

KIC 010857583

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})
010857583-01	OBS	No	568.634152	263.772287	1392.7	5.316	18.0	6.7	0.33	3577	1.27	0.02
010857583-02	OBS	No	588.281610	209.166692	1603.0	7.608	15.0	7.7	0.33	3577	1.33	0.02
010857583-03	OBS	No	379.207725	434.130336	1620.7	7.811	11.9	9.1	0.33	3577	1.40	0.03
010857583-04	OBS	No	584.034494	329.436061	1517.4	8.387	13.6	7.1	0.33	3577	1.29	0.02
010857583-05	OBS	No	403.784419	492.361887	1489.6	9.675	12.5	7.0	0.33	3577	1.28	0.03
010857583-06	OBS	No	354.599656	304.376433	2021.9	18.157	10.4	10.2	0.33	3577	1.72	0.03
010857583-07	OBS	No	408.868532	137.224673	1139.5	6.601	11.4	6.2	0.33	3577	1.18	0.03
010857583-08	OBS	No	476.626409	468.712412	884.9	7.500	11.6	-1.0	0.33	3577	0.98	0.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010857583-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010857583-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010857583-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010857583-04	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—INCONSISTENT_TRANS
010857583-05	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
010857583-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
010857583-07	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—INCONSISTENT_TRANS
010857583-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—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.

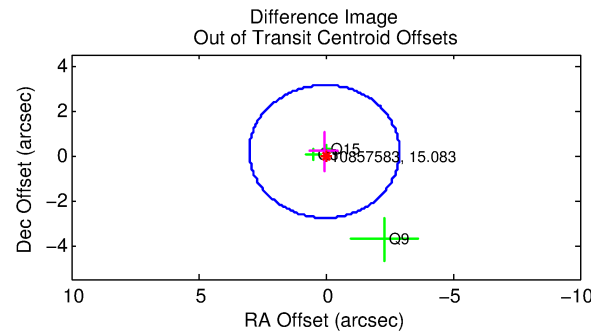
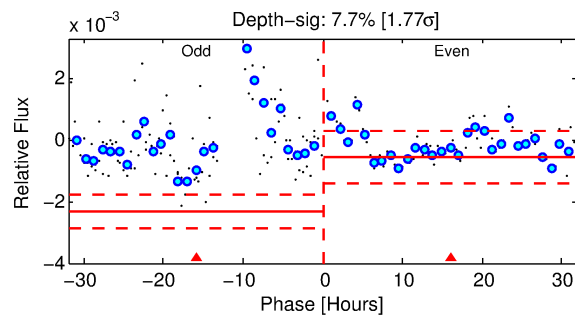
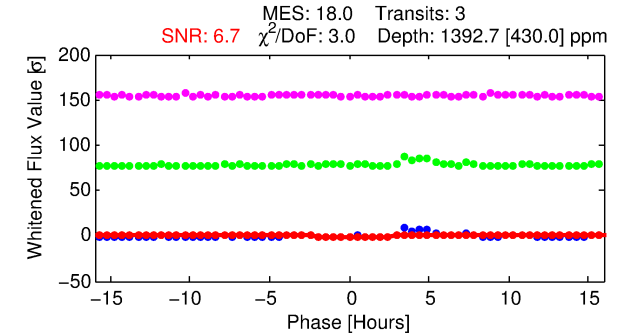
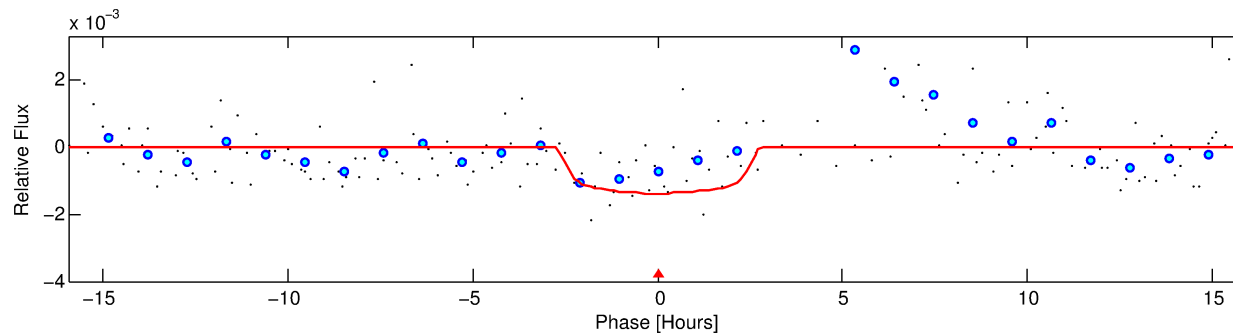
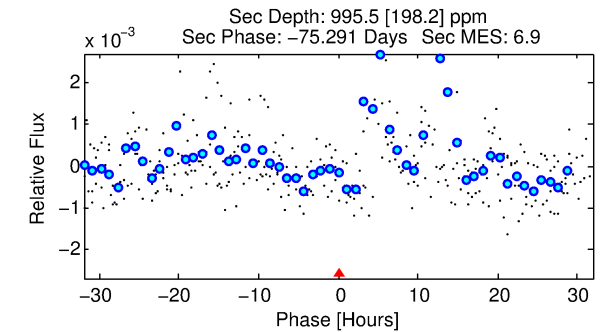
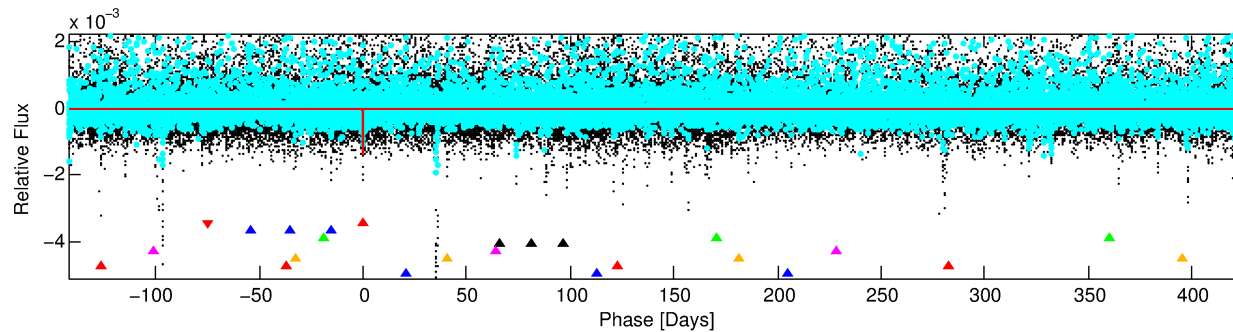
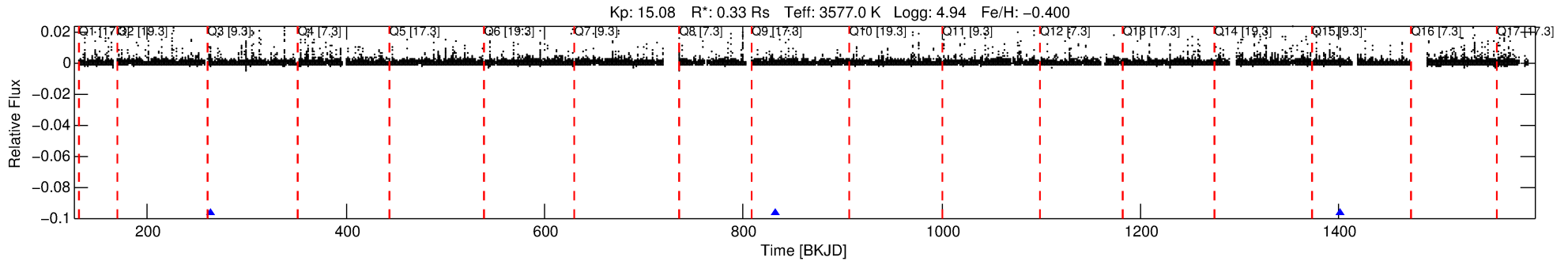
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010857583-01

No Significant Match Found

DV One-Page Summary

KIC: 10857583 Candidate: 1 of 8 Period: 568.634 d



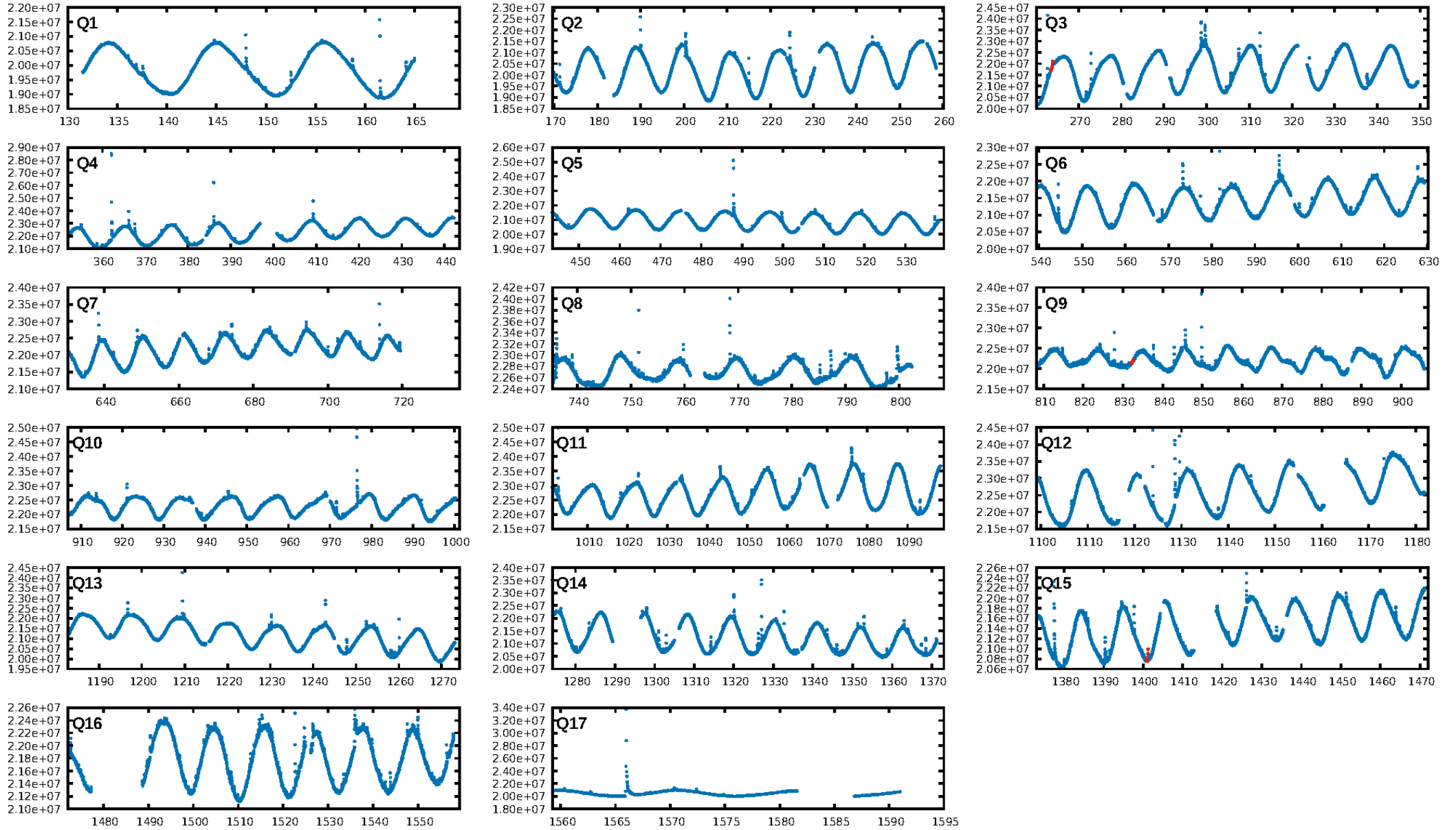
DV Fit Results:

Period = 568.63415 [0.01229] d
Epoch = 263.7723 [0.0169] BKJD
Rp/R* = 0.0352 [0.0353]
a/R* = 726.92 [3455.41]
b = 0.53 [6.47]
Seff = 0.02 [0.00]
Teq = 93 [3] K
Rp = 1.27 [1.28] Re
a = 0.9432 [0.0745] AU
Ag = 302537.76 [609133.82] [0.50σ]
Teffp = 3385 [1702] K [1.93σ]

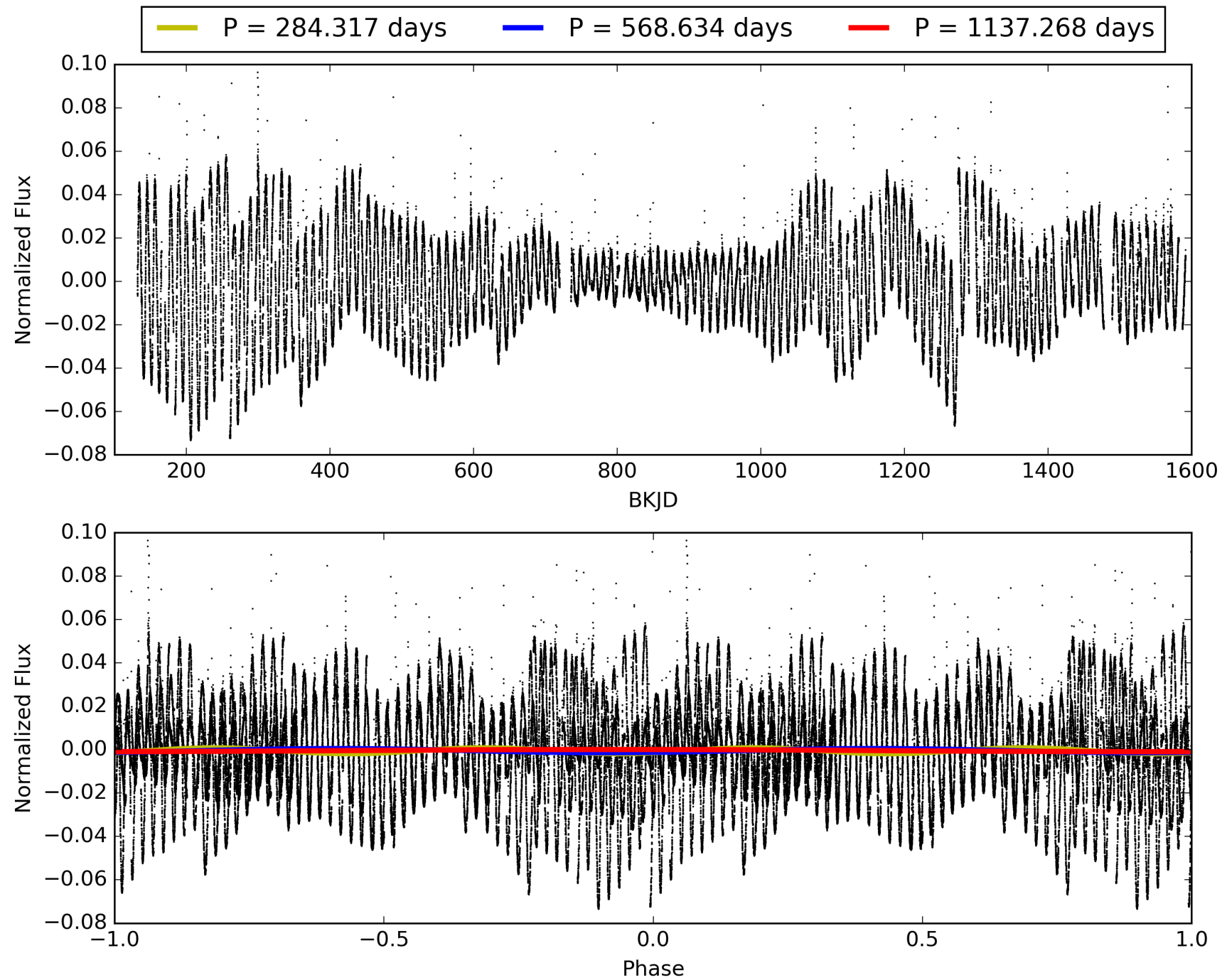
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [240.21σ]
LongPeriod-sig: 100.0% [37.22σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 4.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.5628
Centroid-sig: 85.5%
Centroid-so: 0.180 arcsec [0.17σ]
OotOffset-rm: 0.177 arcsec [0.18σ]
OotOffset-st: 0/2/0/1 [3]
KicOffset-rm: 0.170 arcsec [0.41σ]
KicOffset-st: 0/2/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 010857583-01, PDC Light Curves

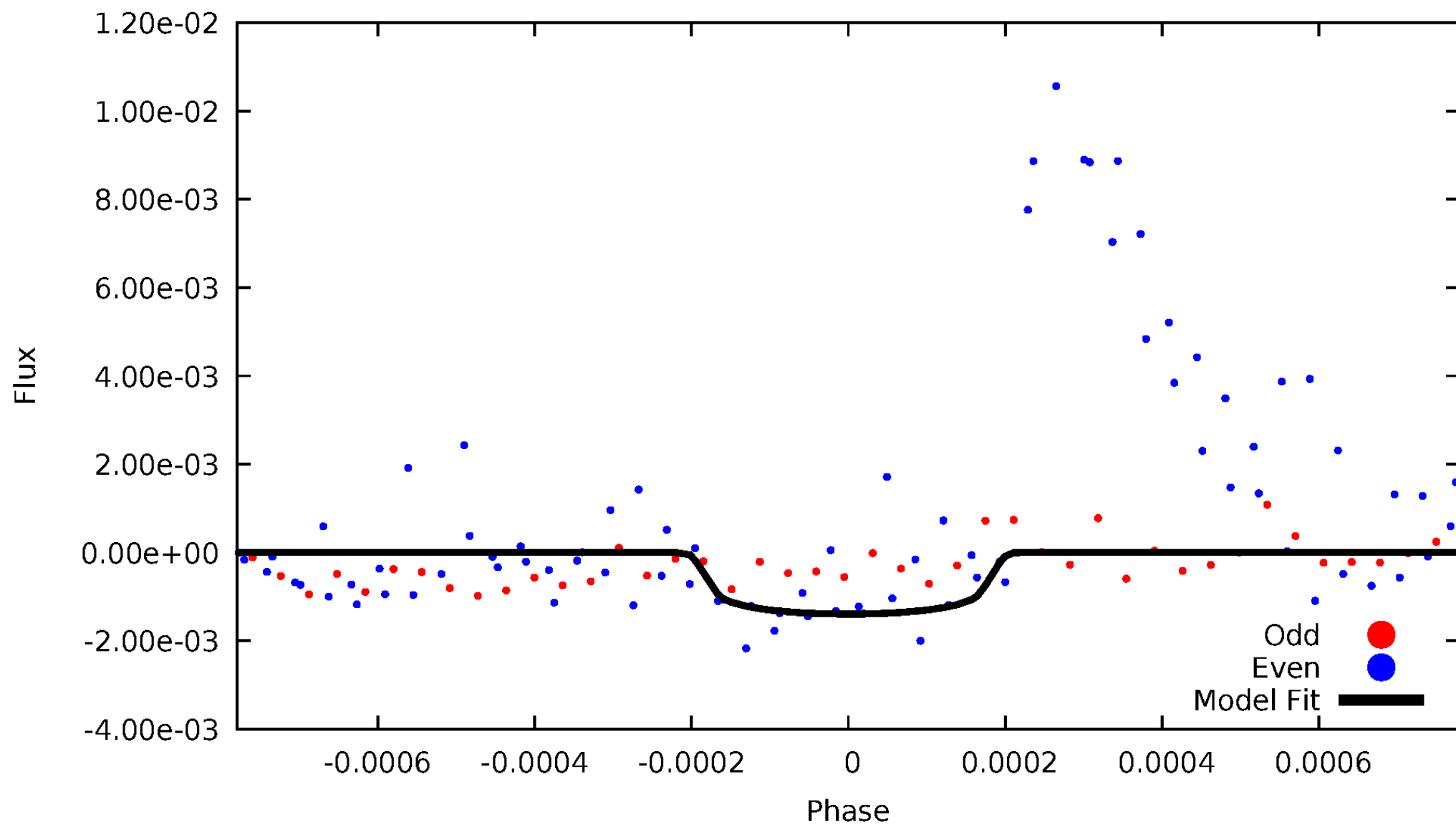


TCE 010857583-01



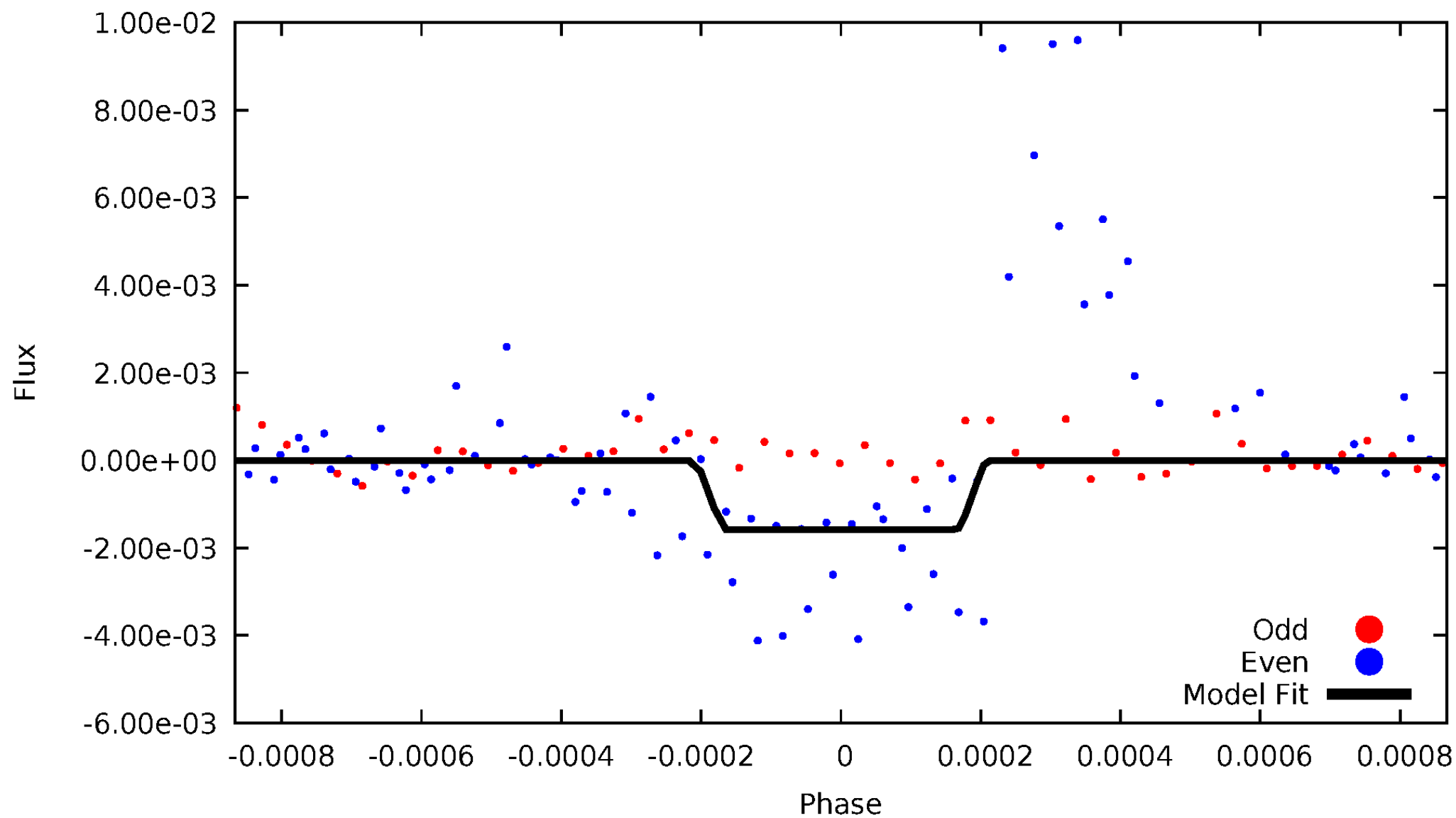
DV Odd/Even

TCE 010857583-01



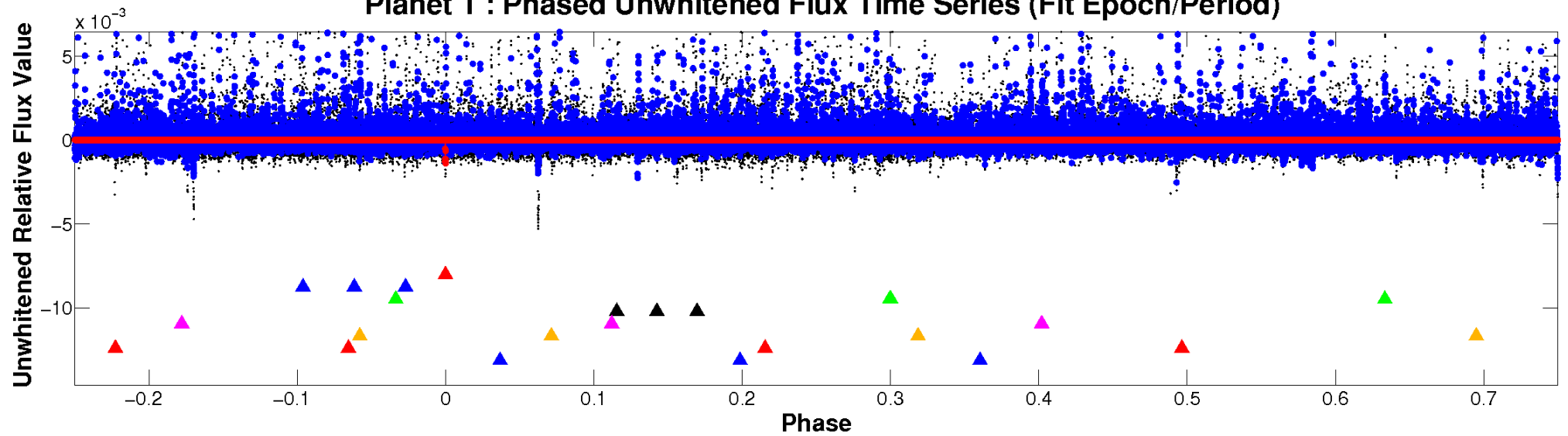
ALT Odd/Even

TCE 010857583-01

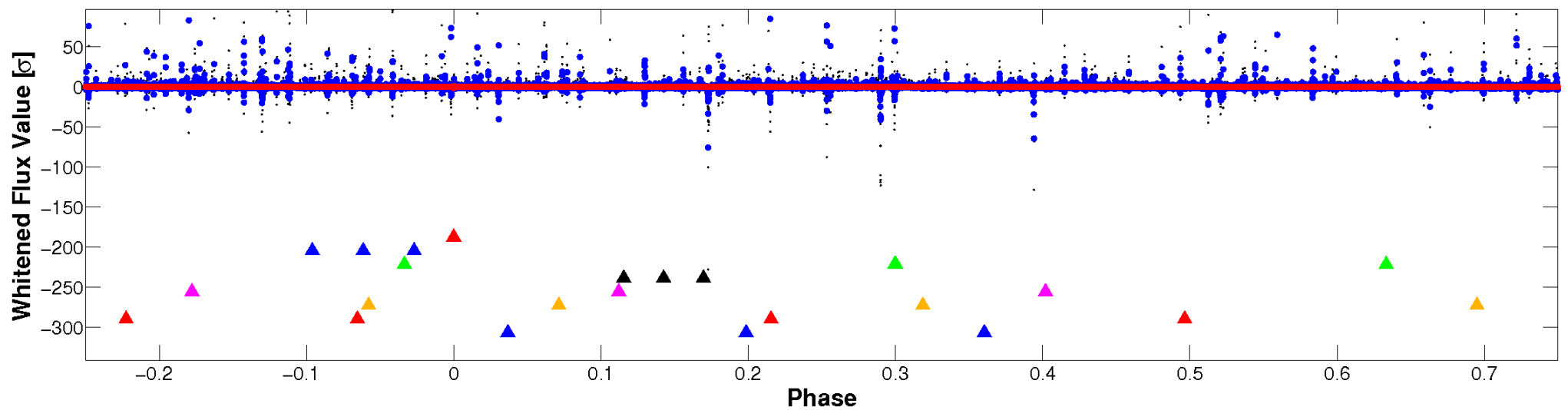


Non-Whitened Vs. Whitened Light Curve

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

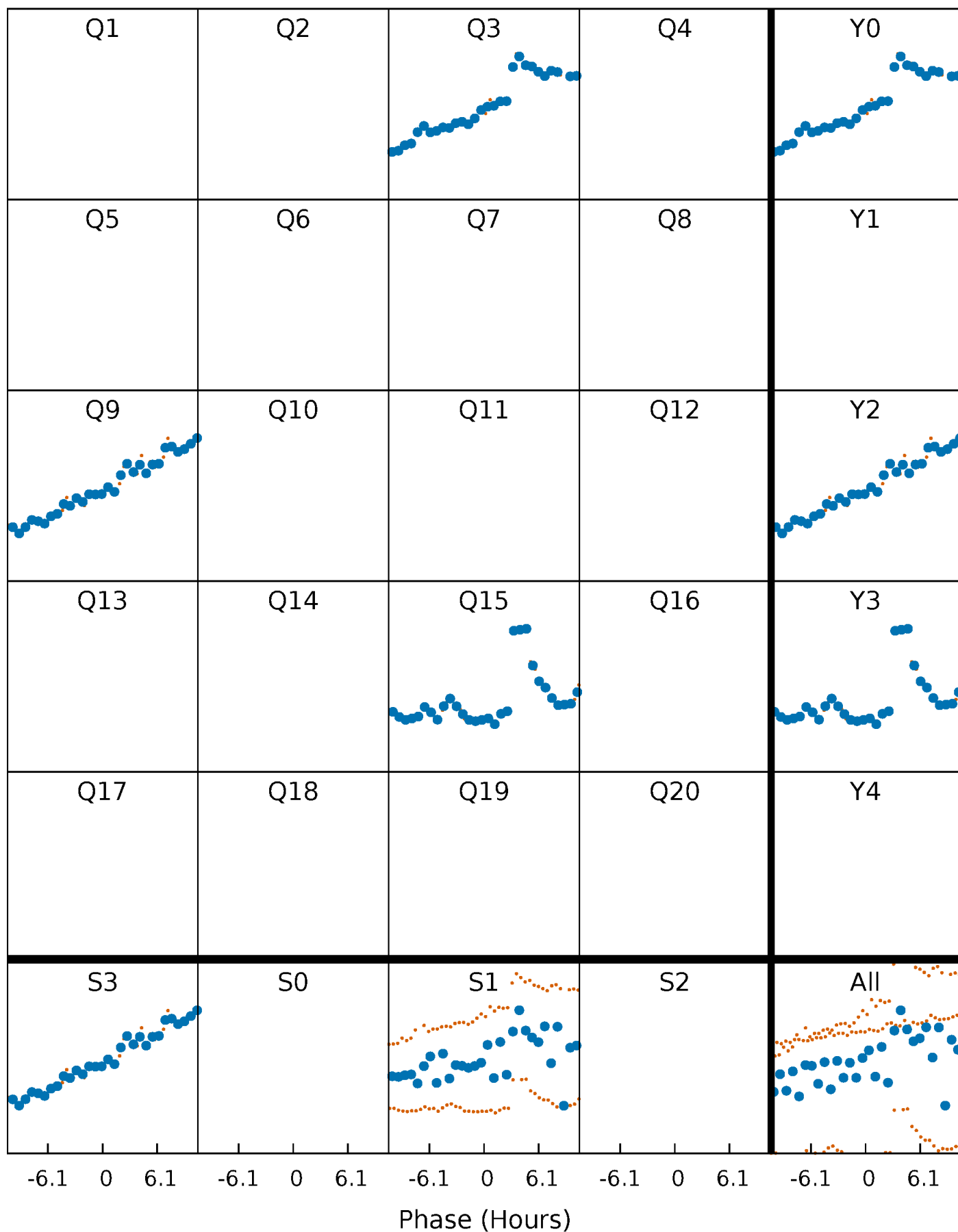


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



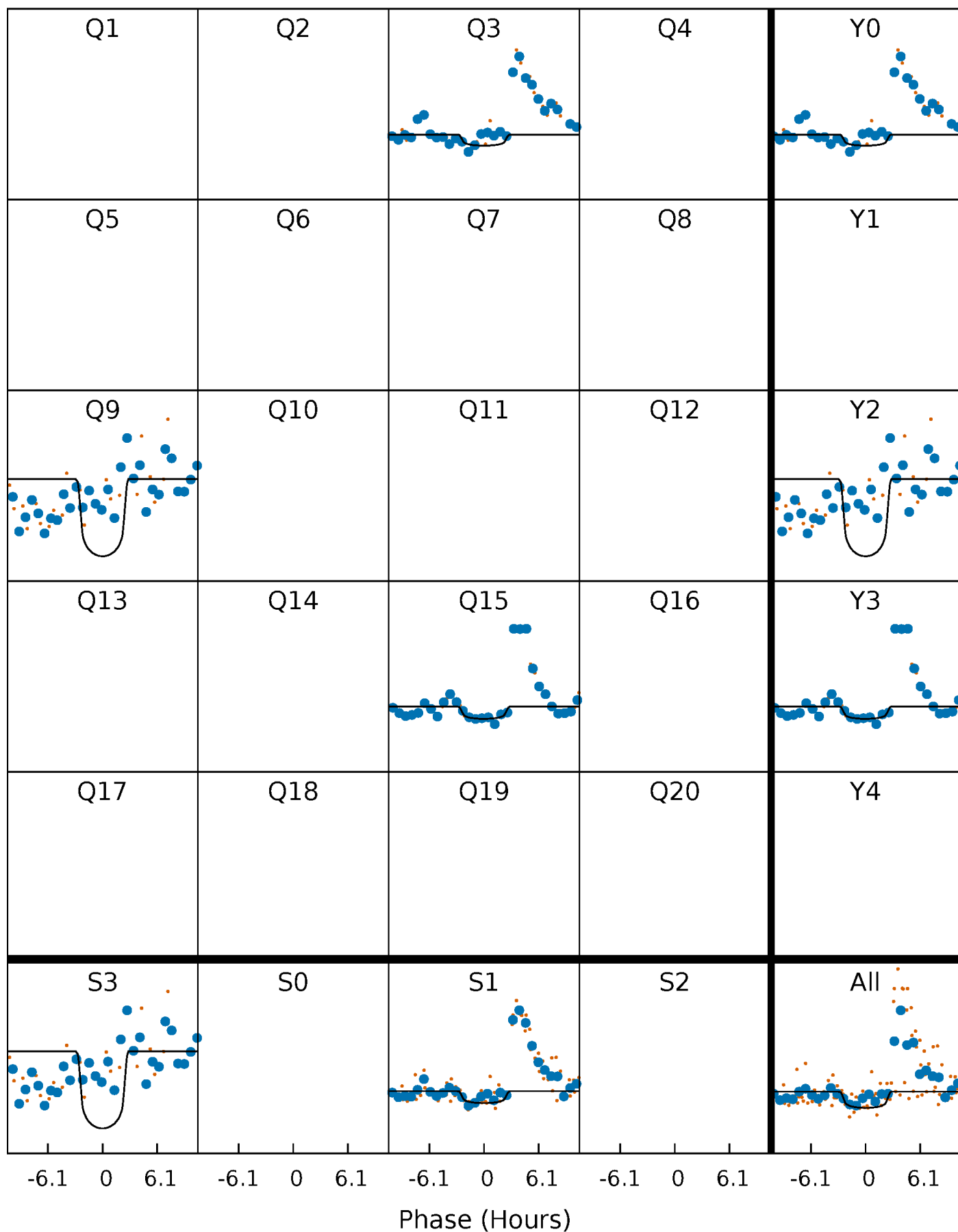
PDC Quarter-Phased Transit Curves

TCE 010857583-01 P=568.634152 Days $T_0=263.772287$ (BKJD)



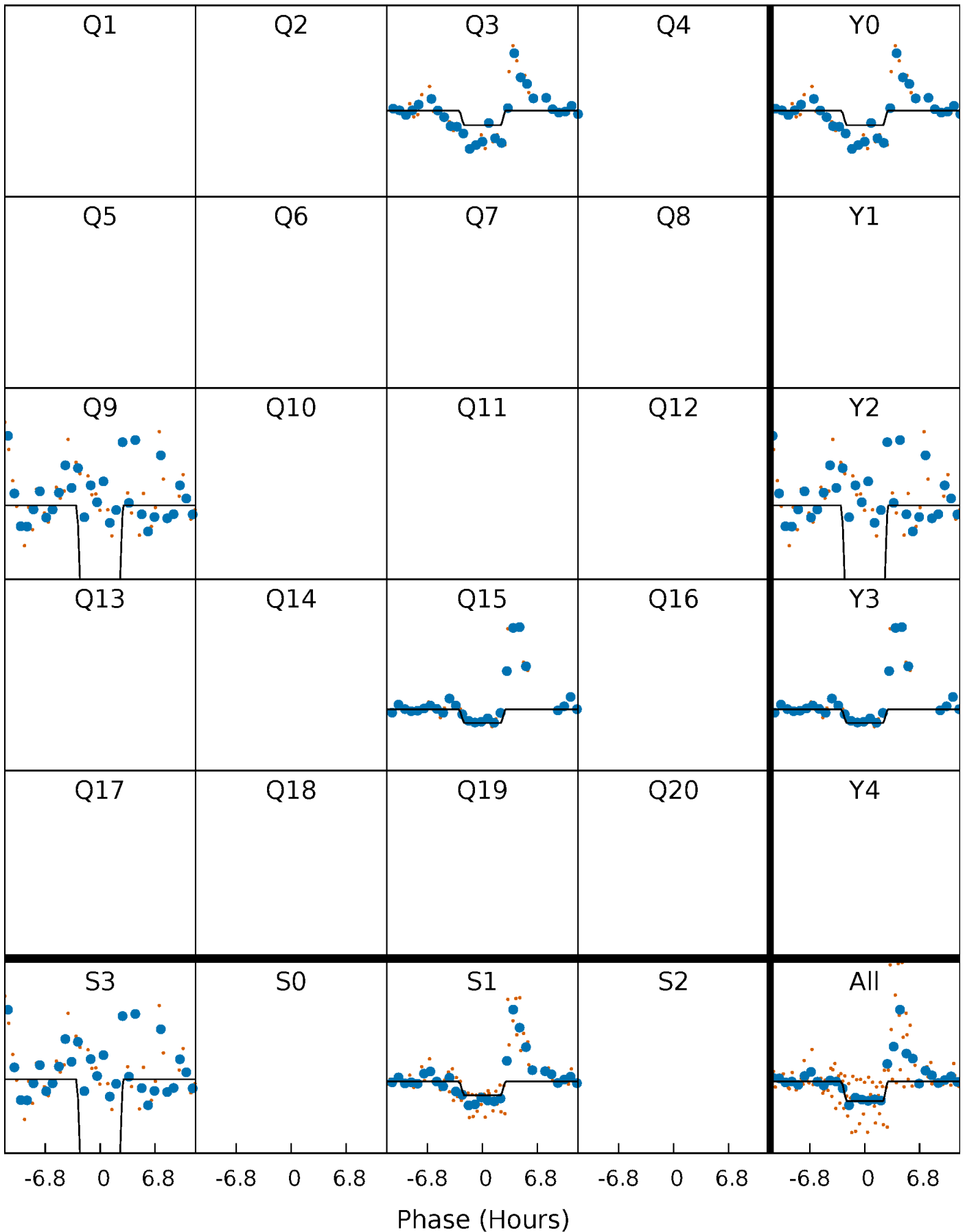
DV Quarter-Phased Transit Curves

TCE 010857583-01 P=568.634152 Days $T_0=263.772287$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

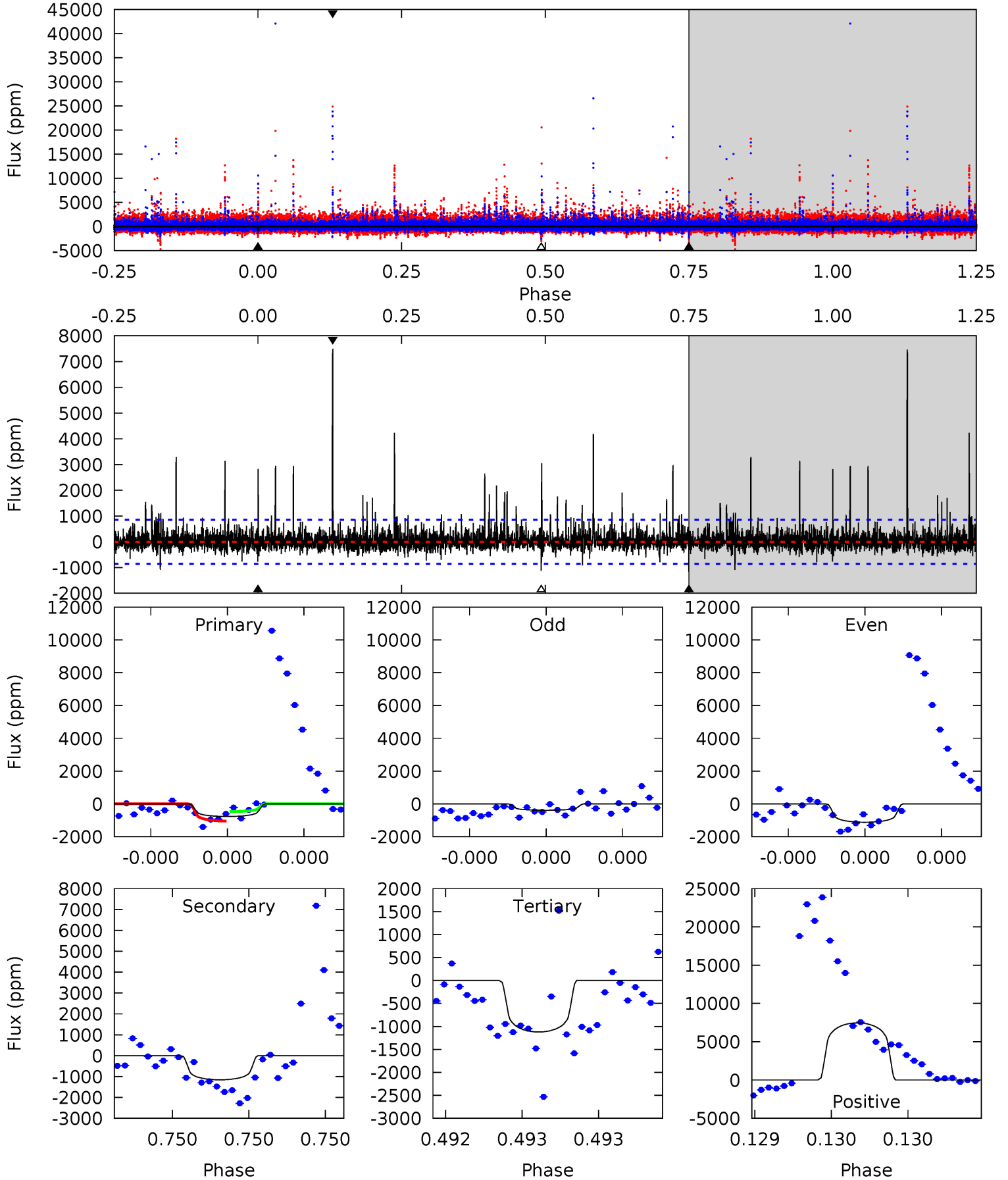
TCE 010857583-01 P=568.638730 Days $T_0=263.765876$ (BKJD)



DV Model-Shift Uniqueness Test

010857583-01, P = 568.634152 Days, E = 263.772287 Days

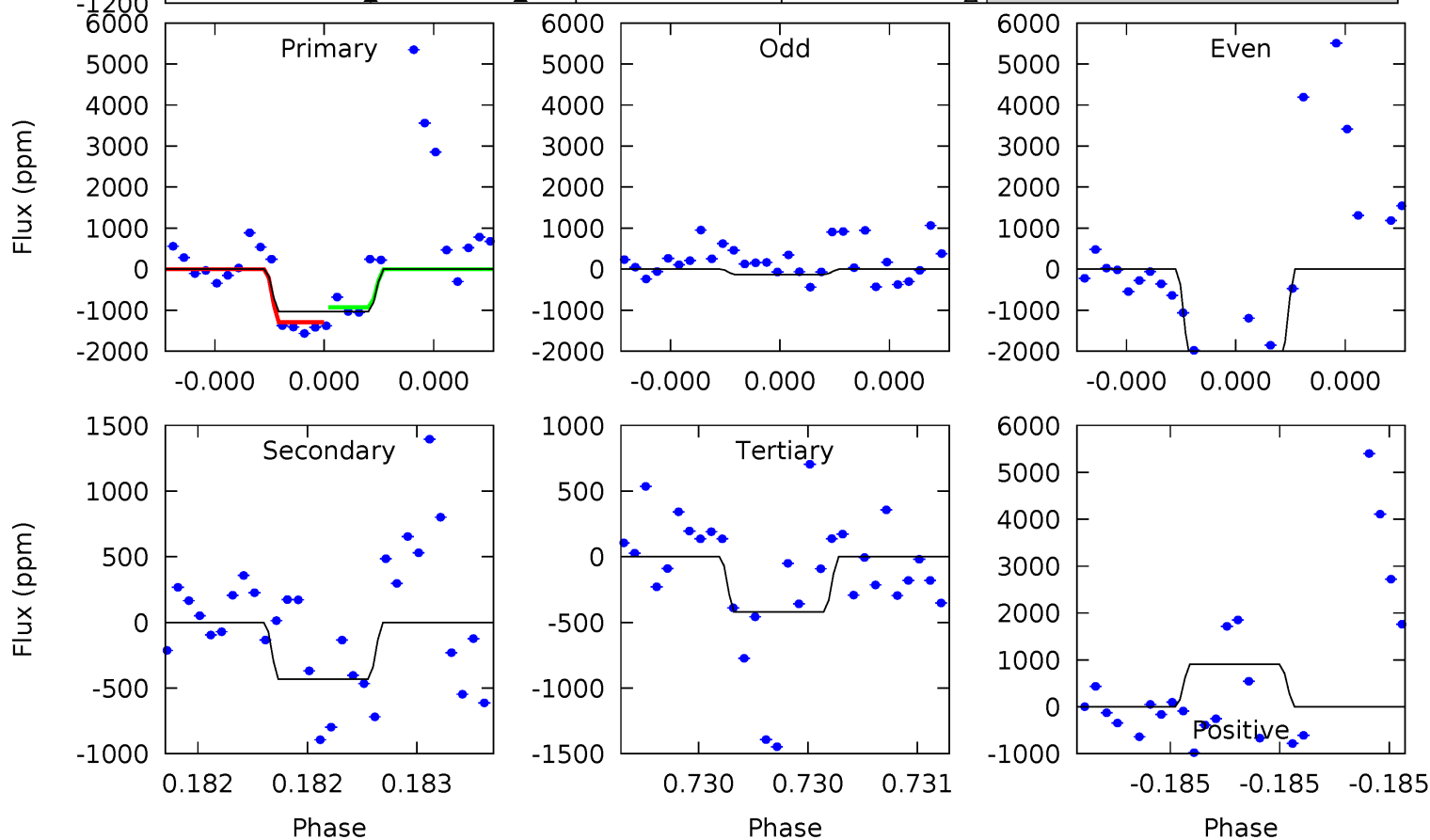
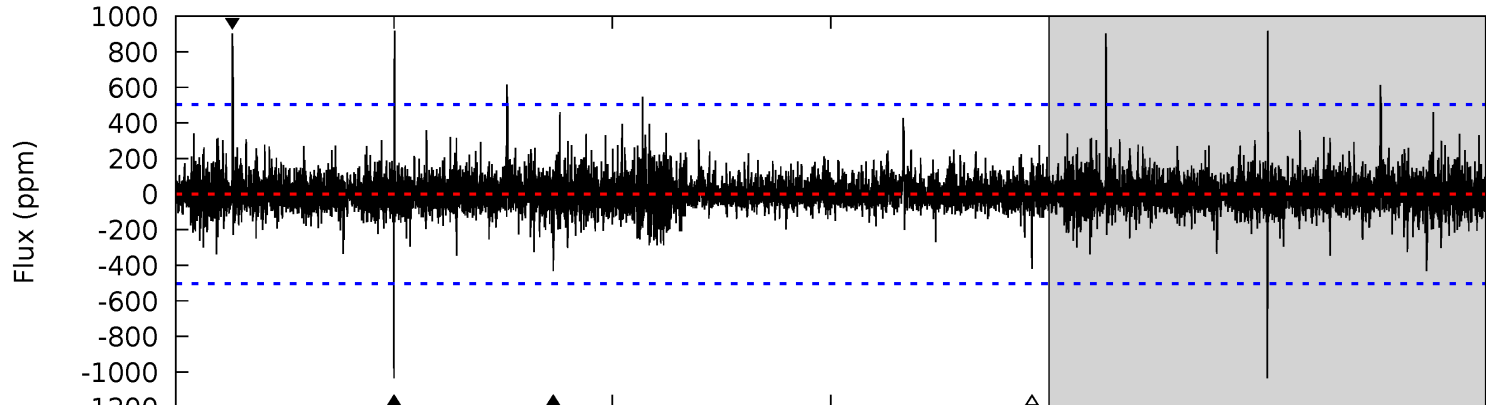
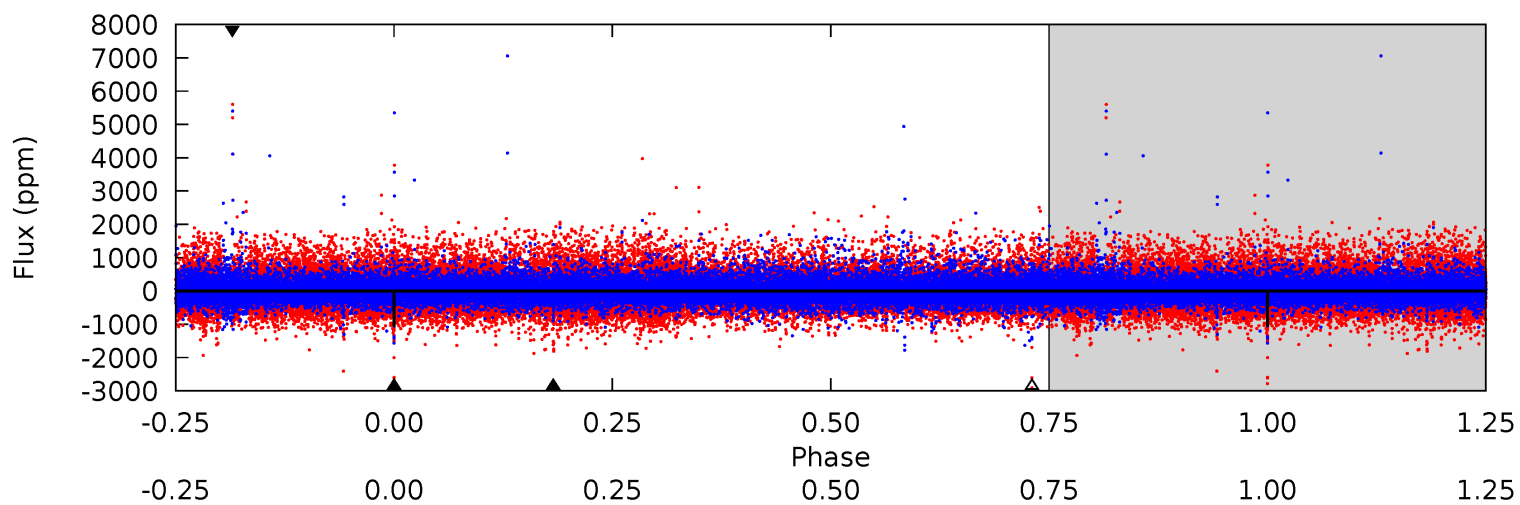
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.02	7.56	7.34	48.8	5.60	3.52	2.33	-2.31	-43.8	0.23	-41.3	1.20	1.49	0.87	1.90



Alt Model-Shift Uniqueness Test

010857583-01, P = 568.638730 Days, E = 263.765876 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	4.83	4.69	10.1	5.61	3.54	0.83	6.84	1.46	0.14	-5.25	12.0	1.13	0.47	1.98



Stellar Parameters For KIC 010857583

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3577^{+42}_{-48}	$4.940^{+0.040}_{-0.040}$	$-0.400^{+0.100}_{-0.100}$	$0.330^{+0.030}_{-0.036}$	$0.346^{+0.033}_{-0.045}$	$13.530^{+2.941}_{-2.197}$
	+1%/-1%	+1%/-1%	+25%/-25%	+9%/-11%	+10%/-13%	+22%/-16%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 010857583-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1156 ± 153	$1.53^{+1.18}_{-0.97}$	130^{+3}_{-3}	3335^{+1347}_{-519}	$241676^{+1458883}_{-168160}$
Alt.	-433 ± 90	$1.62^{+1.30}_{-0.98}$	131^{+3}_{-3}	2834^{+910}_{-397}	$77442^{+414081}_{-53518}$

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 $A_{obs} \gg 1.0$

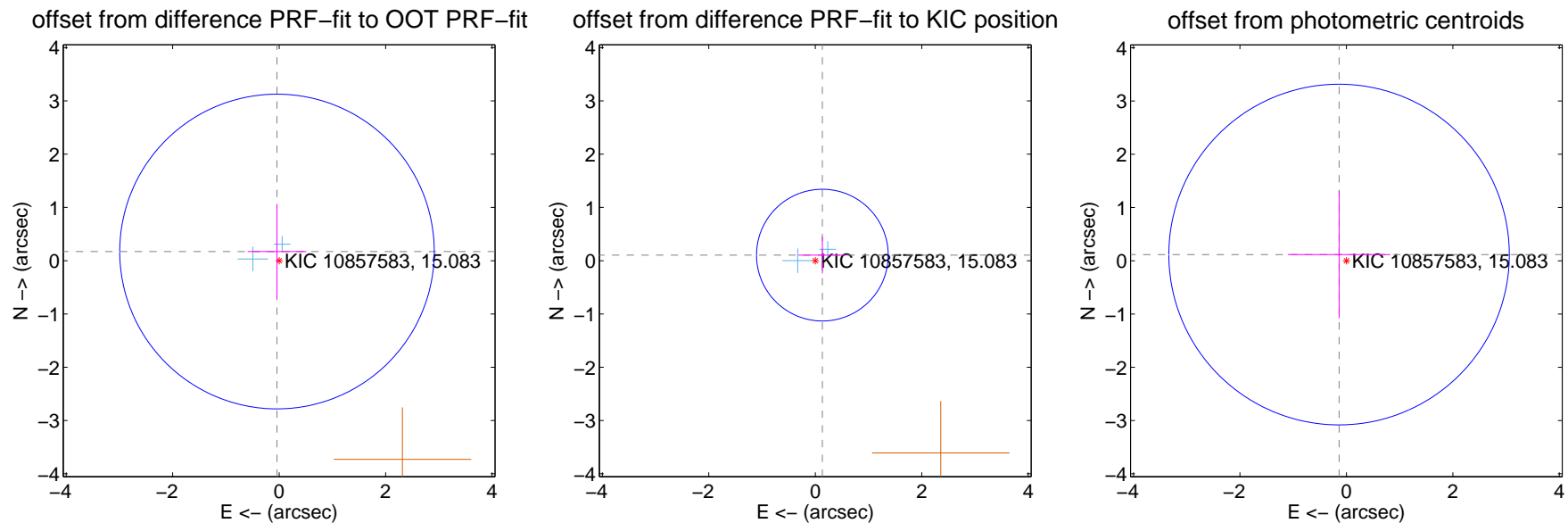
DV Centroid Data

Supplemental centroid analysis for 010857583-01. Kepler magnitude: 15.08. Transit SNR 6.71

There are 2 quarters with good PRF difference image offsets

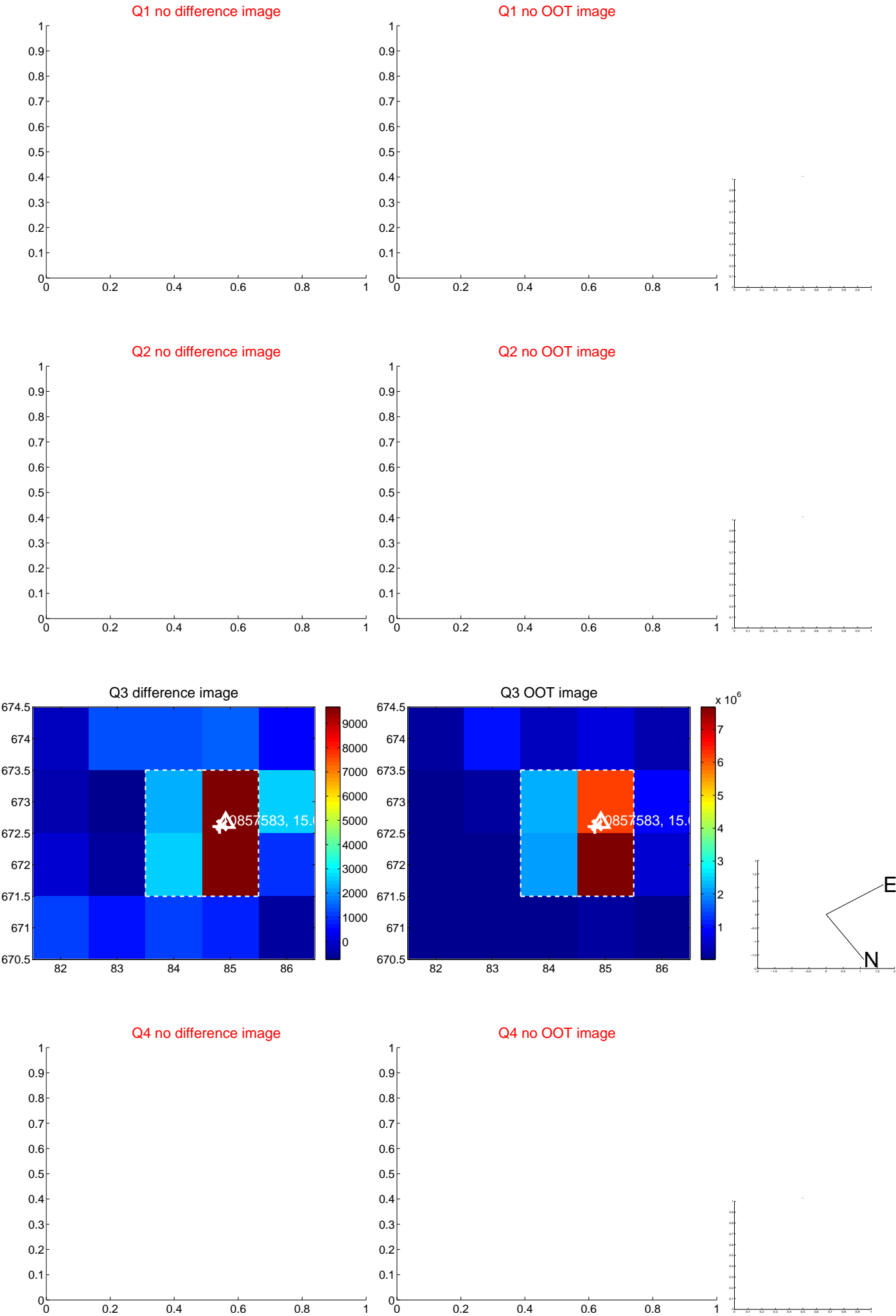
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.177 ± 0.985	0.18	0.040 ± 0.551	0.172 ± 0.890
PRF-fit source offset from KIC position	0.170 ± 0.412	0.41	-0.133 ± 0.449	0.105 ± 0.344
photometric centroid source offset	0.18 ± 1.07	0.17	0.14 ± 0.96	0.12 ± 1.19

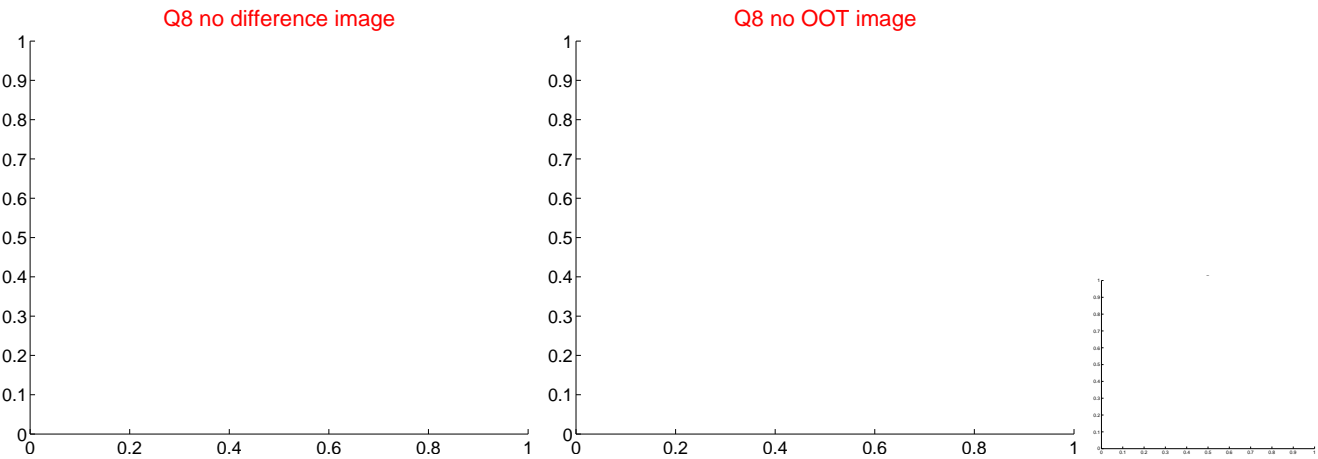
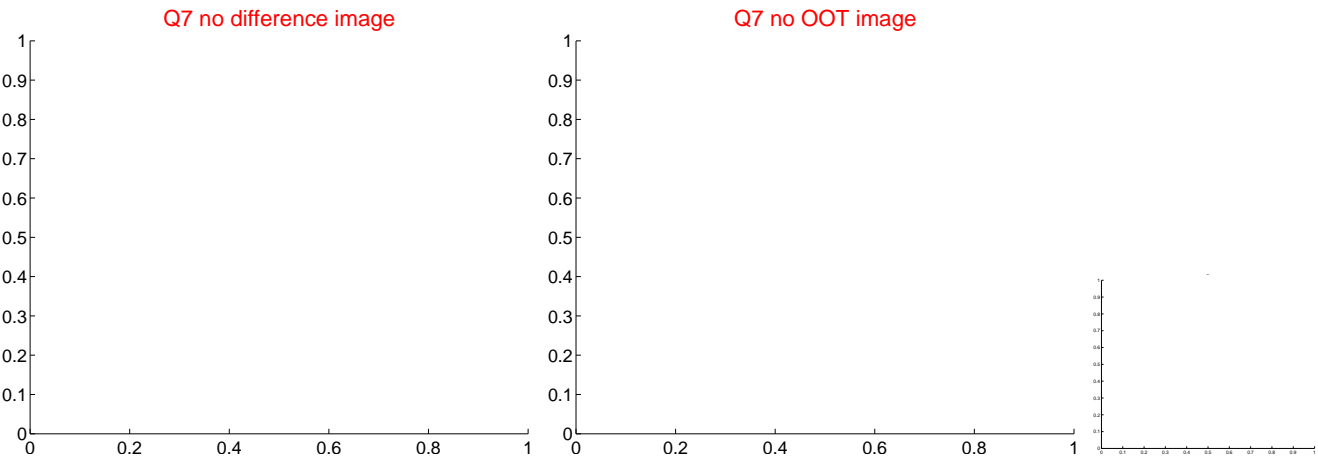
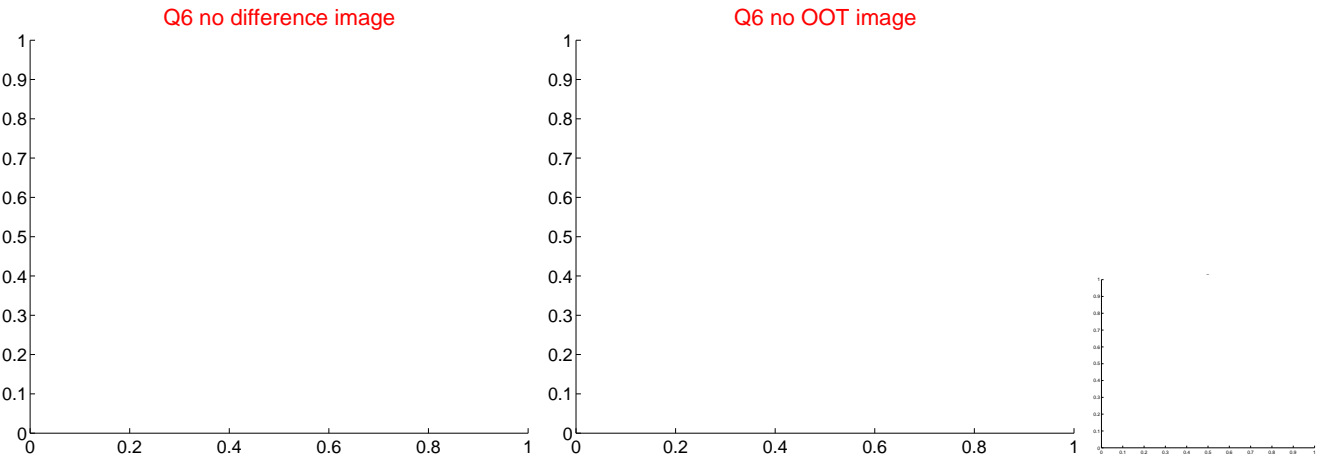
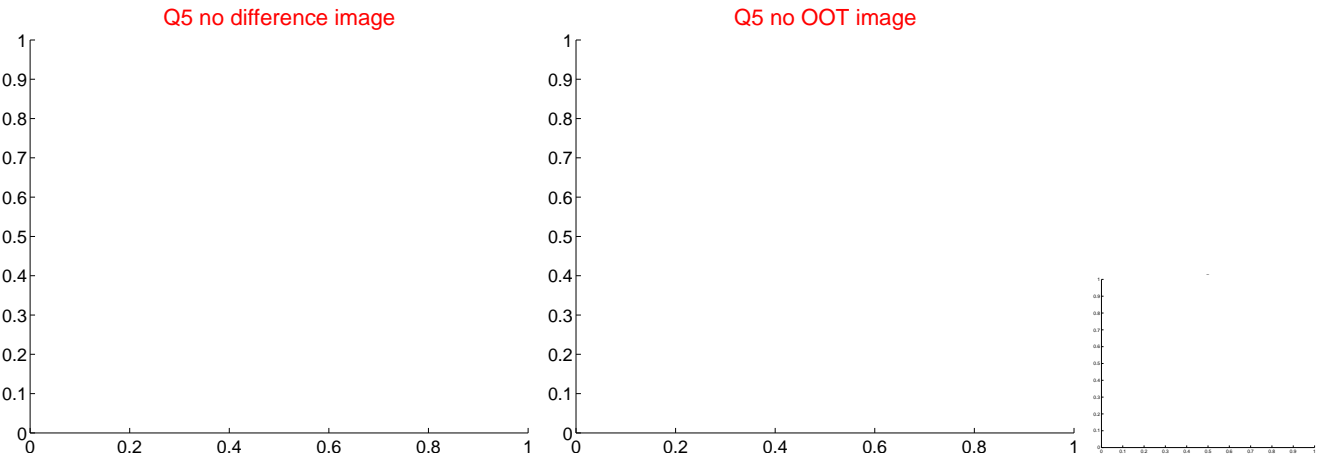


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

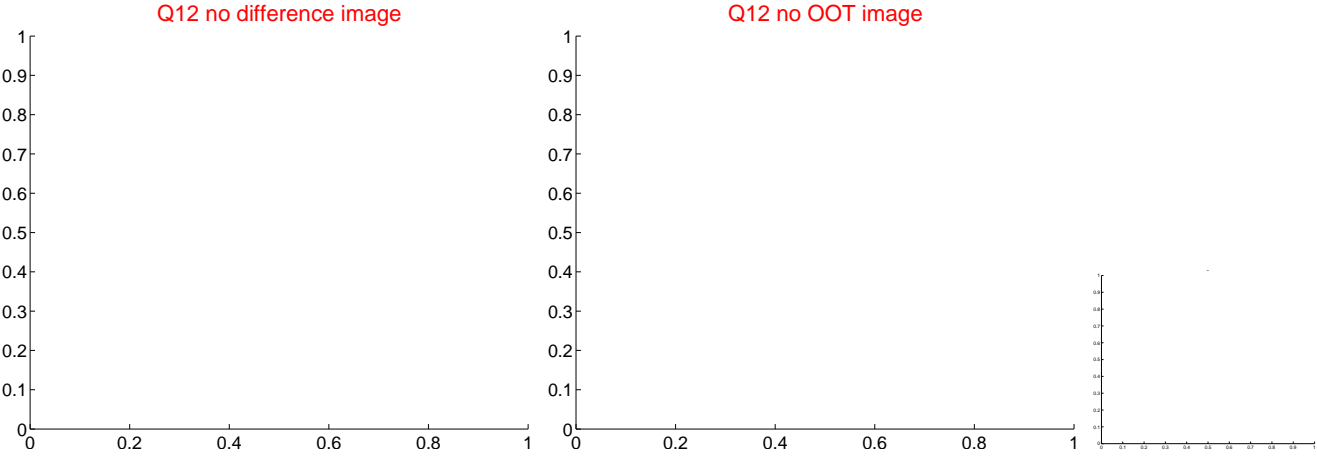
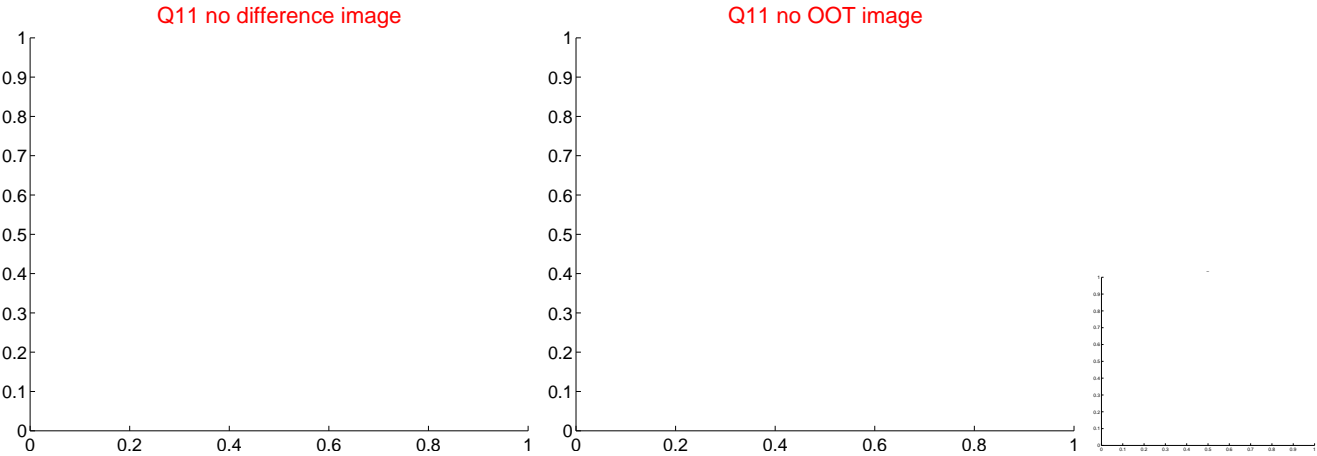
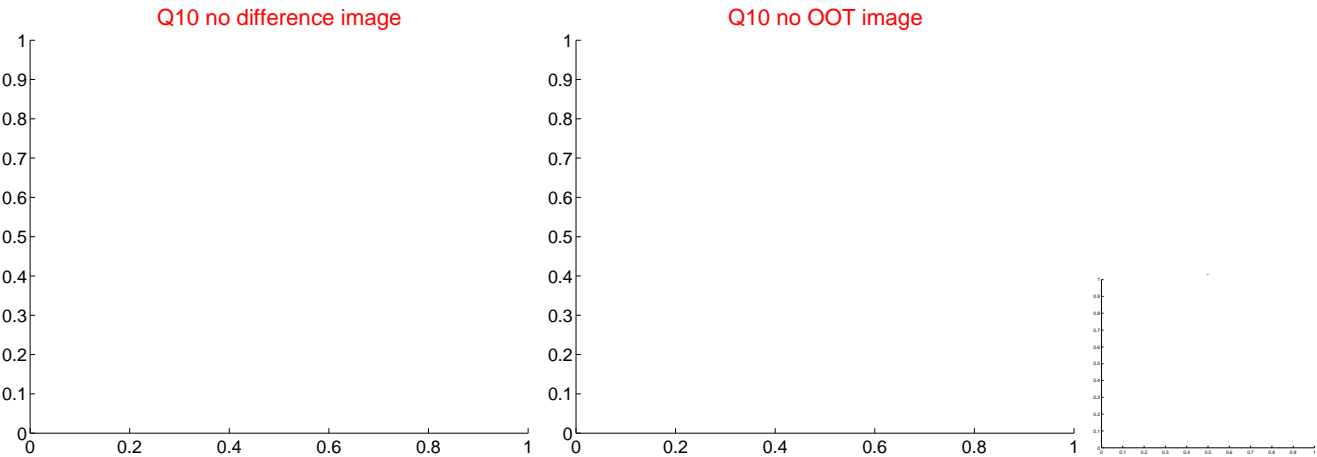
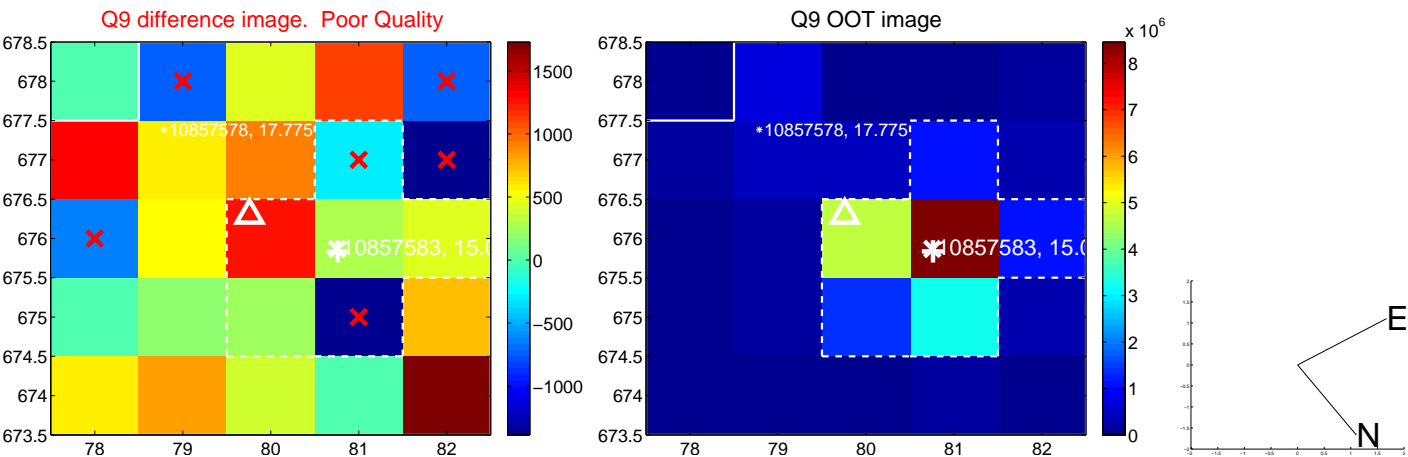
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



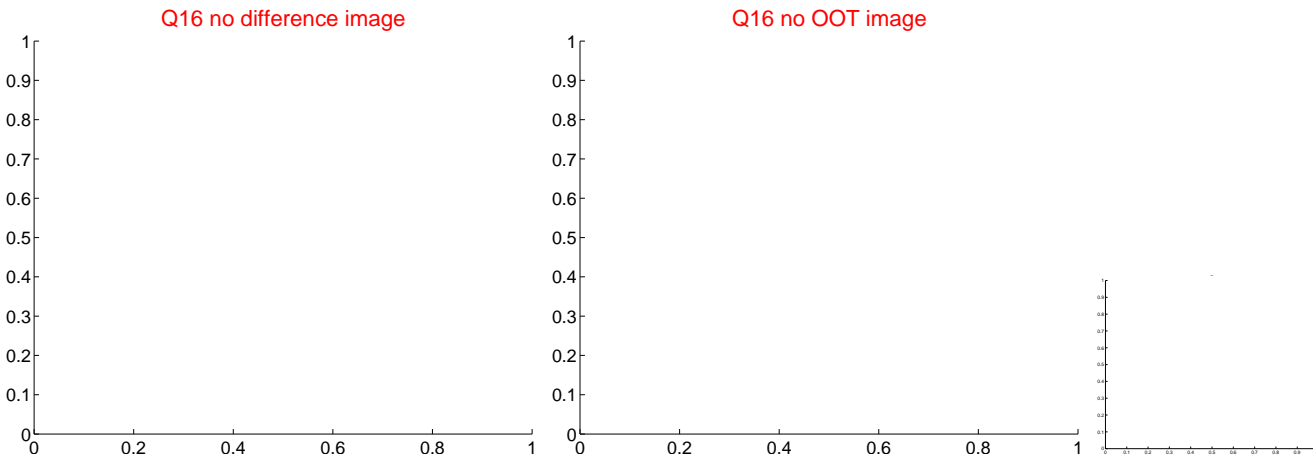
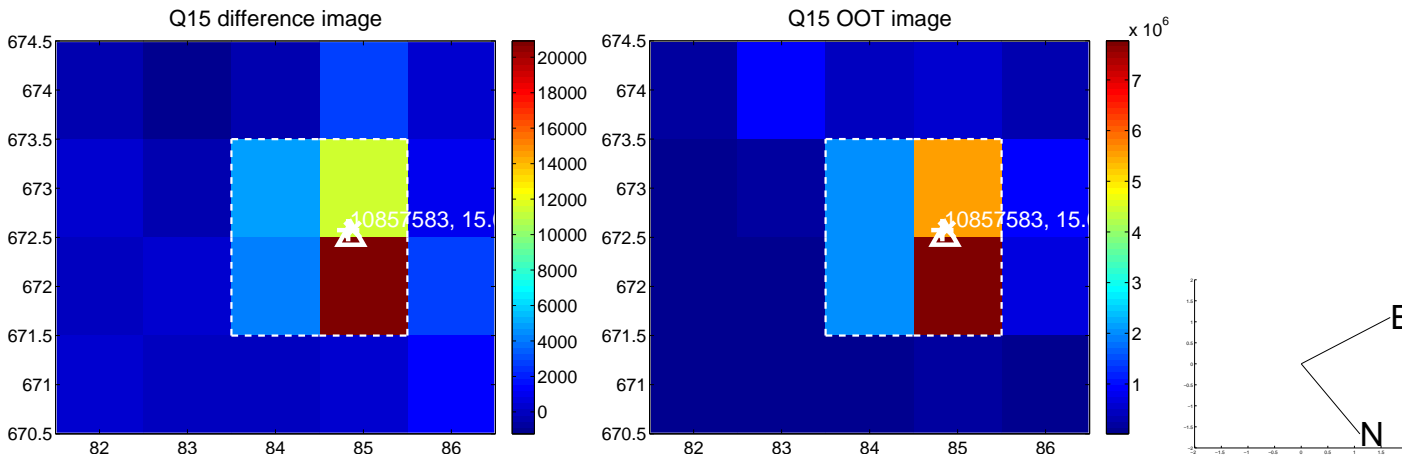
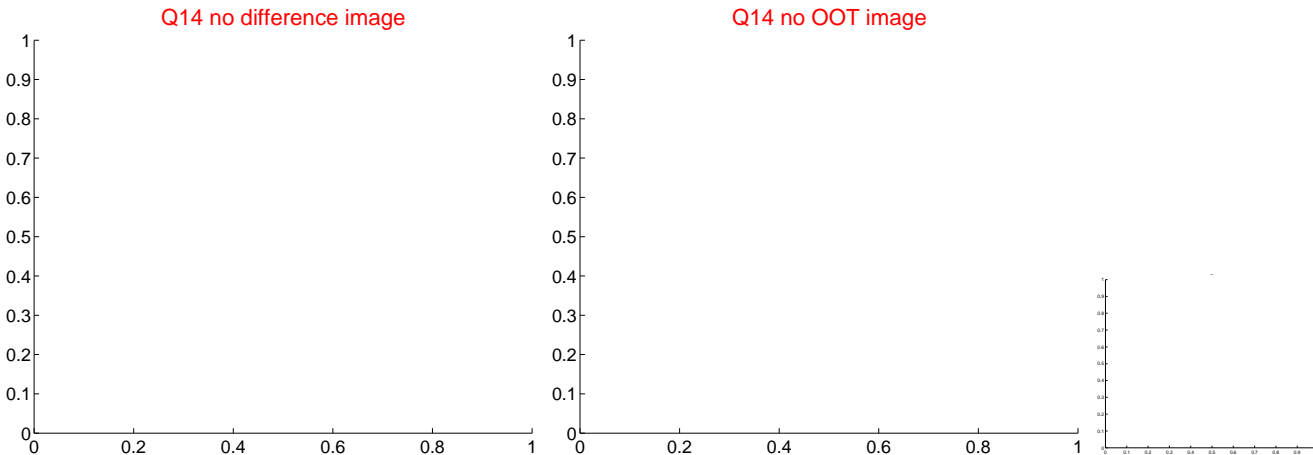
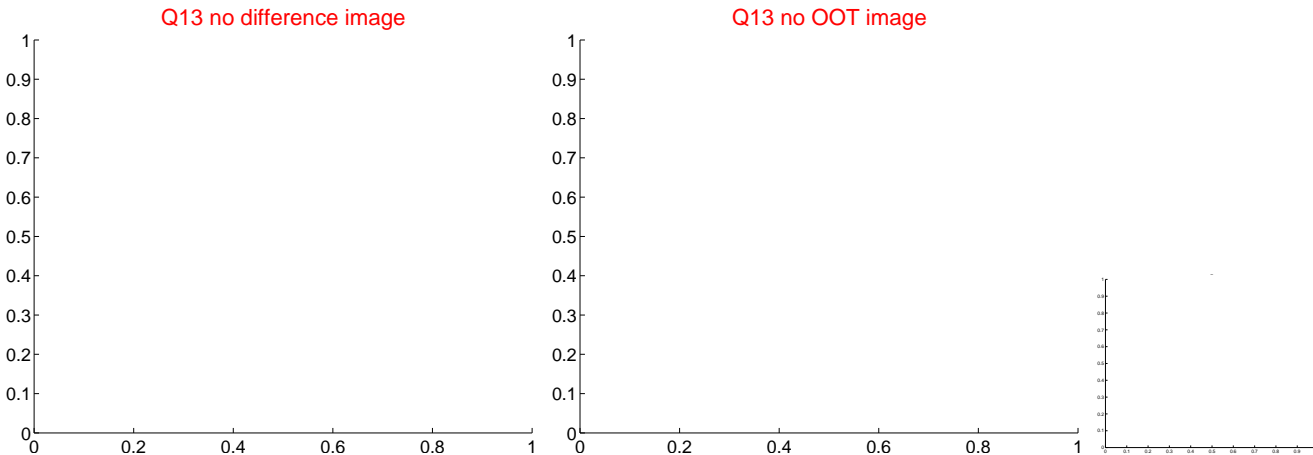
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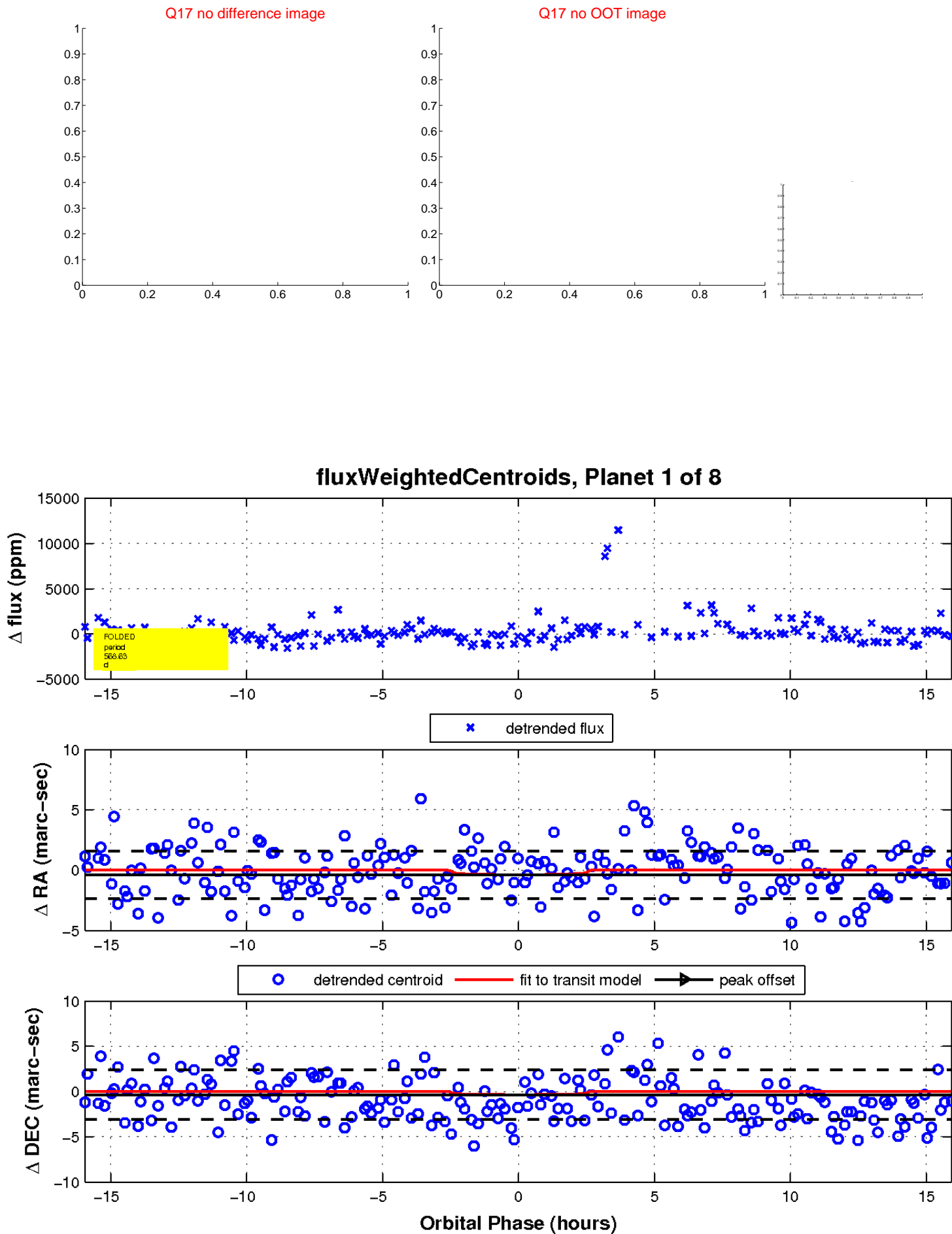
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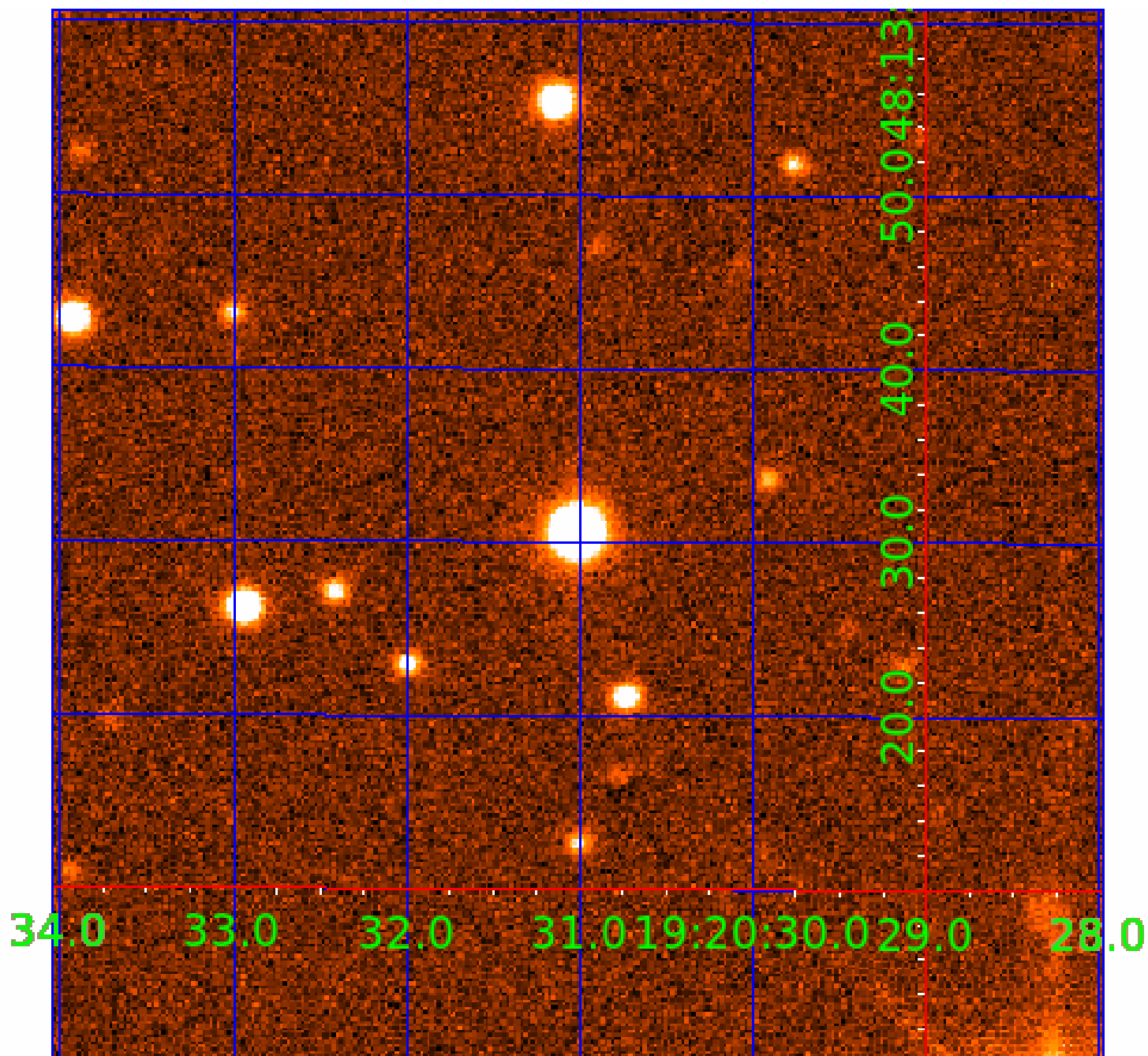


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UKIRT Image

Declination



KIC 010857583

Q1-17 DR25 TCE Parameters

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010857583-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010857583-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010857583-04	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—INCONSISTENT_TRANS
010857583-05	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
010857583-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
010857583-07	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—INCONSISTENT_TRANS
010857583-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—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.

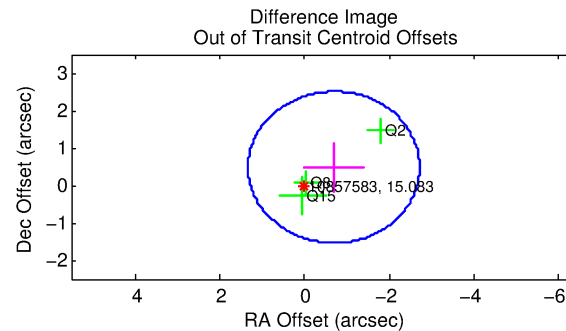
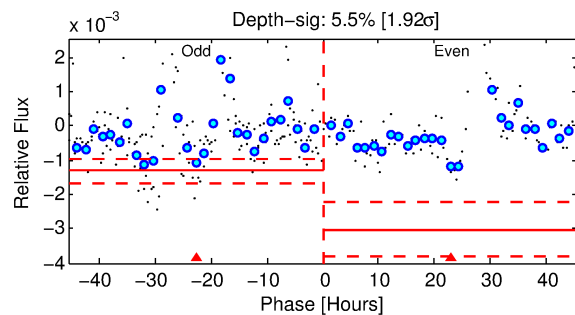
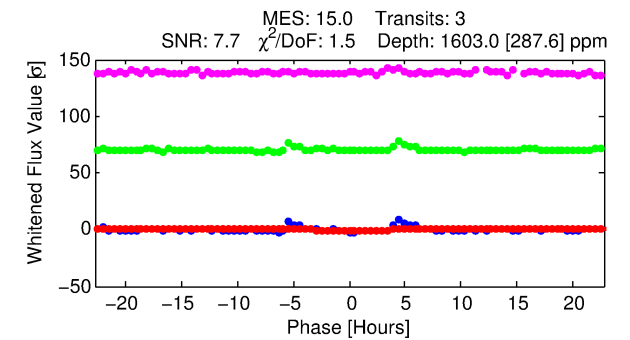
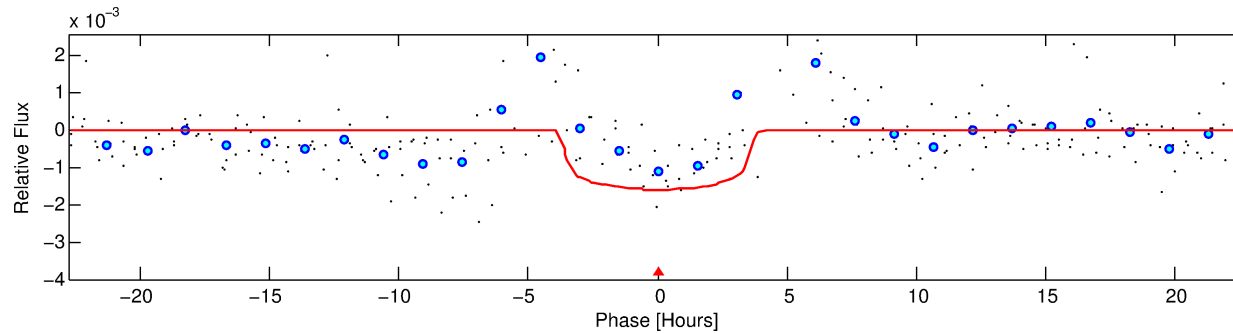
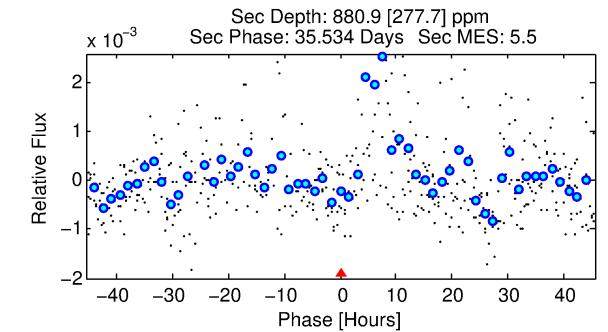
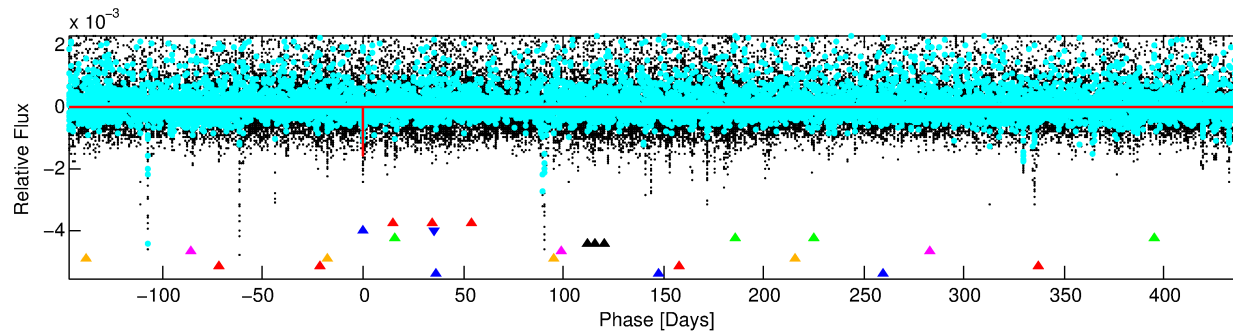
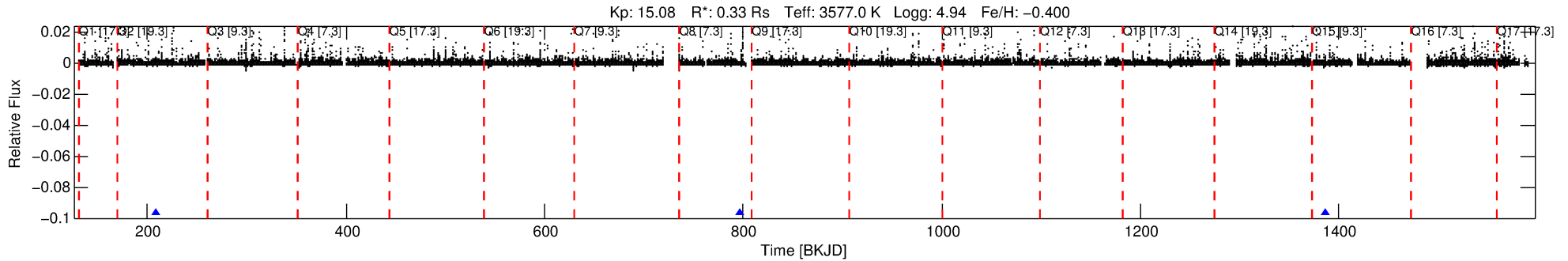
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010857583-02

No Significant Match Found

DV One-Page Summary

KIC: 10857583 Candidate: 2 of 8 Period: 588.282 d



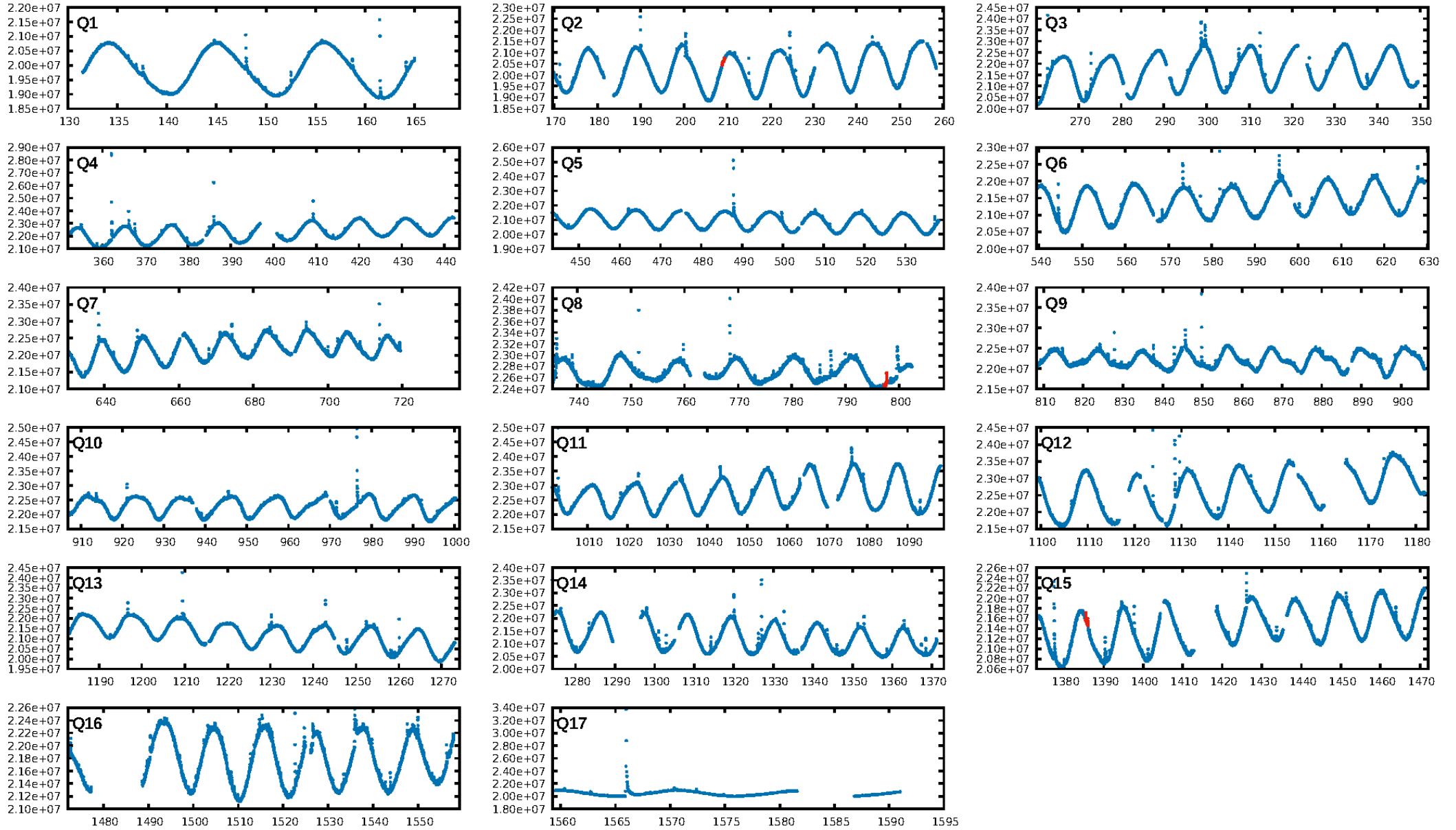
DV Fit Results:

Period = 588.28161 [0.00763] d
Epoch = 209.1667 [0.0099] BKJD
Rp/R* = 0.0370 [0.0208]
a/R* = 577.81 [1540.66]
b = 0.34 [6.84]
Seff = 0.02 [0.00]
Teq = 92 [3] K
Rp = 1.33 [0.76] Re
a = 0.9648 [0.0762] AU
Ag = 253469.67 [296659.66] [0.85σ]
Teffp = 3202 [935] K [3.33σ]

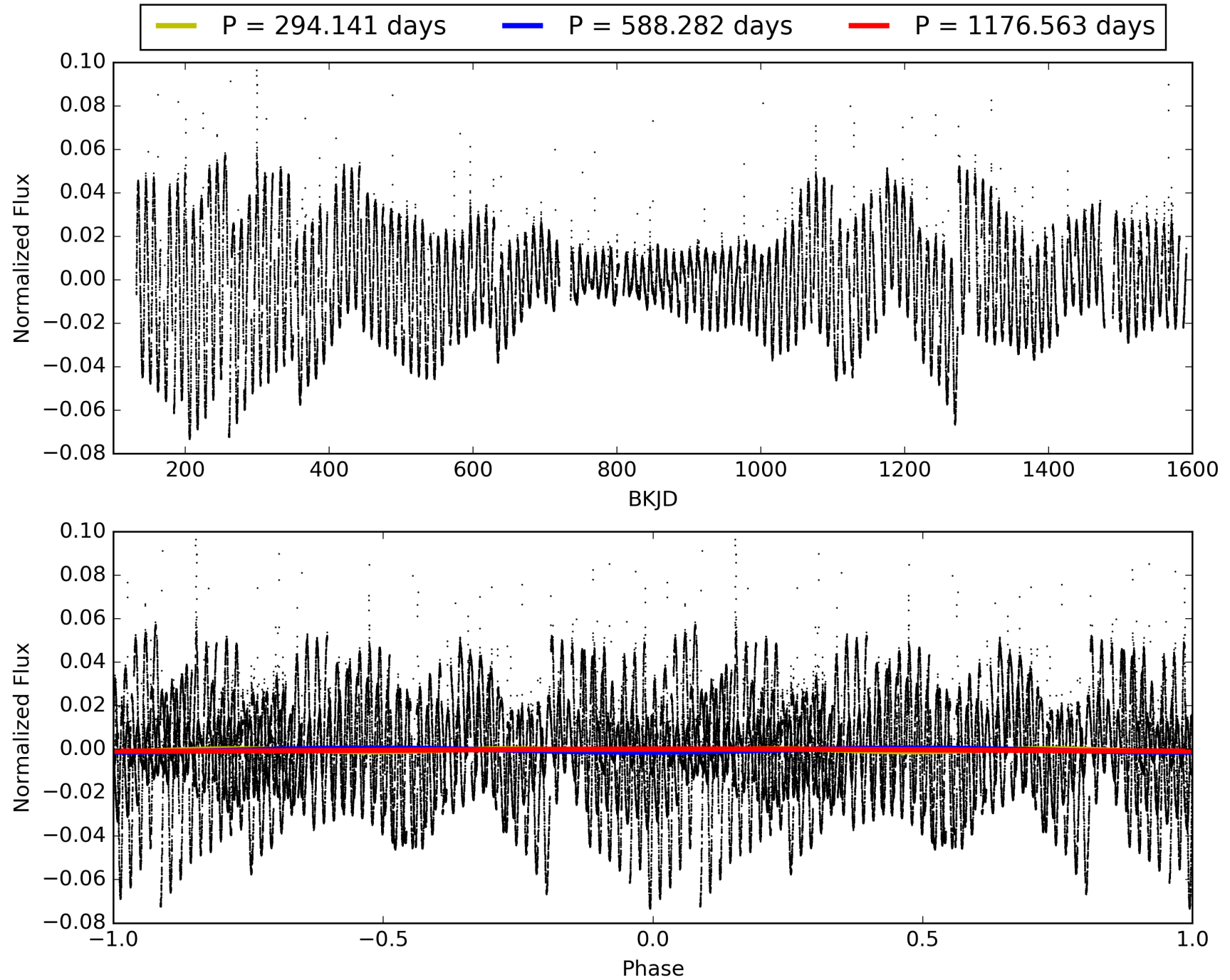
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [9.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 26.1%
ModelChiSquareGof-sig: 71.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.4827
Centroid-sig: 15.4%
Centroid-so: 1.108 arcsec [1.37σ]
OotOffset-rm: 0.847 arcsec [1.26σ]
KicOffset-rm: 0.995 arcsec [1.53σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 010857583-02, PDC Light Curves

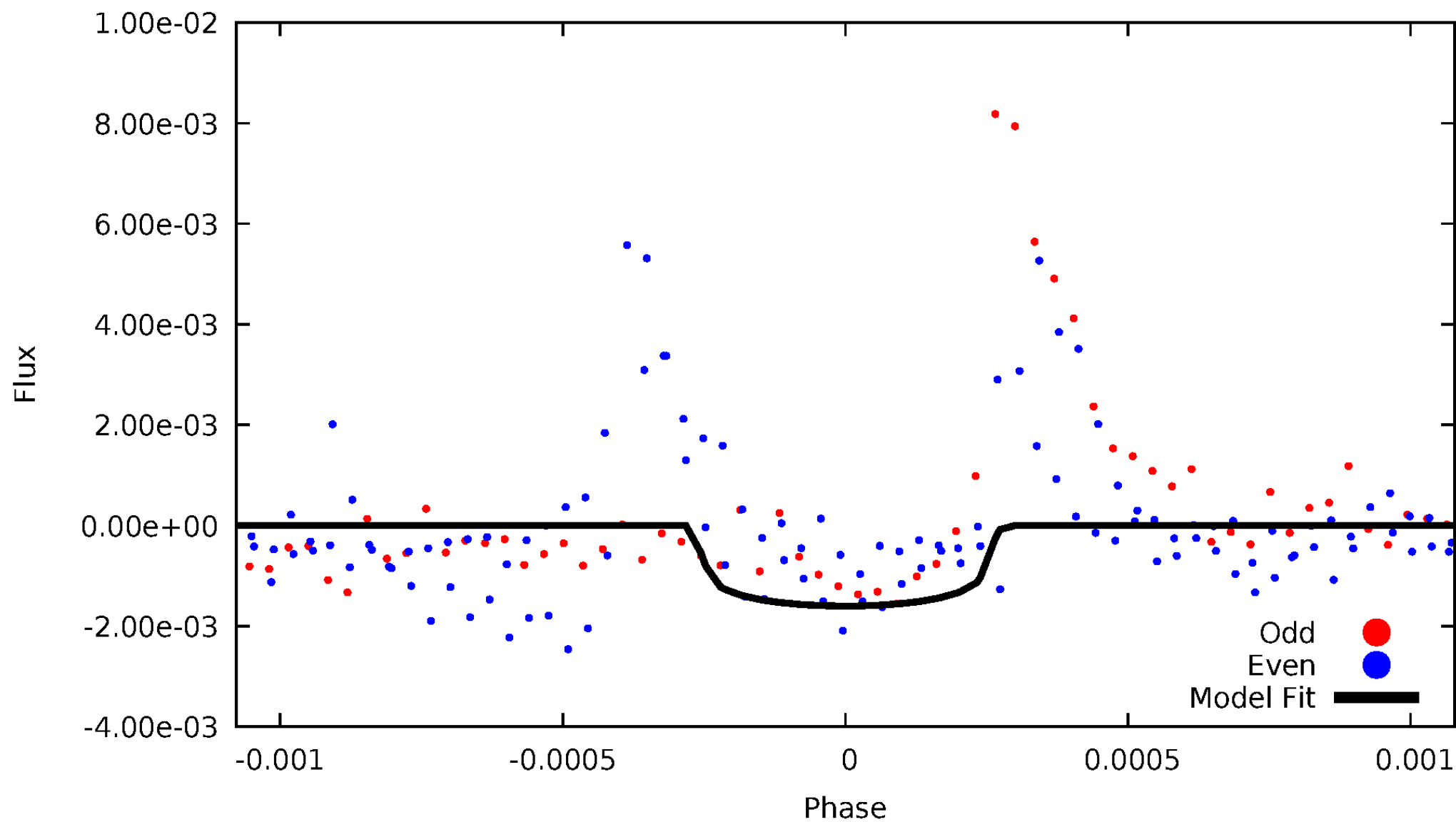


TCE 010857583-02



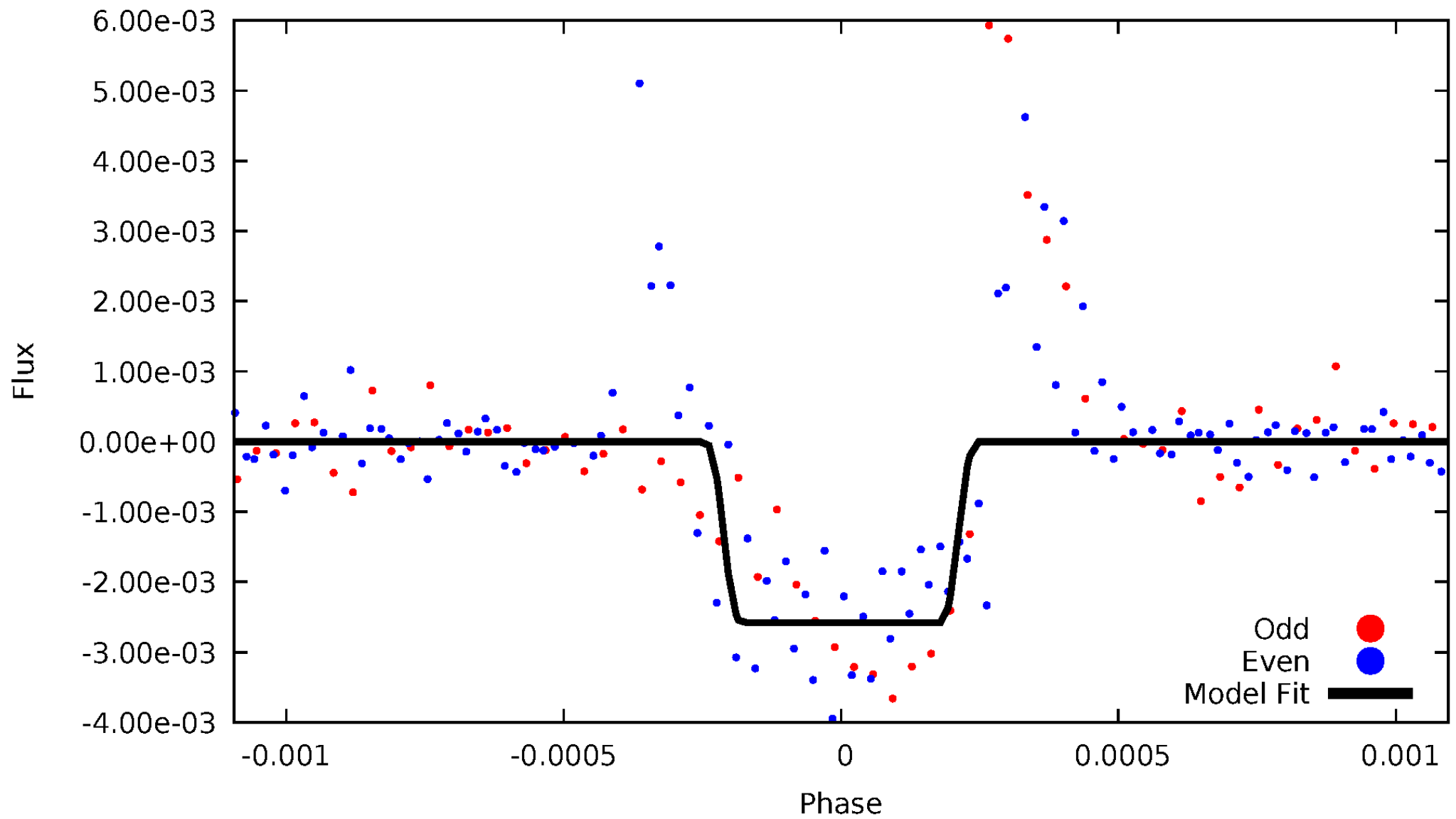
DV Odd/Even

TCE 010857583-02



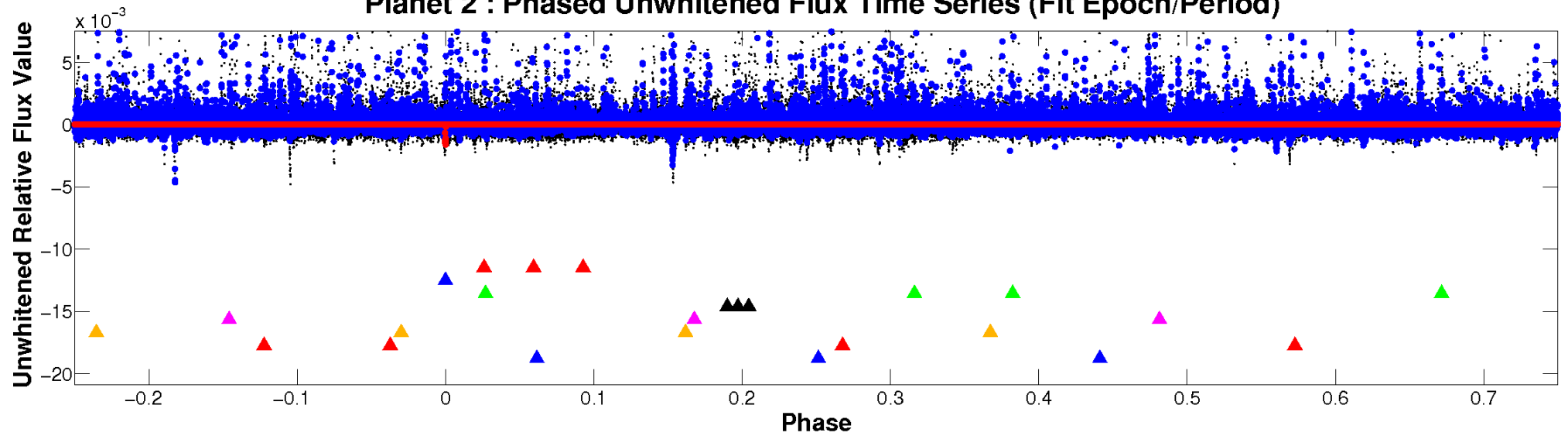
ALT Odd/Even

TCE 010857583-02

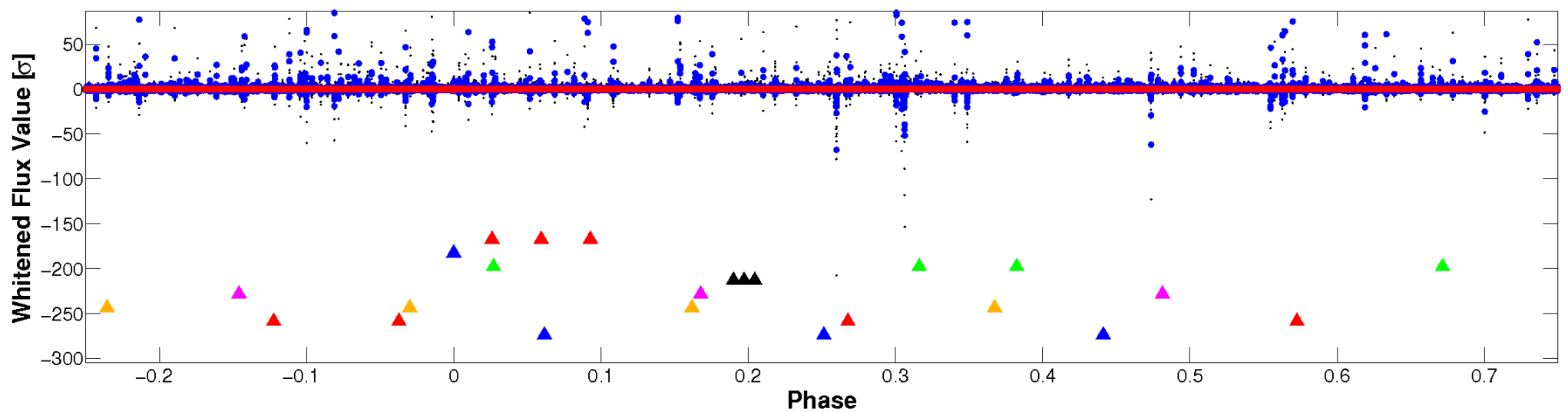


Non-Whitened Vs. Whitened Light Curve

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

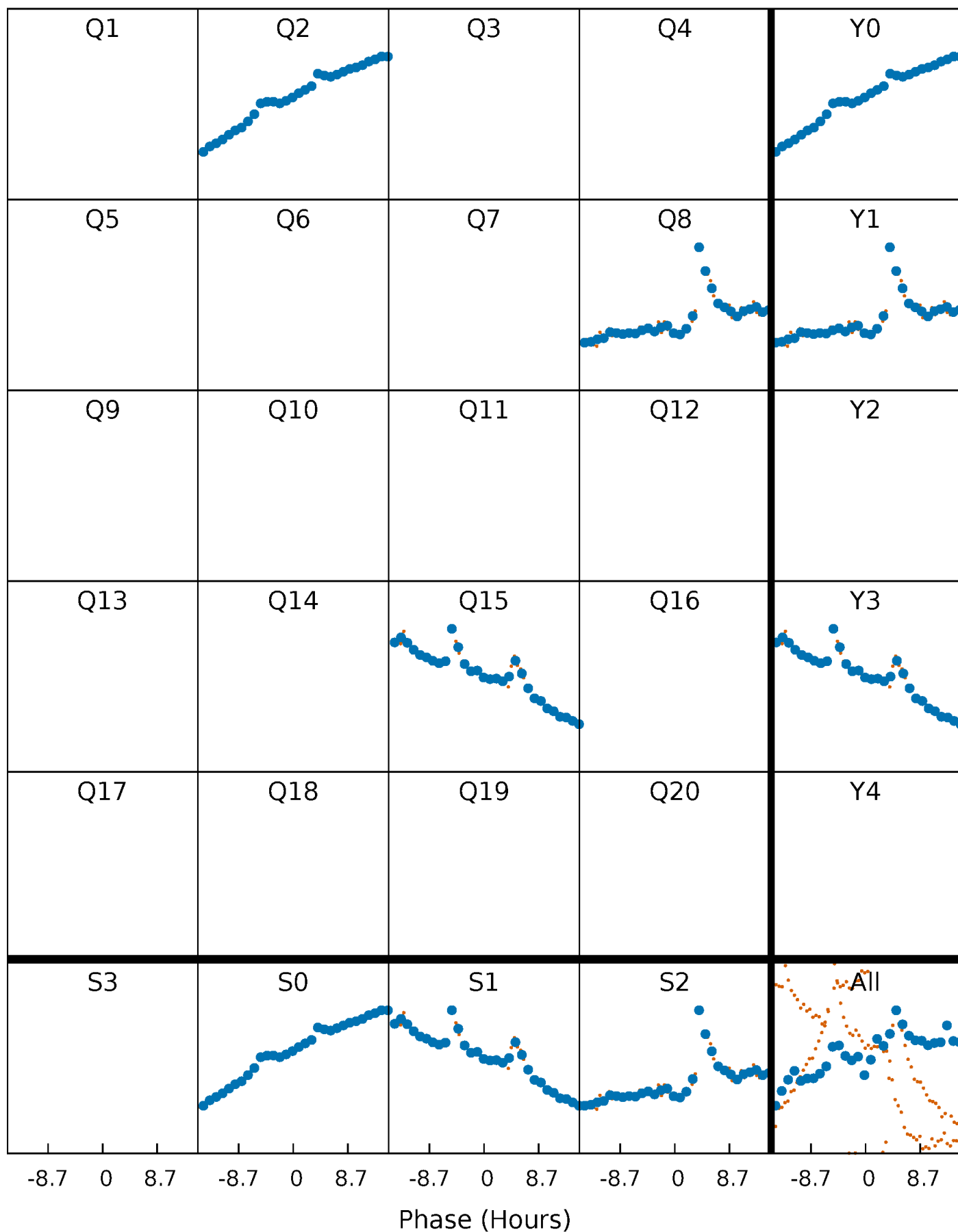


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



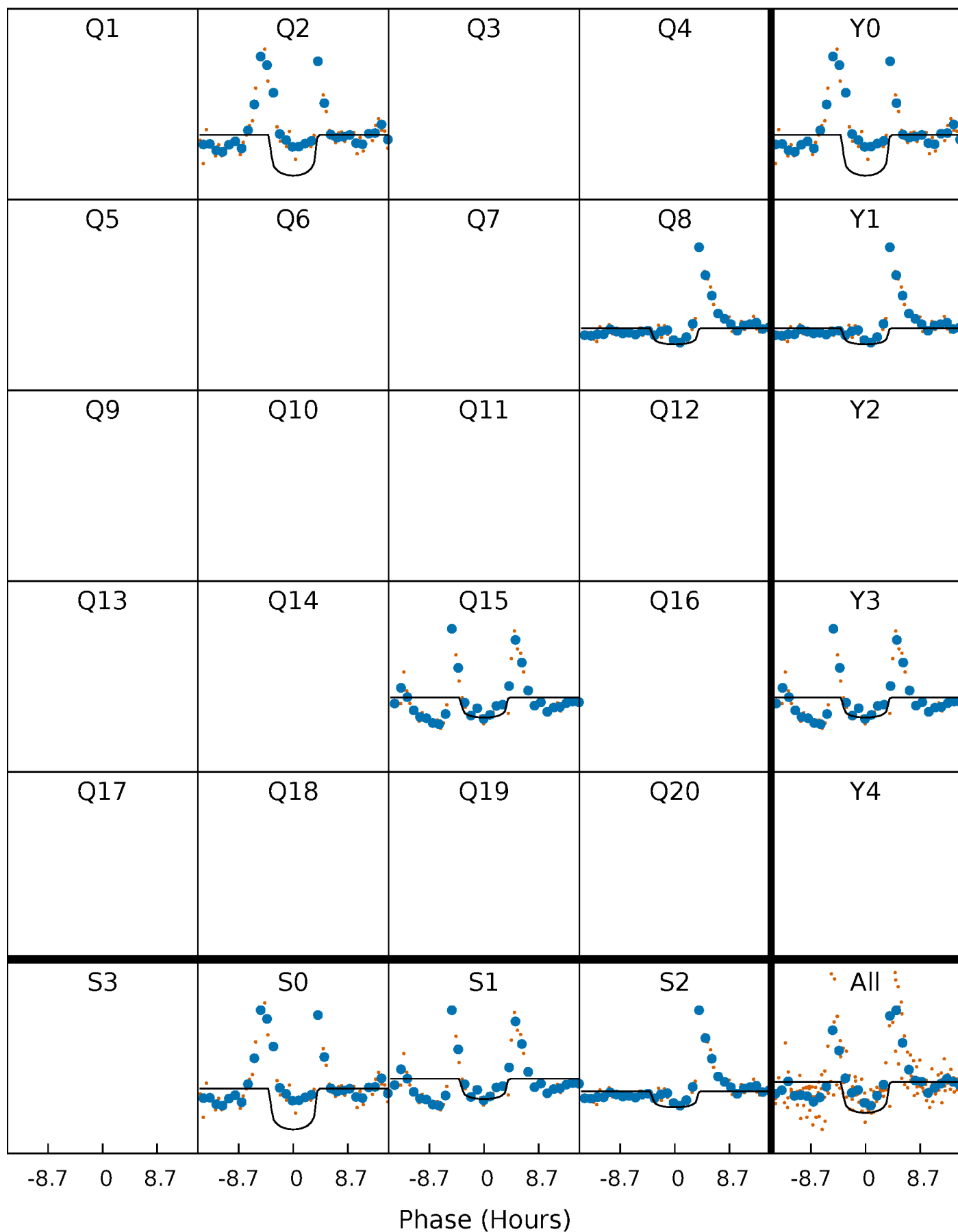
PDC Quarter-Phased Transit Curves

TCE 010857583-02 P=588.281610 Days $T_0=209.166692$ (BKJD)



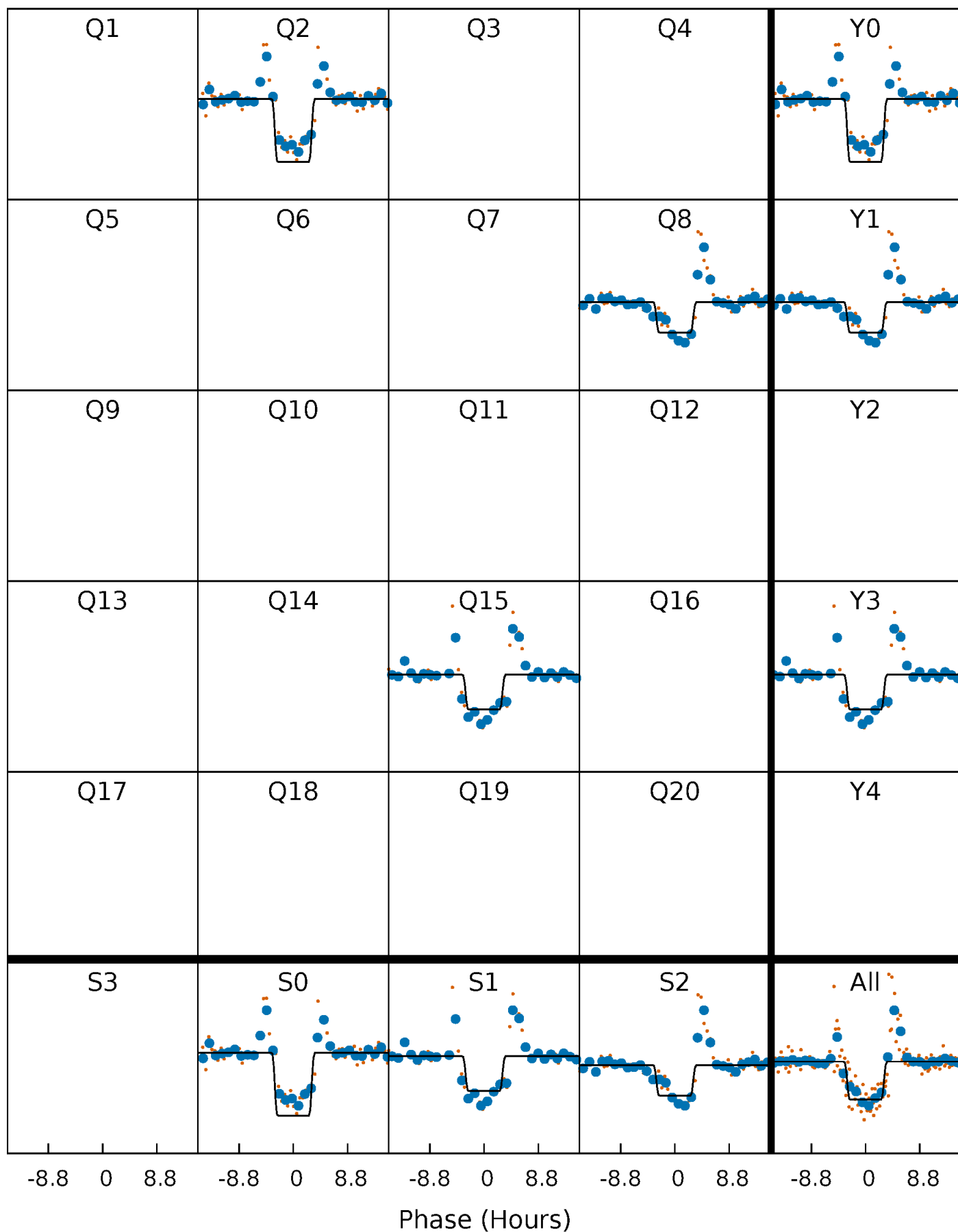
DV Quarter-Phased Transit Curves

TCE 010857583-02 $P=588.281610$ Days $T_0=209.166692$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

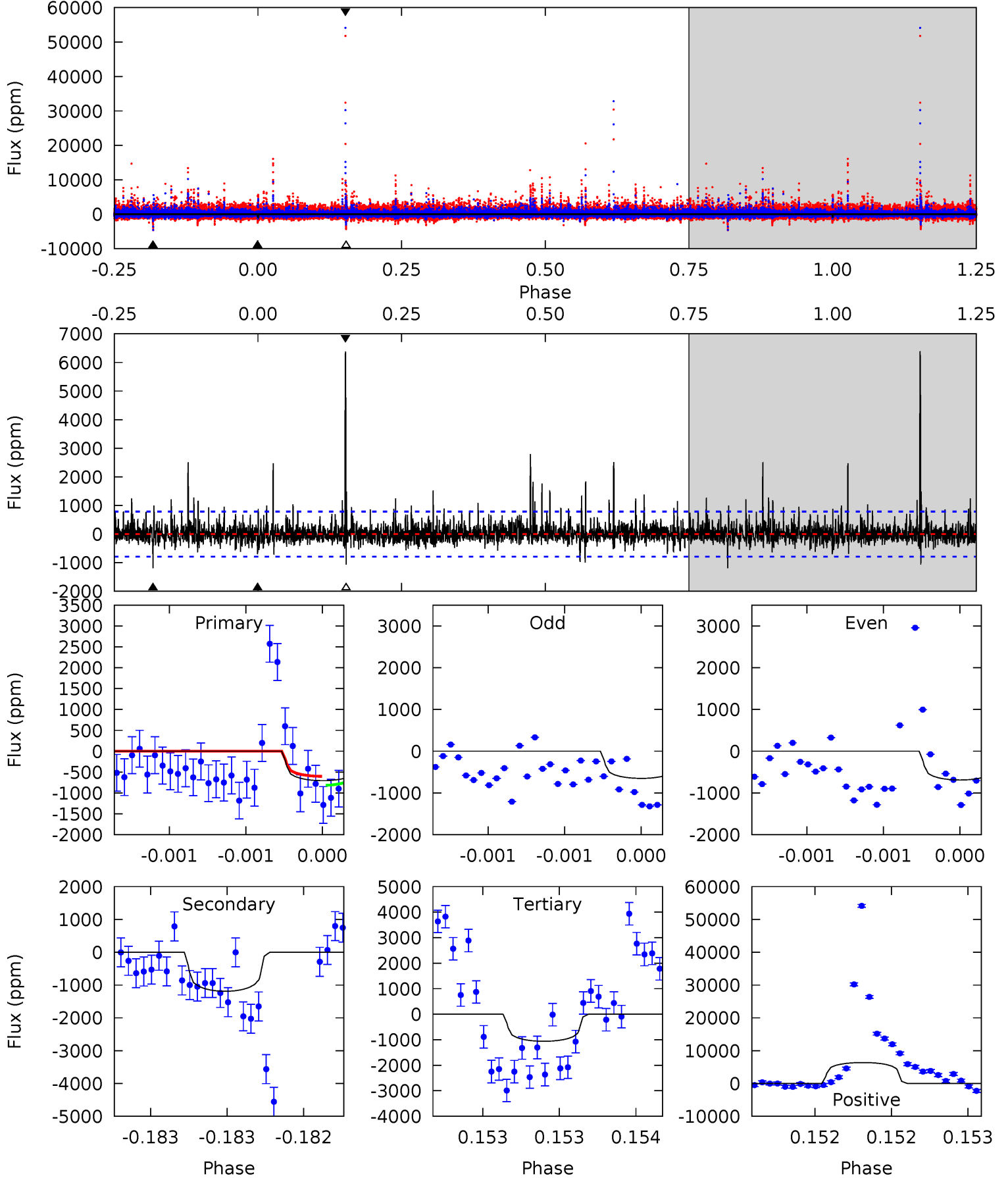
TCE 010857583-02 $P=588.289004$ Days $T_0=209.158580$ (BKJD)



DV Model-Shift Uniqueness Test

010857583-02, P = 588.281610 Days, E = 209.166692 Days

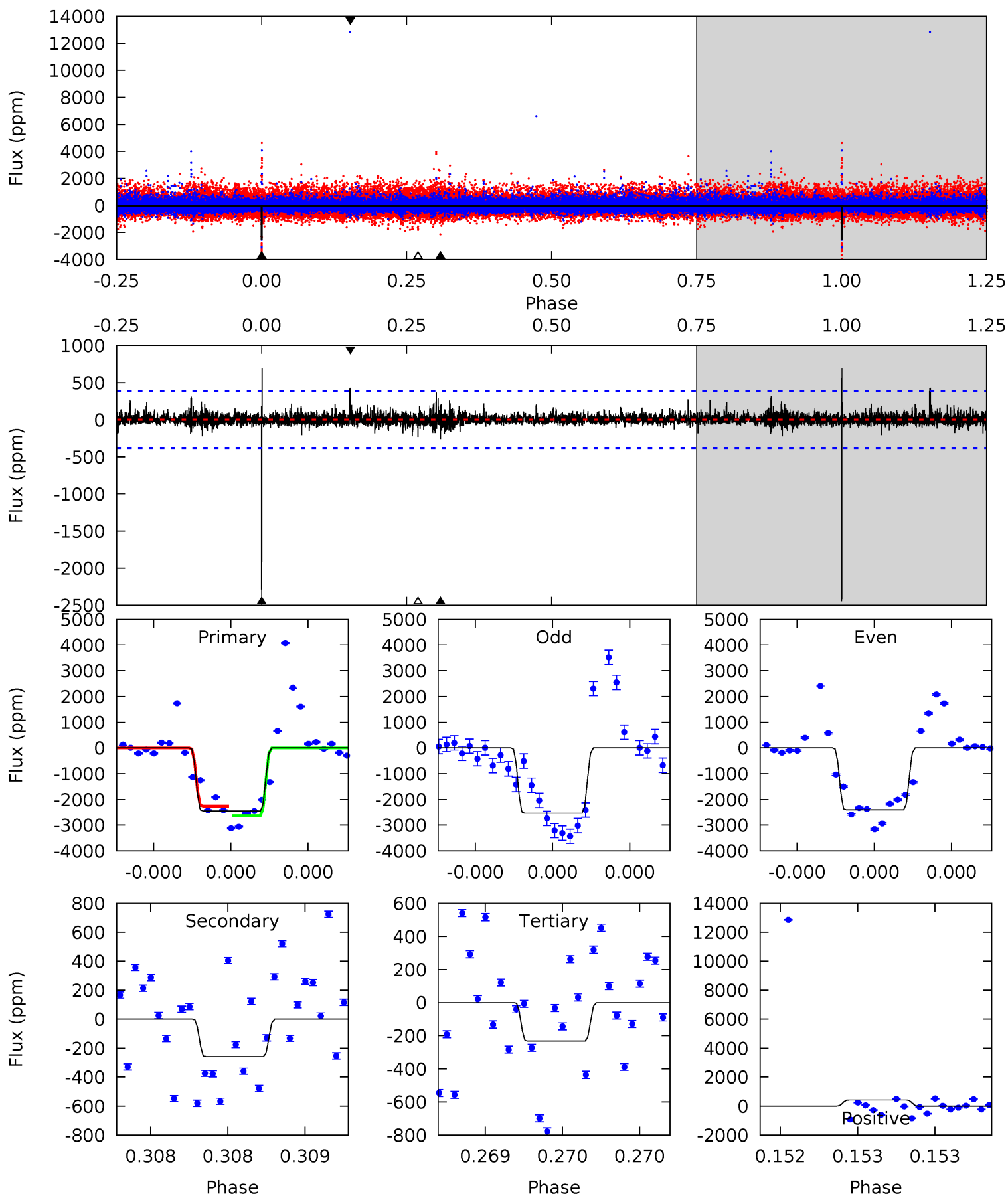
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.98	8.39	7.48	45.0	5.56	3.47	2.21	-2.50	-40.1	0.91	-36.7	0.07	1.03	0.84	0.77



Alt Model-Shift Uniqueness Test

010857583-02, P = 588.289004 Days, E = 209.158580 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.8	3.78	3.40	6.10	5.58	3.50	0.71	32.4	29.7	0.38	-2.32	0.82	0.96	0.22	2.74



Stellar Parameters For KIC 010857583

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3577^{+42}_{-48}	$4.940^{+0.040}_{-0.040}$	$-0.400^{+0.100}_{-0.100}$	$0.330^{+0.030}_{-0.036}$	$0.346^{+0.033}_{-0.045}$	$13.530^{+2.941}_{-2.197}$
	+1%/-1%	+1%/-1%	+25%/-25%	+9%/-11%	+10%/-13%	+22%/-16%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 010857583-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1190 ± 142	$1.37^{+0.69}_{-0.69}$	129^{+3}_{-3}	3490^{+906}_{-422}	$324935^{+959404}_{-184083}$
Alt.	-258 ± 68	$1.84^{+0.78}_{-0.74}$	129^{+3}_{-3}	2565^{+385}_{-217}	38642^{+70475}_{-20439}

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

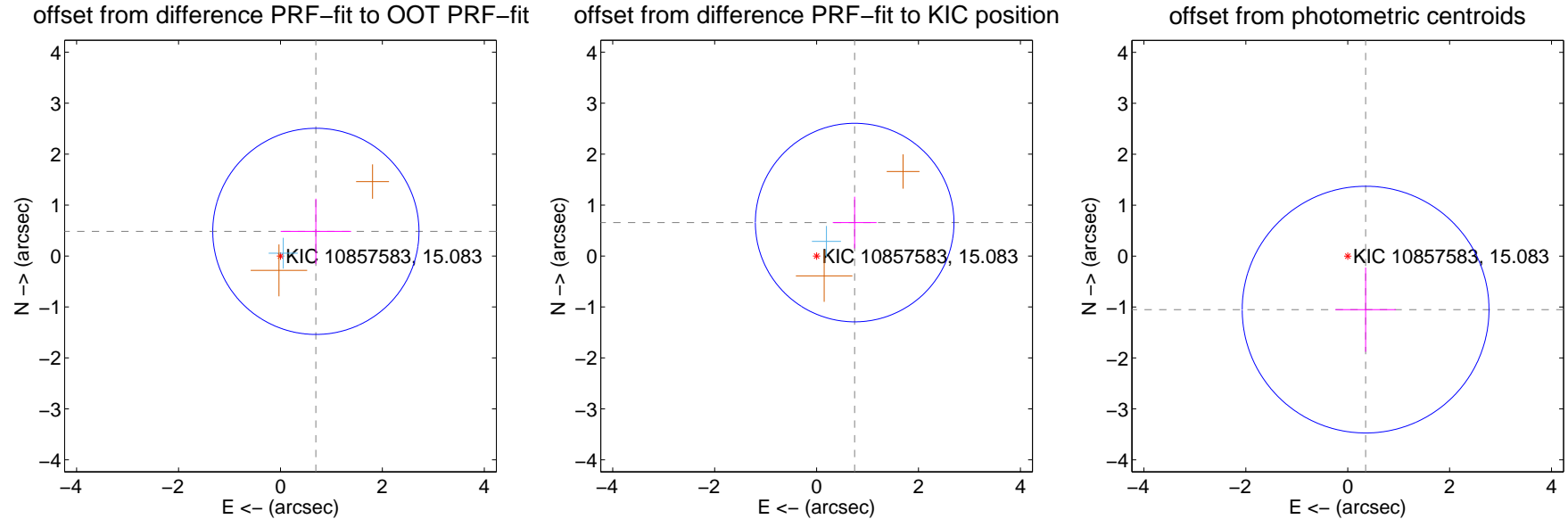
DV Centroid Data

Supplemental centroid analysis for 010857583-02. Kepler magnitude: 15.08. Transit SNR 7.75

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

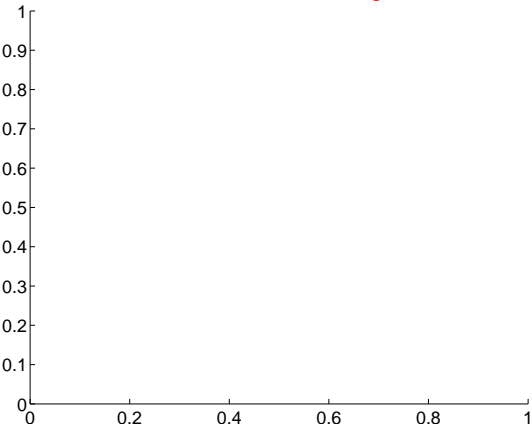
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.847 ± 0.674	1.26	-0.695 ± 0.690	0.484 ± 0.641
PRF-fit source offset from KIC position	0.995 ± 0.650	1.53	-0.748 ± 0.430	0.657 ± 0.507
photometric centroid source offset	1.11 ± 0.81	1.37	-0.35 ± 0.59	-1.05 ± 0.83



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

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

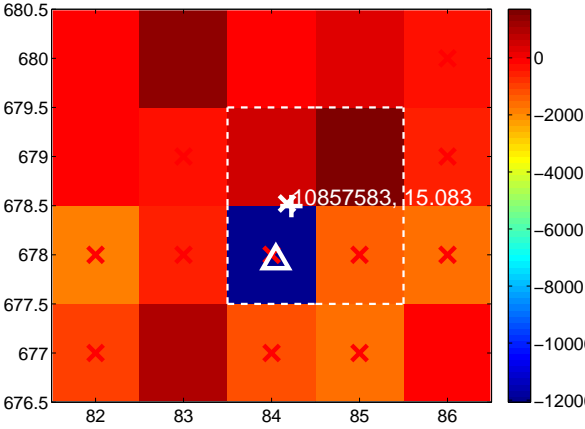
Q1 no difference image



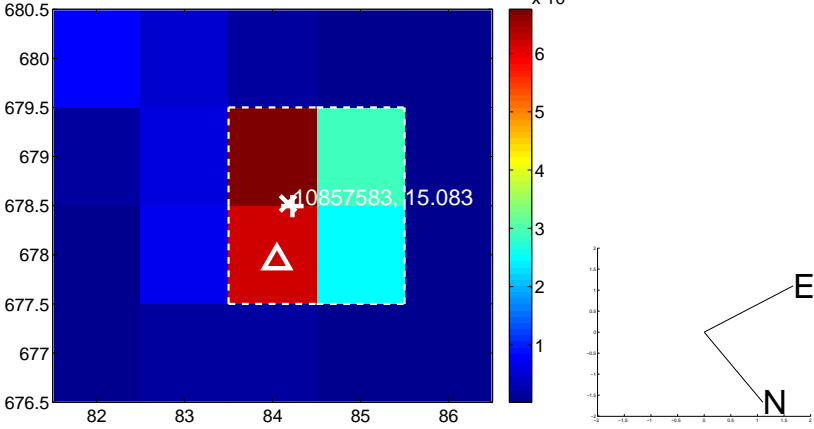
Q1 no OOT image



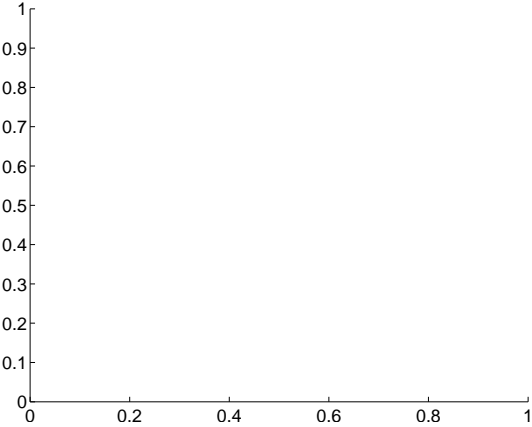
Q2 difference image. Poor Quality



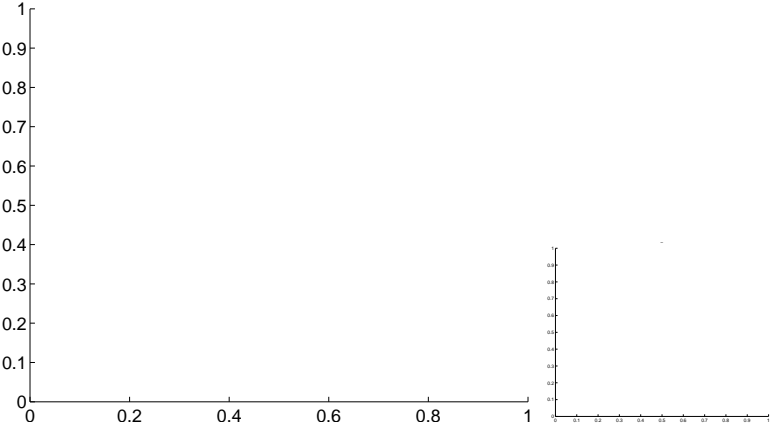
Q2 OOT image



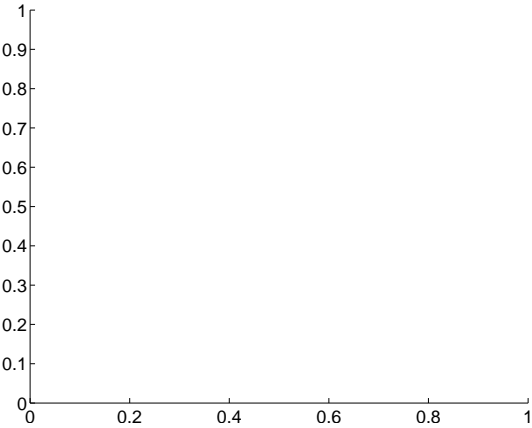
Q3 no difference image



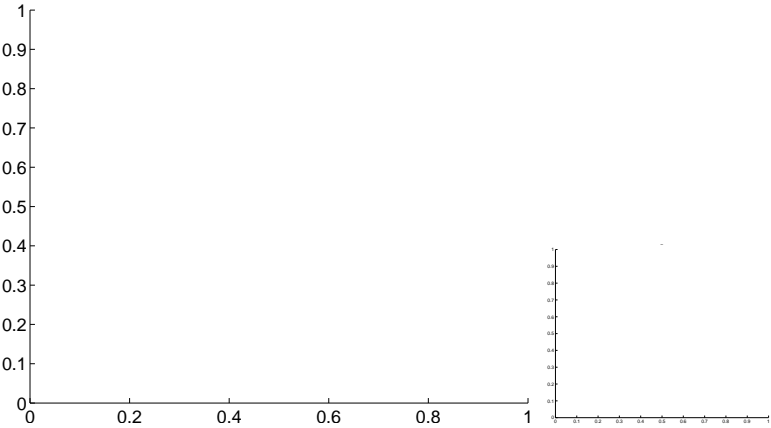
Q3 no OOT image



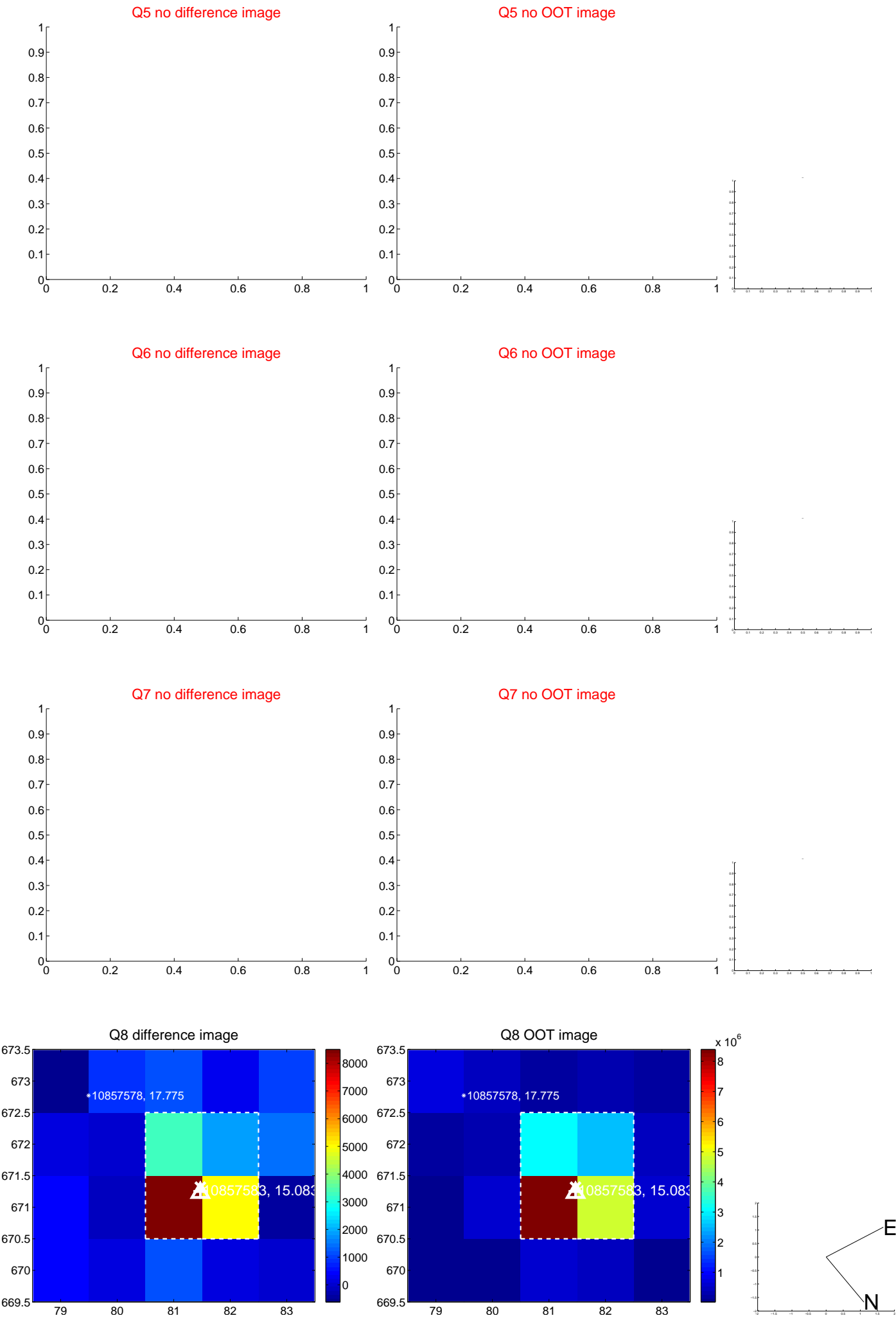
Q4 no difference image



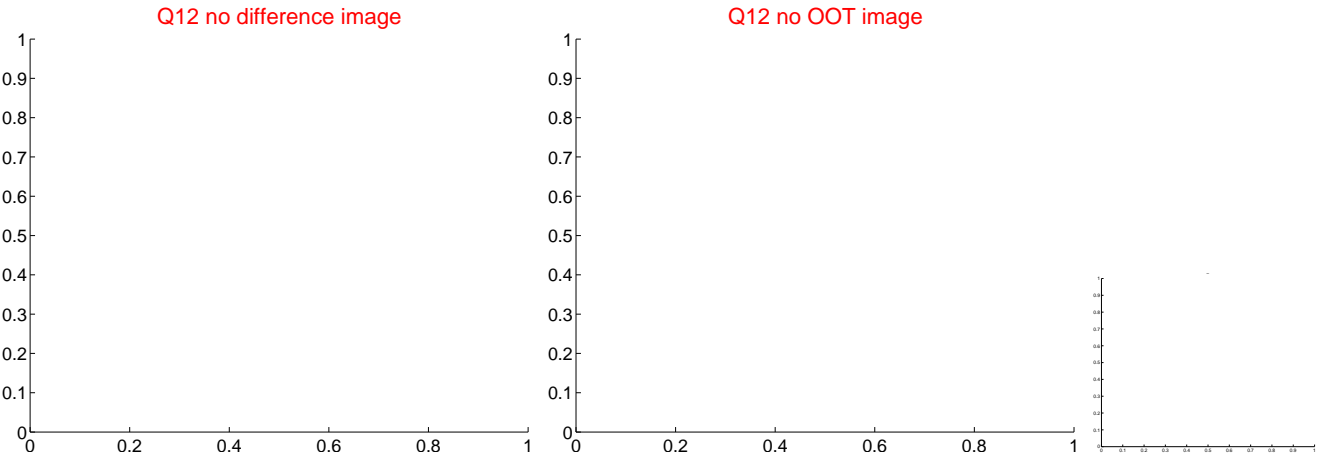
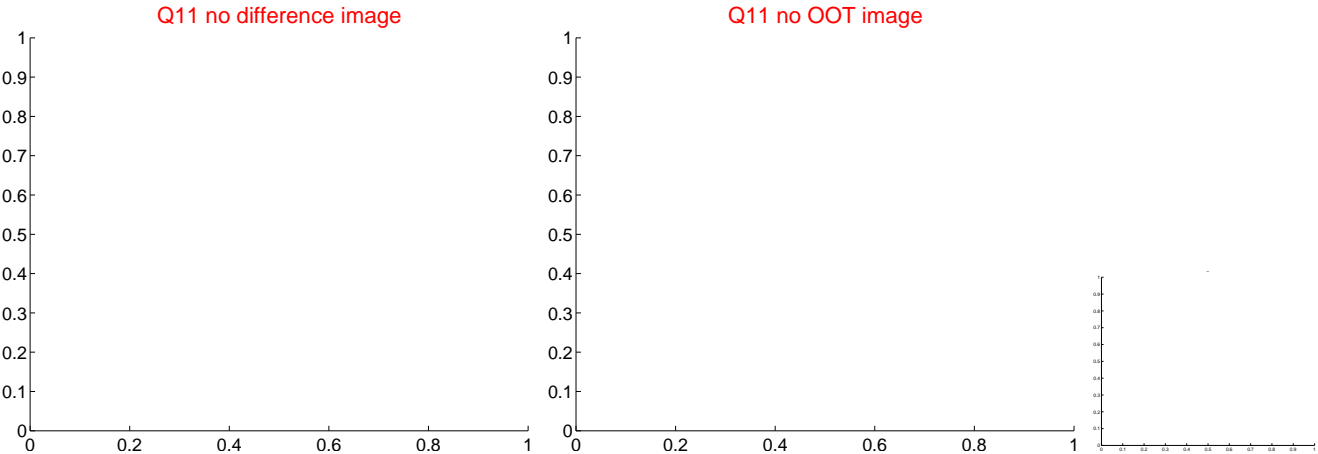
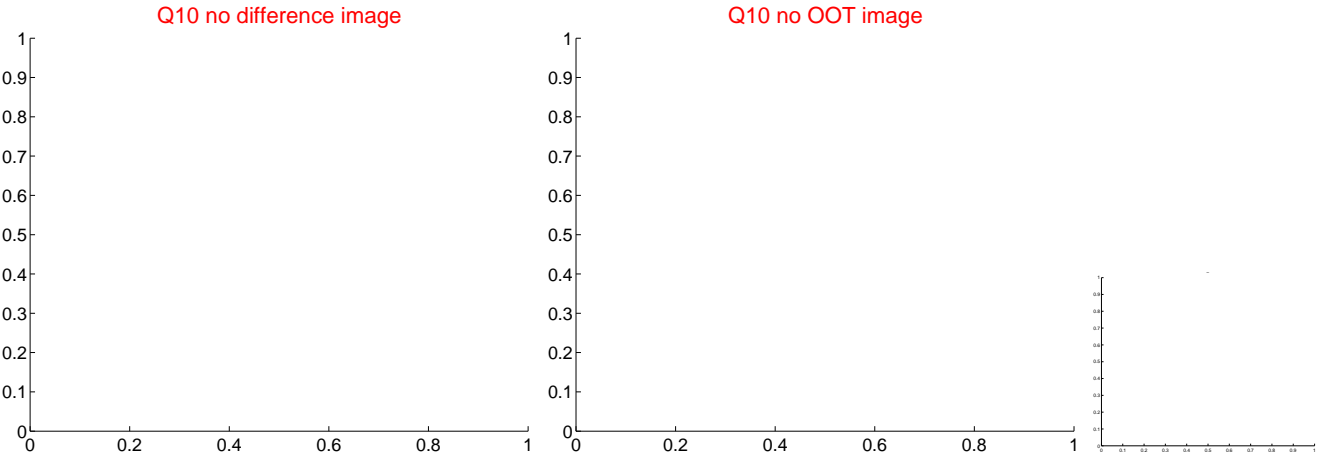
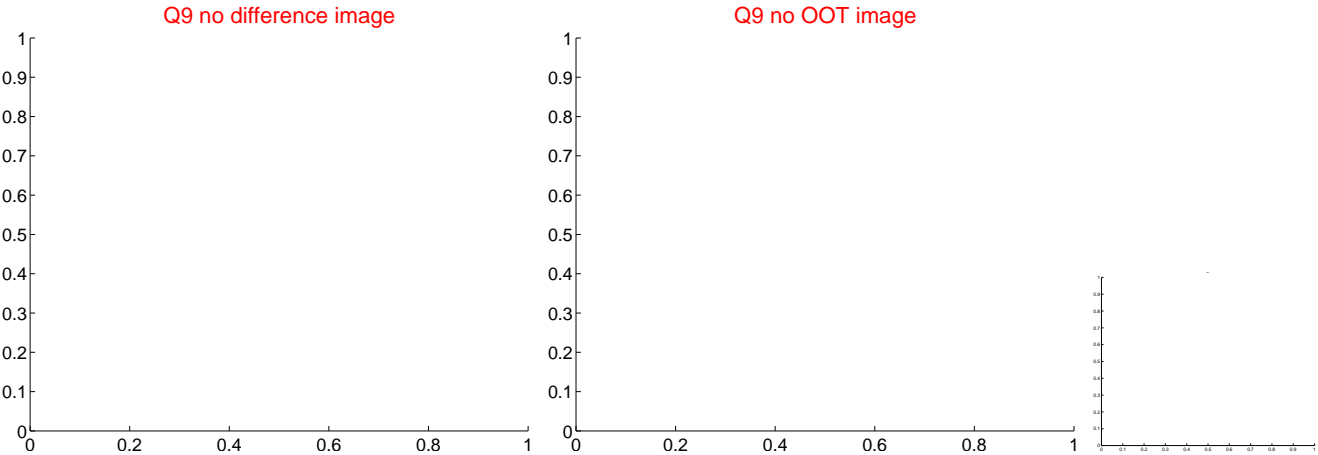
Q4 no OOT image



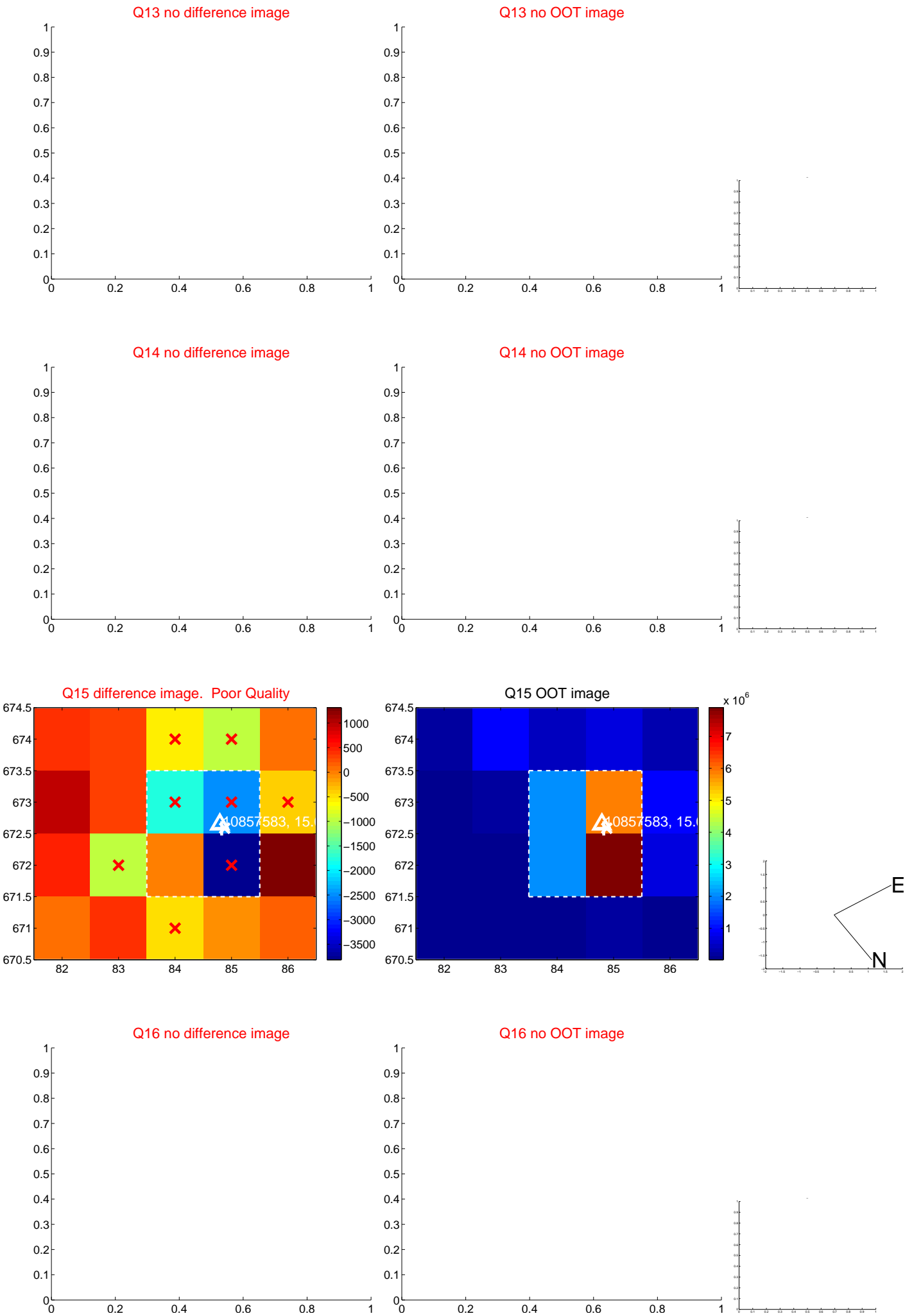
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



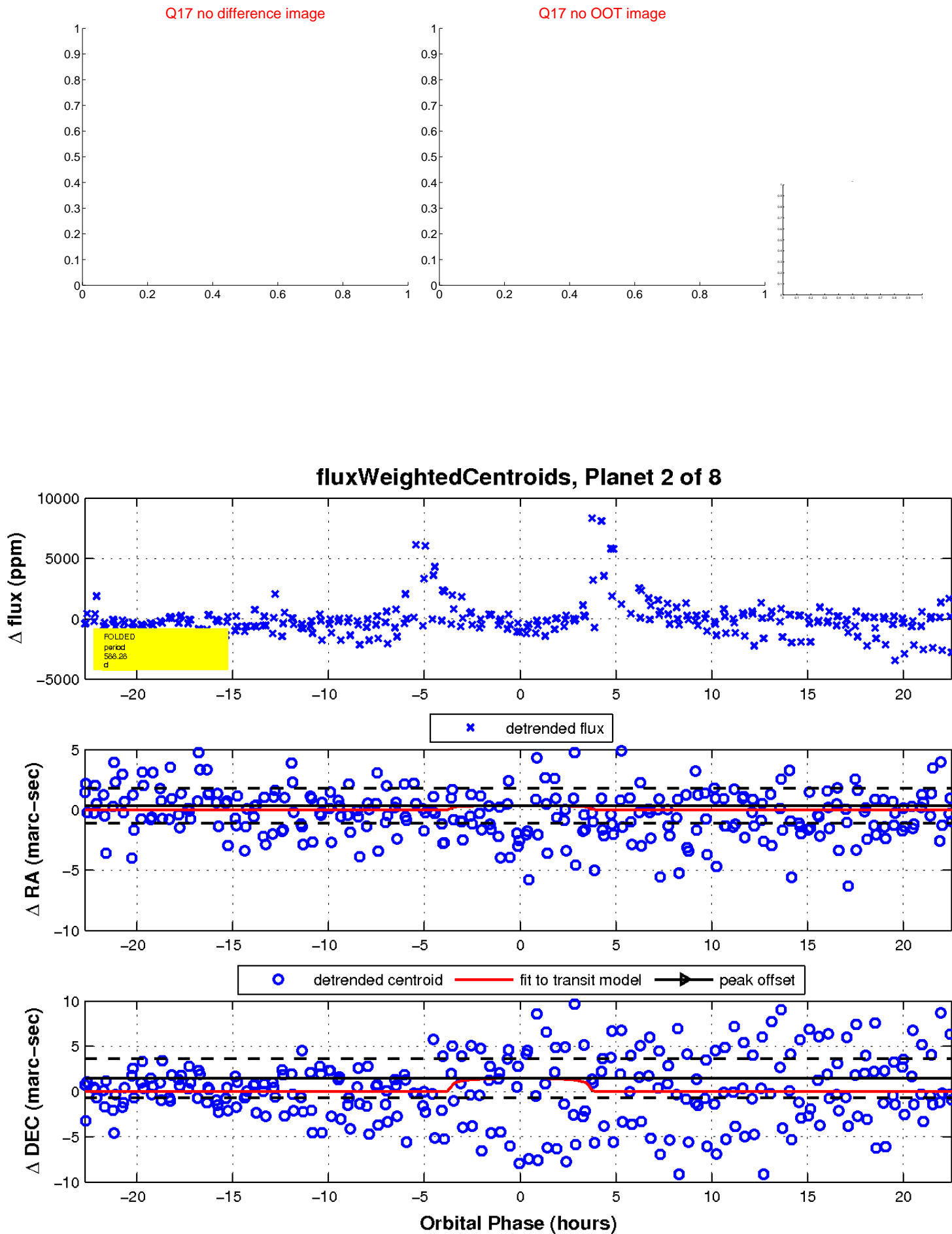
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

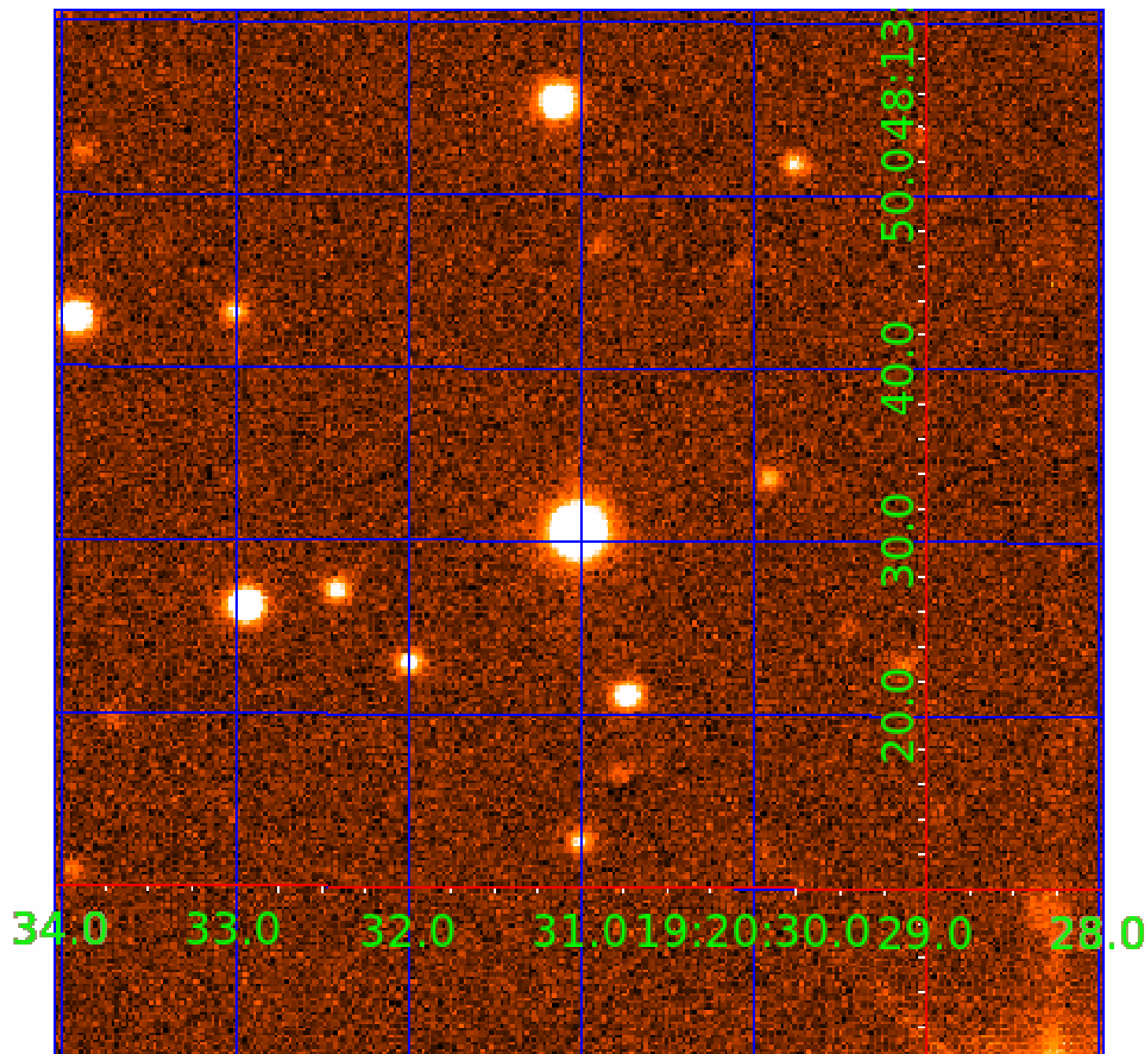


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010857583

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})
010857583-01	OBS	No	568.634152	263.772287	1392.7	5.316	18.0	6.7	0.33	3577	1.27	0.02
010857583-02	OBS	No	588.281610	209.166692	1603.0	7.608	15.0	7.7	0.33	3577	1.33	0.02
010857583-03	OBS	No	379.207725	434.130336	1620.7	7.811	11.9	9.1	0.33	3577	1.40	0.03
010857583-04	OBS	No	584.034494	329.436061	1517.4	8.387	13.6	7.1	0.33	3577	1.29	0.02
010857583-05	OBS	No	403.784419	492.361887	1489.6	9.675	12.5	7.0	0.33	3577	1.28	0.03
010857583-06	OBS	No	354.599656	304.376433	2021.9	18.157	10.4	10.2	0.33	3577	1.72	0.03
010857583-07	OBS	No	408.868532	137.224673	1139.5	6.601	11.4	6.2	0.33	3577	1.18	0.03
010857583-08	OBS	No	476.626409	468.712412	884.9	7.500	11.6	-1.0	0.33	3577	0.98	0.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010857583-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010857583-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010857583-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010857583-04	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—INCONSISTENT_TRANS
010857583-05	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
010857583-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
010857583-07	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—INCONSISTENT_TRANS
010857583-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—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.

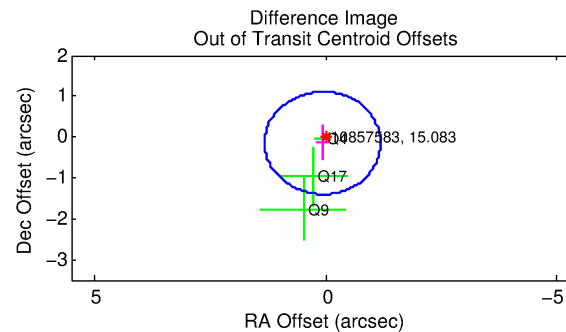
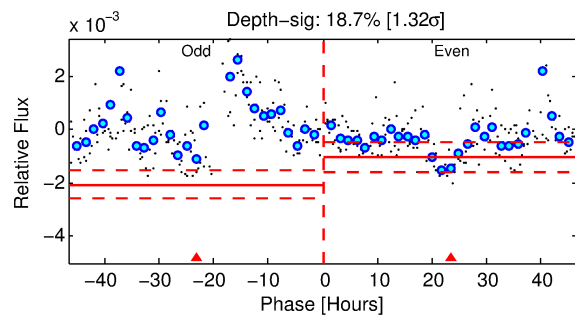
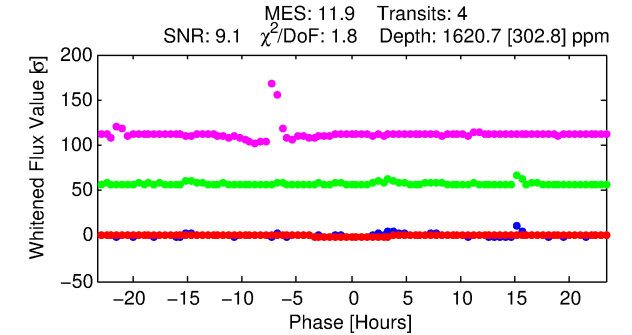
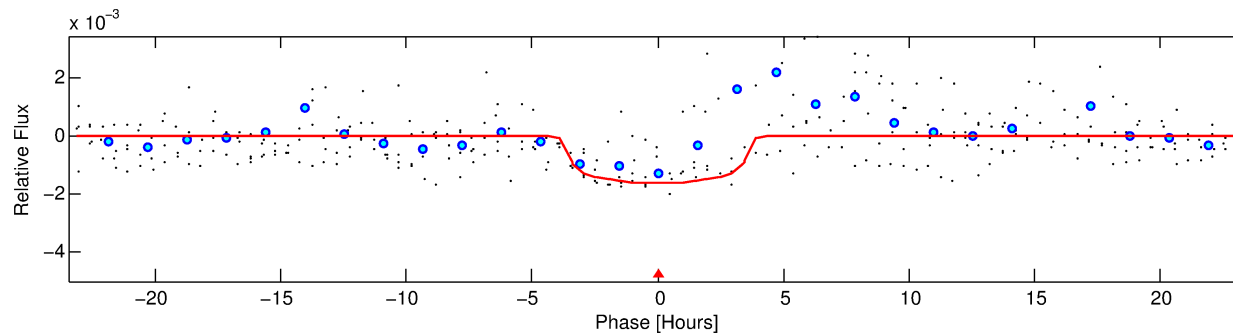
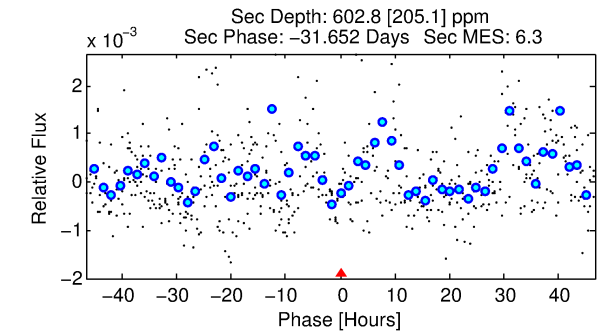
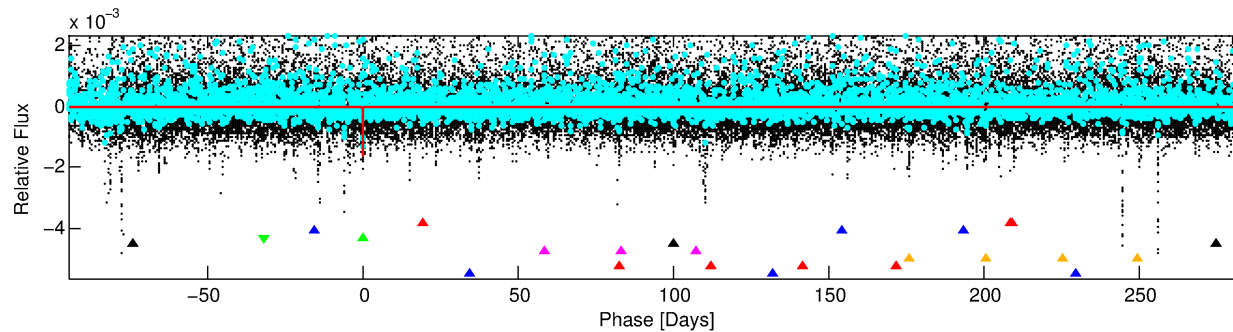
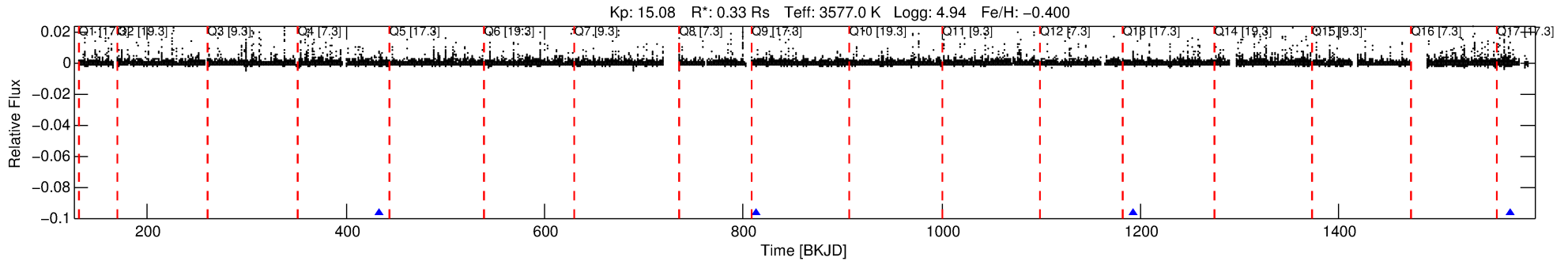
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010857583-03

No Significant Match Found

DV One-Page Summary

KIC: 10857583 Candidate: 3 of 8 Period: 379.208 d



DV Fit Results:

Period = 379.20773 [0.00787] d
Epoch = 434.1303 [0.0131] BKJD
Rp/R* = 0.0389 [0.0094]
a/R* = 298.92 [304.10]
b = 0.66 [0.87]
Seff = 0.03 [0.00]
Teq = 107 [3] K
Rp = 1.40 [0.37] Re
a = 0.7199 [0.0568] AU
Ag = 87592.93 [52615.45] [1.66σ]
Teffp = 2842 [423] K [6.46σ]

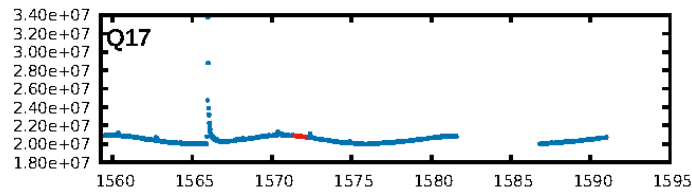
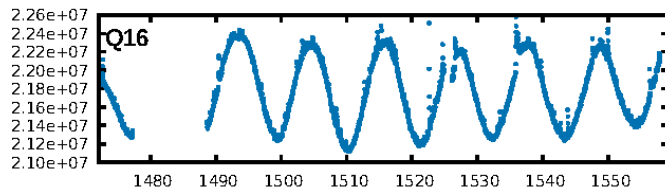
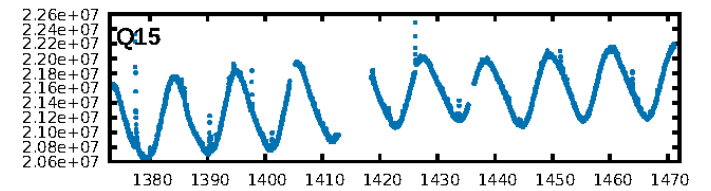
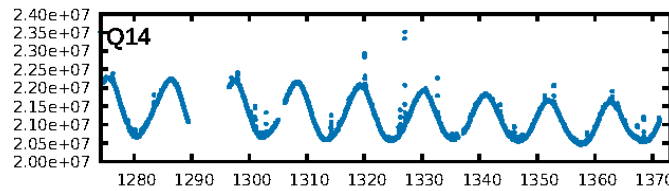
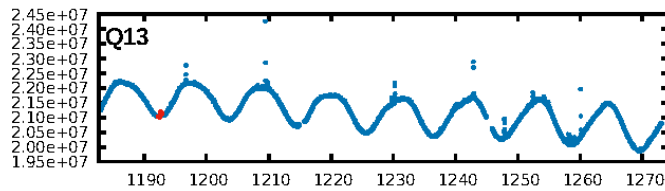
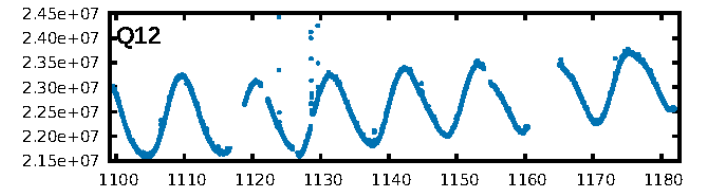
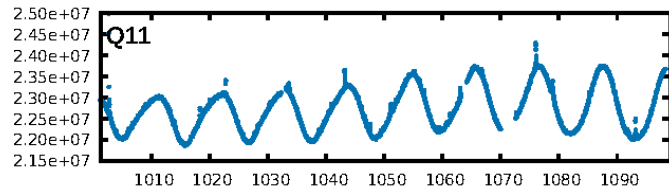
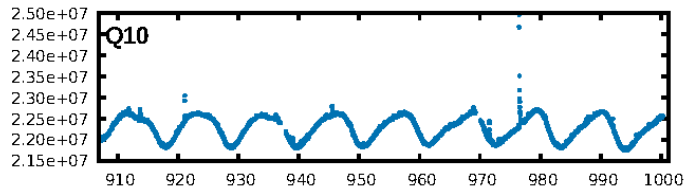
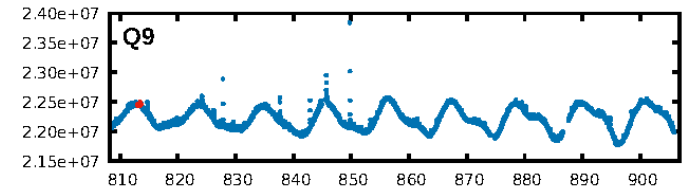
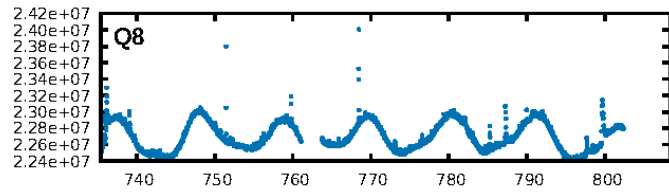
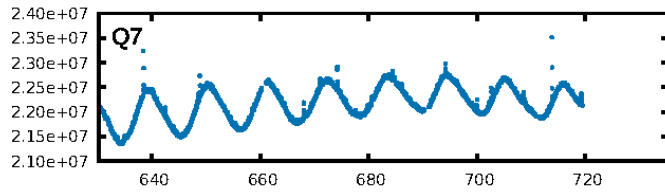
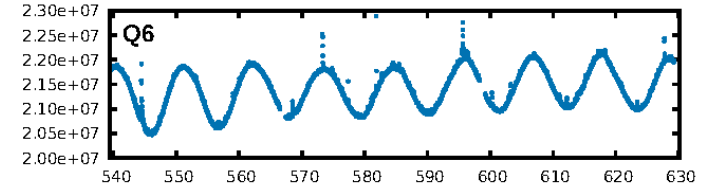
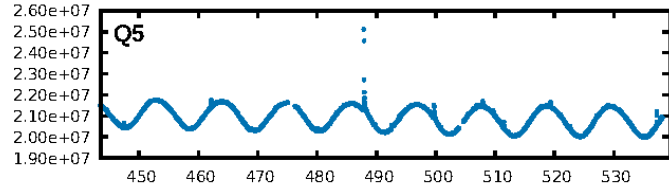
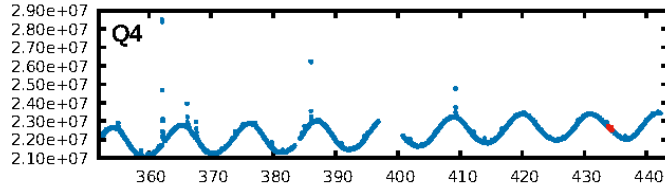
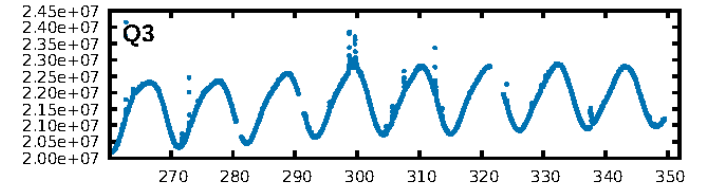
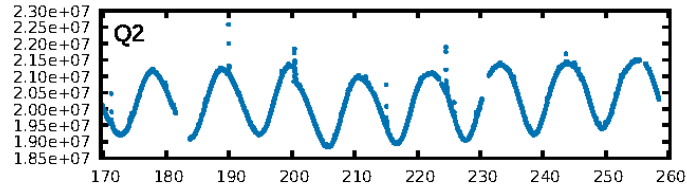
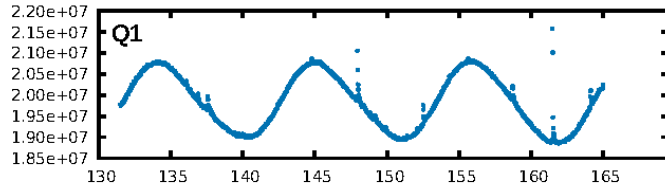
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [29.88σ]
LongPeriod-sig: 100.0% [47.43σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 59.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -2.256
Centroid-sig: 3.1%
Centroid-so: 1.038 arcsec [1.57σ]
OotOffset-rm: 0.161 arcsec [0.39σ]
OotOffset-st: 0/0/1/2 [3]
KicOffset-rm: 0.072 arcsec [0.18σ]
KicOffset-st: 0/0/1/2 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

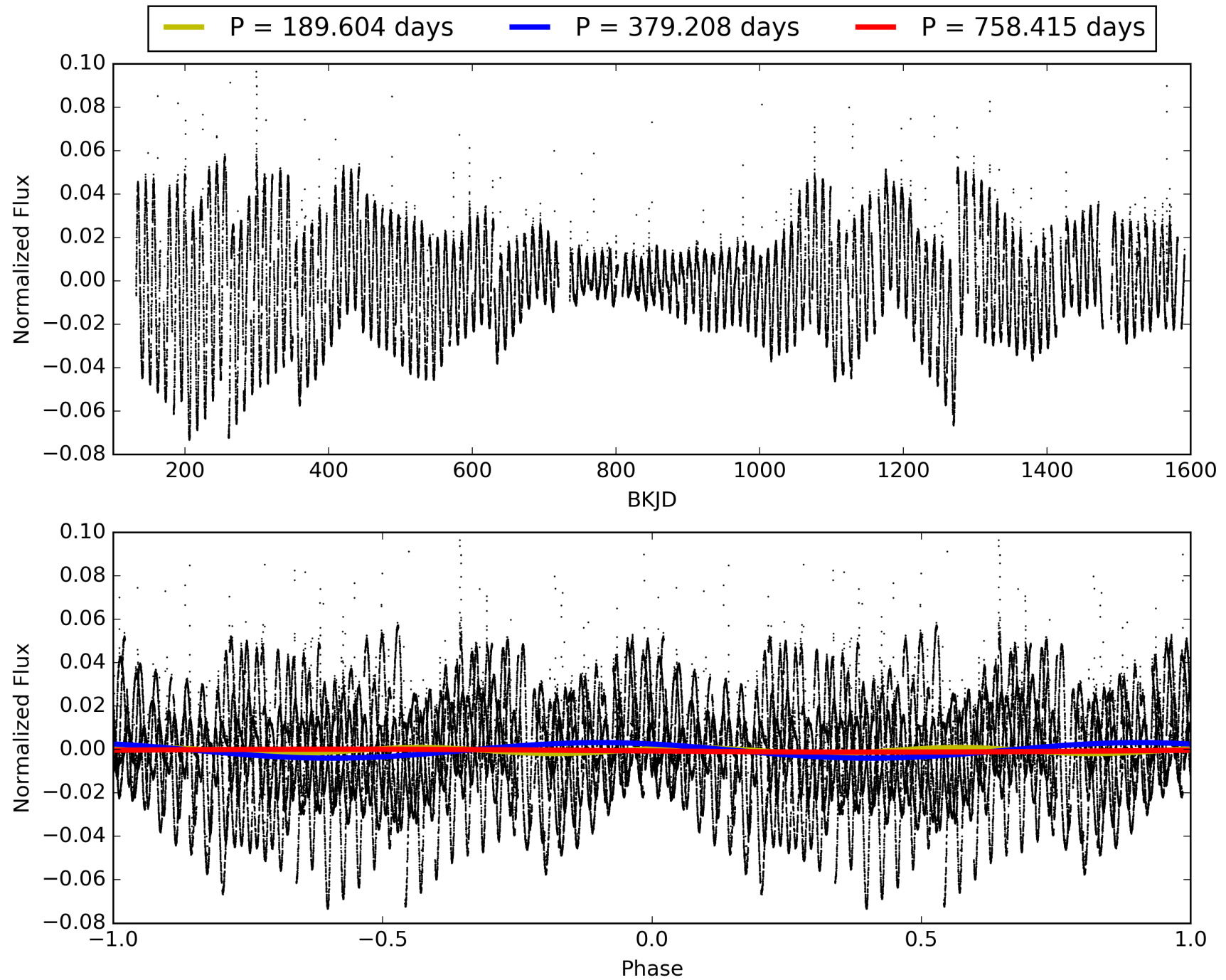
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:27:16 Z

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

TCE 010857583-03, PDC Light Curves

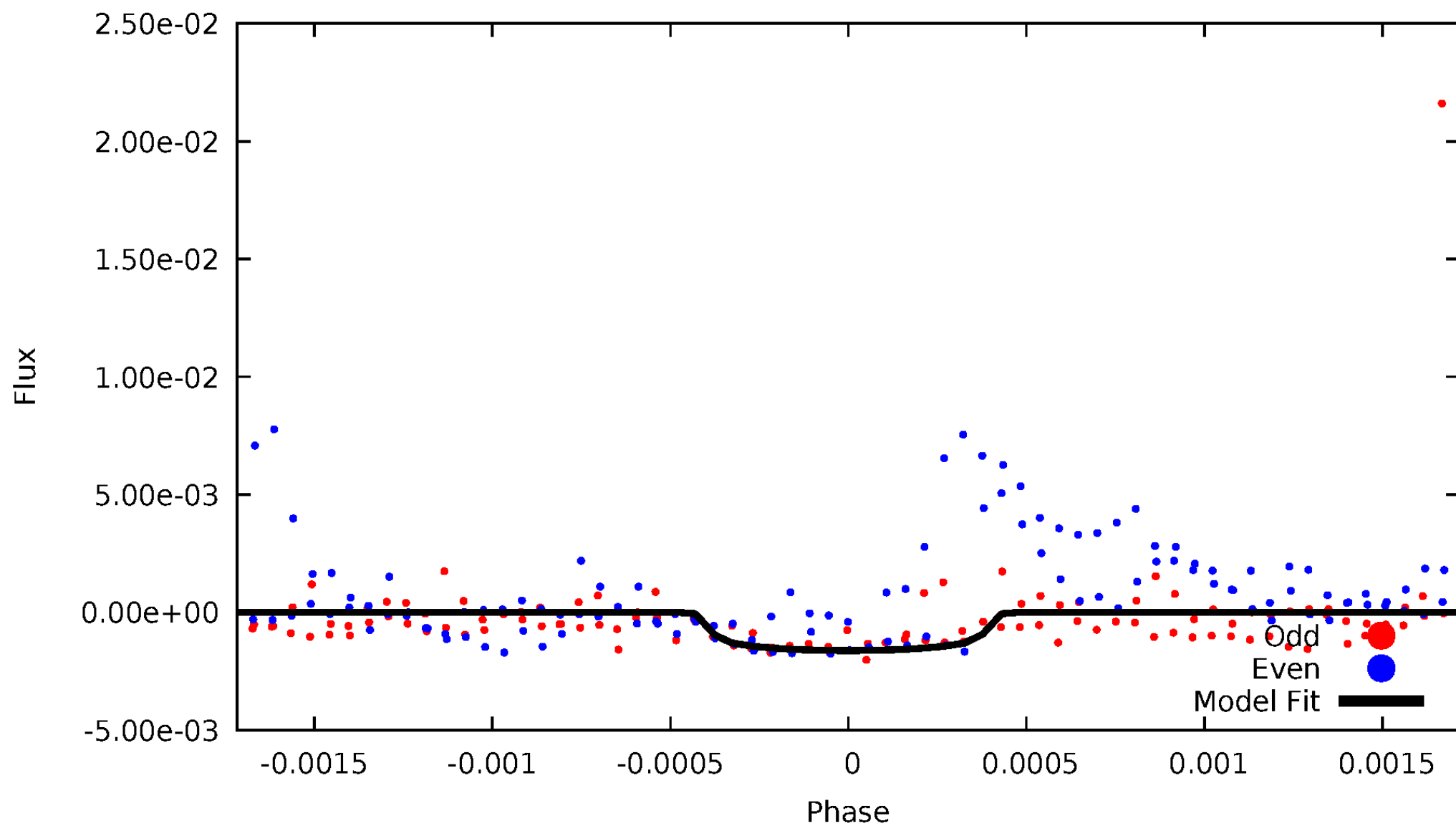


TCE 010857583-03



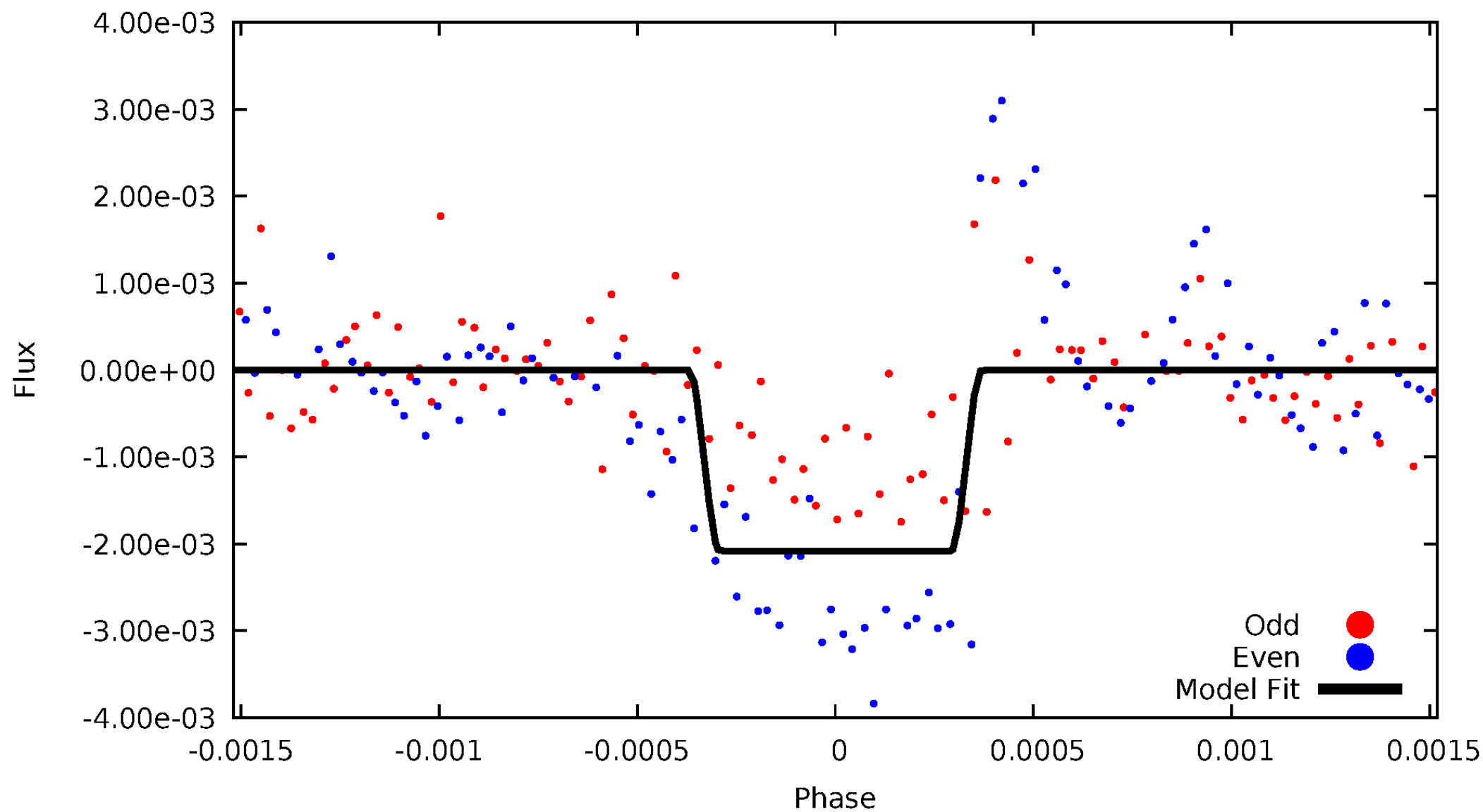
DV Odd/Even

TCE 010857583-03



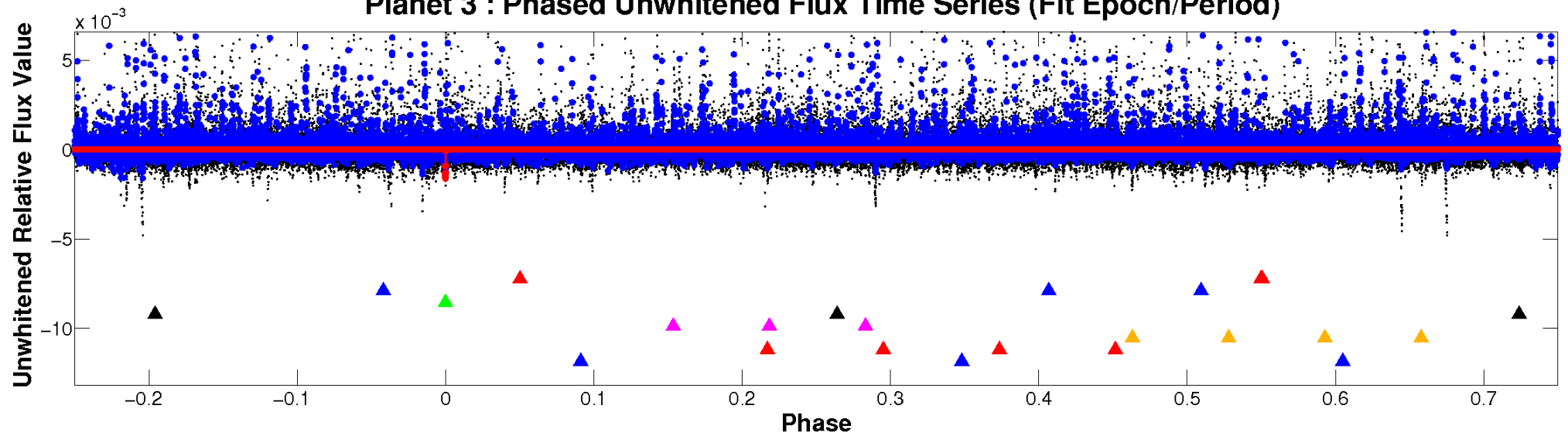
ALT Odd/Even

TCE 010857583-03

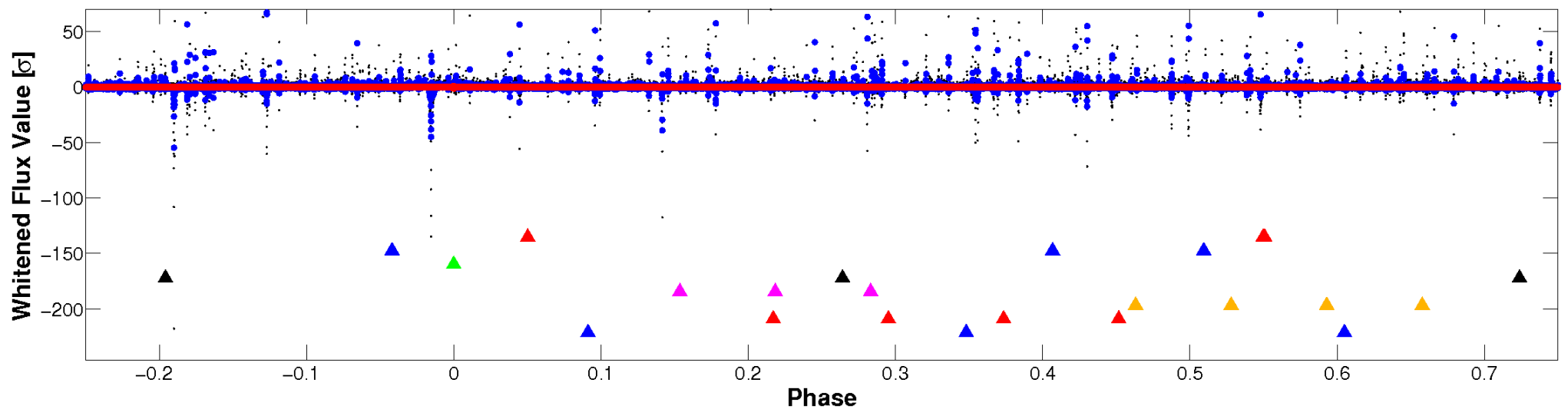


Non-Whitened Vs. Whitened Light Curve

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

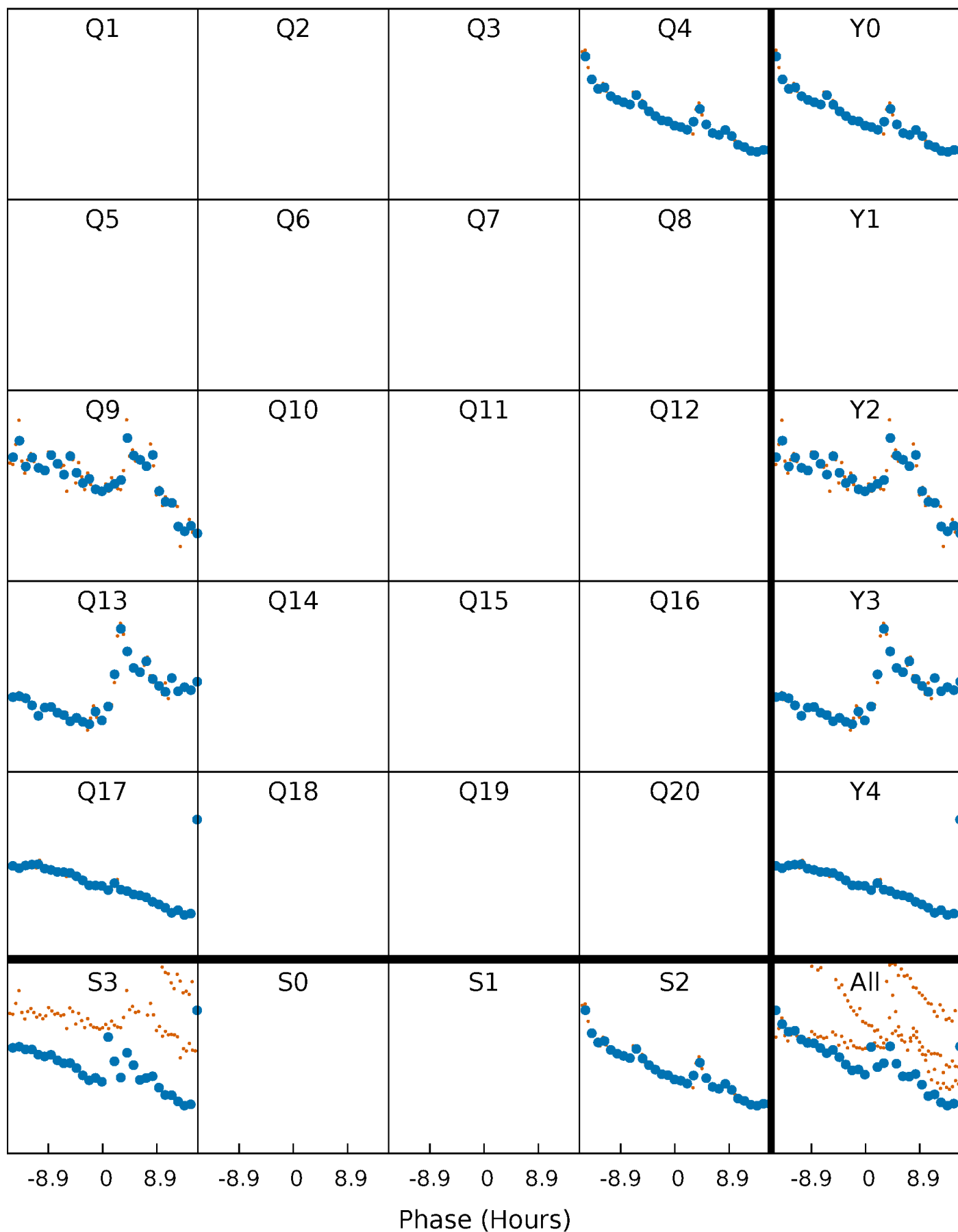


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



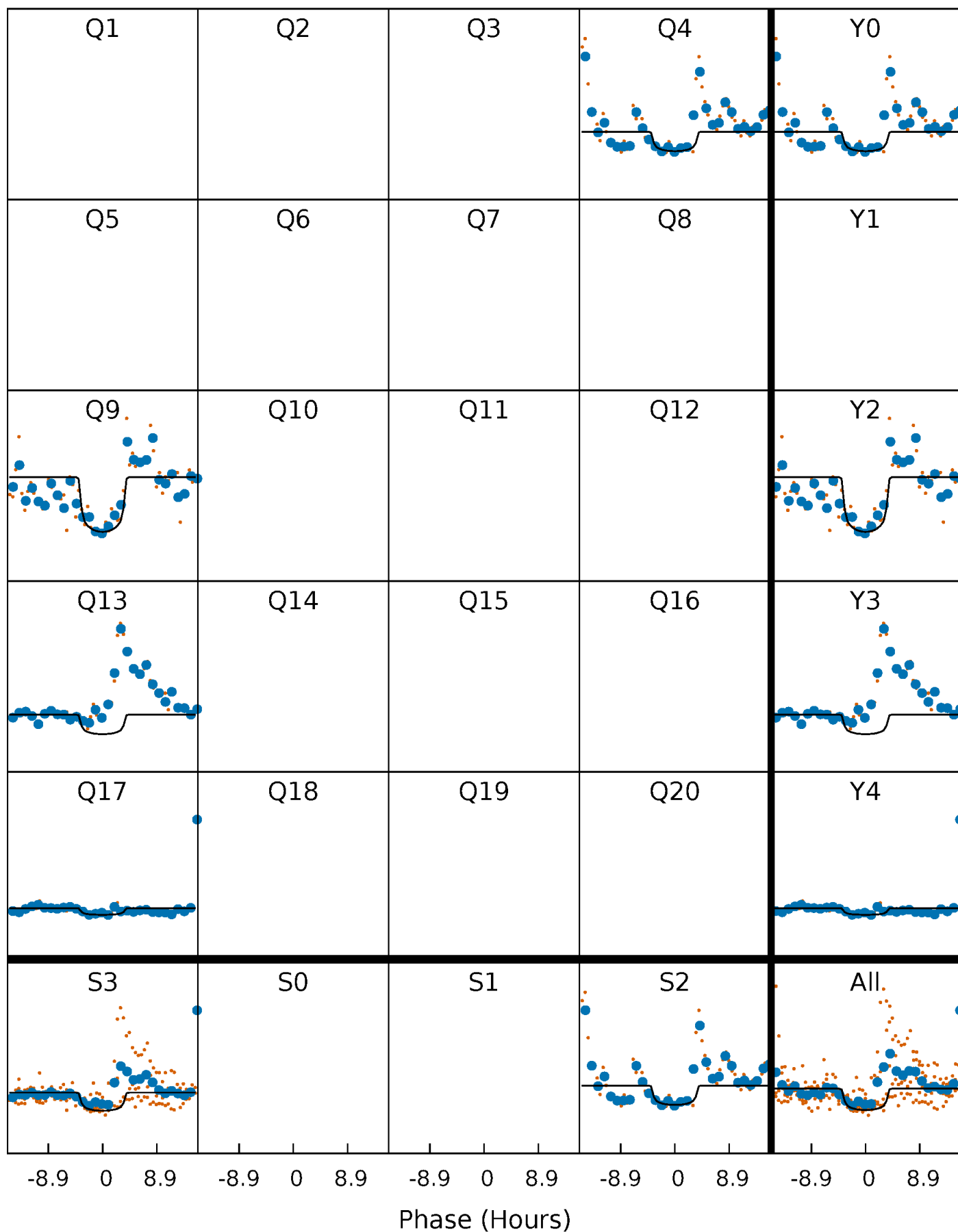
PDC Quarter-Phased Transit Curves

TCE 010857583-03 $P=379.207725$ Days $T_0=434.130336$ (BKJD)



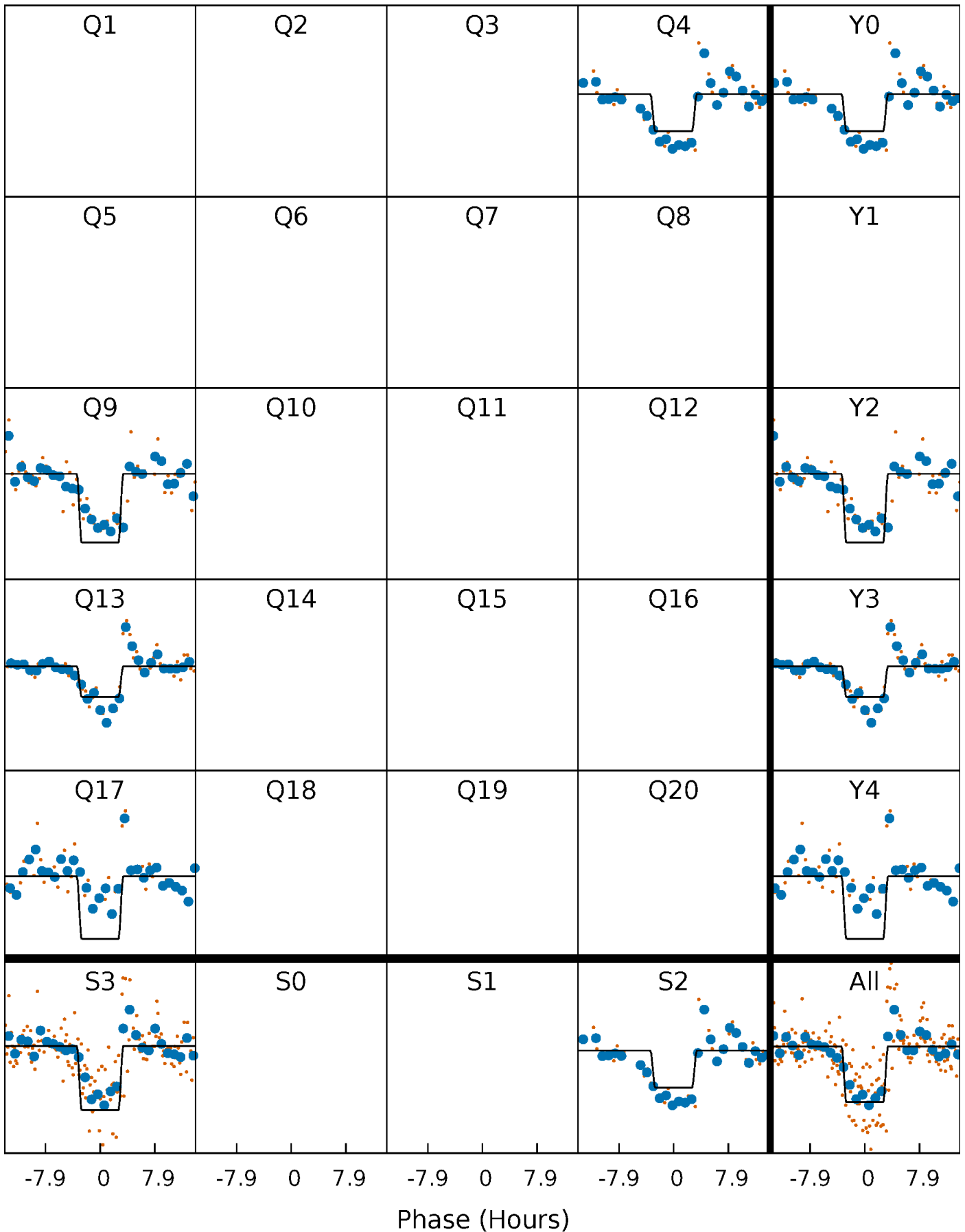
DV Quarter-Phased Transit Curves

TCE 010857583-03 $P=379.207725$ Days $T_0=434.130336$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

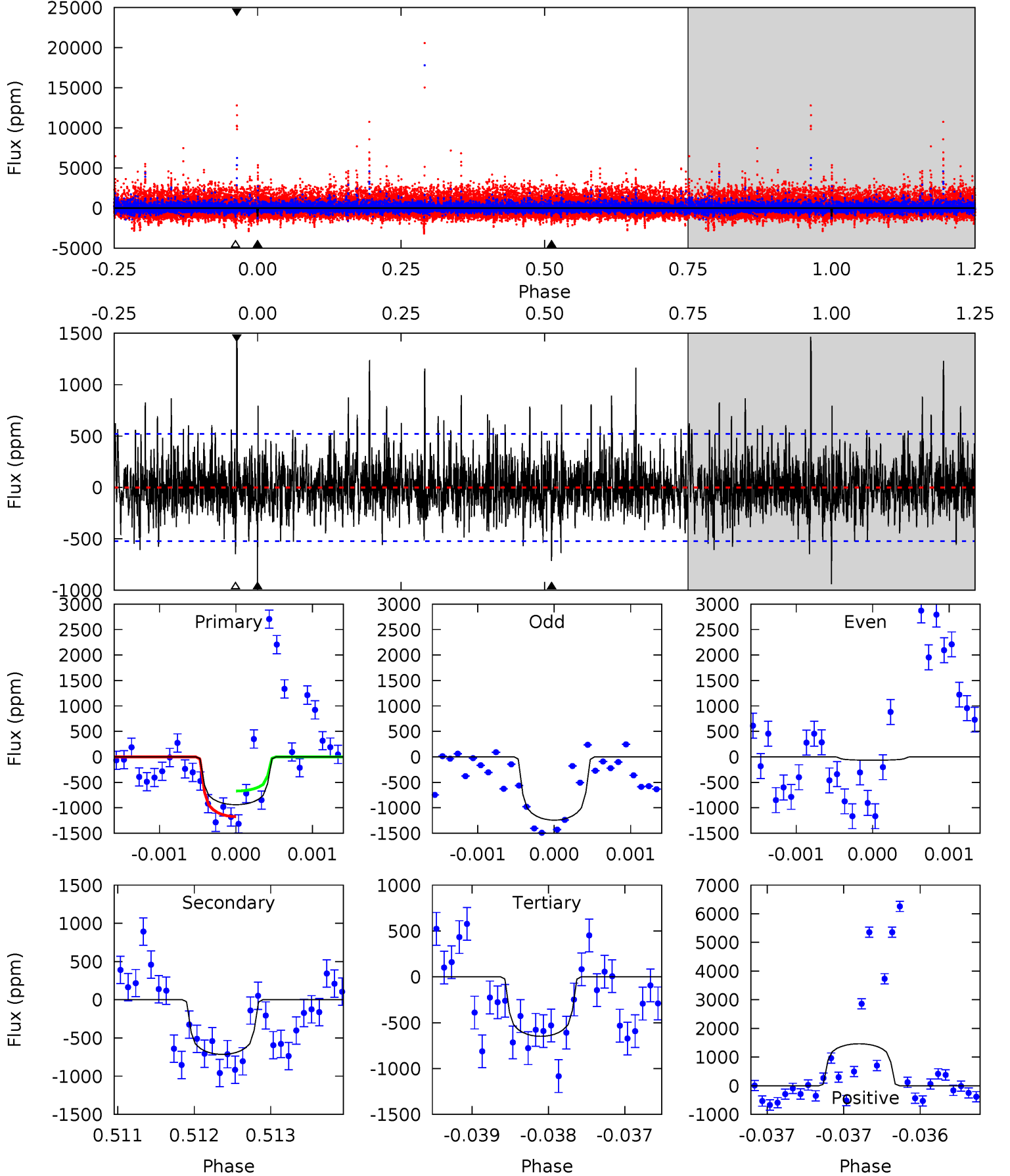
TCE 010857583-03 P=379.192384 Days $T_0=434.123884$ (BKJD)



DV Model-Shift Uniqueness Test

010857583-03, P = 379.207725 Days, E = 54.922611 Days

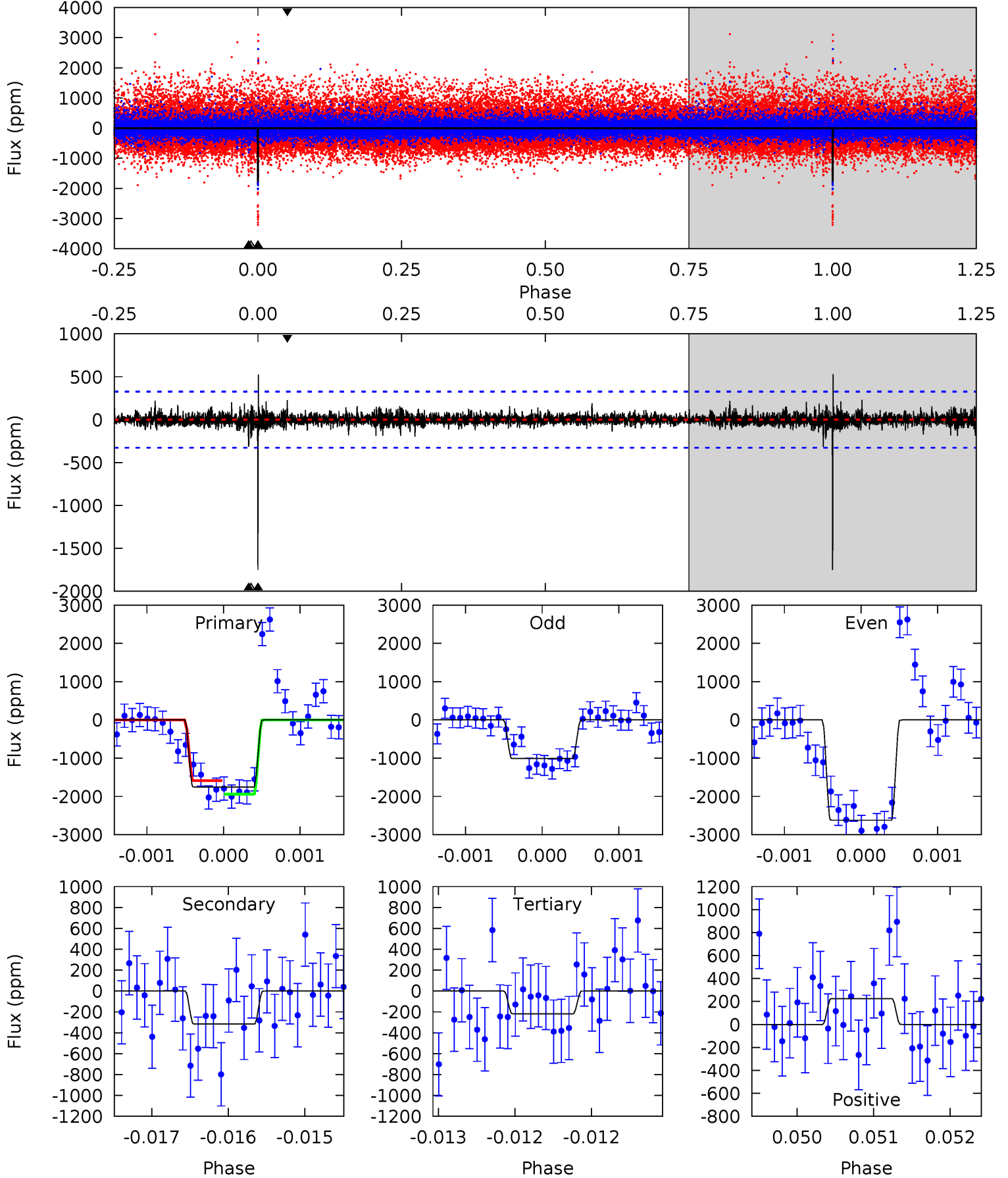
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.85	7.50	6.81	15.4	5.47	3.32	2.17	3.04	-5.50	0.69	-7.86	1.89	0.45	0.61	2.66



Alt Model-Shift Uniqueness Test

010857583-03, $P = 379.192384$ Days, $E = 54.931500$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.5	5.30	3.66	3.77	5.51	3.38	0.69	25.8	25.7	1.64	1.53	12.3	0.93	0.23	2.94



Stellar Parameters For KIC 010857583

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3577^{+42}_{-48}	$4.940^{+0.040}_{-0.040}$	$-0.400^{+0.100}_{-0.100}$	$0.330^{+0.030}_{-0.036}$	$0.346^{+0.033}_{-0.045}$	$13.530^{+2.941}_{-2.197}$
	+1%/-1%	+1%/-1%	+25%/-25%	+9%/-11%	+10%/-13%	+22%/-16%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 010857583-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-715 ± 95	$1.39^{+0.35}_{-0.35}$	149^{+3}_{-3}	3191^{+313}_{-203}	104473^{+84538}_{-35964}
Alt.	-316 ± 60	$1.64^{+0.35}_{-0.35}$	149^{+3}_{-3}	2713^{+175}_{-135}	32699^{+19928}_{-10844}

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

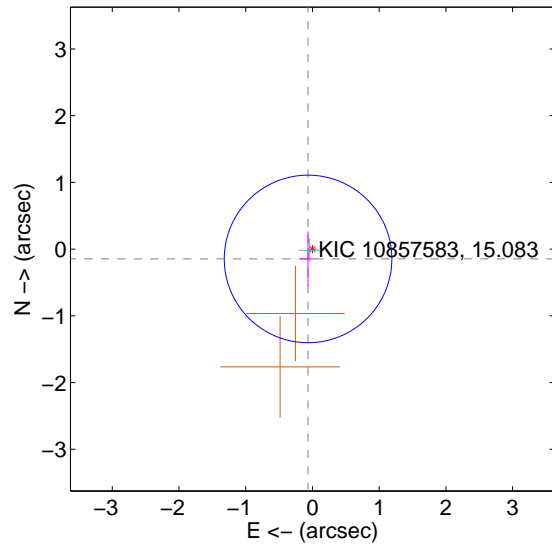
Supplemental centroid analysis for 010857583-03. Kepler magnitude: 15.08. Transit SNR 9.11

There are 1 quarters with good PRF difference image offsets

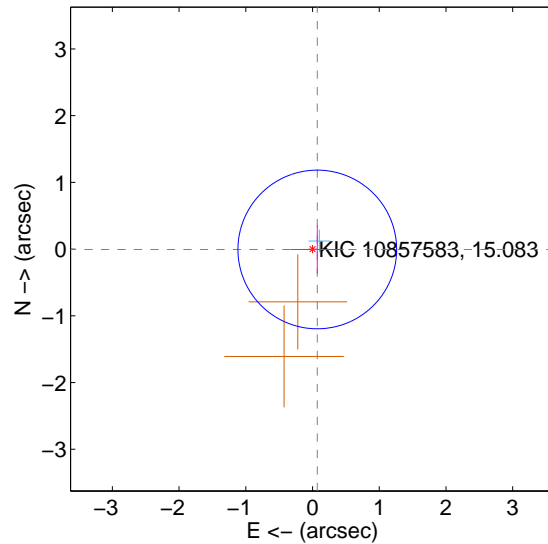
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.161 ± 0.418	0.39	0.066 ± 0.123	-0.147 ± 0.412
PRF-fit source offset from KIC position	0.072 ± 0.396	0.18	-0.071 ± 0.397	-0.005 ± 0.359
photometric centroid source offset	1.04 ± 0.66	1.57	-0.49 ± 0.51	0.91 ± 0.70

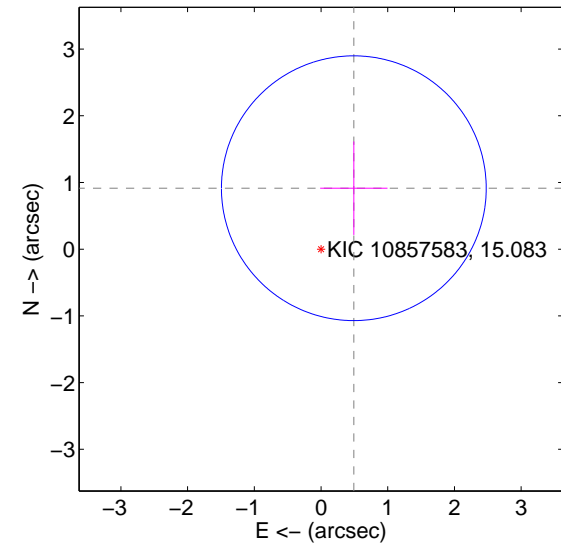
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

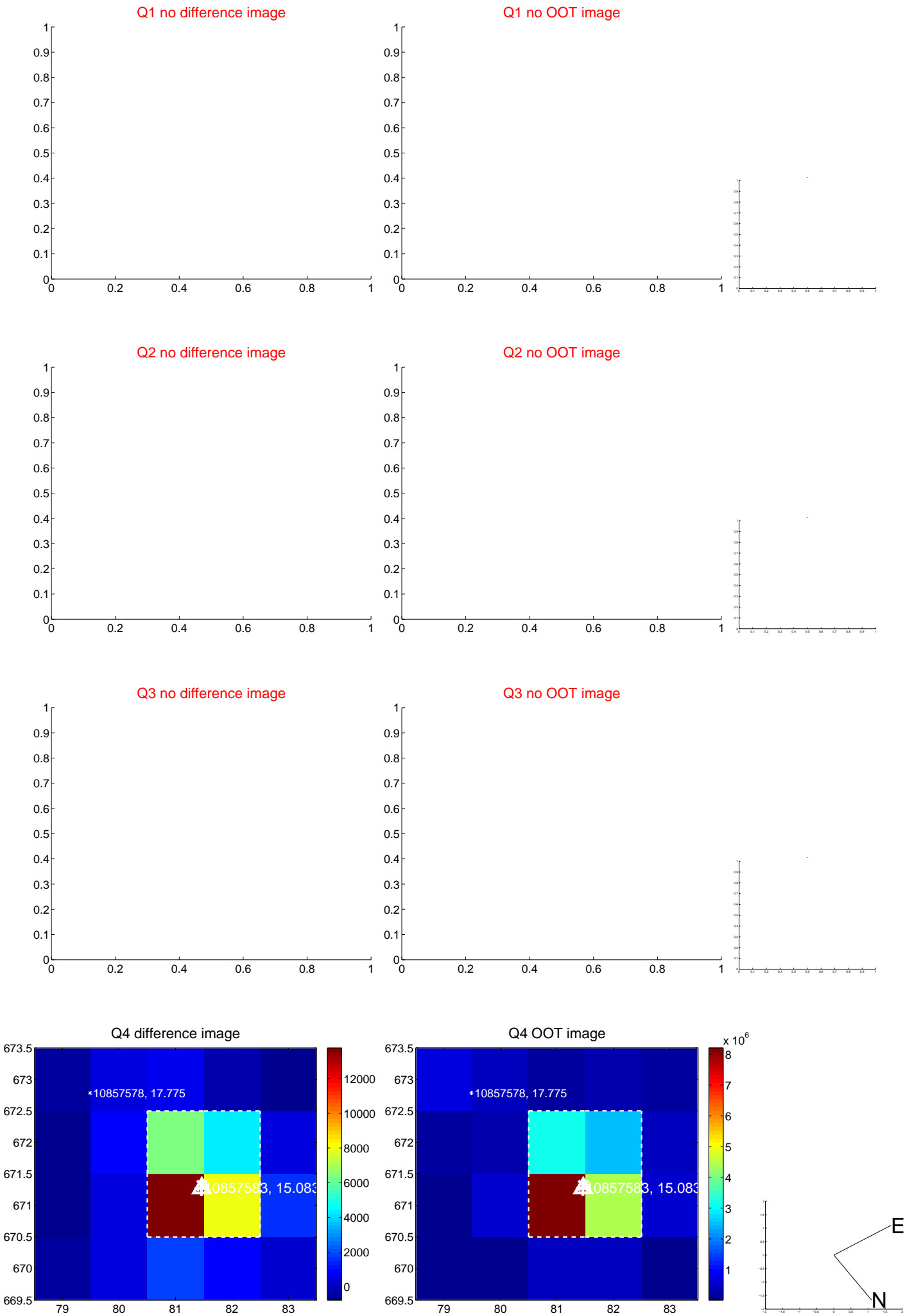


offset from photometric centroids

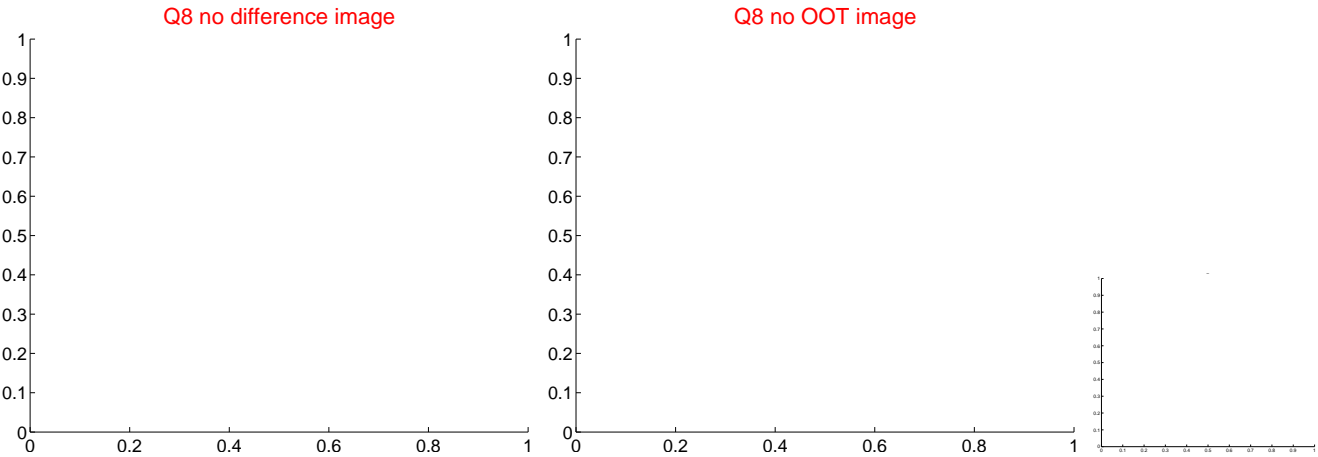
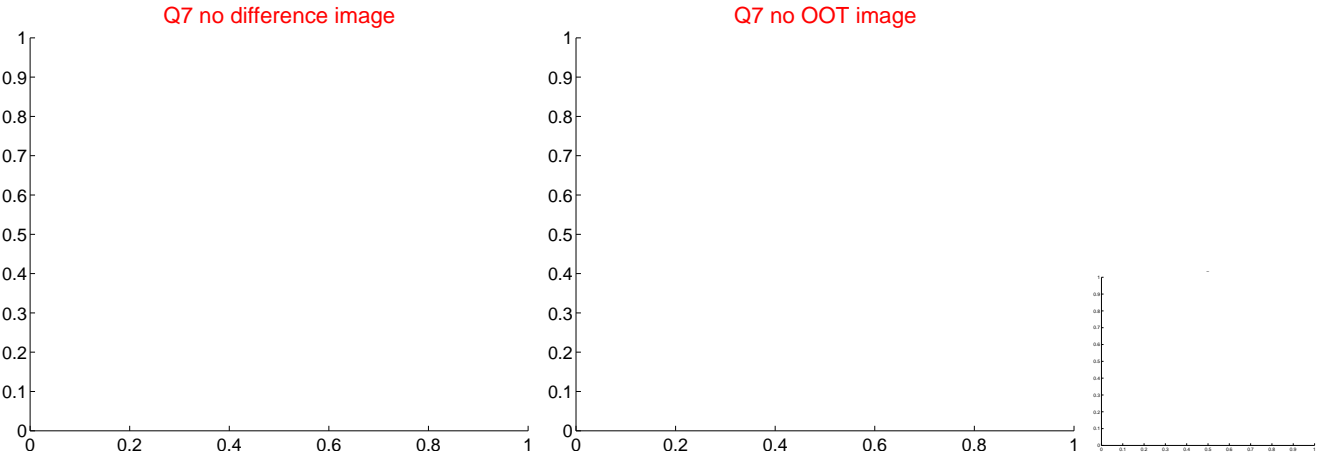
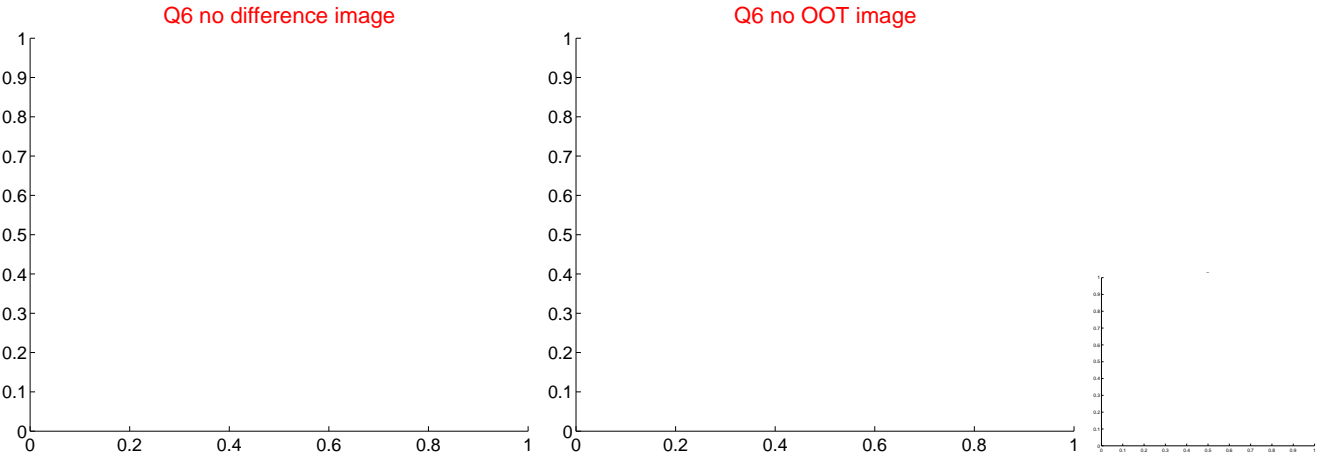
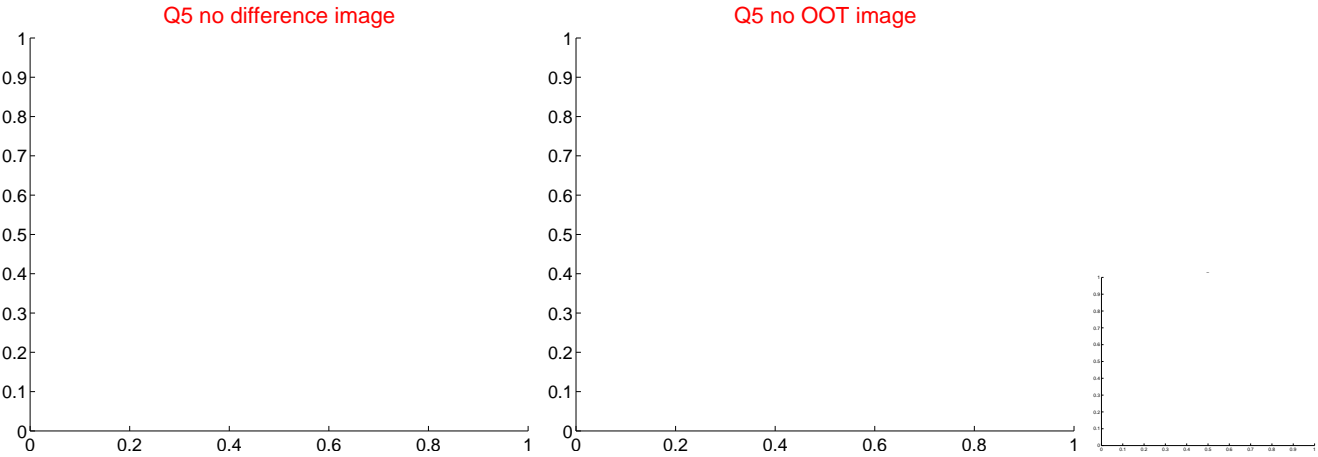


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

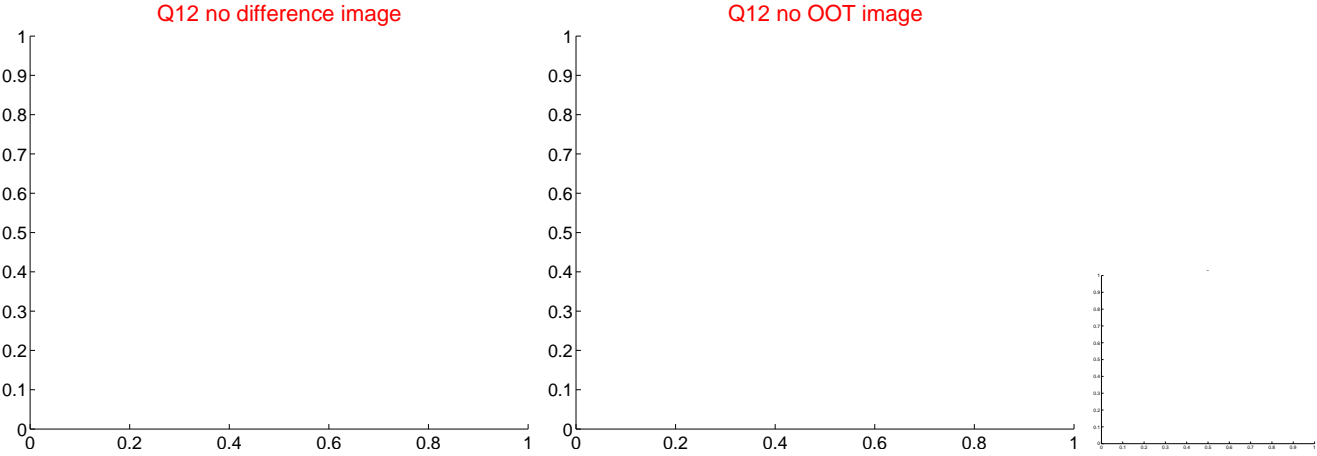
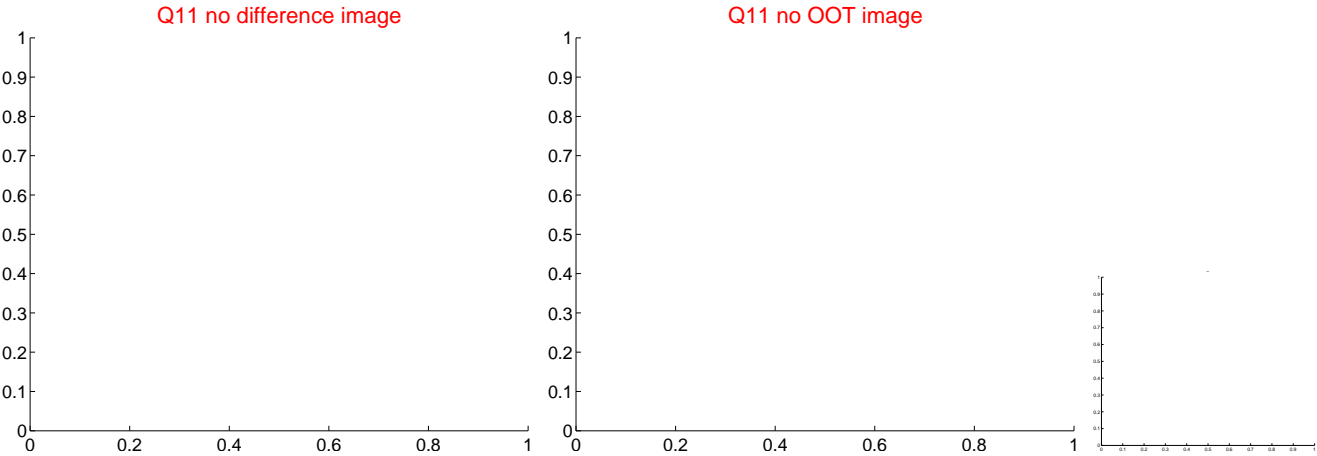
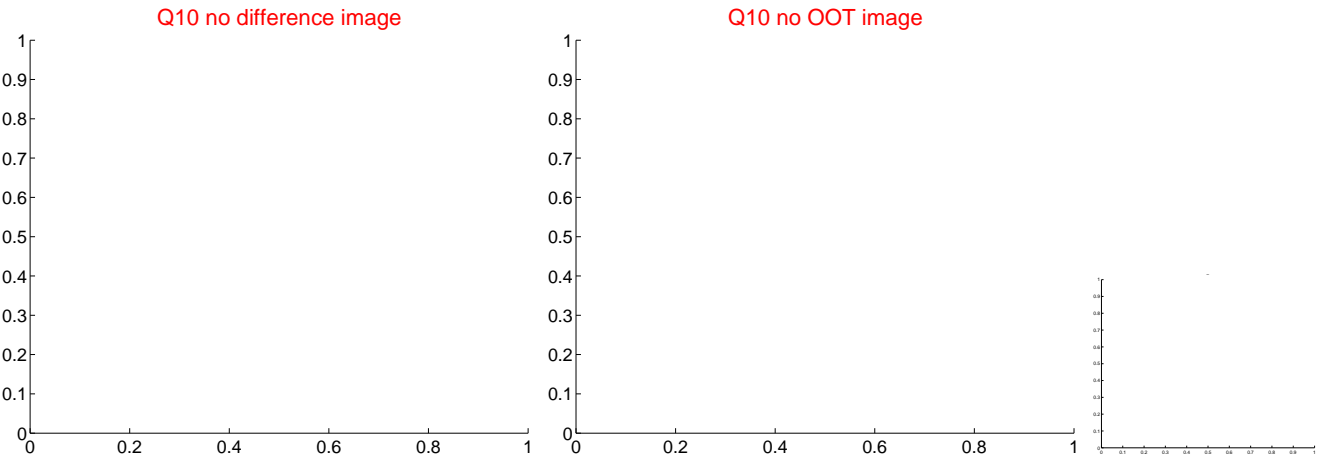
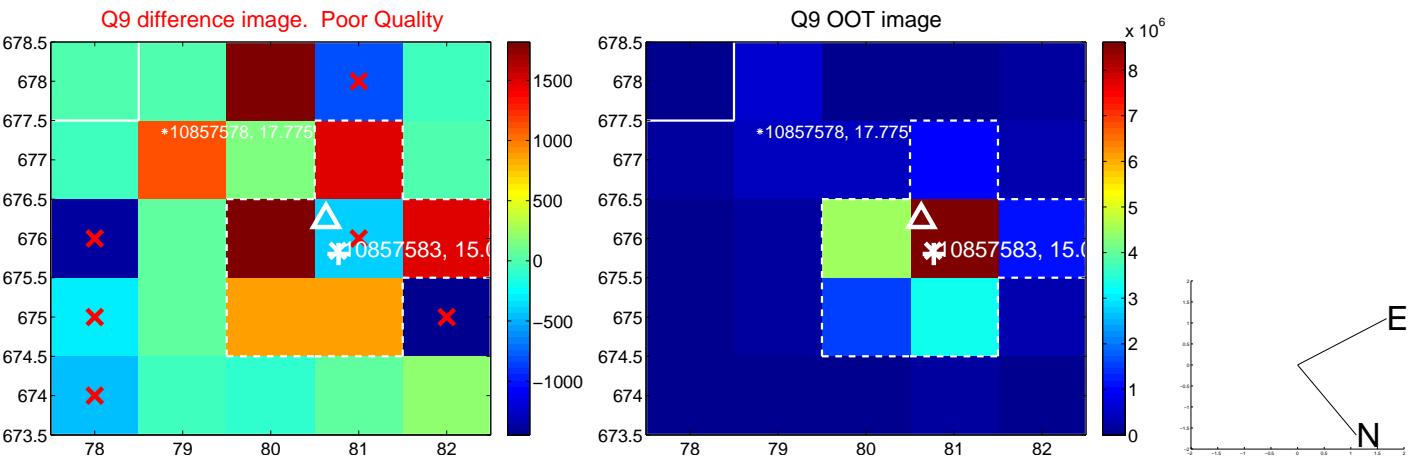
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



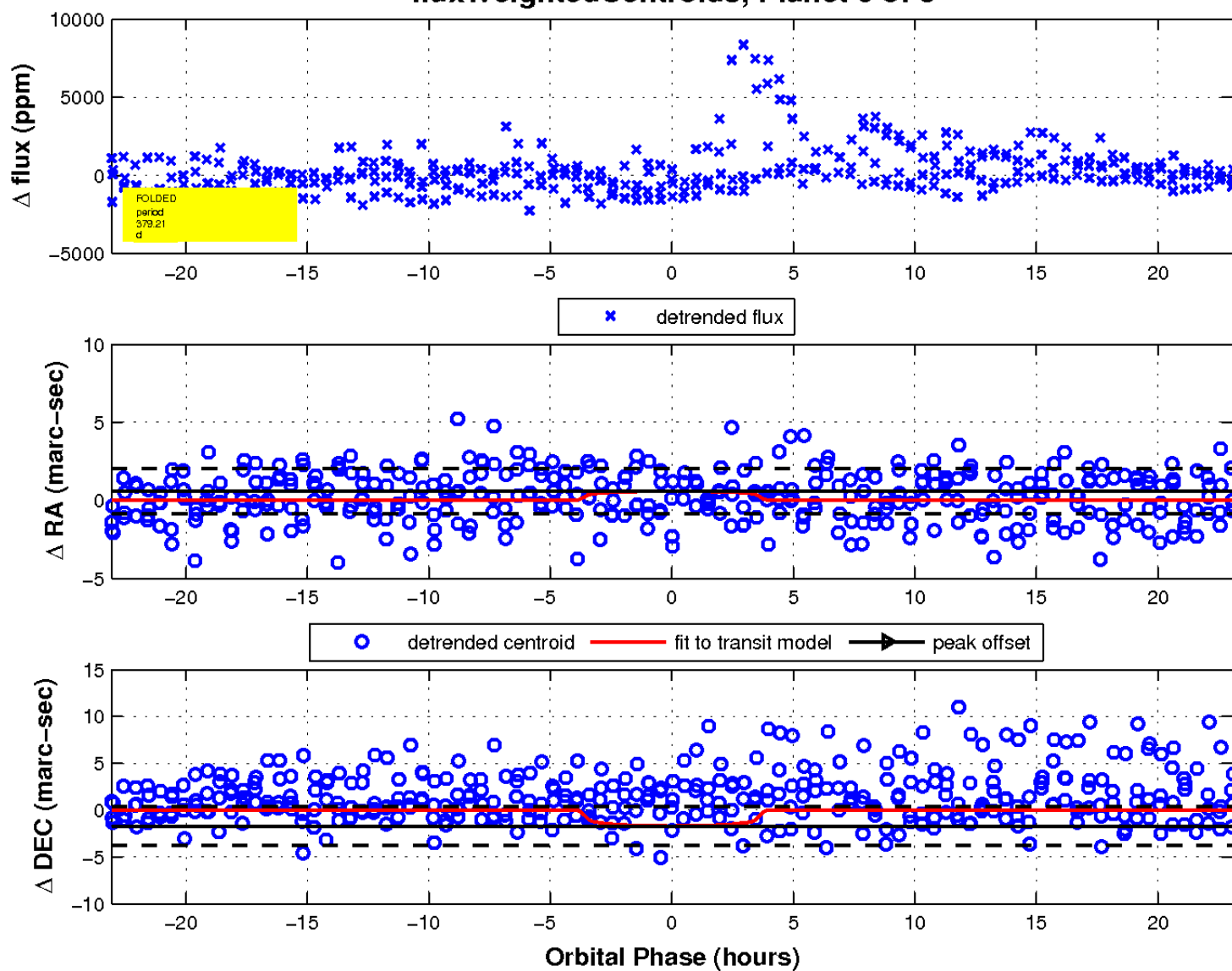
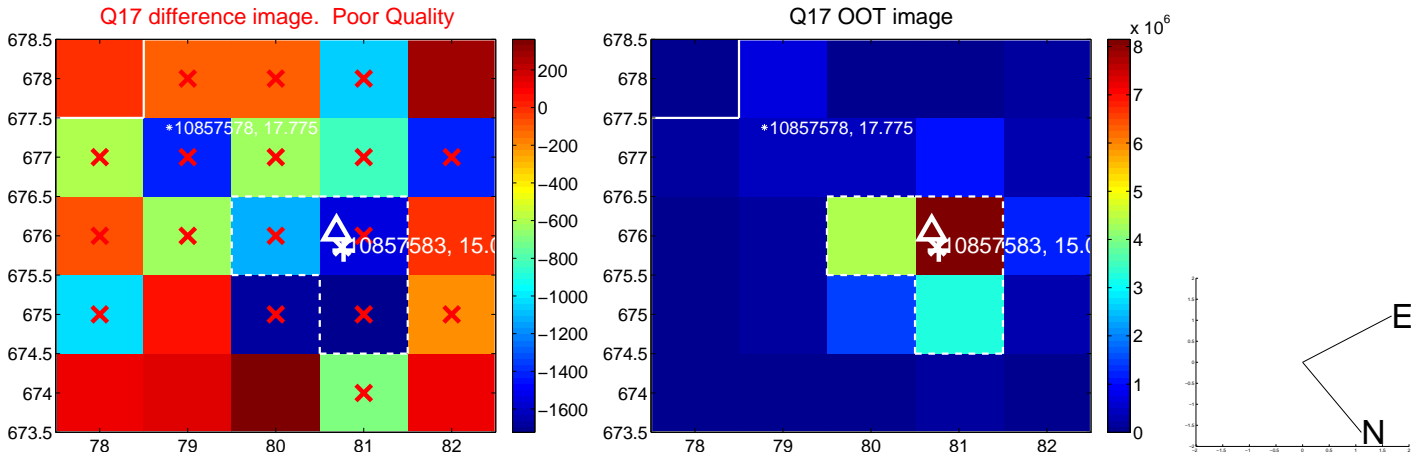
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

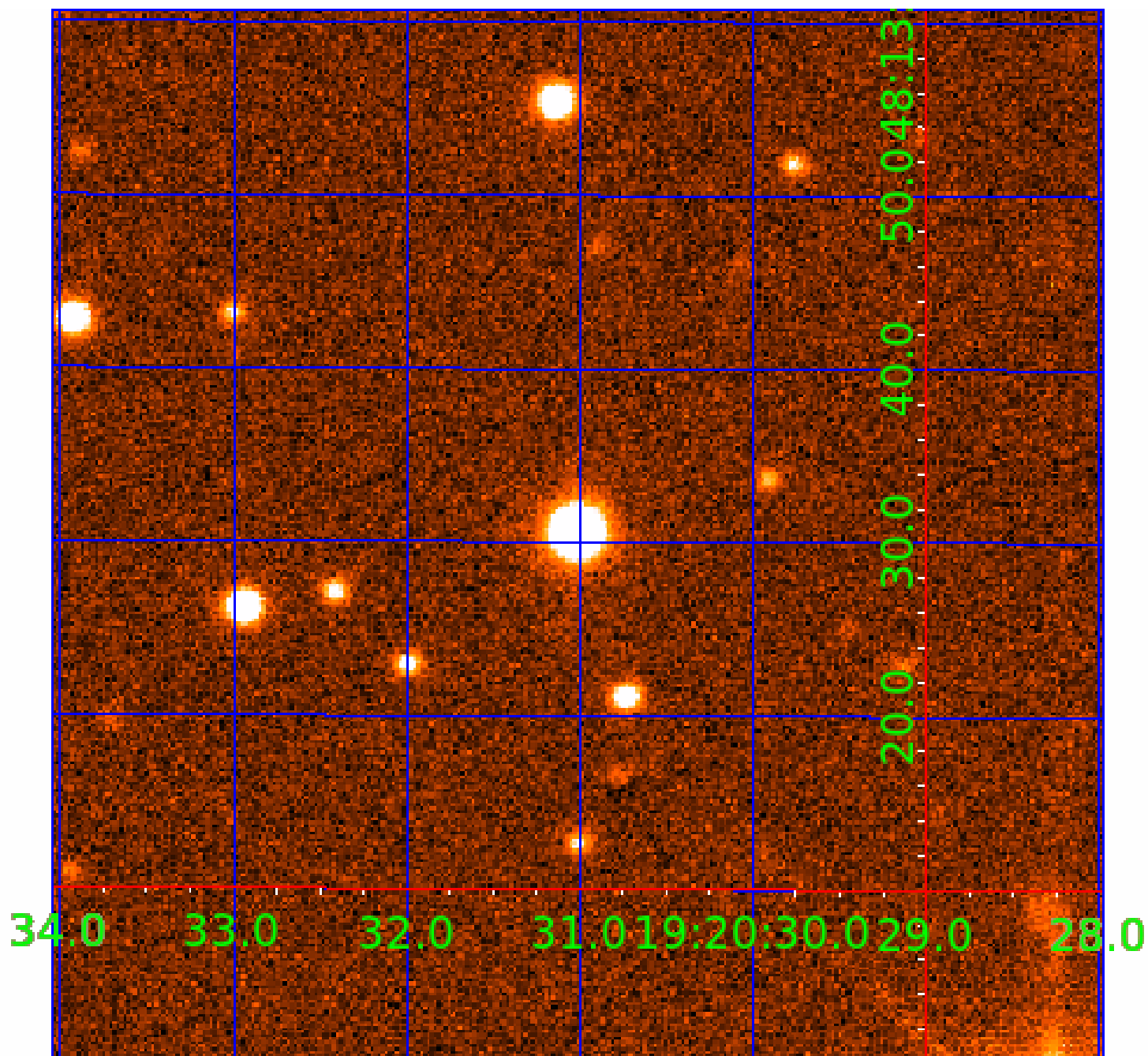


white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010857583

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})
010857583-01	OBS	No	568.634152	263.772287	1392.7	5.316	18.0	6.7	0.33	3577	1.27	0.02
010857583-02	OBS	No	588.281610	209.166692	1603.0	7.608	15.0	7.7	0.33	3577	1.33	0.02
010857583-03	OBS	No	379.207725	434.130336	1620.7	7.811	11.9	9.1	0.33	3577	1.40	0.03
010857583-04	OBS	No	584.034494	329.436061	1517.4	8.387	13.6	7.1	0.33	3577	1.29	0.02
010857583-05	OBS	No	403.784419	492.361887	1489.6	9.675	12.5	7.0	0.33	3577	1.28	0.03
010857583-06	OBS	No	354.599656	304.376433	2021.9	18.157	10.4	10.2	0.33	3577	1.72	0.03
010857583-07	OBS	No	408.868532	137.224673	1139.5	6.601	11.4	6.2	0.33	3577	1.18	0.03
010857583-08	OBS	No	476.626409	468.712412	884.9	7.500	11.6	-1.0	0.33	3577	0.98	0.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010857583-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010857583-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010857583-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010857583-04	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—INCONSISTENT_TRANS
010857583-05	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
010857583-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
010857583-07	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—INCONSISTENT_TRANS
010857583-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—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.

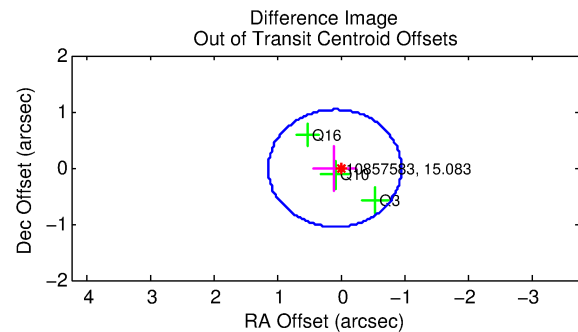
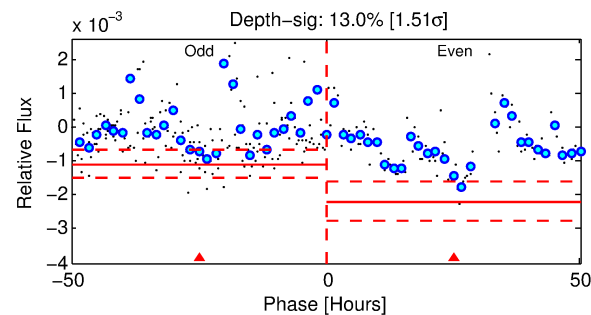
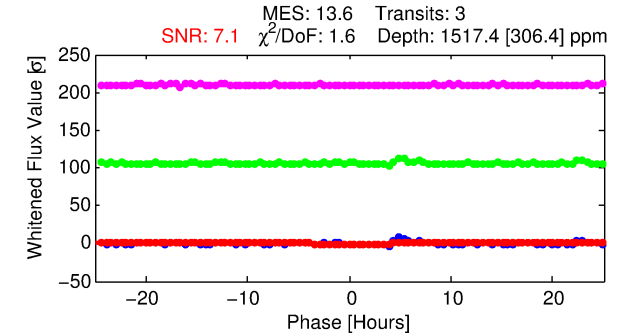
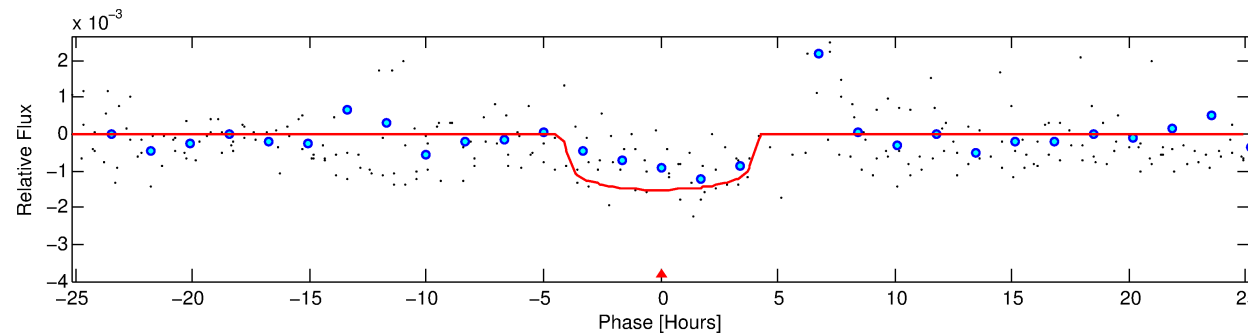
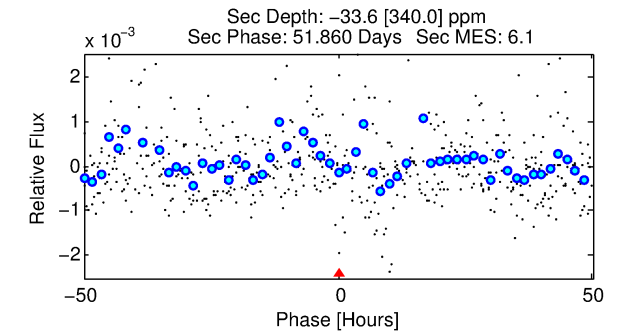
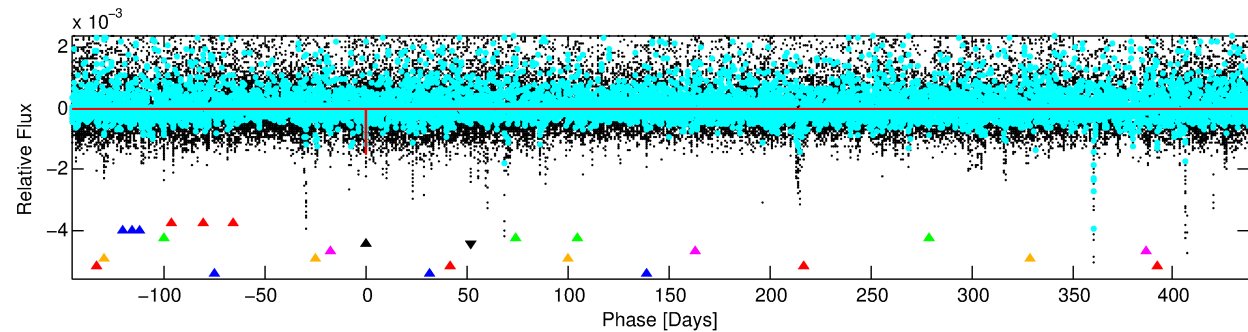
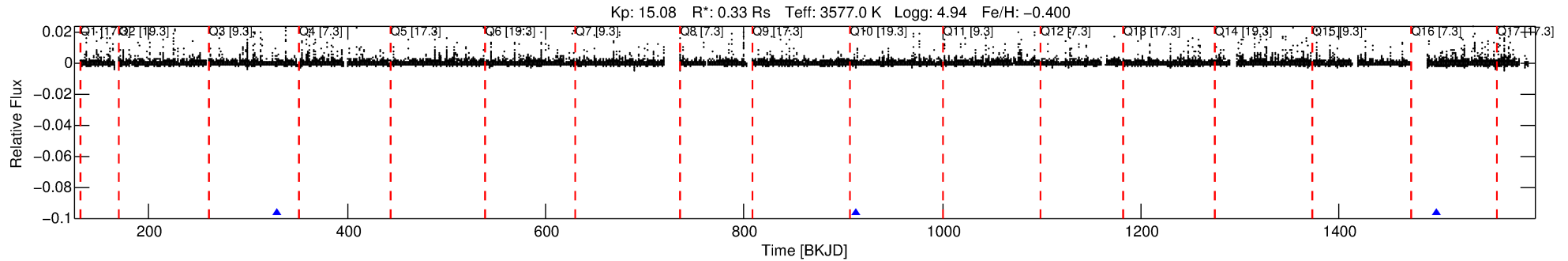
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010857583-04

No Significant Match Found

DV One-Page Summary

KIC: 10857583 Candidate: 4 of 8 Period: 584.034 d



DV Fit Results:

Period = 584.03449 [0.00918] d
Epoch = 329.4361 [0.0108] BKJD
Rp/R* = 0.0357 [0.0191]
a/R* = 542.86 [1356.48]
b = 0.18 [13.67]
Seff = 0.02 [0.00]
Teq = 93 [3] K
Rp = 1.29 [0.70] Re
a = 0.9601 [0.0758] AU
Ag = N/A
Teffp = N/A

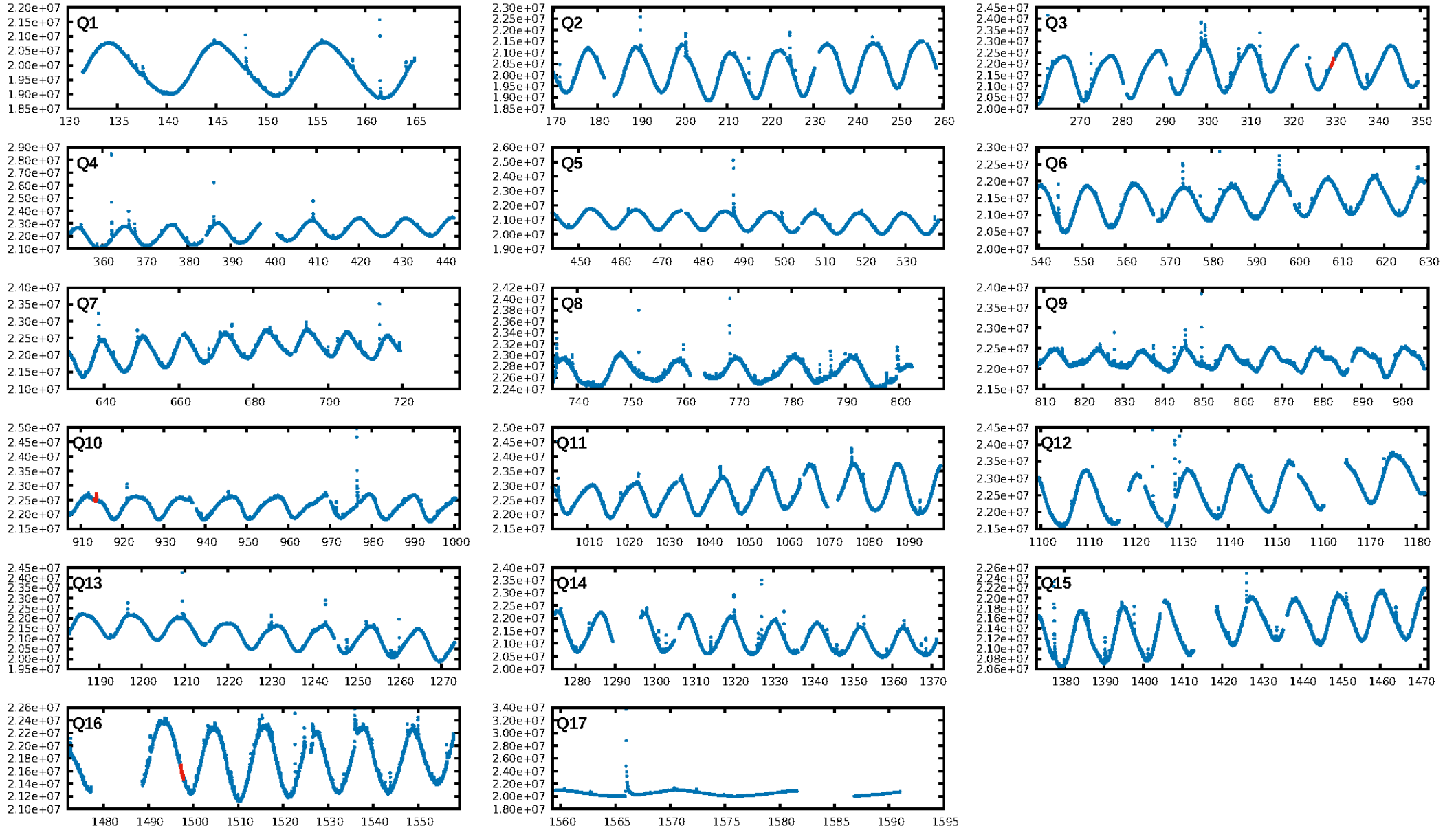
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [37.22σ]
LongPeriod-sig: 100.0% [9.00σ]
ModelChiSquare2-sig: 0.3%
ModelChiSquareGof-sig: 29.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.194
Centroid-sig: 59.0%
Centroid-so: 0.384 arcsec [0.61σ]
OotOffset-rm: 0.104 arcsec [0.30σ]
KicOffset-rm: 0.166 arcsec [0.41σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

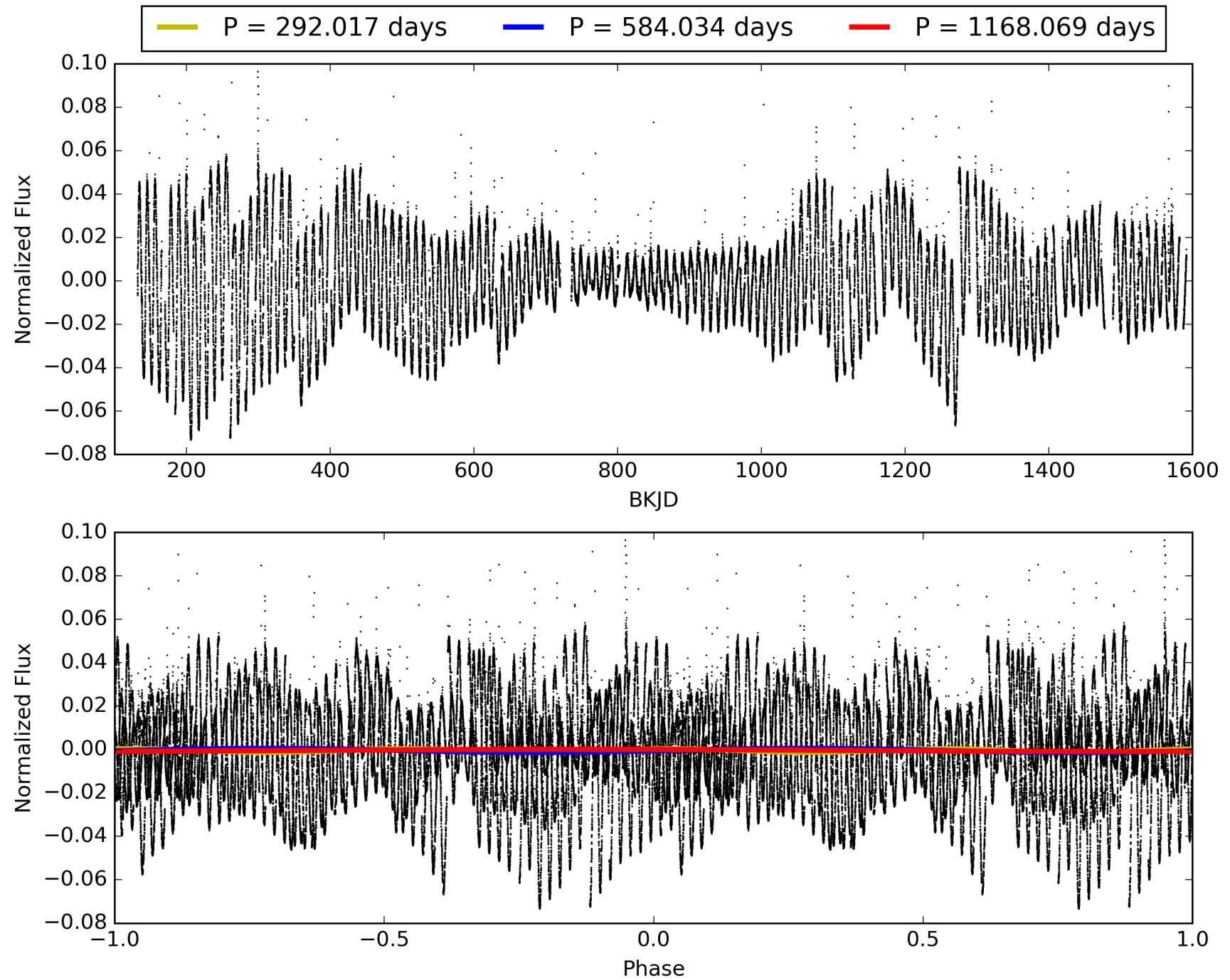
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:27:29 Z

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

TCE 010857583-04, PDC Light Curves

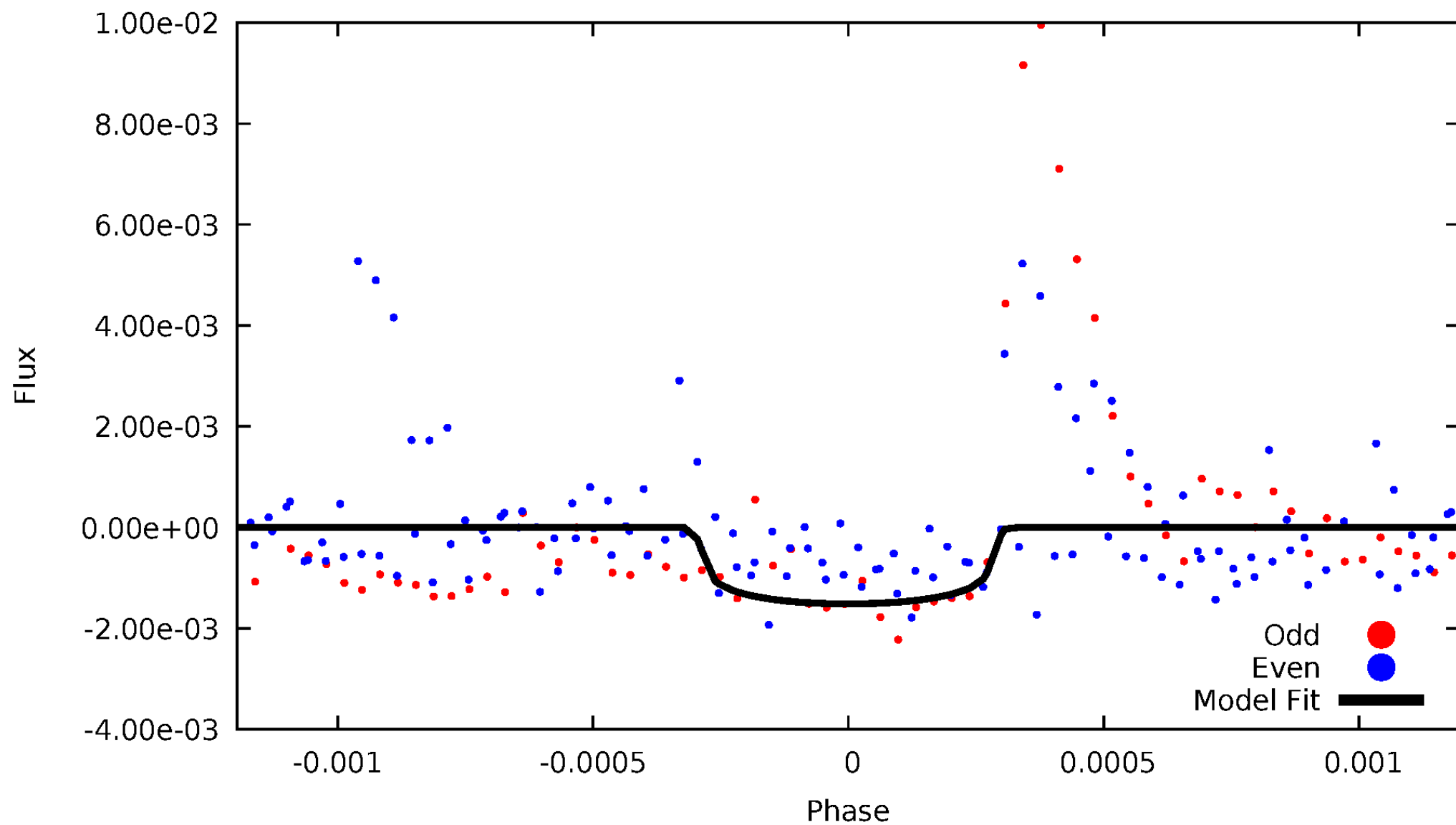


TCE 010857583-04



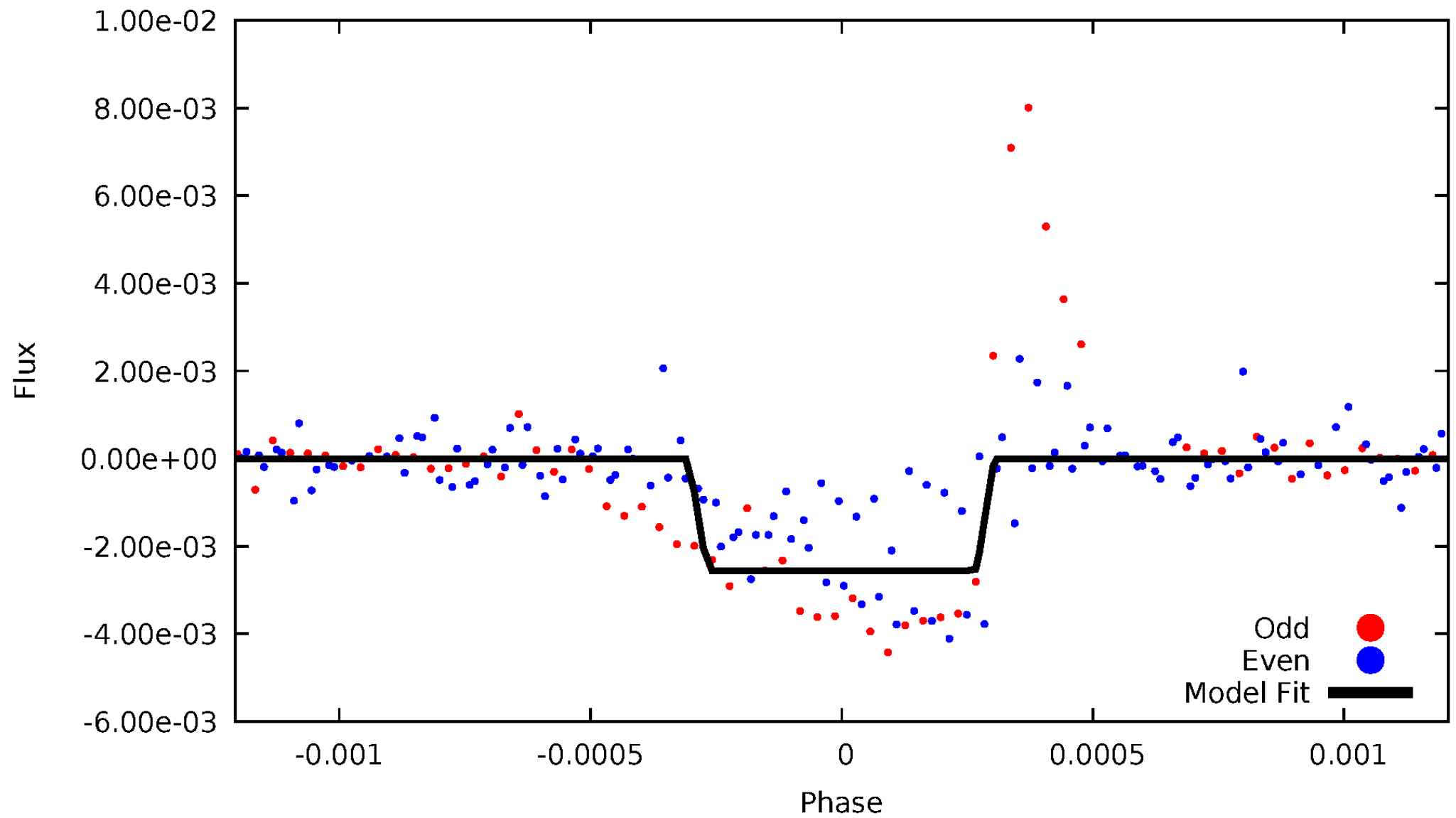
DV Odd/Even

TCE 010857583-04



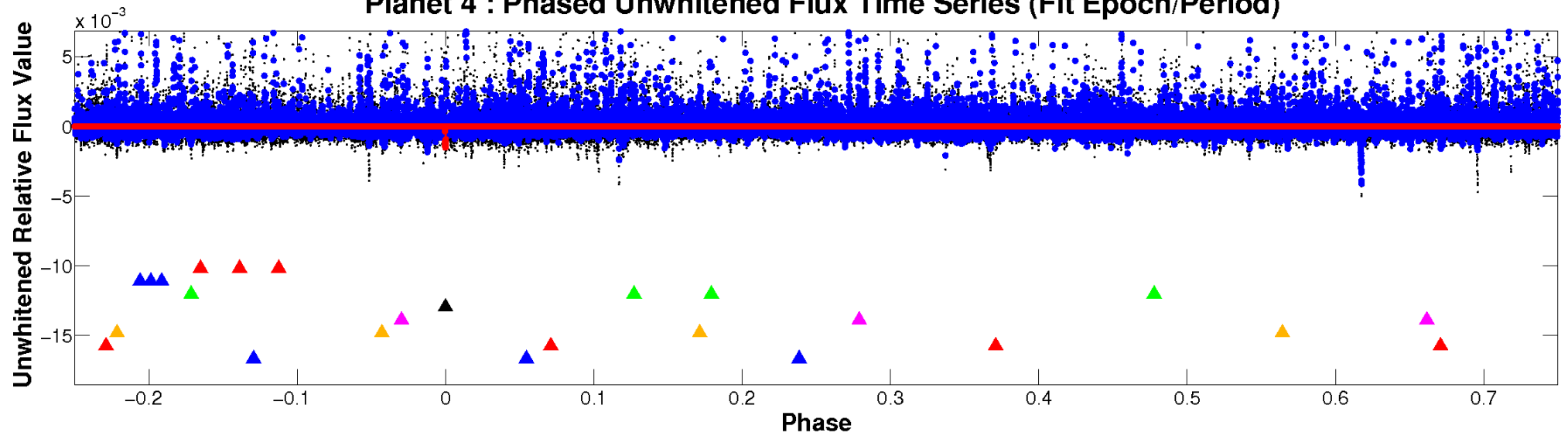
ALT Odd/Even

TCE 010857583-04

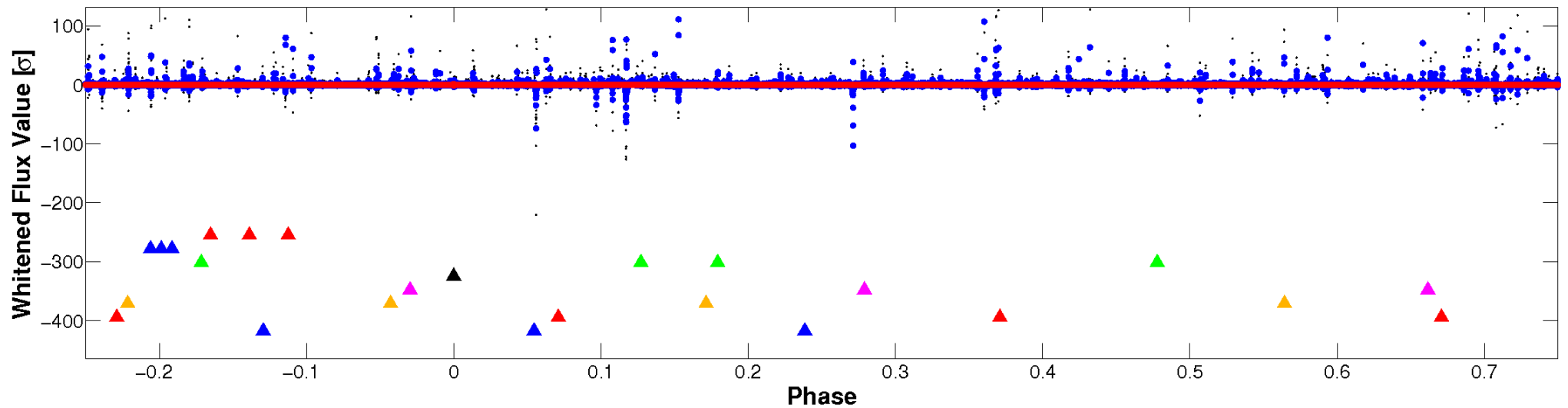


Non-Whitened Vs. Whitened Light Curve

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

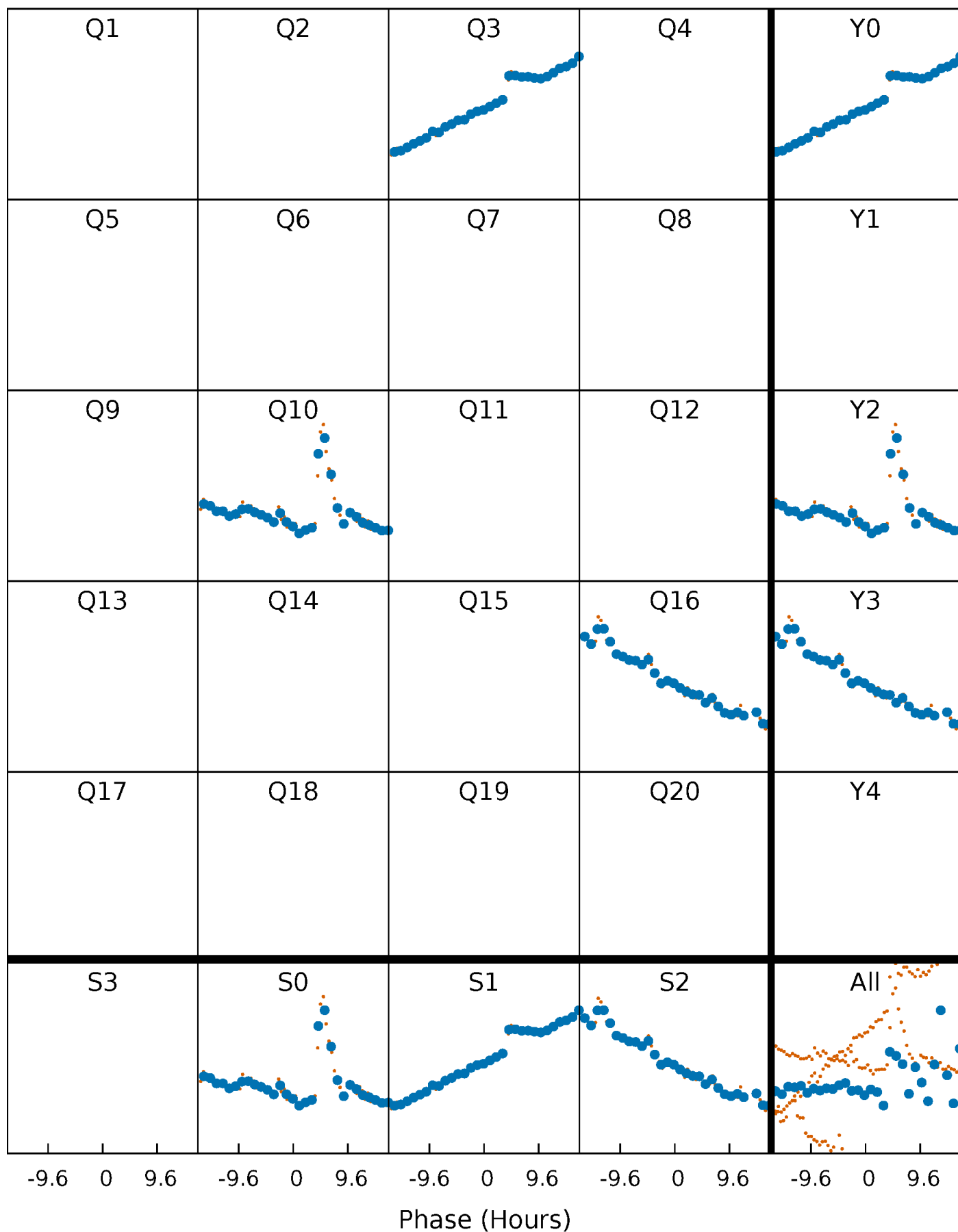


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



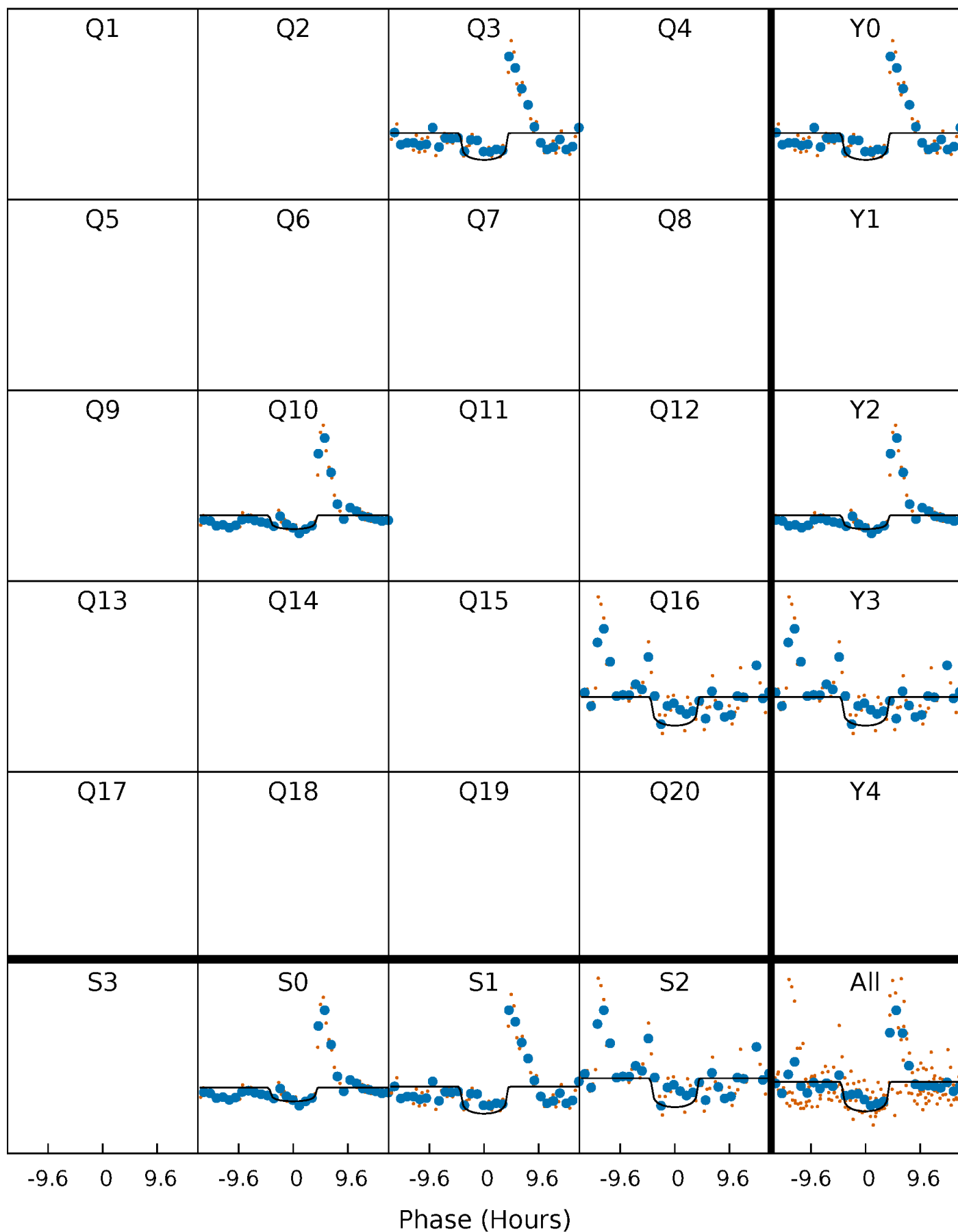
PDC Quarter-Phased Transit Curves

TCE 010857583-04 $P=584.034494$ Days $T_0=329.436061$ (BKJD)



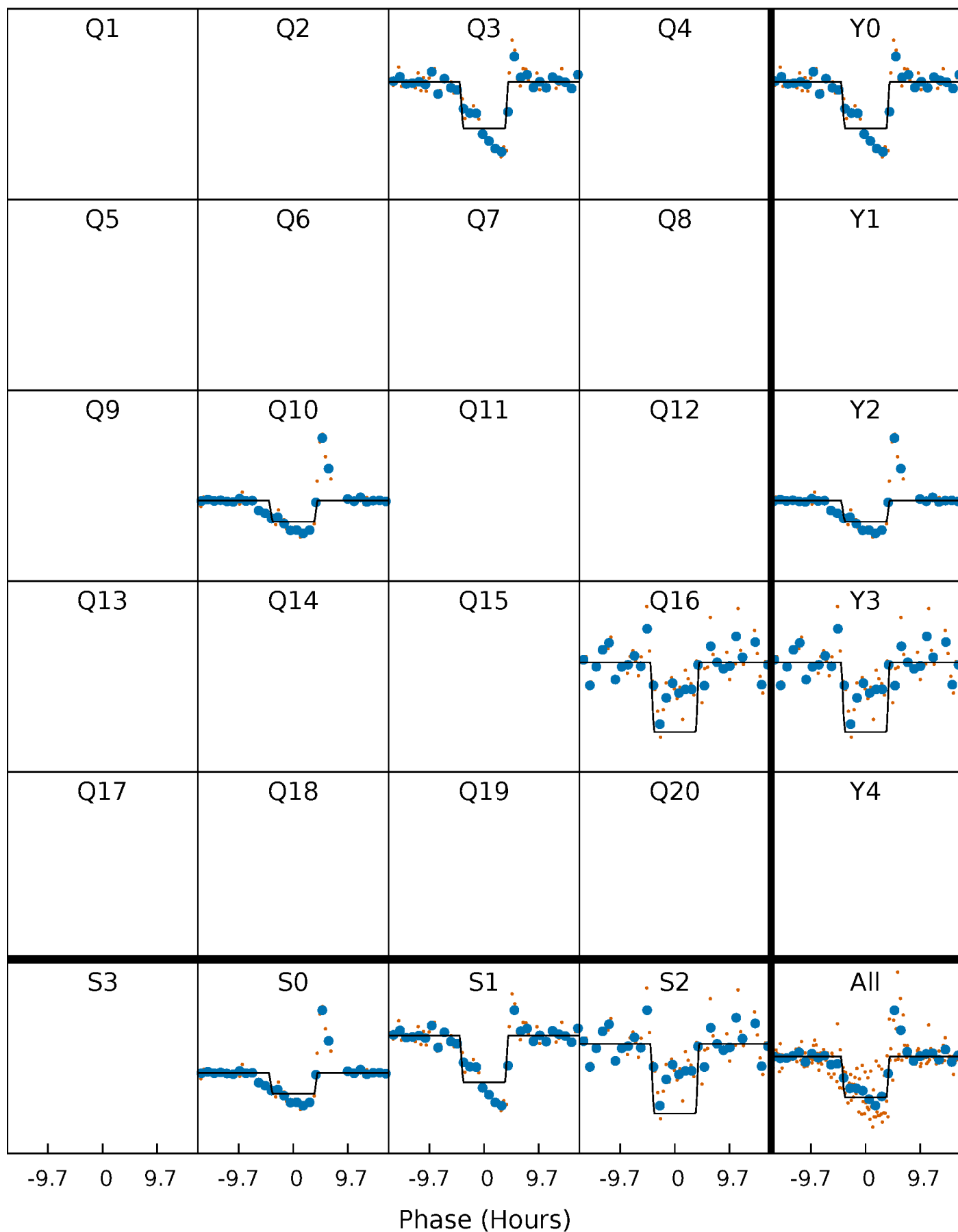
DV Quarter-Phased Transit Curves

TCE 010857583-04 $P=584.034494$ Days $T_0=329.436061$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

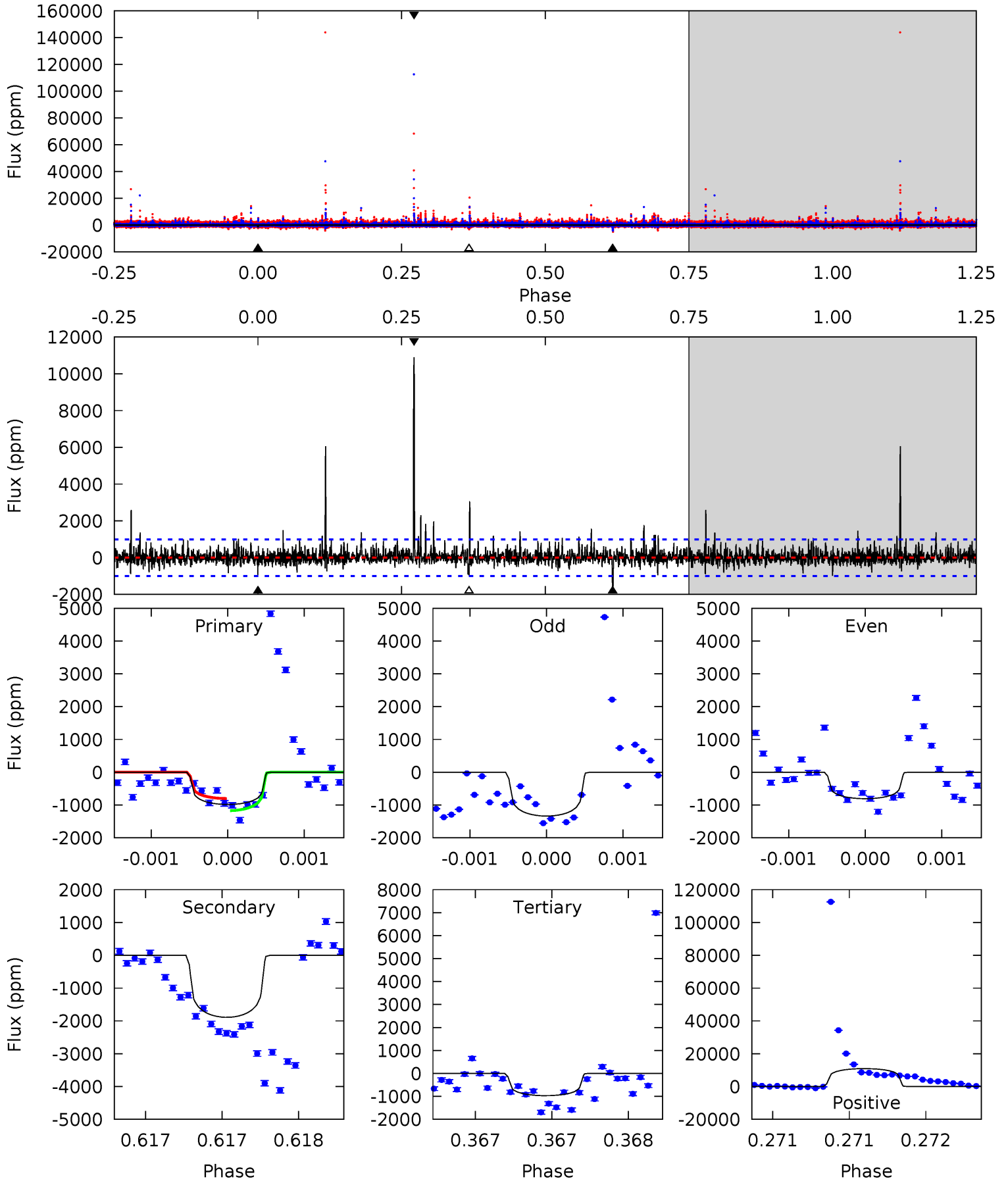
TCE 010857583-04 P=584.045634 Days $T_0=329.428319$ (BKJD)



DV Model-Shift Uniqueness Test

010857583-04, P = 584.034494 Days, E = 329.436061 Days

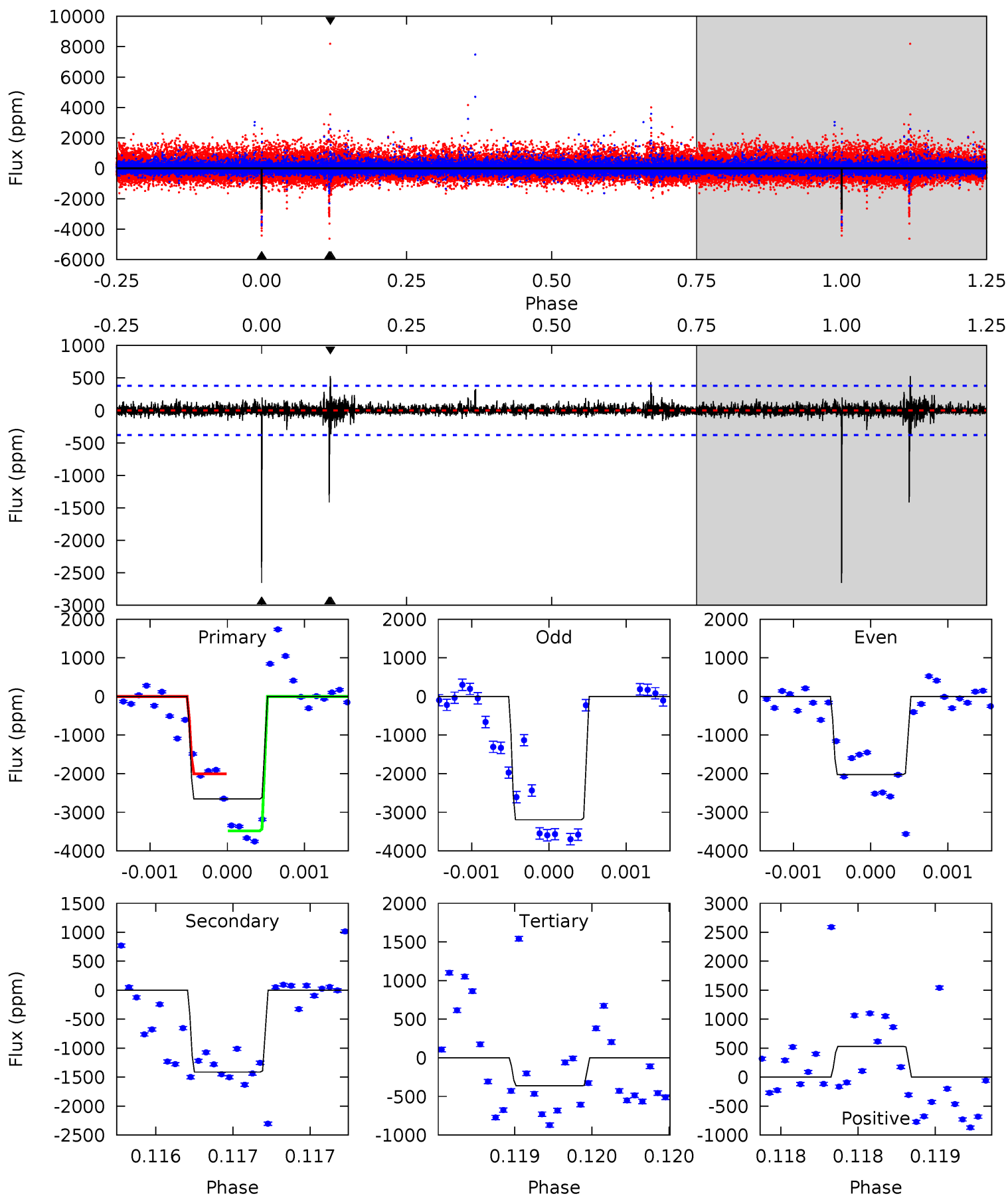
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.48	10.5	5.40	60.6	5.54	3.43	2.35	0.08	-55.1	5.13	-50.1	0.74	1.06	0.85	1.01



Alt Model-Shift Uniqueness Test

010857583-04, P = 584.045634 Days, E = 329.428319 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.8	20.7	5.31	7.74	5.54	3.43	0.71	33.5	31.1	15.4	12.9	7.93	0.86	0.17	10.7



Stellar Parameters For KIC 010857583

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3577^{+42}_{-48}	$4.940^{+0.040}_{-0.040}$	$-0.400^{+0.100}_{-0.100}$	$0.330^{+0.030}_{-0.036}$	$0.346^{+0.033}_{-0.045}$	$13.530^{+2.941}_{-2.197}$
	+1%/-1%	+1%/-1%	+25%/-25%	+9%/-11%	+10%/-13%	+22%/-16%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 010857583-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1891±180	$1.29^{+0.68}_{-0.60}$	129^{+3}_{-3}	3809^{+985}_{-511}	$582030^{+1378708}_{-339010}$
Alt.	-1412±68	$1.88^{+0.68}_{-0.68}$	129^{+3}_{-3}	3227^{+503}_{-276}	$204431^{+300300}_{-94912}$

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

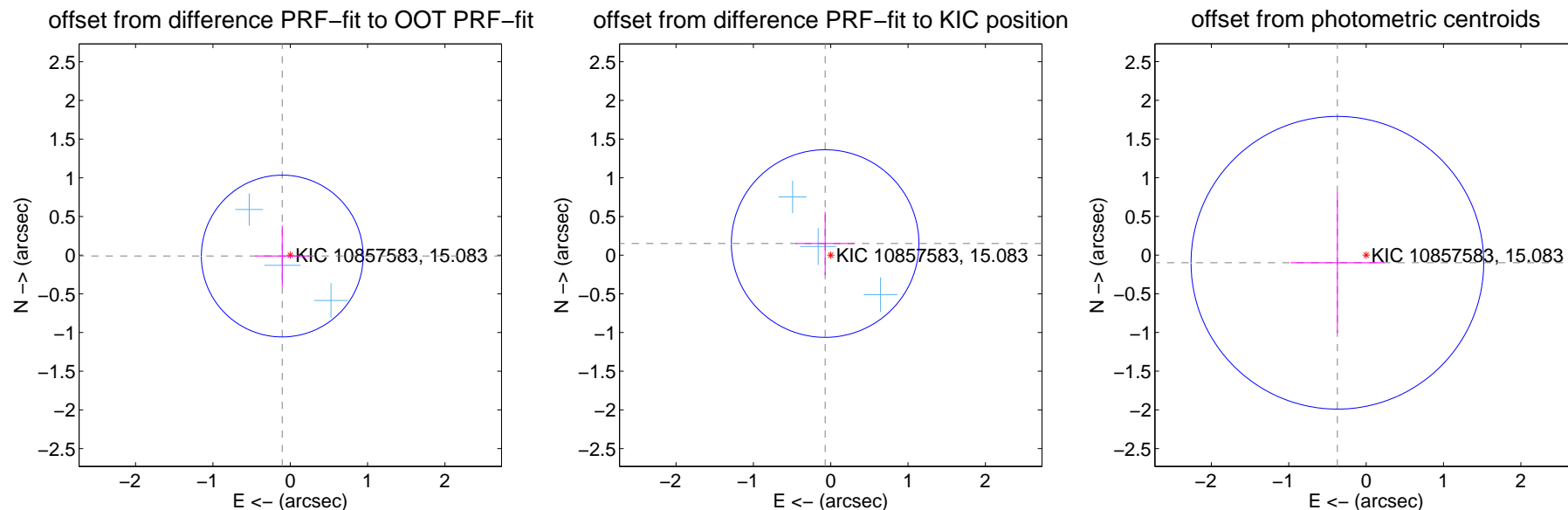
DV Centroid Data

Supplemental centroid analysis for 010857583-04. Kepler magnitude: 15.08. Transit SNR 7.10

There are 3 quarters with good PRF difference image offsets

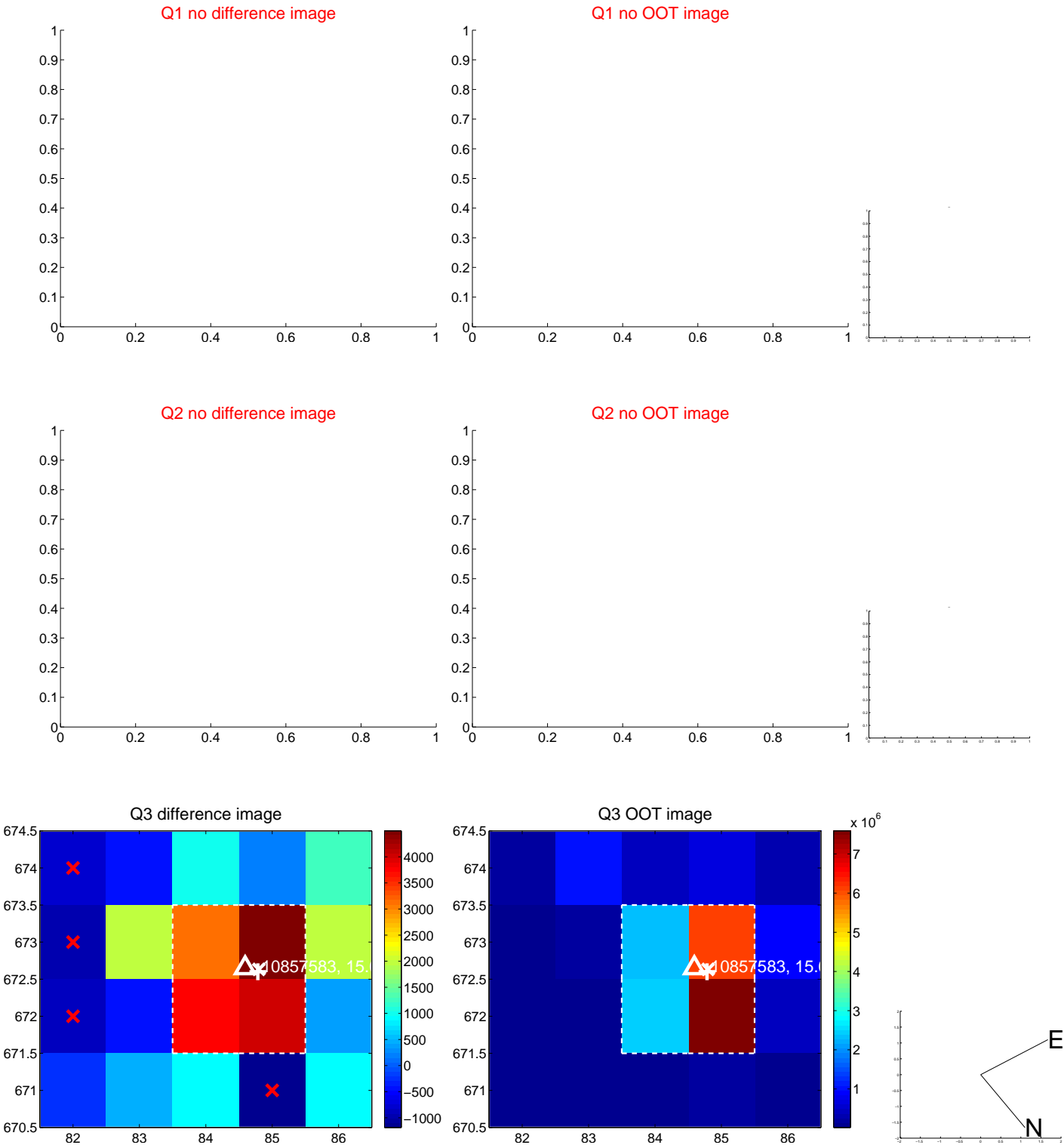
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.104 ± 0.348	0.30	0.104 ± 0.348	-0.012 ± 0.392
PRF-fit source offset from KIC position	0.166 ± 0.404	0.41	0.072 ± 0.381	0.150 ± 0.409
photometric centroid source offset	0.38 ± 0.63	0.61	0.37 ± 0.61	-0.10 ± 0.91

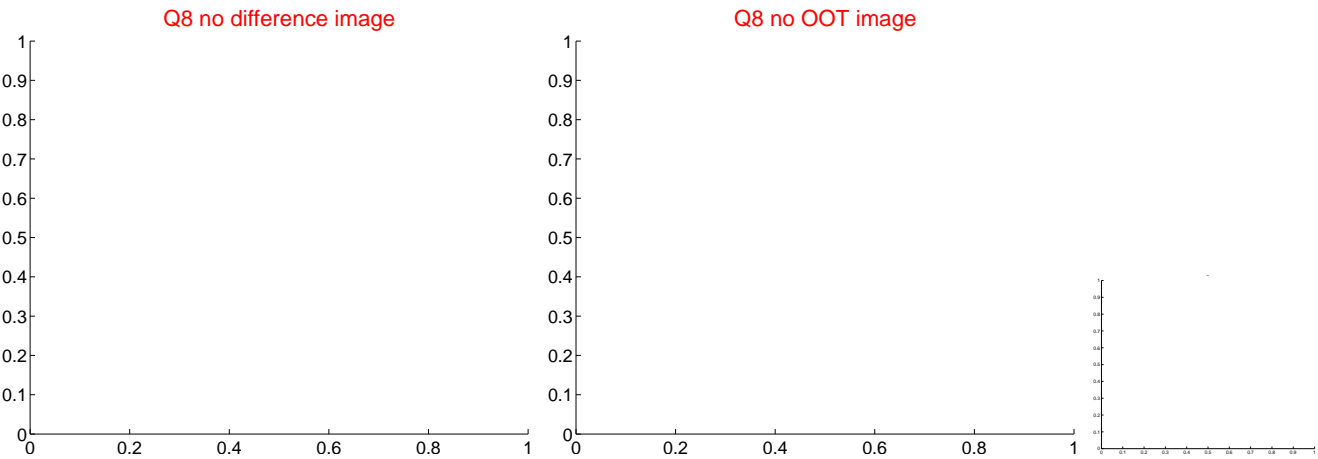
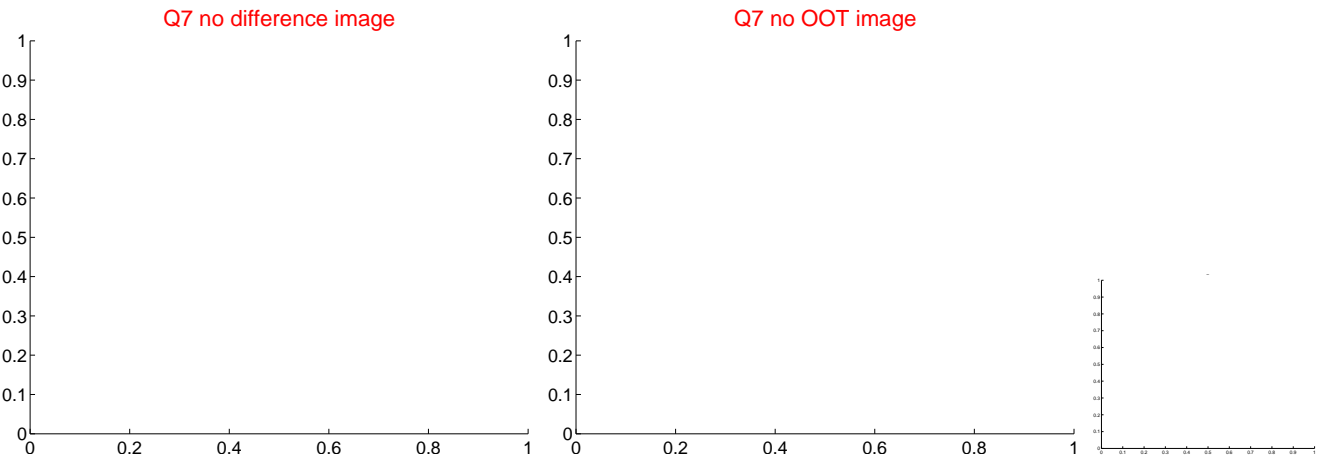
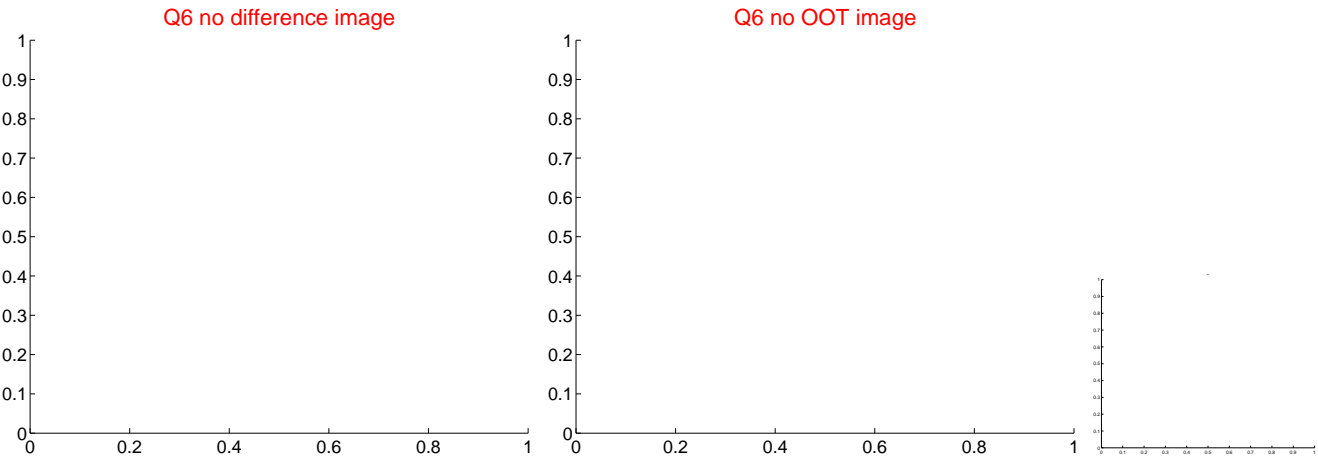
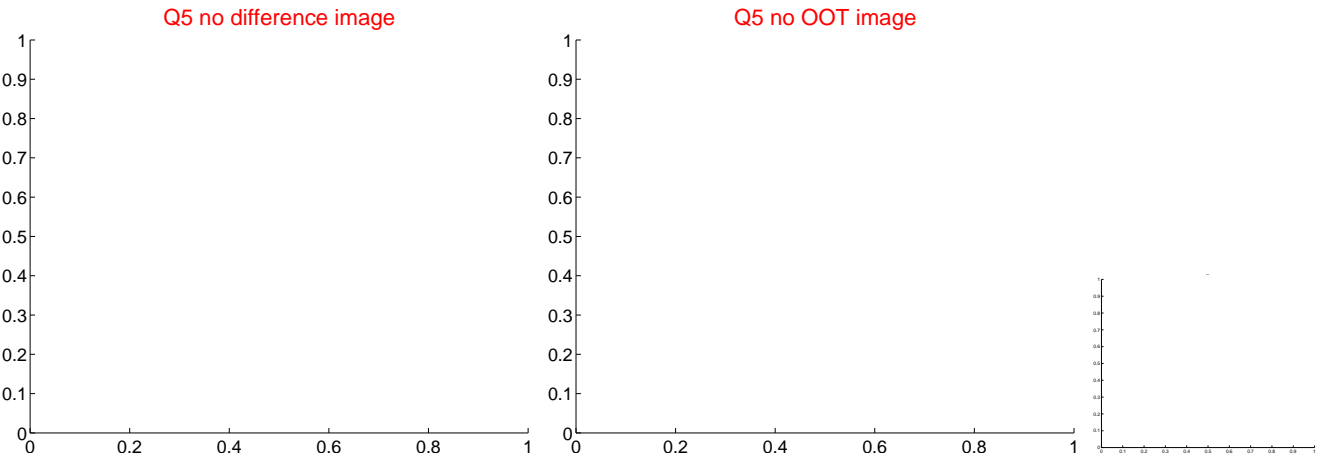


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

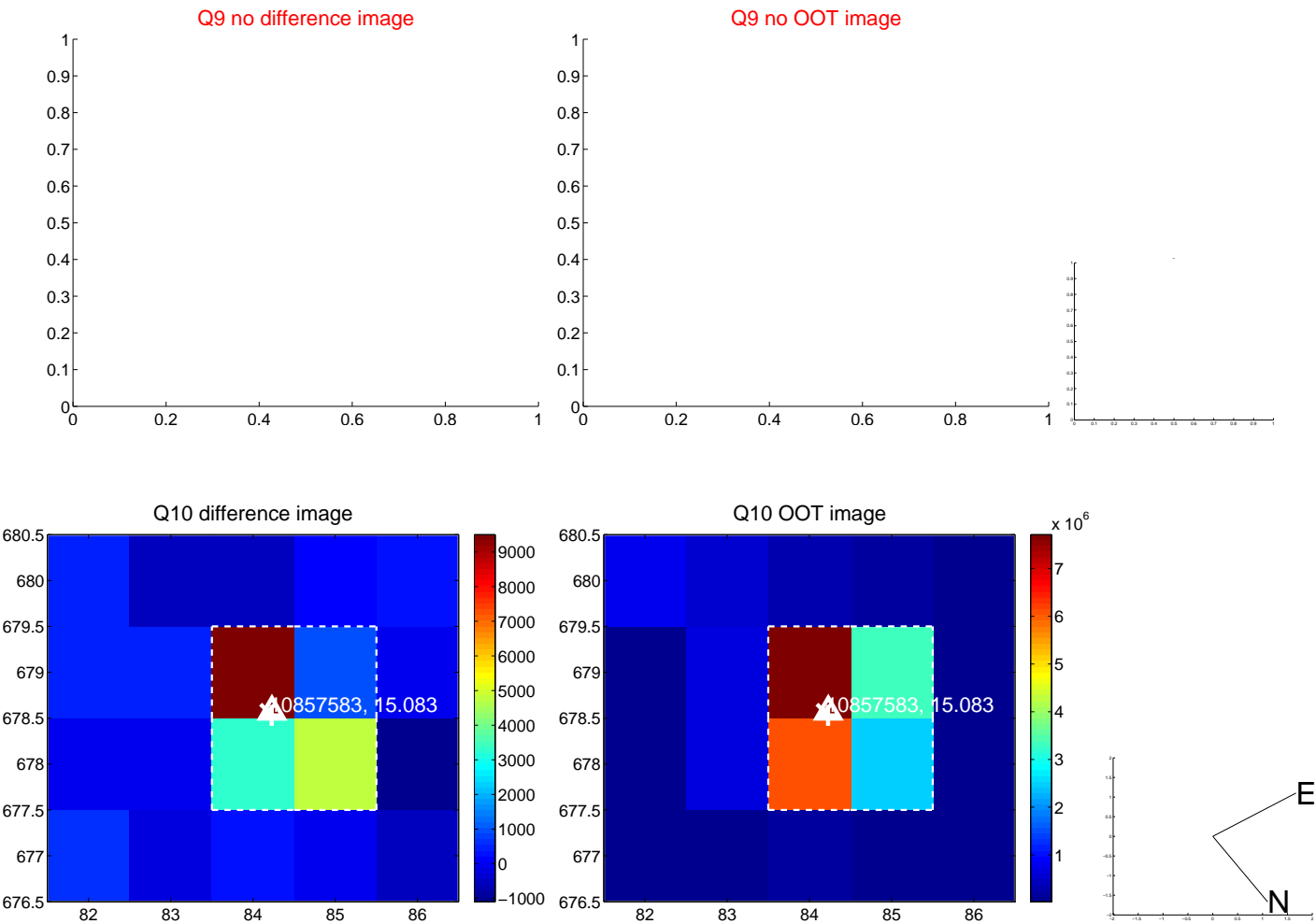
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



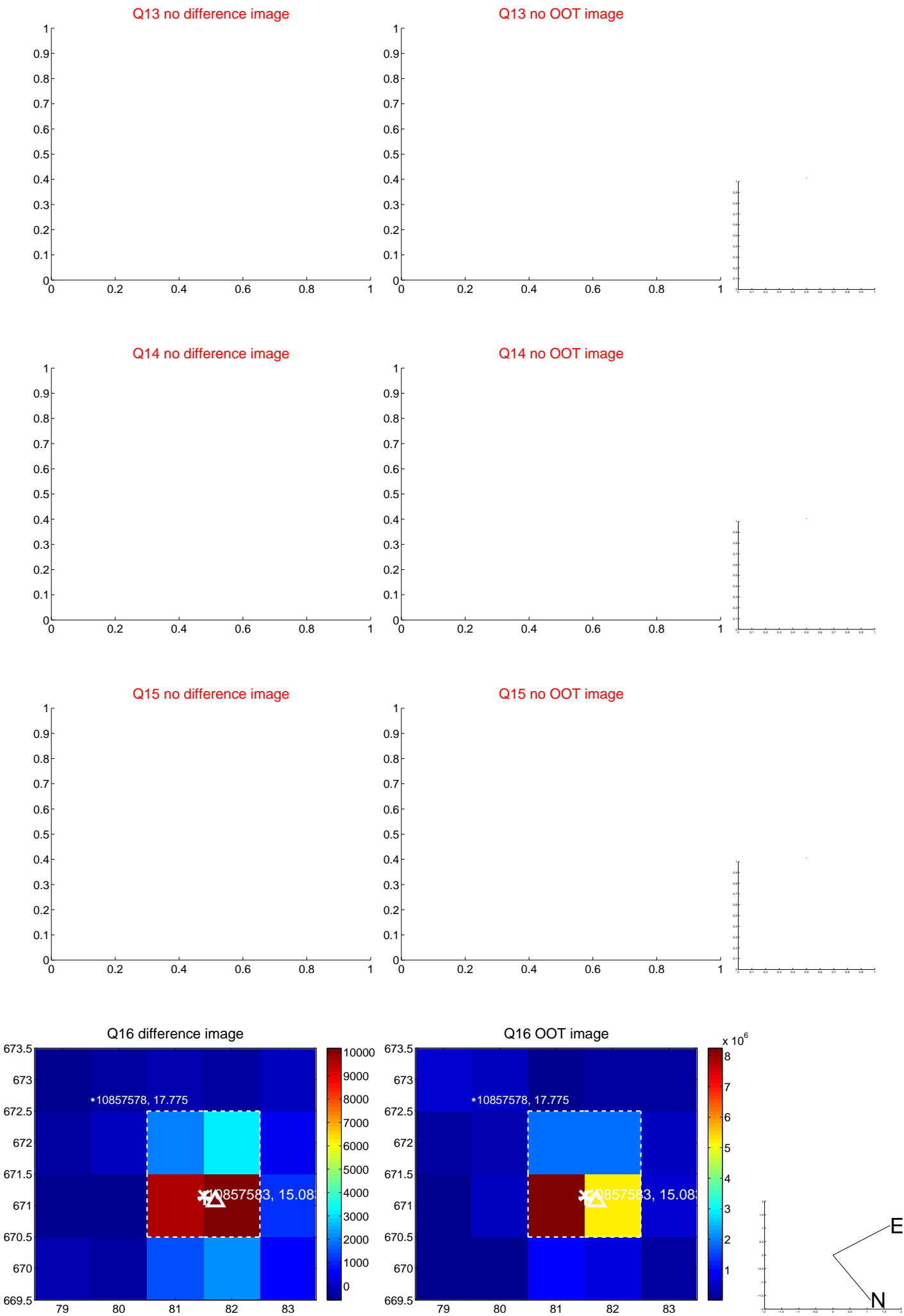
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



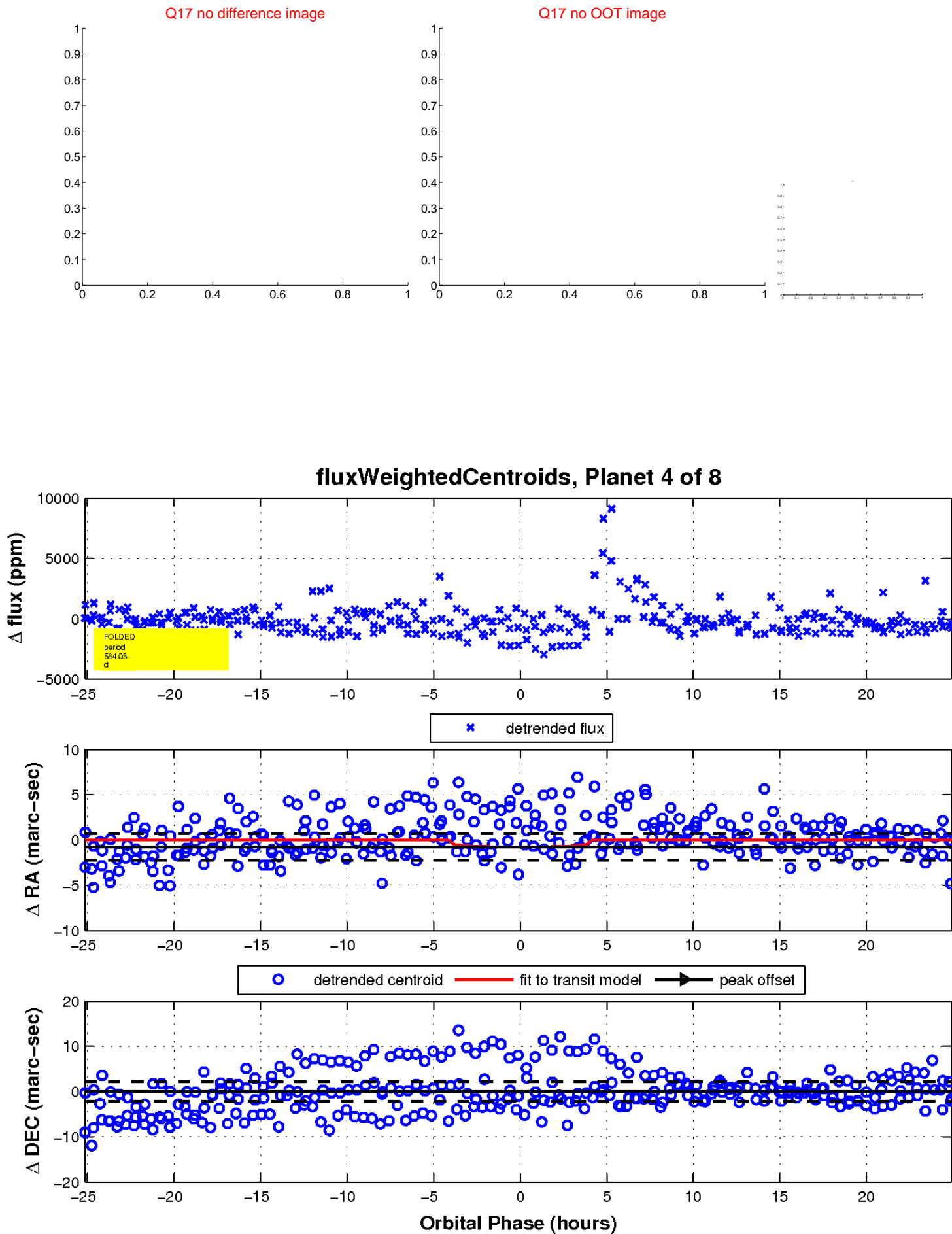
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

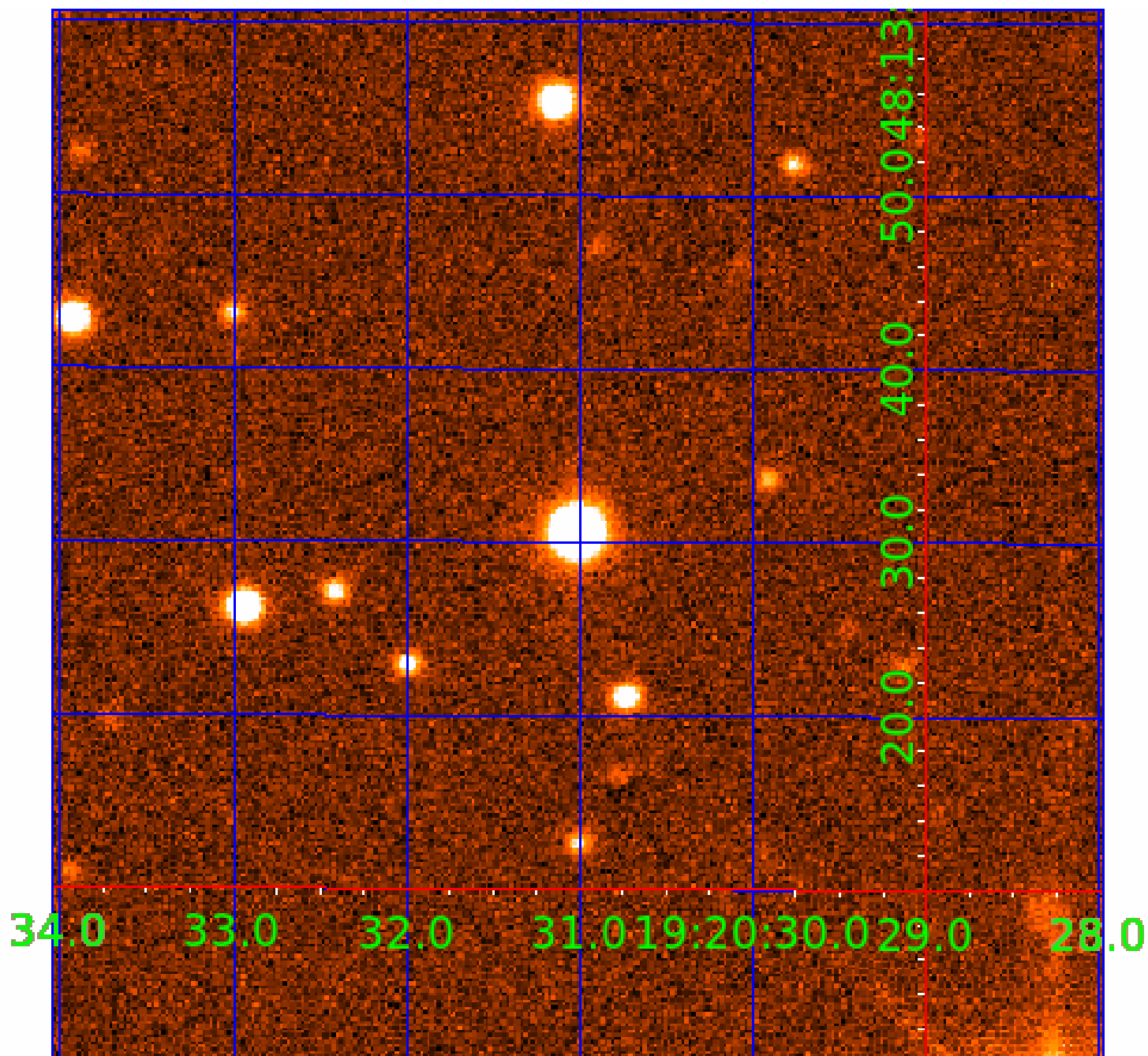


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010857583

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})
010857583-01	OBS	No	568.634152	263.772287	1392.7	5.316	18.0	6.7	0.33	3577	1.27	0.02
010857583-02	OBS	No	588.281610	209.166692	1603.0	7.608	15.0	7.7	0.33	3577	1.33	0.02
010857583-03	OBS	No	379.207725	434.130336	1620.7	7.811	11.9	9.1	0.33	3577	1.40	0.03
010857583-04	OBS	No	584.034494	329.436061	1517.4	8.387	13.6	7.1	0.33	3577	1.29	0.02
010857583-05	OBS	No	403.784419	492.361887	1489.6	9.675	12.5	7.0	0.33	3577	1.28	0.03
010857583-06	OBS	No	354.599656	304.376433	2021.9	18.157	10.4	10.2	0.33	3577	1.72	0.03
010857583-07	OBS	No	408.868532	137.224673	1139.5	6.601	11.4	6.2	0.33	3577	1.18	0.03
010857583-08	OBS	No	476.626409	468.712412	884.9	7.500	11.6	-1.0	0.33	3577	0.98	0.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010857583-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010857583-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010857583-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010857583-04	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—INCONSISTENT_TRANS
010857583-05	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
010857583-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
010857583-07	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—INCONSISTENT_TRANS
010857583-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—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.

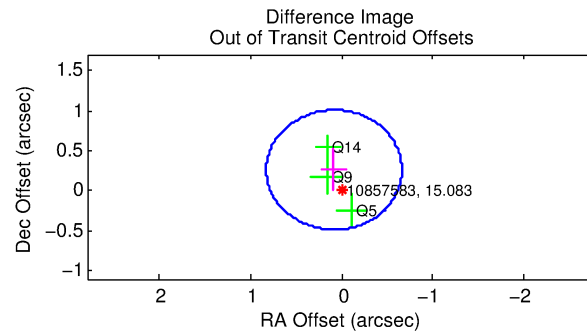
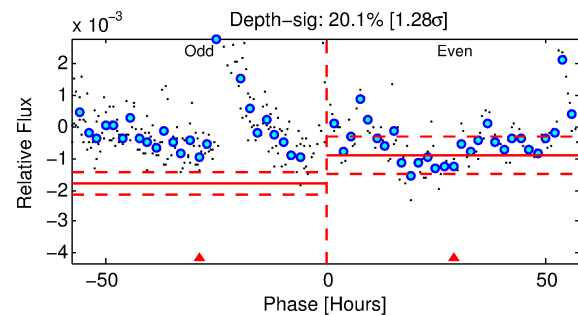
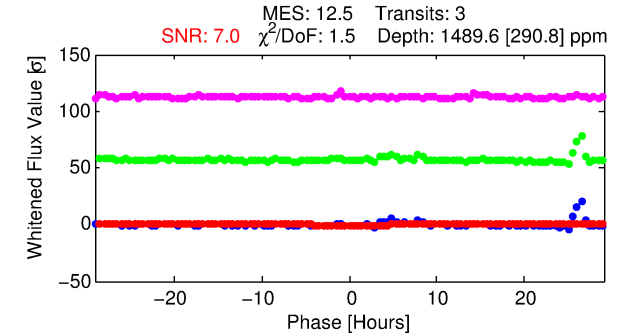
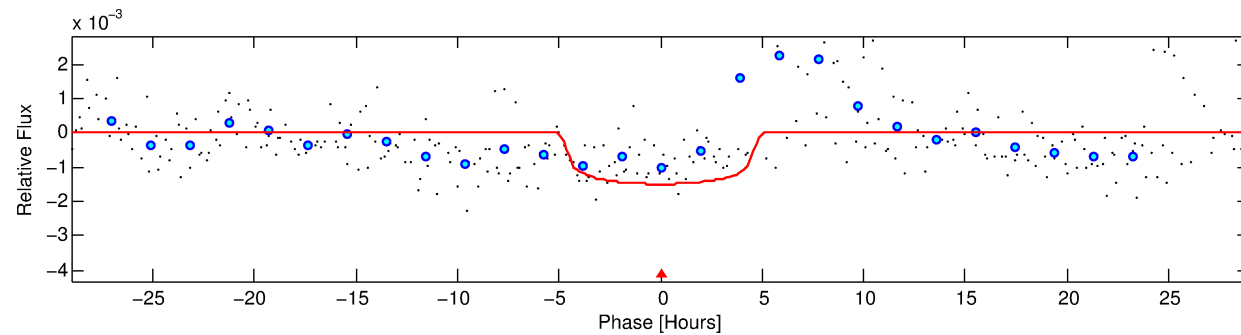
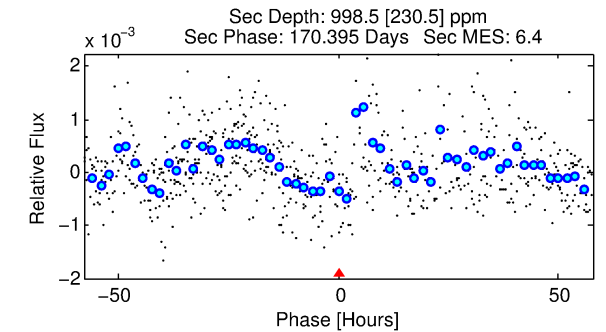
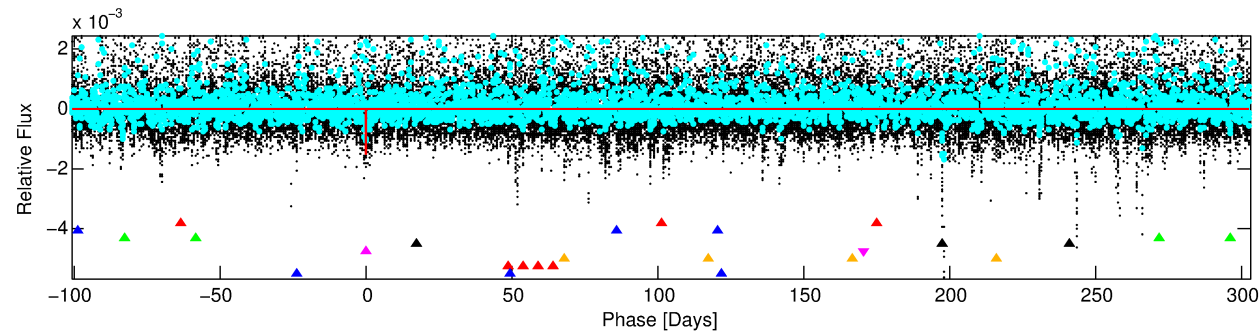
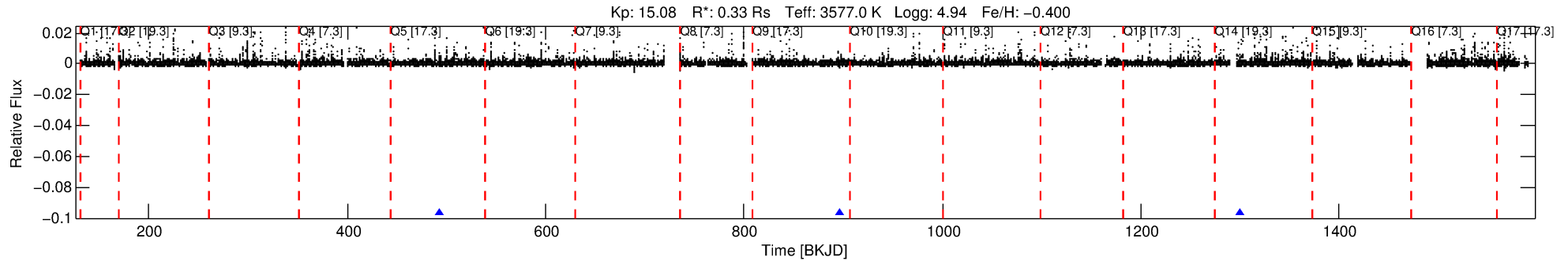
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010857583-05

No Significant Match Found

DV One-Page Summary

KIC: 10857583 Candidate: 5 of 8 Period: 403.784 d



DV Fit Results:

Period = 403.78442 [0.00917] d
Epoch = 492.3619 [0.0104] BKJD
Rp/R* = 0.0356 [0.0229]
a/R* = 316.19 [968.97]
b = 0.30 [9.39]
Seff = 0.03 [0.00]
Teq = 105 [3] K
Rp = 1.28 [0.84] Re
a = 0.7507 [0.0593] AU
Ag = 188468.64 [247048.02] [0.76σ]
Teffp = 3370 [1103] K [2.96σ]

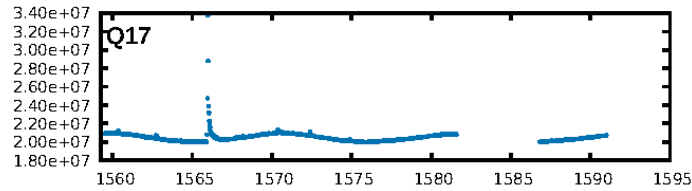
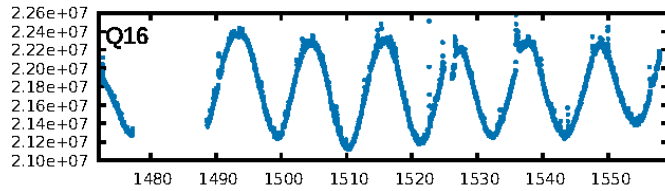
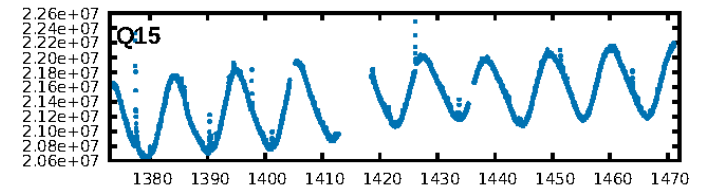
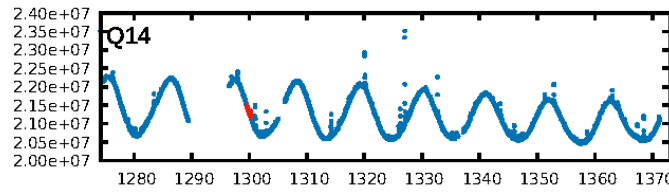
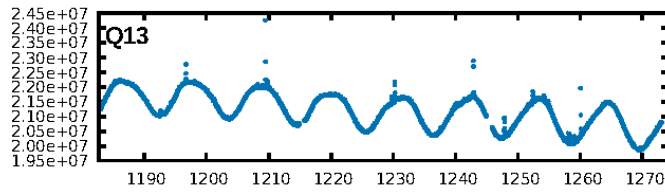
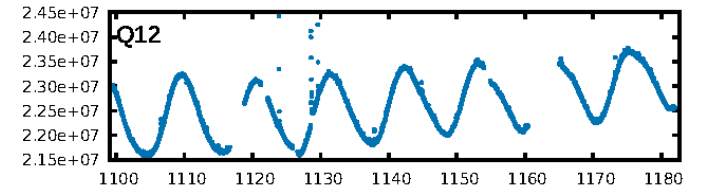
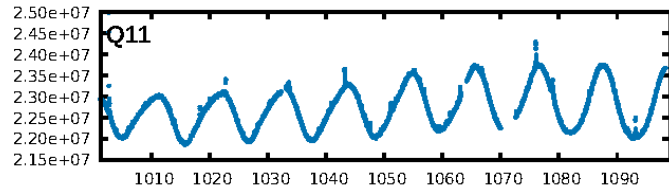
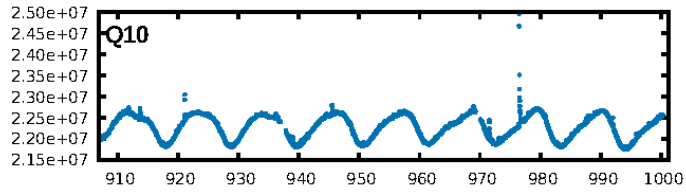
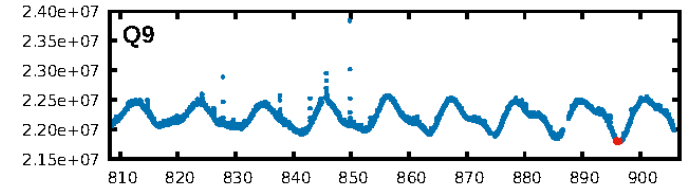
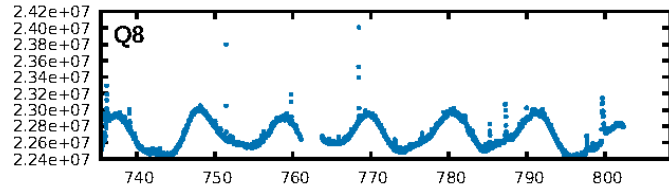
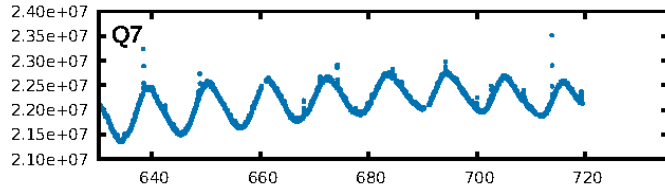
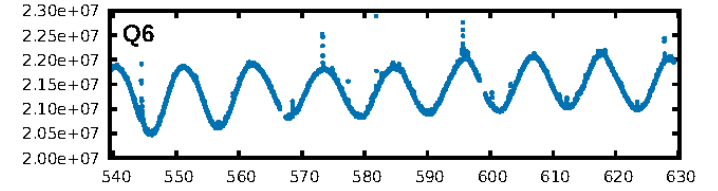
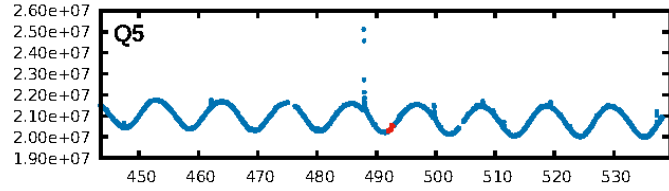
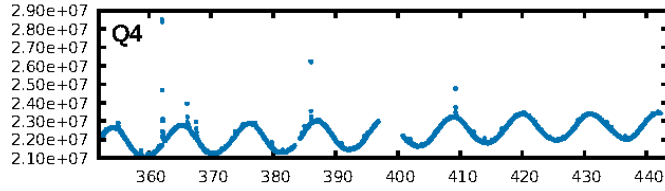
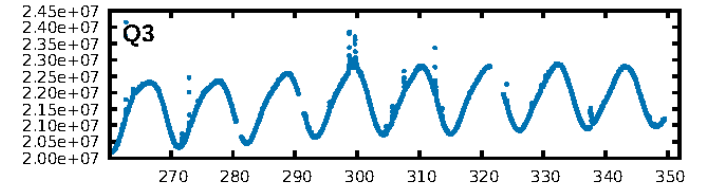
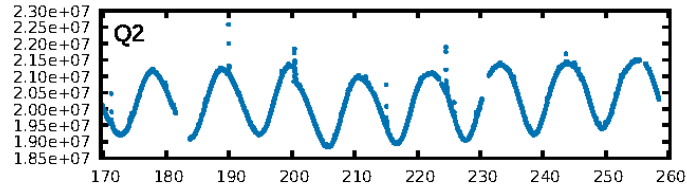
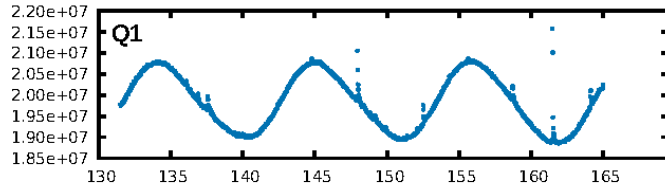
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [47.43σ]
LongPeriod-sig: 100.0% [10.42σ]
ModelChiSquare2-sig: 47.3%
ModelChiSquareGof-sig: 99.2%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.231
Centroid-sig: 42.5%
Centroid-so: 0.683 arcsec [1.13σ]
OotOffset-rm: 0.272 arcsec [1.09σ]
OotOffset-st: 1/0/0/2 [3]
KicOffset-rm: 0.476 arcsec [1.79σ]
KicOffset-st: 1/0/0/2 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

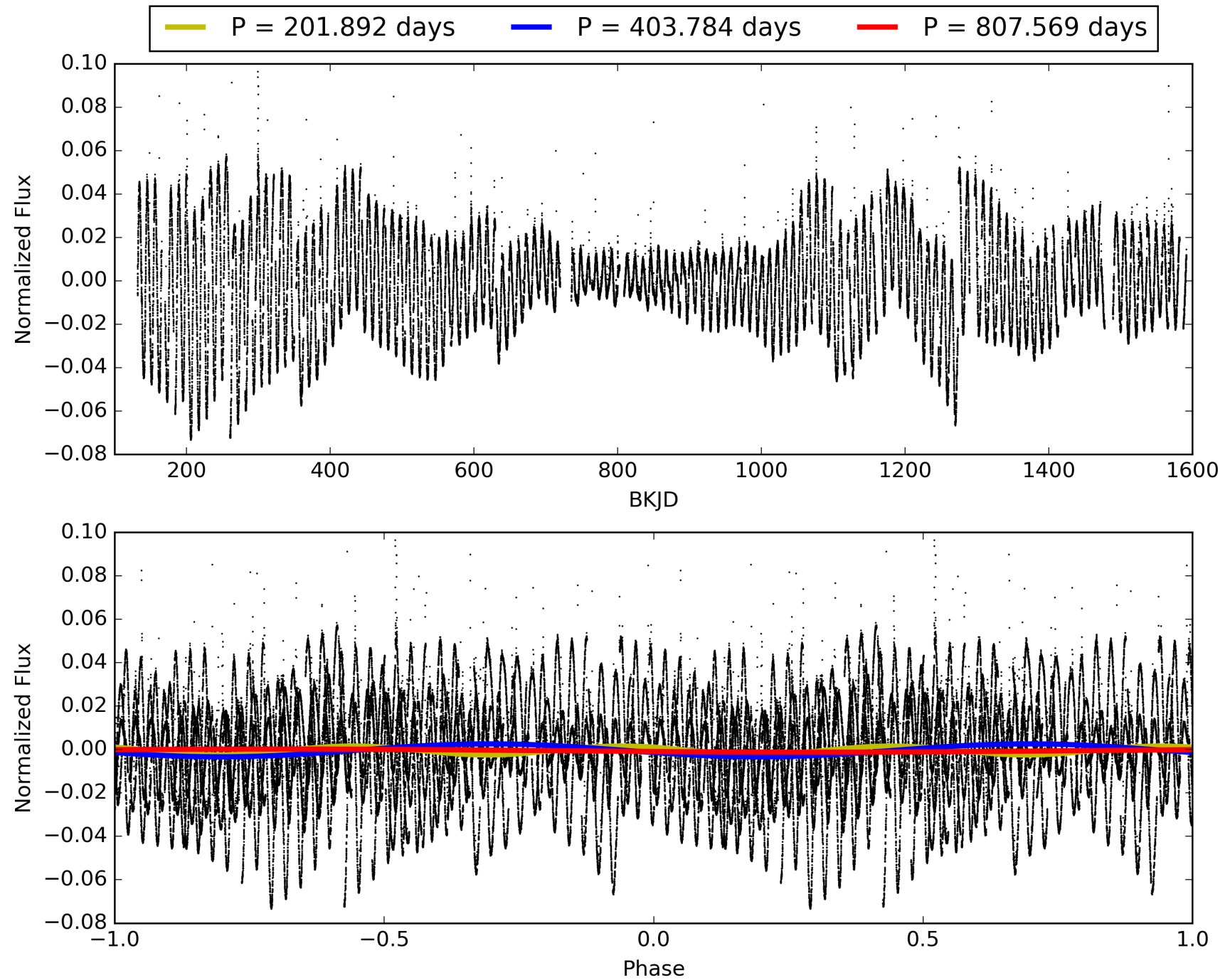
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:27:38 Z

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

TCE 010857583-05, PDC Light Curves

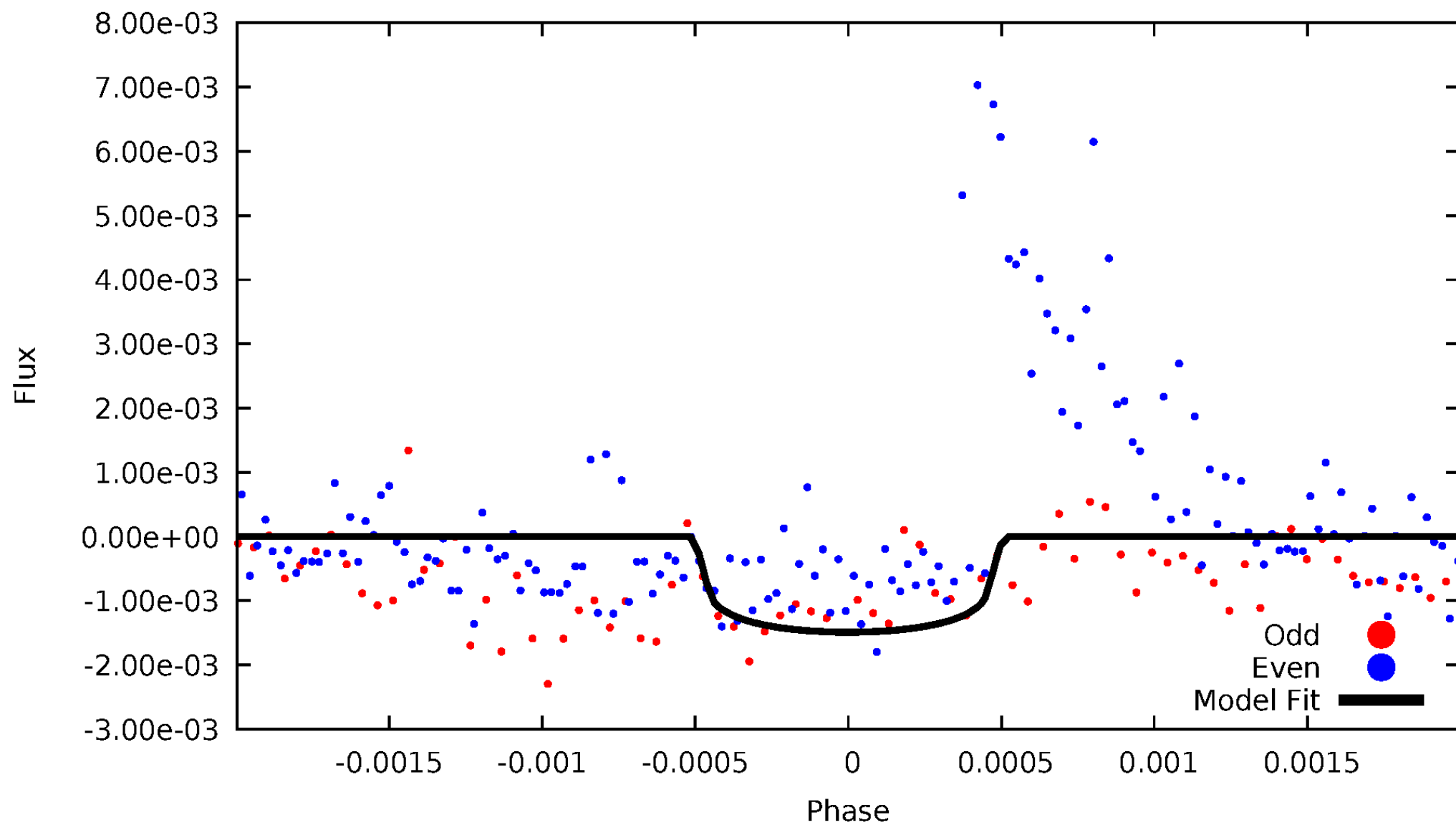


TCE 010857583-05



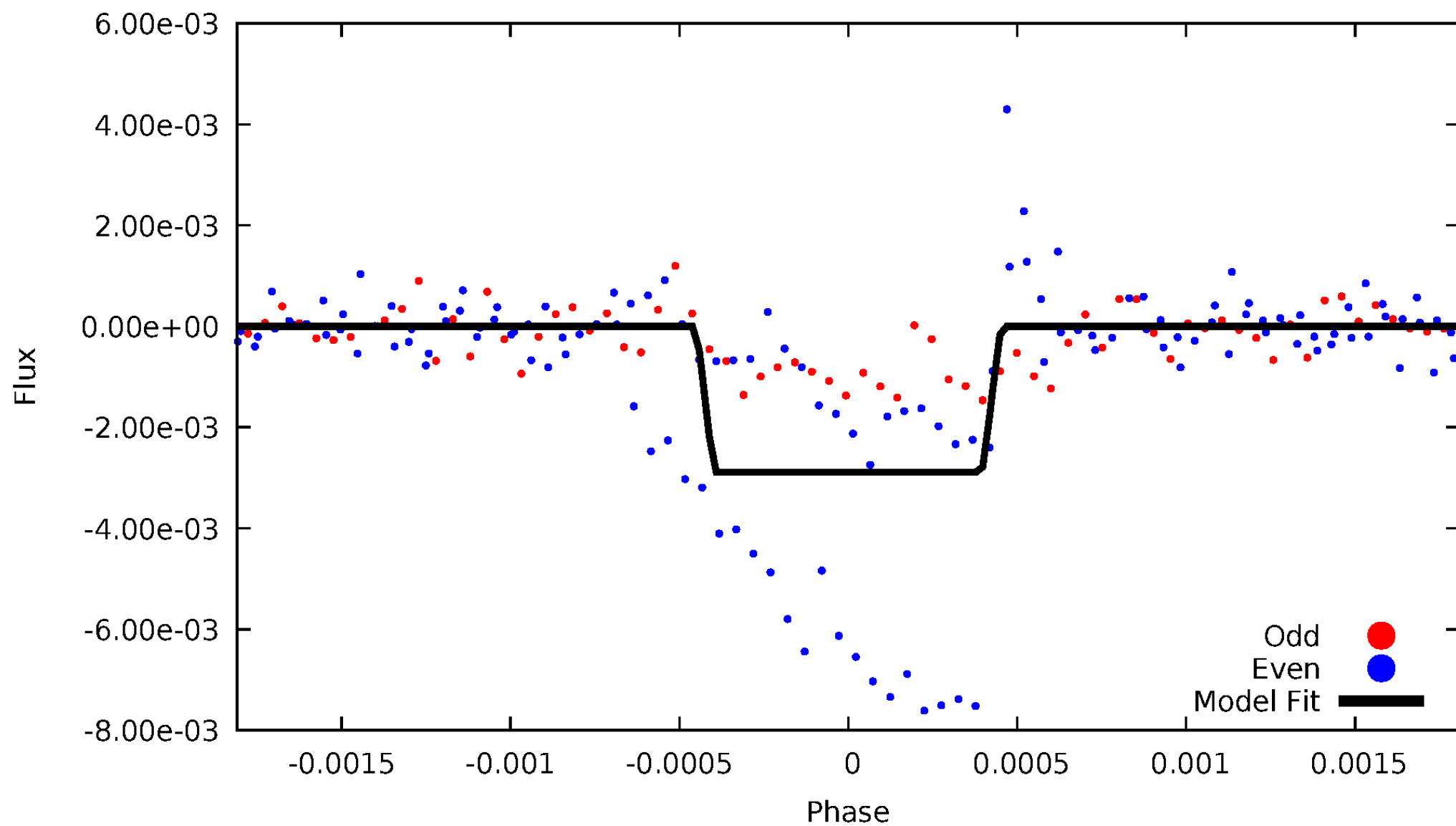
DV Odd/Even

TCE 010857583-05



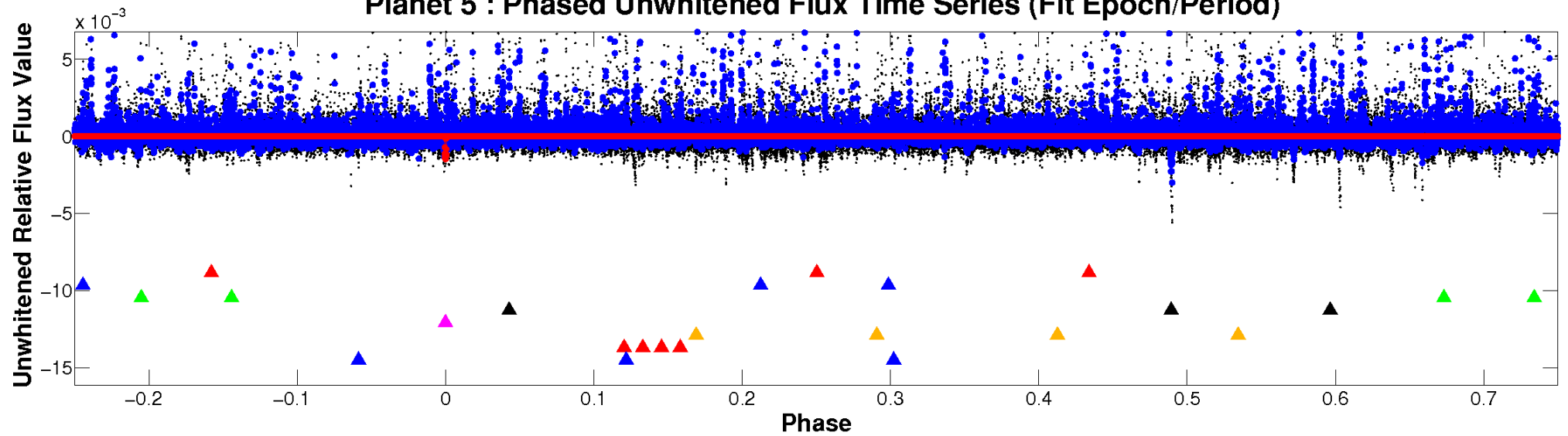
ALT Odd/Even

TCE 010857583-05

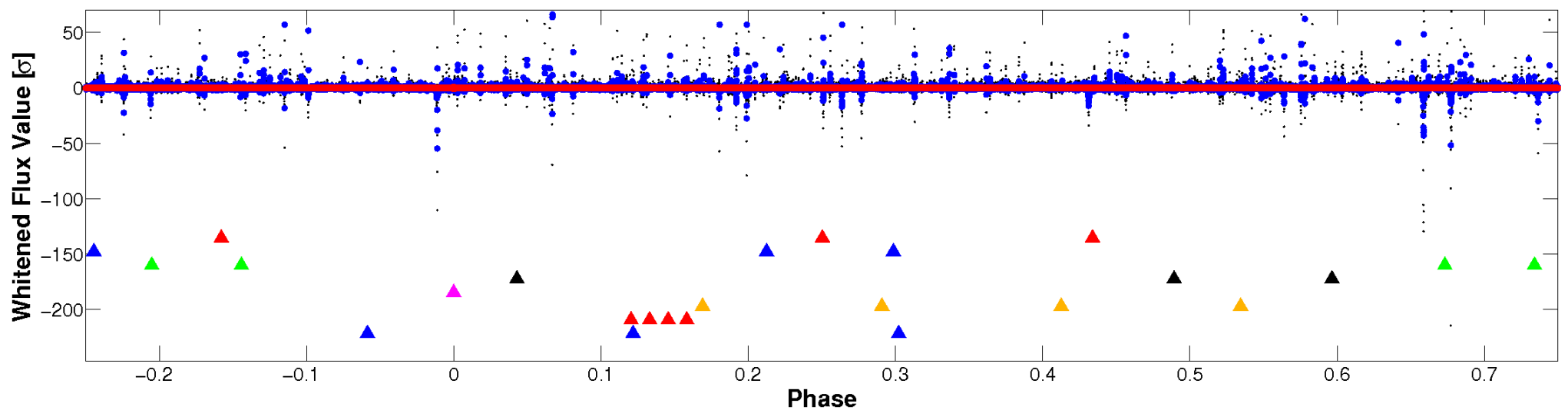


Non-Whitened Vs. Whitened Light Curve

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

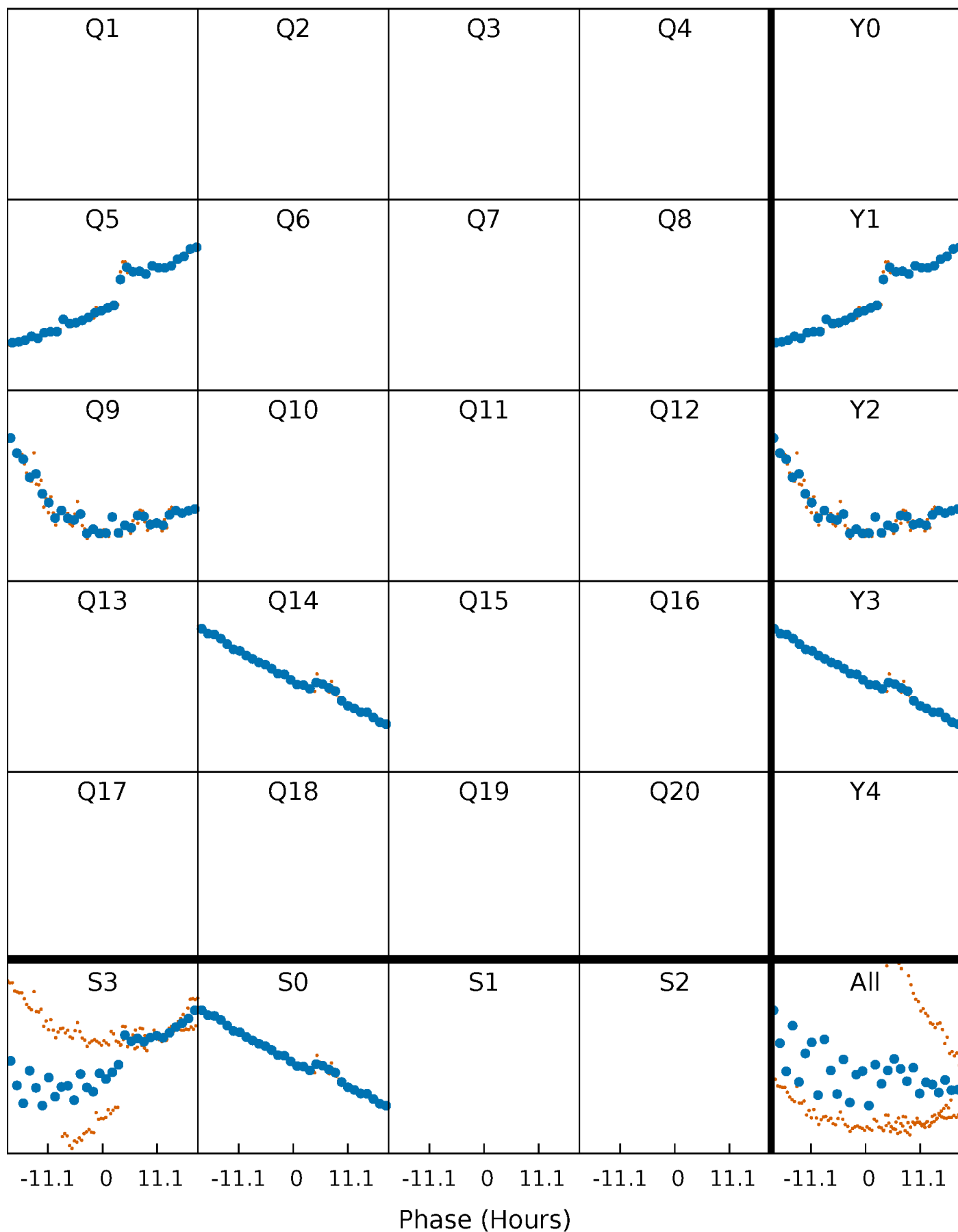


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



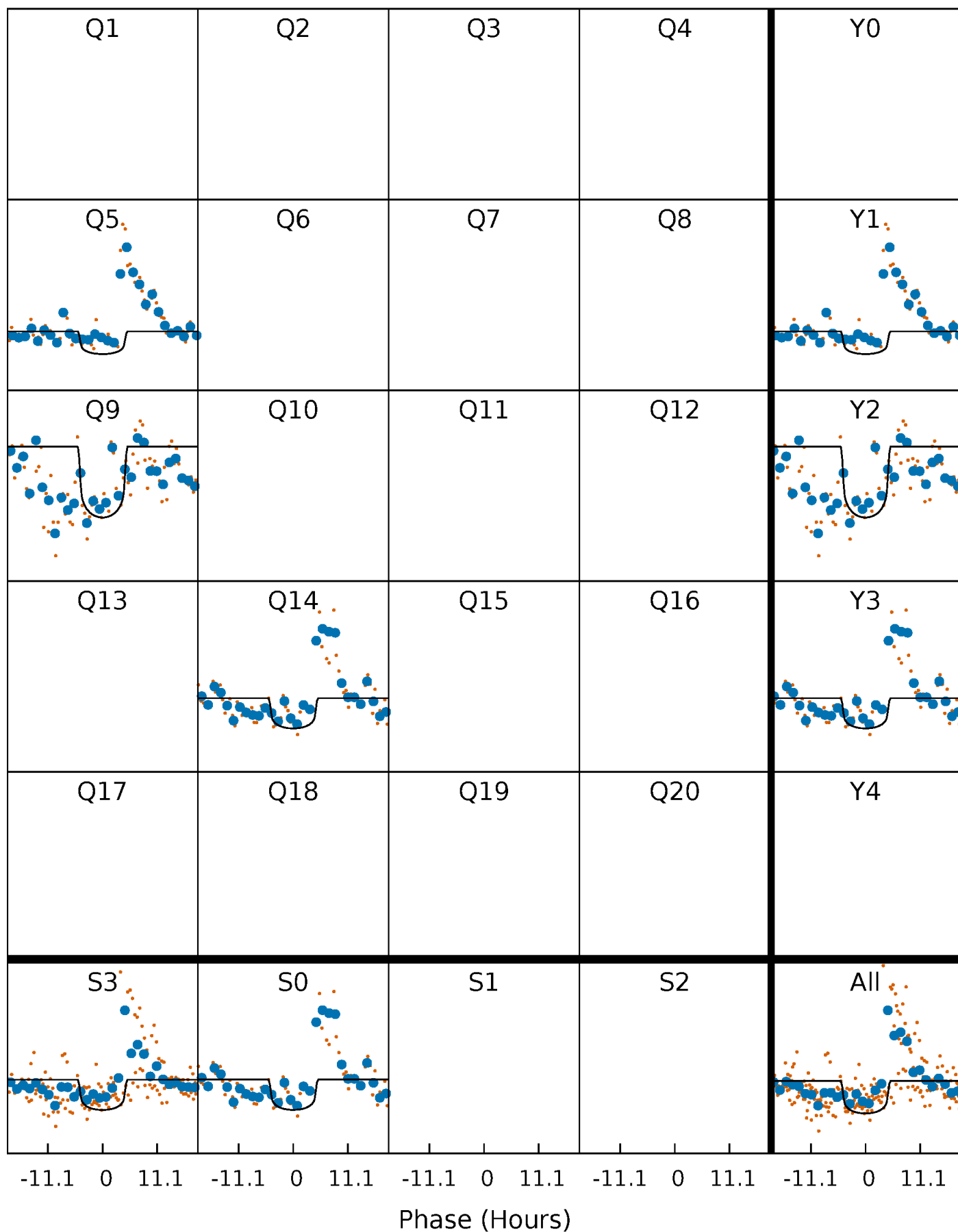
PDC Quarter-Phased Transit Curves

TCE 010857583-05 $P=403.784419$ Days $T_0=492.361887$ (BKJD)



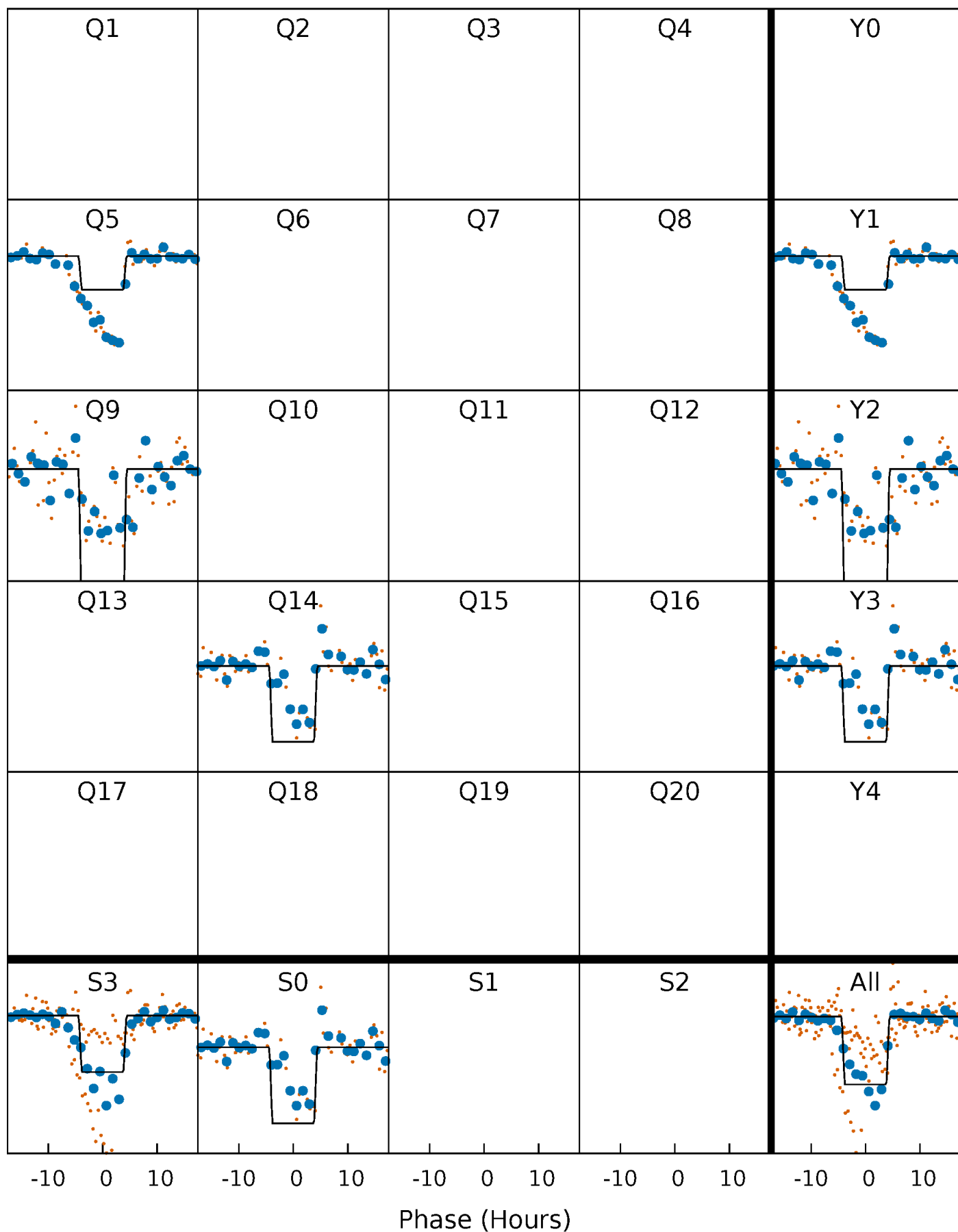
DV Quarter-Phased Transit Curves

TCE 010857583-05 $P=403.784419$ Days $T_0=492.361887$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

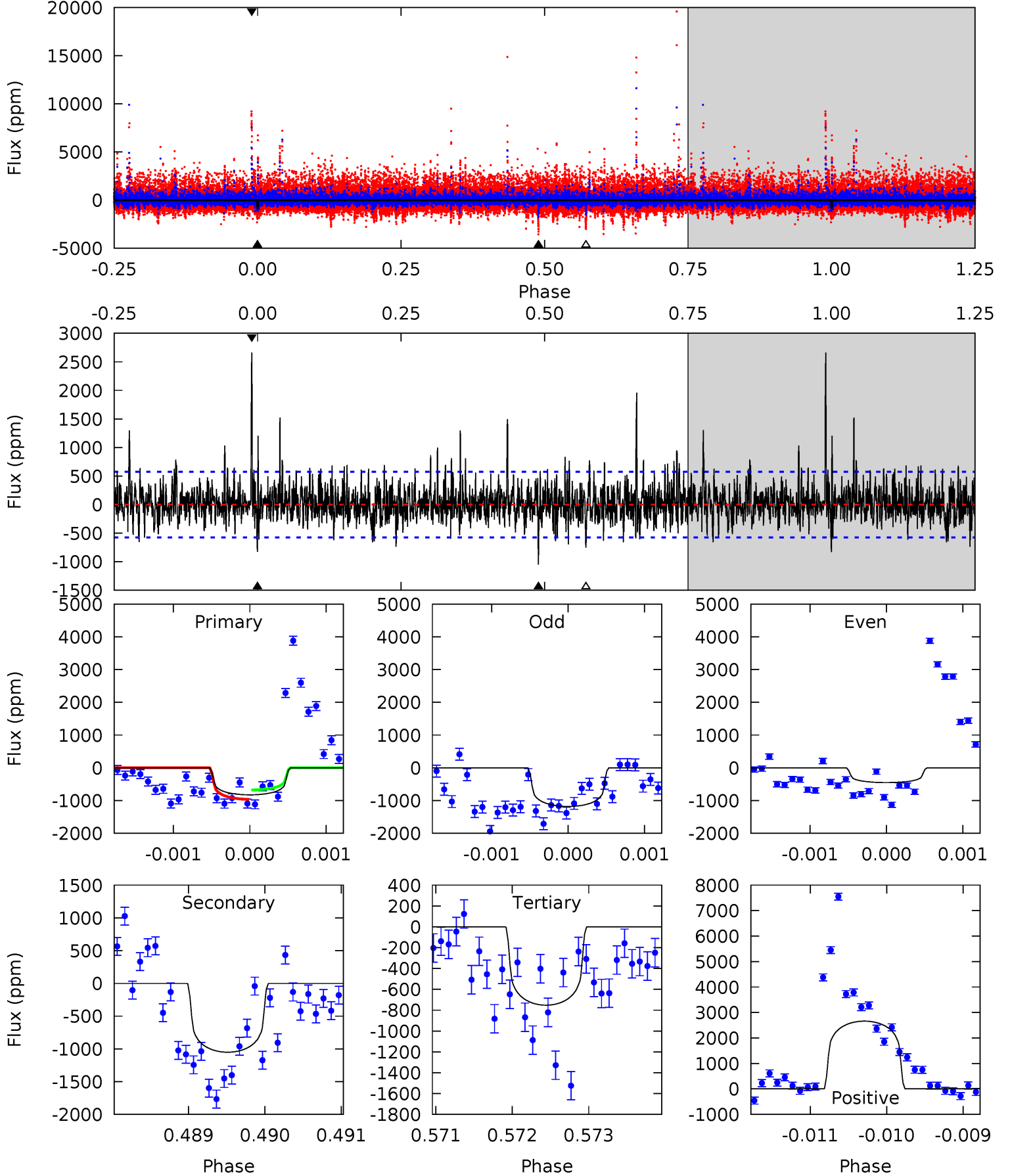
TCE 010857583-05 $P=403.801201$ Days $T_0=492.339650$ (BKJD)



DV Model-Shift Uniqueness Test

010857583-05, P = 403.784419 Days, E = 88.577468 Days

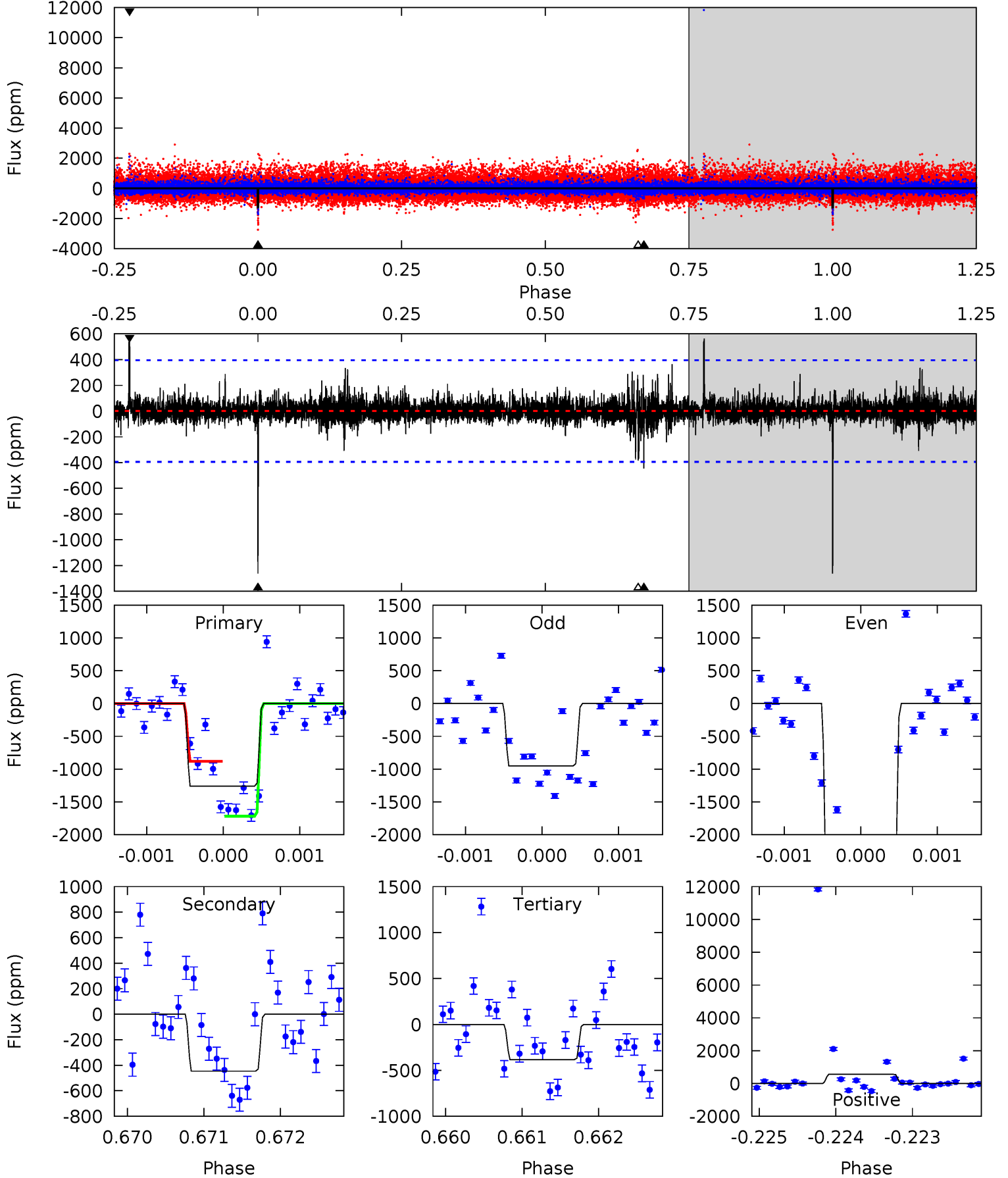
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.83	9.97	7.13	25.2	5.45	3.29	2.42	0.70	-17.4	2.83	-15.3	1.55	0.69	0.72	1.37



Alt Model-Shift Uniqueness Test

010857583-05, P = 403.801201 Days, E = 88.538449 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.5	6.18	5.30	7.77	5.47	3.32	0.80	12.2	9.68	0.88	-1.59	19.4	1.92	0.31	5.73



Stellar Parameters For KIC 010857583

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3577^{+42}_{-48}	$4.940^{+0.040}_{-0.040}$	$-0.400^{+0.100}_{-0.100}$	$0.330^{+0.030}_{-0.036}$	$0.346^{+0.033}_{-0.045}$	$13.530^{+2.941}_{-2.197}$
	+1%/-1%	+1%/-1%	+25%/-25%	+9%/-11%	+10%/-13%	+22%/-16%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 010857583-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1051 ± 105	$1.33^{+0.84}_{-0.75}$	146^{+3}_{-3}	3413^{+1168}_{-459}	$181553^{+735541}_{-114004}$
Alt.	-446 ± 72	$1.96^{+0.79}_{-0.81}$	146^{+3}_{-3}	2707^{+439}_{-224}	34537^{+71291}_{-16892}

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

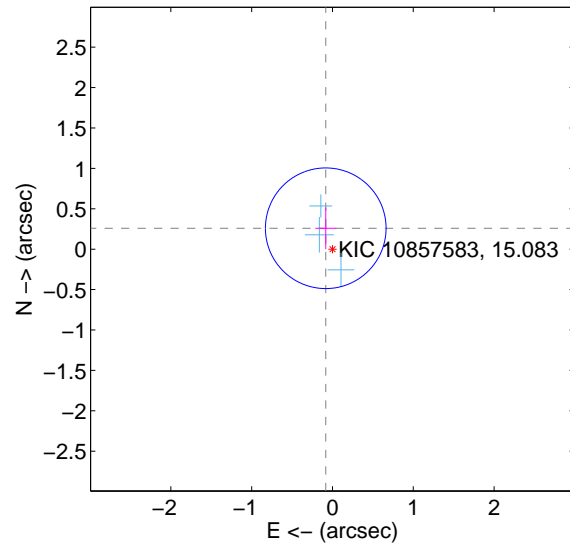
Supplemental centroid analysis for 010857583-05. Kepler magnitude: 15.08. Transit SNR 7.03

There are 3 quarters with good PRF difference image offsets

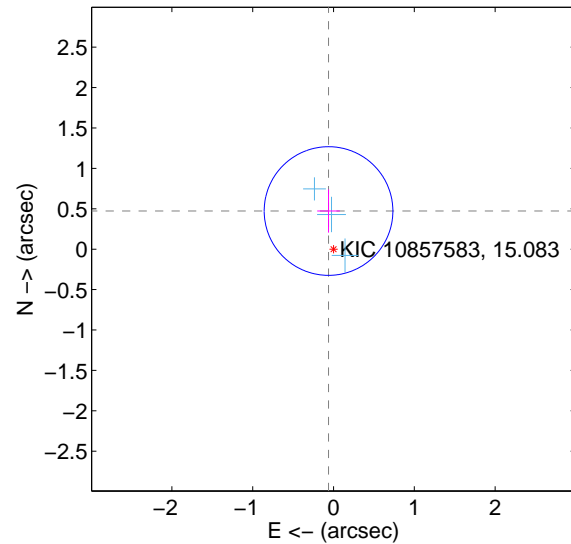
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.272 ± 0.249	1.09	0.083 ± 0.129	0.259 ± 0.258
PRF-fit source offset from KIC position	0.476 ± 0.265	1.79	0.062 ± 0.141	0.472 ± 0.267
photometric centroid source offset	0.68 ± 0.60	1.13	-0.66 ± 0.58	0.18 ± 0.88

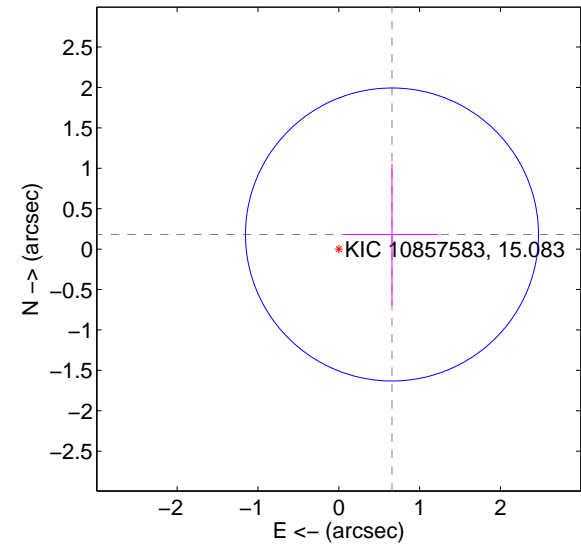
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

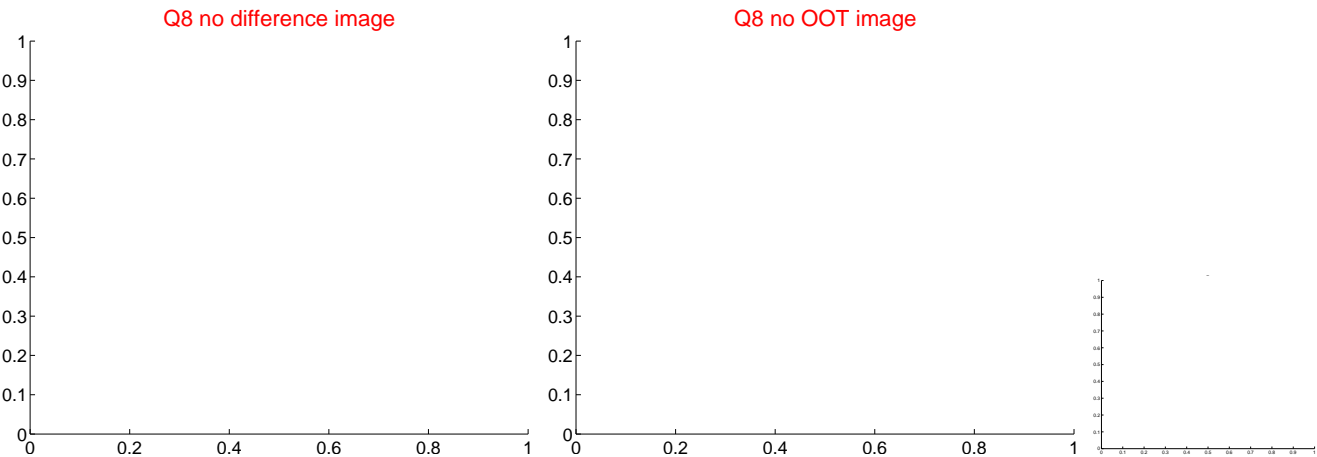
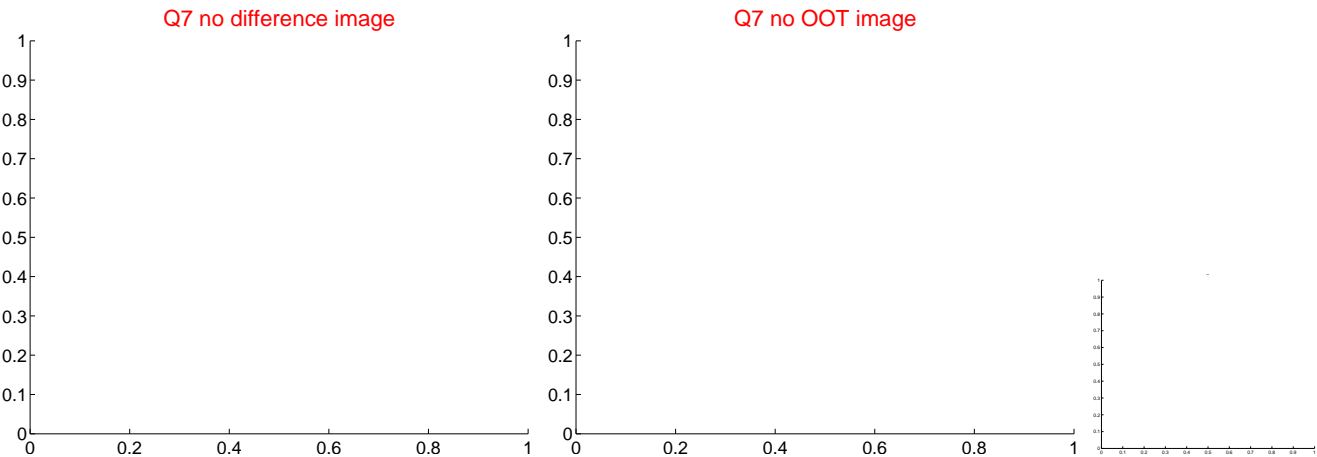
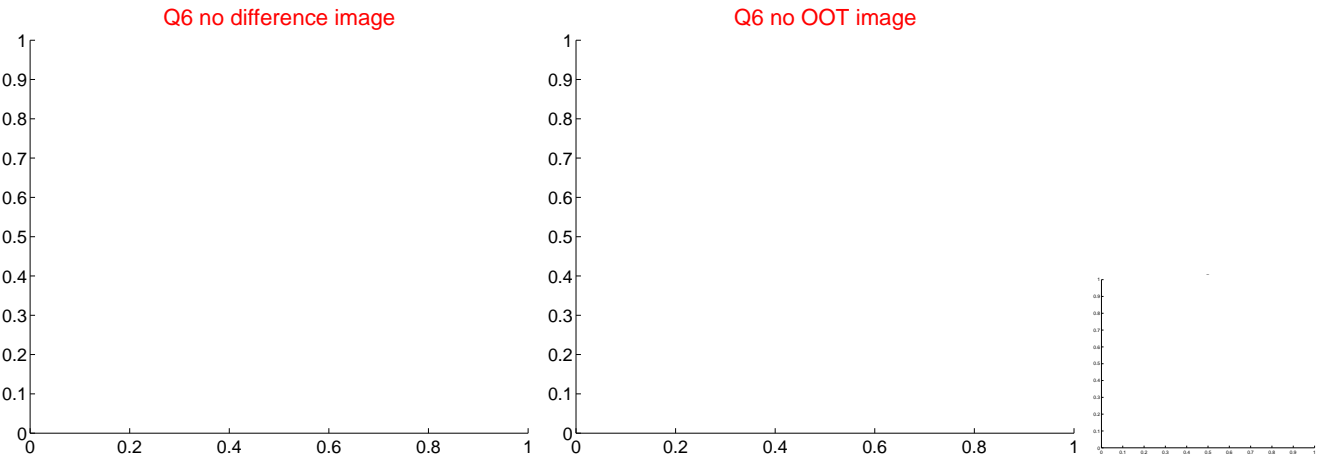
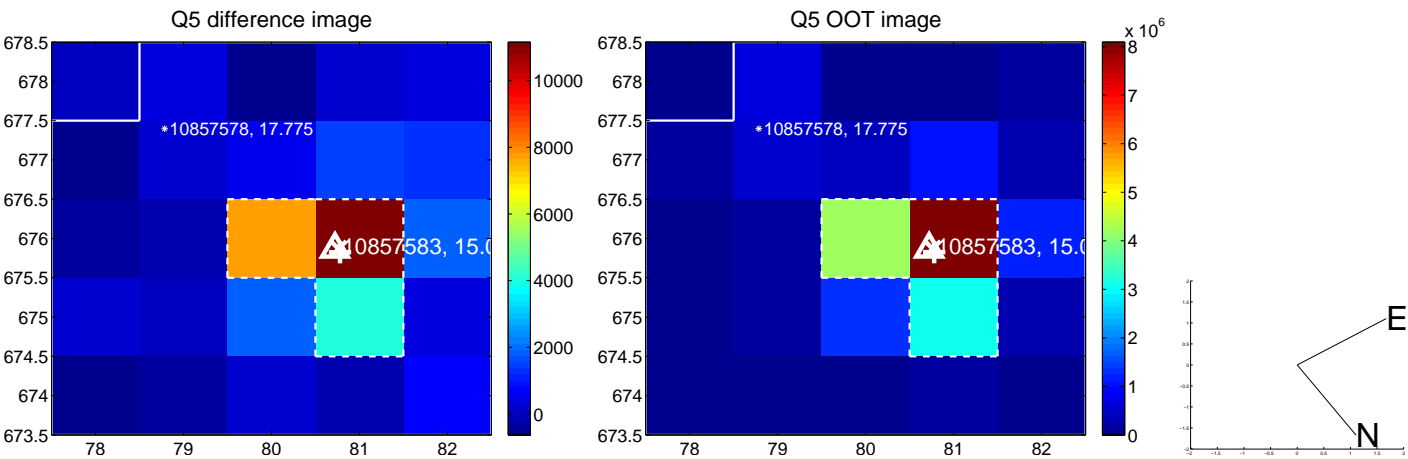


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

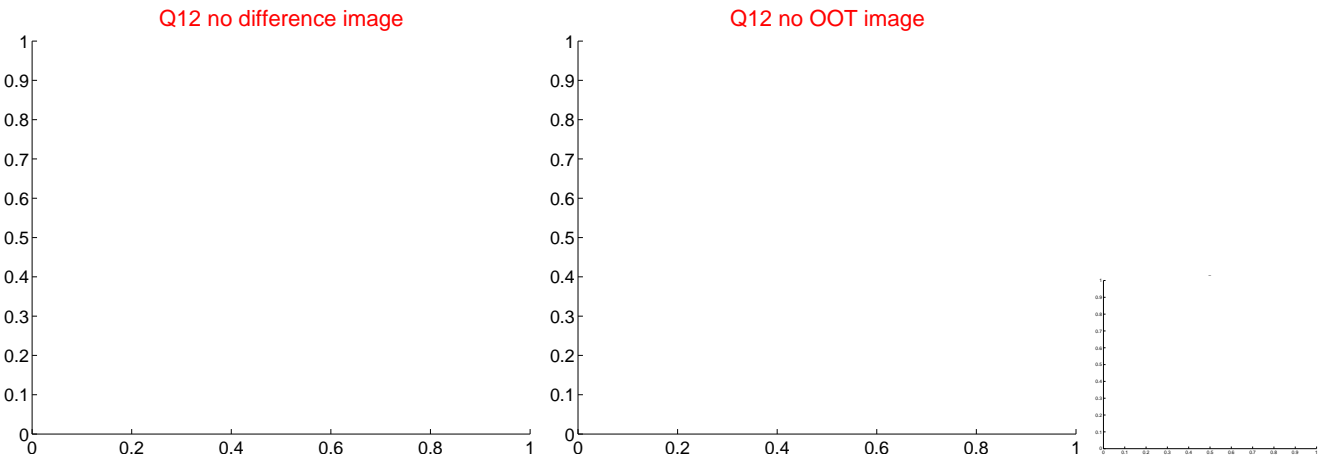
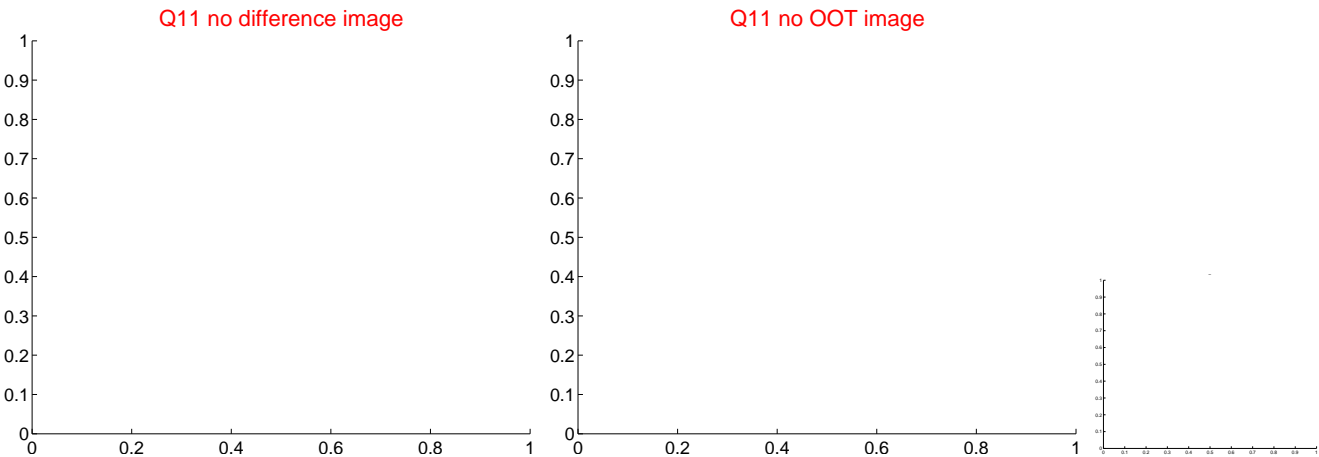
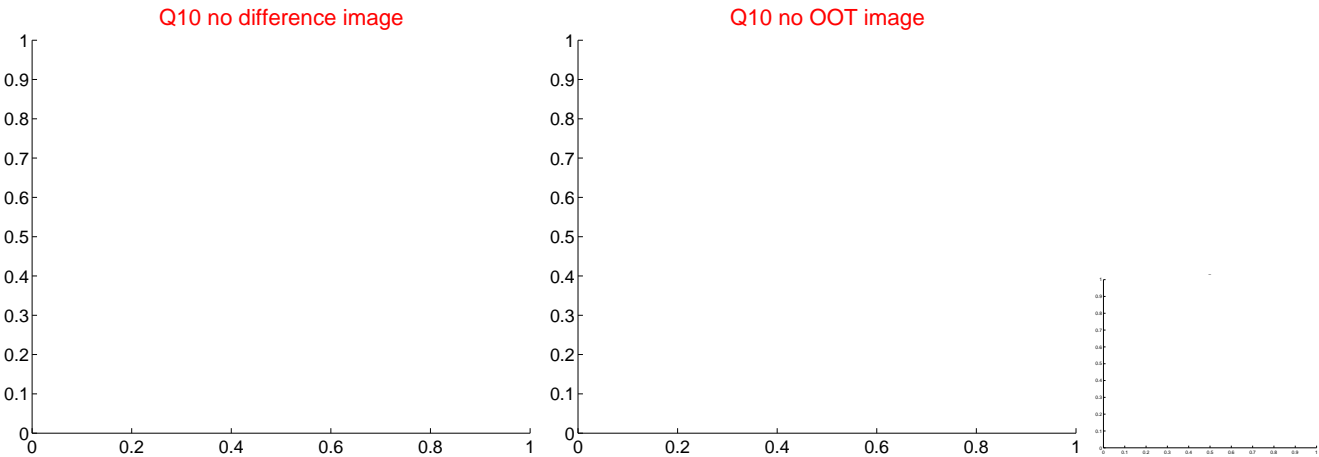
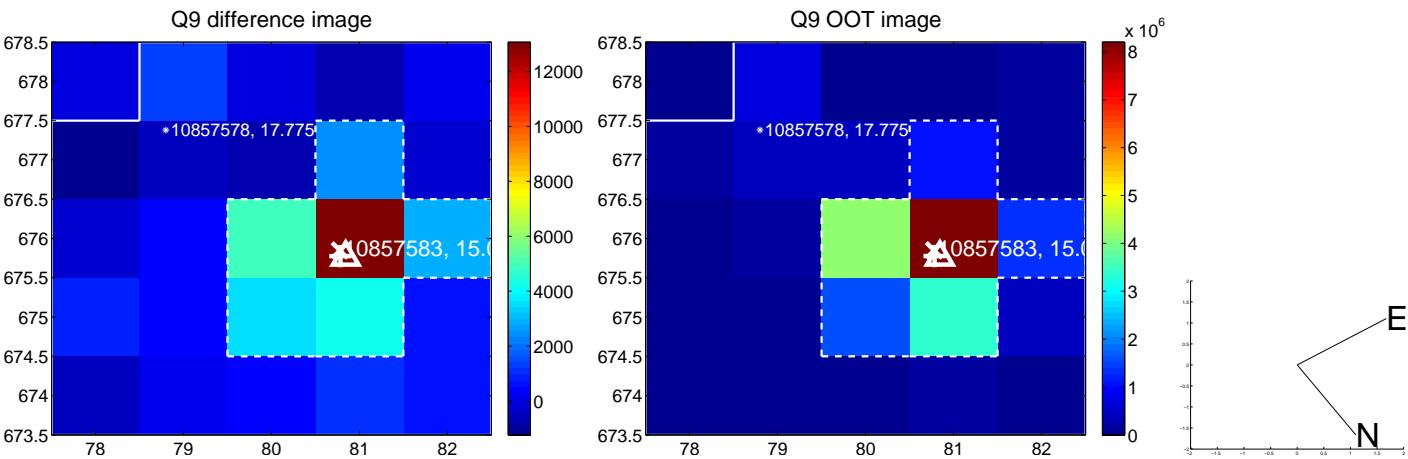
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



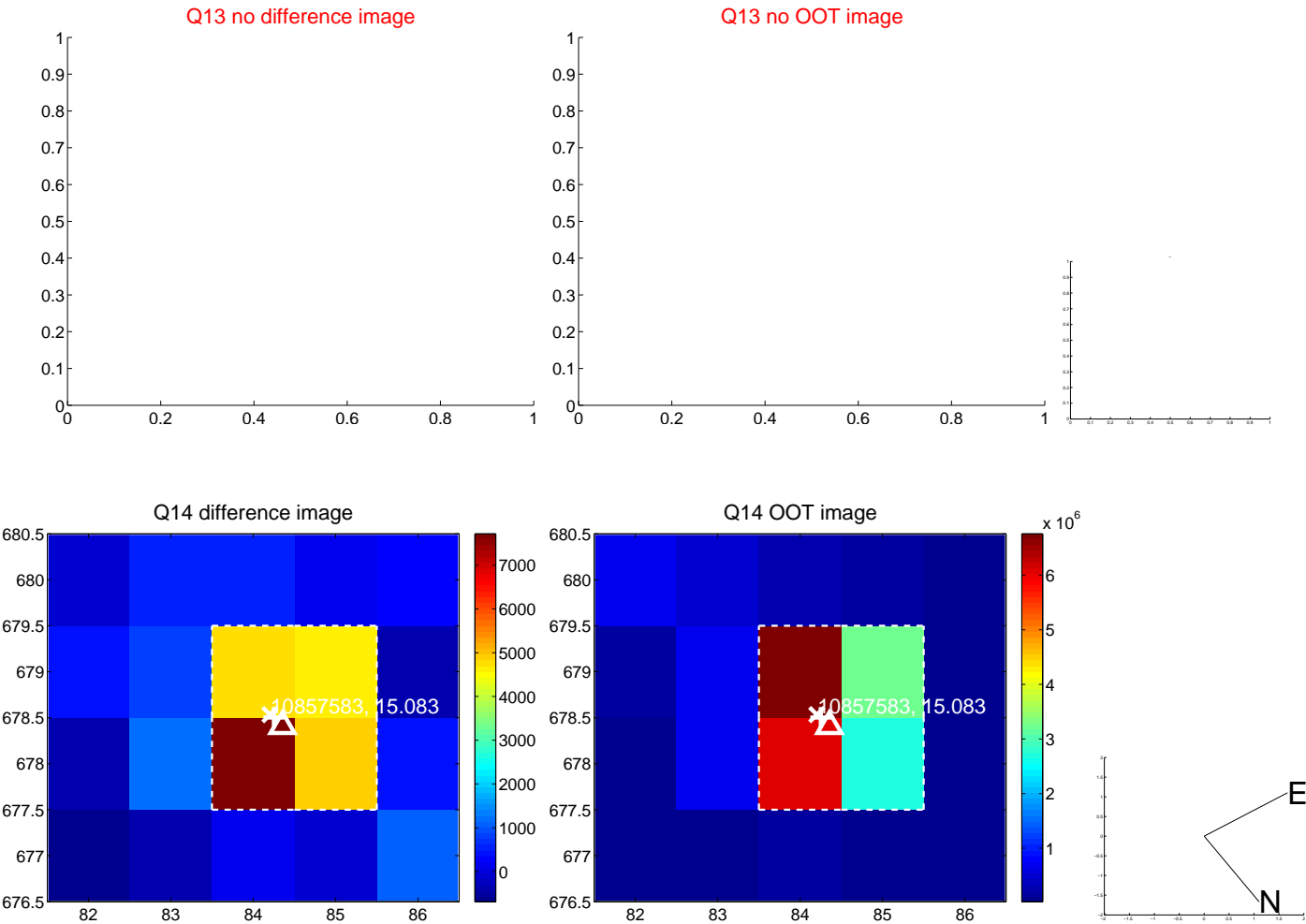
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



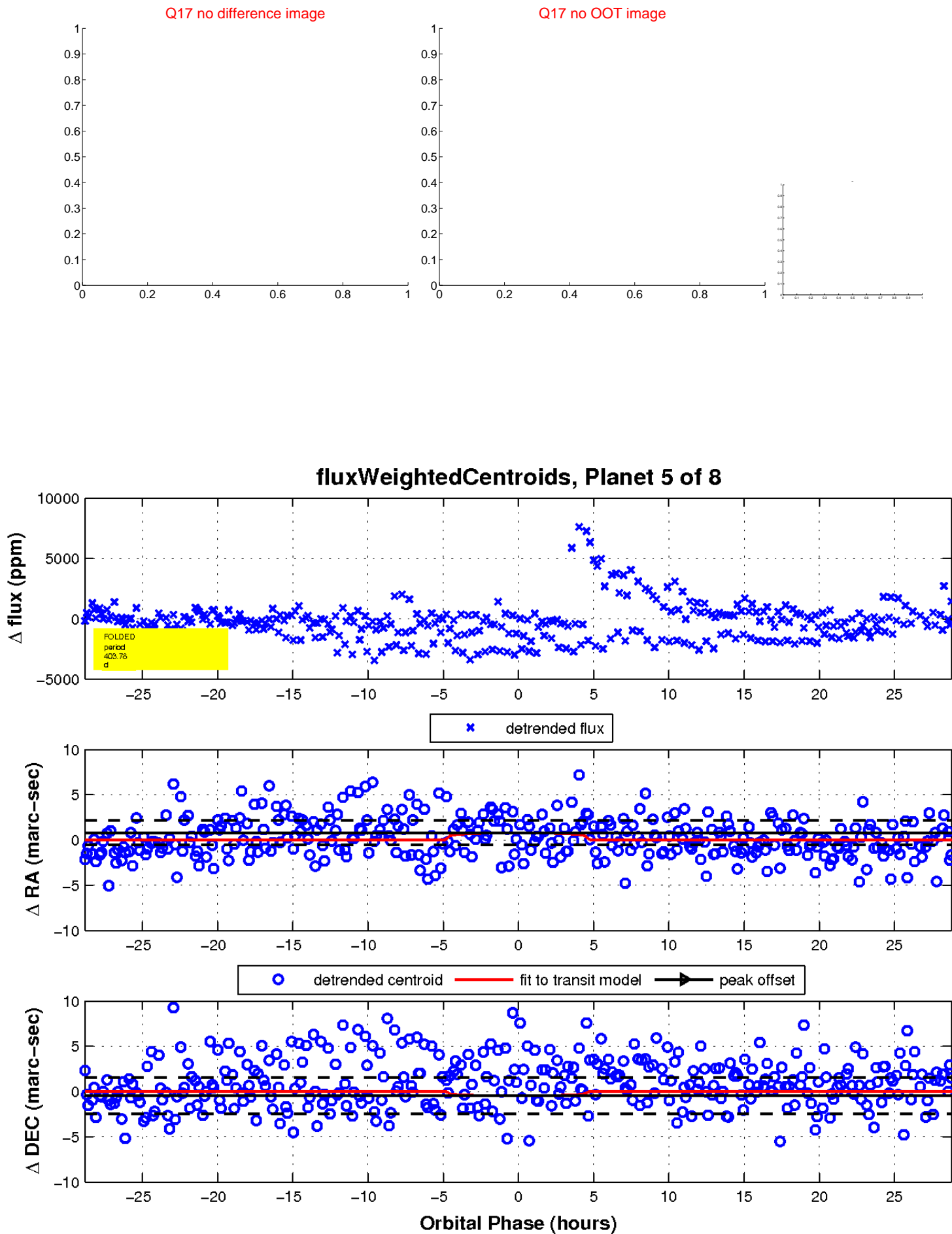
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

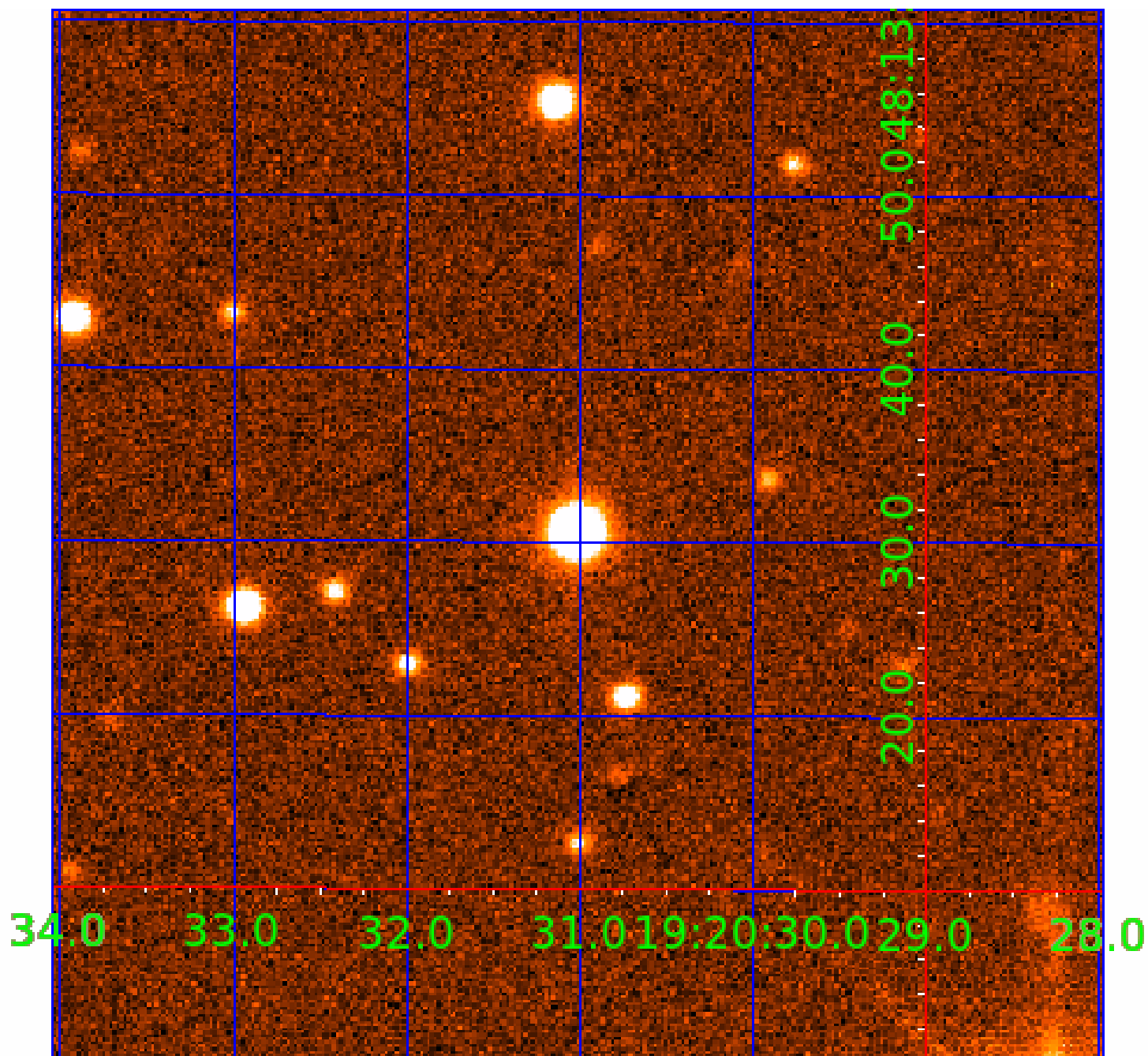


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010857583

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})
010857583-01	OBS	No	568.634152	263.772287	1392.7	5.316	18.0	6.7	0.33	3577	1.27	0.02
010857583-02	OBS	No	588.281610	209.166692	1603.0	7.608	15.0	7.7	0.33	3577	1.33	0.02
010857583-03	OBS	No	379.207725	434.130336	1620.7	7.811	11.9	9.1	0.33	3577	1.40	0.03
010857583-04	OBS	No	584.034494	329.436061	1517.4	8.387	13.6	7.1	0.33	3577	1.29	0.02
010857583-05	OBS	No	403.784419	492.361887	1489.6	9.675	12.5	7.0	0.33	3577	1.28	0.03
010857583-06	OBS	No	354.599656	304.376433	2021.9	18.157	10.4	10.2	0.33	3577	1.72	0.03
010857583-07	OBS	No	408.868532	137.224673	1139.5	6.601	11.4	6.2	0.33	3577	1.18	0.03
010857583-08	OBS	No	476.626409	468.712412	884.9	7.500	11.6	-1.0	0.33	3577	0.98	0.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010857583-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010857583-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010857583-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010857583-04	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—INCONSISTENT_TRANS
010857583-05	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
010857583-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
010857583-07	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—INCONSISTENT_TRANS
010857583-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—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.

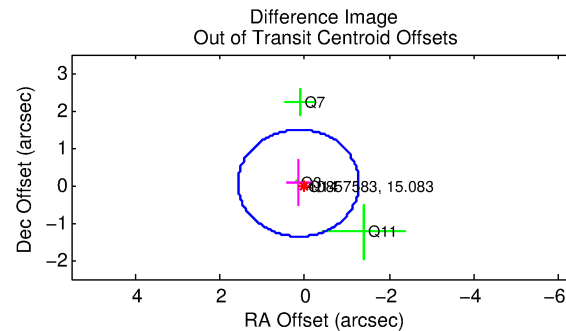
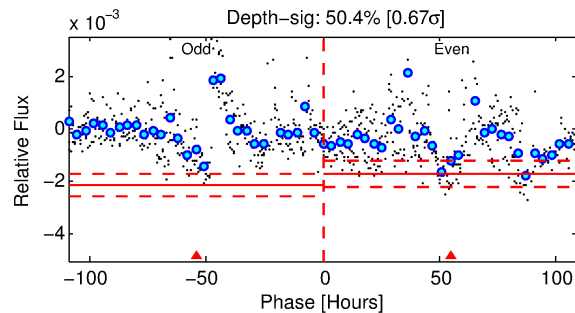
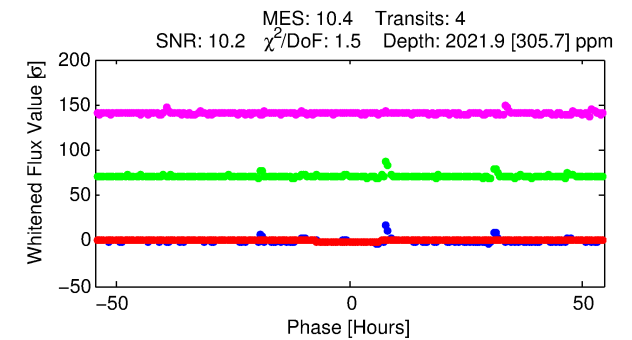
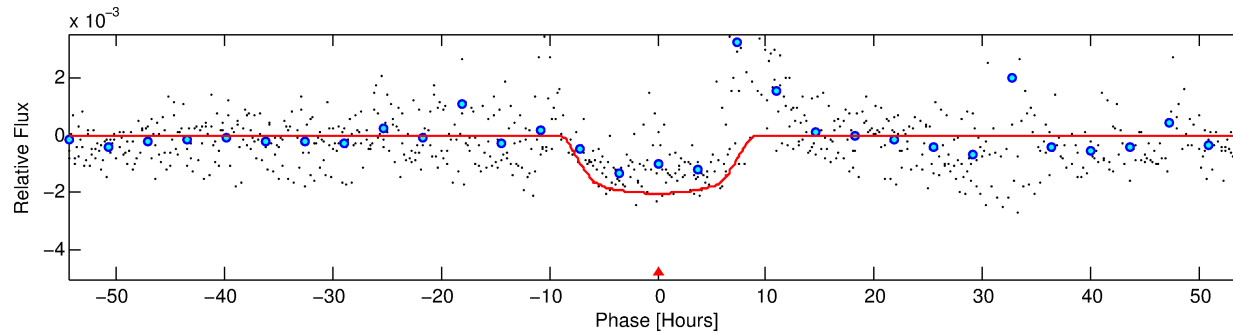
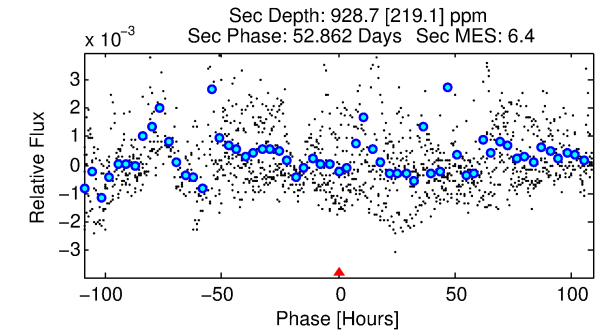
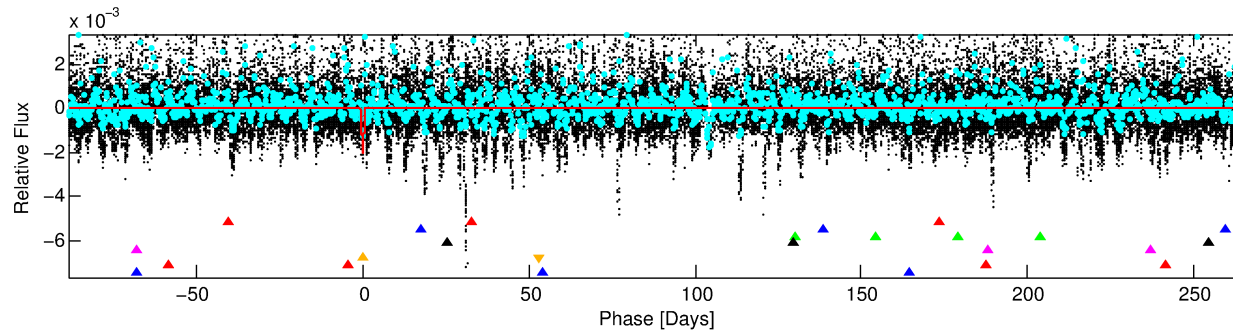
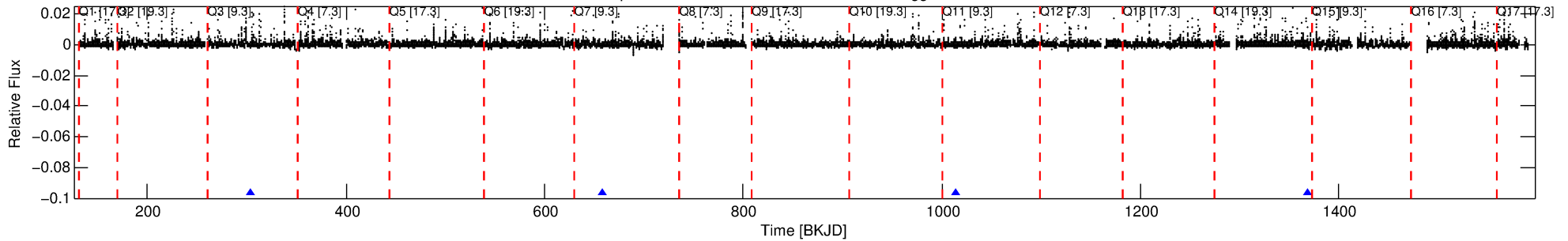
Ephemeris Match Information For 010857583-06

No Significant Match Found

DV One-Page Summary

KIC: 10857583 Candidate: 6 of 8 Period: 354.600 d

Kp: 15.08 R*: 0.33 Rs Teff: 3577.0 K Logg: 4.94 Fe/H: -0.400



DV Fit Results:

Period = 354.59966 [0.01315] d
Epoch = 304.3764 [0.0238] BKJD
Rp/R* = 0.0477 [0.0043]
a/R* = 84.87 [15.02]
b = 0.88 [0.05]
Seff = 0.03 [0.00]
Teq = 109 [3] K
Rp = 1.72 [0.24] Re
a = 0.6884 [0.0543] AU
Ag = 81932.59 [25547.07] [3.21σ]
Teffp = 2858 [216] K [12.75σ]

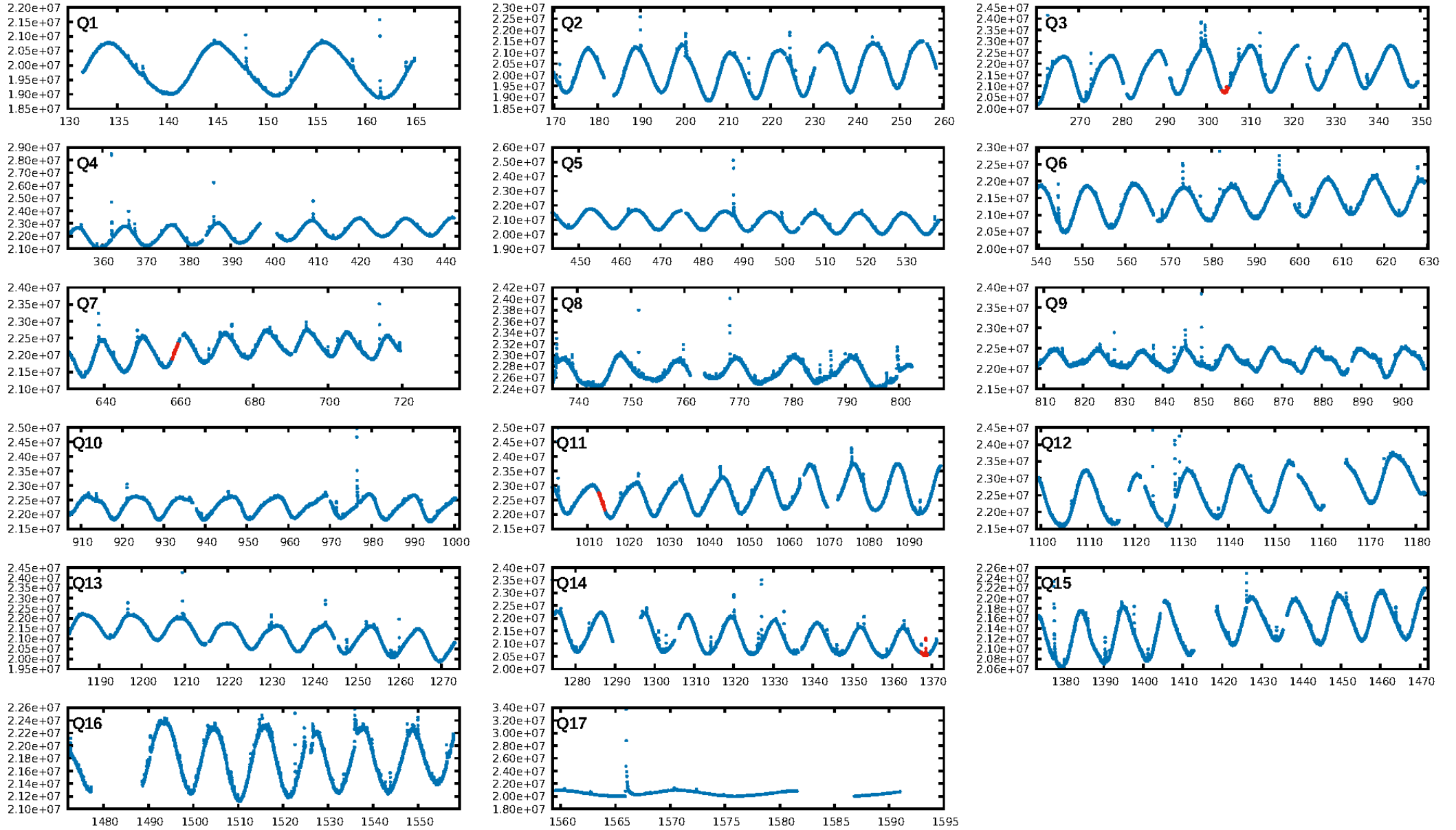
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [29.88σ]
ModelChiSquare2-sig: 0.6%
ModelChiSquareGof-sig: 81.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -1.407
Centroid-sig: 69.4%
Centroid-so: 0.275 arcsec [0.43σ]
OotOffset-rm: 0.151 arcsec [0.32σ]
OotOffset-st: 1/3/0/0 [4]
KicOffset-rm: 0.126 arcsec [0.16σ]
KicOffset-st: 1/3/0/0 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [4/4]

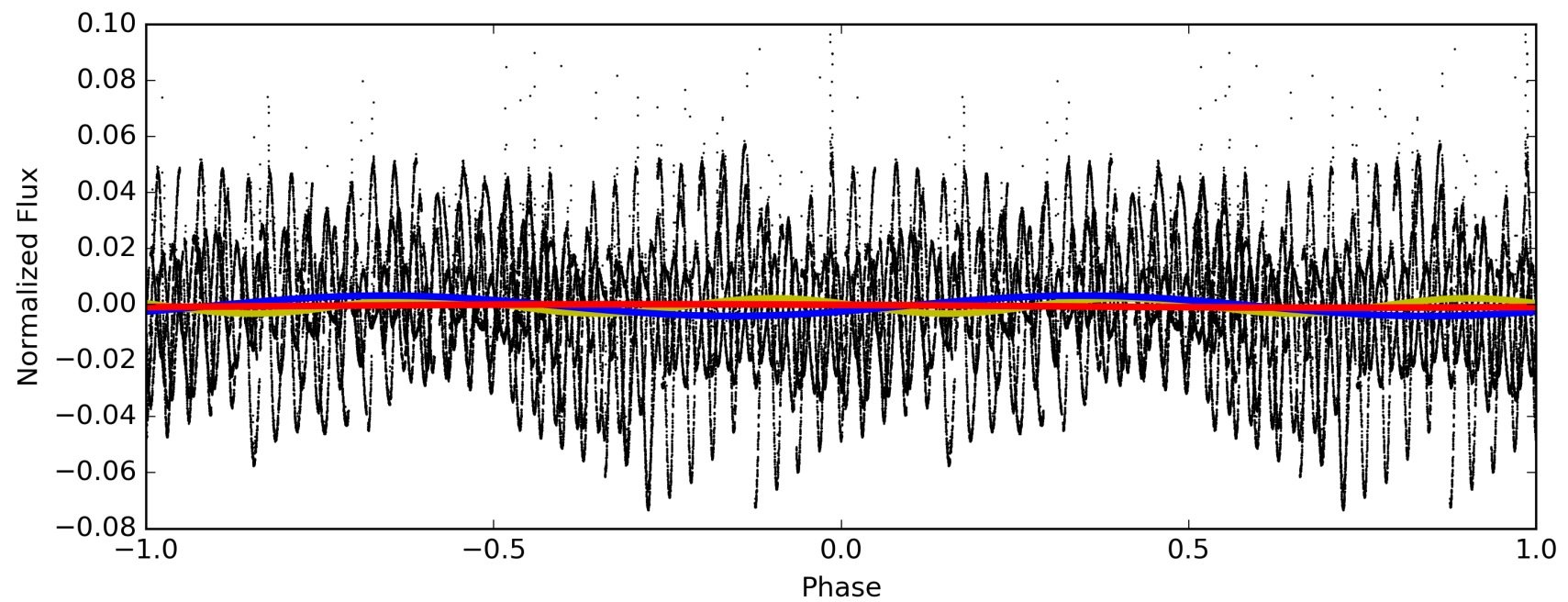
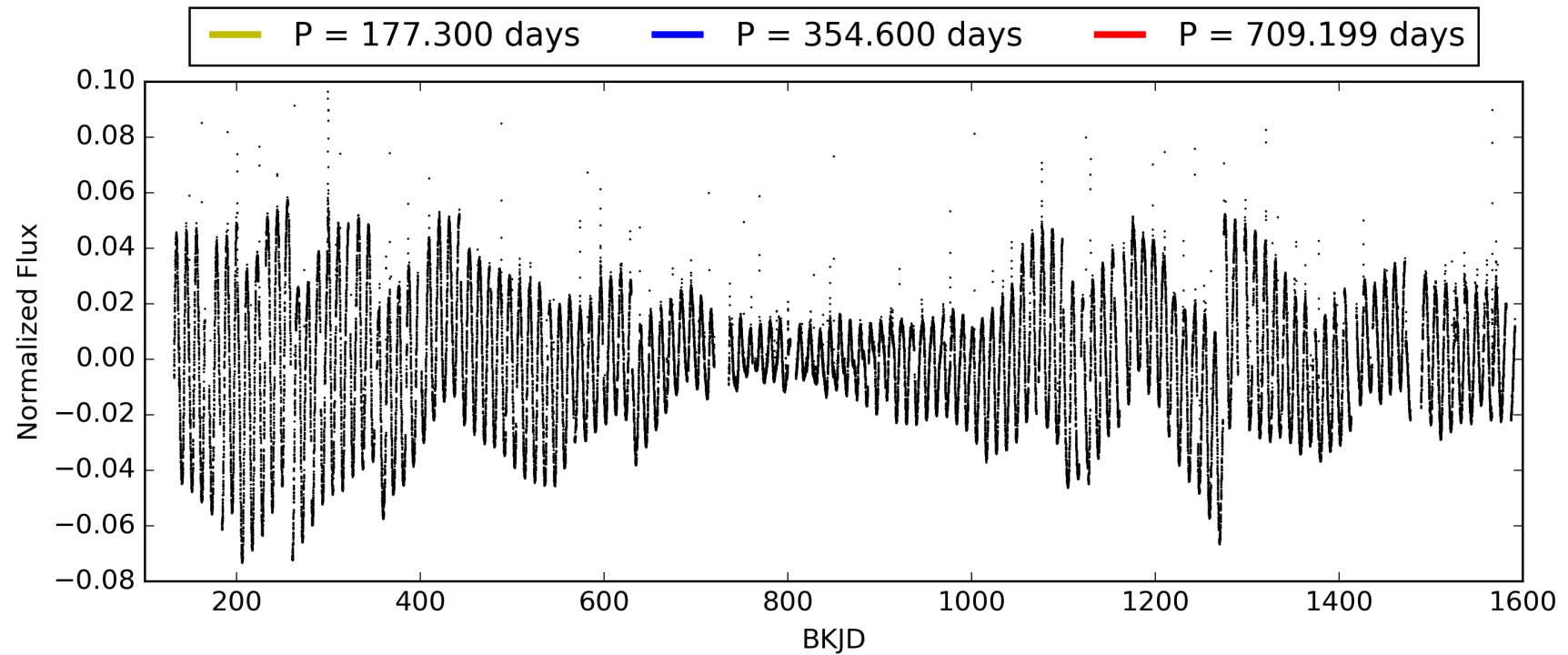
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:27:45 Z

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

TCE 010857583-06, PDC Light Curves

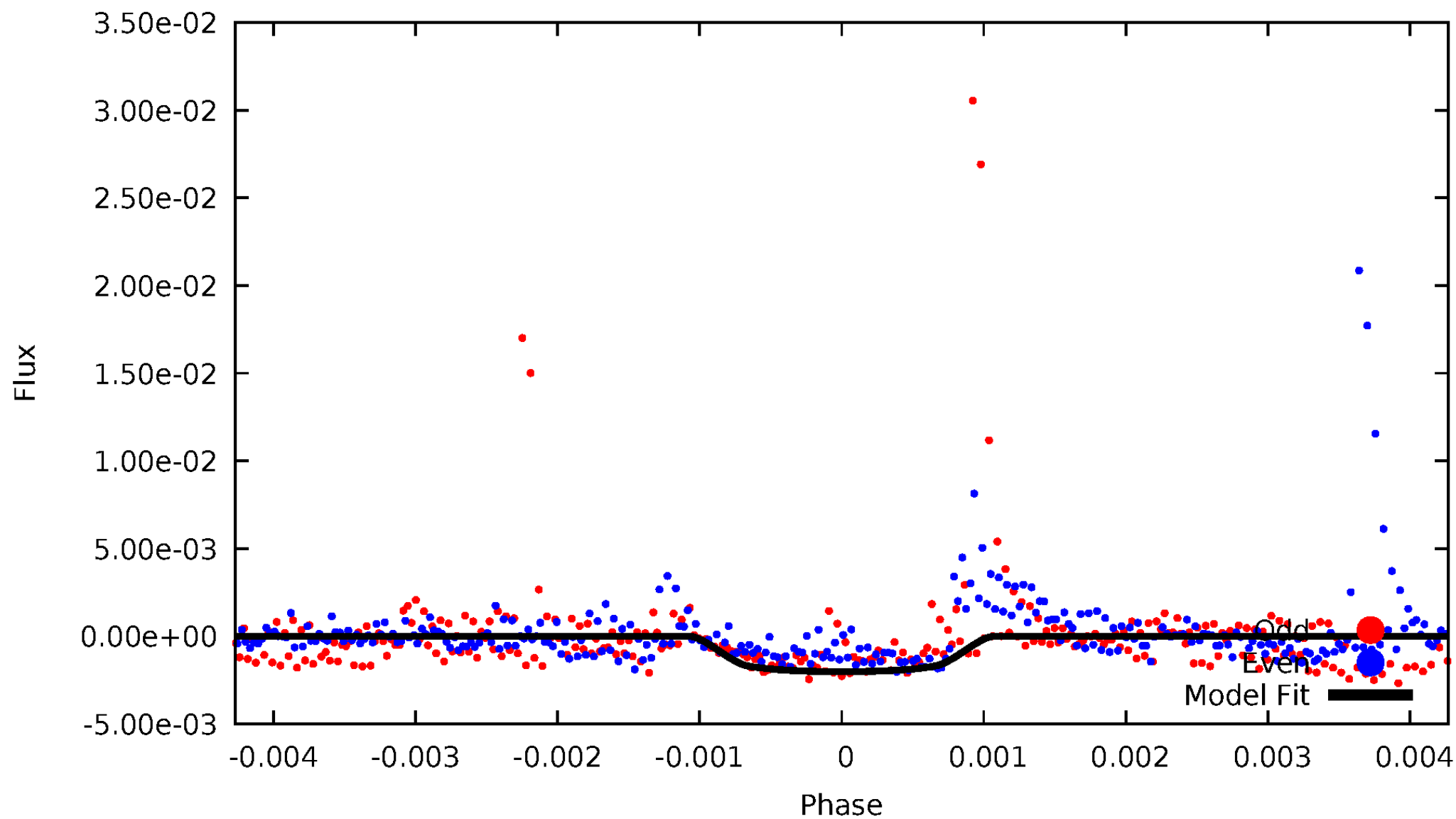


TCE 010857583-06



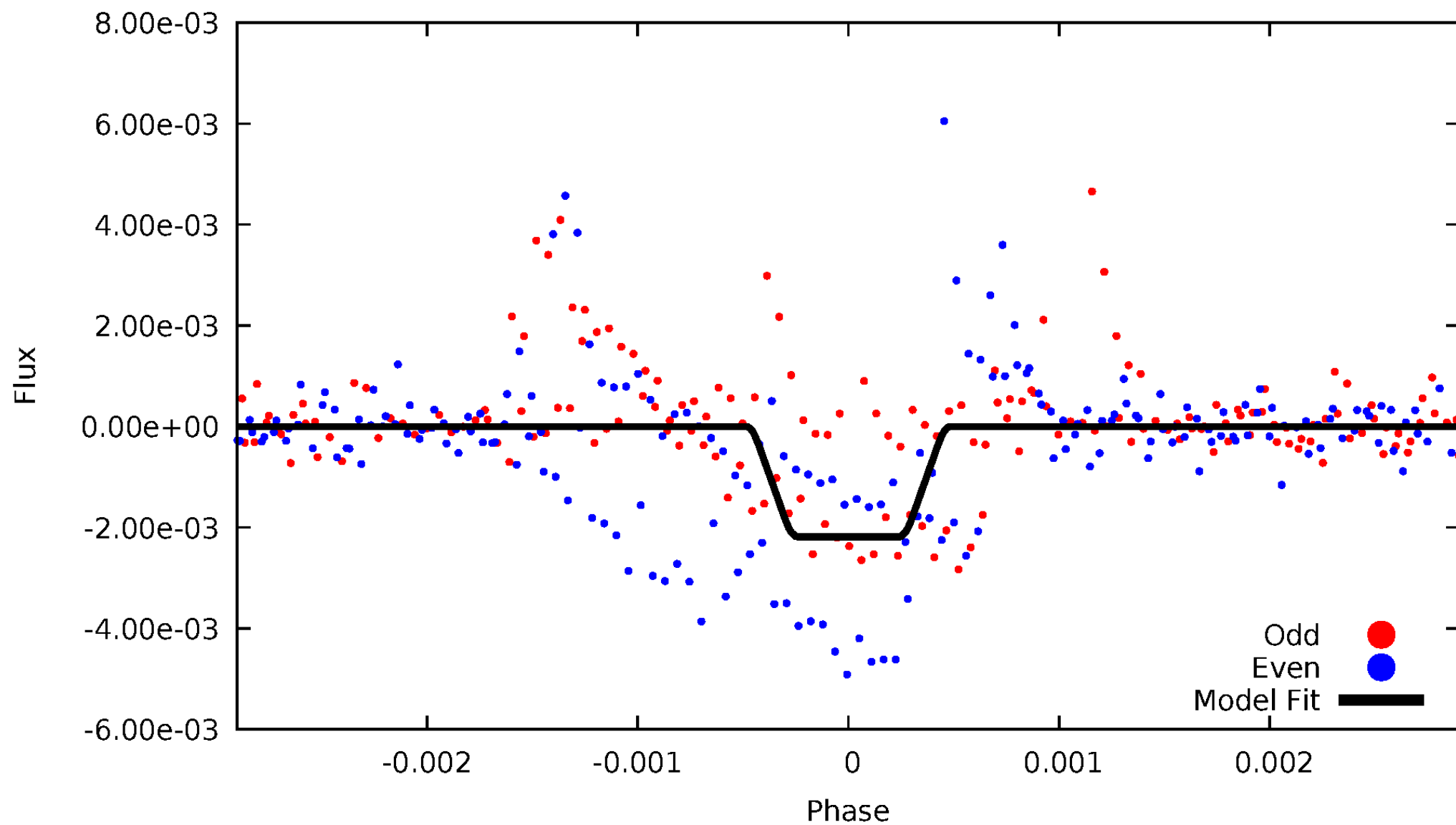
DV Odd/Even

TCE 010857583-06



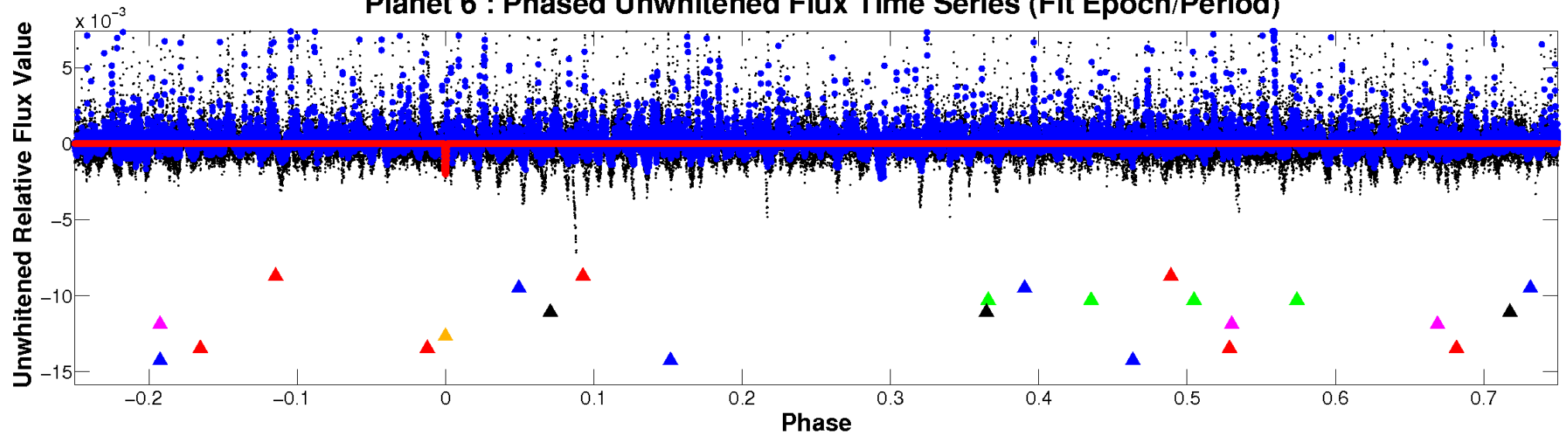
ALT Odd/Even

TCE 010857583-06

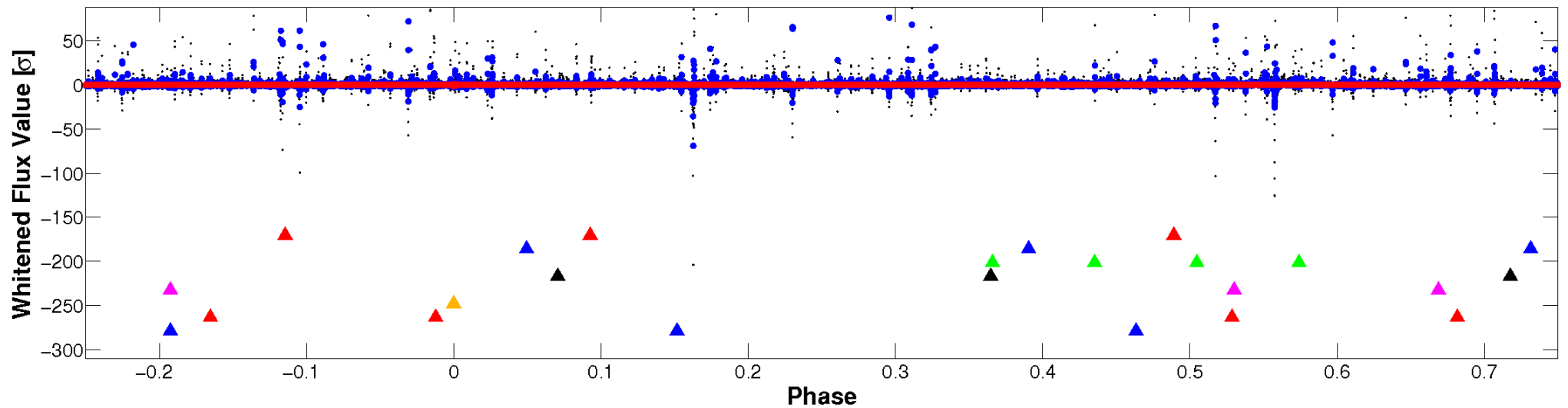


Non-Whitened Vs. Whitened Light Curve

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

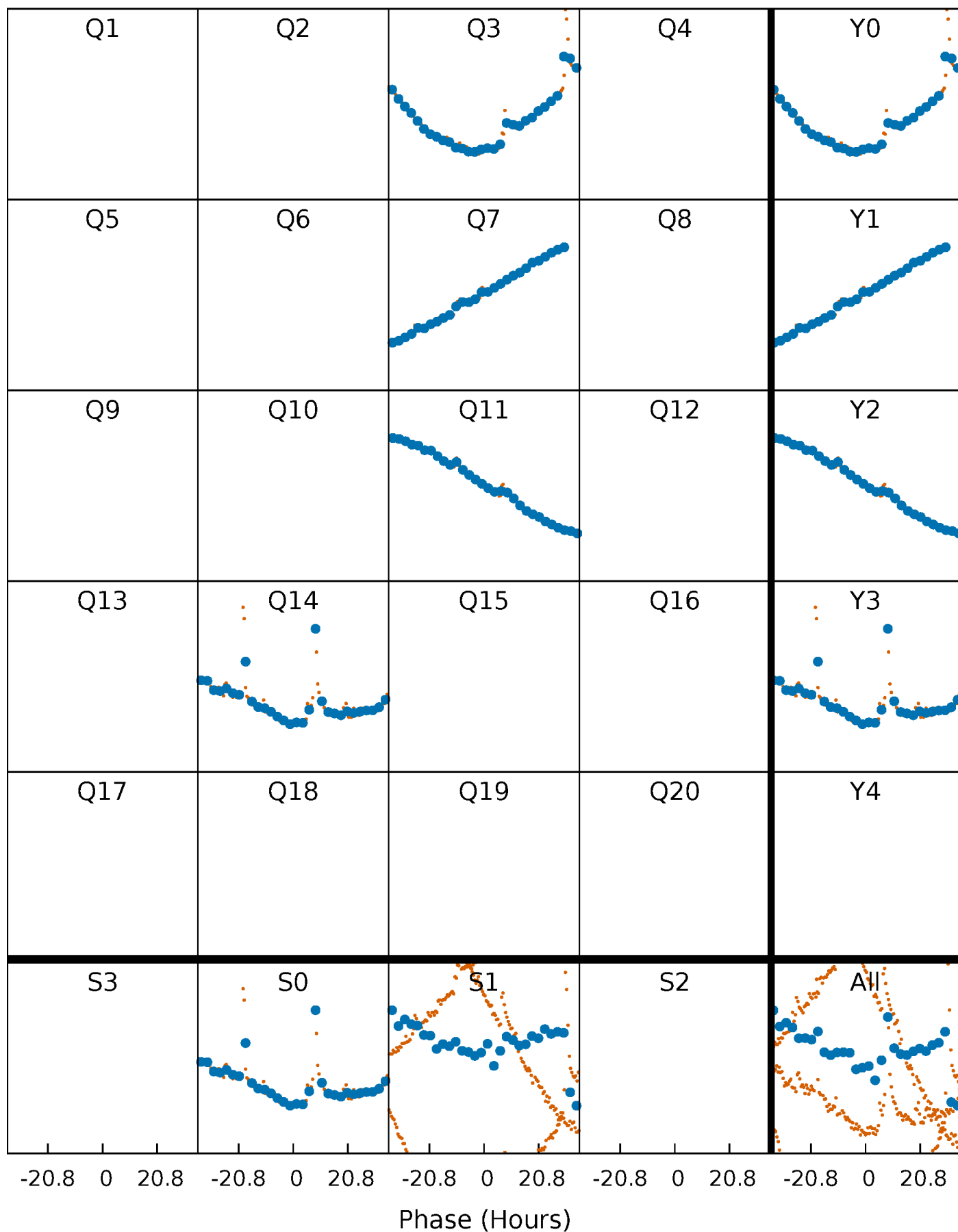


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



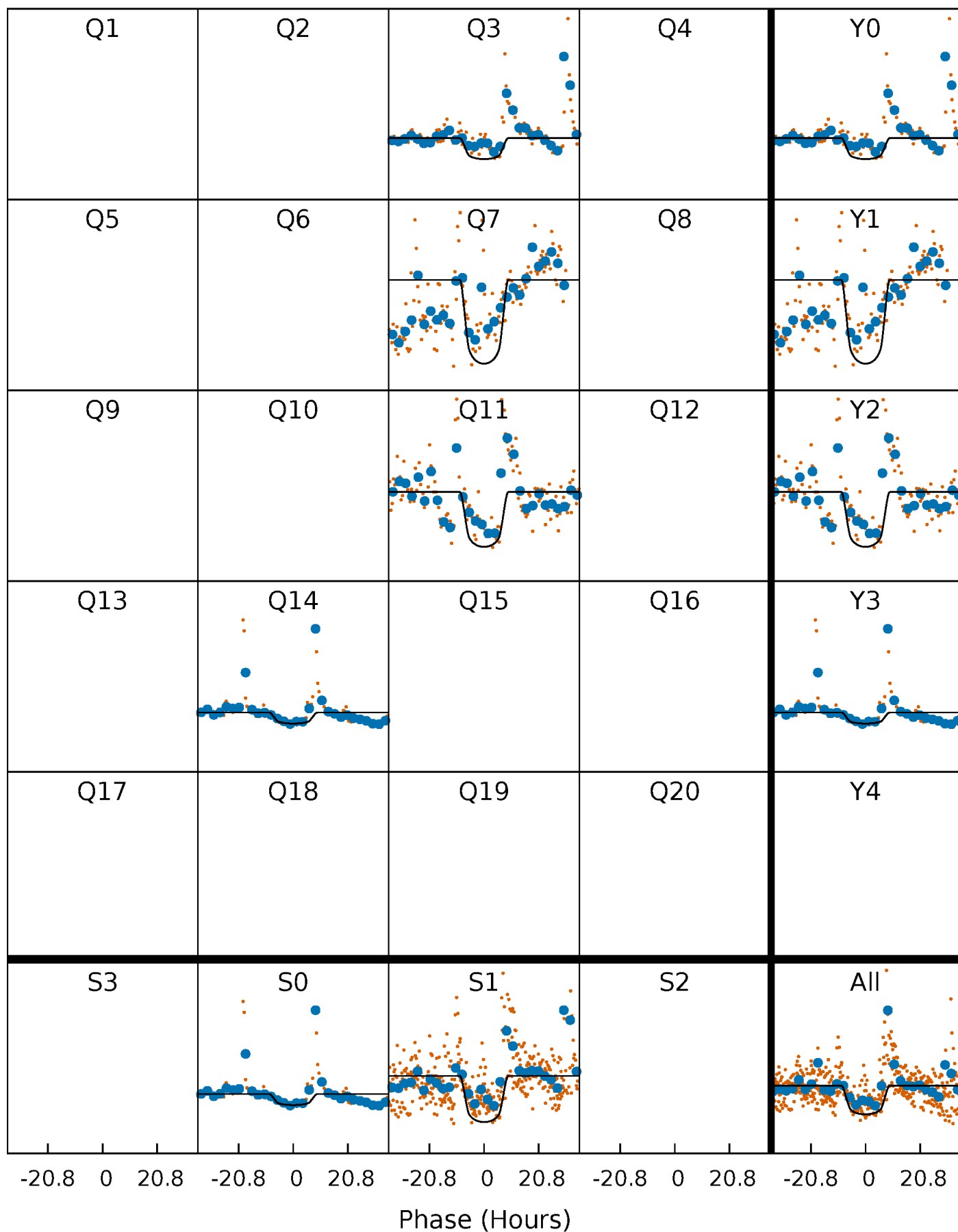
PDC Quarter-Phased Transit Curves

TCE 010857583-06 P=354.599656 Days $T_0=304.376433$ (BKJD)



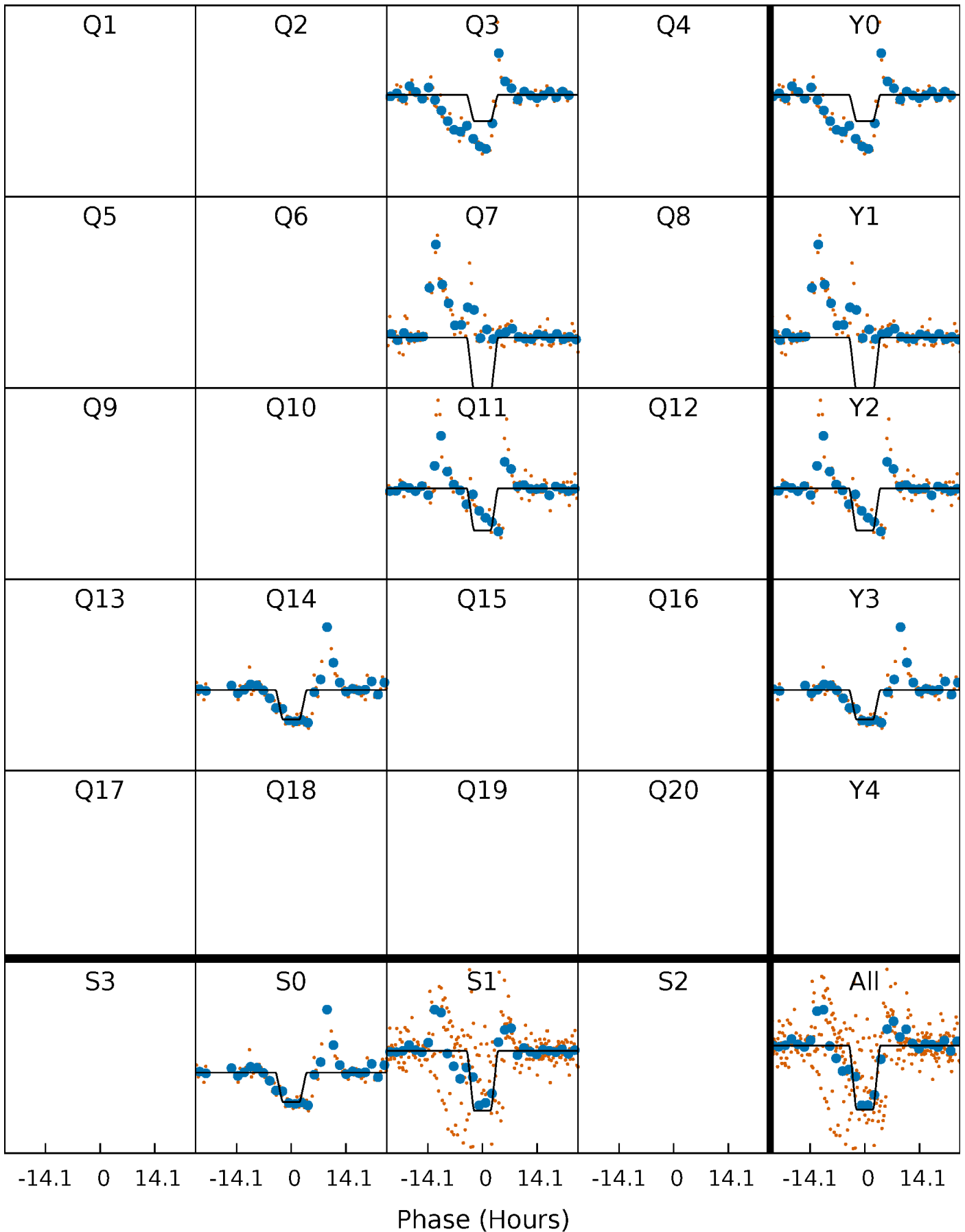
DV Quarter-Phased Transit Curves

TCE 010857583-06 $P=354.599656$ Days $T_0=304.376433$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

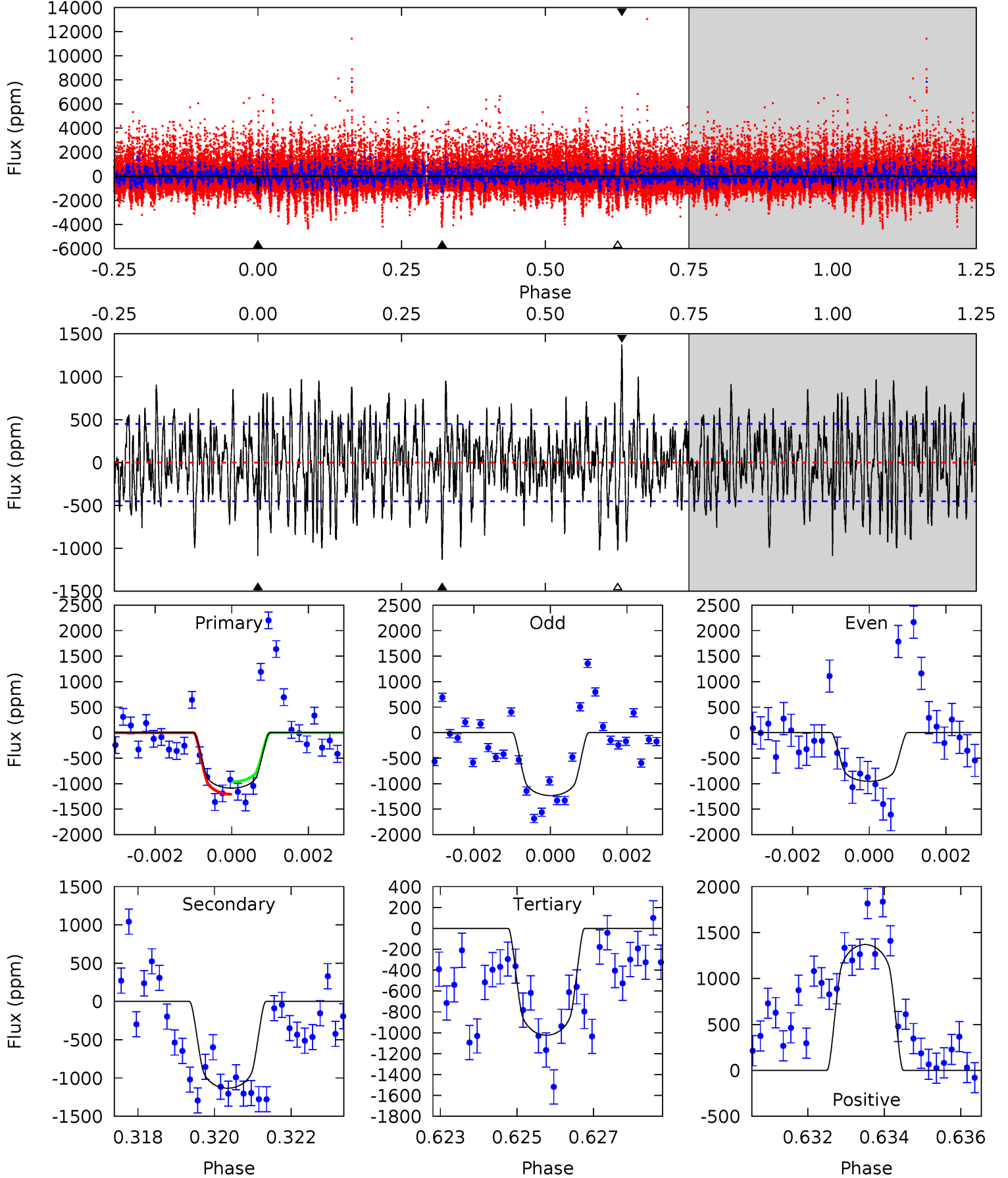
TCE 010857583-06 P=354.535888 Days $T_0=304.545645$ (BKJD)



DV Model-Shift Uniqueness Test

010857583-06, P = 354.599656 Days, E = 304.376433 Days

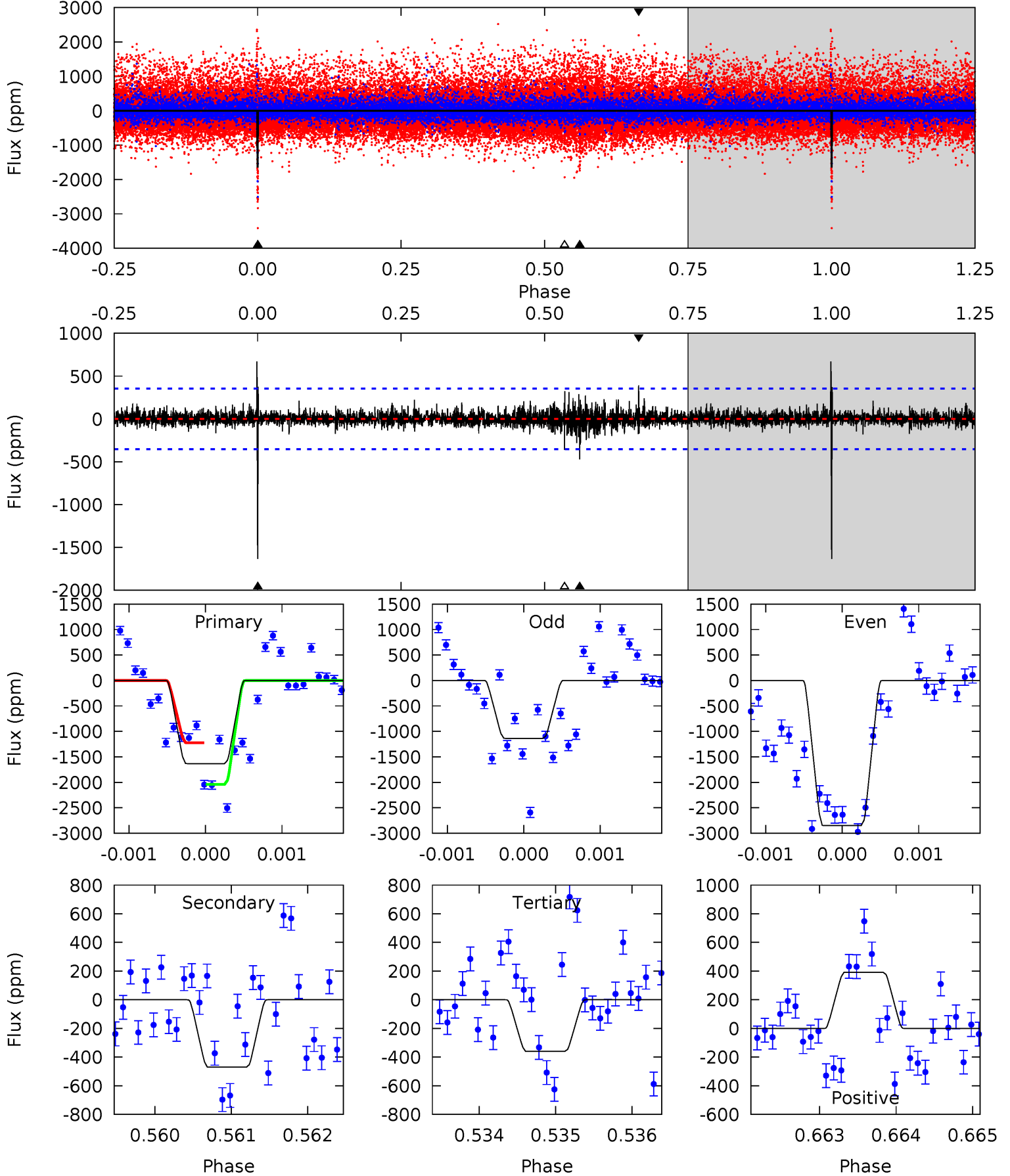
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.8	13.4	12.1	16.1	5.31	3.07	4.15	0.76	-3.31	1.29	-2.78	0.89	0.97	0.55	1.45



Alt Model-Shift Uniqueness Test

010857583-06, P = 354.535888 Days, E = 304.545645 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.2	7.28	5.58	6.06	5.46	3.31	0.88	19.6	19.2	1.70	1.22	15.2	1.02	0.29	0



Stellar Parameters For KIC 010857583

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3577^{+42}_{-48}	$4.940^{+0.040}_{-0.040}$	$-0.400^{+0.100}_{-0.100}$	$0.330^{+0.030}_{-0.036}$	$0.346^{+0.033}_{-0.045}$	$13.530^{+2.941}_{-2.197}$
	+1%/-1%	+1%/-1%	+25%/-25%	+9%/-11%	+10%/-13%	+22%/-16%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 010857583-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1133 ± 85	$1.72^{+0.19}_{-0.17}$	153^{+3}_{-4}	3208^{+107}_{-96}	100023^{+23729}_{-18492}
Alt.	-471 ± 65	$1.70^{+0.17}_{-0.18}$	153^{+3}_{-4}	2847^{+104}_{-84}	43181^{+11544}_{-9293}

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

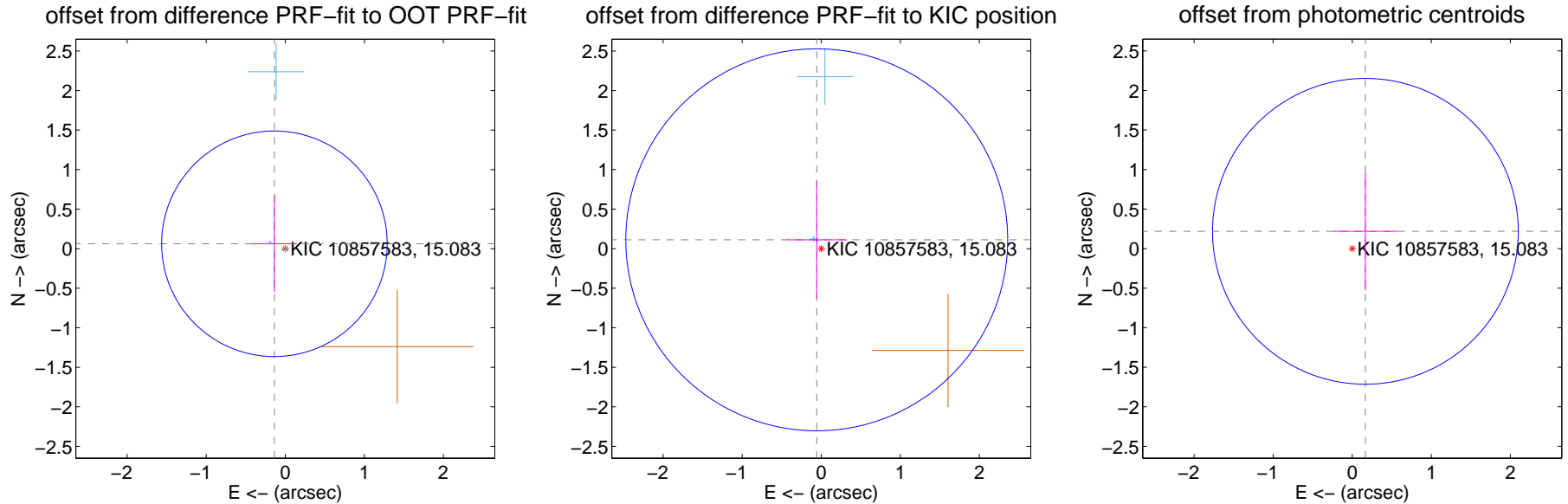
DV Centroid Data

Supplemental centroid analysis for 010857583-06. Kepler magnitude: 15.08. Transit SNR 10.23

There are 3 quarters with good PRF difference image offsets

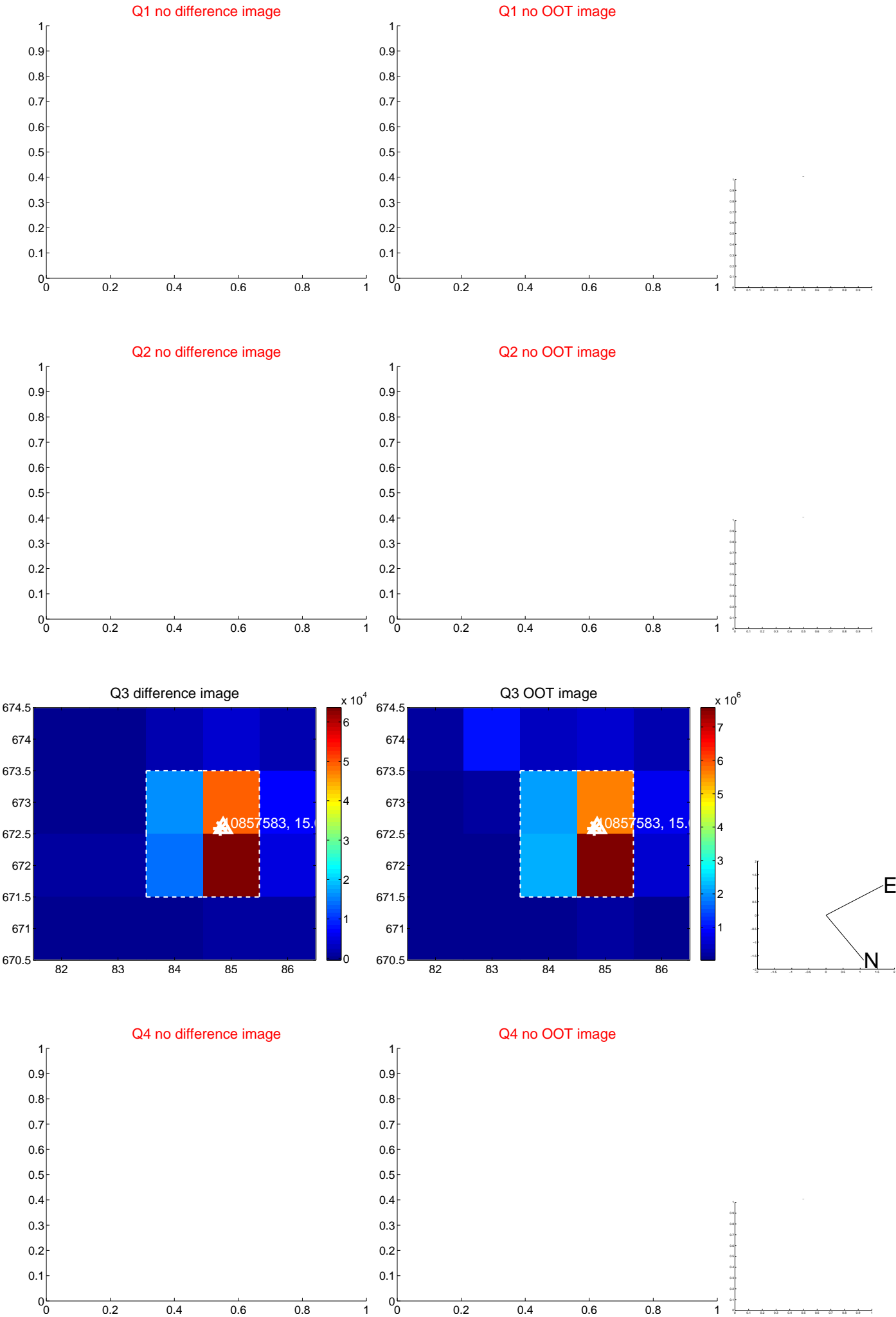
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.151 ± 0.475	0.32	0.137 ± 0.284	0.062 ± 0.611
PRF-fit source offset from KIC position	0.126 ± 0.805	0.16	0.057 ± 0.381	0.112 ± 0.742
photometric centroid source offset	0.27 ± 0.64	0.43	-0.17 ± 0.41	0.22 ± 0.75

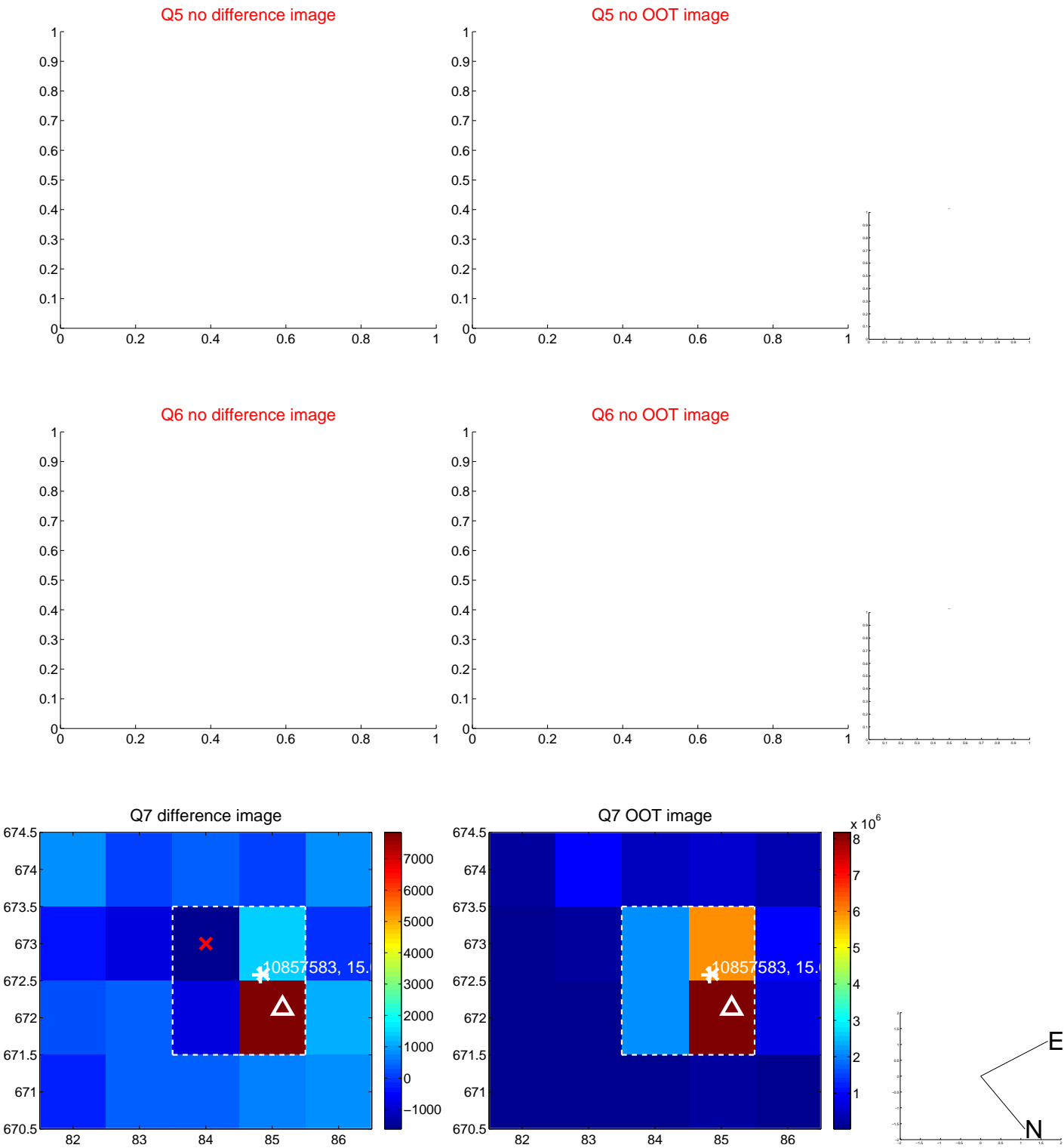


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

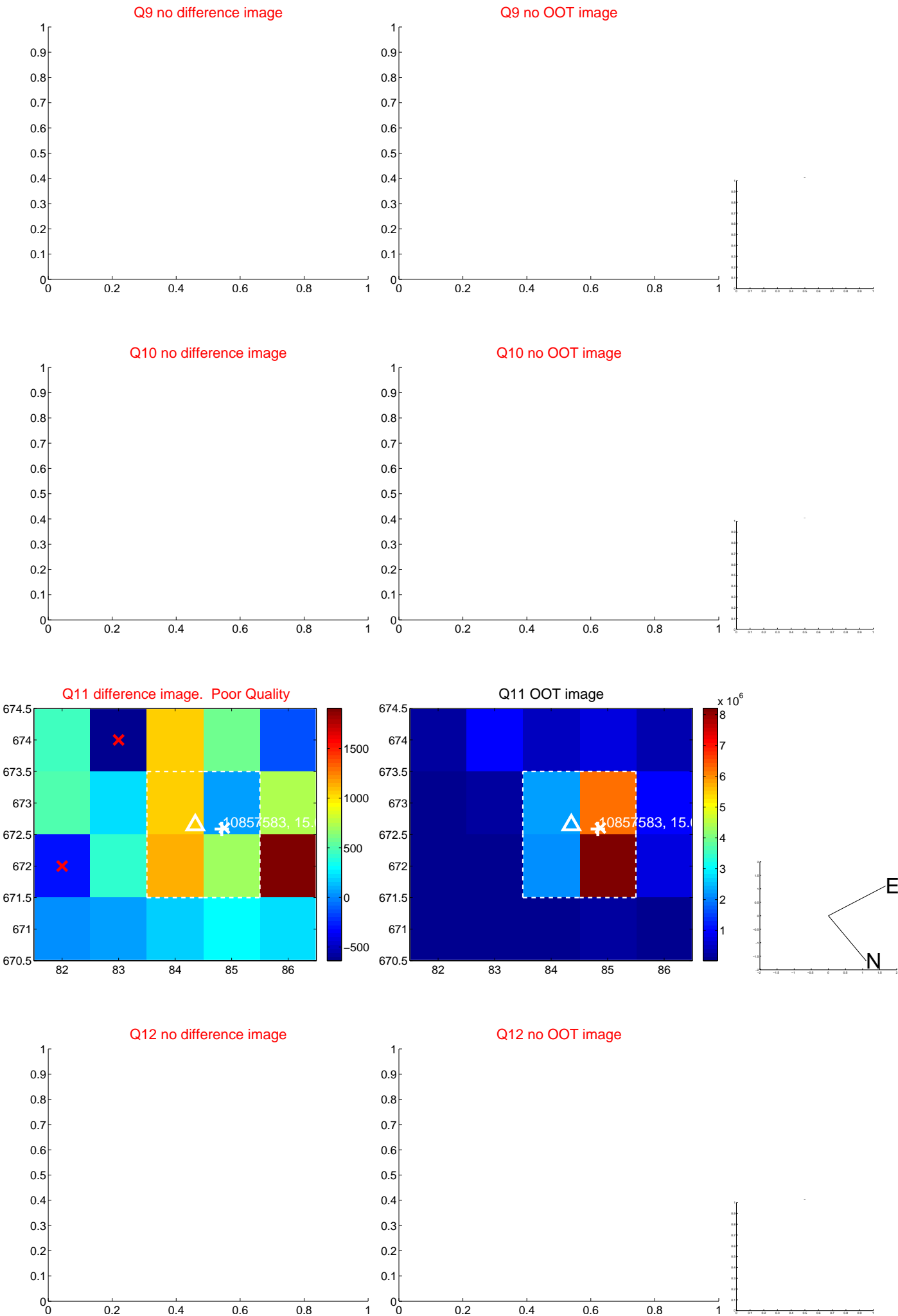
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



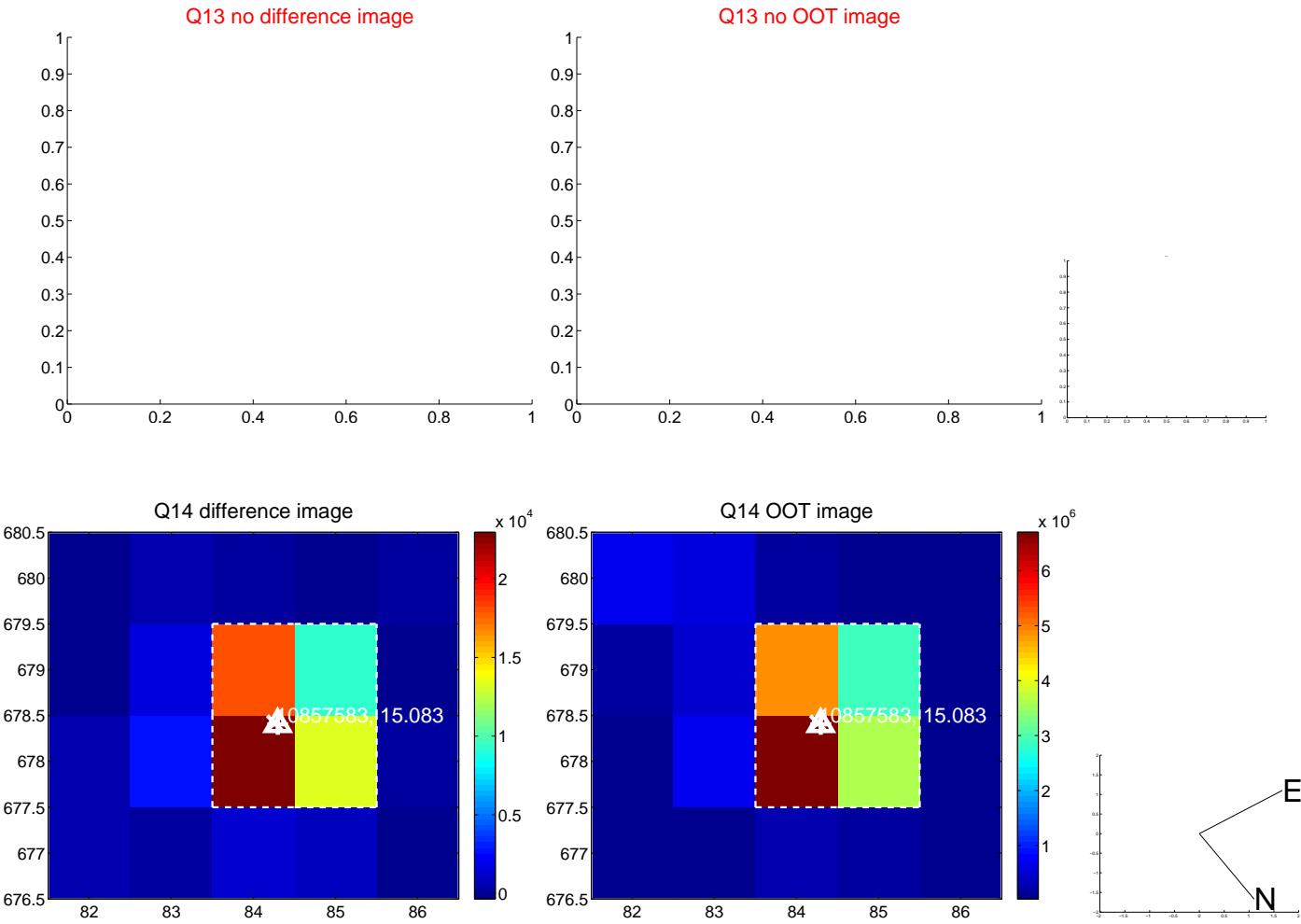
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



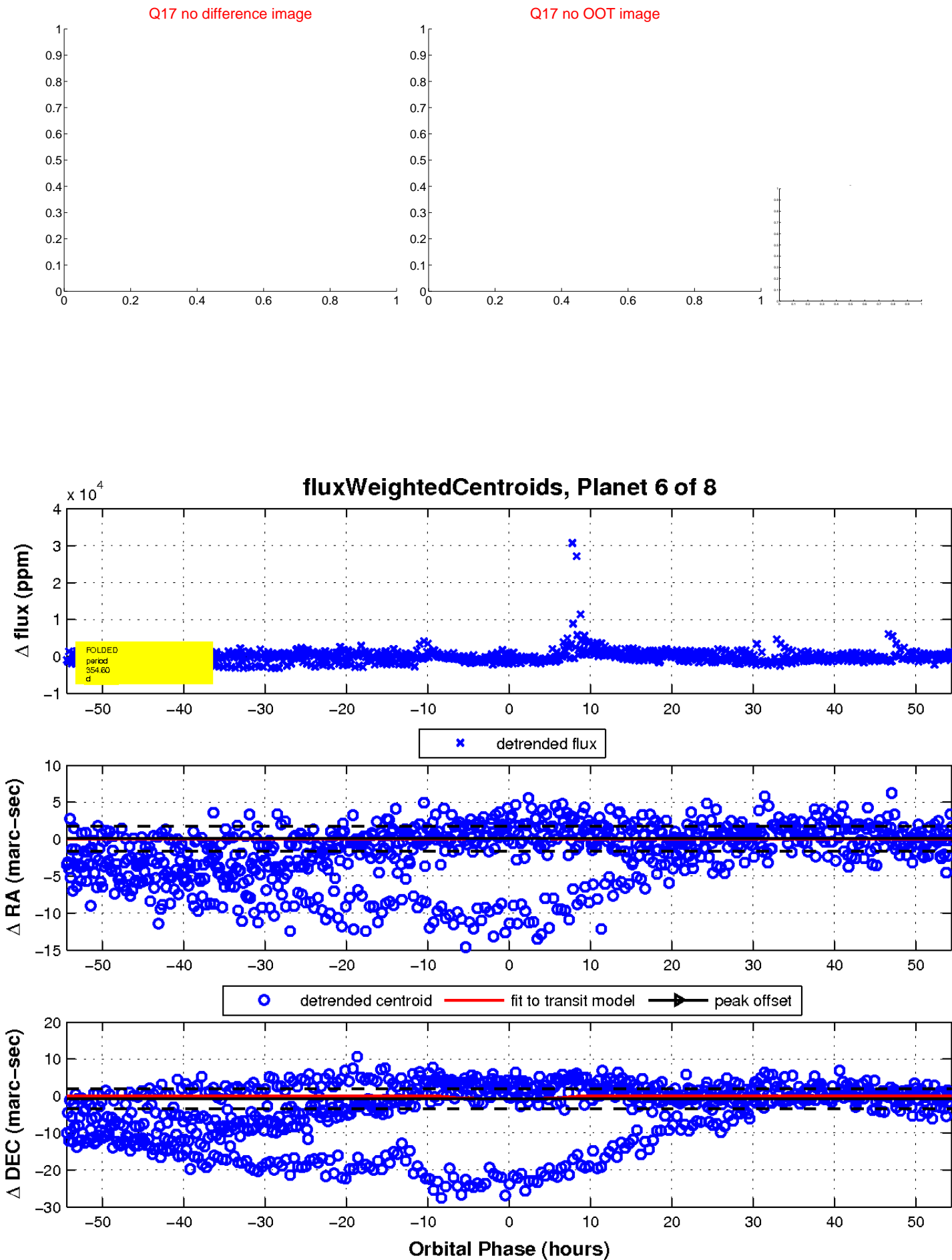
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

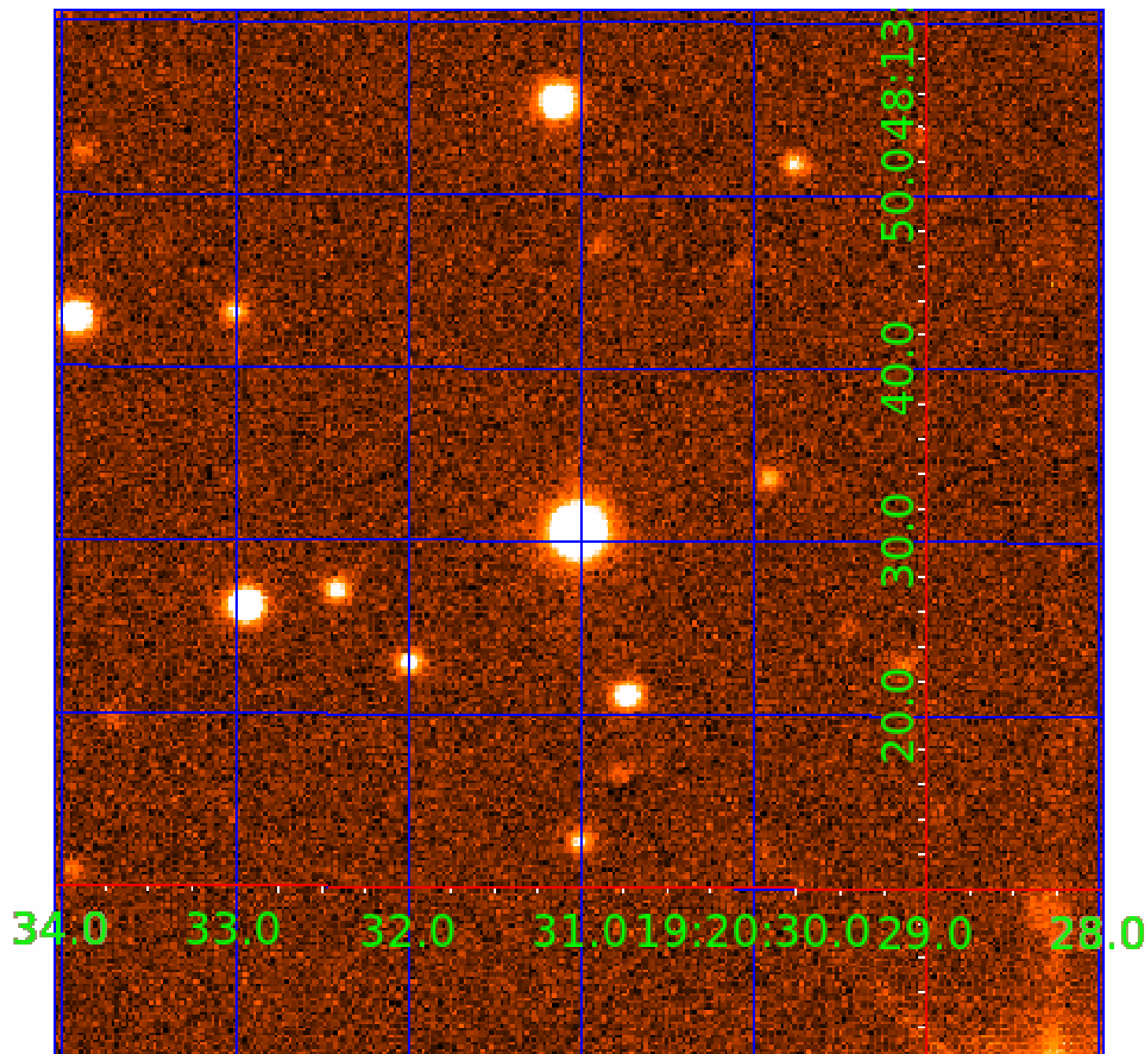


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010857583

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})
010857583-01	OBS	No	568.634152	263.772287	1392.7	5.316	18.0	6.7	0.33	3577	1.27	0.02
010857583-02	OBS	No	588.281610	209.166692	1603.0	7.608	15.0	7.7	0.33	3577	1.33	0.02
010857583-03	OBS	No	379.207725	434.130336	1620.7	7.811	11.9	9.1	0.33	3577	1.40	0.03
010857583-04	OBS	No	584.034494	329.436061	1517.4	8.387	13.6	7.1	0.33	3577	1.29	0.02
010857583-05	OBS	No	403.784419	492.361887	1489.6	9.675	12.5	7.0	0.33	3577	1.28	0.03
010857583-06	OBS	No	354.599656	304.376433	2021.9	18.157	10.4	10.2	0.33	3577	1.72	0.03
010857583-07	OBS	No	408.868532	137.224673	1139.5	6.601	11.4	6.2	0.33	3577	1.18	0.03
010857583-08	OBS	No	476.626409	468.712412	884.9	7.500	11.6	-1.0	0.33	3577	0.98	0.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010857583-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010857583-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010857583-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010857583-04	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—INCONSISTENT_TRANS
010857583-05	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
010857583-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
010857583-07	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—INCONSISTENT_TRANS
010857583-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—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.

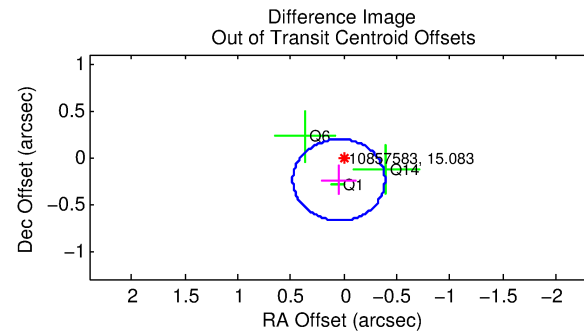
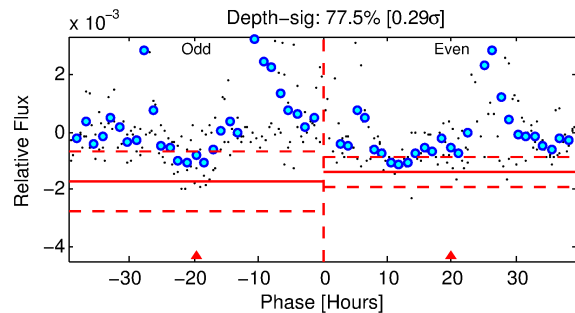
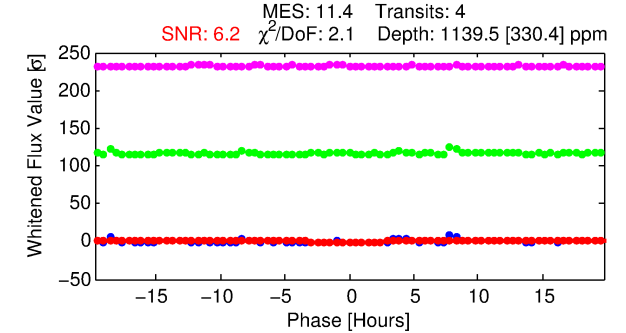
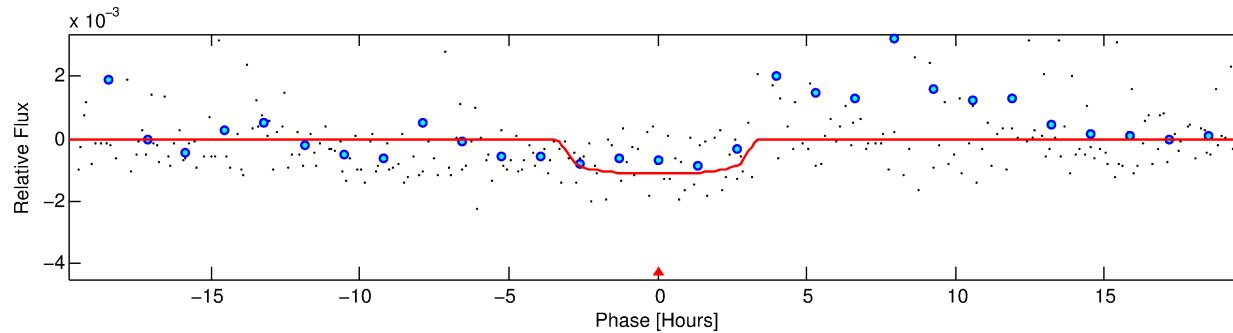
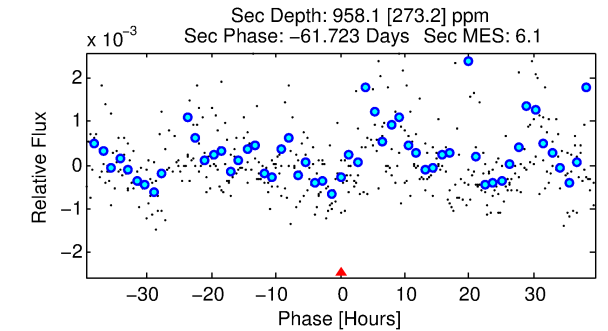
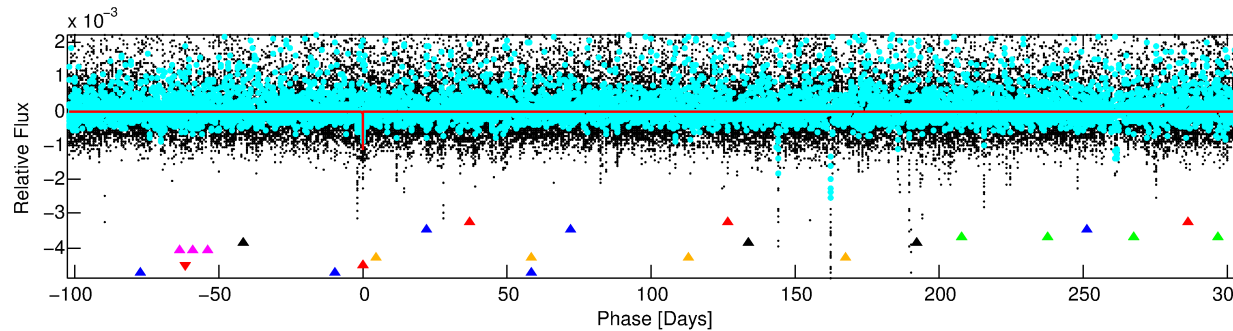
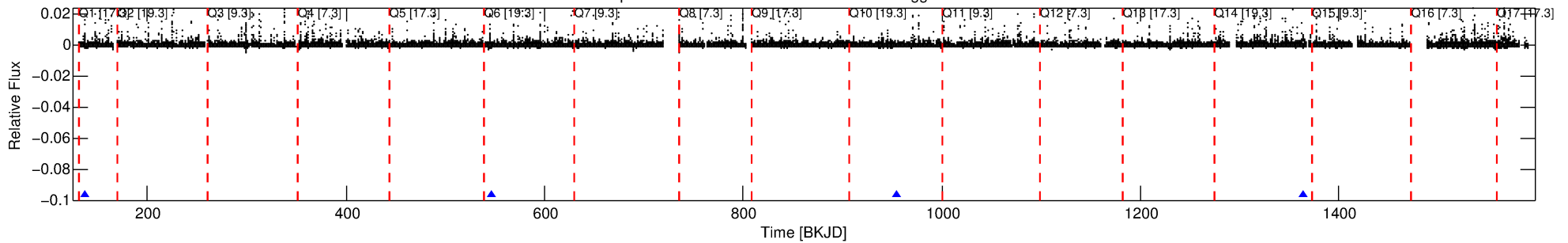
Ephemeris Match Information For 010857583-07

No Significant Match Found

DV One-Page Summary

KIC: 10857583 Candidate: 7 of 8 Period: 408.869 d

Kp: 15.08 R*: 0.33 Rs Teff: 3577.0 K Logg: 4.94 Fe/H: -0.400



DV Fit Results:

Period = 408.86853 [0.00854] d
Epoch = 137.2247 [0.0161] BKJD
Rp/R* = 0.0328 [0.0179]
a/R* = 369.23 [900.35]
b = 0.68 [1.96]
Seff = 0.03 [0.00]
Teq = 104 [3] K
Rp = 1.18 [0.66] Re
a = 0.7570 [0.0598] AU
Ag = 216740.74 [245190.59] [0.88σ]
Teffp = 3476 [981] K [3.44σ]

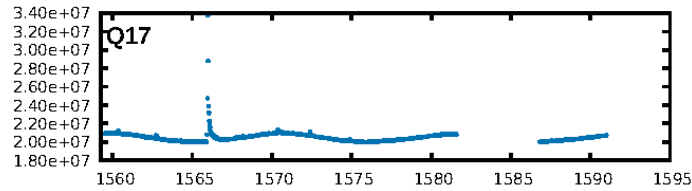
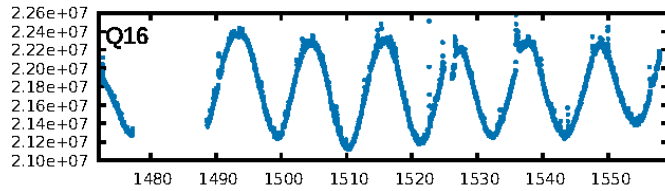
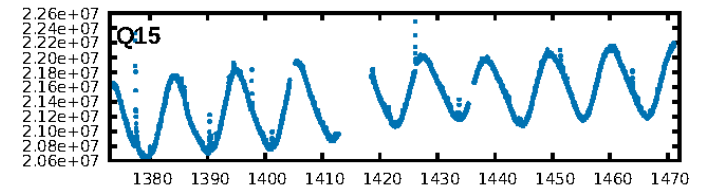
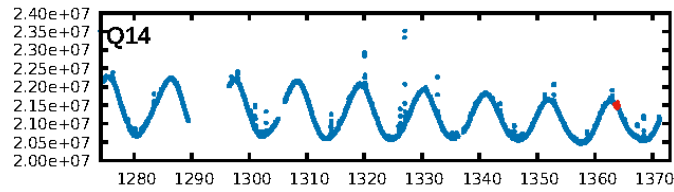
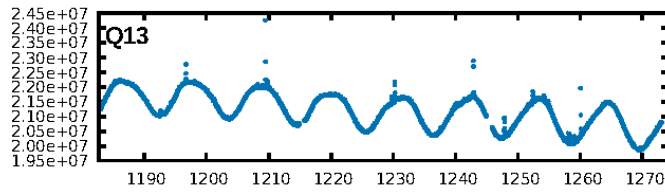
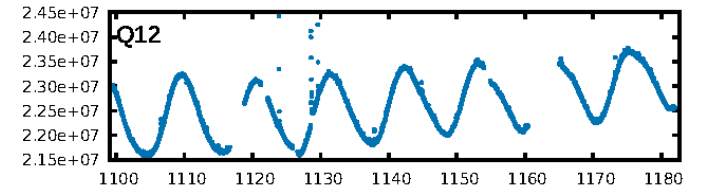
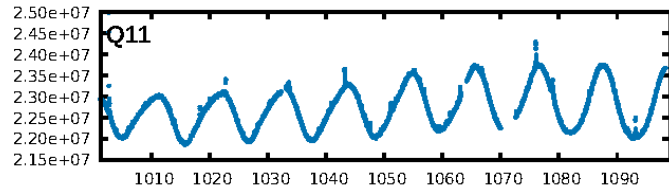
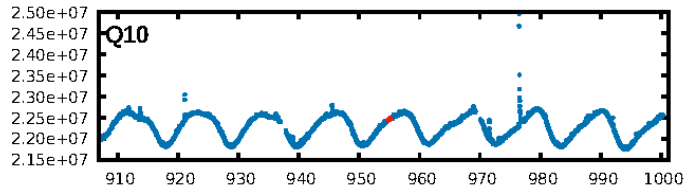
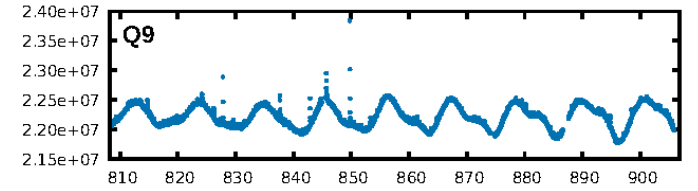
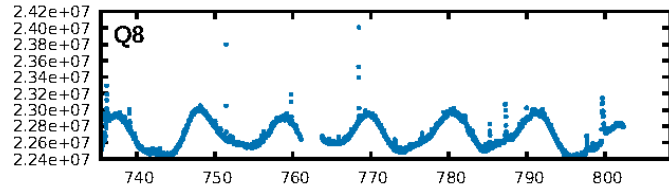
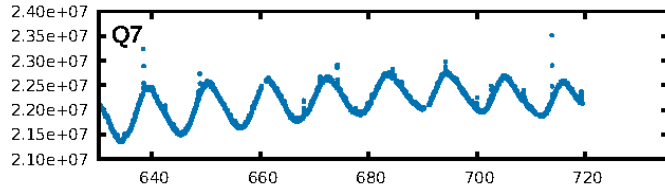
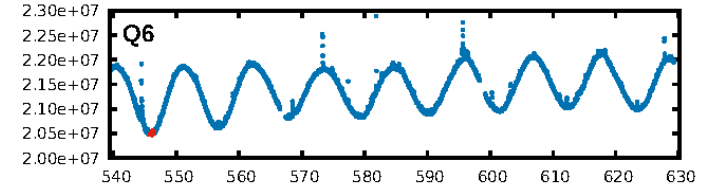
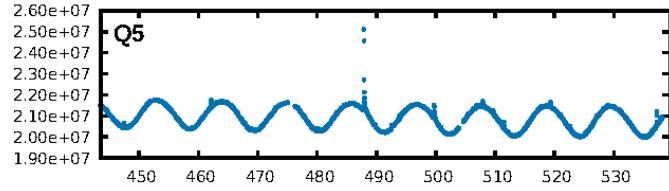
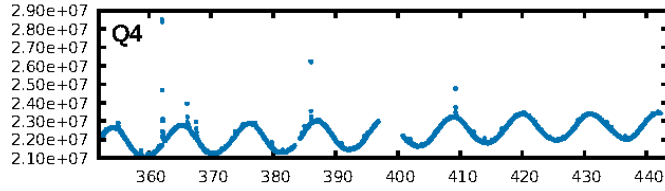
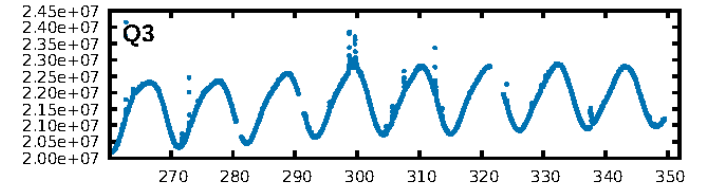
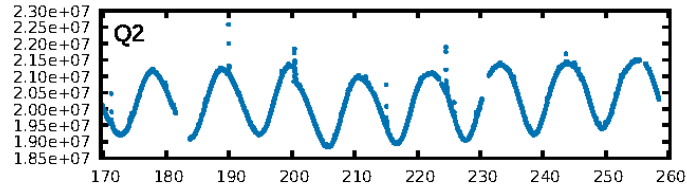
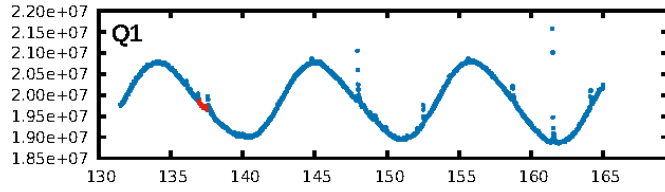
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [10.42σ]
LongPeriod-sig: 100.0% [162.76σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 17.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.254
Centroid-sig: 26.6%
Centroid-so: 1.068 arcsec [1.08σ]
OotOffset-rm: 0.247 arcsec [1.70σ]
OotOffset-st: 2/0/0/1 [3]
KicOffset-rm: 0.066 arcsec [0.46σ]
KicOffset-st: 2/0/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [4/4]

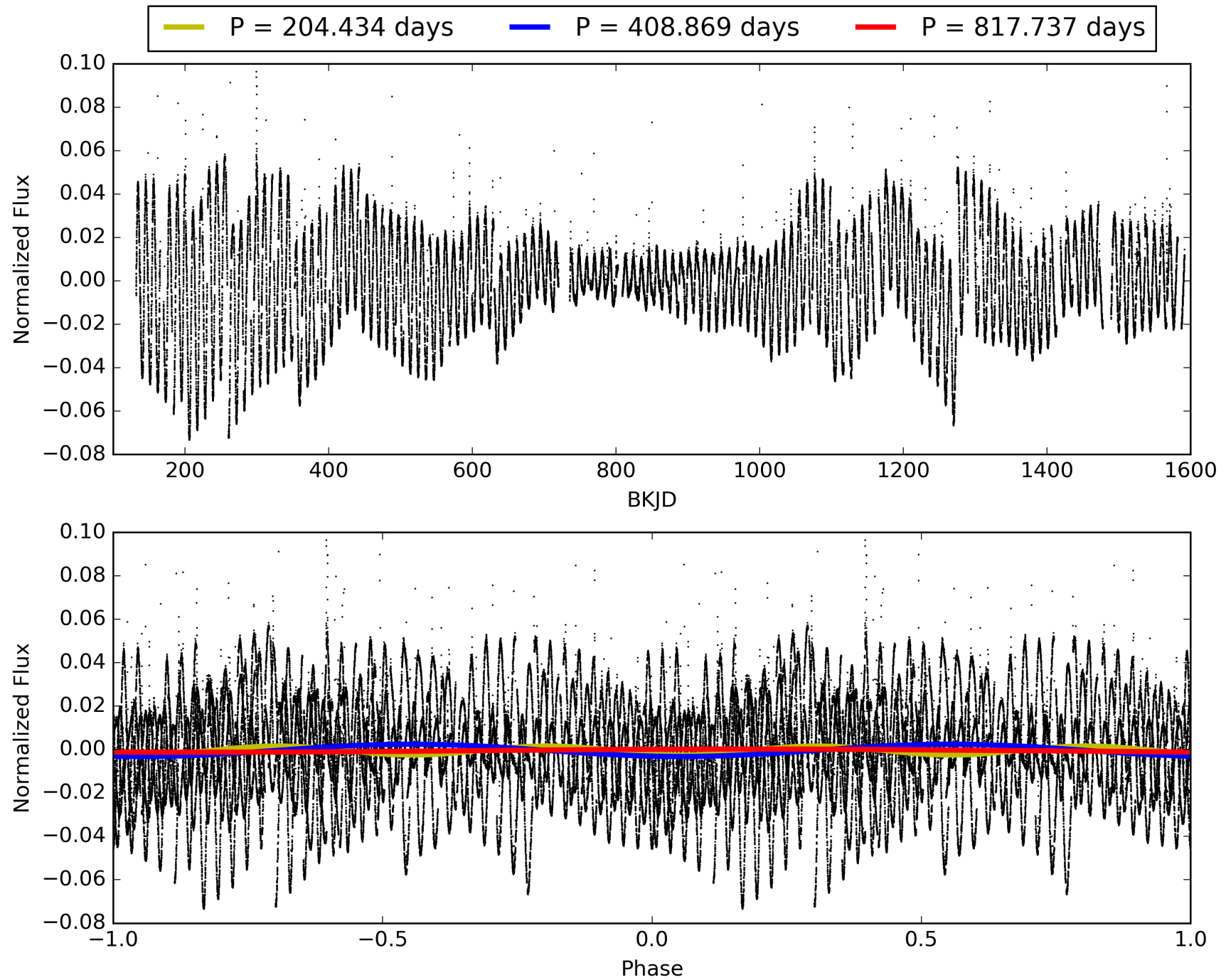
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:27:56 Z

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

TCE 010857583-07, PDC Light Curves

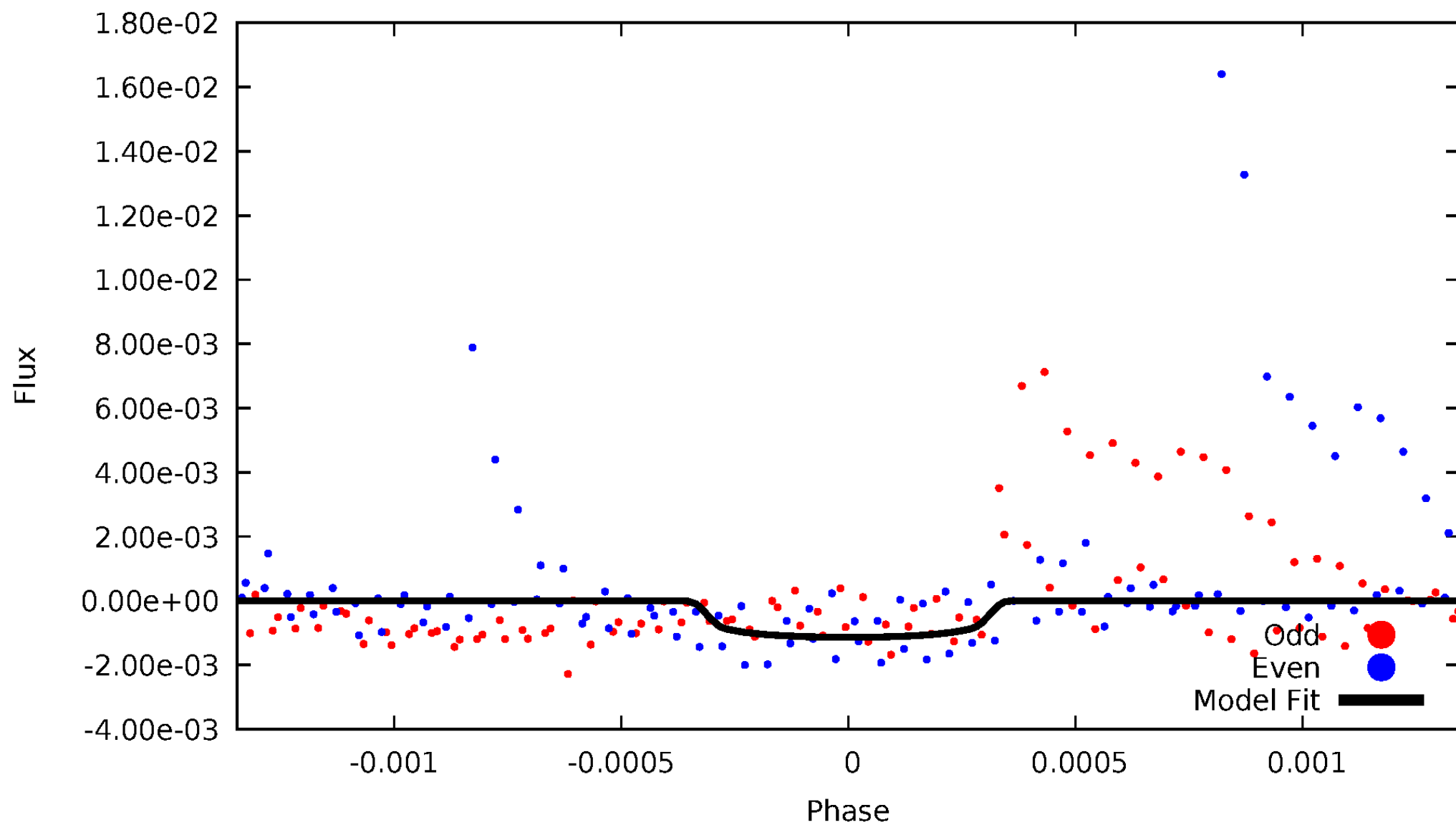


TCE 010857583-07



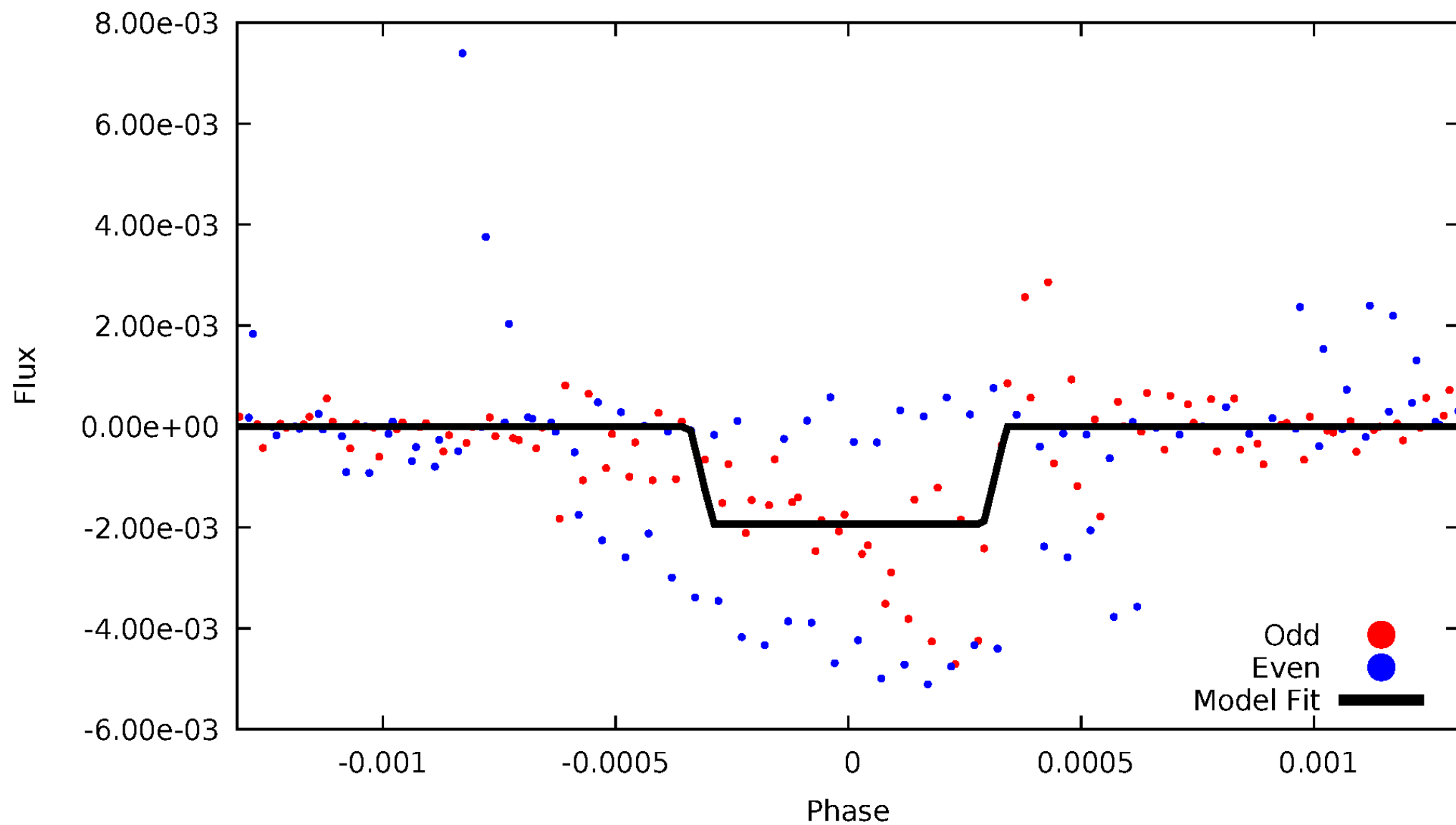
DV Odd/Even

TCE 010857583-07



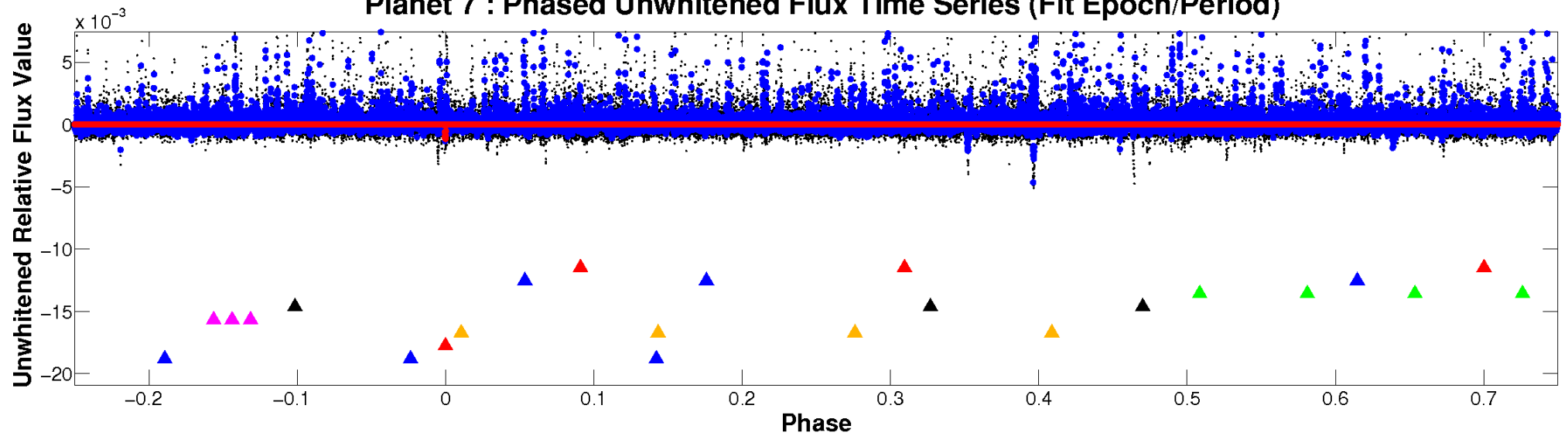
ALT Odd/Even

TCE 010857583-07

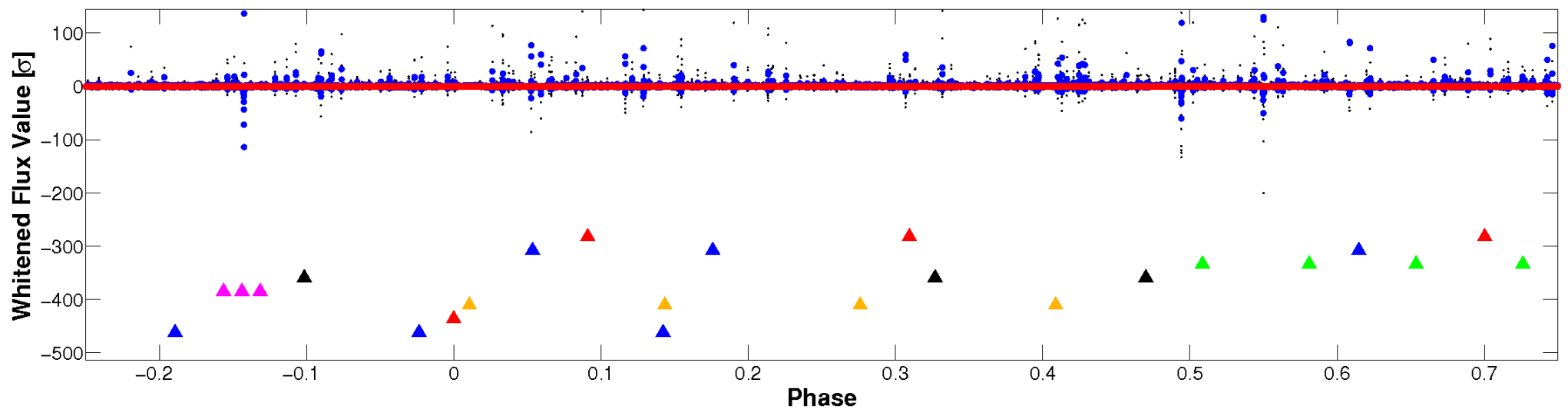


Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

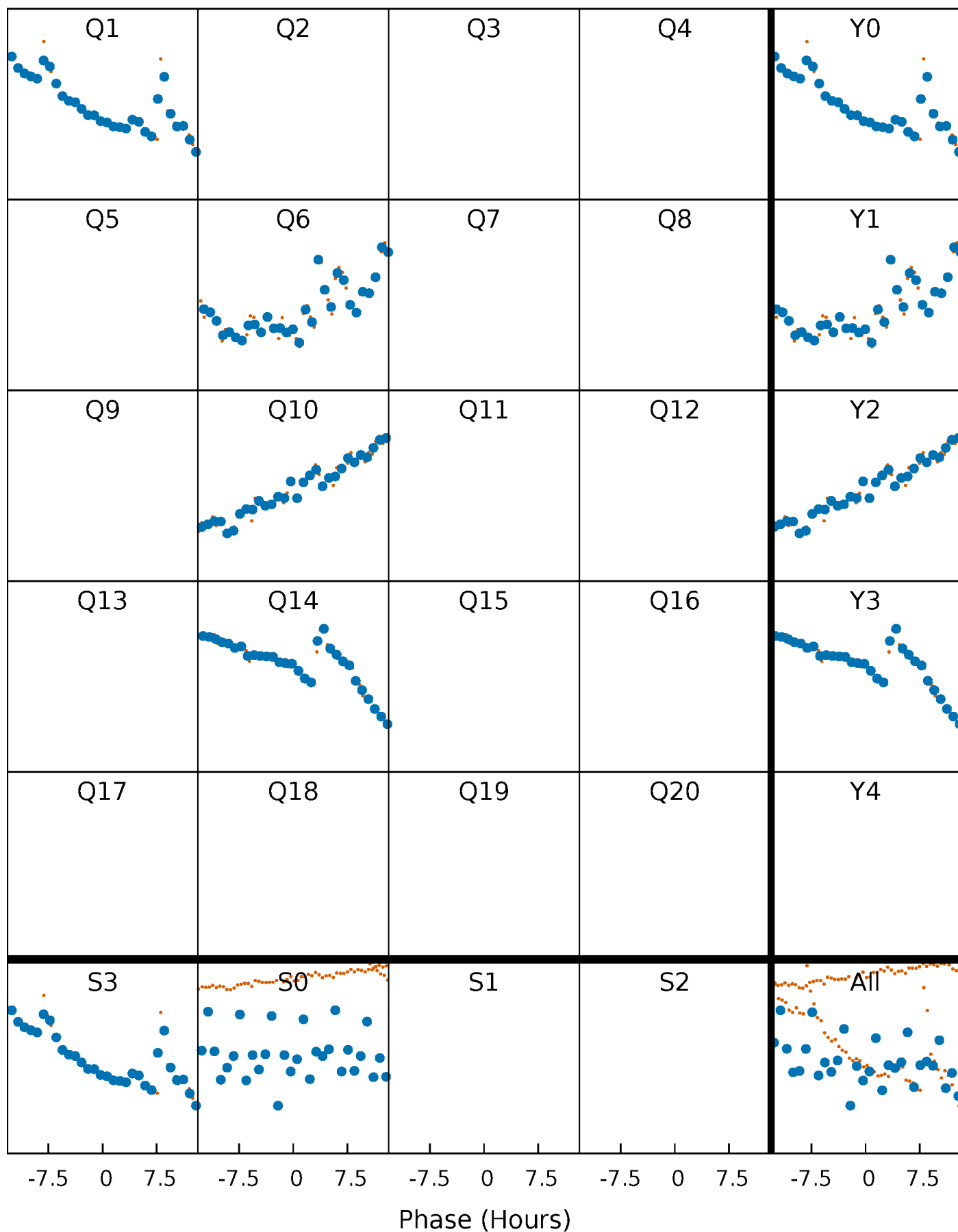


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



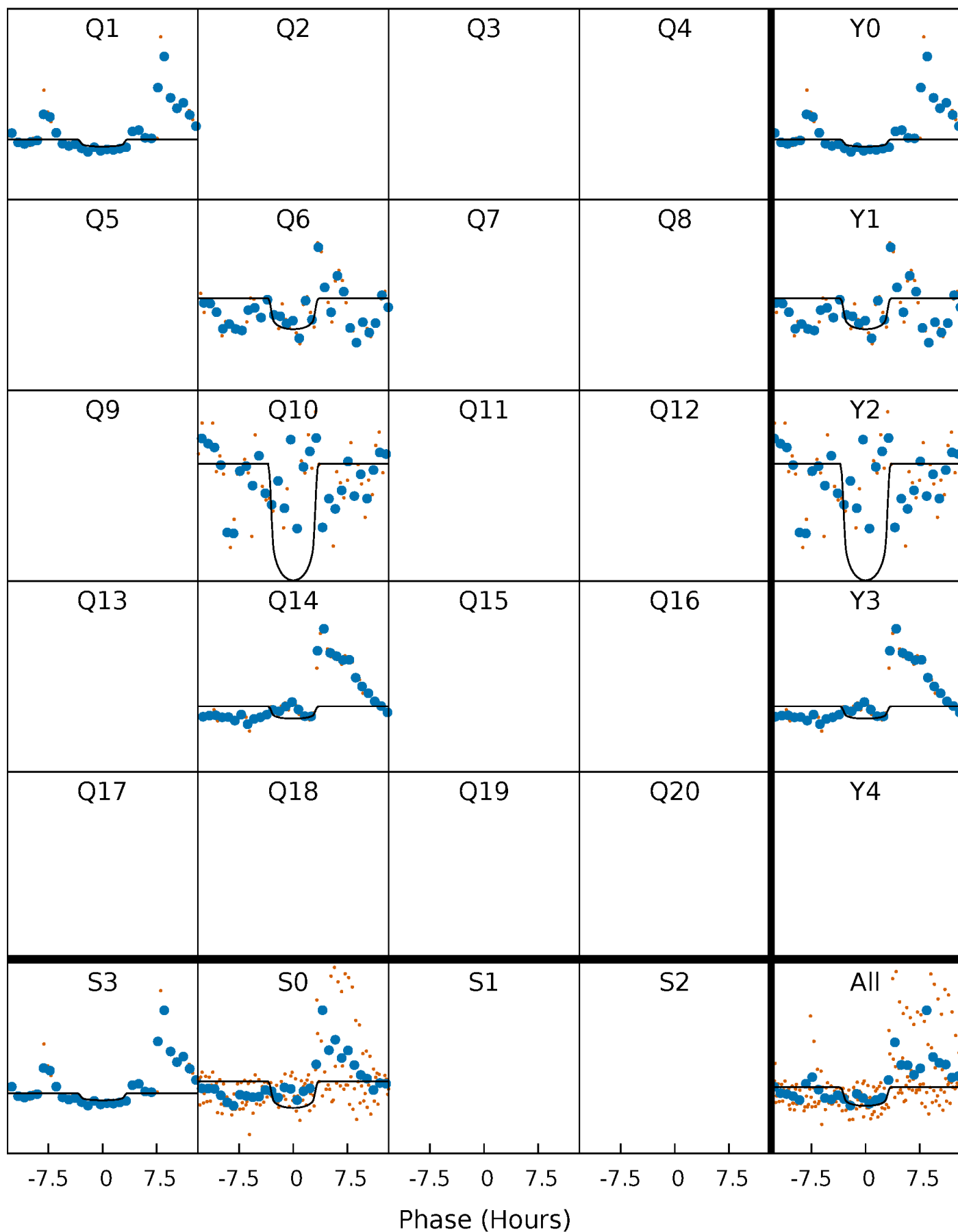
PDC Quarter-Phased Transit Curves

TCE 010857583-07 $P=408.868532$ Days $T_0=137.224673$ (BKJD)



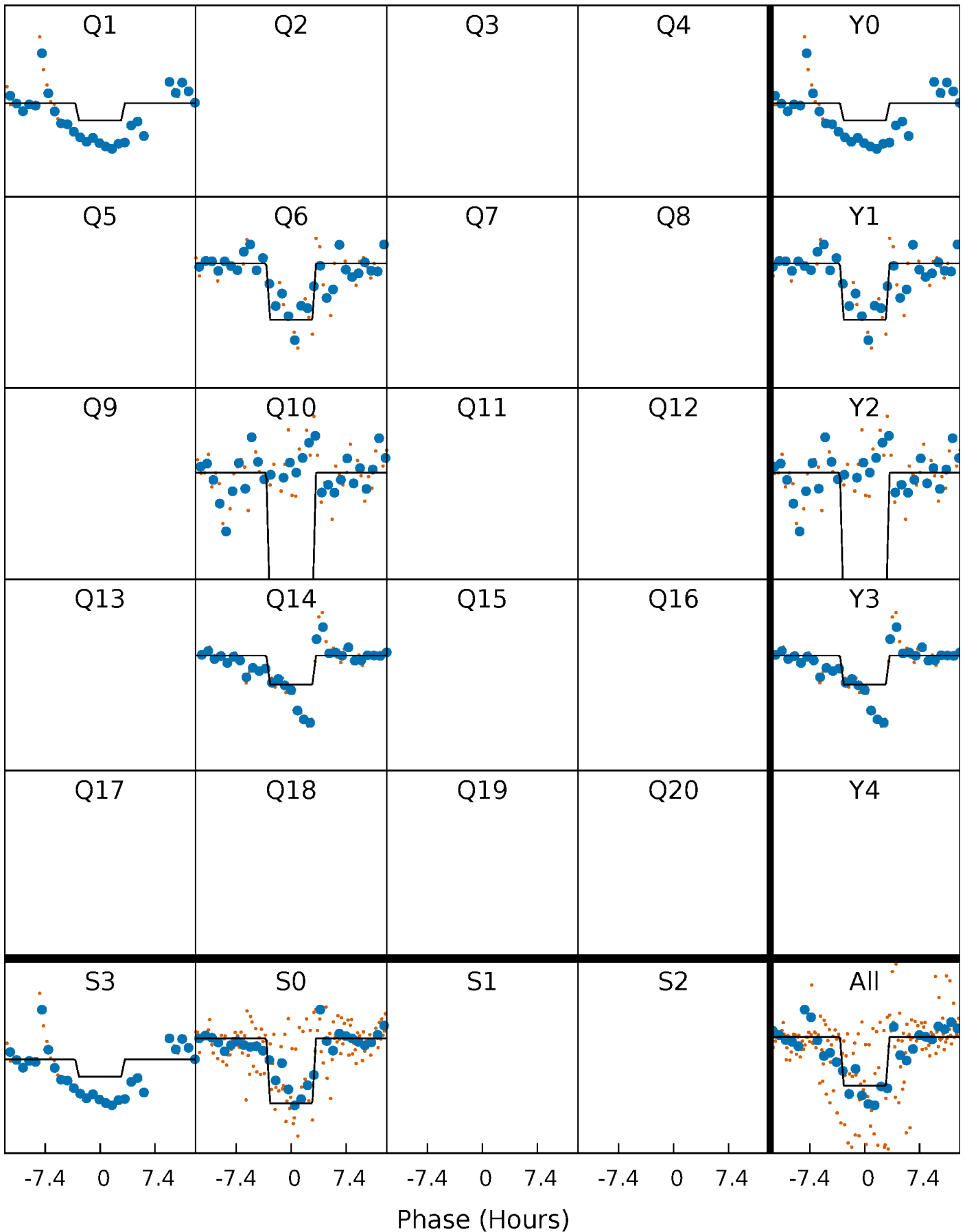
DV Quarter-Phased Transit Curves

TCE 010857583-07 $P=408.868532$ Days $T_0=137.224673$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

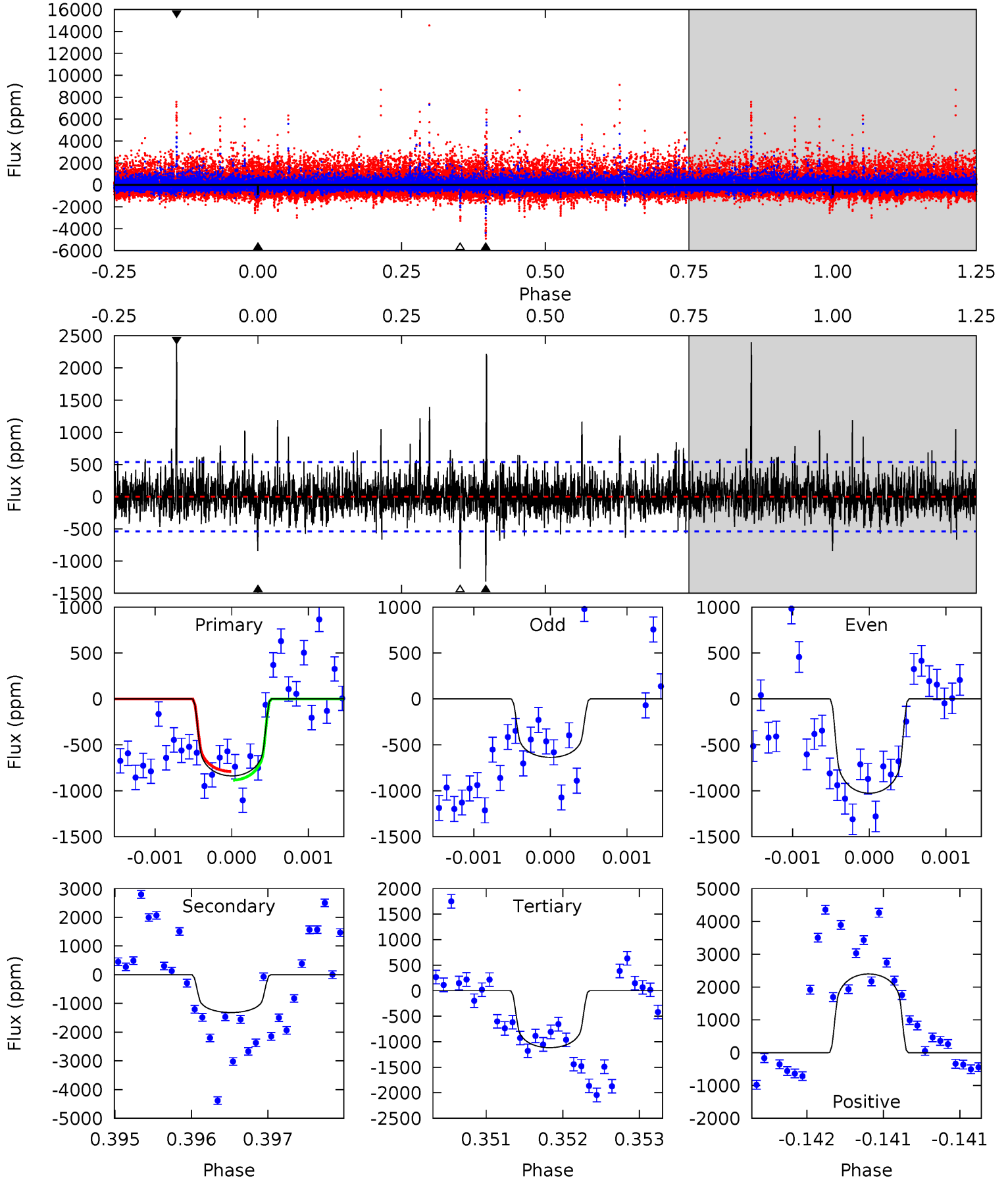
TCE 010857583-07 $P=408.868724$ Days $T_0=137.225273$ (BKJD)



DV Model-Shift Uniqueness Test

010857583-07, P = 408.868532 Days, E = 137.224673 Days

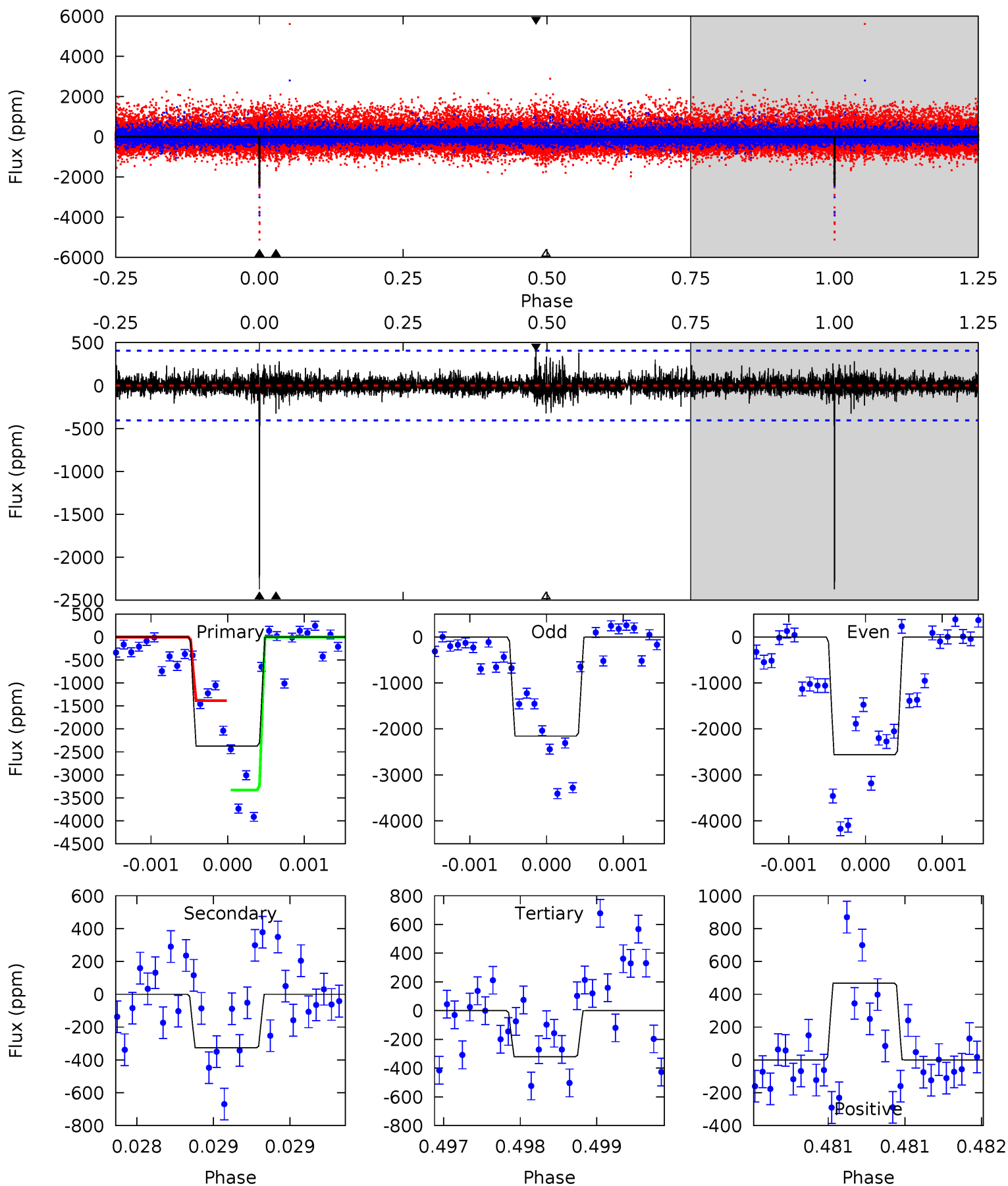
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.58	13.5	11.4	24.6	5.51	3.39	2.30	-2.85	-16.0	2.04	-11.1	1.01	1.28	0.65	0.49



Alt Model-Shift Uniqueness Test

010857583-07, P = 408.868724 Days, E = 137.225273 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.2	4.43	4.35	6.34	5.51	3.39	0.82	27.8	25.8	0.08	-1.92	3.08	0.99	0.16	13.2



Stellar Parameters For KIC 010857583

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3577^{+42}_{-48}	$4.940^{+0.040}_{-0.040}$	$-0.400^{+0.100}_{-0.100}$	$0.330^{+0.030}_{-0.036}$	$0.346^{+0.033}_{-0.045}$	$13.530^{+2.941}_{-2.197}$
	+1%/-1%	+1%/-1%	+25%/-25%	+9%/-11%	+10%/-13%	+22%/-16%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 010857583-07 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1315 ± 98	$1.19^{+0.66}_{-0.60}$	146^{+3}_{-3}	3698^{+1085}_{-464}	$297064^{+927448}_{-169354}$
Alt.	-326 ± 74	$1.63^{+0.64}_{-0.67}$	146^{+3}_{-3}	2740^{+424}_{-241}	39173^{+71824}_{-20245}

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

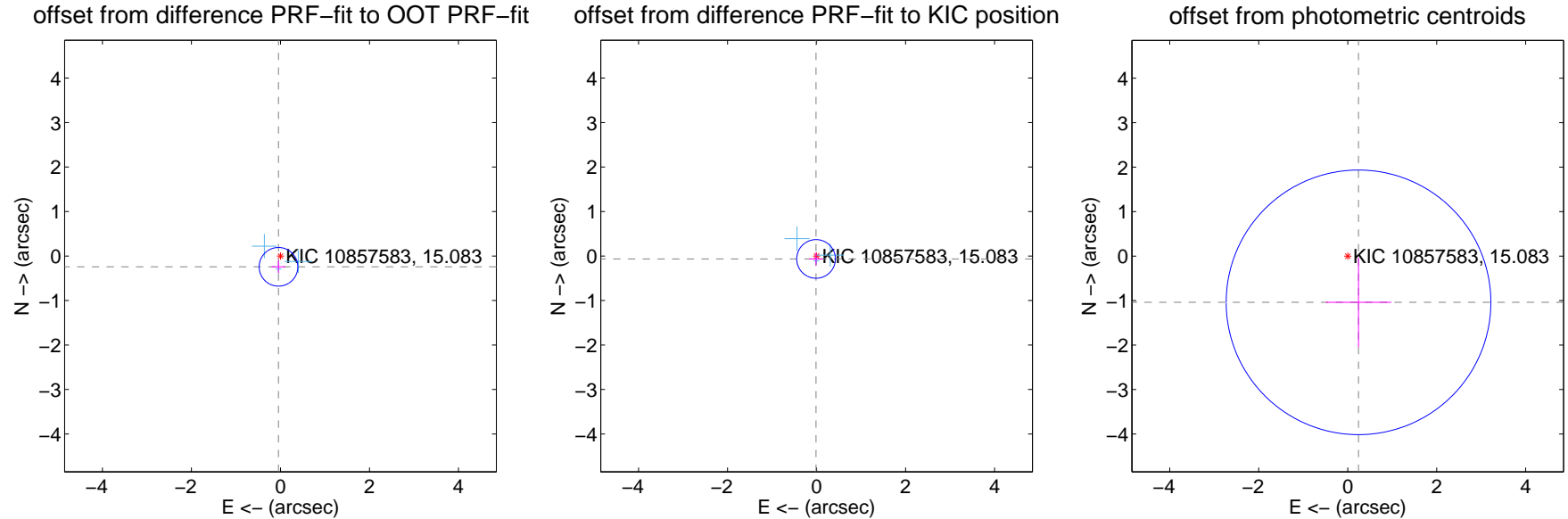
DV Centroid Data

Supplemental centroid analysis for 010857583-07. Kepler magnitude: 15.08. Transit SNR 6.22

There are 3 quarters with good PRF difference image offsets

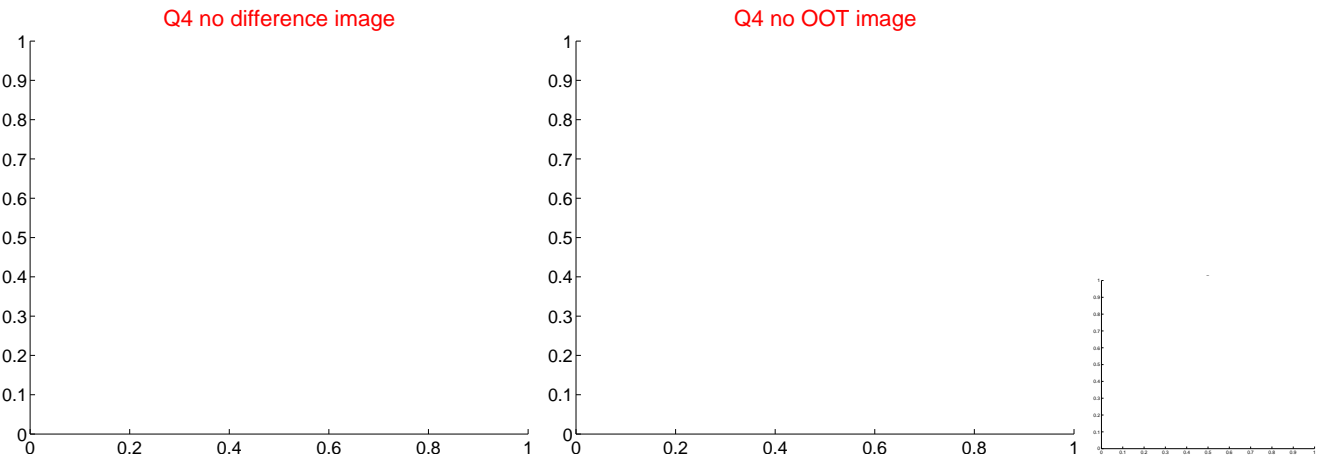
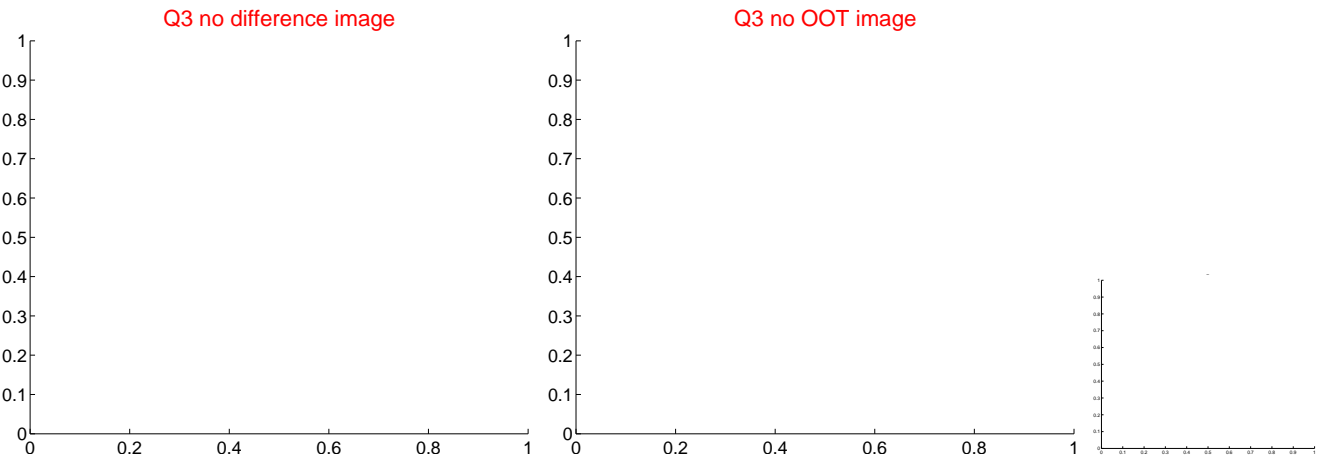
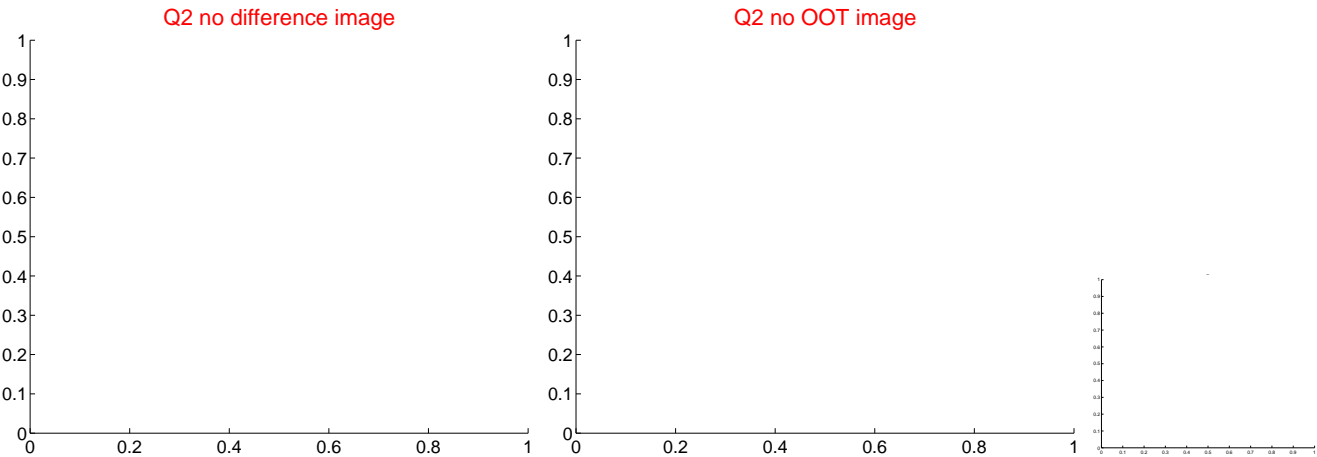
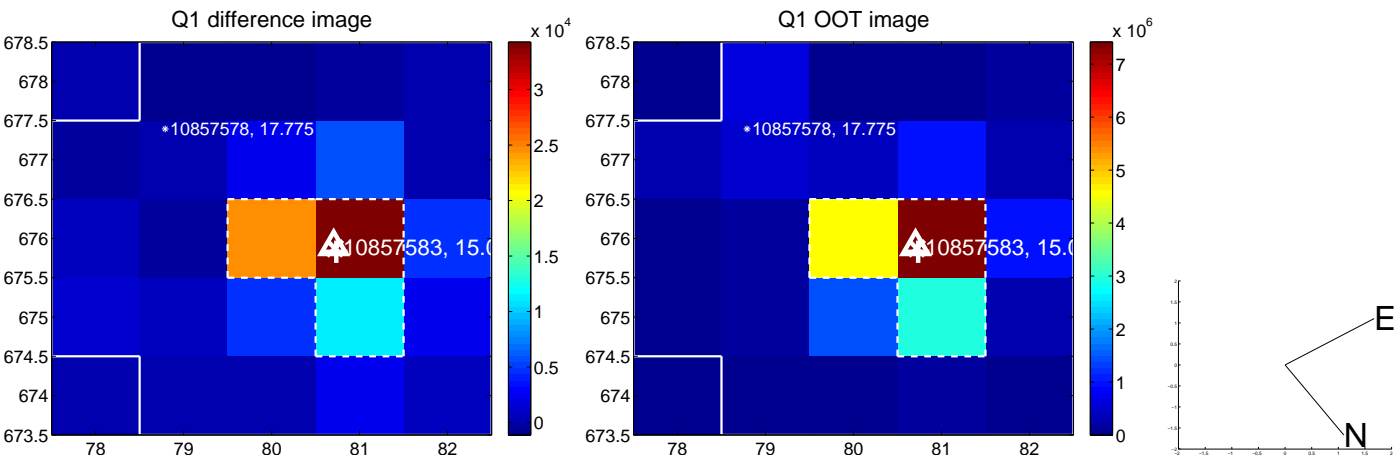
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.247 ± 0.145	1.70	0.044 ± 0.156	-0.243 ± 0.144
PRF-fit source offset from KIC position	0.066 ± 0.145	0.46	0.012 ± 0.156	-0.065 ± 0.144
photometric centroid source offset	1.07 ± 0.99	1.08	-0.24 ± 0.73	-1.04 ± 1.00

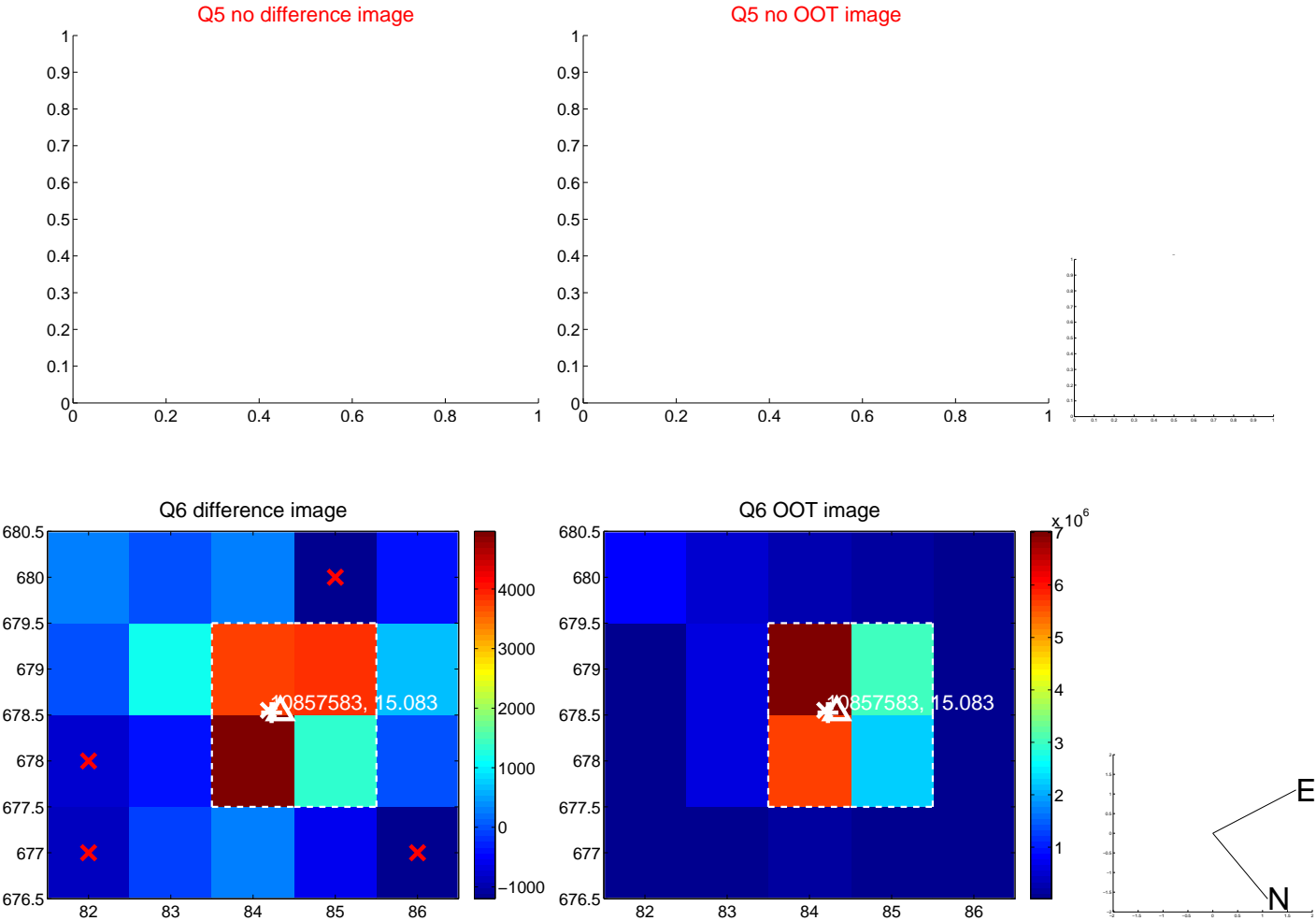


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

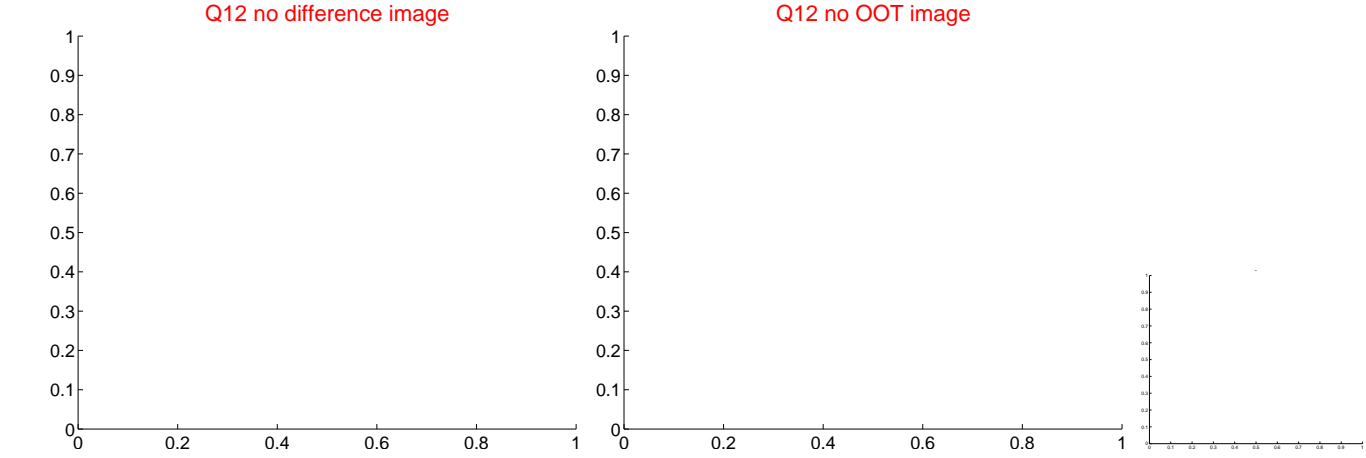
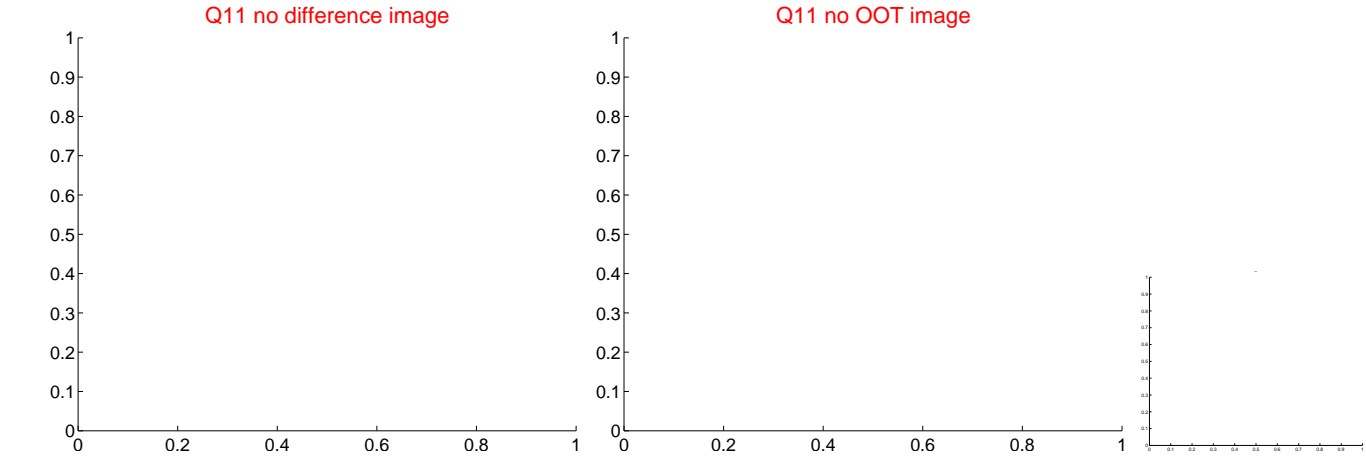
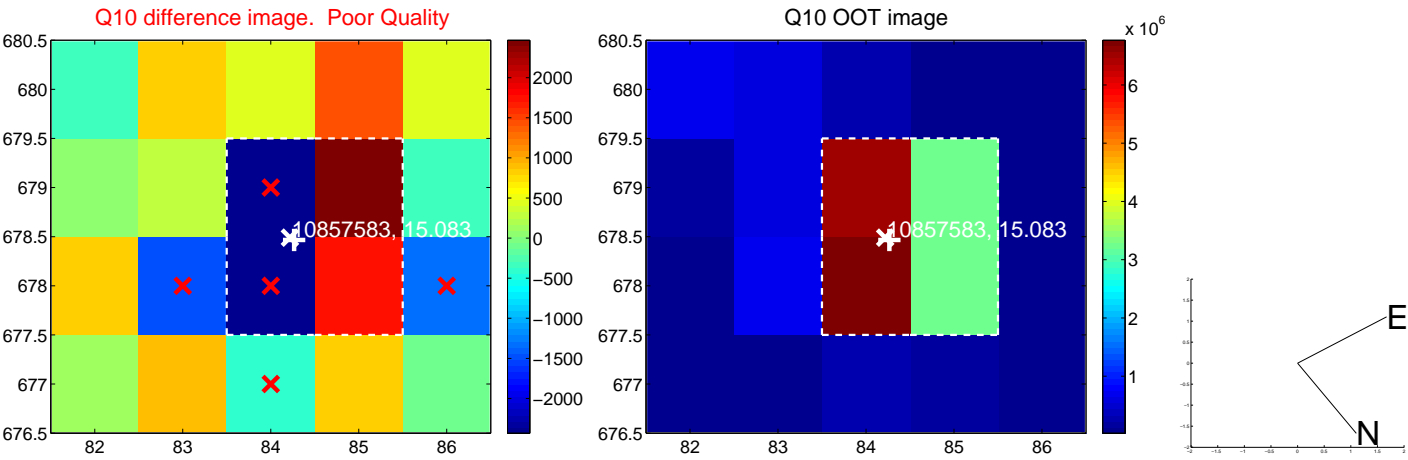
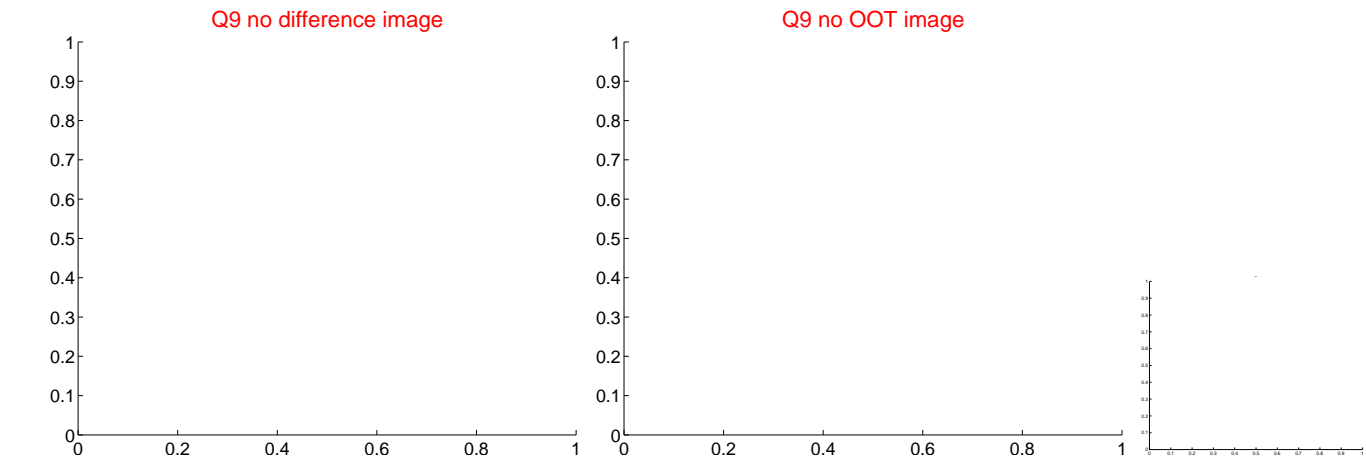
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



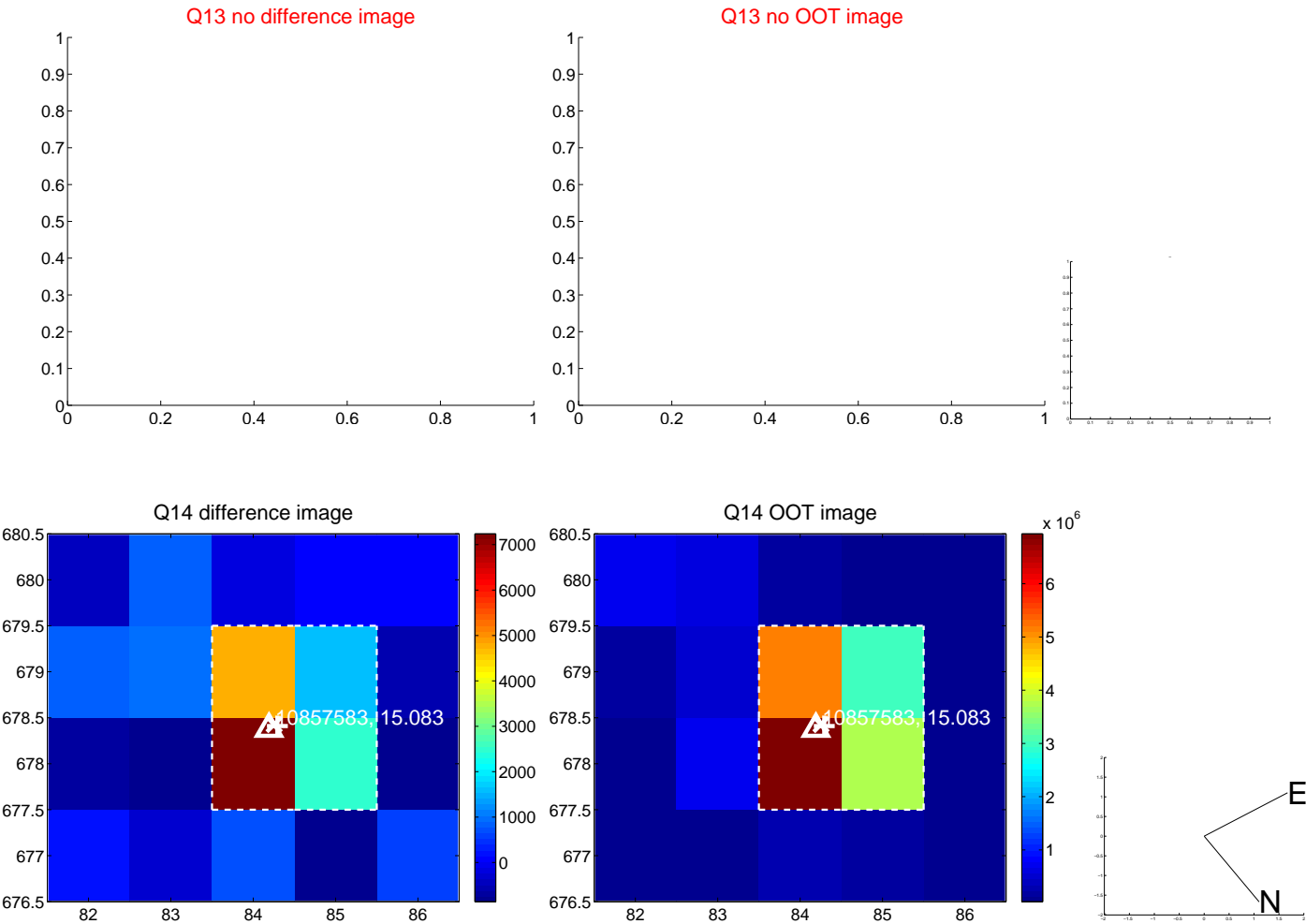
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



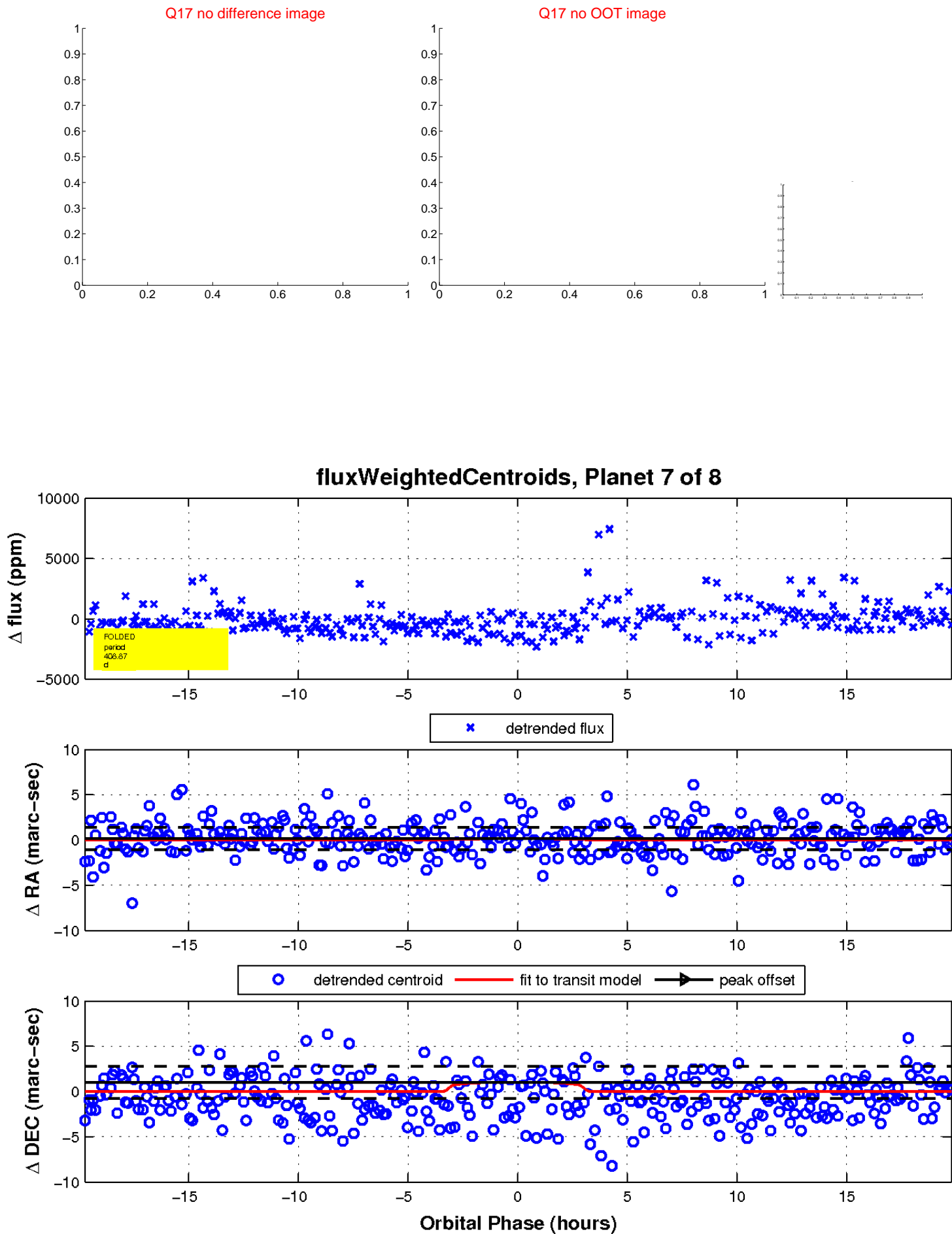
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

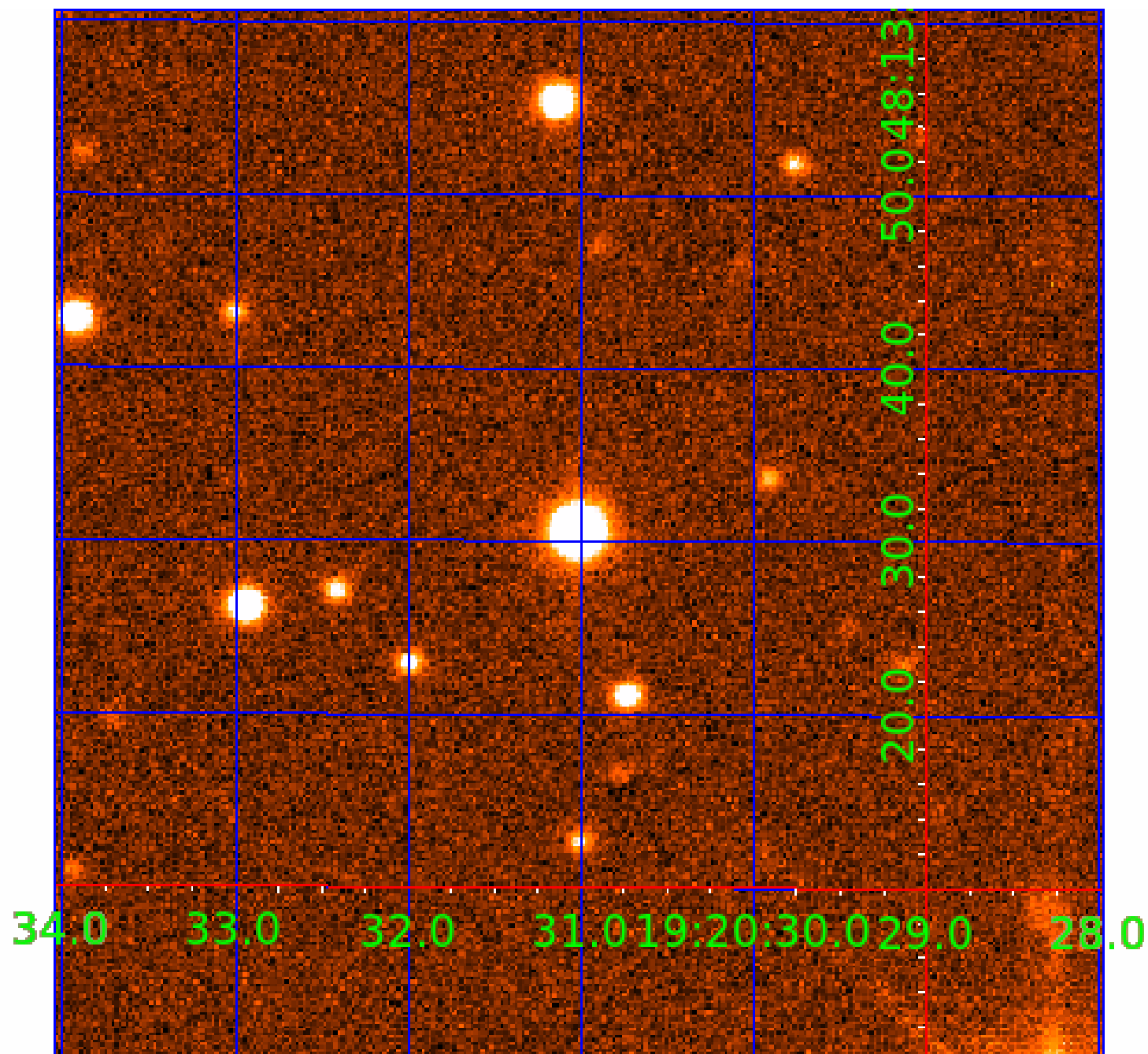


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010857583

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})
010857583-01	OBS	No	568.634152	263.772287	1392.7	5.316	18.0	6.7	0.33	3577	1.27	0.02
010857583-02	OBS	No	588.281610	209.166692	1603.0	7.608	15.0	7.7	0.33	3577	1.33	0.02
010857583-03	OBS	No	379.207725	434.130336	1620.7	7.811	11.9	9.1	0.33	3577	1.40	0.03
010857583-04	OBS	No	584.034494	329.436061	1517.4	8.387	13.6	7.1	0.33	3577	1.29	0.02
010857583-05	OBS	No	403.784419	492.361887	1489.6	9.675	12.5	7.0	0.33	3577	1.28	0.03
010857583-06	OBS	No	354.599656	304.376433	2021.9	18.157	10.4	10.2	0.33	3577	1.72	0.03
010857583-07	OBS	No	408.868532	137.224673	1139.5	6.601	11.4	6.2	0.33	3577	1.18	0.03
010857583-08	OBS	No	476.626409	468.712412	884.9	7.500	11.6	-1.0	0.33	3577	0.98	0.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010857583-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010857583-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010857583-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010857583-04	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—INCONSISTENT_TRANS
010857583-05	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
010857583-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
010857583-07	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—INCONSISTENT_TRANS
010857583-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—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.

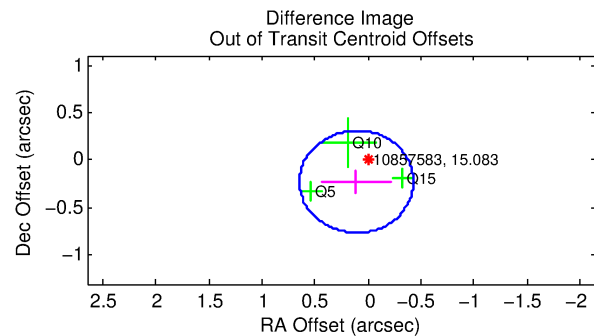
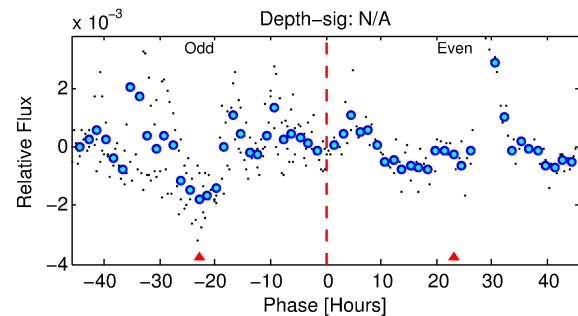
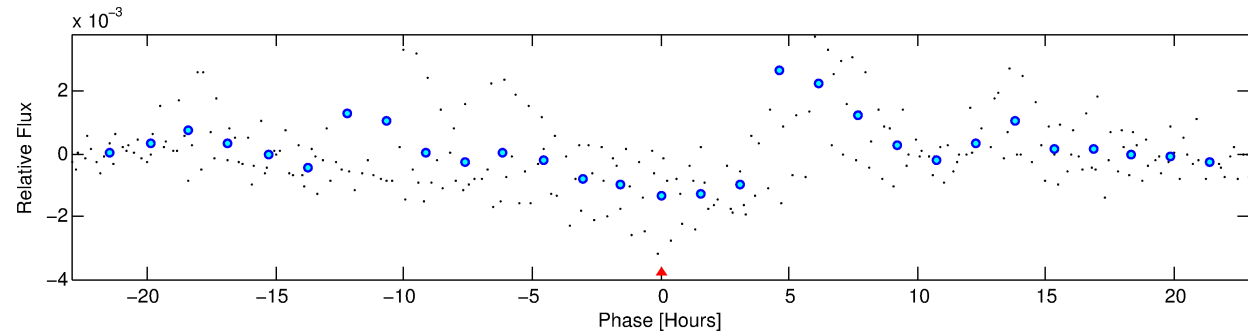
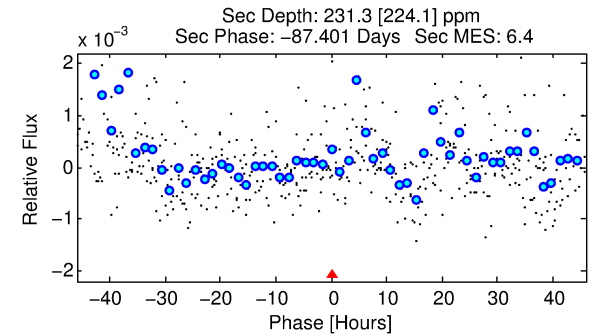
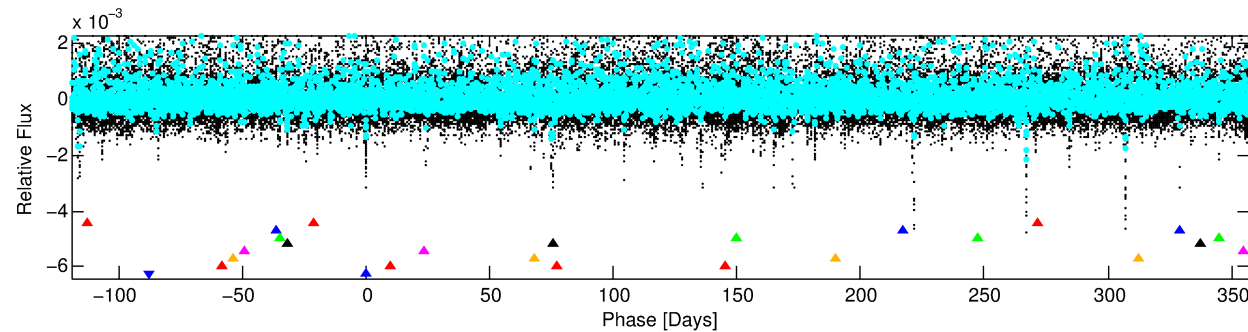
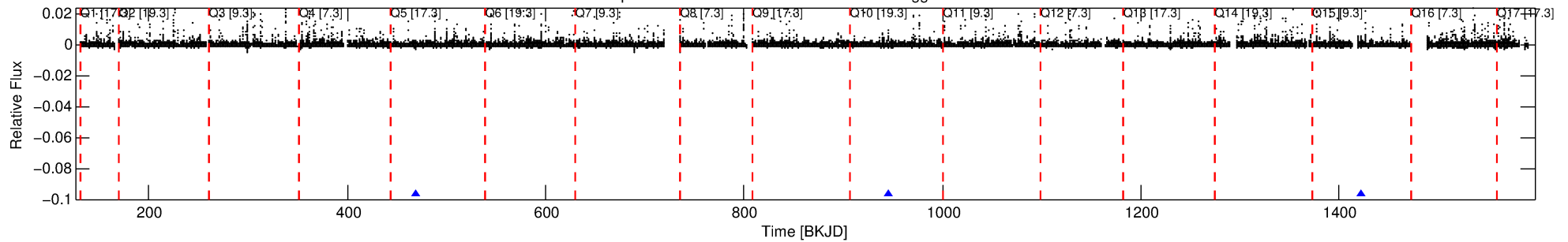
Ephemeris Match Information For 010857583-08

No Significant Match Found

DV One-Page Summary

KIC: 10857583 Candidate: 8 of 8 Period: 476.626 d

Kp: 15.08 R*: 0.33 Rs Teff: 3577.0 K Logg: 4.94 Fe/H: -0.400



TPS TCE Results:

Period = 476.62641 d
Epoch = 468.7124 BKJD

DV fit results are unavailable

DV Diagnostic Results:

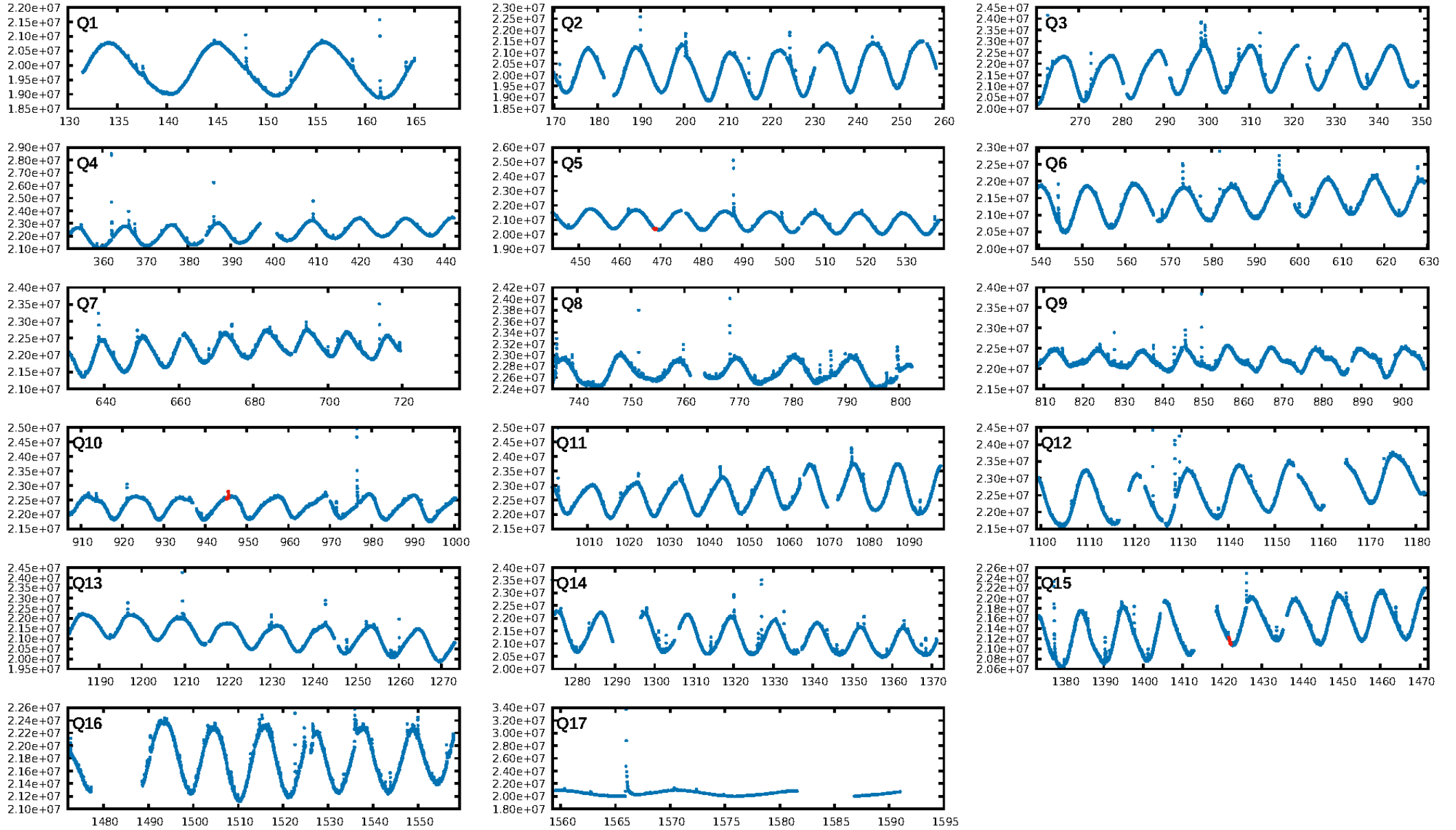
ShortPeriod-sig: 100.0% [162.76 σ]
LongPeriod-sig: 100.0% [240.21 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.9416

Centroid-sig: 62.8%
Centroid-so: 0.075 arcsec [0.16 σ]
OotOffset-rm: 0.251 arcsec [1.40 σ]
KicOffset-rm: 0.163 arcsec [0.82 σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

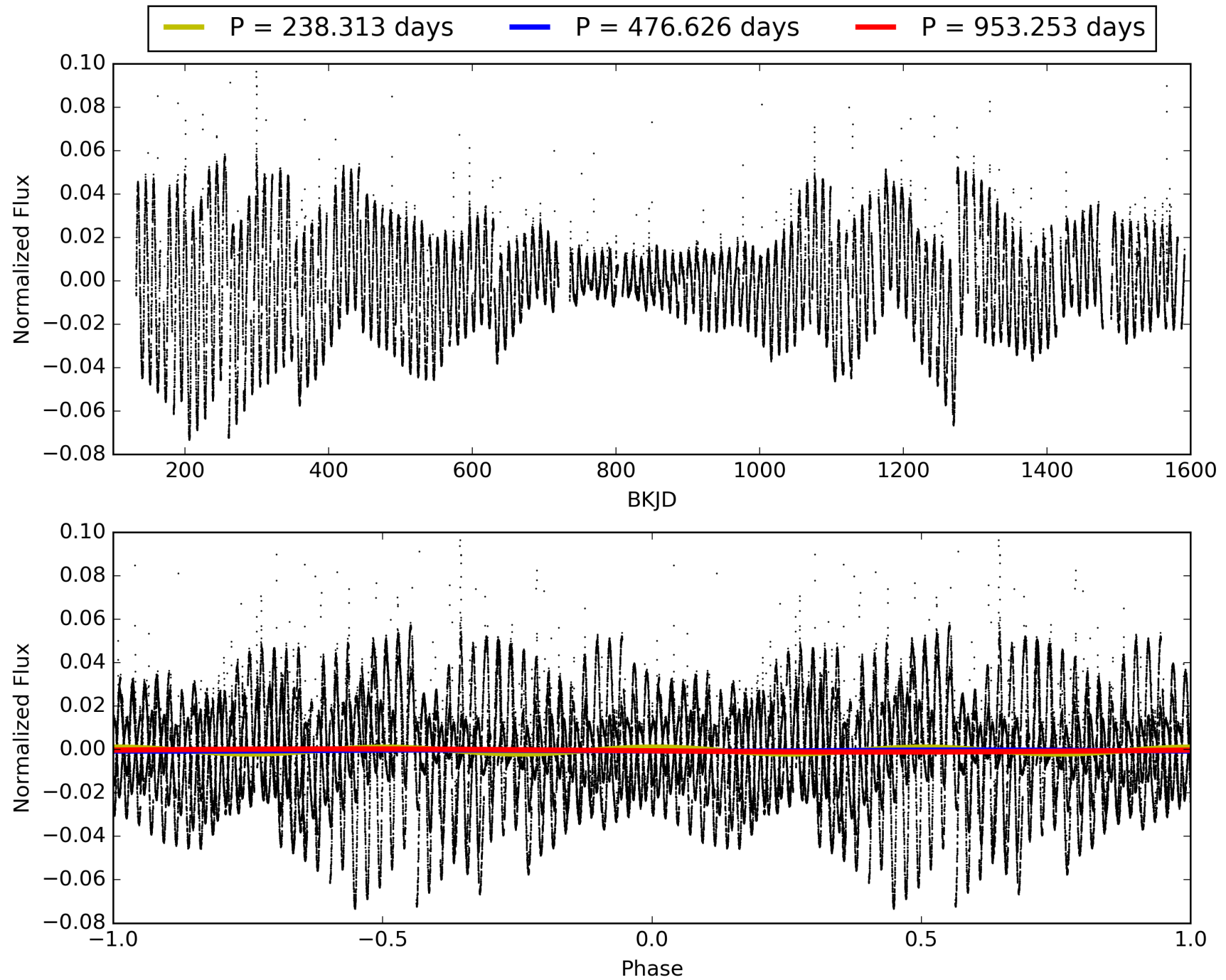
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:28:07 Z

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

TCE 010857583-08, PDC Light Curves

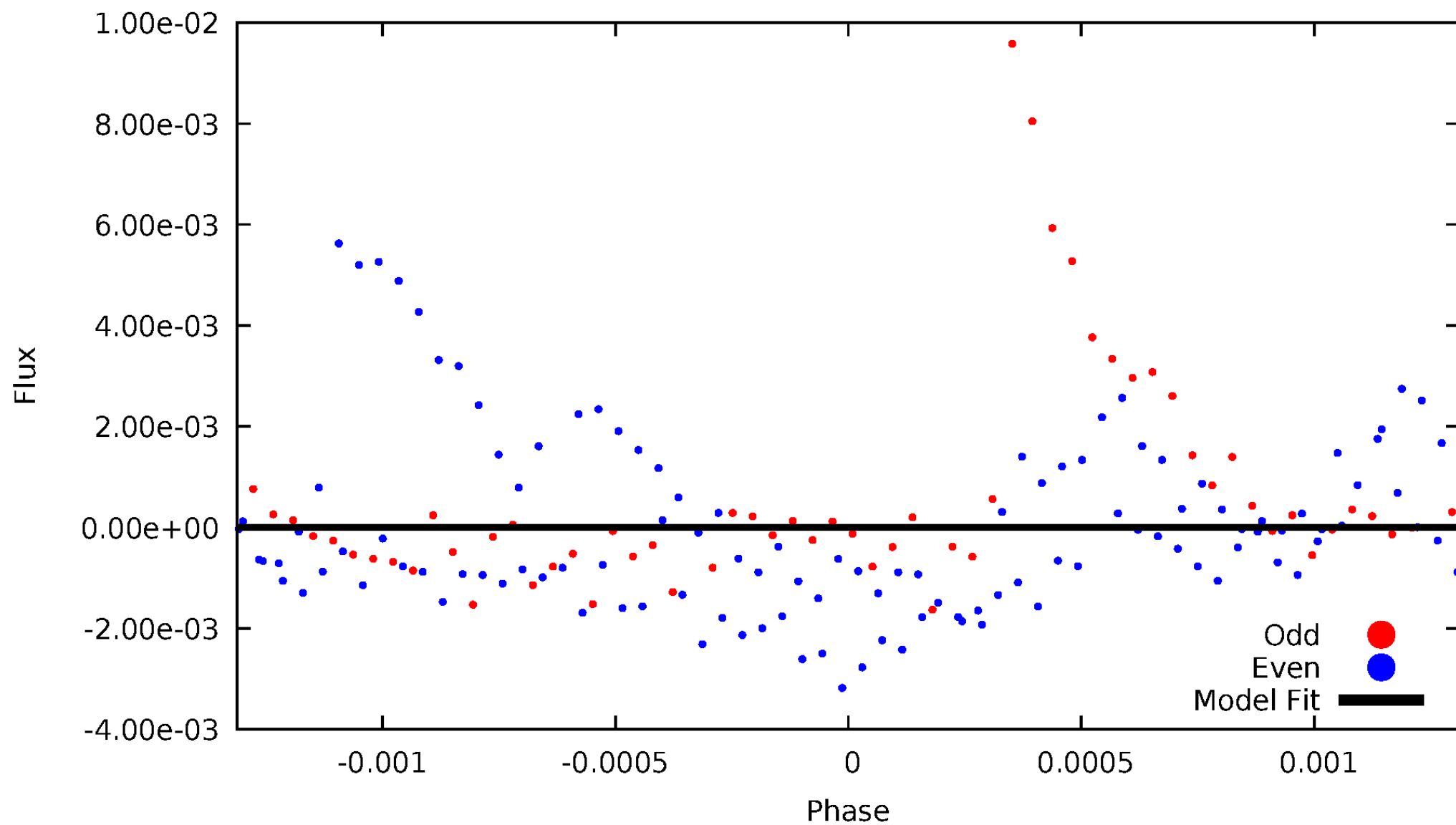


TCE 010857583-08



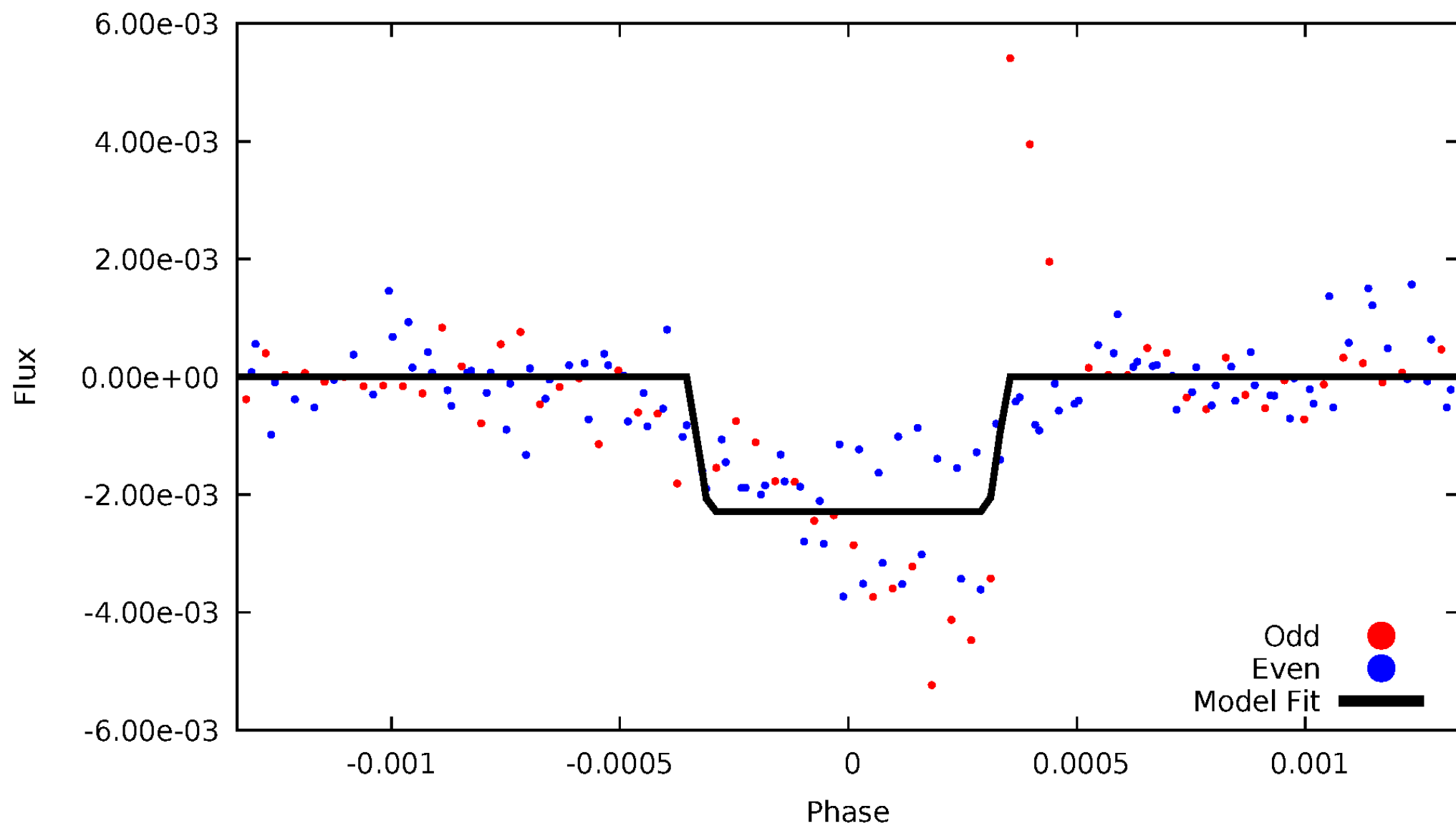
DV Odd/Even

TCE 010857583-08



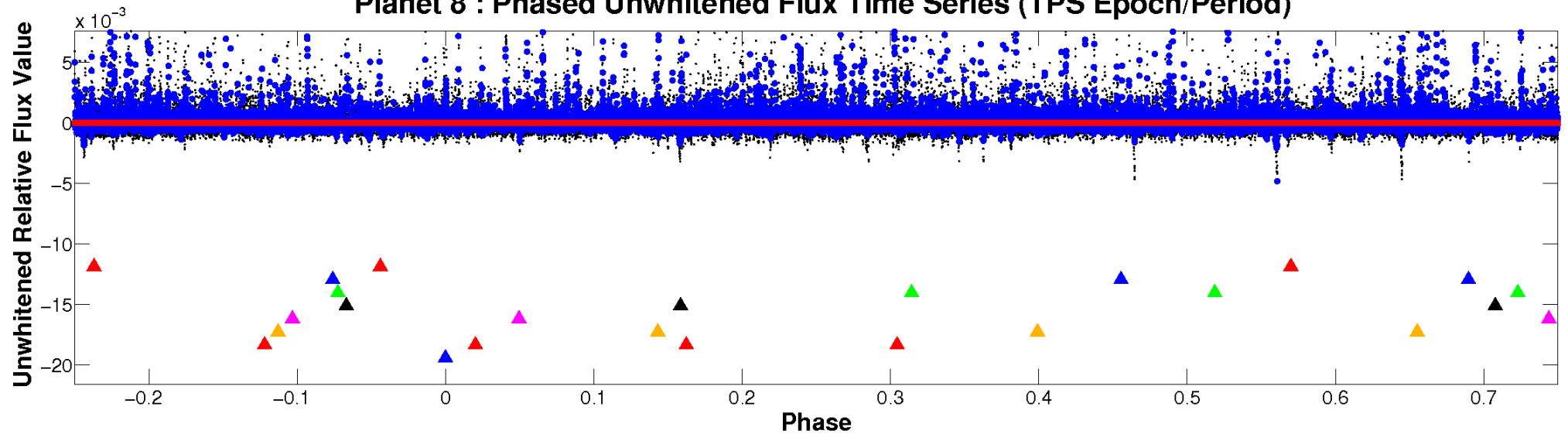
ALT Odd/Even

TCE 010857583-08

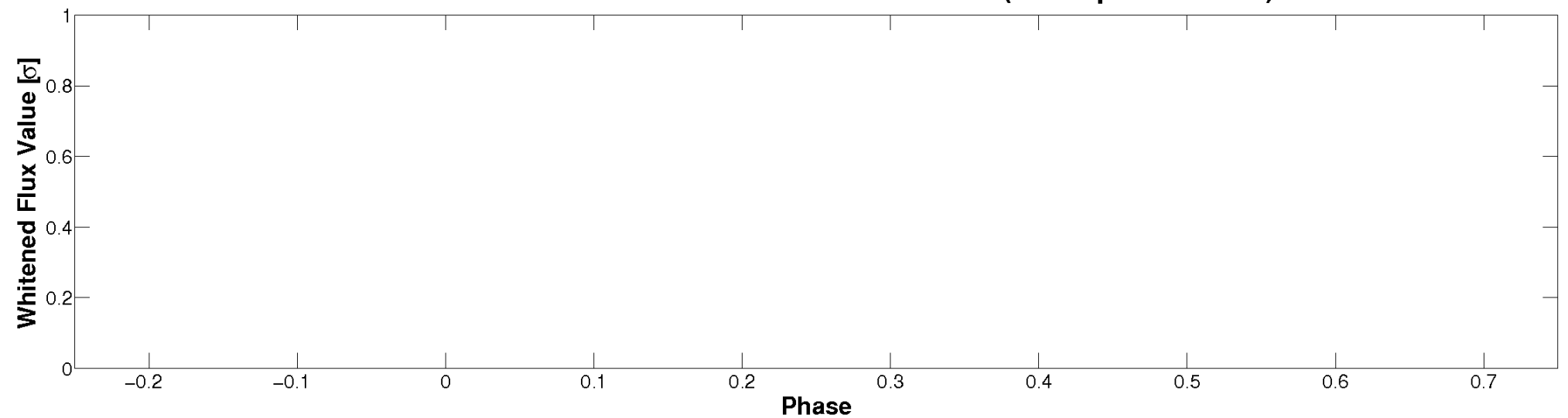


Non-Whitened Vs. Whitened Light Curve

Planet 8 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

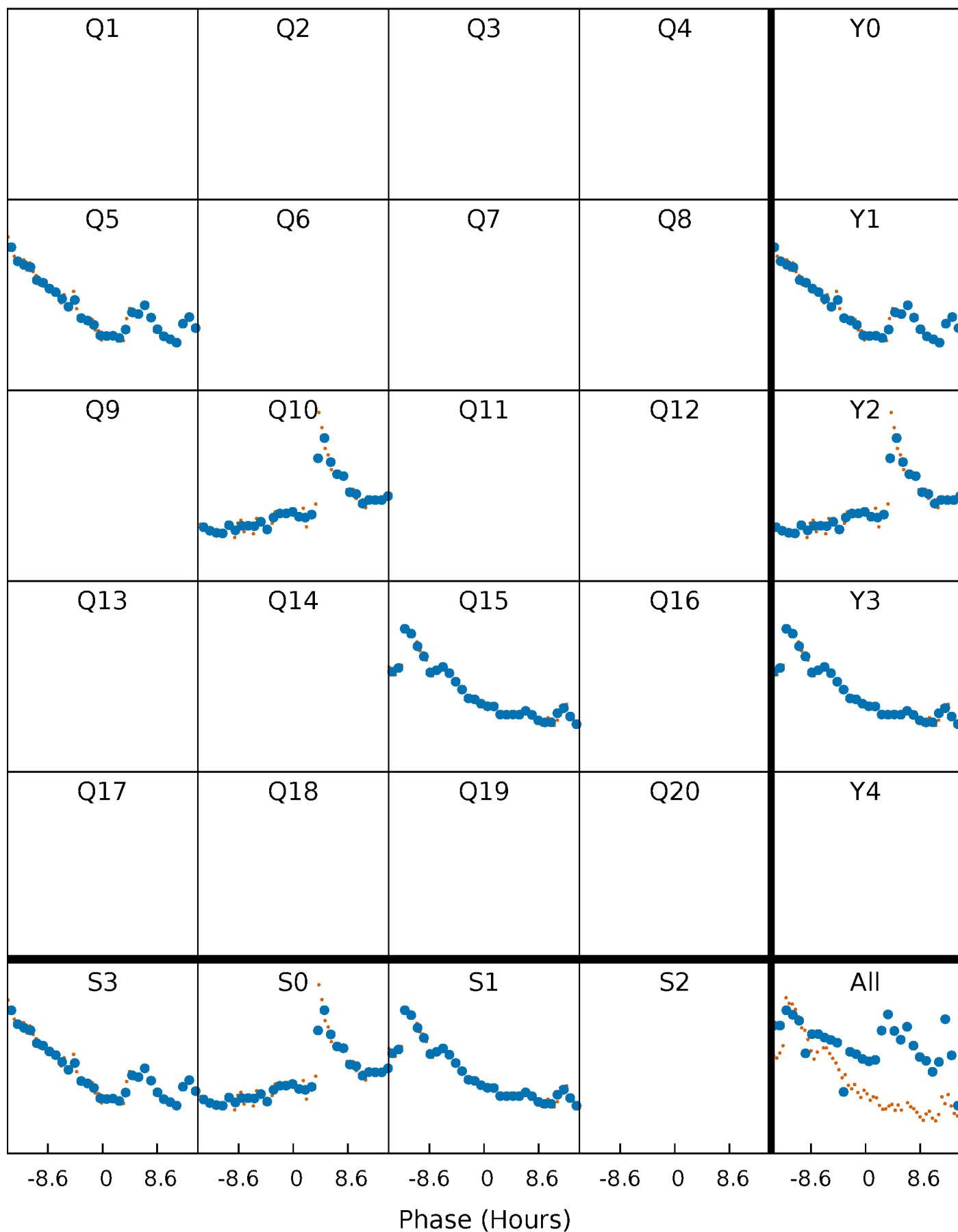


Planet 8 : Phased Whitened Flux Time Series (TPS Epoch/Period)



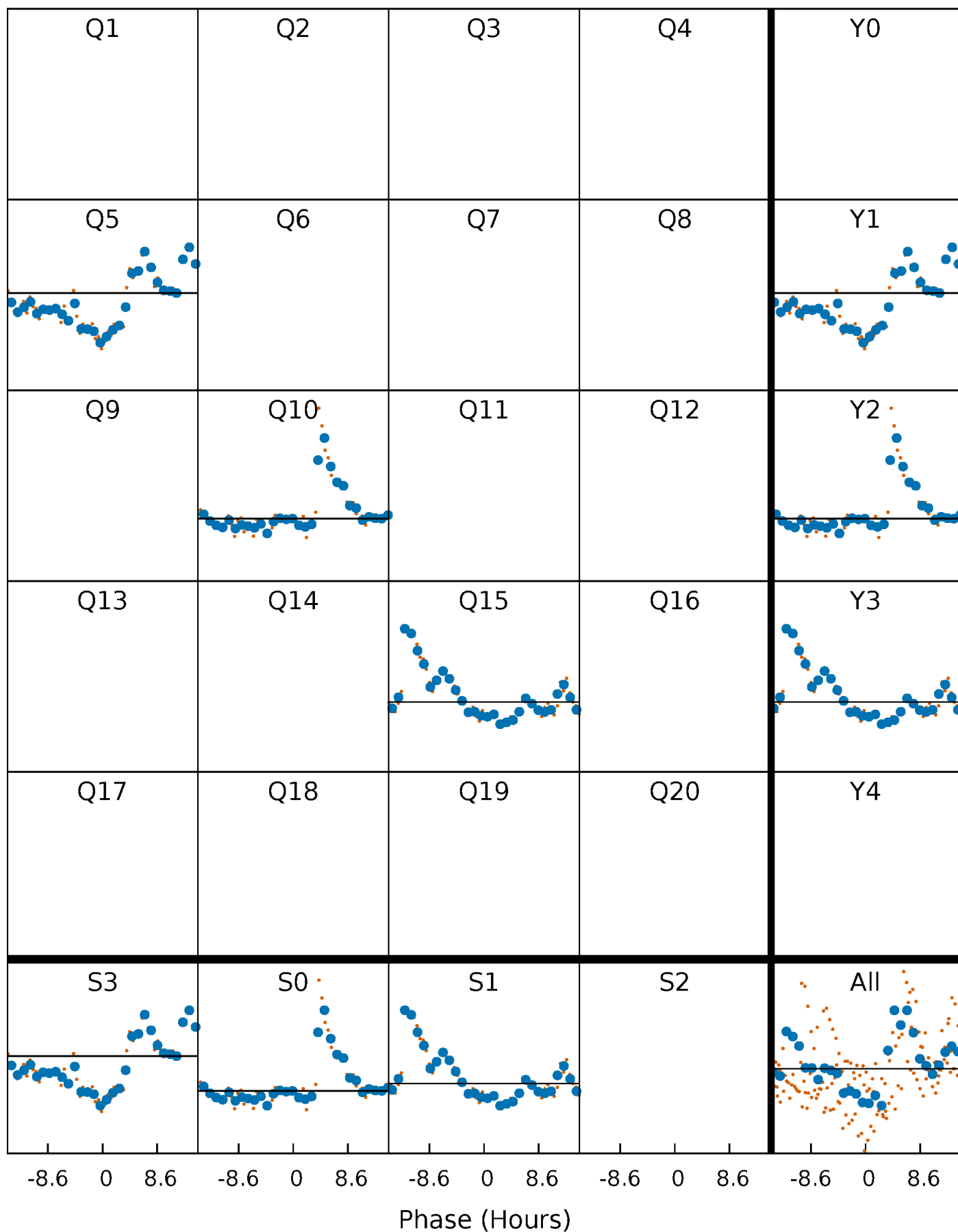
PDC Quarter-Phased Transit Curves

TCE 010857583-08 $P=476.626409$ Days $T_0=468.712412$ (BKJD)



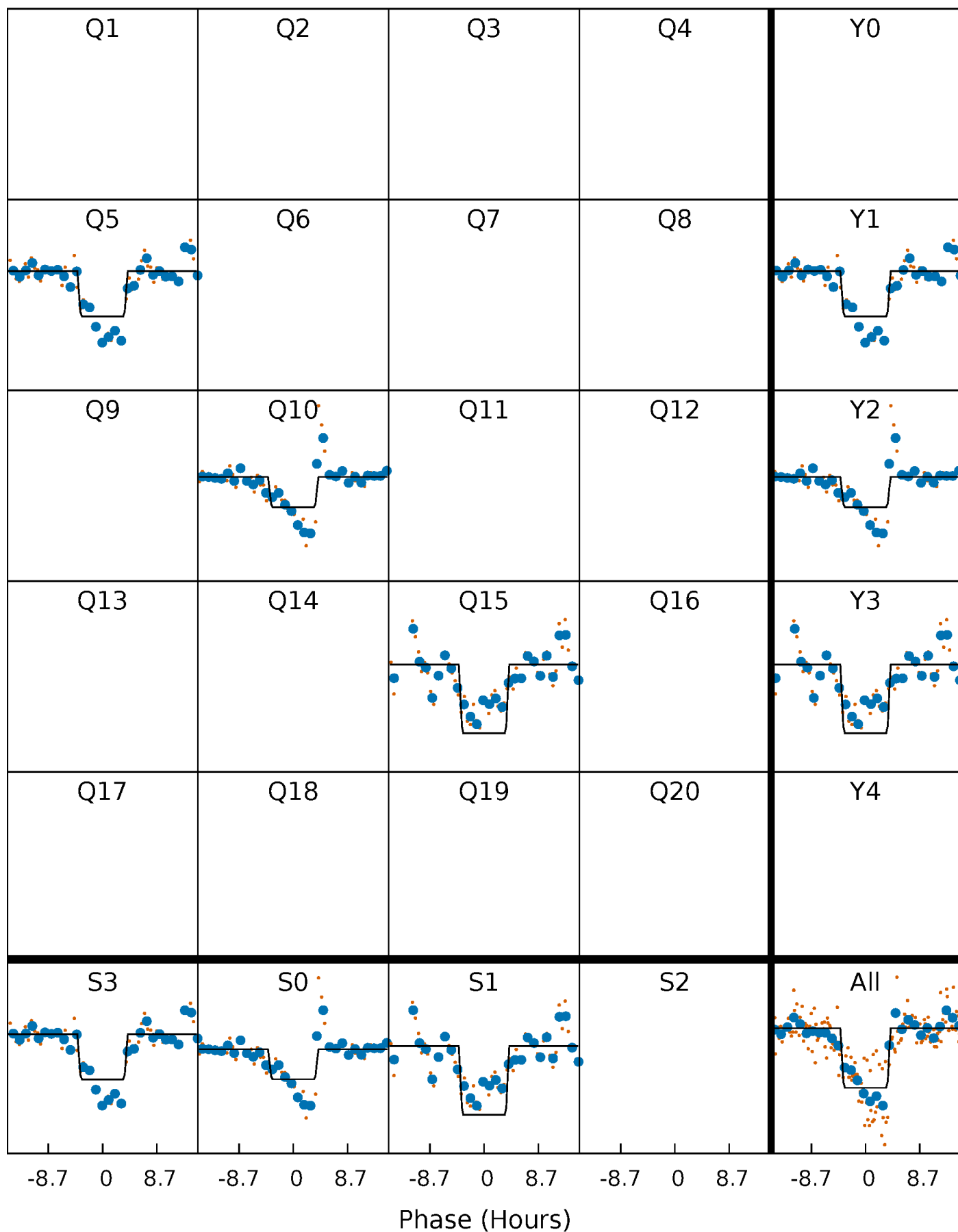
DV Quarter-Phased Transit Curves

TCE 010857583-08 P=476.626409 Days $T_0=468.712412$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

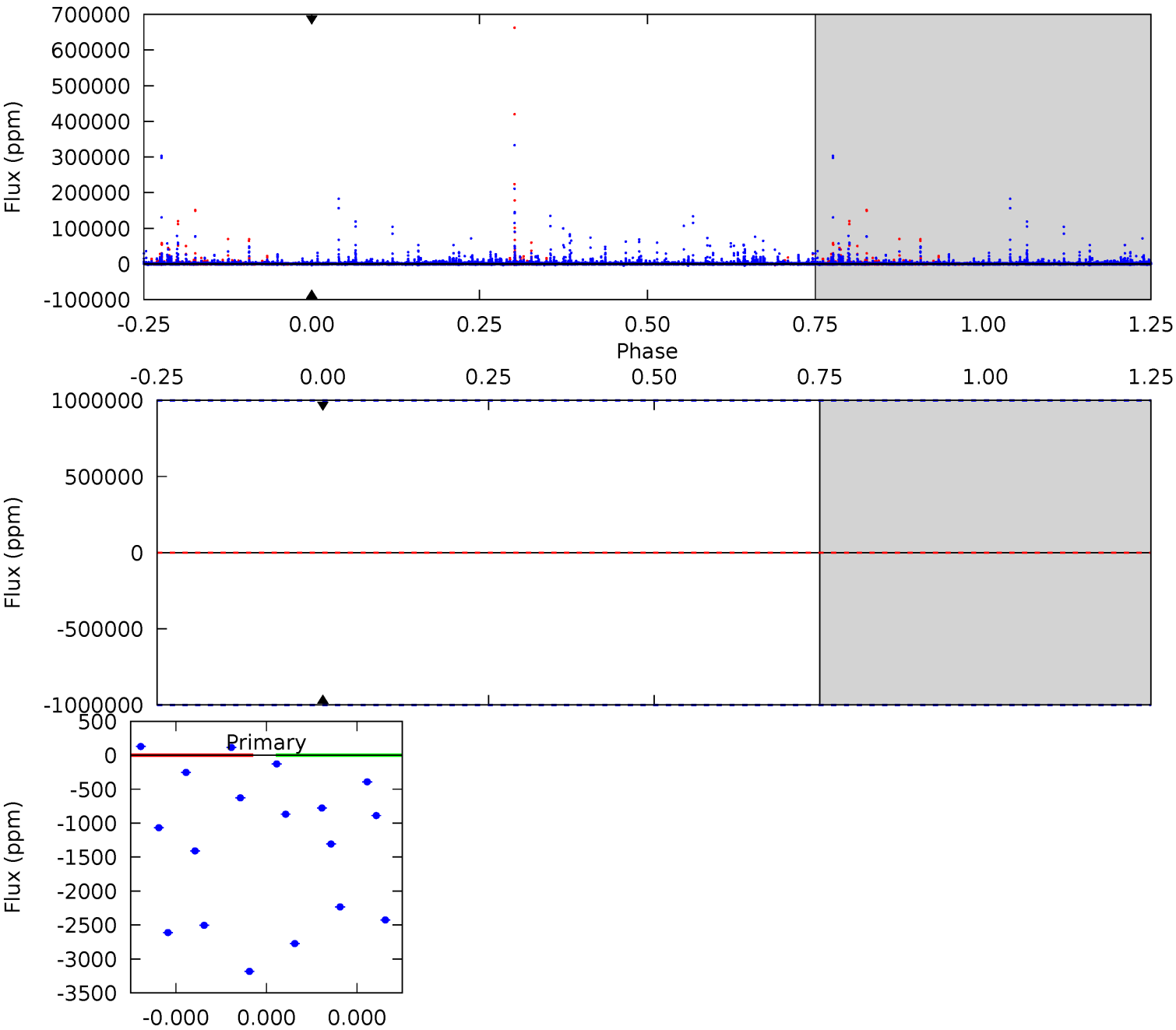
TCE 010857583-08 $P=476.626409$ Days $T_0=468.711405$ (BKJD)



DV Model-Shift Uniqueness Test

010857583-08, P = 476.626409 Days, E = 468.712412 Days

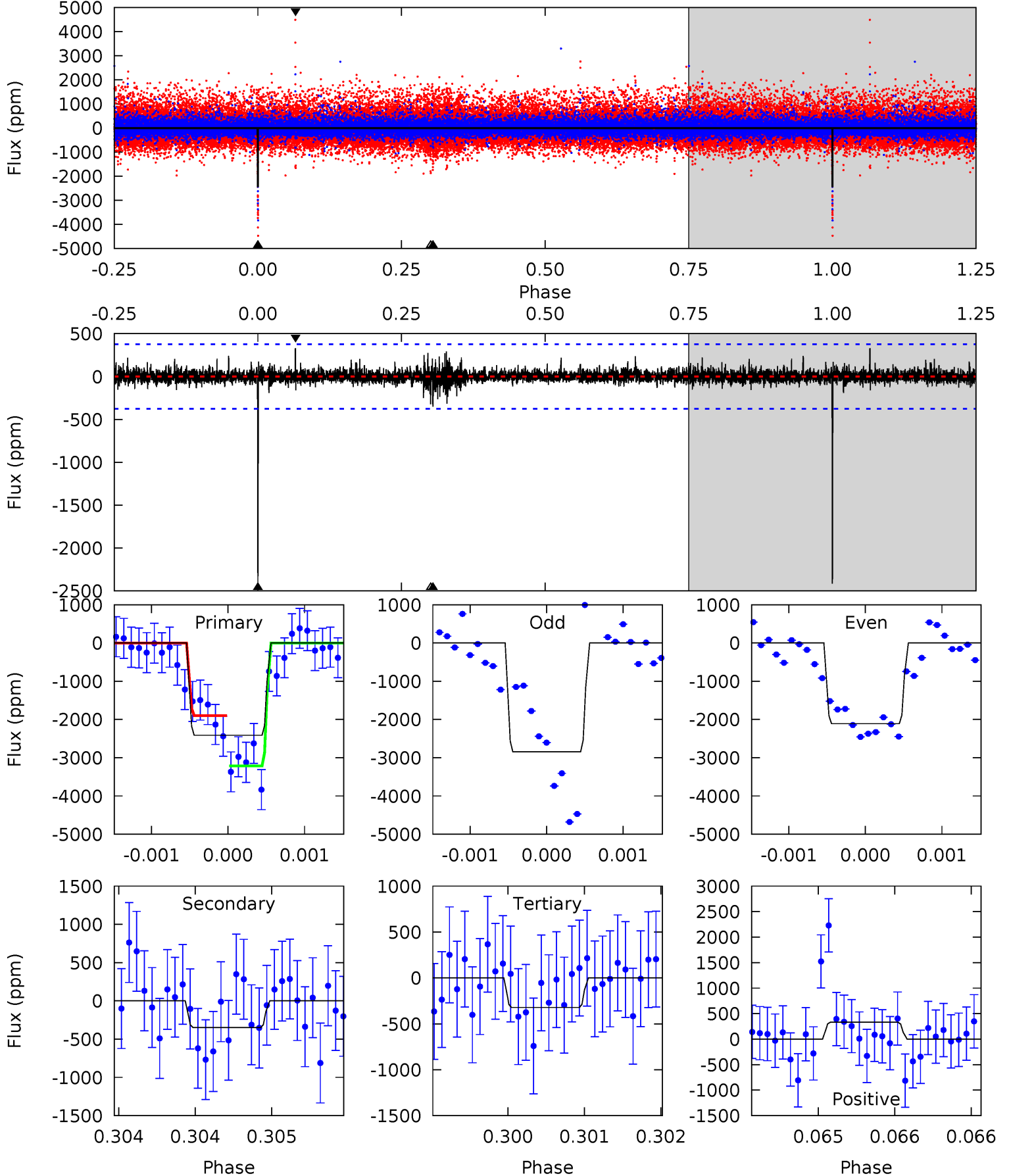
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010857583-08, P = 476.626409 Days, E = 468.711405 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.4	5.12	4.73	4.85	5.53	3.41	0.71	30.7	30.6	0.39	0.27	5.10	0.85	0.12	9.47



Stellar Parameters For KIC 010857583

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3577^{+42}_{-48}	$4.940^{+0.040}_{-0.040}$	$-0.400^{+0.100}_{-0.100}$	$0.330^{+0.030}_{-0.036}$	$0.346^{+0.033}_{-0.045}$	$13.530^{+2.941}_{-2.197}$
	+1%/-1%	+1%/-1%	+25%/-25%	+9%/-11%	+10%/-13%	+22%/-16%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 010857583-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$2.96^{+2.91}_{-1.93}$	138^{+3}_{-3}	-2644^{+9845}_{-4200}	$-40667.906^{+8442376.039}_{-6918138.677}$
Alt.	-349 ± 68	$3.17^{+2.99}_{-2.11}$	138^{+3}_{-3}	2339^{+748}_{-318}	$12763^{+101780}_{-9300}$

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 $A_{obs} \gg 1.0$

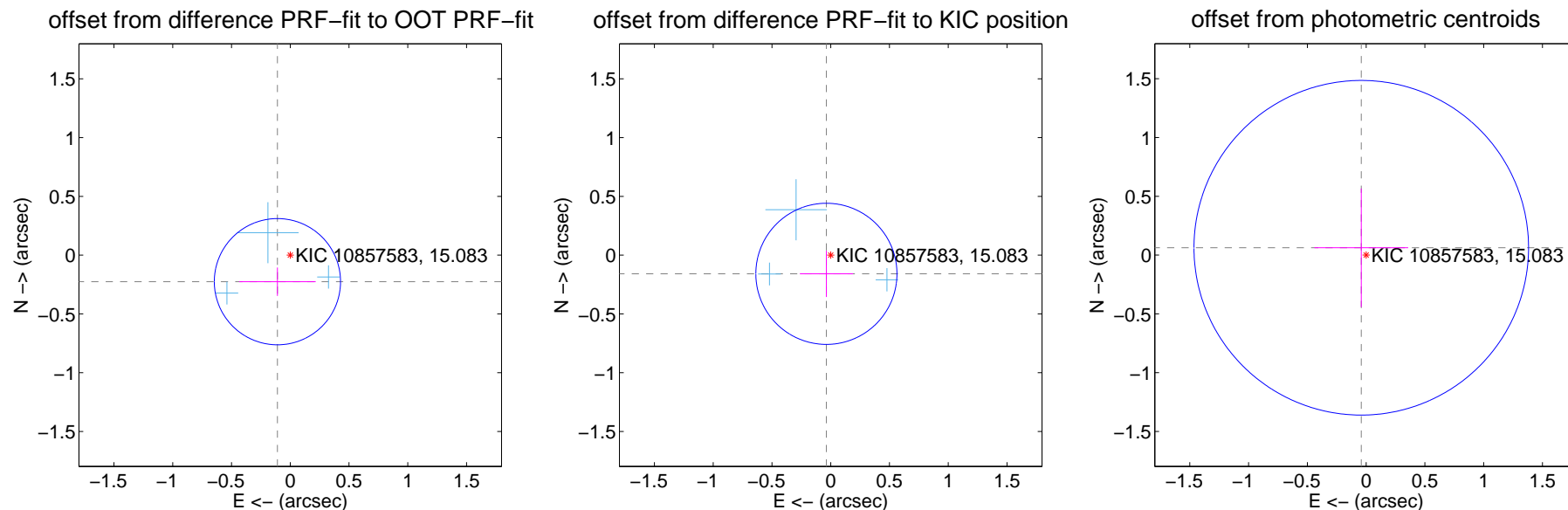
DV Centroid Data

Supplemental centroid analysis for 010857583-08. Kepler magnitude: 15.08. Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.251 ± 0.179	1.40	0.109 ± 0.326	-0.226 ± 0.121
PRF-fit source offset from KIC position	0.163 ± 0.200	0.82	0.037 ± 0.226	-0.159 ± 0.197
photometric centroid source offset	0.07 ± 0.47	0.16	0.04 ± 0.40	0.06 ± 0.50

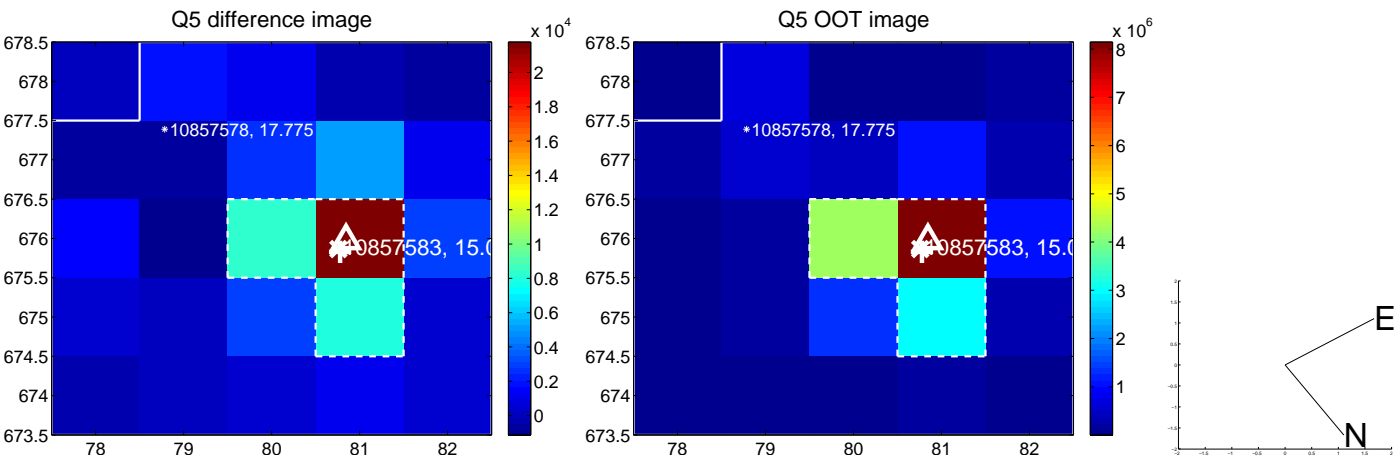


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

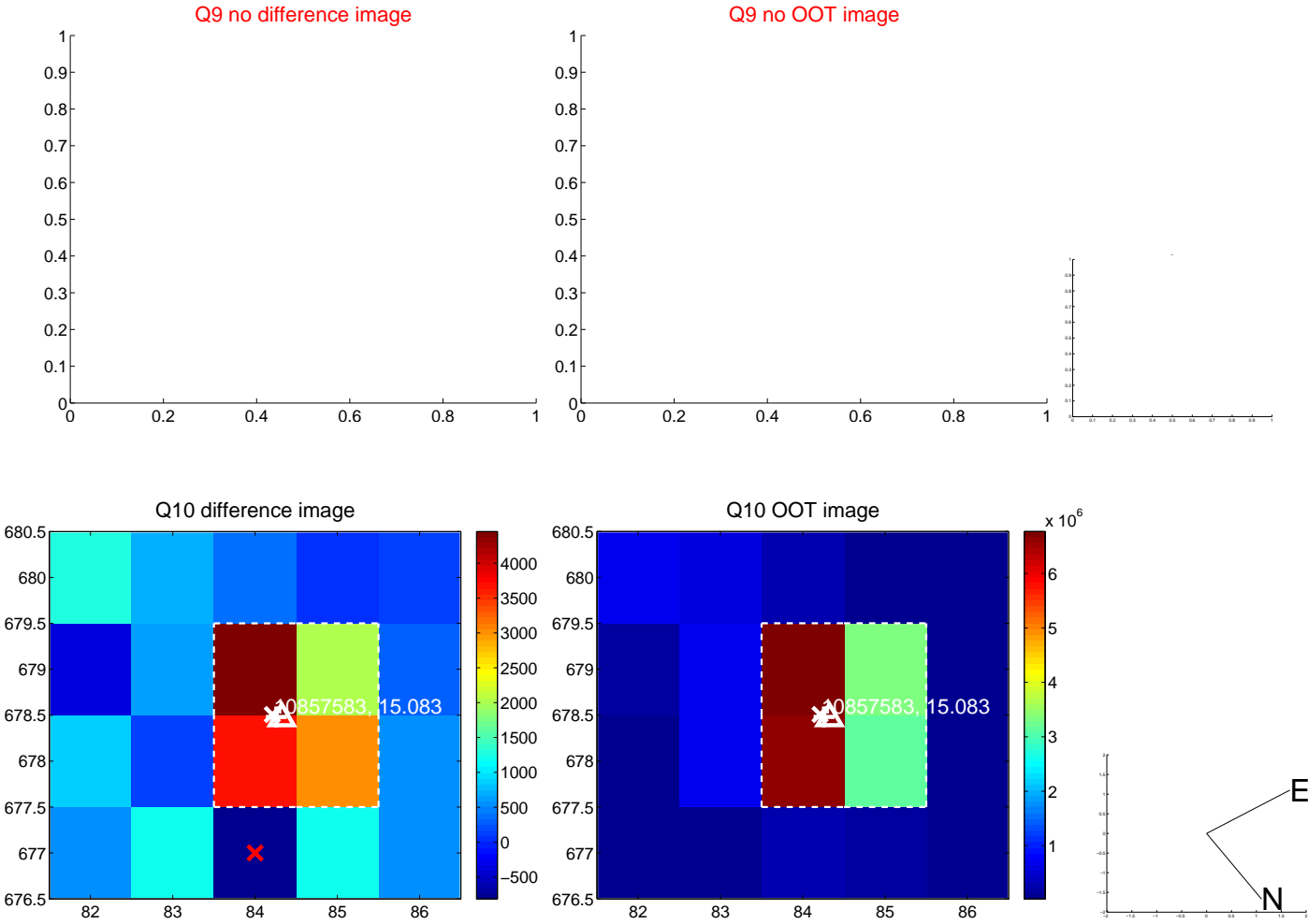
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



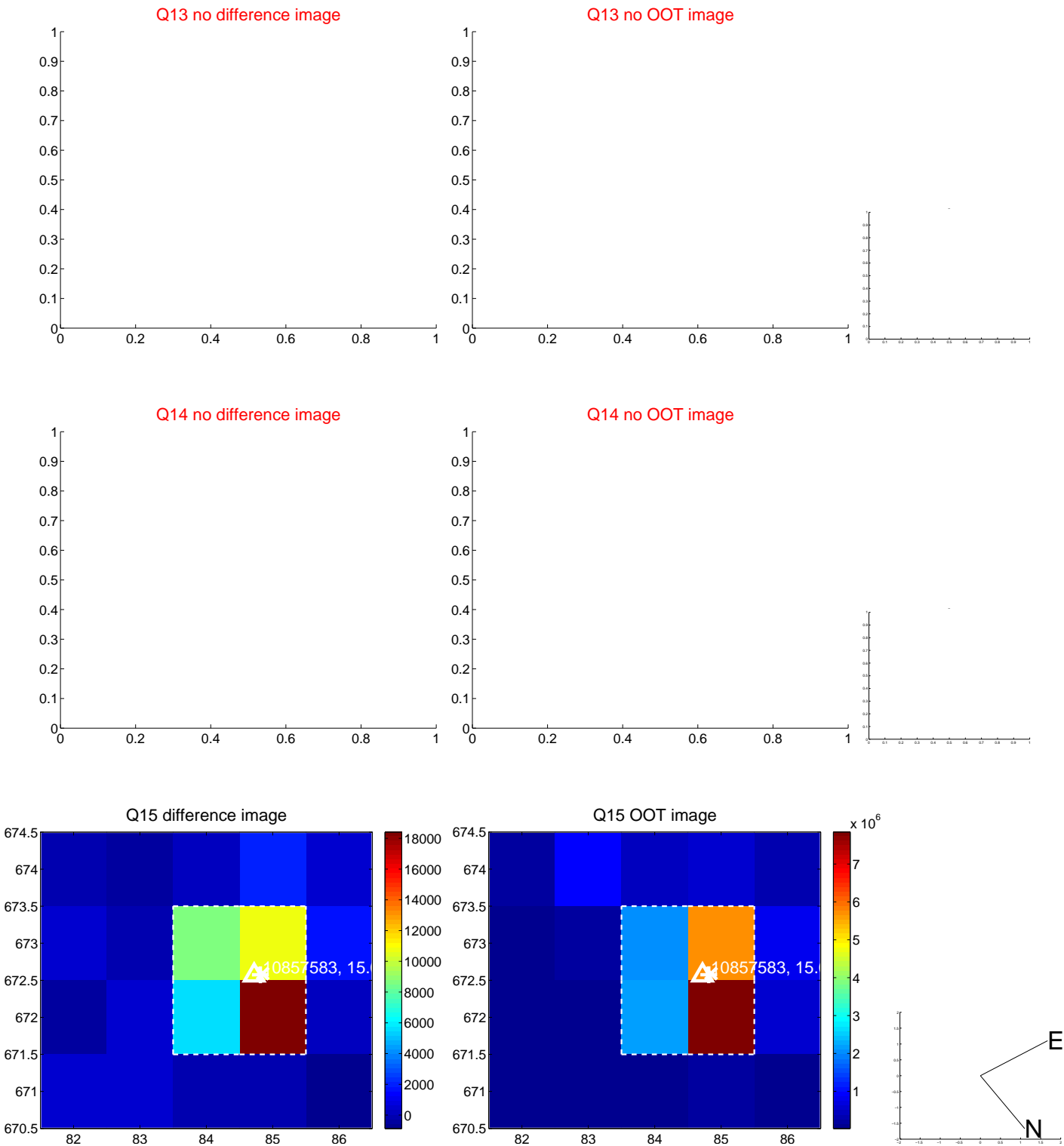
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



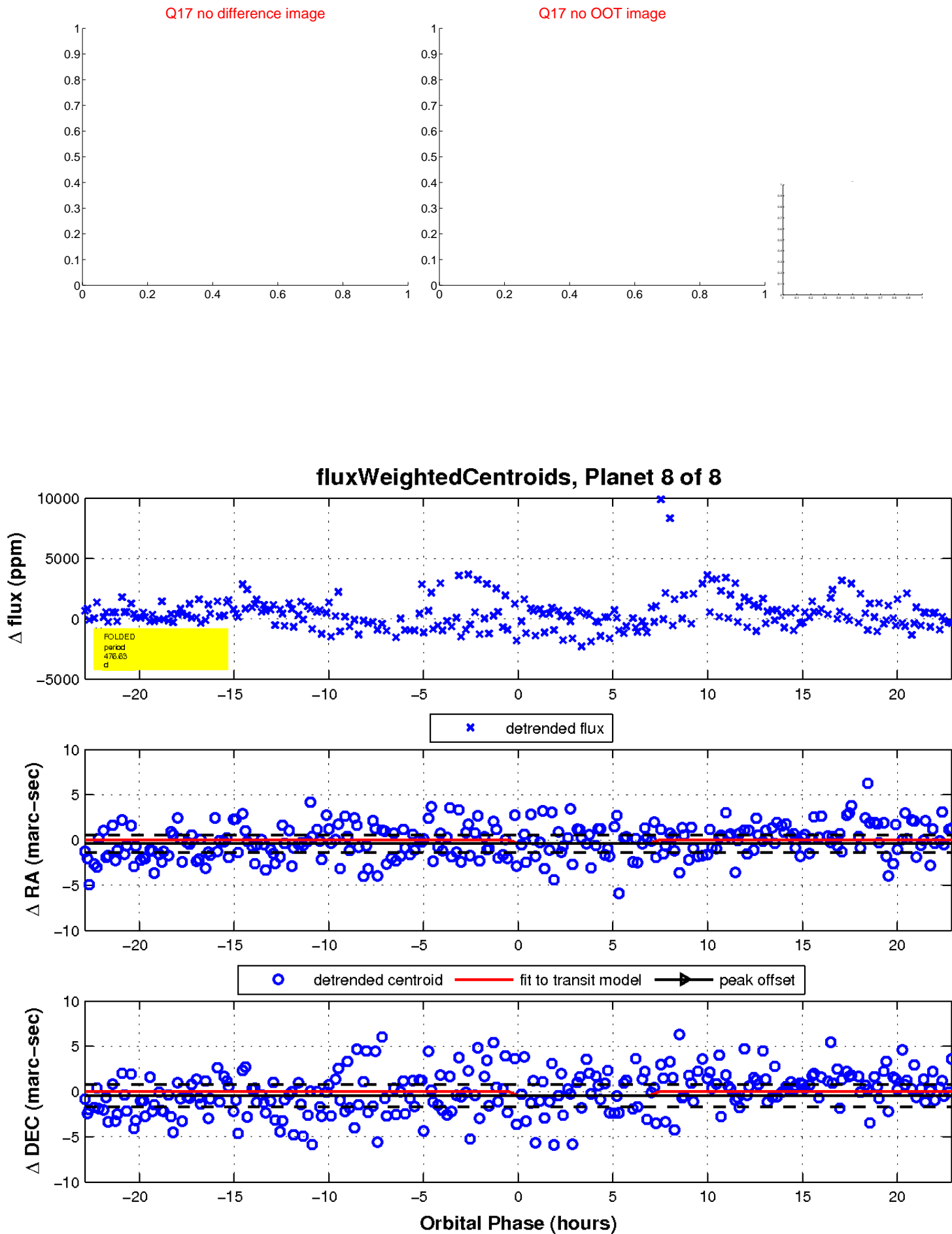
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

