

KIC 005033823

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})
005033823-01	OBS	4546.01	0.741771	131.576619	365.9	1.500	9.2	-1.0	3.15	5897	6.00	30926.00
005033823-02	OBS	No	307.298051	299.218824	175.3	21.276	11.8	7.6	3.15	5897	4.56	10.01

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005033823-01	OBS	PC	1.00	0	0	0	0	CENT_NOFITS
005033823-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—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 005033823-01

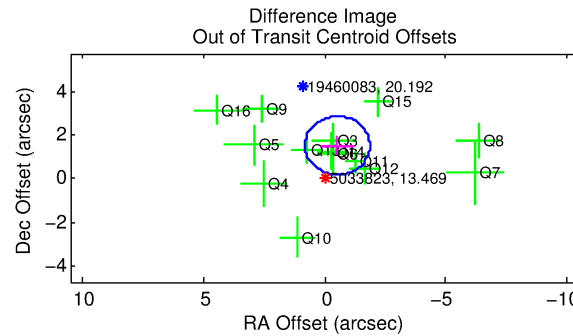
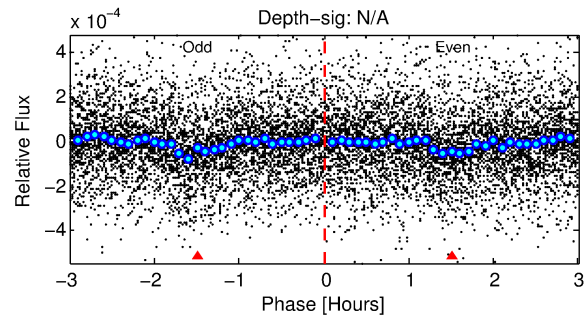
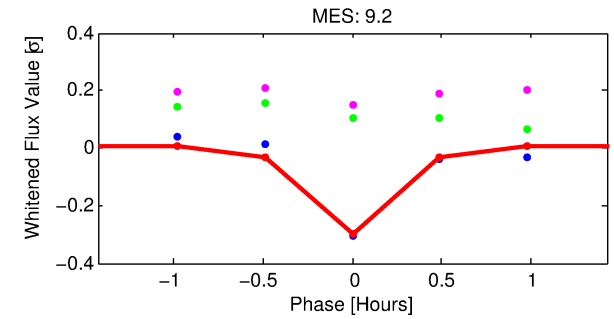
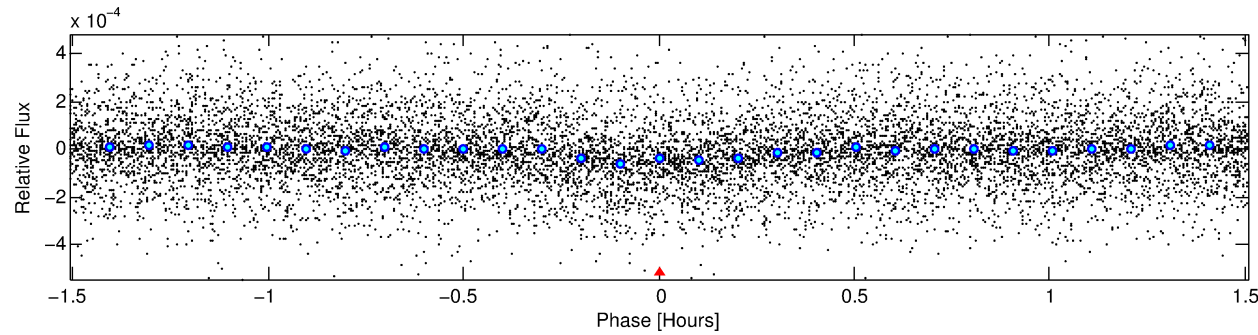
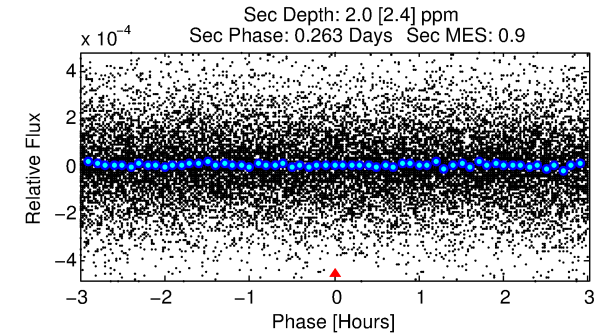
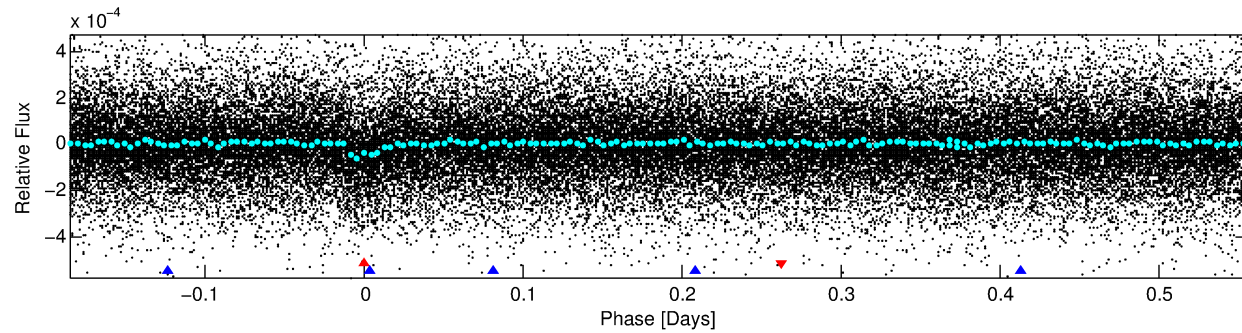
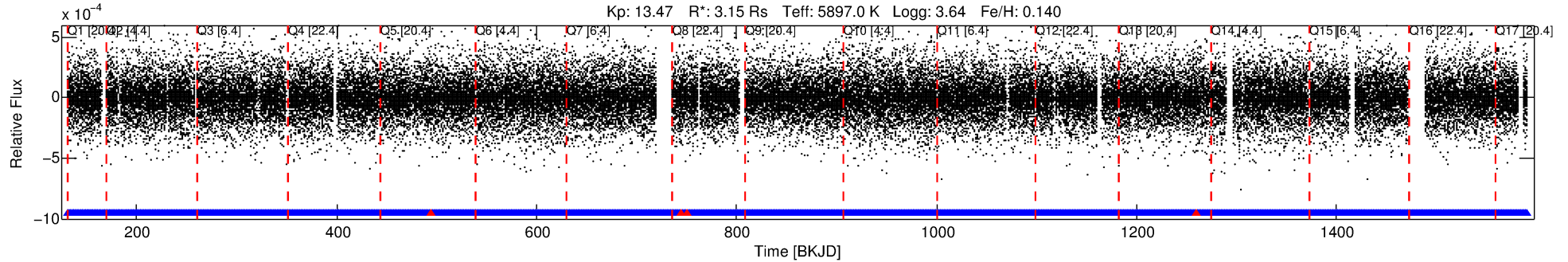
No Significant Match Found

DV One-Page Summary

KIC: 5033823 Candidate: 1 of 2 Period: 0.742 d

KOI: K04546 Corr: No Ephemeris Match

Kp: 13.47 R*: 3.15 Rs Teff: 5897.0 K Logg: 3.64 Fe/H: 0.140



TPS TCE Results:

Period = 0.74177 d
Epoch = 131.5766 BKJD

DV fit results are unavailable

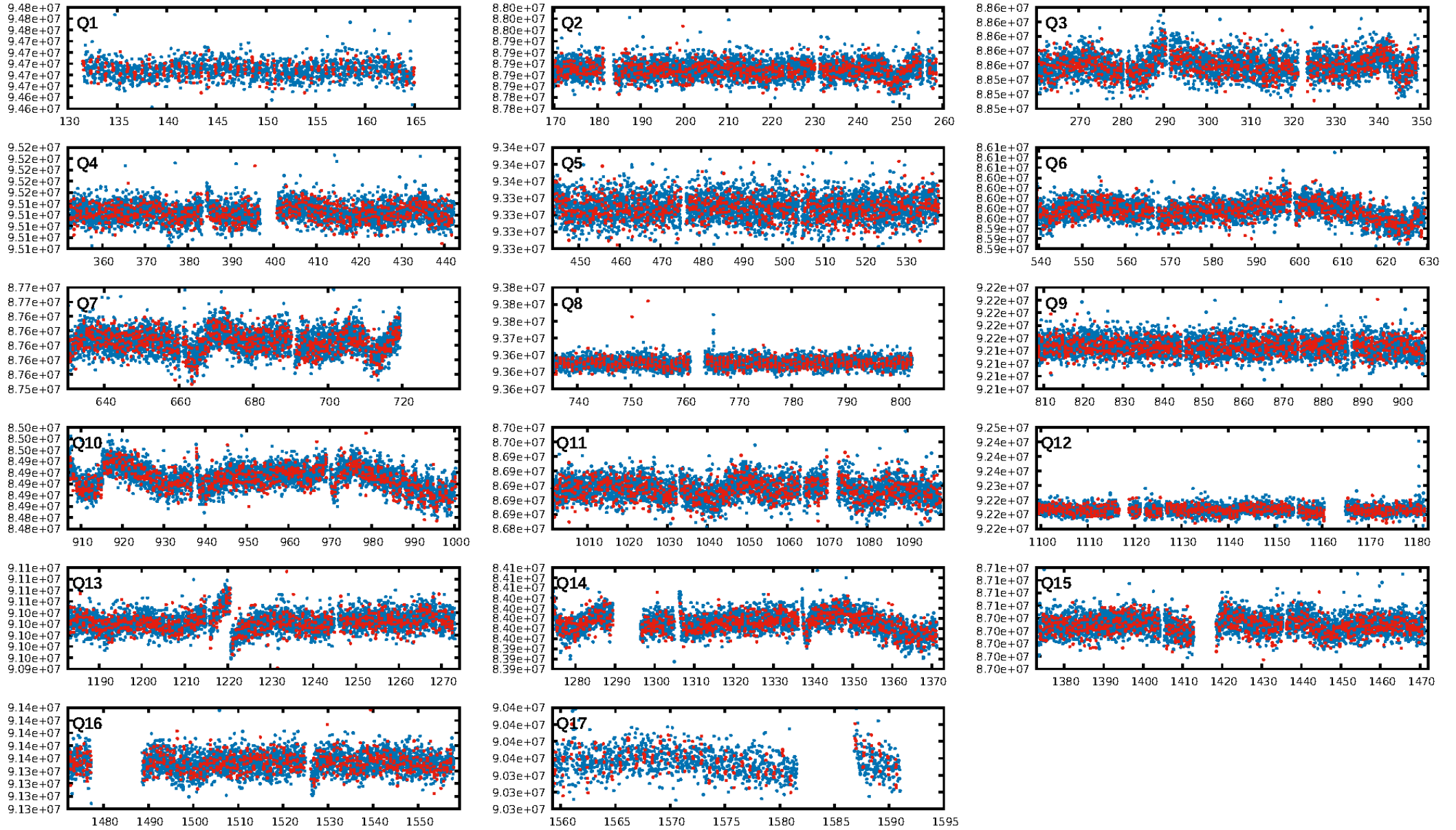
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [344.96σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.26e-20
RollingBand-fgt: 1.00 [1717/1721]
GhostDiagnostic-chr: 2.546
Centroid-sig: 4.1%
Centroid-so: 1.590 arcsec [1.50σ]
OotOffset-rm: 1.611 arcsec [3.61σ]
KicOffset-rm: 1.545 arcsec [3.39σ]
OotOffset-st: 3/4/4/3 [14]
KicOffset-st: 3/4/4/3 [14]
DiffImageQuality-fgm: 0.50 [7/14]
DiffImageOverlap-fno: 1.00 [17/17]

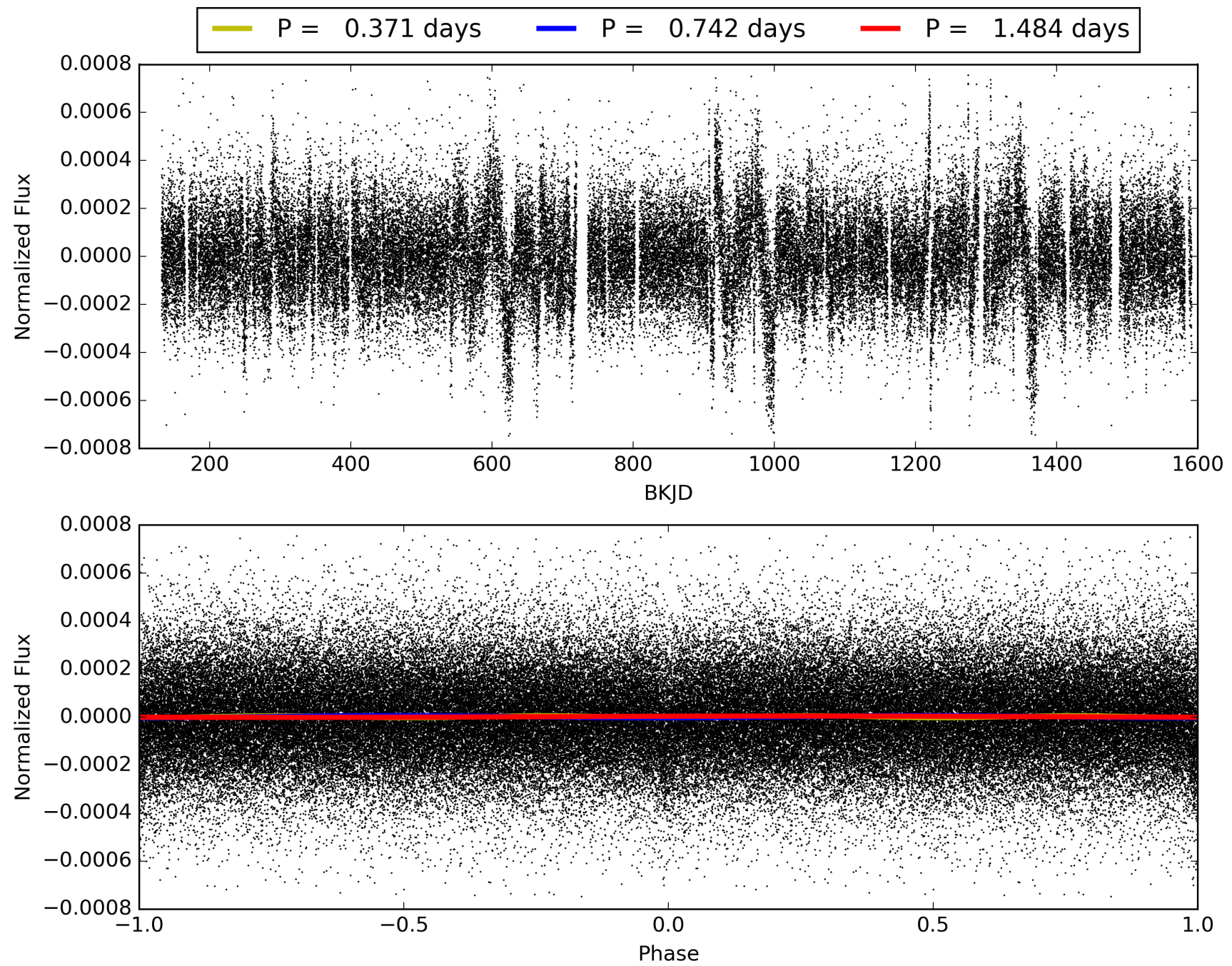
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:58:13 Z

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

TCE 005033823-01, PDC Light Curves

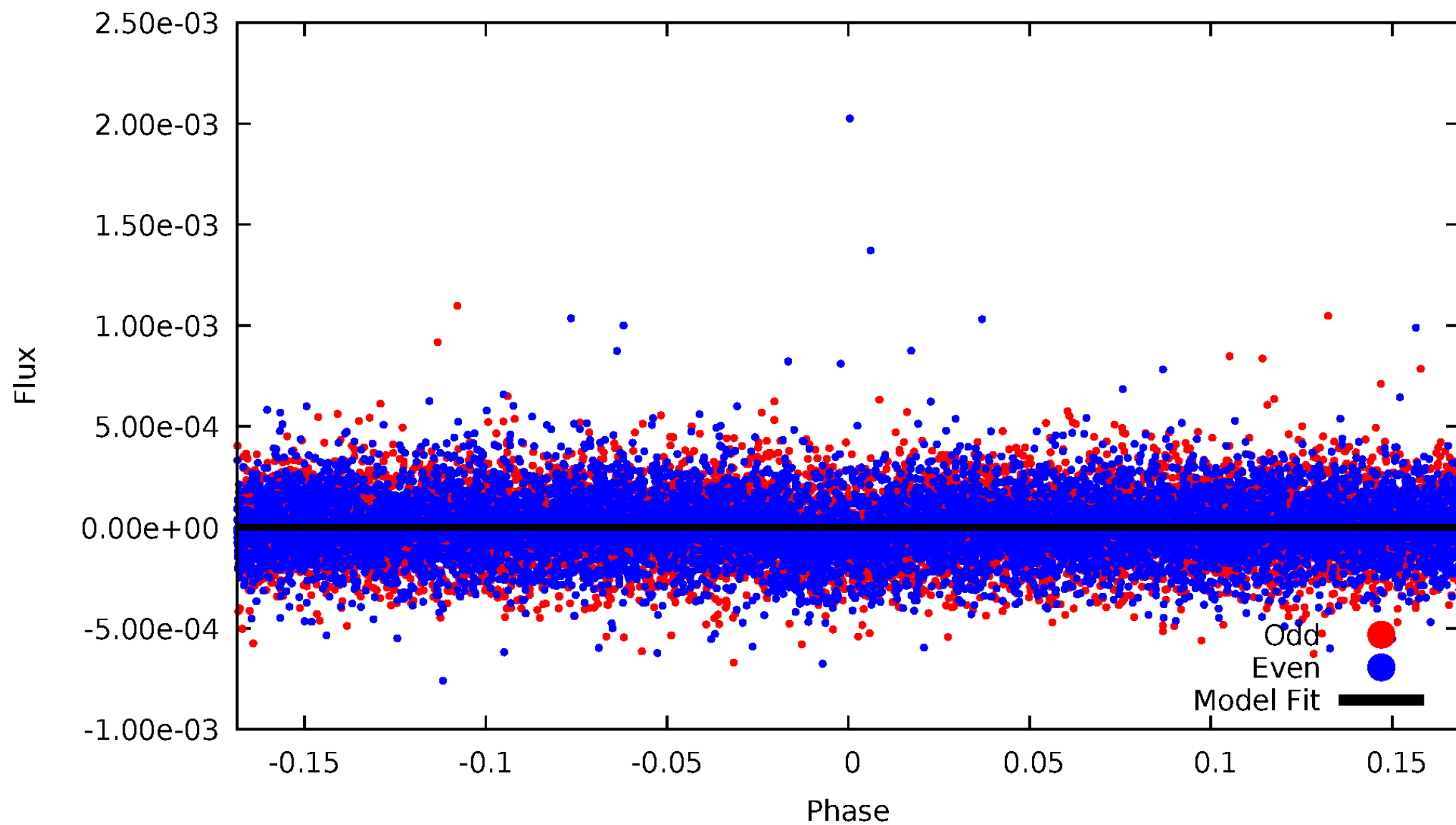


TCE 005033823-01



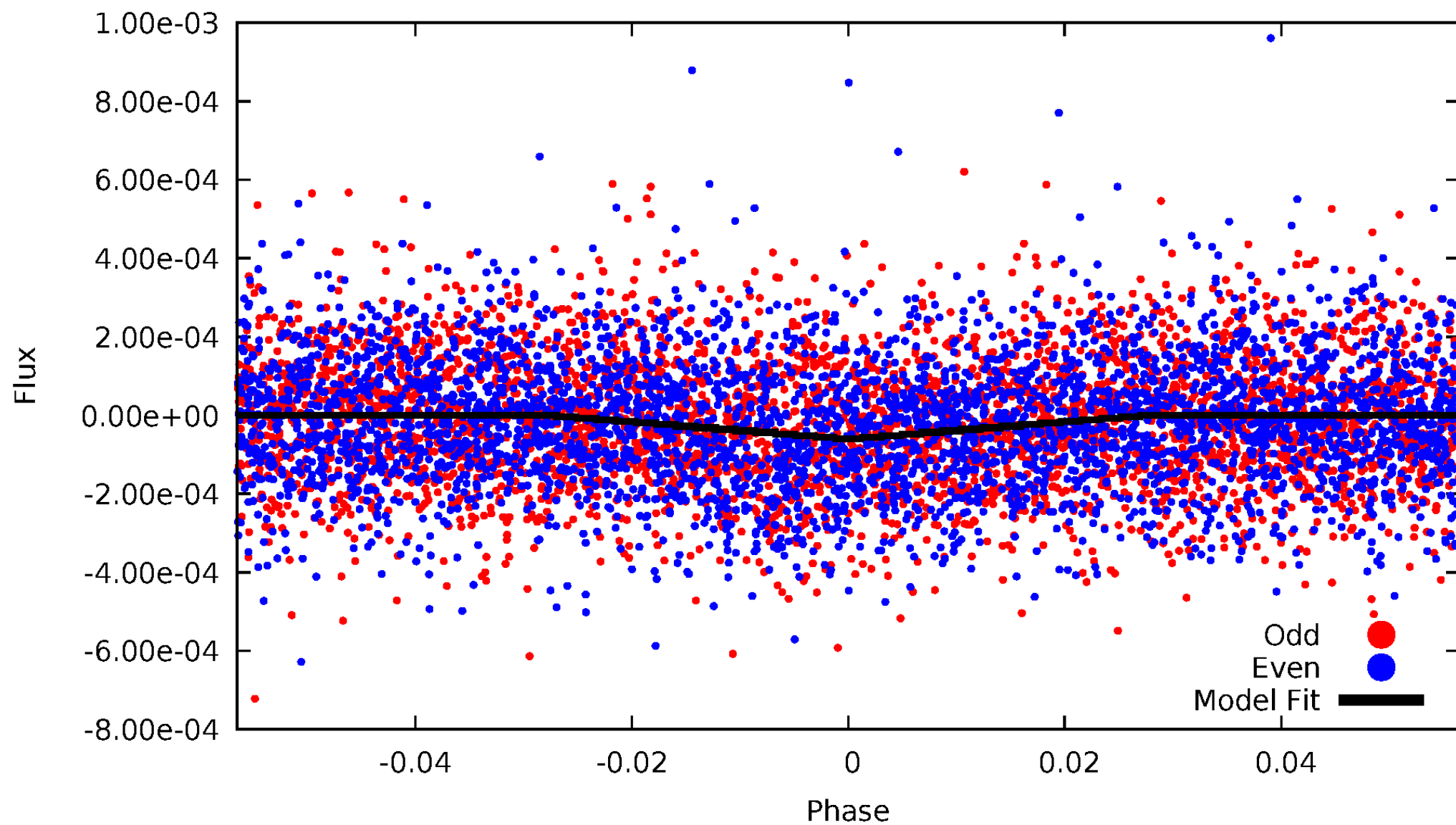
DV Odd/Even

TCE 005033823-01



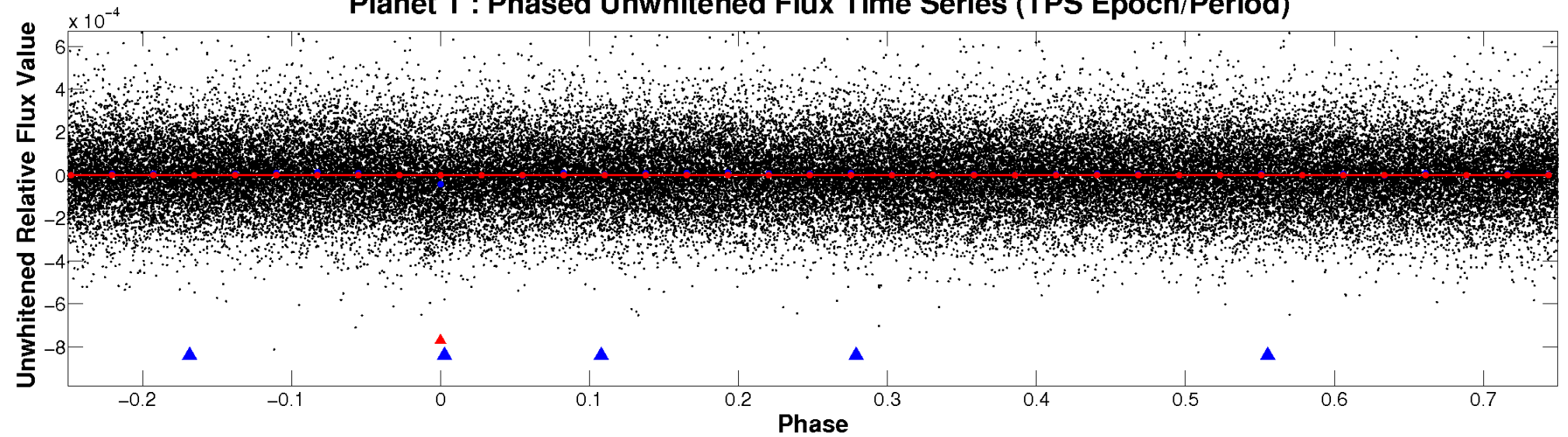
ALT Odd/Even

TCE 005033823-01

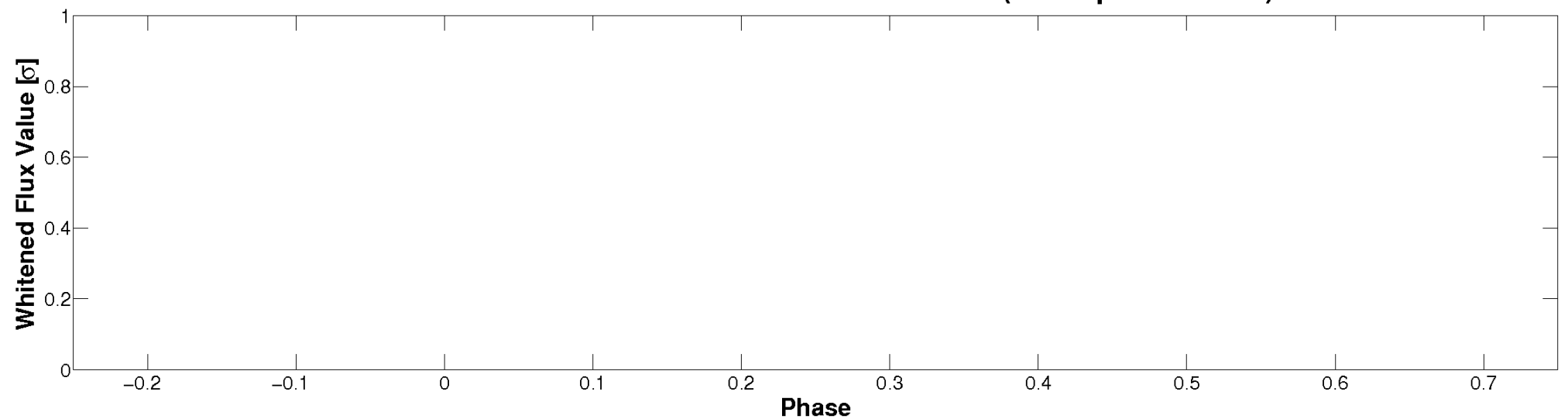


Non-Whitened Vs. Whitened Light Curve

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

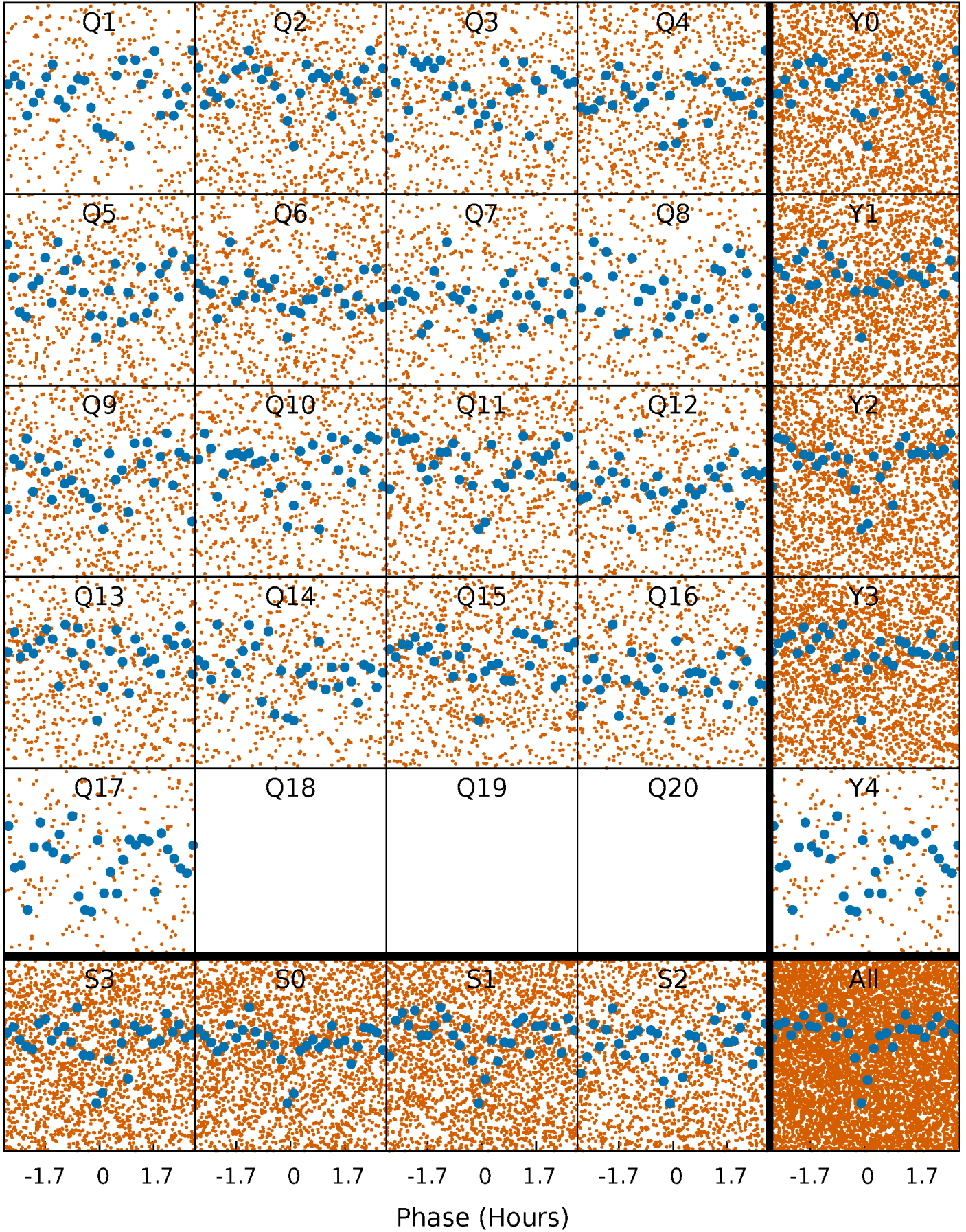


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



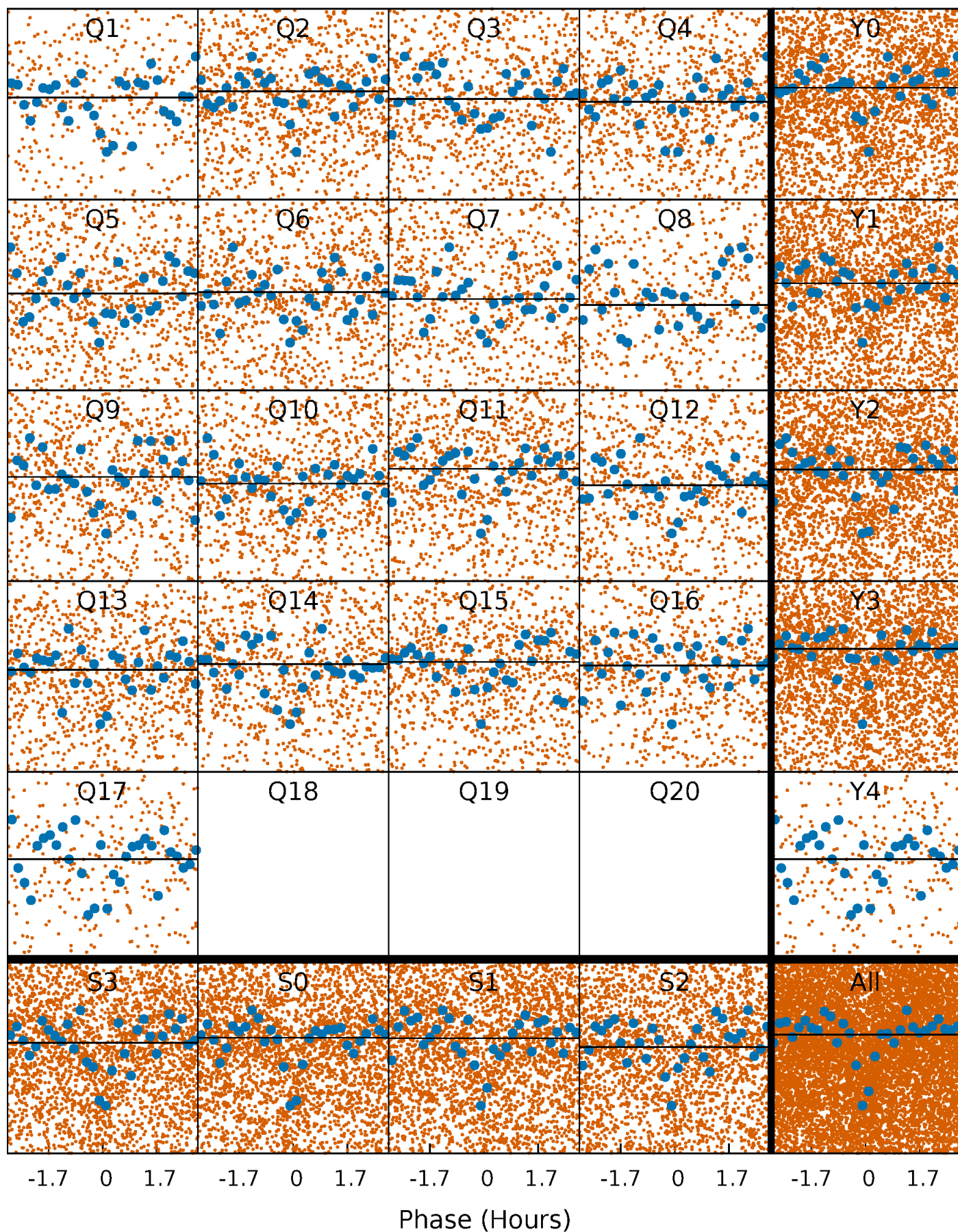
PDC Quarter-Phased Transit Curves

TCE 005033823-01 P= 0.741771 Days $T_0=131.576619$ (BKJD)



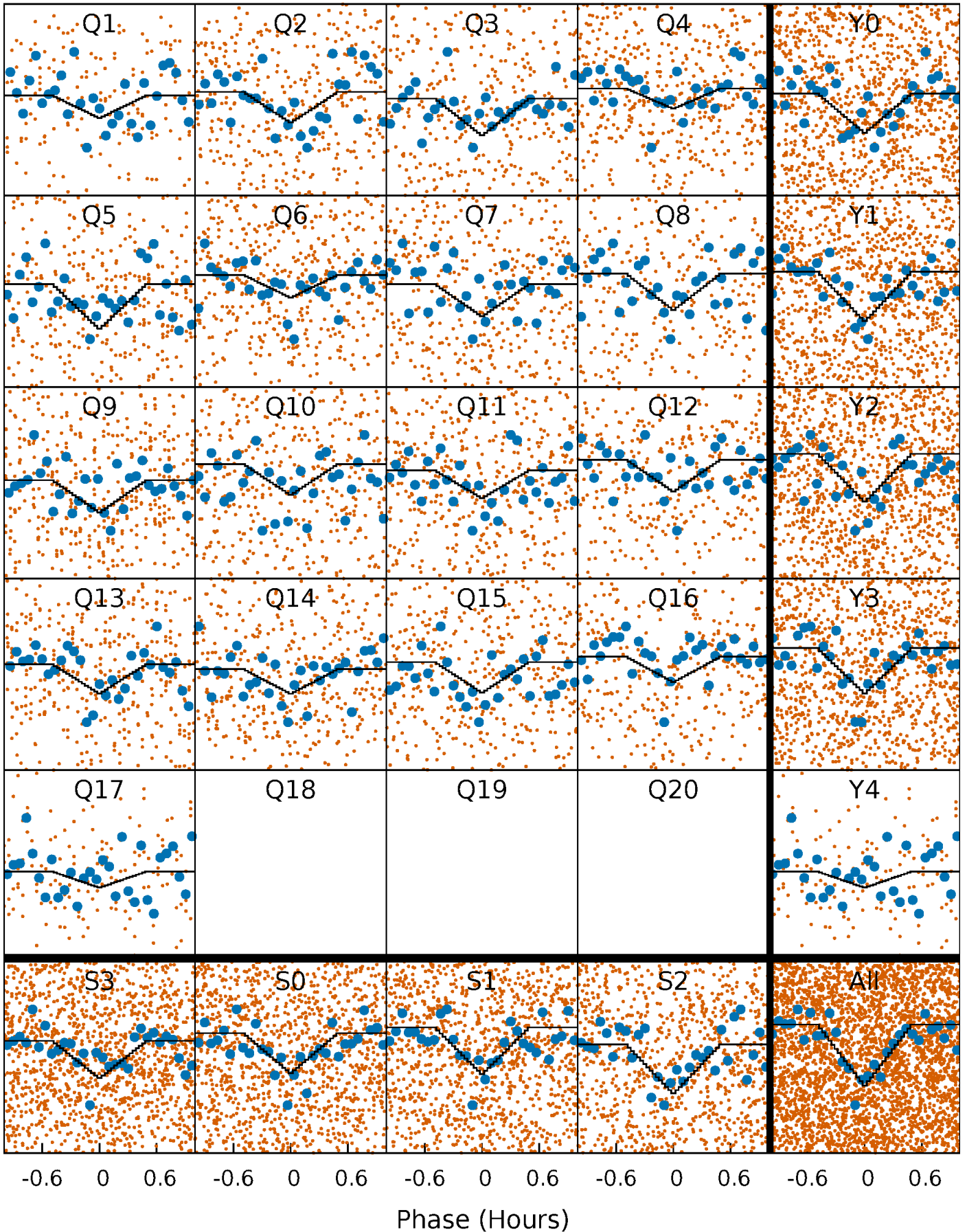
DV Quarter-Phased Transit Curves

TCE 005033823-01 P= 0.741771 Days $T_0=131.576619$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

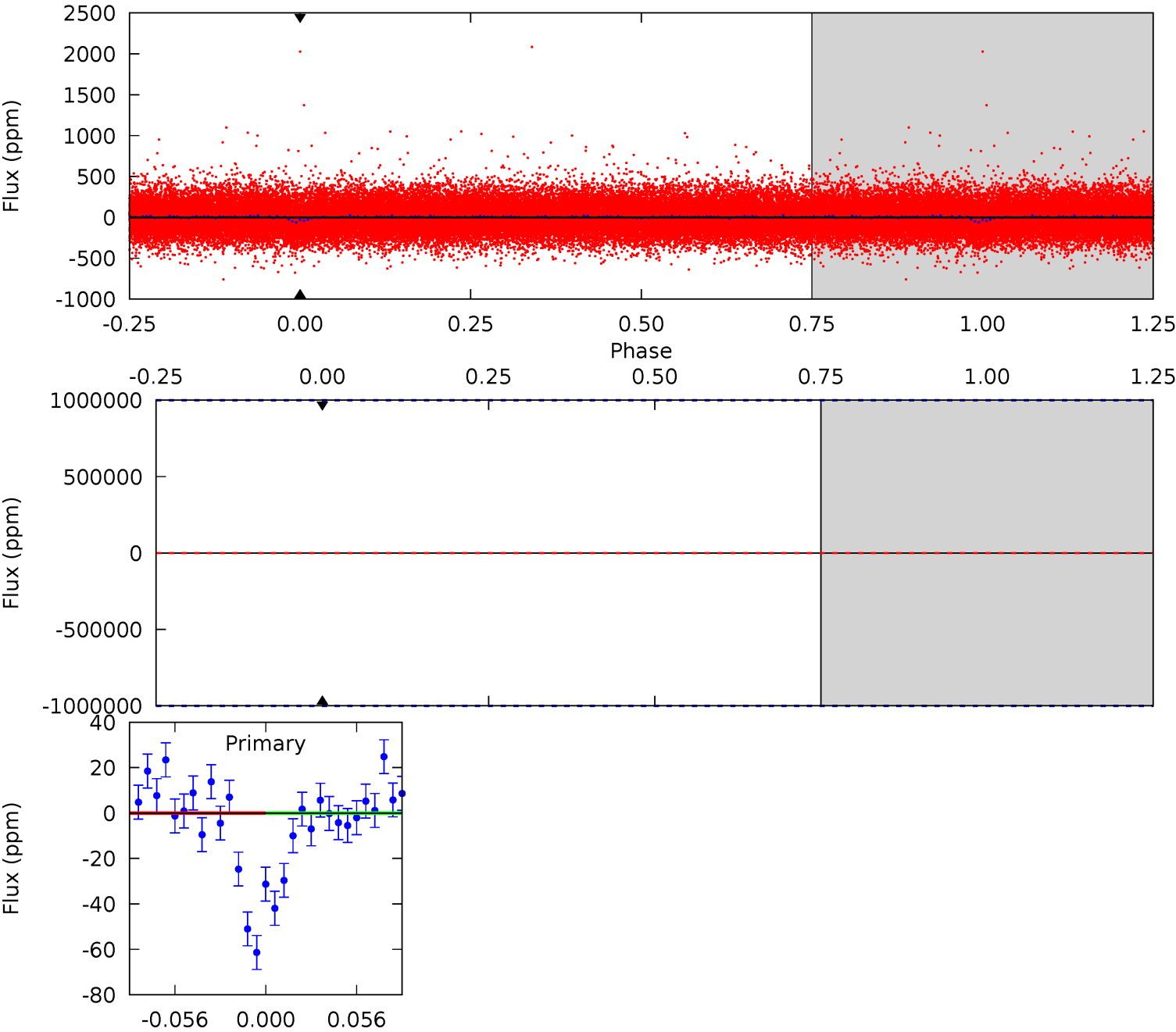
TCE 005033823-01 P= 0.741771 Days $T_0=131.575039$ (BKJD)



DV Model-Shift Uniqueness Test

005033823-01, P = 0.741771 Days, E = 130.834848 Days

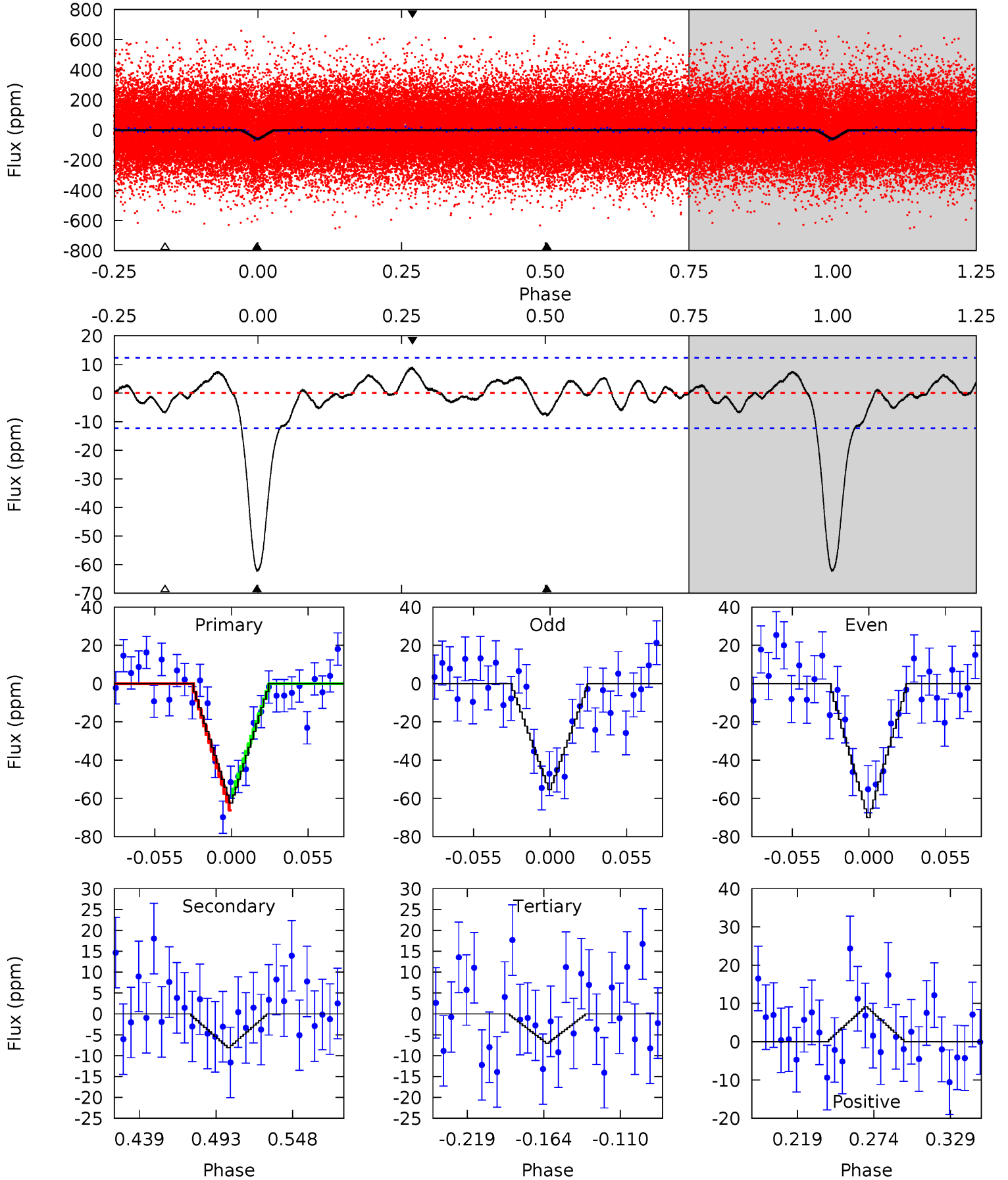
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

005033823-01, P = 0.741771 Days, E = 130.833268 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.7	3.07	2.68	3.47	4.69	1.92	1.28	21.0	20.2	0.39	-0.40	2.78	0.90	0.13	1.38



Stellar Parameters For KIC 005033823

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5897^{+88}_{-79}	$3.637^{+0.382}_{-0.127}$	$0.140^{+0.150}_{-0.150}$	$3.147^{+0.722}_{-1.341}$	$1.566^{+0.132}_{-0.395}$	$0.071^{+0.233}_{-0.027}$
	+1%/-1%	+11%/-3%	+107%/-107%	+23%/-43%	+8%/-25%	+329%/-38%
Source	SPE90	FLK73	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 005033823-01 / KOI 4546.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$24.01^{+27.54}_{-16.36}$	4656^{+294}_{-507}	4019^{+17977}_{-24025}	$0.482^{+71.401}_{-53.134}$
Alt.	-8 ± 3	$21.70^{+25.98}_{-16.06}$	4635^{+314}_{-444}	-4024^{+395}_{-231}	$0.003^{+0.045}_{-0.002}$

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

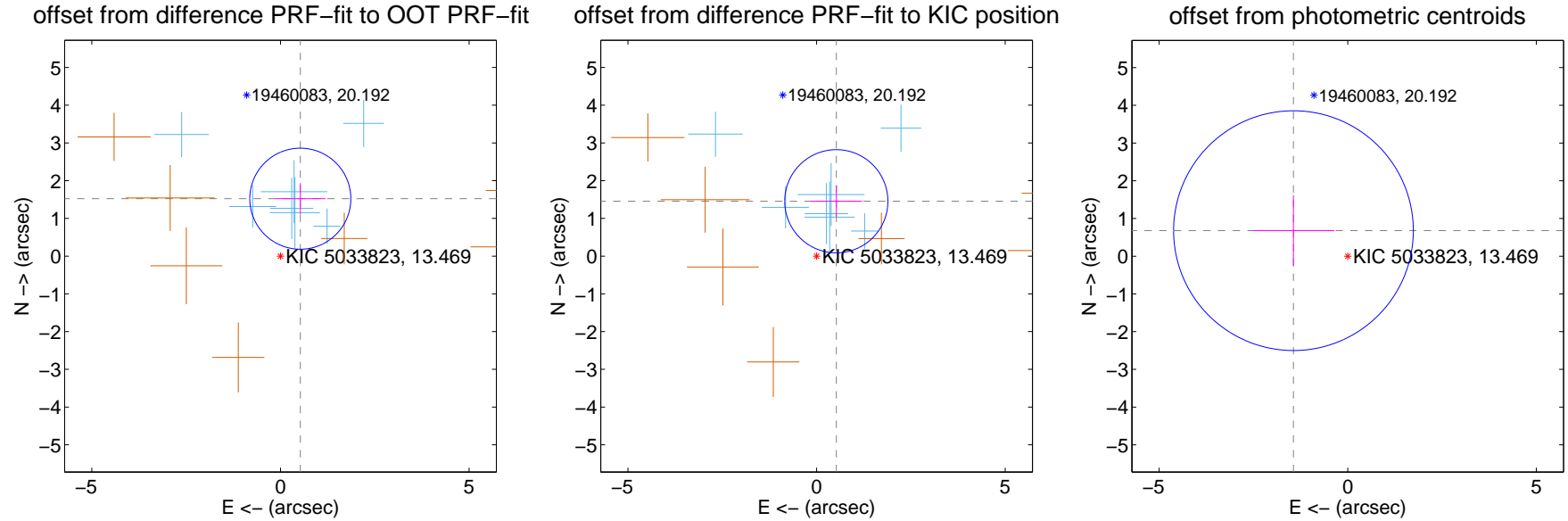
DV Centroid Data

Supplemental centroid analysis for 005033823-01. Kepler magnitude: 13.47. Transit SNR -1.00

There are 7 quarters with good PRF difference image offsets

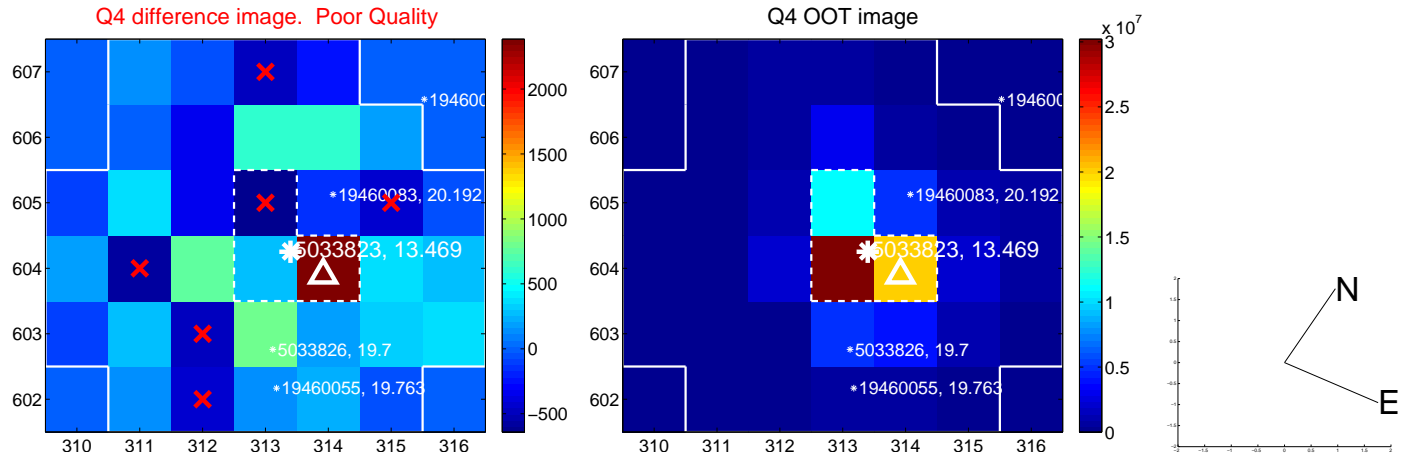
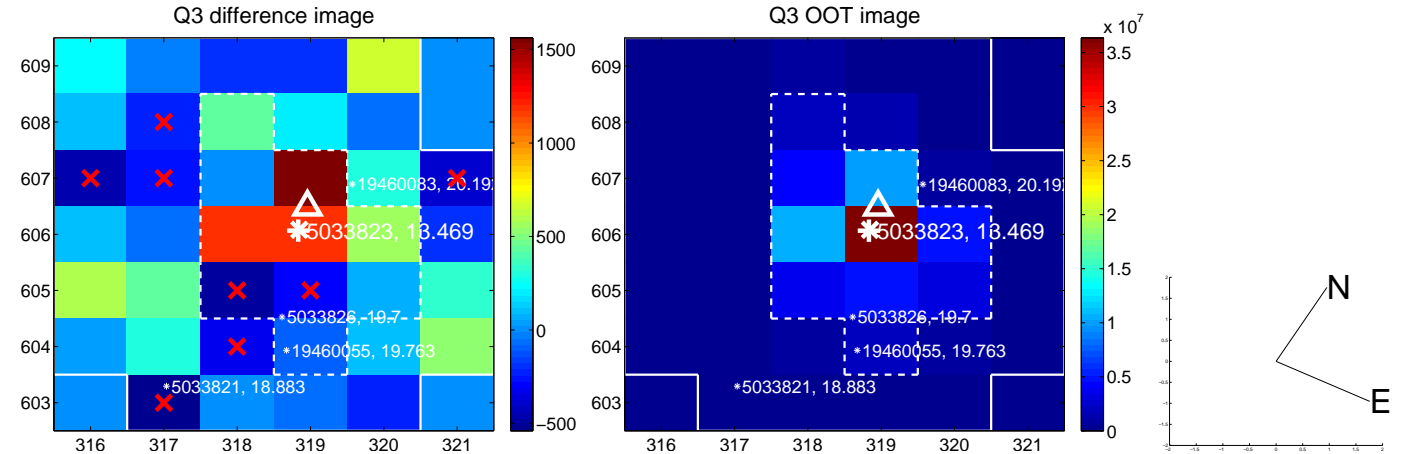
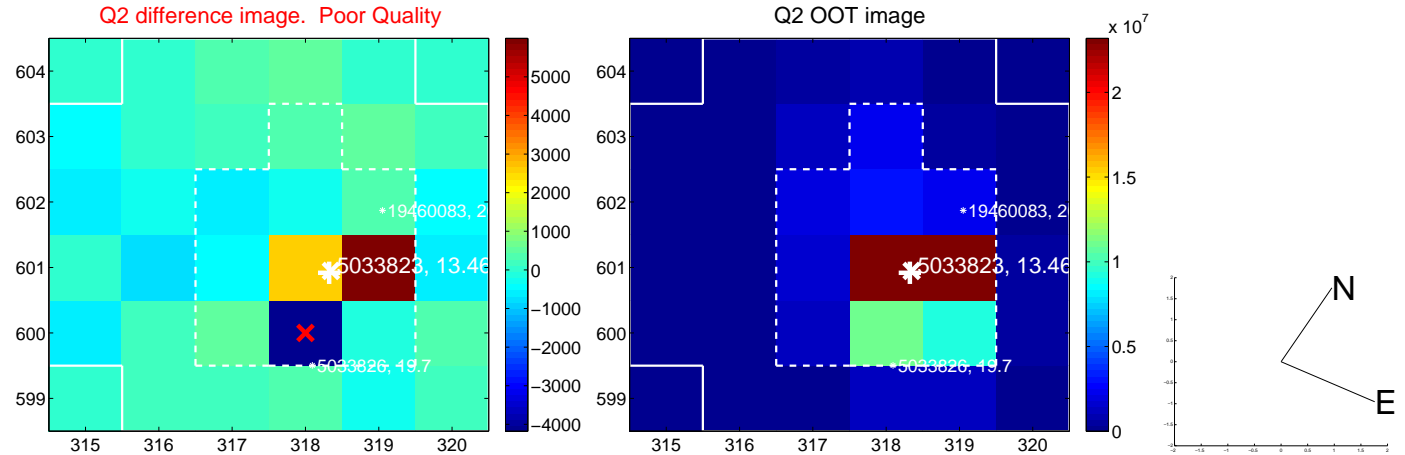
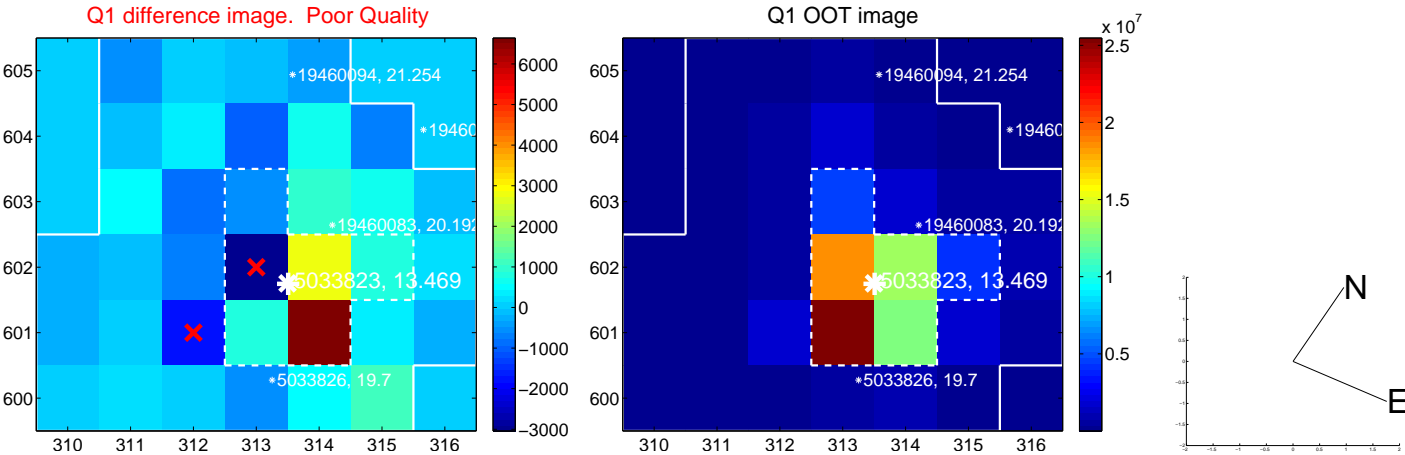
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.611 ± 0.446	3.61	-0.526 ± 0.671	1.522 ± 0.412
PRF-fit source offset from KIC position	1.545 ± 0.456	3.39	-0.523 ± 0.680	1.454 ± 0.418
photometric centroid source offset	1.59 ± 1.06	1.50	1.44 ± 1.08	0.68 ± 0.94

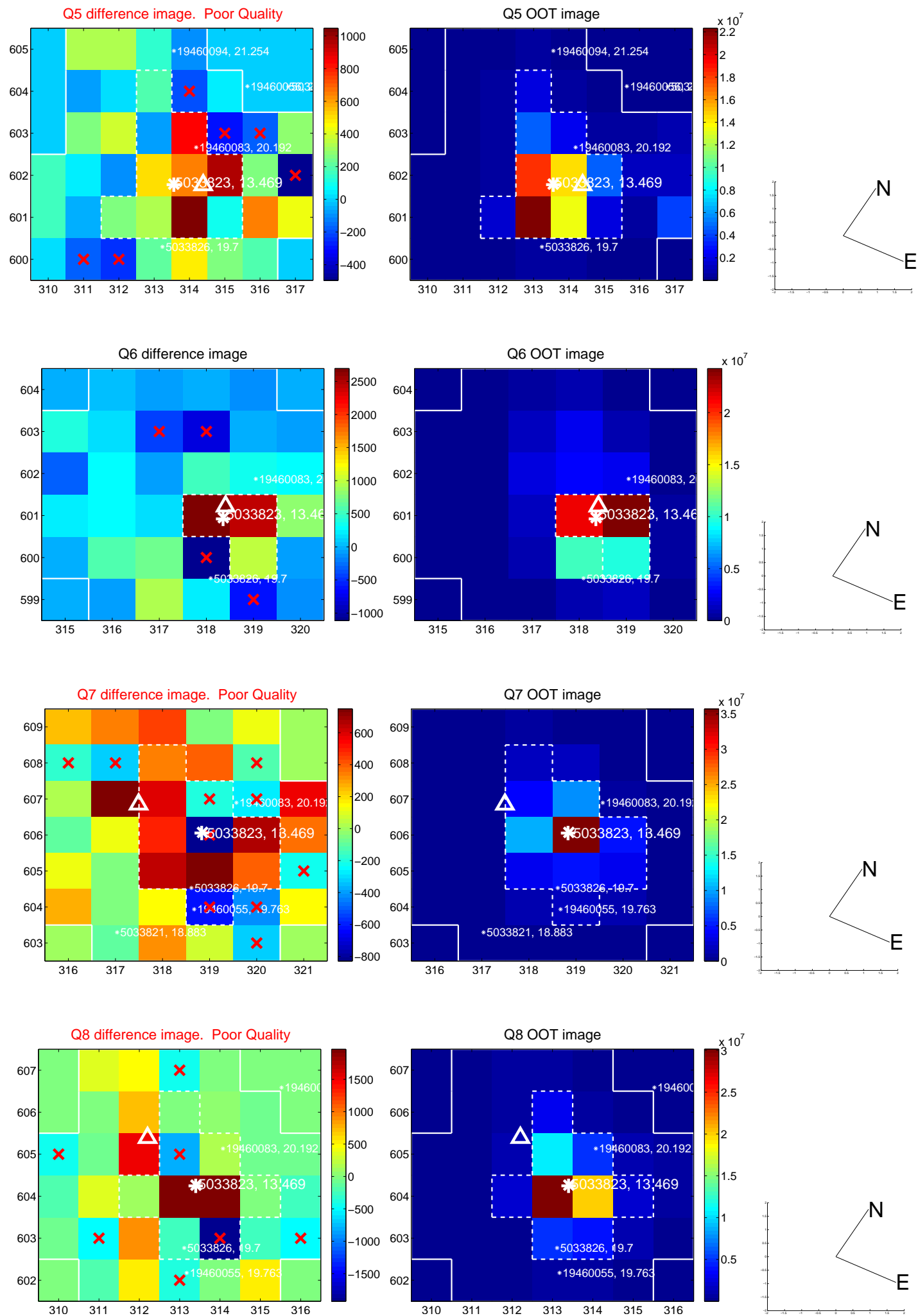


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

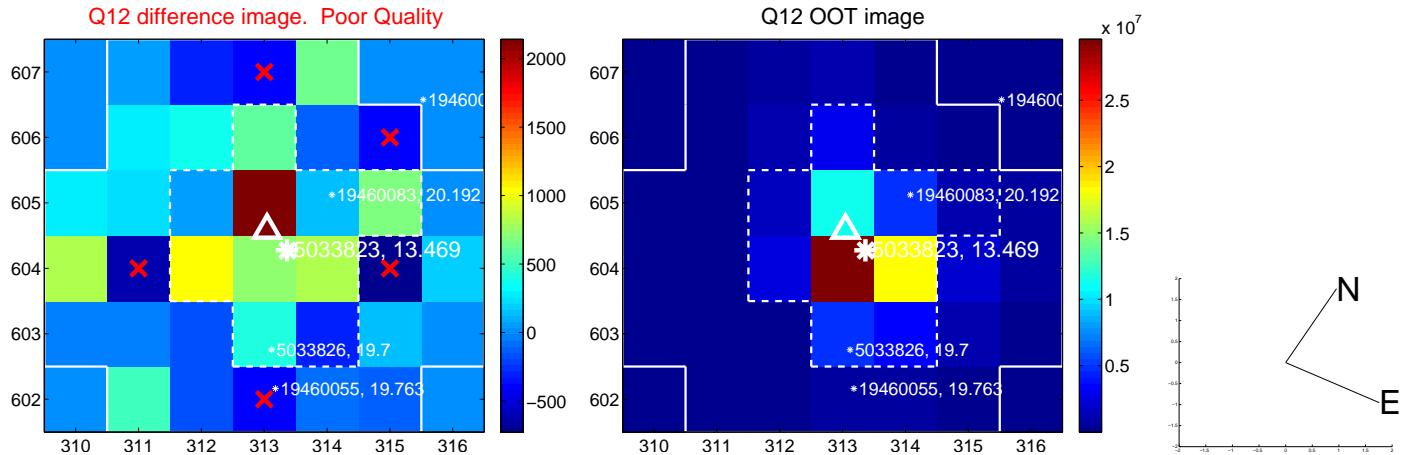
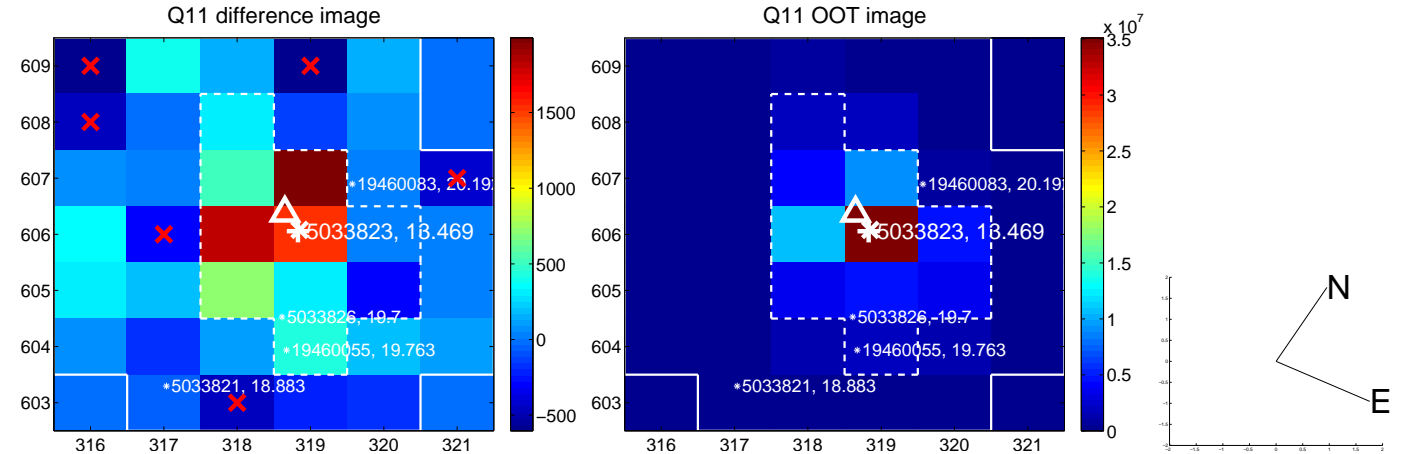
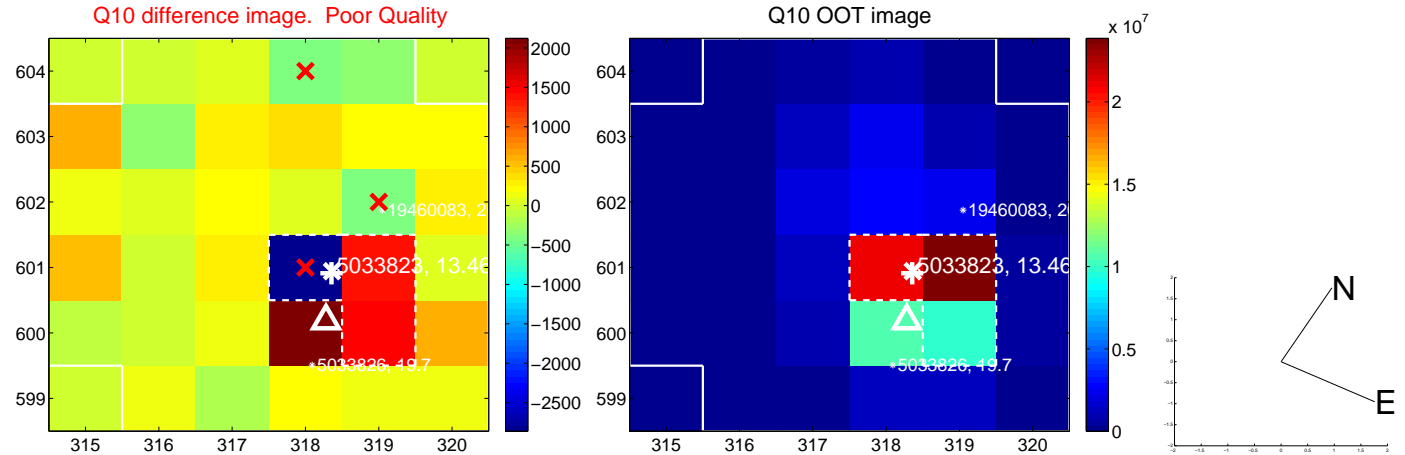
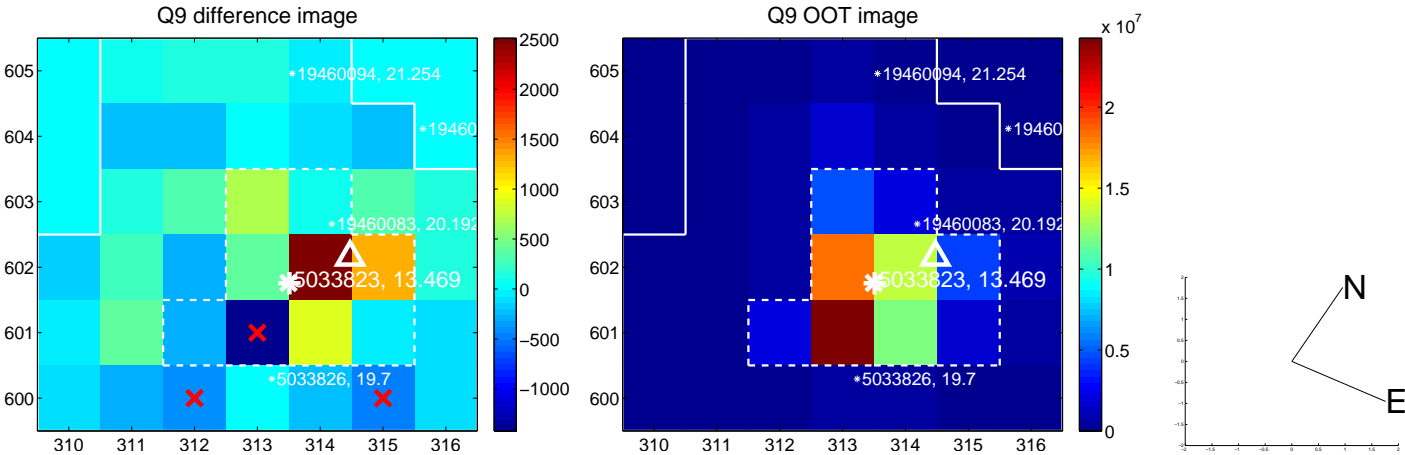
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



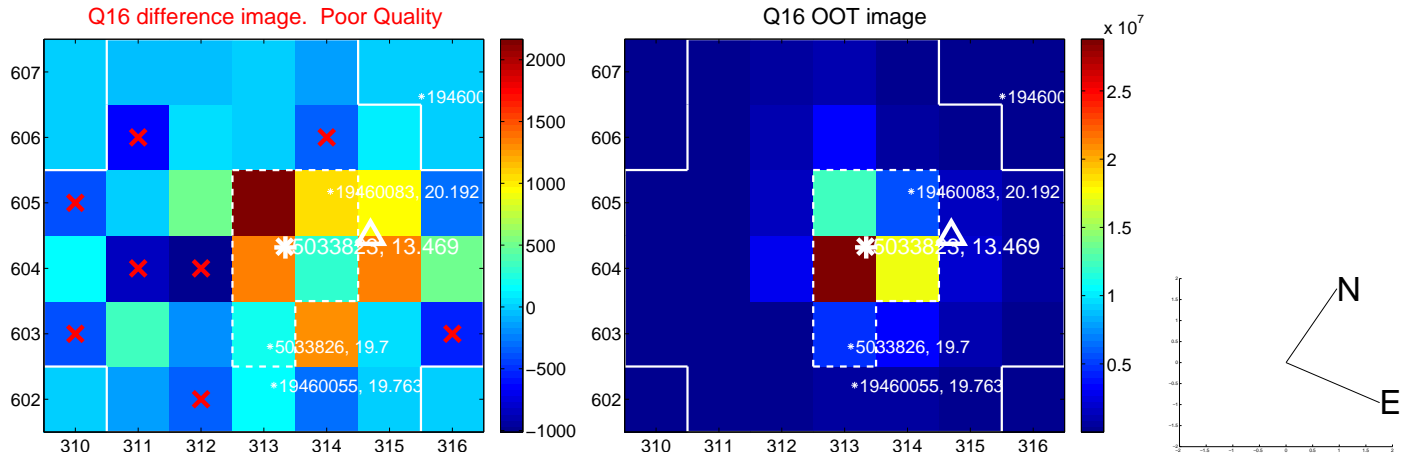
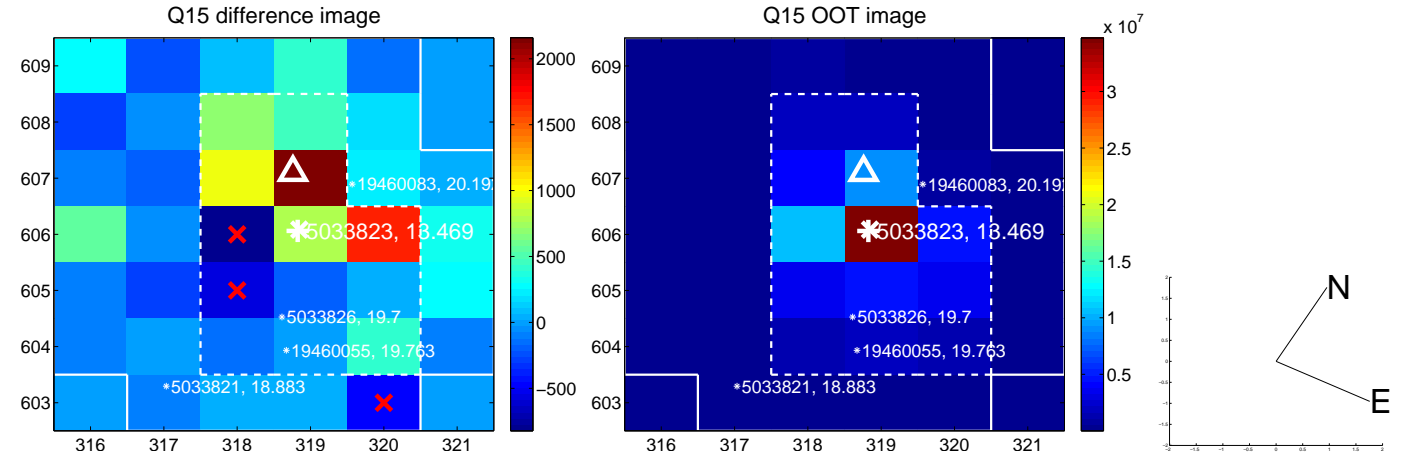
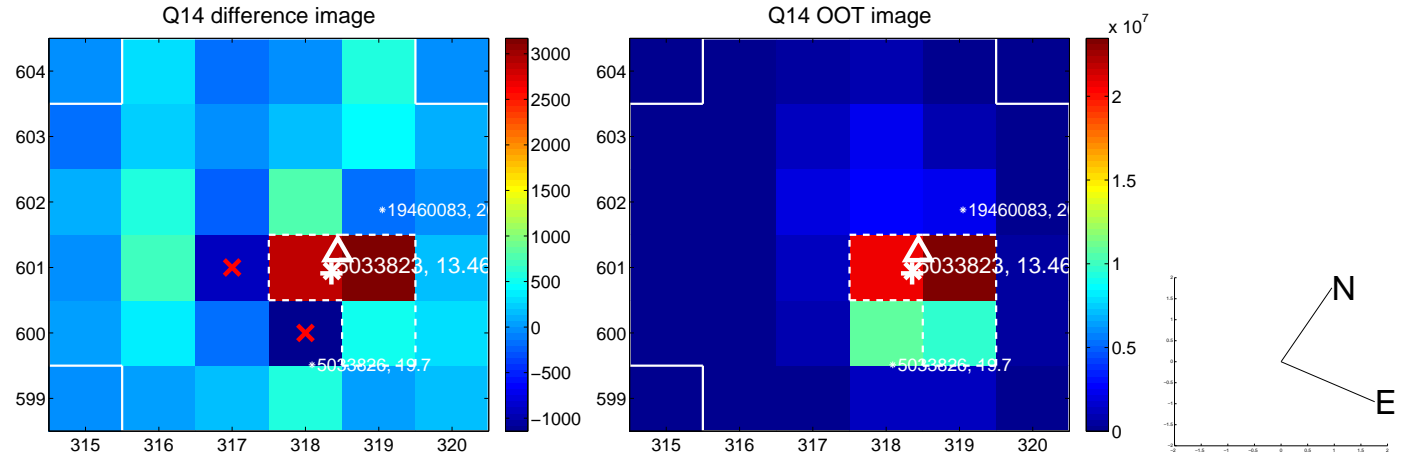
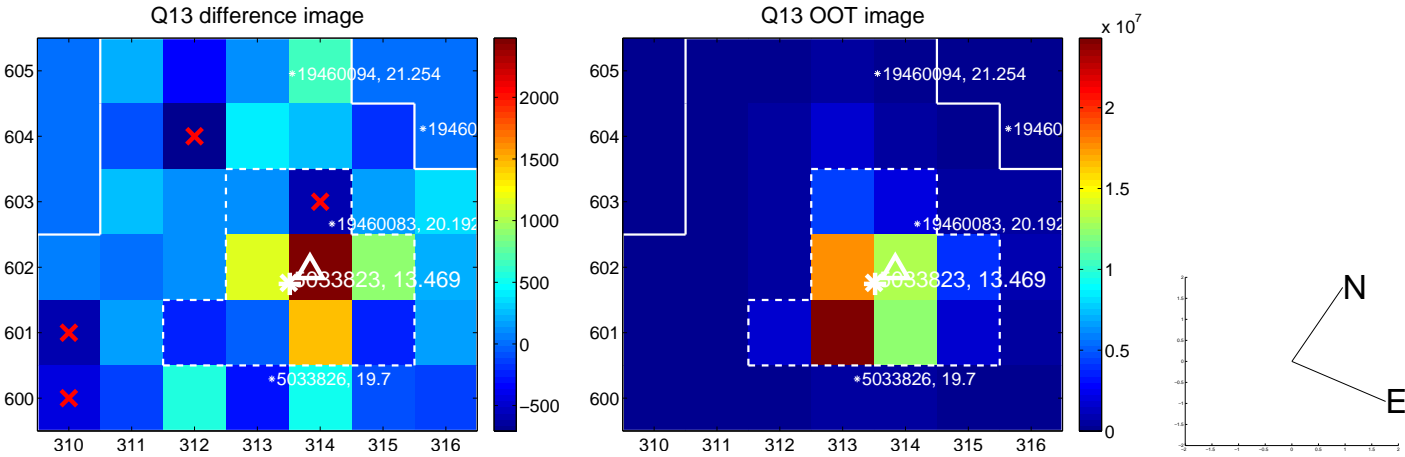
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



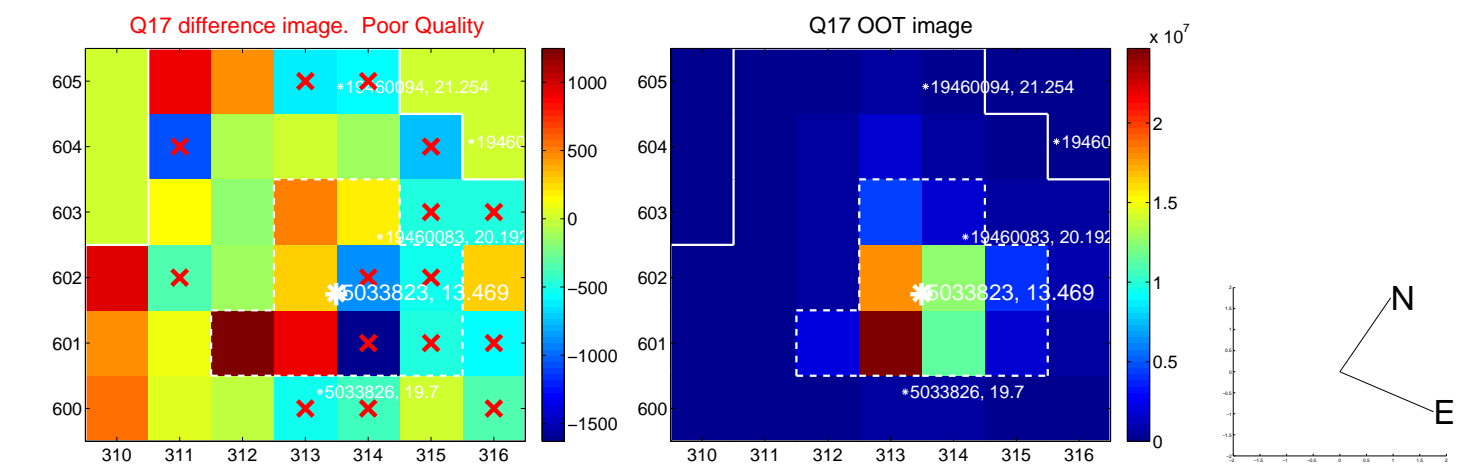
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



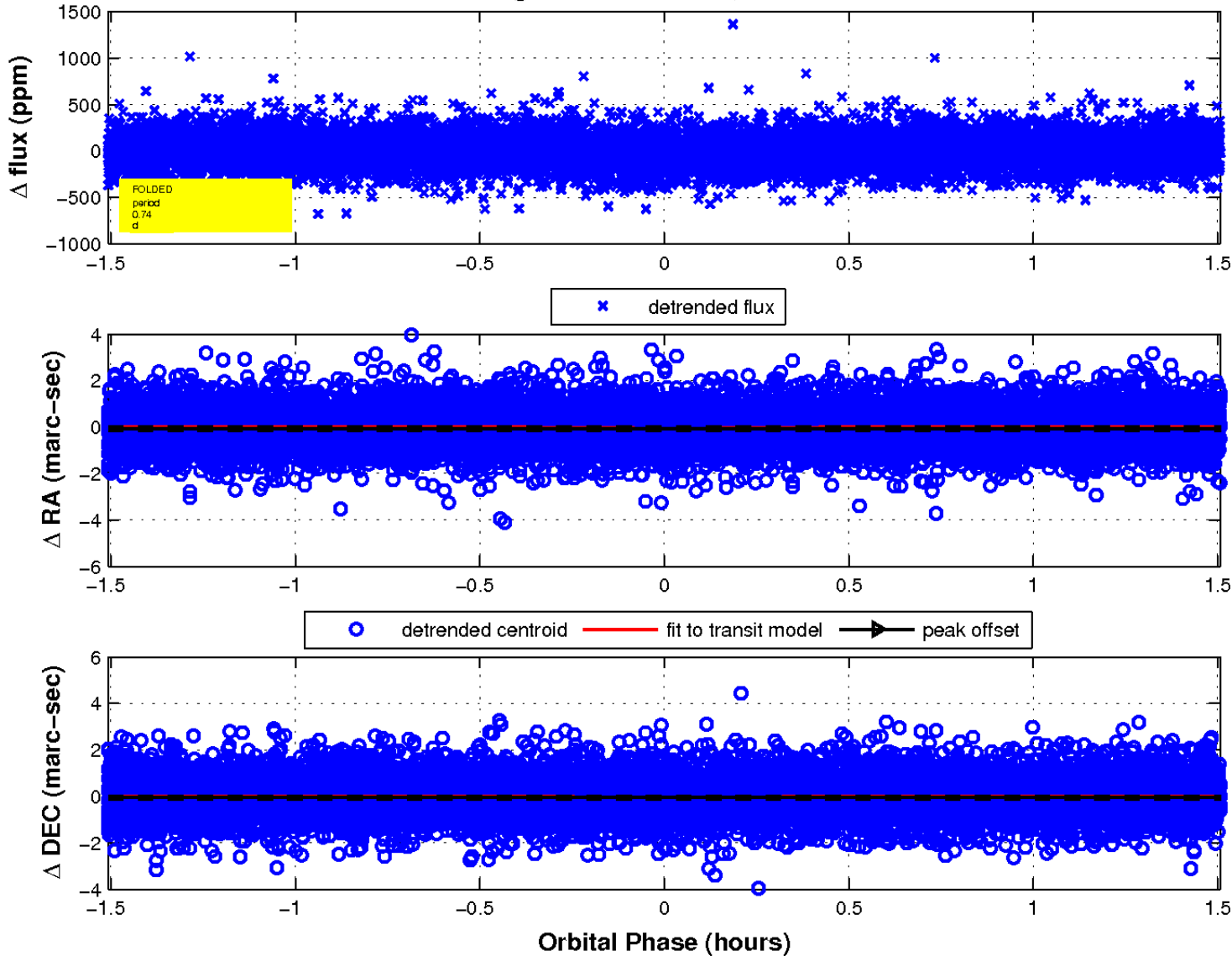
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

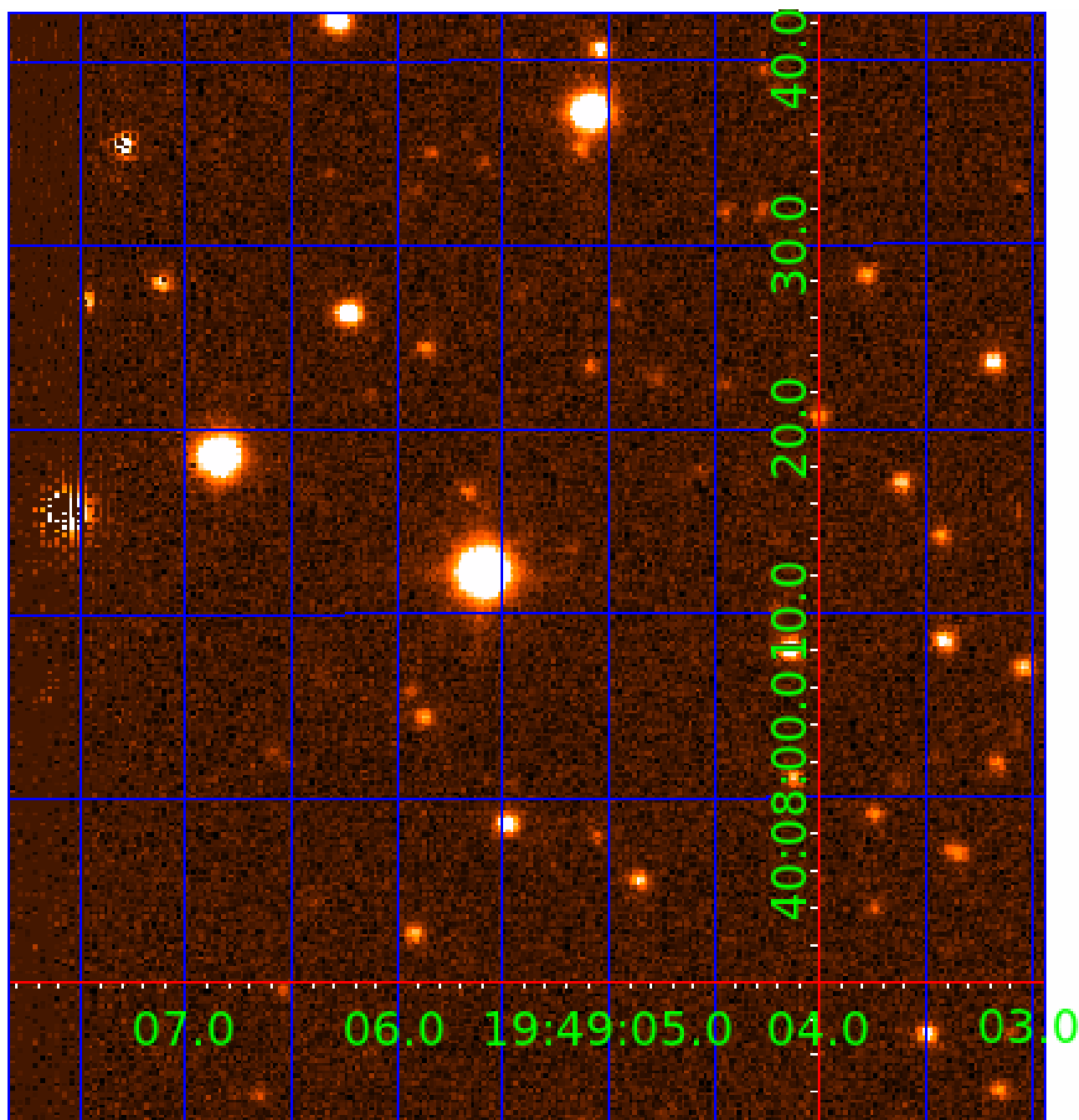


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005033823

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})
005033823-01	OBS	4546.01	0.741771	131.576619	365.9	1.500	9.2	-1.0	3.15	5897	6.00	30926.00
005033823-02	OBS	No	307.298051	299.218824	175.3	21.276	11.8	7.6	3.15	5897	4.56	10.01

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005033823-01	OBS	PC	1.00	0	0	0	0	CENT_NOFITS
005033823-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—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.

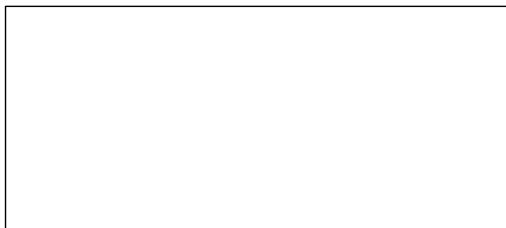
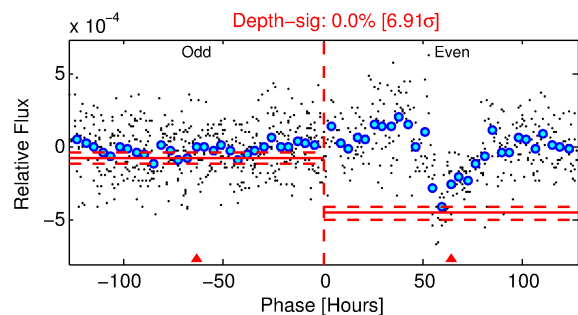
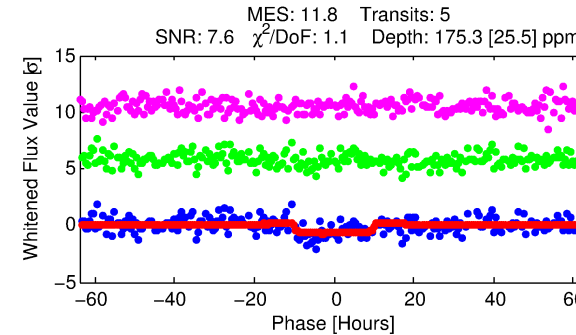
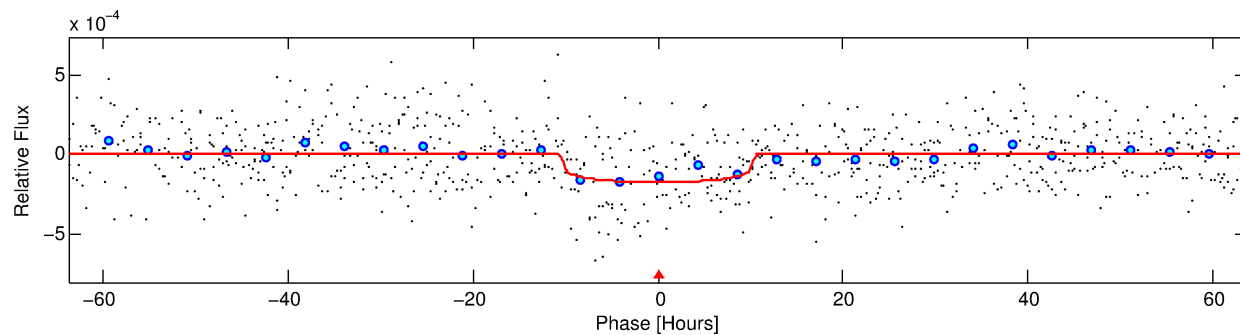
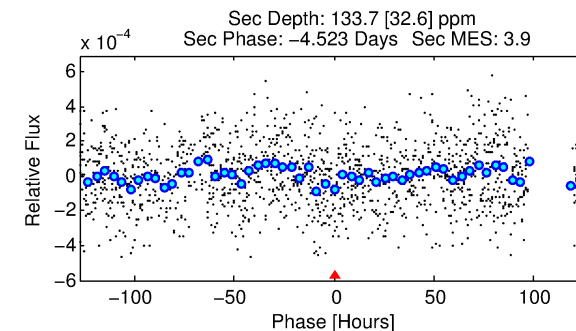
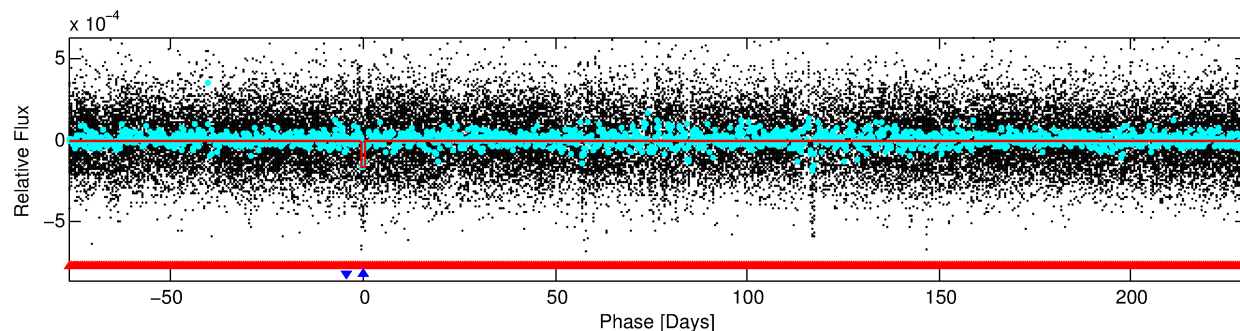
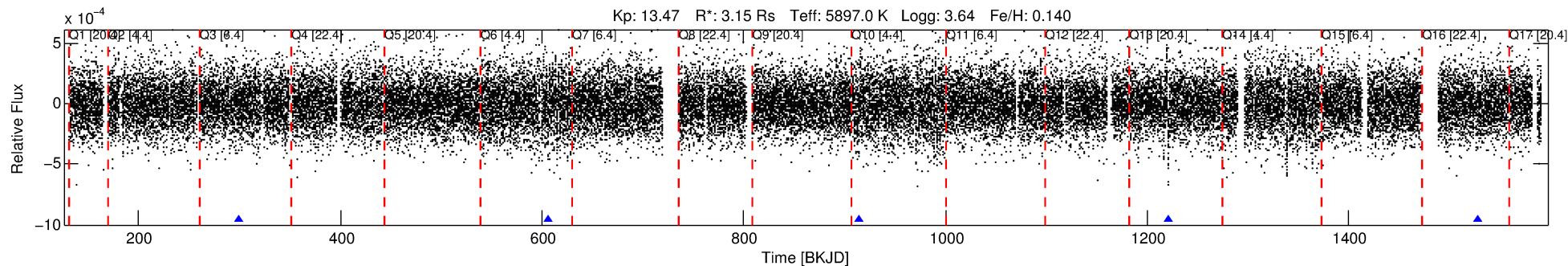
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005033823-02

No Significant Match Found

DV One-Page Summary

KIC: 5033823 Candidate: 2 of 2 Period: 307.298 d
KOI: K04546 Corr: No Ephemeris Match



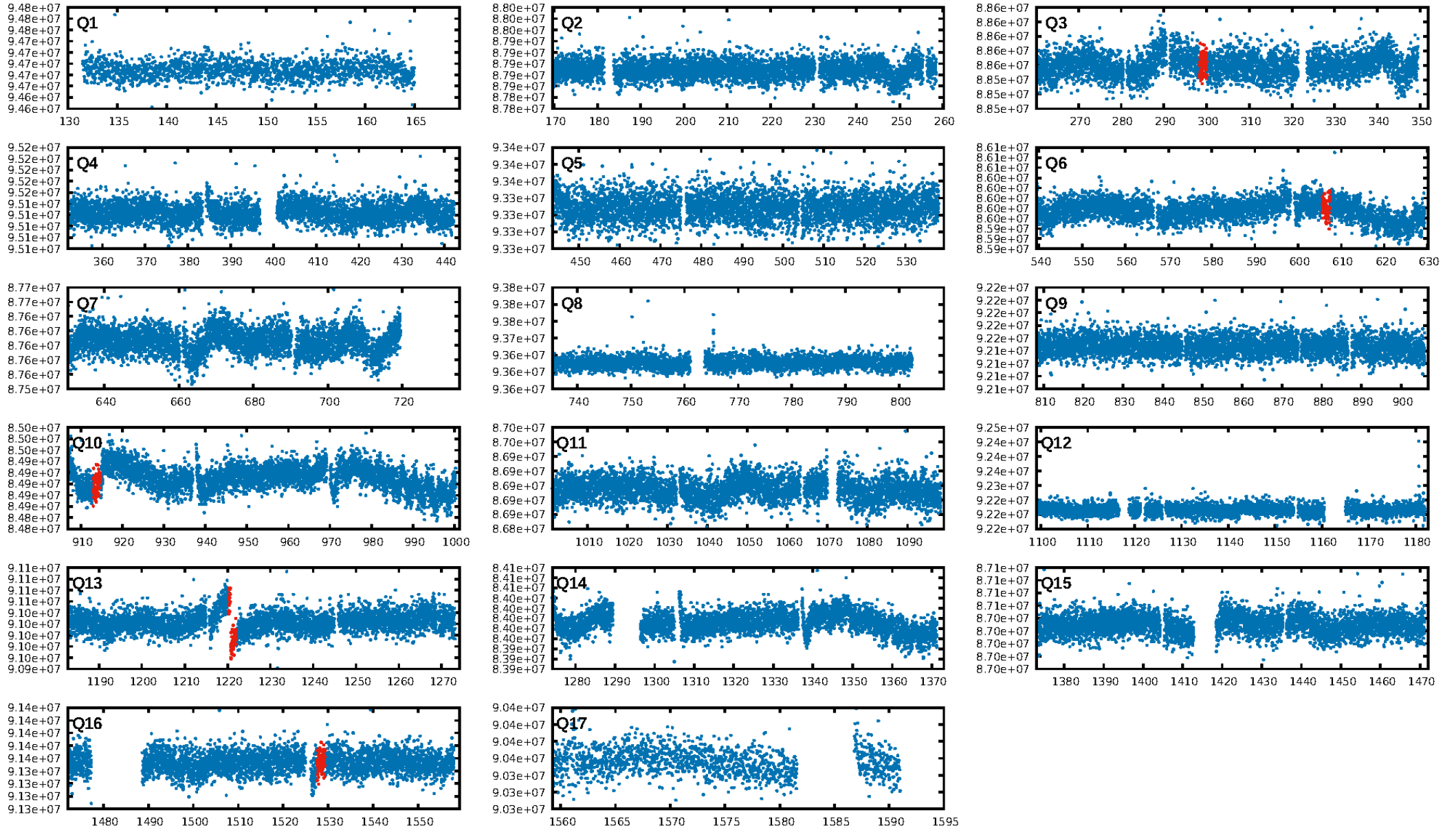
DV Fit Results:

Period = 307.29805 [0.00999] d
Epoch = 299.2188 [0.0260] BKJD
Rp/R* = 0.0133 [0.0044]
a/R* = 72.36 [107.93]
b = 0.77 [0.78]
Seff = 10.01 [6.55]
Teq = 454 [74] K
Rp = 4.56 [2.46] Re
a = 1.0351 [0.4226] AU
Ag = 3784.54 [3621.97] [1.04 σ]
Teffp = 5501 [967] K [5.20 σ]

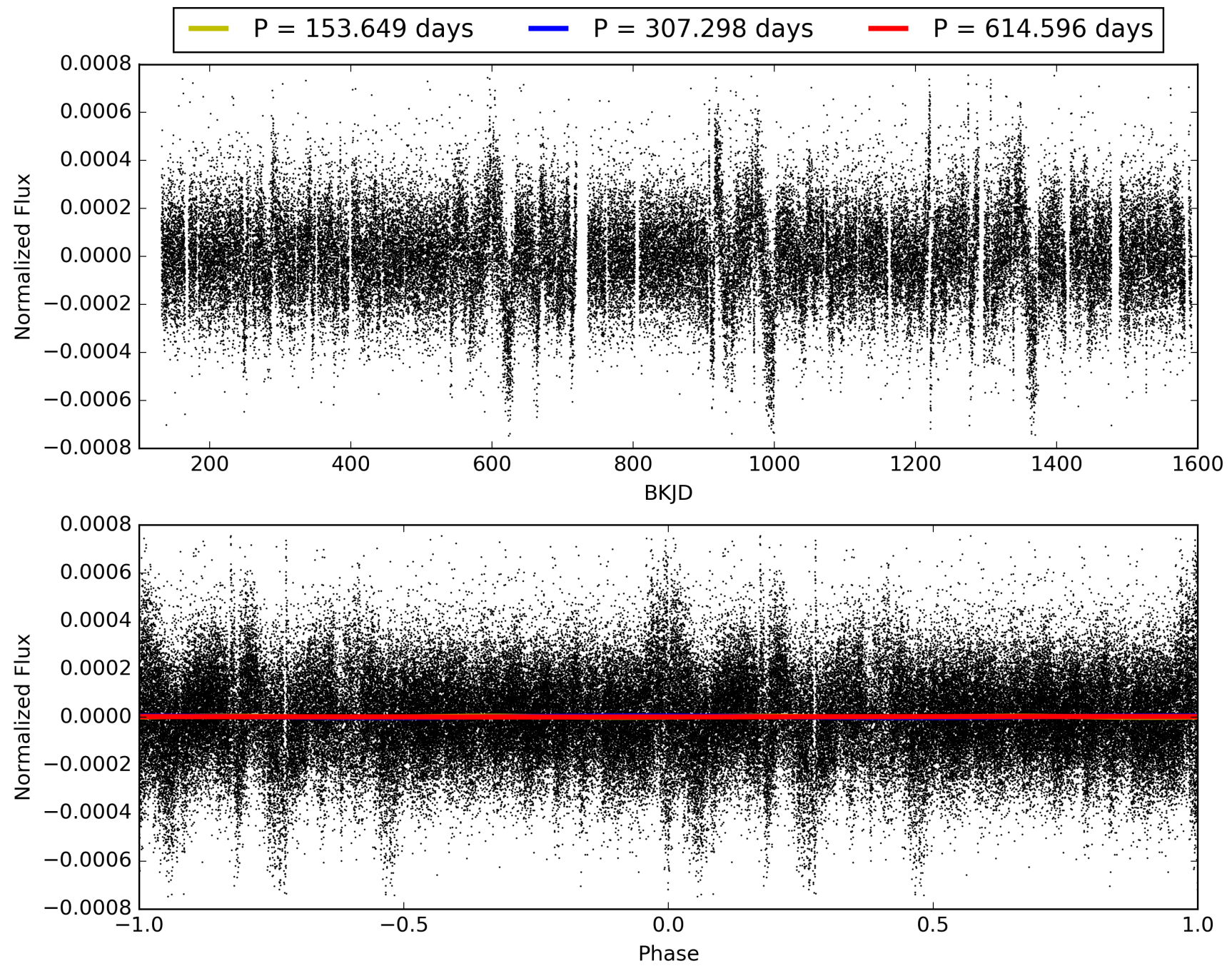
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [344.96 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.99e-31
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 1.517
Centroid-sig: 0.0%
Centroid-so: 3.208 arcsec [2.52 σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 0.00 [0/3]

TCE 005033823-02, PDC Light Curves

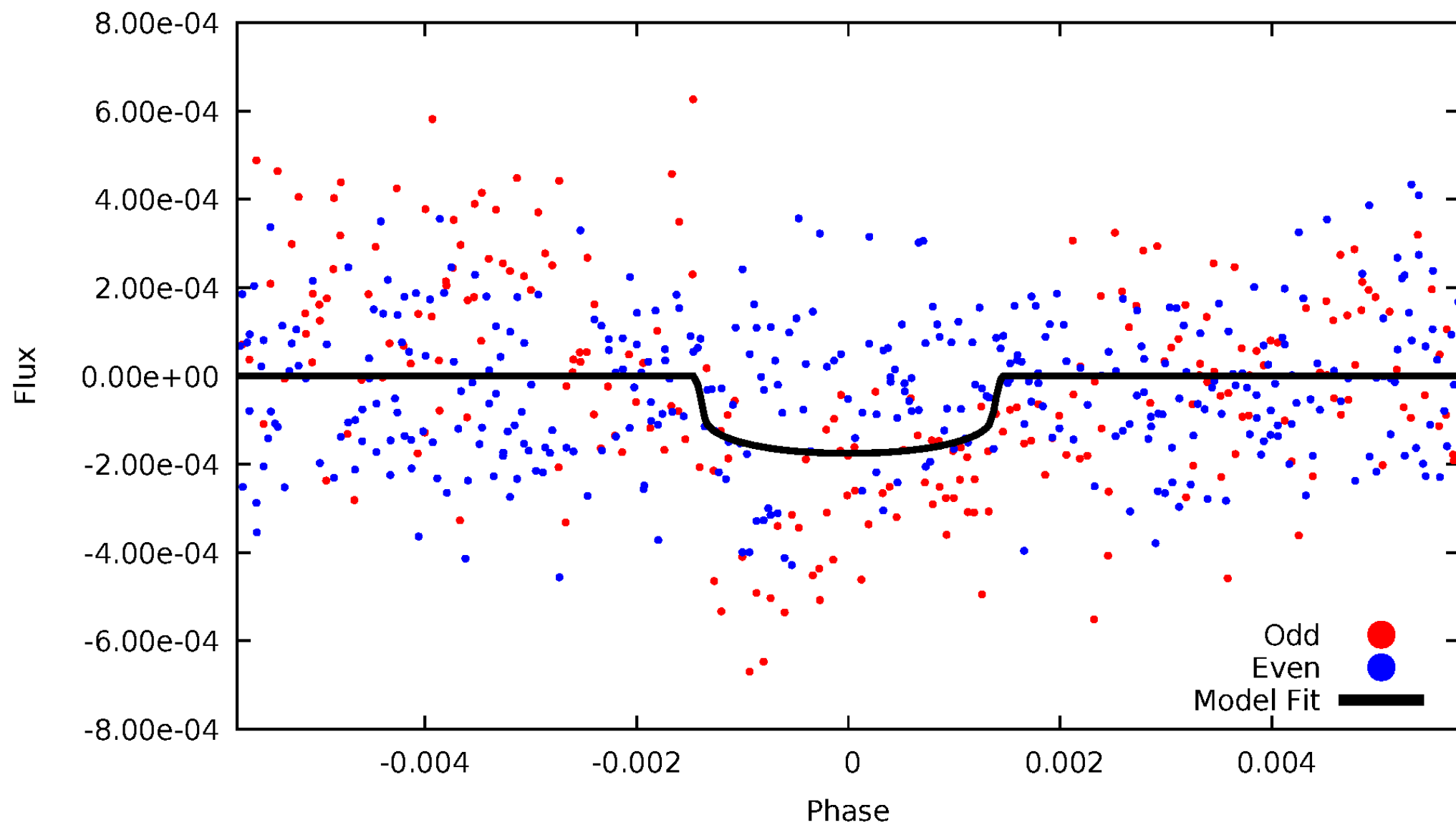


TCE 005033823-02



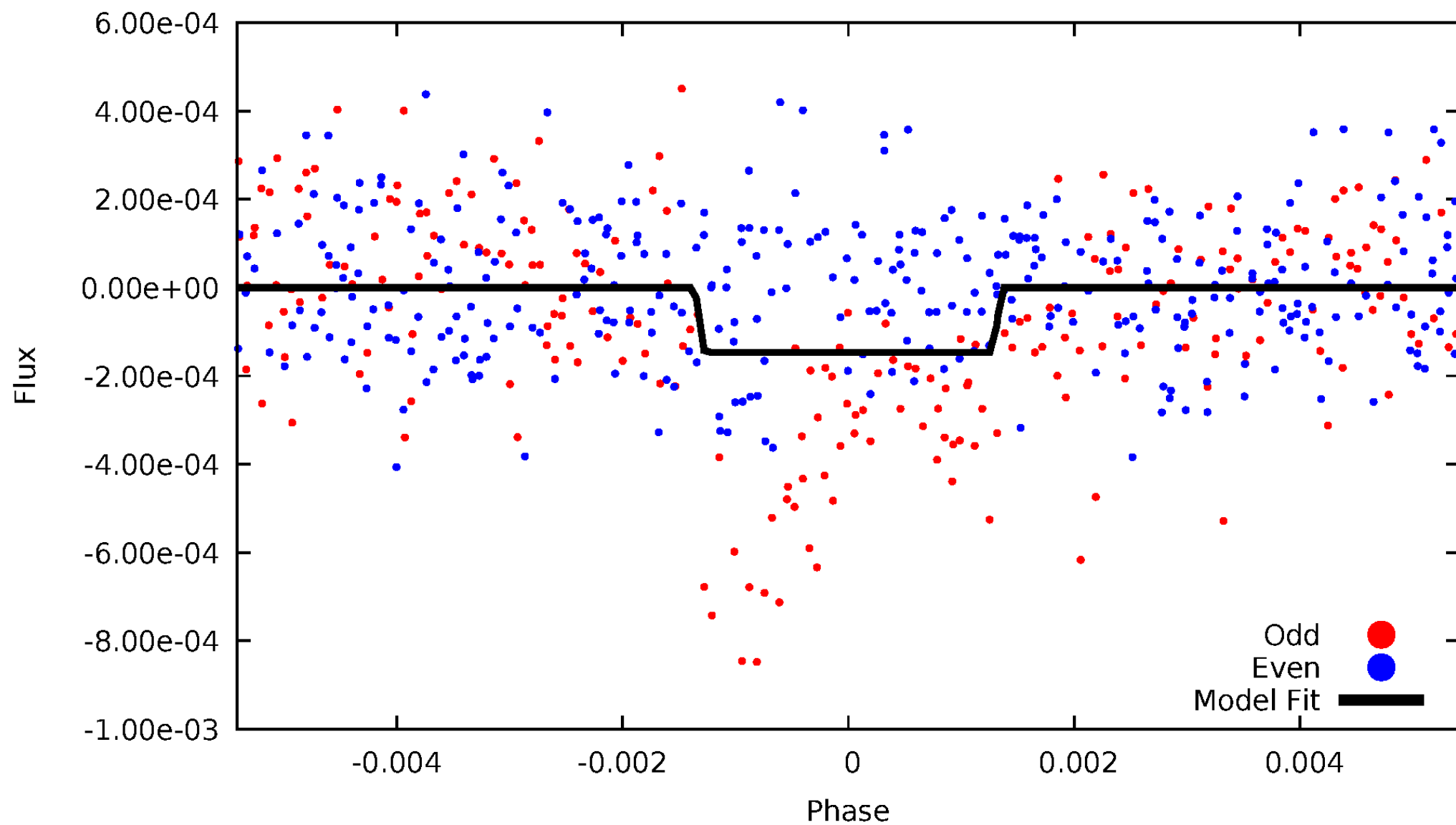
DV Odd/Even

TCE 005033823-02



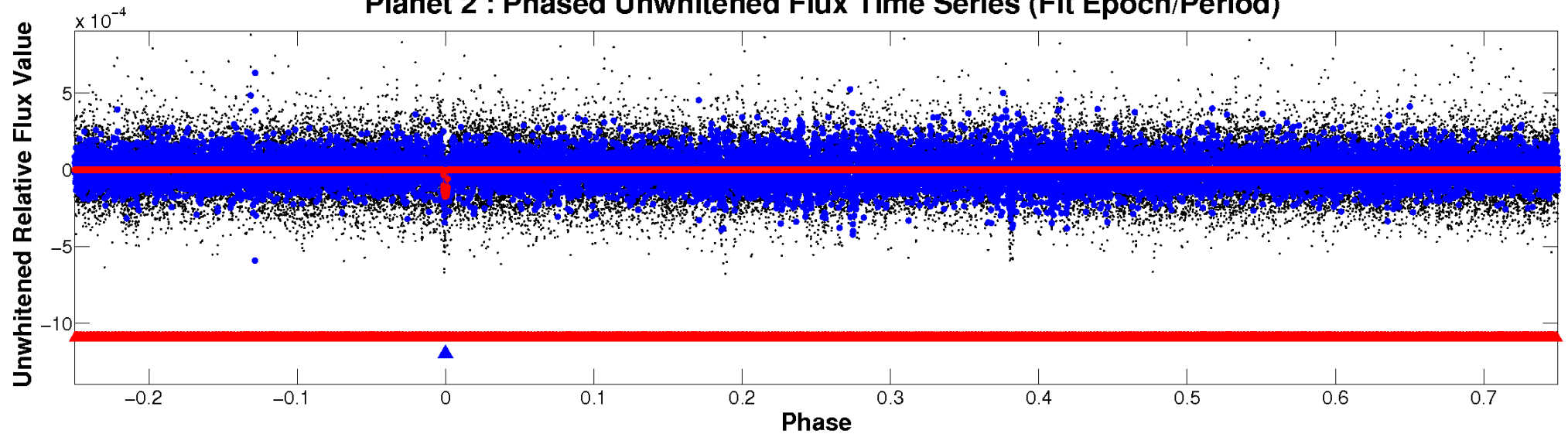
ALT Odd/Even

TCE 005033823-02

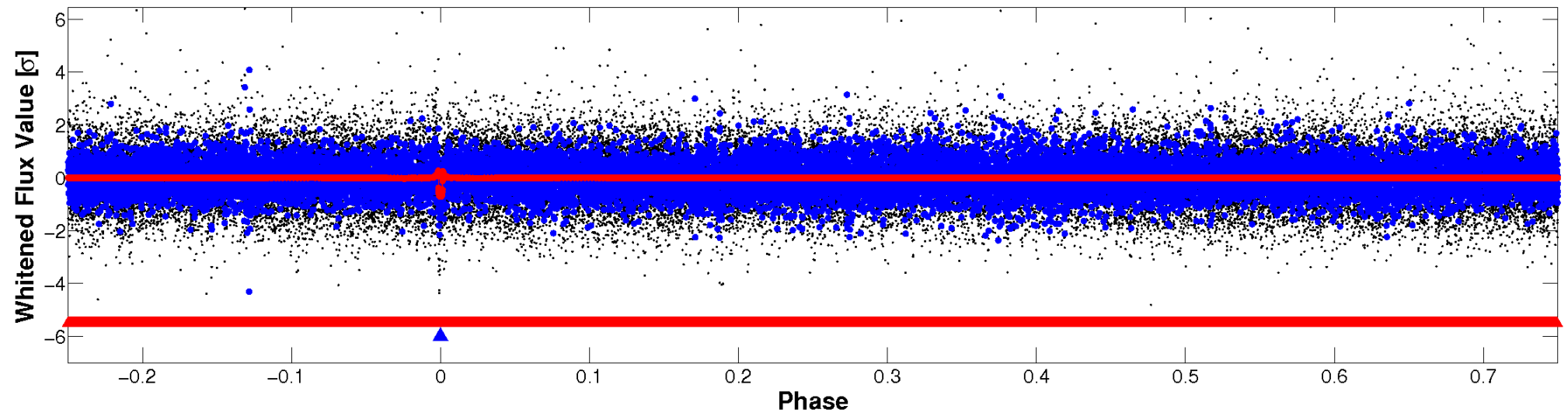


Non-Whitened Vs. Whitened Light Curve

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

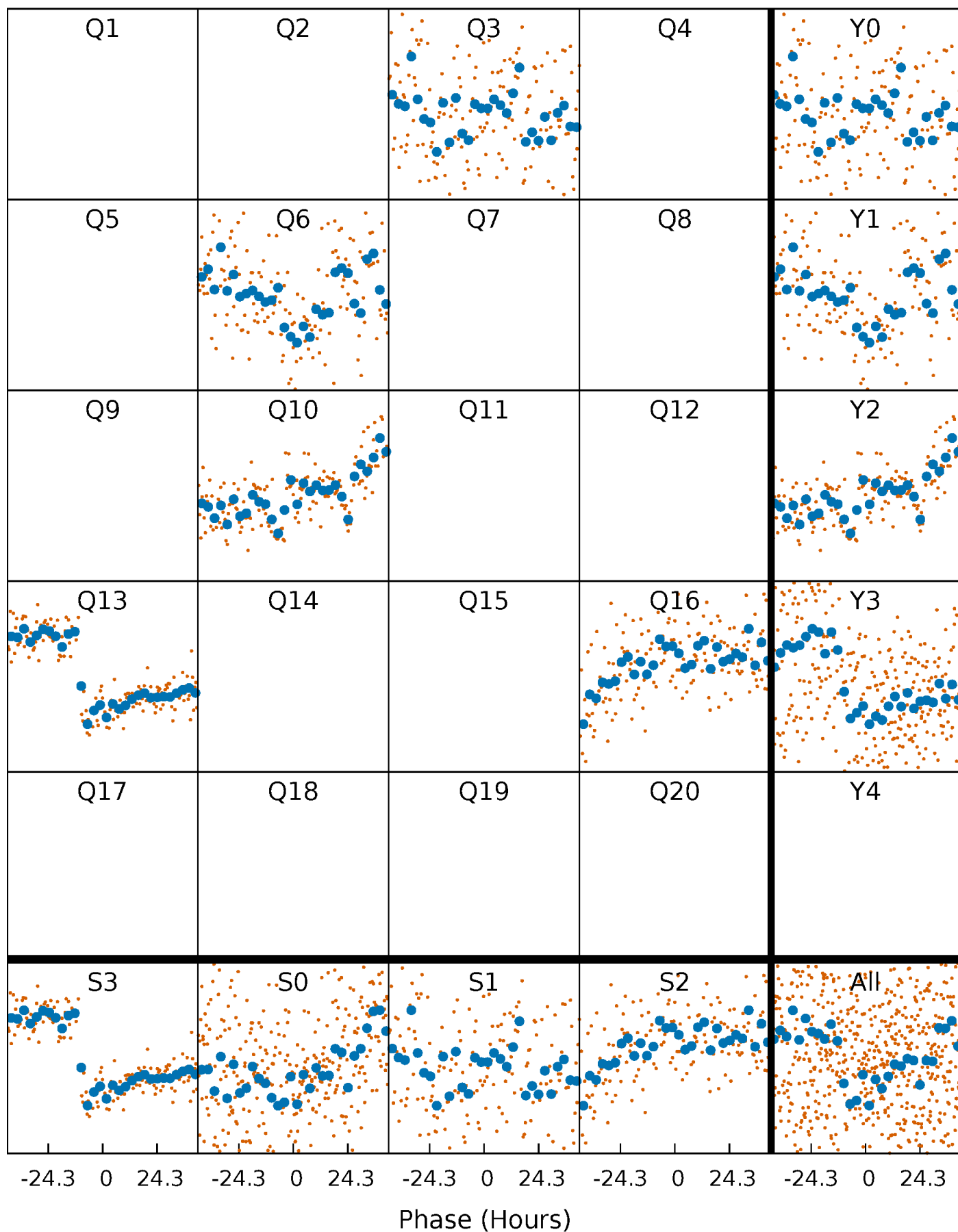


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



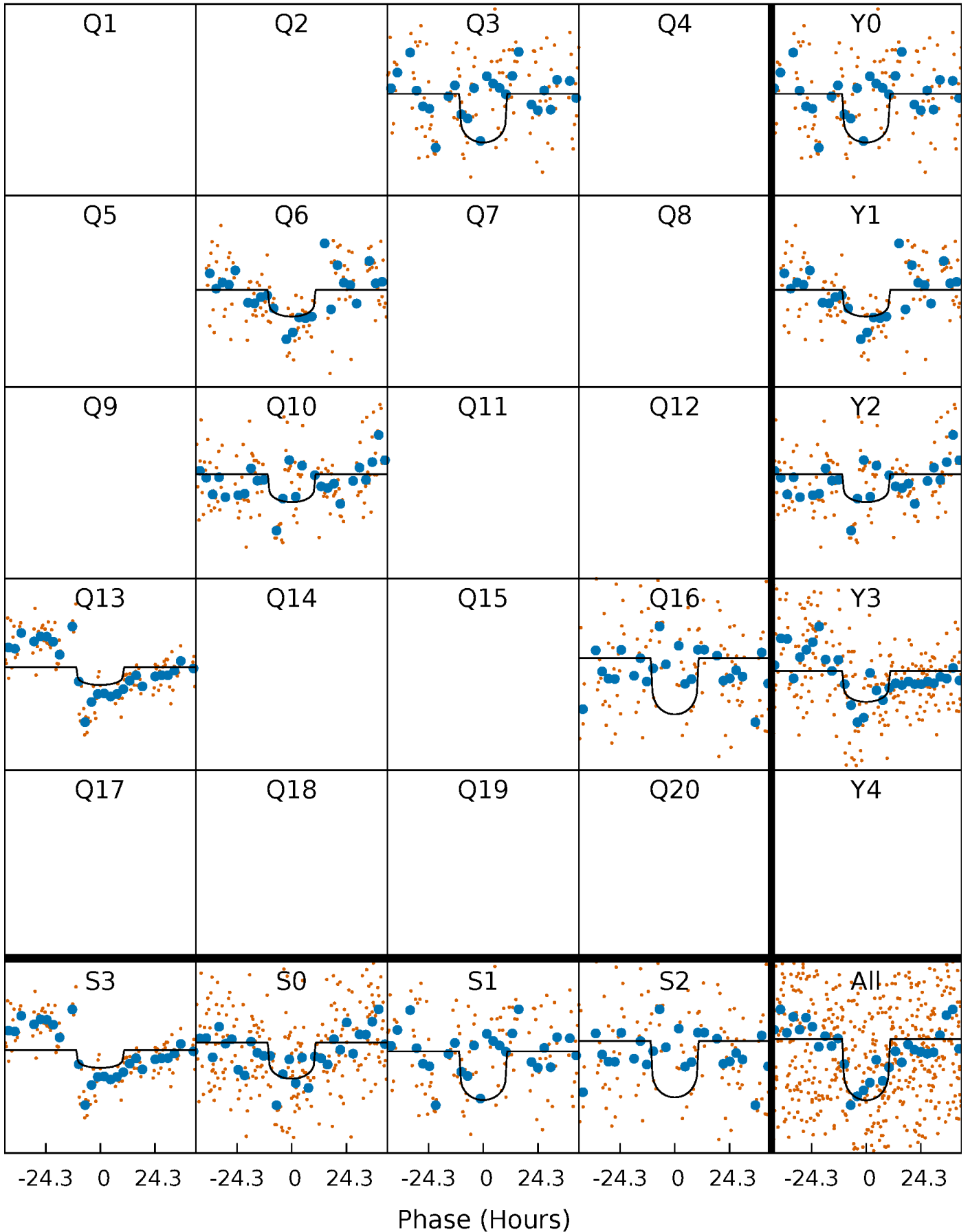
PDC Quarter-Phased Transit Curves

TCE 005033823-02 $P=307.298051$ Days $T_0=299.218824$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 005033823-02 P=307.298051 Days $T_0=299.218824$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

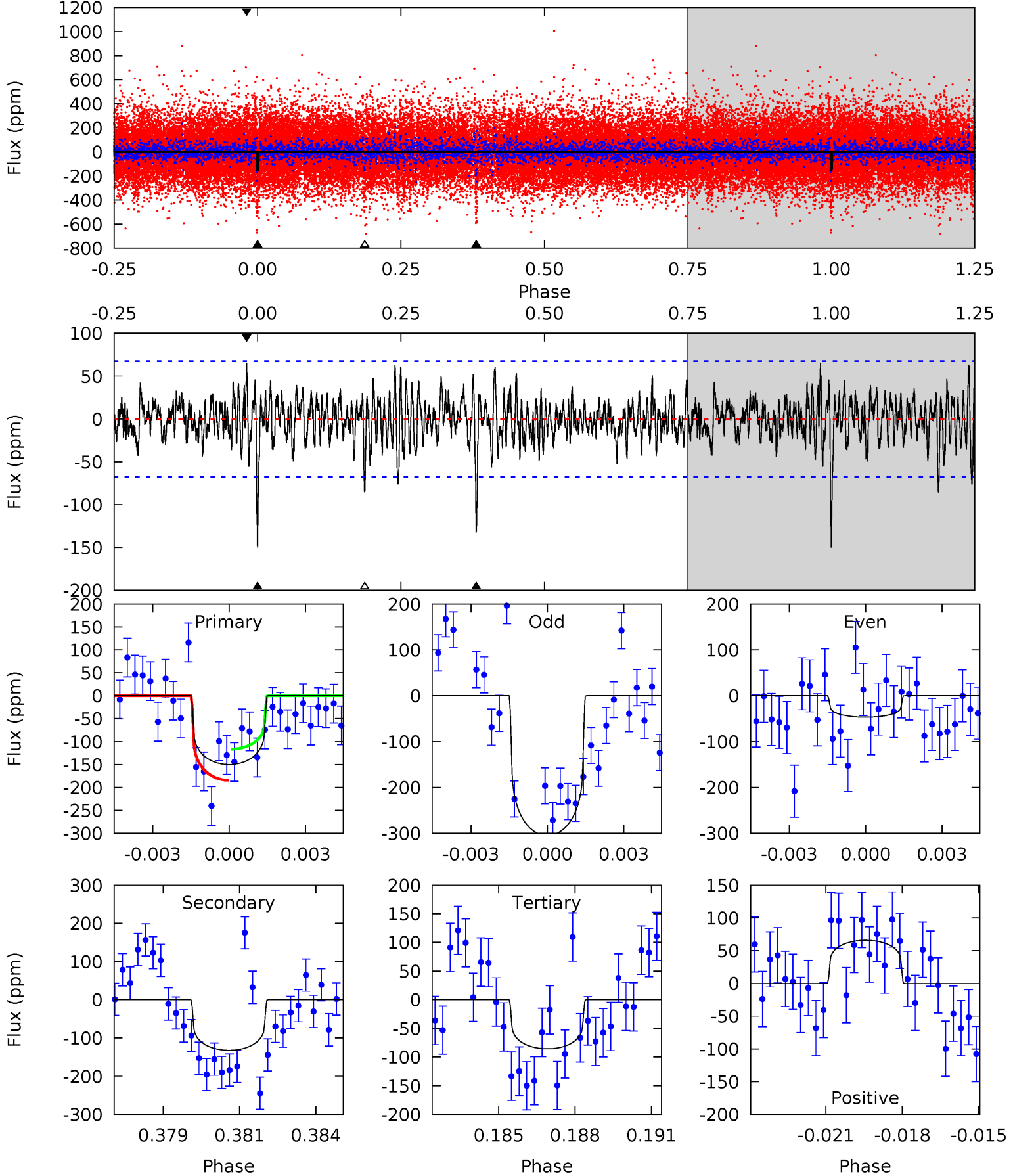
TCE 005033823-02 P=307.259442 Days $T_0=299.337357$ (BKJD)



DV Model-Shift Uniqueness Test

005033823-02, P = 307.298051 Days, E = 299.218824 Days

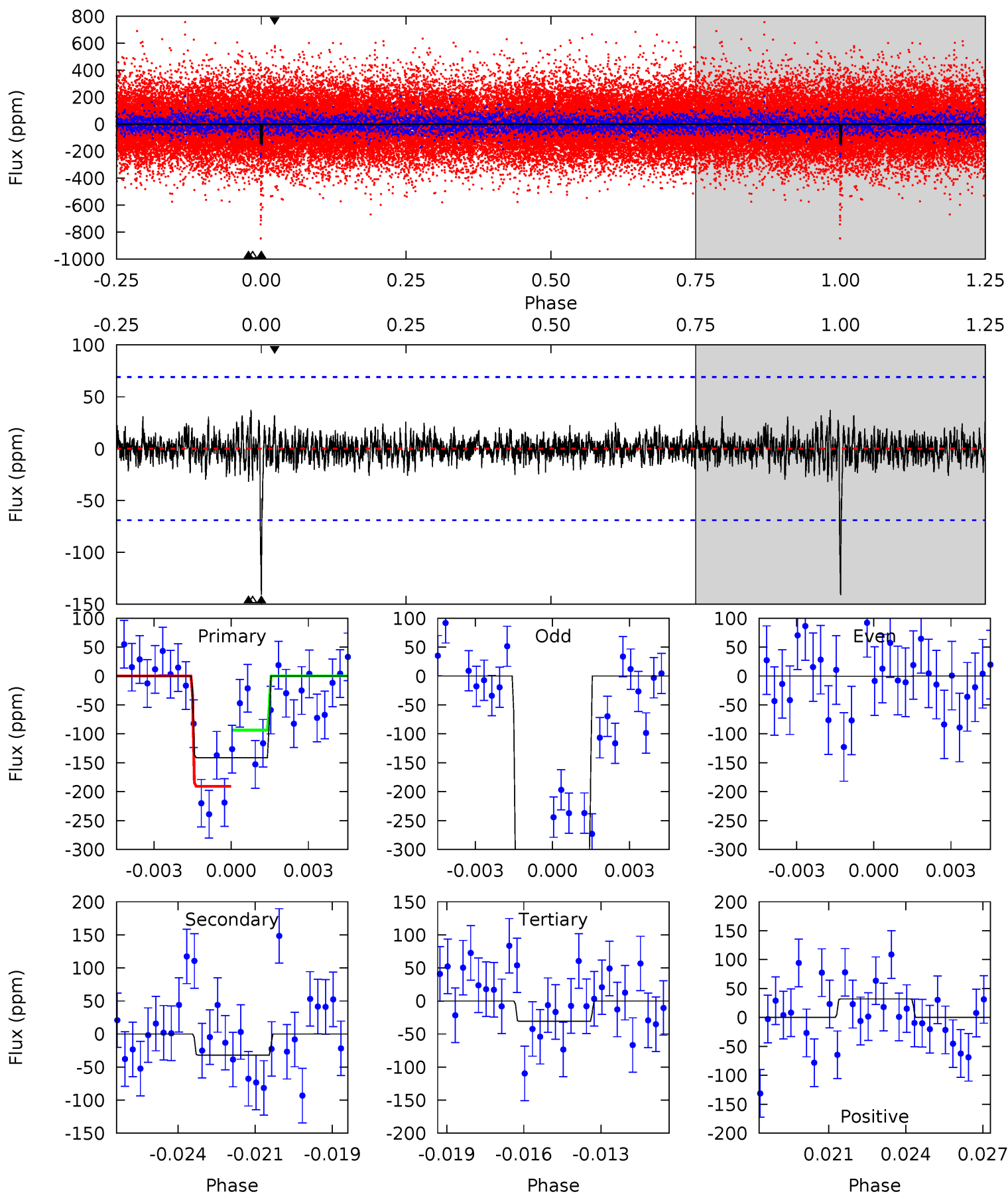
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	10.3	6.66	5.12	5.26	2.97	1.55	5.02	6.56	3.64	5.18	9.84	1.57	0.30	2.64



Alt Model-Shift Uniqueness Test

005033823-02, P = 307.259442 Days, E = 299.337357 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	2.44	2.35	2.45	5.27	3.00	0.65	8.43	8.33	0.09	-0.01	13.8	5.37	0.21	3.72



Stellar Parameters For KIC 005033823

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5897^{+88}_{-79}	$3.637^{+0.382}_{-0.127}$	$0.140^{+0.150}_{-0.150}$	$3.147^{+0.722}_{-1.341}$	$1.566^{+0.132}_{-0.395}$	$0.071^{+0.233}_{-0.027}$
	+1%/-1%	+11%/-3%	+107%/-107%	+23%/-43%	+8%/-25%	+329%/-38%
Source	SPE90	FLK73	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 005033823-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-132 ± 13	$4.08^{+1.77}_{-1.48}$	625^{+40}_{-73}	5562^{+1157}_{-683}	4454^{+7210}_{-2225}
Alt.	-32 ± 13	$3.71^{+1.75}_{-1.42}$	620^{+43}_{-68}	4247^{+845}_{-570}	1290^{+2150}_{-789}

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

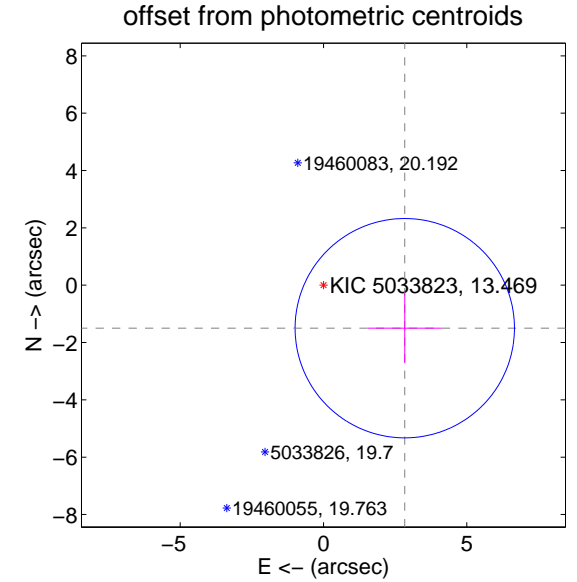
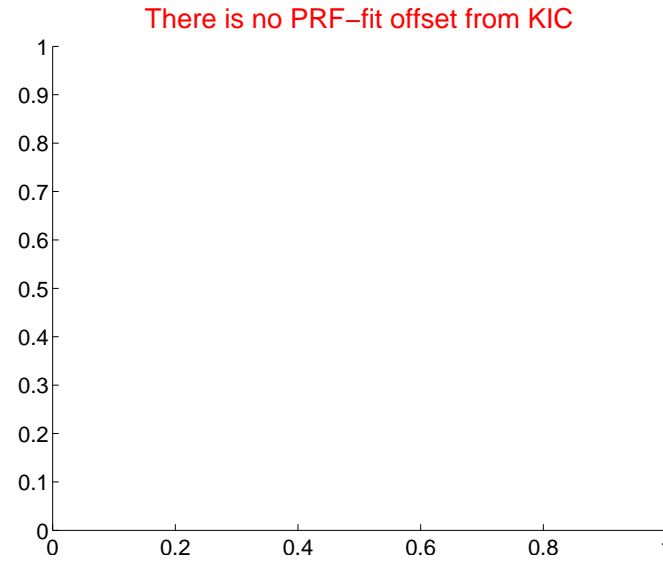
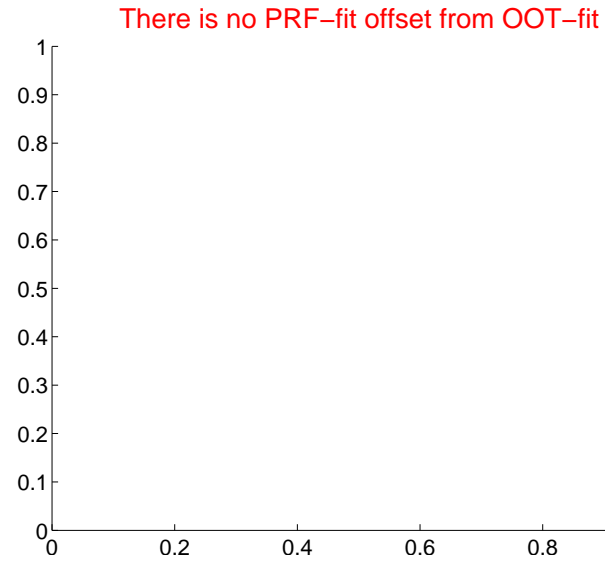
DV Centroid Data

Supplemental centroid analysis for 005033823-02. Kepler magnitude: 13.47. Transit SNR 7.59

There are 0 quarters with good PRF difference image offsets

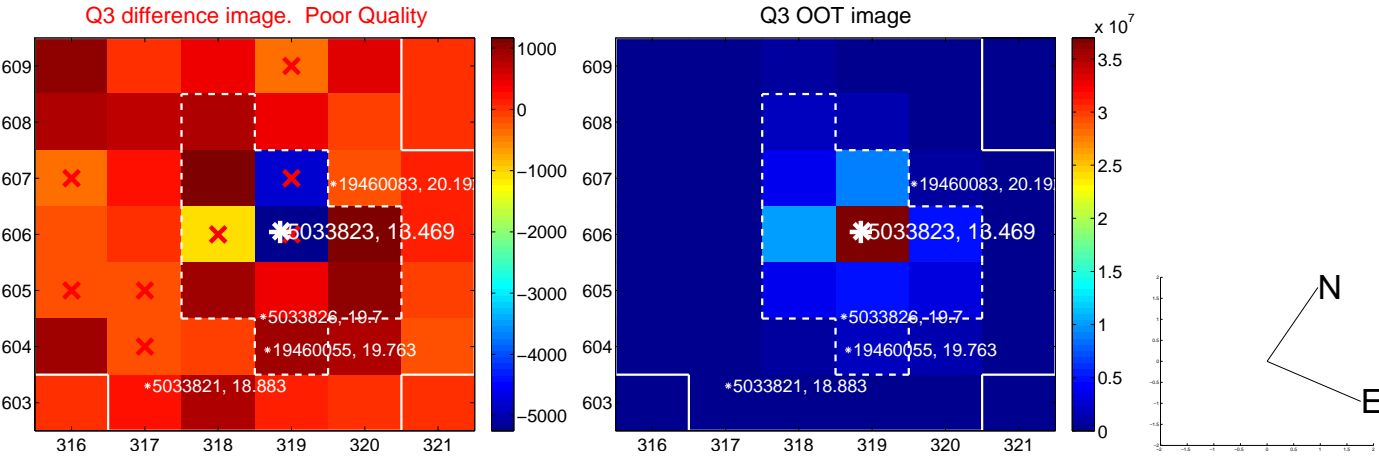
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	3.21 ± 1.28	2.52	-2.84 ± 1.29	-1.50 ± 1.22

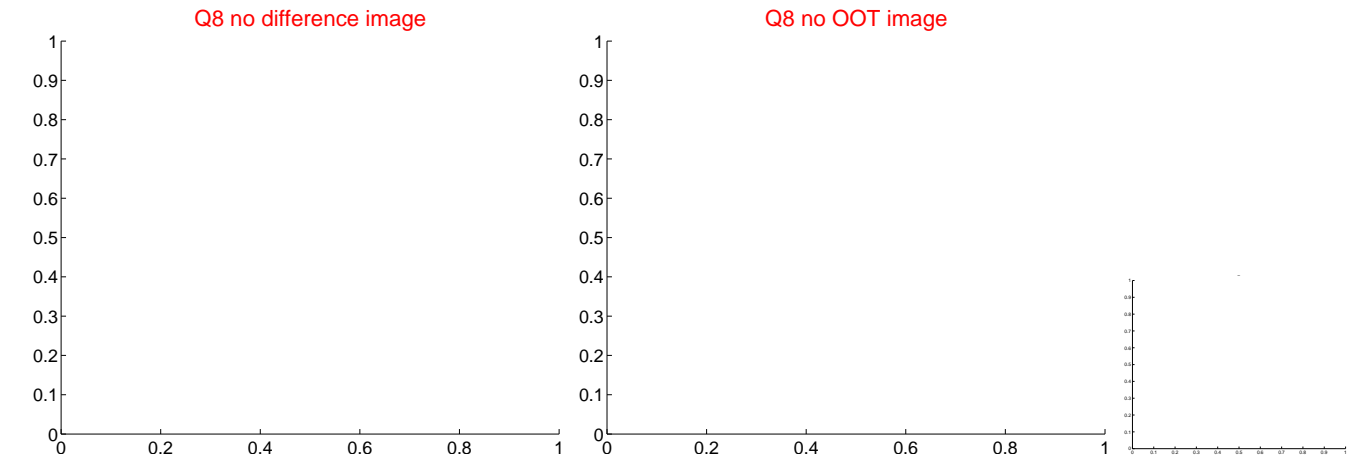
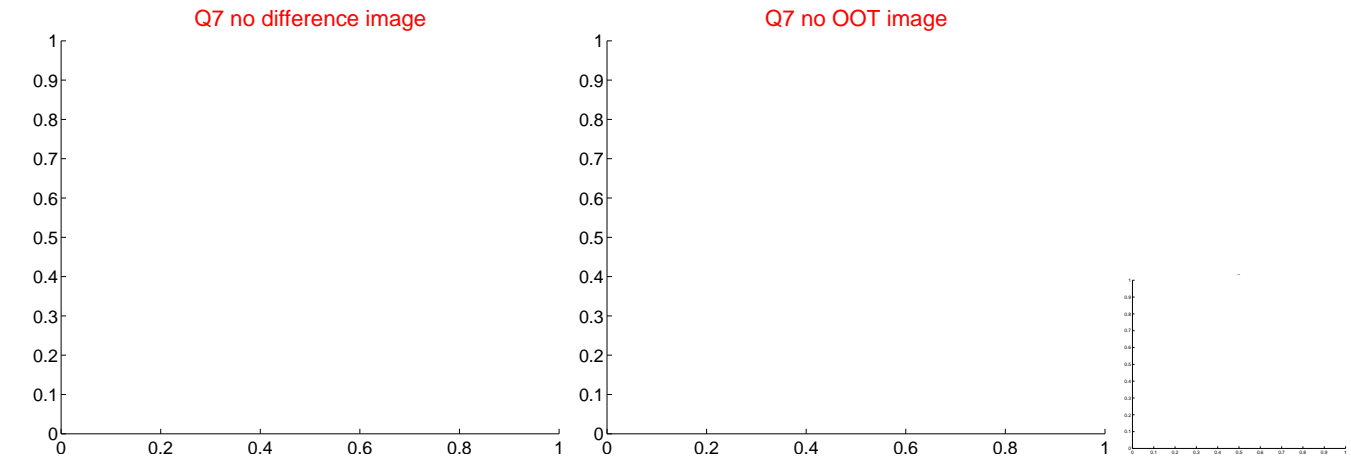
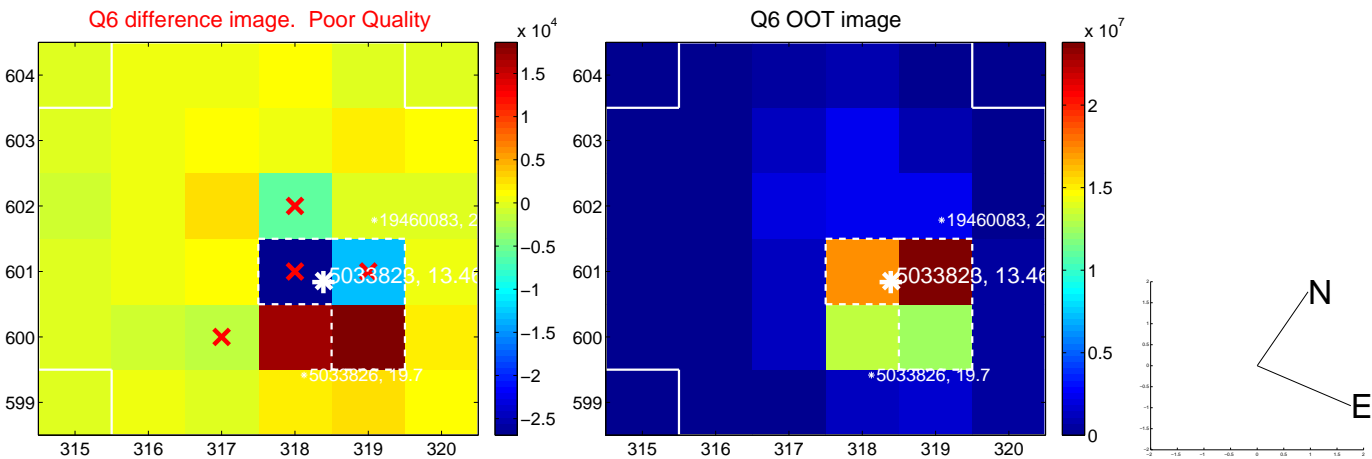
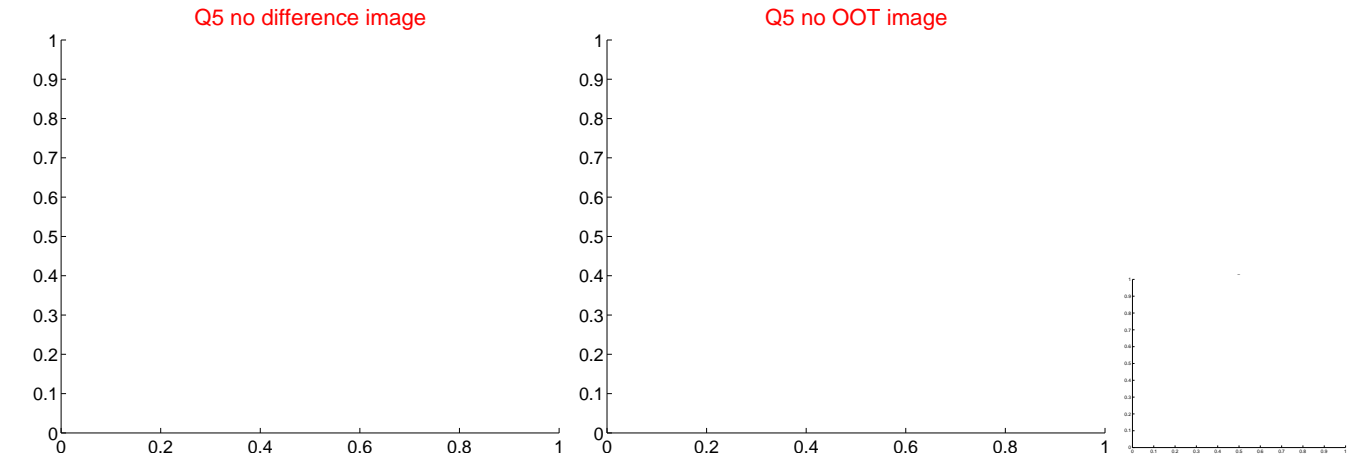


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

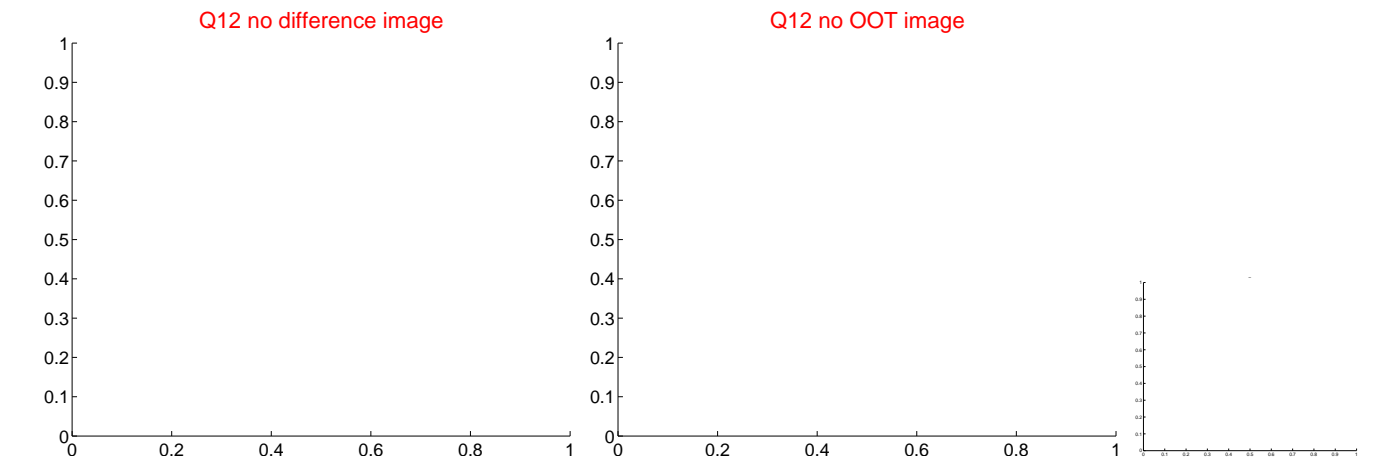
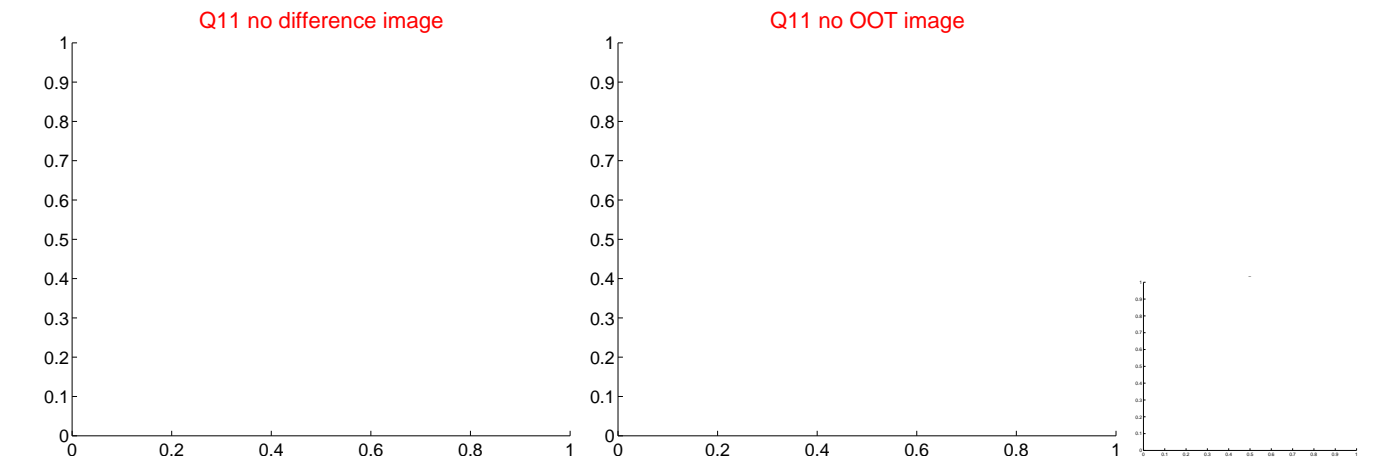
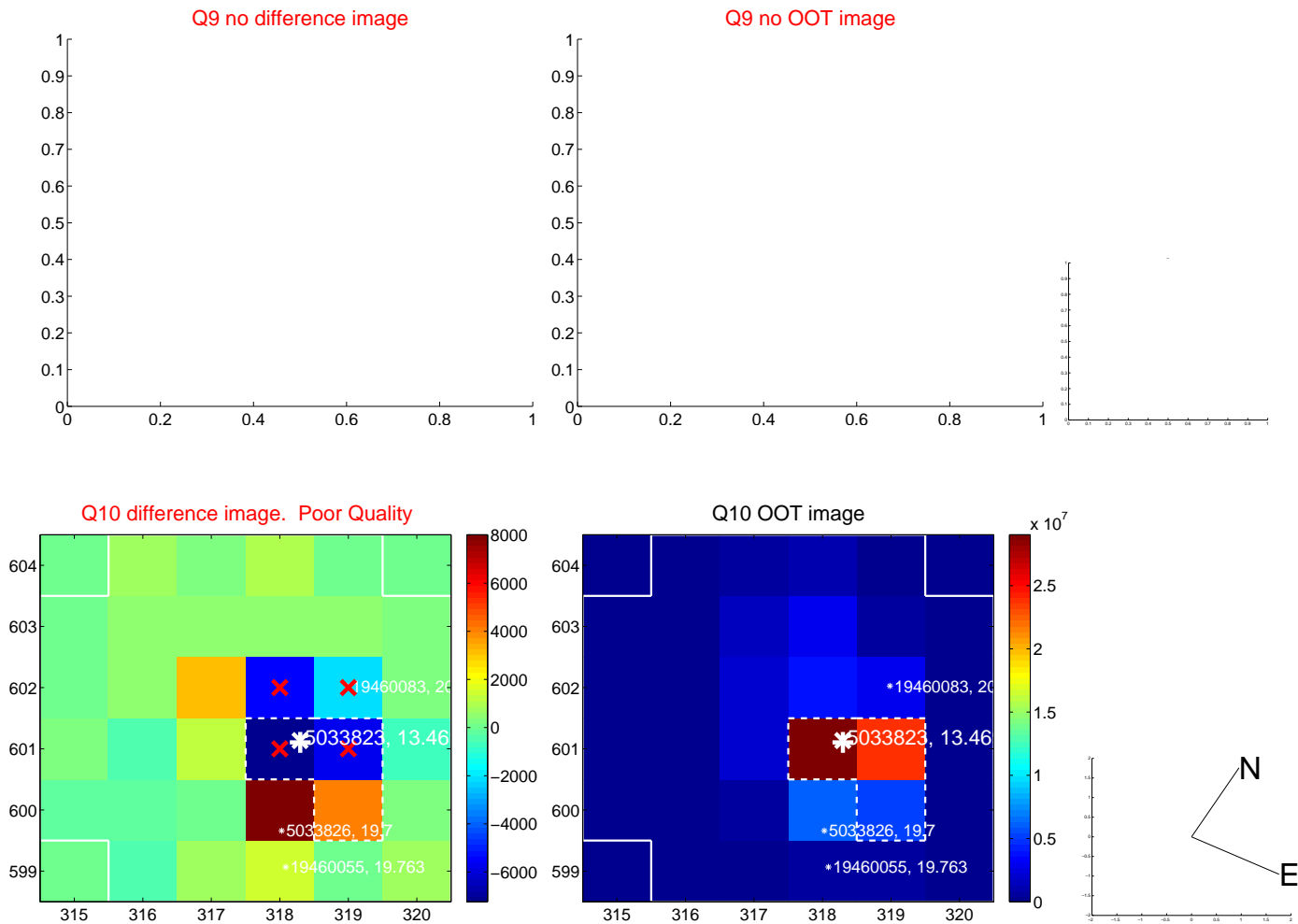
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



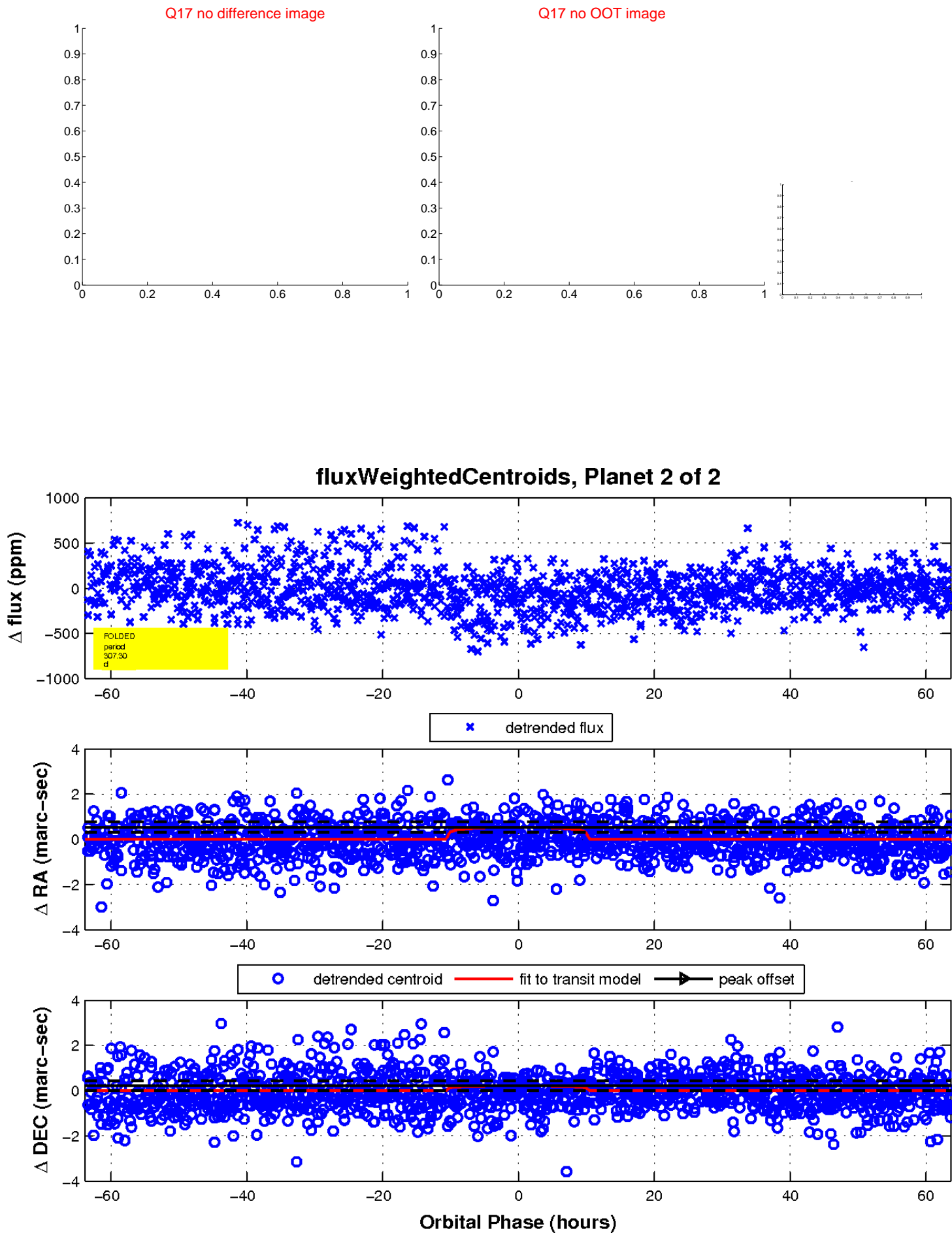
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UKIRT Image

Declination

