

KIC 004580484

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})
004580484-01	OBS	No	1.757345	132.007273	97.9	6.364	9.8	10.1	1.71	8074	1.97	10534.44
004580484-02	OBS	No	1.171576	131.980941	95.1	4.954	7.7	9.3	1.71	8074	1.77	18088.13
004580484-03	OBS	No	138.963421	202.755169	656.0	10.162	7.2	6.8	1.71	8074	4.67	31.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004580484-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004580484-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
004580484-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS

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

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

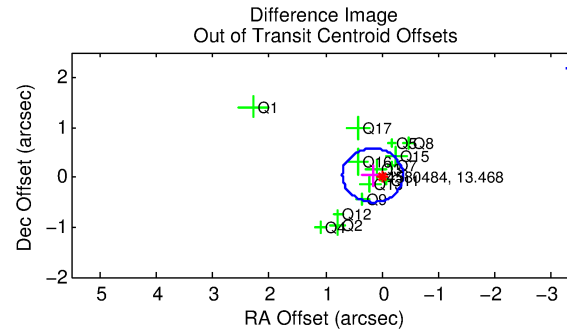
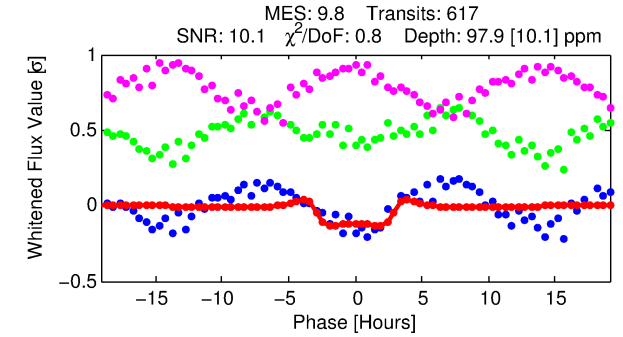
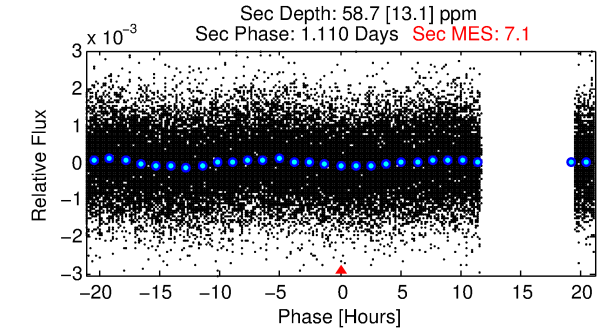
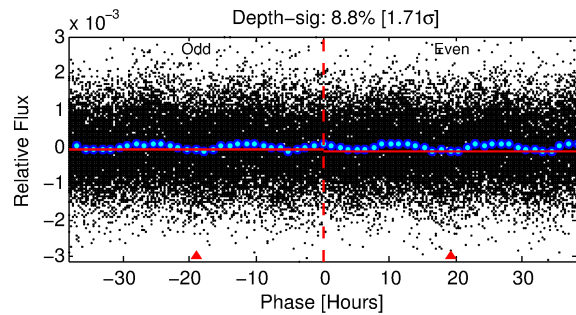
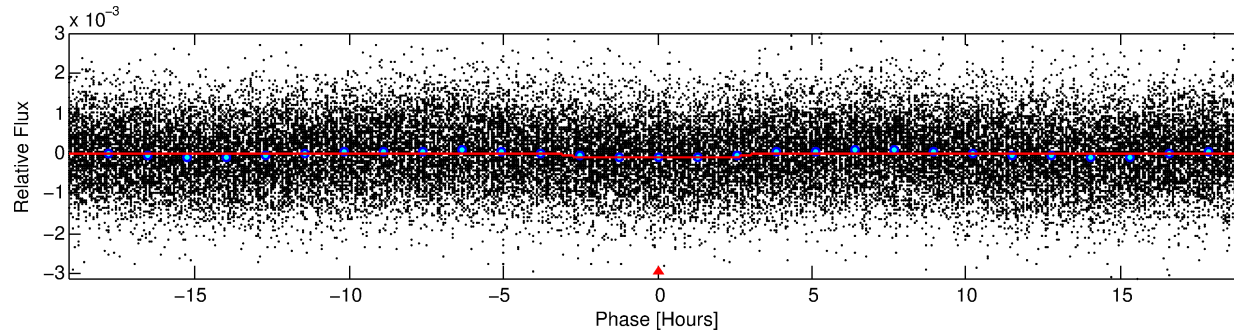
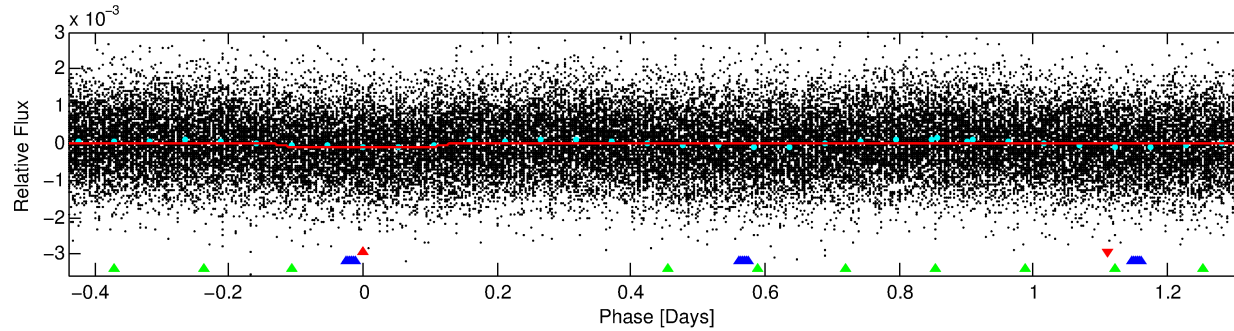
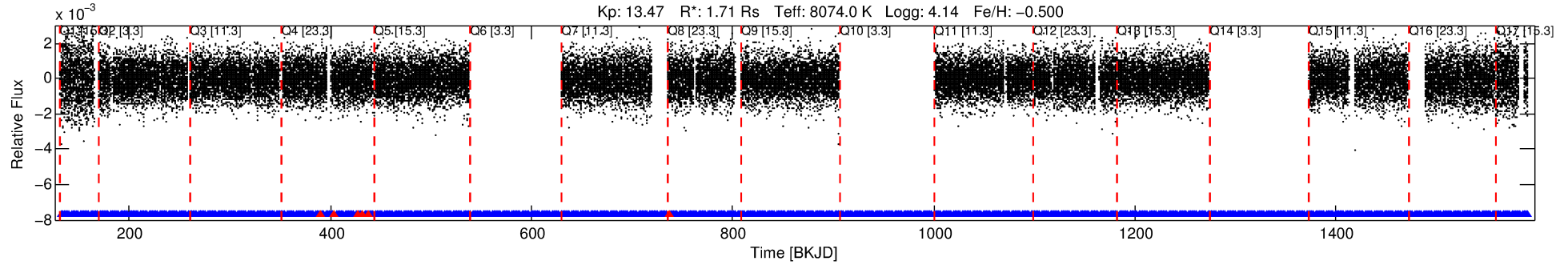
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004580484-01

No Significant Match Found

DV One-Page Summary

KIC: 4580484 Candidate: 1 of 3 Period: 1.757 d



DV Fit Results:

Period = 1.75734 [0.00002] d
Epoch = 132.0073 [0.0059] BKJD
Rp/R* = 0.0105 [0.0031]
a/R* = 1.35 [1.15]
b = 0.90 [0.40]
Seff = 10534.44 [2271.37]
Teq = 2583 [139] K
Rp = 1.96 [0.66] Re
a = 0.0326 [0.0045] AU
Ag = 8.87 [5.95] [1.32 σ]
Teffp = 6893 [1099] K [3.89 σ]

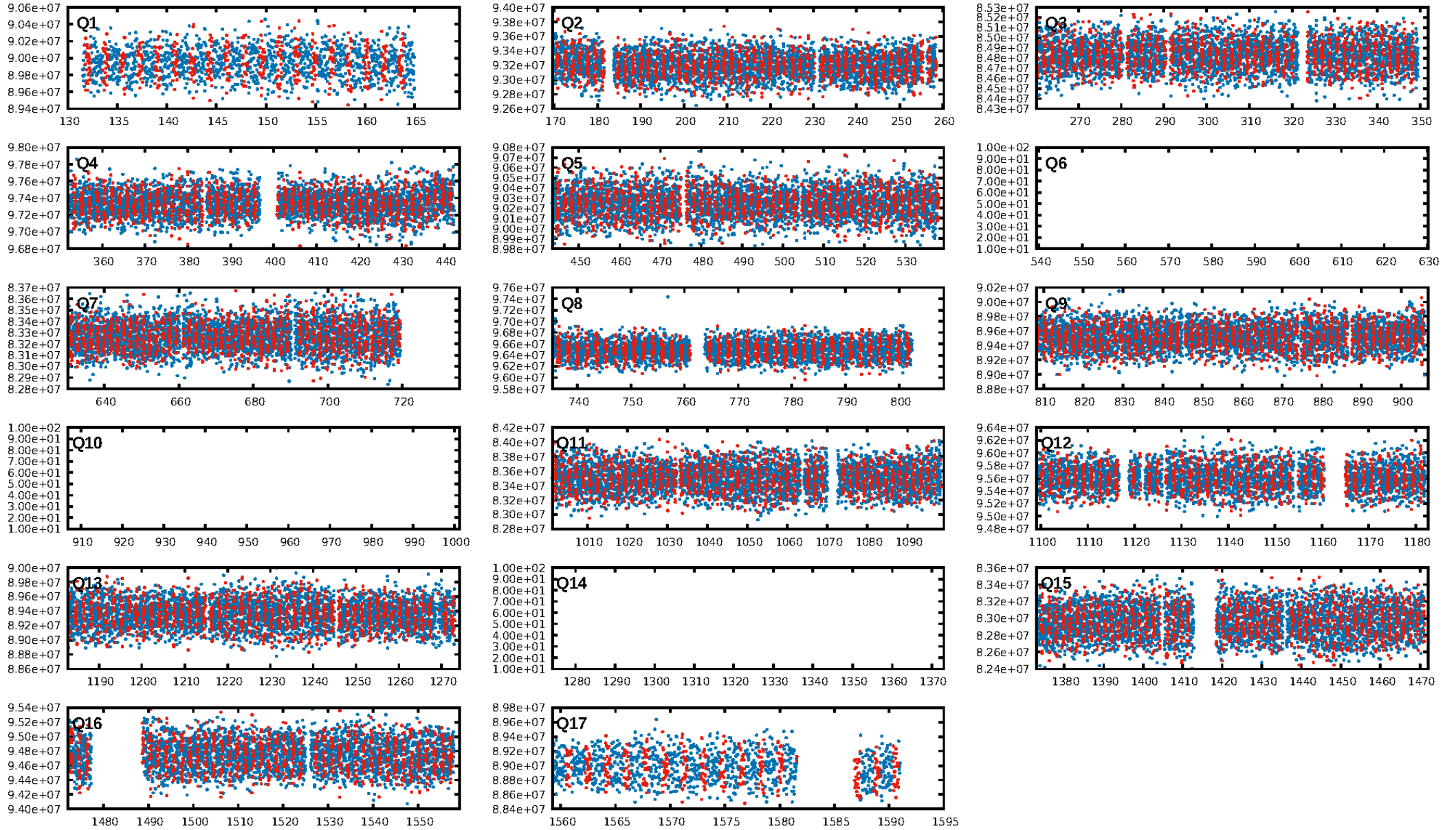
DV Diagnostic Results:

ShortPeriod-sig: 91.9% [1.74 σ]
LongPeriod-sig: 100.0% [274.64 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.51e-14
RollingBand-fgt: 0.99 [577/583]
GhostDiagnostic-chr: 2.921
Centroid-sig: 11.0%
Centroid-so: 0.688 arcsec [1.69 σ]
OotOffset-rm: 0.170 arcsec [0.95 σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-rm: 0.125 arcsec [0.58 σ]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.00 [0/14]

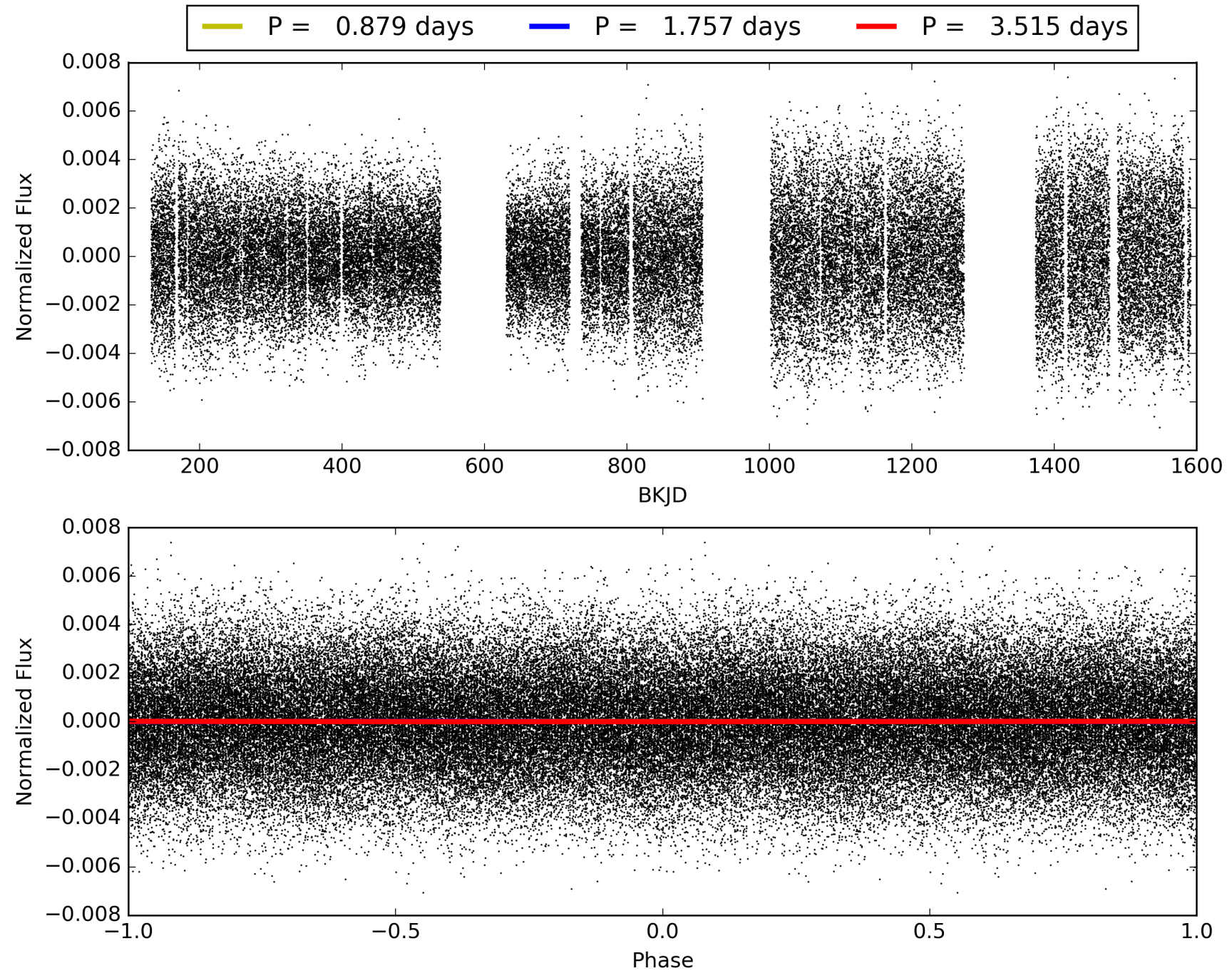
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 12:04:58 Z

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

TCE 004580484-01, PDC Light Curves

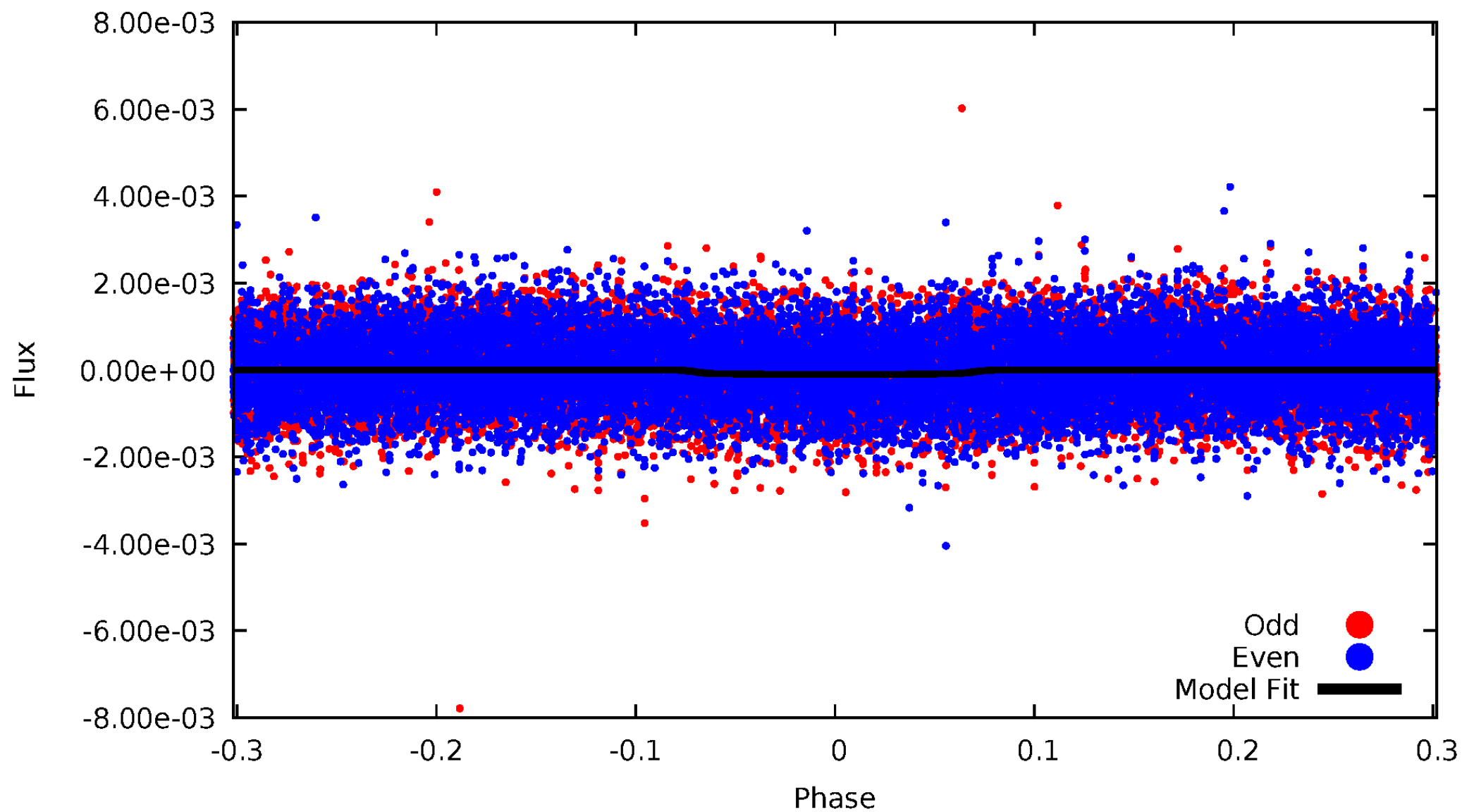


TCE 004580484-01



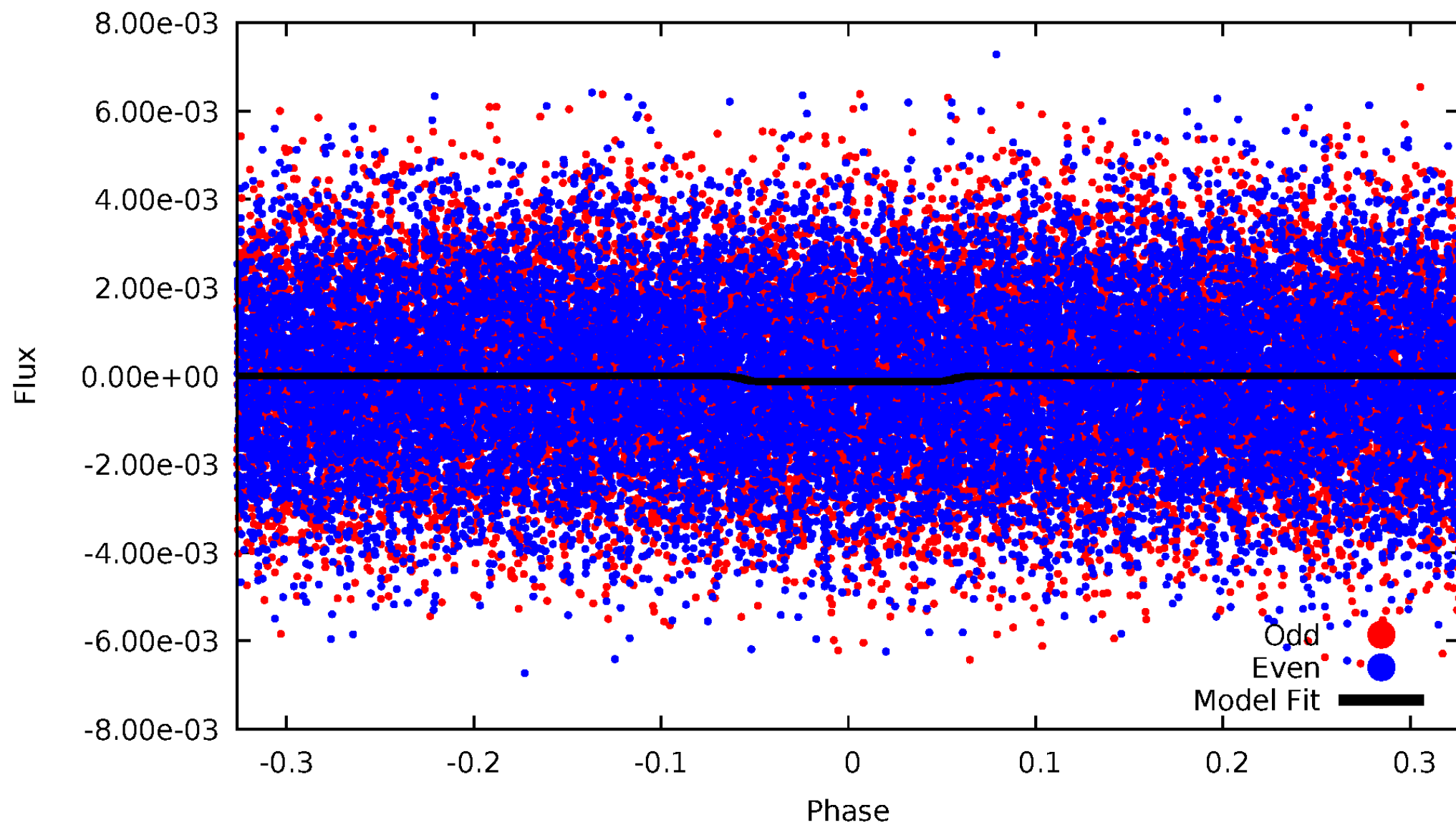
DV Odd/Even

TCE 004580484-01



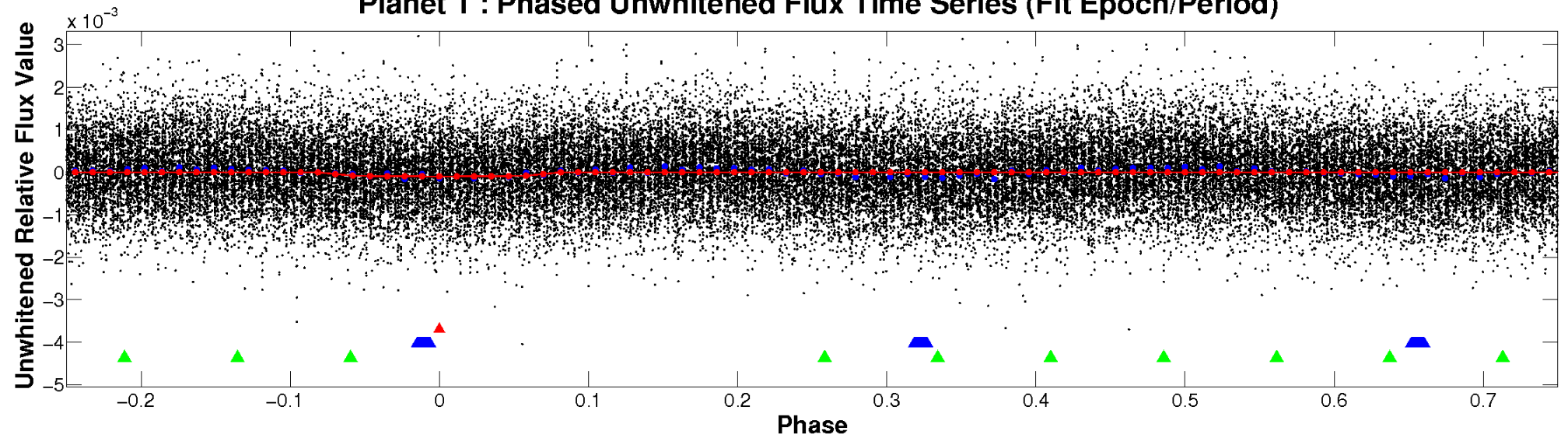
ALT Odd/Even

TCE 004580484-01

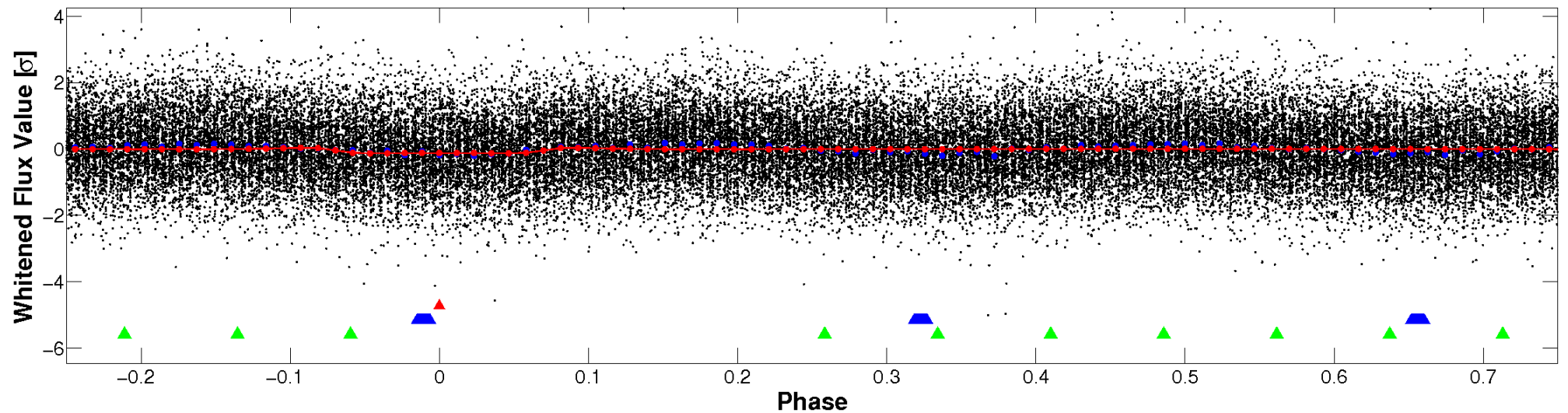


Non-Whitened Vs. Whitened Light Curve

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

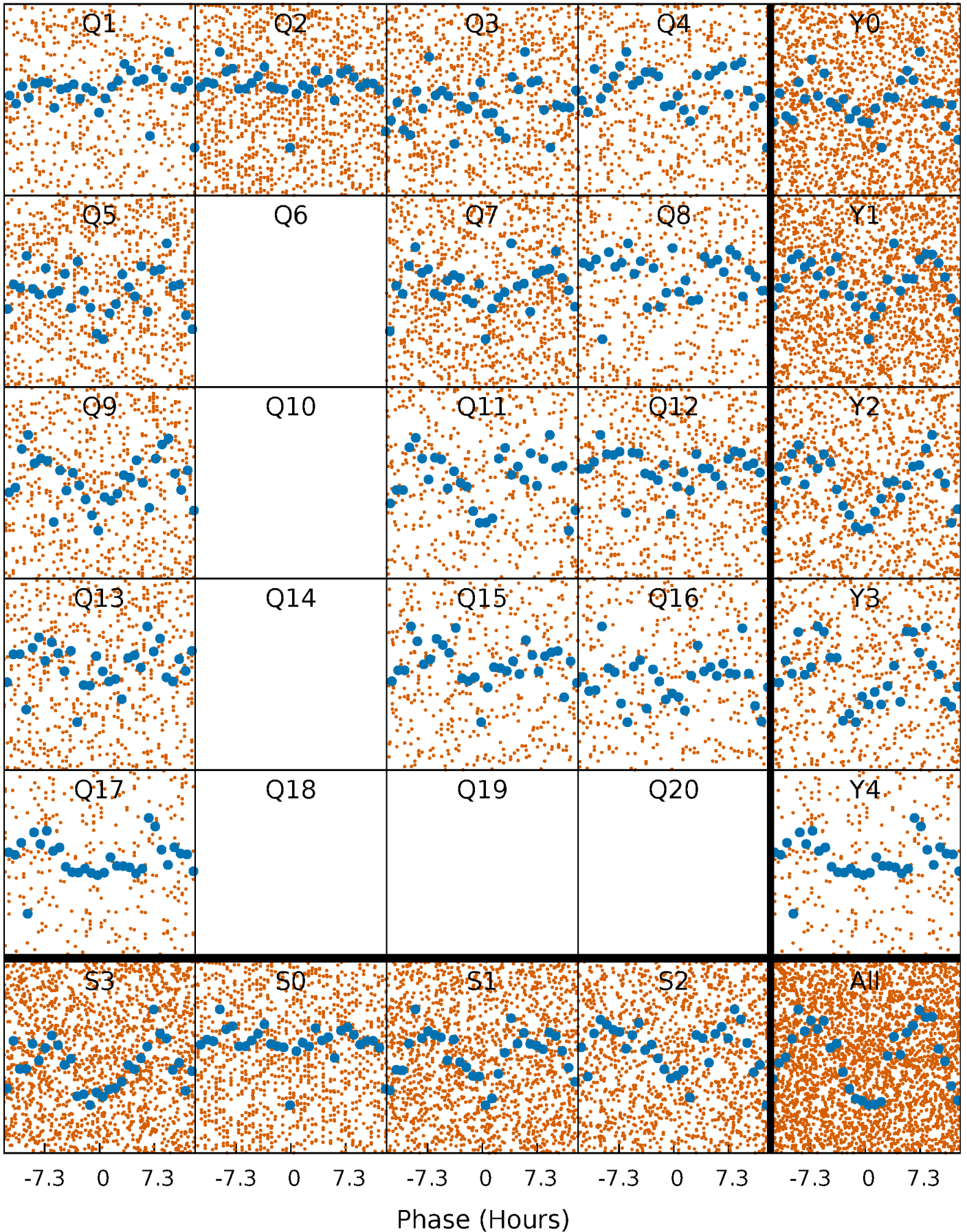


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



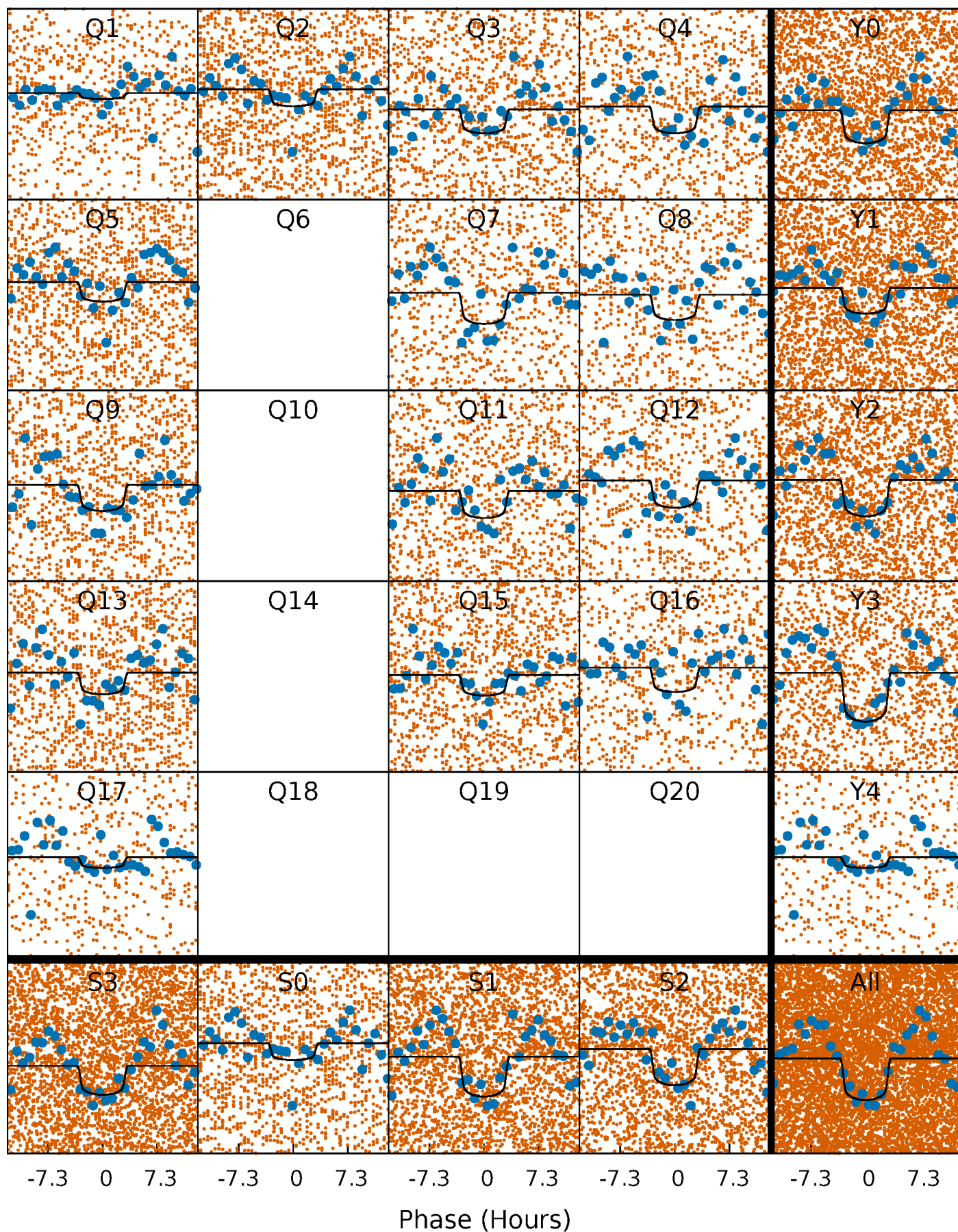
PDC Quarter-Phased Transit Curves

TCE 004580484-01 P= 1.757345 Days $T_0=132.007273$ (BKJD)



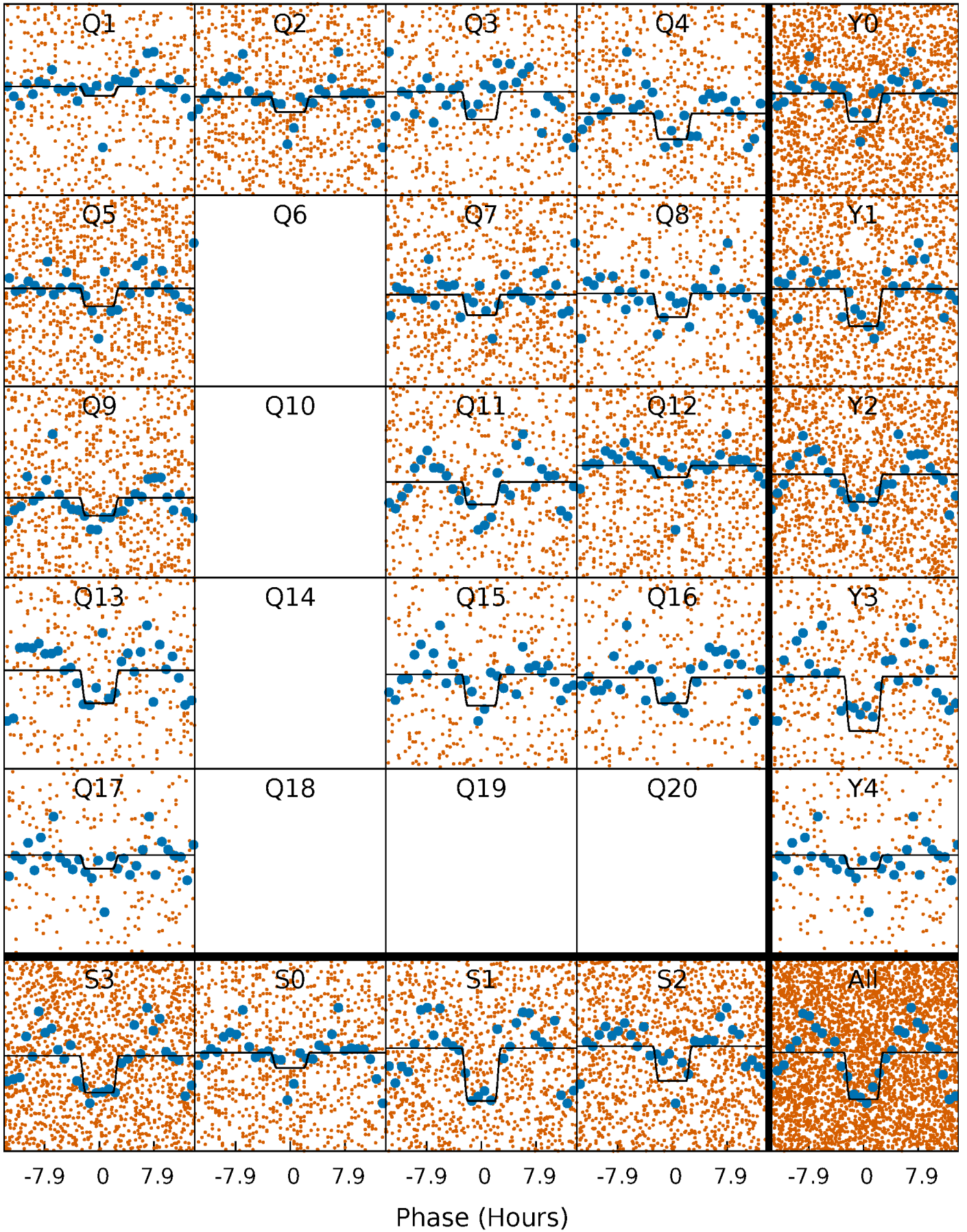
DV Quarter-Phased Transit Curves

TCE 004580484-01 P= 1.757345 Days $T_0=132.007273$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

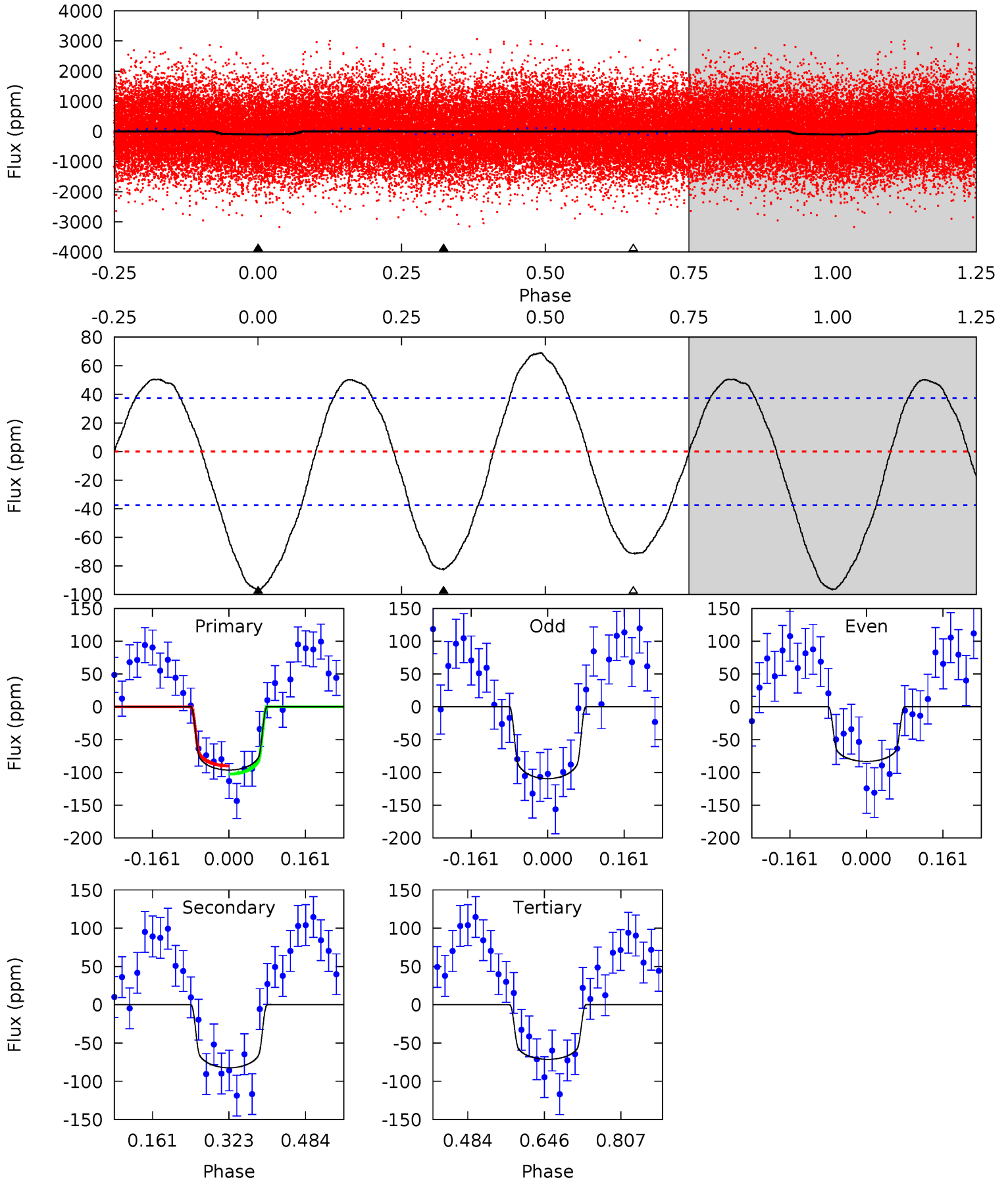
TCE 004580484-01 P= 1.757324 Days $T_0=132.022069$ (BKJD)



DV Model-Shift Uniqueness Test

004580484-01, P = 1.757345 Days, E = 130.249928 Days

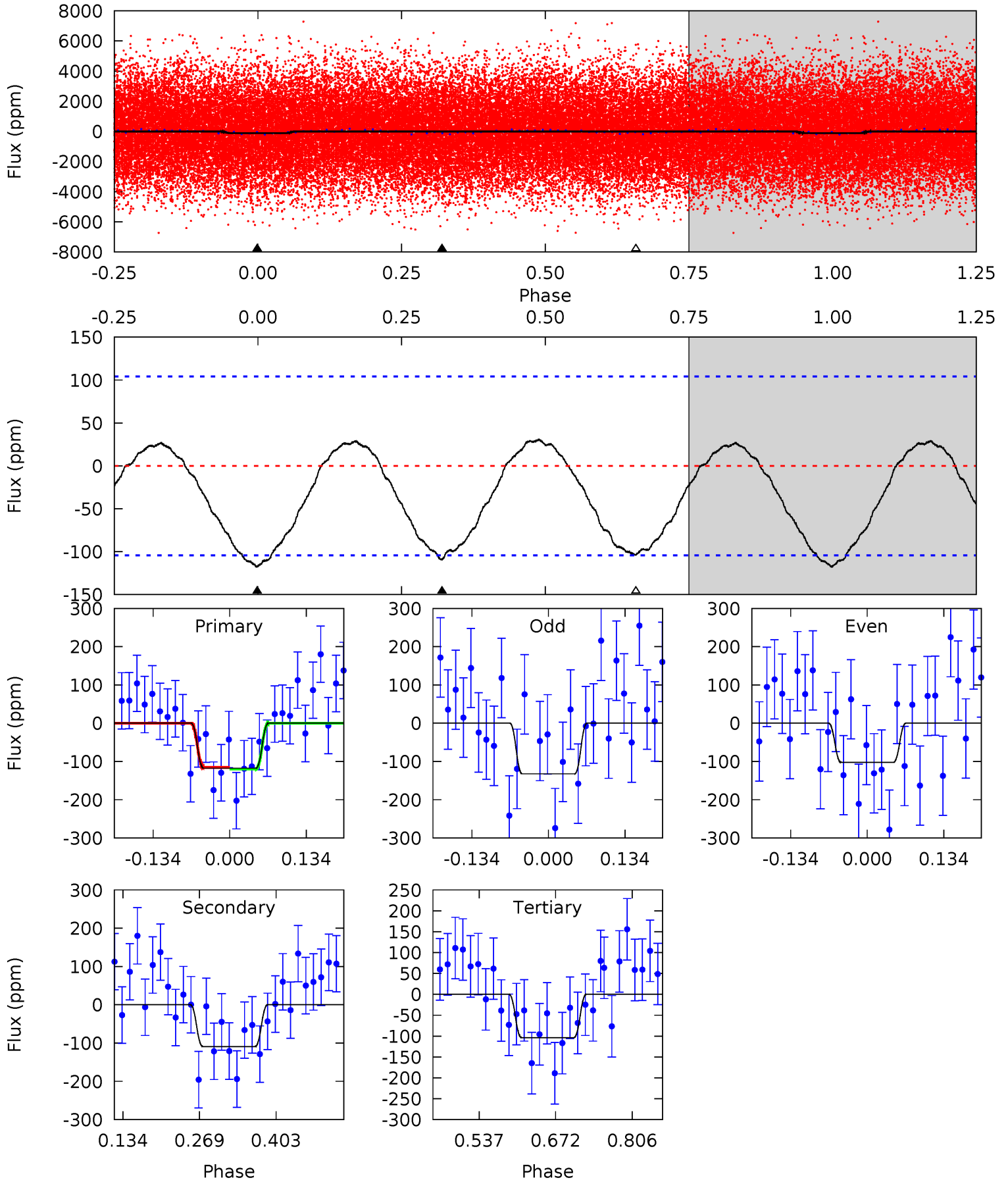
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	9.80	8.49	0	4.46	1.40	5.66	2.99	11.5	1.31	9.80	1.54	1.08	0.42	0.74



Alt Model-Shift Uniqueness Test

004580484-01, P = 1.757324 Days, E = 130.264745 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.08	4.71	4.48	0	4.50	1.50	2.04	0.60	5.08	0.23	4.71	0.64	1.02	0.21	0.09



Stellar Parameters For KIC 004580484

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8074^{+72}_{-72}	$4.144^{+0.121}_{-0.099}$	$-0.500^{+0.150}_{-0.150}$	$1.713^{+0.266}_{-0.266}$	$1.489^{+0.127}_{-0.088}$	$0.417^{+0.242}_{-0.131}$
	+1%/-1%	+3%/-2%	+30%/-30%	+16%/-16%	+9%/-6%	+58%/-31%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 004580484-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-82 ± 8	$1.97^{+0.61}_{-0.61}$	3595^{+163}_{-140}	7262^{+2052}_{-966}	12^{+14}_{-5}
Alt.	-109 ± 23	$2.12^{+0.59}_{-0.60}$	3606^{+141}_{-146}	7609^{+2023}_{-1131}	14^{+15}_{-6}

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

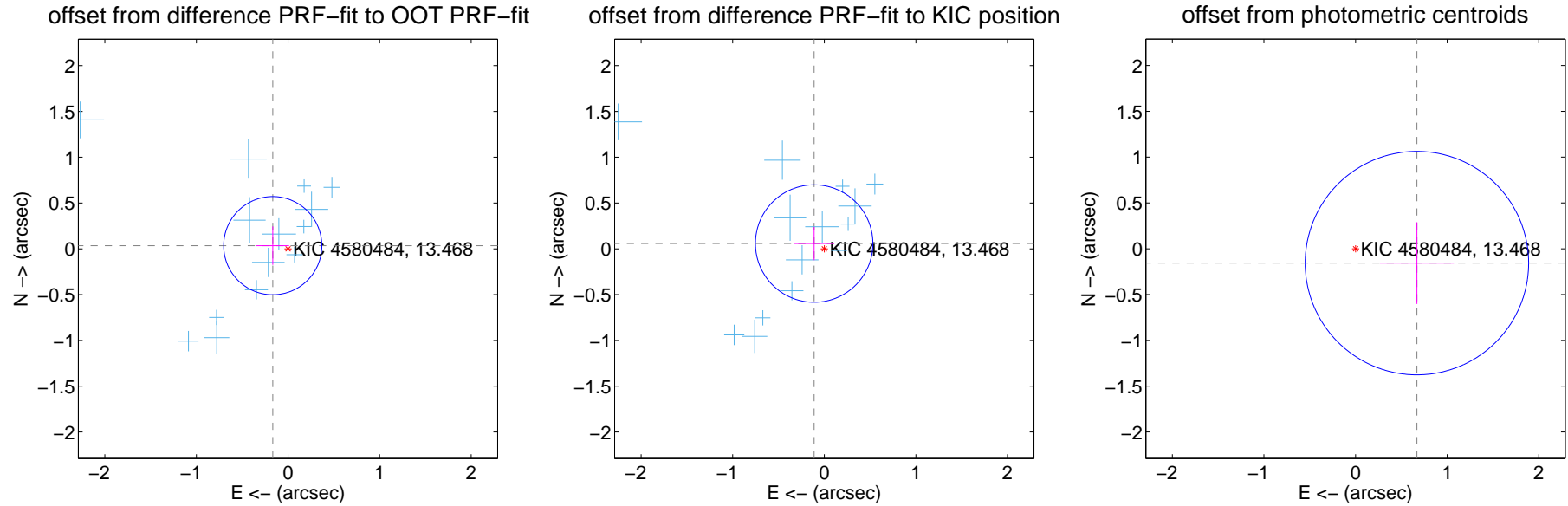
DV Centroid Data

Supplemental centroid analysis for 004580484-01. Kepler magnitude: 13.47. Transit SNR 10.09

There are 14 quarters with good PRF difference image offsets

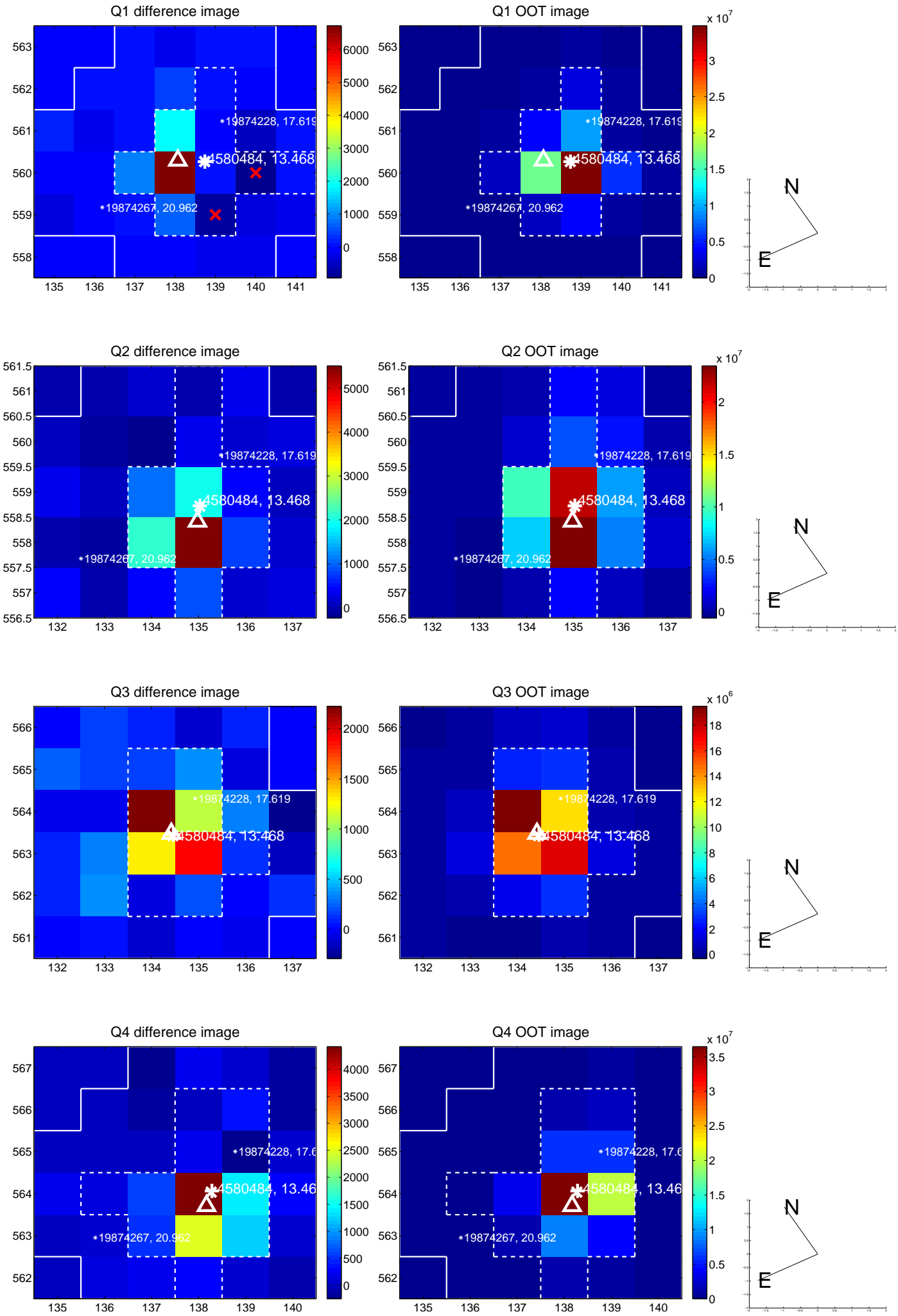
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.170 ± 0.179	0.95	0.167 ± 0.178	0.034 ± 0.210
PRF-fit source offset from KIC position	0.125 ± 0.214	0.58	0.111 ± 0.220	0.057 ± 0.182
photometric centroid source offset	0.69 ± 0.41	1.69	-0.67 ± 0.40	-0.16 ± 0.45

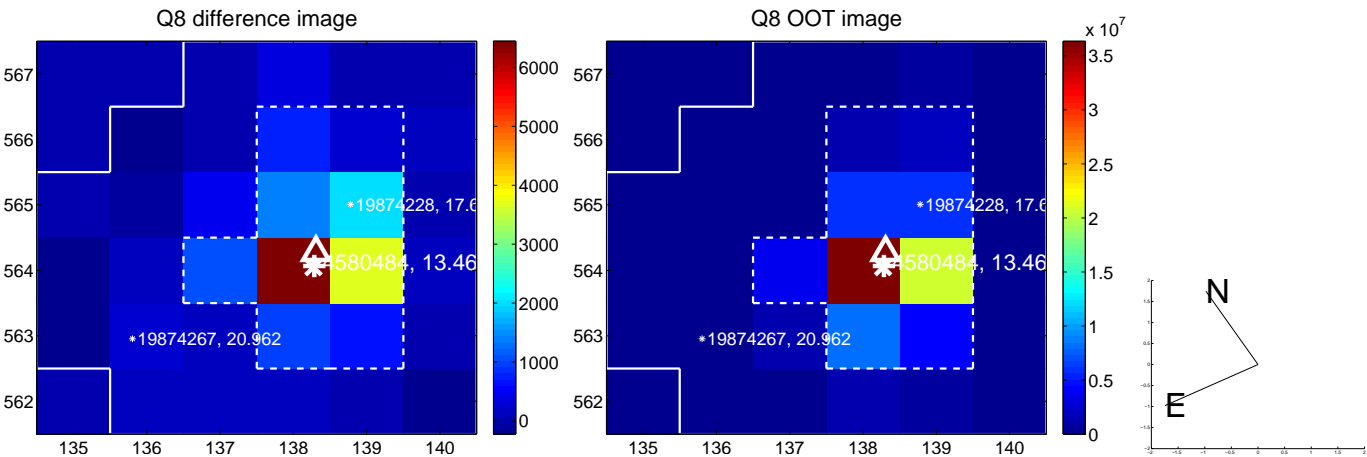
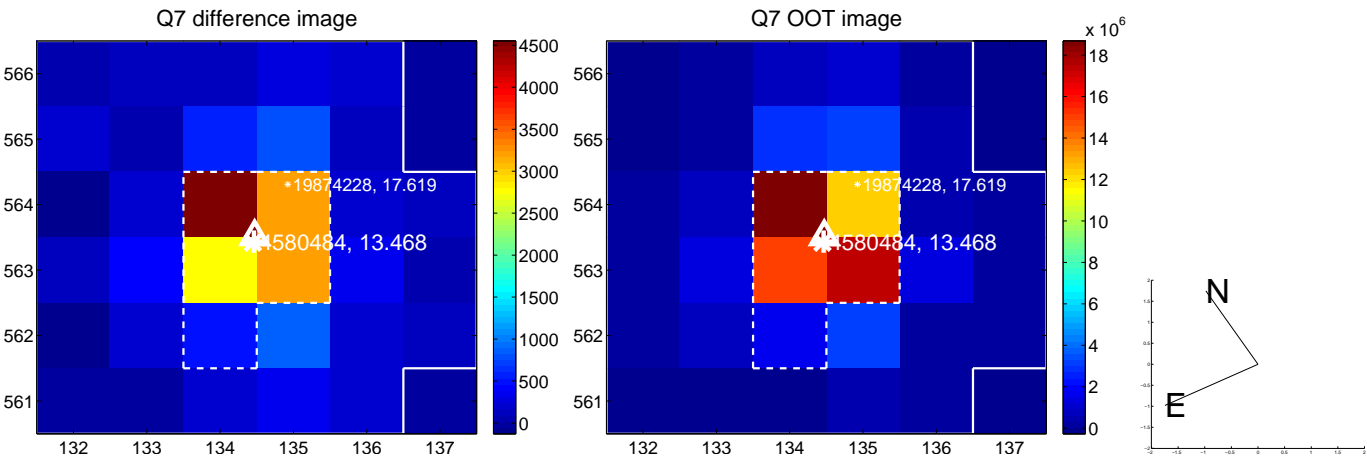
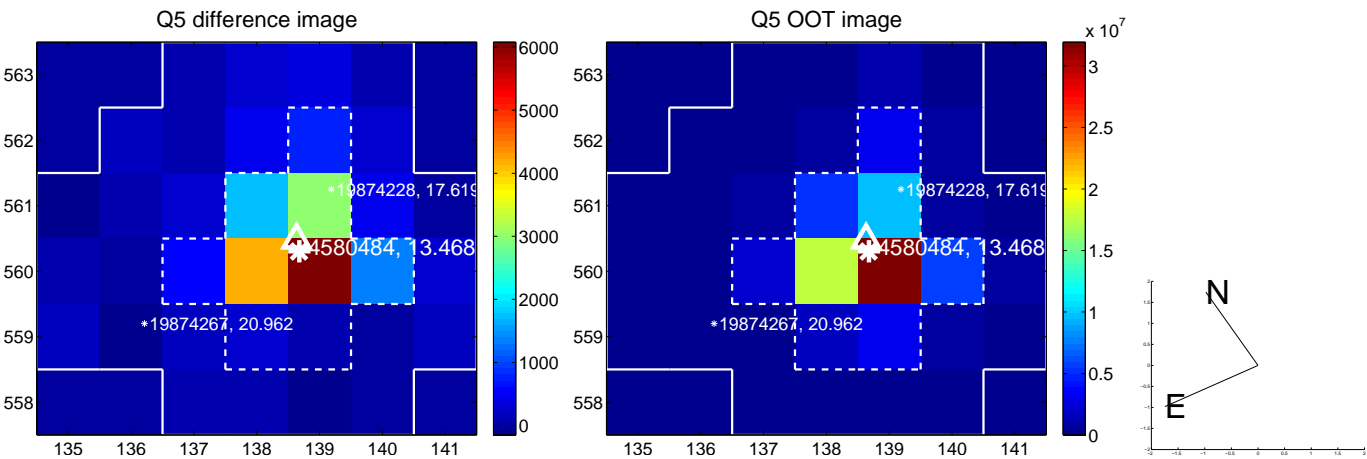


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

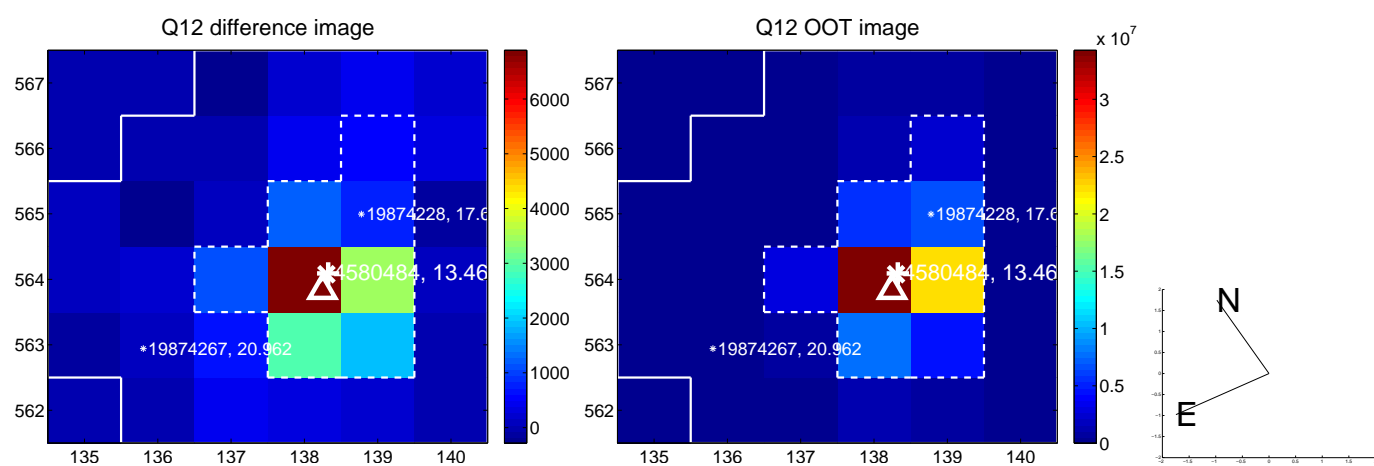
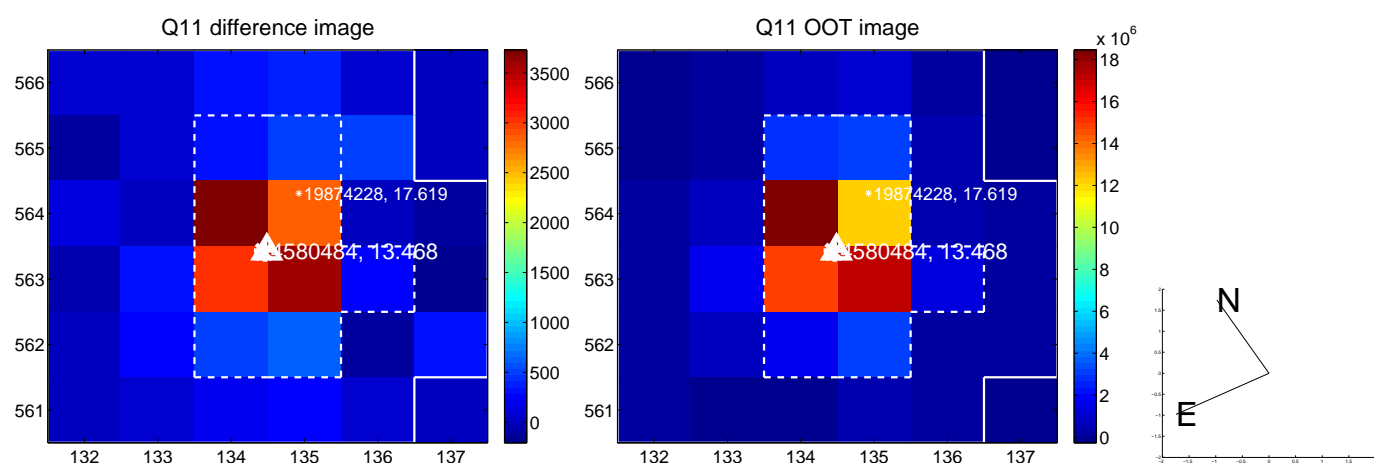
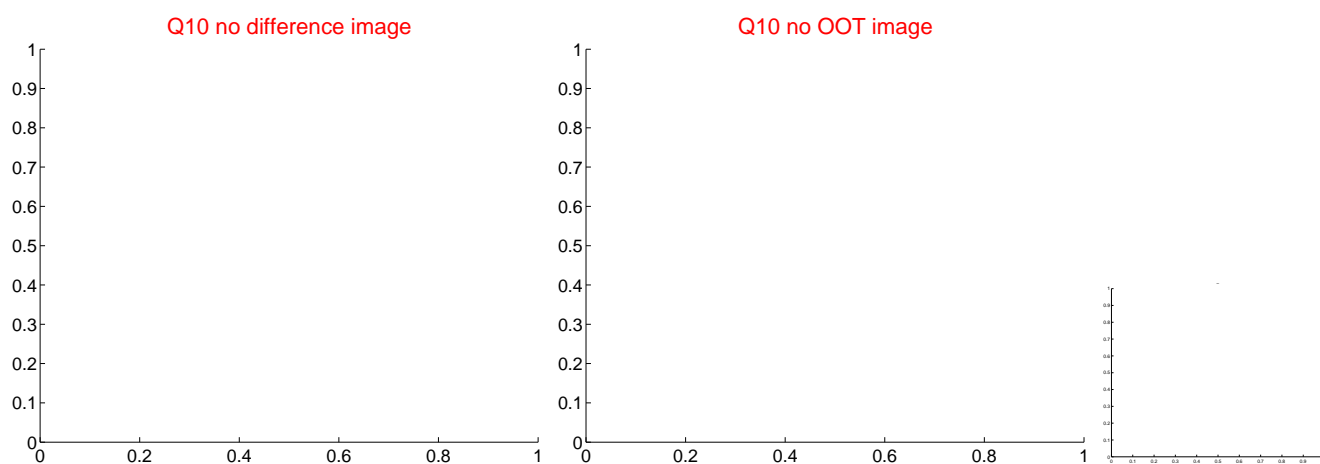
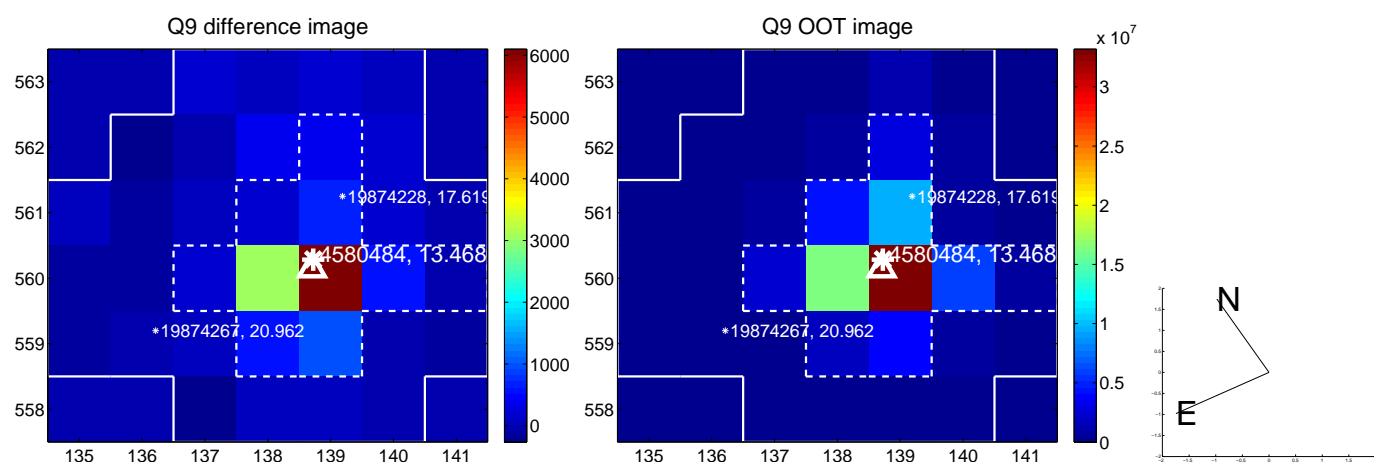
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



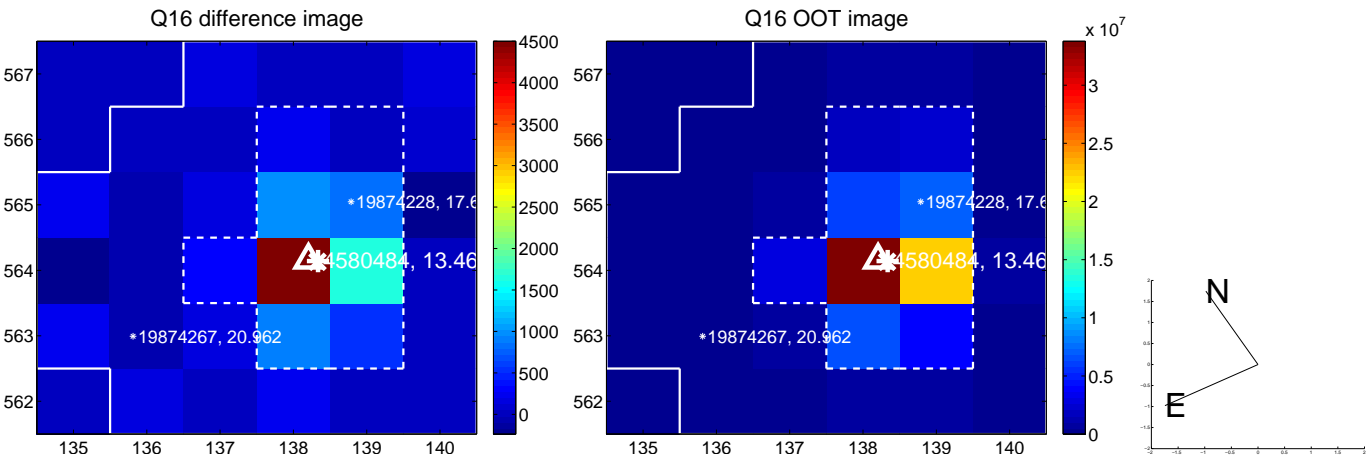
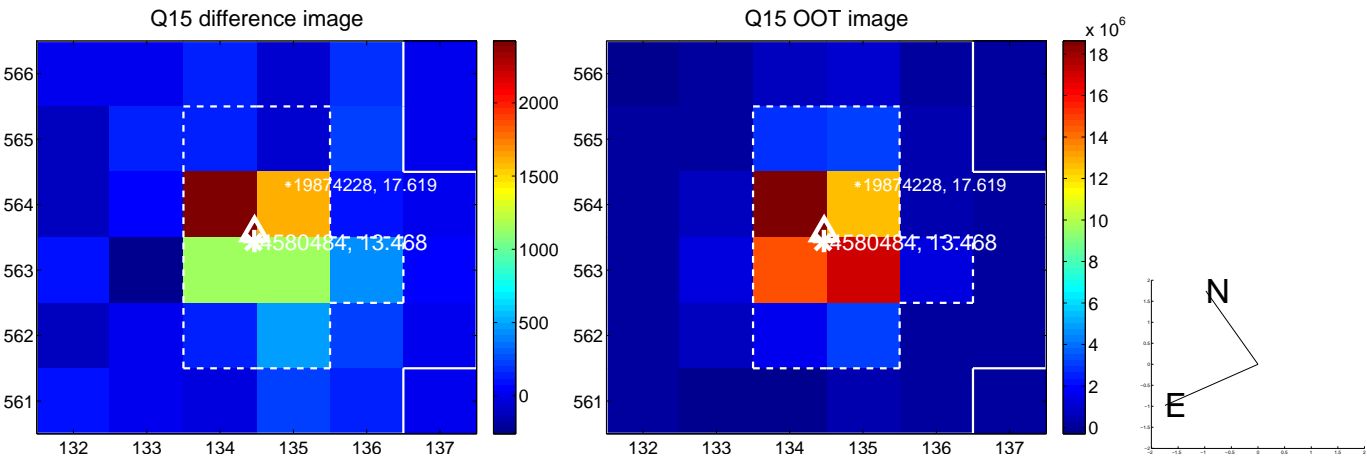
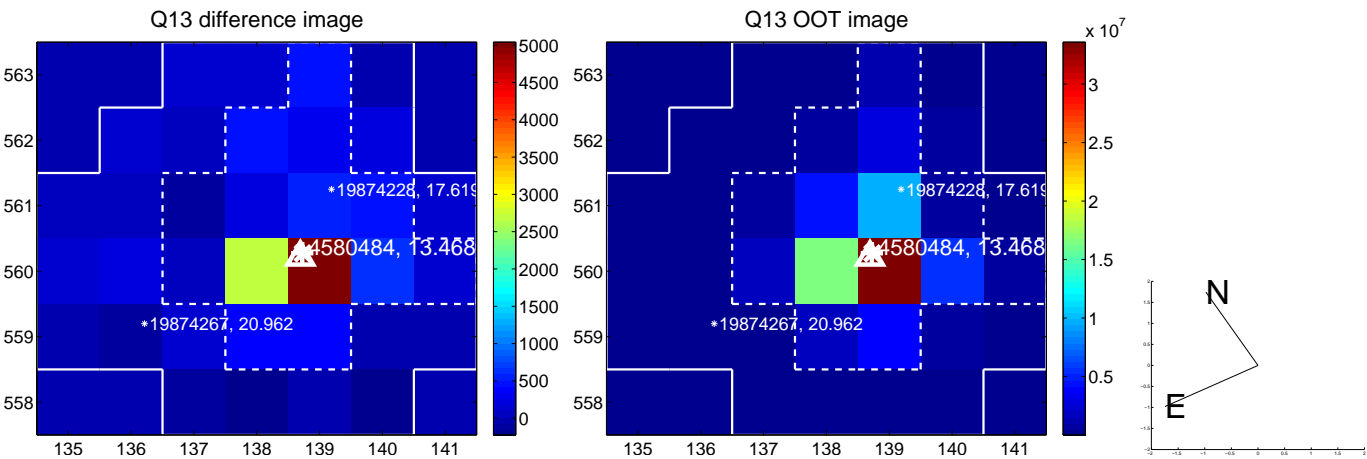
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



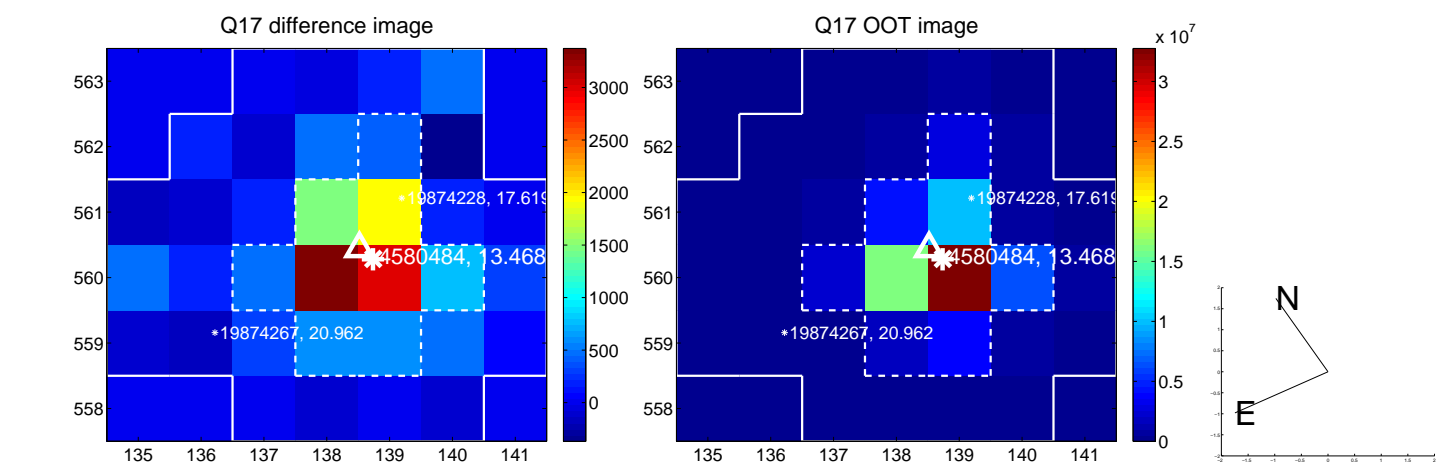
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



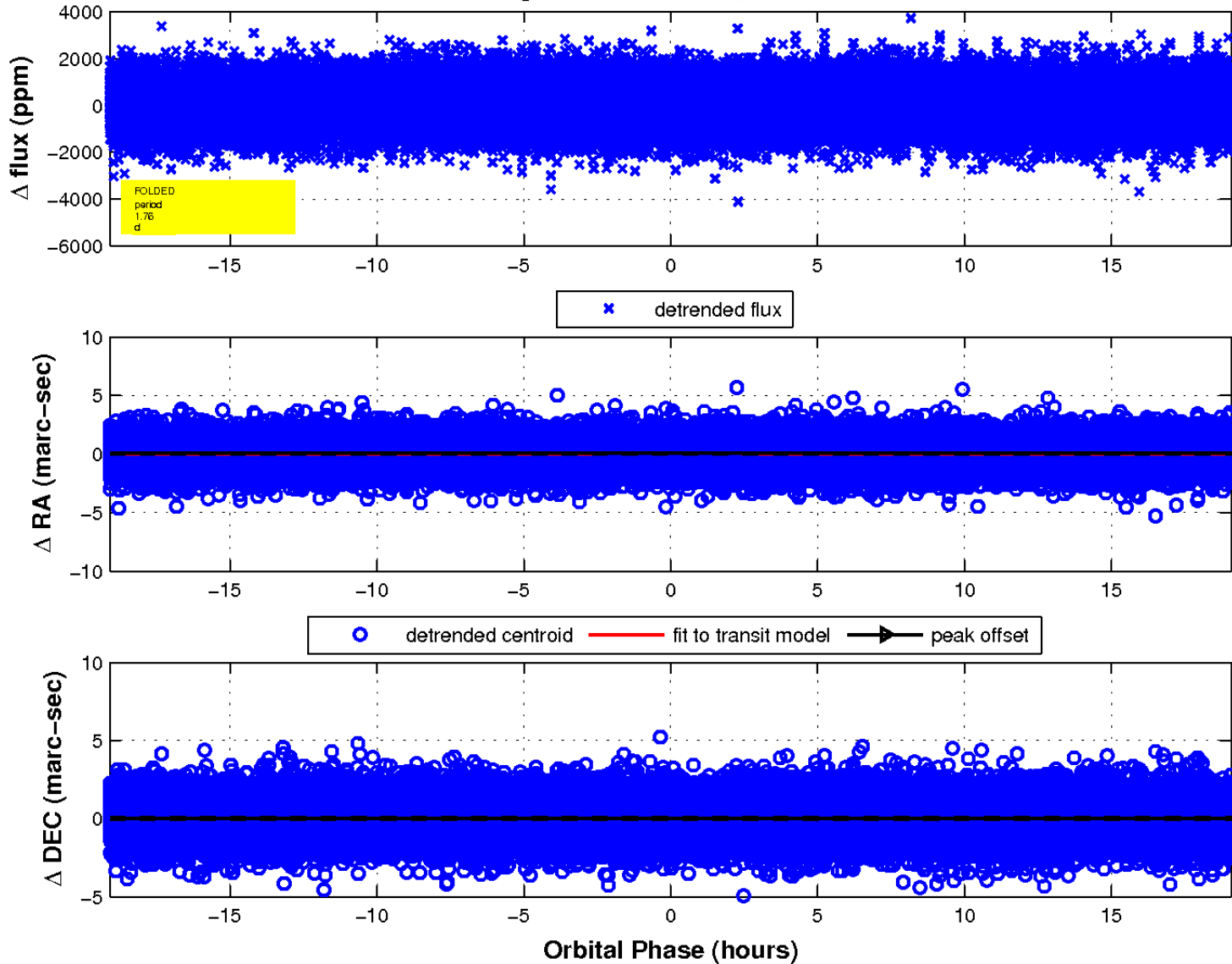
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

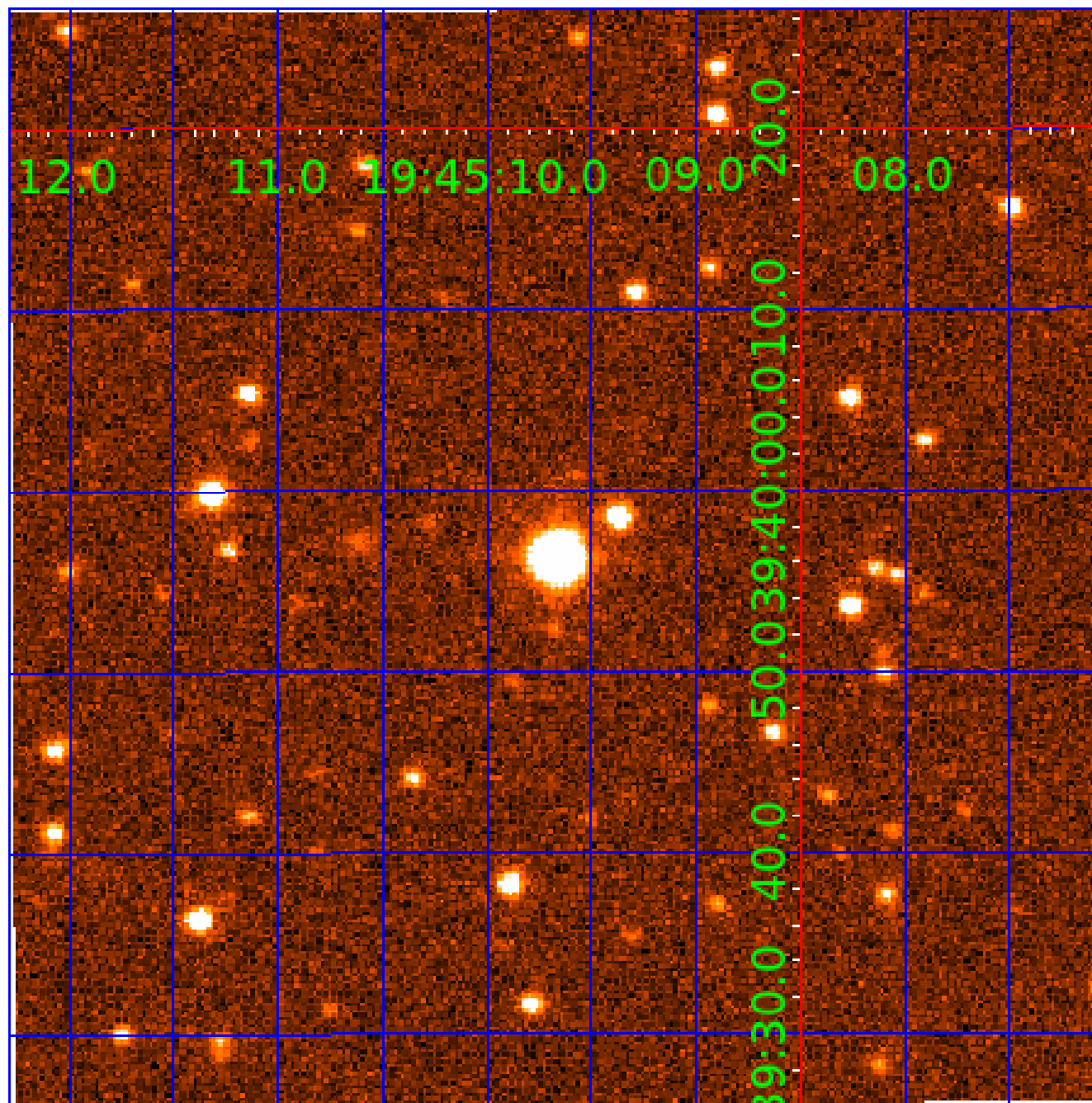


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 004580484

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})
004580484-01	OBS	No	1.757345	132.007273	97.9	6.364	9.8	10.1	1.71	8074	1.97	10534.44
004580484-02	OBS	No	1.171576	131.980941	95.1	4.954	7.7	9.3	1.71	8074	1.77	18088.13
004580484-03	OBS	No	138.963421	202.755169	656.0	10.162	7.2	6.8	1.71	8074	4.67	31.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004580484-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004580484-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
004580484-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS

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

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

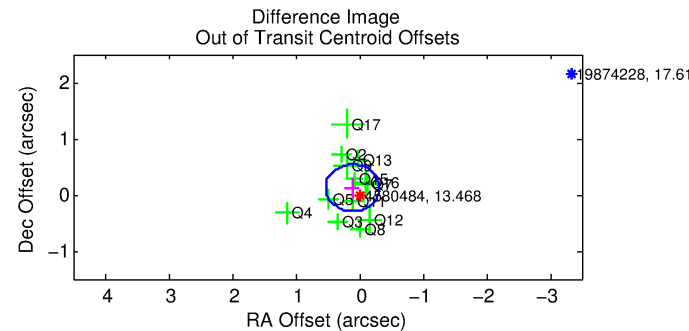
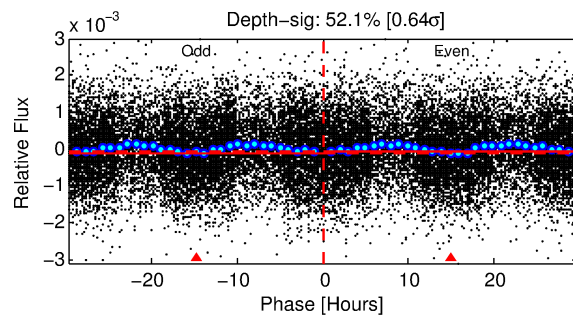
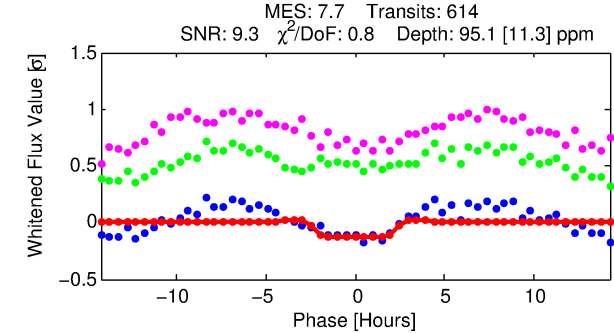
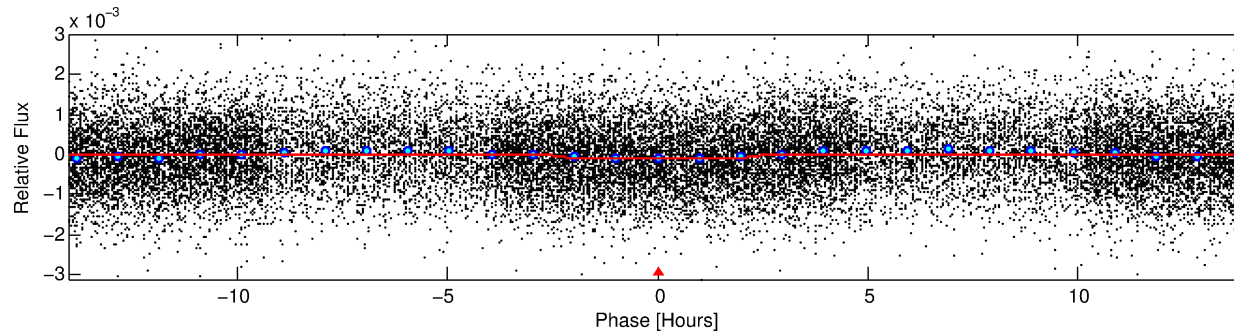
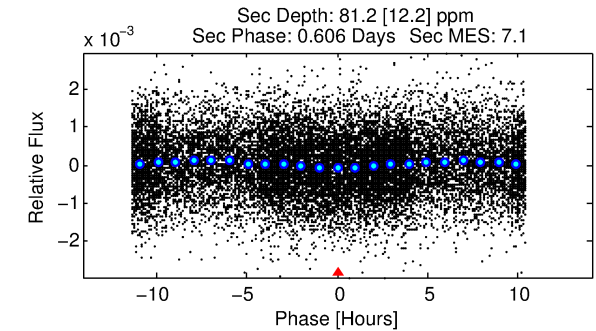
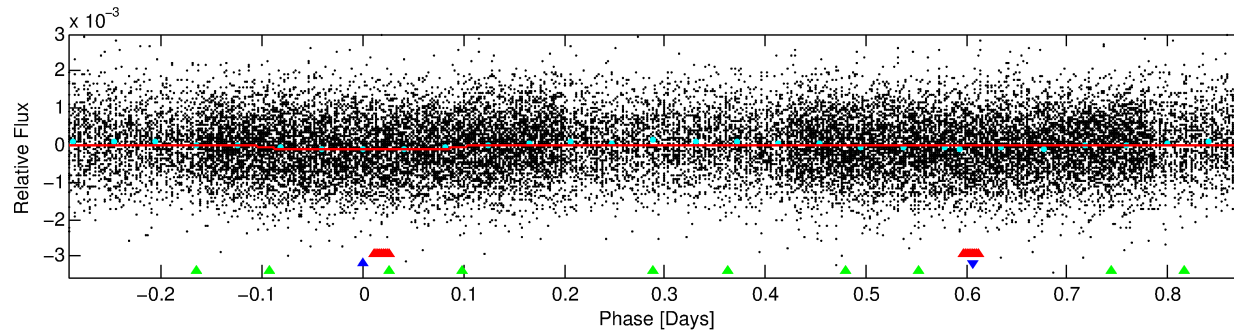
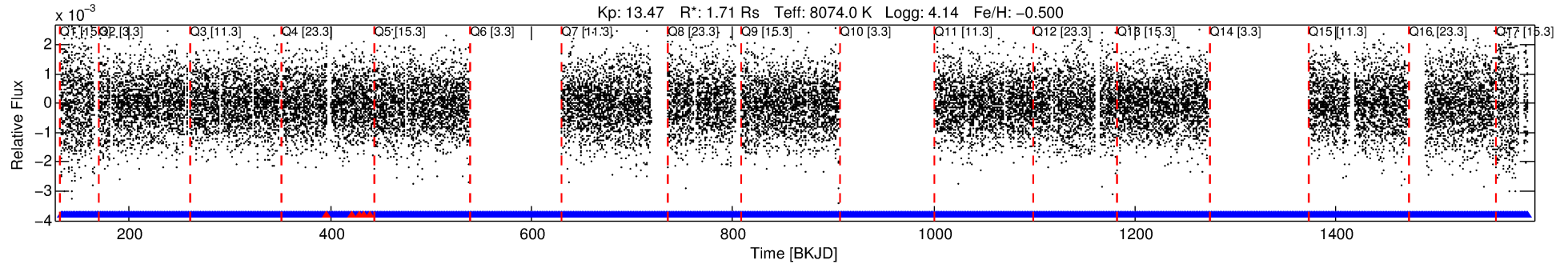
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004580484-02

No Significant Match Found

DV One-Page Summary

KIC: 4580484 Candidate: 2 of 3 Period: 1.172 d



DV Fit Results:

Period = 1.17158 [0.00002] d
Epoch = 131.9809 [0.0057] BKJD
Rp/R* = 0.0095 [0.0063]
a/R* = 1.60 [3.93]
b = 0.65 [3.57]
Seff = 18088.14 [3900.05]
Teq = 2957 [159] K
Rp = 1.77 [1.21] Re
a = 0.0249 [0.0035] AU
Ag = 8.78 [11.85] [0.66σ]
Teffp = 7871 [2622] K [1.87σ]

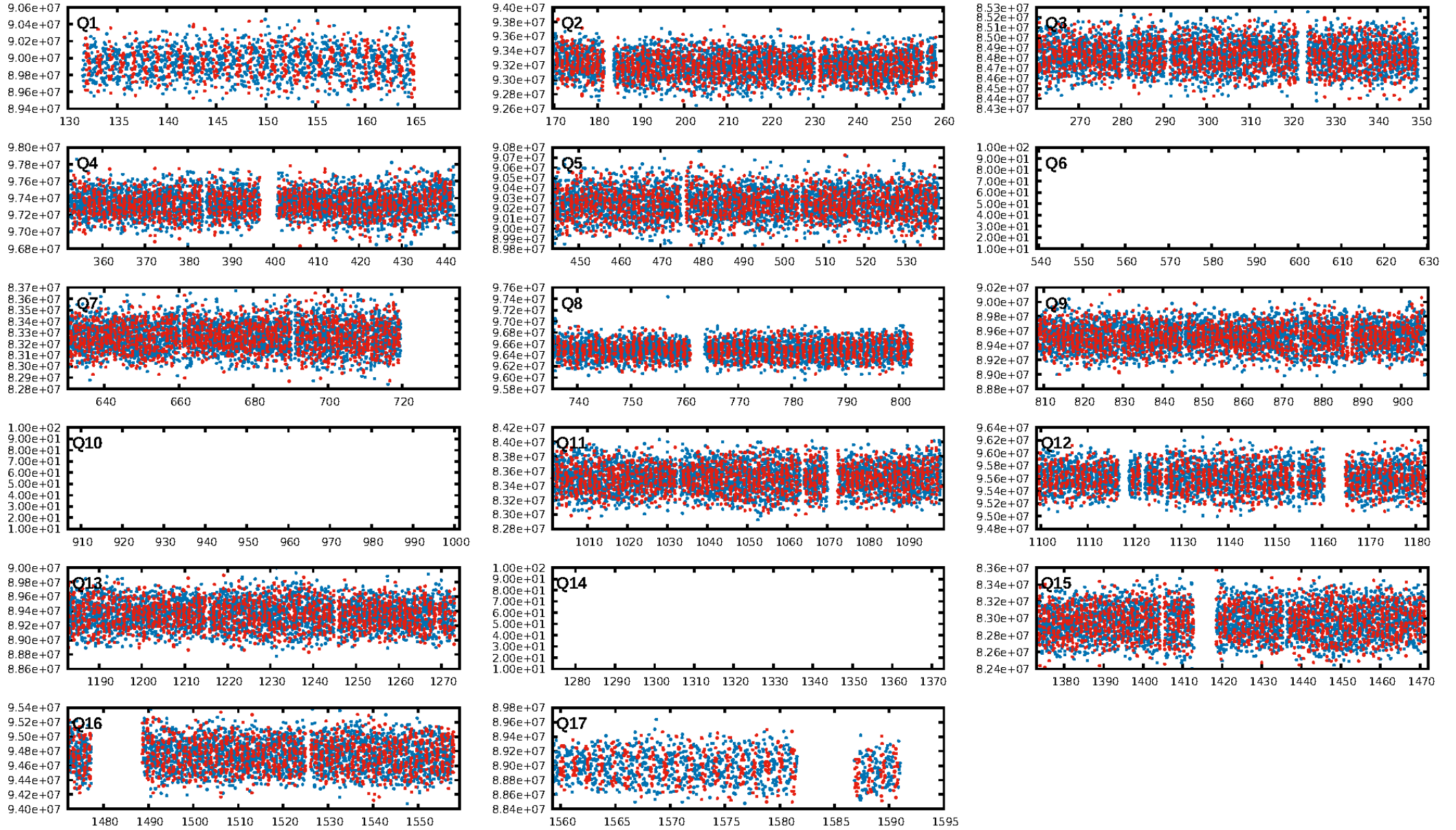
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 91.9% [1.74σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.02e-11
RollingBand-fgt: 0.99 [575/580]
GhostDiagnostic-chr: 1.301
Centroid-sig: 7.9%
Centroid-so: 0.367 arcsec [0.89σ]
OotOffset-rm: 0.163 arcsec [1.16σ]
KicOffset-rm: 0.168 arcsec [1.11σ]
OotOffset-st: 1/4/4/4 [13]
KicOffset-st: 1/4/4/4 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [14/14]

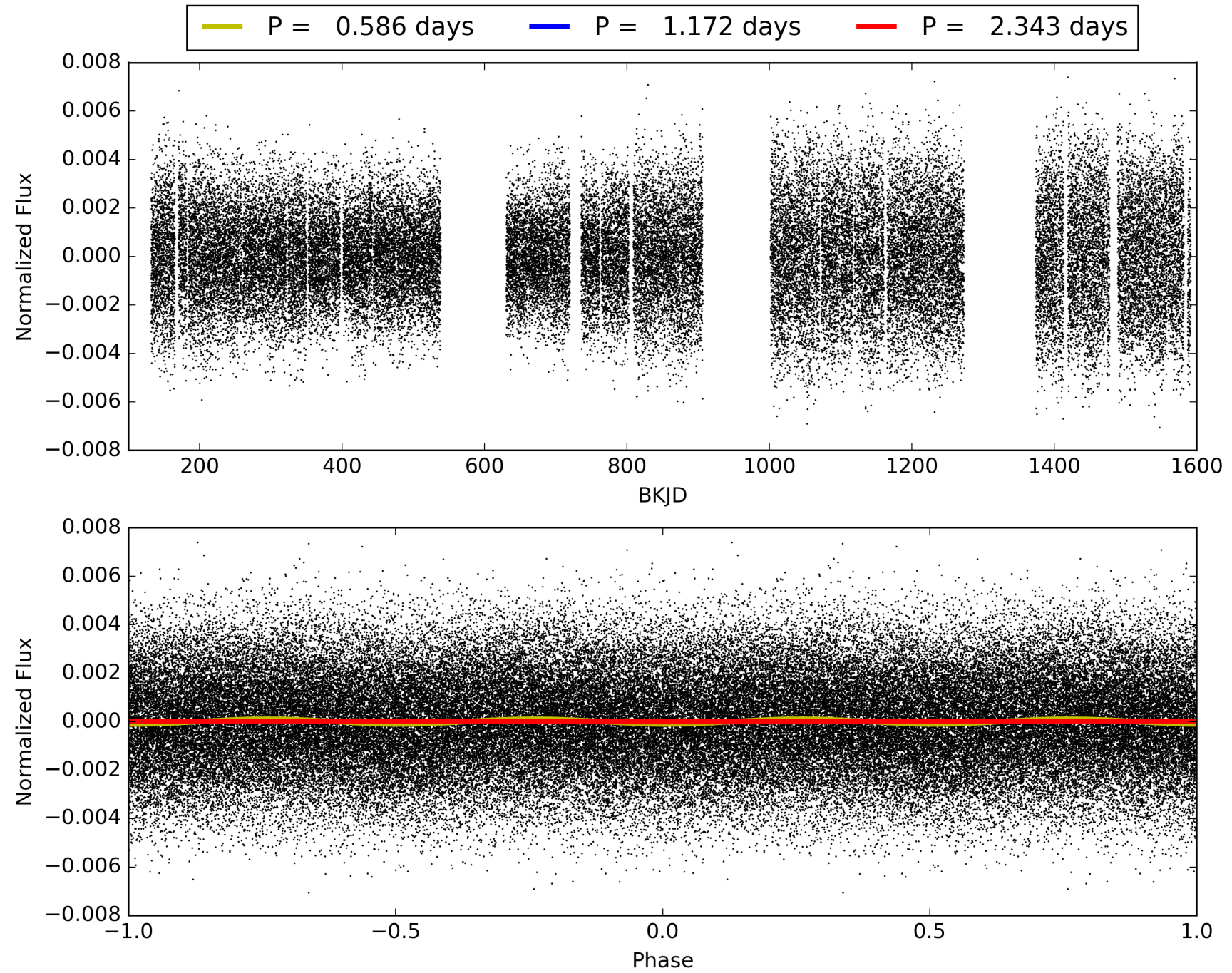
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 12:05:09 Z

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

TCE 004580484-02, PDC Light Curves

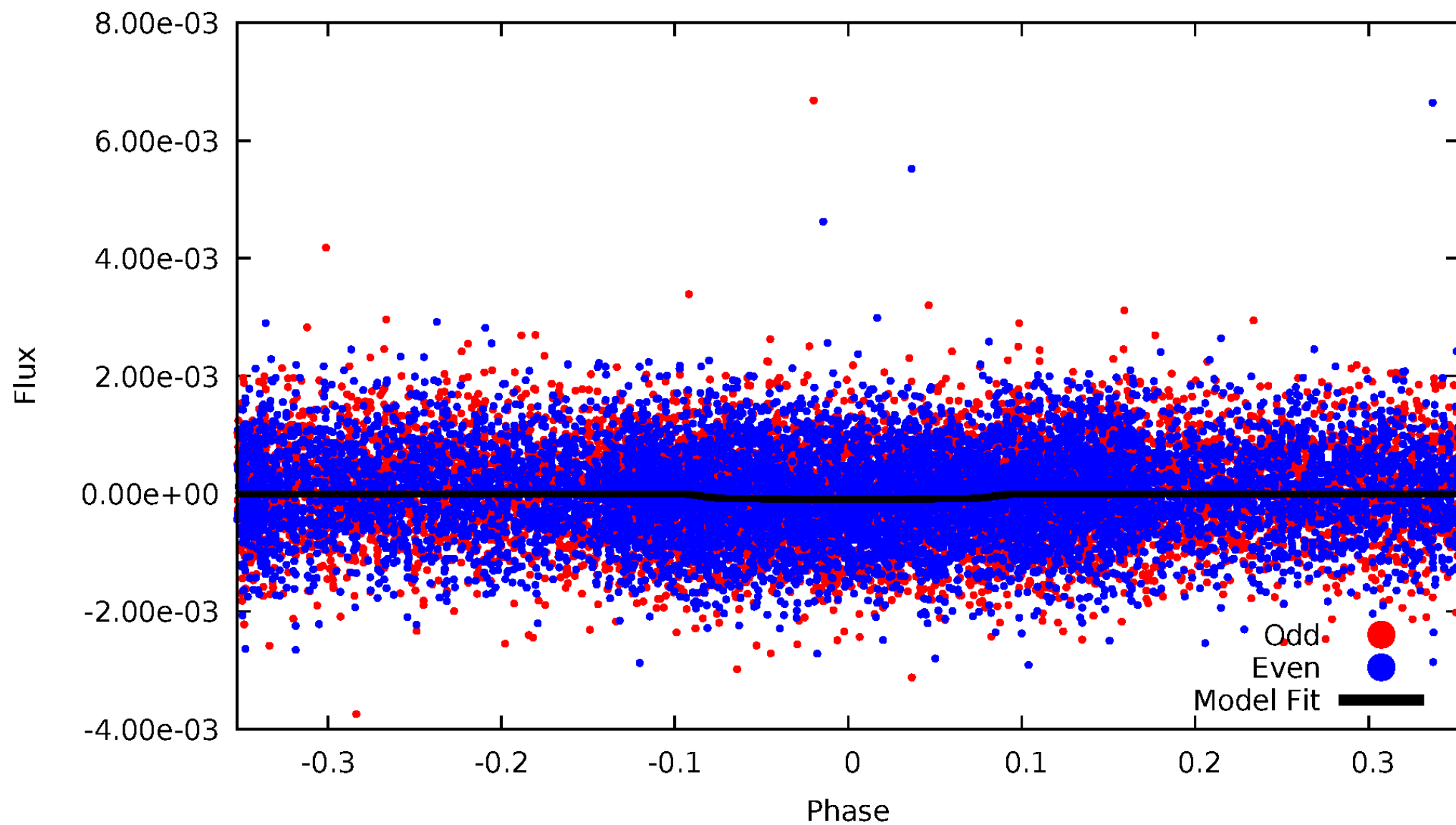


TCE 004580484-02



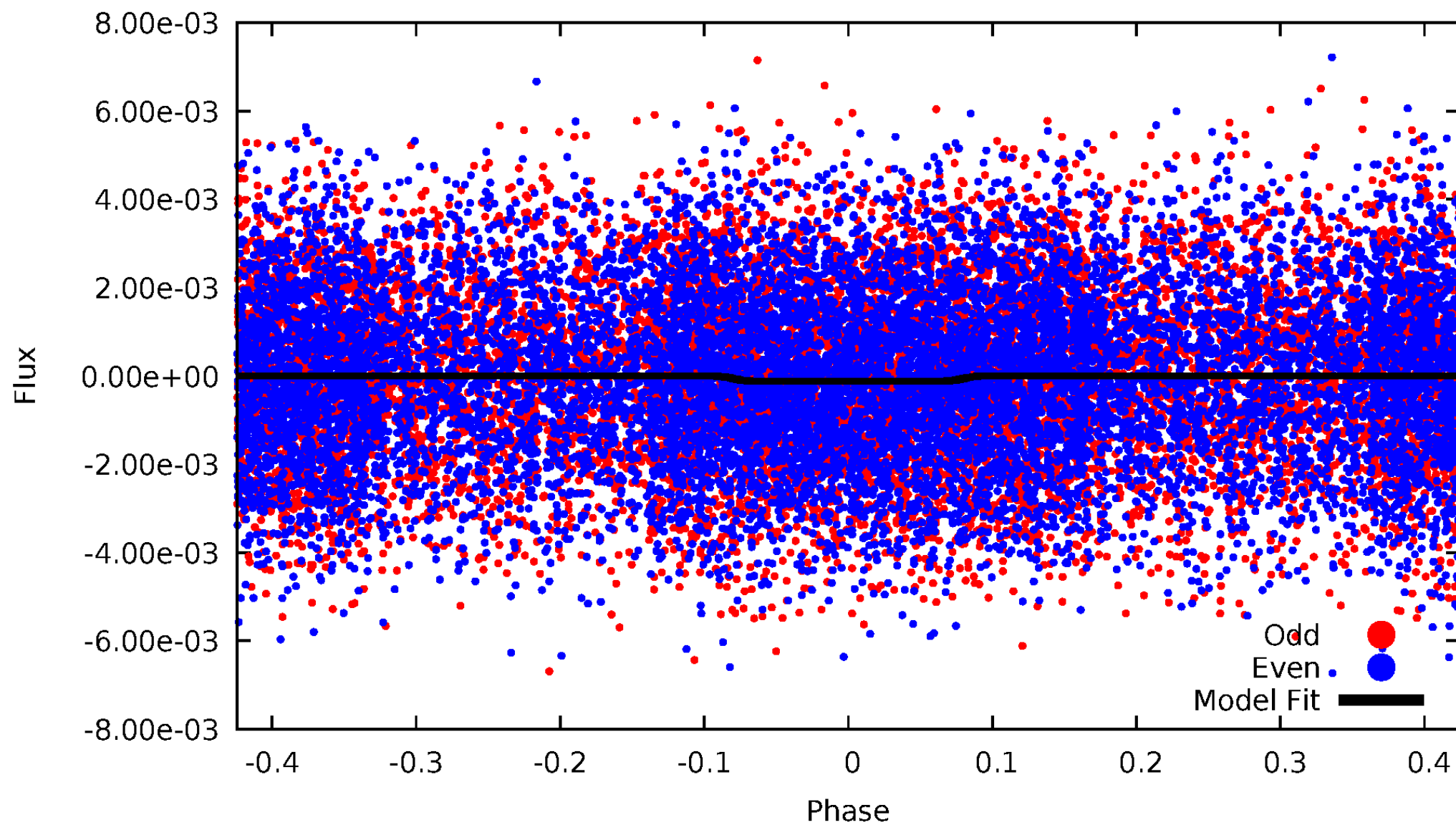
DV Odd/Even

TCE 004580484-02



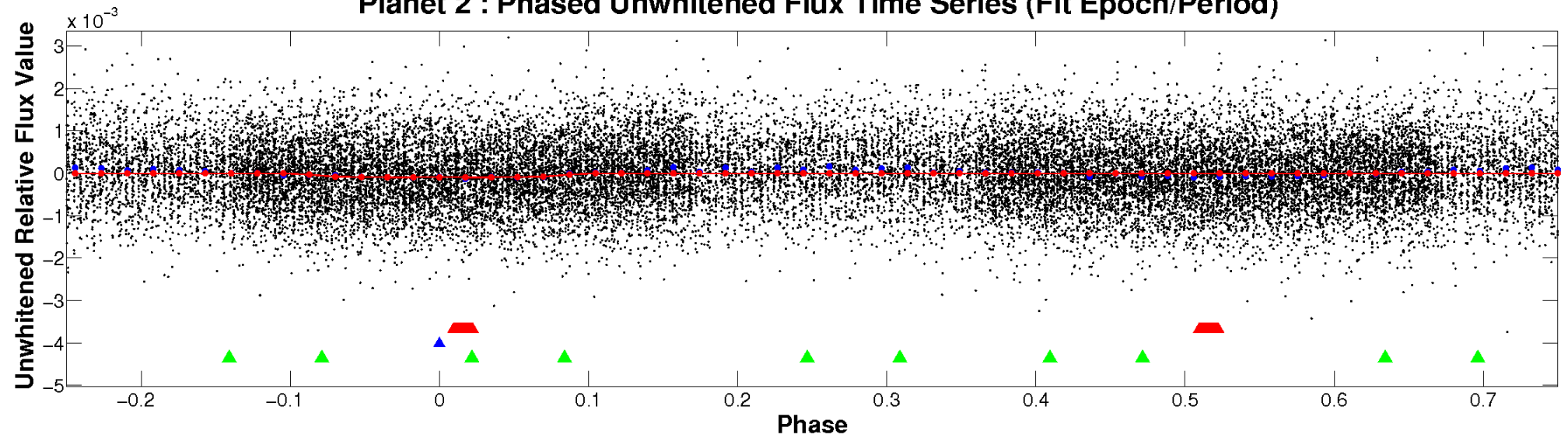
ALT Odd/Even

TCE 004580484-02

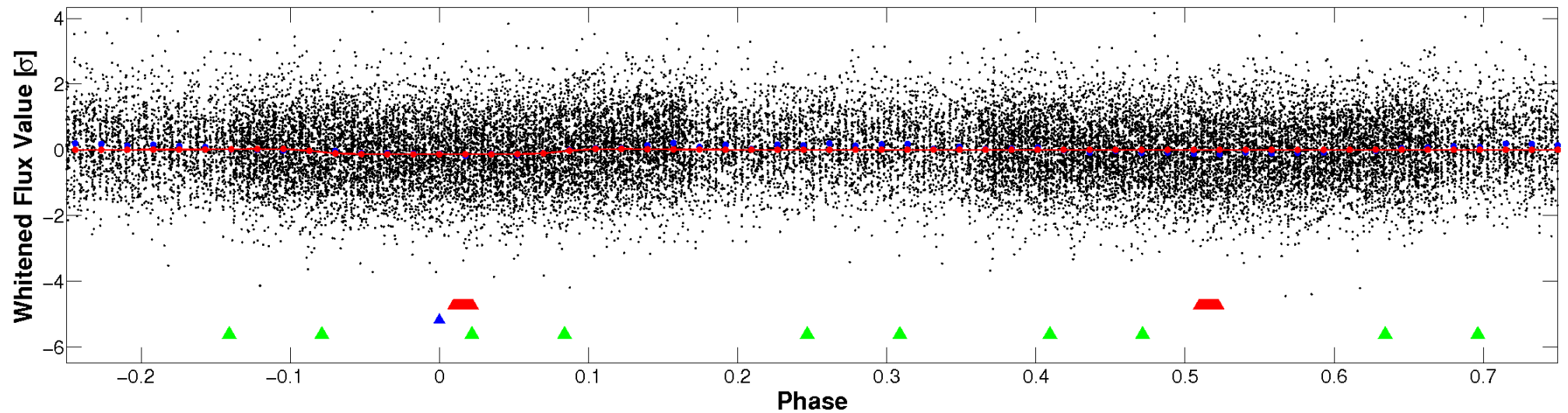


Non-Whitened Vs. Whitened Light Curve

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

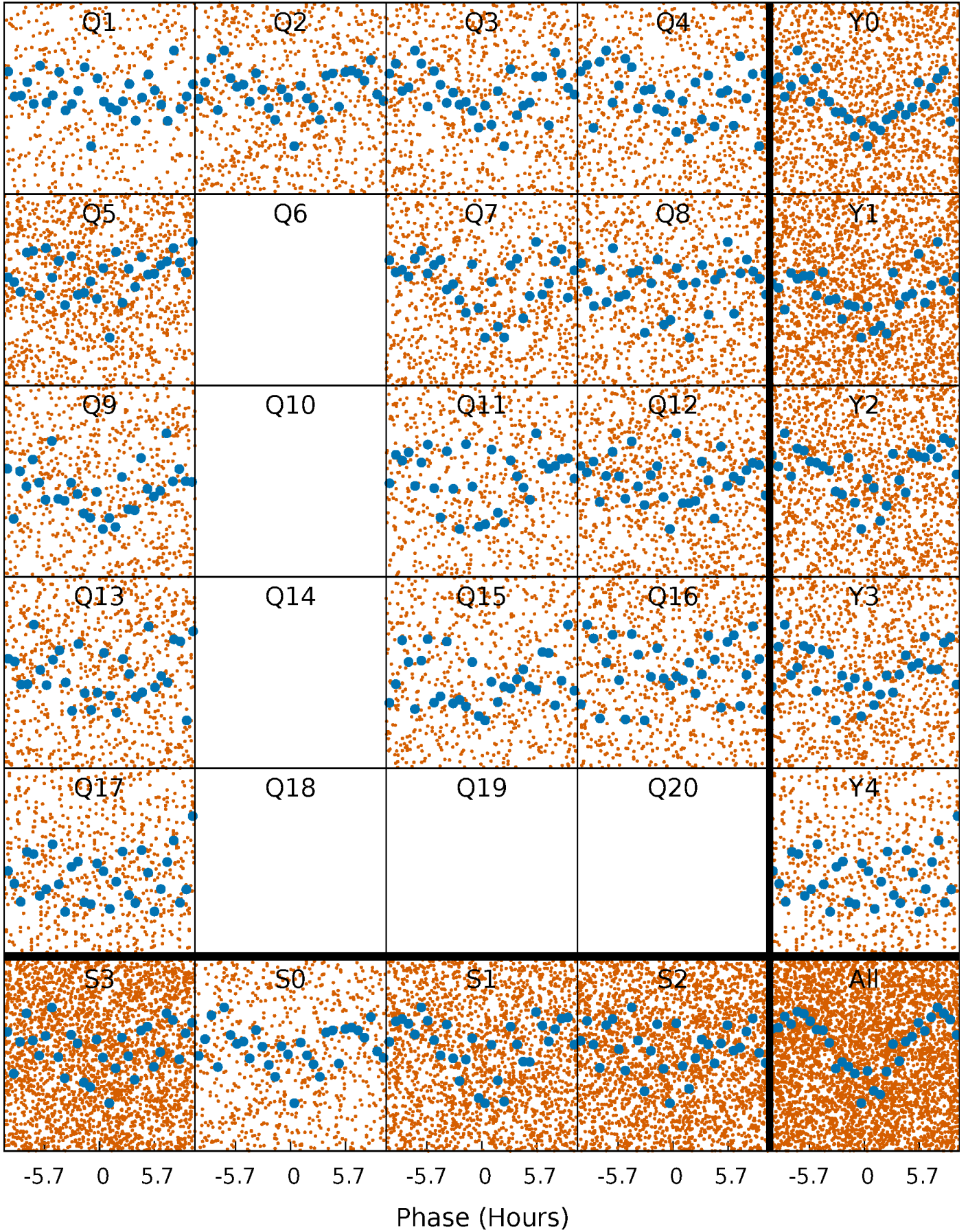


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



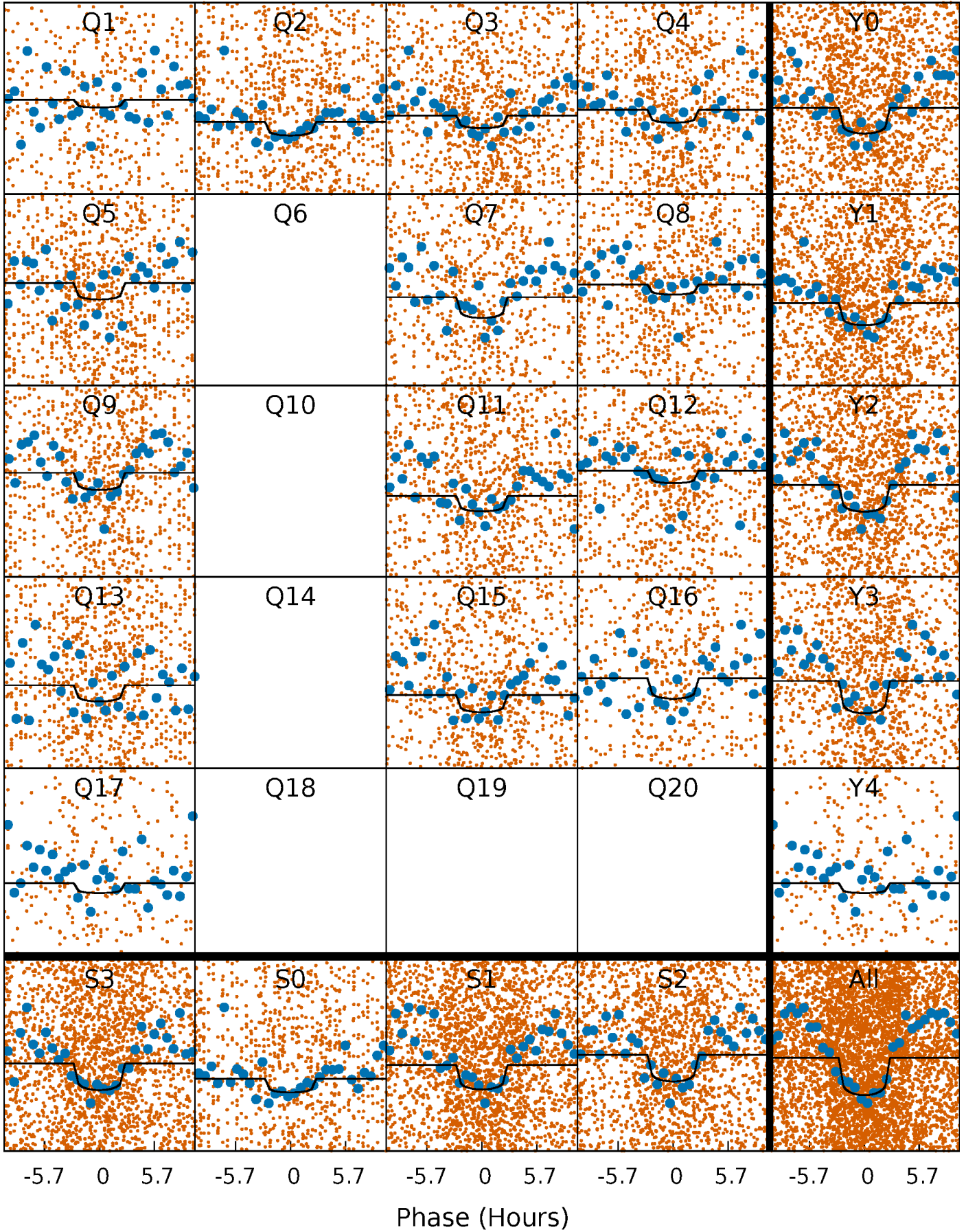
PDC Quarter-Phased Transit Curves

TCE 004580484-02 P= 1.171576 Days $T_0=131.980941$ (BKJD)



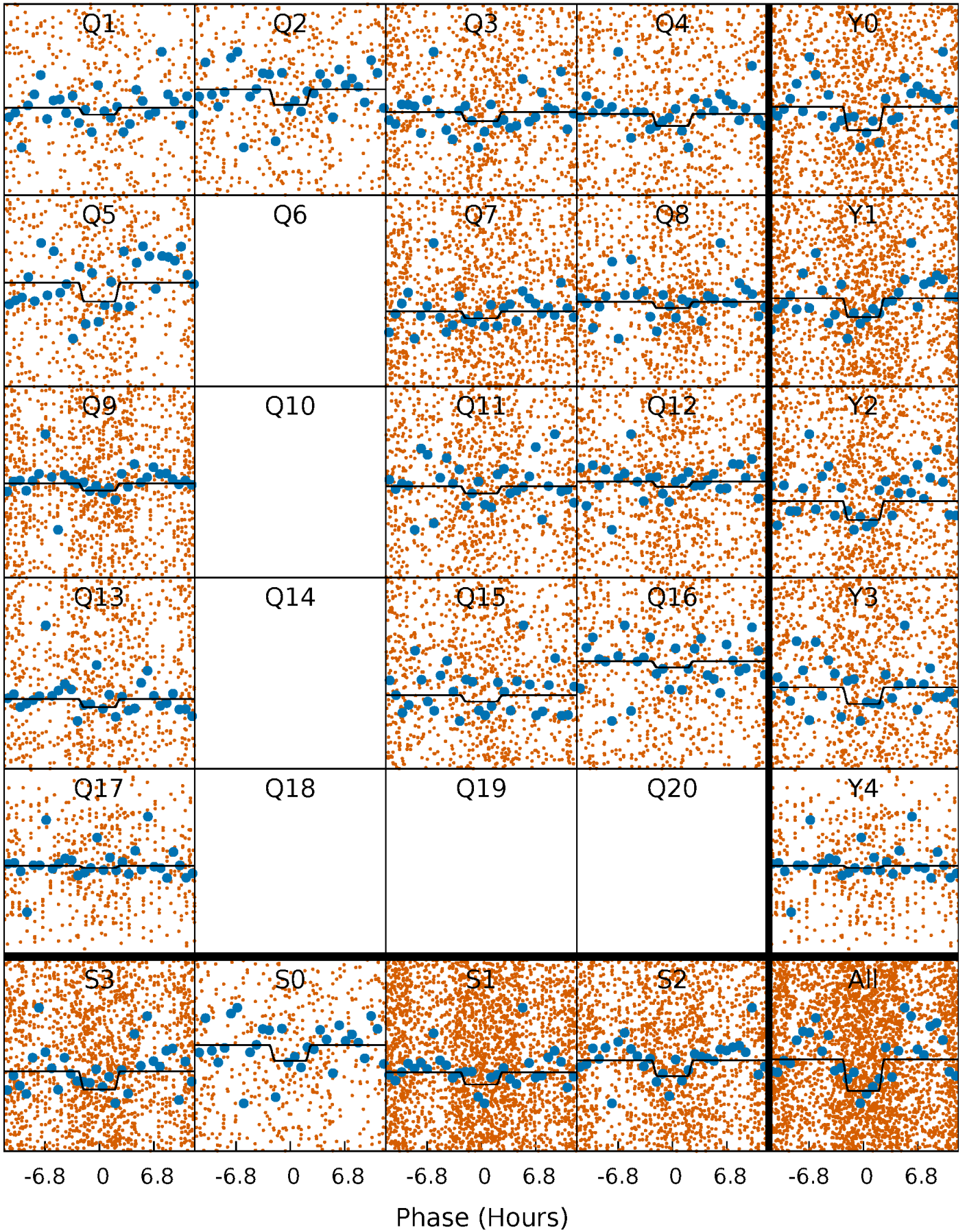
DV Quarter-Phased Transit Curves

TCE 004580484-02 P= 1.171576 Days $T_0=131.980941$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

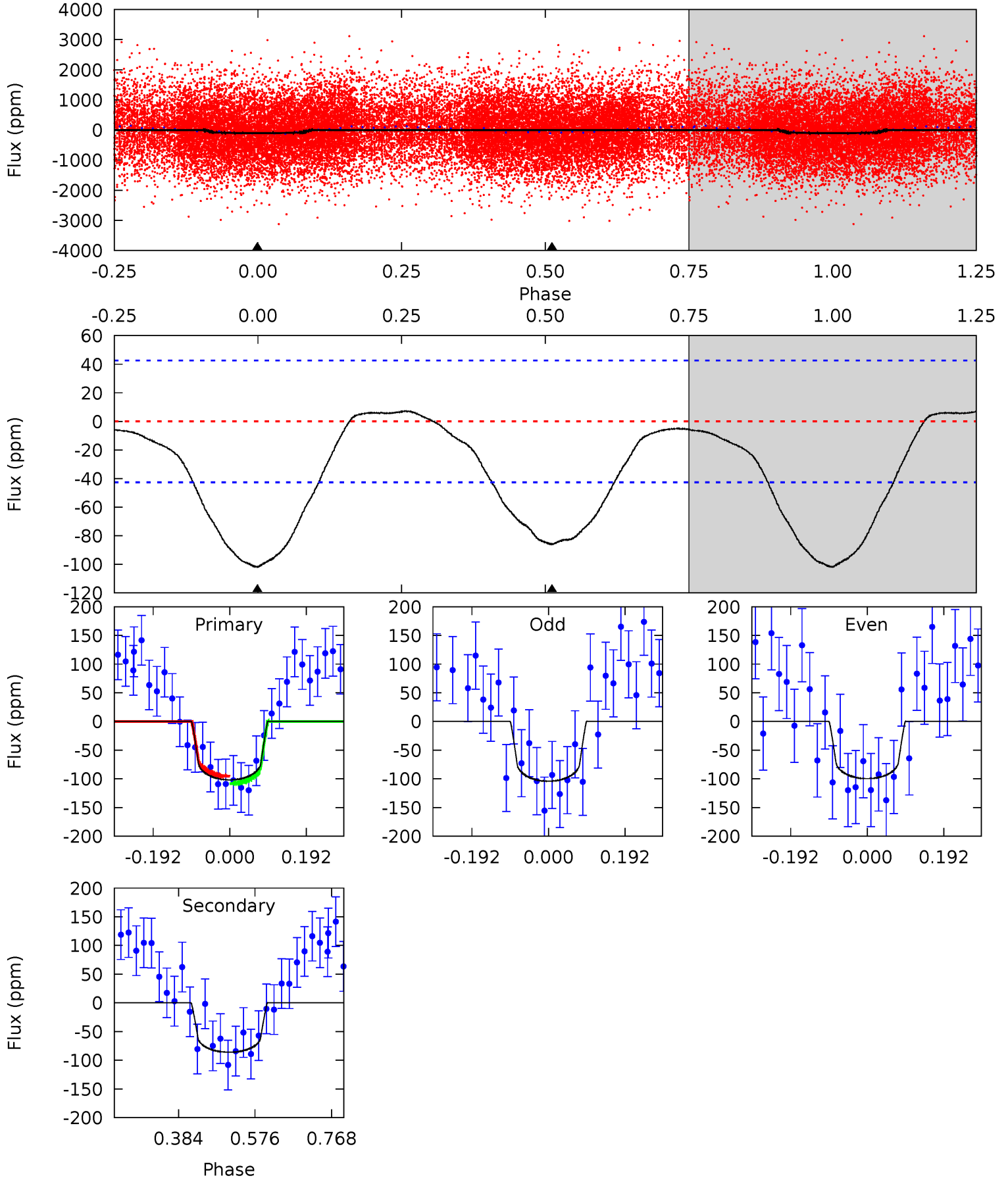
TCE 004580484-02 P= 1.171584 Days $T_0=131.971919$ (BKJD)



DV Model-Shift Uniqueness Test

004580484-02, P = 1.171576 Days, E = 130.809365 Days

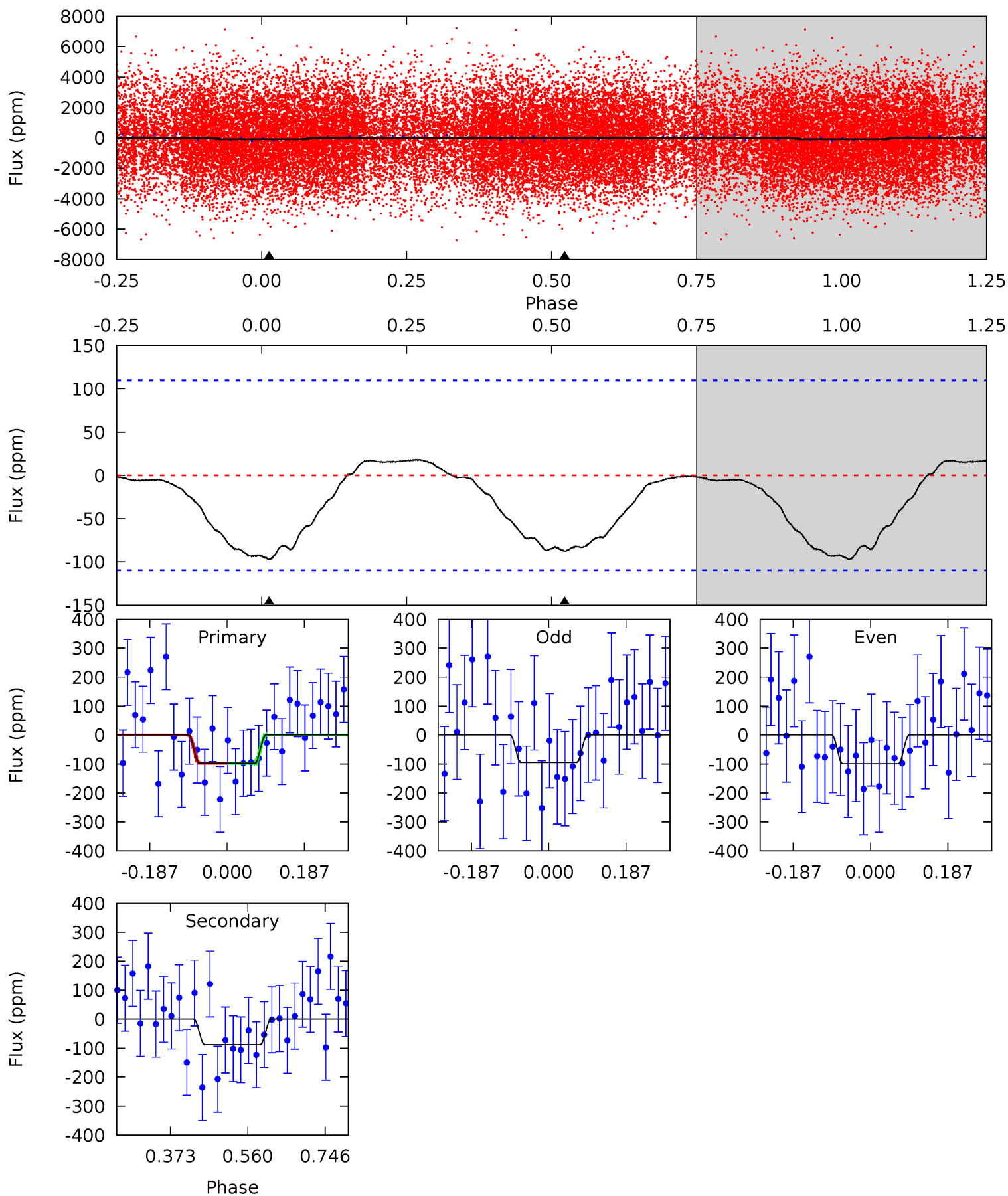
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.6	8.93	0	0	4.43	1.30	0.63	10.6	10.6	8.93	8.93	0.23	0.95	0.07	0.67



Alt Model-Shift Uniqueness Test

004580484-02, P = 1.171584 Days, E = 130.800335 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.92	3.54	0	0	4.43	1.32	0.38	3.92	3.92	3.54	3.54	0.09	1.19	0.16	0.01



Stellar Parameters For KIC 004580484

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8074^{+72}_{-72}	$4.144^{+0.121}_{-0.099}$	$-0.500^{+0.150}_{-0.150}$	$1.713^{+0.266}_{-0.266}$	$1.489^{+0.127}_{-0.088}$	$0.417^{+0.242}_{-0.131}$
	+1%/-1%	+3%/-2%	+30%/-30%	+16%/-16%	+9%/-6%	+58%/-31%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 004580484-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-86 ± 10	$1.76^{+1.17}_{-0.97}$	4122^{+167}_{-182}	7926^{+6400}_{-2008}	$9.291^{+38.192}_{-5.882}$
Alt.	-88 ± 25	$2.00^{+1.12}_{-1.06}$	4121^{+169}_{-154}	7206^{+5453}_{-1563}	$7.087^{+26.350}_{-4.254}$

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 $A_{obs} \gg 1.0$

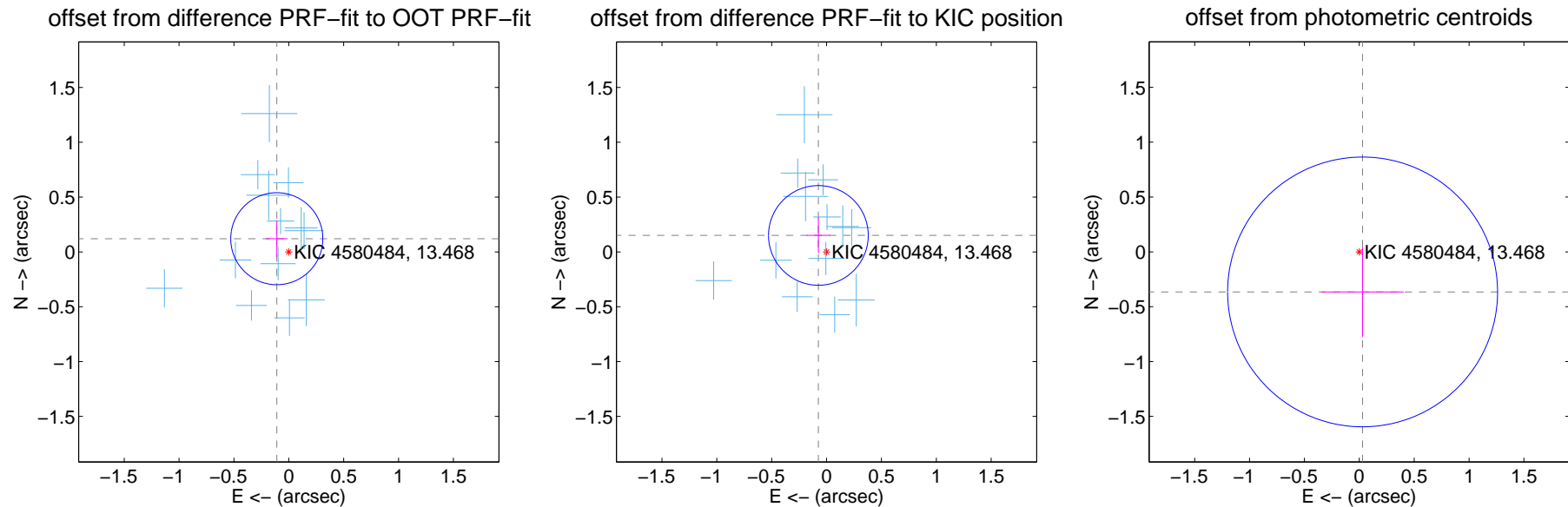
DV Centroid Data

Supplemental centroid analysis for 004580484-02. Kepler magnitude: 13.47. Transit SNR 9.35

There are 13 quarters with good PRF difference image offsets

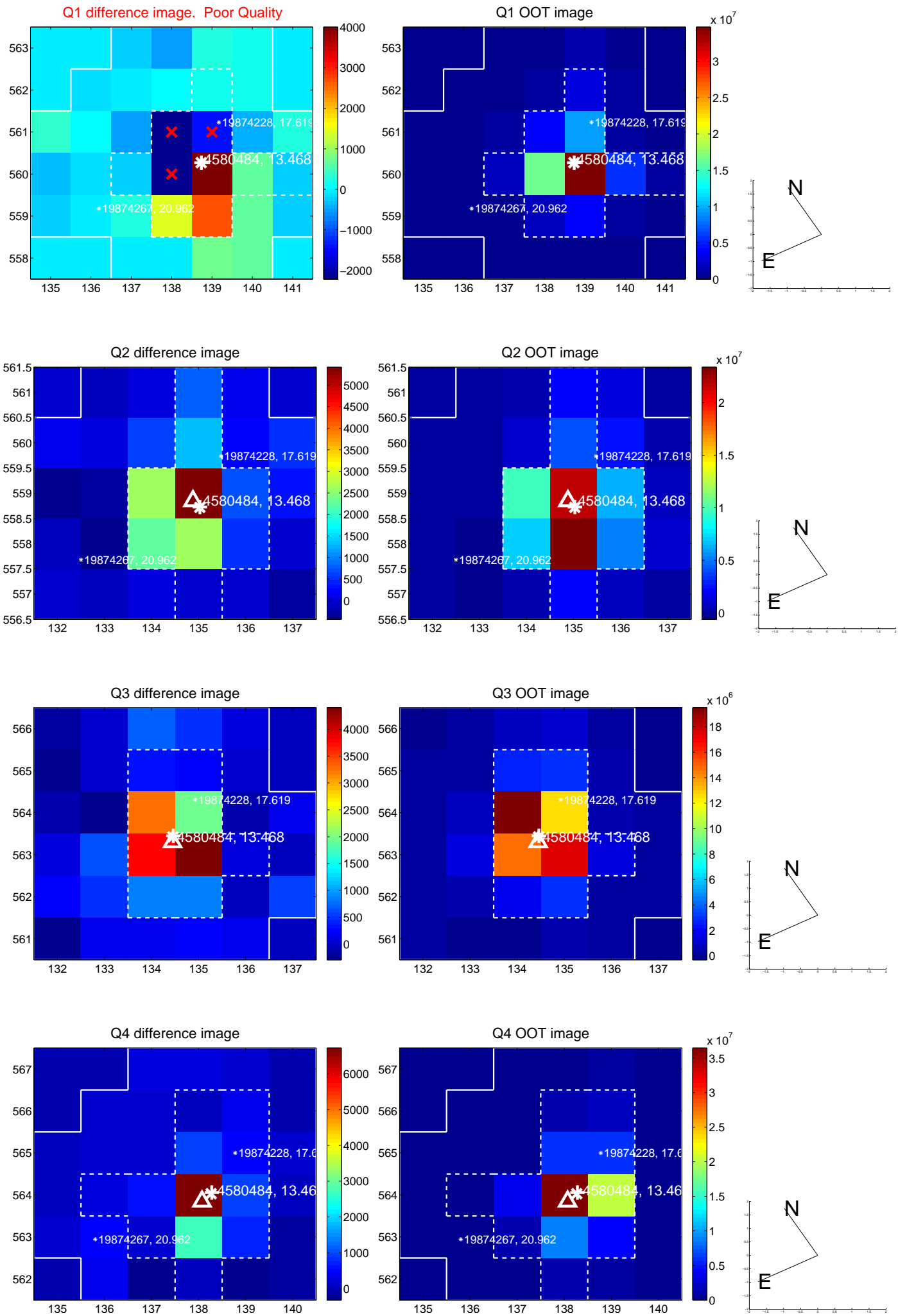
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.163 ± 0.140	1.16	0.110 ± 0.098	0.120 ± 0.167
PRF-fit source offset from KIC position	0.168 ± 0.151	1.11	0.075 ± 0.109	0.150 ± 0.162
photometric centroid source offset	0.37 ± 0.41	0.89	-0.03 ± 0.37	-0.37 ± 0.41

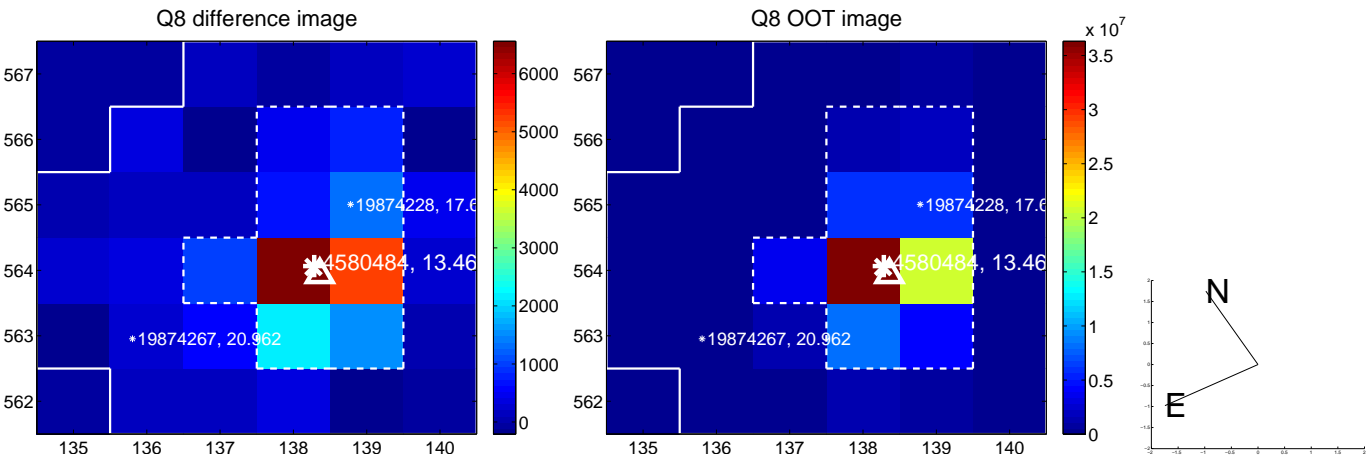
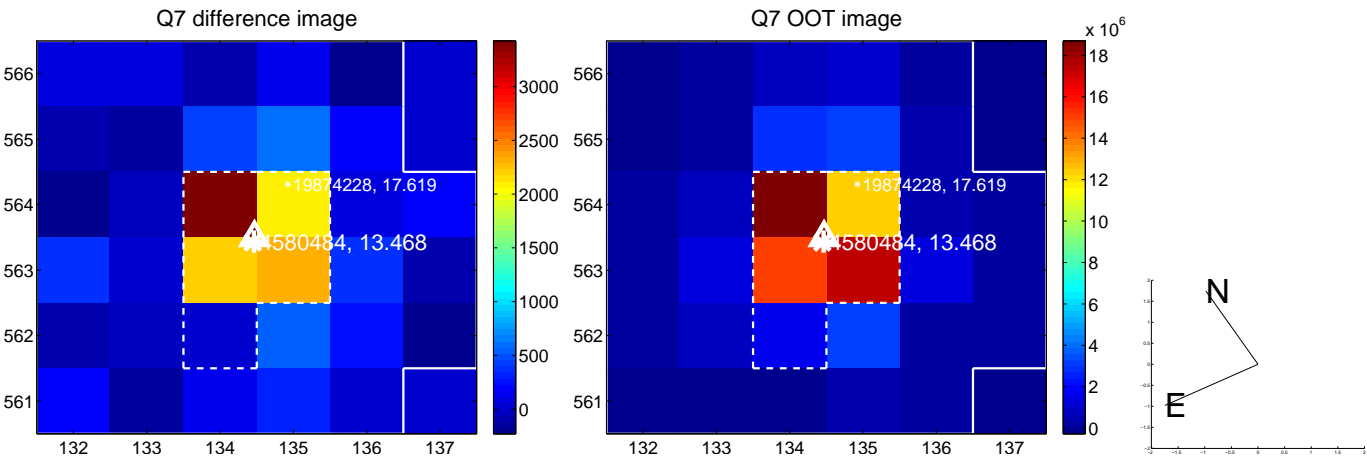
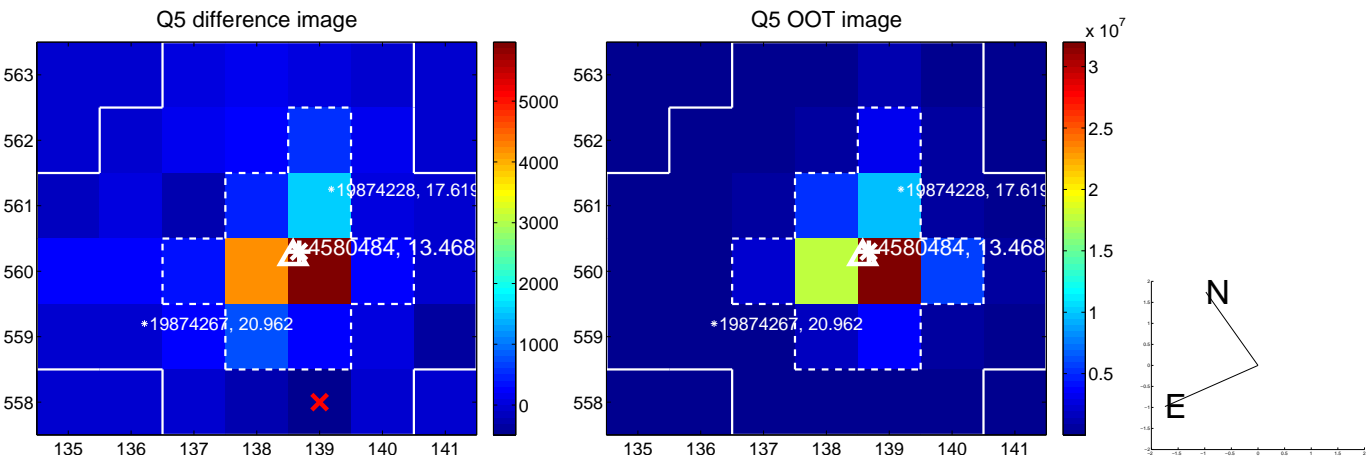


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

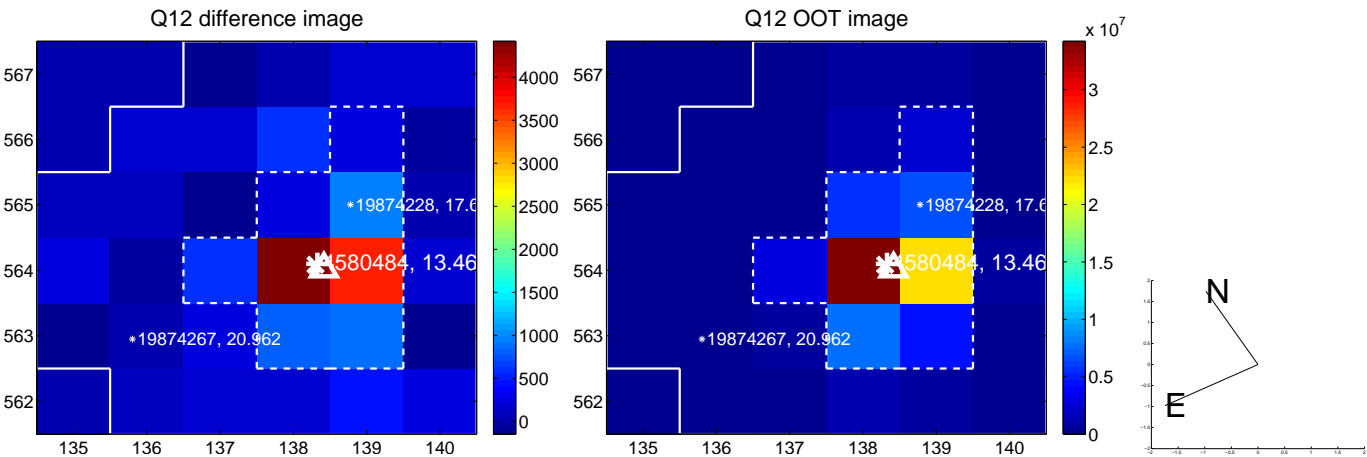
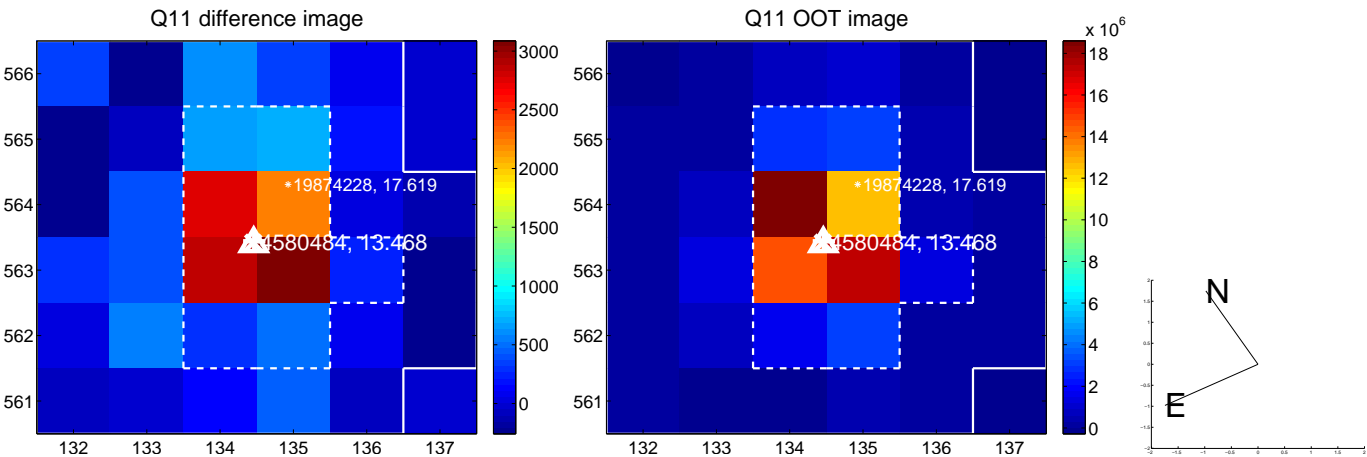
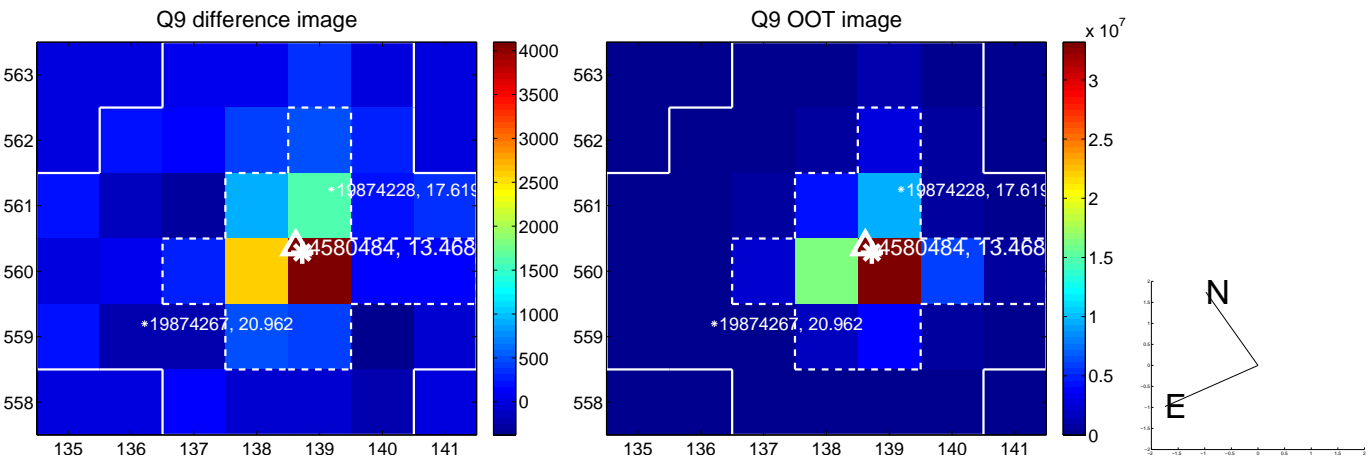
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



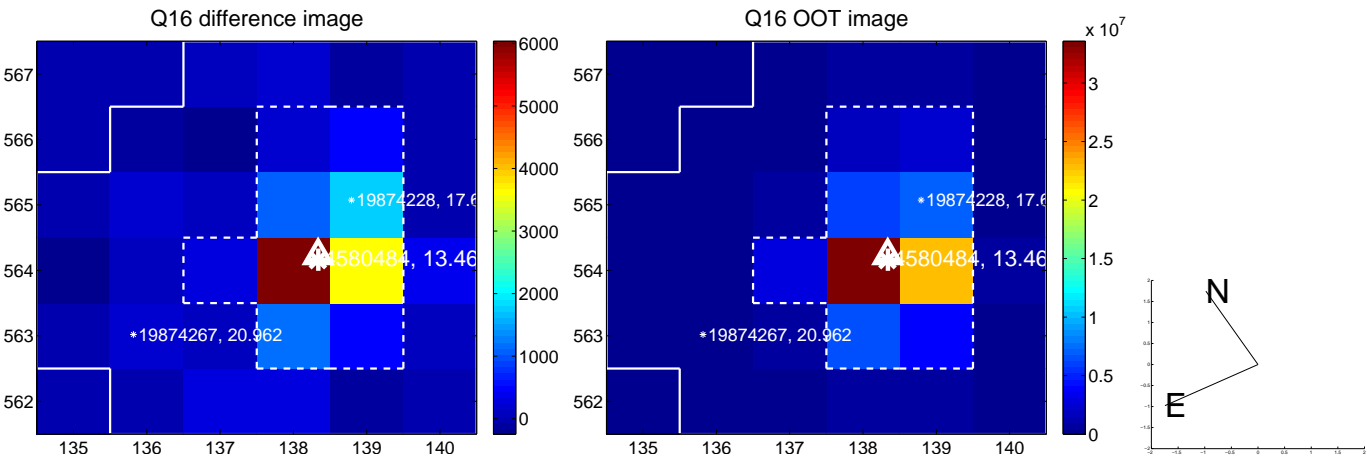
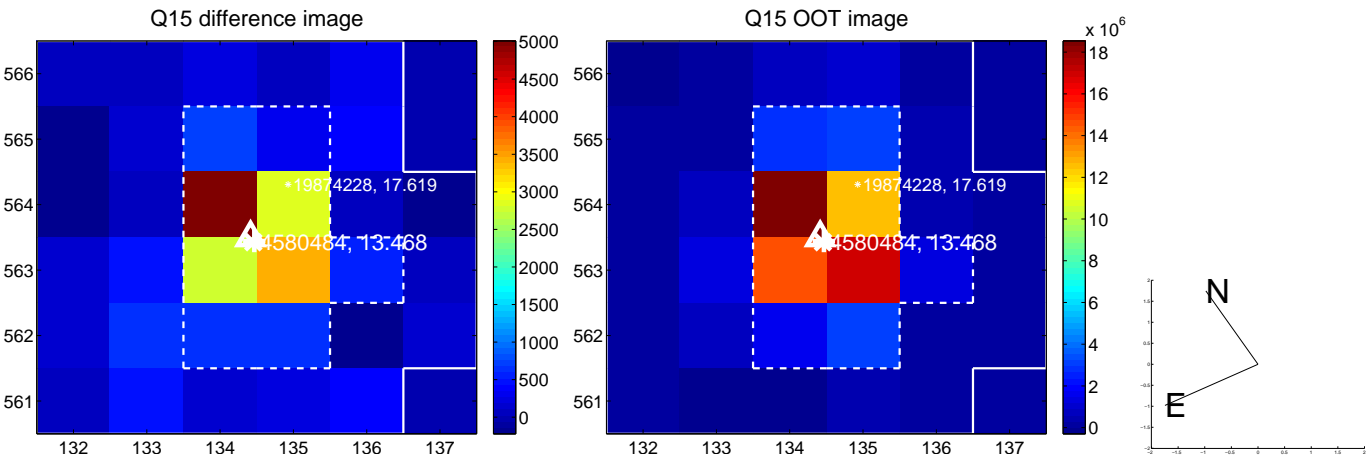
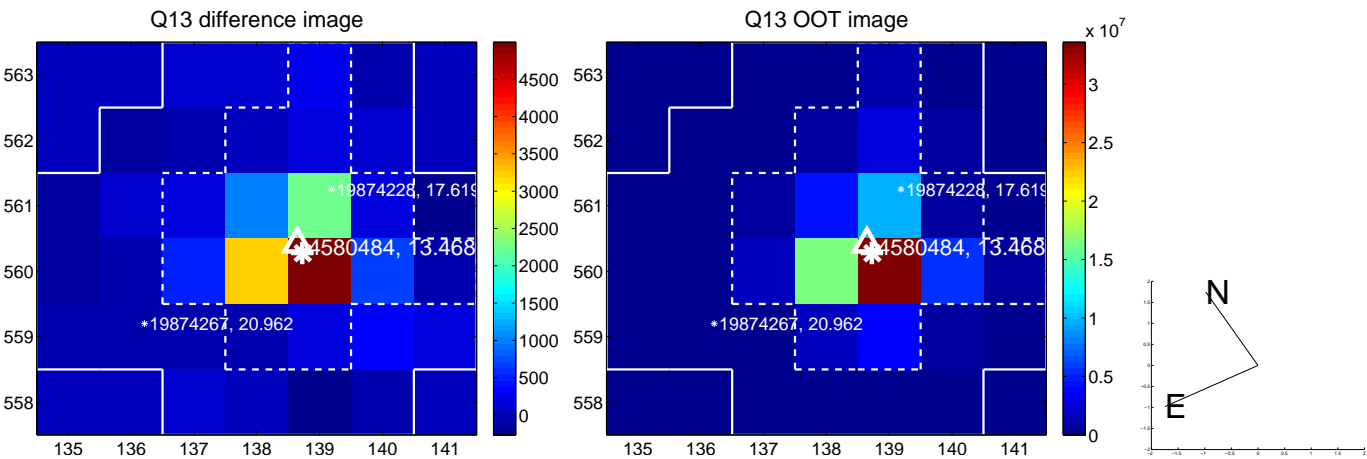
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



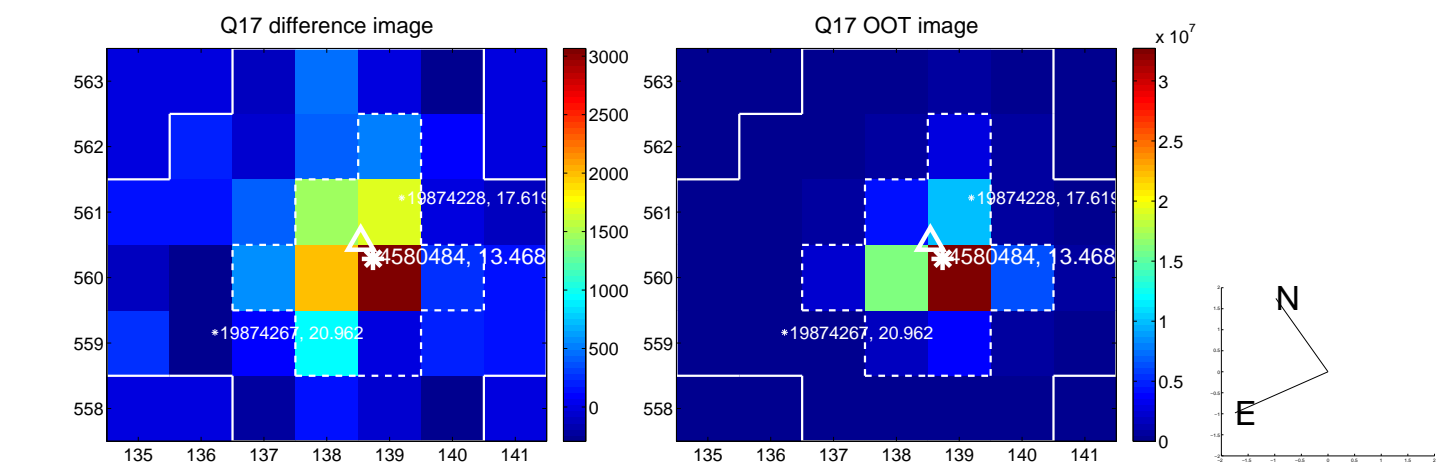
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



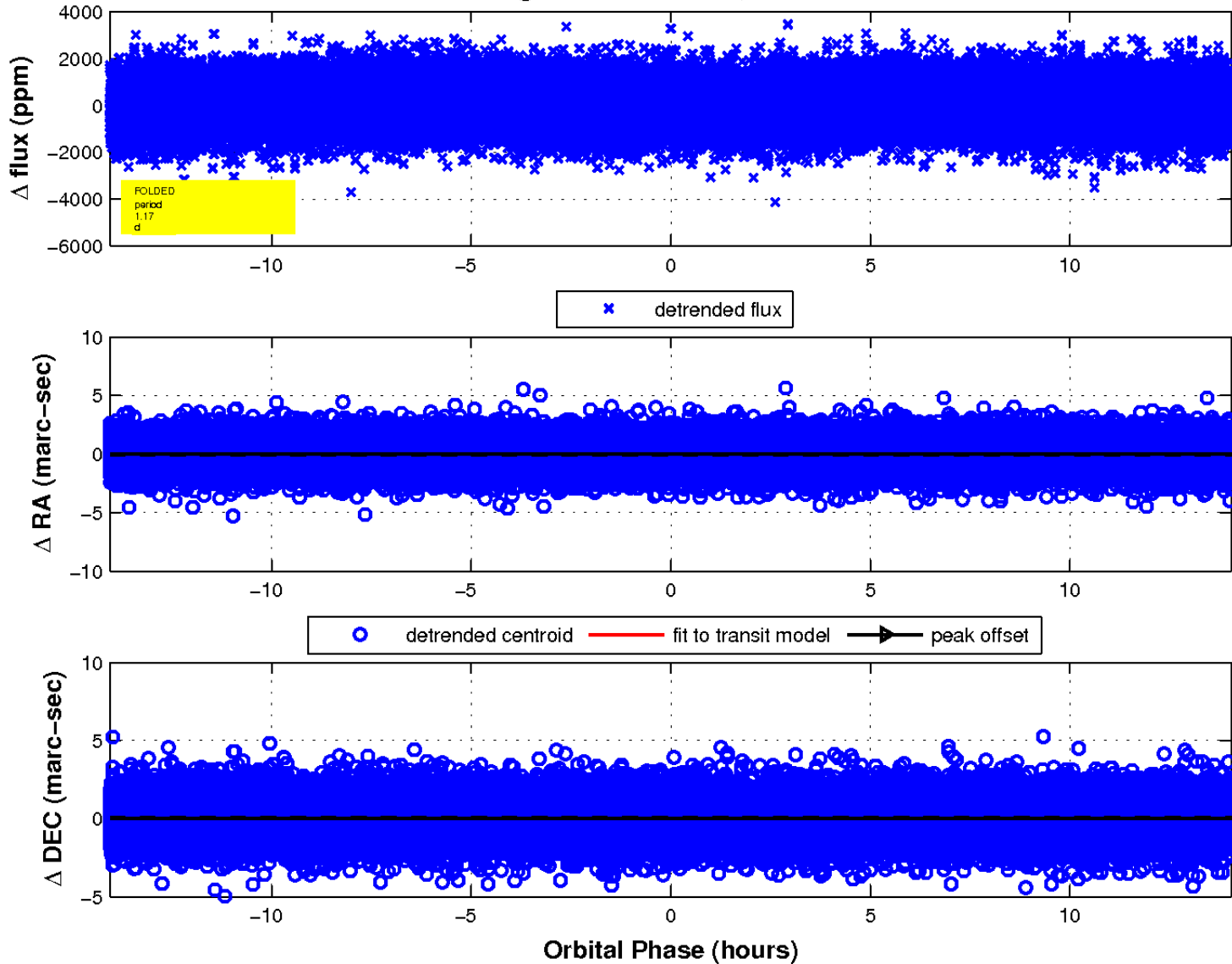
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

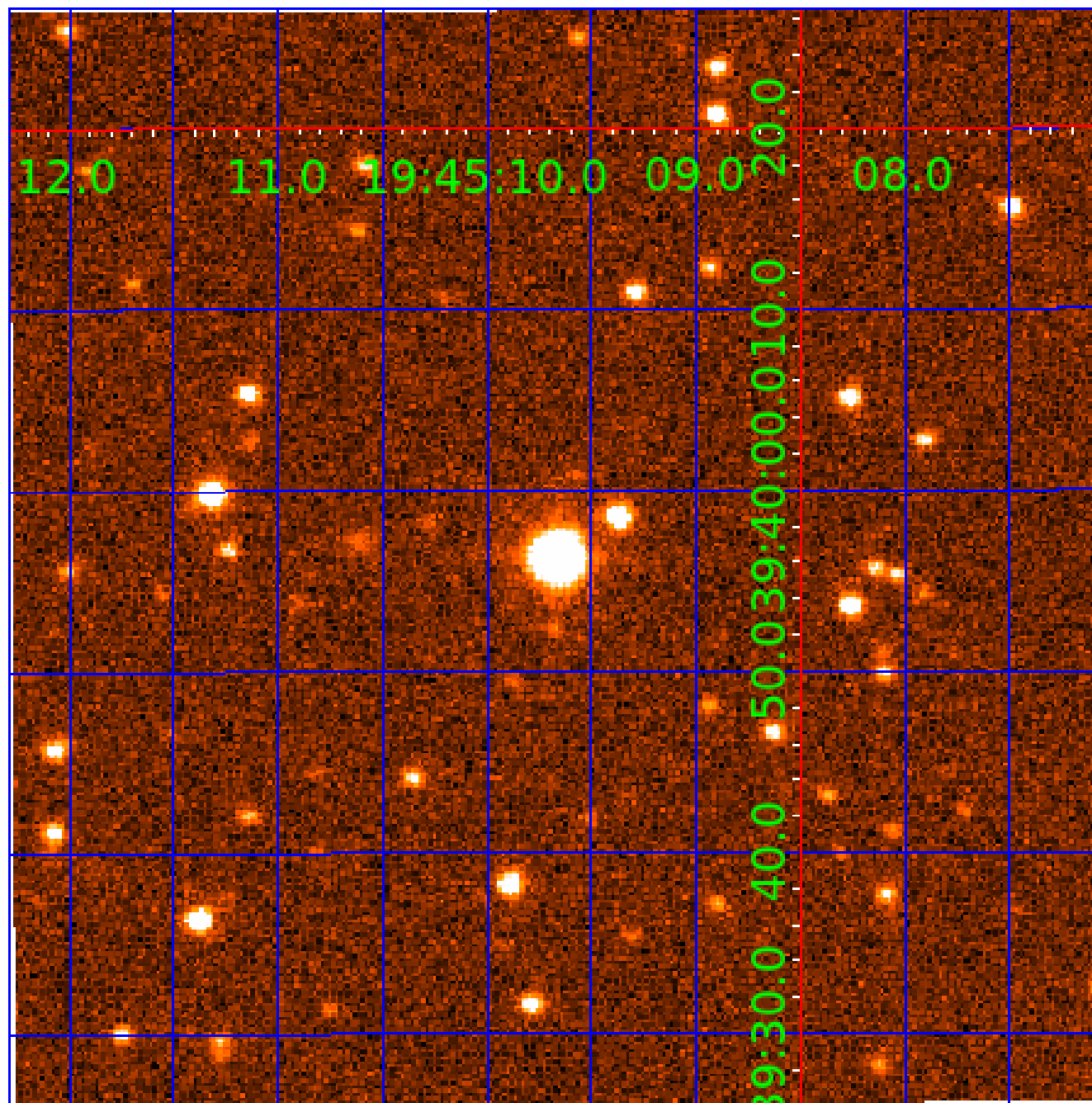


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 004580484

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})
004580484-01	OBS	No	1.757345	132.007273	97.9	6.364	9.8	10.1	1.71	8074	1.97	10534.44
004580484-02	OBS	No	1.171576	131.980941	95.1	4.954	7.7	9.3	1.71	8074	1.77	18088.13
004580484-03	OBS	No	138.963421	202.755169	656.0	10.162	7.2	6.8	1.71	8074	4.67	31.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004580484-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004580484-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
004580484-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS

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

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

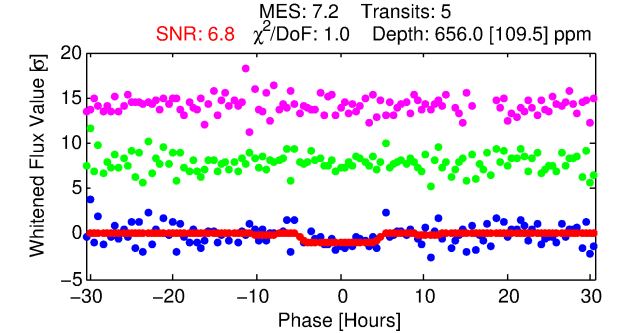
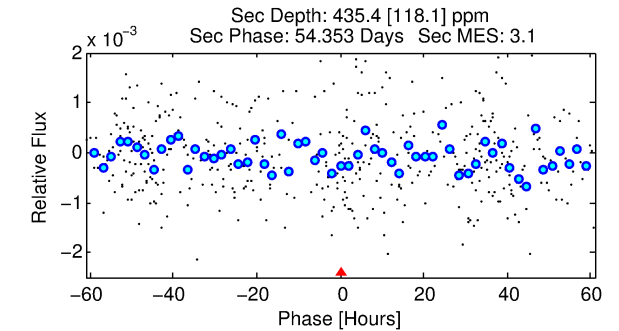
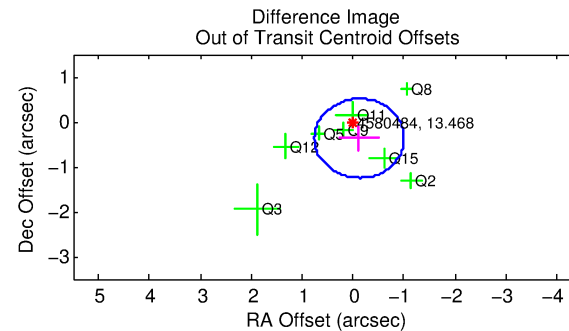
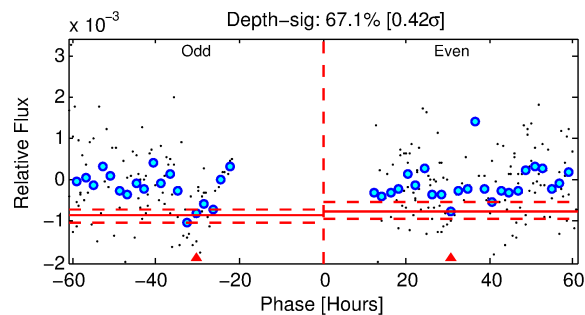
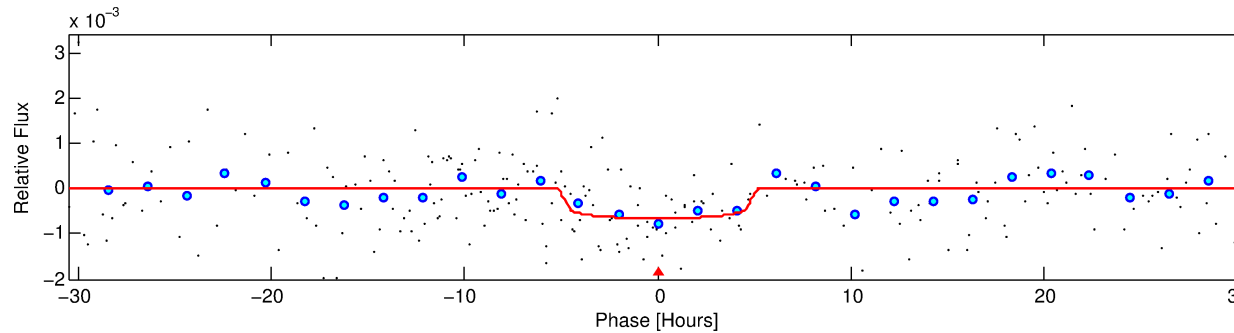
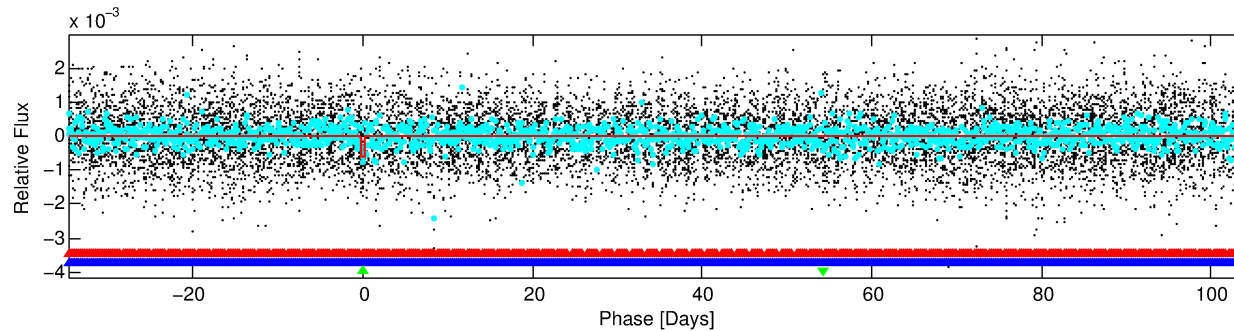
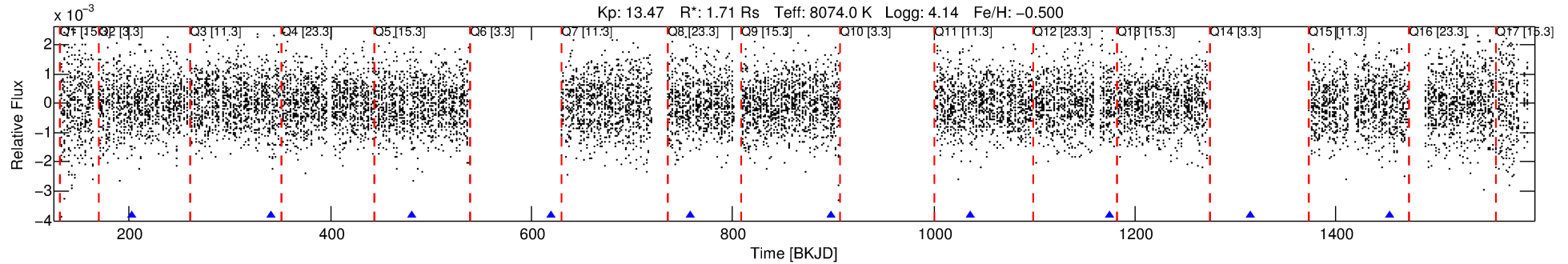
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004580484-03

No Significant Match Found

DV One-Page Summary

KIC: 4580484 Candidate: 3 of 3 Period: 138.963 d



DV Fit Results:

Period = 138.96342 [0.00646] d
Epoch = 202.7552 [0.0295] BKJD
Rp/R* = 0.0250 [0.0201]
a/R* = 81.54 [397.43]
b = 0.66 [4.11]
Seff = 31.04 [6.69]
Teq = 602 [32] K
Rp = 4.67 [3.83] Re
a = 0.6000 [0.0834] AU
Ag = 3960.22 [6534.01] [0.61 σ]
Teffp = 7382 [3020] K [2.24 σ]

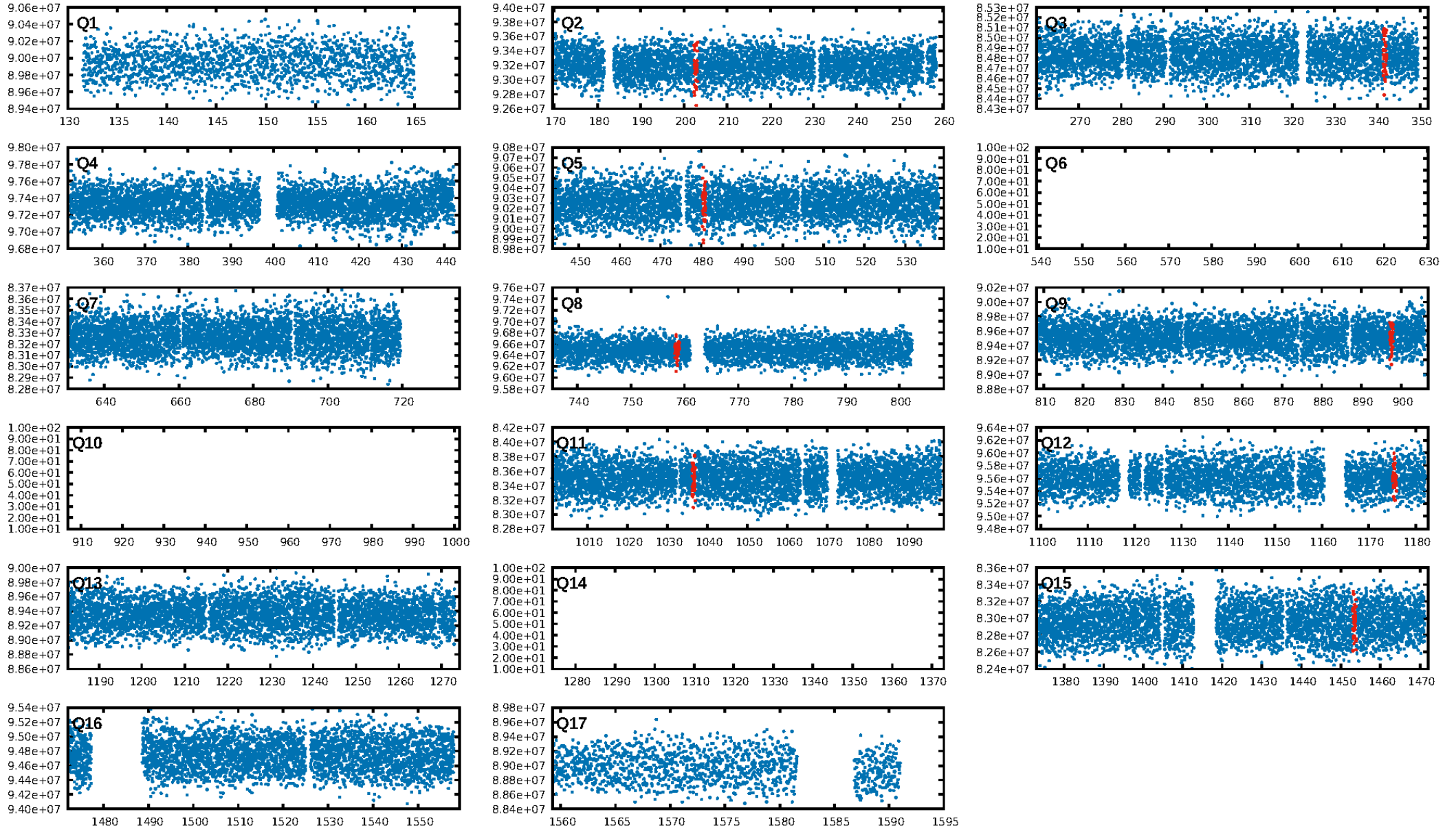
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [274.64 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 3.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.50e-10
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 3.728
Centroid-sig: 19.2%
Centroid-so: 0.646 arcsec [1.45 σ]
OotOffset-rm: 0.389 arcsec [1.33 σ]
KicOffset-rm: 0.415 arcsec [1.39 σ]
OotOffset-st: 1/3/2/2 [8]
KicOffset-st: 1/3/2/2 [8]
DiffImageQuality-fgm: 0.75 [6/8]
DiffImageOverlap-fno: 0.00 [0/8]

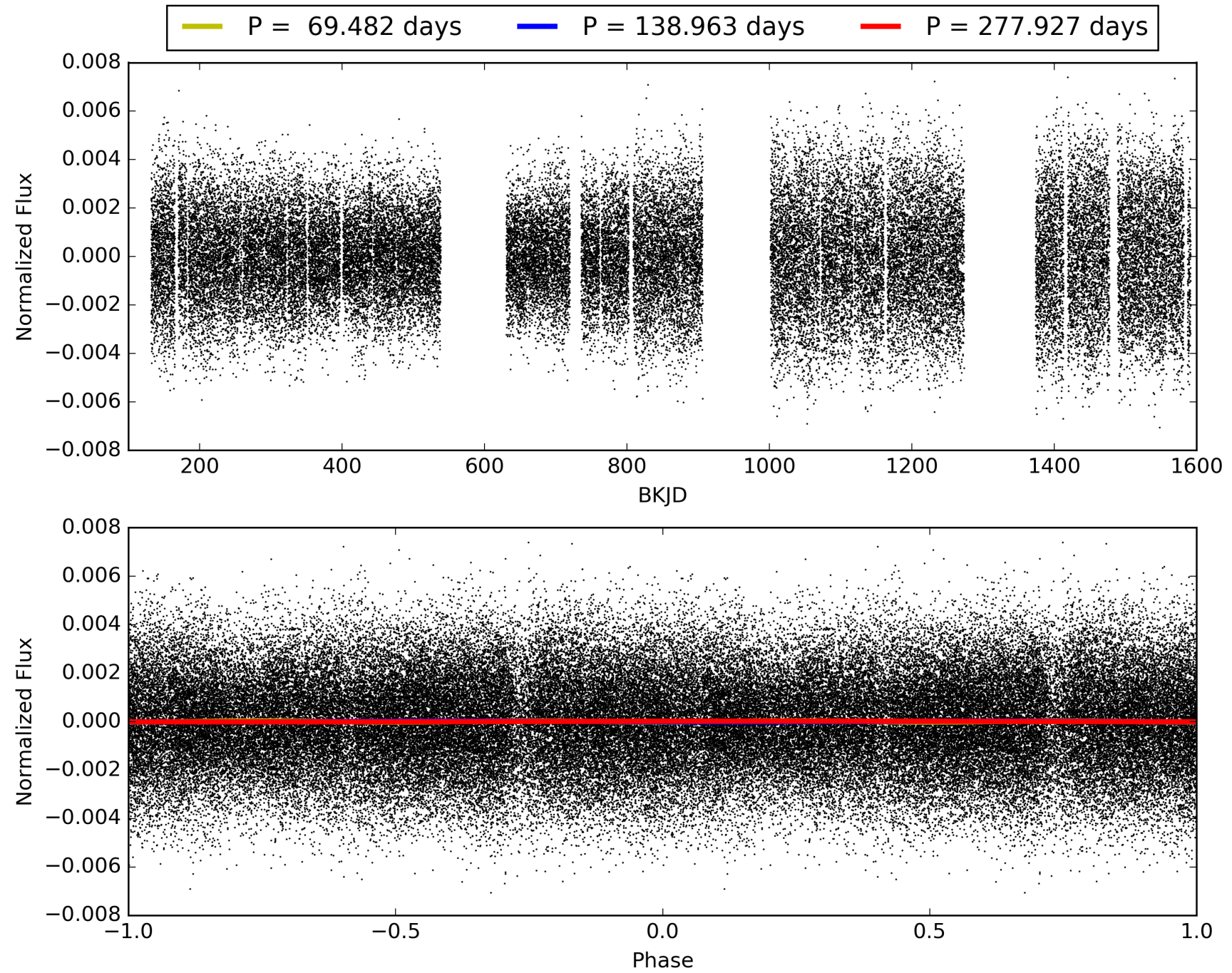
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 12:05:16 Z

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

TCE 004580484-03, PDC Light Curves

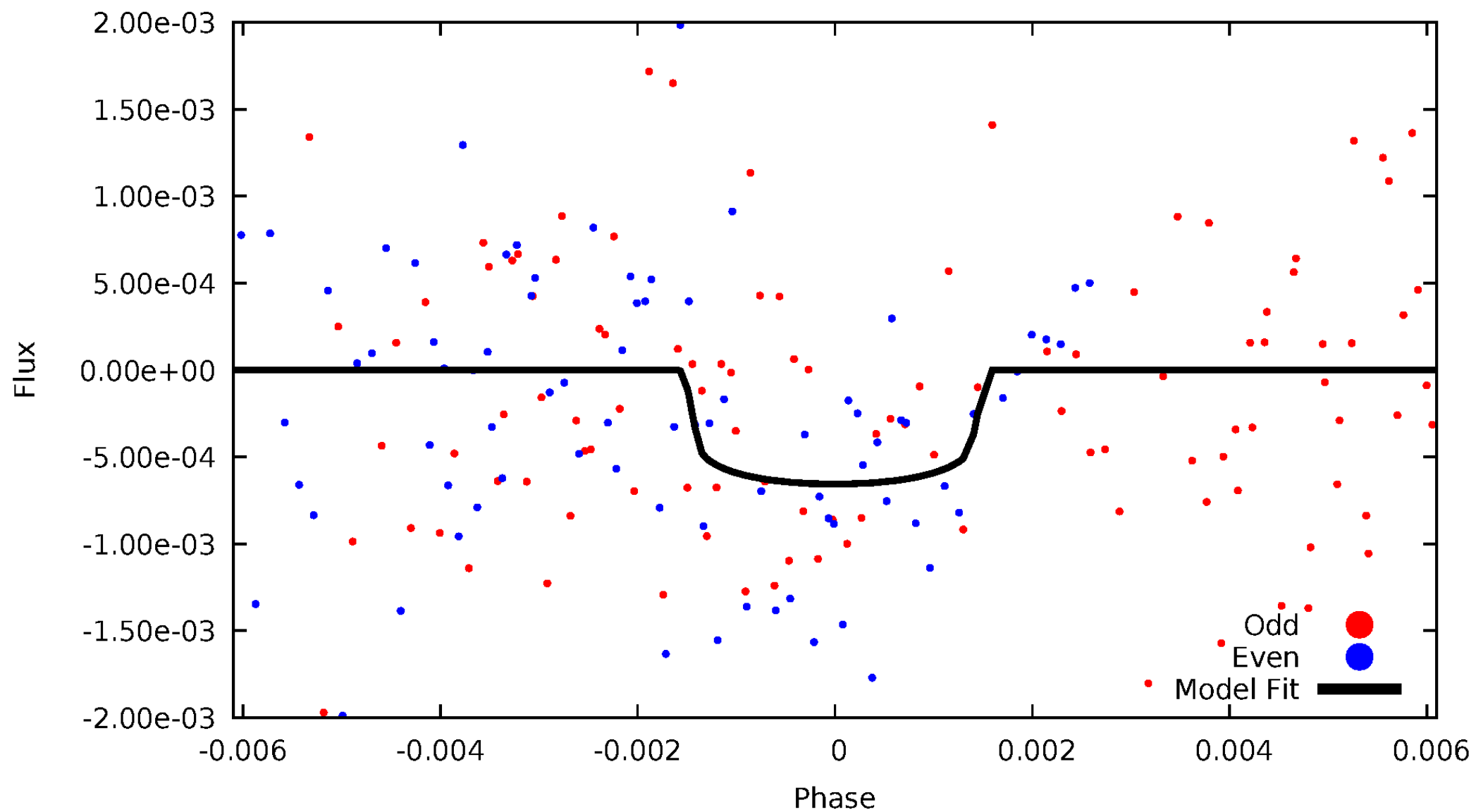


TCE 004580484-03



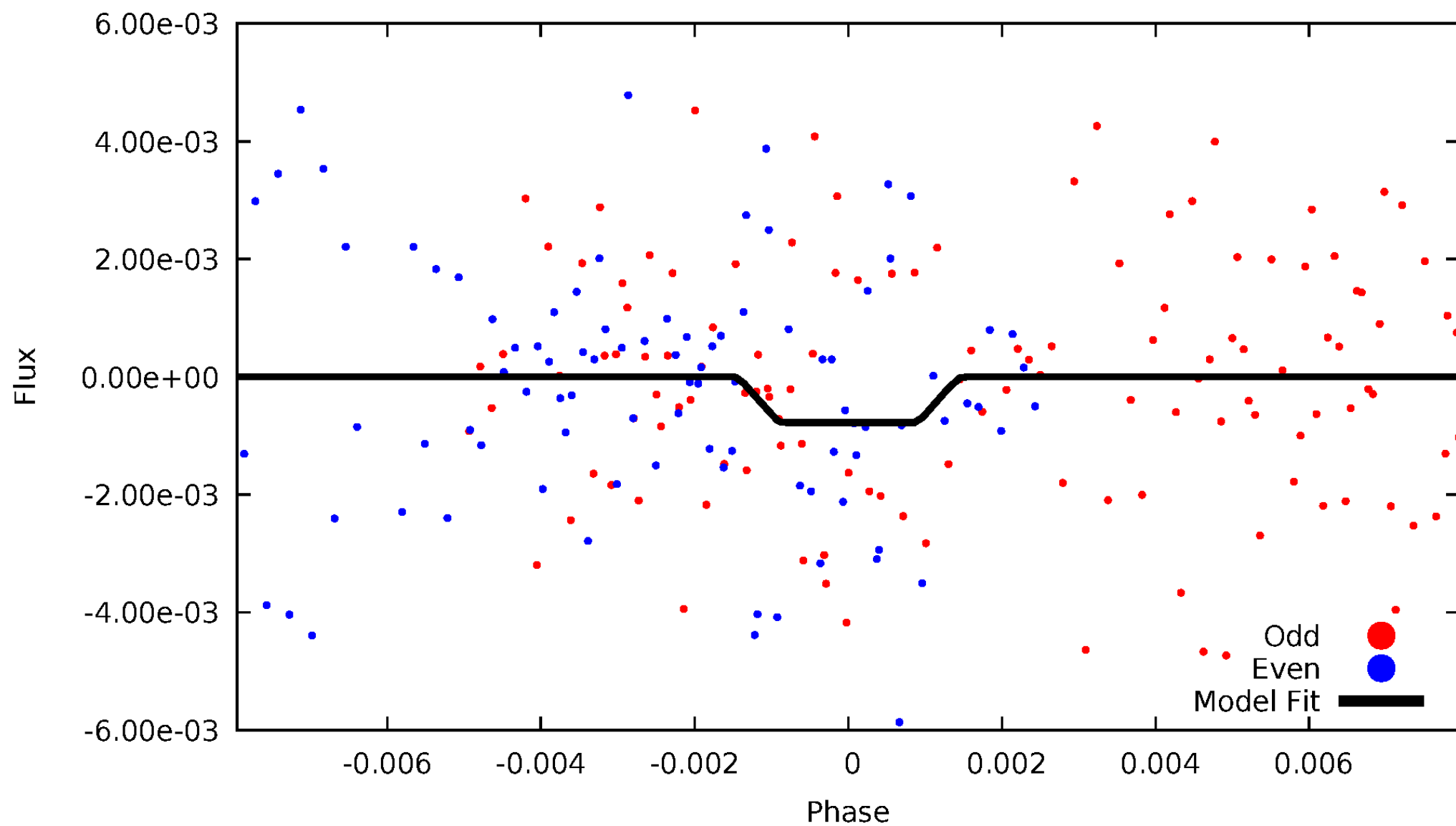
DV Odd/Even

TCE 004580484-03



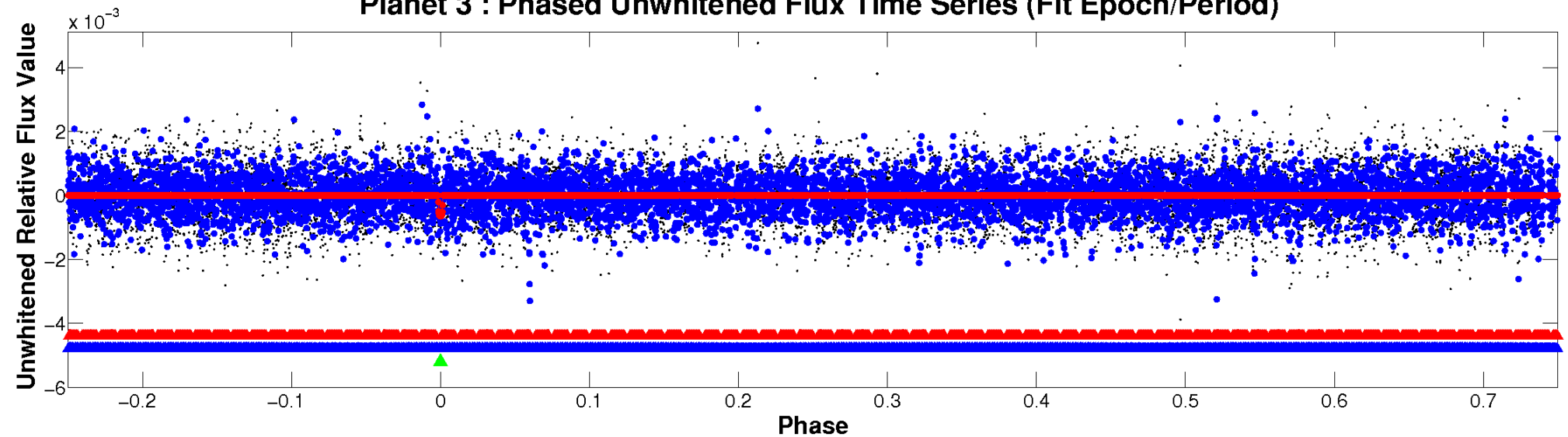
ALT Odd/Even

TCE 004580484-03

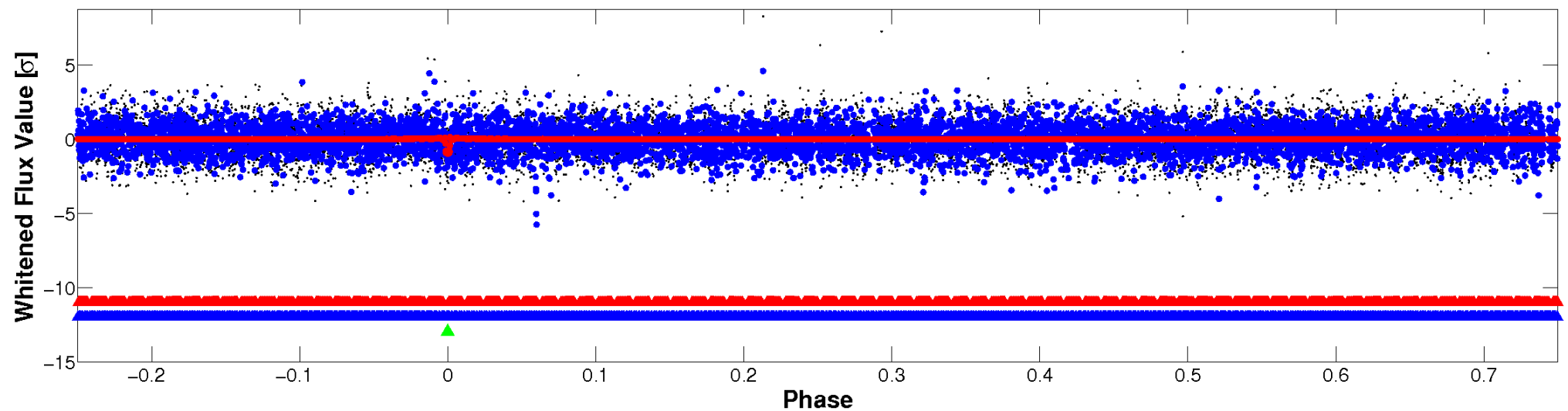


Non-Whitened Vs. Whitened Light Curve

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

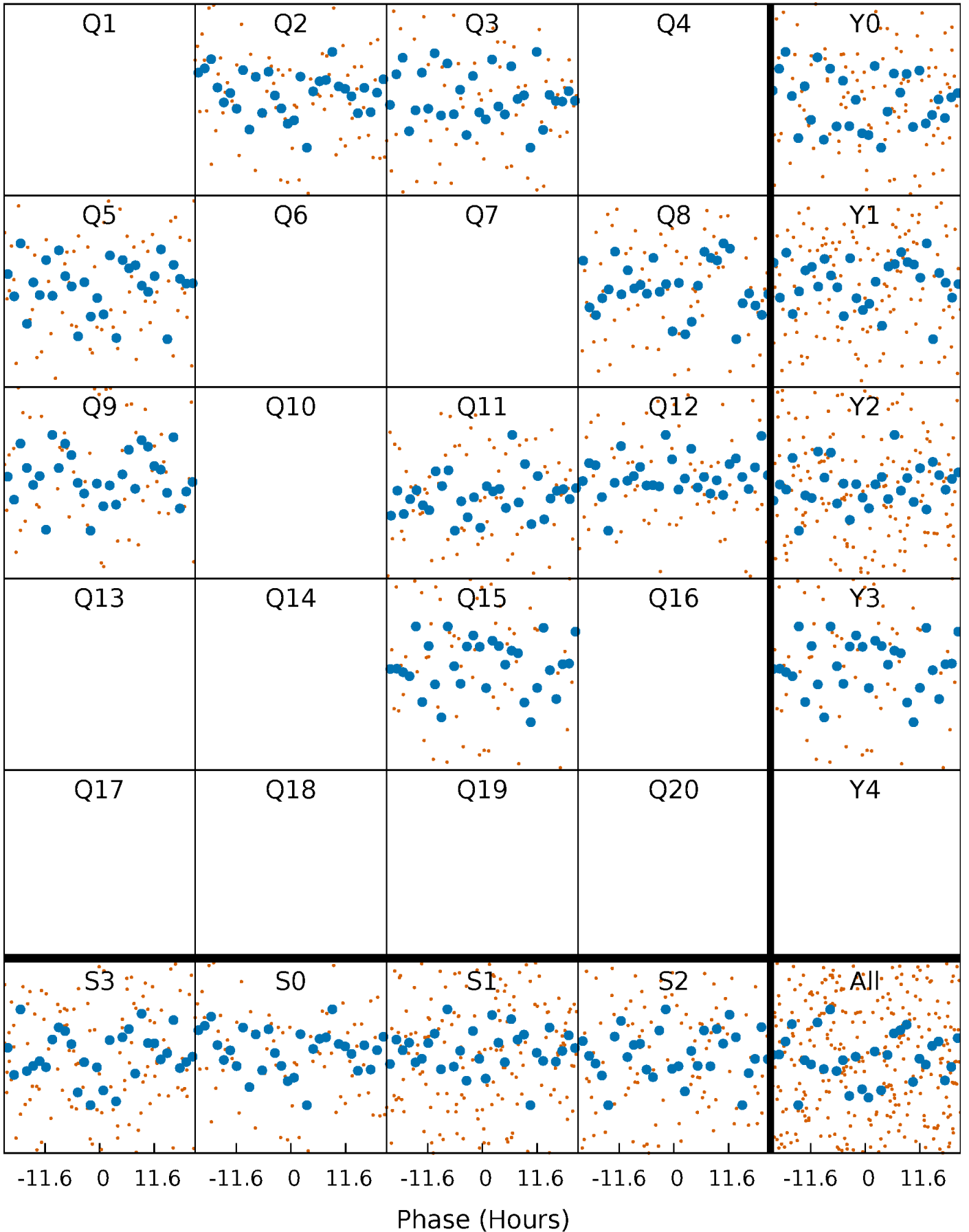


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



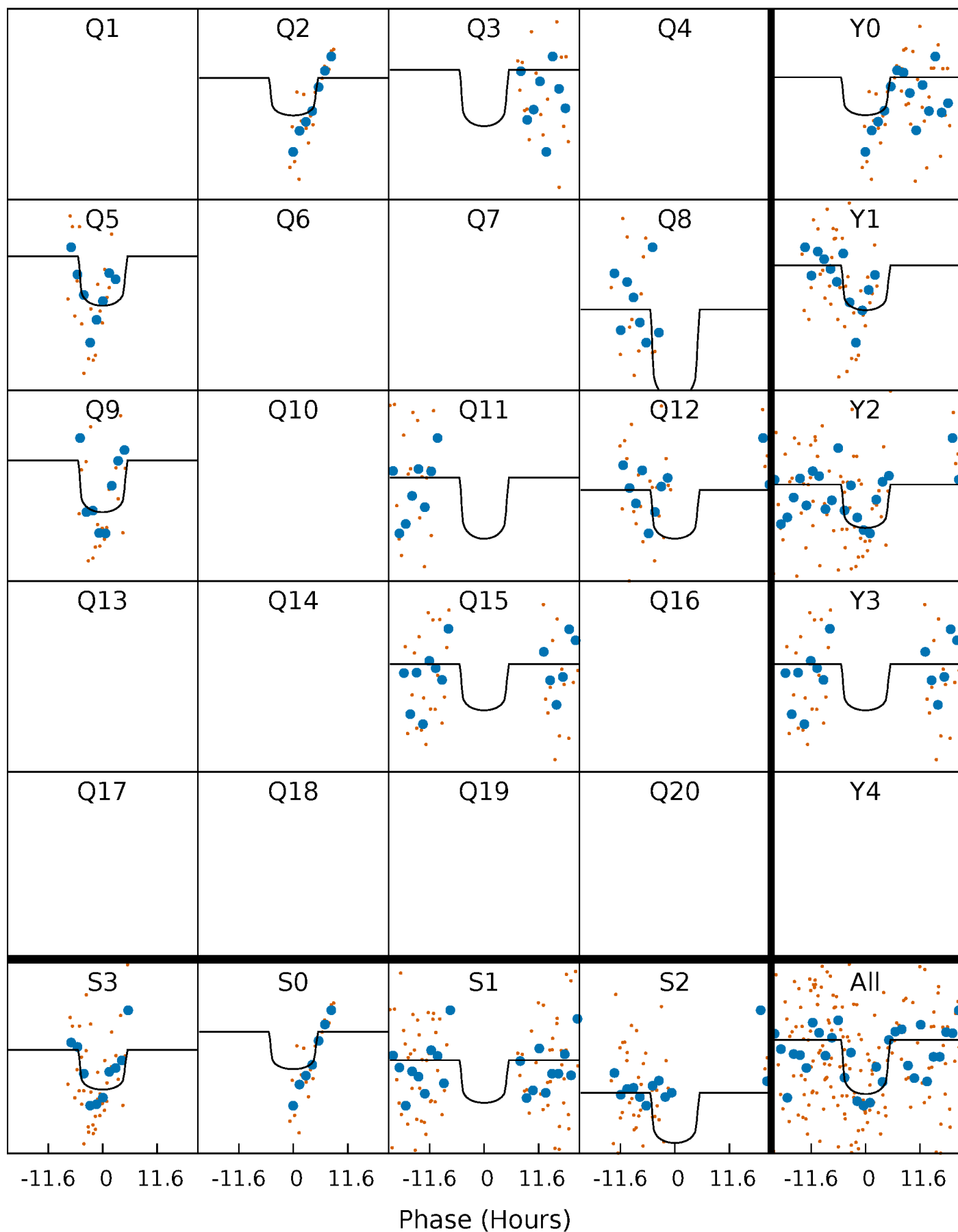
PDC Quarter-Phased Transit Curves

TCE 004580484-03 P=138.963421 Days $T_0=202.755169$ (BKJD)



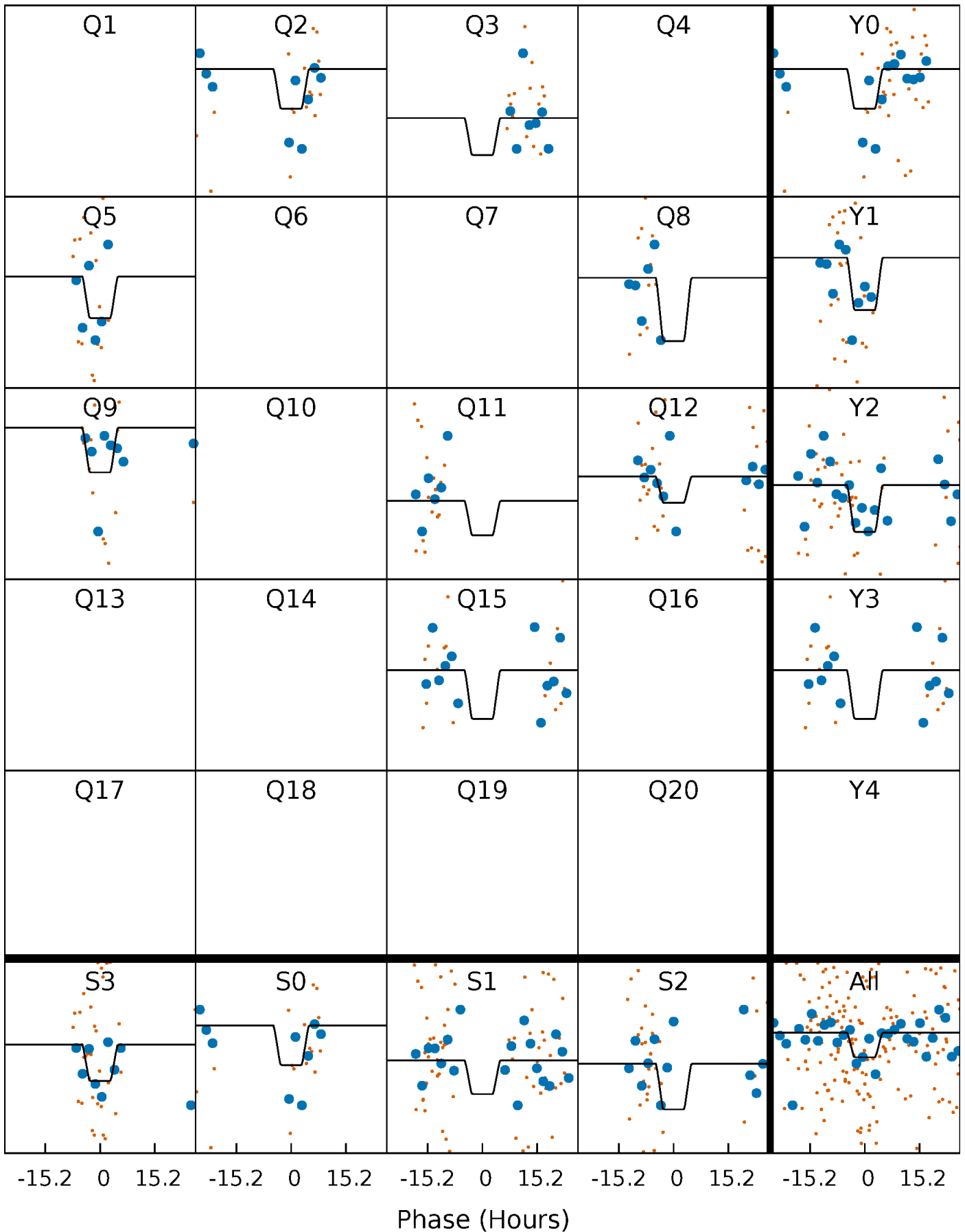
DV Quarter-Phased Transit Curves

TCE 004580484-03 P=138.963421 Days $T_0=202.755169$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

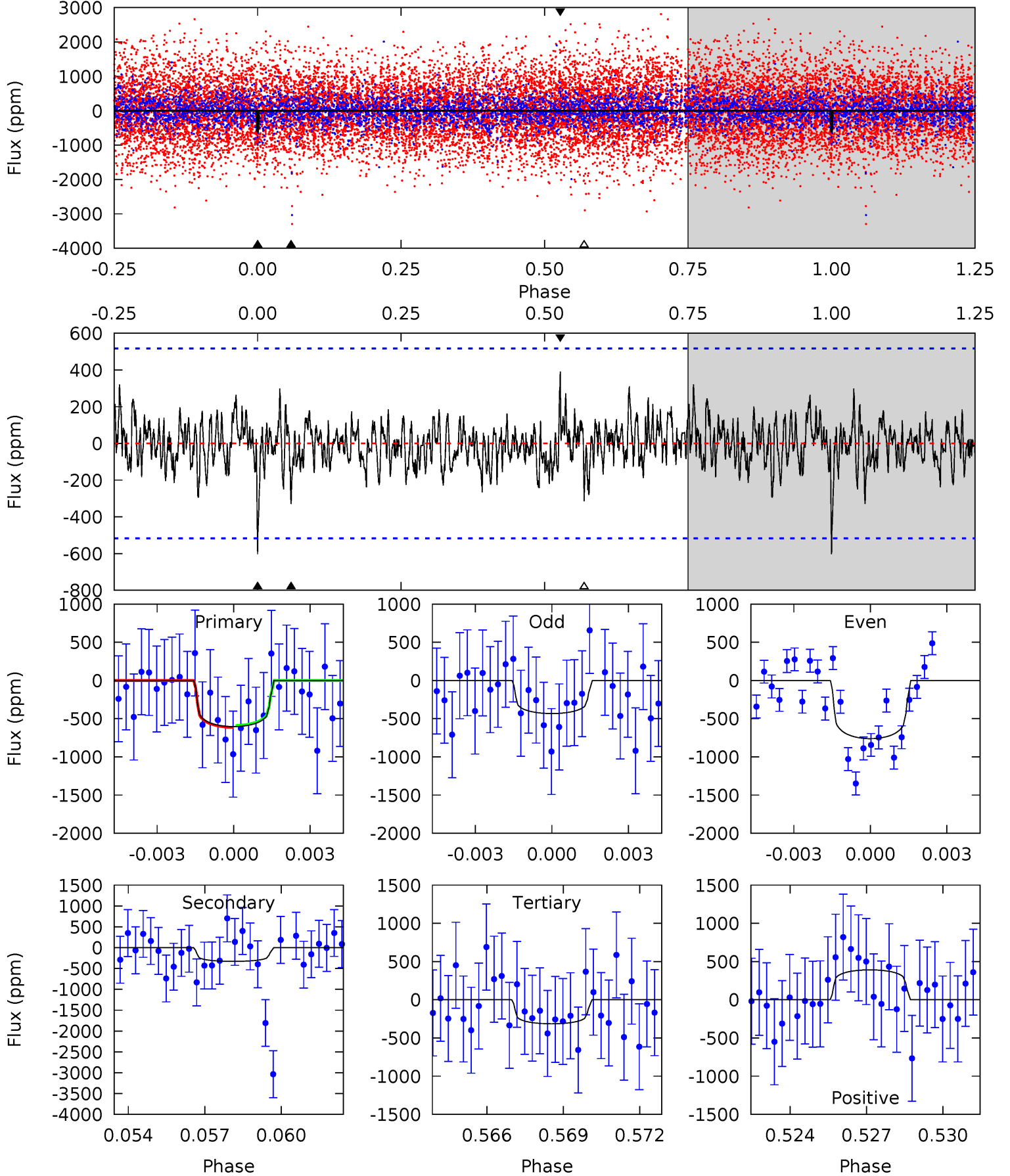
TCE 004580484-03 P=138.955019 Days $T_0=202.776271$ (BKJD)



DV Model-Shift Uniqueness Test

004580484-03, P = 138.963421 Days, E = 63.791748 Days

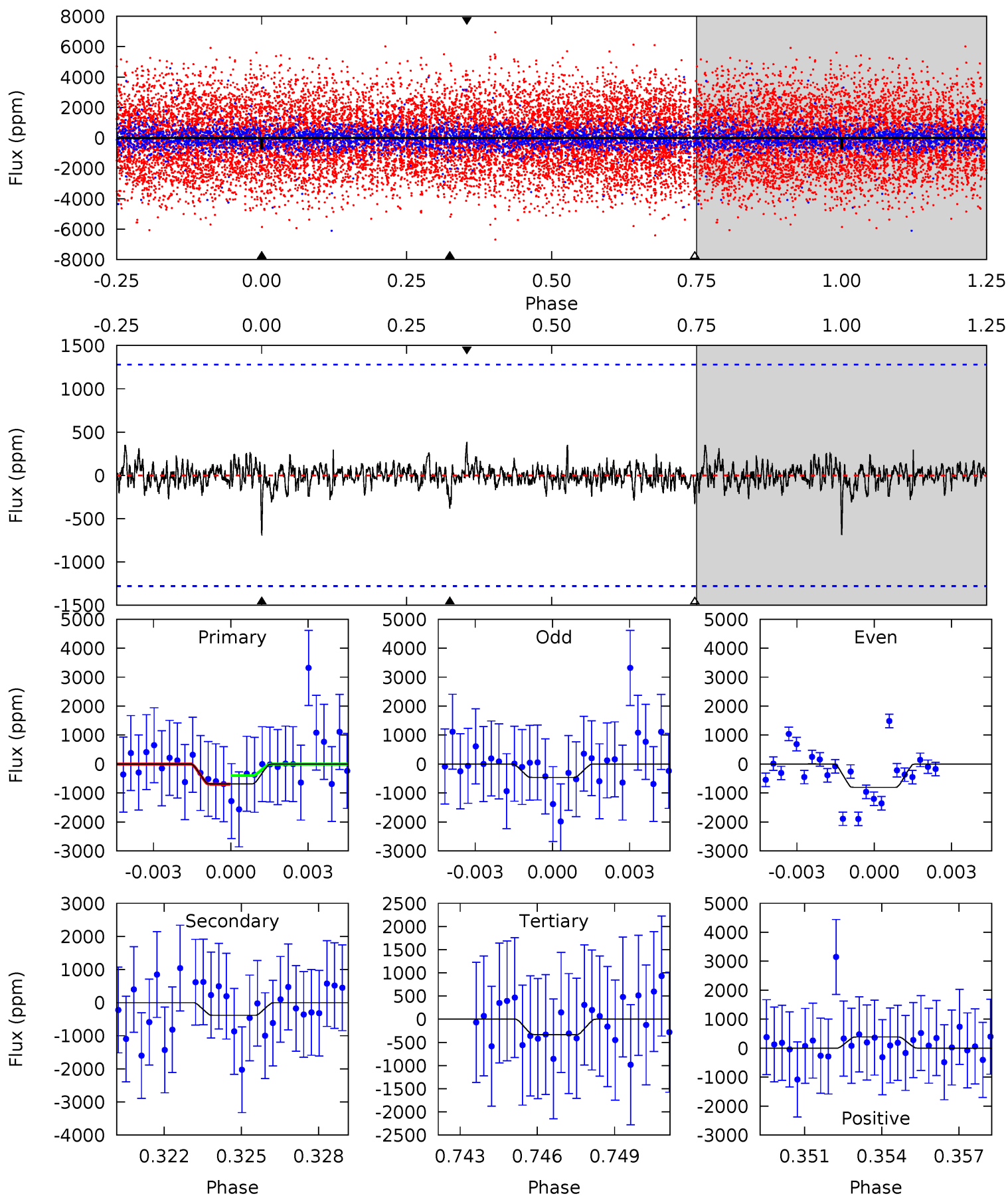
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.13	3.35	3.20	3.97	5.25	2.97	1.03	2.93	2.15	0.15	-0.63	1.70	0.85	0.39	0.13



Alt Model-Shift Uniqueness Test

004580484-03, P = 138.955019 Days, E = 63.821252 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.81	1.58	1.37	1.59	5.26	2.98	0.39	1.44	1.22	0.21	-0.01	0.71	0.60	0.36	0.59



Stellar Parameters For KIC 004580484

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8074^{+72}_{-72}	$4.144^{+0.121}_{-0.099}$	$-0.500^{+0.150}_{-0.150}$	$1.713^{+0.266}_{-0.266}$	$1.489^{+0.127}_{-0.088}$	$0.417^{+0.242}_{-0.131}$
	+1%/-1%	+3%/-2%	+30%/-30%	+16%/-16%	+9%/-6%	+58%/-31%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 004580484-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-329 ± 98	$5.03^{+3.66}_{-2.78}$	842^{+33}_{-36}	6412^{+4342}_{-1513}	2546^{+10840}_{-1749}
Alt.	-384 ± 243	$5.37^{+3.79}_{-3.13}$	840^{+32}_{-32}	6131^{+5110}_{-1711}	2148^{+12940}_{-1696}

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

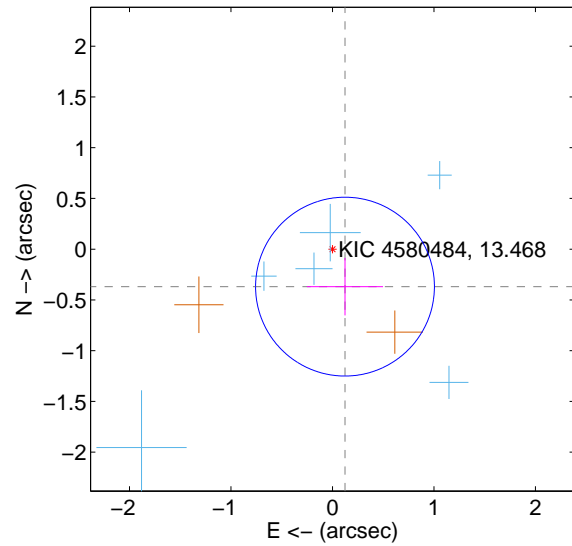
Supplemental centroid analysis for 004580484-03. Kepler magnitude: 13.47. Transit SNR 6.82

There are 6 quarters with good PRF difference image offsets

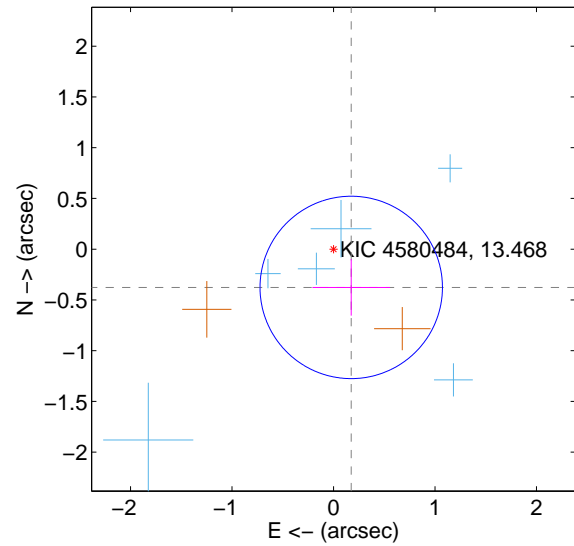
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.389 ± 0.294	1.33	-0.123 ± 0.375	-0.369 ± 0.283
PRF-fit source offset from KIC position	0.415 ± 0.300	1.39	-0.175 ± 0.383	-0.377 ± 0.279
photometric centroid source offset	0.65 ± 0.45	1.45	-0.51 ± 0.43	0.39 ± 0.48

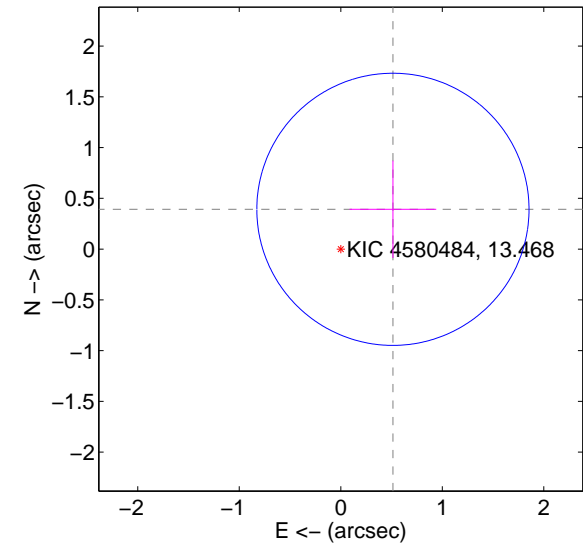
offset from difference PRF-fit to OOT PRF-fit



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.

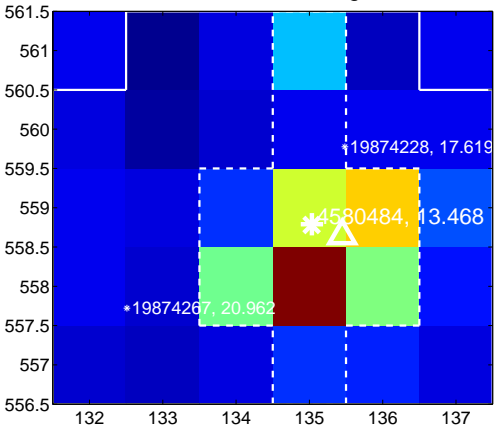
Q1 no difference image



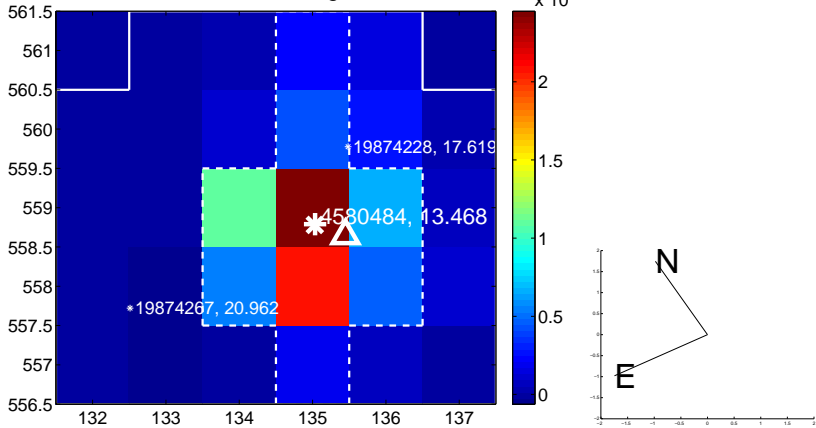
Q1 no OOT image



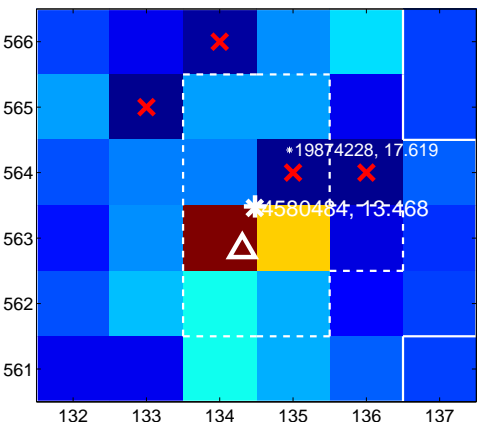
Q2 difference image



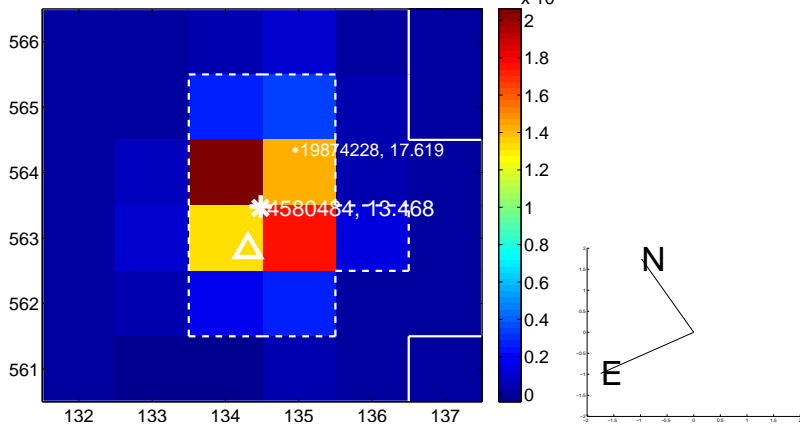
Q2 OOT image



Q3 difference image



Q3 OOT image



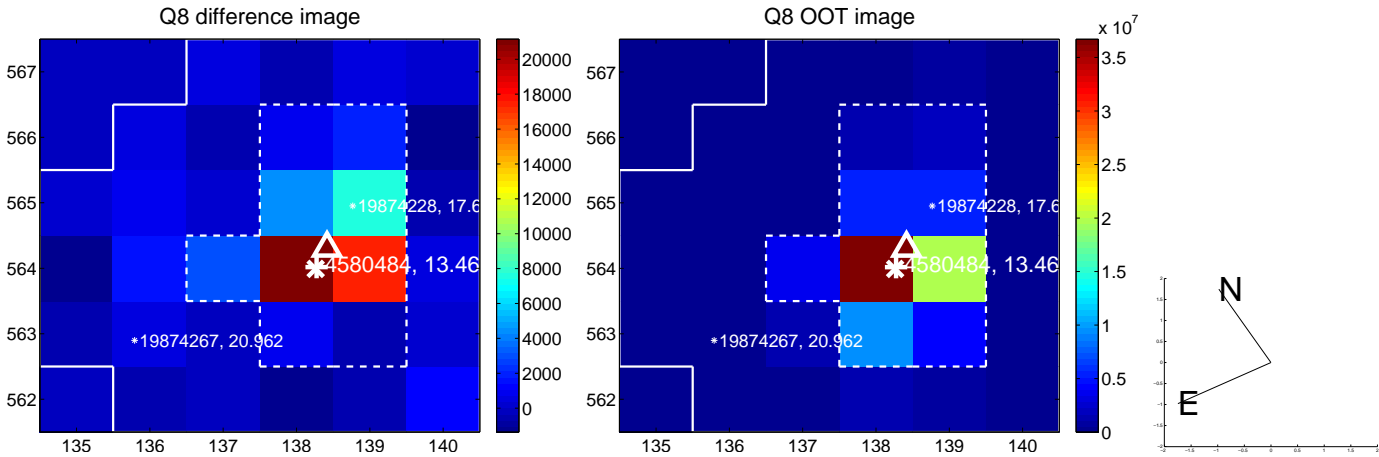
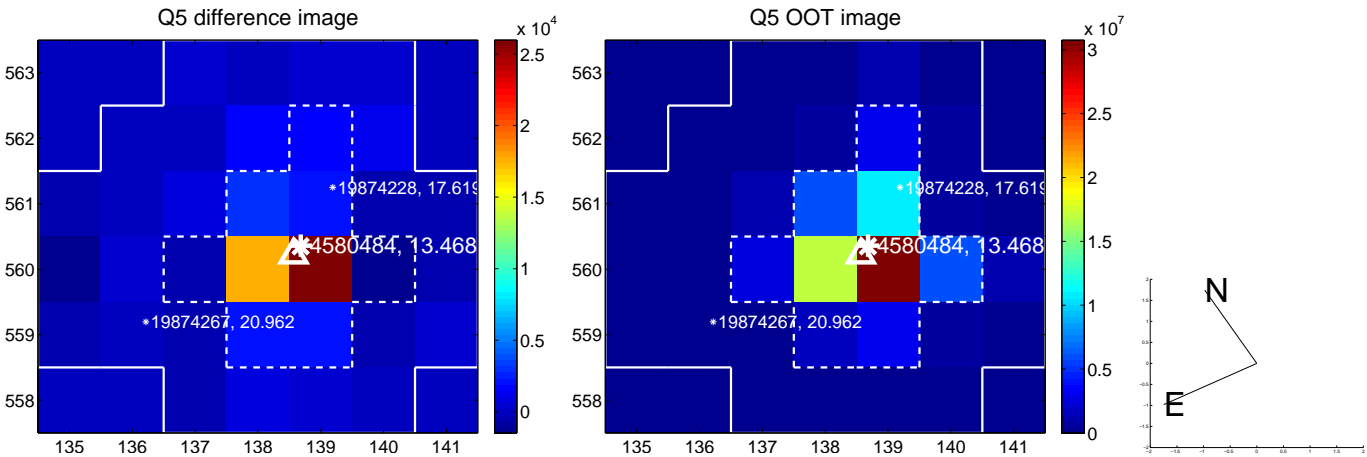
Q4 no difference image



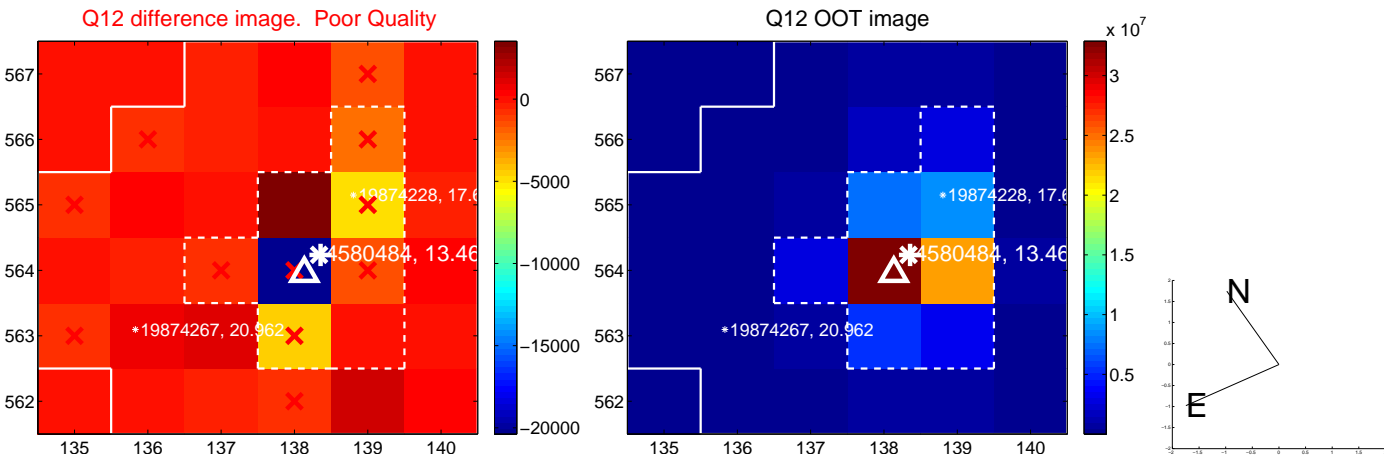
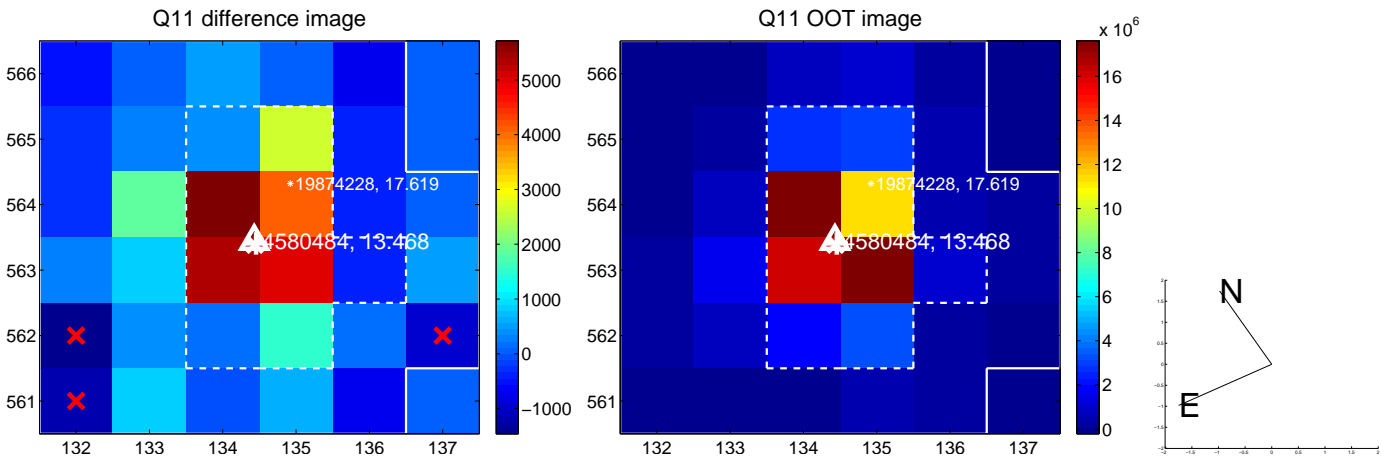
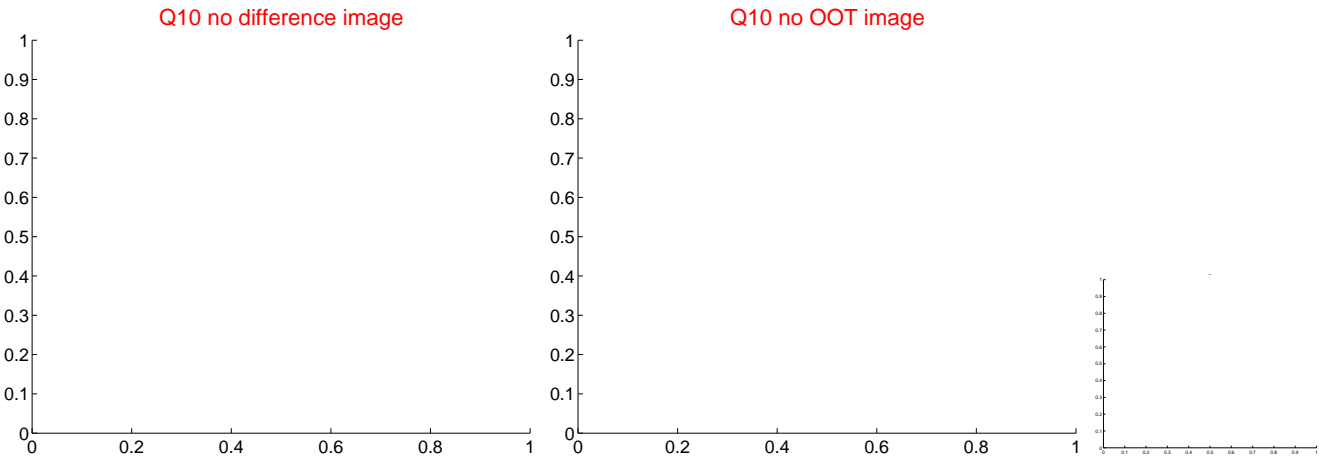
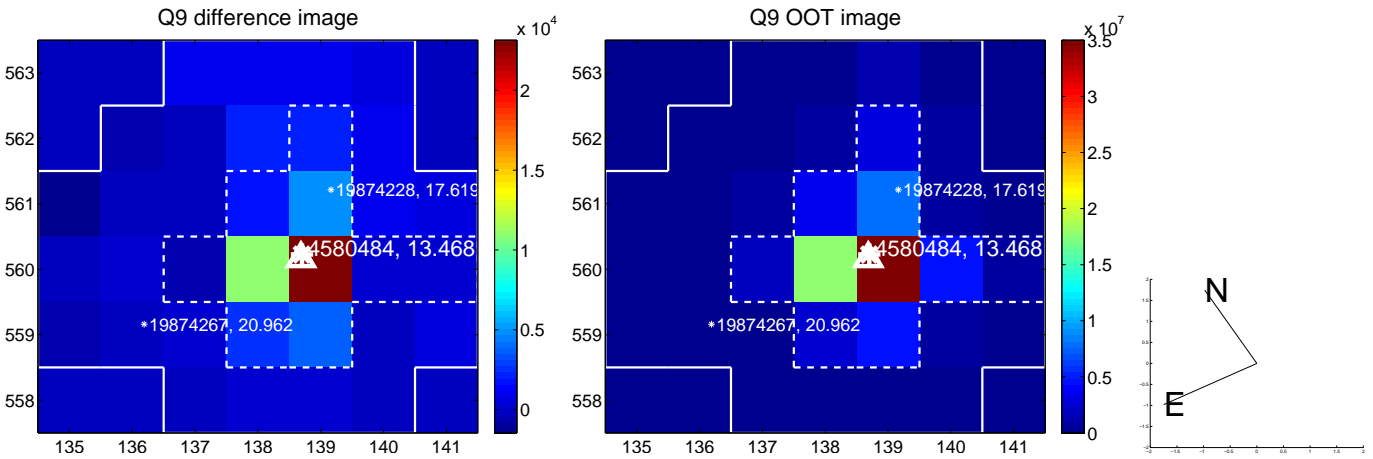
Q4 no OOT image



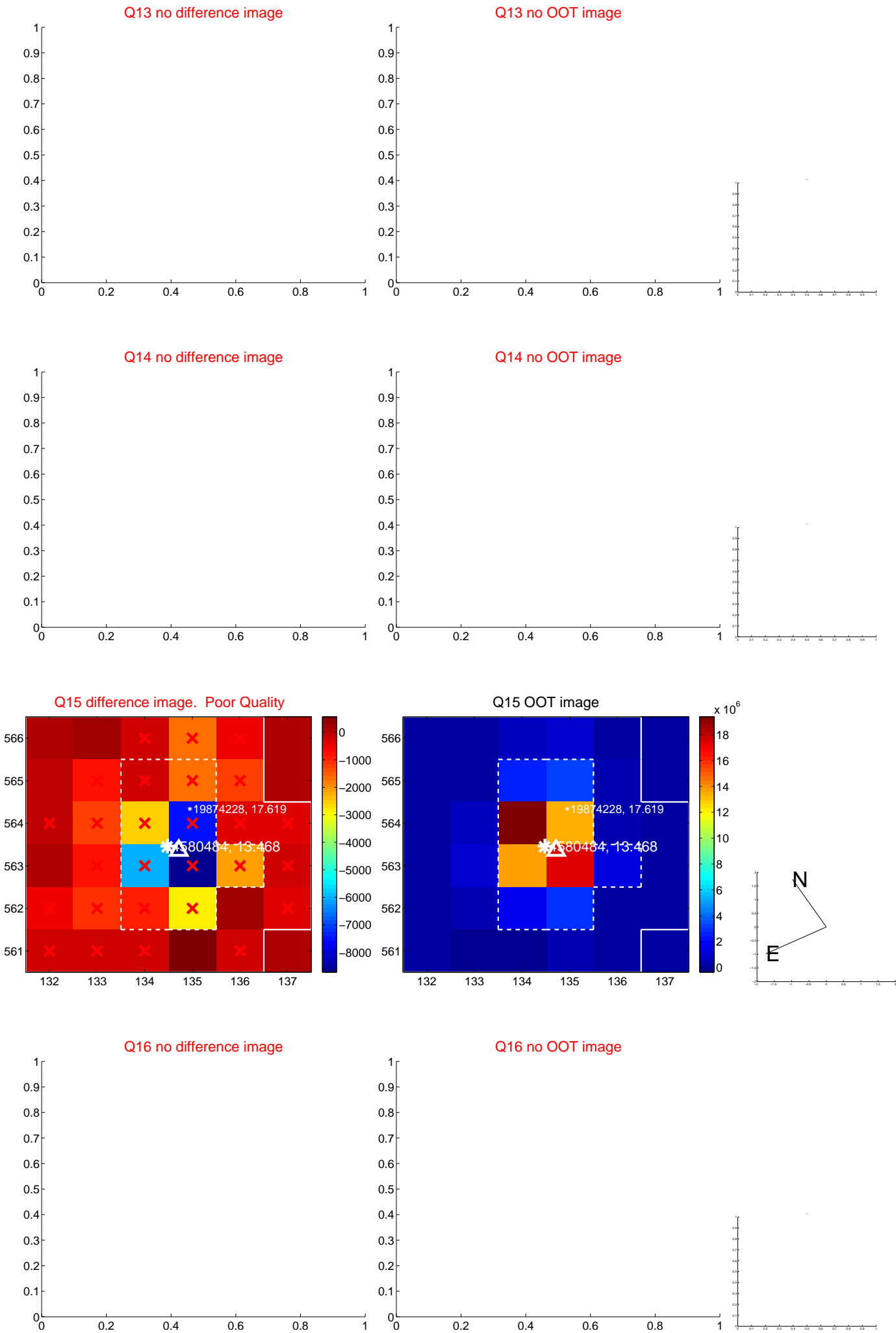
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



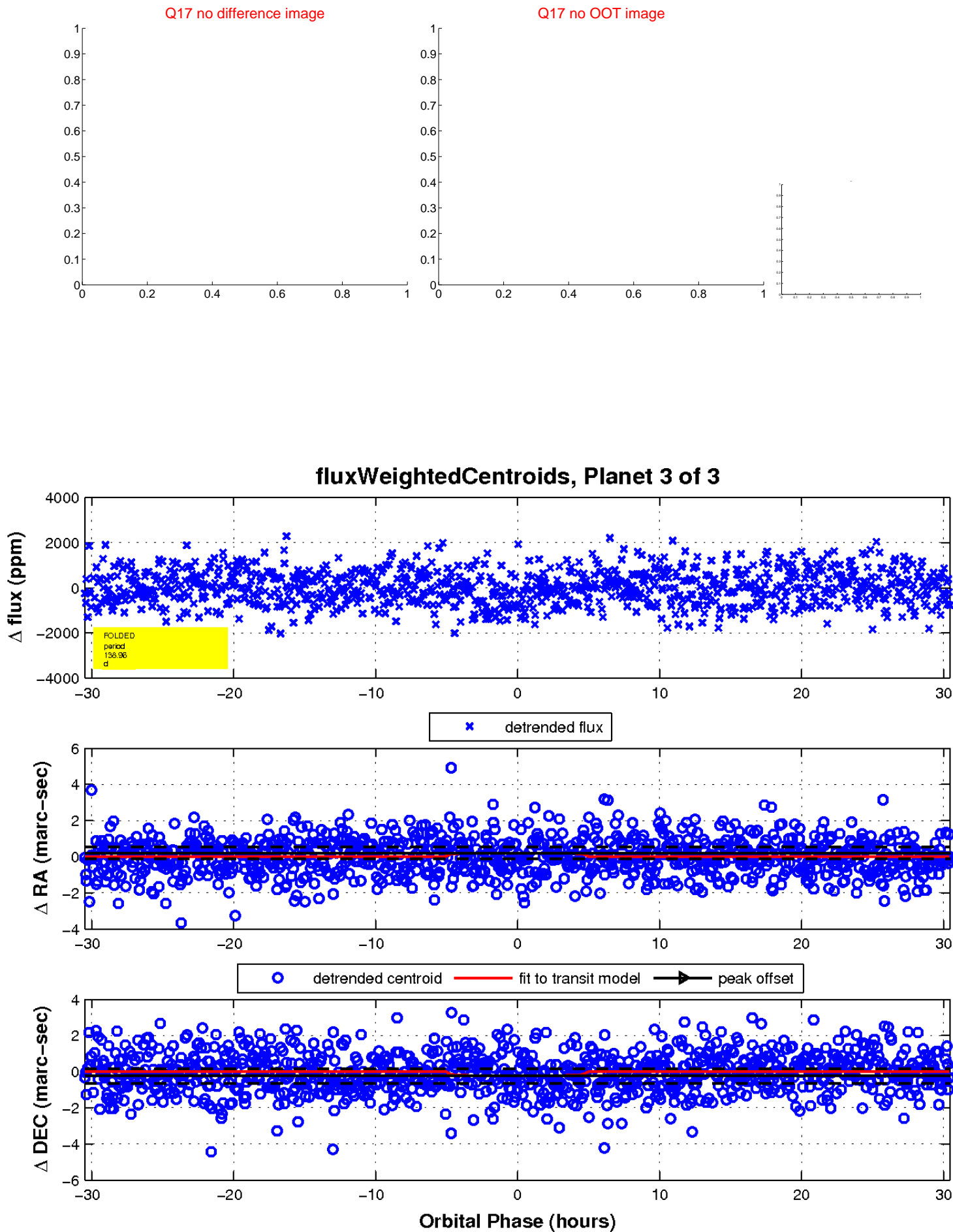
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

