

KIC 005200185

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})
005200185-01	OBS	No	434.199212	389.363646	1963.7	2.708	14.5	7.9	0.74	4521	3.28	0.20
005200185-02	OBS	No	315.639678	378.976684	1981.4	3.048	9.8	7.8	0.74	4521	3.51	0.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005200185-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005200185-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

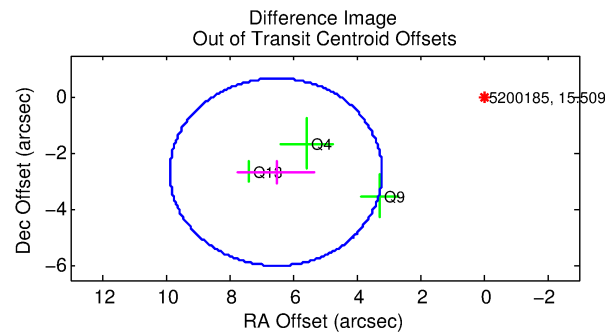
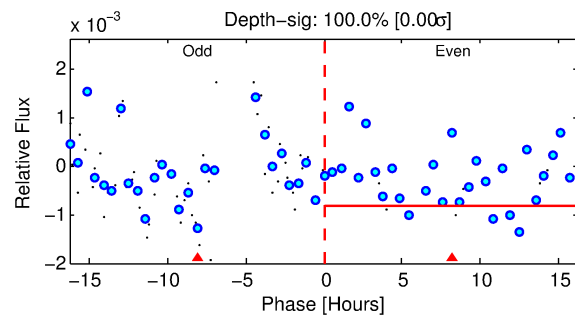
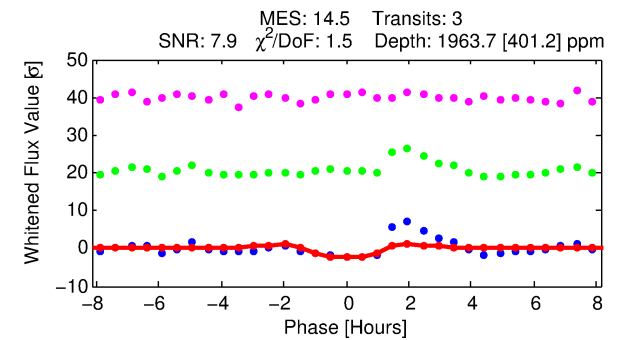
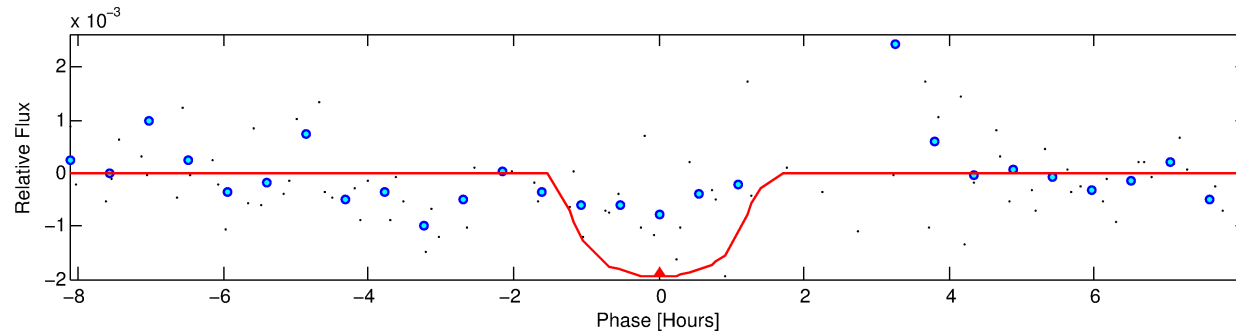
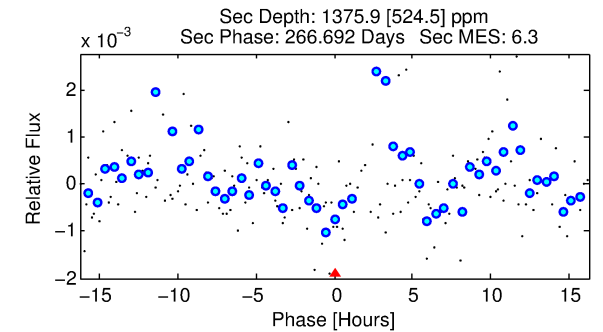
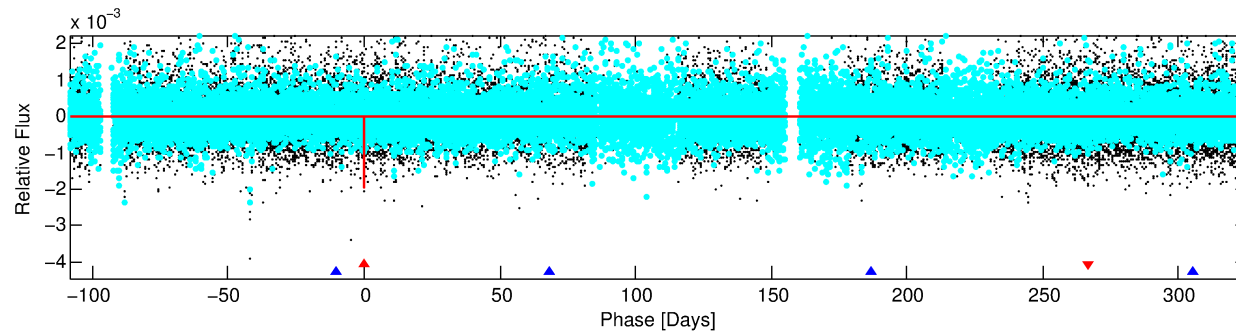
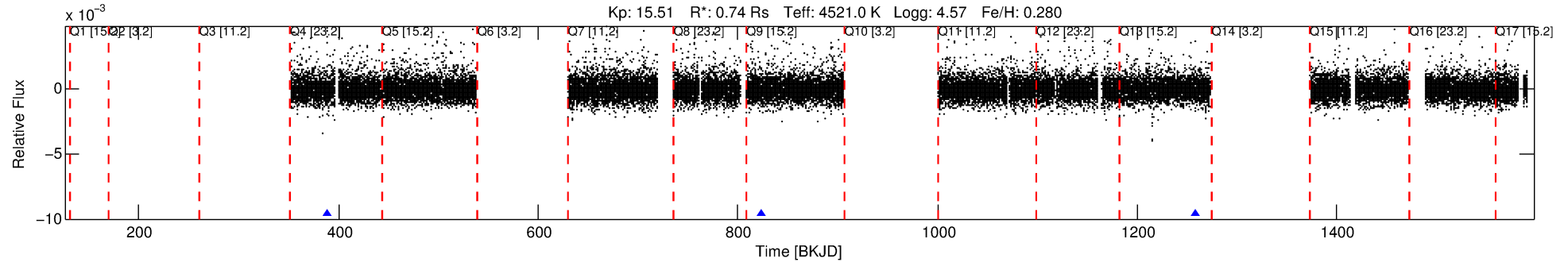
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005200185-01

No Significant Match Found

DV One-Page Summary

KIC: 5200185 Candidate: 1 of 2 Period: 434.199 d



DV Fit Results:

Period = 434.19921 [0.00575] d
Epoch = 389.3636 [0.0077] BKJD
Rp/R* = 0.0406 [0.1365]
a/R* = 1123.67 [10696.39]
b = 0.49 [15.21]
Seff = 0.20 [0.04]
Teq = 170 [7] K
Rp = 3.28 [11.03] Re
a = 1.0131 [0.0743] AU
Ag = 72196.06 [486075.06] [0.15 σ]
Teffp = 4320 [7272] K [0.57 σ]

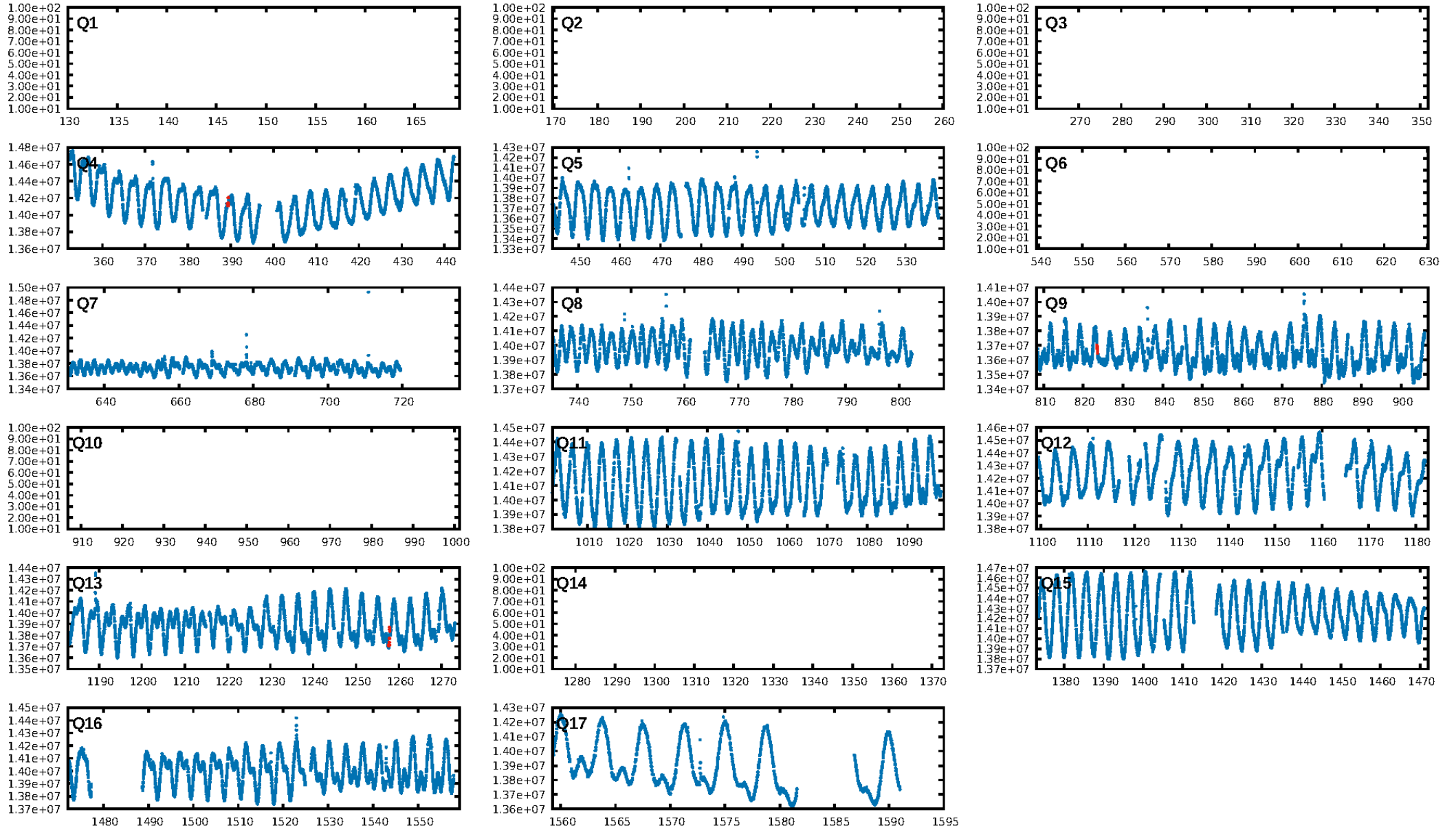
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [697.94 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.5%
ModelChiSquareGof-sig: 52.3%
Bootstrap-pfa: 5.68e-18
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -30.97
Centroid-sig: 1.1%
Centroid-so: 2.087 arcsec [1.67 σ]
OotOffset-rm: 7.048 arcsec [6.33 σ]
KicOffset-rm: 0.639 arcsec [0.45 σ]
OotOffset-st: 0/0/1/2 [3]
KicOffset-st: 0/0/1/2 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

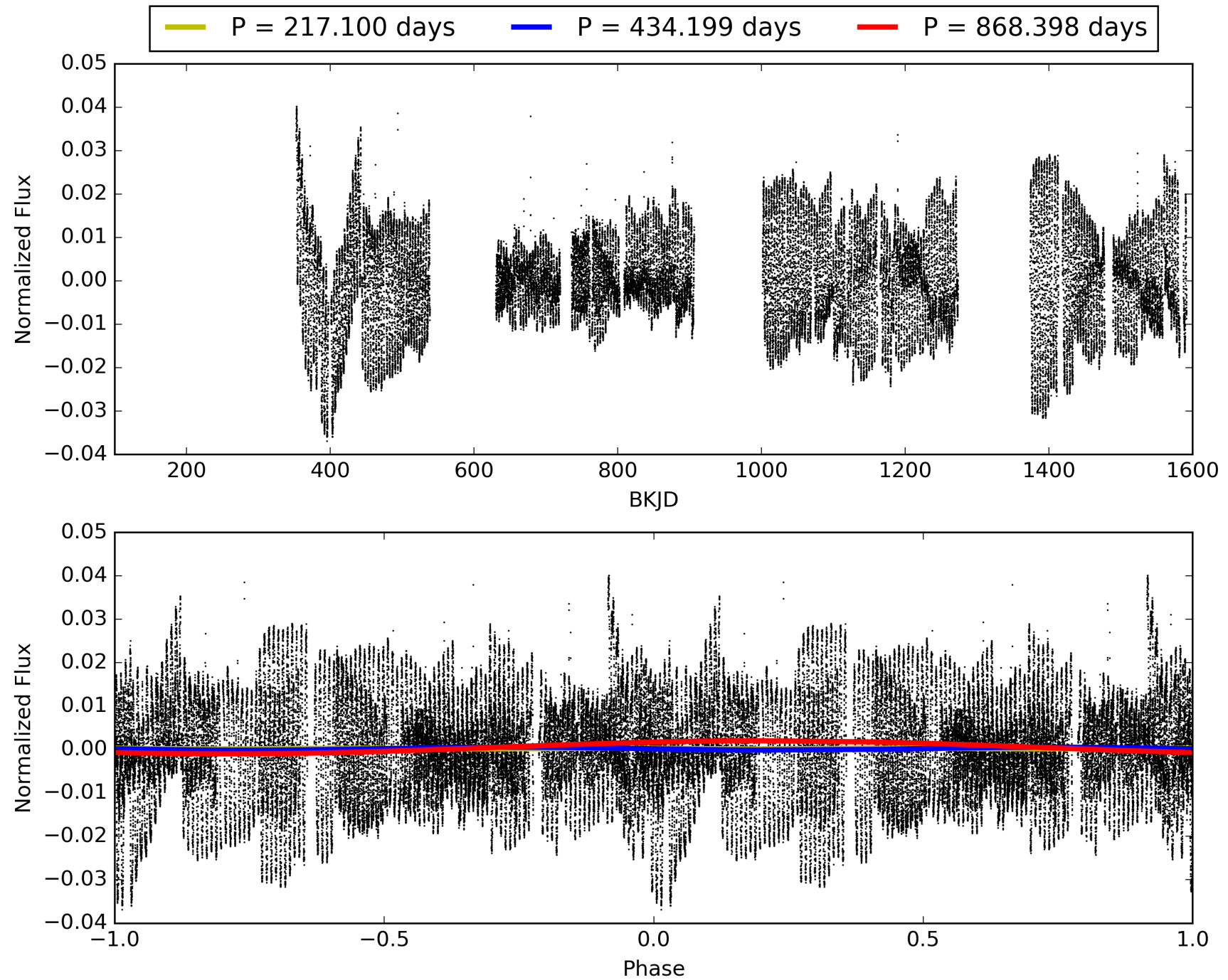
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005200185-01, PDC Light Curves

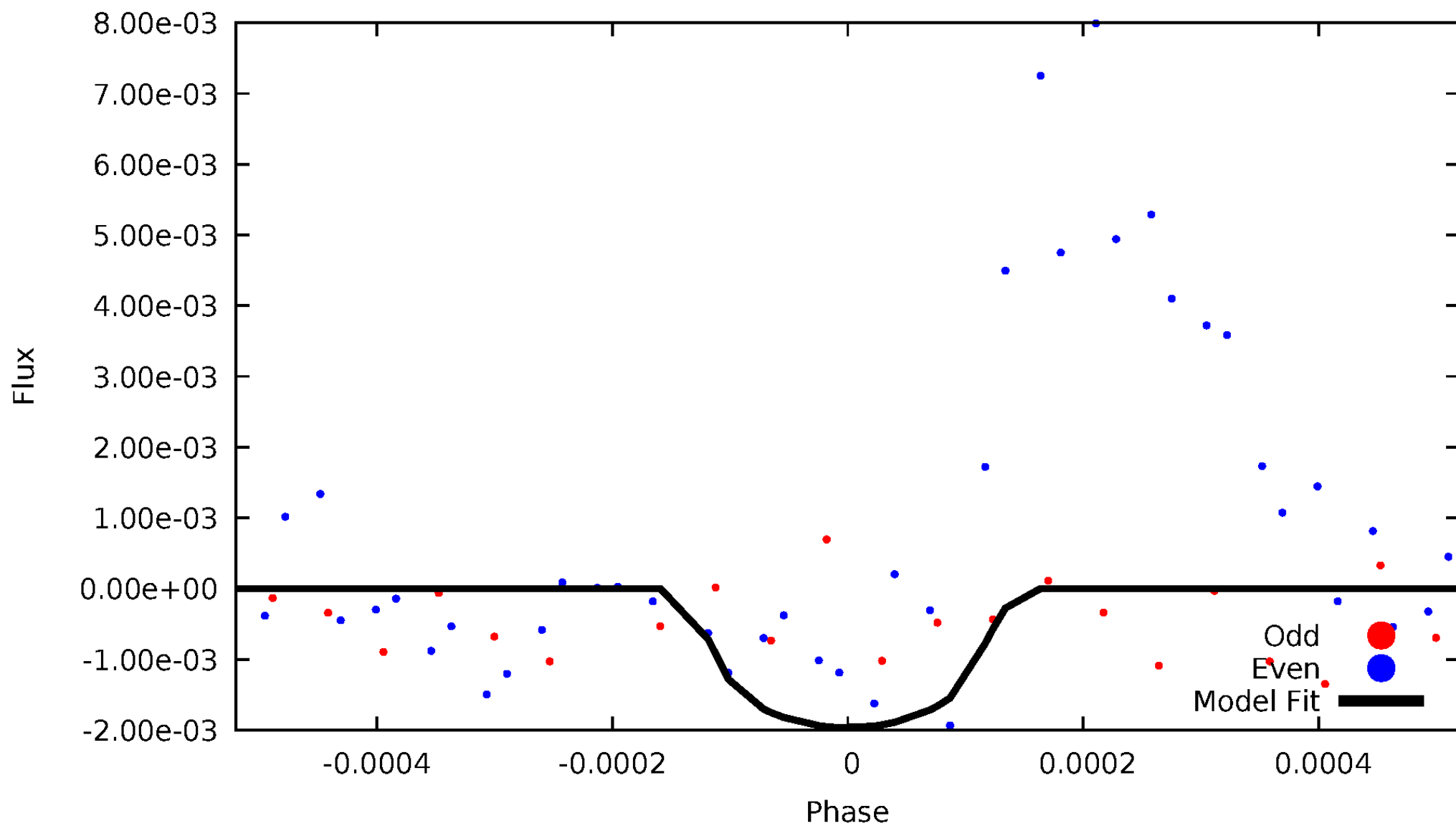


TCE 005200185-01



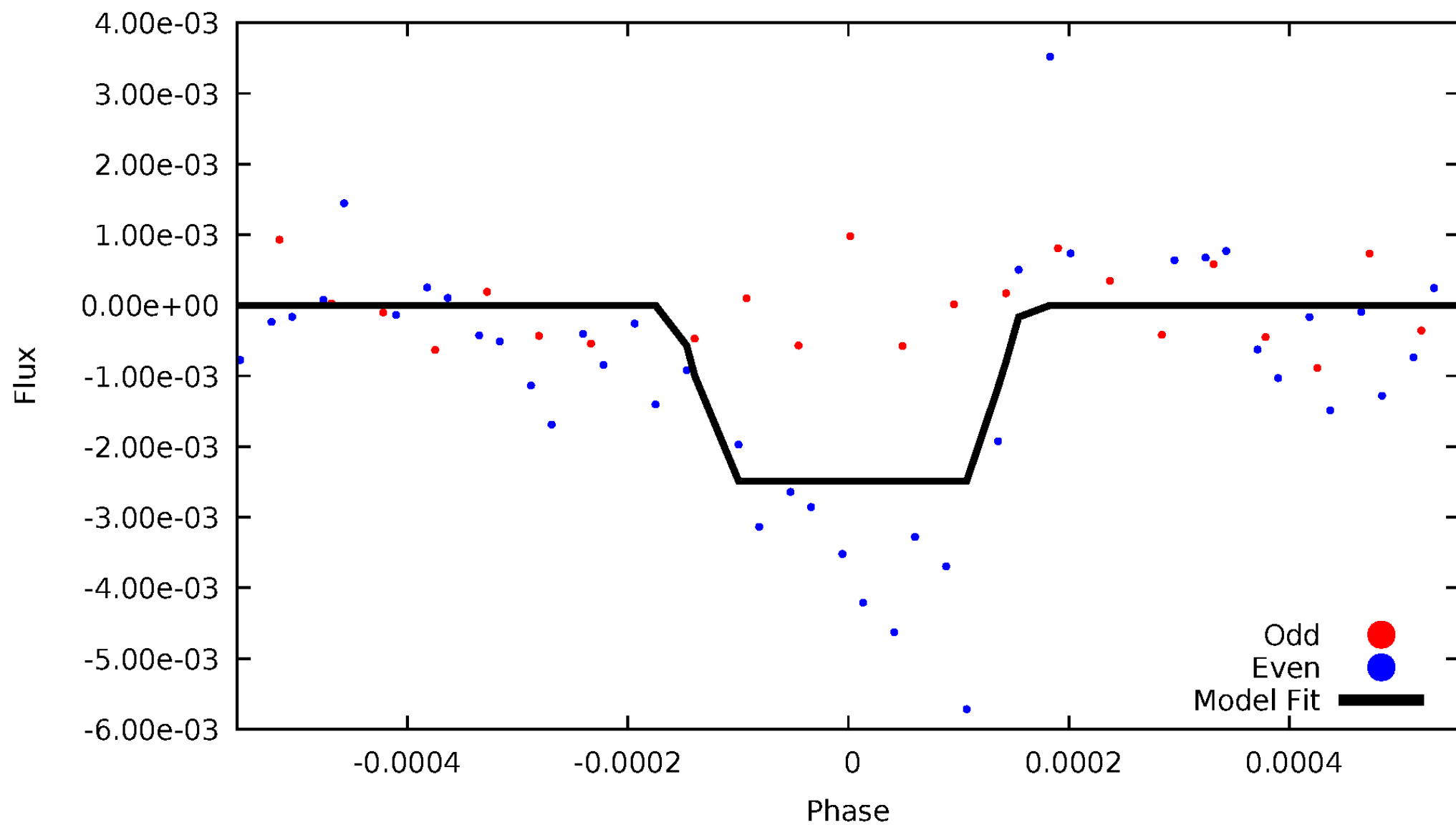
DV Odd/Even

TCE 005200185-01



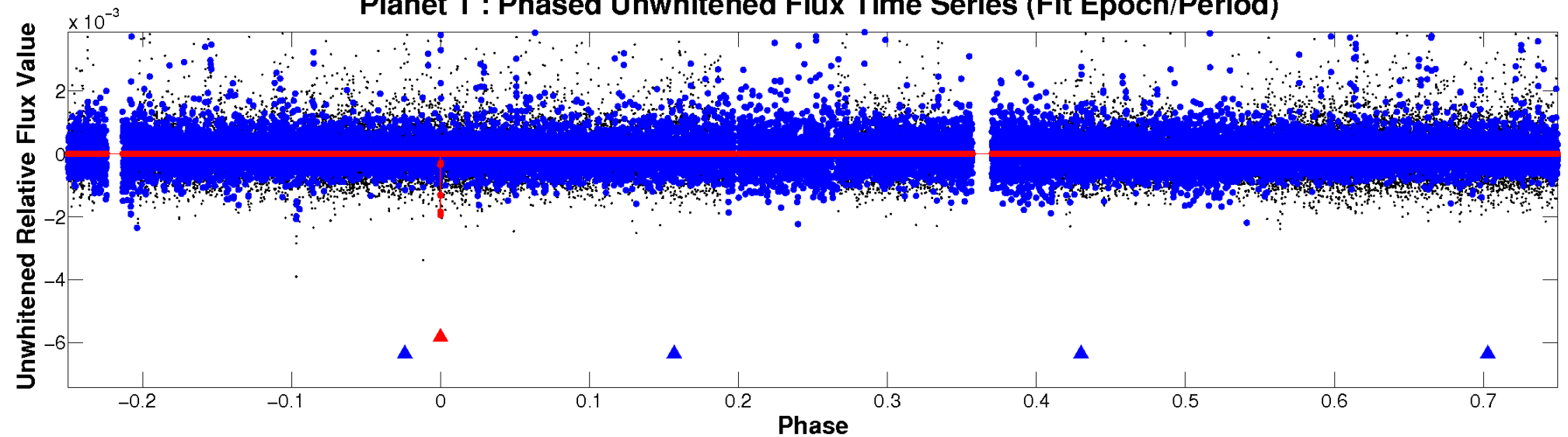
ALT Odd/Even

TCE 005200185-01

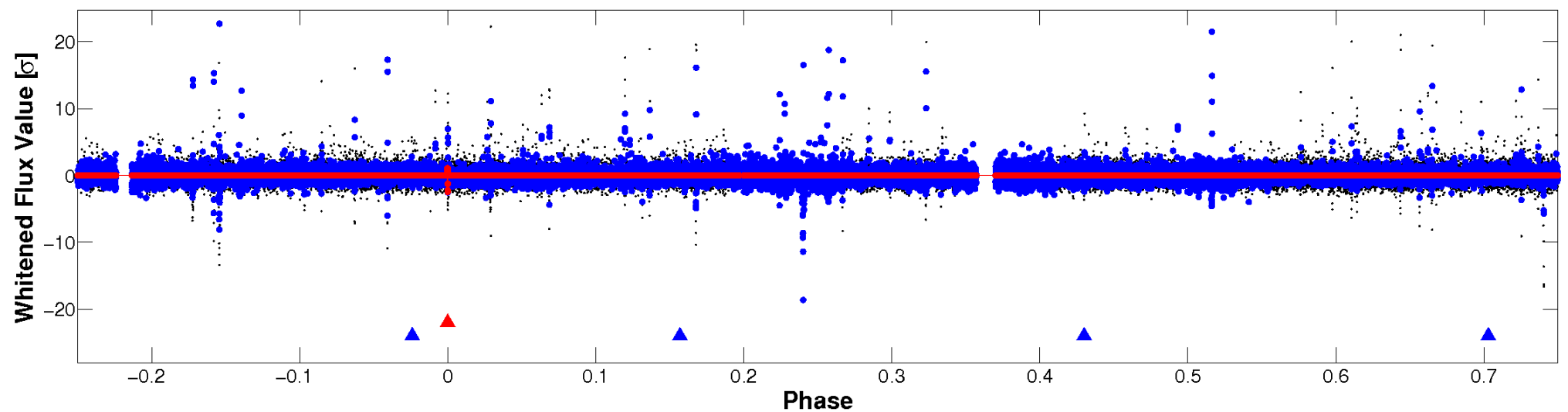


Non-Whitened Vs. Whitened Light Curve

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



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



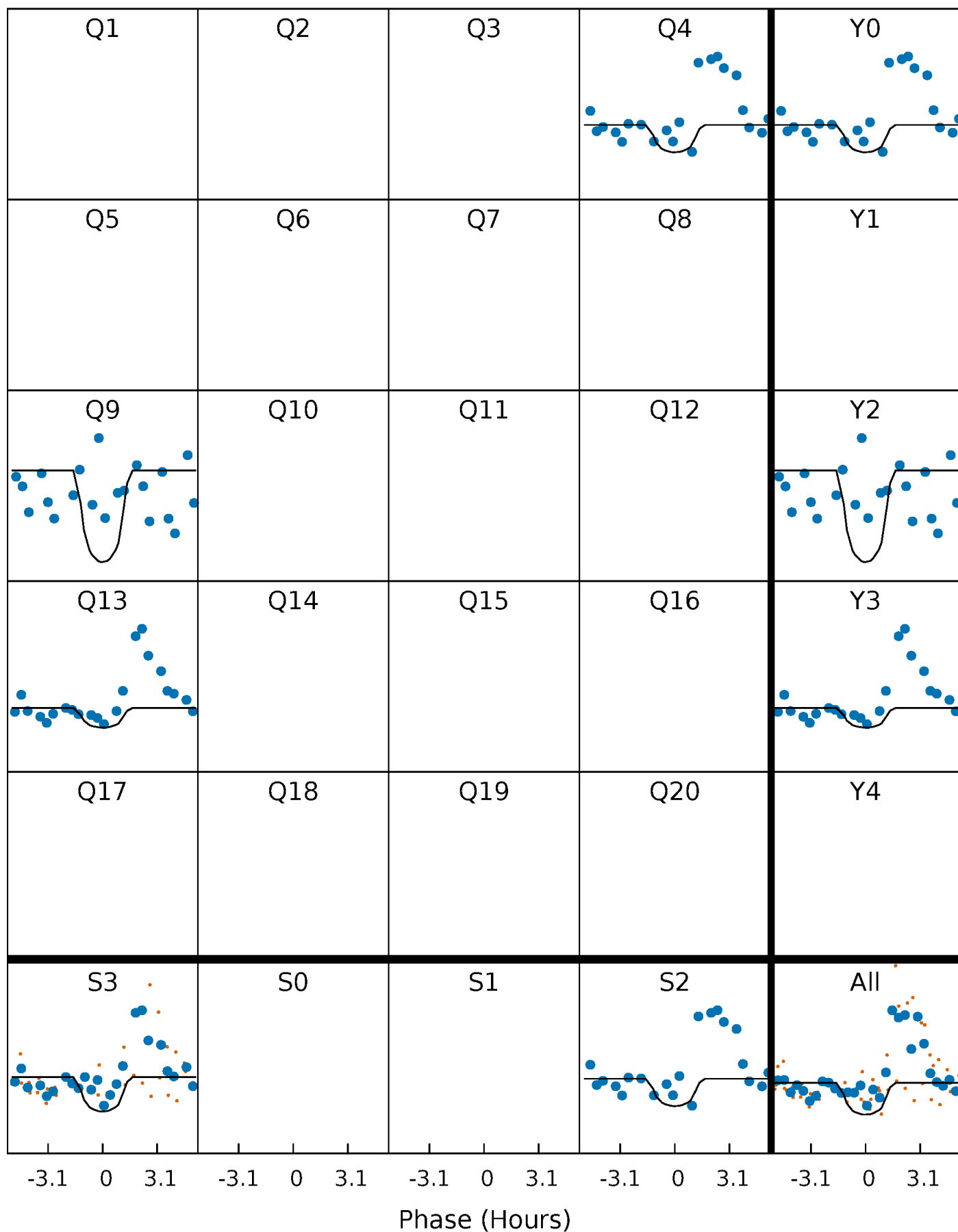
PDC Quarter-Phased Transit Curves

TCE 005200185-01 P=434.199212 Days $T_0=389.363646$ (BKJD)



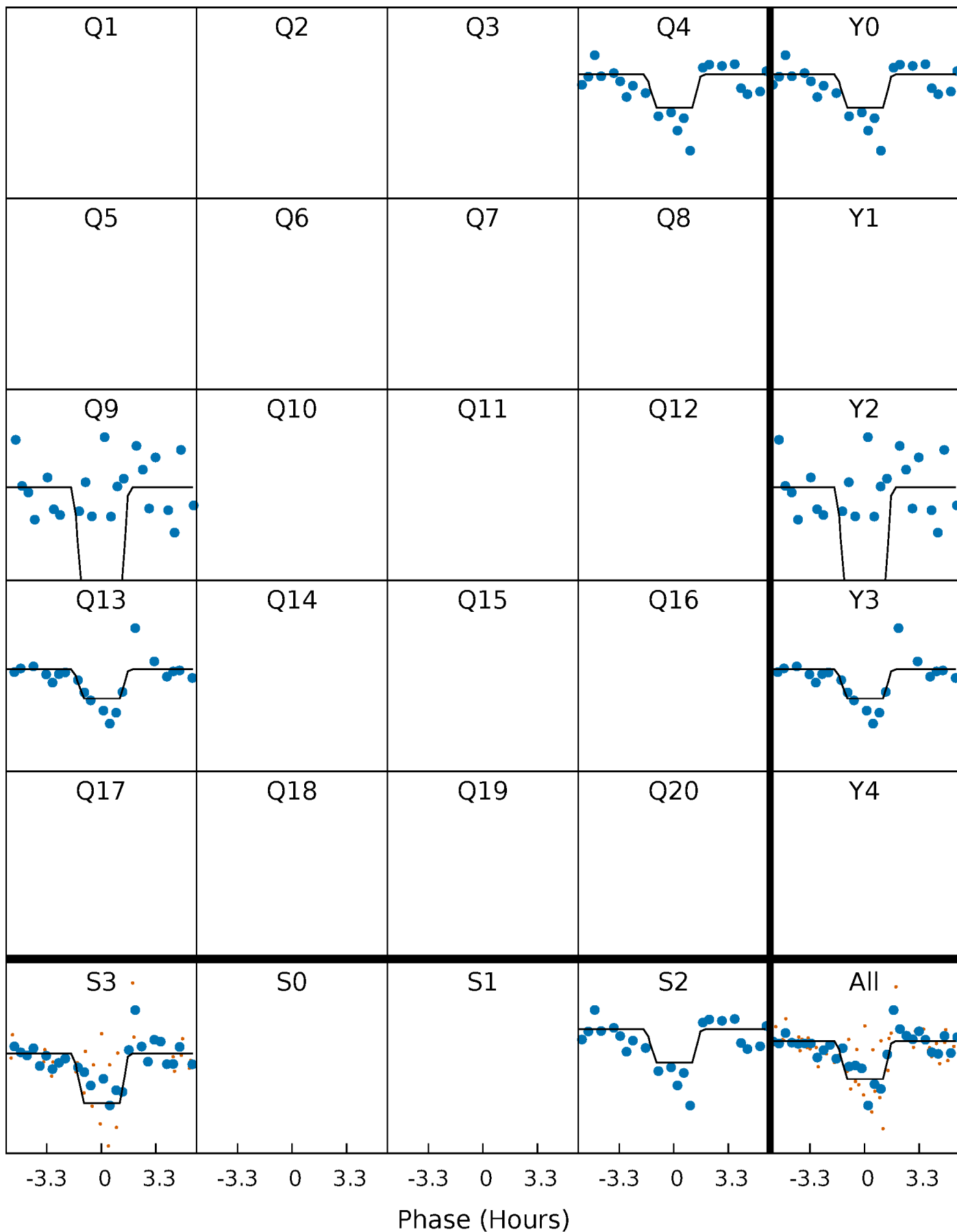
DV Quarter-Phased Transit Curves

TCE 005200185-01 P=434.199212 Days $T_0=389.363646$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

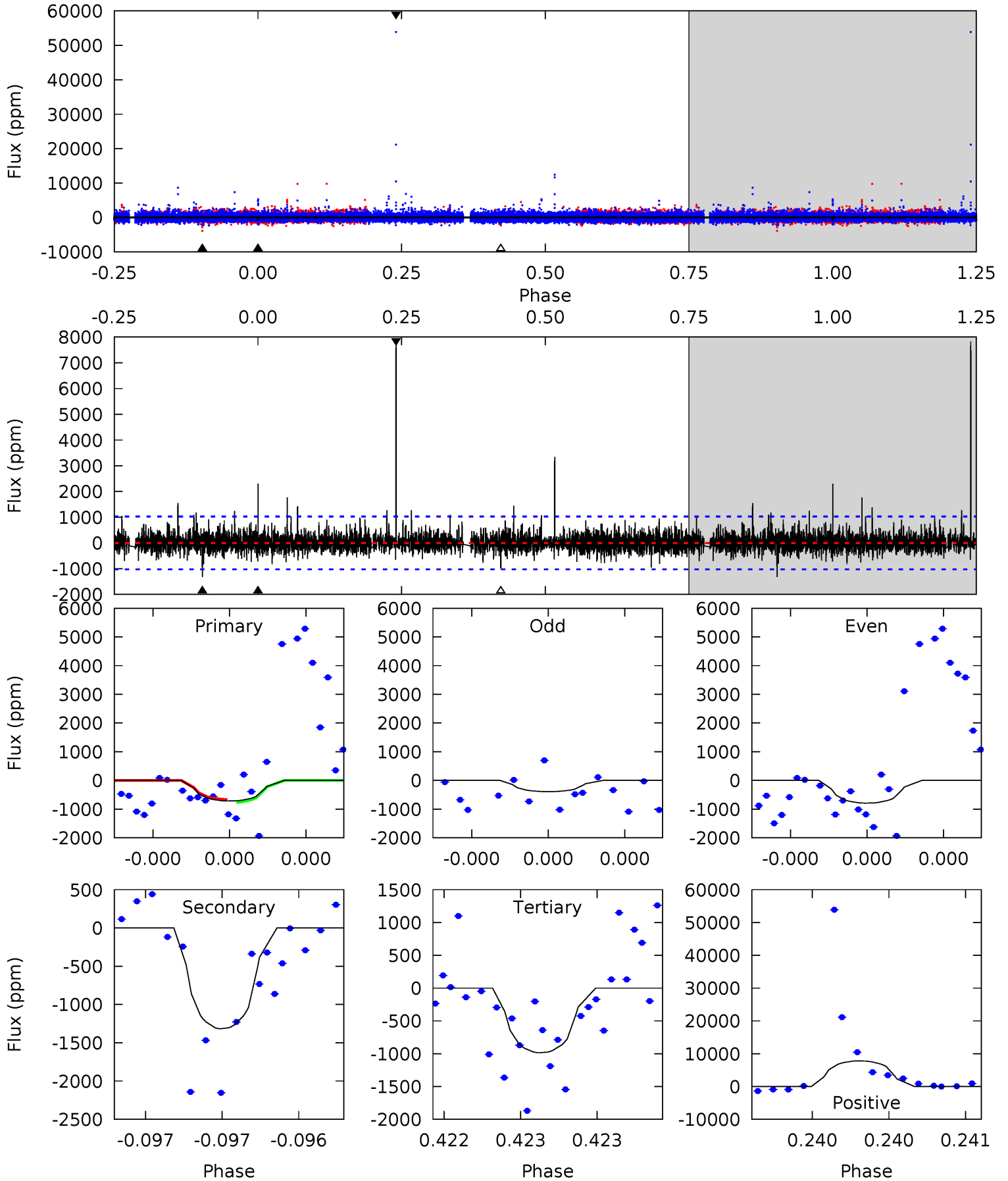
TCE 005200185-01 P=434.199528 Days $T_0=389.354733$ (BKJD)



DV Model-Shift Uniqueness Test

005200185-01, P = 434.199212 Days, E = 389.363646 Days

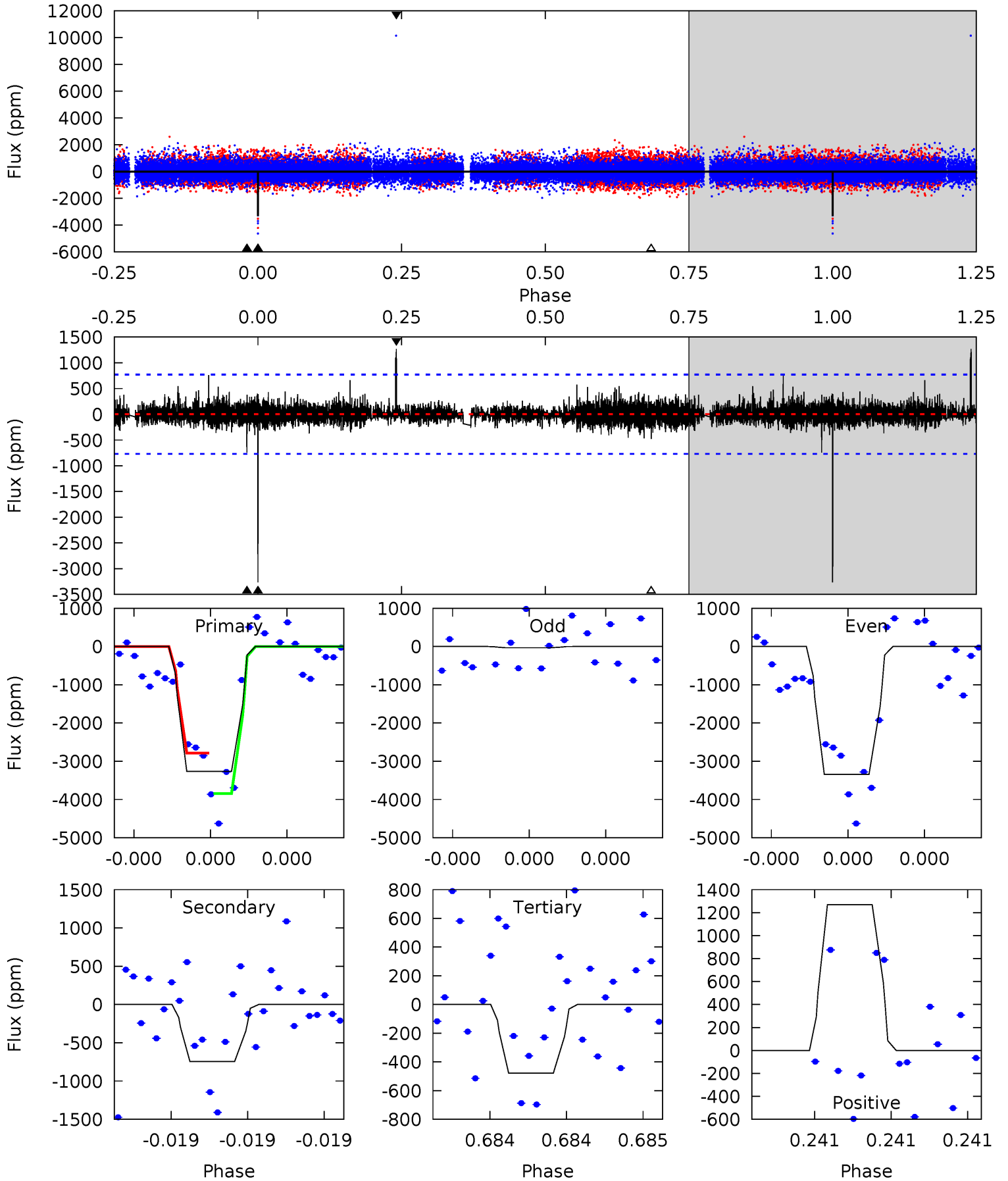
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.98	7.30	5.46	43.3	5.69	3.66	1.58	-1.48	-39.3	1.84	-36.0	0.95	0.85	0.86	0.28



Alt Model-Shift Uniqueness Test

005200185-01, P = 434.199528 Days, E = 389.354733 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.0	5.46	3.51	9.33	5.65	3.60	0.78	20.5	14.7	1.95	-3.87	13.5	0.72	0.28	3.84



Stellar Parameters For KIC 005200185

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4521^{+159}_{-159}	$4.566^{+0.056}_{-0.020}$	$0.280^{+0.150}_{-0.300}$	$0.740^{+0.031}_{-0.066}$	$0.734^{+0.048}_{-0.052}$	$2.554^{+0.651}_{-0.237}$
	+4%/-4%	+1%/-0%	+54%/-107%	+4%/-9%	+7%/-7%	+26%/-9%
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 005200185-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1318 ± 181	$8.56^{+8.42}_{-5.96}$	237^{+8}_{-10}	3143^{+1636}_{-530}	10009^{+99617}_{-7420}
Alt.	-744 ± 136	$8.65^{+8.27}_{-5.99}$	237^{+8}_{-10}	2899^{+1285}_{-480}	5640^{+52984}_{-4222}

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

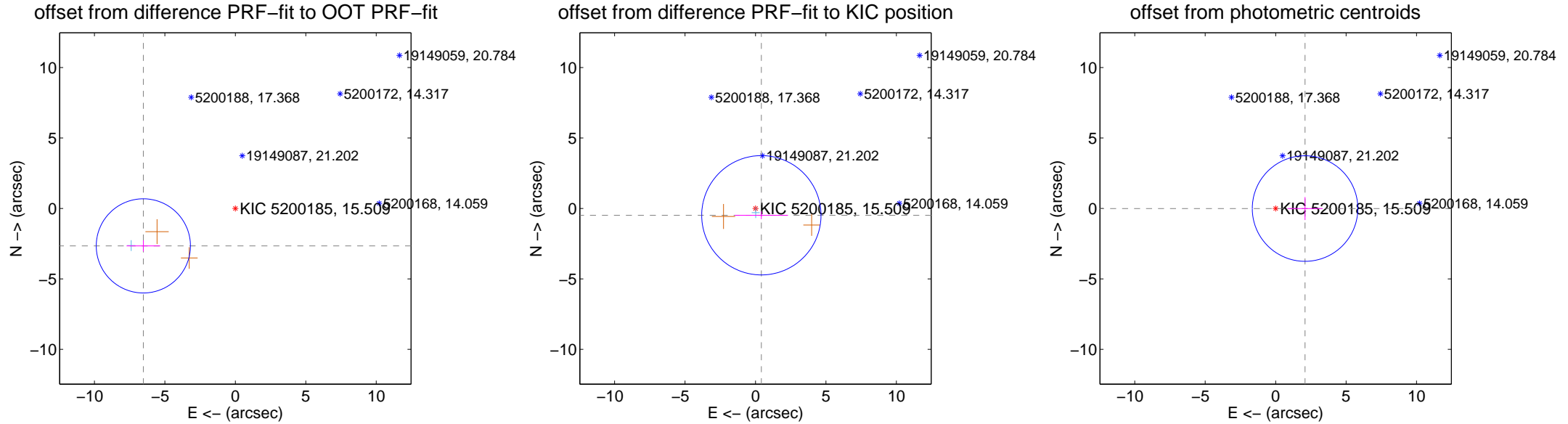
DV Centroid Data

Supplemental centroid analysis for 005200185-01. Kepler magnitude: 15.51. Transit SNR 7.93

There are 1 quarters with good PRF difference image offsets

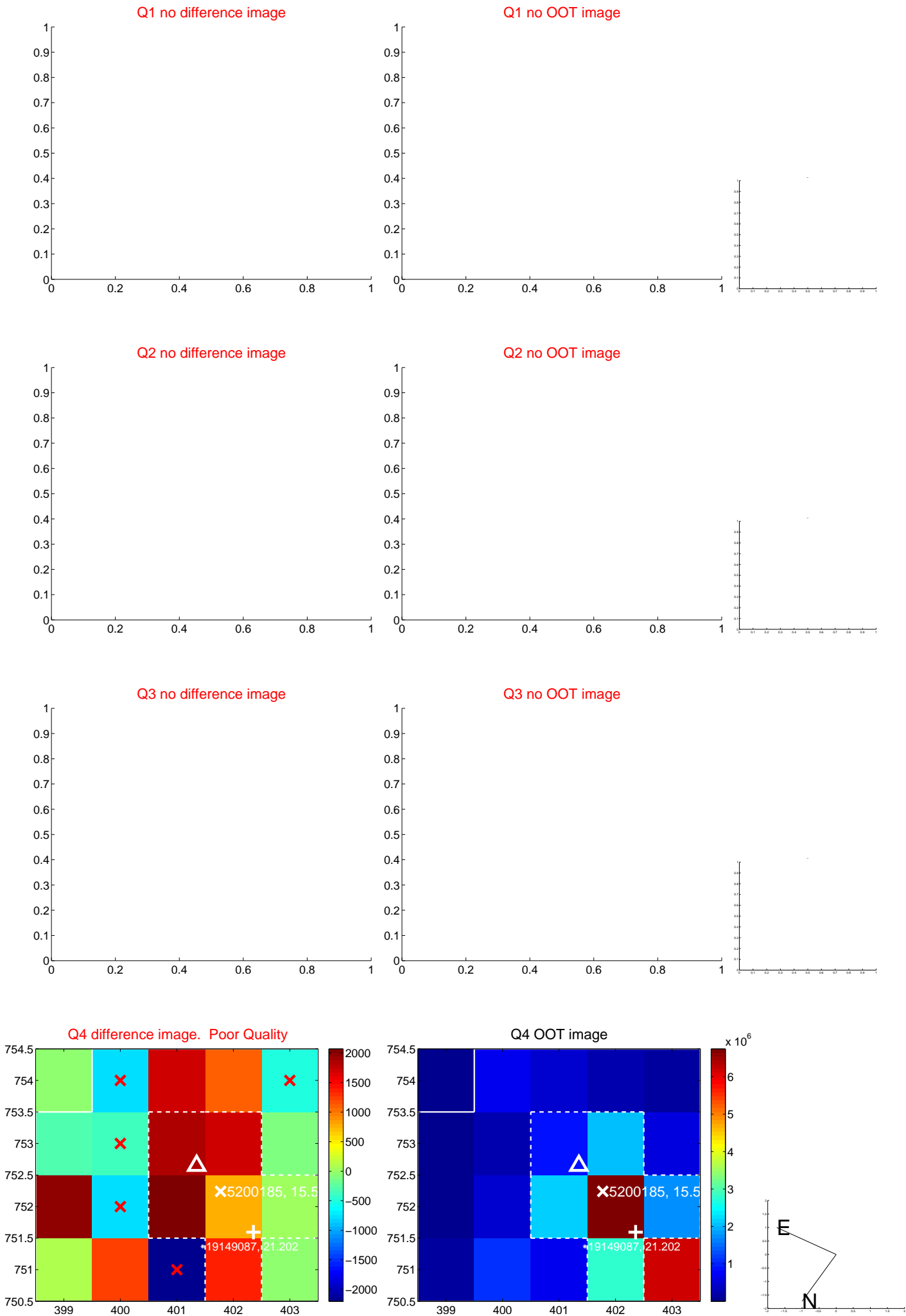
The OOT PRF centroid is offset from the target star catalog position by about 7.76 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.048 ± 1.114	6.33	6.528 ± 1.192	-2.657 ± 0.394
PRF-fit source offset from KIC position	0.639 ± 1.411	0.45	-0.416 ± 1.888	-0.485 ± 0.274
photometric centroid source offset	2.09 ± 1.25	1.67	-2.09 ± 1.25	-0.01 ± 0.81

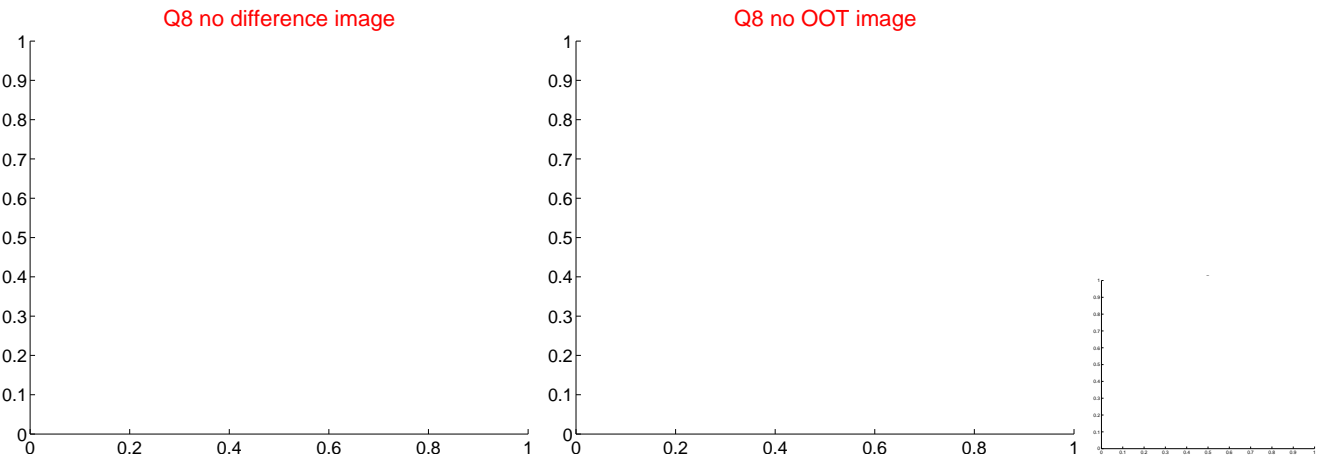


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

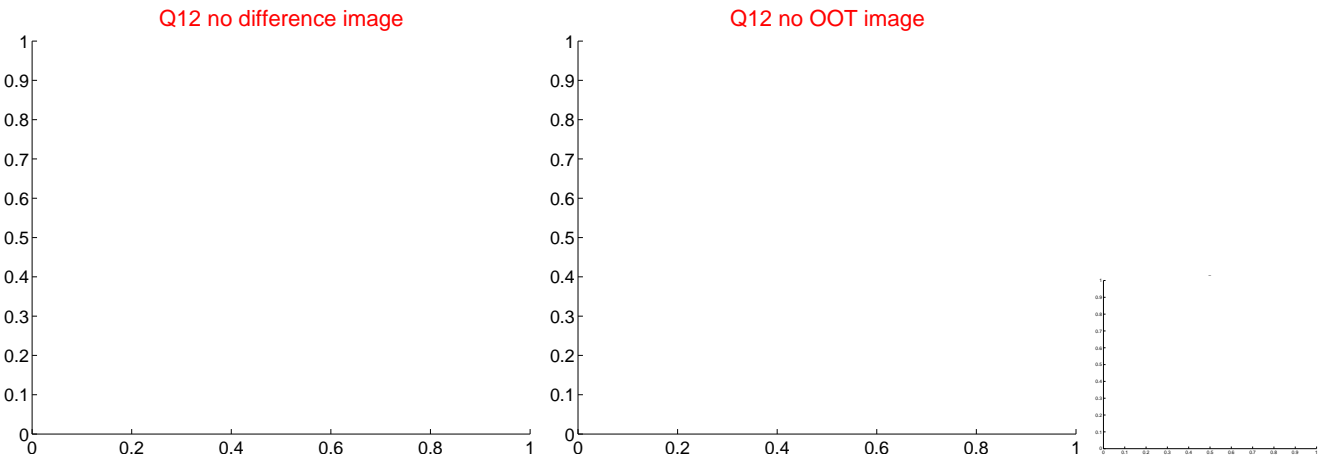
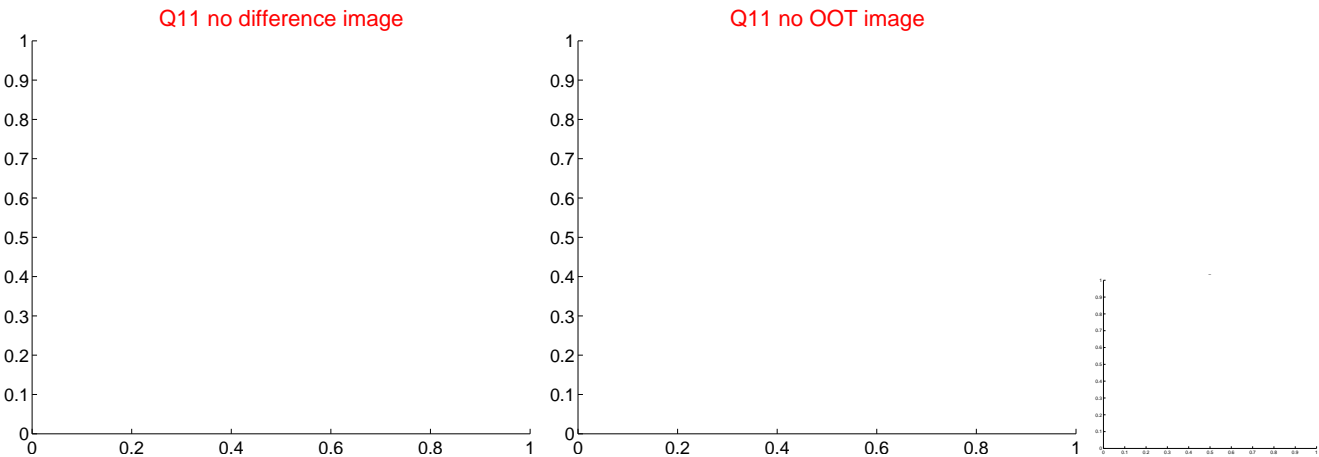
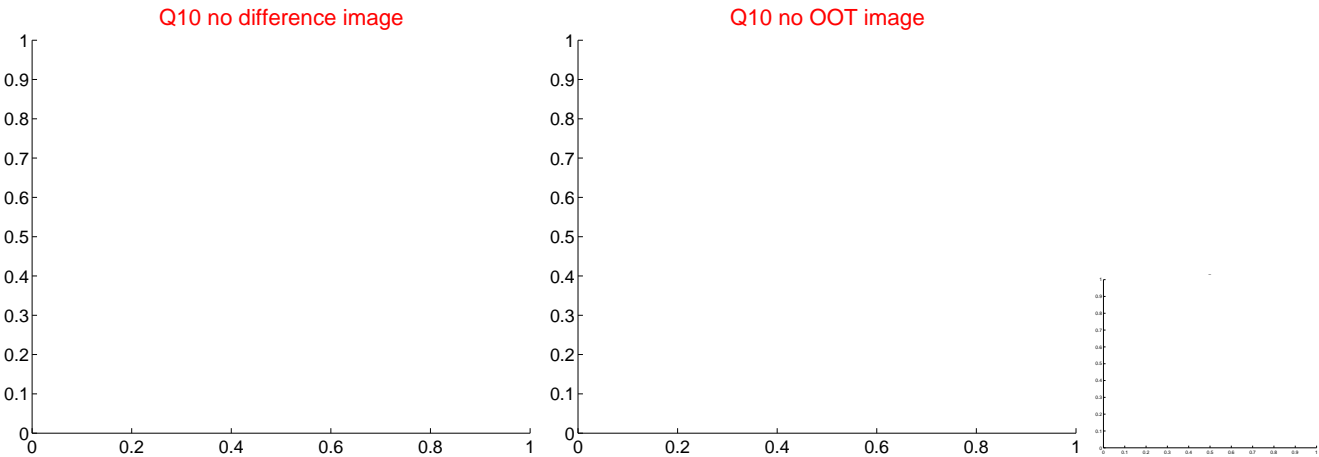
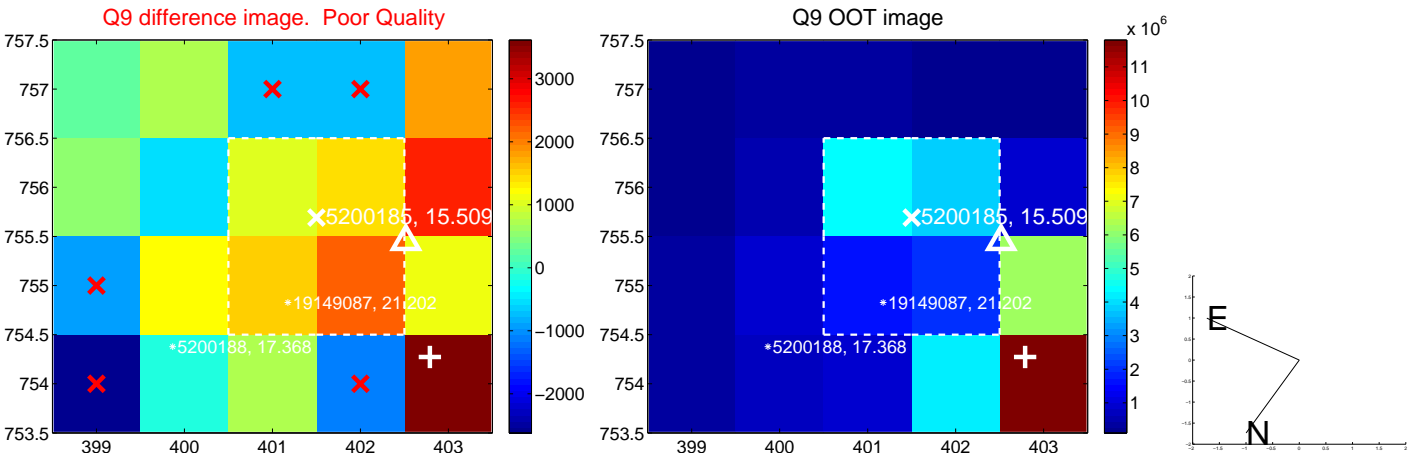
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



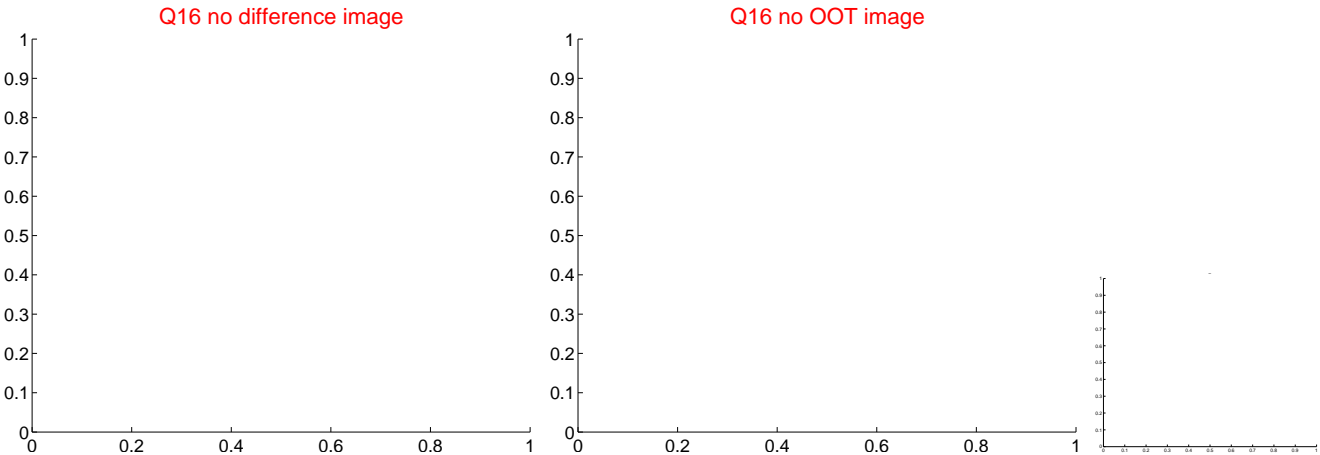
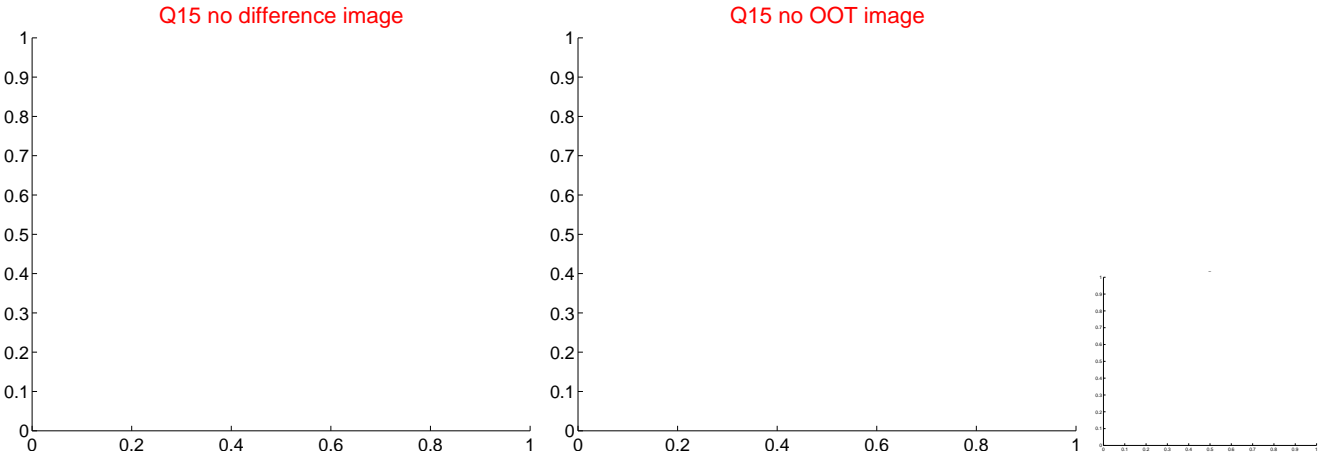
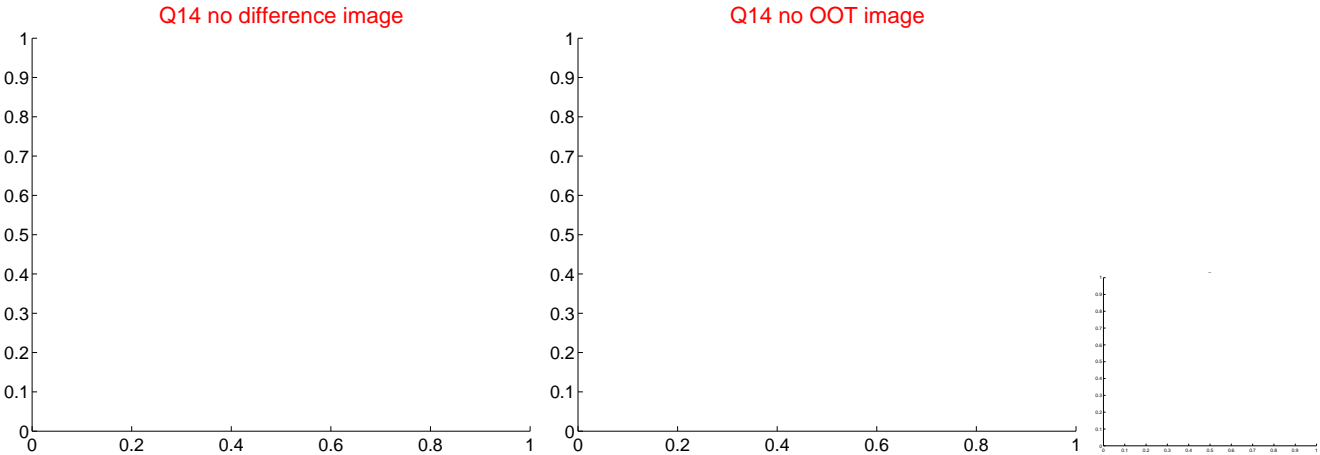
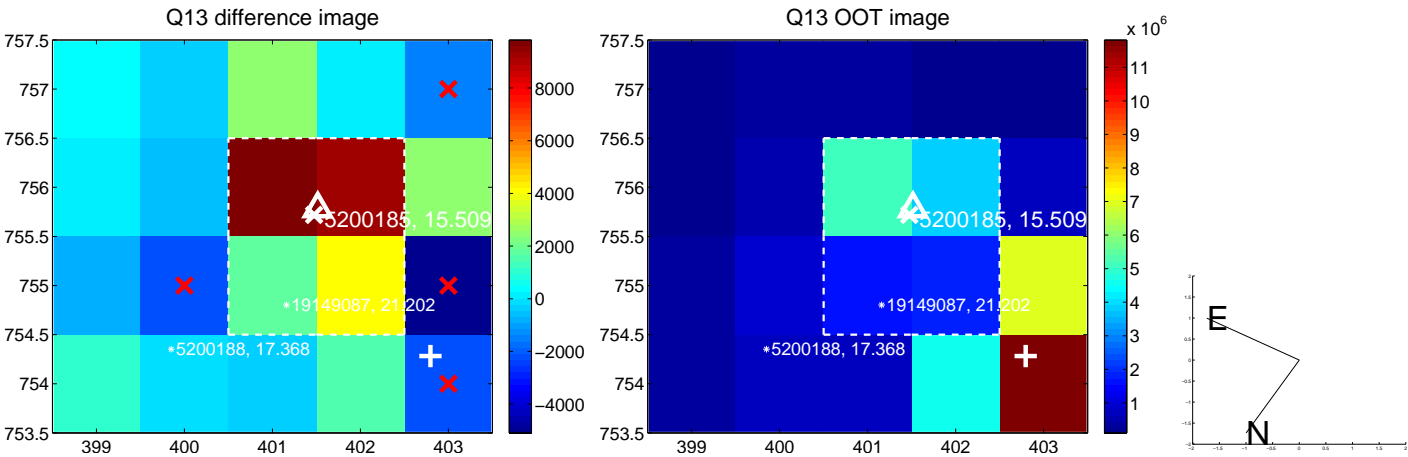
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



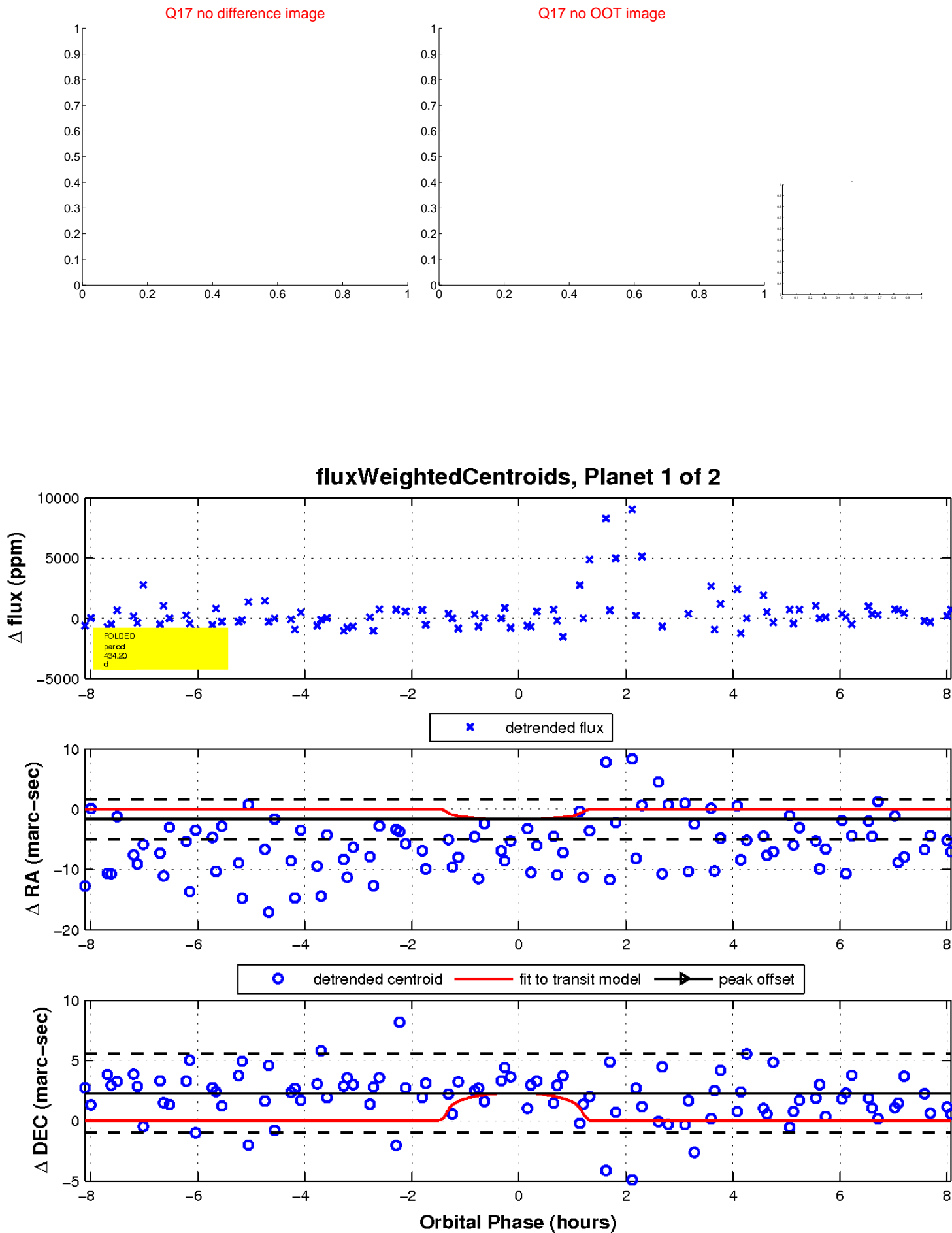
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

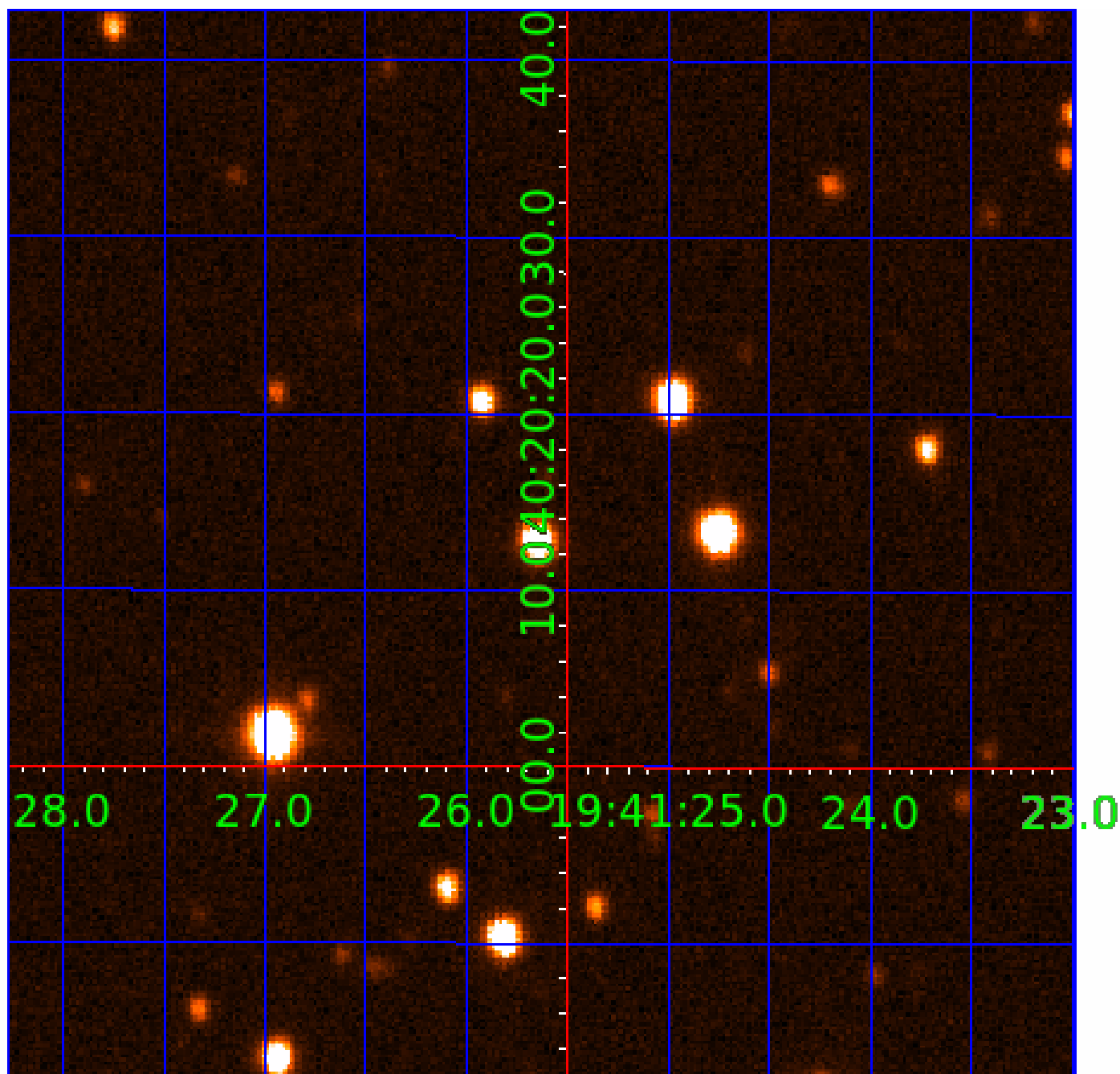


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005200185

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})
005200185-01	OBS	No	434.199212	389.363646	1963.7	2.708	14.5	7.9	0.74	4521	3.28	0.20
005200185-02	OBS	No	315.639678	378.976684	1981.4	3.048	9.8	7.8	0.74	4521	3.51	0.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005200185-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005200185-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

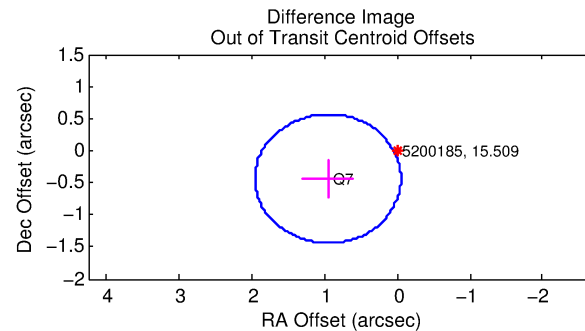
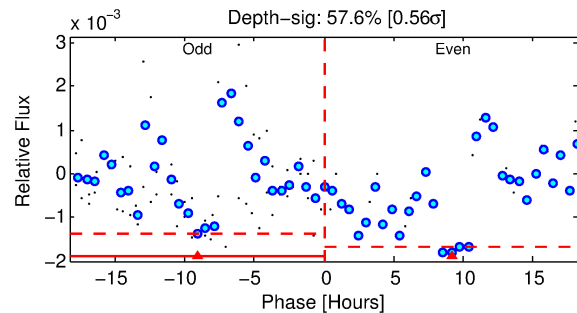
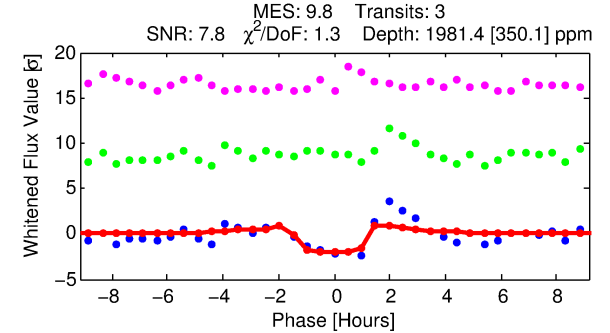
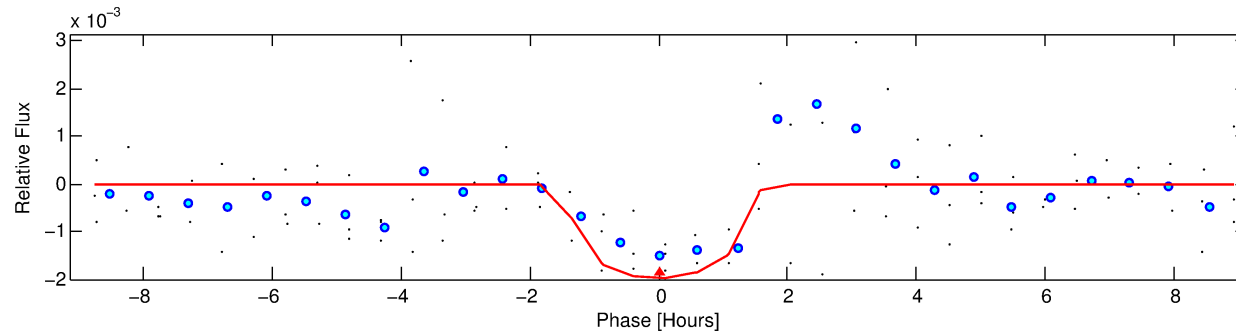
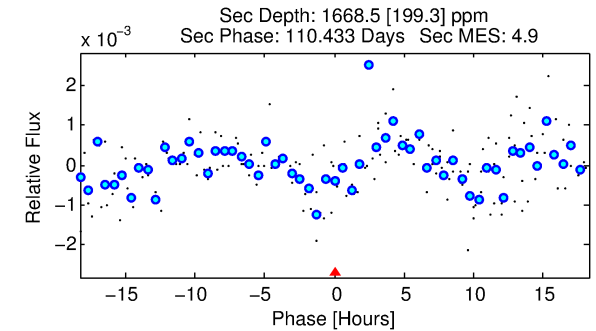
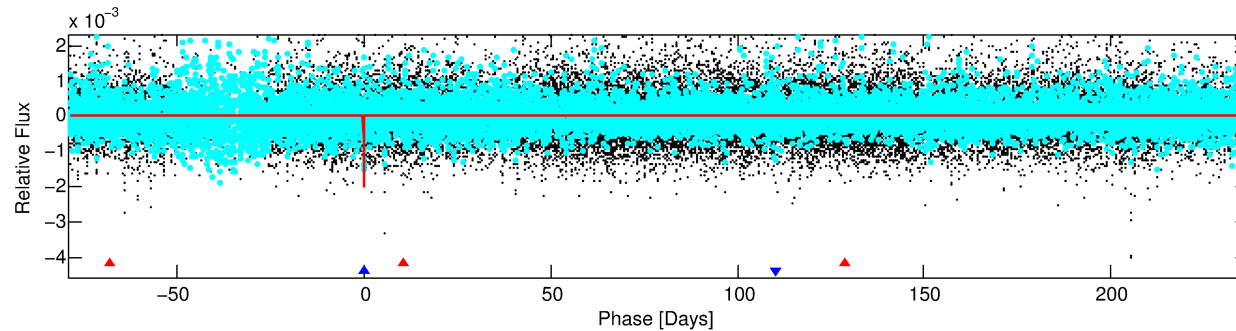
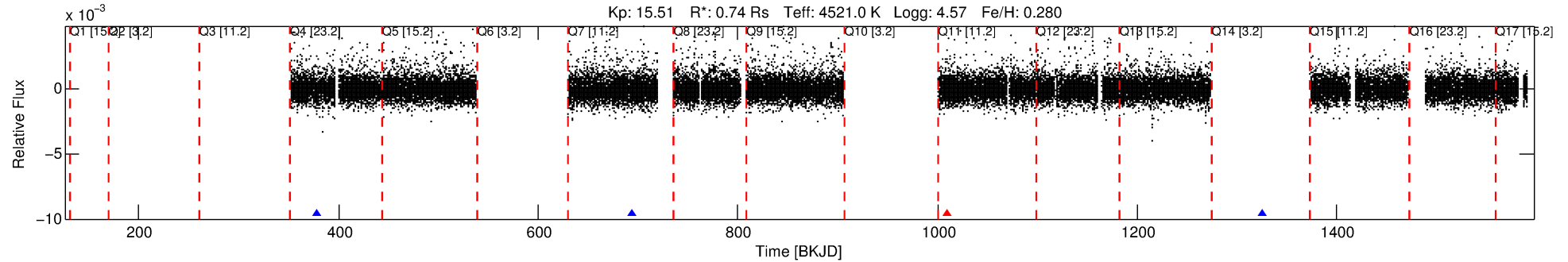
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005200185-02

No Significant Match Found

DV One-Page Summary

KIC: 5200185 Candidate: 2 of 2 Period: 315.640 d



DV Fit Results:

Period = 315.63968 [0.00568] d
Epoch = 378.9767 [0.0077] BKJD
Rp/R* = 0.0434 [0.1024]
a/R* = 619.35 [4313.88]
b = 0.69 [5.51]
Seff = 0.31 [0.05]
Teq = 190 [8] K
Rp = 3.51 [8.28] Re
a = 0.8191 [0.0601] AU
Ag = 50078.51 [236350.30] [0.21σ]
Teffp = 4385 [5175] K [0.81σ]

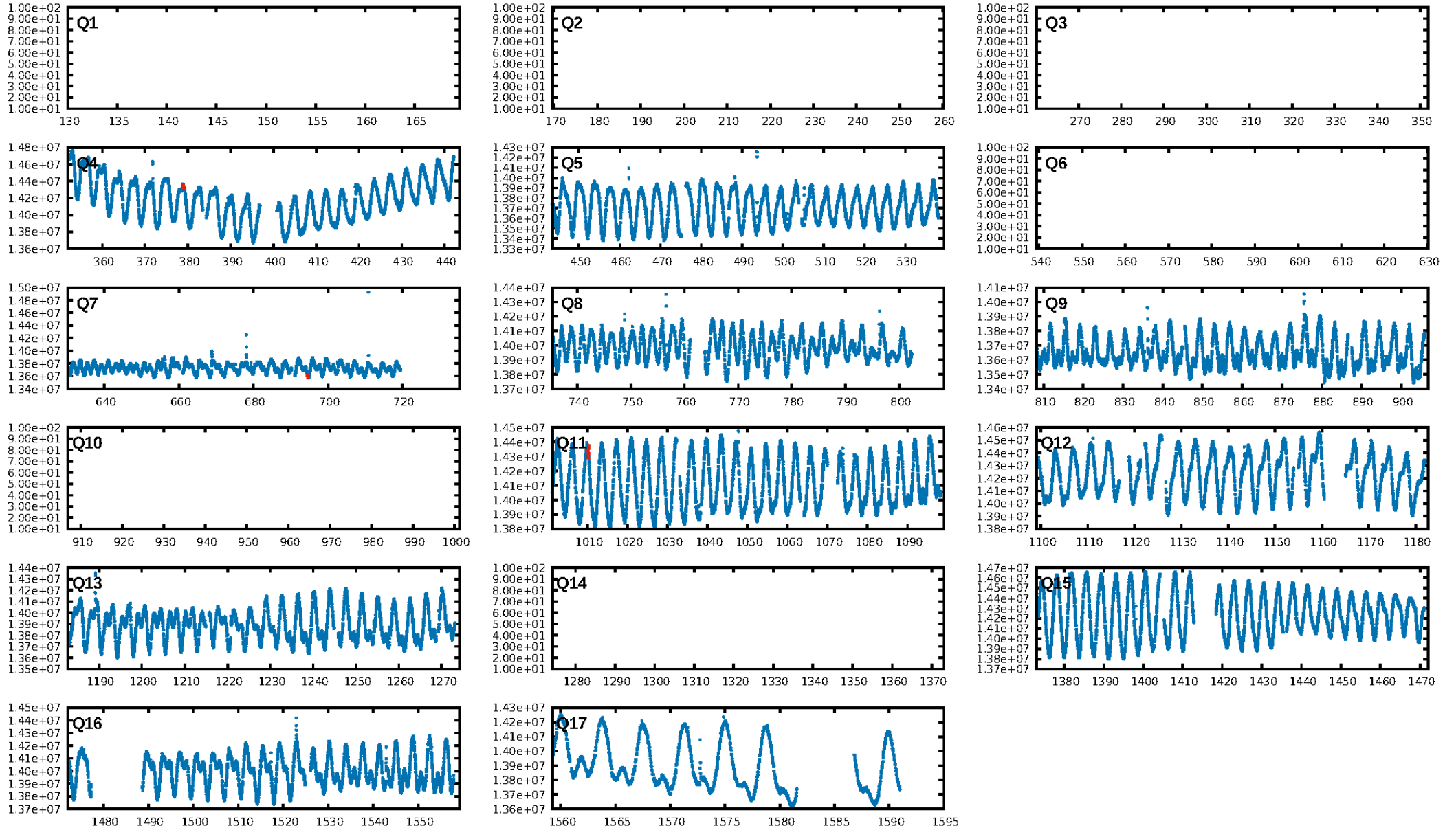
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [697.94σ]
ModelChiSquare2-sig: 3.5%
ModelChiSquareGof-sig: 76.6%
Bootstrap-pfa: 8.41e-11
RollingBand-fgt: 0.67 [2/3]
GhostDiagnostic-chr: -0.528
Centroid-sig: 0.2%
Centroid-so: 1.664 arcsec [1.50σ]
OotOffset-rm: 1.048 arcsec [3.13σ]
KicOffset-rm: 0.521 arcsec [1.71σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

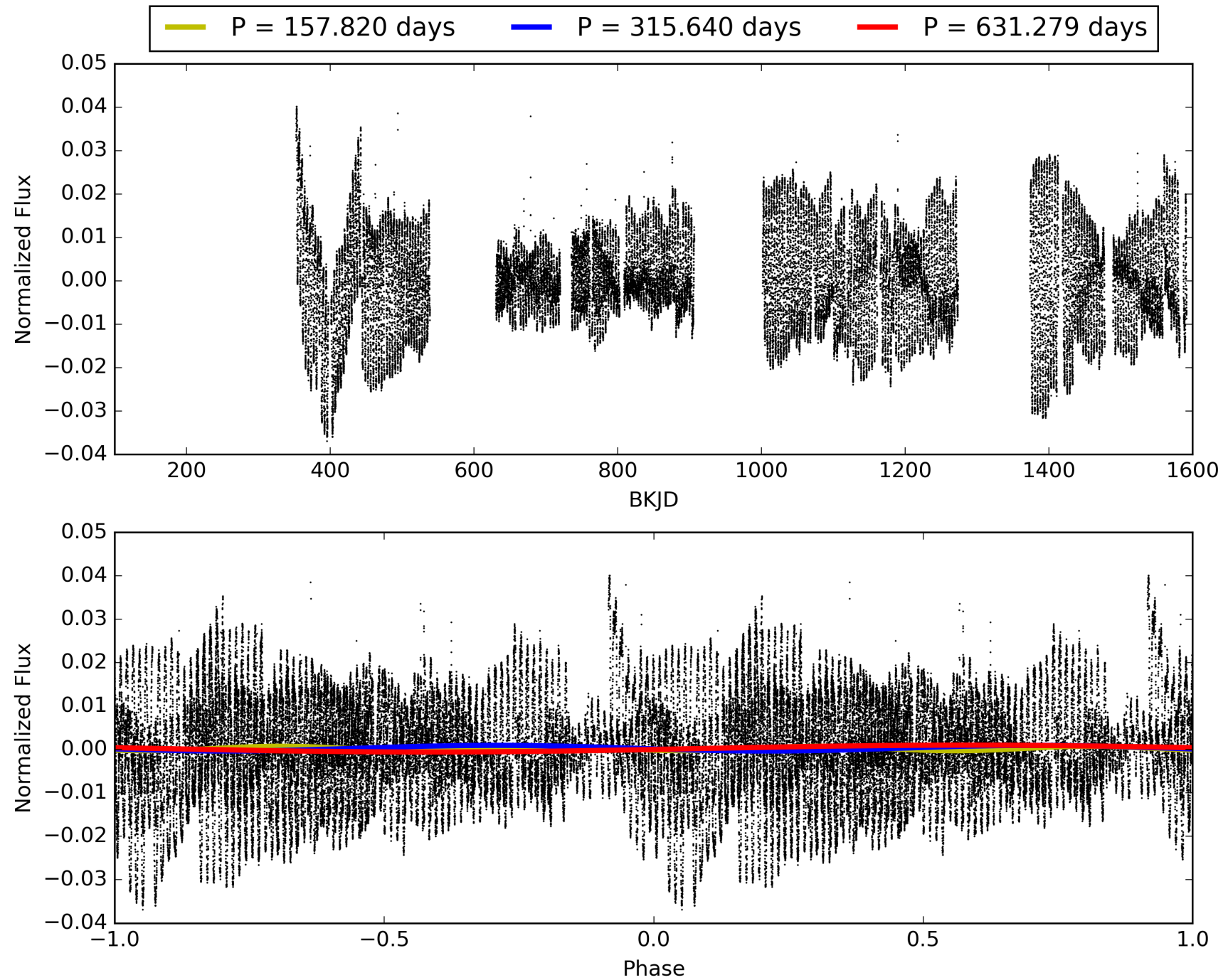
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 01:38:11 Z

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

TCE 005200185-02, PDC Light Curves

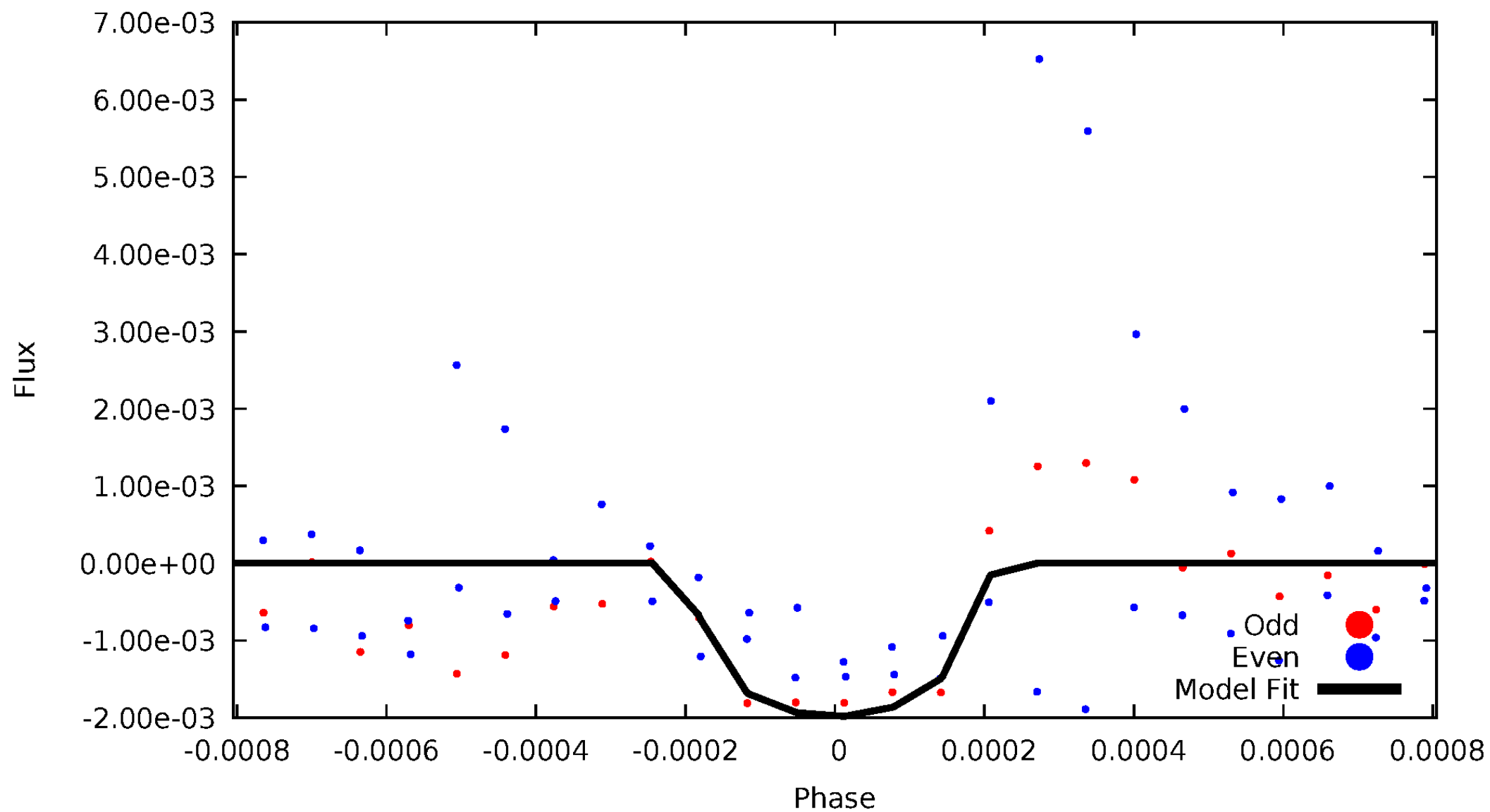


TCE 005200185-02



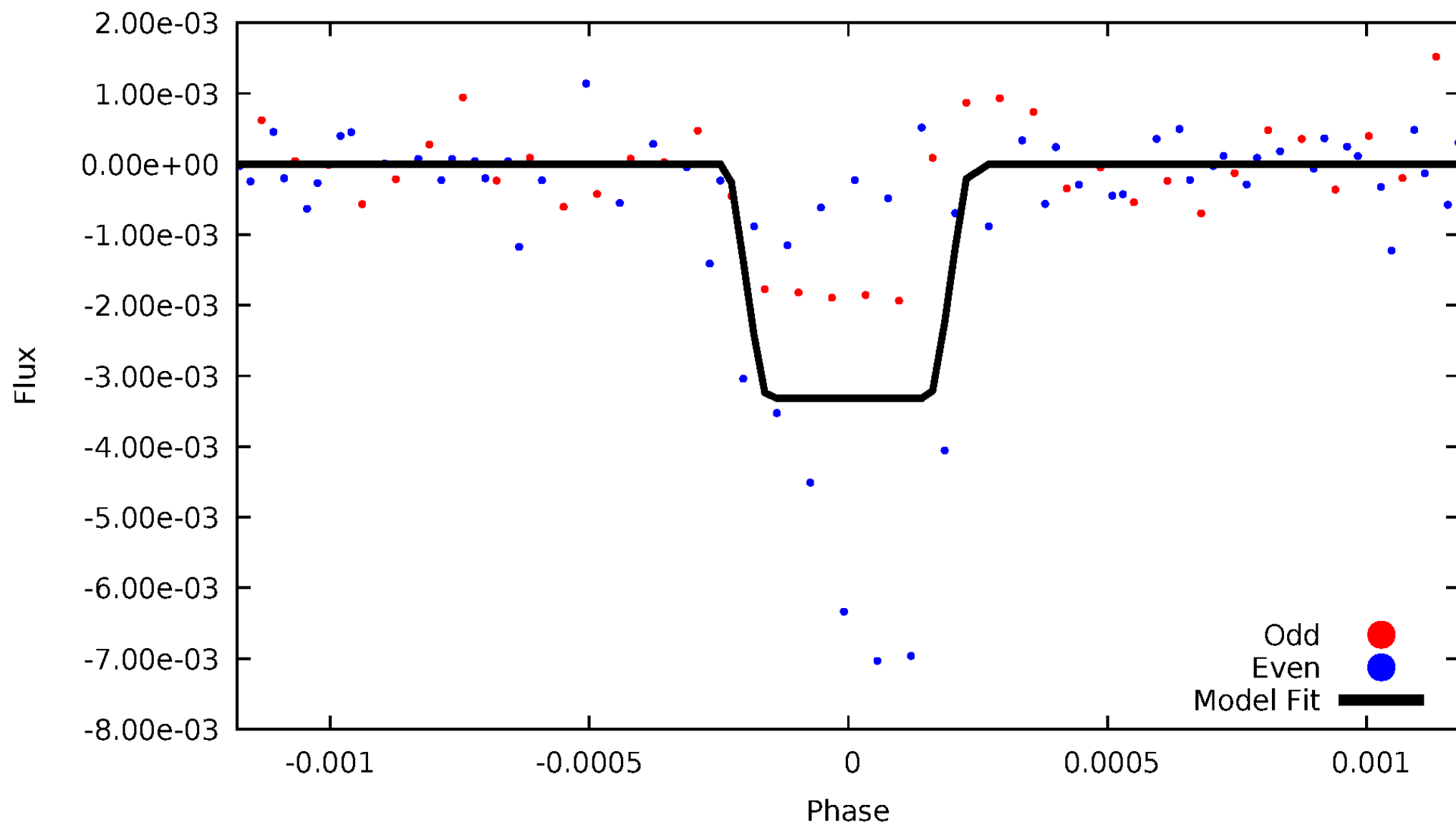
DV Odd/Even

TCE 005200185-02



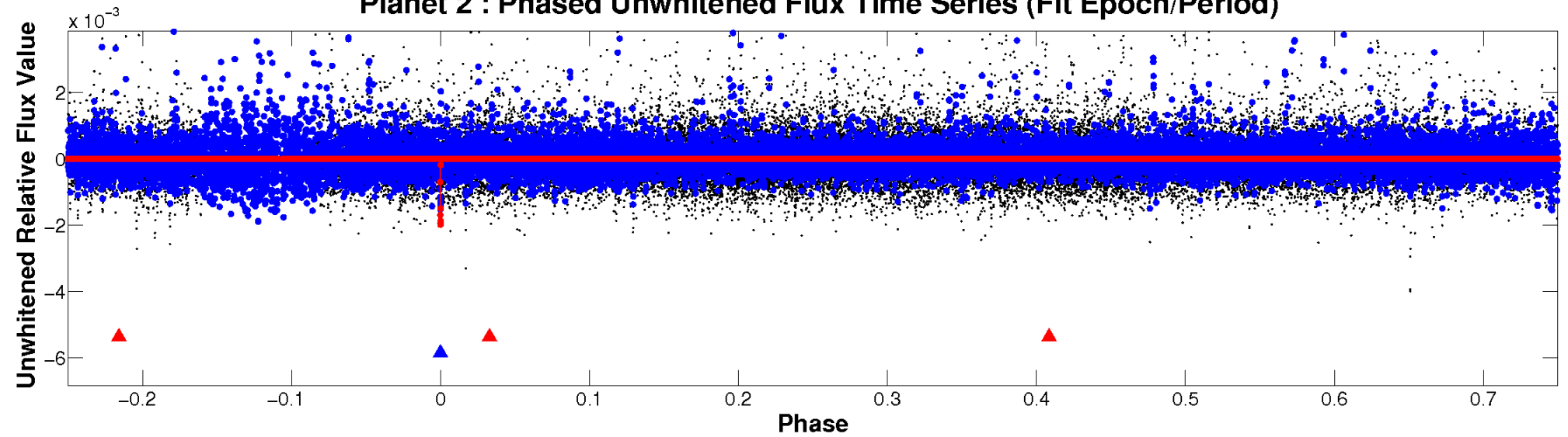
ALT Odd/Even

TCE 005200185-02

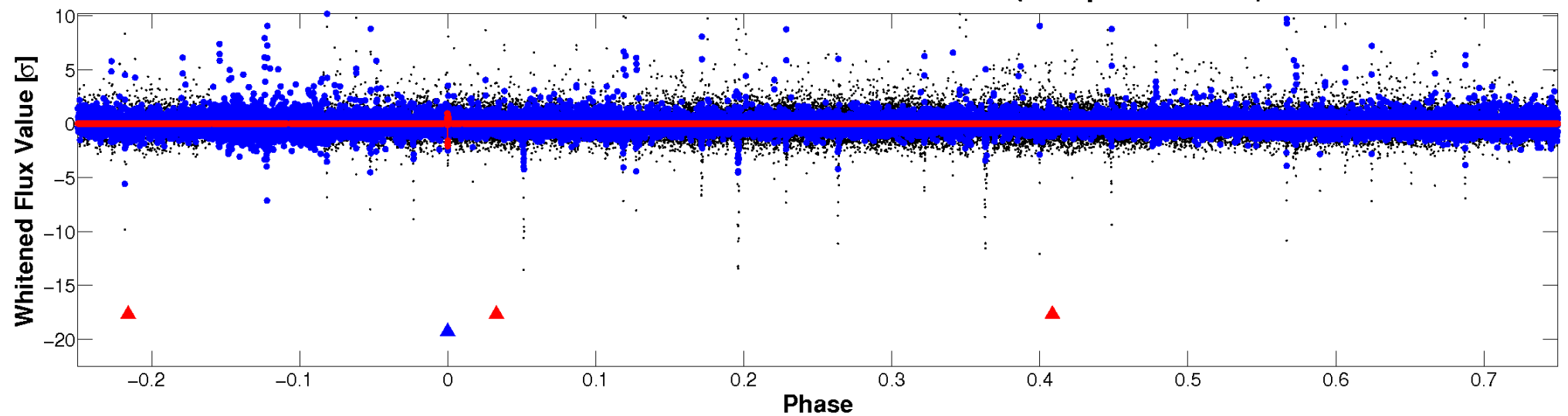


Non-Whitened Vs. Whitened Light Curve

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



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



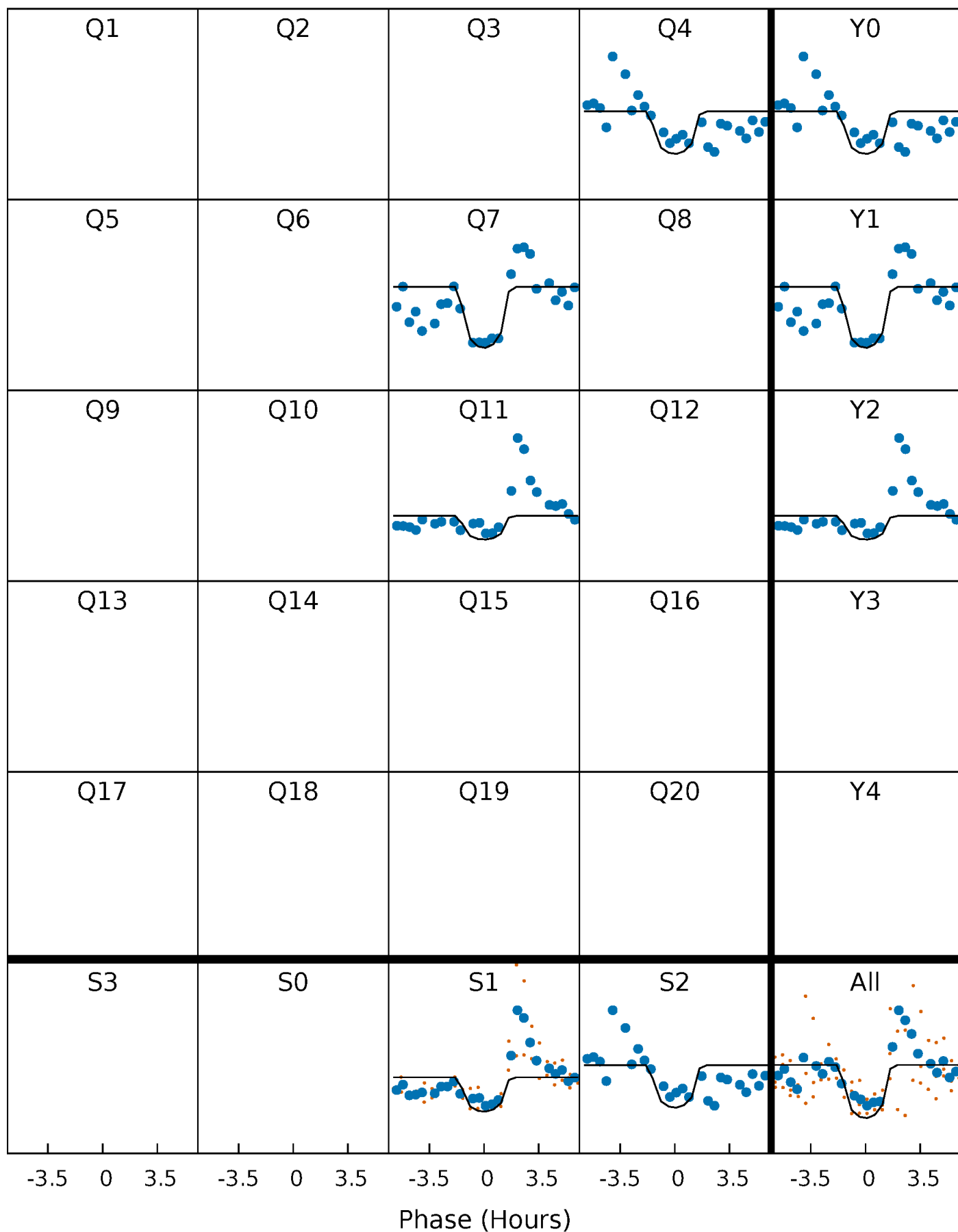
PDC Quarter-Phased Transit Curves

TCE 005200185-02 $P=315.639678$ Days $T_0=378.976684$ (BKJD)



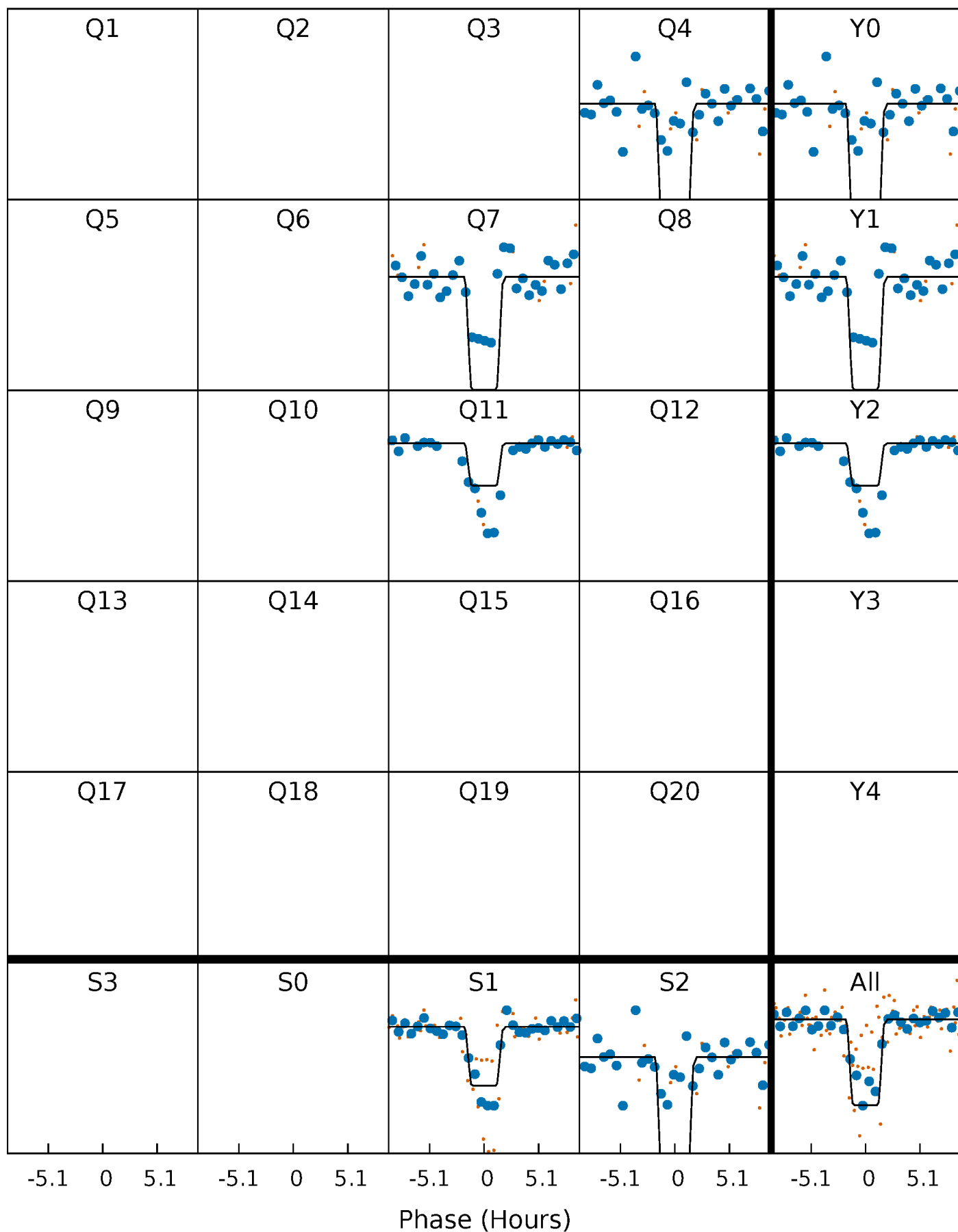
DV Quarter-Phased Transit Curves

TCE 005200185-02 $P=315.639678$ Days $T_0=378.976684$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

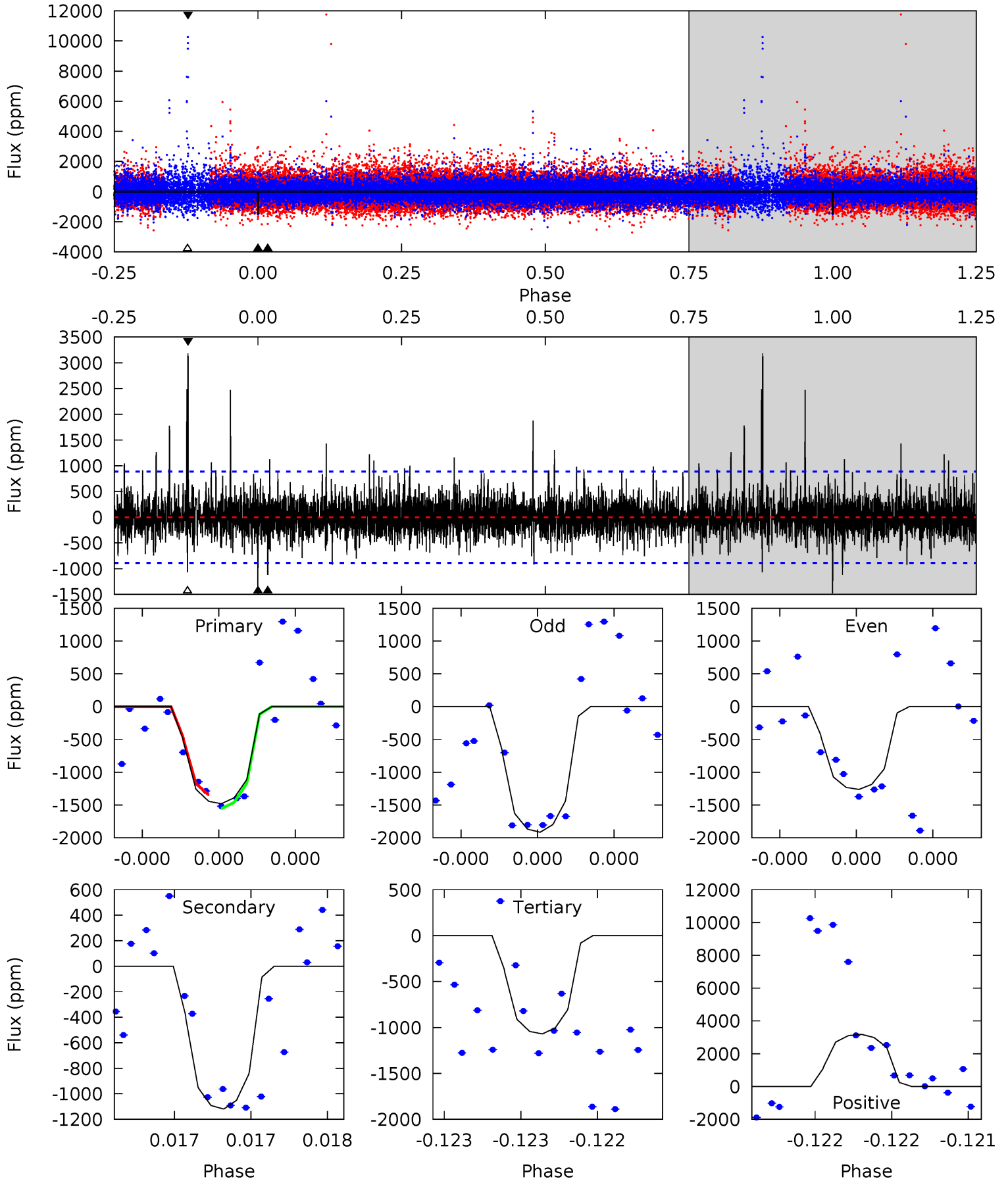
TCE 005200185-02 P=315.633175 Days $T_0=378.997037$ (BKJD)



DV Model-Shift Uniqueness Test

005200185-02, P = 315.639678 Days, E = 63.337006 Days

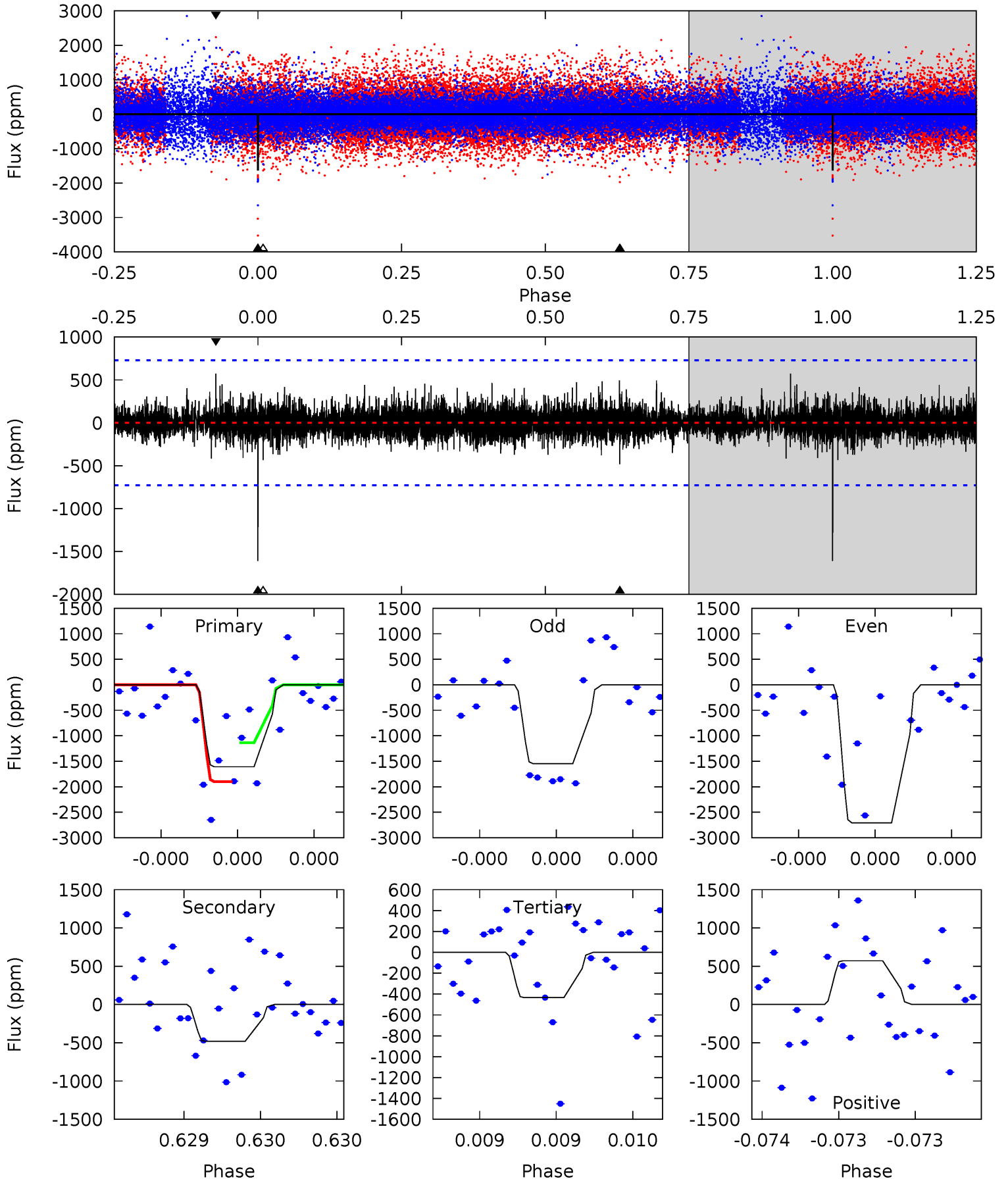
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.36	7.07	6.76	20.1	5.62	3.55	1.63	2.59	-10.8	0.31	-13.0	1.66	1.08	0.68	0.65



Alt Model-Shift Uniqueness Test

005200185-02, $P = 315.633175$ Days, $E = 63.363862$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.3	3.69	3.33	4.39	5.59	3.51	0.80	9.01	7.96	0.36	-0.70	4.81	1.68	0.26	0



Stellar Parameters For KIC 005200185

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4521^{+159}_{-159}	$4.566^{+0.056}_{-0.020}$	$0.280^{+0.150}_{-0.300}$	$0.740^{+0.031}_{-0.066}$	$0.734^{+0.048}_{-0.052}$	$2.554^{+0.651}_{-0.237}$
	+4%/-4%	+1%/-0%	+54%/-107%	+4%/-9%	+7%/-7%	+26%/-9%
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 005200185-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1119 ± 158	$7.59^{+7.11}_{-5.18}$	263^{+10}_{-11}	3175^{+1547}_{-529}	7475^{+61921}_{-5590}
Alt.	-481 ± 130	$7.61^{+6.65}_{-5.45}$	263^{+10}_{-10}	2824^{+1365}_{-443}	2962^{+33754}_{-2140}

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 $A_{obs} \gg 1.0$

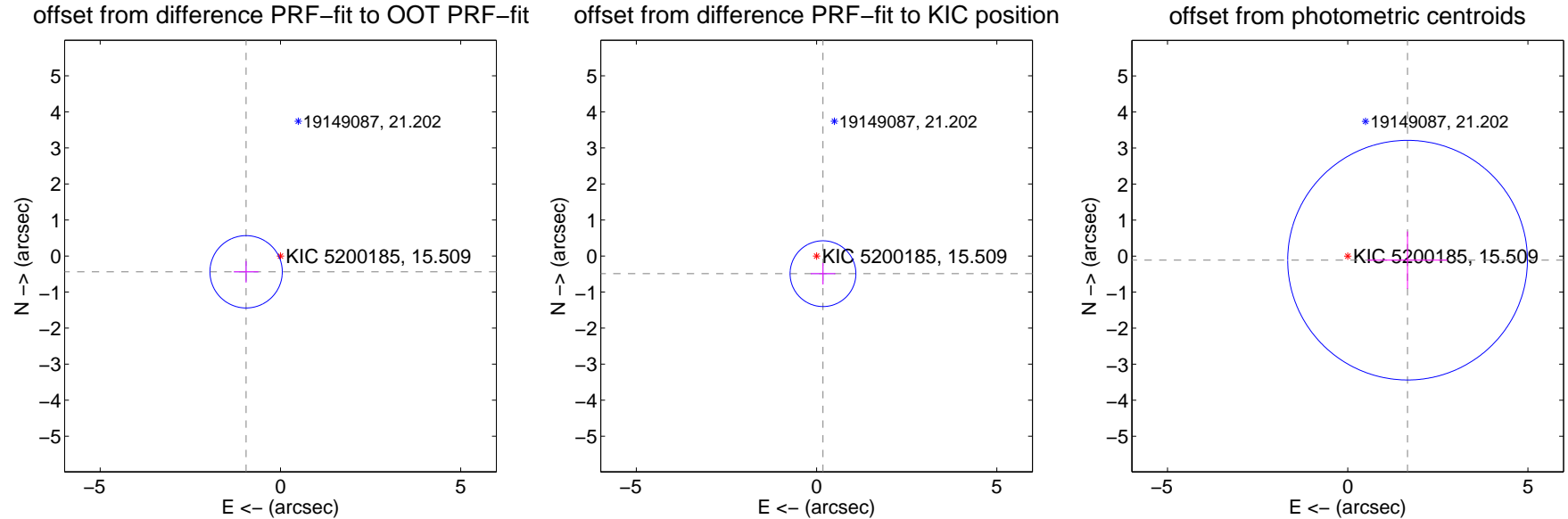
DV Centroid Data

Supplemental centroid analysis for 005200185-02. Kepler magnitude: 15.51. Transit SNR 7.76

There are 1 quarters with good PRF difference image offsets

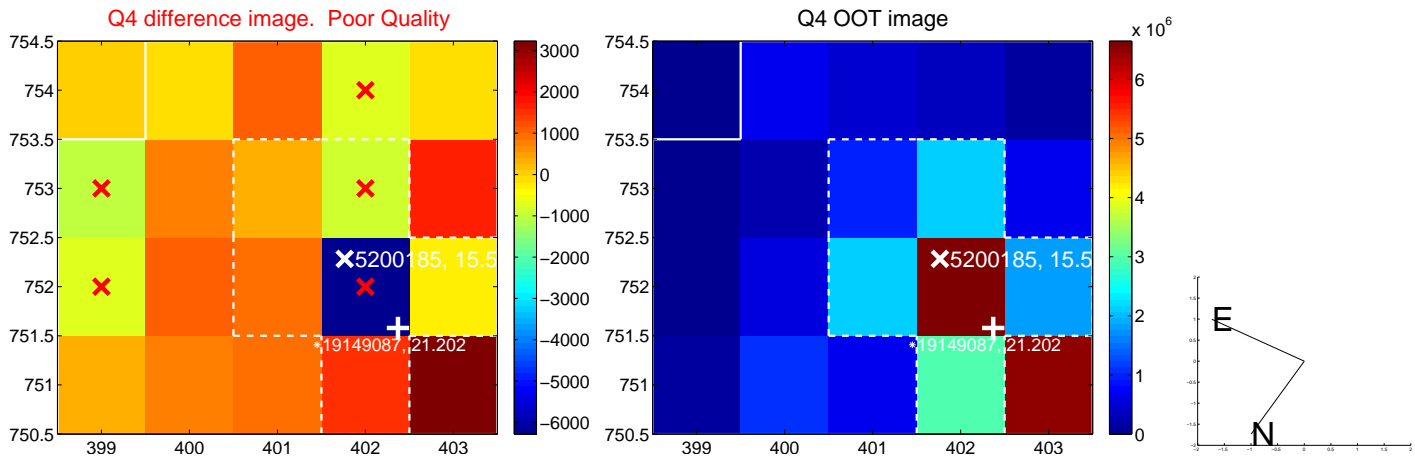
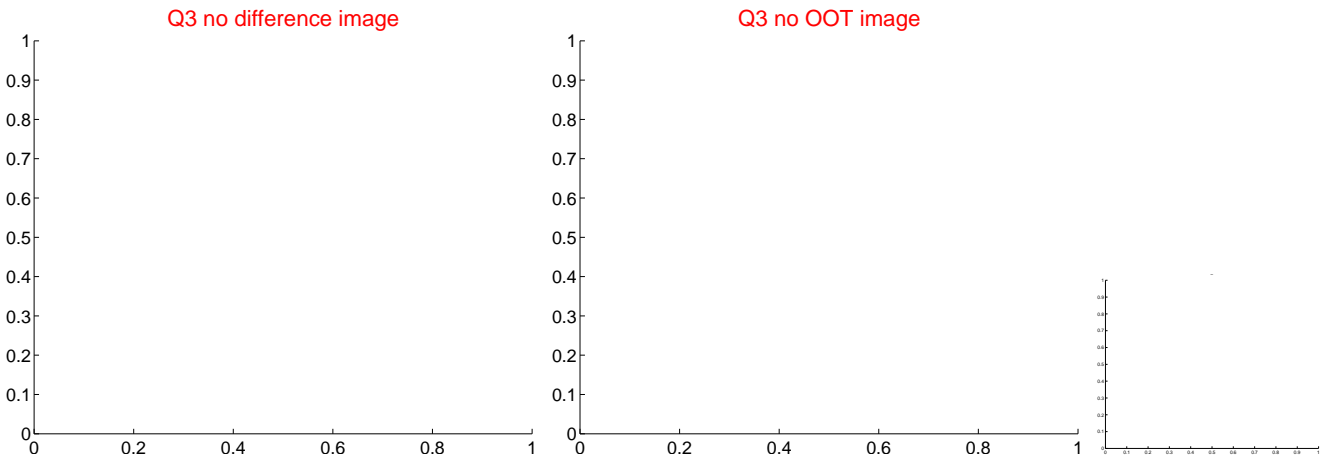
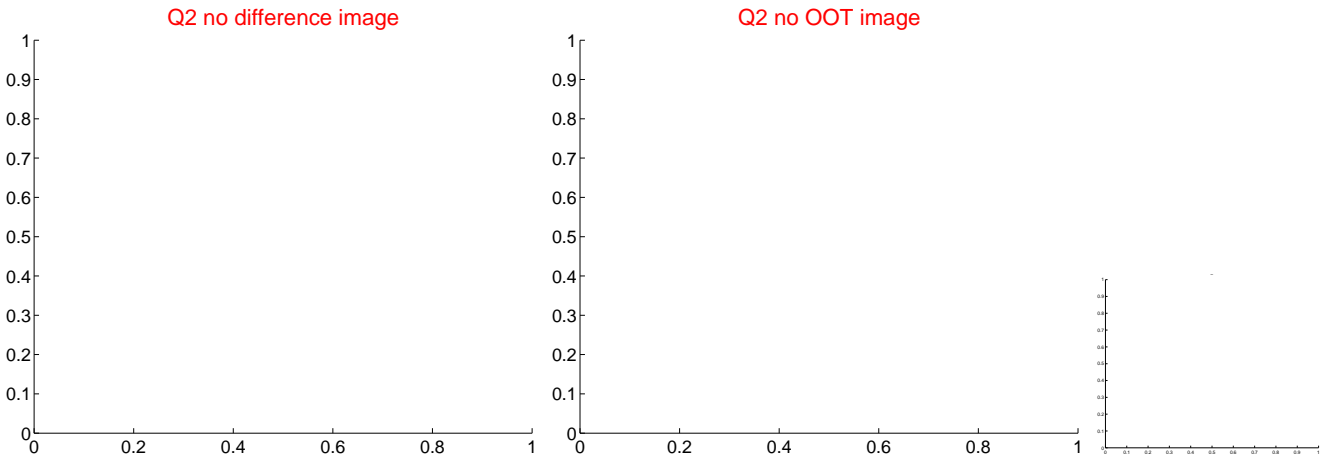
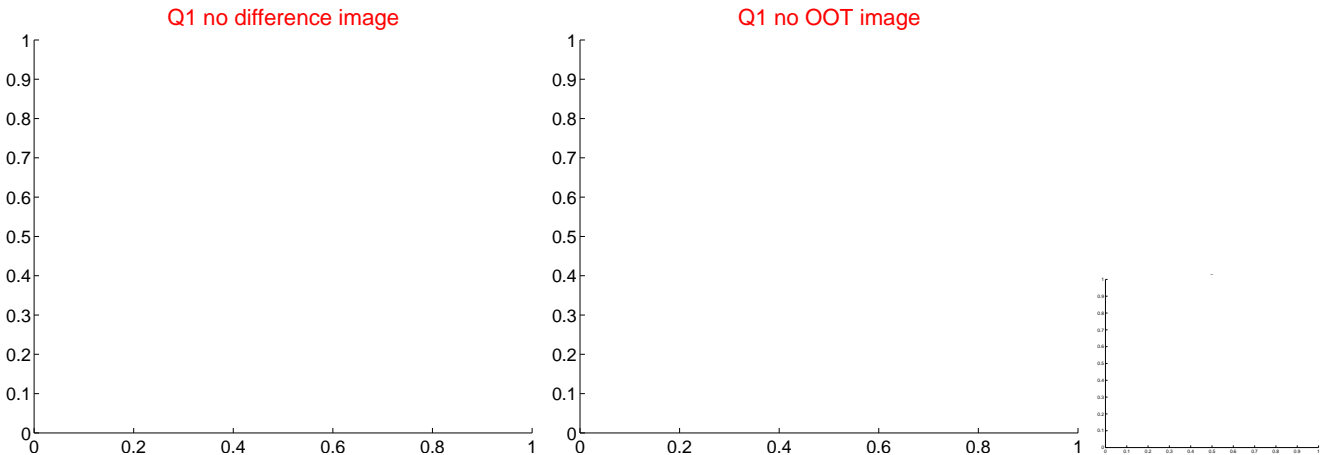
The direct PRF centroid is offset from the target star catalog position by about 1.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.048 ± 0.335	3.13	0.952 ± 0.342	-0.438 ± 0.299
PRF-fit source offset from KIC position	0.521 ± 0.304	1.71	-0.178 ± 0.342	-0.490 ± 0.299
photometric centroid source offset	1.66 ± 1.11	1.50	-1.66 ± 1.11	-0.11 ± 0.79

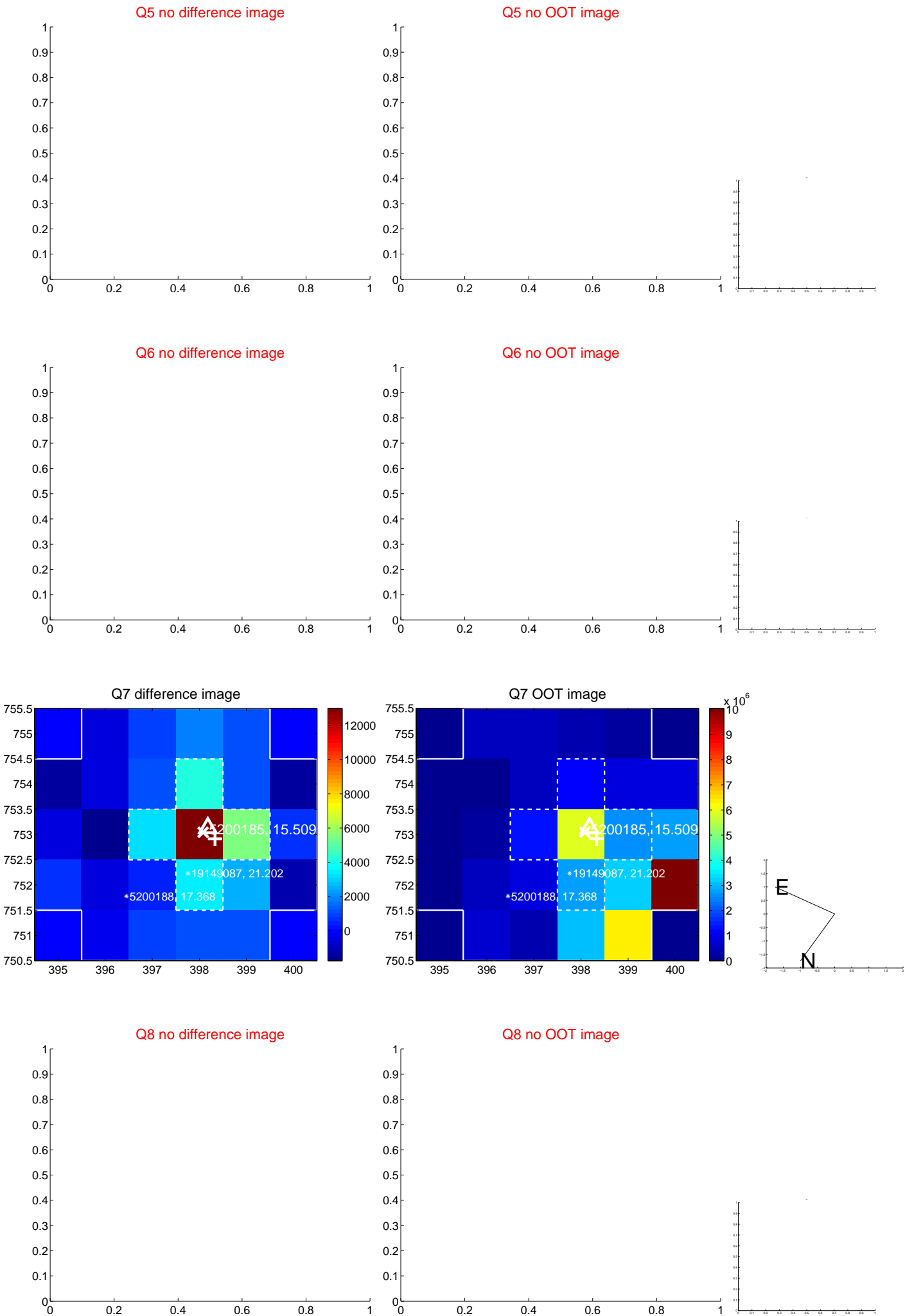


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

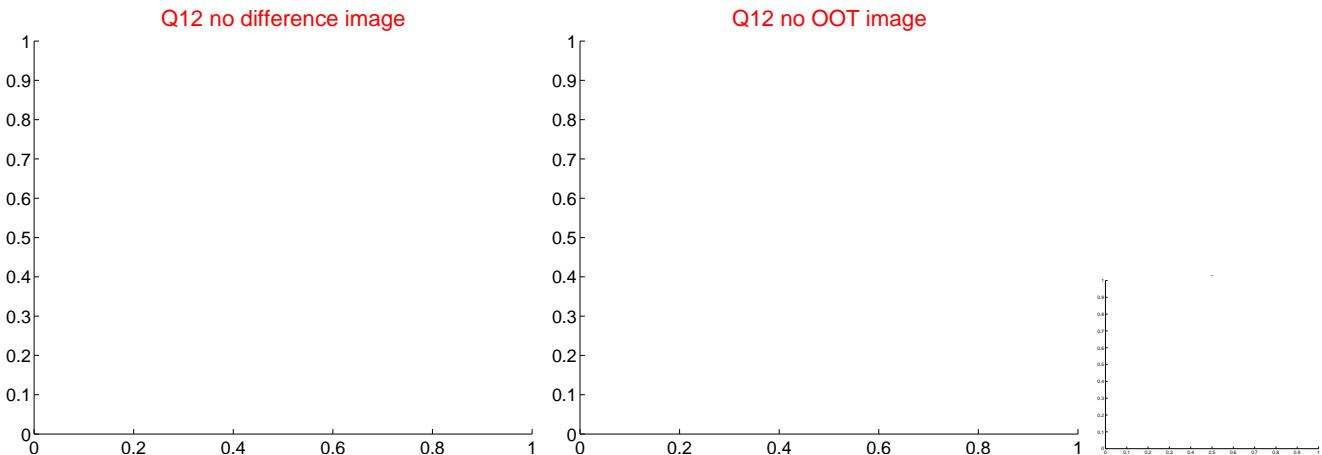
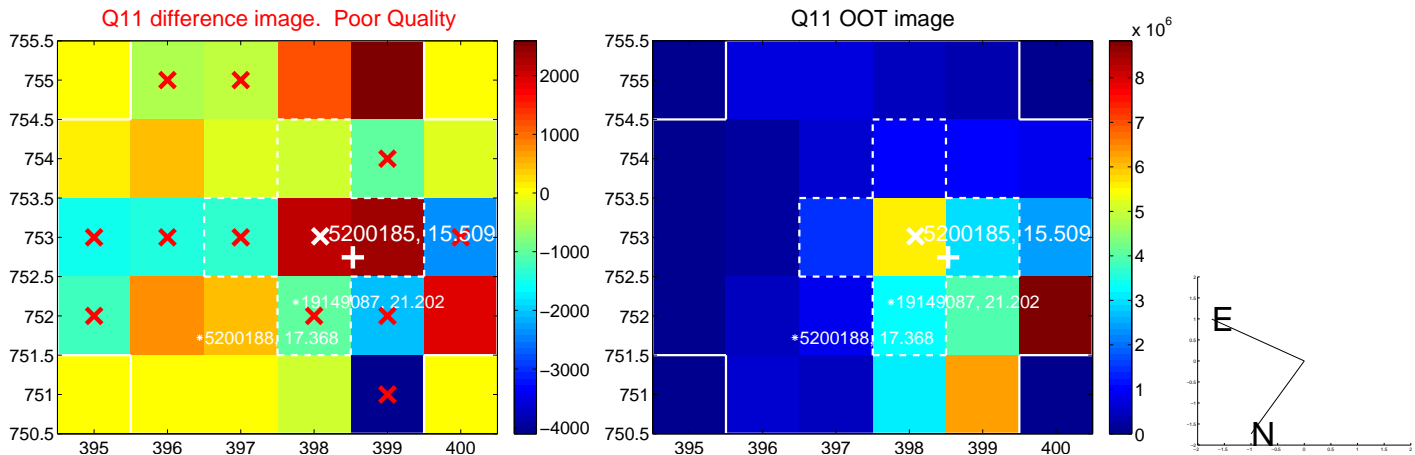
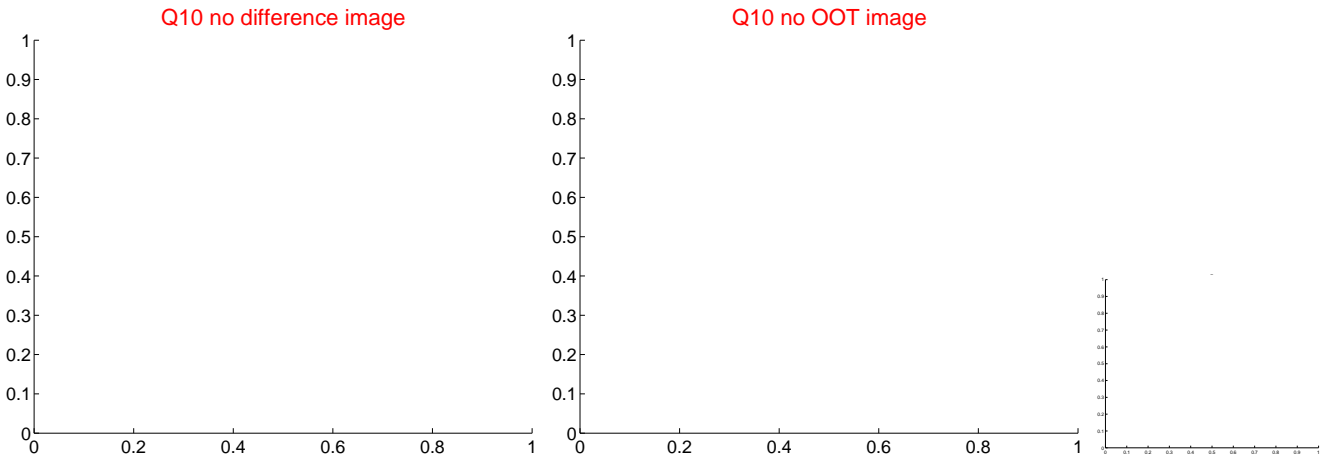
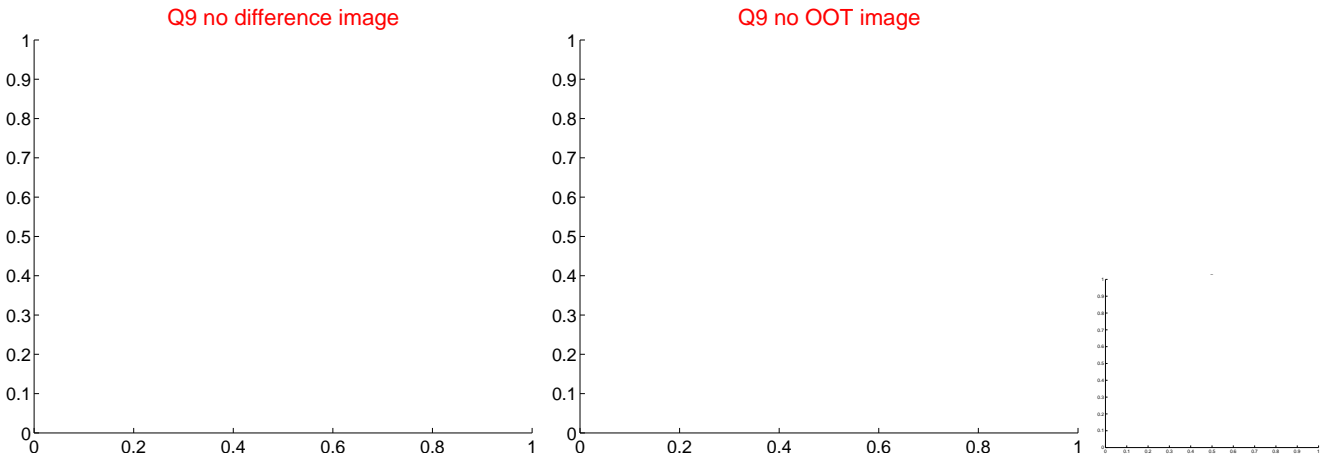
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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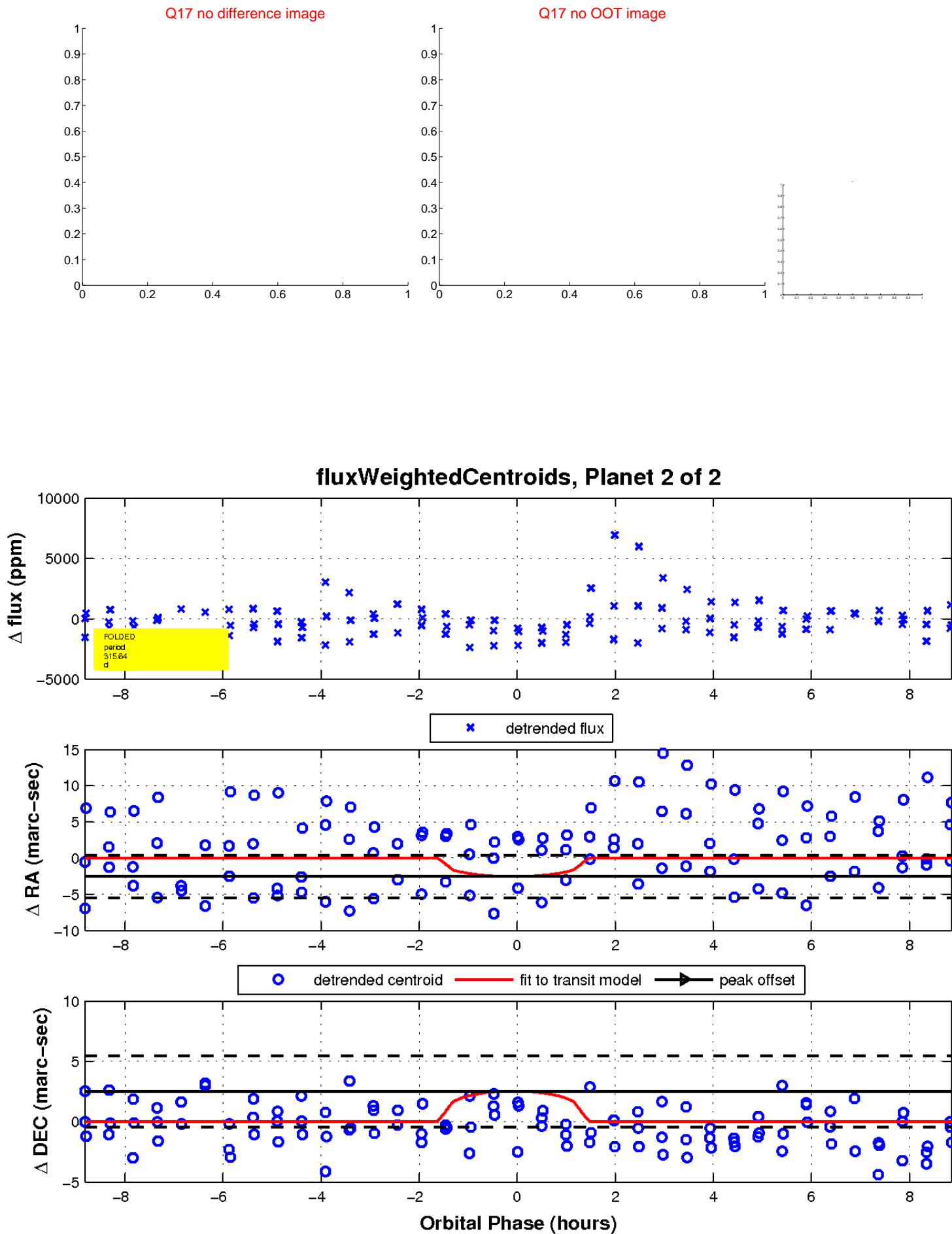
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UKIRT Image

Declination

