

KIC 007673192

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})
007673192-01	OBS	2722.01	6.124820	134.934774	140.7	3.748	27.2	28.6	1.20	6052	1.68	400.22
007673192-02	OBS	2722.03	4.028779	133.765963	97.7	3.266	21.9	23.0	1.20	6052	1.39	699.62
007673192-03	OBS	2722.02	11.242838	136.321380	134.9	4.380	17.8	19.3	1.20	6052	1.64	178.07
007673192-04	OBS	2722.04	8.921137	137.491758	105.3	4.010	15.4	16.8	1.20	6052	1.45	242.40
007673192-05	OBS	2722.05	16.534025	135.408478	76.1	4.180	7.8	8.5	1.20	6052	1.24	106.48

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007673192-01	OBS	PC	0.98	0	0	0	0	NO_COMMENT
007673192-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007673192-03	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007673192-04	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007673192-05	OBS	PC	0.89	0	0	0	0	NO_COMMENT

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.

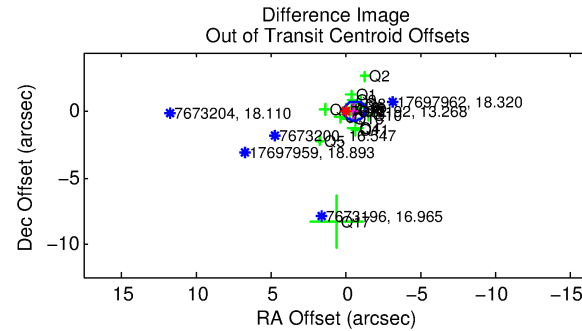
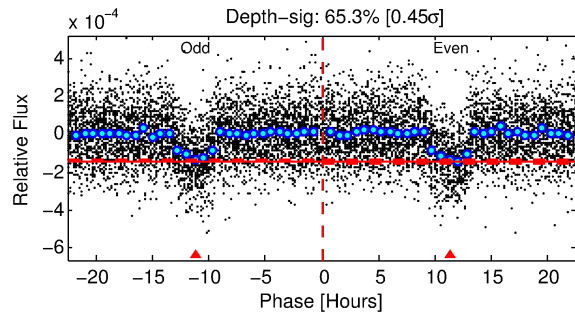
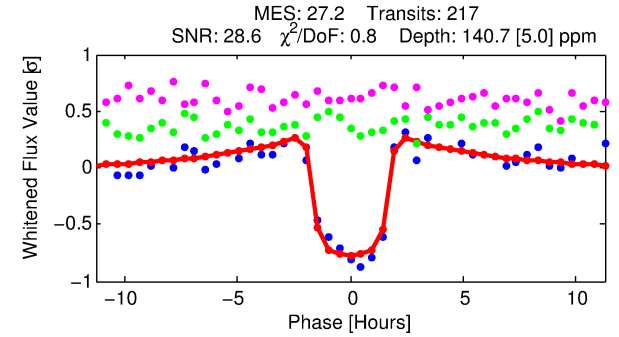
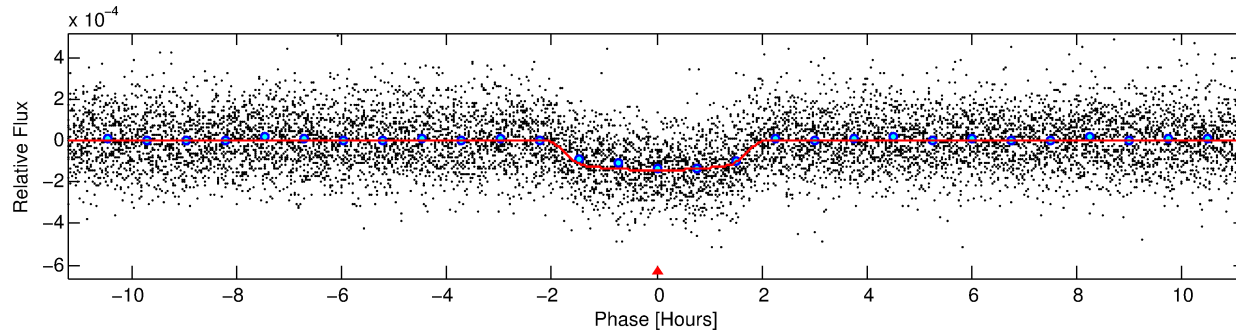
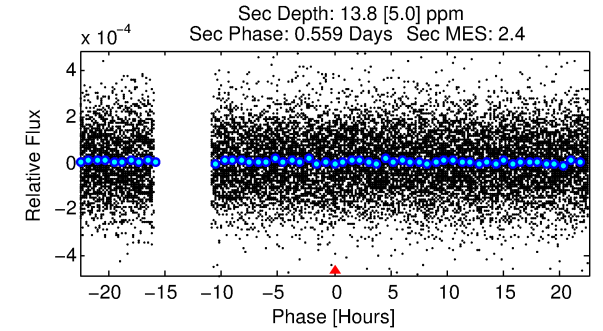
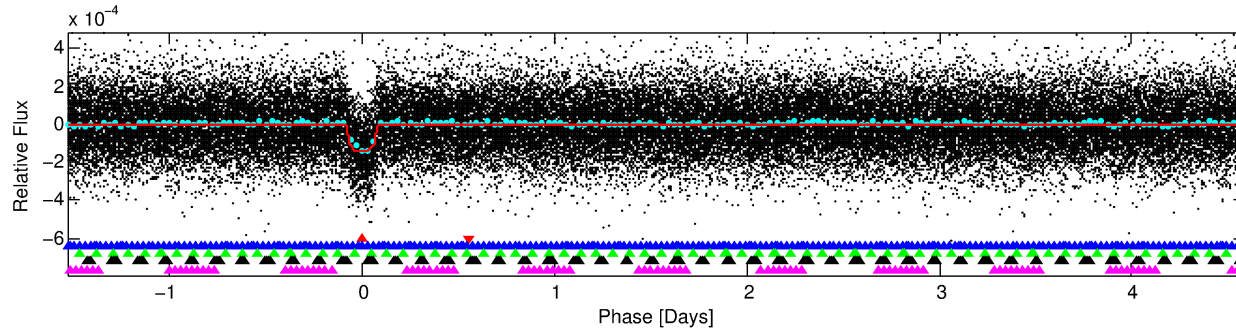
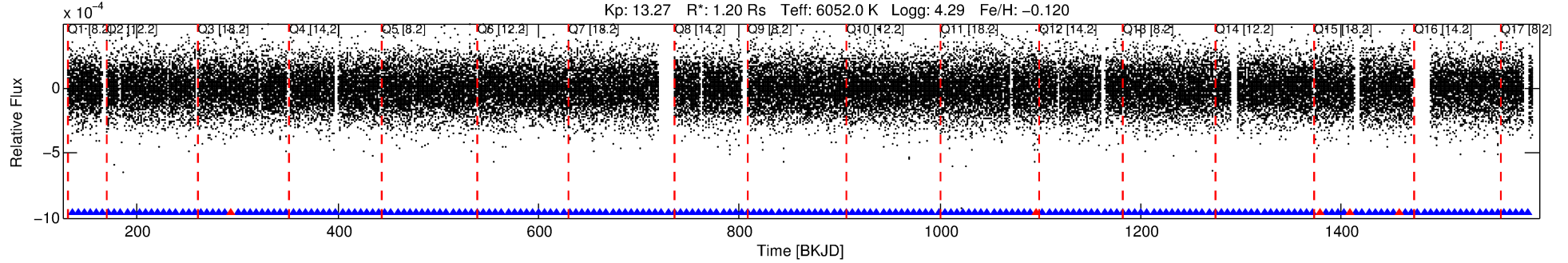
Ephemeris Match Information For 007673192-01

No Significant Match Found

DV One-Page Summary

KIC: 7673192 Candidate: 1 of 5 Period: 6.125 d
KOI: K02722.01 Name: Kepler-402c Corr: 0.982

Kp: 13.27 R*: 1.20 Rs Teff: 6052.0 K Logg: 4.29 Fe/H: -0.120



DV Fit Results:

Period = 6.12482 [0.00002] d
Epoch = 134.9348 [0.0018] BKJD
Rp/R* = 0.0128 [0.0017]
a/R* = 5.92 [4.02]
b = 0.90 [0.15]
Seff = 400.22 [102.24]
Teq = 1141 [73] K
Rp = 1.68 [0.37] Re
a = 0.0659 [0.0103] AU
Ag = 11.73 [5.99] [1.79σ]
Teffp = 3263 [374] K [5.56σ]

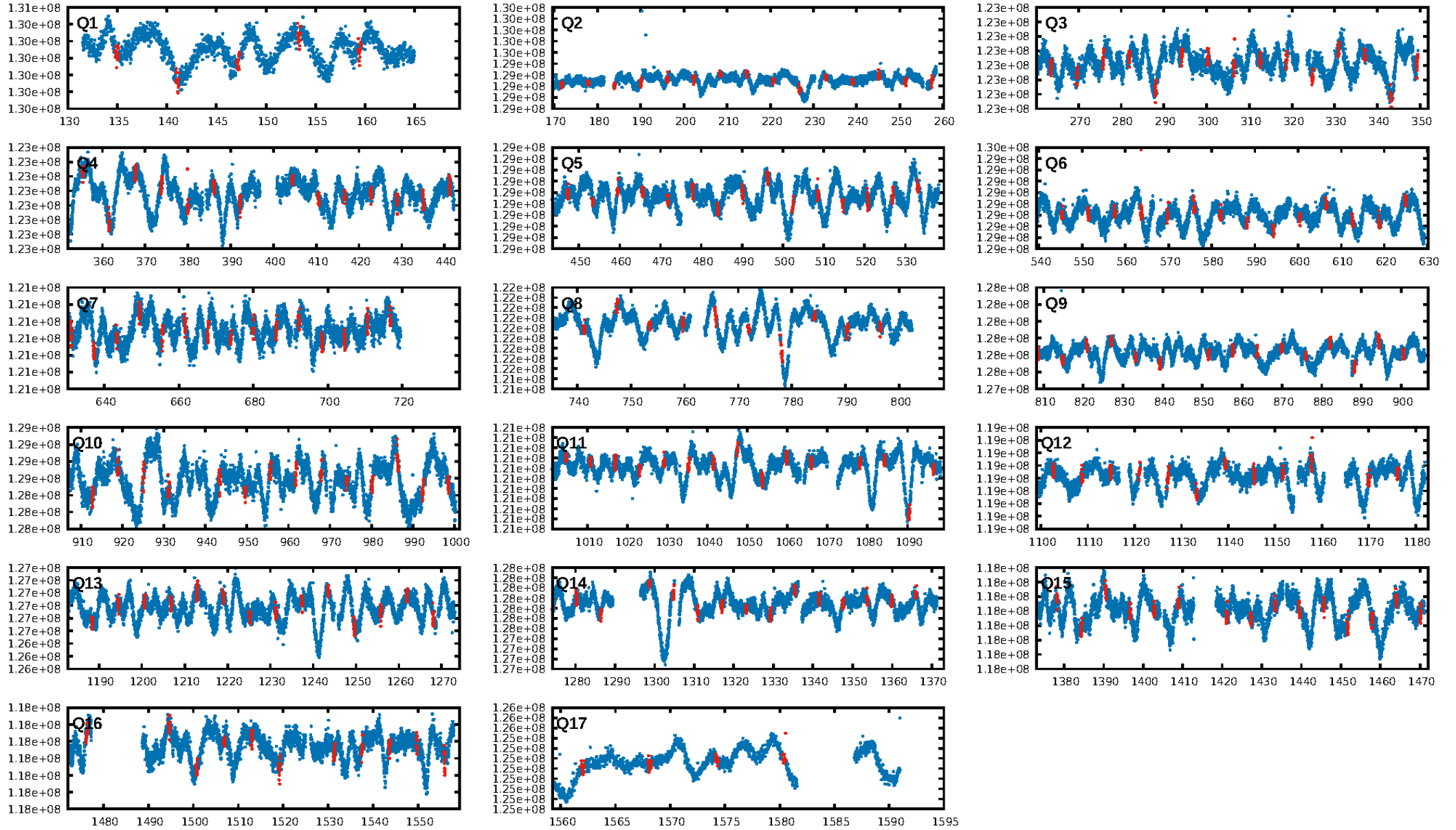
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [10.12σ]
LongPeriod-sig: 100.0% [12.23σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.61e-154
RollingBand-fgt: 0.98 [203/208]
GhostDiagnostic-chr: 8.189
Centroid-sig: 35.2%
Centroid-so: 0.460 arcsec [1.47σ]
OotOffset-rm: 0.600 arcsec [2.47σ]
KicOffset-rm: 0.689 arcsec [2.89σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 1.00 [17/17]

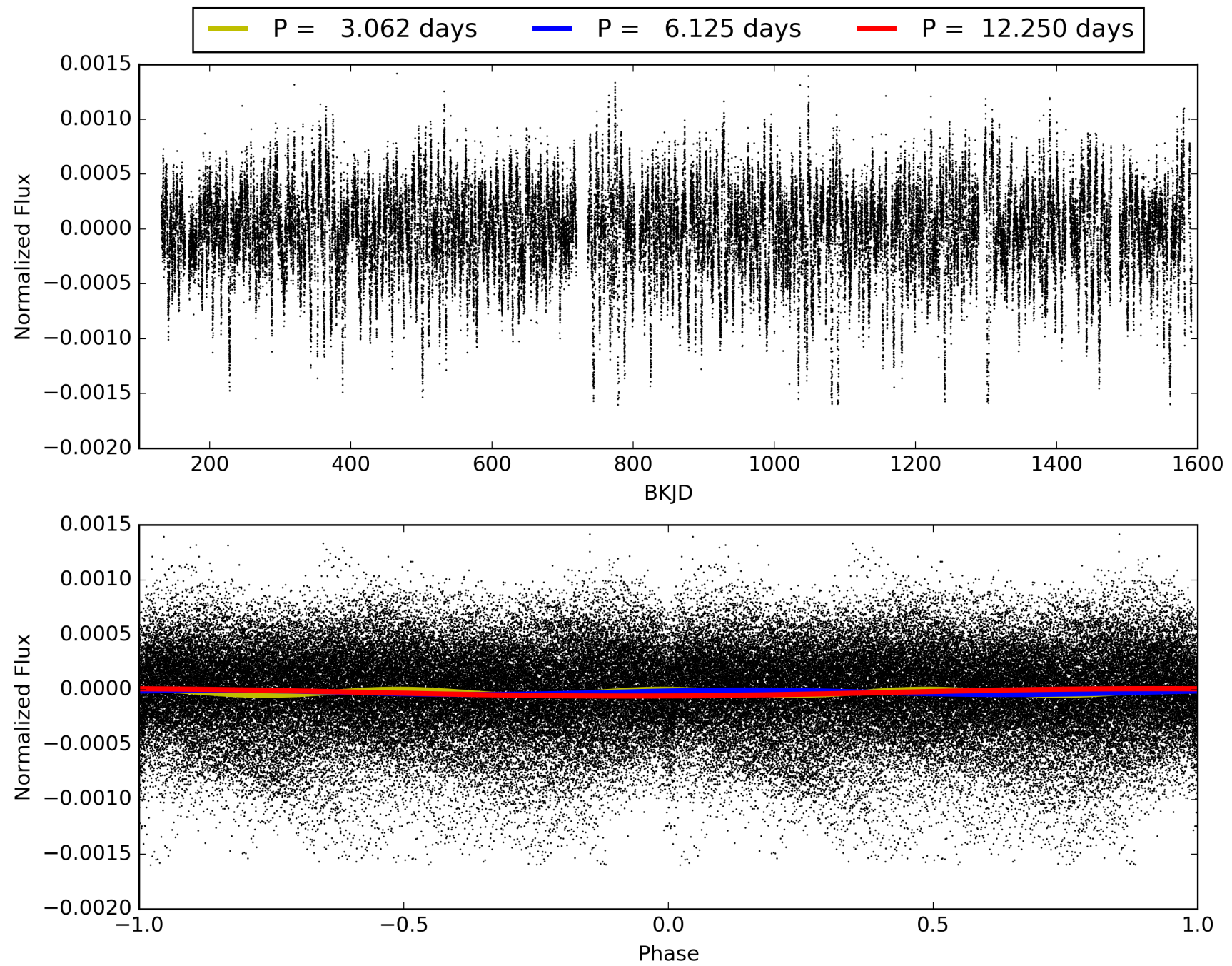
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 11:40:01 Z

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

TCE 007673192-01, PDC Light Curves

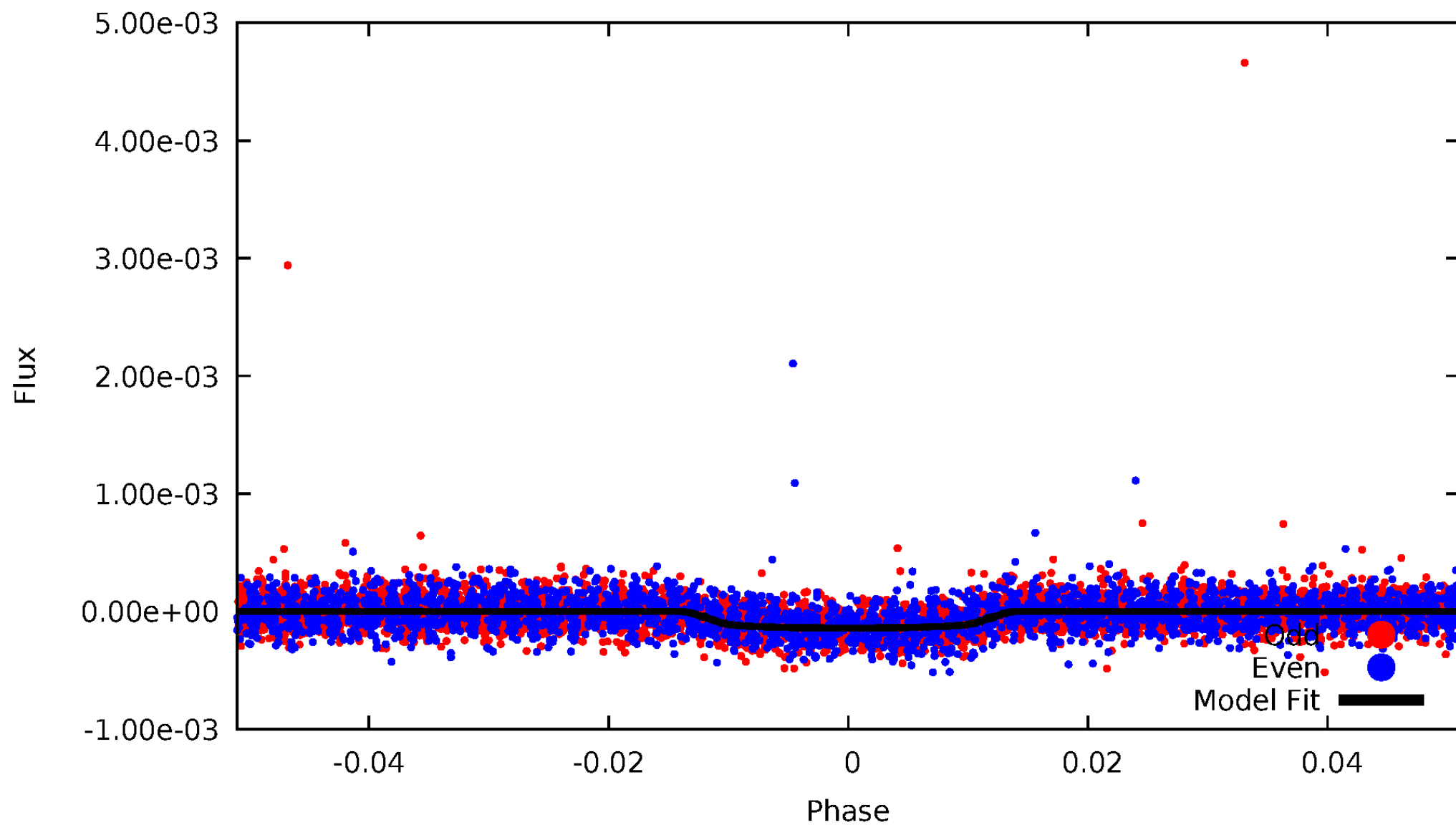


TCE 007673192-01



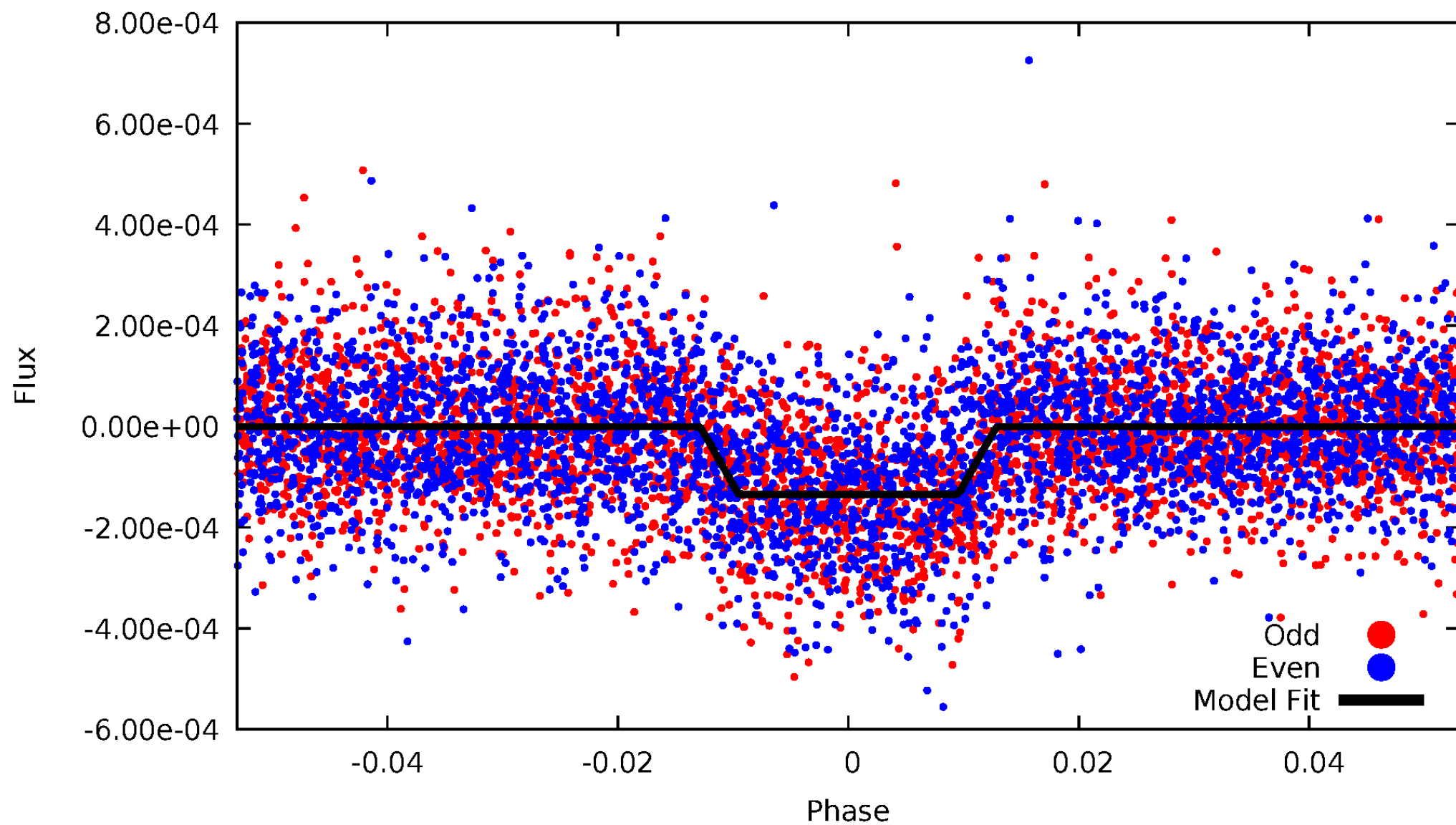
DV Odd/Even

TCE 007673192-01



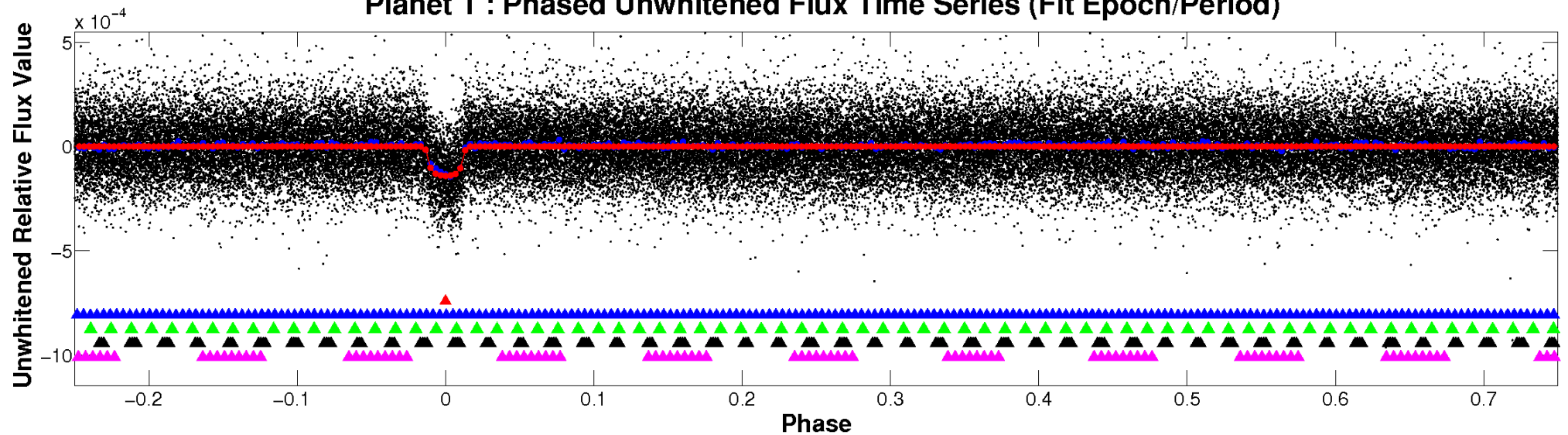
ALT Odd/Even

TCE 007673192-01

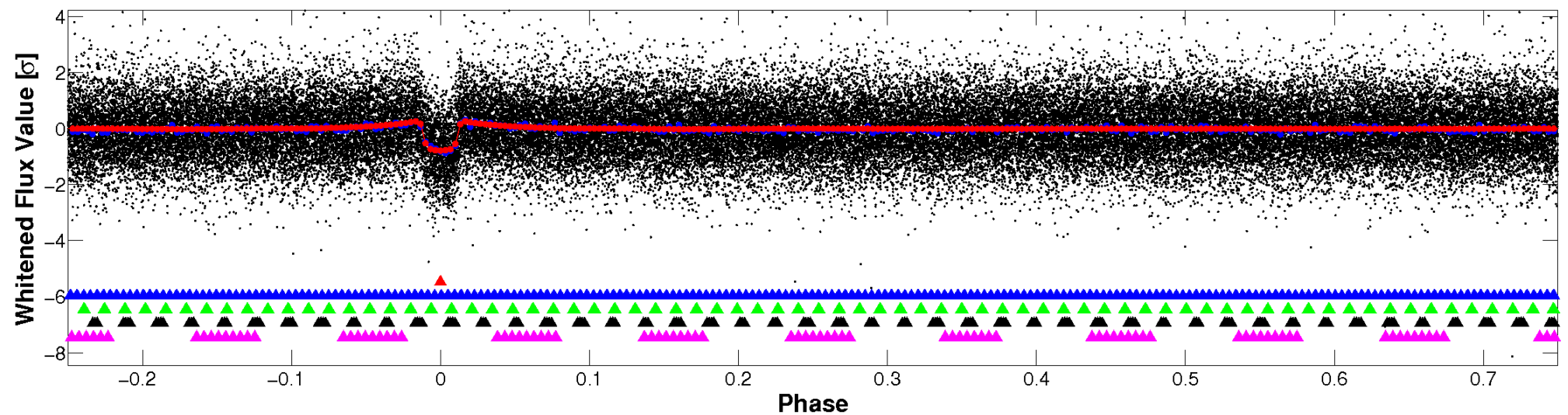


Non-Whitened Vs. Whitened Light Curve

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

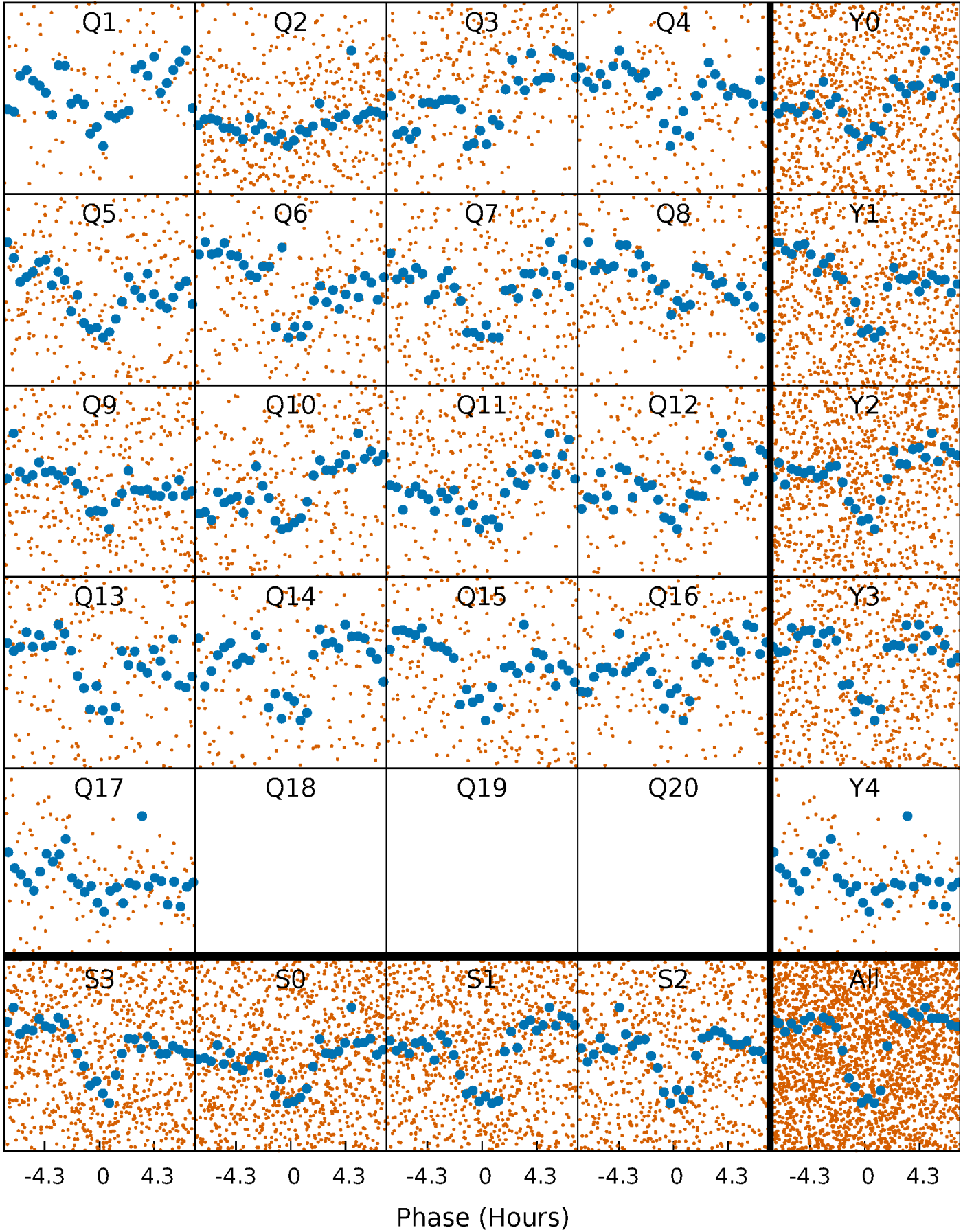


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



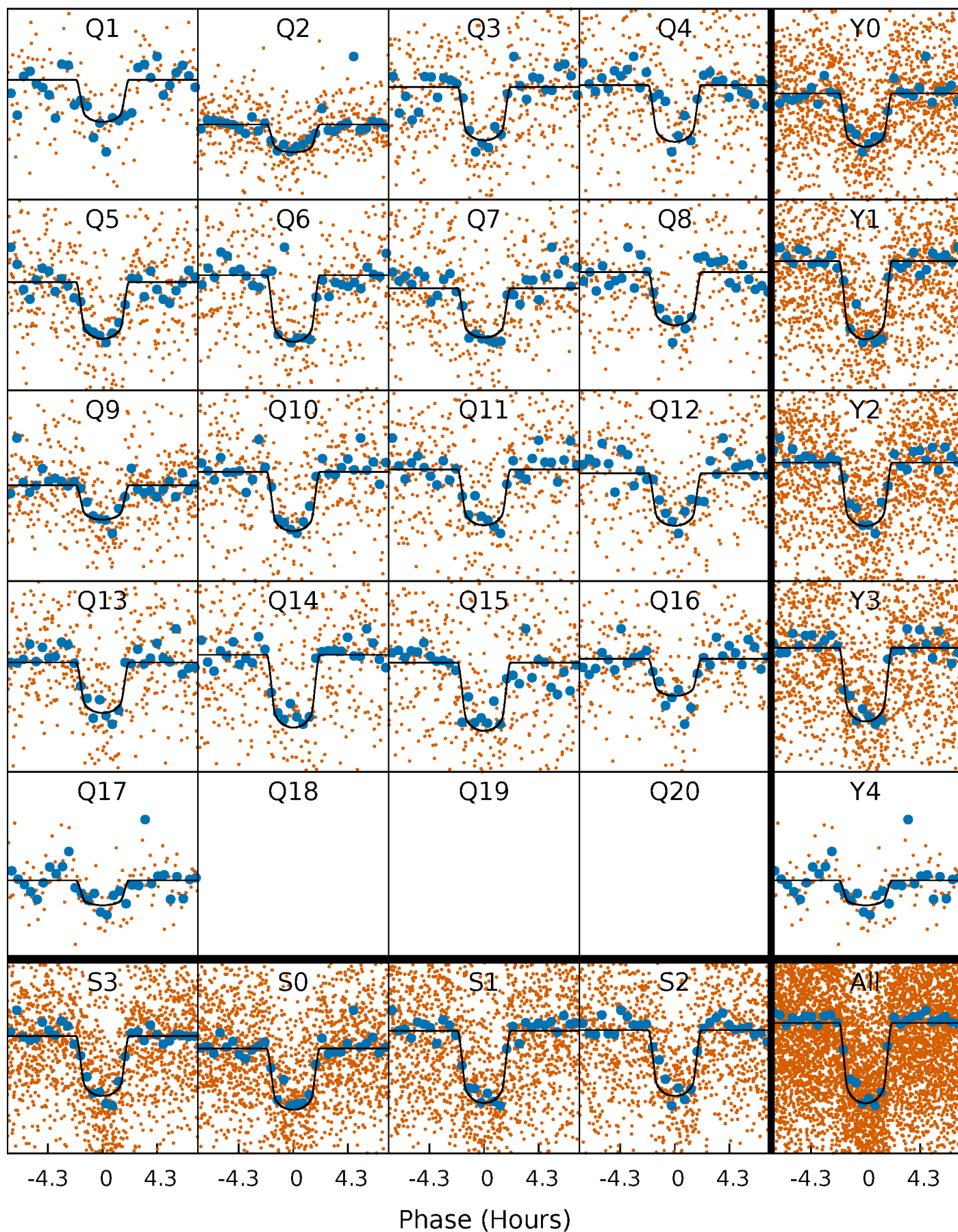
PDC Quarter-Phased Transit Curves

TCE 007673192-01 P= 6.124820 Days $T_0=134.934774$ (BKJD)



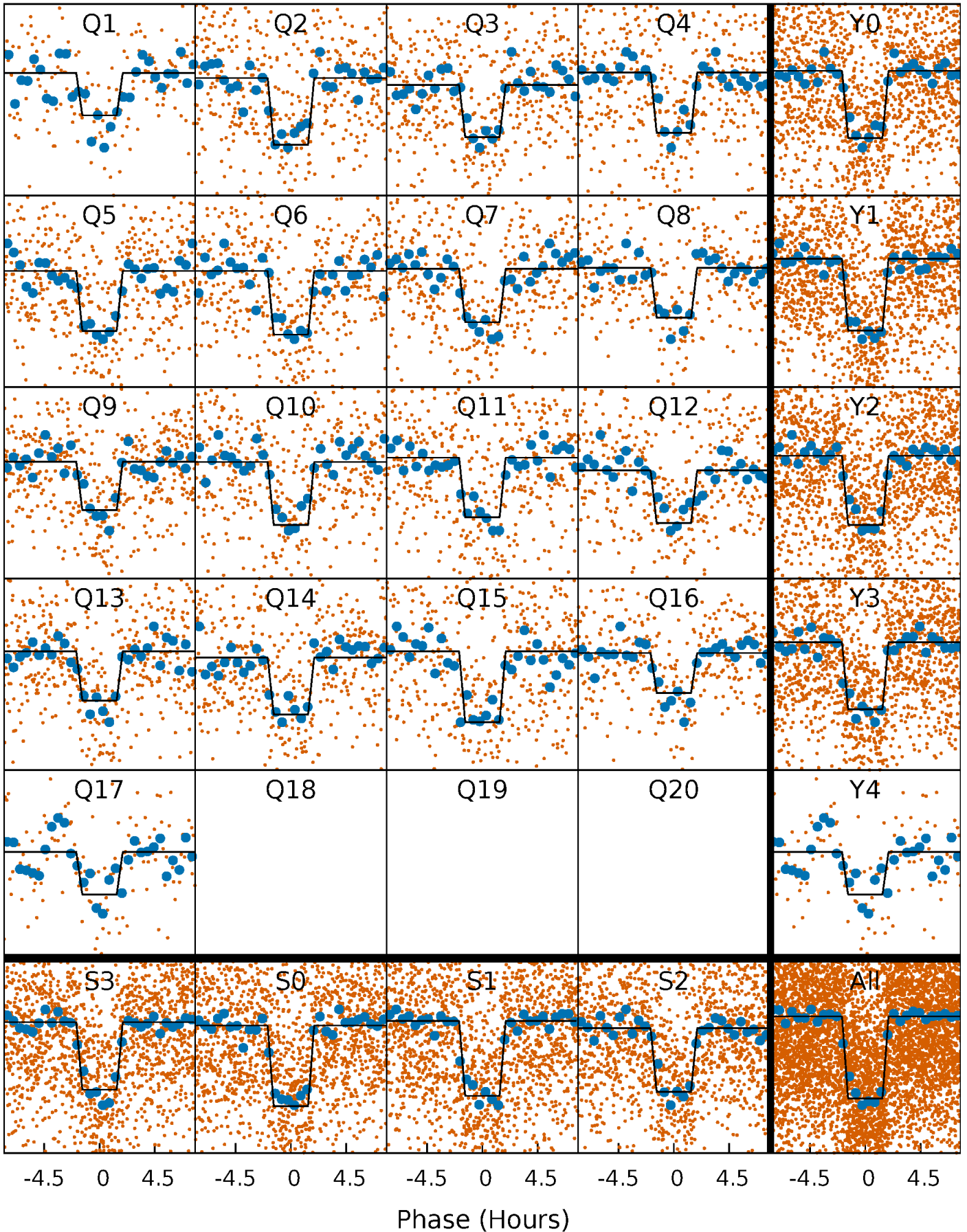
DV Quarter-Phased Transit Curves

TCE 007673192-01 P= 6.124820 Days $T_0=134.934774$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

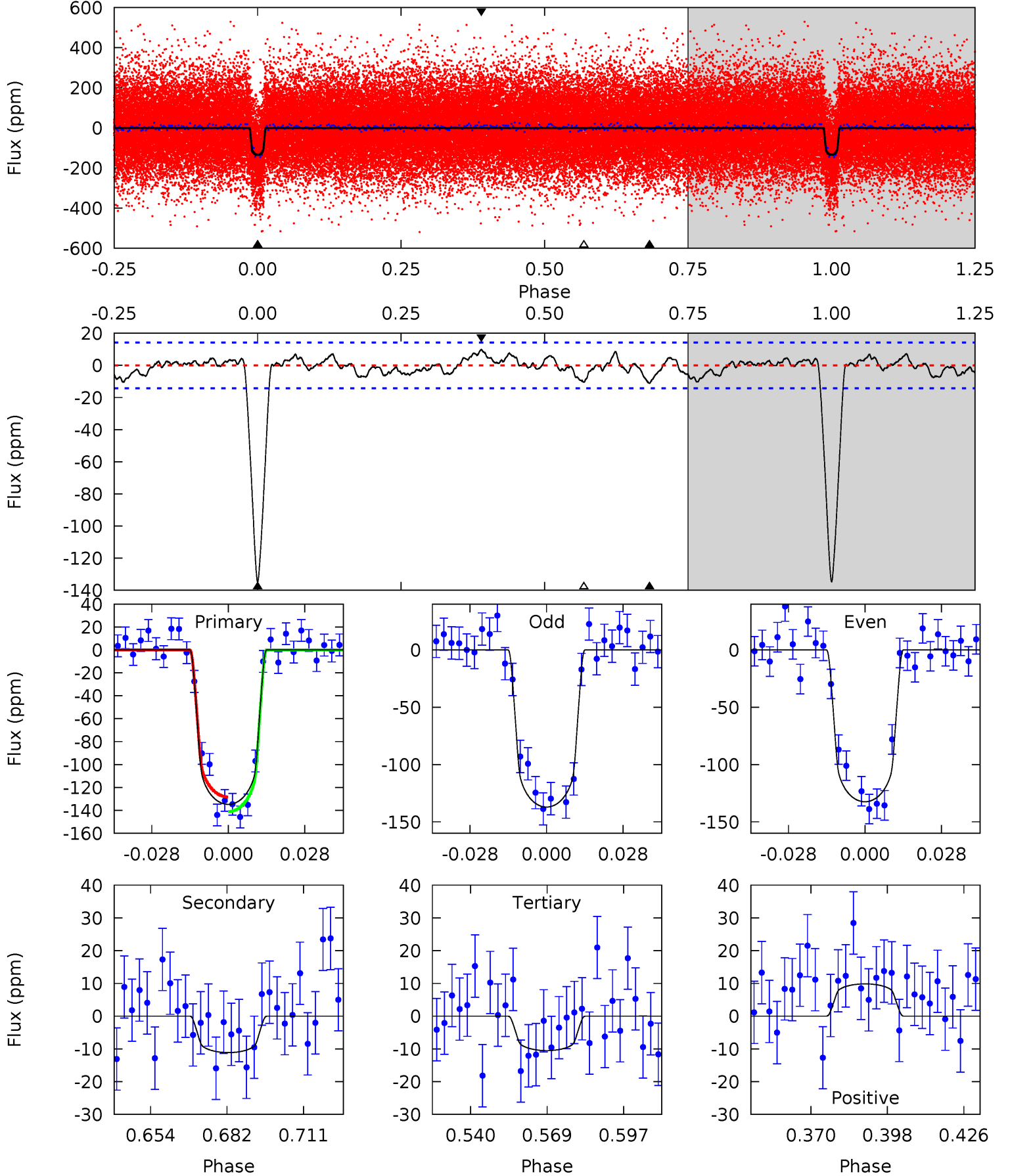
TCE 007673192-01 P= 6.124829 Days $T_0=134.934160$ (BKJD)



DV Model-Shift Uniqueness Test

007673192-01, P = 6.124820 Days, E = 128.809954 Days

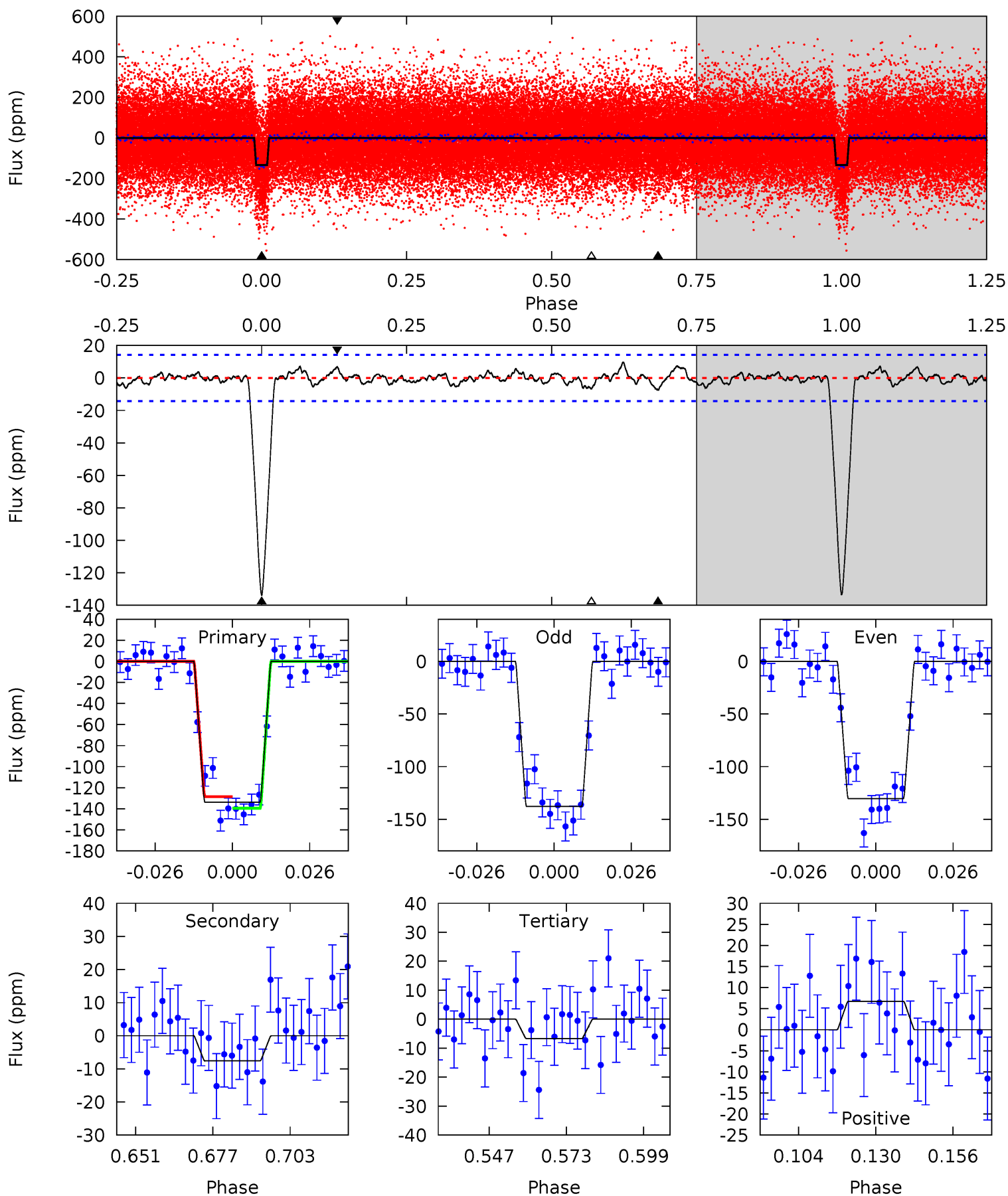
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
45.6	3.77	3.56	3.33	4.82	2.19	1.37	42.1	42.3	0.21	0.44	0.79	0.97	0.07	2.17



Alt Model-Shift Uniqueness Test

007673192-01, P = 6.124829 Days, E = 128.809331 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
45.4	2.57	2.29	2.29	4.84	2.23	0.95	43.1	43.1	0.29	0.29	1.29	1.02	0.07	1.86



Stellar Parameters For KIC 007673192

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6052^{+121}_{-133}	$4.285^{+0.137}_{-0.112}$	$-0.120^{+0.150}_{-0.150}$	$1.202^{+0.208}_{-0.189}$	$1.015^{+0.085}_{-0.068}$	$0.823^{+0.474}_{-0.278}$
	+2%/-2%	+3%/-3%	+125%/-125%	+17%/-16%	+8%/-7%	+58%/-34%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 007673192-01 / KOI 2722.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-11 ± 3	$1.66^{+0.27}_{-0.28}$	1587^{+77}_{-76}	3546^{+263}_{-225}	$9.806^{+4.861}_{-3.574}$
Alt.	-8 ± 3	$1.52^{+0.27}_{-0.25}$	1586^{+80}_{-77}	3424^{+271}_{-285}	$7.768^{+4.941}_{-3.340}$

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

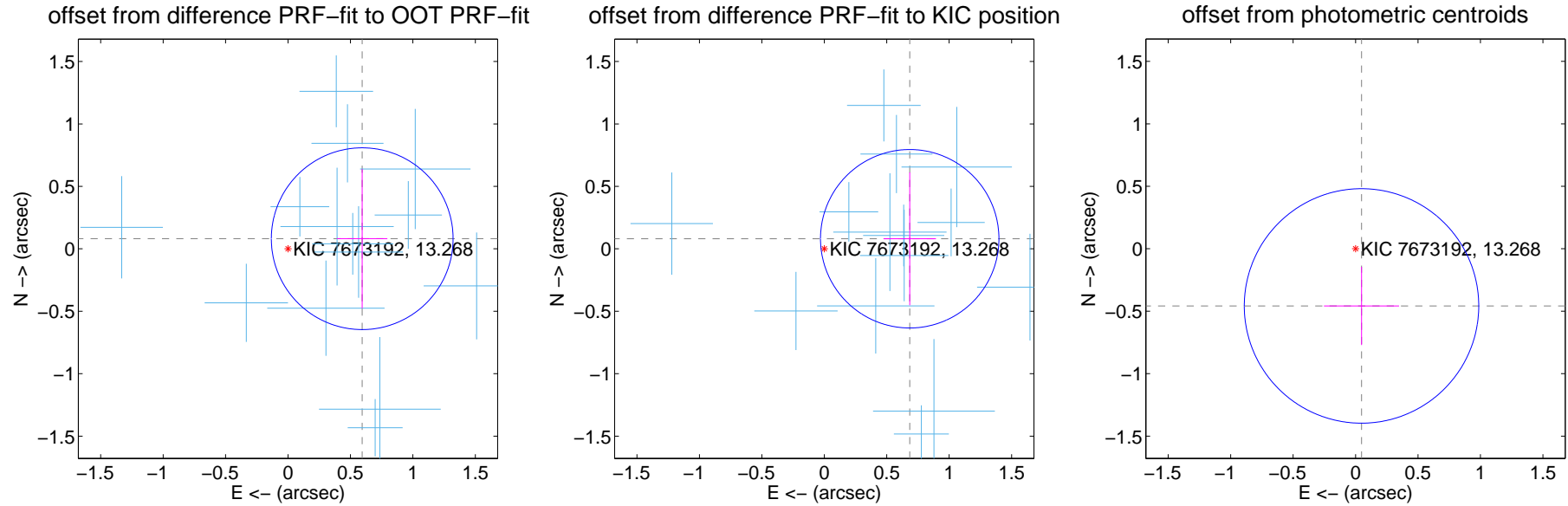
DV Centroid Data

Supplemental centroid analysis for 007673192-01. Kepler magnitude: 13.27. Transit SNR 28.62

There are 16 quarters with good PRF difference image offsets

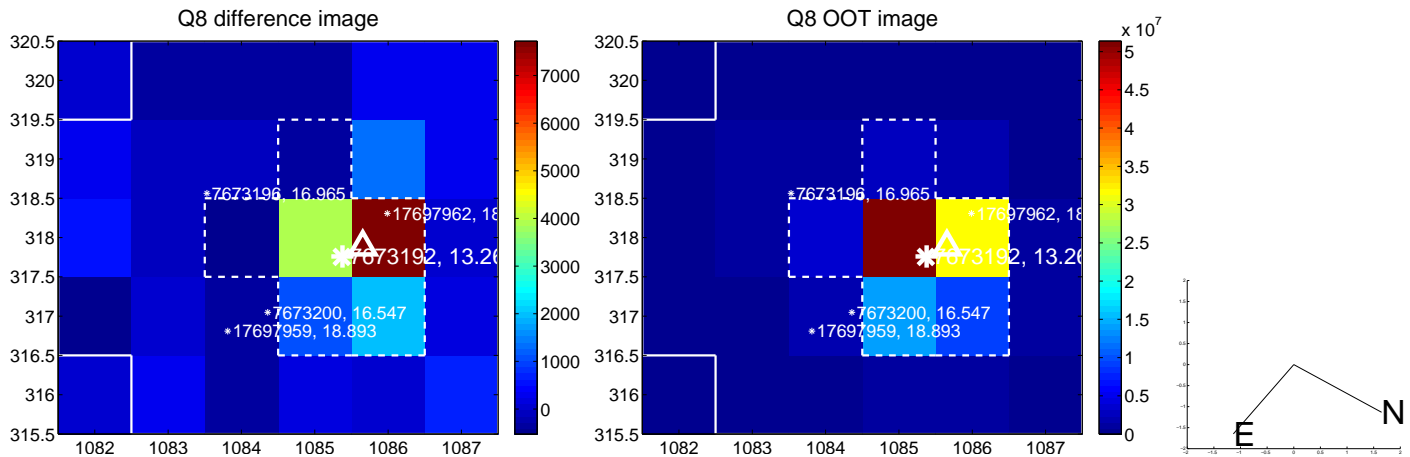
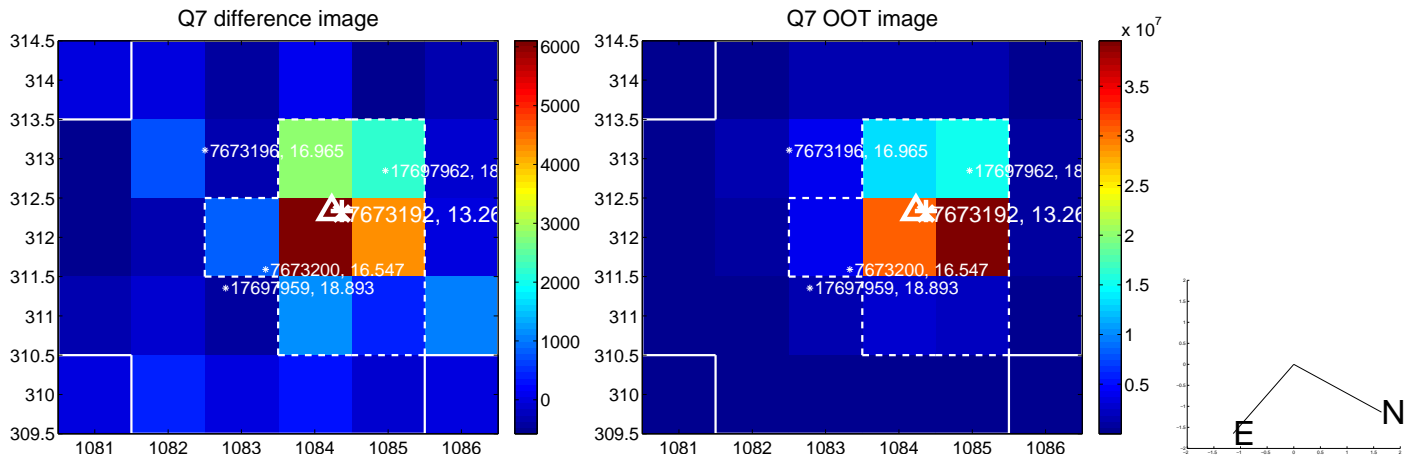
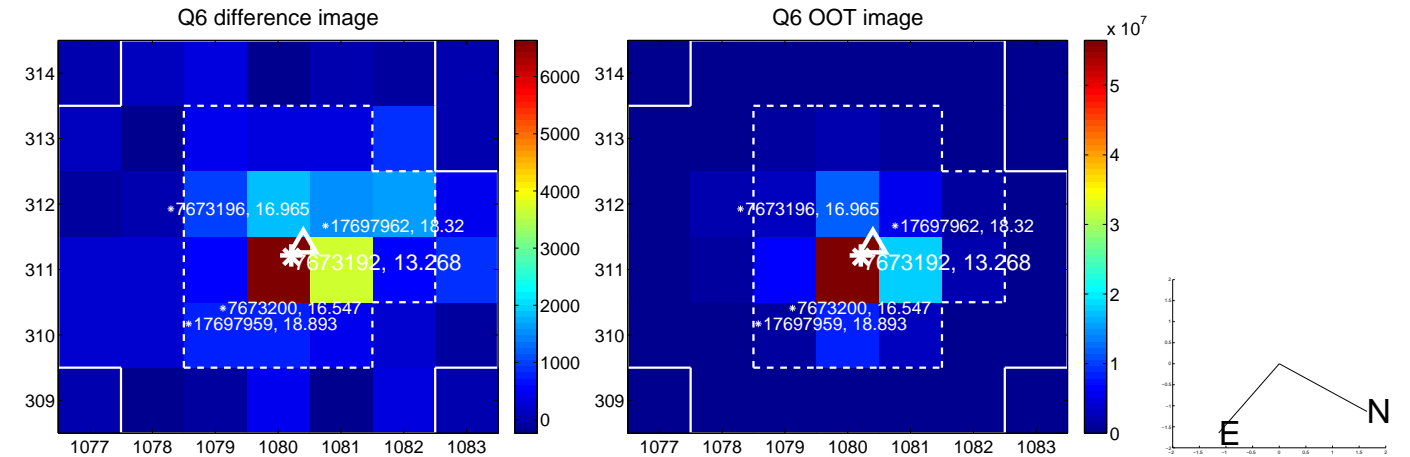
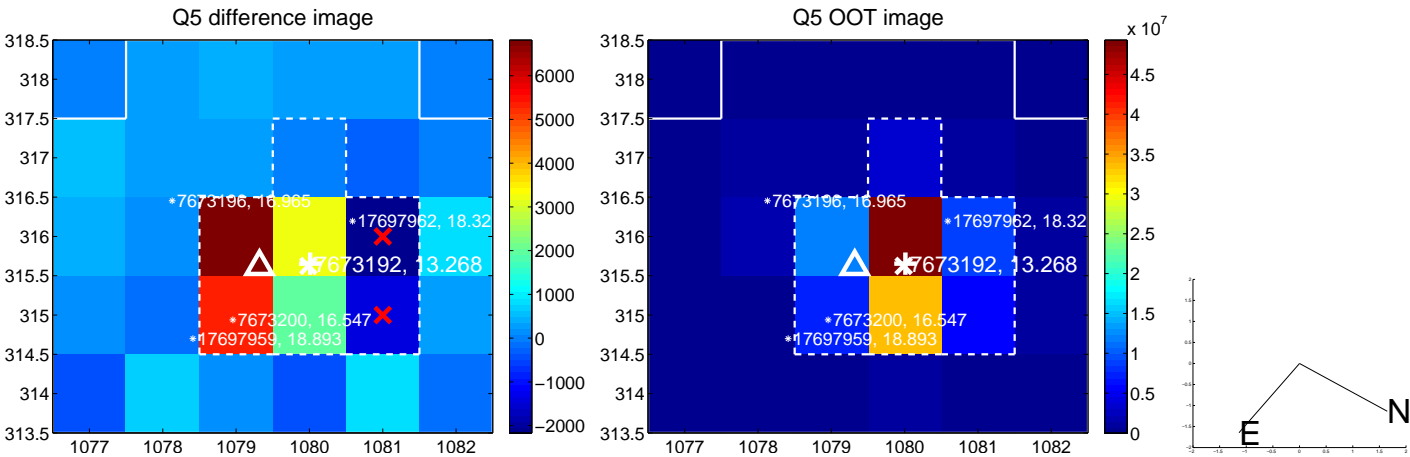
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.600 ± 0.243	2.47	-0.594 ± 0.202	0.081 ± 0.557
PRF-fit source offset from KIC position	0.689 ± 0.238	2.89	-0.684 ± 0.210	0.081 ± 0.532
photometric centroid source offset	0.46 ± 0.31	1.47	-0.05 ± 0.30	-0.46 ± 0.31

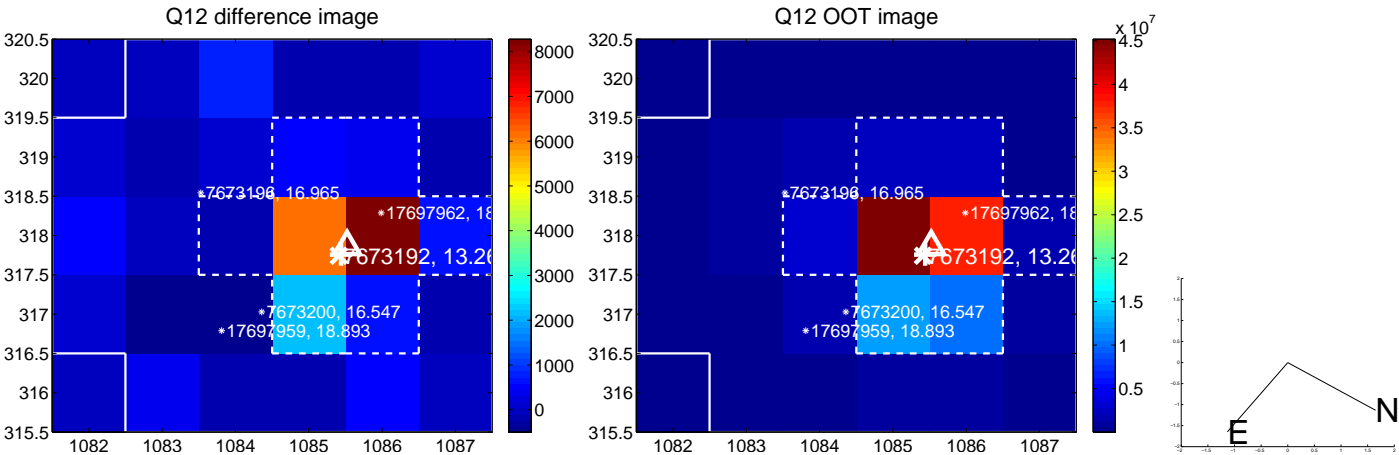
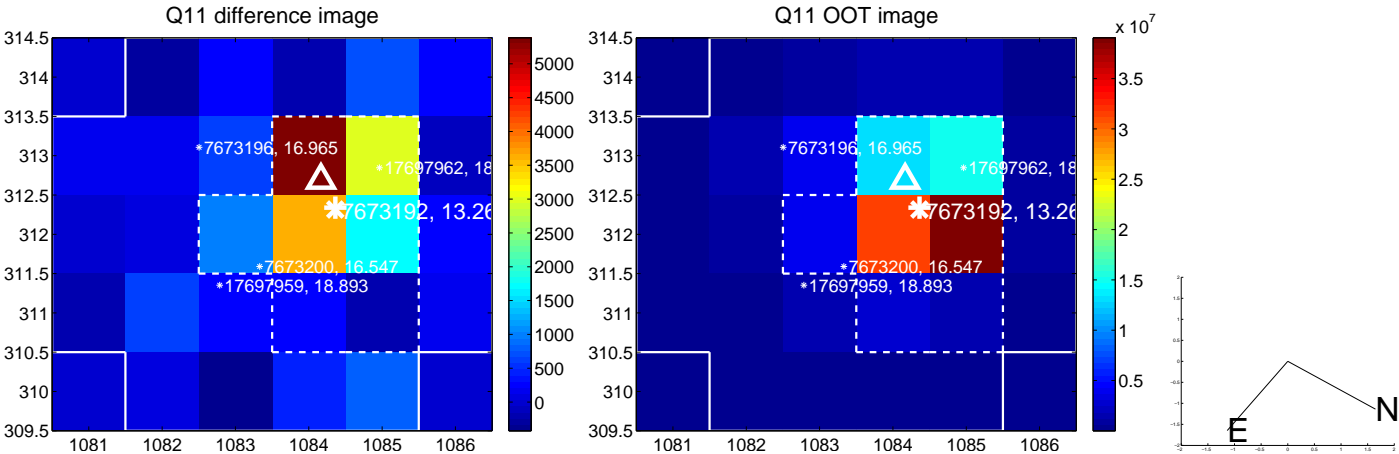
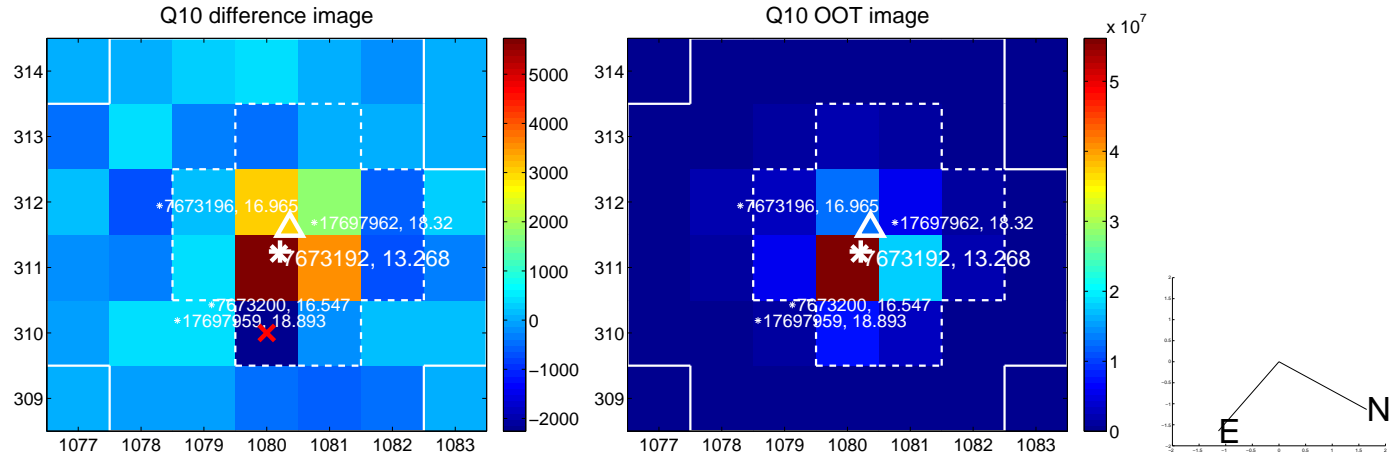
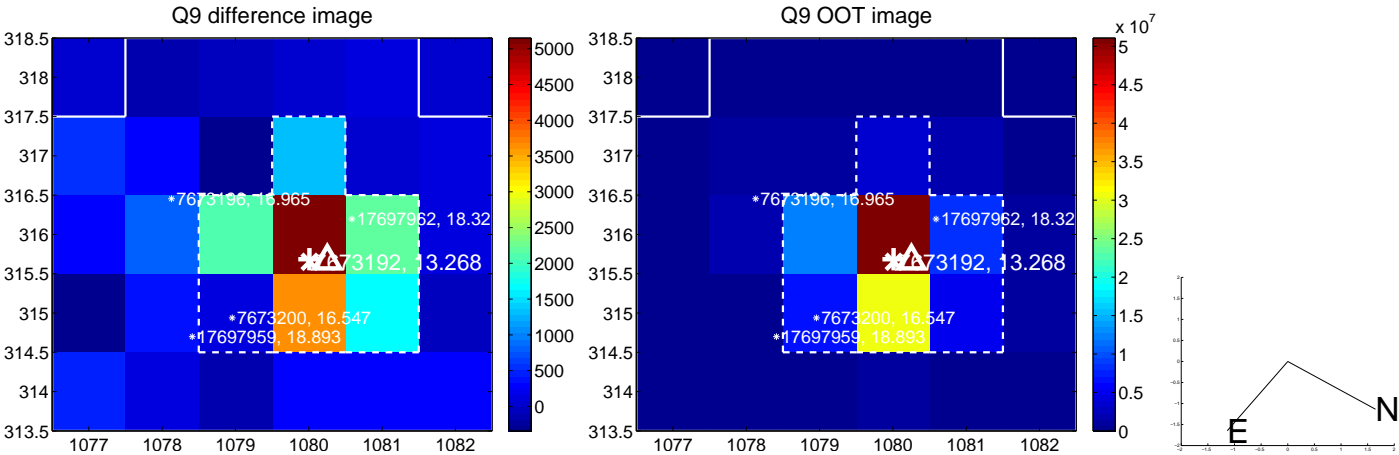


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

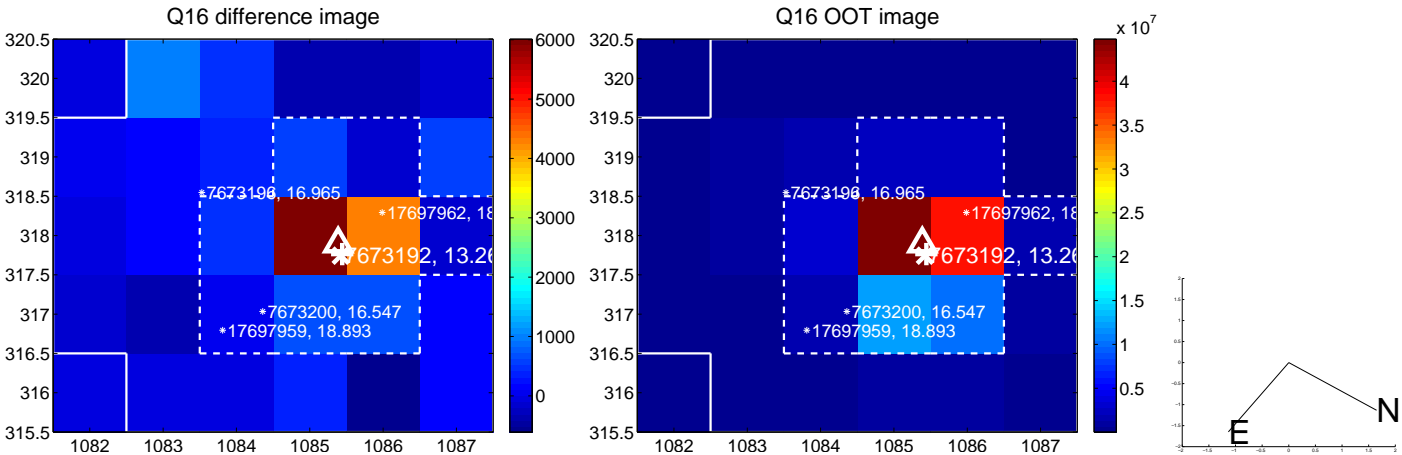
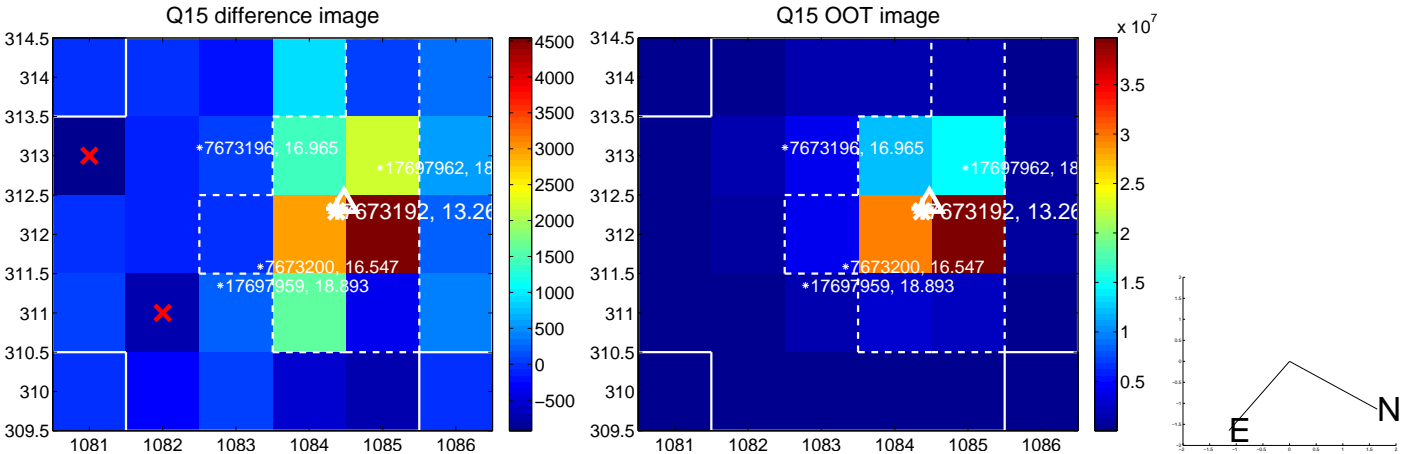
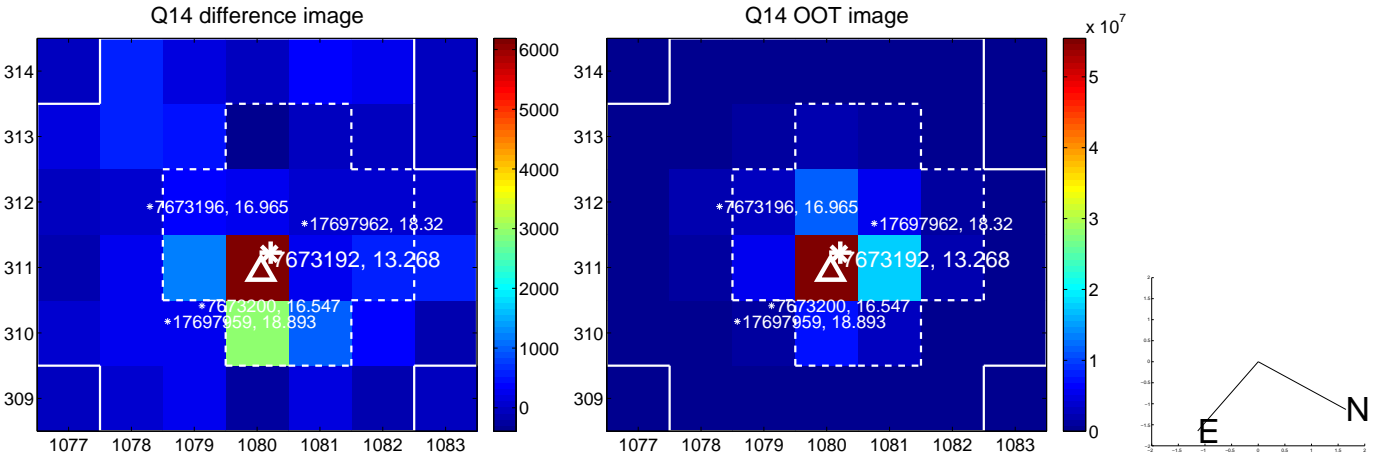
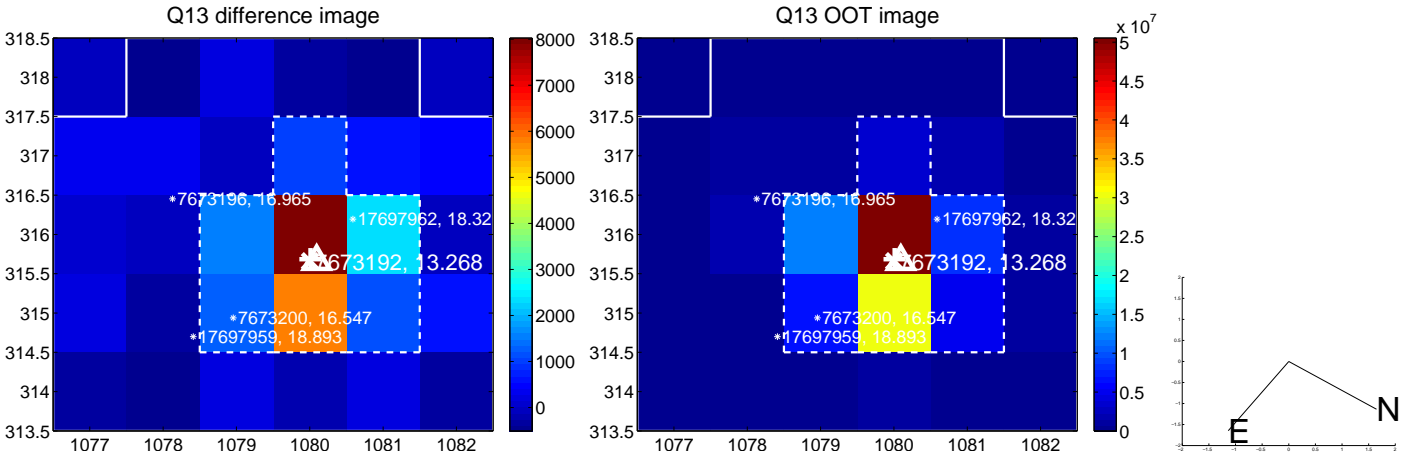
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



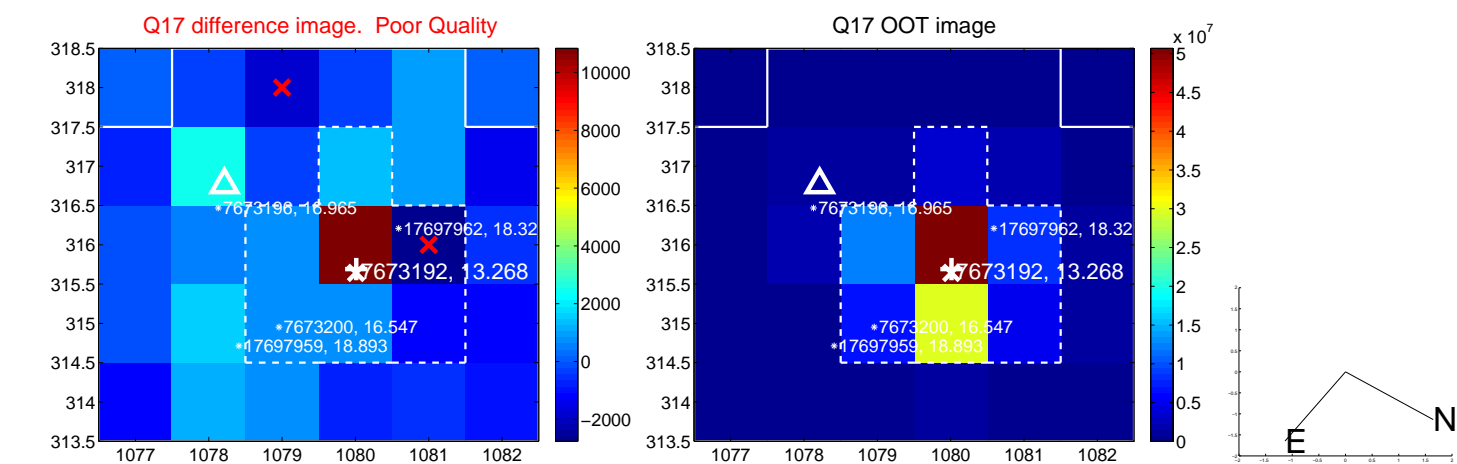
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



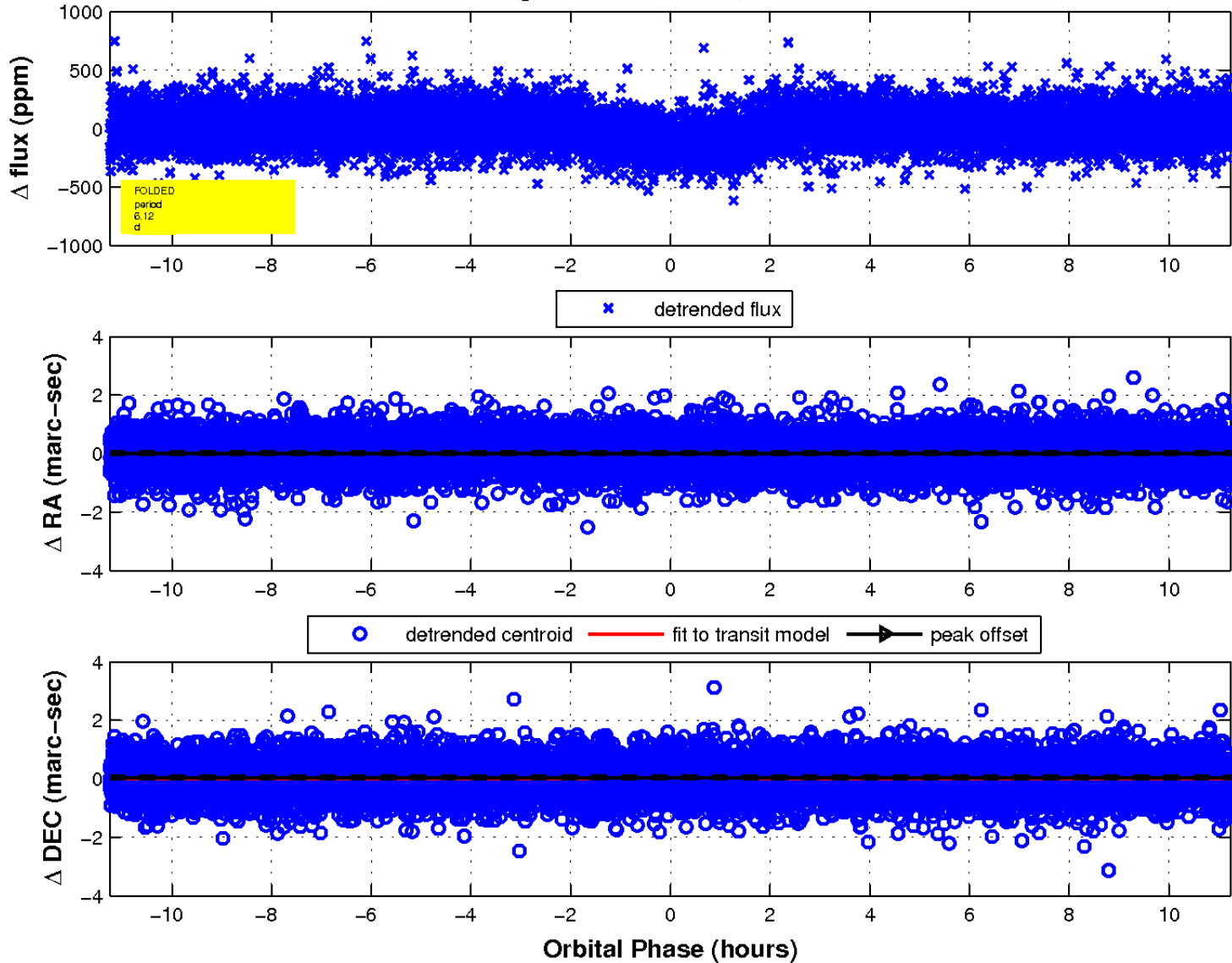
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

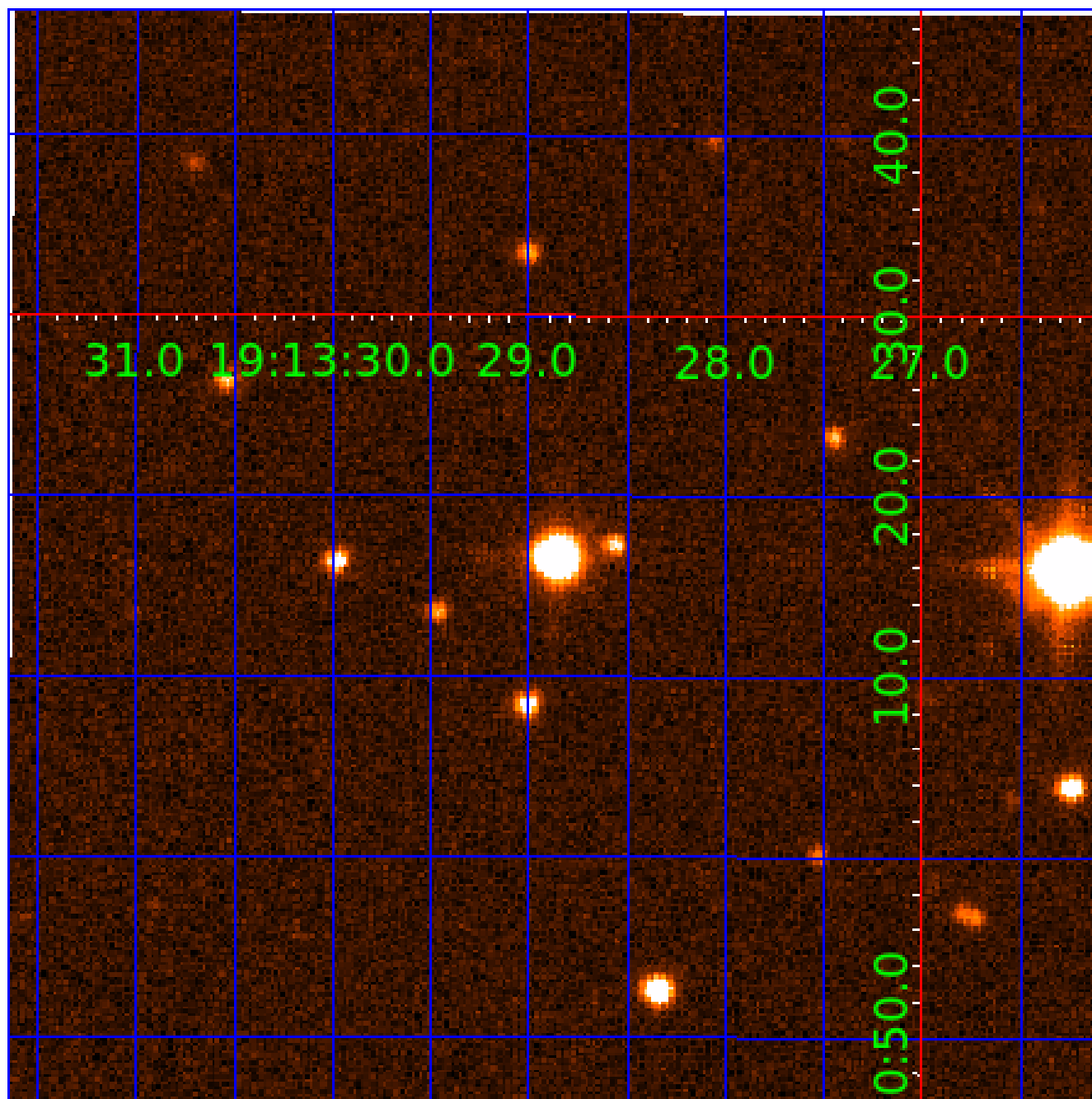


fluxWeightedCentroids, Planet 1 of 5



UKIRT Image

Declination



KIC 007673192

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})
007673192-01	OBS	2722.01	6.124820	134.934774	140.7	3.748	27.2	28.6	1.20	6052	1.68	400.22
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007673192-03	OBS	2722.02	11.242838	136.321380	134.9	4.380	17.8	19.3	1.20	6052	1.64	178.07
007673192-04	OBS	2722.04	8.921137	137.491758	105.3	4.010	15.4	16.8	1.20	6052	1.45	242.40
007673192-05	OBS	2722.05	16.534025	135.408478	76.1	4.180	7.8	8.5	1.20	6052	1.24	106.48

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007673192-01	OBS	PC	0.98	0	0	0	0	NO_COMMENT
007673192-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007673192-03	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007673192-04	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007673192-05	OBS	PC	0.89	0	0	0	0	NO_COMMENT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

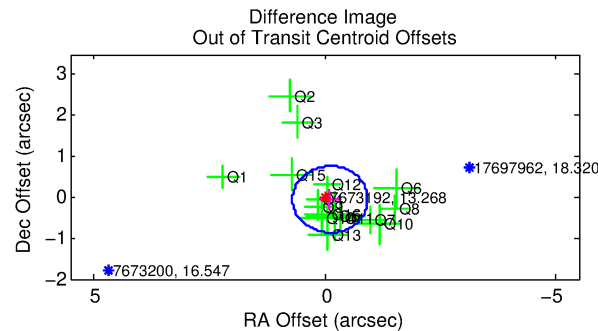
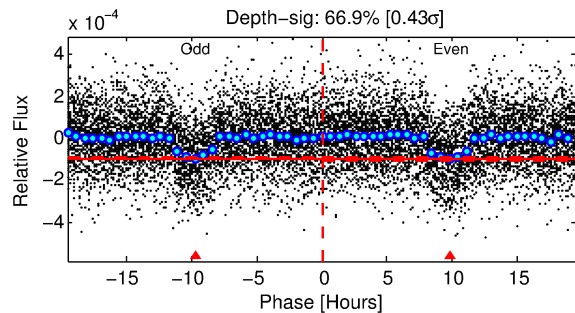
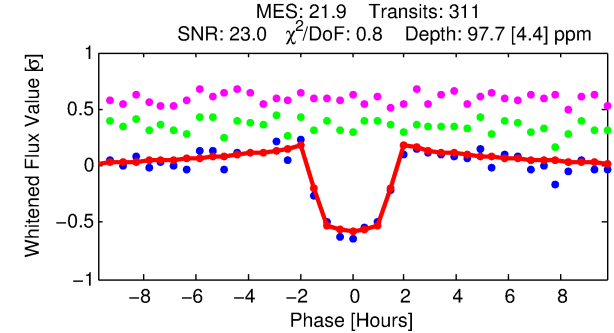
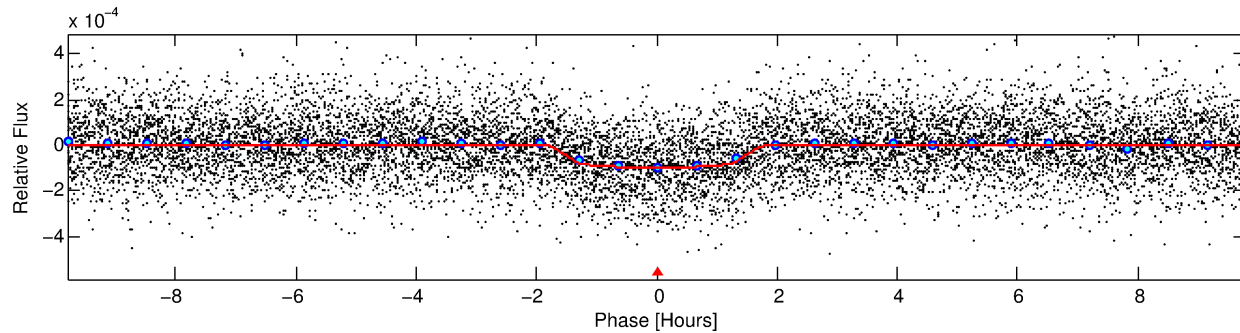
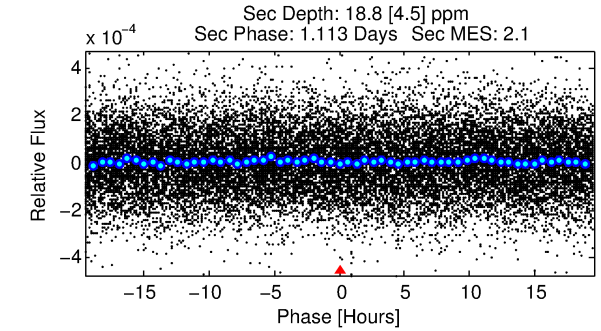
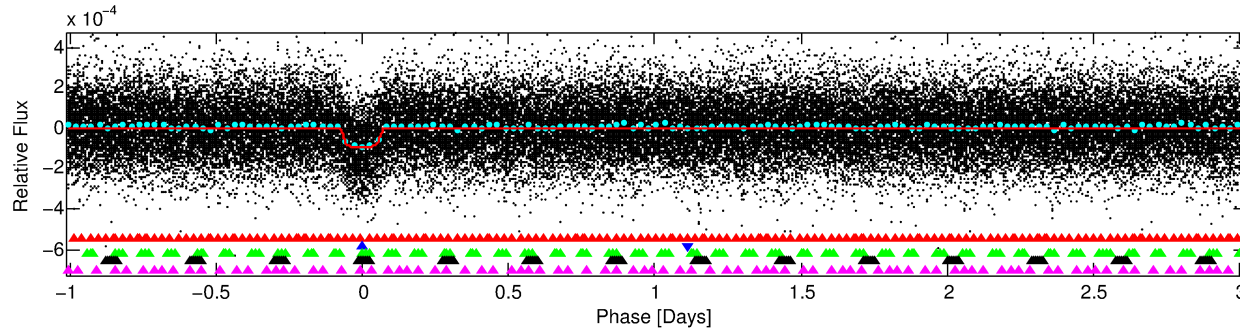
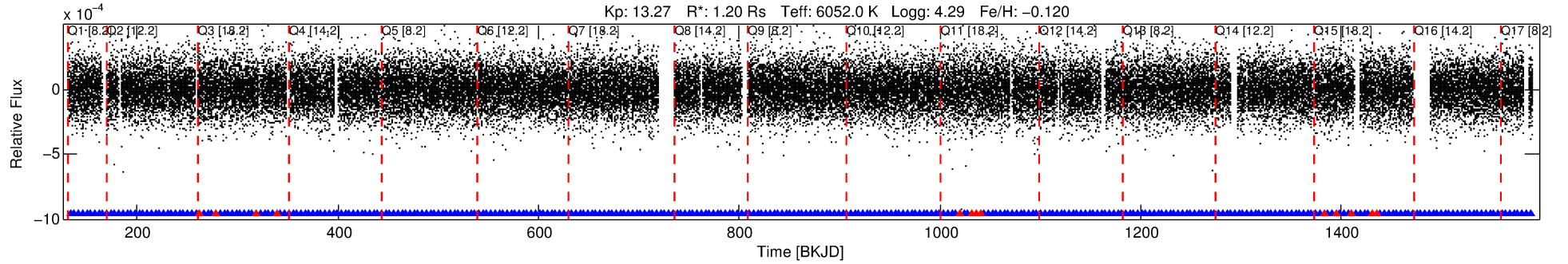
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007673192-02

No Significant Match Found

DV One-Page Summary

KIC: 7673192 Candidate: 2 of 5 Period: 4.029 d
KOI: K02722.03 Name: Kepler-402b Corr: 0.966



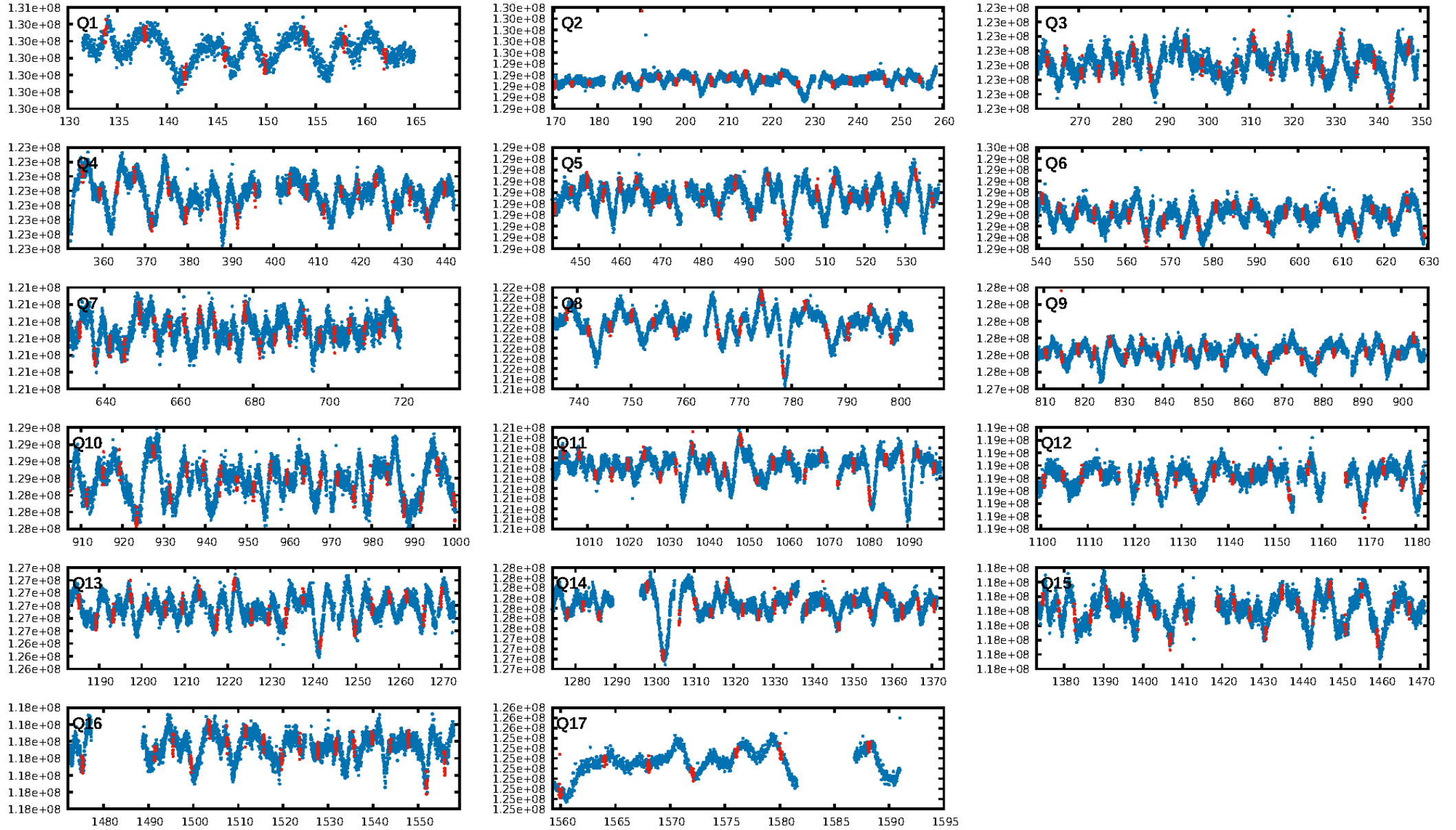
DV Fit Results:

Period = 4.02878 [0.00001] d
Epoch = 133.7660 [0.0018] BKJD
Rp/R* = 0.0106 [0.0022]
a/R* = 4.55 [4.73]
b = 0.89 [0.25]
Seff = 699.62 [178.73]
Teq = 1311 [84] K
Rp = 1.39 [0.38] Re
a = 0.0498 [0.0078] AU
Ag = 13.22 [7.13] [1.71σ]
Teffp = 3866 [475] K [5.30σ]

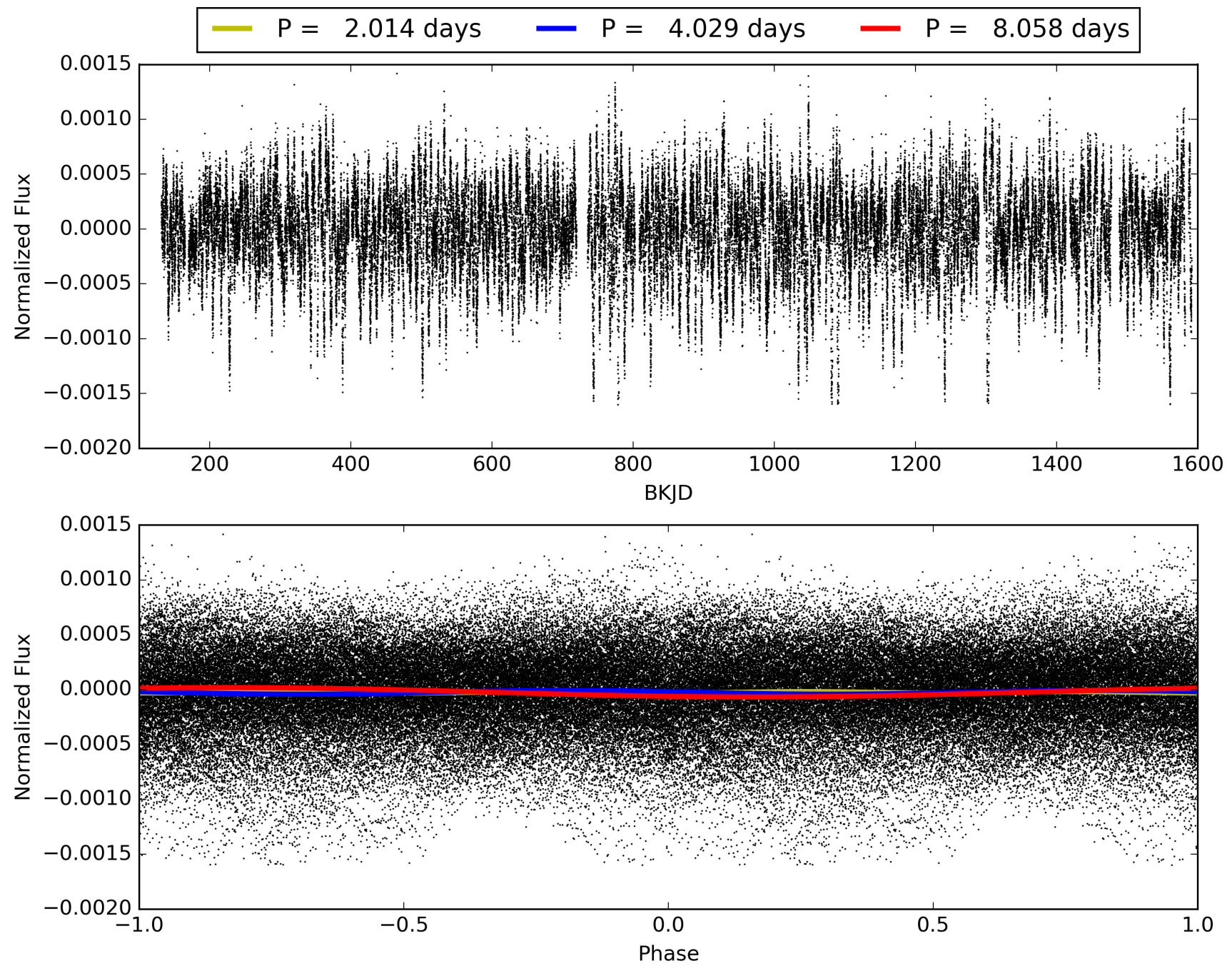
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [10.12σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: 1.78e-101
RollingBand-fgt: 0.96 [284/297]
GhostDiagnostic-chr: 101.2
Centroid-sig: 15.8%
Centroid-so: 0.271 arcsec [0.71σ]
OotOffset-rm: 0.126 arcsec [0.46σ]
KicOffset-rm: 0.239 arcsec [0.86σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.94 [15/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 007673192-02, PDC Light Curves

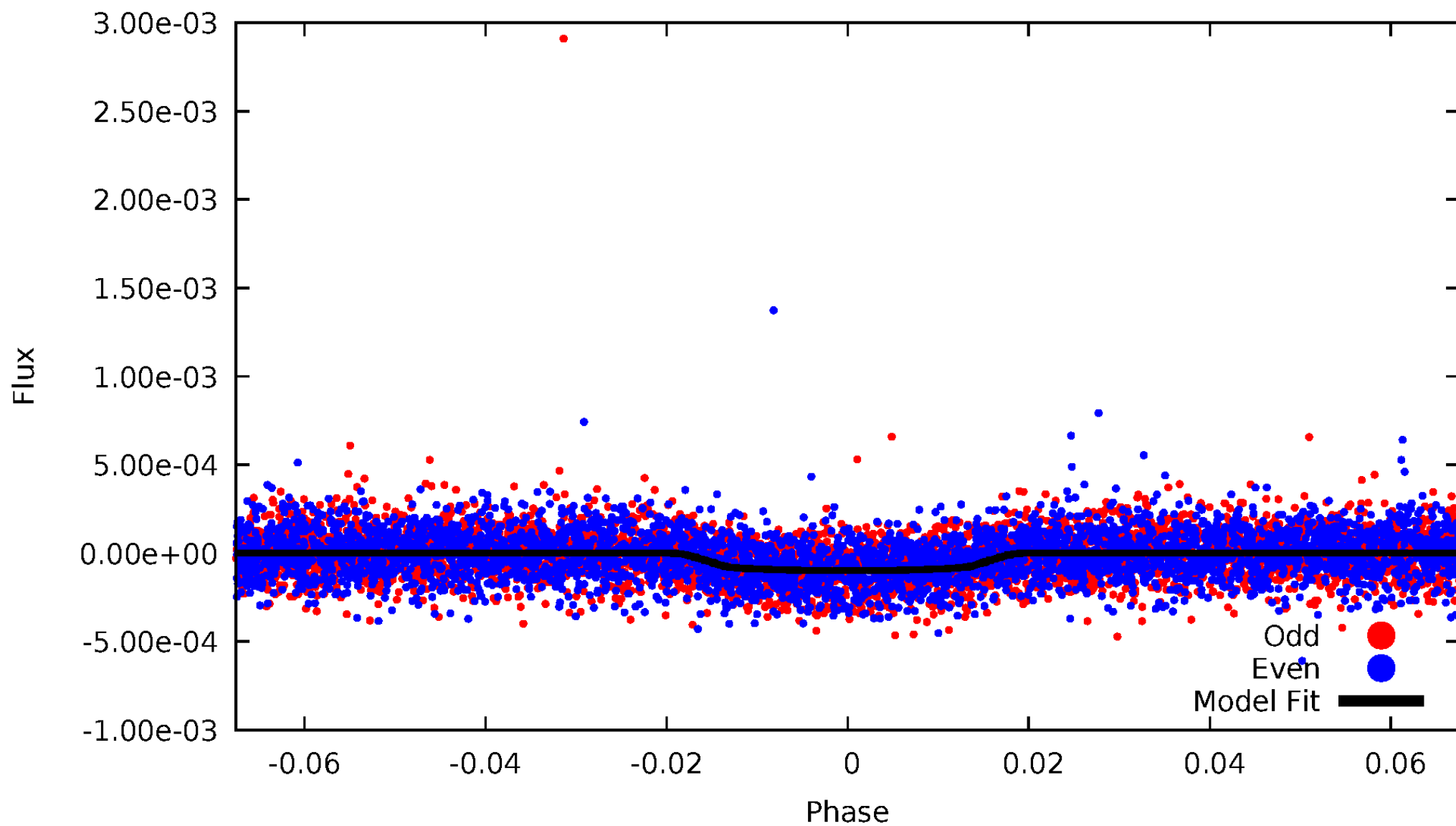


TCE 007673192-02



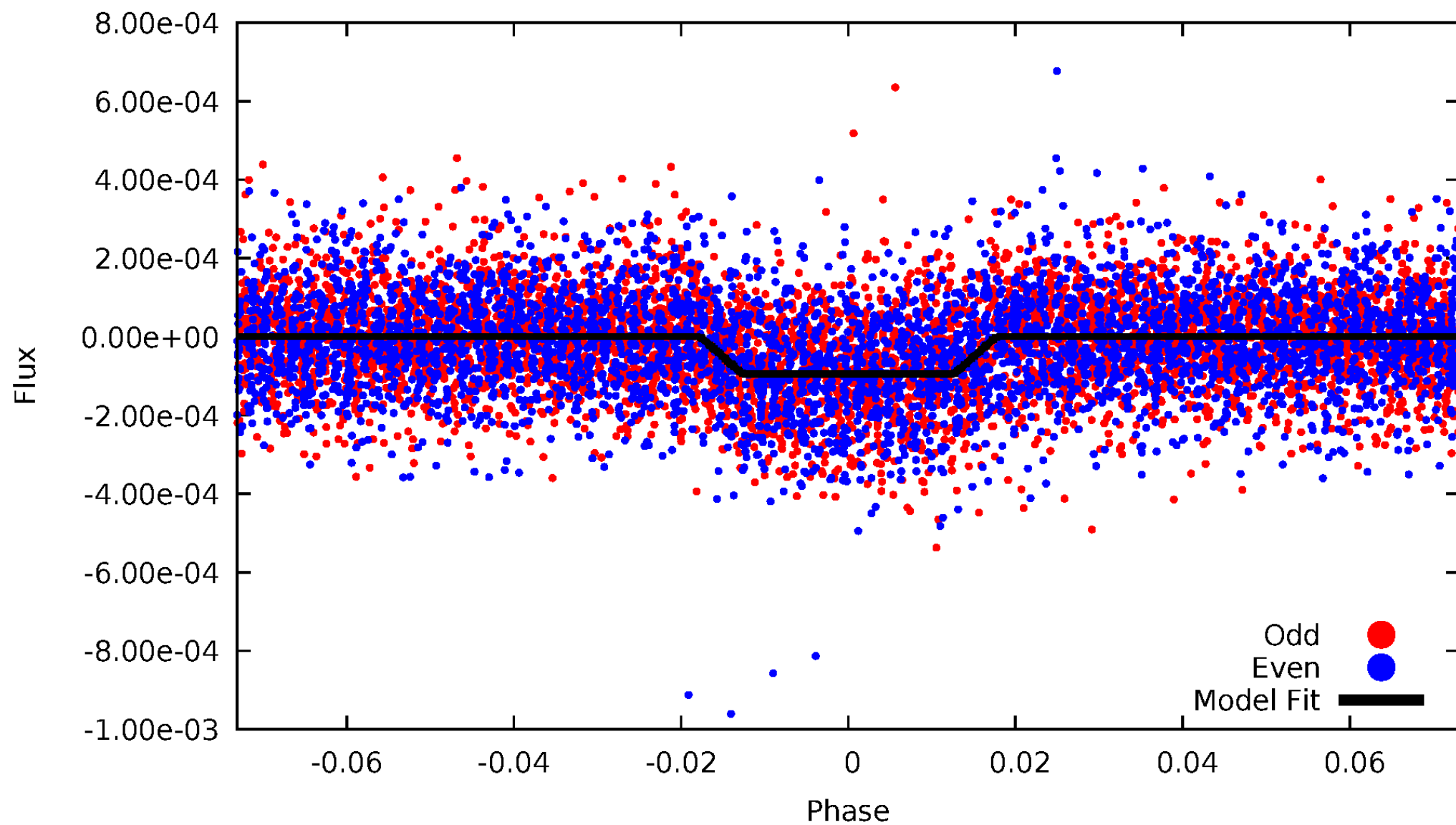
DV Odd/Even

TCE 007673192-02



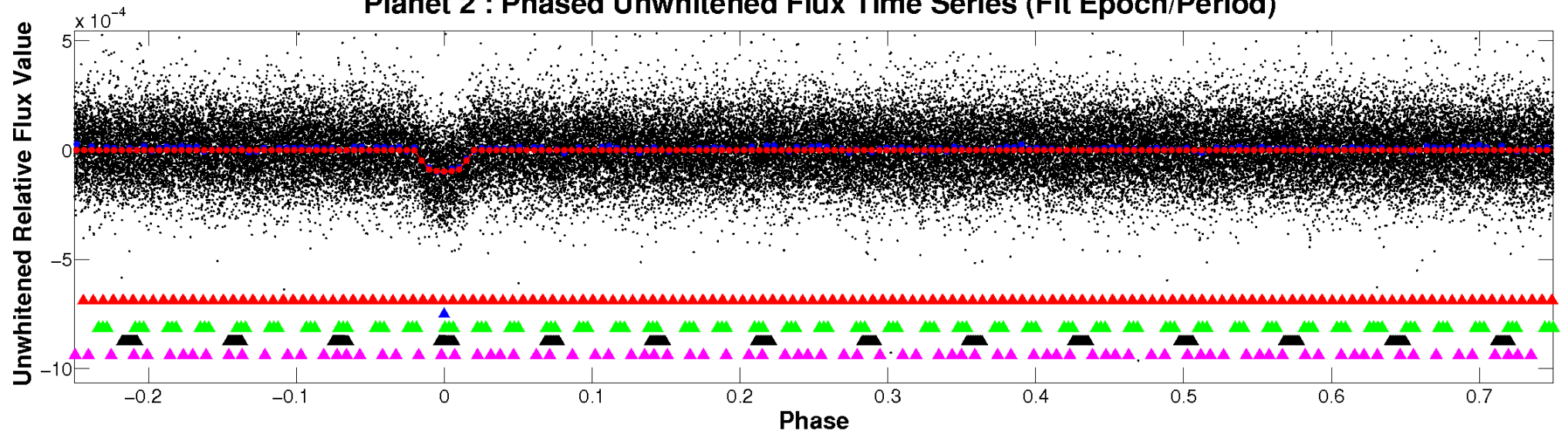
ALT Odd/Even

TCE 007673192-02

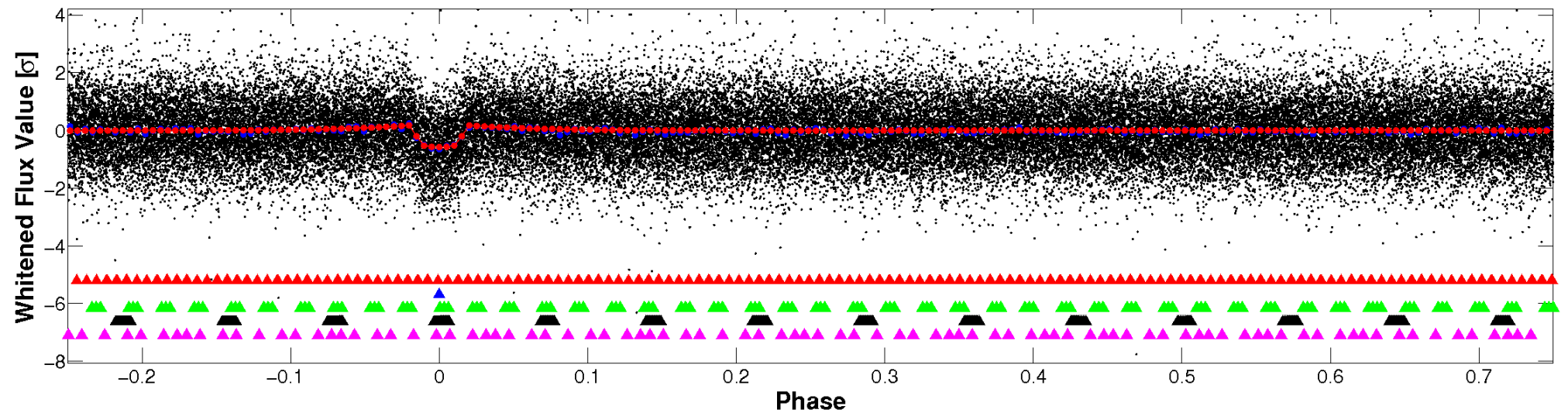


Non-Whitened Vs. Whitened Light Curve

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

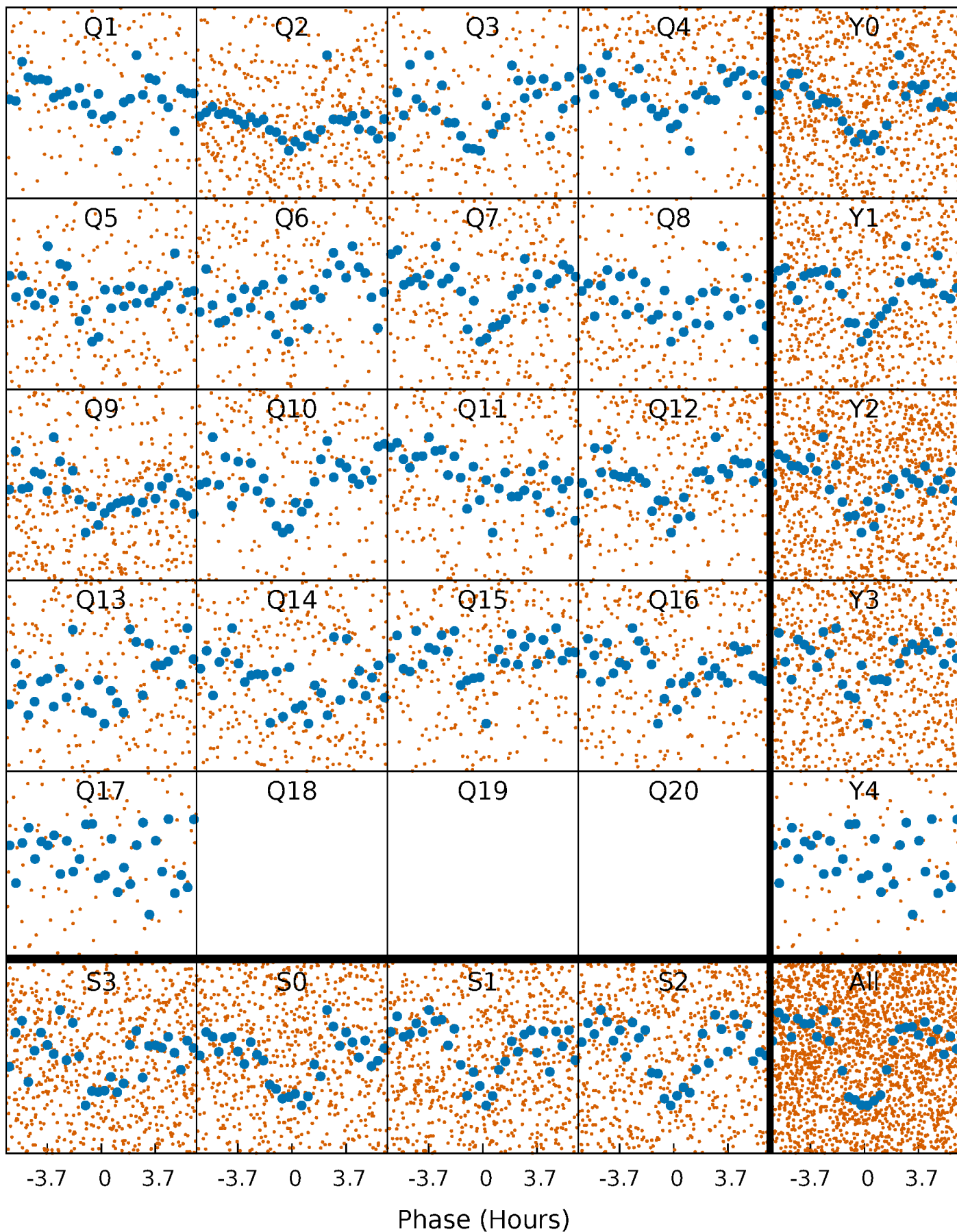


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



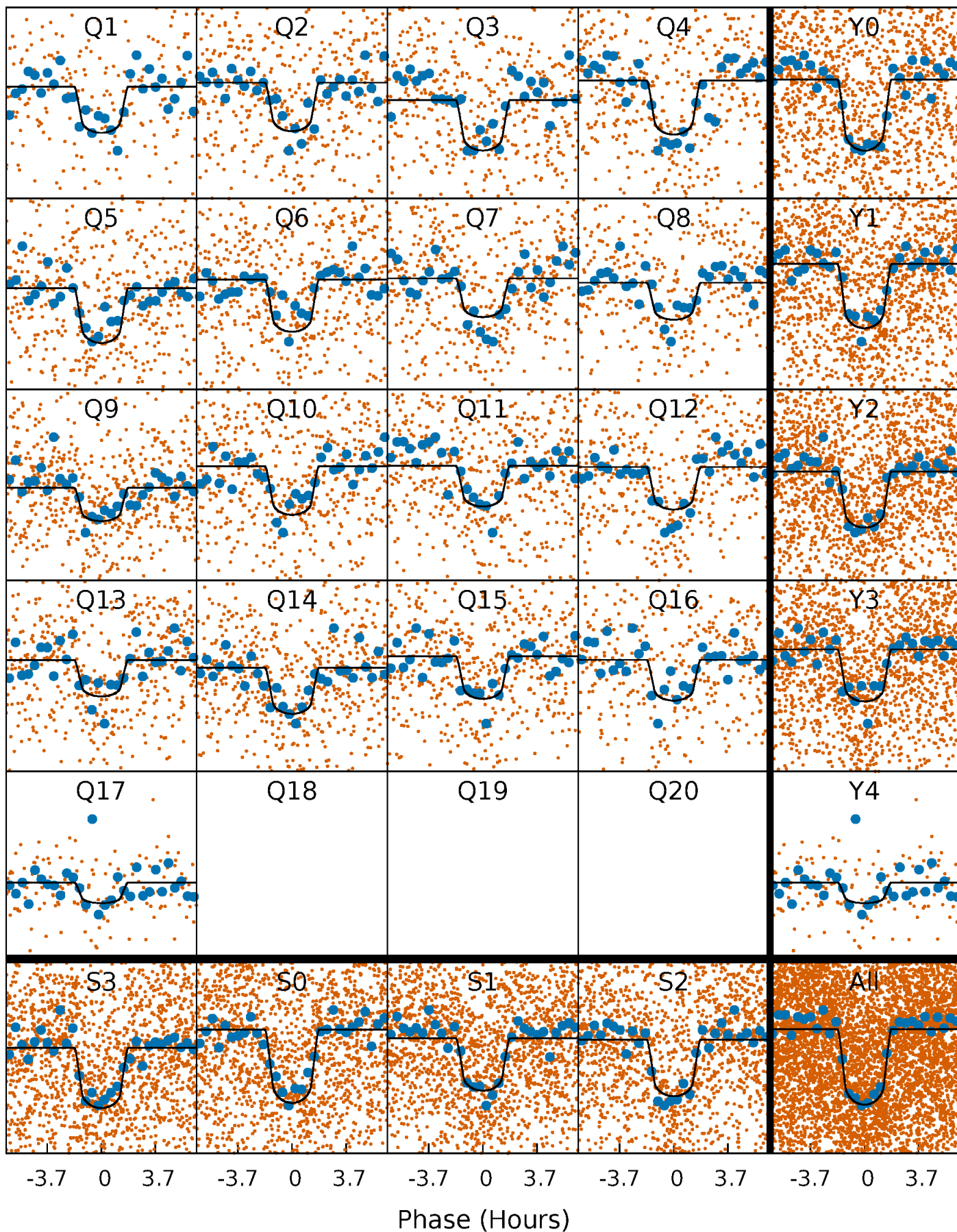
PDC Quarter-Phased Transit Curves

TCE 007673192-02 P= 4.028779 Days $T_0=133.765963$ (BKJD)



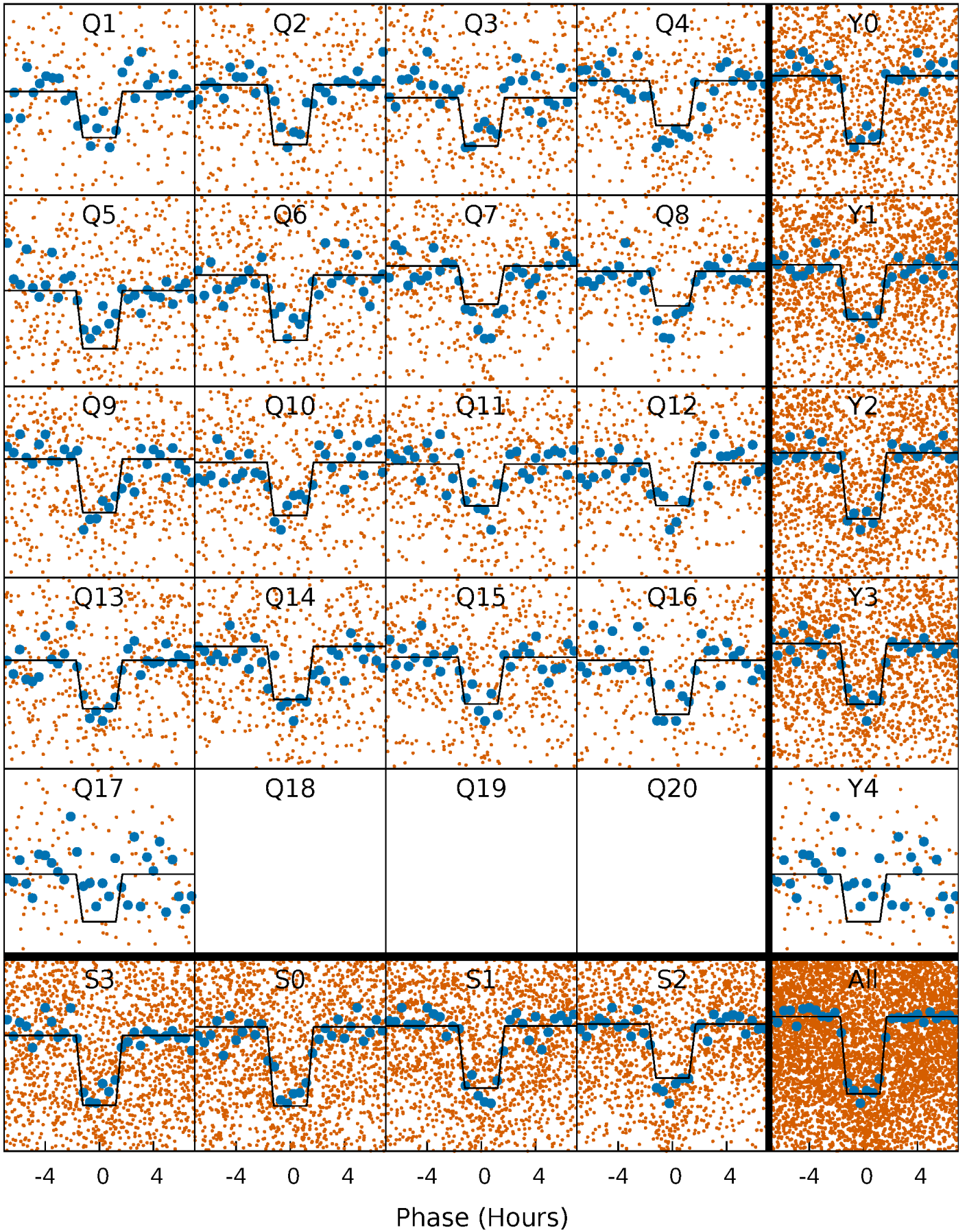
DV Quarter-Phased Transit Curves

TCE 007673192-02 P= 4.028779 Days $T_0=133.765963$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

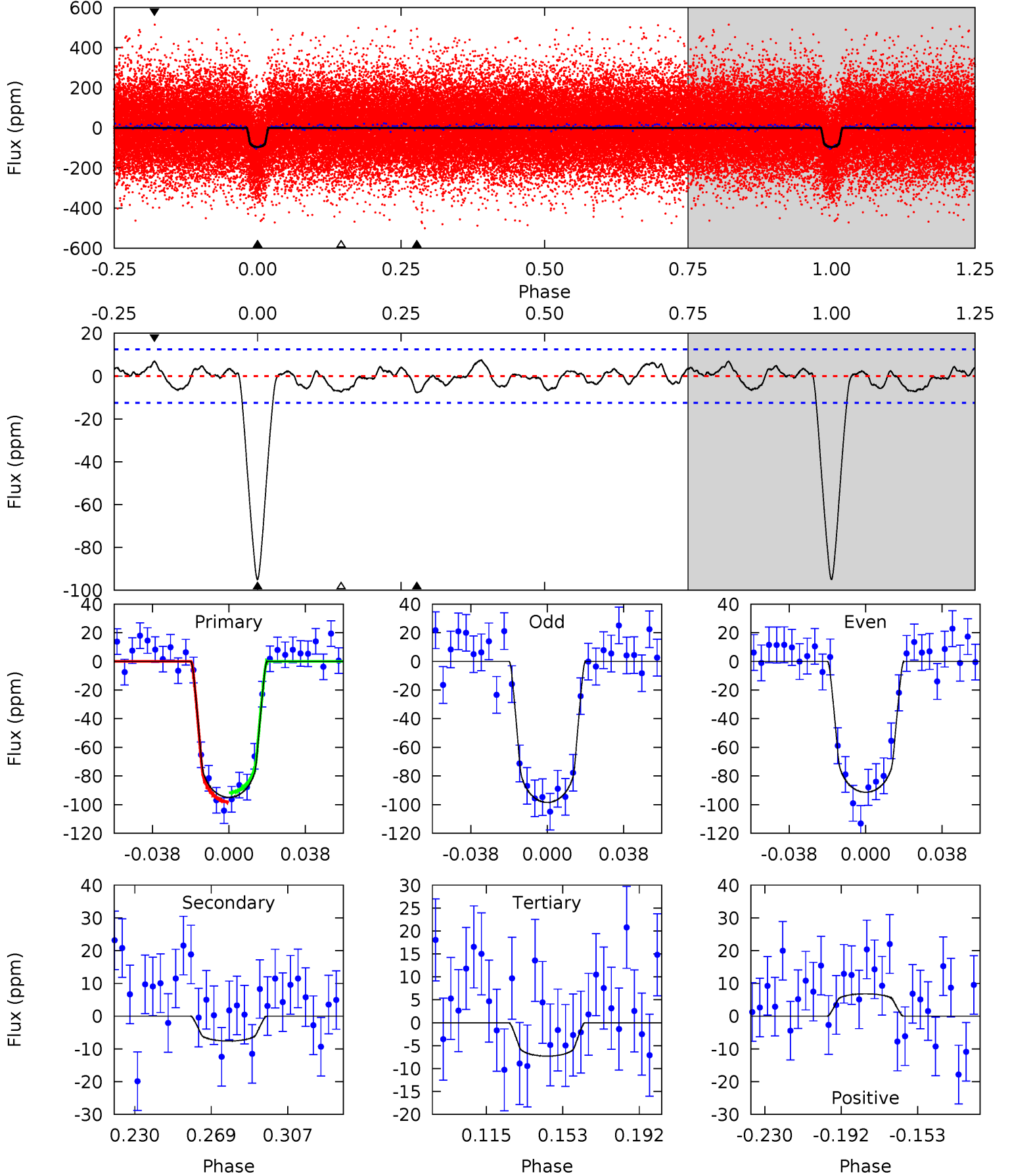
TCE 007673192-02 P= 4.028755 Days $T_0=133.770208$ (BKJD)



DV Model-Shift Uniqueness Test

007673192-02, P = 4.028779 Days, E = 129.737184 Days

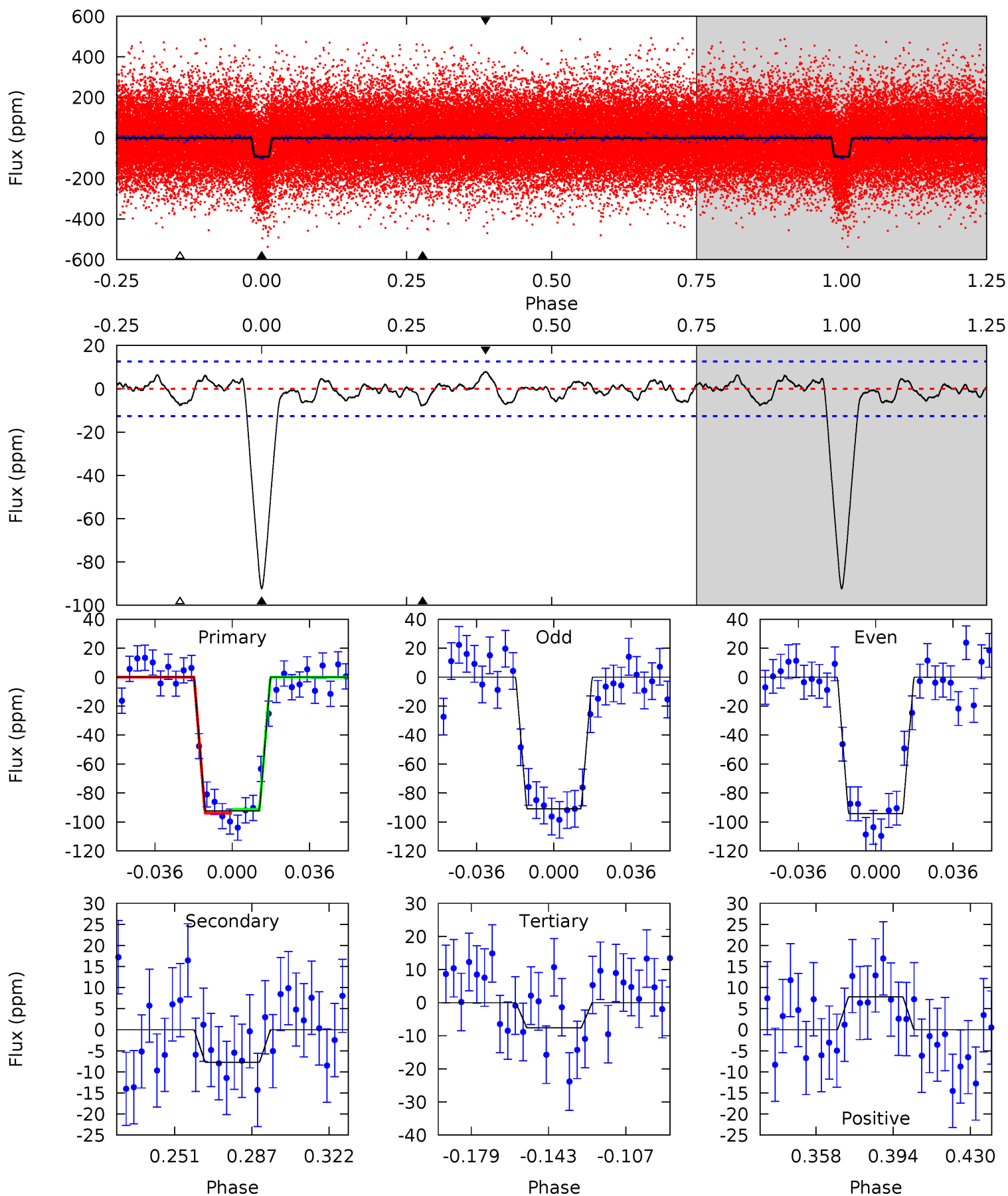
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.2	2.90	2.78	2.59	4.76	2.07	1.28	33.4	33.6	0.12	0.30	1.36	0.99	0.07	1.23



Alt Model-Shift Uniqueness Test

007673192-02, P = 4.028755 Days, E = 129.741453 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.9	2.92	2.88	2.96	4.78	2.10	1.22	32.1	32.0	0.04	-0.04	0.60	1.08	0.08	0.50



Stellar Parameters For KIC 007673192

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6052^{+121}_{-133}	$4.285^{+0.137}_{-0.112}$	$-0.120^{+0.150}_{-0.150}$	$1.202^{+0.208}_{-0.189}$	$1.015^{+0.085}_{-0.068}$	$0.823^{+0.474}_{-0.278}$
	+2%/-2%	+3%/-3%	+125%/-125%	+17%/-16%	+8%/-7%	+58%/-34%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 007673192-02 / KOI 2722.03

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-8 ± 3	$1.38^{+0.33}_{-0.32}$	1825^{+97}_{-89}	3512^{+340}_{-332}	$5.348^{+4.102}_{-2.487}$
Alt.	-8 ± 3	$1.27^{+0.32}_{-0.29}$	1830^{+96}_{-92}	3622^{+383}_{-362}	$6.410^{+5.304}_{-3.023}$

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

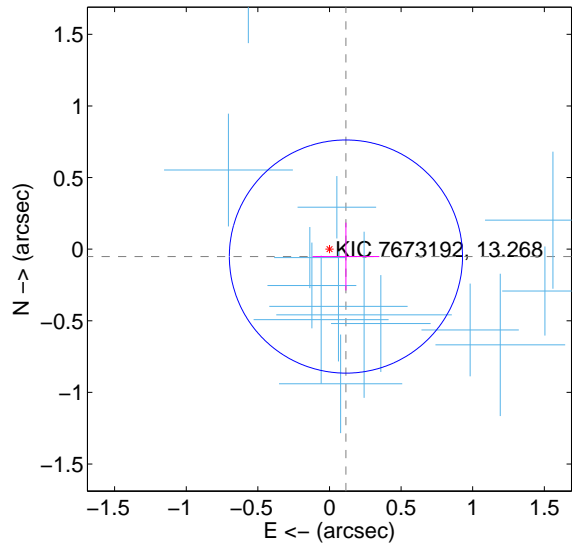
Supplemental centroid analysis for 007673192-02. Kepler magnitude: 13.27. Transit SNR 22.99

There are 15 quarters with good PRF difference image offsets

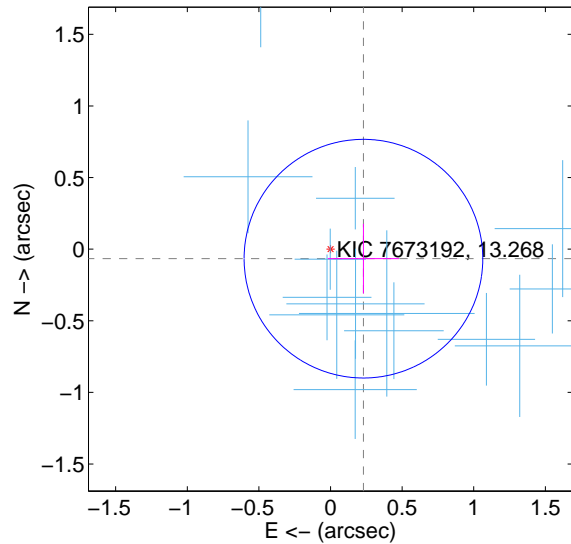
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.126 ± 0.271	0.46	-0.115 ± 0.233	-0.052 ± 0.237
PRF-fit source offset from KIC position	0.239 ± 0.278	0.86	-0.230 ± 0.249	-0.066 ± 0.243
photometric centroid source offset	0.27 ± 0.38	0.71	0.21 ± 0.37	0.17 ± 0.39

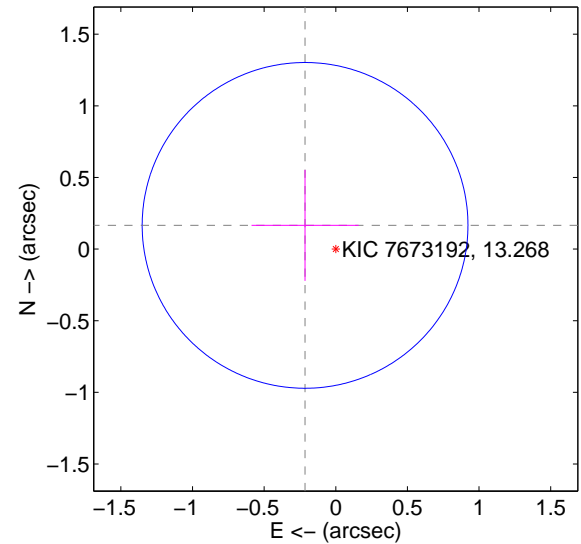
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

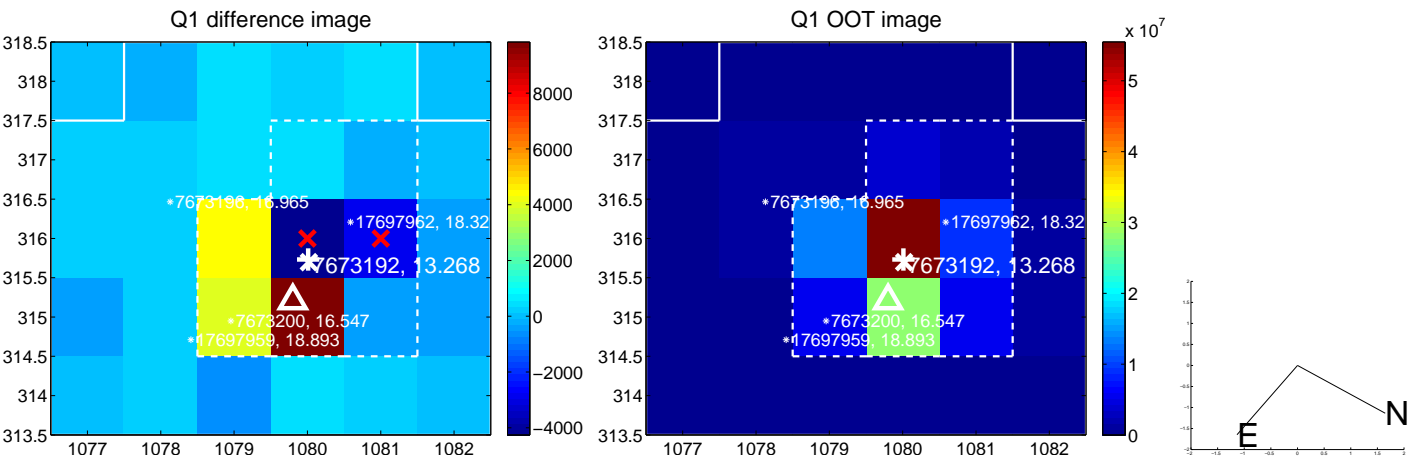


offset from photometric centroids

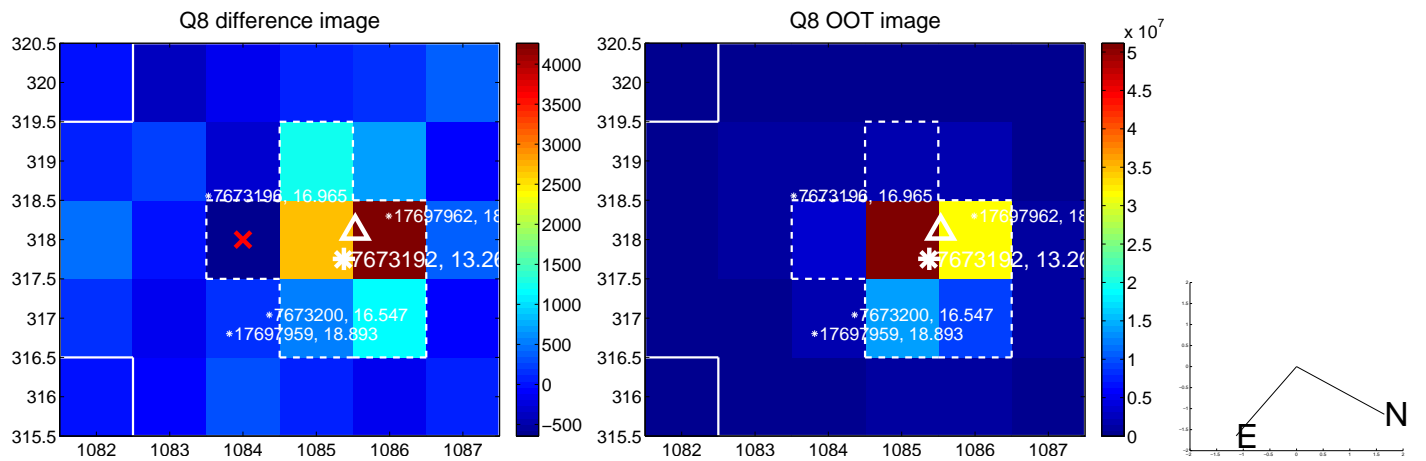
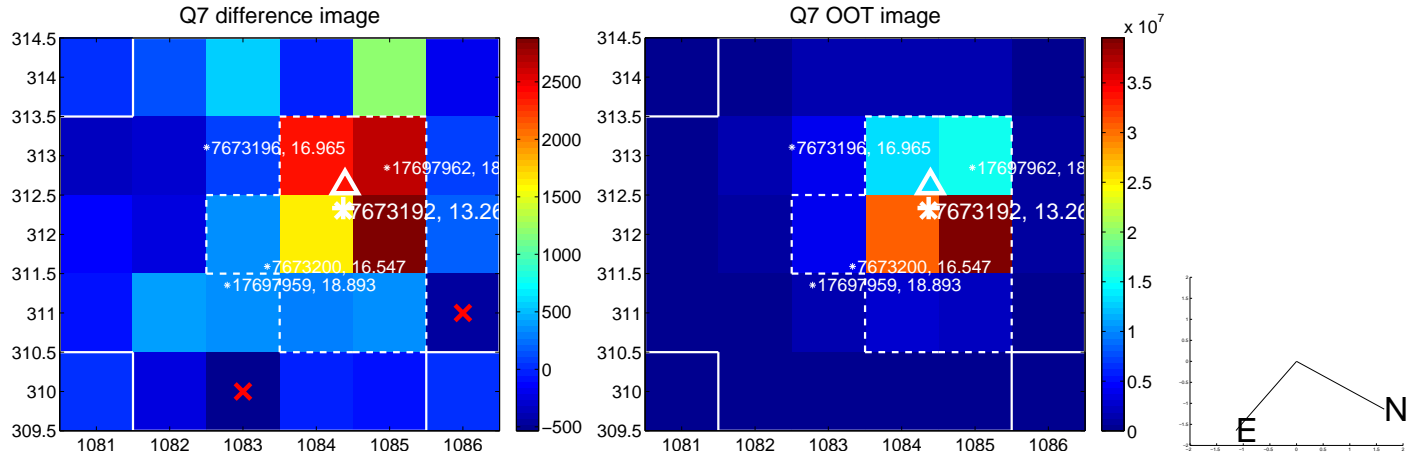
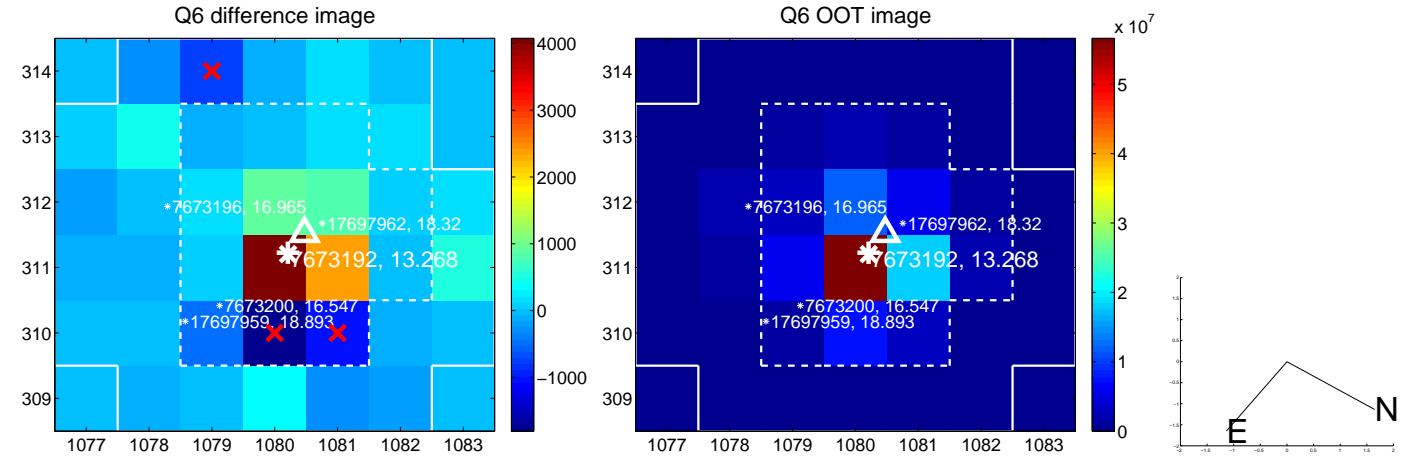
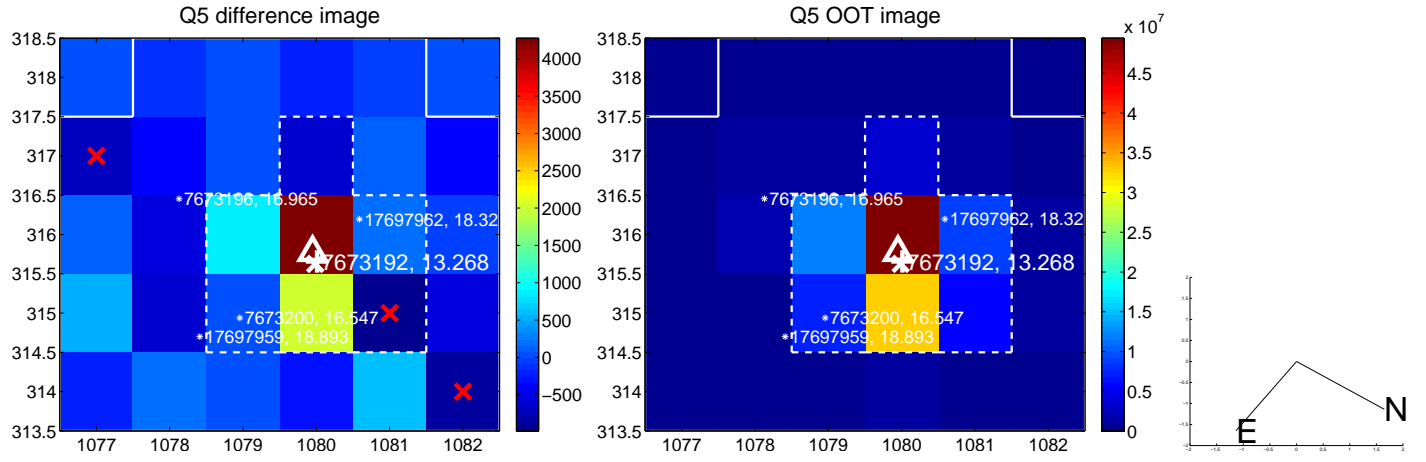


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

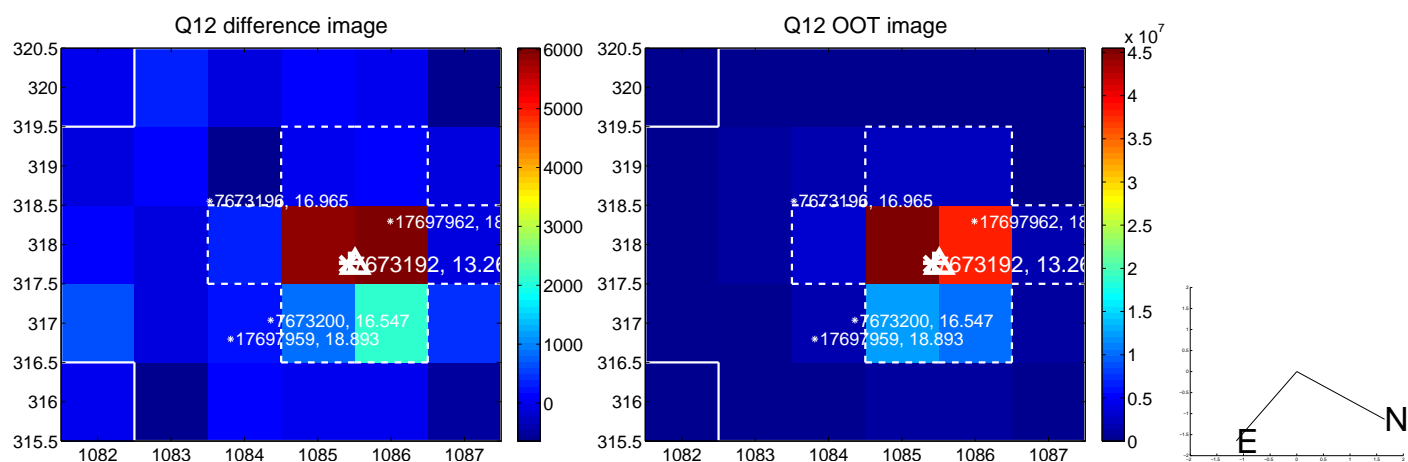
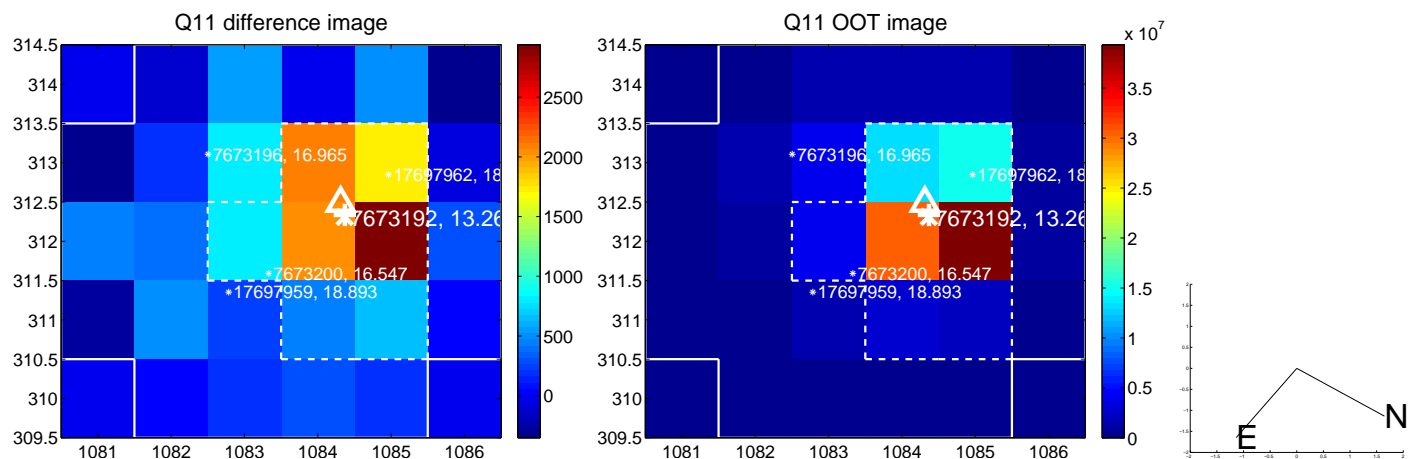
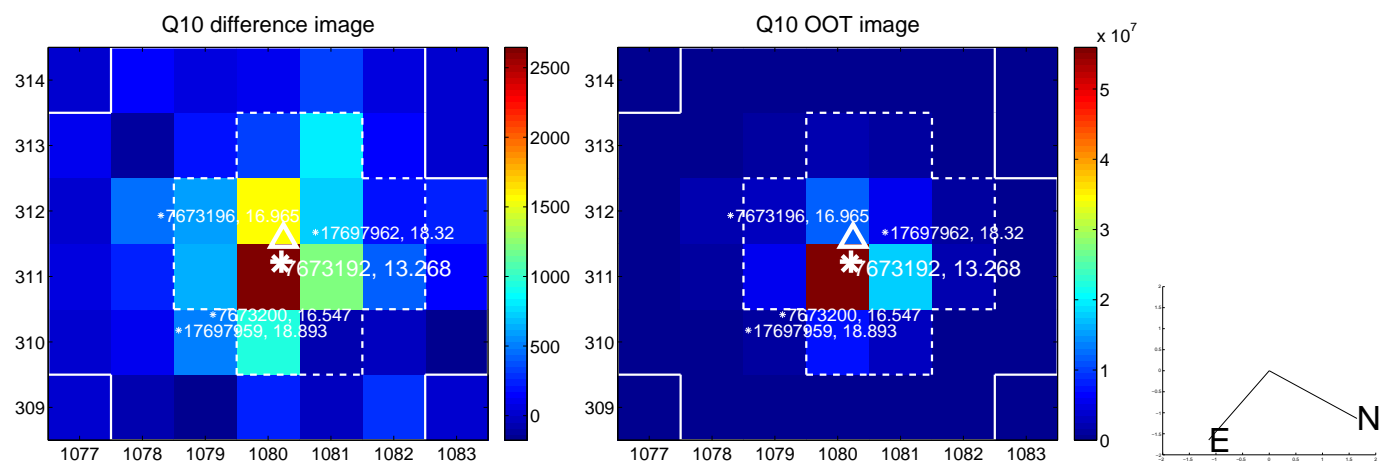
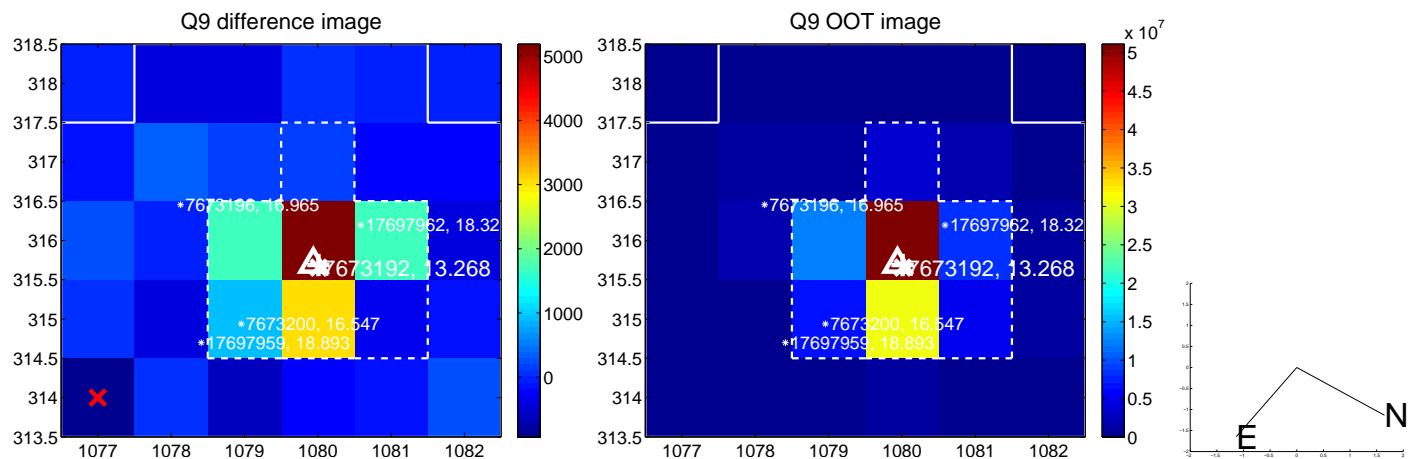
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



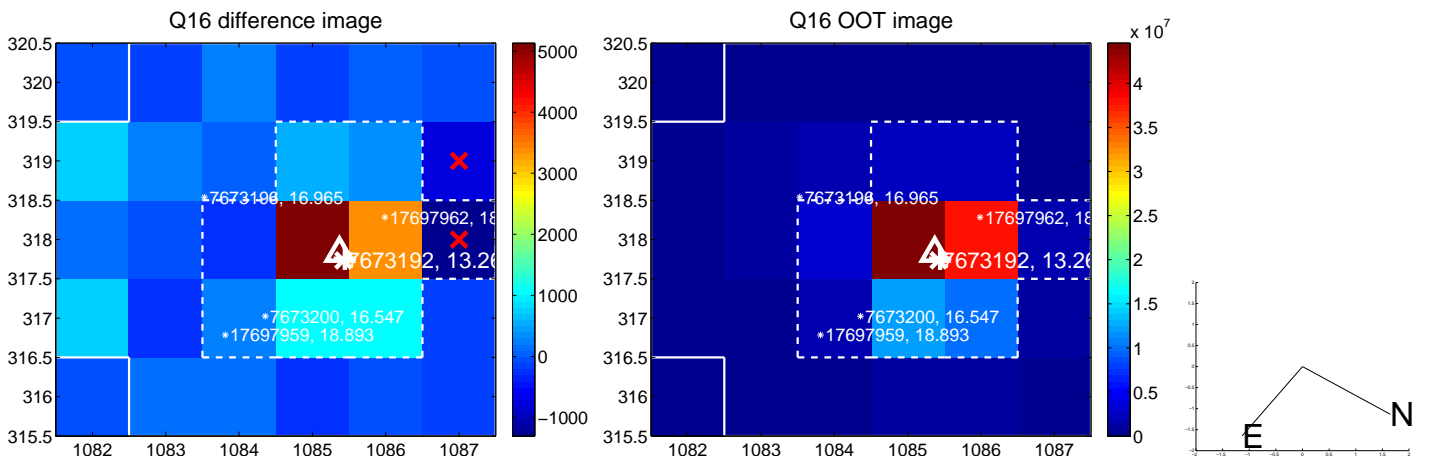
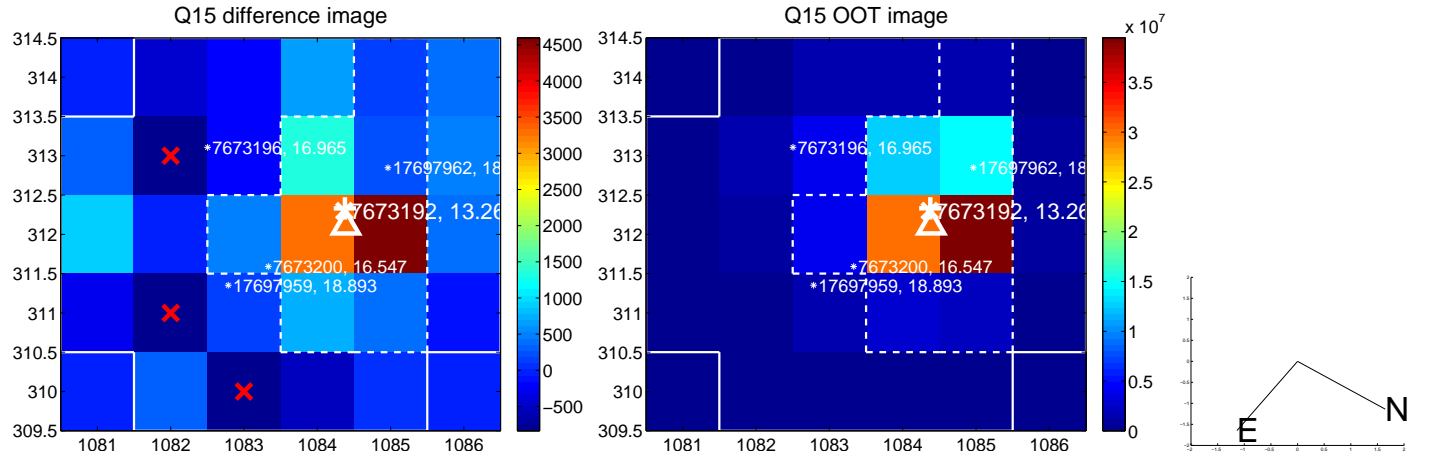
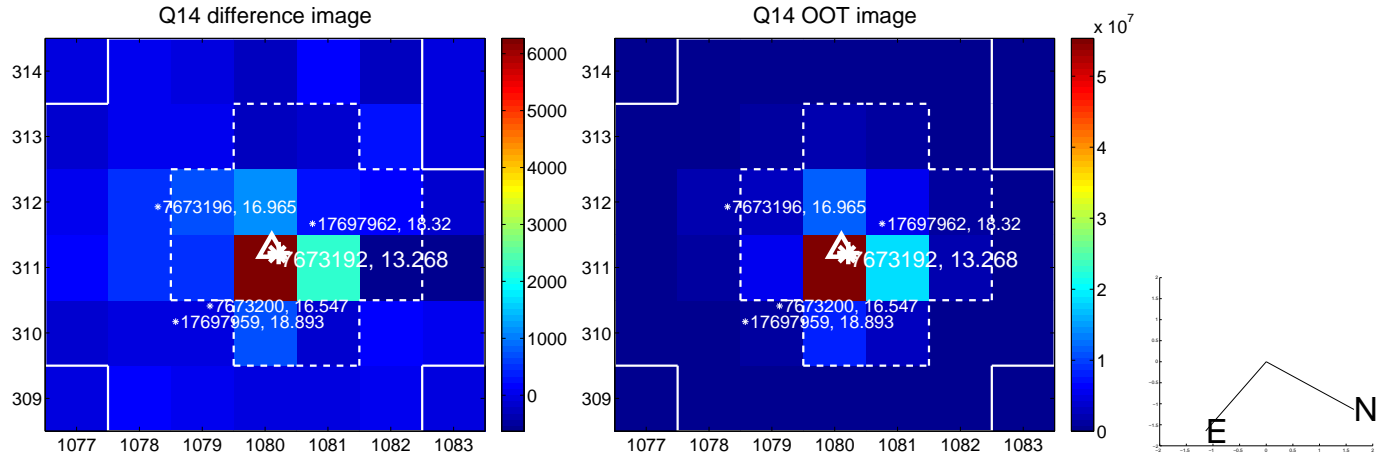
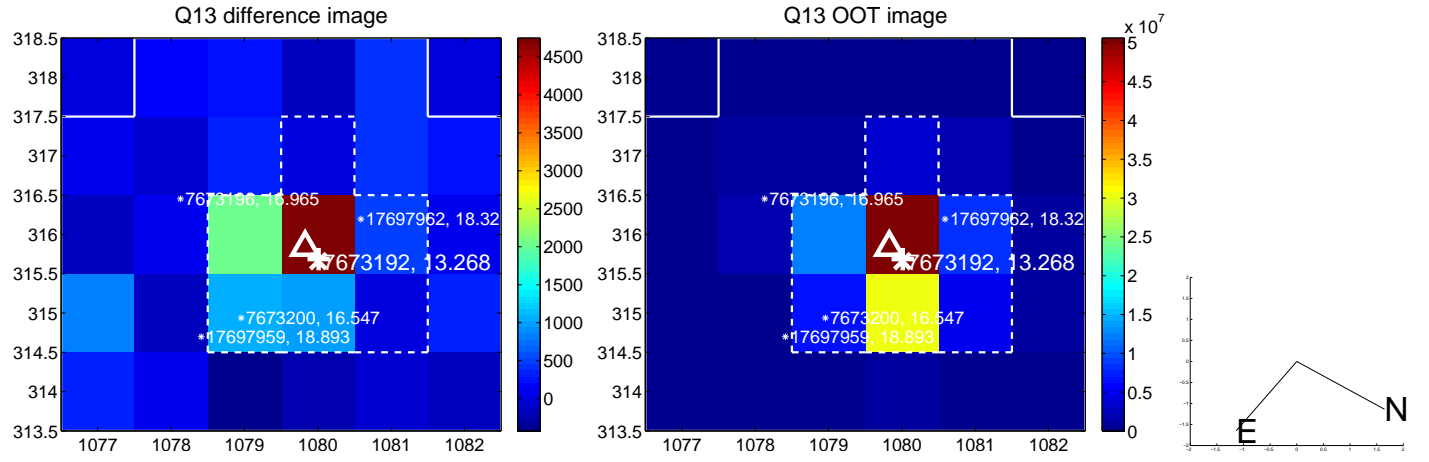
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



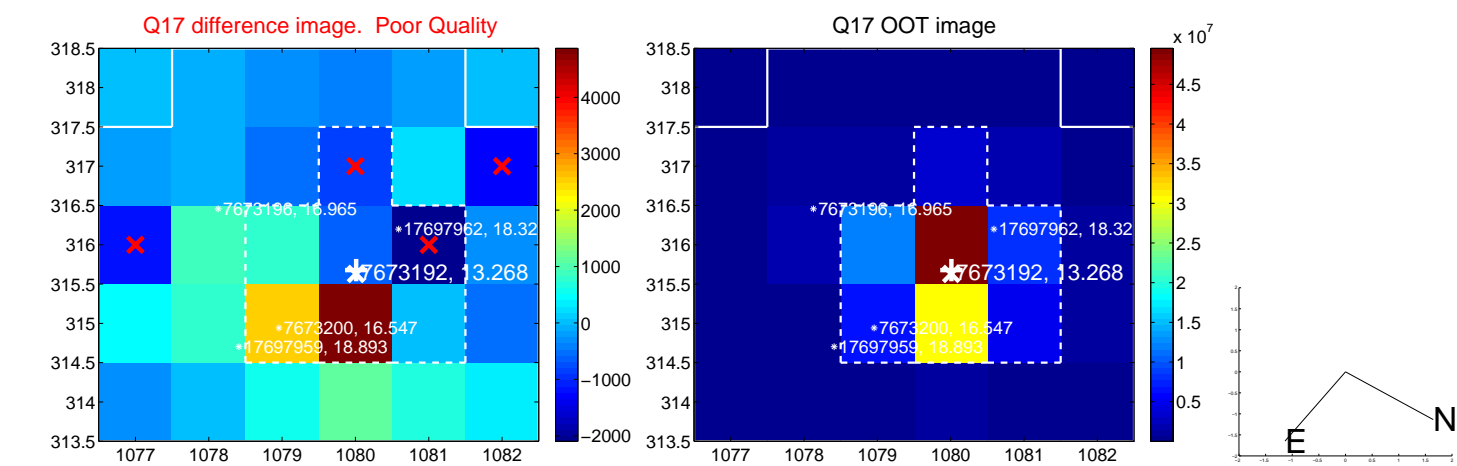
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



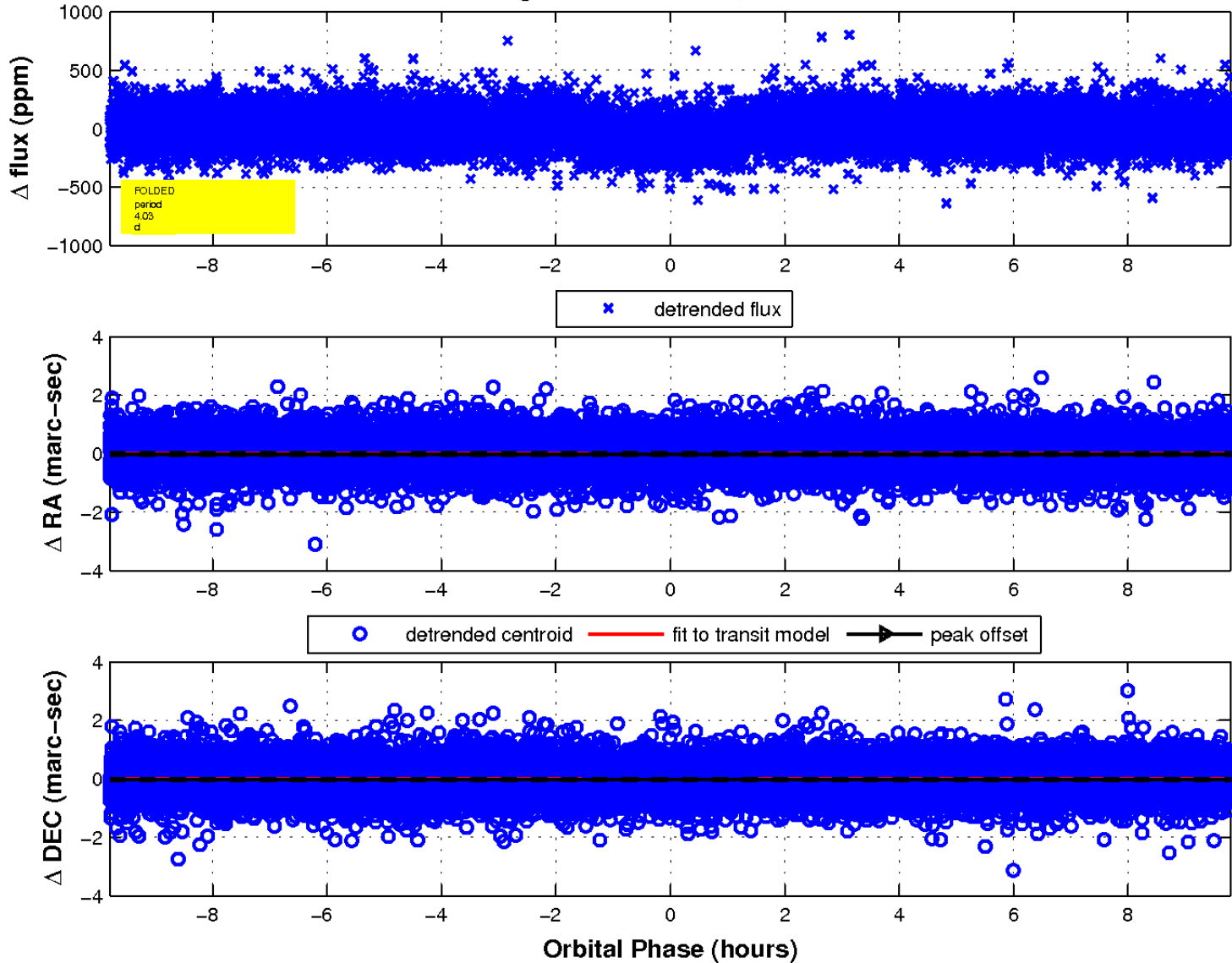
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

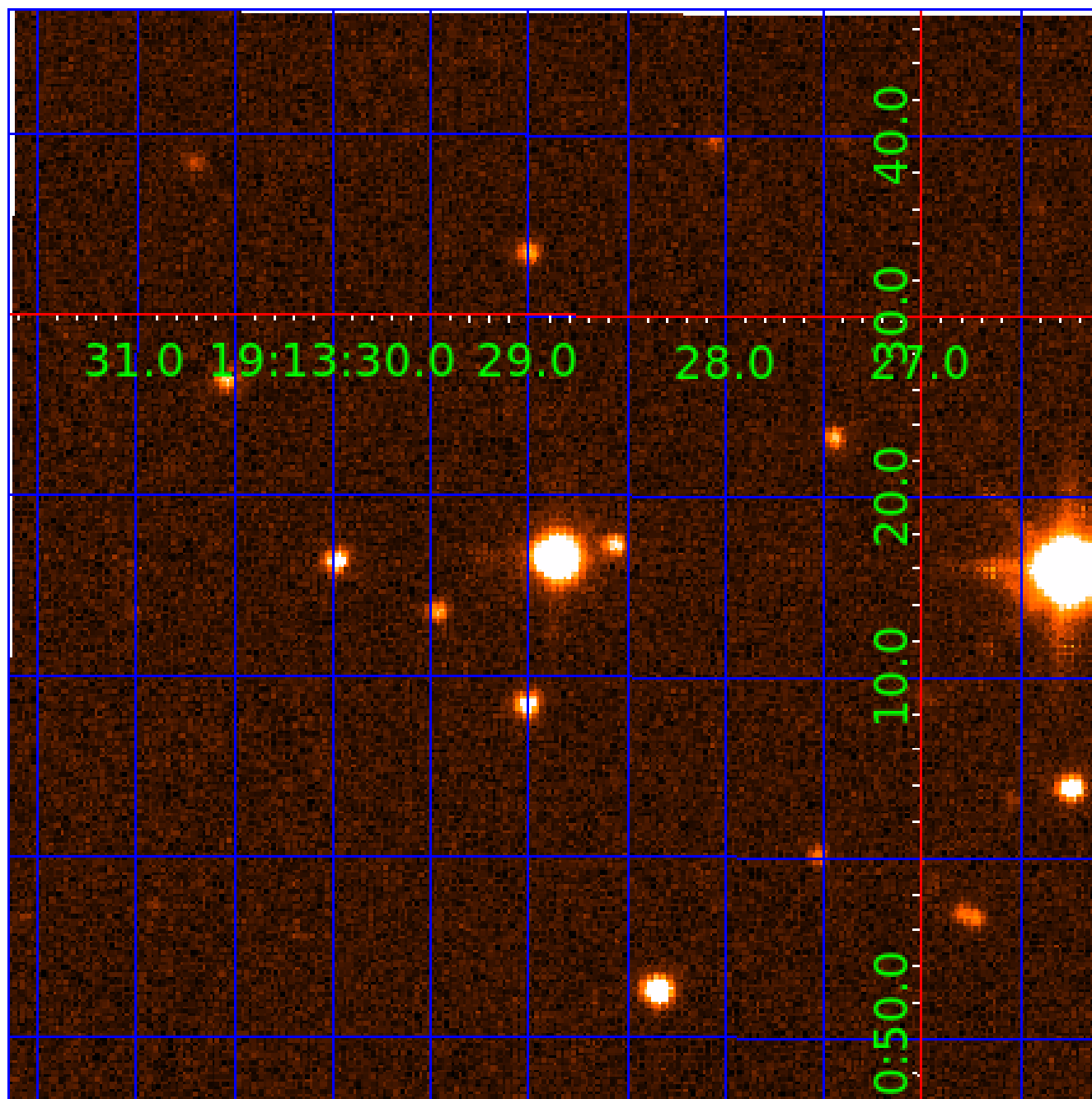


fluxWeightedCentroids, Planet 2 of 5



UKIRT Image

Declination



KIC 007673192

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})
007673192-01	OBS	2722.01	6.124820	134.934774	140.7	3.748	27.2	28.6	1.20	6052	1.68	400.22
007673192-02	OBS	2722.03	4.028779	133.765963	97.7	3.266	21.9	23.0	1.20	6052	1.39	699.62
007673192-03	OBS	2722.02	11.242838	136.321380	134.9	4.380	17.8	19.3	1.20	6052	1.64	178.07
007673192-04	OBS	2722.04	8.921137	137.491758	105.3	4.010	15.4	16.8	1.20	6052	1.45	242.40
007673192-05	OBS	2722.05	16.534025	135.408478	76.1	4.180	7.8	8.5	1.20	6052	1.24	106.48

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007673192-01	OBS	PC	0.98	0	0	0	0	NO_COMMENT
007673192-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007673192-03	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007673192-04	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007673192-05	OBS	PC	0.89	0	0	0	0	NO_COMMENT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

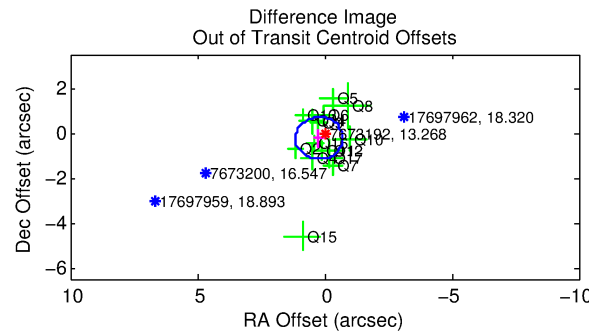
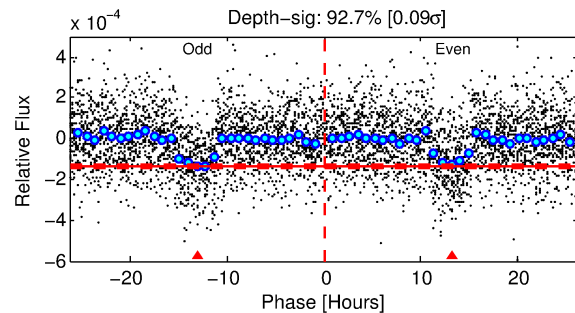
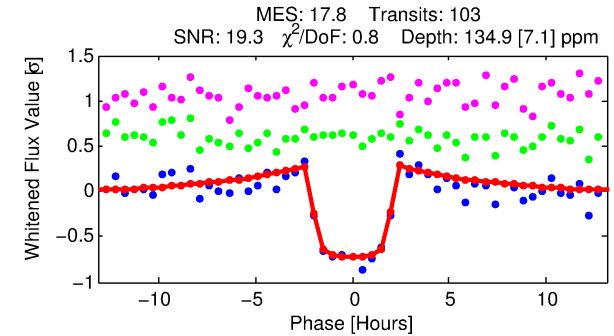
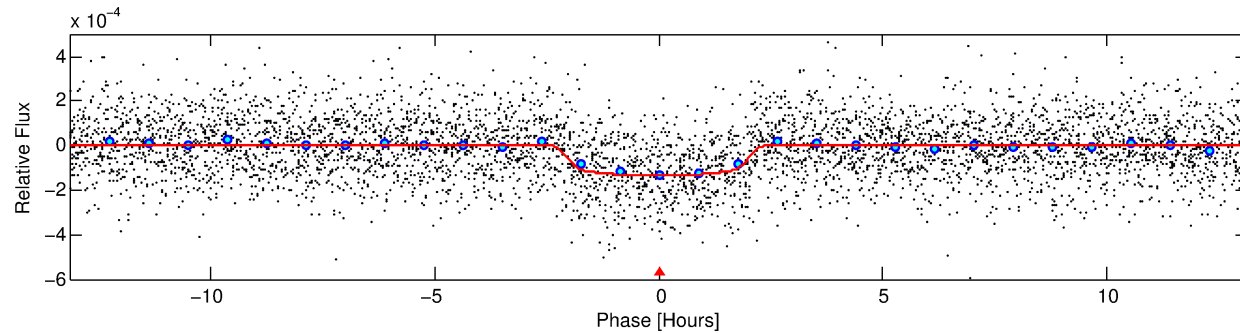
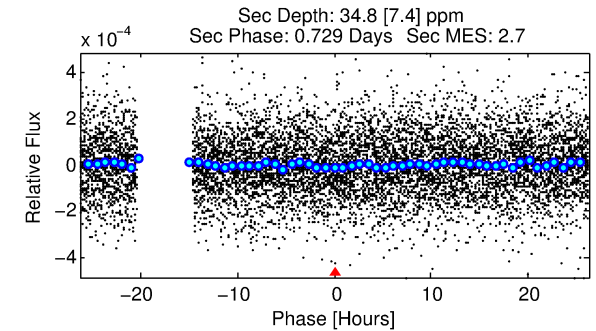
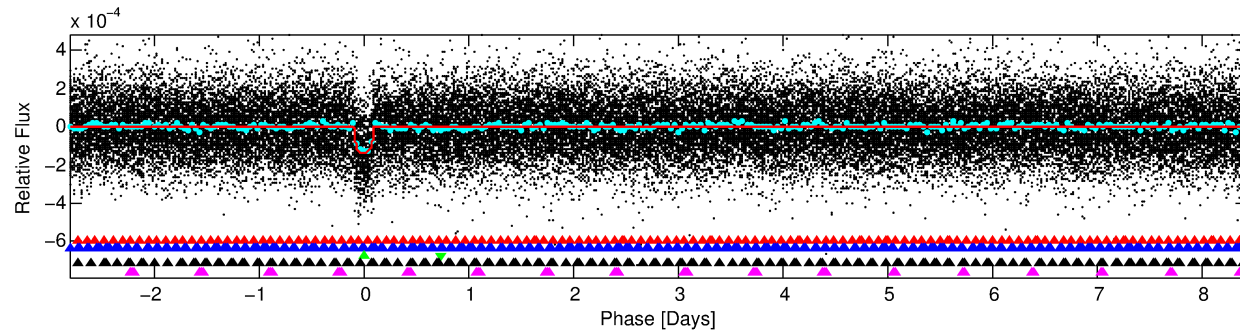
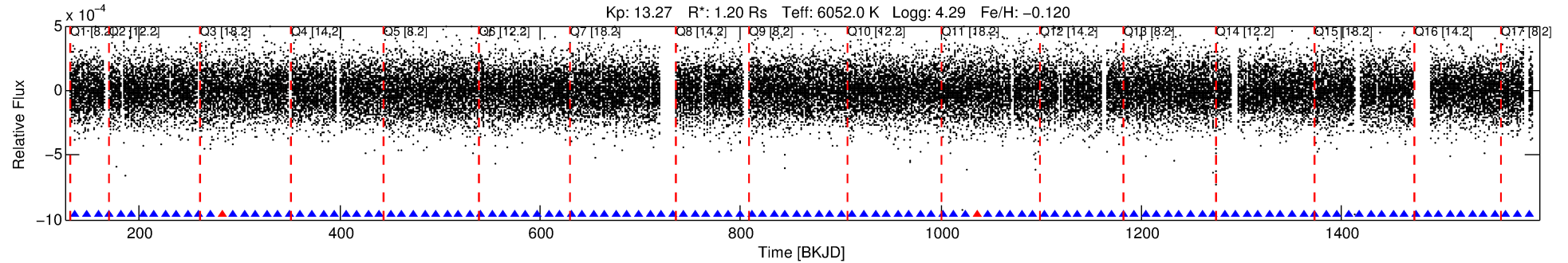
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007673192-03

No Significant Match Found

DV One-Page Summary

KIC: 7673192 Candidate: 3 of 5 Period: 11.243 d
KOI: K02722.02 Name: Kepler-402e Corr: 0.980



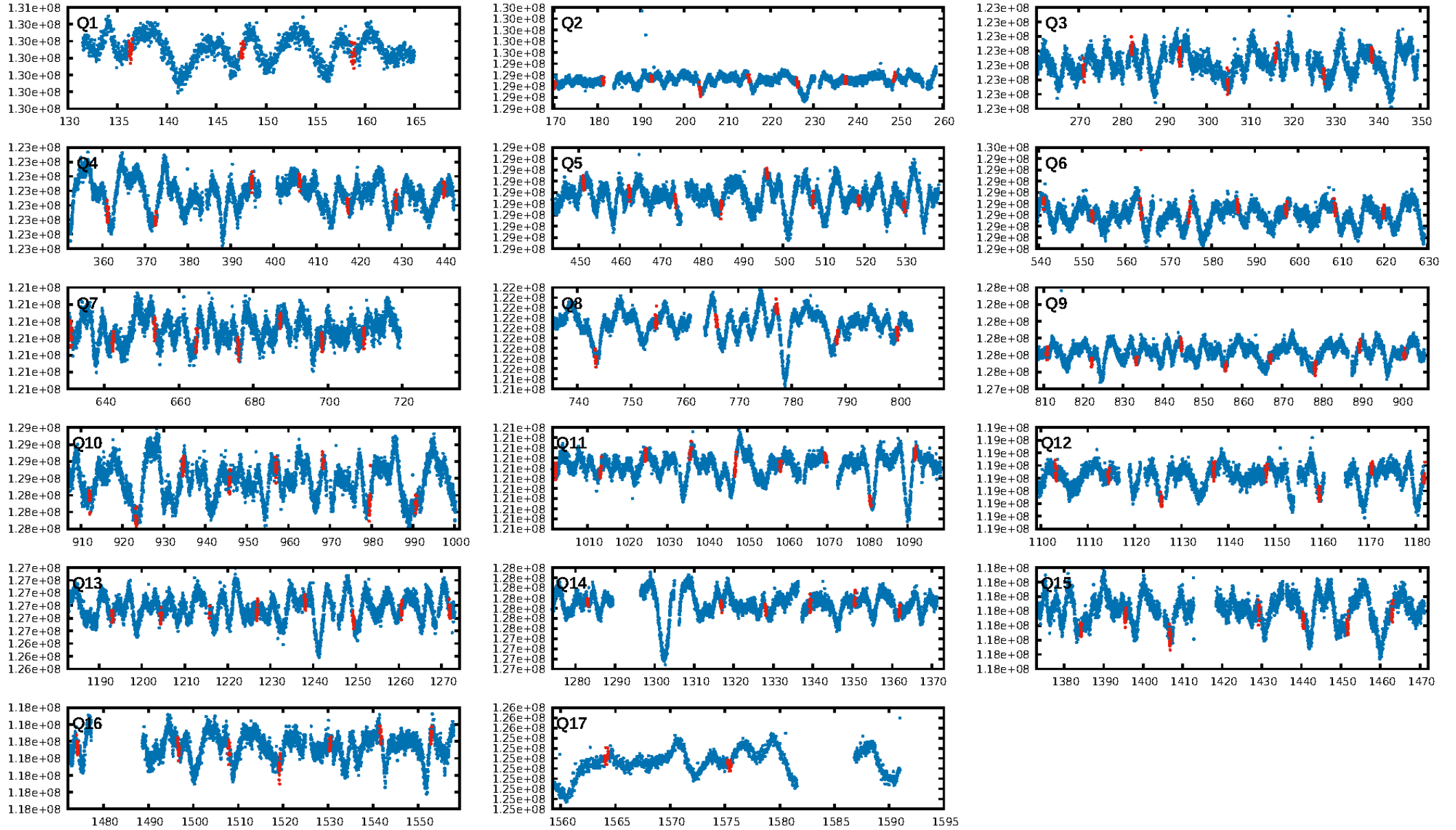
DV Fit Results:

Period = 11.24284 [0.00005] d
Epoch = 136.3214 [0.0034] BKJD
Rp/R* = 0.0125 [0.0021]
a/R* = 9.27 [8.01]
b = 0.90 [0.19]
Seff = 178.07 [45.49]
Teq = 931 [59] K
Rp = 1.64 [0.40] Re
a = 0.0988 [0.0154] AU
Ag = 69.53 [32.53] [2.11σ]
Teffp = 4159 [427] K [7.48σ]

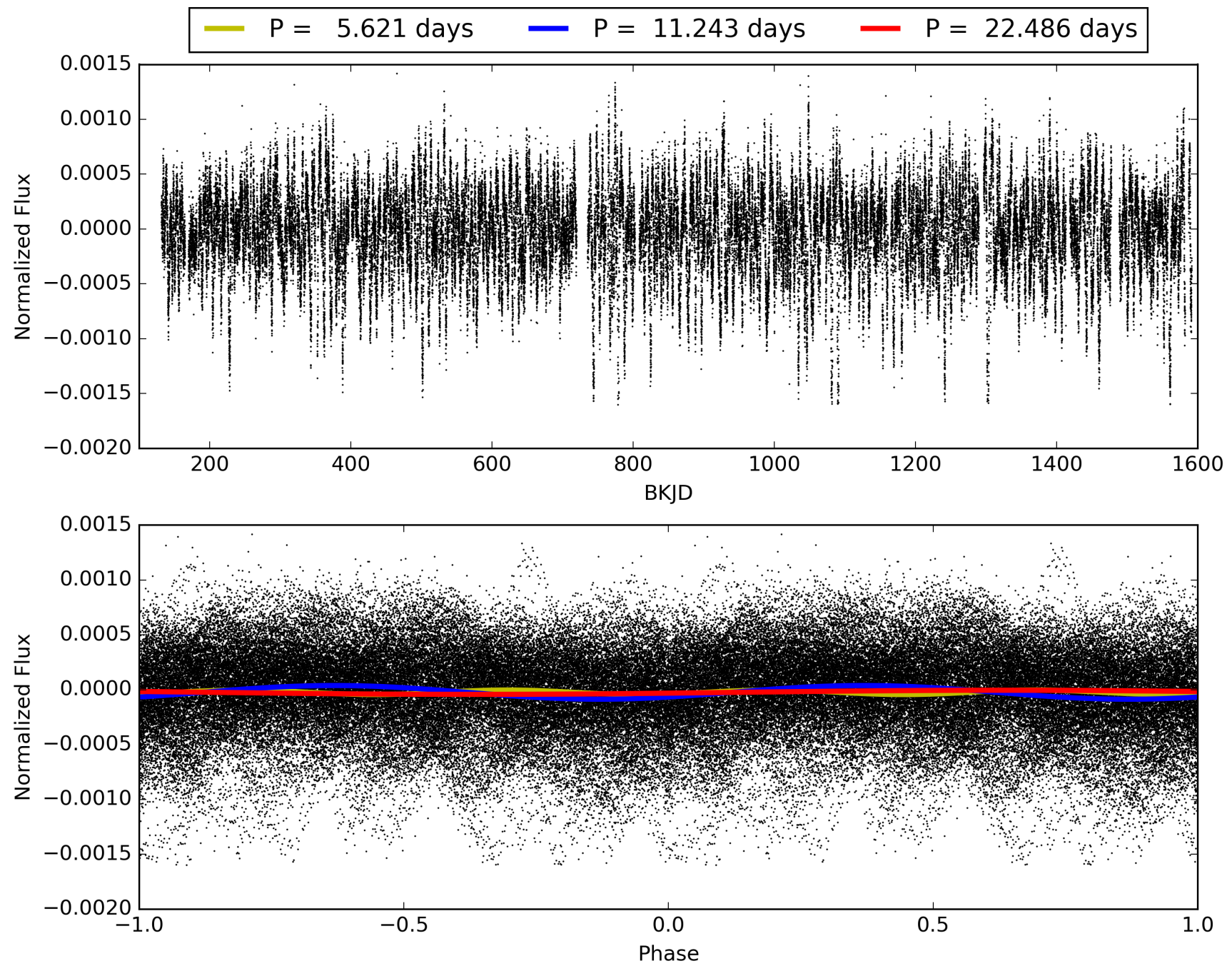
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [9.38σ]
LongPeriod-sig: 100.0% [20.97σ]
ModelChiSquare2-sig: 99.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.96e-67
RollingBand-fgt: 0.98 [96/98]
GhostDiagnostic-chr: 5.796
Centroid-sig: 0.1%
Centroid-so: 0.703 arcsec [1.71σ]
OotOffset-rm: 0.322 arcsec [1.04σ]
KicOffset-rm: 0.291 arcsec [0.74σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 0.93 [14/15]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 007673192-03, PDC Light Curves

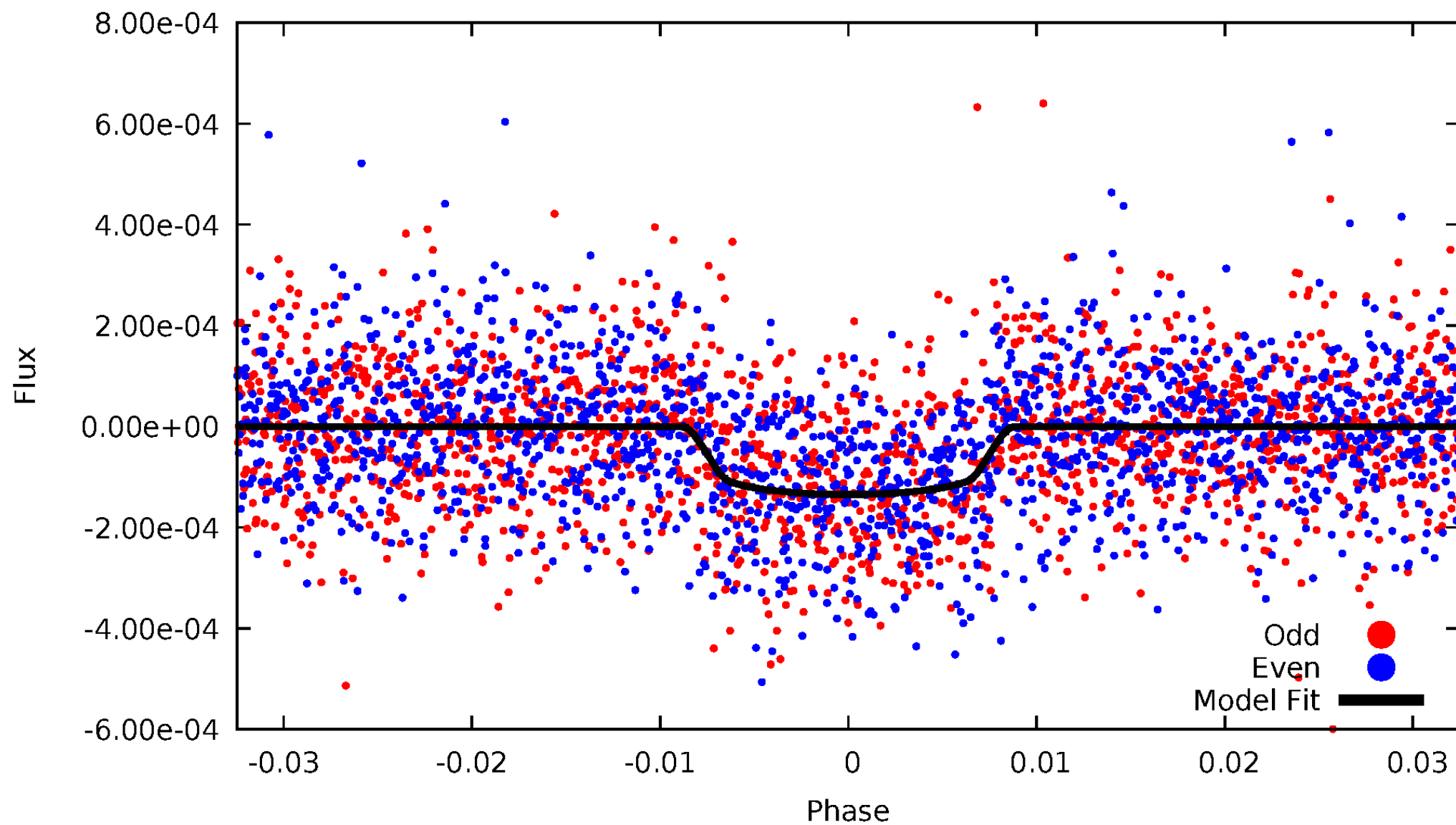


TCE 007673192-03



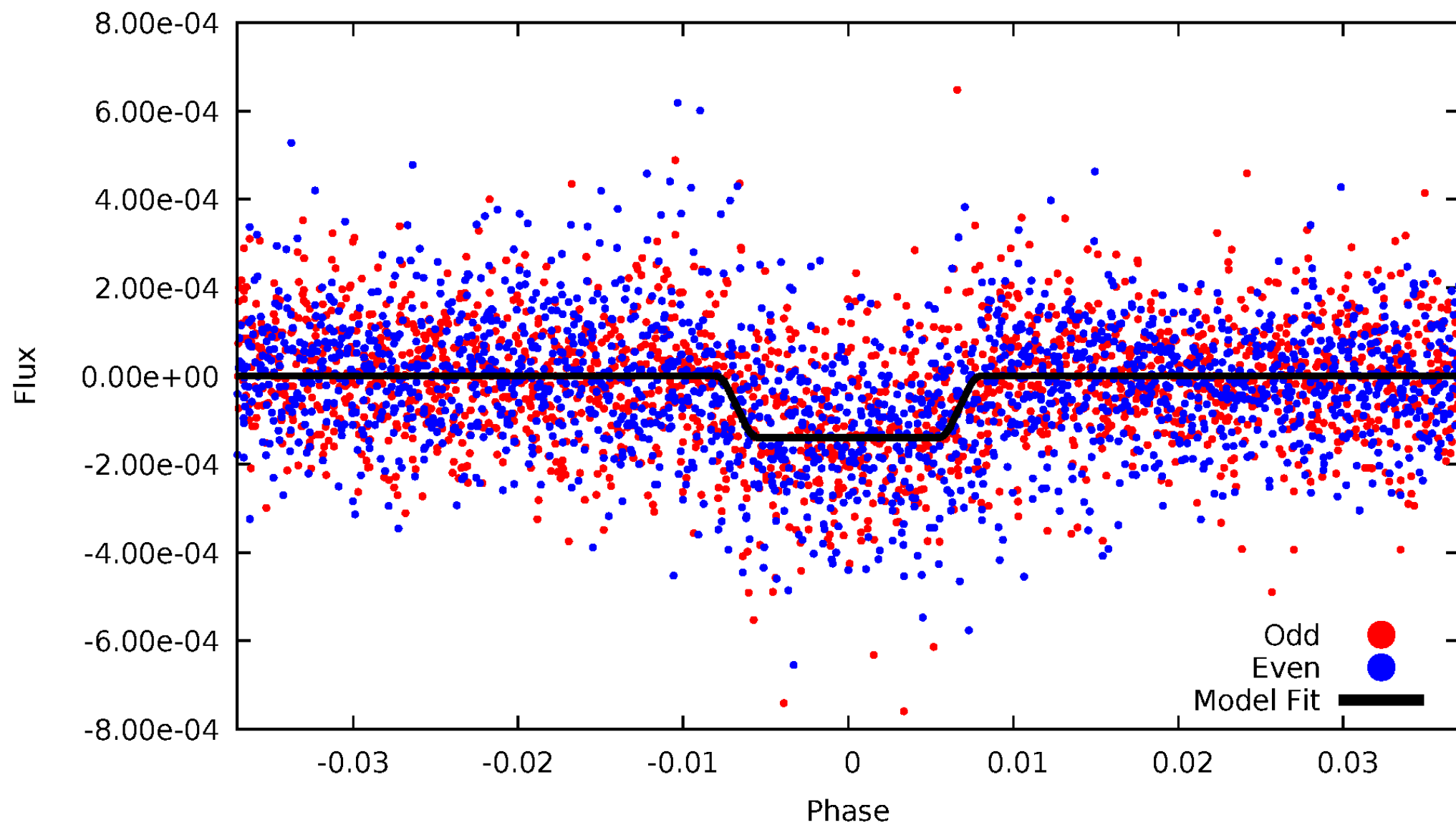
DV Odd/Even

TCE 007673192-03



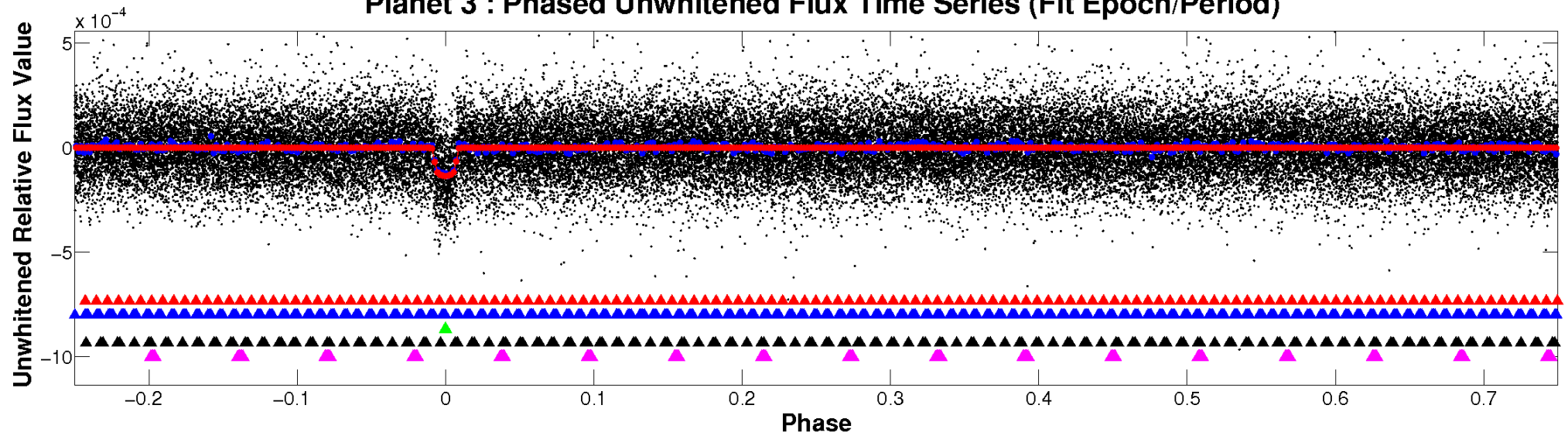
ALT Odd/Even

TCE 007673192-03

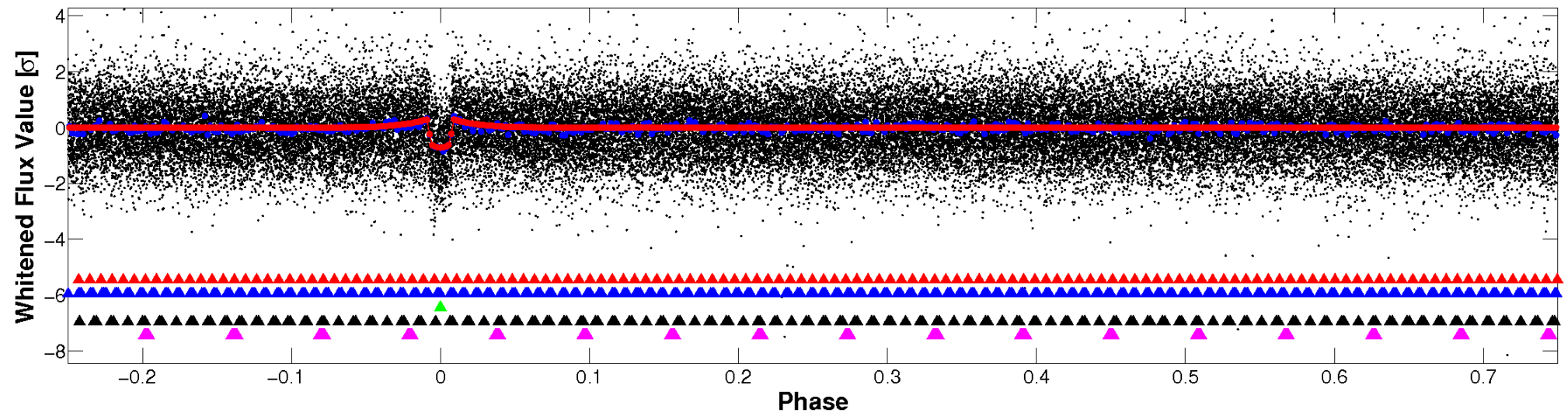


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

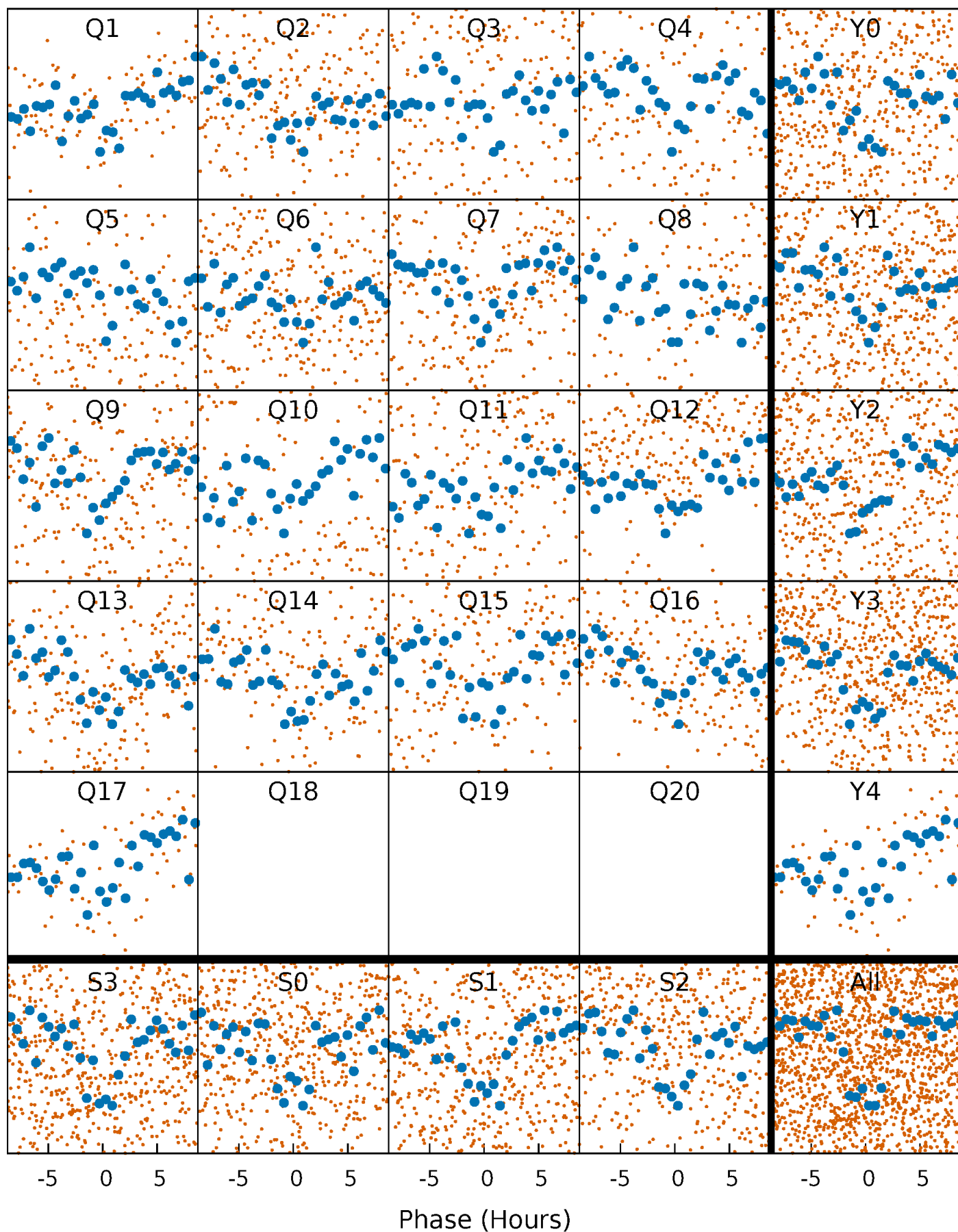


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



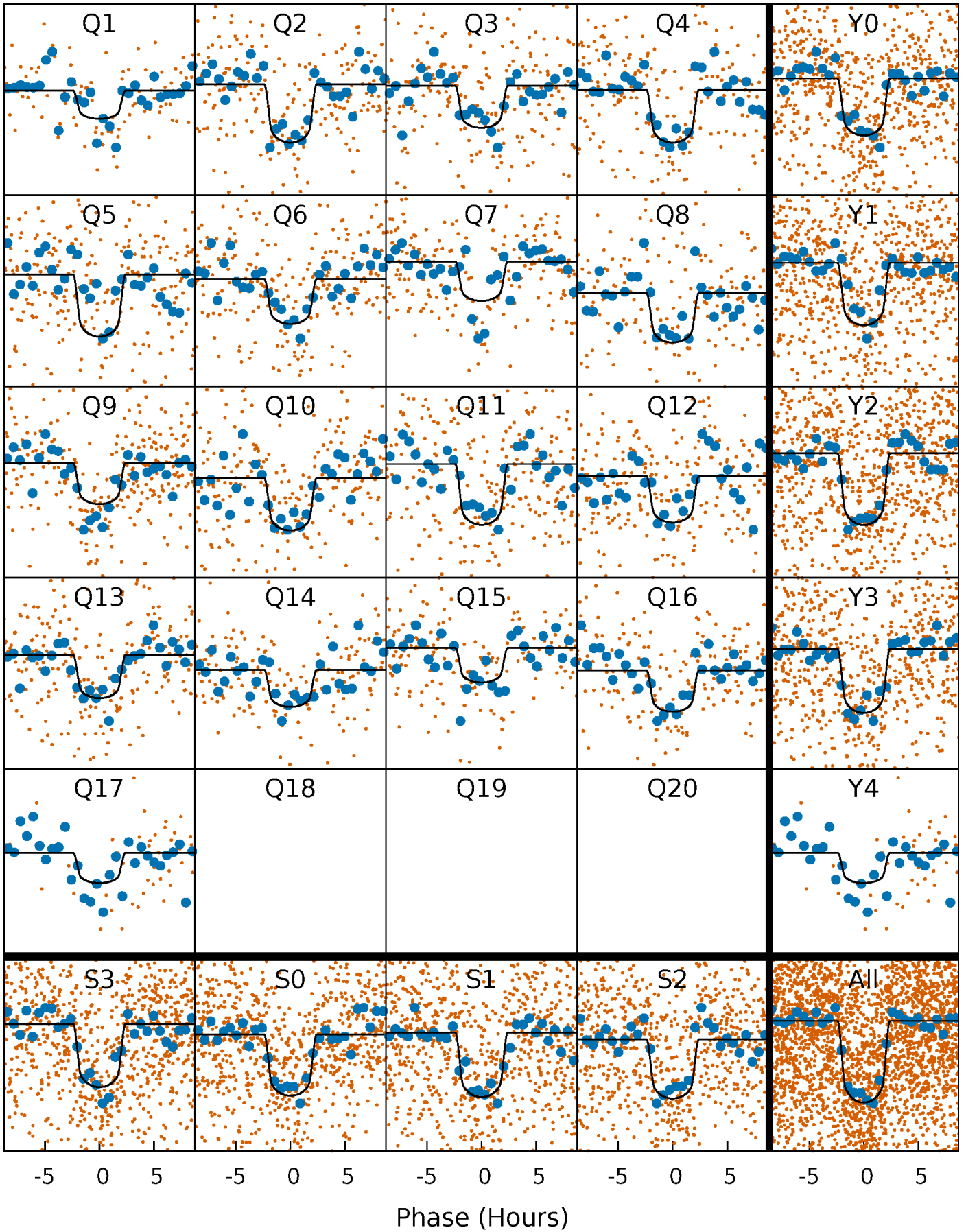
PDC Quarter-Phased Transit Curves

TCE 007673192-03 P= 11.242838 Days $T_0=136.321380$ (BKJD)



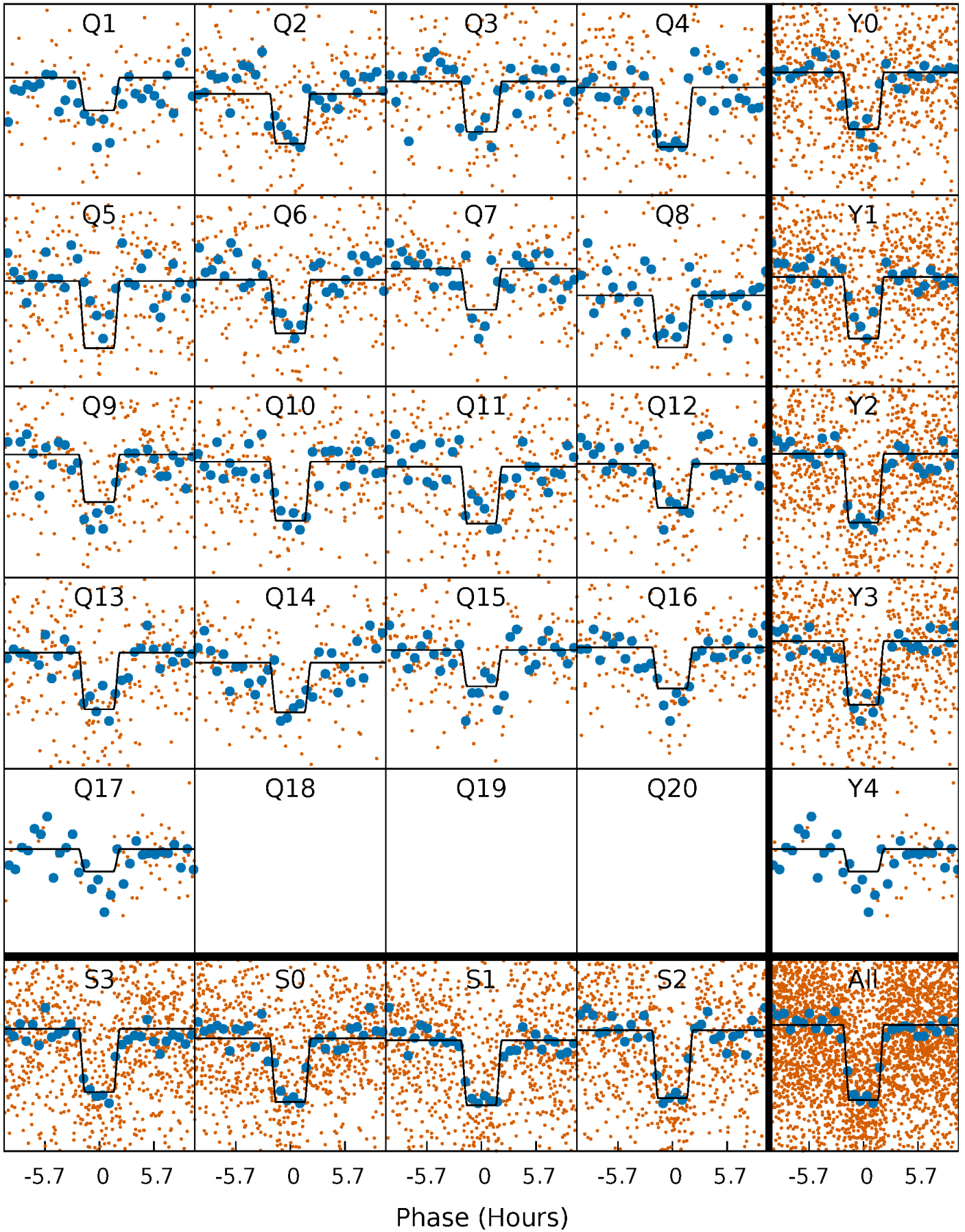
DV Quarter-Phased Transit Curves

TCE 007673192-03 P= 11.242838 Days $T_0=136.321380$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

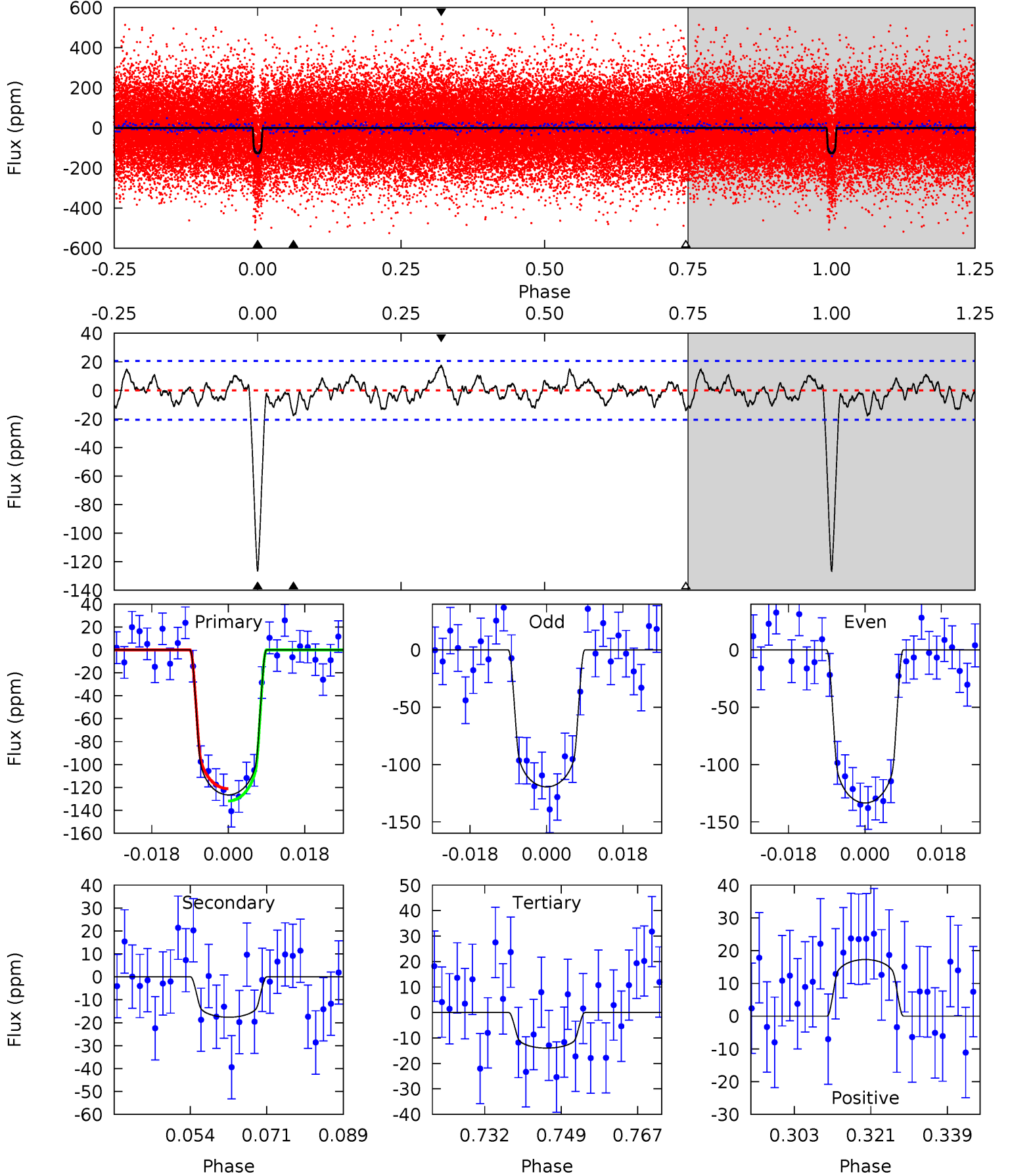
TCE 007673192-03 $P = 11.242582$ Days $T_0 = 136.338250$ (BKJD)



DV Model-Shift Uniqueness Test

007673192-03, P = 11.242838 Days, E = 125.078542 Days

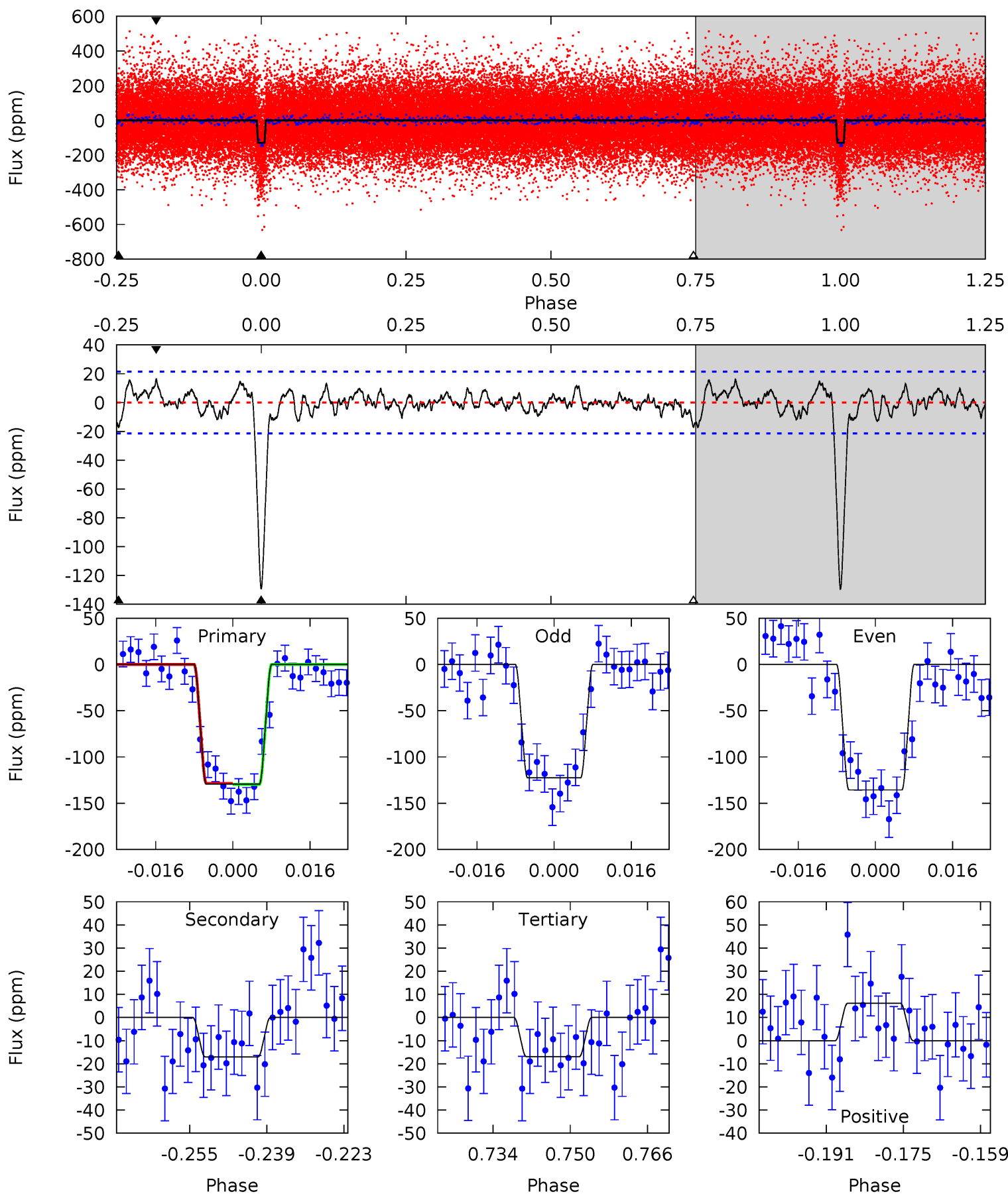
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.2	4.20	3.33	4.12	4.91	2.37	1.41	26.8	26.0	0.87	0.08	1.68	0.99	0.12	1.29



Alt Model-Shift Uniqueness Test

007673192-03, $P = 11.242582$ Days, $E = 125.095668$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.8	3.91	3.89	3.71	4.94	2.41	1.25	25.9	26.0	0.02	0.21	1.50	1.05	0.11	0.13



Stellar Parameters For KIC 007673192

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6052^{+121}_{-133}	$4.285^{+0.137}_{-0.112}$	$-0.120^{+0.150}_{-0.150}$	$1.202^{+0.208}_{-0.189}$	$1.015^{+0.085}_{-0.068}$	$0.823^{+0.474}_{-0.278}$
	+2%/-2%	+3%/-3%	+125%/-125%	+17%/-16%	+8%/-7%	+58%/-34%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 007673192-03 / KOI 2722.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-18 ± 4	$1.62^{+0.35}_{-0.29}$	1293^{+65}_{-56}	3844^{+346}_{-258}	35^{+21}_{-13}
Alt.	-17 ± 4	$1.53^{+0.32}_{-0.30}$	1297^{+60}_{-60}	3913^{+362}_{-298}	39^{+28}_{-14}

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

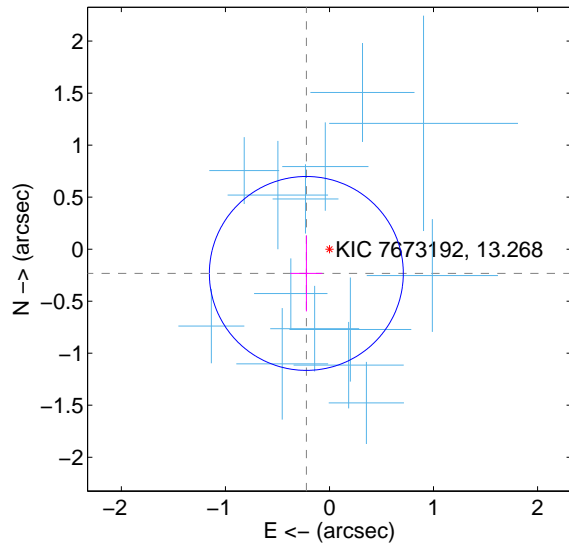
Supplemental centroid analysis for 007673192-03. Kepler magnitude: 13.27. Transit SNR 19.28

There are 14 quarters with good PRF difference image offsets

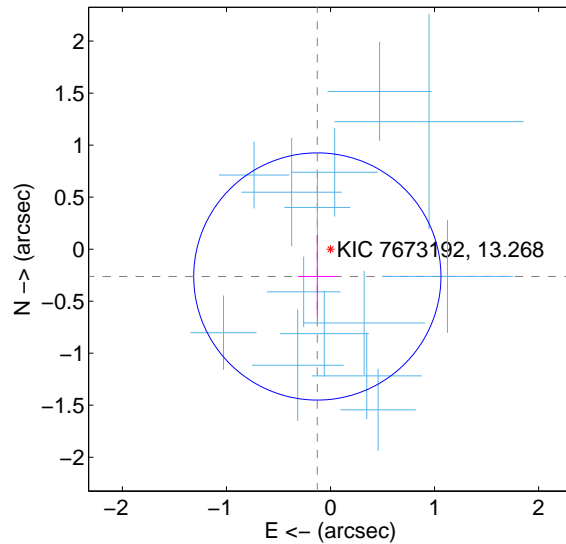
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.322 ± 0.311	1.04	0.222 ± 0.153	-0.233 ± 0.365
PRF-fit source offset from KIC position	0.291 ± 0.396	0.74	0.127 ± 0.186	-0.262 ± 0.399
photometric centroid source offset	0.70 ± 0.41	1.71	-0.20 ± 0.40	0.67 ± 0.41

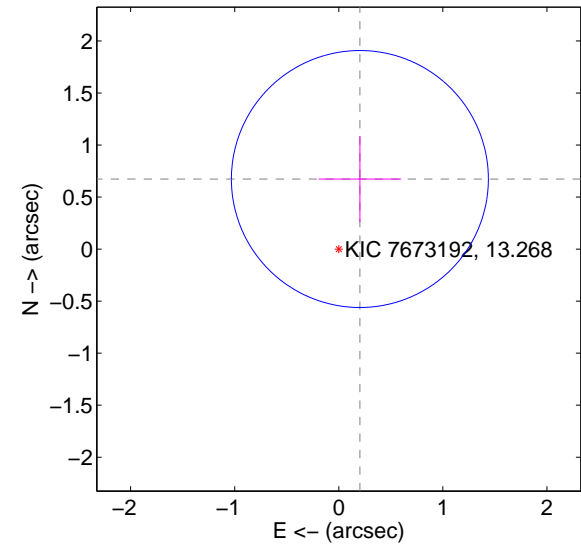
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

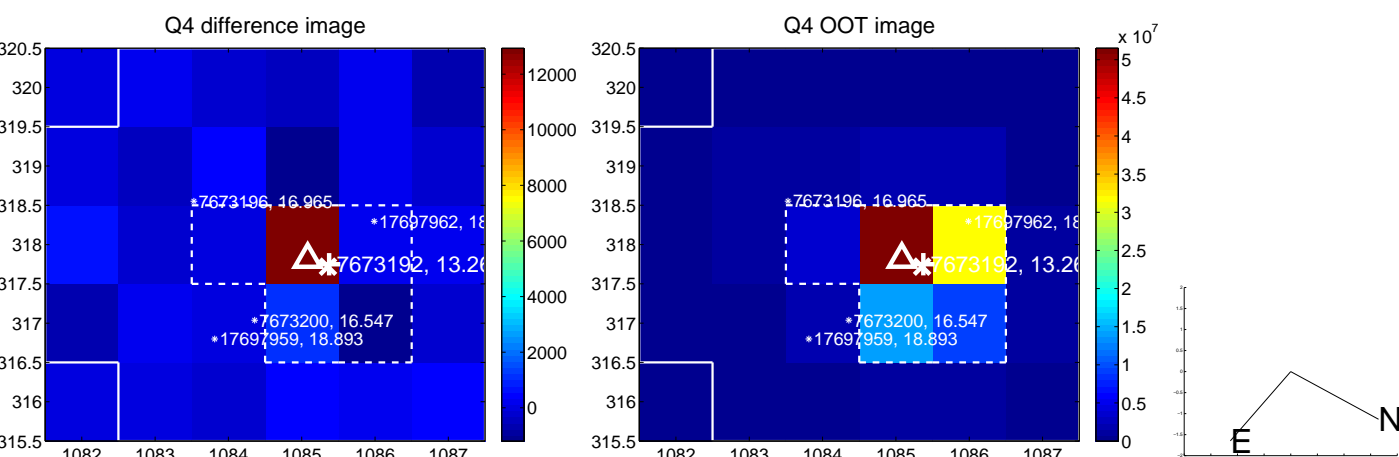
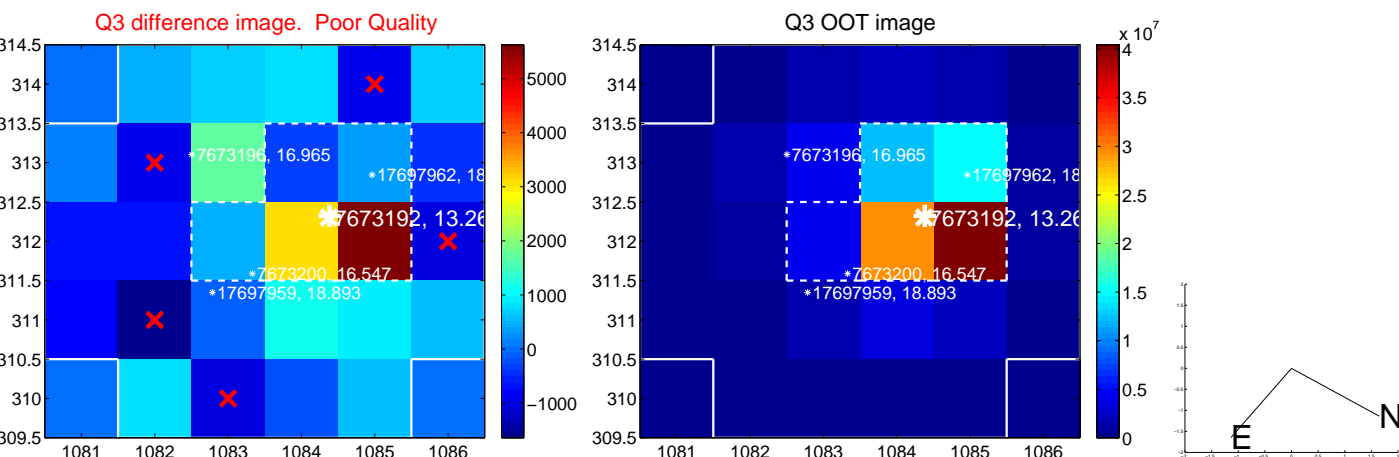
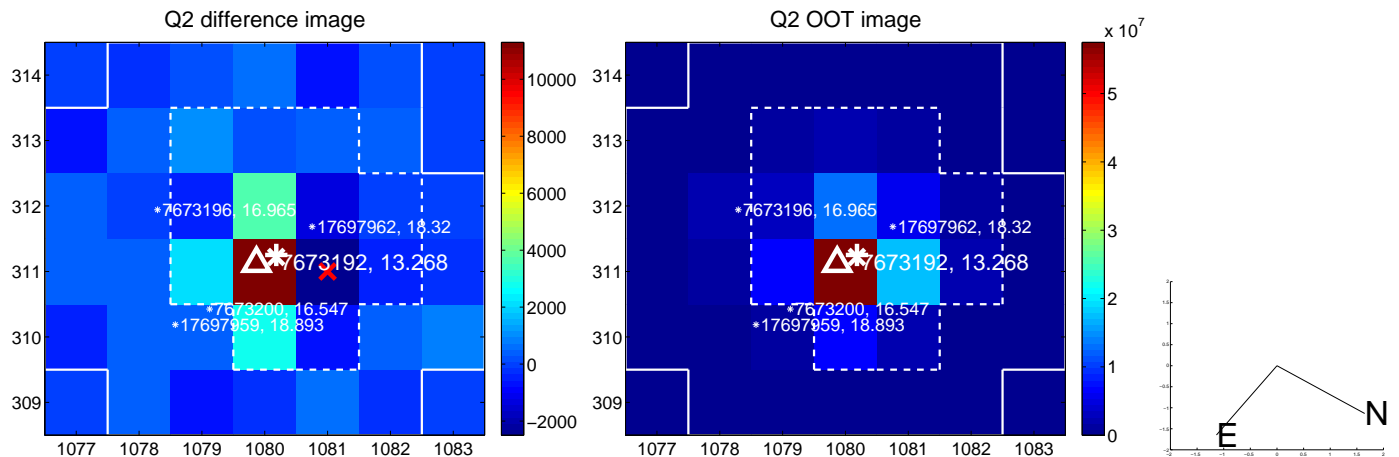
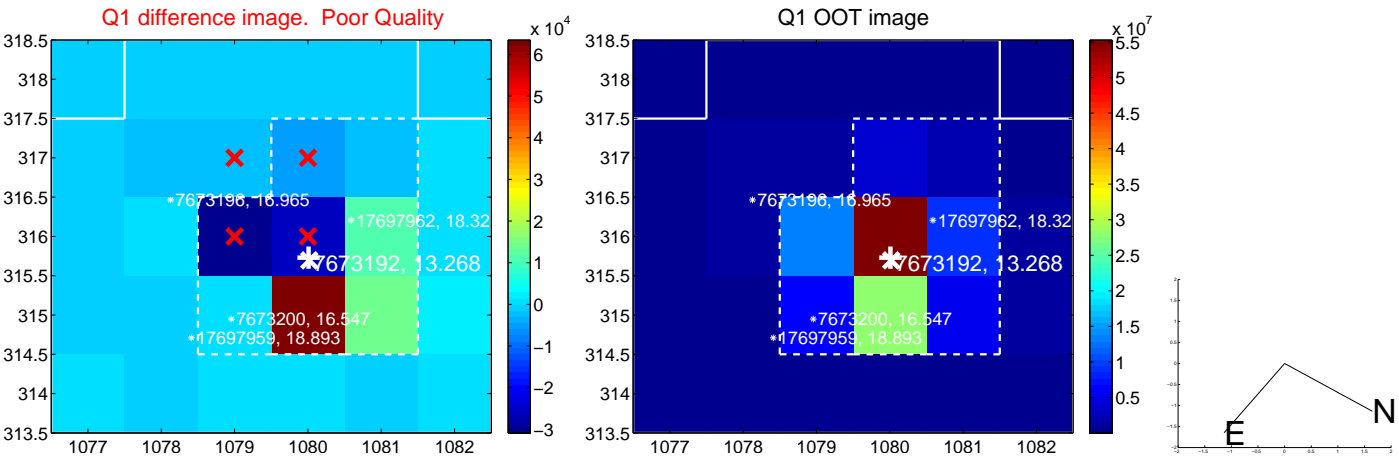


offset from photometric centroids

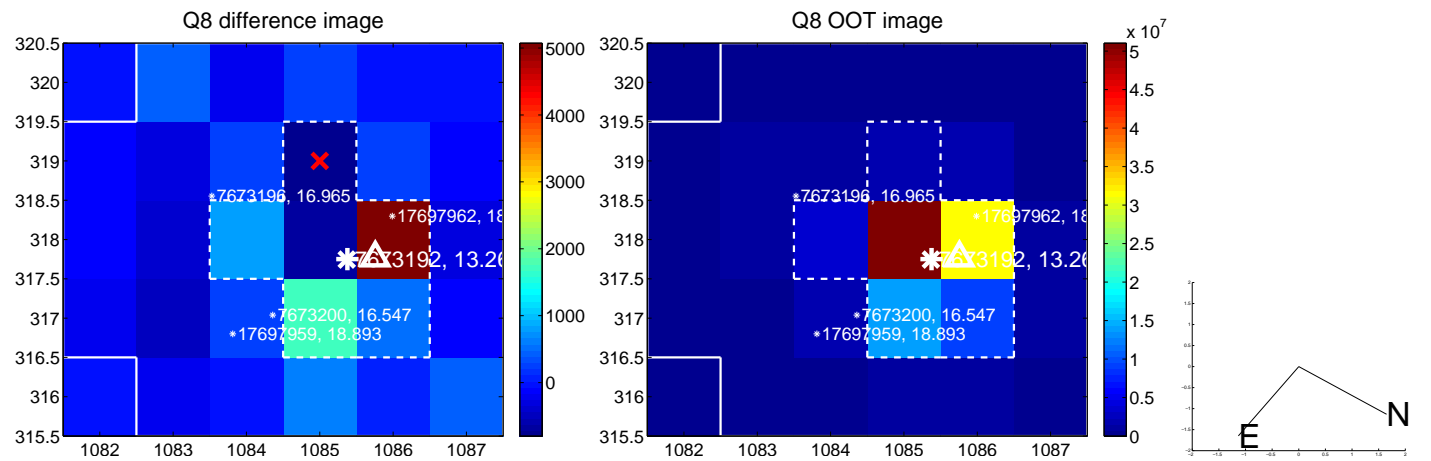
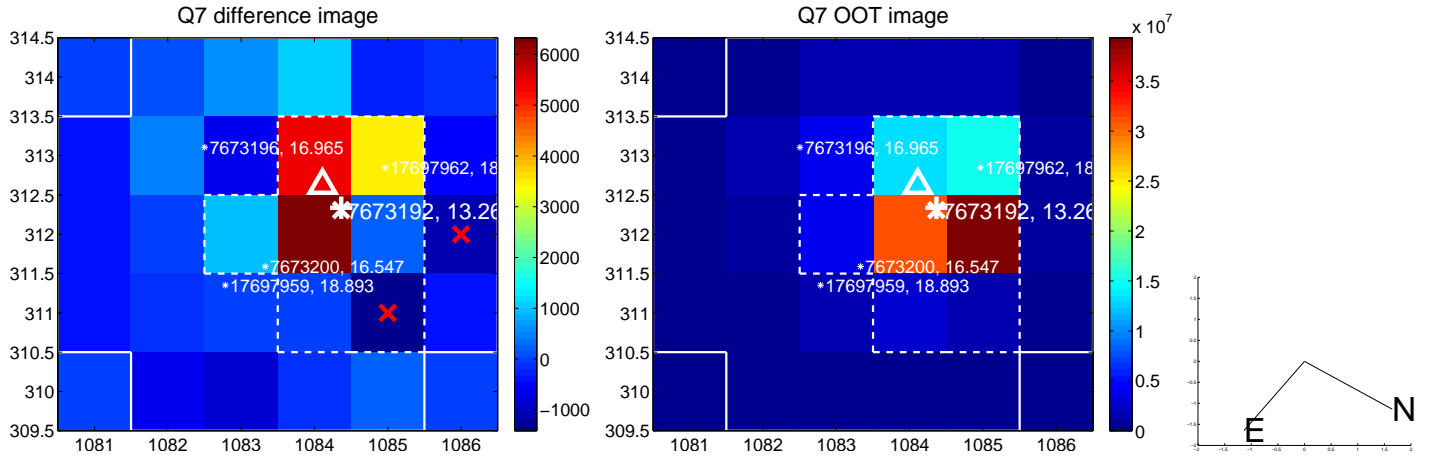
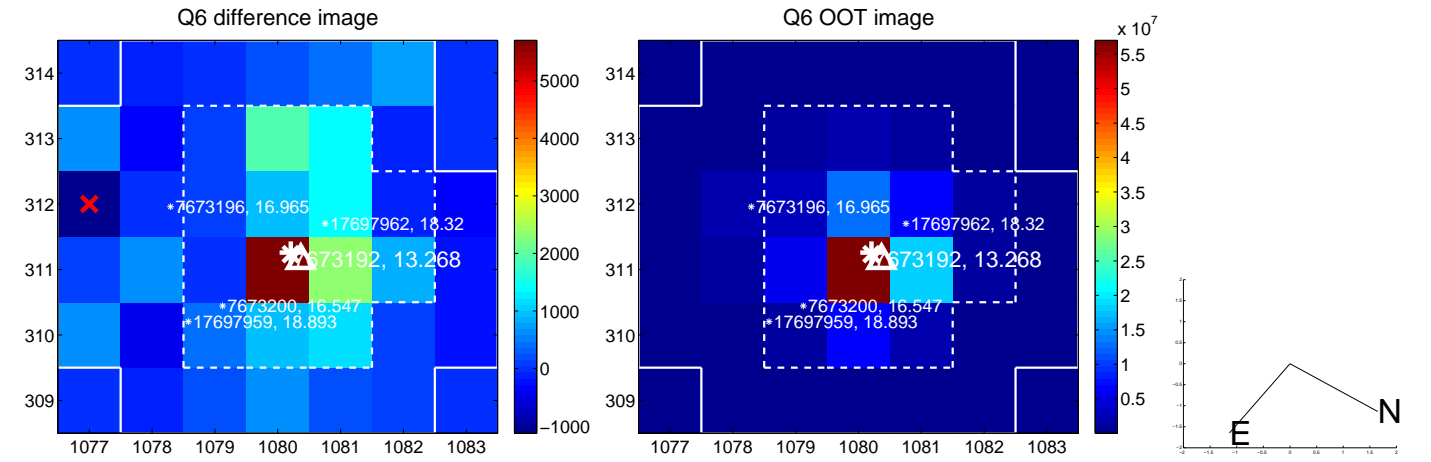
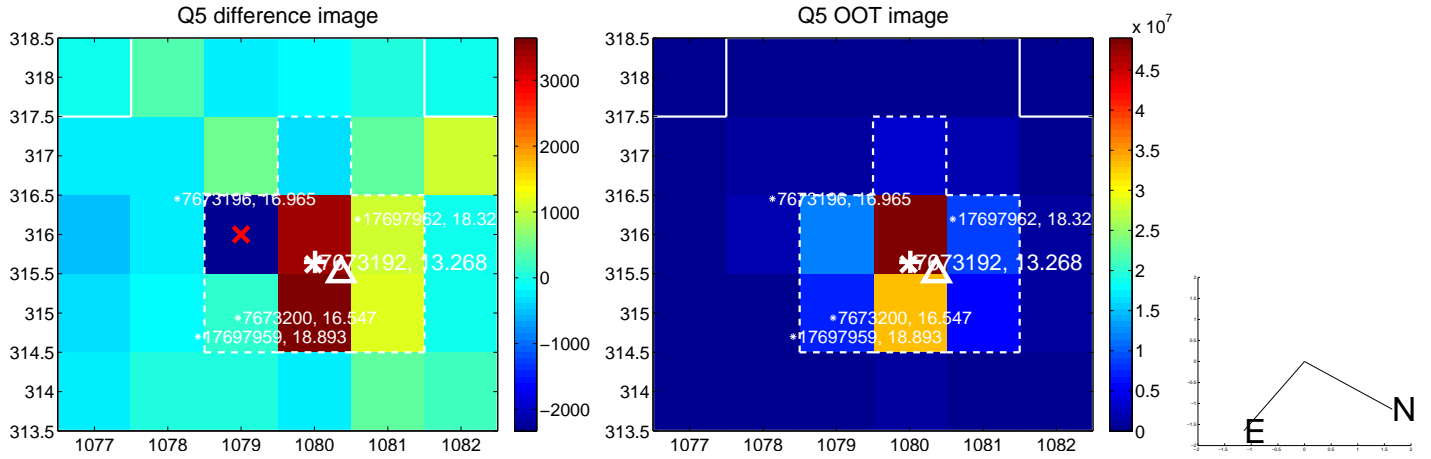


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

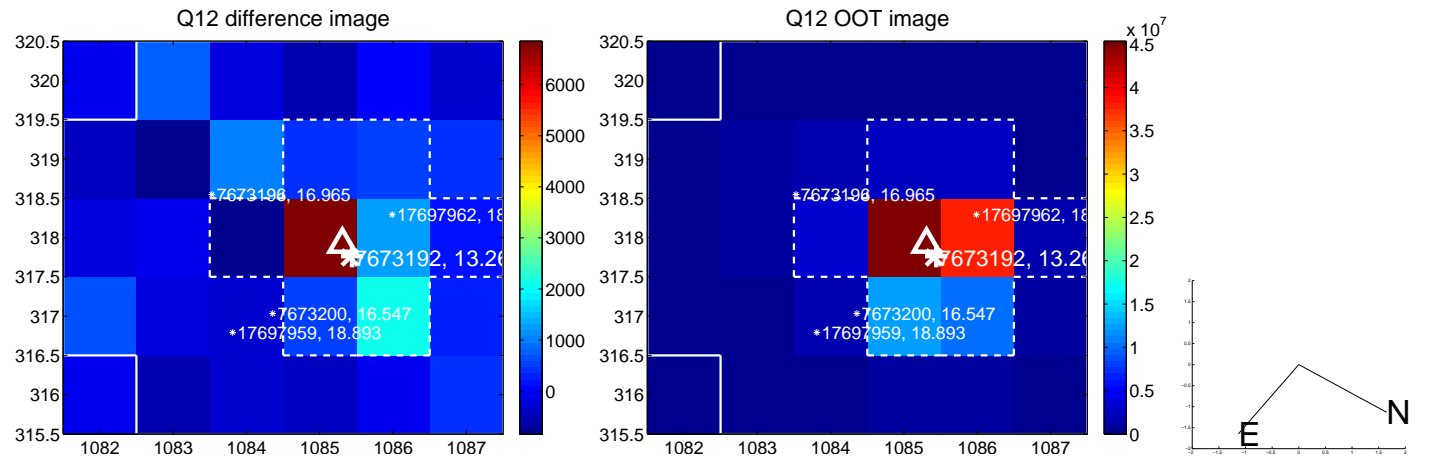
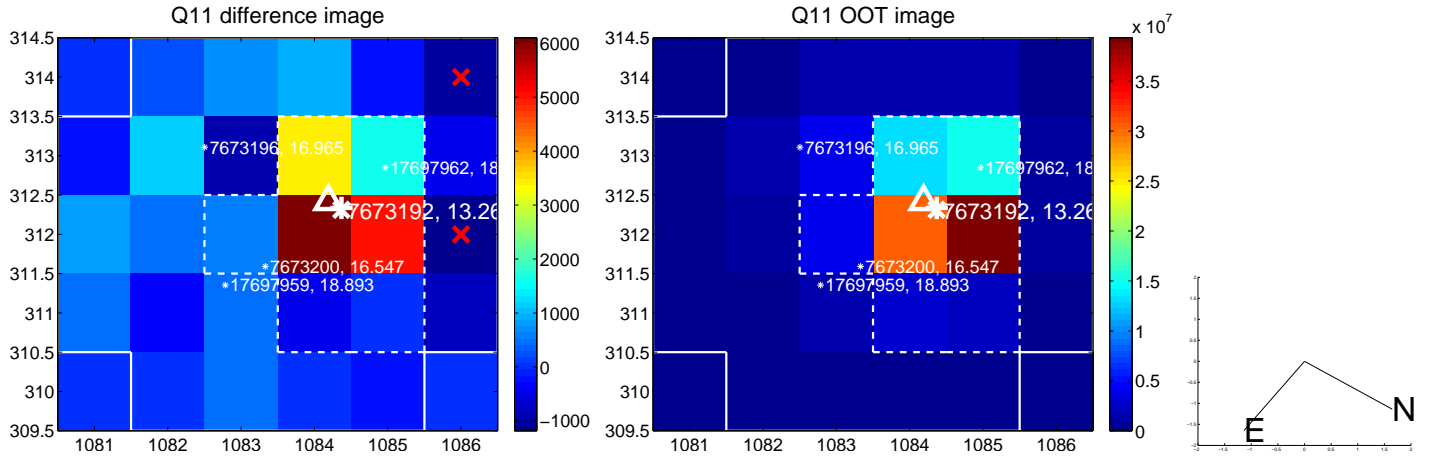
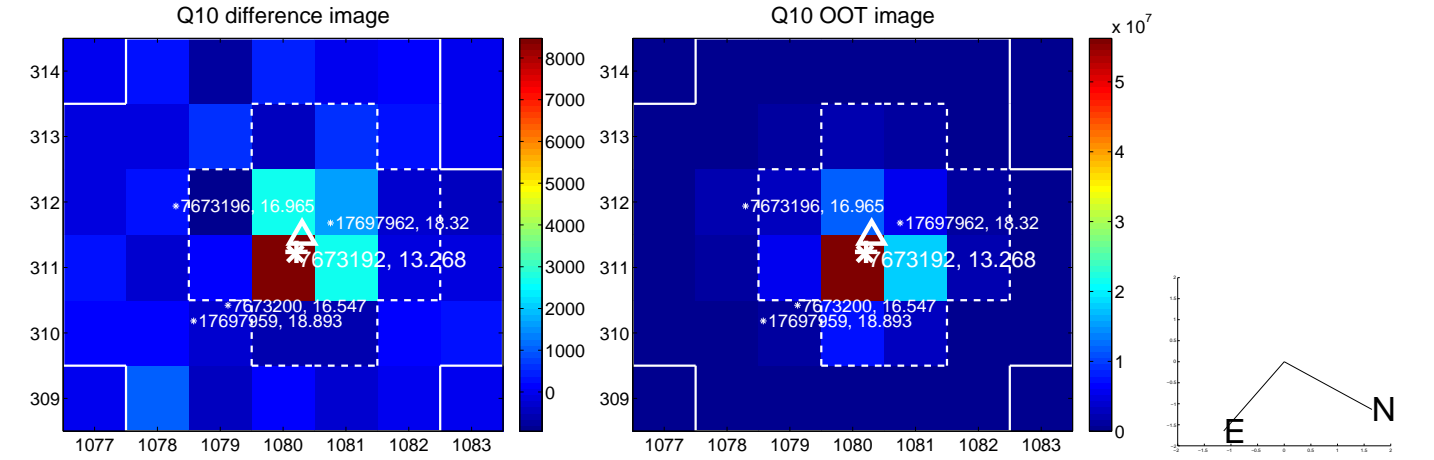
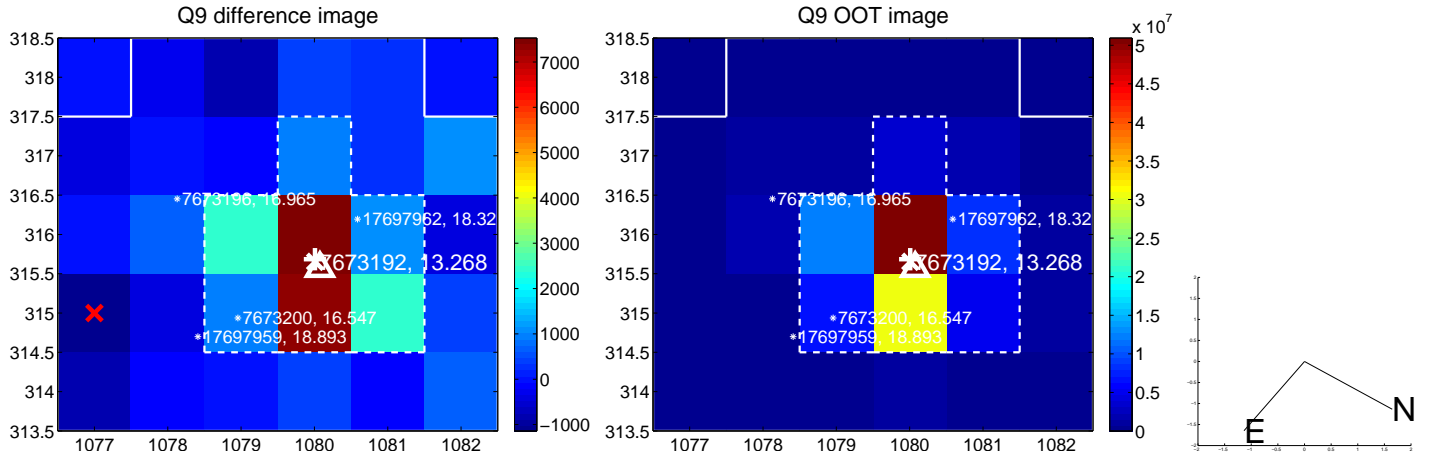
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



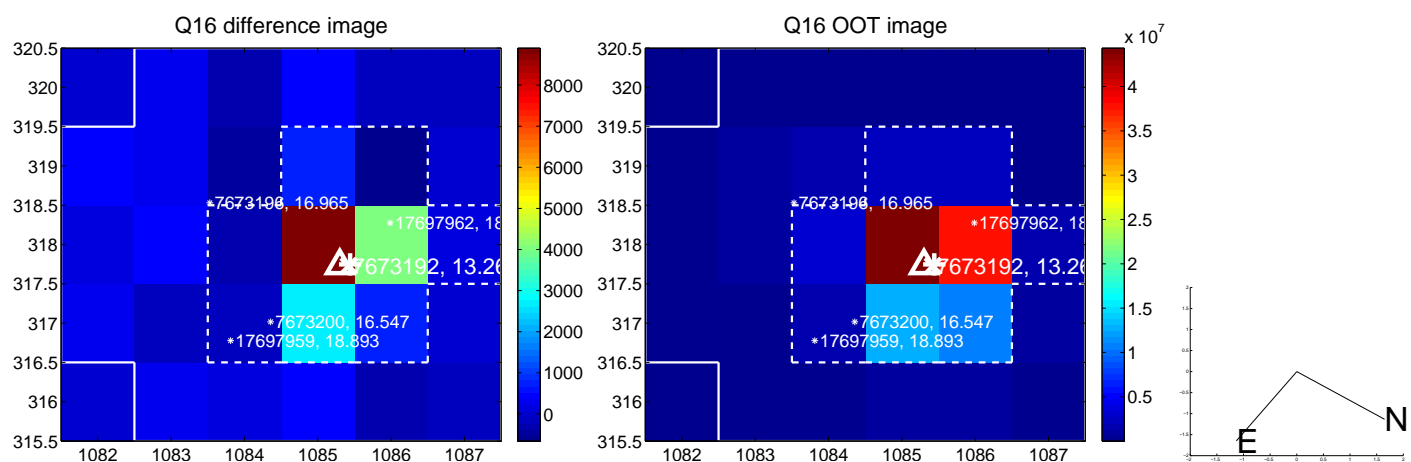
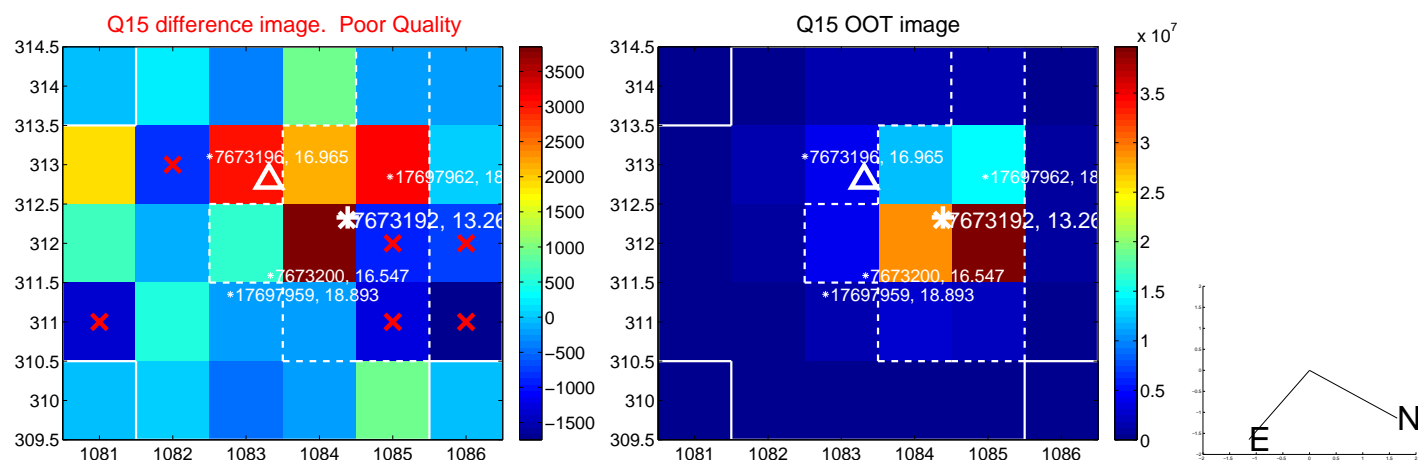
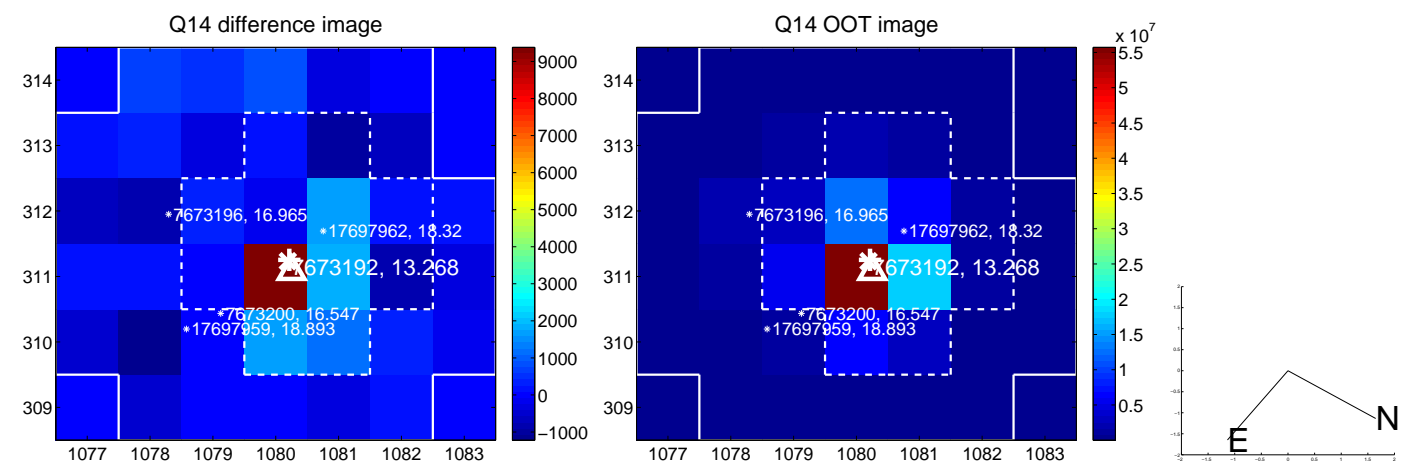
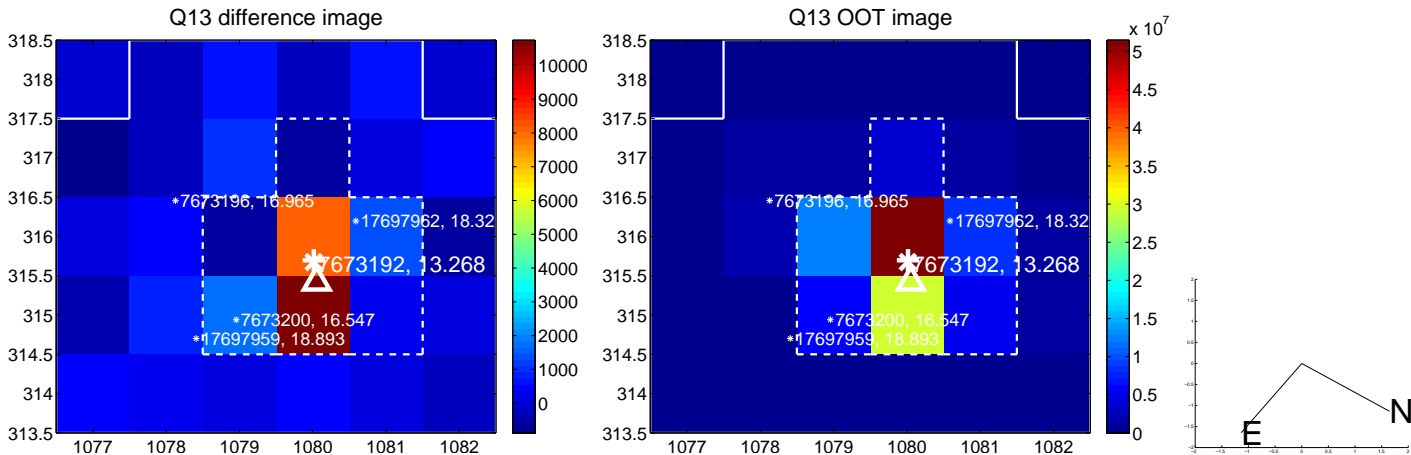
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



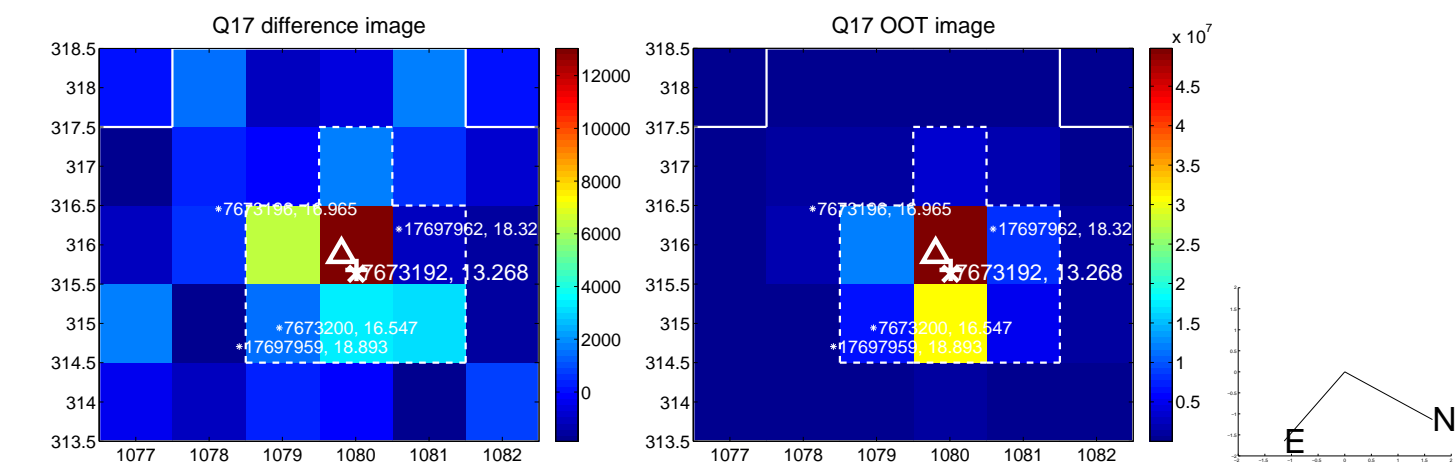
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



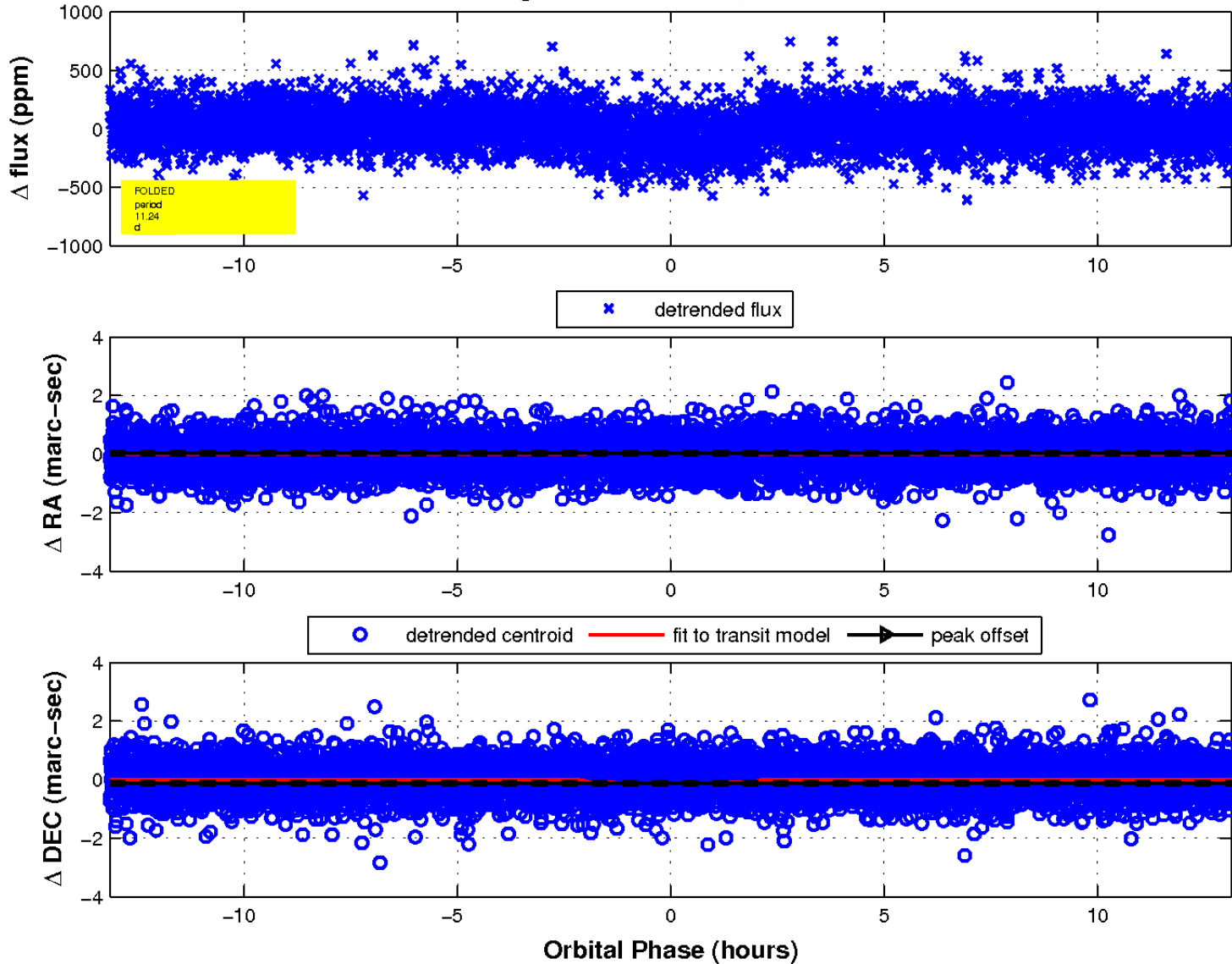
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 5



This astronomical image shows a field of stars against a dark background. A blue grid is overlaid on the image. Green text labels provide coordinates: '31.0 19:13:30.0 29.0 28.0 27.0' is written horizontally across the upper middle, and '0:50.0 10.0 20.0 30.0 40.0' is written vertically along the right edge. A red horizontal line is visible across the middle of the image.

This astronomical image shows a field of stars against a dark background. A blue grid is overlaid on the image. Green text labels provide coordinates: '31.0 19:13:30.0 29.0 28.0 27.0' is written horizontally across the upper middle, and '0:50.0 10.0 20.0 30.0 40.0' is written vertically along the right edge. A red horizontal line is visible across the middle of the image.

KIC 007673192

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})
007673192-01	OBS	2722.01	6.124820	134.934774	140.7	3.748	27.2	28.6	1.20	6052	1.68	400.22
007673192-02	OBS	2722.03	4.028779	133.765963	97.7	3.266	21.9	23.0	1.20	6052	1.39	699.62
007673192-03	OBS	2722.02	11.242838	136.321380	134.9	4.380	17.8	19.3	1.20	6052	1.64	178.07
007673192-04	OBS	2722.04	8.921137	137.491758	105.3	4.010	15.4	16.8	1.20	6052	1.45	242.40
007673192-05	OBS	2722.05	16.534025	135.408478	76.1	4.180	7.8	8.5	1.20	6052	1.24	106.48

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007673192-01	OBS	PC	0.98	0	0	0	0	NO_COMMENT
007673192-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007673192-03	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007673192-04	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007673192-05	OBS	PC	0.89	0	0	0	0	NO_COMMENT

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.

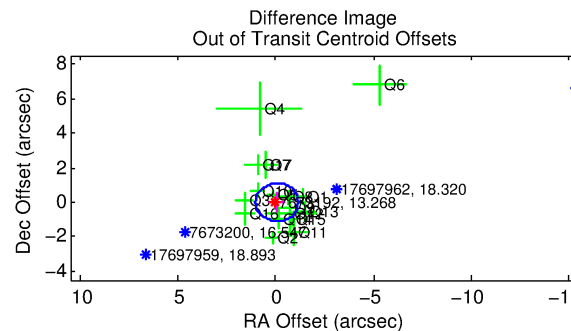
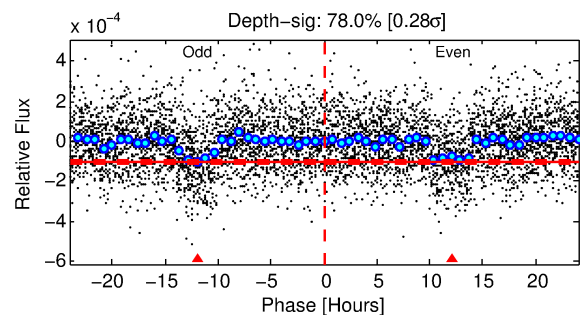
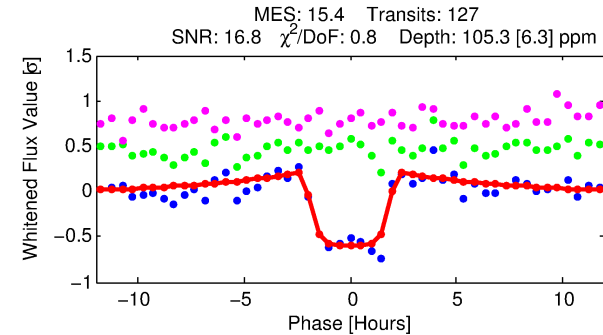
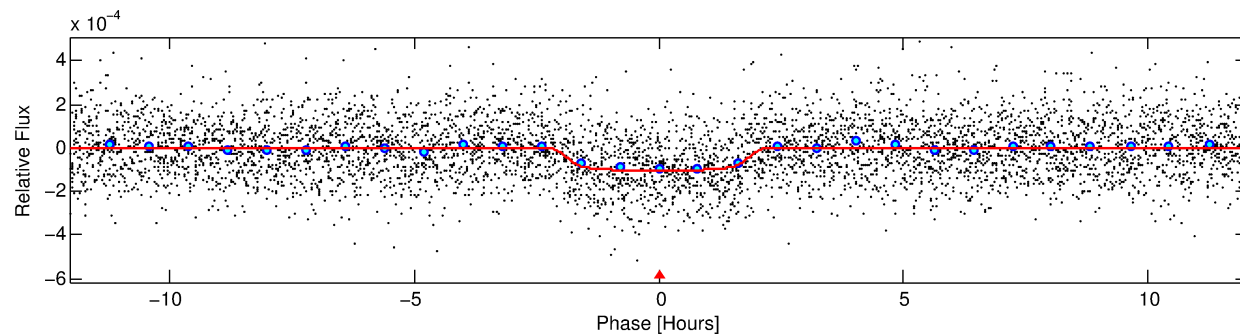
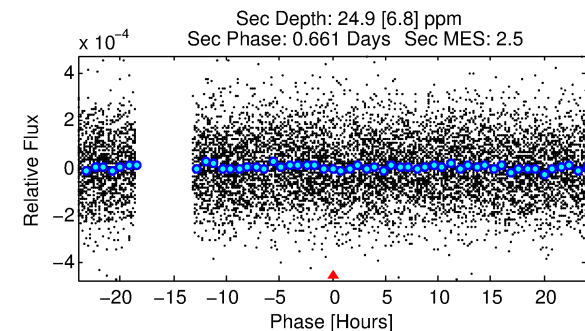
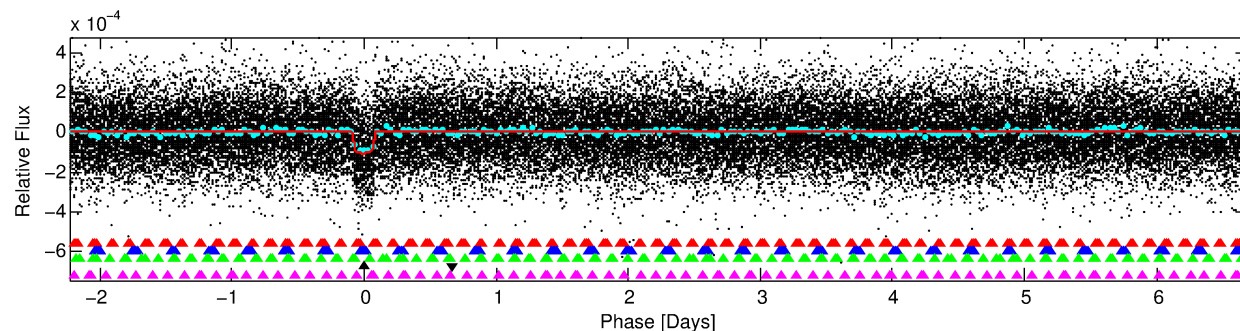
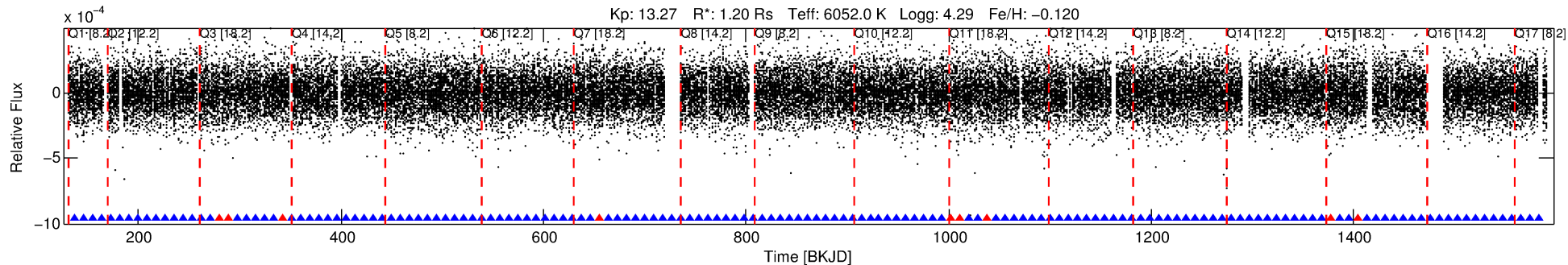
Ephemeris Match Information For 007673192-04

No Significant Match Found

DV One-Page Summary

KIC: 7673192 Candidate: 4 of 5 Period: 8.921 d
KOI: K02722.04 Name: Kepler-402d Corr: 0.988

Kp: 13.27 R*: 1.20 Rs Teff: 6052.0 K Logg: 4.29 Fe/H: -0.120



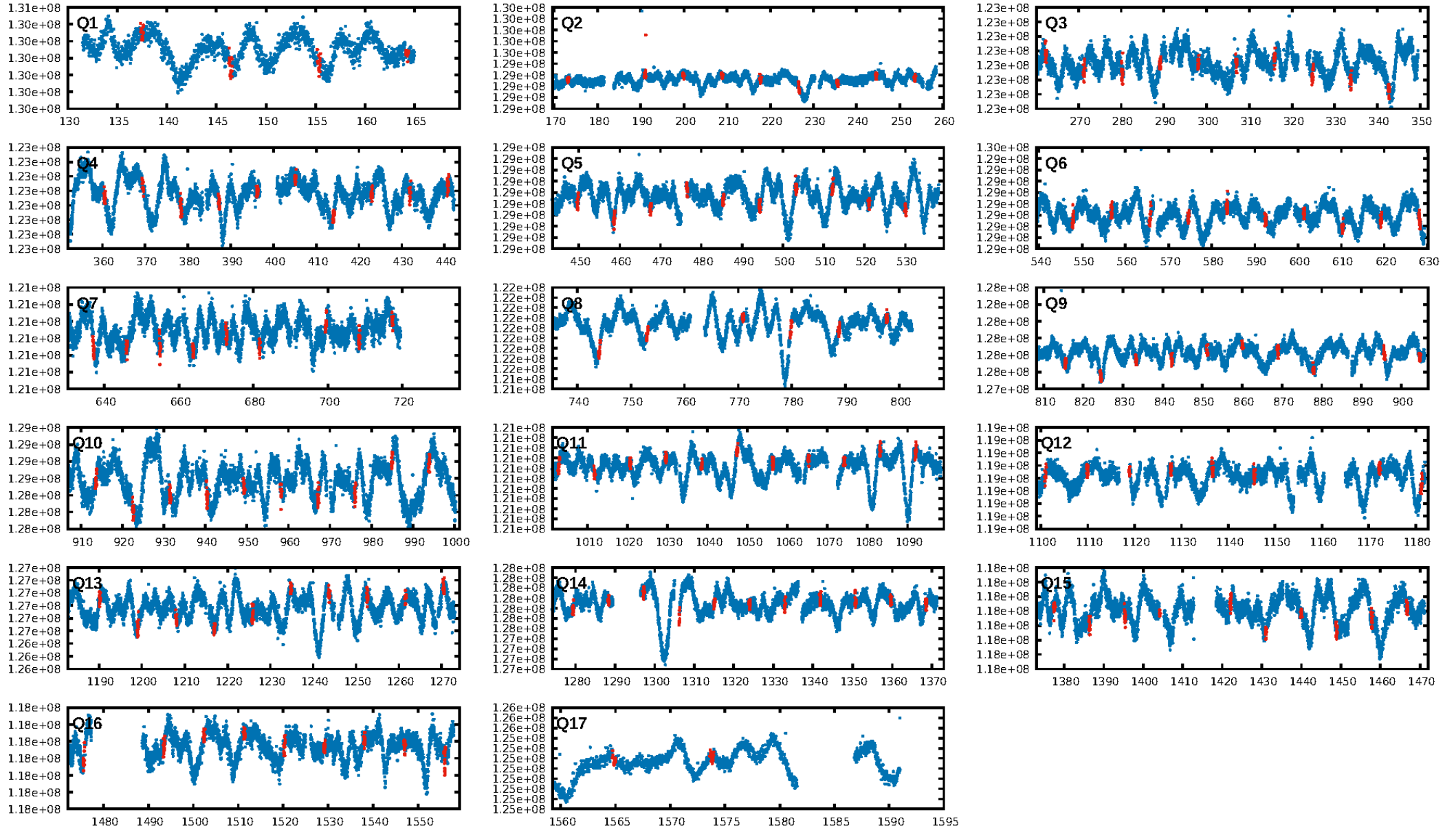
DV Fit Results:

Period = 8.92114 [0.00004] d
Epoch = 137.4918 [0.0037] BKJD
Rp/R* = 0.0111 [0.0026]
a/R* = 7.90 [9.35]
b = 0.90 [0.26]
Seff = 242.40 [61.93]
Teq = 1006 [64] K
Rp = 1.45 [0.42] Re
a = 0.0846 [0.0132] AU
Ag = 46.51 [27.36] [1.66σ]
Teffp = 4062 [553] K [5.49σ]

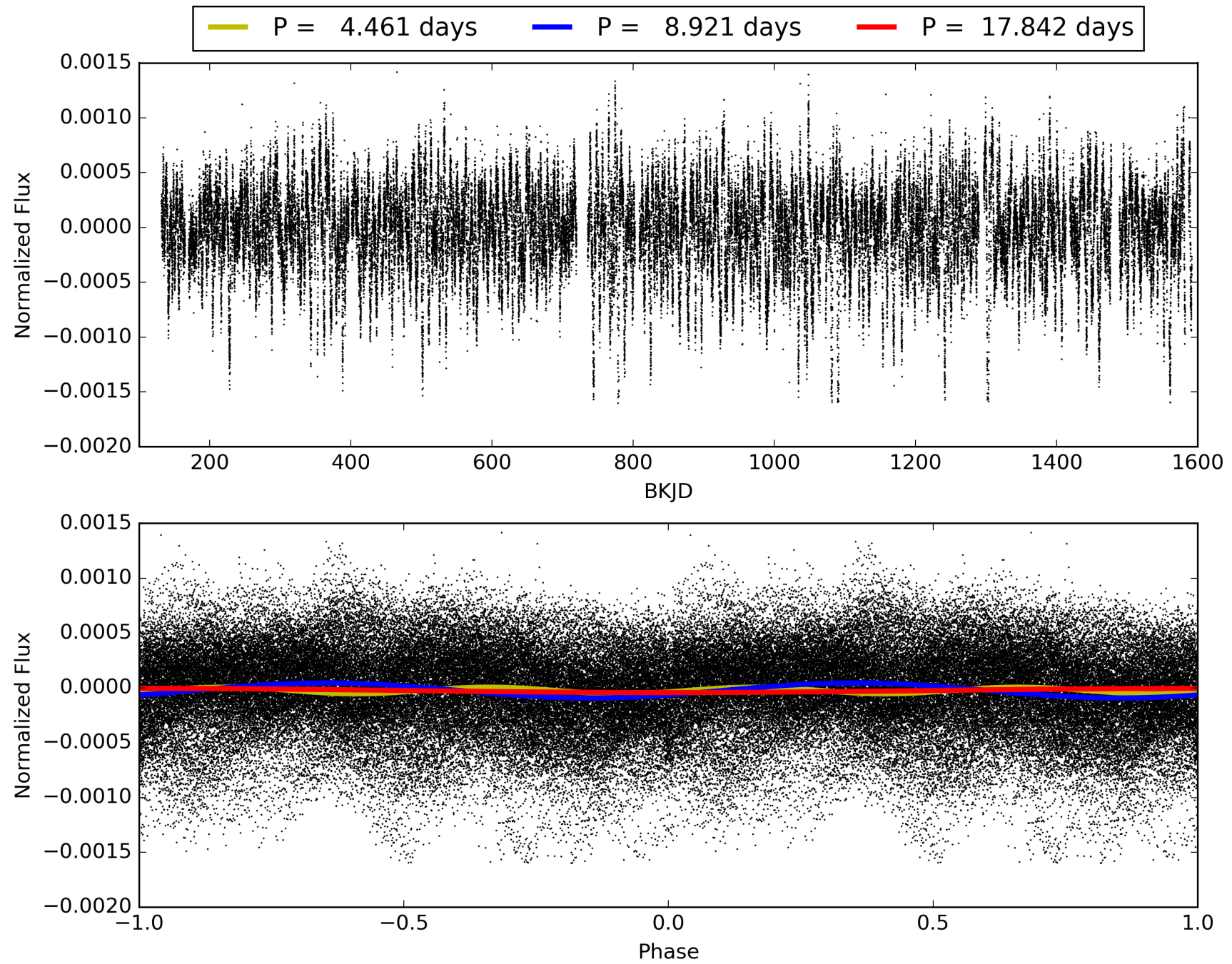
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [12.23σ]
LongPeriod-sig: 100.0% [9.38σ]
ModelChiSquare2-sig: 95.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.16e-50
RollingBand-fgt: 0.93 [112/121]
GhostDiagnostic-chr: -17.52
Centroid-sig: 19.6%
Centroid-so: 0.352 arcsec [0.73σ]
OotOffset-rm: 0.062 arcsec [0.17σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.179 arcsec [0.46σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.88 [15/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 007673192-04, PDC Light Curves

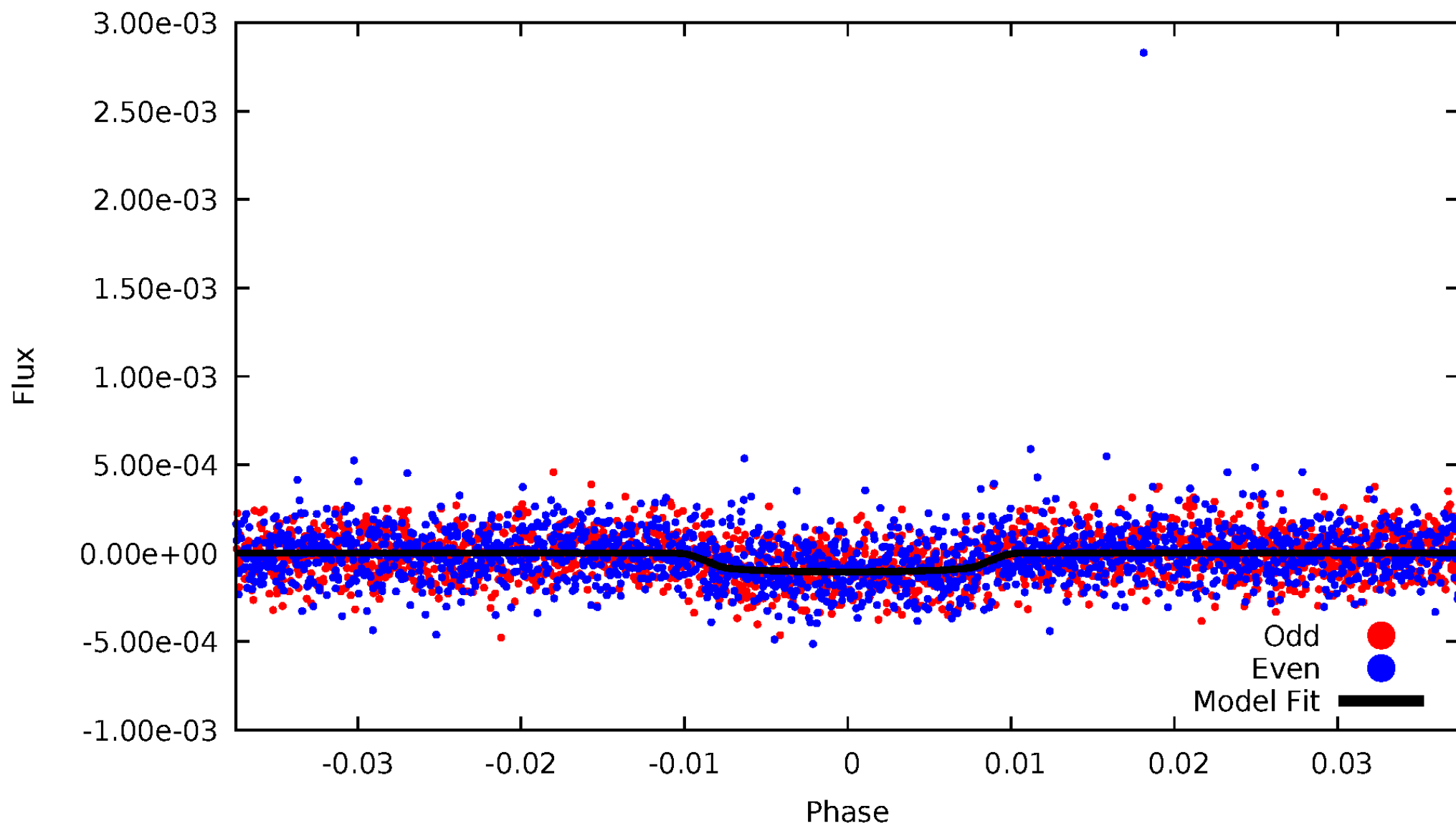


TCE 007673192-04



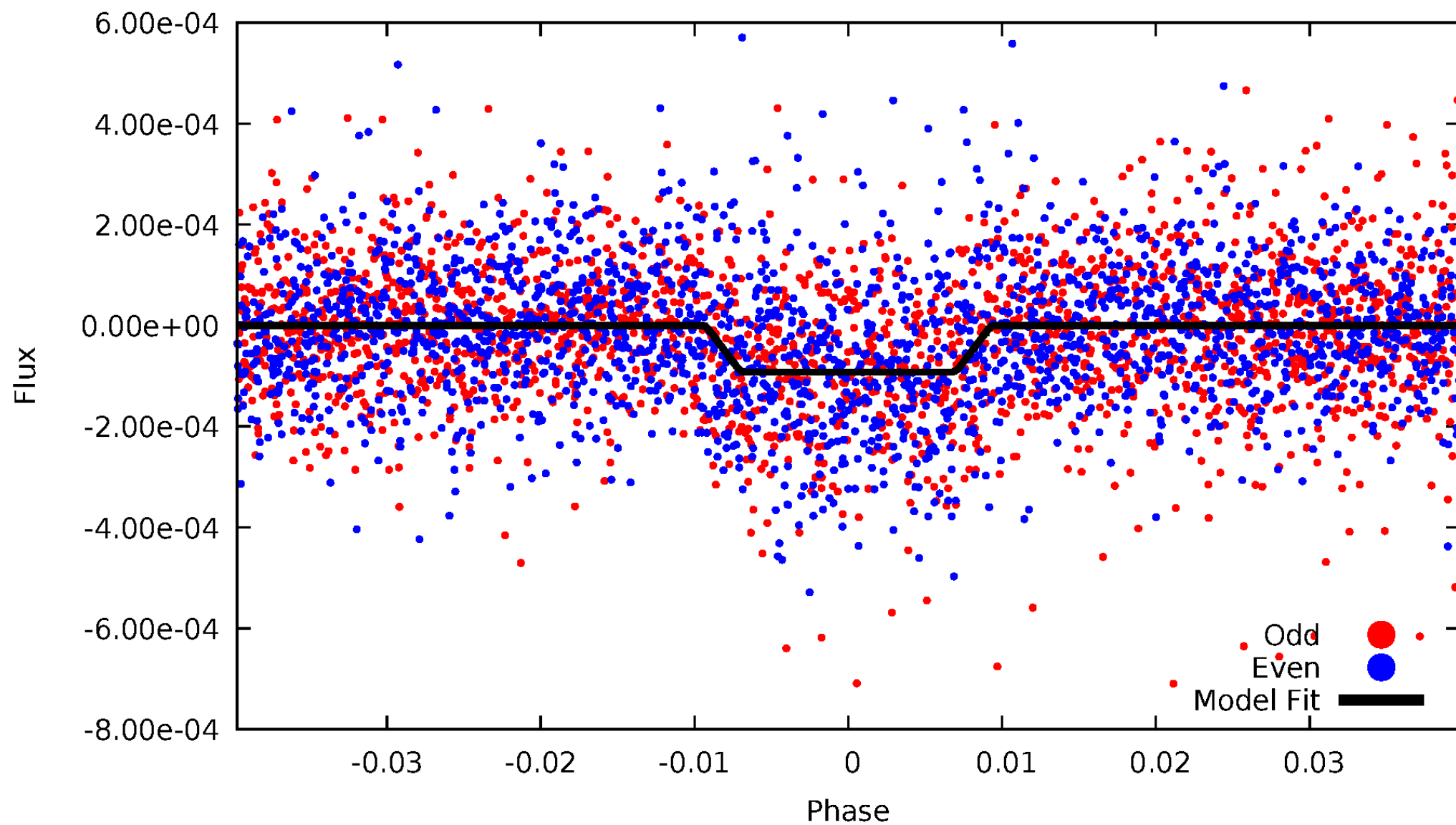
DV Odd/Even

TCE 007673192-04



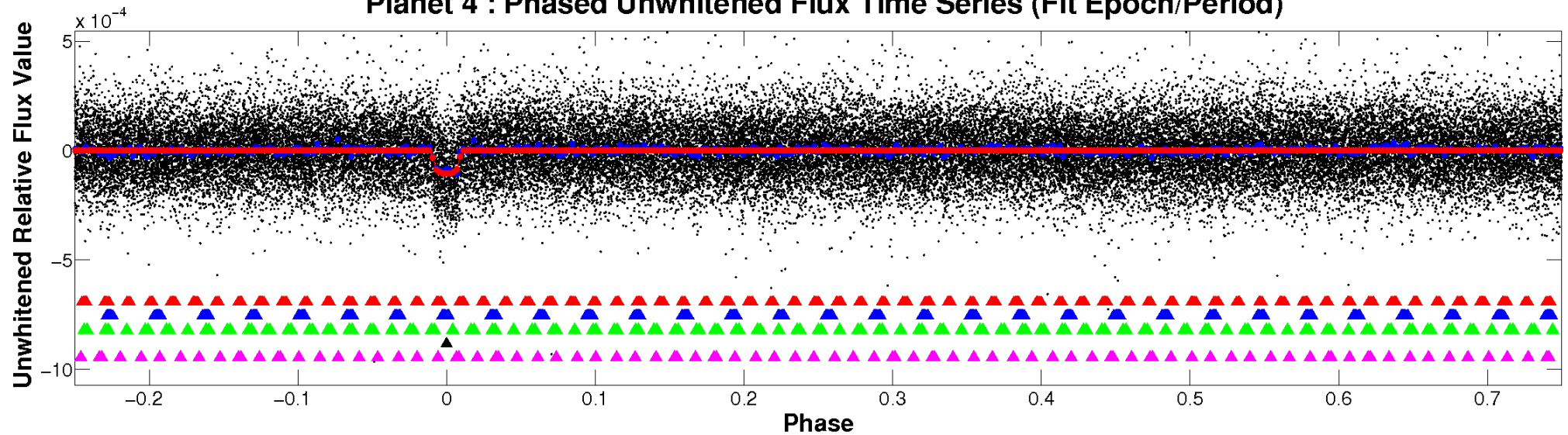
ALT Odd/Even

TCE 007673192-04

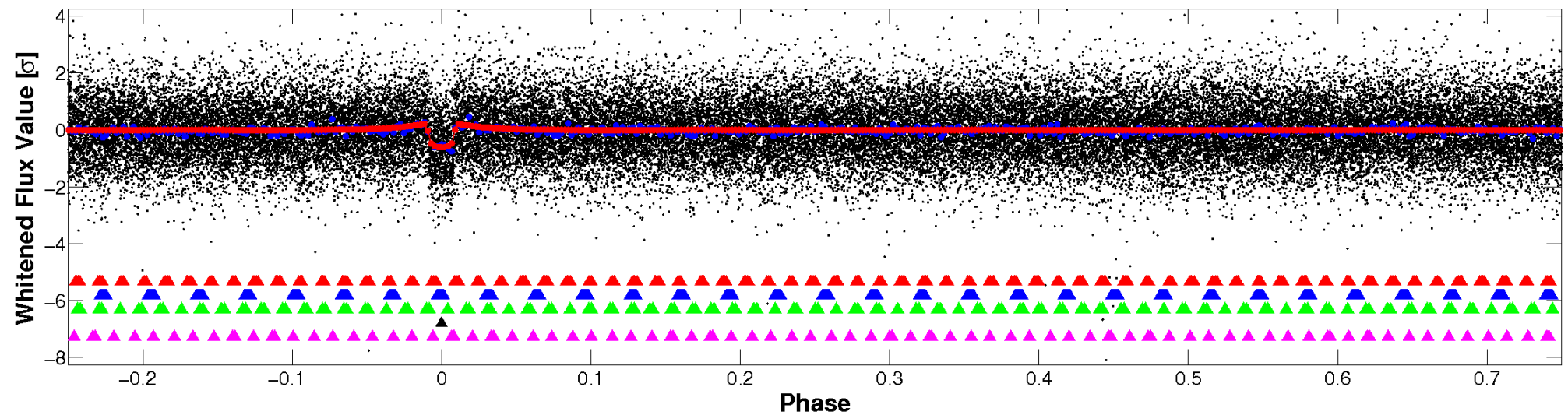


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

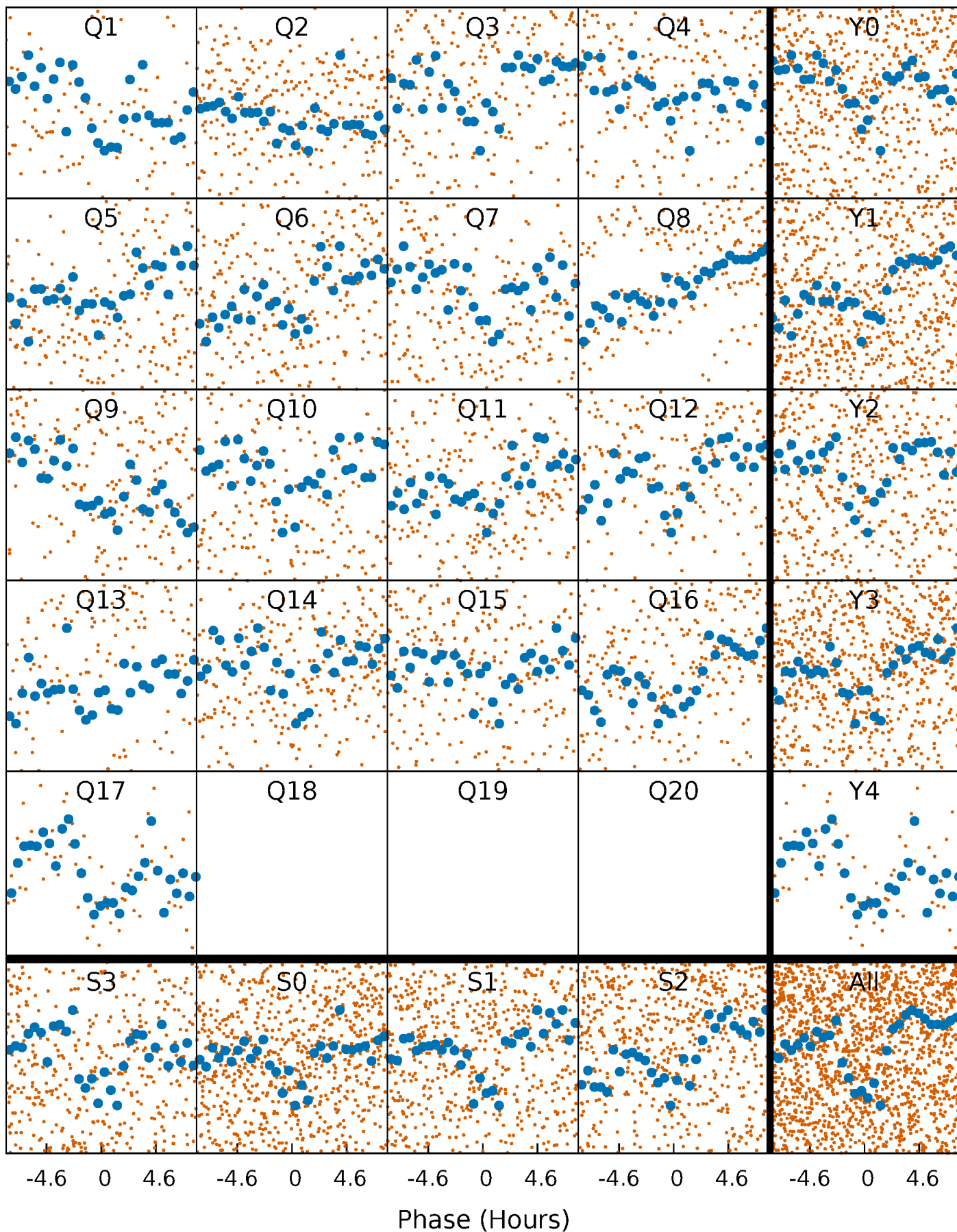


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



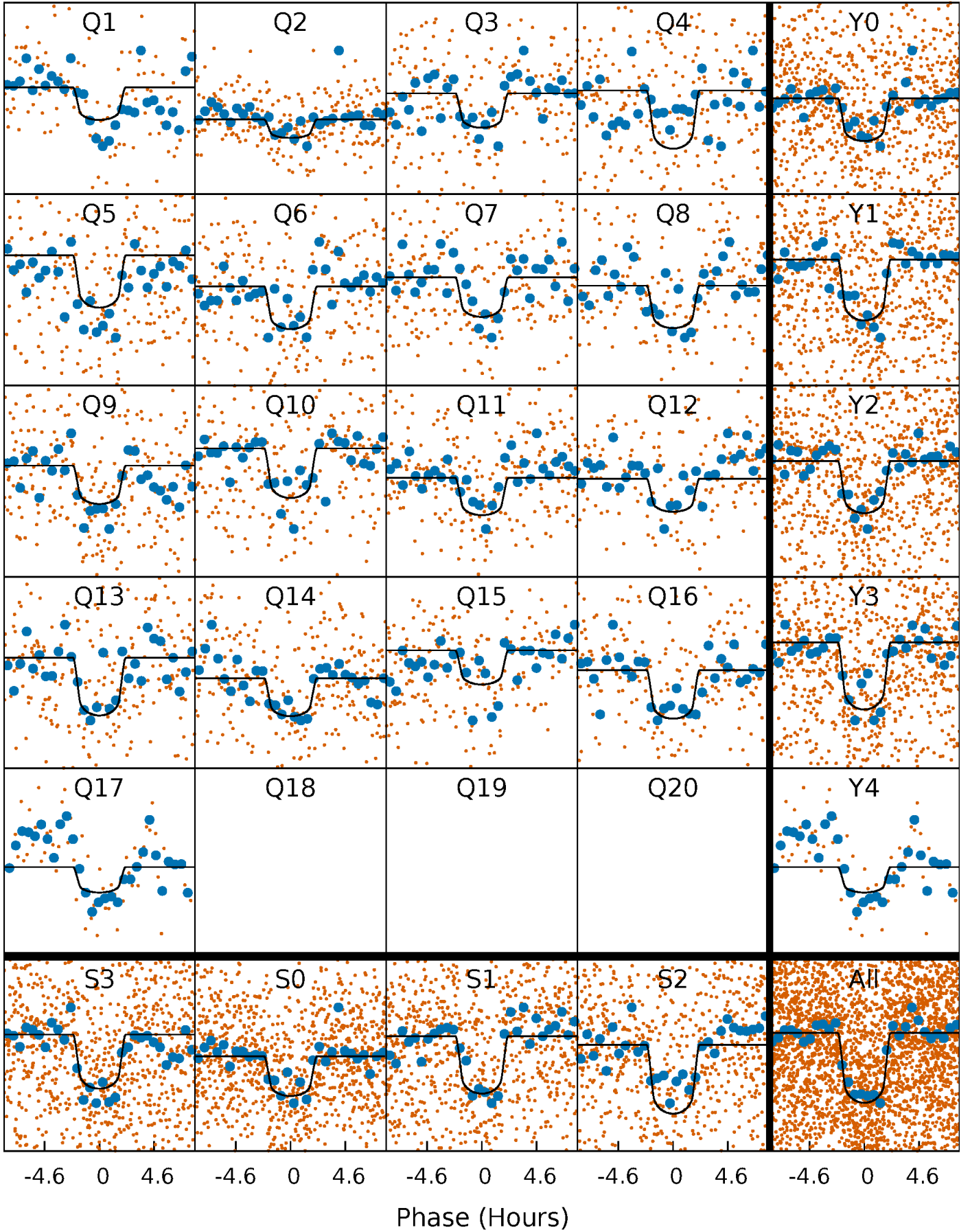
PDC Quarter-Phased Transit Curves

TCE 007673192-04 P= 8.921137 Days $T_0=137.491758$ (BKJD)



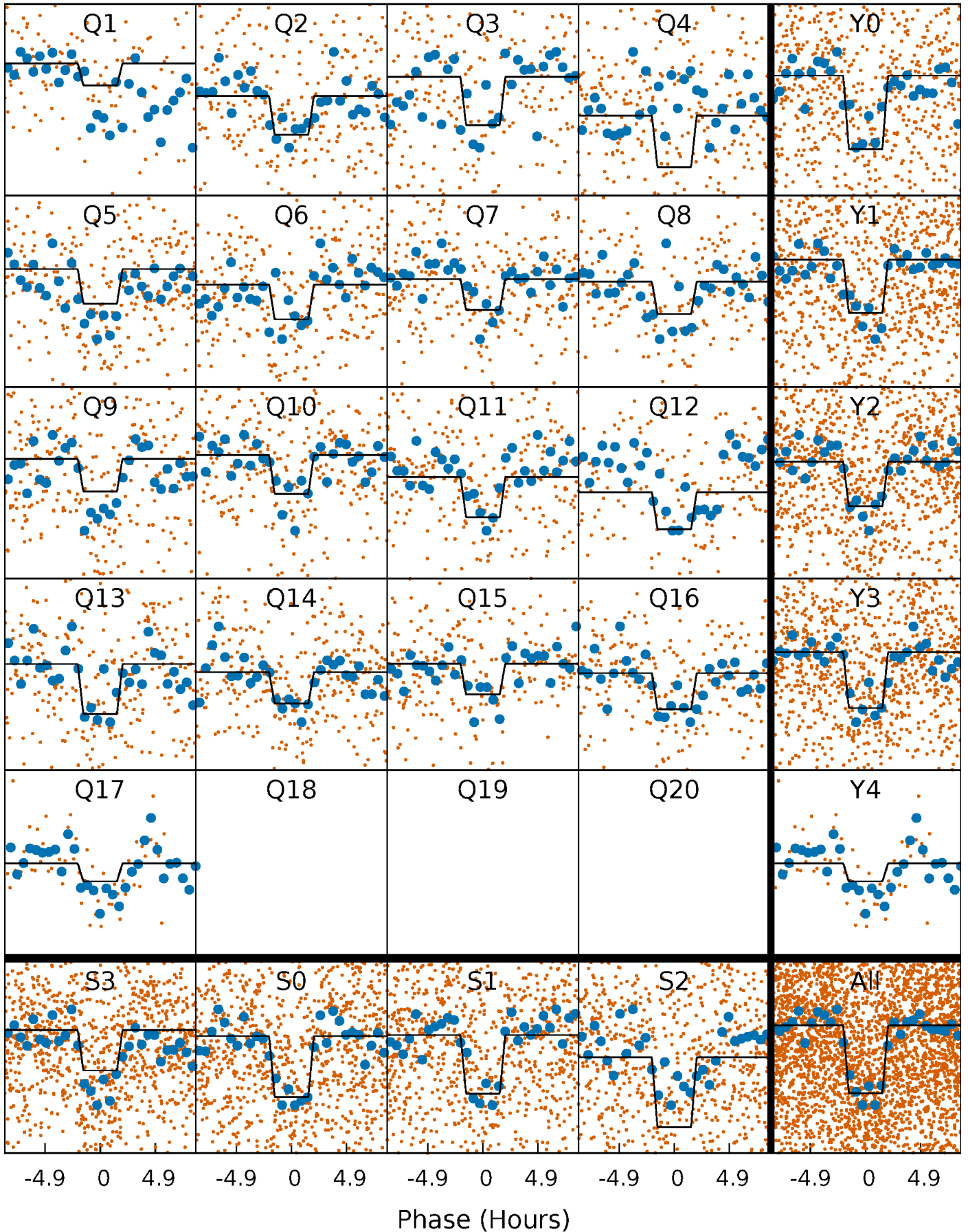
DV Quarter-Phased Transit Curves

TCE 007673192-04 P= 8.921137 Days $T_0=137.491758$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

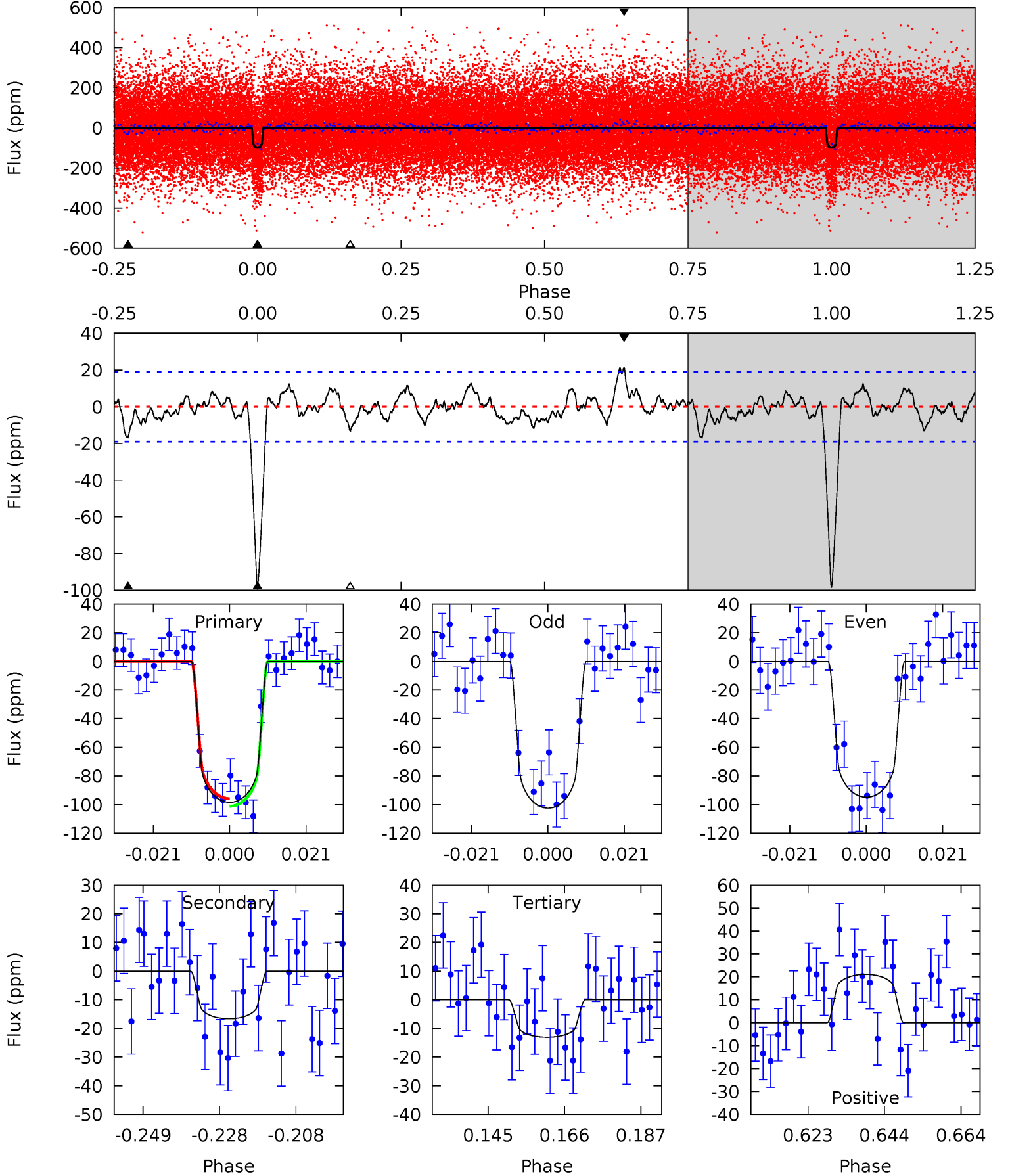
TCE 007673192-04 P= 8.920990 Days $T_0=137.503811$ (BKJD)



DV Model-Shift Uniqueness Test

007673192-04, P = 8.921137 Days, E = 128.570621 Days

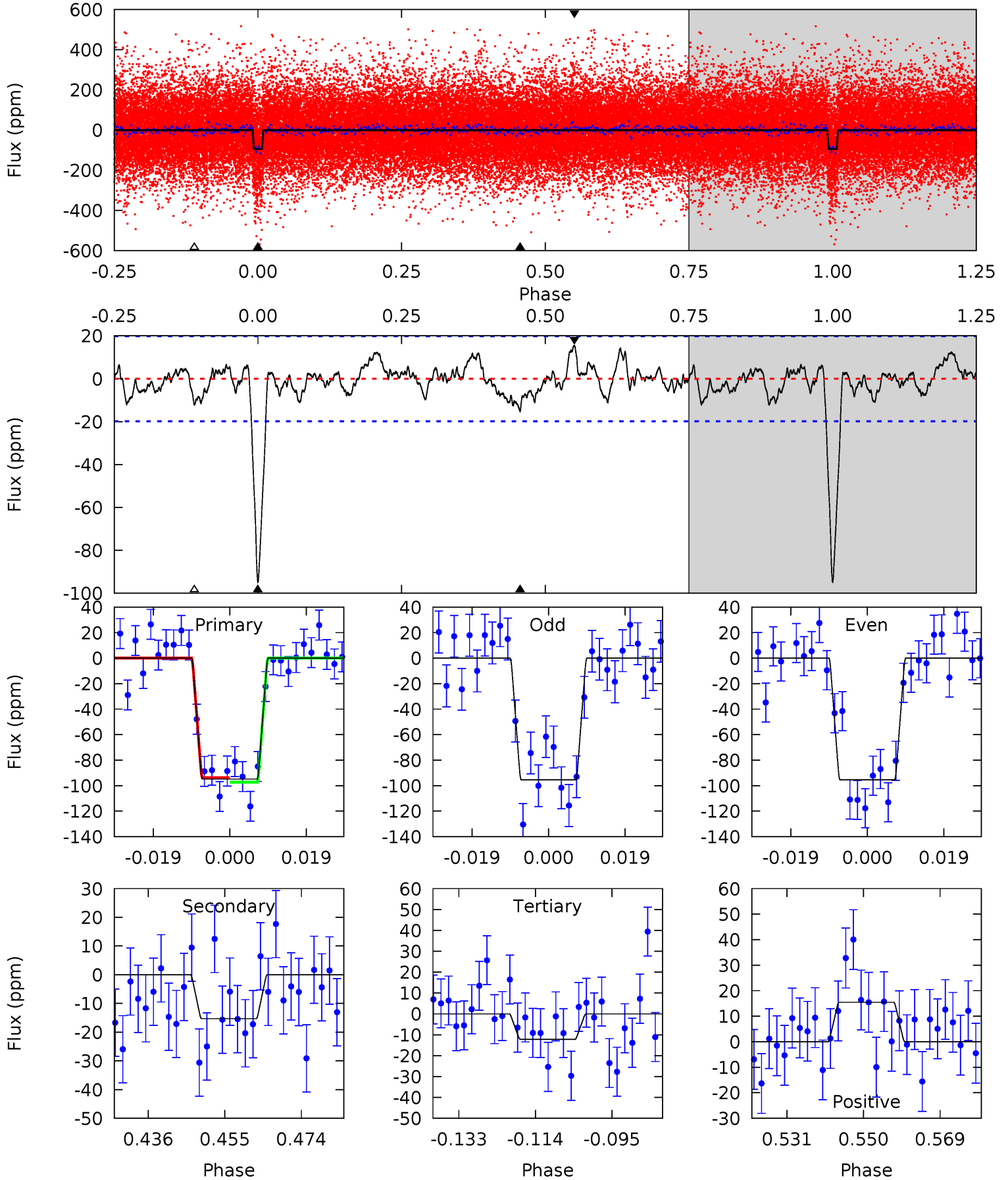
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.3	4.28	3.37	5.43	4.88	2.31	1.50	21.9	19.9	0.91	-1.14	0.98	1.02	0.18	0.69



Alt Model-Shift Uniqueness Test

007673192-04, P = 8.920990 Days, E = 128.582821 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.5	3.79	3.02	3.82	4.90	2.35	1.33	20.5	19.7	0.77	-0.04	0.00	1.02	0.14	0.44



Stellar Parameters For KIC 007673192

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6052^{+121}_{-133}	$4.285^{+0.137}_{-0.112}$	$-0.120^{+0.150}_{-0.150}$	$1.202^{+0.208}_{-0.189}$	$1.015^{+0.085}_{-0.068}$	$0.823^{+0.474}_{-0.278}$
	+2%/-2%	+3%/-3%	+125%/-125%	+17%/-16%	+8%/-7%	+58%/-34%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 007673192-04 / KOI 2722.04

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-17 ± 4	$1.45^{+0.38}_{-0.37}$	1401^{+69}_{-69}	4001^{+433}_{-360}	32^{+25}_{-14}
Alt.	-15 ± 4	$1.26^{+0.36}_{-0.34}$	1401^{+72}_{-69}	4117^{+534}_{-403}	38^{+36}_{-17}

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 $A_{obs} \gg 1.0$

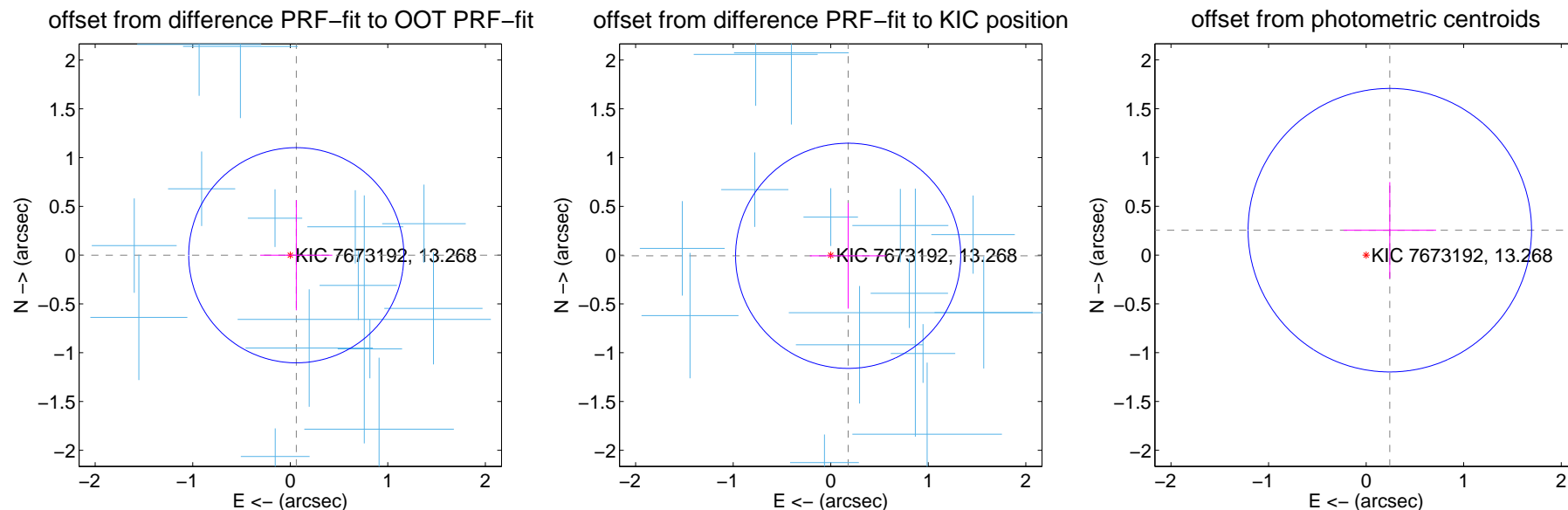
DV Centroid Data

Supplemental centroid analysis for 007673192-04. Kepler magnitude: 13.27. Transit SNR 16.85

There are 15 quarters with good PRF difference image offsets

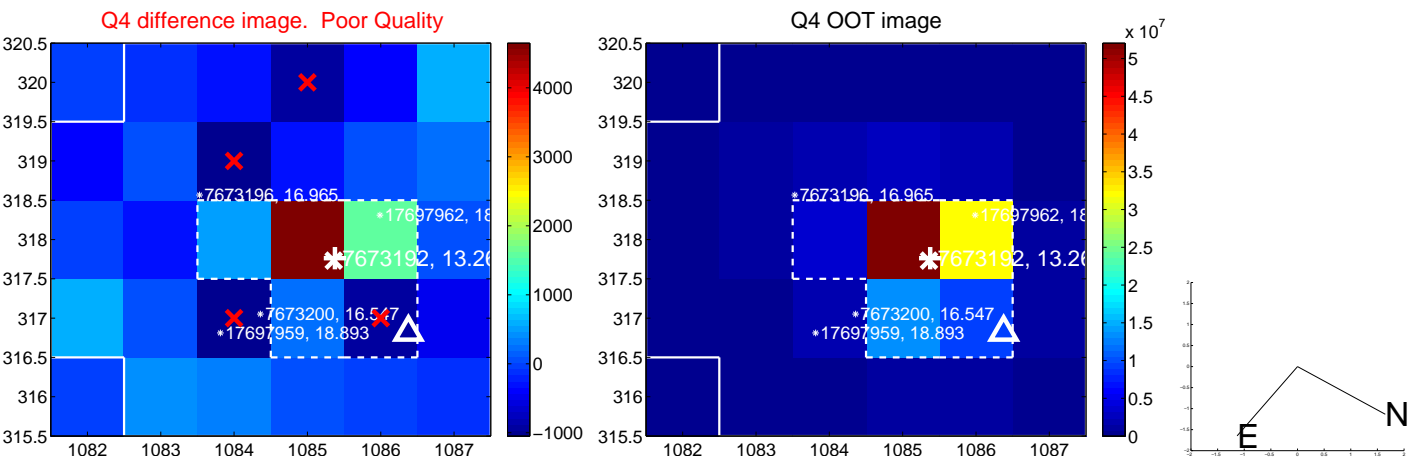
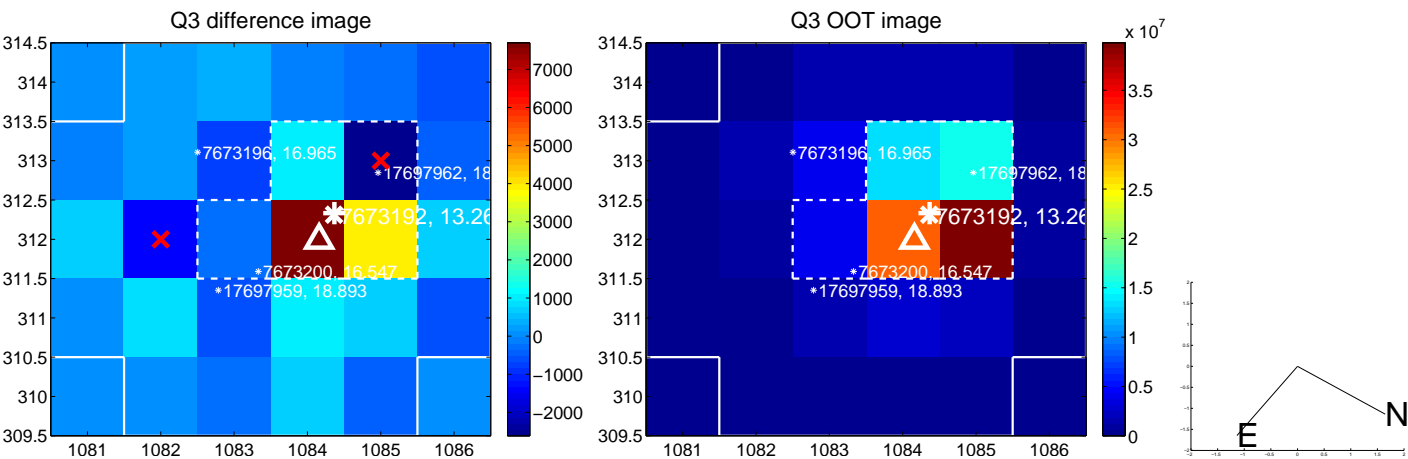
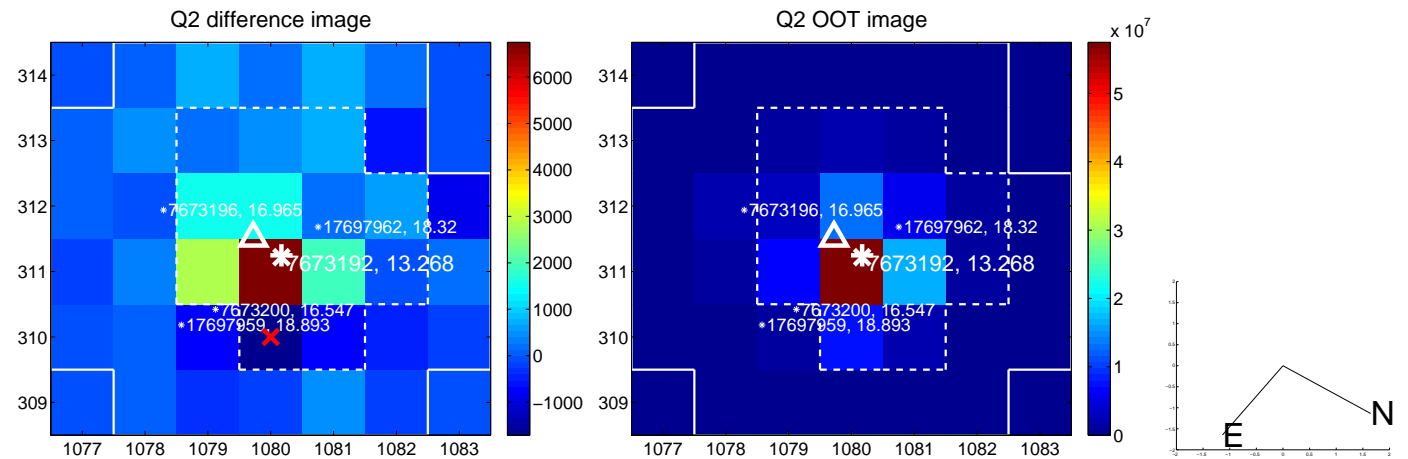
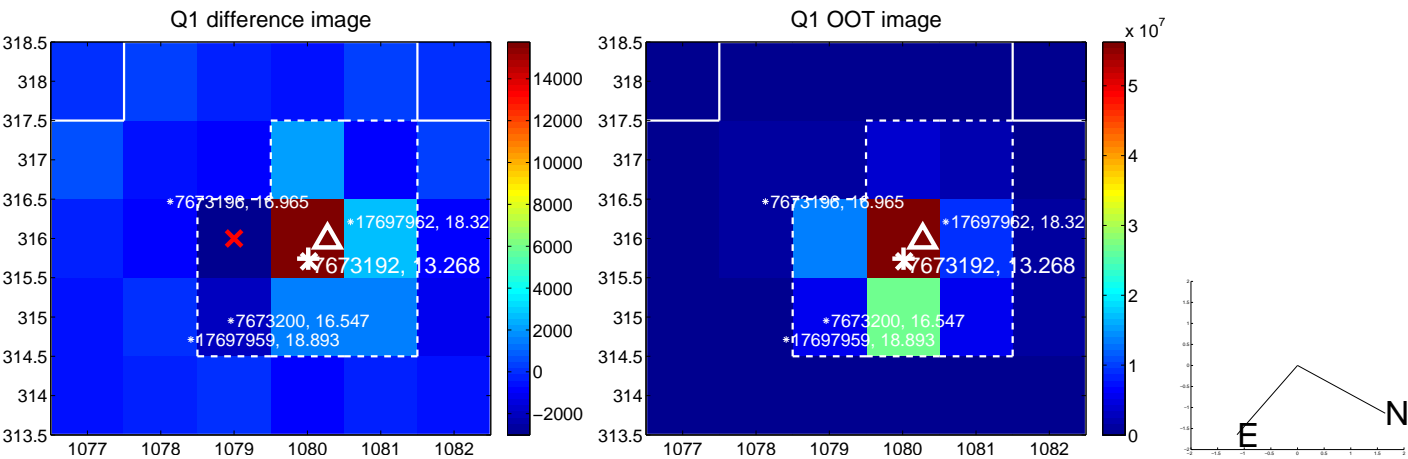
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.062 ± 0.368	0.17	-0.062 ± 0.370	-0.001 ± 0.564
PRF-fit source offset from KIC position	0.179 ± 0.385	0.46	-0.178 ± 0.392	-0.007 ± 0.541
photometric centroid source offset	0.35 ± 0.48	0.73	-0.24 ± 0.47	0.26 ± 0.49

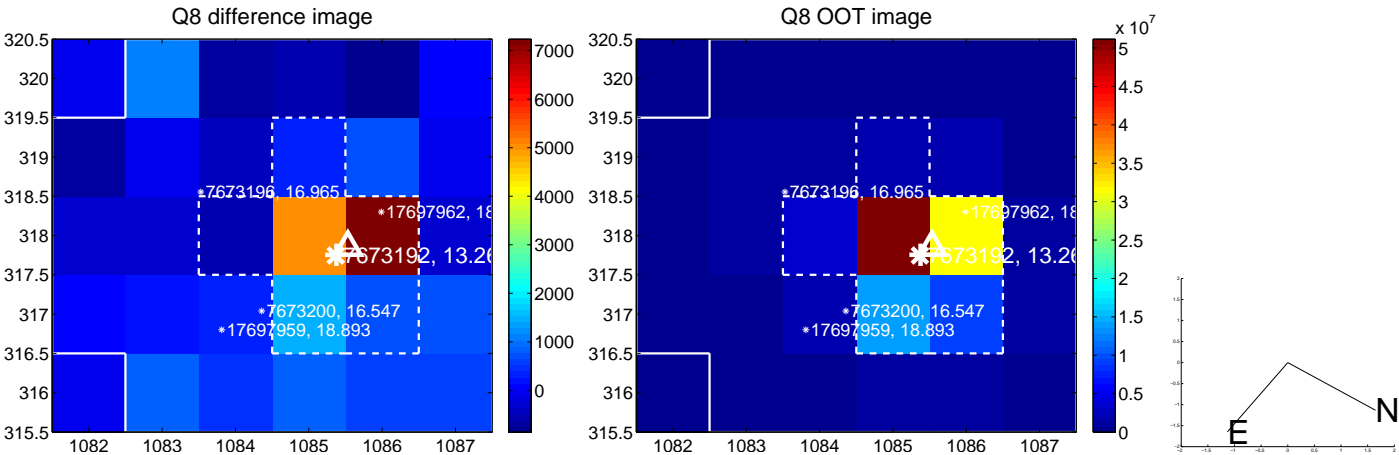
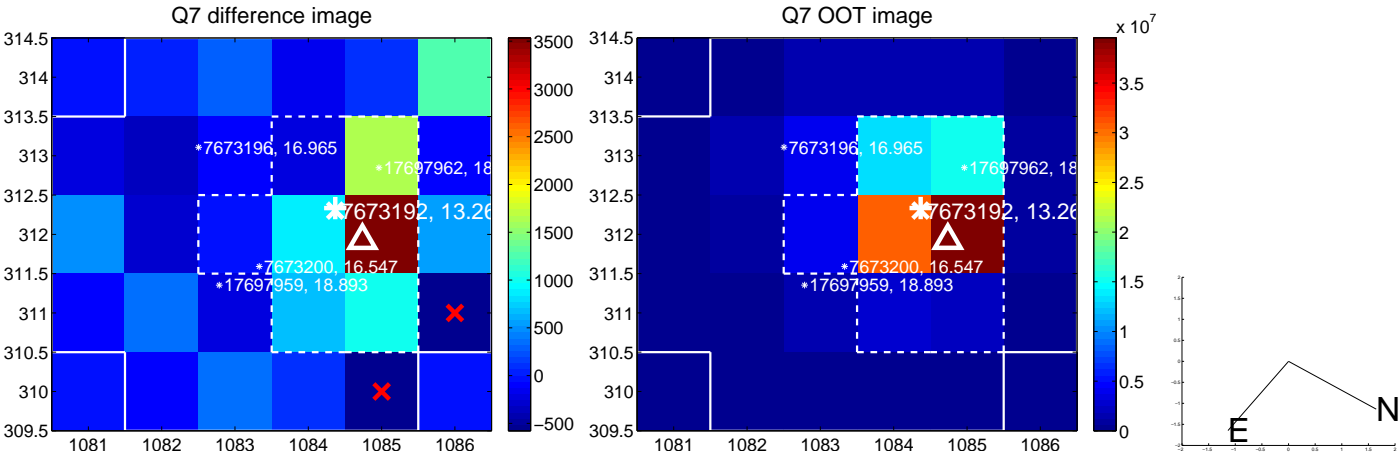
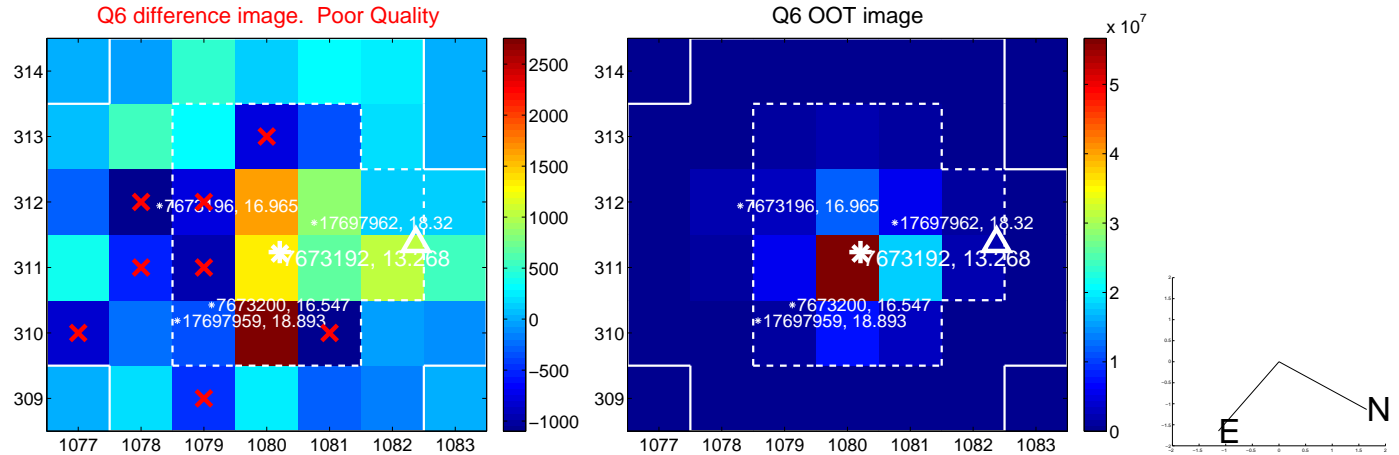
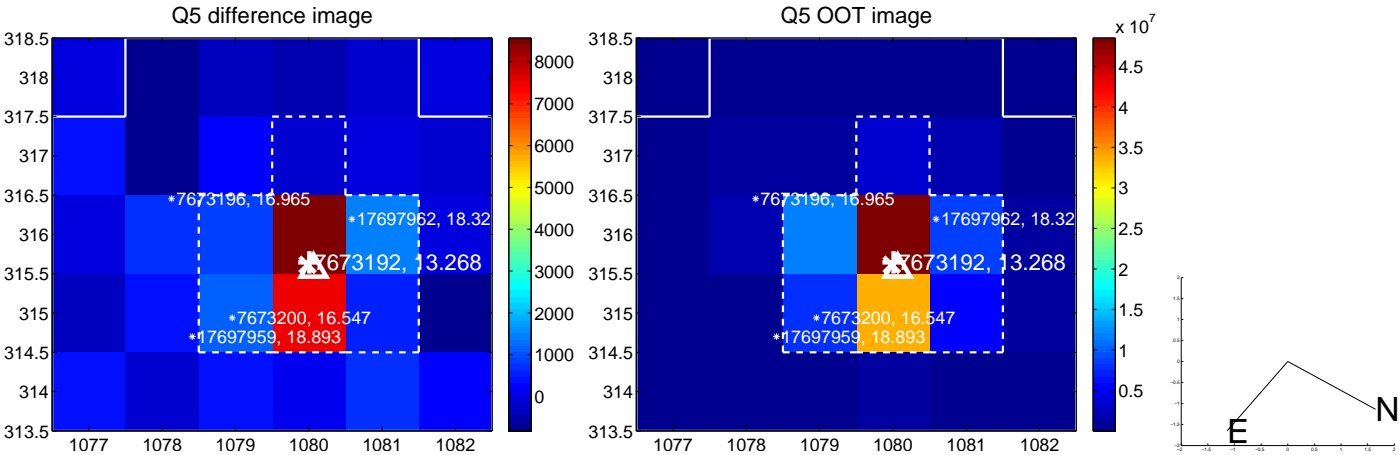


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

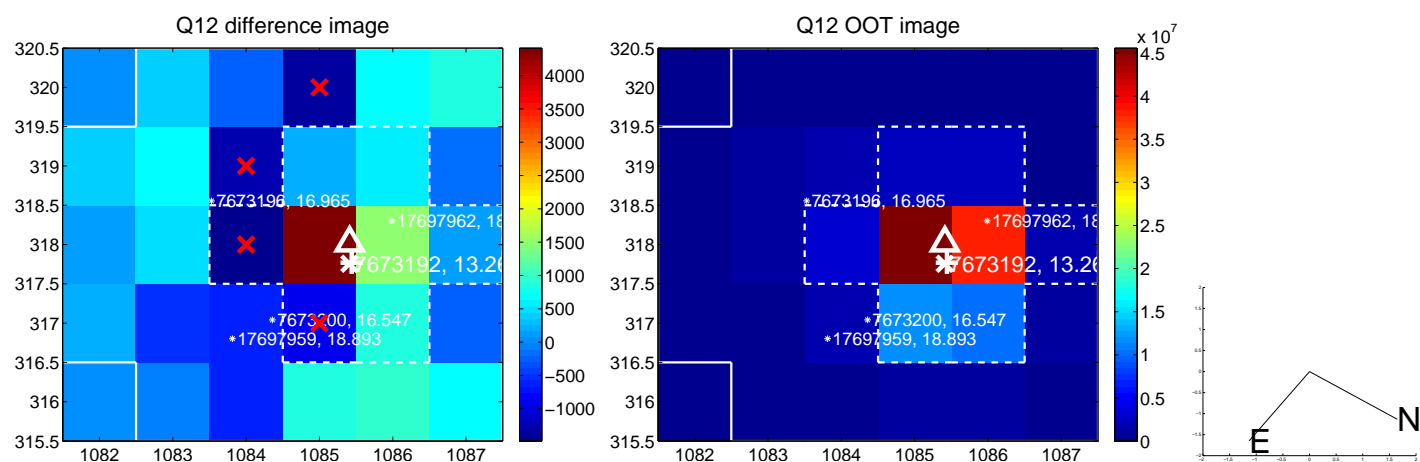
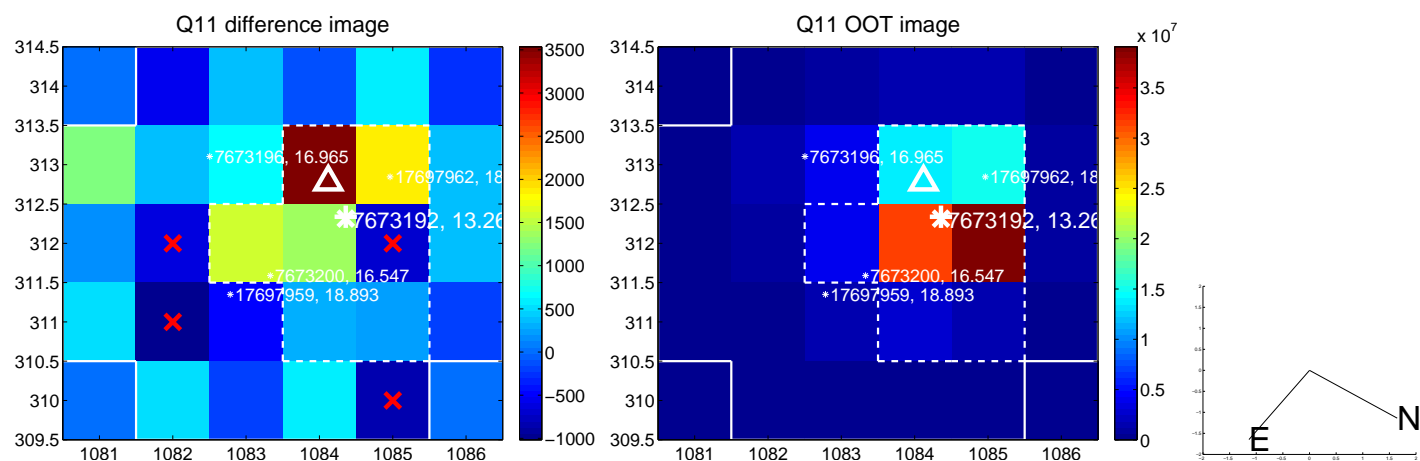
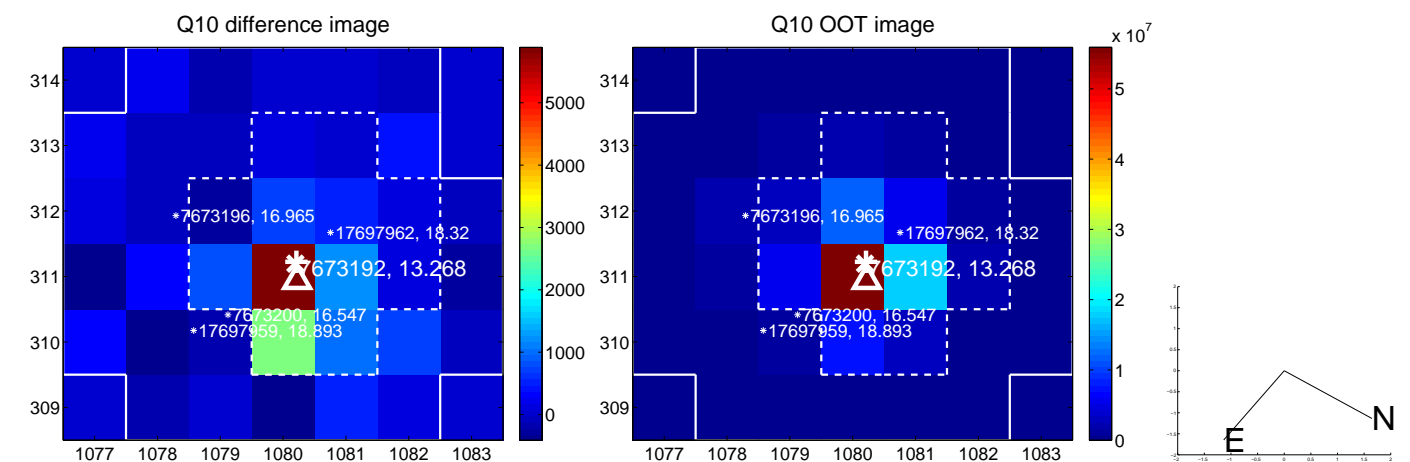
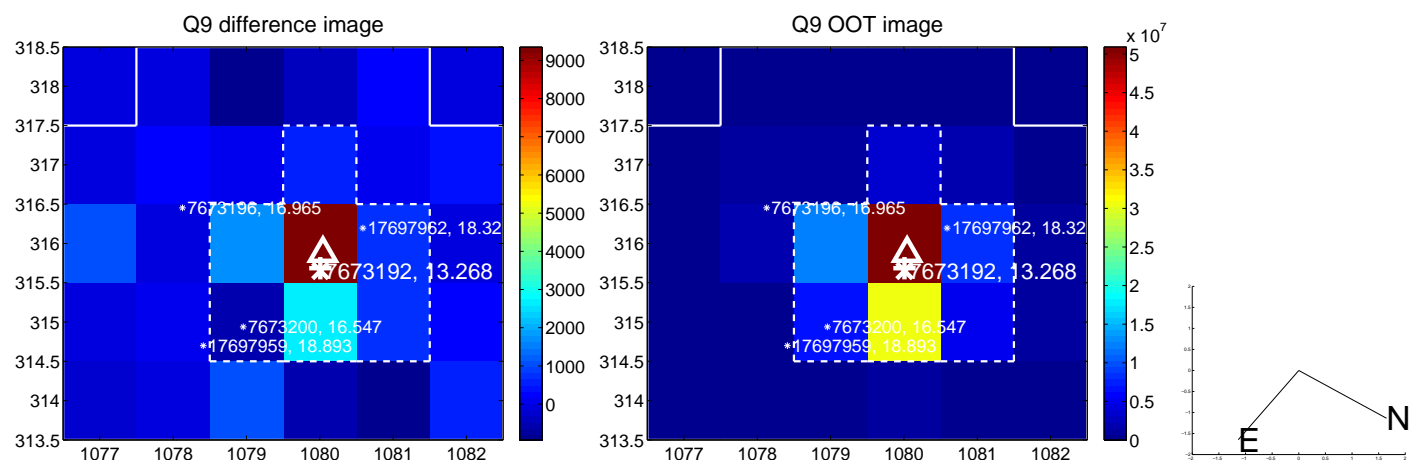
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



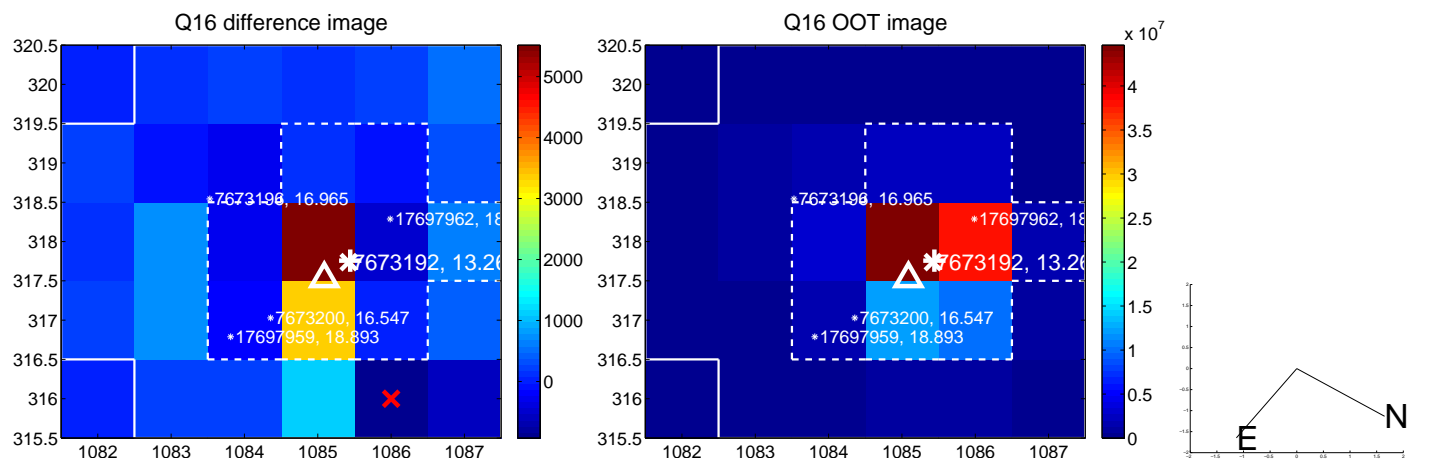
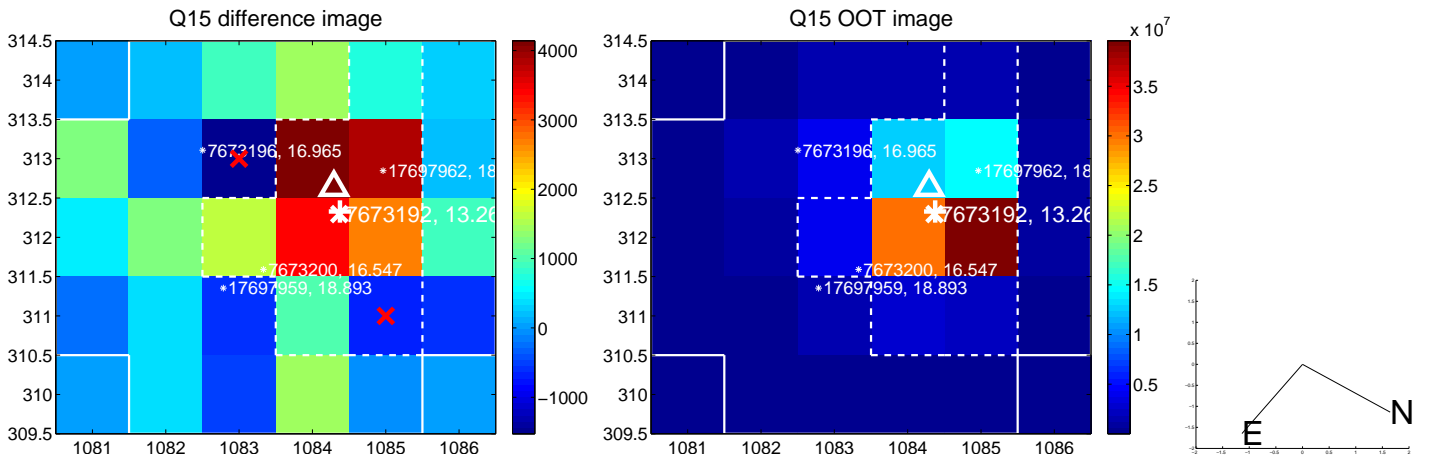
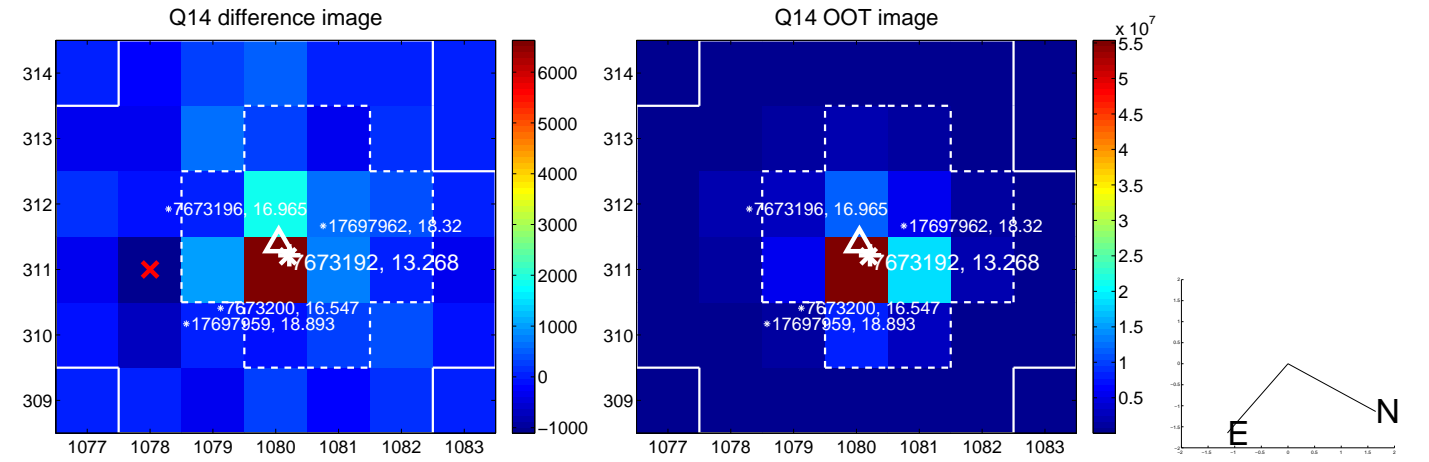
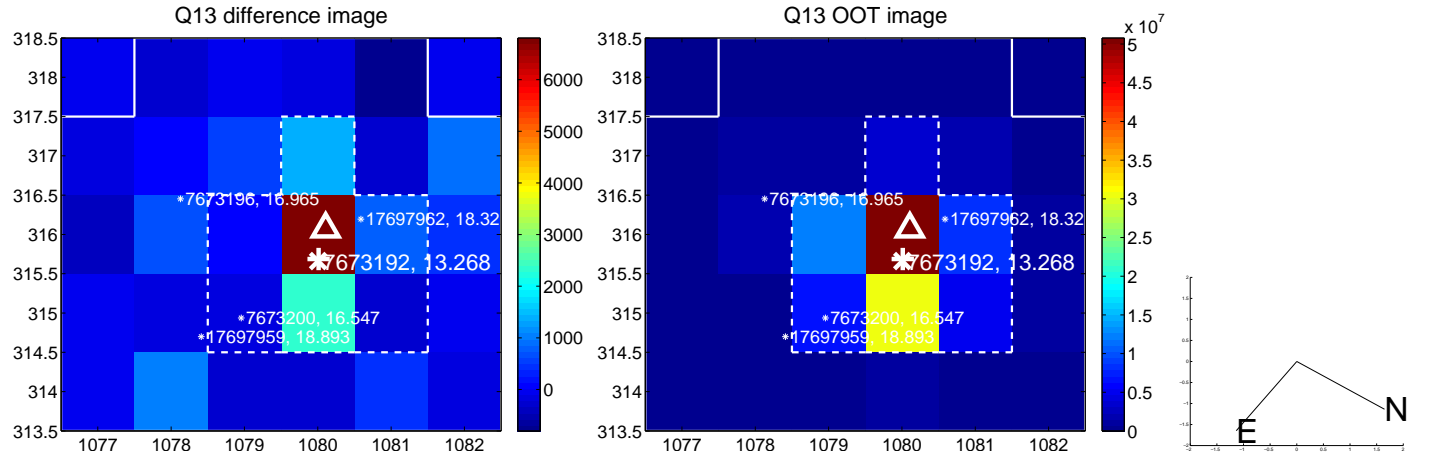
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



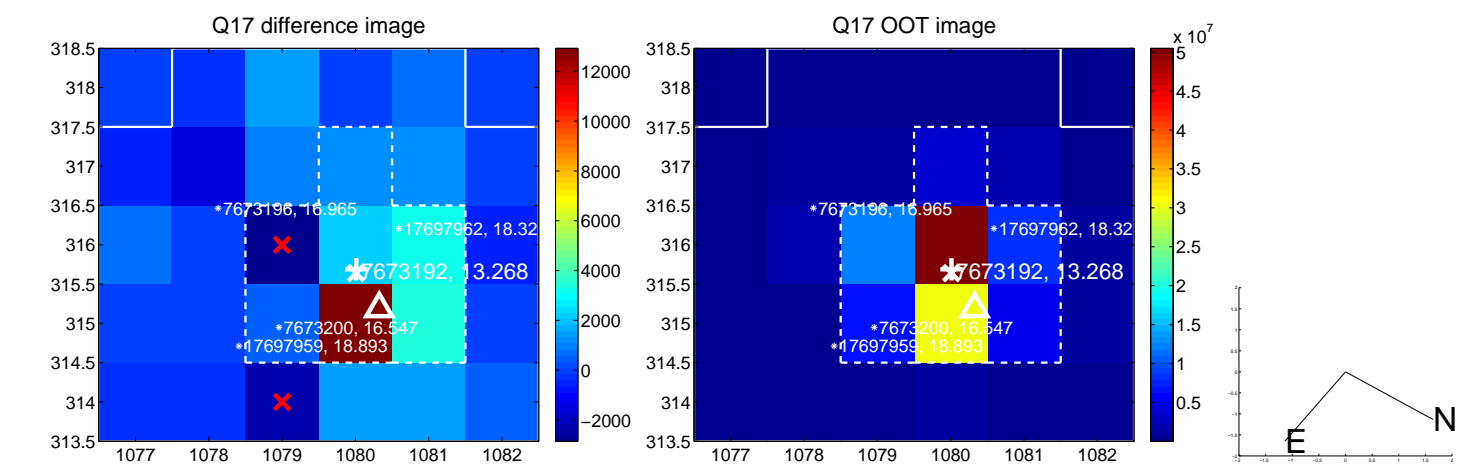
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



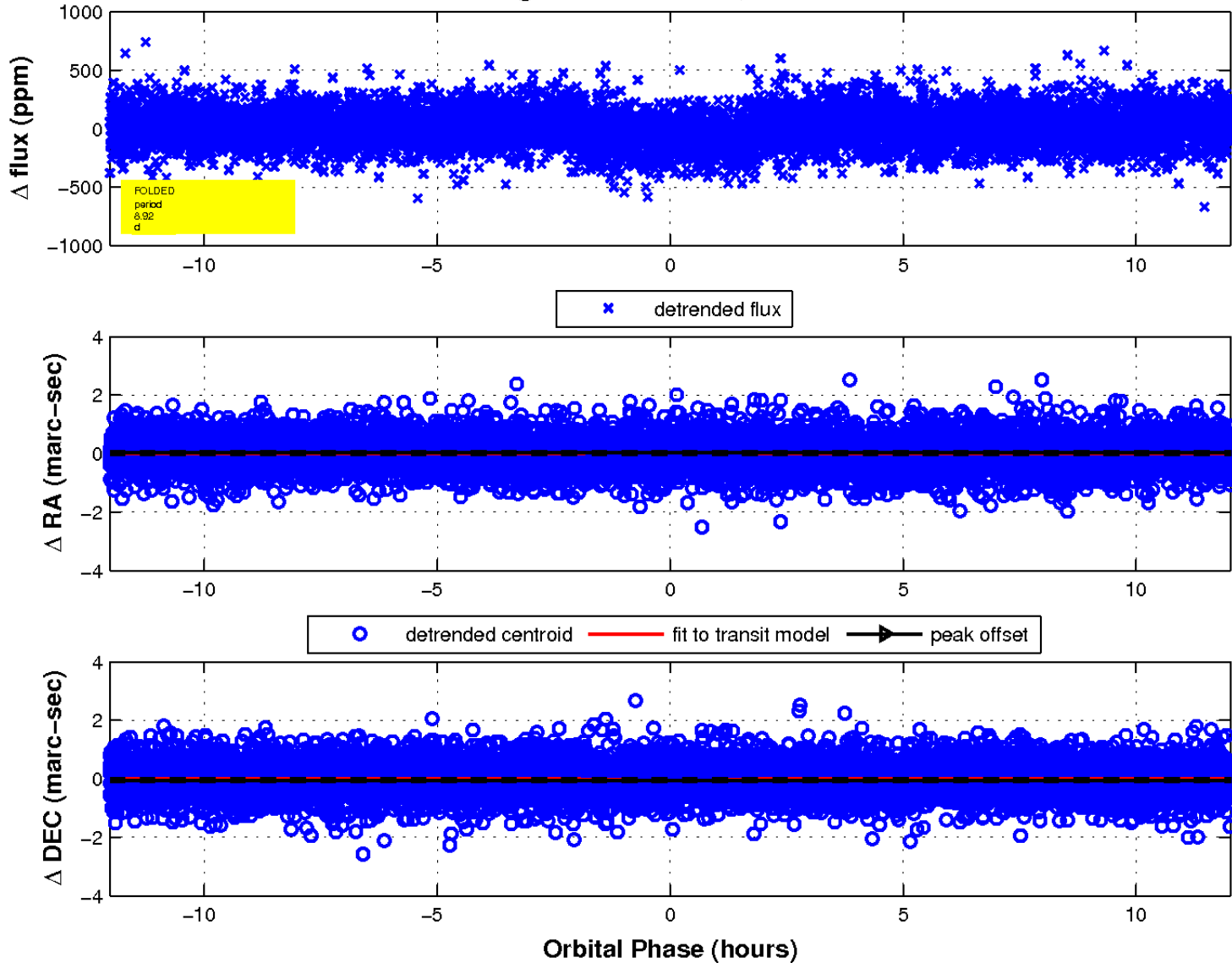
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

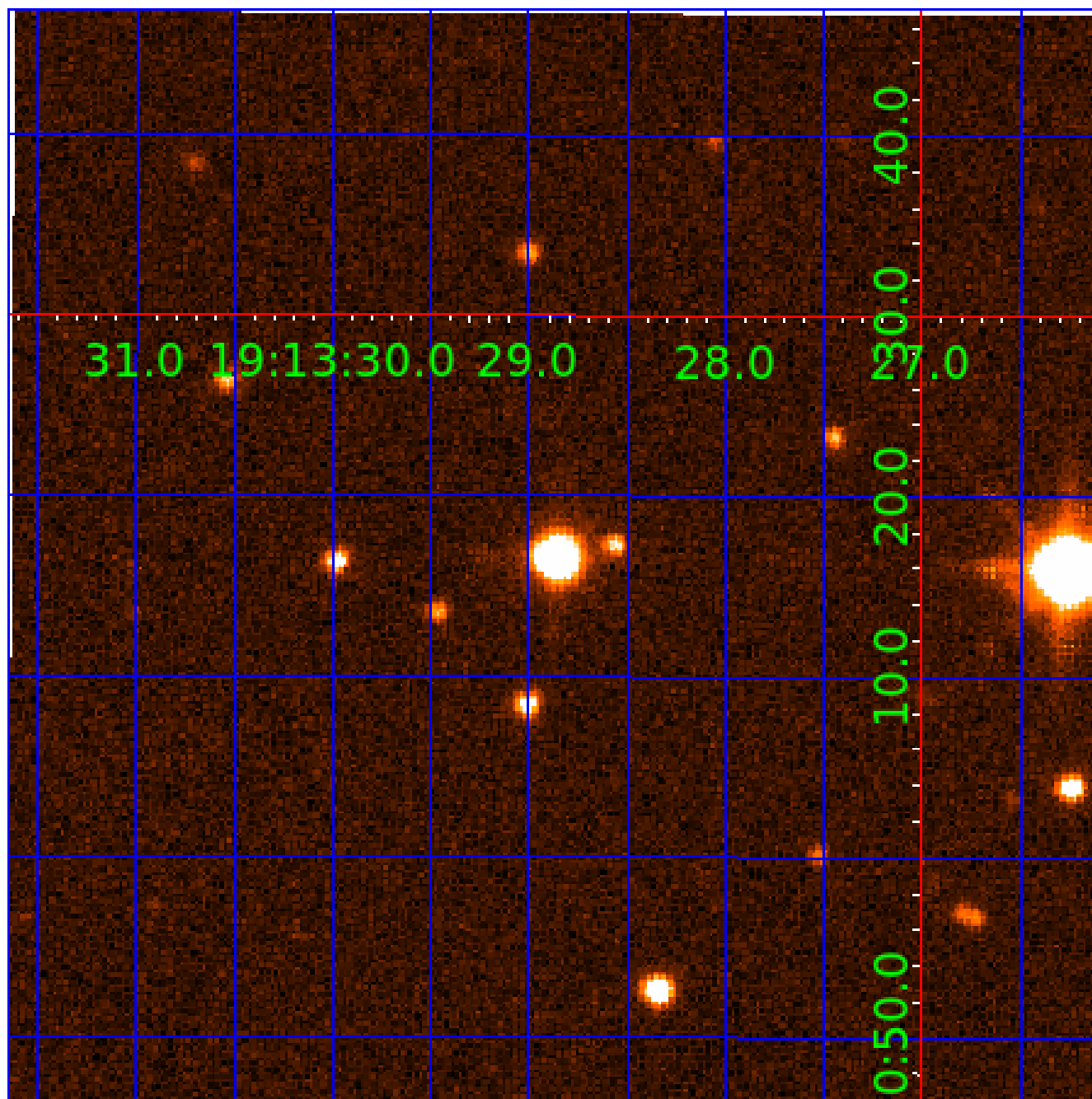


fluxWeightedCentroids, Planet 4 of 5



UKIRT Image

Declination



KIC 007673192

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})
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007673192-02	OBS	2722.03	4.028779	133.765963	97.7	3.266	21.9	23.0	1.20	6052	1.39	699.62
007673192-03	OBS	2722.02	11.242838	136.321380	134.9	4.380	17.8	19.3	1.20	6052	1.64	178.07
007673192-04	OBS	2722.04	8.921137	137.491758	105.3	4.010	15.4	16.8	1.20	6052	1.45	242.40
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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007673192-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007673192-03	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007673192-04	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007673192-05	OBS	PC	0.89	0	0	0	0	NO_COMMENT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

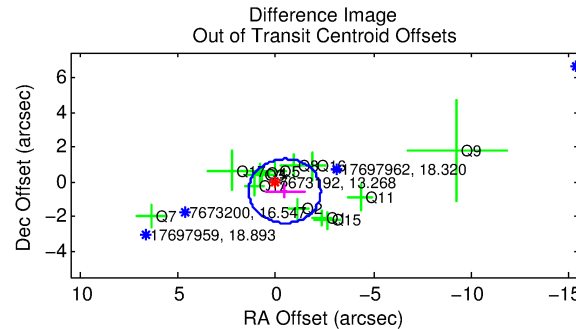
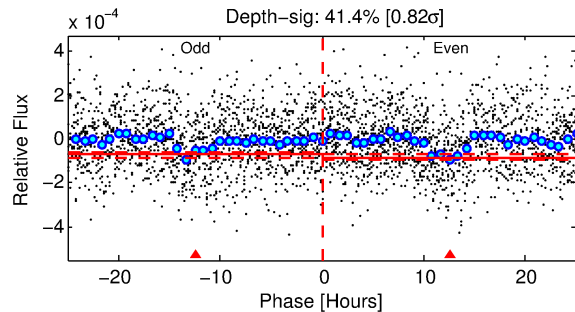
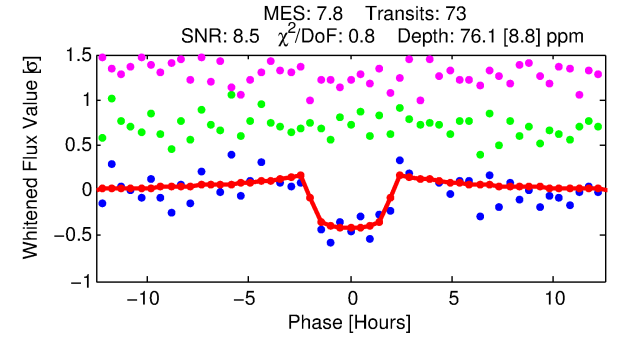
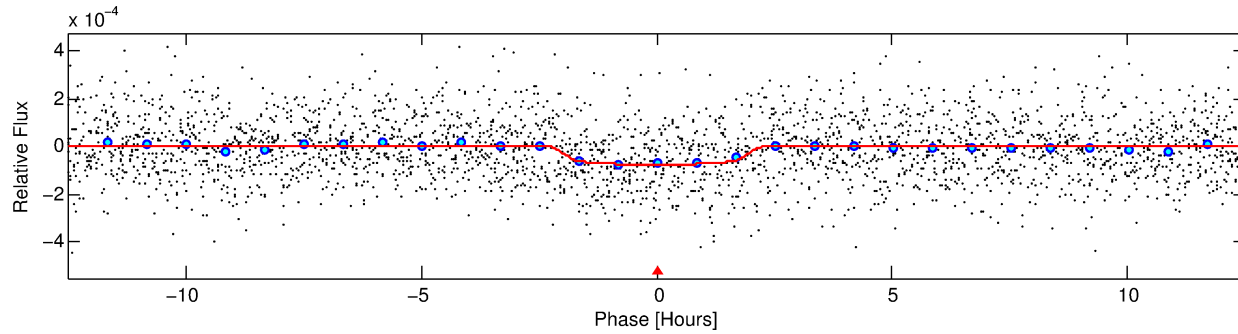
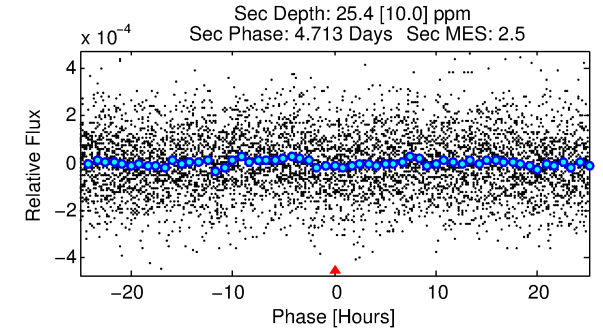
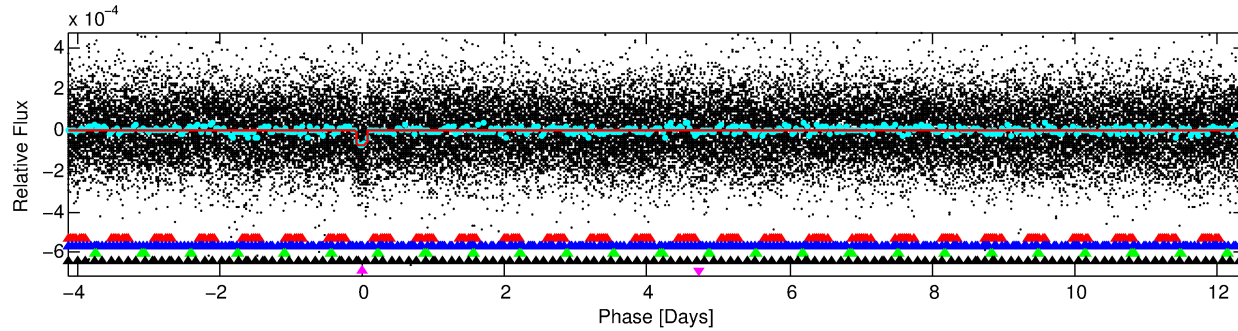
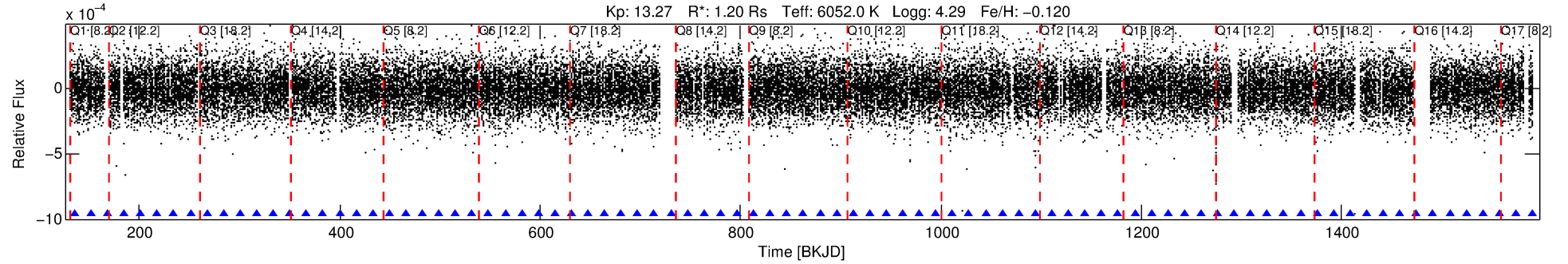
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007673192-05

No Significant Match Found

DV One-Page Summary

KIC: 7673192 Candidate: 5 of 5 Period: 16.534 d
KOI: K02722.05 Corr: 0.973



DV Fit Results:

Period = 16.53403 [0.00015] d
Epoch = 135.4085 [0.0077] BKJD
Rp/R* = 0.0094 [0.0042]
a/R* = 13.88 [32.16]
b = 0.90 [0.50]
Seff = 106.48 [27.20]
Teq = 819 [52] K
Rp = 1.23 [0.59] Re
a = 0.1277 [0.0199] AU
Ag = 149.25 [150.74] [0.98σ]
Teff = 4427 [1090] K [3.31σ]

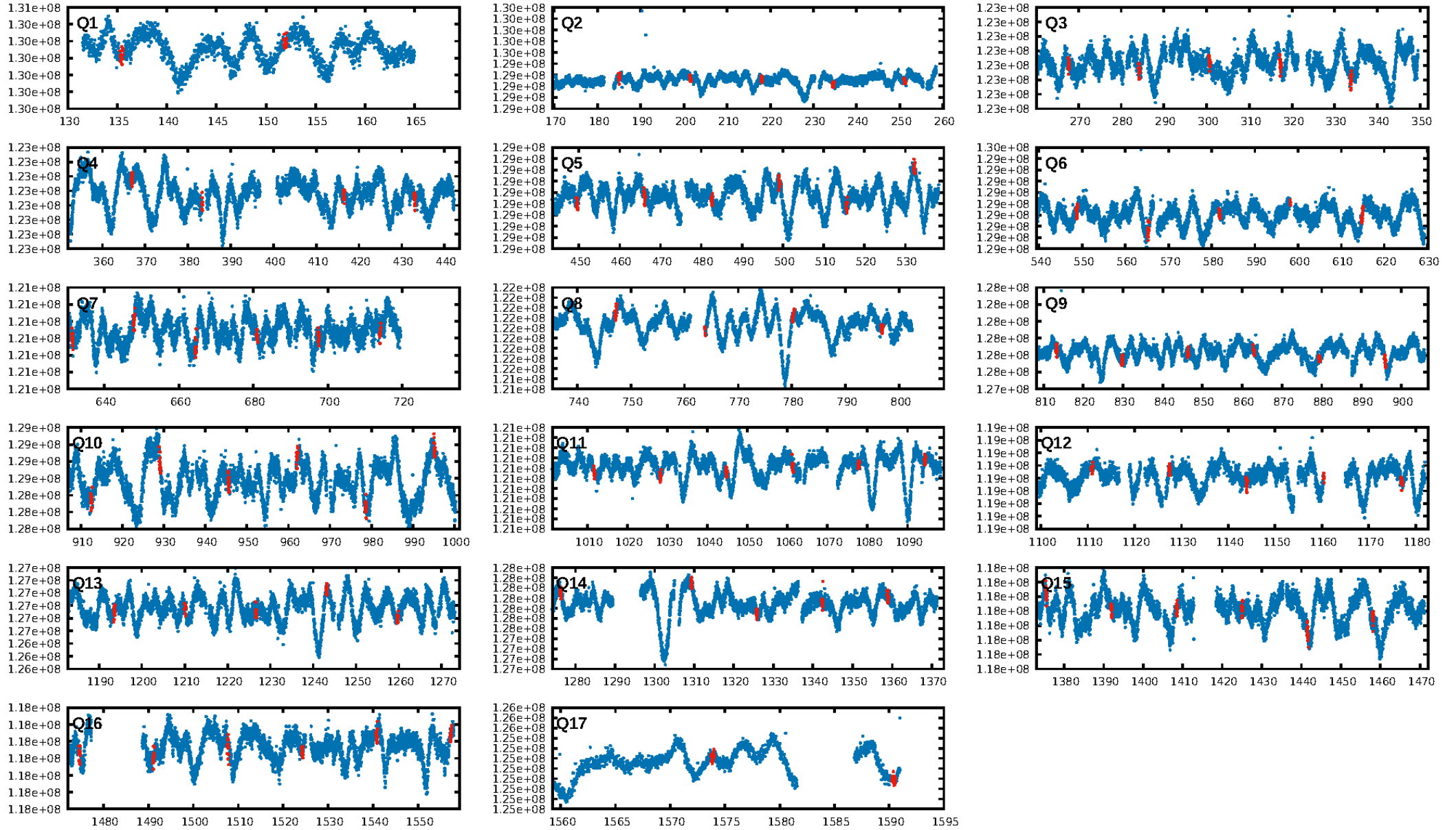
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [20.97σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.28e-14
RollingBand-fgt: 1.00 [70/70]
GhostDiagnostic-chr: 51.2
Centroid-sig: 24.2%
Centroid-so: 1.150 arcsec [1.30σ]
OotOffset-rm: 0.699 arcsec [1.13σ]
KicOffset-rm: 0.793 arcsec [1.10σ]
OotOffset-st: 1/4/4/4 [13]
KicOffset-st: 1/4/4/4 [13]
DiffImageQuality-fgm: 0.69 [9/13]
DiffImageOverlap-fno: 0.94 [16/17]

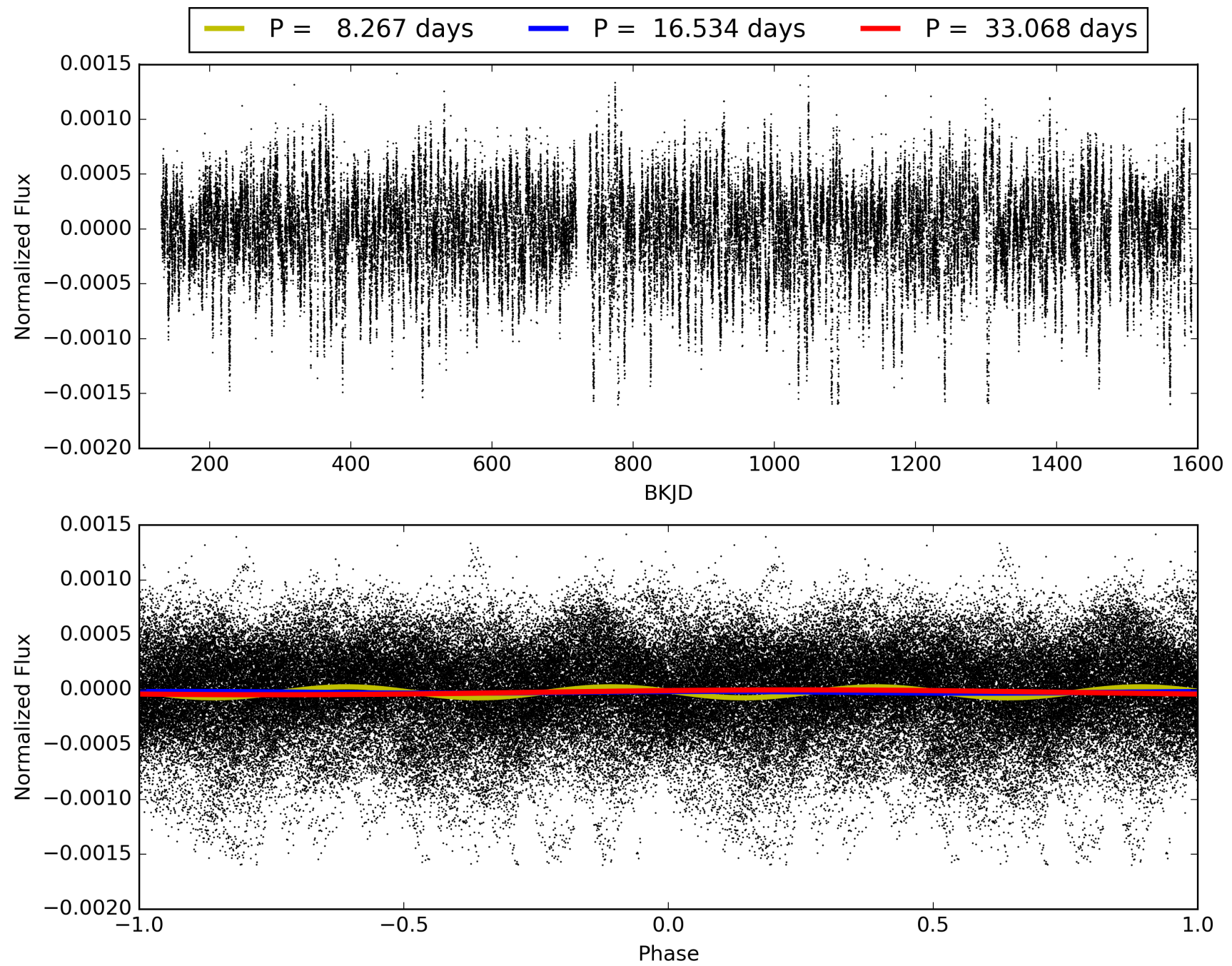
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 11:40:29 Z

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

TCE 007673192-05, PDC Light Curves

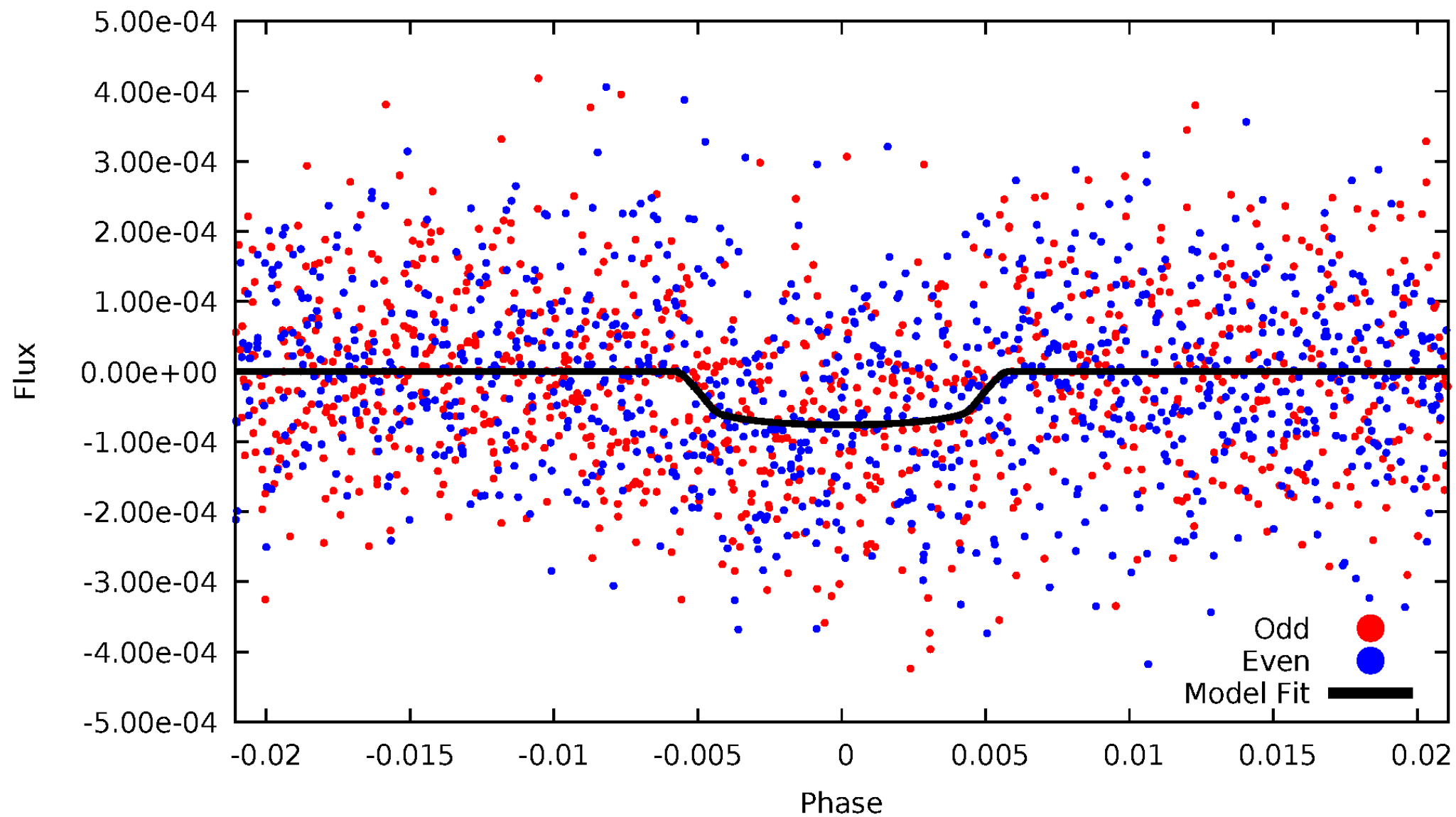


TCE 007673192-05



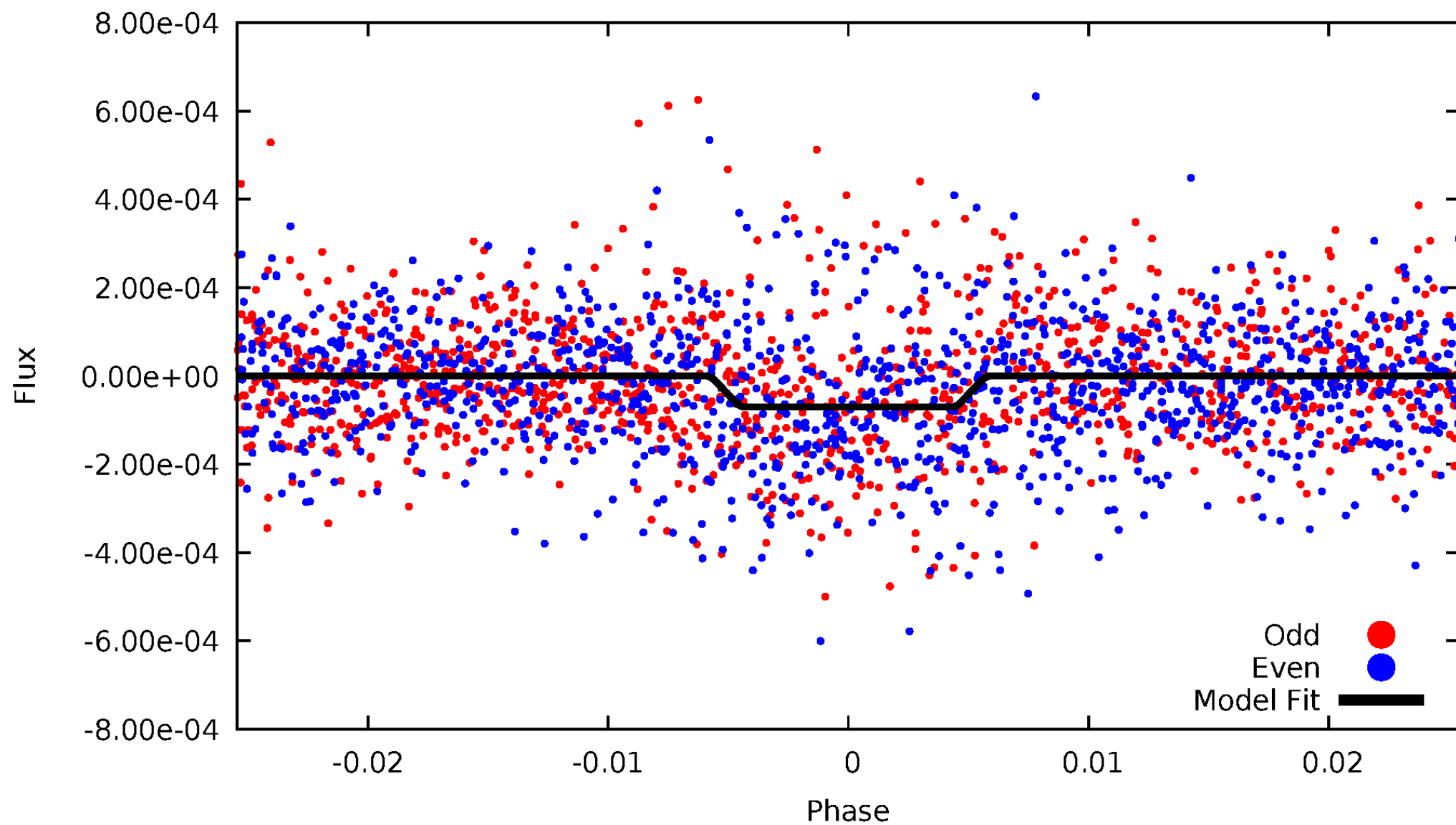
DV Odd/Even

TCE 007673192-05



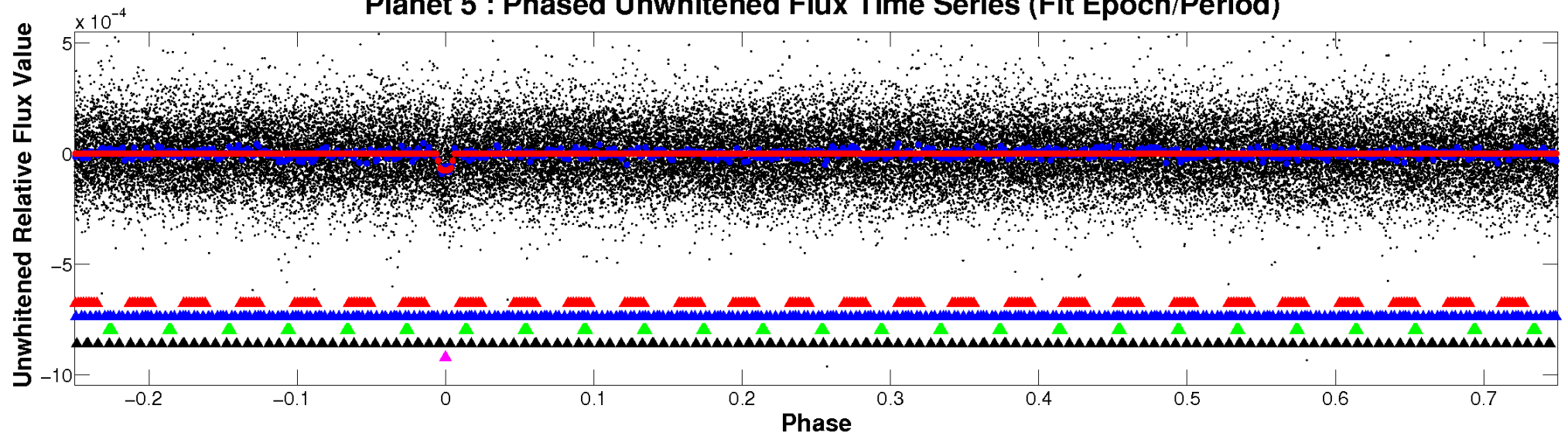
ALT Odd/Even

TCE 007673192-05

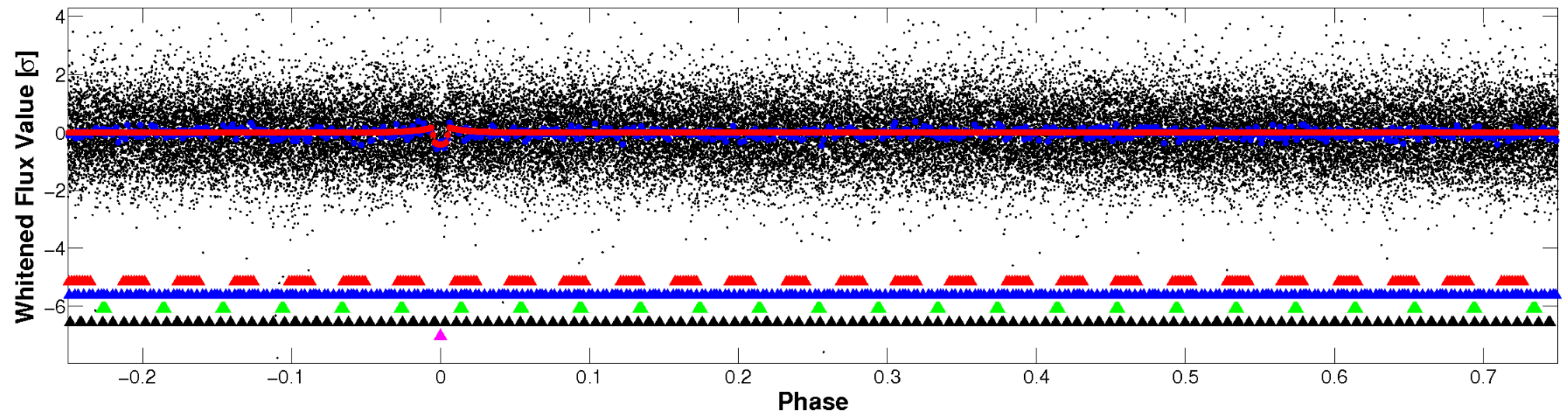


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

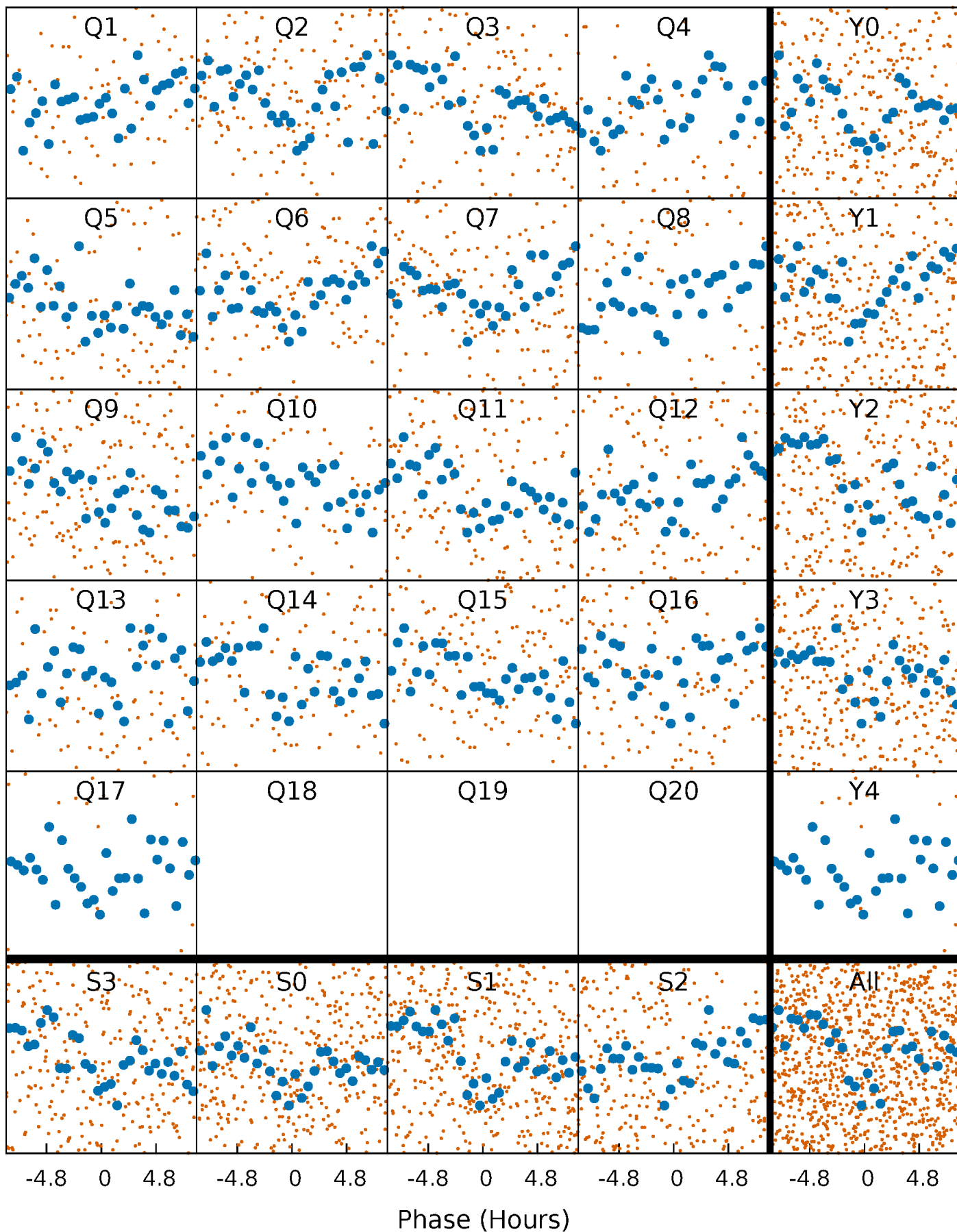


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



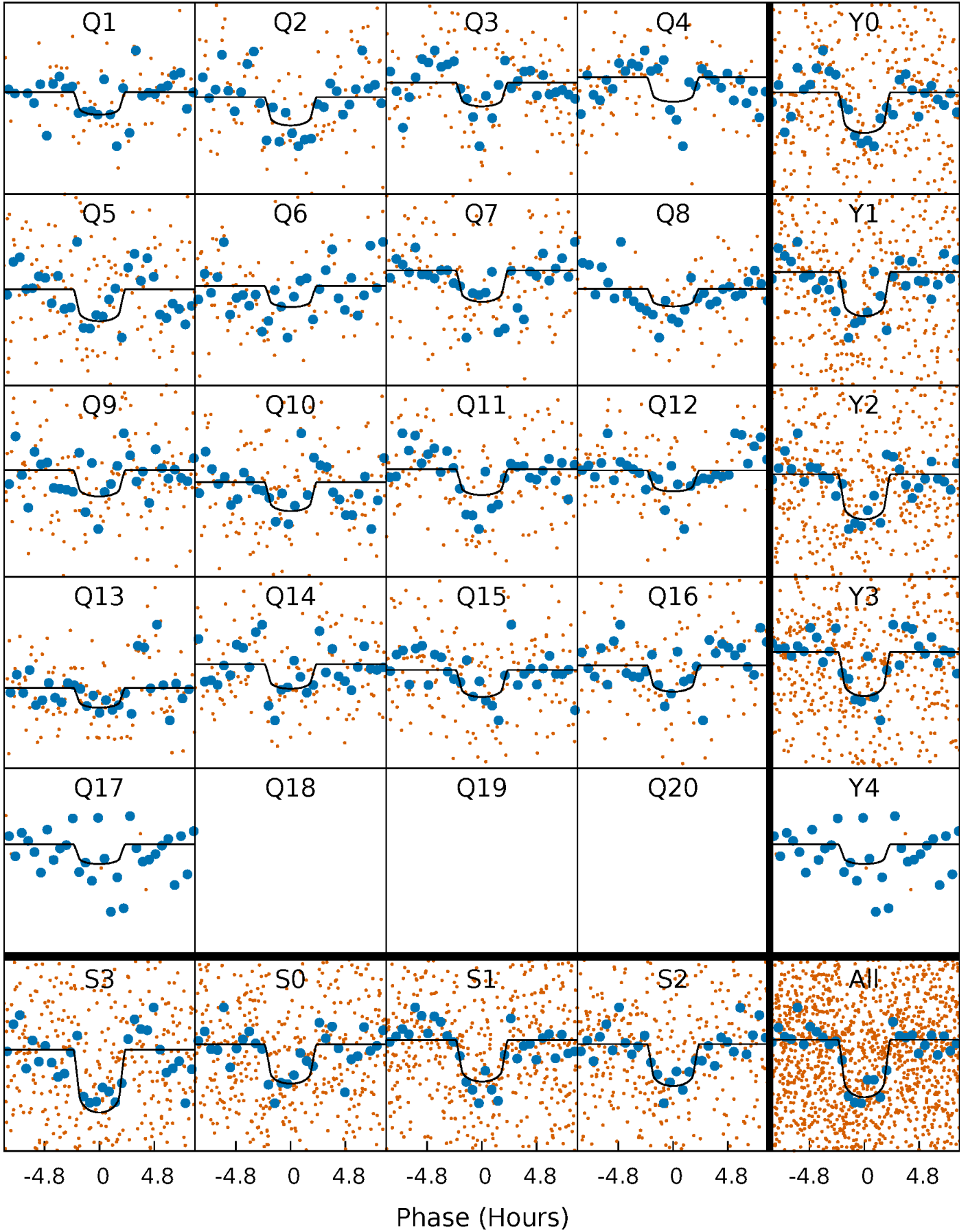
PDC Quarter-Phased Transit Curves

TCE 007673192-05 P= 16.534025 Days $T_0=135.408478$ (BKJD)



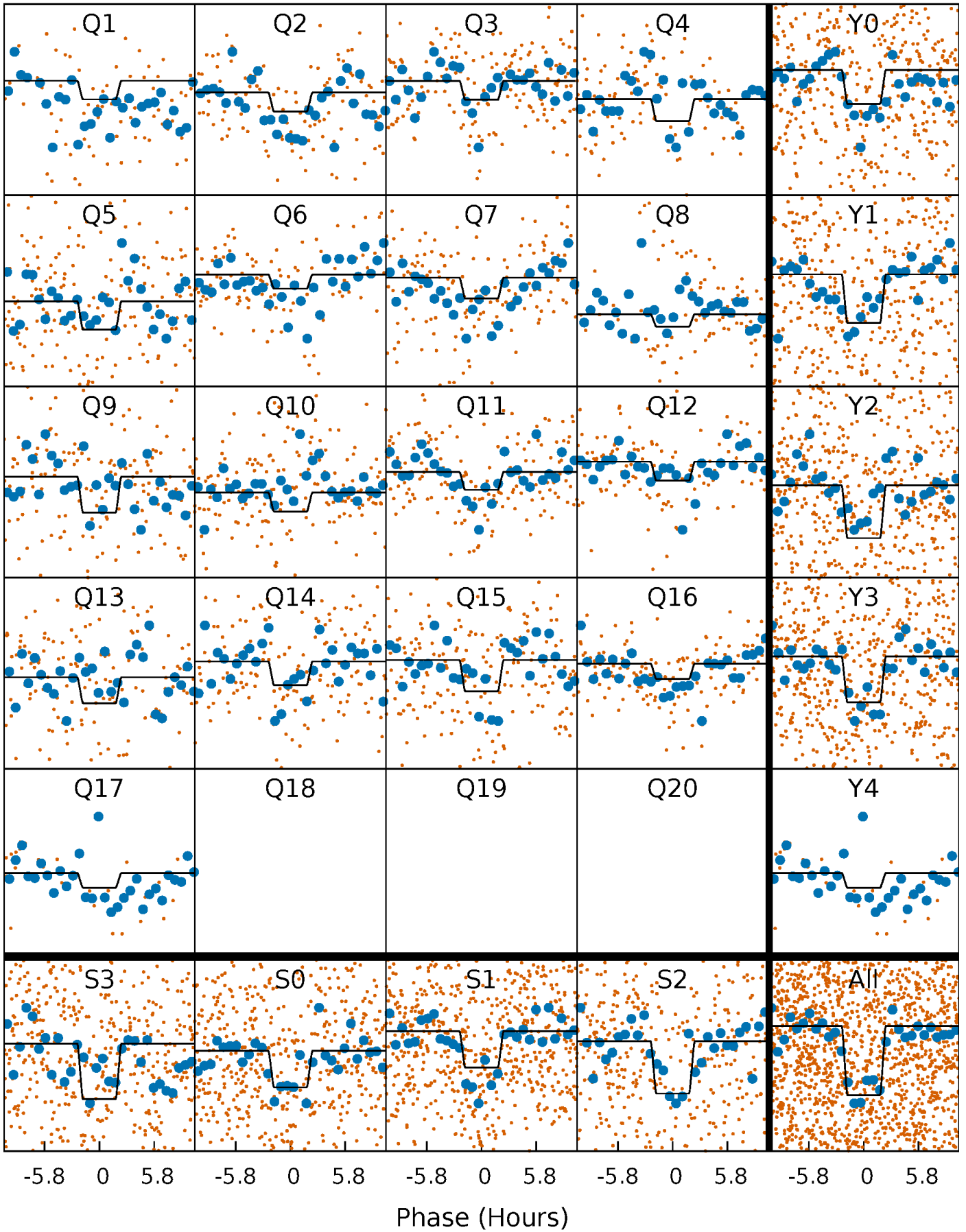
DV Quarter-Phased Transit Curves

TCE 007673192-05 P= 16.534025 Days $T_0=135.408478$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

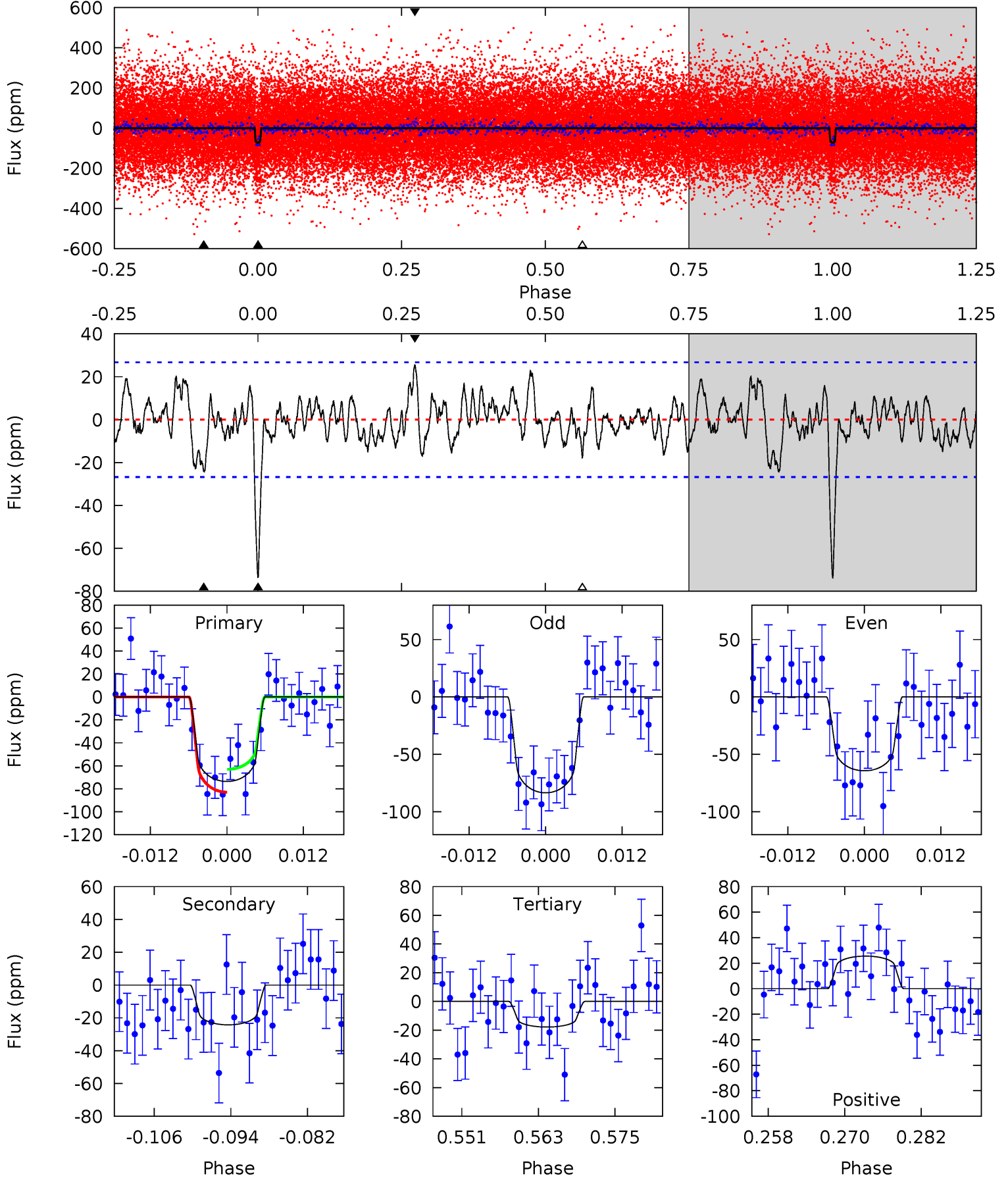
TCE 007673192-05 $P = 16.533752$ Days $T_0 = 135.420260$ (BKJD)



DV Model-Shift Uniqueness Test

007673192-05, P = 16.534025 Days, E = 118.874453 Days

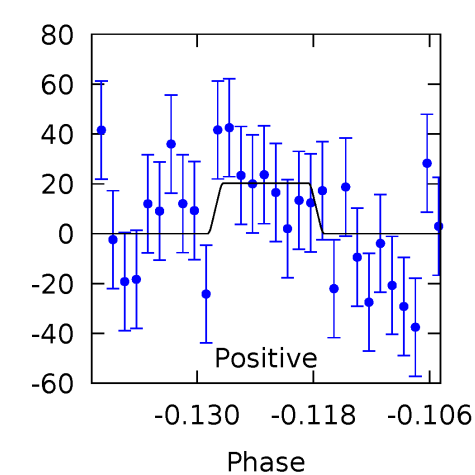
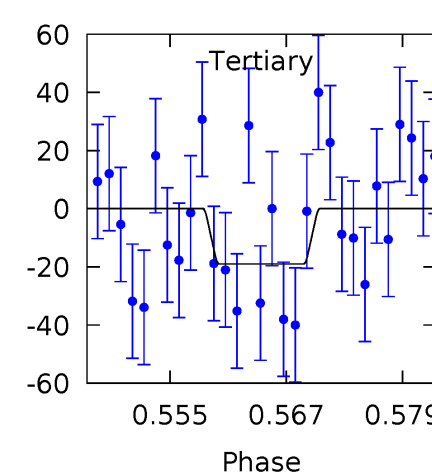
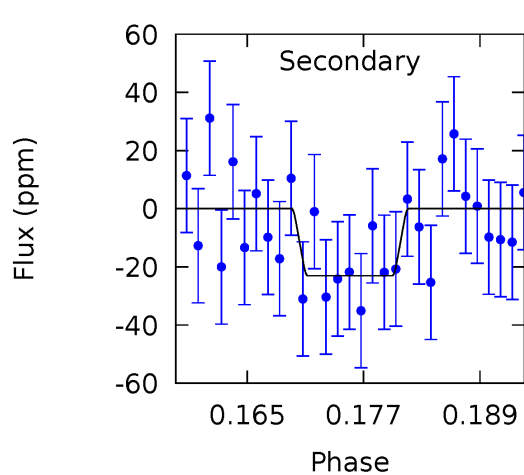
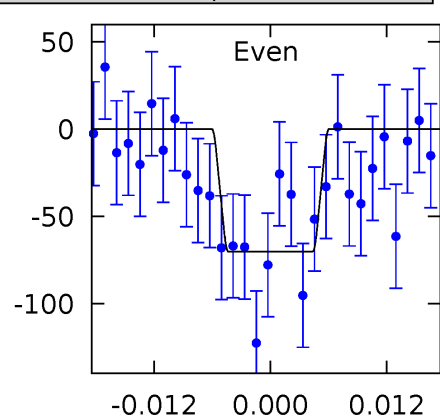
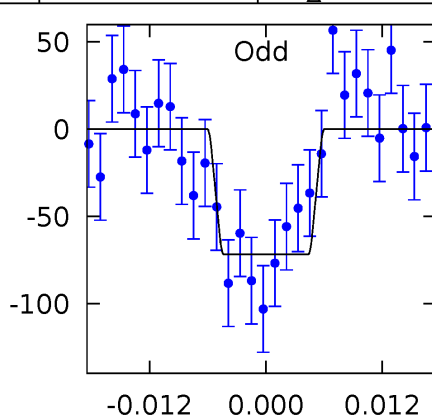
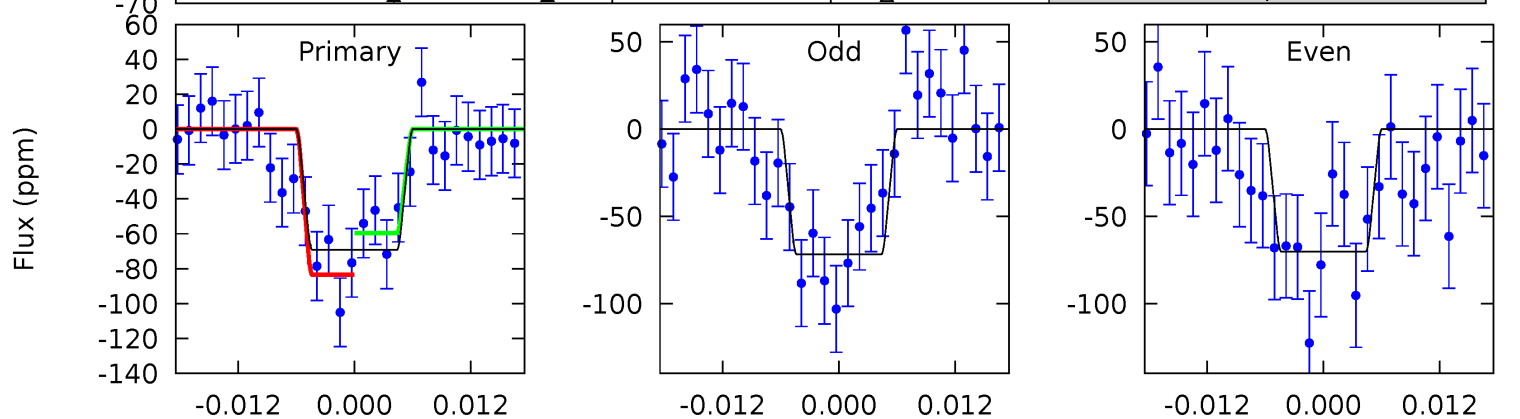
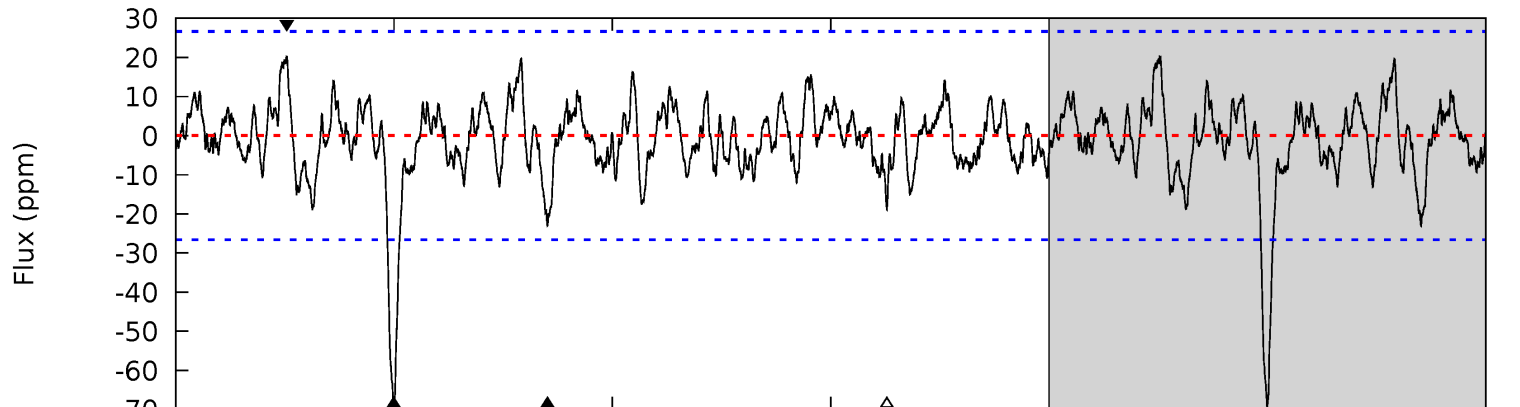
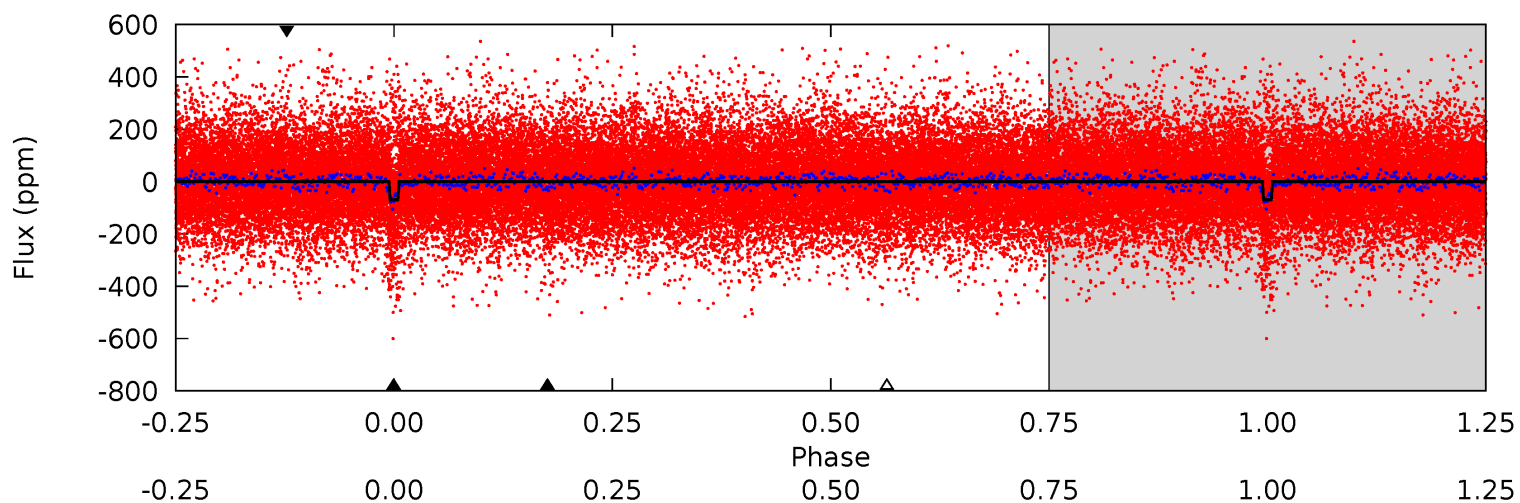
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	4.53	3.32	4.77	5.00	2.52	1.51	10.4	8.98	1.20	-0.24	1.79	0.97	0.26	1.85



Alt Model-Shift Uniqueness Test

007673192-05, P = 16.533752 Days, E = 118.886508 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	4.32	3.56	3.81	4.99	2.52	1.30	9.44	9.19	0.76	0.51	0.16	0.93	0.23	2.23



Stellar Parameters For KIC 007673192

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6052^{+121}_{-133}	$4.285^{+0.137}_{-0.112}$	$-0.120^{+0.150}_{-0.150}$	$1.202^{+0.208}_{-0.189}$	$1.015^{+0.085}_{-0.068}$	$0.823^{+0.474}_{-0.278}$
	+2%/-2%	+3%/-3%	+125%/-125%	+17%/-16%	+8%/-7%	+58%/-34%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 007673192-05 / KOI 2722.05

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-24 ± 5	$1.24^{+0.61}_{-0.55}$	1137^{+54}_{-56}	4505^{+1230}_{-609}	142^{+280}_{-80}
Alt.	-23 ± 5	$1.12^{+0.58}_{-0.50}$	1142^{+52}_{-54}	4620^{+1396}_{-643}	157^{+368}_{-88}

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

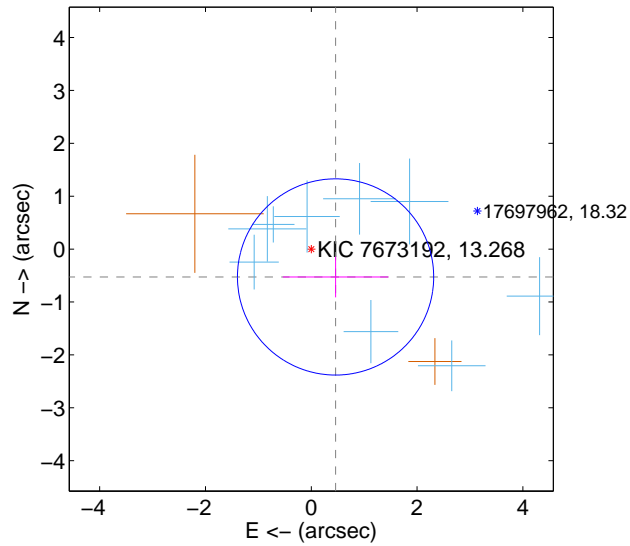
Supplemental centroid analysis for 007673192-05. Kepler magnitude: 13.27. Transit SNR 8.54

There are 9 quarters with good PRF difference image offsets

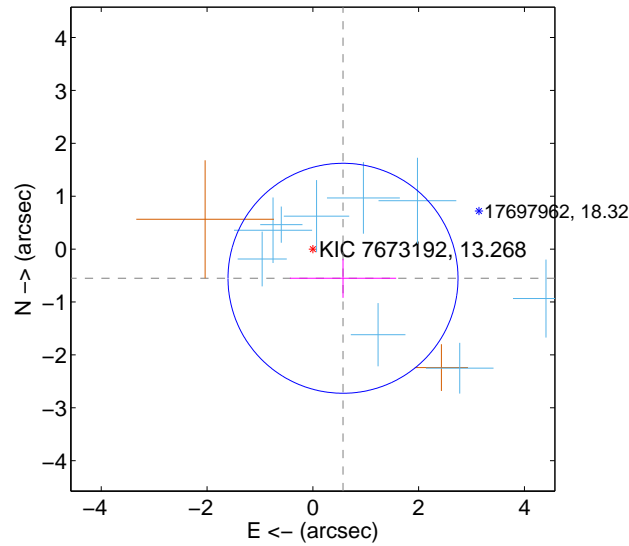
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.699 ± 0.618	1.13	-0.459 ± 0.998	-0.527 ± 0.385
PRF-fit source offset from KIC position	0.793 ± 0.725	1.10	-0.570 ± 1.005	-0.552 ± 0.369
photometric centroid source offset	1.15 ± 0.89	1.30	0.83 ± 0.87	-0.80 ± 0.90

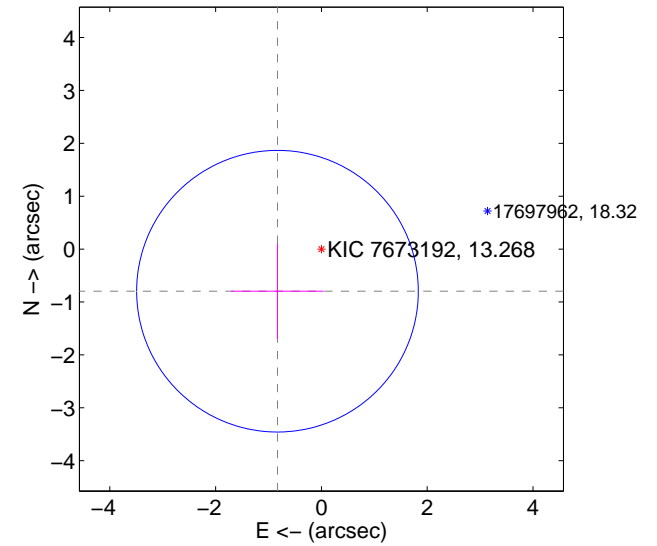
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

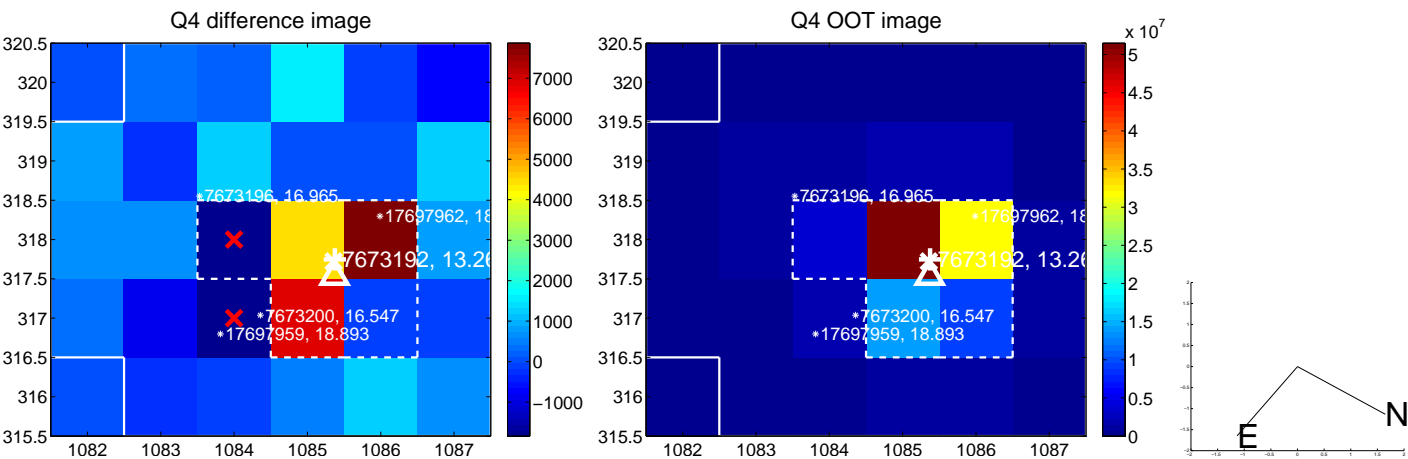
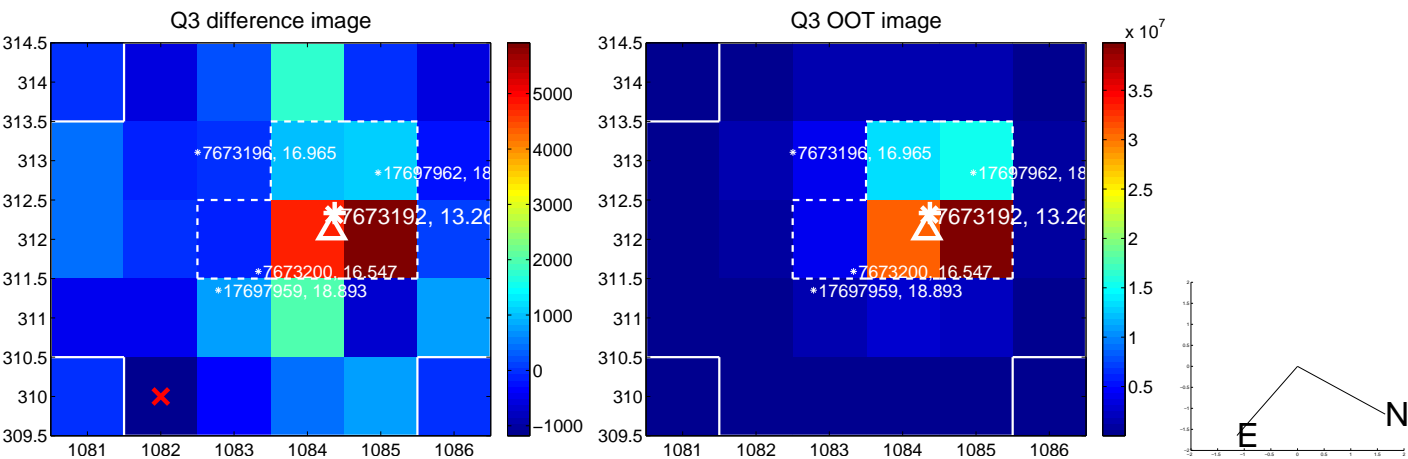
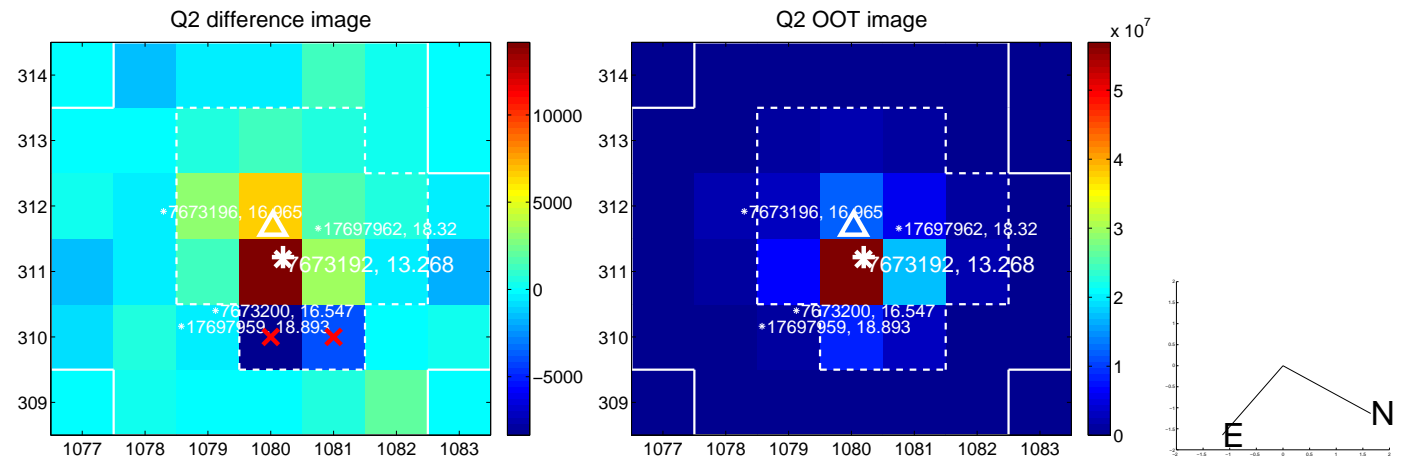
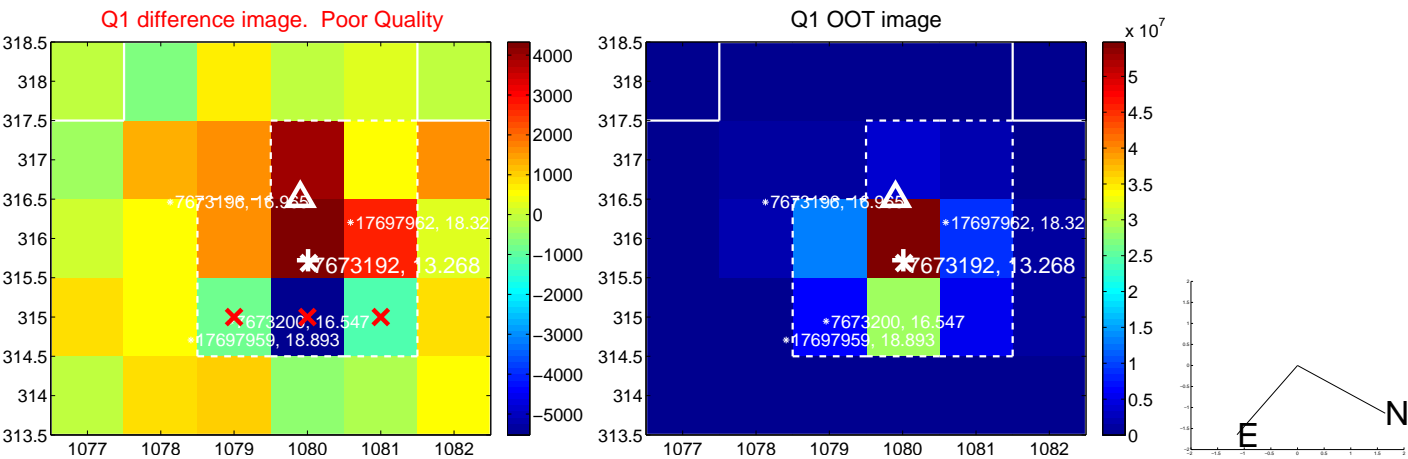


offset from photometric centroids

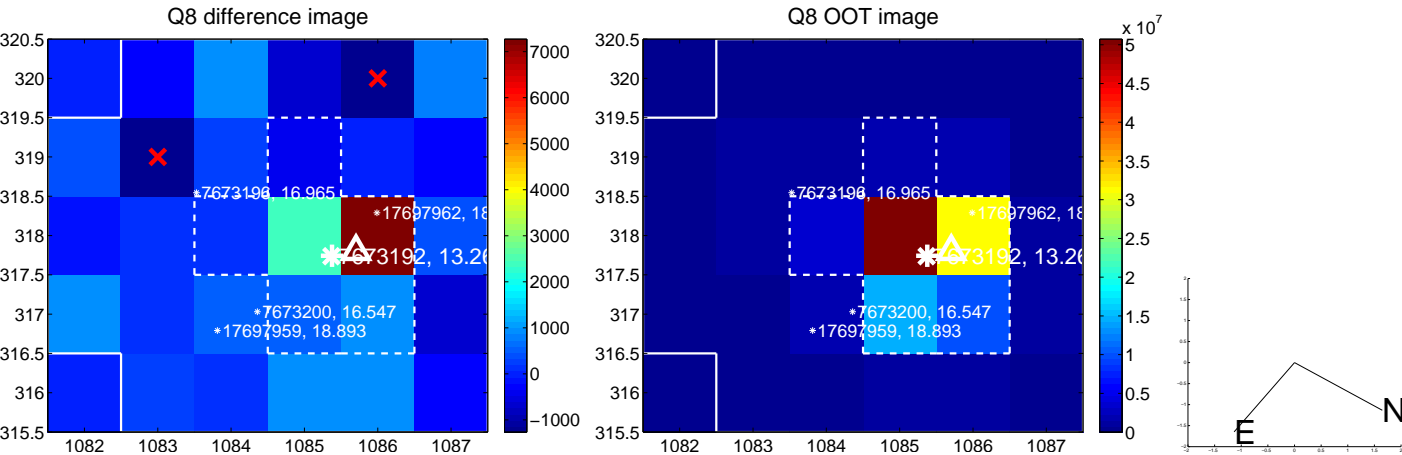
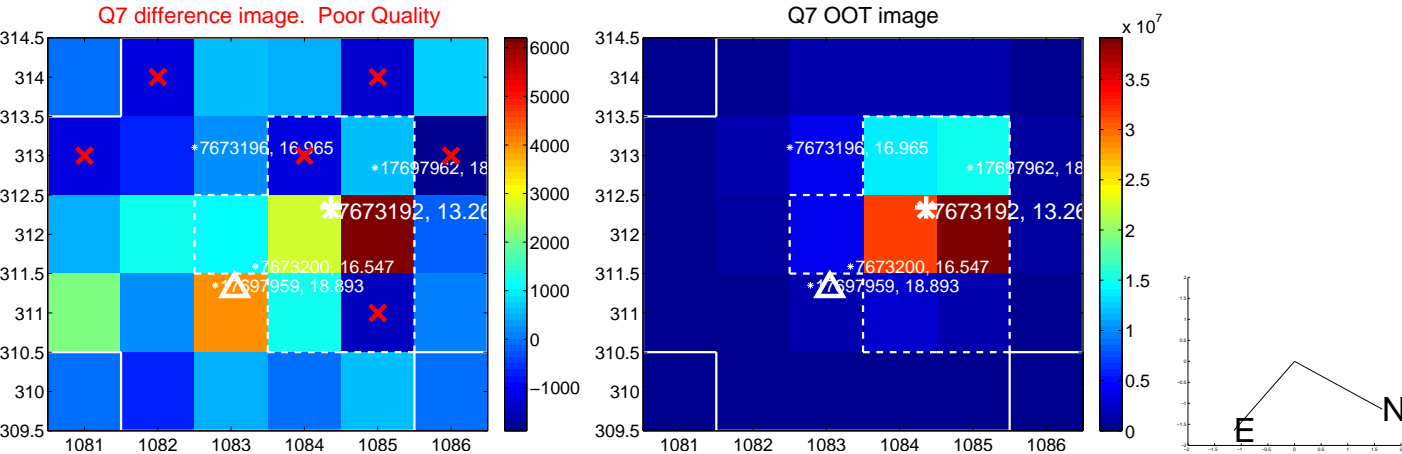
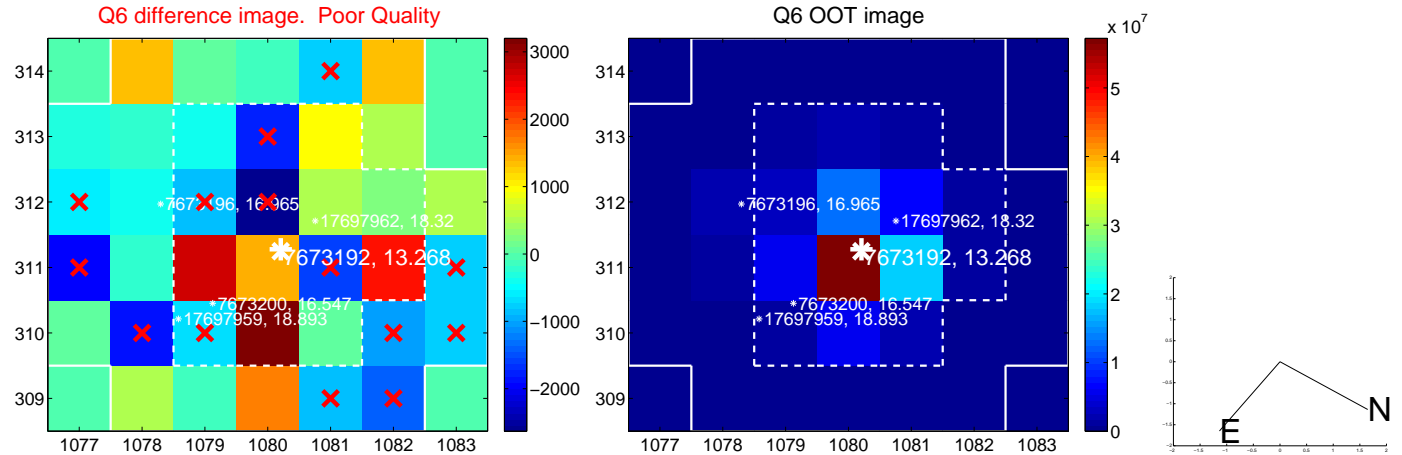
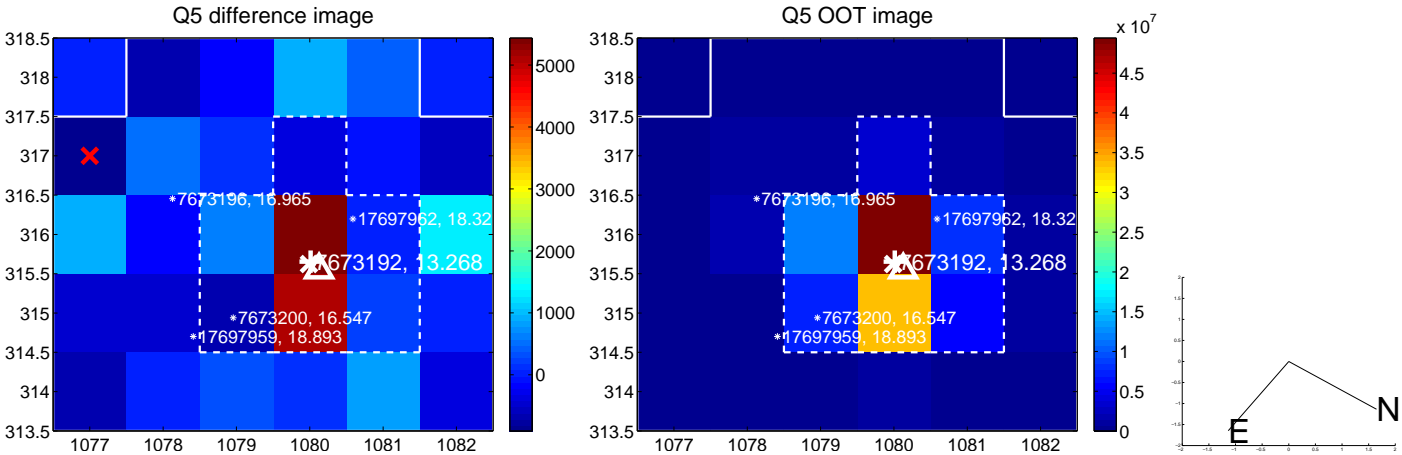


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

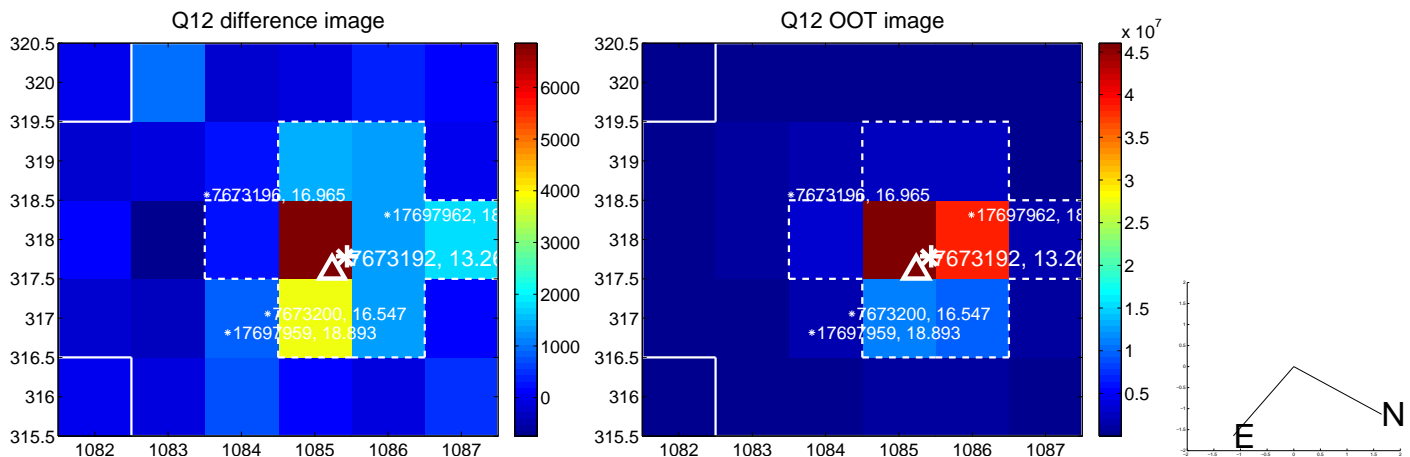
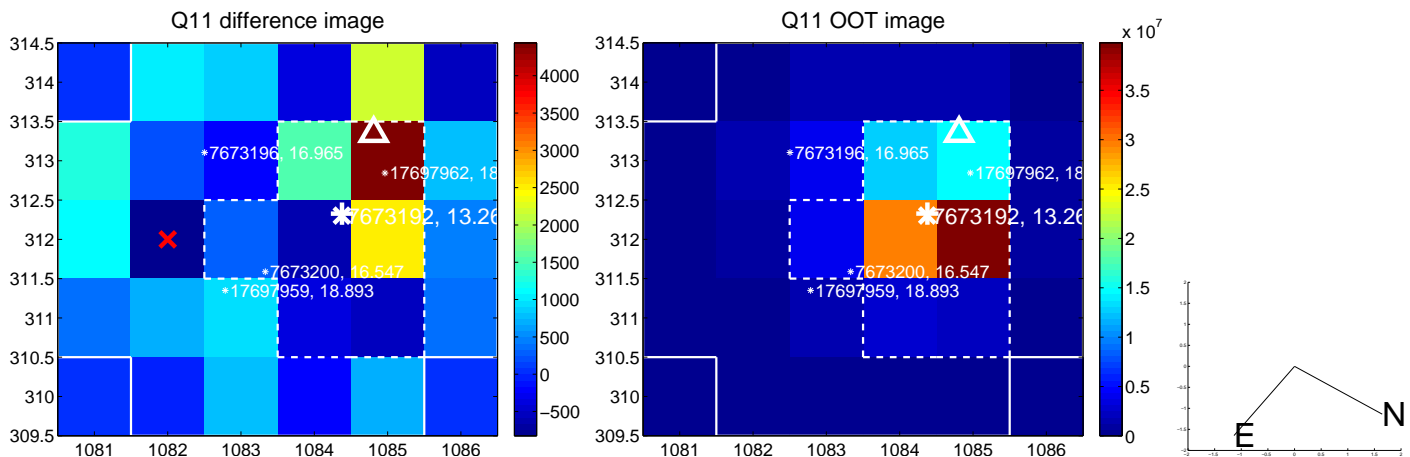
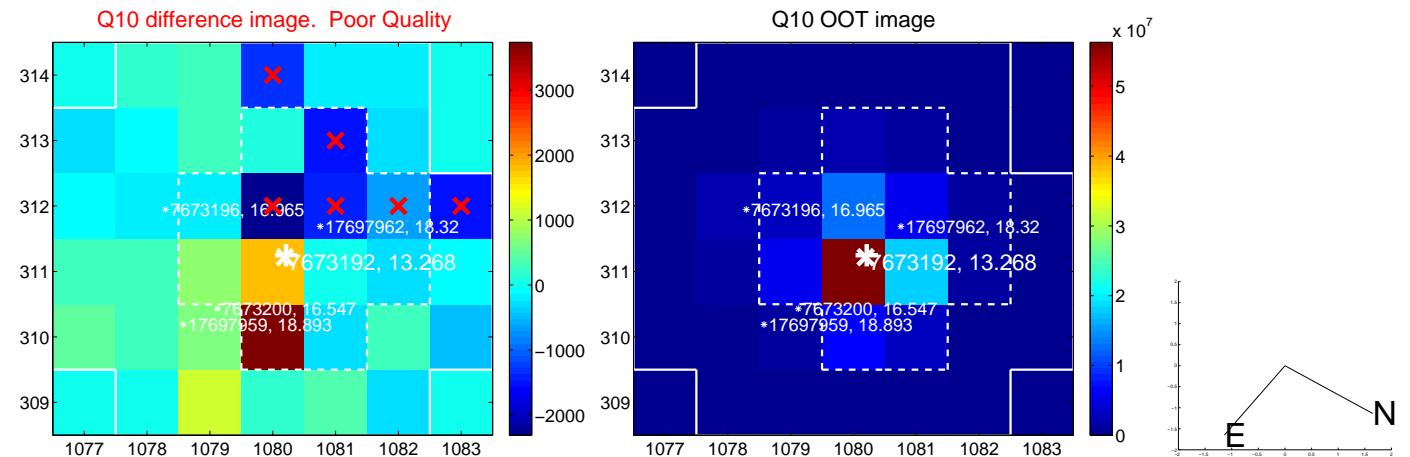
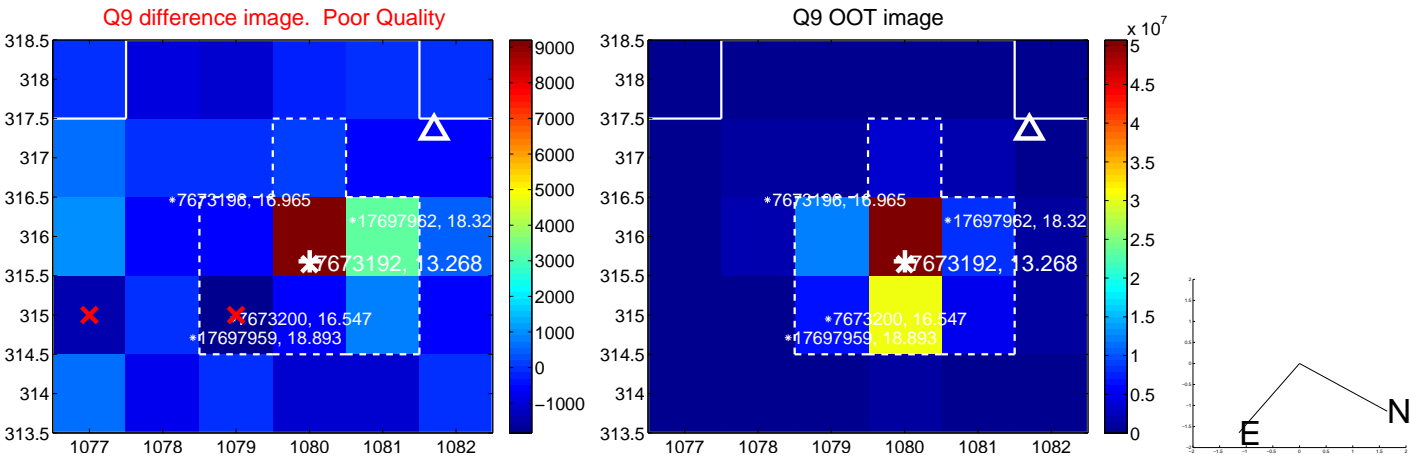
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



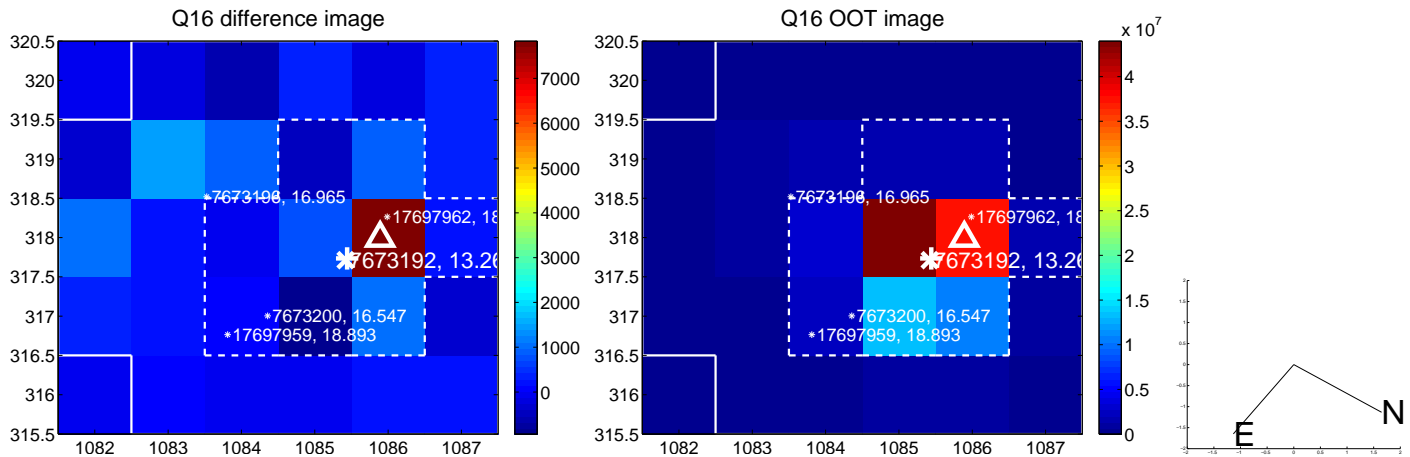
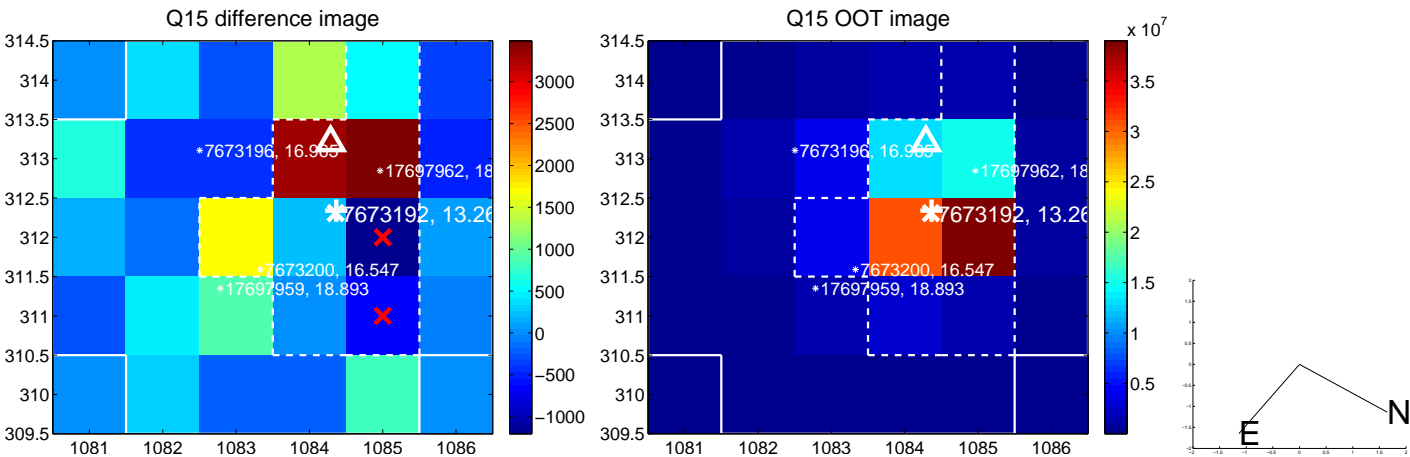
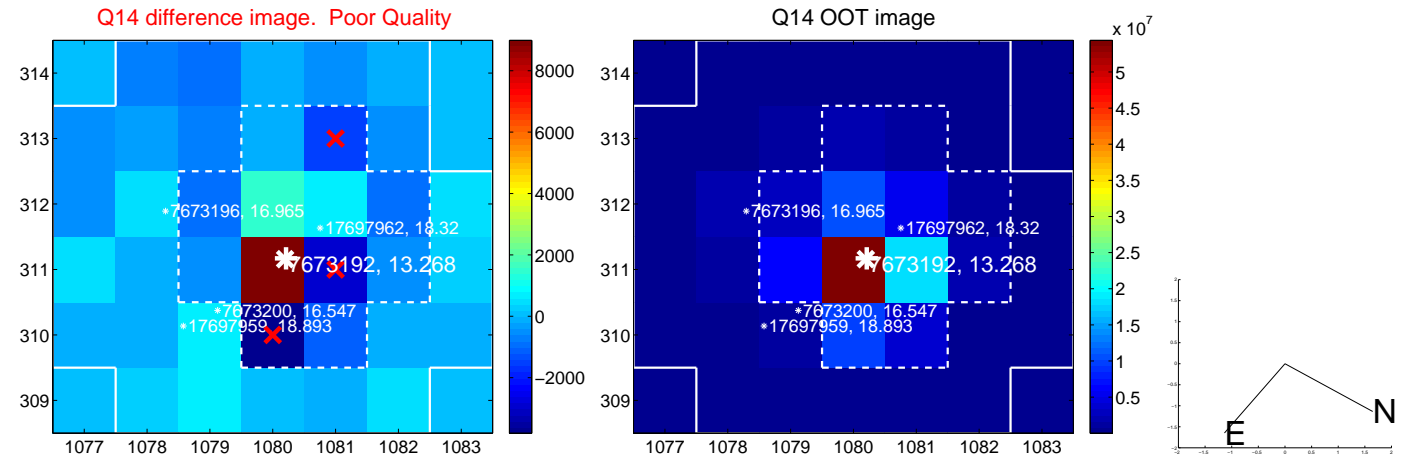
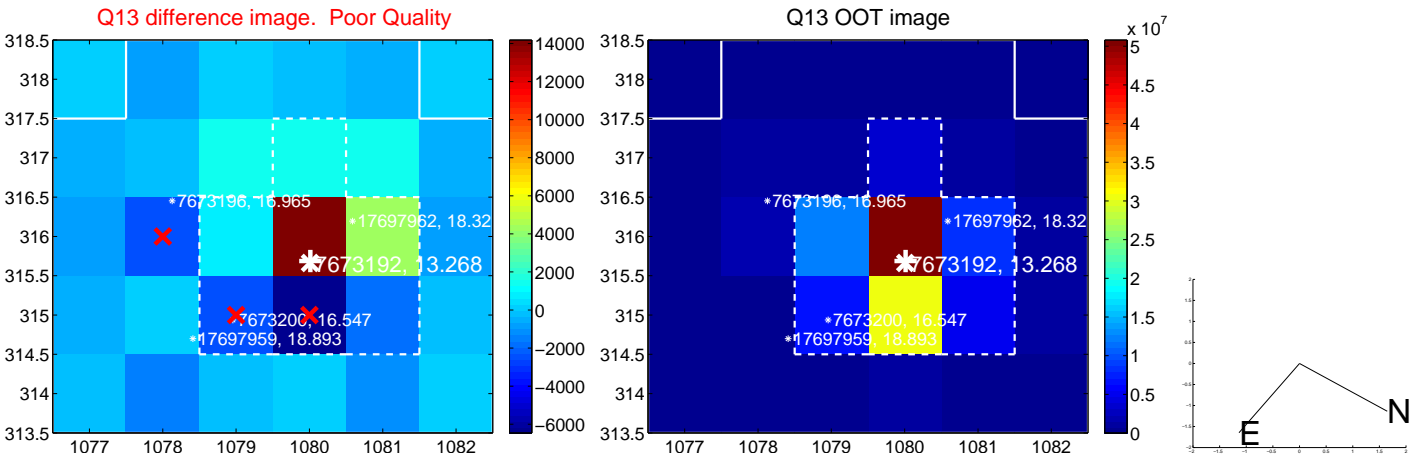
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



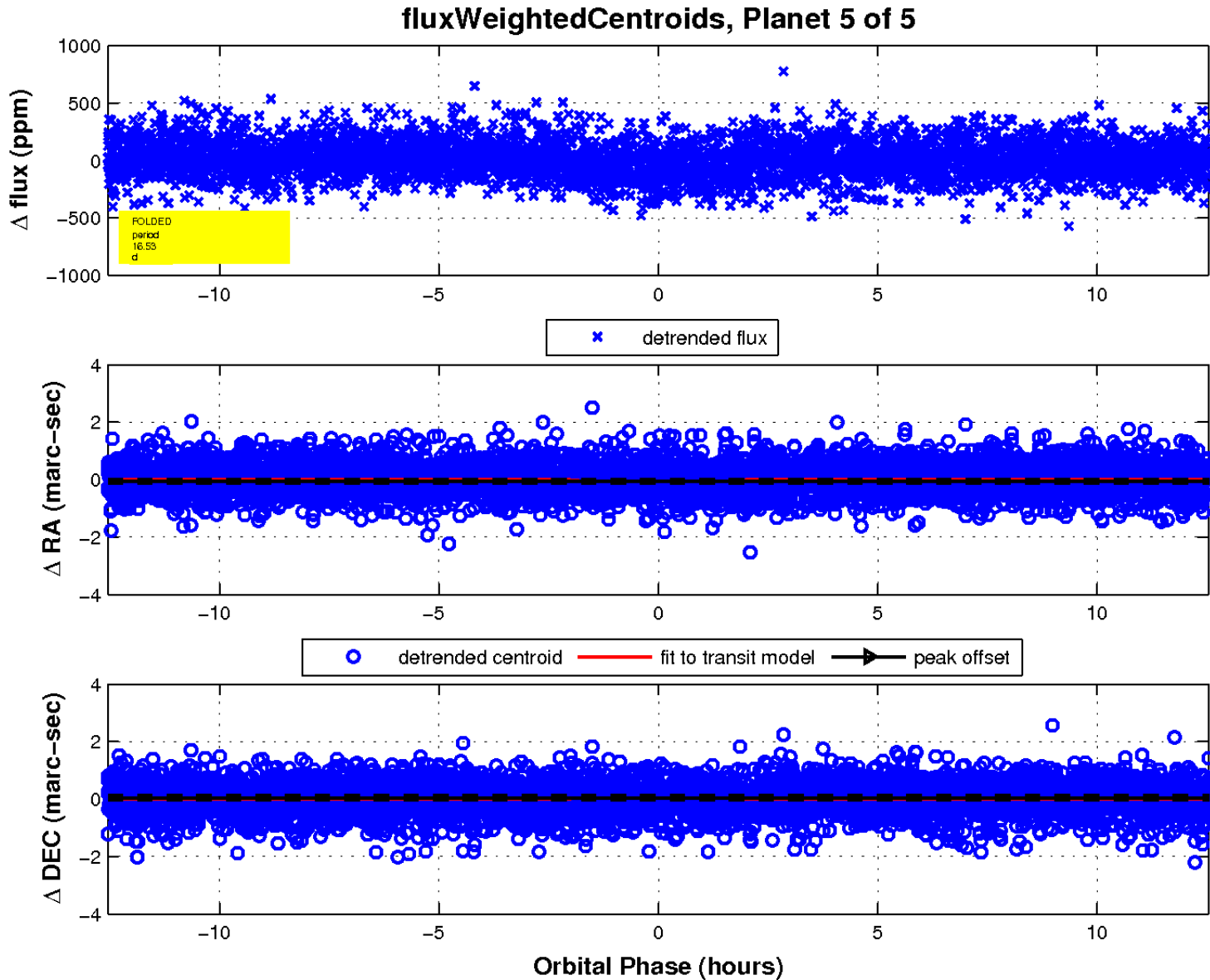
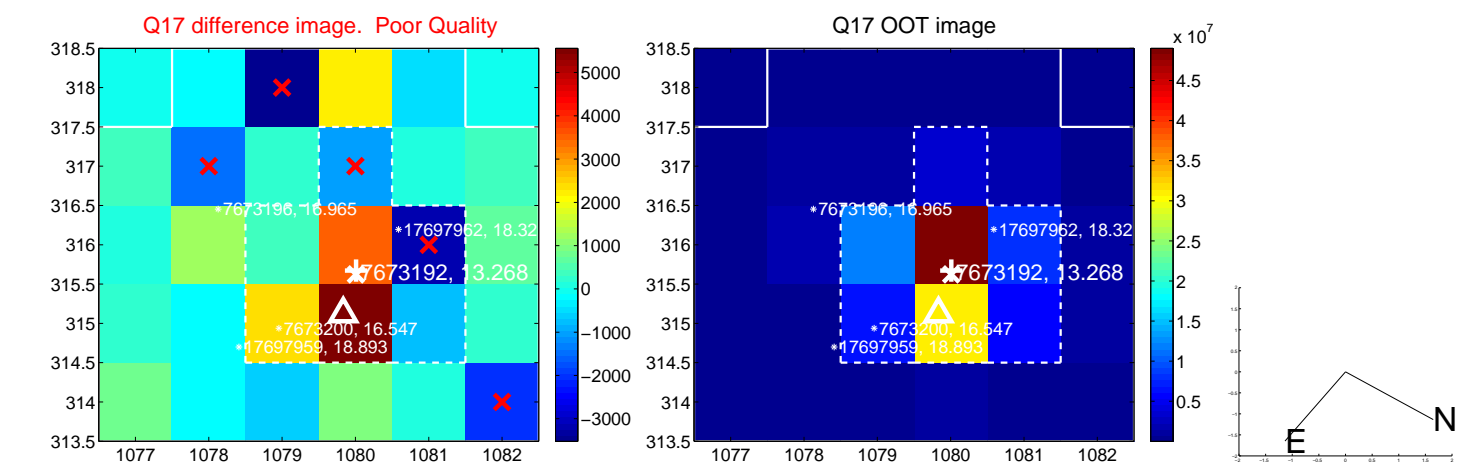
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

