

KIC 005597406

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})
005597406-01	OBS	No	360.274536	202.614342	1934.4	2.575	15.9	7.8	0.59	4708	2.64	0.22
005597406-02	OBS	No	289.795853	348.677283	1261.1	7.681	14.2	4.1	0.59	4708	2.13	0.29
005597406-03	OBS	No	192.844572	225.844649	1547.6	2.670	12.6	6.8	0.59	4708	2.61	0.50
005597406-04	OBS	No	621.959135	144.245805	1701.8	3.462	13.0	6.8	0.59	4708	2.44	0.10
005597406-05	OBS	No	188.877286	258.435507	1767.1	3.531	13.0	7.0	0.59	4708	2.72	0.52
005597406-06	OBS	No	273.610864	393.087807	820.9	3.500	11.3	-1.0	0.59	4708	1.65	0.32

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005597406-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005597406-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005597406-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—CENT_FEW_DIFFS
005597406-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005597406-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
005597406-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

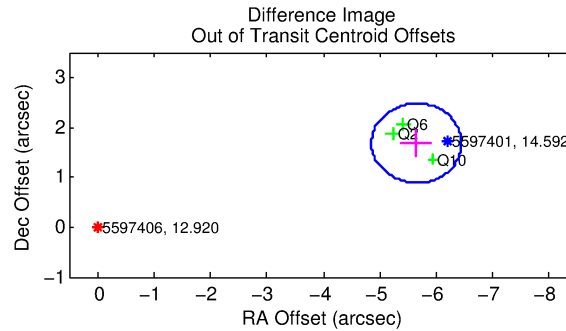
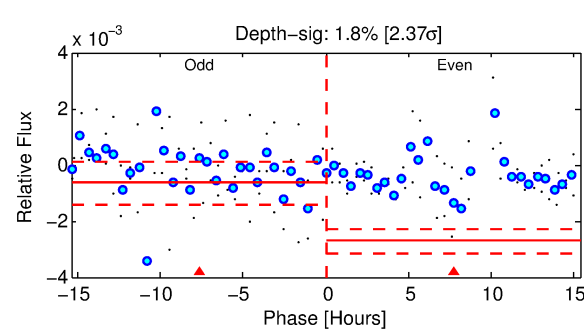
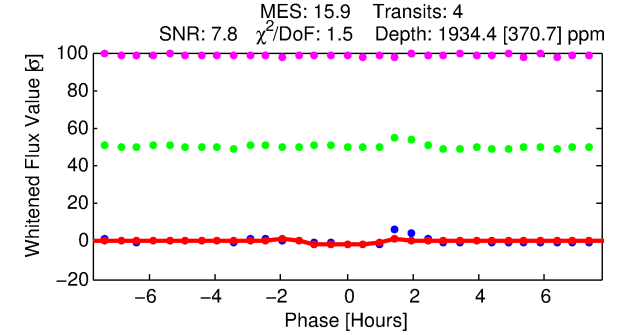
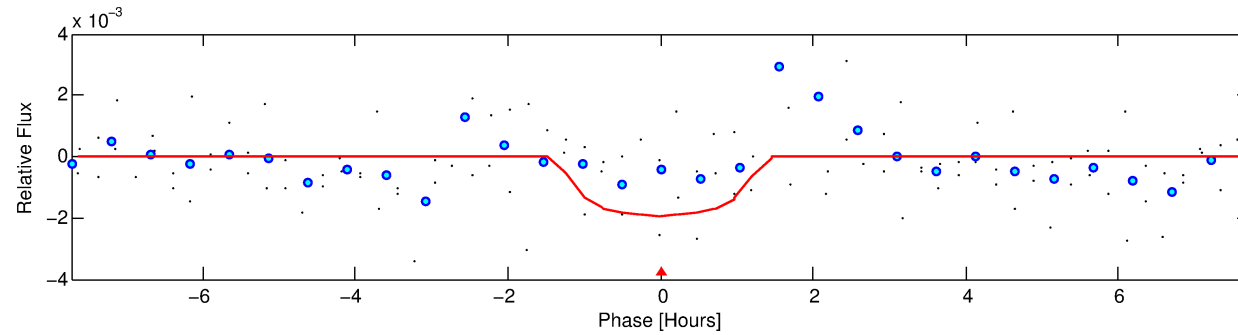
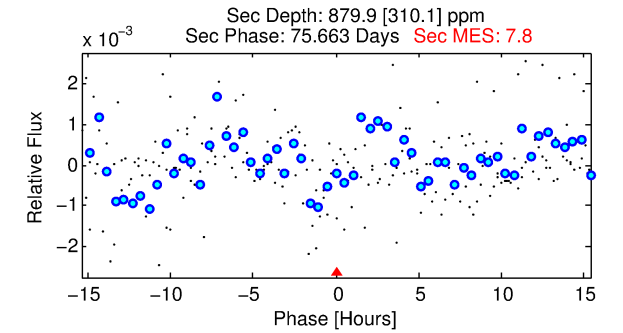
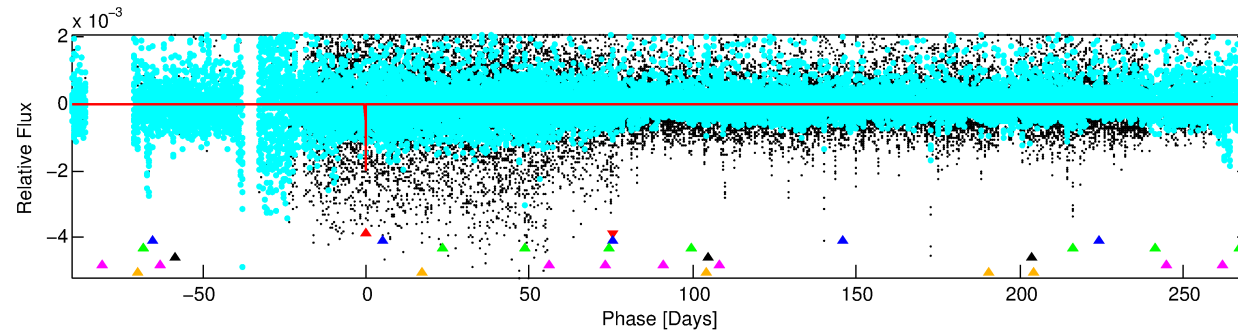
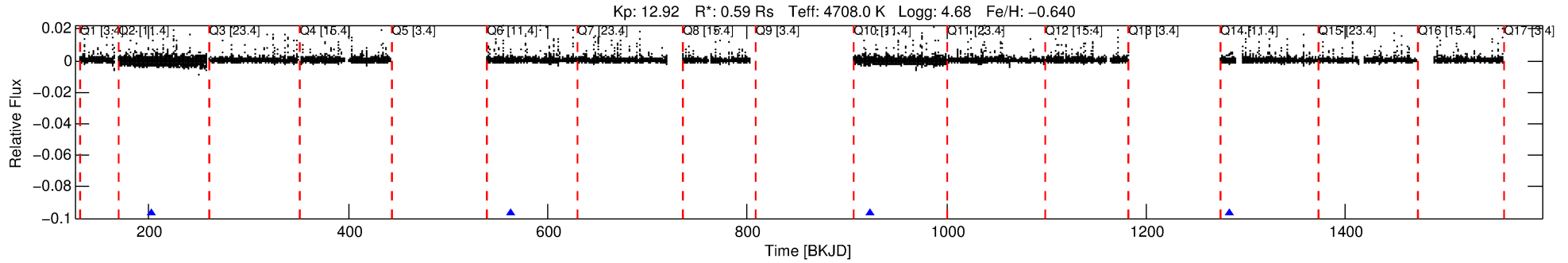
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005597406-01

No Significant Match Found

DV One-Page Summary

KIC: 5597406 Candidate: 1 of 6 Period: 360.275 d



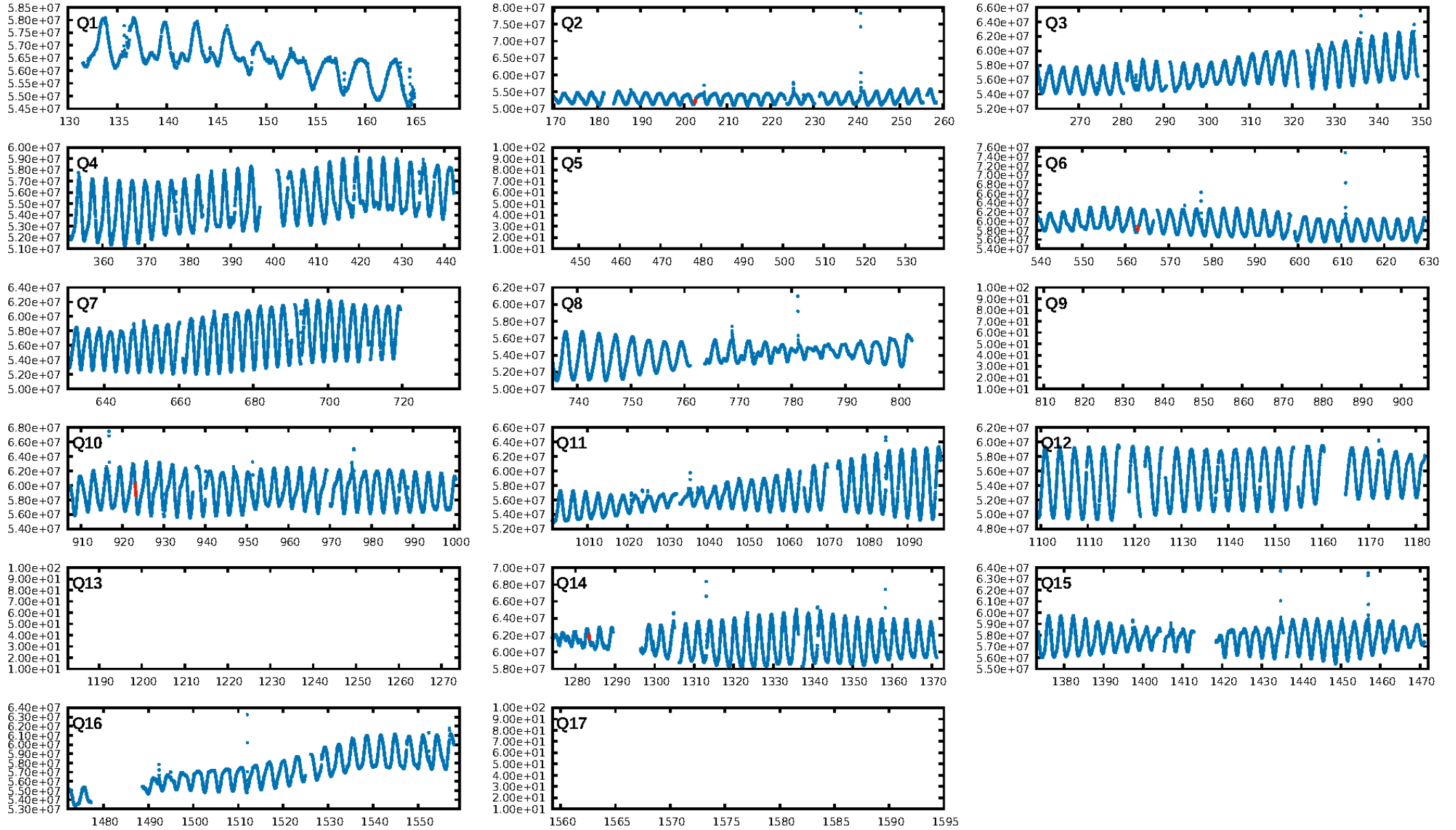
DV Fit Results:

Period = 360.27454 [0.00419] d
Epoch = 202.6143 [0.0100] BKJD
Rp/R* = 0.0407 [0.0851]
a/R* = 976.08 [6754.57]
b = 0.50 [10.56]
Seff = 0.22 [0.04]
Teq = 174 [8] K
Rp = 2.64 [5.52] Re
a = 0.8439 [0.0654] AU
Ag = 49596.29 [208209.86] [0.24σ]
Teffp = 4020 [4221] K [0.91σ]

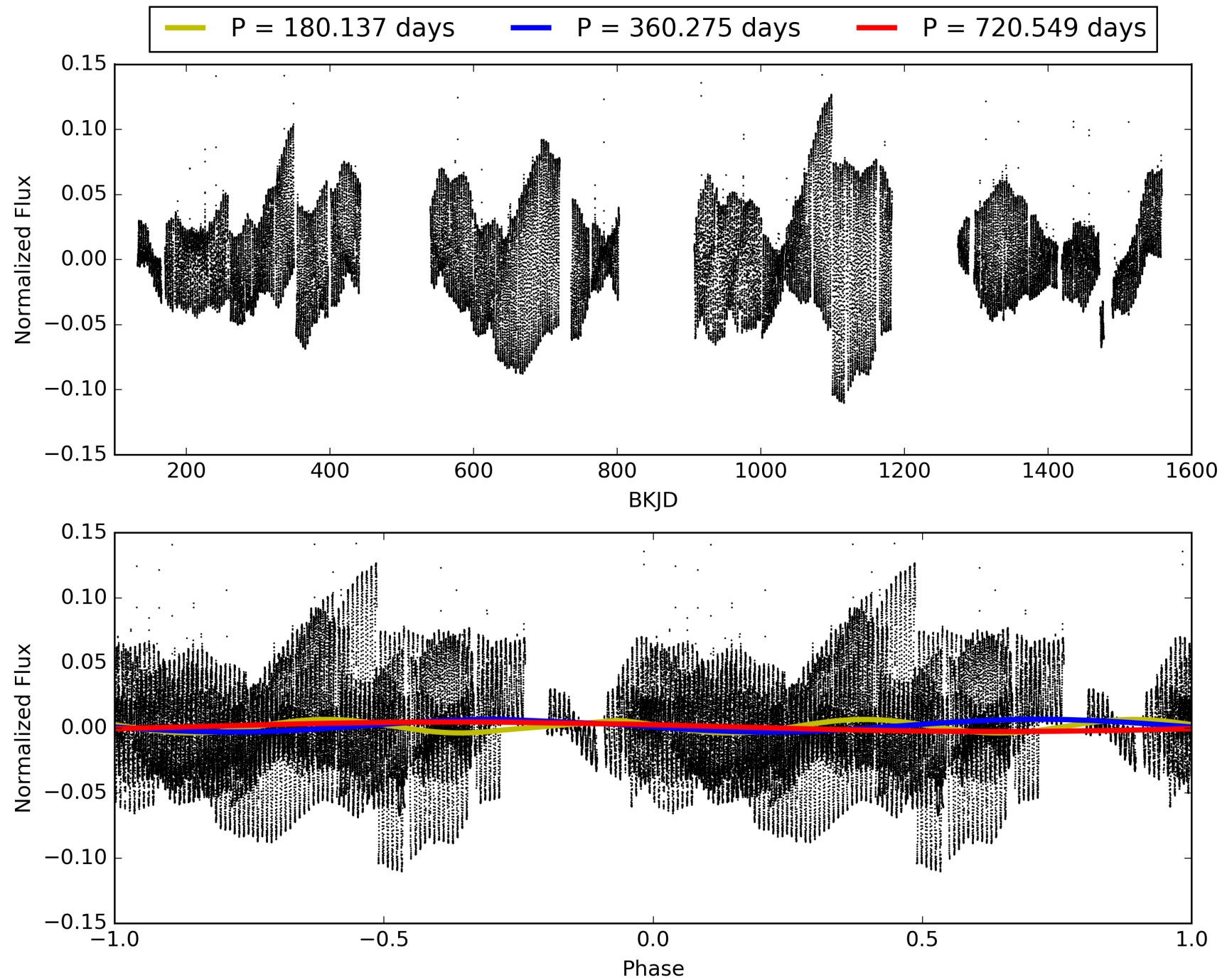
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [208.80σ]
LongPeriod-sig: 100.0% [1455.70σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 19.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 2.164
Centroid-sig: 21.1%
Centroid-so: 1.099 arcsec [0.44σ]
OotOffset-rm: 5.892 arcsec [22.19σ]
KicOffset-rm: 6.607 arcsec [63.52σ]
OotOffset-st: 3/0/0/0 [3]
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 005597406-01, PDC Light Curves

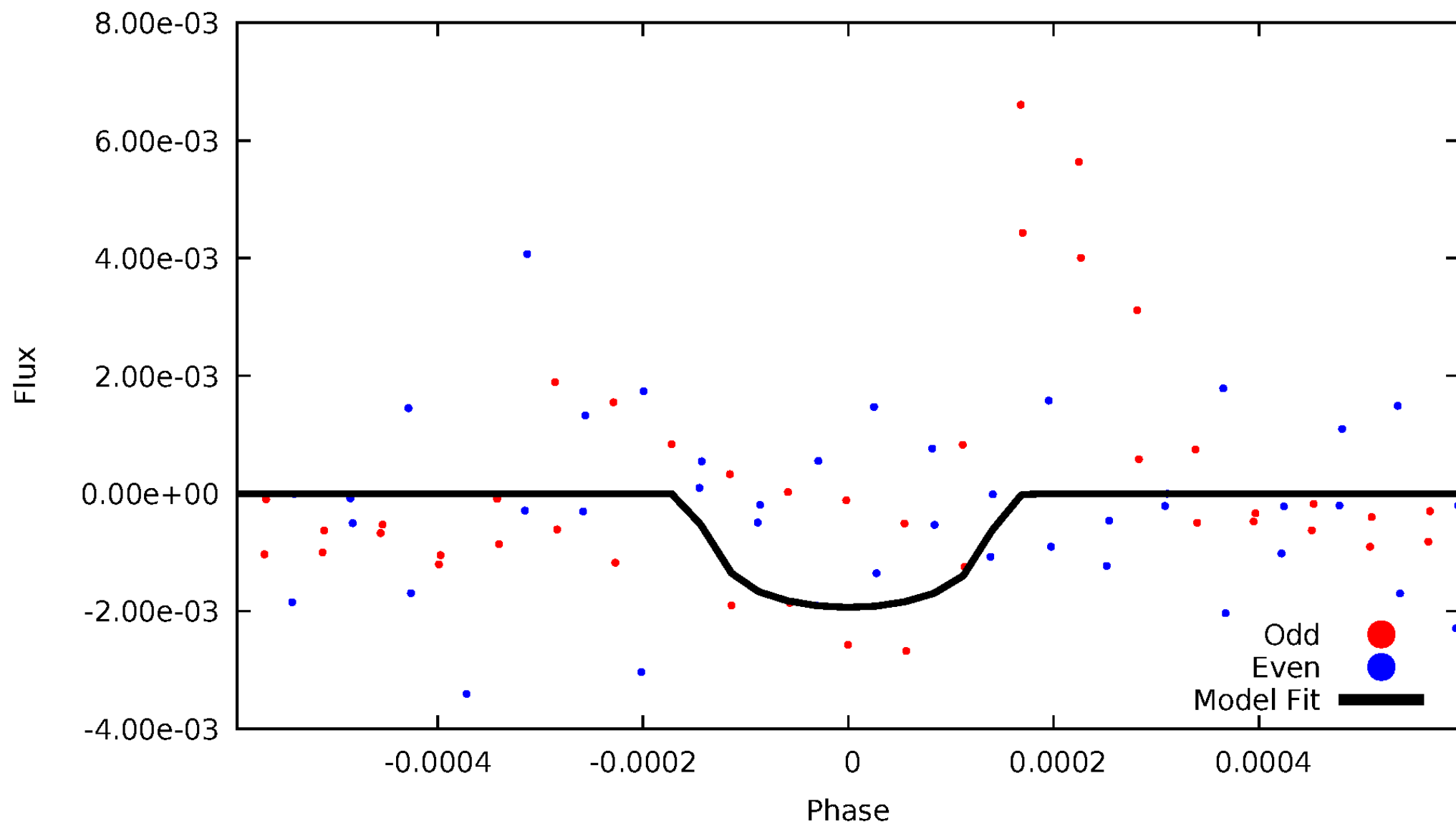


TCE 005597406-01



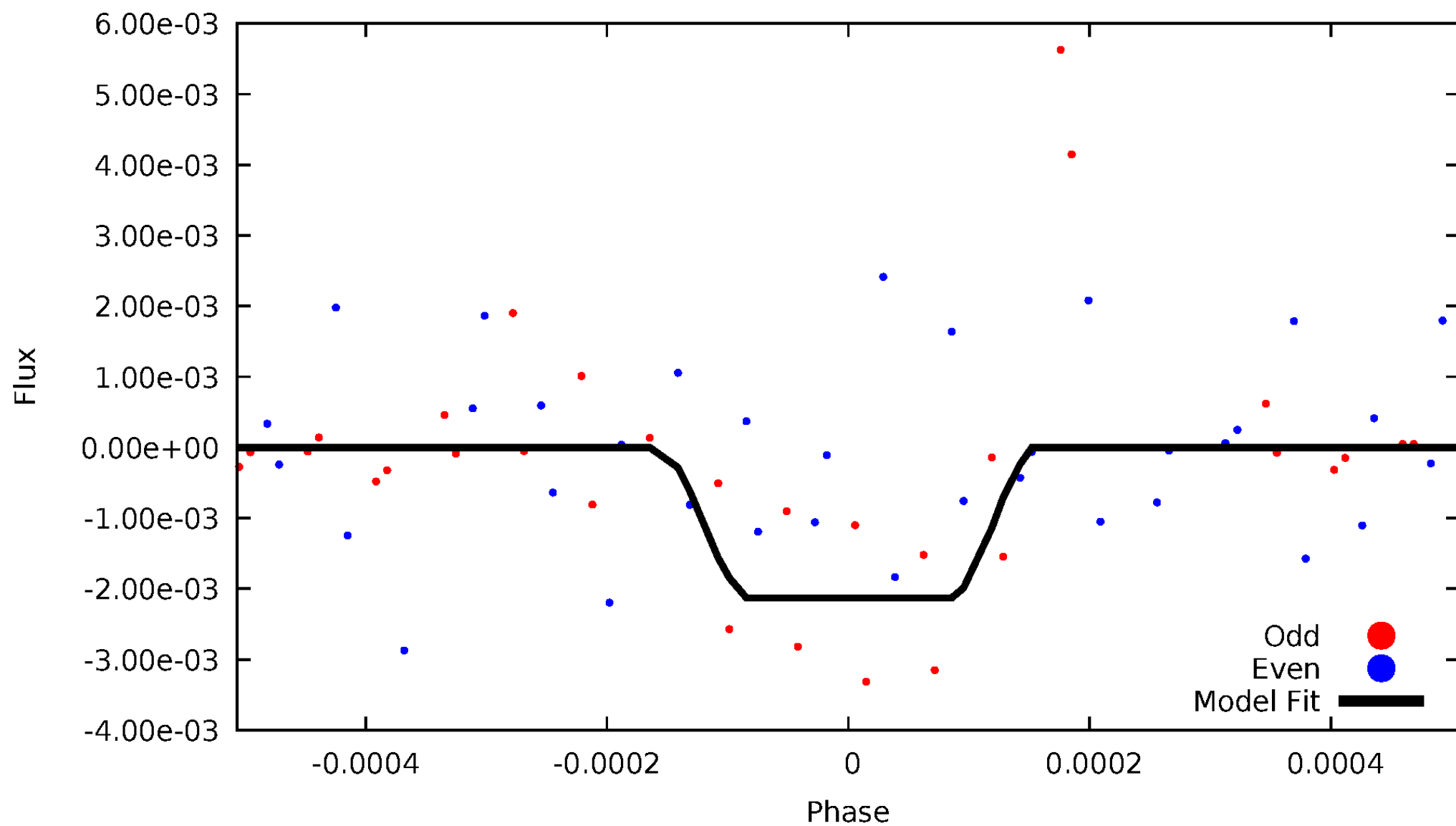
DV Odd/Even

TCE 005597406-01



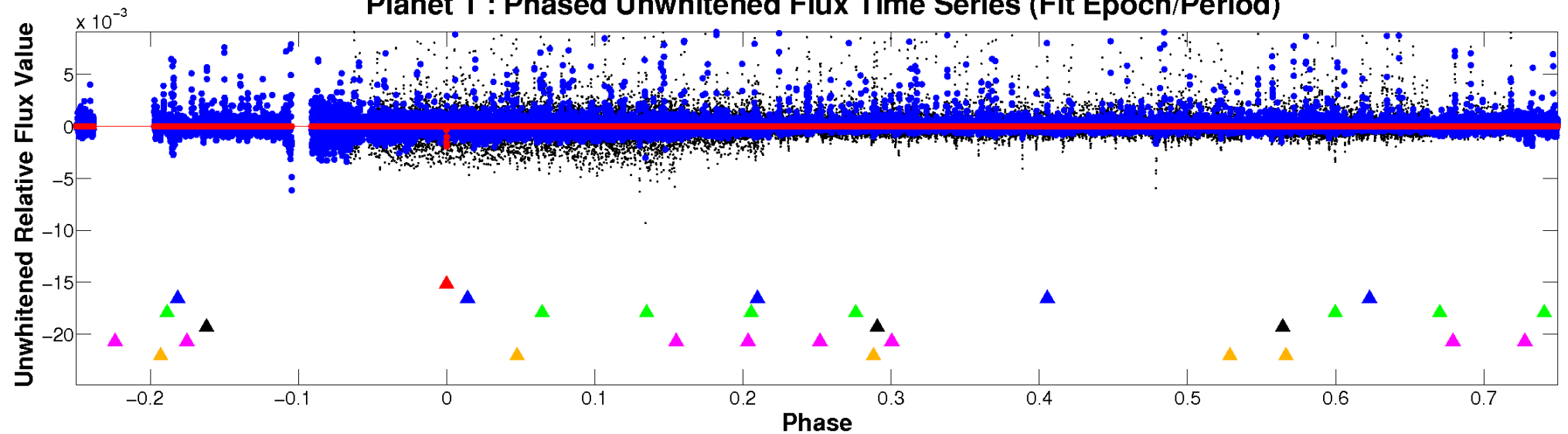
ALT Odd/Even

TCE 005597406-01

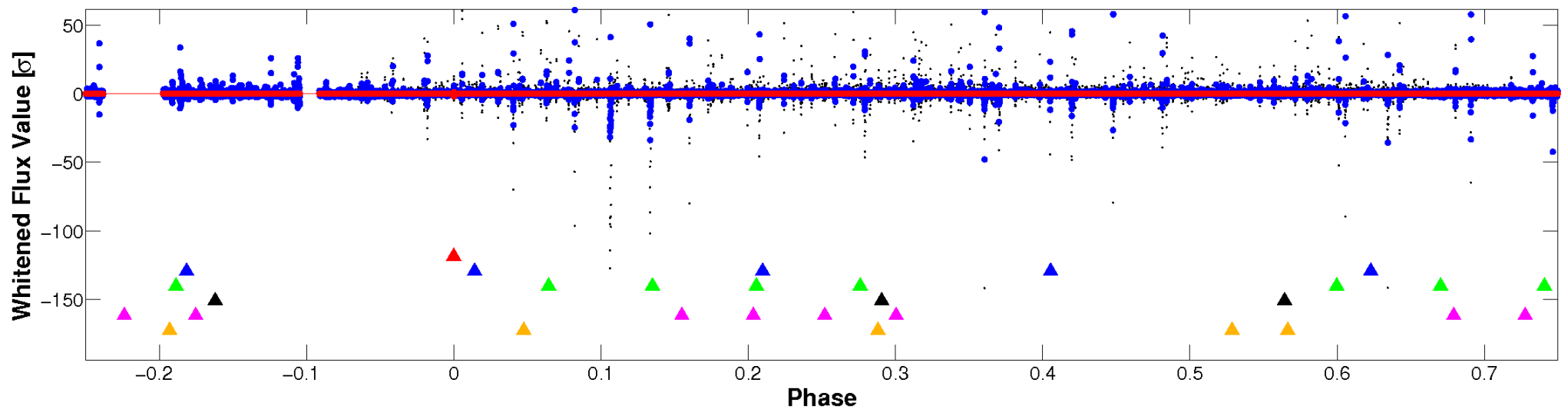


Non-Whitened Vs. Whitened Light Curve

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

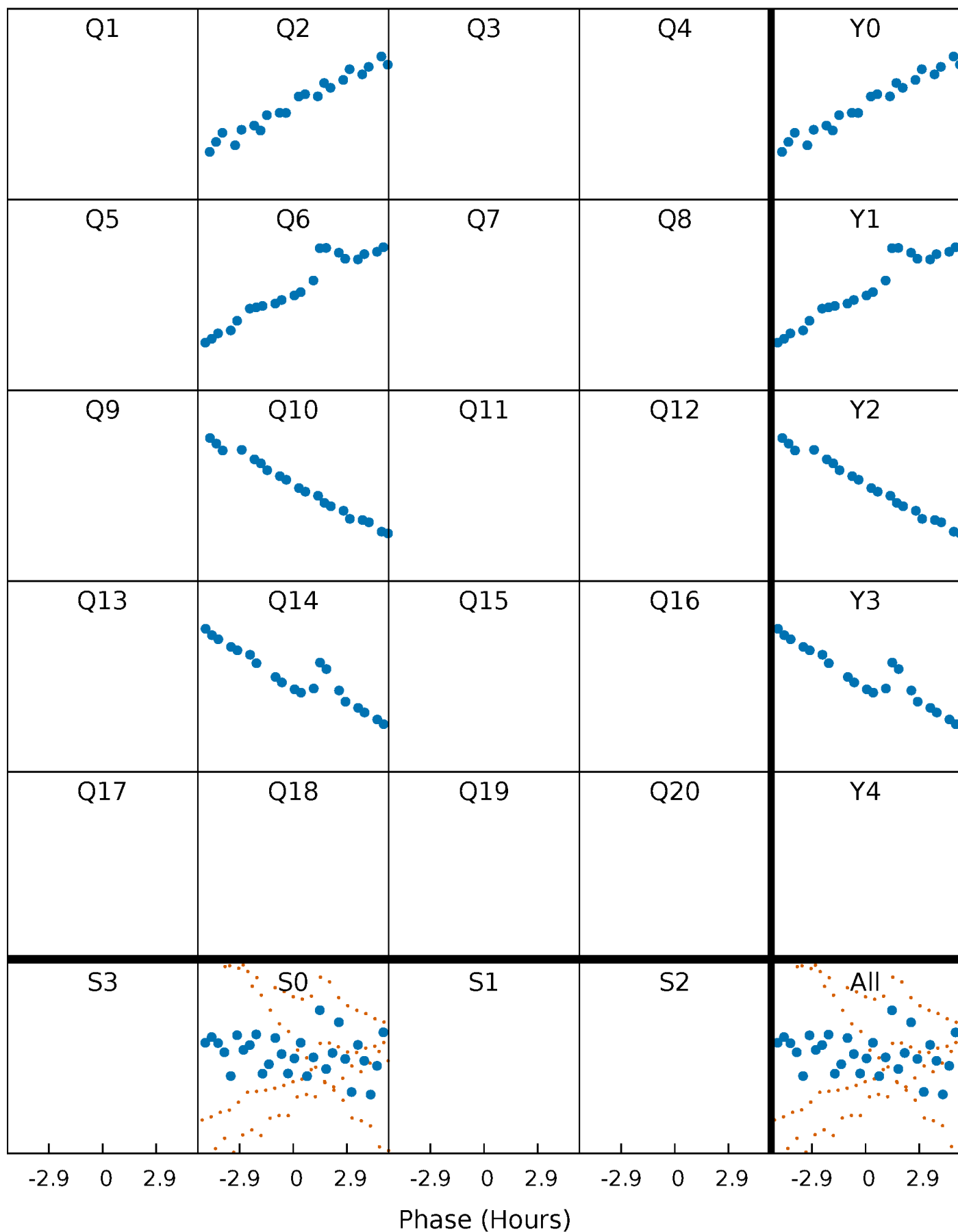


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



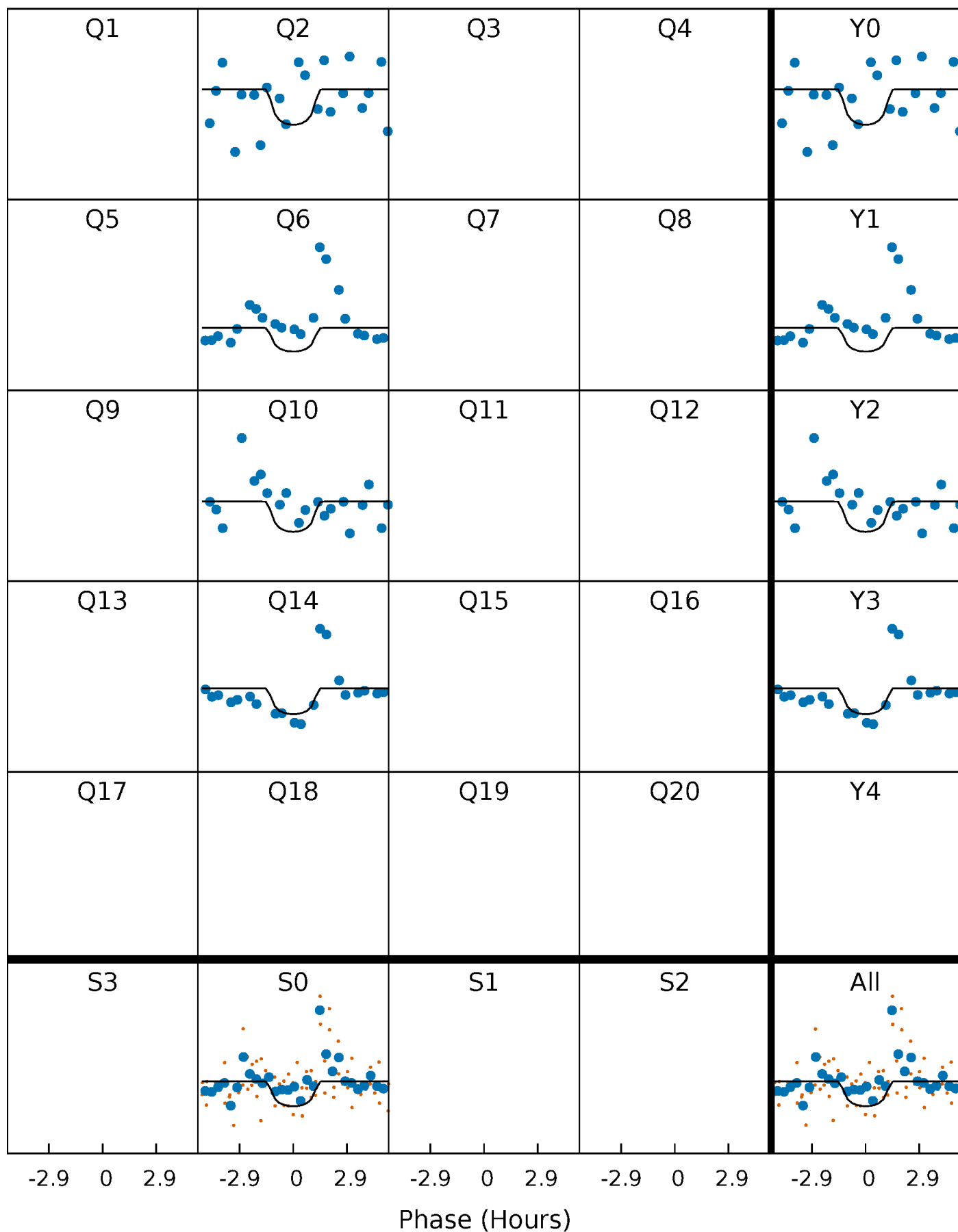
PDC Quarter-Phased Transit Curves

TCE 005597406-01 P=360.274536 Days $T_0=202.614342$ (BKJD)



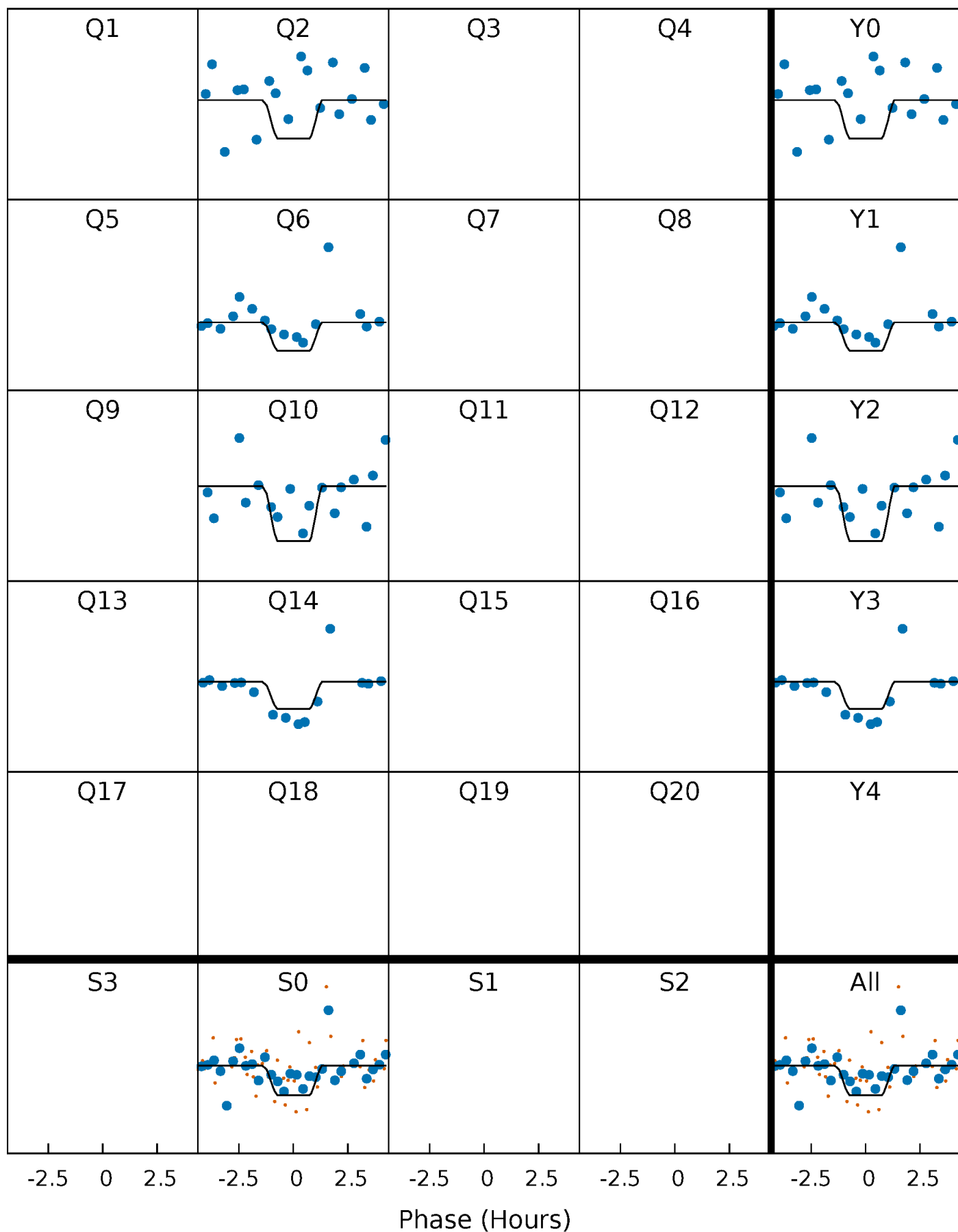
DV Quarter-Phased Transit Curves

TCE 005597406-01 P=360.274536 Days $T_0=202.614342$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

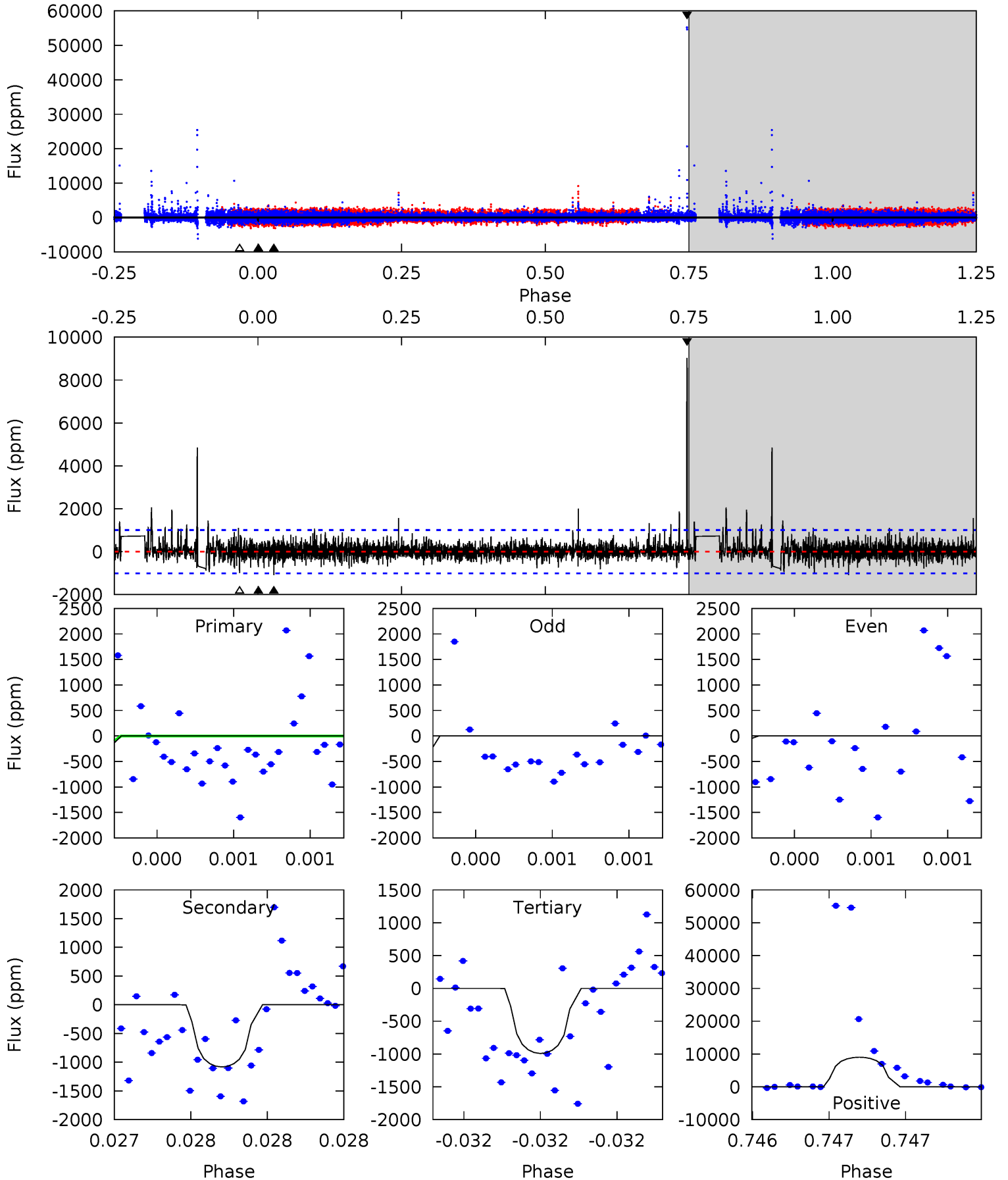
TCE 005597406-01 P=360.273186 Days $T_0=202.612942$ (BKJD)



DV Model-Shift Uniqueness Test

005597406-01, P = 360.274536 Days, E = 202.614342 Days

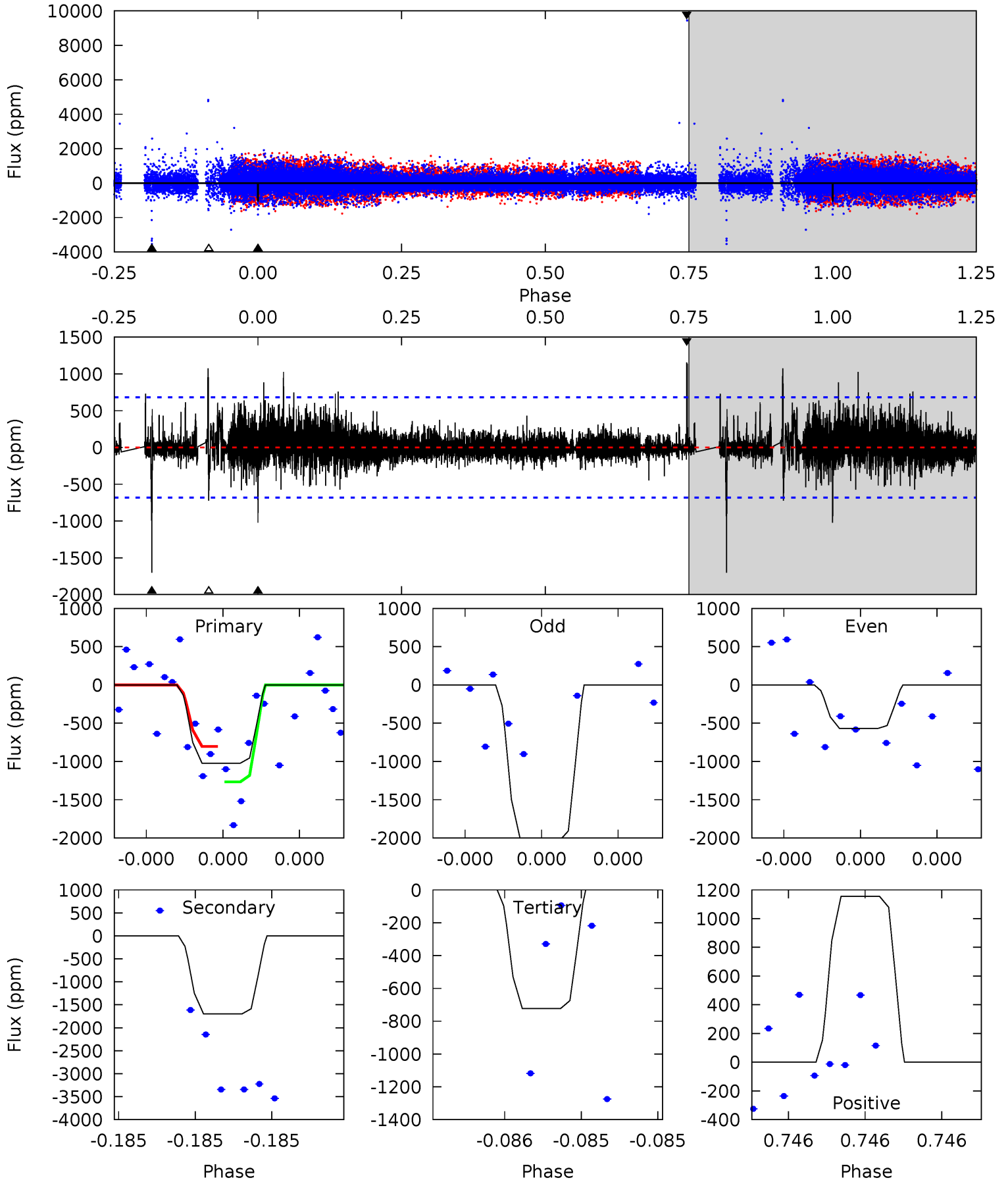
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.99	6.04	5.53	50.3	5.63	3.56	1.69	-1.54	-46.3	0.51	-44.3	1.49	2.83	0.89	1.02



Alt Model-Shift Uniqueness Test

005597406-01, P = 360.273186 Days, E = 202.612942 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.52	14.2	6.02	9.63	5.68	3.64	1.07	2.50	-1.11	8.14	4.53	6.41	1.04	0.40	1.96



Stellar Parameters For KIC 005597406

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4708^{+165}_{-165}	$4.681^{+0.036}_{-0.050}$	$-0.640^{+0.300}_{-0.300}$	$0.594^{+0.060}_{-0.044}$	$0.618^{+0.061}_{-0.044}$	$4.148^{+0.692}_{-0.712}$
	+4%/-4%	+1%/-1%	+47%/-47%	+10%/-7%	+10%/-7%	+17%/-17%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 005597406-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1083 ± 179	$4.95^{+4.38}_{-3.37}$	244^{+9}_{-9}	3512^{+1945}_{-632}	$17252^{+161535}_{-12571}$
Alt.	-1700 ± 120	$5.24^{+4.75}_{-3.52}$	244^{+10}_{-9}	3713^{+1983}_{-674}	$24663^{+195188}_{-17962}$

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 $A_{obs} \gg 1.0$

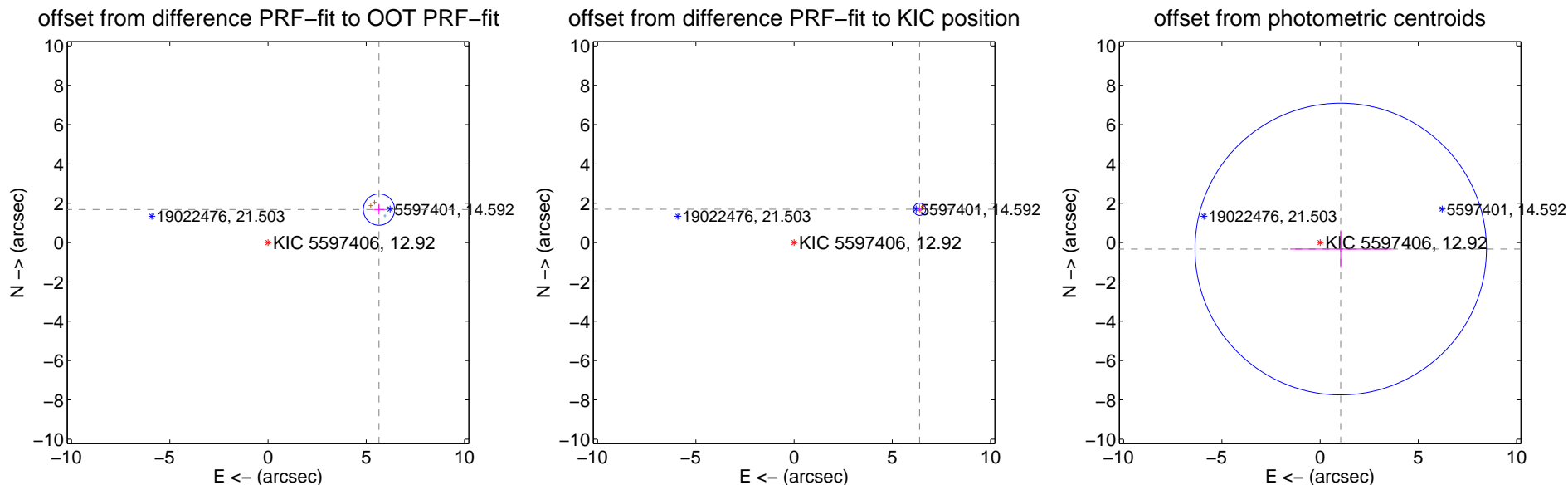
DV Centroid Data

Supplemental centroid analysis for 005597406-01. Kepler magnitude: 12.92. Transit SNR 7.78

There are 1 quarters with good PRF difference image offsets

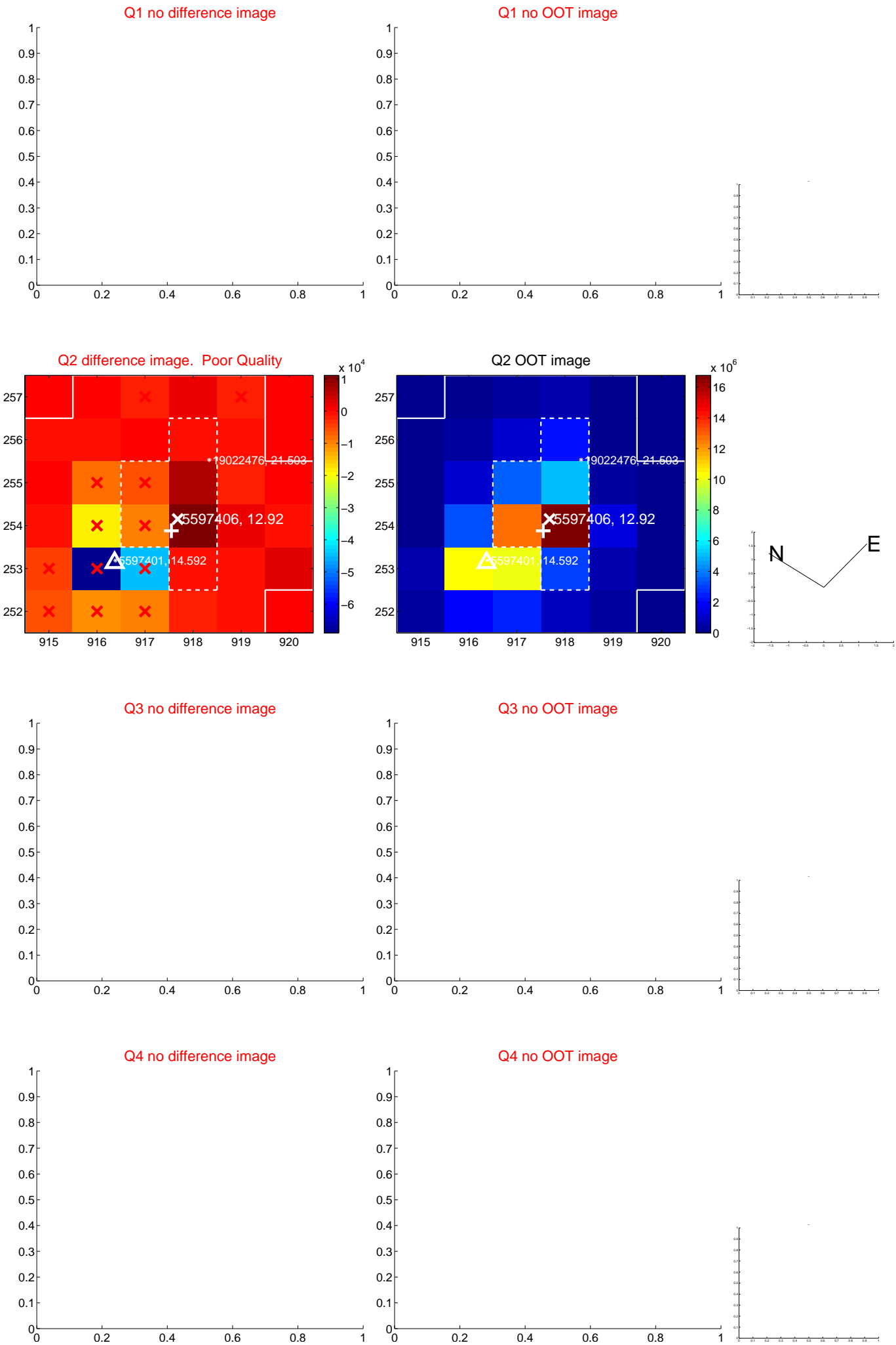
The direct PRF centroid is offset from the target star catalog position by about 0.47 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.892 ± 0.265	22.19	-5.647 ± 0.266	1.679 ± 0.256
PRF-fit source offset from KIC position	6.607 ± 0.104	63.52	-6.386 ± 0.097	1.695 ± 0.085
photometric centroid source offset	1.10 ± 2.47	0.44	-1.05 ± 2.57	-0.33 ± 0.95

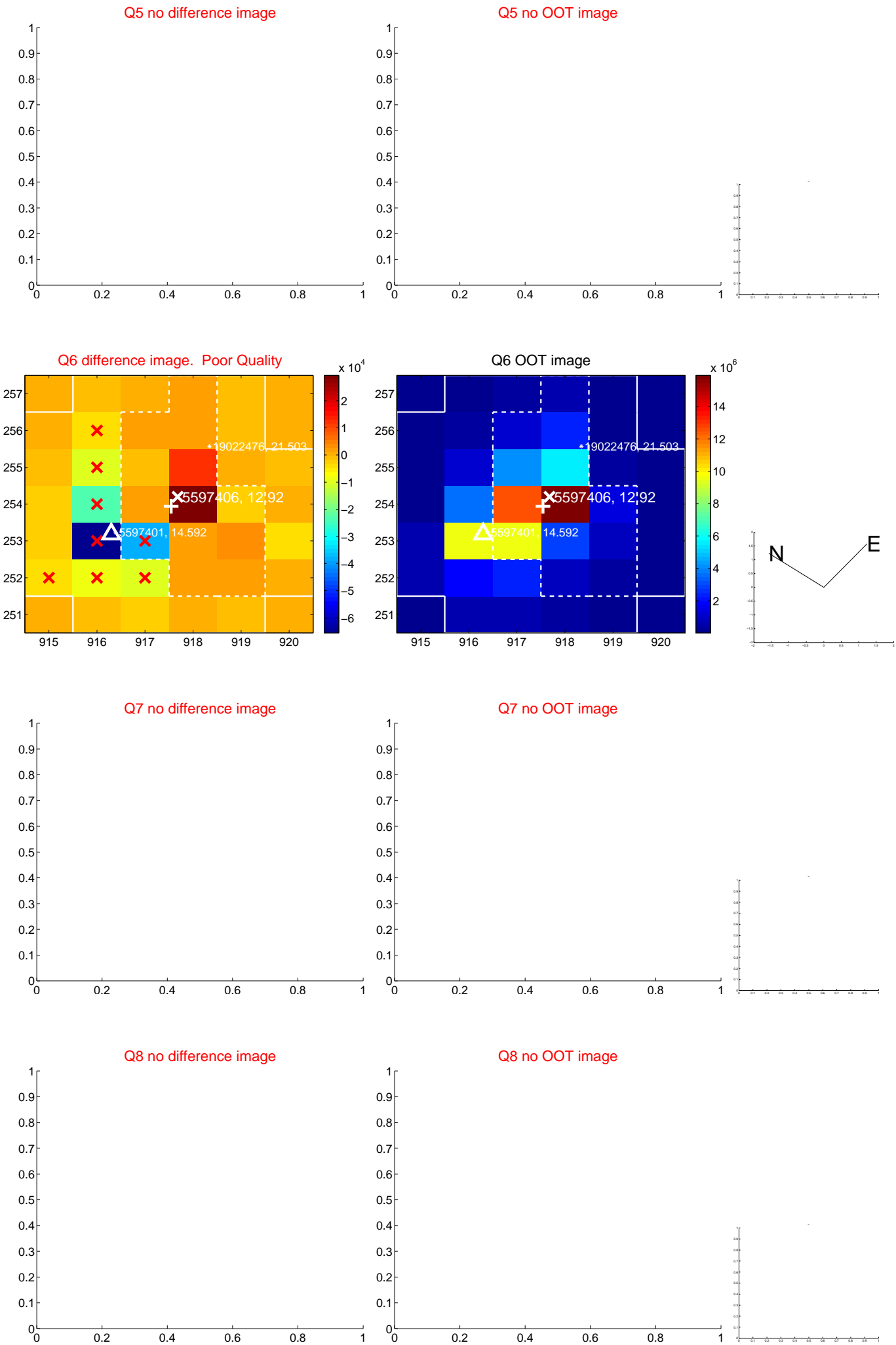


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

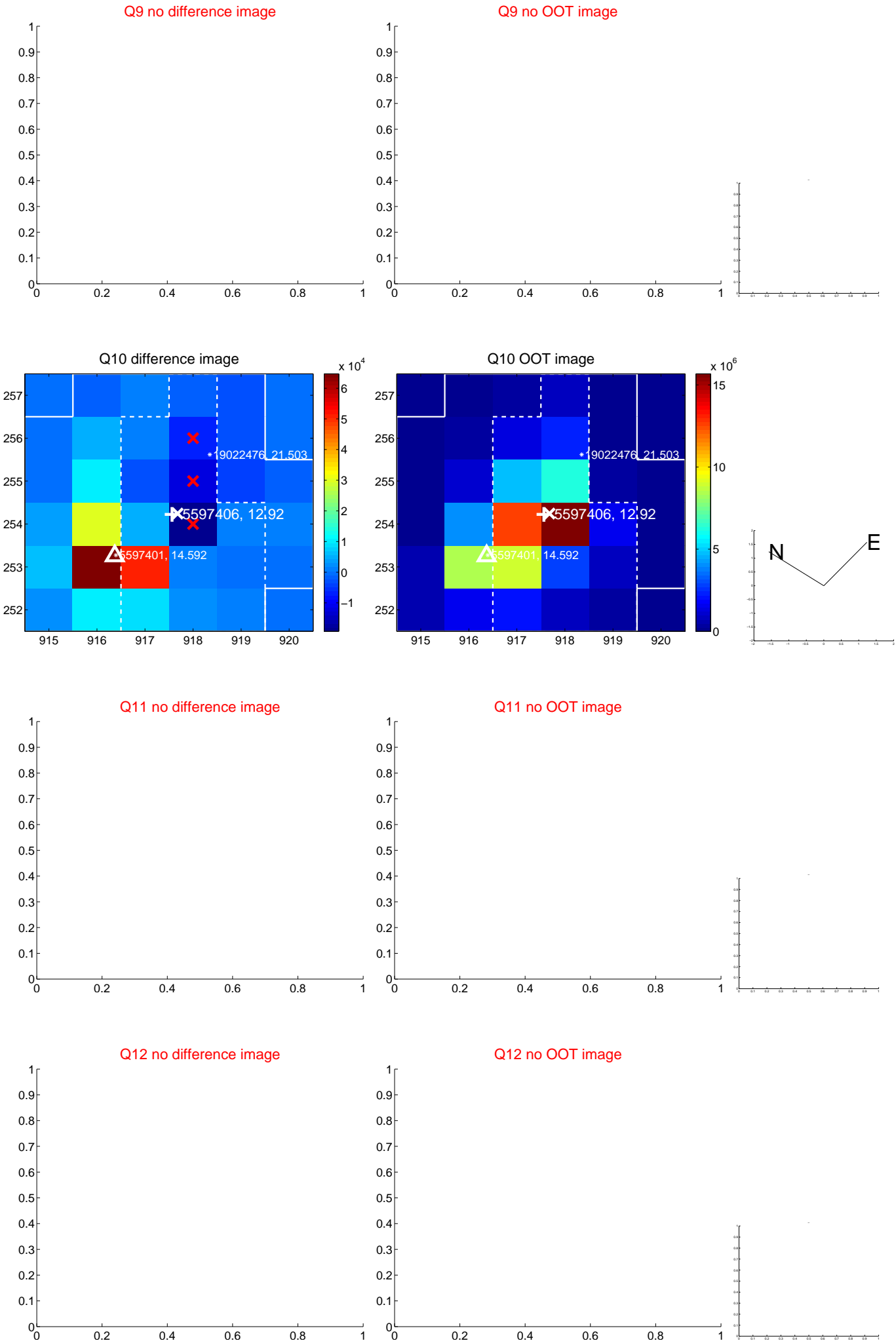
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



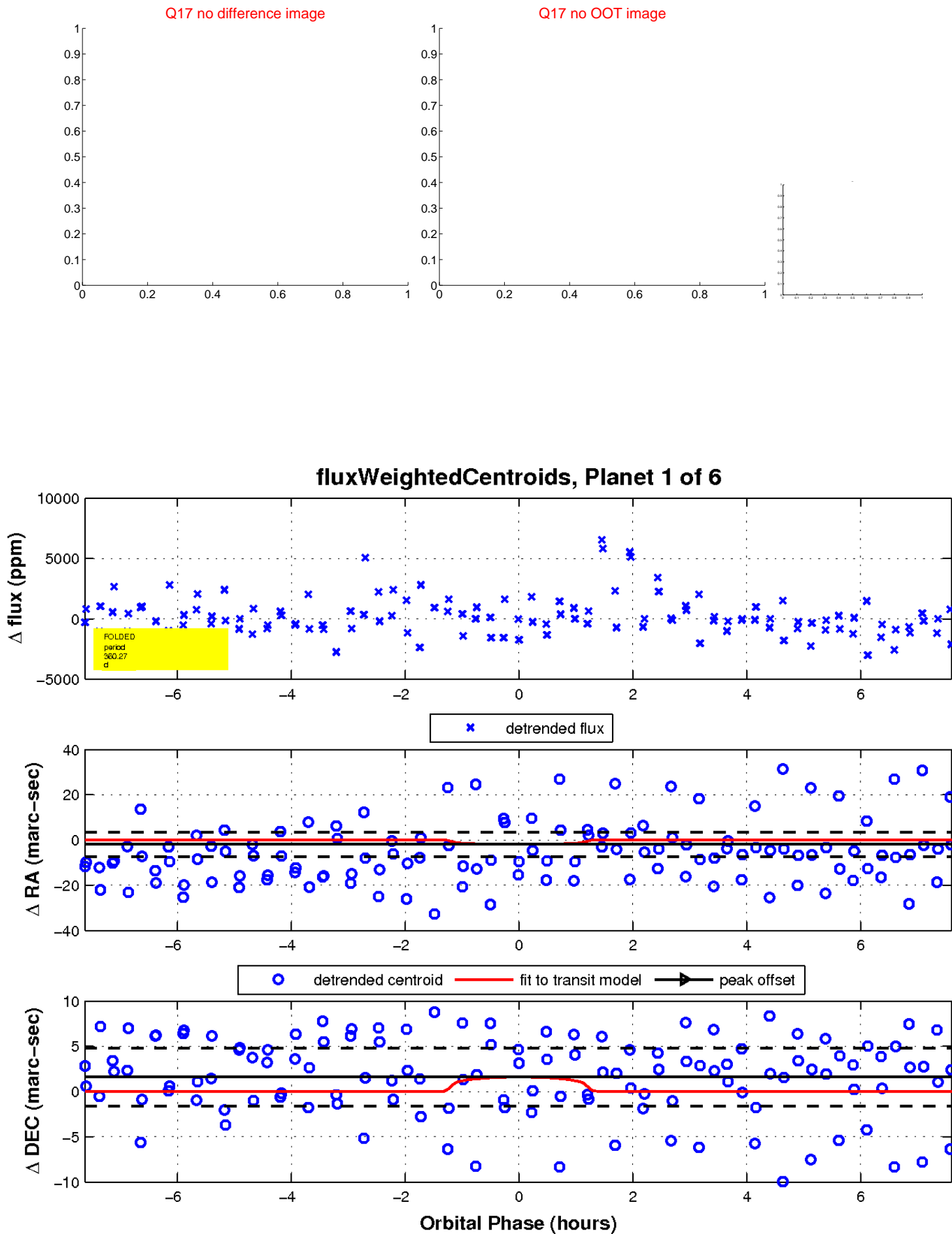
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

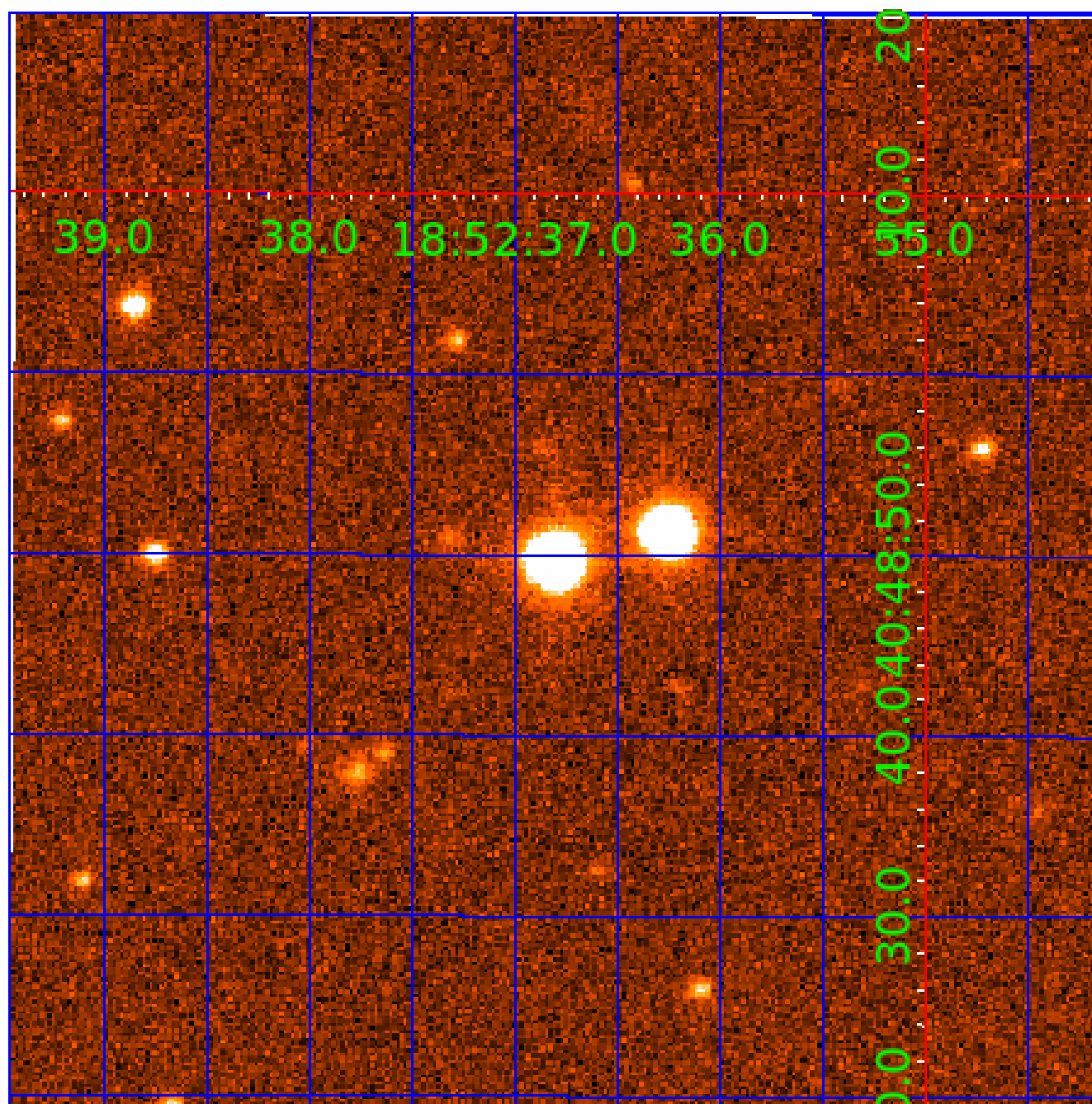


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005597406

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})
005597406-01	OBS	No	360.274536	202.614342	1934.4	2.575	15.9	7.8	0.59	4708	2.64	0.22
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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005597406-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005597406-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—CENT_FEW_DIFFS
005597406-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005597406-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
005597406-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

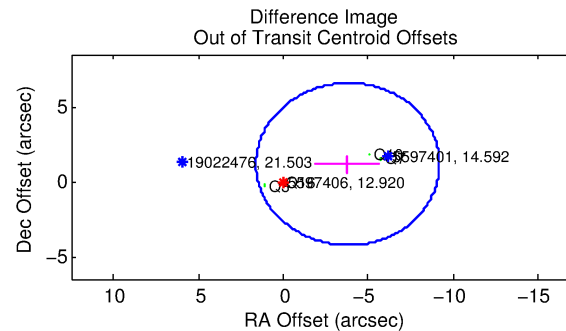
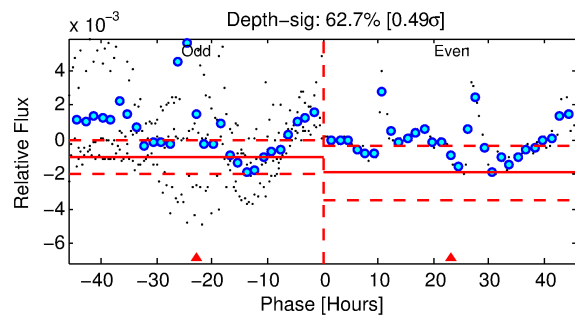
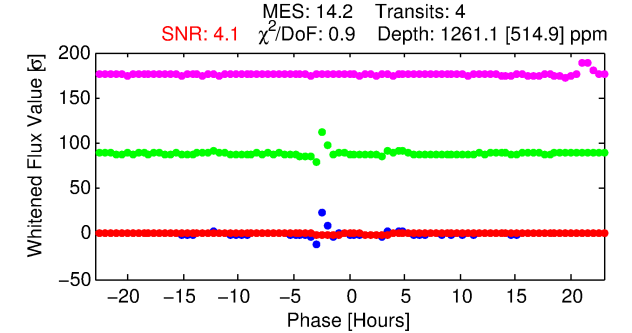
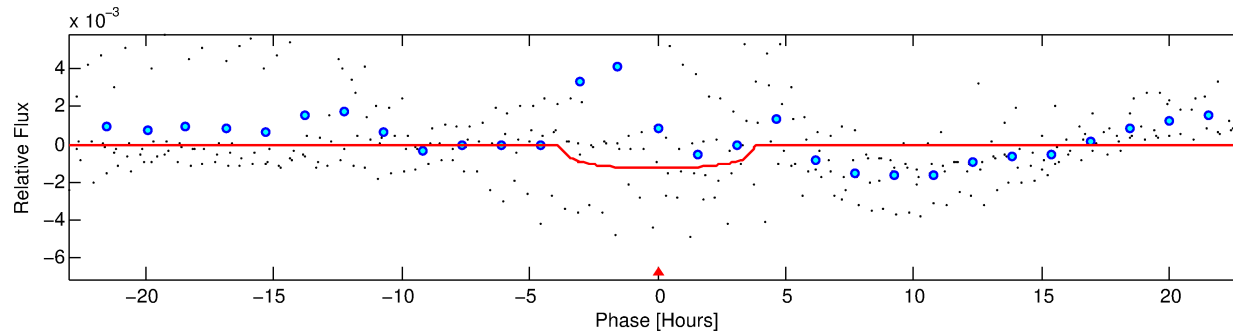
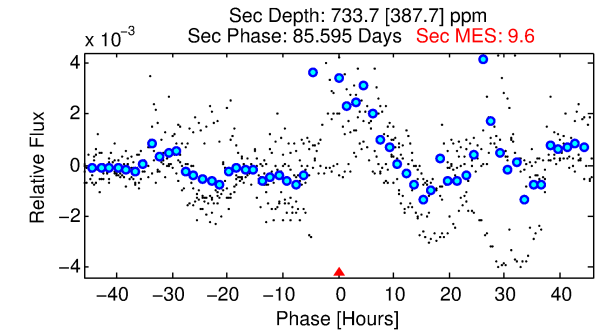
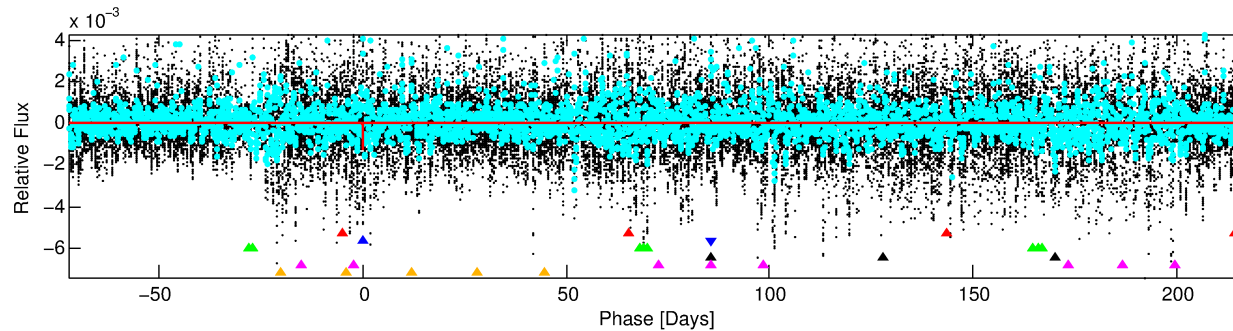
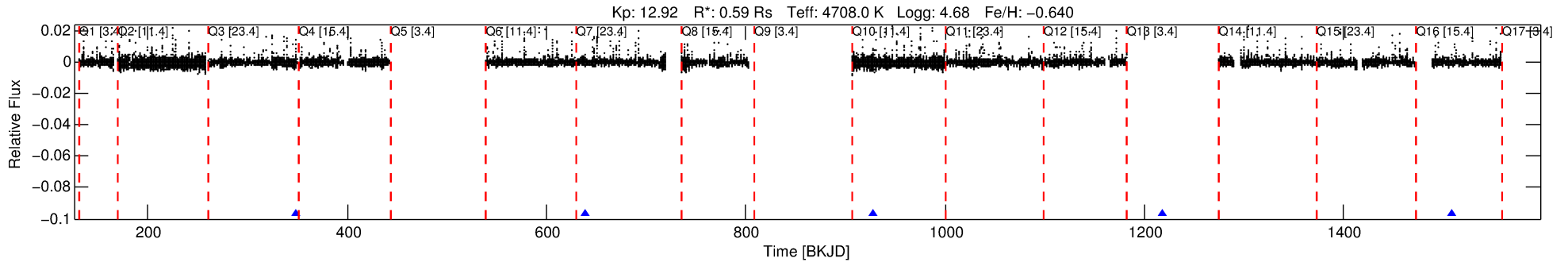
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005597406-02

No Significant Match Found

DV One-Page Summary

KIC: 5597406 Candidate: 2 of 6 Period: 289.796 d



DV Fit Results:

Period = 289.79585 [0.00581] d
Epoch = 348.6773 [0.0161] BKJD
Rp/R* = 0.0329 [0.0359]
a/R* = 257.93 [901.24]
b = 0.52 [5.03]
Seff = 0.29 [0.05]
Teq = 187 [8] K
Rp = 2.13 [2.34] Re
a = 0.7299 [0.0566] AU
Ag = 47315.08 [106326.59] [0.44σ]
Teffp = 4272 [2402] K [1.70σ]

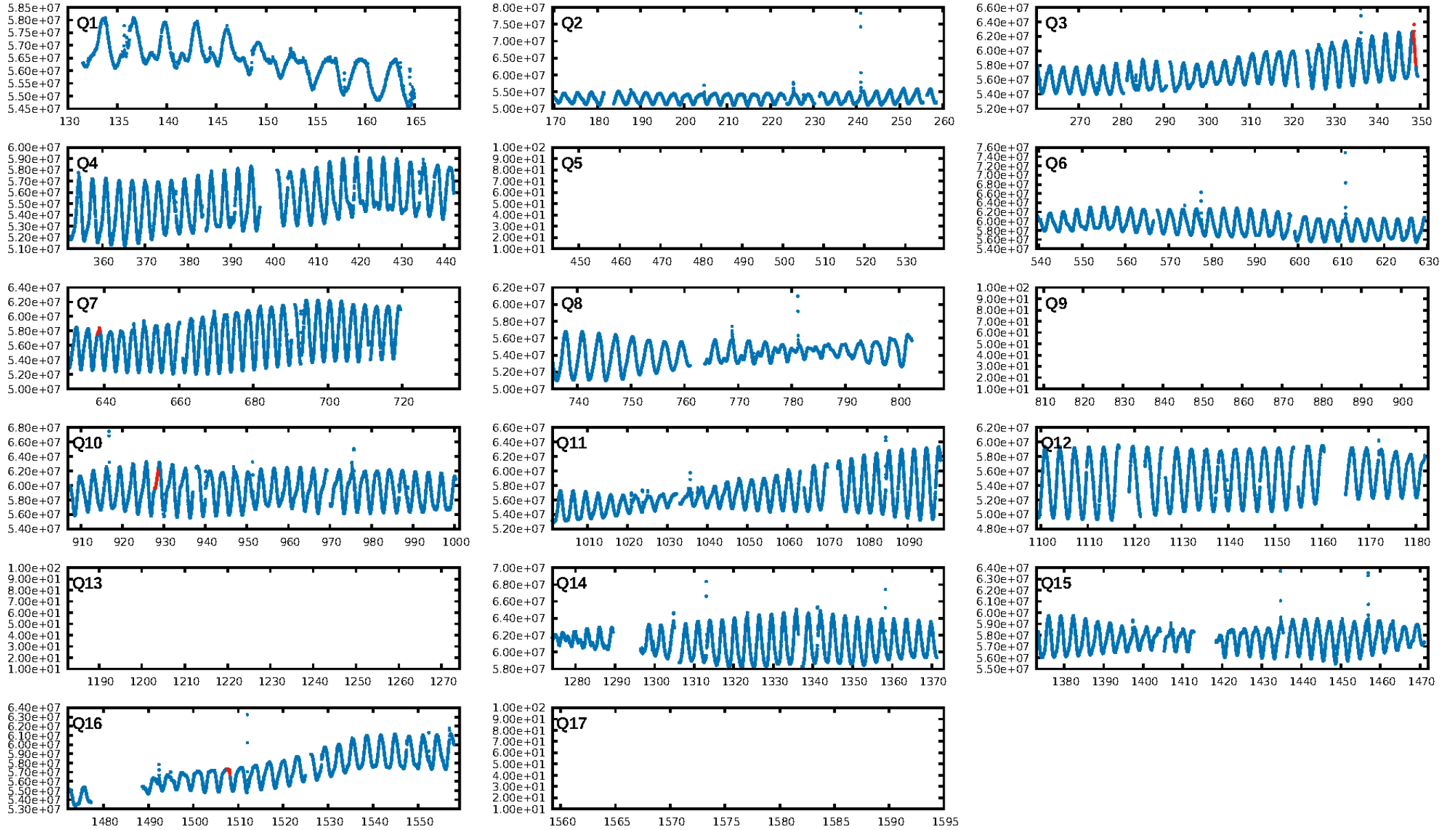
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [46.02σ]
LongPeriod-sig: 100.0% [208.80σ]
ModelChiSquare2-sig: 35.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.1616
Centroid-sig: 37.6%
Centroid-so: 0.866 arcsec [0.37σ]
OotOffset-rm: 3.984 arcsec [2.21σ]
KicOffset-rm: 4.813 arcsec [2.48σ]
OotOffset-st: 1/2/1/0 [4]
KicOffset-st: 1/2/1/0 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 1.00 [4/4]

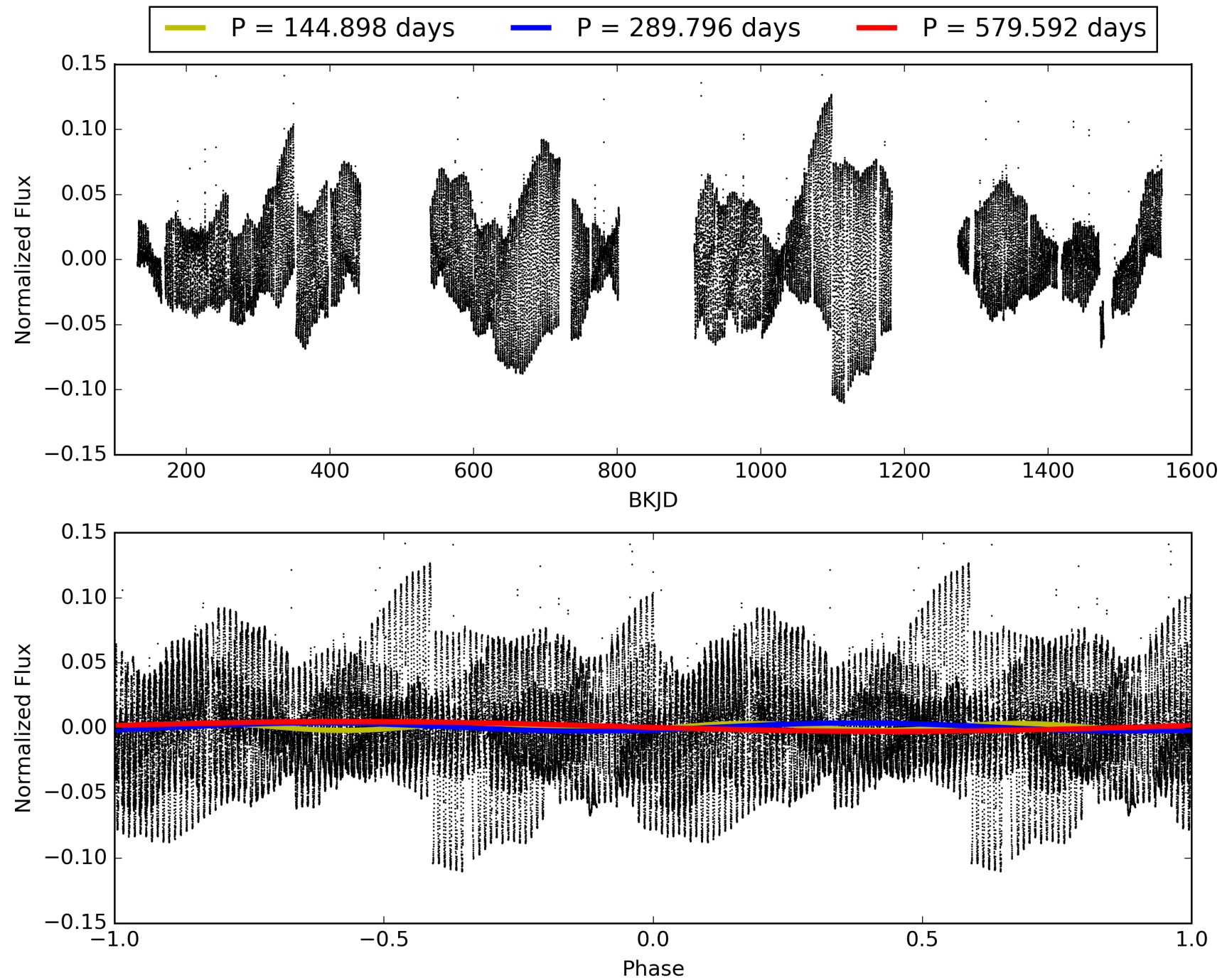
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005597406-02, PDC Light Curves

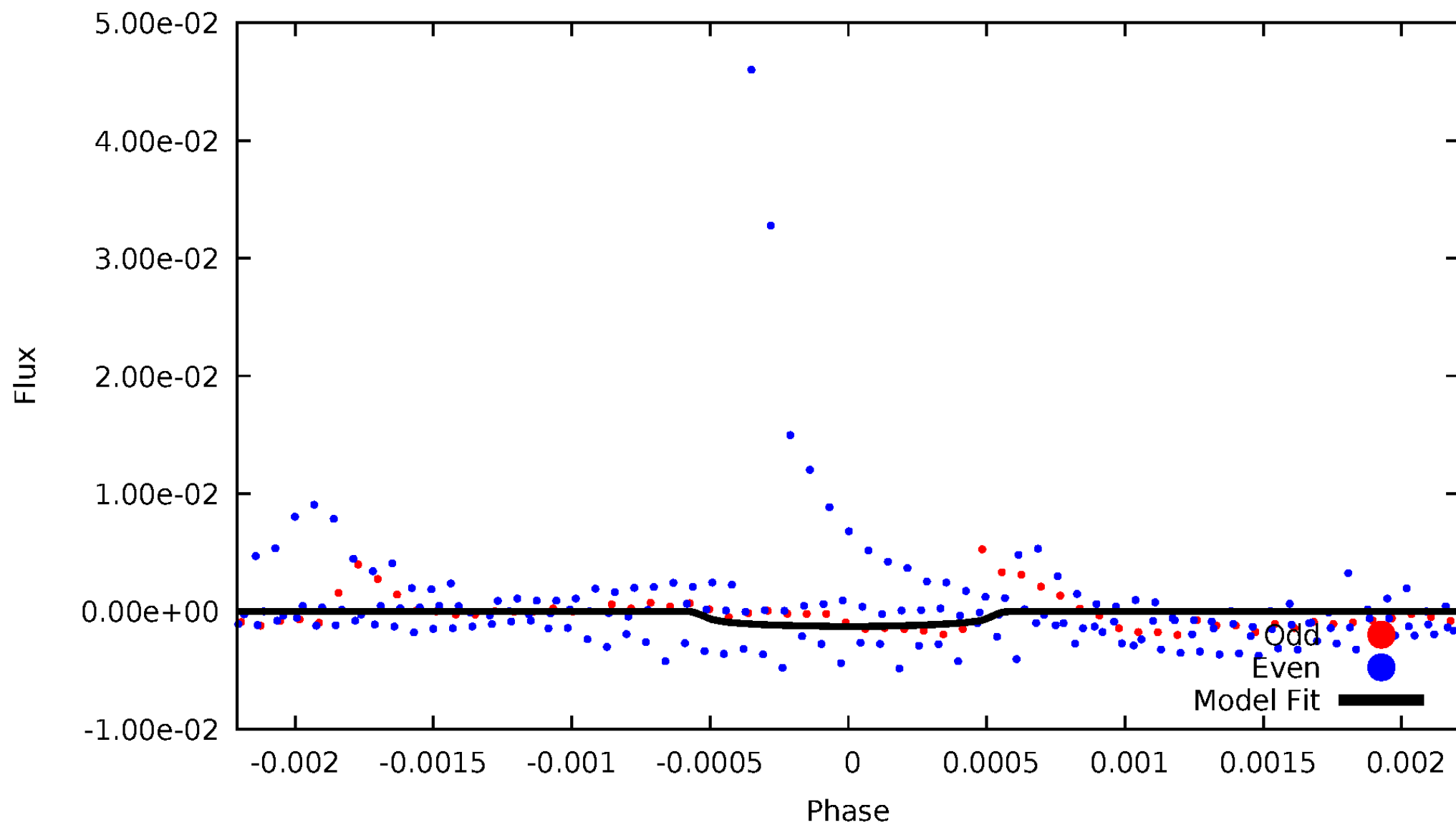


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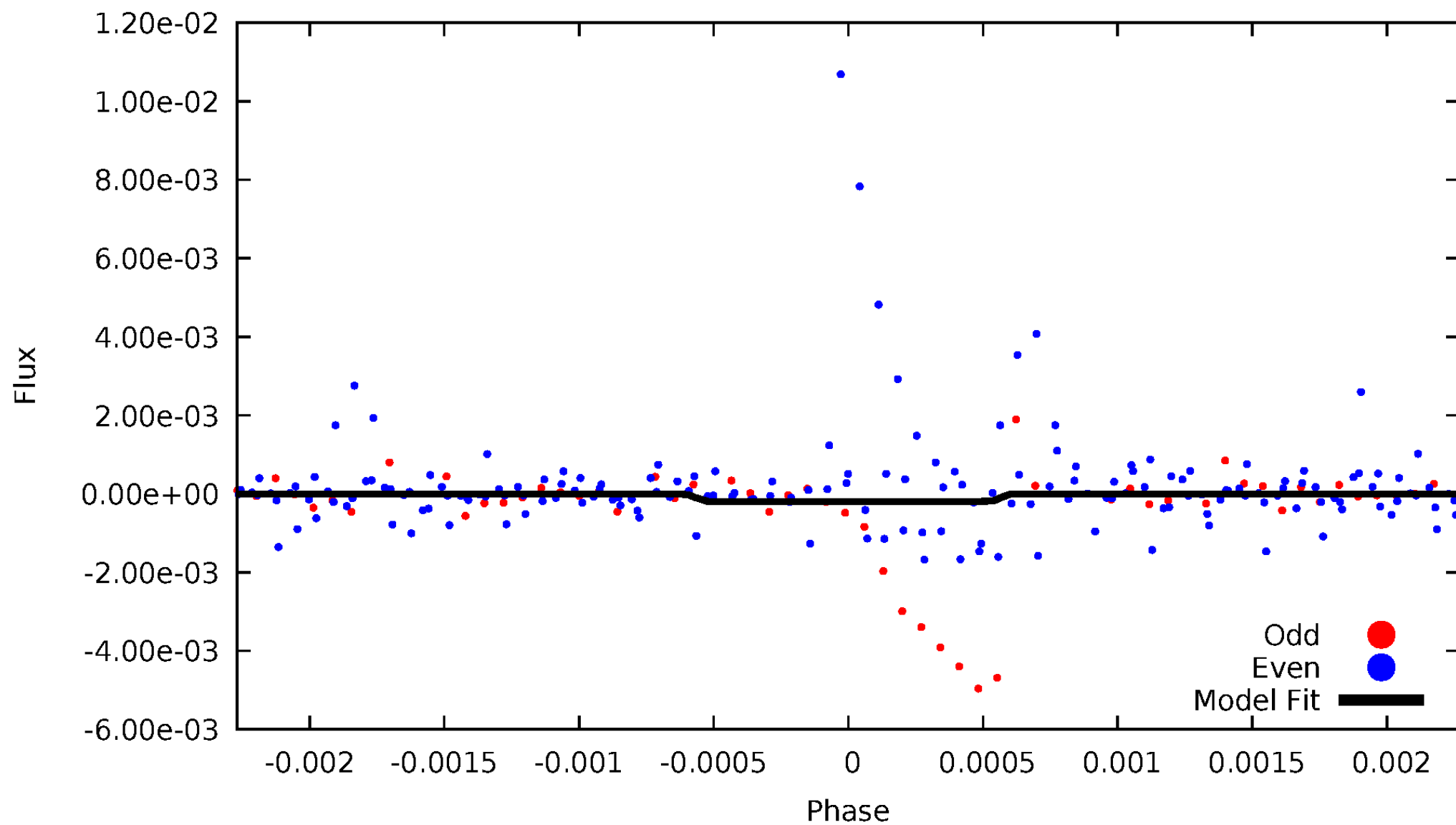
DV Odd/Even

TCE 005597406-02



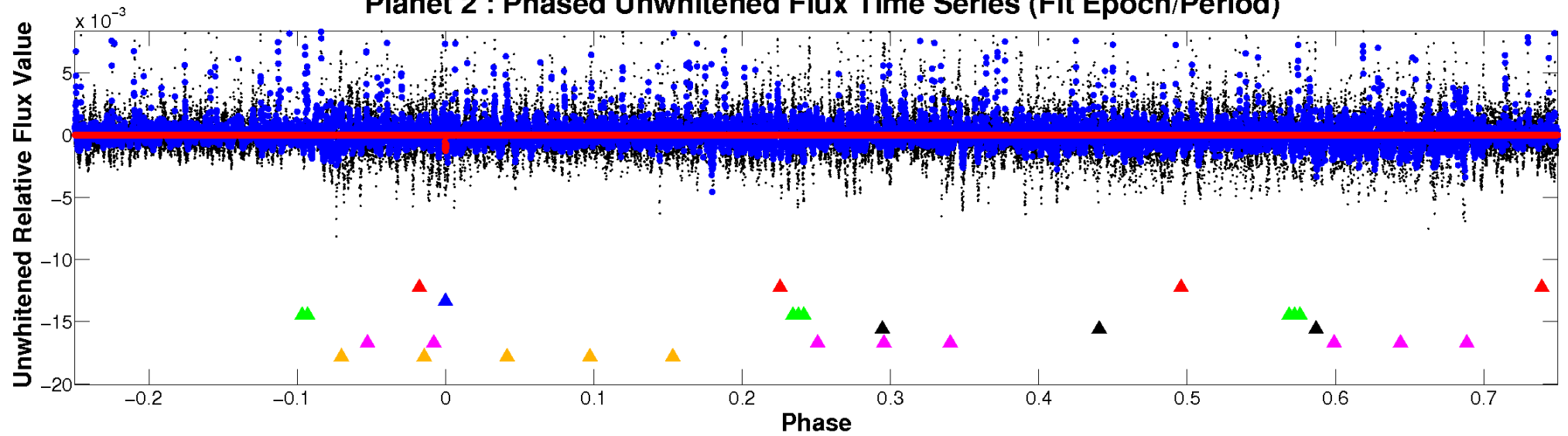
ALT Odd/Even

TCE 005597406-02

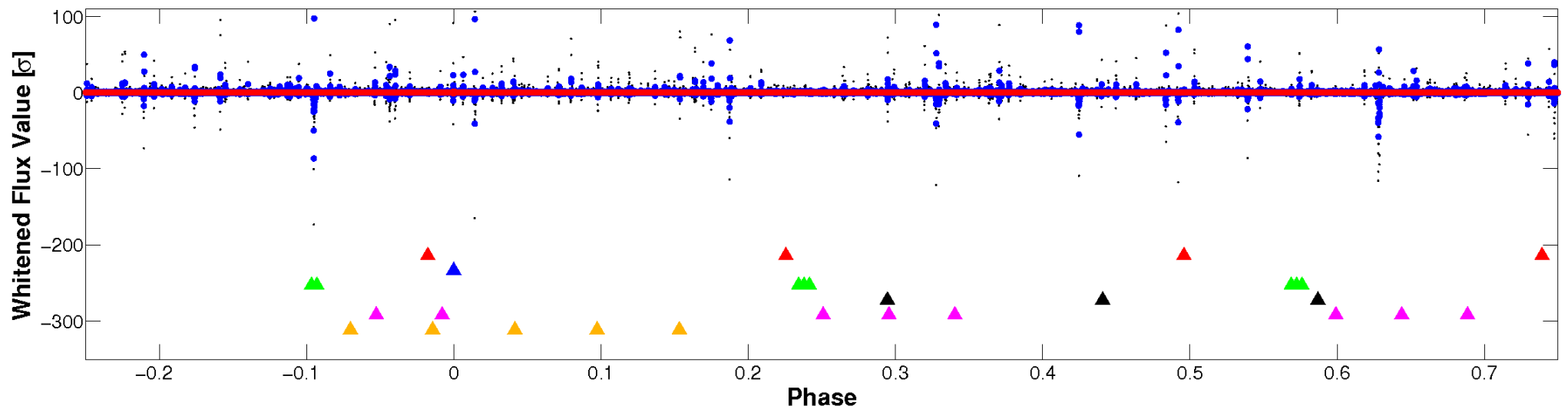


Non-Whitened Vs. Whitened Light Curve

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

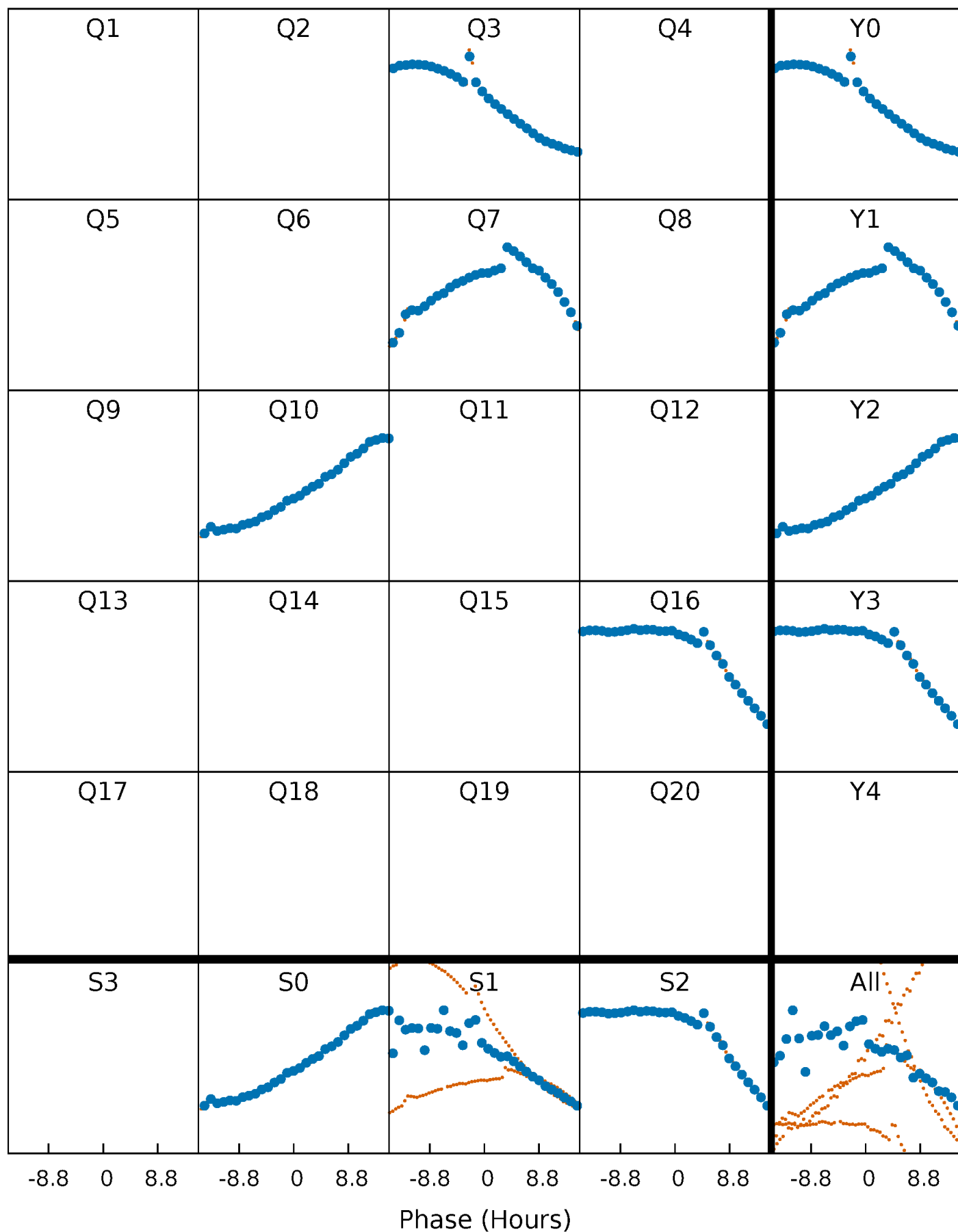


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



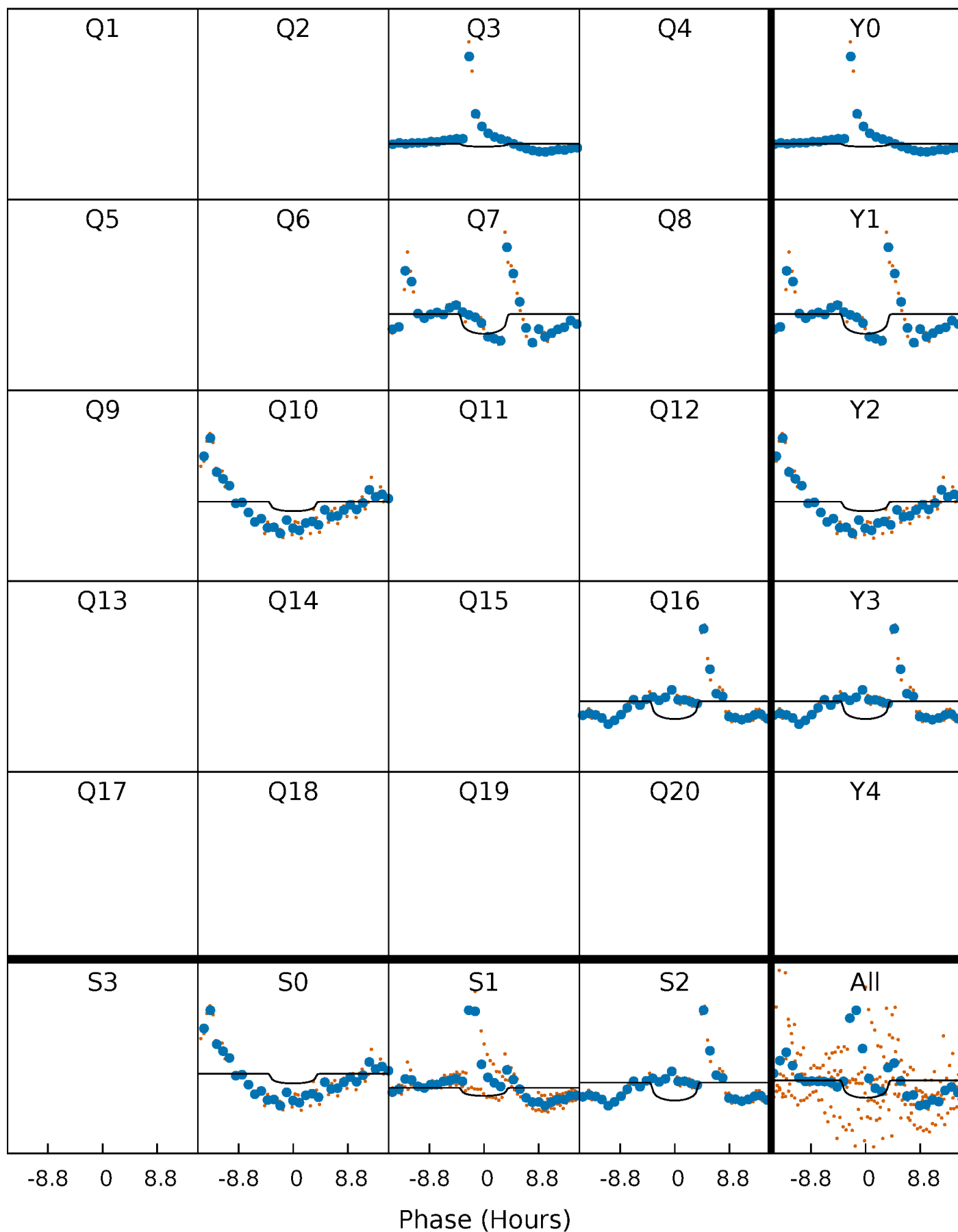
PDC Quarter-Phased Transit Curves

TCE 005597406-02 P=289.795853 Days $T_0=348.677283$ (BKJD)



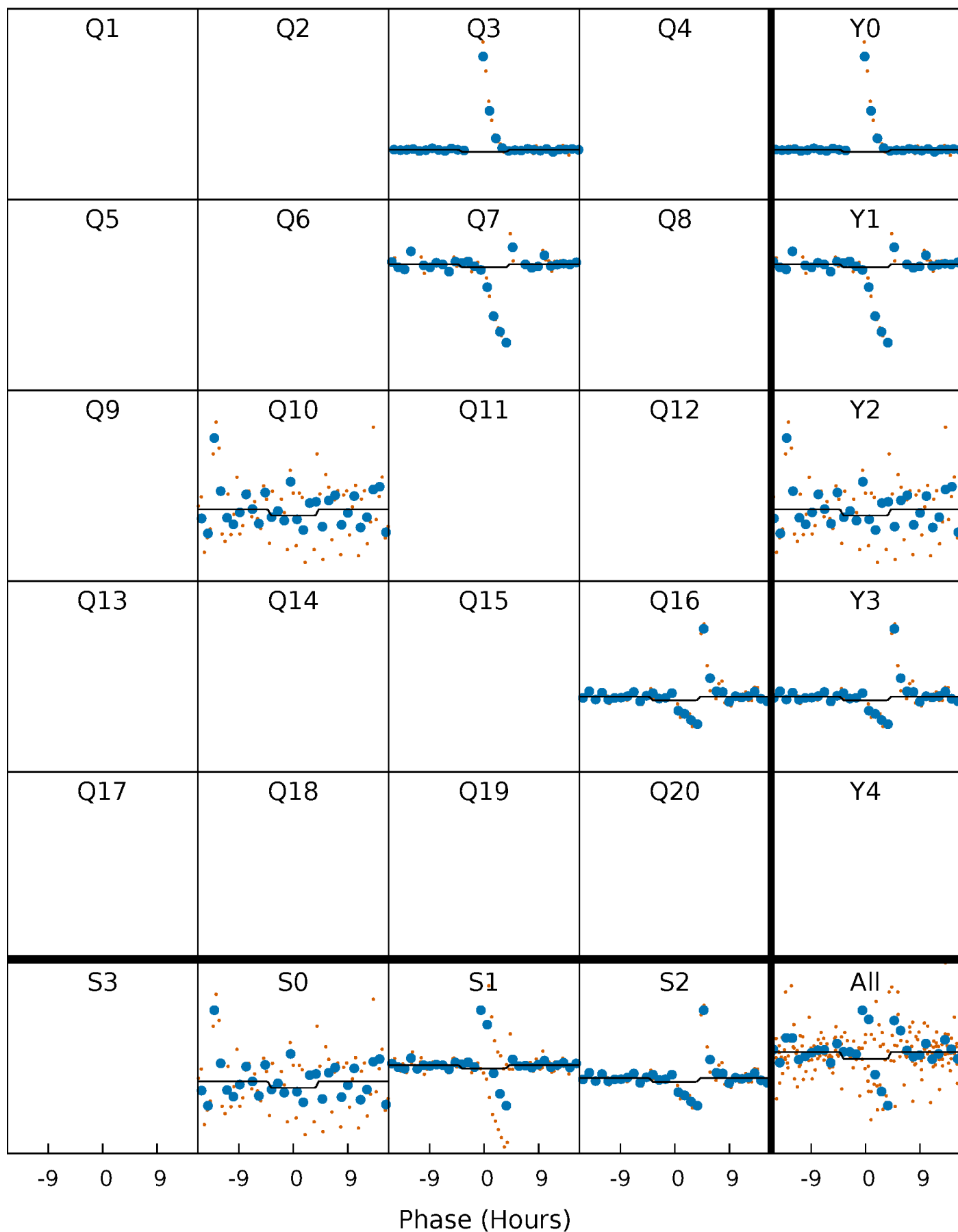
DV Quarter-Phased Transit Curves

TCE 005597406-02 P=289.795853 Days $T_0=348.677283$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

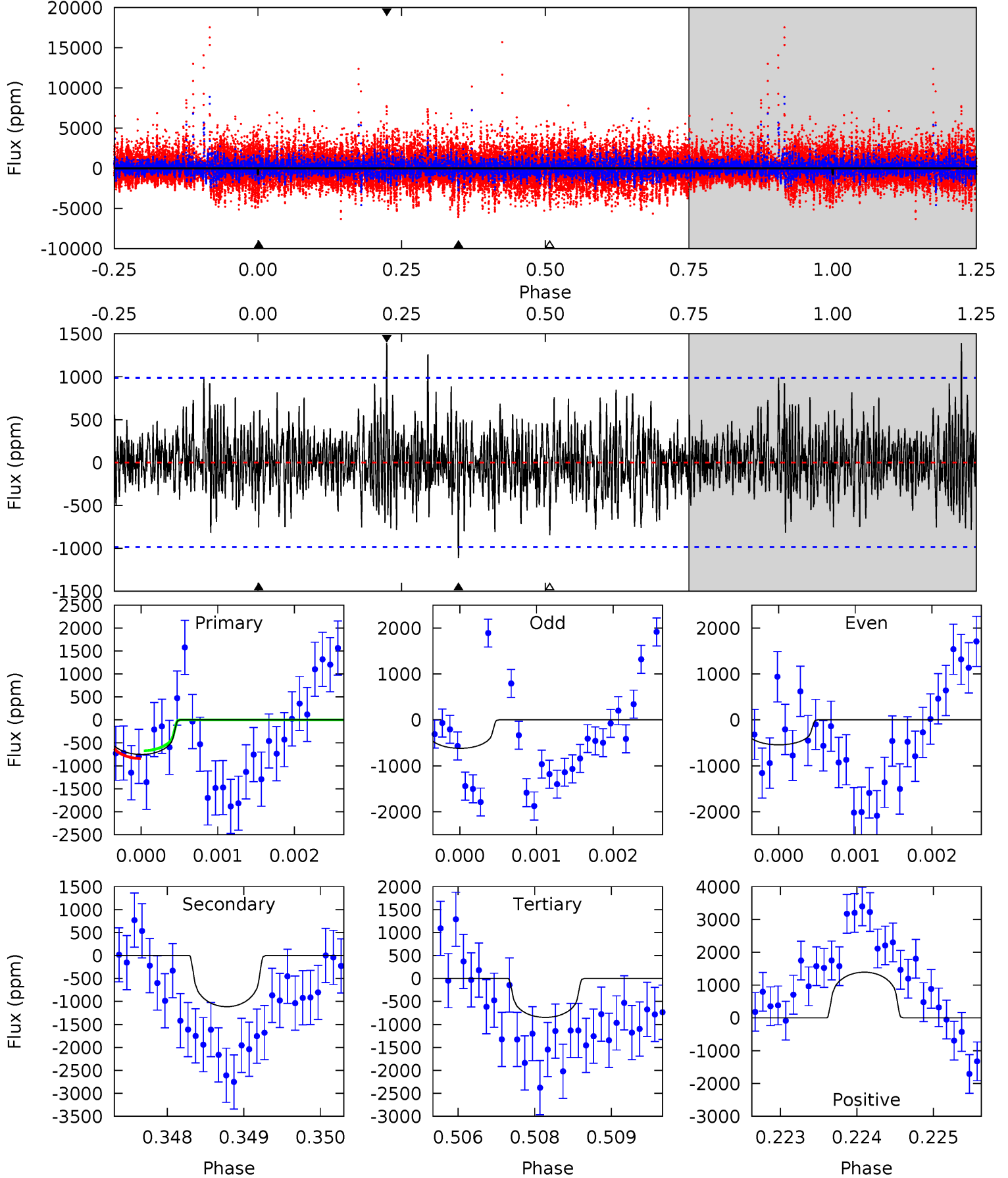
TCE 005597406-02 $P=289.808090$ Days $T_0=348.624805$ (BKJD)



DV Model-Shift Uniqueness Test

005597406-02, $P = 289.795853$ Days, $E = 58.881430$ Days

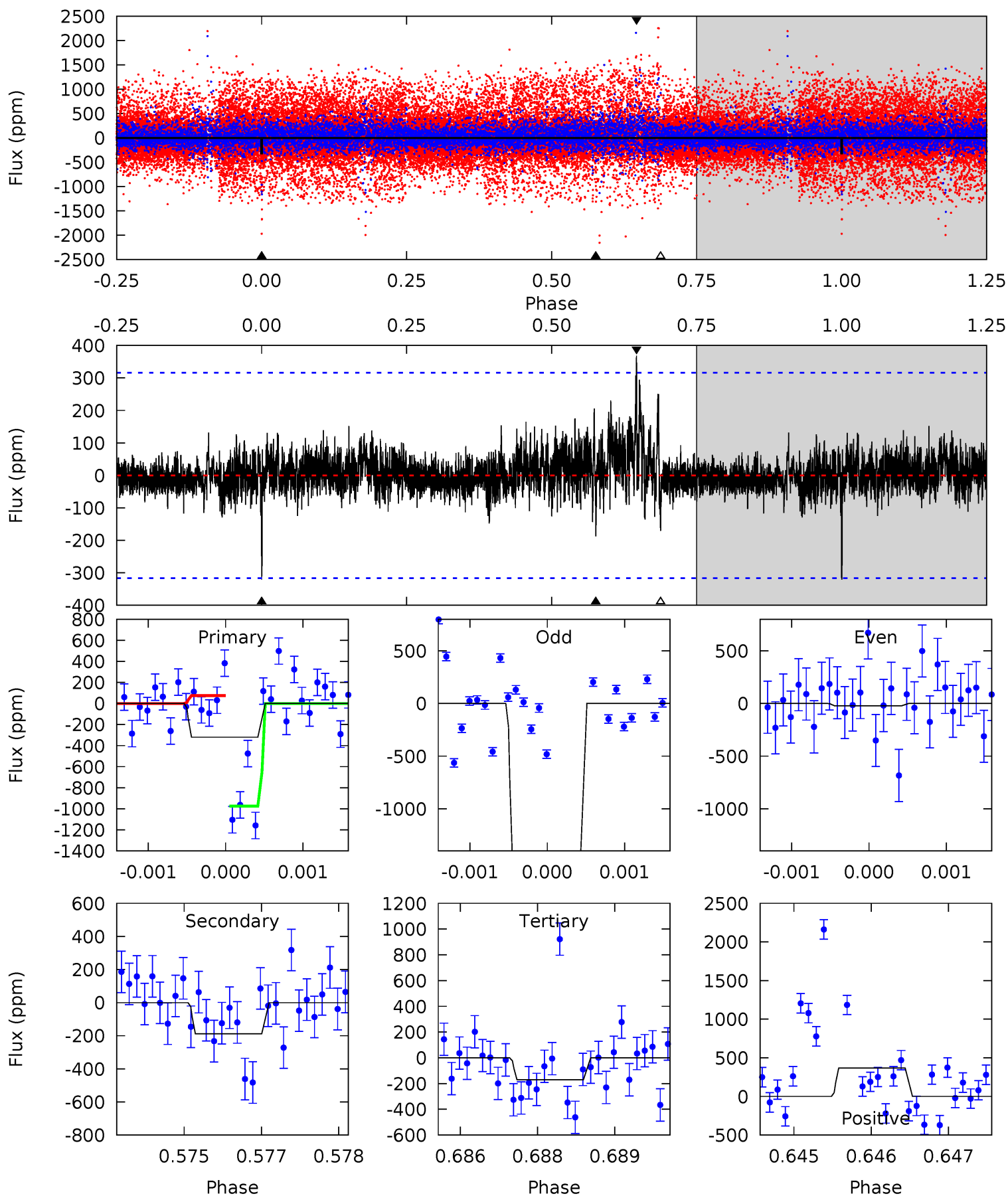
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.13	6.12	4.65	7.65	5.42	3.24	1.57	-0.52	-3.51	1.47	-1.53	0.12	-9.24	0.56	0.47



Alt Model-Shift Uniqueness Test

005597406-02, P = 289.808090 Days, E = 58.816715 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.49	3.21	2.93	6.32	5.42	3.24	0.77	2.57	-0.82	0.28	-3.10	15.0	-0.47	0.53	7.65



Stellar Parameters For KIC 005597406

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4708^{+165}_{-165}	$4.681^{+0.036}_{-0.050}$	$-0.640^{+0.300}_{-0.300}$	$0.594^{+0.060}_{-0.044}$	$0.618^{+0.061}_{-0.044}$	$4.148^{+0.692}_{-0.712}$
	+4%/-4%	+1%/-1%	+47%/-47%	+10%/-7%	+10%/-7%	+17%/-17%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 005597406-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1112 ± 182	$2.71^{+2.10}_{-1.69}$	262^{+10}_{-11}	4324^{+2431}_{-800}	$43897^{+297928}_{-30240}$
Alt.	-187 ± 58	$1.93^{+1.84}_{-1.34}$	263^{+10}_{-10}	3580^{+2090}_{-699}	$14752^{+136771}_{-11198}$

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 $A_{obs} \gg 1.0$

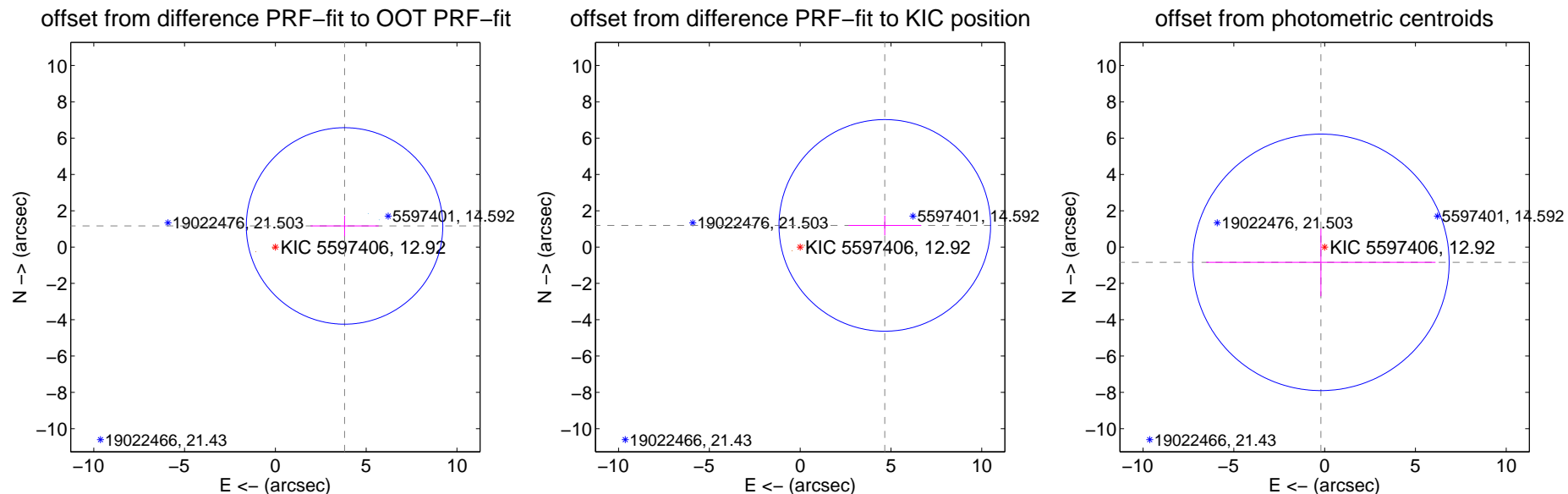
DV Centroid Data

Supplemental centroid analysis for 005597406-02. Kepler magnitude: 12.92. Transit SNR 4.14

There are 2 quarters with good PRF difference image offsets

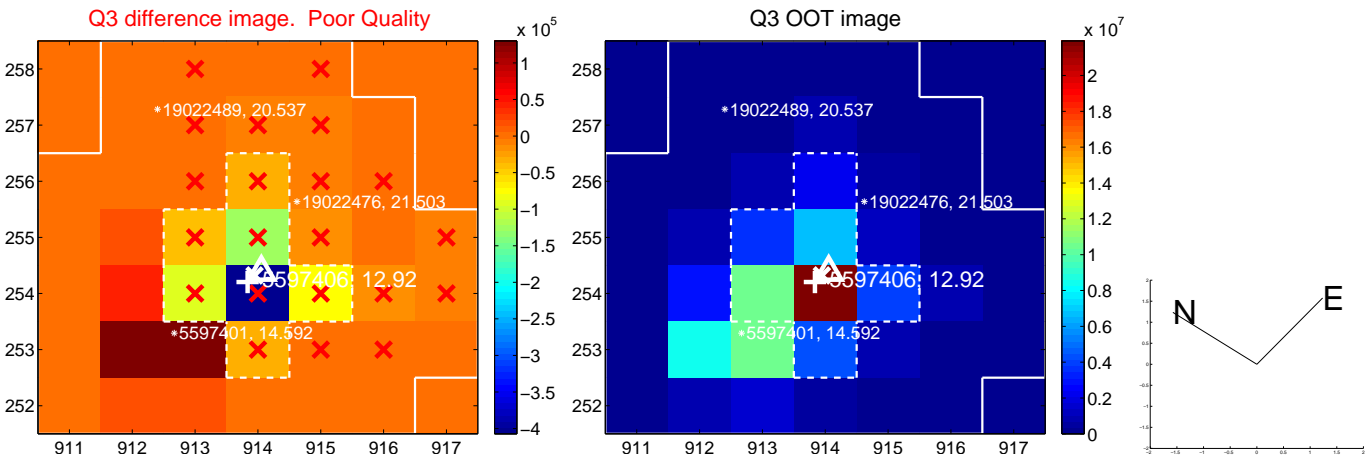
The direct PRF centroid is offset from the target star catalog position by about 0.40 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.984 ± 1.804	2.21	-3.810 ± 1.878	1.165 ± 0.569
PRF-fit source offset from KIC position	4.813 ± 1.943	2.48	-4.662 ± 2.001	1.194 ± 0.539
photometric centroid source offset	0.87 ± 2.35	0.37	0.21 ± 6.31	-0.84 ± 1.87

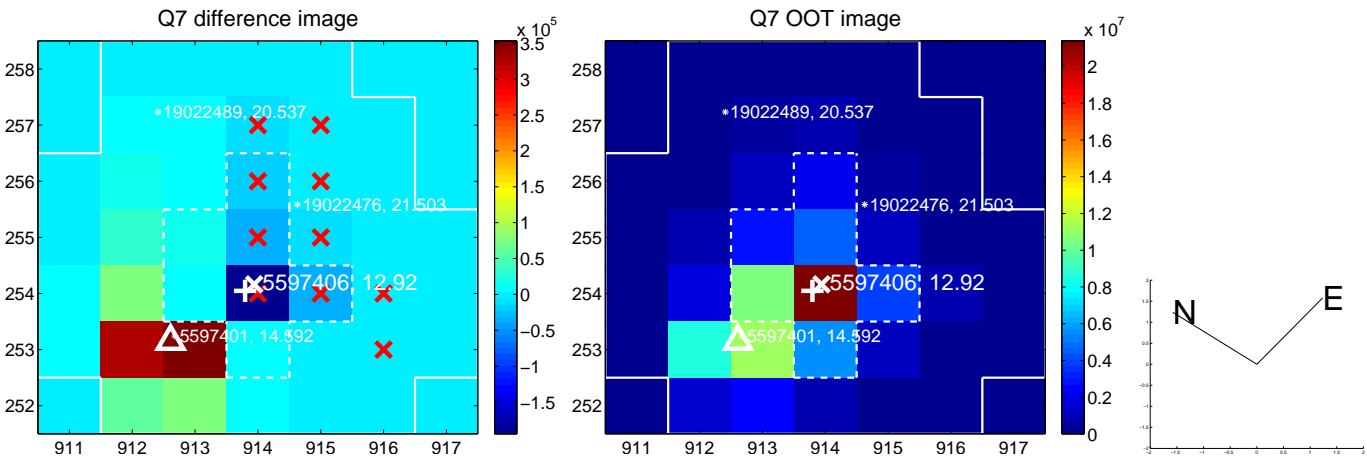


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

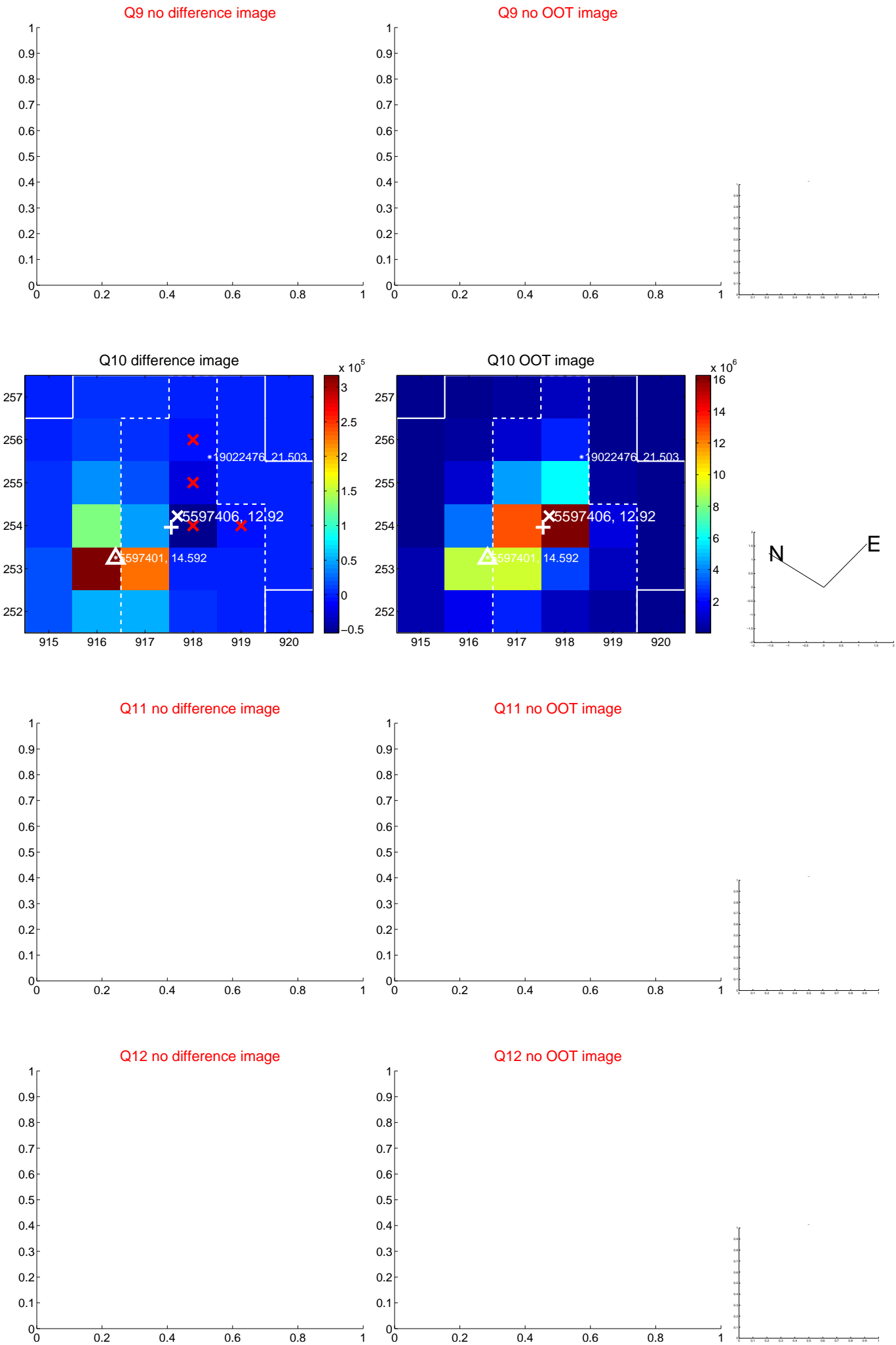
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



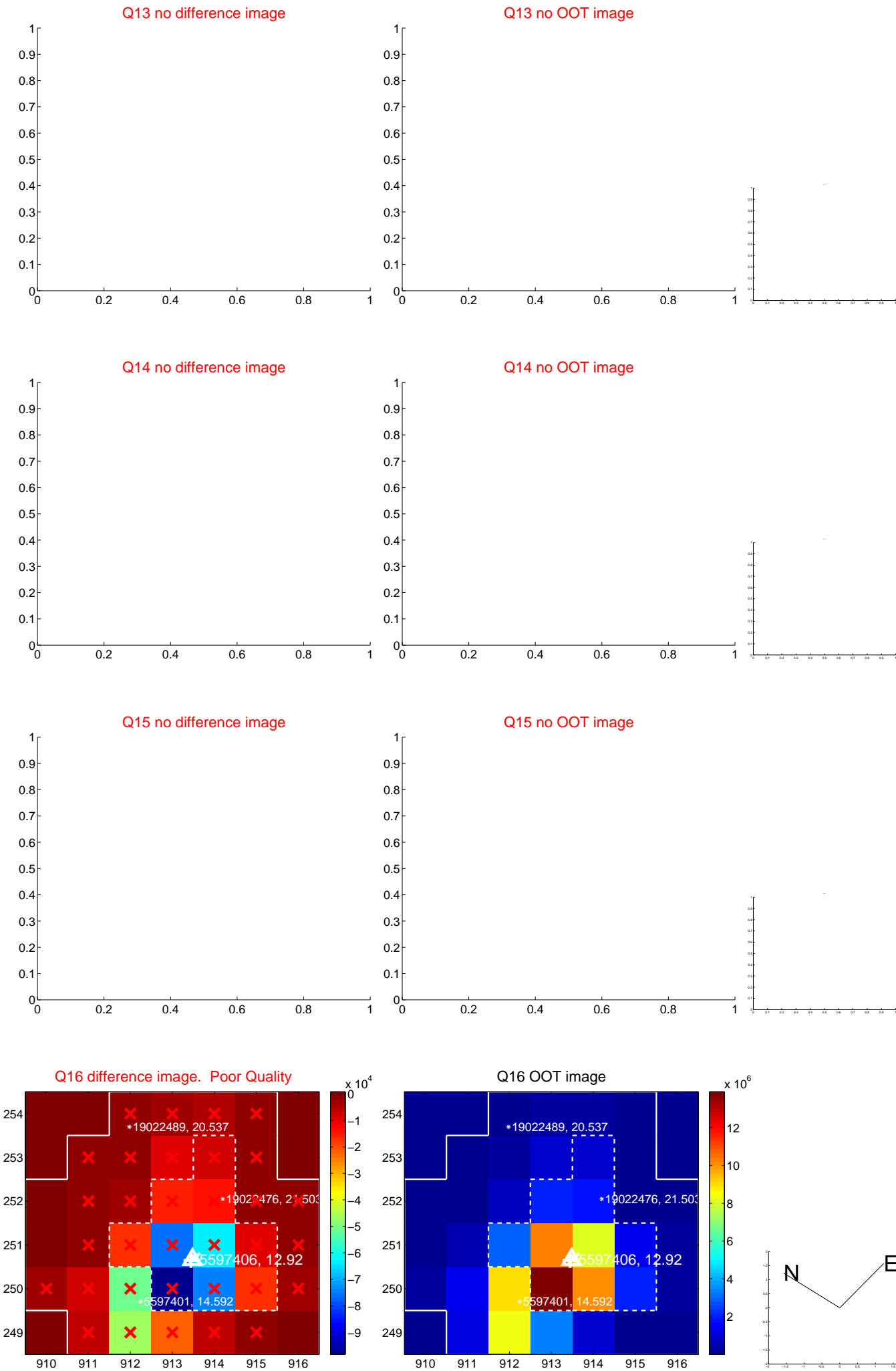
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



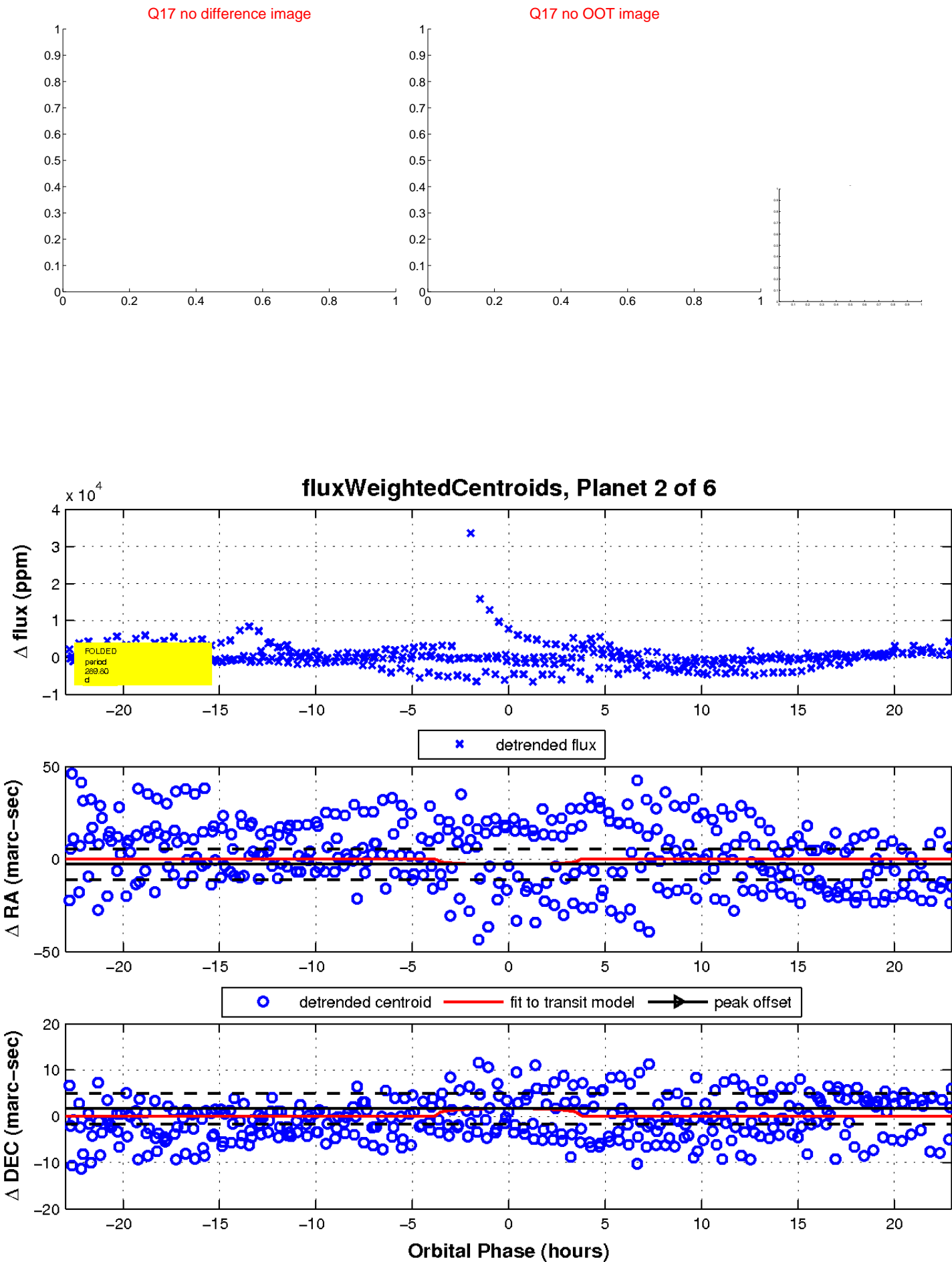
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

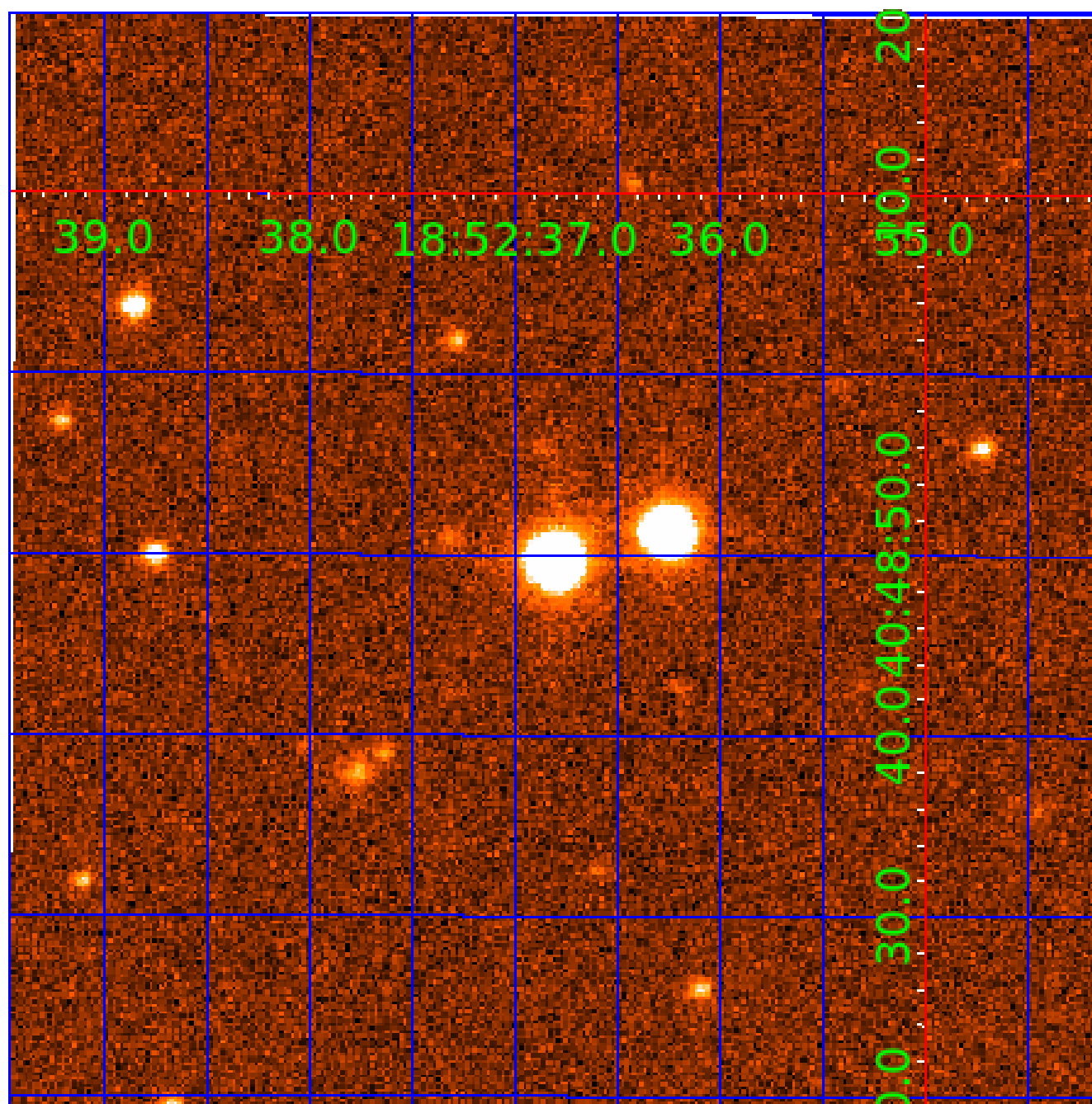


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005597406

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})
005597406-01	OBS	No	360.274536	202.614342	1934.4	2.575	15.9	7.8	0.59	4708	2.64	0.22
005597406-02	OBS	No	289.795853	348.677283	1261.1	7.681	14.2	4.1	0.59	4708	2.13	0.29
005597406-03	OBS	No	192.844572	225.844649	1547.6	2.670	12.6	6.8	0.59	4708	2.61	0.50
005597406-04	OBS	No	621.959135	144.245805	1701.8	3.462	13.0	6.8	0.59	4708	2.44	0.10
005597406-05	OBS	No	188.877286	258.435507	1767.1	3.531	13.0	7.0	0.59	4708	2.72	0.52
005597406-06	OBS	No	273.610864	393.087807	820.9	3.500	11.3	-1.0	0.59	4708	1.65	0.32

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005597406-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005597406-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005597406-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—CENT_FEW_DIFFS
005597406-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005597406-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
005597406-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

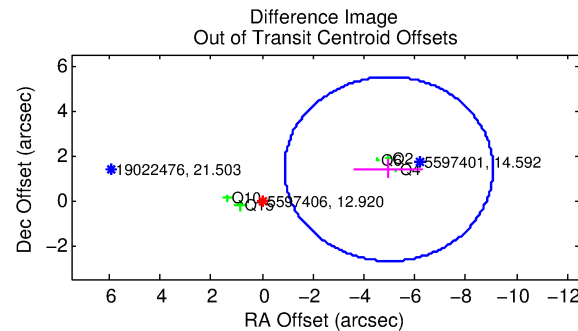
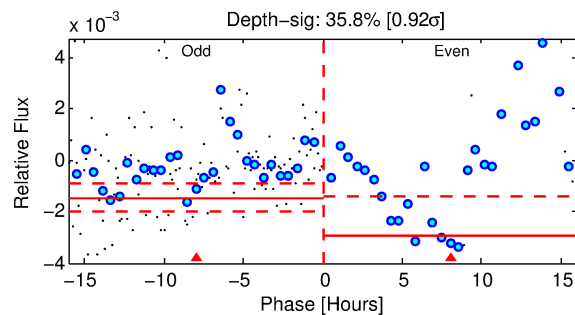
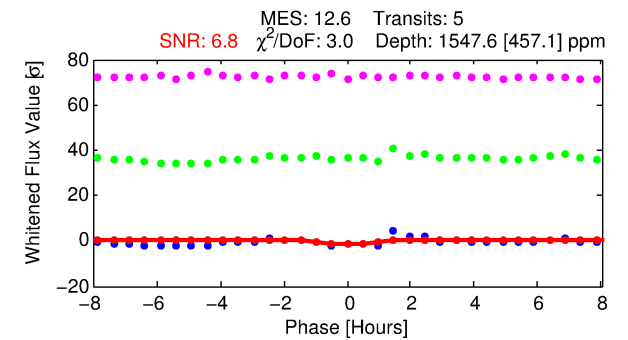
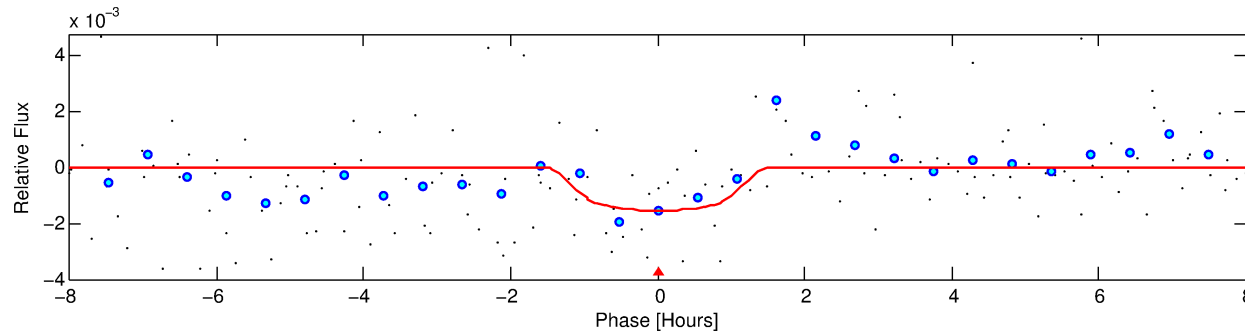
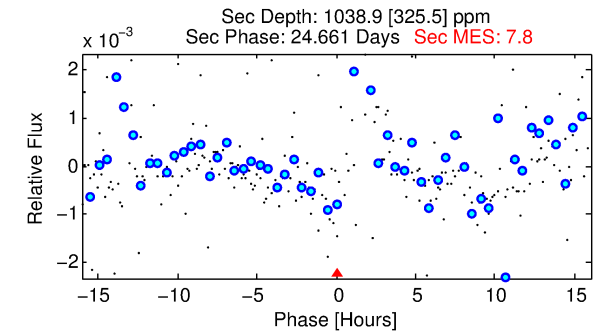
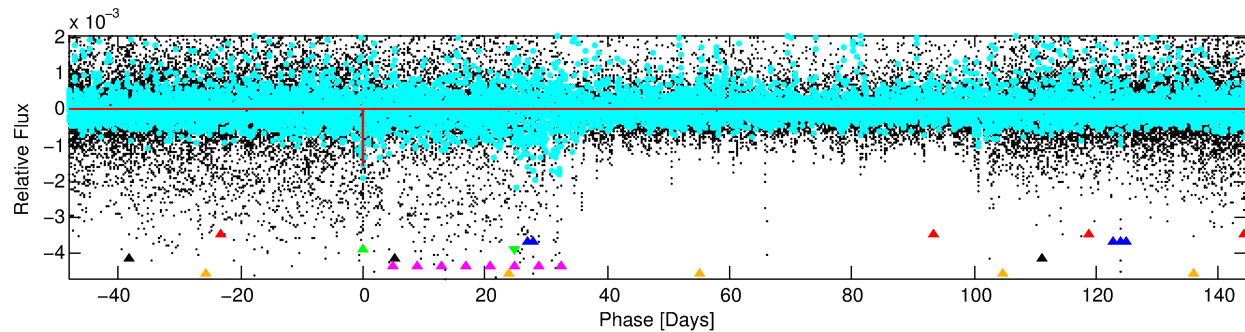
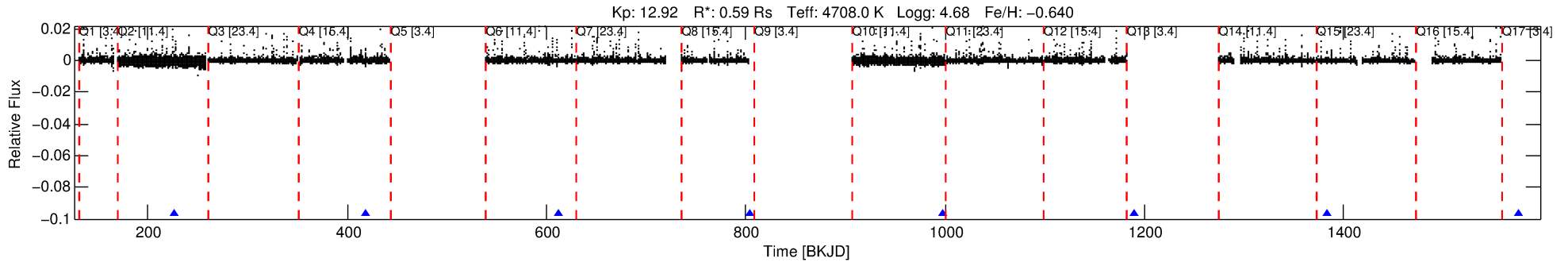
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005597406-03

No Significant Match Found

DV One-Page Summary

KIC: 5597406 Candidate: 3 of 6 Period: 192.845 d



DV Fit Results:

Period = 192.84457 [0.00333] d
Epoch = 225.8446 [0.0117] BKJD
Rp/R* = 0.0403 [0.1124]
a/R* = 371.68 [3570.83]
b = 0.79 [4.66]
Seff = 0.50 [0.09]
Teq = 215 [9] K
Rp = 2.61 [7.29] Re
a = 0.5564 [0.0431] AU
Ag = 25957.81 [145132.66] [0.18σ]
Teffp = 4212 [5888] K [0.68σ]

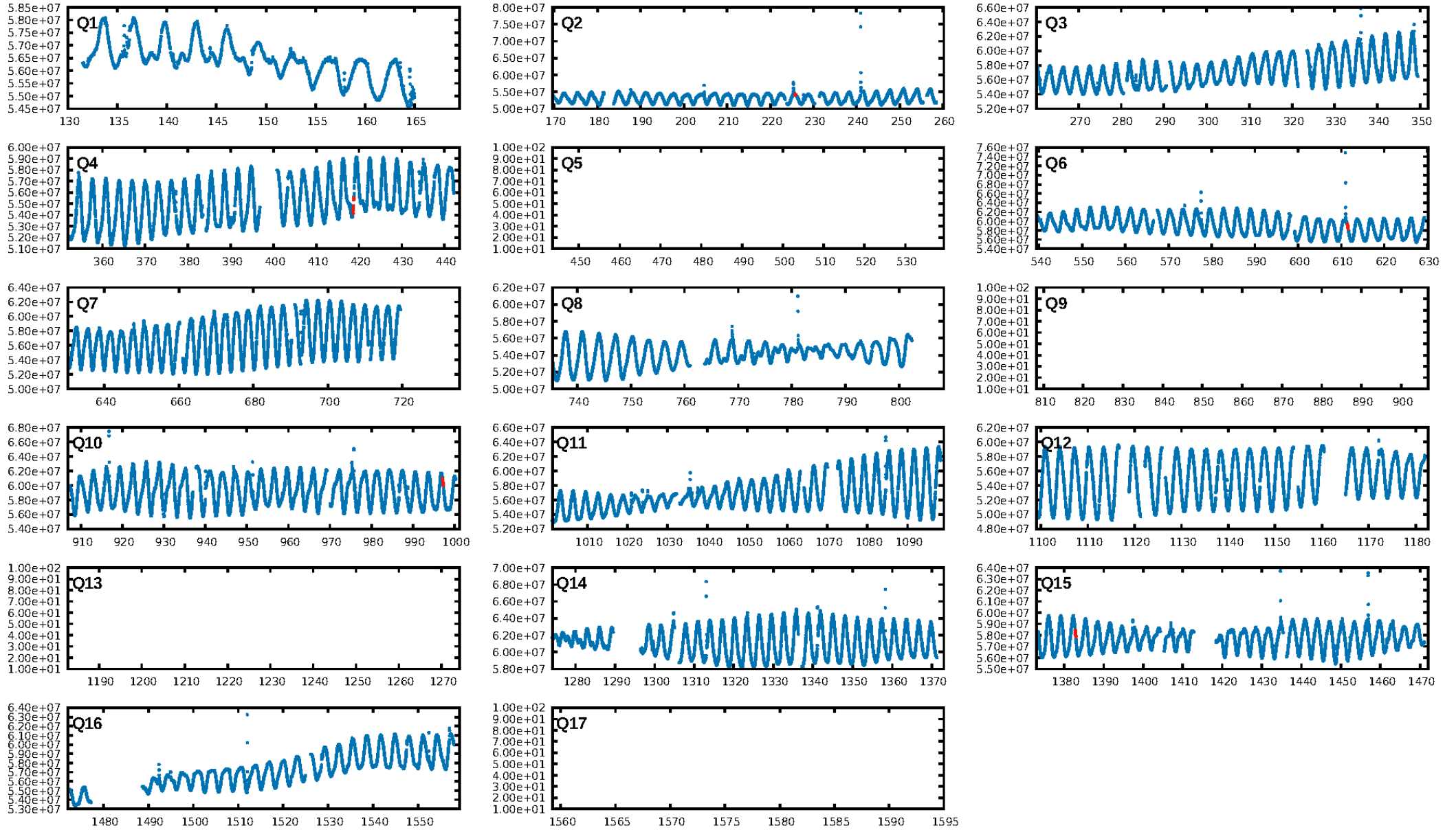
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [21.51σ]
LongPeriod-sig: 100.0% [440.35σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 6.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 0.7368
Centroid-sig: 12.2%
Centroid-so: 0.227 arcsec [0.14σ]
OotOffset-rm: 5.175 arcsec [3.79σ]
KicOffset-rm: 5.882 arcsec [3.54σ]
OotOffset-st: 3/1/1/0 [5]
KicOffset-st: 3/1/1/0 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 1.00 [5/5]

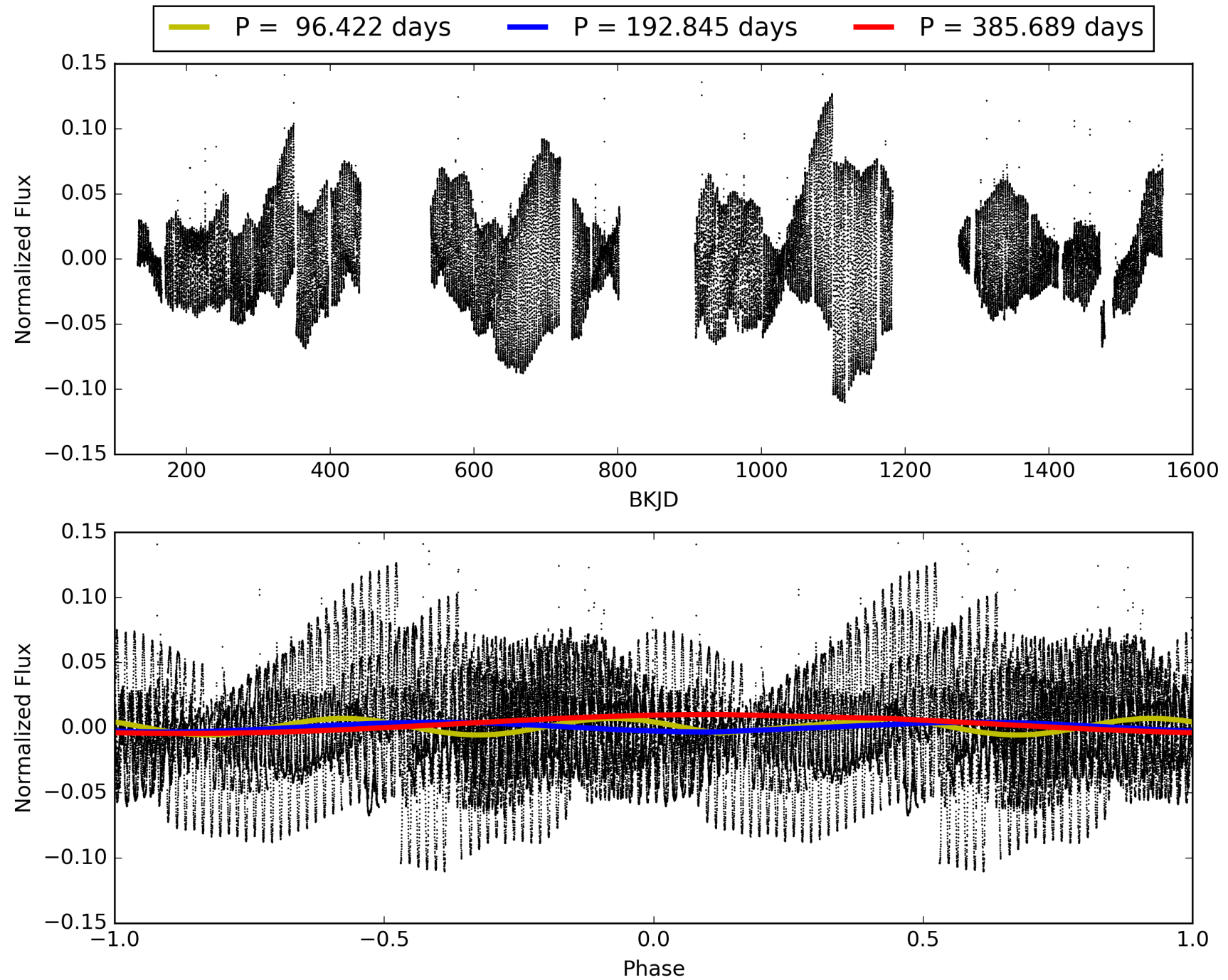
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 08:56:57 Z

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

TCE 005597406-03, PDC Light Curves

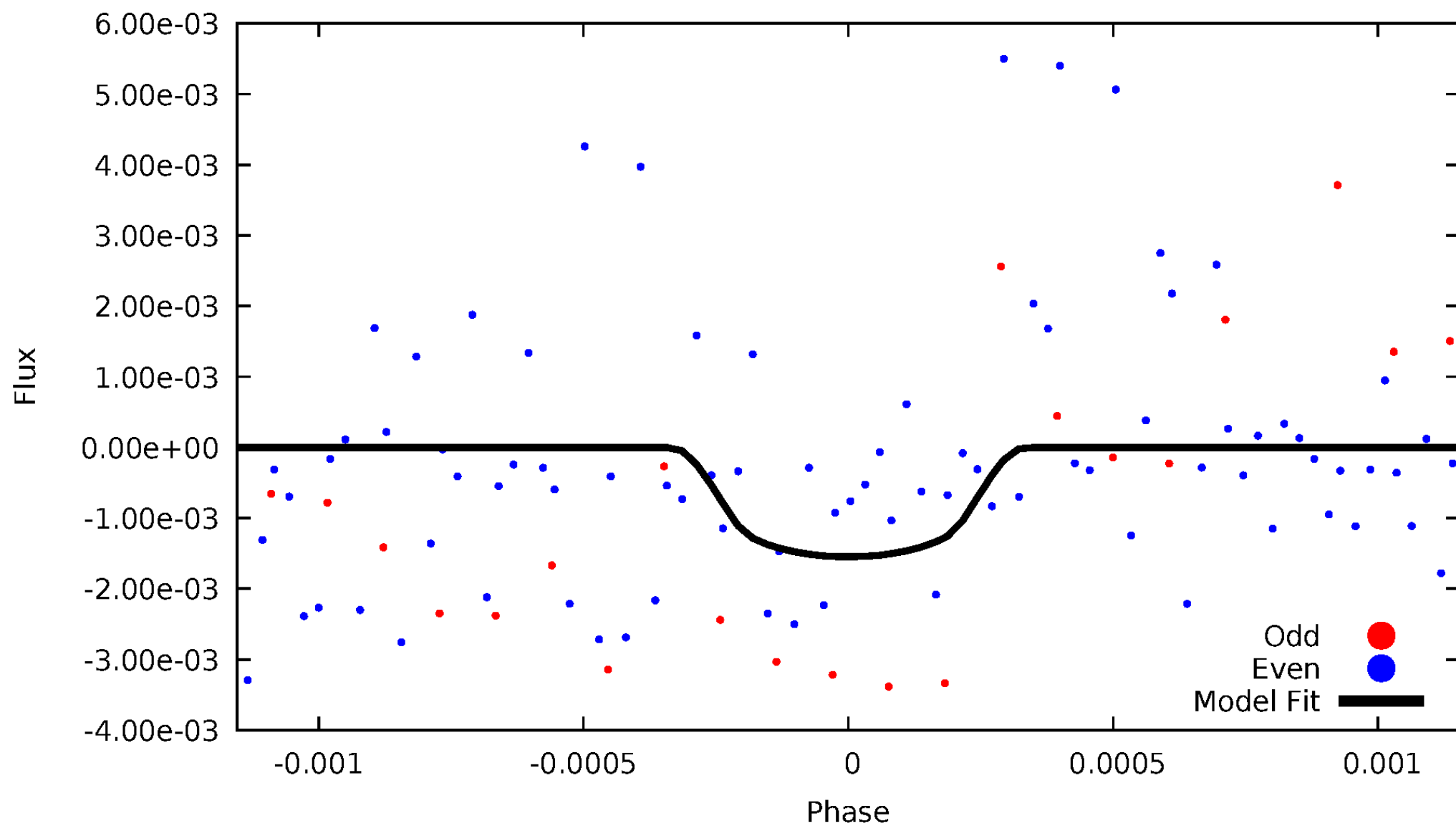


TCE 005597406-03



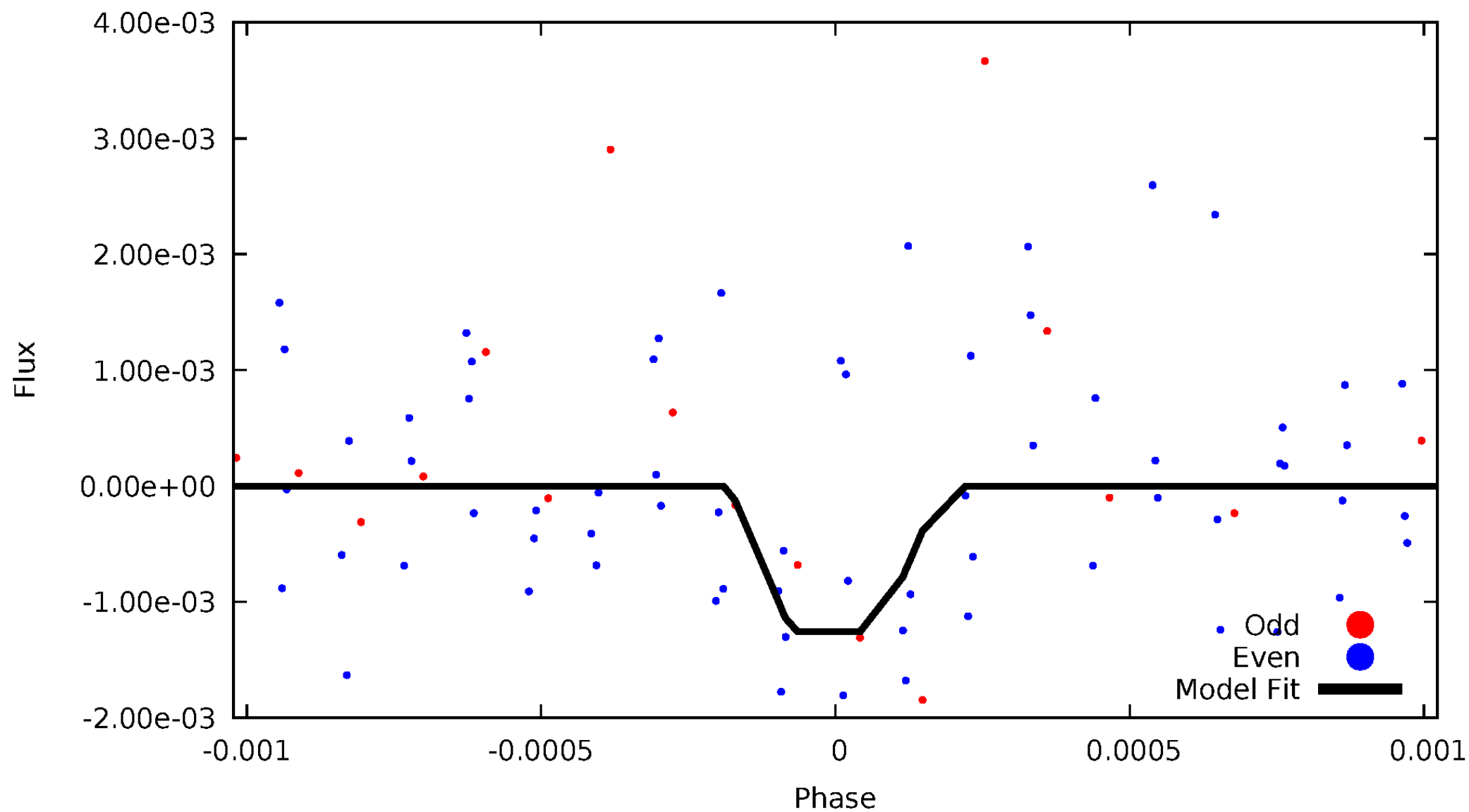
DV Odd/Even

TCE 005597406-03



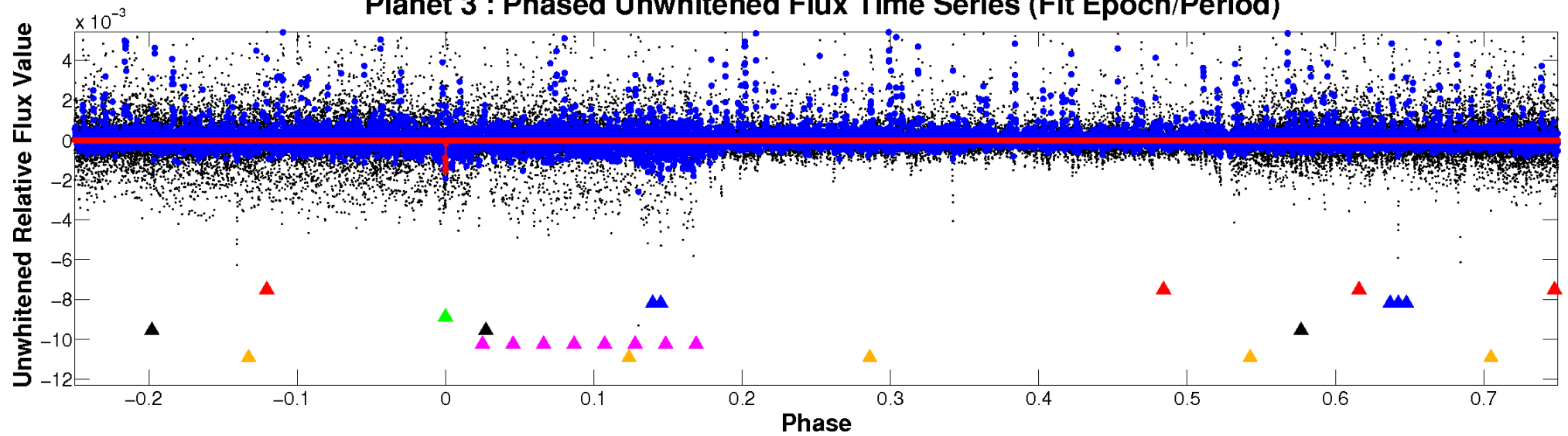
ALT Odd/Even

TCE 005597406-03

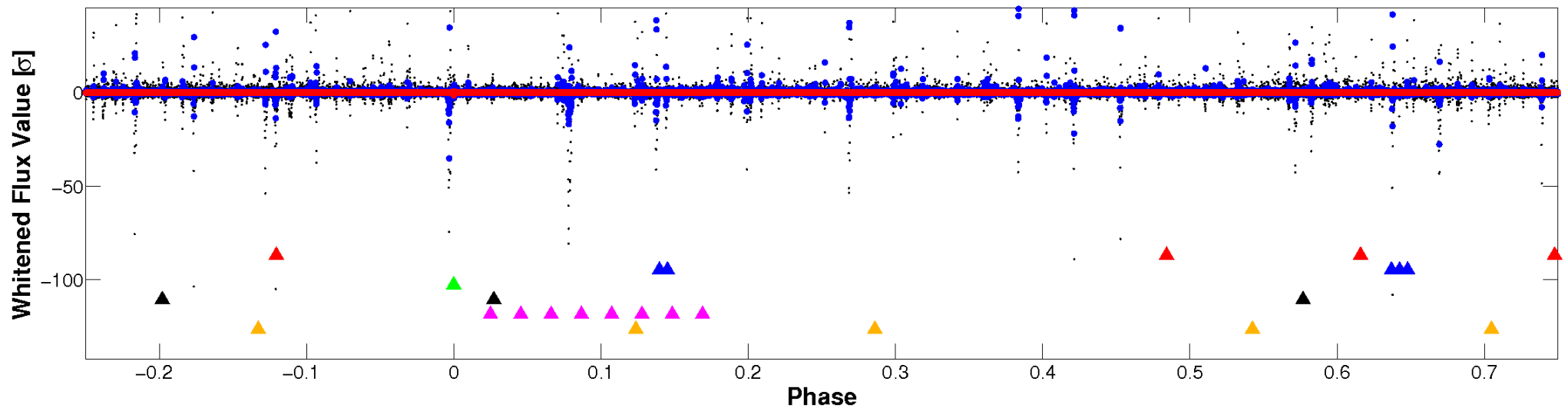


Non-Whitened Vs. Whitened Light Curve

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

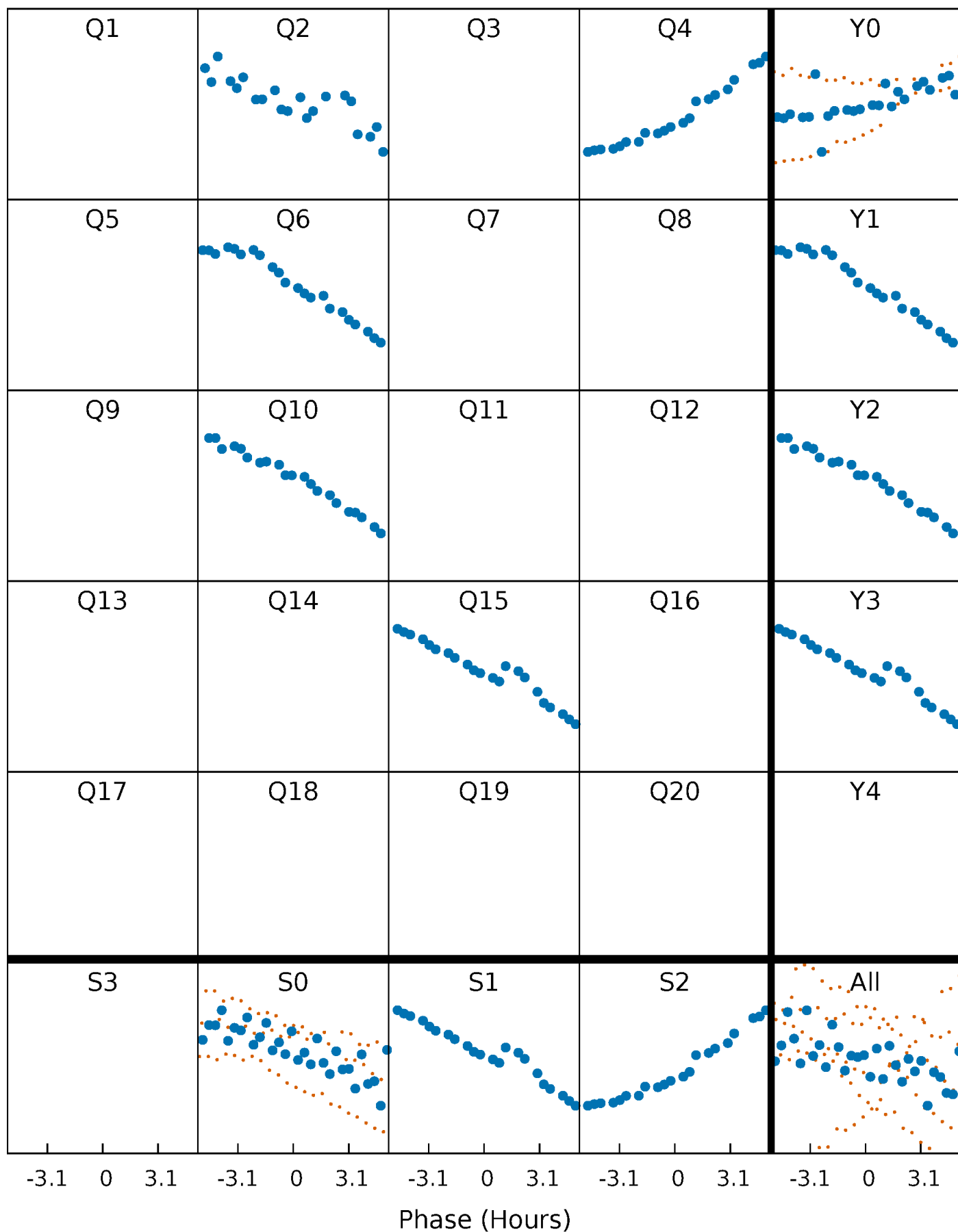


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



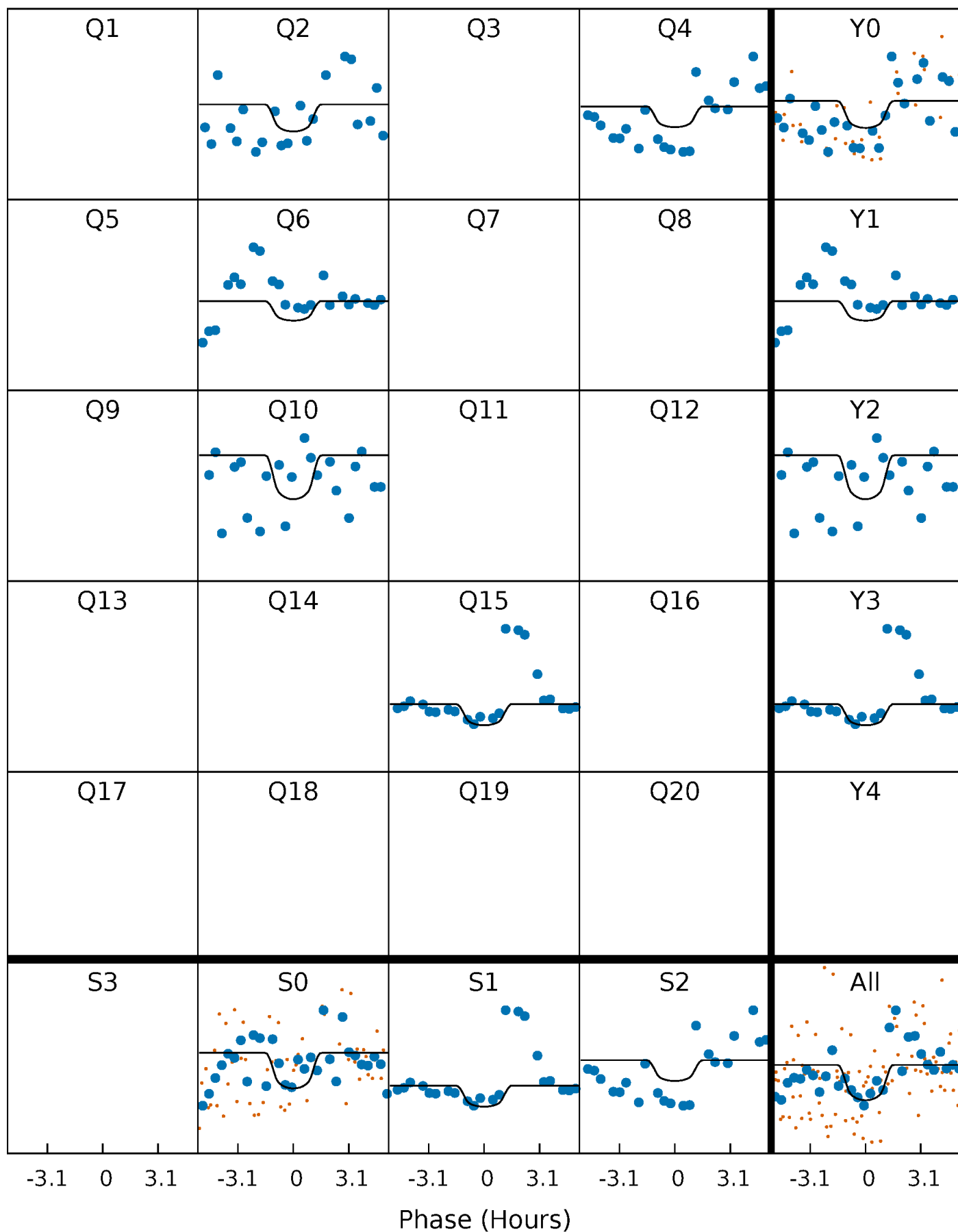
PDC Quarter-Phased Transit Curves

TCE 005597406-03 $P=192.844572$ Days $T_0=225.844649$ (BKJD)



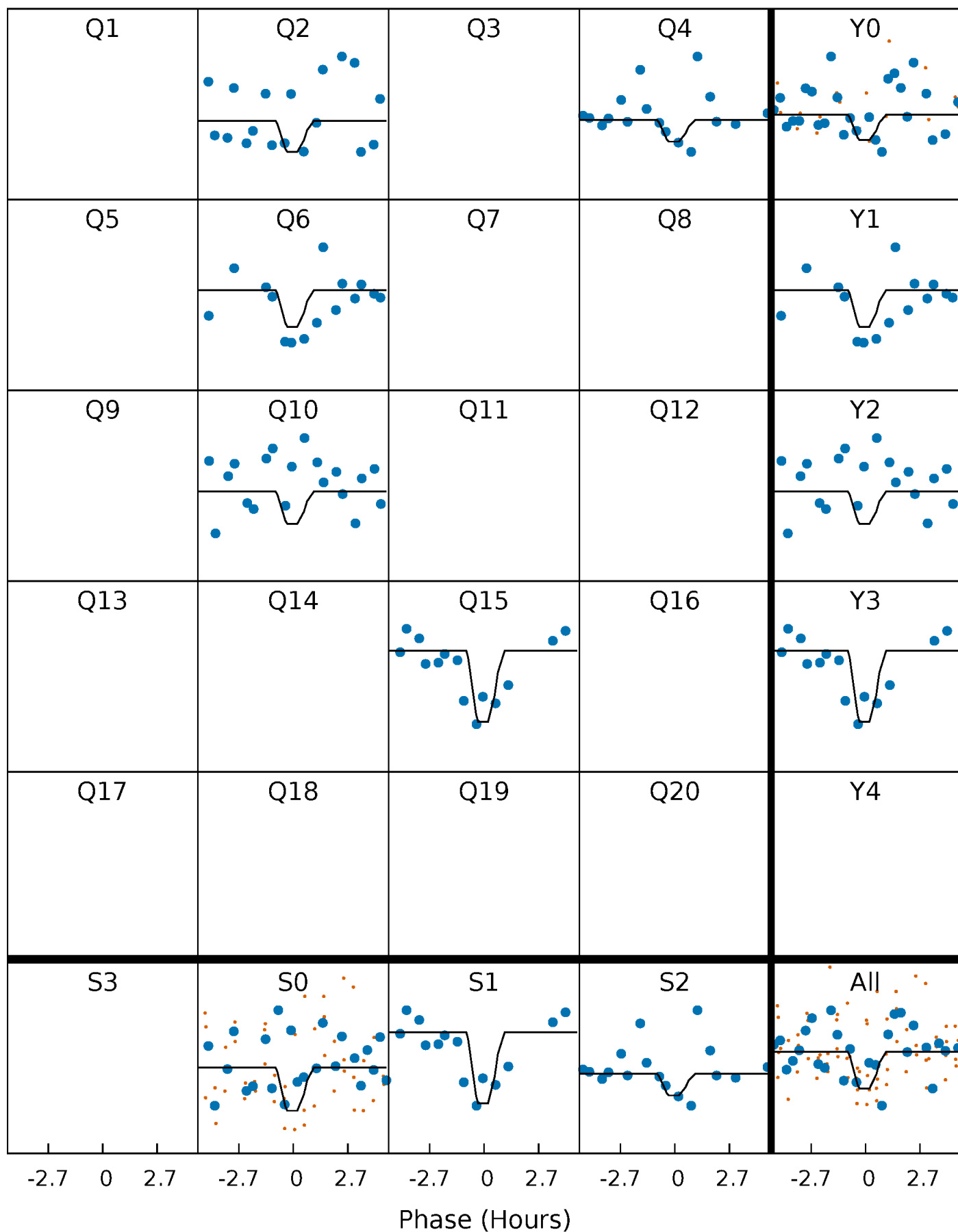
DV Quarter-Phased Transit Curves

TCE 005597406-03 $P=192.844572$ Days $T_0=225.844649$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

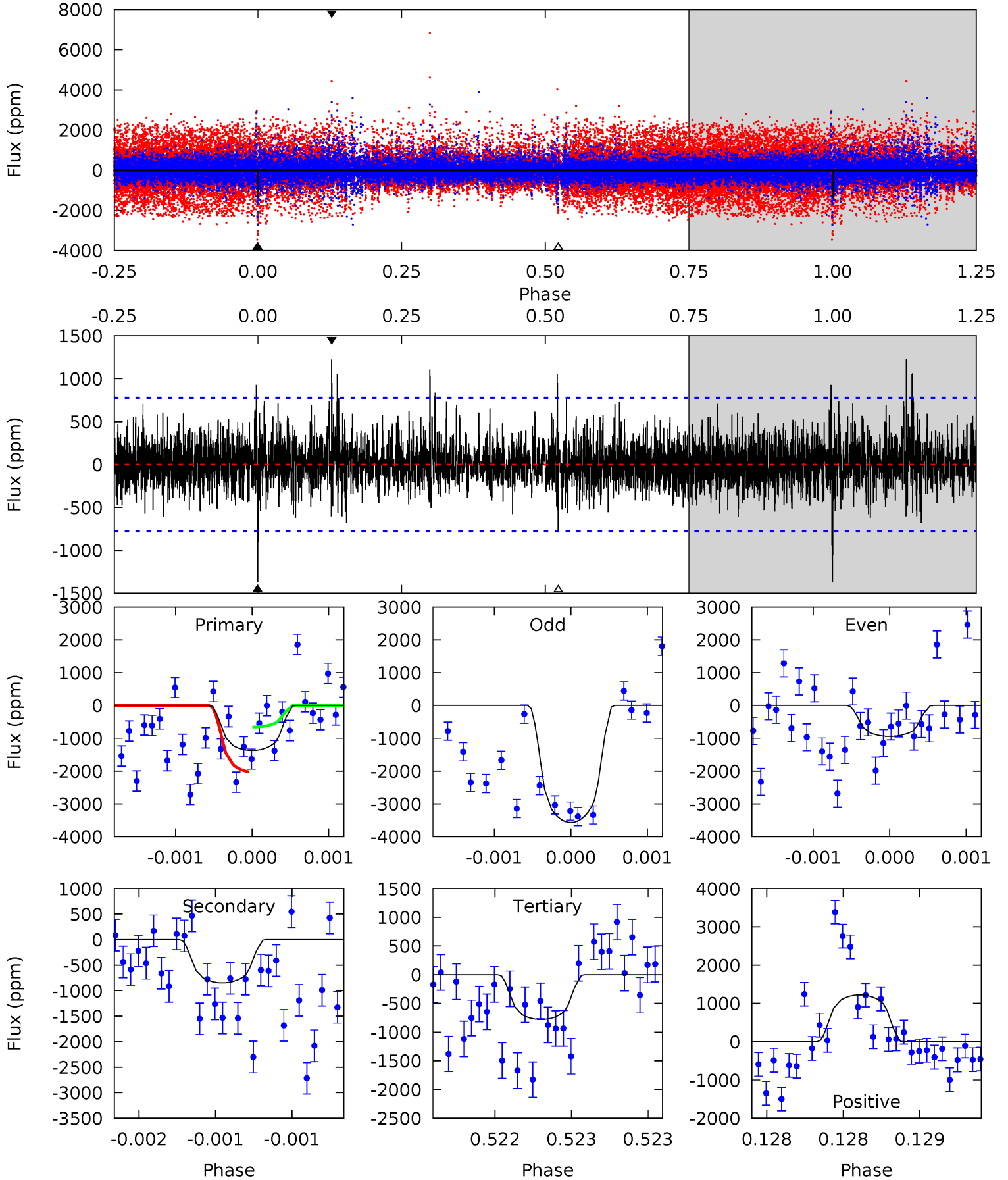
TCE 005597406-03 P=192.841469 Days $T_0=225.854344$ (BKJD)



DV Model-Shift Uniqueness Test

005597406-03, $P = 192.844572$ Days, $E = 33.000077$ Days

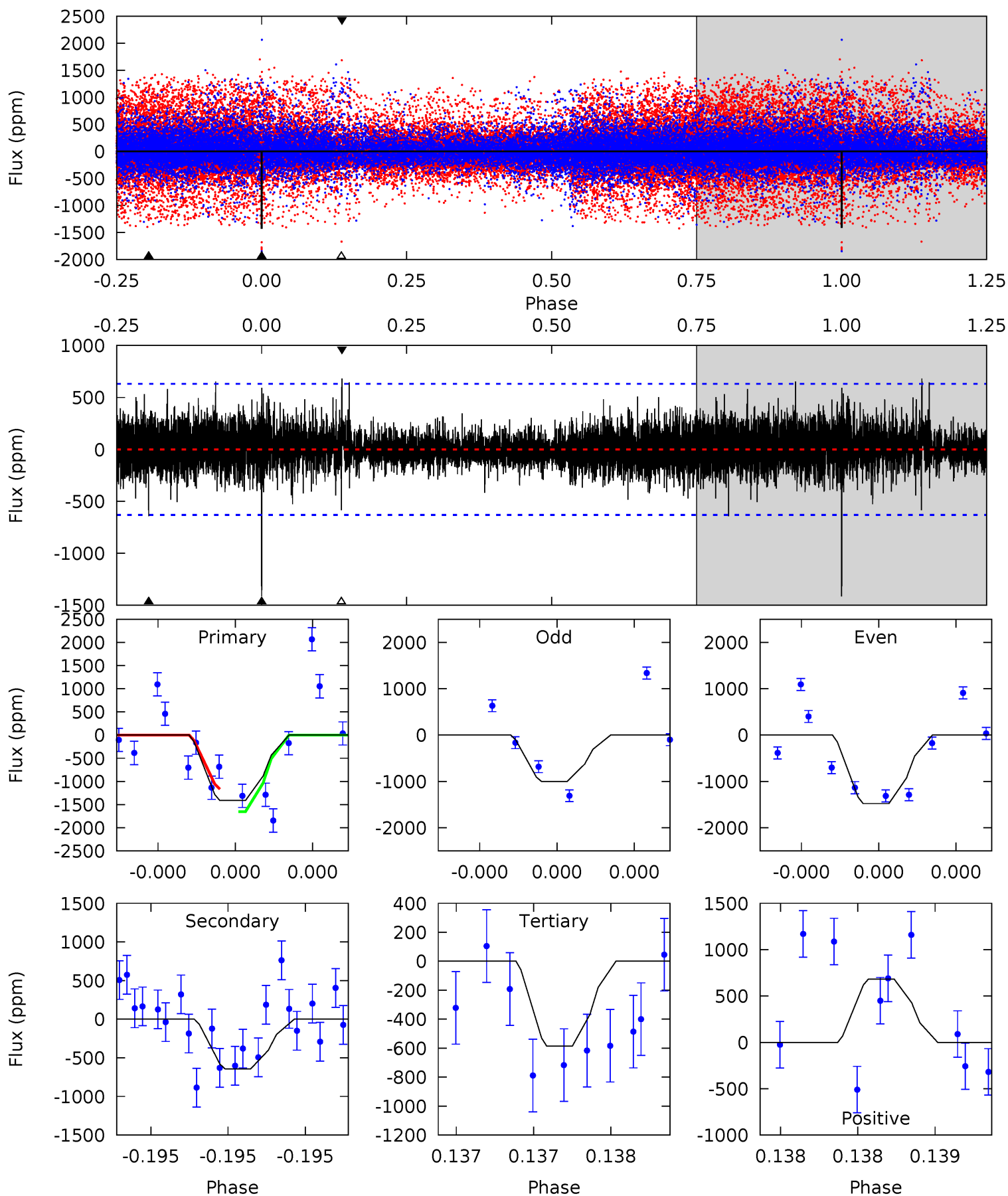
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.75	6.02	5.55	8.70	5.54	3.43	1.45	4.20	1.05	0.47	-2.68	6.98	1.39	0.47	5.03



Alt Model-Shift Uniqueness Test

005597406-03, P = 192.841469 Days, E = 33.012875 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.7	5.76	5.25	6.12	5.65	3.60	1.15	7.41	6.54	0.51	-0.36	1.95	0.66	0.33	2.19



Stellar Parameters For KIC 005597406

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4708^{+165}_{-165}	$4.681^{+0.036}_{-0.050}$	$-0.640^{+0.300}_{-0.300}$	$0.594^{+0.060}_{-0.044}$	$0.618^{+0.061}_{-0.044}$	$4.148^{+0.692}_{-0.712}$
	+4%/-4%	+1%/-1%	+47%/-47%	+10%/-7%	+10%/-7%	+17%/-17%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 005597406-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-846 ± 141	$6.29^{+5.81}_{-4.37}$	302^{+12}_{-12}	3148^{+1547}_{-533}	3775^{+34645}_{-2828}
Alt.	-643 ± 112	$5.92^{+5.45}_{-4.02}$	300^{+12}_{-11}	3051^{+1412}_{-511}	3057^{+25734}_{-2258}

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 $A_{obs} \gg 1.0$

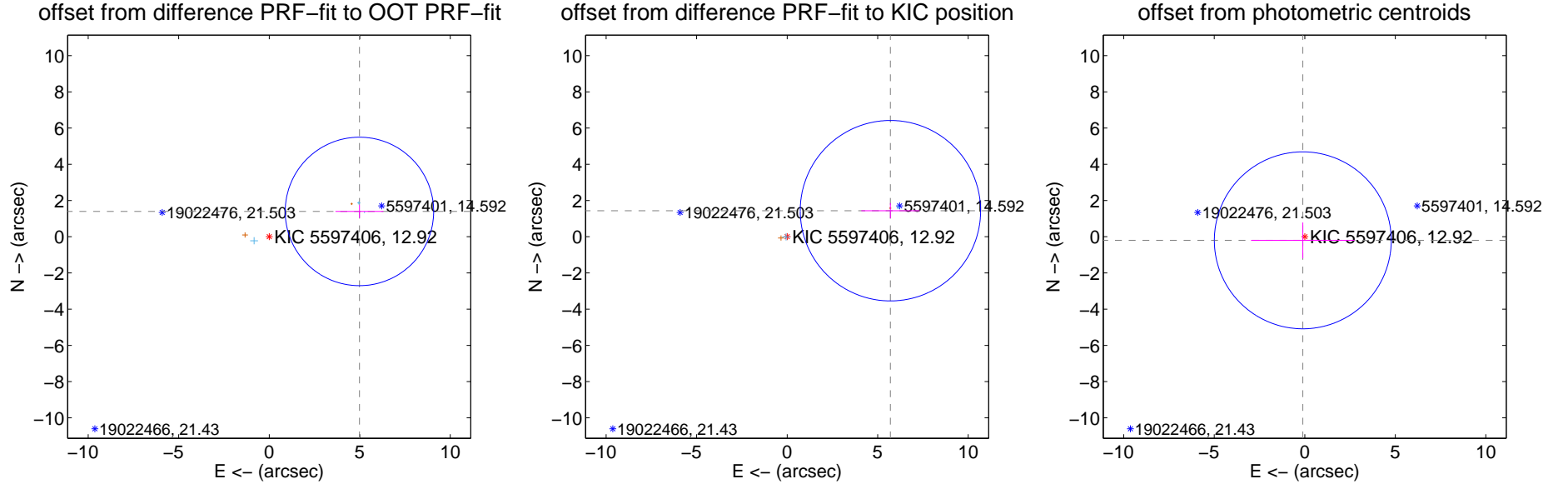
DV Centroid Data

Supplemental centroid analysis for 005597406-03. Kepler magnitude: 12.92. Transit SNR 6.79

There are 3 quarters with good PRF difference image offsets

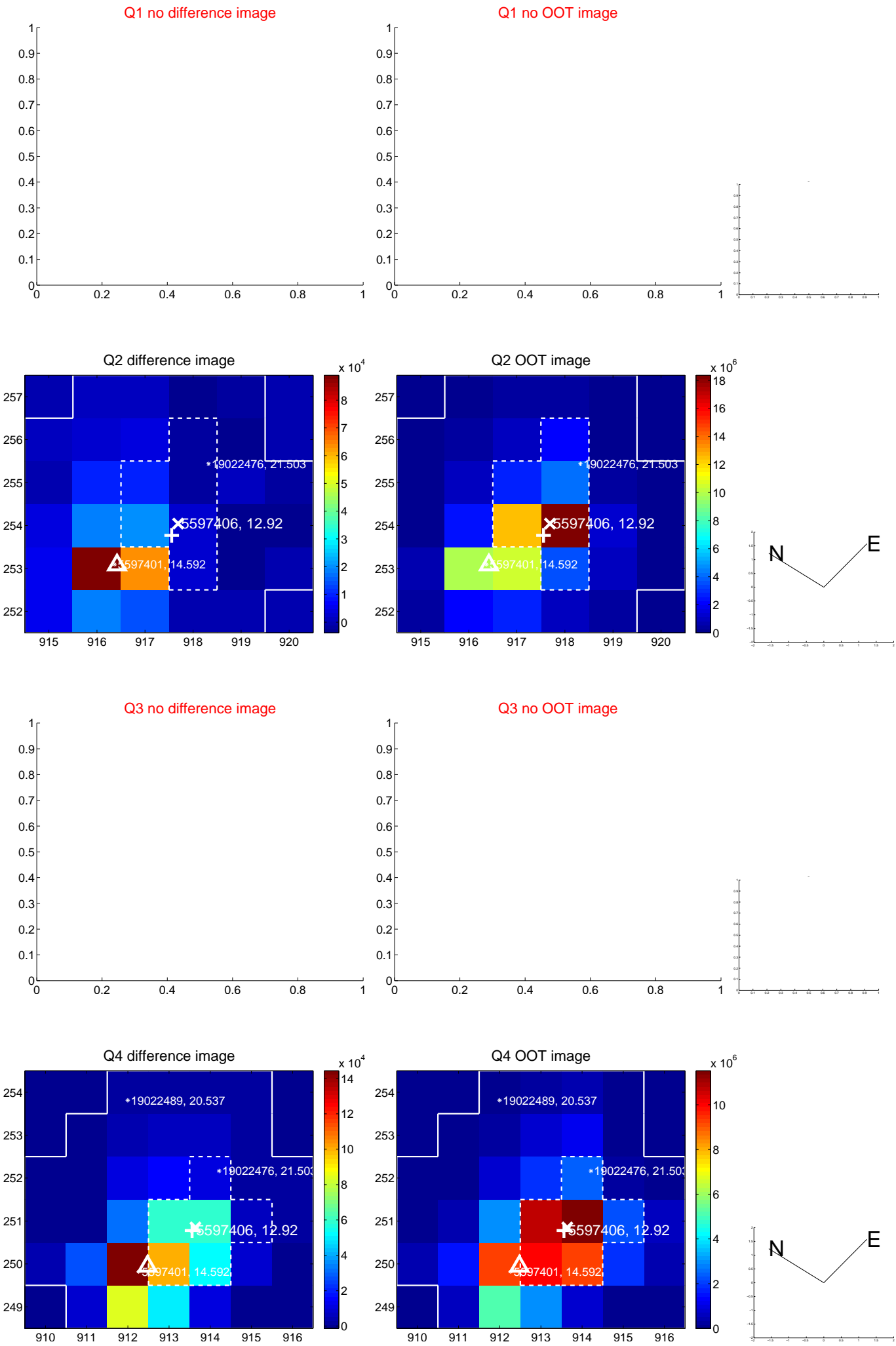
The direct PRF centroid is offset from the target star catalog position by about 0.80 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.175 ± 1.366	3.79	-4.983 ± 1.323	1.397 ± 0.361
PRF-fit source offset from KIC position	5.882 ± 1.661	3.54	-5.704 ± 1.608	1.438 ± 0.423
photometric centroid source offset	0.23 ± 1.63	0.14	0.11 ± 2.86	-0.20 ± 0.99

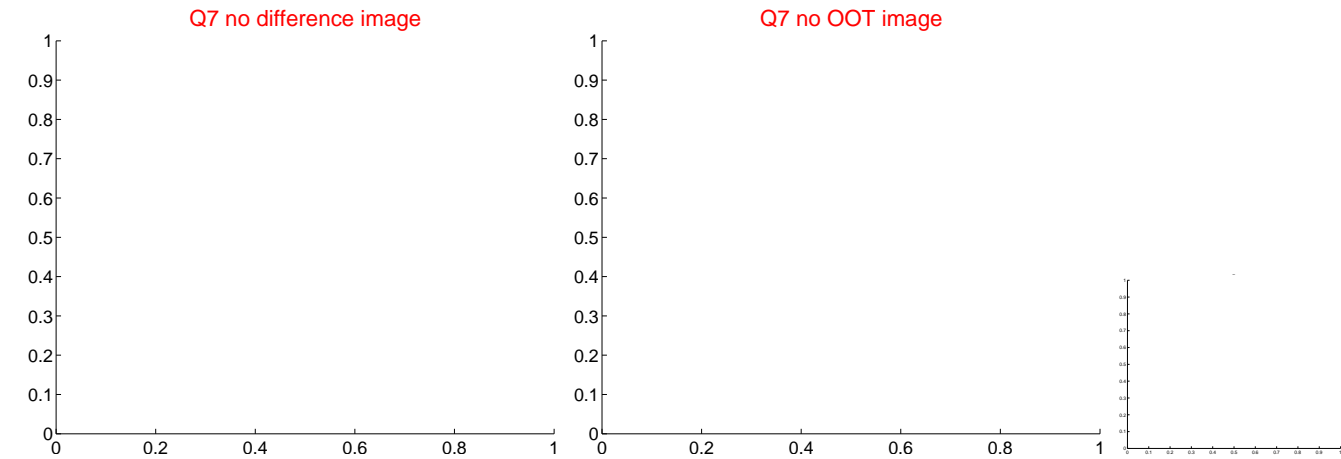
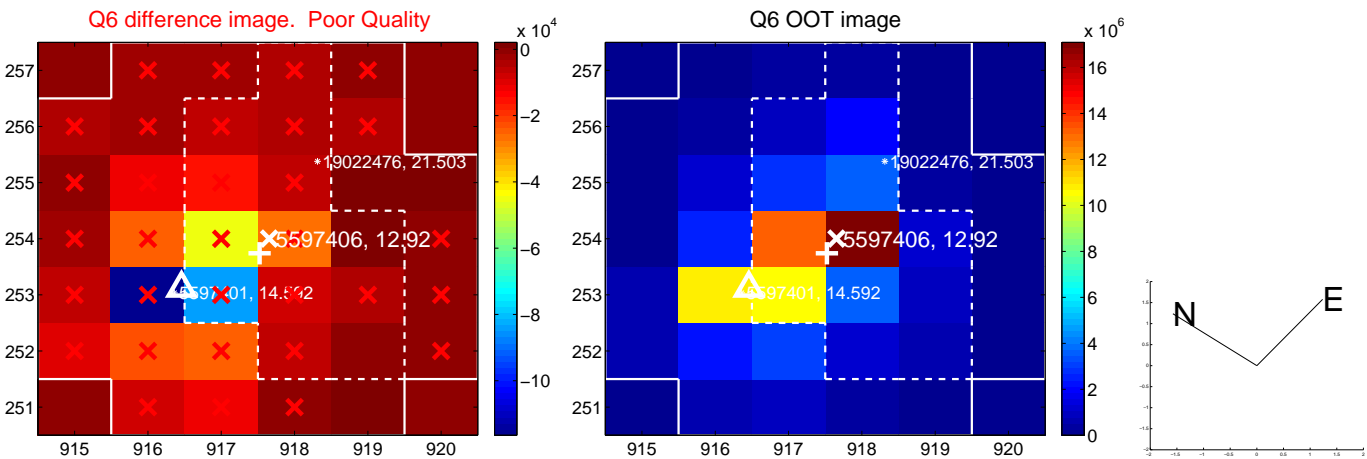


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

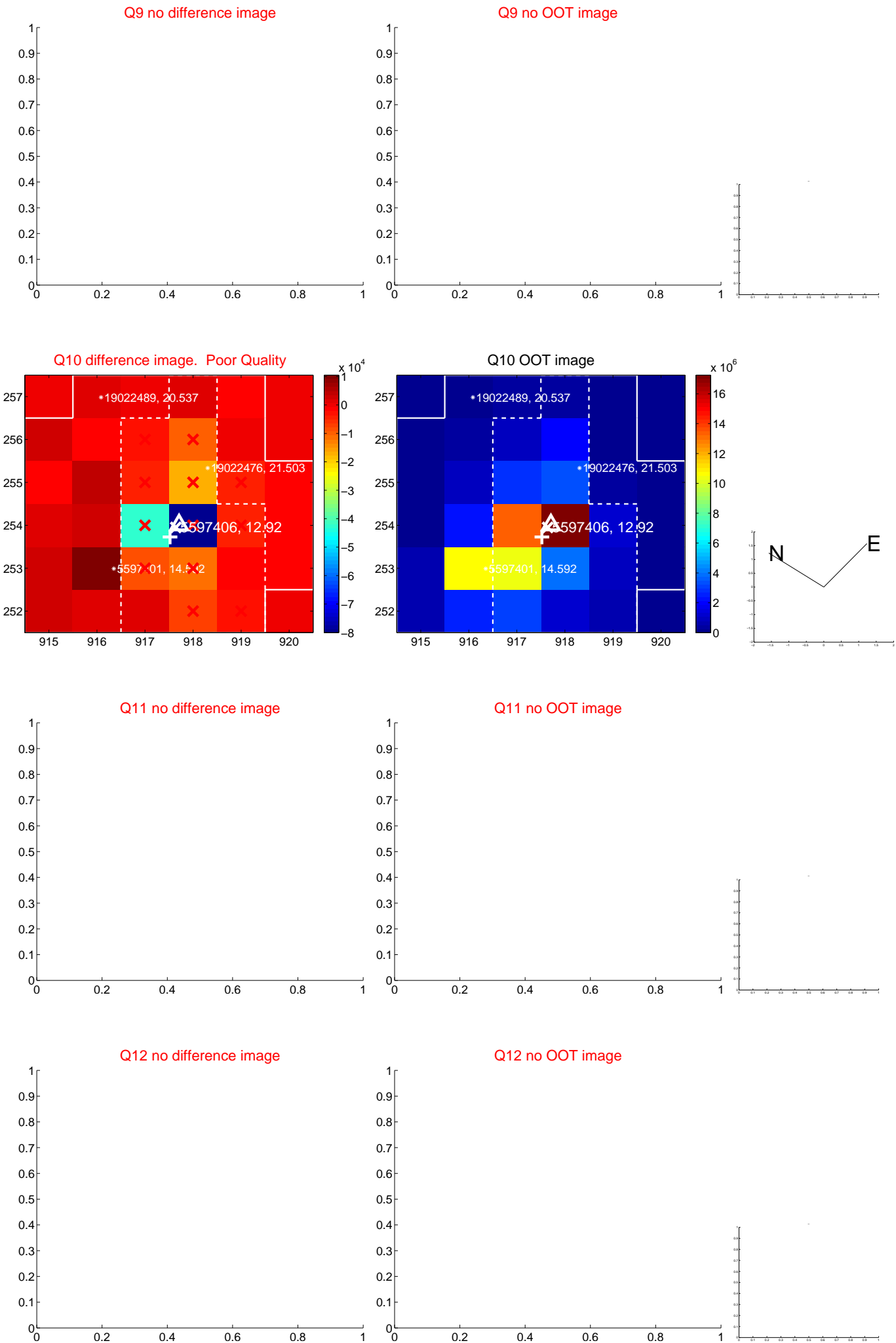
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



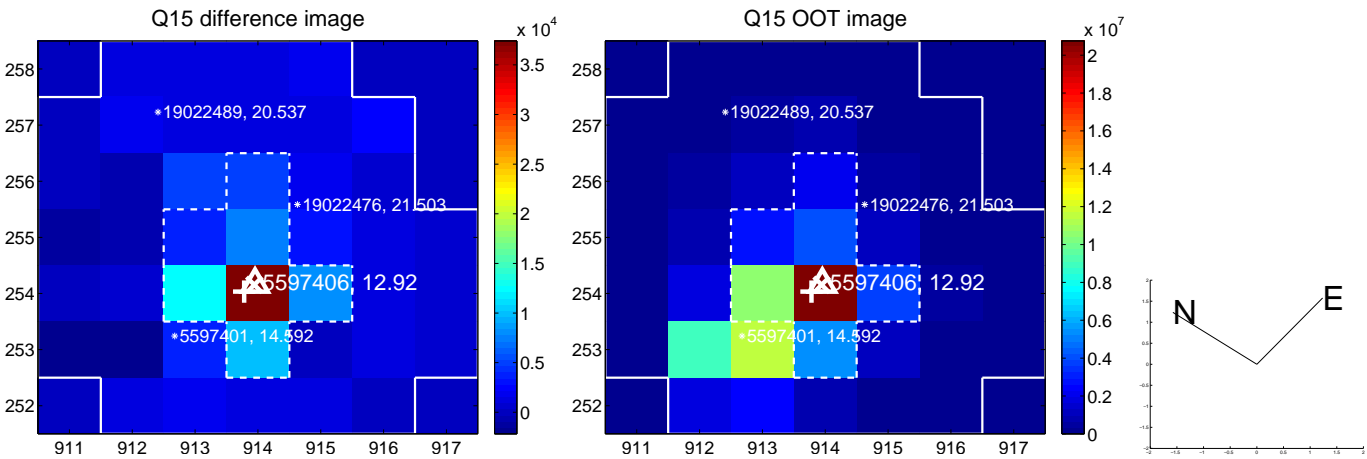
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



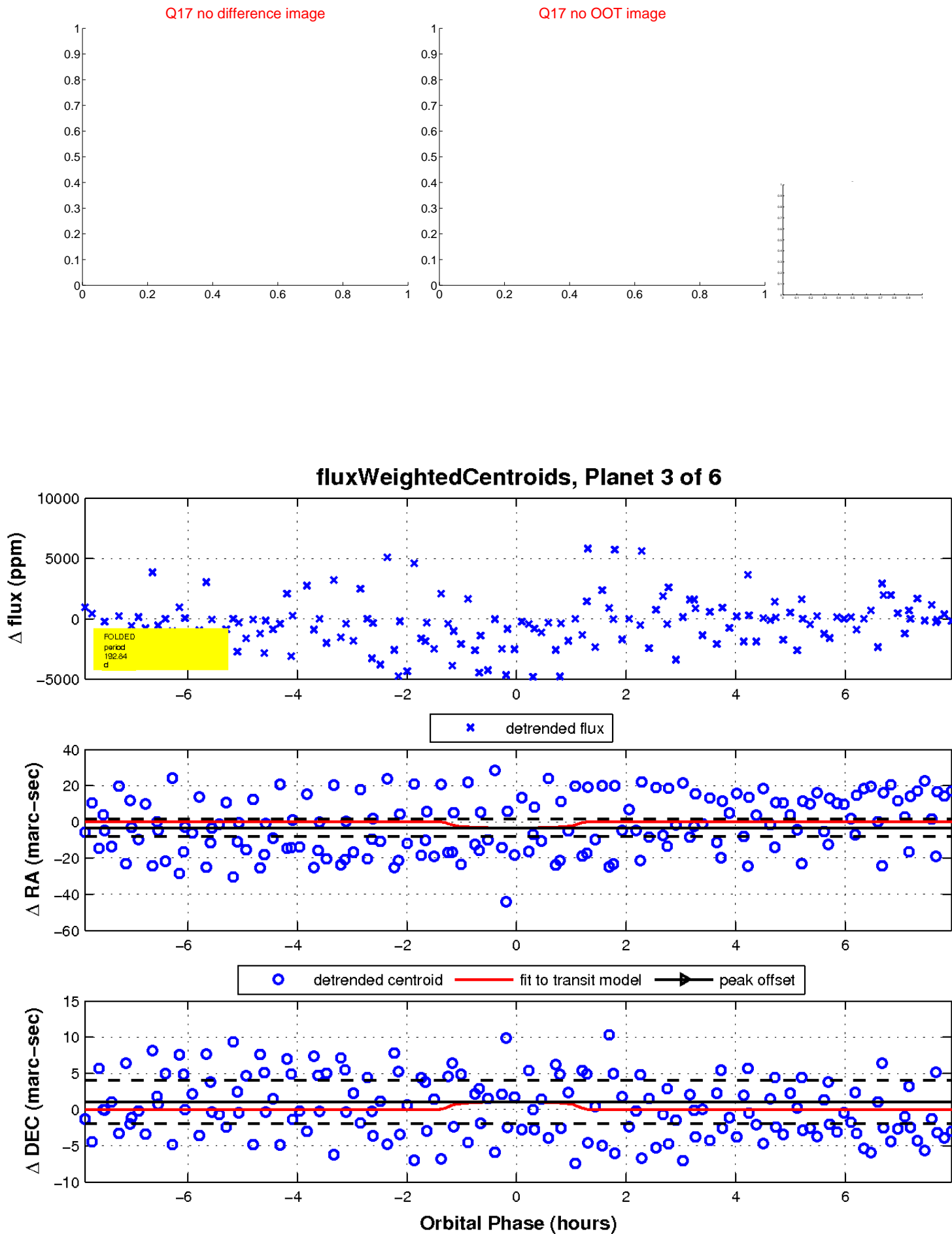
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

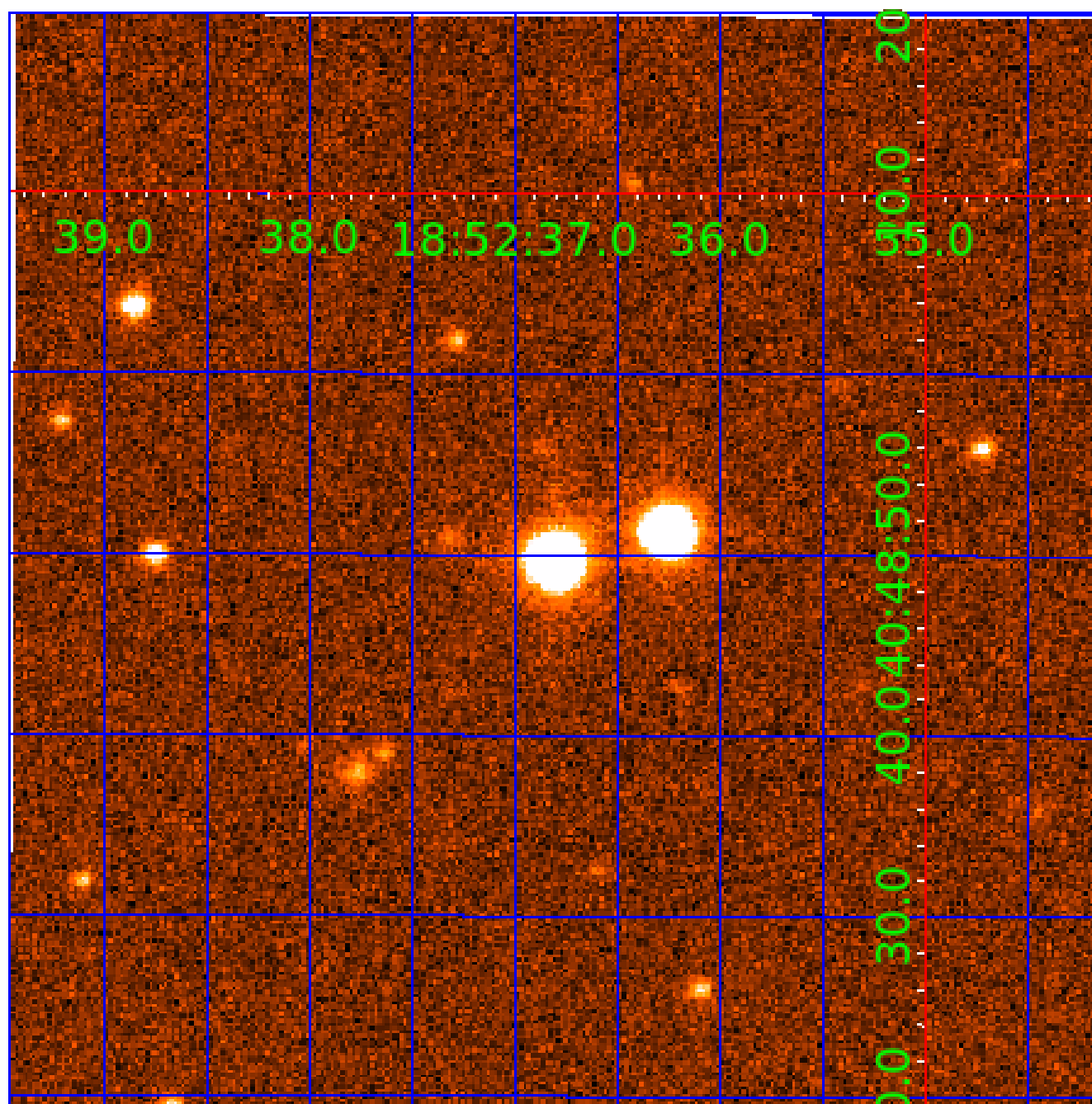


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005597406

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})
005597406-01	OBS	No	360.274536	202.614342	1934.4	2.575	15.9	7.8	0.59	4708	2.64	0.22
005597406-02	OBS	No	289.795853	348.677283	1261.1	7.681	14.2	4.1	0.59	4708	2.13	0.29
005597406-03	OBS	No	192.844572	225.844649	1547.6	2.670	12.6	6.8	0.59	4708	2.61	0.50
005597406-04	OBS	No	621.959135	144.245805	1701.8	3.462	13.0	6.8	0.59	4708	2.44	0.10
005597406-05	OBS	No	188.877286	258.435507	1767.1	3.531	13.0	7.0	0.59	4708	2.72	0.52
005597406-06	OBS	No	273.610864	393.087807	820.9	3.500	11.3	-1.0	0.59	4708	1.65	0.32

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005597406-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005597406-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005597406-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—CENT_FEW_DIFFS
005597406-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005597406-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
005597406-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

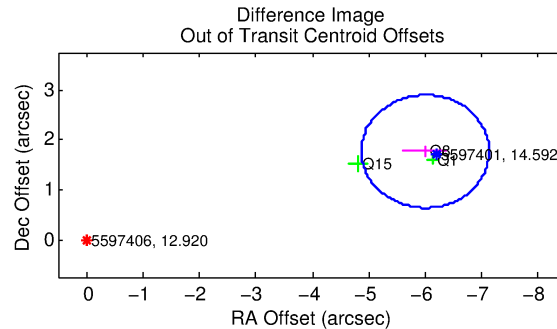
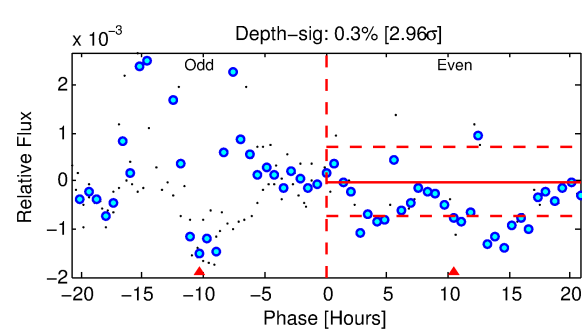
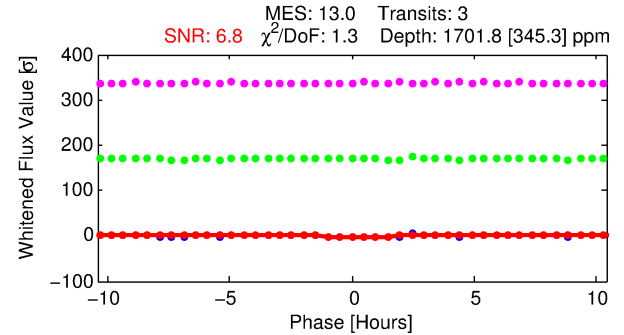
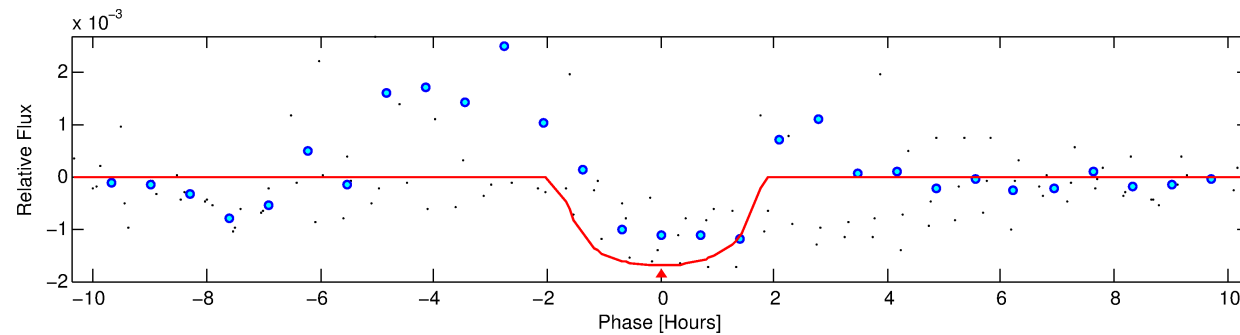
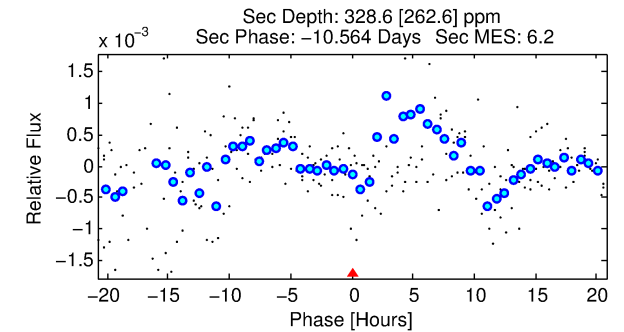
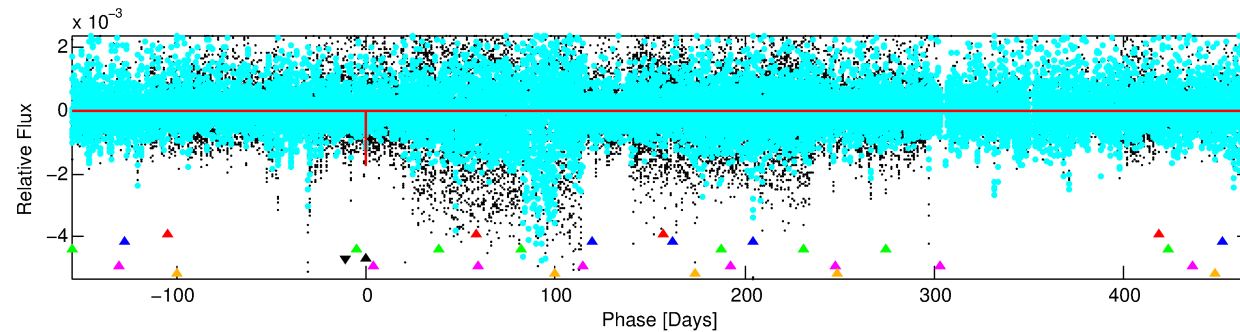
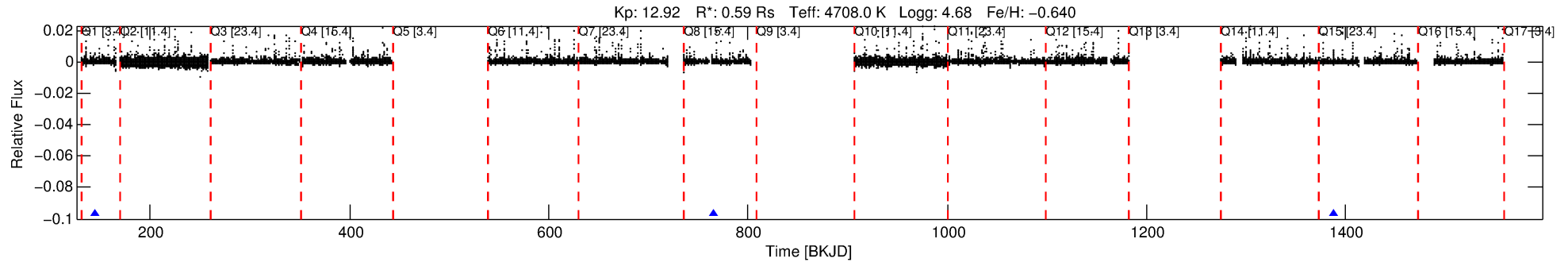
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005597406-04

No Significant Match Found

DV One-Page Summary

KIC: 5597406 Candidate: 4 of 6 Period: 621.959 d



DV Fit Results:

Period = 621.95914 [0.00556] d
Epoch = 144.2458 [0.0070] BKJD
Rp/R* = 0.0377 [0.0594]
a/R* = 1292.30 [6772.30]
b = 0.44 [9.87]
Seff = 0.11 [0.02]
Teq = 145 [6] K
Rp = 2.44 [3.86] Re
a = 1.2145 [0.0941] AU
Ag = 44646.85 [145250.27] [0.31σ]
Teffp = 3265 [2656] K [1.17σ]

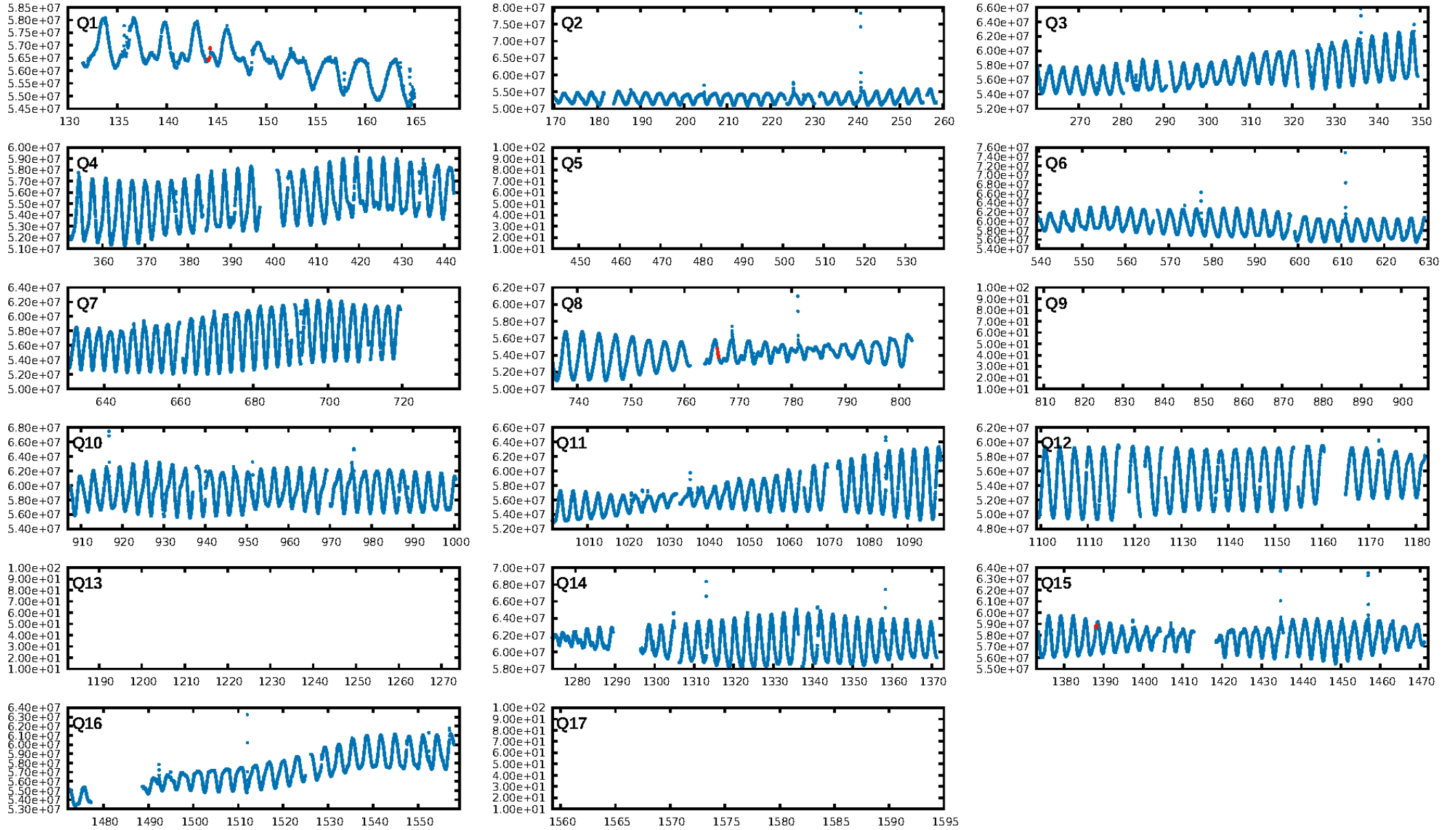
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1455.70σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 24.2%
ModelChiSquareGof-sig: 87.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 0.321
Centroid-sig: 26.0%
Centroid-so: 1.809 arcsec [0.77σ]
OotOffset-rm: 6.250 arcsec [16.58σ]
KicOffset-rm: 6.578 arcsec [26.84σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

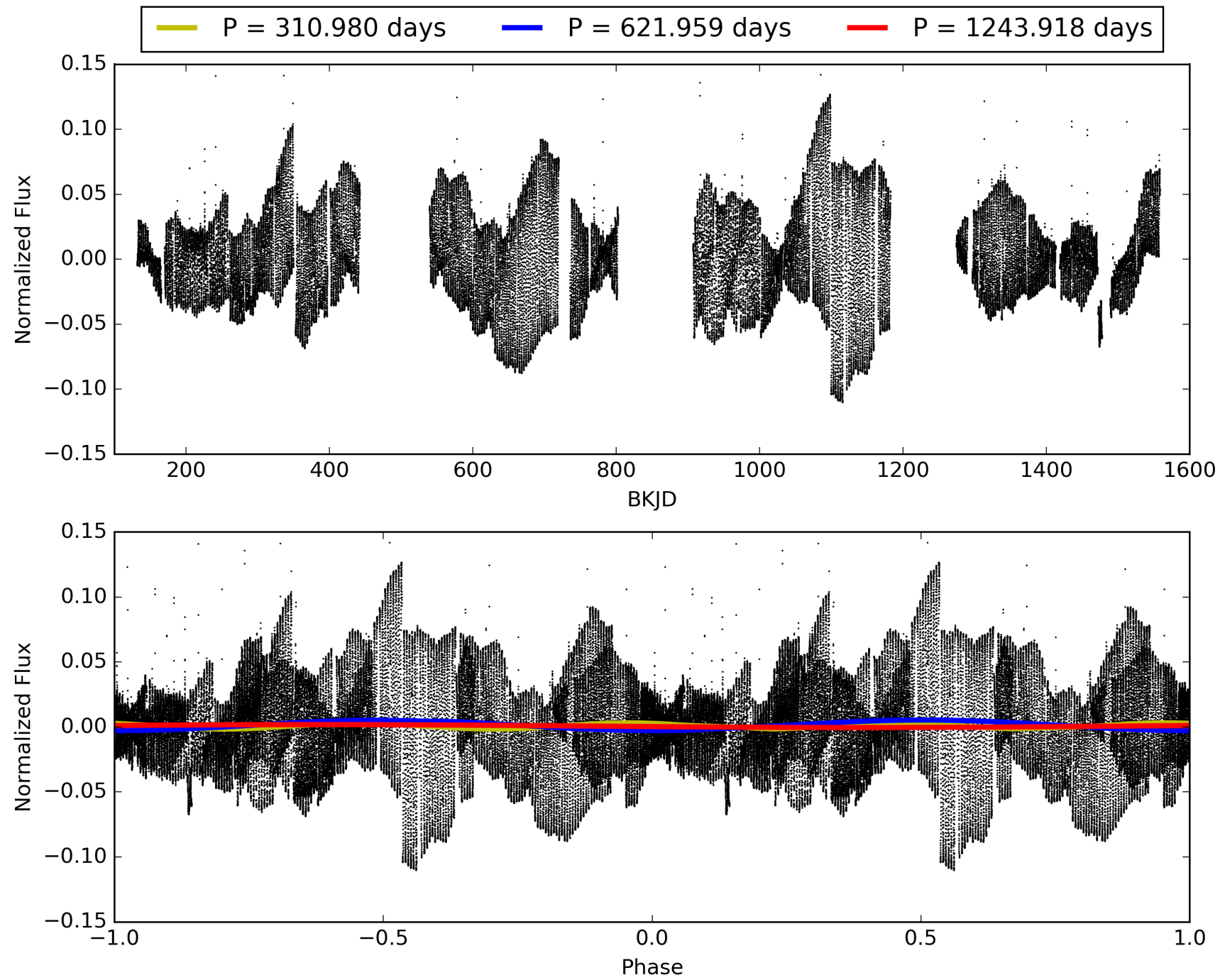
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 08:57:16 Z

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

TCE 005597406-04, PDC Light Curves

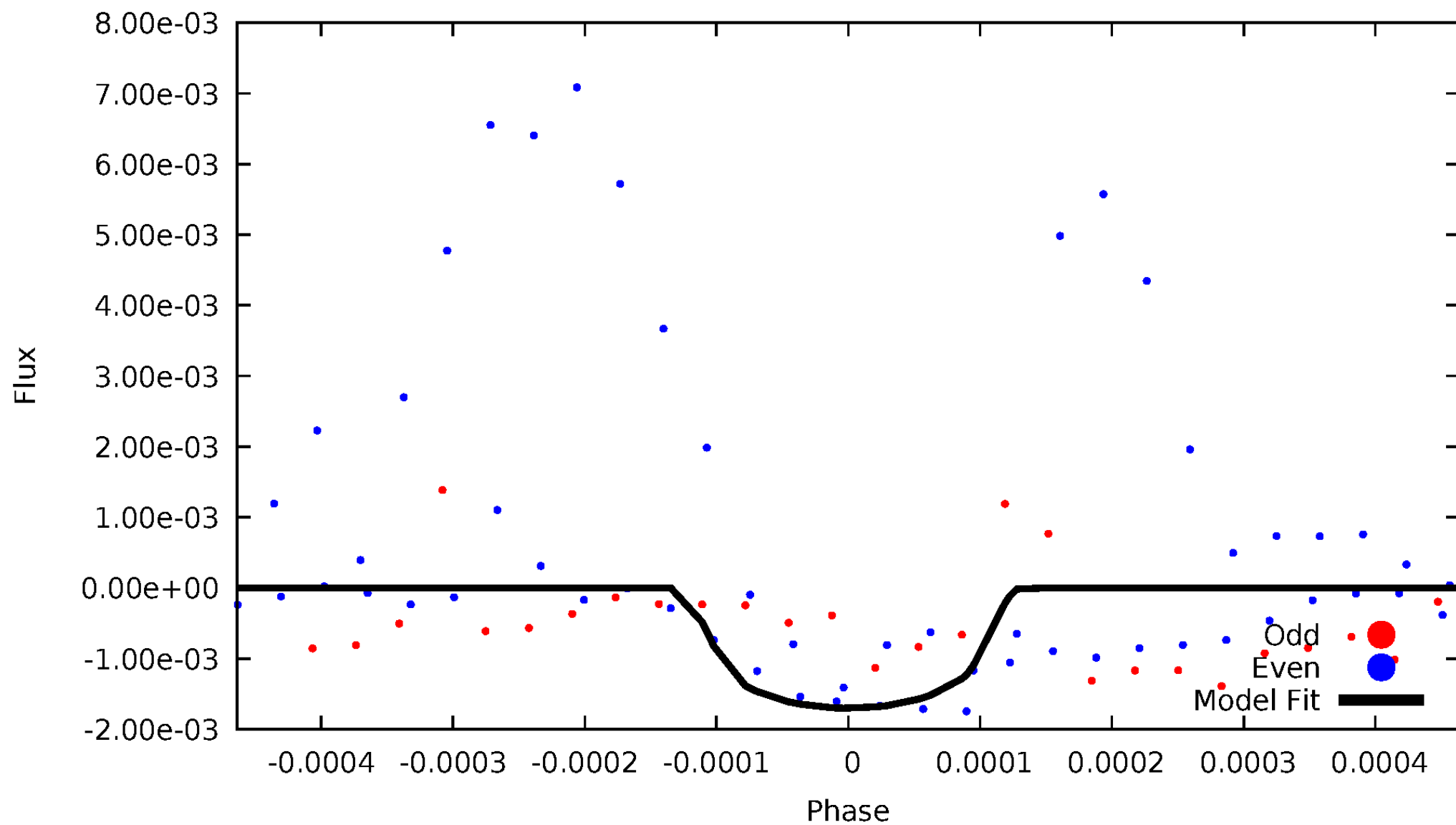


TCE 005597406-04



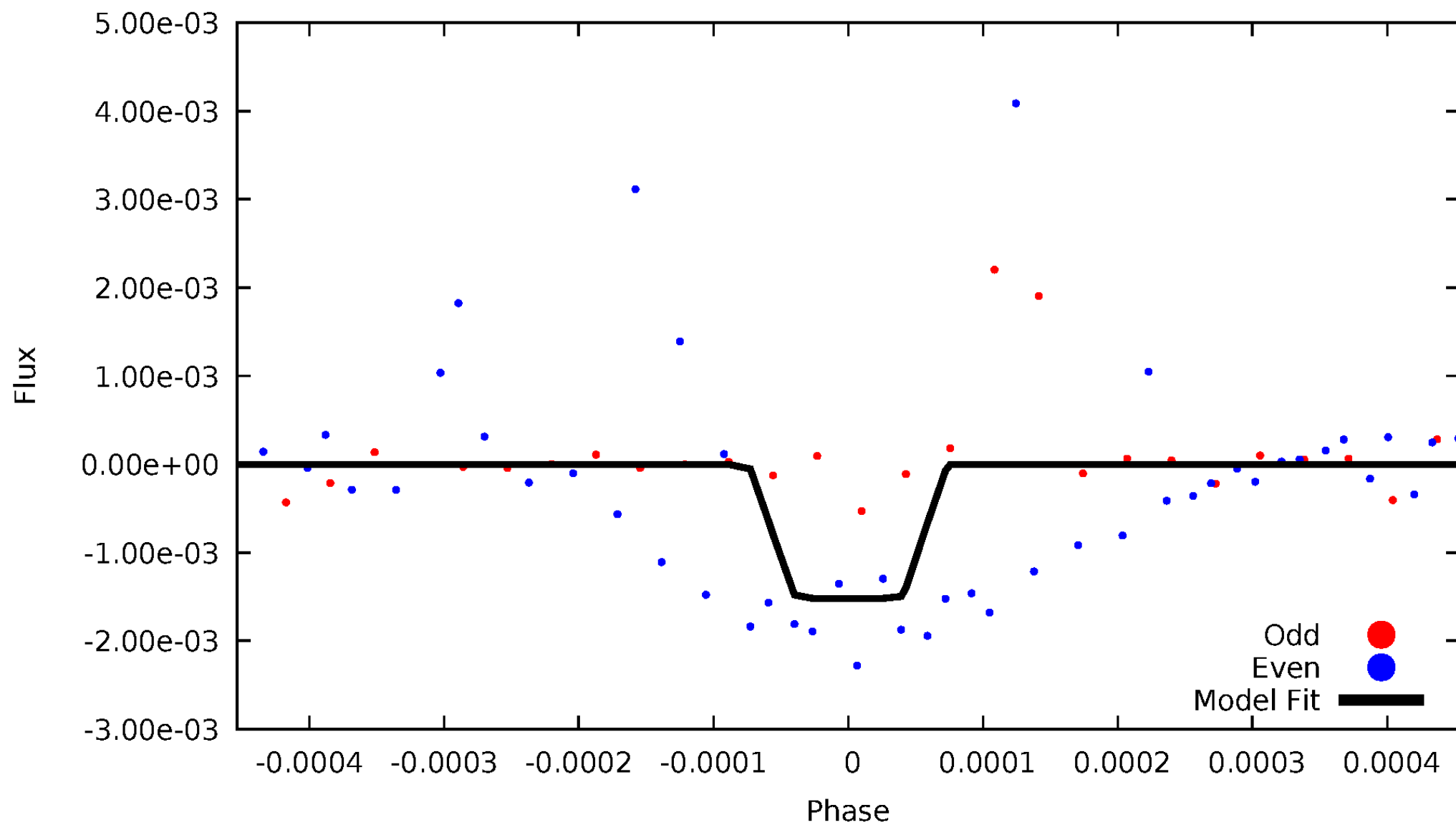
DV Odd/Even

TCE 005597406-04



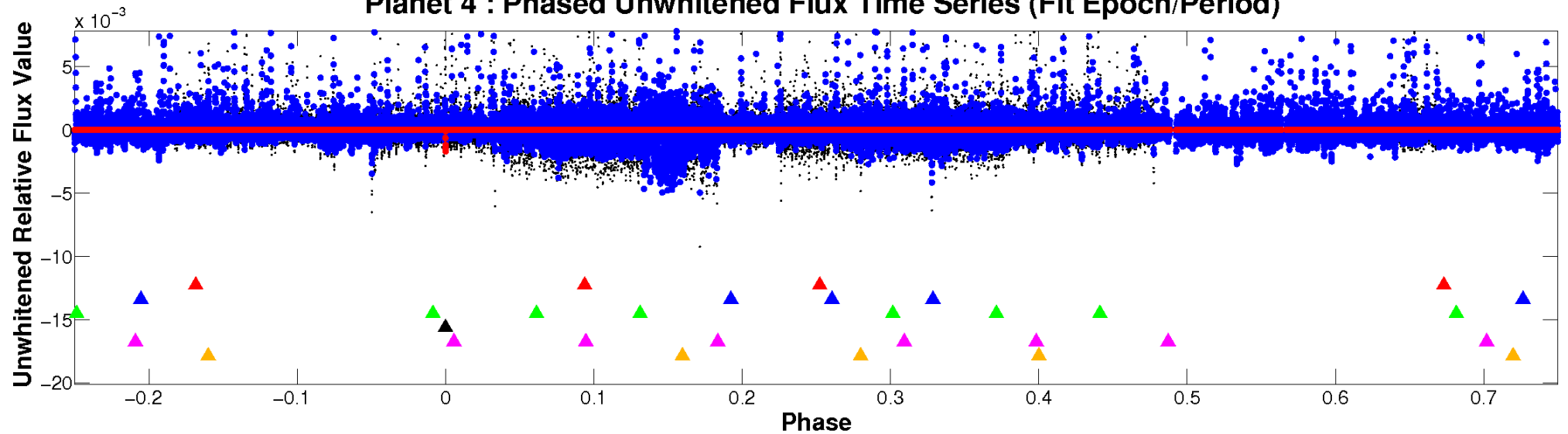
ALT Odd/Even

TCE 005597406-04

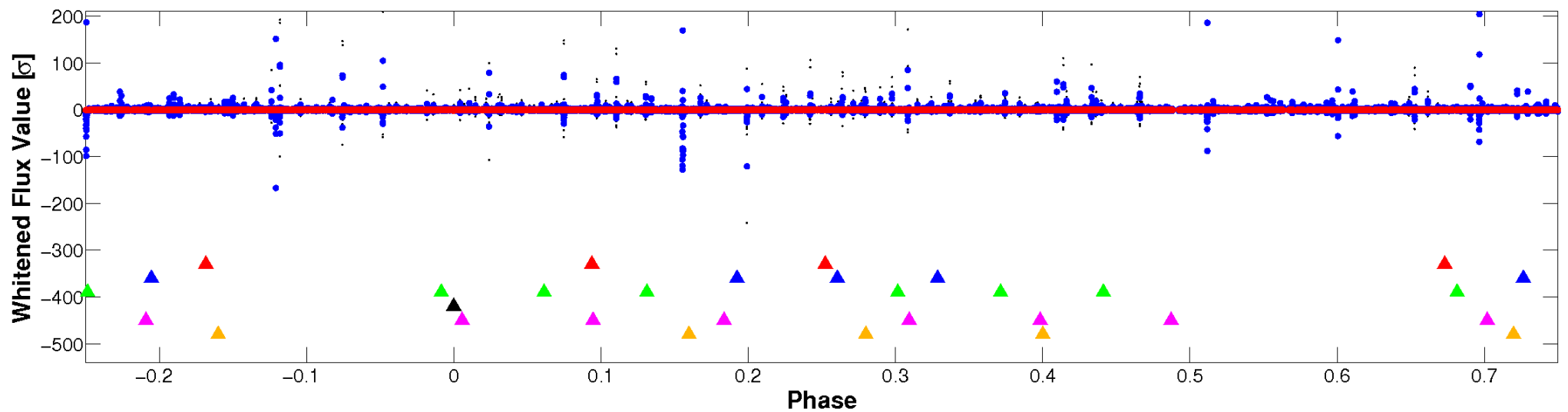


Non-Whitened Vs. Whitened Light Curve

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

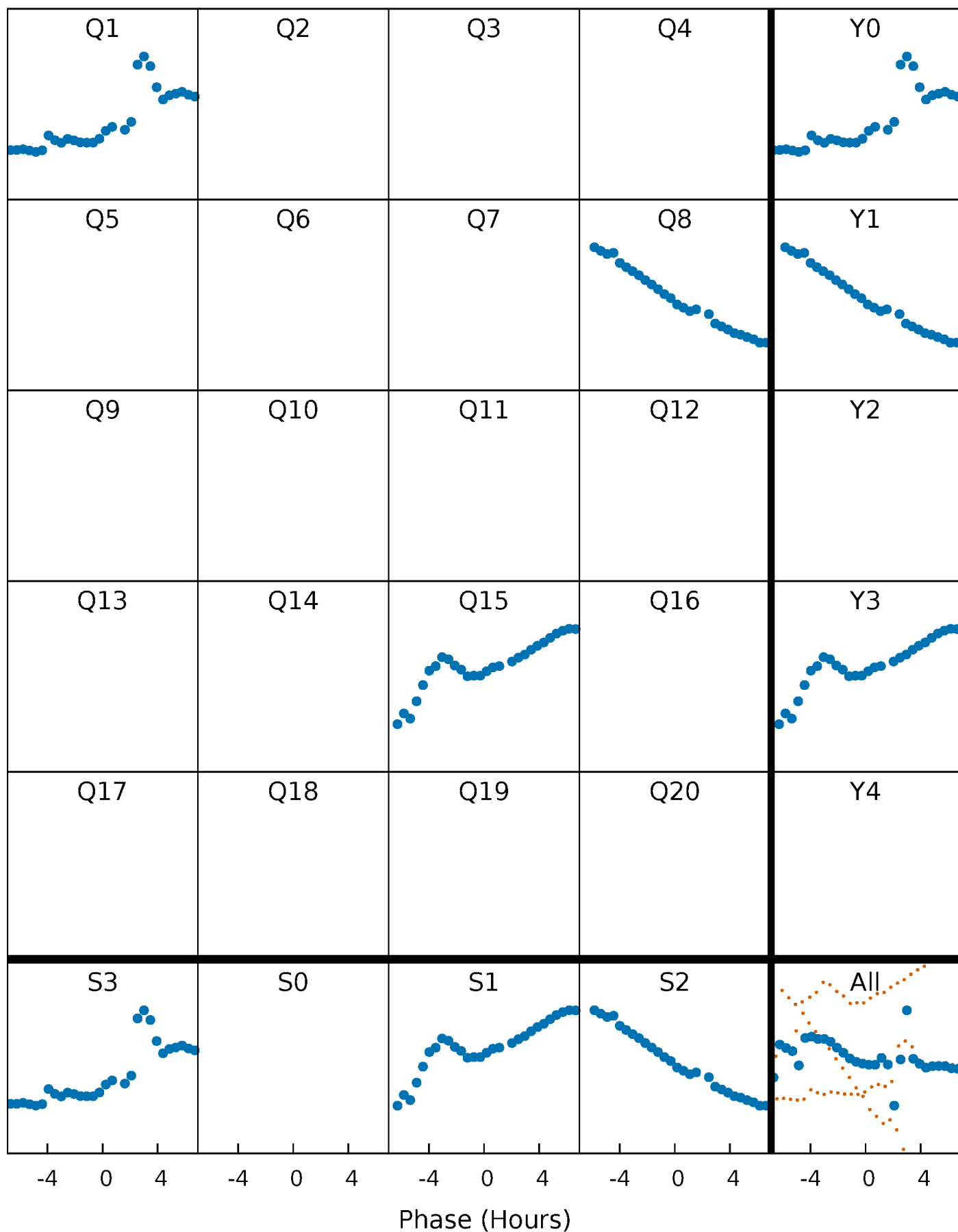


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



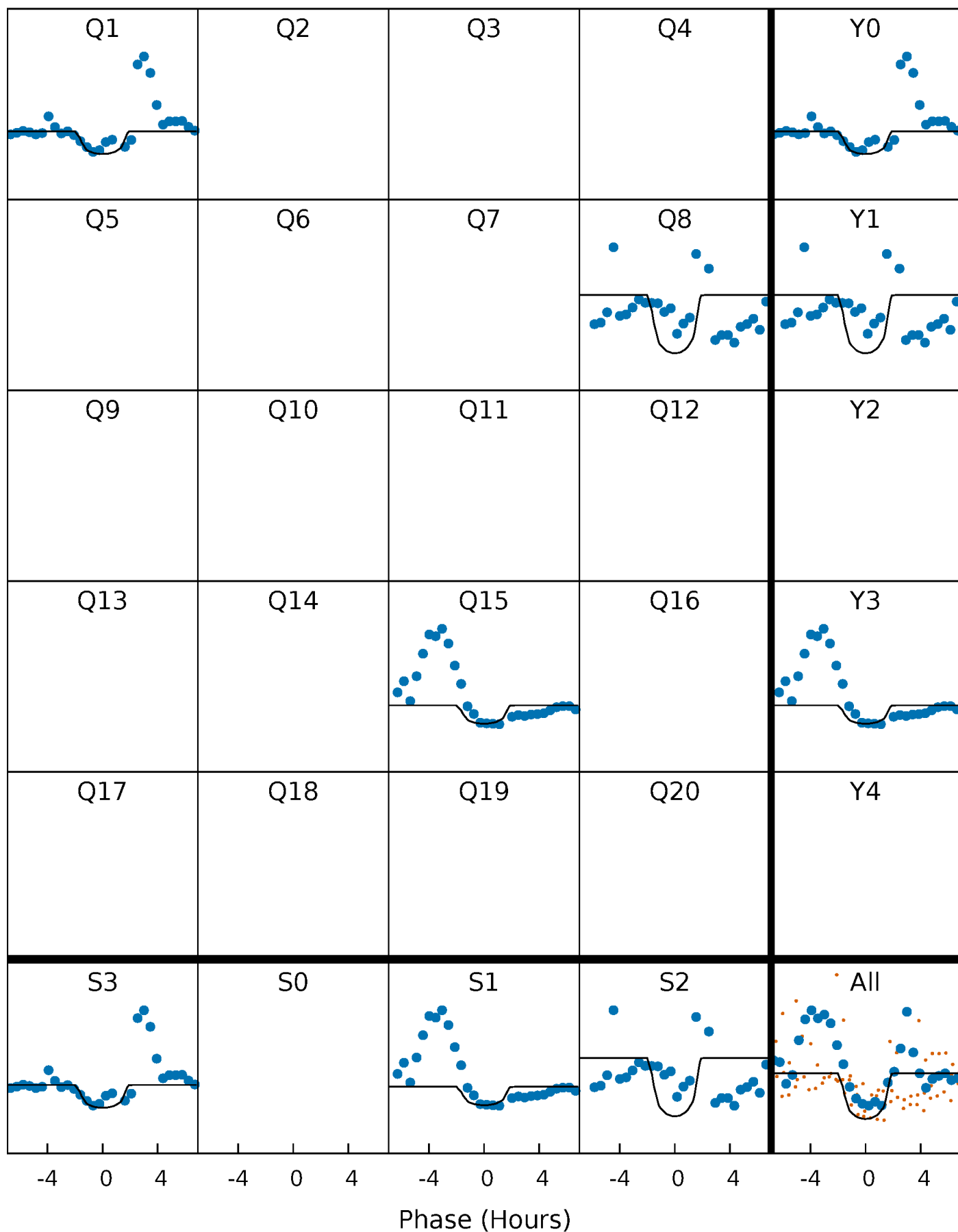
PDC Quarter-Phased Transit Curves

TCE 005597406-04 P=621.959135 Days $T_0=144.245805$ (BKJD)



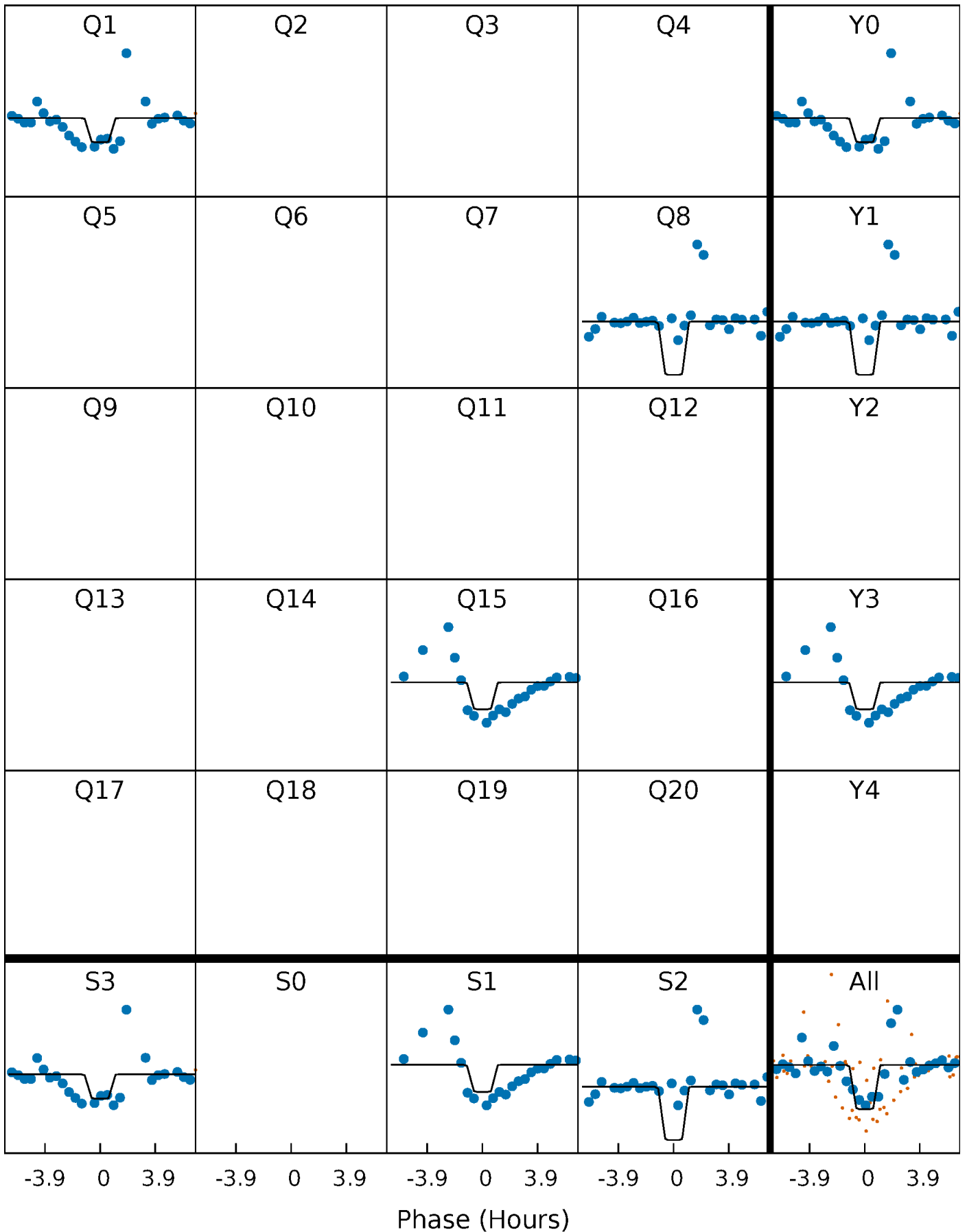
DV Quarter-Phased Transit Curves

TCE 005597406-04 $P=621.959135$ Days $T_0=144.245805$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

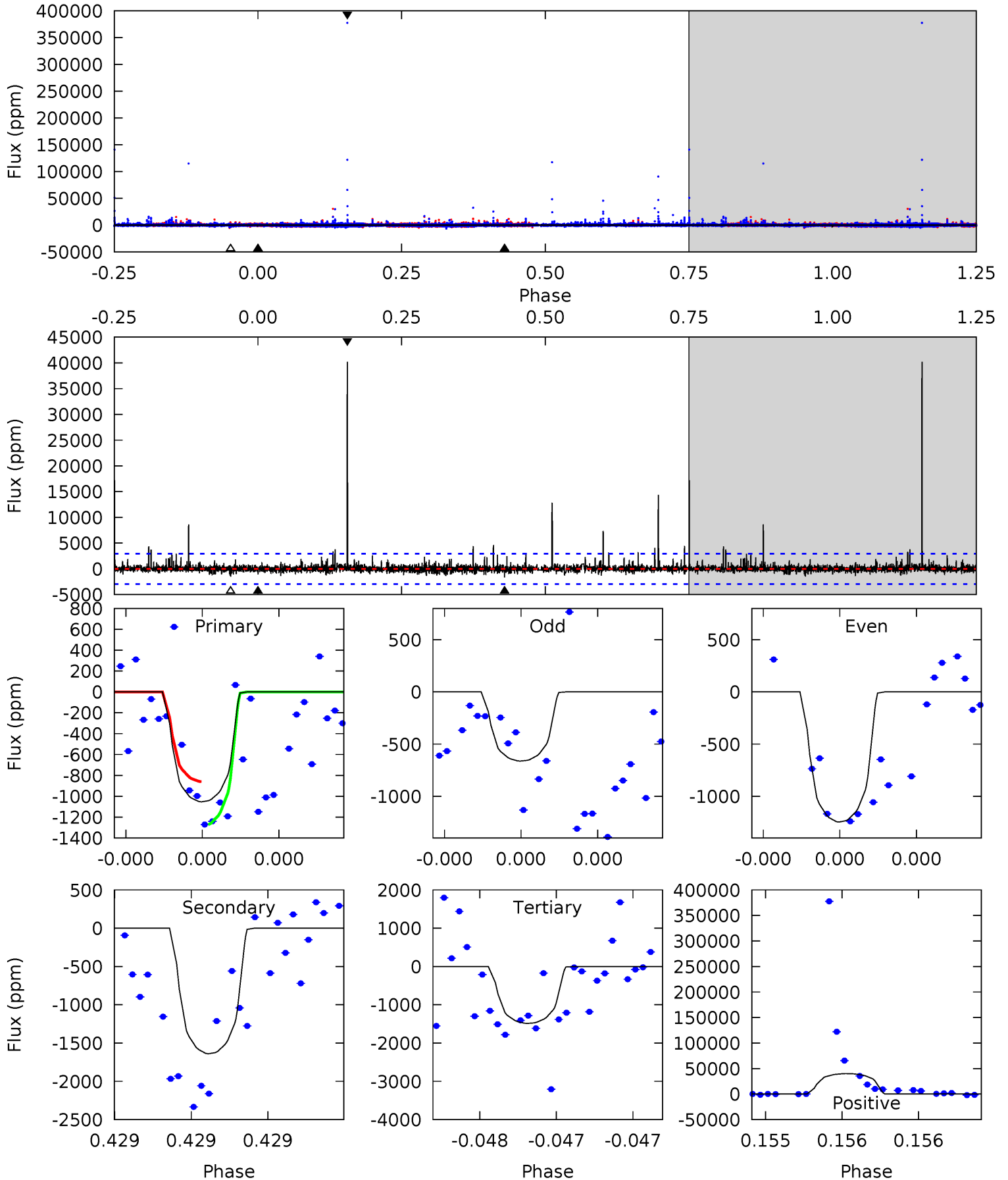
TCE 005597406-04 P=621.943077 Days $T_0=144.268451$ (BKJD)



DV Model-Shift Uniqueness Test

005597406-04, P = 621.959135 Days, E = 144.245805 Days

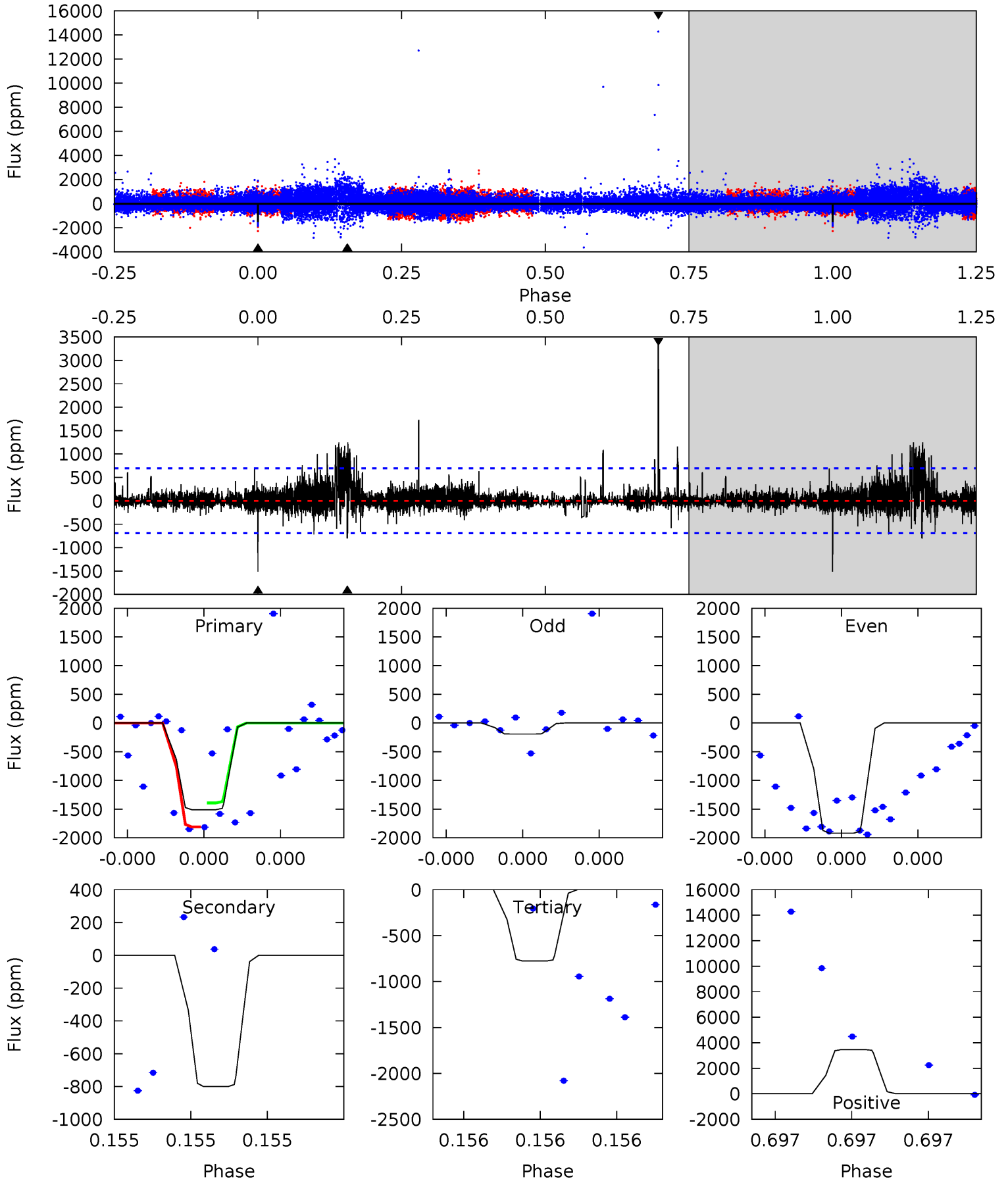
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.03	3.16	2.87	77.5	5.69	3.65	1.87	-0.84	-75.4	0.30	-74.3	0.46	0.85	0.96	0.41



Alt Model-Shift Uniqueness Test

005597406-04, P = 621.943077 Days, E = 144.268451 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.6	6.66	6.45	28.8	5.76	3.77	1.20	6.10	-16.3	0.20	-22.2	6.63	0.79	0.70	1.66



Stellar Parameters For KIC 005597406

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4708^{+165}_{-165}	$4.681^{+0.036}_{-0.050}$	$-0.640^{+0.300}_{-0.300}$	$0.594^{+0.060}_{-0.044}$	$0.618^{+0.061}_{-0.044}$	$4.148^{+0.692}_{-0.712}$
	+4%/-4%	+1%/-1%	+47%/-47%	+10%/-7%	+10%/-7%	+17%/-17%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 005597406-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1640 ± 519	$3.85^{+3.01}_{-2.55}$	204^{+8}_{-8}	4107^{+2243}_{-800}	$90913^{+643075}_{-65742}$
Alt.	-801 ± 120	$3.83^{+3.48}_{-2.56}$	204^{+8}_{-8}	3661^{+1762}_{-694}	$45611^{+366447}_{-34165}$

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 $A_{obs} \gg 1.0$

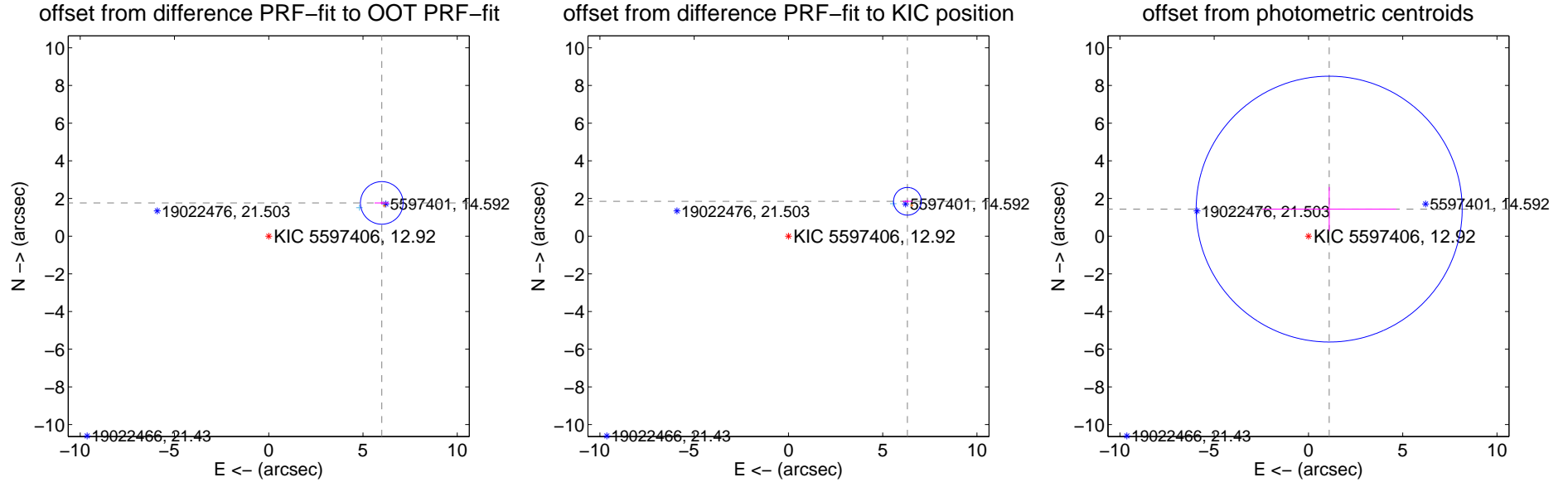
DV Centroid Data

Supplemental centroid analysis for 005597406-04. Kepler magnitude: 12.92. Transit SNR 6.77

There are 2 quarters with good PRF difference image offsets

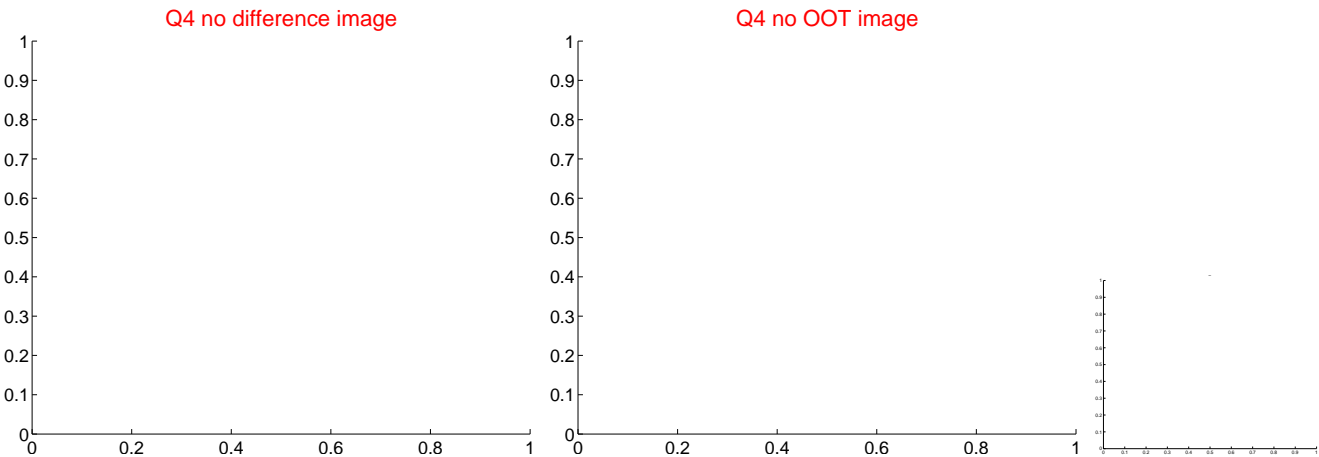
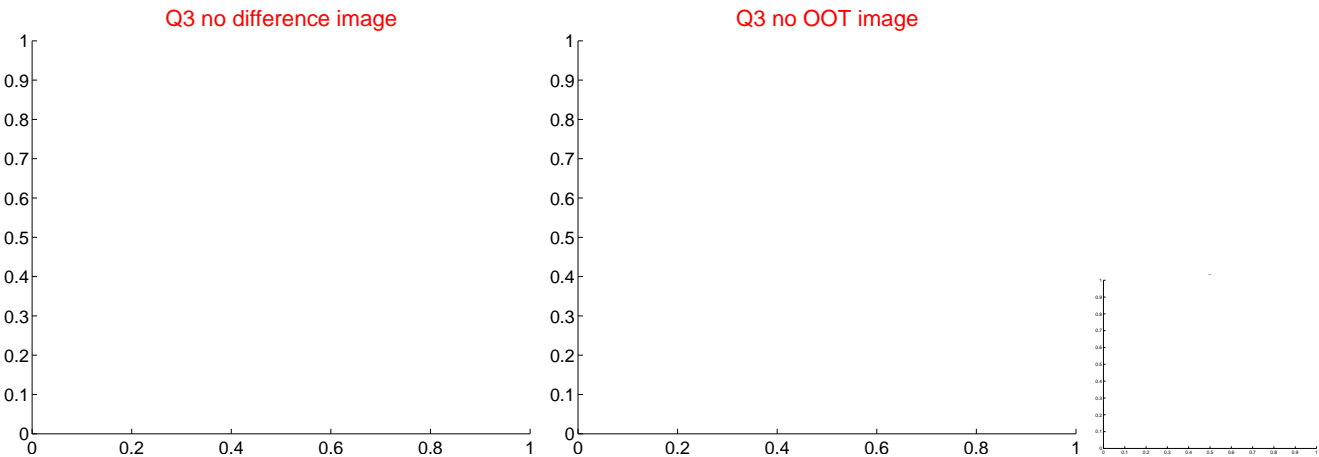
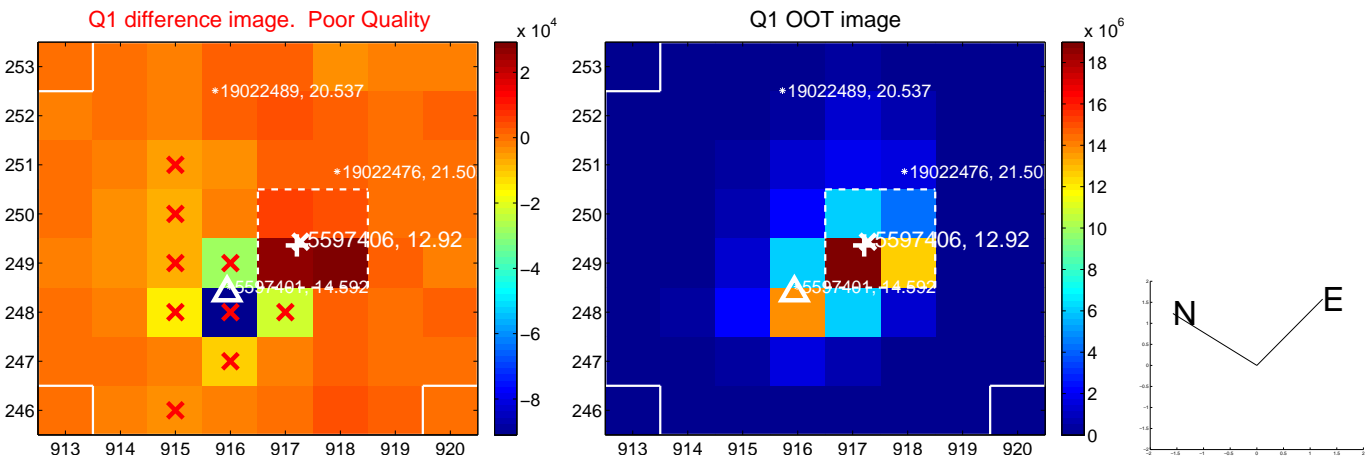
The direct PRF centroid is offset from the target star catalog position by about 0.78 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.250 ± 0.377	16.58	-5.996 ± 0.383	1.765 ± 0.086
PRF-fit source offset from KIC position	6.578 ± 0.245	26.84	-6.312 ± 0.261	1.852 ± 0.080
photometric centroid source offset	1.81 ± 2.35	0.77	-1.10 ± 3.56	1.44 ± 1.17

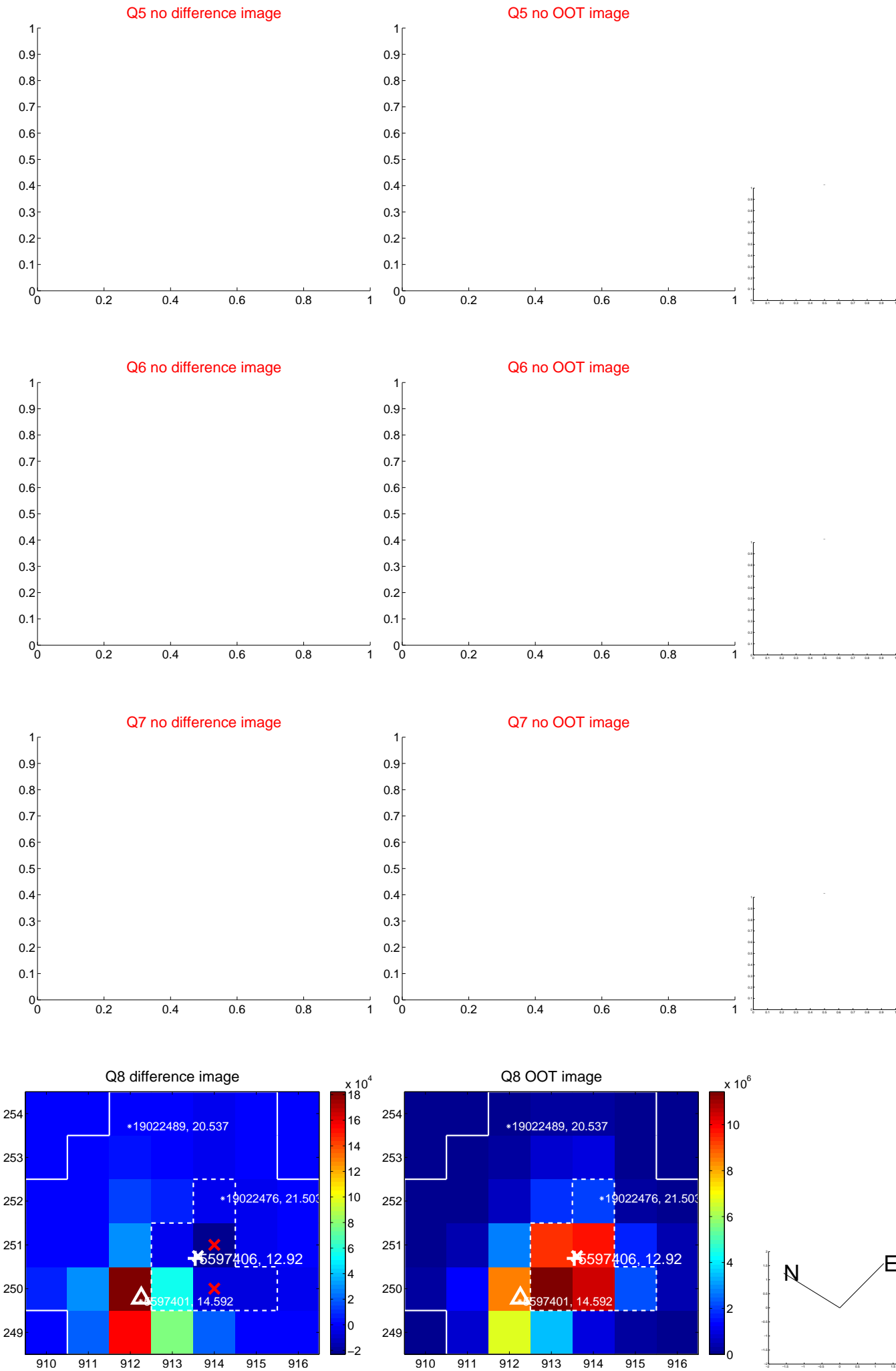


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



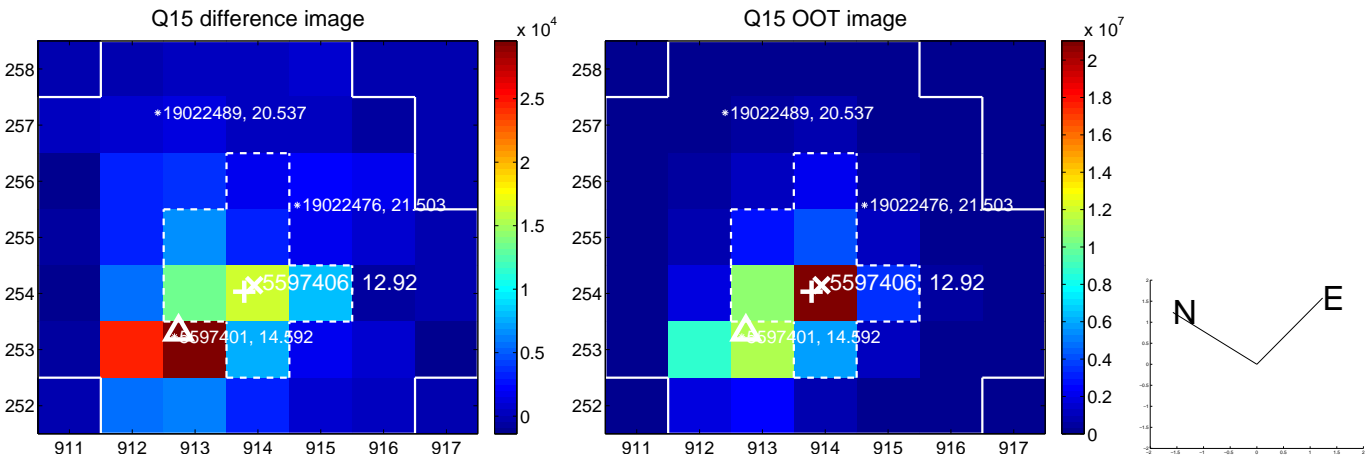
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



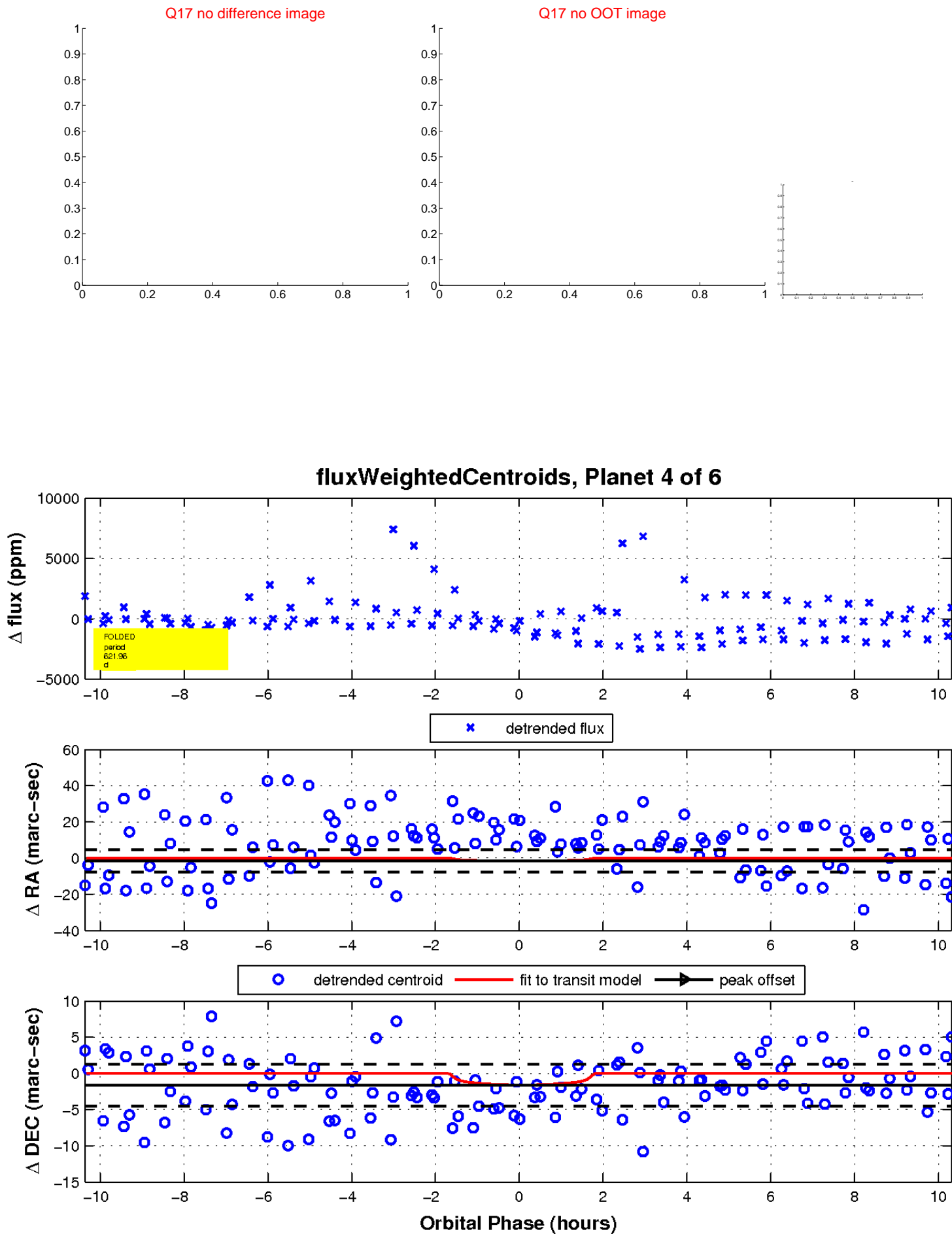
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

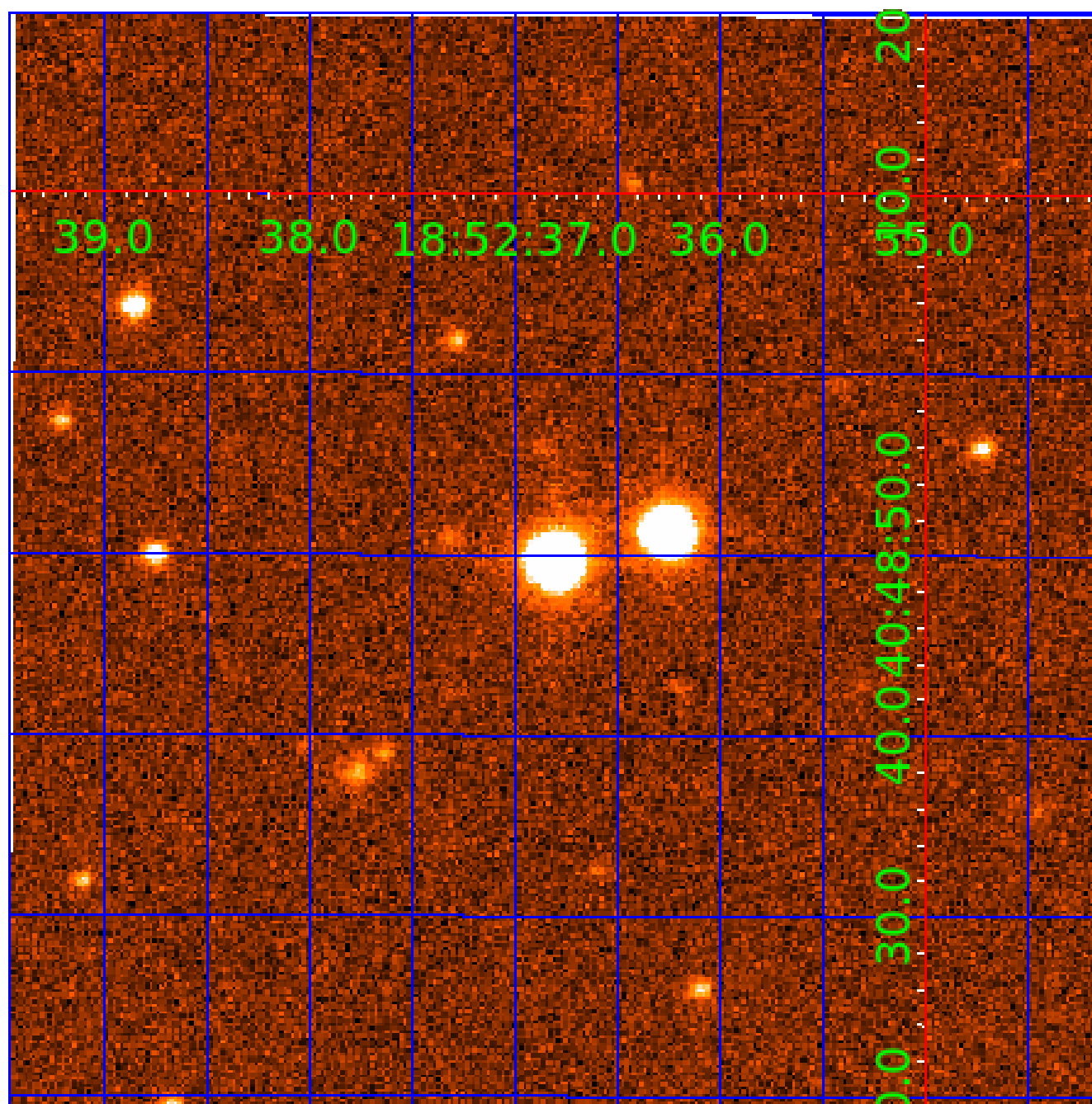


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005597406

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})
005597406-01	OBS	No	360.274536	202.614342	1934.4	2.575	15.9	7.8	0.59	4708	2.64	0.22
005597406-02	OBS	No	289.795853	348.677283	1261.1	7.681	14.2	4.1	0.59	4708	2.13	0.29
005597406-03	OBS	No	192.844572	225.844649	1547.6	2.670	12.6	6.8	0.59	4708	2.61	0.50
005597406-04	OBS	No	621.959135	144.245805	1701.8	3.462	13.0	6.8	0.59	4708	2.44	0.10
005597406-05	OBS	No	188.877286	258.435507	1767.1	3.531	13.0	7.0	0.59	4708	2.72	0.52
005597406-06	OBS	No	273.610864	393.087807	820.9	3.500	11.3	-1.0	0.59	4708	1.65	0.32

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005597406-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005597406-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005597406-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—CENT_FEW_DIFFS
005597406-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005597406-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
005597406-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

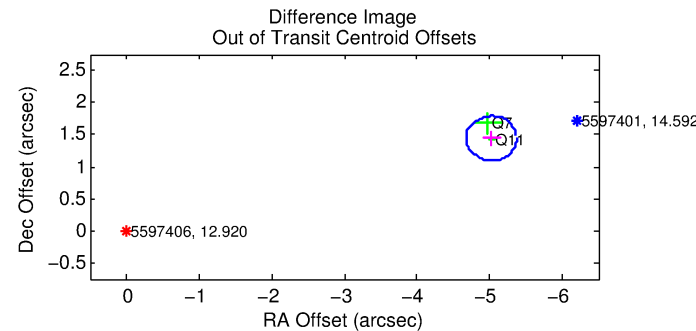
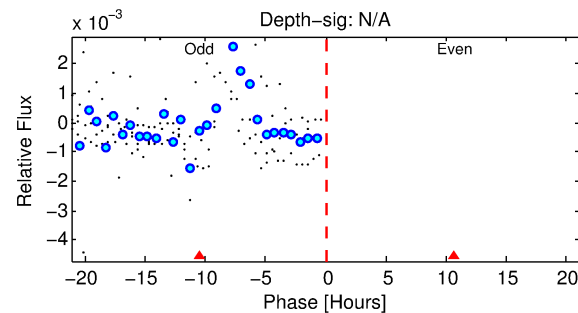
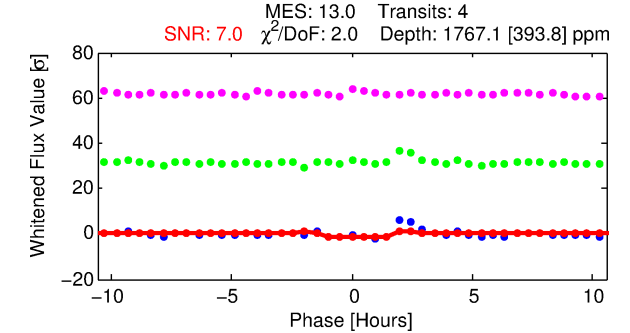
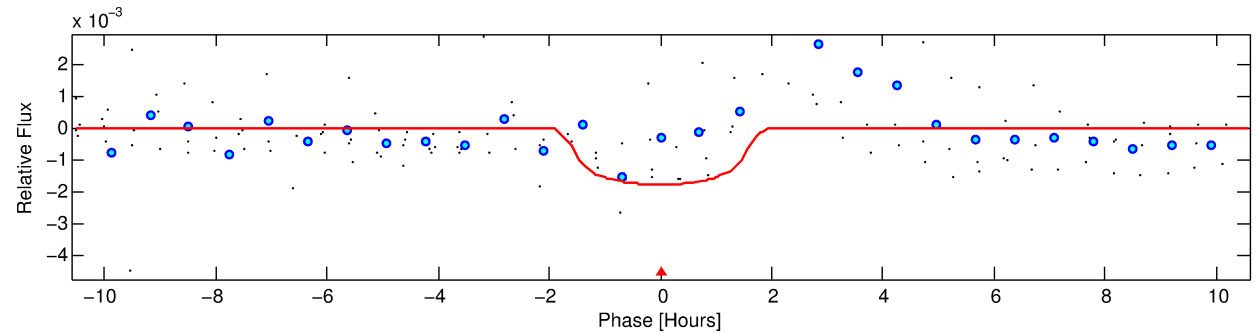
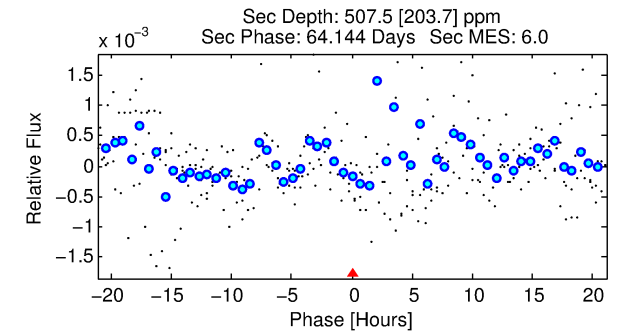
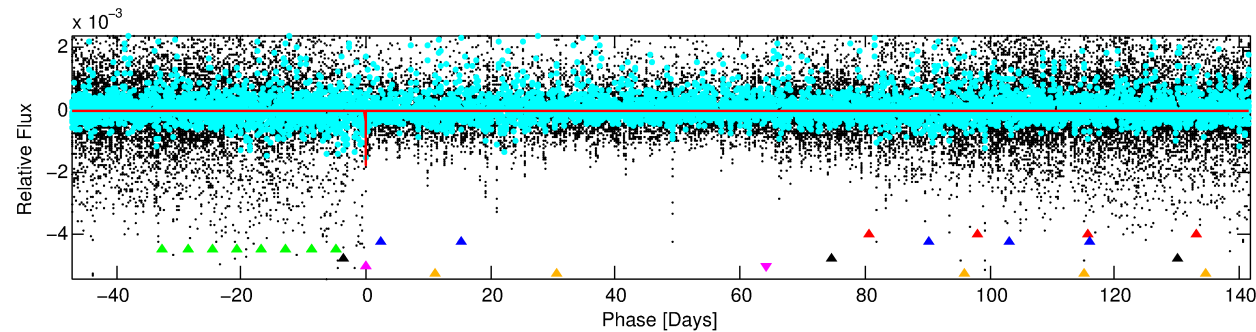
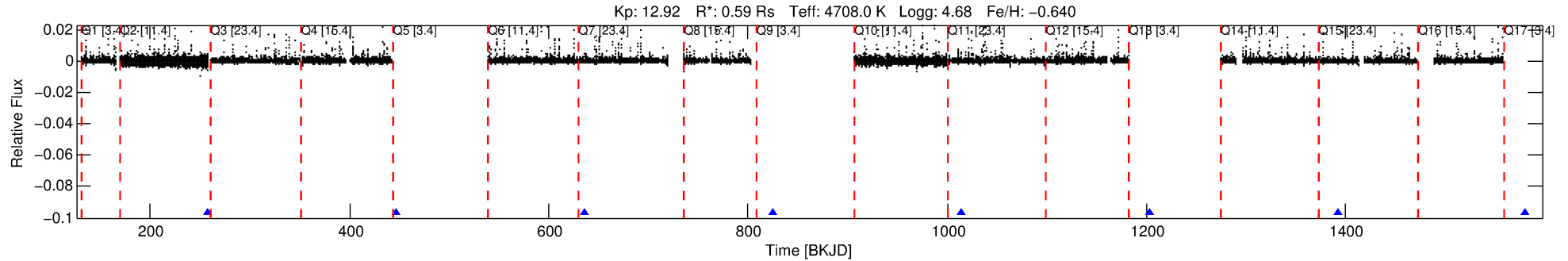
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005597406-05

No Significant Match Found

DV One-Page Summary

KIC: 5597406 Candidate: 5 of 6 Period: 188.877 d



DV Fit Results:

Period = 188.87729 [0.00259] d
Epoch = 258.4355 [0.0112] BKJD
Rp/R* = 0.0420 [0.0275]
a/R* = 296.56 [635.56]
b = 0.75 [1.30]
Seff = 0.52 [0.09]
Teq = 216 [9] K
Rp = 2.72 [1.81] Re
a = 0.5487 [0.0425] AU
Ag = 11357.29 [15632.18] [0.73 σ]
Teffp = 3449 [1190] K [2.72 σ]

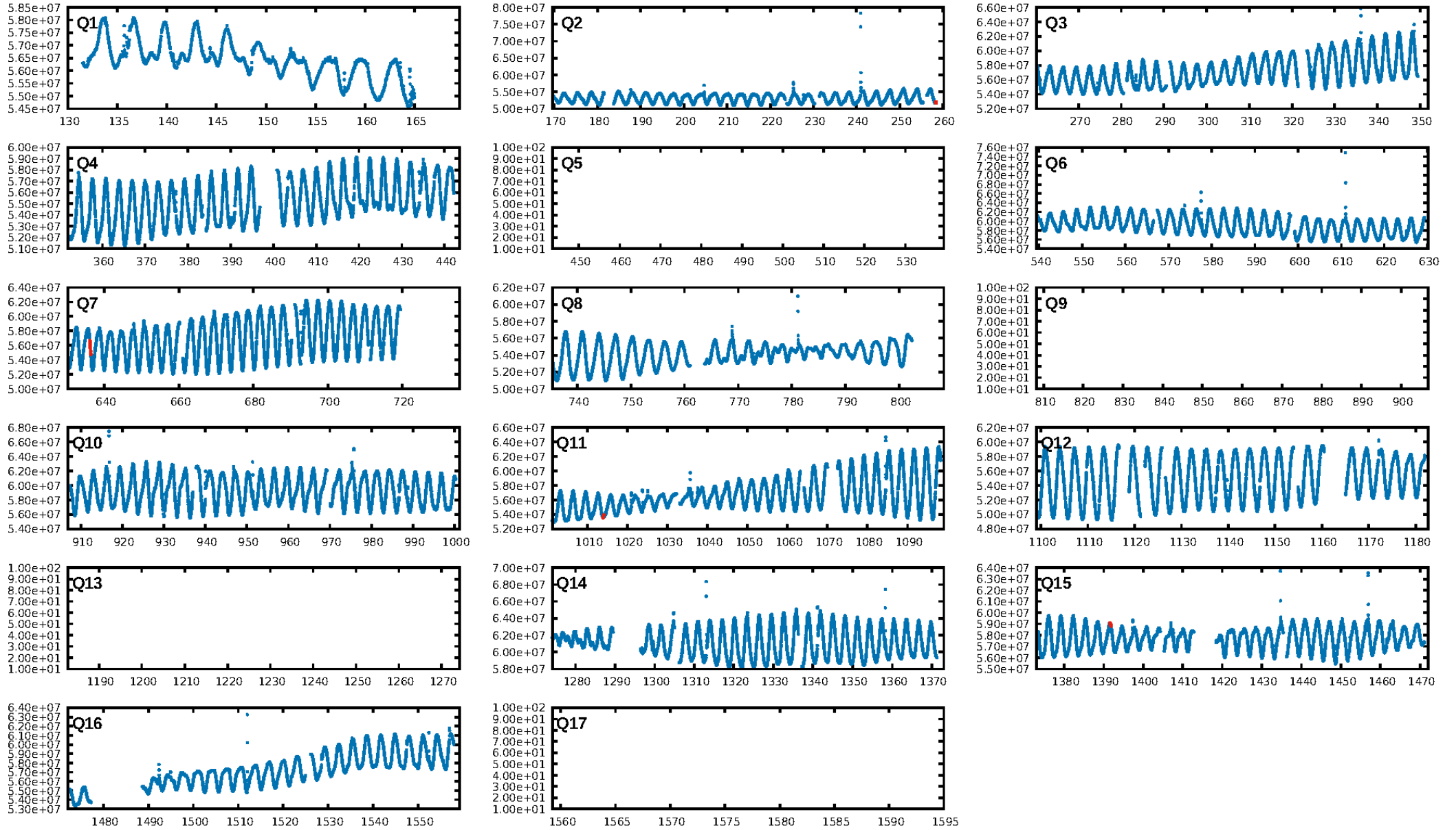
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [21.51 σ]
ModelChiSquare2-sig: 10.9%
ModelChiSquareGof-sig: 2.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 2.008
Centroid-sig: 92.7%
Centroid-so: 2.326 arcsec [0.75 σ]
OotOffset-rm: 5.227 arcsec [45.18 σ]
KicOffset-rm: 6.034 arcsec [52.15 σ]
OotOffset-st: 0/2/0/0 [2]
KicOffset-st: 0/2/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

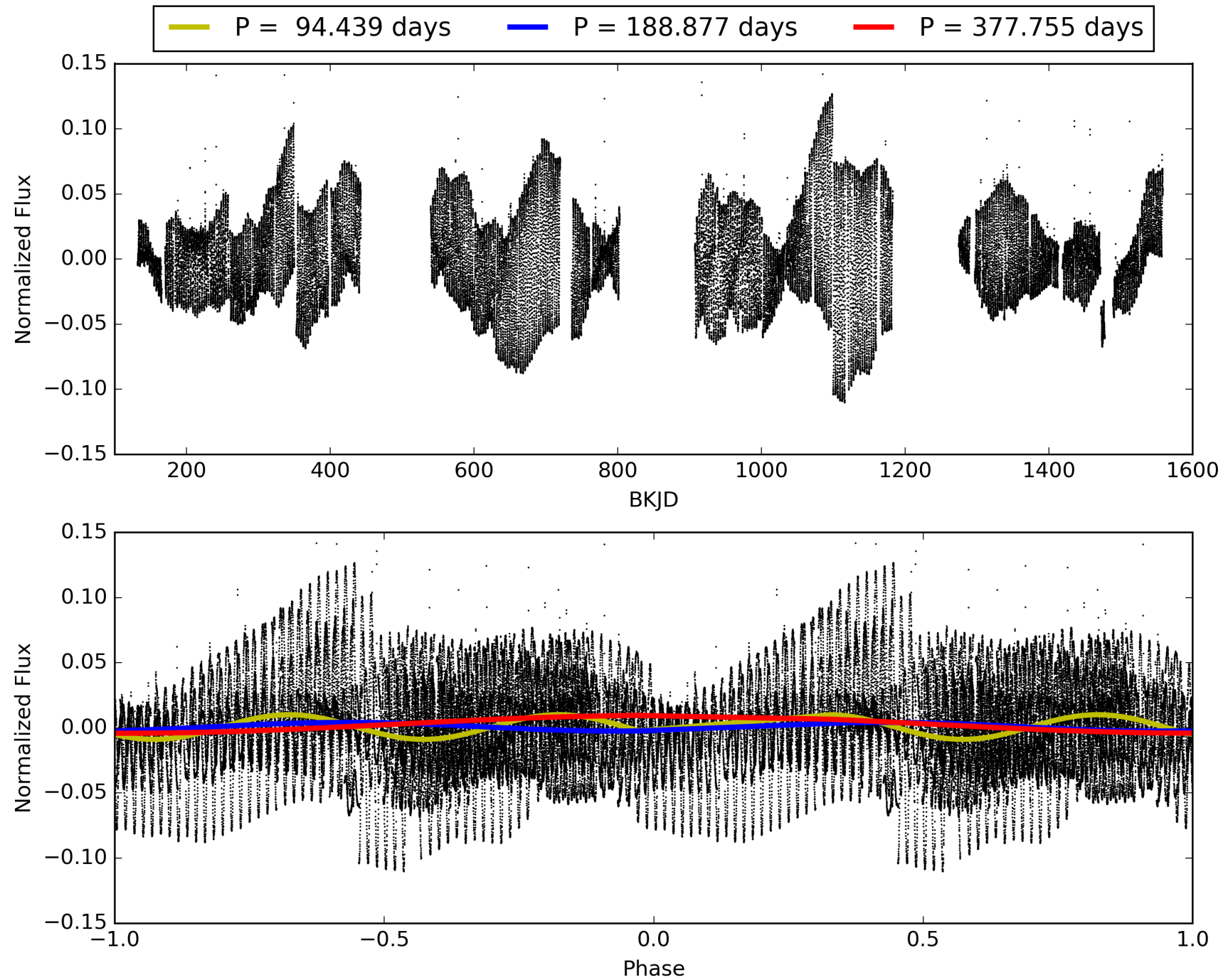
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 08:57:25 Z

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

TCE 005597406-05, PDC Light Curves

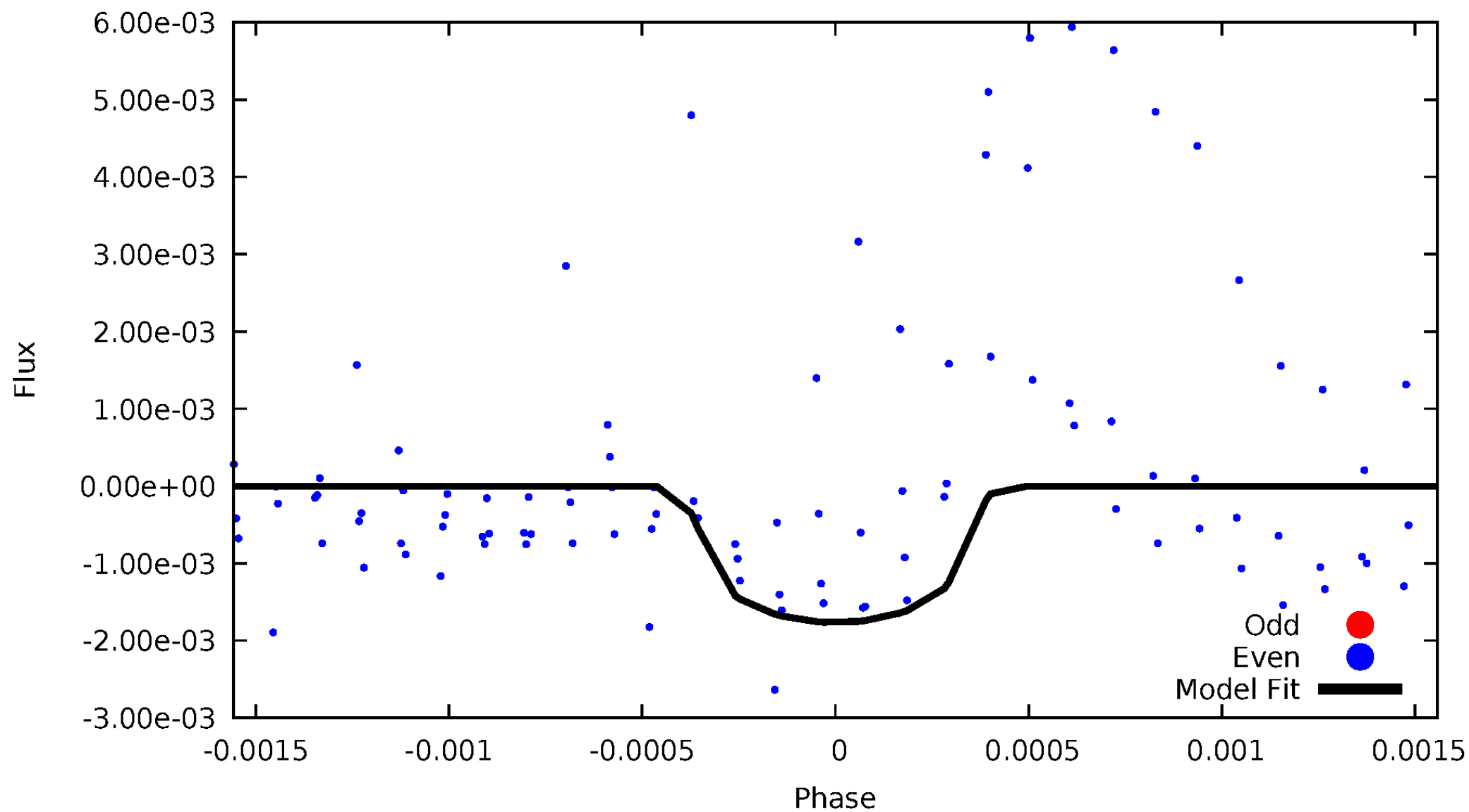


TCE 005597406-05



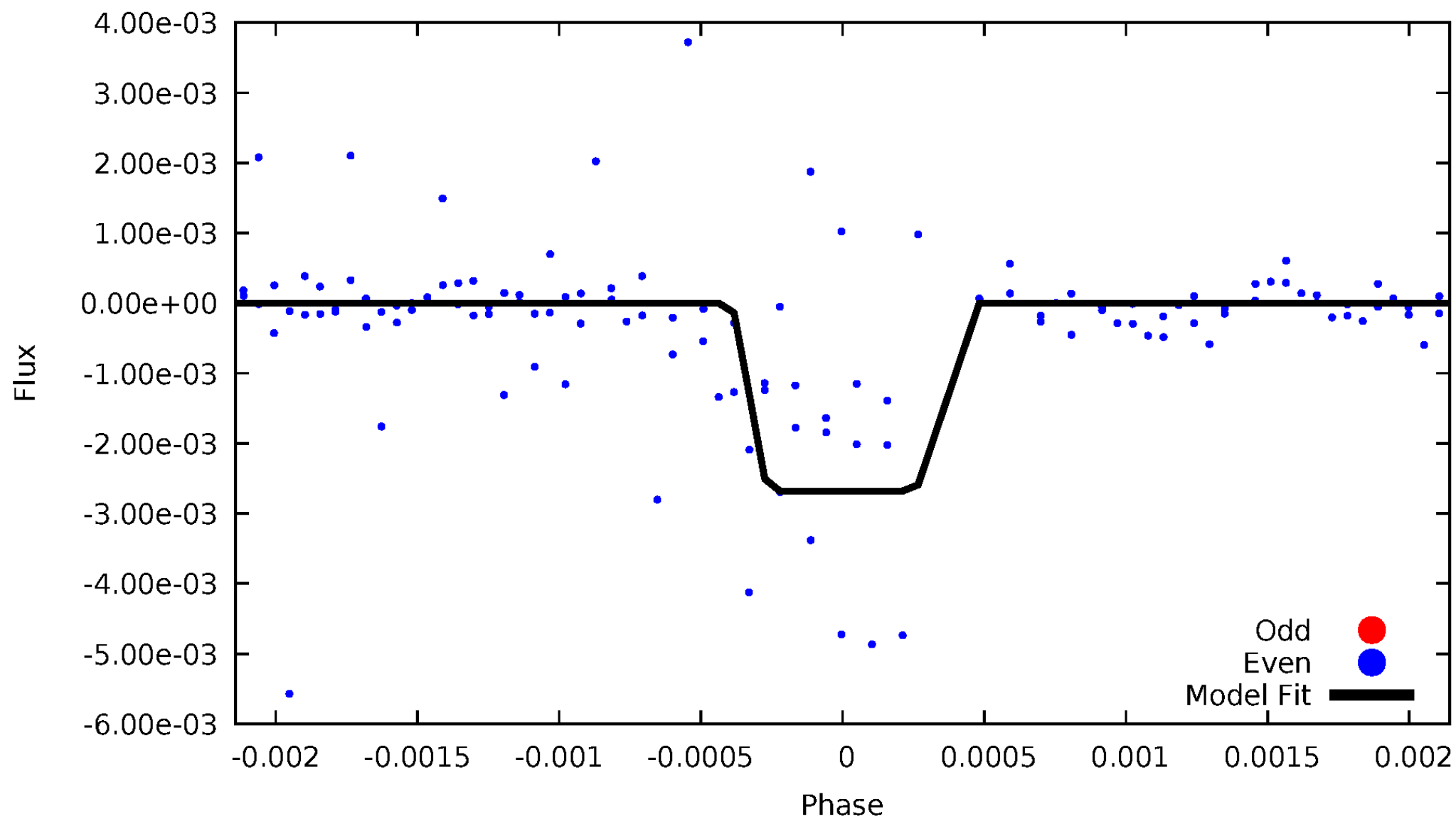
DV Odd/Even

TCE 005597406-05



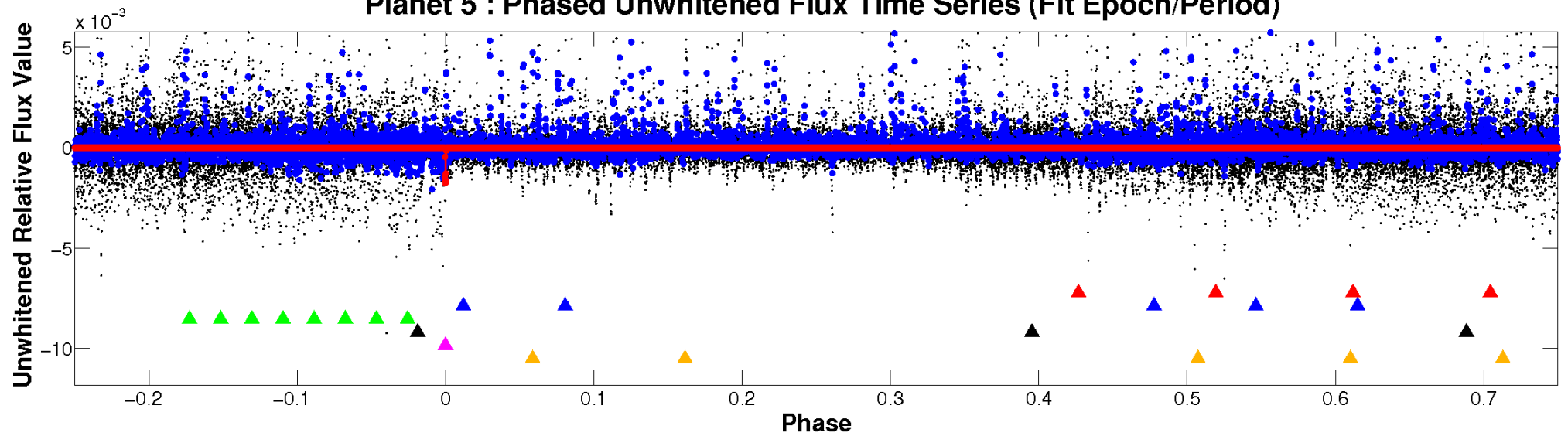
ALT Odd/Even

TCE 005597406-05

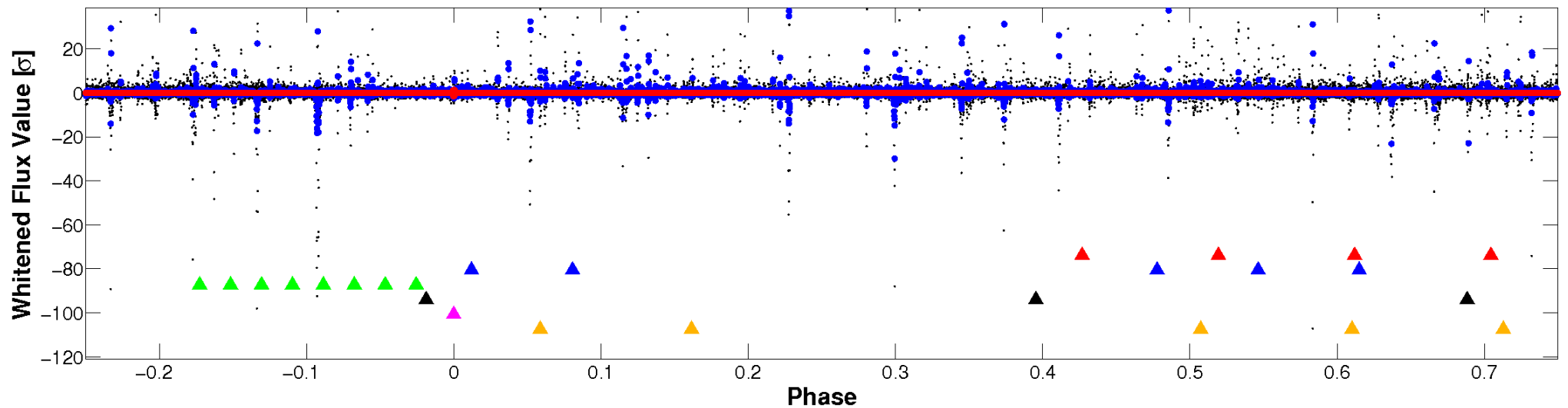


Non-Whitened Vs. Whitened Light Curve

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

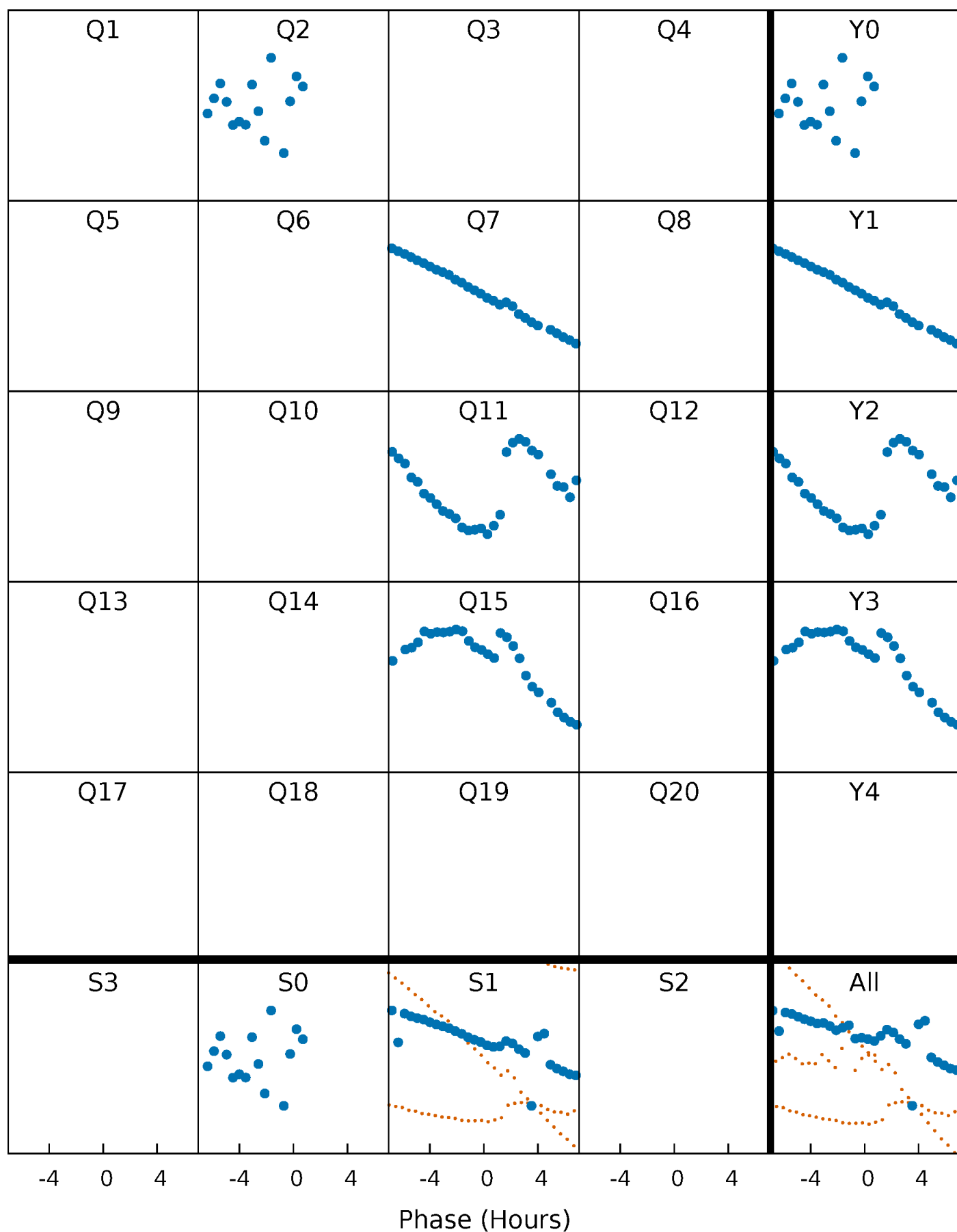


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



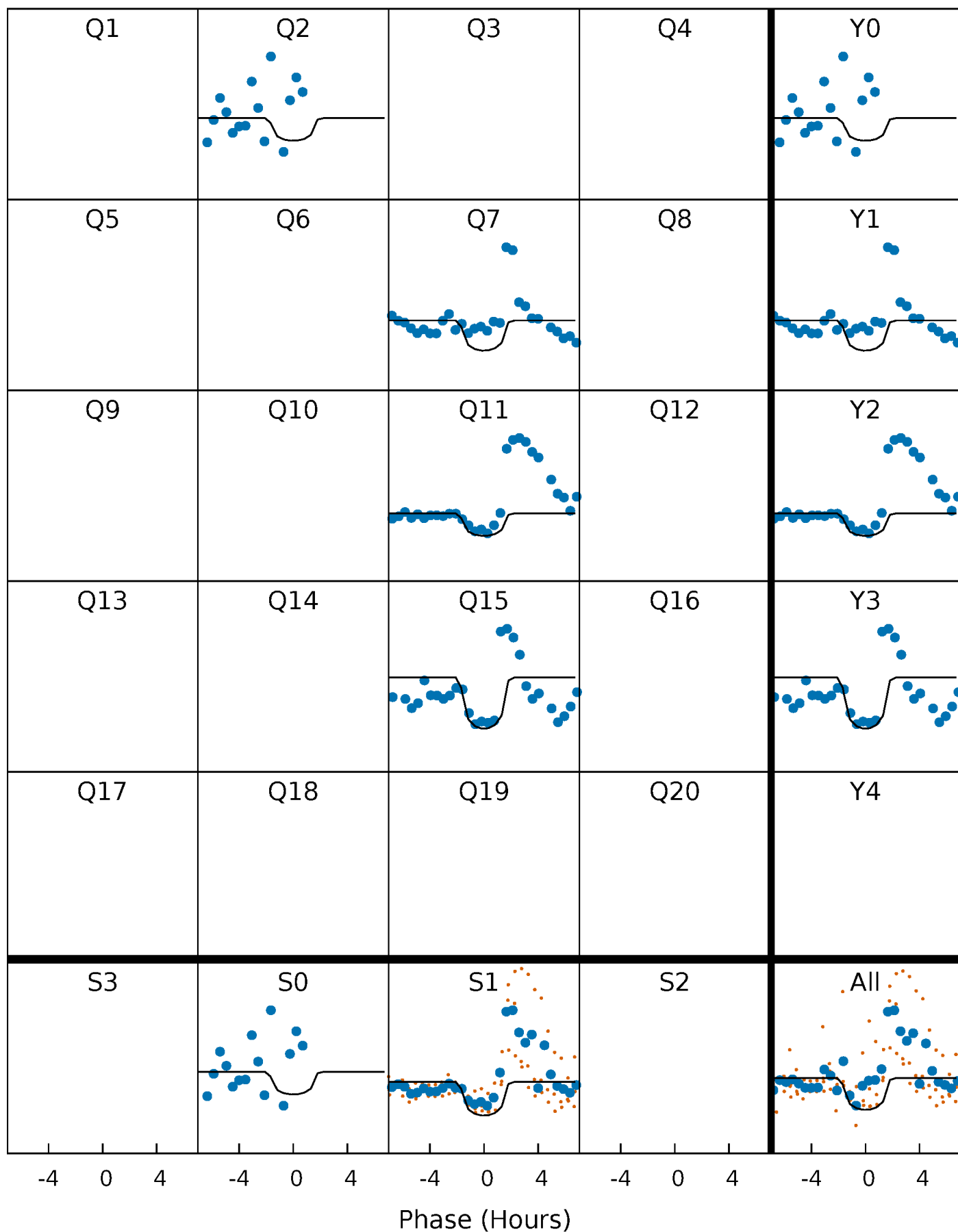
PDC Quarter-Phased Transit Curves

TCE 005597406-05 $P=188.877286$ Days $T_0=258.435507$ (BKJD)



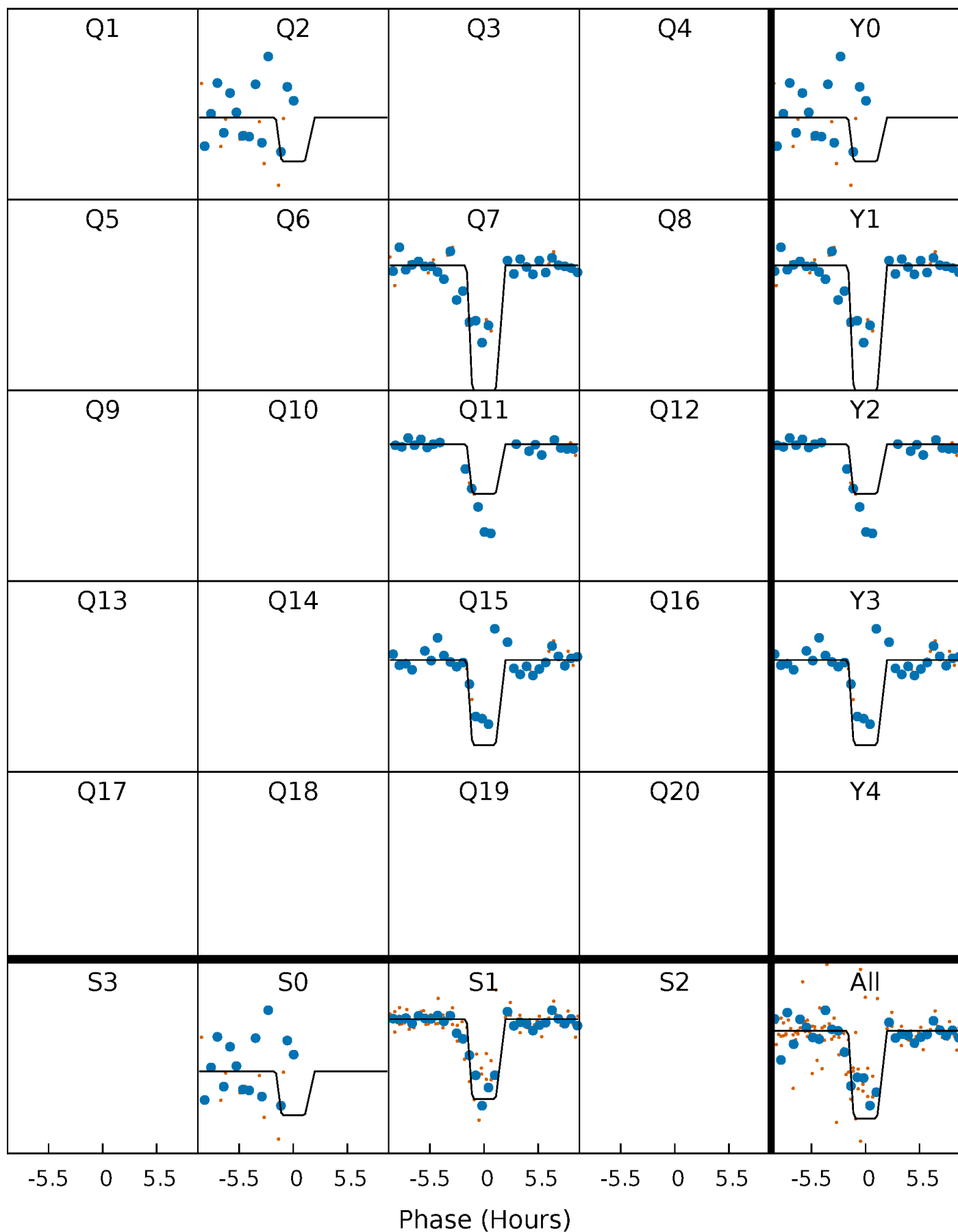
DV Quarter-Phased Transit Curves

TCE 005597406-05 $P=188.877286$ Days $T_0=258.435507$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

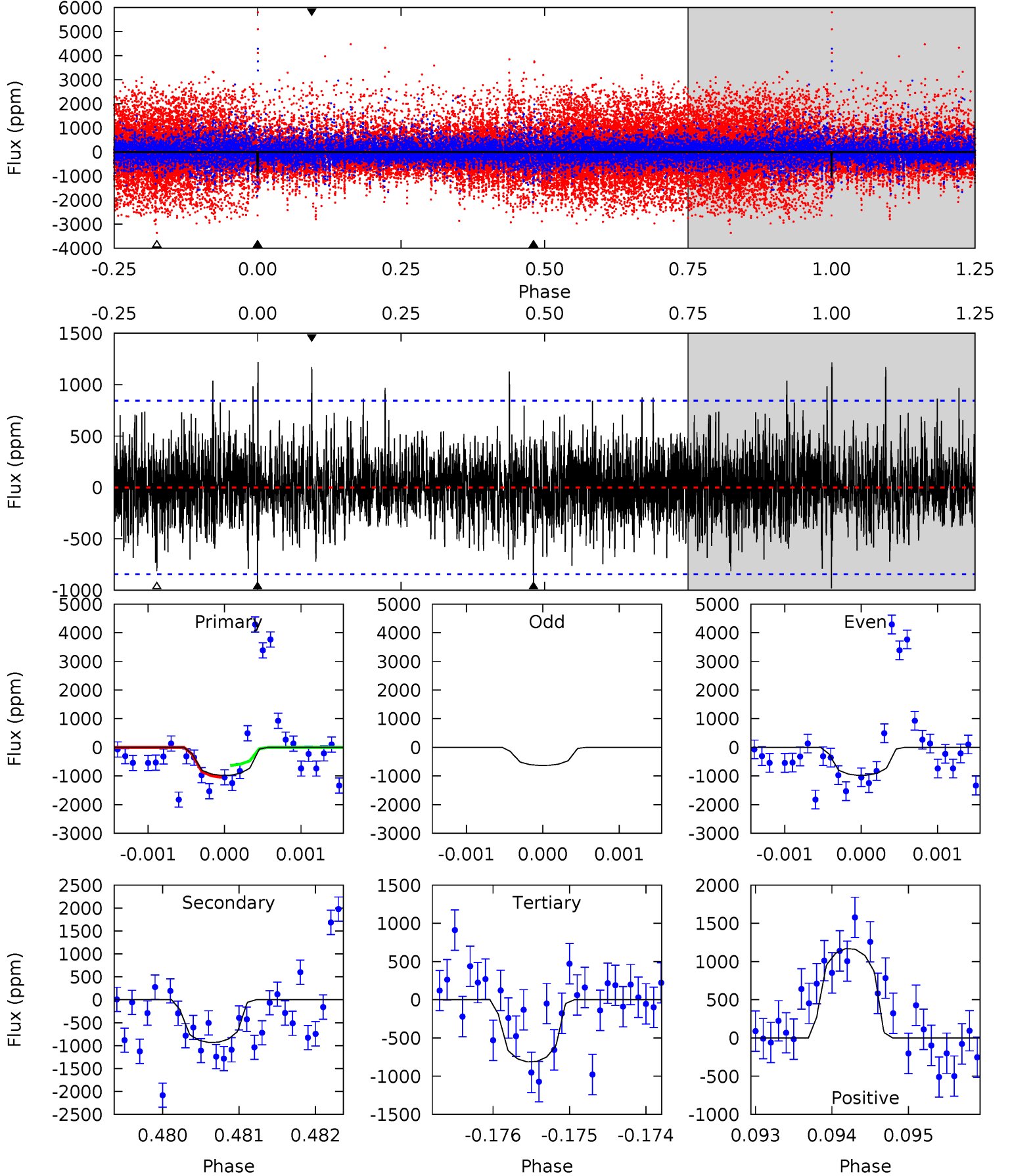
TCE 005597406-05 $P=188.872718$ Days $T_0=258.468015$ (BKJD)



DV Model-Shift Uniqueness Test

005597406-05, P = 188.877286 Days, E = 69.558221 Days

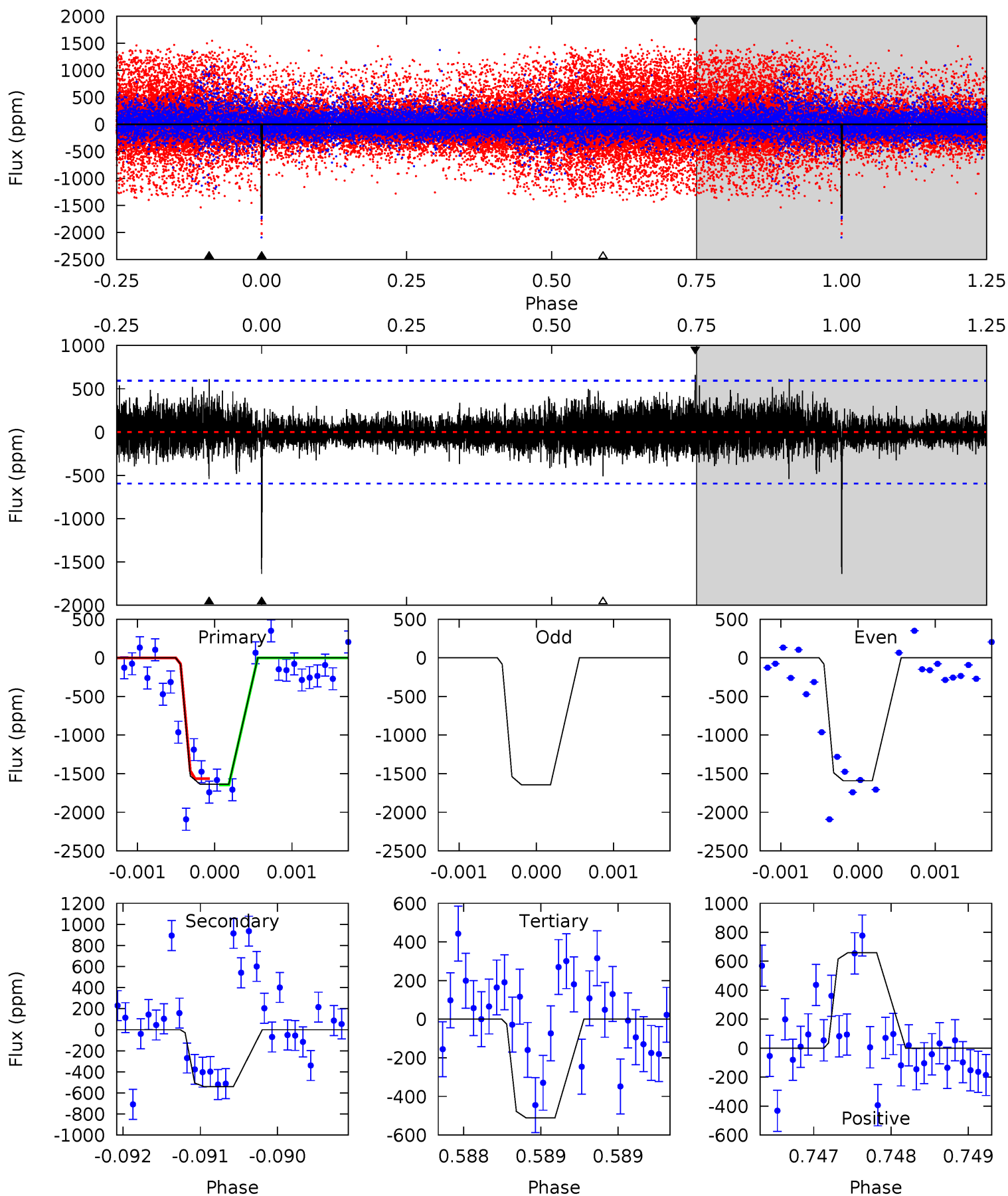
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.36	6.06	5.28	7.60	5.48	3.33	1.52	1.08	-1.23	0.77	-1.54	1.35	0.46	0.55	1.36



Alt Model-Shift Uniqueness Test

005597406-05, P = 188.872718 Days, E = 69.595297 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.1	4.99	4.71	6.07	5.48	3.33	1.09	10.4	9.00	0.29	-1.08	0.30	1.21	0.29	0



Stellar Parameters For KIC 005597406

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4708^{+165}_{-165}	$4.681^{+0.036}_{-0.050}$	$-0.640^{+0.300}_{-0.300}$	$0.594^{+0.060}_{-0.044}$	$0.618^{+0.061}_{-0.044}$	$4.148^{+0.692}_{-0.712}$
	+4%/-4%	+1%/-1%	+47%/-47%	+10%/-7%	+10%/-7%	+17%/-17%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 005597406-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-933 ± 154	$2.84^{+1.72}_{-1.62}$	303^{+12}_{-12}	4093^{+1745}_{-652}	18870^{+81663}_{-11851}
Alt.	-541 ± 108	$3.52^{+1.73}_{-1.69}$	303^{+12}_{-12}	3485^{+917}_{-399}	7339^{+20676}_{-4115}

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 $A_{obs} \gg 1.0$

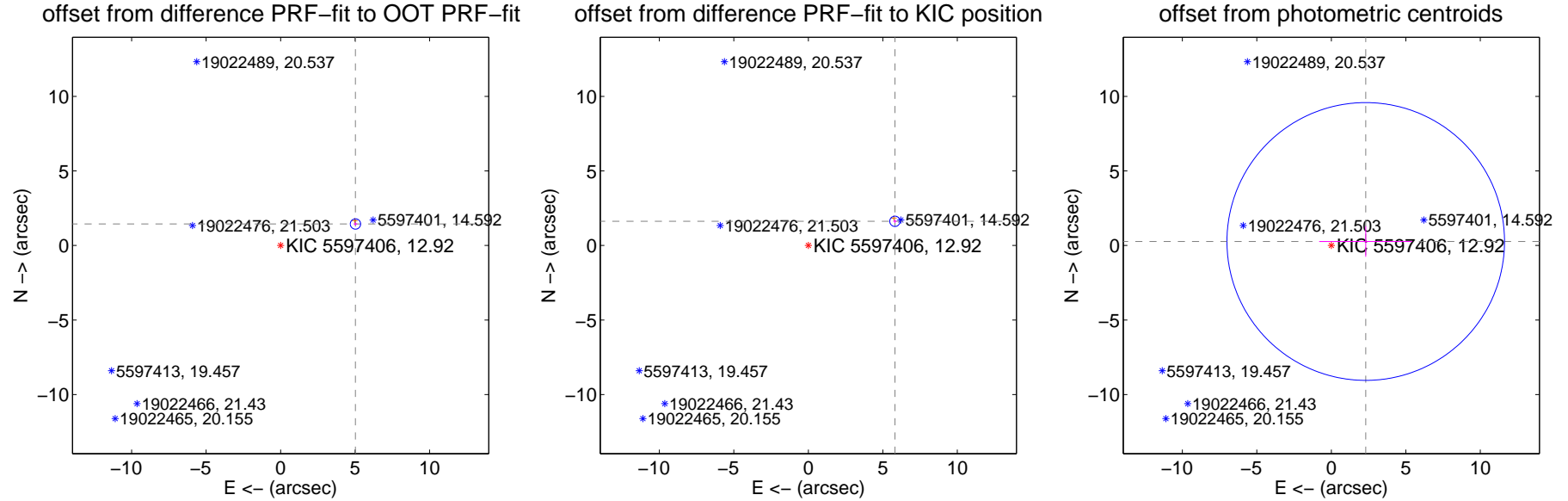
DV Centroid Data

Supplemental centroid analysis for 005597406-05. Kepler magnitude: 12.92. Transit SNR 6.95

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.81 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.227 ± 0.116	45.18	-5.024 ± 0.116	1.442 ± 0.108
PRF-fit source offset from KIC position	6.034 ± 0.116	52.15	-5.812 ± 0.116	1.623 ± 0.108
photometric centroid source offset	2.33 ± 3.11	0.75	-2.31 ± 3.12	0.27 ± 1.03

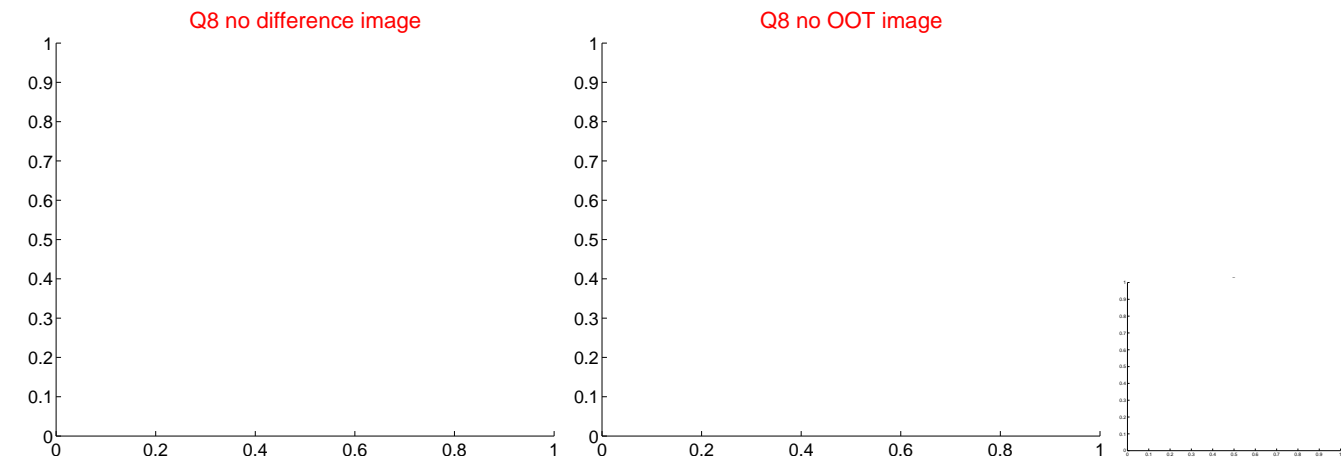
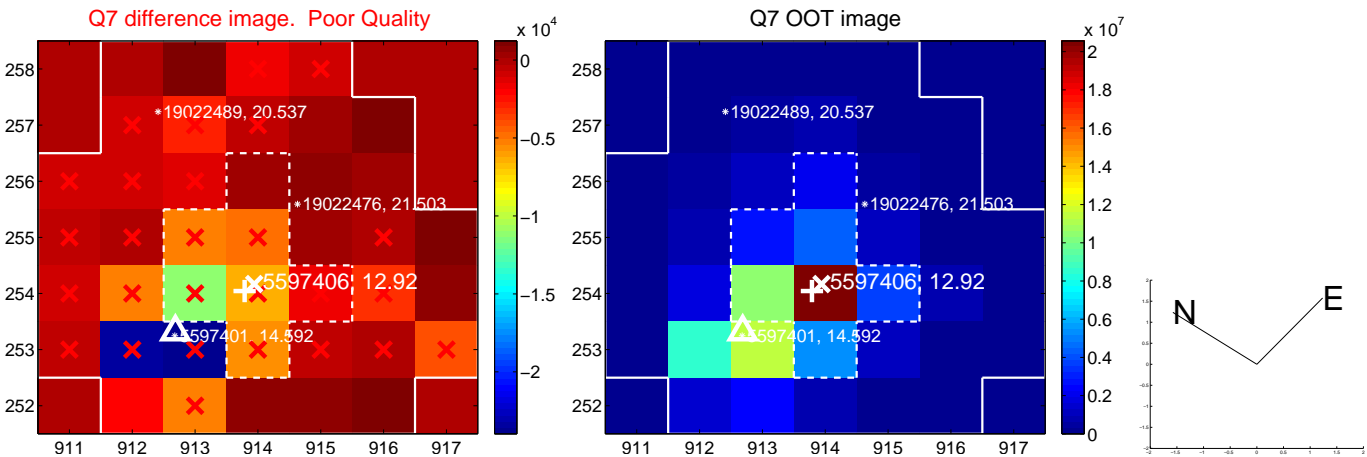


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

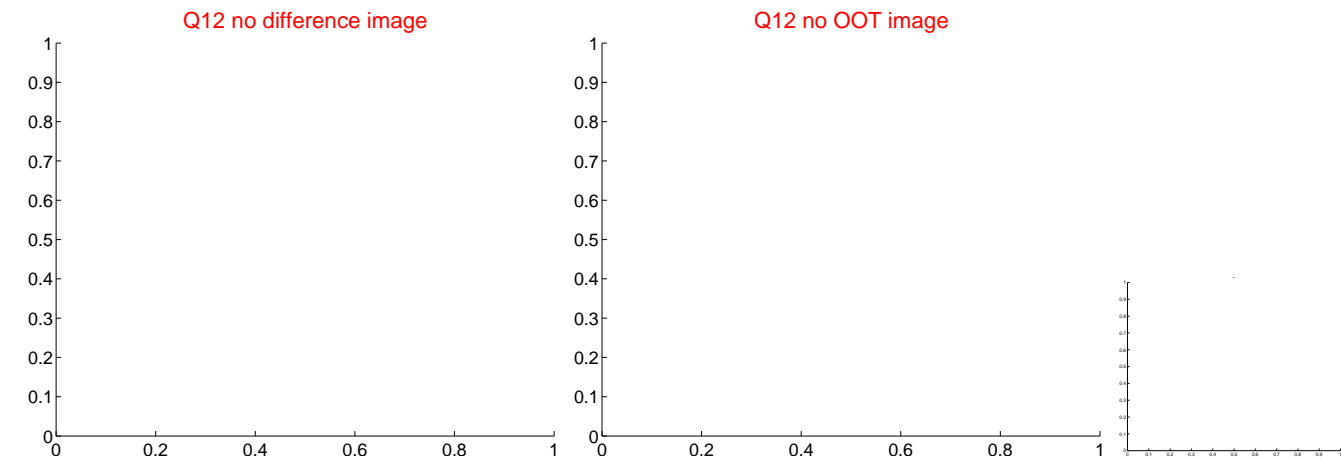
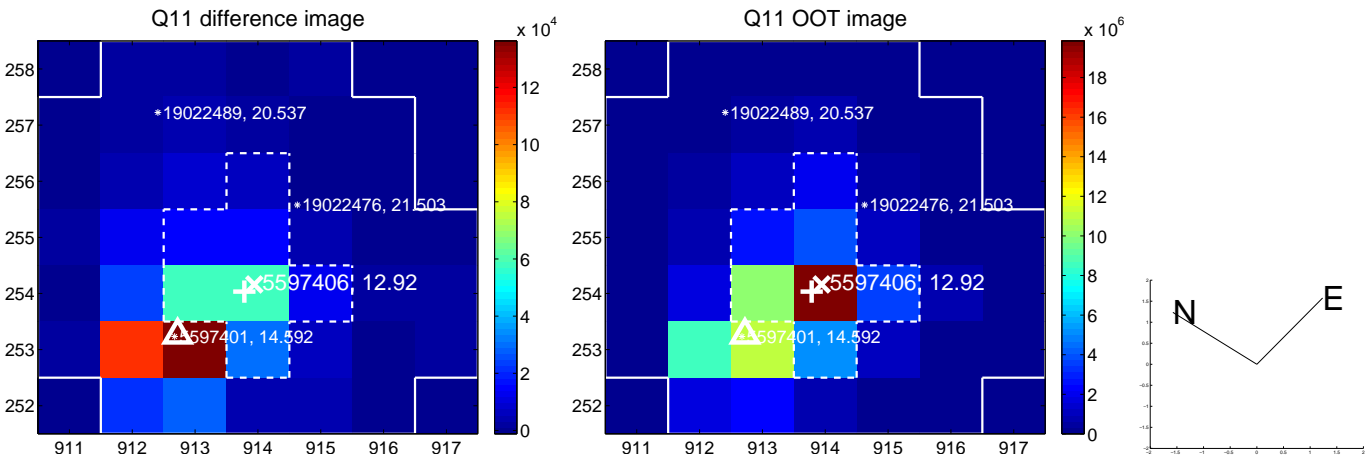
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



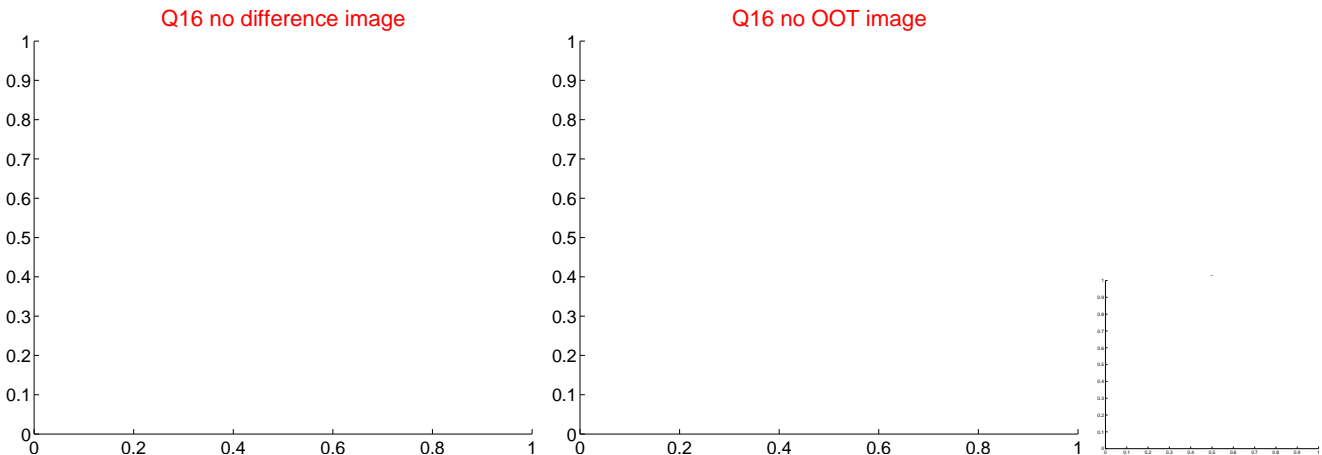
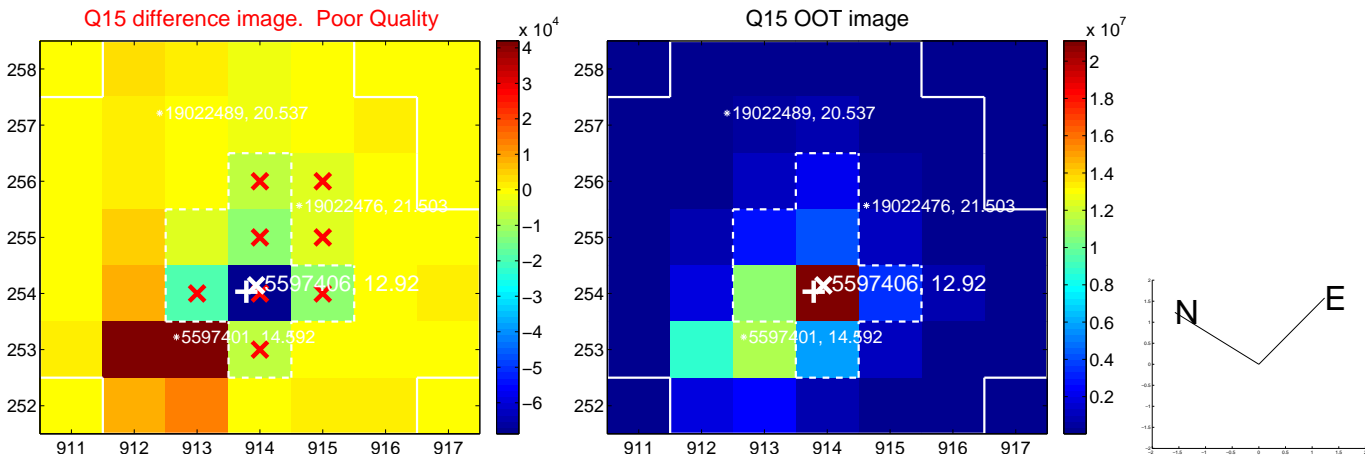
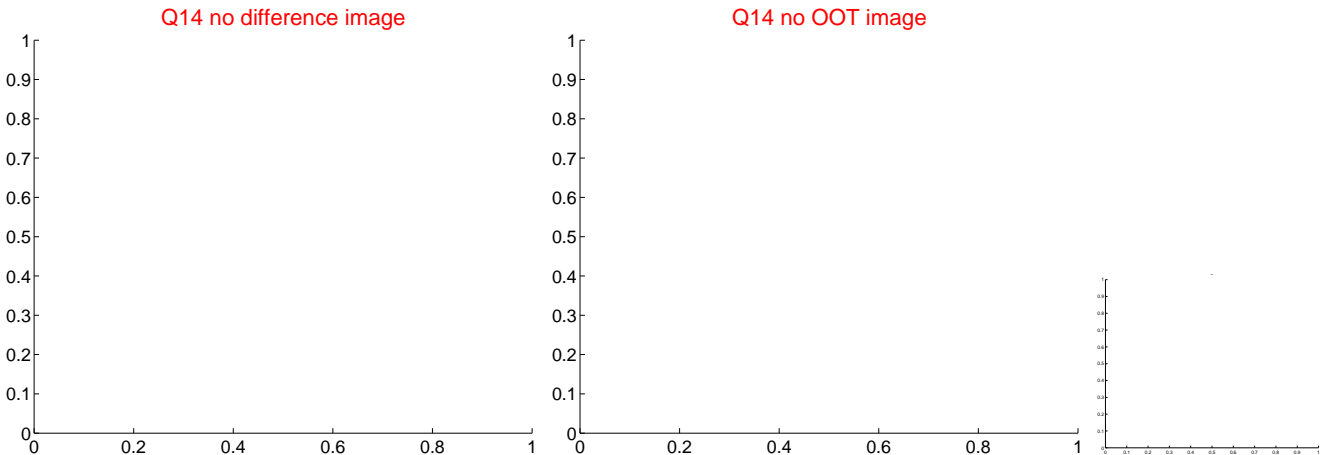
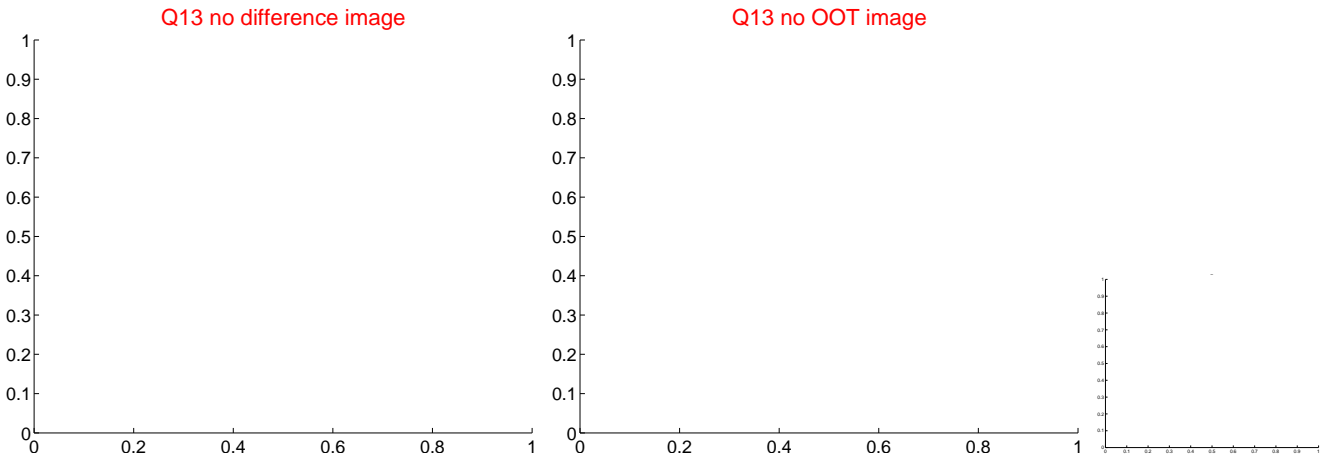
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



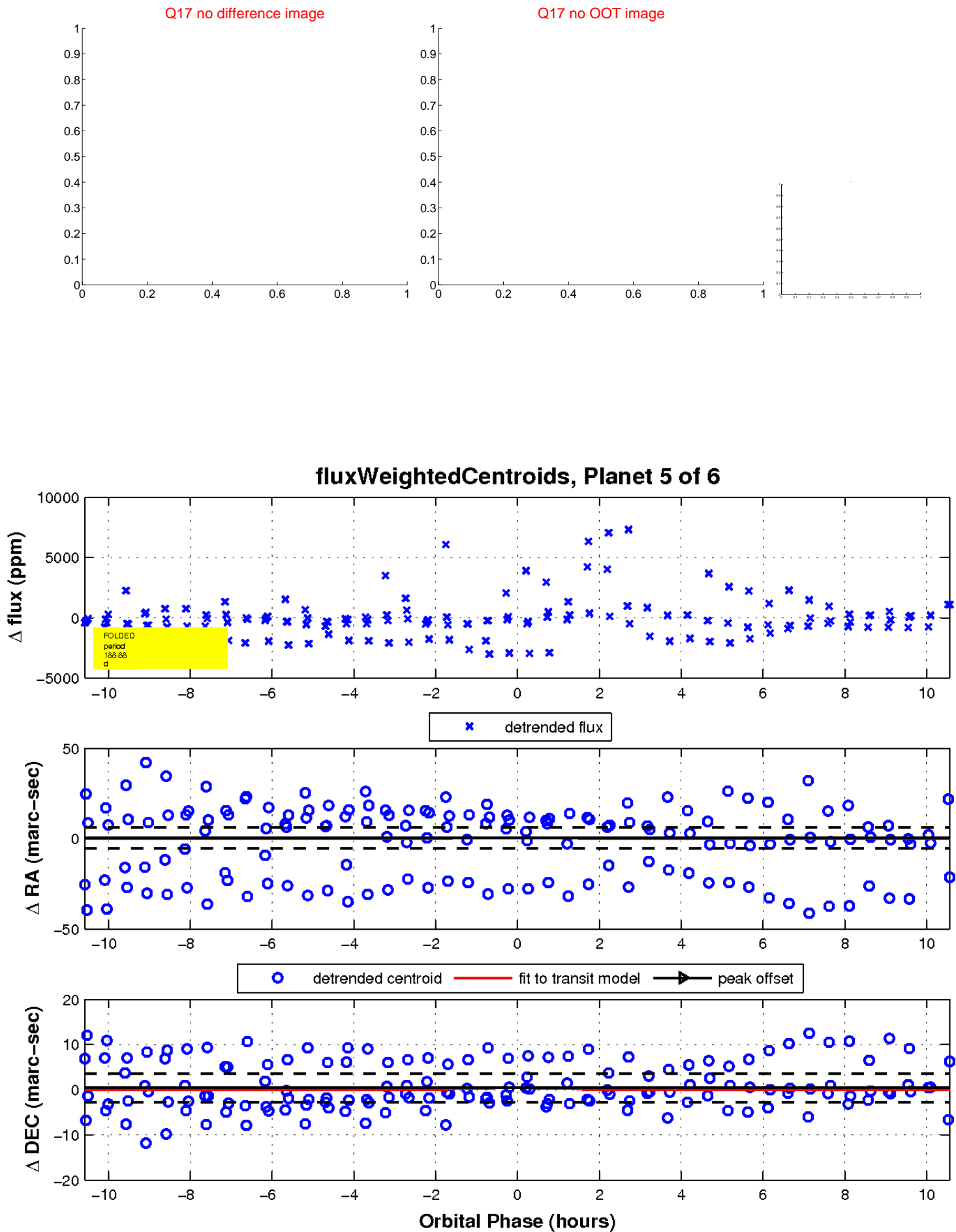
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

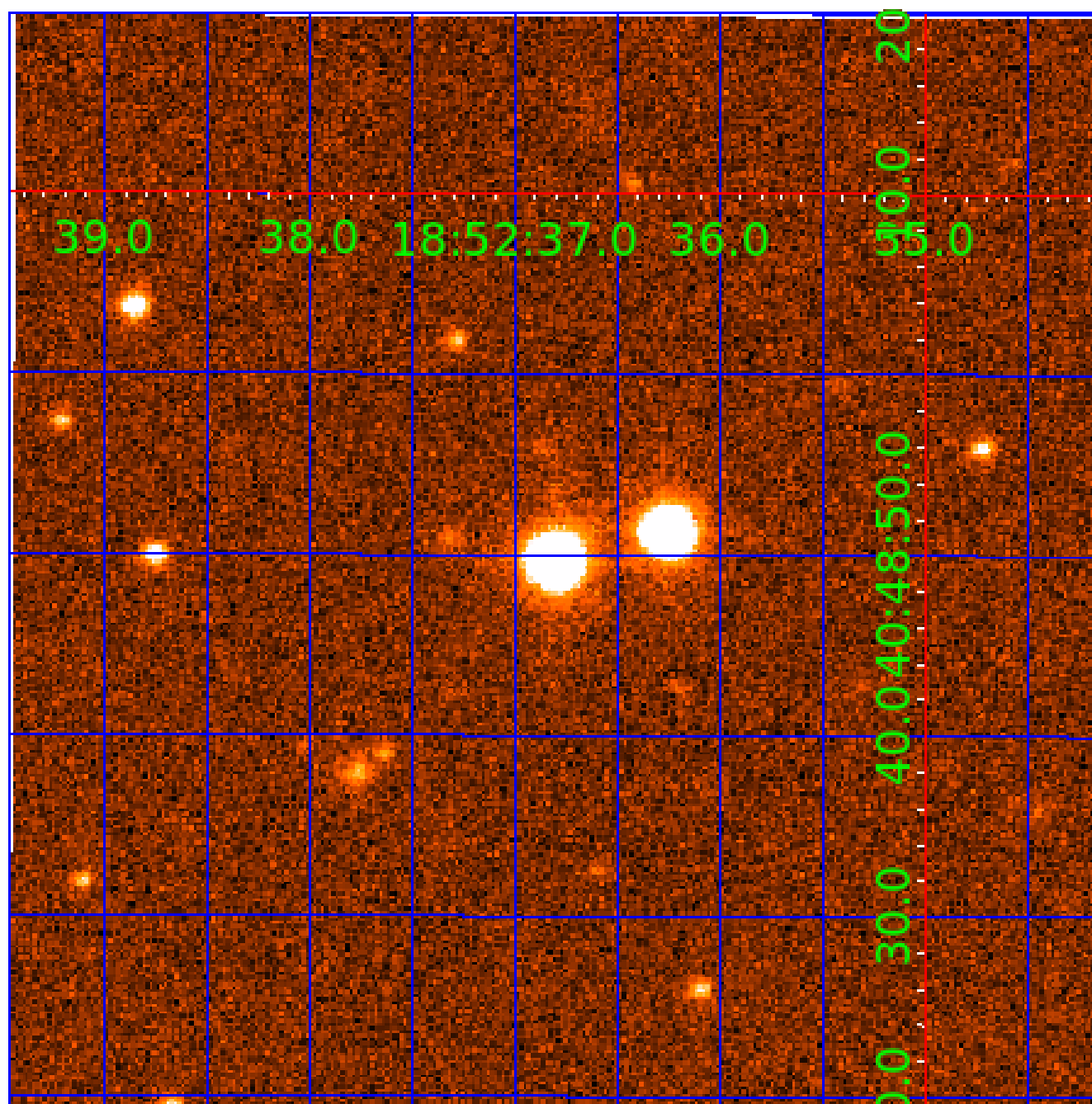


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005597406

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})
005597406-01	OBS	No	360.274536	202.614342	1934.4	2.575	15.9	7.8	0.59	4708	2.64	0.22
005597406-02	OBS	No	289.795853	348.677283	1261.1	7.681	14.2	4.1	0.59	4708	2.13	0.29
005597406-03	OBS	No	192.844572	225.844649	1547.6	2.670	12.6	6.8	0.59	4708	2.61	0.50
005597406-04	OBS	No	621.959135	144.245805	1701.8	3.462	13.0	6.8	0.59	4708	2.44	0.10
005597406-05	OBS	No	188.877286	258.435507	1767.1	3.531	13.0	7.0	0.59	4708	2.72	0.52
005597406-06	OBS	No	273.610864	393.087807	820.9	3.500	11.3	-1.0	0.59	4708	1.65	0.32

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005597406-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005597406-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005597406-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—CENT_FEW_DIFFS
005597406-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005597406-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
005597406-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

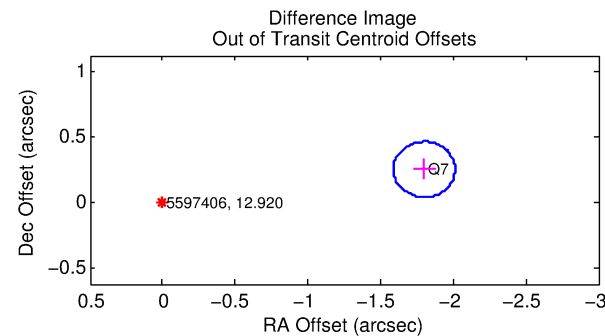
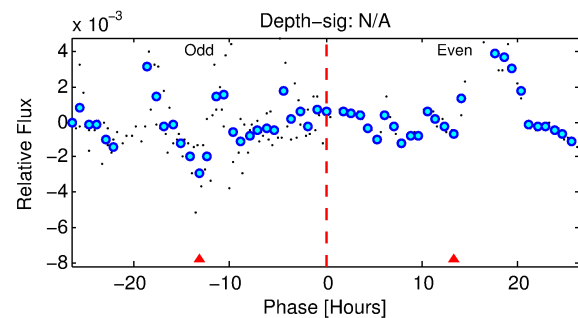
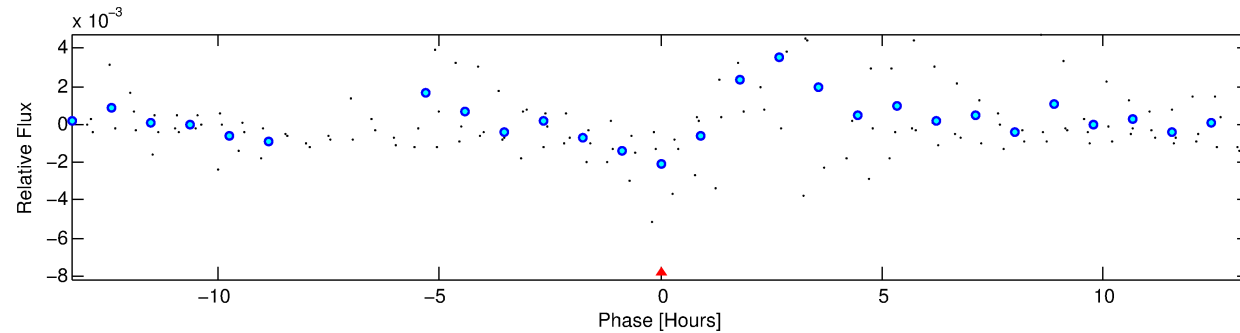
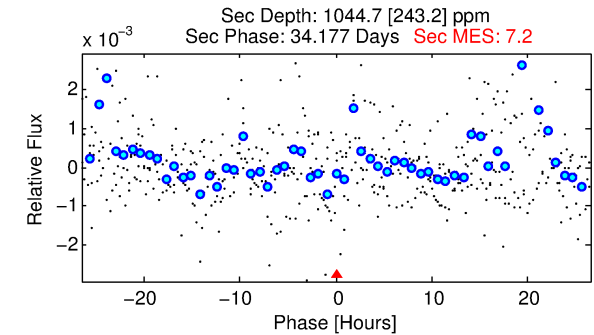
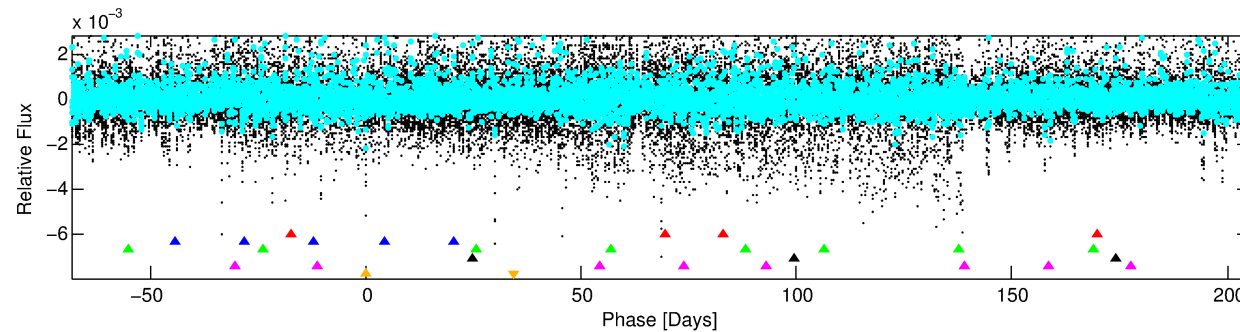
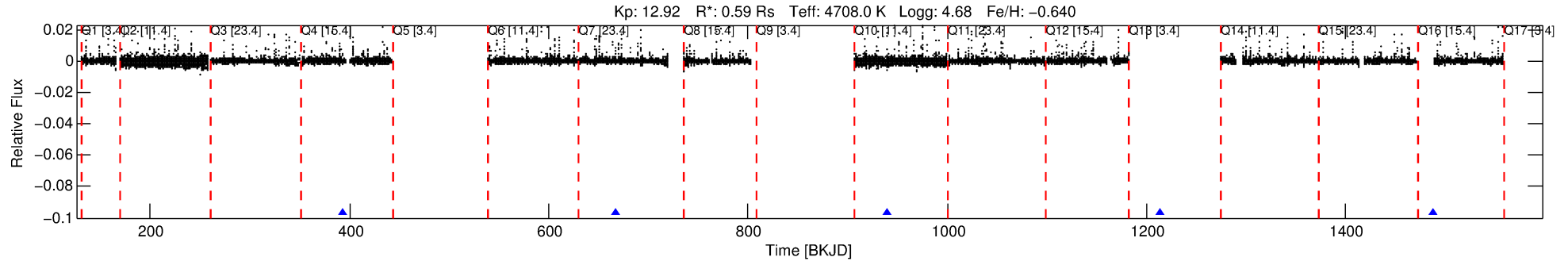
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005597406-06

No Significant Match Found

DV One-Page Summary

KIC: 5597406 Candidate: 6 of 6 Period: 273.611 d



TPS TCE Results:

Period = 273.61086 d
Epoch = 393.0878 BKJD

DV fit results are unavailable

DV Diagnostic Results:

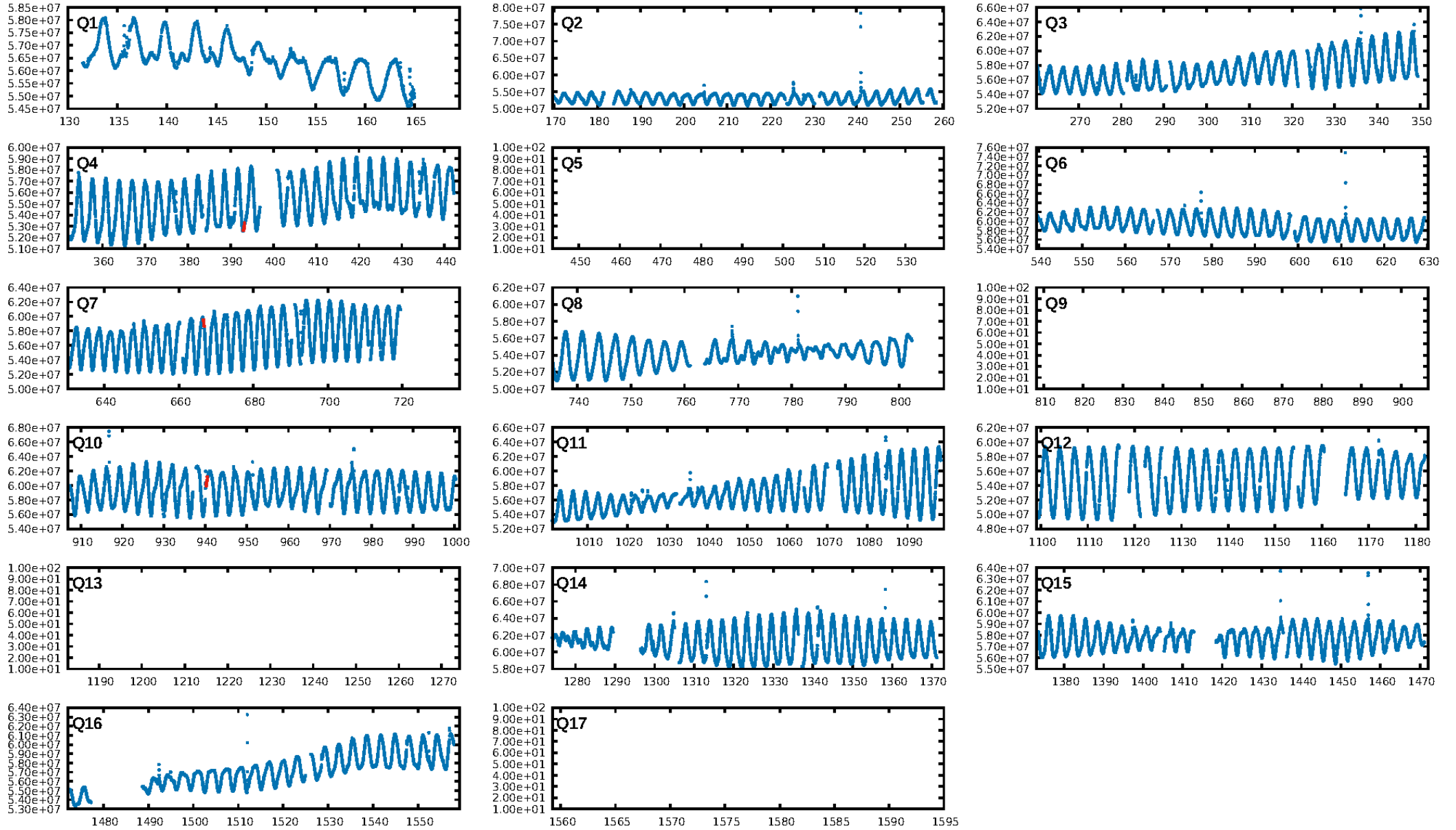
ShortPeriod-sig: 100.0% [440.35 σ]
LongPeriod-sig: 100.0% [46.02 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -3.495

Centroid-sig: 47.9%
Centroid-so: 3.481 arcsec [1.20 σ]
OotOffset-rm: 1.816 arcsec [25.61 σ]
KicOffset-rm: 2.528 arcsec [35.64 σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [3/3]

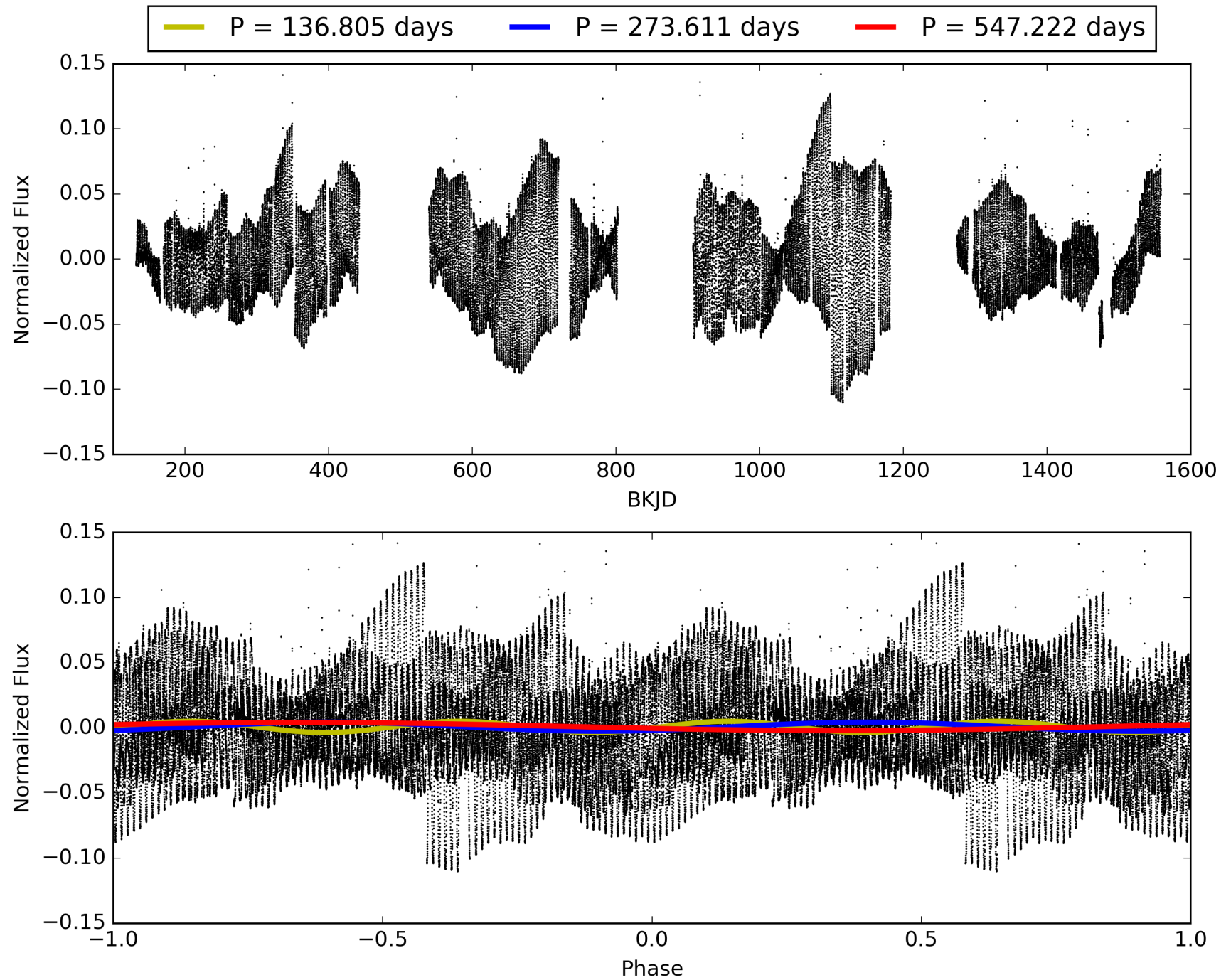
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 08:57:34 Z

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

TCE 005597406-06, PDC Light Curves

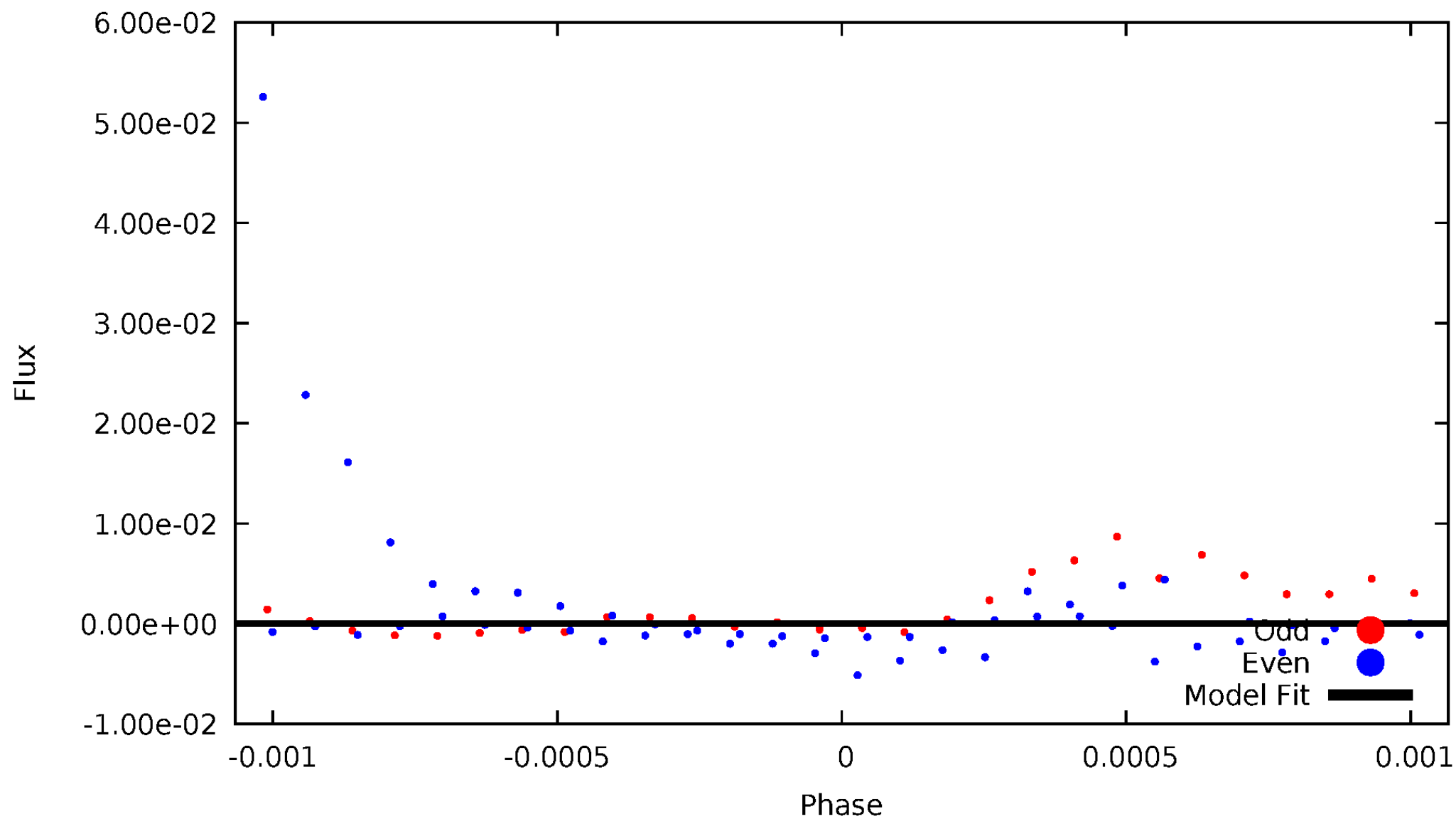


TCE 005597406-06



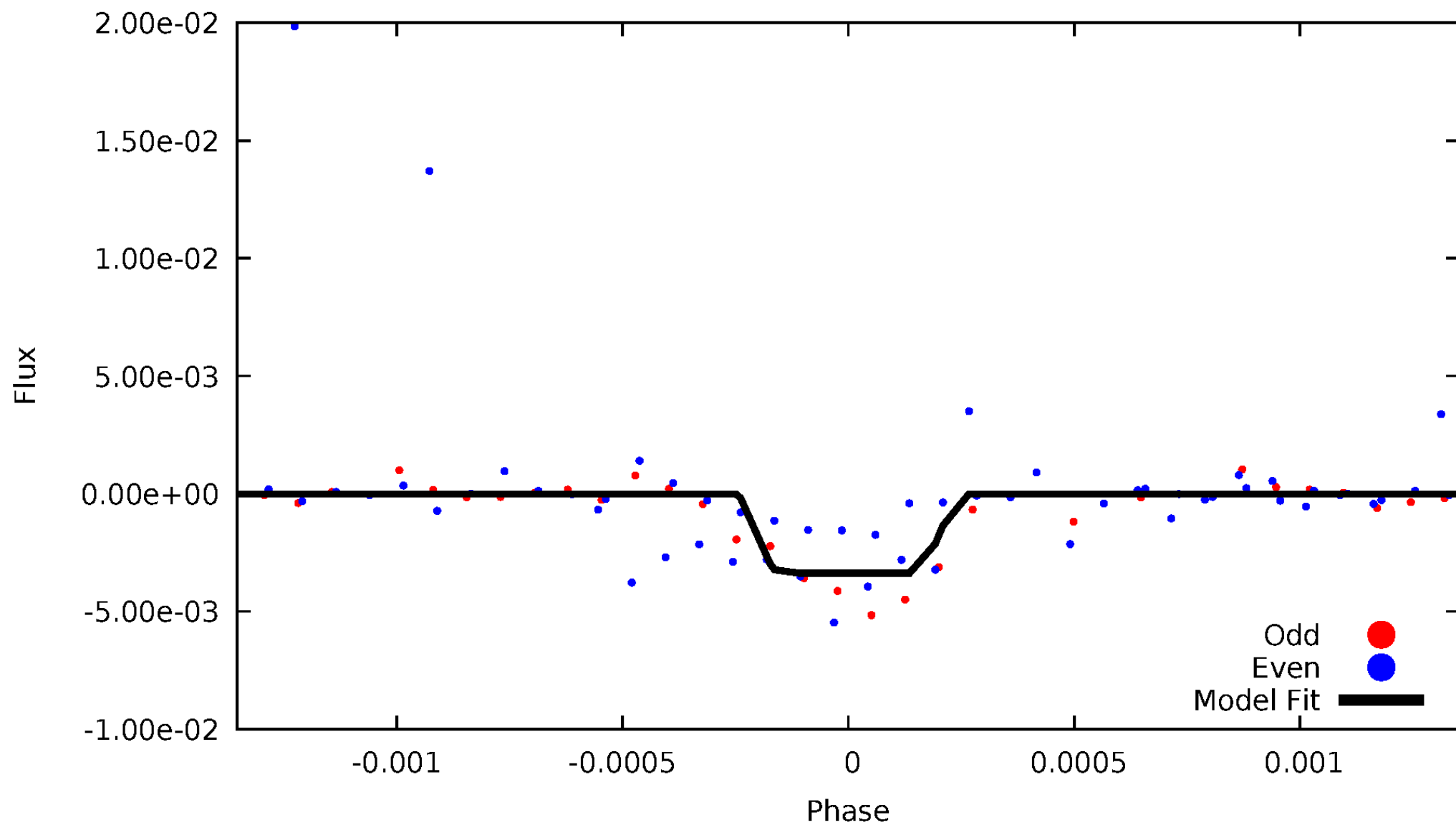
DV Odd/Even

TCE 005597406-06

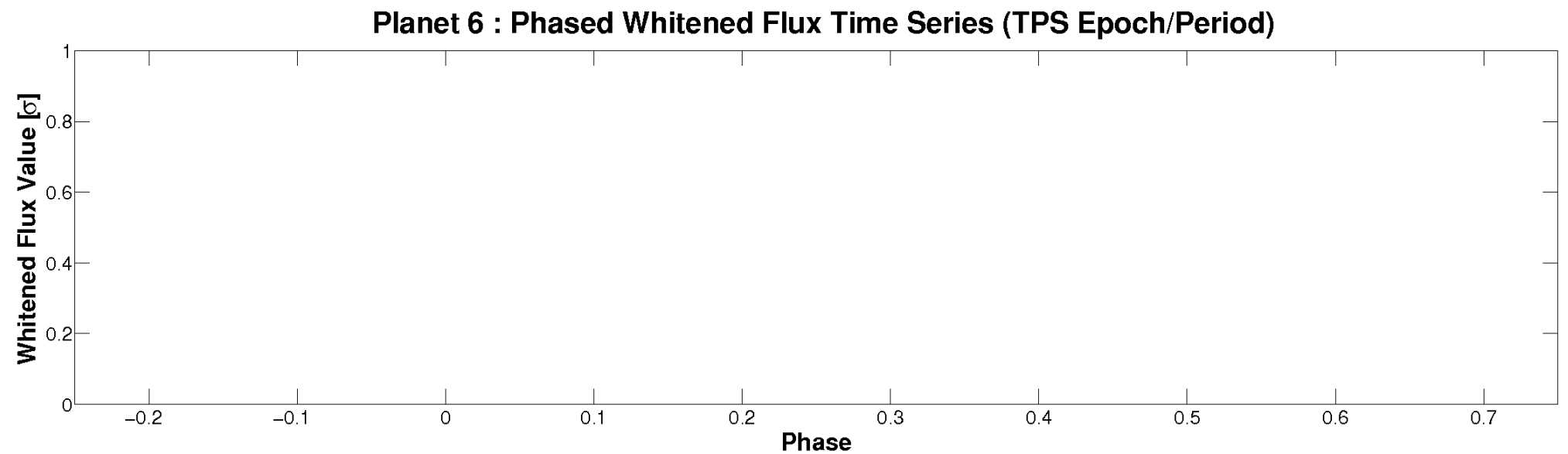
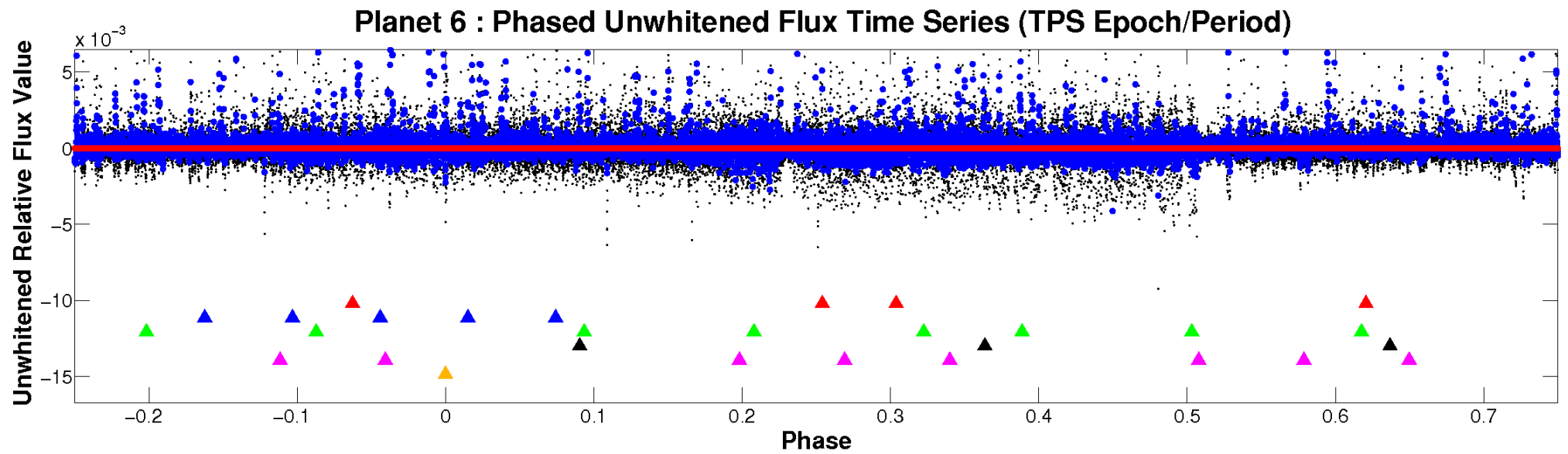


ALT Odd/Even

TCE 005597406-06

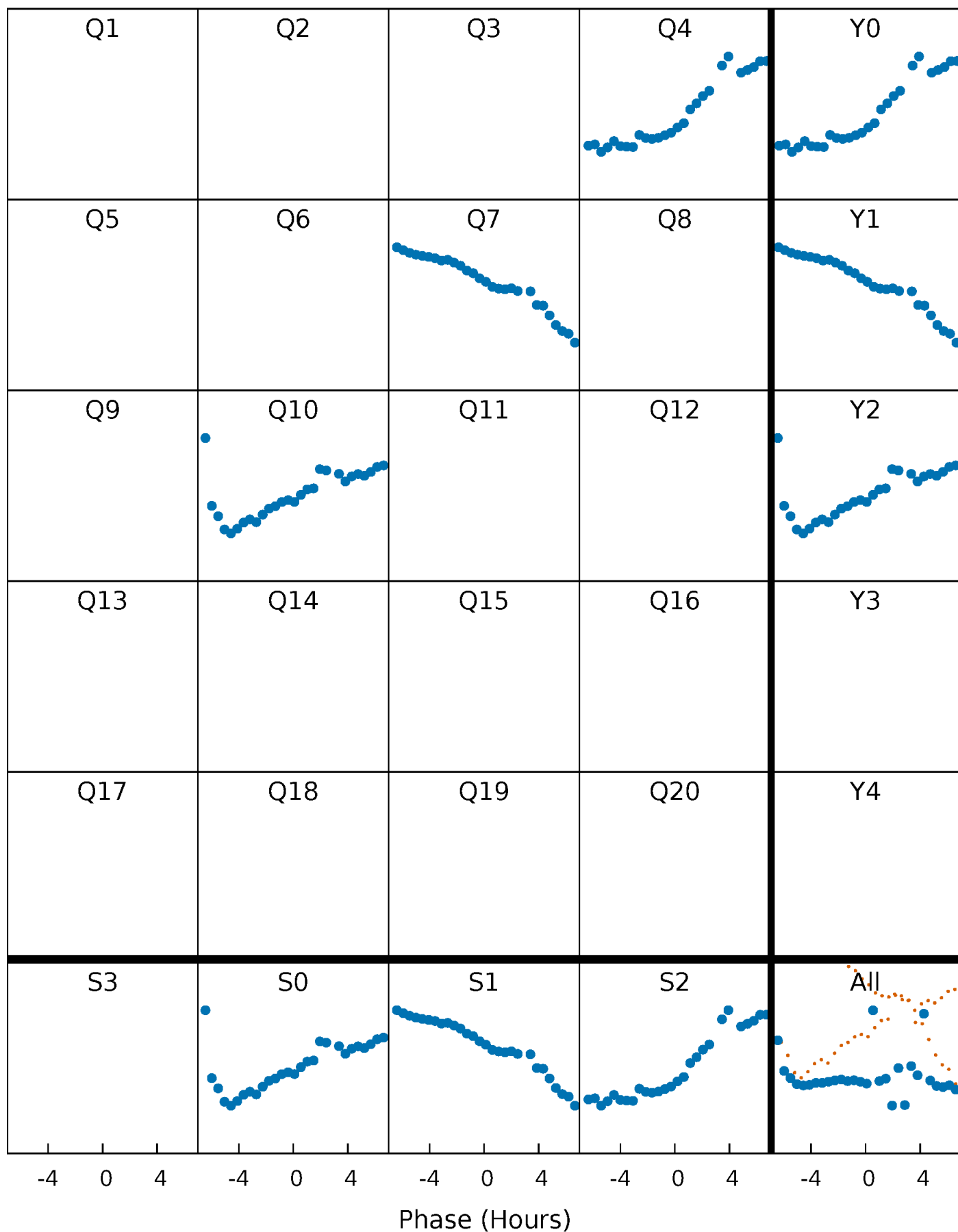


Non-Whitened Vs. Whitened Light Curve



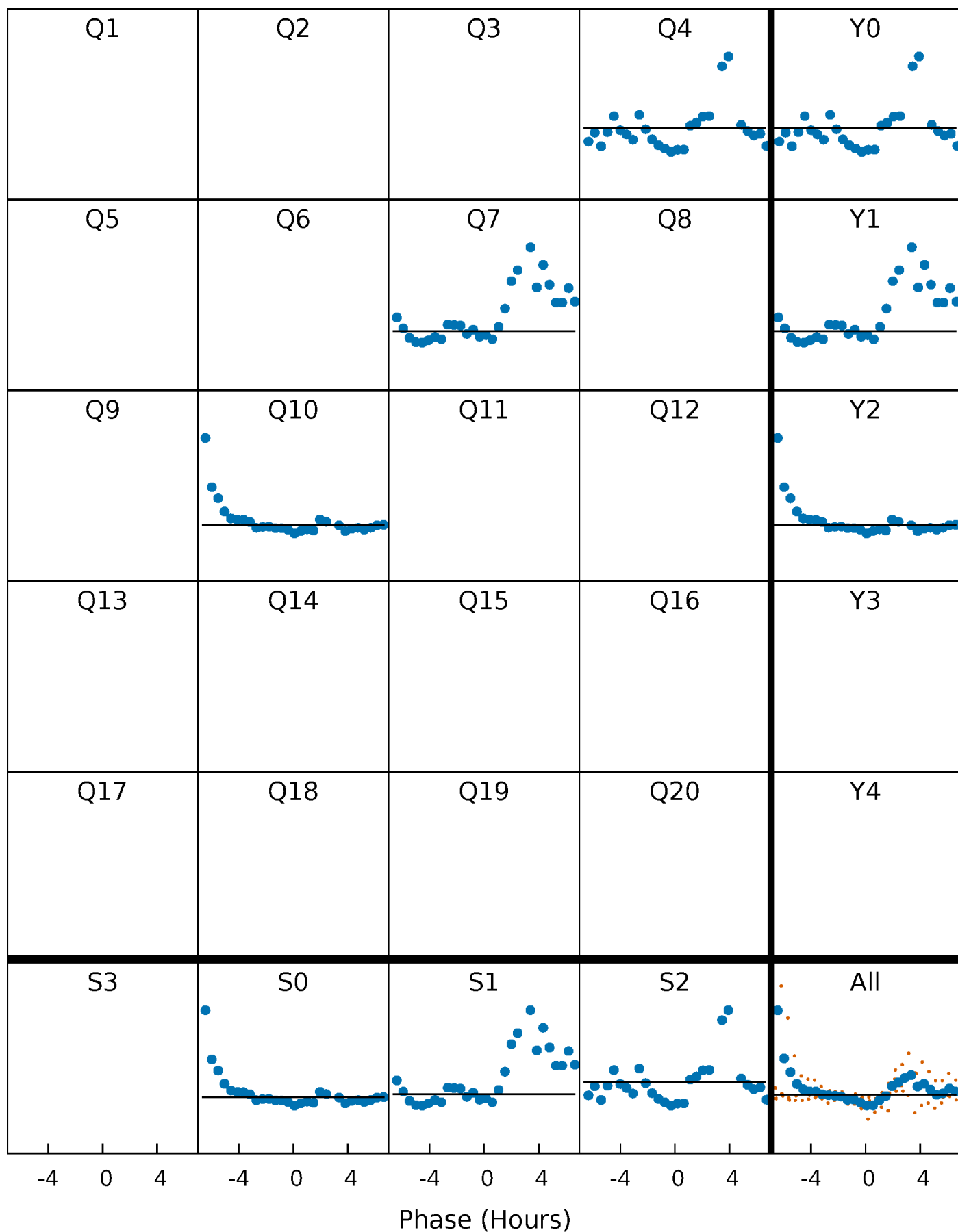
PDC Quarter-Phased Transit Curves

TCE 005597406-06 P=273.610864 Days $T_0=393.087807$ (BKJD)



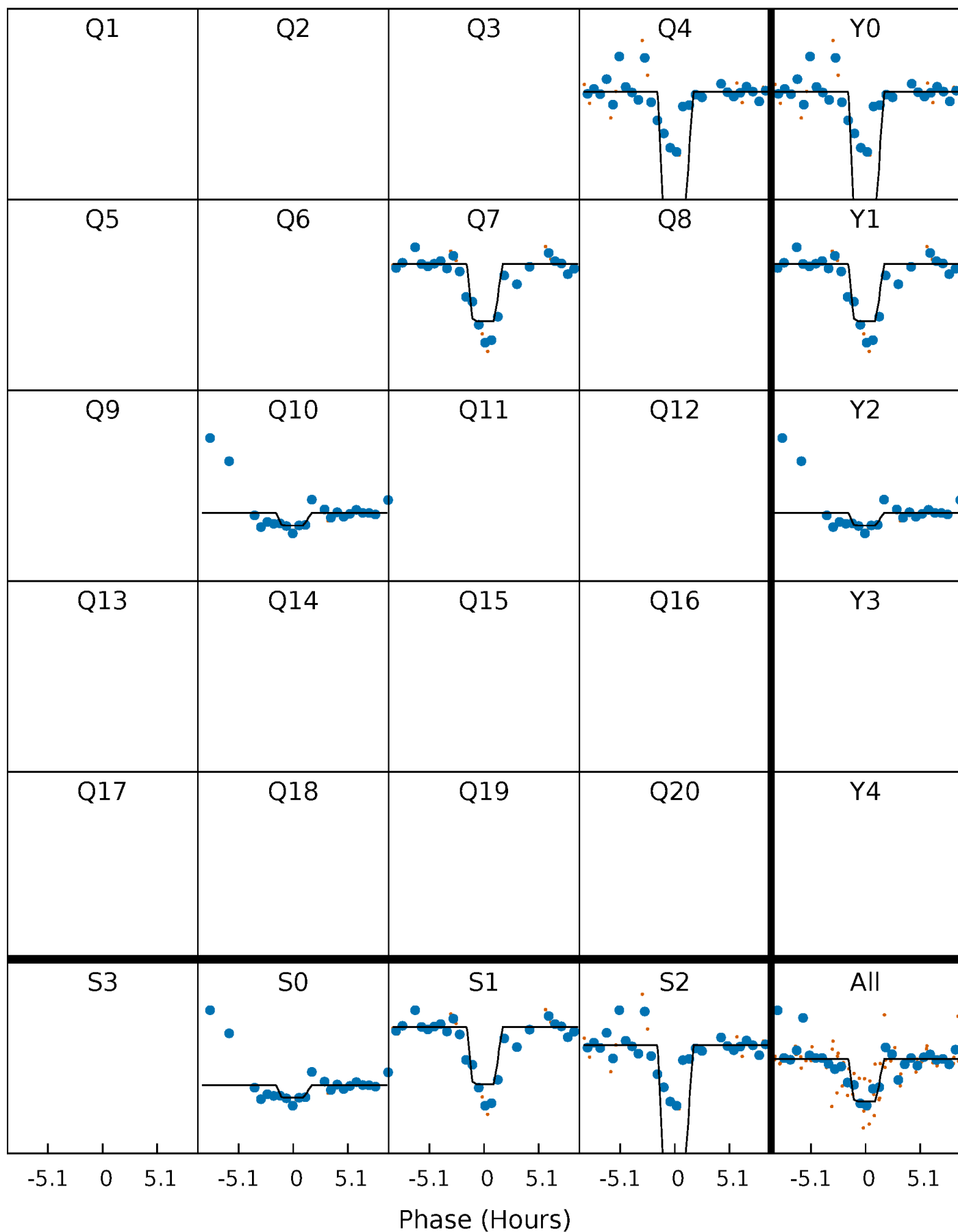
DV Quarter-Phased Transit Curves

TCE 005597406-06 $P=273.610864$ Days $T_0=393.087807$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

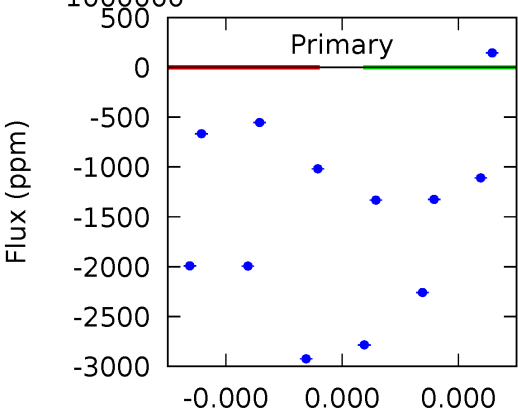
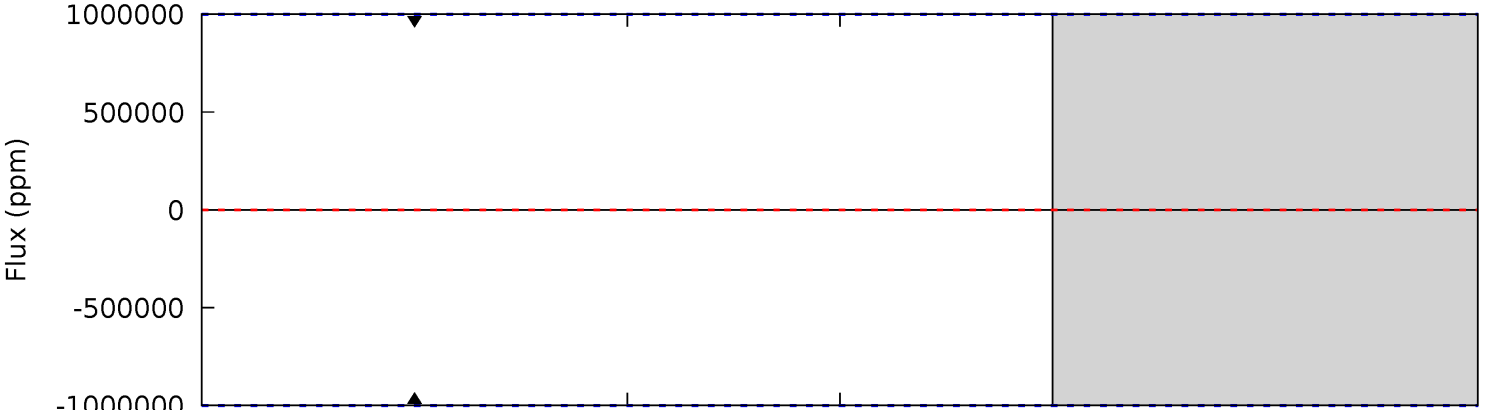
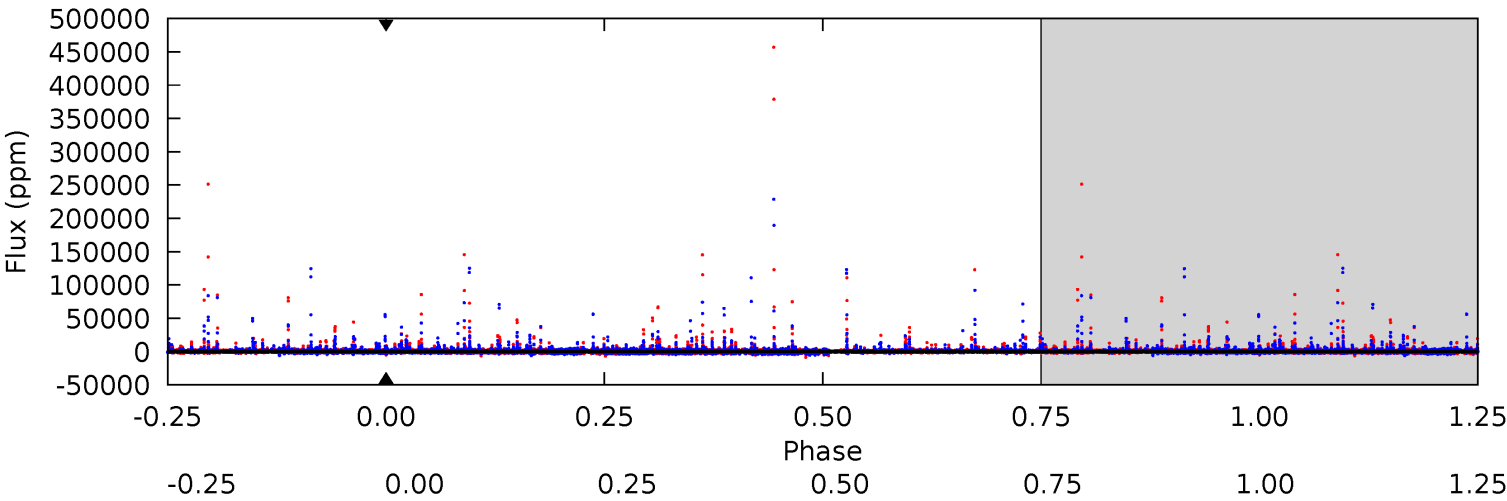
TCE 005597406-06 $P=273.610864$ Days $T_0=393.104060$ (BKJD)



DV Model-Shift Uniqueness Test

005597406-06, P = 273.610864 Days, E = 119.476943 Days

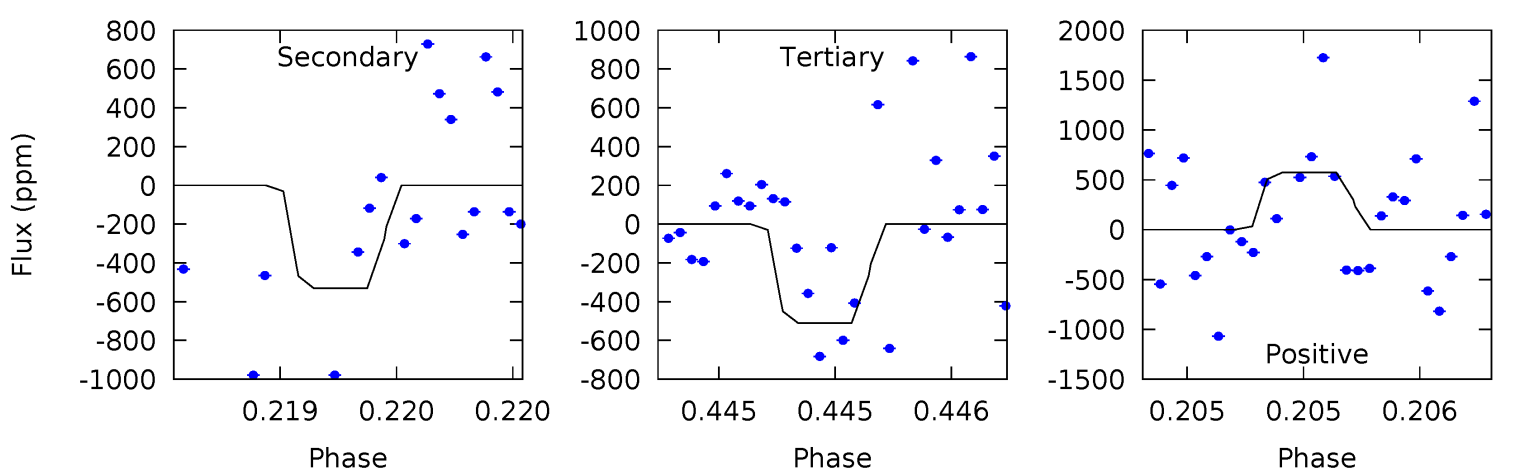
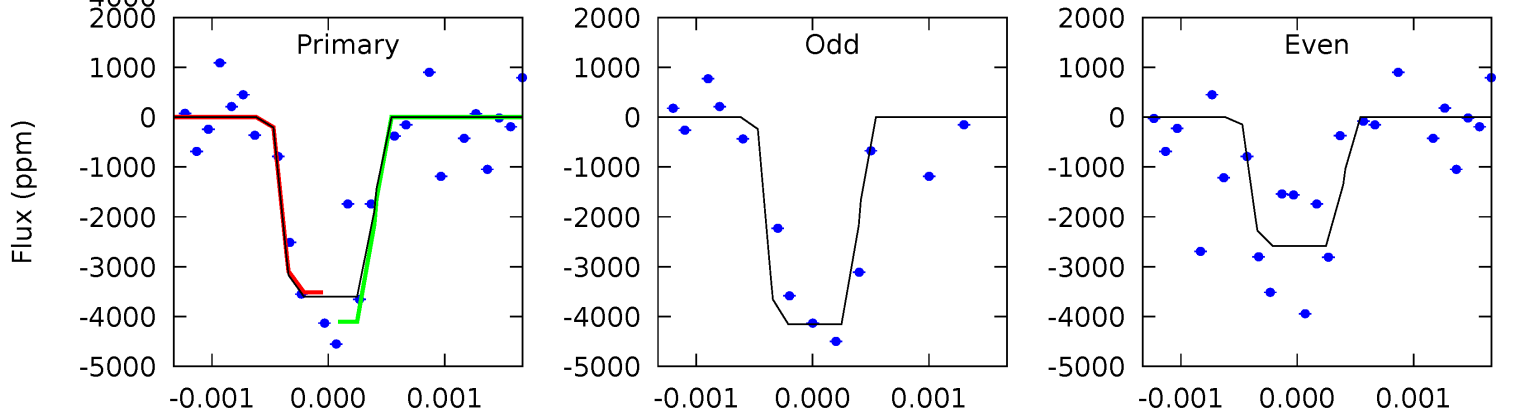
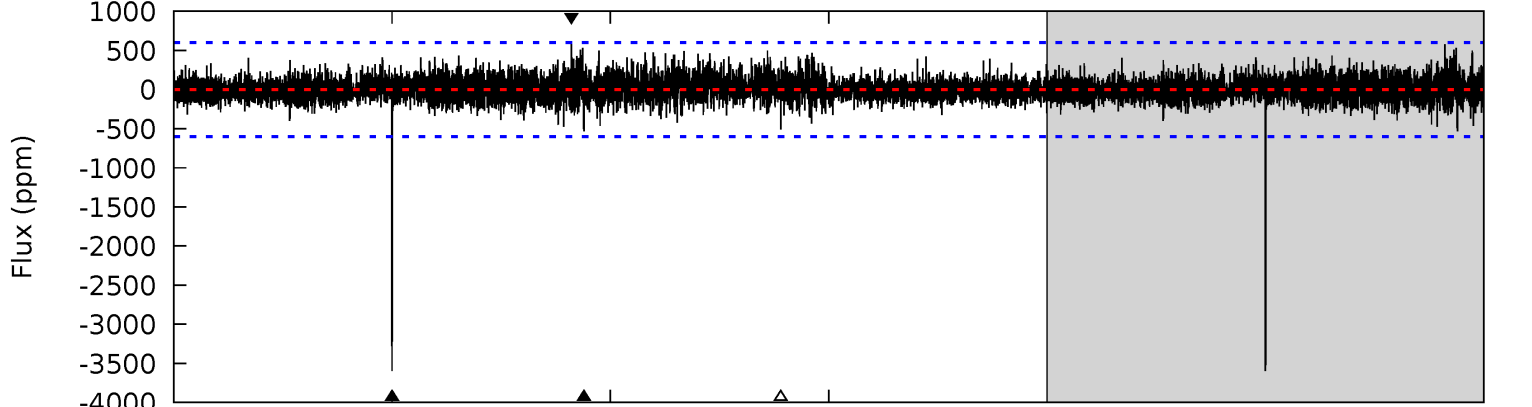
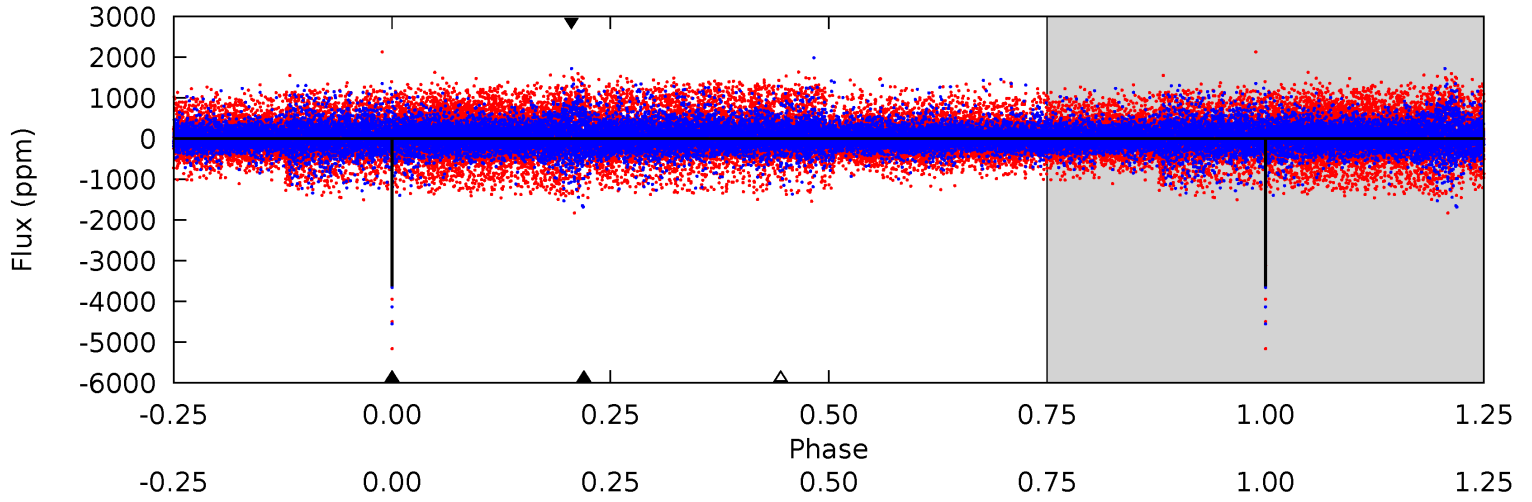
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

005597406-06, P = 273.610864 Days, E = 119.493196 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.4	4.92	4.73	5.32	5.57	3.48	1.04	28.6	28.0	0.19	-0.40	6.19	0.79	0.14	0



Stellar Parameters For KIC 005597406

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4708^{+165}_{-165}	$4.681^{+0.036}_{-0.050}$	$-0.640^{+0.300}_{-0.300}$	$0.594^{+0.060}_{-0.044}$	$0.618^{+0.061}_{-0.044}$	$4.148^{+0.692}_{-0.712}$
	+4%/-4%	+1%/-1%	+47%/-47%	+10%/-7%	+10%/-7%	+17%/-17%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 005597406-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$5.38^{+4.99}_{-3.73}$	268^{+10}_{-10}	-4162^{+15363}_{-9116}	$-36475.121^{+1539834.763}_{-2050180.144}$
Alt.	-531 ± 108	$6.26^{+5.89}_{-4.08}$	268^{+11}_{-11}	2931^{+1276}_{-465}	3611^{+28991}_{-2644}

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

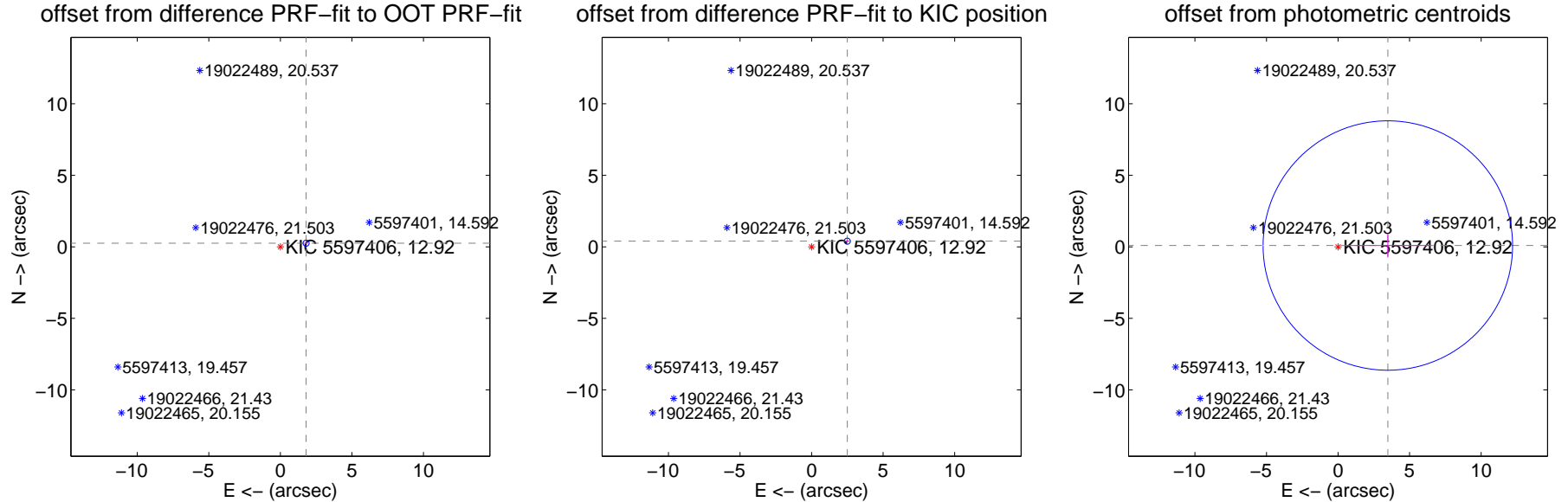
DV Centroid Data

Supplemental centroid analysis for 005597406-06. Kepler magnitude: 12.92. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

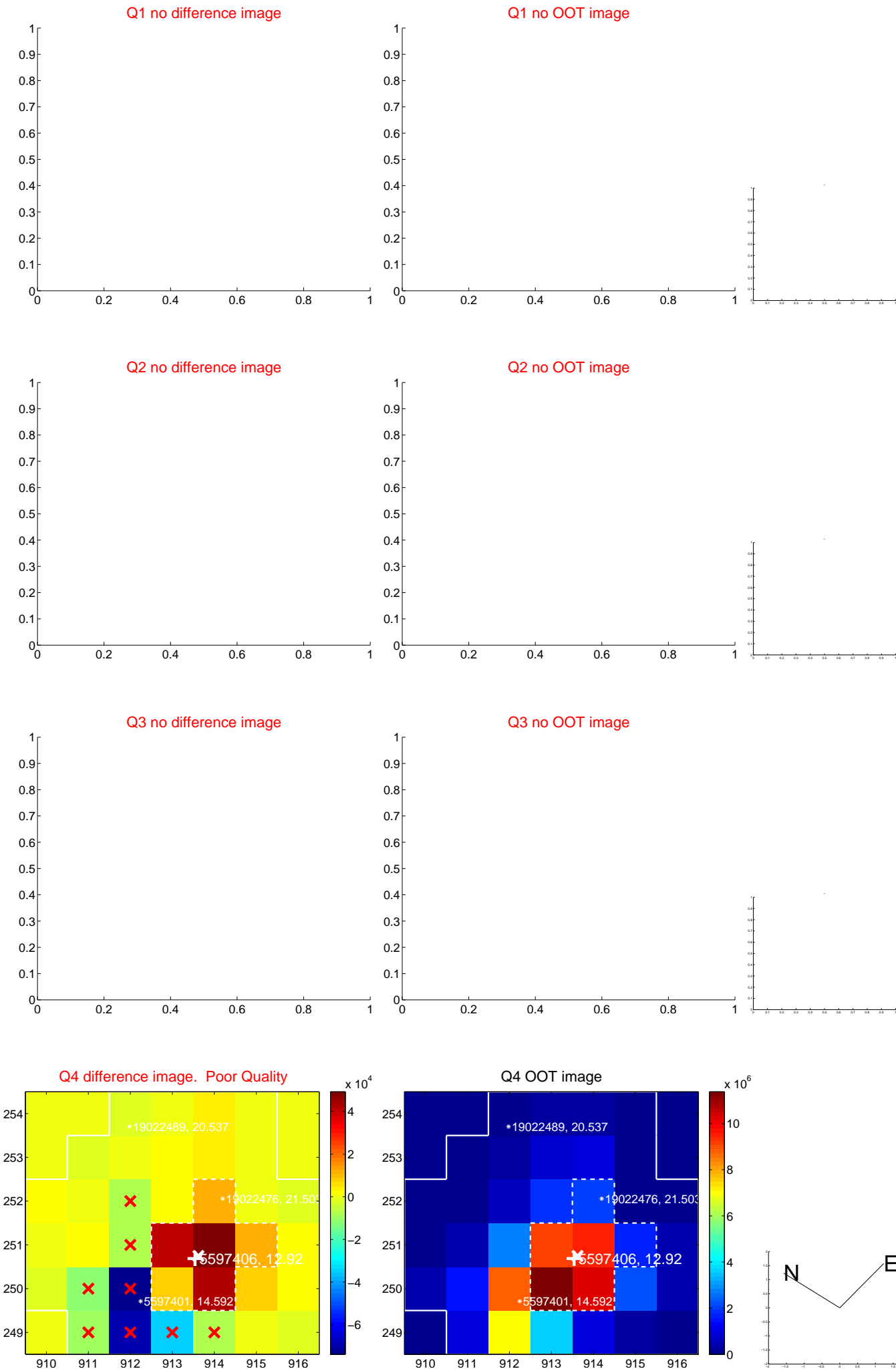
The direct PRF centroid is offset from the target star catalog position by about 0.71 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.816 ± 0.071	25.61	-1.799 ± 0.071	0.253 ± 0.073
PRF-fit source offset from KIC position	2.528 ± 0.071	35.64	-2.497 ± 0.071	0.395 ± 0.073
photometric centroid source offset	3.48 ± 2.91	1.20	-3.48 ± 2.91	0.09 ± 0.84

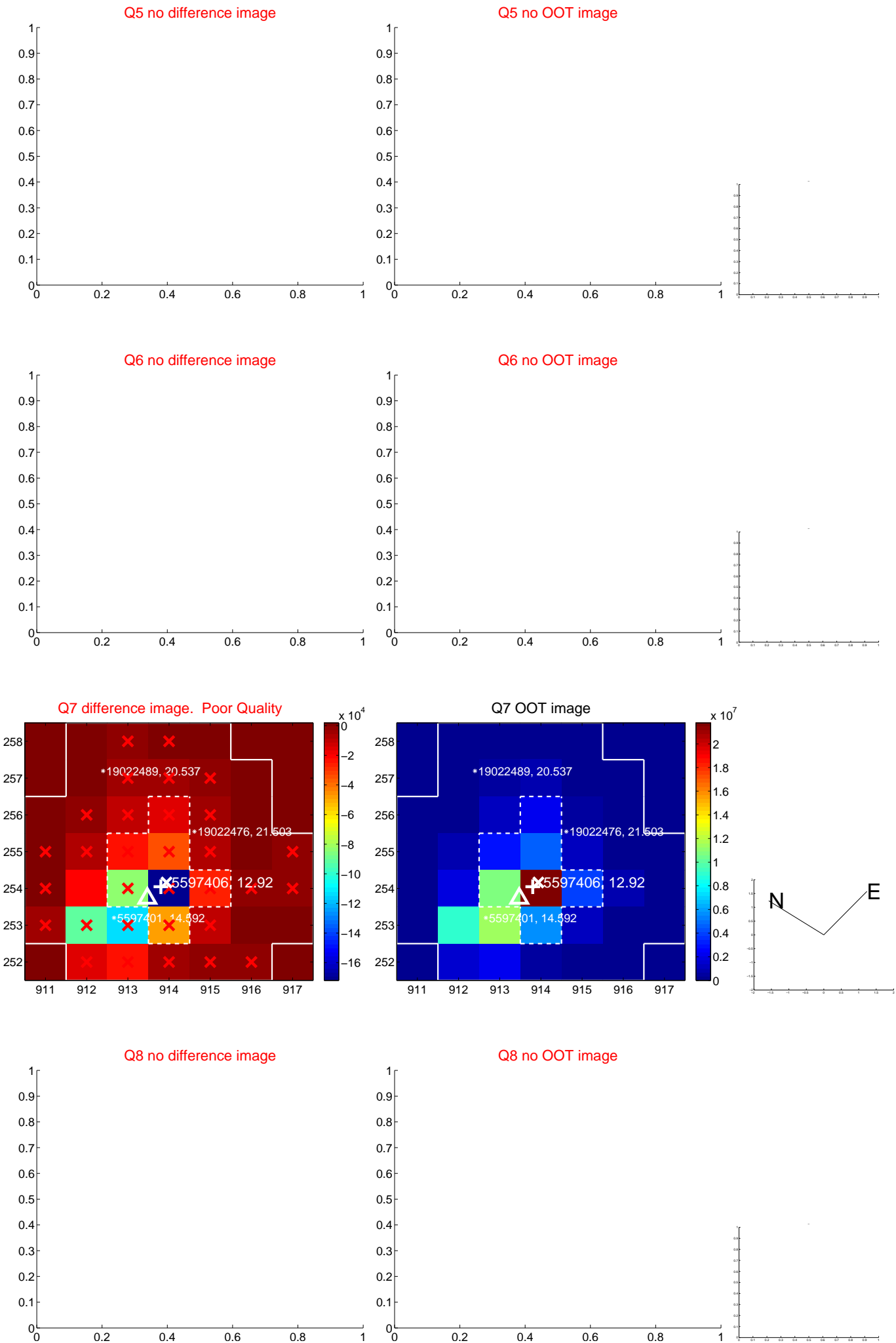


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

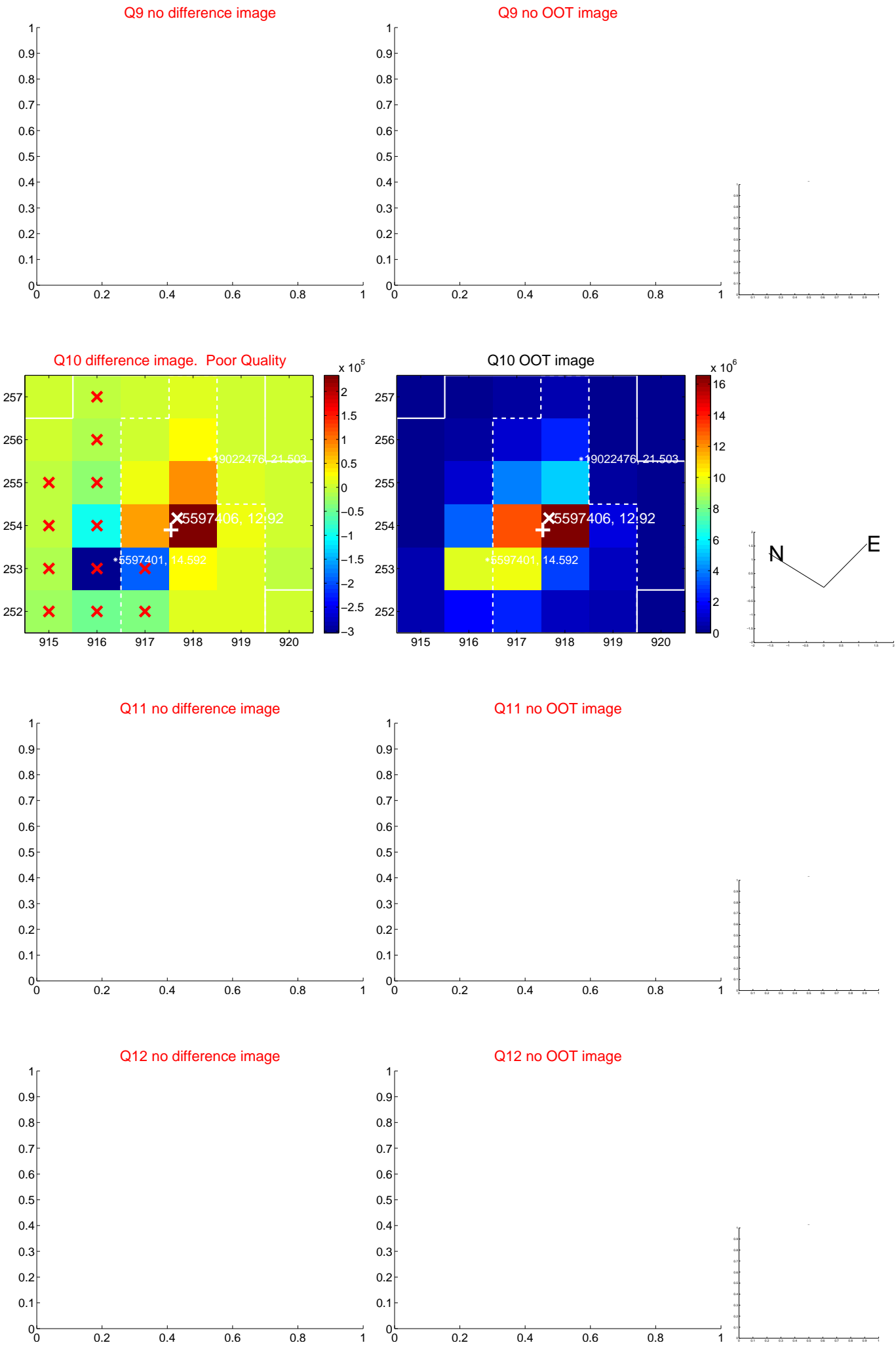
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



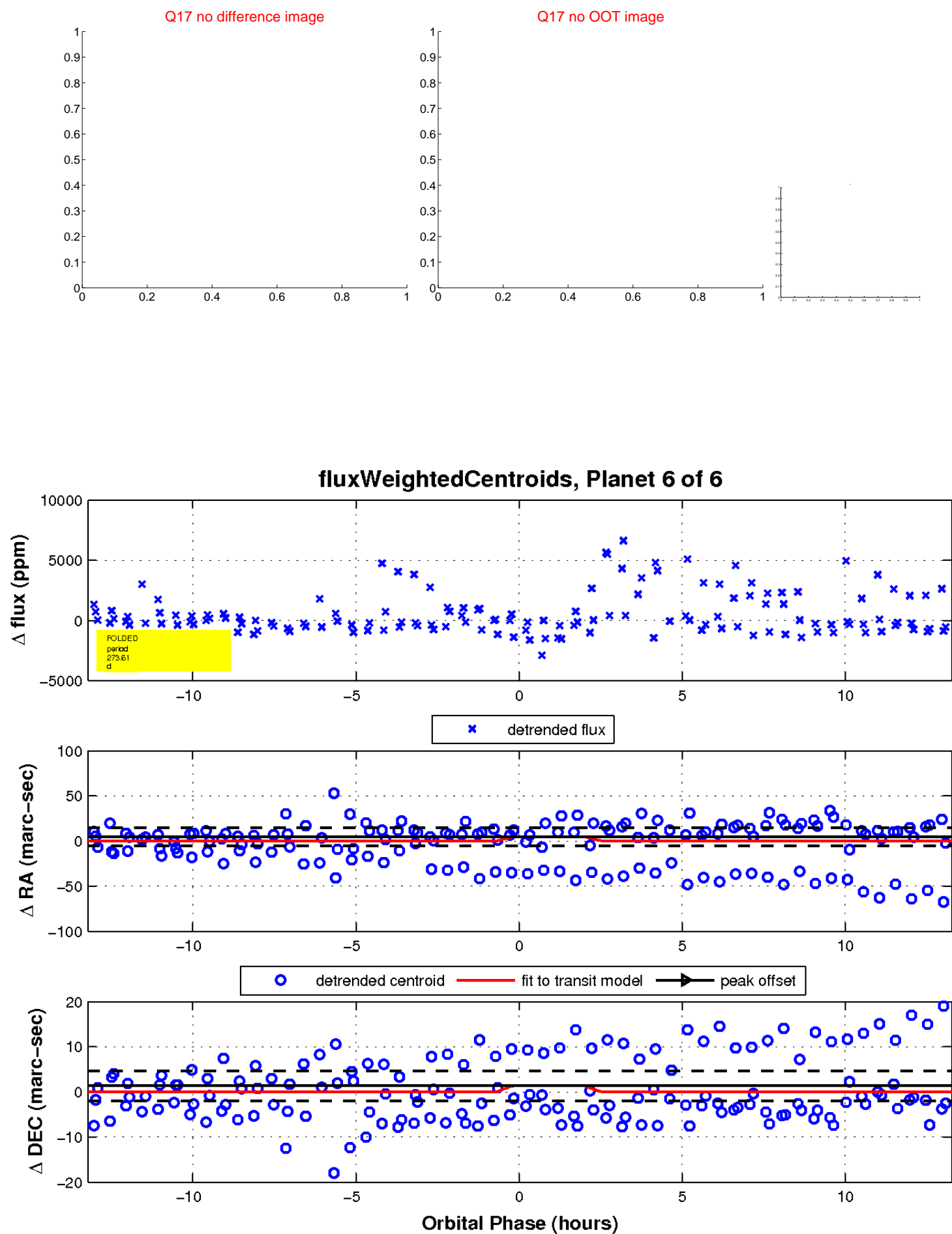
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

