

KIC 004474484

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})
004474484-01	OBS	No	348.648431	397.472181	78.3	21.765	8.6	3.1	2.40	7209	2.35	10.58
004474484-02	OBS	No	0.812804	132.057498	22.6	4.250	8.3	9.9	2.40	7209	1.29	34227.05
004474484-03	OBS	No	126.273650	187.886755	149.1	12.882	9.6	6.6	2.40	7209	3.24	40.98
004474484-04	OBS	No	93.569317	199.676165	289.5	1.913	8.5	8.6	2.40	7209	4.78	61.12
004474484-05	OBS	No	57.211617	135.978817	194.3	4.651	8.3	8.8	2.40	7209	4.03	117.77
004474484-06	OBS	No	65.490862	150.136107	222.7	3.536	7.6	7.1	2.40	7209	4.18	98.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004474484-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
004474484-02	OBS	FP	0.00	1	0	0	0	LPP_DV
004474484-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004474484-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004474484-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004474484-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

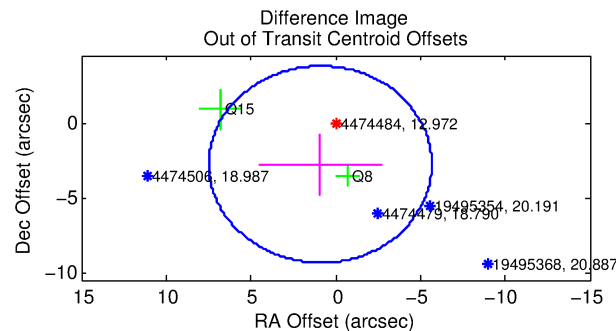
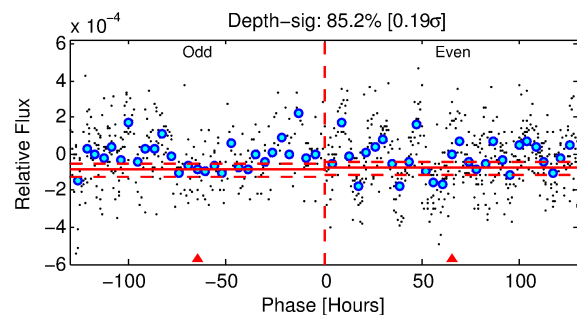
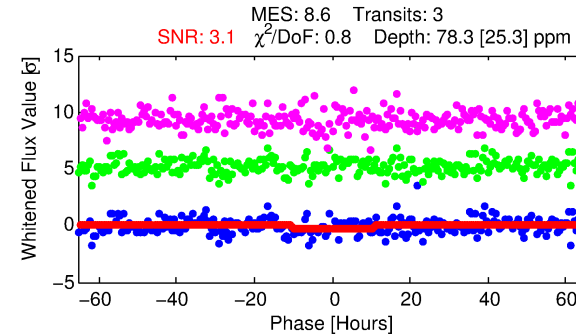
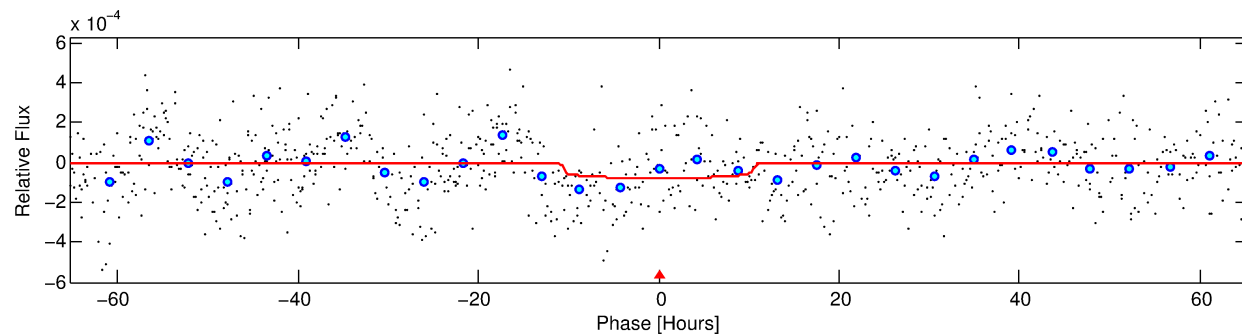
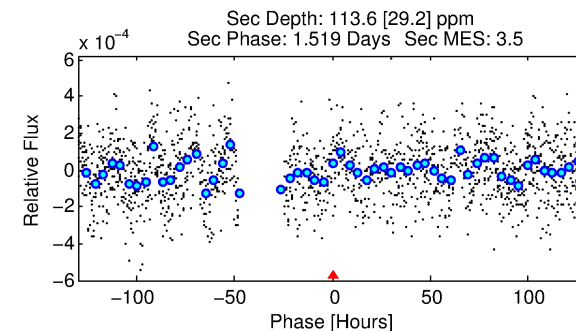
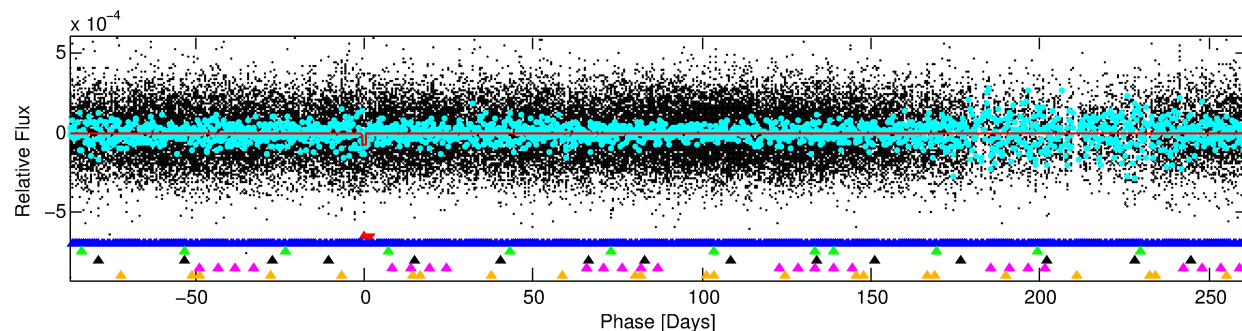
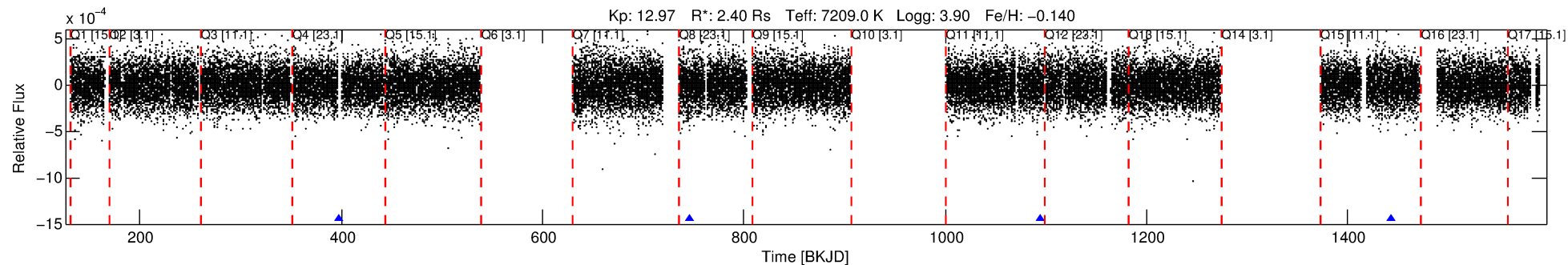
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004474484-01

No Significant Match Found

DV One-Page Summary

KIC: 4474484 Candidate: 1 of 6 Period: 348.648 d



DV Fit Results:

Period = 348.64843 [0.03122] d
Epoch = 397.4722 [0.0753] BKJD
Rp/R* = 0.0090 [0.0040]
a/R* = 75.09 [183.65]
b = 0.80 [1.09]
Seff = 10.58 [5.93]
Teq = 460 [64] K
Rp = 2.35 [1.34] Re
a = 1.1497 [0.3874] AU
Ag = 14980.35 [15944.35] [0.94σ]
Teffp = 7866 [1850] K [4.00σ]

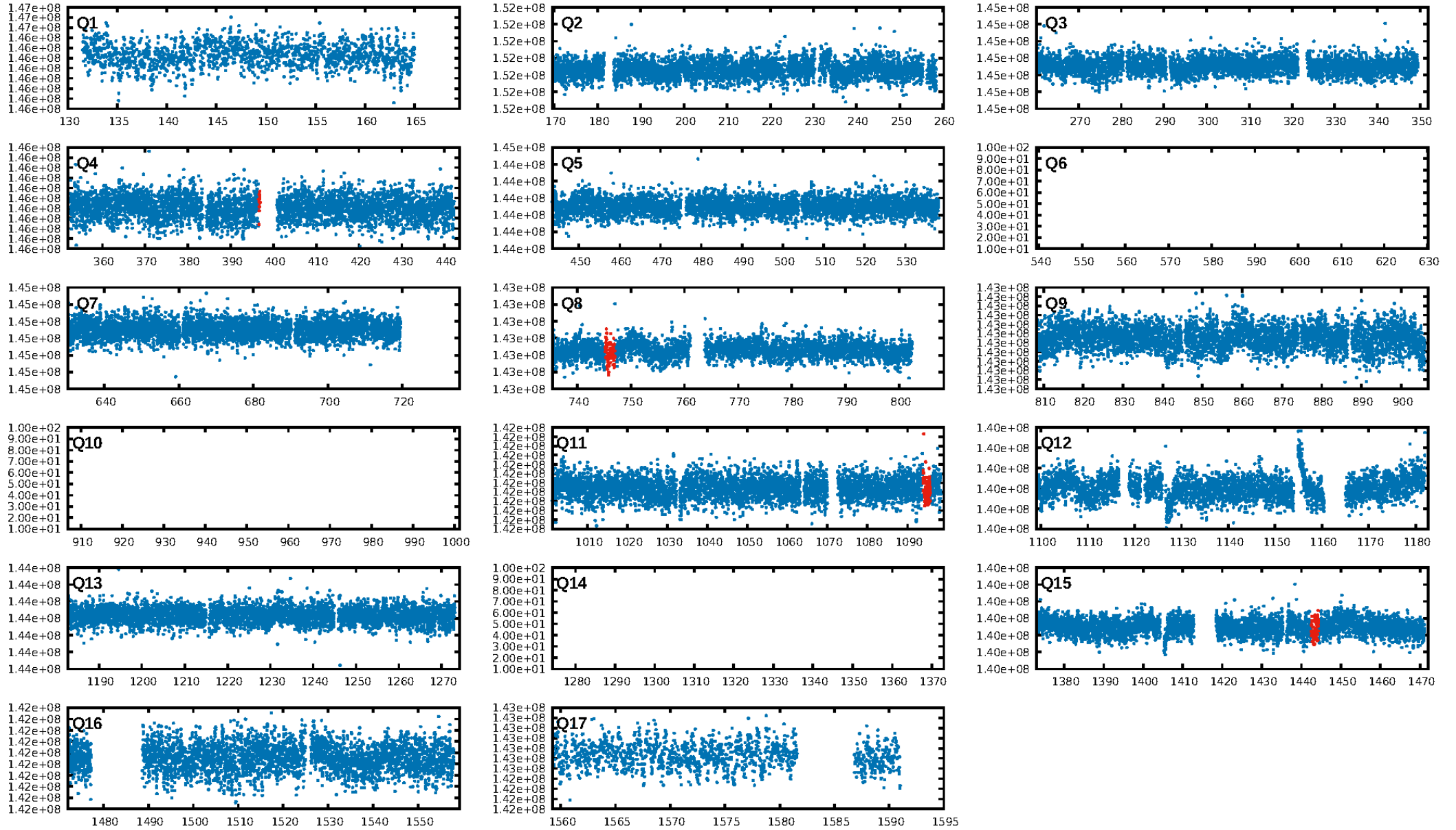
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [211.02σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 73.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.86e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.09356
Centroid-sig: 8.2%
Centroid-so: 2.654 arcsec [1.24σ]
OotOffset-rm: 2.927 arcsec [1.34σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-rm: 2.931 arcsec [1.34σ]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 0.00 [0/2]

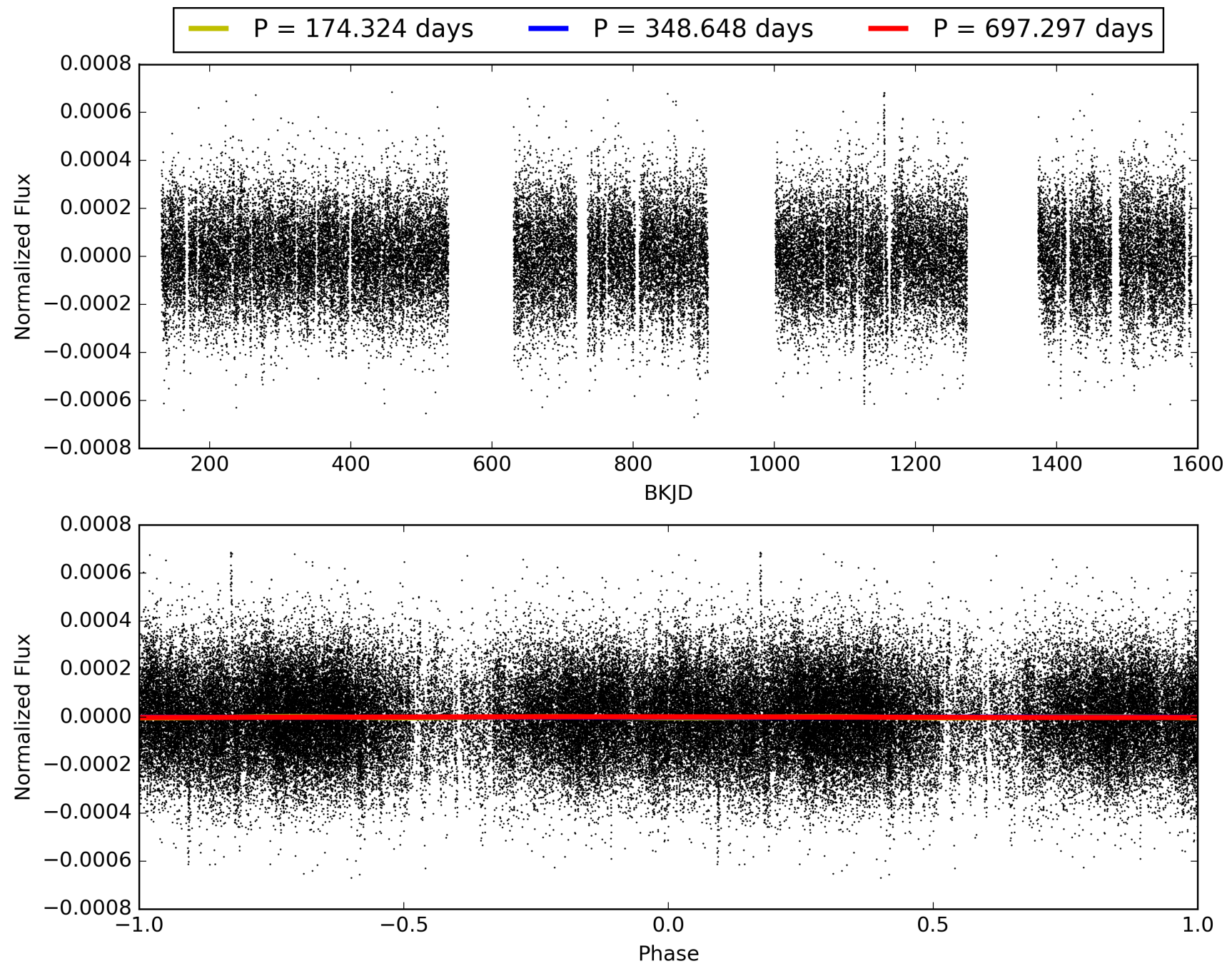
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:03:31 Z

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

TCE 004474484-01, PDC Light Curves

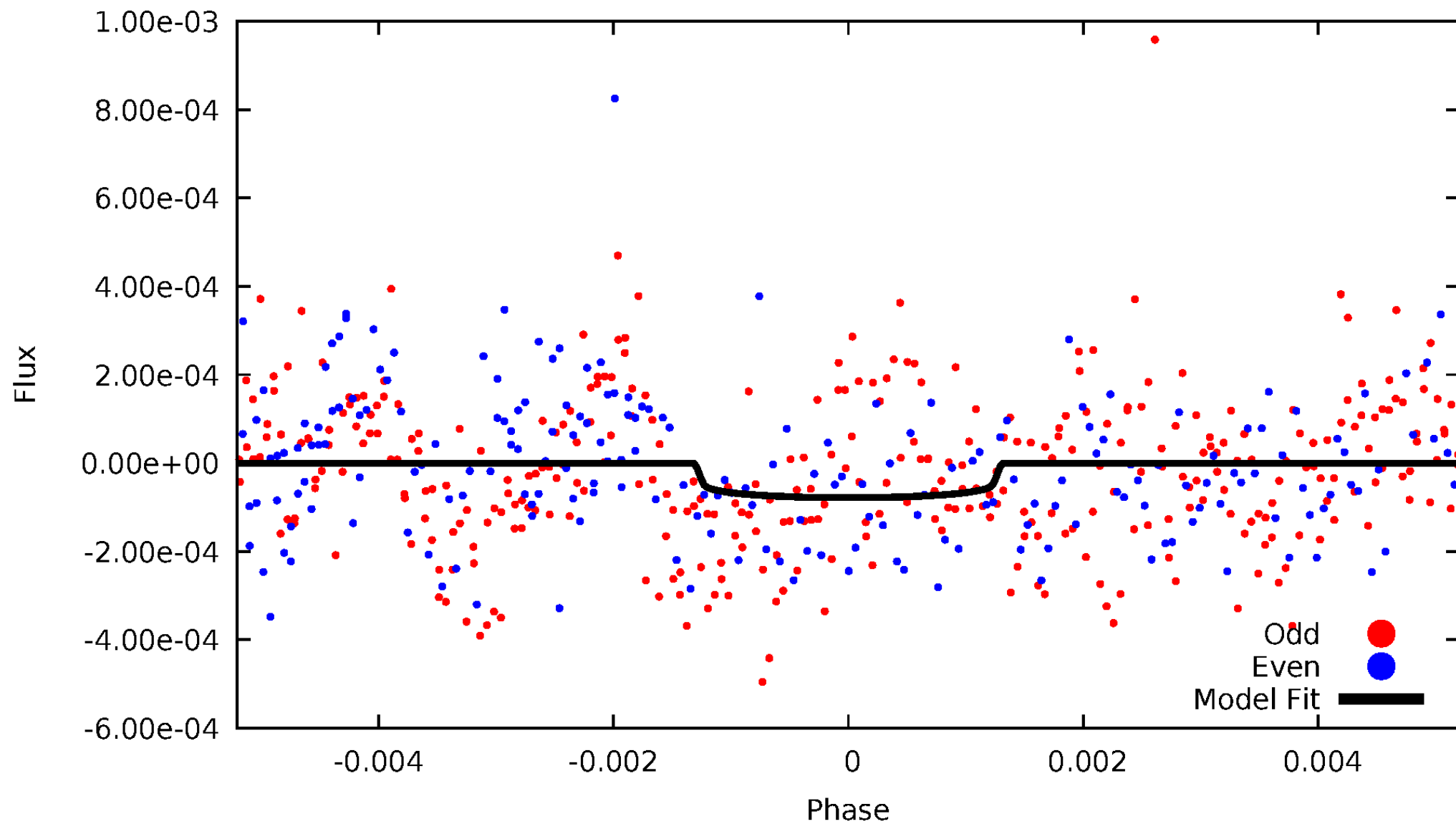


TCE 004474484-01



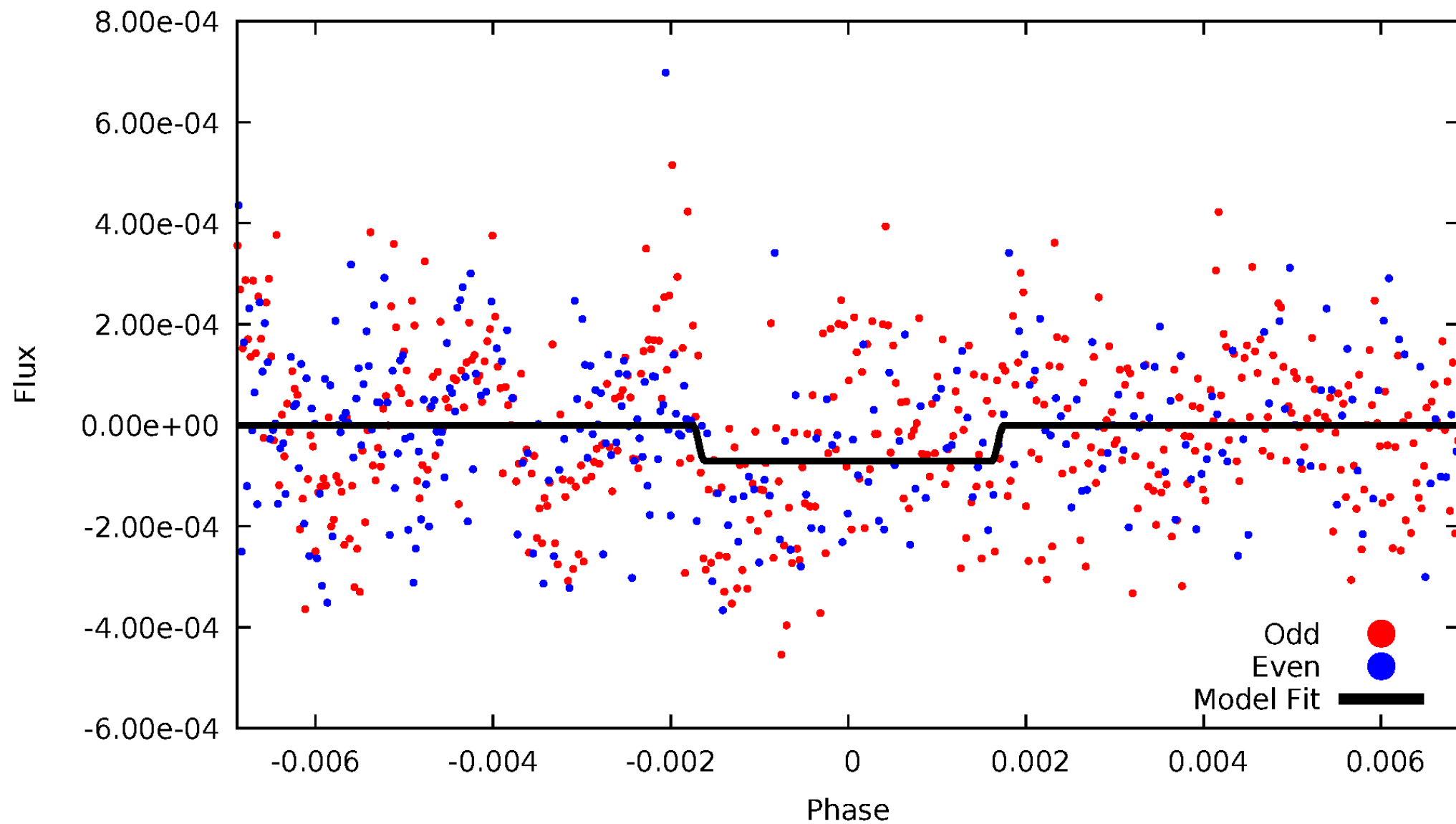
DV Odd/Even

TCE 004474484-01



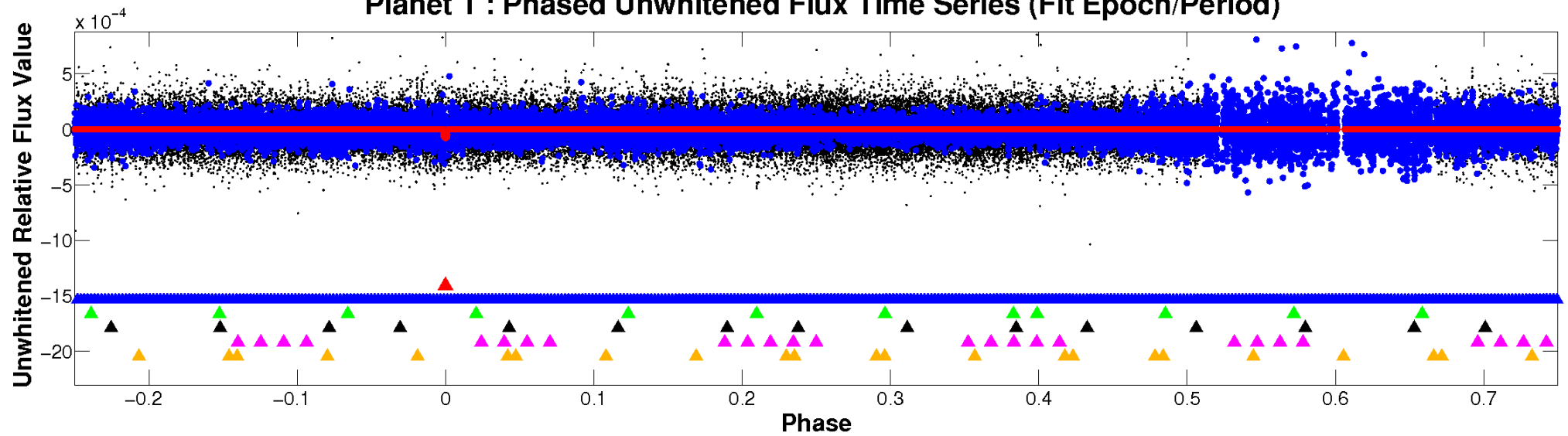
ALT Odd/Even

TCE 004474484-01

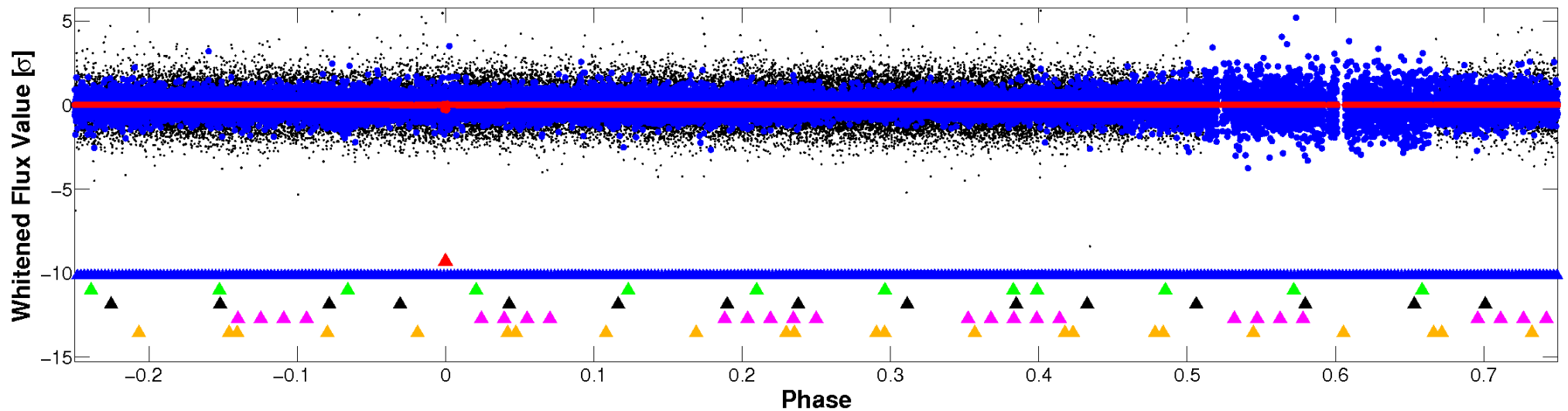


Non-Whitened Vs. Whitened Light Curve

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

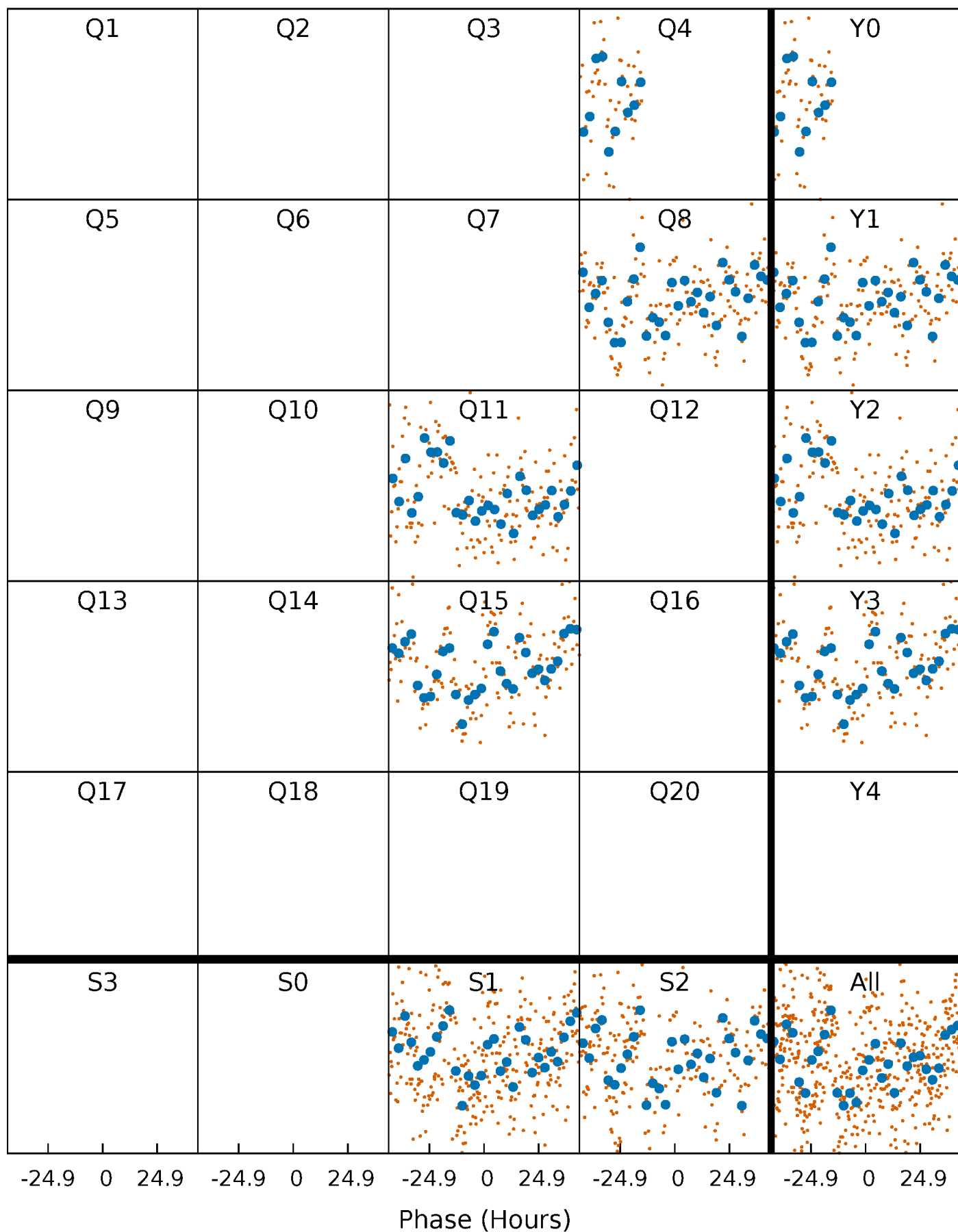


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 004474484-01 P=348.648431 Days $T_0=397.472181$ (BKJD)



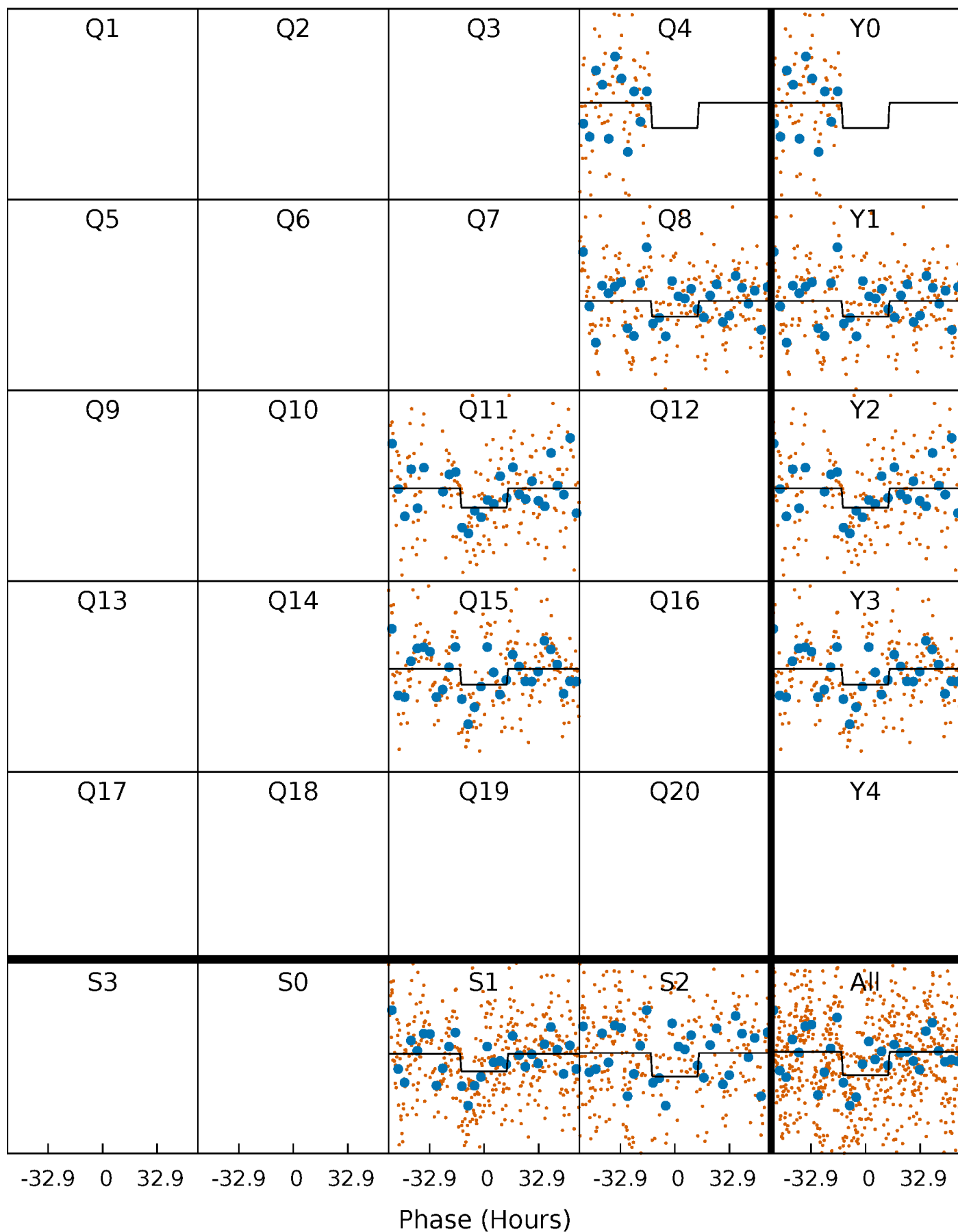
DV Quarter-Phased Transit Curves

TCE 004474484-01 P=348.648431 Days $T_0=397.472181$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

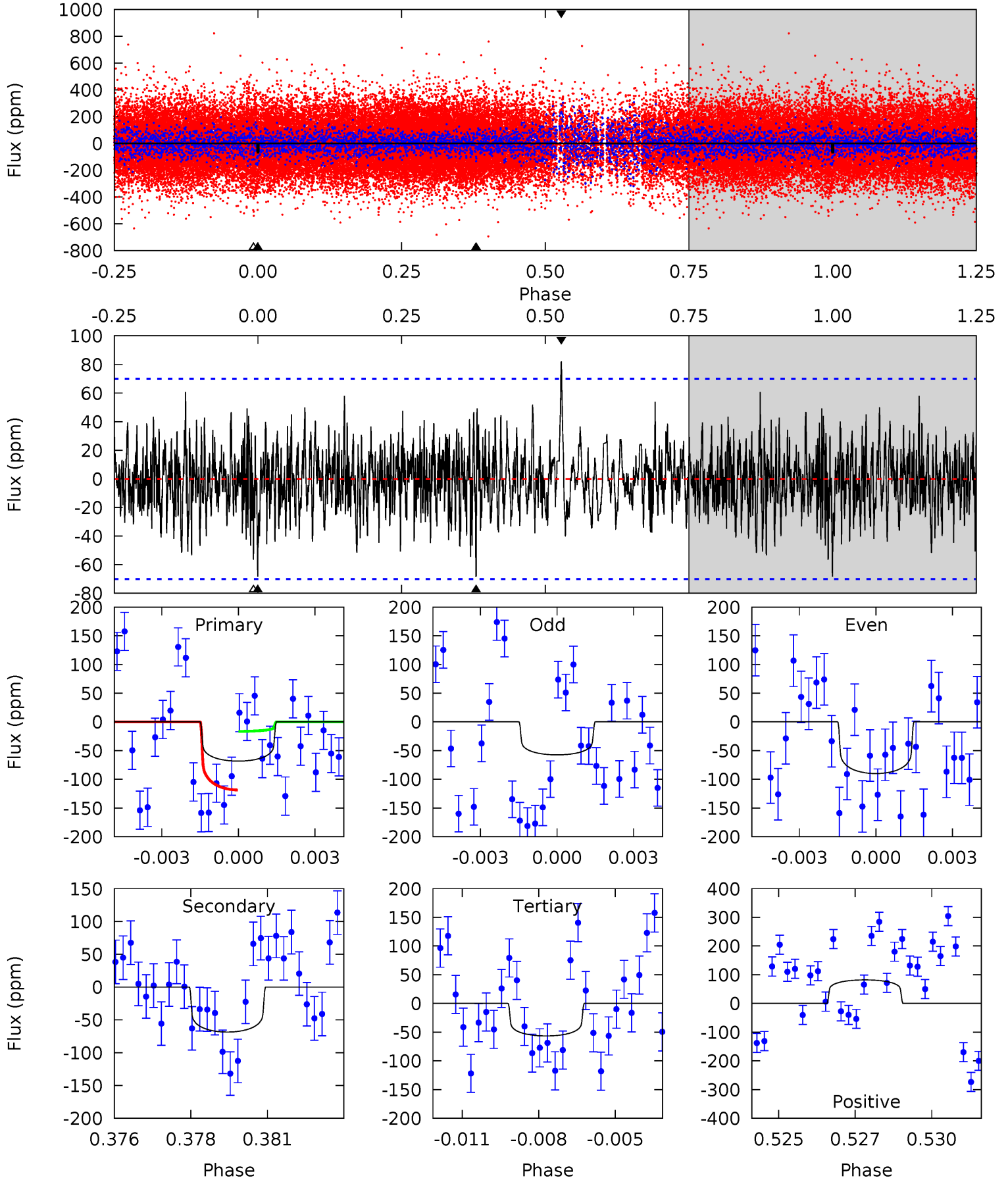
TCE 004474484-01 P=348.664646 Days $T_0=397.463807$ (BKJD)



DV Model-Shift Uniqueness Test

004474484-01, P = 348.648431 Days, E = 48.823750 Days

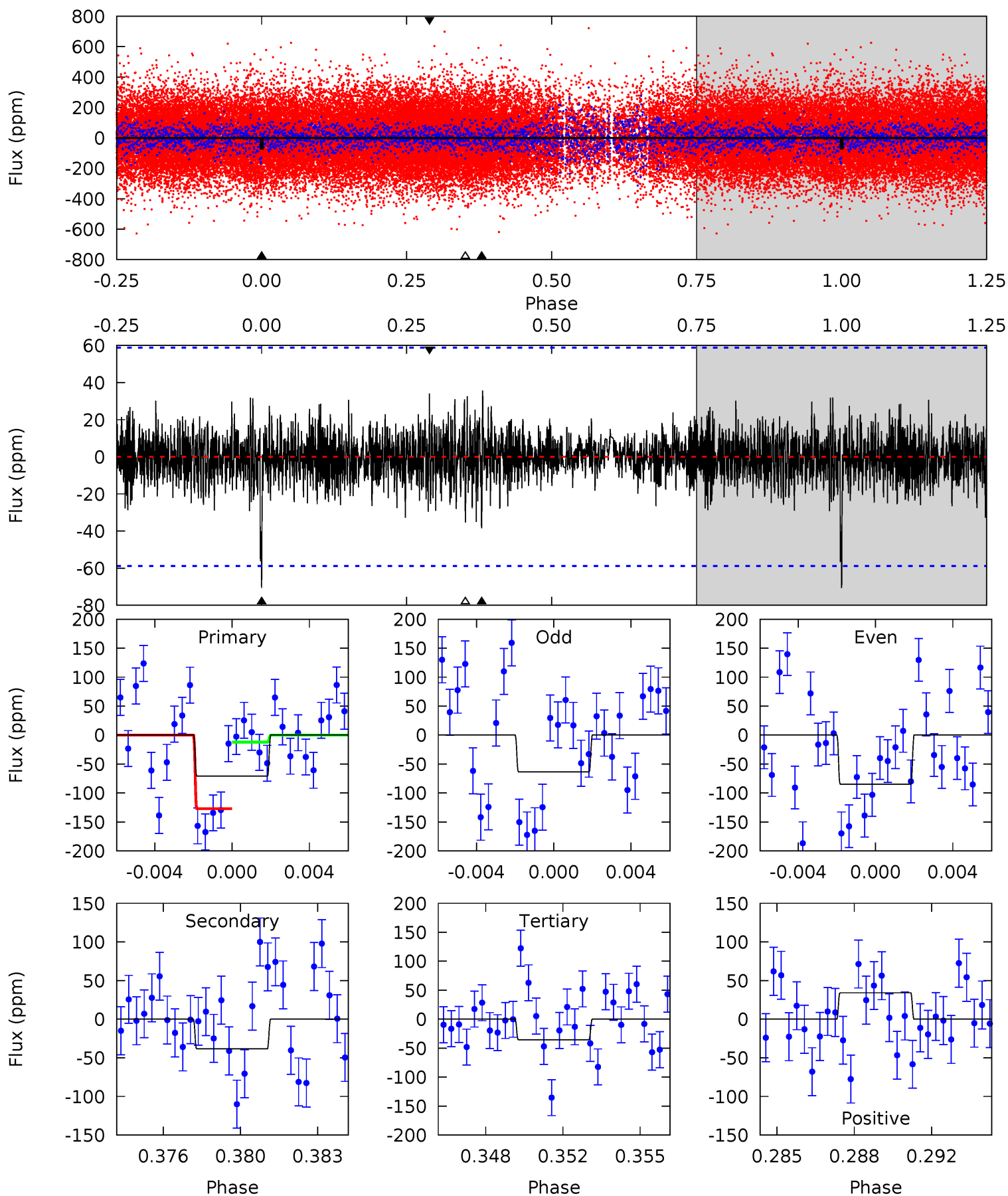
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.15	5.17	4.27	6.18	5.27	3.00	1.37	0.88	-1.03	0.90	-1.01	1.16	1.17	0.54	3.84



Alt Model-Shift Uniqueness Test

004474484-01, P = 348.664646 Days, E = 48.799161 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.27	3.41	3.14	3.03	5.22	2.92	0.88	3.13	3.24	0.27	0.38	0.90	0.83	0.34	5.10



Stellar Parameters For KIC 004474484

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7209^{+226}_{-327}	$3.898^{+0.308}_{-0.132}$	$-0.140^{+0.250}_{-0.350}$	$2.404^{+0.578}_{-0.866}$	$1.667^{+0.168}_{-0.364}$	$0.169^{+0.365}_{-0.064}$
	+3%/-5%	+8%/-3%	+179%/-250%	+24%/-36%	+10%/-22%	+216%/-38%
Source	KIC0	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 004474484-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-69 ± 13	$2.21^{+1.07}_{-1.00}$	628^{+49}_{-62}	6795^{+2755}_{-1174}	9789^{+21125}_{-5375}
Alt.	-38 ± 11	$2.08^{+1.02}_{-1.00}$	631^{+47}_{-58}	6013^{+2523}_{-1055}	5870^{+15829}_{-3380}

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

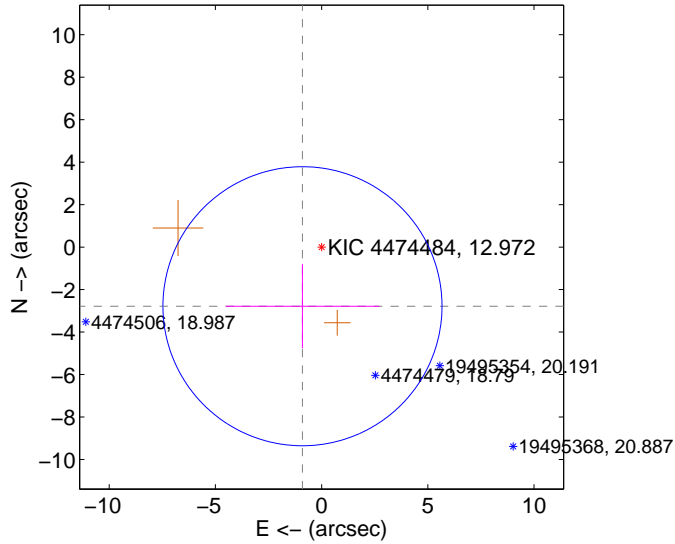
Supplemental centroid analysis for 004474484-01. Kepler magnitude: 12.97. Transit SNR 3.07

There are 0 quarters with good PRF difference image offsets

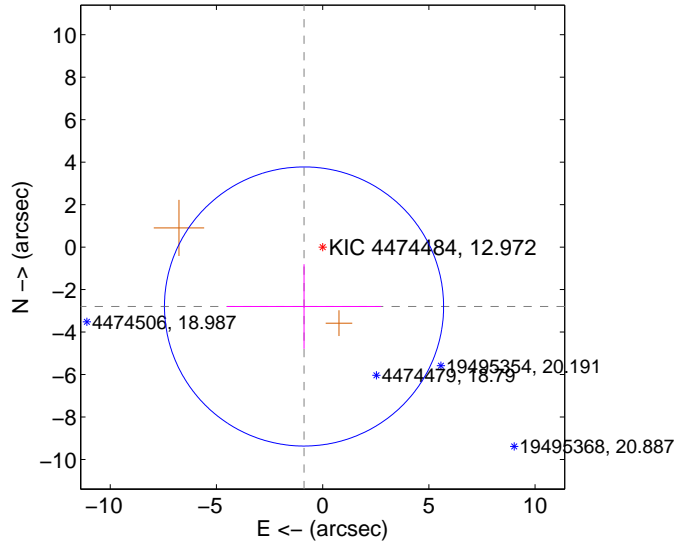
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.927 ± 2.190	1.34	0.901 ± 3.618	-2.784 ± 1.982
PRF-fit source offset from KIC position	2.931 ± 2.191	1.34	0.877 ± 3.636	-2.797 ± 1.993
photometric centroid source offset	2.65 ± 2.13	1.24	0.84 ± 2.21	-2.52 ± 2.13

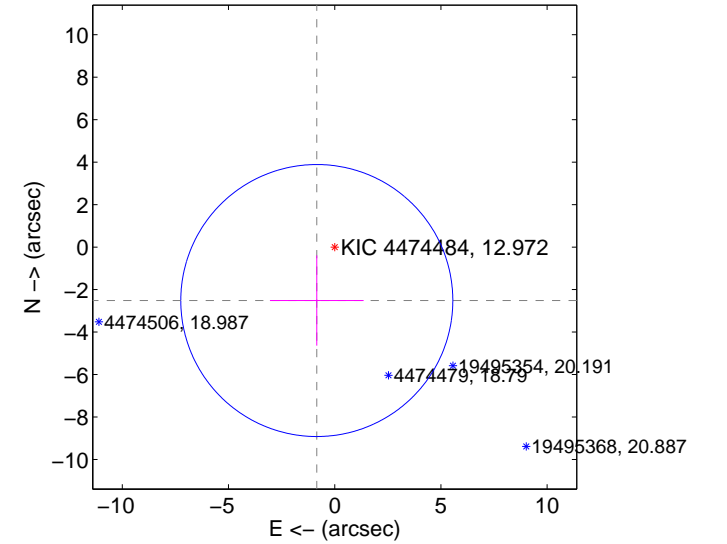
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

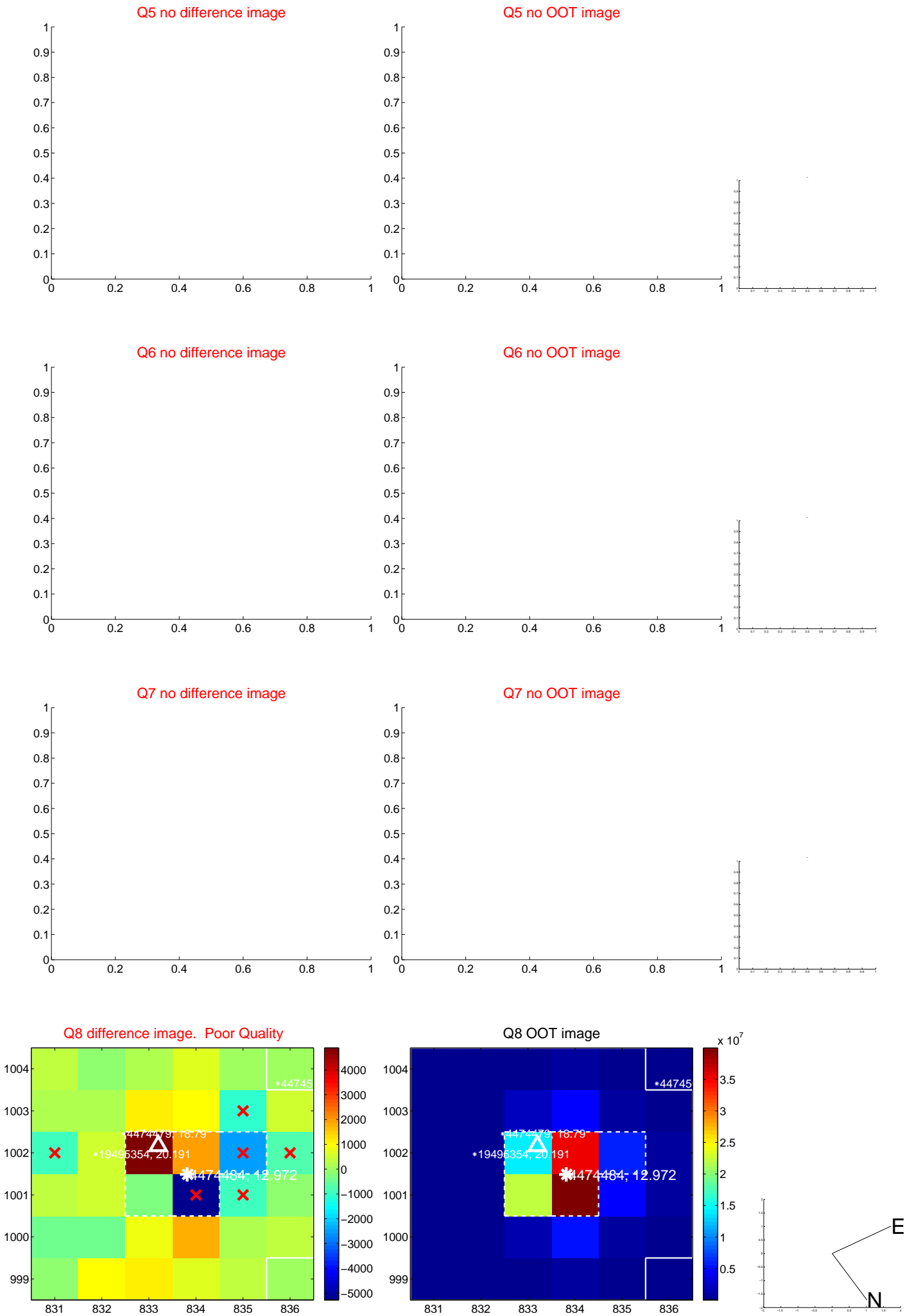


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



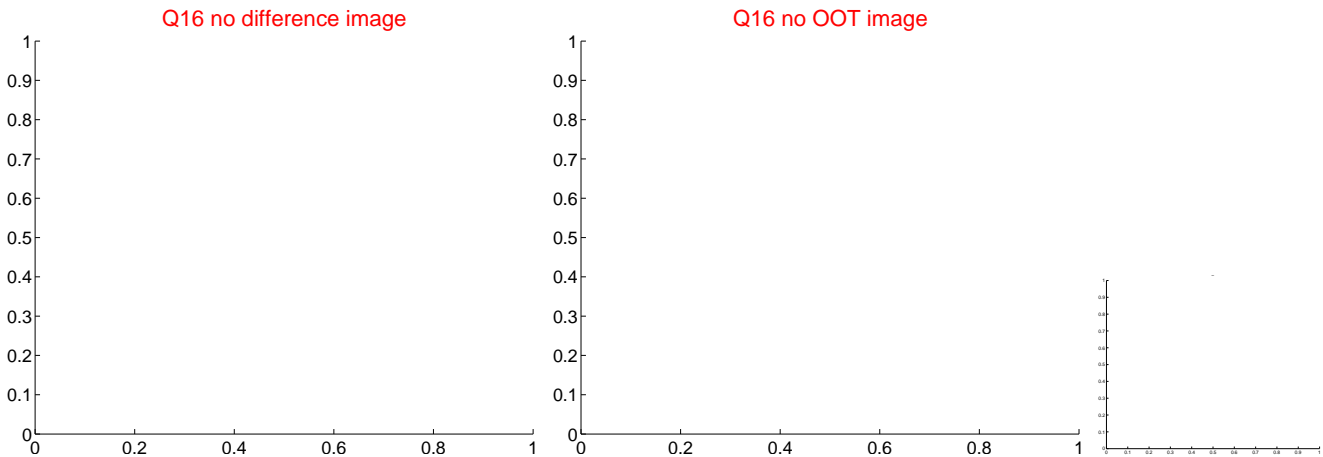
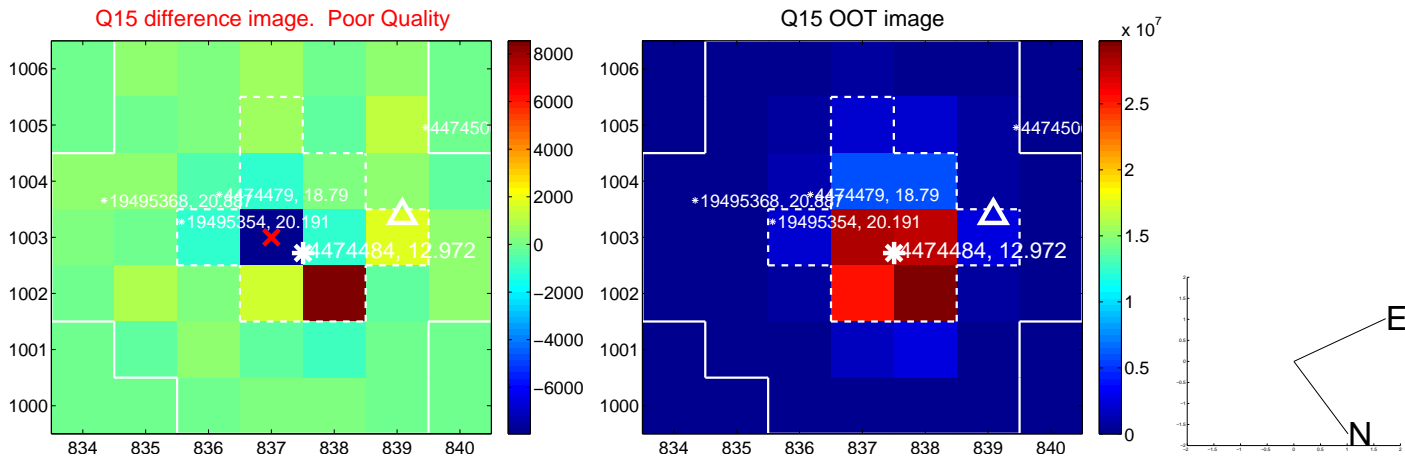
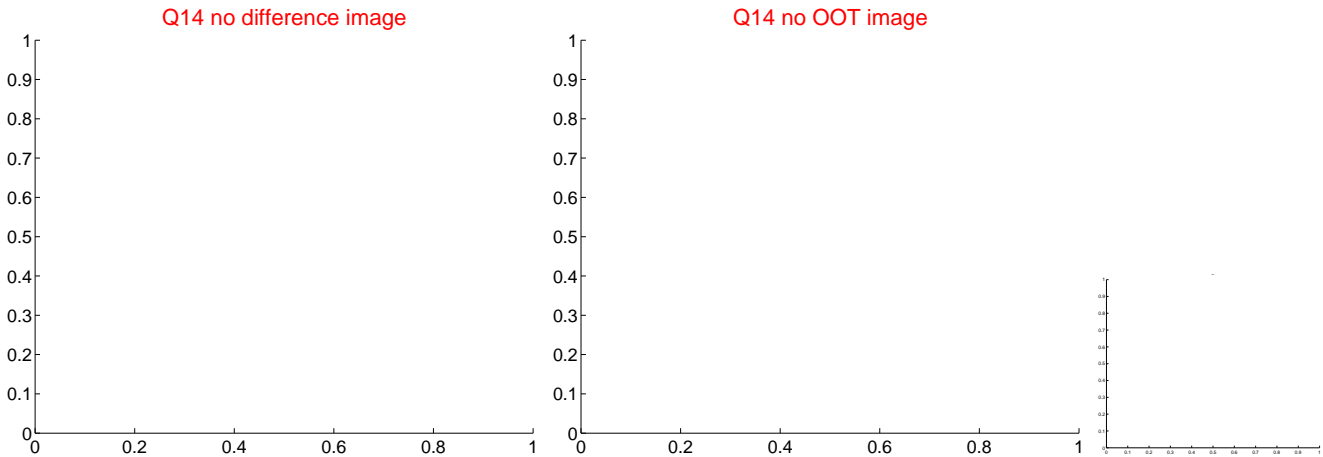
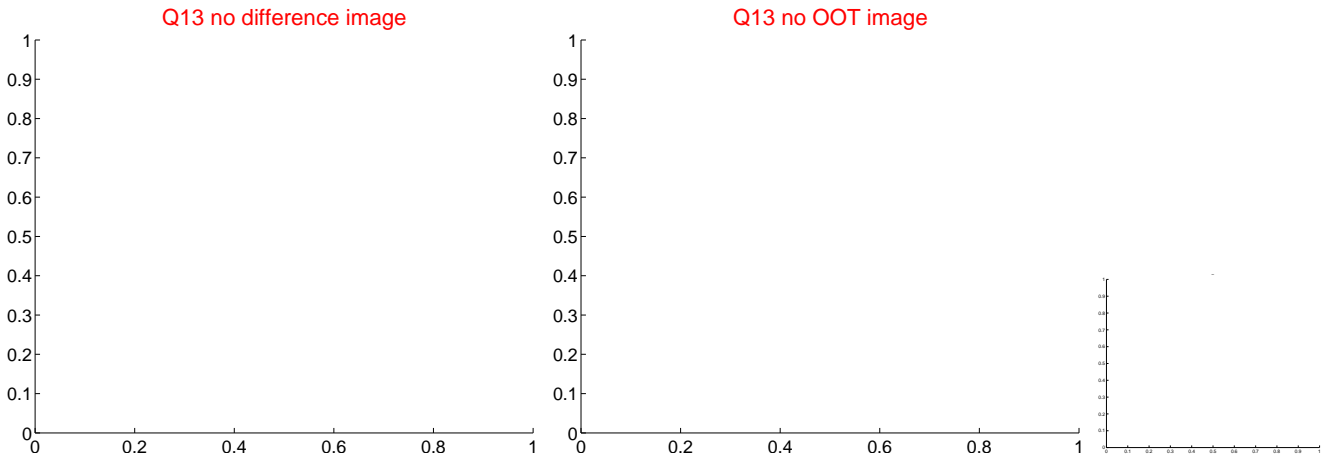
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



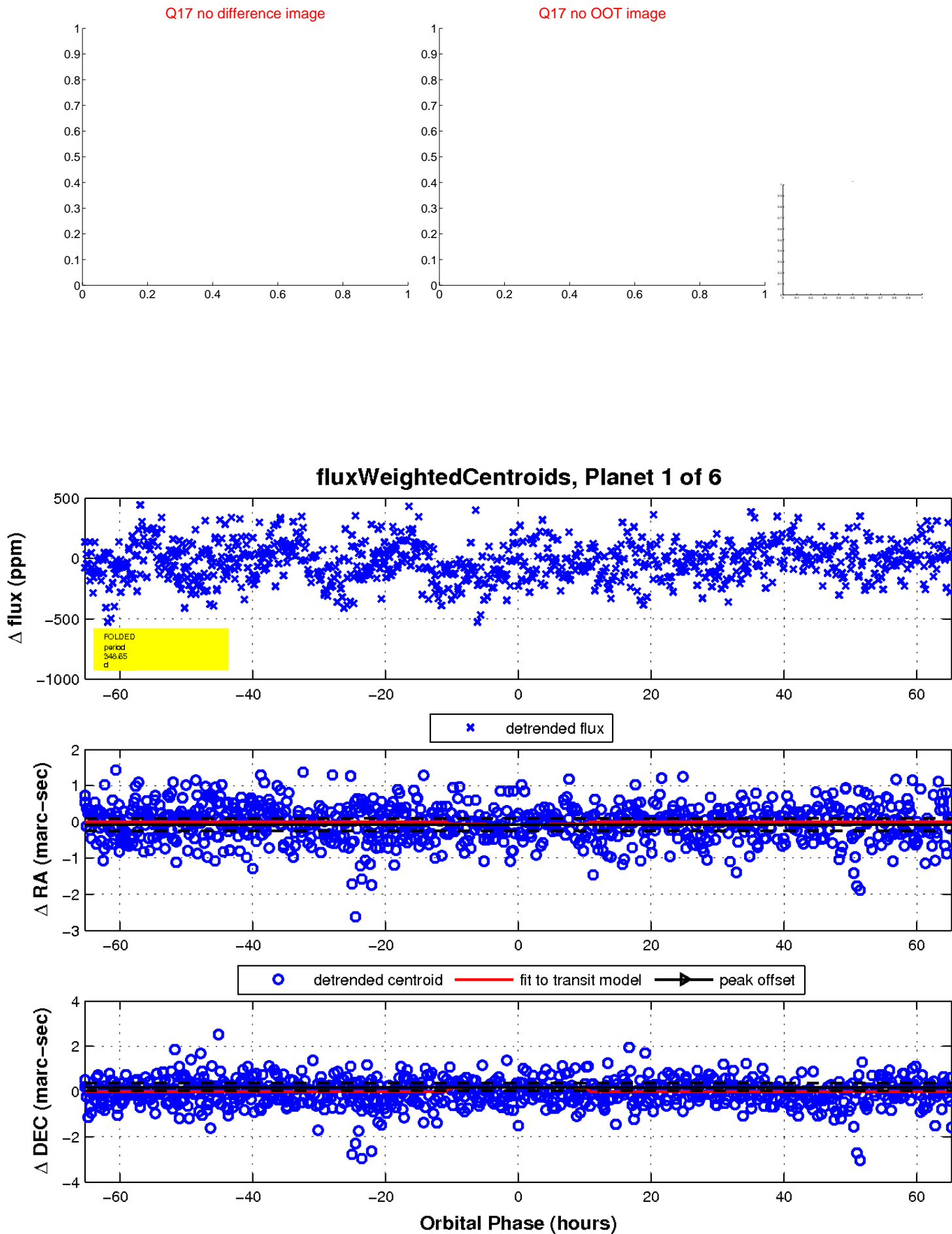
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

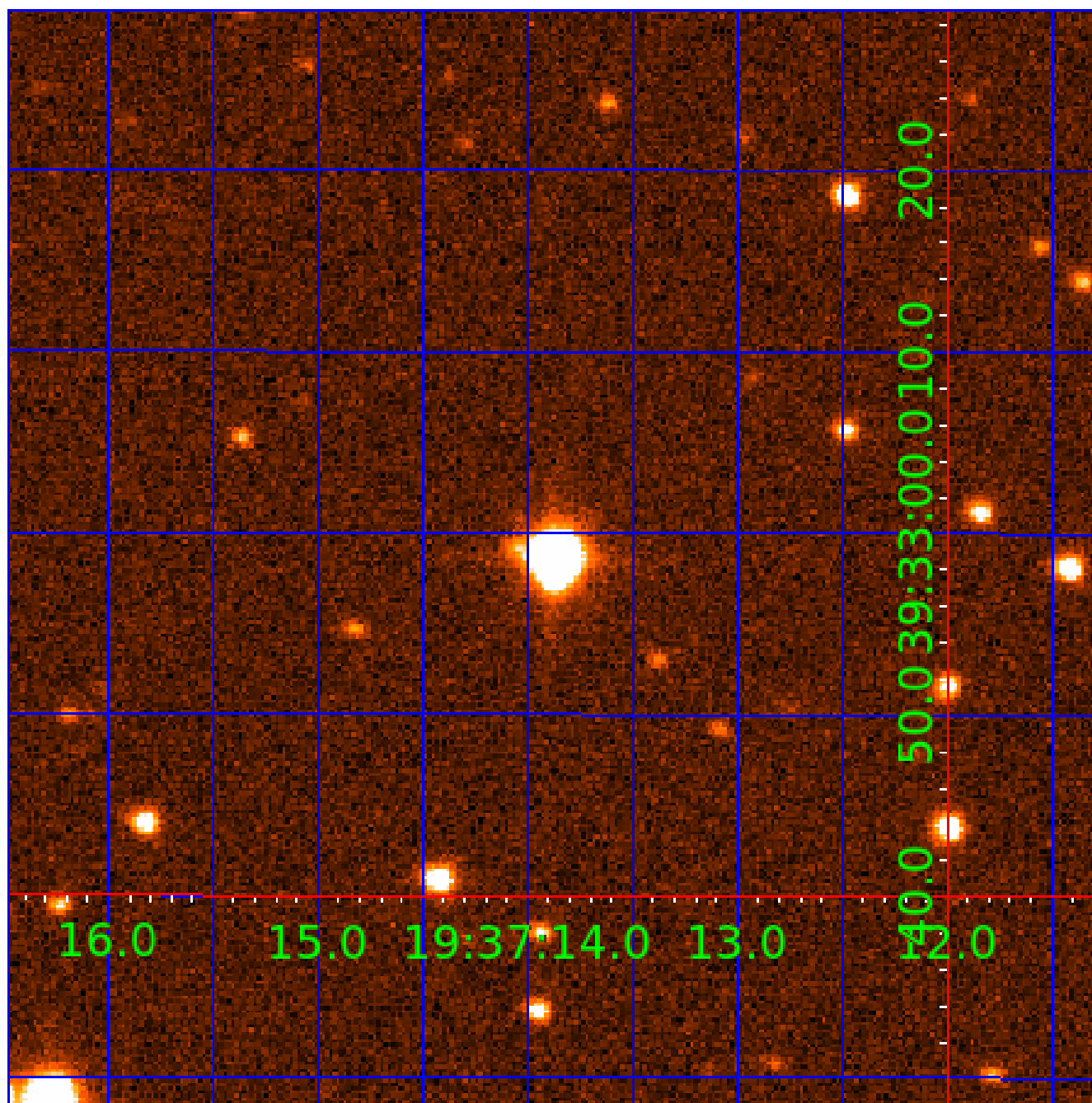


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004474484

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})
004474484-01	OBS	No	348.648431	397.472181	78.3	21.765	8.6	3.1	2.40	7209	2.35	10.58
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004474484-06	OBS	No	65.490862	150.136107	222.7	3.536	7.6	7.1	2.40	7209	4.18	98.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004474484-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
004474484-02	OBS	FP	0.00	1	0	0	0	LPP_DV
004474484-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004474484-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004474484-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004474484-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

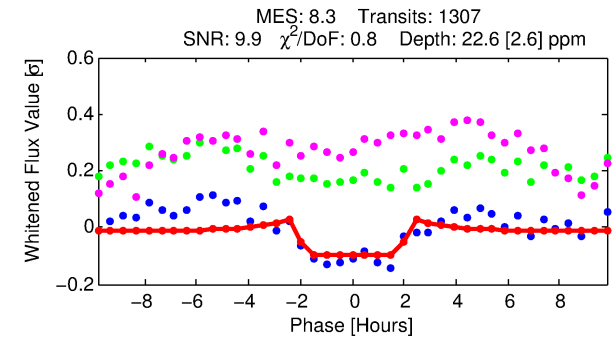
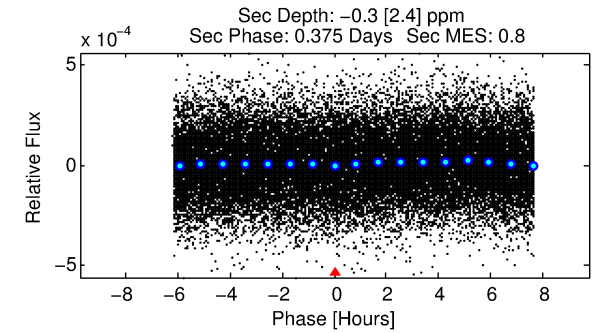
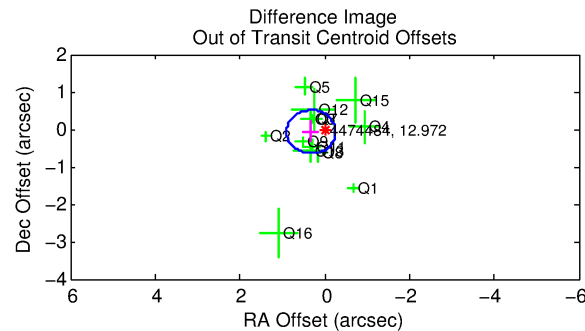
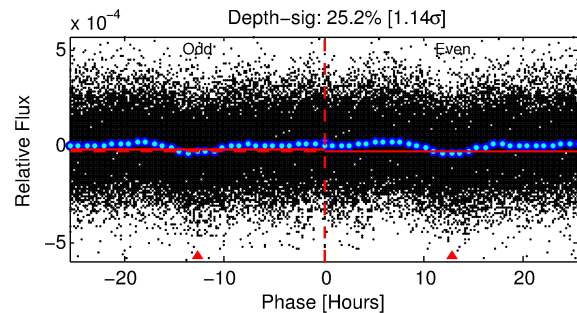
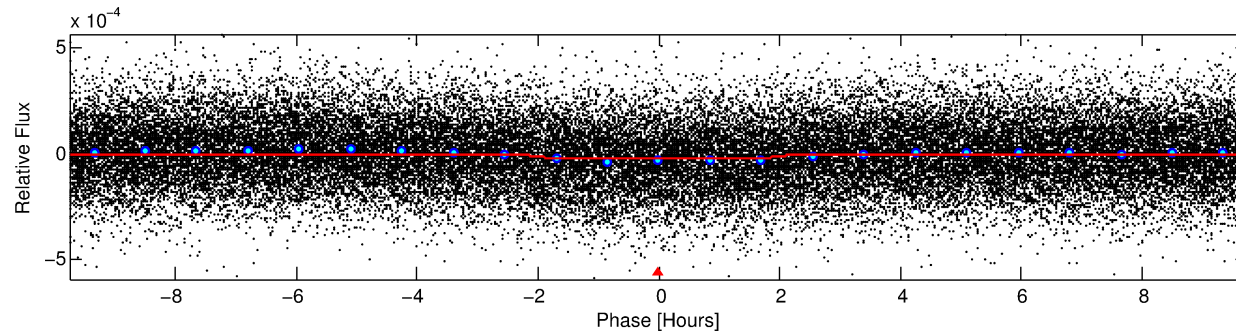
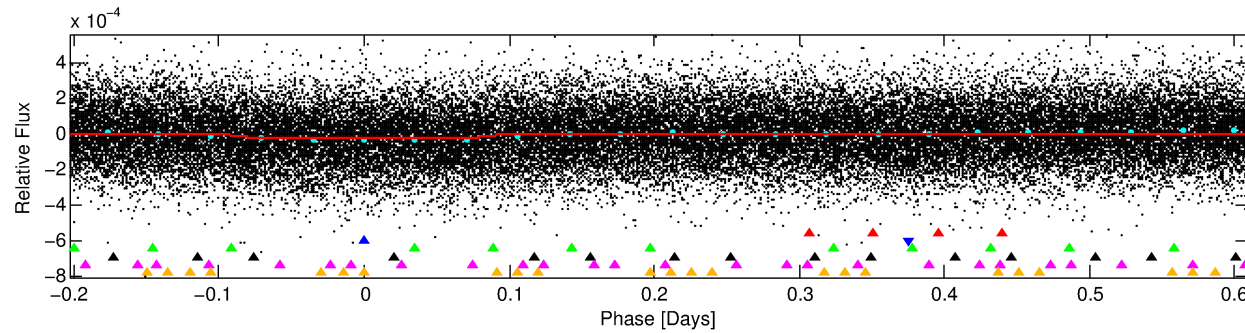
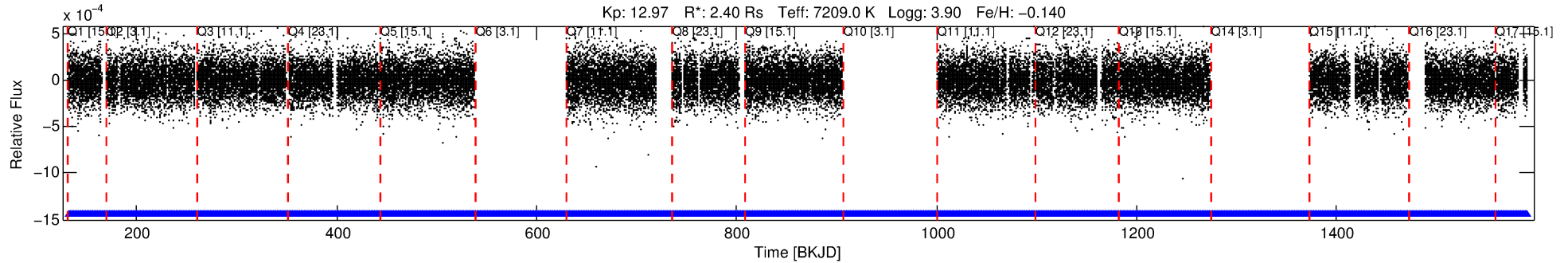
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004474484-02

No Significant Match Found

DV One-Page Summary

KIC: 4474484 Candidate: 2 of 6 Period: 0.813 d



DV Fit Results:

Period = 0.81280 [0.00001] d
Epoch = 132.0575 [0.0032] BKJD
Rp/R* = 0.0049 [0.0014]
a/R* = 1.20 [0.64]
b = 0.85 [0.57]
Seff = 34227.05 [19183.41]
Teq = 3468 [486] K
Rp = 1.29 [0.60] Re
a = 0.0202 [0.0068] AU
Ag = N/A
Teffp = N/A

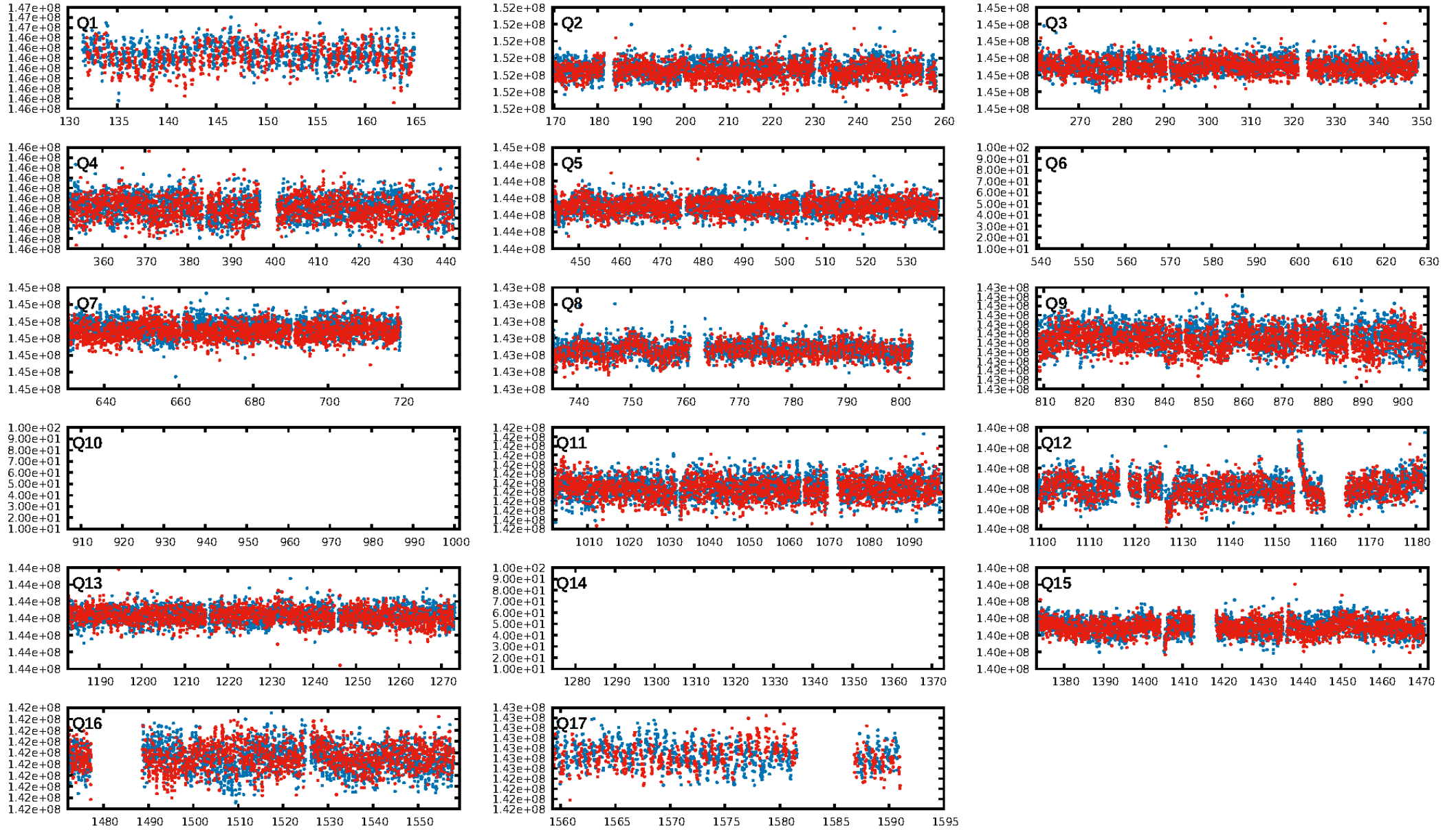
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [214.85 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.75e-11
RollingBand-fgt: 1.00 [1232/1232]
GhostDiagnostic-chr: 1.266
Centroid-sig: 0.0%
Centroid-so: 1.509 arcsec [2.17 σ]
OotOffset-rm: 0.331 arcsec [1.71 σ]
KicOffset-rm: 0.345 arcsec [1.66 σ]
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]

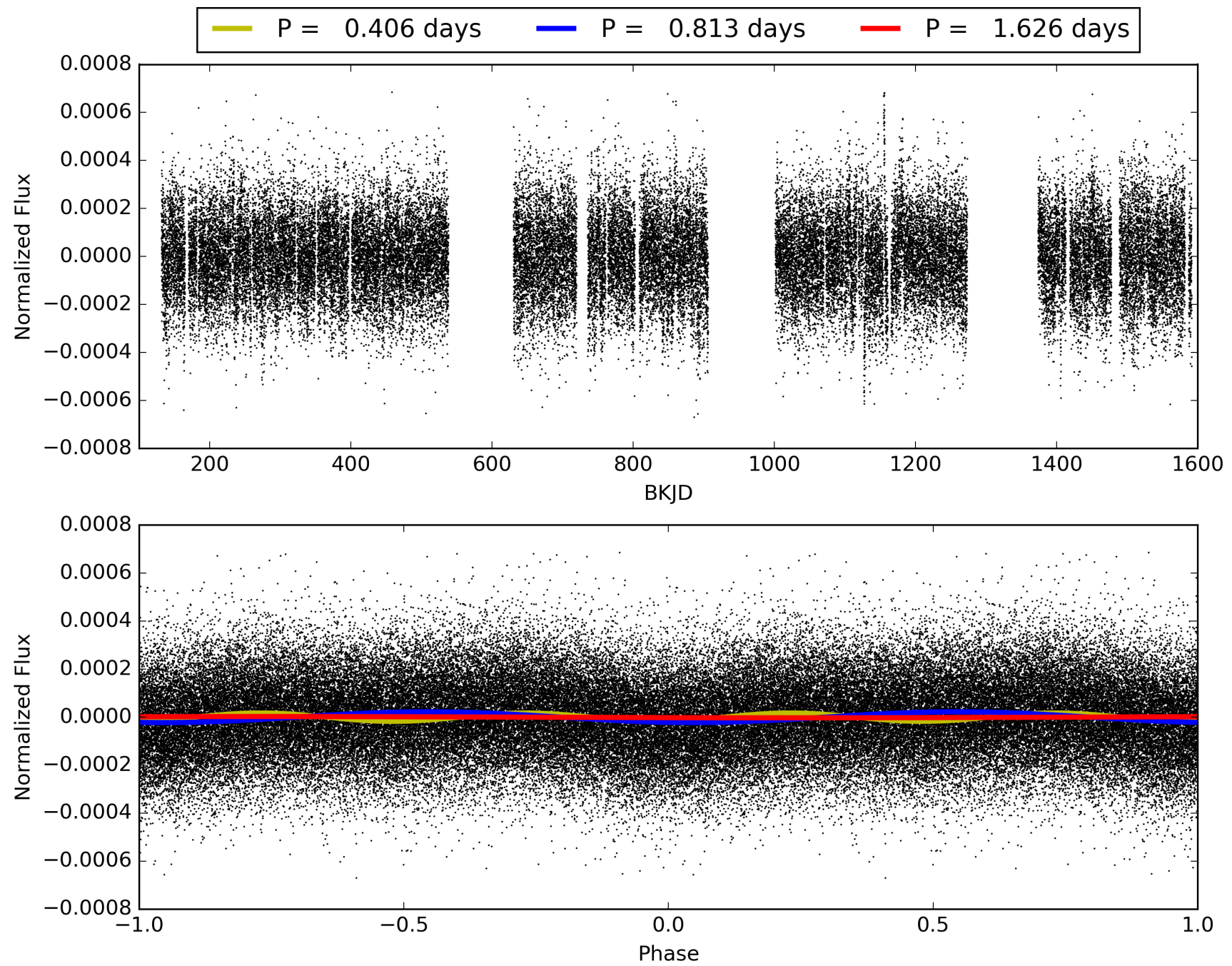
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:03:40 Z

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

TCE 004474484-02, PDC Light Curves

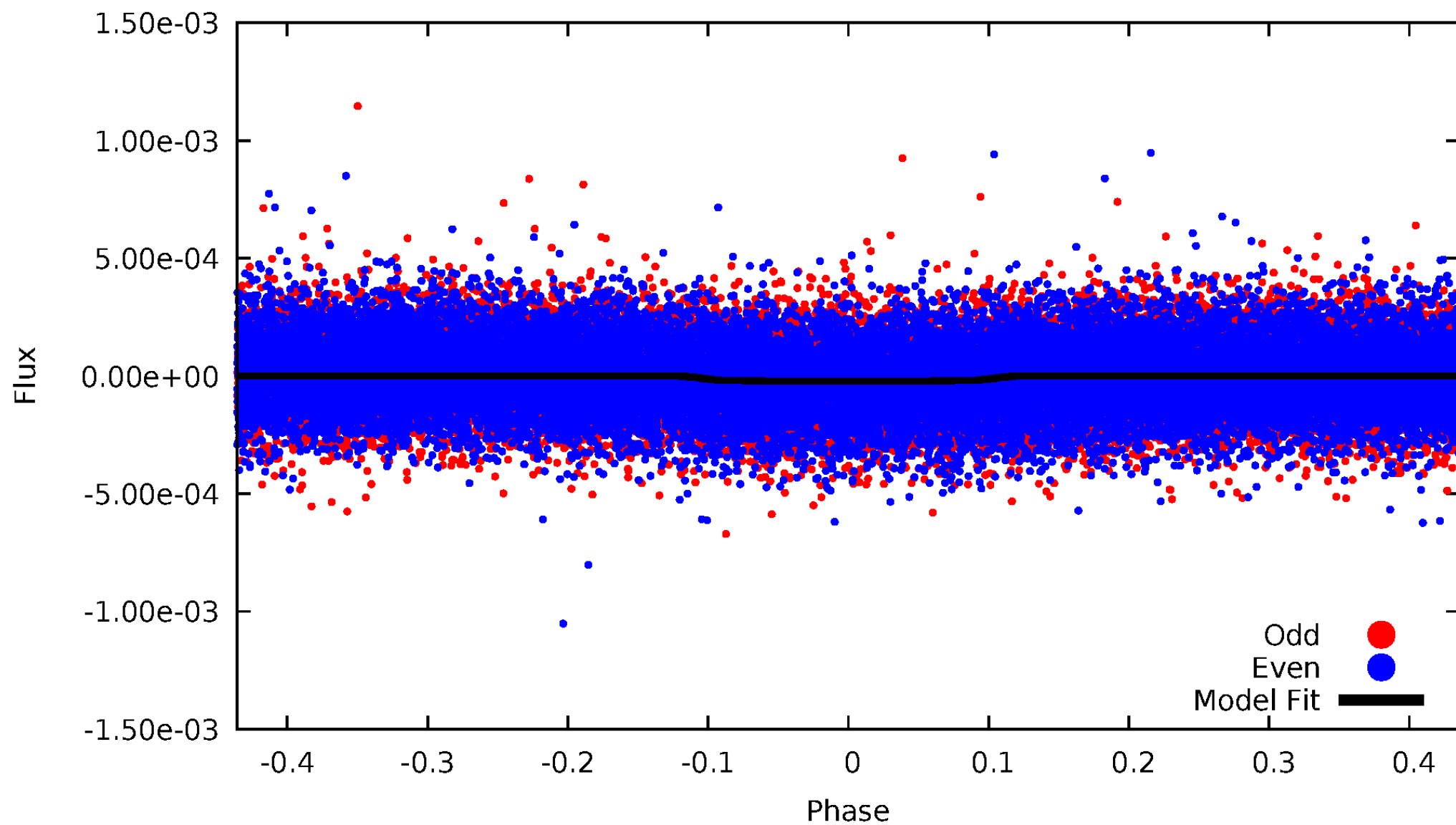


TCE 004474484-02



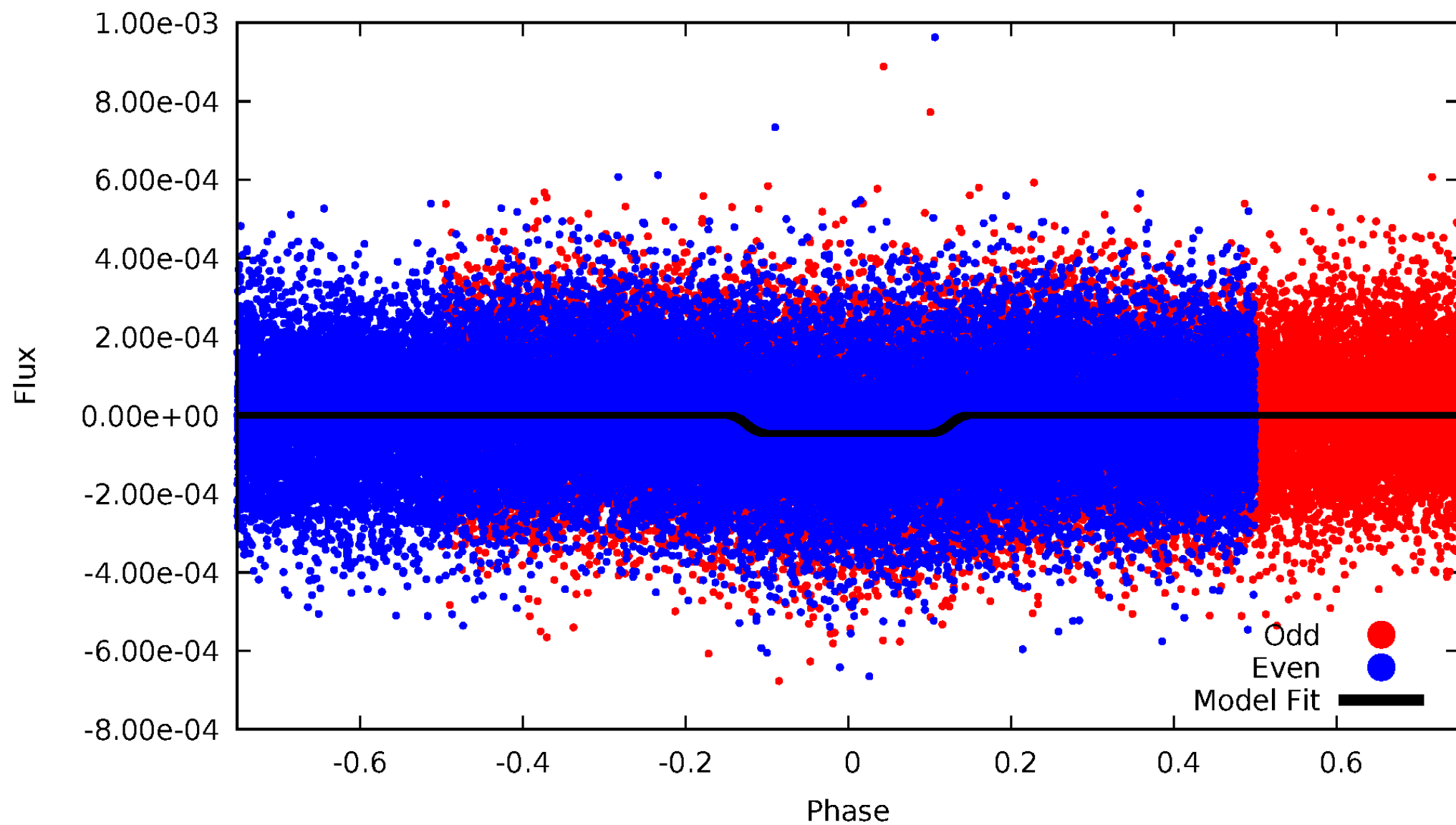
DV Odd/Even

TCE 004474484-02



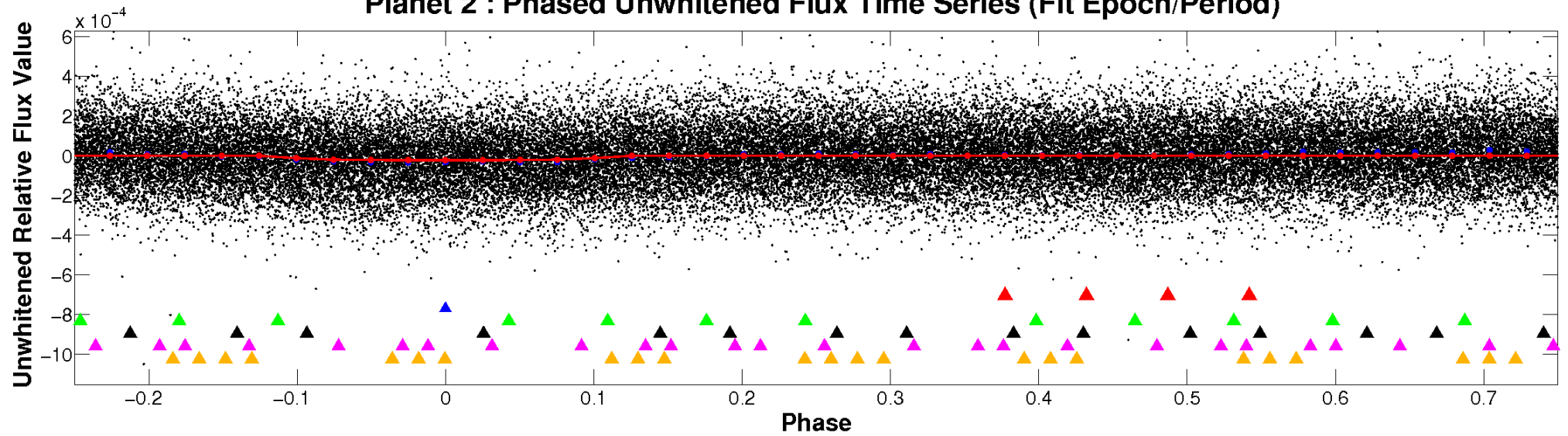
ALT Odd/Even

TCE 004474484-02

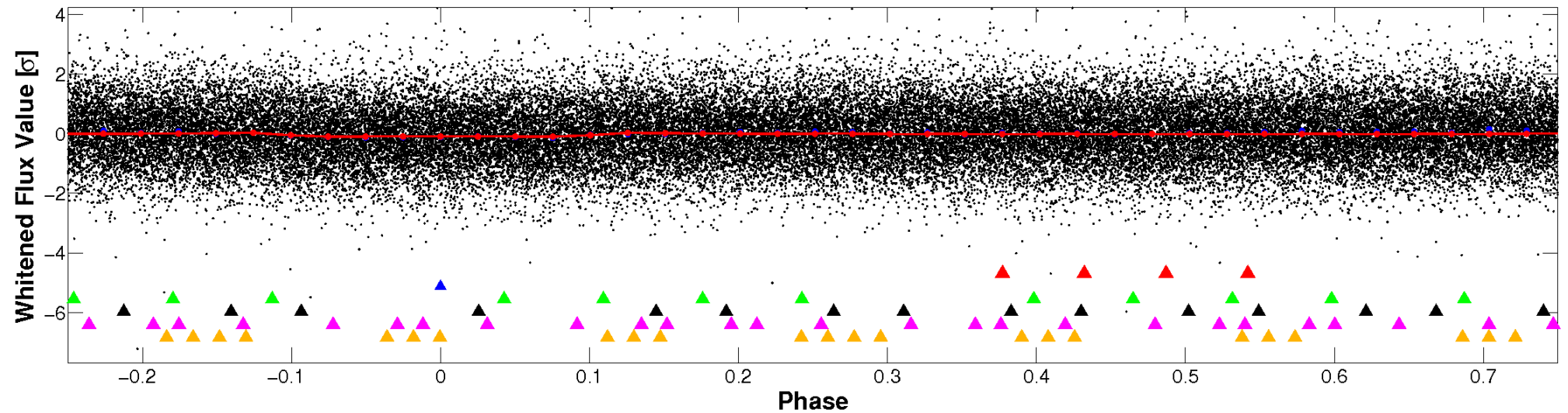


Non-Whitened Vs. Whitened Light Curve

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

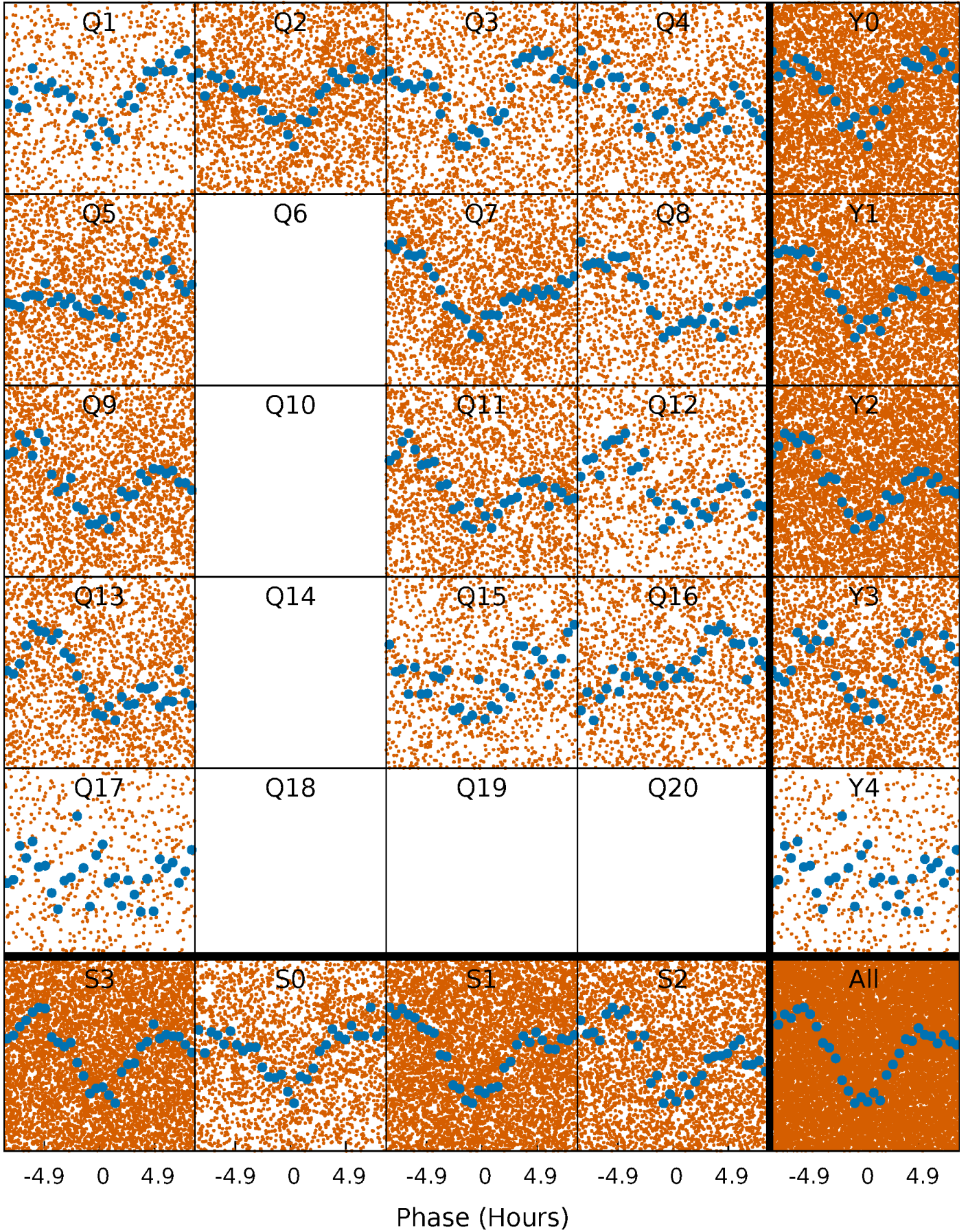


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



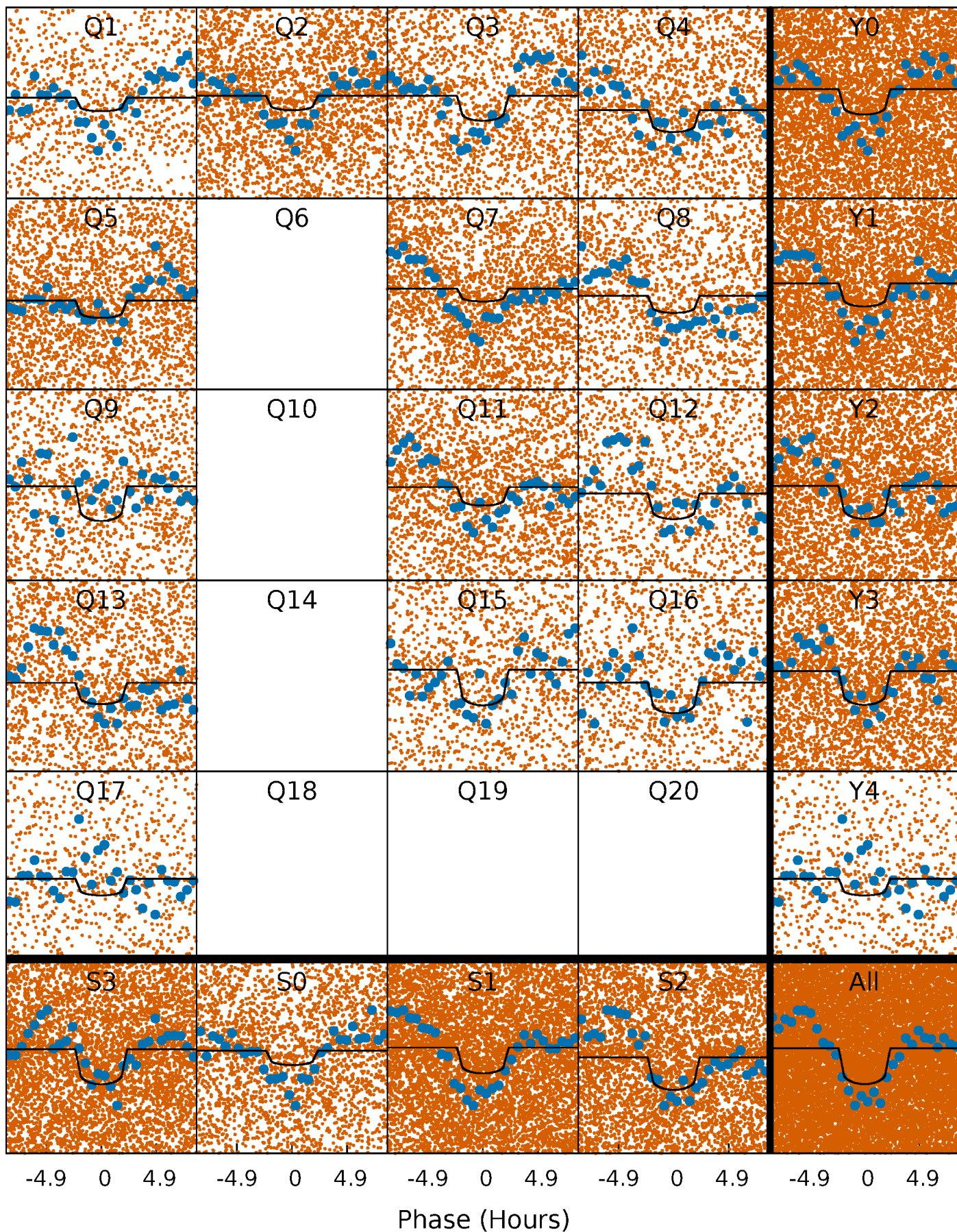
PDC Quarter-Phased Transit Curves

TCE 004474484-02 P= 0.812804 Days $T_0=132.057499$ (BKJD)



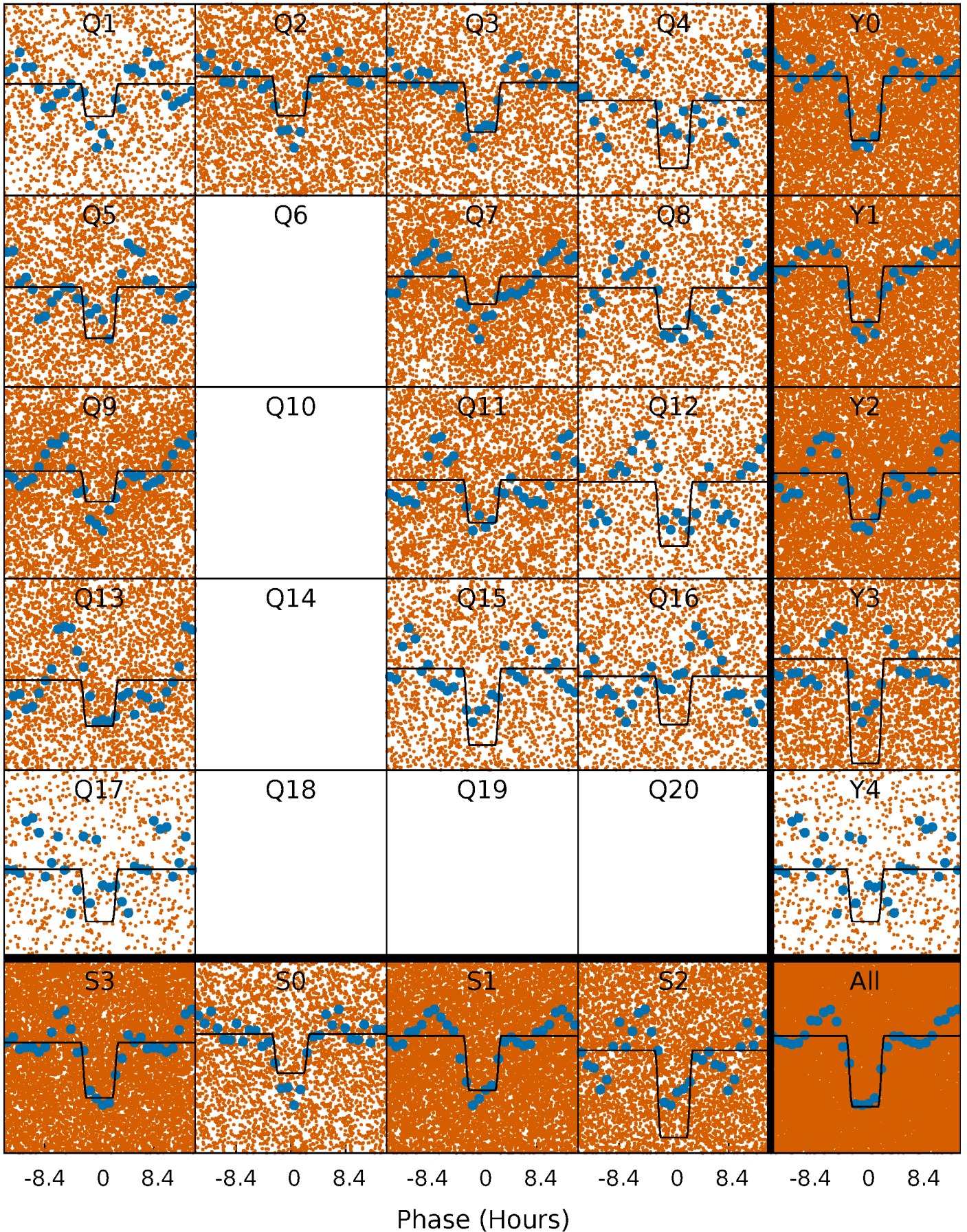
DV Quarter-Phased Transit Curves

TCE 004474484-02 P= 0.812804 Days $T_0=132.057499$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

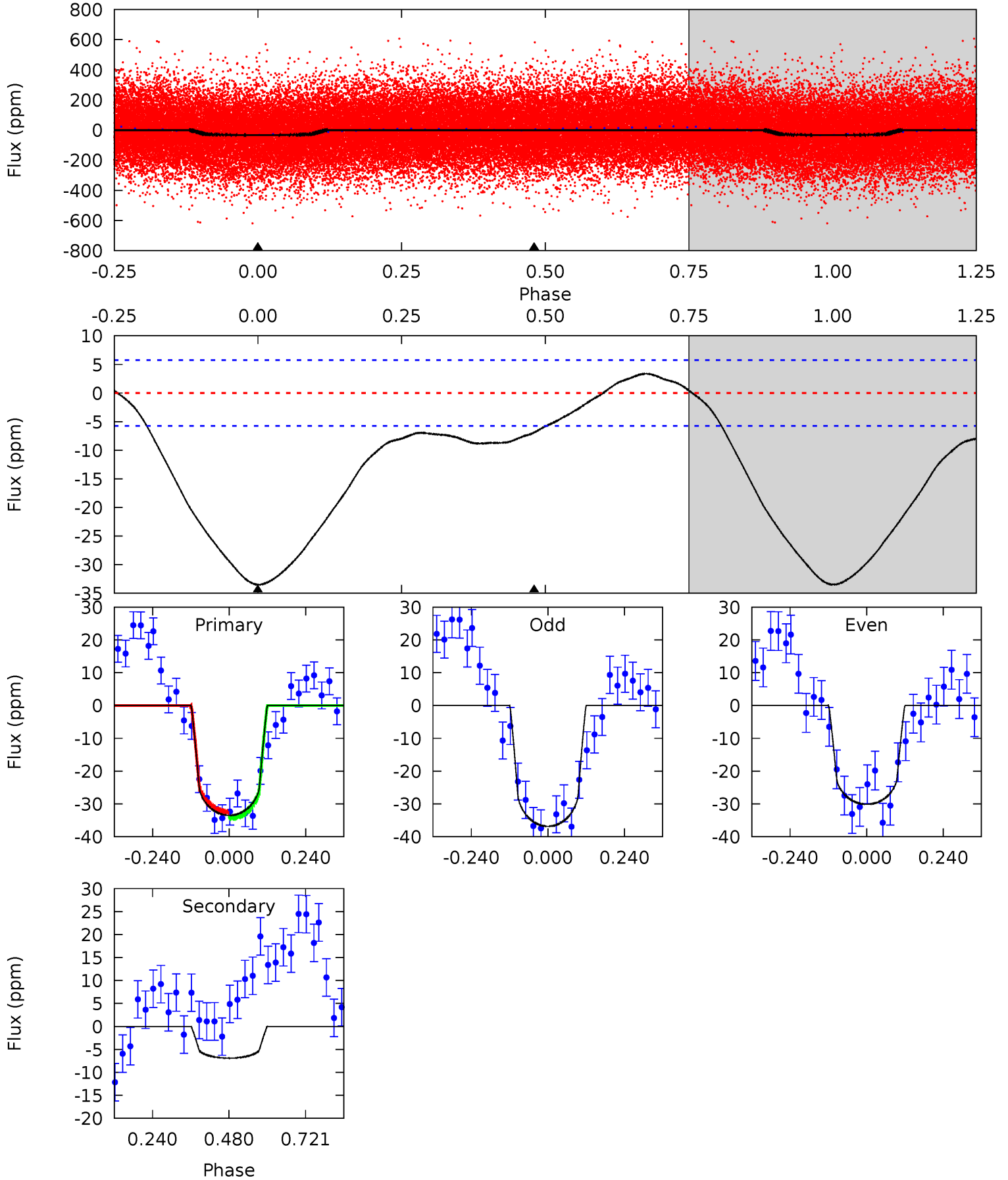
TCE 004474484-02 P= 0.812815 Days $T_0=132.050831$ (BKJD)



DV Model-Shift Uniqueness Test

004474484-02, P = 0.812804 Days, E = 131.244695 Days

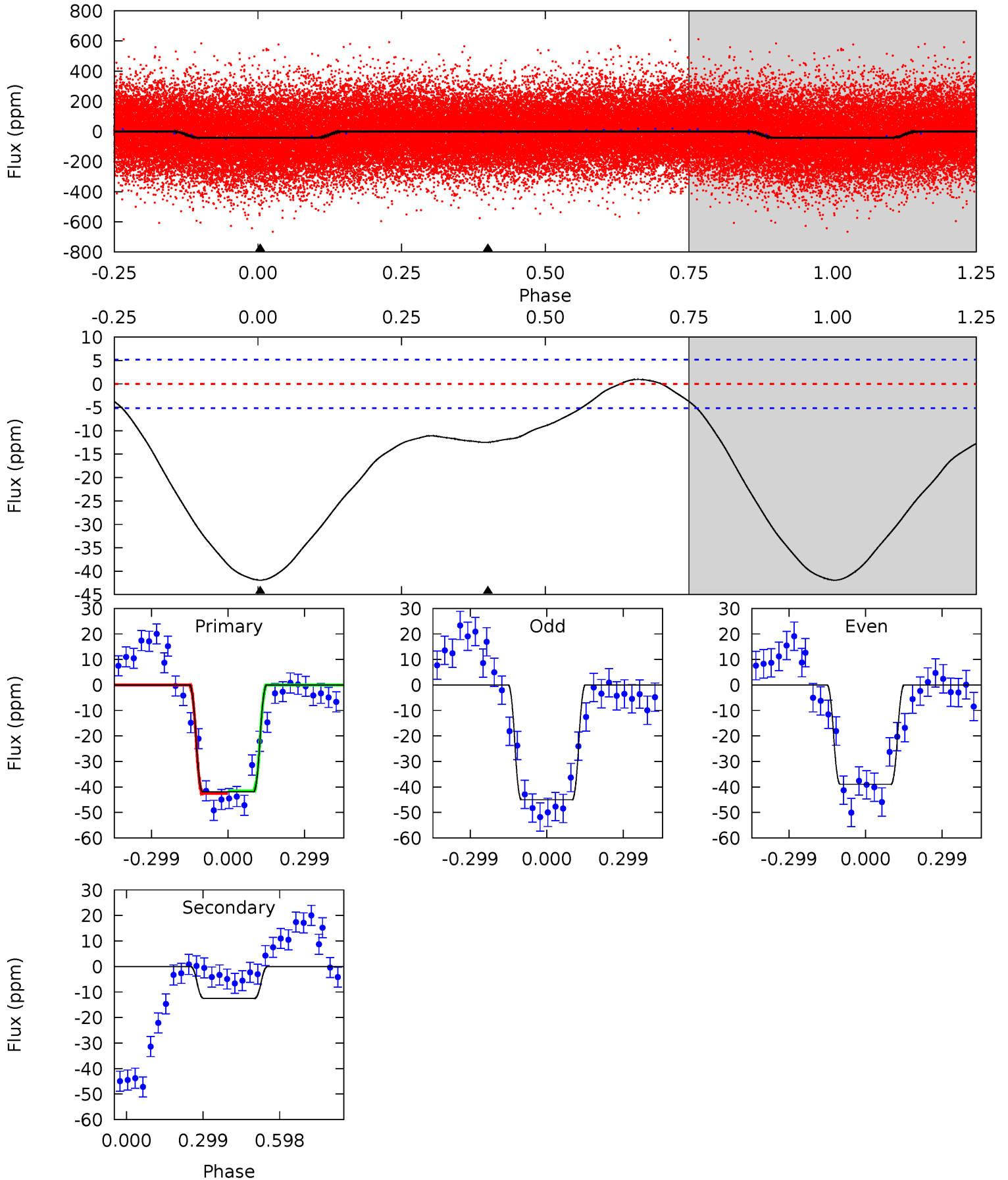
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.5	5.26	0	0	4.38	1.17	3.30	25.5	25.5	5.26	5.26	2.56	1.07	0.09	0.66



Alt Model-Shift Uniqueness Test

004474484-02, P = 0.812815 Days, E = 131.238016 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.0	10.4	0	0	4.33	1.04	1.30	35.0	35.0	10.4	10.4	2.53	1.02	0.02	0.41



Stellar Parameters For KIC 004474484

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7209^{+226}_{-327}	$3.898^{+0.308}_{-0.132}$	$-0.140^{+0.250}_{-0.350}$	$2.404^{+0.578}_{-0.866}$	$1.667^{+0.168}_{-0.364}$	$0.169^{+0.365}_{-0.064}$
	+3%/-5%	+8%/-3%	+179%/-250%	+24%/-36%	+10%/-22%	+216%/-38%
Source	KIC0	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 004474484-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-7 ± 1	$1.19^{+0.48}_{-0.38}$	4740^{+353}_{-427}	4840^{+1158}_{-875}	$1.039^{+1.220}_{-0.513}$
Alt.	-12 ± 1	$1.70^{+0.50}_{-0.47}$	4751^{+350}_{-460}	4726^{+780}_{-556}	$0.948^{+0.802}_{-0.369}$

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

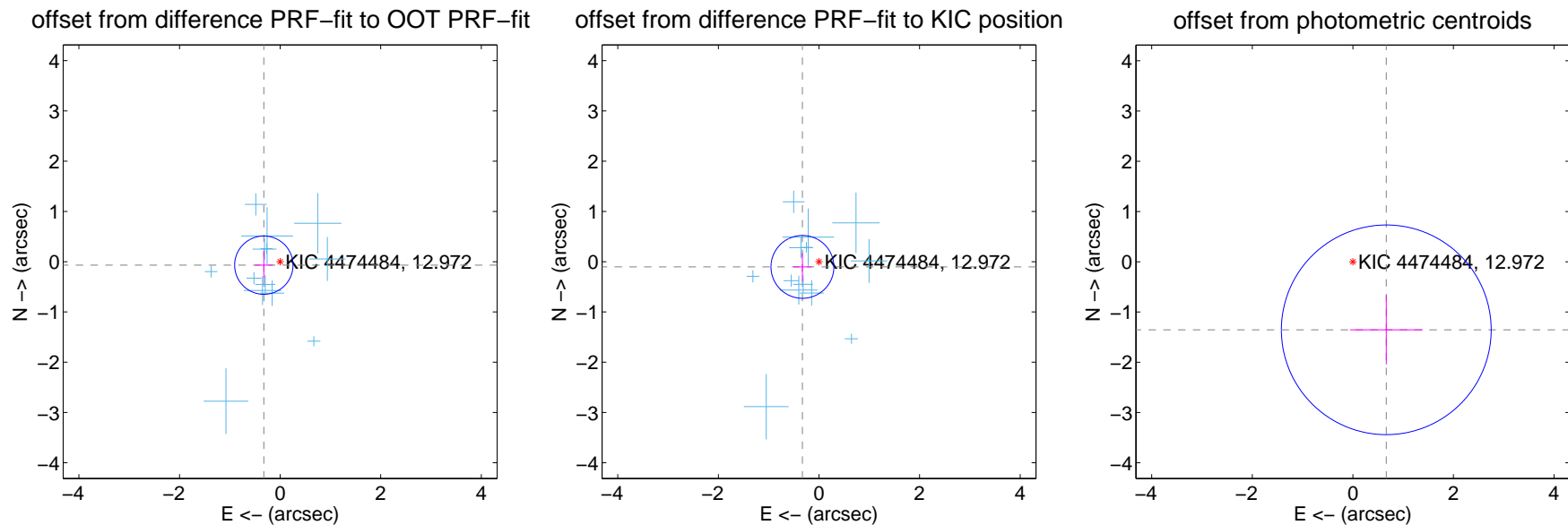
DV Centroid Data

Supplemental centroid analysis for 004474484-02. Kepler magnitude: 12.97. Transit SNR 9.94

There are 13 quarters with good PRF difference image offsets

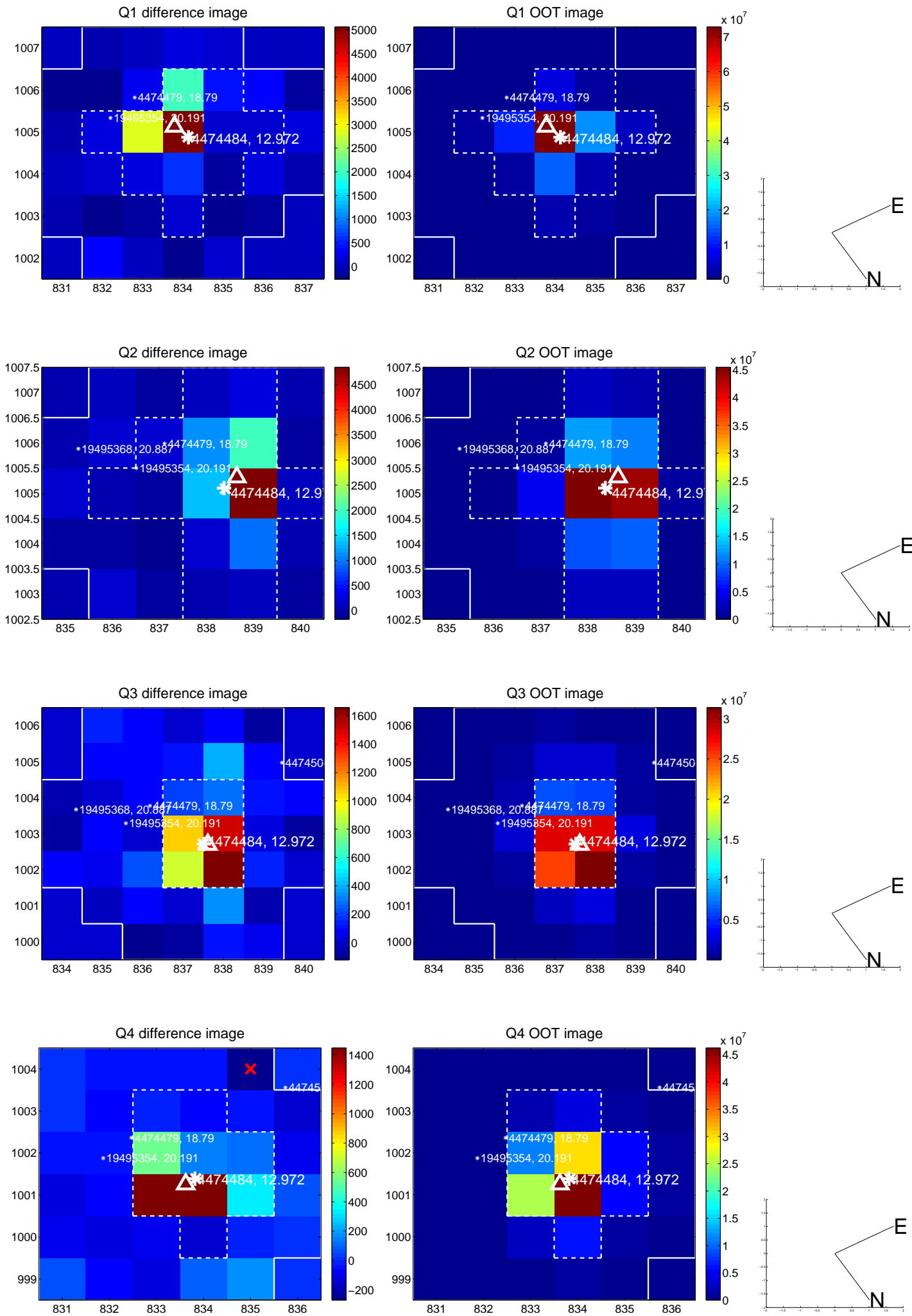
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.331 ± 0.193	1.71	0.324 ± 0.180	-0.069 ± 0.275
PRF-fit source offset from KIC position	0.345 ± 0.208	1.66	0.329 ± 0.183	-0.103 ± 0.278
photometric centroid source offset	1.51 ± 0.70	2.17	-0.66 ± 0.72	-1.35 ± 0.69

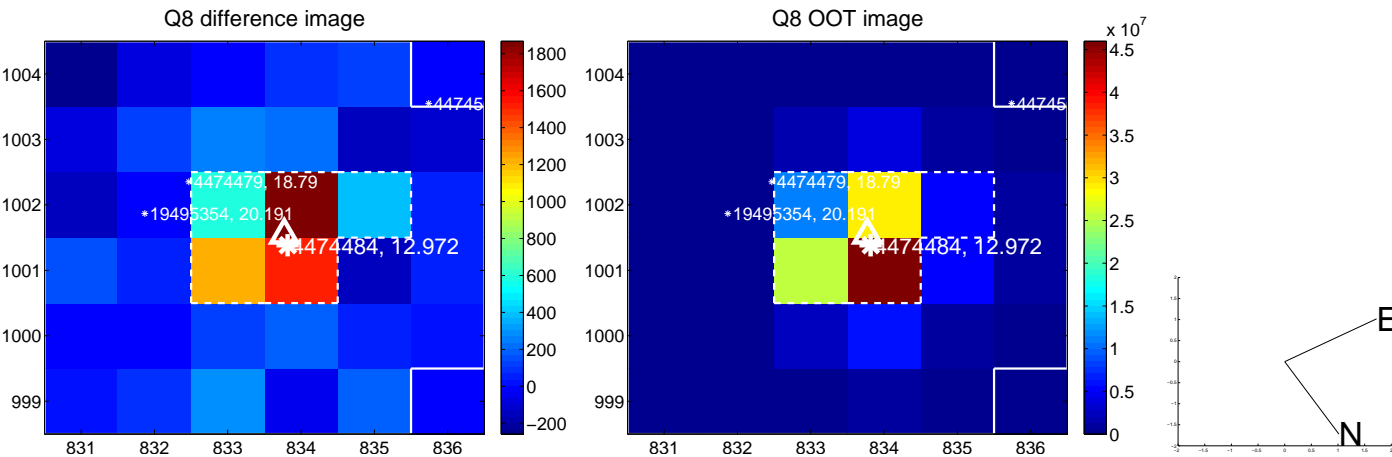
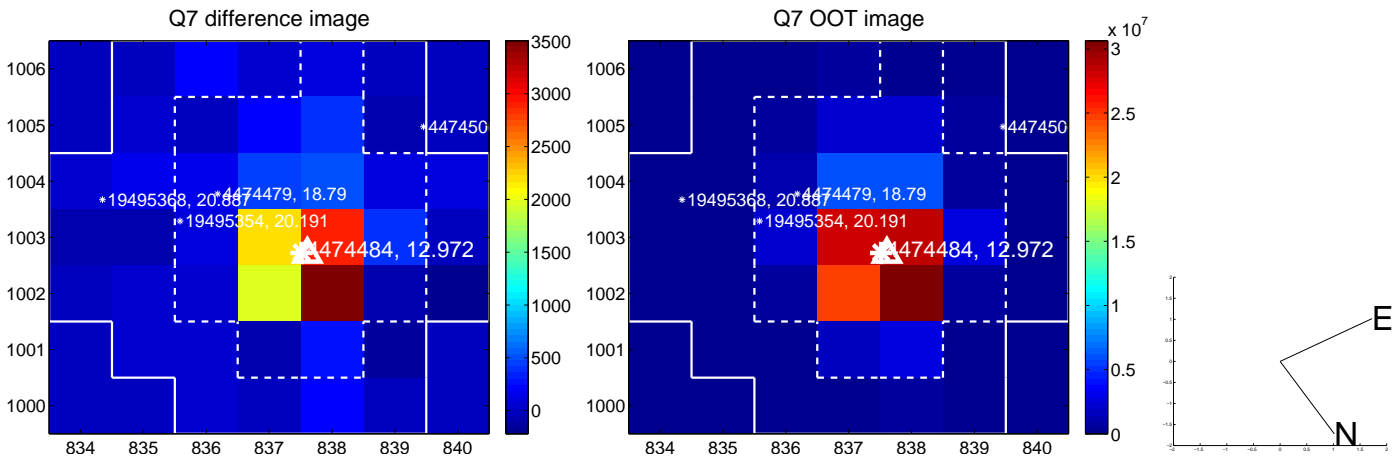
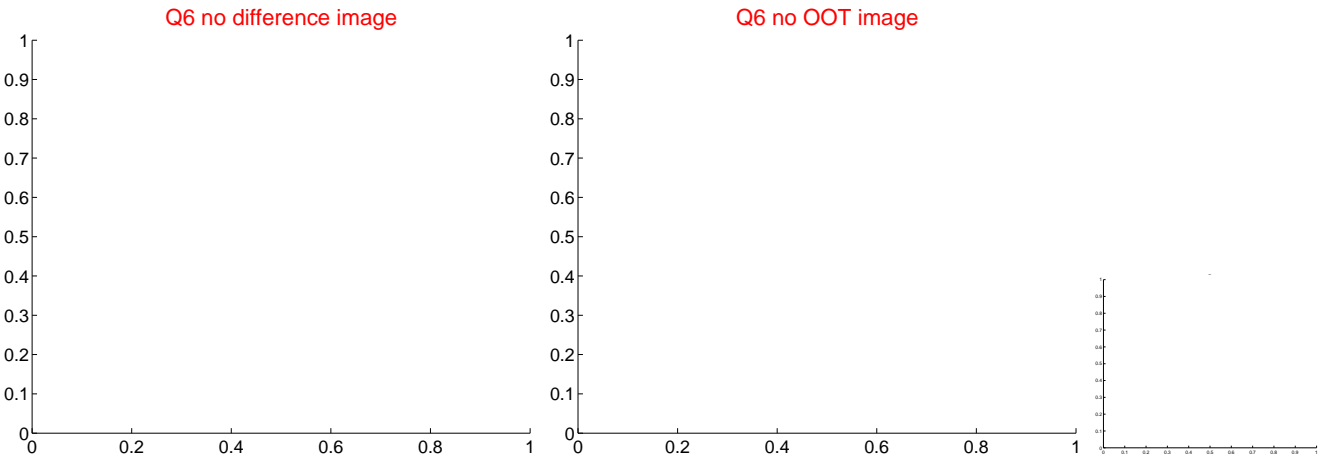
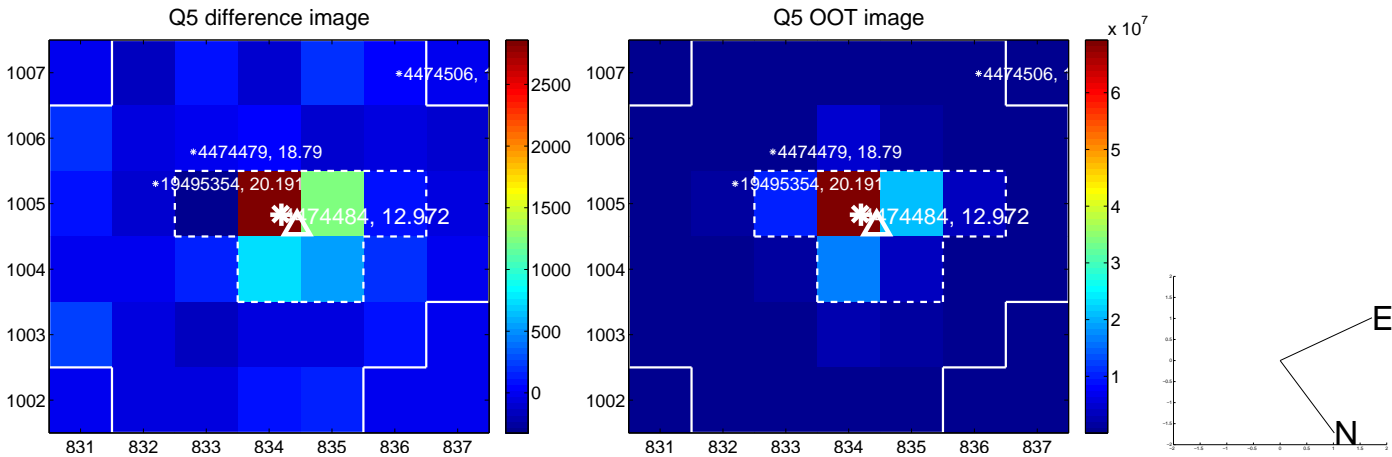


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

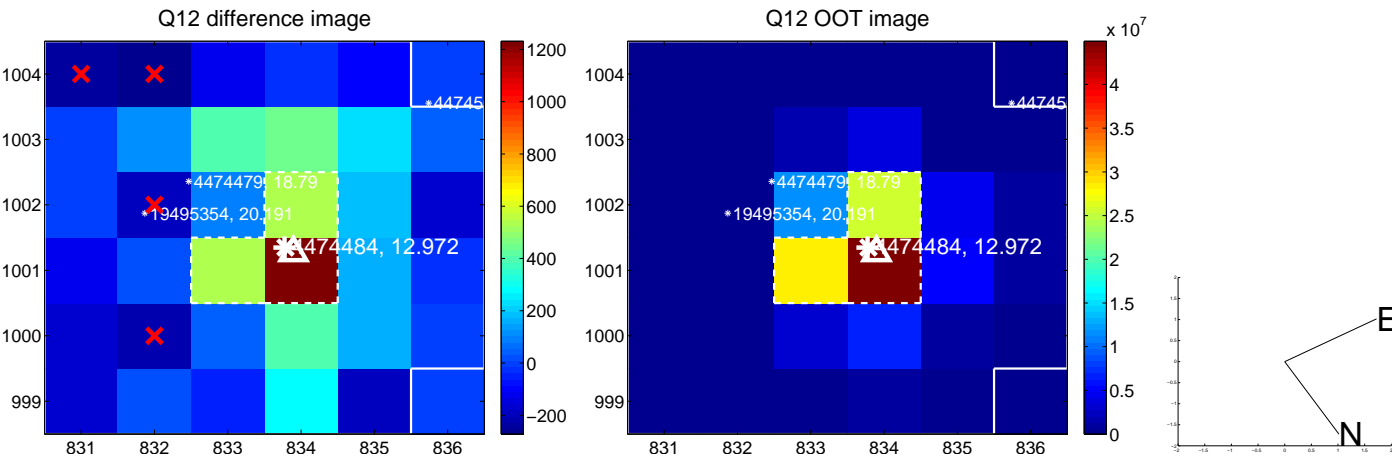
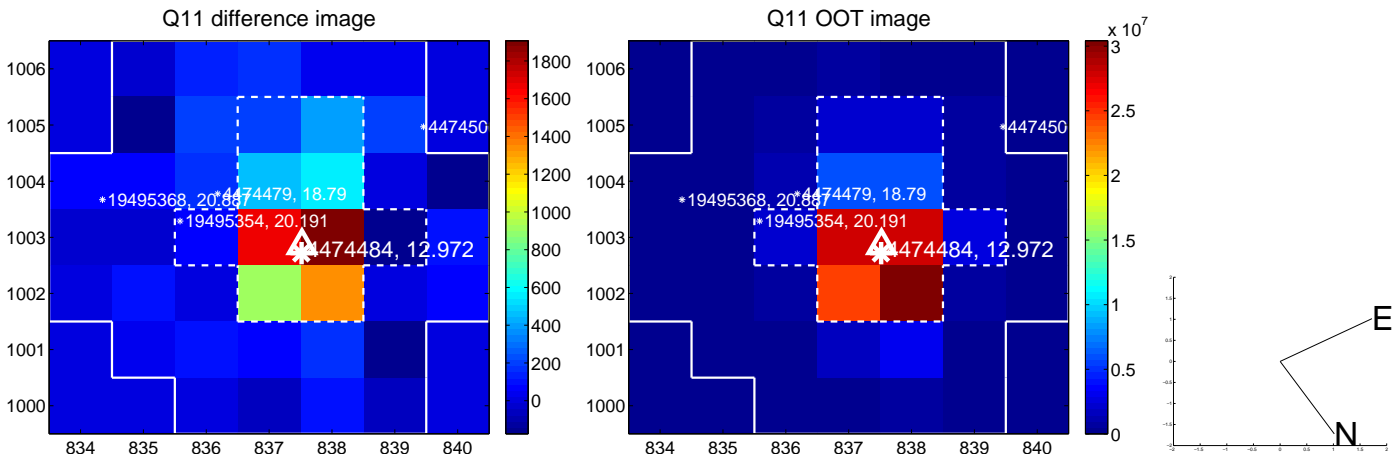
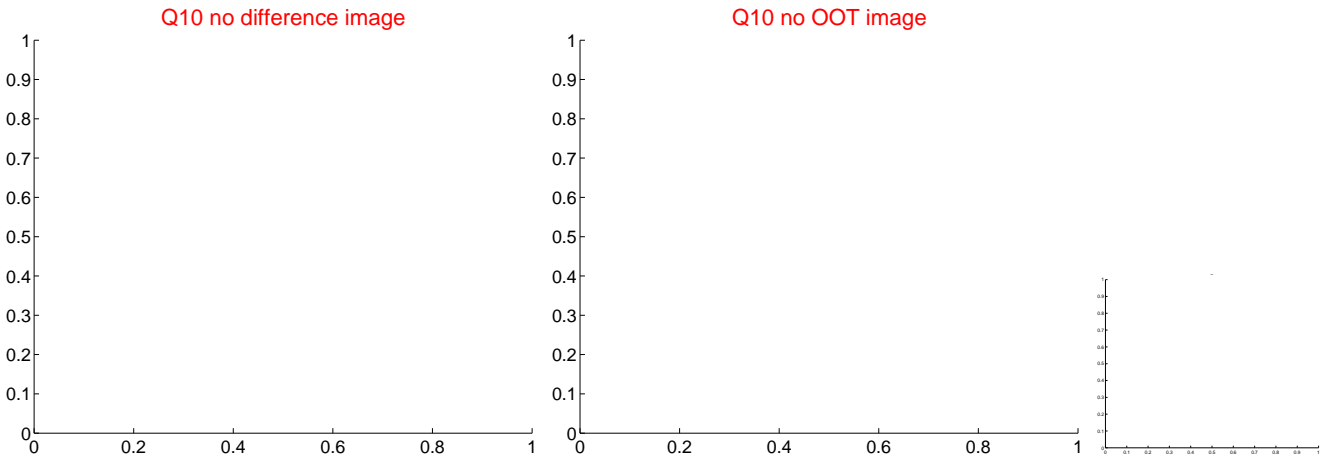
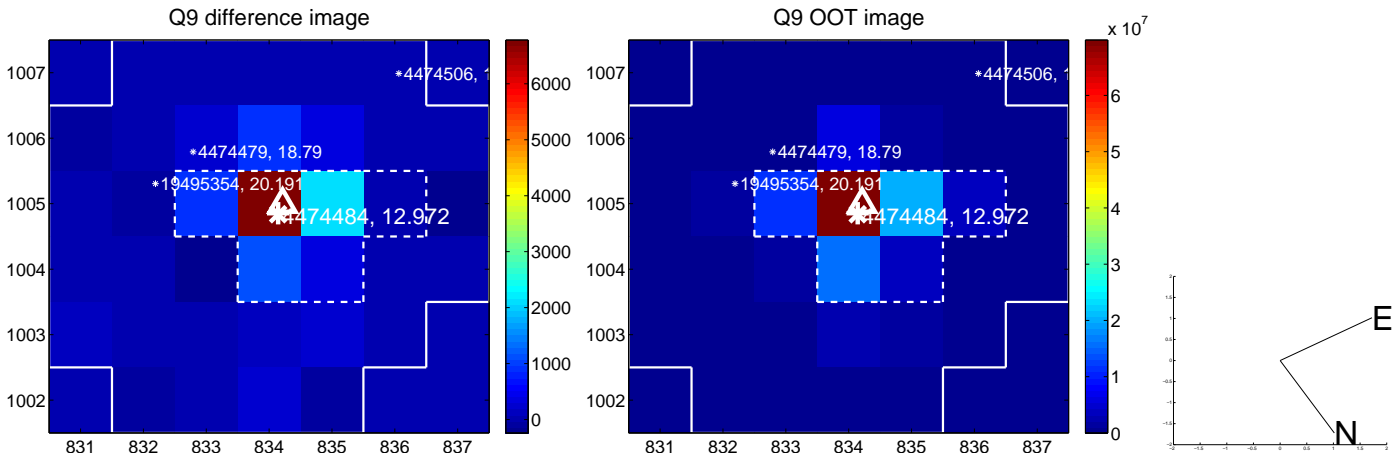
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



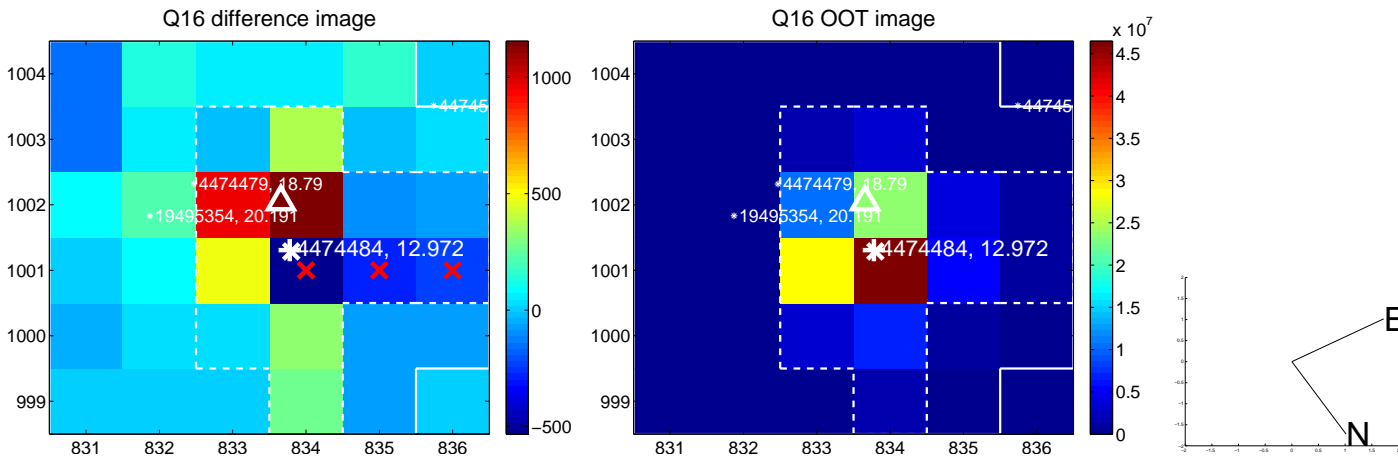
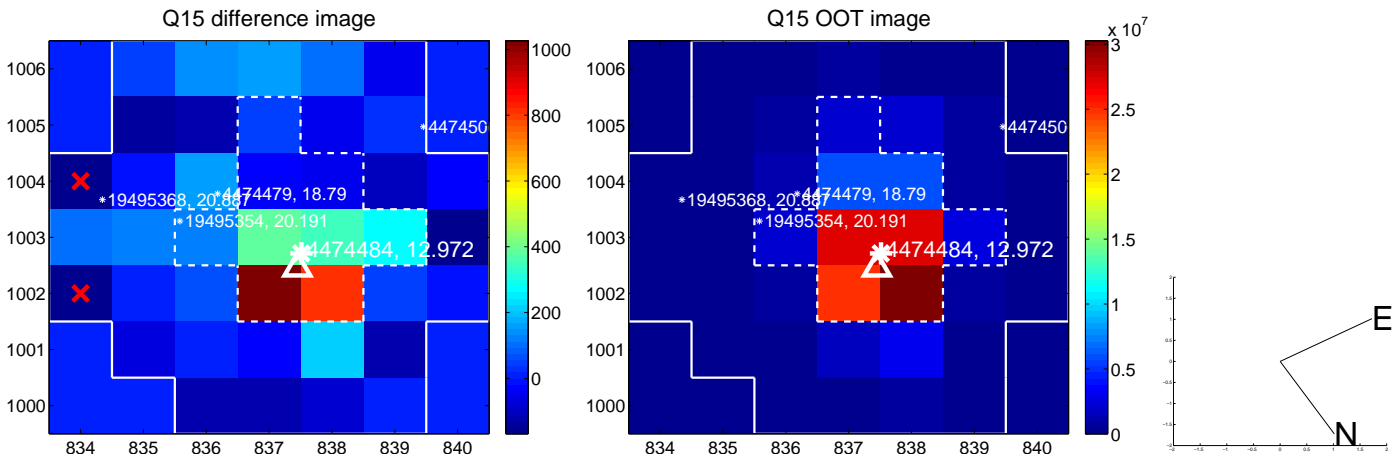
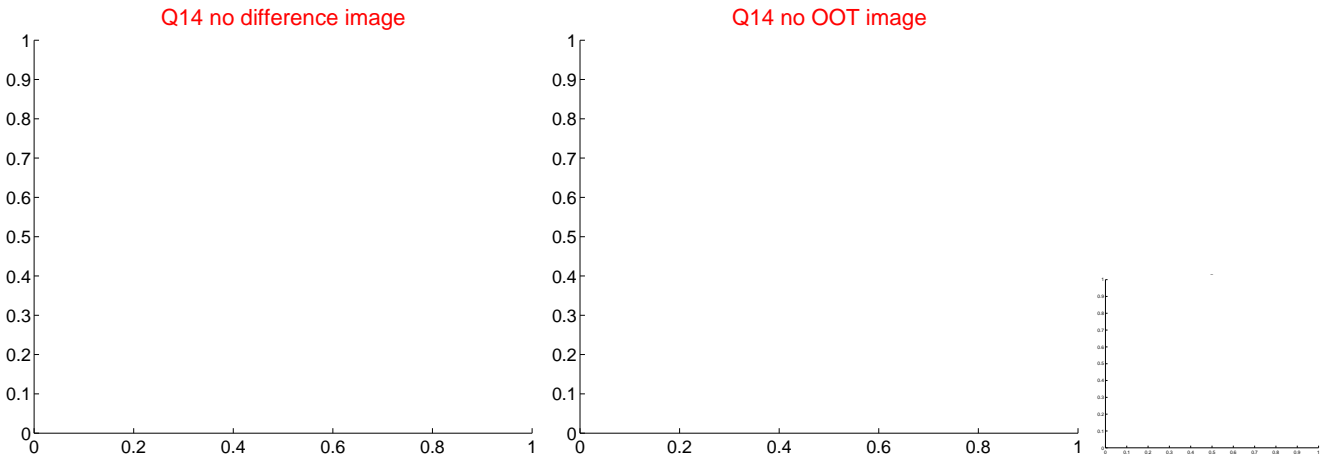
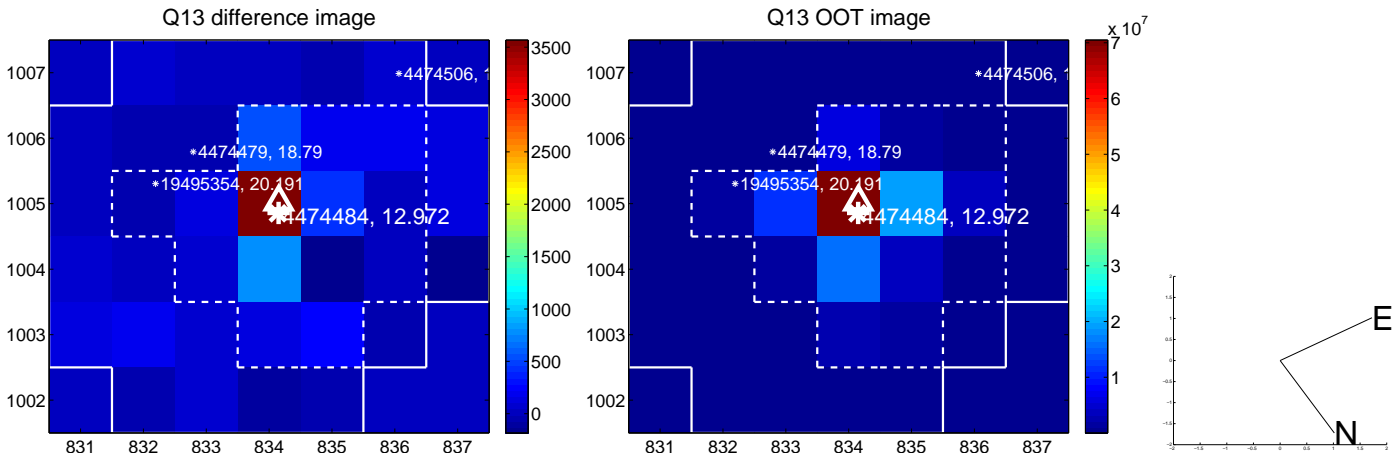
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



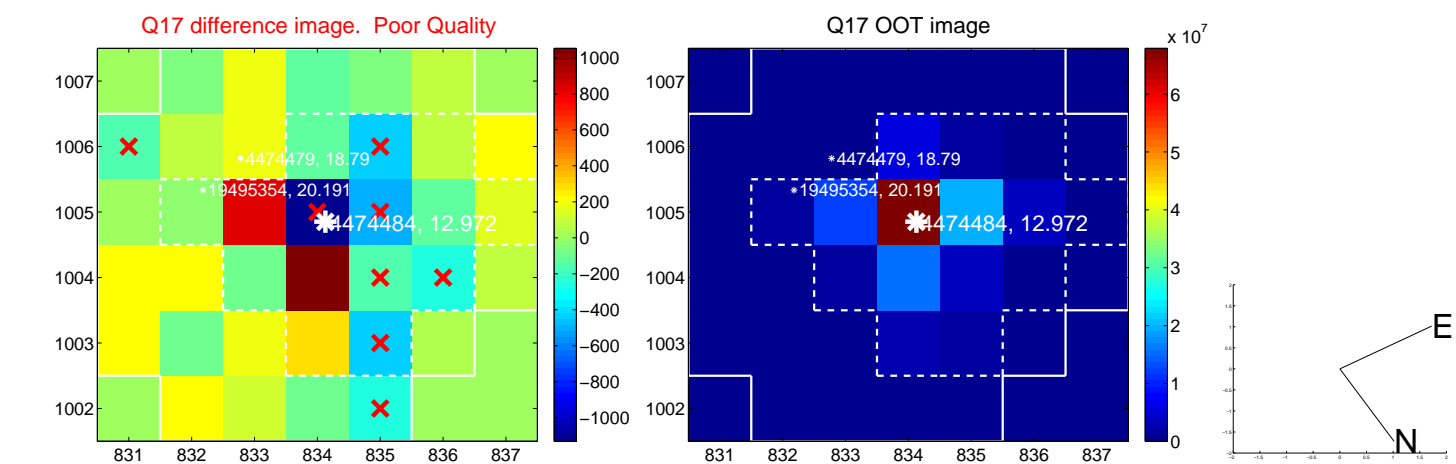
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



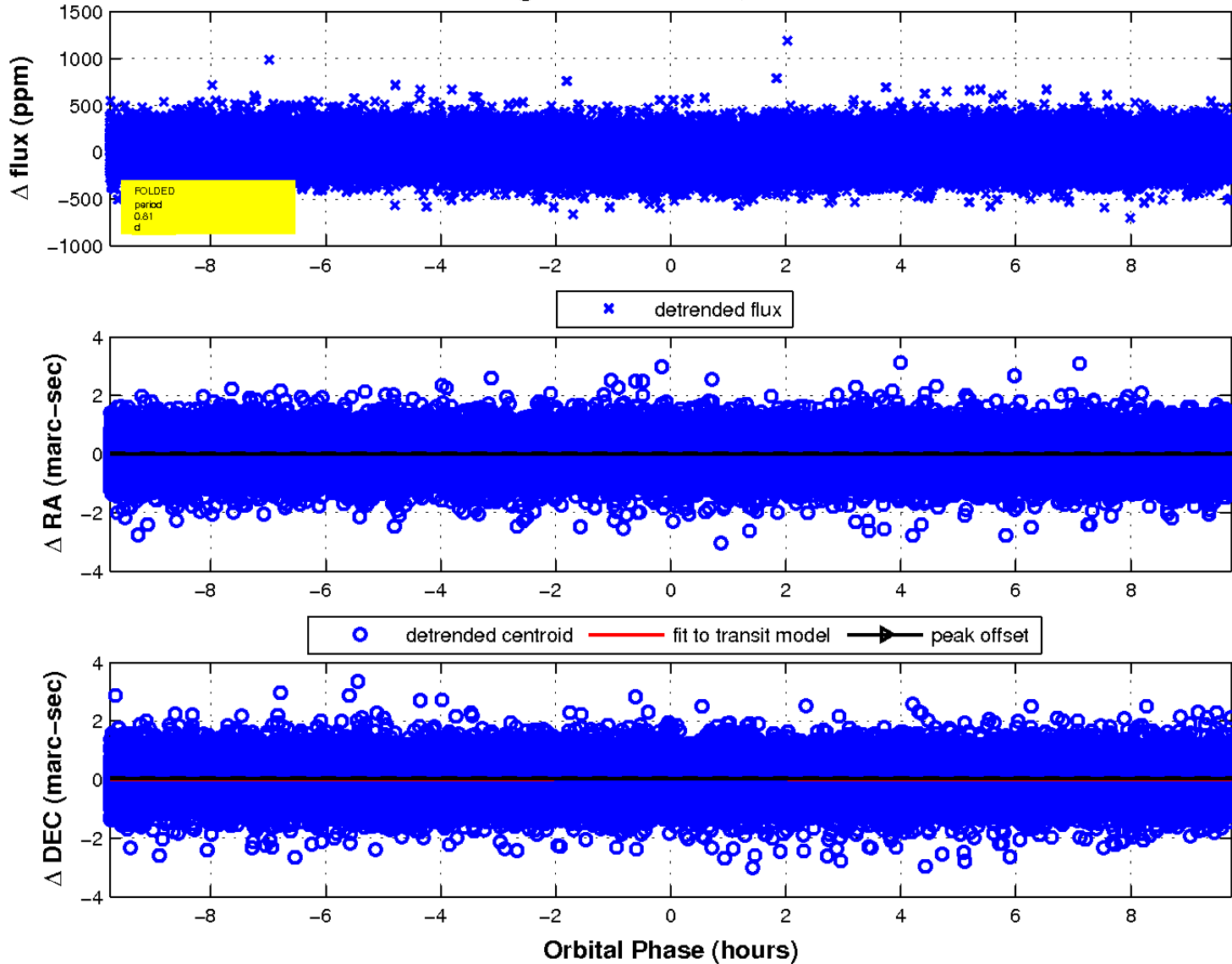
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

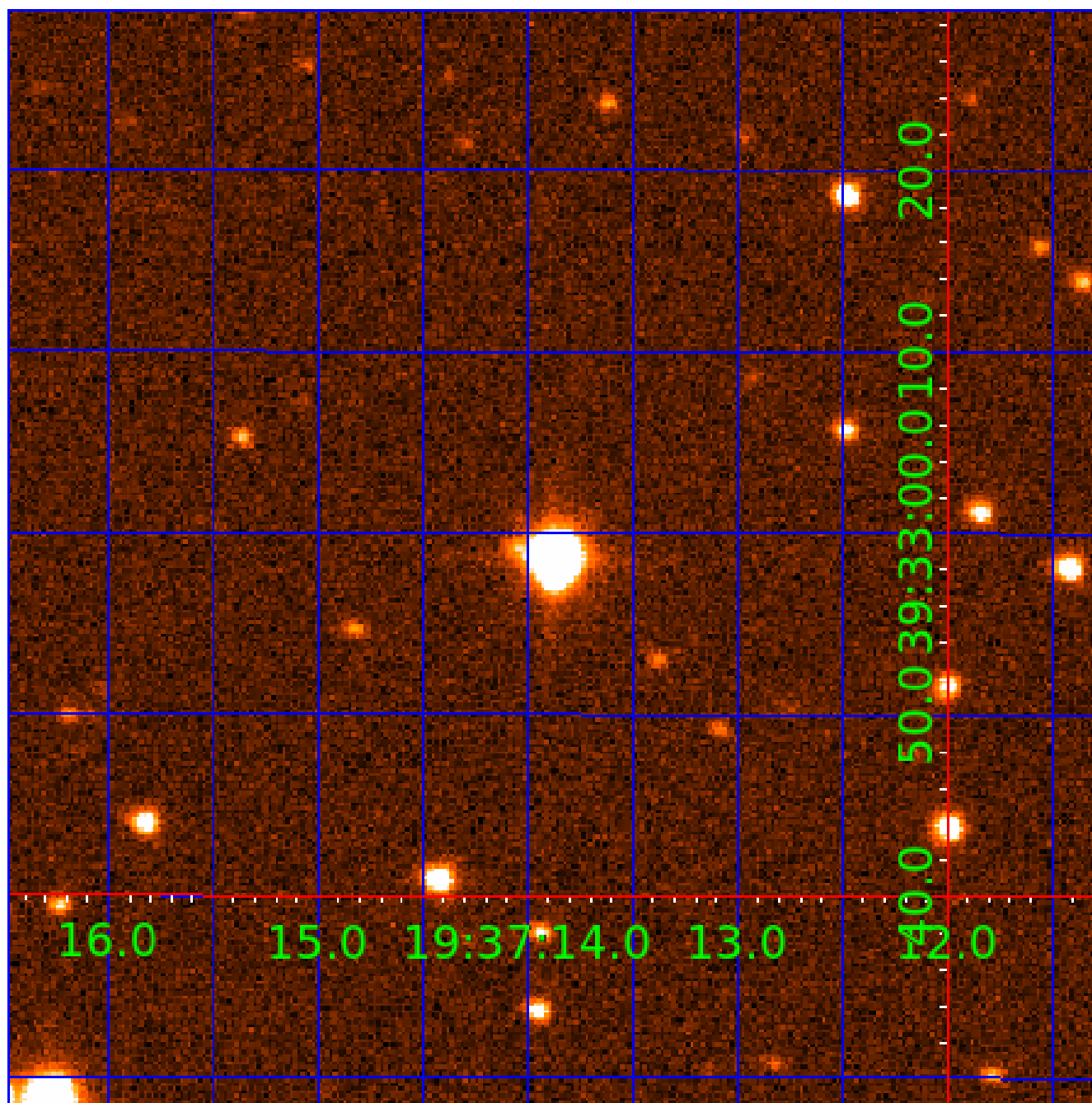


fluxWeightedCentroids, Planet 2 of 6



UKIRT Image

Declination



KIC 004474484

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})
004474484-01	OBS	No	348.648431	397.472181	78.3	21.765	8.6	3.1	2.40	7209	2.35	10.58
004474484-02	OBS	No	0.812804	132.057498	22.6	4.250	8.3	9.9	2.40	7209	1.29	34227.05
004474484-03	OBS	No	126.273650	187.886755	149.1	12.882	9.6	6.6	2.40	7209	3.24	40.98
004474484-04	OBS	No	93.569317	199.676165	289.5	1.913	8.5	8.6	2.40	7209	4.78	61.12
004474484-05	OBS	No	57.211617	135.978817	194.3	4.651	8.3	8.8	2.40	7209	4.03	117.77
004474484-06	OBS	No	65.490862	150.136107	222.7	3.536	7.6	7.1	2.40	7209	4.18	98.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004474484-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
004474484-02	OBS	FP	0.00	1	0	0	0	LPP_DV
004474484-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004474484-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004474484-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004474484-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

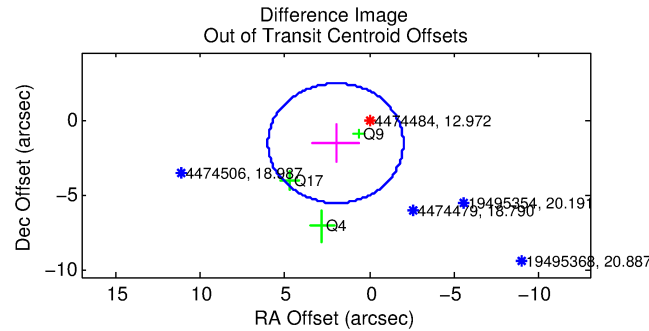
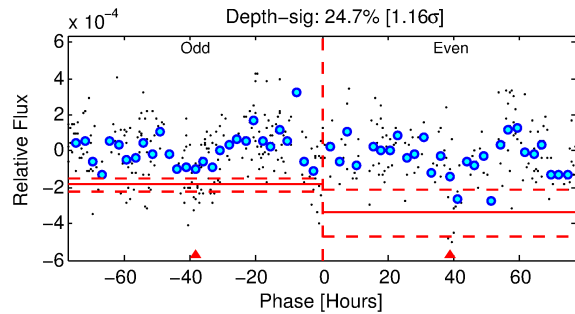
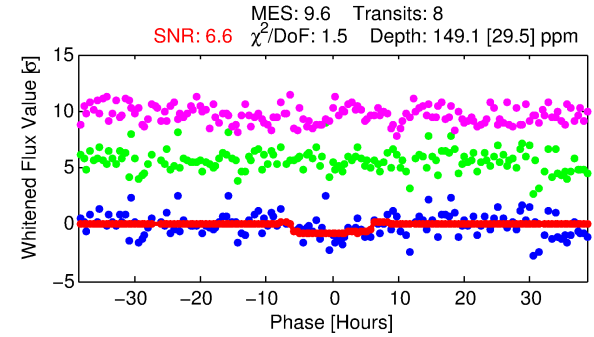
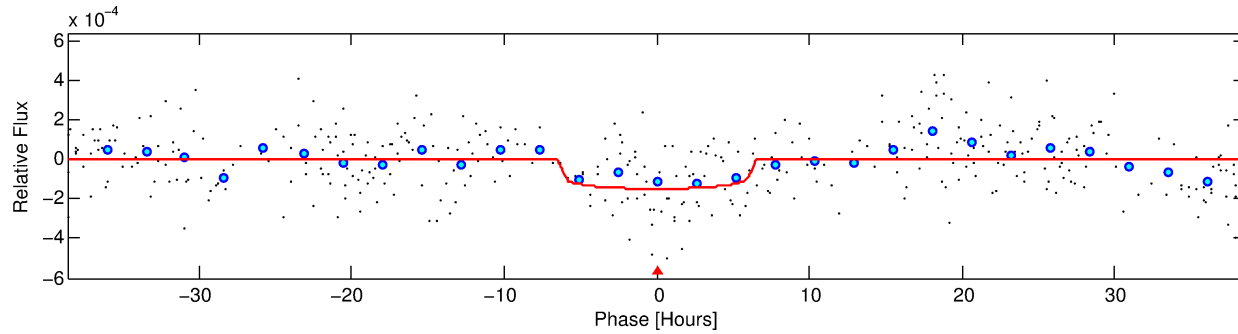
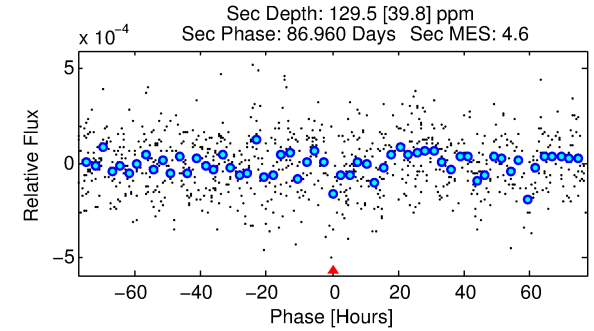
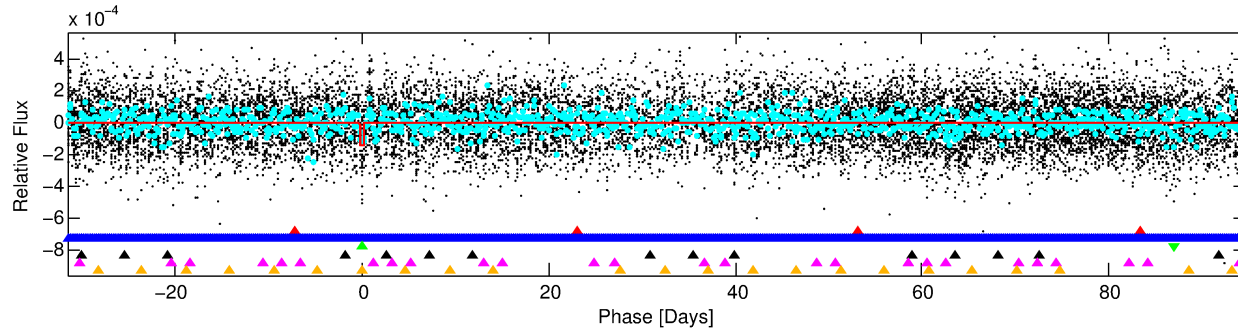
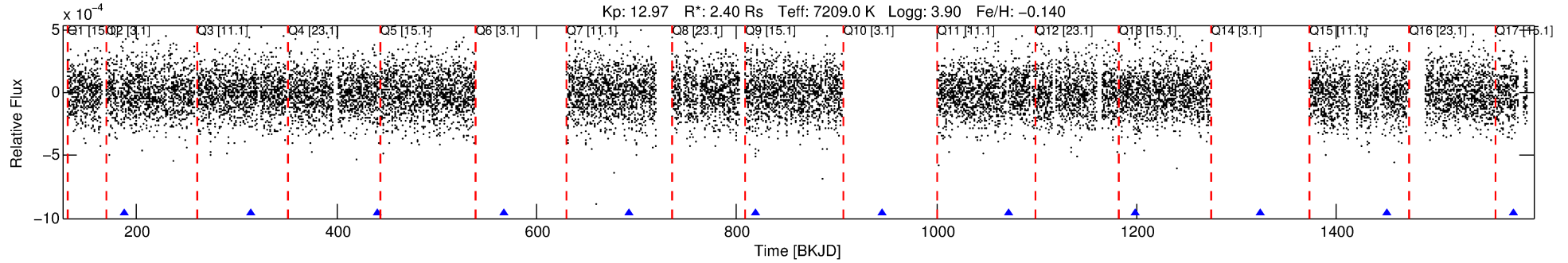
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004474484-03

No Significant Match Found

DV One-Page Summary

KIC: 4474484 Candidate: 3 of 6 Period: 126.274 d



DV Fit Results:

Period = 126.27365 [0.00587] d
Epoch = 187.8868 [0.0259] BKJD
Rp/R* = 0.0123 [0.0049]
a/R* = 46.45 [103.29]
b = 0.80 [1.00]
Seff = 40.98 [22.97]
Teq = 645 [90] K
Rp = 3.24 [1.73] Re
a = 0.5842 [0.1969] AU
Ag = 2317.32 [2321.86] [1.00σ]
Teffp = 6921 [1504] K [4.17σ]

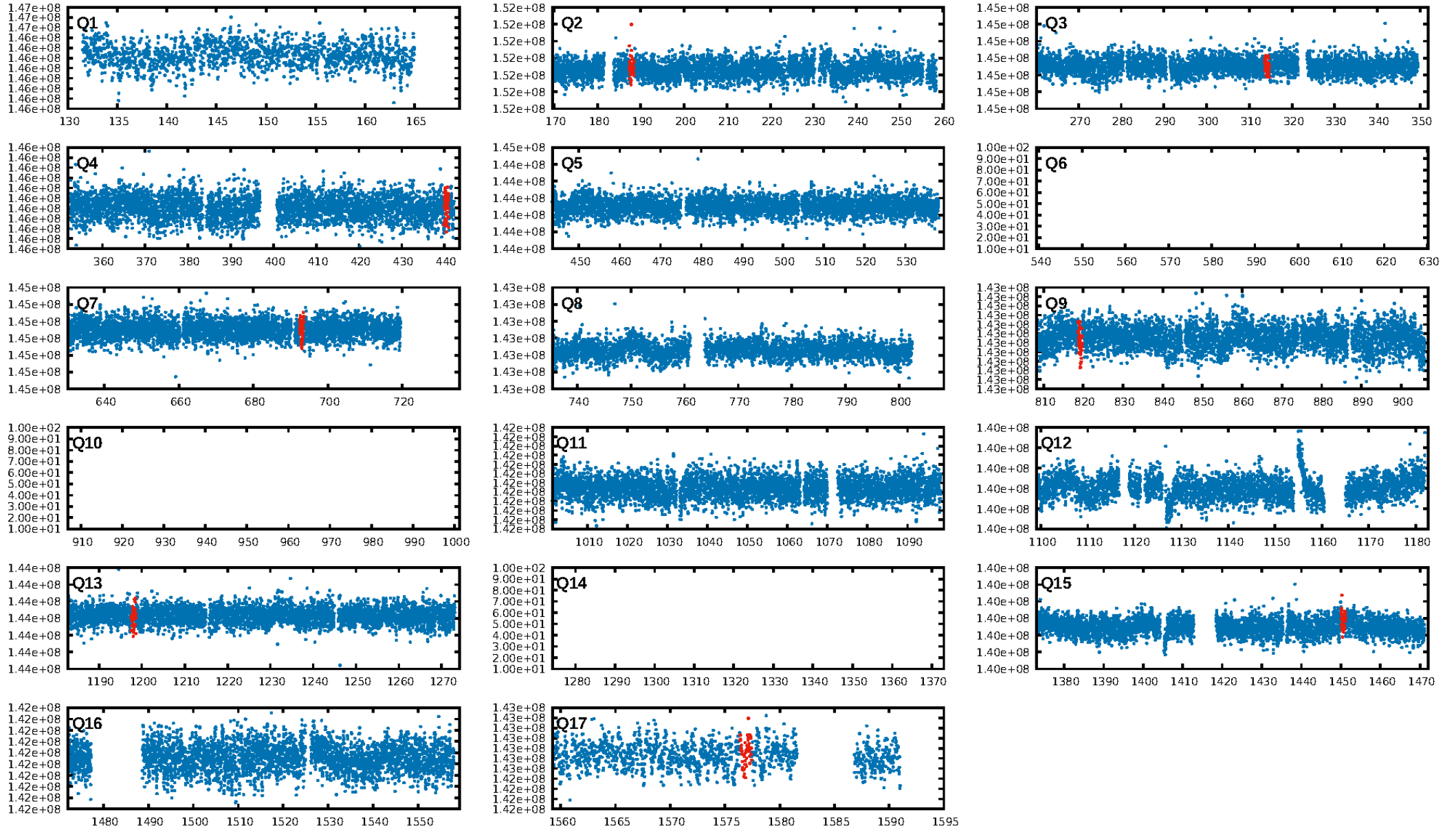
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [60.27σ]
LongPeriod-sig: 100.0% [211.02σ]
ModelChiSquare2-sig: 2.1%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 6.50e-15
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 1.236
Centroid-sig: 75.2%
Centroid-so: 0.452 arcsec [0.48σ]
OotOffset-rm: 2.535 arcsec [1.91σ]
OotOffset-st: 0/0/1/2 [3]
KicOffset-rm: 2.602 arcsec [1.58σ]
KicOffset-st: 0/0/1/2 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.00 [0/6]

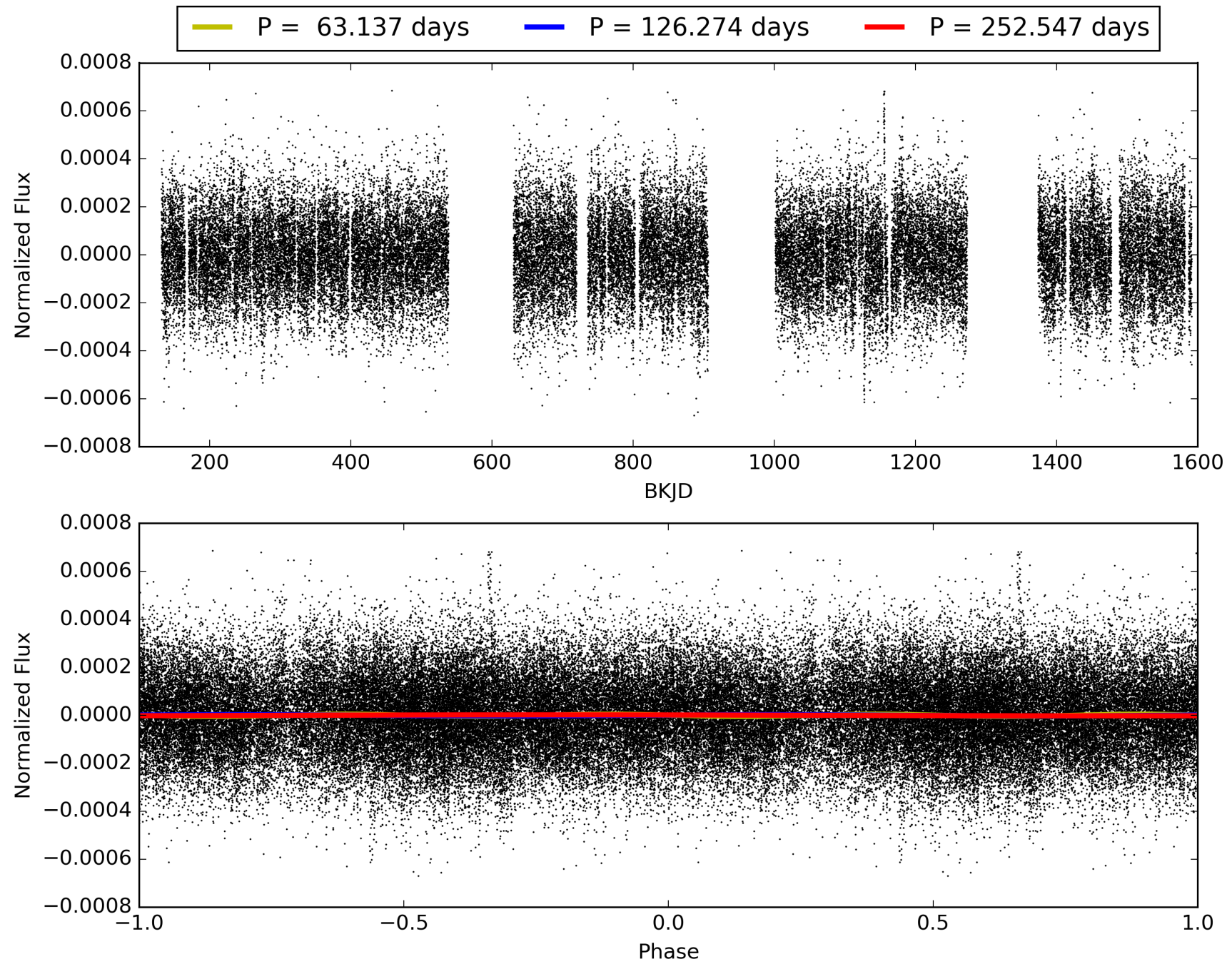
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:03:49 Z

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

TCE 004474484-03, PDC Light Curves

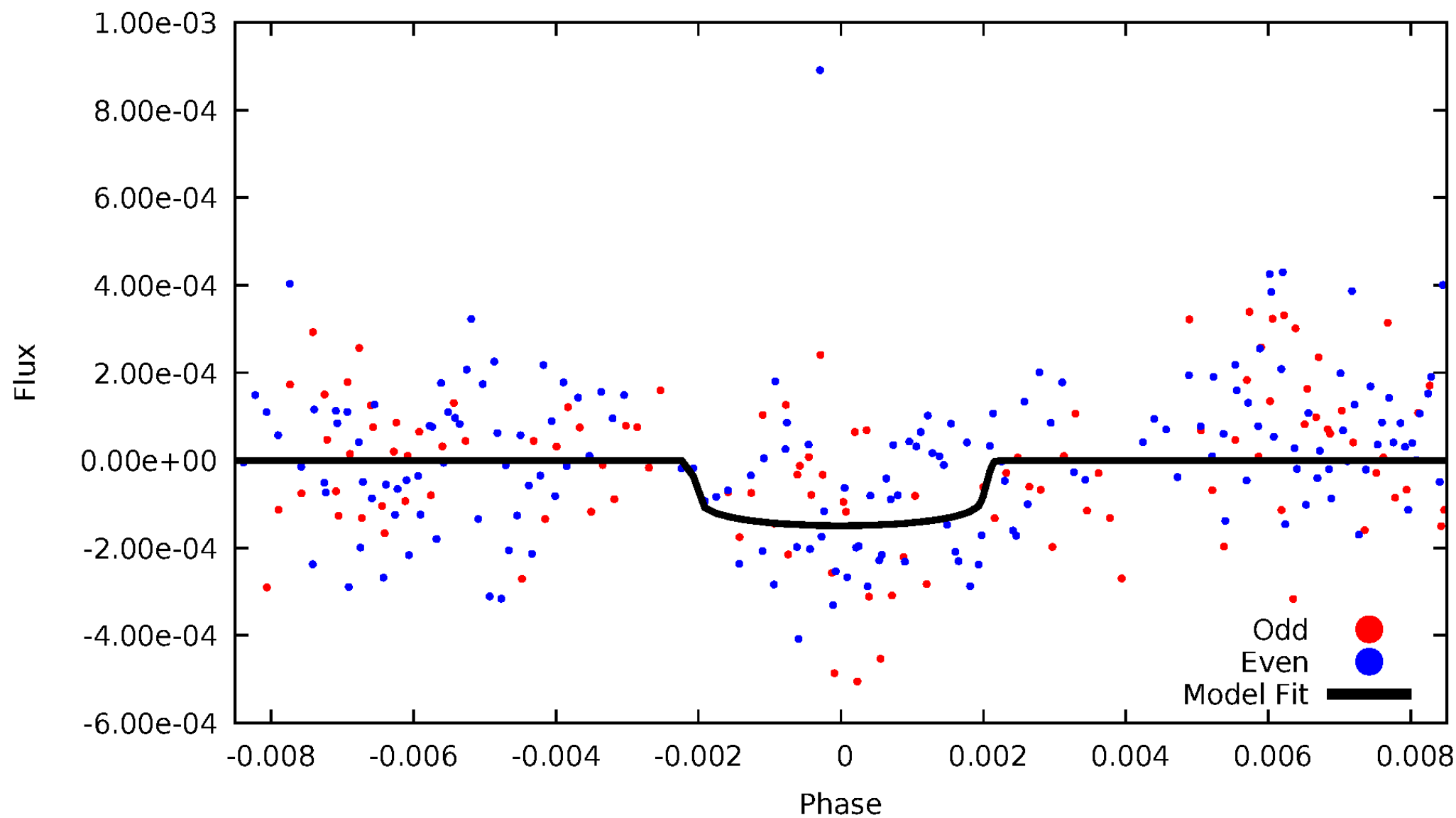


TCE 004474484-03



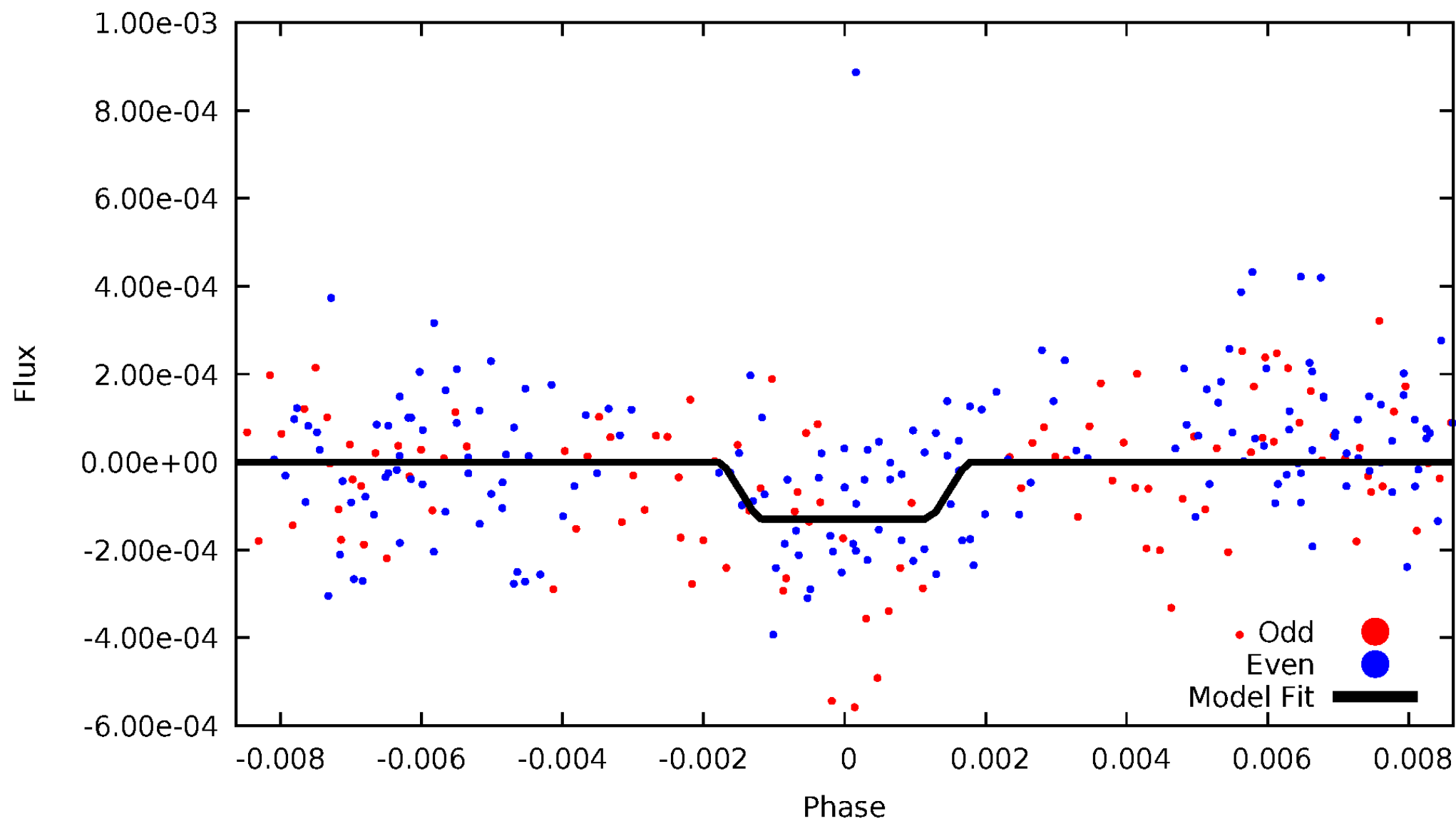
DV Odd/Even

TCE 004474484-03

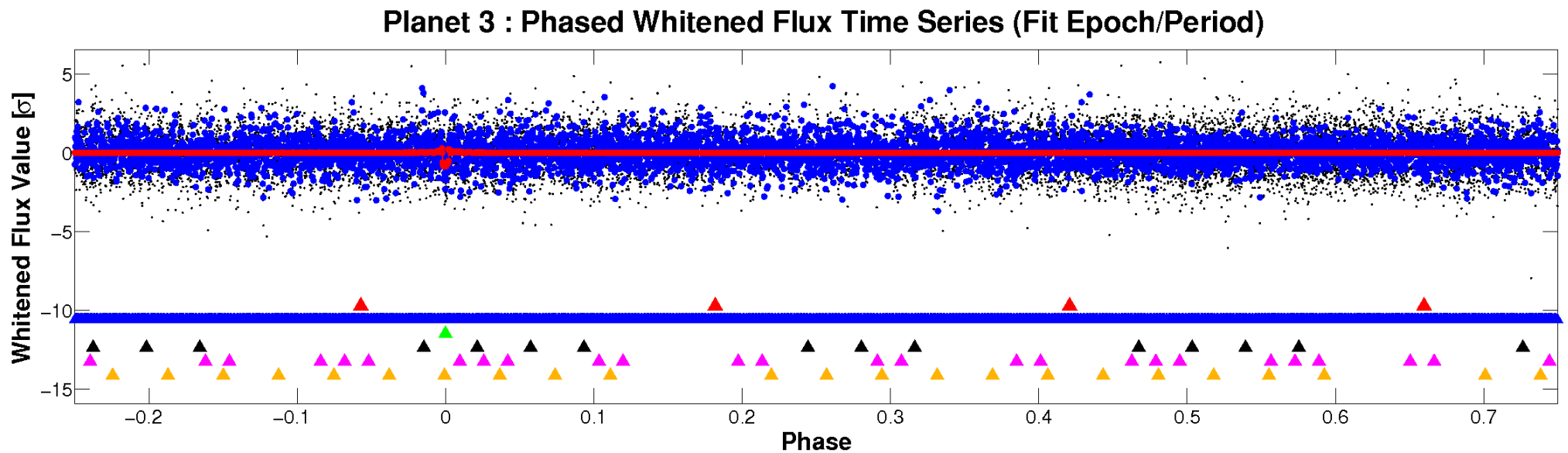
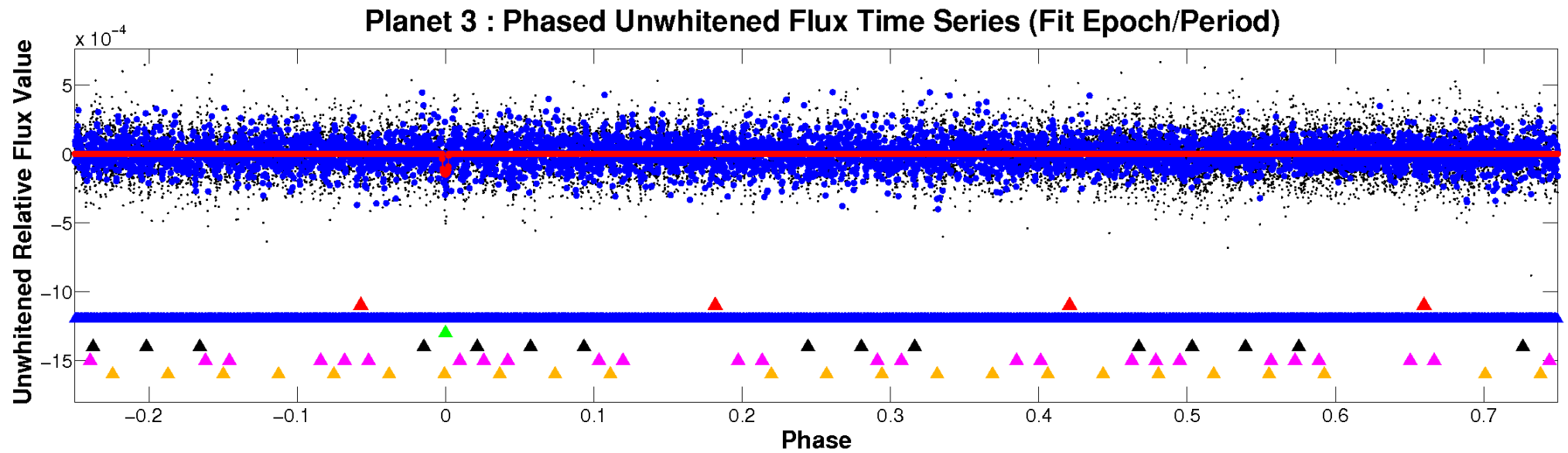


ALT Odd/Even

TCE 004474484-03

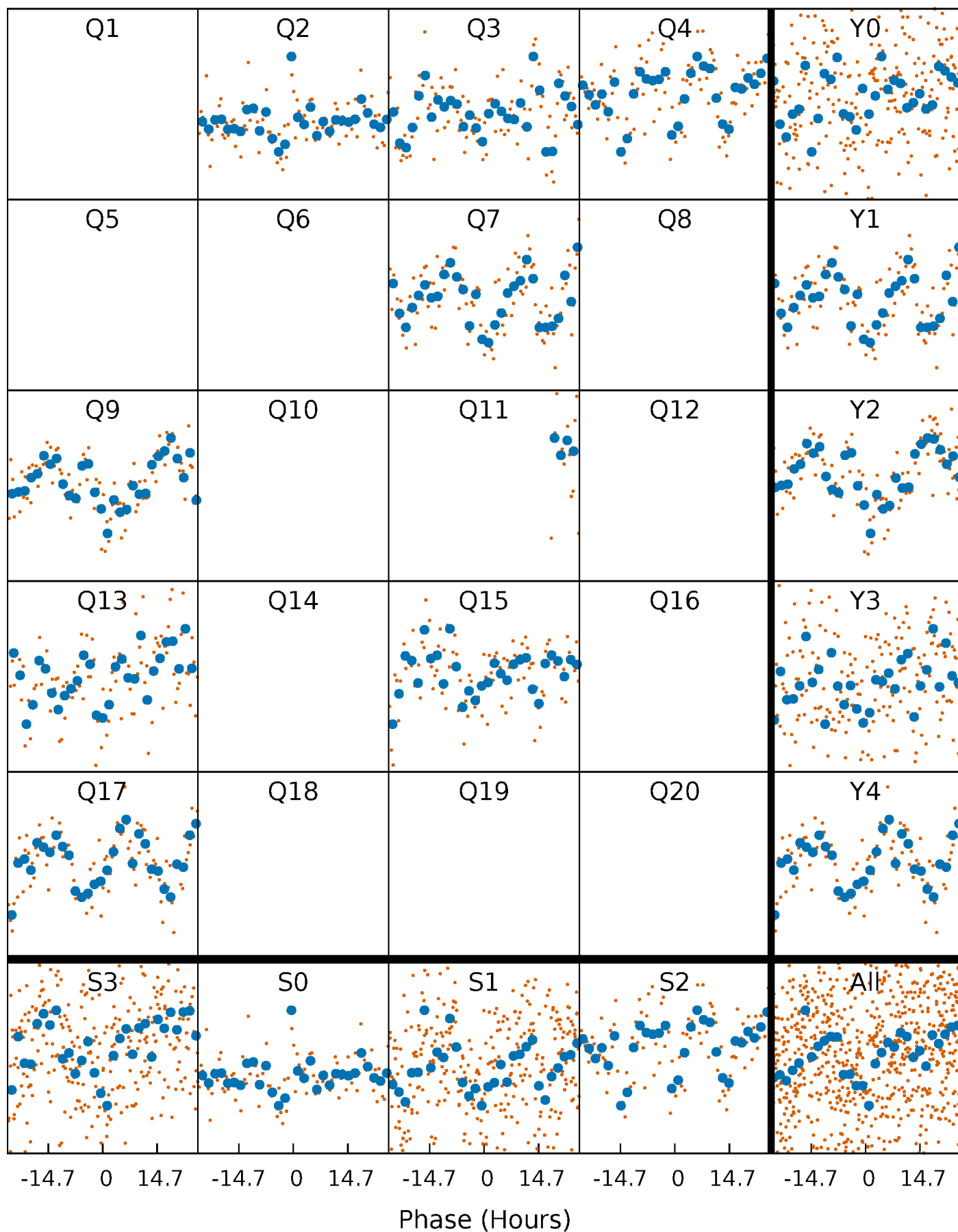


Non-Whitened Vs. Whitened Light Curve



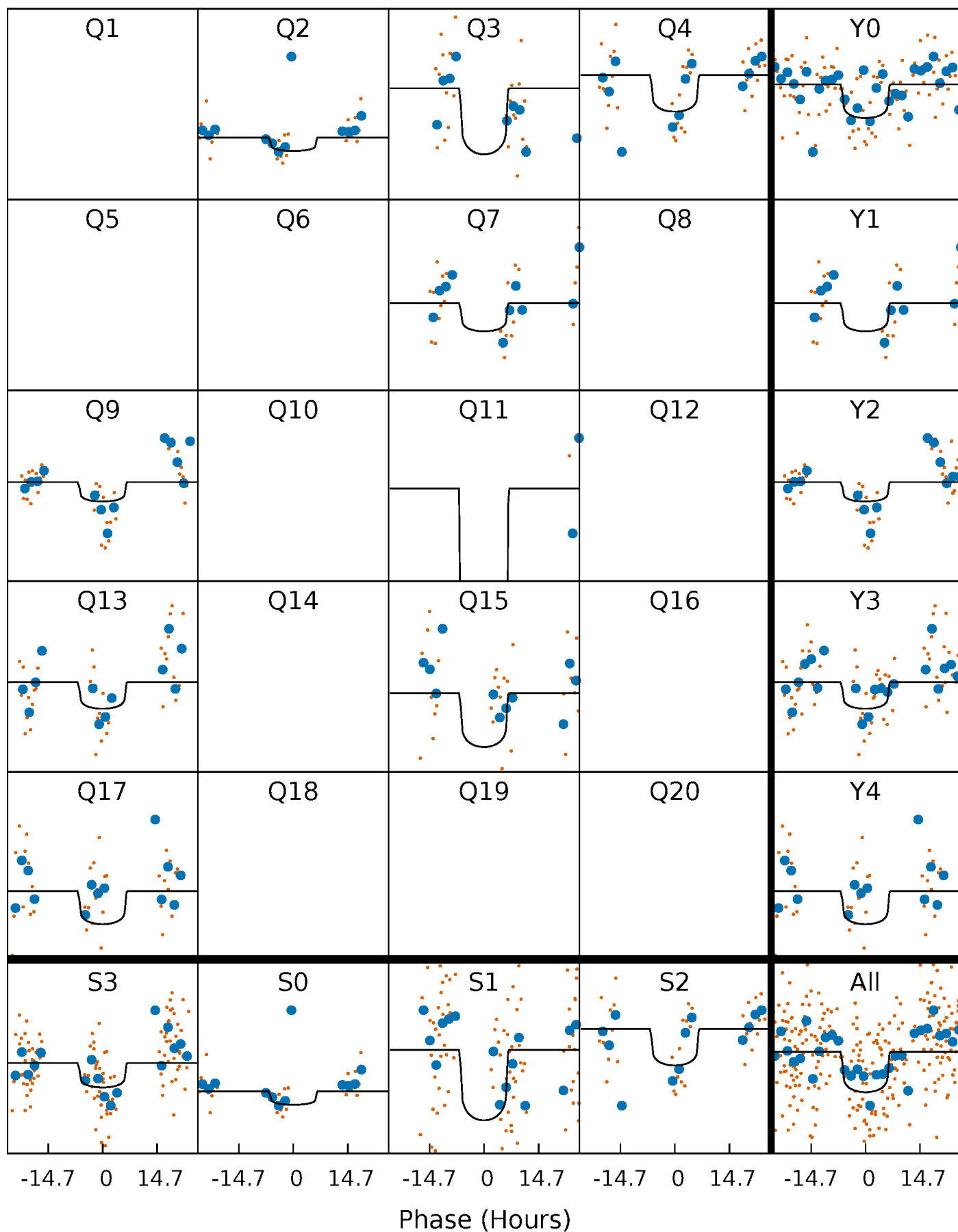
PDC Quarter-Phased Transit Curves

TCE 004474484-03 P=126.273650 Days $T_0=187.886755$ (BKJD)



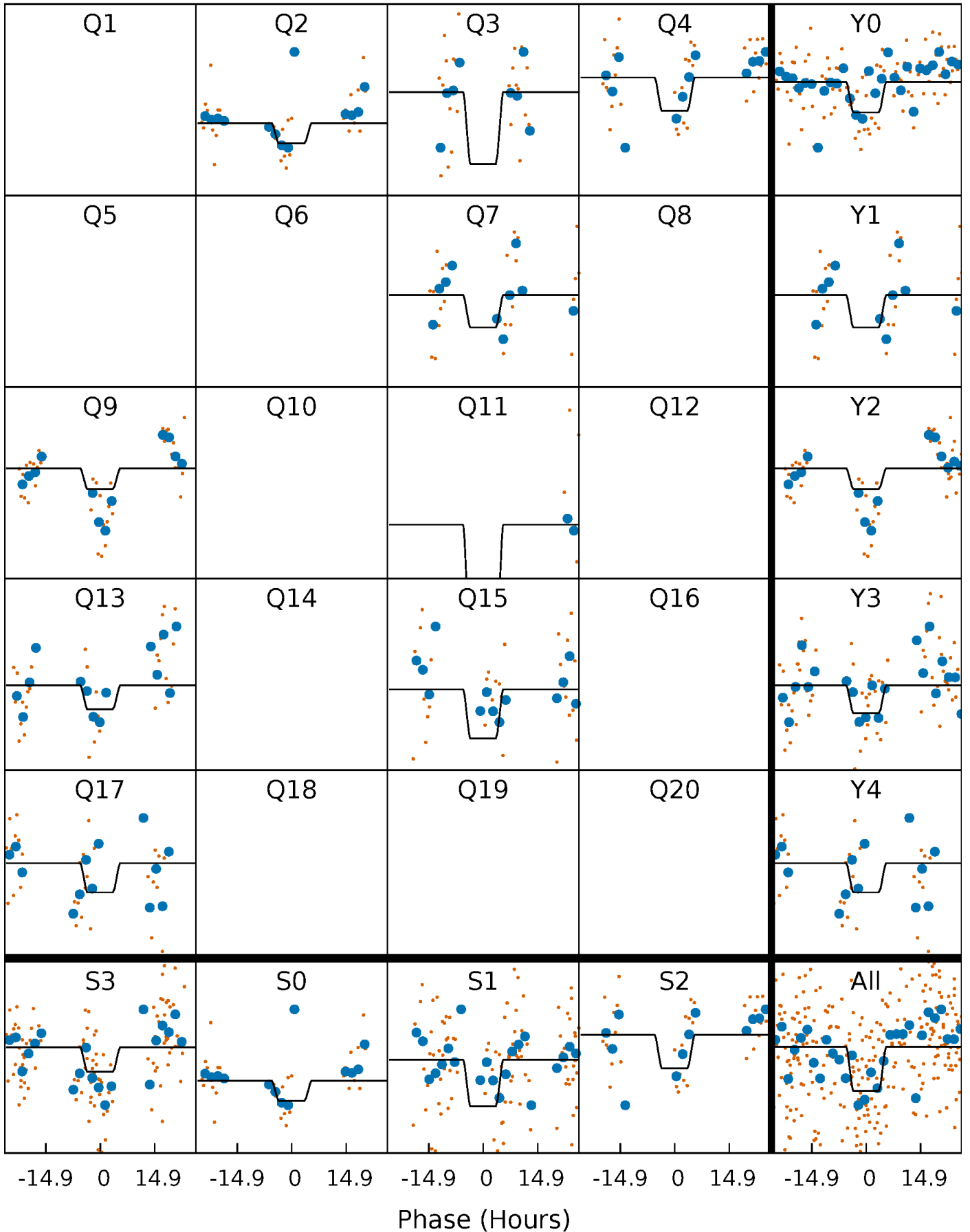
DV Quarter-Phased Transit Curves

TCE 004474484-03 $P=126.273650$ Days $T_0=187.886755$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

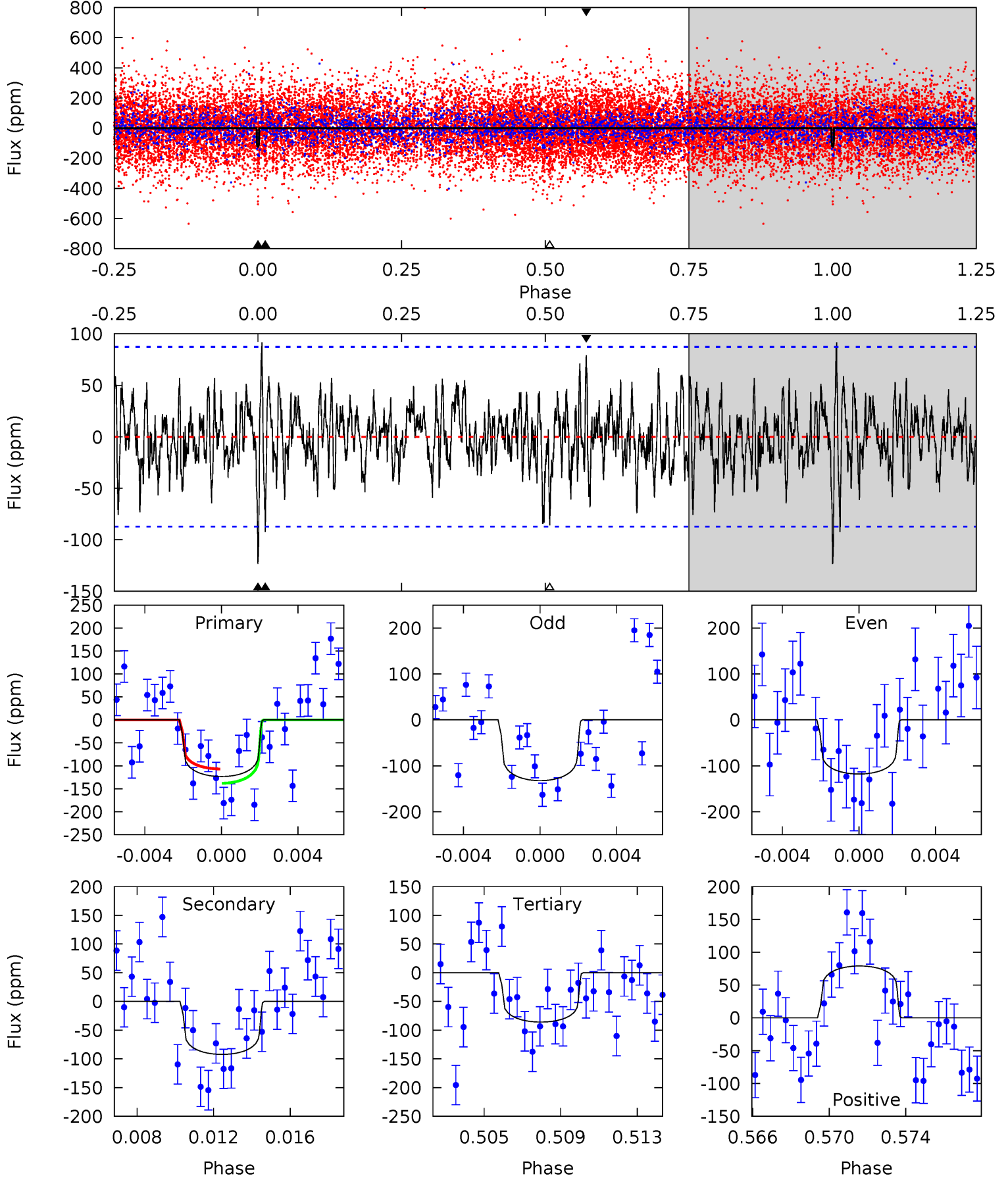
TCE 004474484-03 P=126.287368 Days $T_0=187.829666$ (BKJD)



DV Model-Shift Uniqueness Test

004474484-03, P = 126.273650 Days, E = 61.613105 Days

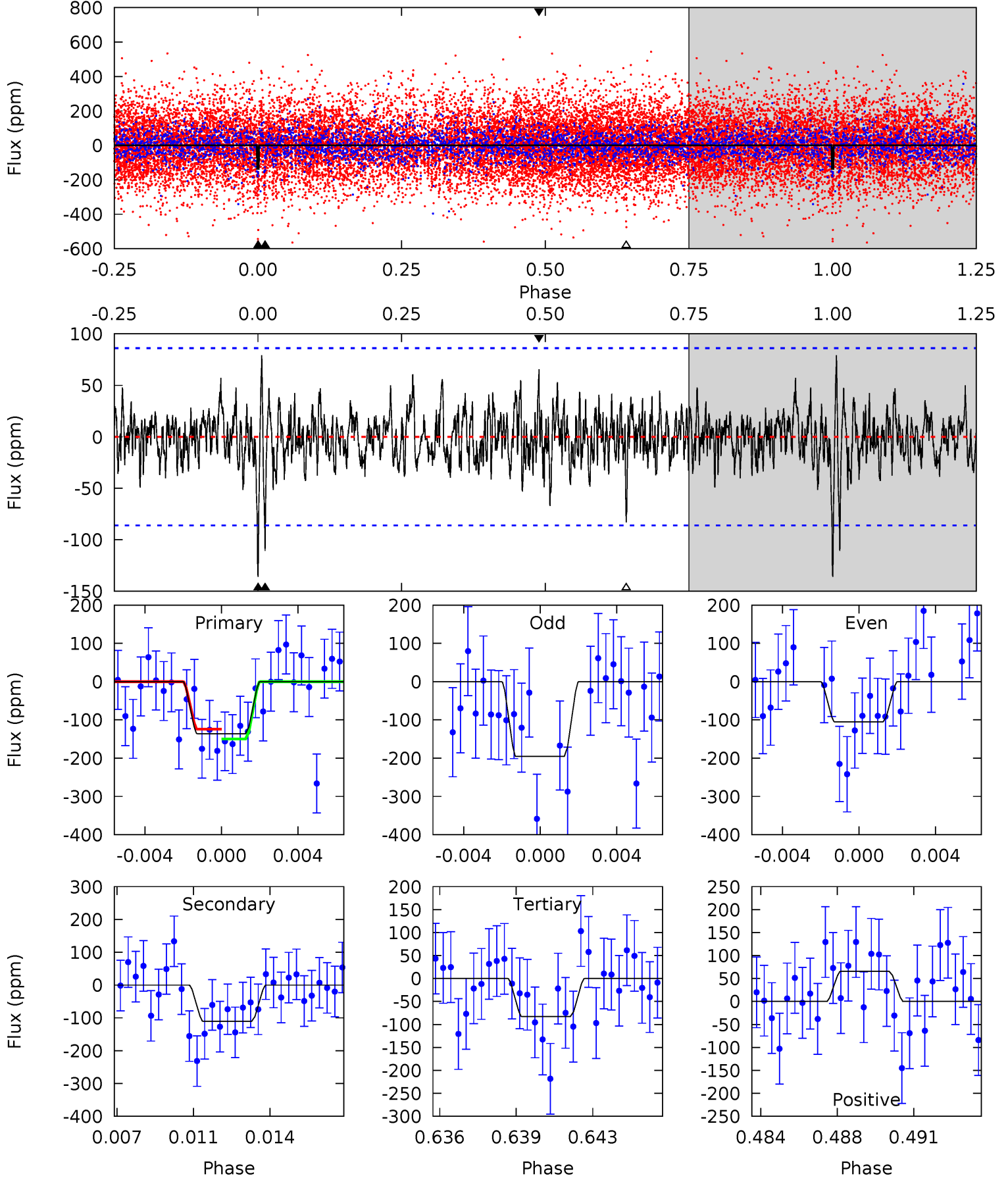
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.35	5.49	5.12	4.71	5.20	2.87	1.57	2.23	2.64	0.38	0.78	0.42	1.08	0.43	0.92



Alt Model-Shift Uniqueness Test

004474484-03, P = 126.287368 Days, E = 61.542298 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.24	6.71	5.03	3.98	5.22	2.91	1.24	3.22	4.26	1.68	2.73	2.57	1.44	0.37	0.78



Stellar Parameters For KIC 004474484

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7209^{+226}_{-327}	$3.898^{+0.308}_{-0.132}$	$-0.140^{+0.250}_{-0.350}$	$2.404^{+0.578}_{-0.866}$	$1.667^{+0.168}_{-0.364}$	$0.169^{+0.365}_{-0.064}$
	+3%/-5%	+8%/-3%	+179%/-250%	+24%/-36%	+10%/-22%	+216%/-38%
Source	KIC0	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 004474484-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-92 ± 17	$3.06^{+1.35}_{-1.30}$	881^{+70}_{-79}	6258^{+2103}_{-972}	1774^{+3525}_{-925}
Alt.	-111 ± 16	$2.78^{+1.41}_{-1.16}$	880^{+71}_{-83}	6845^{+2438}_{-1224}	2734^{+4861}_{-1570}

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

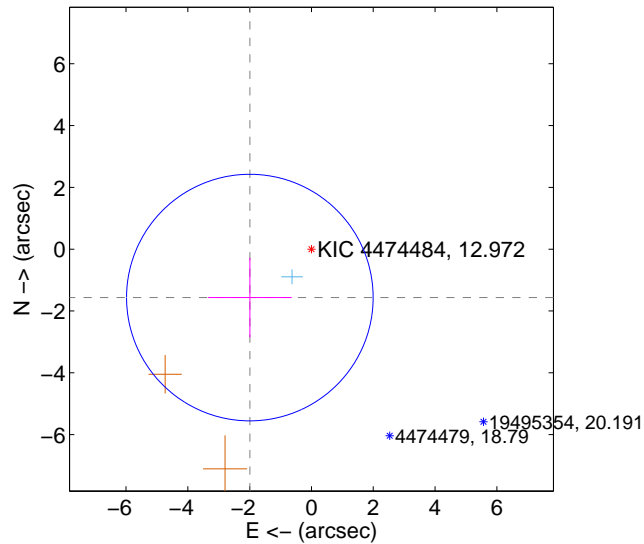
Supplemental centroid analysis for 004474484-03. Kepler magnitude: 12.97. Transit SNR 6.56

There are 1 quarters with good PRF difference image offsets

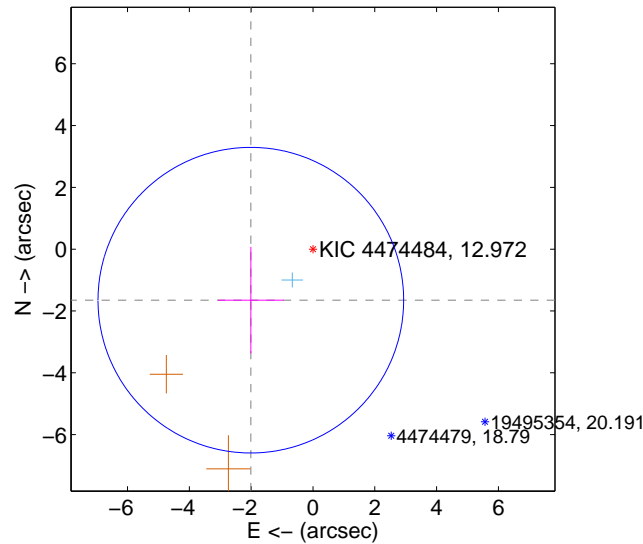
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.535 ± 1.330	1.91	1.993 ± 1.356	-1.567 ± 1.287
PRF-fit source offset from KIC position	2.602 ± 1.648	1.58	2.011 ± 1.064	-1.651 ± 1.725
photometric centroid source offset	0.45 ± 0.95	0.48	0.45 ± 0.95	0.03 ± 0.96

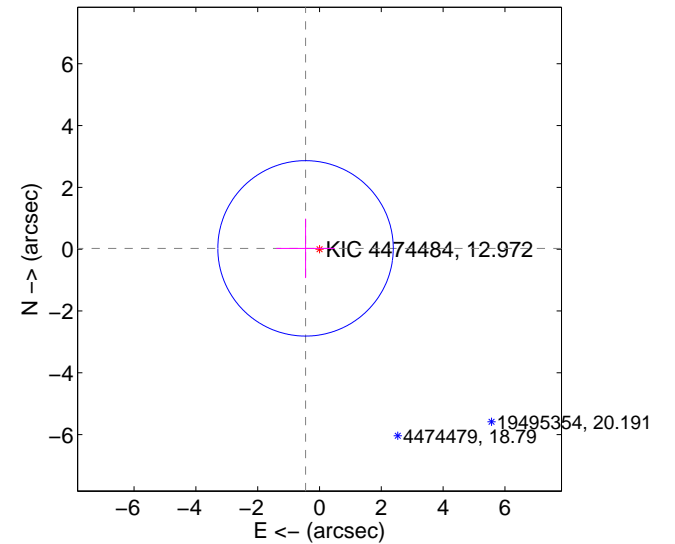
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

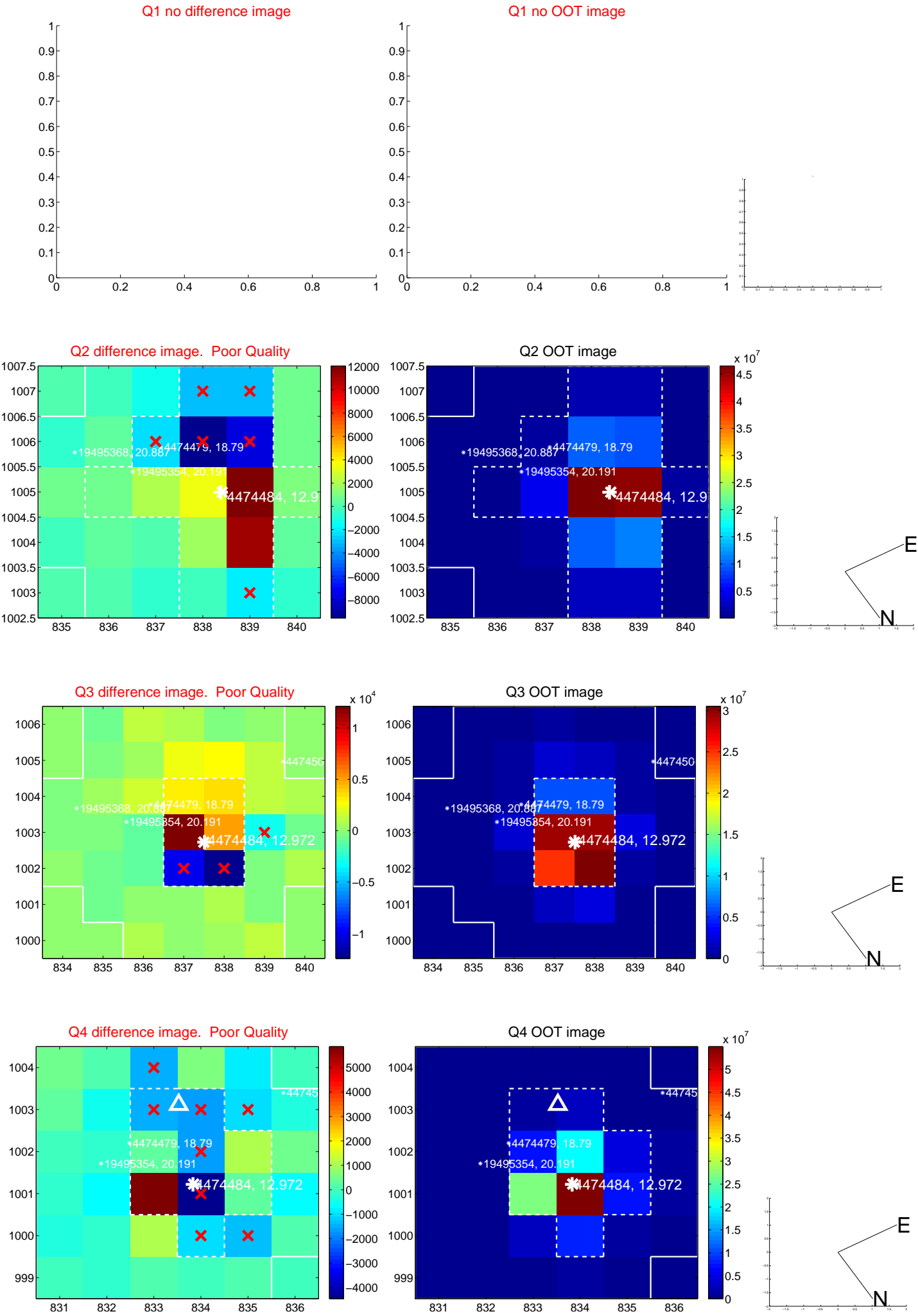


offset from photometric centroids



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

Q5 no difference image



Q5 no OOT image



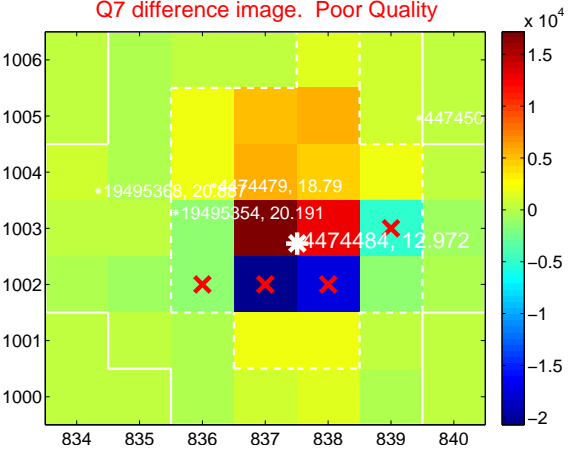
Q6 no difference image



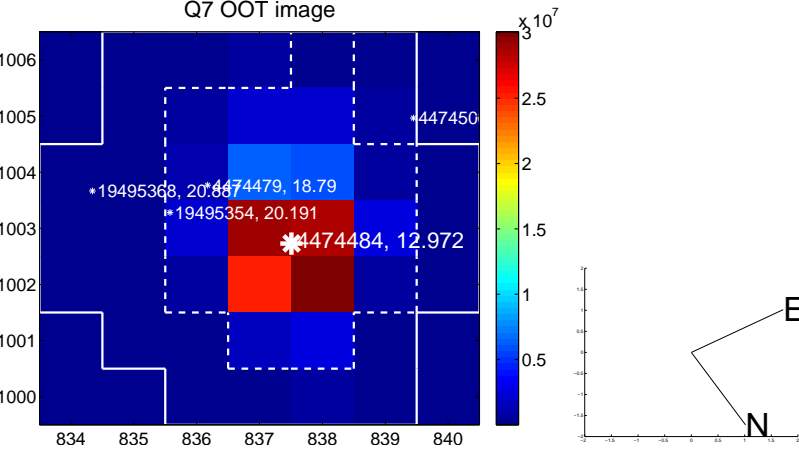
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 OOT image



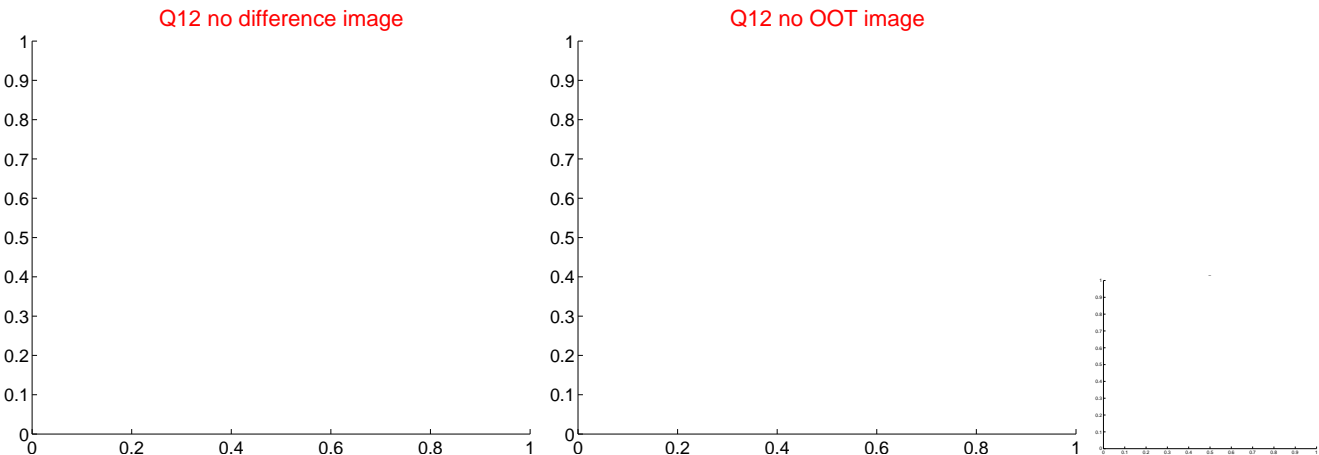
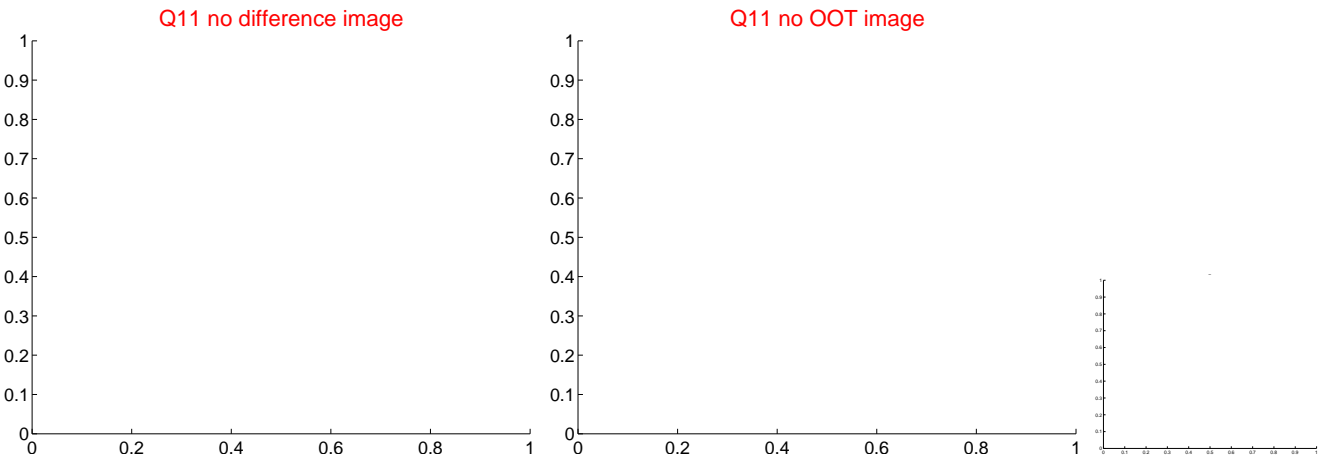
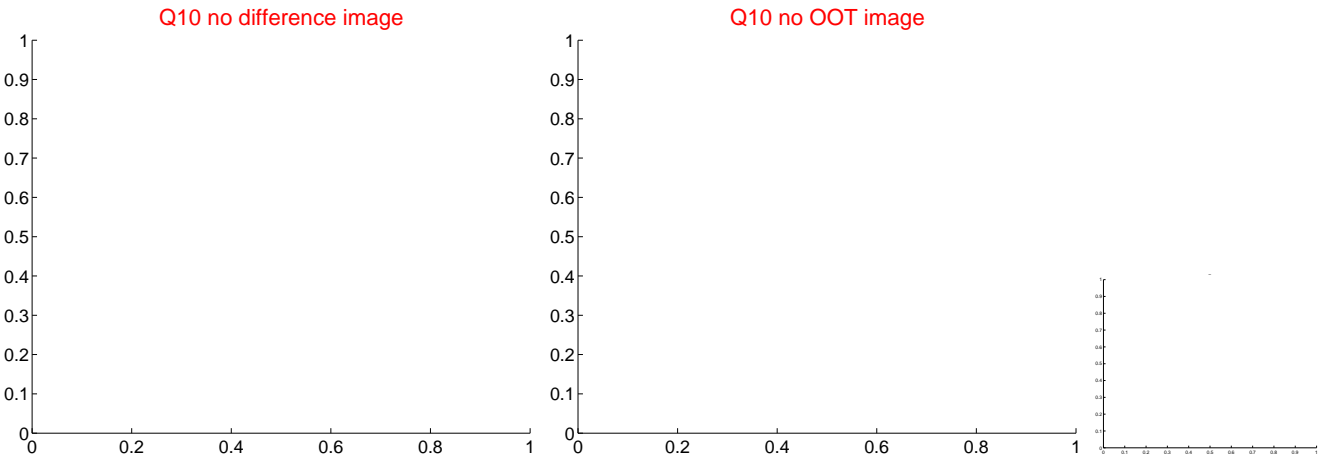
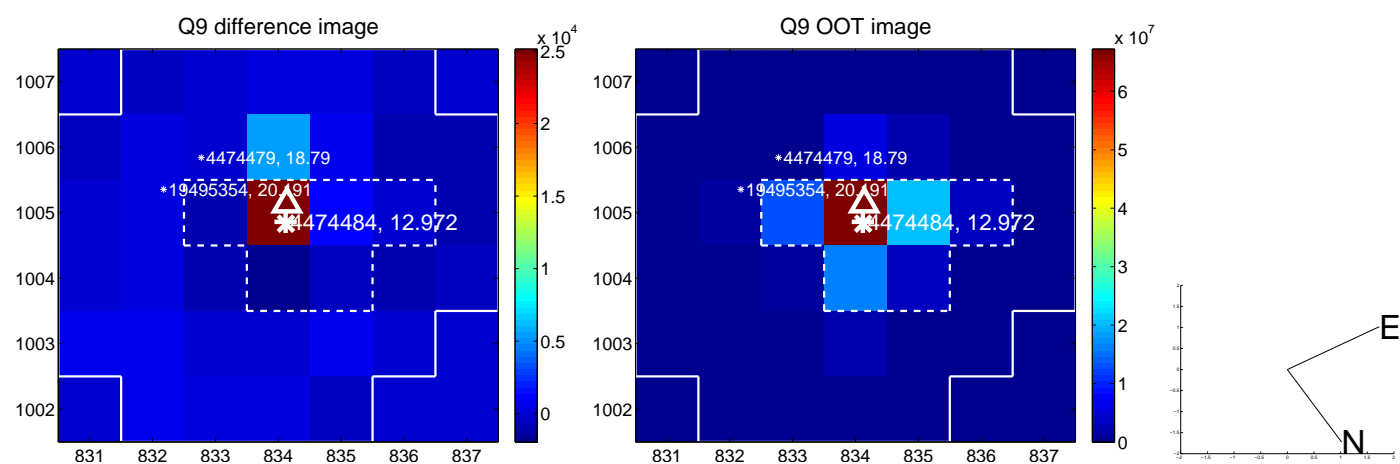
Q8 no difference image



Q8 no OOT image



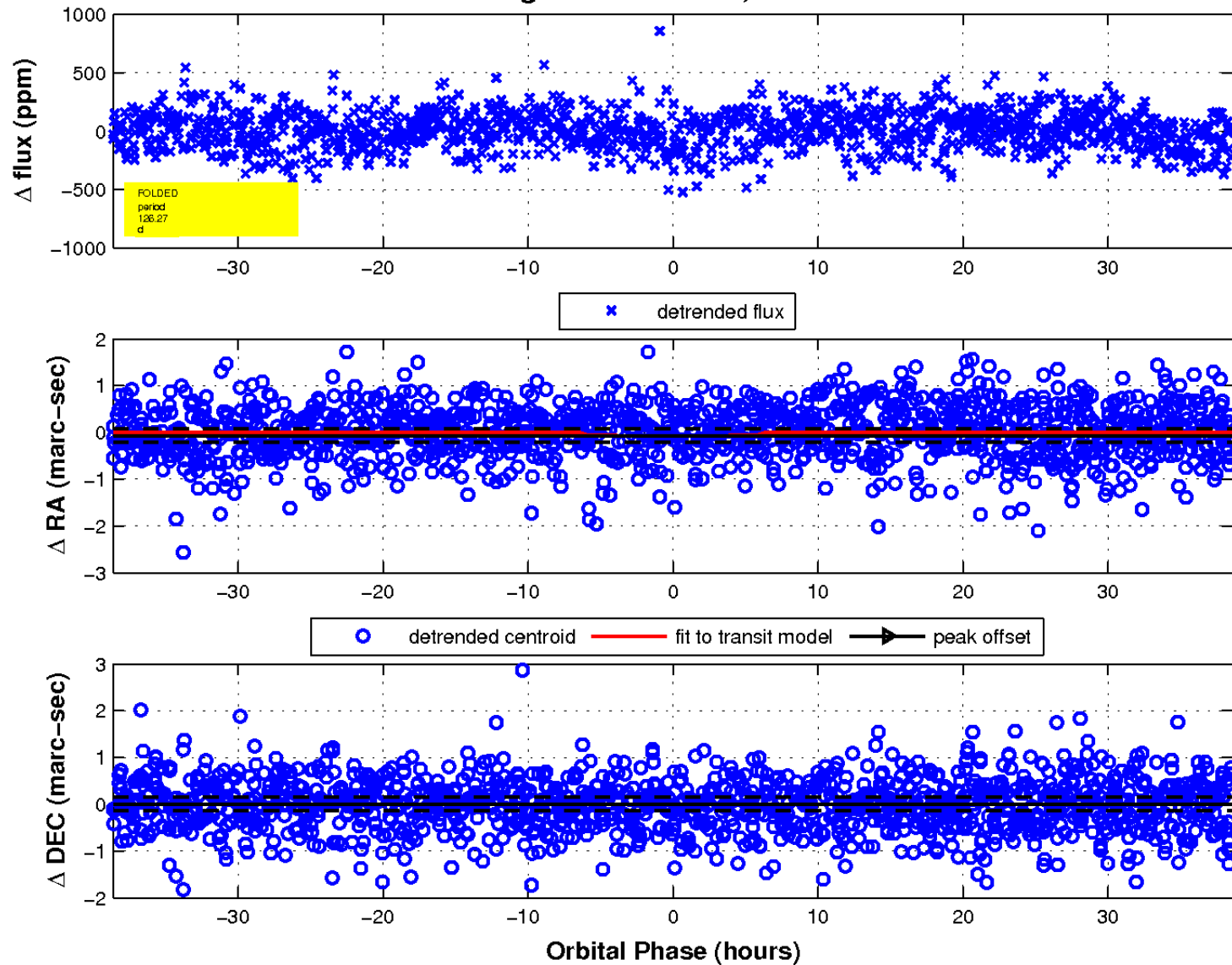
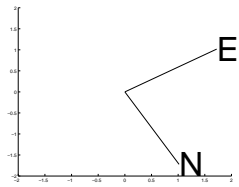
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

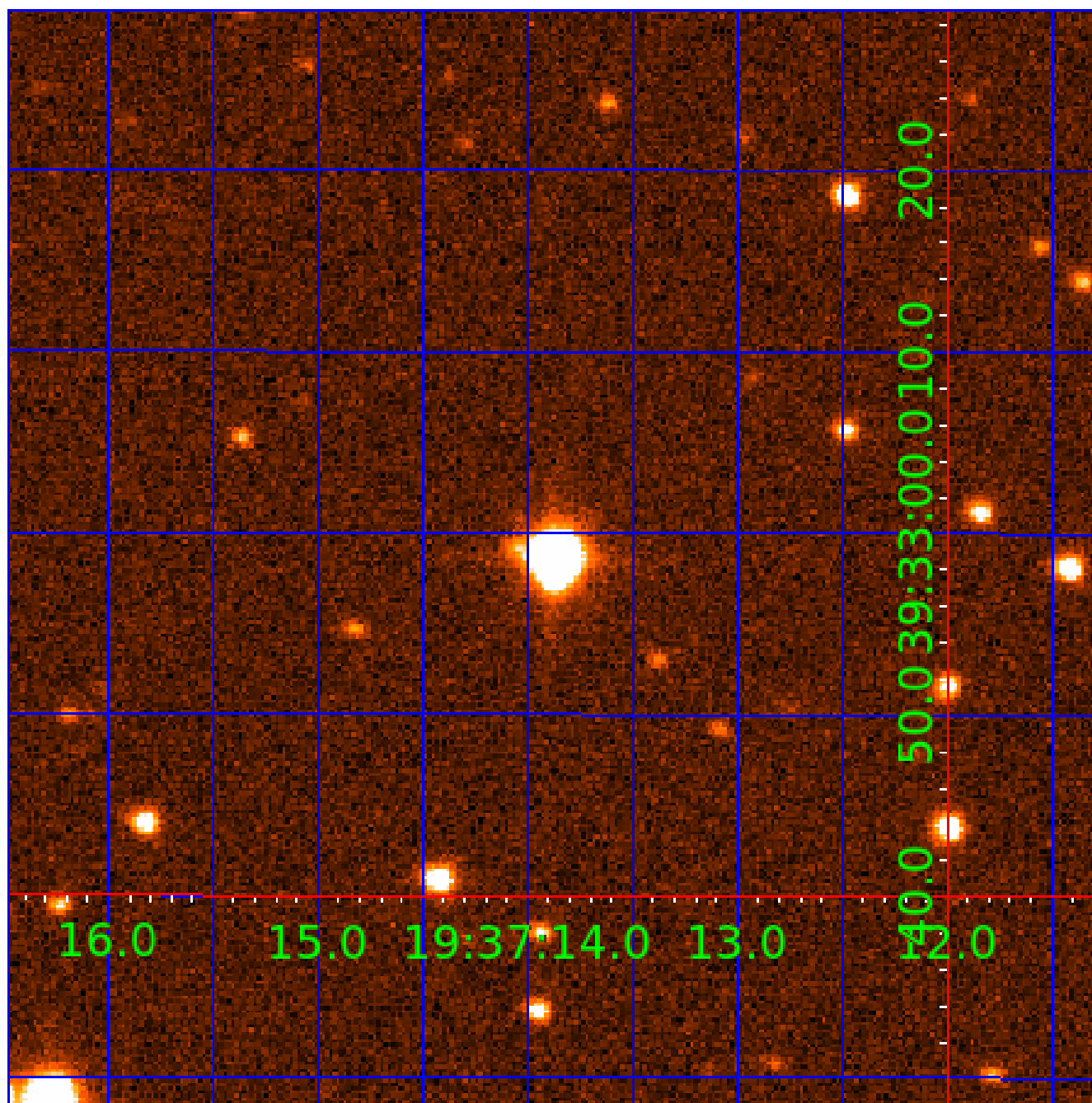


25



UKIRT Image

Declination



KIC 004474484

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})
004474484-01	OBS	No	348.648431	397.472181	78.3	21.765	8.6	3.1	2.40	7209	2.35	10.58
004474484-02	OBS	No	0.812804	132.057498	22.6	4.250	8.3	9.9	2.40	7209	1.29	34227.05
004474484-03	OBS	No	126.273650	187.886755	149.1	12.882	9.6	6.6	2.40	7209	3.24	40.98
004474484-04	OBS	No	93.569317	199.676165	289.5	1.913	8.5	8.6	2.40	7209	4.78	61.12
004474484-05	OBS	No	57.211617	135.978817	194.3	4.651	8.3	8.8	2.40	7209	4.03	117.77
004474484-06	OBS	No	65.490862	150.136107	222.7	3.536	7.6	7.1	2.40	7209	4.18	98.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004474484-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
004474484-02	OBS	FP	0.00	1	0	0	0	LPP_DV
004474484-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004474484-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004474484-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004474484-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

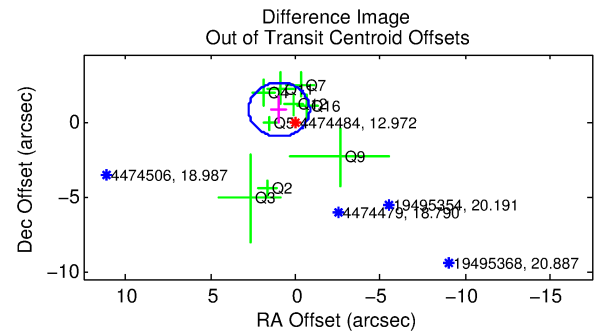
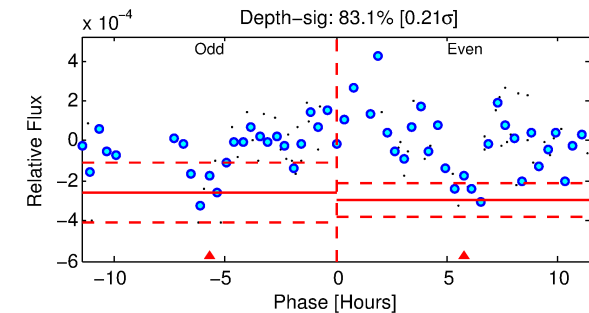
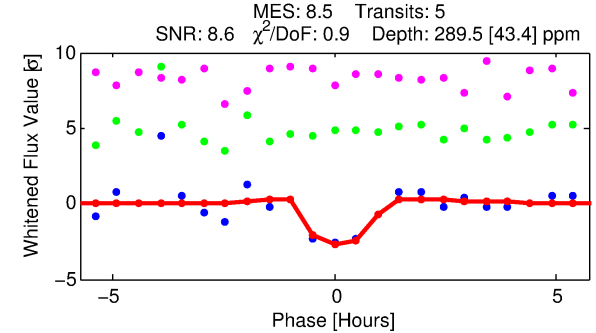
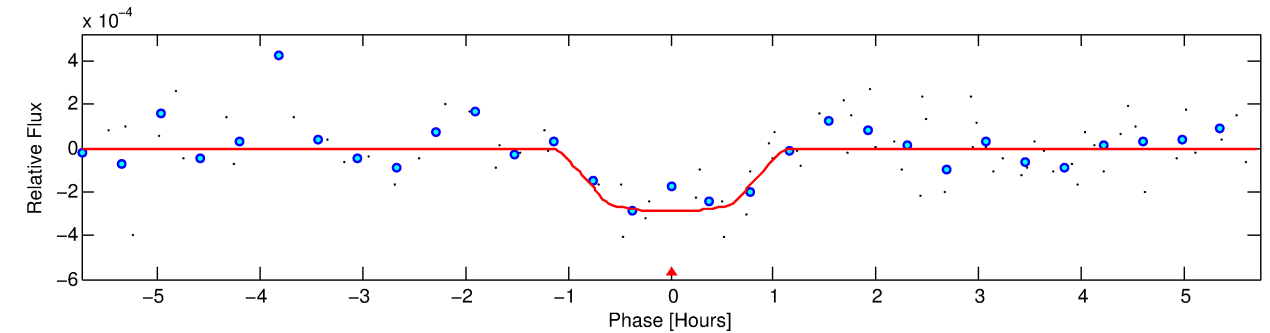
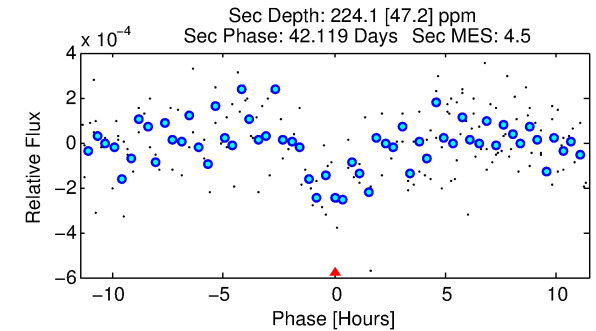
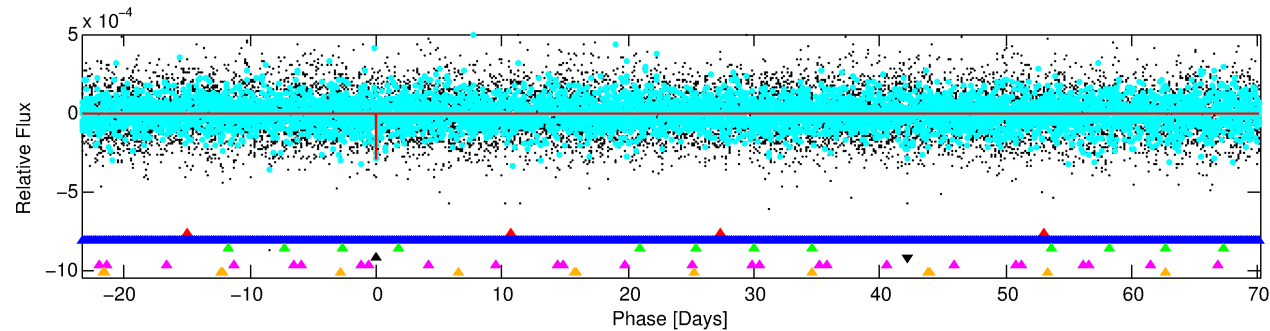
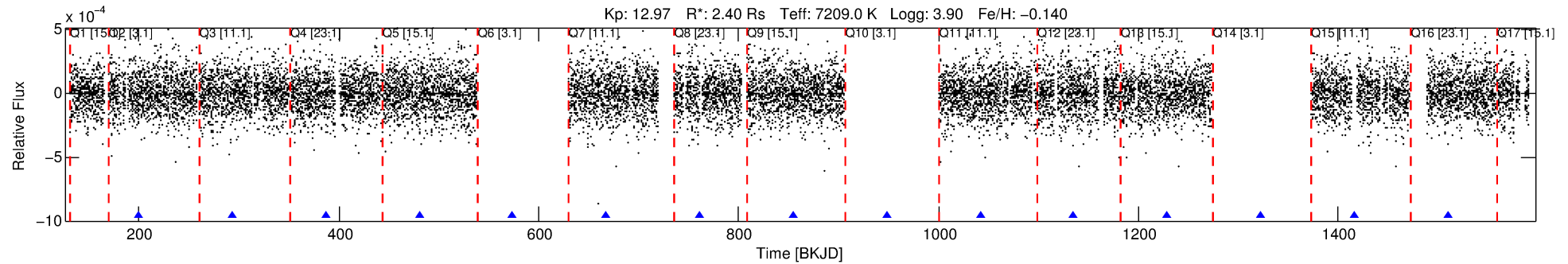
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004474484-04

No Significant Match Found

DV One-Page Summary

KIC: 4474484 Candidate: 4 of 6 Period: 93.569 d



DV Fit Results:

Period = 93.56932 [0.00095] d
Epoch = 199.6762 [0.0054] BKJD
Rp/R* = 0.0182 [0.0220]
a/R* = 176.08 [1305.79]
b = 0.90 [1.54]
Seff = 61.12 [34.26]
Teq = 713 [100] K
Rp = 4.78 [6.02] Re
a = 0.4783 [0.1612] AU
Ag = 1235.44 [3063.05] [0.40 σ]
Teffp = 6535 [3968] K [1.47 σ]

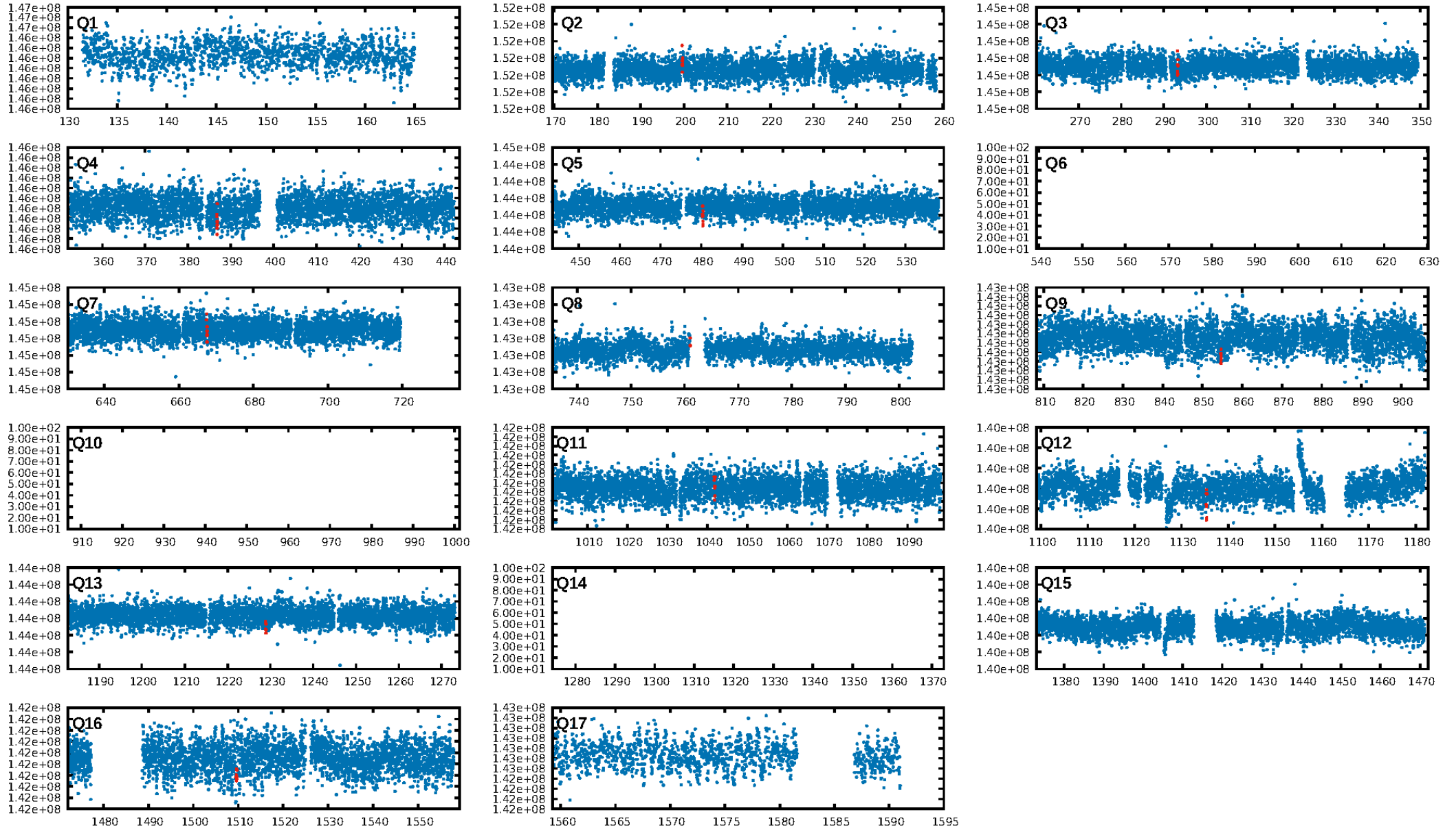
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [167.61 σ]
LongPeriod-sig: 100.0% [60.27 σ]
ModelChiSquare2-sig: 42.4%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 9.94e-11
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 2.61
Centroid-sig: 42.4%
Centroid-so: 0.711 arcsec [0.78 σ]
OotOffset-rm: 1.255 arcsec [2.08 σ]
KicOffset-rm: 1.248 arcsec [2.00 σ]
OotOffset-st: 1/3/3/2 [9]
KicOffset-st: 1/3/3/2 [9]
DiffImageQuality-fgm: 0.56 [5/9]
DiffImageOverlap-fno: 0.22 [2/9]

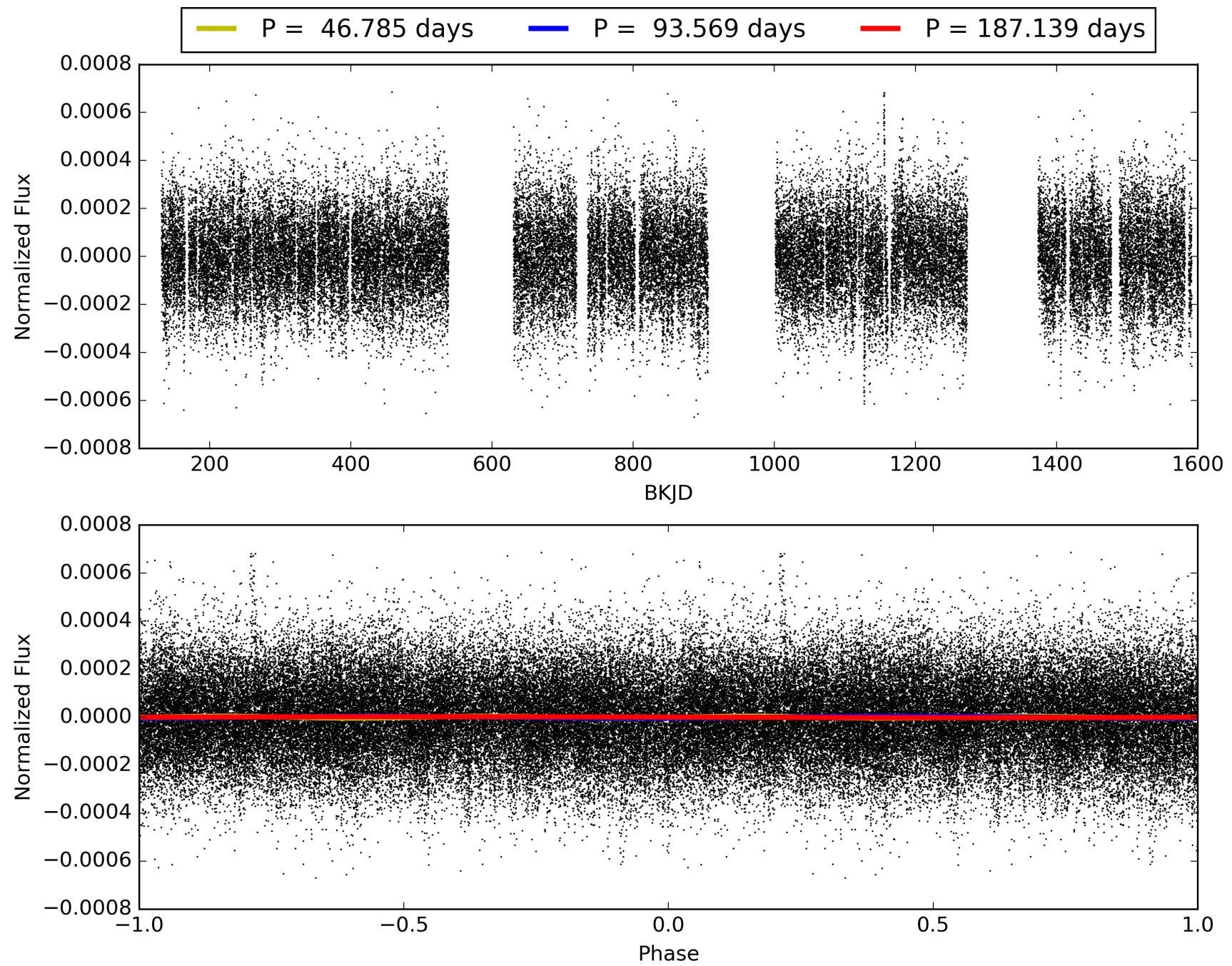
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:03:54 Z

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

TCE 004474484-04, PDC Light Curves

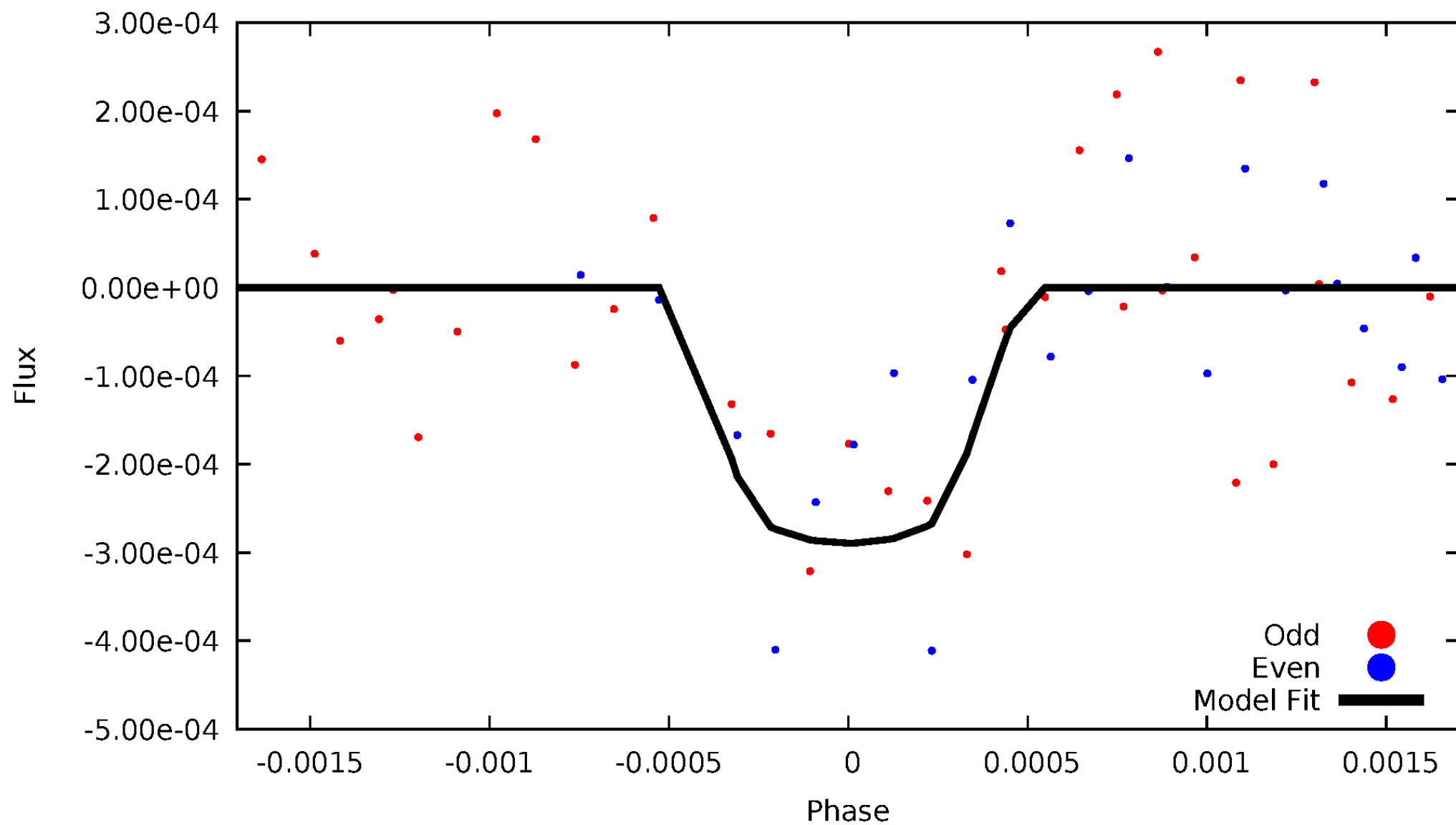


TCE 004474484-04



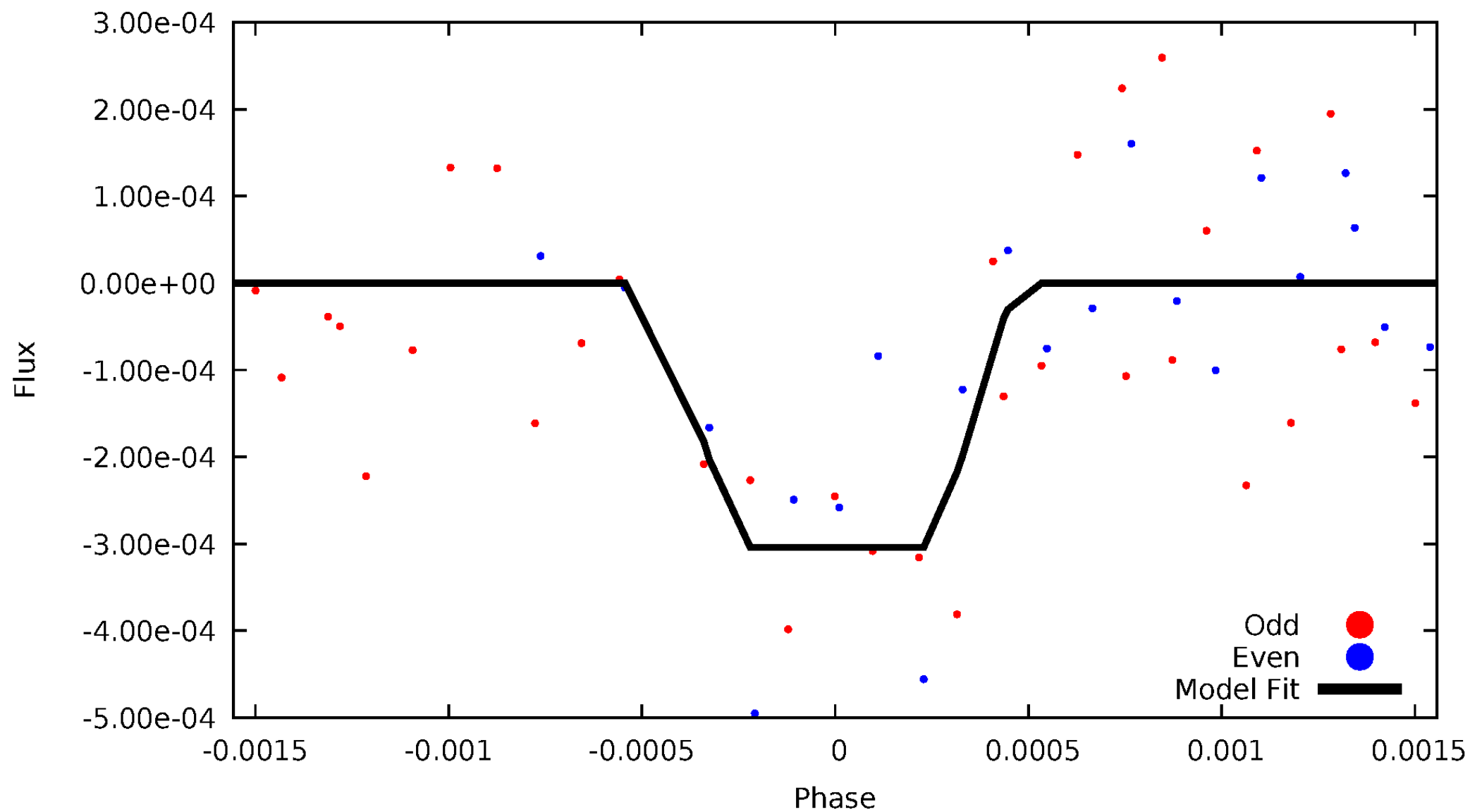
DV Odd/Even

TCE 004474484-04



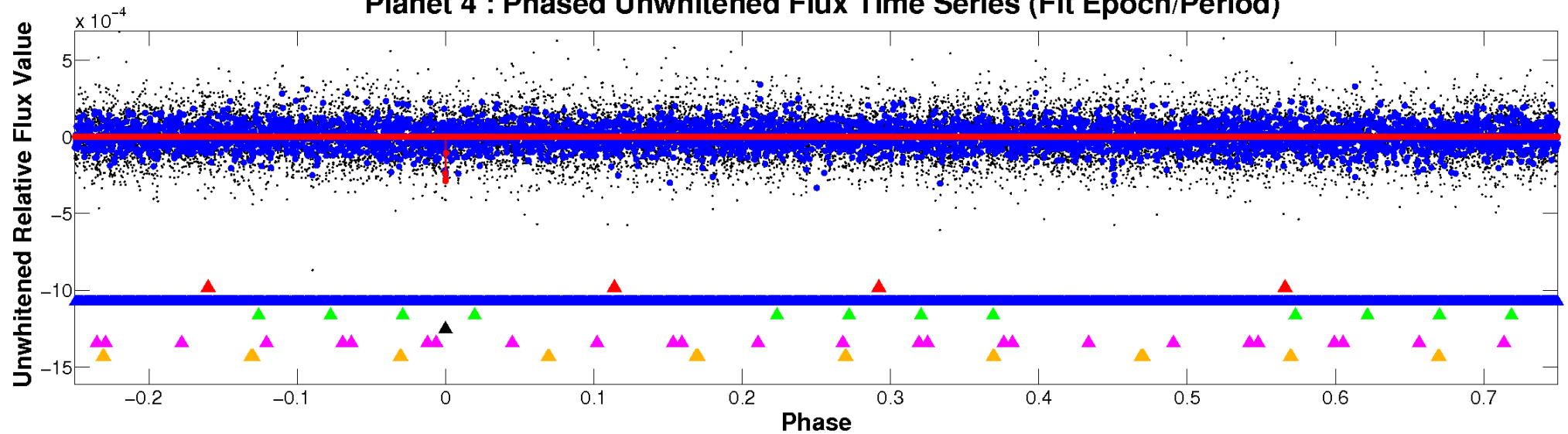
ALT Odd/Even

TCE 004474484-04

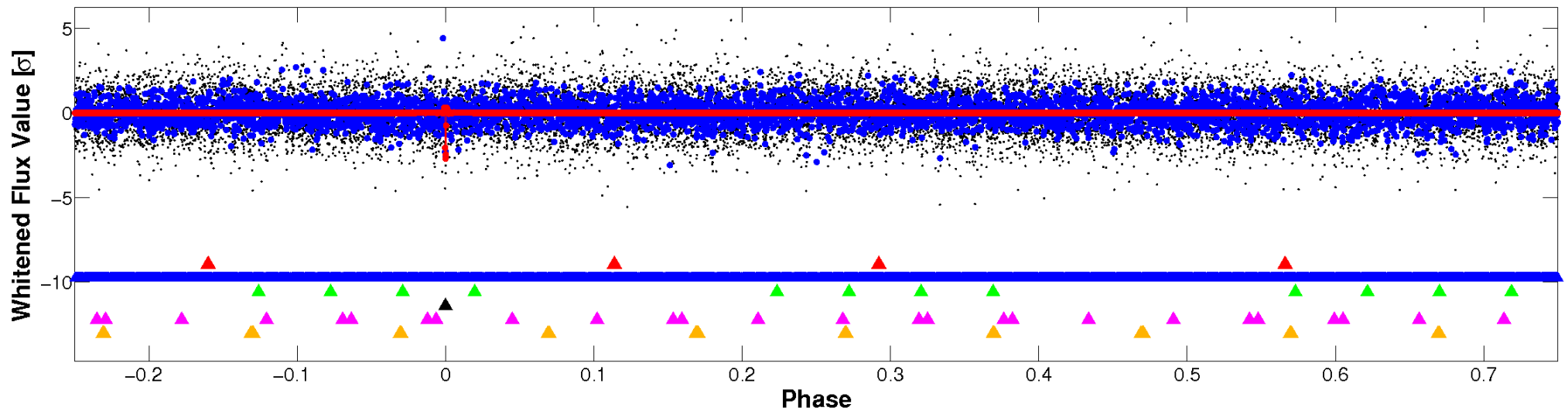


Non-Whitened Vs. Whitened Light Curve

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

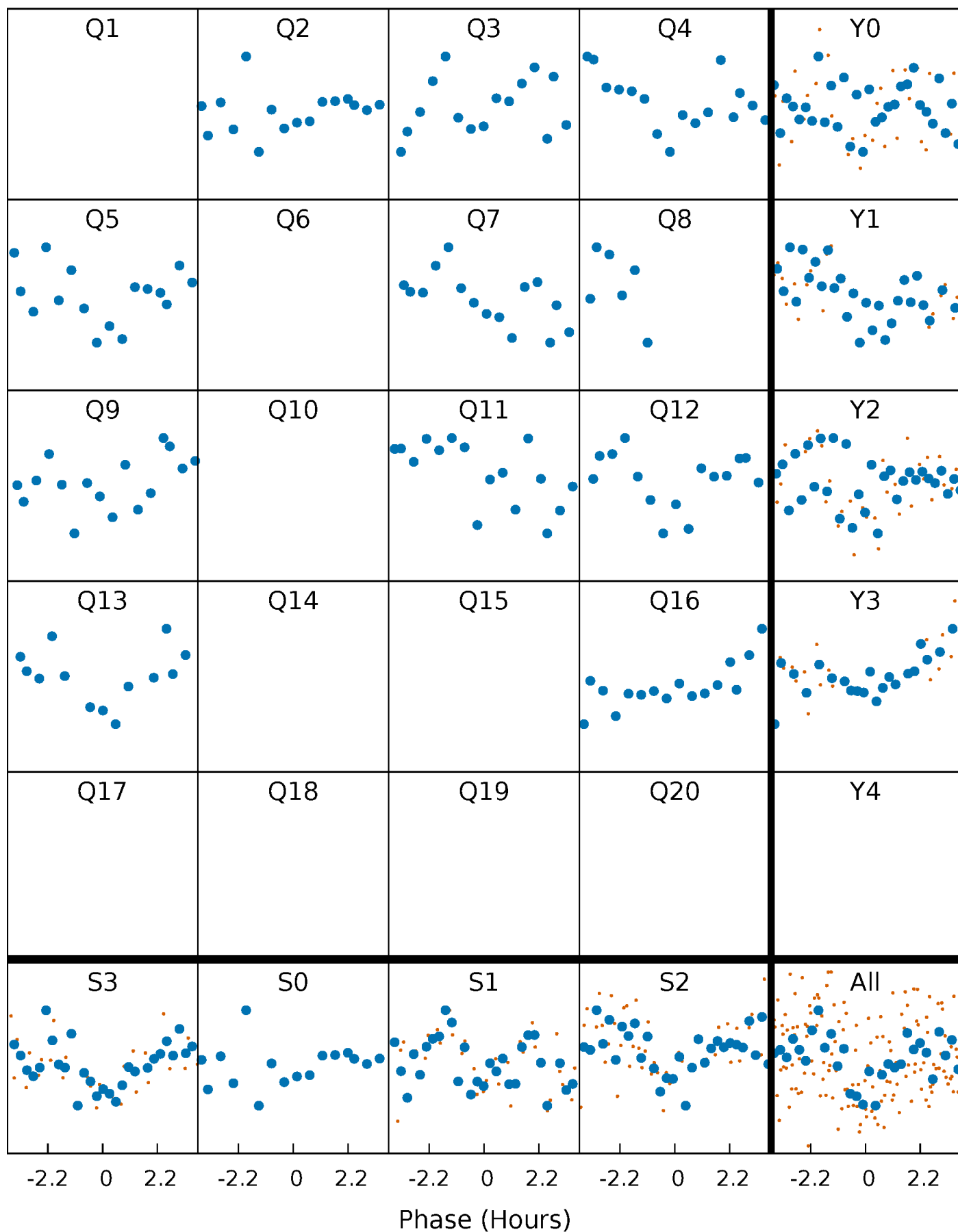


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



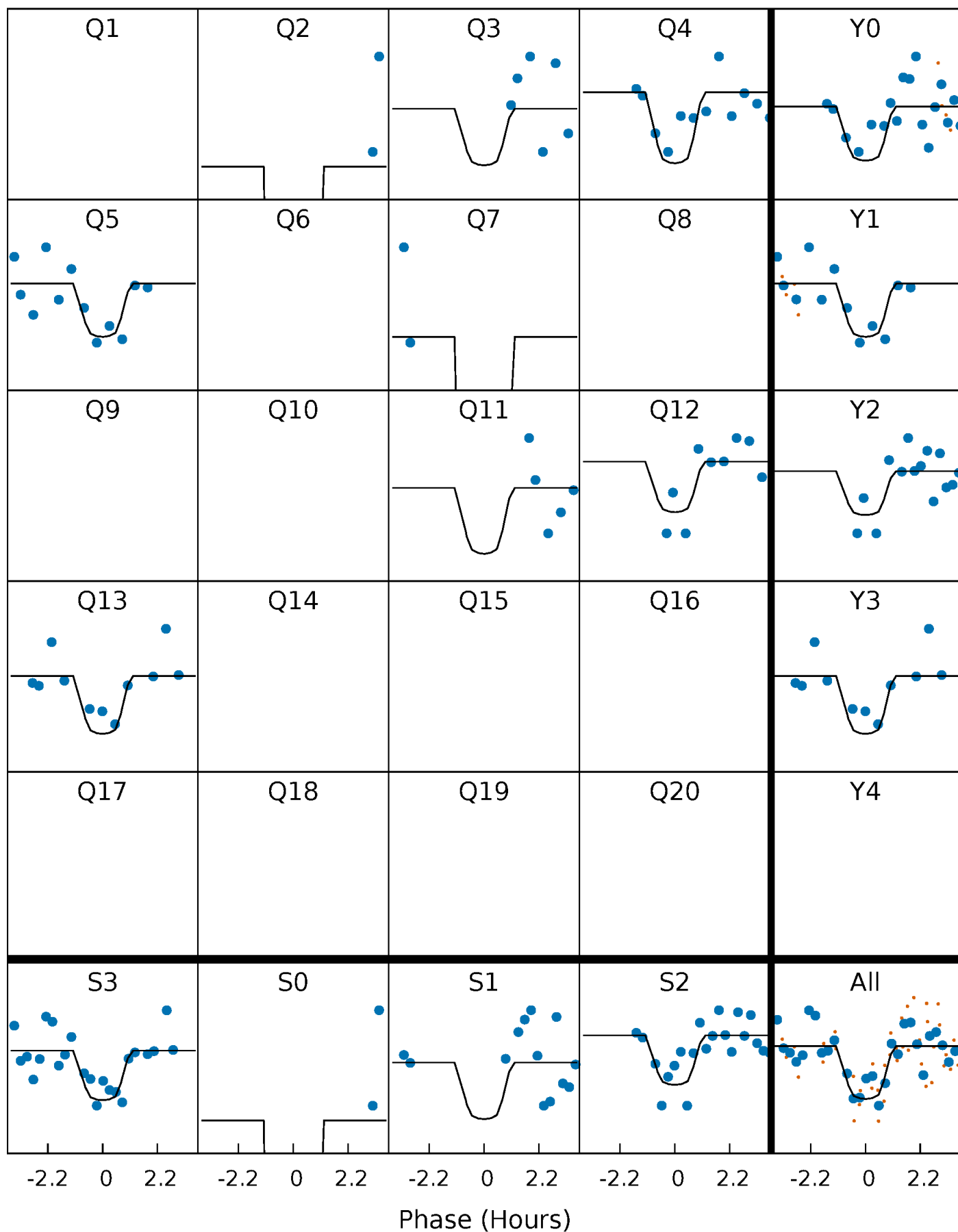
PDC Quarter-Phased Transit Curves

TCE 004474484-04 P= 93.569317 Days $T_0=199.676165$ (BKJD)



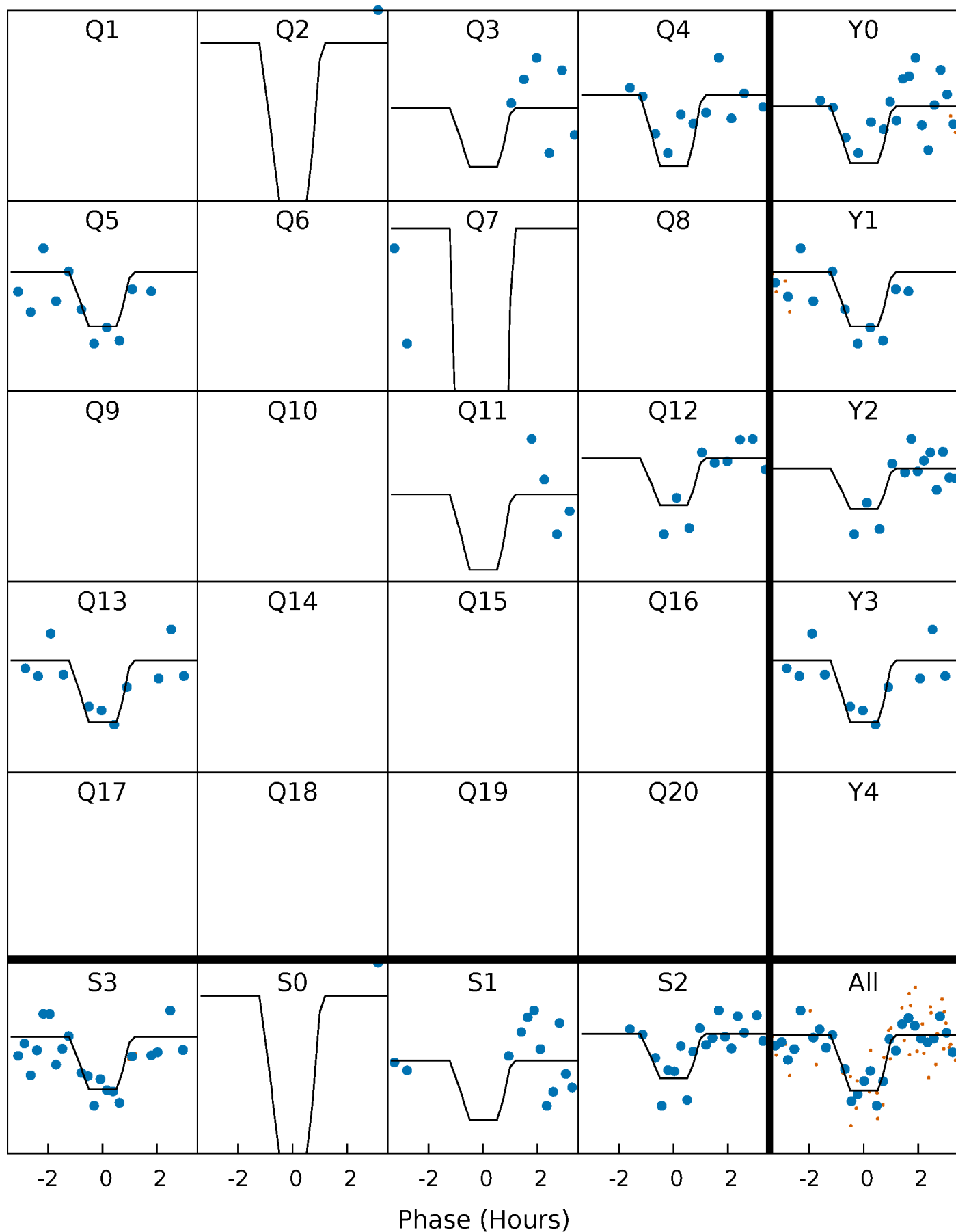
DV Quarter-Phased Transit Curves

TCE 004474484-04 P= 93.569317 Days $T_0=199.676165$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

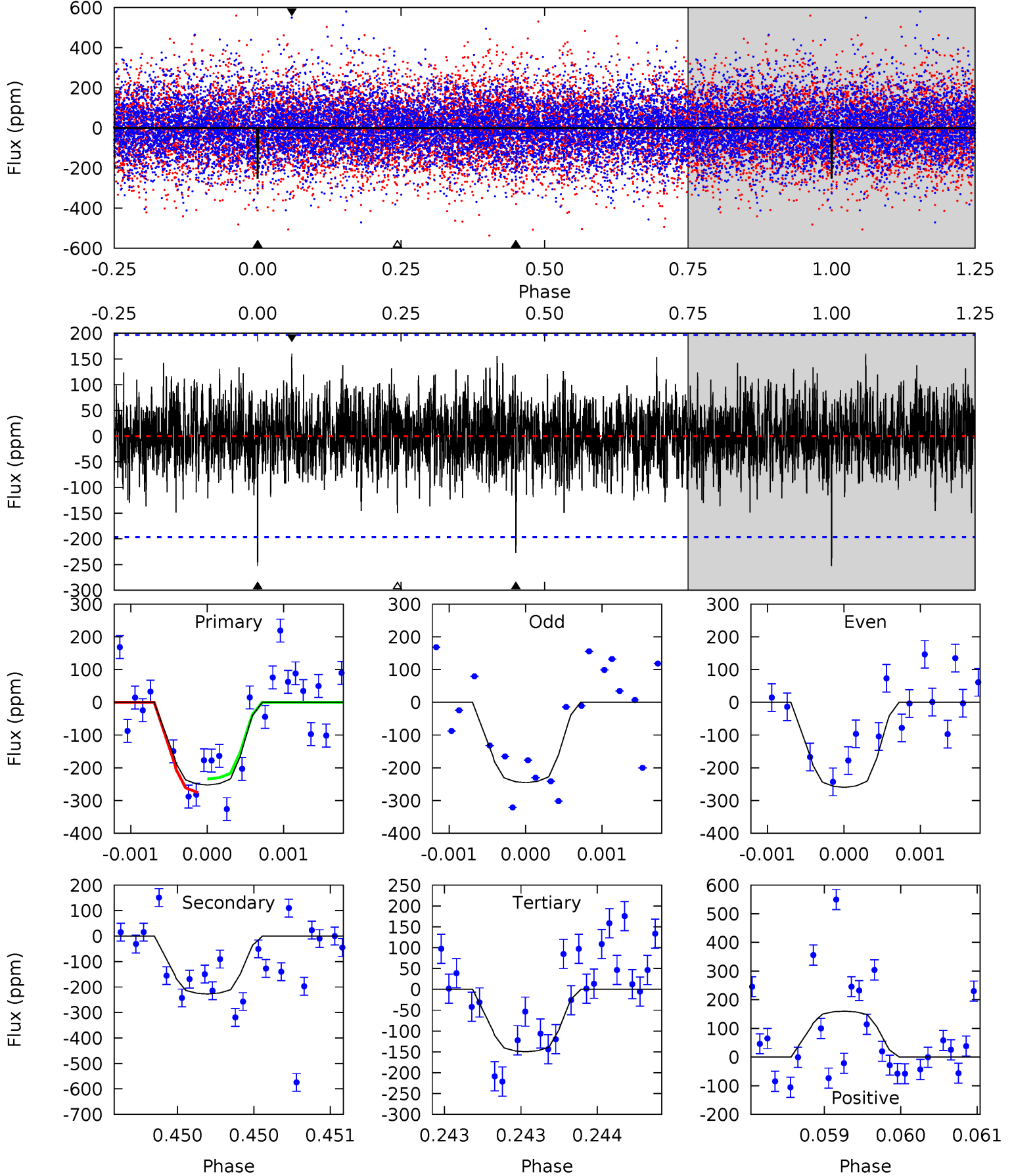
TCE 004474484-04 P= 93.569177 Days $T_0=199.677939$ (BKJD)



DV Model-Shift Uniqueness Test

004474484-04, P = 93.569317 Days, E = 106.106848 Days

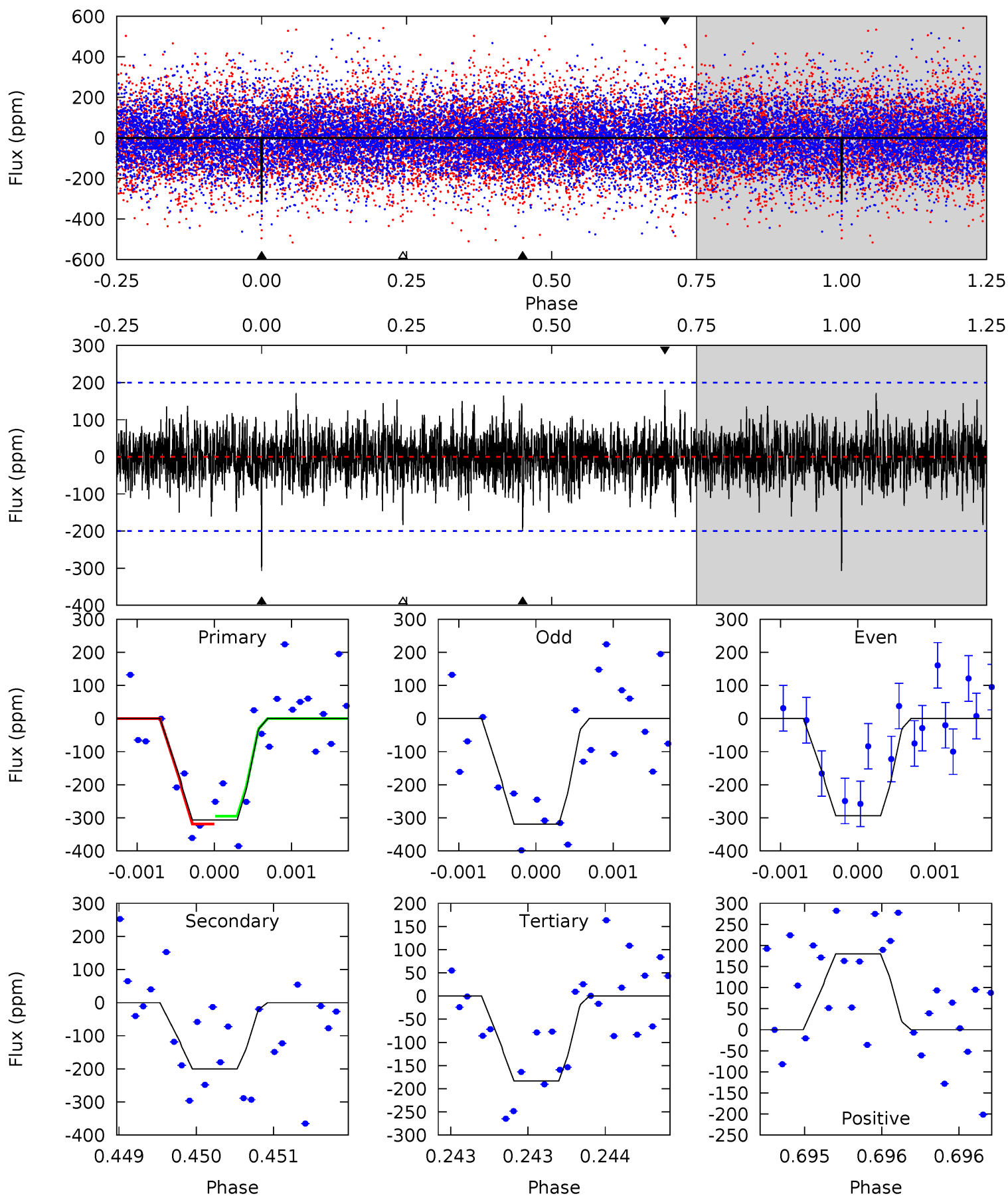
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.06	6.35	4.19	4.47	5.50	3.37	1.30	2.88	2.59	2.17	1.88	0.20	1.02	0.39	0.52



Alt Model-Shift Uniqueness Test

004474484-04, P = 93.569177 Days, E = 106.108762 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.43	5.49	5.03	4.94	5.50	3.36	1.31	3.39	3.48	0.46	0.55	0.34	0.95	0.37	0.31



Stellar Parameters For KIC 004474484

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7209^{+226}_{-327}	$3.898^{+0.308}_{-0.132}$	$-0.140^{+0.250}_{-0.350}$	$2.404^{+0.578}_{-0.866}$	$1.667^{+0.168}_{-0.364}$	$0.169^{+0.365}_{-0.064}$
	+3%/-5%	+8%/-3%	+179%/-250%	+24%/-36%	+10%/-22%	+216%/-38%
Source	KIC0	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 004474484-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-227 ± 36	$5.83^{+4.94}_{-3.84}$	974^{+79}_{-96}	5661^{+4582}_{-1265}	823^{+6145}_{-588}
Alt.	-200 ± 36	$5.76^{+5.10}_{-3.70}$	977^{+72}_{-91}	5576^{+4103}_{-1276}	764^{+4720}_{-552}

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

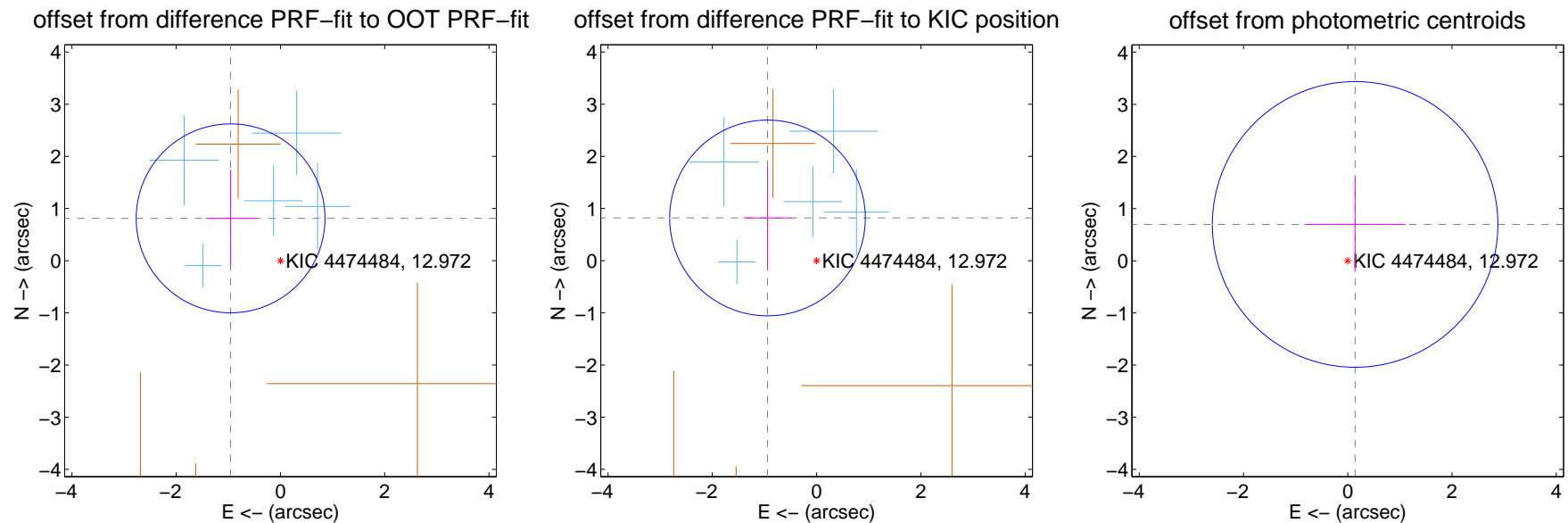
DV Centroid Data

Supplemental centroid analysis for 004474484-04. Kepler magnitude: 12.97. Transit SNR 8.59

There are 5 quarters with good PRF difference image offsets

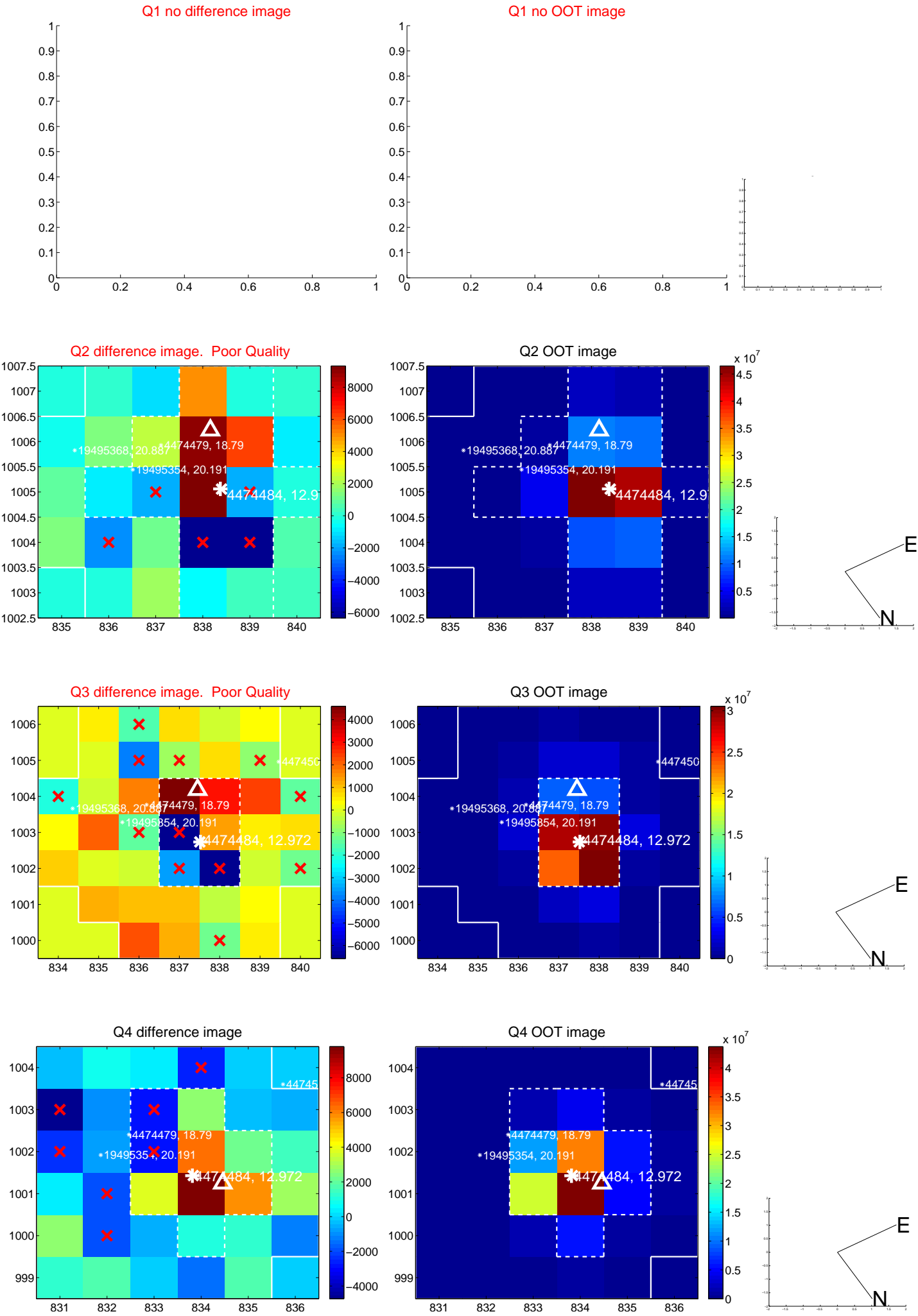
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.255 ± 0.604	2.08	0.957 ± 0.475	0.812 ± 0.934
PRF-fit source offset from KIC position	1.248 ± 0.625	2.00	0.942 ± 0.460	0.819 ± 0.988
photometric centroid source offset	0.71 ± 0.91	0.78	-0.14 ± 0.96	0.70 ± 0.91

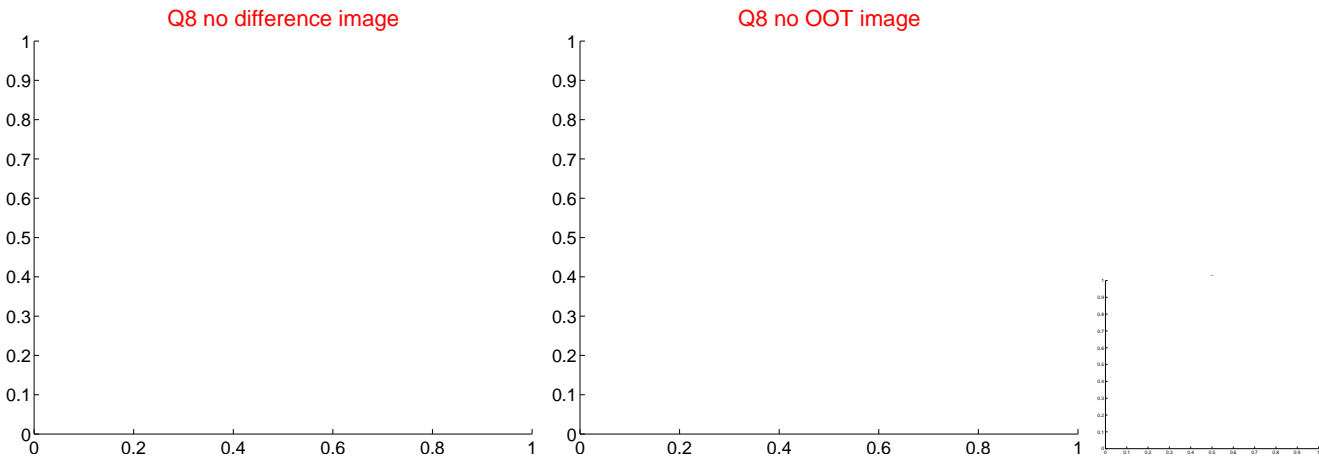
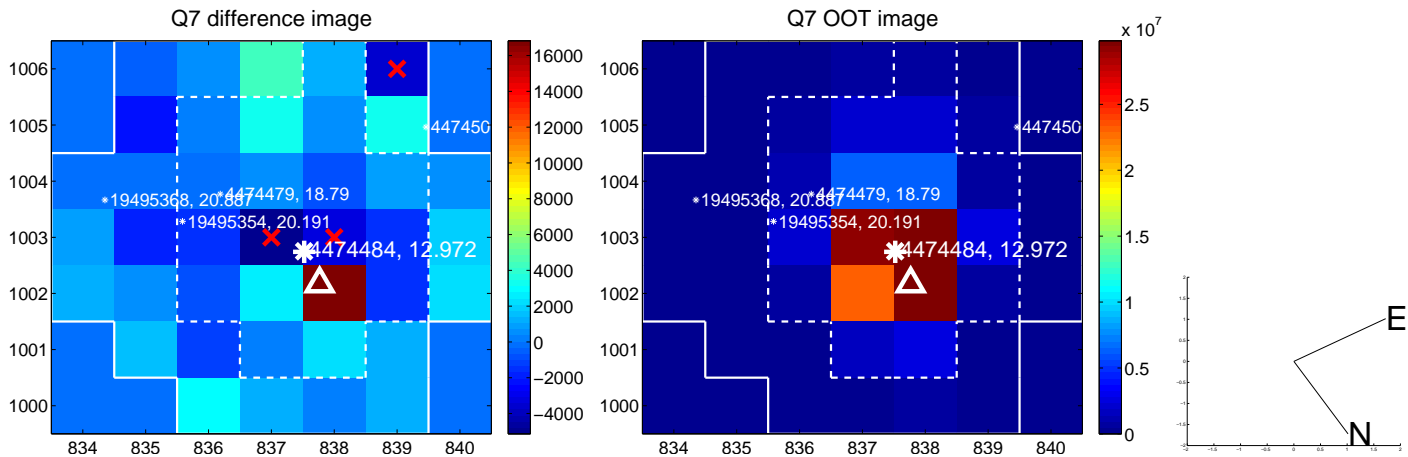
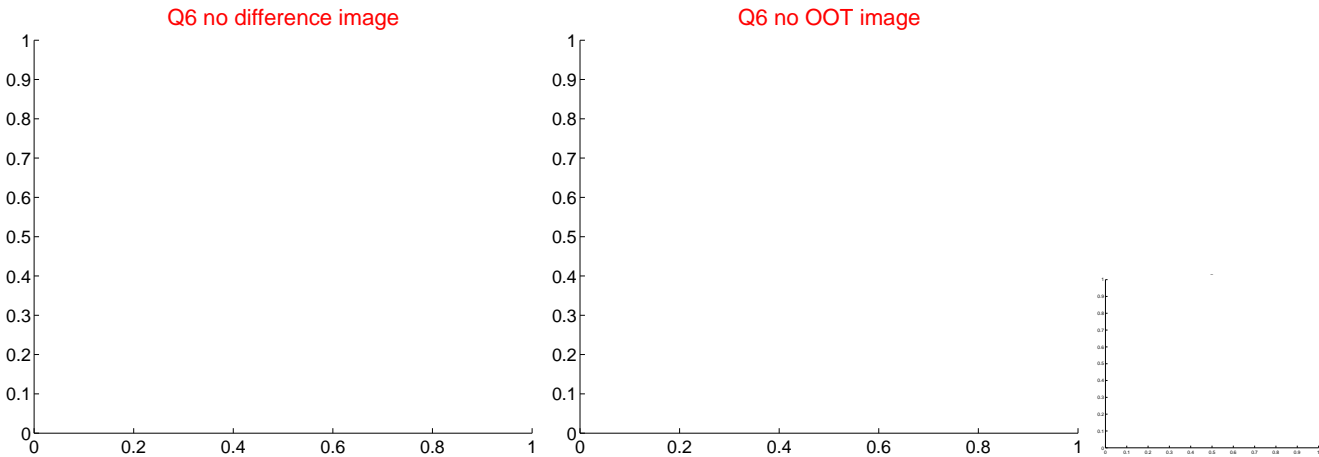
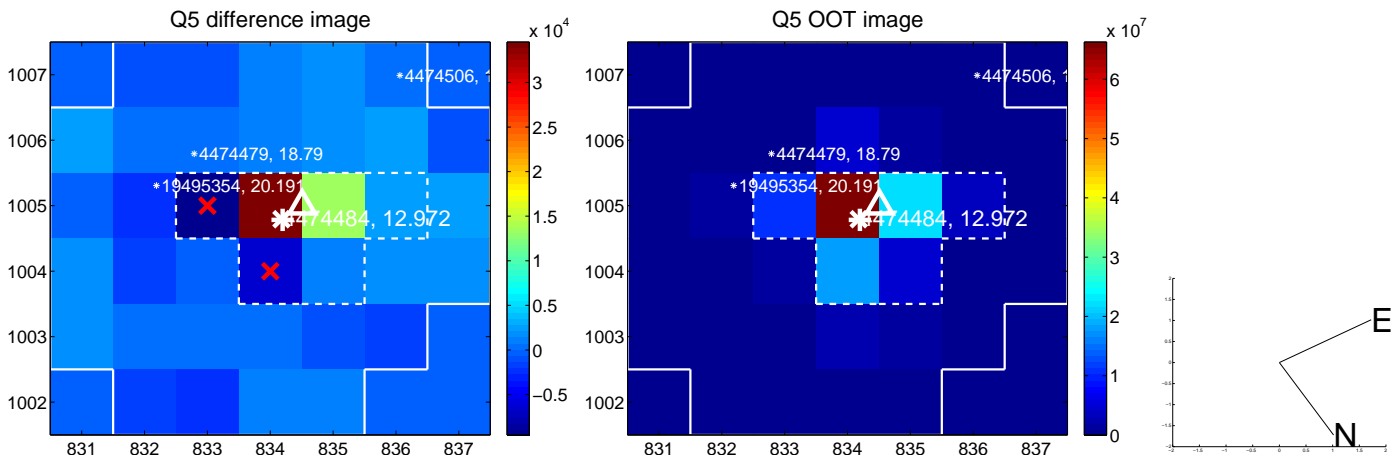


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

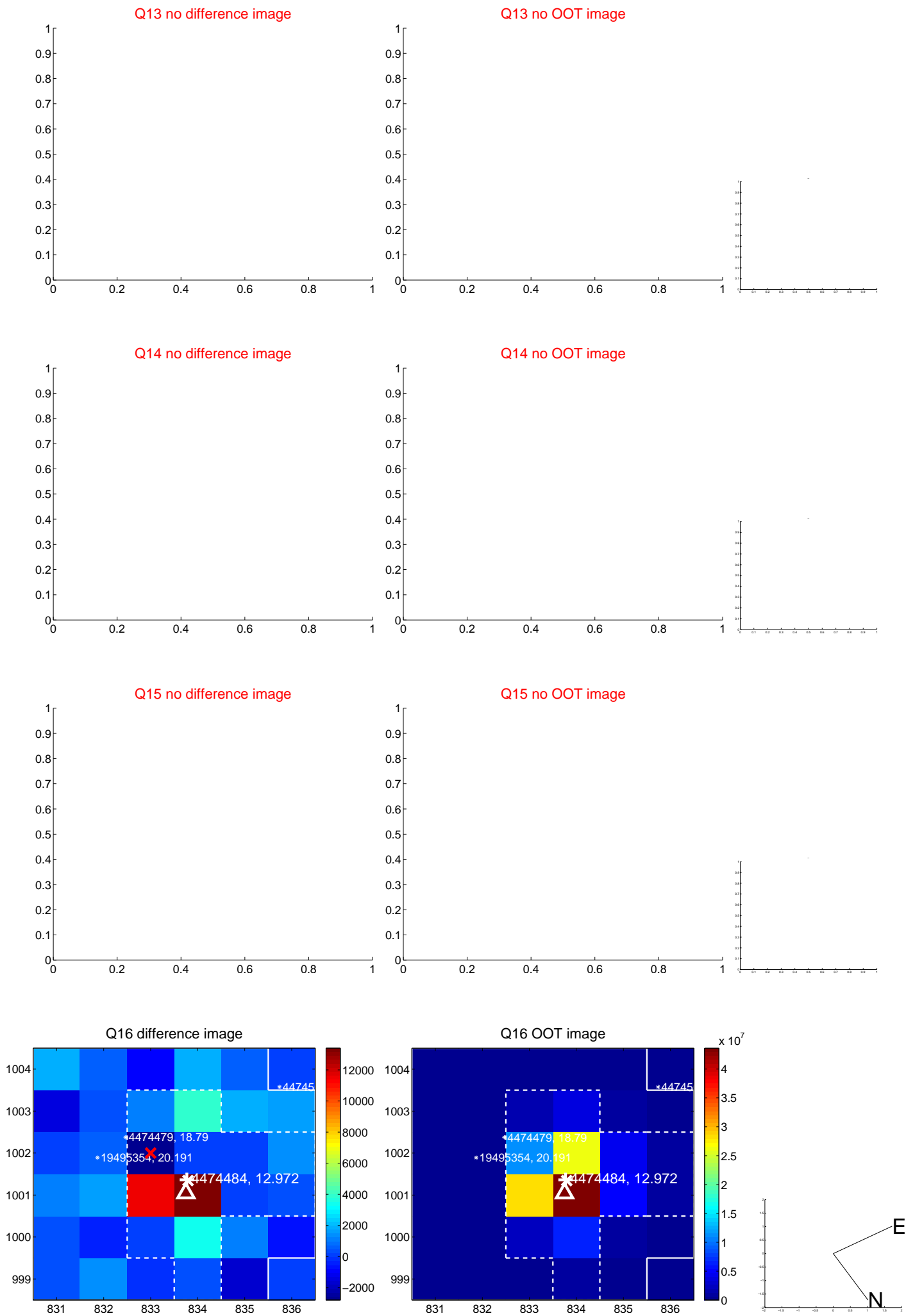
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



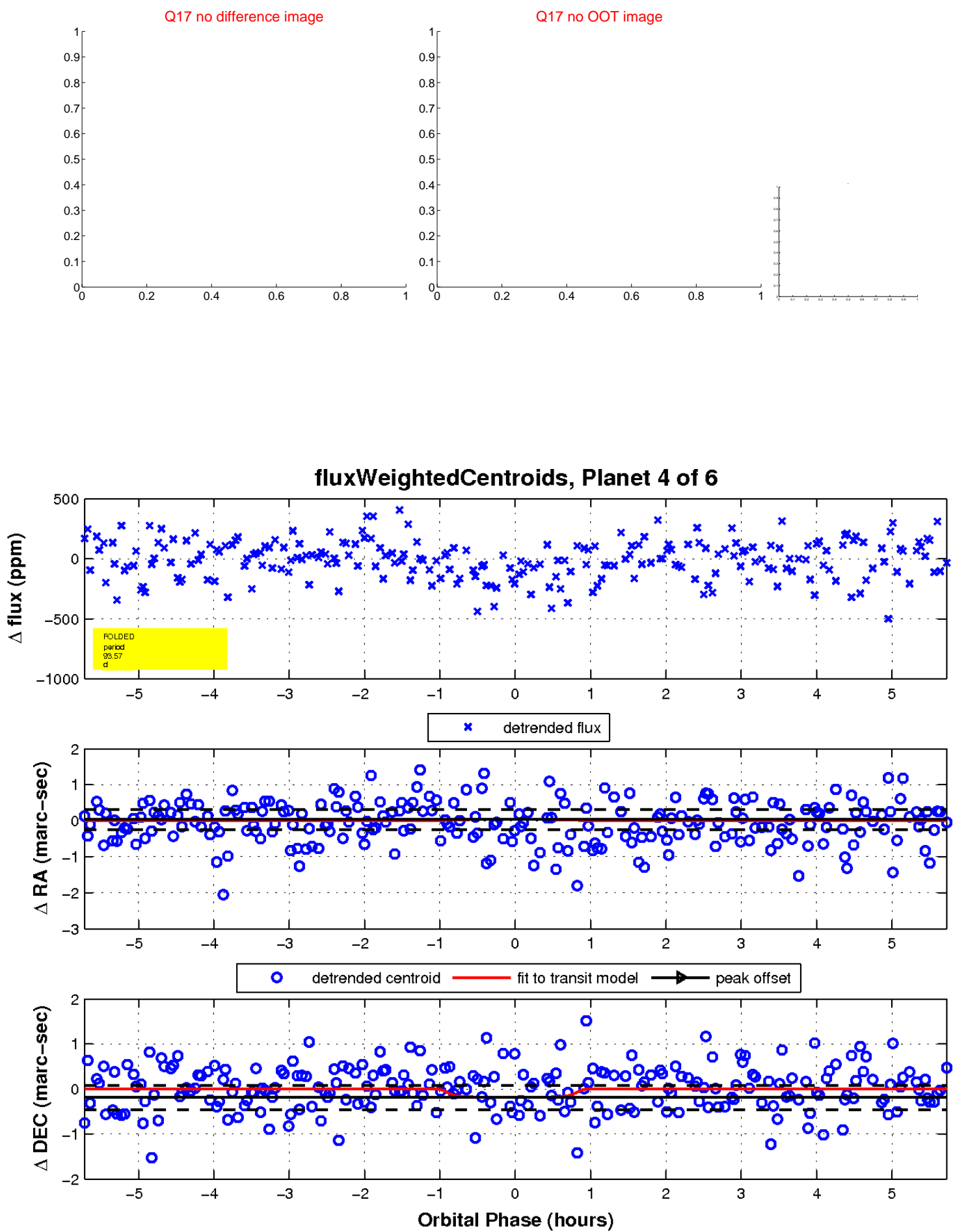
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

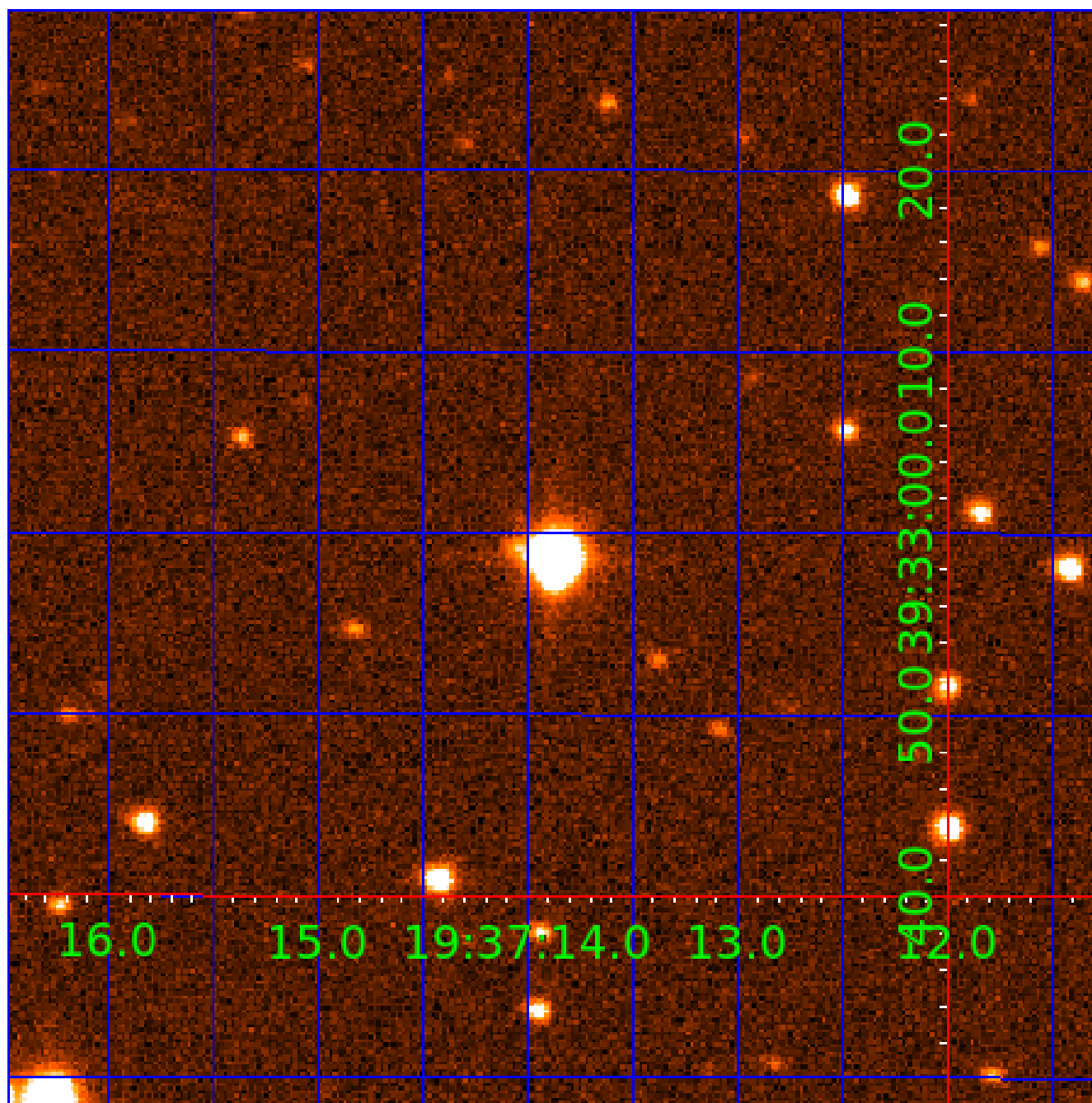


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004474484

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})
004474484-01	OBS	No	348.648431	397.472181	78.3	21.765	8.6	3.1	2.40	7209	2.35	10.58
004474484-02	OBS	No	0.812804	132.057498	22.6	4.250	8.3	9.9	2.40	7209	1.29	34227.05
004474484-03	OBS	No	126.273650	187.886755	149.1	12.882	9.6	6.6	2.40	7209	3.24	40.98
004474484-04	OBS	No	93.569317	199.676165	289.5	1.913	8.5	8.6	2.40	7209	4.78	61.12
004474484-05	OBS	No	57.211617	135.978817	194.3	4.651	8.3	8.8	2.40	7209	4.03	117.77
004474484-06	OBS	No	65.490862	150.136107	222.7	3.536	7.6	7.1	2.40	7209	4.18	98.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004474484-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
004474484-02	OBS	FP	0.00	1	0	0	0	LPP_DV
004474484-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004474484-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004474484-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004474484-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

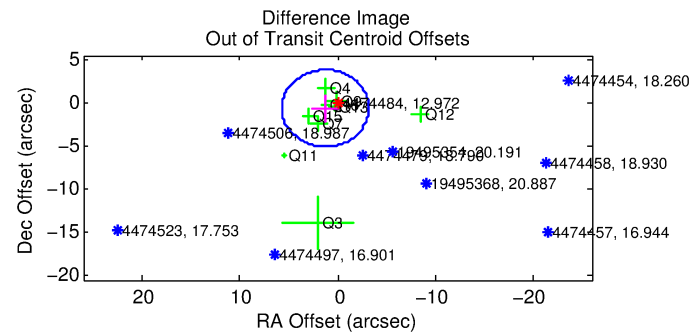
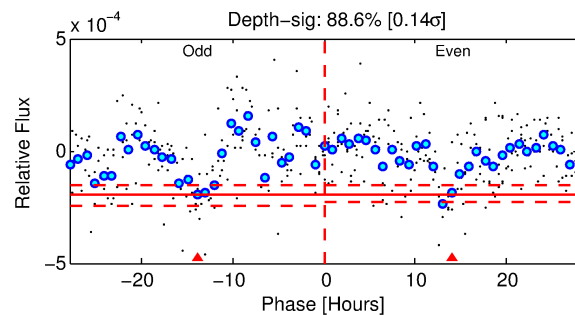
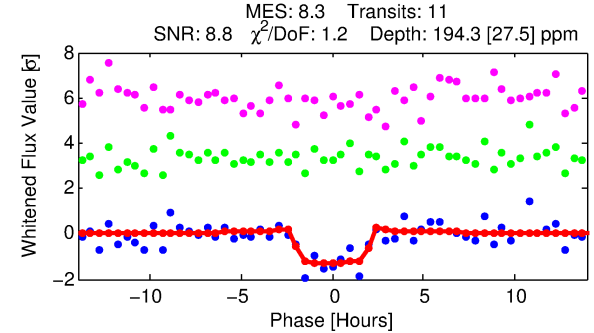
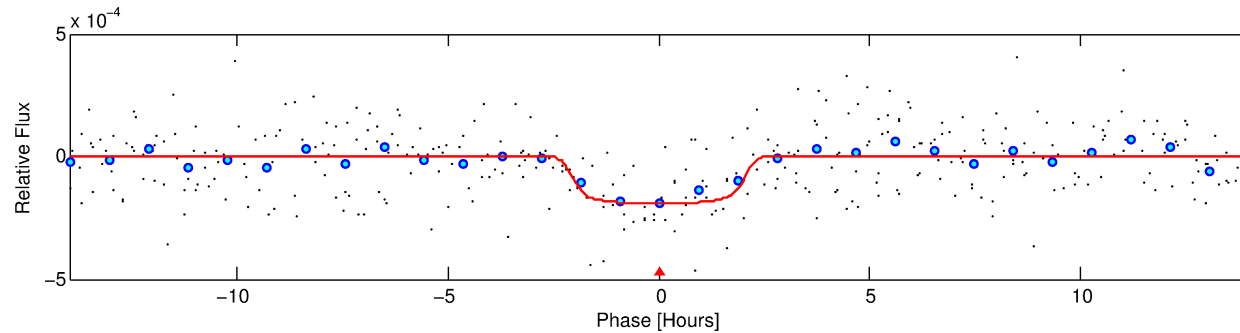
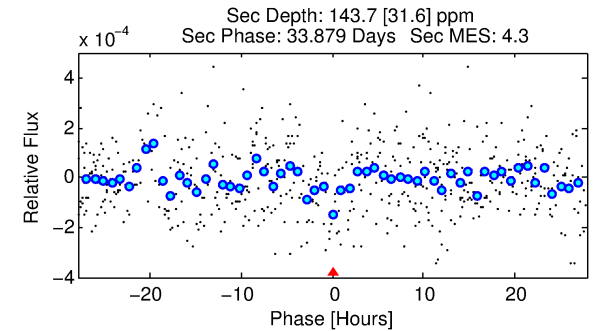
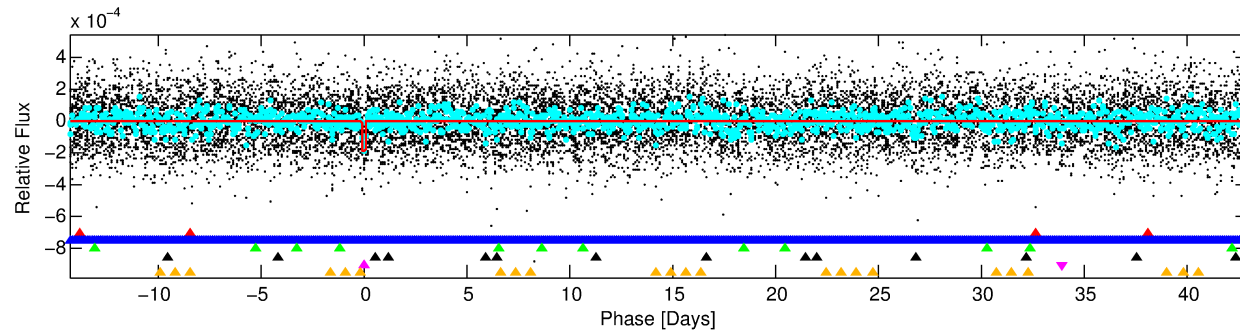
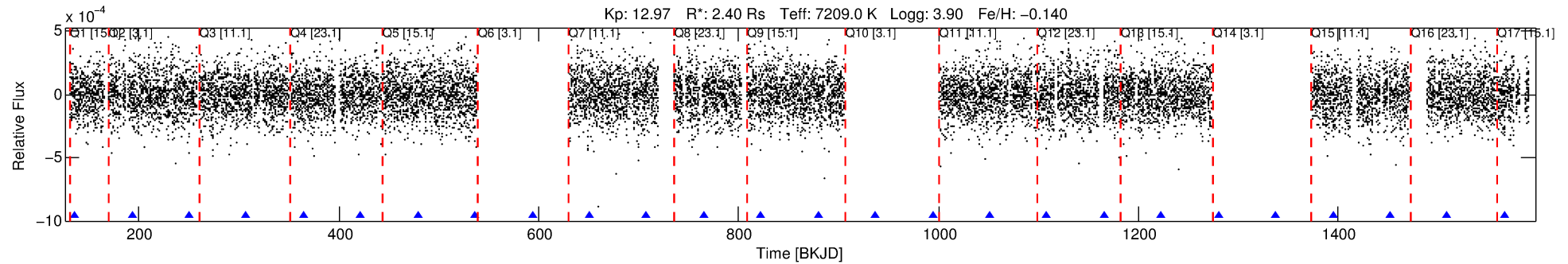
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004474484-05

No Significant Match Found

DV One-Page Summary

KIC: 4474484 Candidate: 5 of 6 Period: 57.212 d



DV Fit Results:

Period = 57.21162 [0.00067] d
Epoch = 135.9788 [0.0105] BKJD
Rp/R* = 0.0154 [0.0028]
a/R* = 37.24 [36.64]
b = 0.93 [0.14]
Seff = 117.77 [66.01]
Teff = 840 [118] K
Rp = 4.03 [1.63] Re
a = 0.3446 [0.1161] AU
Ag = 578.37 [394.38] [1.46σ]
Teffp = 6369 [741] K [7.37σ]

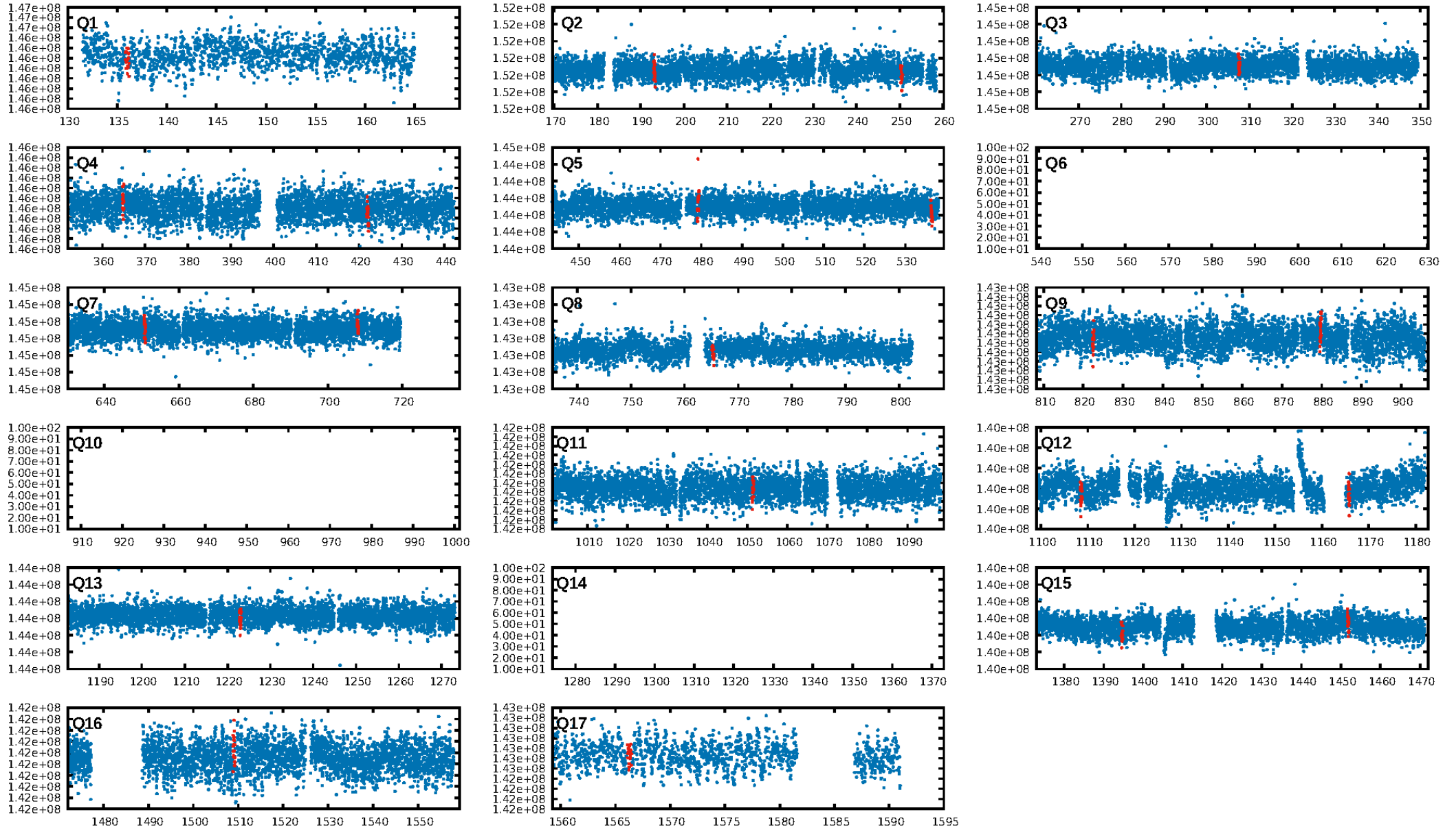
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [214.85σ]
LongPeriod-sig: 100.0% [34.01σ]
ModelChiSquare2-sig: 93.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.06e-10
RollingBand-fgt: 1.00 [10/10]
GhostDiagnostic-chr: -31.42
Centroid-sig: 52.3%
Centroid-so: 0.394 arcsec [0.60σ]
OotOffset-rm: 1.421 arcsec [0.96σ]
OotOffset-st: 0/4/3/2 [9]
KicOffset-rm: 1.421 arcsec [0.99σ]
KicOffset-st: 0/4/3/2 [9]
DiffImageQuality-fgm: 0.56 [5/9]
DiffImageOverlap-fno: 0.00 [0/14]

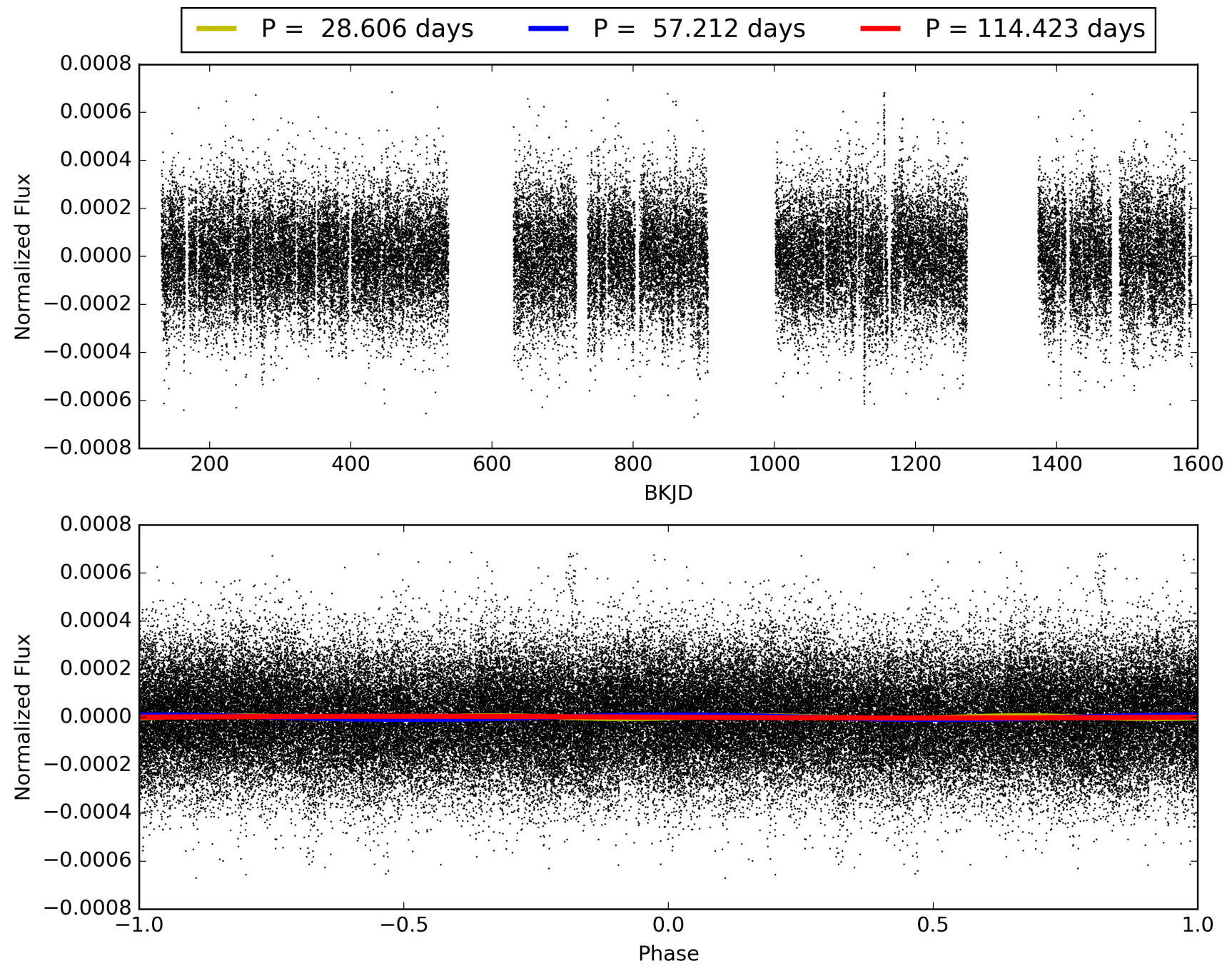
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:03:59 Z

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

TCE 004474484-05, PDC Light Curves

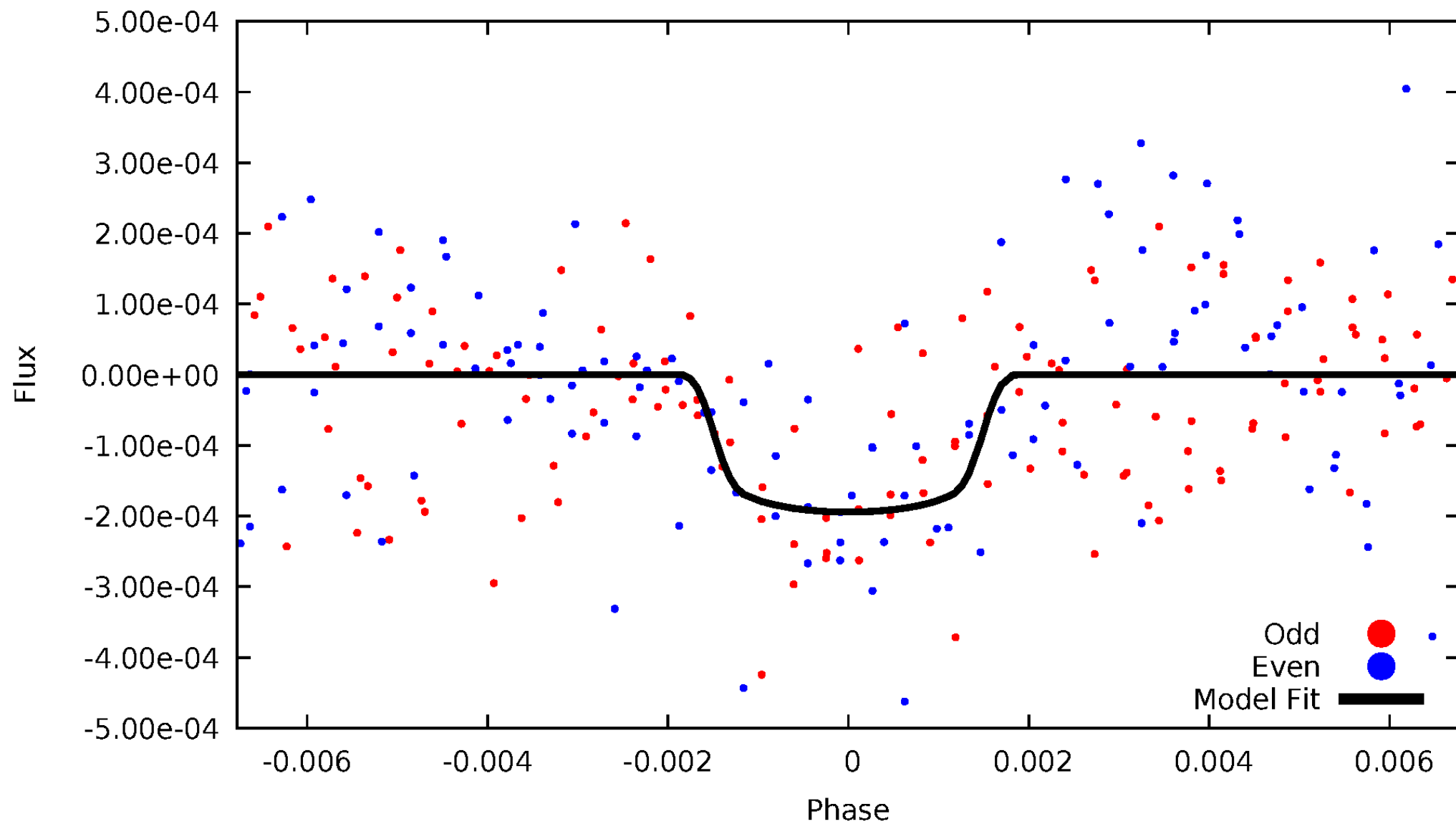


TCE 004474484-05



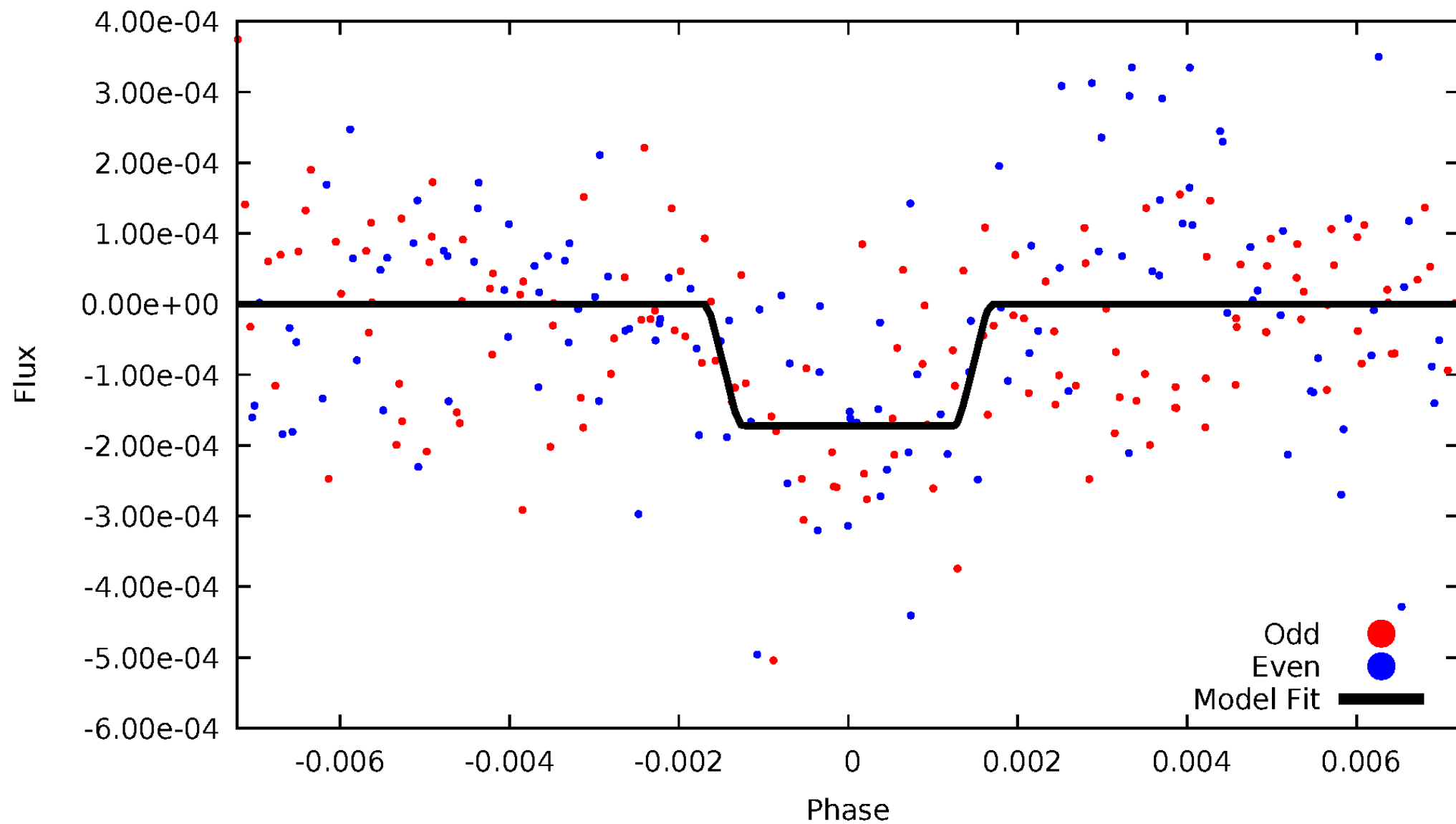
DV Odd/Even

TCE 004474484-05



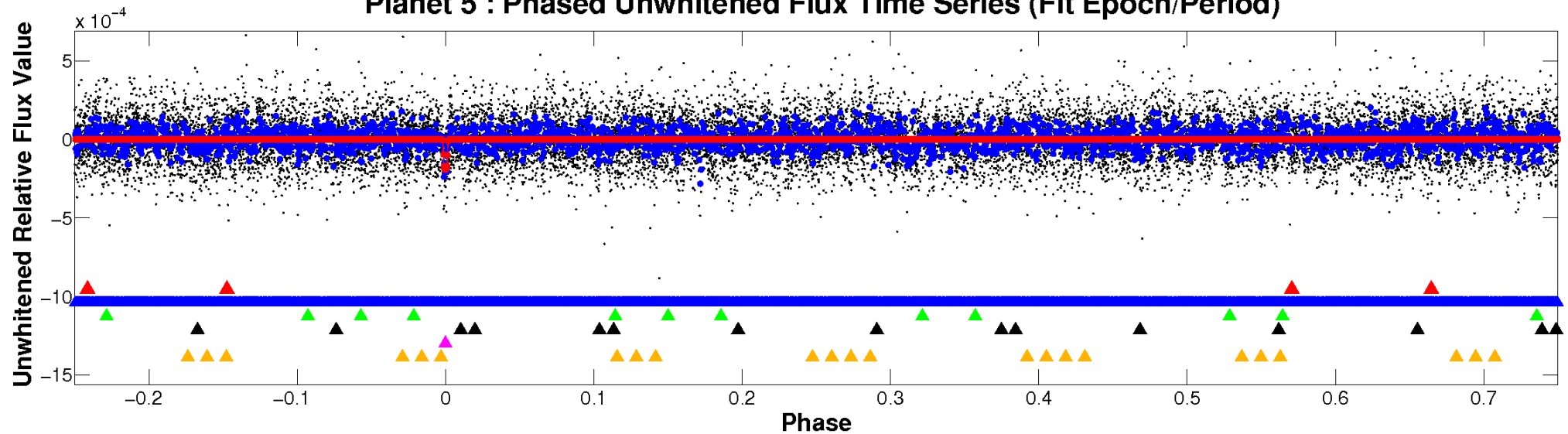
ALT Odd/Even

TCE 004474484-05

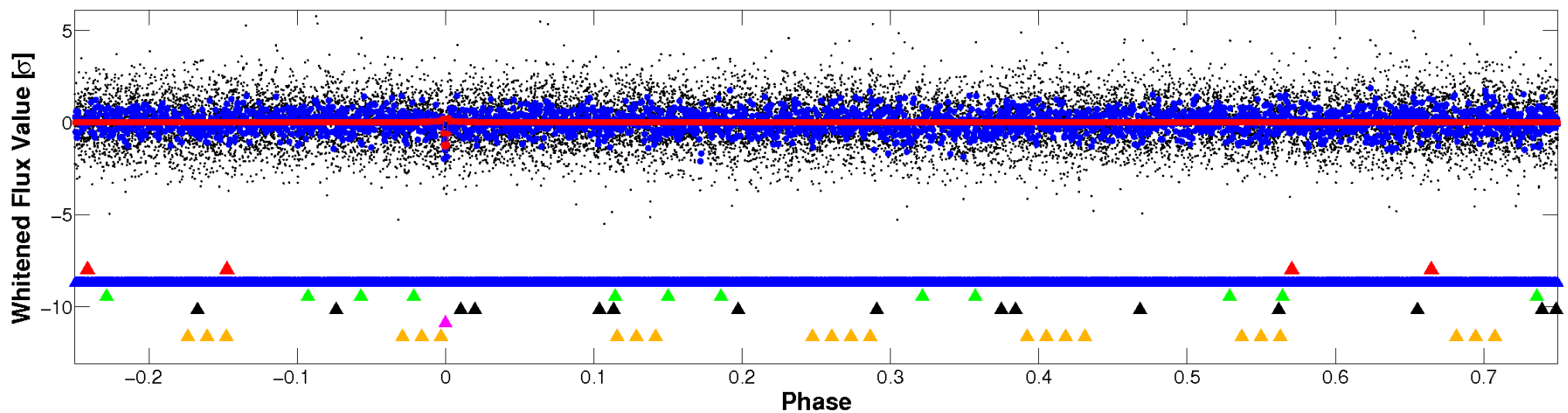


Non-Whitened Vs. Whitened Light Curve

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

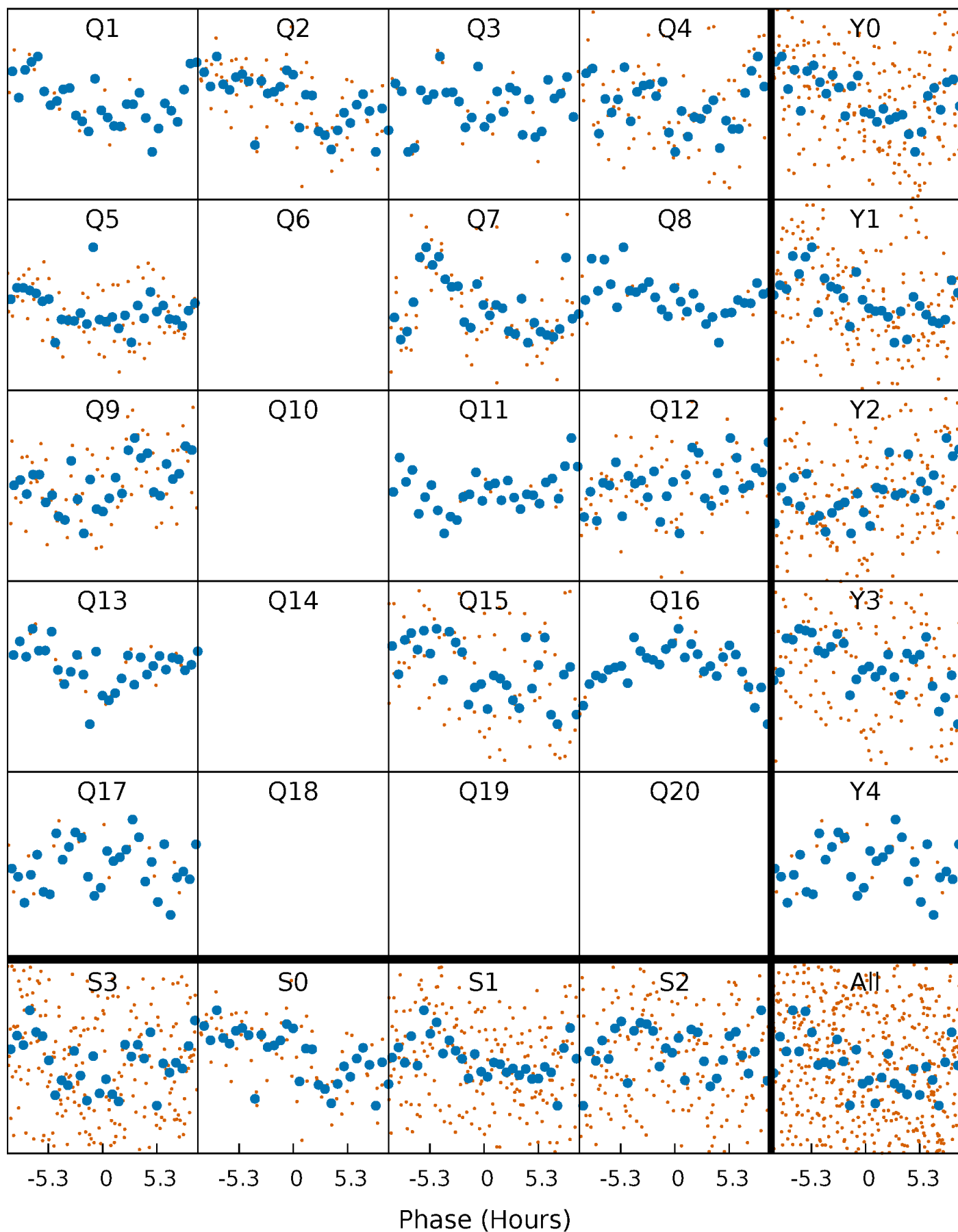


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



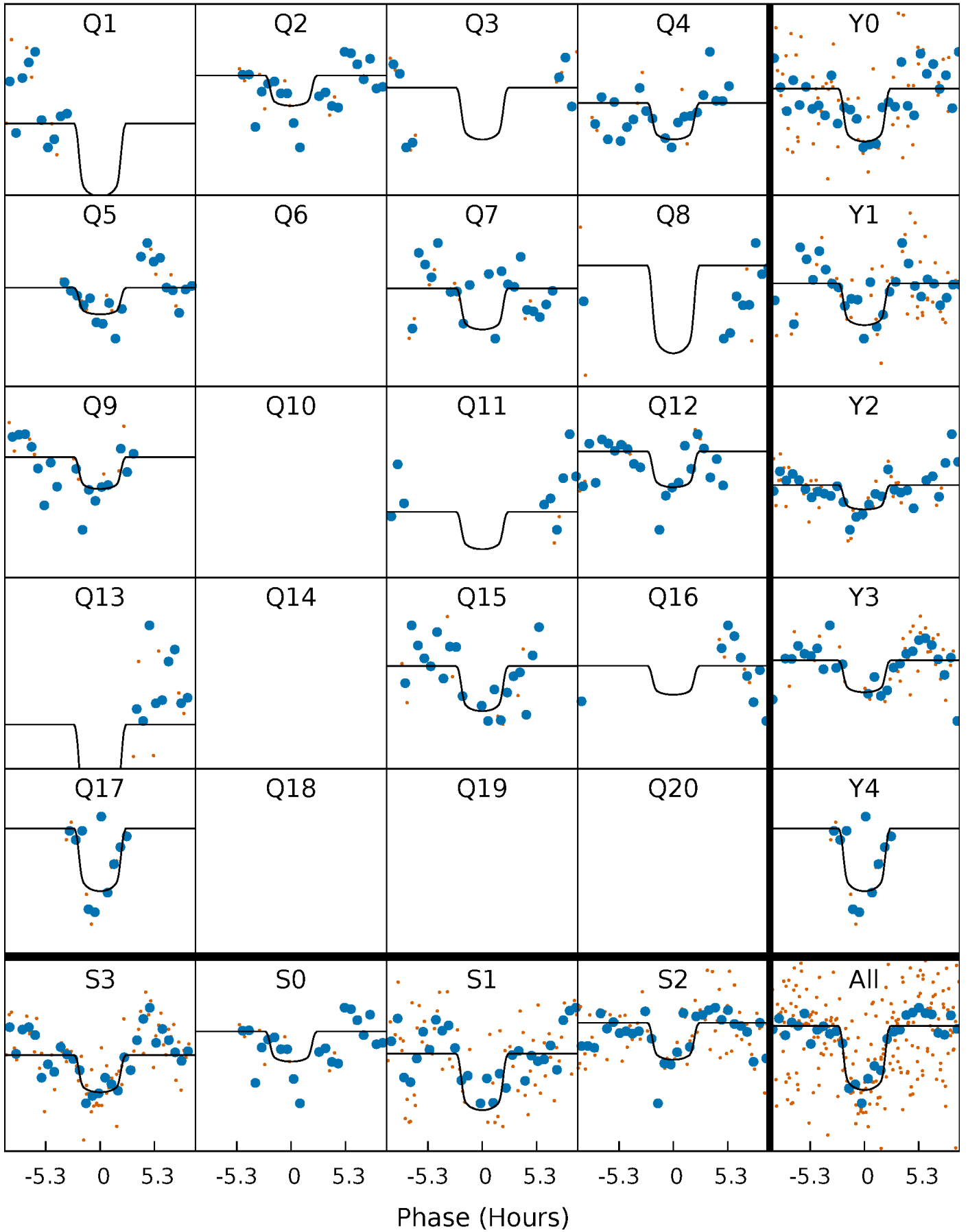
PDC Quarter-Phased Transit Curves

TCE 004474484-05 P= 57.211617 Days $T_0=135.978817$ (BKJD)



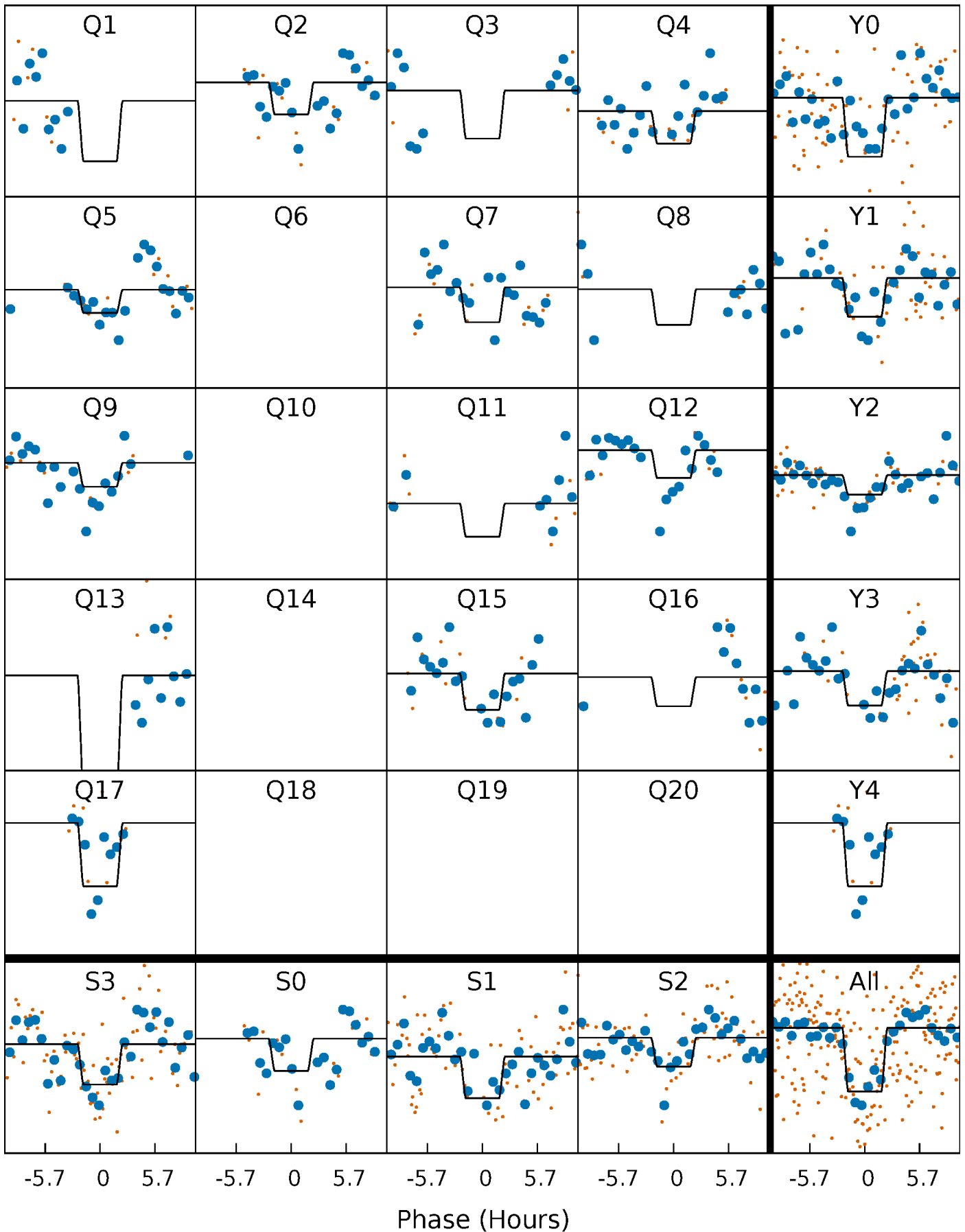
DV Quarter-Phased Transit Curves

TCE 004474484-05 P= 57.211617 Days $T_0=135.978817$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

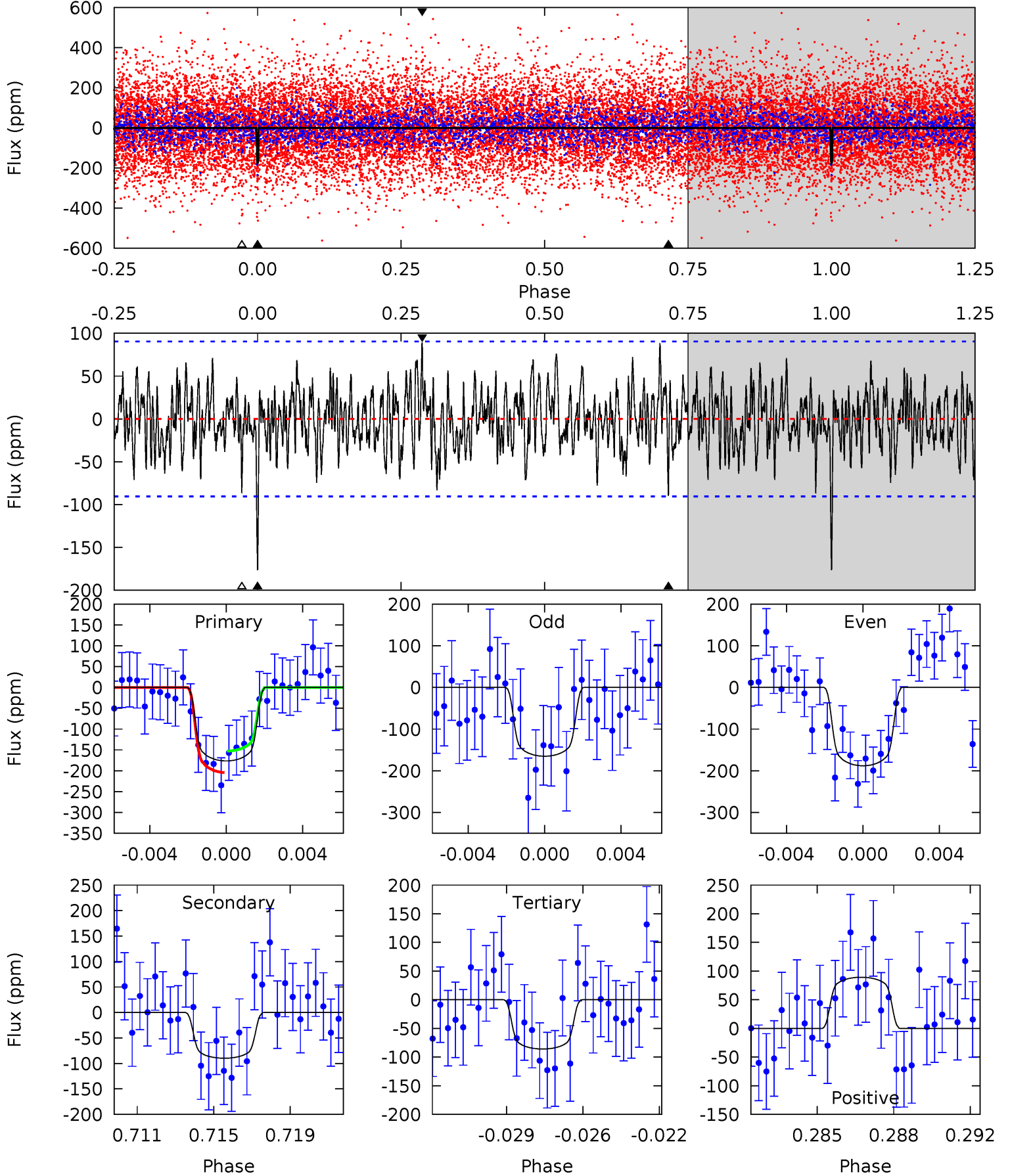
TCE 004474484-05 $P = 57.211762$ Days $T_0 = 135.972086$ (BKJD)



DV Model-Shift Uniqueness Test

004474484-05, P = 57.211617 Days, E = 78.767200 Days

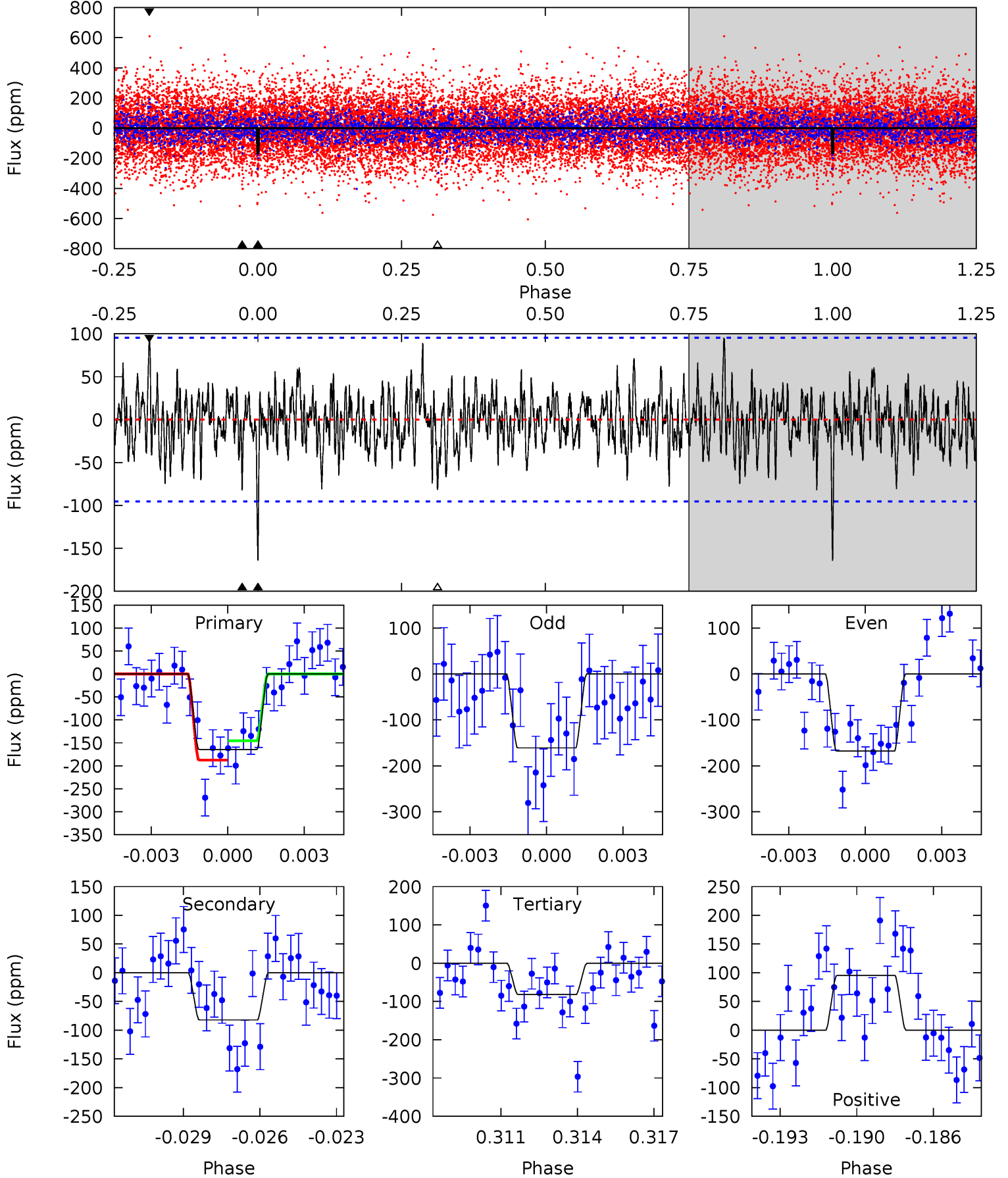
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	5.18	4.96	5.15	5.22	2.91	1.68	5.22	5.02	0.22	0.03	0.66	0.90	0.34	1.48



Alt Model-Shift Uniqueness Test

004474484-05, P = 57.211762 Days, E = 78.760324 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.02	4.52	4.50	5.23	5.24	2.94	1.43	4.53	3.79	0.02	-0.71	0.19	1.04	0.37	1.15



Stellar Parameters For KIC 004474484

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7209^{+226}_{-327}	$3.898^{+0.308}_{-0.132}$	$-0.140^{+0.250}_{-0.350}$	$2.404^{+0.578}_{-0.866}$	$1.667^{+0.168}_{-0.364}$	$0.169^{+0.365}_{-0.064}$
	+3%/-5%	+8%/-3%	+179%/-250%	+24%/-36%	+10%/-22%	+216%/-38%
Source	KIC0	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 004474484-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-90 ± 17	$3.84^{+1.00}_{-0.93}$	1152^{+85}_{-109}	5580^{+679}_{-529}	390^{+290}_{-159}
Alt.	-82 ± 18	$3.27^{+1.03}_{-0.94}$	1150^{+95}_{-107}	5899^{+871}_{-684}	491^{+451}_{-225}

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 $A_{obs} \gg 1.0$

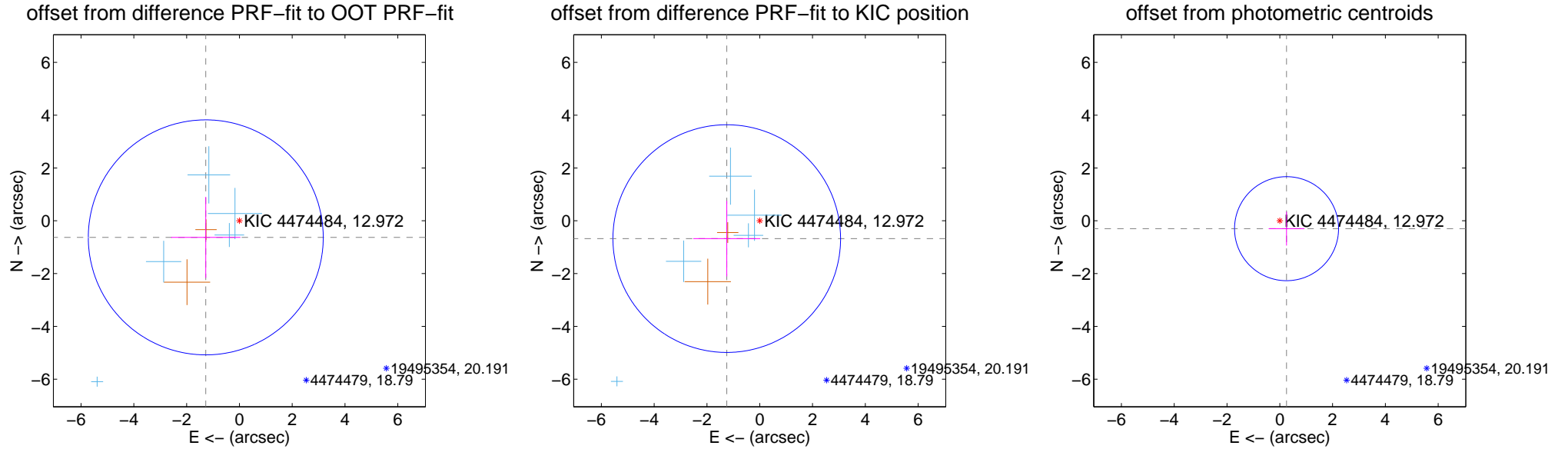
DV Centroid Data

Supplemental centroid analysis for 004474484-05. Kepler magnitude: 12.97. Transit SNR 8.81

There are 5 quarters with good PRF difference image offsets

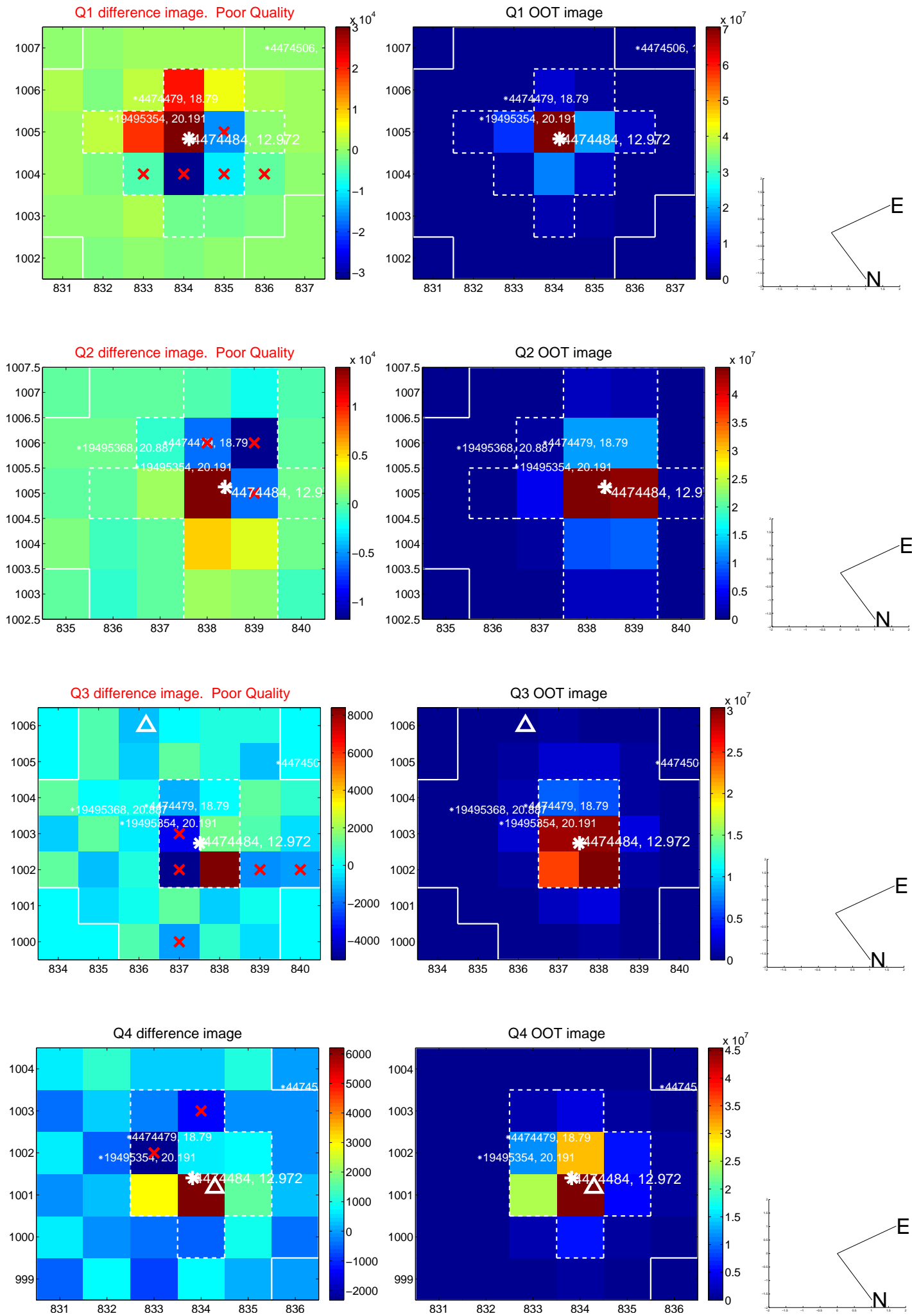
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.421 ± 1.484	0.96	1.275 ± 1.313	-0.628 ± 1.533
PRF-fit source offset from KIC position	1.421 ± 1.438	0.99	1.250 ± 1.270	-0.675 ± 1.430
photometric centroid source offset	0.39 ± 0.66	0.60	-0.26 ± 0.68	-0.30 ± 0.64

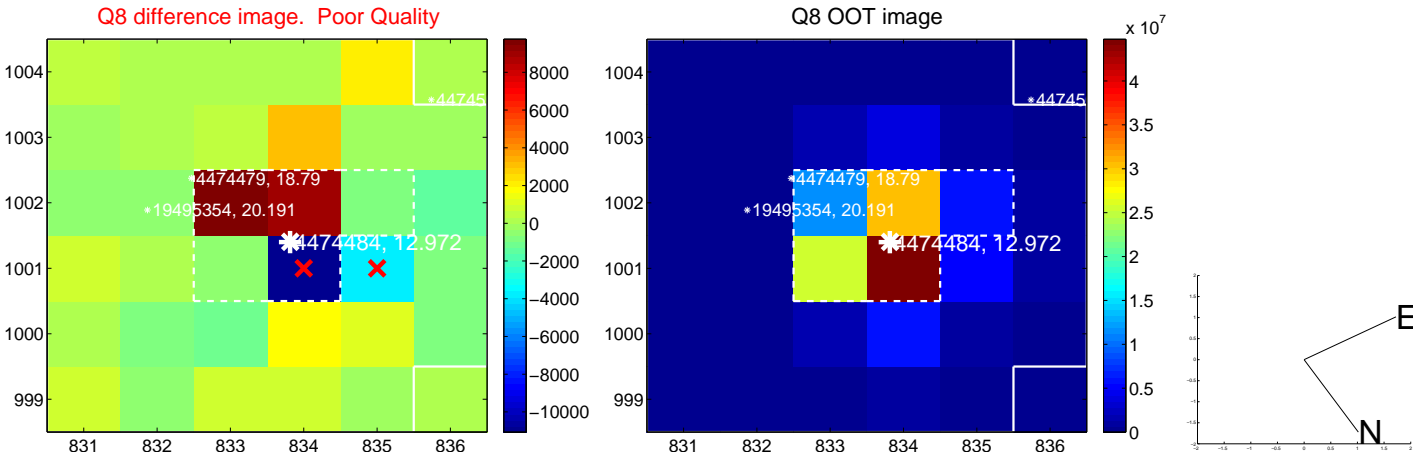
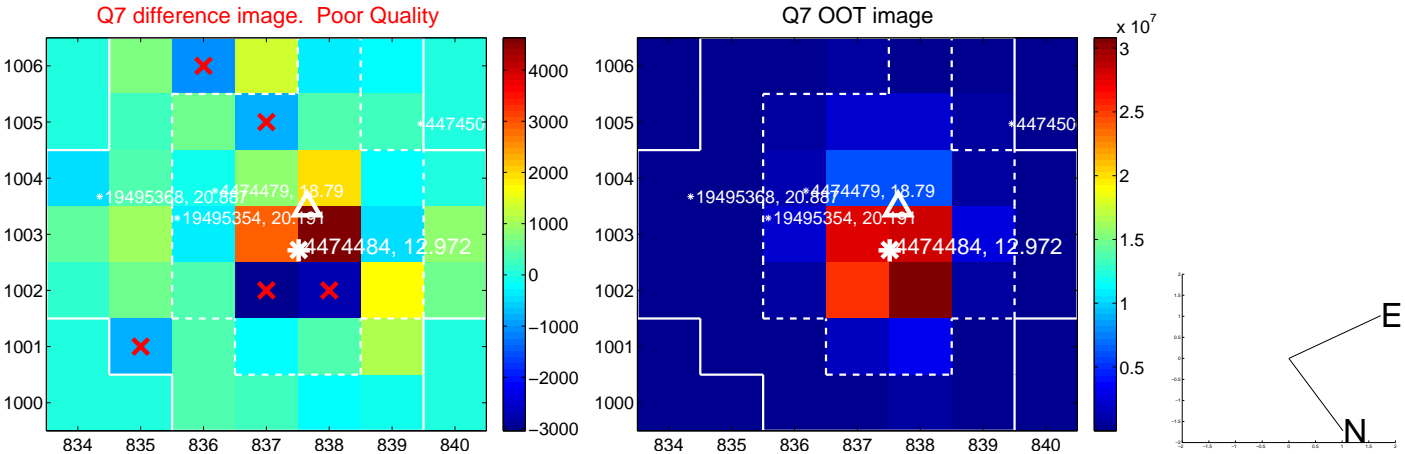
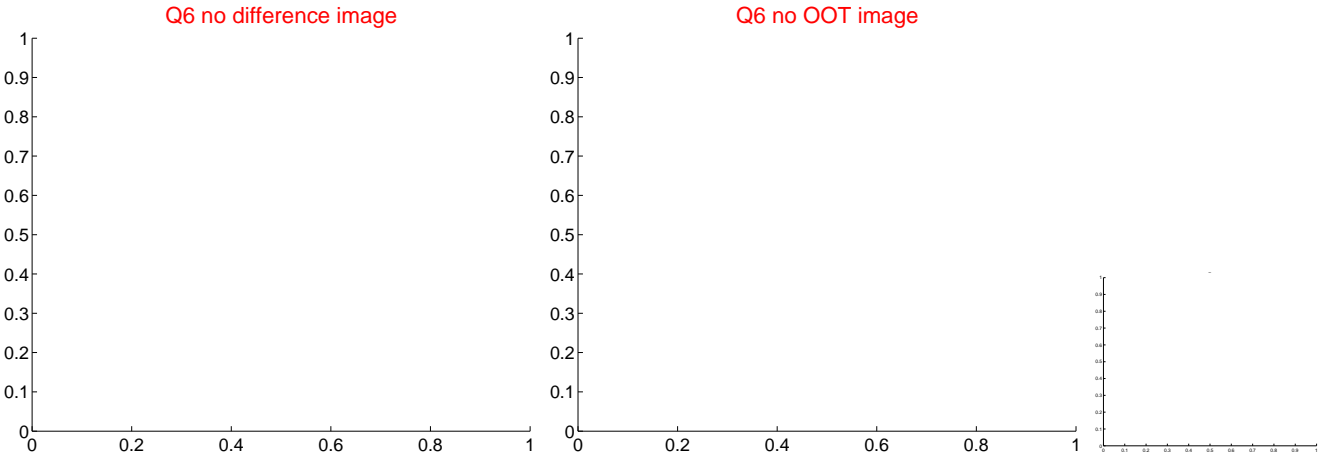
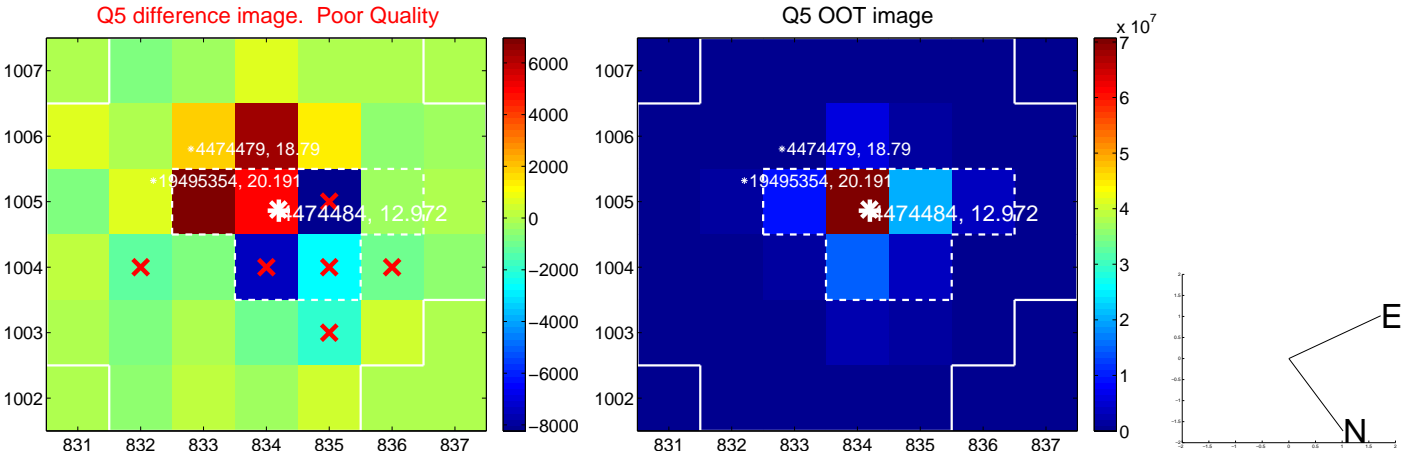


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

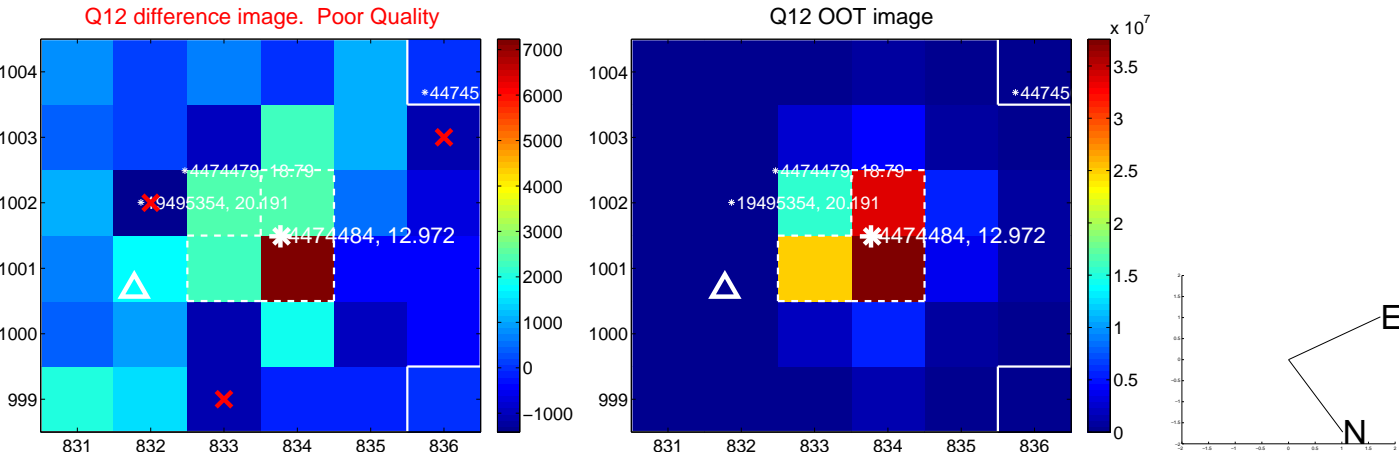
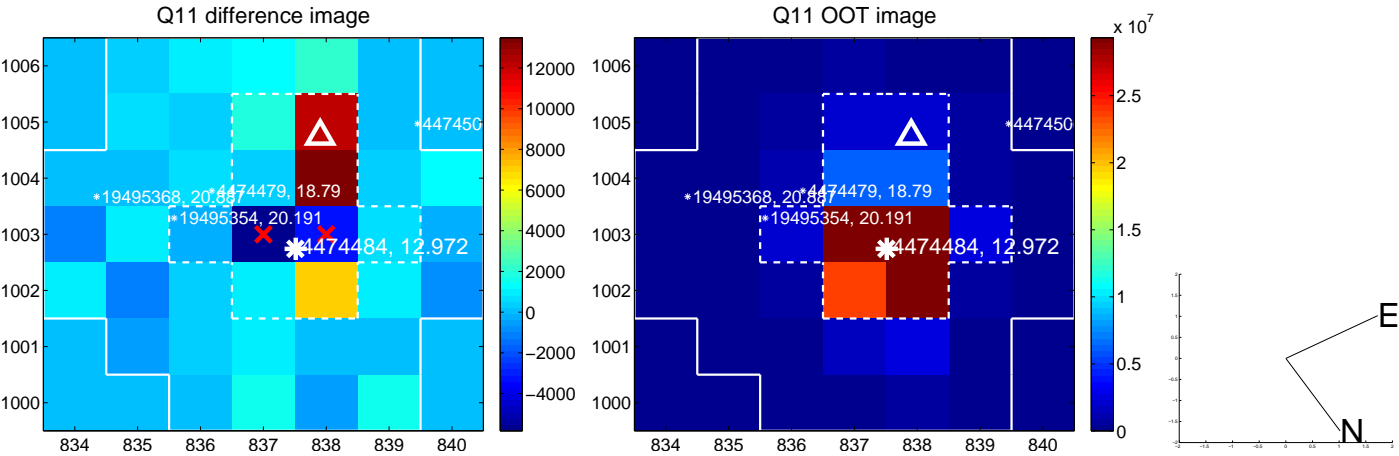
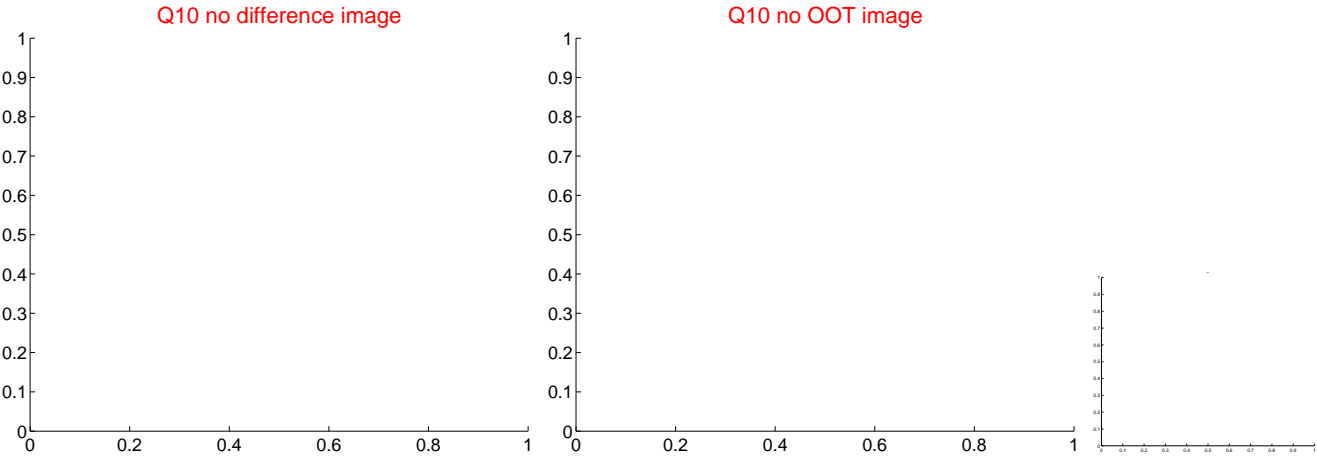
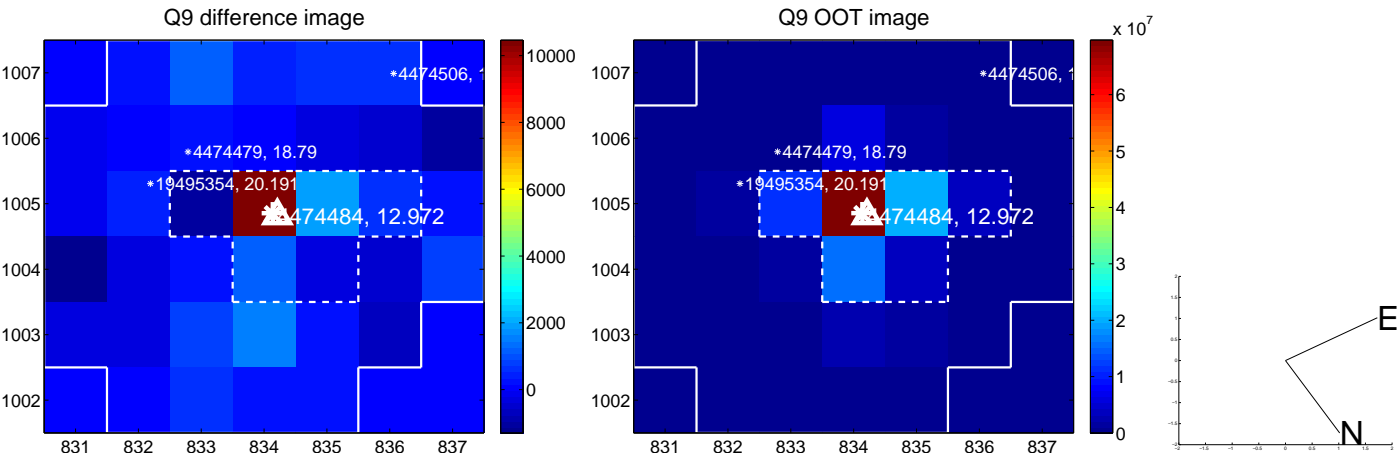
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



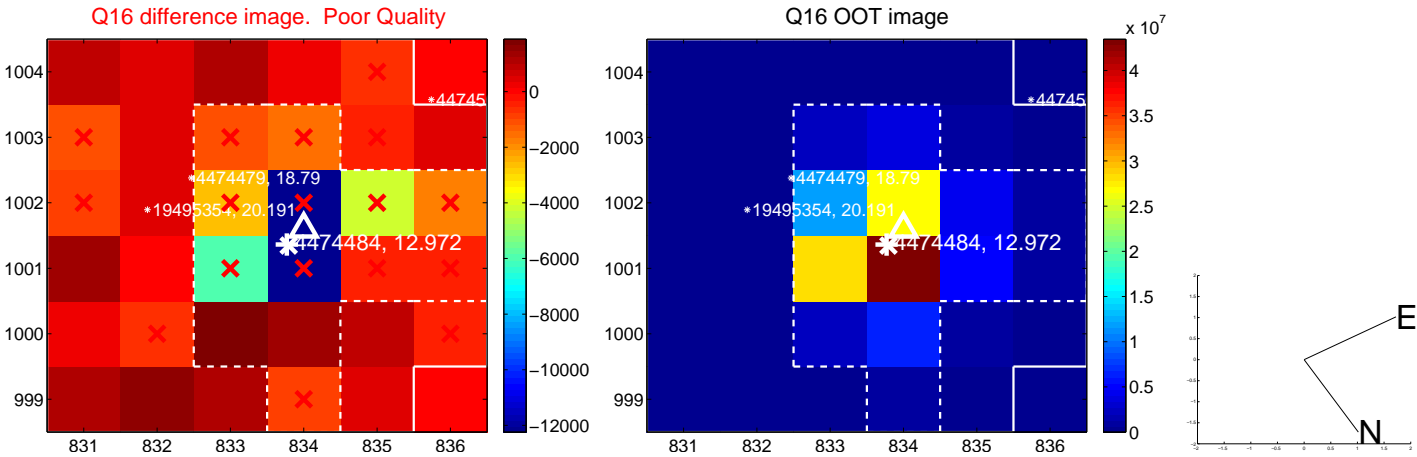
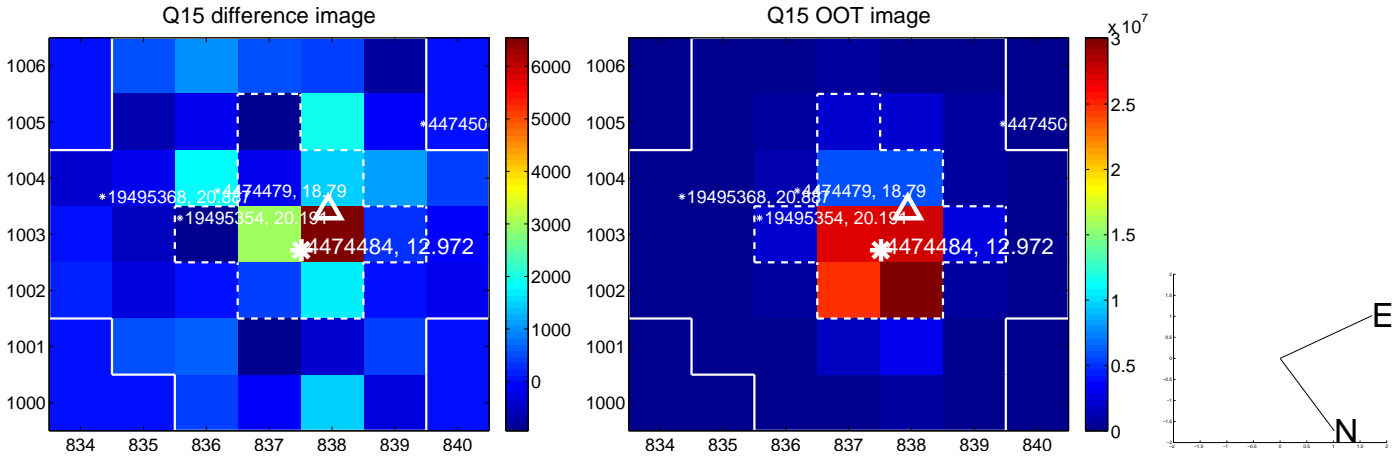
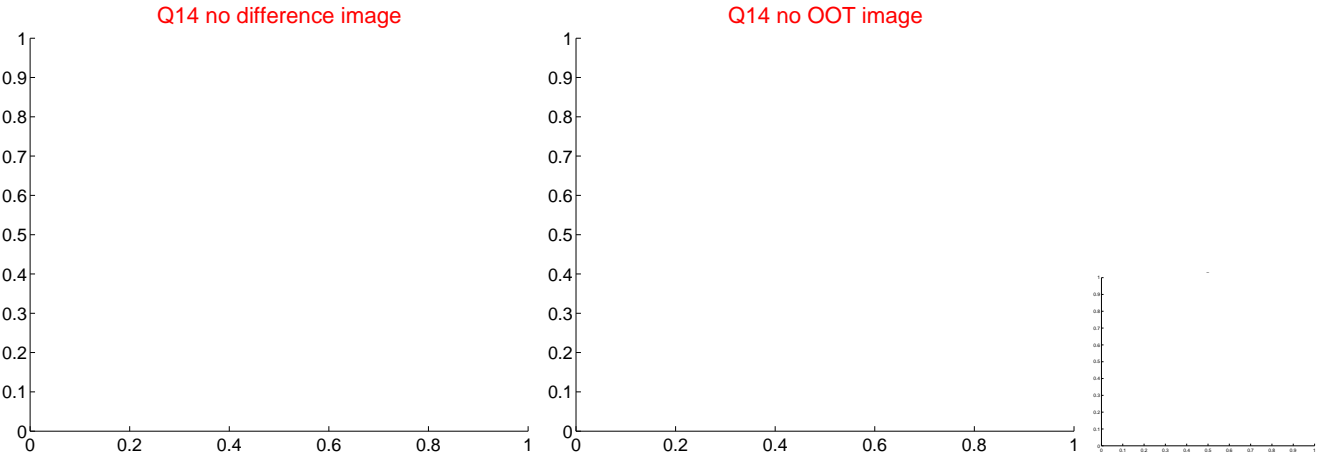
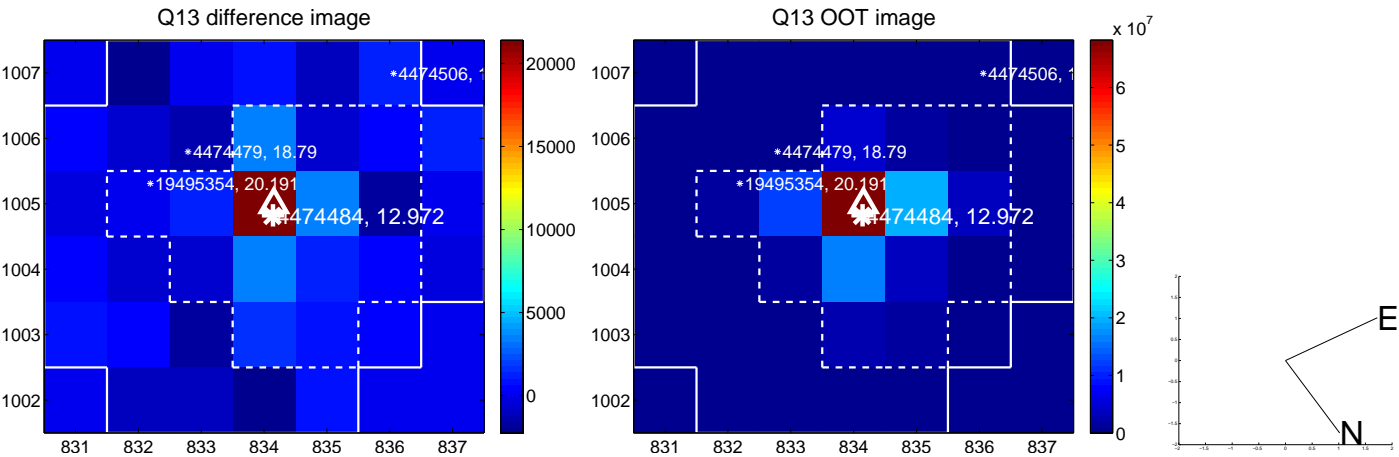
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



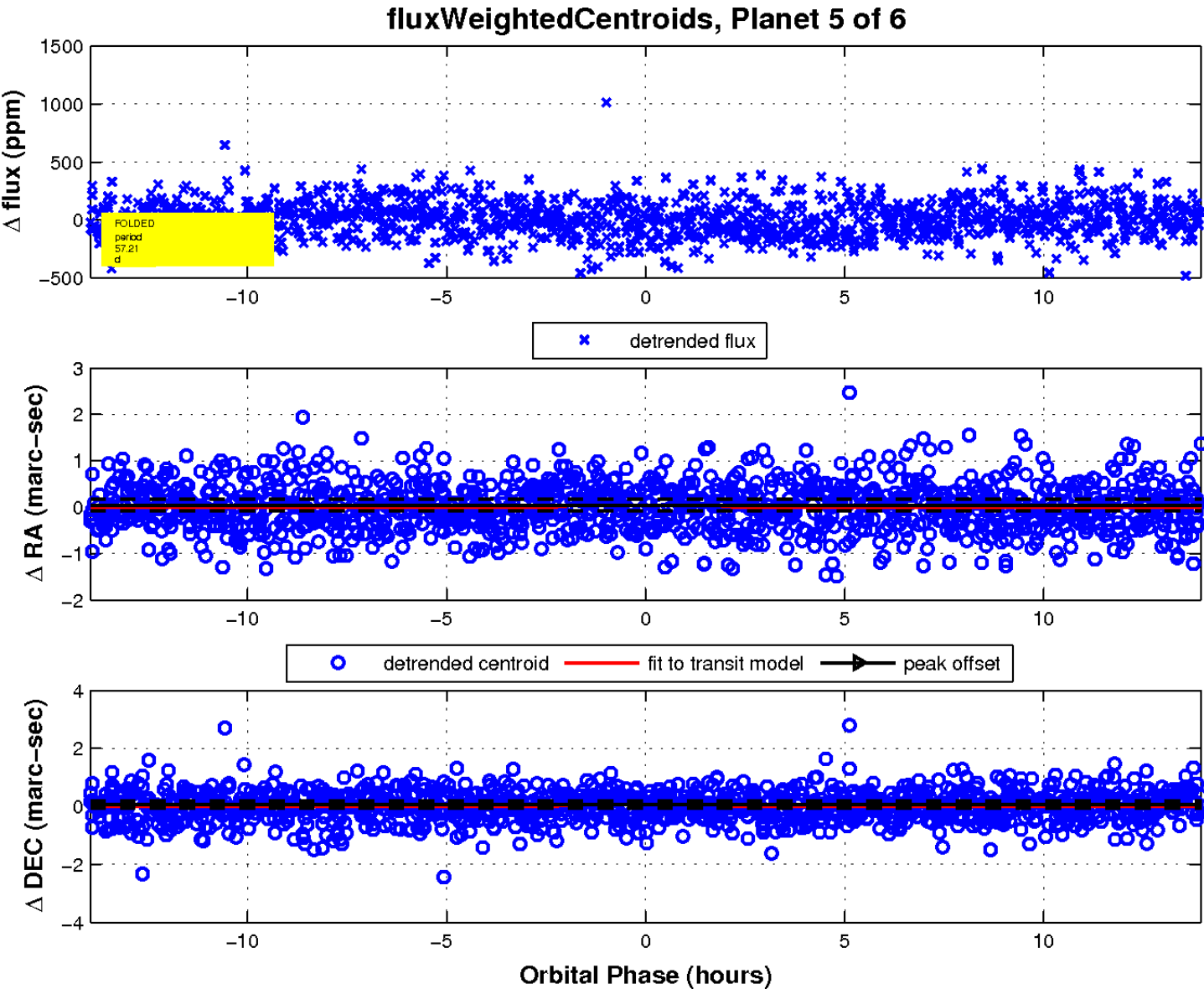
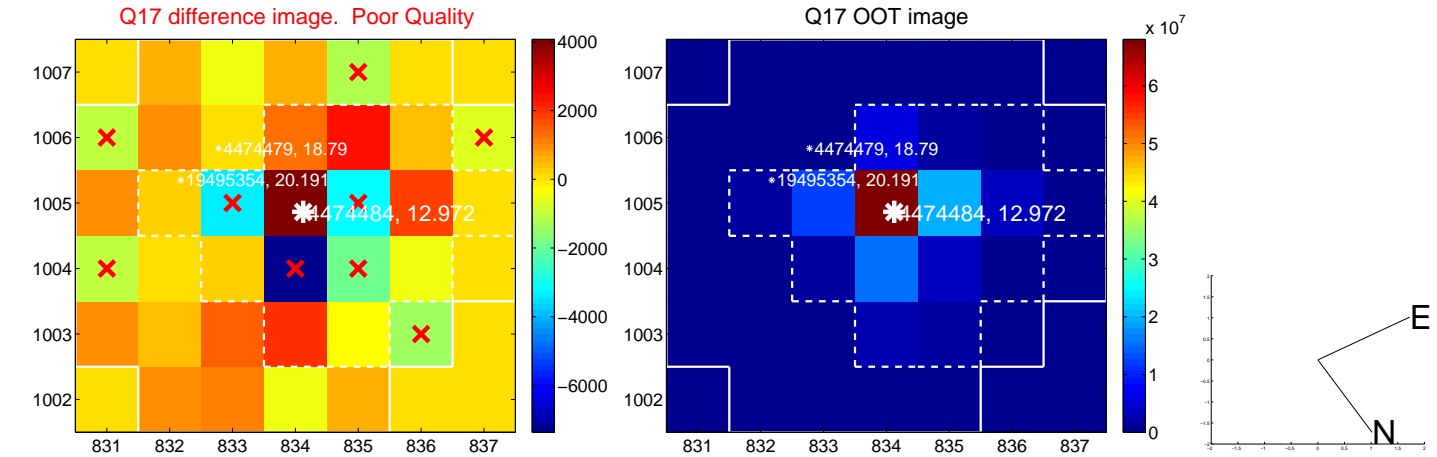
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

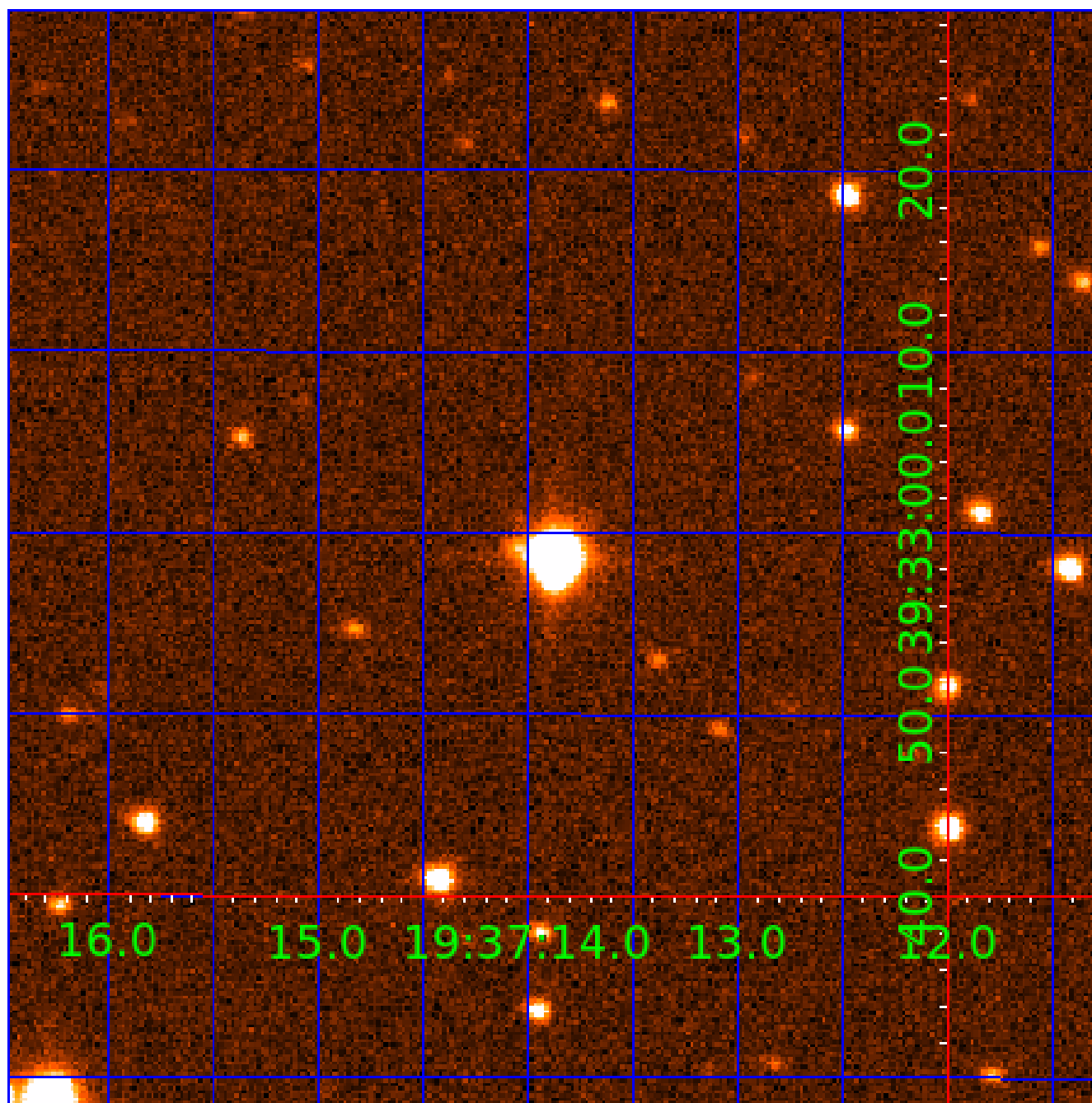


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004474484

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})
004474484-01	OBS	No	348.648431	397.472181	78.3	21.765	8.6	3.1	2.40	7209	2.35	10.58
004474484-02	OBS	No	0.812804	132.057498	22.6	4.250	8.3	9.9	2.40	7209	1.29	34227.05
004474484-03	OBS	No	126.273650	187.886755	149.1	12.882	9.6	6.6	2.40	7209	3.24	40.98
004474484-04	OBS	No	93.569317	199.676165	289.5	1.913	8.5	8.6	2.40	7209	4.78	61.12
004474484-05	OBS	No	57.211617	135.978817	194.3	4.651	8.3	8.8	2.40	7209	4.03	117.77
004474484-06	OBS	No	65.490862	150.136107	222.7	3.536	7.6	7.1	2.40	7209	4.18	98.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004474484-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
004474484-02	OBS	FP	0.00	1	0	0	0	LPP_DV
004474484-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004474484-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004474484-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004474484-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

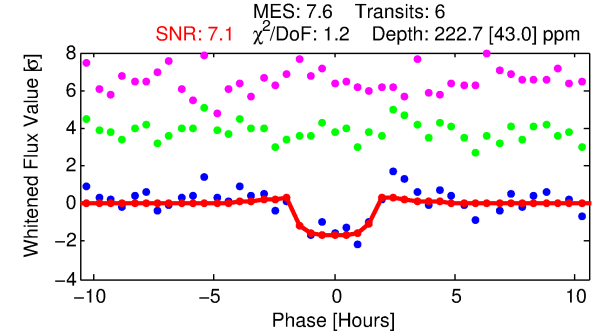
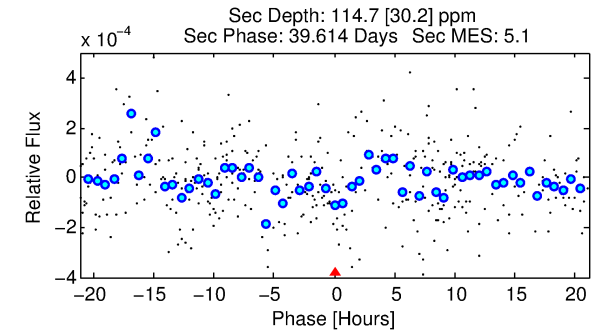
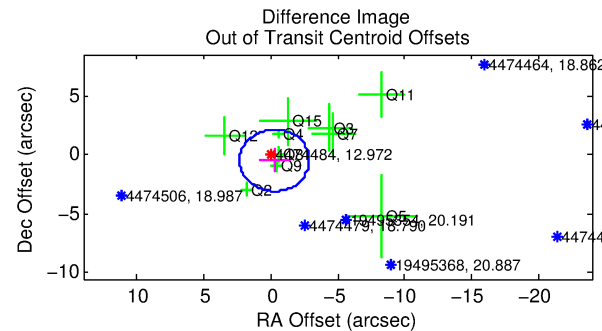
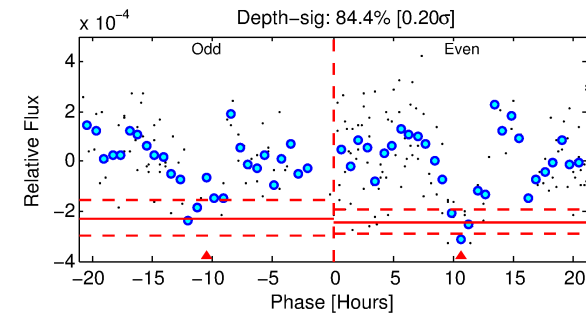
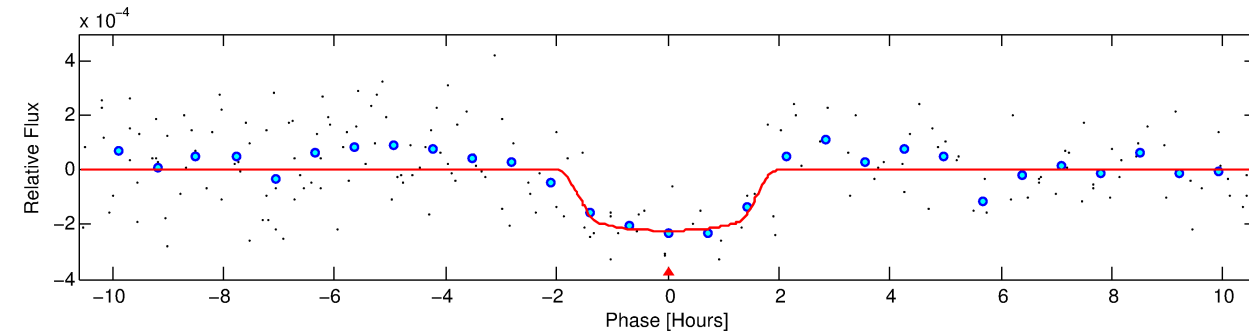
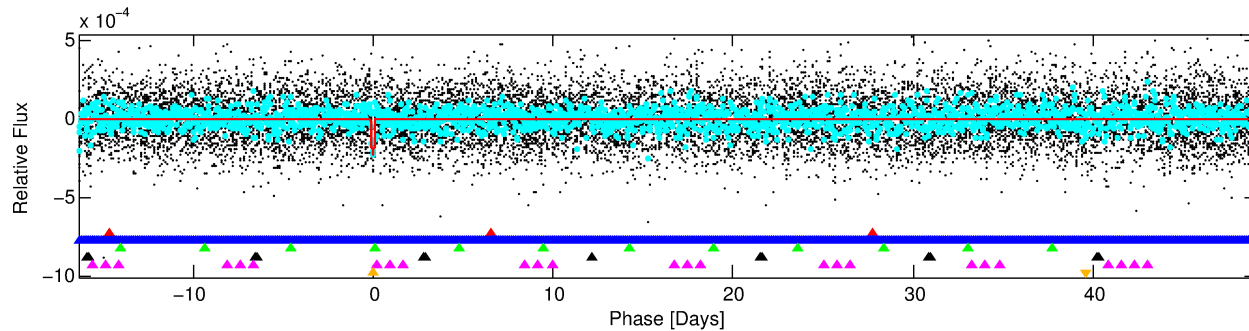
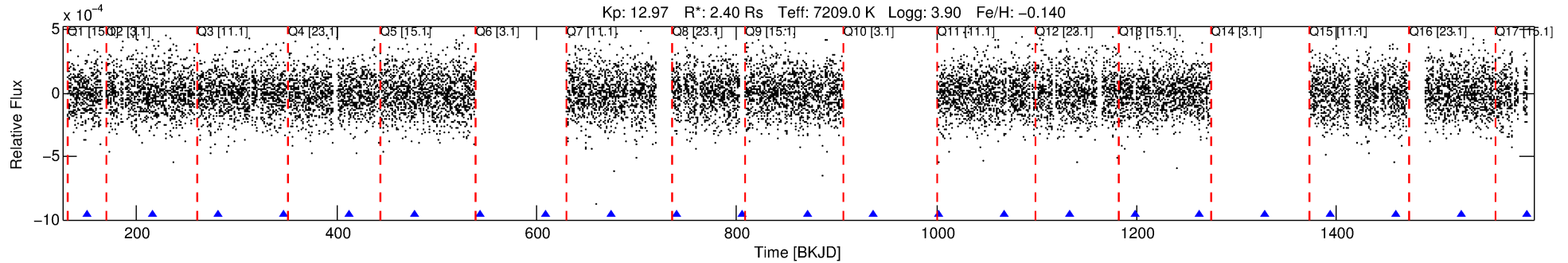
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004474484-06

No Significant Match Found

DV One-Page Summary

KIC: 4474484 Candidate: 6 of 6 Period: 65.491 d



DV Fit Results:

Period = 65.49086 [0.00126] d
Epoch = 150.1361 [0.0132] BKJD
Rp/R* = 0.0159 [0.0062]
a/R* = 66.13 [145.33]
b = 0.90 [0.46]
Seff = 98.35 [55.12]
Teq = 803 [113] K
Rp = 4.18 [2.21] Re
a = 0.3771 [0.1271] AU
Ag = 512.86 [500.33] [1.02σ]
Teffp = 5908 [1239] K [4.10σ]

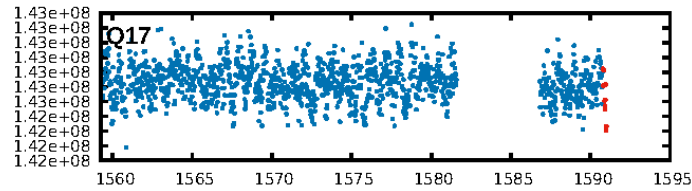
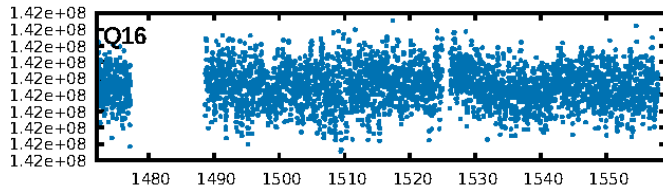
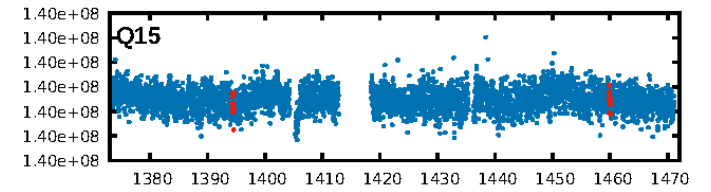
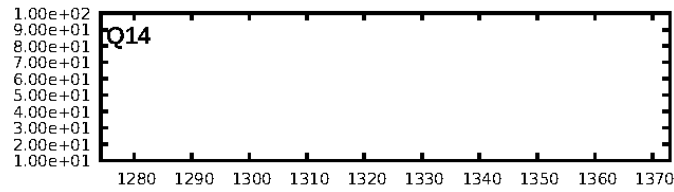
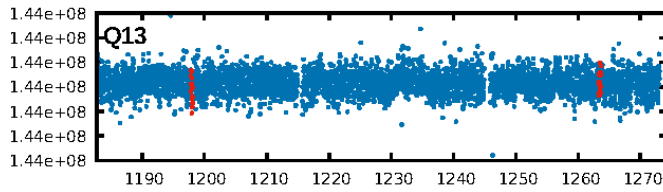
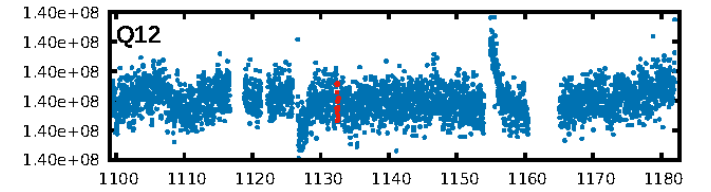
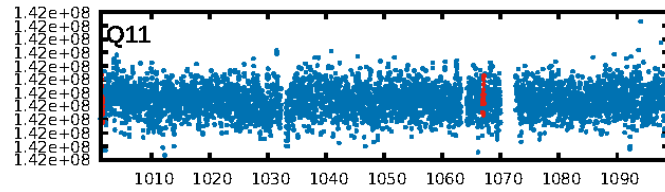
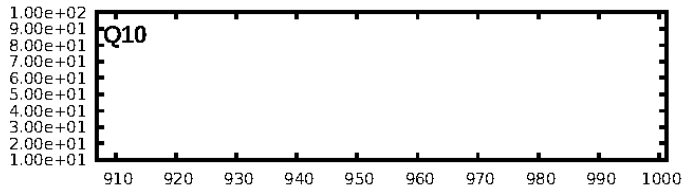
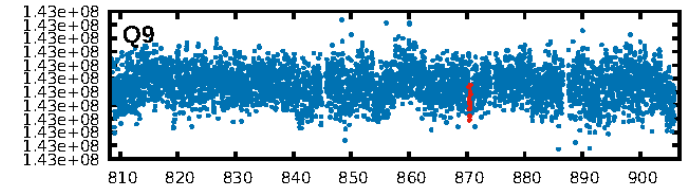
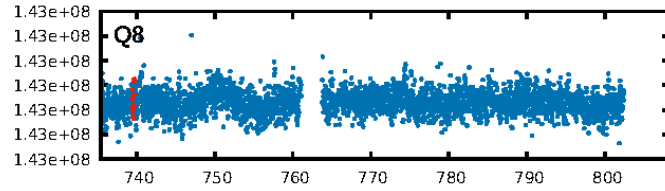
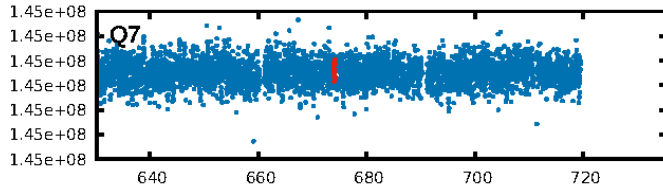
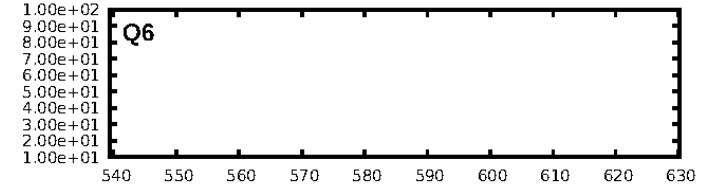
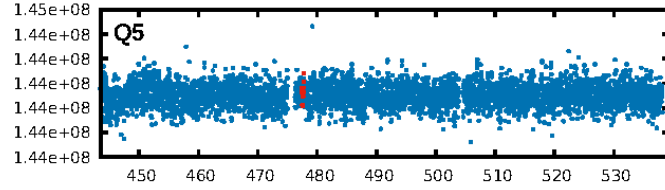
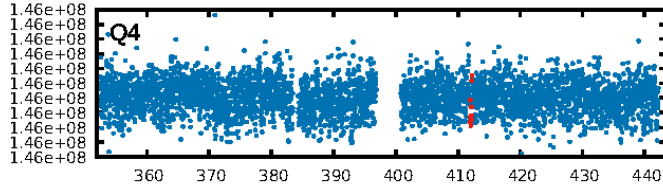
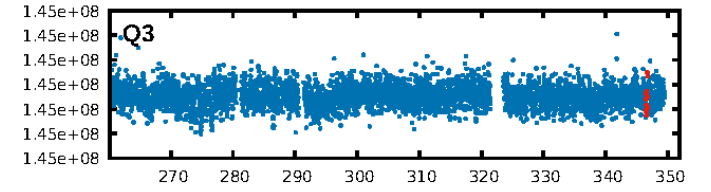
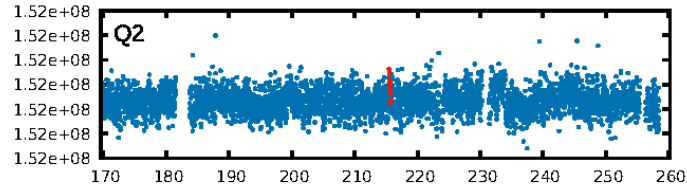
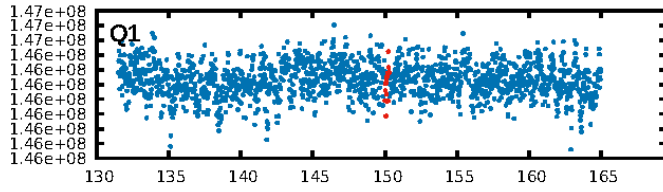
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [34.01σ]
LongPeriod-sig: 100.0% [167.61σ]
ModelChiSquare2-sig: 71.8%
ModelChiSquare2-sig: 100.0%
Bootstrap-pfa: 1.85e-08
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -1.119
Centroid-sig: 3.7%
Centroid-so: 1.223 arcsec [1.60σ]
OotOffset-rm: 0.543 arcsec [0.62σ]
KicOffset-rm: 0.571 arcsec [0.61σ]
OotOffset-st: 1/4/3/2 [10]
KicOffset-st: 1/4/3/2 [10]
DiffImageQuality-fgm: 0.30 [3/10]
DiffImageOverlap-fno: 0.00 [0/12]

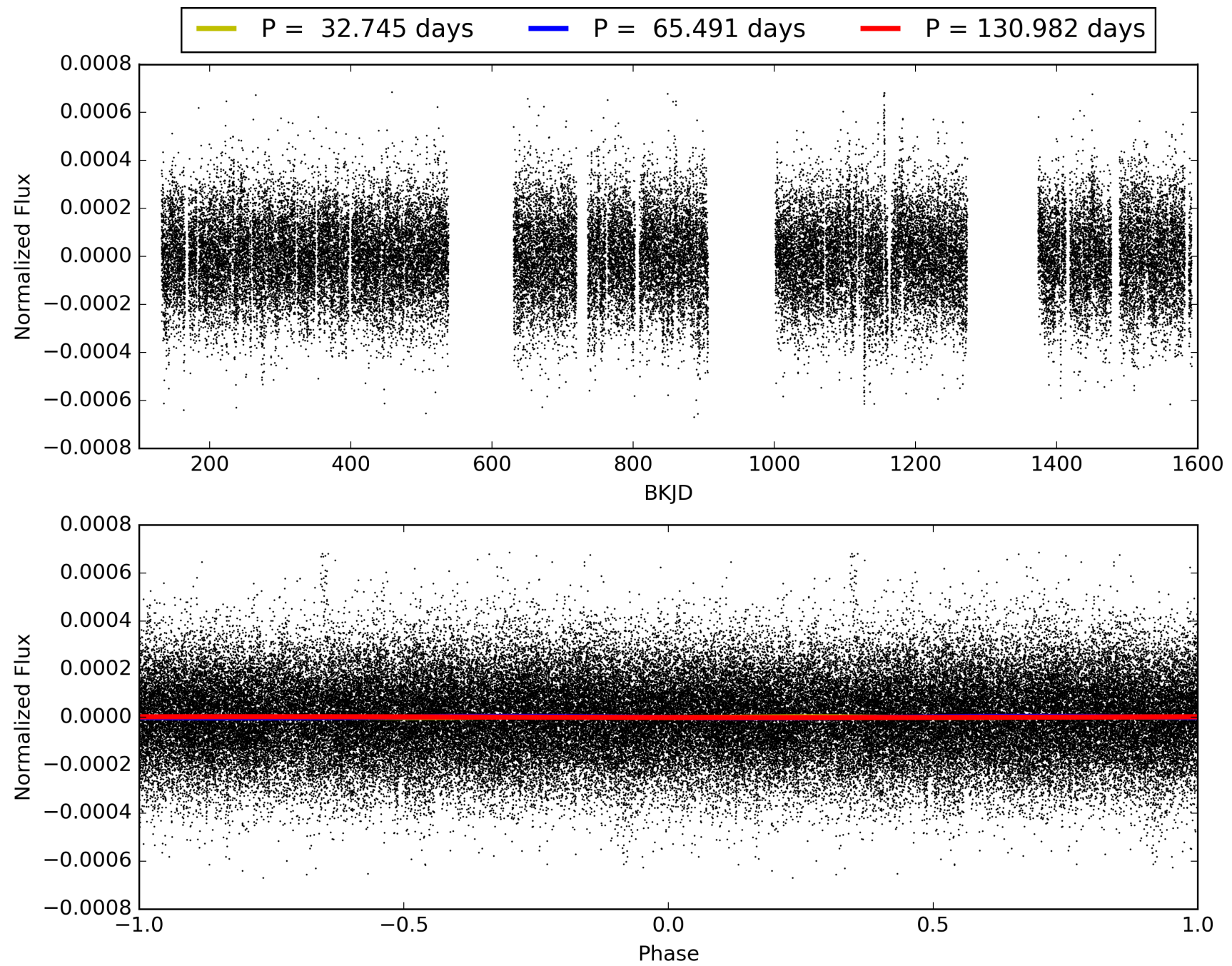
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:04:03 Z

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

TCE 004474484-06, PDC Light Curves

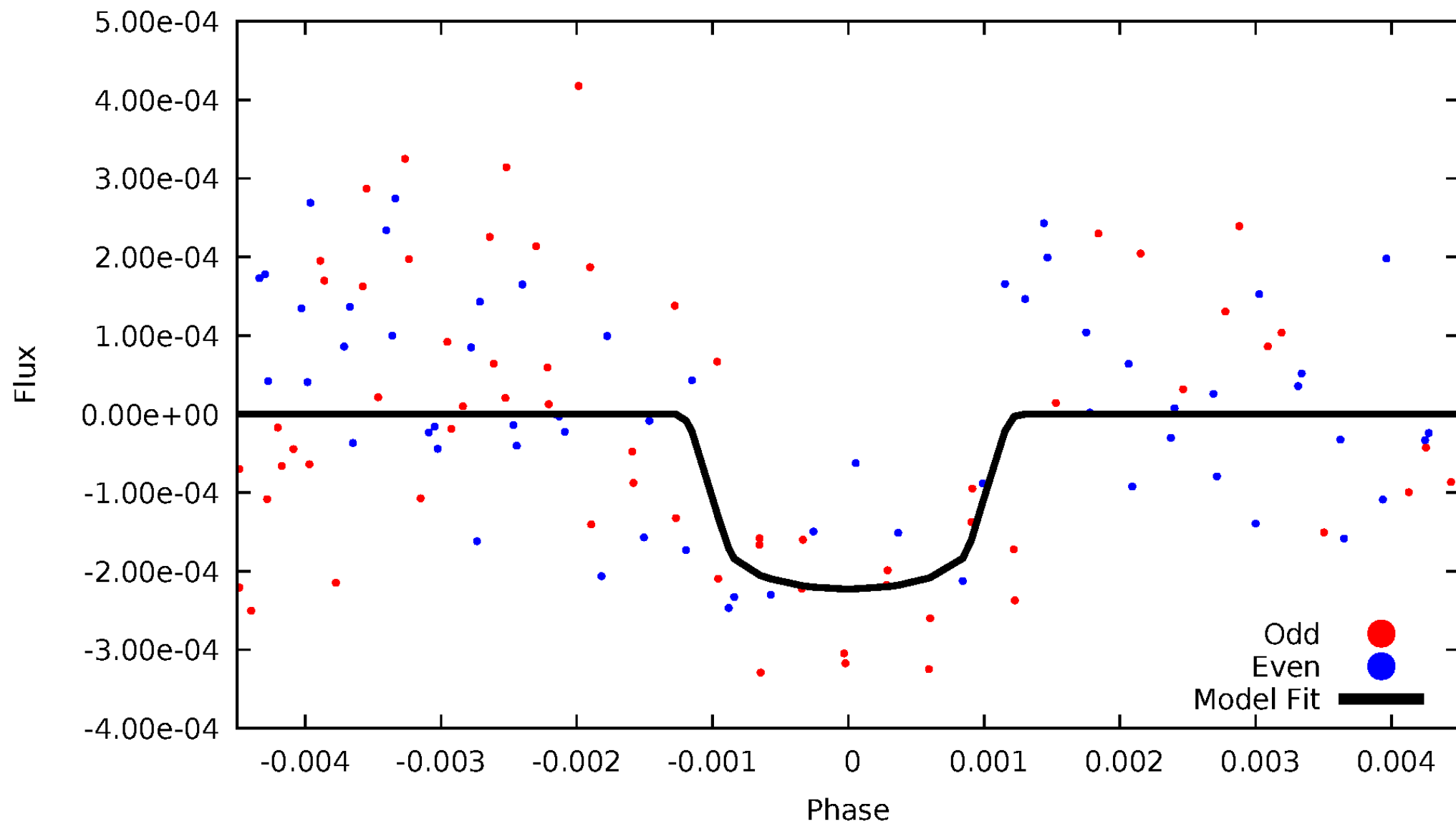


TCE 004474484-06



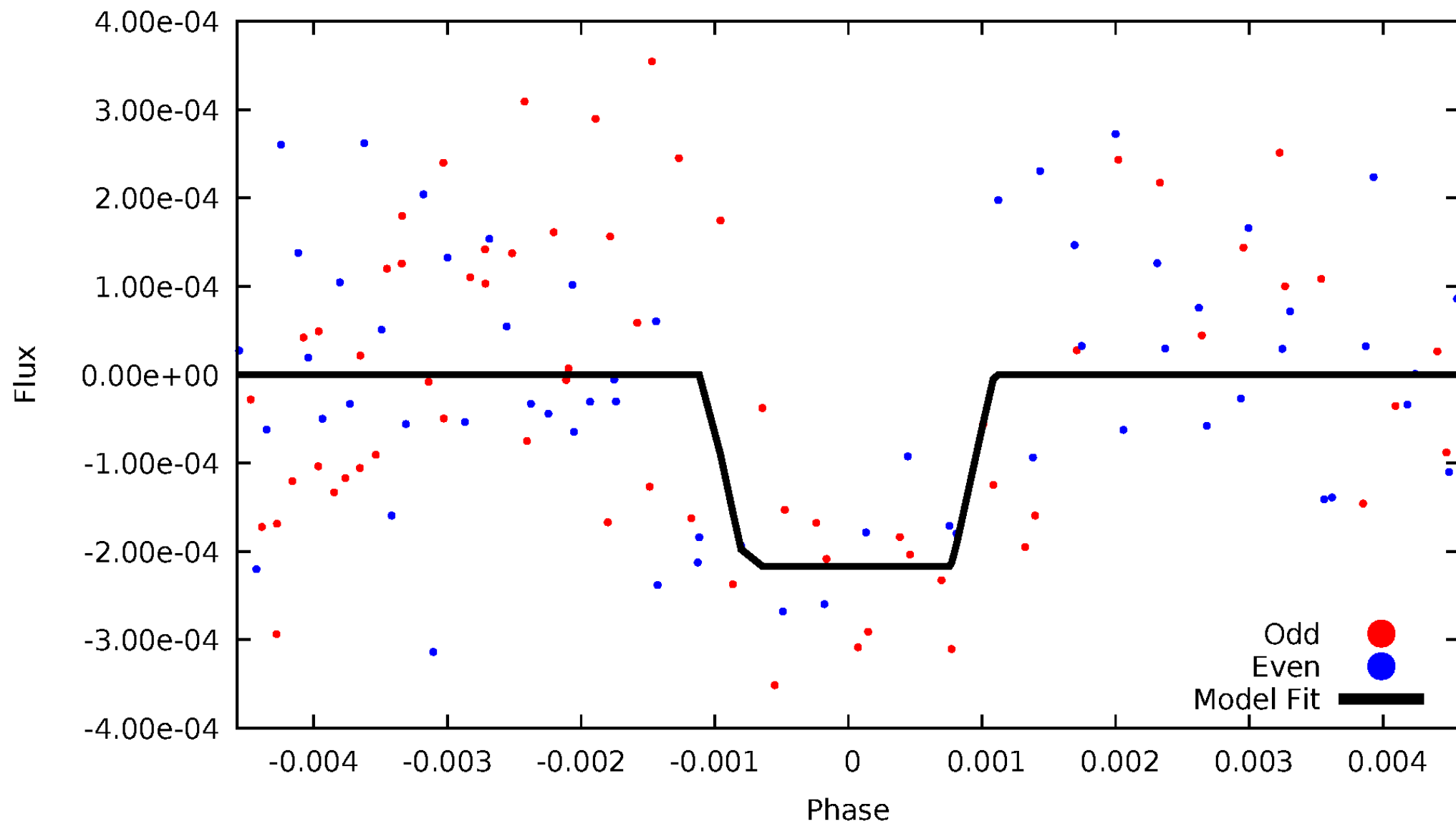
DV Odd/Even

TCE 004474484-06



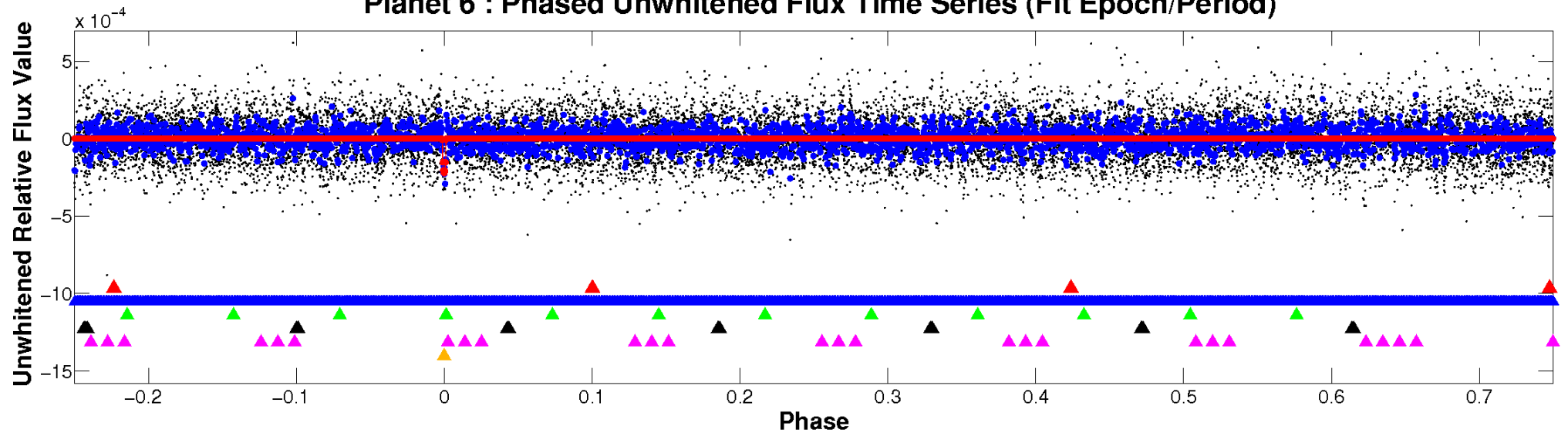
ALT Odd/Even

TCE 004474484-06

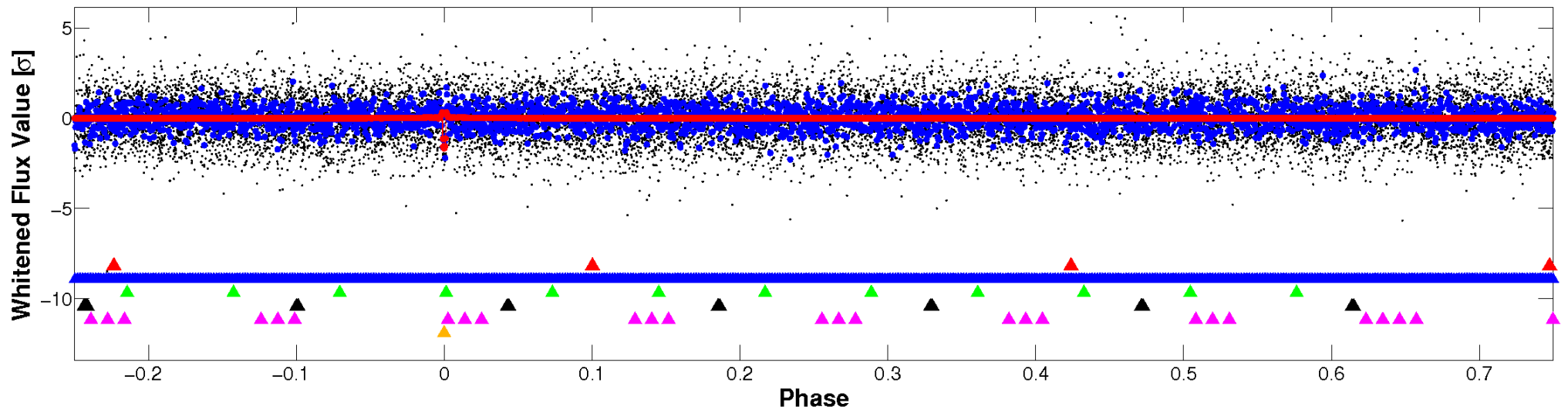


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

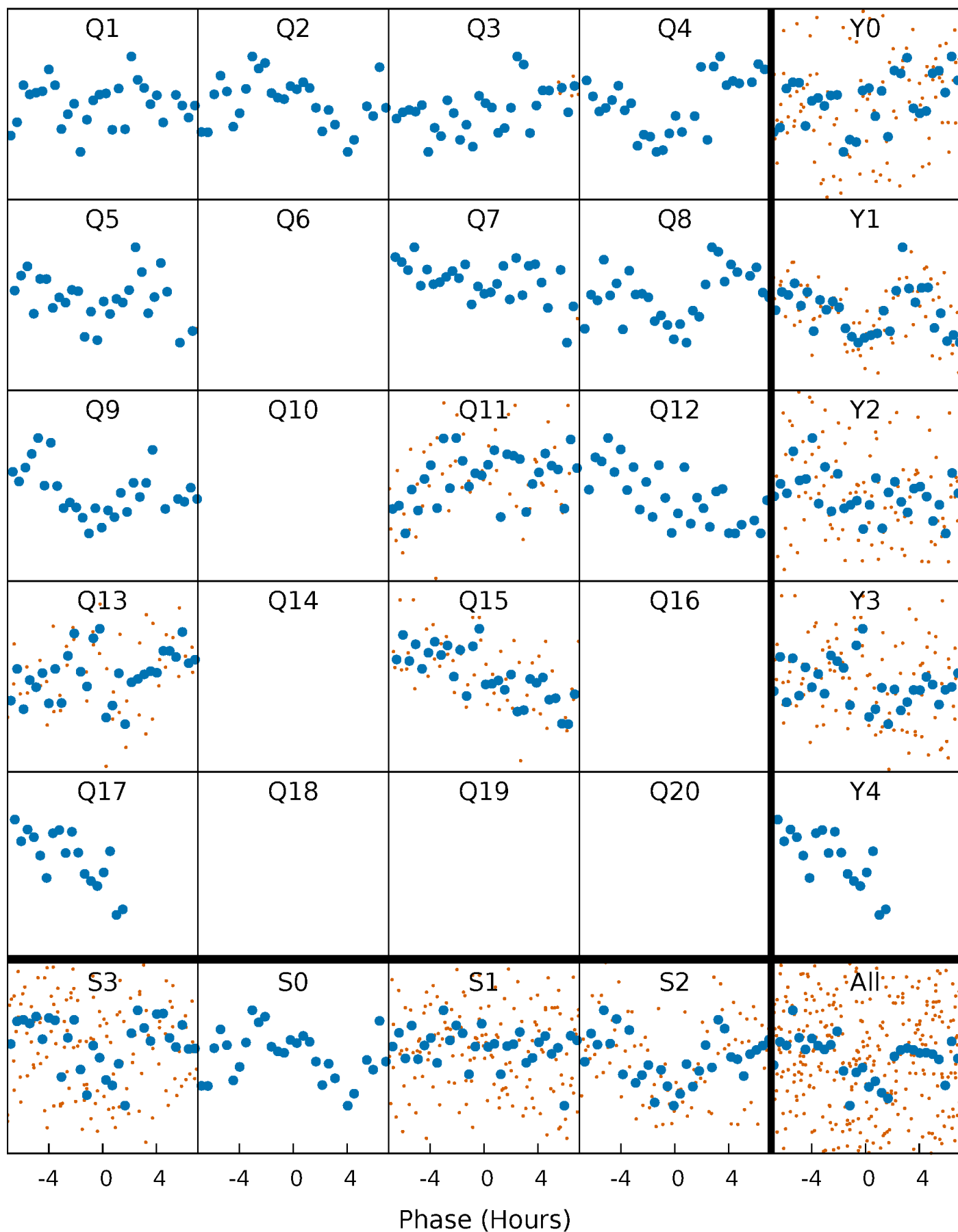


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



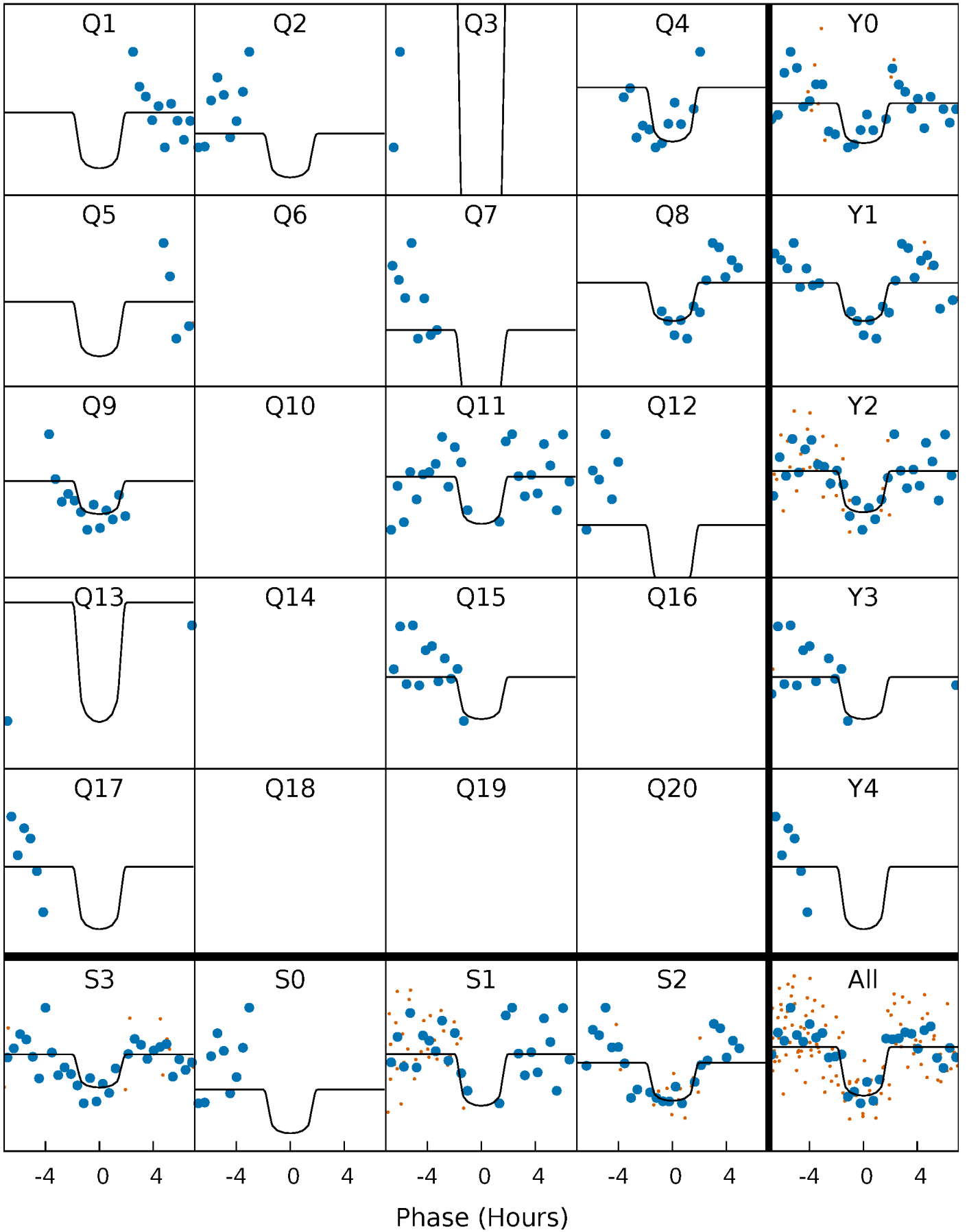
PDC Quarter-Phased Transit Curves

TCE 004474484-06 P= 65.490862 Days $T_0=150.136107$ (BKJD)



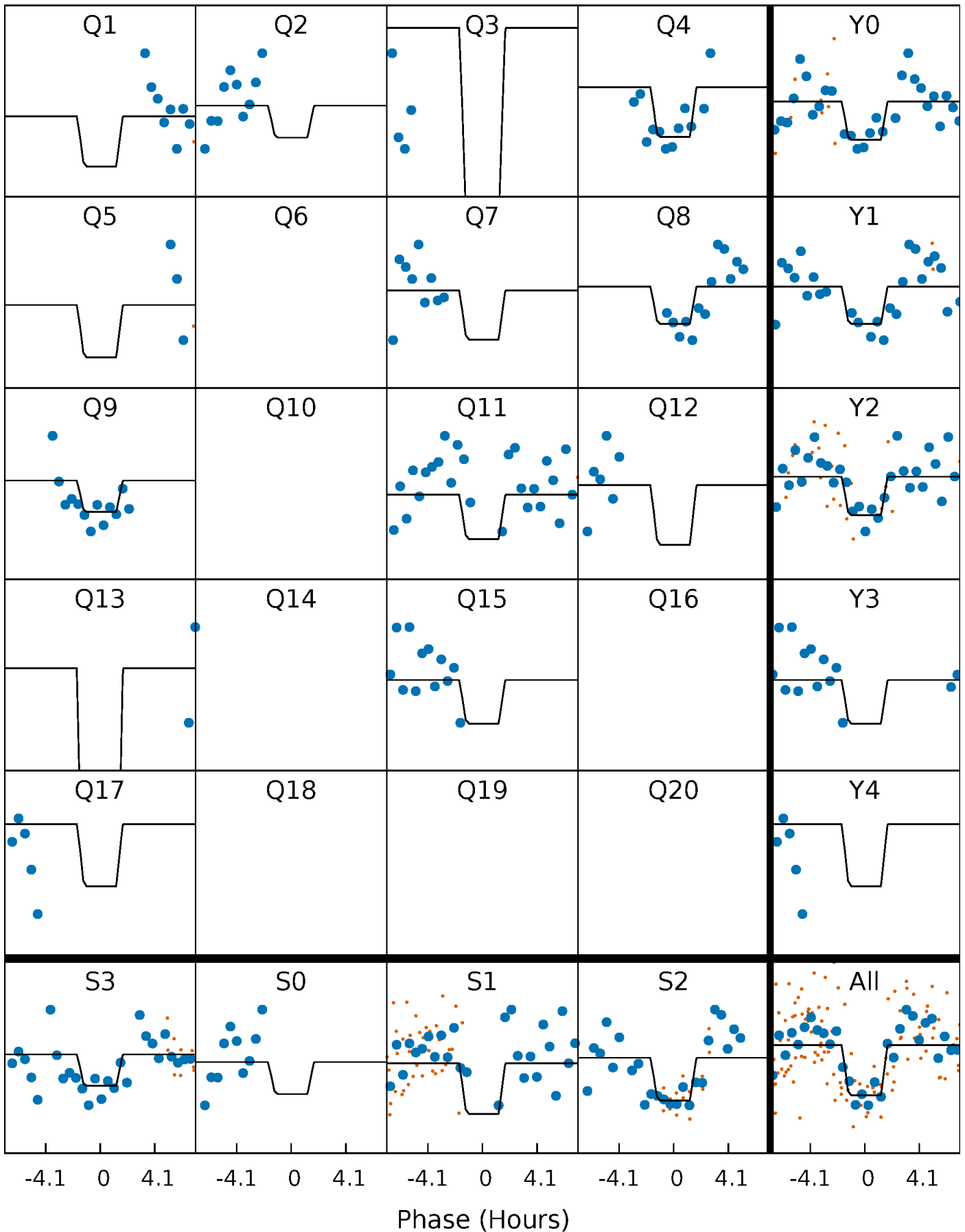
DV Quarter-Phased Transit Curves

TCE 004474484-06 P= 65.490862 Days $T_0=150.136107$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

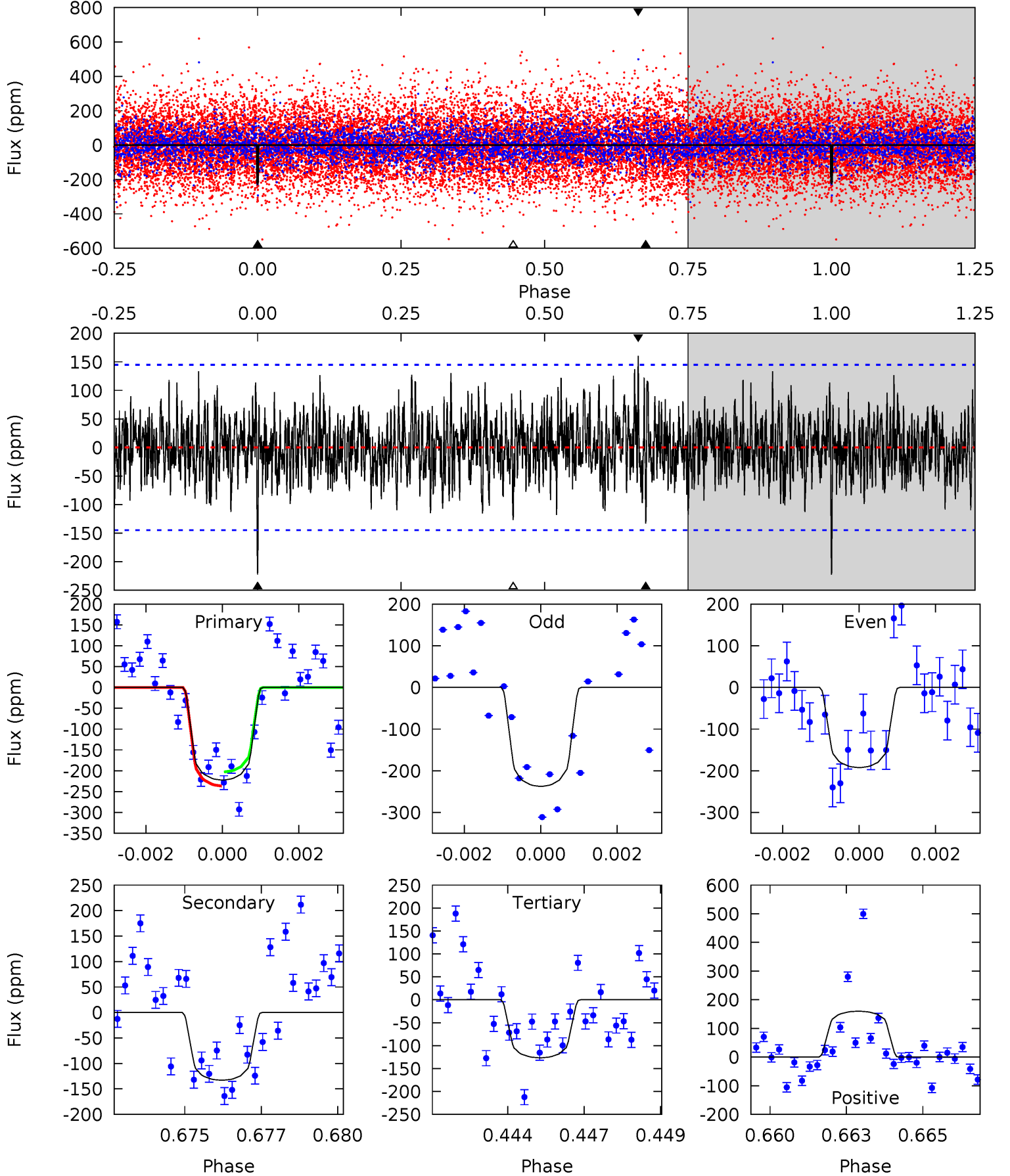
TCE 004474484-06 P= 65.493632 Days $T_0=150.099443$ (BKJD)



DV Model-Shift Uniqueness Test

004474484-06, P = 65.490862 Days, E = 84.645245 Days

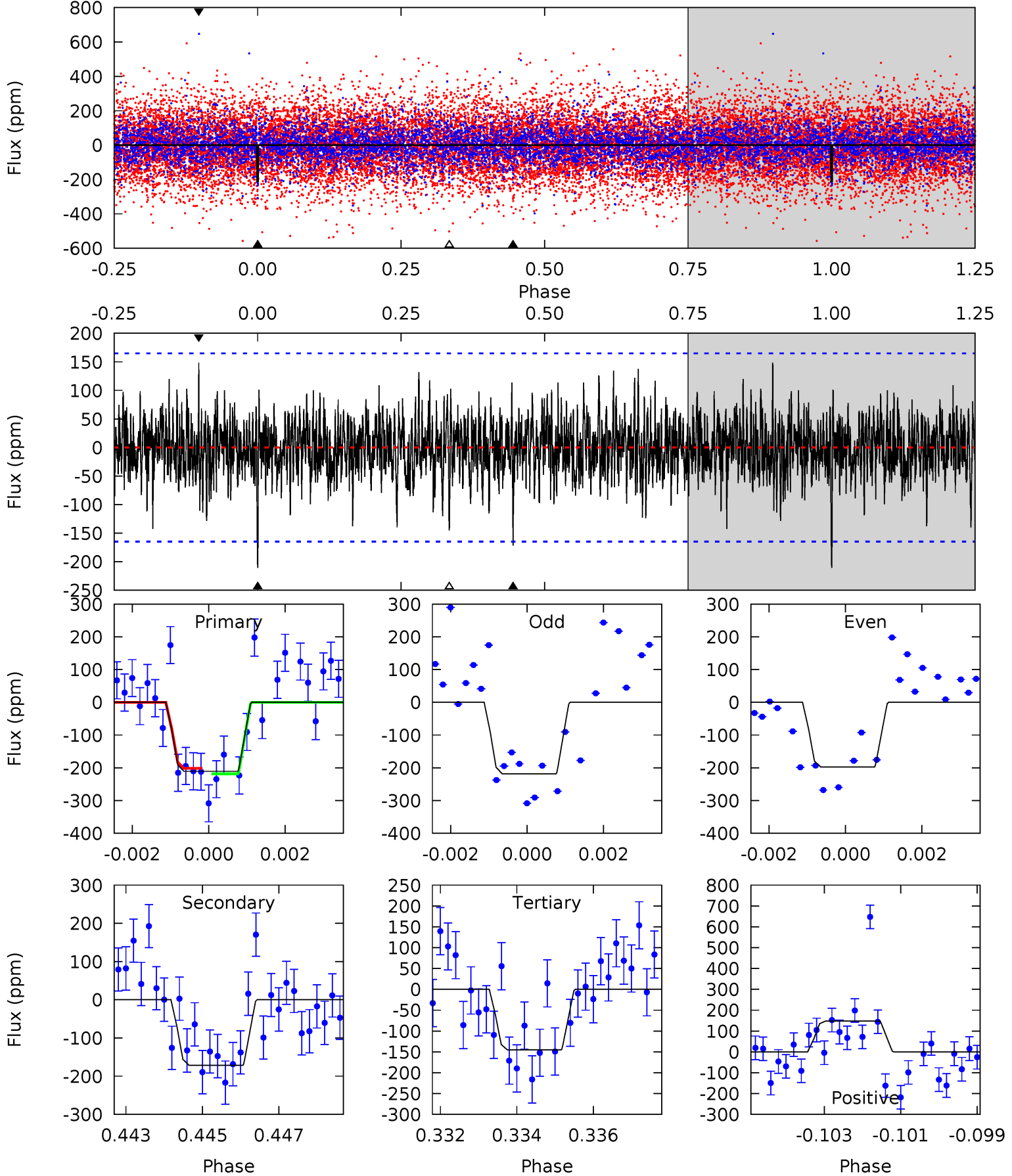
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.12	4.86	4.63	5.85	5.29	3.03	1.53	3.50	2.27	0.23	-0.99	0.78	0.88	0.42	0.62



Alt Model-Shift Uniqueness Test

004474484-06, P = 65.493632 Days, E = 84.605811 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.81	5.55	4.70	4.80	5.33	3.09	1.30	2.12	2.02	0.85	0.75	0.32	0.76	0.41	0.26



Stellar Parameters For KIC 004474484

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7209^{+226}_{-327}	$3.898^{+0.308}_{-0.132}$	$-0.140^{+0.250}_{-0.350}$	$2.404^{+0.578}_{-0.866}$	$1.667^{+0.168}_{-0.364}$	$0.169^{+0.365}_{-0.064}$
	+3%/-5%	+8%/-3%	+179%/-250%	+24%/-36%	+10%/-22%	+216%/-38%
Source	KIC0	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 004474484-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-133 ± 27	$4.02^{+1.81}_{-1.63}$	1097^{+79}_{-112}	5891^{+1812}_{-860}	630^{+1121}_{-345}
Alt.	-172 ± 31	$3.63^{+1.77}_{-1.64}$	1098^{+90}_{-106}	6757^{+2555}_{-1233}	1033^{+2153}_{-602}

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

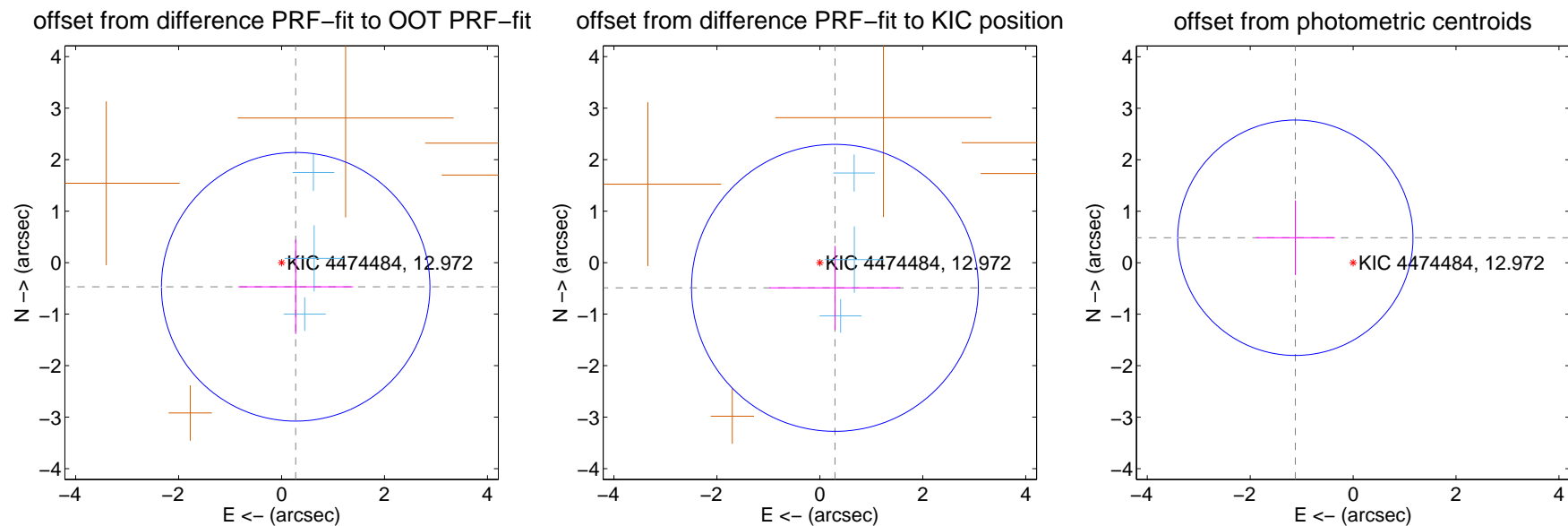
DV Centroid Data

Supplemental centroid analysis for 004474484-06. Kepler magnitude: 12.97. Transit SNR 7.07

There are 3 quarters with good PRF difference image offsets

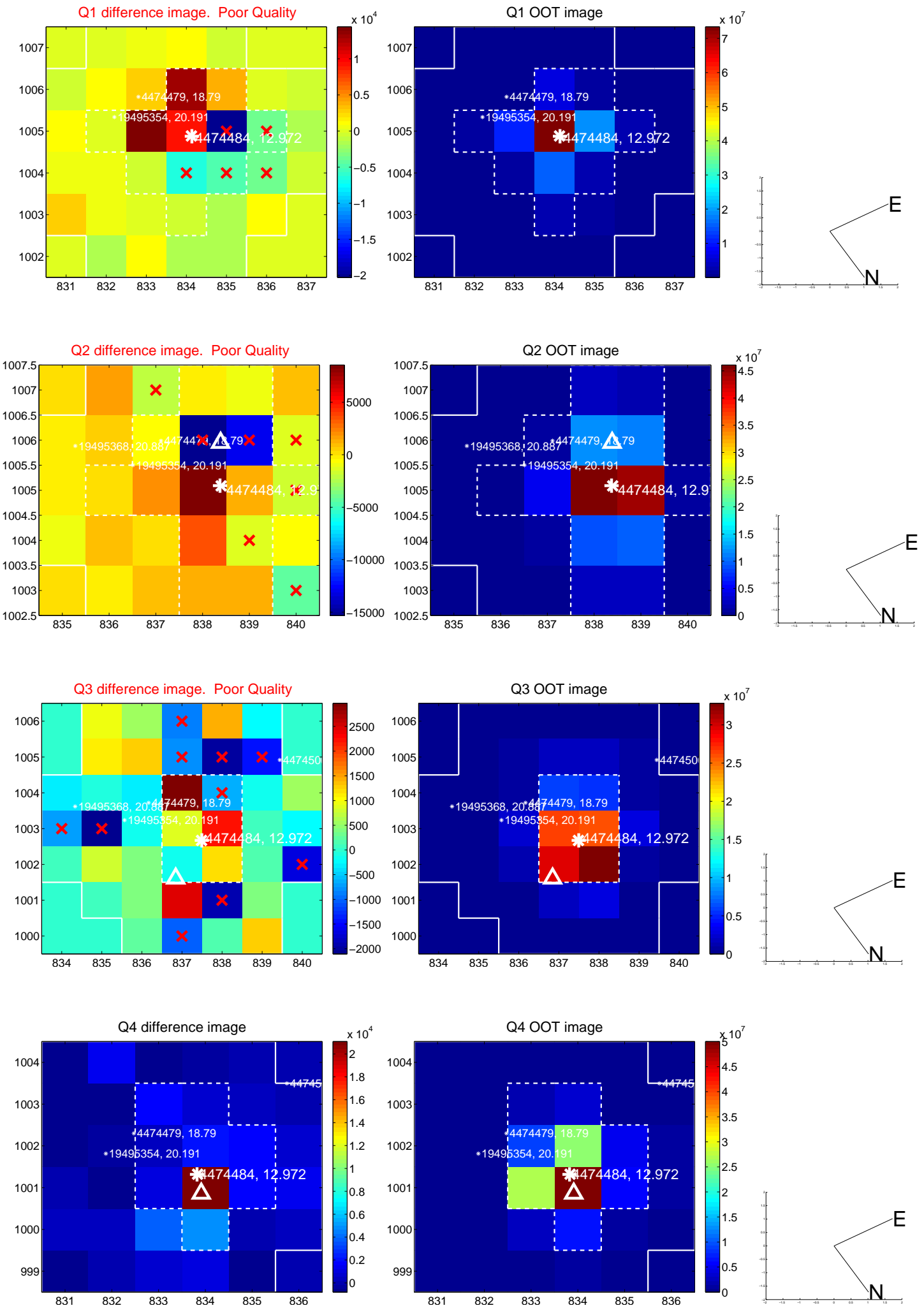
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.543 ± 0.869	0.62	-0.274 ± 1.116	-0.469 ± 0.918
PRF-fit source offset from KIC position	0.571 ± 0.929	0.61	-0.293 ± 1.271	-0.490 ± 0.815
photometric centroid source offset	1.22 ± 0.76	1.60	1.12 ± 0.77	0.48 ± 0.73

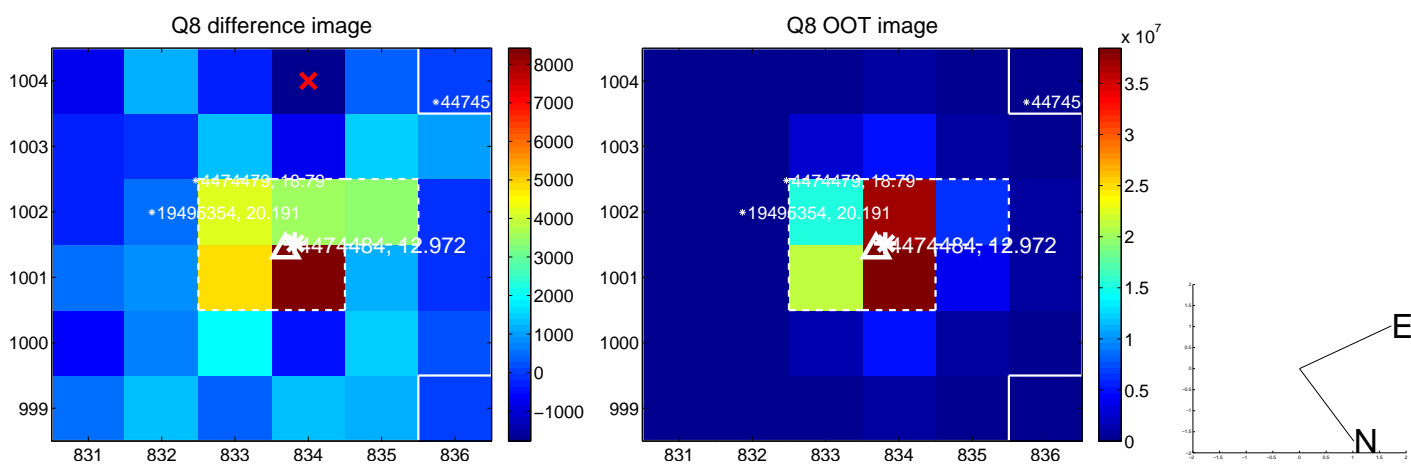
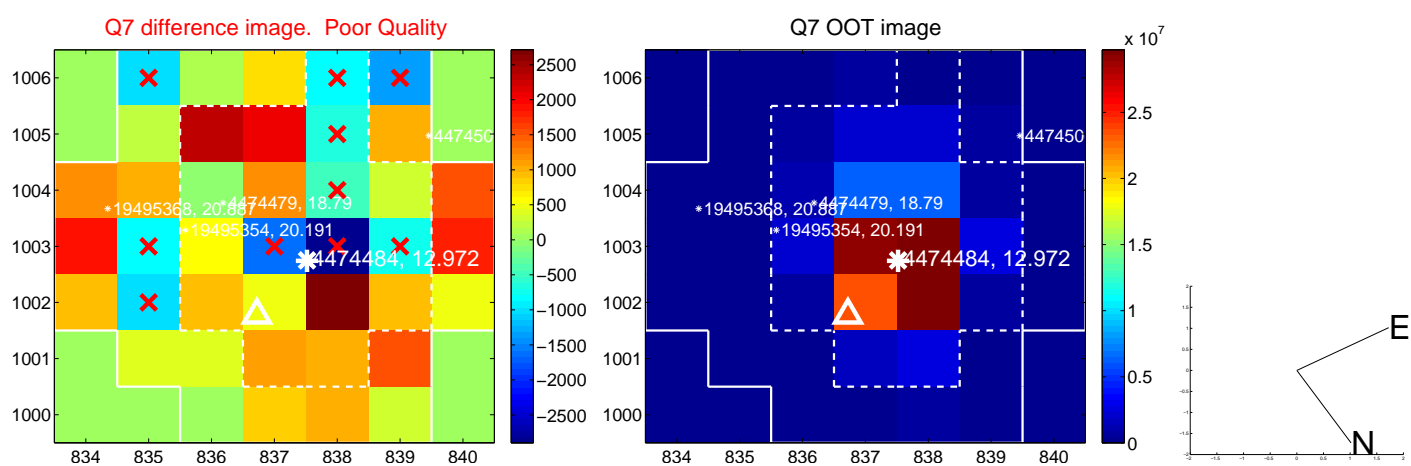
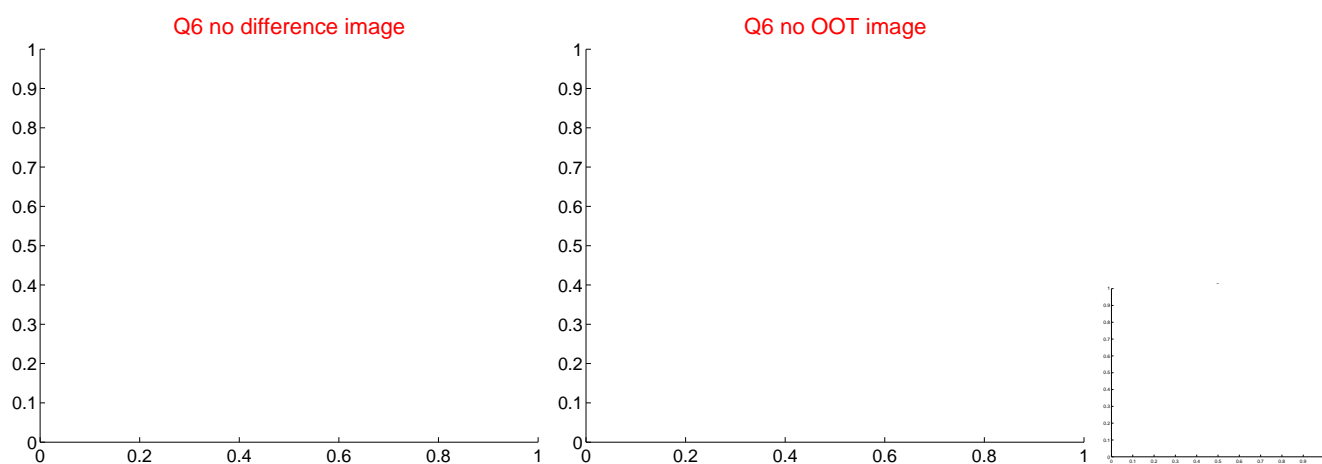
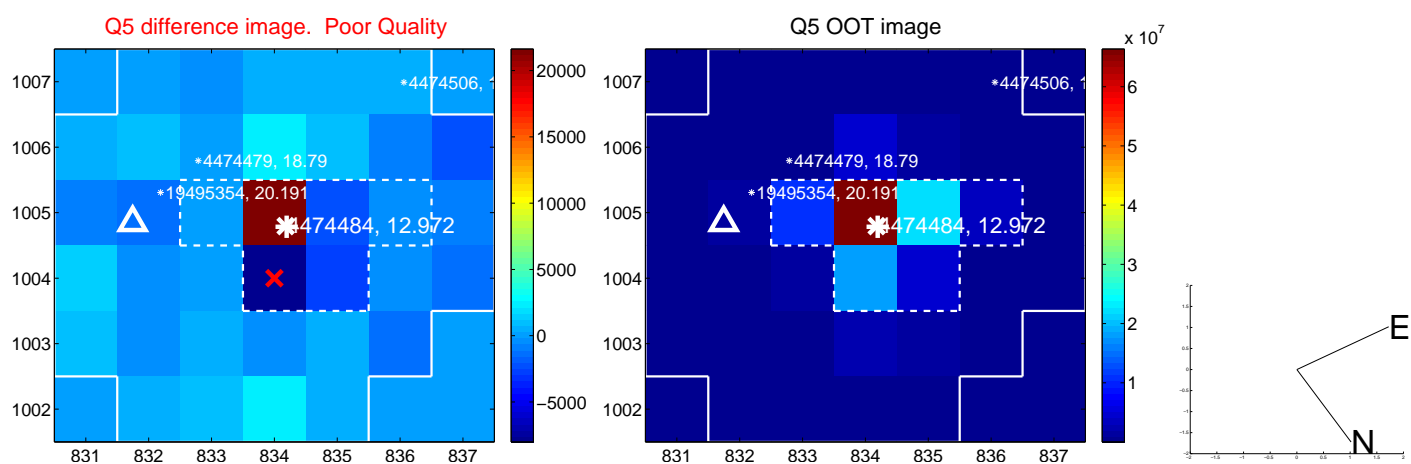


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

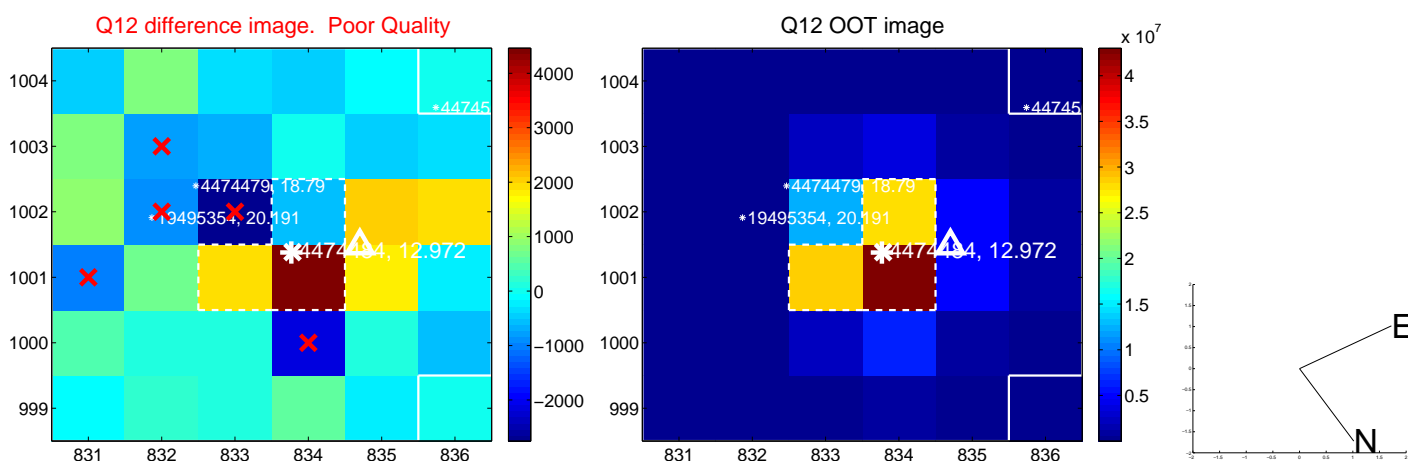
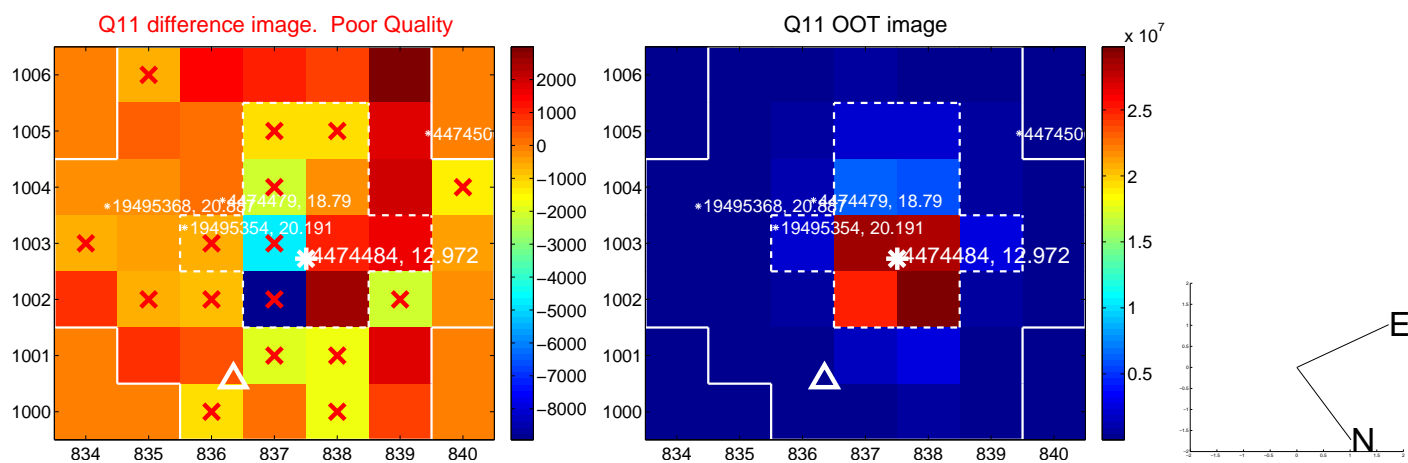
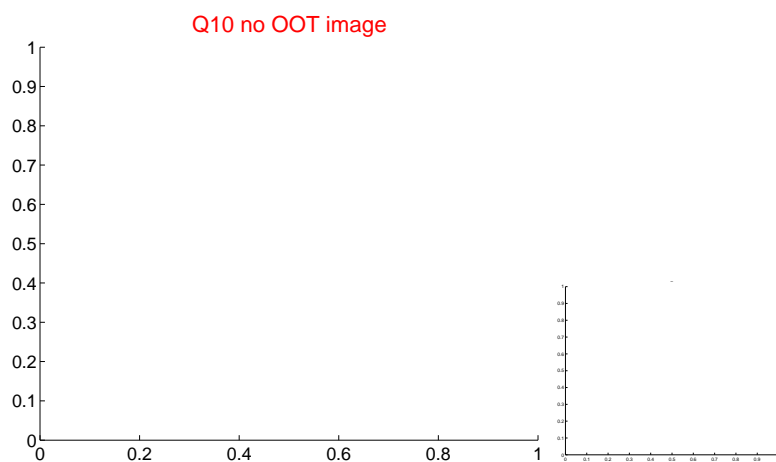
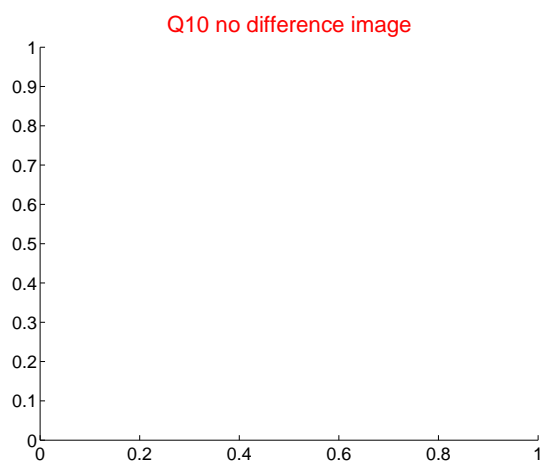
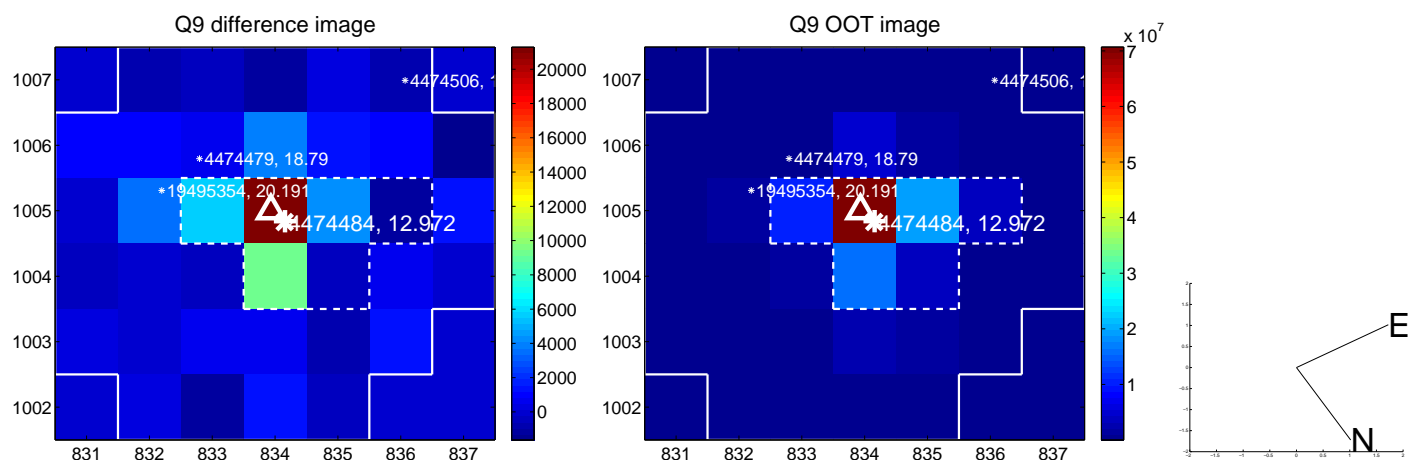
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



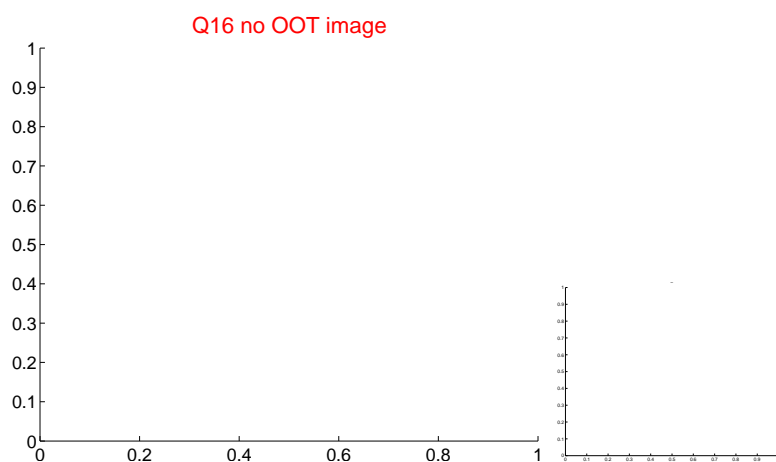
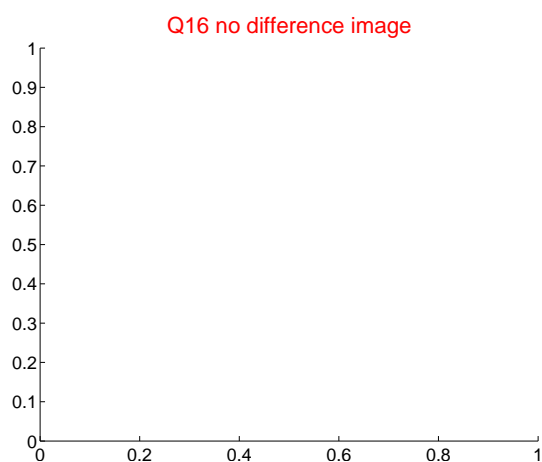
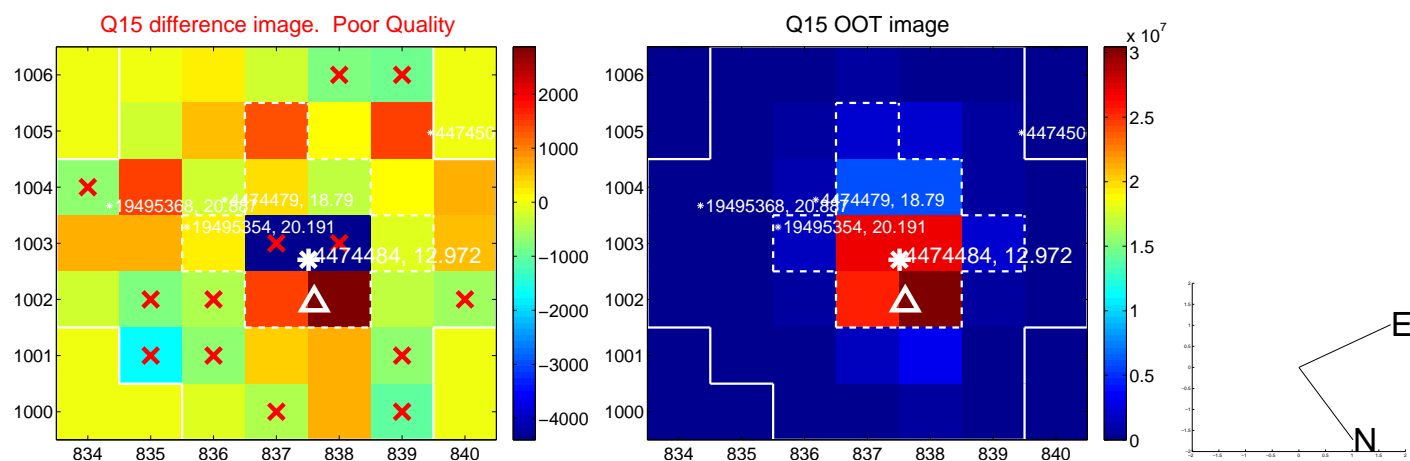
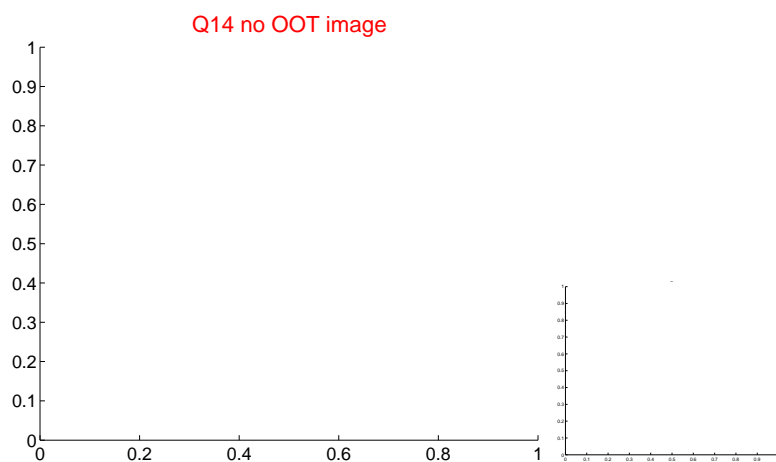
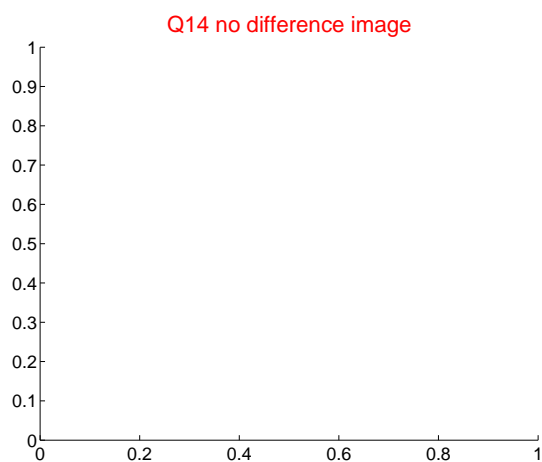
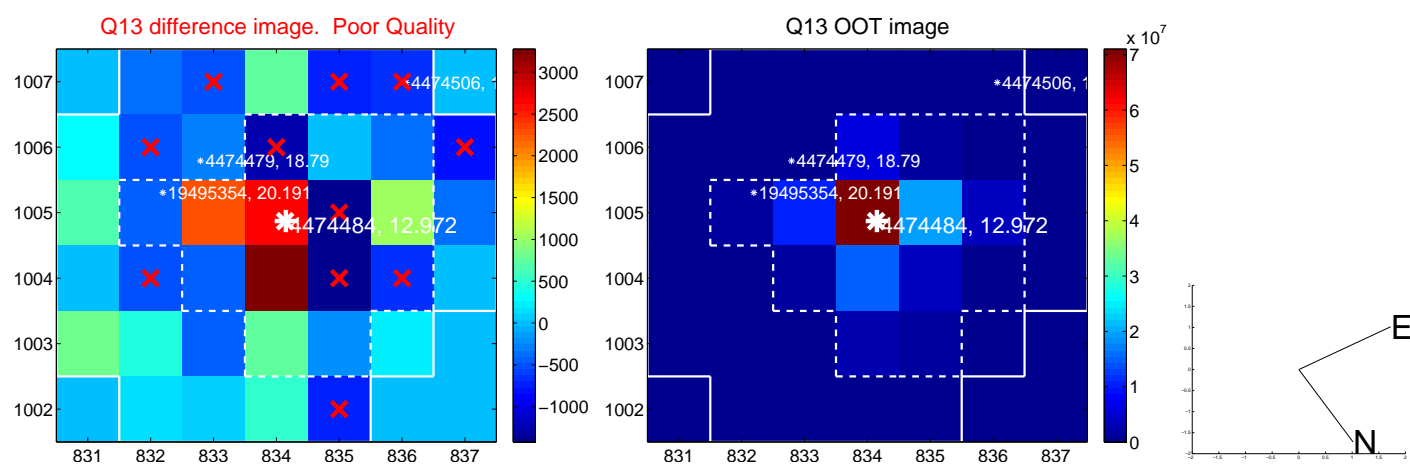
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



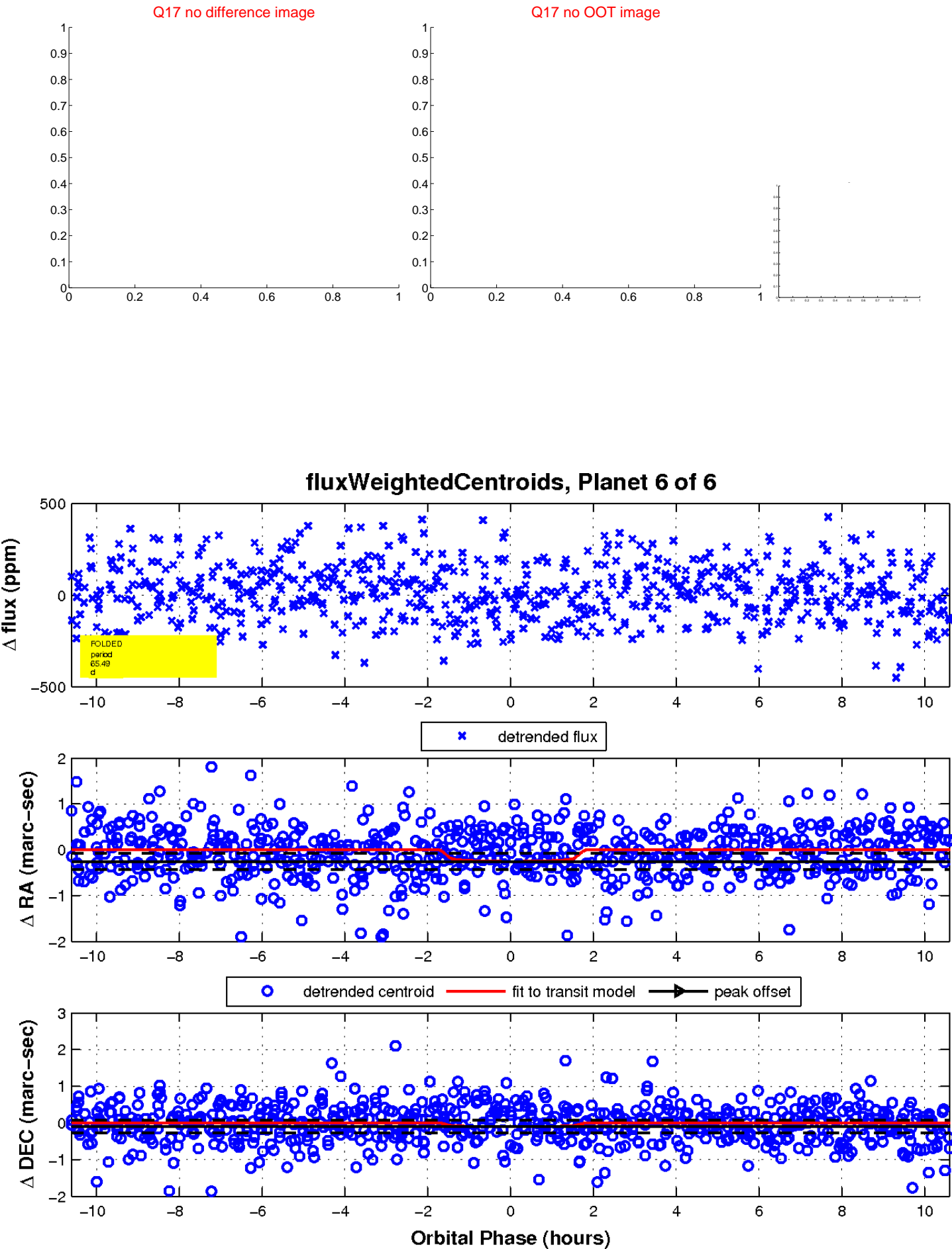
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

