

KIC 002984632

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})
002984632-01	OBS	No	1.234368	132.361234	13.7	4.946	7.9	4.3	3.07	6564	1.33	22353.76
002984632-02	OBS	No	398.708835	203.556849	480.4	6.316	7.5	8.2	3.07	6564	8.37	10.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002984632-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
002984632-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—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.

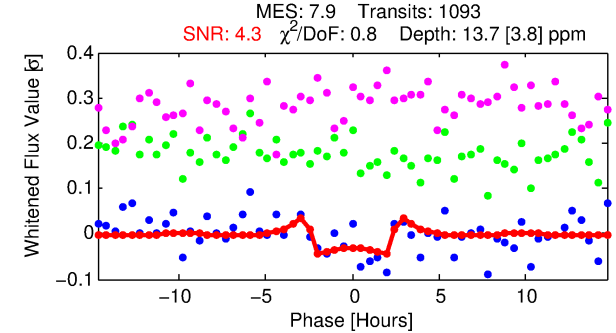
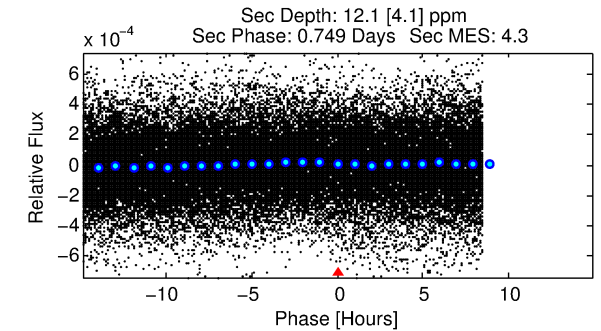
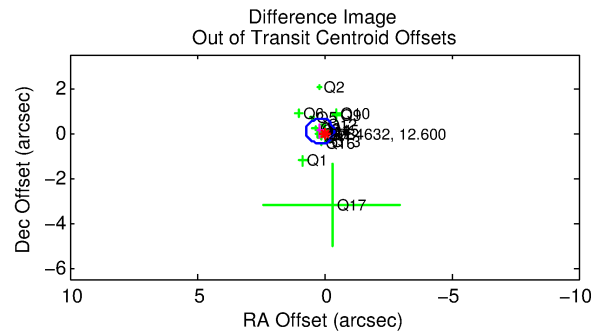
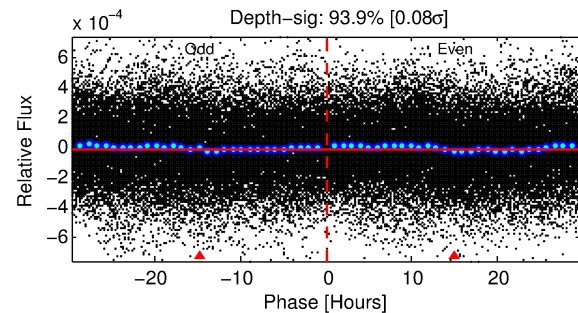
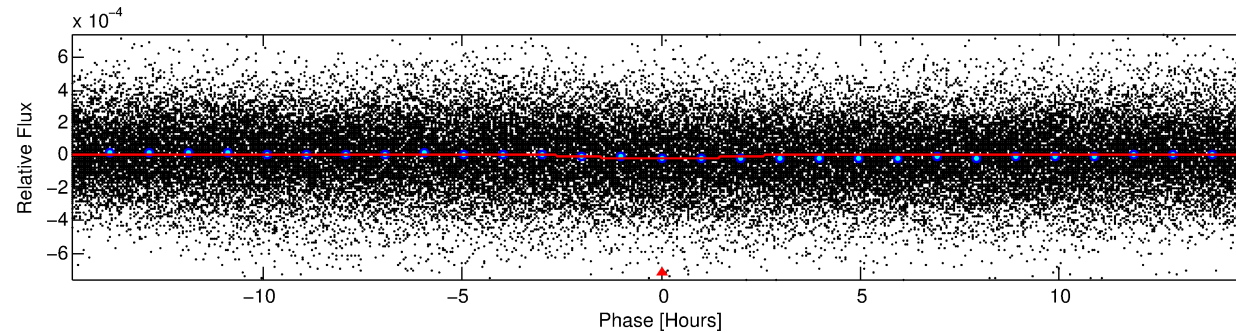
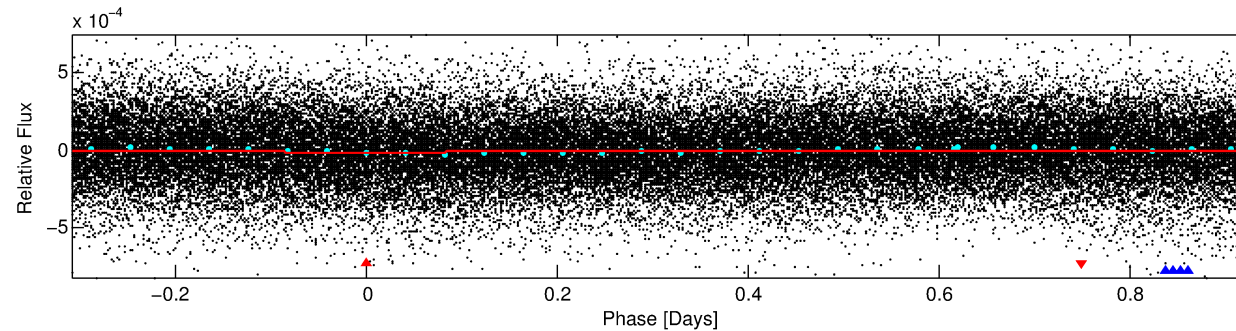
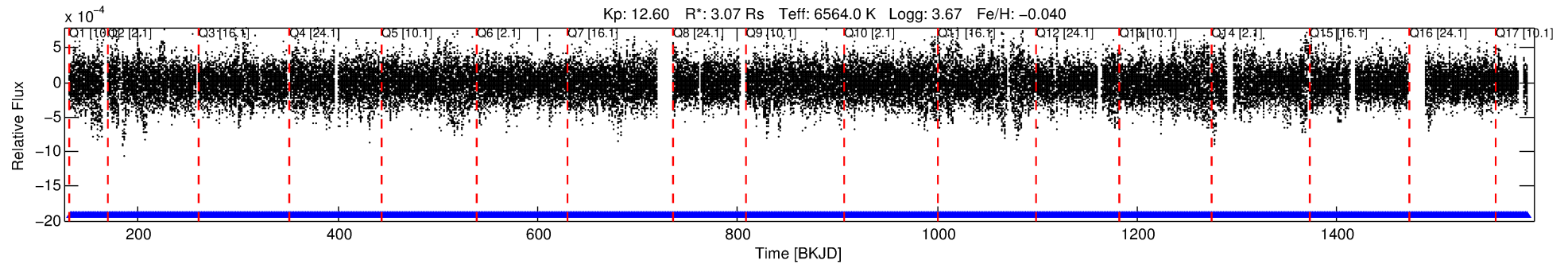
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002984632-01

No Significant Match Found

DV One-Page Summary

KIC: 2984632 Candidate: 1 of 2 Period: 1.234 d



DV Fit Results:

Period = 1.23437 [0.00002] d
Epoch = 132.3612 [0.0053] BKJD
Rp/R* = 0.0040 [0.0015]
a/R* = 1.26 [0.99]
b = 0.90 [0.45]
Seff = 22353.76 [12042.68]
Teq = 3118 [420] K
Rp = 1.33 [0.70] Re
a = 0.0265 [0.0089] AU
Ag = 2.66 [2.62] [0.63 σ]
Teffp = 6154 [1299] K [2.22 σ]

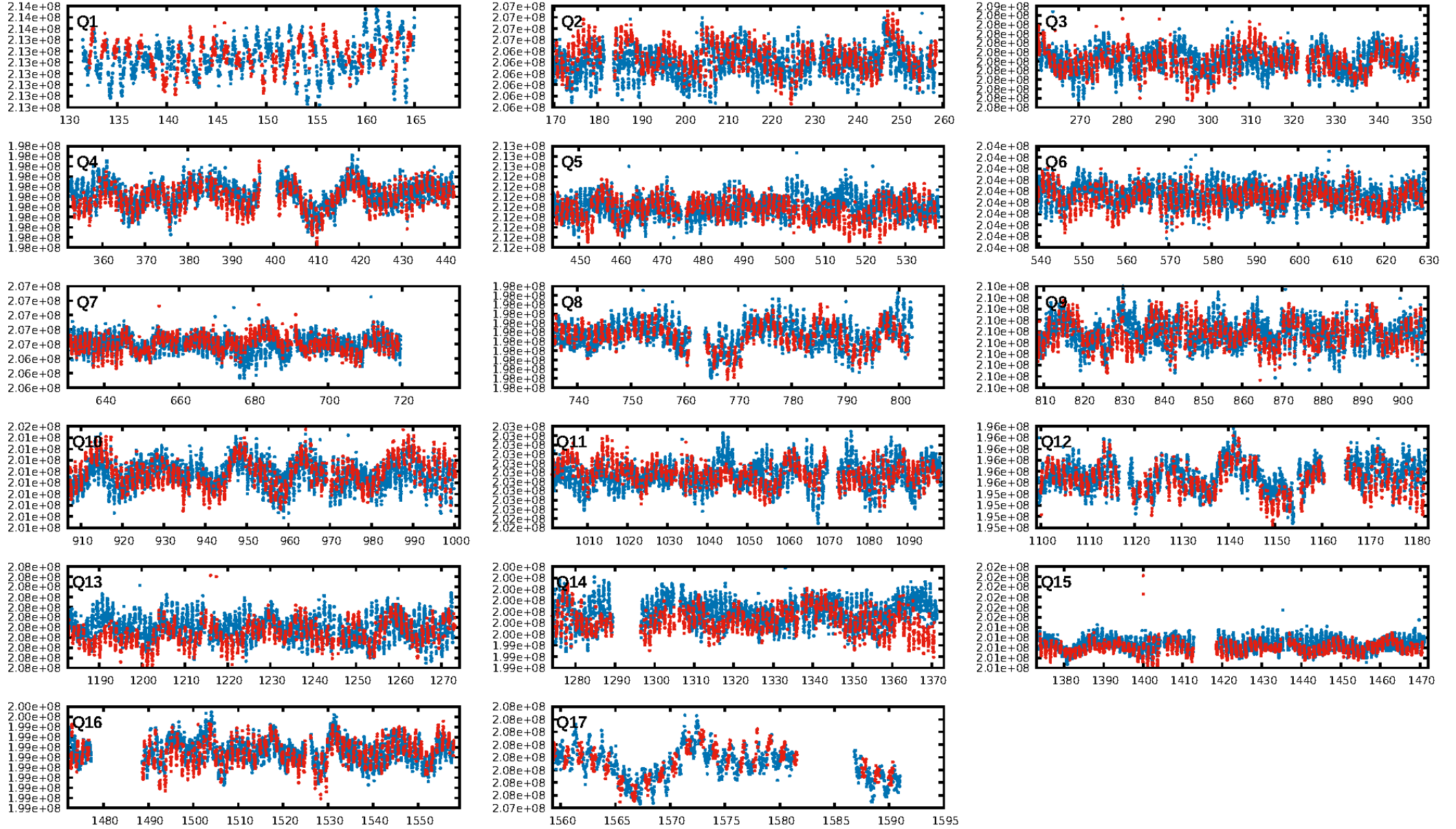
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1189.05 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.23e-11
RollingBand-fgt: 1.00 [1044/1044]
GhostDiagnostic-chr: 1.163
Centroid-sig: 26.4%
Centroid-so: 1.044 arcsec [1.03 σ]
OotOffset-rm: 0.191 arcsec [1.02 σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-rm: 0.163 arcsec [0.92 σ]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 0.56 [9/16]
DiffImageOverlap-fno: 1.00 [17/17]

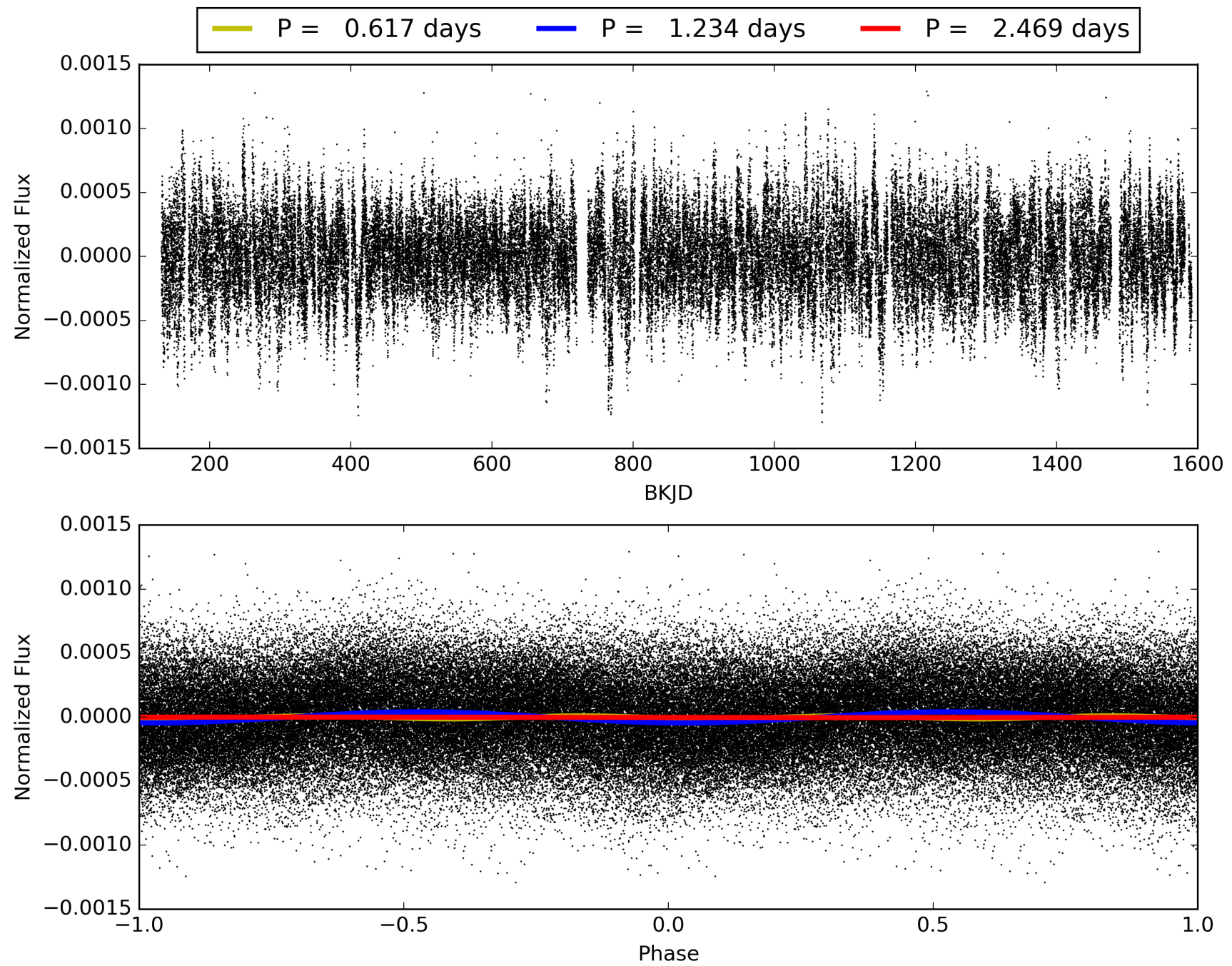
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:56:44 Z

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

TCE 002984632-01, PDC Light Curves

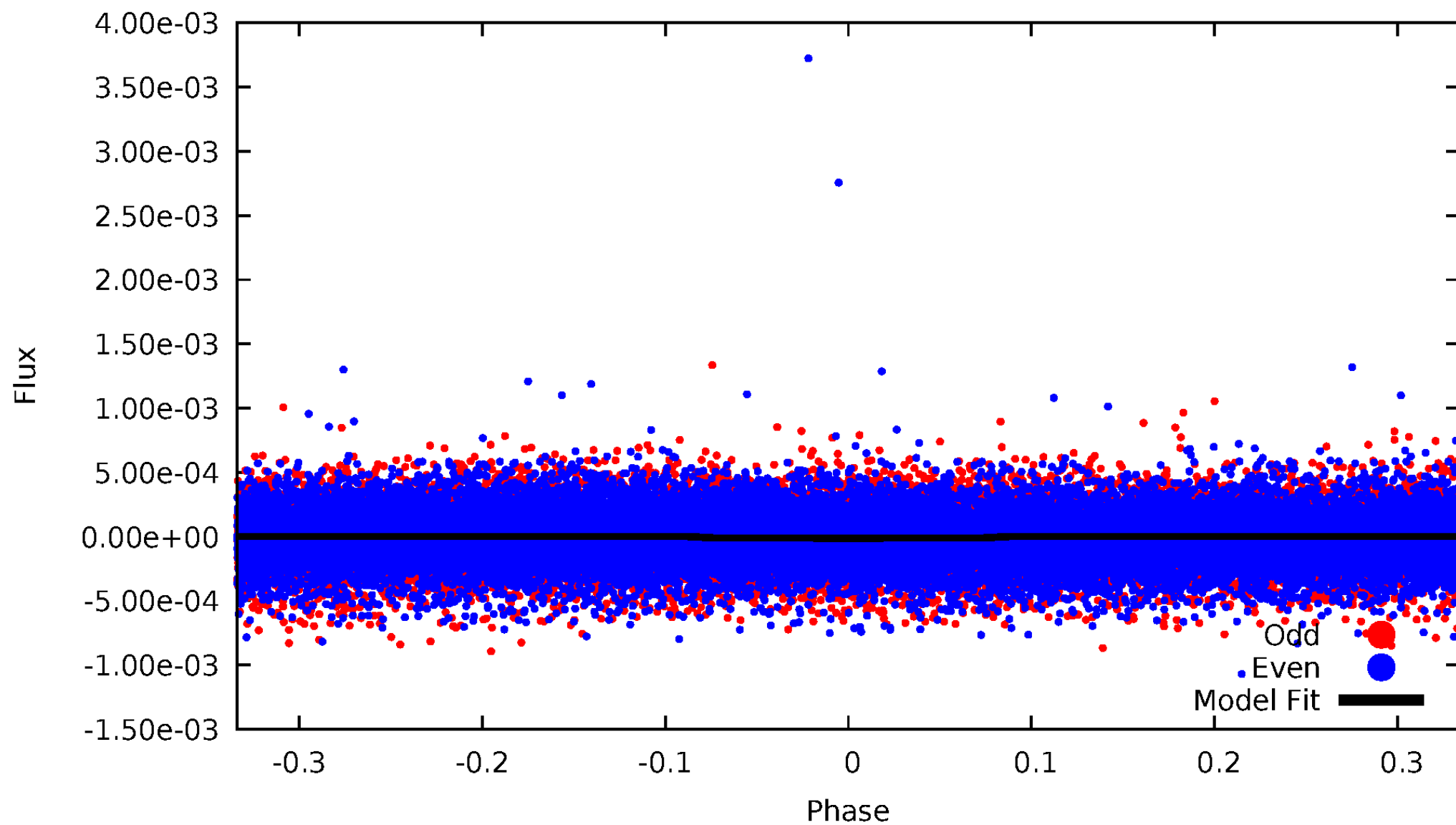


TCE 002984632-01



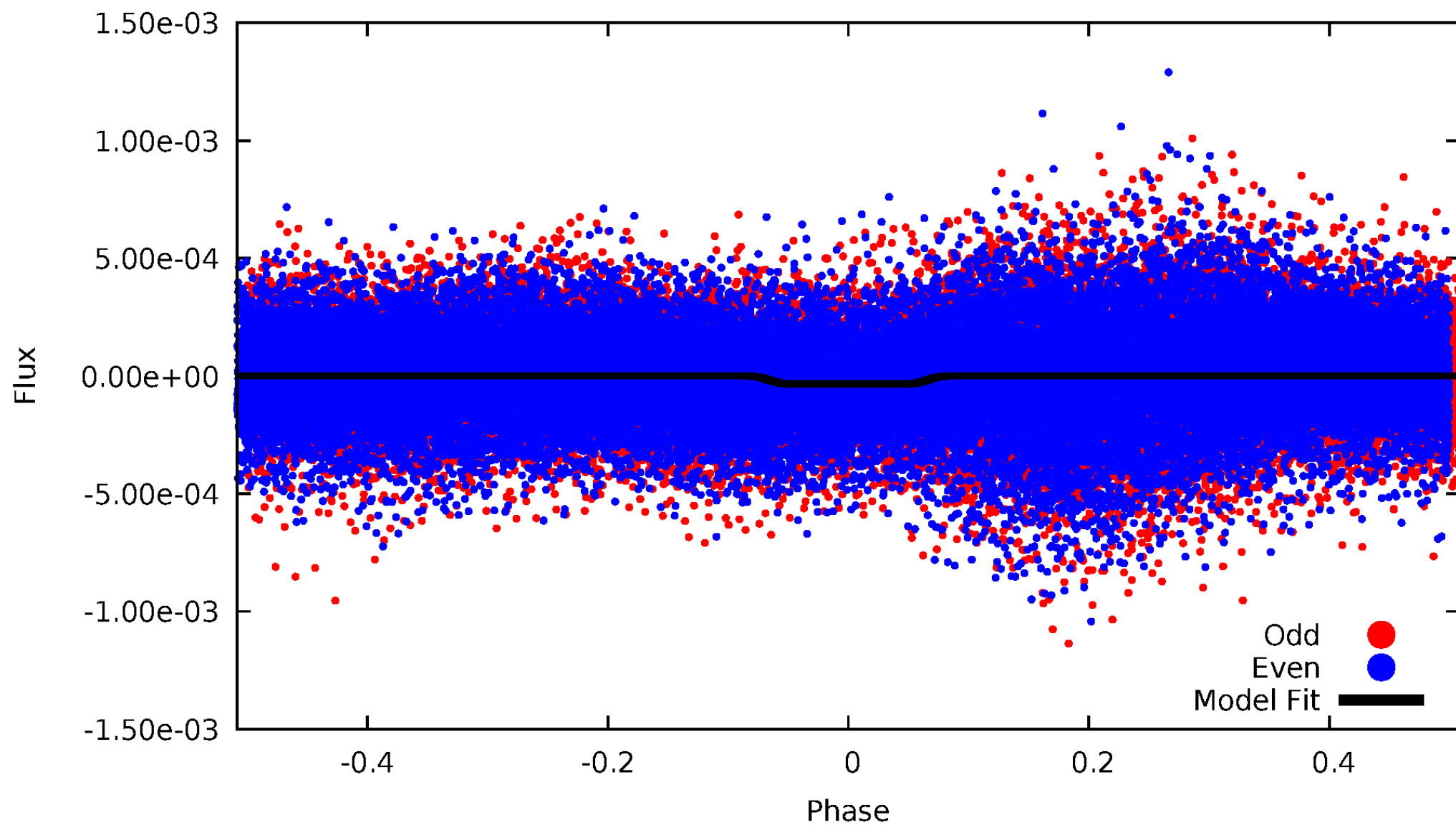
DV Odd/Even

TCE 002984632-01

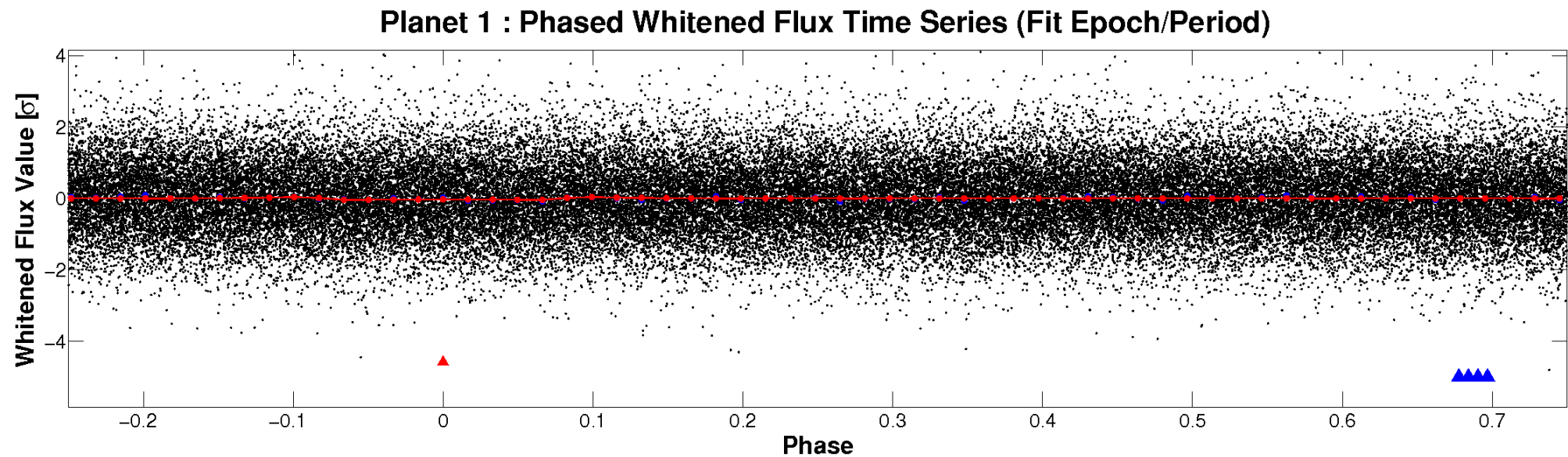
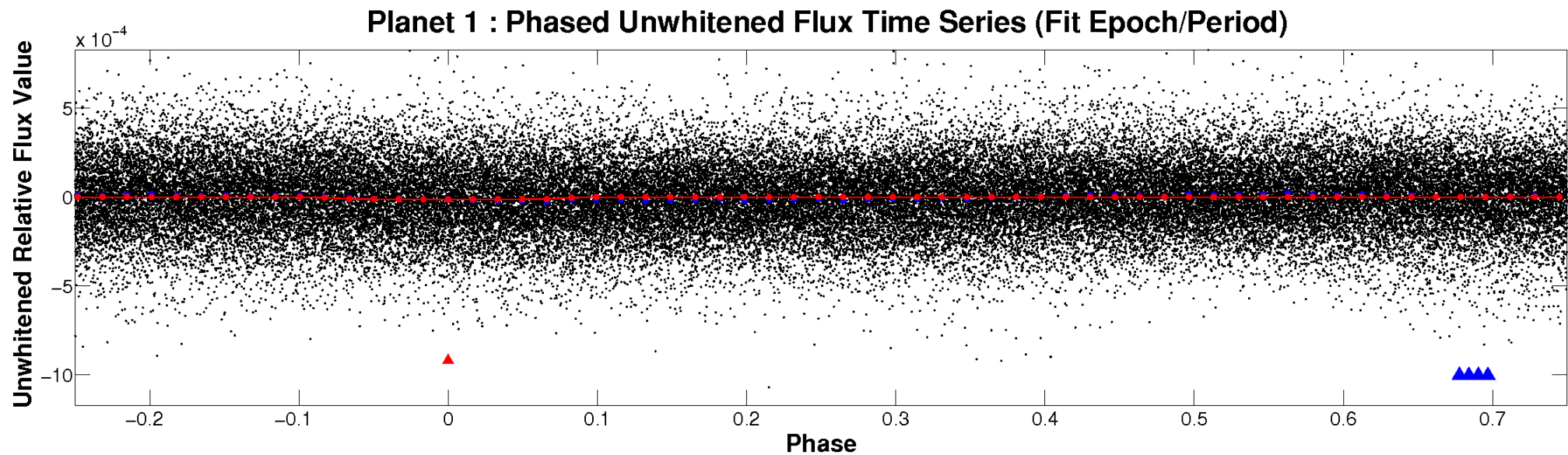


ALT Odd/Even

TCE 002984632-01

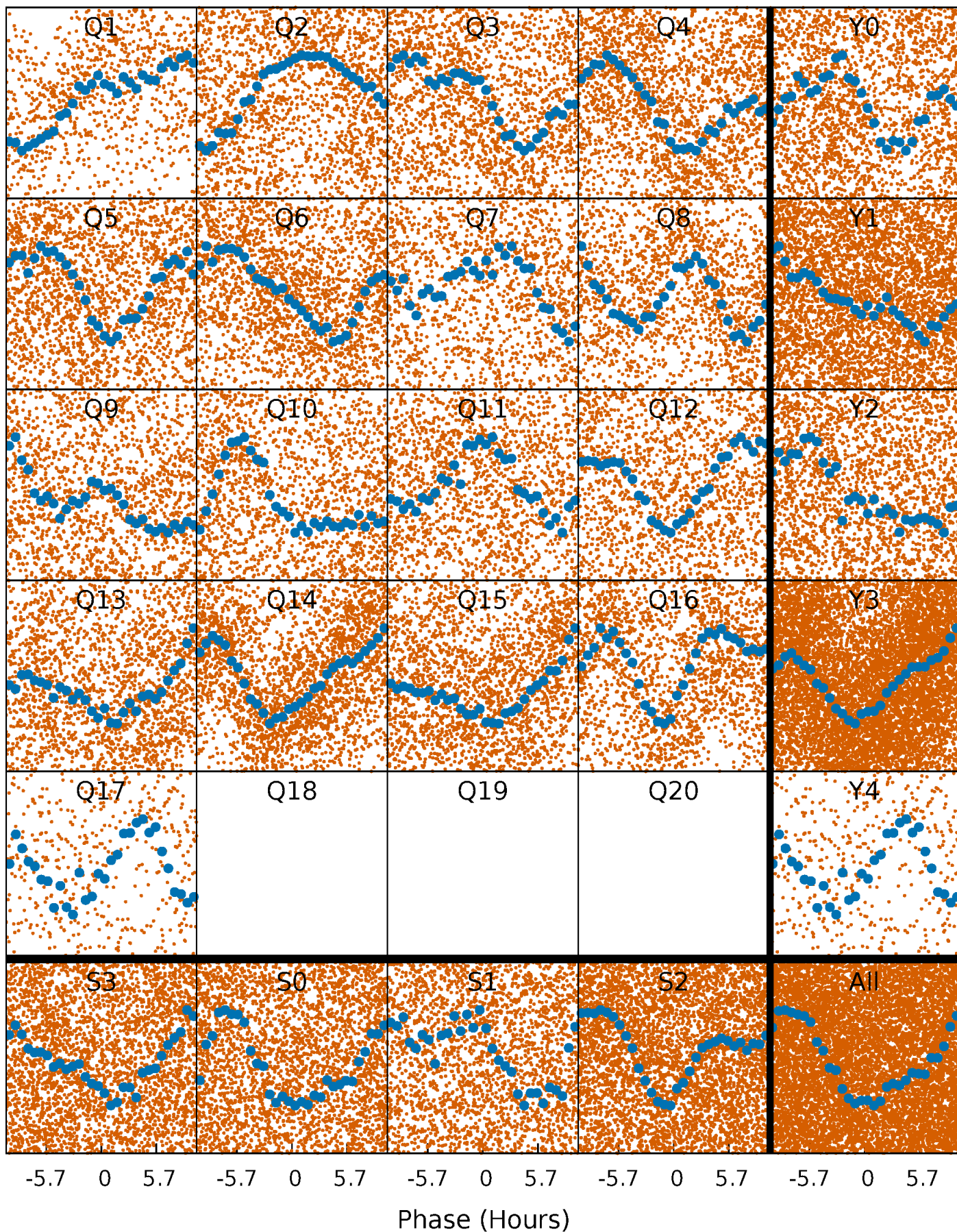


Non-Whitened Vs. Whitened Light Curve



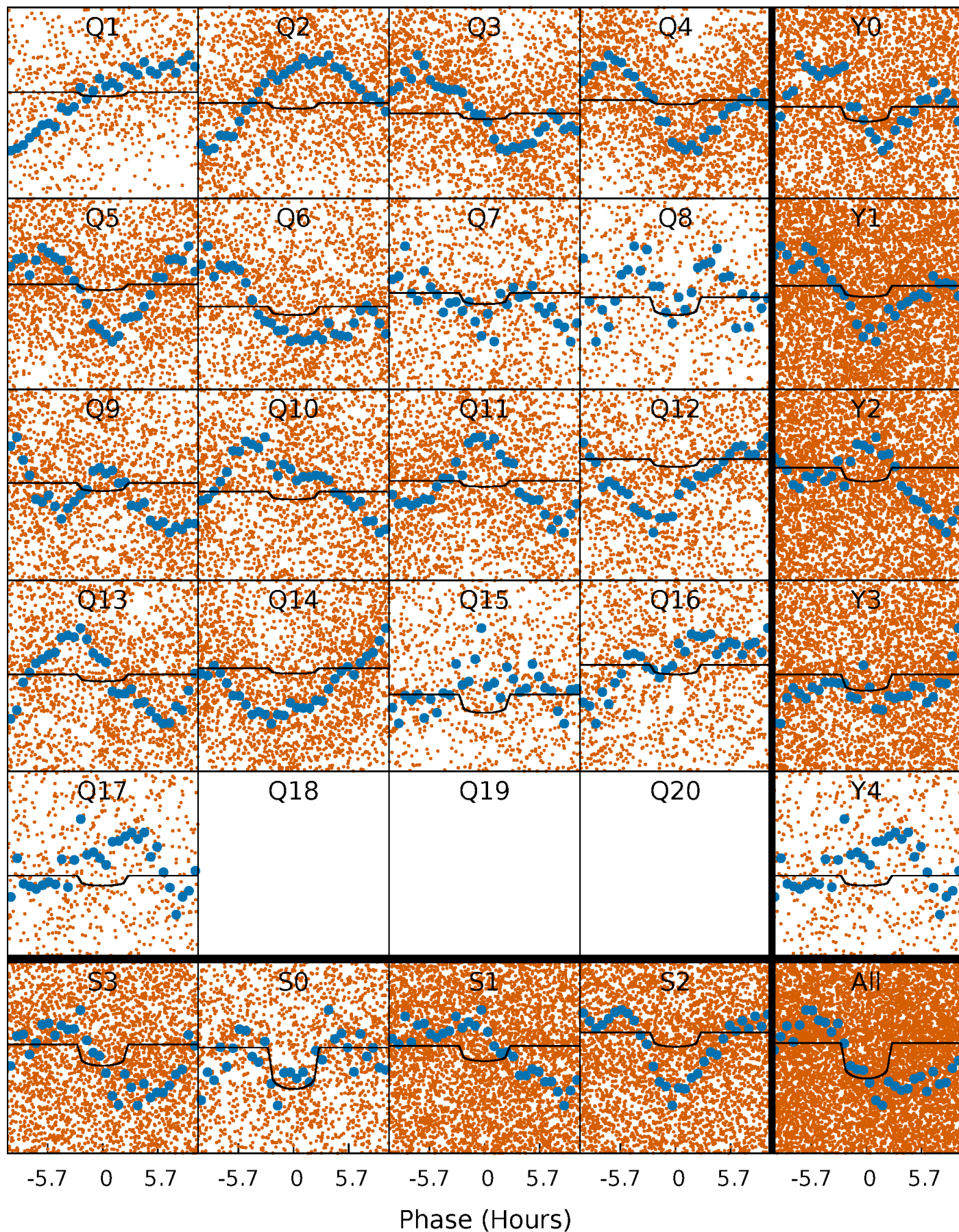
PDC Quarter-Phased Transit Curves

TCE 002984632-01 P= 1.234368 Days $T_0=132.361234$ (BKJD)



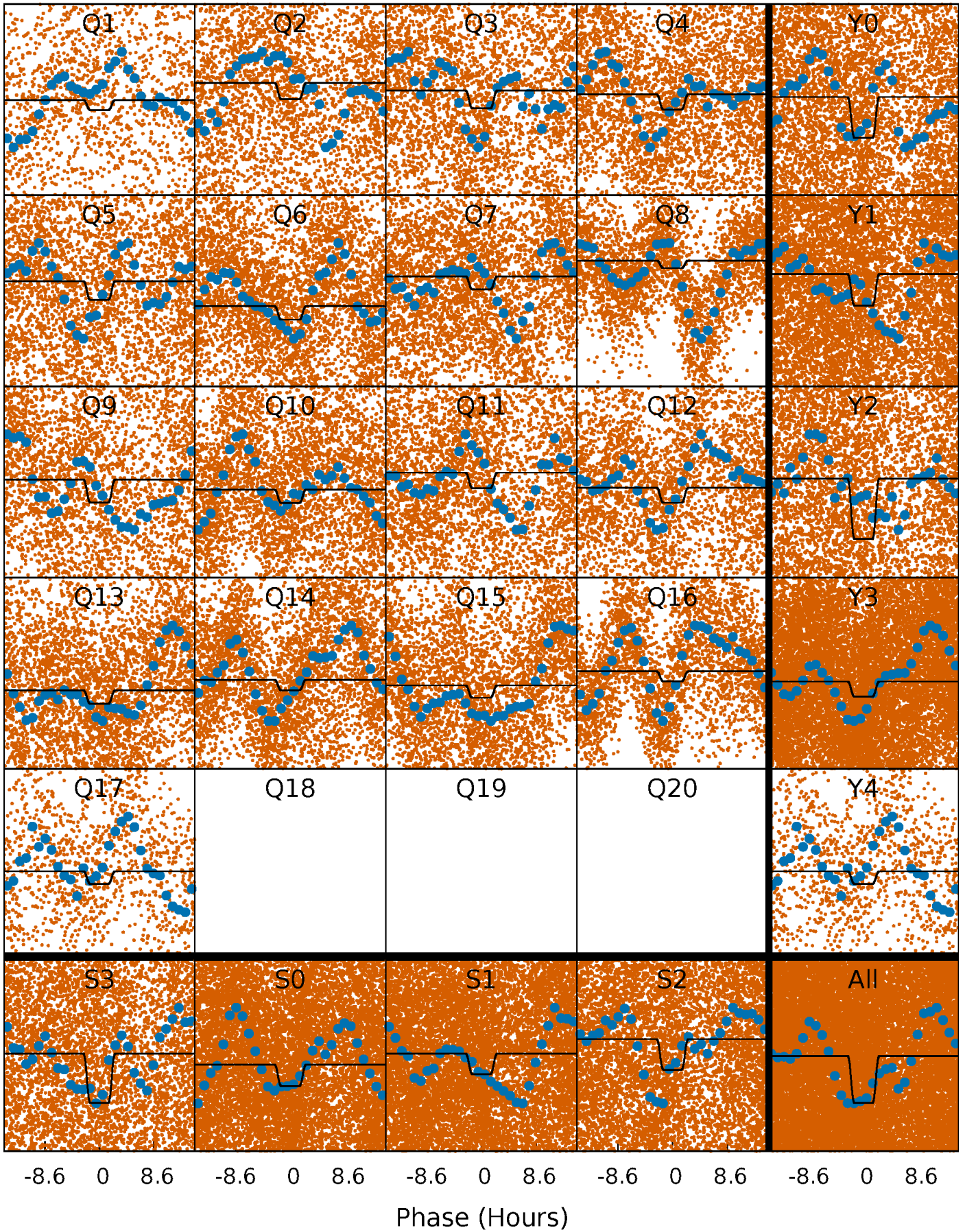
DV Quarter-Phased Transit Curves

TCE 002984632-01 P= 1.234368 Days $T_0=132.361234$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

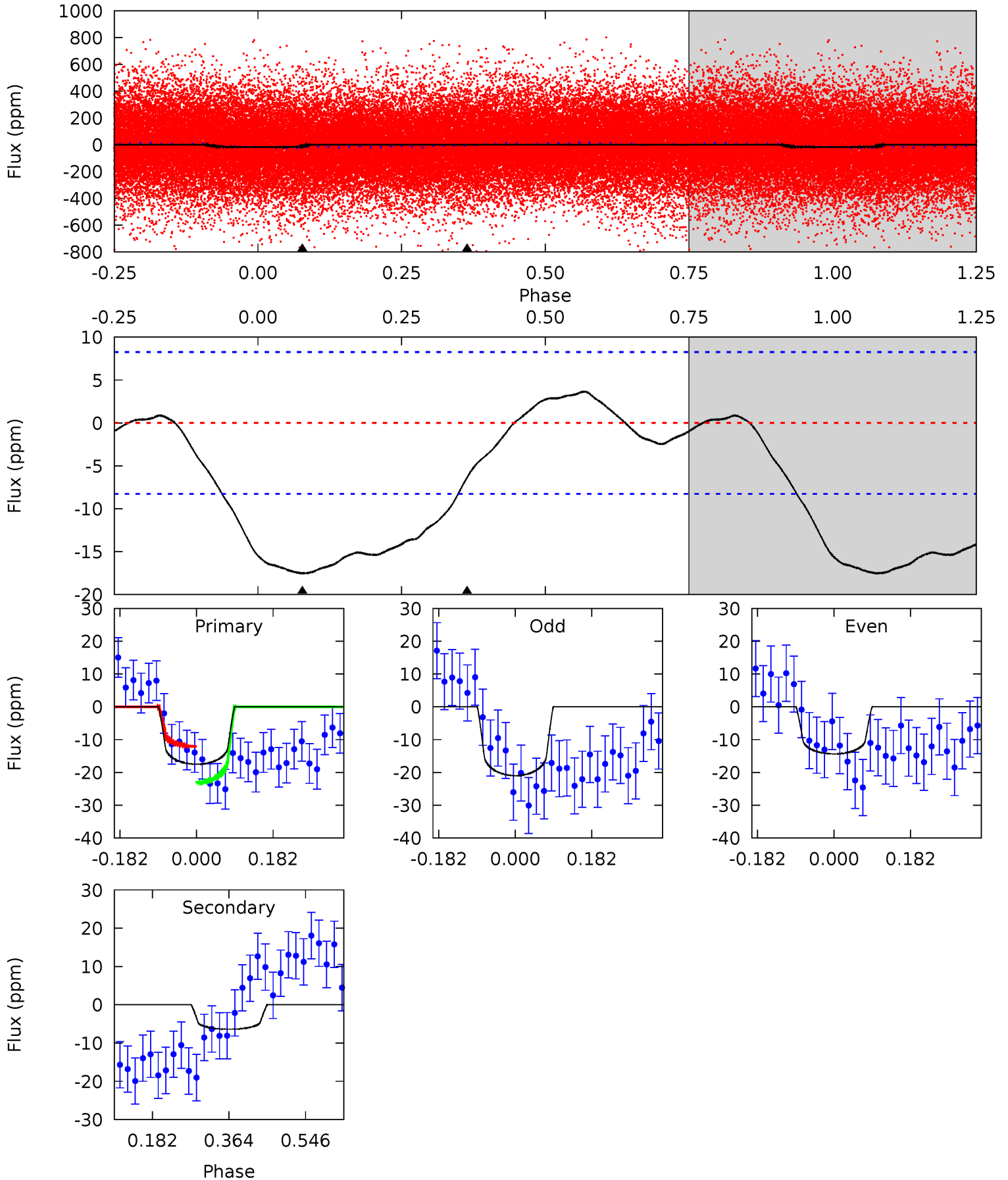
TCE 002984632-01 P= 1.234180 Days $T_0=132.584566$ (BKJD)



DV Model-Shift Uniqueness Test

002984632-01, P = 1.234368 Days, E = 131.126866 Days

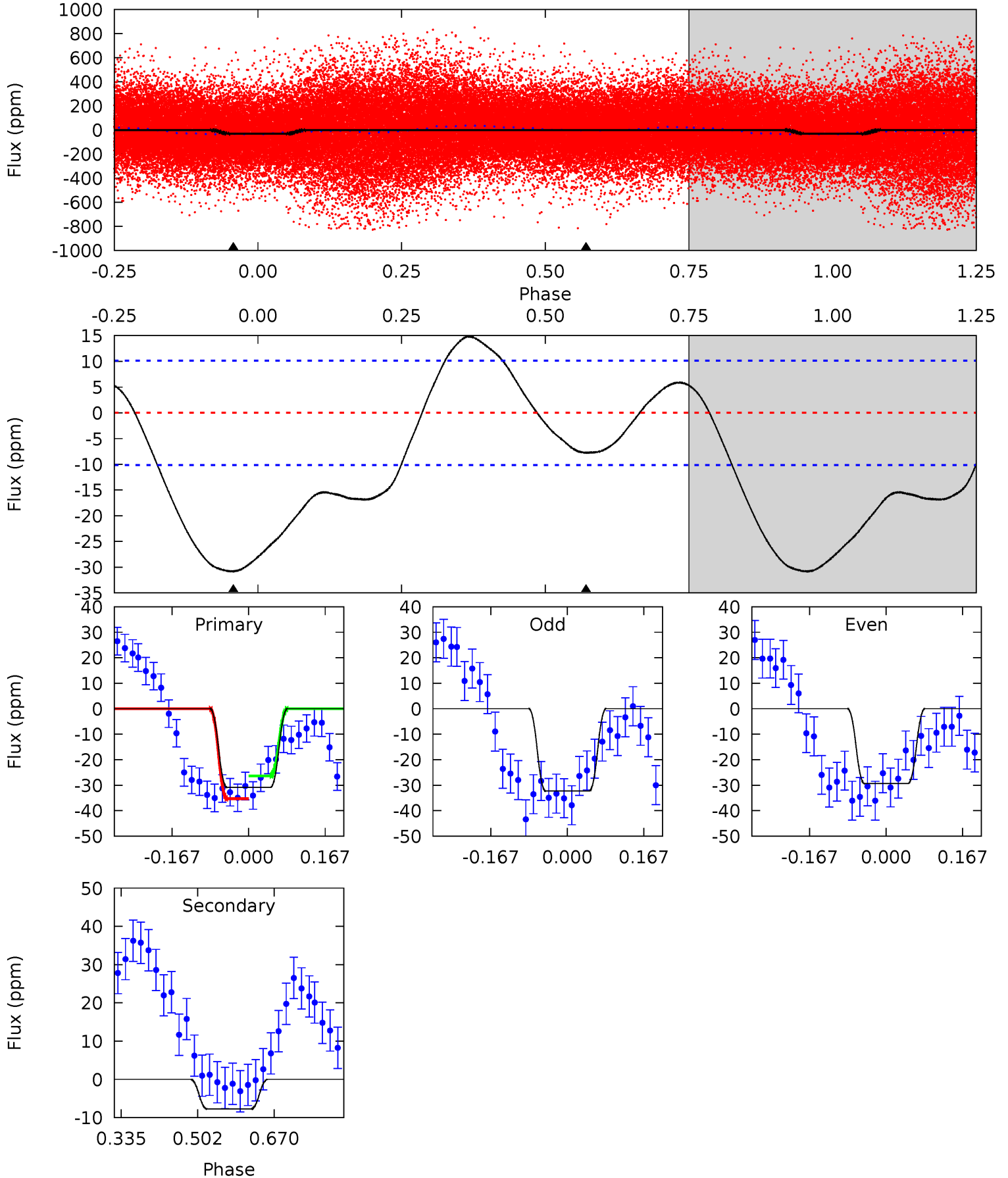
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.40	3.43	0	0	4.44	1.34	0.99	9.40	9.40	3.43	3.43	1.78	0.99	0.17	3.02



Alt Model-Shift Uniqueness Test

002984632-01, P = 1.234180 Days, E = 131.350386 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.5	3.41	0	0	4.46	1.38	5.25	13.5	13.5	3.41	3.41	0.64	0.90	0.33	2.08



Stellar Parameters For KIC 002984632

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6564^{+177}_{-196}	$3.675^{+0.304}_{-0.076}$	$-0.040^{+0.300}_{-0.250}$	$3.073^{+0.477}_{-1.112}$	$1.629^{+0.216}_{-0.298}$	$0.079^{+0.166}_{-0.021}$
	+3%/-3%	+8%/-2%	+750%/-625%	+16%/-36%	+13%/-18%	+209%/-26%
Source	PHO1	FLK73	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 002984632-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-6 ± 2	$1.21^{+0.58}_{-0.48}$	4246^{+238}_{-410}	5005^{+1687}_{-934}	$1.622^{+3.278}_{-0.900}$
Alt.	-8 ± 2	$1.75^{+0.64}_{-0.53}$	4248^{+249}_{-401}	4360^{+869}_{-793}	$0.961^{+1.079}_{-0.461}$

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 $A_{obs} \gg 1.0$

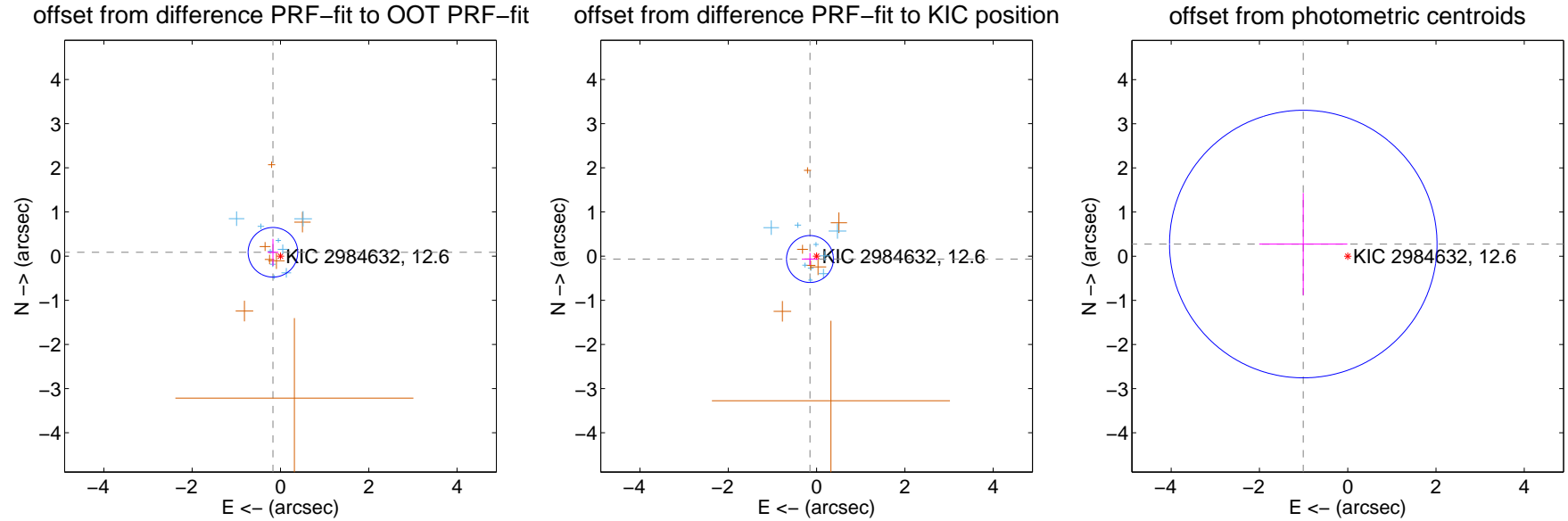
DV Centroid Data

Supplemental centroid analysis for 002984632-01. Kepler magnitude: 12.60. Transit SNR 4.30

There are 9 quarters with good PRF difference image offsets

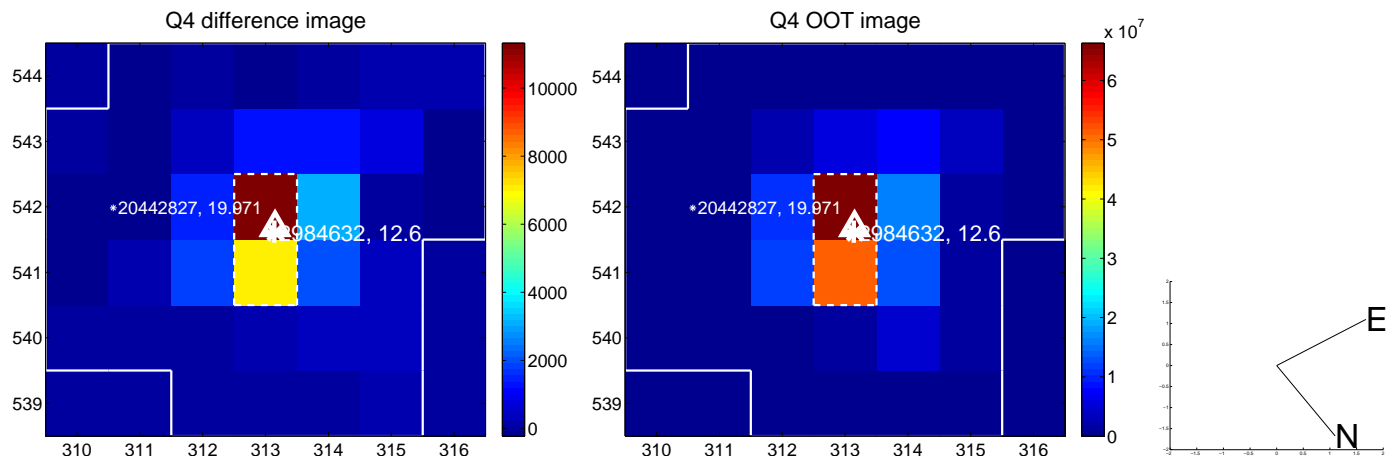
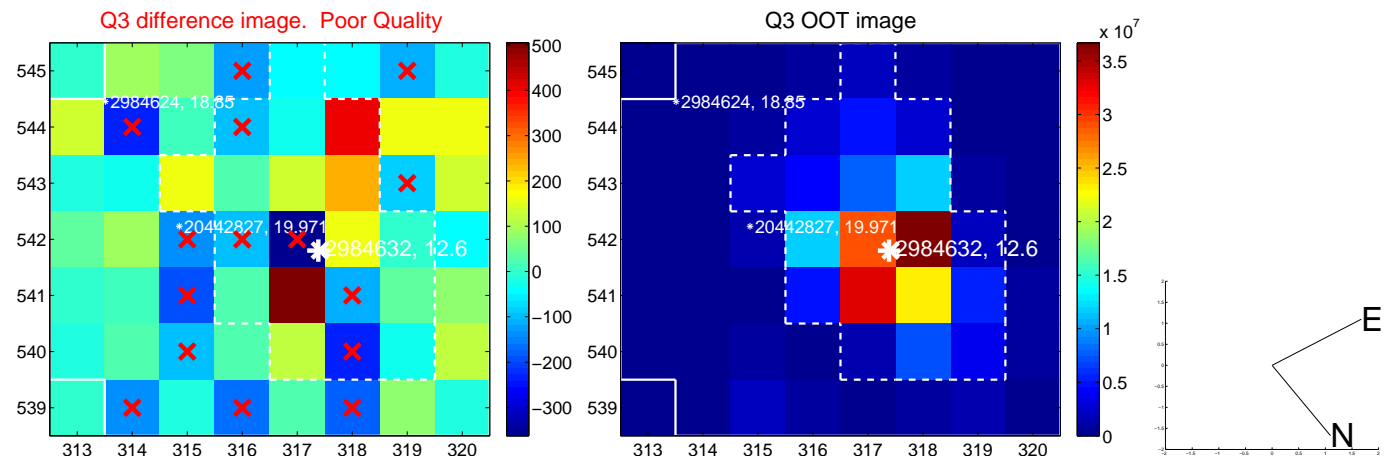
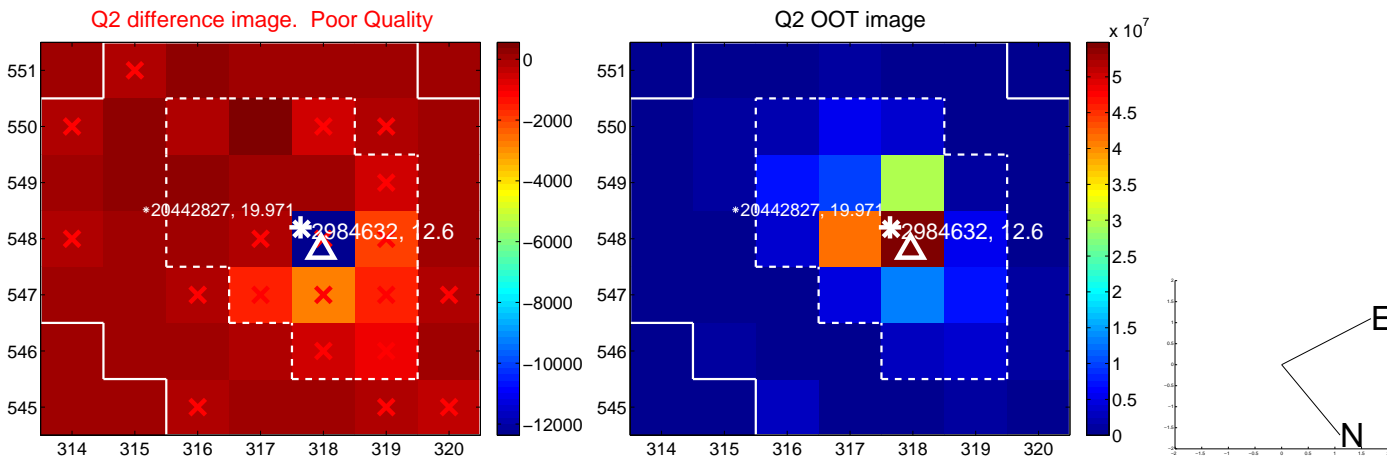
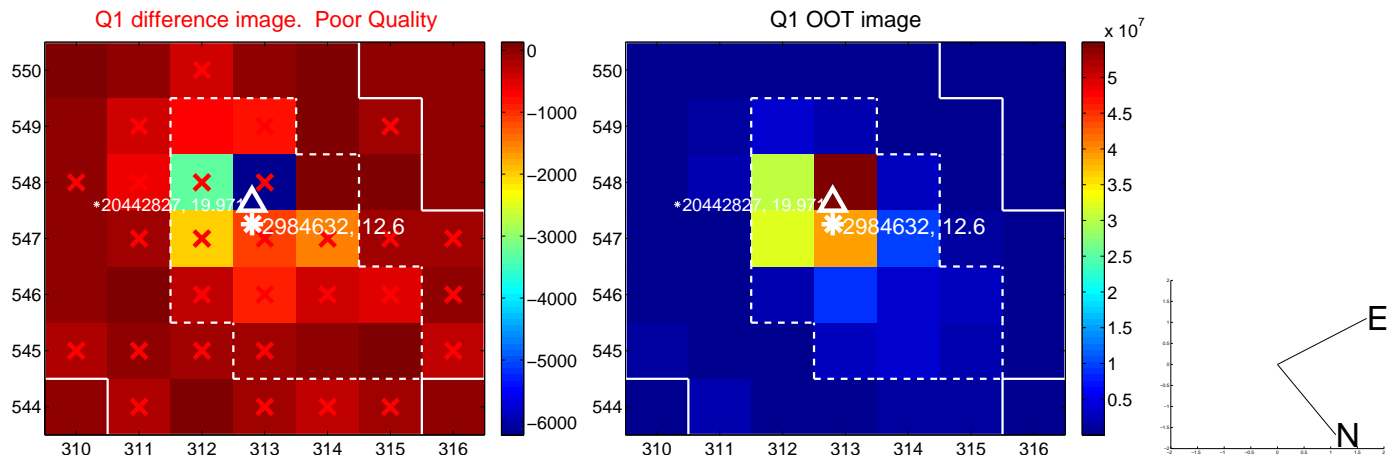
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.191 ± 0.187	1.02	0.170 ± 0.123	0.087 ± 0.305
PRF-fit source offset from KIC position	0.163 ± 0.177	0.92	0.150 ± 0.184	-0.065 ± 0.135
photometric centroid source offset	1.04 ± 1.01	1.03	1.01 ± 1.00	0.28 ± 1.16

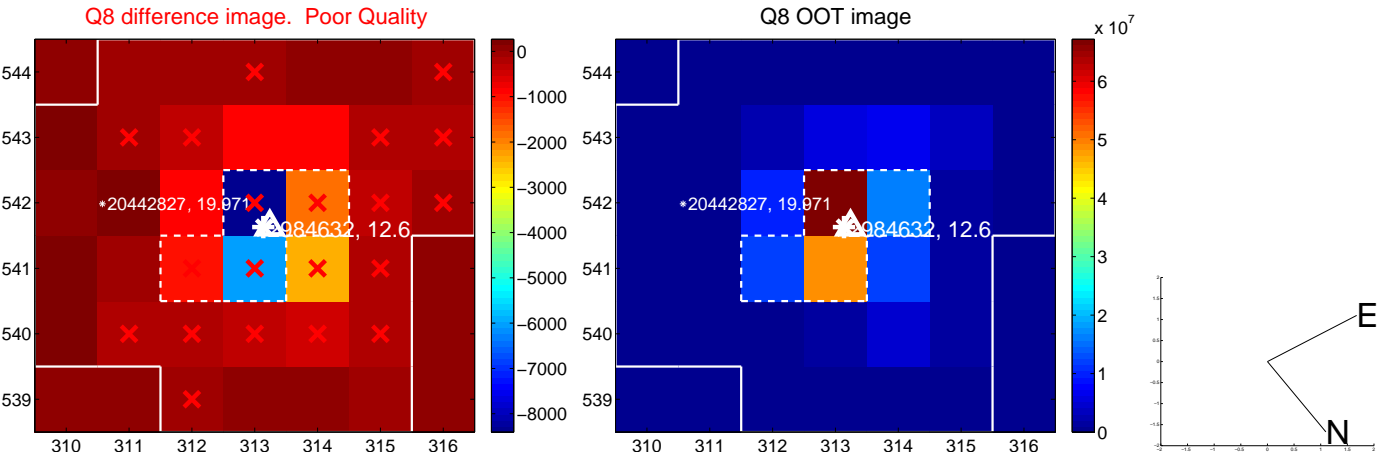
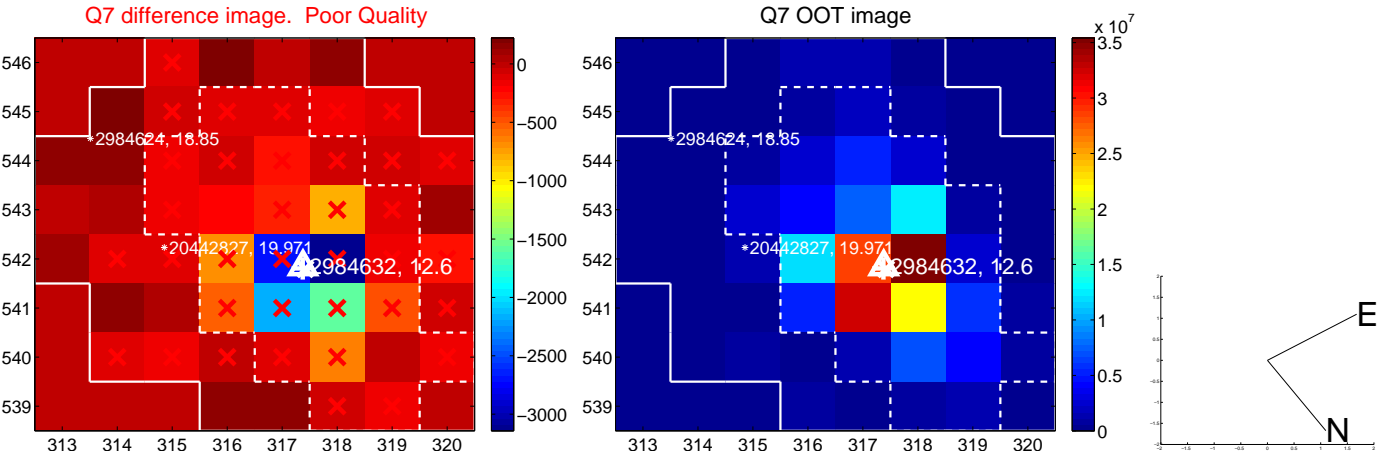
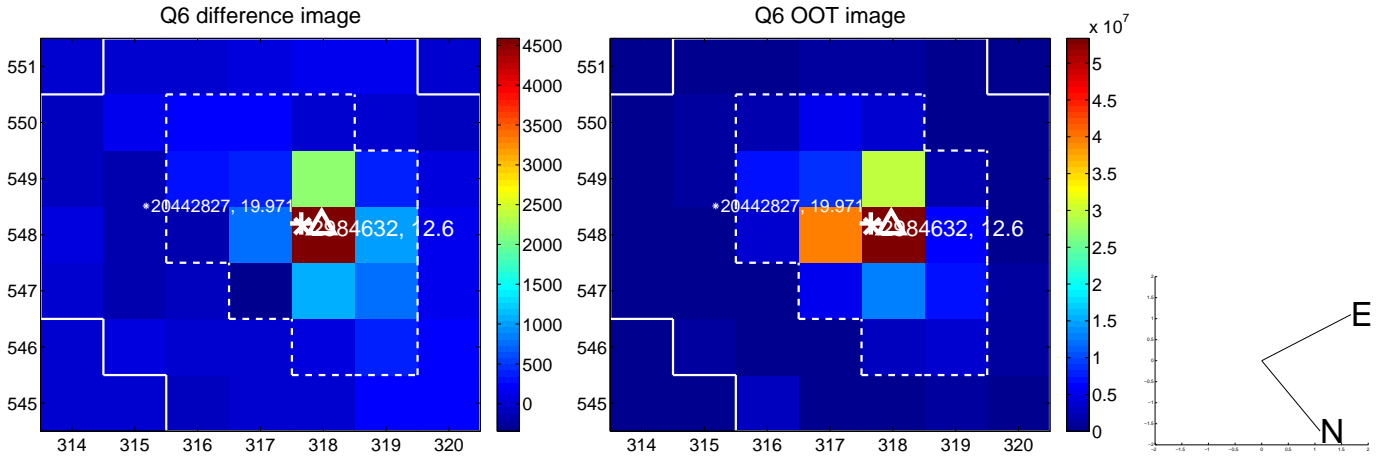
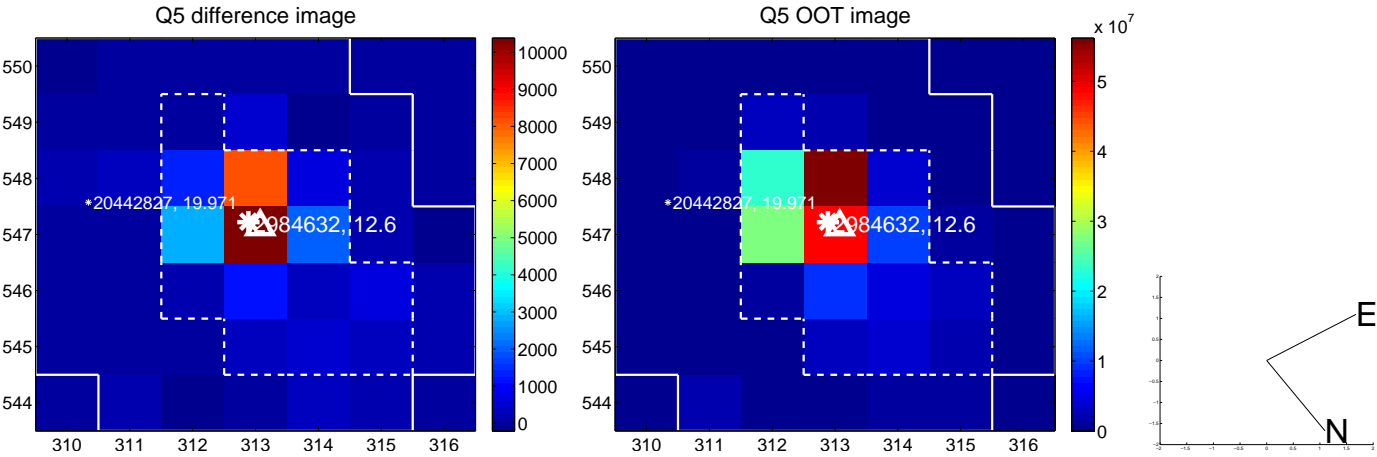


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

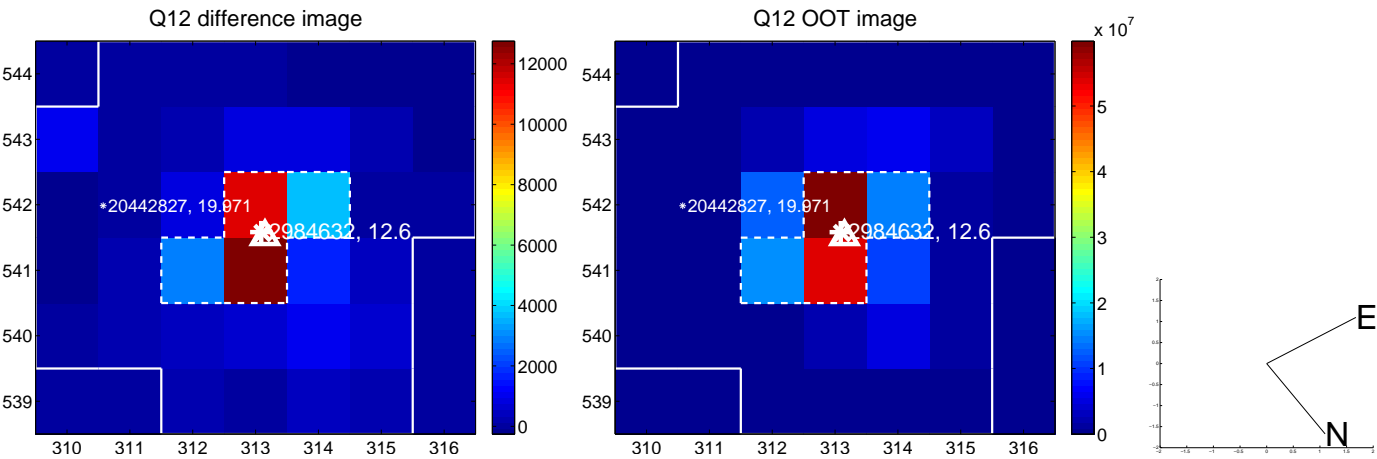
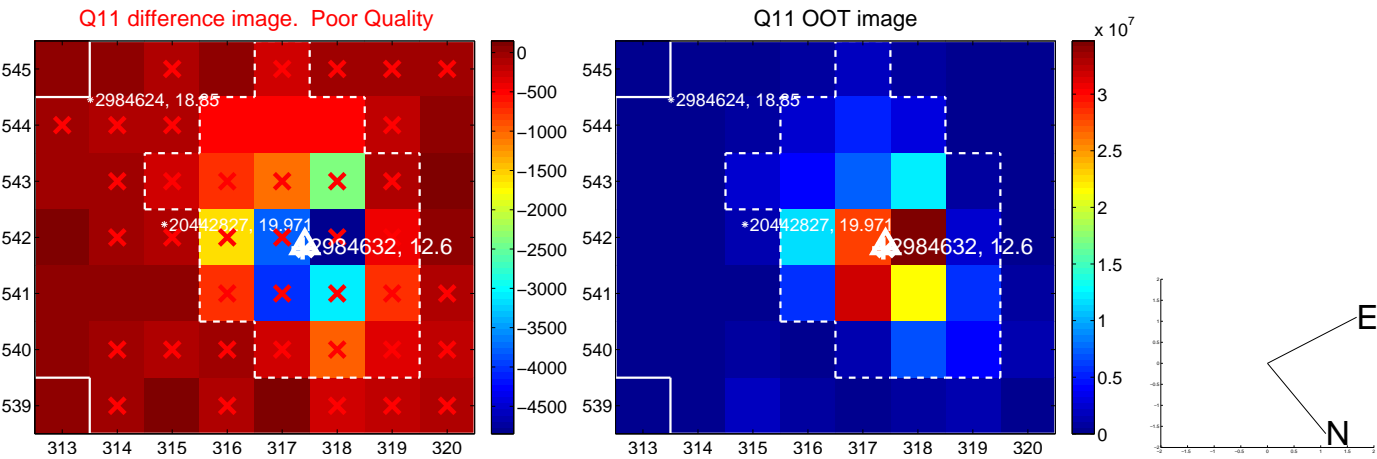
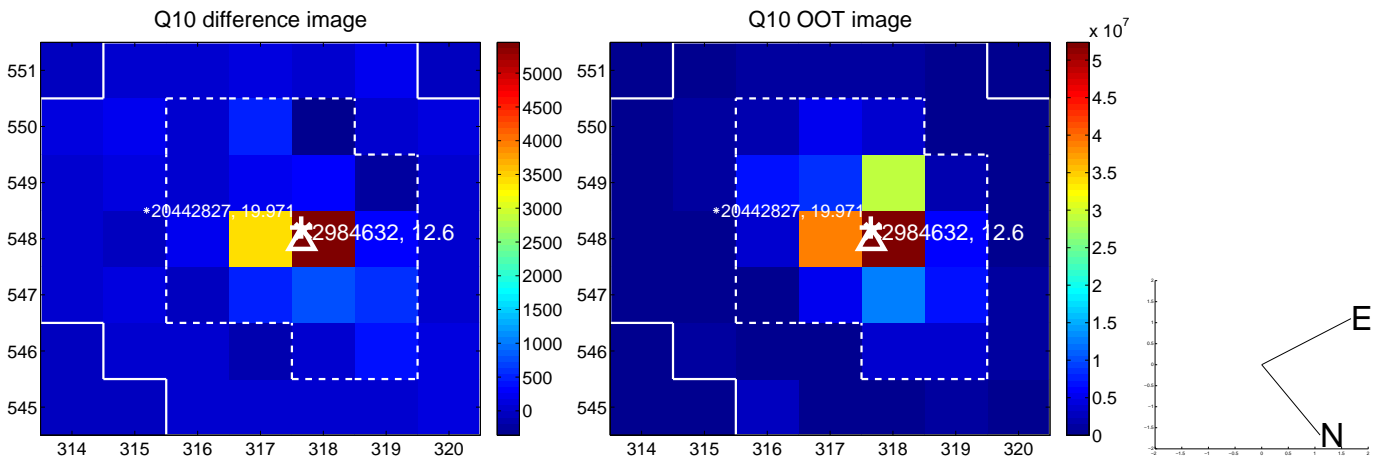
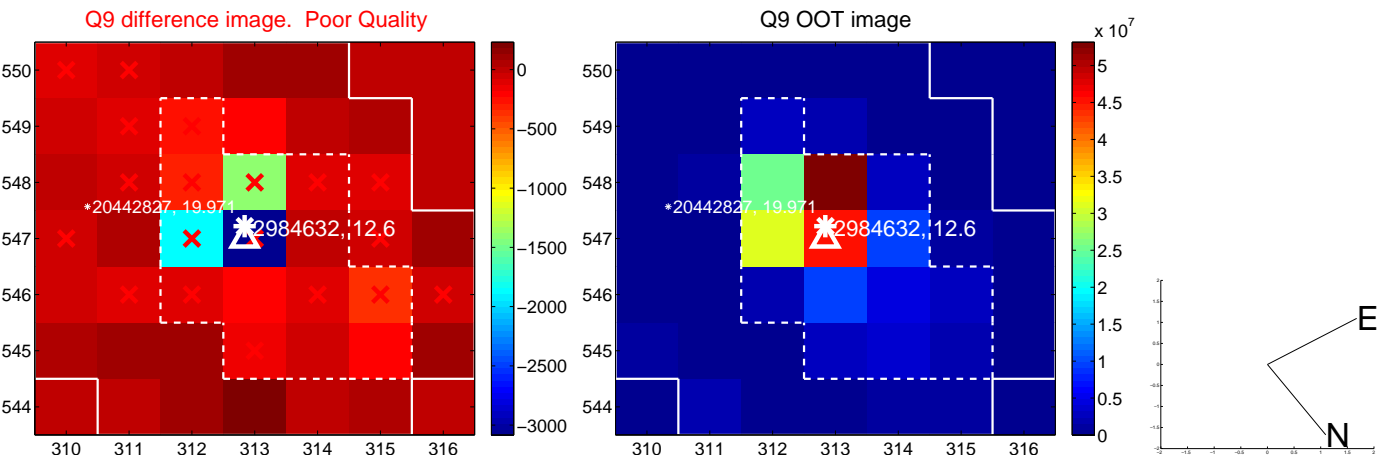
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



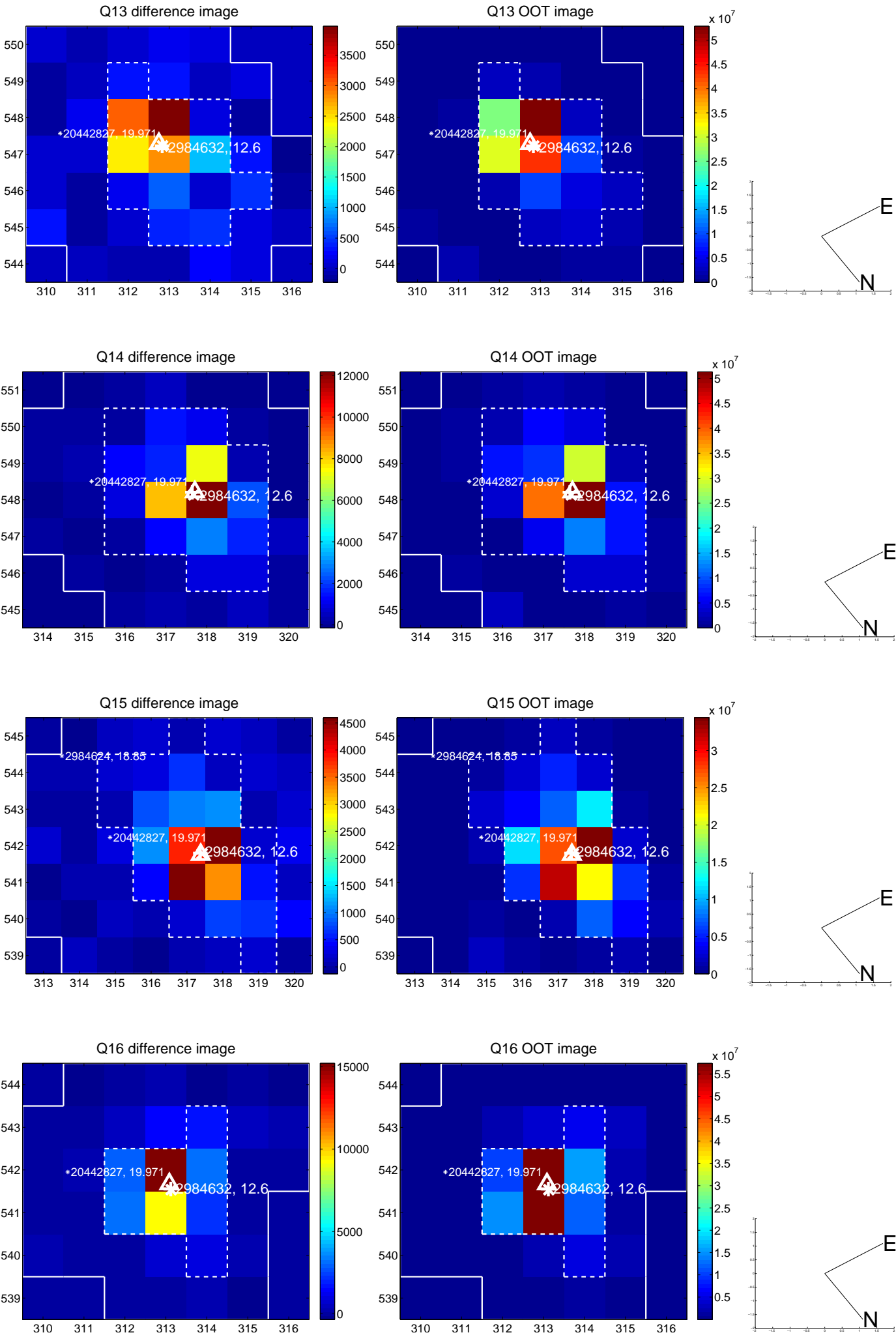
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



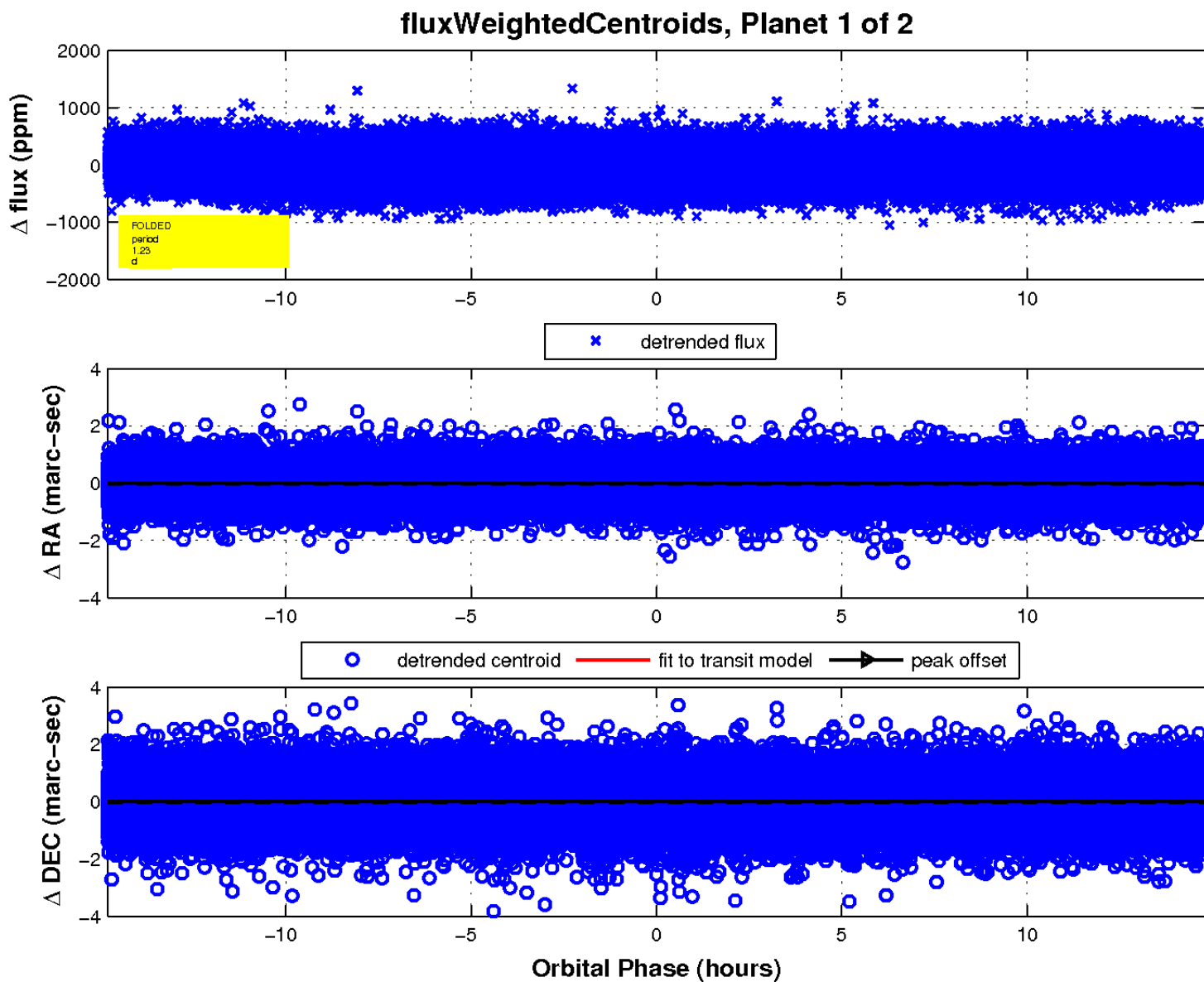
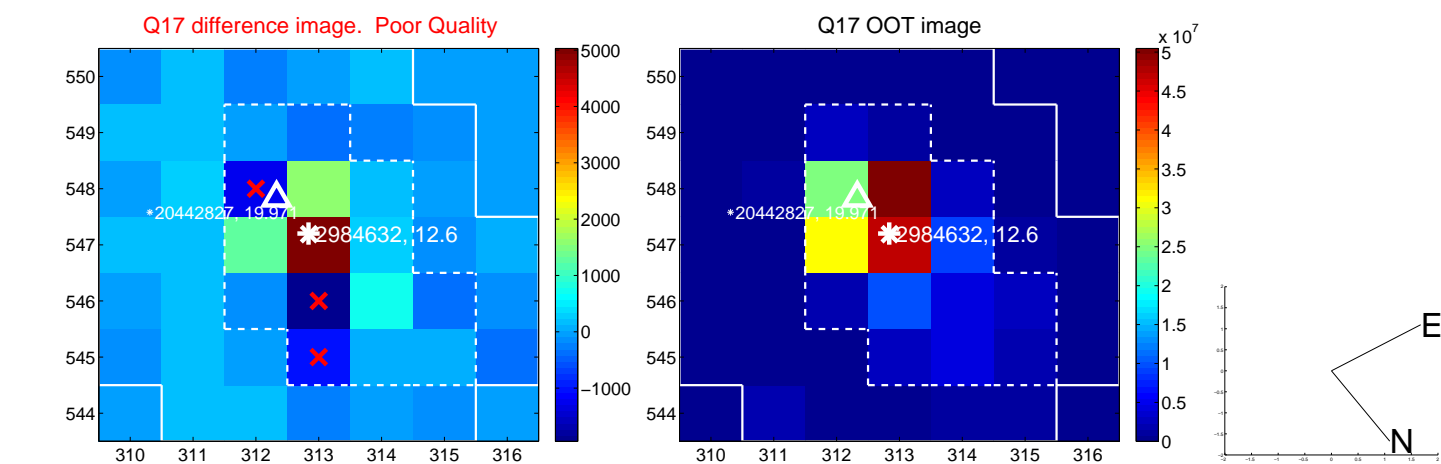
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



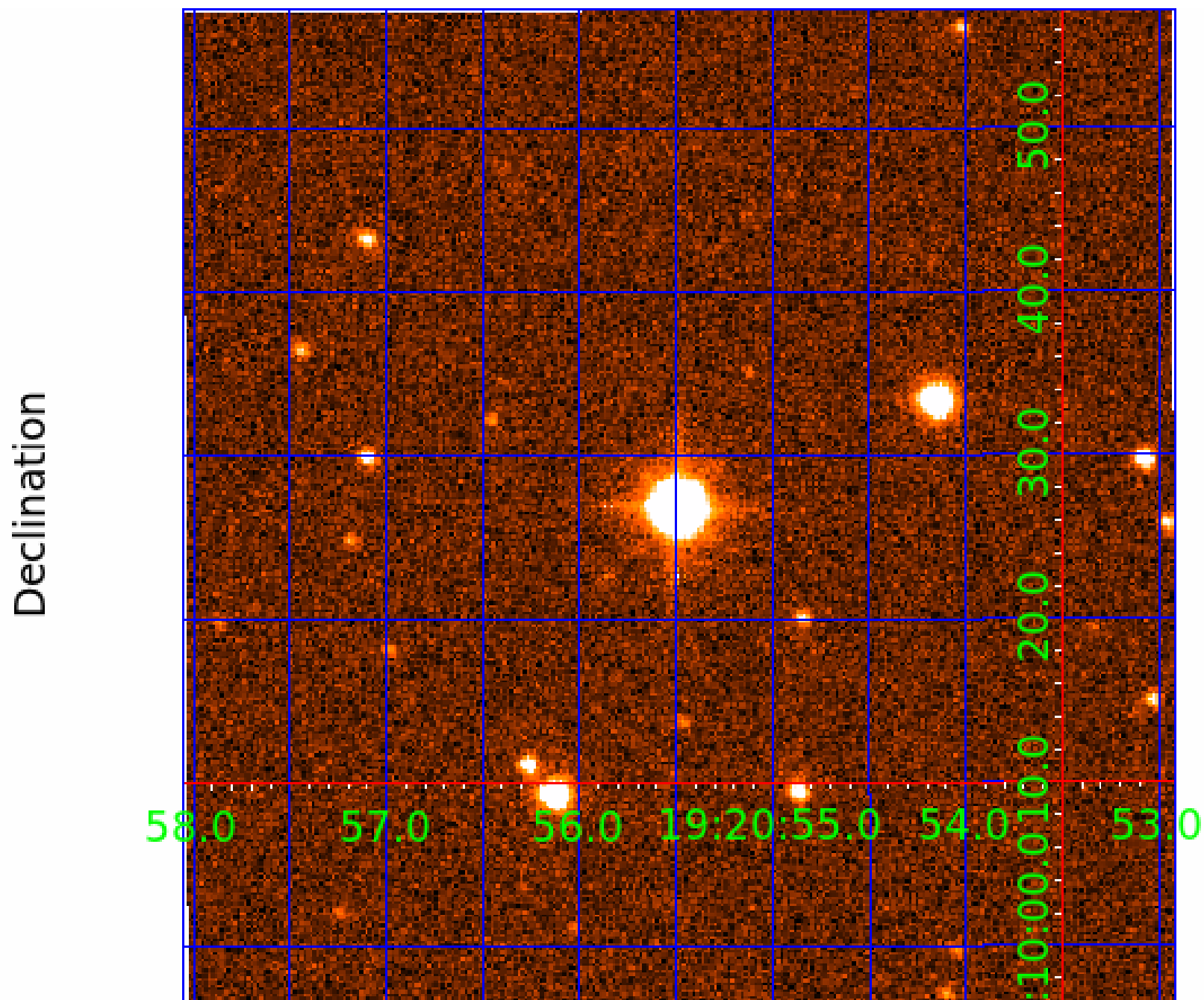
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 002984632

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})
002984632-01	OBS	No	1.234368	132.361234	13.7	4.946	7.9	4.3	3.07	6564	1.33	22353.76
002984632-02	OBS	No	398.708835	203.556849	480.4	6.316	7.5	8.2	3.07	6564	8.37	10.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002984632-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
002984632-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—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.

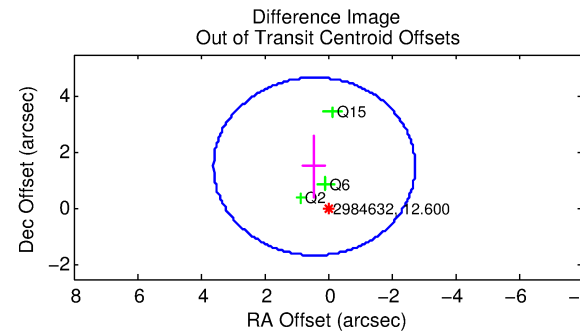
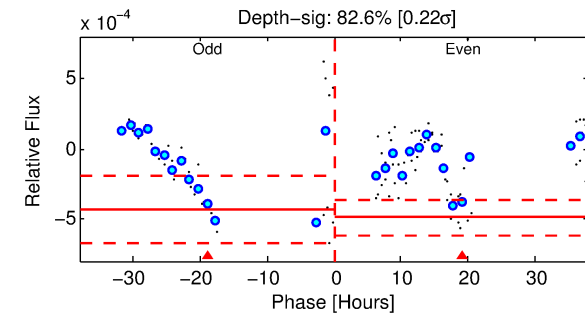
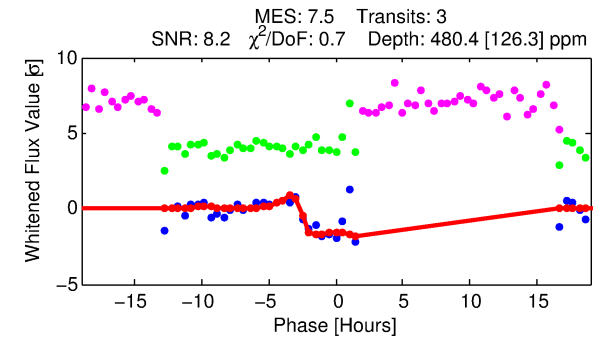
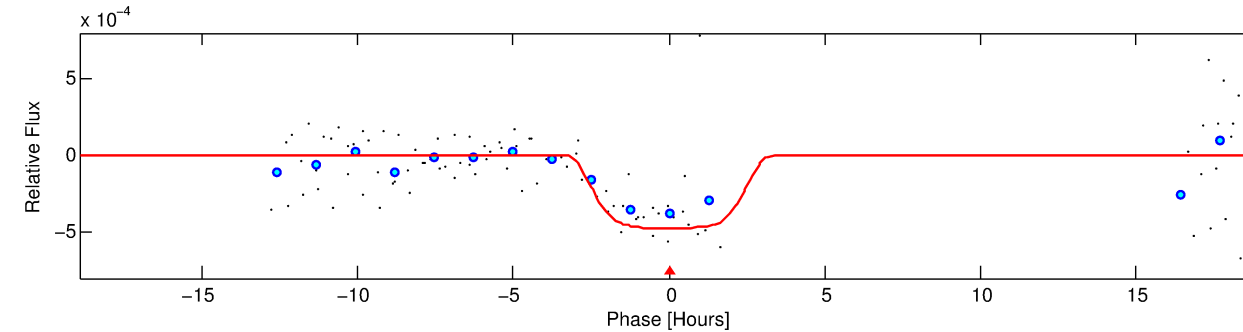
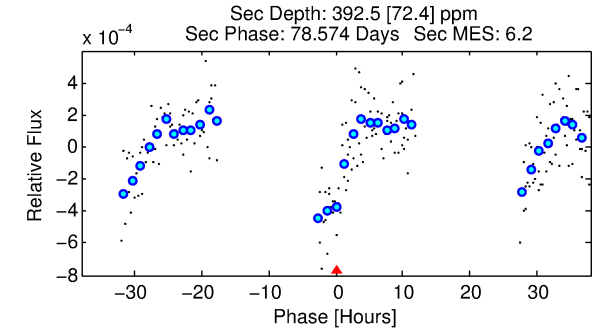
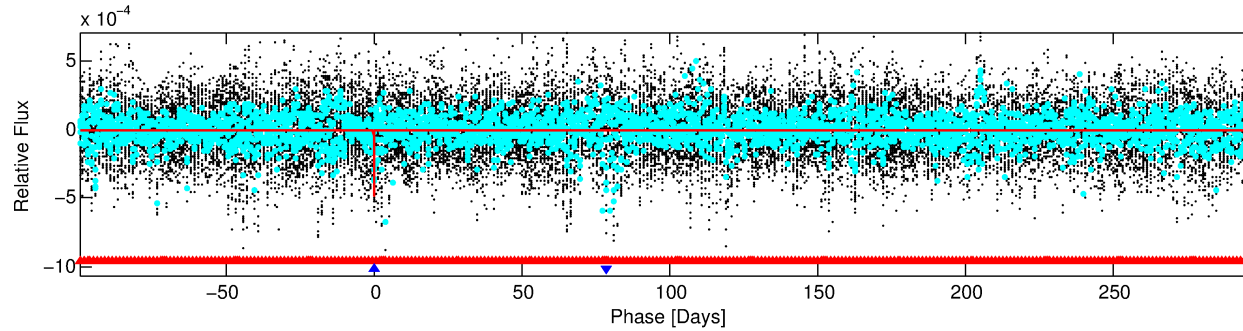
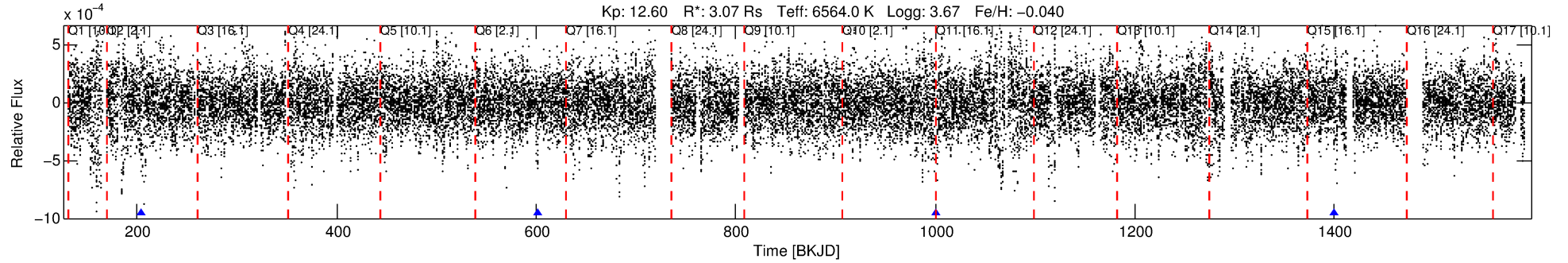
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002984632-02

No Significant Match Found

DV One-Page Summary

KIC: 2984632 Candidate: 2 of 2 Period: 398.709 d



DV Fit Results:

Period = 398.70884 [0.00583] d
Epoch = 203.5568 [0.0400] BKJD
Rp/R* = 0.0249 [0.0027]
a/R* = 181.37 [45.02]
b = 0.95 [0.03]
Seff = 10.09 [5.43]
Teq = 454 [61] K
Rp = 8.37 [3.16] Re
a = 1.2479 [0.4188] AU
Ag = 4804.11 [2874.51] [1.67σ]
Teffp = 5849 [454] K [11.78σ]

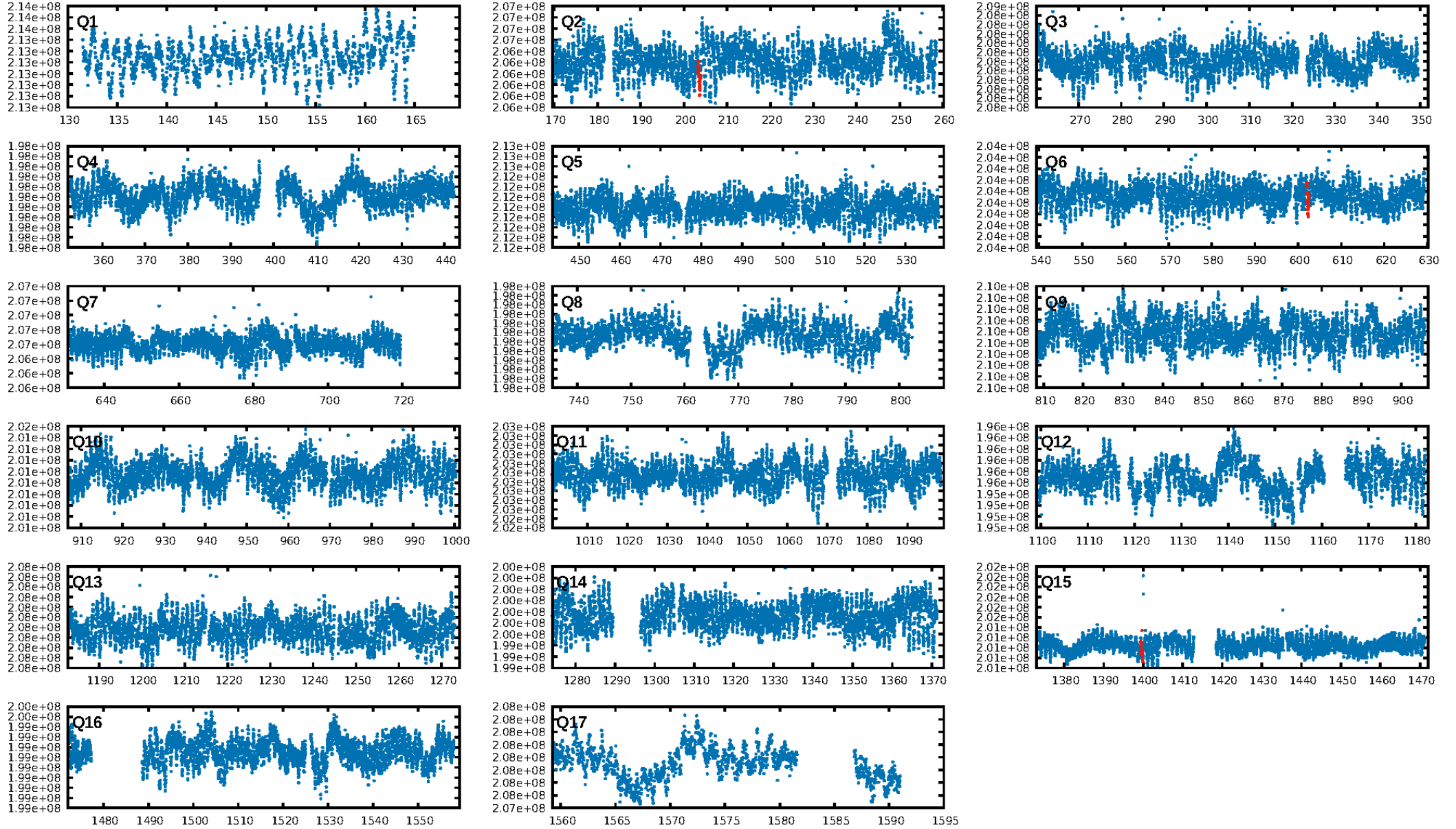
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1189.05σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 69.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.41e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 7.203
Centroid-sig: 73.9%
Centroid-so: 0.307 arcsec [0.33σ]
OotOffset-rm: 1.565 arcsec [1.48σ]
OotOffset-st: 2/1/0/0 [3]
KicOffset-rm: 1.415 arcsec [1.36σ]
KicOffset-st: 2/1/0/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.00 [0/3]

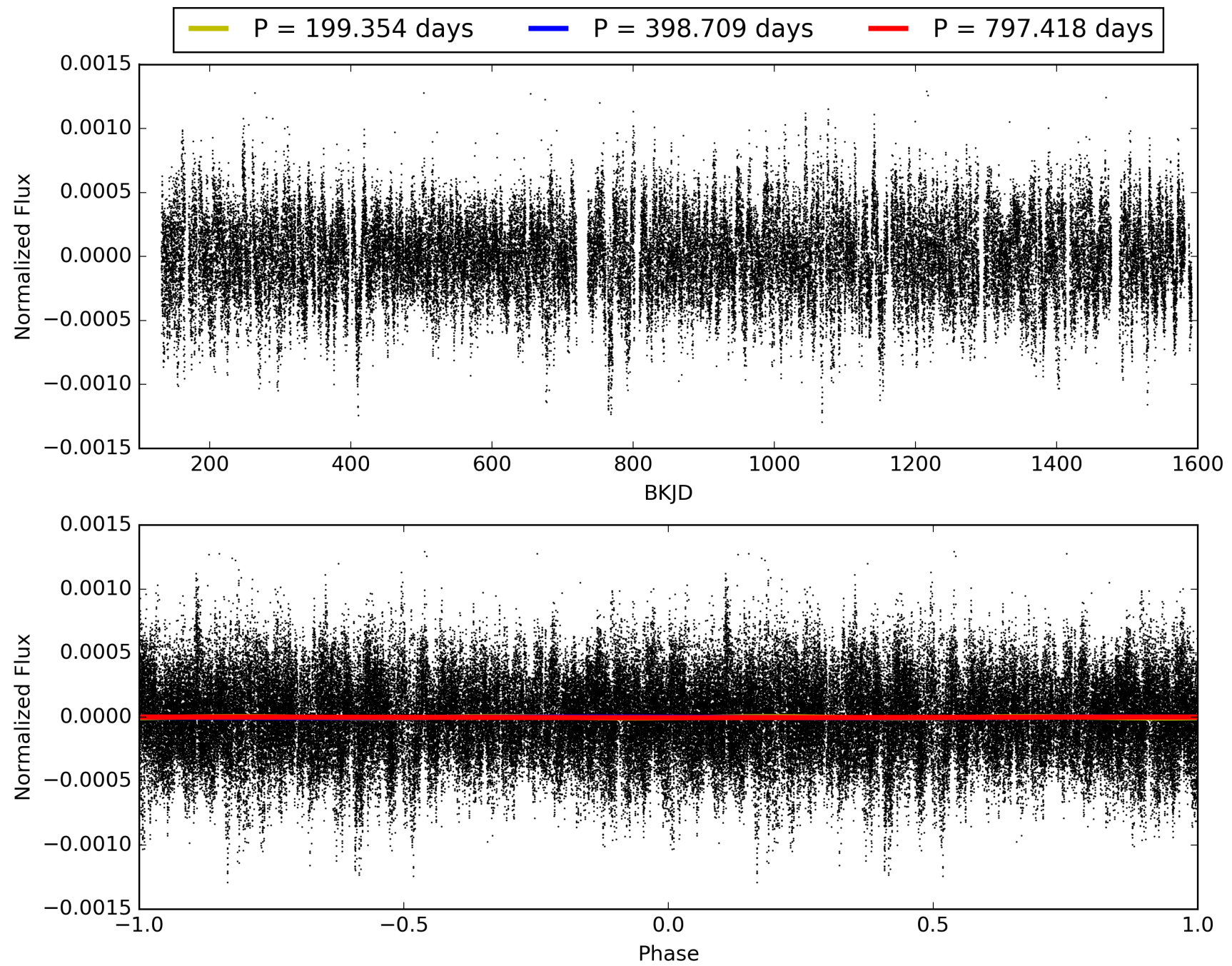
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:56:57 Z

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

TCE 002984632-02, PDC Light Curves

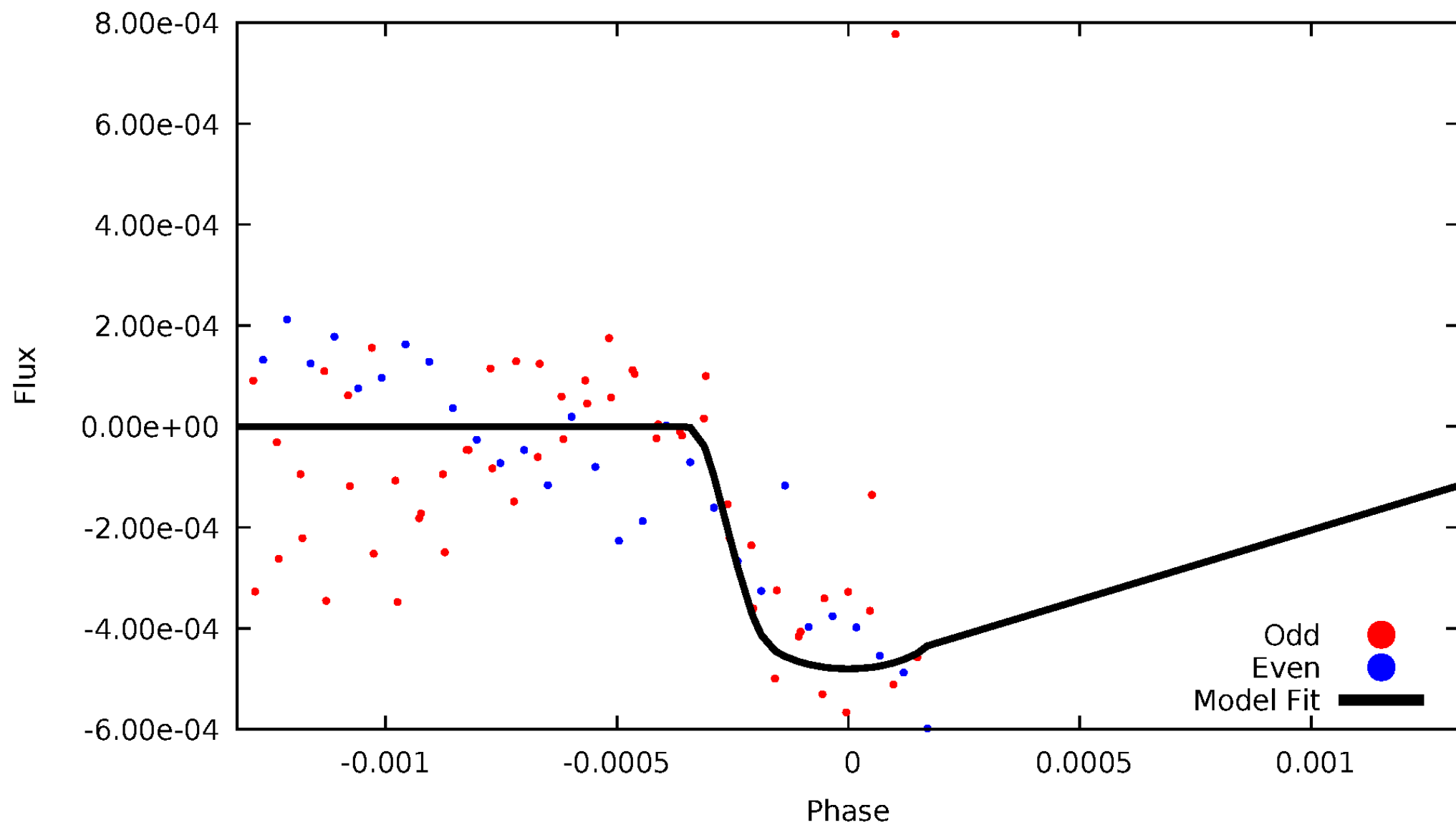


TCE 002984632-02



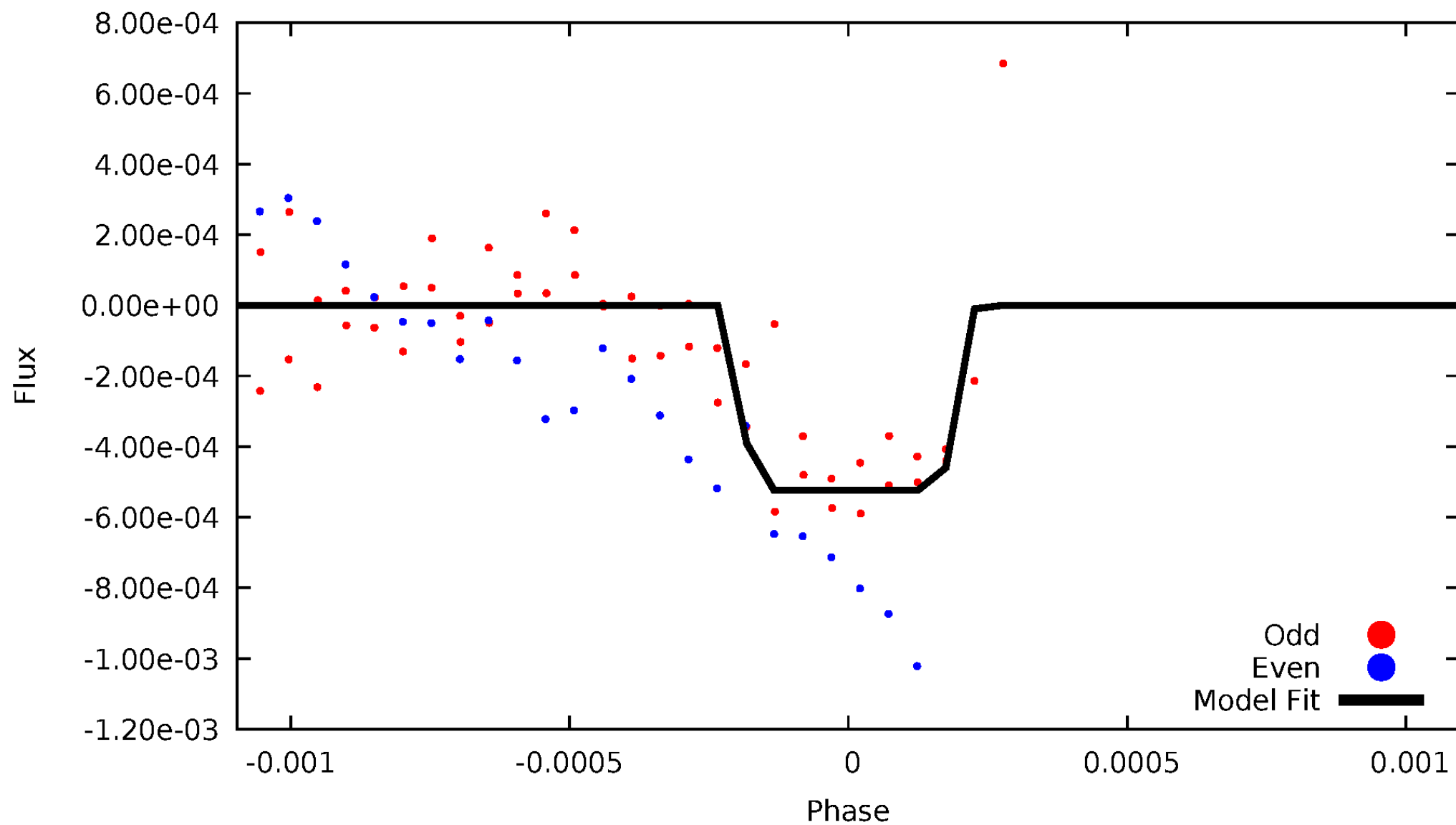
DV Odd/Even

TCE 002984632-02



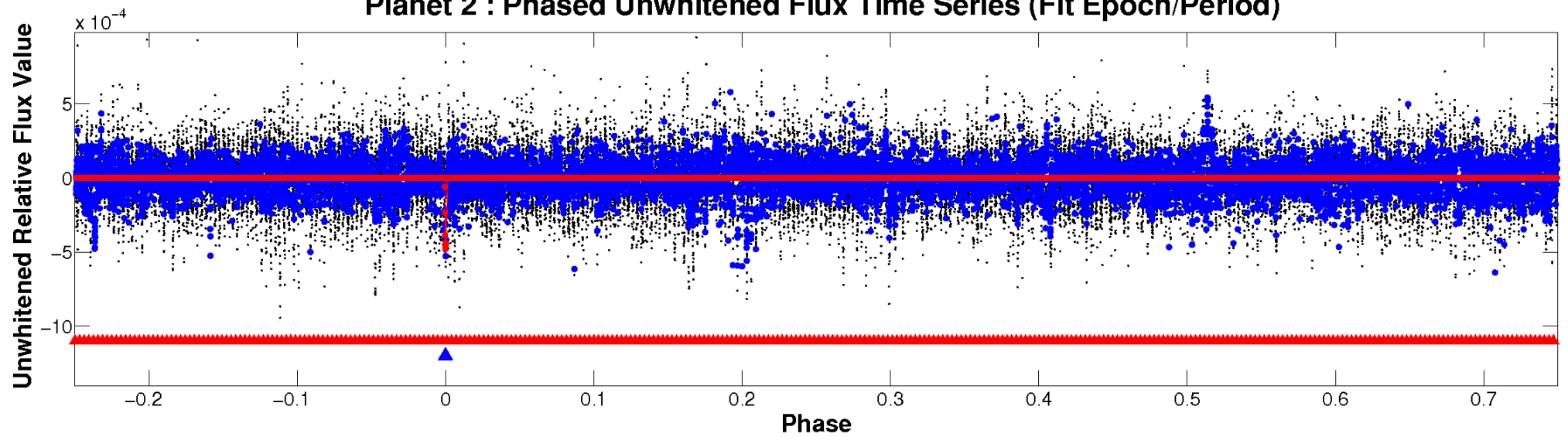
ALT Odd/Even

TCE 002984632-02

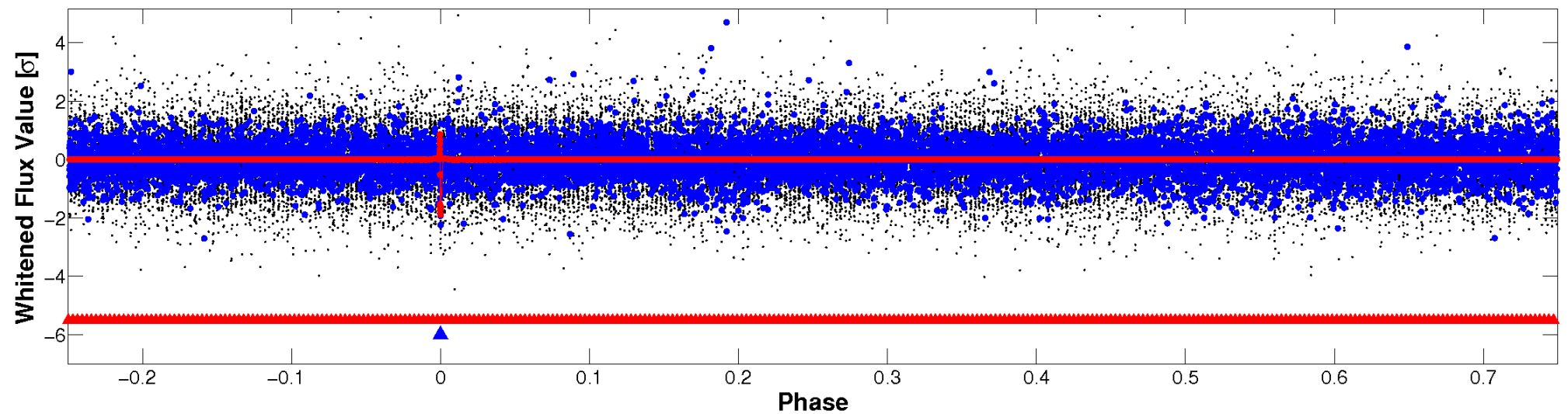


Non-Whitened Vs. Whitened Light Curve

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

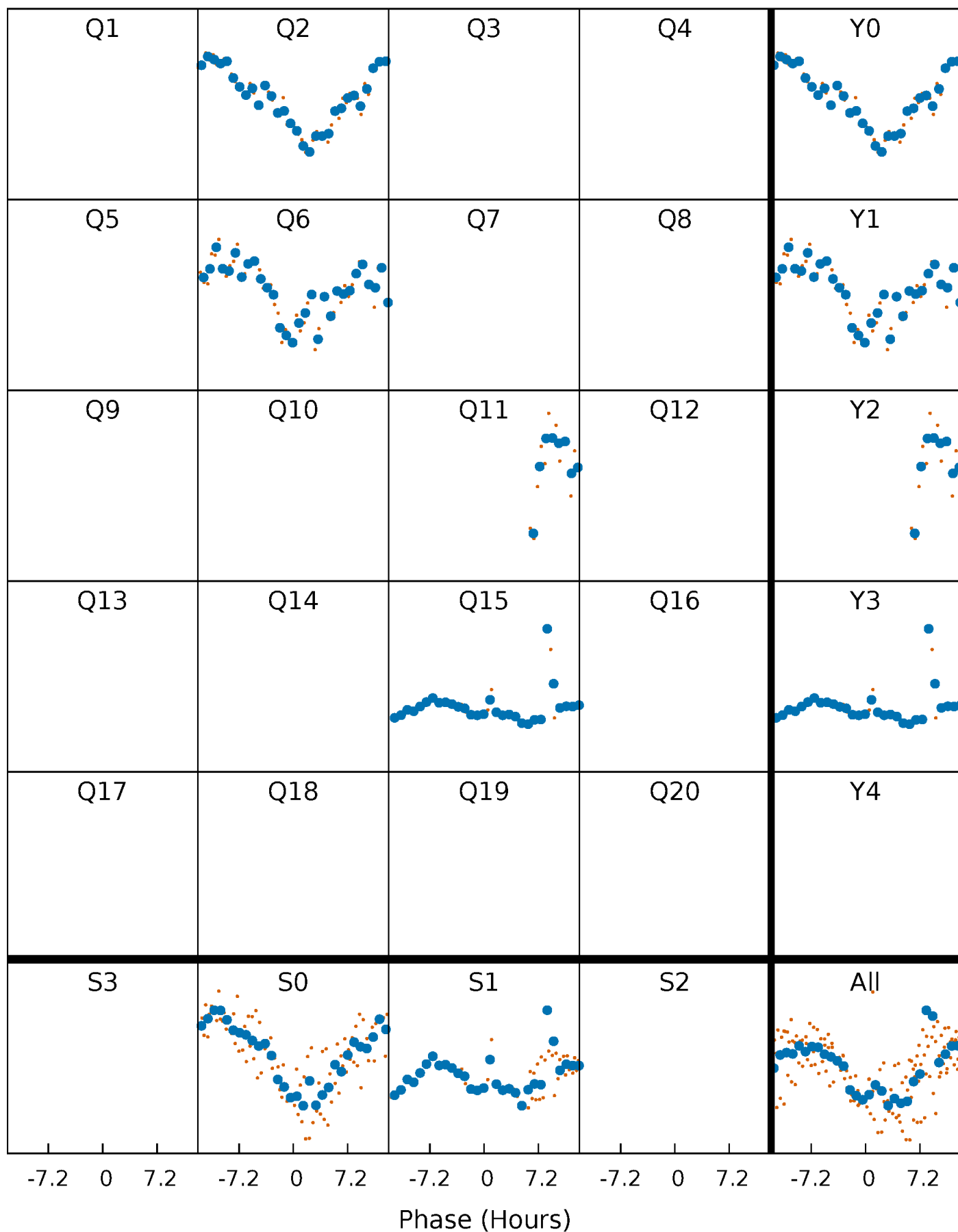


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



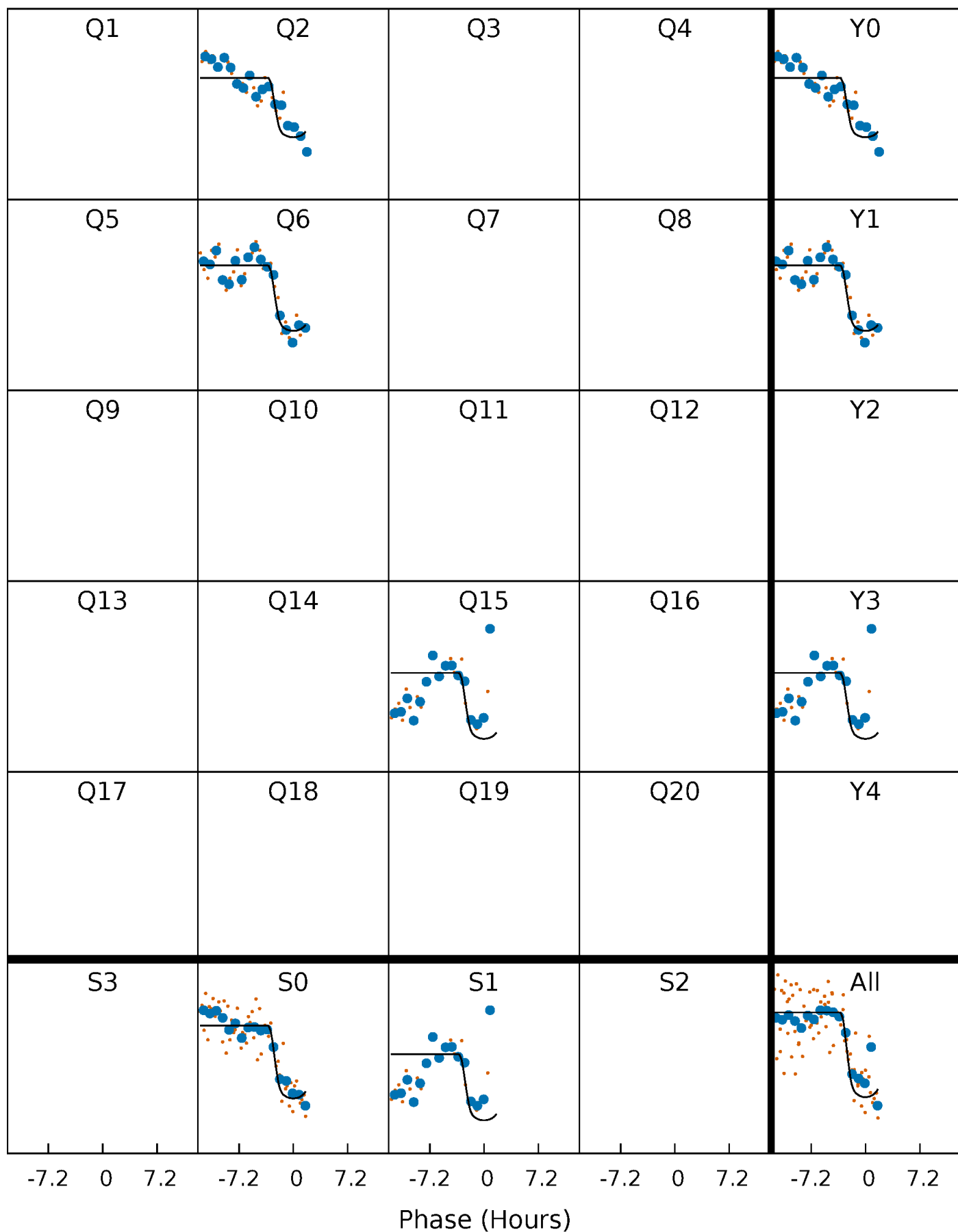
PDC Quarter-Phased Transit Curves

TCE 002984632-02 $P=398.708835$ Days $T_0=203.556849$ (BKJD)



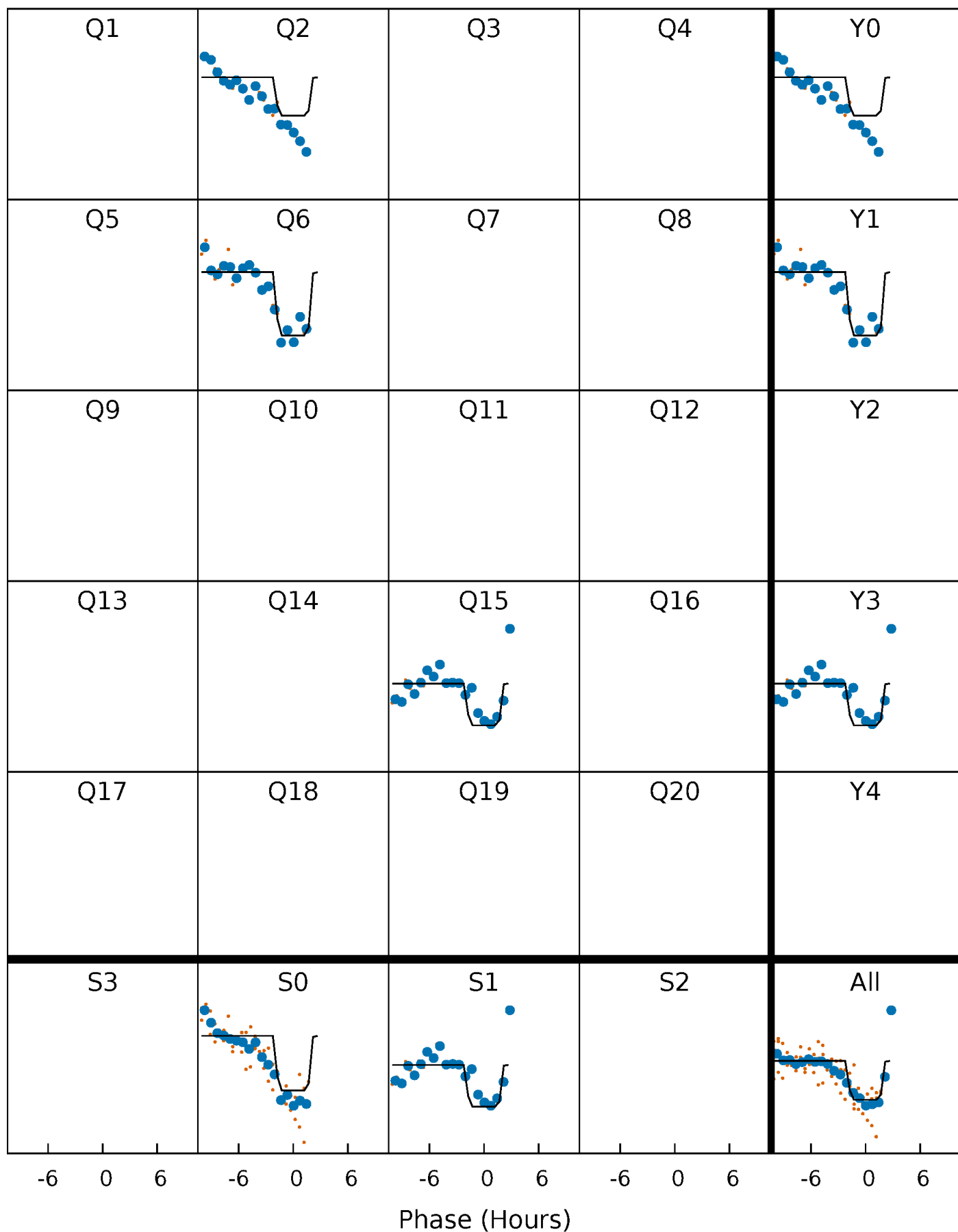
DV Quarter-Phased Transit Curves

TCE 002984632-02 $P=398.708835$ Days $T_0=203.556849$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

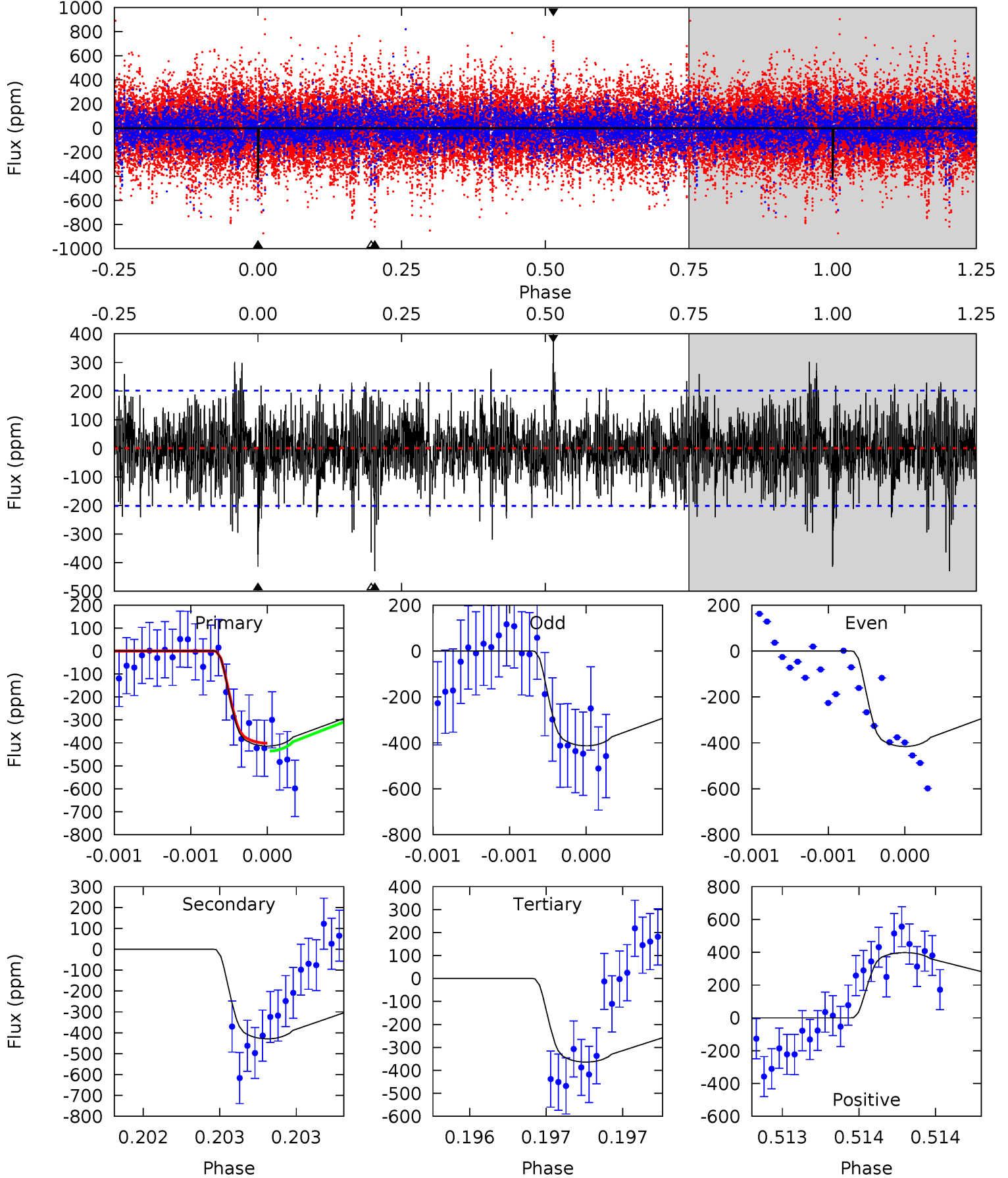
TCE 002984632-02 P=398.679189 Days $T_0=203.575820$ (BKJD)



DV Model-Shift Uniqueness Test

002984632-02, P = 398.708835 Days, E = 203.556849 Days

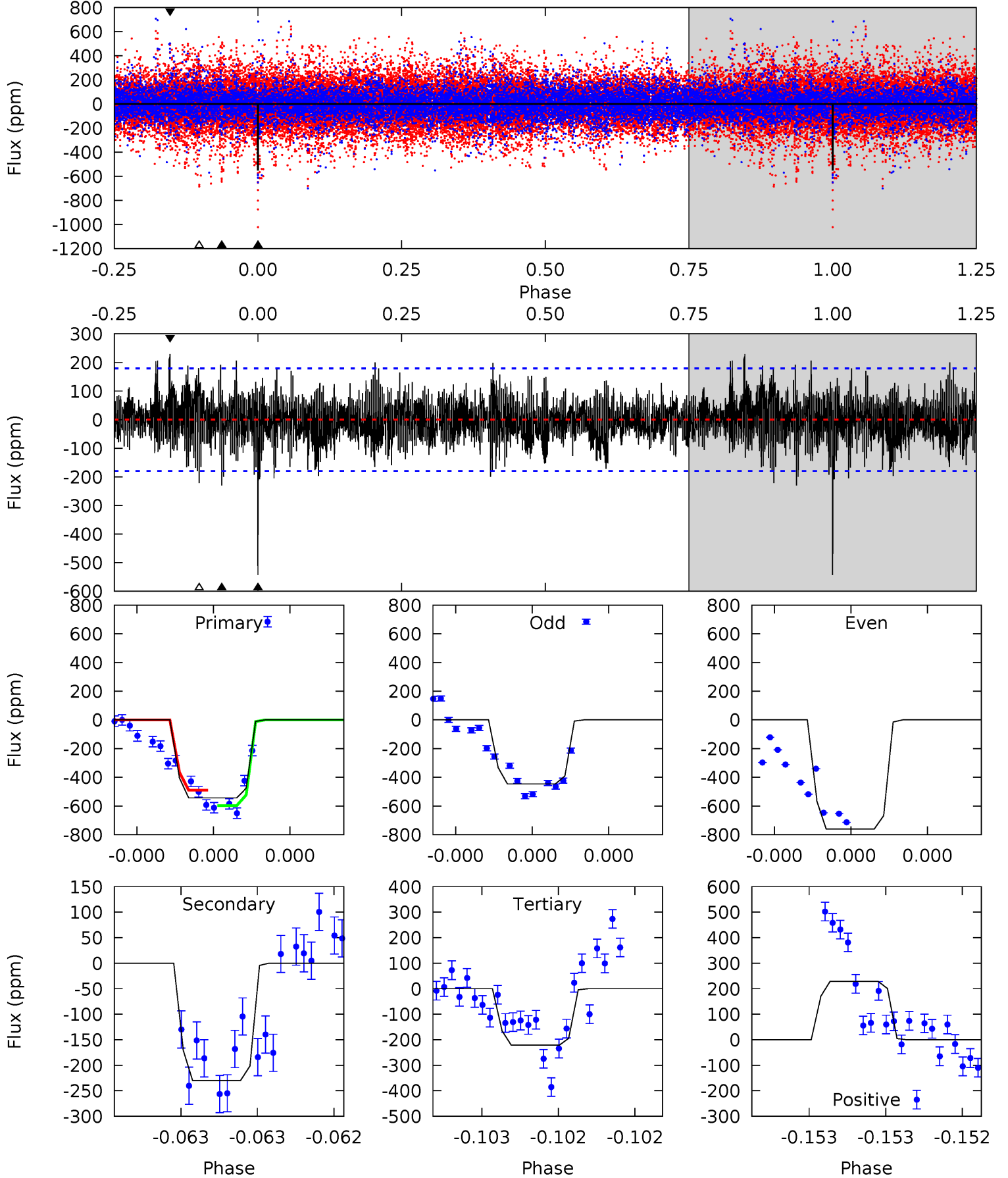
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	11.9	10.1	11.0	5.57	3.47	2.29	1.39	0.45	1.80	0.87	0.04	0.85	0.48	0.42



Alt Model-Shift Uniqueness Test

002984632-02, P = 398.679189 Days, E = 203.575820 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.0	7.18	6.93	7.16	5.61	3.53	1.77	10.1	9.84	0.25	0.03	4.31	1.08	0.30	1.68



Stellar Parameters For KIC 002984632

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6564^{+177}_{-196}	$3.675^{+0.304}_{-0.076}$	$-0.040^{+0.300}_{-0.250}$	$3.073^{+0.477}_{-1.112}$	$1.629^{+0.216}_{-0.298}$	$0.079^{+0.166}_{-0.021}$
	+3%/-3%	+8%/-2%	+750%/-625%	+16%/-36%	+13%/-18%	+209%/-26%
Source	PHO1	FLK73	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 002984632-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-429 ± 36	$7.93^{+1.40}_{-1.69}$	622^{+35}_{-58}	5944^{+467}_{-324}	5883^{+3305}_{-1658}
Alt.	-230 ± 32	$7.26^{+1.33}_{-1.48}$	622^{+34}_{-55}	5367^{+391}_{-330}	3768^{+1869}_{-1144}

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

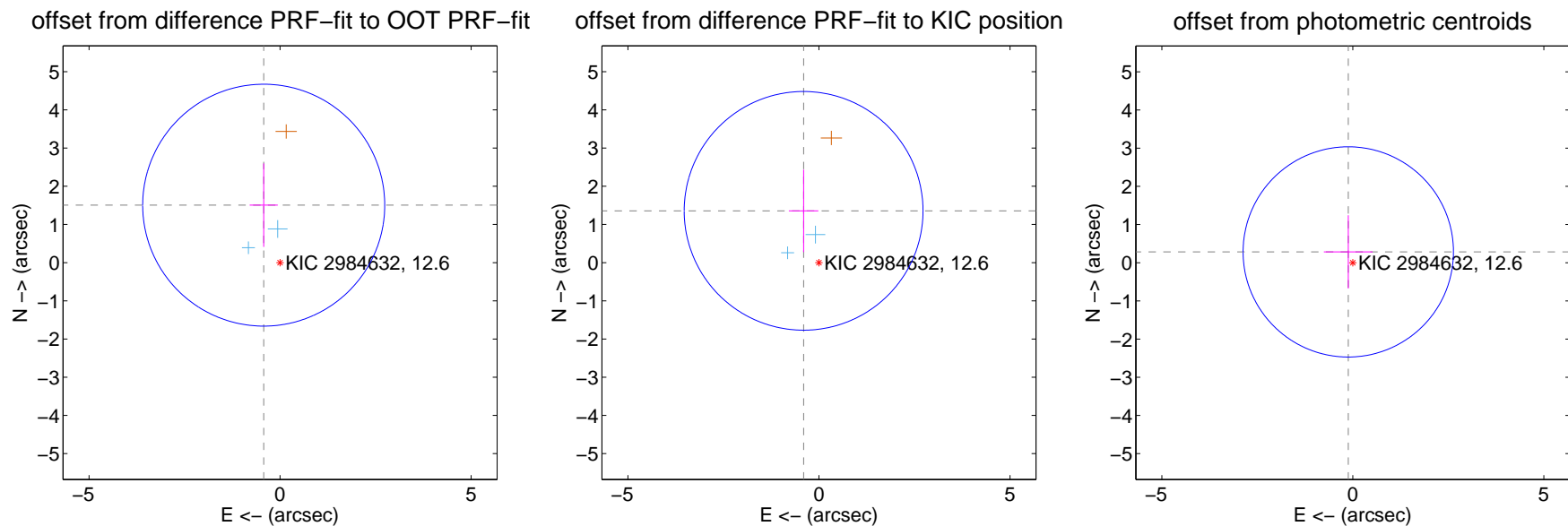
DV Centroid Data

Supplemental centroid analysis for 002984632-02. Kepler magnitude: 12.60. Transit SNR 8.18

There are 2 quarters with good PRF difference image offsets

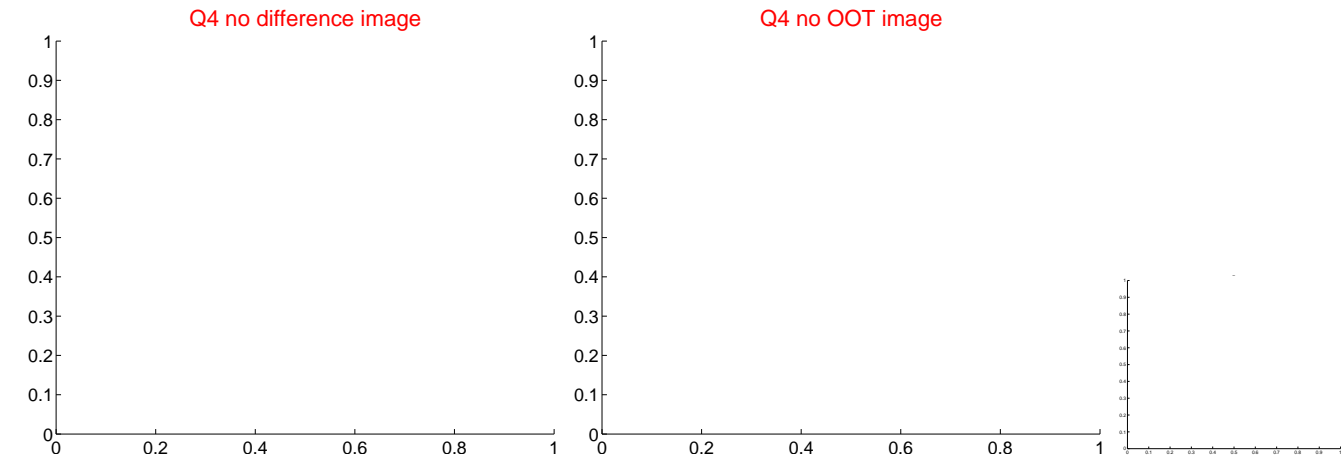
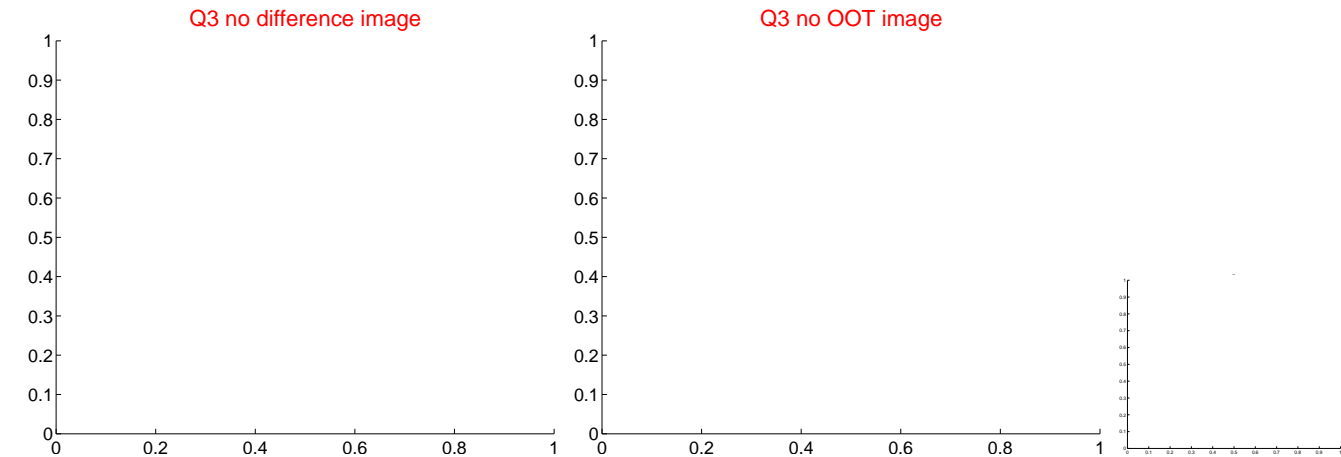
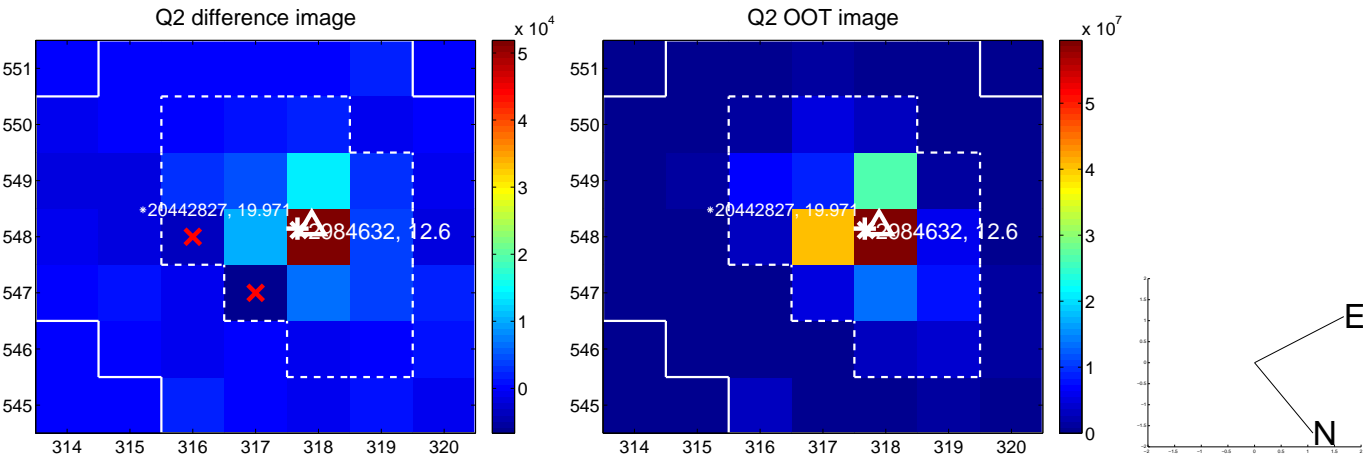
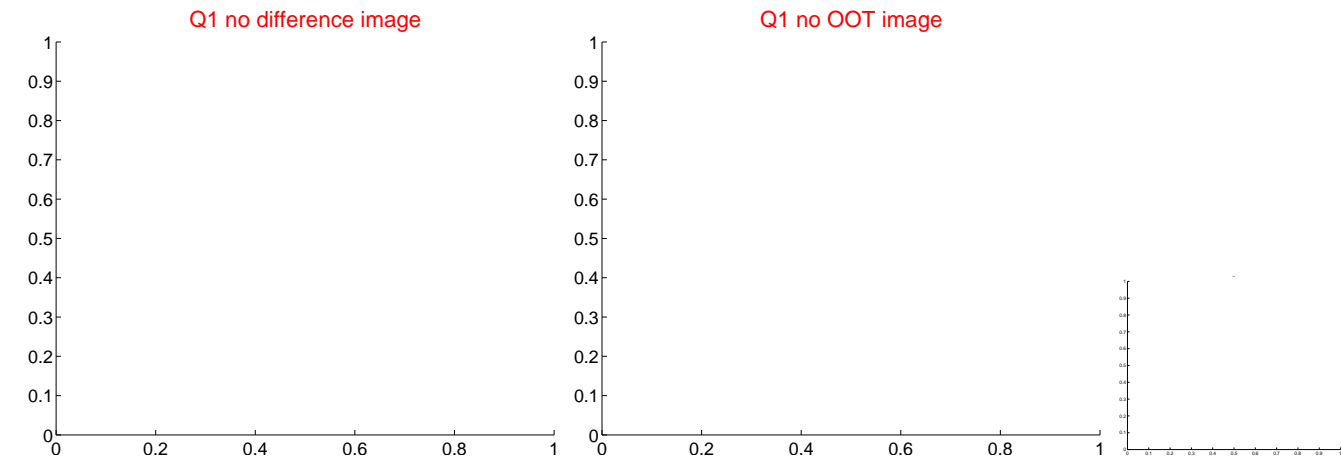
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.565 ± 1.056	1.48	0.429 ± 0.368	1.505 ± 1.093
PRF-fit source offset from KIC position	1.415 ± 1.041	1.36	0.403 ± 0.385	1.356 ± 1.080
photometric centroid source offset	0.31 ± 0.92	0.33	0.12 ± 0.64	0.28 ± 0.96

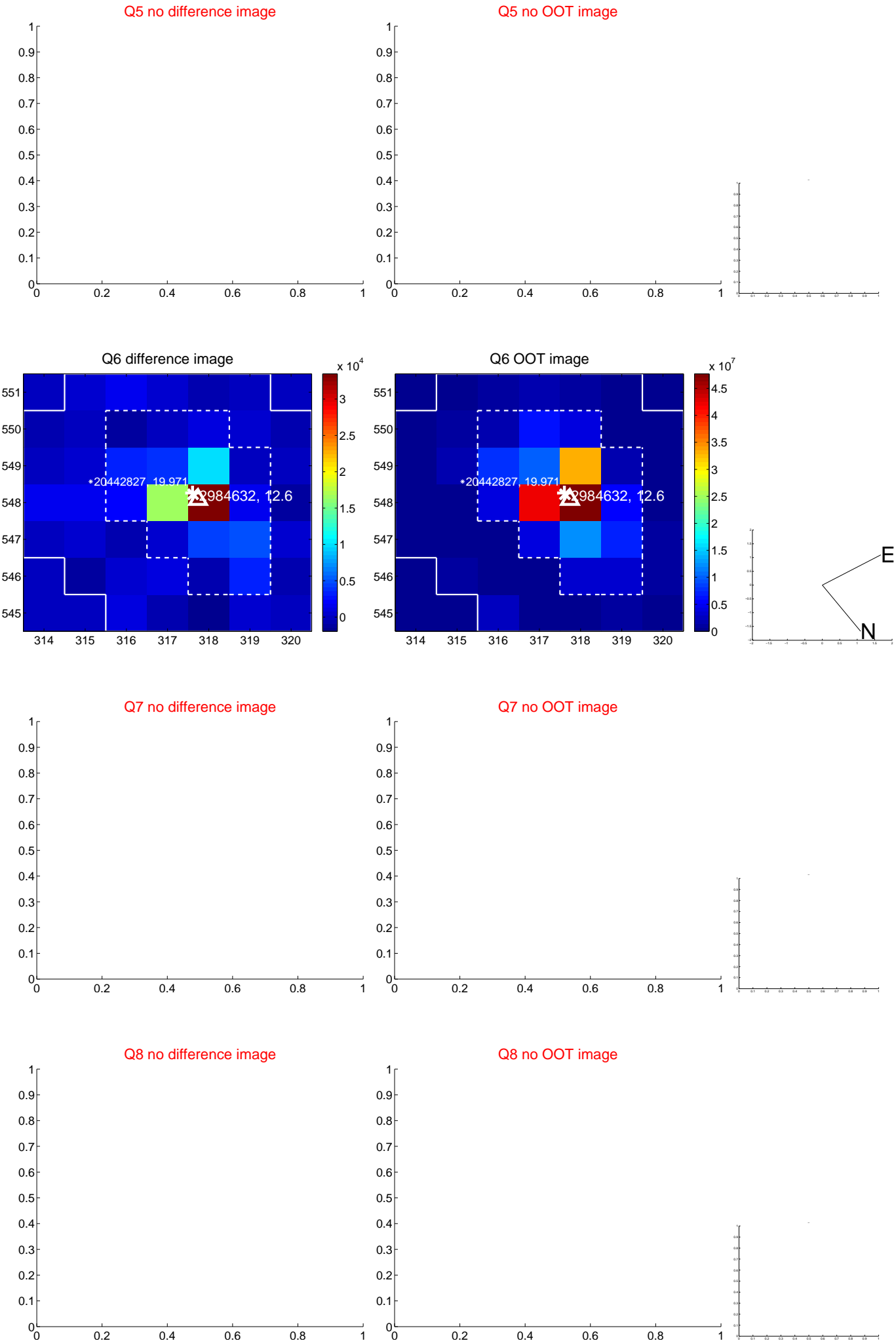


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



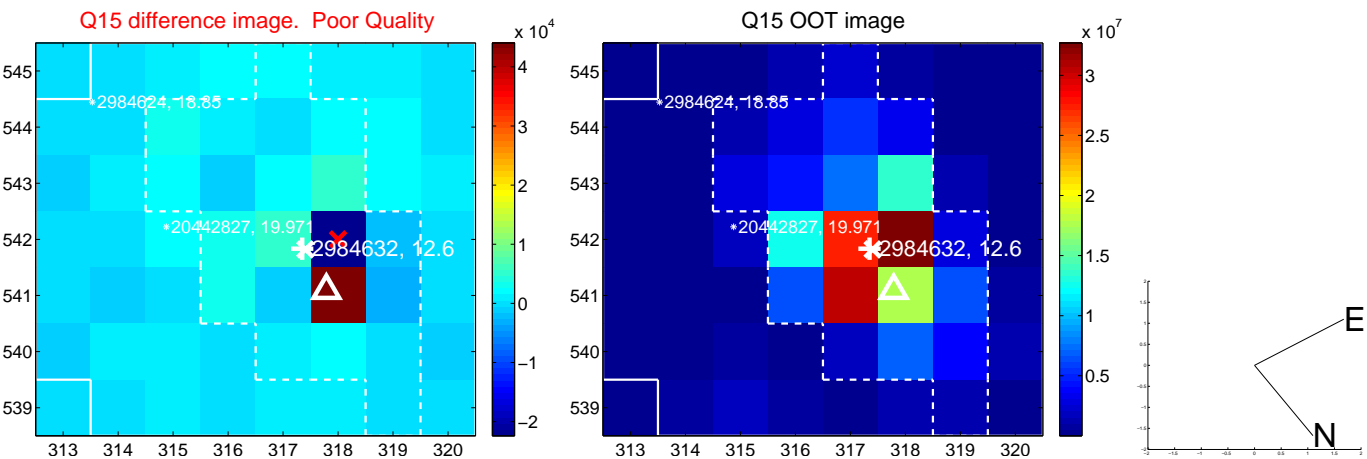
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



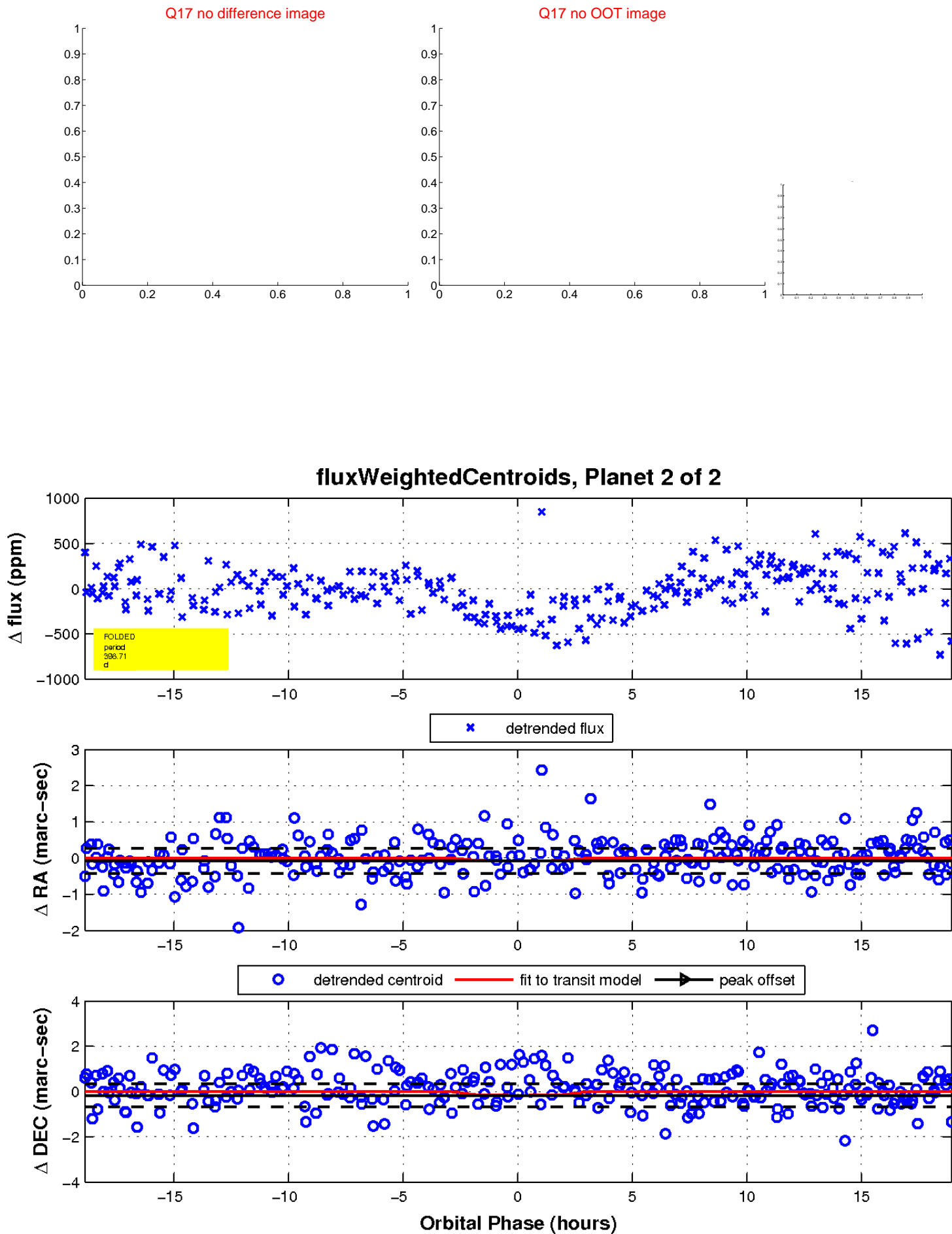
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

