

KIC 003003992

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})
003003992-01	OBS	1119.01	7.244839	131.855461	49.2	2.425	22.2	21.8	0.87	5370	0.70	116.35
003003992-02	OBS	1119.02	13.554803	139.819622	51.9	2.330	16.0	16.8	0.87	5370	0.66	50.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003003992-01	OBS	FP	0.00	0	0	0	1	CENT_SATURATED—EPHEM_MATCH
003003992-02	OBS	FP	0.00	0	0	1	0	CENT_SATURATED—HALO_GHOST

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 003003992-01

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
003003992-01	3003992	6099.01	3003991	1:1	19.8	-5	-2	13.93	11.16	2042.20	Direct-PRF	0	0.36	0.15

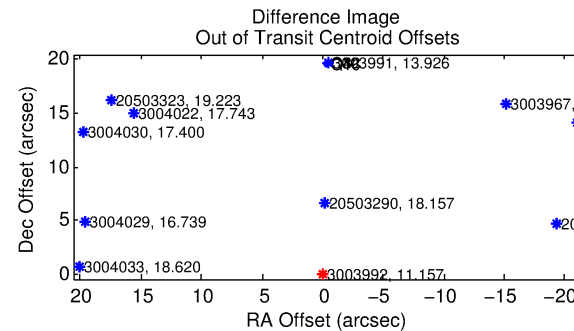
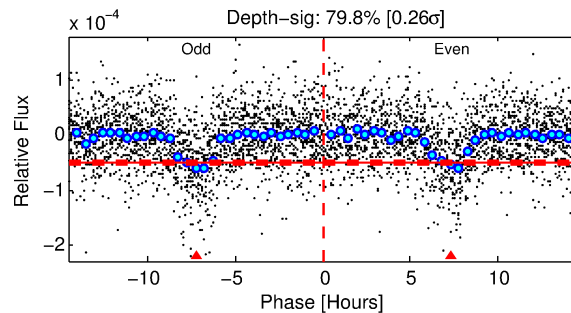
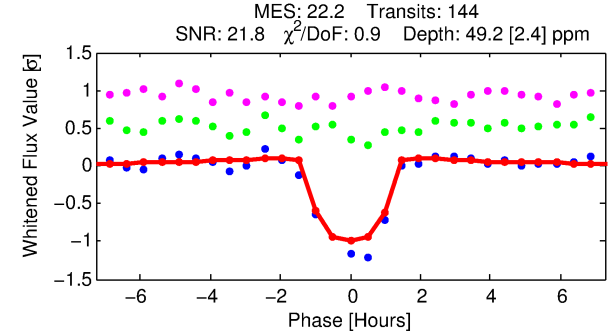
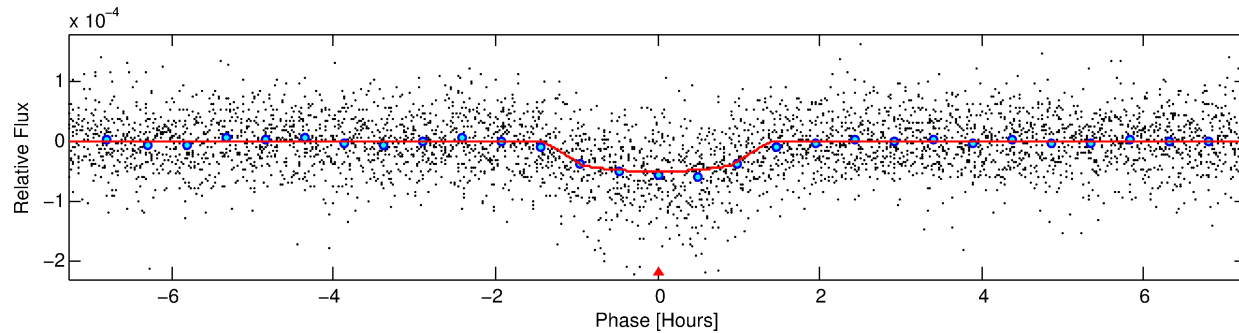
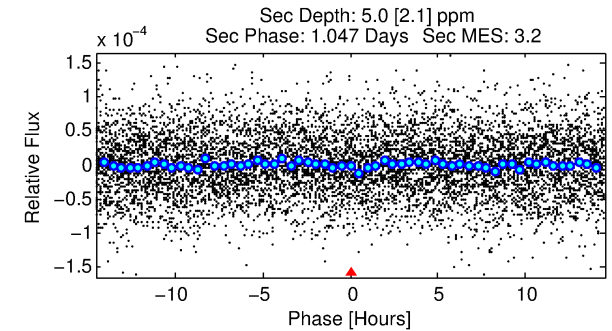
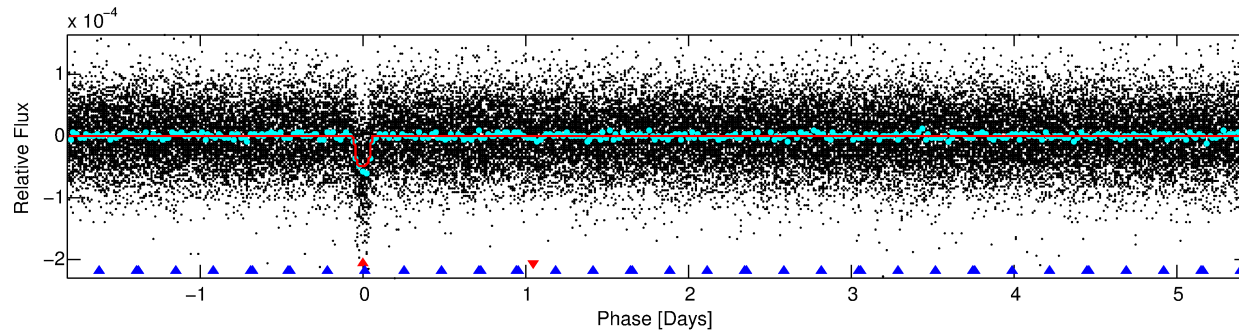
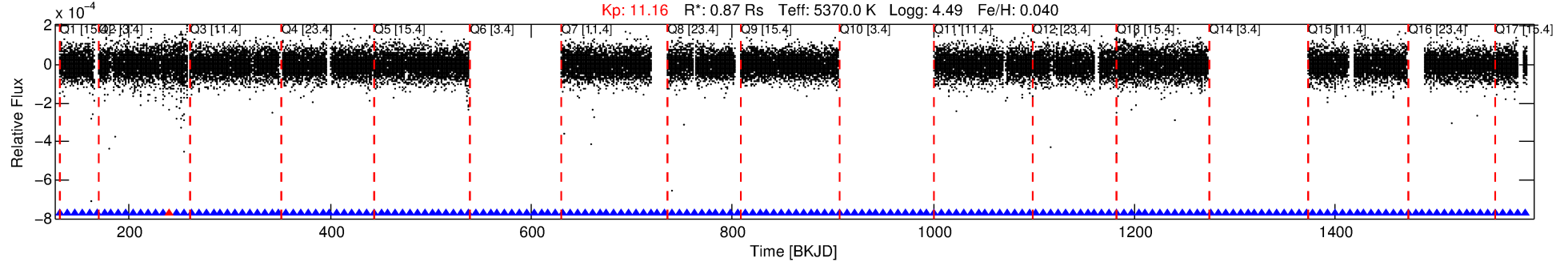
Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match 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: 3003992 Candidate: 1 of 2 Period: 7.245 d

KOI: K01119.01 Corr: 0.959

Kp: 11.16 R*: 0.87 Rs Teff: 5370.0 K Logg: 4.49 Fe/H: 0.040



DV Fit Results:

Period = 7.24484 [0.00002] d
Epoch = 131.8555 [0.0022] BKJD
Rp/R* = 0.0074 [0.0022]
a/R* = 12.70 [15.33]
b = 0.84 [0.43]
Seff = 116.35 [33.33]
Teq = 837 [60] K
Rp = 0.70 [0.25] Re
a = 0.0699 [0.0120] AU
Ag = 27.13 [20.83] [1.25σ]
Teffp = 2955 [546] K [3.86σ]

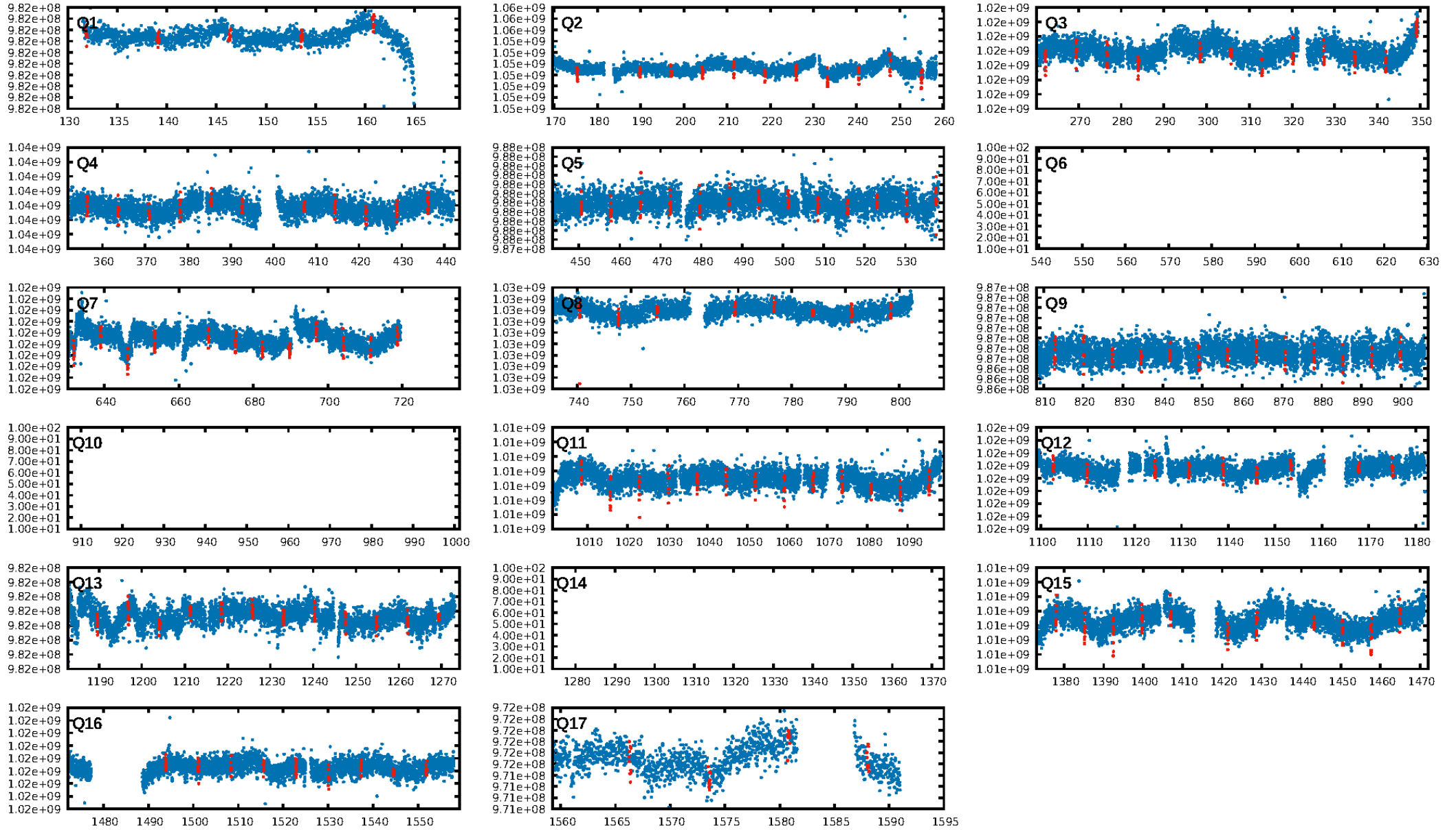
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [45.03σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.10e-103
RollingBand-fgt: 0.99 [134/135]
GhostDiagnostic-chr: -1.432
Centroid-sig: 0.0%
Centroid-so: N/A
OotOffset-rm: 19.658 arcsec [252.06σ]
KicOffset-rm: 19.828 arcsec [296.27σ]
OotOffset-st: 0/0/4/0 [4]
KicOffset-st: 0/0/4/0 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 1.00 [14/14]

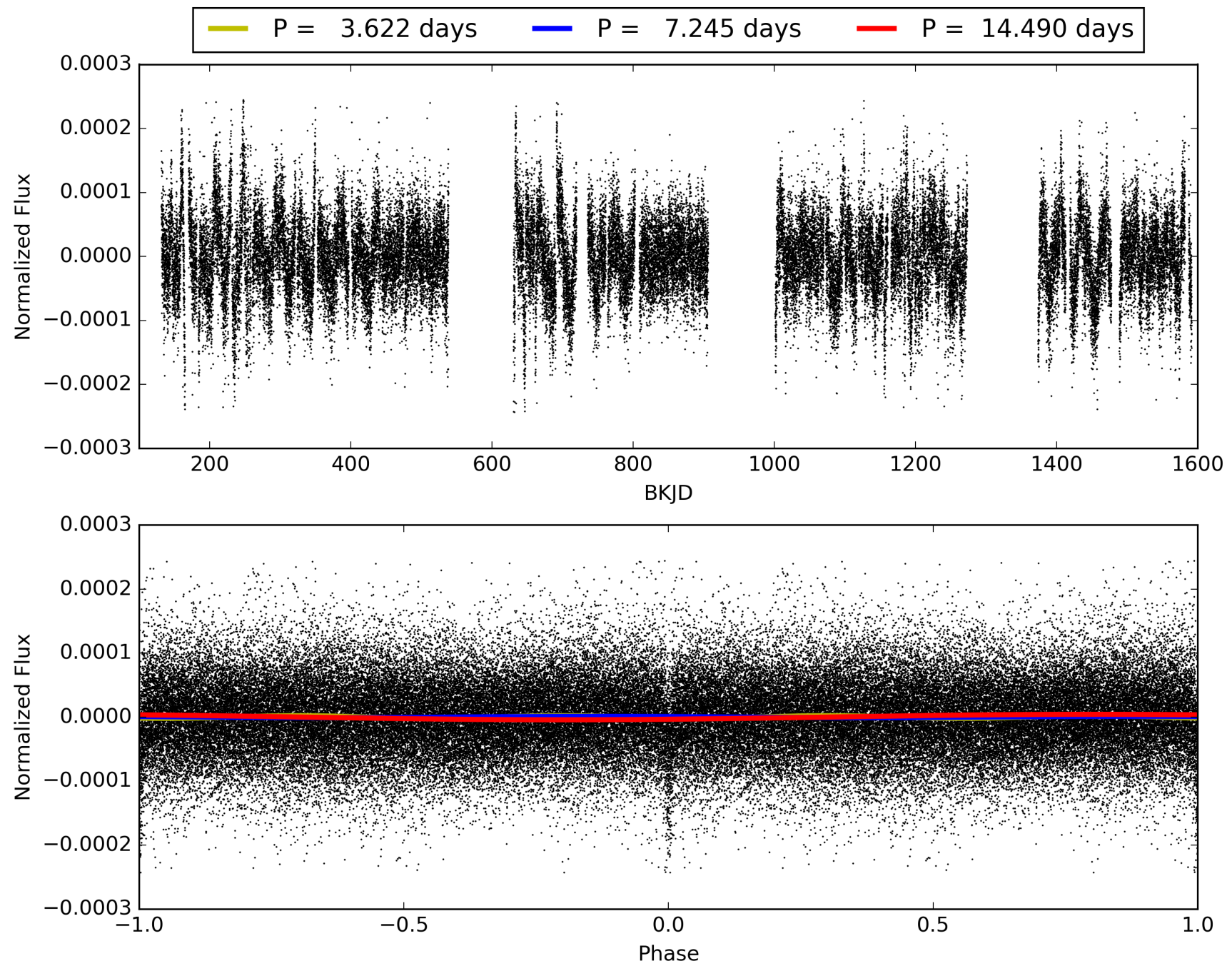
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:25:15 Z

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

TCE 003003992-01, PDC Light Curves

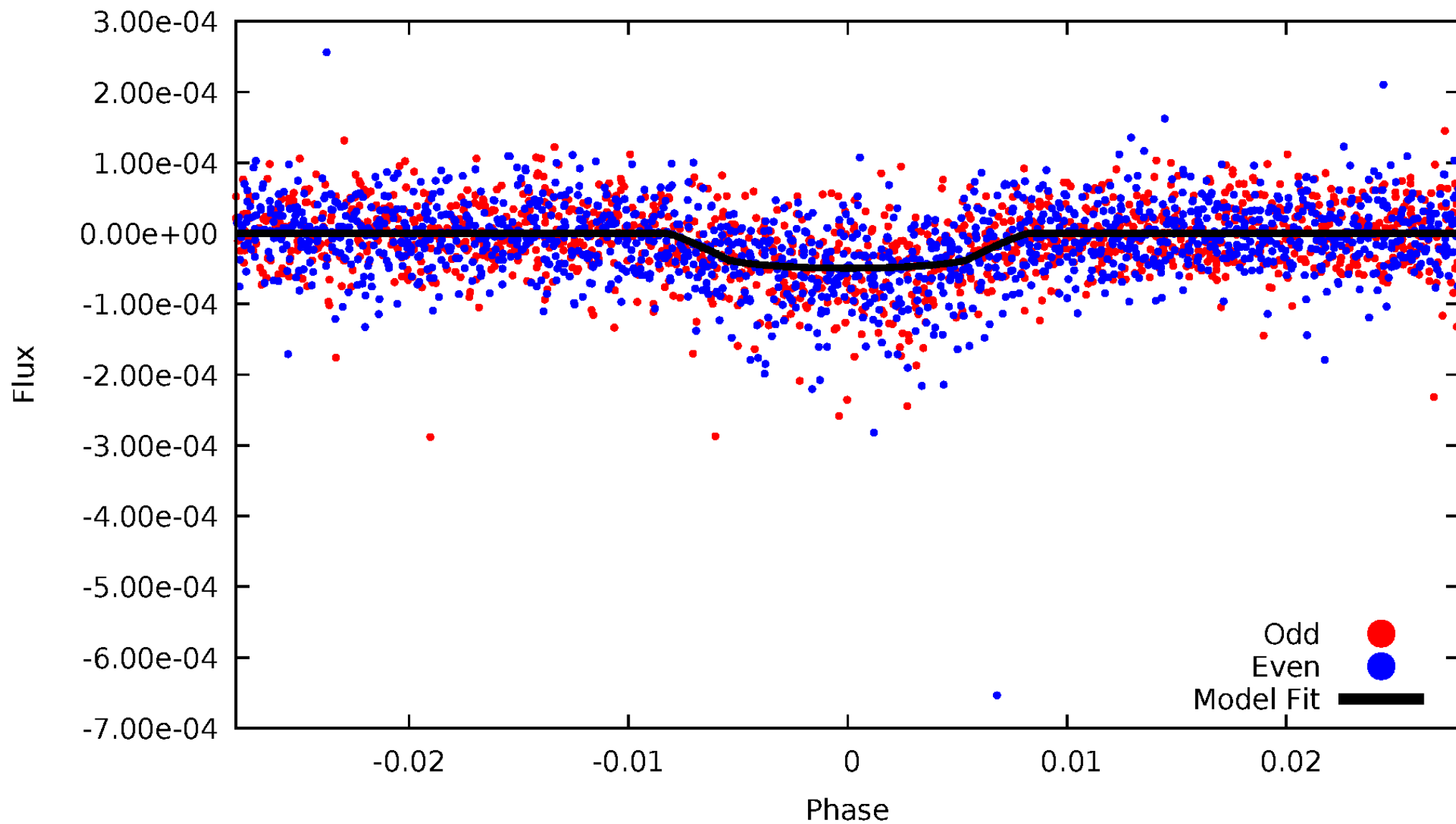


TCE 003003992-01



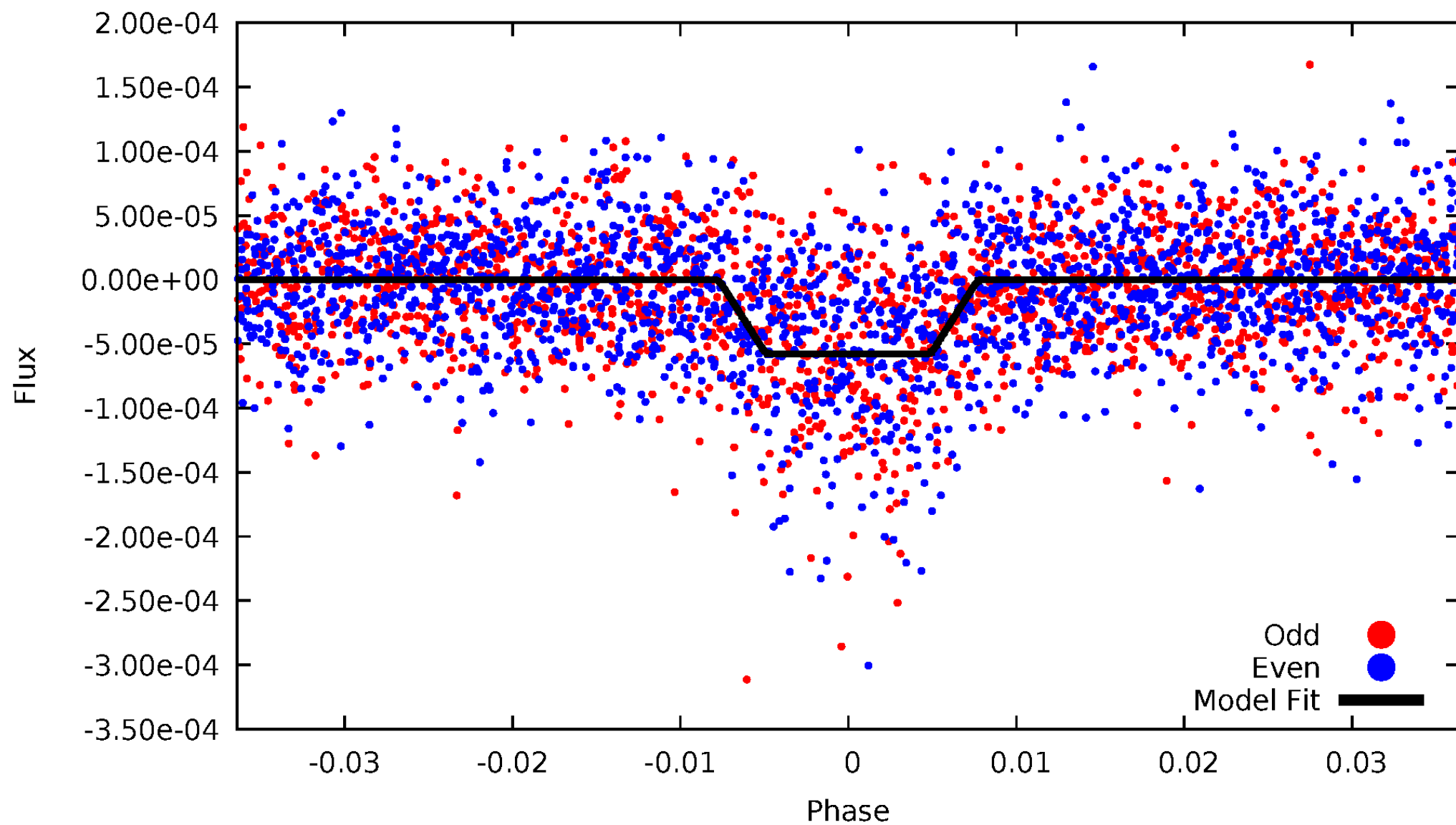
DV Odd/Even

TCE 003003992-01

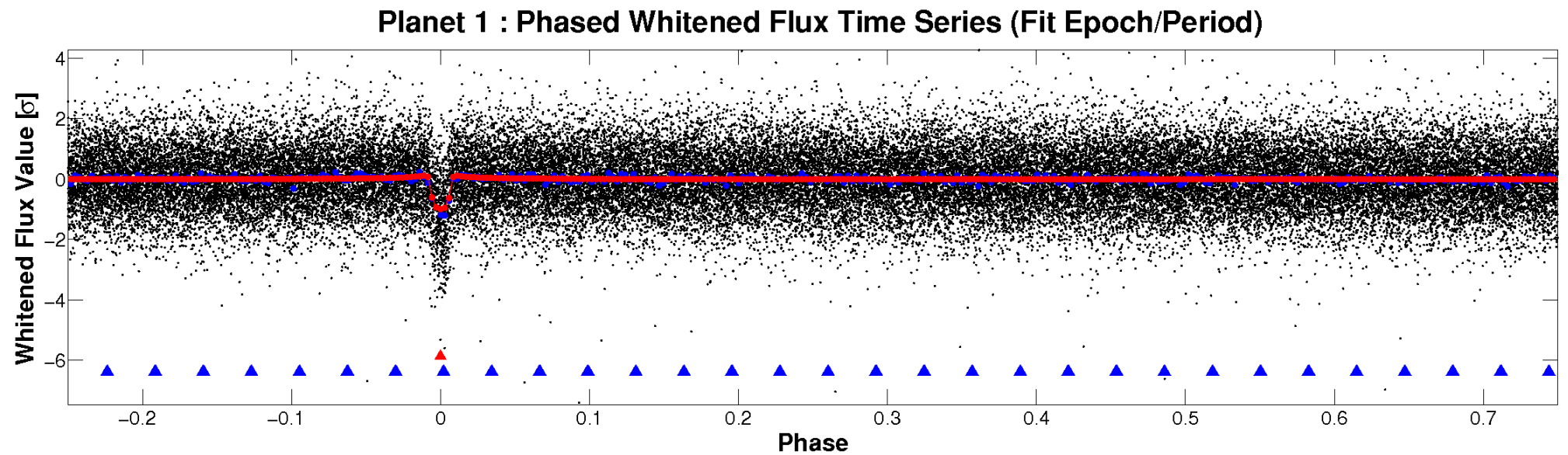
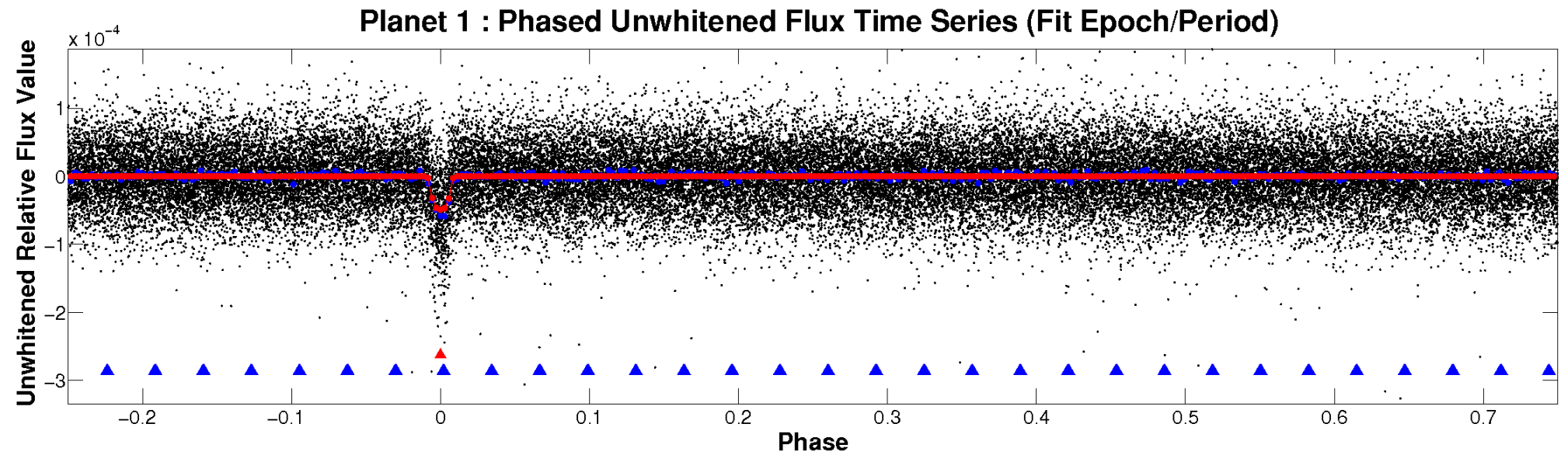


ALT Odd/Even

TCE 003003992-01

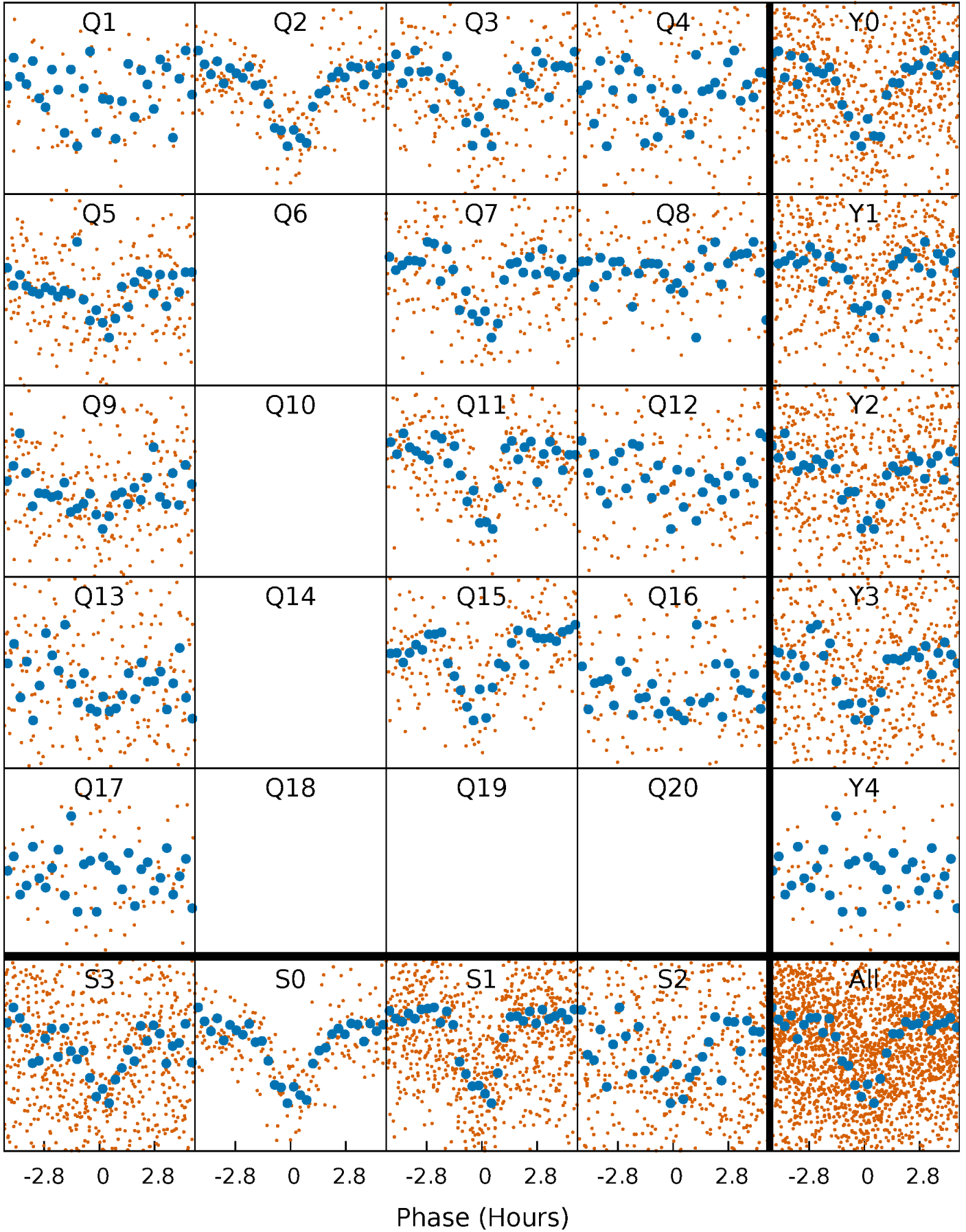


Non-Whitened Vs. Whitened Light Curve



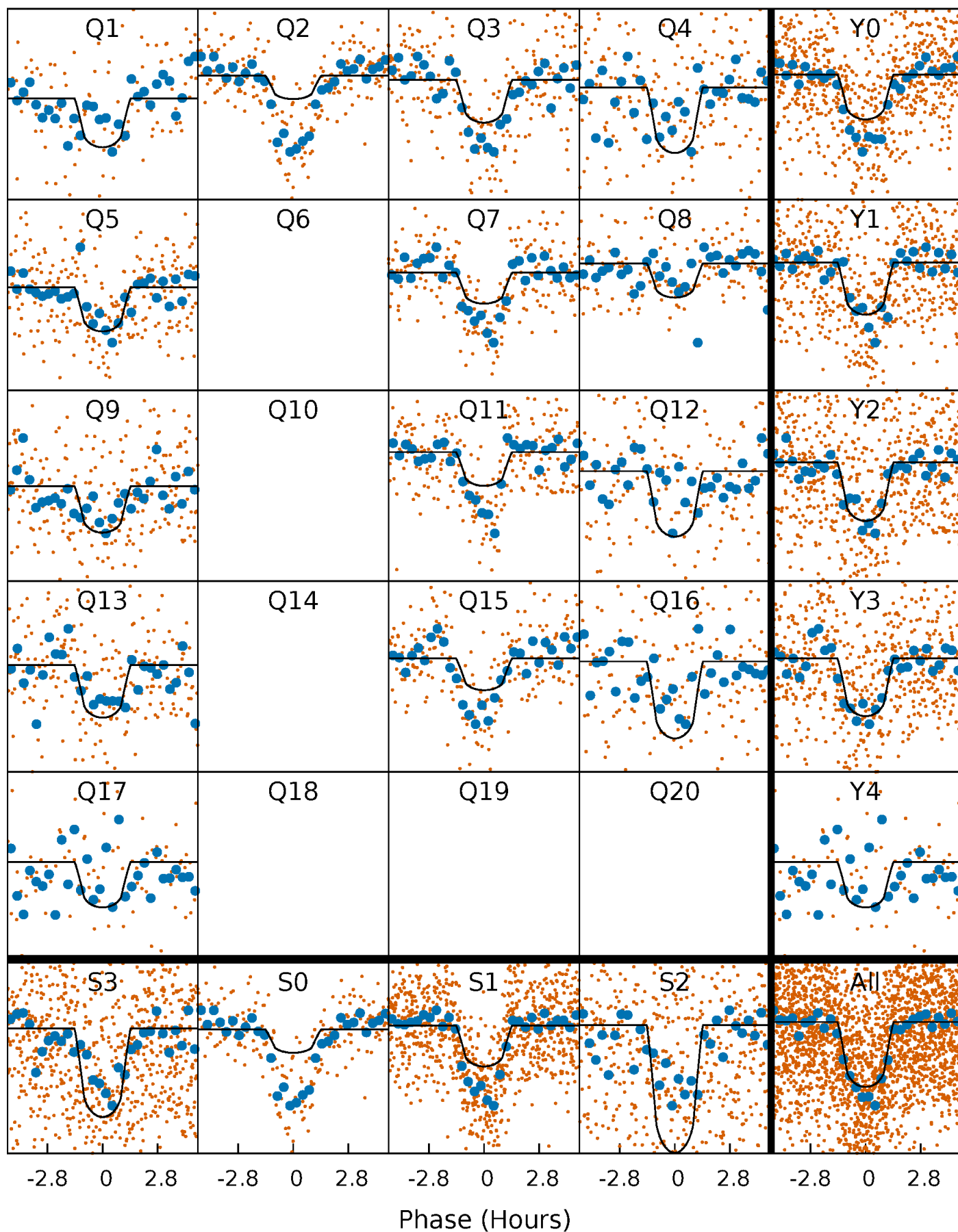
PDC Quarter-Phased Transit Curves

TCE 003003992-01 P= 7.244839 Days $T_0=131.855461$ (BKJD)



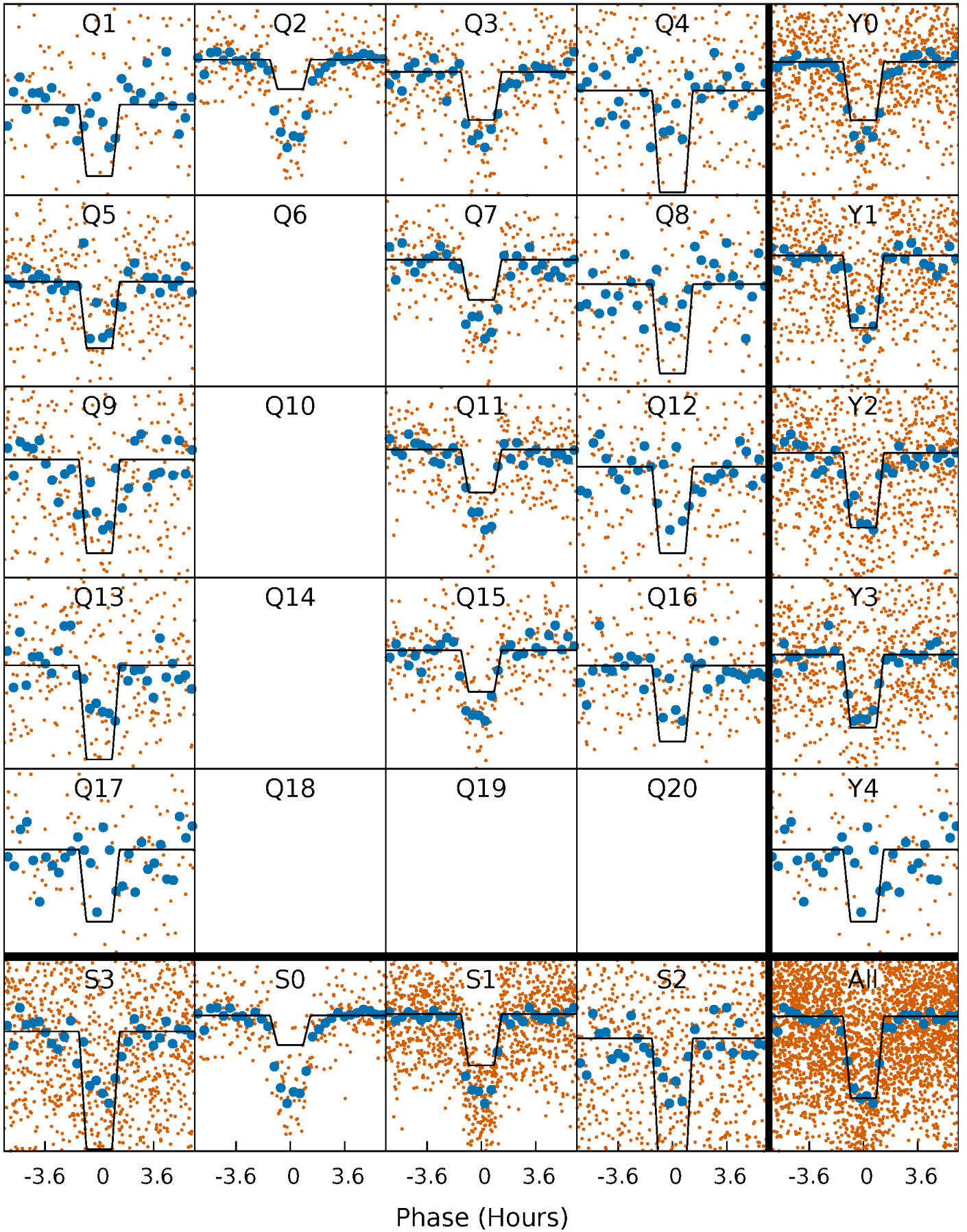
DV Quarter-Phased Transit Curves

TCE 003003992-01 P= 7.244839 Days $T_0=131.855461$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

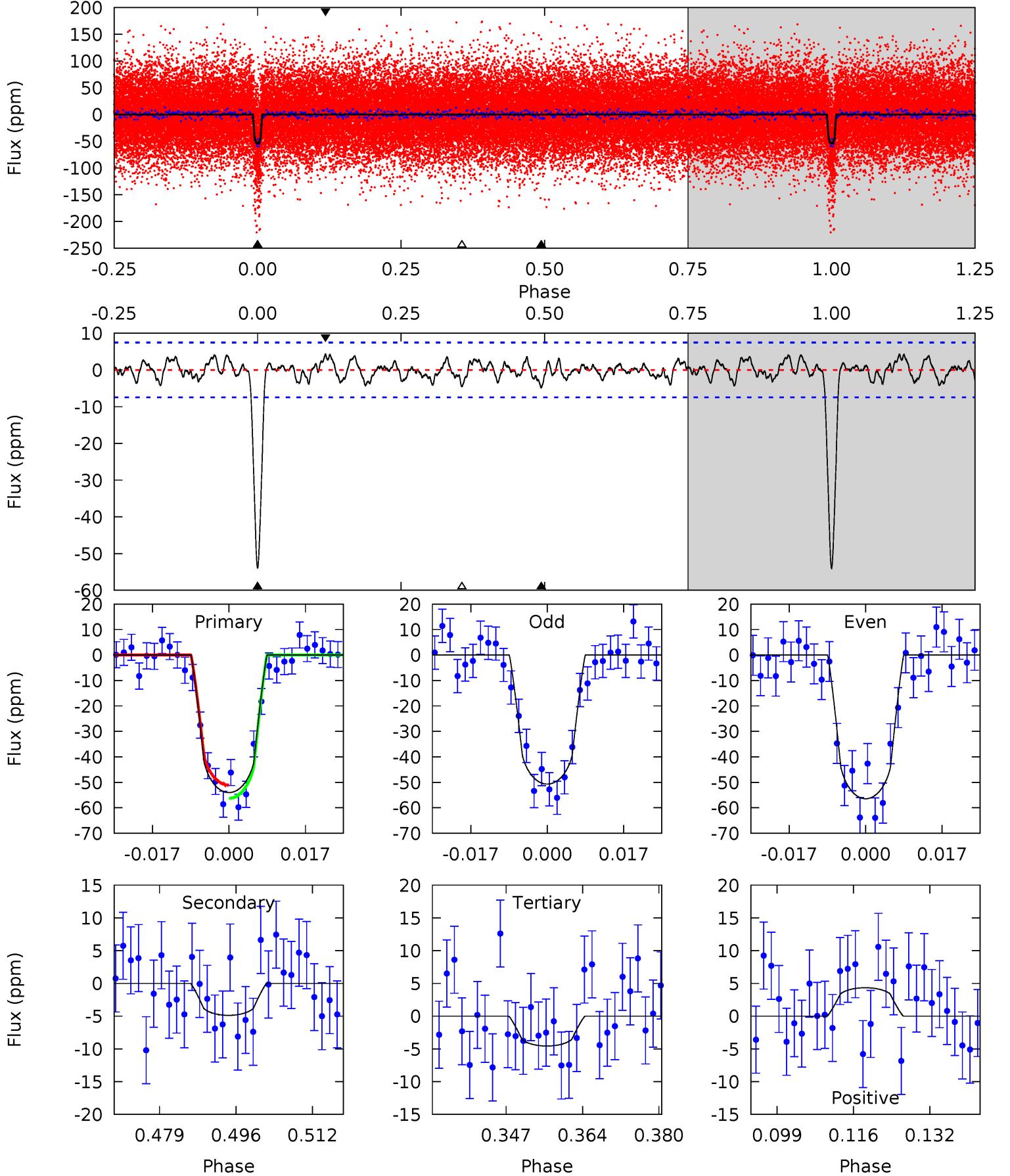
TCE 003003992-01 P= 7.244823 Days $T_0=131.855830$ (BKJD)



DV Model-Shift Uniqueness Test

003003992-01, P = 7.244839 Days, E = 124.610622 Days

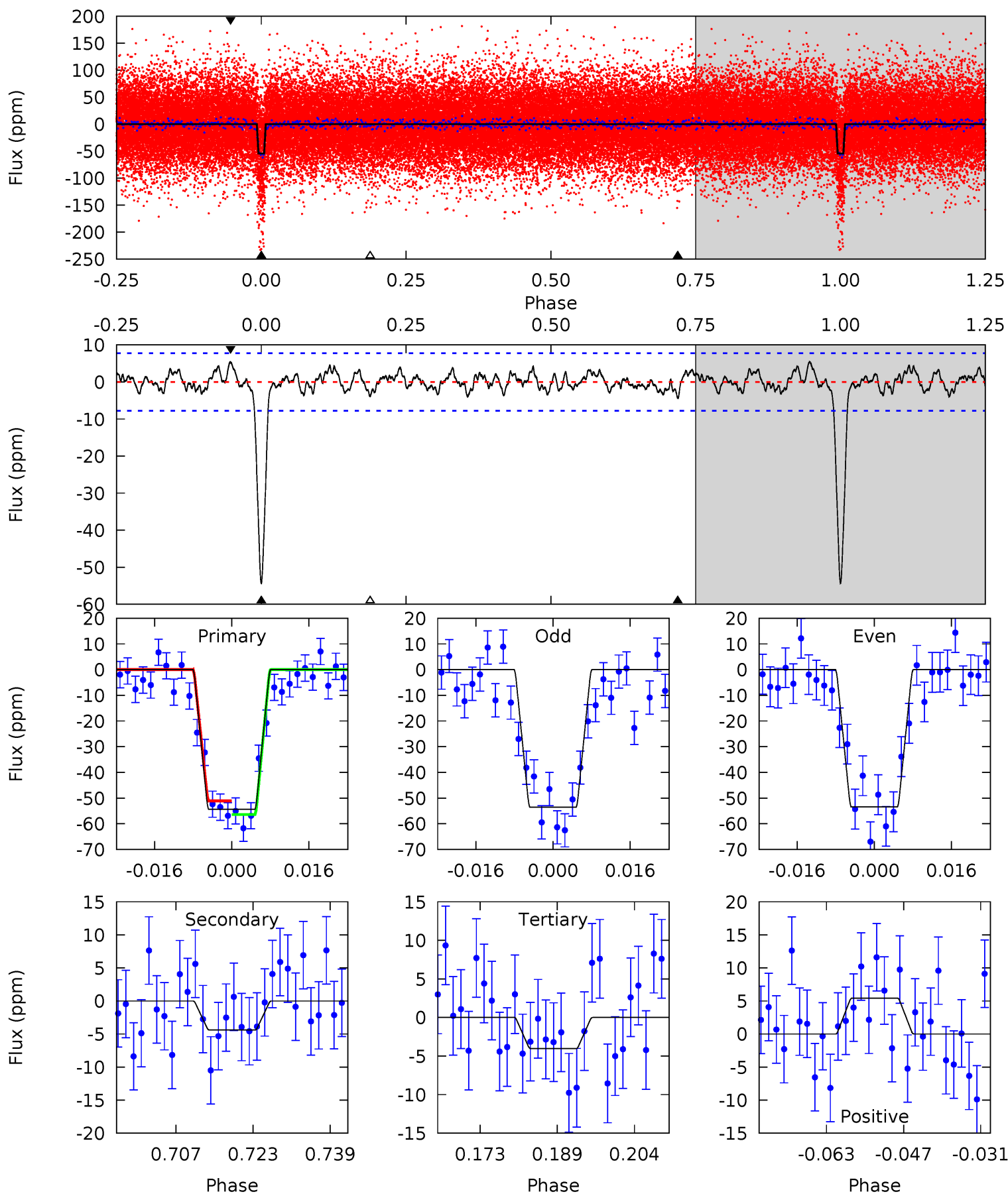
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.6	3.22	3.01	2.86	4.93	2.40	1.19	32.6	32.8	0.21	0.36	1.89	1.27	0.07	1.72



Alt Model-Shift Uniqueness Test

003003992-01, P = 7.244823 Days, E = 124.611007 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.6	2.80	2.56	3.44	4.94	2.42	1.16	32.0	31.1	0.24	-0.64	0.05	1.32	0.09	1.68



Stellar Parameters For KIC 003003992

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5370^{+187}_{-187}	$4.494^{+0.074}_{-0.137}$	$0.040^{+0.250}_{-0.300}$	$0.874^{+0.178}_{-0.096}$	$0.869^{+0.097}_{-0.073}$	$1.831^{+0.574}_{-0.727}$
	+3%/-3%	+2%/-3%	+625%/-750%	+20%/-11%	+11%/-8%	+31%/-40%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 003003992-01 / KOI 1119.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-5 ± 2	$0.71^{+0.24}_{-0.23}$	1182^{+62}_{-58}	3413^{+524}_{-338}	26^{+34}_{-13}
Alt.	-4 ± 2	$0.74^{+0.24}_{-0.21}$	1183^{+66}_{-59}	3307^{+434}_{-308}	21^{+22}_{-10}

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 $A_{obs} \gg 1.0$

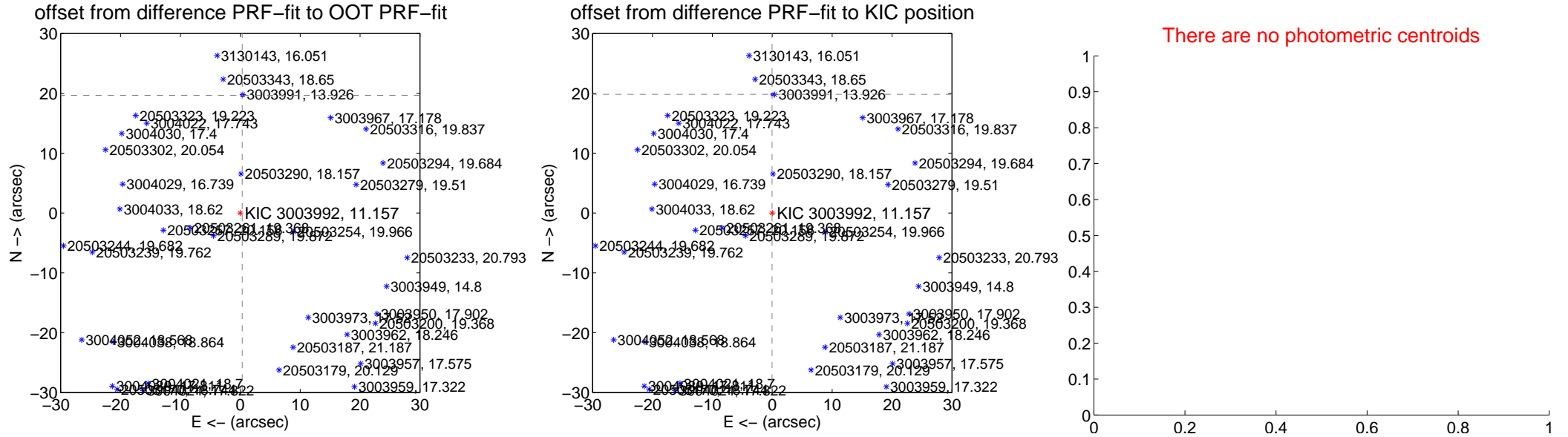
DV Centroid Data

Supplemental centroid analysis for 003003992-01. **Kepler magnitude: 11.16.** Transit SNR 21.80

There are 4 quarters with good PRF difference image offsets

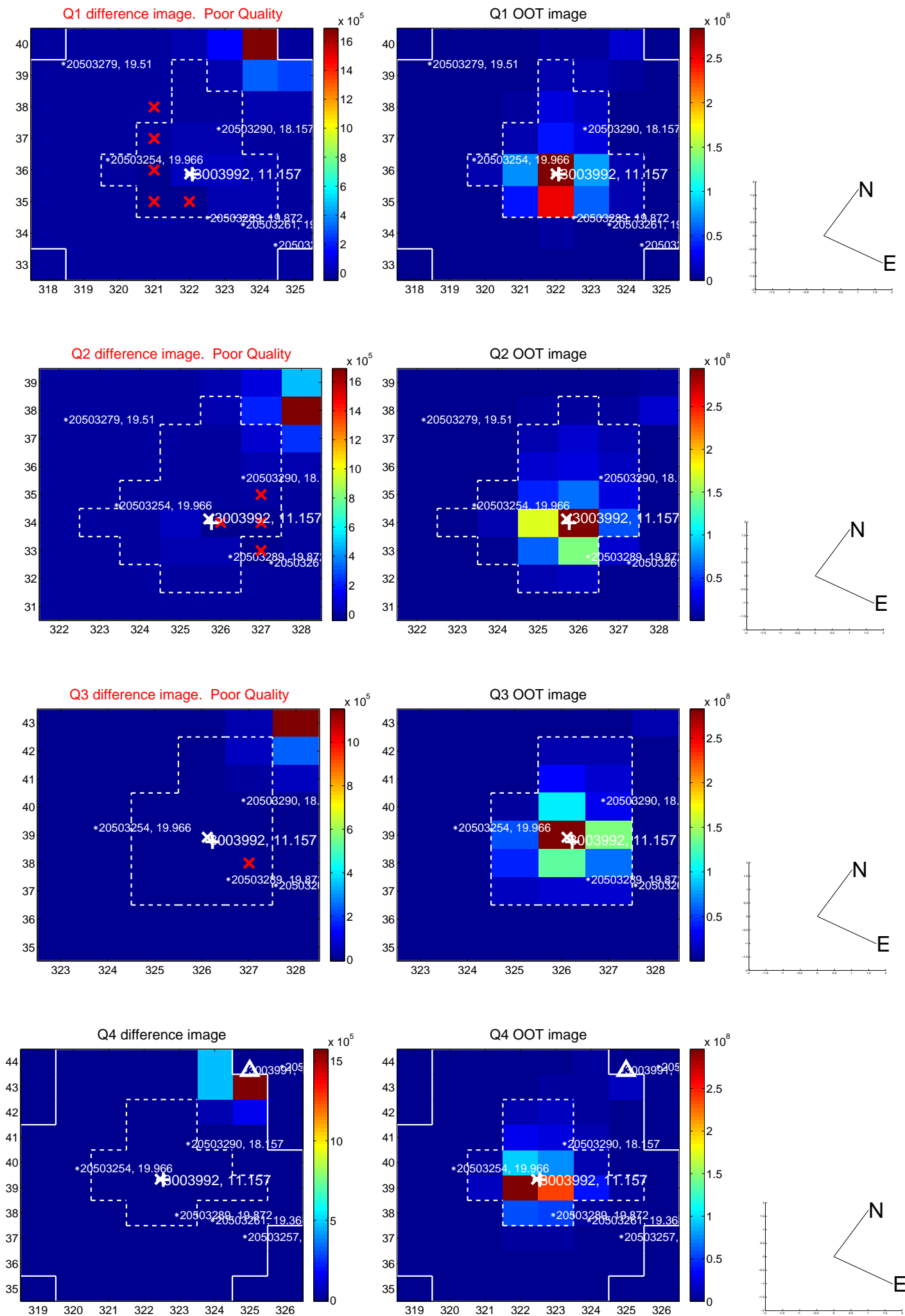
The direct PRF centroid is offset from the target star catalog position by about 0.47 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	19.658 \pm 0.078	252.06	-0.322 \pm 0.067	19.655 \pm 0.078
PRF-fit source offset from KIC position	19.828 \pm 0.067	296.27	0.032 \pm 0.072	19.828 \pm 0.067
photometric centroid source offset	—	—	—	—

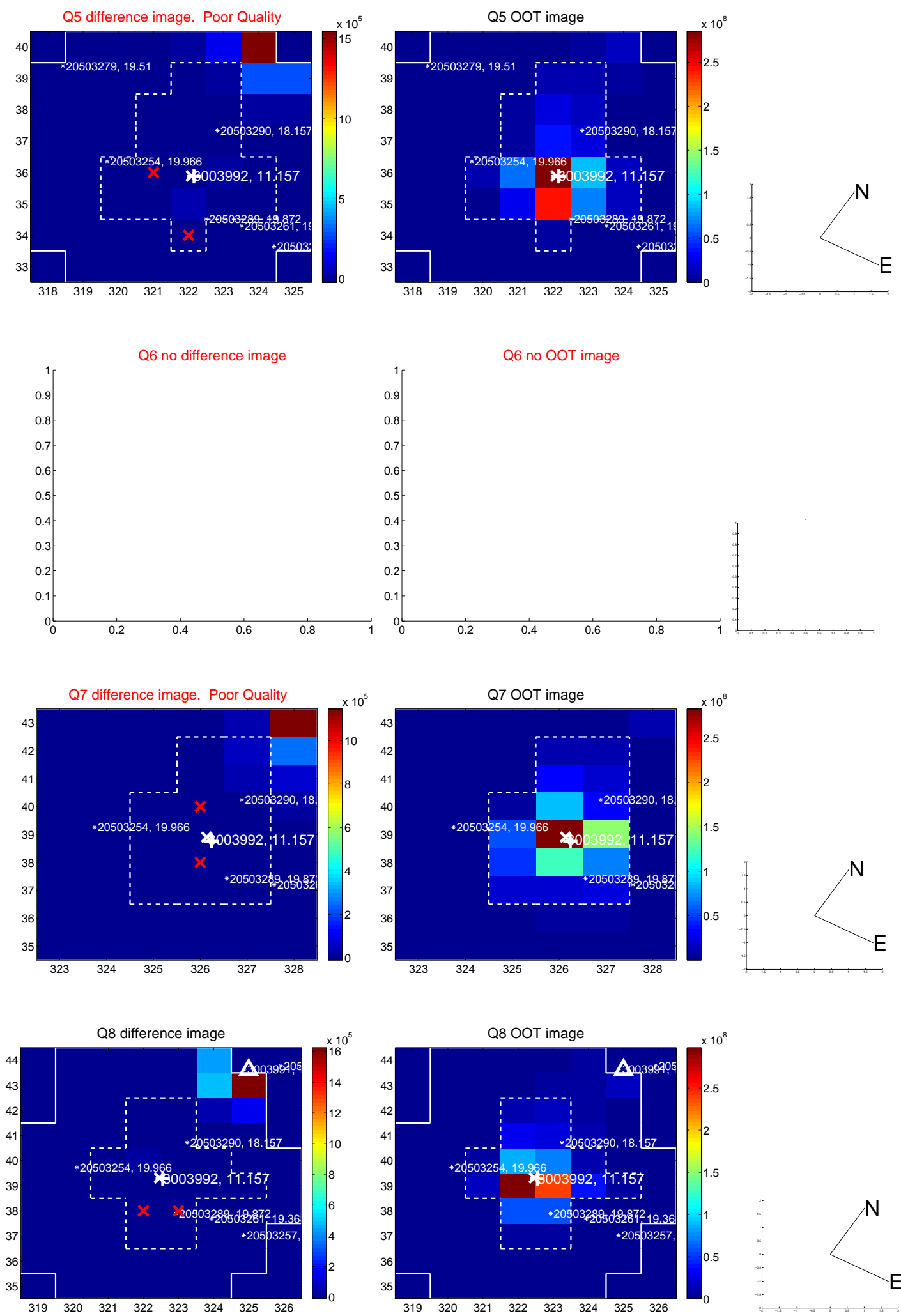


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

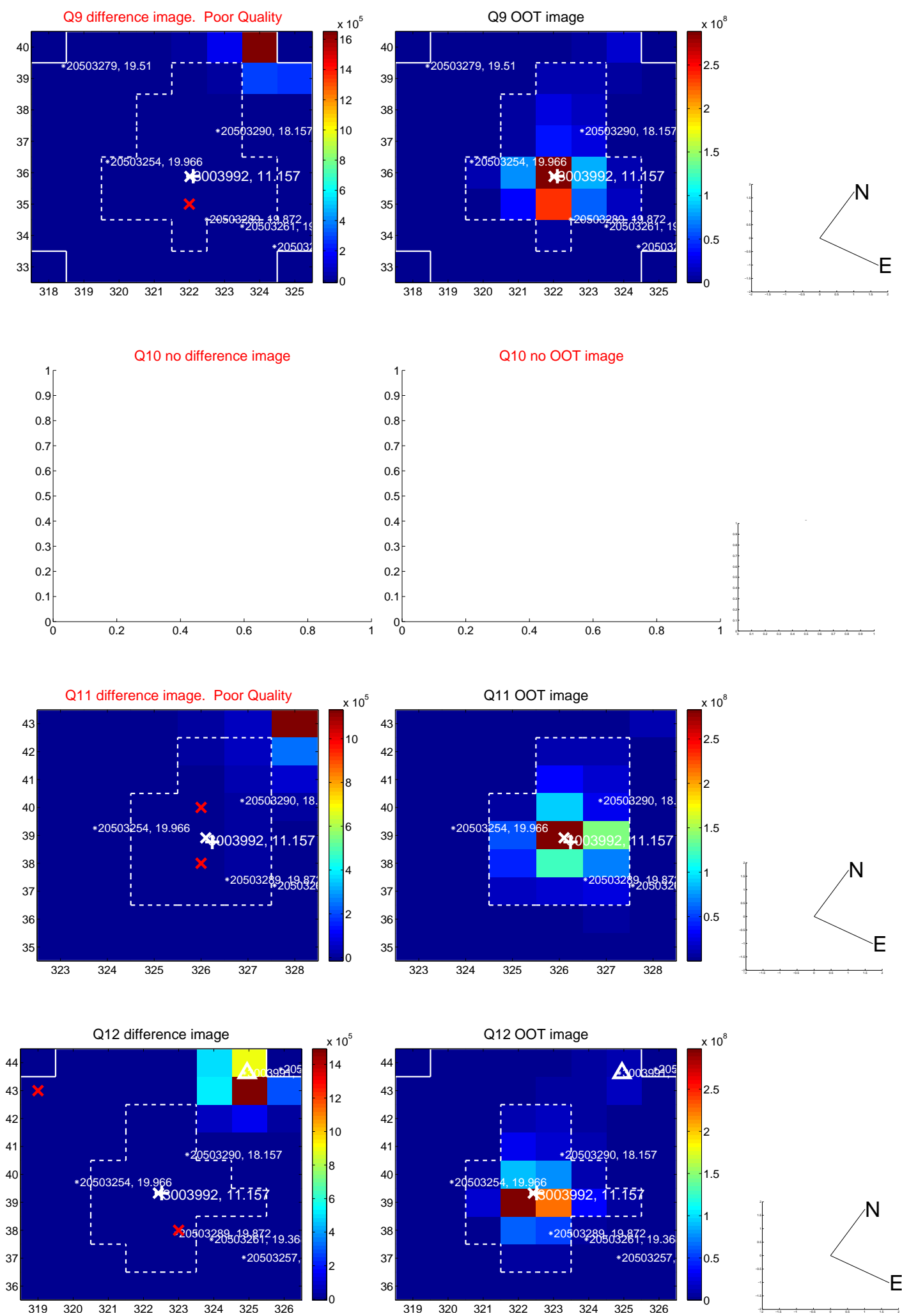
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



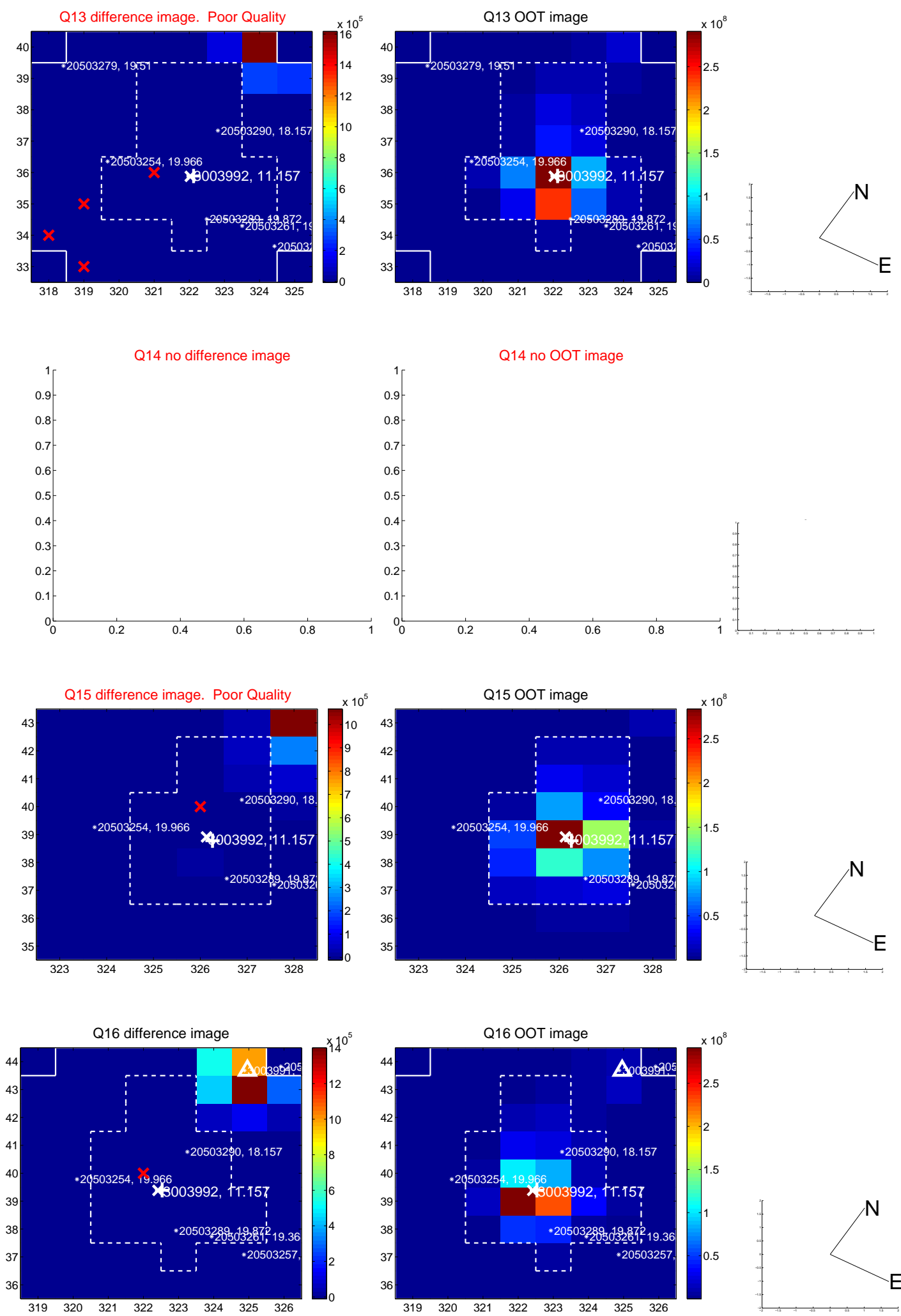
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



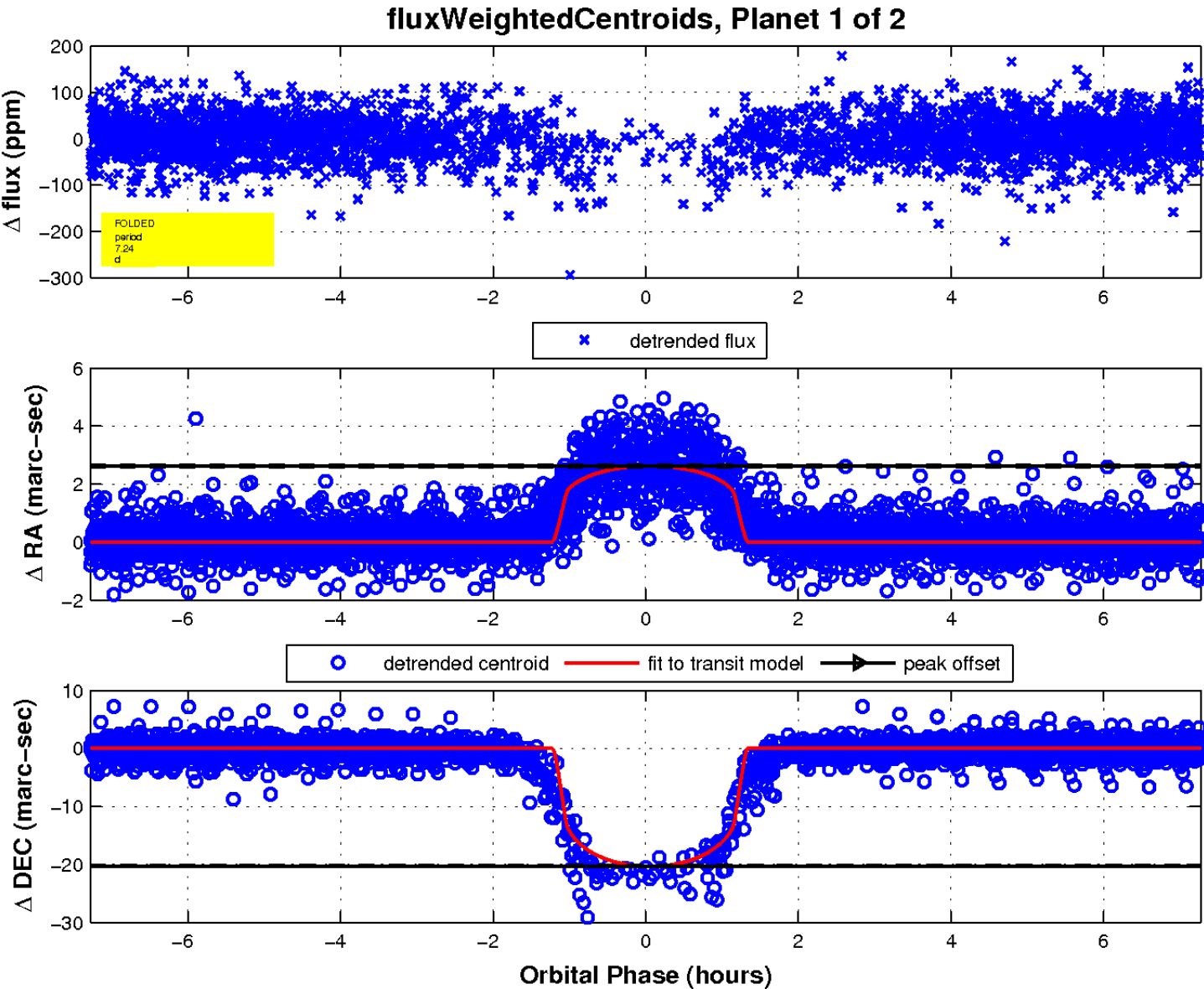
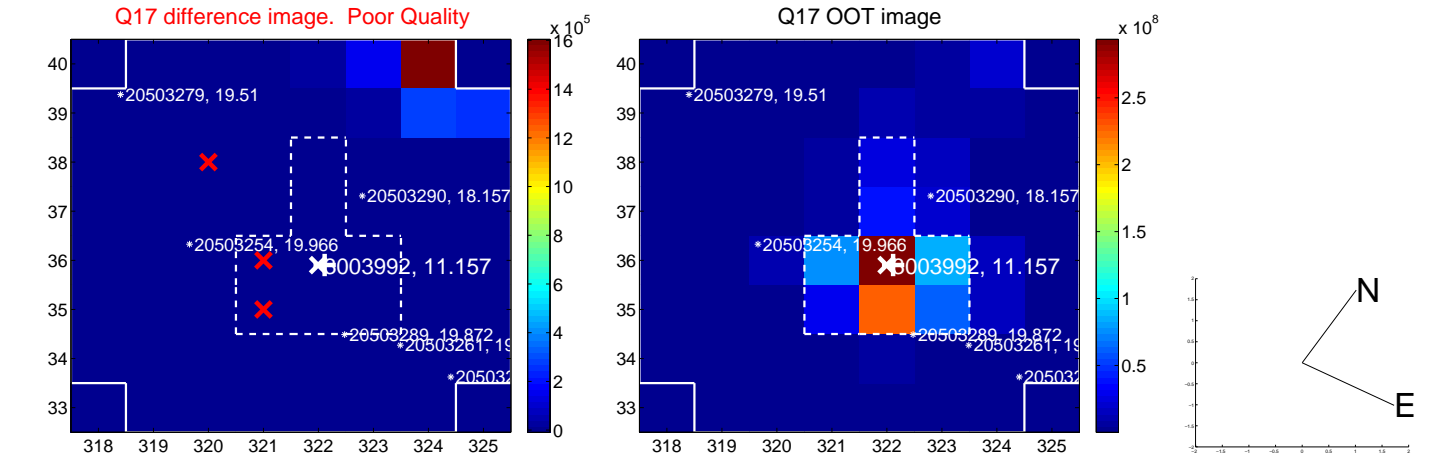
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



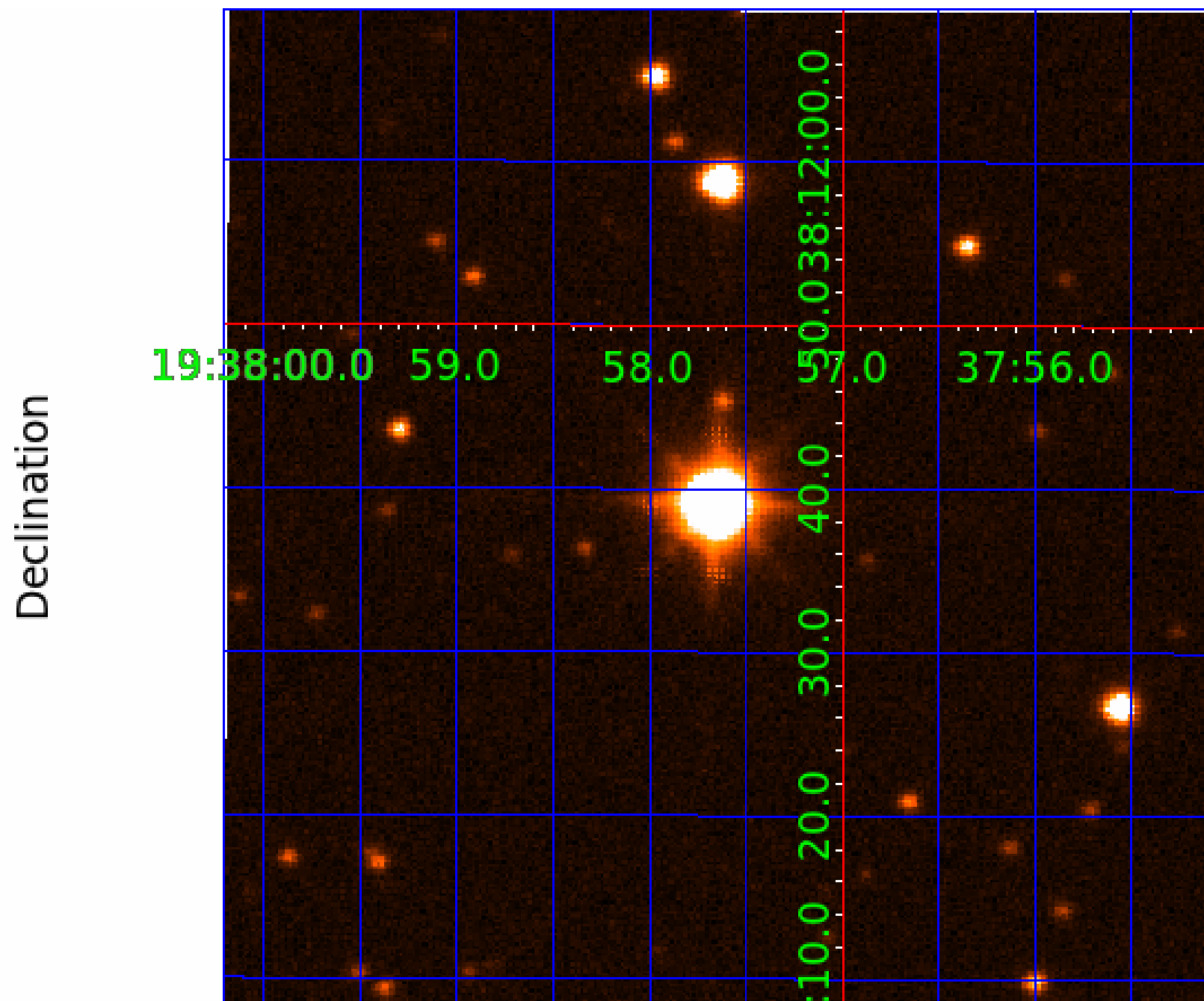
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 003003992

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})
003003992-01	OBS	1119.01	7.244839	131.855461	49.2	2.425	22.2	21.8	0.87	5370	0.70	116.35
003003992-02	OBS	1119.02	13.554803	139.819622	51.9	2.330	16.0	16.8	0.87	5370	0.66	50.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003003992-01	OBS	FP	0.00	0	0	0	1	CENT_SATURATED—EPHEM_MATCH
003003992-02	OBS	FP	0.00	0	0	1	0	CENT_SATURATED—HALO_GHOST

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 003003992-02

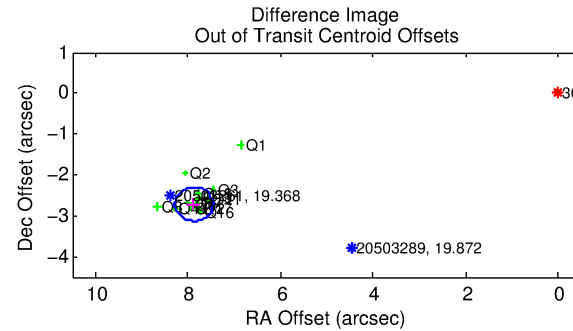
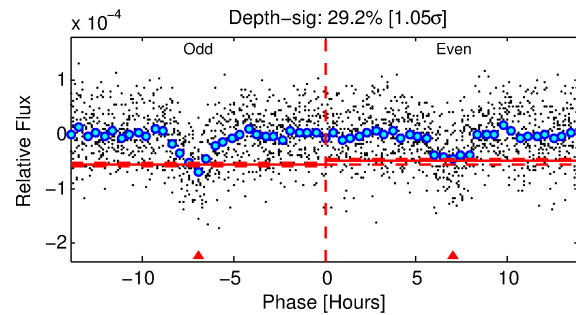
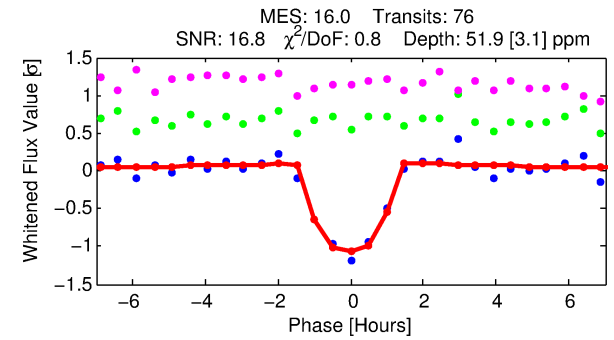
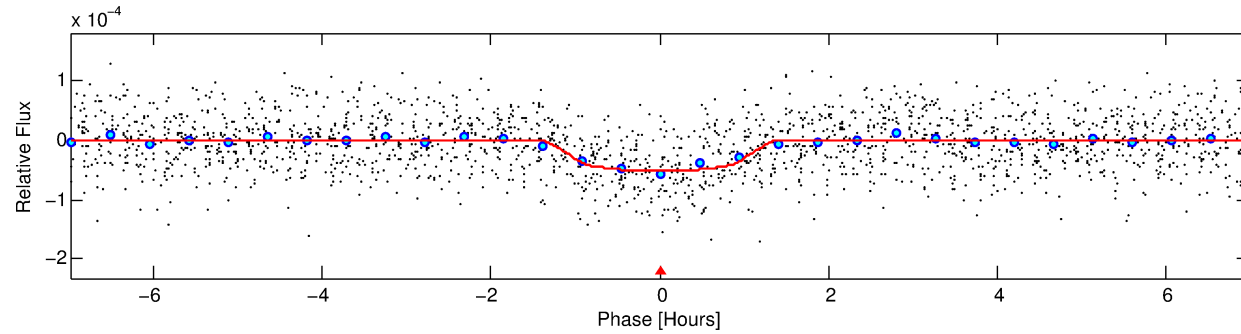
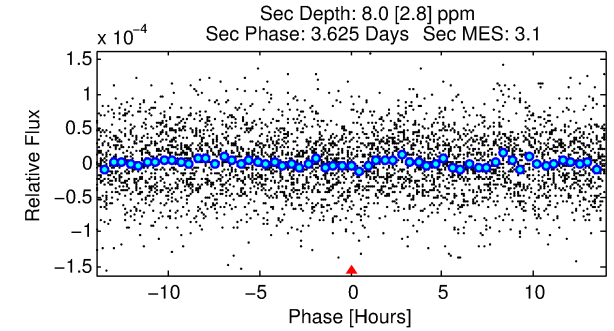
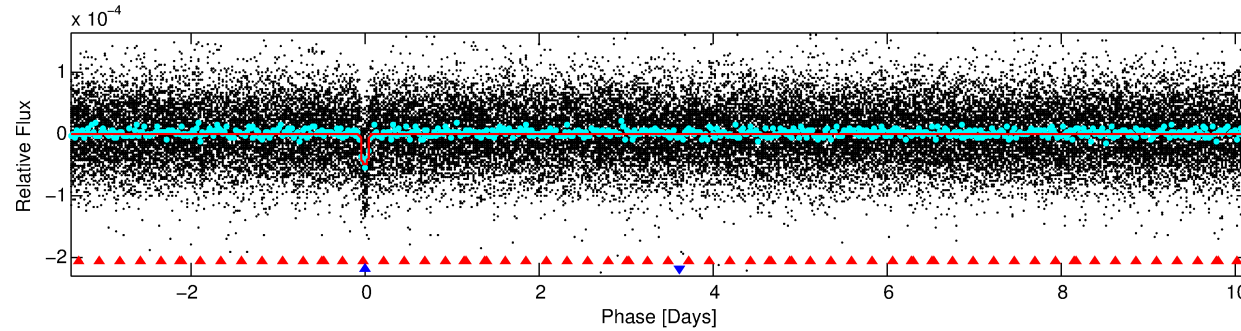
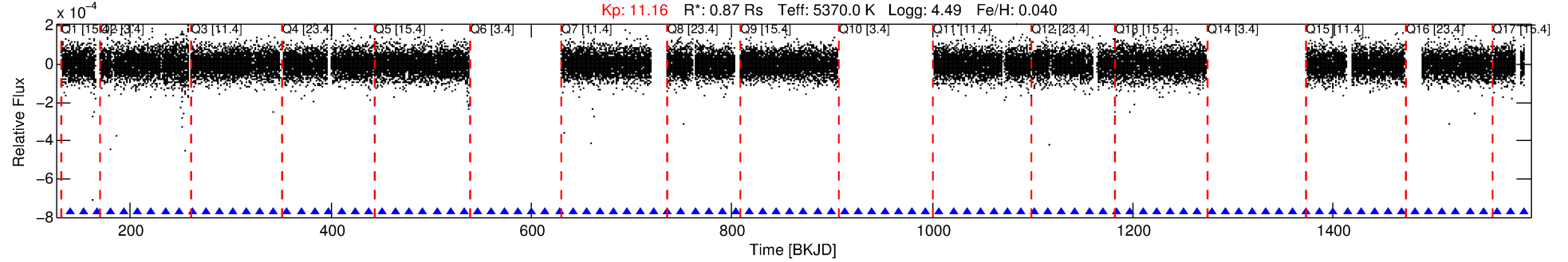
No Significant Match Found

DV One-Page Summary

KIC: 3003992 Candidate: 2 of 2 Period: 13.555 d

KOI: K01119.02 Corr: 0.985

Kp: 11.16 R*: 0.87 Rs Teff: 5370.0 K Logg: 4.49 Fe/H: 0.040



DV Fit Results:

Period = 13.55480 [0.00005] d
Epoch = 139.8196 [0.0031] BKJD
Rp/R* = 0.0069 [0.0021]
a/R* = 34.86 [40.53]
b = 0.63 [1.12]
Seff = 50.47 [14.46]
Teq = 680 [49] K
Rp = 0.66 [0.24] Re
a = 0.1062 [0.0182] AU
Ag = 113.96 [84.56] [1.34σ]
Teff = 3433 [611] K [4.49σ]

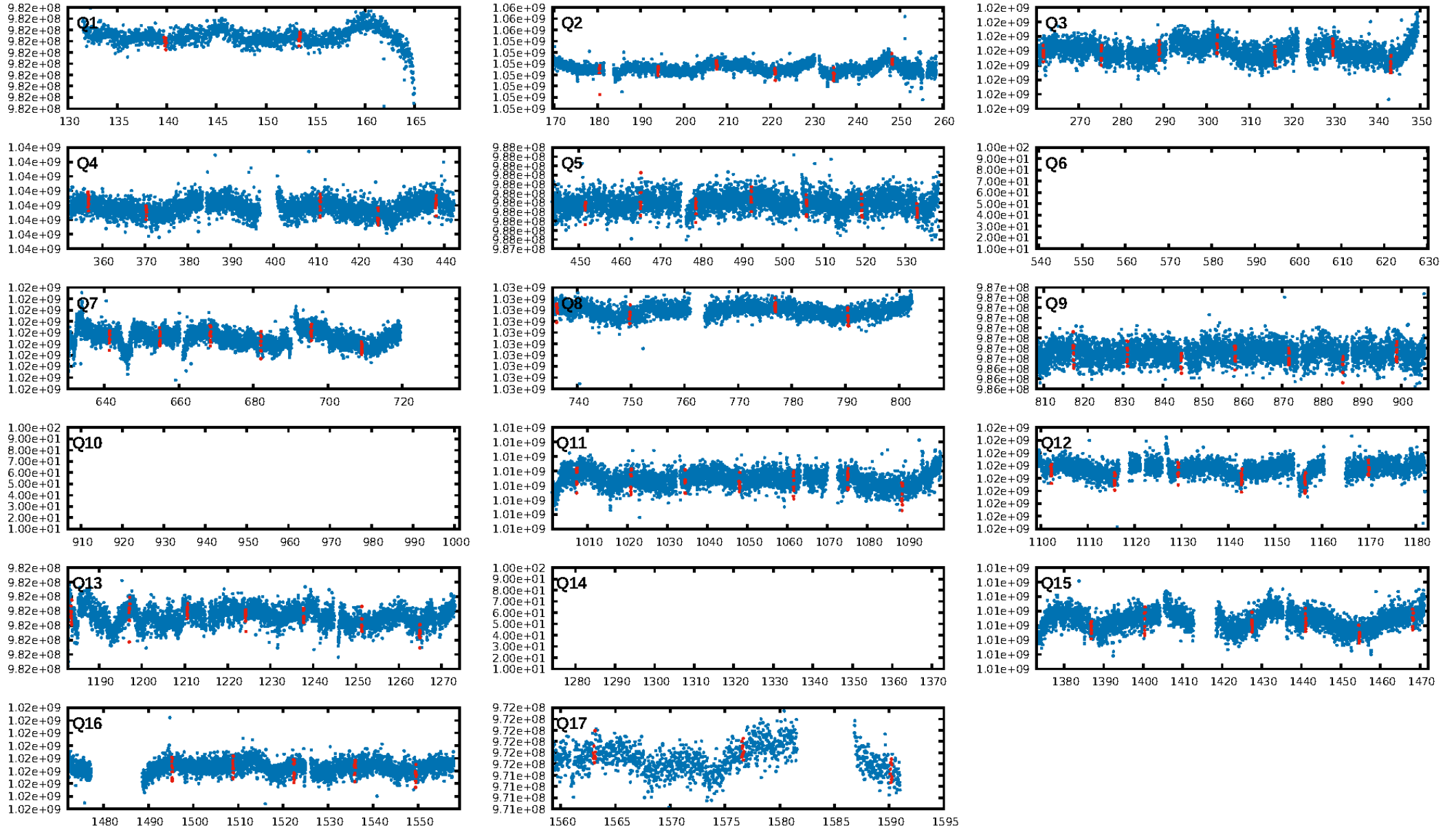
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [45.03σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 73.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.98e-55
RollingBand-fgt: 1.00 [71/71]
GhostDiagnostic-chr: 0.001257
Centroid-sig: 0.0%
Centroid-so: 23.722 arcsec [26.23σ]
OotOffset-rm: 8.329 arcsec [60.72σ]
KicOffset-rm: 8.714 arcsec [61.71σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 0.86 [12/14]
DiffImageOverlap-fno: 1.00 [14/14]

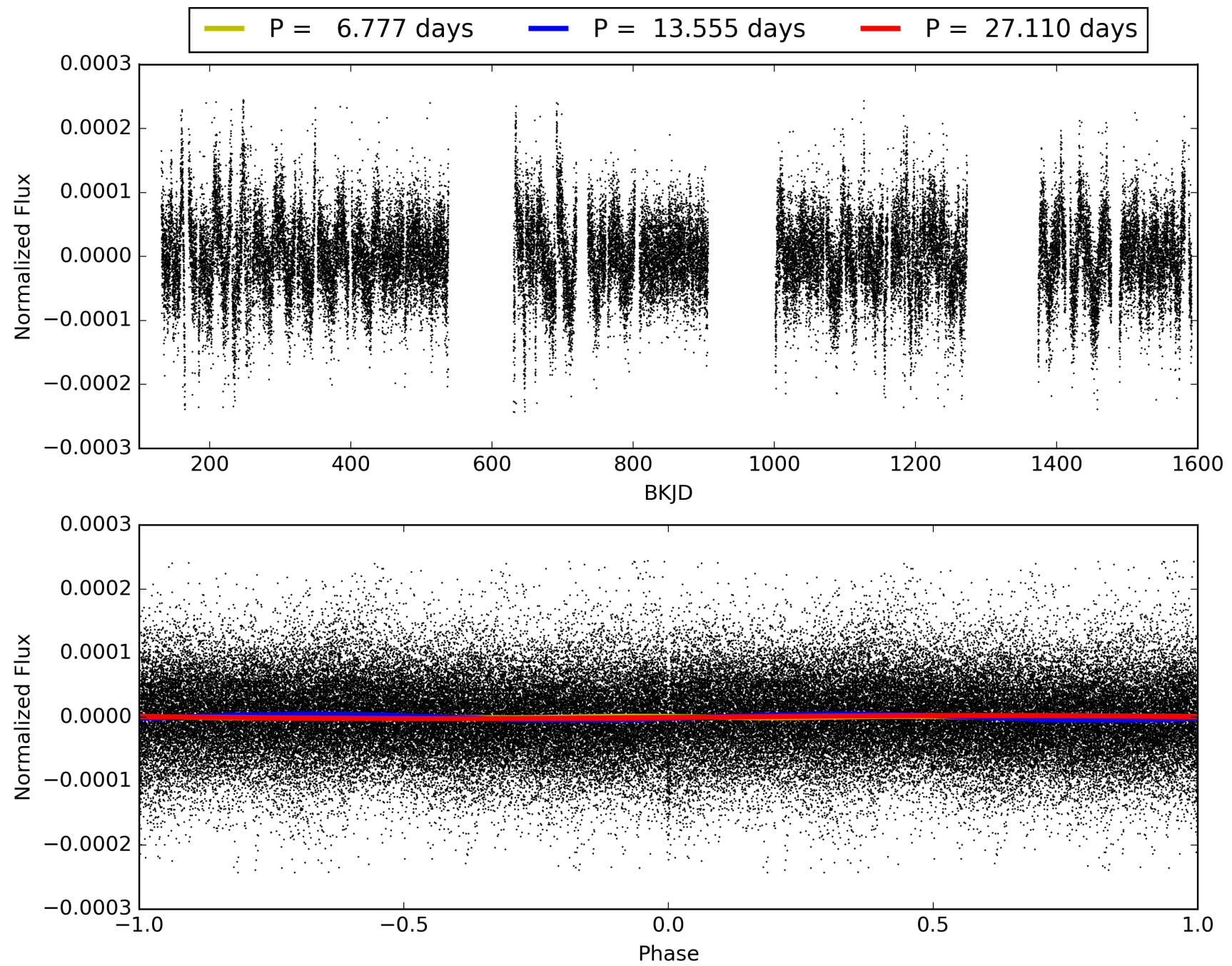
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:25:26 Z

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

TCE 003003992-02, PDC Light Curves

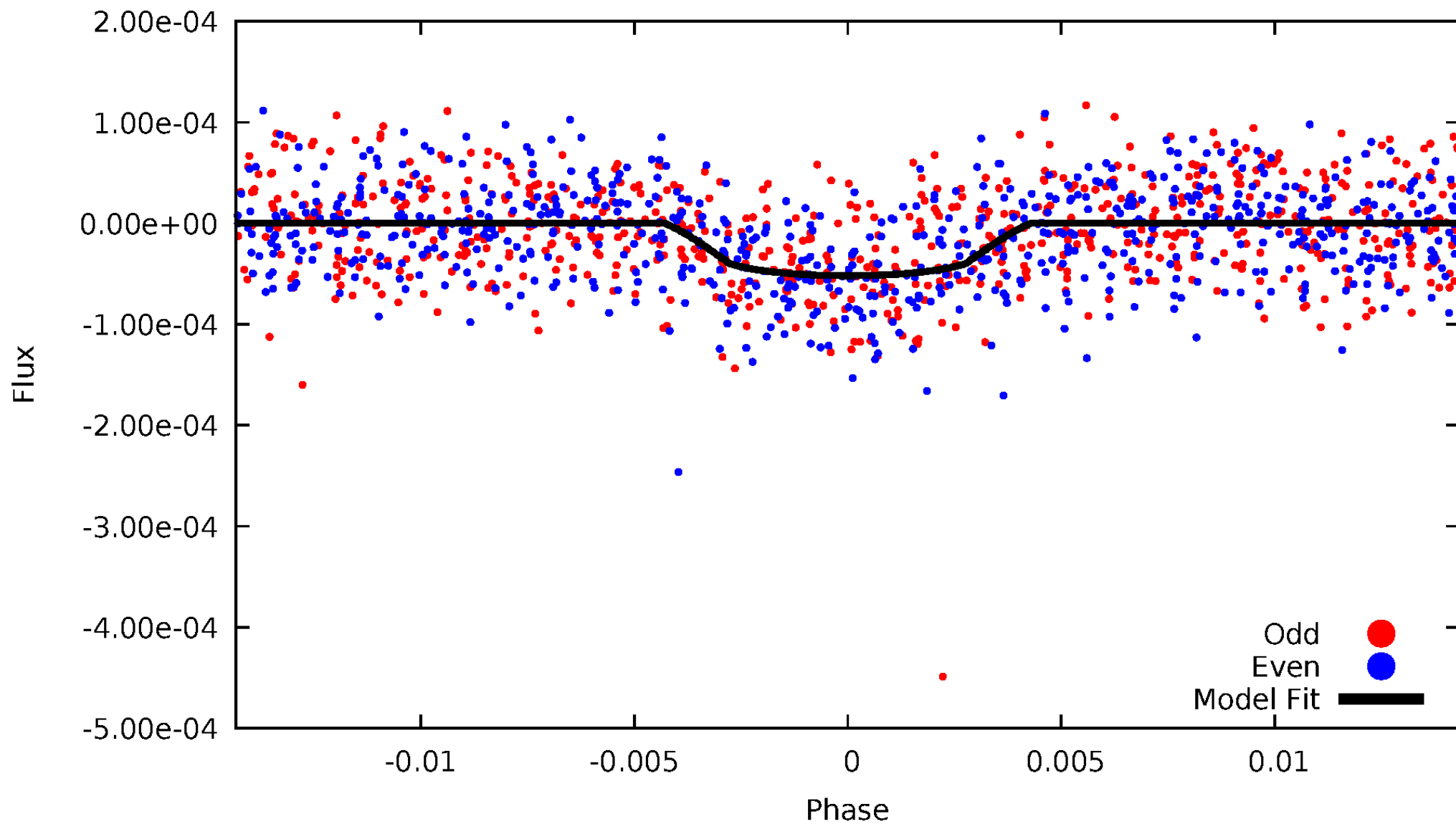


TCE 003003992-02



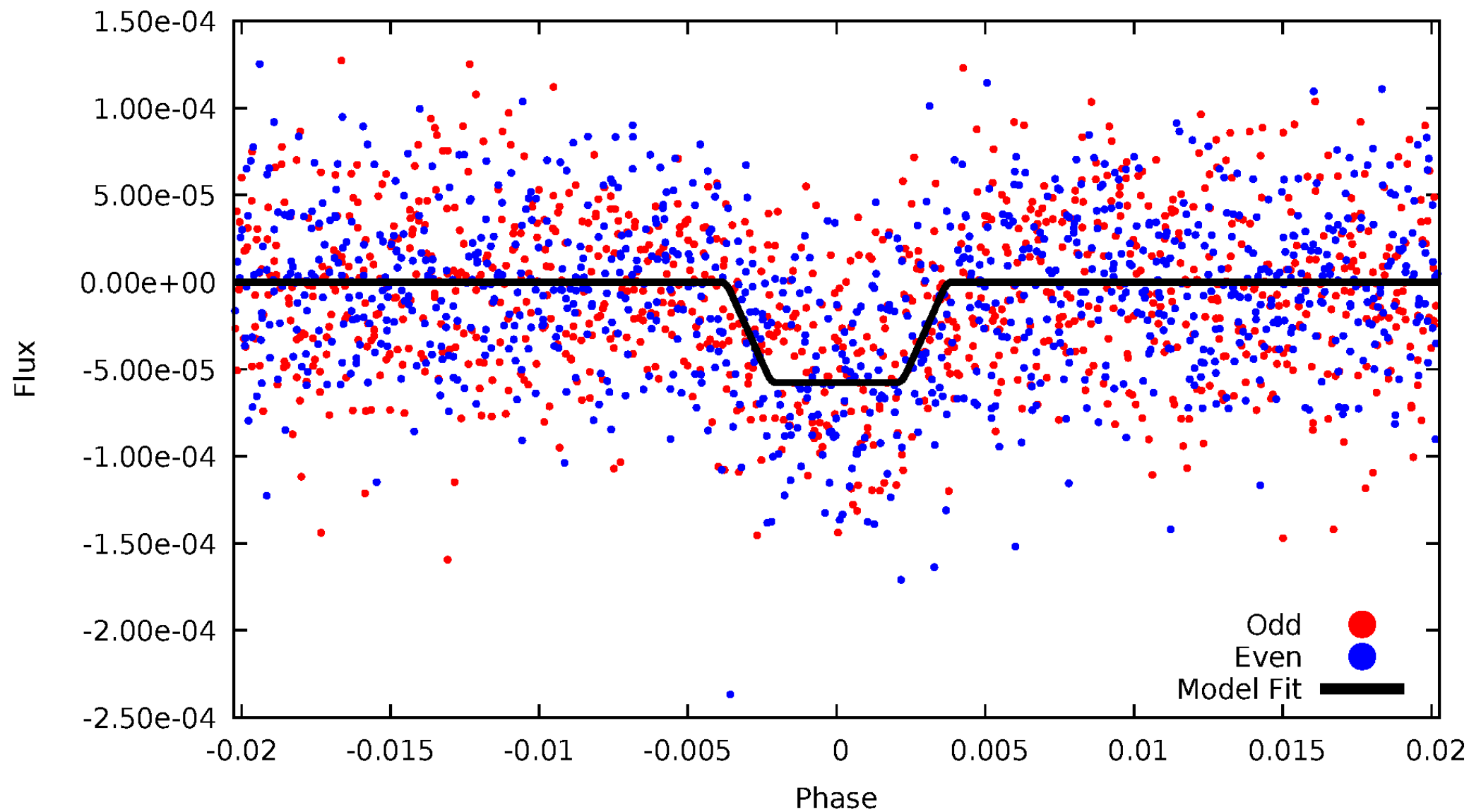
DV Odd/Even

TCE 003003992-02



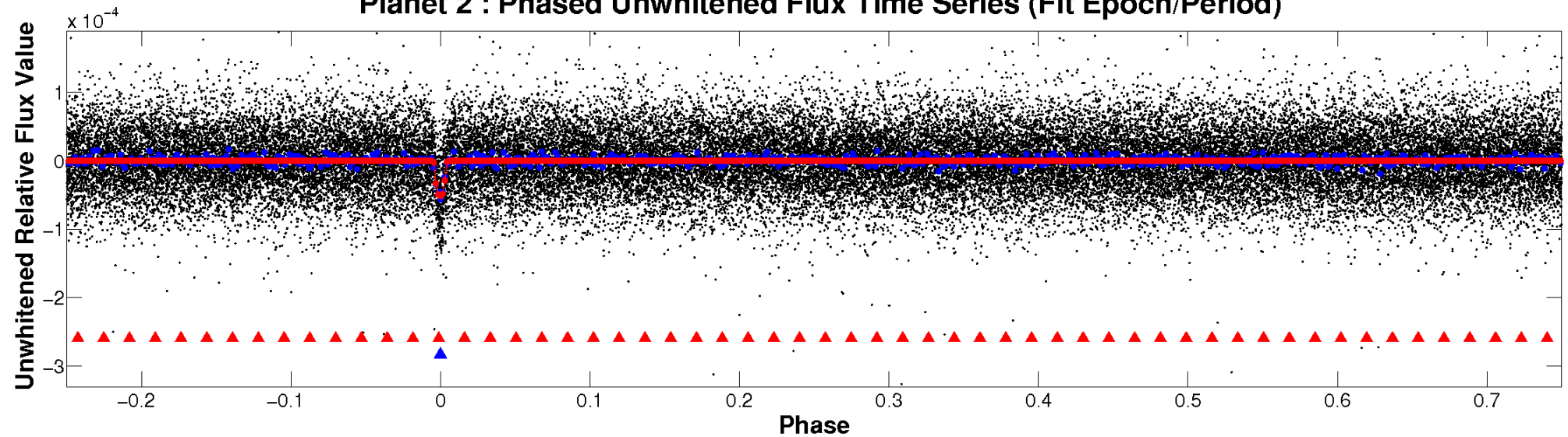
ALT Odd/Even

TCE 003003992-02

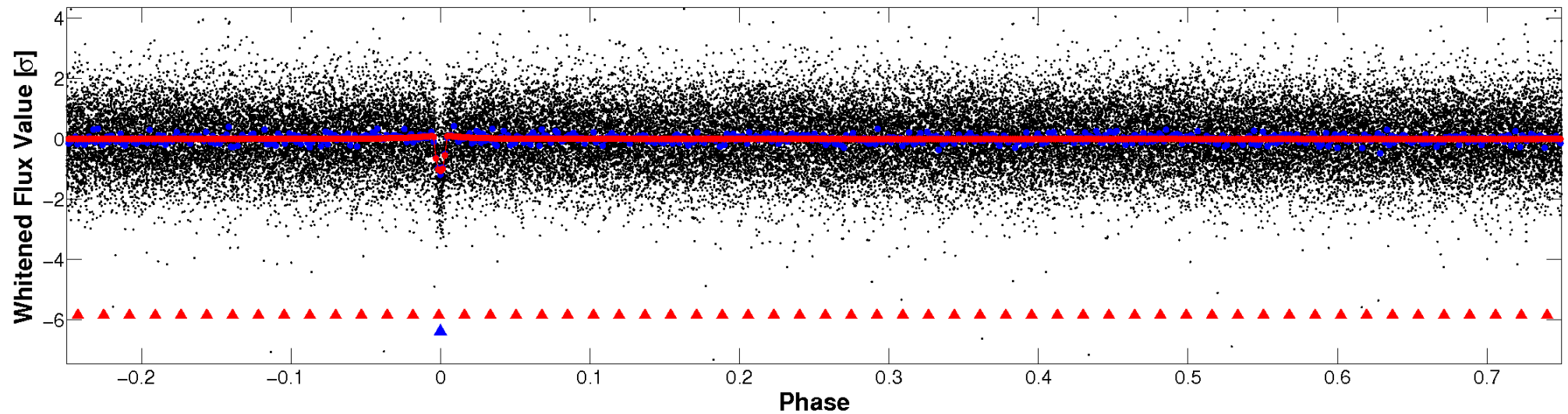


Non-Whitened Vs. Whitened Light Curve

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

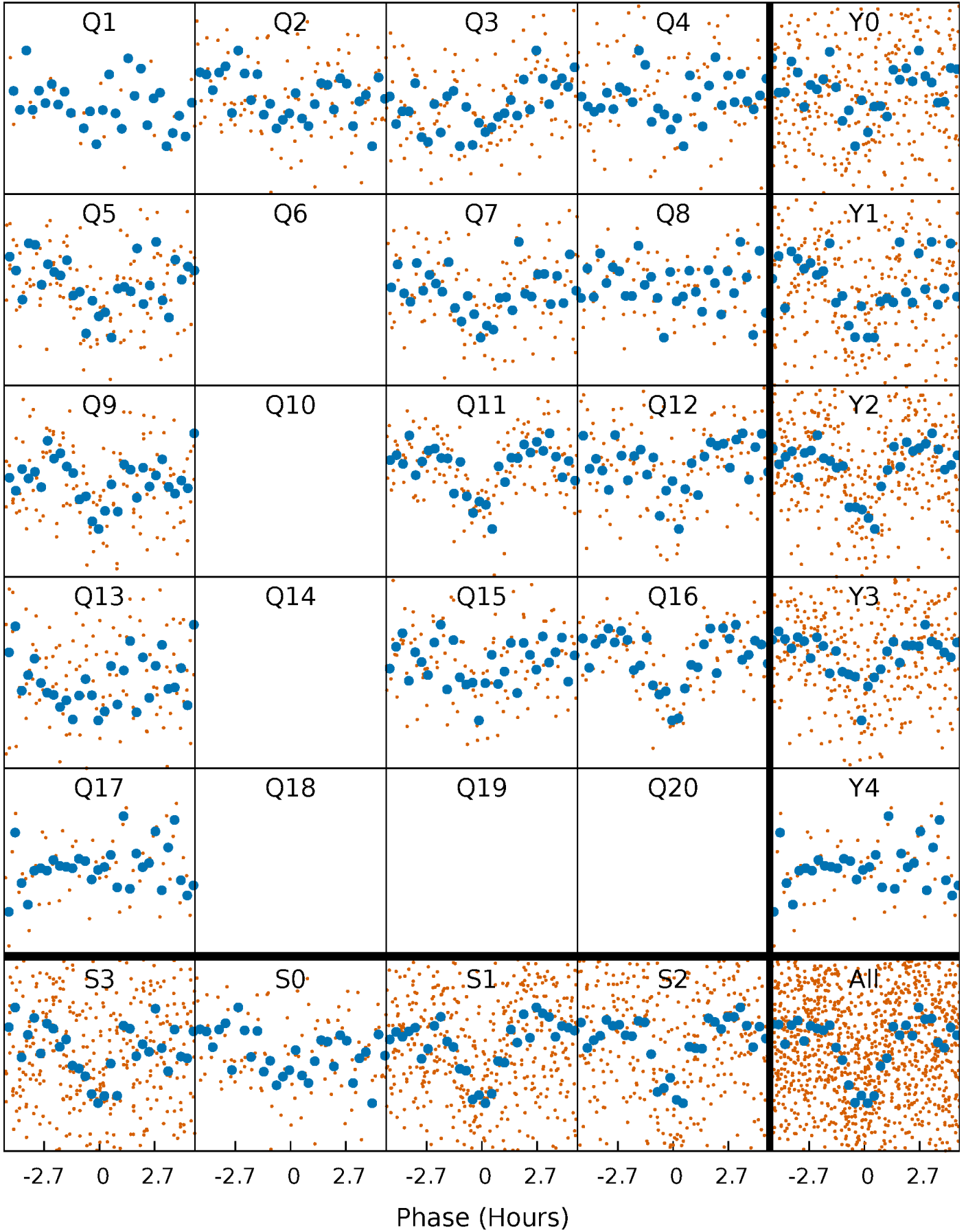


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



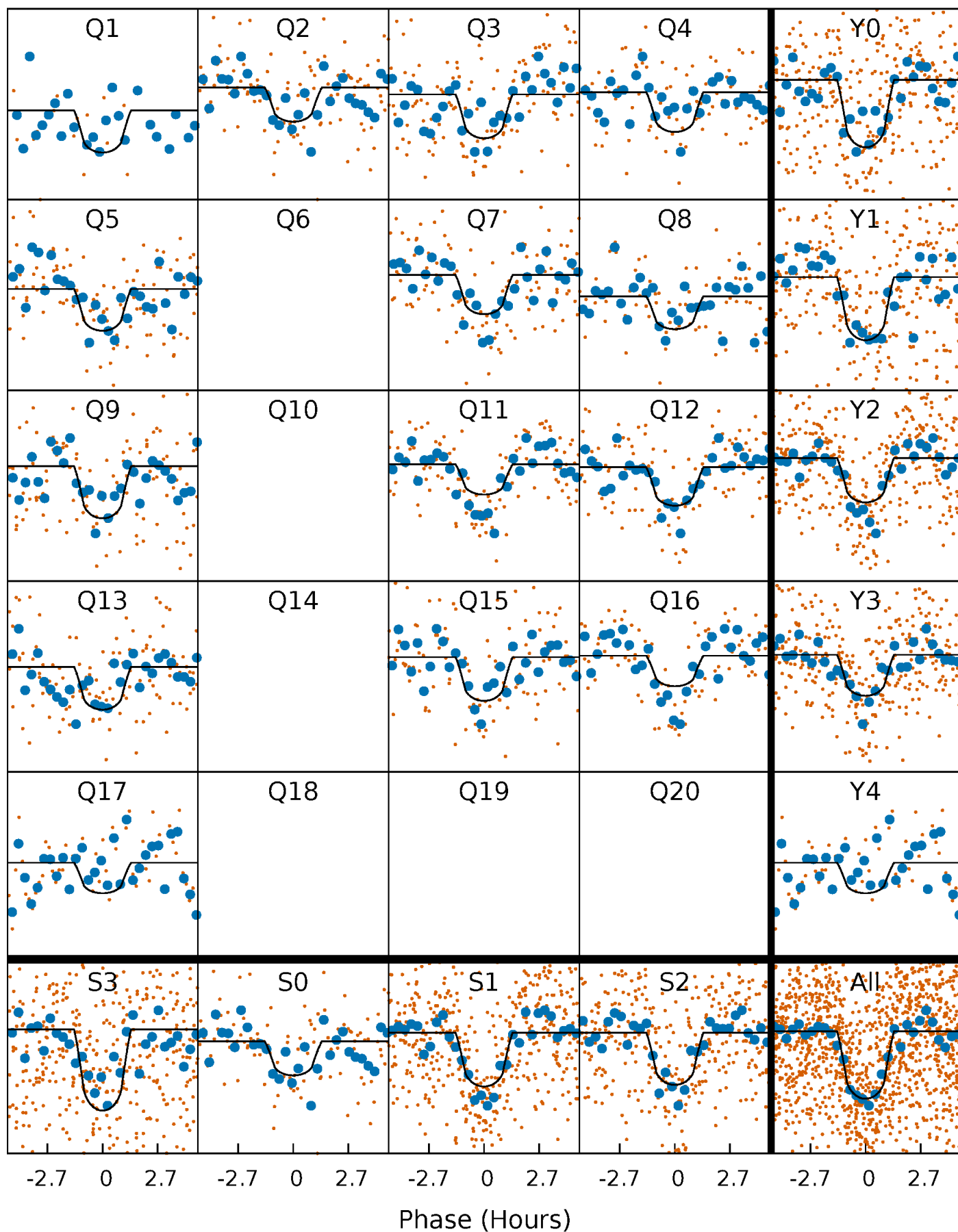
PDC Quarter-Phased Transit Curves

TCE 003003992-02 P= 13.554803 Days $T_0=139.819622$ (BKJD)



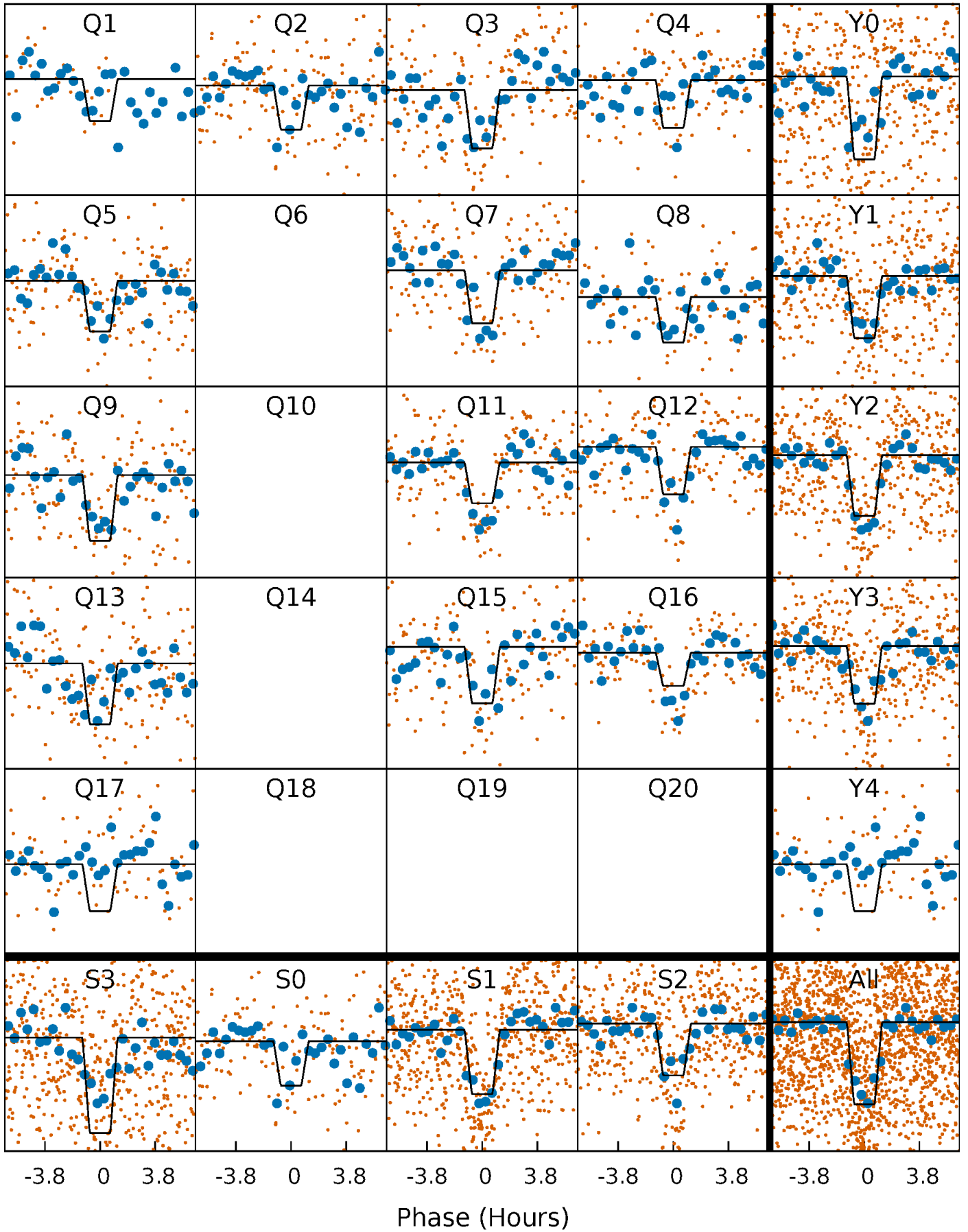
DV Quarter-Phased Transit Curves

TCE 003003992-02 P= 13.554803 Days $T_0=139.819622$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

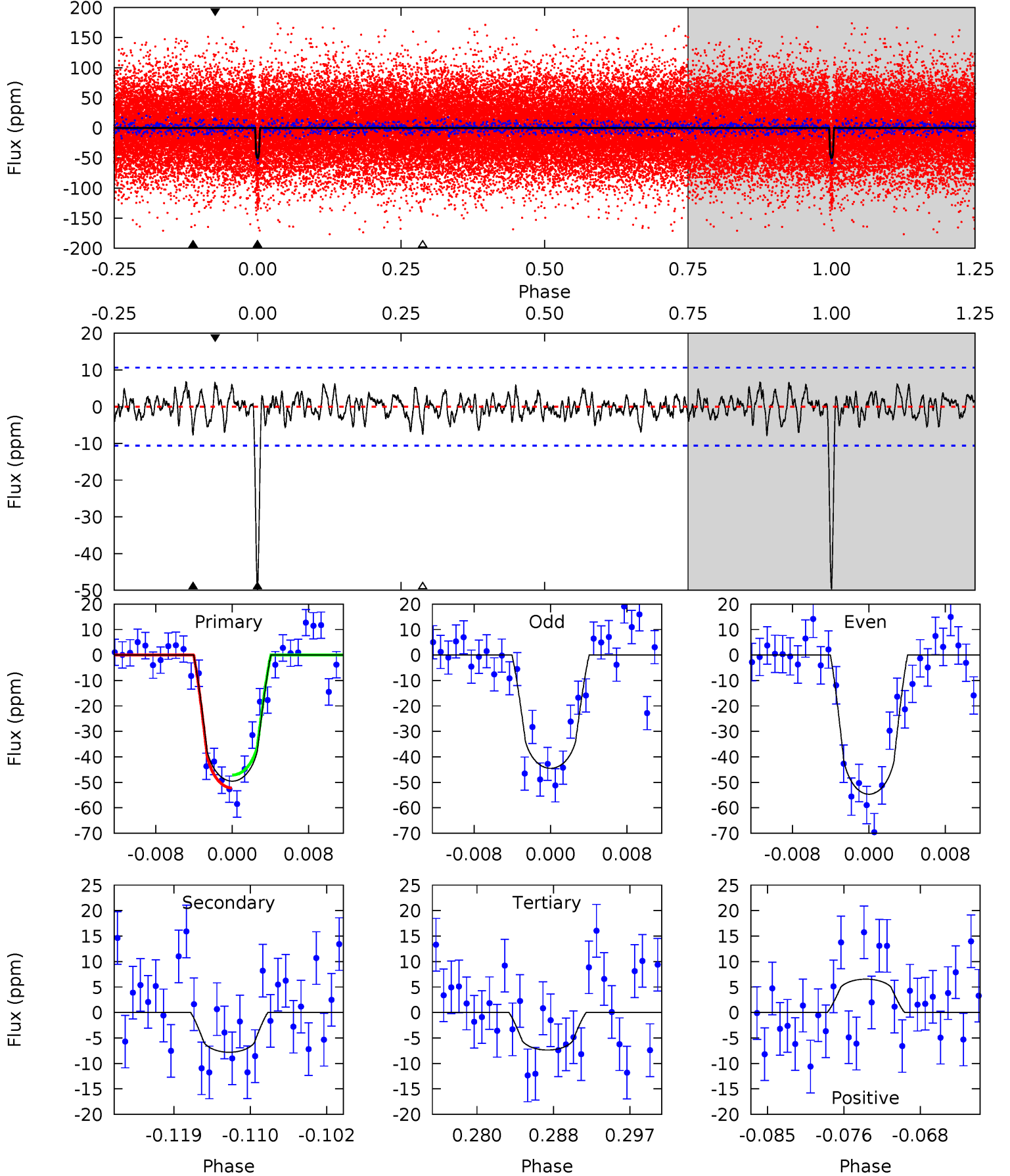
TCE 003003992-02 P= 13.554660 Days $T_0=139.825388$ (BKJD)



DV Model-Shift Uniqueness Test

003003992-02, P = 13.554803 Days, E = 126.264819 Days

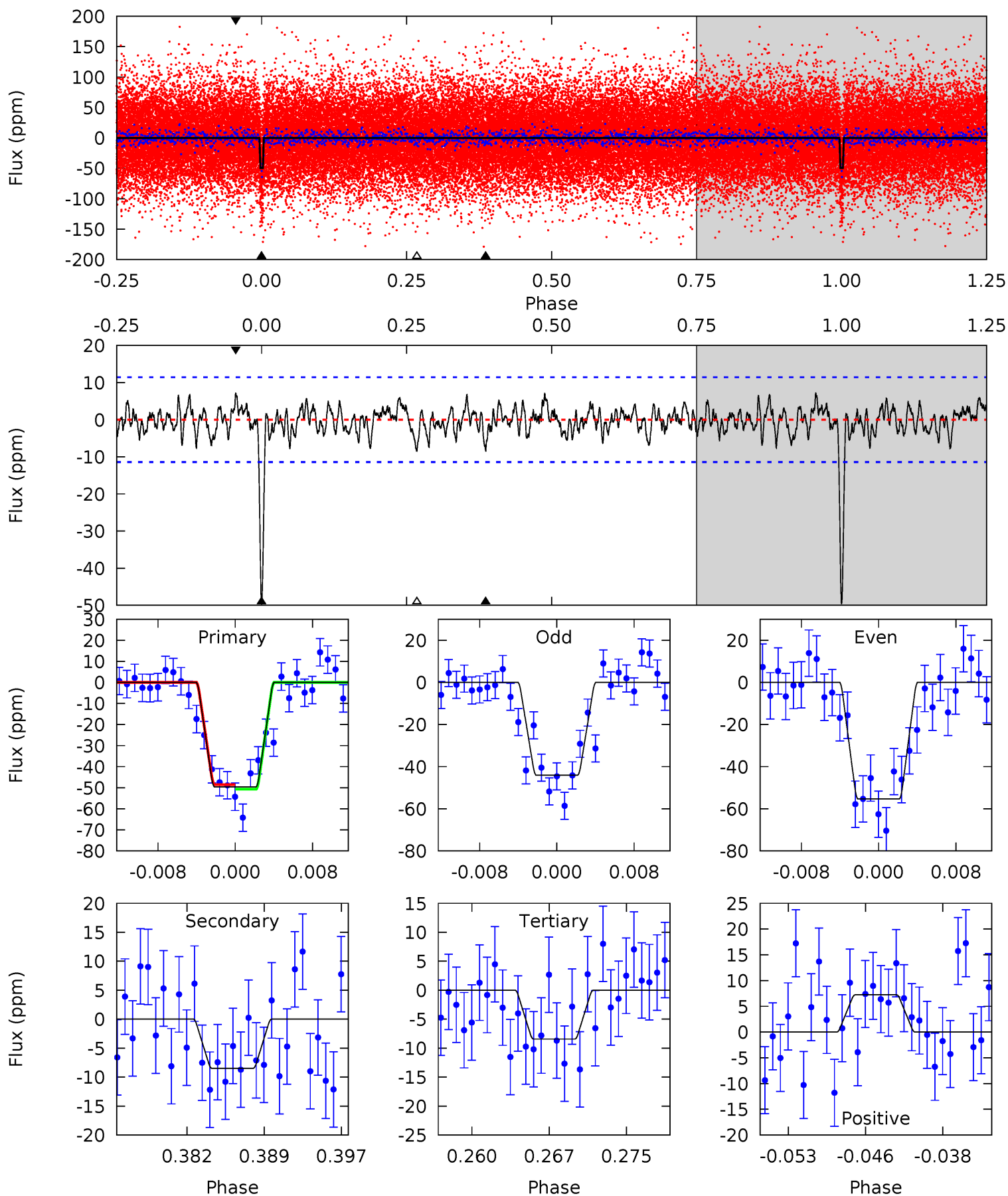
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.6	3.72	3.51	3.12	5.06	2.63	1.17	20.1	20.5	0.20	0.60	2.42	0.98	0.12	1.21



Alt Model-Shift Uniqueness Test

003003992-02, P = 13.554660 Days, E = 126.270728 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.0	3.76	3.75	3.21	5.08	2.67	1.23	18.3	18.8	0.01	0.54	2.50	1.08	0.13	0.47



Stellar Parameters For KIC 003003992

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5370^{+187}_{-187}	$4.494^{+0.074}_{-0.137}$	$0.040^{+0.250}_{-0.300}$	$0.874^{+0.178}_{-0.096}$	$0.869^{+0.097}_{-0.073}$	$1.831^{+0.574}_{-0.727}$
	+3%/-3%	+2%/-3%	+625%/-750%	+20%/-11%	+11%/-8%	+31%/-40%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 003003992-02 / KOI 1119.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-8 ± 2	$0.67^{+0.21}_{-0.21}$	957^{+48}_{-45}	3790^{+554}_{-393}	108^{+128}_{-52}
Alt.	-8 ± 2	$0.74^{+0.22}_{-0.22}$	957^{+54}_{-49}	3685^{+481}_{-358}	92^{+97}_{-44}

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 $A_{obs} \gg 1.0$

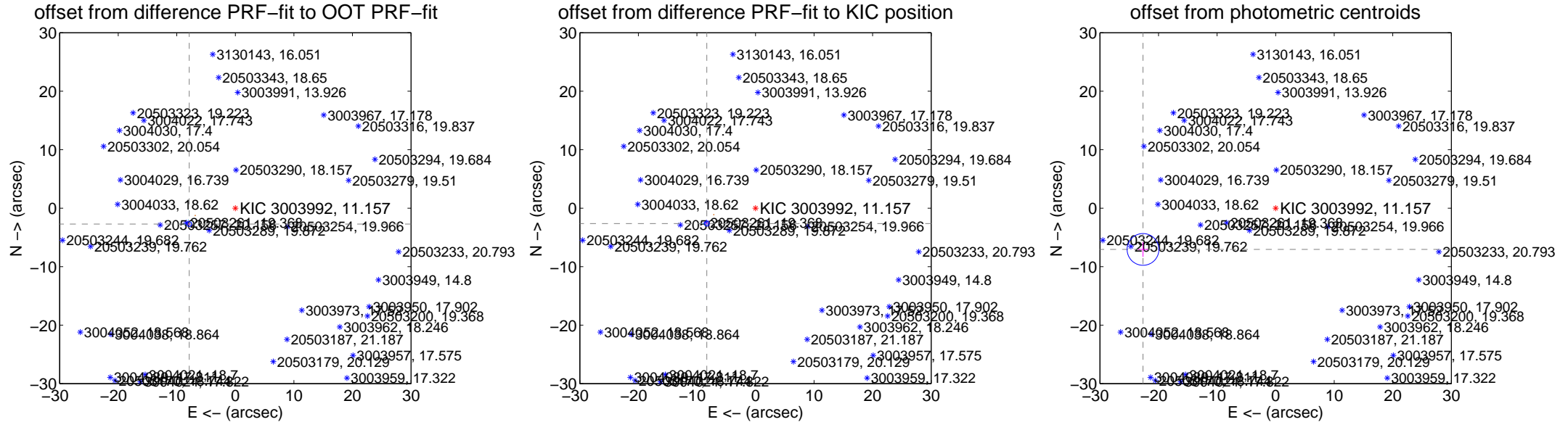
DV Centroid Data

Supplemental centroid analysis for 003003992-02. **Kepler magnitude: 11.16.** Transit SNR 16.81

There are 12 quarters with good PRF difference image offsets

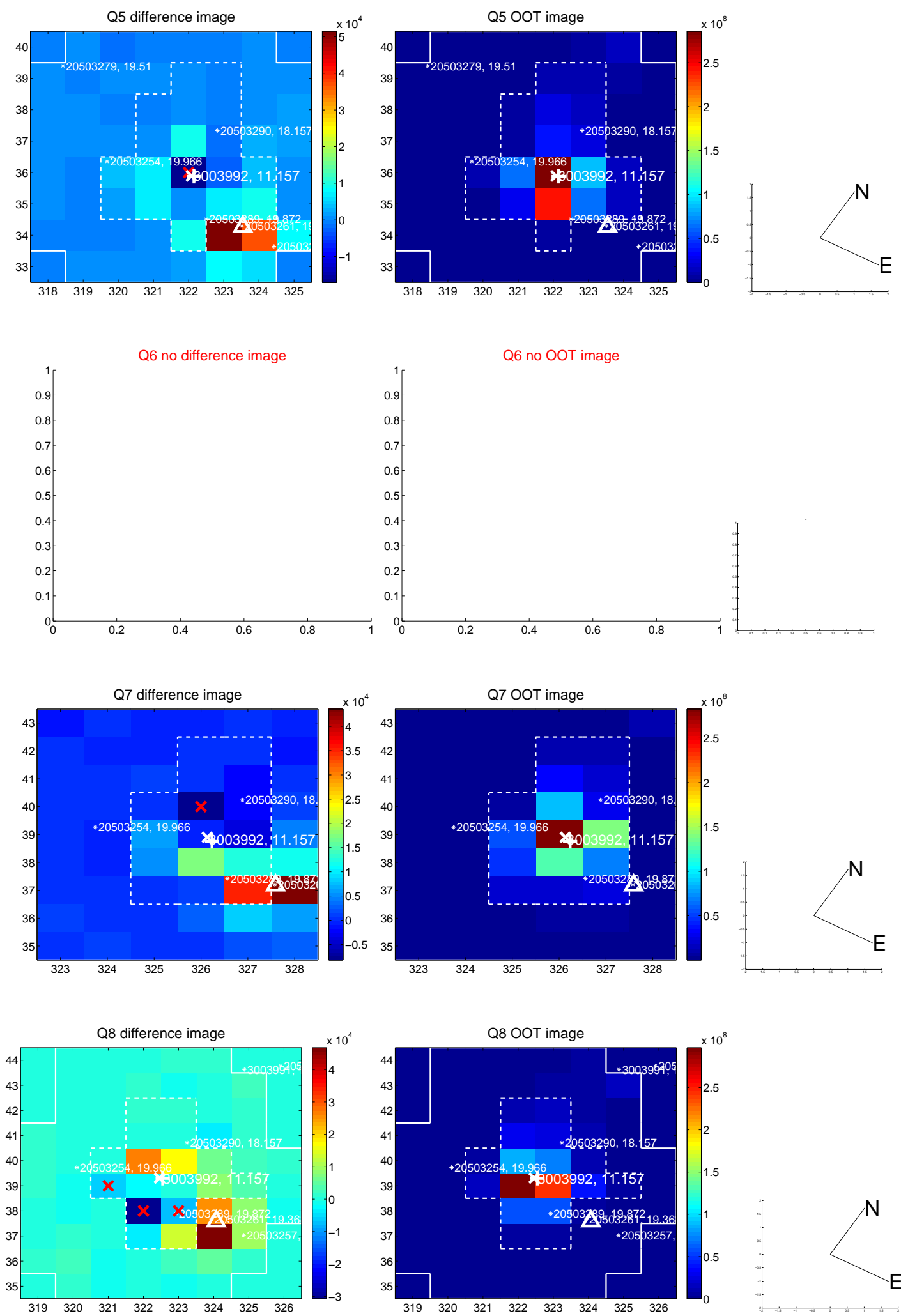
The direct PRF centroid is offset from the target star catalog position by about 0.48 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.329 \pm 0.137	60.72	7.872 \pm 0.122	-2.721 \pm 0.118
PRF-fit source offset from KIC position	8.714 \pm 0.141	61.71	8.306 \pm 0.124	-2.635 \pm 0.126
photometric centroid source offset	23.72 \pm 0.90	26.23	22.65 \pm 0.86	-7.05 \pm 1.26

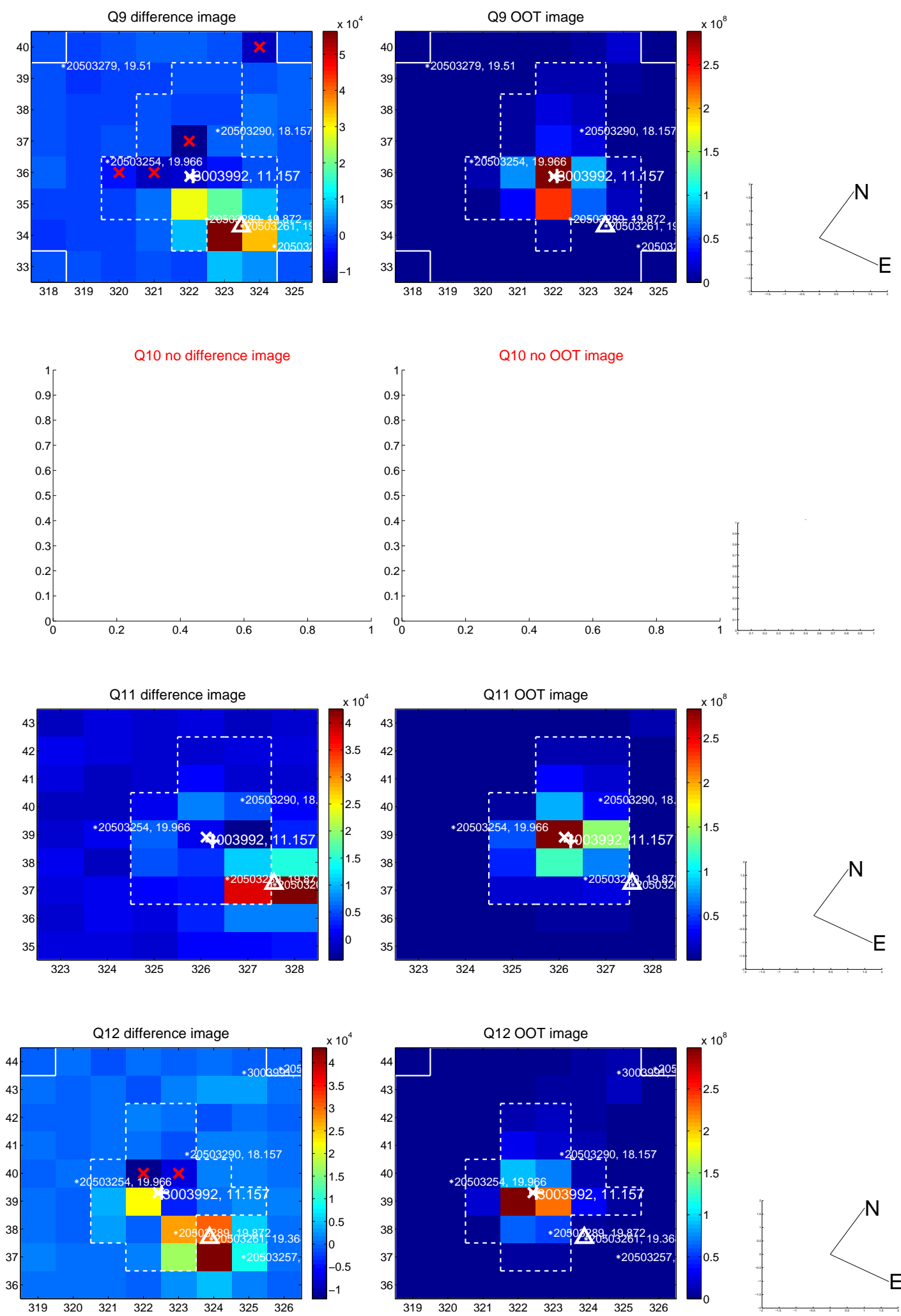


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

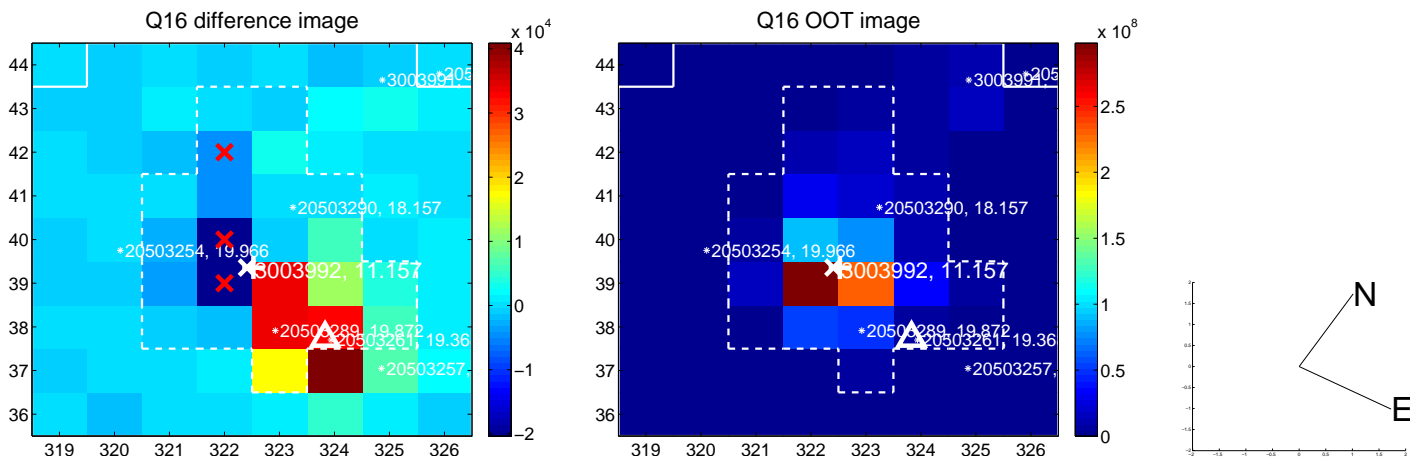
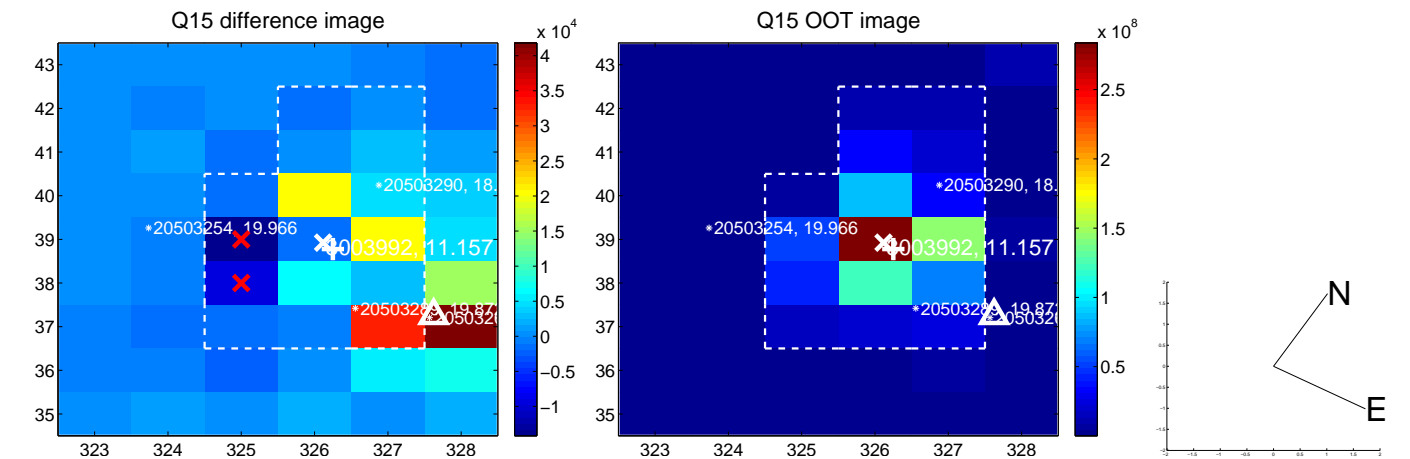
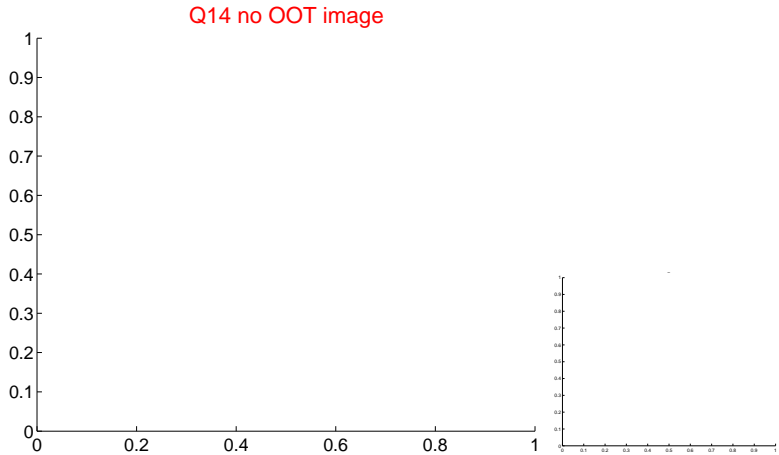
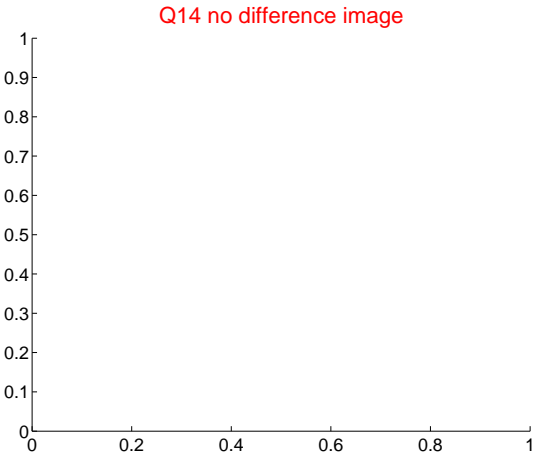
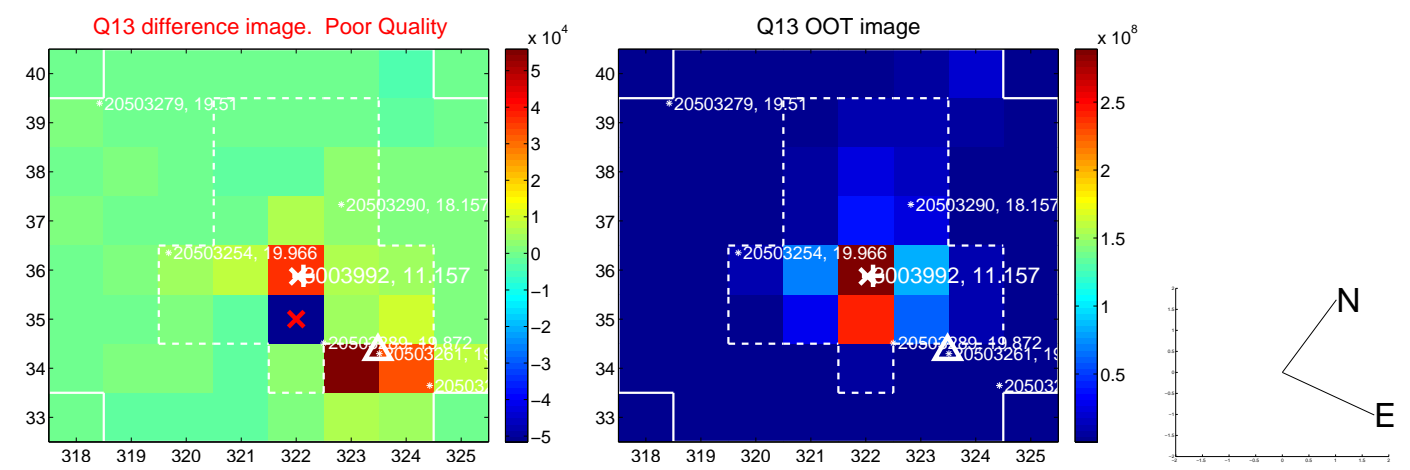
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



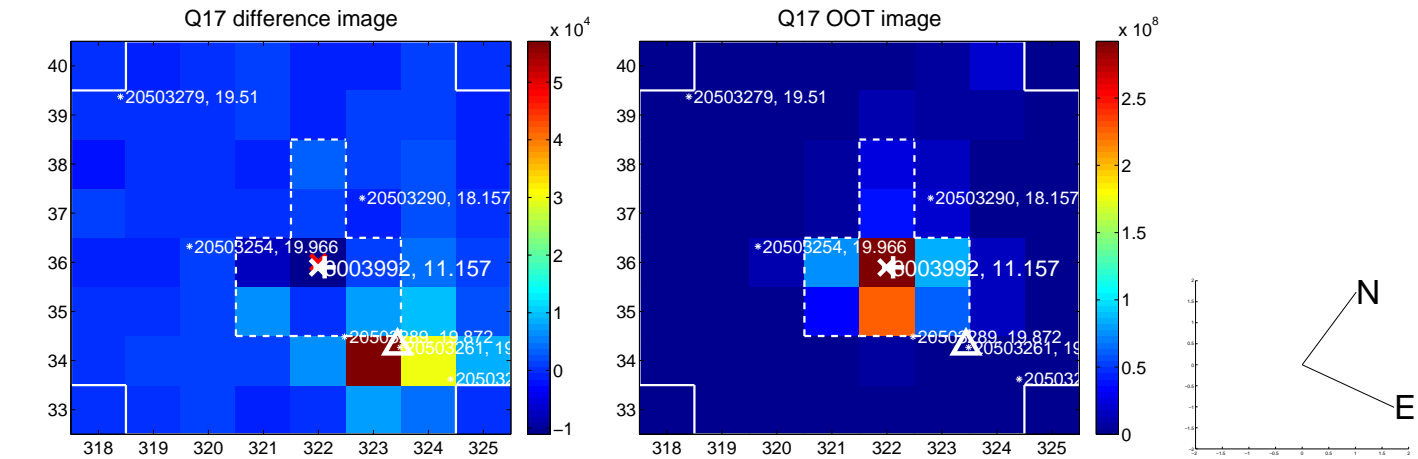
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



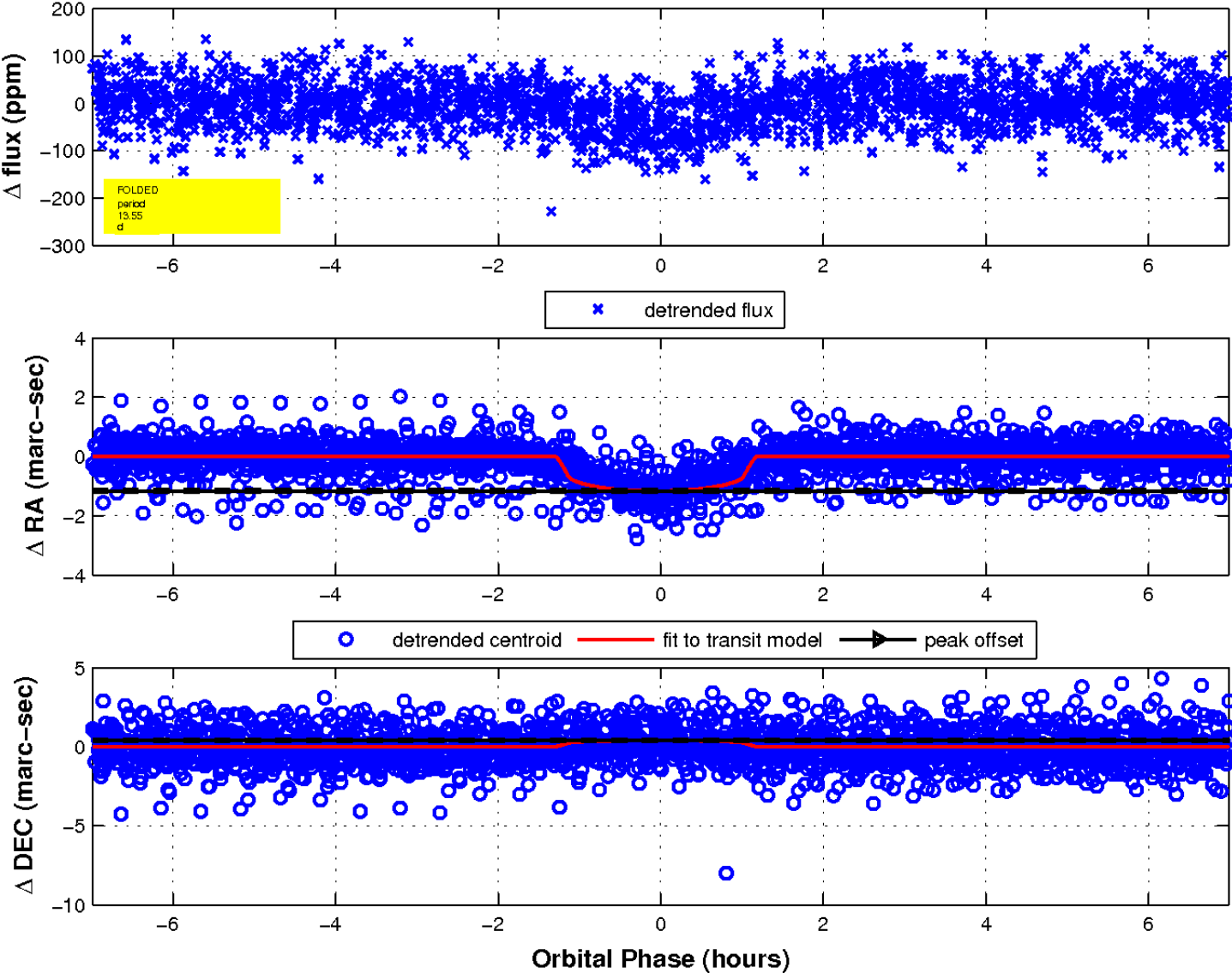
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

