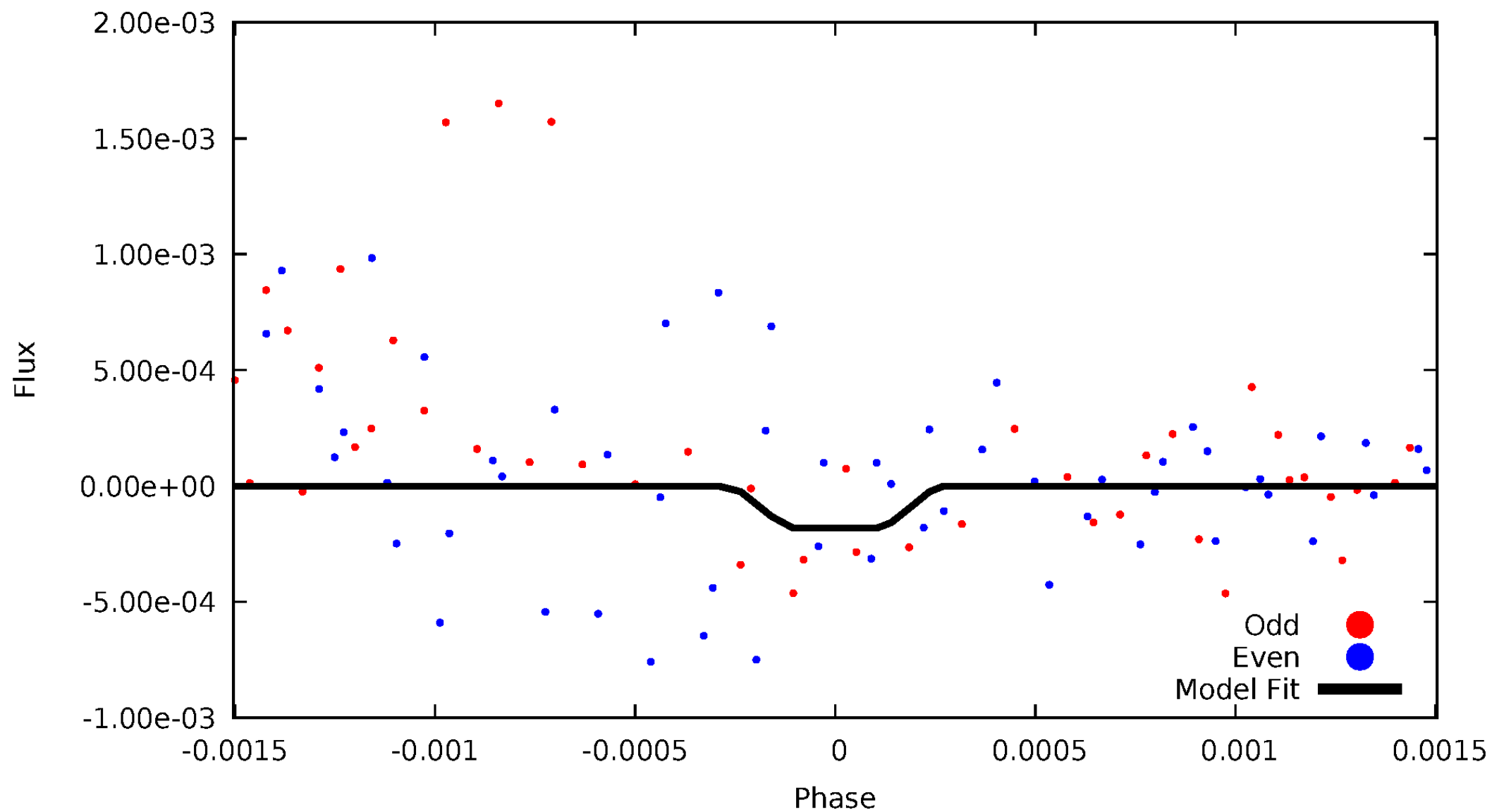
DV Odd/Even

TCE 003642324-02



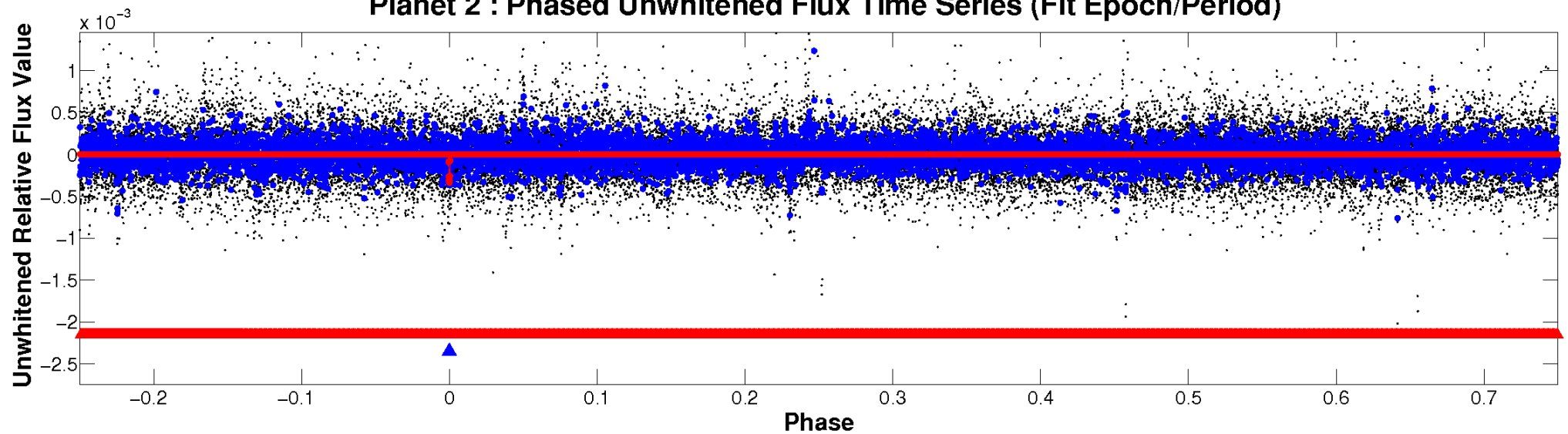
ALT Odd/Even

TCE 003642324-02

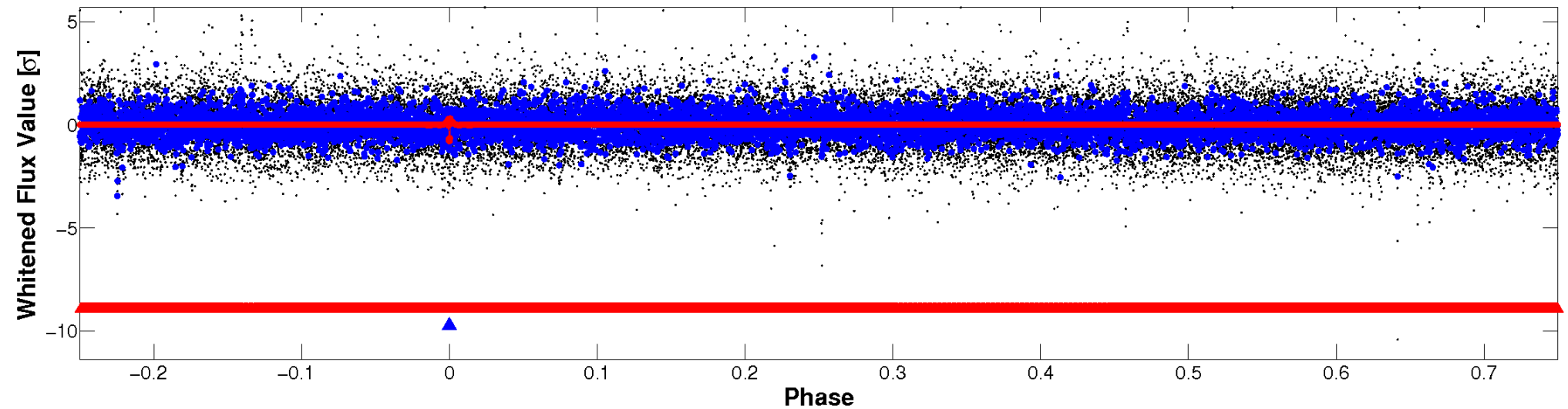


Non-Whitened Vs. Whitened Light Curve

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

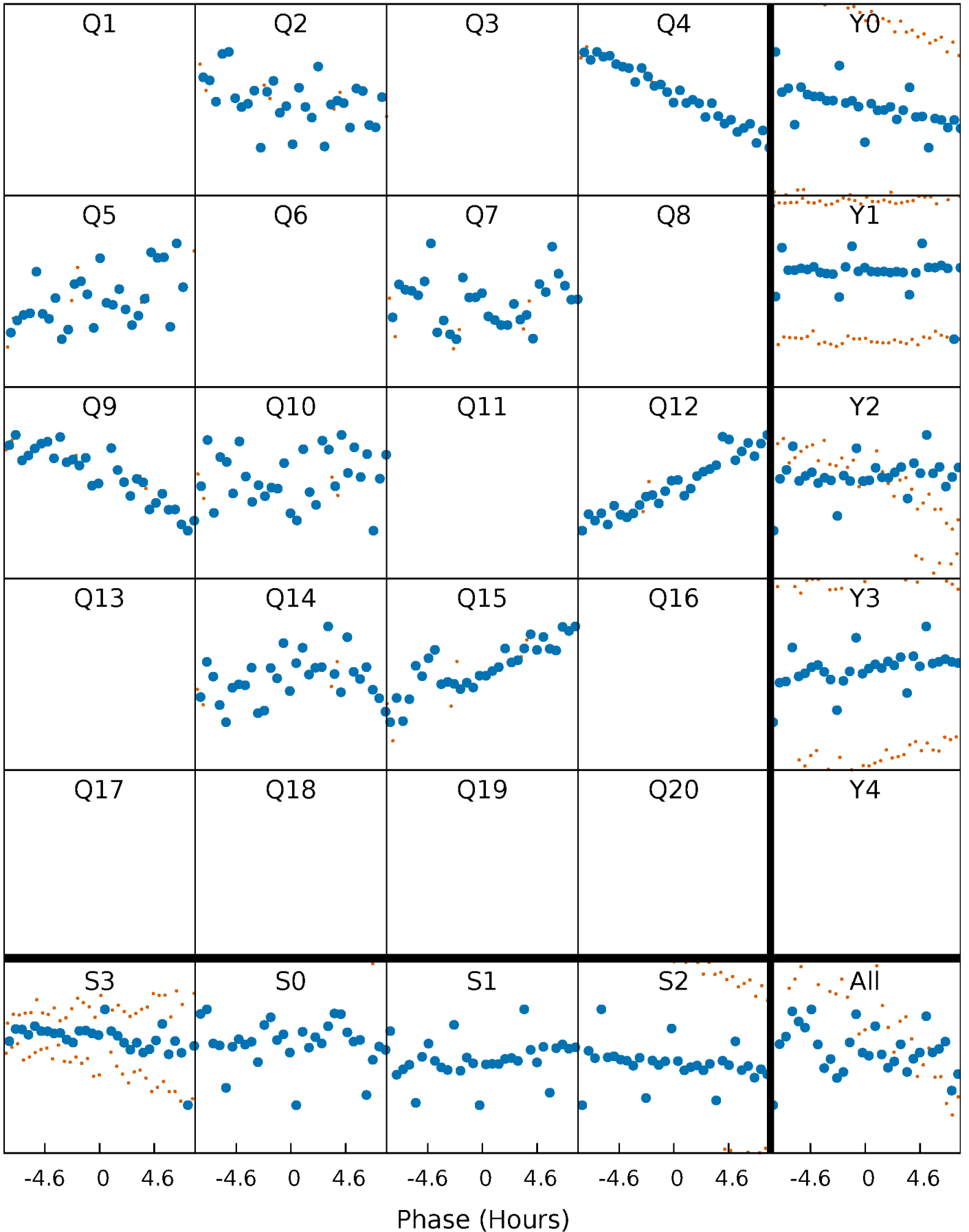


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



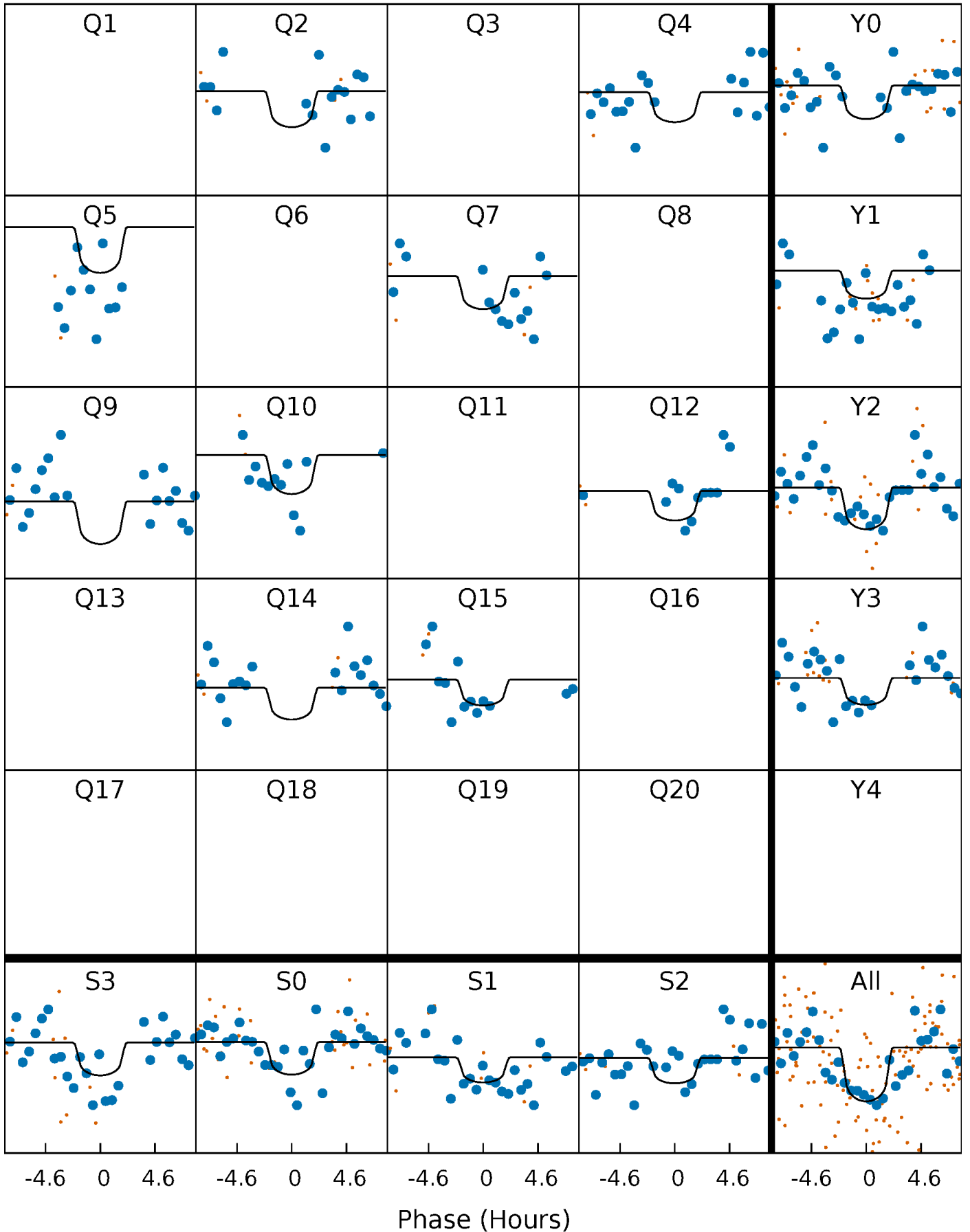
PDC Quarter-Phased Transit Curves

TCE 003642324-02 P=155.031072 Days $T_0=217.347742$ (BKJD)



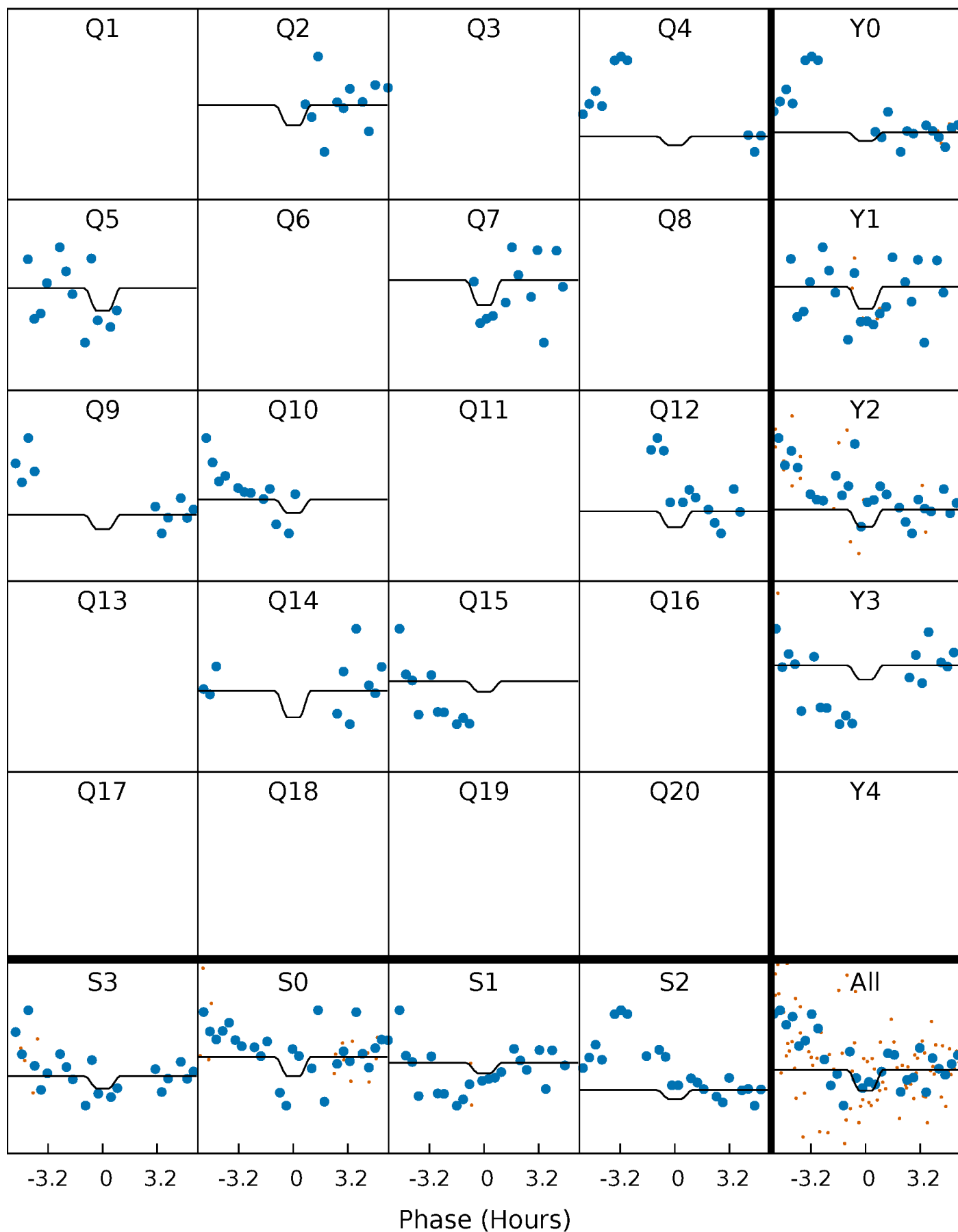
DV Quarter-Phased Transit Curves

TCE 003642324-02 P=155.031072 Days $T_0=217.347742$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

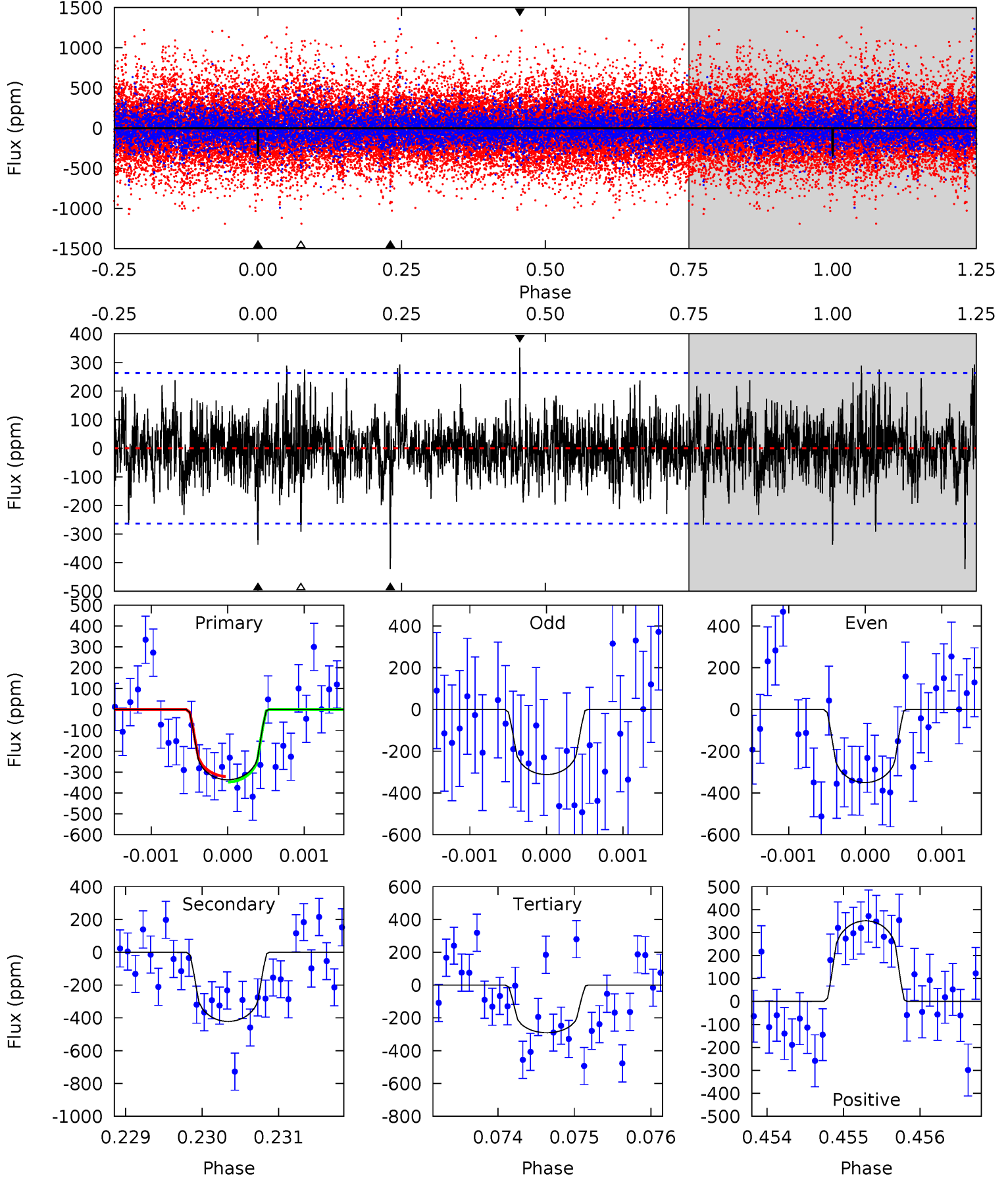
TCE 003642324-02 P=155.033088 Days $T_0=217.375458$ (BKJD)



DV Model-Shift Uniqueness Test

003642324-02, P = 155.031072 Days, E = 62.316670 Days

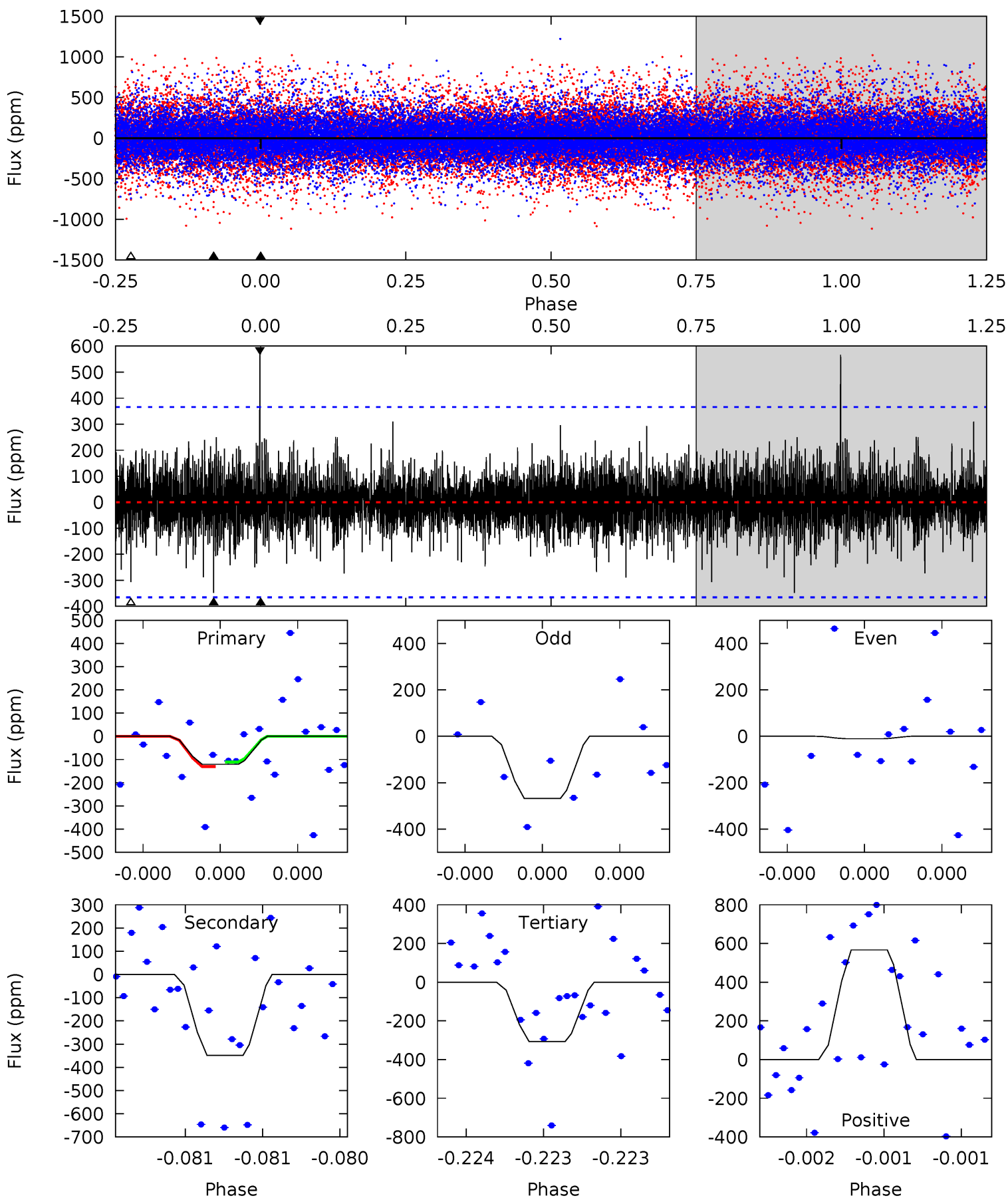
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.94	8.69	6.00	7.24	5.43	3.25	1.52	0.95	-0.29	2.70	1.46	0.38	1.01	0.45	0.27



Alt Model-Shift Uniqueness Test

003642324-02, P = 155.033088 Days, E = 62.342370 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.85	5.33	4.69	8.67	5.59	3.51	1.13	-2.85	-6.82	0.63	-3.34	1.88	0.53	0.62	0.15



Stellar Parameters For KIC 003642324

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5481^{+164}_{-147}	$4.155^{+0.325}_{-0.175}$	$0.140^{+0.250}_{-0.250}$	$1.339^{+0.360}_{-0.440}$	$0.934^{+0.101}_{-0.083}$	$0.548^{+1.172}_{-0.250}$
	+3%/-3%	+8%/-4%	+179%/-179%	+27%/-33%	+11%/-9%	+214%/-46%
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 003642324-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-422 ± 49	$4.87^{+4.84}_{-3.28}$	522^{+41}_{-49}	4395^{+3006}_{-891}	2998^{+24928}_{-2246}
Alt.	-348 ± 65	$4.59^{+4.55}_{-3.01}$	522^{+41}_{-53}	4299^{+2730}_{-872}	2709^{+21126}_{-2017}

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

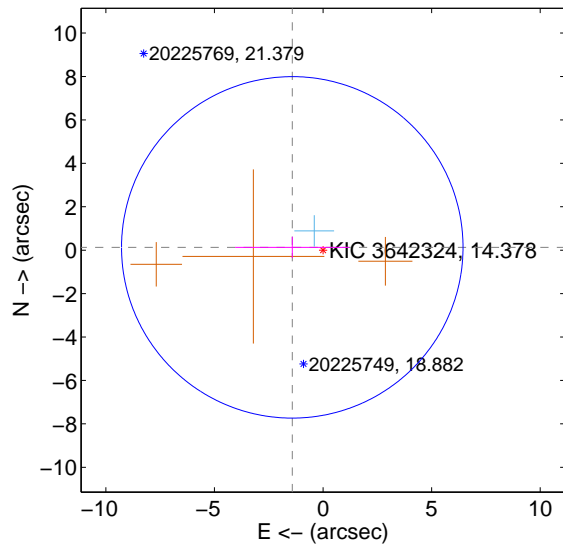
Supplemental centroid analysis for 003642324-02. Kepler magnitude: 14.38. Transit SNR 4.30

There are 1 quarters with good PRF difference image offsets

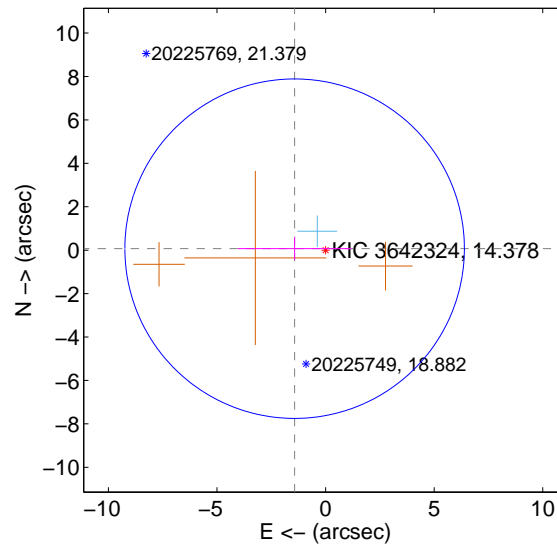
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.423 ± 2.622	0.54	1.417 ± 2.632	0.129 ± 0.492
PRF-fit source offset from KIC position	1.427 ± 2.606	0.55	1.426 ± 2.609	0.069 ± 0.517
photometric centroid source offset	0.87 ± 1.74	0.50	0.49 ± 1.74	-0.72 ± 1.74

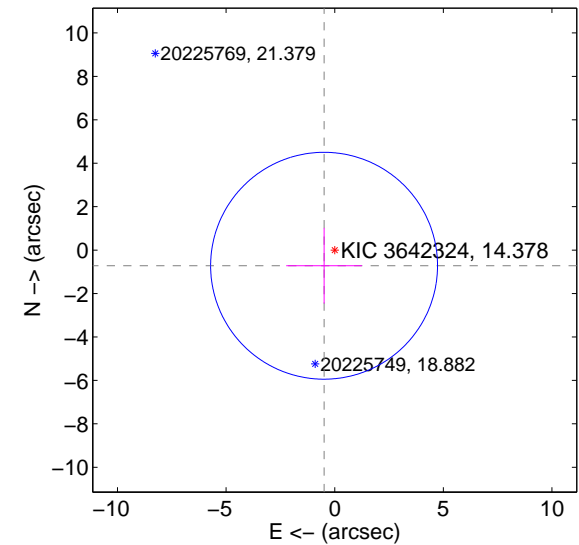
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

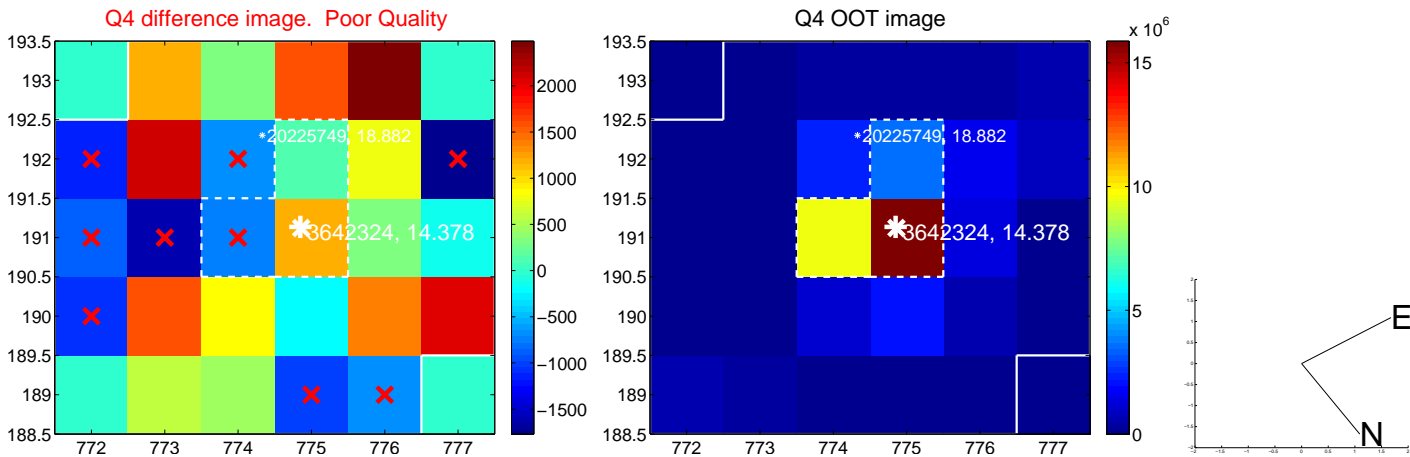
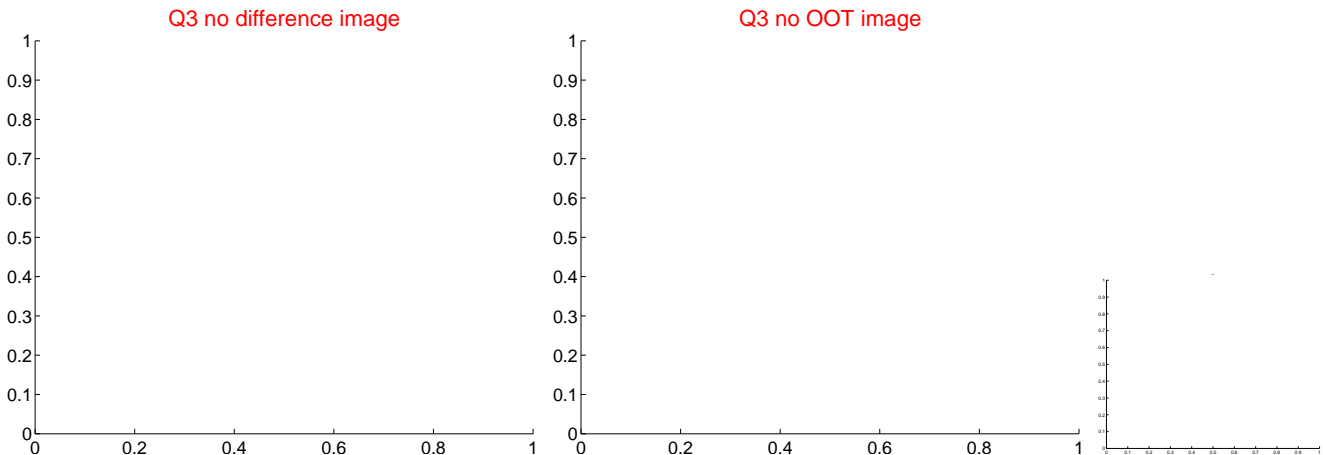
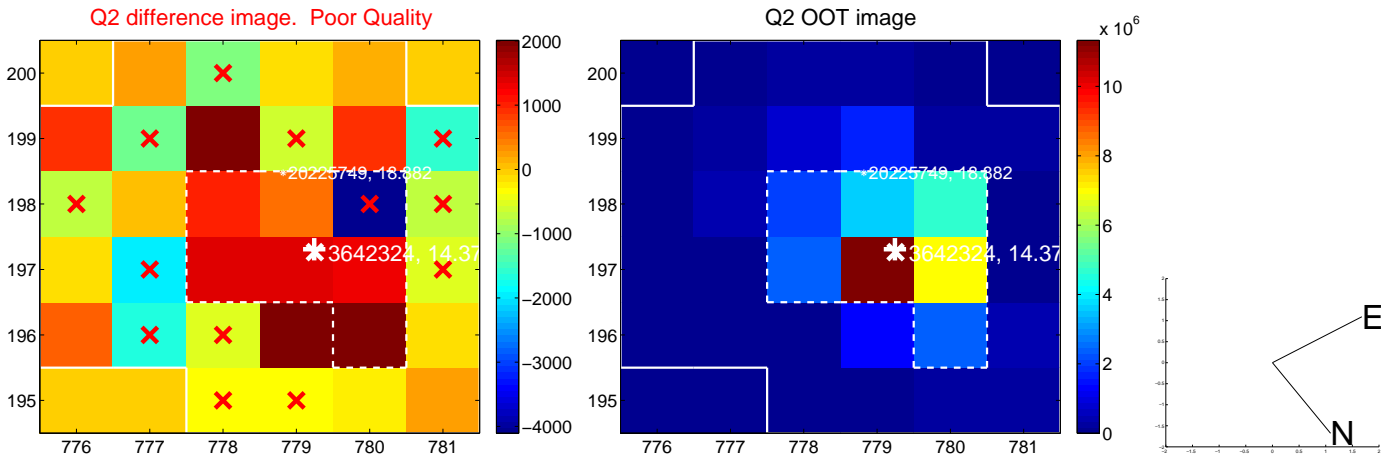
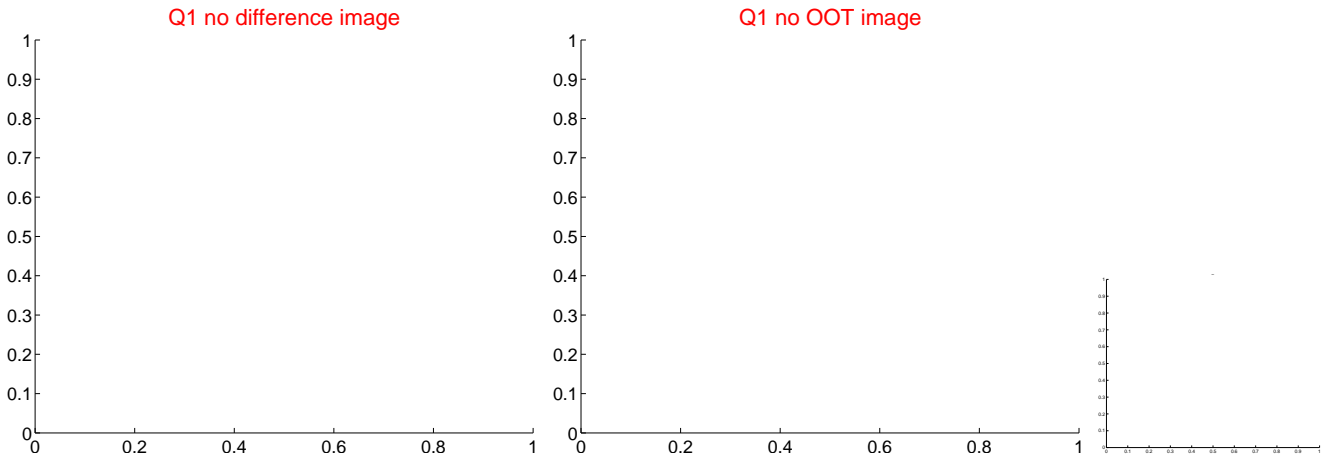


offset from photometric centroids

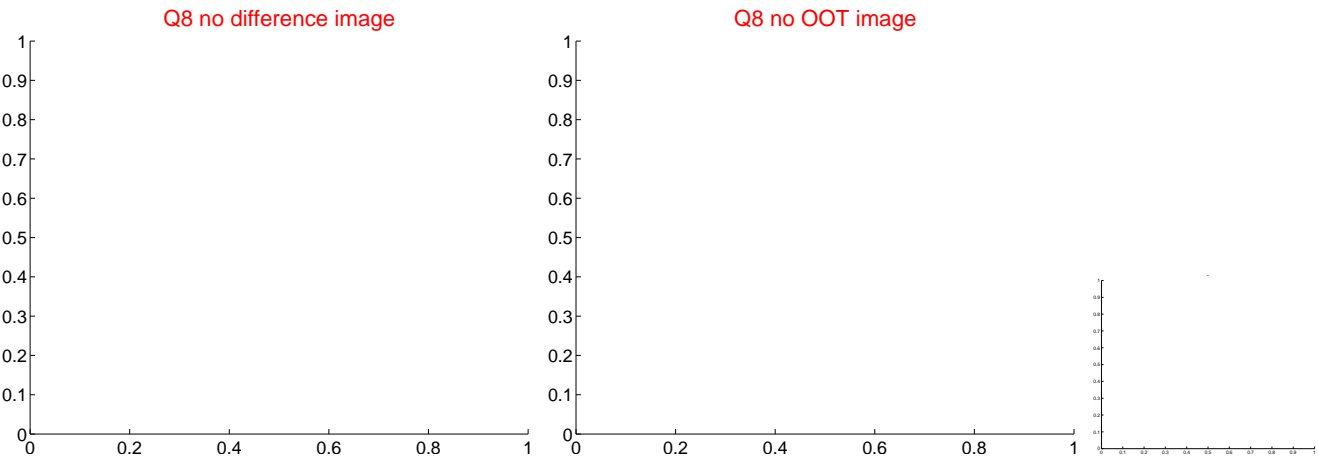
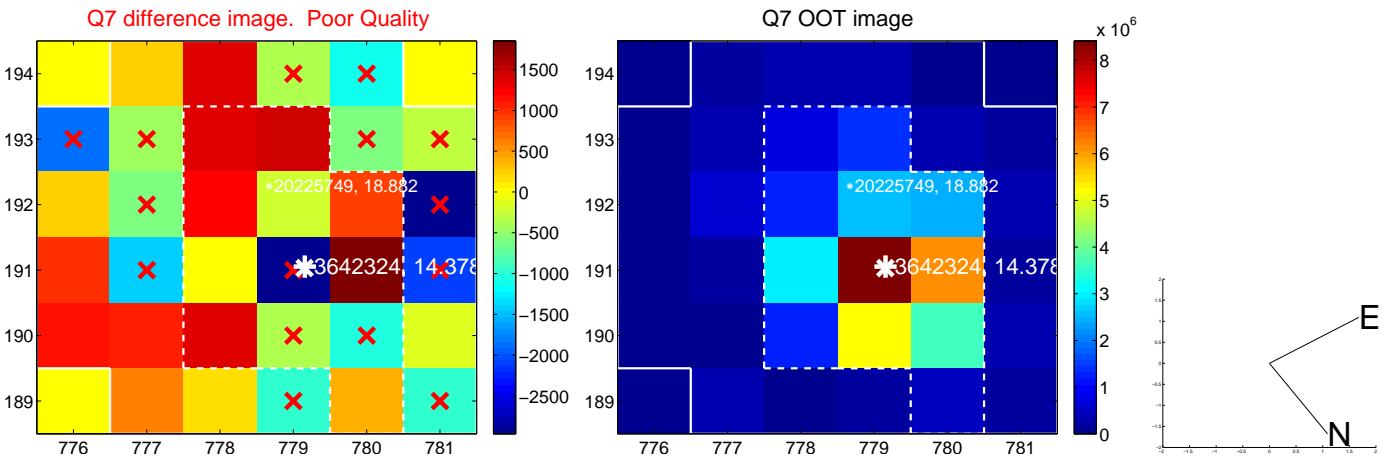
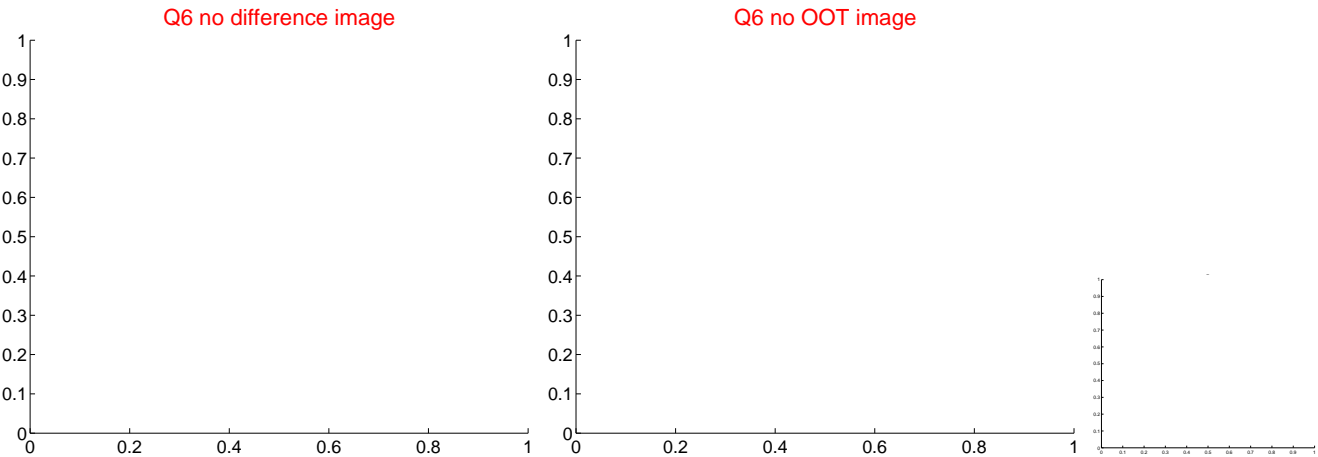
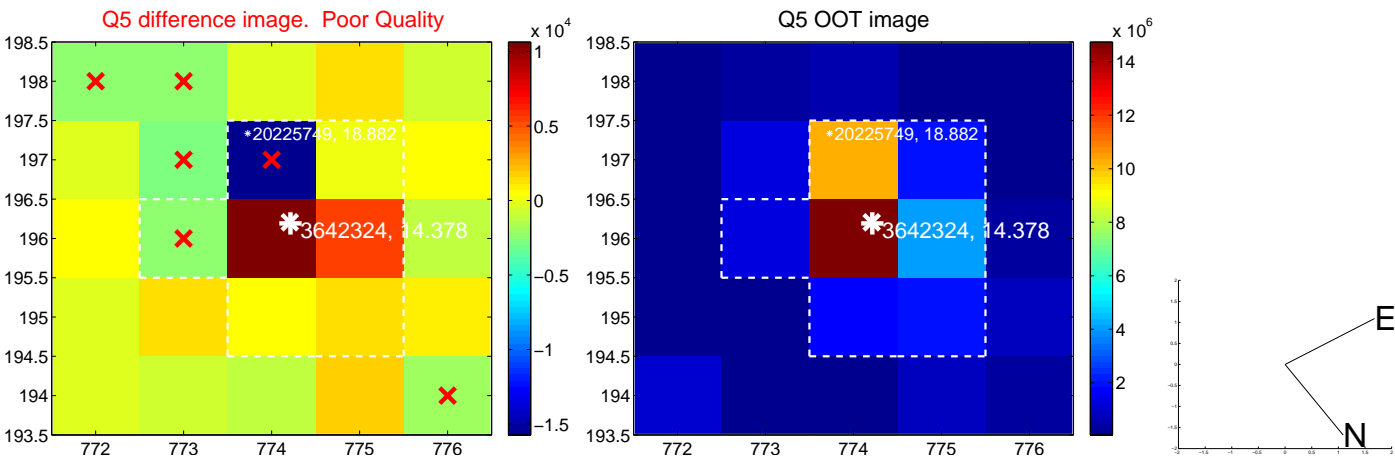


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

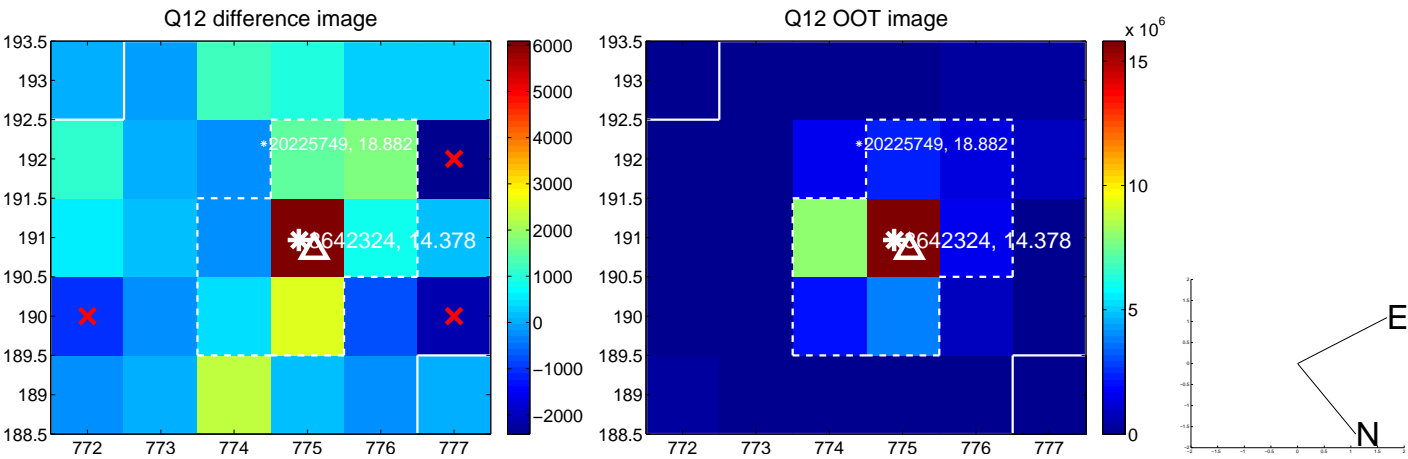
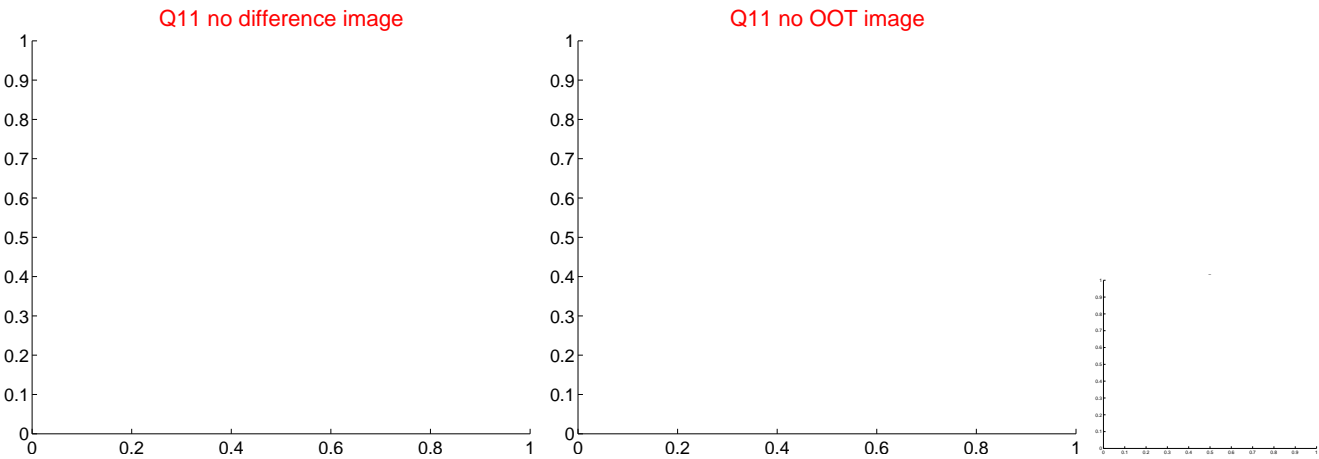
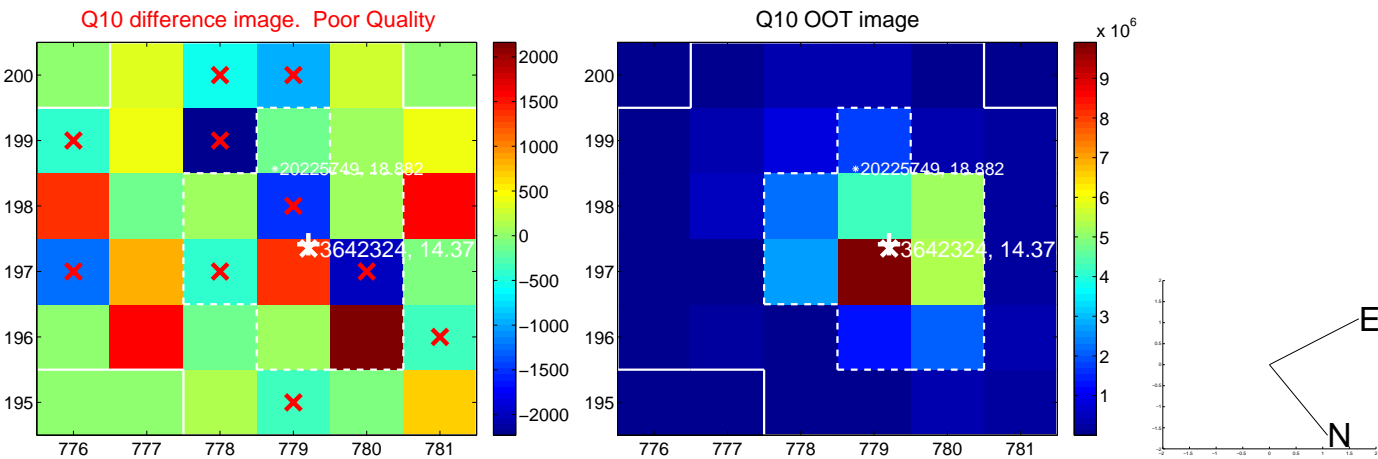
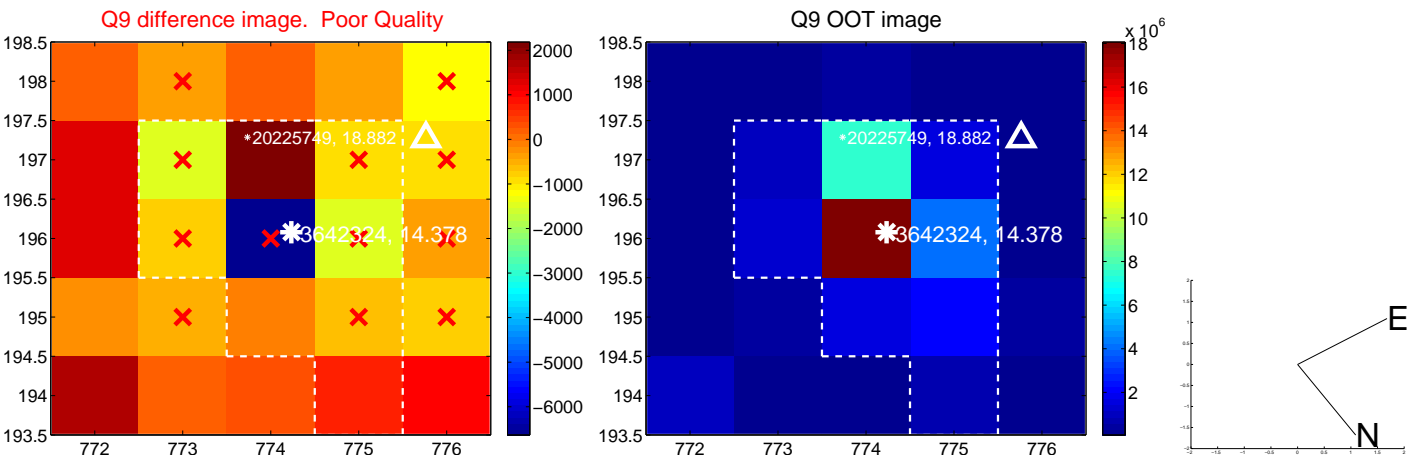
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

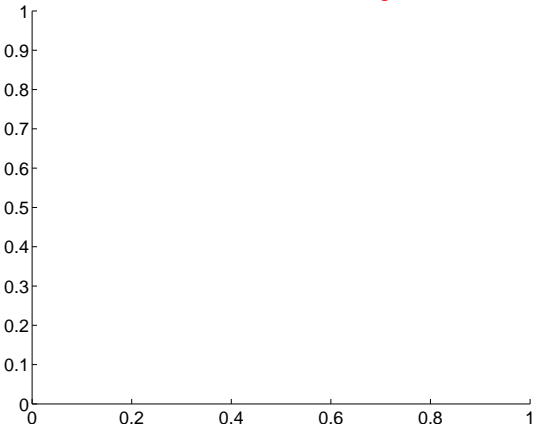


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

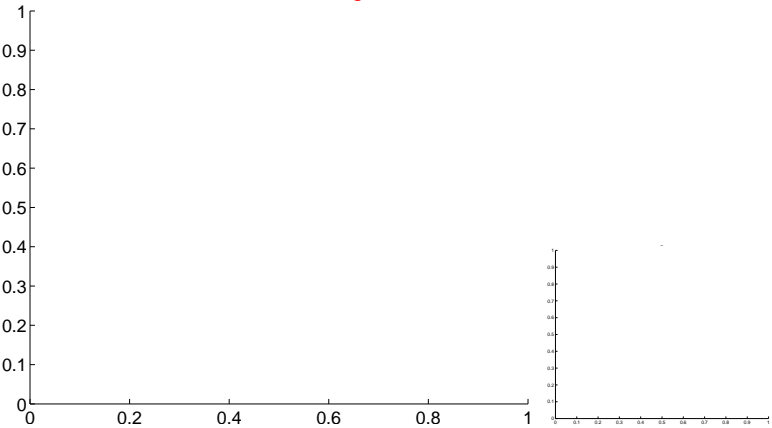


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

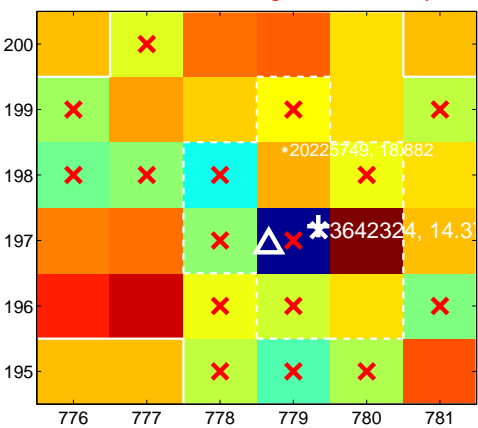
Q13 no difference image



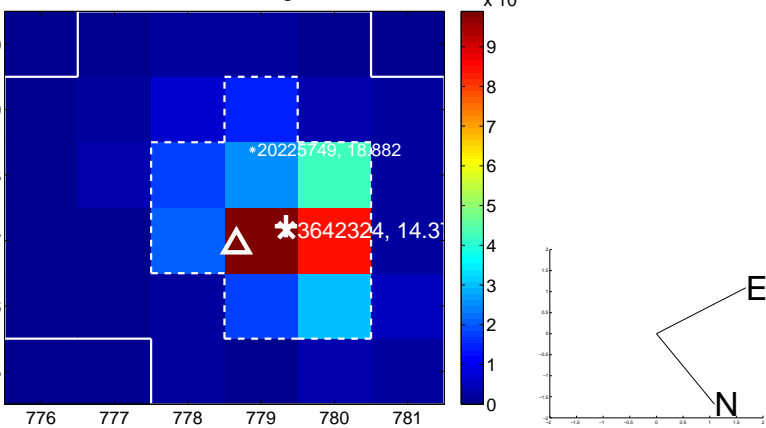
Q13 no OOT image



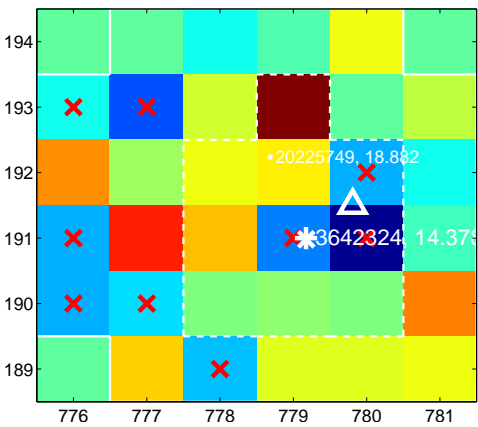
Q14 difference image. Poor Quality



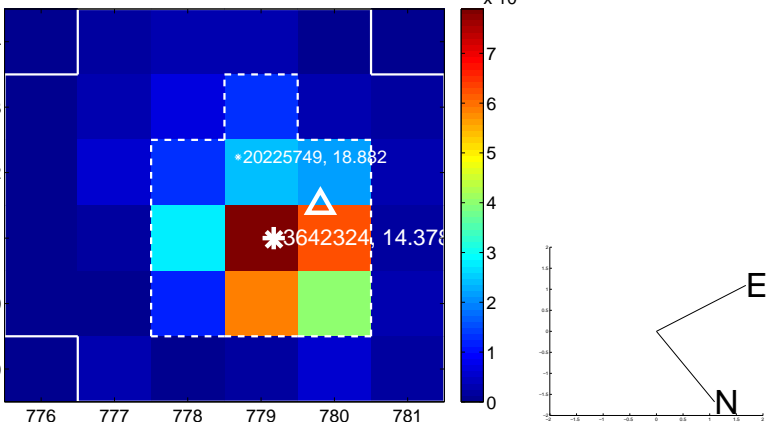
Q14 OOT image



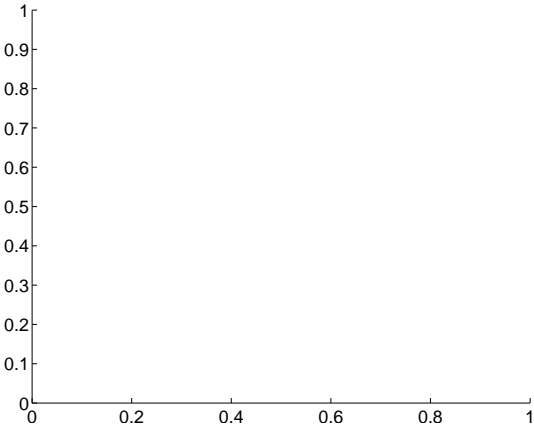
Q15 difference image. Poor Quality



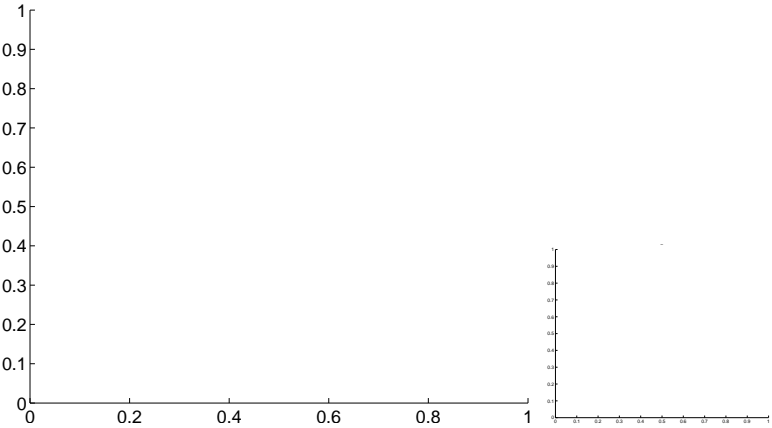
Q15 OOT image



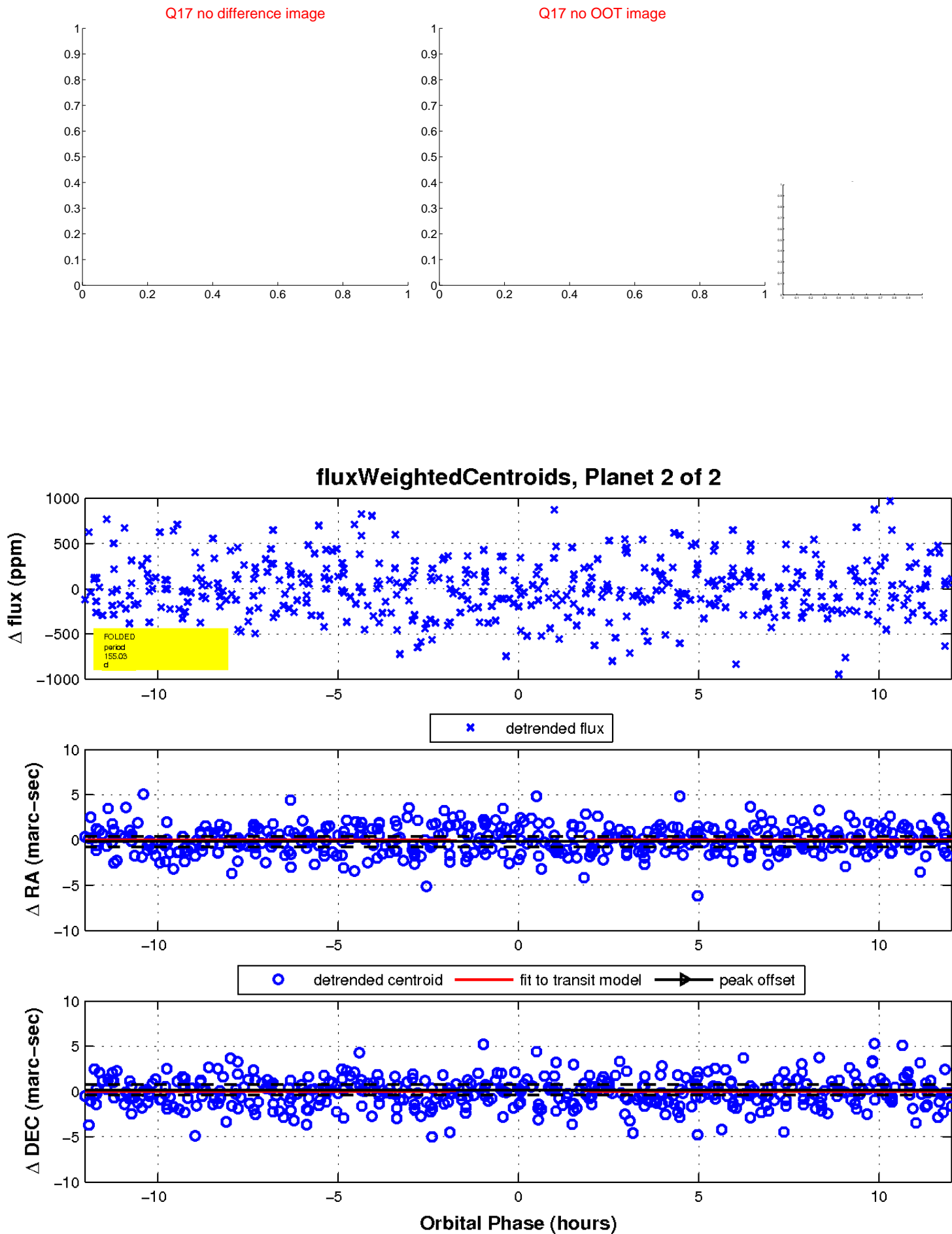
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

