

KIC 004553072

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})
004553072-01	OBS	No	369.067895	172.668012	566.1	16.273	37.0	3.8	1.60	5982	4.76	2.58
004553072-02	OBS	No	367.183652	175.776618	9315.3	26.598	53.3	47.0	1.60	5982	17.60	2.60
004553072-03	OBS	No	364.571921	192.739711	2445.6	31.590	29.1	17.1	1.60	5982	14.84	2.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004553072-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
004553072-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004553072-03	OBS	FP	0.00	1	0	1	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

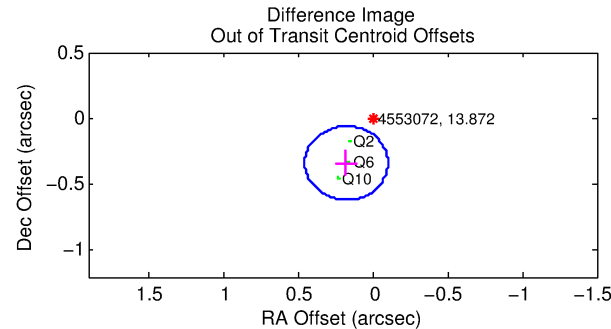
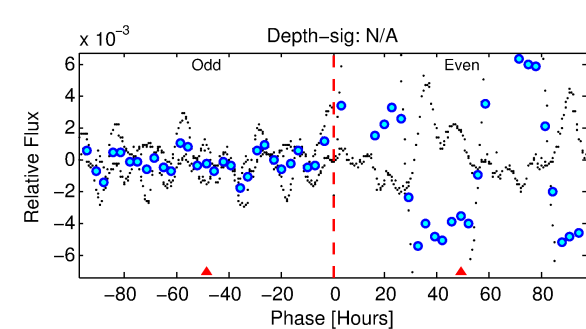
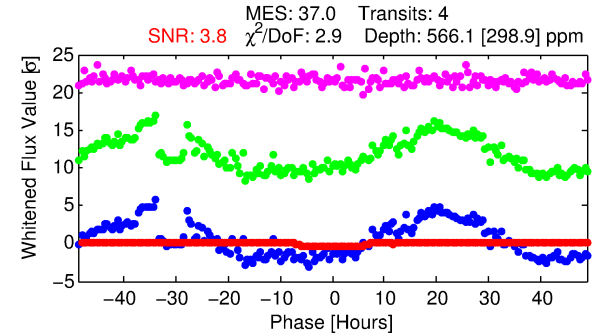
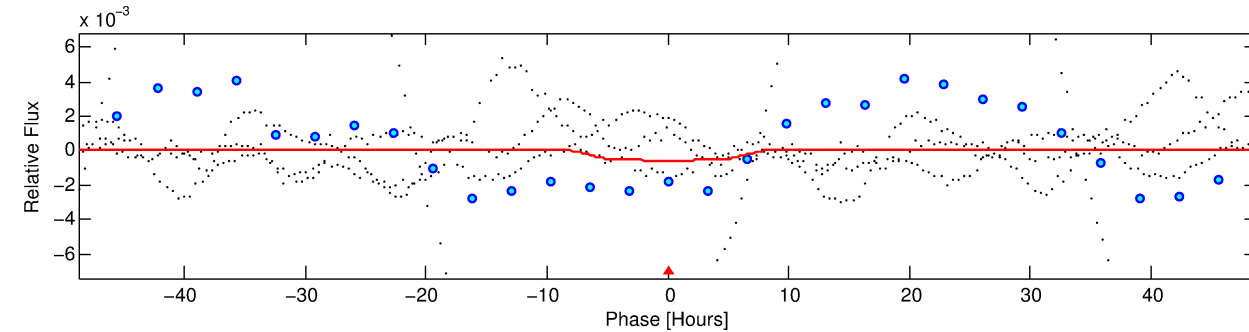
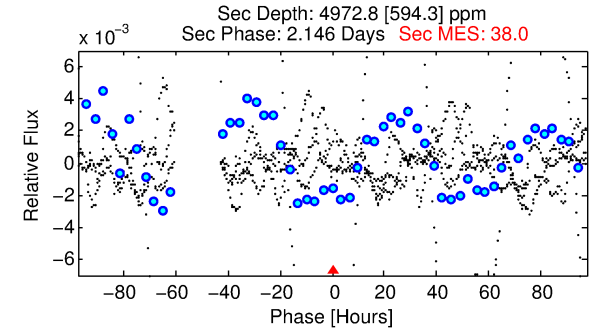
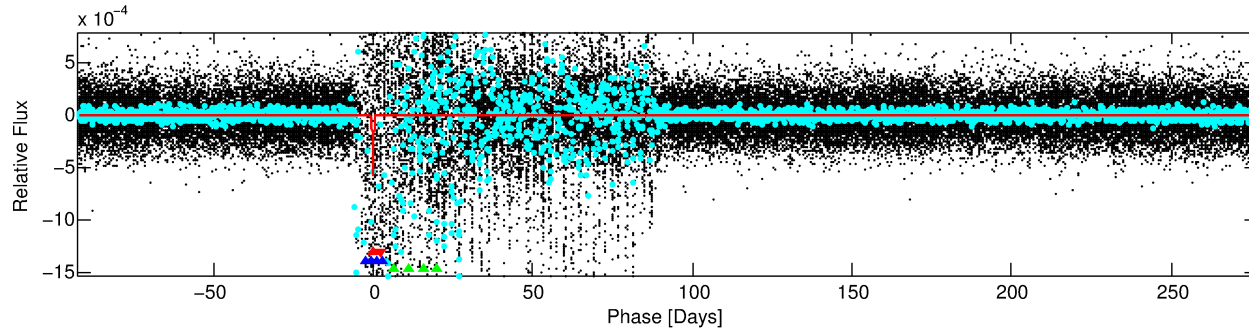
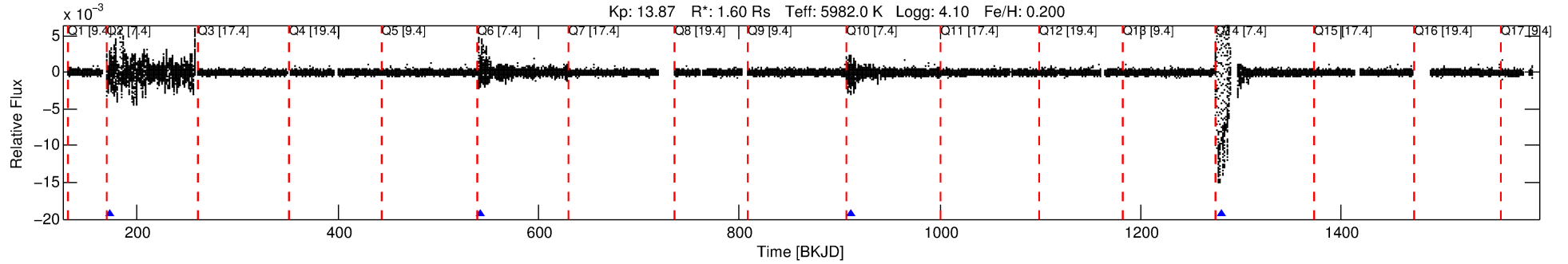
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004553072-01

No Significant Match Found

DV One-Page Summary

KIC: 4553072 Candidate: 1 of 3 Period: 369.068 d



DV Fit Results:

Period = 369.06790 [0.05535] d
Epoch = 172.6680 [0.0997] BKJD
Rp/R* = 0.0273 [0.0079]
a/R* = 69.79 [29.81]
b = 0.95 [0.05]
Seff = 2.58 [1.28]
Teq = 323 [40] K
Rp = 4.76 [2.04] Re
a = 1.0649 [0.3200] AU
Ag = 136760.48 [103742.85] [1.32]
Teffp = 9609 [1452] K [6.39 σ]

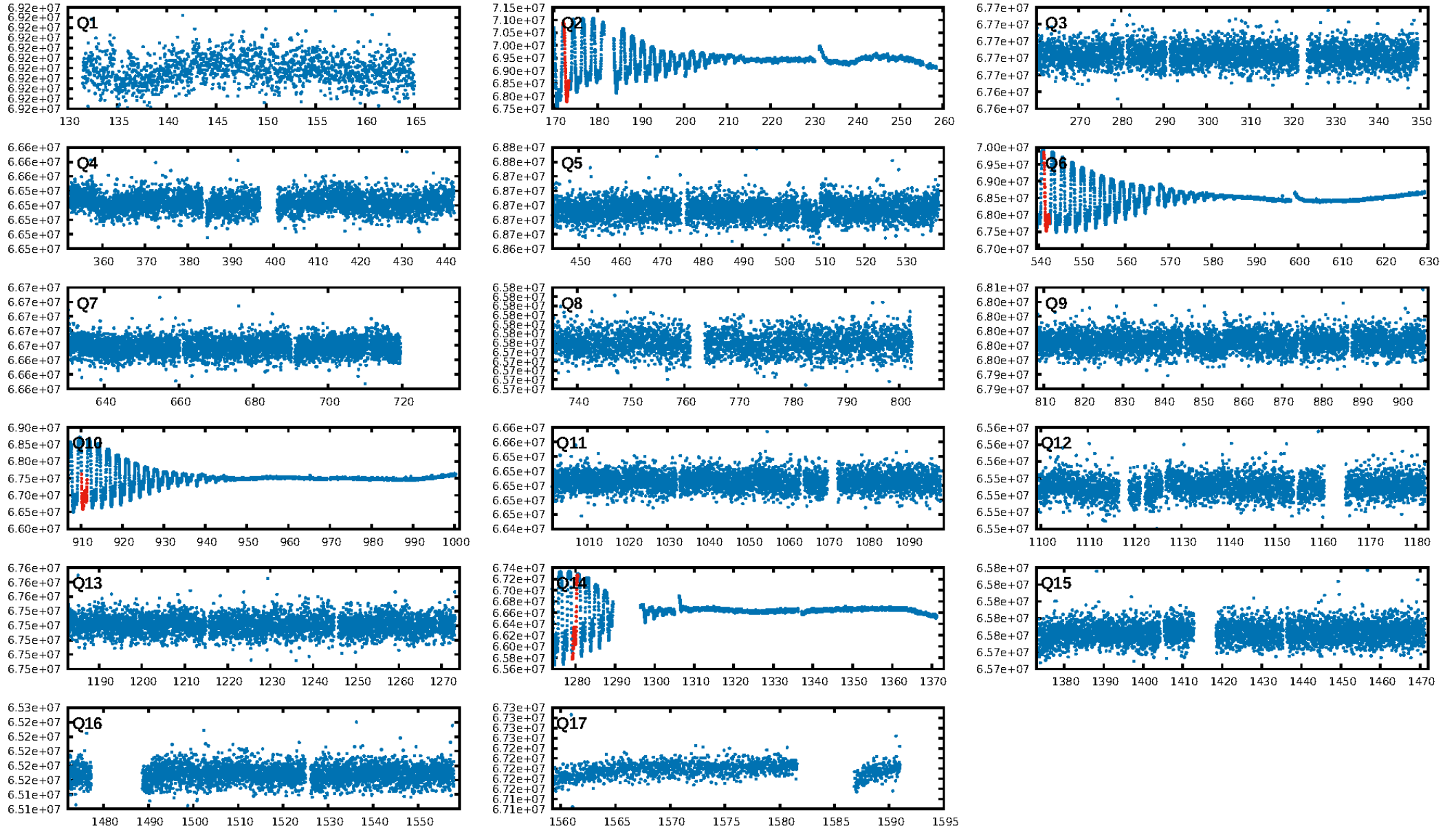
DV Diagnostic Results:

ShortPeriod-sig: 85.3% [1.45 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 6.54e-38
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.1663
Centroid-sig: 0.9%
Centroid-so: 2.408 arcsec [2.36 σ]
OotOffset-rm: 0.381 arcsec [4.11 σ]
OotOffset-st: 3/0/0 [3]
KicOffset-rm: 0.408 arcsec [4.42 σ]
KicOffset-st: 3/0/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 0.33 [1/3]

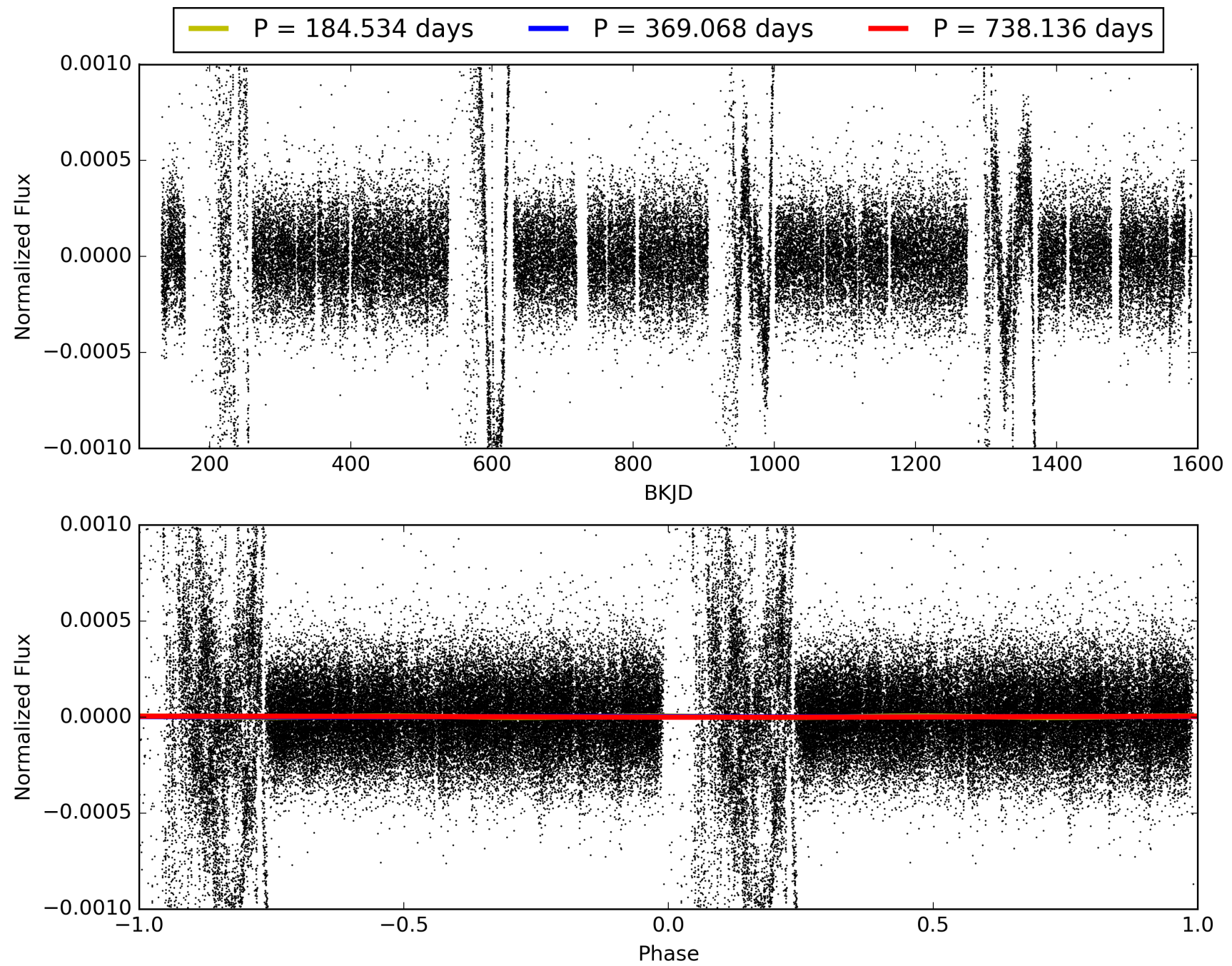
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:12:58 Z

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

TCE 004553072-01, PDC Light Curves

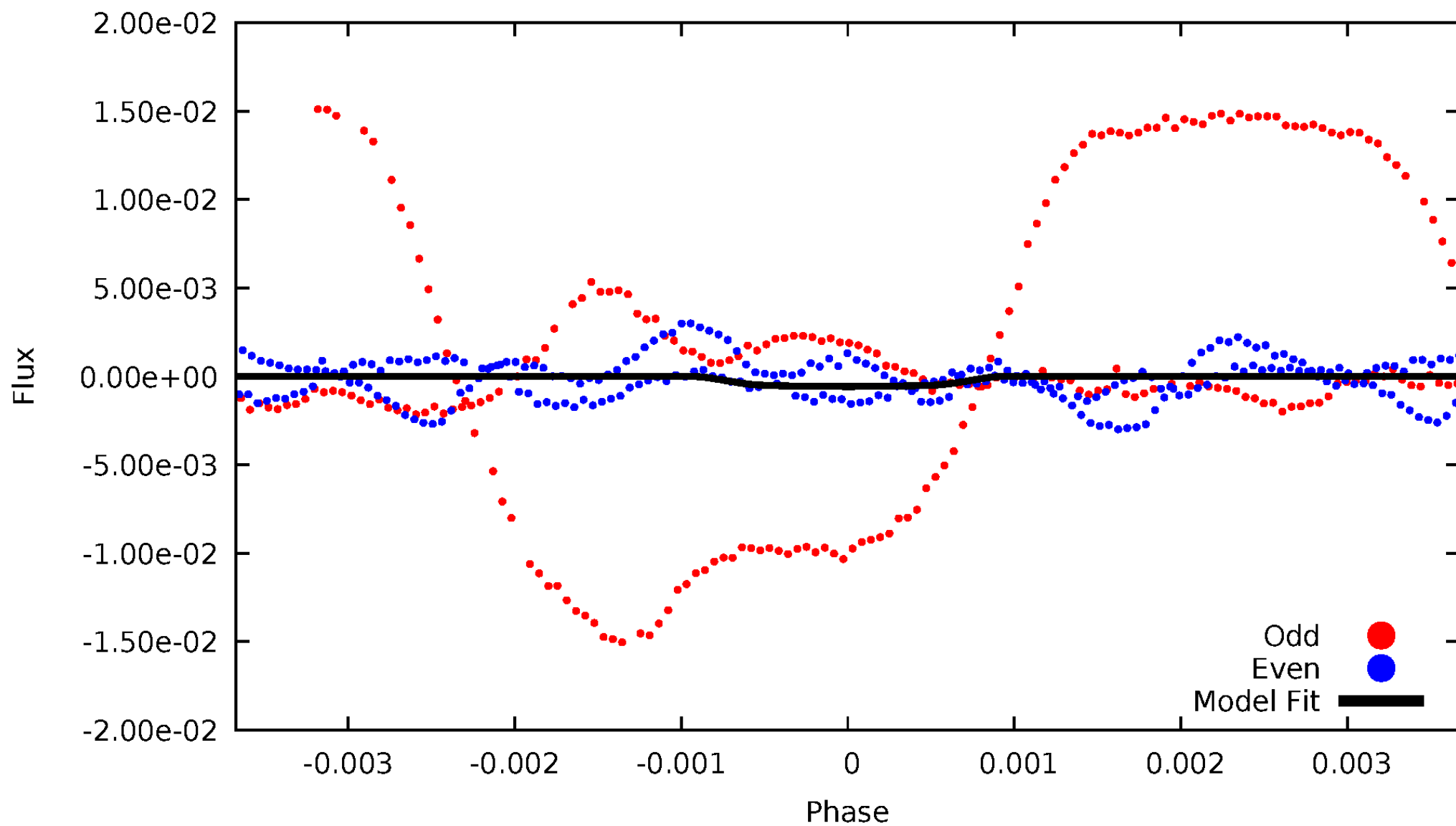


TCE 004553072-01



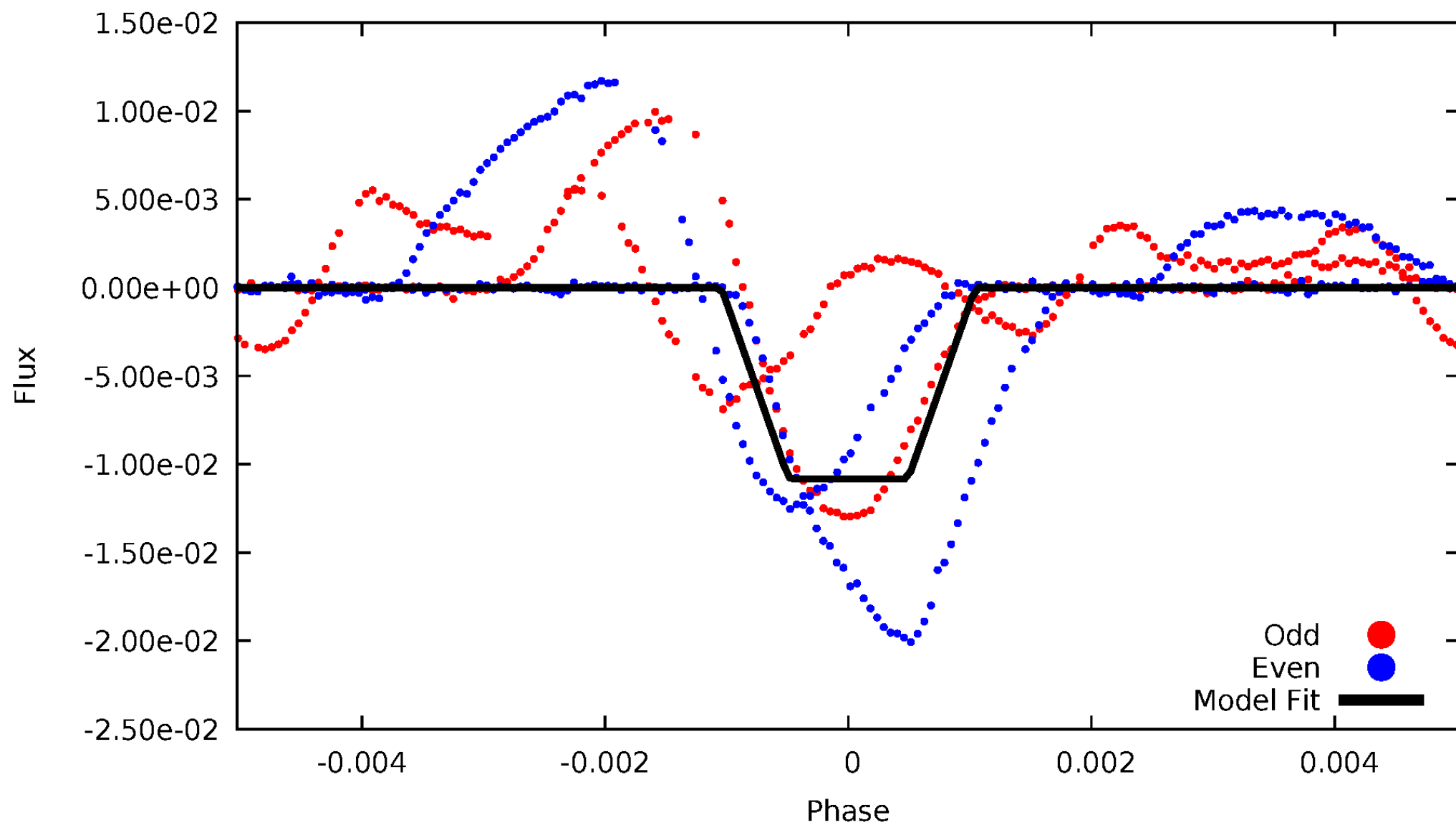
DV Odd/Even

TCE 004553072-01

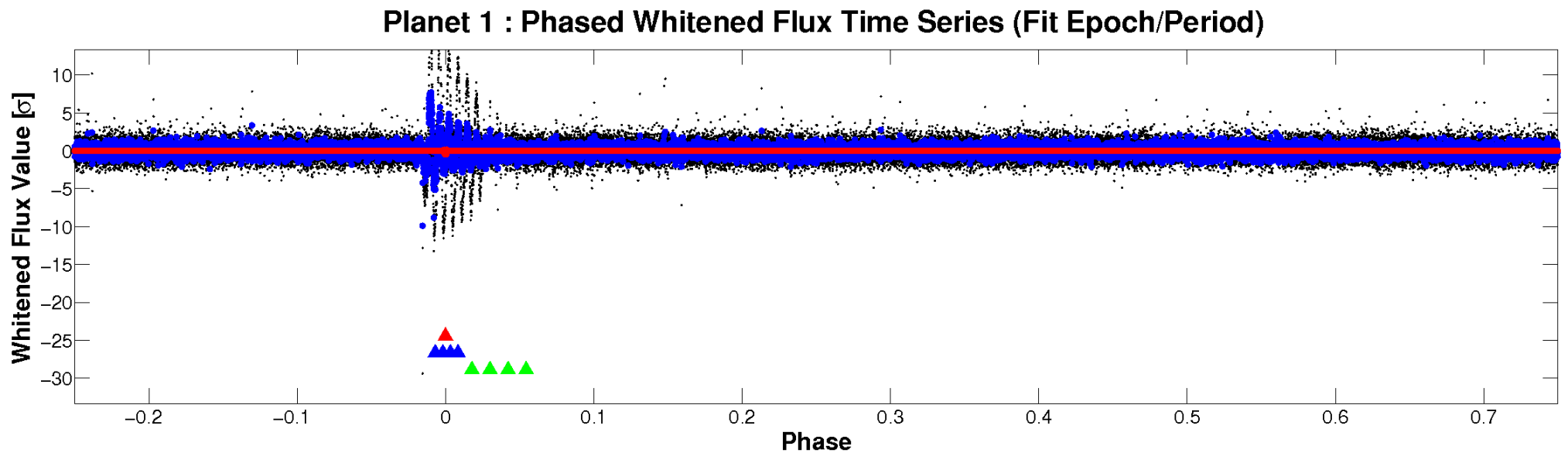
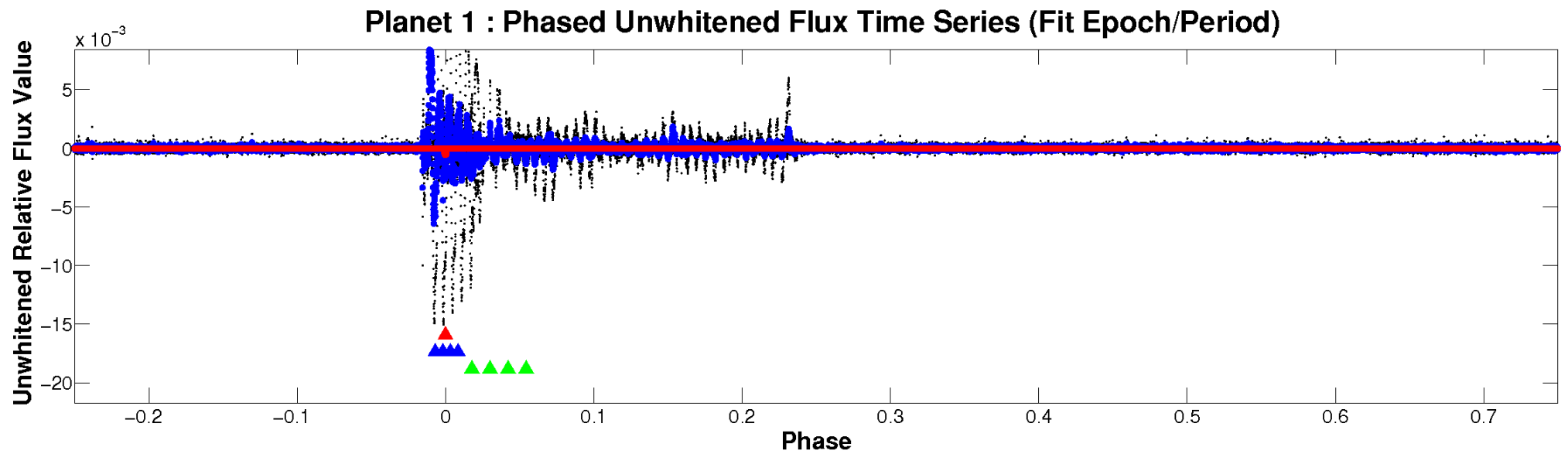


ALT Odd/Even

TCE 004553072-01

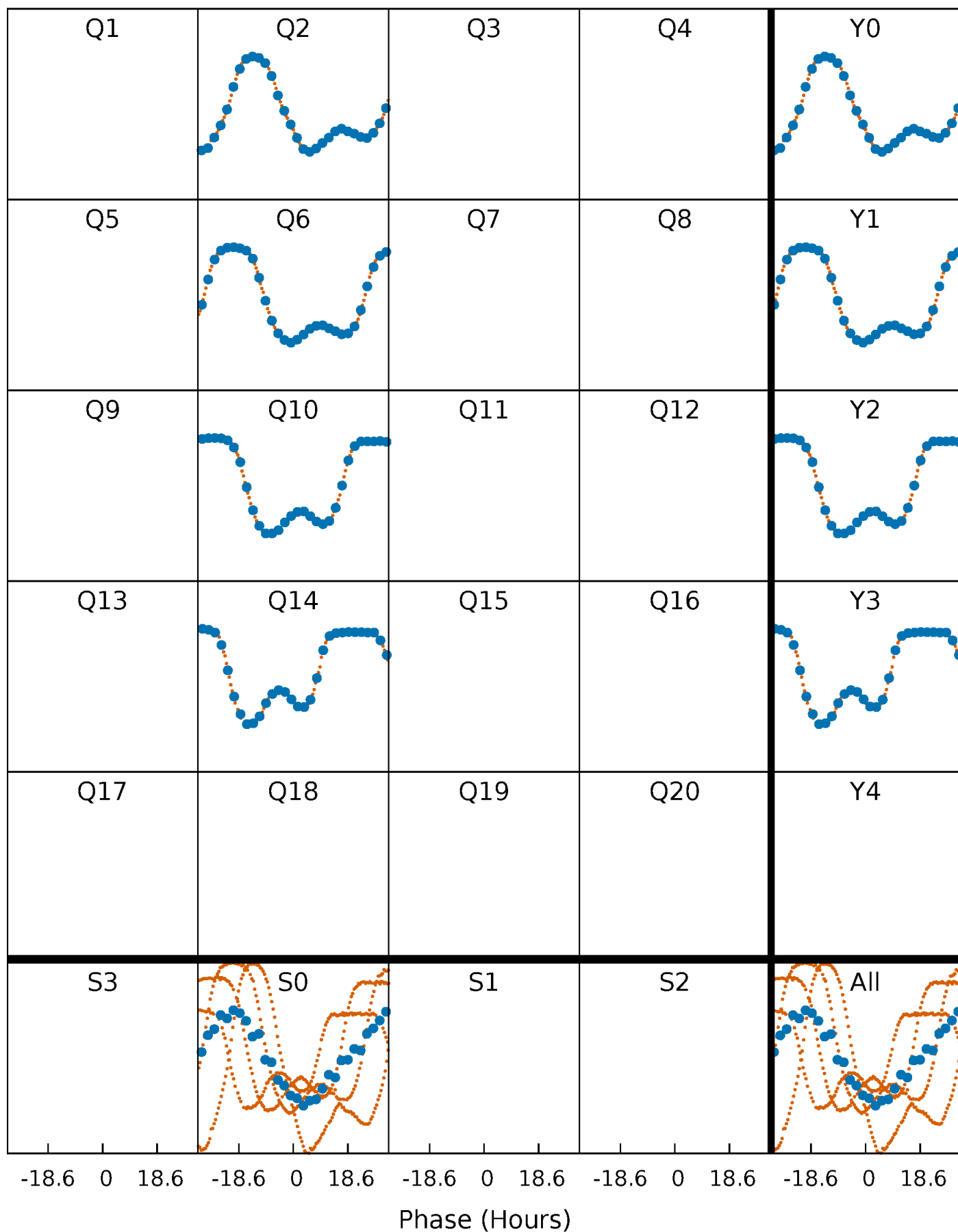


Non-Whitened Vs. Whitened Light Curve



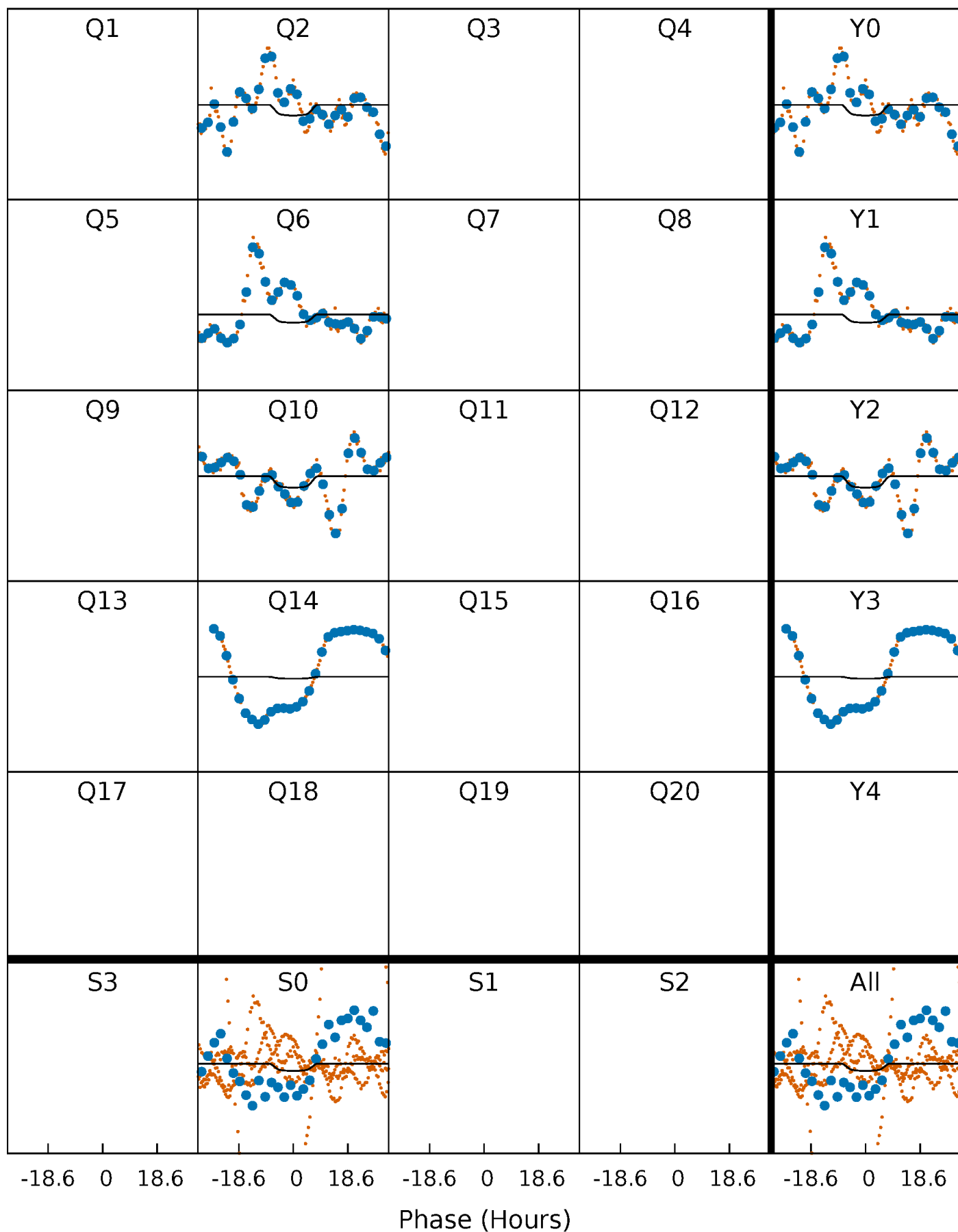
PDC Quarter-Phased Transit Curves

TCE 004553072-01 P=369.067895 Days $T_0=172.668012$ (BKJD)



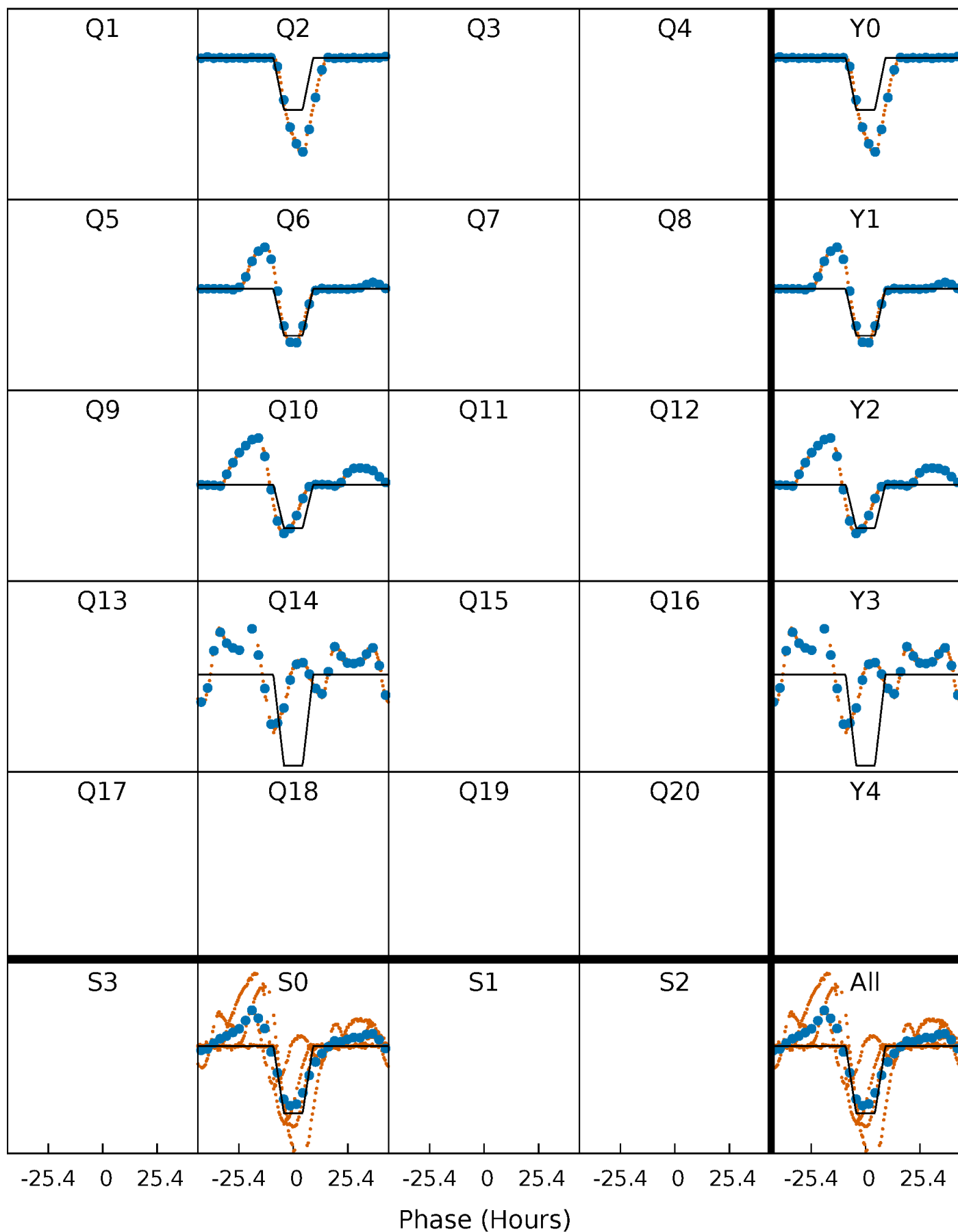
DV Quarter-Phased Transit Curves

TCE 004553072-01 P=369.067895 Days $T_0=172.668012$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

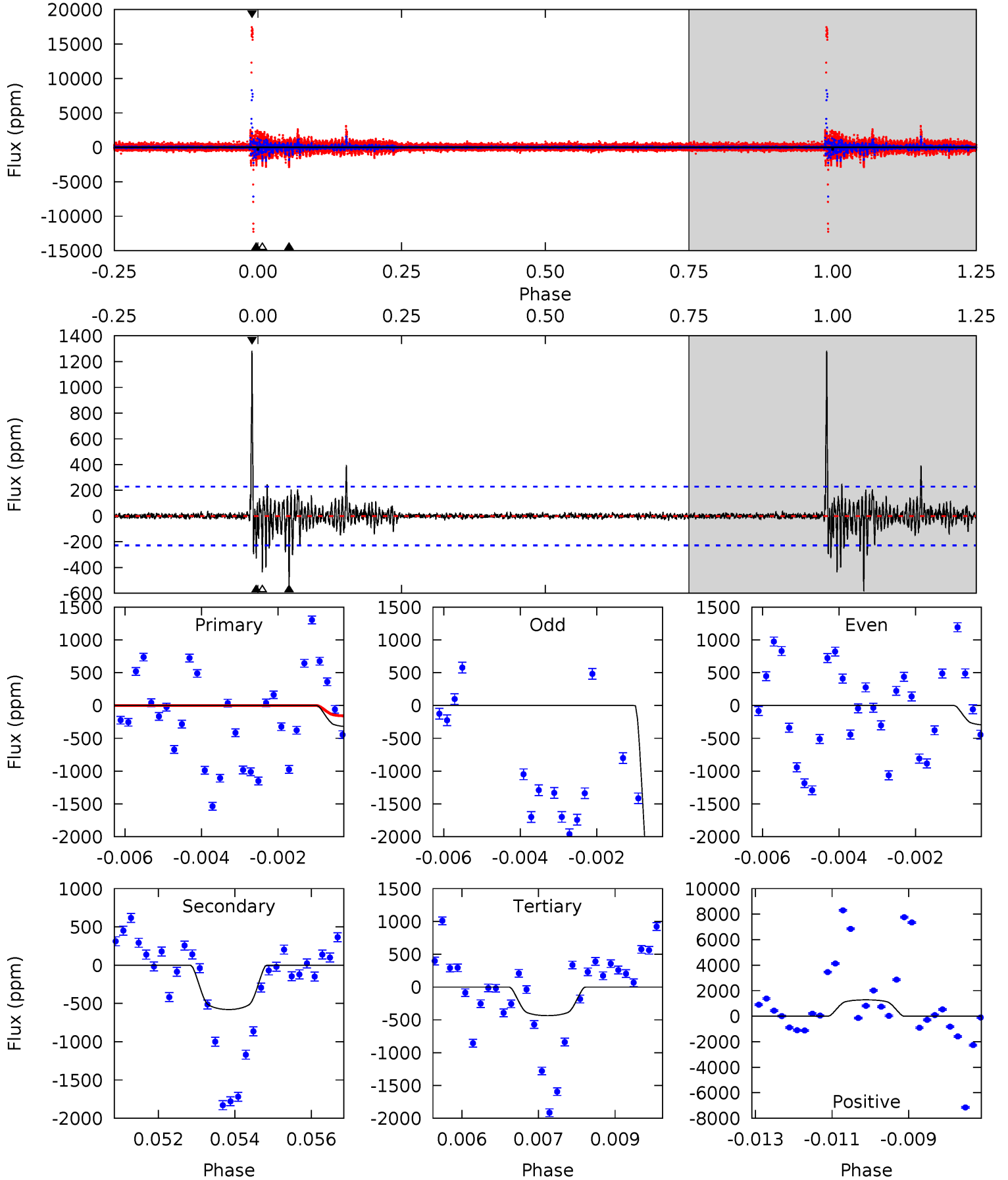
TCE 004553072-01 P=368.968793 Days $T_0=172.641305$ (BKJD)



DV Model-Shift Uniqueness Test

004553072-01, P = 369.067895 Days, E = 172.668012 Days

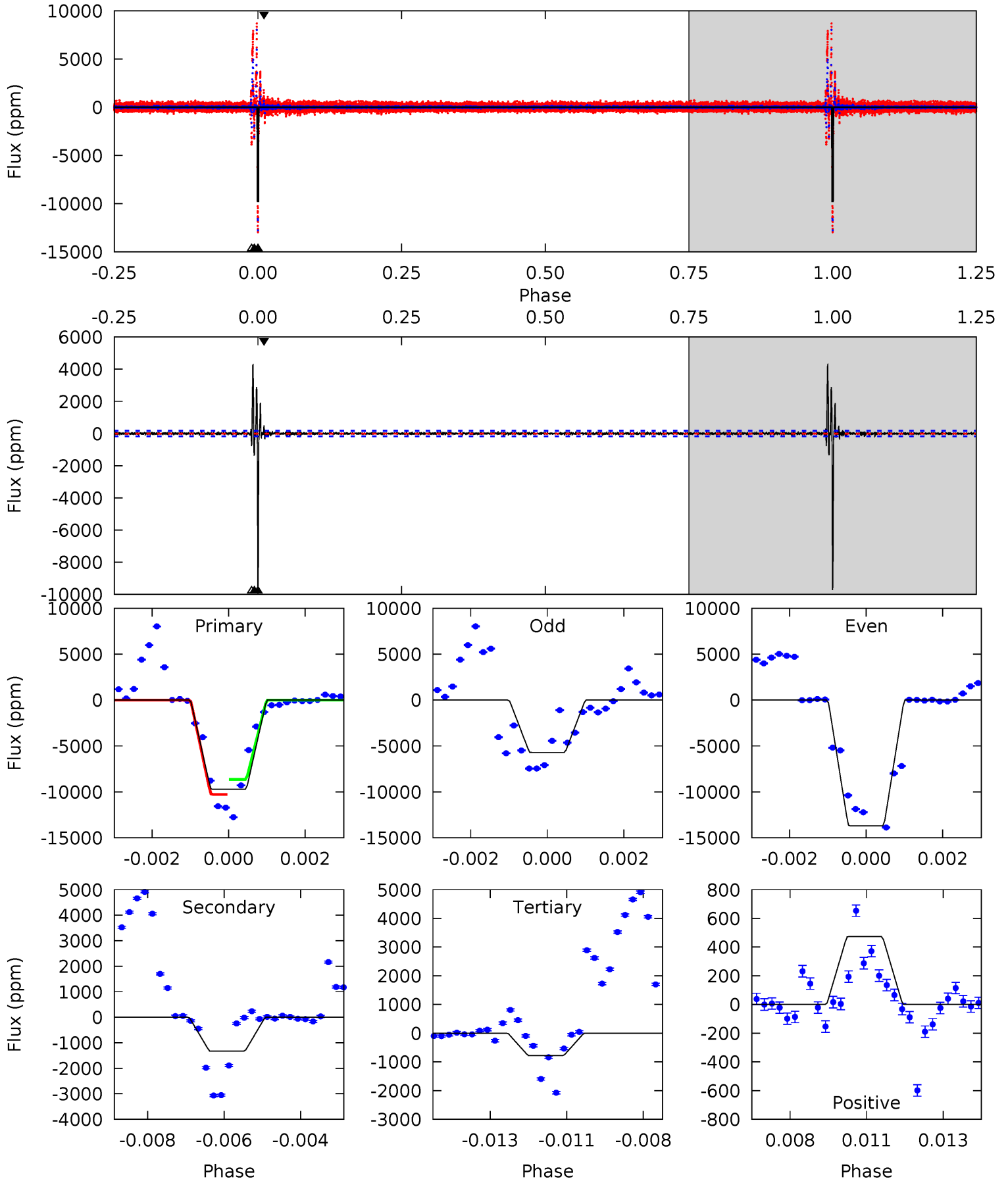
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.68	13.6	10.2	30.0	5.34	3.11	1.22	-2.52	-22.4	3.36	-16.5	21.5	6.67	0.69	0



Alt Model-Shift Uniqueness Test

004553072-01, P = 368.968793 Days, E = 172.641305 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
305.4	41.7	24.5	14.9	5.32	3.07	4.03	280.9	290.5	17.3	26.9	115.5	0.93	0.31	0



Stellar Parameters For KIC 004553072

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5982^{+181}_{-199}	$4.104^{+0.279}_{-0.150}$	$0.200^{+0.200}_{-0.300}$	$1.597^{+0.413}_{-0.505}$	$1.182^{+0.164}_{-0.180}$	$0.409^{+0.746}_{-0.176}$
	+3%/-3%	+7%/-4%	+100%/-150%	+26%/-32%	+14%/-15%	+182%/-43%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 004553072-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-580 ± 43	$4.57^{+1.70}_{-1.50}$	446^{+35}_{-38}	5618^{+1117}_{-608}	17300^{+19590}_{-8069}
Alt.	-1329 ± 32	$18.01^{+2.78}_{-3.40}$	449^{+30}_{-42}	3891^{+139}_{-123}	2578^{+1175}_{-615}

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

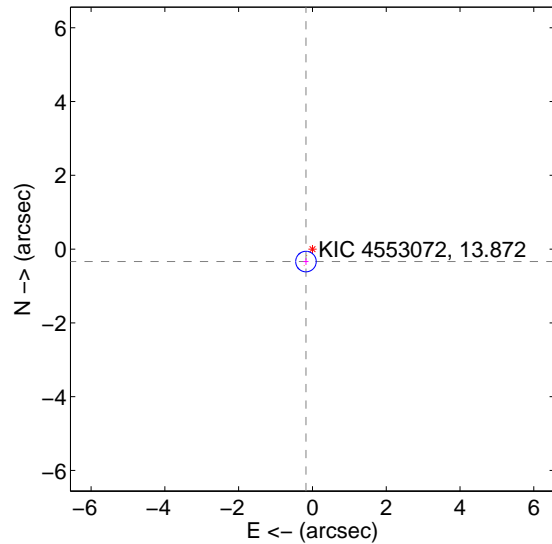
Supplemental centroid analysis for 004553072-01. Kepler magnitude: 13.87. Transit SNR 3.76

There are 0 quarters with good PRF difference image offsets

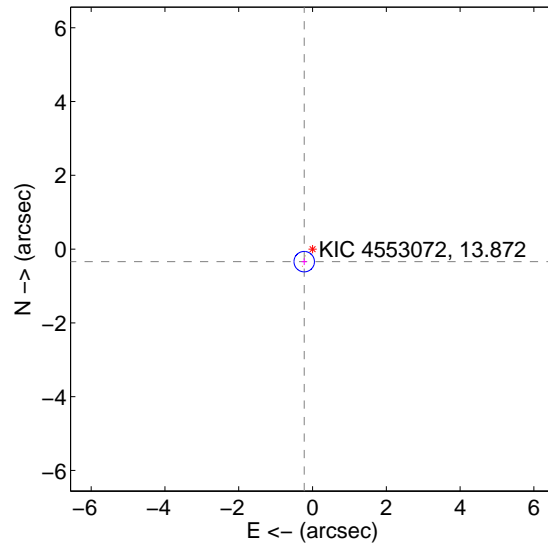
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.381 ± 0.093	4.11	0.176 ± 0.069	-0.338 ± 0.092
PRF-fit source offset from KIC position	0.408 ± 0.092	4.42	0.225 ± 0.069	-0.340 ± 0.094
photometric centroid source offset	2.41 ± 1.02	2.36	2.31 ± 1.03	0.69 ± 0.85

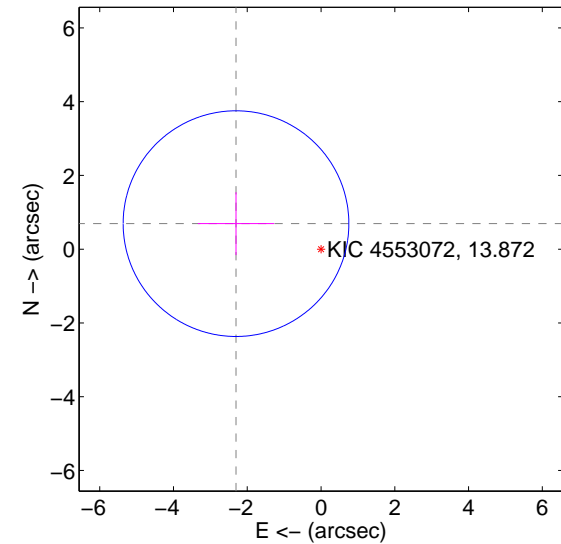
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

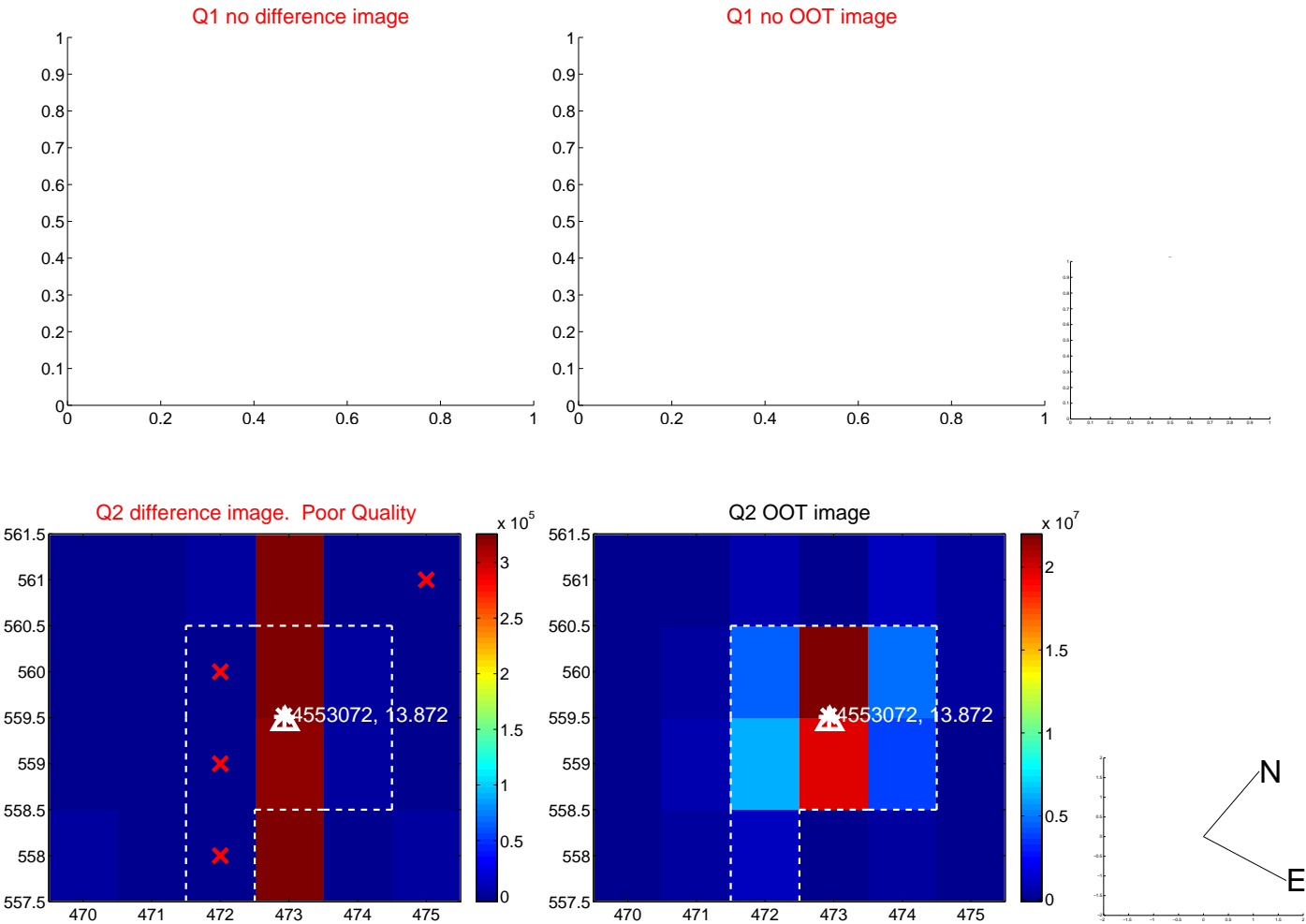


offset from photometric centroids

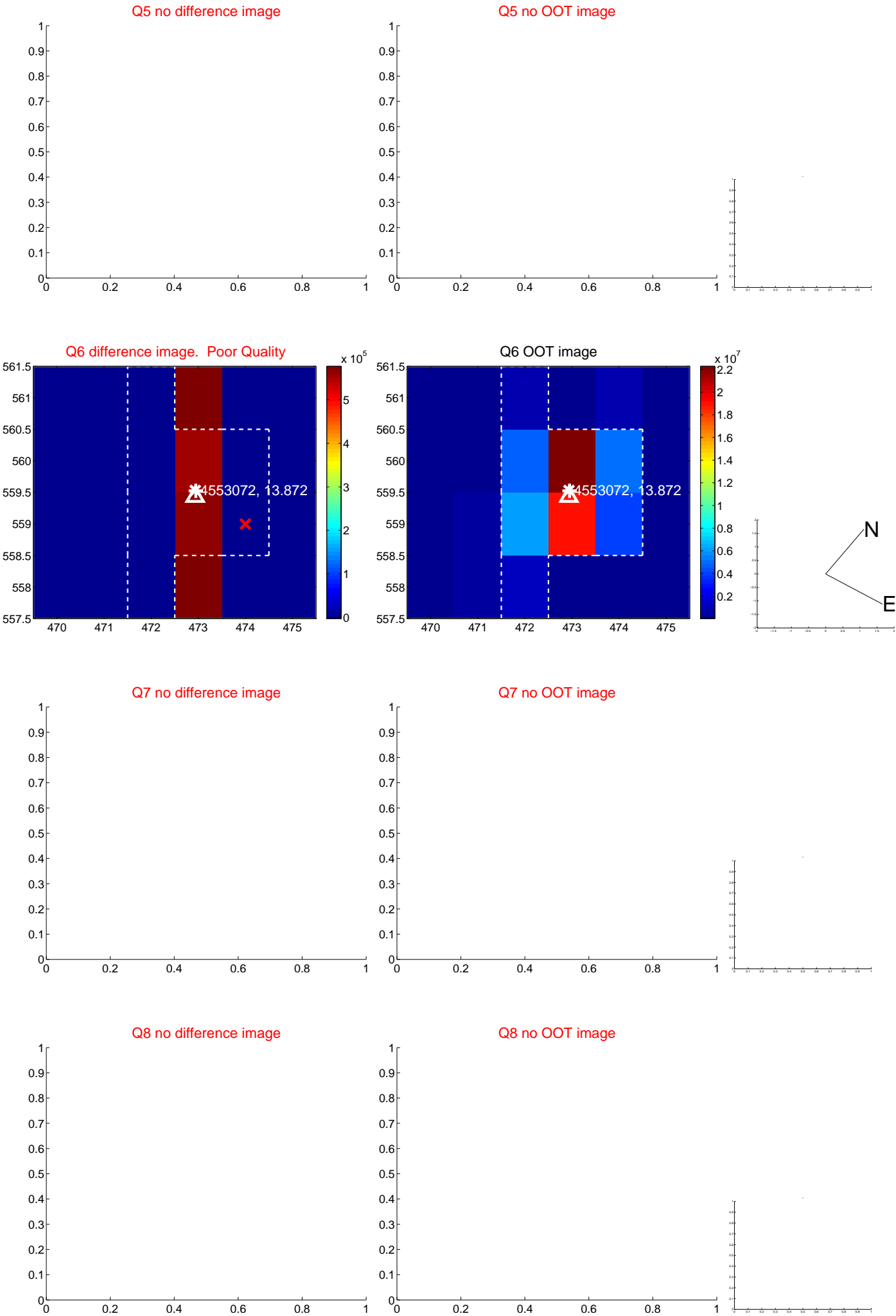


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

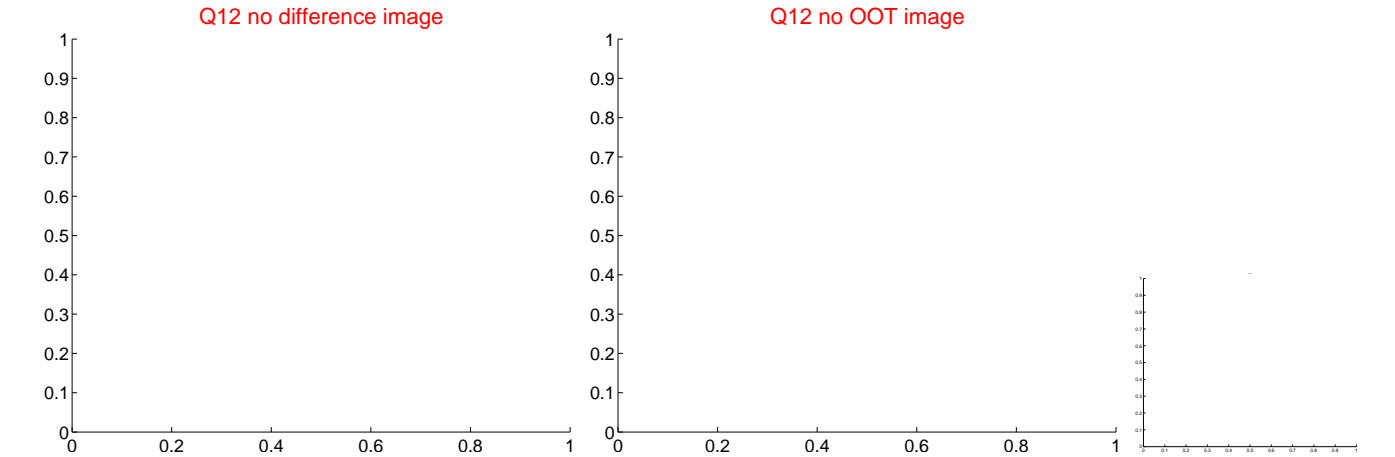
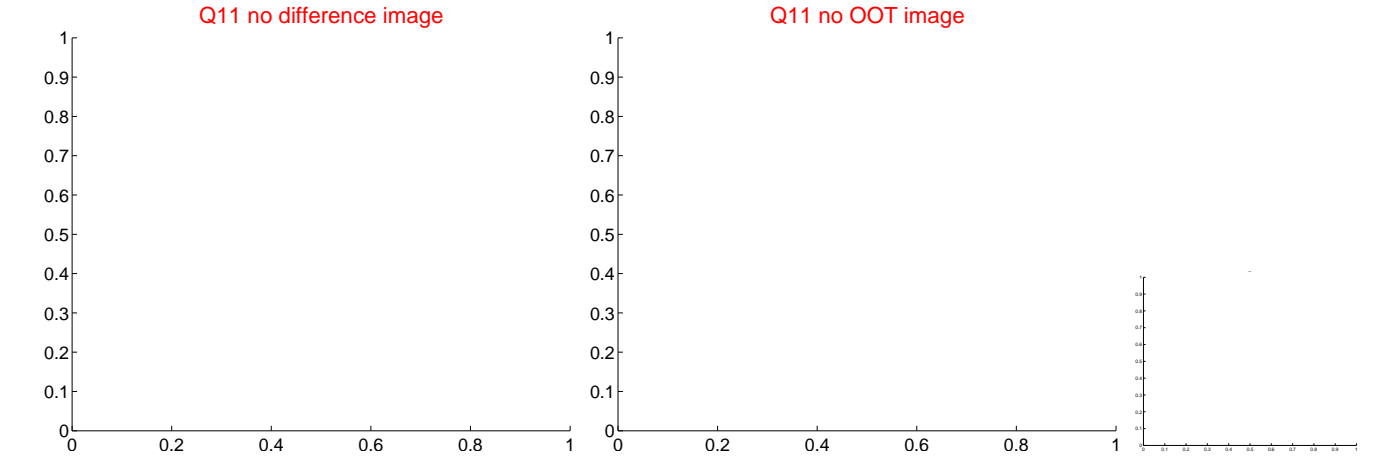
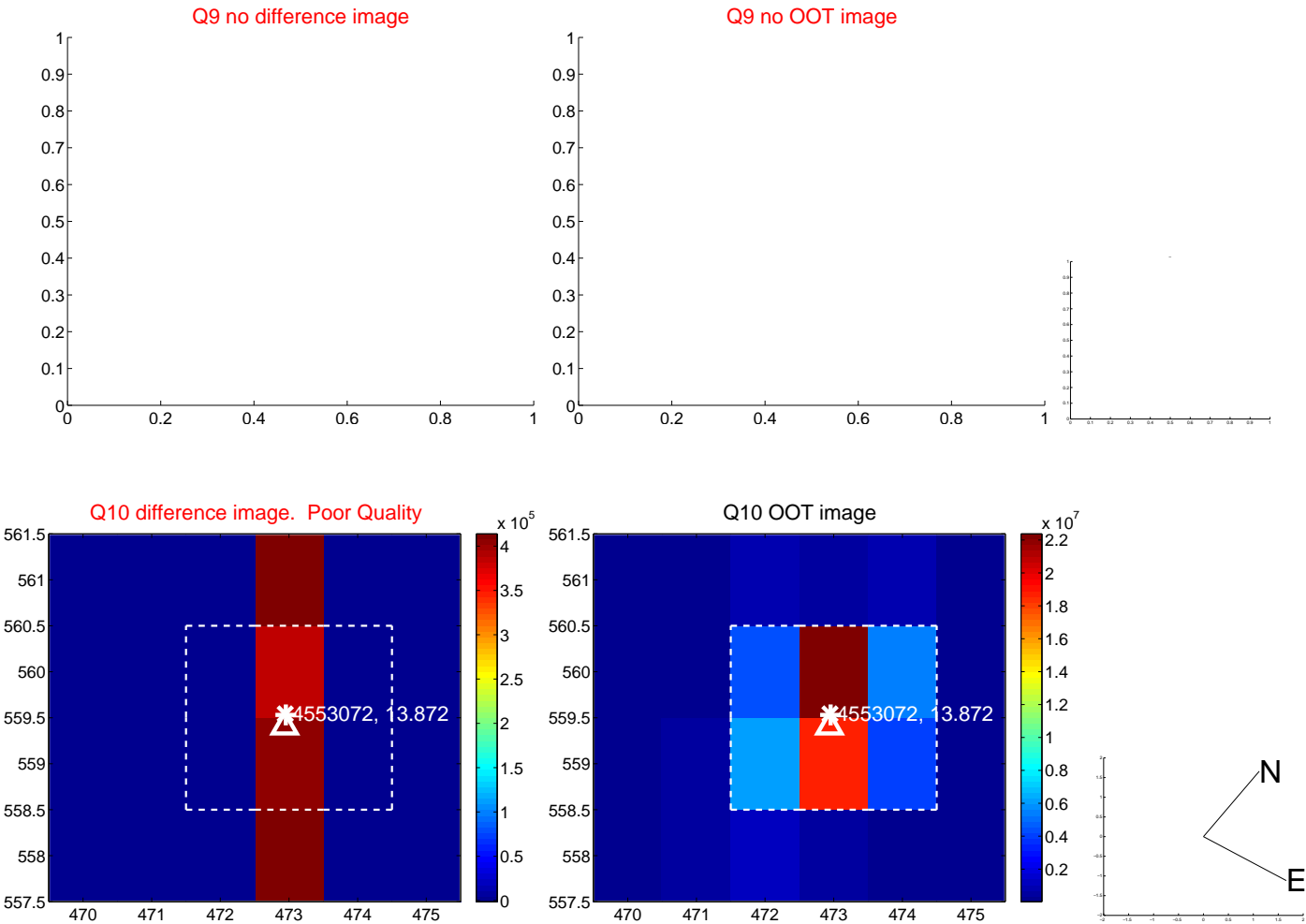
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



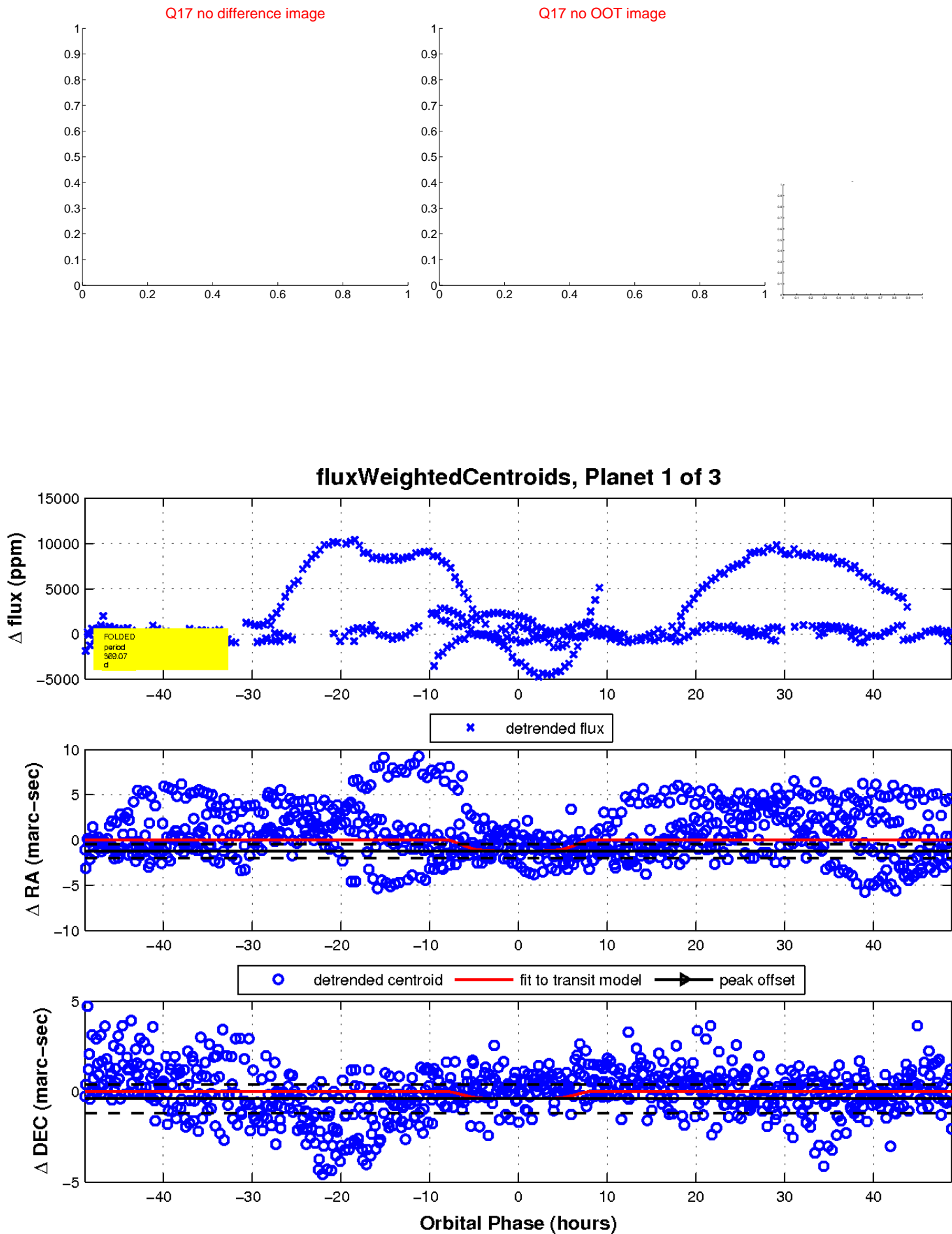
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

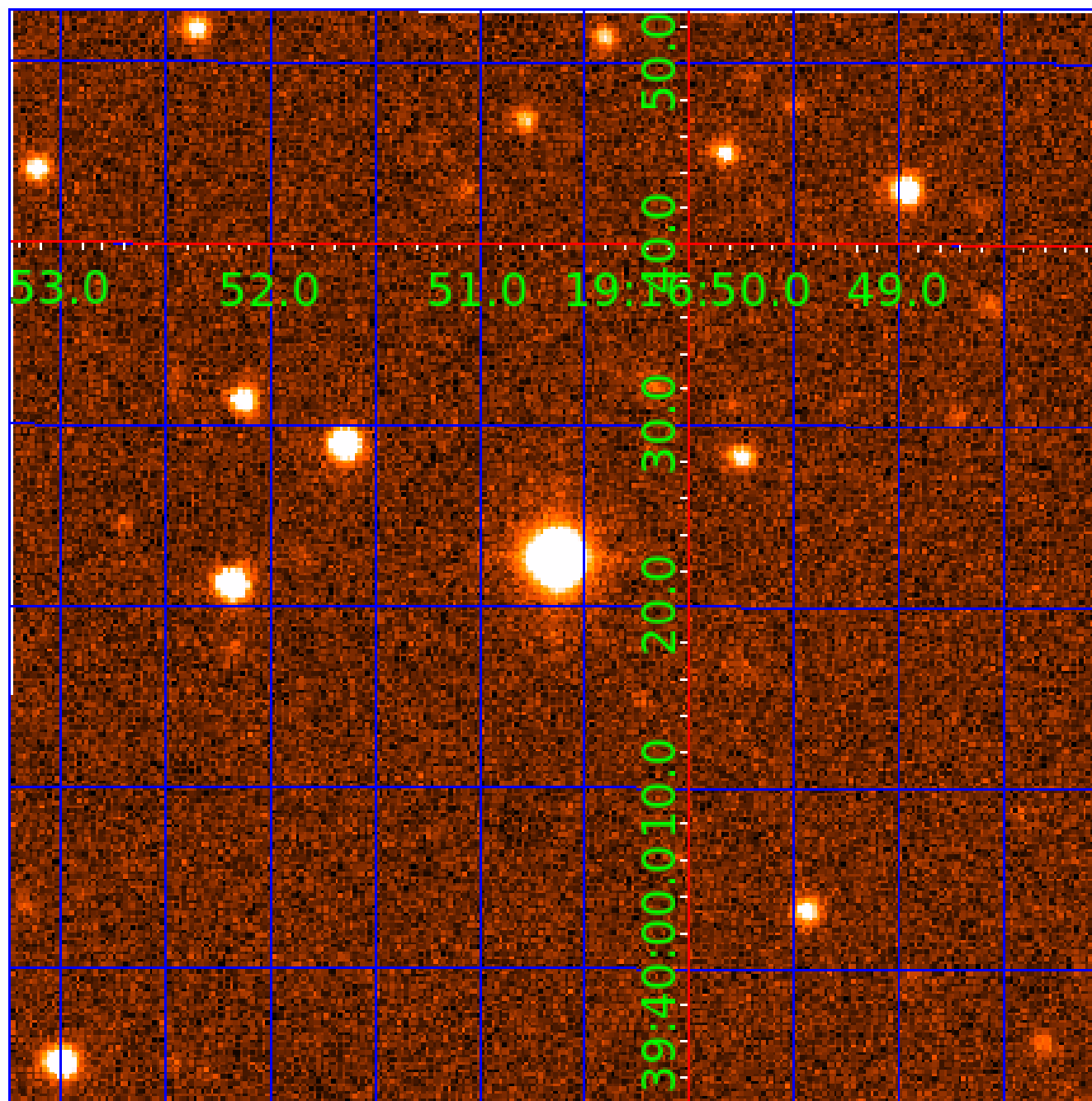


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004553072

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})
004553072-01	OBS	No	369.067895	172.668012	566.1	16.273	37.0	3.8	1.60	5982	4.76	2.58
004553072-02	OBS	No	367.183652	175.776618	9315.3	26.598	53.3	47.0	1.60	5982	17.60	2.60
004553072-03	OBS	No	364.571921	192.739711	2445.6	31.590	29.1	17.1	1.60	5982	14.84	2.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004553072-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
004553072-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004553072-03	OBS	FP	0.00	1	0	1	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

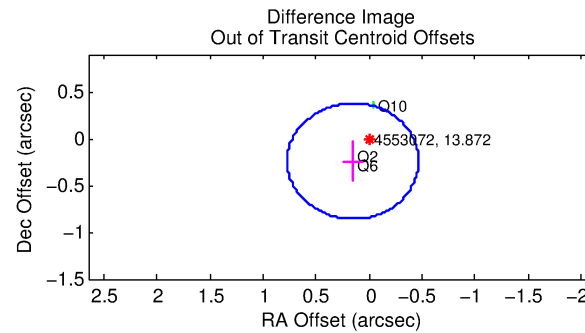
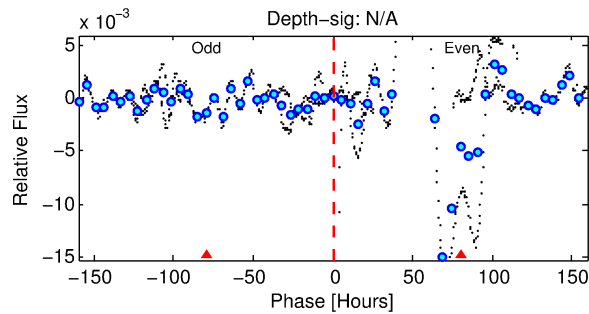
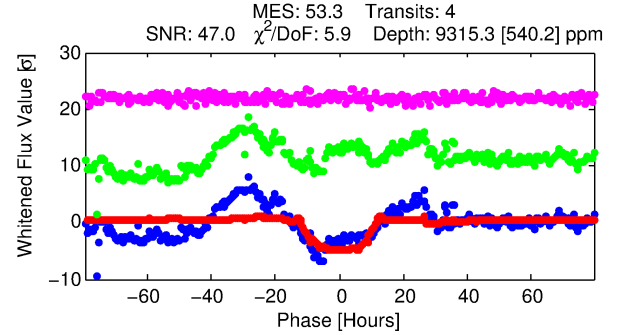
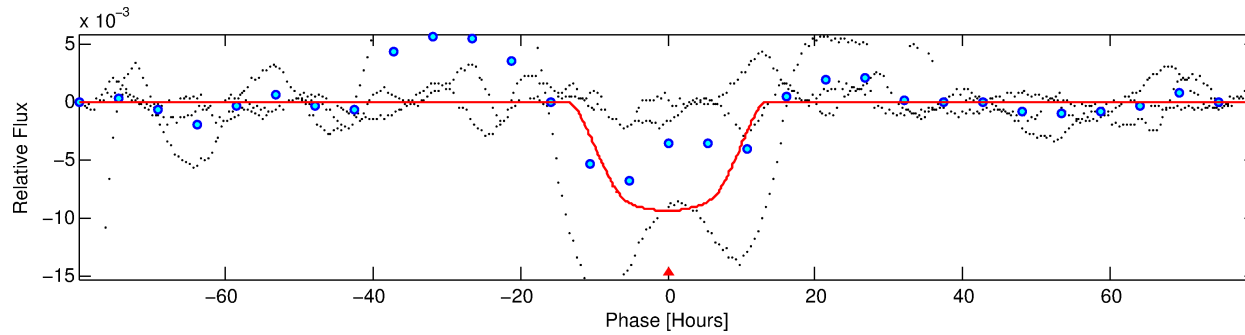
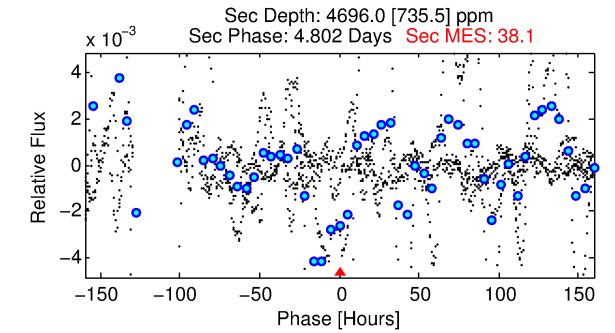
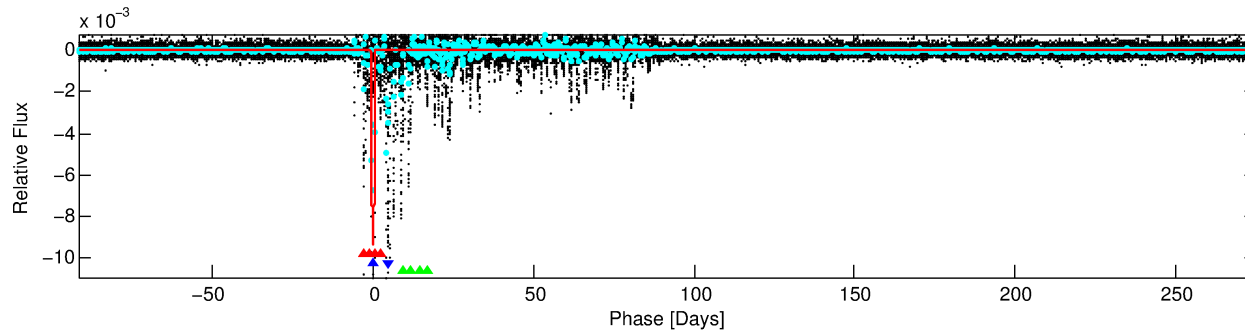
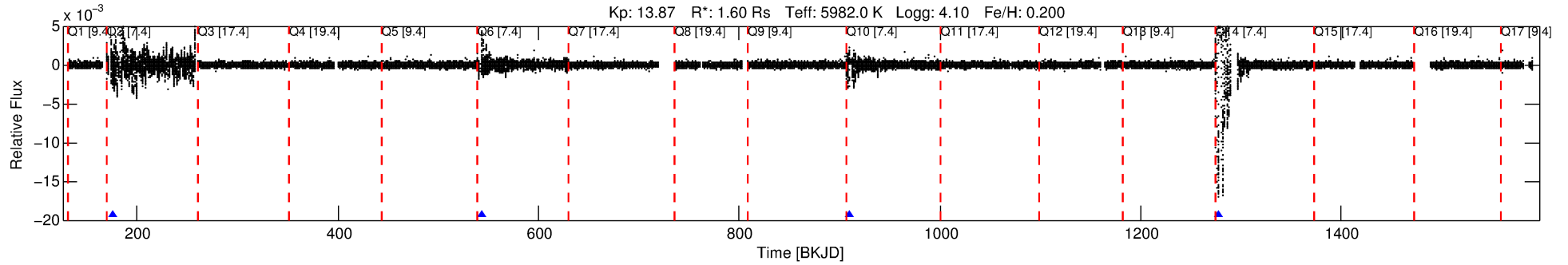
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004553072-02

No Significant Match Found

DV One-Page Summary

KIC: 4553072 Candidate: 2 of 3 Period: 367.184 d



DV Fit Results:

Period = 367.18365 [0.01103] d
Epoch = 175.7766 [0.0231] BKJD
Rp/R* = 0.1010 [0.0038]
a/R* = 74.44 [4.61]
b = 0.85 [0.03]
Seff = 2.60 [1.29]
Teq = 324 [40] K
Rp = 17.60 [5.60] Re
a = 1.0613 [0.3189] AU
Ag = 9395.37 [4772.55] [1.97]
Teffp = 4928 [270] K [16.89]

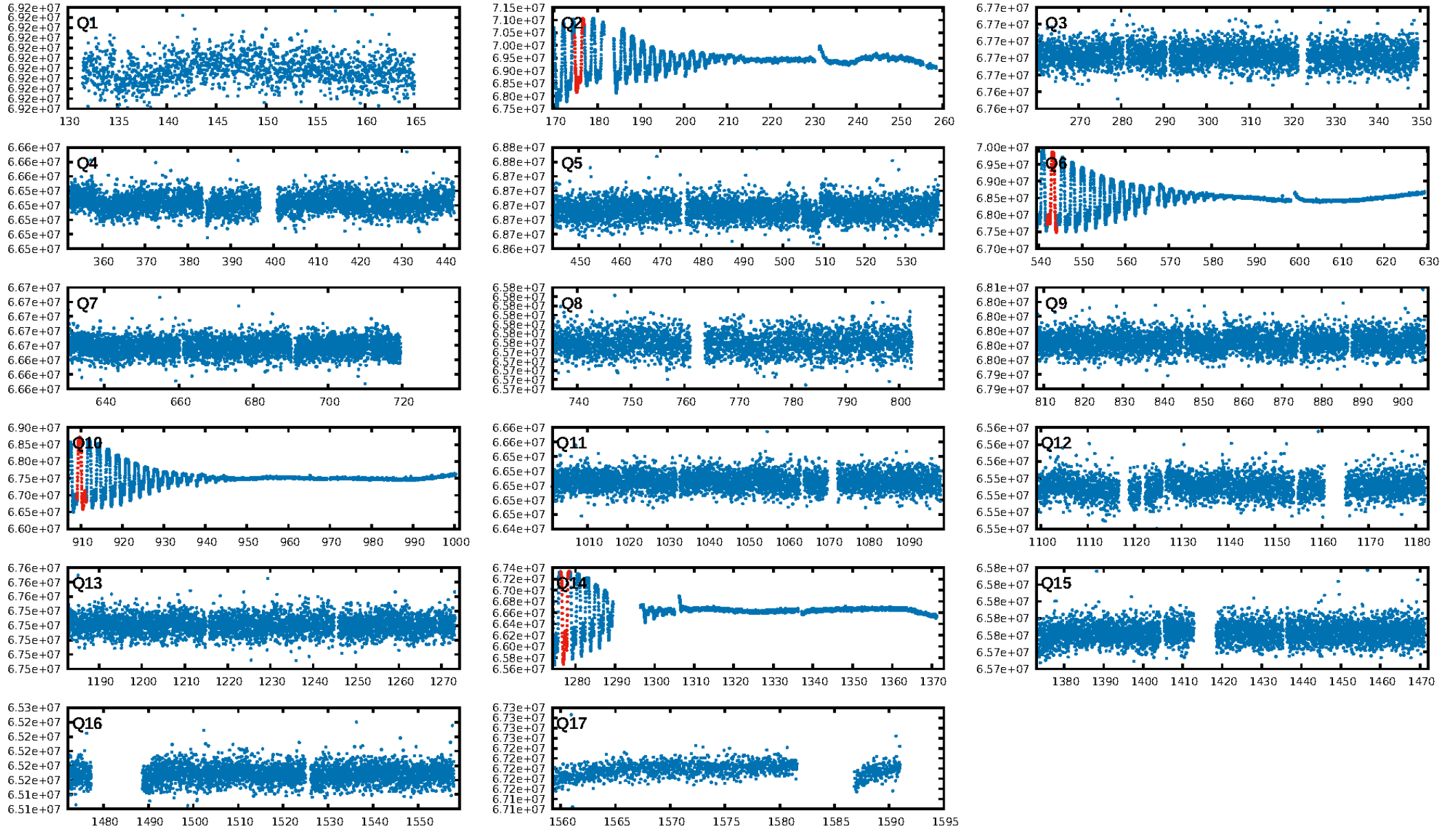
DV Diagnostic Results:

ShortPeriod-sig: 87.1% [1.52]
LongPeriod-sig: 85.3% [1.45]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 1.49e-65
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.2813
Centroid-sig: 0.1%
Centroid-so: 0.257 arcsec [4.12]
OotOffset-rm: 0.286 arcsec [1.39]
KicOffset-rm: 0.316 arcsec [1.59]
OotOffset-st: 3/0/0/0 [3]
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 0.33 [1/3]

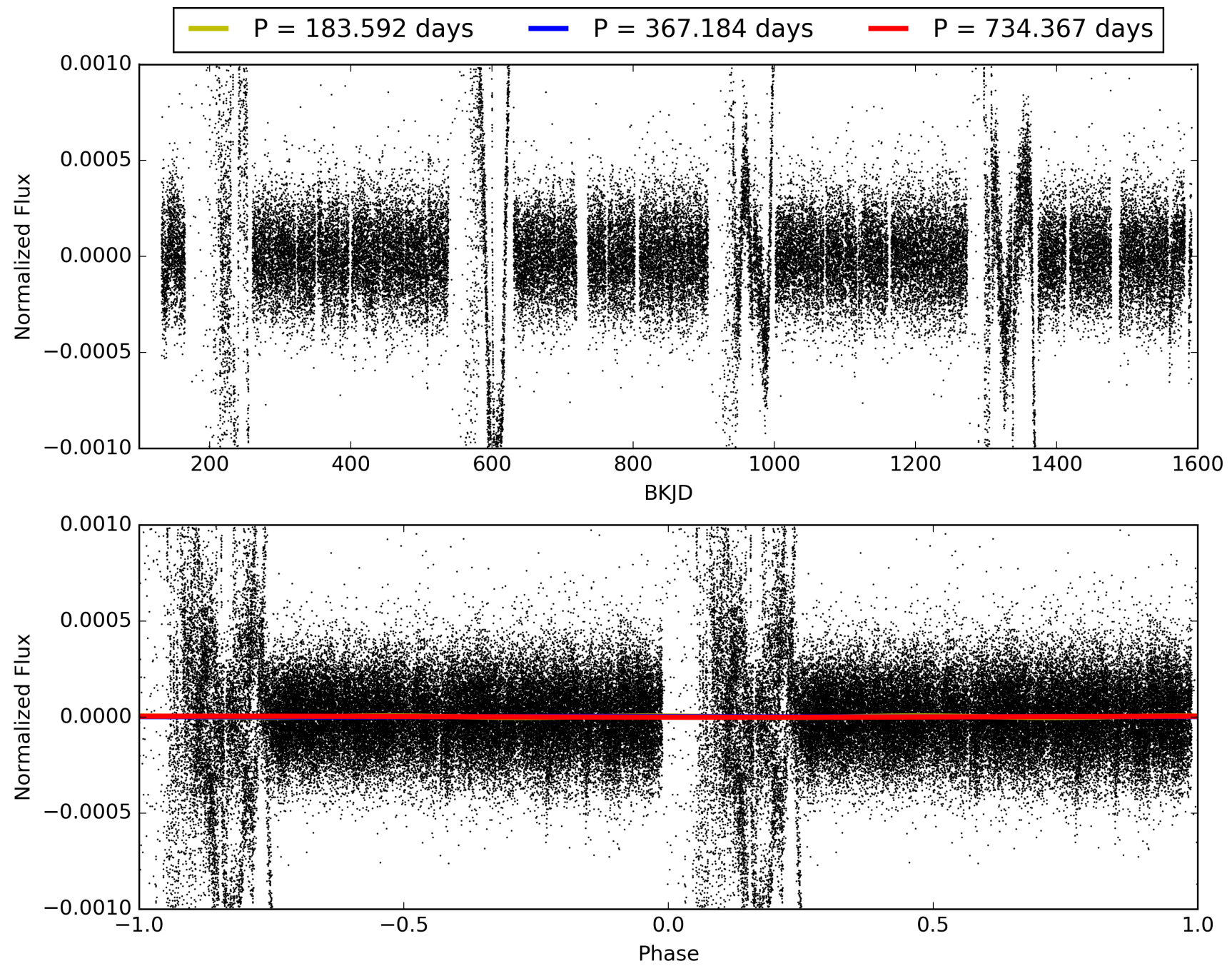
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:13:06 Z

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

TCE 004553072-02, PDC Light Curves

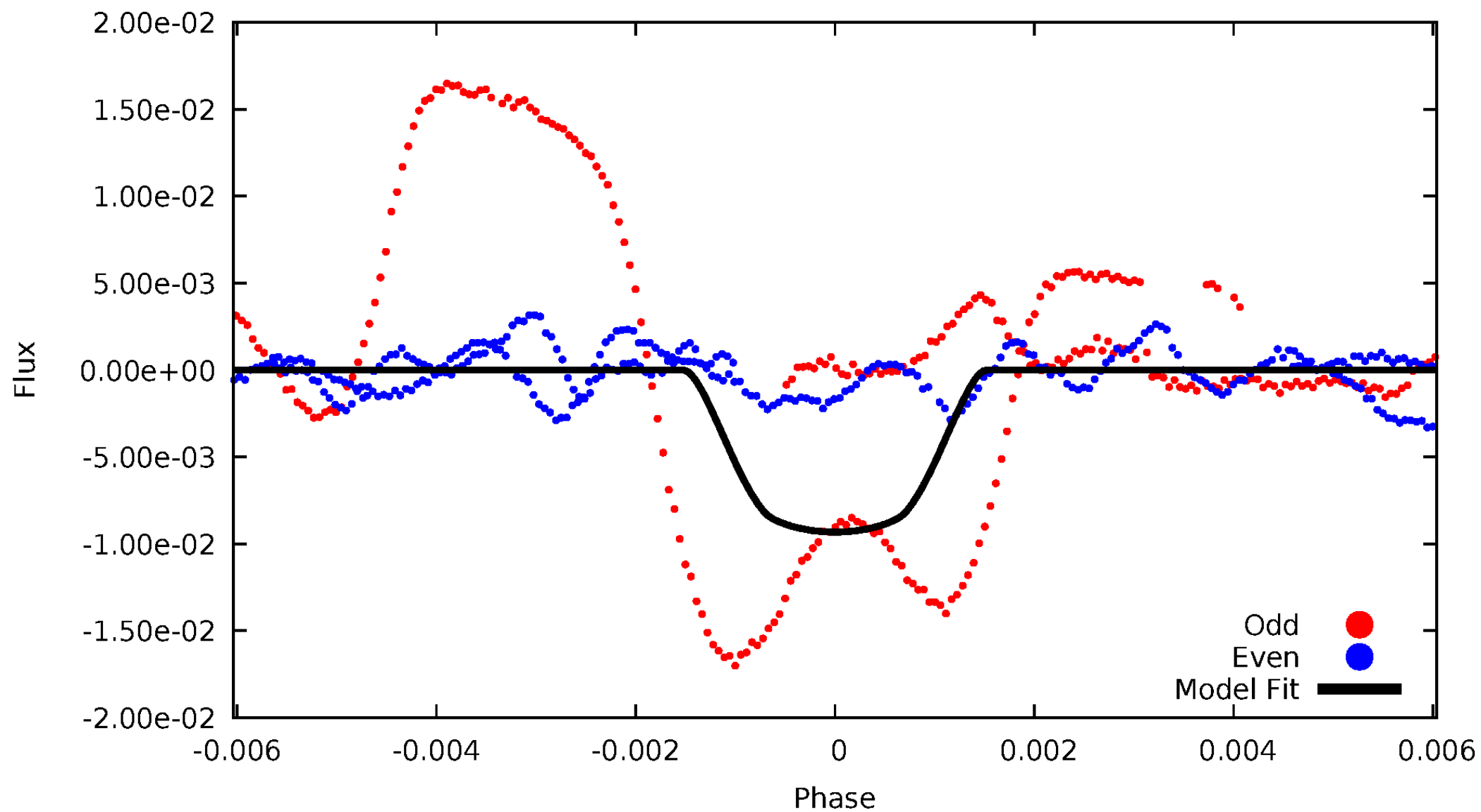


TCE 004553072-02



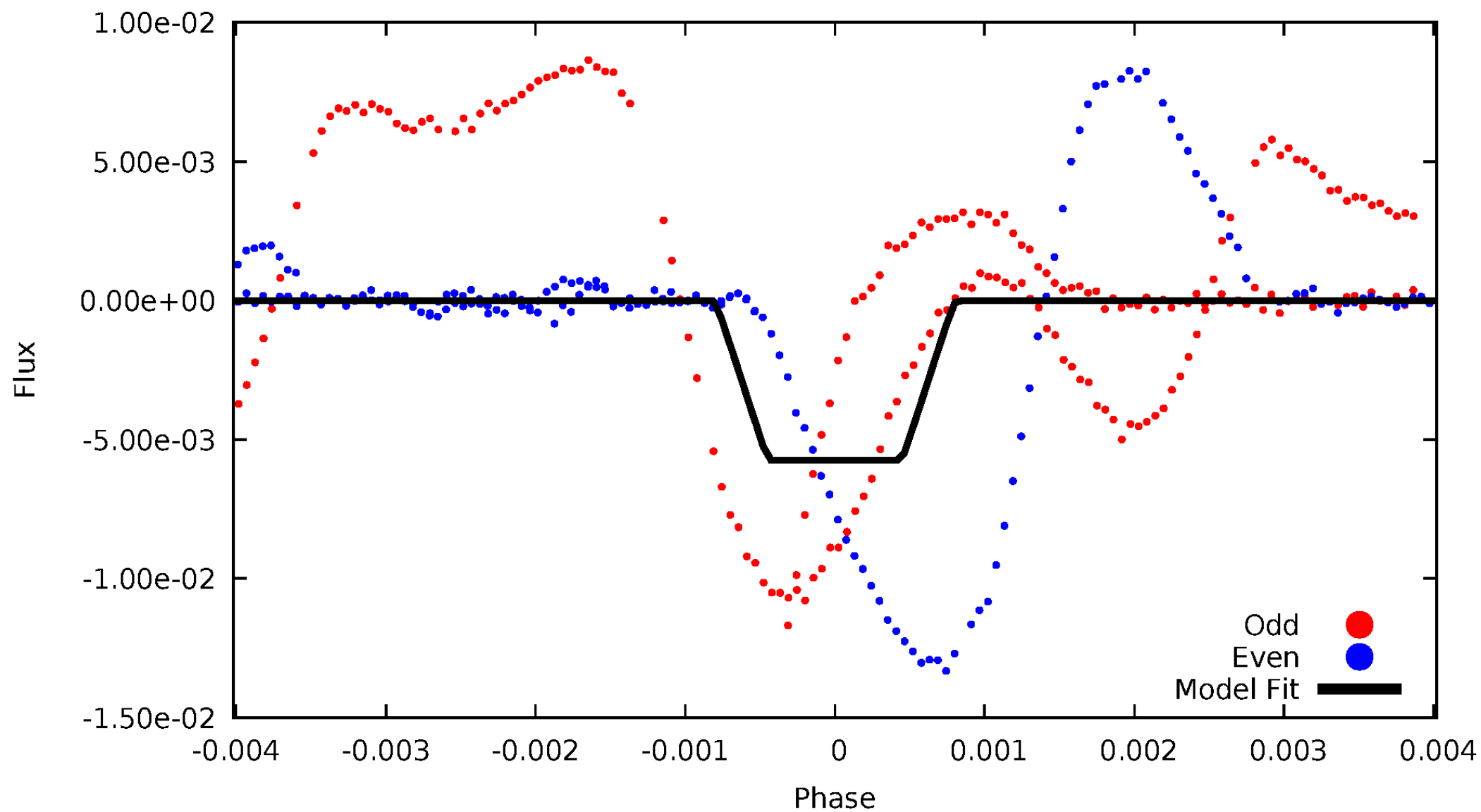
DV Odd/Even

TCE 004553072-02



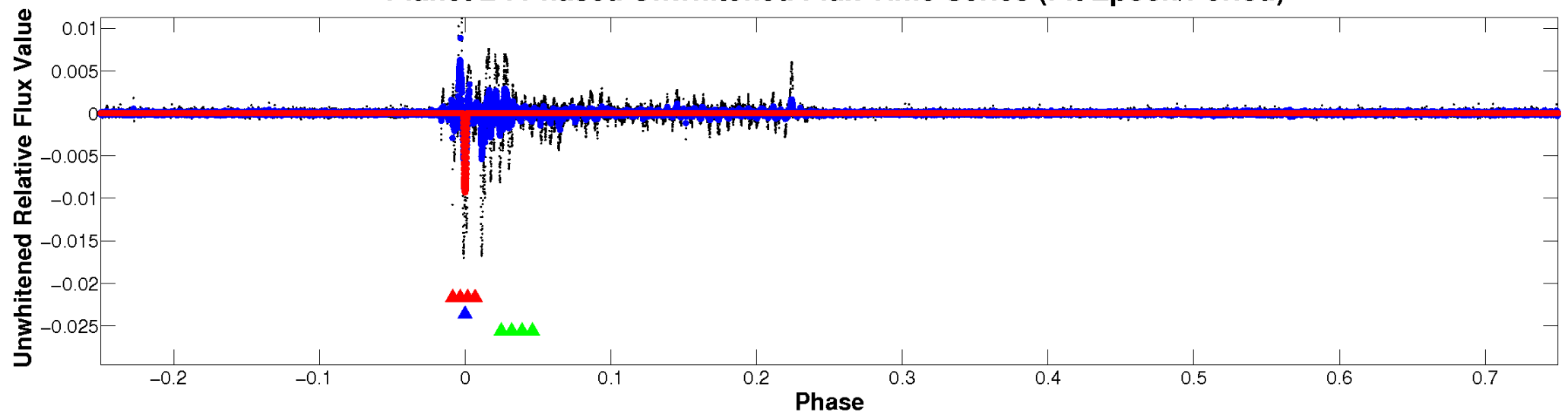
ALT Odd/Even

TCE 004553072-02

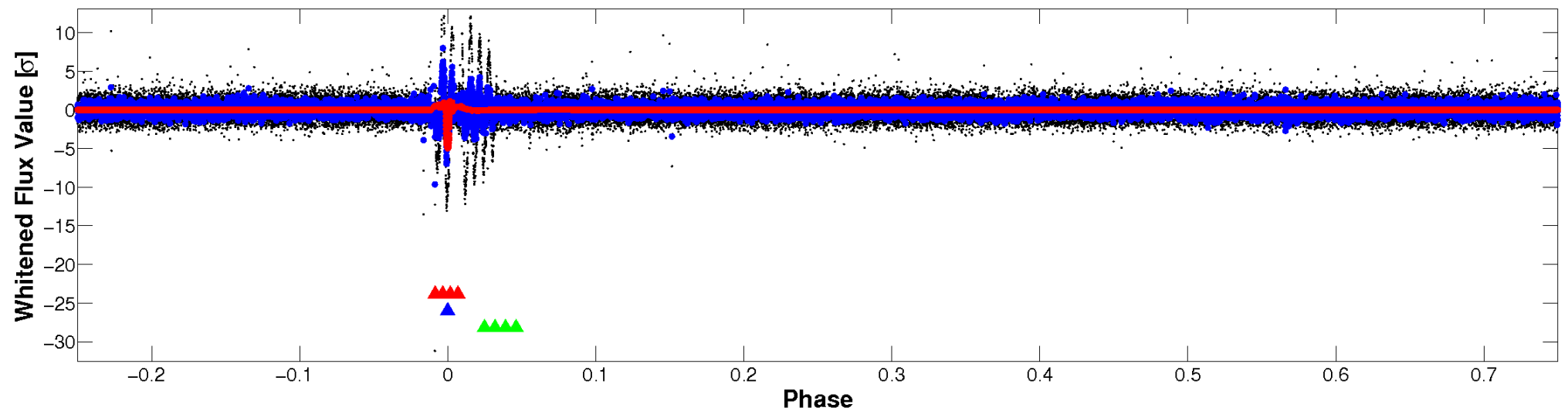


Non-Whitened Vs. Whitened Light Curve

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

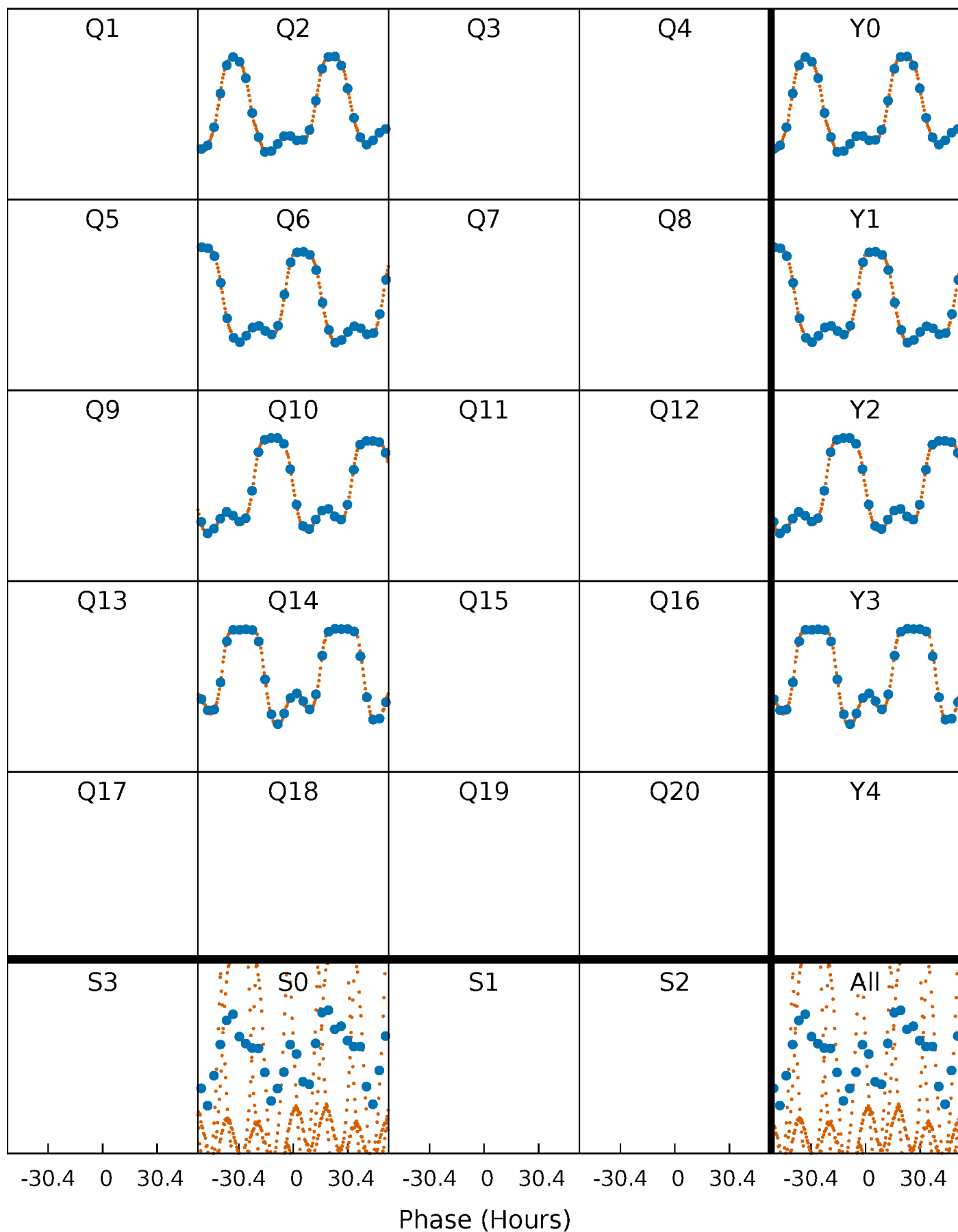


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



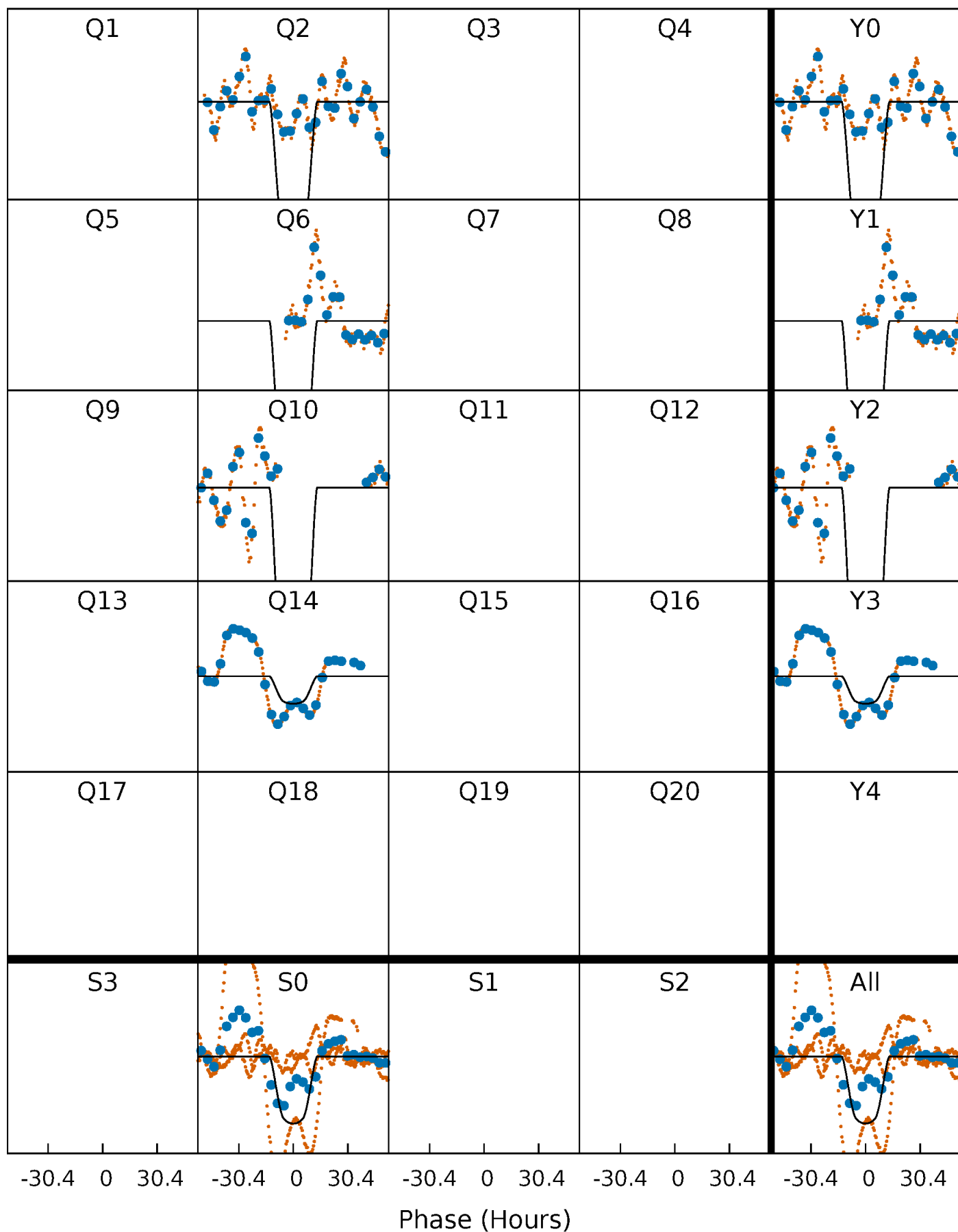
PDC Quarter-Phased Transit Curves

TCE 004553072-02 P=367.183652 Days $T_0=175.776618$ (BKJD)



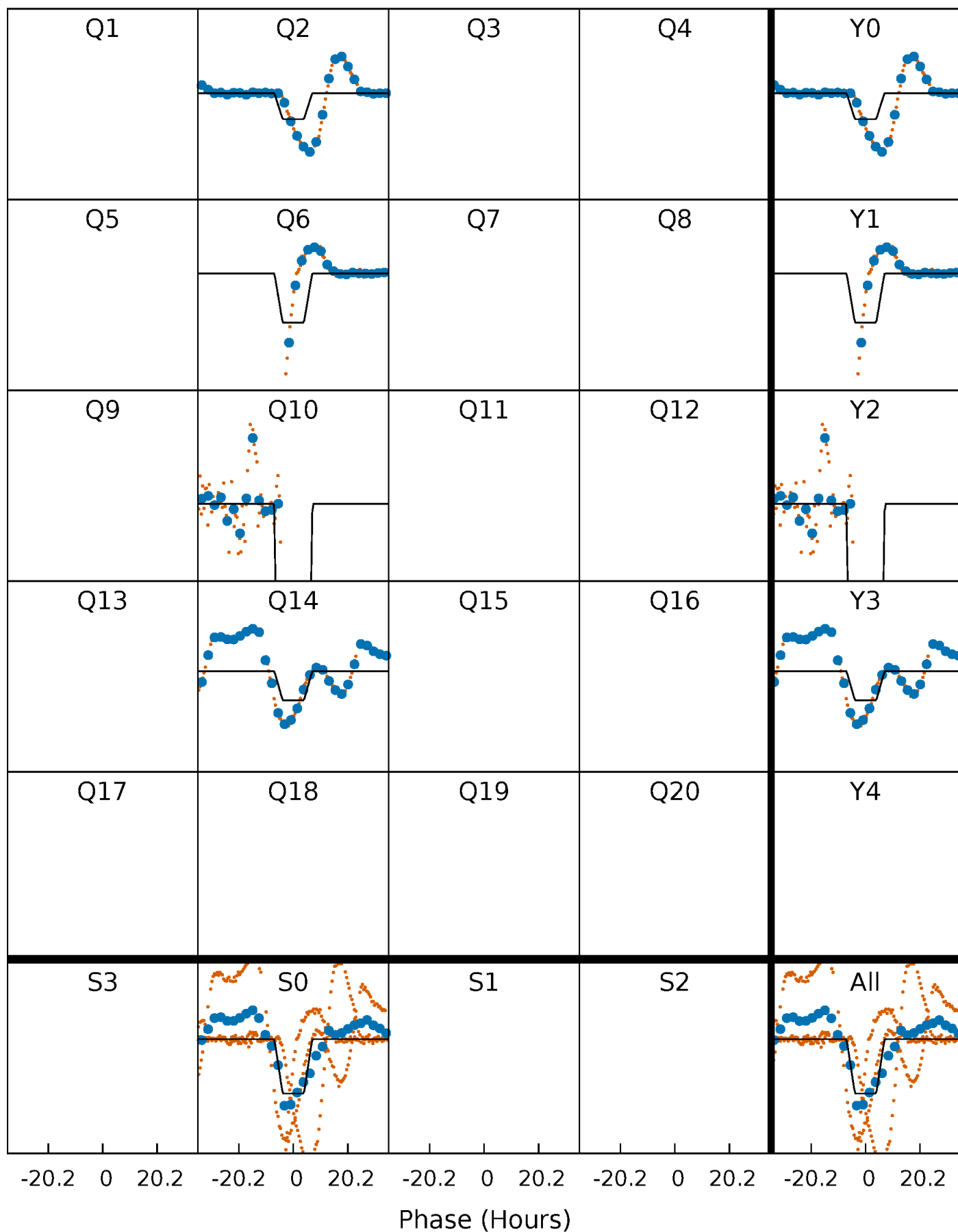
DV Quarter-Phased Transit Curves

TCE 004553072-02 P=367.183652 Days $T_0=175.776618$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

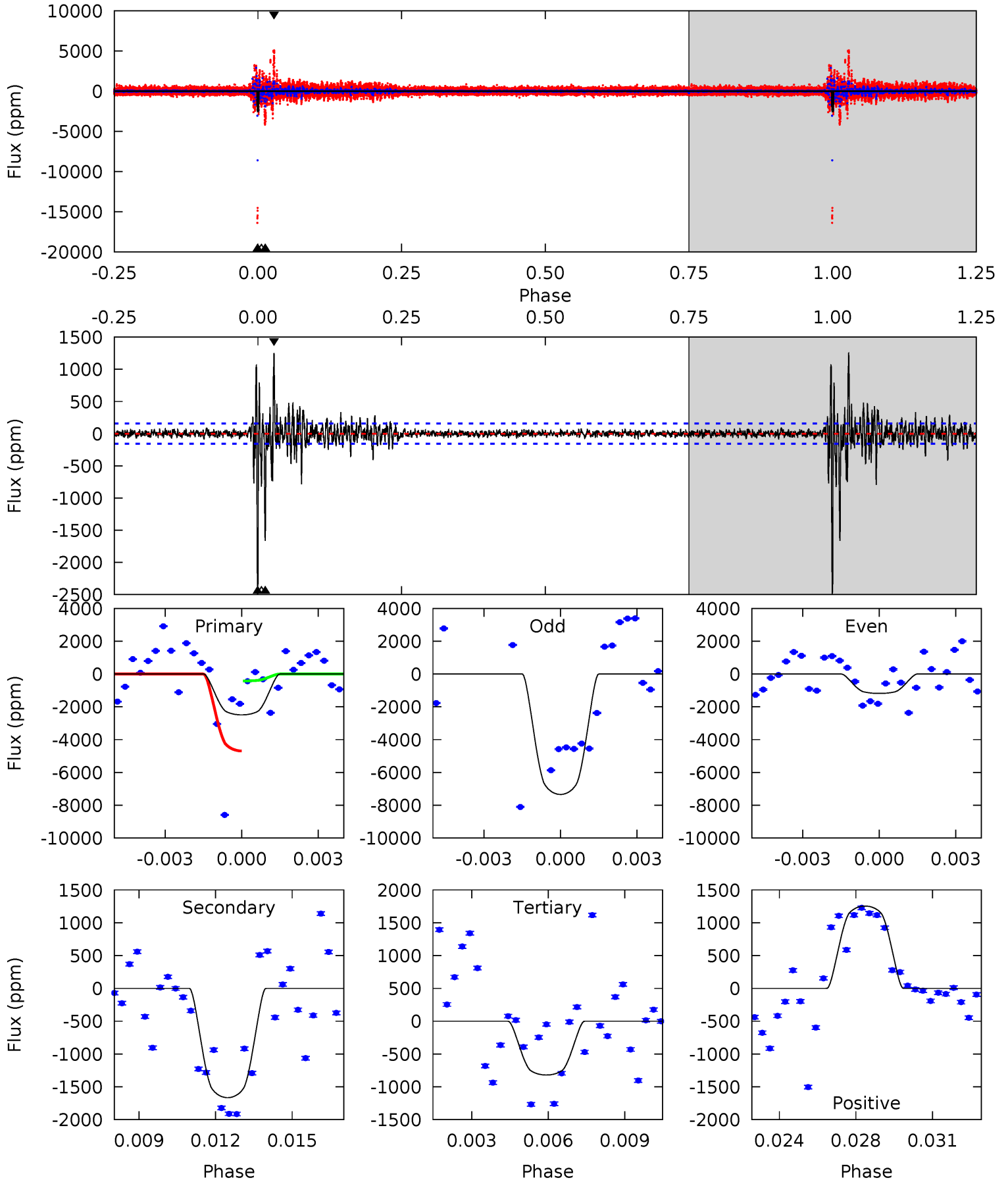
TCE 004553072-02 $P=367.068472$ Days $T_0=175.827721$ (BKJD)



DV Model-Shift Uniqueness Test

004553072-02, P = 367.183652 Days, E = 175.776618 Days

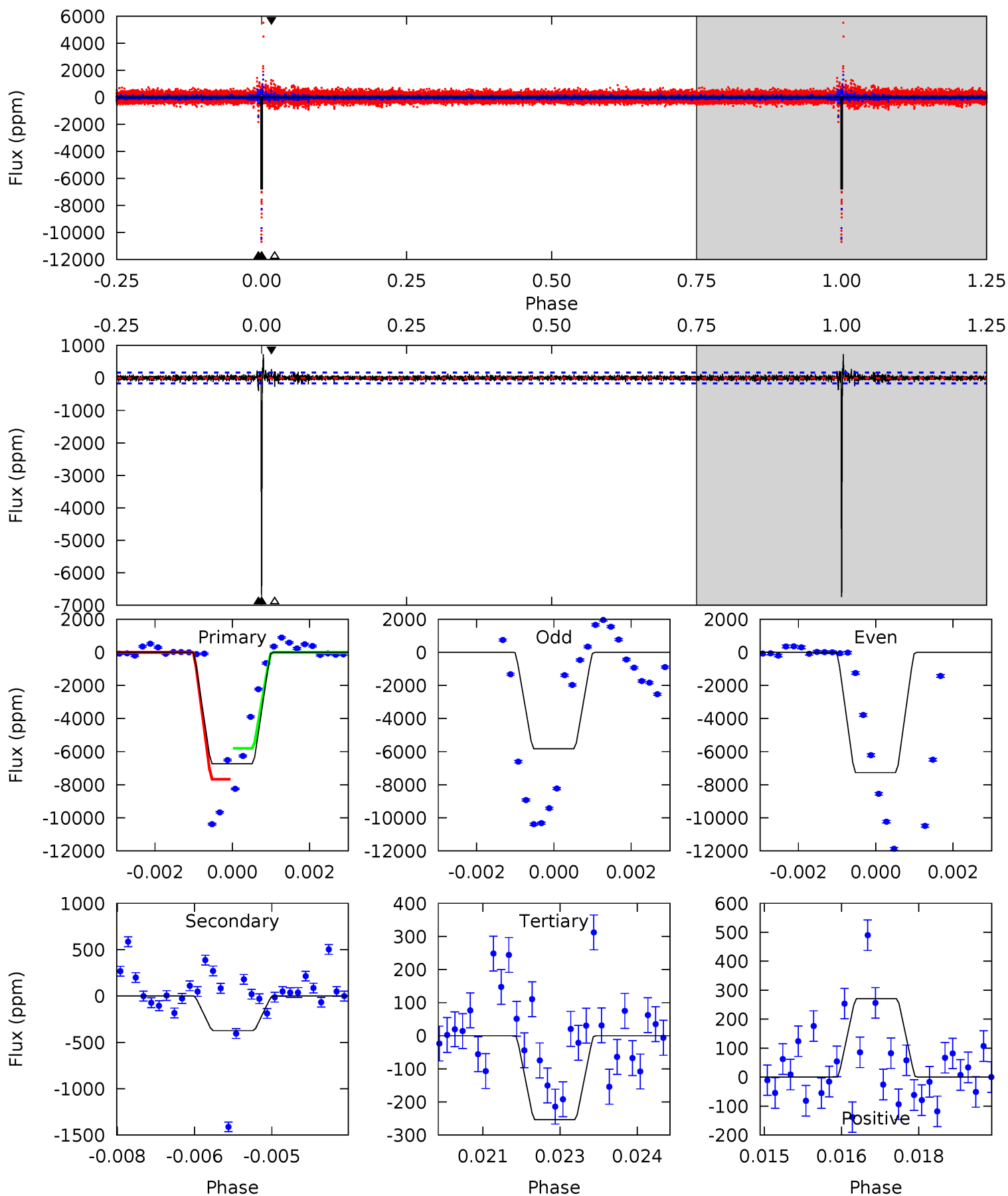
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
83.0	55.4	27.3	41.7	5.25	2.96	3.25	55.7	41.2	28.1	13.7	68.6	7.18	0.33	69.8



Alt Model-Shift Uniqueness Test

004553072-02, P = 367.068472 Days, E = 175.827721 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
218.2	12.1	8.20	8.77	5.37	3.15	1.26	210.0	209.4	3.88	3.32	19.4	0.93	0.10	0



Stellar Parameters For KIC 004553072

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5982^{+181}_{-199}	$4.104^{+0.279}_{-0.150}$	$0.200^{+0.200}_{-0.300}$	$1.597^{+0.413}_{-0.505}$	$1.182^{+0.164}_{-0.180}$	$0.409^{+0.746}_{-0.176}$
	+3%/-3%	+7%/-4%	+100%/-150%	+26%/-32%	+14%/-15%	+182%/-43%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 004553072-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1665 ± 30	$17.30^{+2.63}_{-3.06}$	446^{+31}_{-37}	4088^{+116}_{-117}	3499^{+1411}_{-826}
Alt.	-373 ± 31	$13.04^{+1.99}_{-2.36}$	449^{+33}_{-41}	3505^{+106}_{-103}	1389^{+622}_{-362}

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

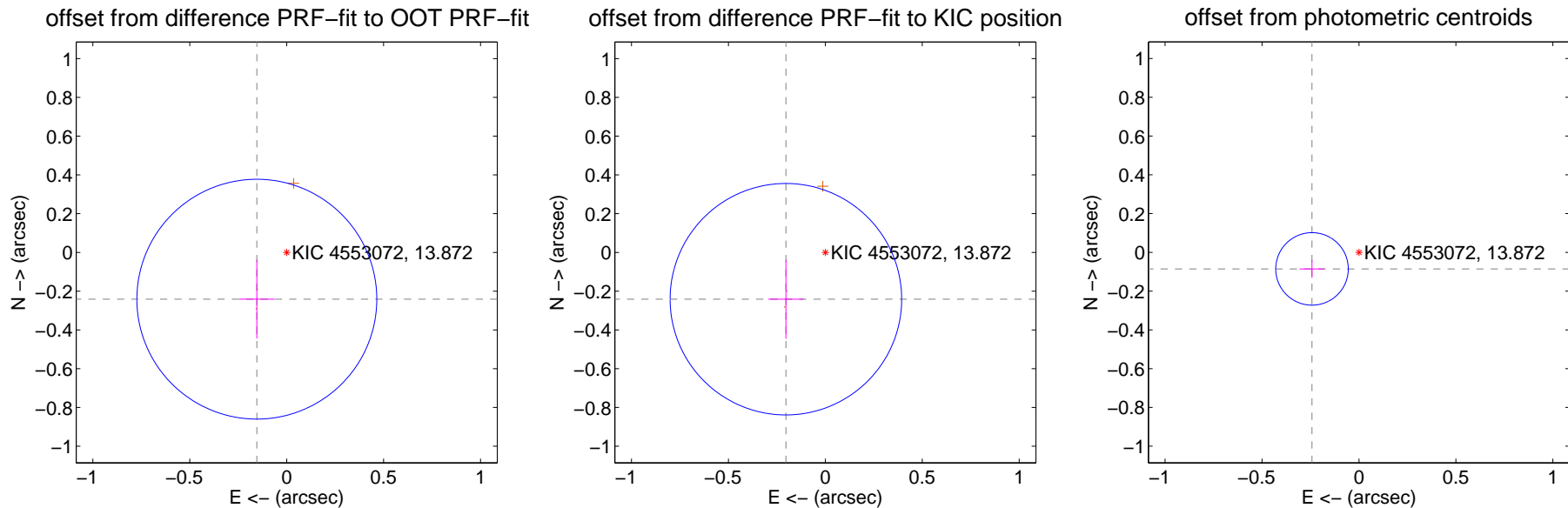
DV Centroid Data

Supplemental centroid analysis for 004553072-02. Kepler magnitude: 13.87. Transit SNR 46.96

There are 0 quarters with good PRF difference image offsets

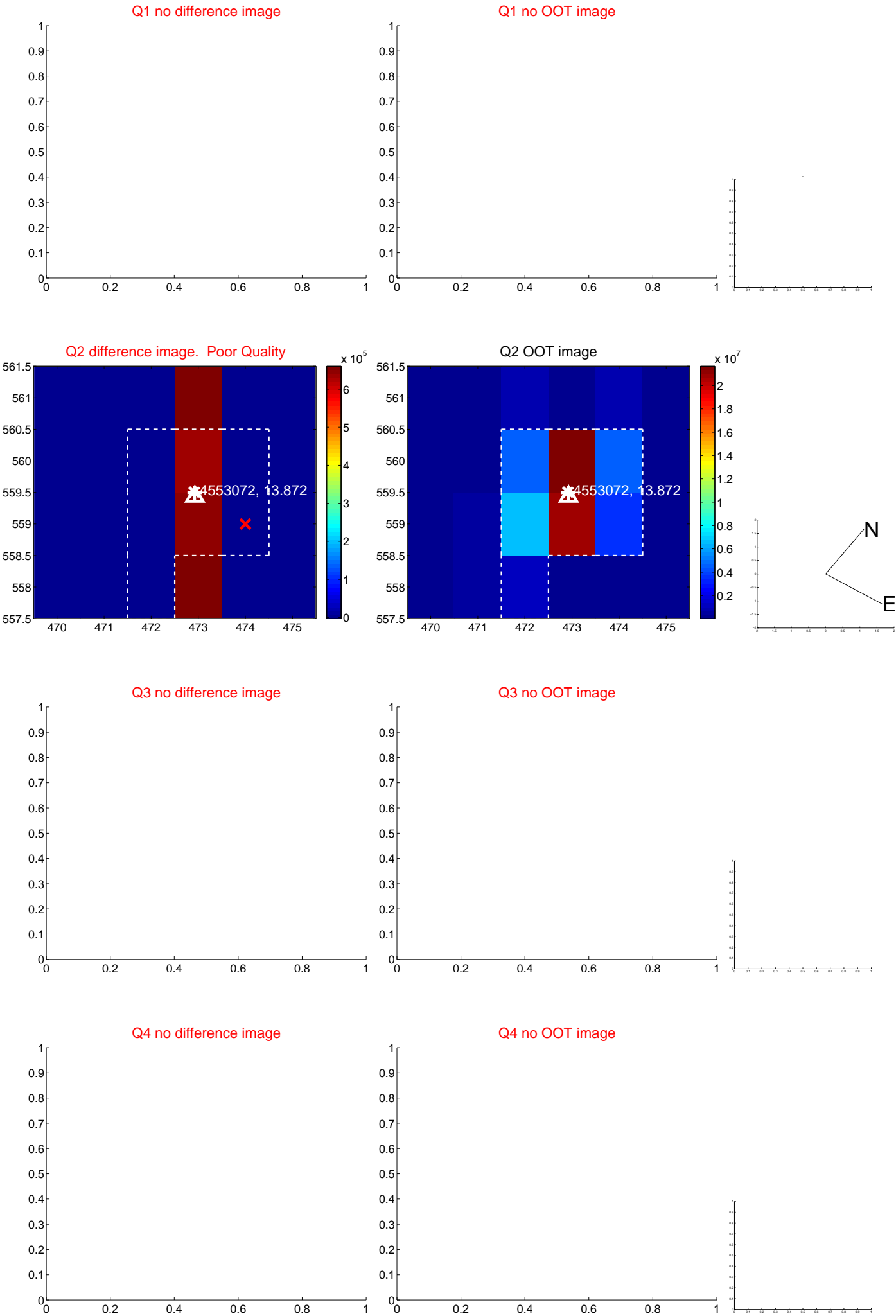
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.286 ± 0.206	1.39	0.154 ± 0.092	-0.241 ± 0.203
PRF-fit source offset from KIC position	0.316 ± 0.199	1.59	0.203 ± 0.091	-0.241 ± 0.204
photometric centroid source offset	0.26 ± 0.06	4.12	0.24 ± 0.06	-0.09 ± 0.05

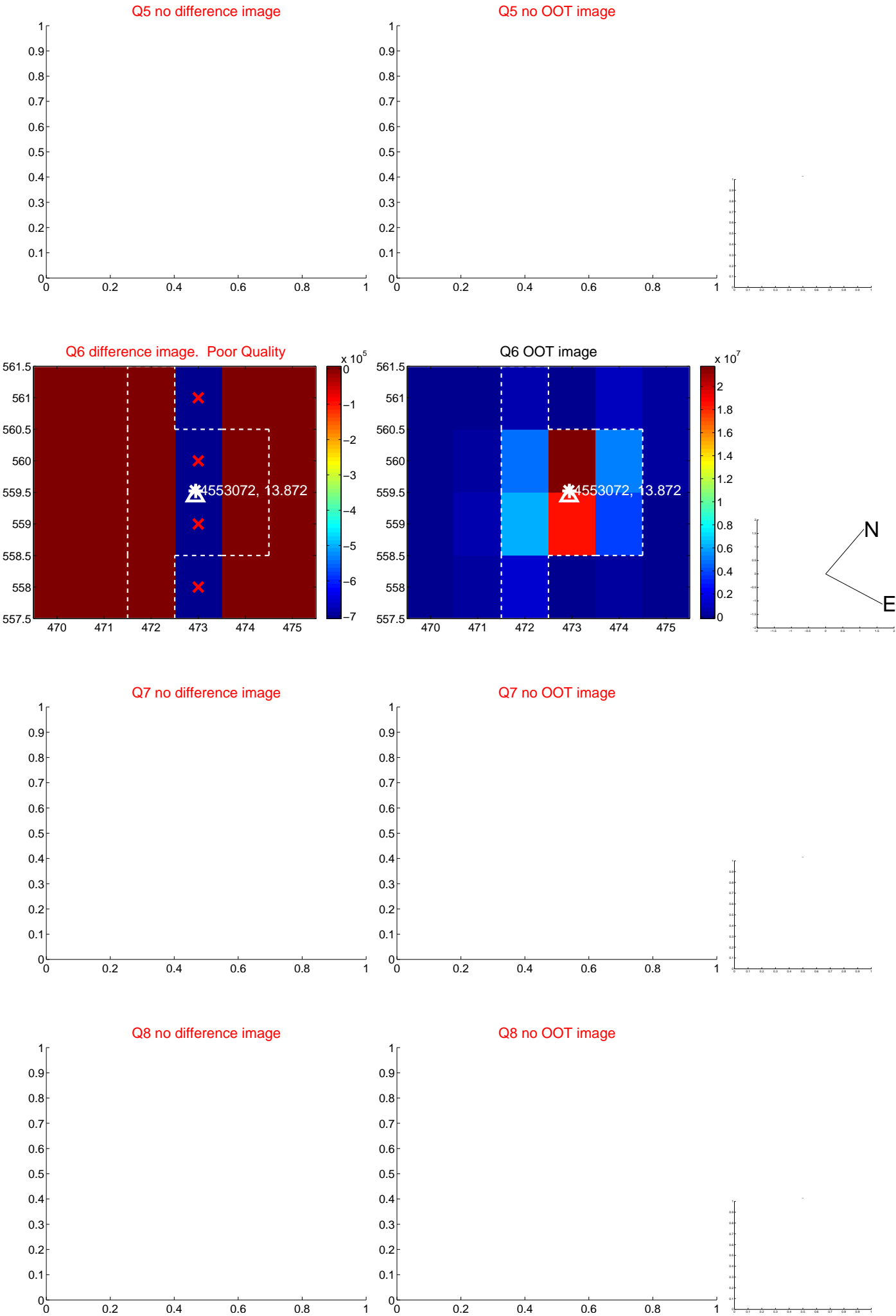


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

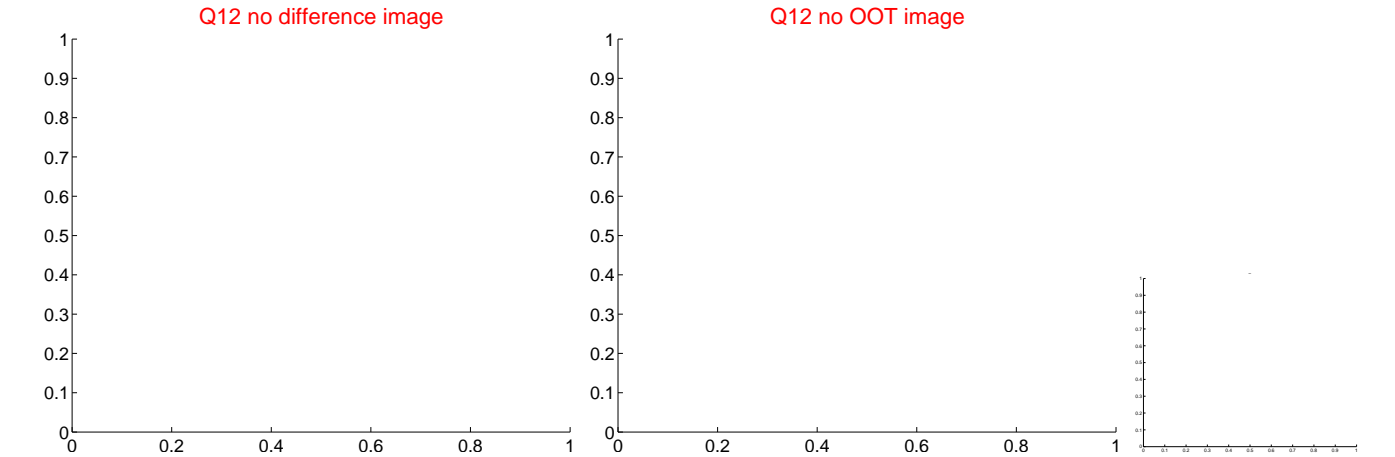
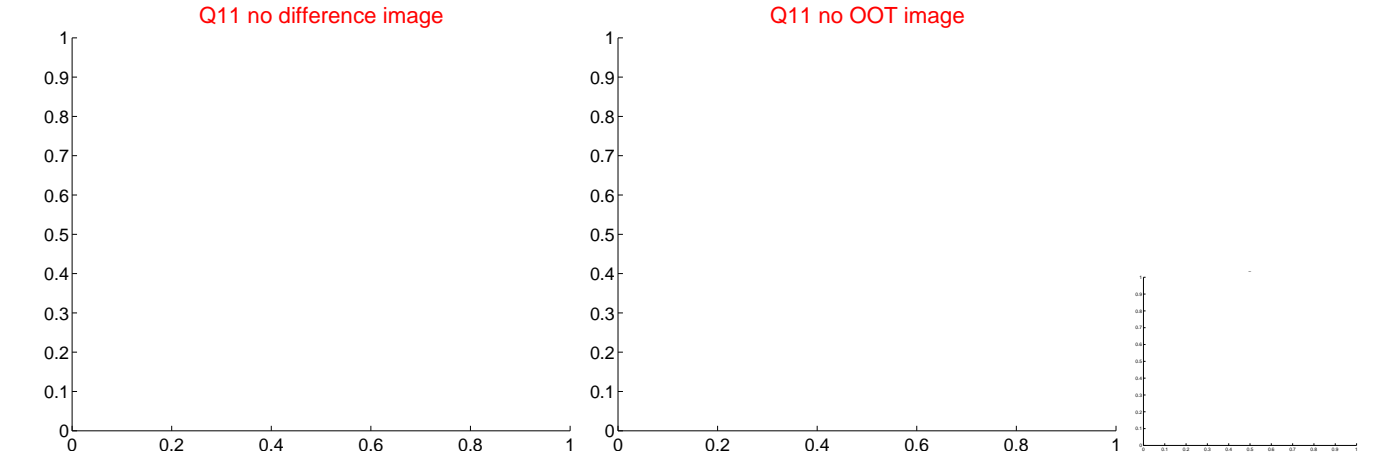
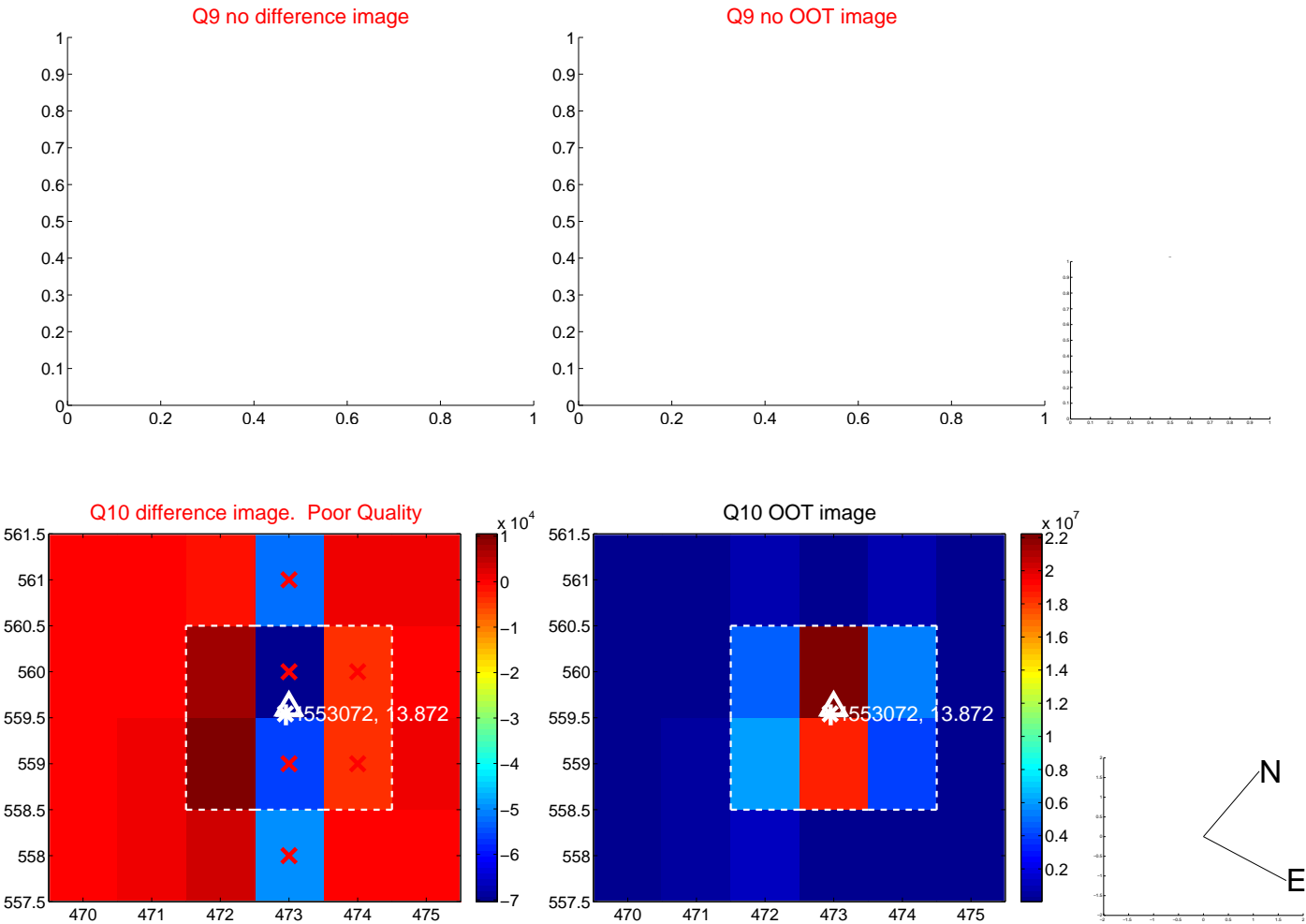
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



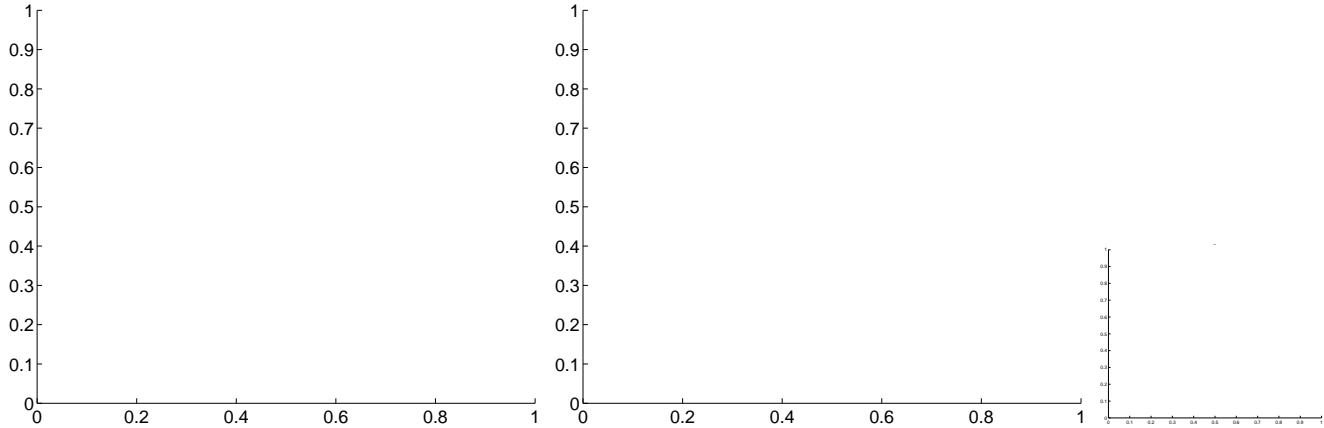
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



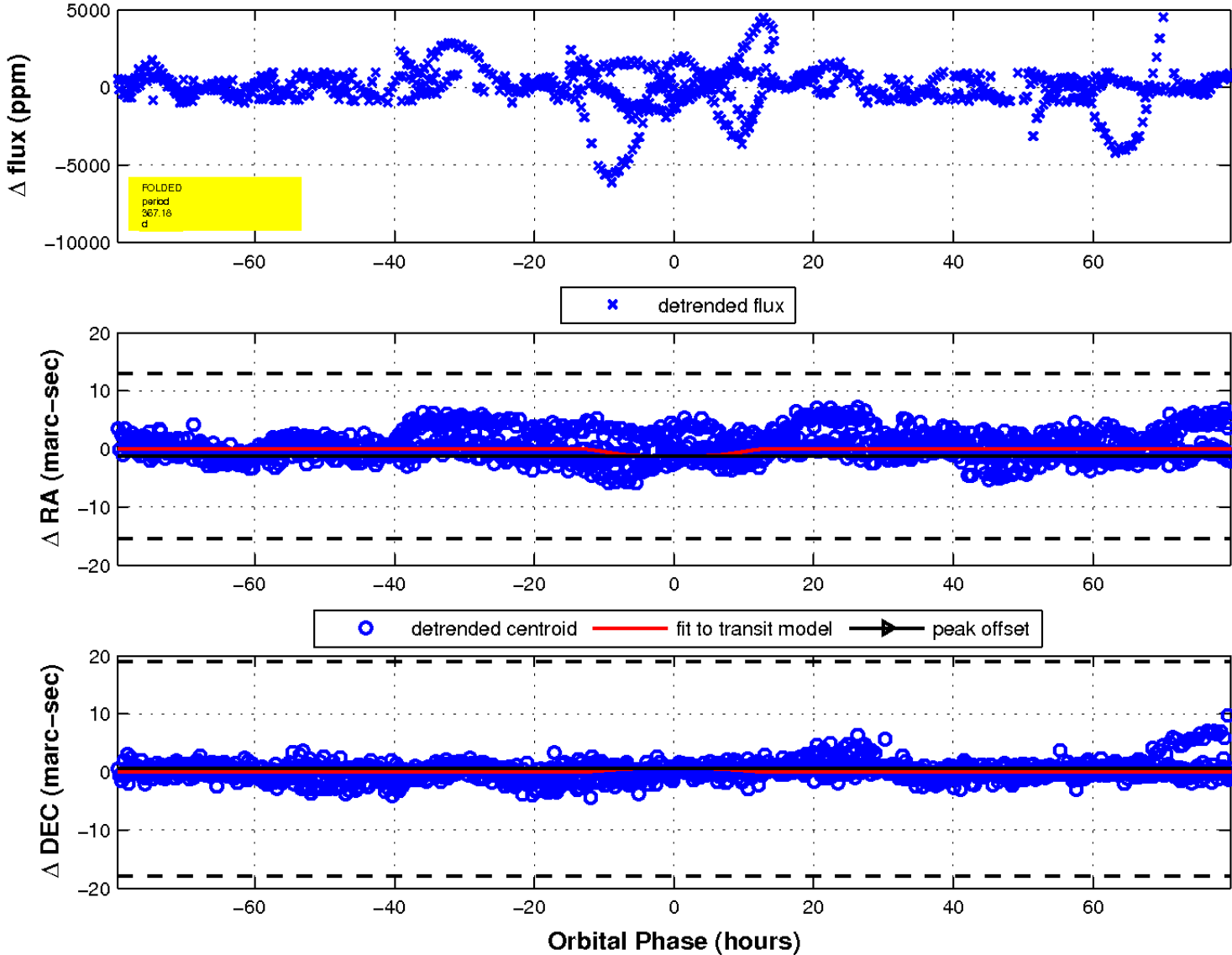
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q17 no difference image

Q17 no OOT image

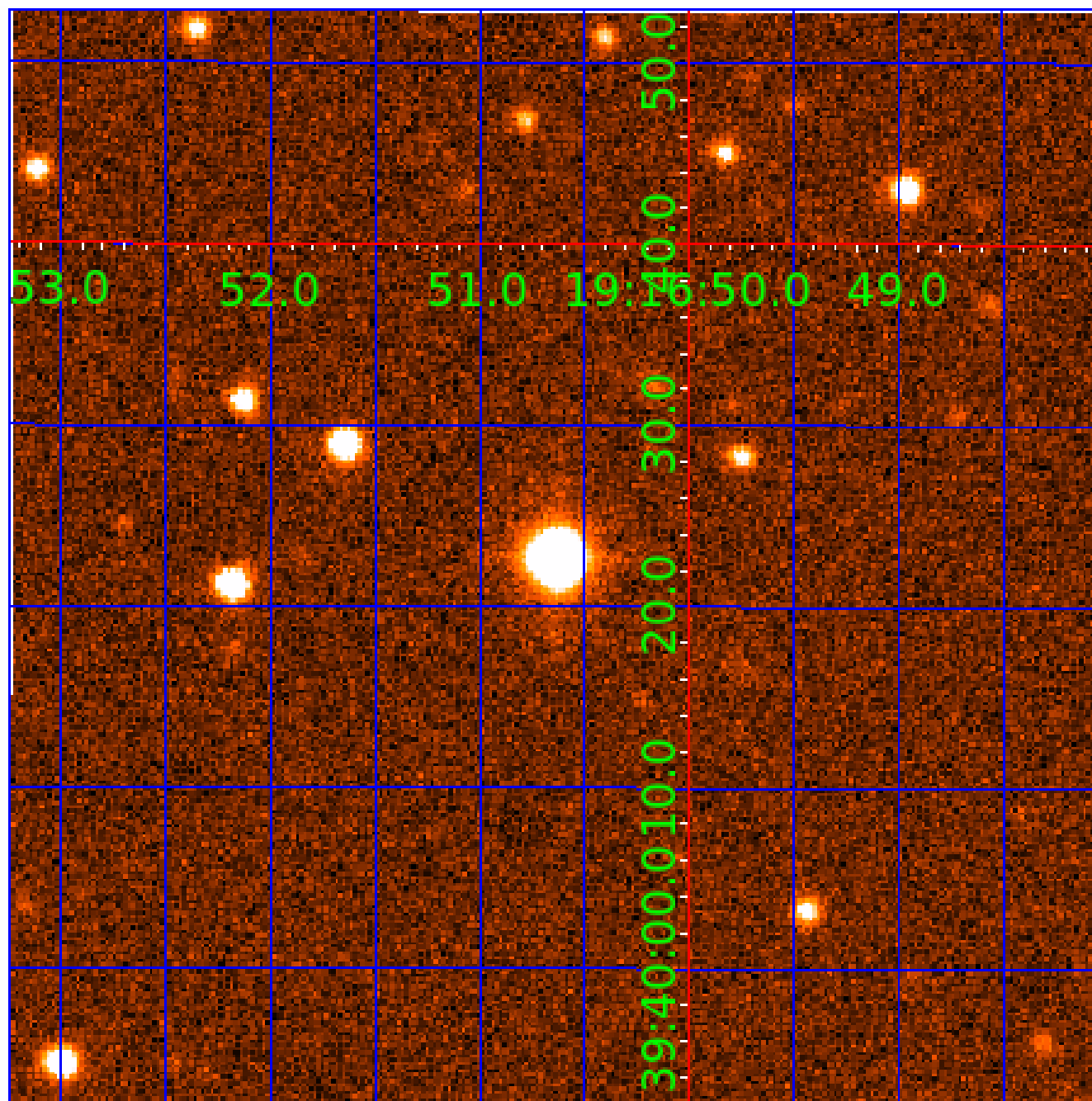


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 004553072

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})
004553072-01	OBS	No	369.067895	172.668012	566.1	16.273	37.0	3.8	1.60	5982	4.76	2.58
004553072-02	OBS	No	367.183652	175.776618	9315.3	26.598	53.3	47.0	1.60	5982	17.60	2.60
004553072-03	OBS	No	364.571921	192.739711	2445.6	31.590	29.1	17.1	1.60	5982	14.84	2.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004553072-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
004553072-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004553072-03	OBS	FP	0.00	1	0	1	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

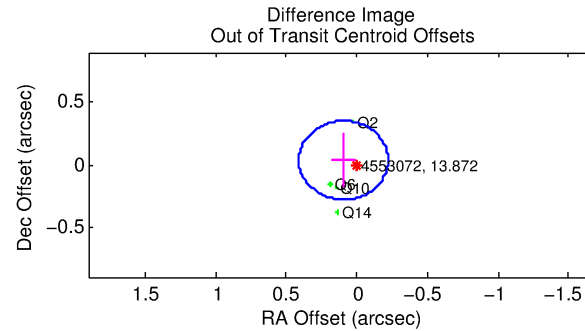
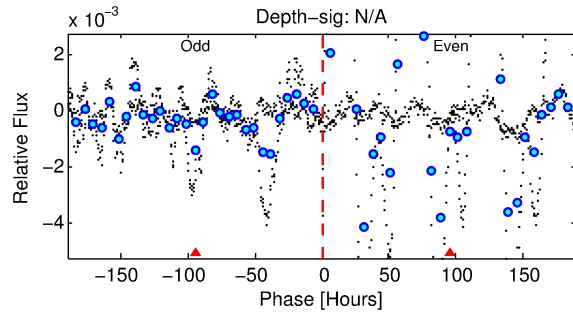
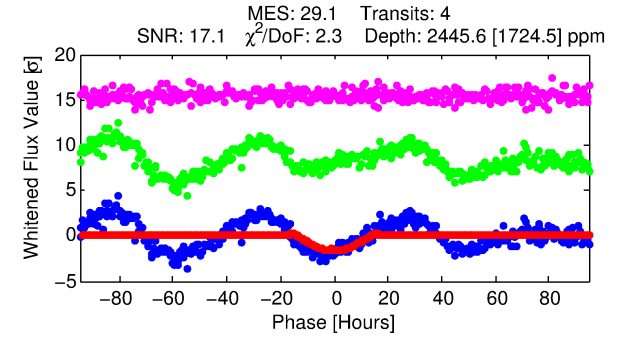
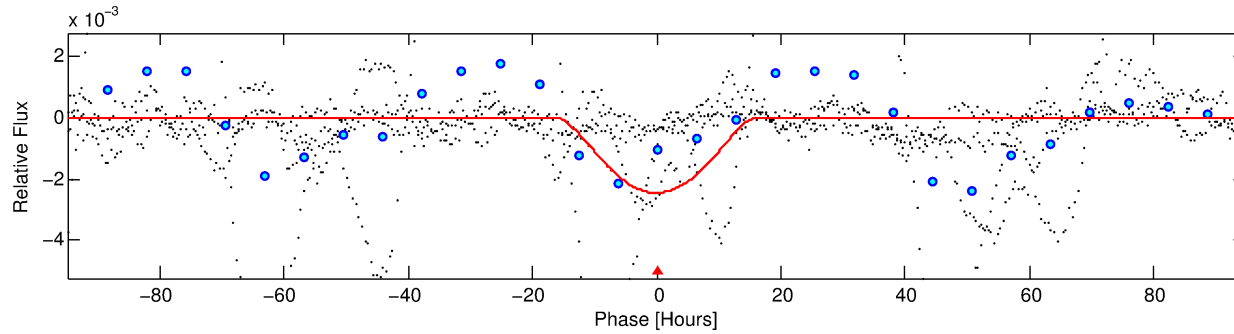
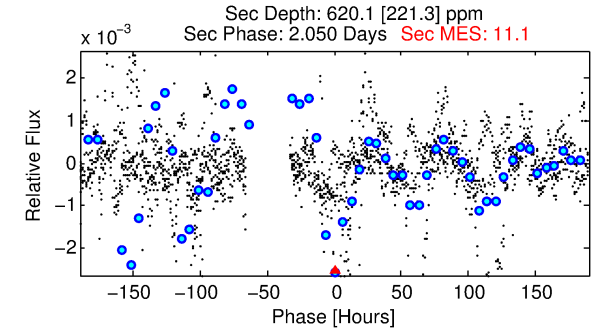
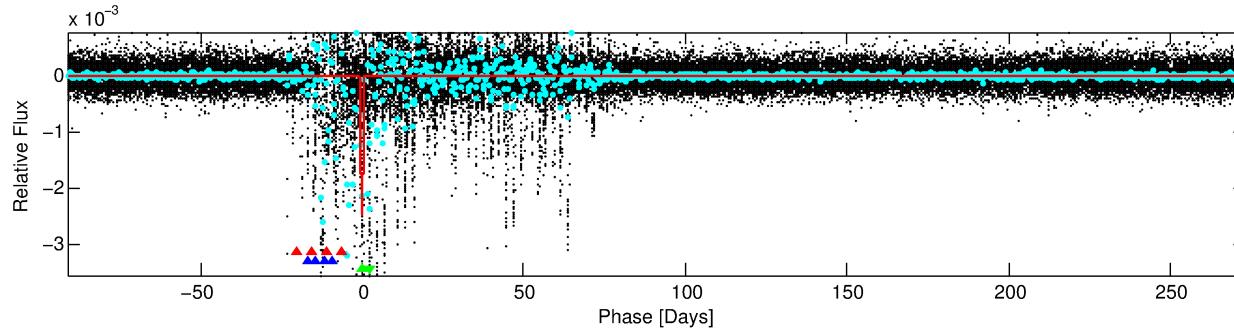
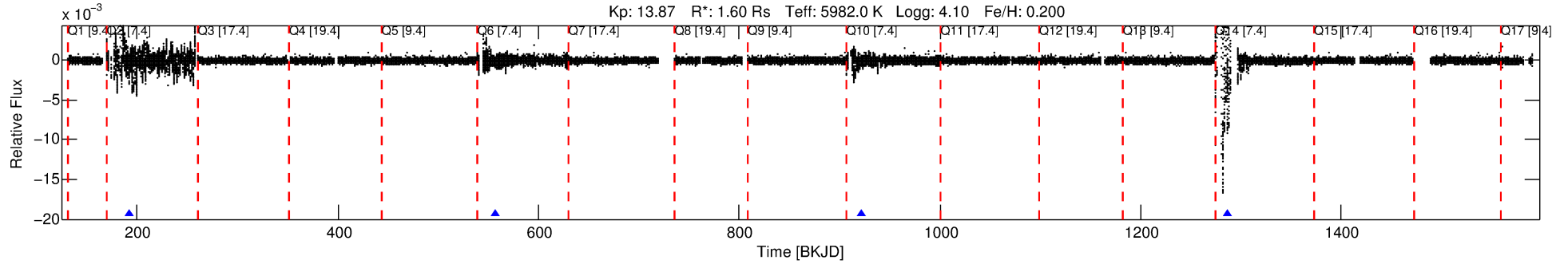
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004553072-03

No Significant Match Found

DV One-Page Summary

KIC: 4553072 Candidate: 3 of 3 Period: 364.572 d



DV Fit Results:

Period = 364.57192 [0.03339] d
Epoch = 192.7397 [0.0720] BKJD
Rp/R* = 0.0851 [0.2075]
a/R* = 37.22 [17.99]
b = 1.00 [0.26]
Seff = 2.62 [1.30]
Teq = 325 [40] K
Rp = 14.84 [36.46] Re
a = 1.0562 [0.3174] AU
Ag = 1728.87 [8490.16] [0.20σ]
Teffp = 3235 [3955] K [0.74σ]

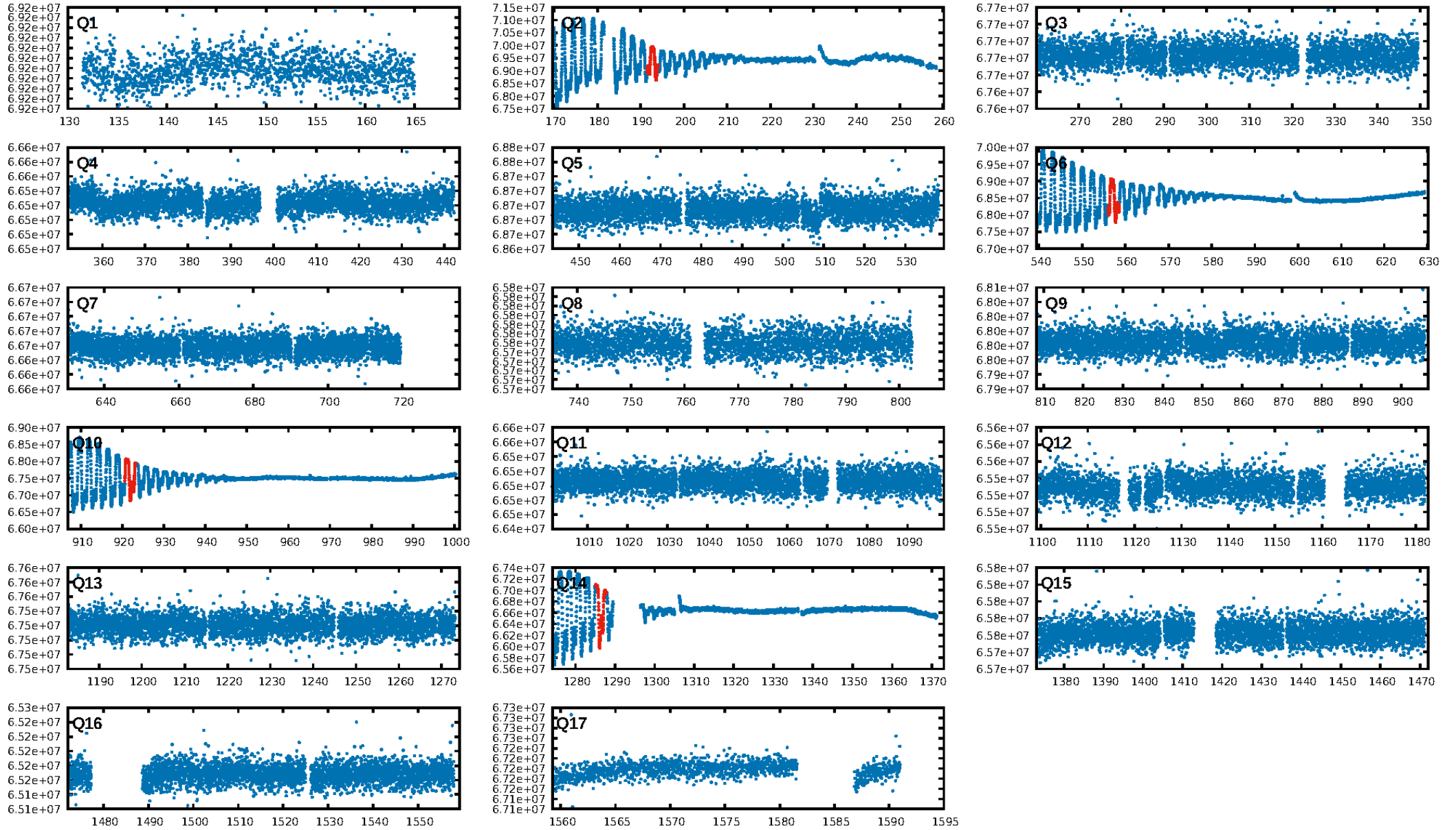
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 87.1% [1.53σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 2.75e-27
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.0434
Centroid-sig: 30.1%
Centroid-so: 0.407 arcsec [1.53σ]
OotOffset-rm: 0.101 arcsec [0.96σ]
OotOffset-st: 4/0/0/0 [4]
KicOffset-rm: 0.154 arcsec [1.52σ]
KicOffset-st: 4/0/0/0 [4]
DiffImageQuality-fgm: 0.00 [0/4]
DiffImageOverlap-fno: 1.00 [4/4]

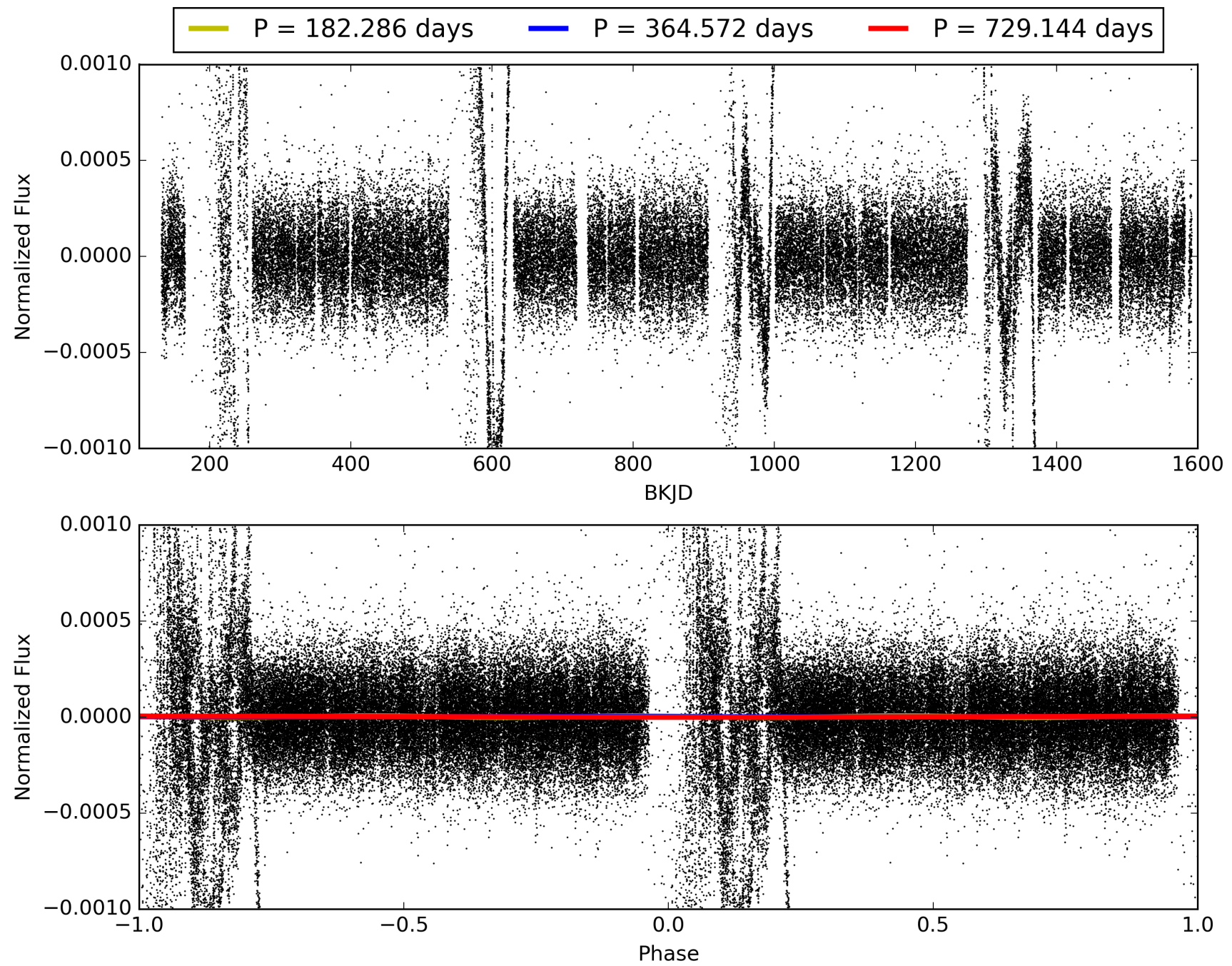
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:13:13 Z

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

TCE 004553072-03, PDC Light Curves

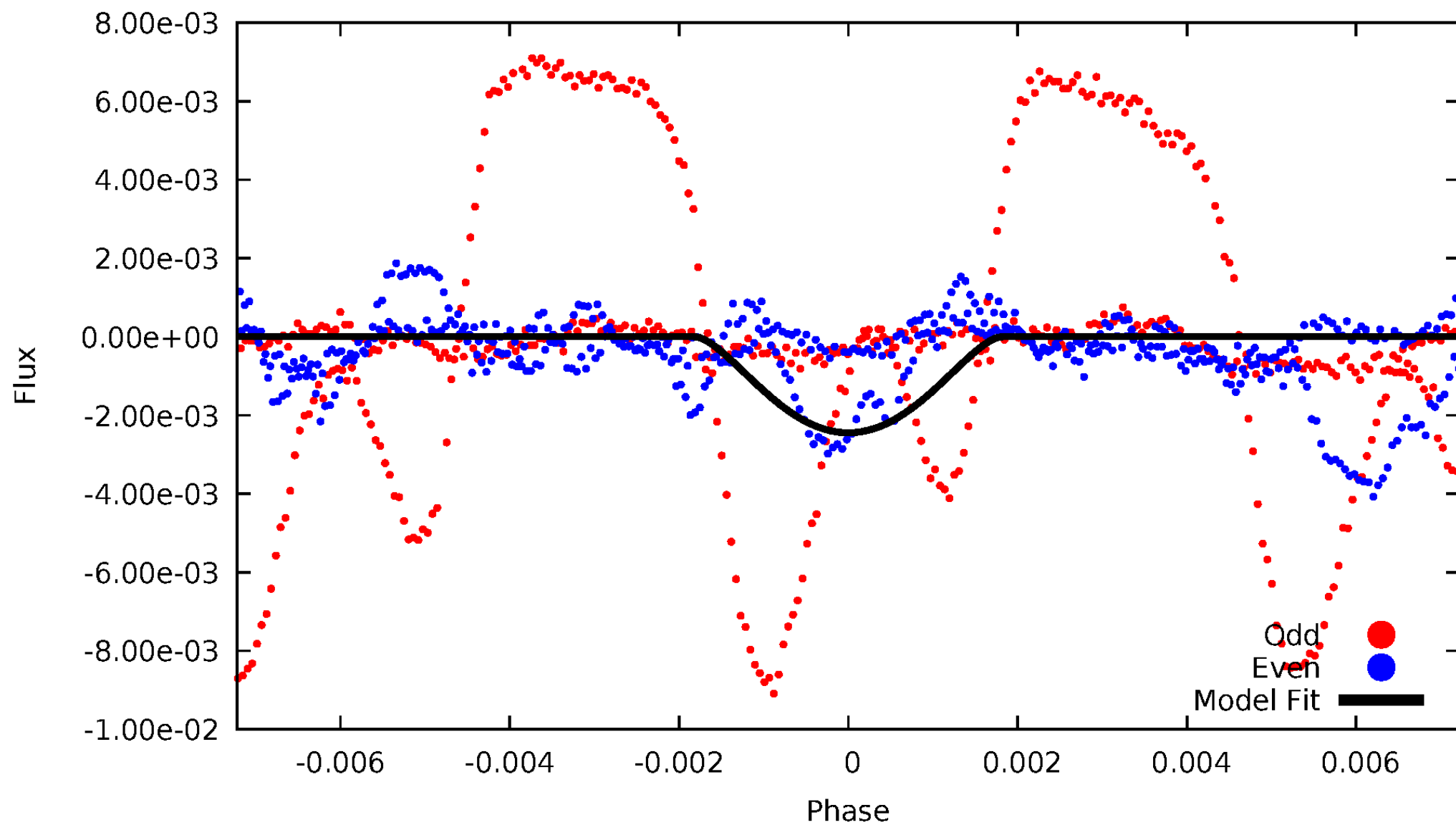


TCE 004553072-03



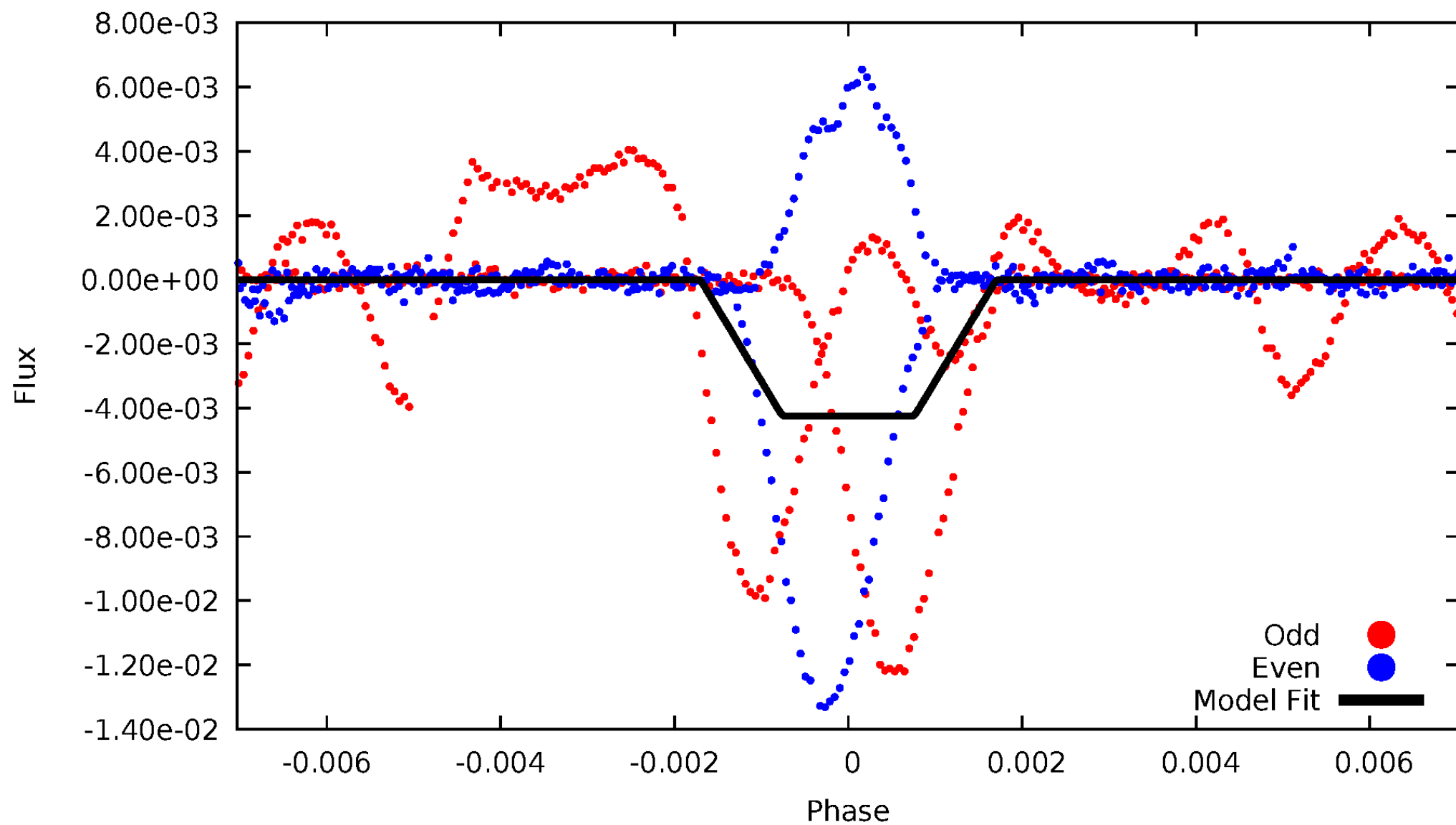
DV Odd/Even

TCE 004553072-03

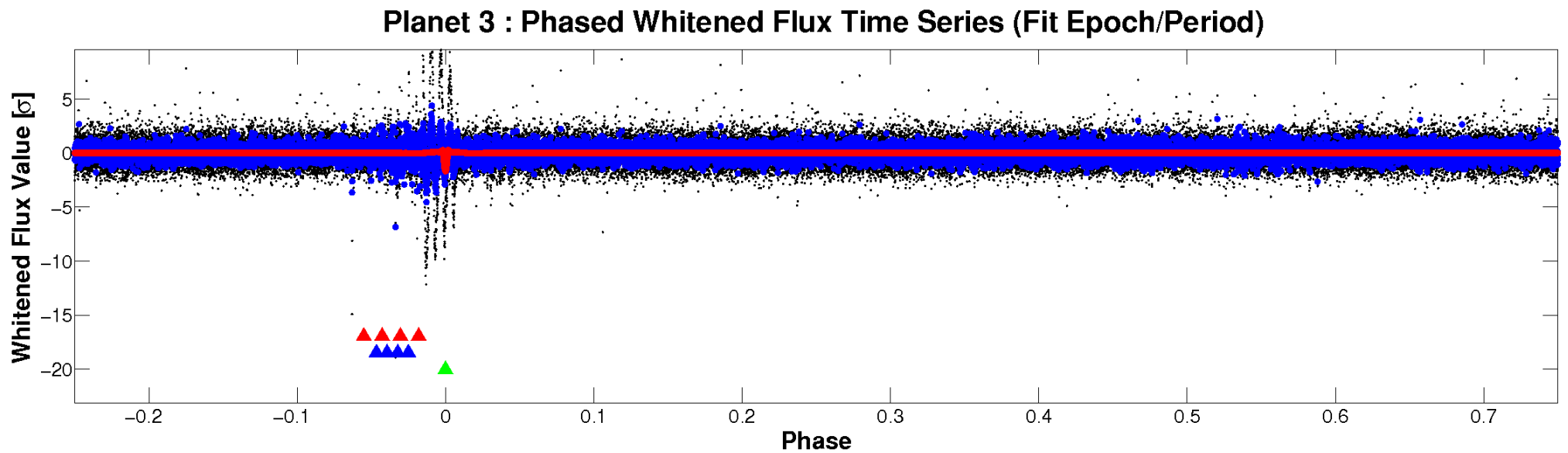
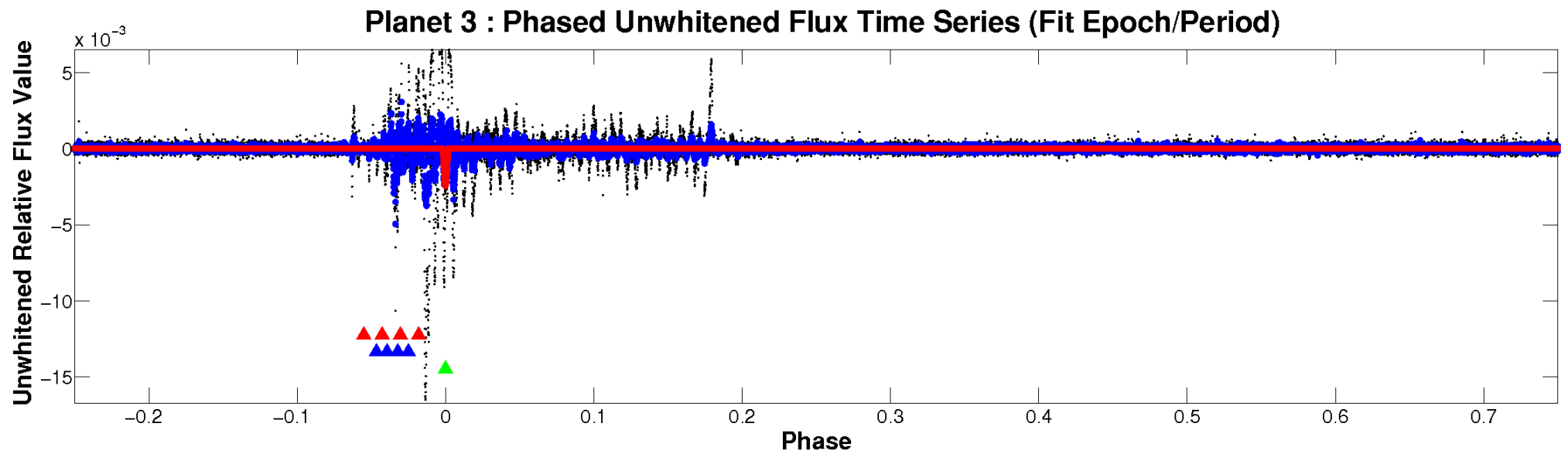


ALT Odd/Even

TCE 004553072-03

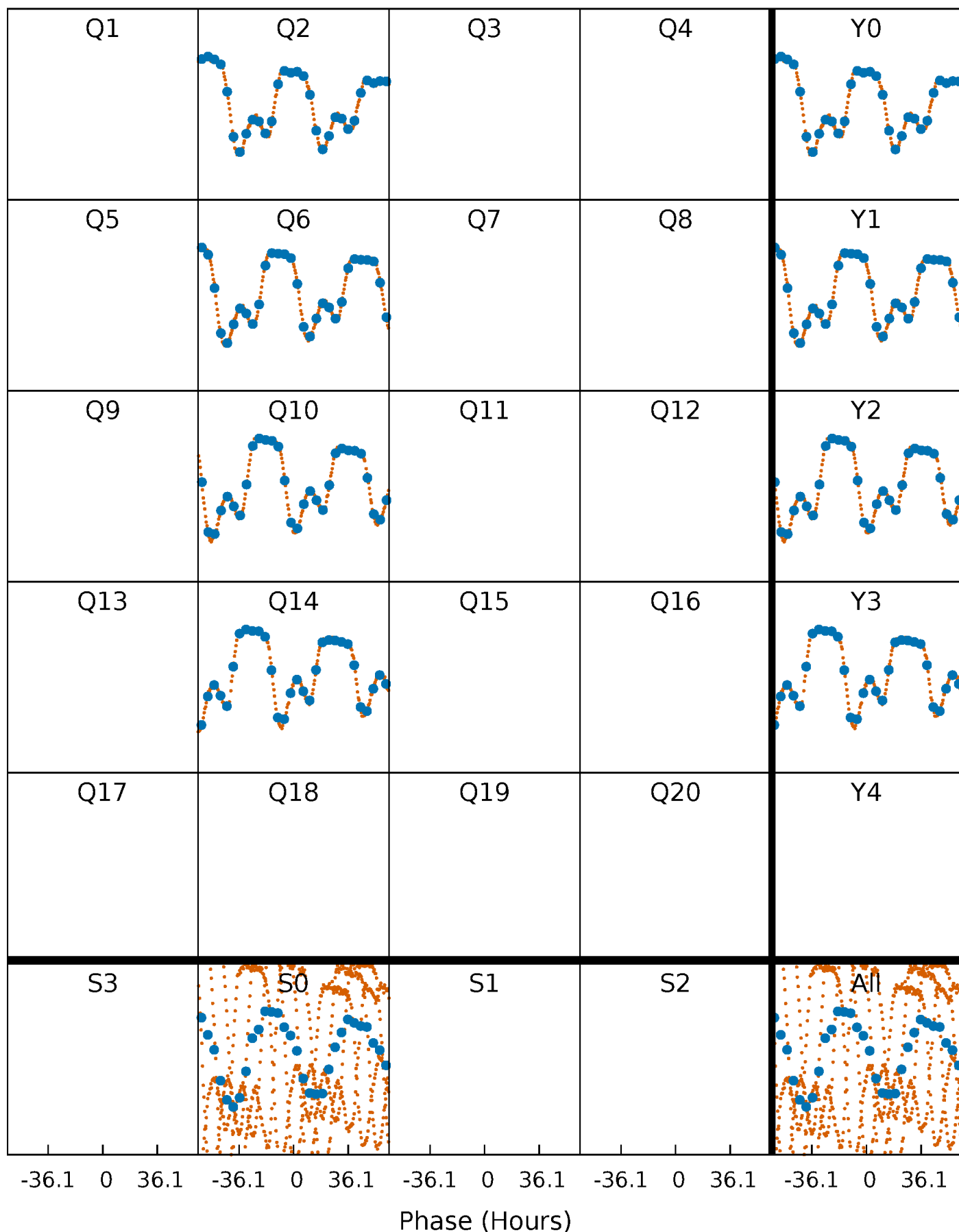


Non-Whitened Vs. Whitened Light Curve



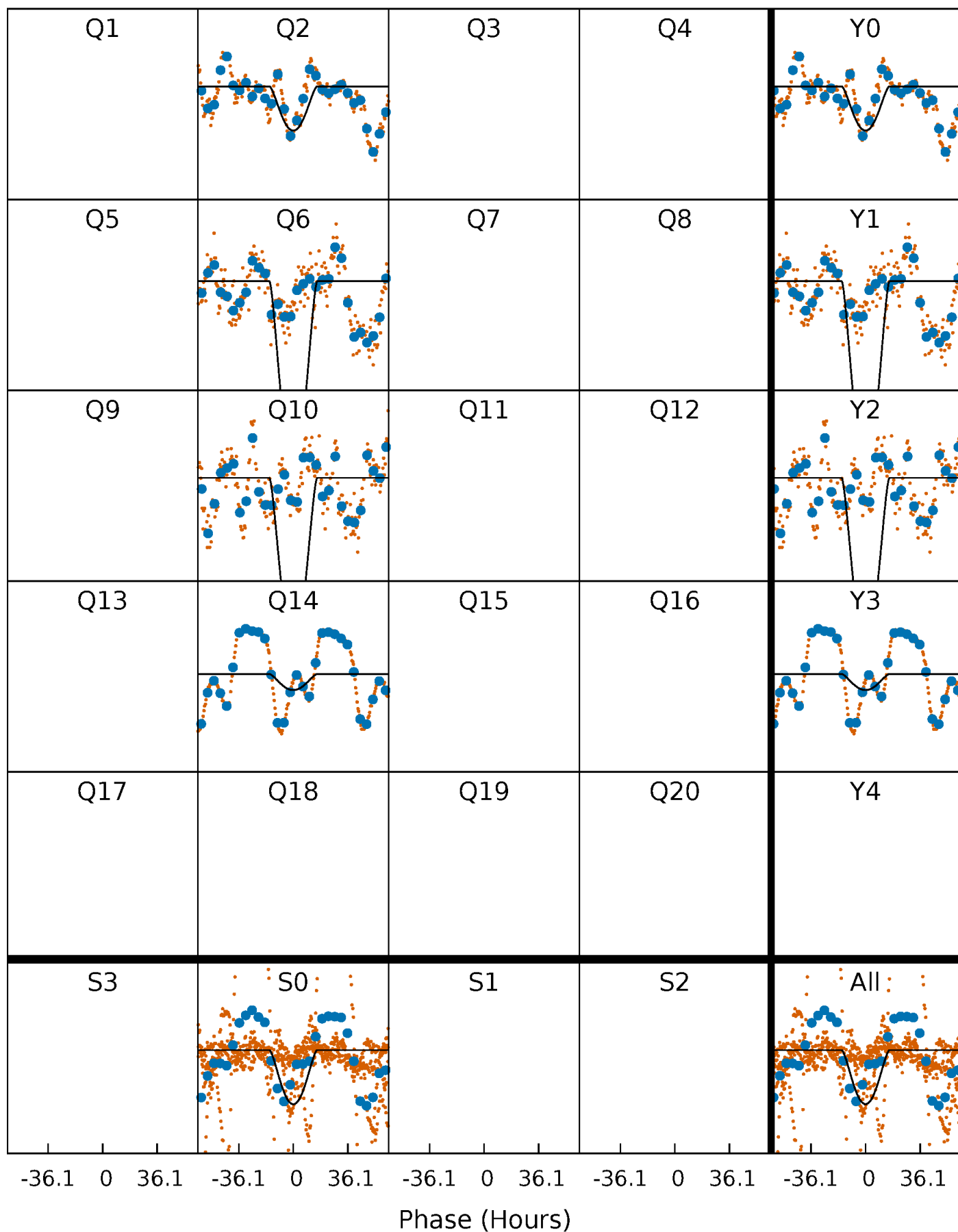
PDC Quarter-Phased Transit Curves

TCE 004553072-03 P=364.571921 Days $T_0=192.739711$ (BKJD)



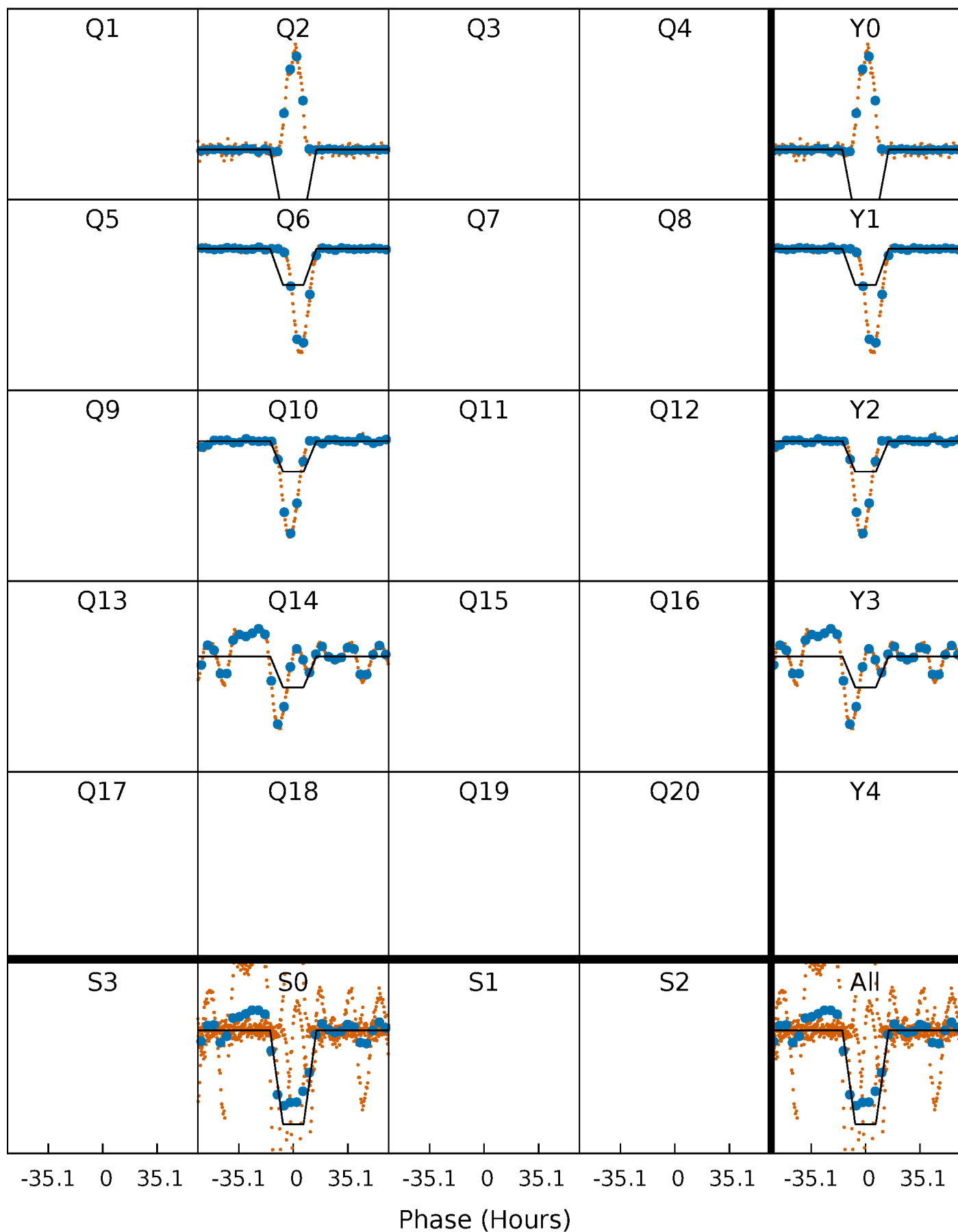
DV Quarter-Phased Transit Curves

TCE 004553072-03 P=364.571921 Days $T_0=192.739711$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

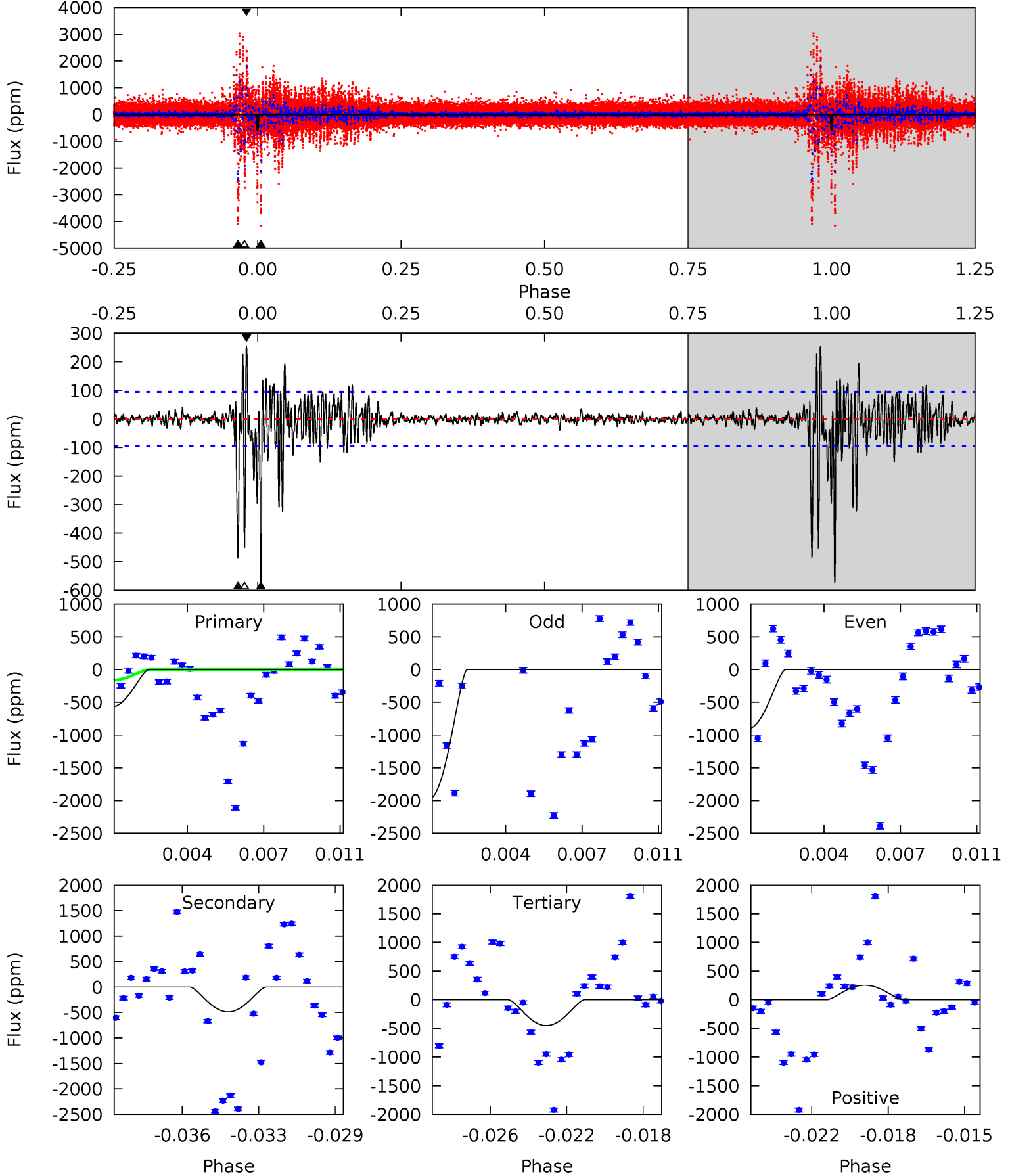
TCE 004553072-03 P=364.500654 Days $T_0=192.982397$ (BKJD)



DV Model-Shift Uniqueness Test

004553072-03, P = 364.571921 Days, E = 192.739711 Days

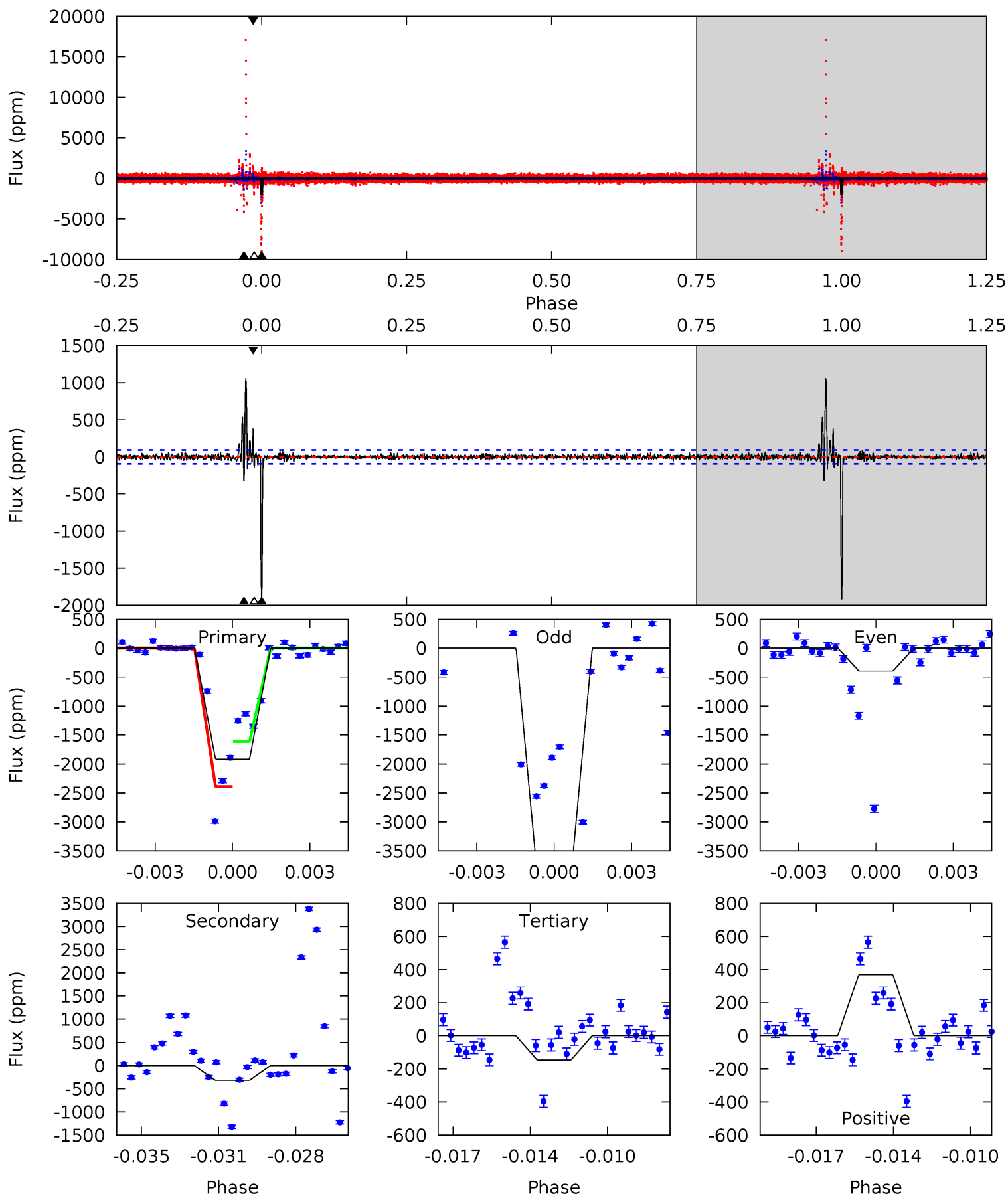
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.6	26.9	24.8	14.0	5.22	2.91	2.32	6.79	17.6	2.04	12.9	18.4	1.61	0.31	23.6



Alt Model-Shift Uniqueness Test

004553072-03, P = 364.500654 Days, E = 192.982397 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
108.2	18.2	8.22	20.9	5.23	2.92	1.79	100.0	87.4	9.97	-2.68	57.6	0.73	0.35	19.7



Stellar Parameters For KIC 004553072

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5982^{+181}_{-199}	$4.104^{+0.279}_{-0.150}$	$0.200^{+0.200}_{-0.300}$	$1.597^{+0.413}_{-0.505}$	$1.182^{+0.164}_{-0.180}$	$0.409^{+0.746}_{-0.176}$
	+3%/-3%	+7%/-4%	+100%/-150%	+26%/-32%	+14%/-15%	+182%/-43%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 004553072-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-488 ± 18	$30.31^{+27.69}_{-21.30}$	447^{+35}_{-39}	2840^{+1209}_{-446}	339^{+3431}_{-251}
Alt.	-322 ± 18	$26.34^{+29.75}_{-18.21}$	448^{+30}_{-39}	2767^{+1160}_{-448}	285^{+2562}_{-220}

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

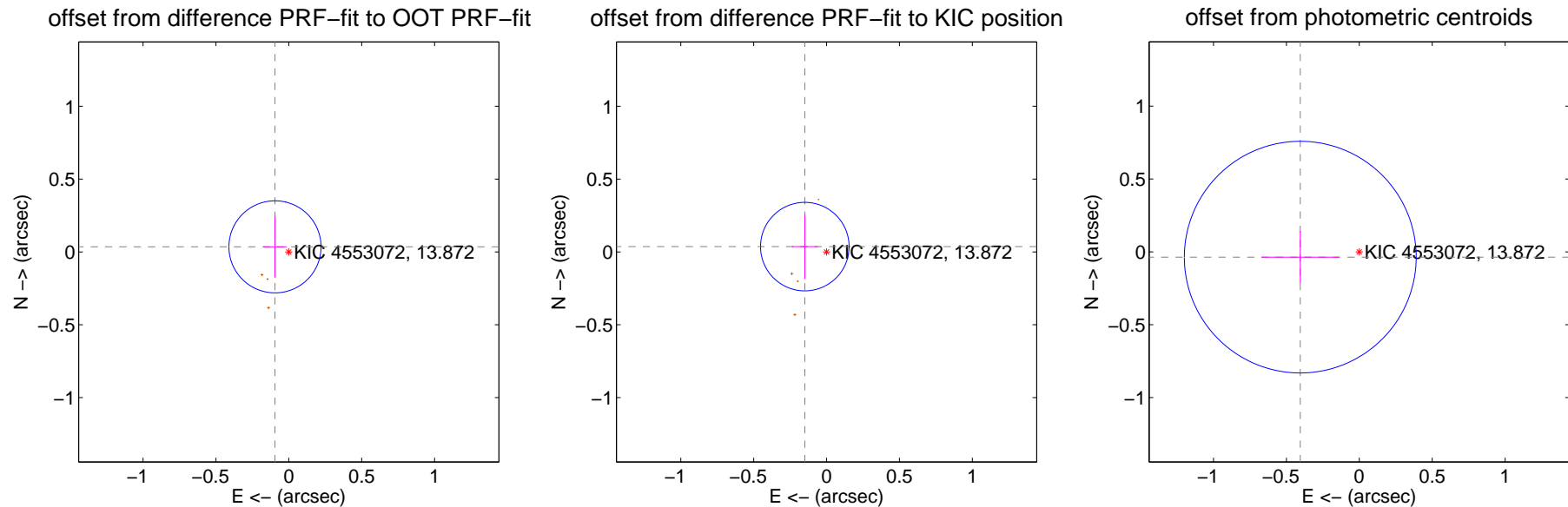
DV Centroid Data

Supplemental centroid analysis for 004553072-03. Kepler magnitude: 13.87. Transit SNR 17.14

There are 0 quarters with good PRF difference image offsets

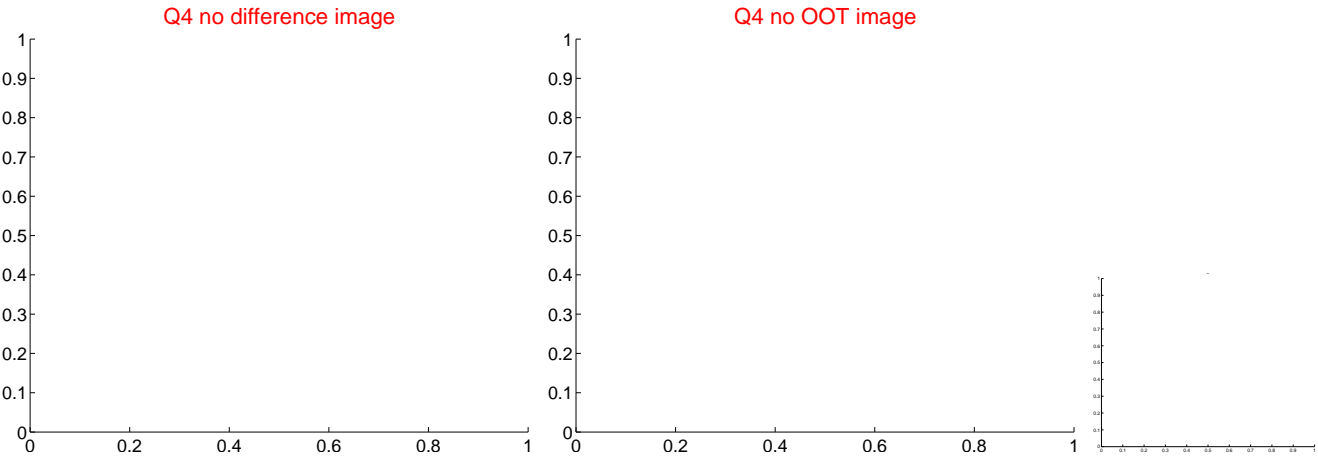
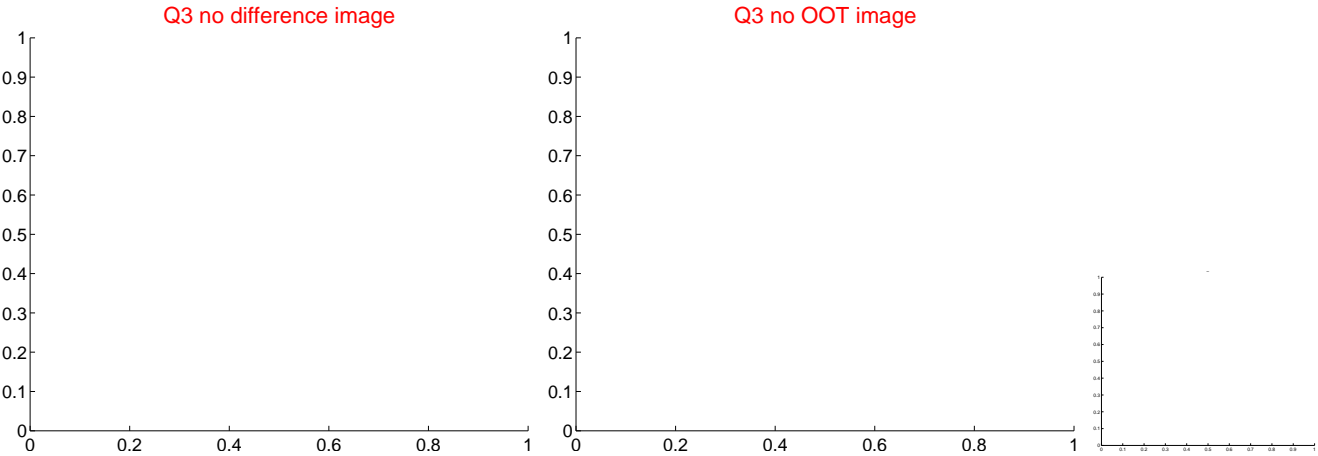
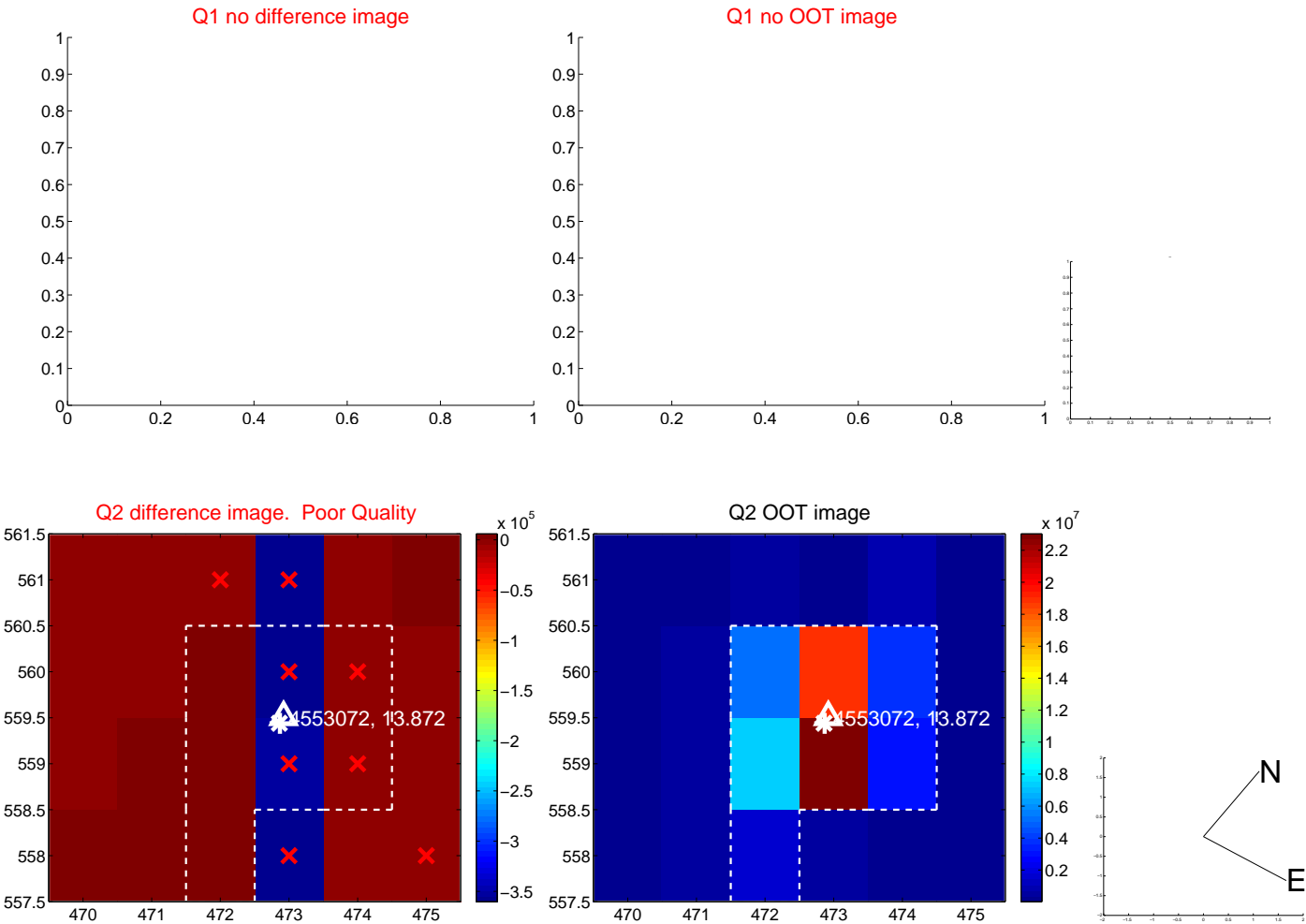
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.101 ± 0.105	0.96	0.095 ± 0.081	0.035 ± 0.211
PRF-fit source offset from KIC position	0.154 ± 0.101	1.52	0.149 ± 0.089	0.036 ± 0.222
photometric centroid source offset	0.41 ± 0.27	1.53	0.40 ± 0.27	-0.04 ± 0.18

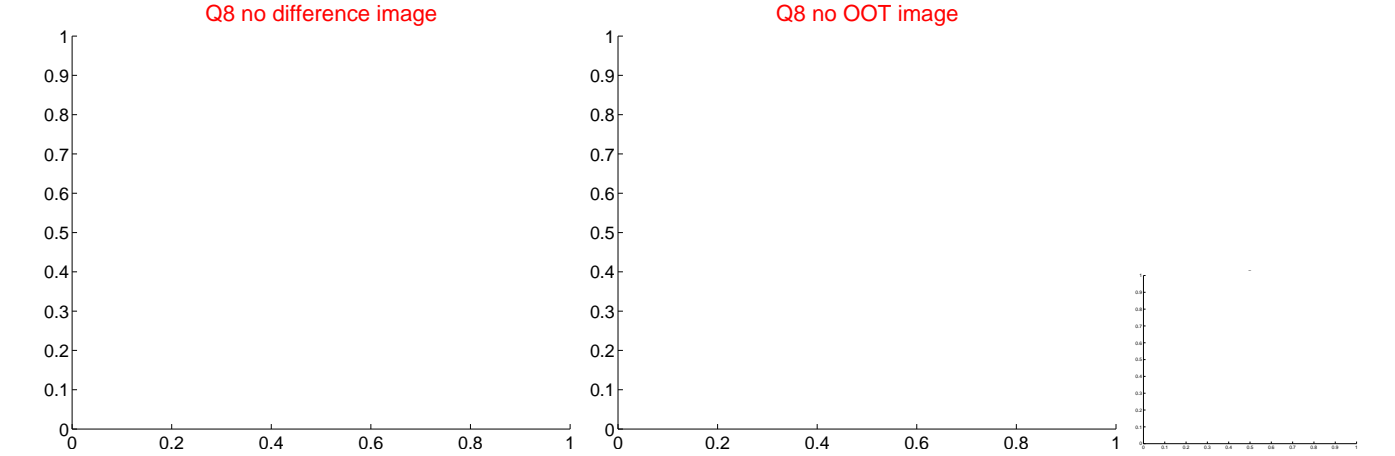
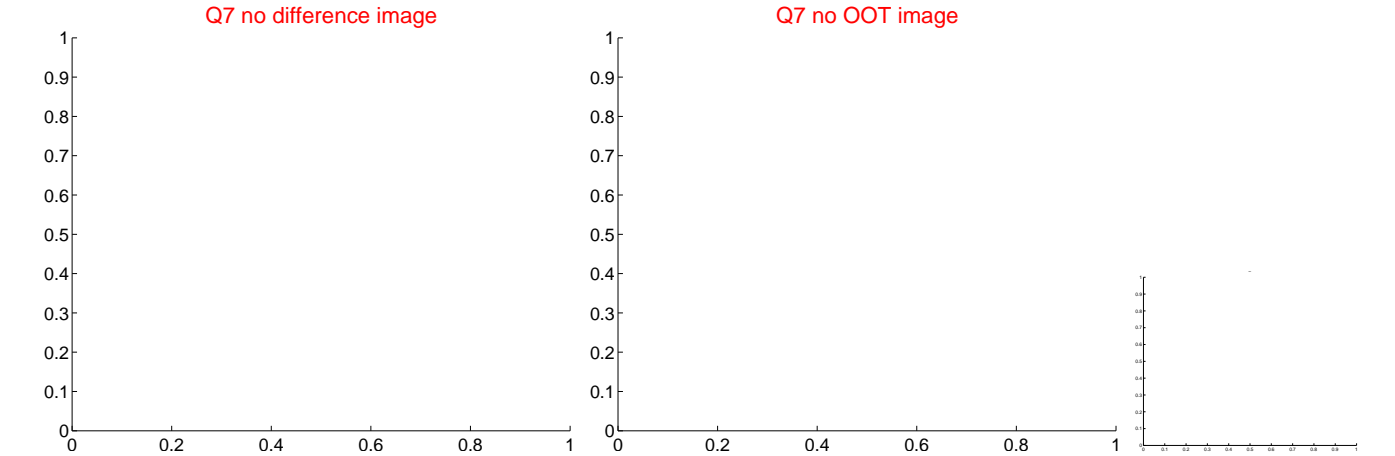
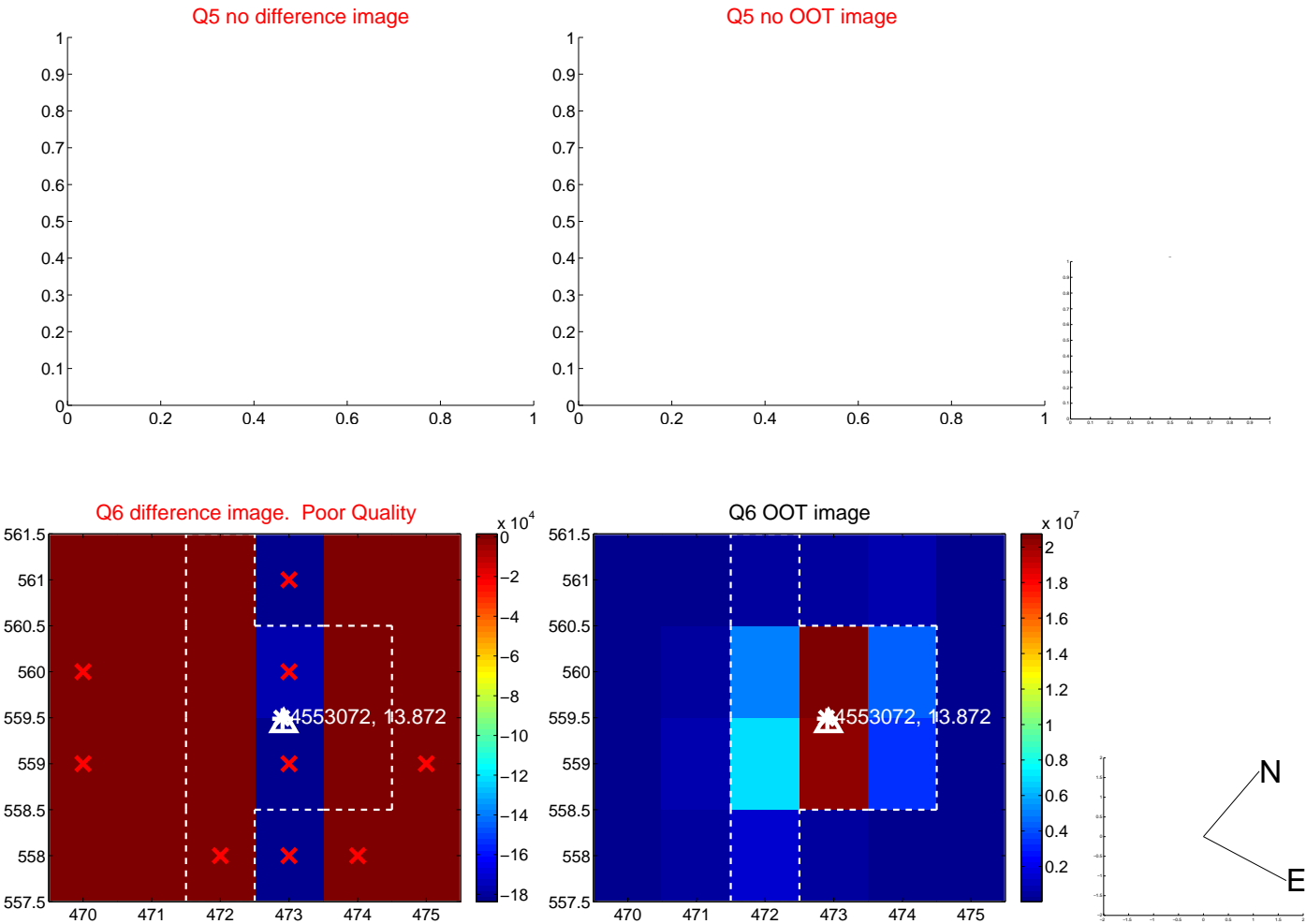


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

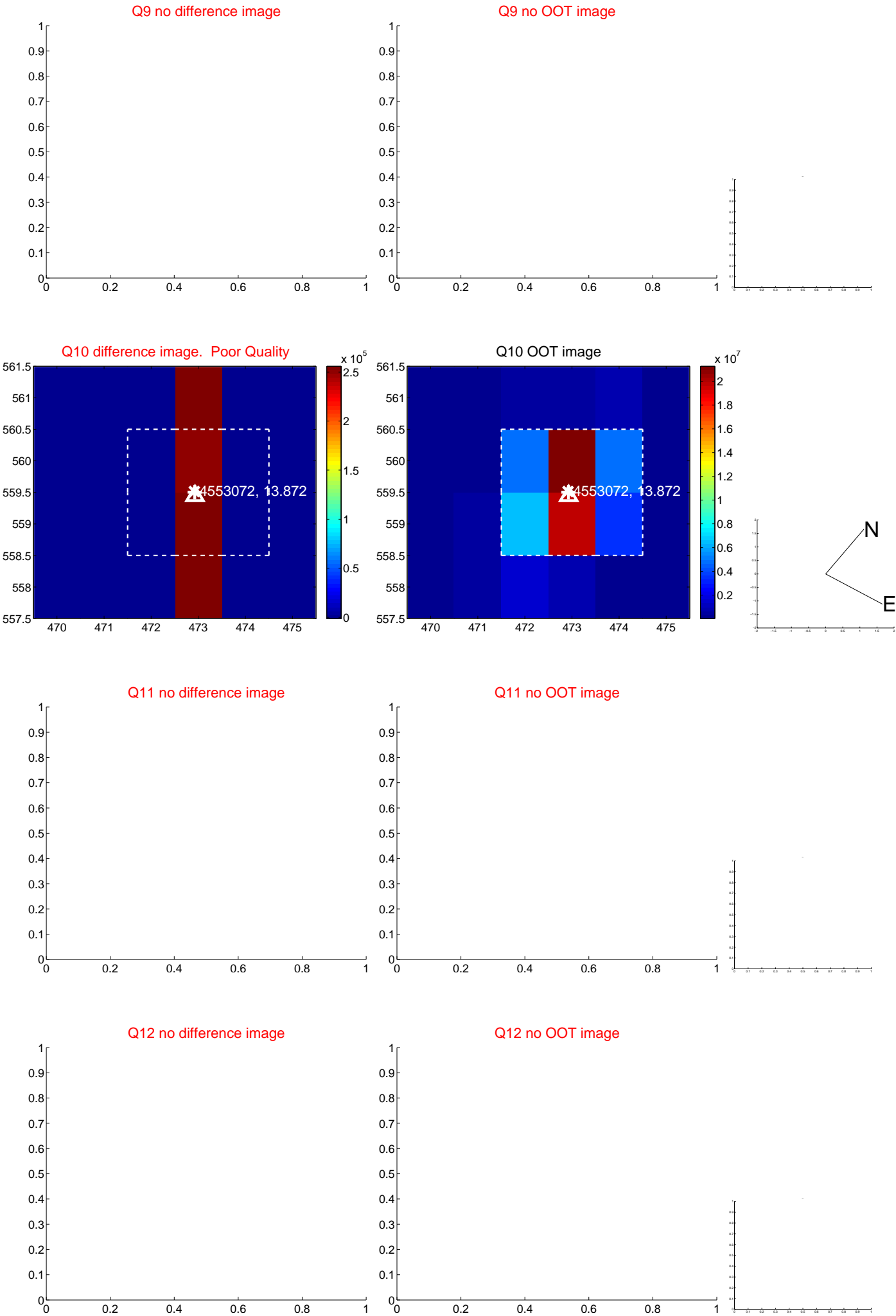
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



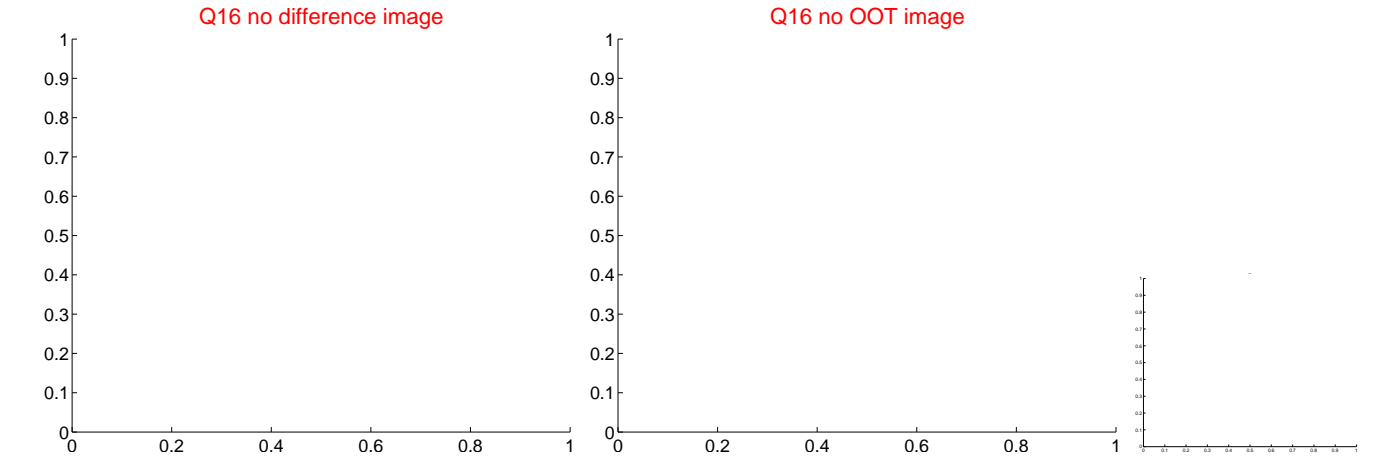
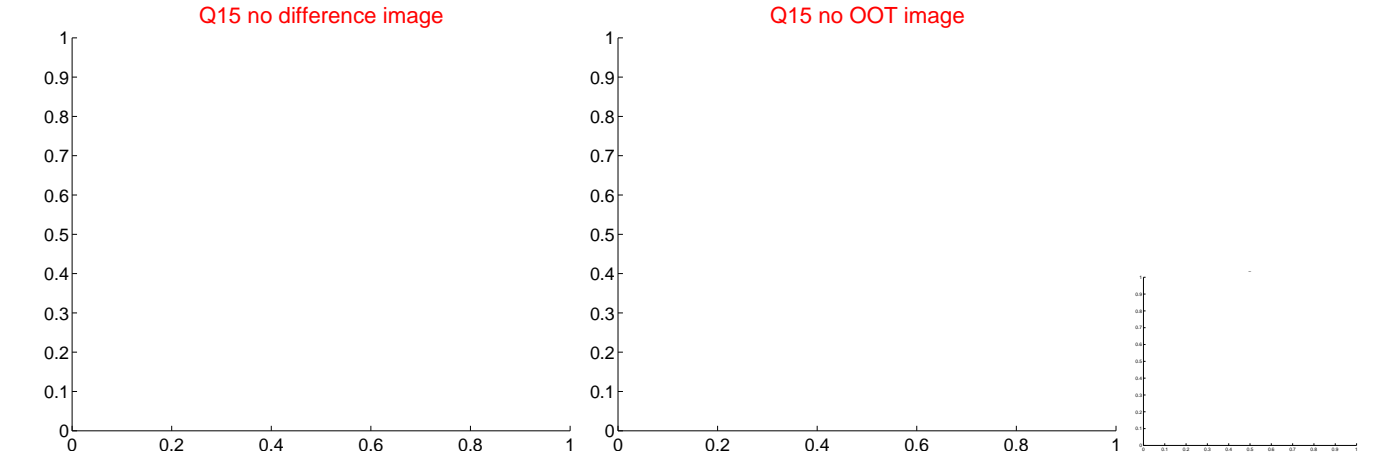
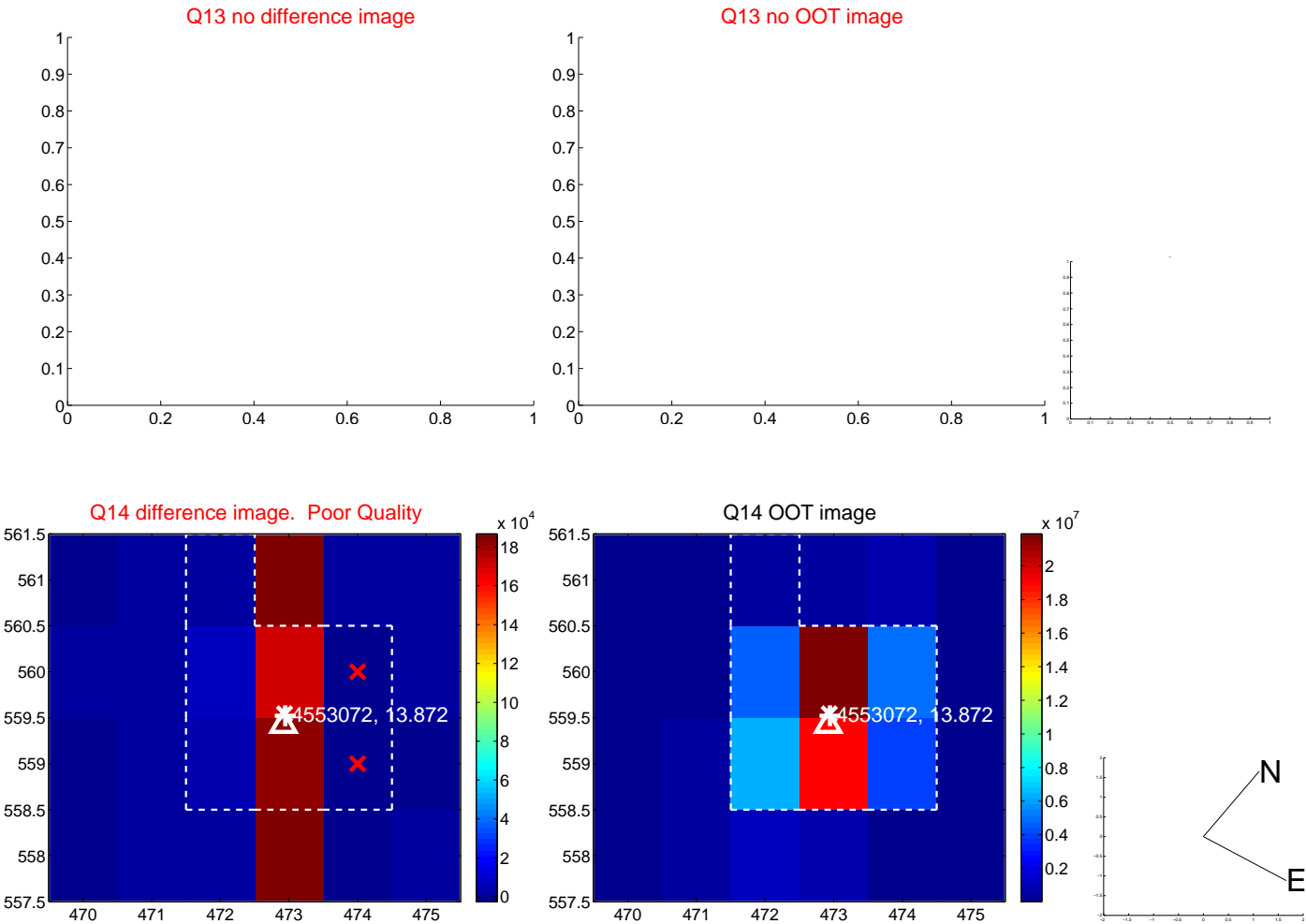
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



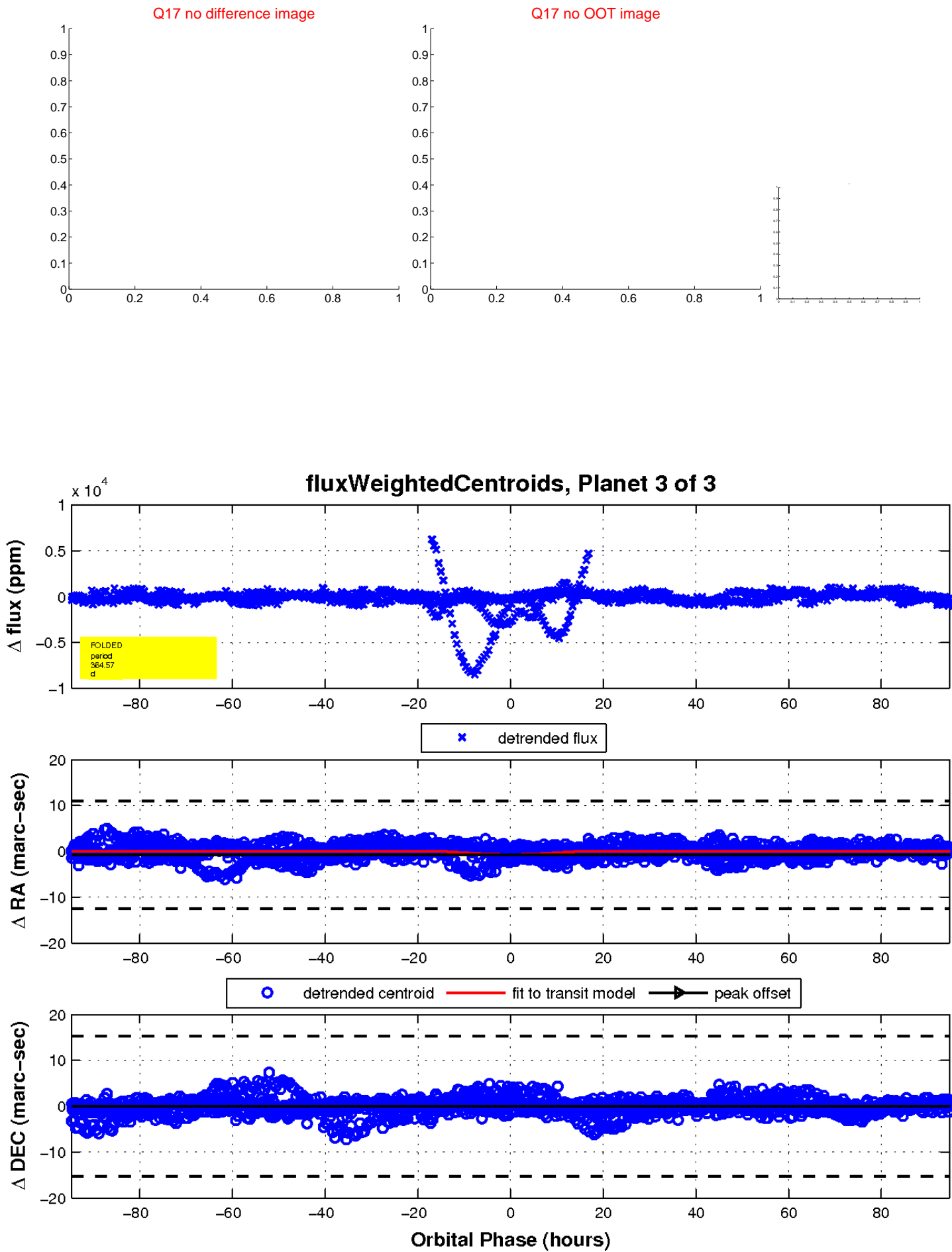
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

