

KIC 005471192

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})
005471192-01	OBS	6009.01	12.425538	141.516628	128.6	23.534	9.4	10.5	1.09	6246	1.63	132.14
005471192-02	OBS	No	6.212143	134.110889	159.6	31.004	9.0	11.5	1.09	6246	2.29	333.01

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005471192-01	OBS	FP	0.00	1	0	1	1	LPP_DV—HALO_GHOST—EPHEM_MATCH
005471192-02	OBS	FP	0.00	1	0	1	0	LPP_DV—SAME_NTL_PERIOD—HALO_GHOST

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

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

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

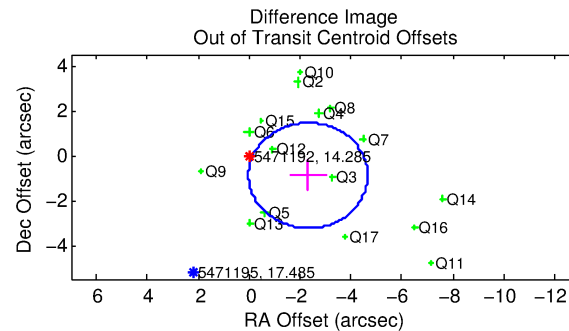
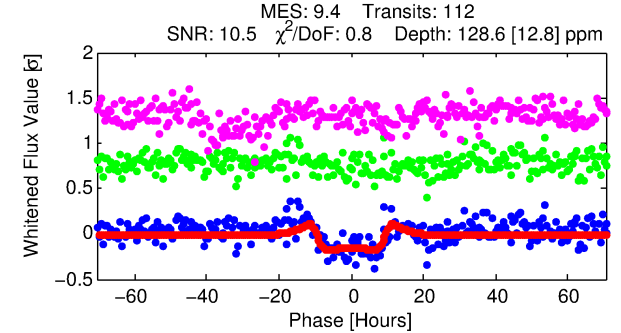
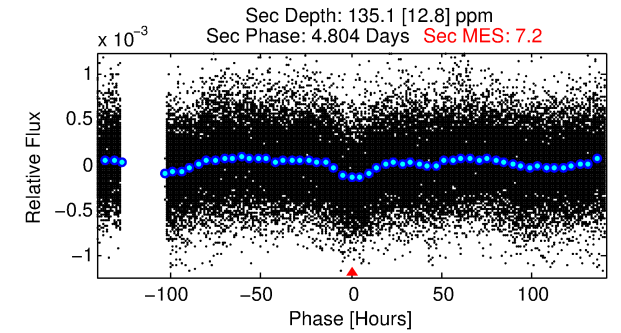
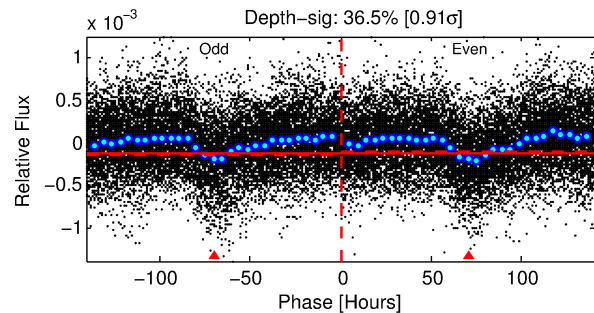
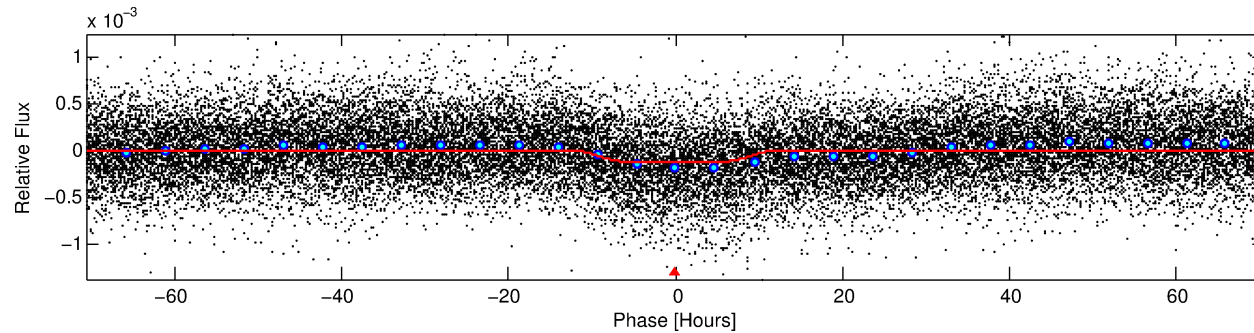
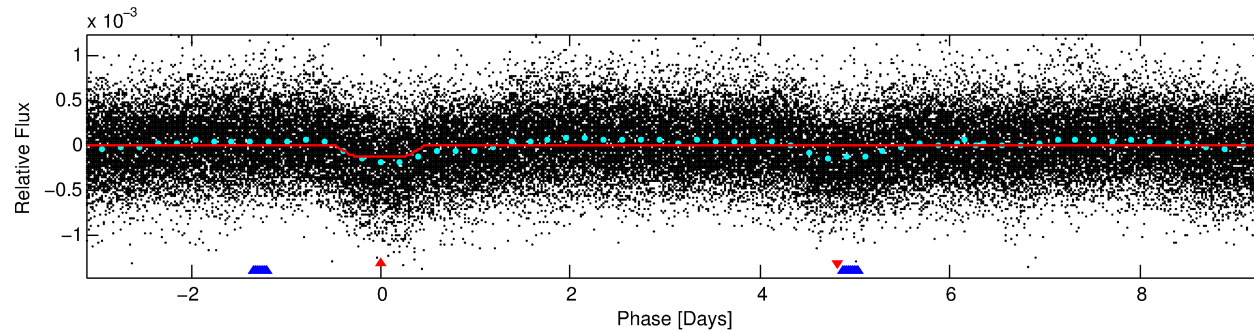
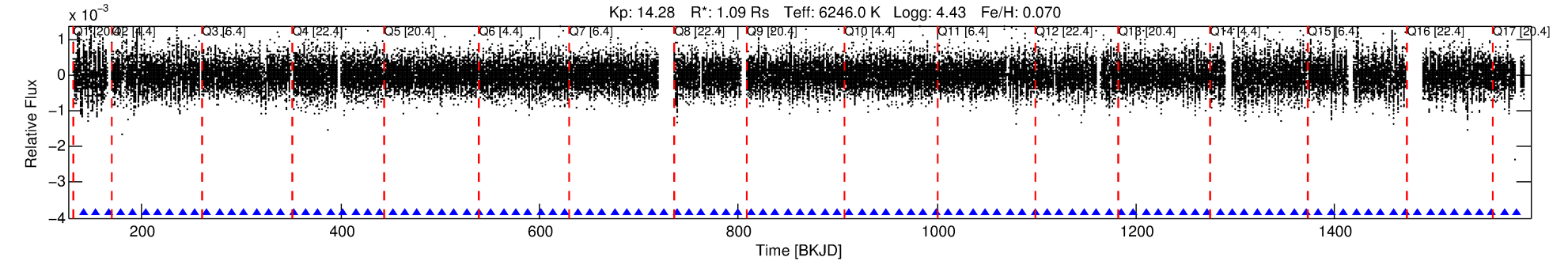
Ephemeris Match Information For 005471192-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
005471192-01	5471192	V380-Cyg-pri	5385723	1:1	218.9	48	-27	5.77	14.28	1123.50	Direct-PRF	0	0.52	0.75

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 5471192 Candidate: 1 of 2 Period: 12.426 d
KOI: K06009.01 Corr: 0.889



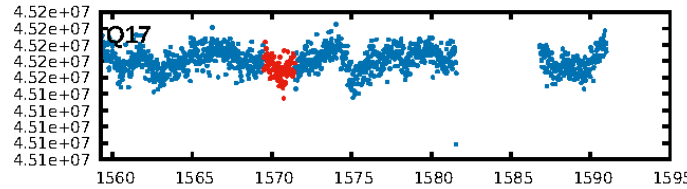
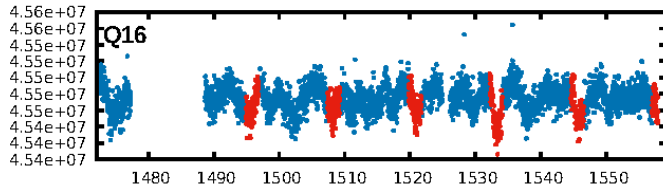
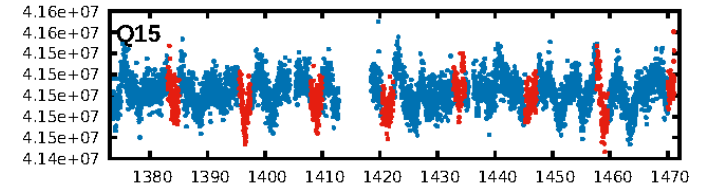
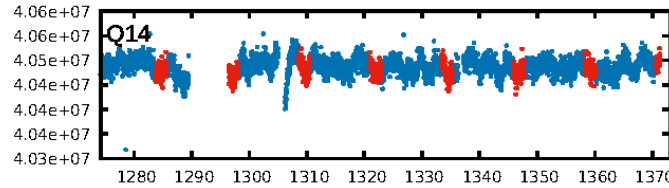
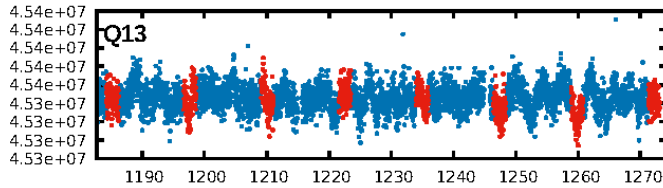
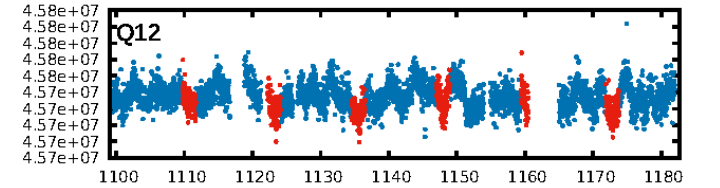
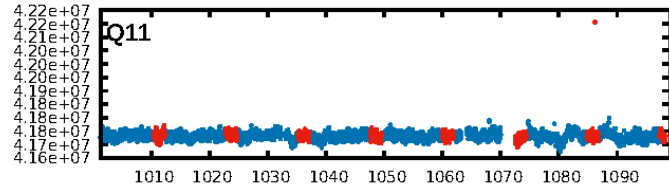
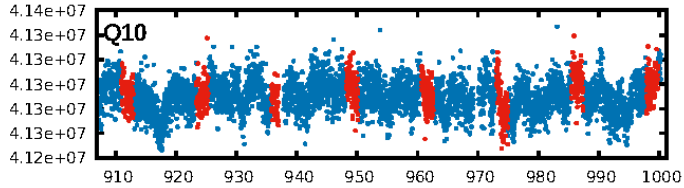
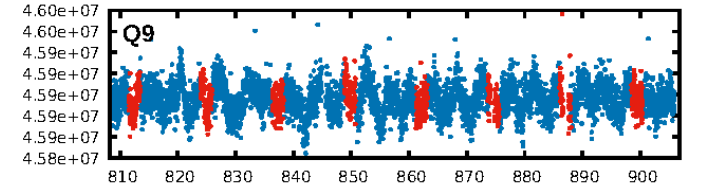
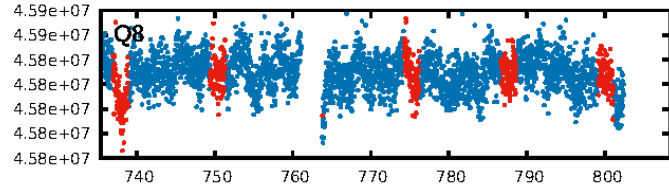
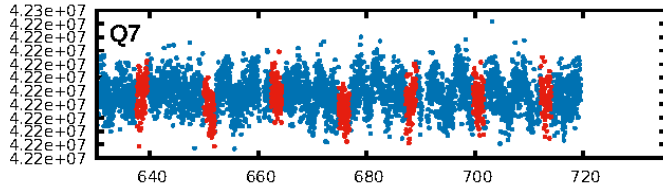
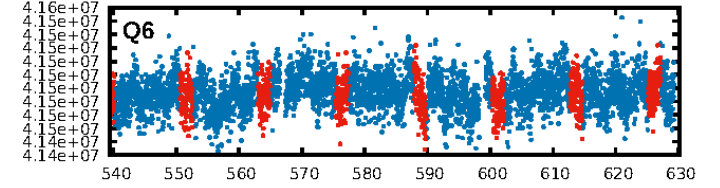
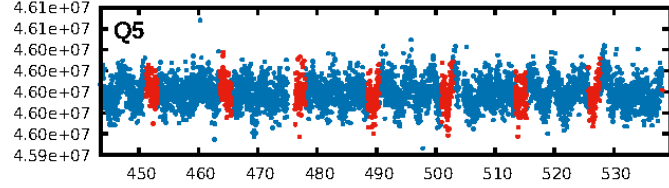
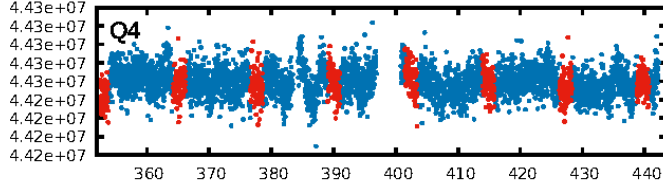
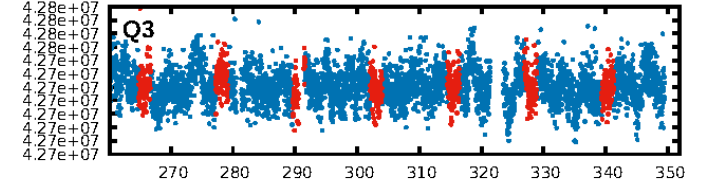
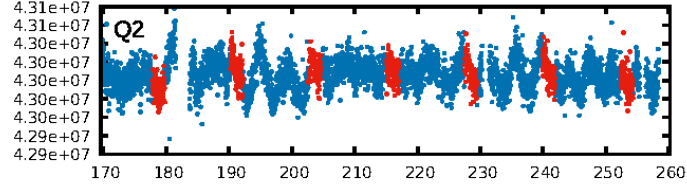
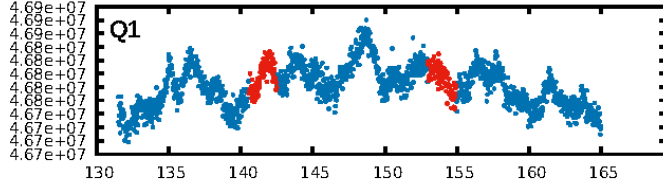
DV Fit Results:

Period = 12.42554 [0.00043] d
Epoch = 141.5166 [0.0283] BKJD
Rp/R* = 0.0137 [0.0008]
a/R* = 1.50 [0.09]
b = 0.97 [0.01]
Seff = 132.14 [58.44]
Teff = 865 [96] K
Rp = 1.63 [0.55] Re
a = 0.1109 [0.0312] AU
Ag = 343.81 [149.79] [2.29 σ]
Teffp = 5756 [321] K [14.62 σ]

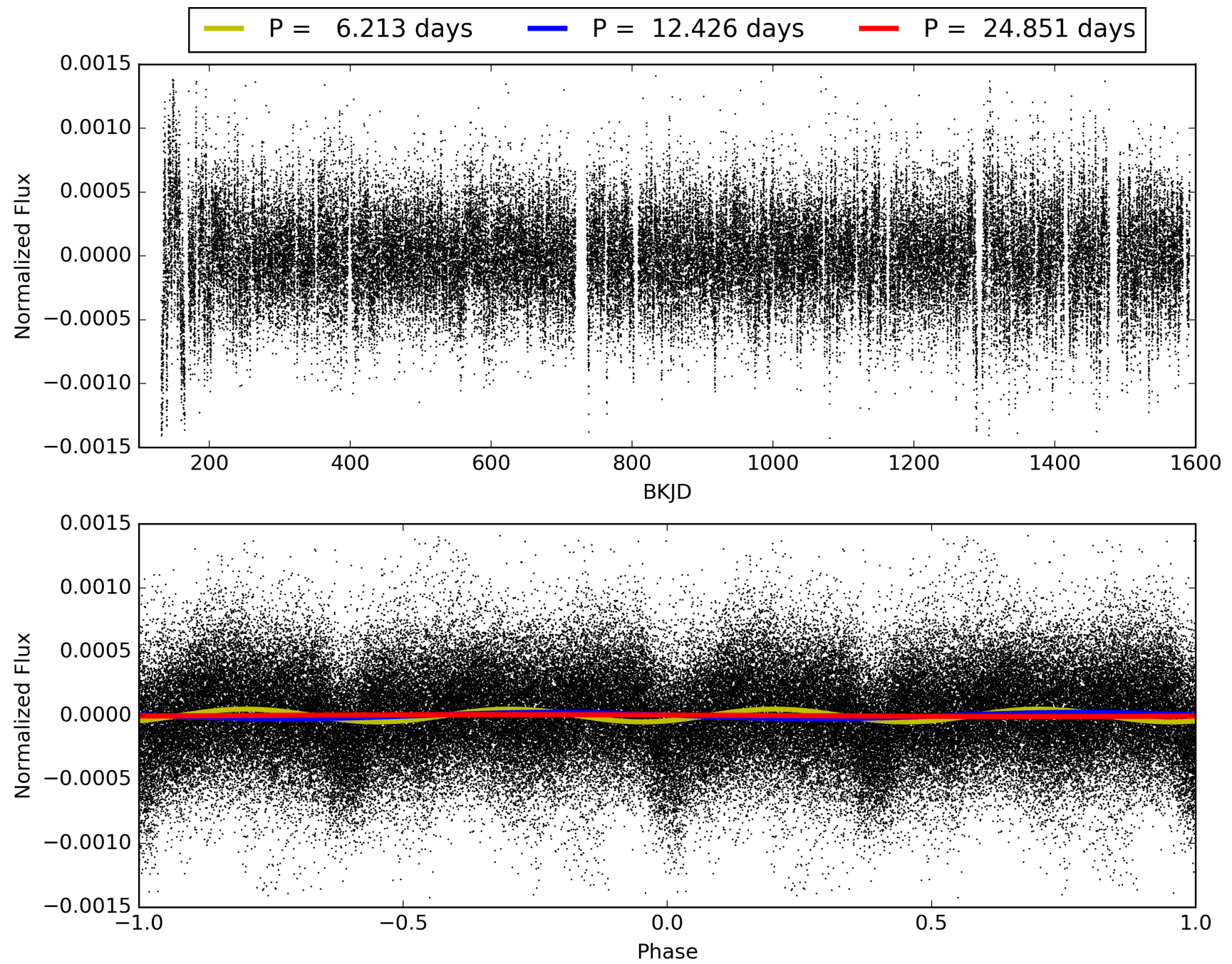
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [3.83 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 65.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.77e-19
RollingBand-fgt: 1.00 [109/109]
GhostDiagnostic-chr: -0.0618
Centroid-sig: 0.0%
Centroid-so: 1.666 arcsec [3.37 σ]
OotOffset-rm: 2.482 arcsec [3.18 σ]
KicOffset-rm: 2.400 arcsec [3.17 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.38 [6/16]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 005471192-01, PDC Light Curves

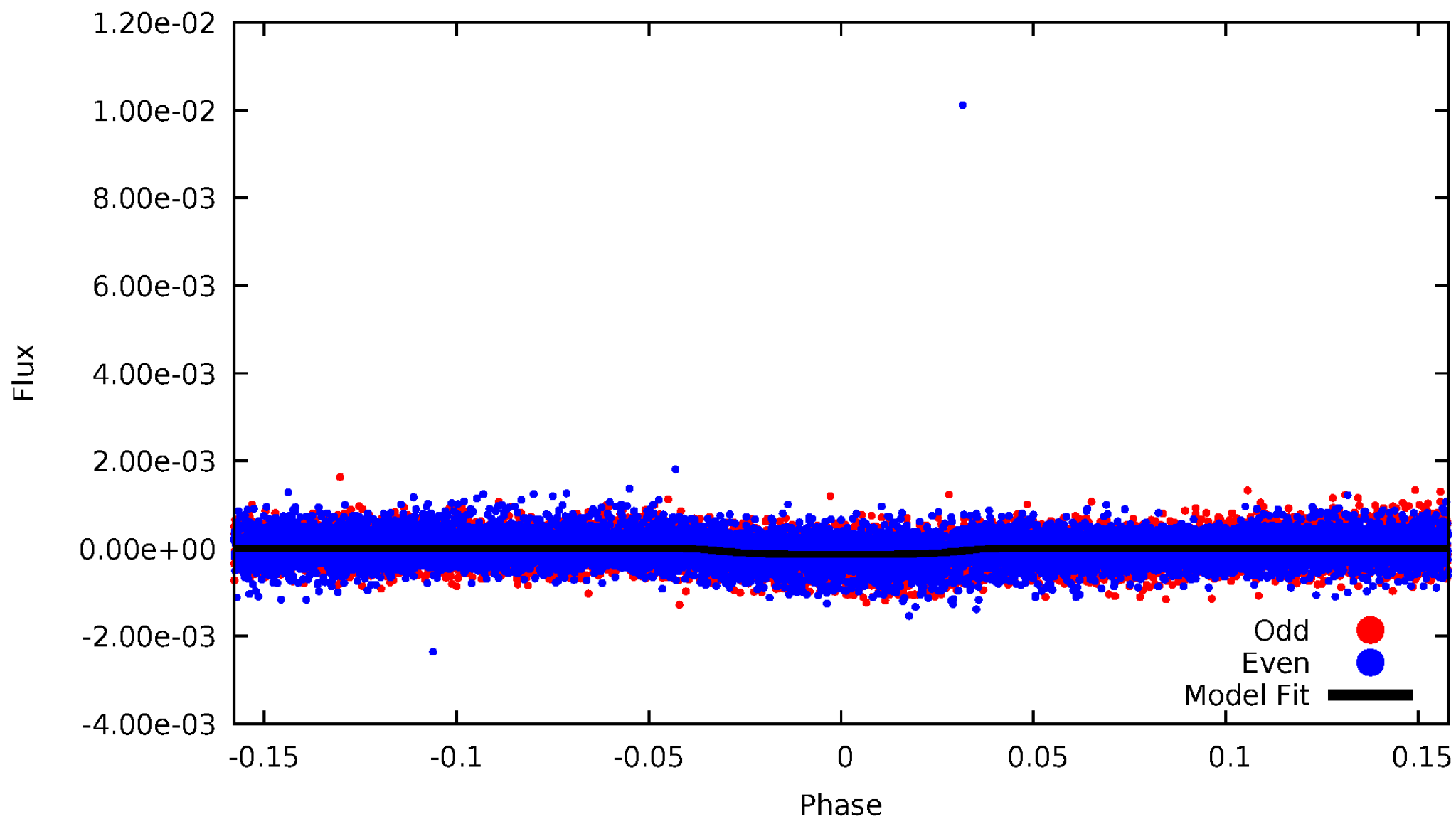


TCE 005471192-01



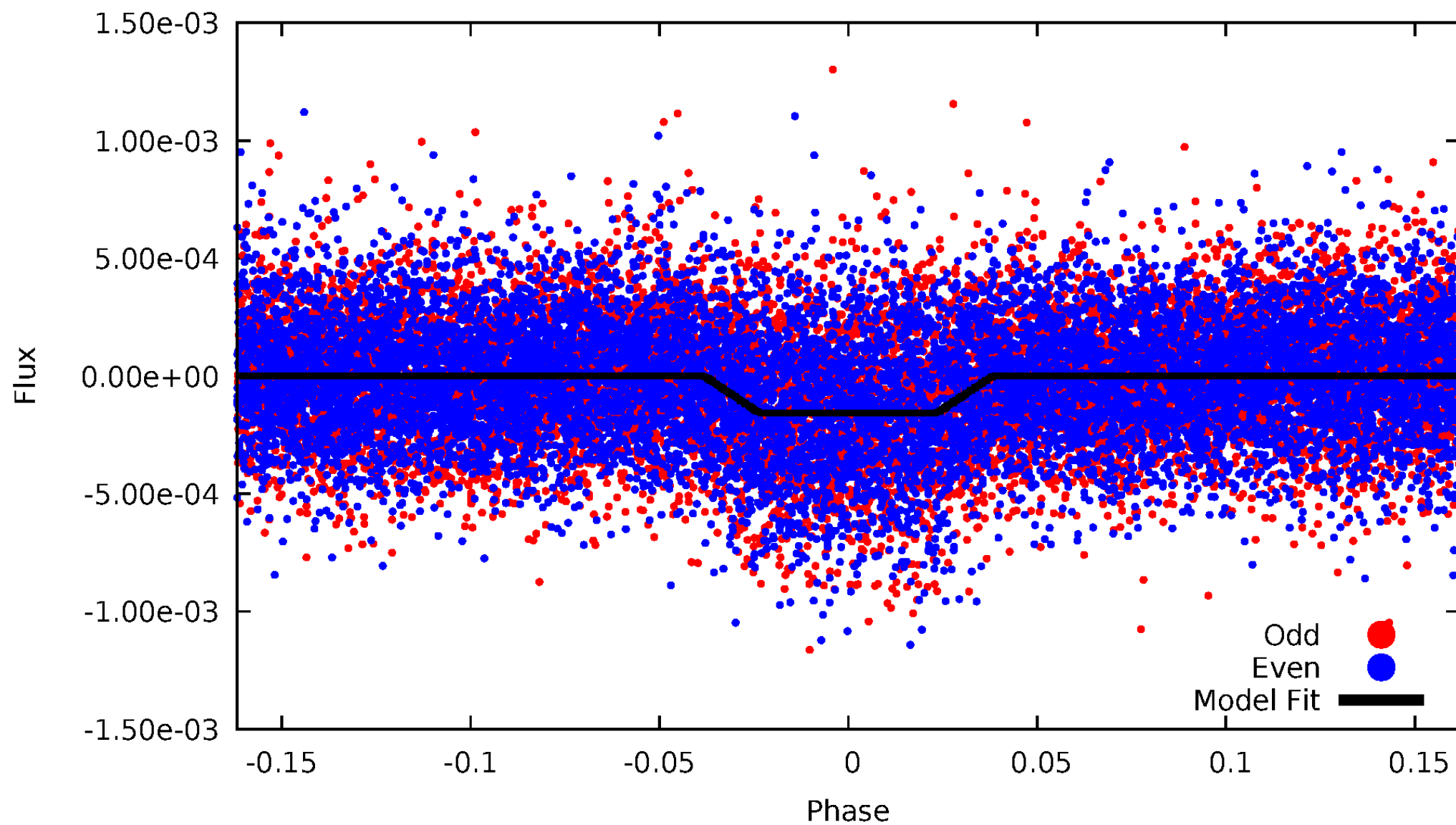
DV Odd/Even

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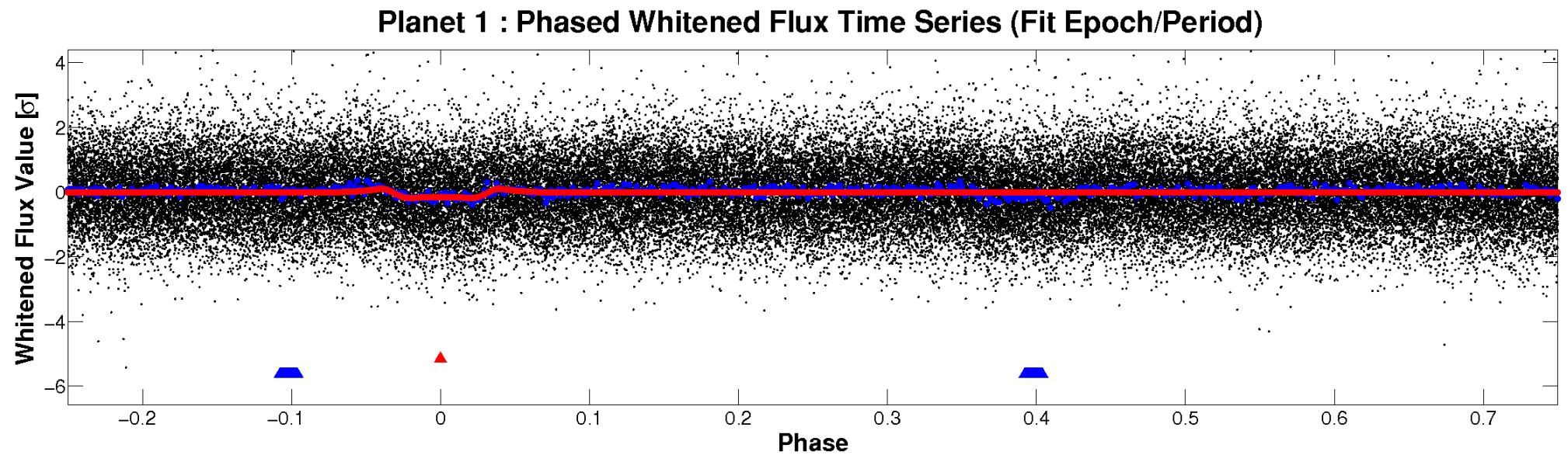
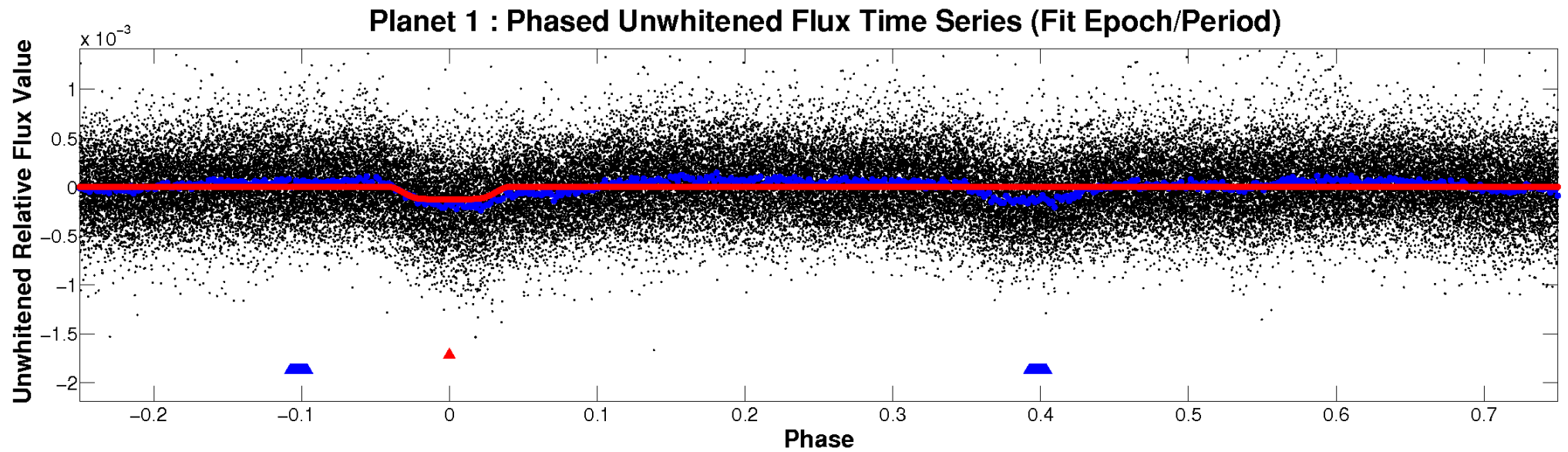


ALT Odd/Even

TCE 005471192-01

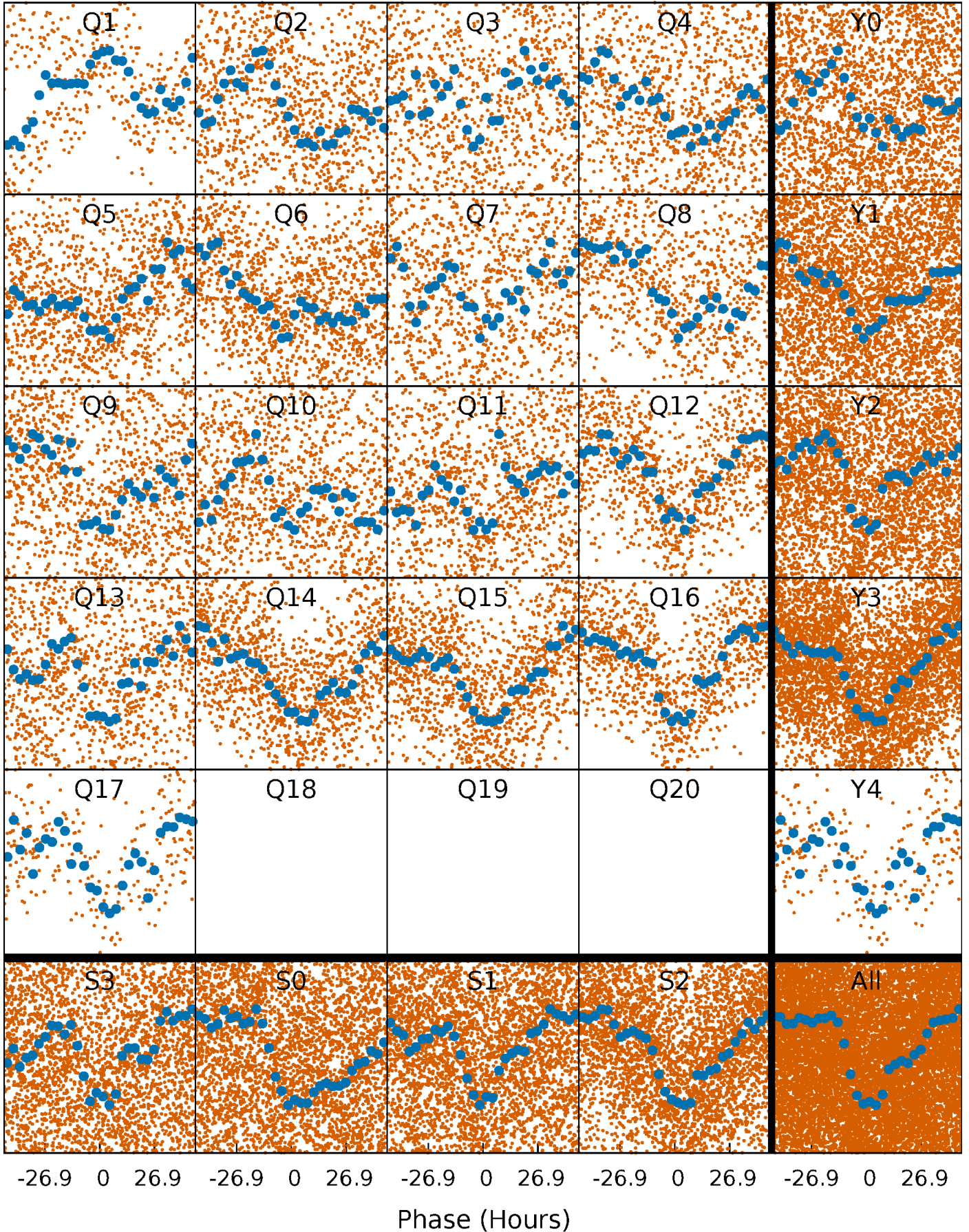


Non-Whitened Vs. Whitened Light Curve



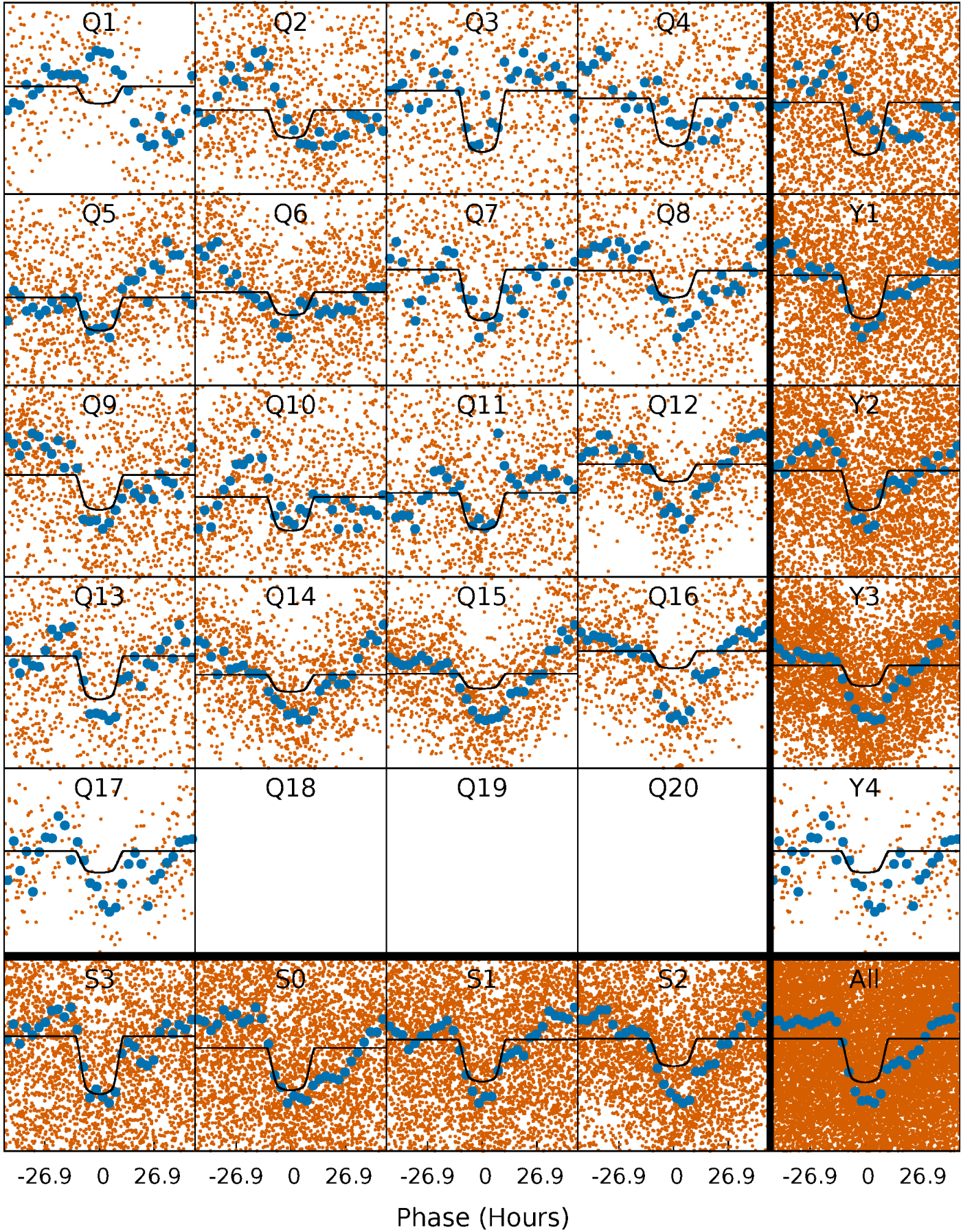
PDC Quarter-Phased Transit Curves

TCE 005471192-01 P= 12.425538 Days $T_0=141.516628$ (BKJD)



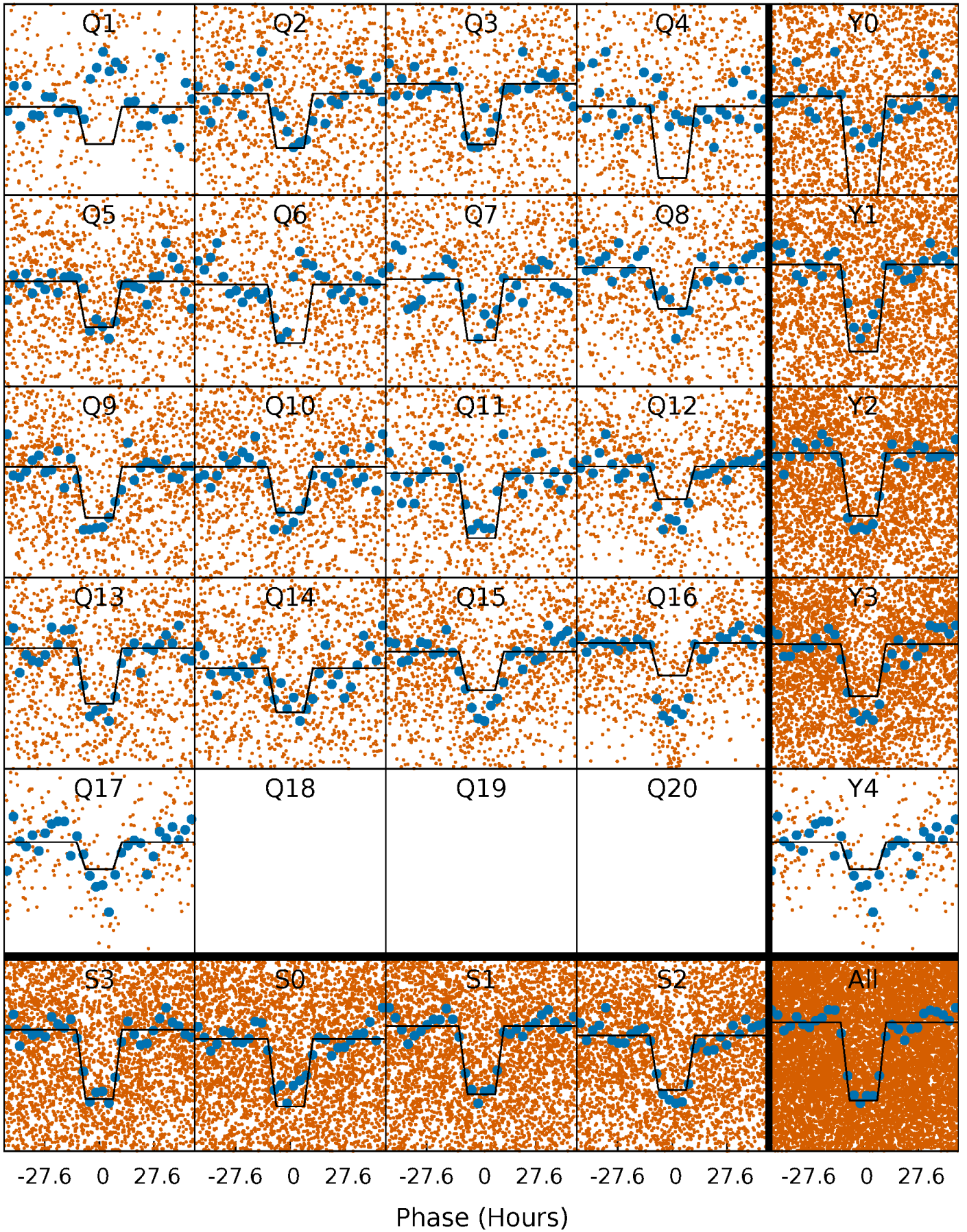
DV Quarter-Phased Transit Curves

TCE 005471192-01 P= 12.425538 Days $T_0=141.516628$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

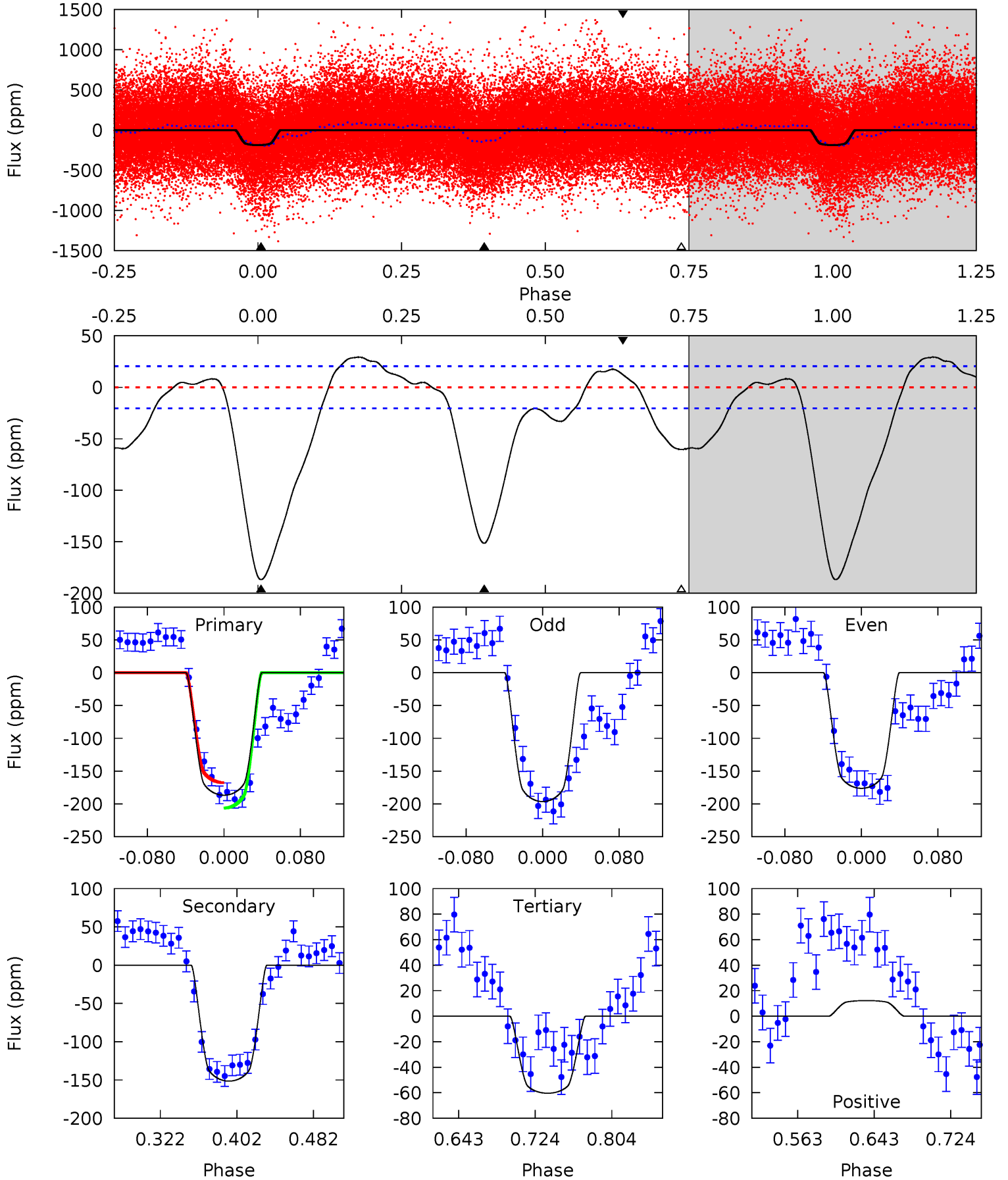
TCE 005471192-01 P= 12.425672 Days $T_0=141.517767$ (BKJD)



DV Model-Shift Uniqueness Test

005471192-01, $P = 12.425538$ Days, $E = 129.091090$ Days

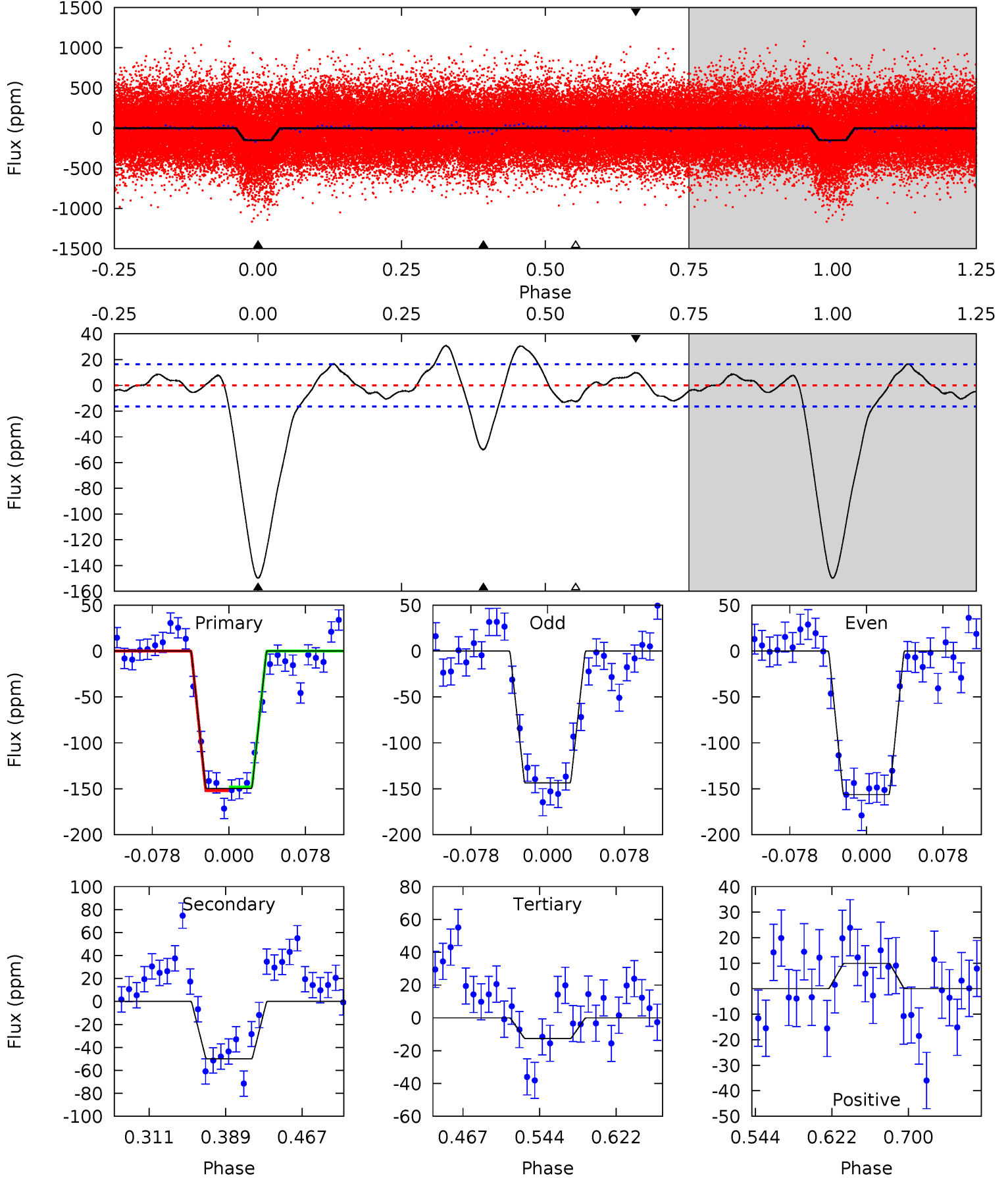
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
42.1	34.2	13.6	2.77	4.61	1.75	6.03	28.5	39.4	20.6	31.4	2.28	1.10	0.14	4.33



Alt Model-Shift Uniqueness Test

005471192-01, P = 12.425672 Days, E = 129.092095 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
42.1	14.0	3.54	2.78	4.62	1.76	2.35	38.5	39.3	10.5	11.2	1.81	1.13	0.17	0.57



Stellar Parameters For KIC 005471192

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6246^{+173}_{-260}	$4.433^{+0.056}_{-0.224}$	$0.070^{+0.250}_{-0.300}$	$1.092^{+0.365}_{-0.122}$	$1.180^{+0.158}_{-0.173}$	$1.276^{+0.381}_{-0.690}$
	+3%/-4%	+1%/-5%	+357%/-429%	+33%/-11%	+13%/-15%	+30%/-54%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005471192-01 / KOI 6009.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-151 ± 4	$1.68^{+0.30}_{-0.18}$	1228^{+96}_{-67}	5890^{+258}_{-260}	351^{+82}_{-82}
Alt.	-50 ± 4	$1.57^{+0.27}_{-0.18}$	1238^{+98}_{-71}	4780^{+195}_{-197}	133^{+36}_{-33}

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

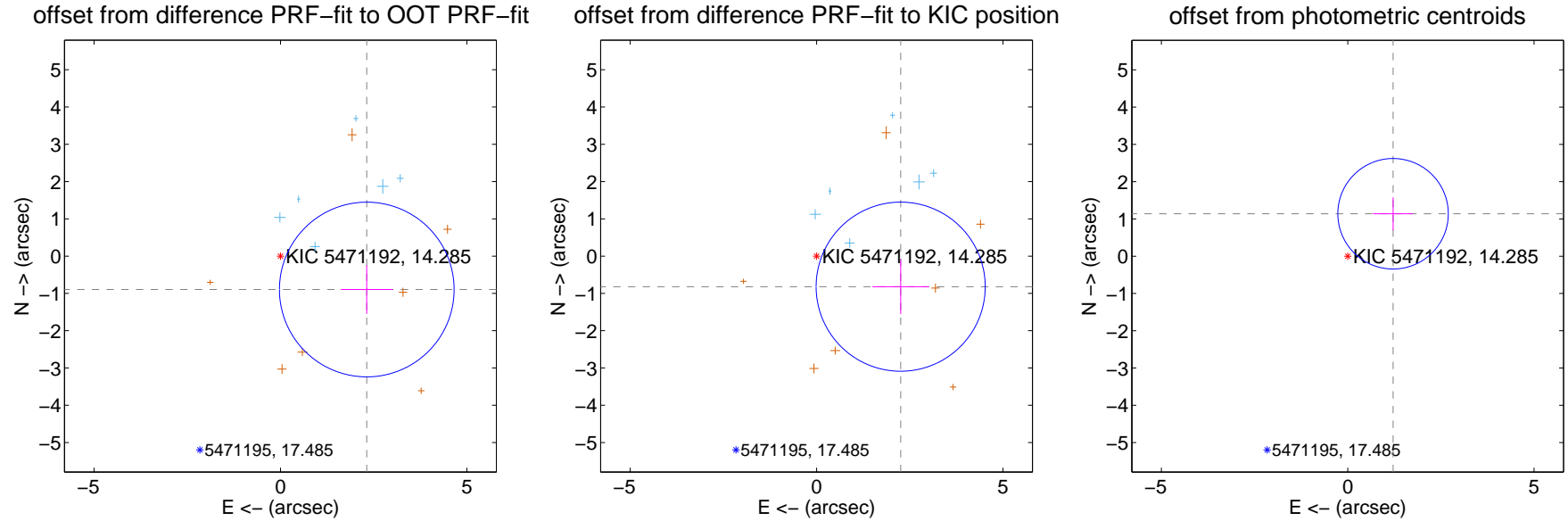
DV Centroid Data

Supplemental centroid analysis for 005471192-01. Kepler magnitude: 14.29. Transit SNR 10.47

There are 6 quarters with good PRF difference image offsets

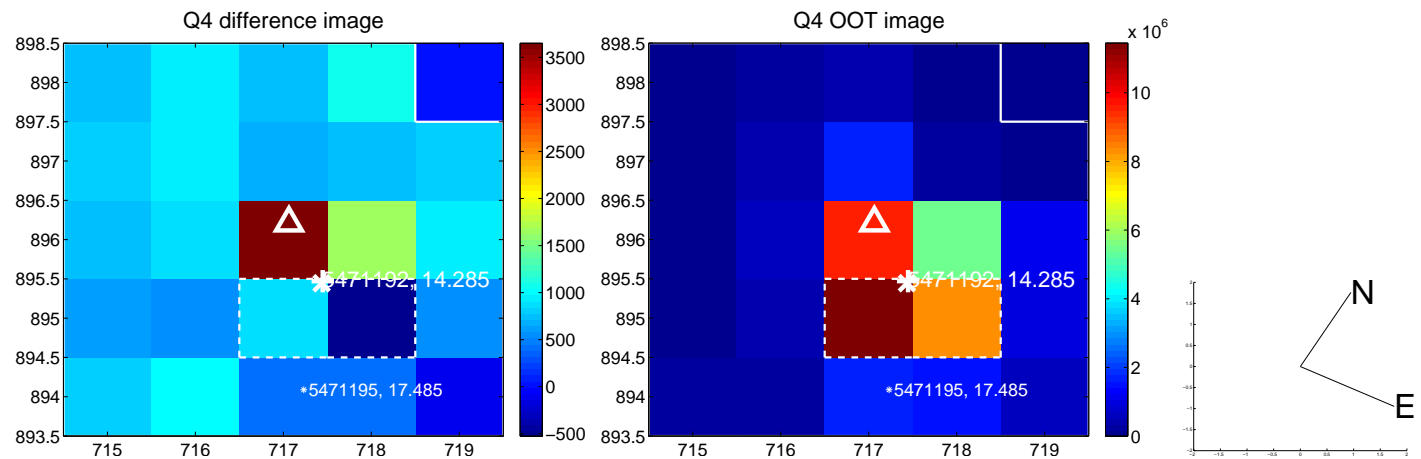
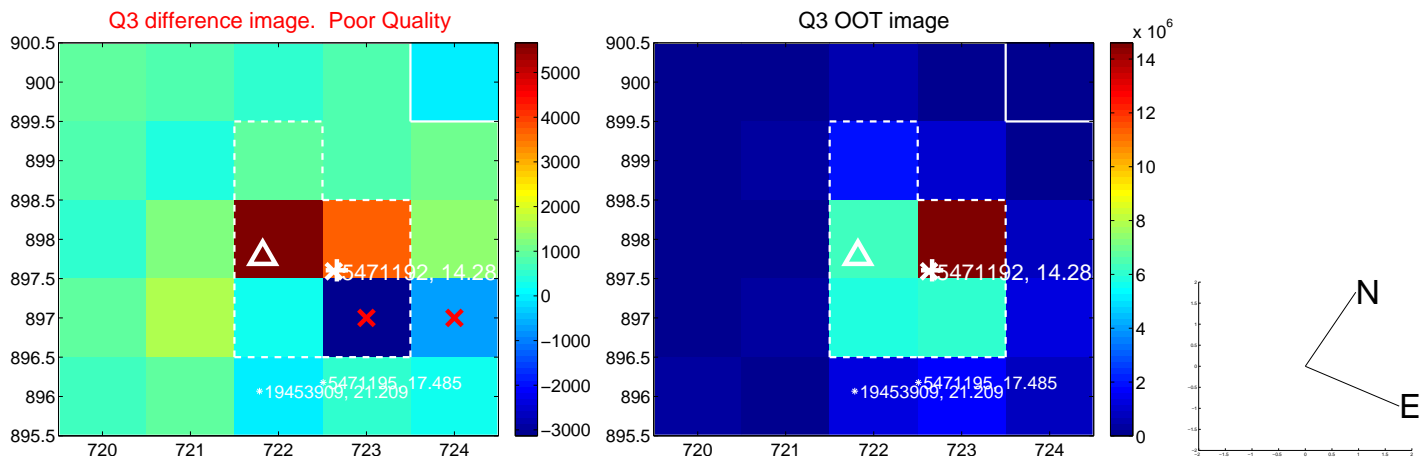
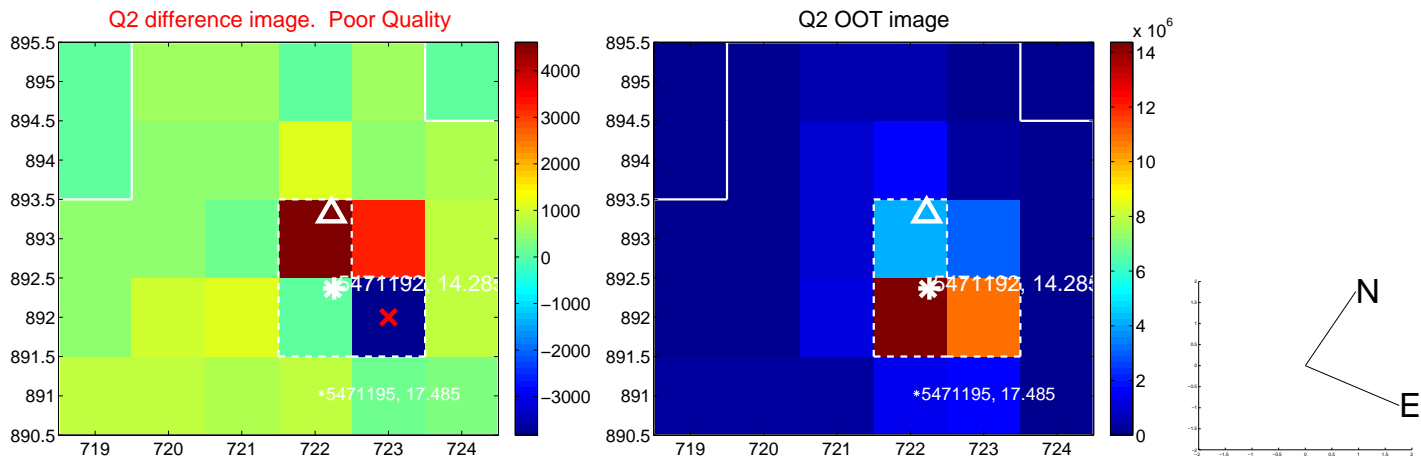
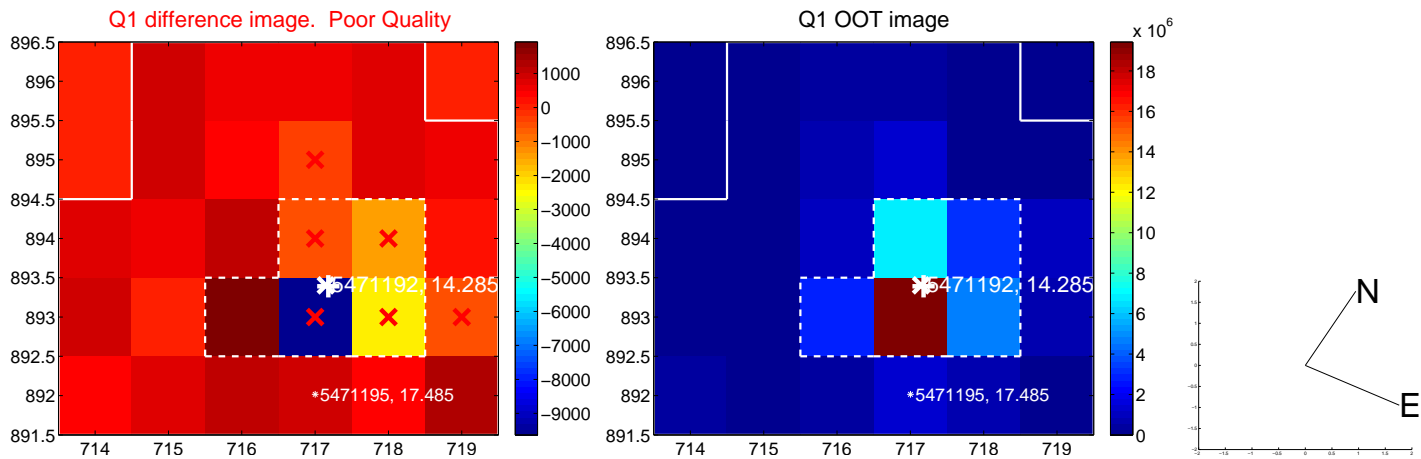
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.482 ± 0.781	3.18	-2.315 ± 0.697	-0.895 ± 0.651
PRF-fit source offset from KIC position	2.400 ± 0.756	3.17	-2.256 ± 0.759	-0.819 ± 0.735
photometric centroid source offset	1.67 ± 0.49	3.37	-1.22 ± 0.54	1.14 ± 0.44

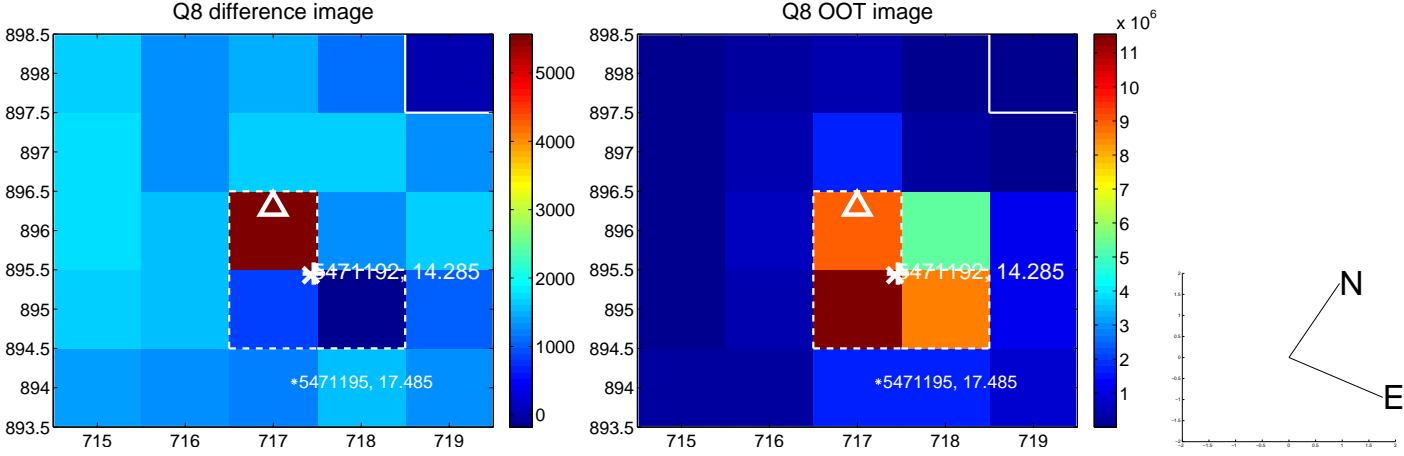
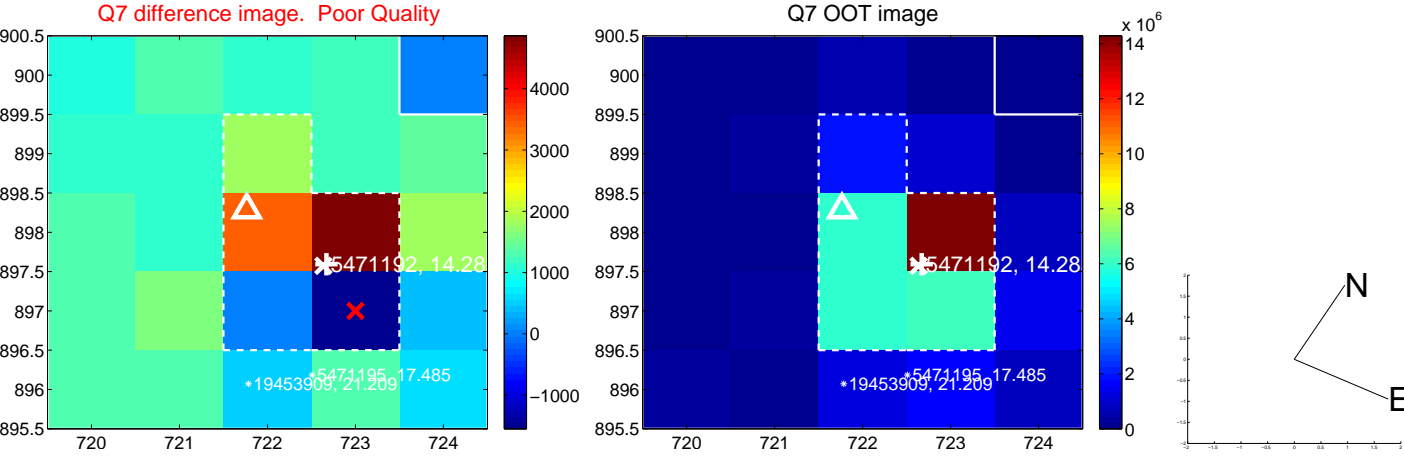
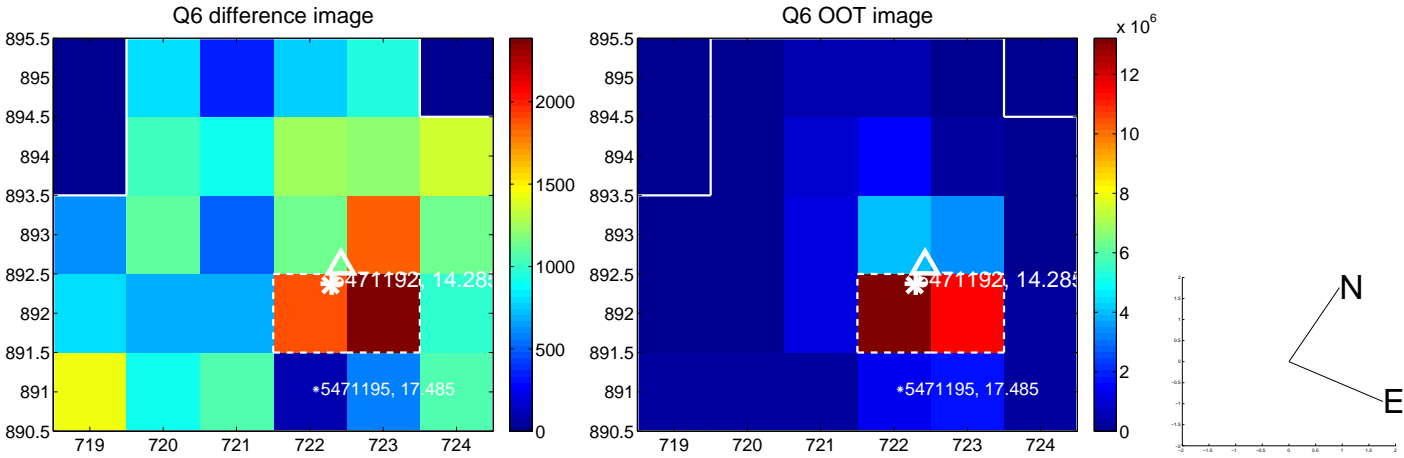
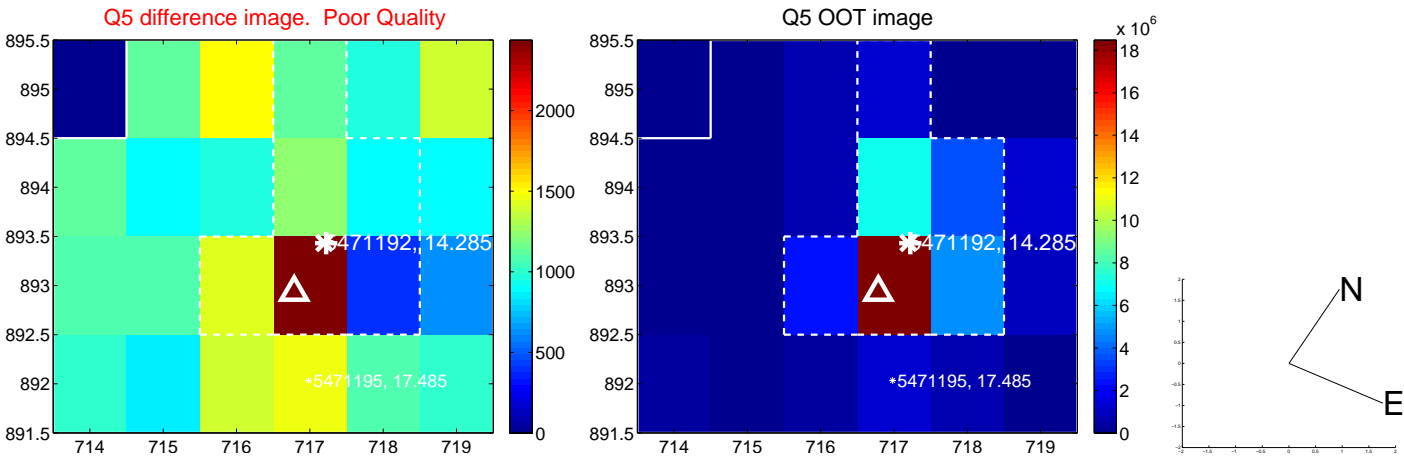


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

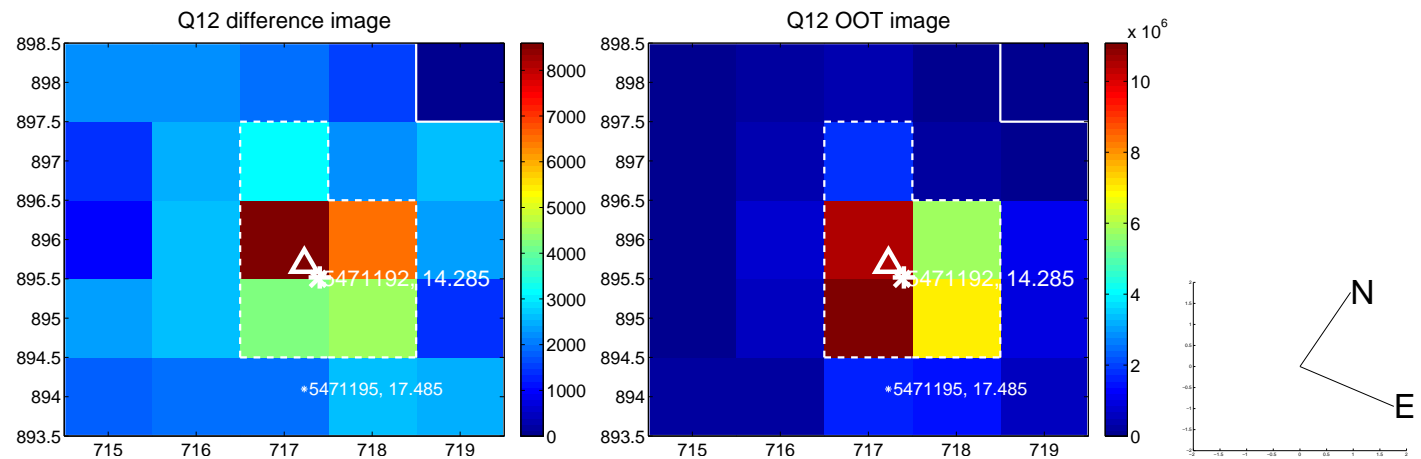
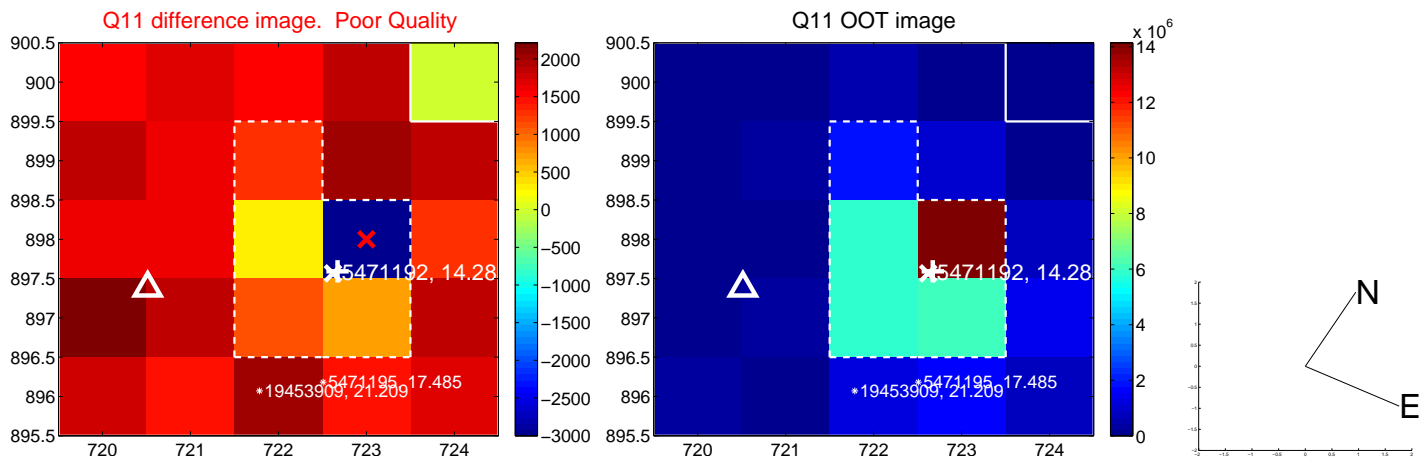
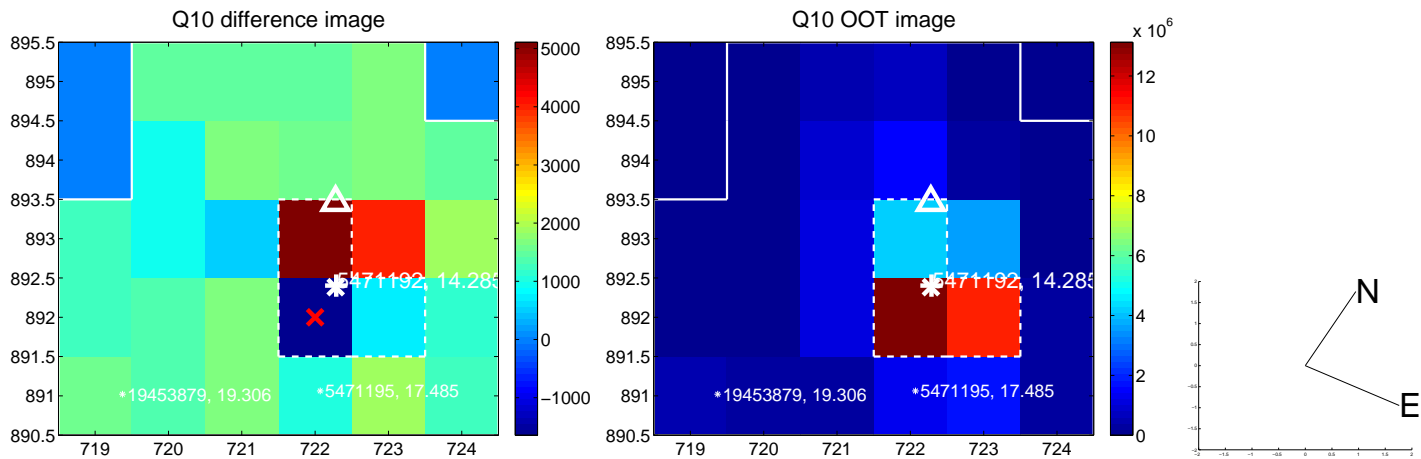
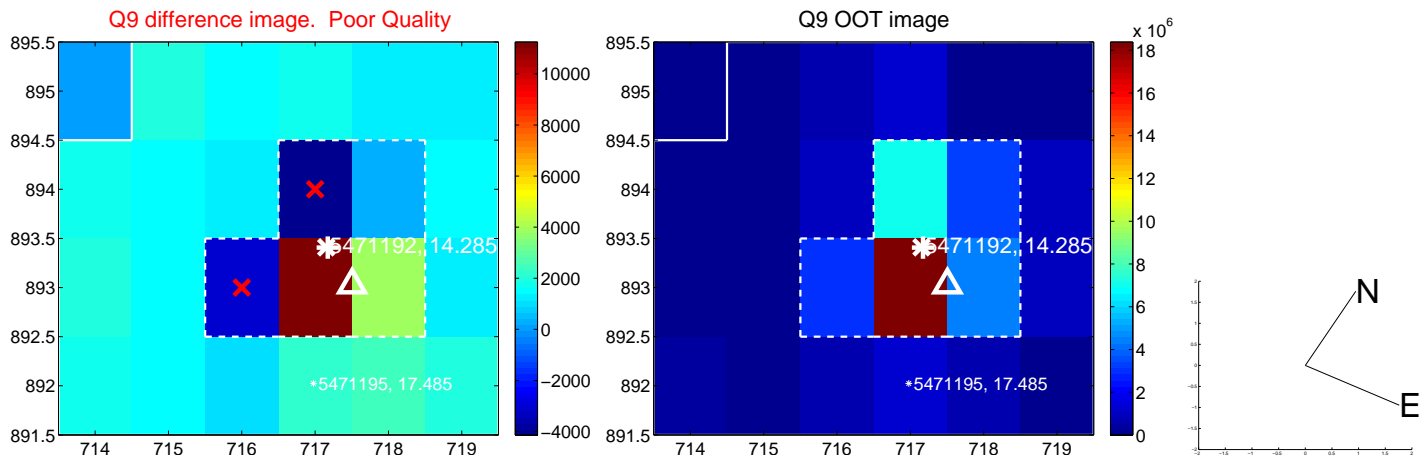
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



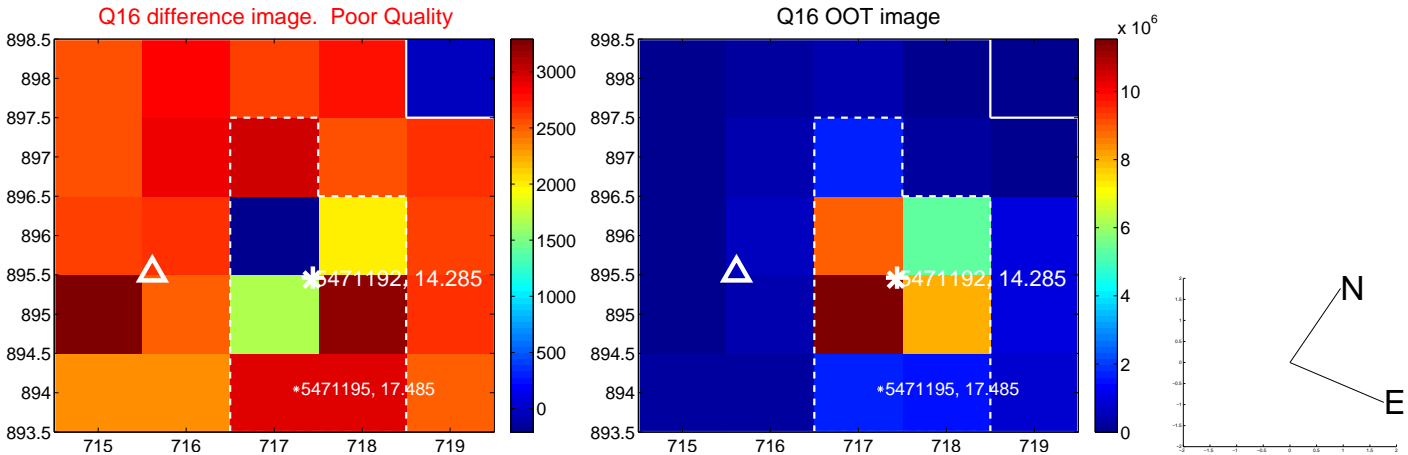
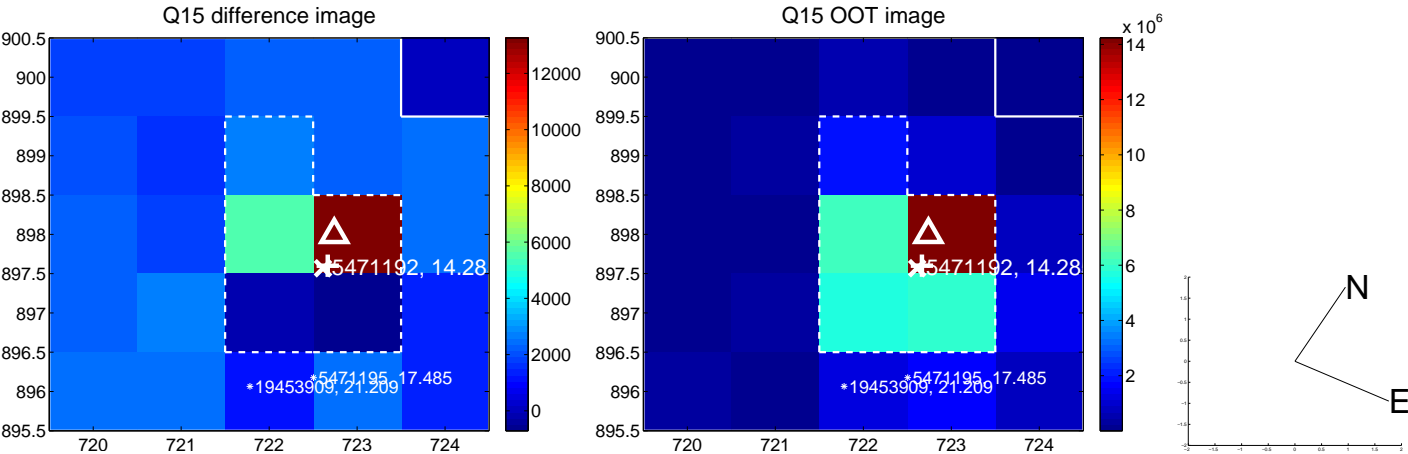
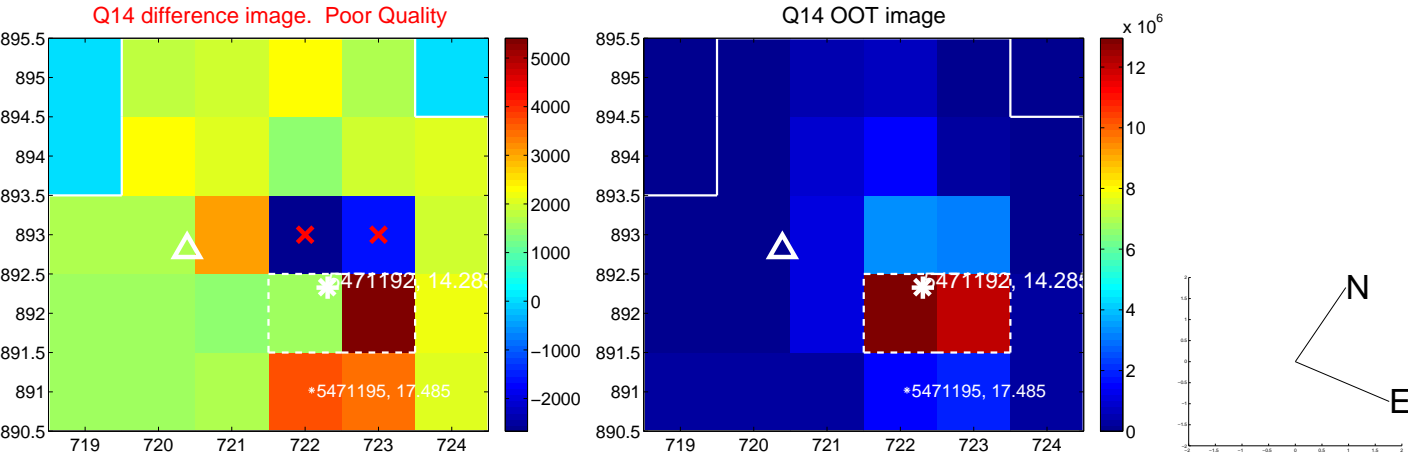
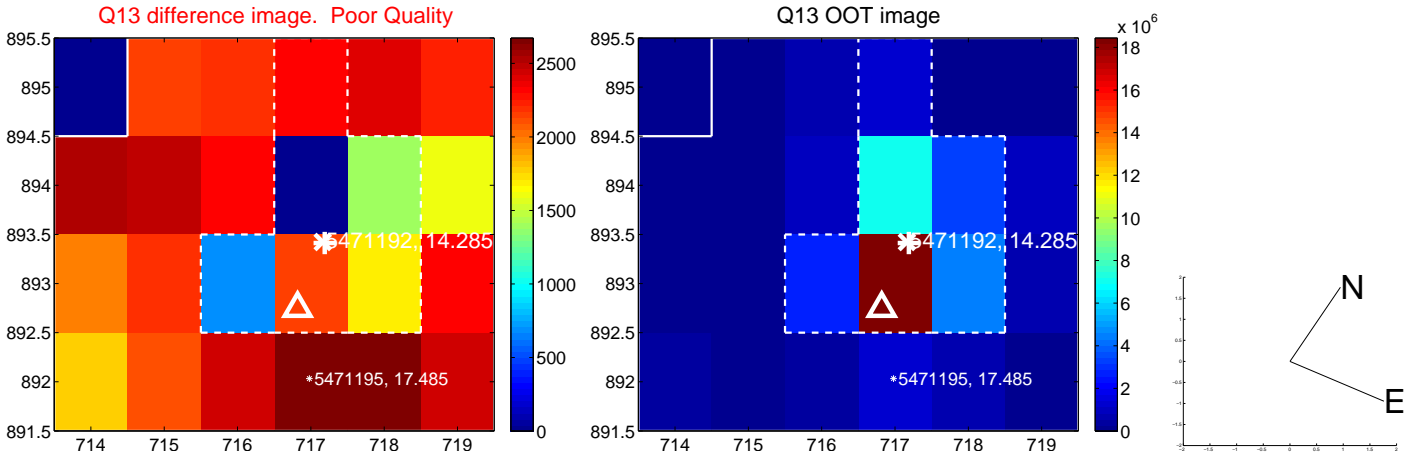
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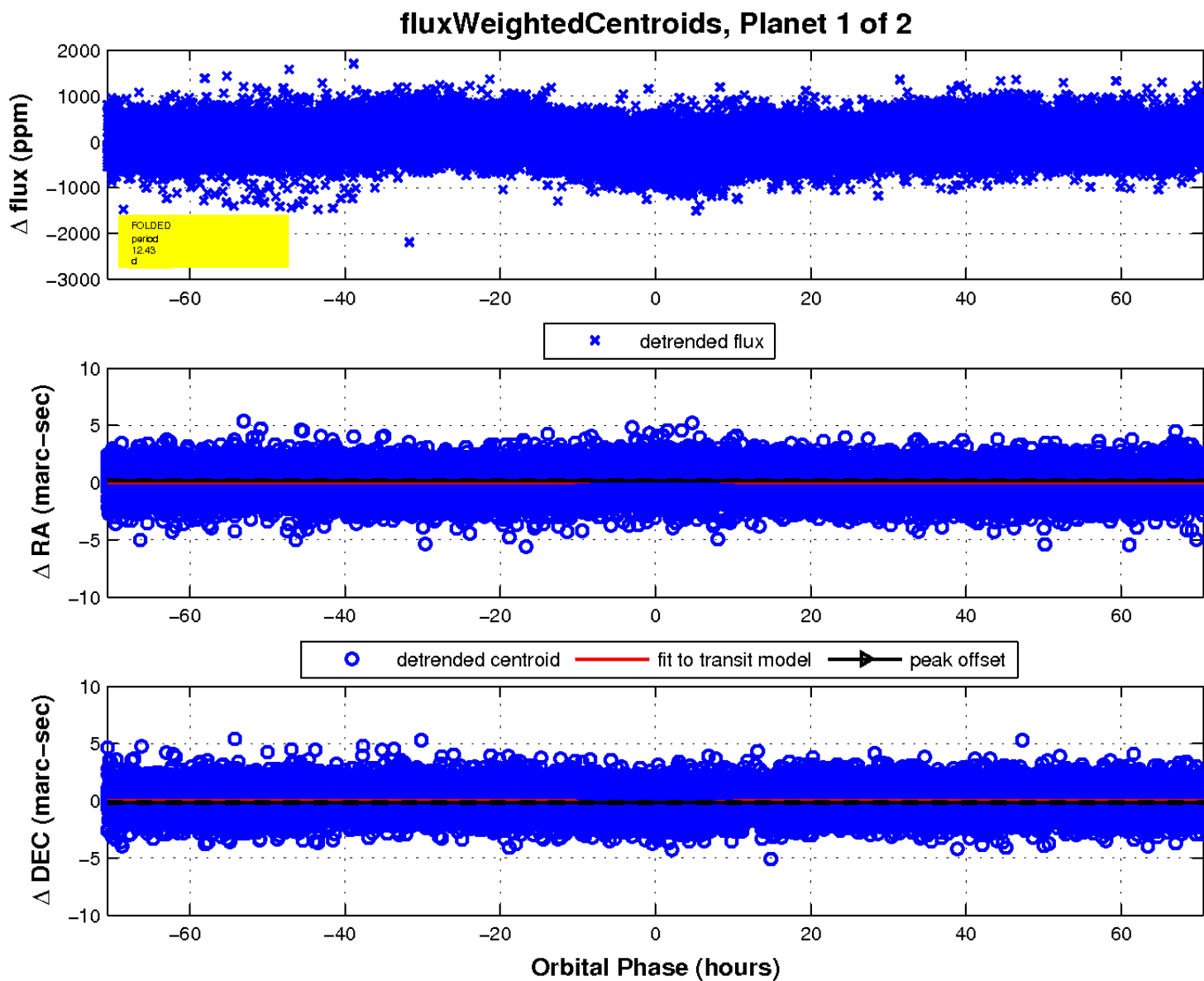
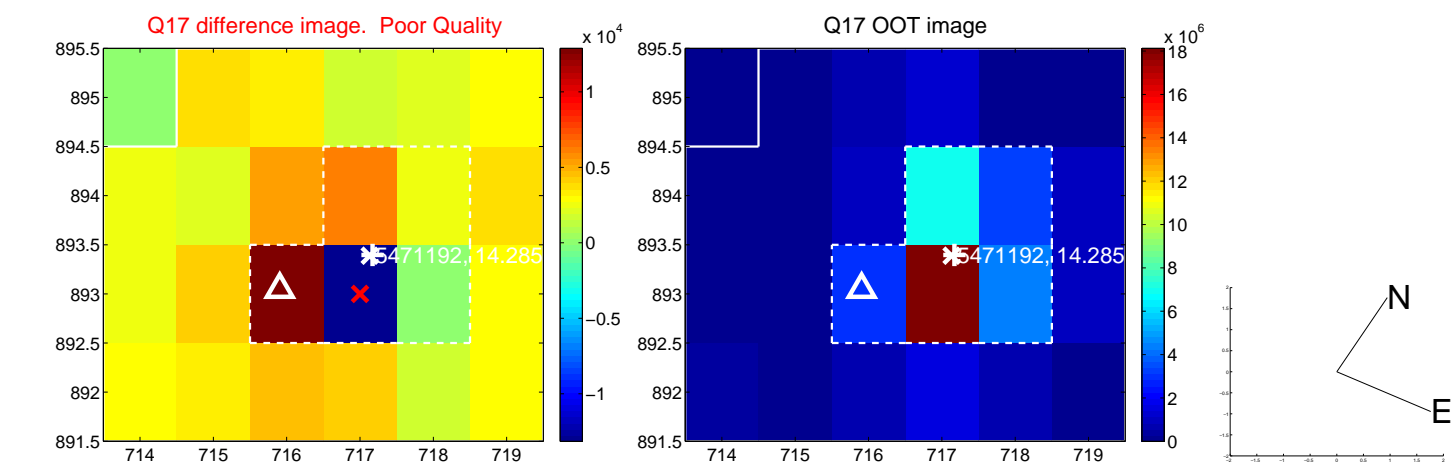
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white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

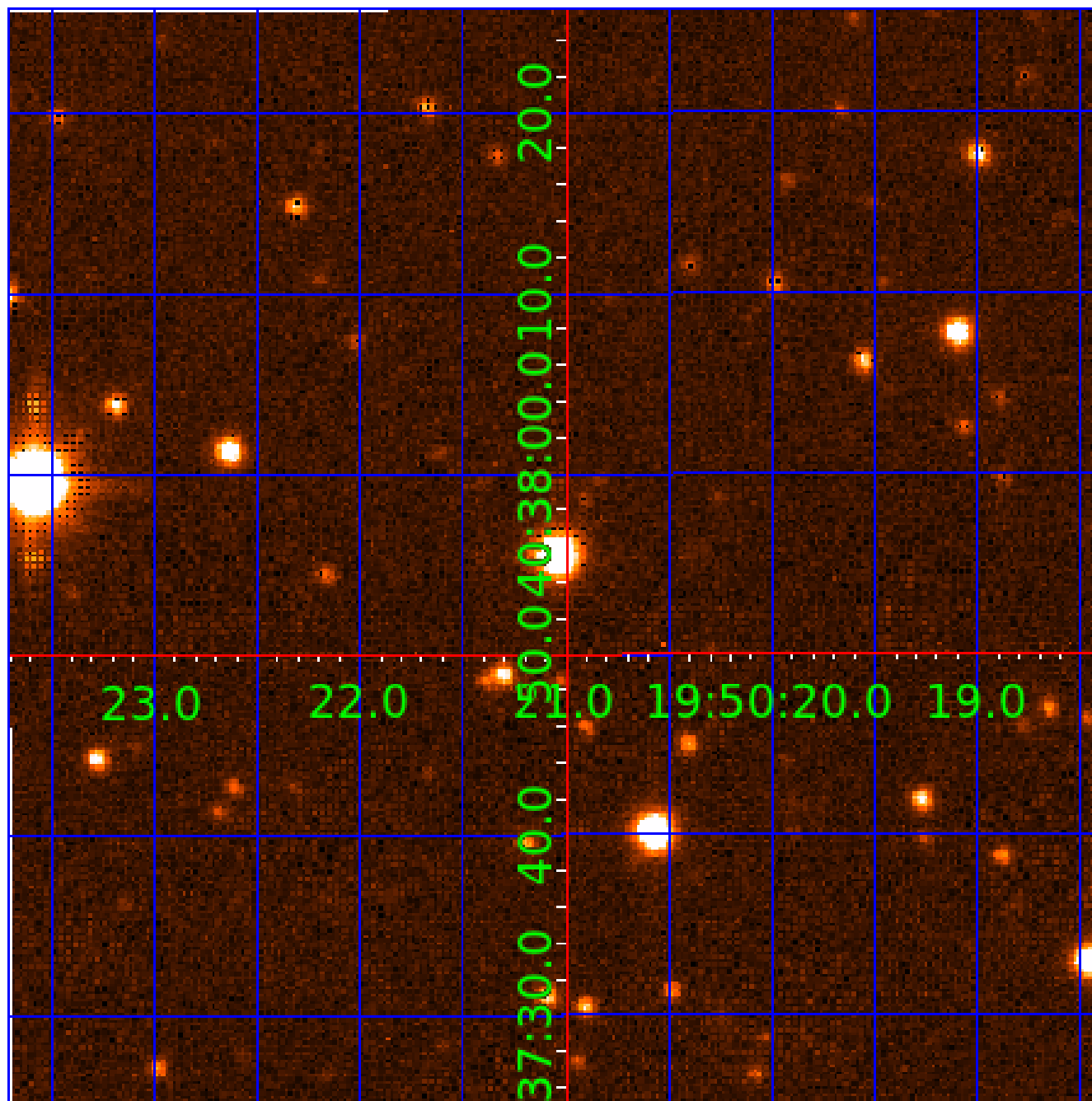


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005471192

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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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005471192-01	OBS	FP	0.00	1	0	1	1	LPP_DV—HALO_GHOST—EPHEM_MATCH
005471192-02	OBS	FP	0.00	1	0	1	0	LPP_DV—SAME_NTL_PERIOD—HALO_GHOST

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

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

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

Ephemeris Match Information For 005471192-02

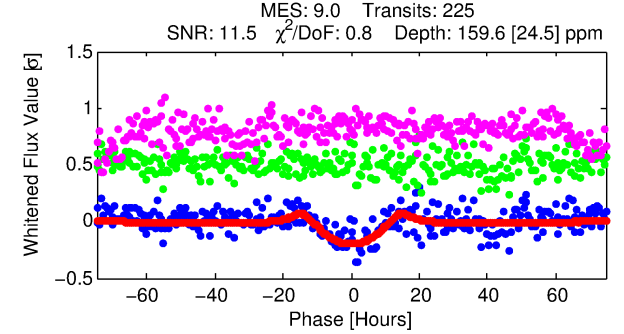
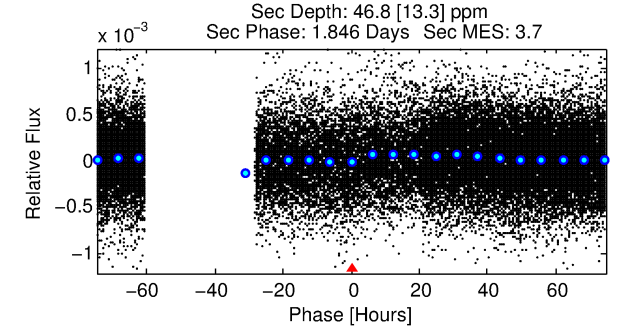
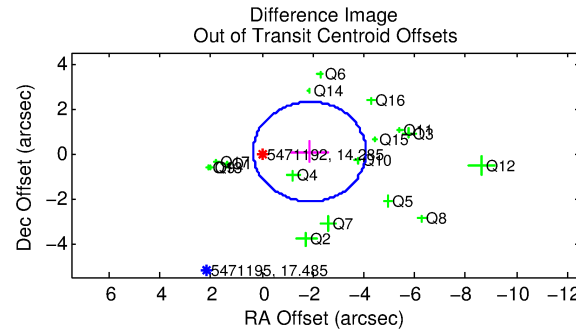
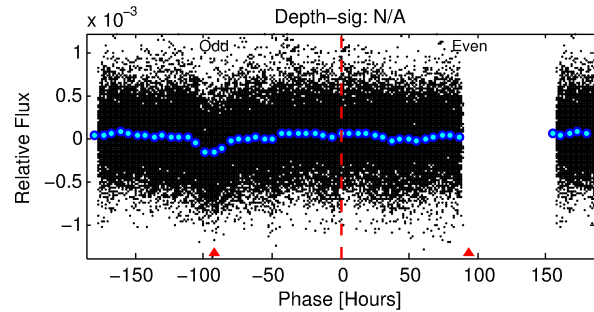
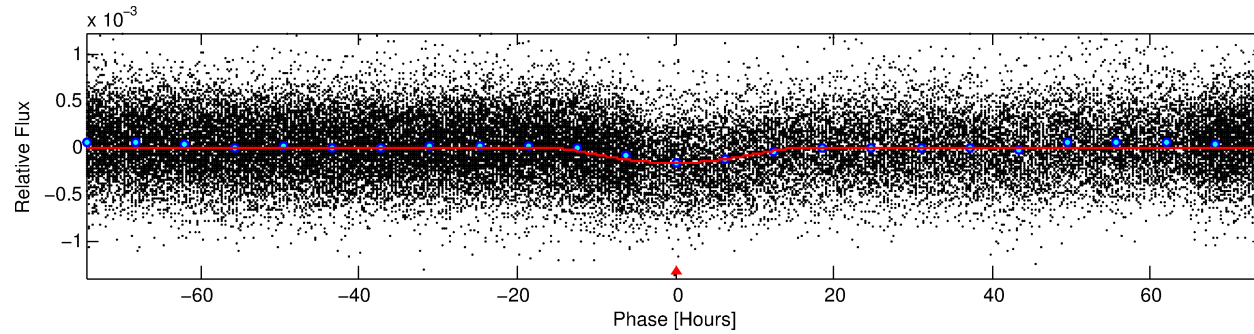
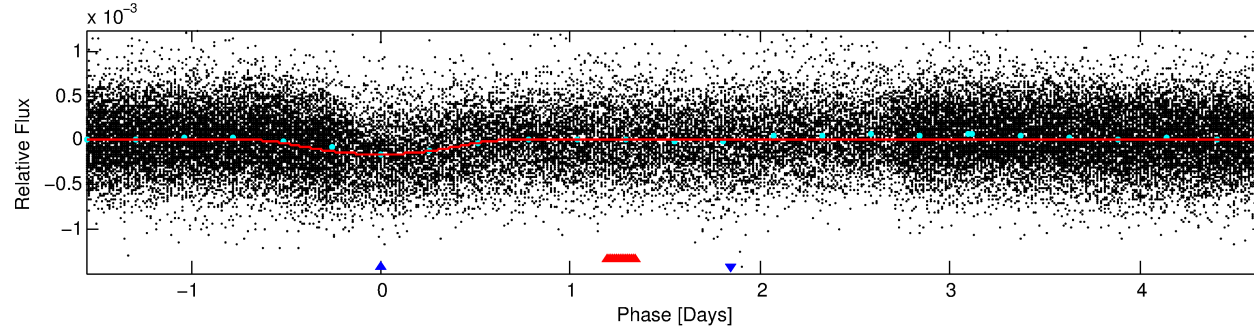
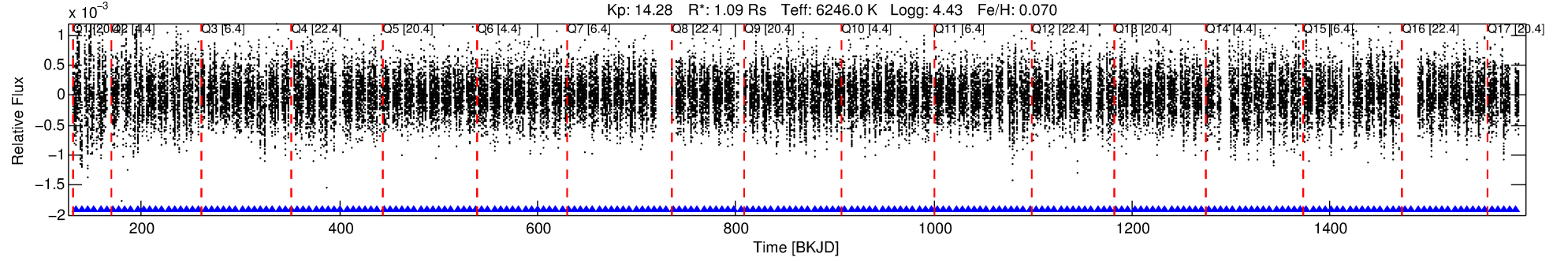
No Significant Match Found

DV One-Page Summary

KIC: 5471192 Candidate: 2 of 2 Period: 6.212 d

KOI: K06009 Corr: No Ephemeris Match

Kp: 14.28 R*: 1.09 Rs Teff: 6246.0 K Logg: 4.43 Fe/H: 0.070



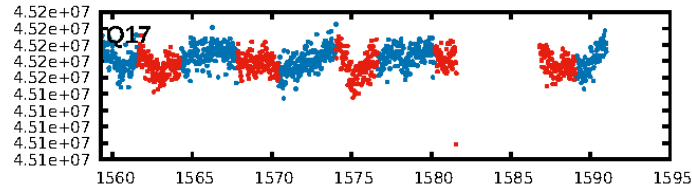
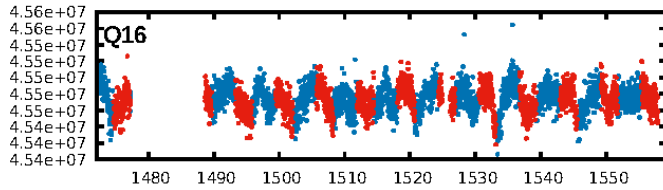
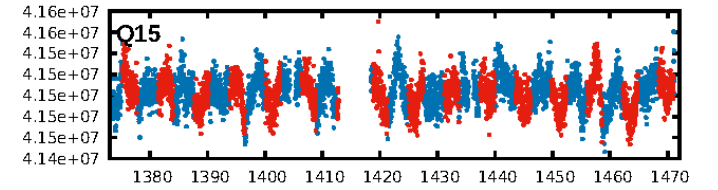
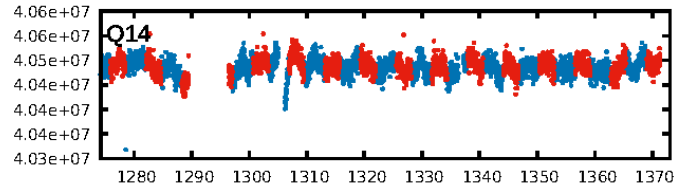
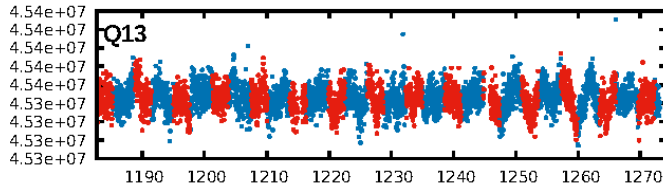
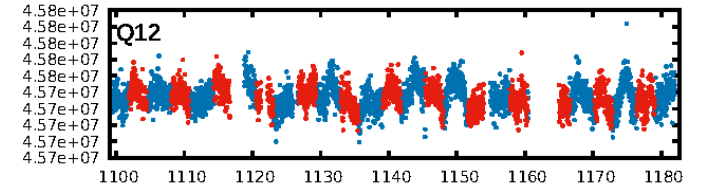
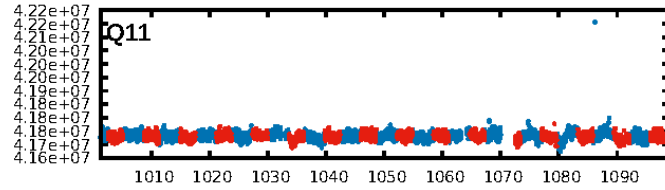
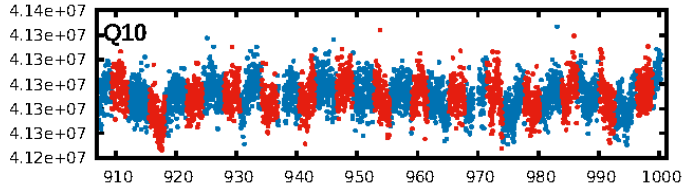
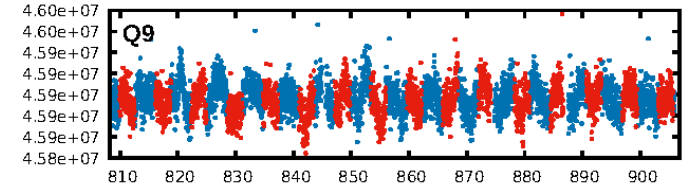
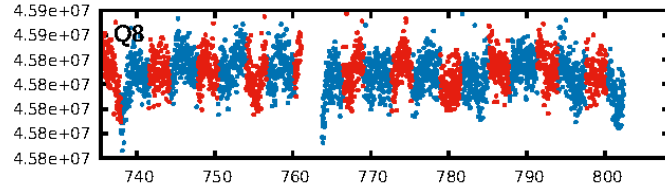
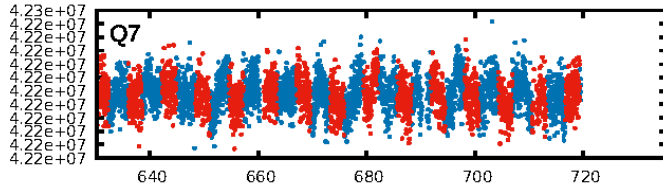
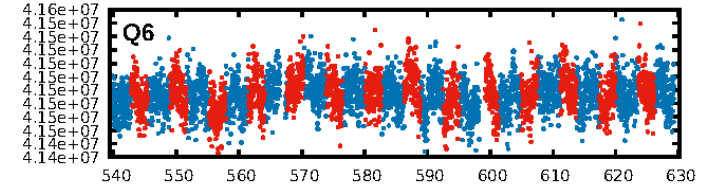
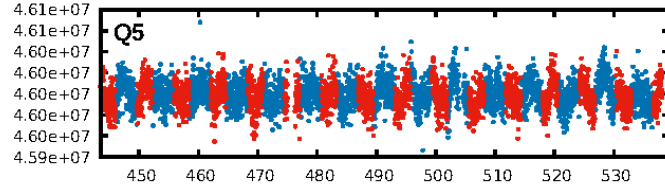
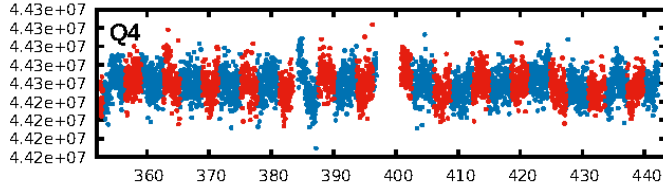
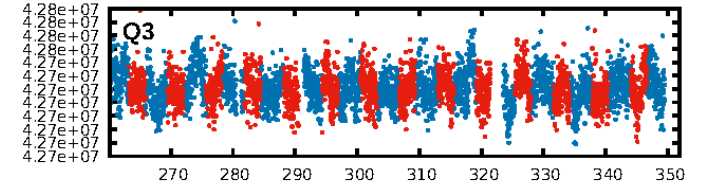
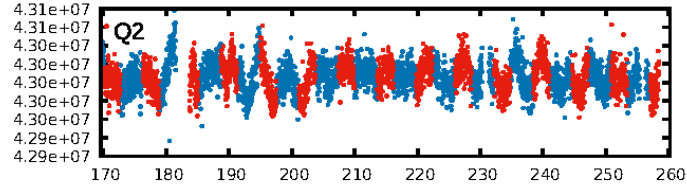
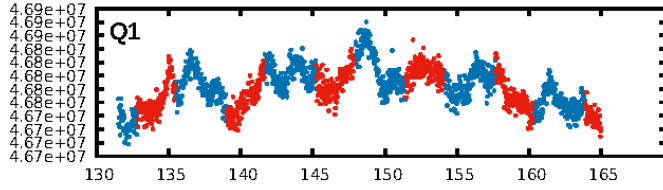
DV Fit Results:

Period = 6.21214 [0.00030] d
Epoch = 134.1109 [0.0408] BKJD
Rp/R* = 0.0192 [0.0095]
a/R* = 1.06 [0.01]
b = 0.99 [0.02]
Seff = 333.01 [147.29]
Teff = 1089 [120] K
Rp = 2.29 [1.37] Re
a = 0.0699 [0.0197] AU
Ag = 23.95 [26.60] [0.86σ]
Teffp = 3726 [974] K [2.69σ]

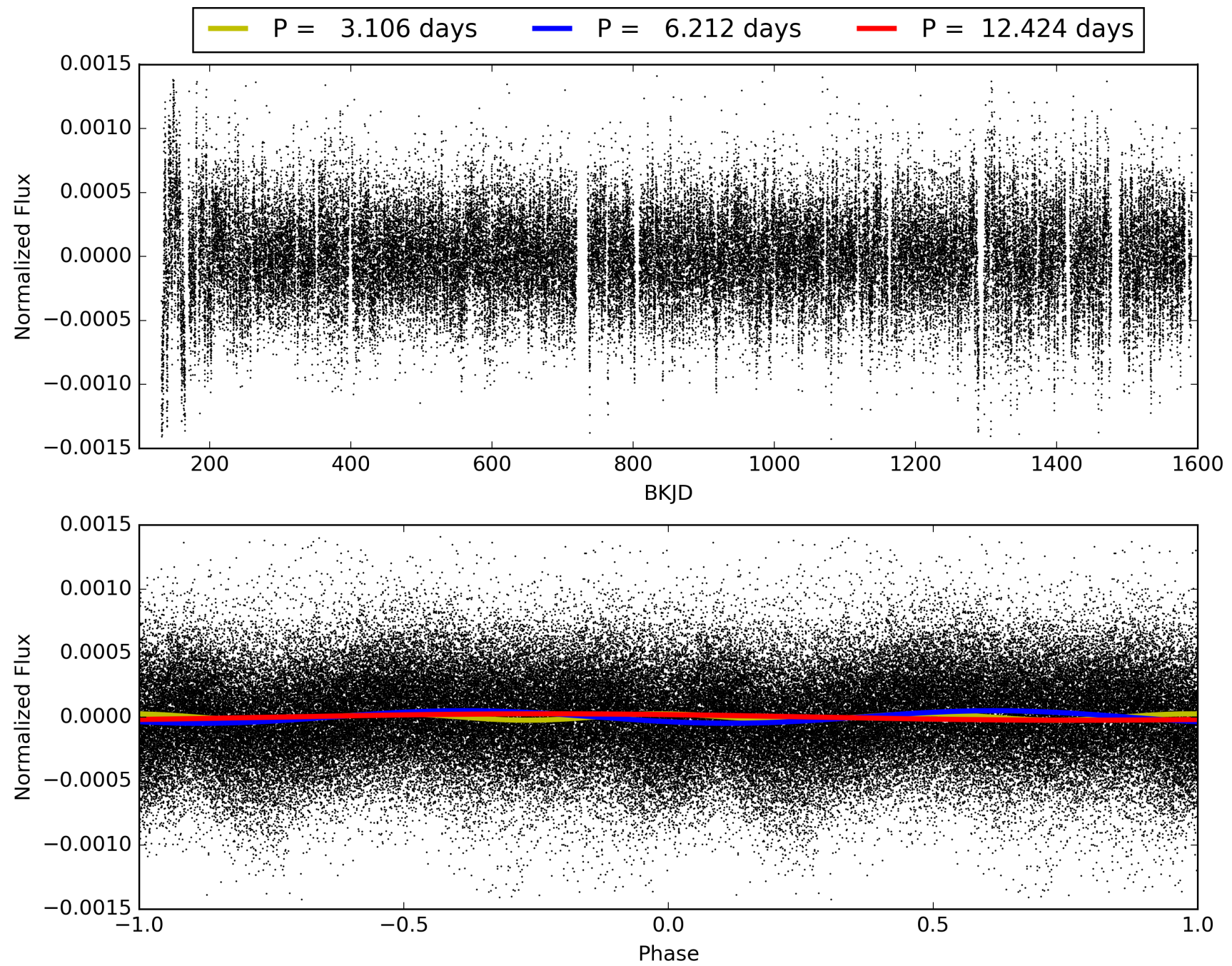
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [3.83σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.87e-18
RollingBand-fgt: 1.00 [214/214]
GhostDiagnostic-chr: 0.02837
Centroid-sig: 0.0%
Centroid-so: 0.694 arcsec [2.26σ]
OotOffset-rm: 1.874 arcsec [2.54σ]
KicOffset-rm: 1.853 arcsec [2.46σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.35 [6/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005471192-02, PDC Light Curves

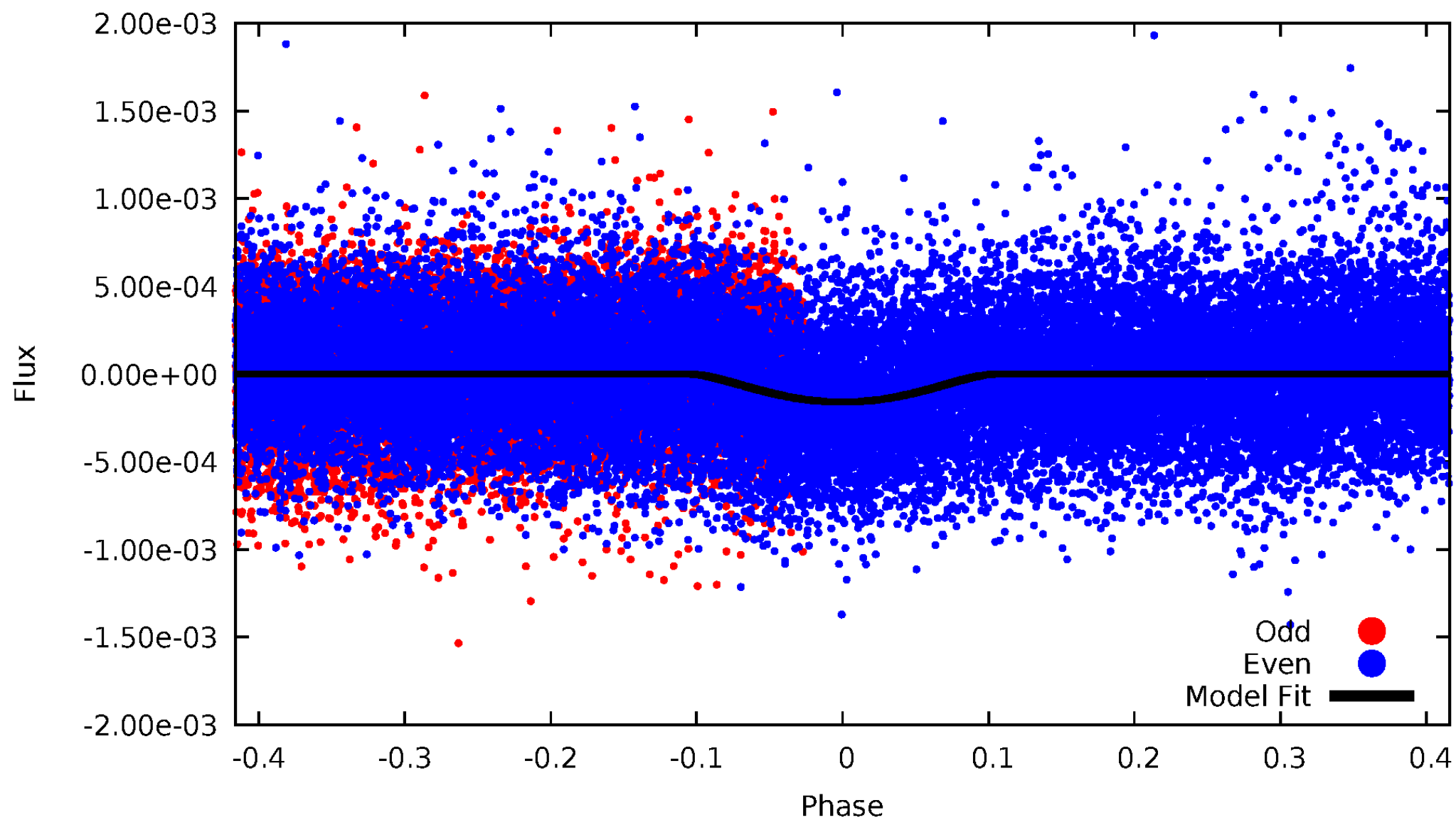


TCE 005471192-02



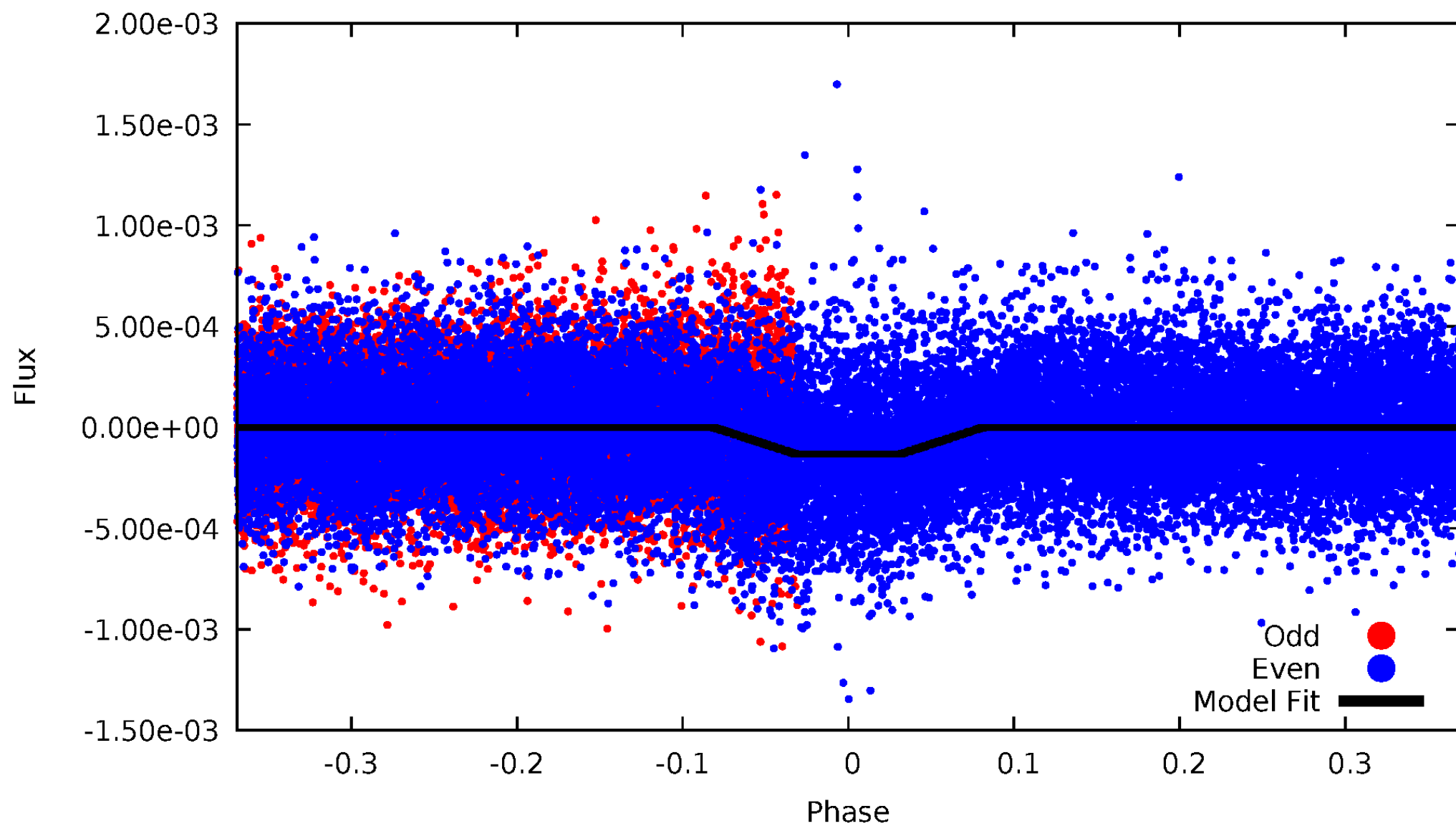
DV Odd/Even

TCE 005471192-02



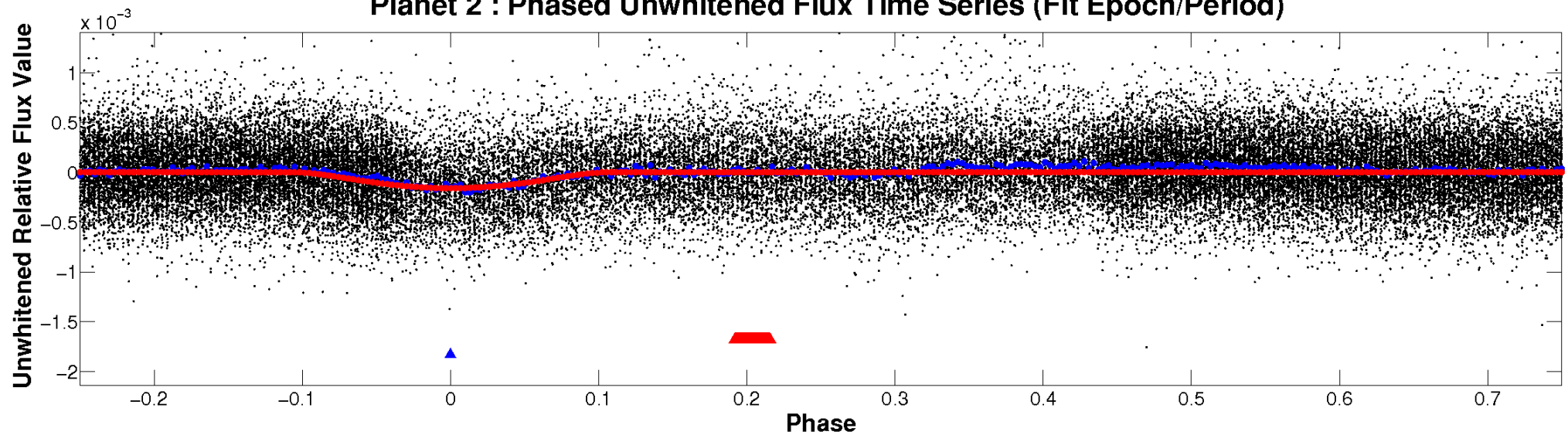
ALT Odd/Even

TCE 005471192-02

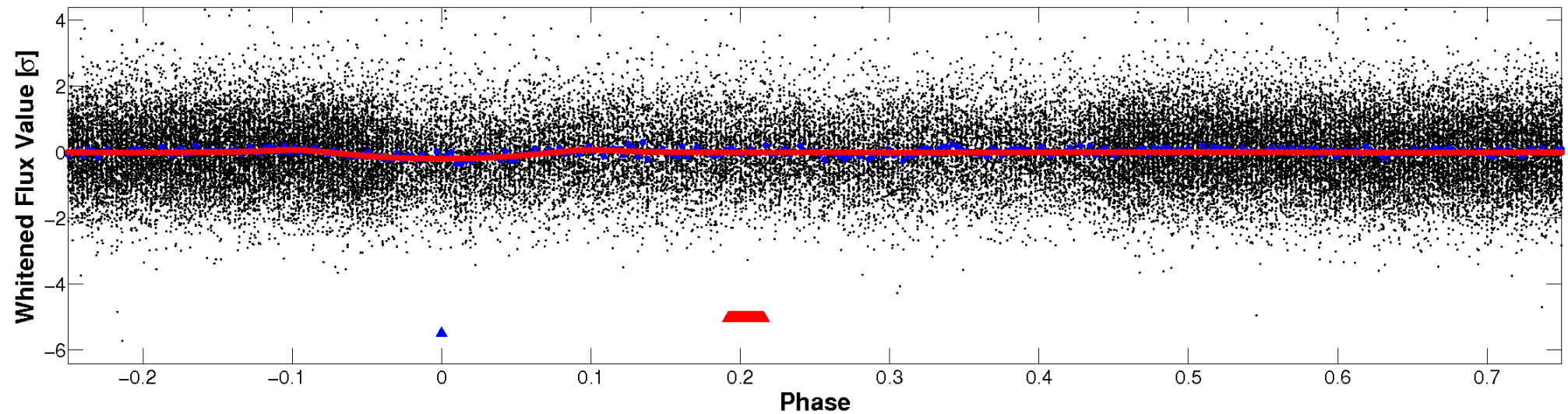


Non-Whitened Vs. Whitened Light Curve

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

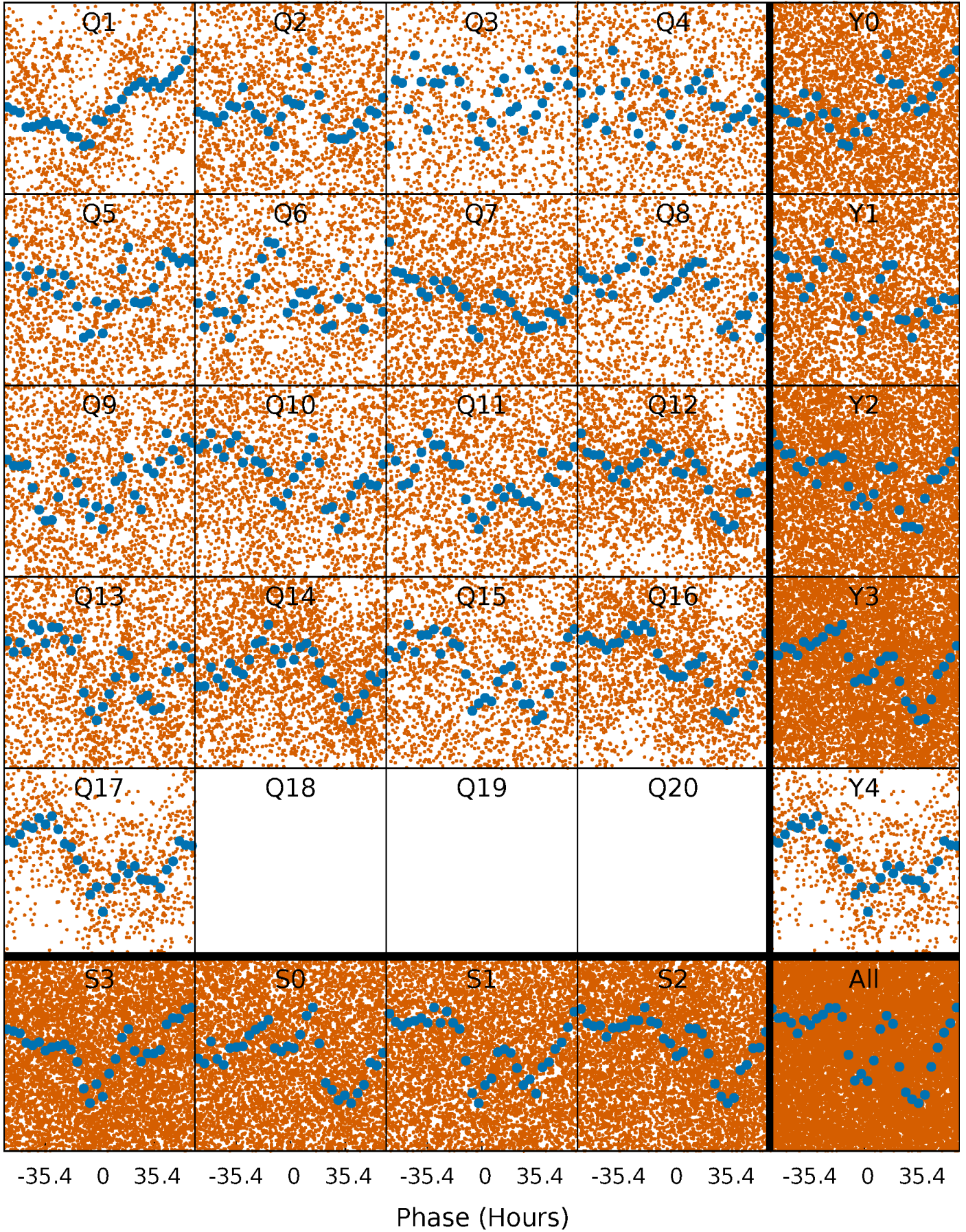


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



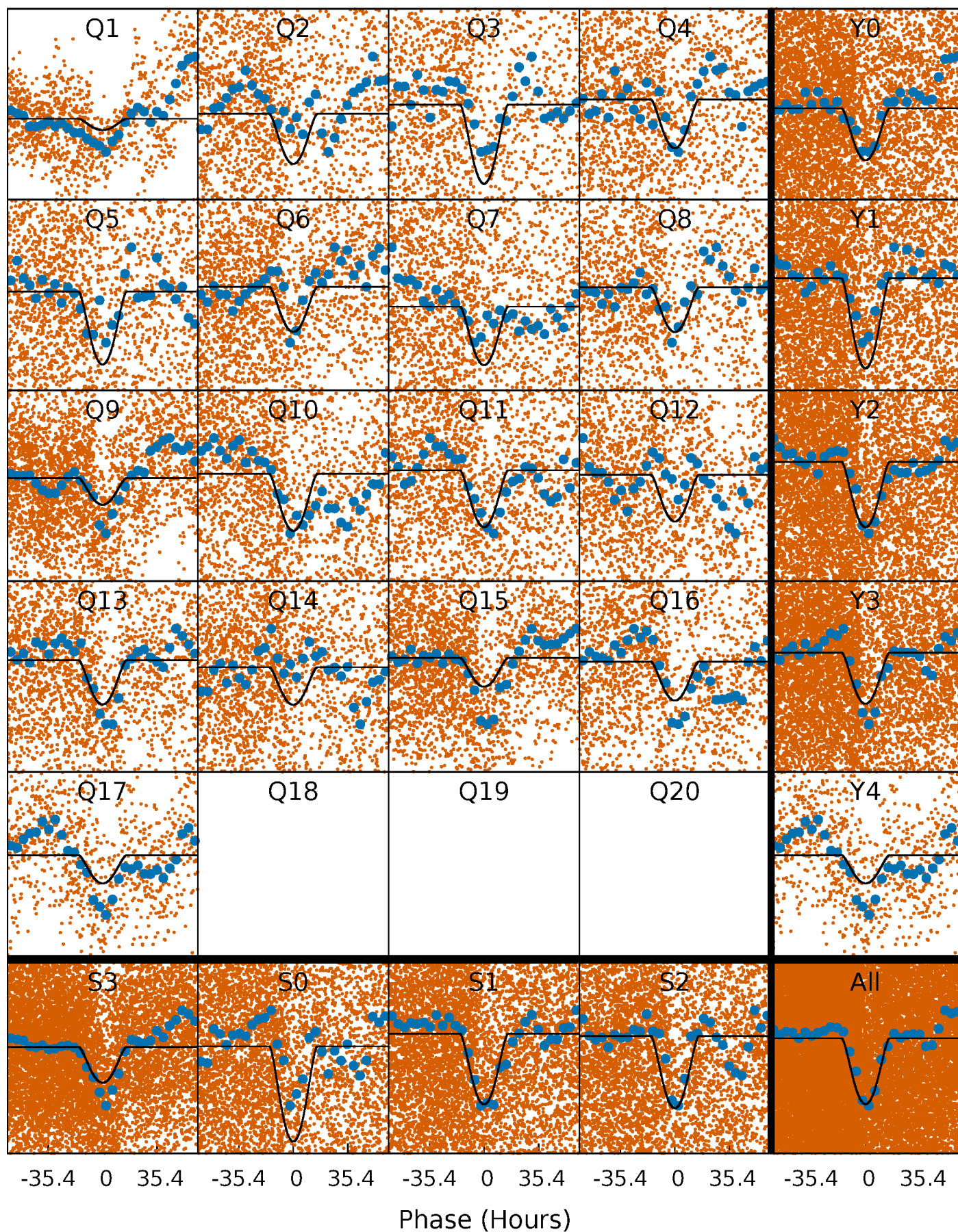
PDC Quarter-Phased Transit Curves

TCE 005471192-02 P= 6.212143 Days $T_0=134.110889$ (BKJD)



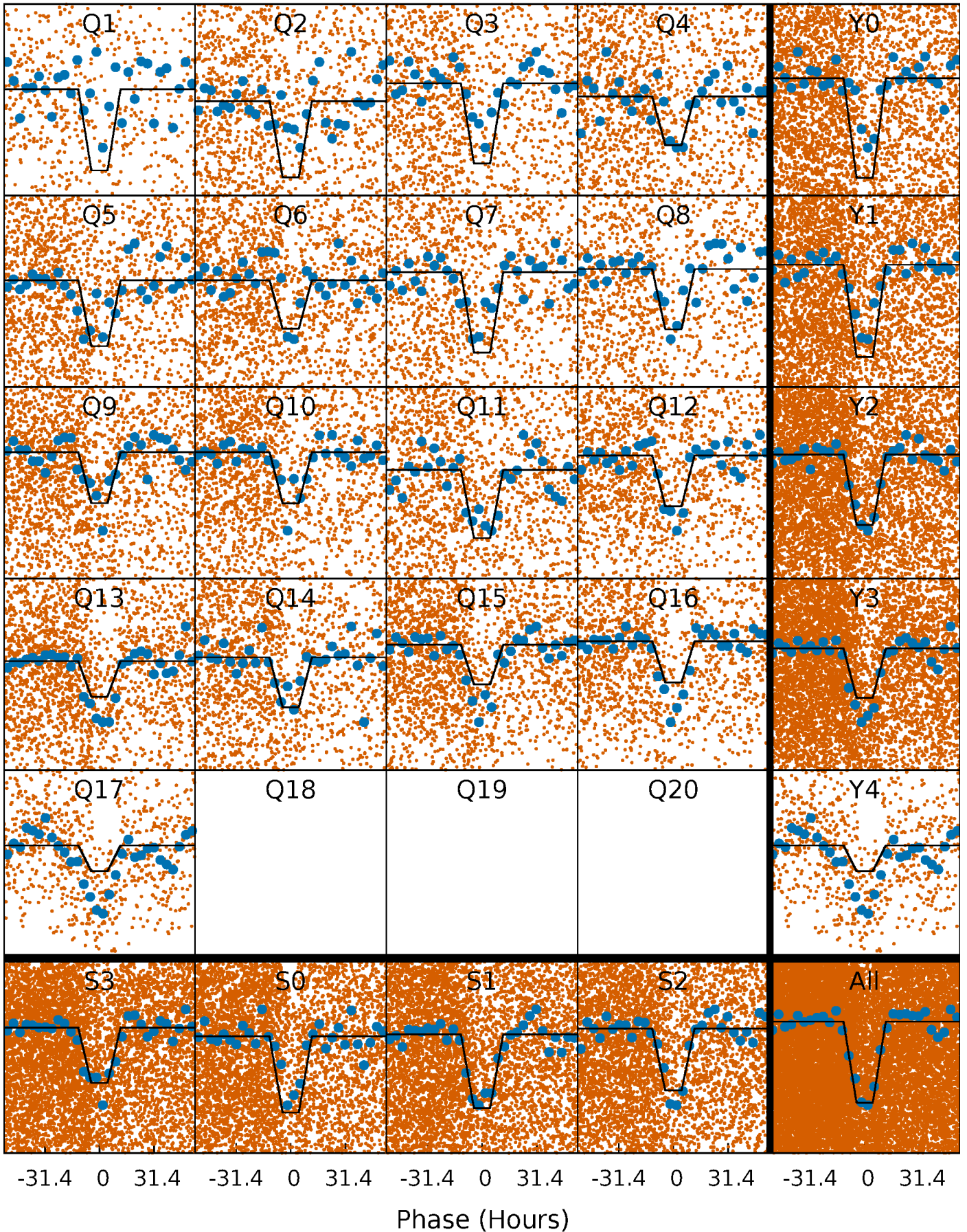
DV Quarter-Phased Transit Curves

TCE 005471192-02 P= 6.212143 Days $T_0=134.110889$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

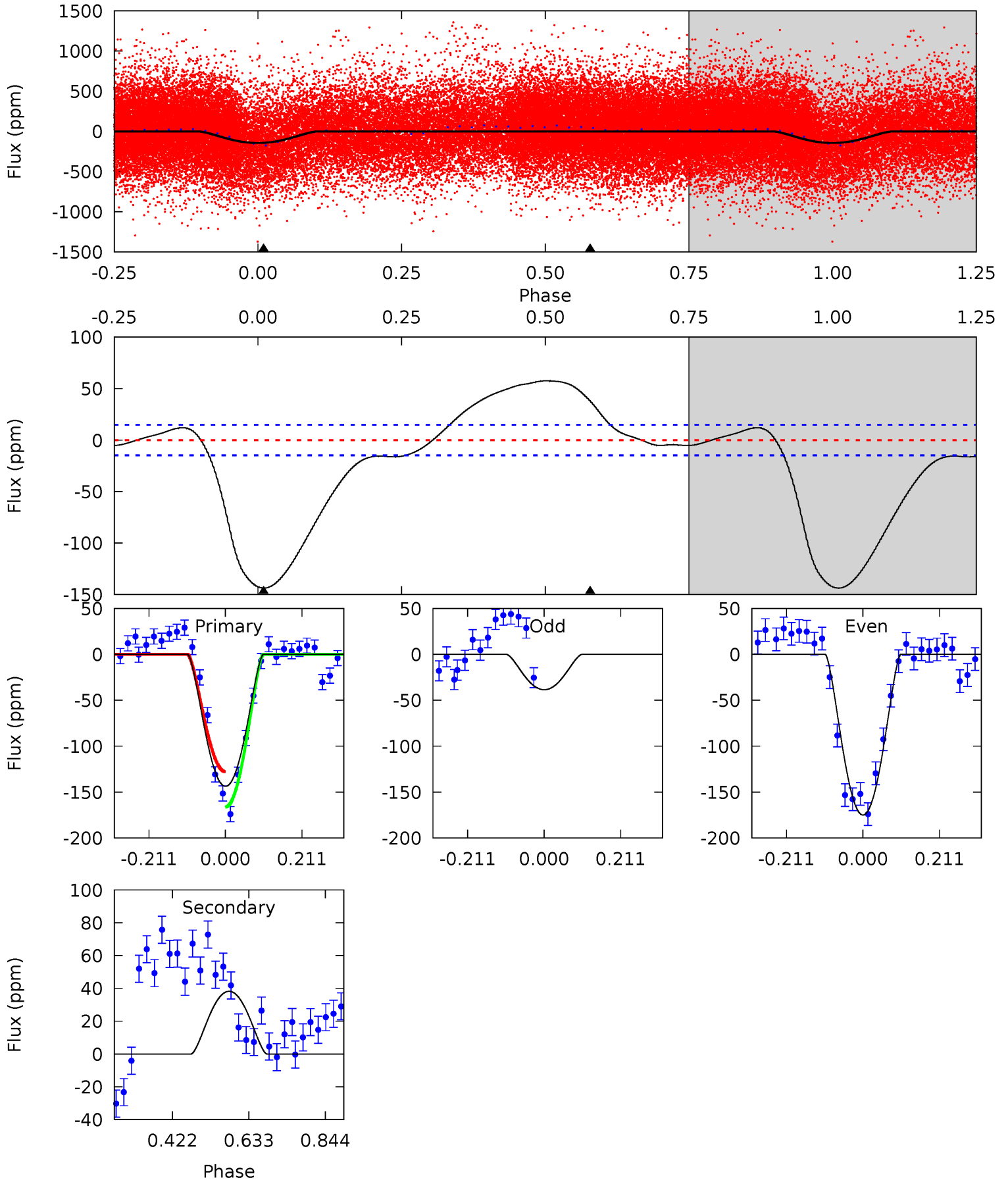
TCE 005471192-02 P= 6.212502 Days $T_0=134.061586$ (BKJD)



DV Model-Shift Uniqueness Test

005471192-02, P = 6.212143 Days, E = 127.898746 Days

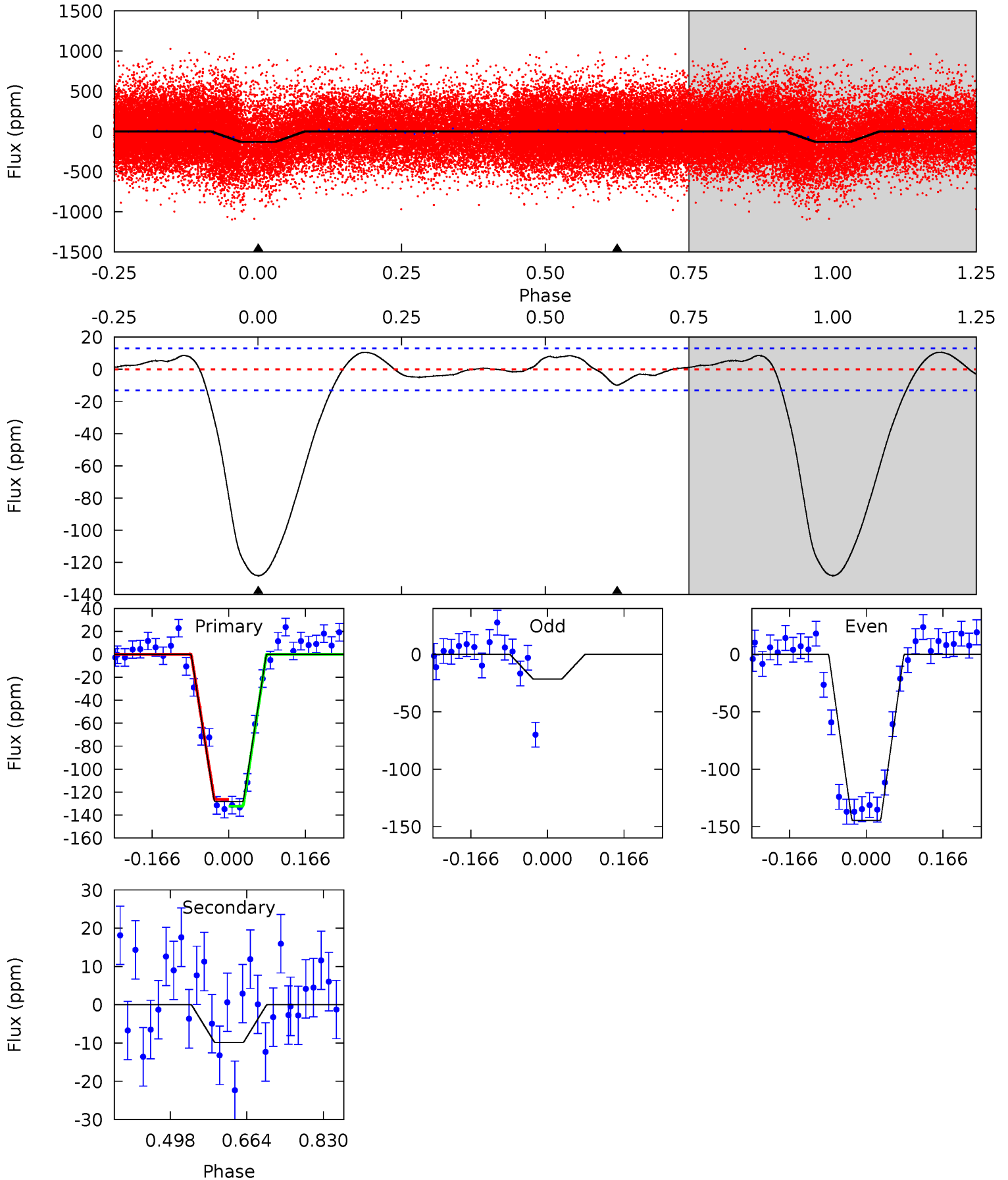
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
42.7	-11.3	0	0	4.41	1.25	4.28	42.7	42.7	-11.3	-11.3	18.0	1.24	0.29	5.66



Alt Model-Shift Uniqueness Test

005471192-02, P = 6.212502 Days, E = 127.849084 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
43.8	3.36	0	0	4.46	1.39	1.52	43.8	43.8	3.36	3.36	16.8	0.55	0.08	0.98



Stellar Parameters For KIC 005471192

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6246^{+173}_{-260}	$4.433^{+0.056}_{-0.224}$	$0.070^{+0.250}_{-0.300}$	$1.092^{+0.365}_{-0.122}$	$1.180^{+0.158}_{-0.173}$	$1.276^{+0.381}_{-0.690}$
	+3%/-4%	+1%/-5%	+357%/-429%	+33%/-11%	+13%/-15%	+30%/-54%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005471192-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	38 ± 3	$2.45^{+1.20}_{-1.25}$	1553^{+124}_{-86}	-3889^{+477}_{-1159}	$-16.887^{+9.344}_{-52.518}$
Alt.	-10 ± 3	$1.65^{+1.06}_{-1.01}$	1548^{+119}_{-80}	3487^{+1520}_{-529}	$9.105^{+57.405}_{-5.716}$

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 $A_{obs} \gg 1.0$

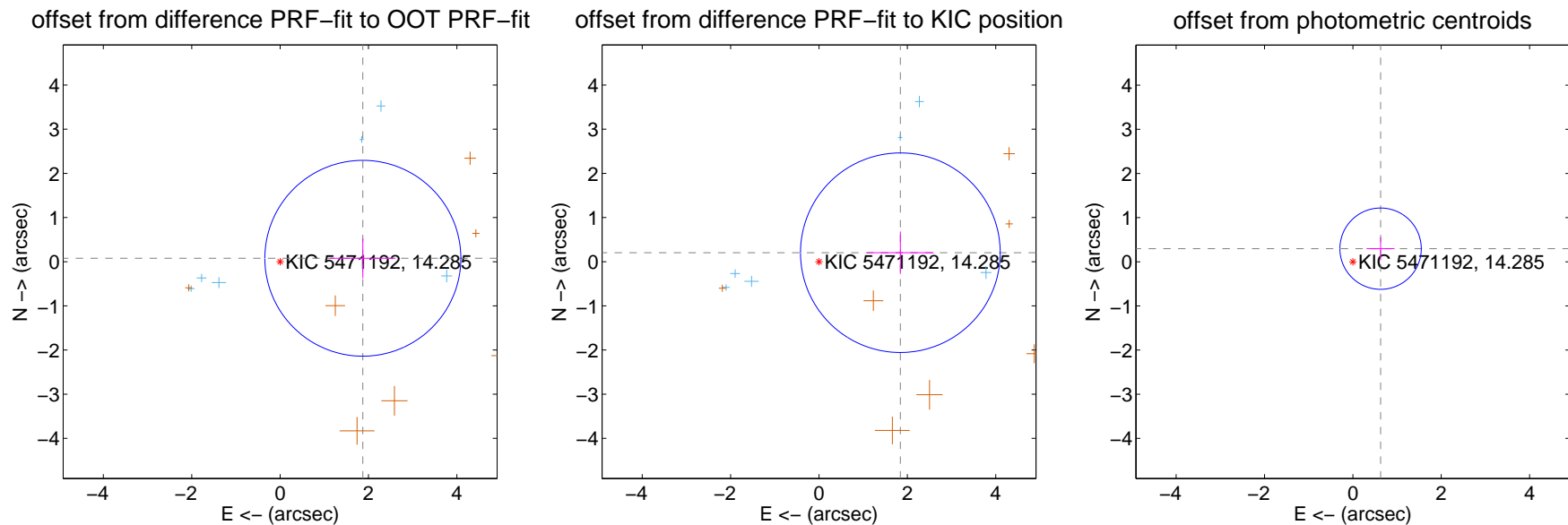
DV Centroid Data

Supplemental centroid analysis for 005471192-02. Kepler magnitude: 14.29. Transit SNR 11.48

There are 6 quarters with good PRF difference image offsets

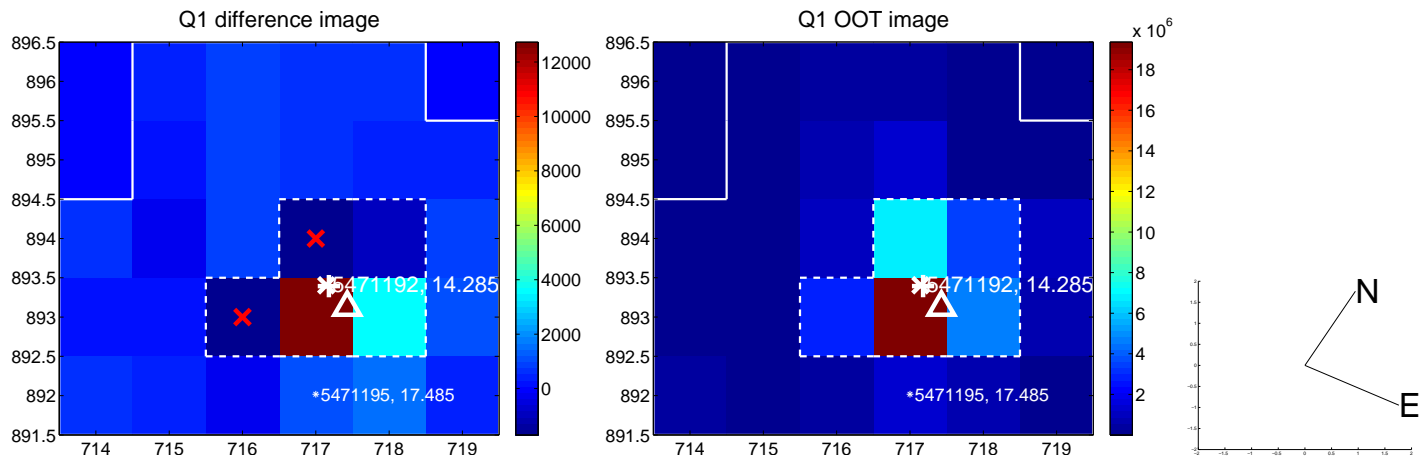
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.874 ± 0.739	2.54	-1.872 ± 0.741	0.078 ± 0.452
PRF-fit source offset from KIC position	1.853 ± 0.753	2.46	-1.841 ± 0.754	0.203 ± 0.481
photometric centroid source offset	0.69 ± 0.31	2.26	-0.63 ± 0.32	0.30 ± 0.26

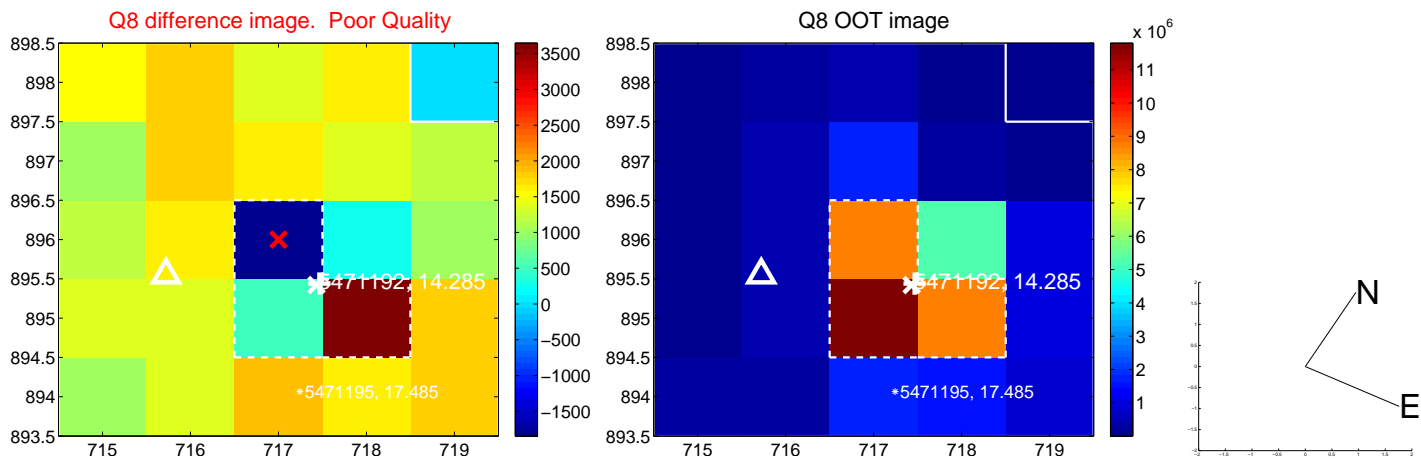
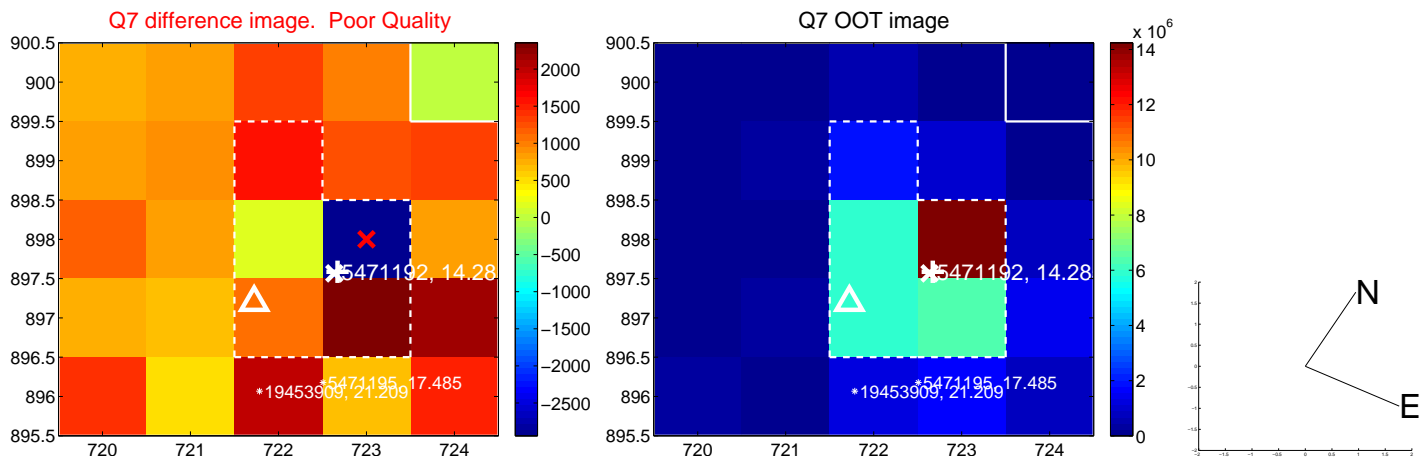
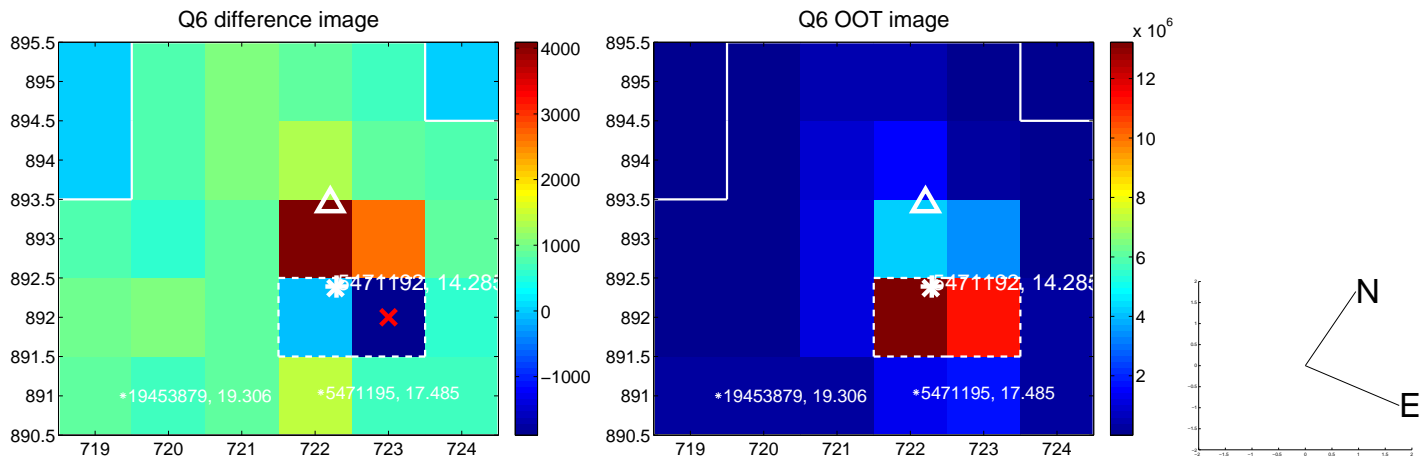
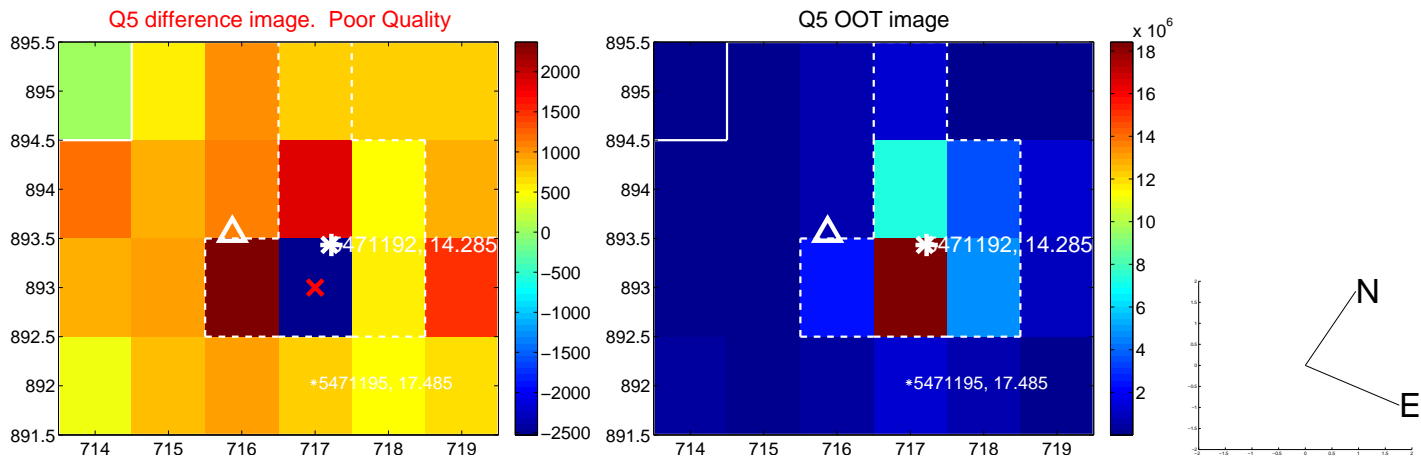


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

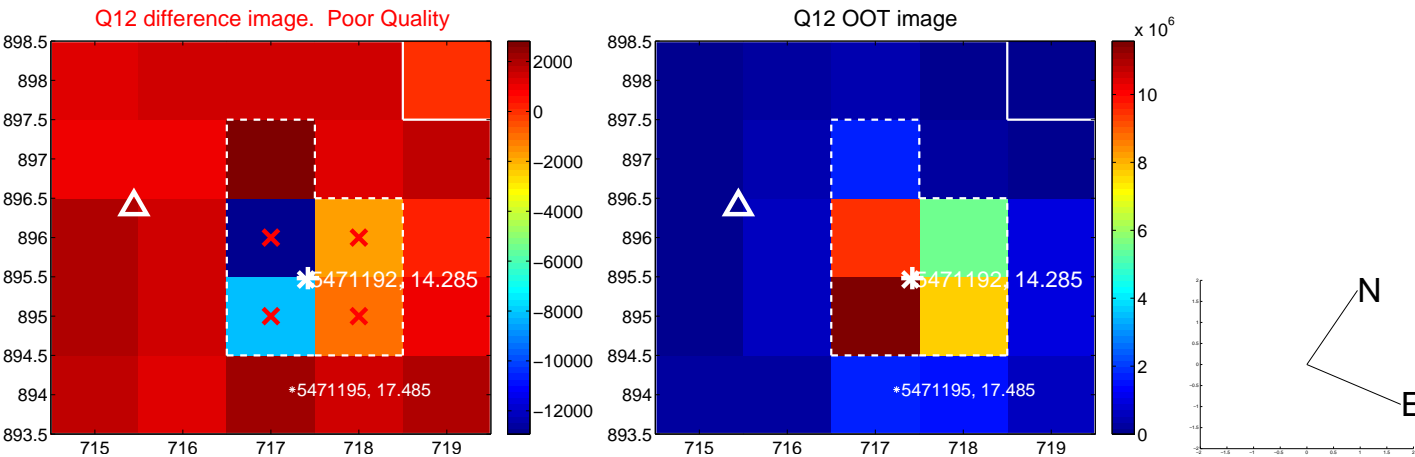
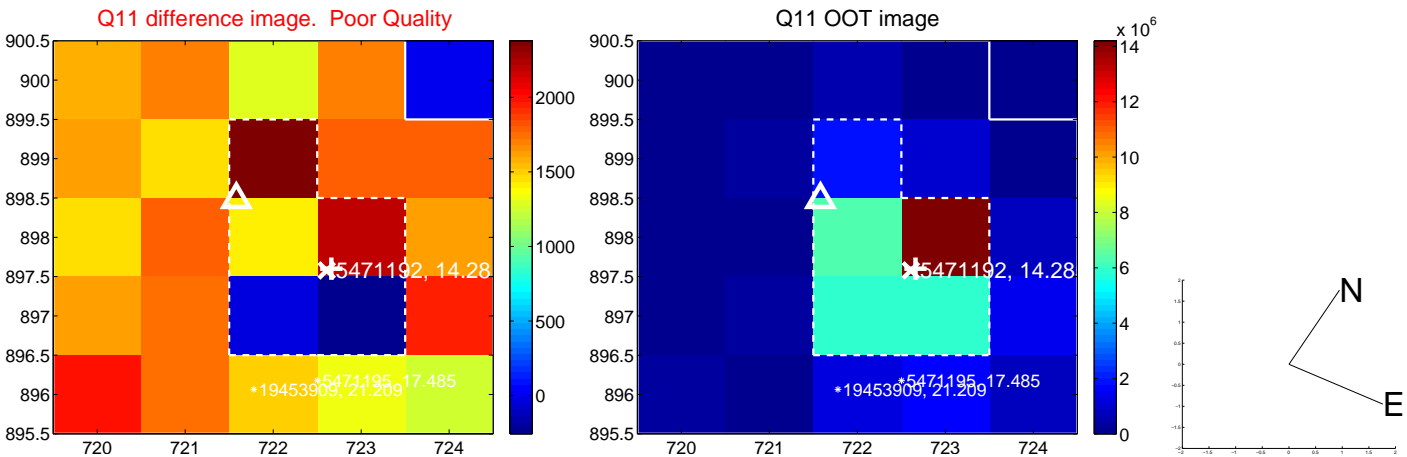
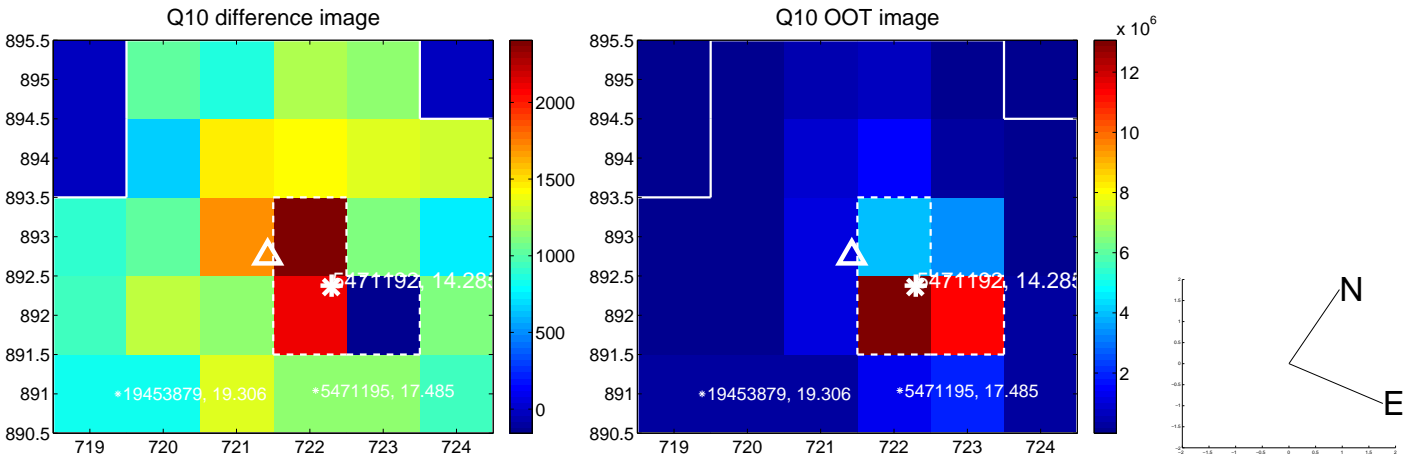
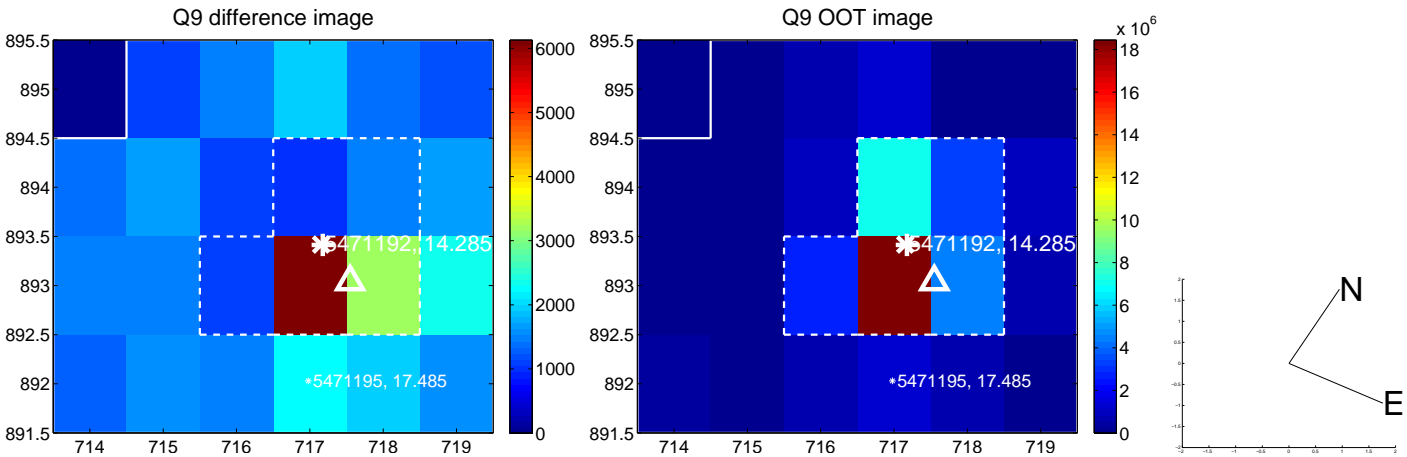
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



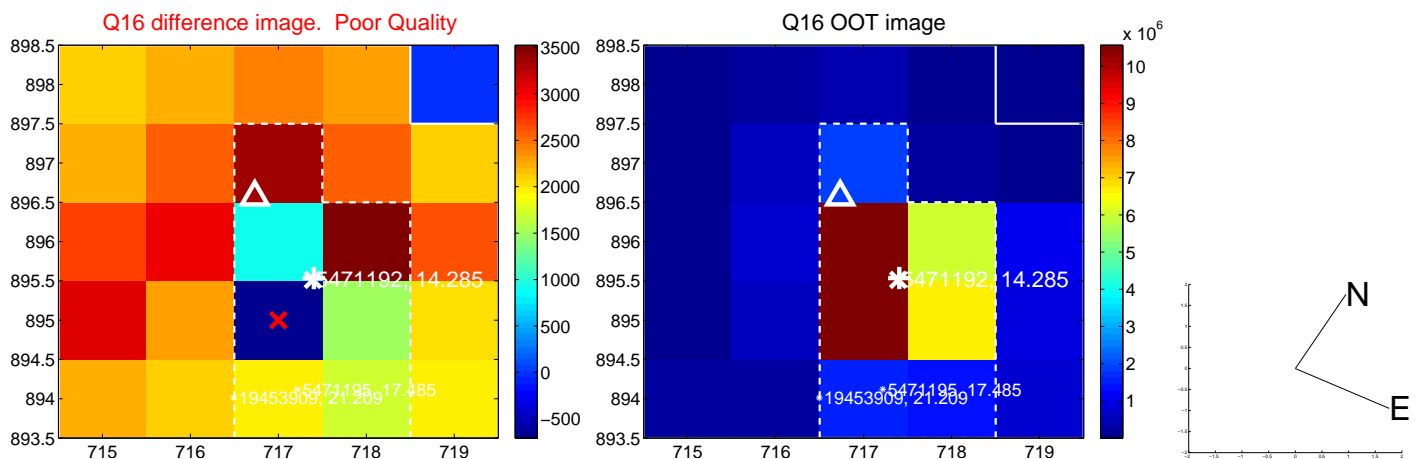
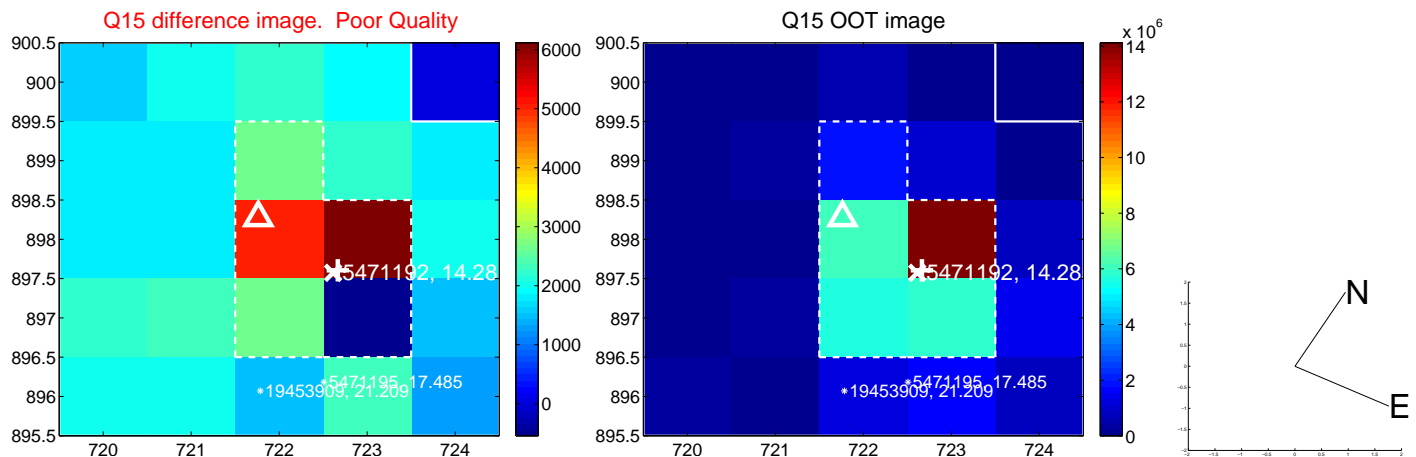
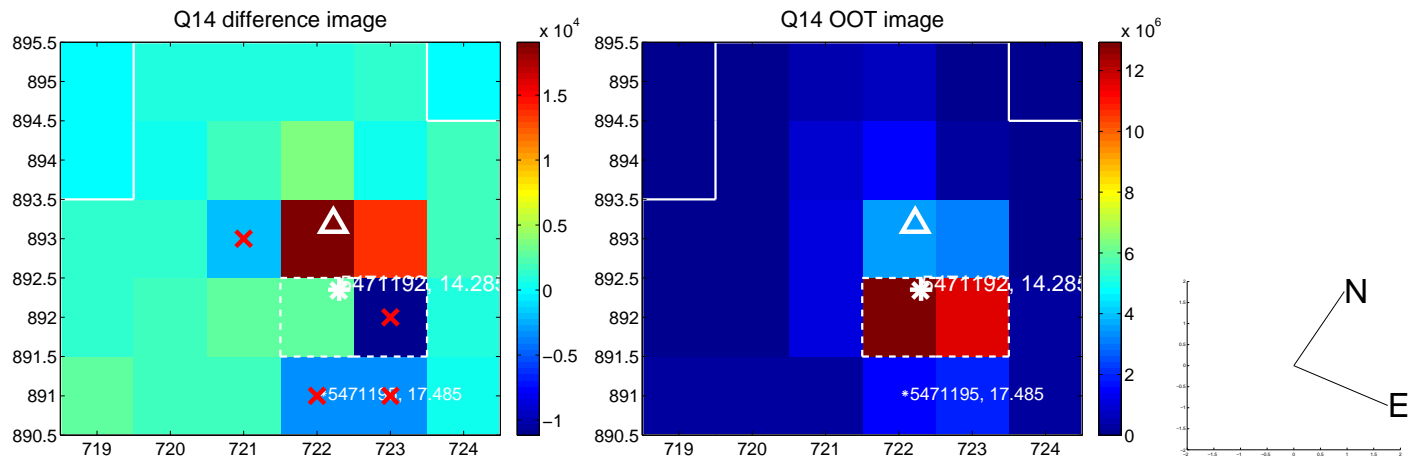
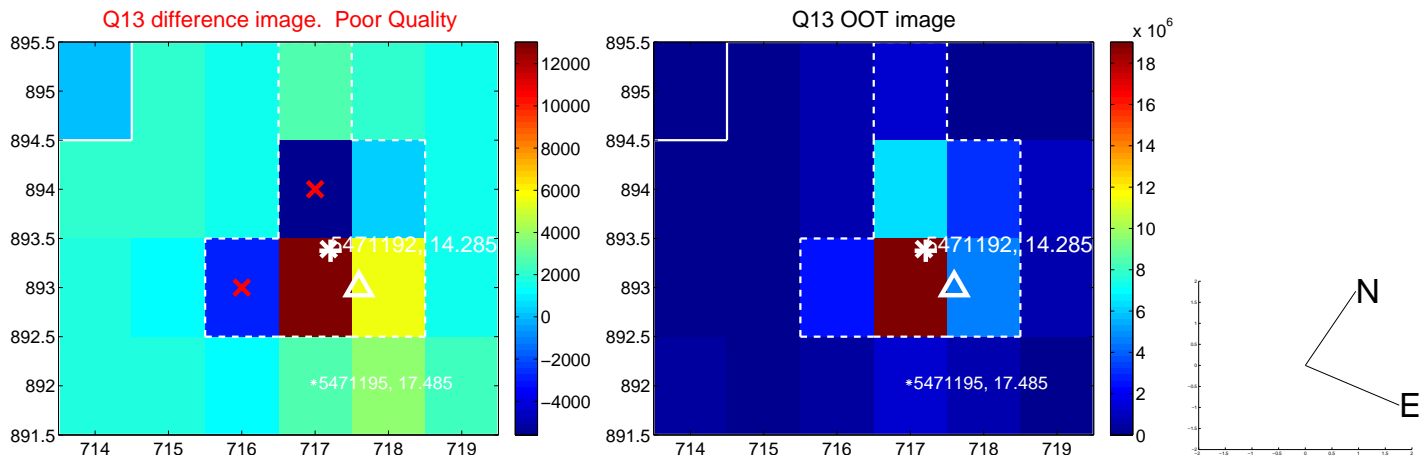
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



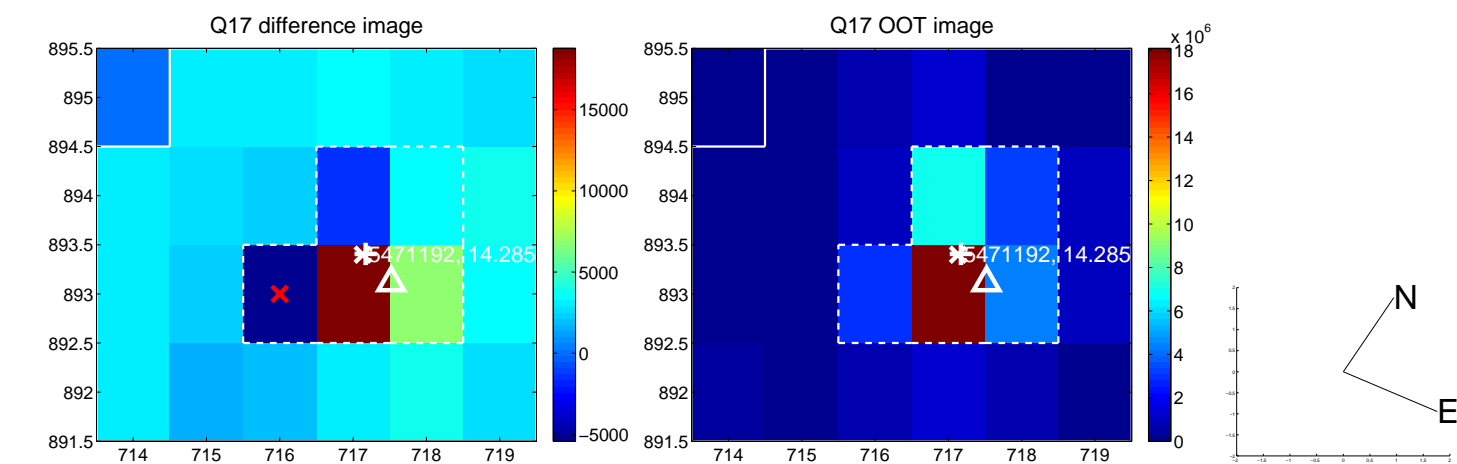
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



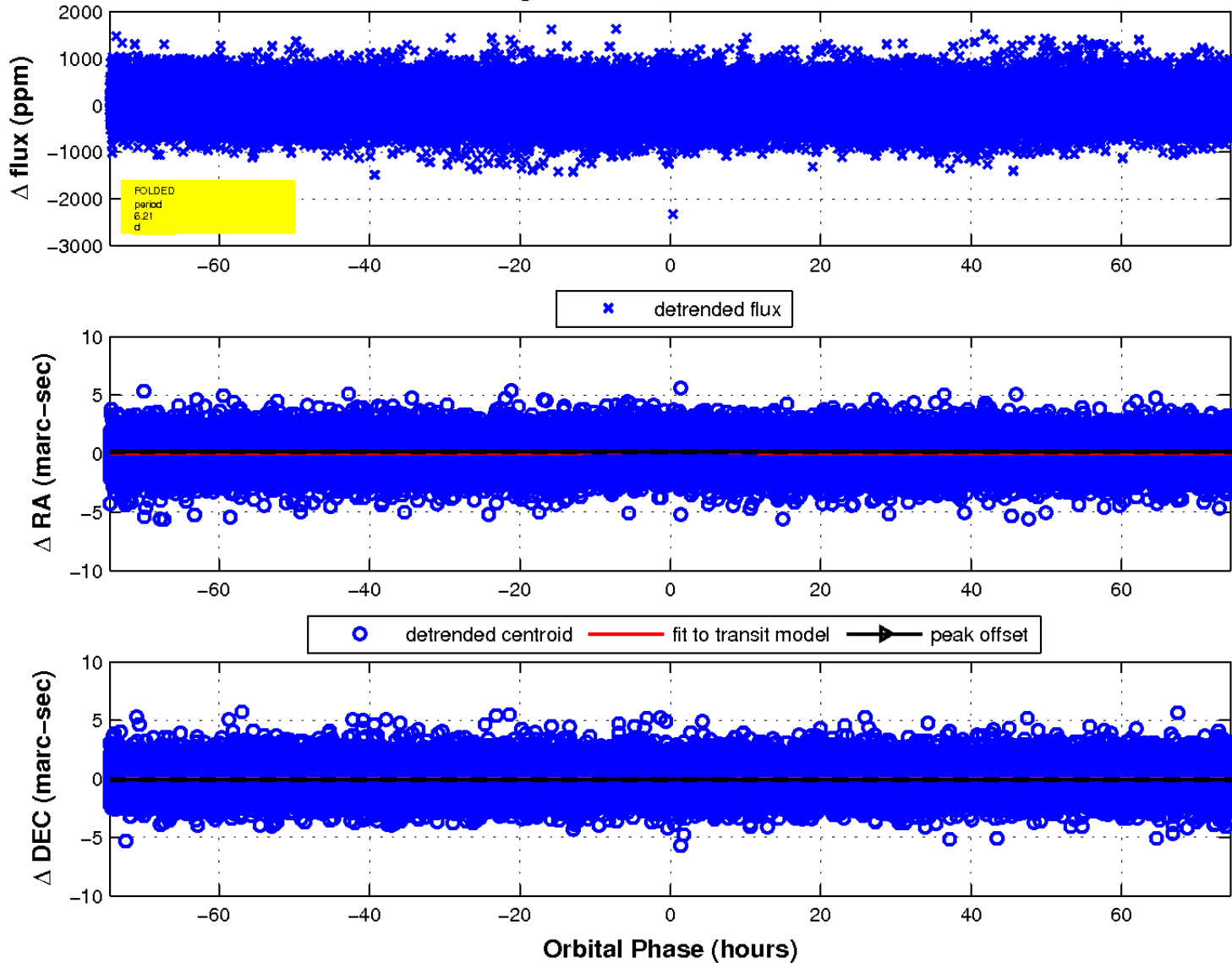
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

