

KIC 005193384

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})
005193384-01	OBS	3637.01	21.379002	147.169912	304672.9	15.000	742.6	-1.0	3.48	4905	190.09	300.74
005193384-02	OBS	No	21.377997	136.446755	209460.9	22.538	201.1	102.4	3.48	4905	156.25	300.75

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005193384-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—MOD_ODDEVEN_ALT—HAS_SEC_TCE—SEASONAL_DEPTH_DV—SEASONAL_DEPTH_ALT—CENT_NOFITS
005193384-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET

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.

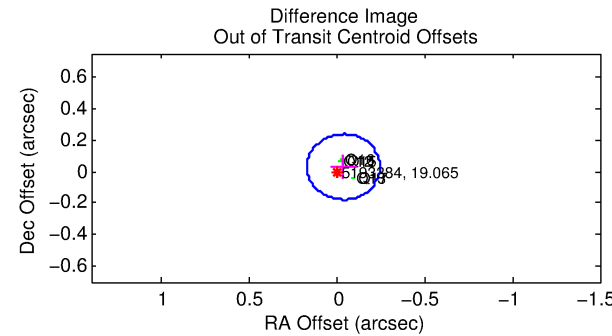
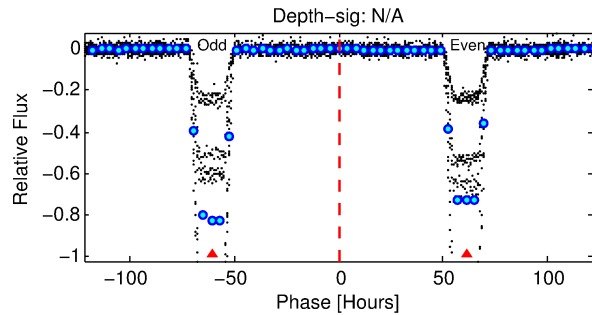
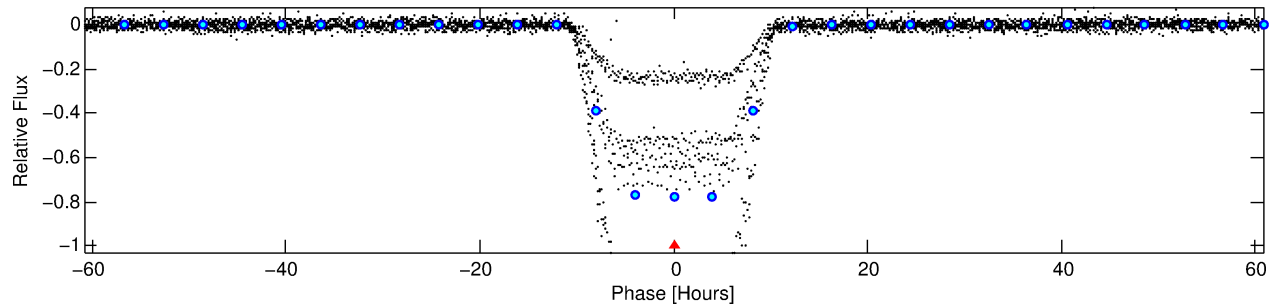
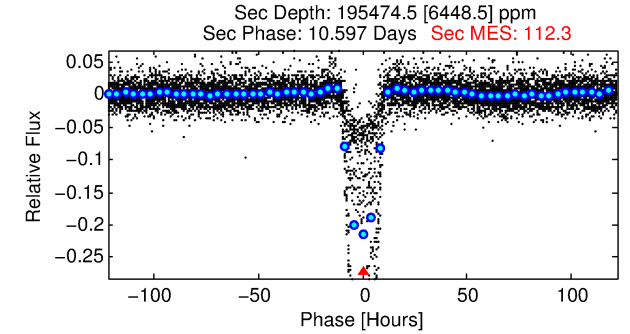
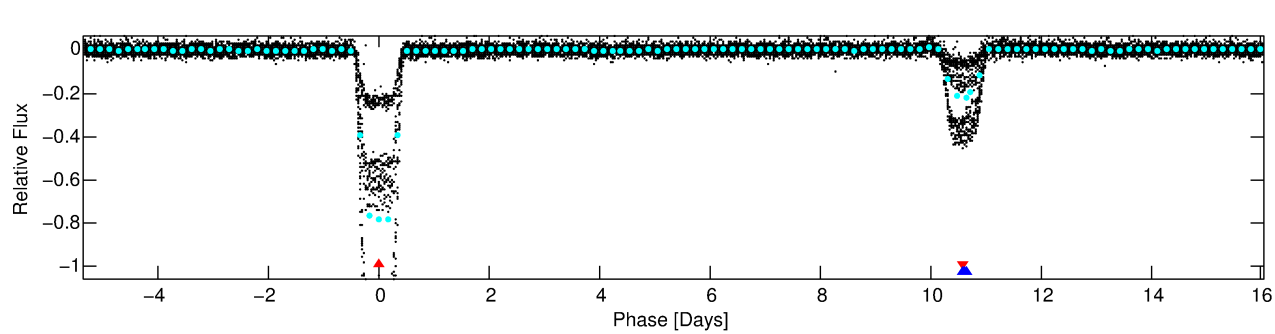
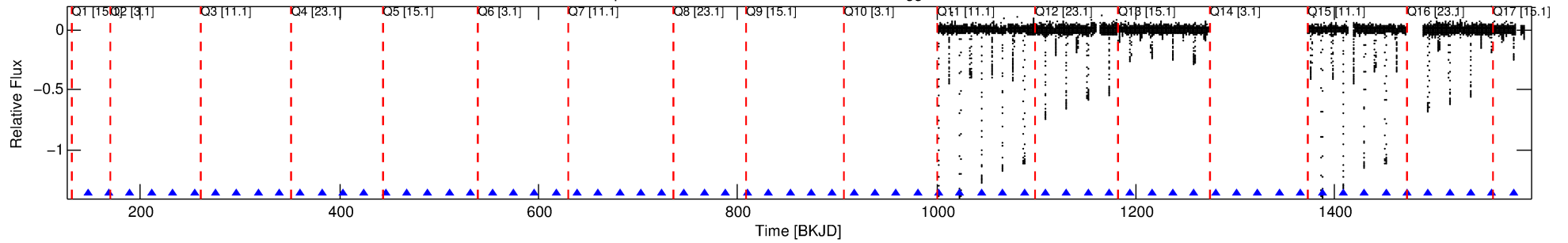
Ephemeris Match Information For 005193384-01

No Significant Match Found

DV One-Page Summary

KIC: 5193384 Candidate: 1 of 2 Period: 21.379 d
KOI: K03637 Corr: No Ephemeris Match

Kp: 19.07 R*: 3.48 Rs Teff: 4905.0 K Logg: 3.30 Fe/H: -0.240



TPS TCE Results:

Period = 21.37900 d
Epoch = 147.1699 BKJD

DV fit results are unavailable

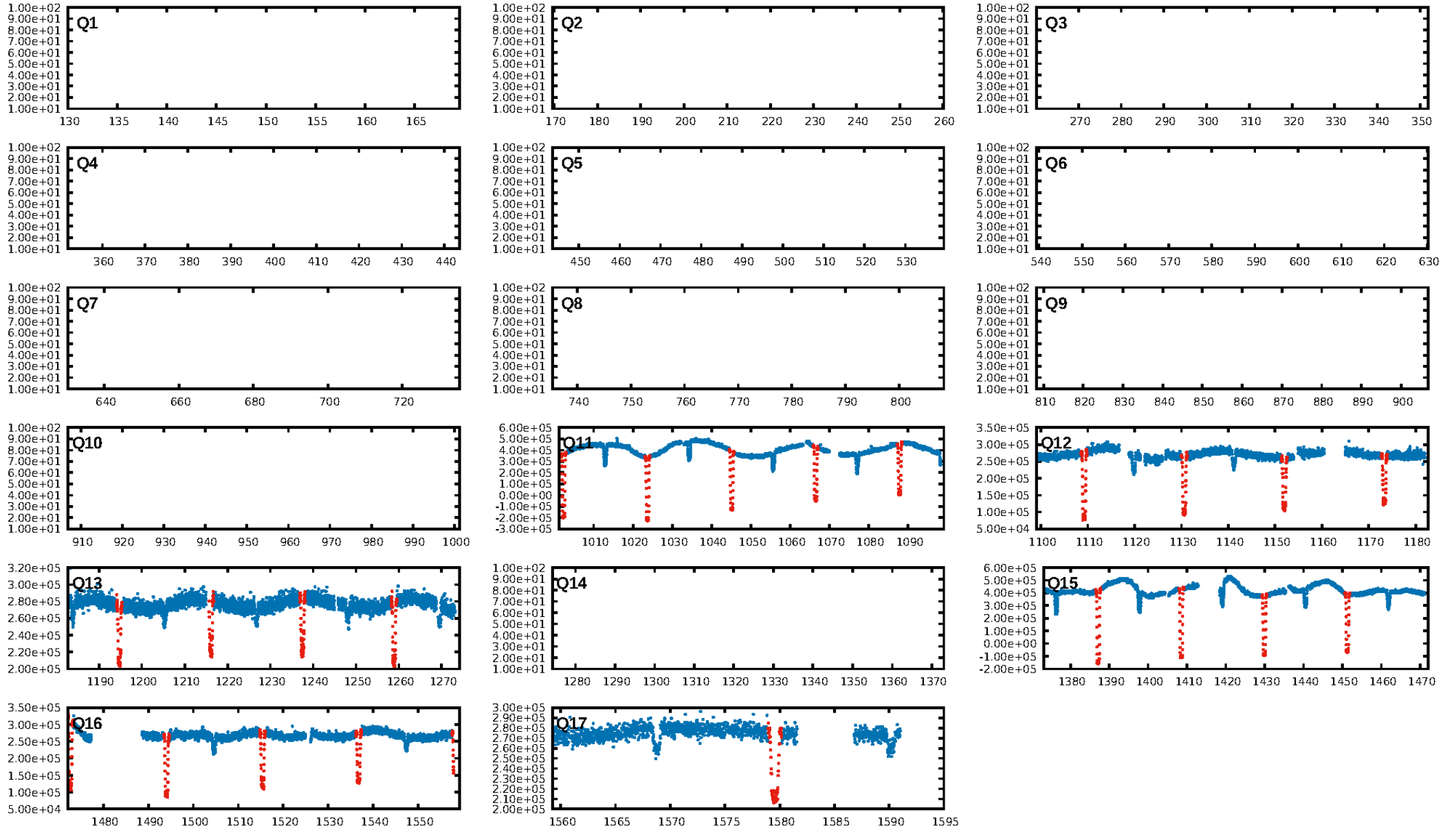
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [21/21]
GhostDiagnostic-chr: -0.8311
Centroid-sig: 0.0%
Centroid-so: 5.311 arcsec [6160.44 σ]
OotOffset-rm: 0.048 arcsec [0.69 σ]
KicOffset-rm: 8.291 arcsec [112.20 σ]
OotOffset-st: 0/2/2/2 [6]
KicOffset-st: 0/2/2/2 [6]
DiffImageQuality-fgm: 1.00 [6/6]
DiffImageOverlap-fno: 1.00 [6/6]

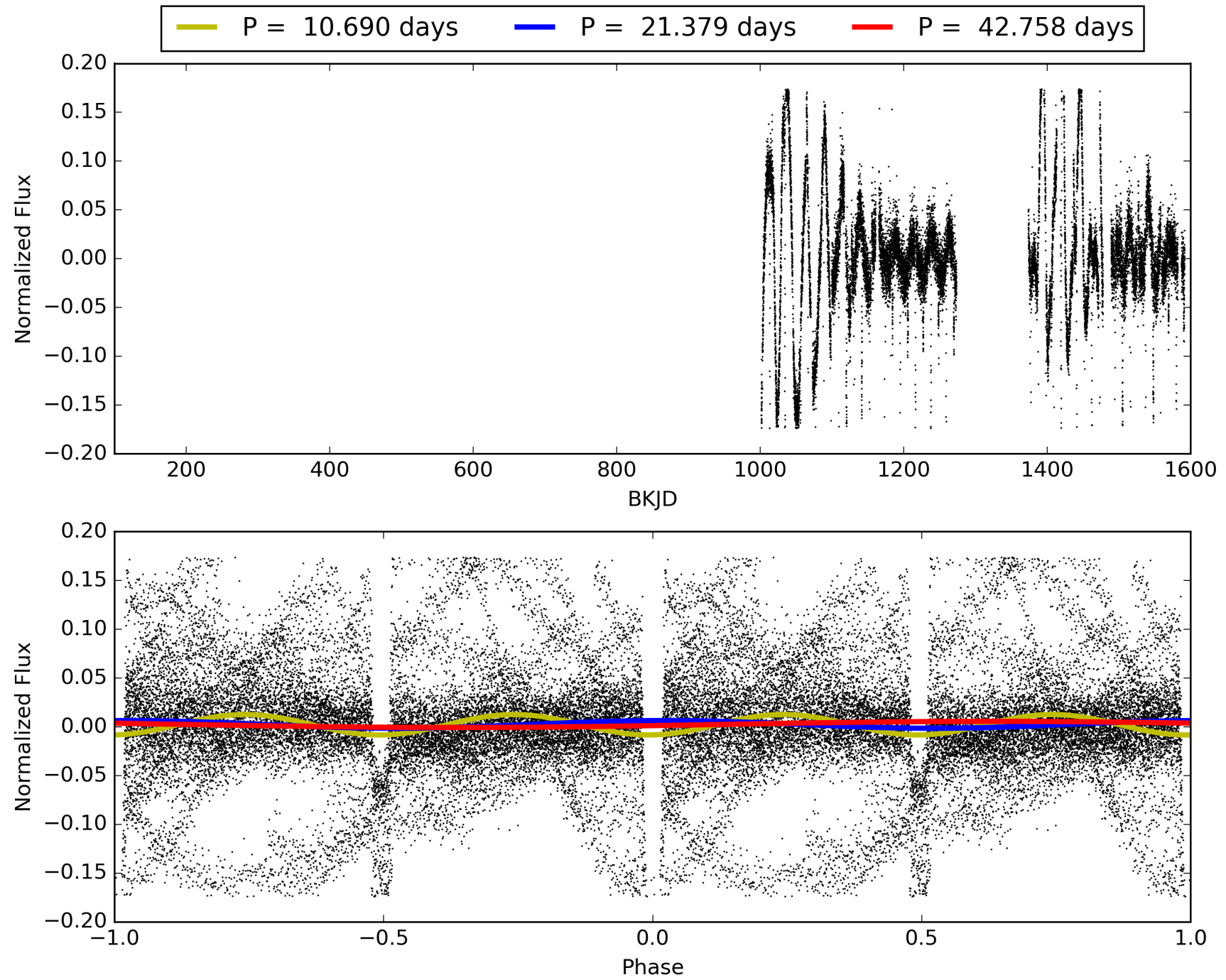
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005193384-01, PDC Light Curves

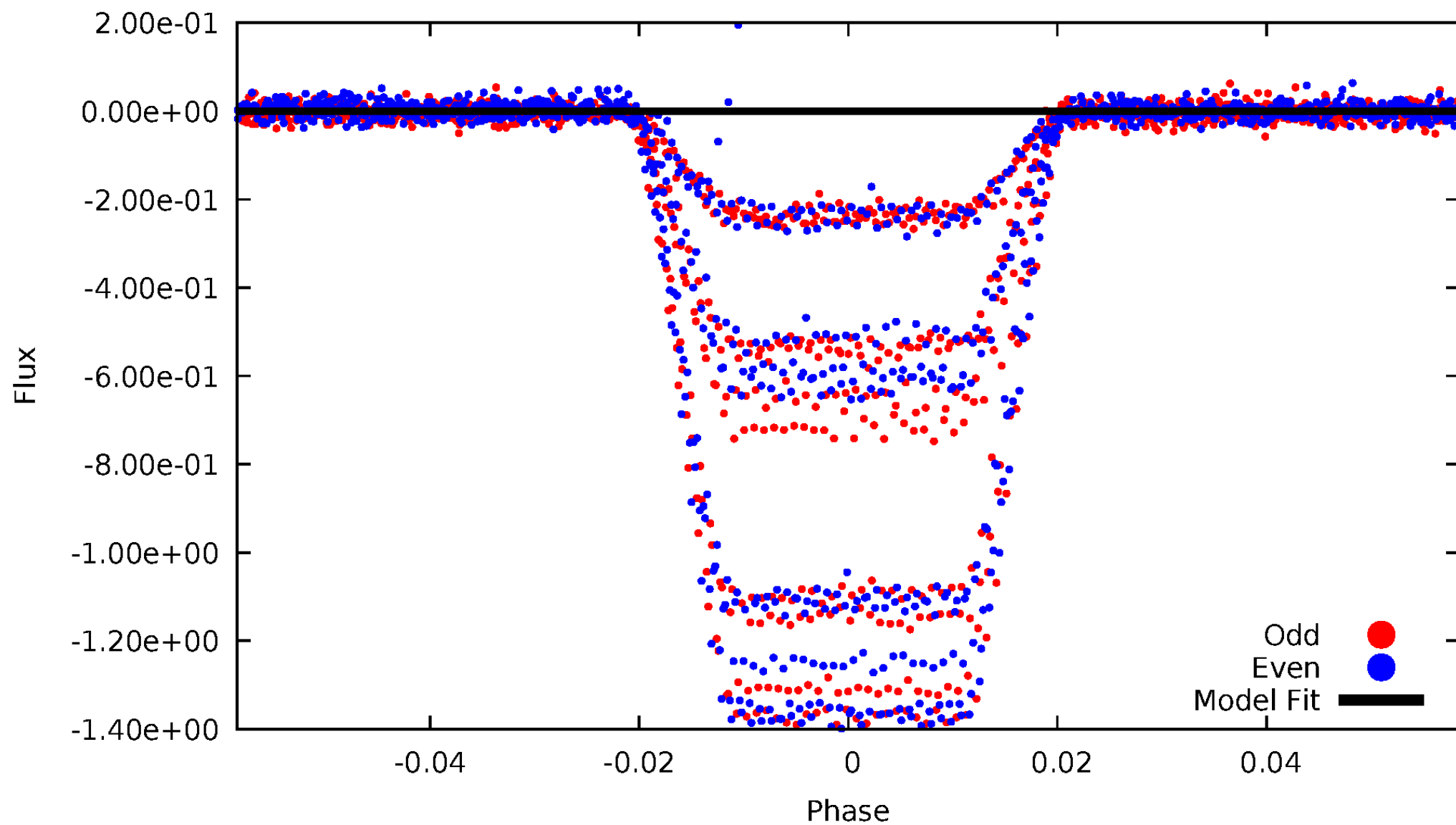


TCE 005193384-01



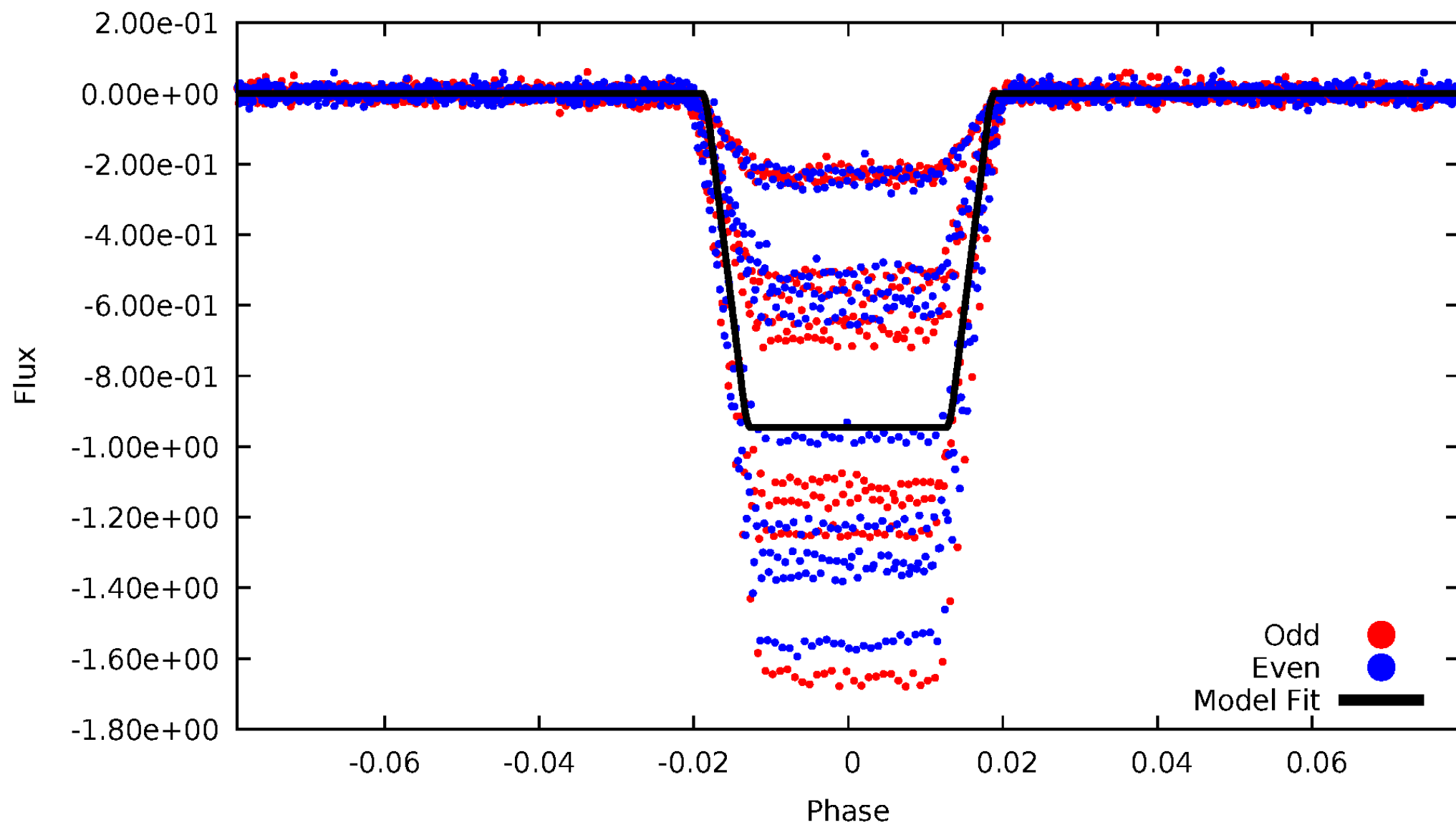
DV Odd/Even

TCE 005193384-01



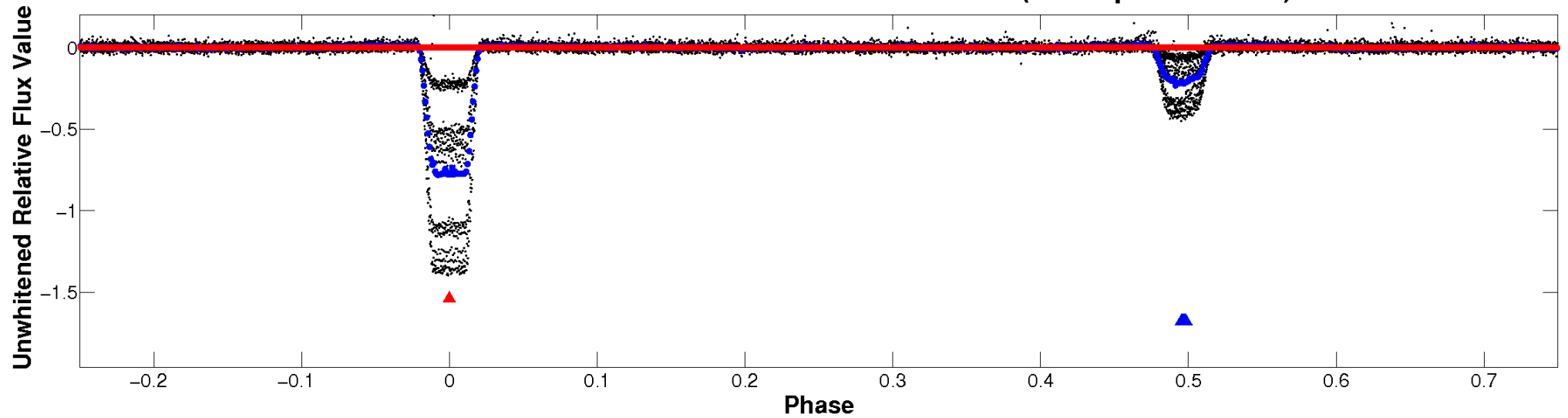
ALT Odd/Even

TCE 005193384-01

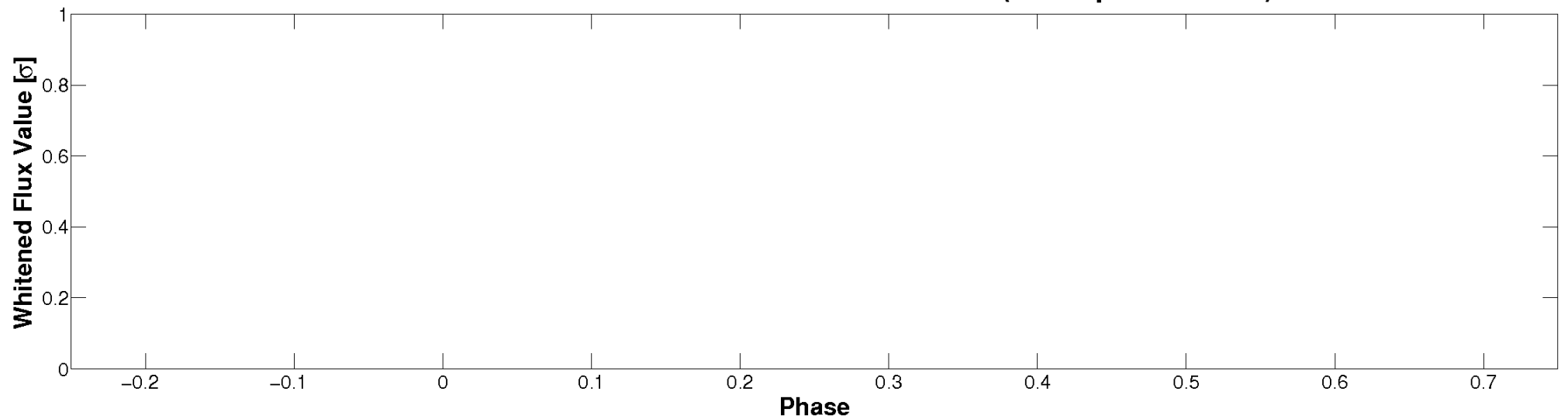


Non-Whitened Vs. Whitened Light Curve

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

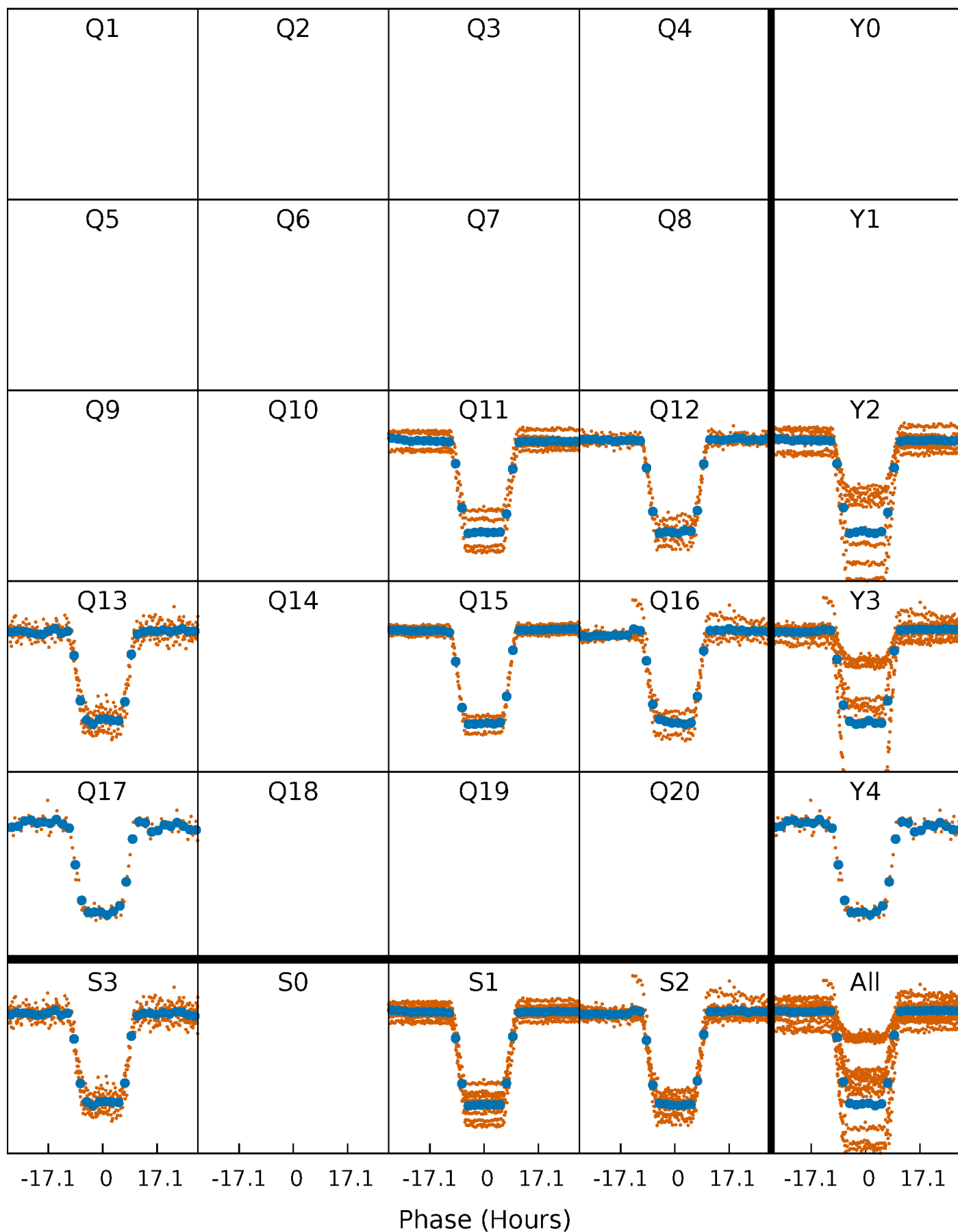


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



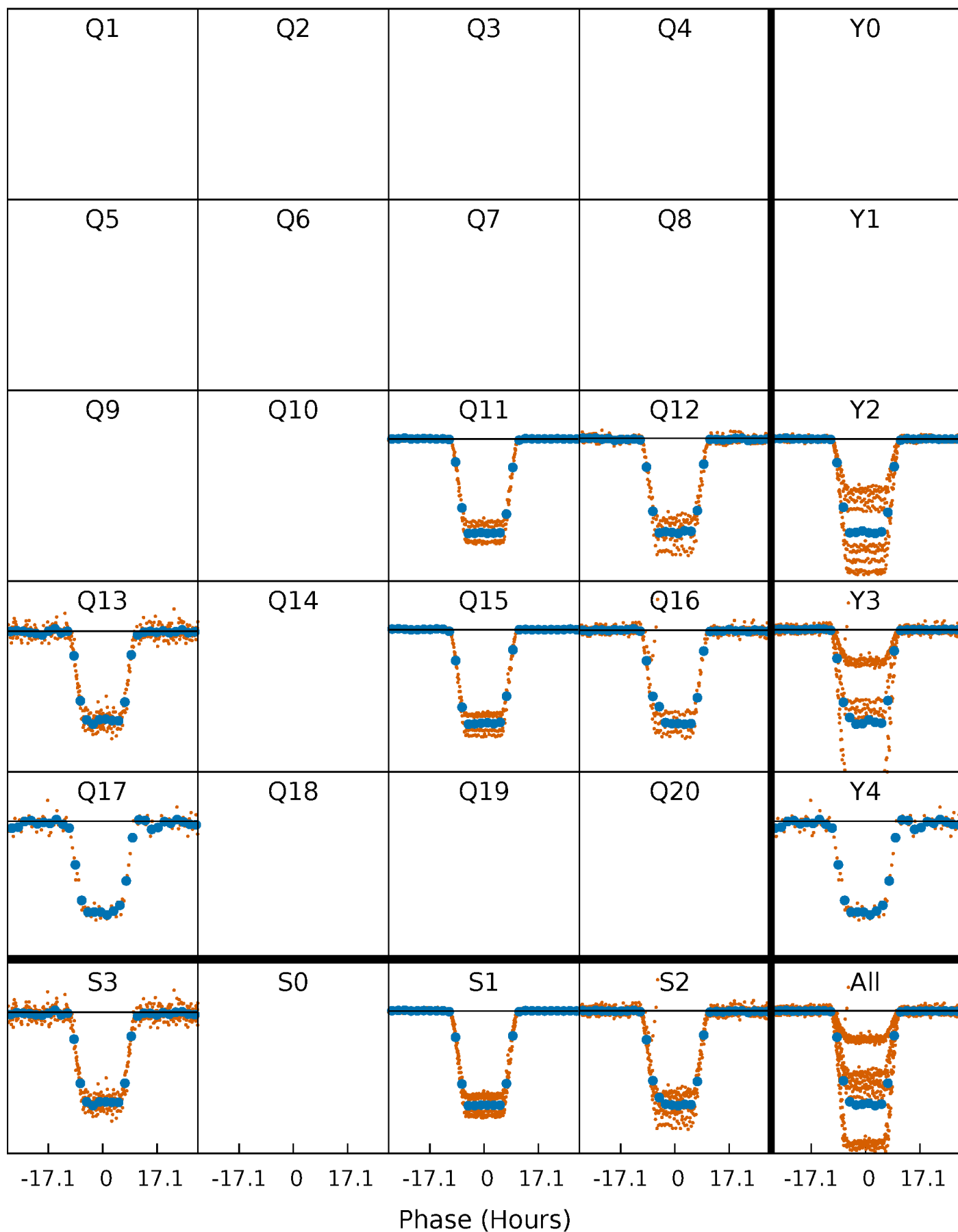
PDC Quarter-Phased Transit Curves

TCE 005193384-01 P= 21.379002 Days $T_0=147.169912$ (BKJD)



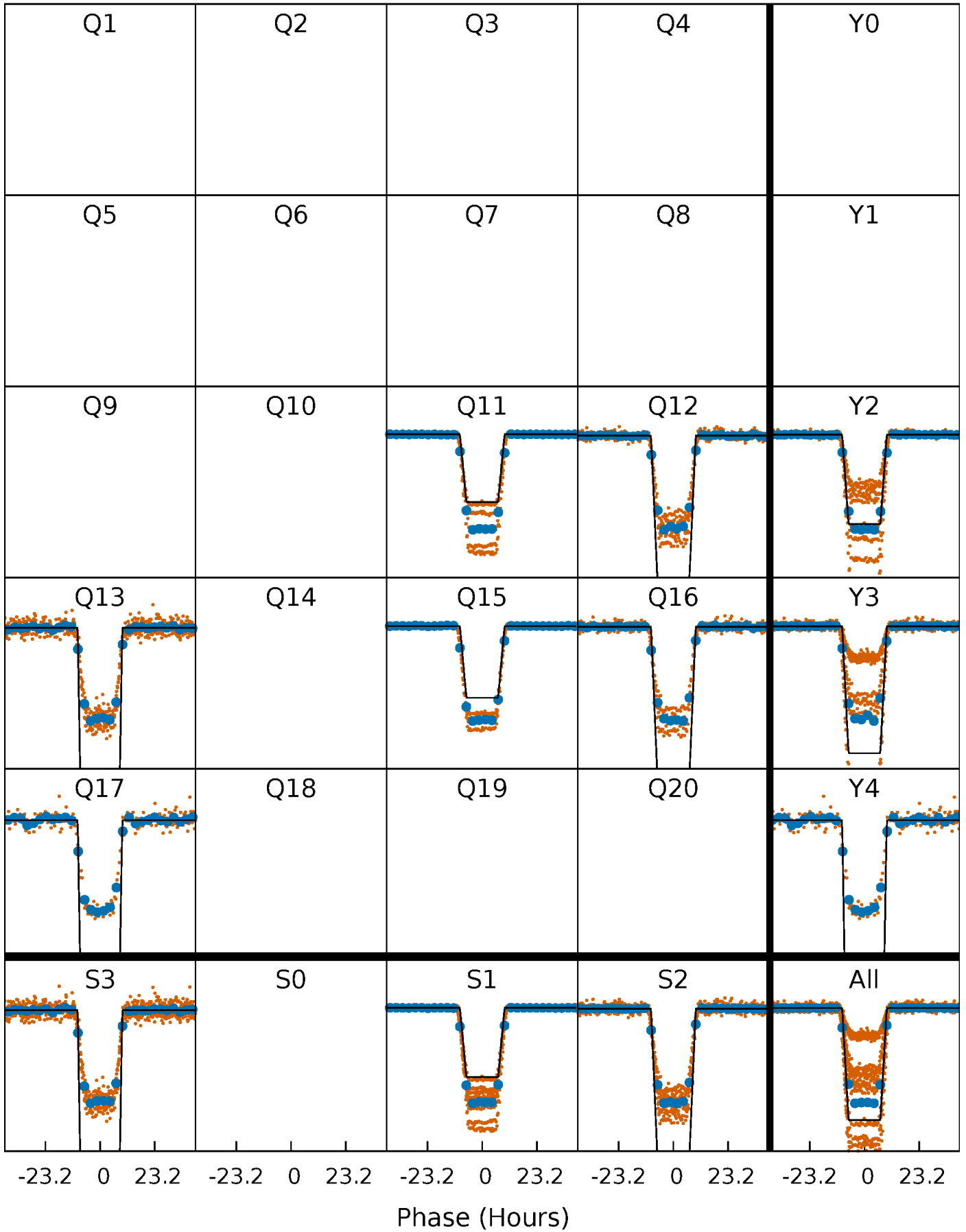
DV Quarter-Phased Transit Curves

TCE 005193384-01 P= 21.379002 Days $T_0=147.169912$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

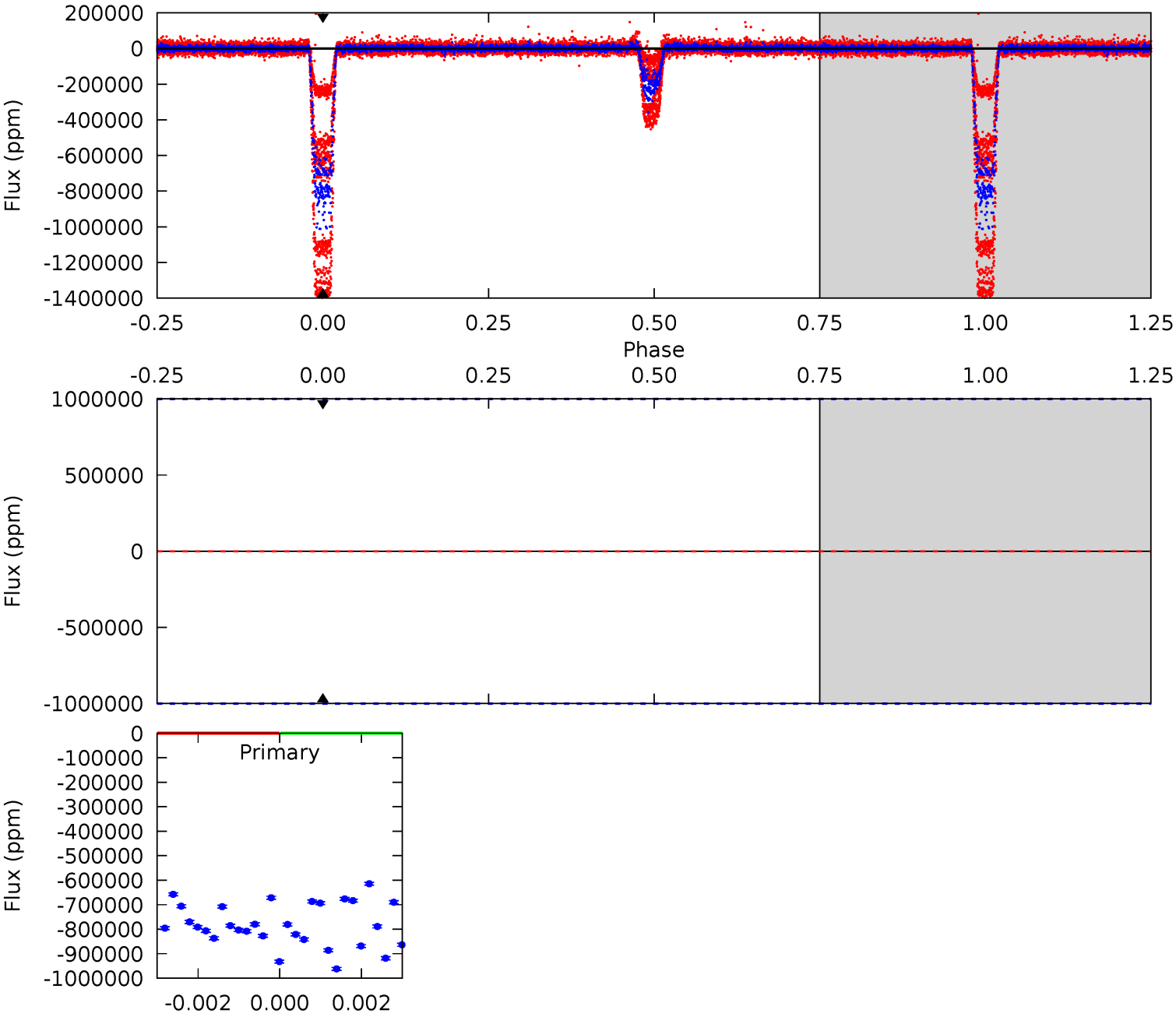
TCE 005193384-01 P= 21.379002 Days $T_0=147.171051$ (BKJD)



DV Model-Shift Uniqueness Test

005193384-01, P = 21.379002 Days, E = 147.169912 Days

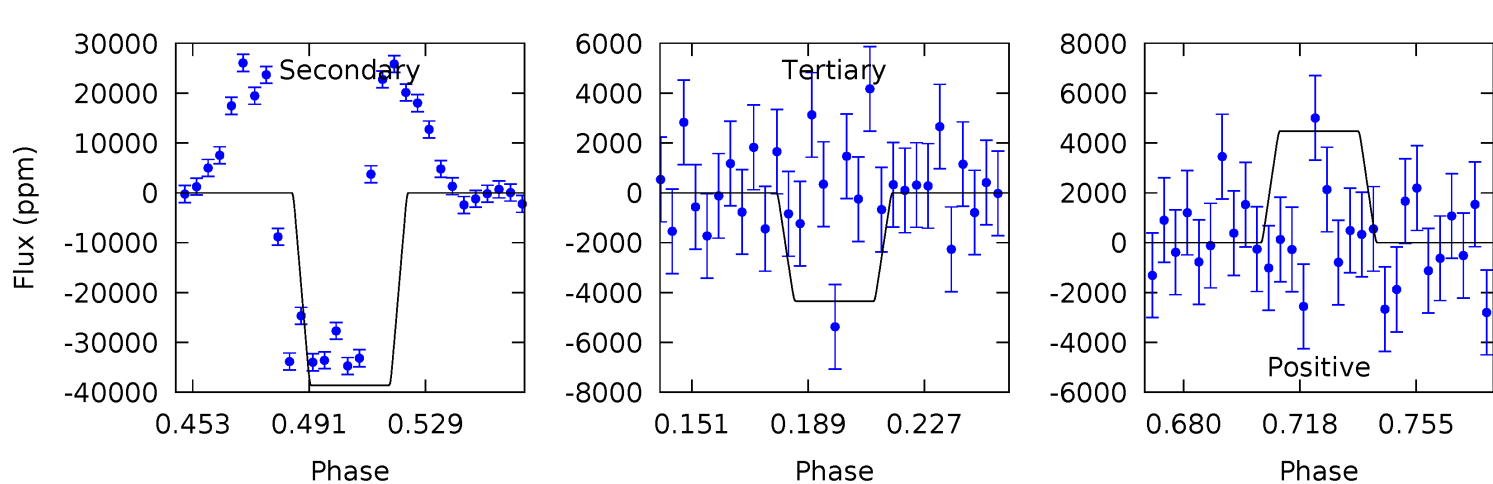
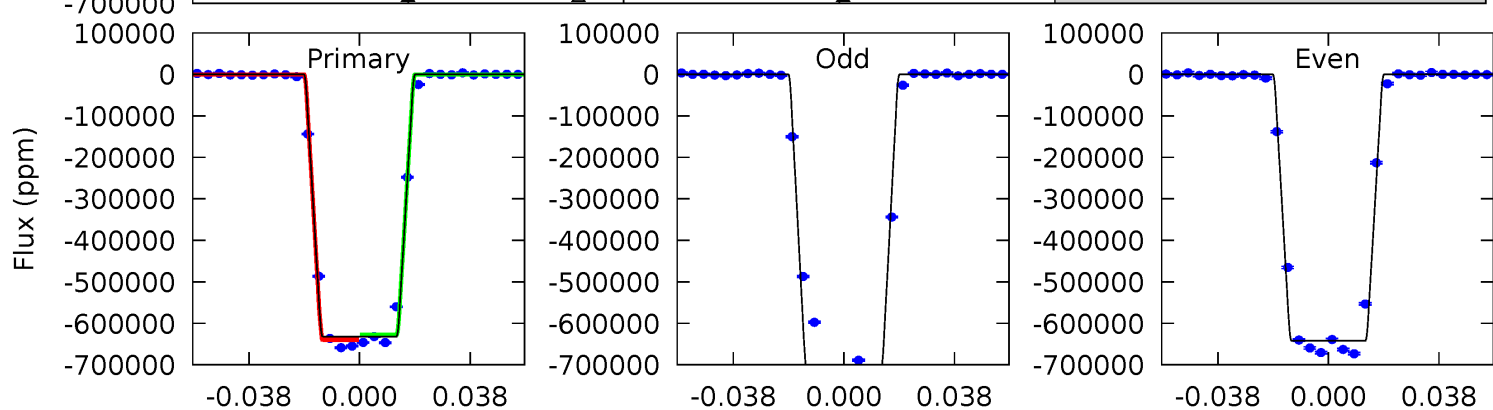
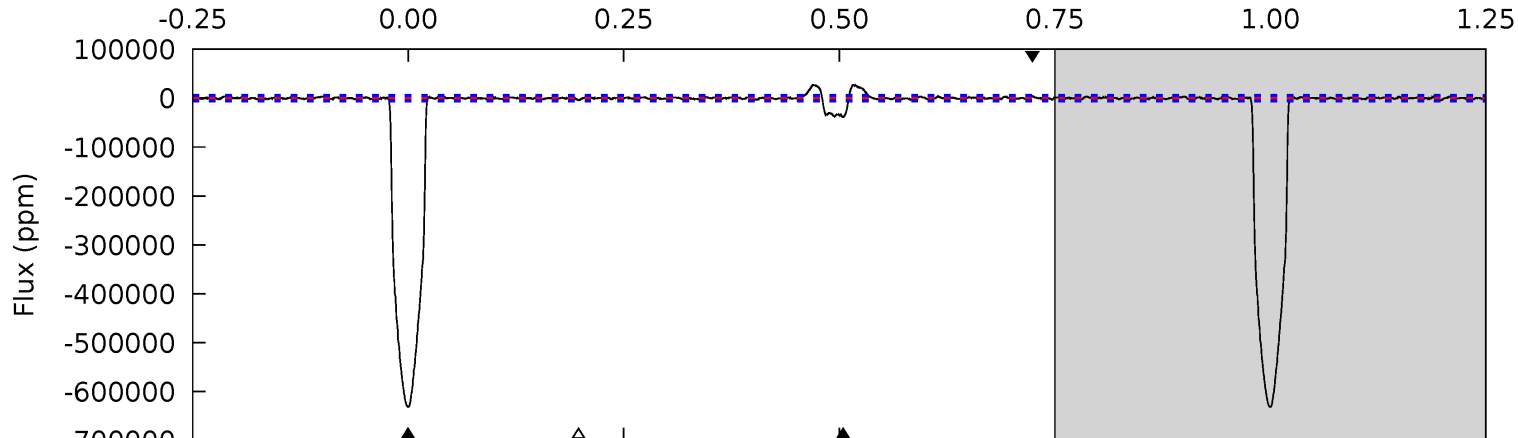
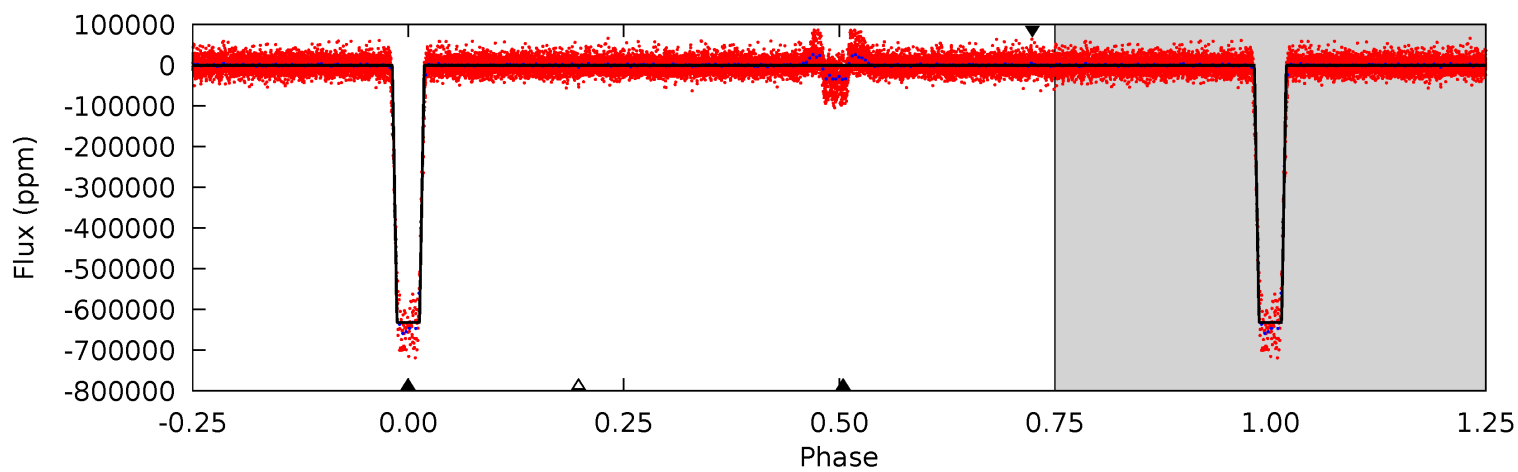
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

005193384-01, P = 21.379002 Days, E = 147.171051 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
542.9	33.2	3.73	3.84	4.76	2.08	1.46	539.2	539.1	29.4	29.3	31.0	1.24	0.04	0



Stellar Parameters For KIC 005193384

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4905^{+66}_{-51}	$3.300^{+0.135}_{-0.165}$	$-0.240^{+0.150}_{-0.100}$	$3.484^{+0.909}_{-0.490}$	$0.883^{+0.115}_{-0.014}$	$0.029^{+0.018}_{-0.013}$
	+1%/-1%	+4%/-5%	+62%/-42%	+26%/-14%	+13%/-2%	+61%/-44%
Source	SPE74	SPE74	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 005193384-01 / KOI 3637.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$193.69^{+46.01}_{-41.30}$	1486^{+98}_{-73}	2579^{+1691}_{-6665}	$1.632^{+37.181}_{-32.265}$
Alt.	-38599 ± 1163	$375.17^{+61.63}_{-53.61}$	1487^{+97}_{-76}	2859^{+94}_{-88}	$3.398^{+1.150}_{-0.895}$

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 $A_{obs} \gg 1.0$

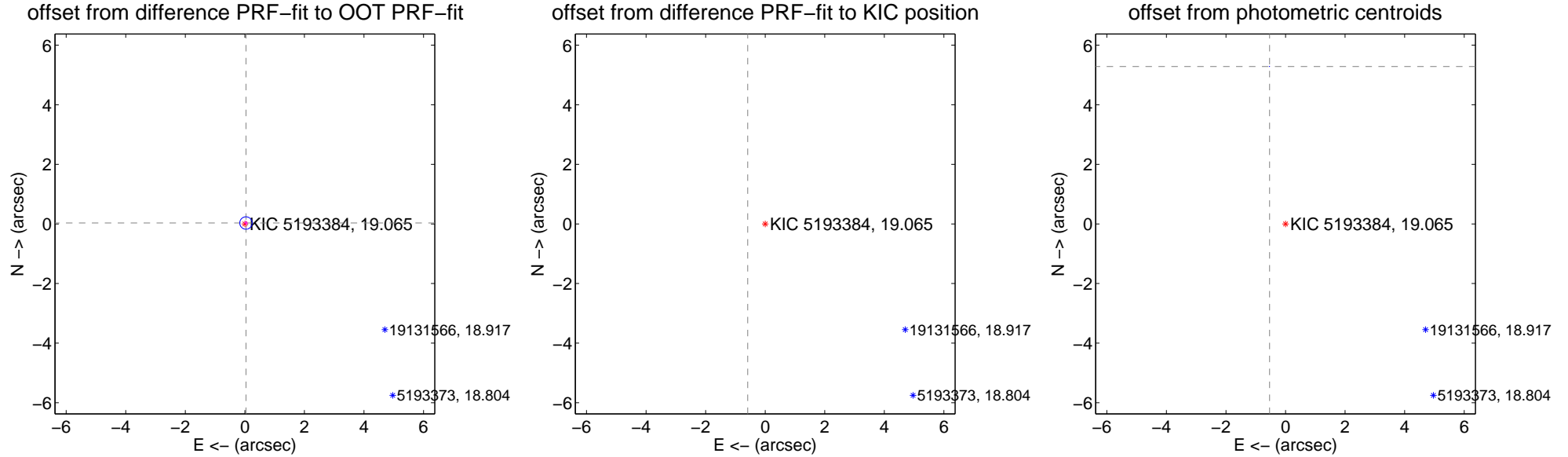
DV Centroid Data

Supplemental centroid analysis for 005193384-01. Kepler magnitude: 19.07. Transit SNR -1.00

There are 6 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 8.30 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.048 ± 0.069	0.69	-0.037 ± 0.068	0.031 ± 0.072
PRF-fit source offset from KIC position	8.291 ± 0.074	112.20	0.587 ± 0.068	8.270 ± 0.074
photometric centroid source offset	5.31 ± 0.00	6160.44	0.54 ± 0.00	5.28 ± 0.00



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.

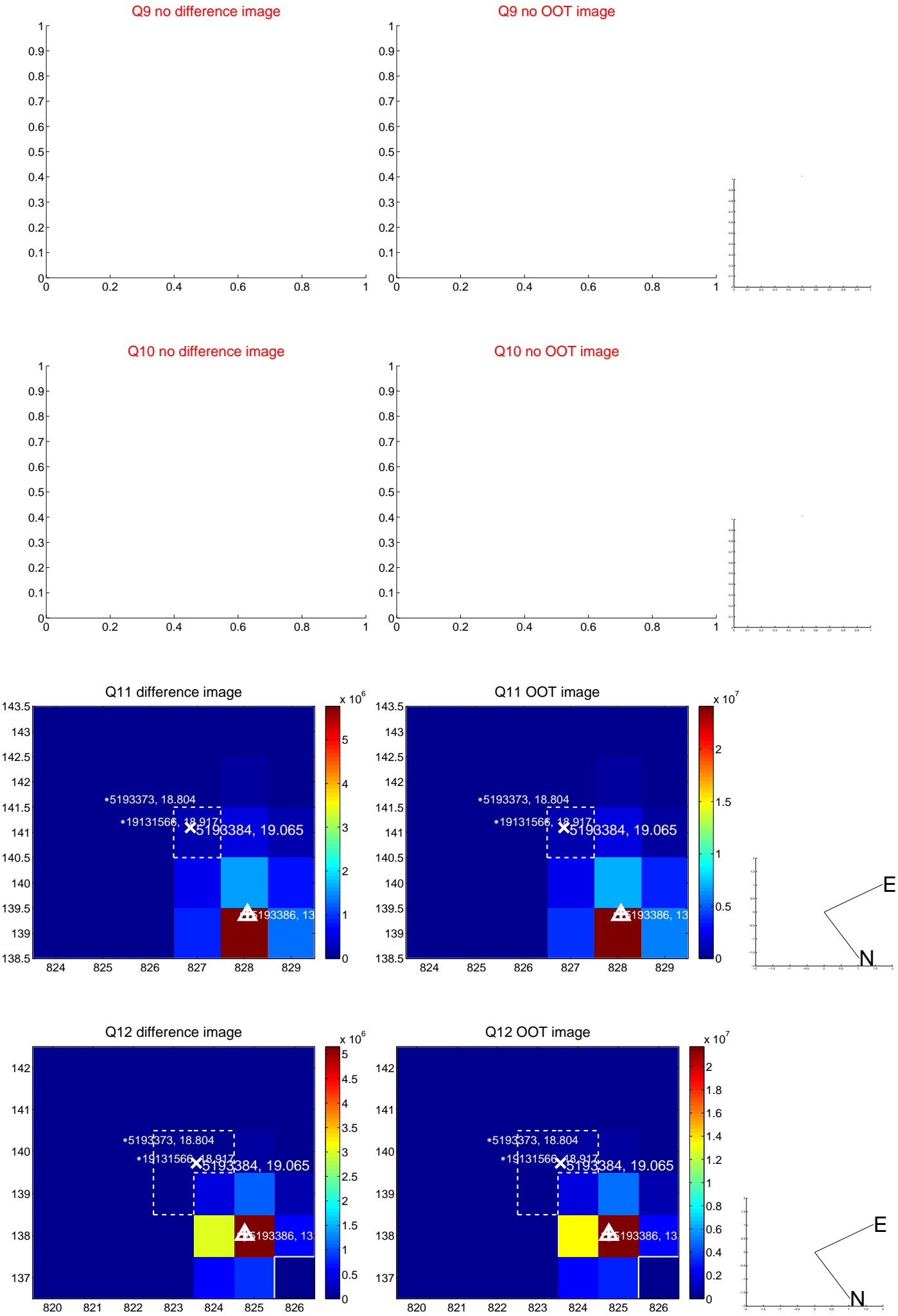
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



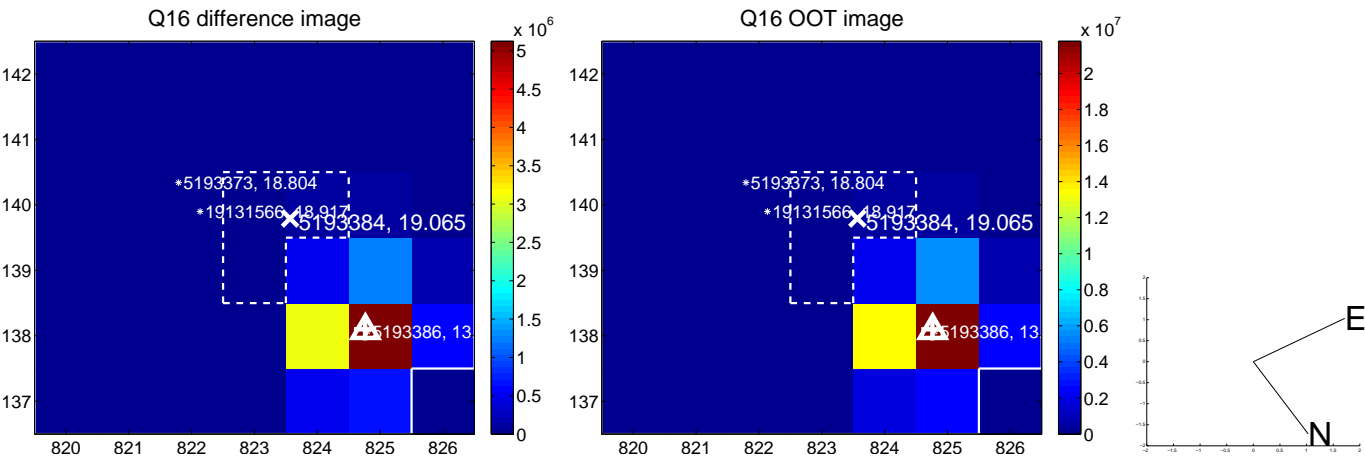
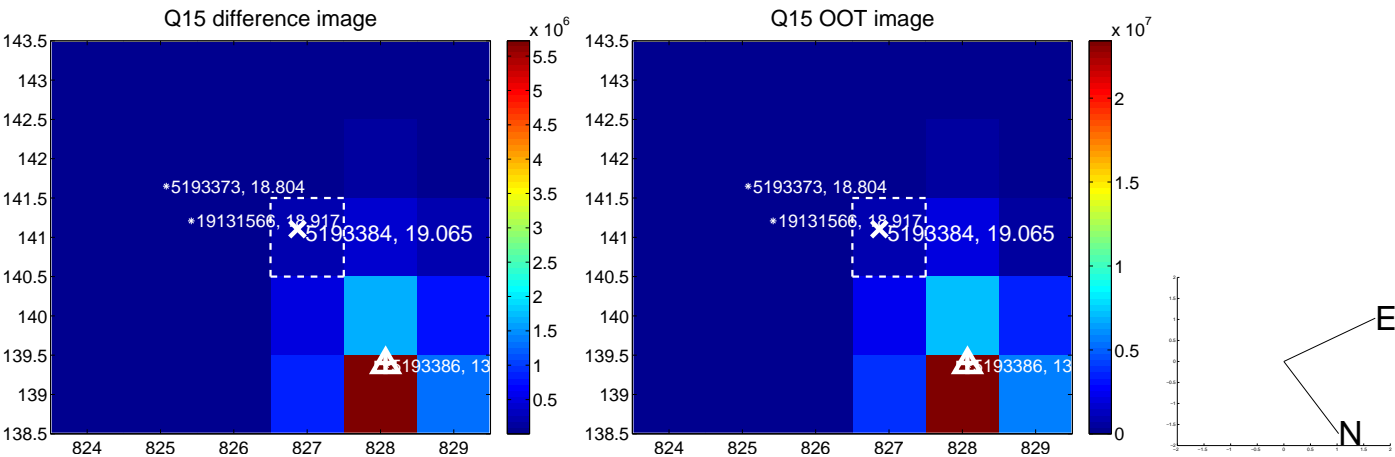
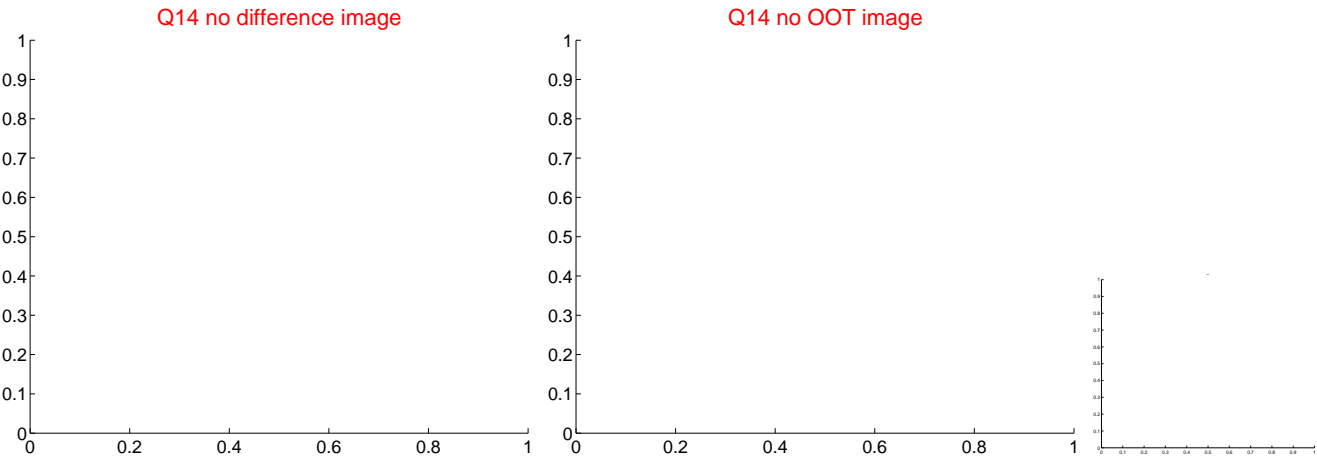
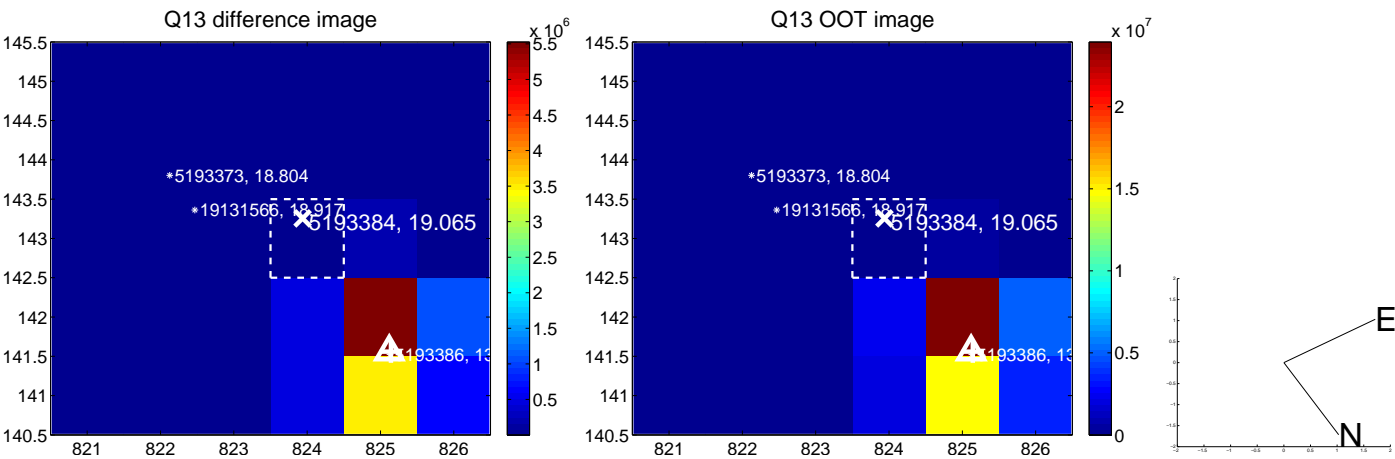
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



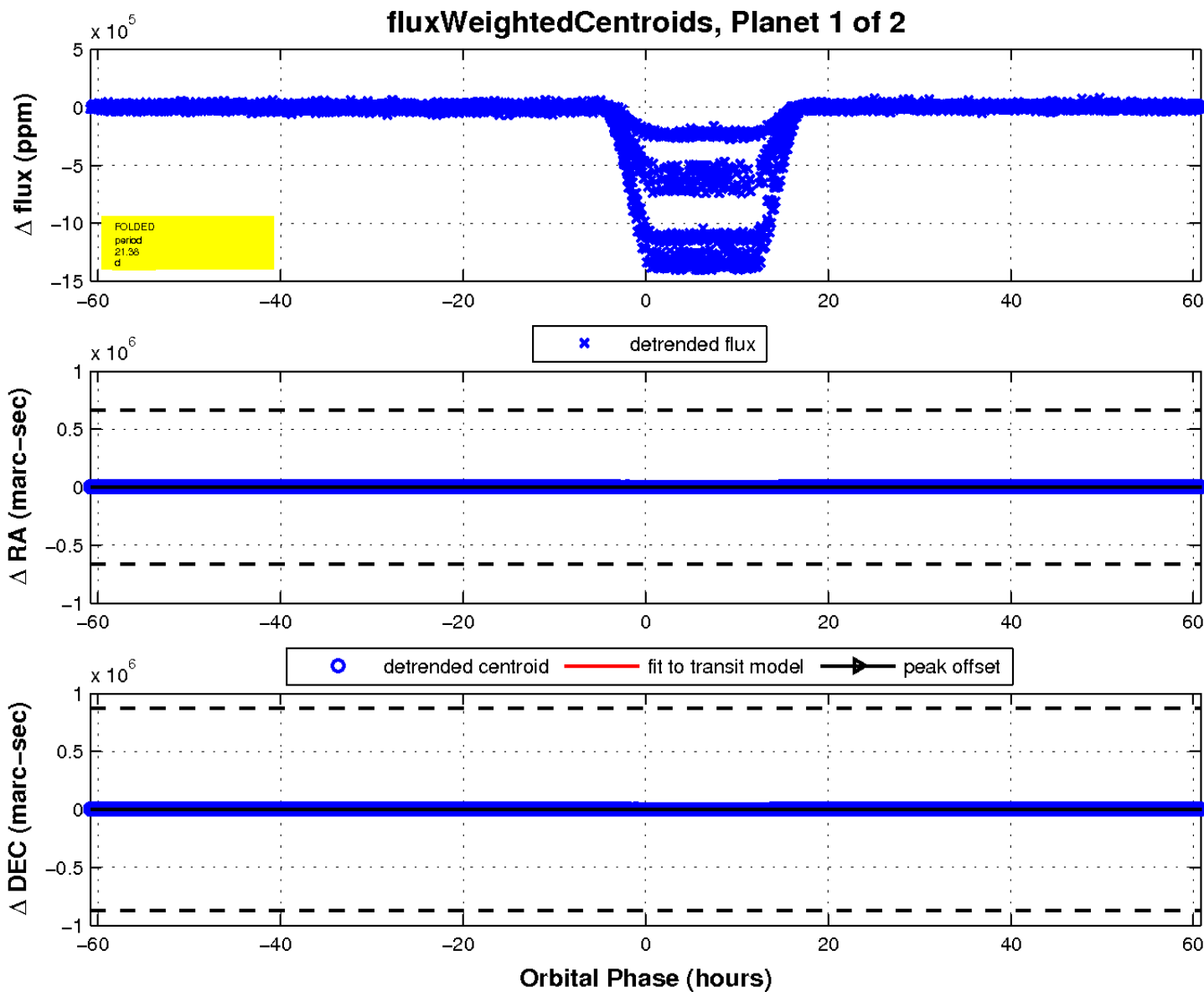
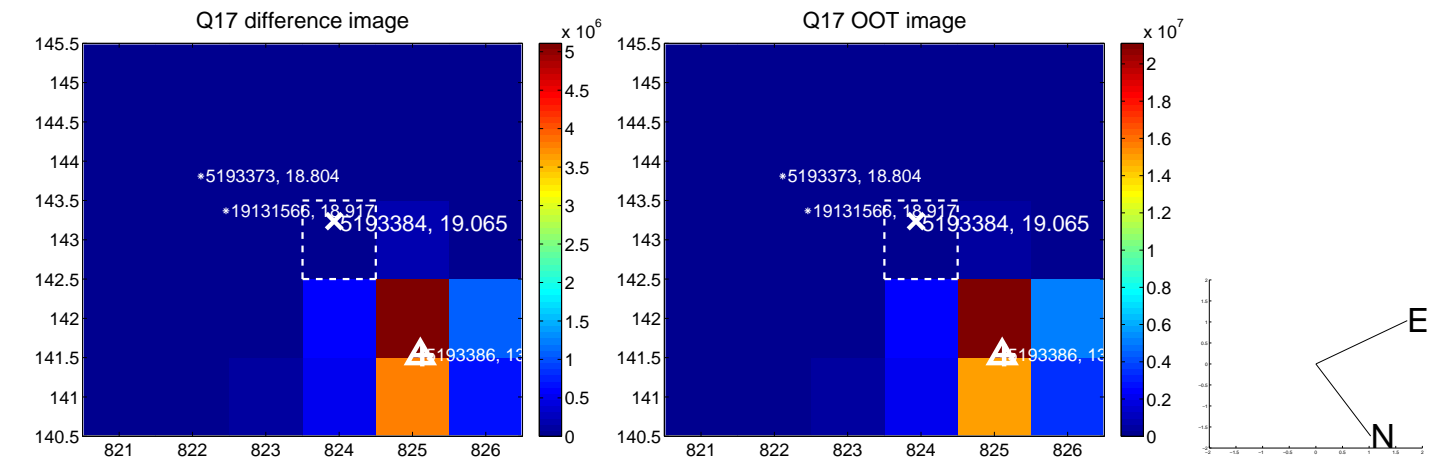
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white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

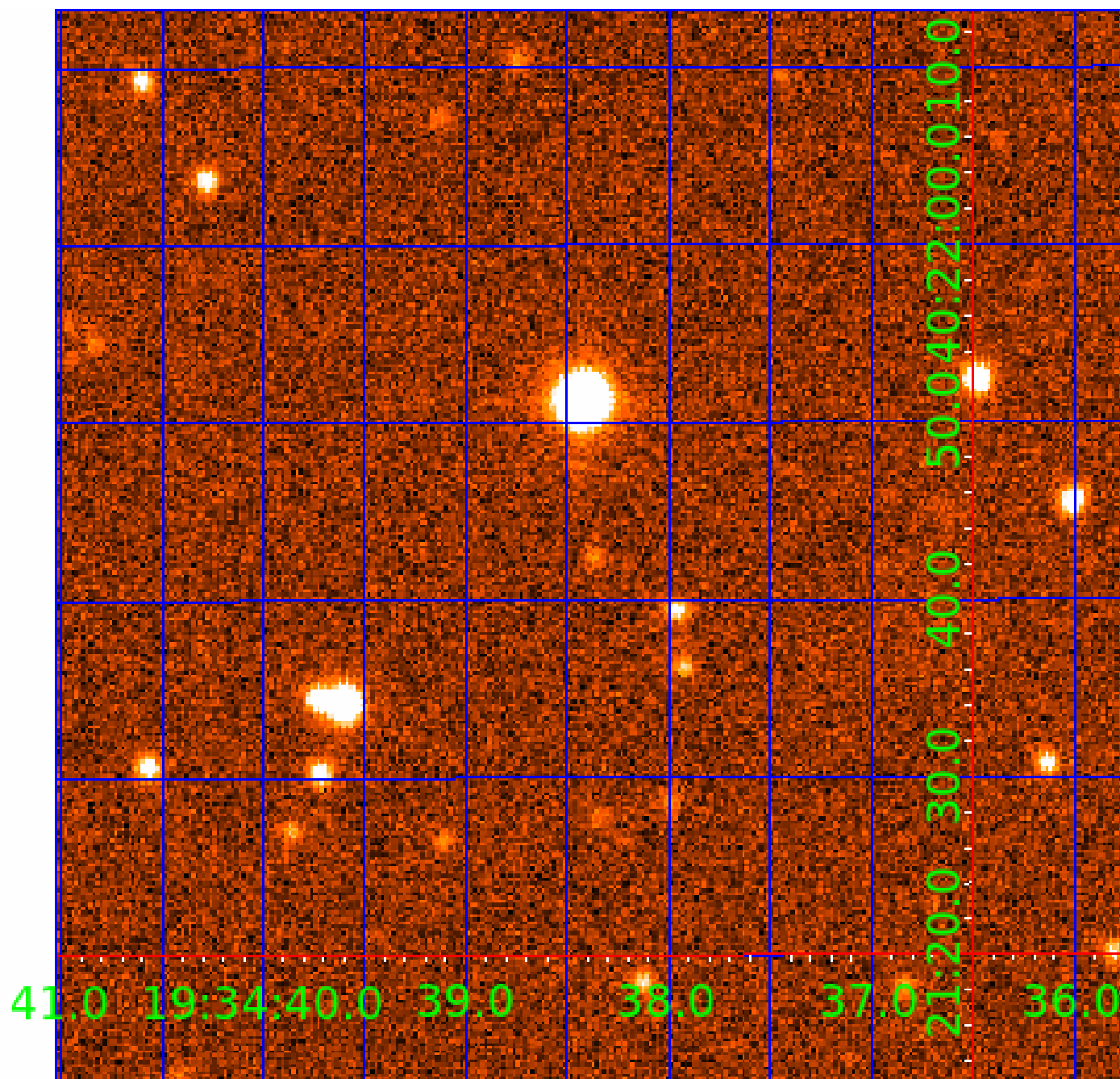


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005193384

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})
005193384-01	OBS	3637.01	21.379002	147.169912	304672.9	15.000	742.6	-1.0	3.48	4905	190.09	300.74
005193384-02	OBS	No	21.377997	136.446755	209460.9	22.538	201.1	102.4	3.48	4905	156.25	300.75

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005193384-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—MOD_ODDEVEN_ALT—HAS_SEC_TCE—SEASONAL_DEPTH_DV—SEASONAL_DEPTH_ALT—CENT_NOFITS
005193384-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET

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.

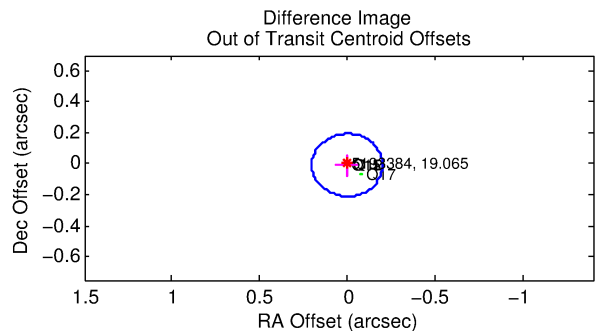
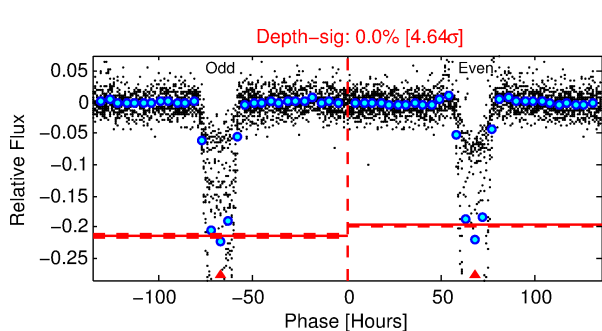
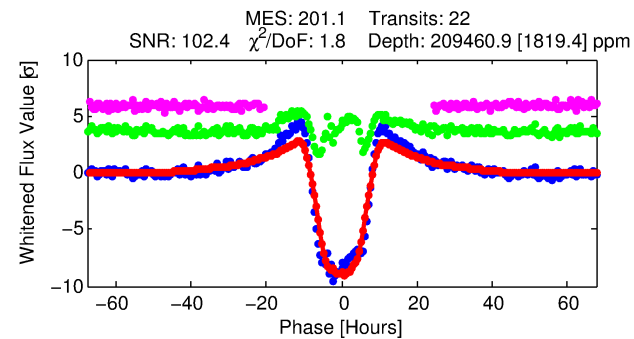
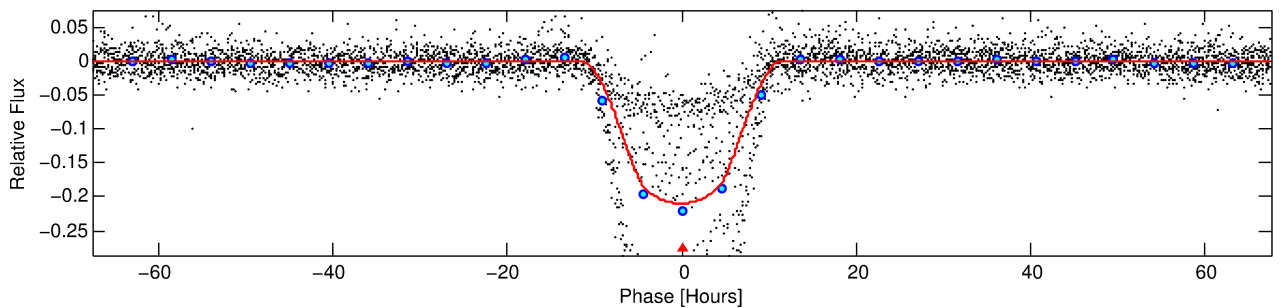
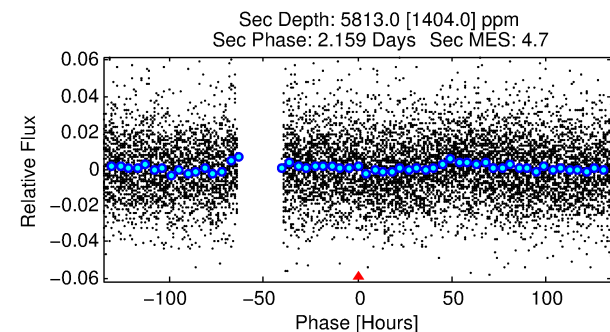
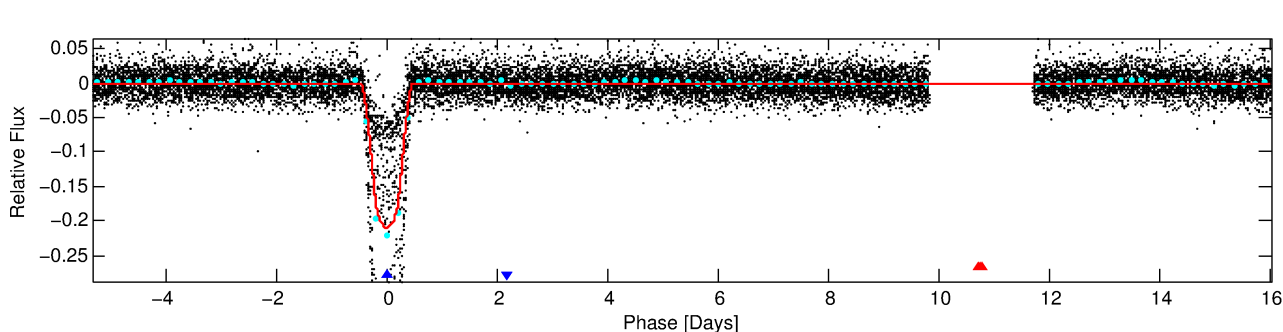
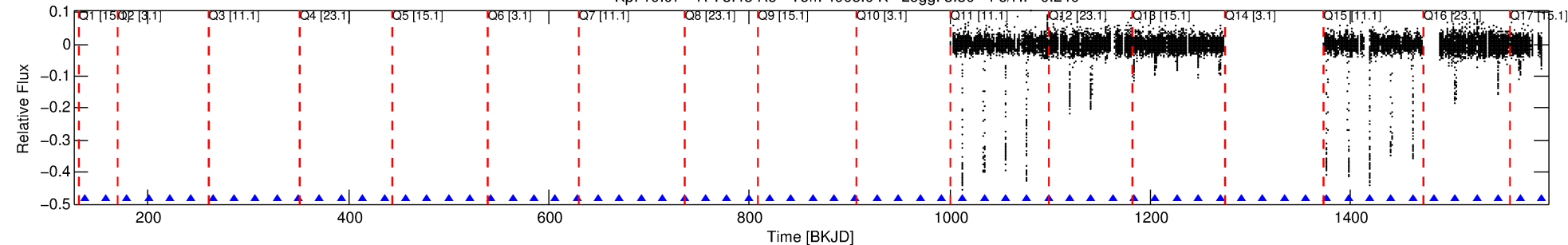
Ephemeris Match Information For 005193384-02

No Significant Match Found

DV One-Page Summary

KIC: 5193384 Candidate: 2 of 2 Period: 21.378 d
KOI: K03637.01 Corr: 0.946

Kp: 19.07 R*: 3.48 Rs Teff: 4905.0 K Logg: 3.30 Fe/H: -0.240



DV Fit Results:

Period = 21.37800 [0.00019] d
Epoch = 136.4468 [0.0103] BKJD
Rp/R* = 0.4110 [0.0031]
a/R* = 10.26 [0.15]
b = 0.01 [2.68]
Seff = 300.76 [93.82]
Teq = 1062 [83] K
Rp = 156.25 [40.78] Re
a = 0.1447 [0.0311] AU
Ag = 2.74 [1.07] [1.62sigma]
Teffp = 2113 [131] K [6.78sigma]

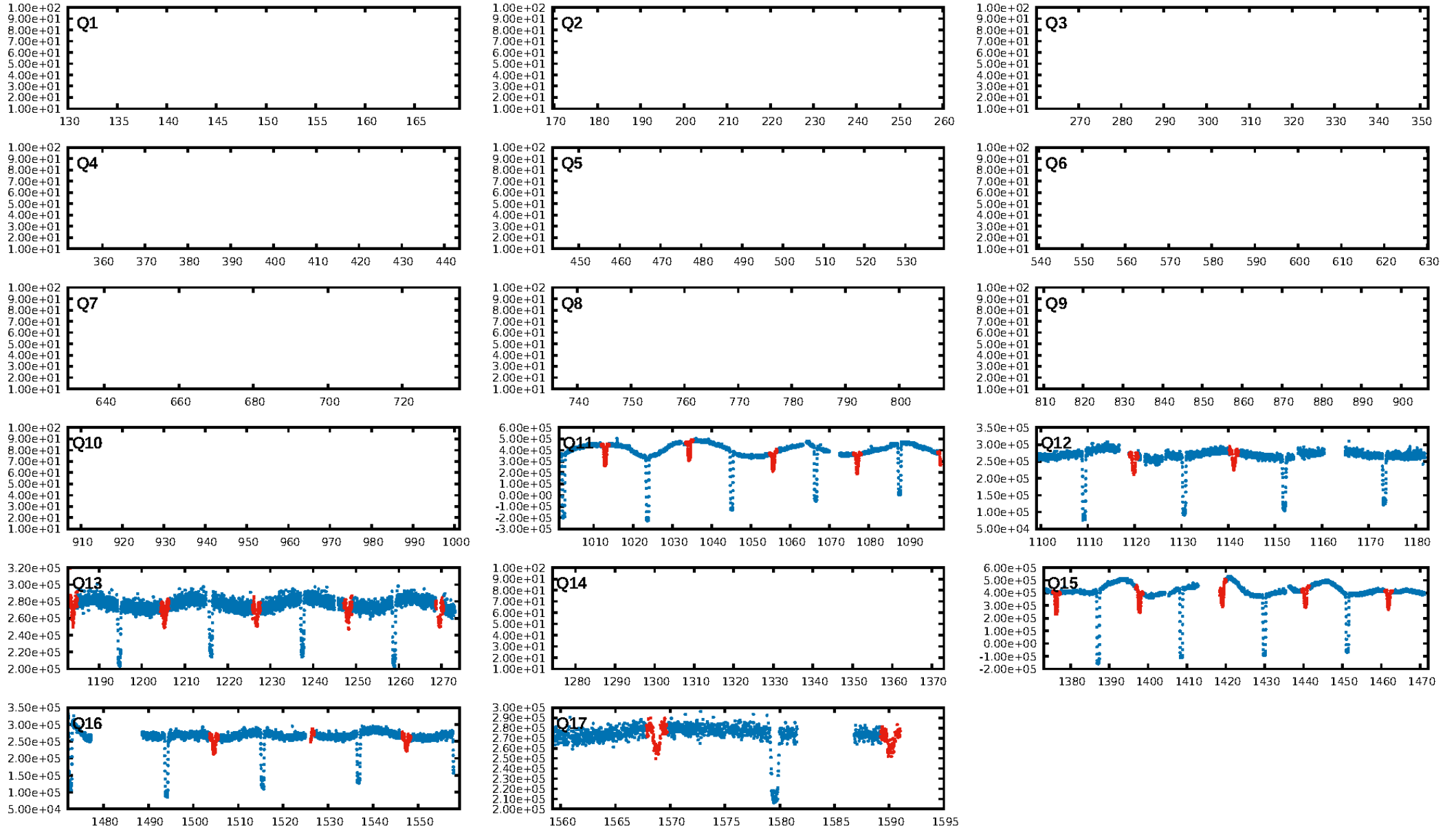
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00sigma]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [20/20]
GhostDiagnostic-chr: -0.815
Centroid-sig: 0.0%
Centroid-so: 5.347 arcsec [1600.88sigma]
OotOffset-rm: 0.009 arcsec [0.13sigma]
OotOffset-st: 0.2/1/1 [4]
KicOffset-rm: 8.265 arcsec [117.26sigma]
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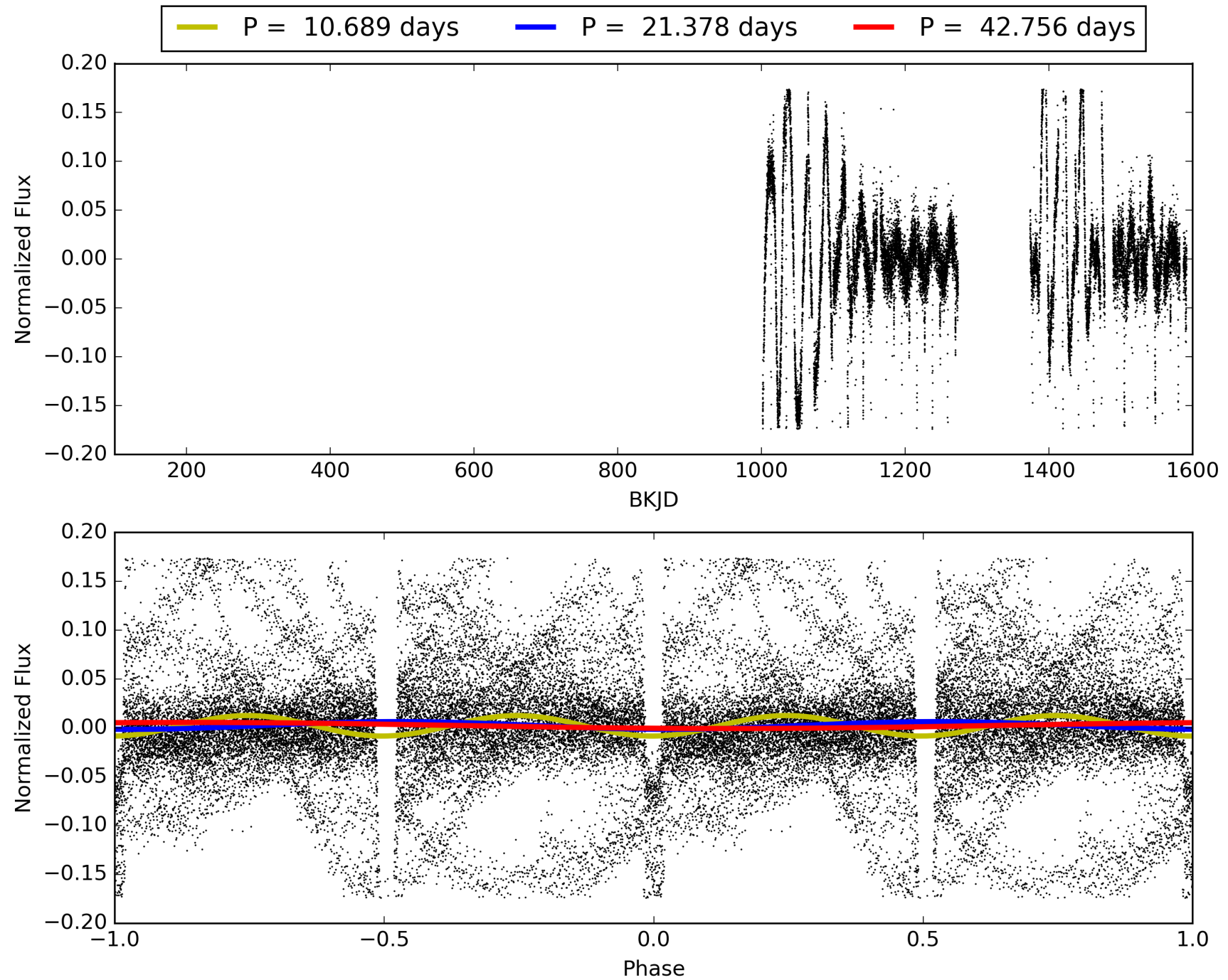
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005193384-02, PDC Light Curves

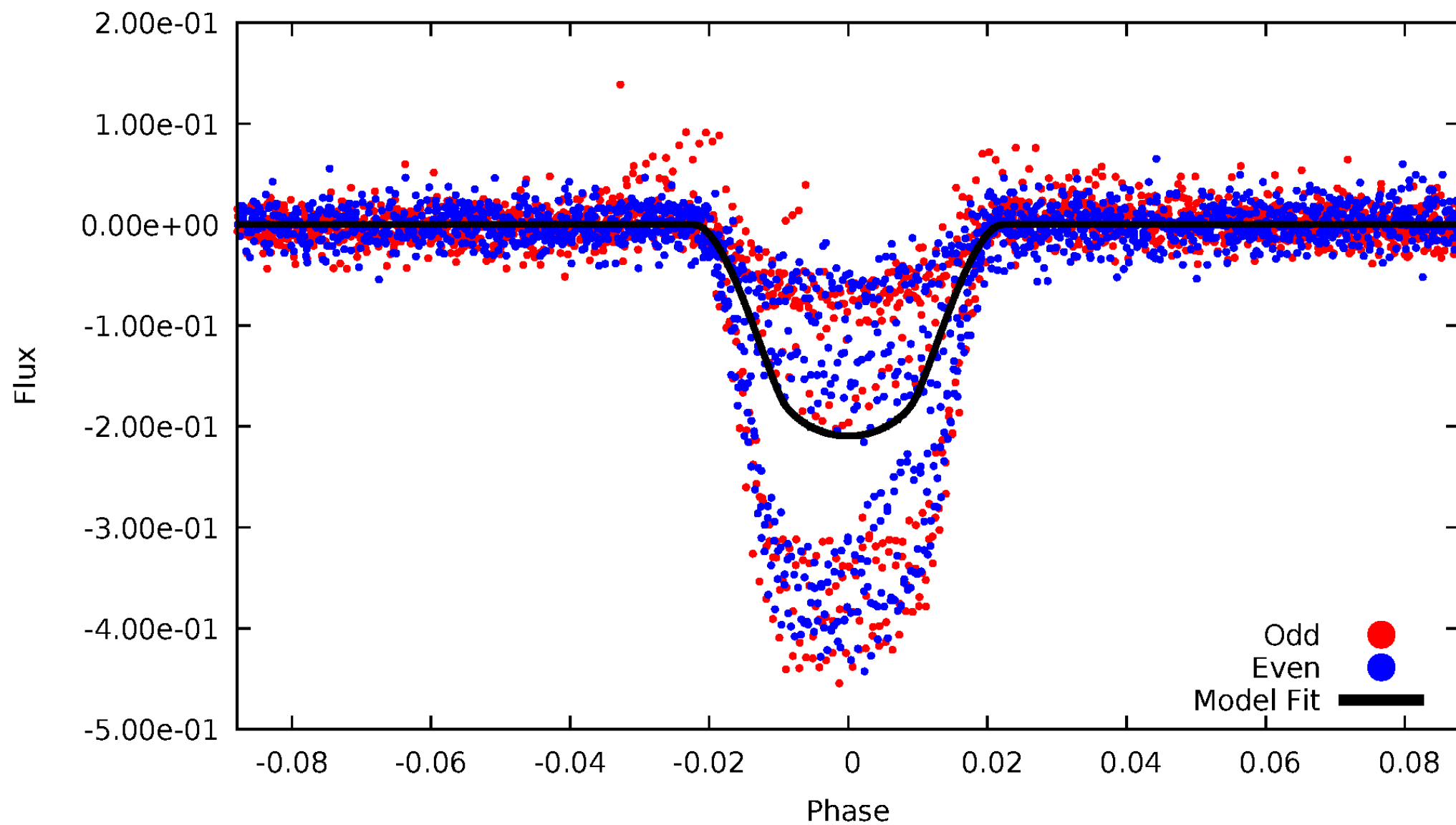


TCE 005193384-02



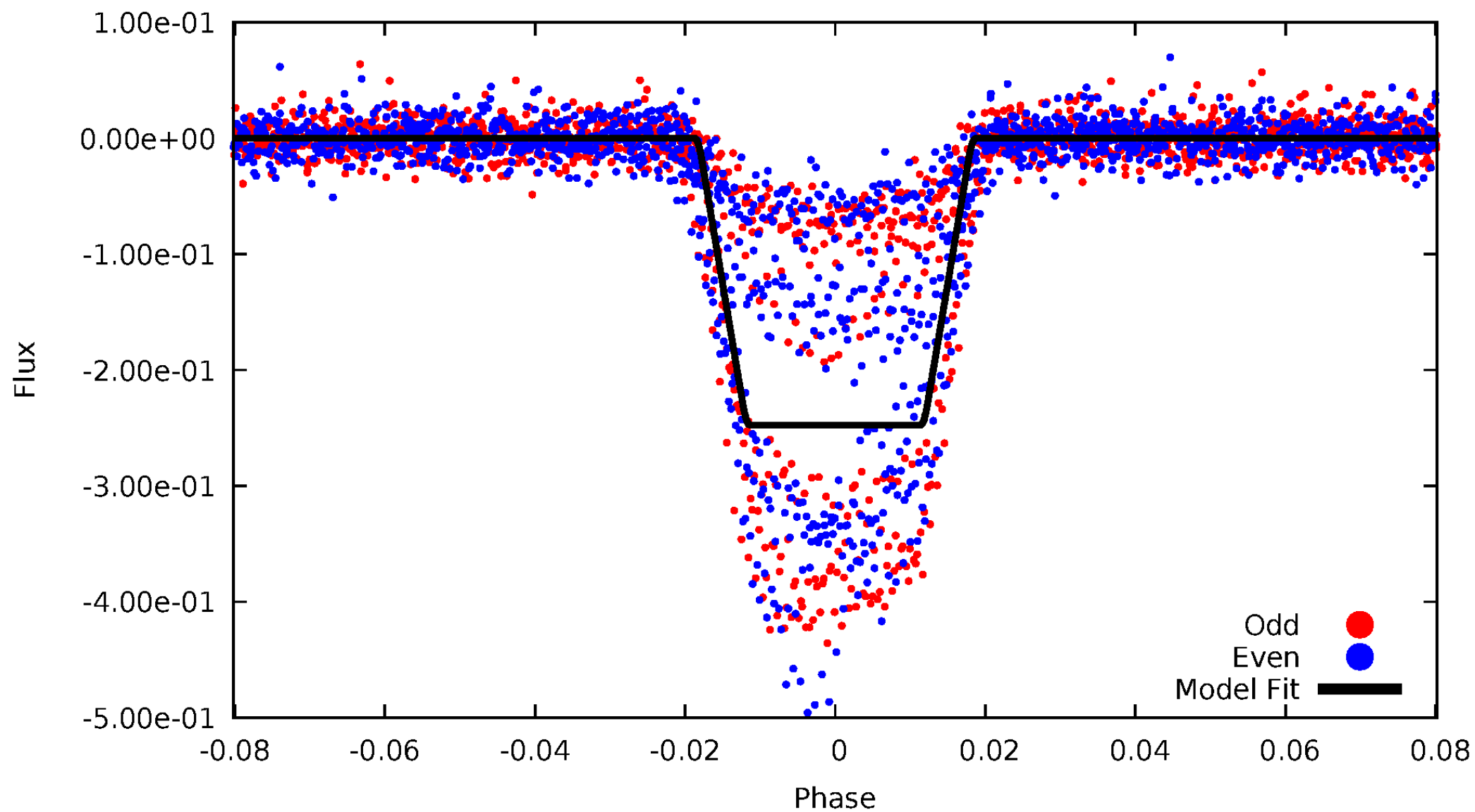
DV Odd/Even

TCE 005193384-02



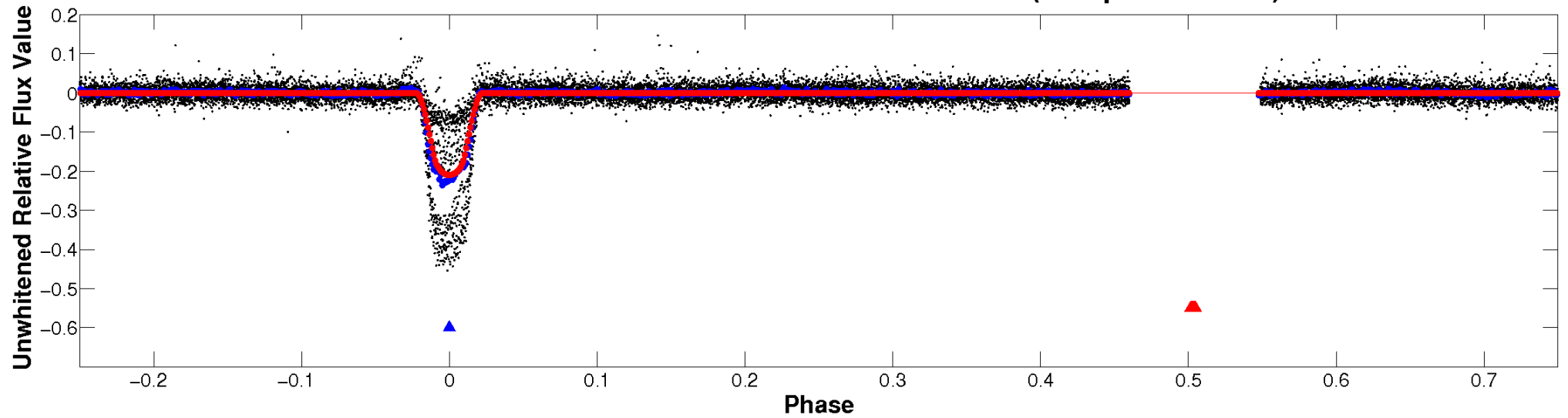
ALT Odd/Even

TCE 005193384-02

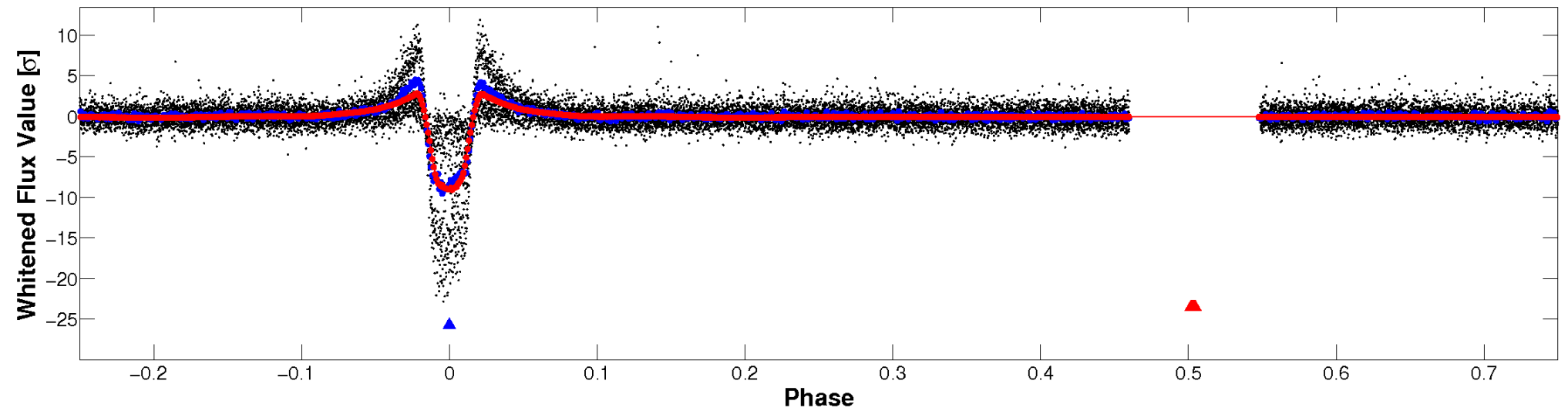


Non-Whitened Vs. Whitened Light Curve

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

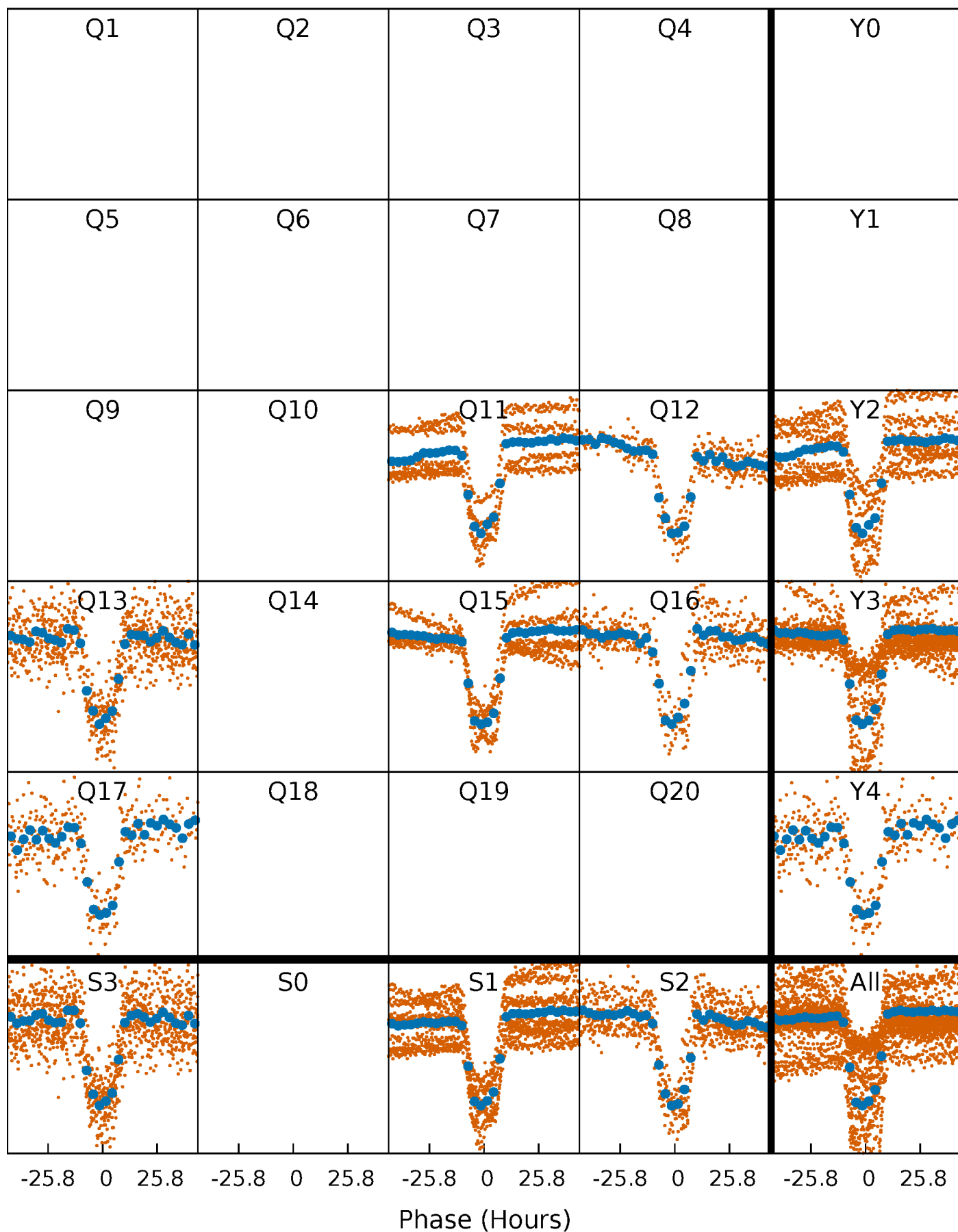


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



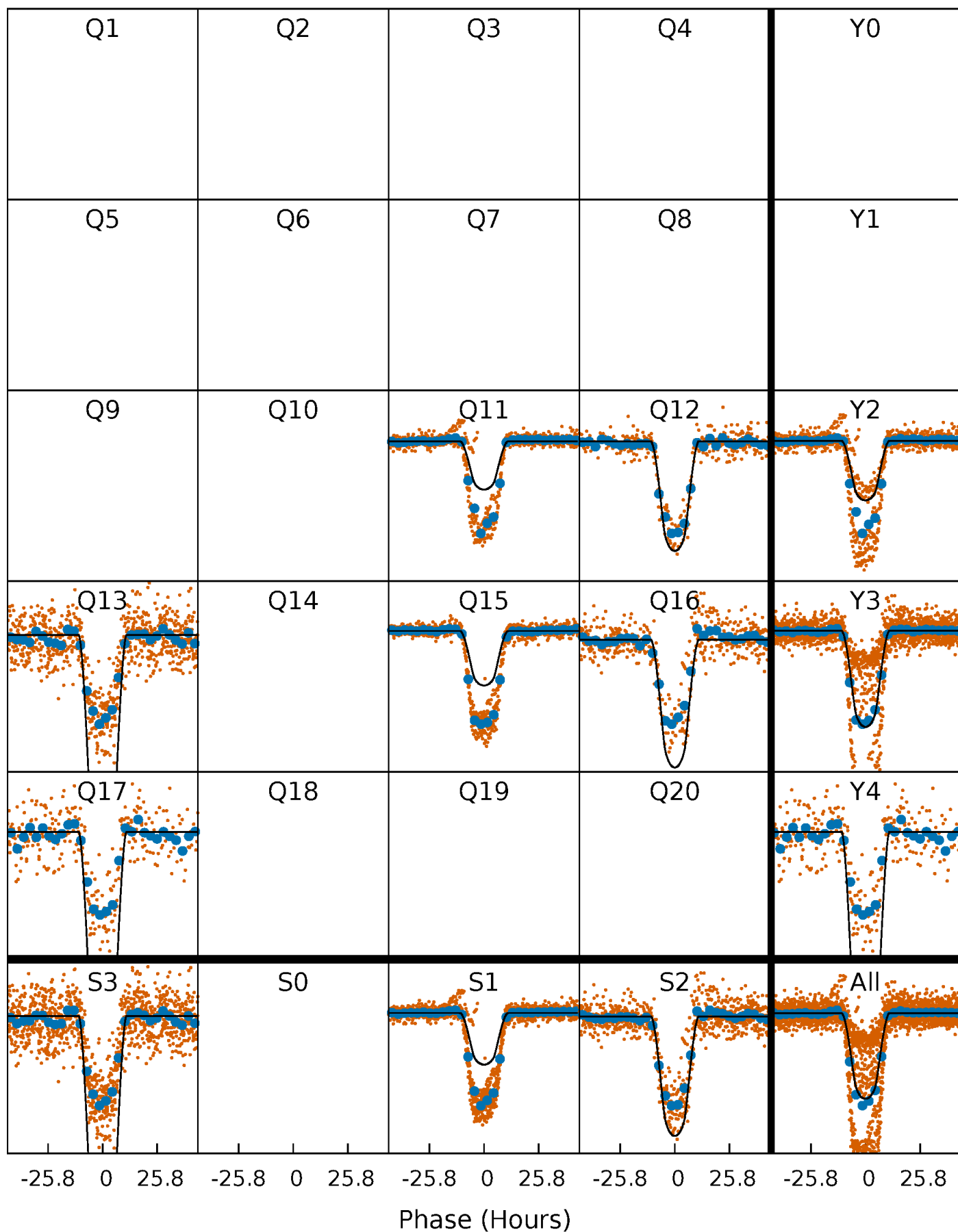
PDC Quarter-Phased Transit Curves

TCE 005193384-02 P= 21.377997 Days $T_0=136.446755$ (BKJD)



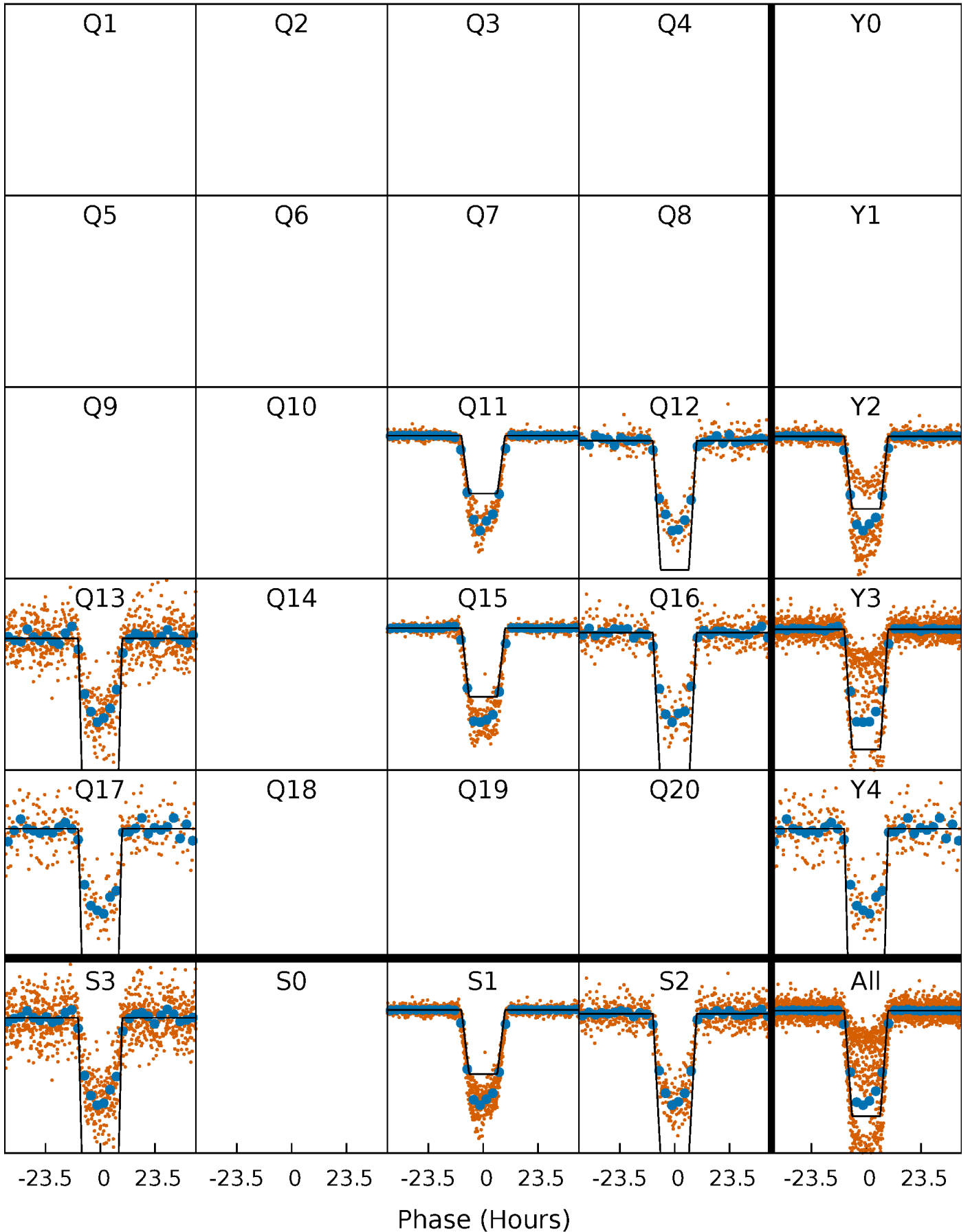
DV Quarter-Phased Transit Curves

TCE 005193384-02 P= 21.377997 Days $T_0=136.446755$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

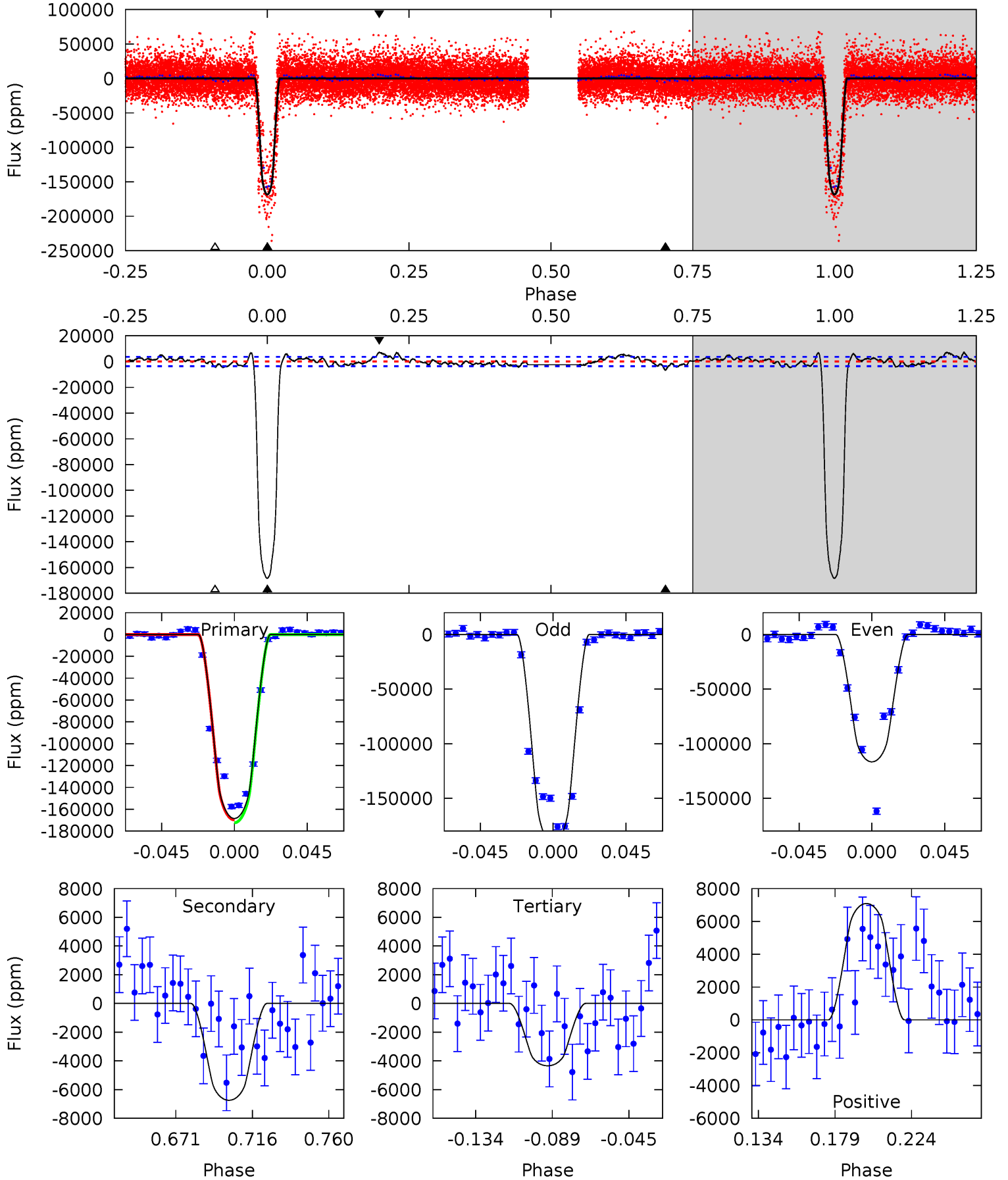
TCE 005193384-02 P= 21.377699 Days $T_0=136.453207$ (BKJD)



DV Model-Shift Uniqueness Test

005193384-02, P = 21.377997 Days, E = 136.446755 Days

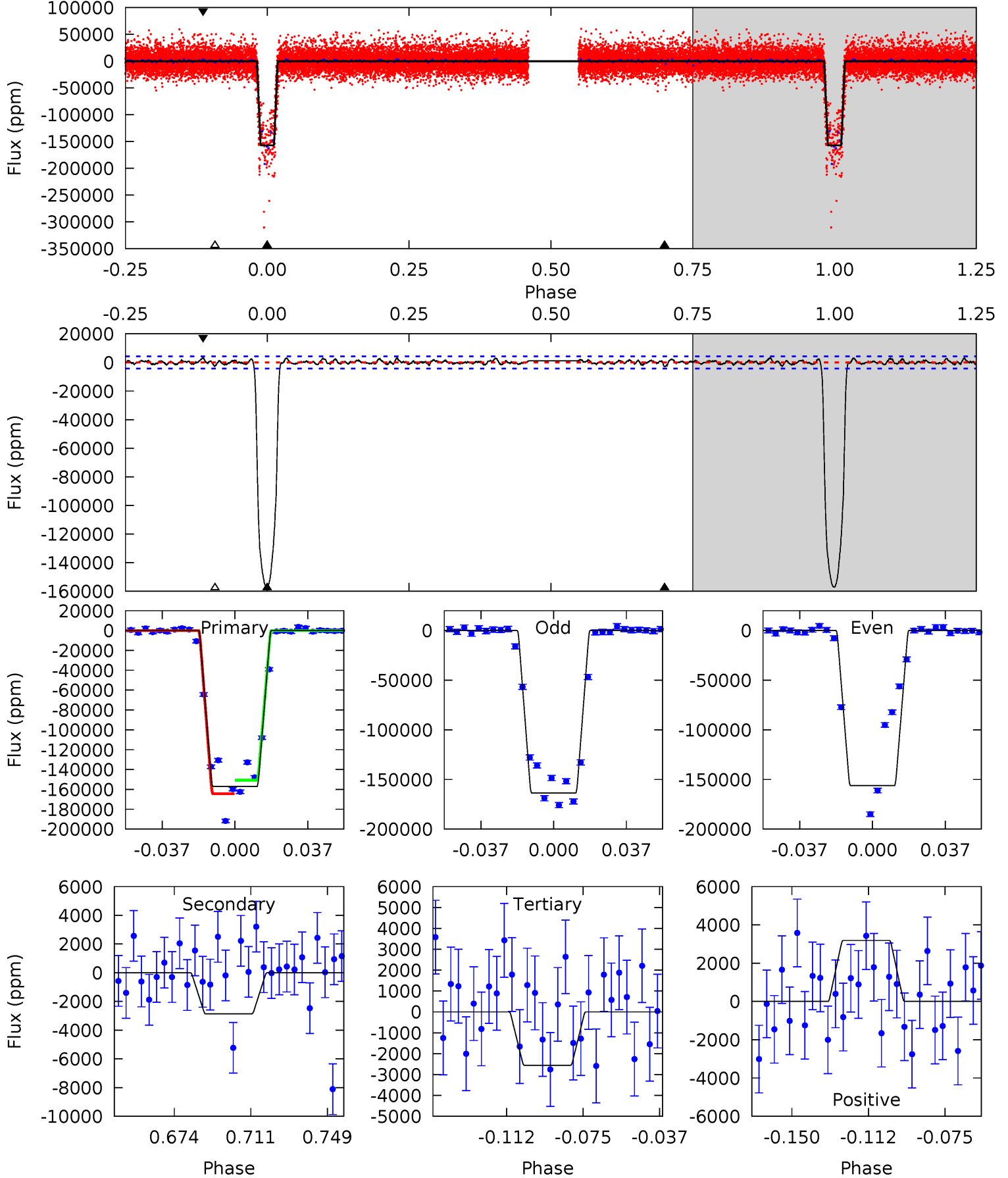
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
220.2	8.82	5.68	9.27	4.73	2.01	3.30	214.5	210.9	3.14	-0.45	51.6	1.27	0.04	1.72



Alt Model-Shift Uniqueness Test

005193384-02, P = 21.377699 Days, E = 136.453207 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
175.4	3.19	2.85	3.56	4.77	2.08	1.05	172.6	171.9	0.34	-0.37	4.47	1.29	0.02	0



Stellar Parameters For KIC 005193384

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4905^{+66}_{-51}	$3.300^{+0.135}_{-0.165}$	$-0.240^{+0.150}_{-0.100}$	$3.484^{+0.909}_{-0.490}$	$0.883^{+0.115}_{-0.014}$	$0.029^{+0.018}_{-0.013}$
	+1%/-1%	+4%/-5%	+62%/-42%	+26%/-14%	+13%/-2%	+61%/-44%
Source	SPE74	SPE74	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 005193384-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-6747 ± 765	$156.72^{+22.54}_{-11.69}$	1484^{+92}_{-68}	2837^{+54}_{-55}	$3.184^{+0.785}_{-0.740}$
Alt.	-2858 ± 895	$189.68^{+28.25}_{-15.39}$	1485^{+99}_{-69}	2329^{+115}_{-180}	$0.882^{+0.387}_{-0.323}$

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

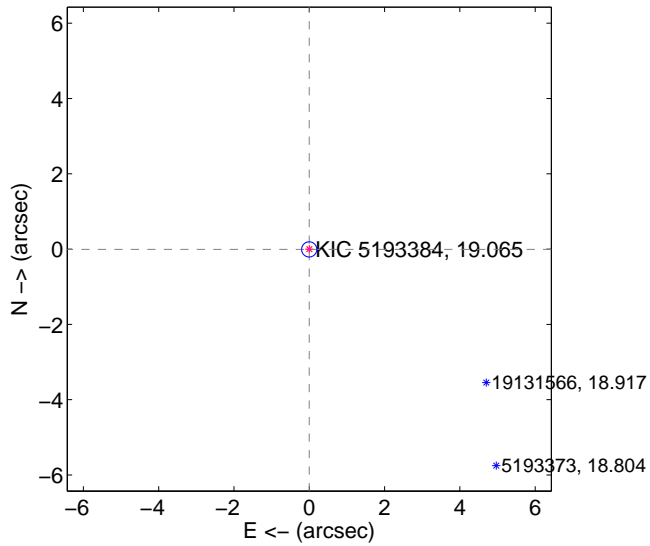
Supplemental centroid analysis for 005193384-02. Kepler magnitude: 19.07. Transit SNR 102.36

There are 4 quarters with good PRF difference image offsets

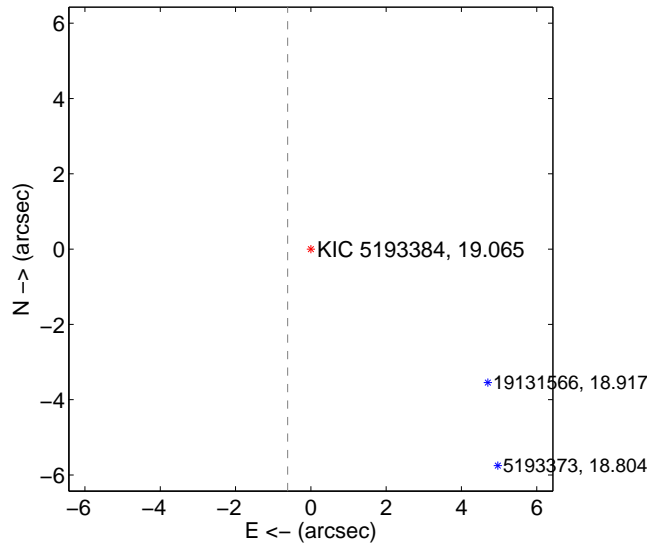
The OOT PRF centroid is offset from the target star catalog position by about 8.30 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.009 ± 0.067	0.13	0.002 ± 0.069	-0.008 ± 0.068
PRF-fit source offset from KIC position	8.265 ± 0.070	117.26	0.615 ± 0.070	8.242 ± 0.070
photometric centroid source offset	5.35 ± 0.00	1600.88	0.53 ± 0.00	5.32 ± 0.00

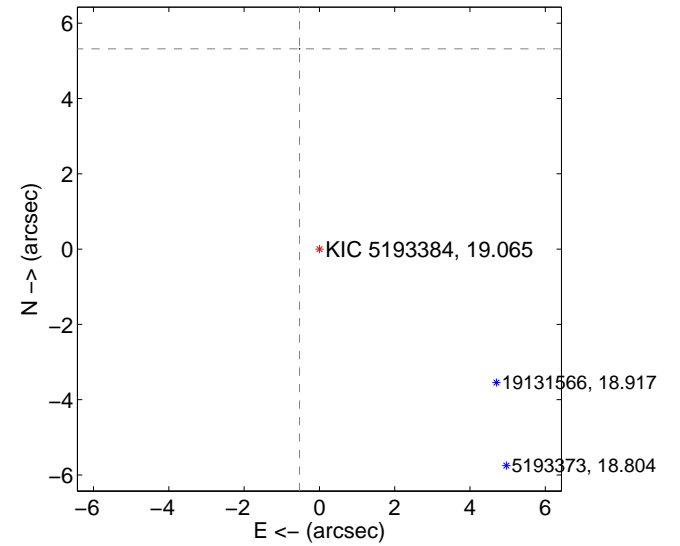
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

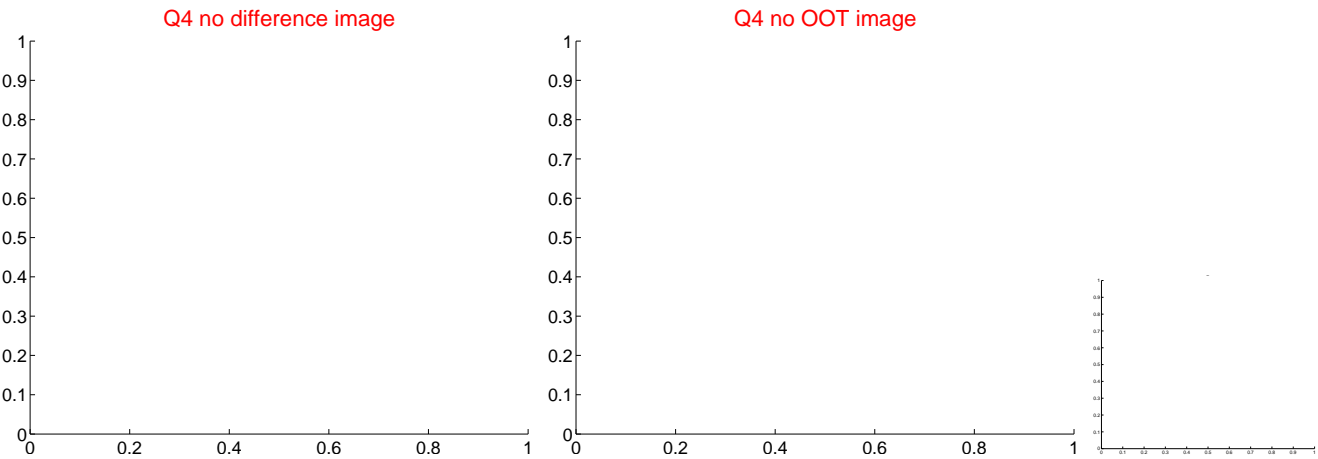
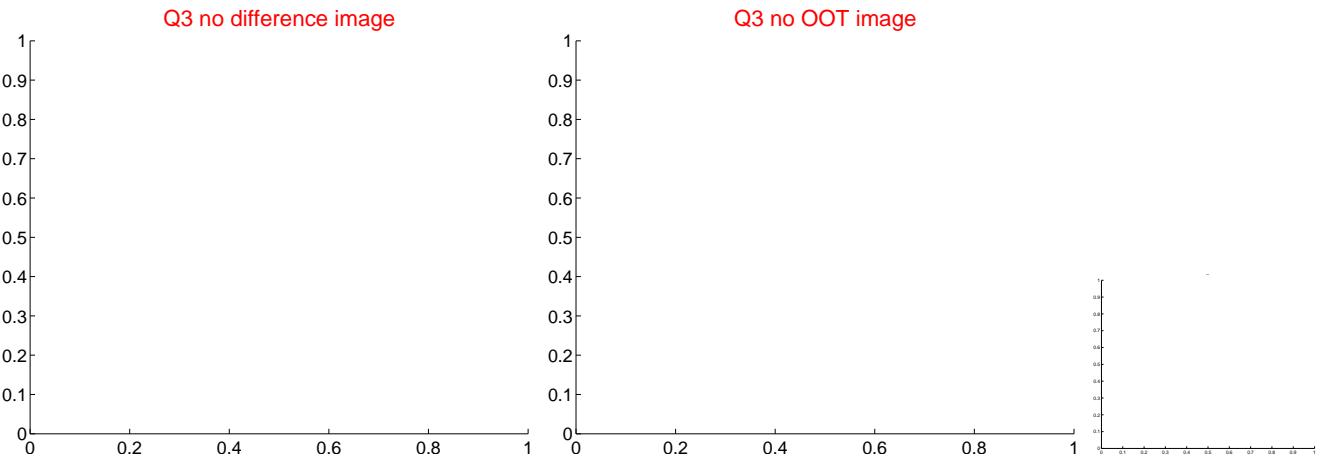
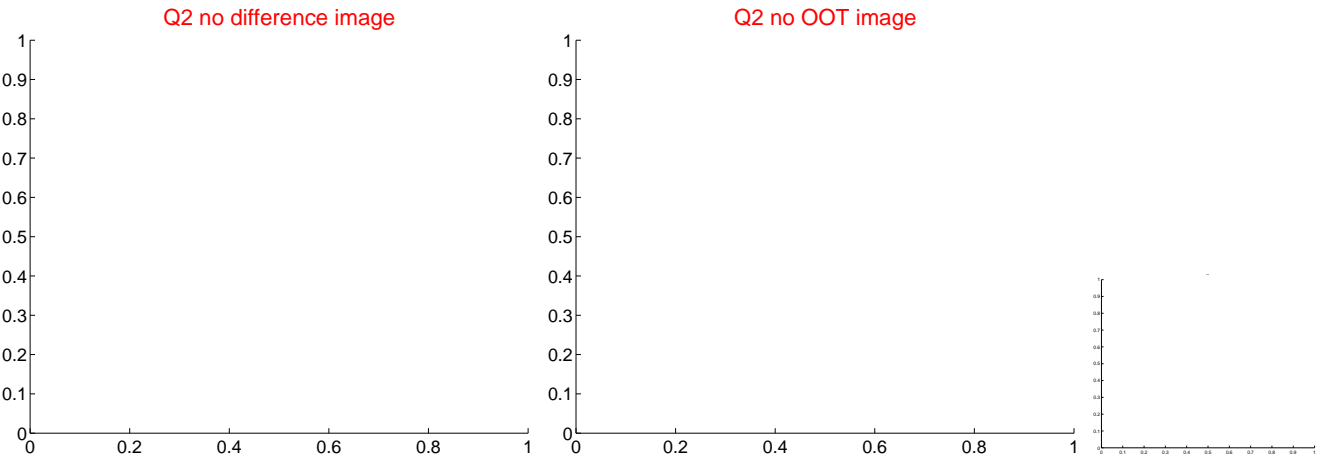
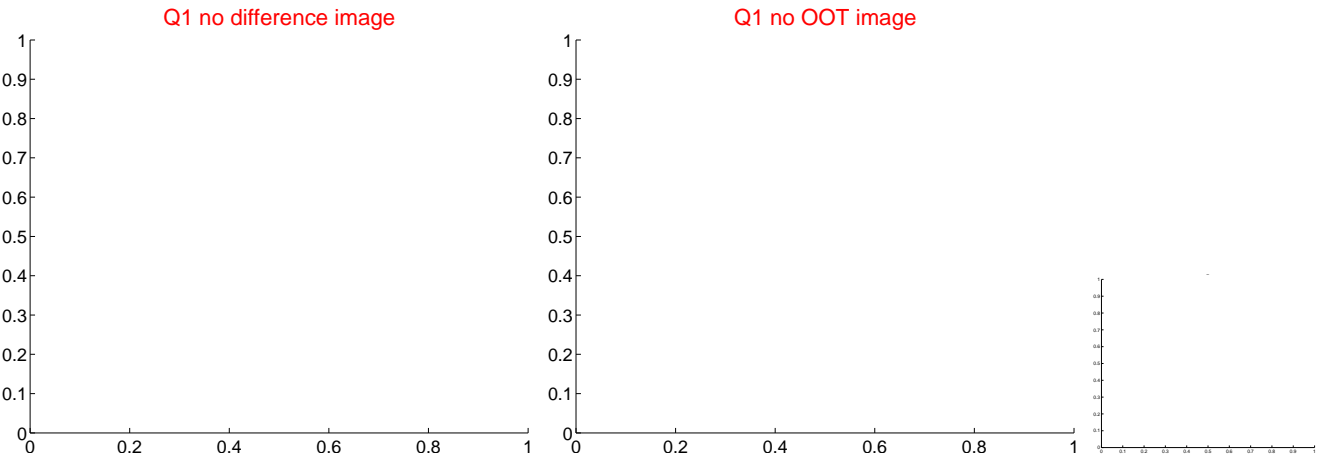


offset from photometric centroids

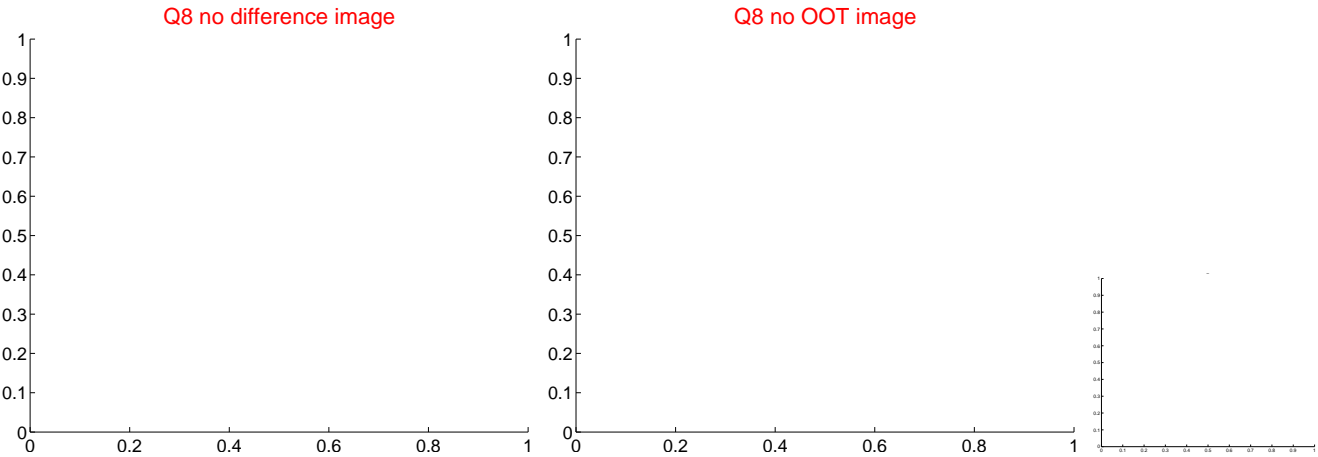
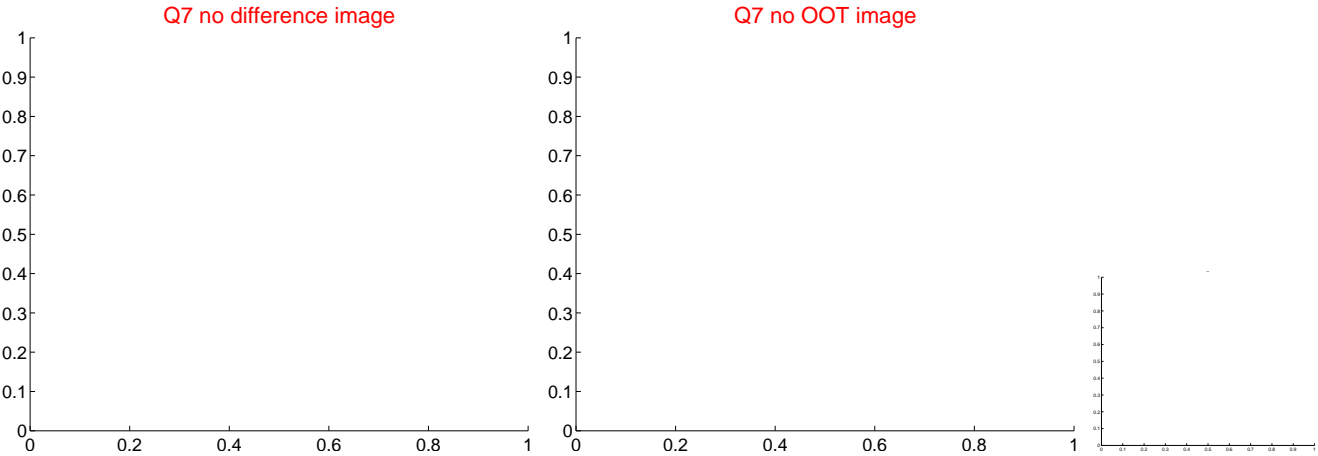
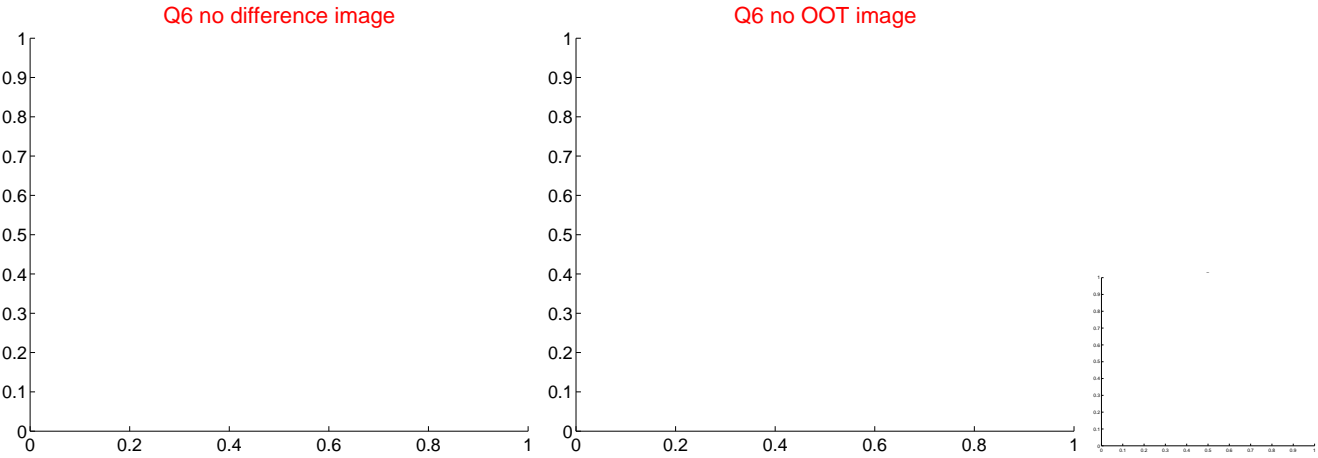
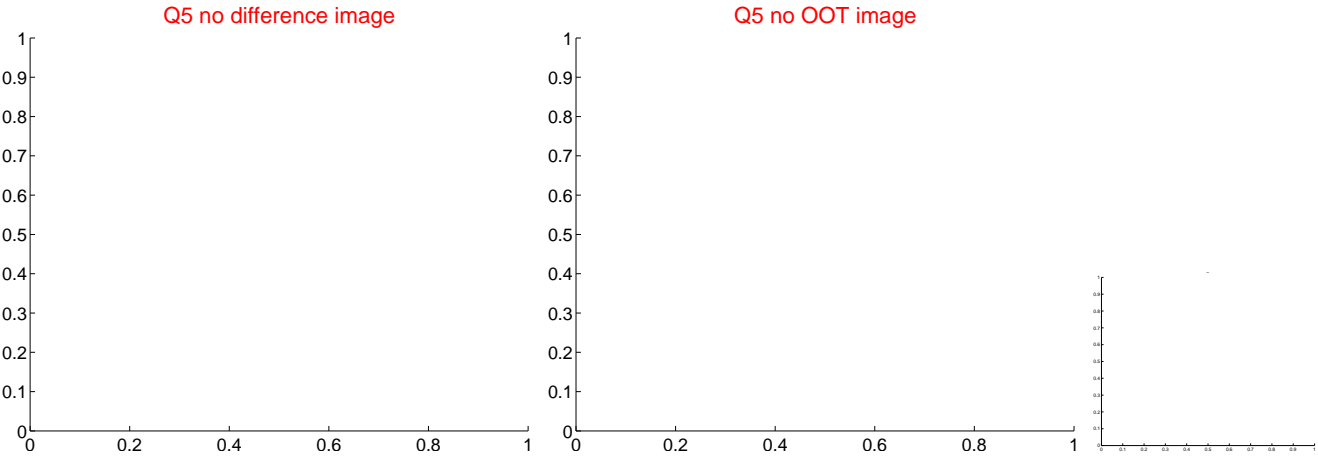


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

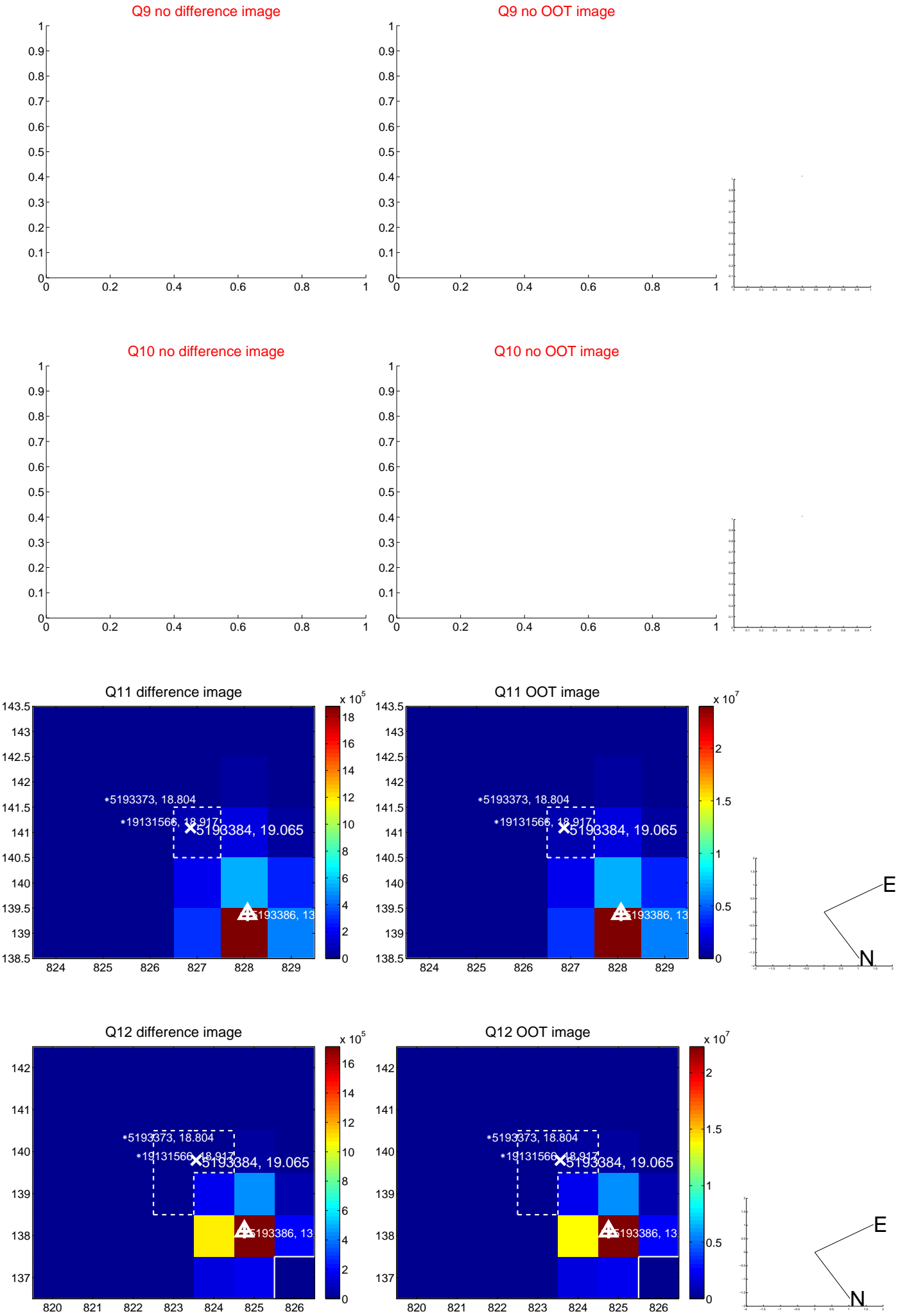
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



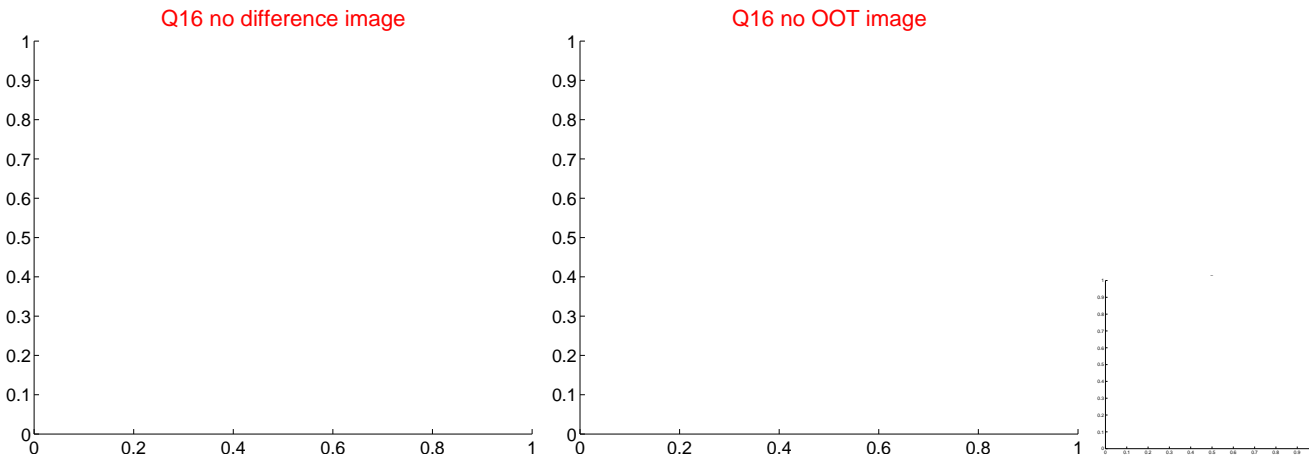
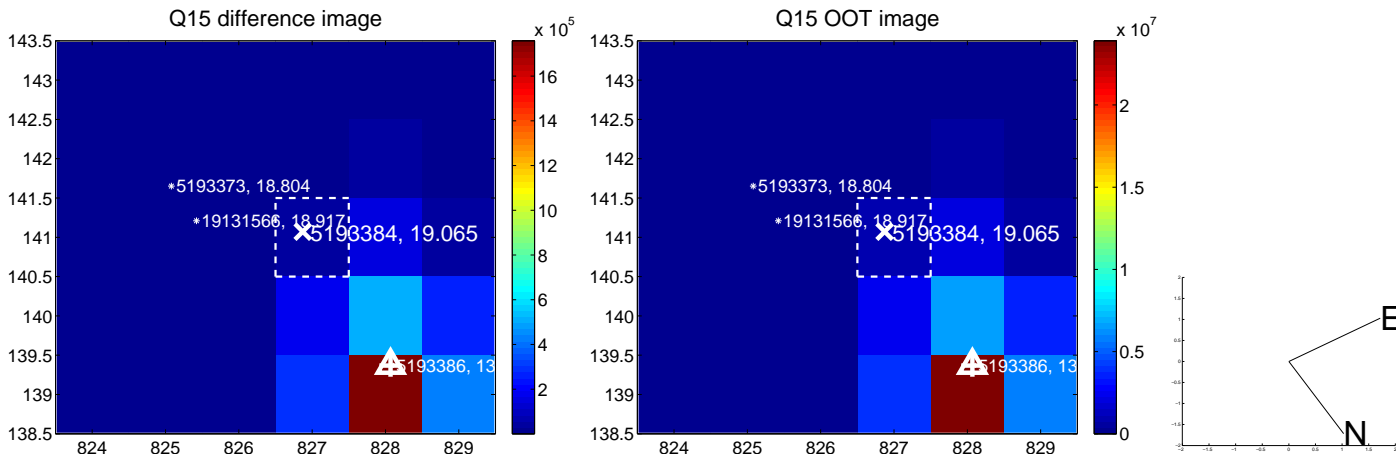
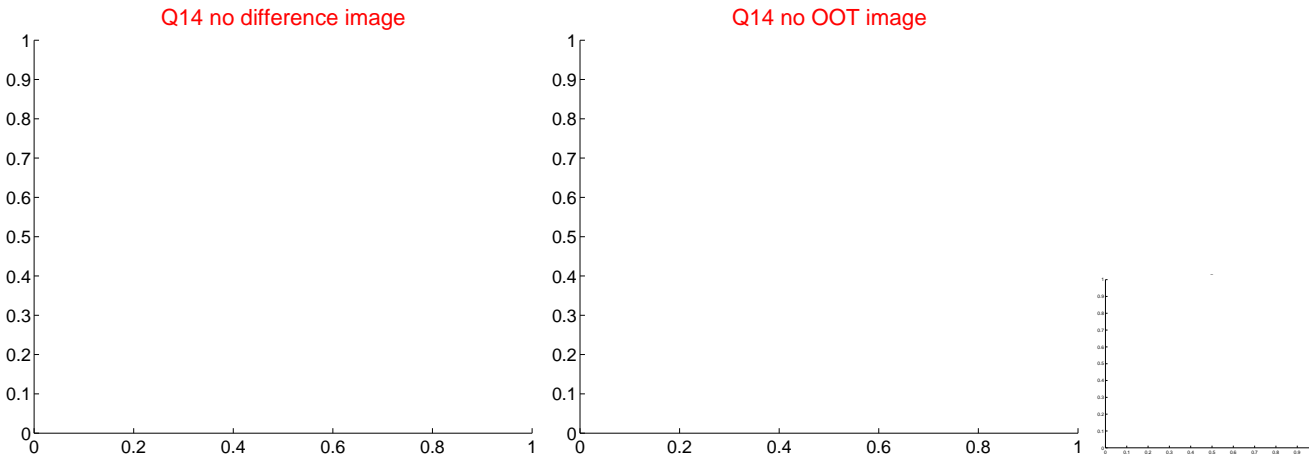
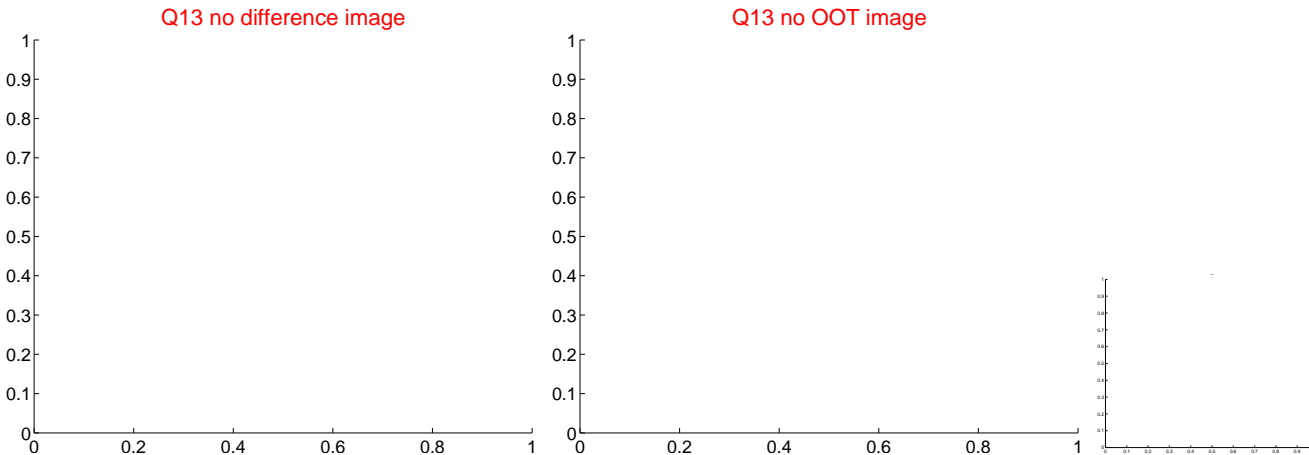
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



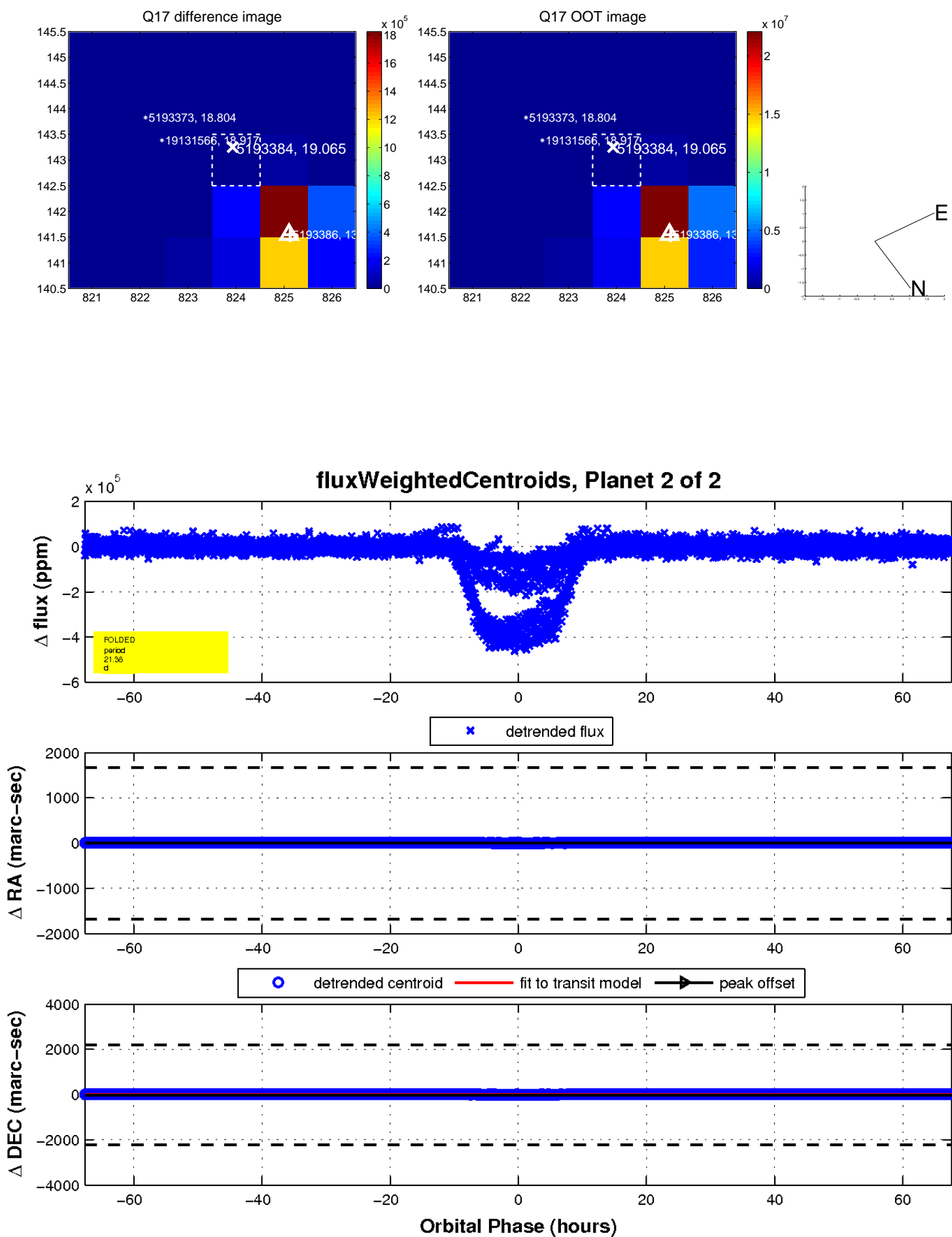
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

