

KIC 005427752

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})
005427752-01	OBS	No	405.917029	367.991203	551.1	20.186	45.7	7.8	0.76	5629	1.81	0.51
005427752-02	OBS	No	395.229958	366.550665	929.2	13.486	18.6	15.1	0.76	5629	4.52	0.53

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005427752-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005427752-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—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.

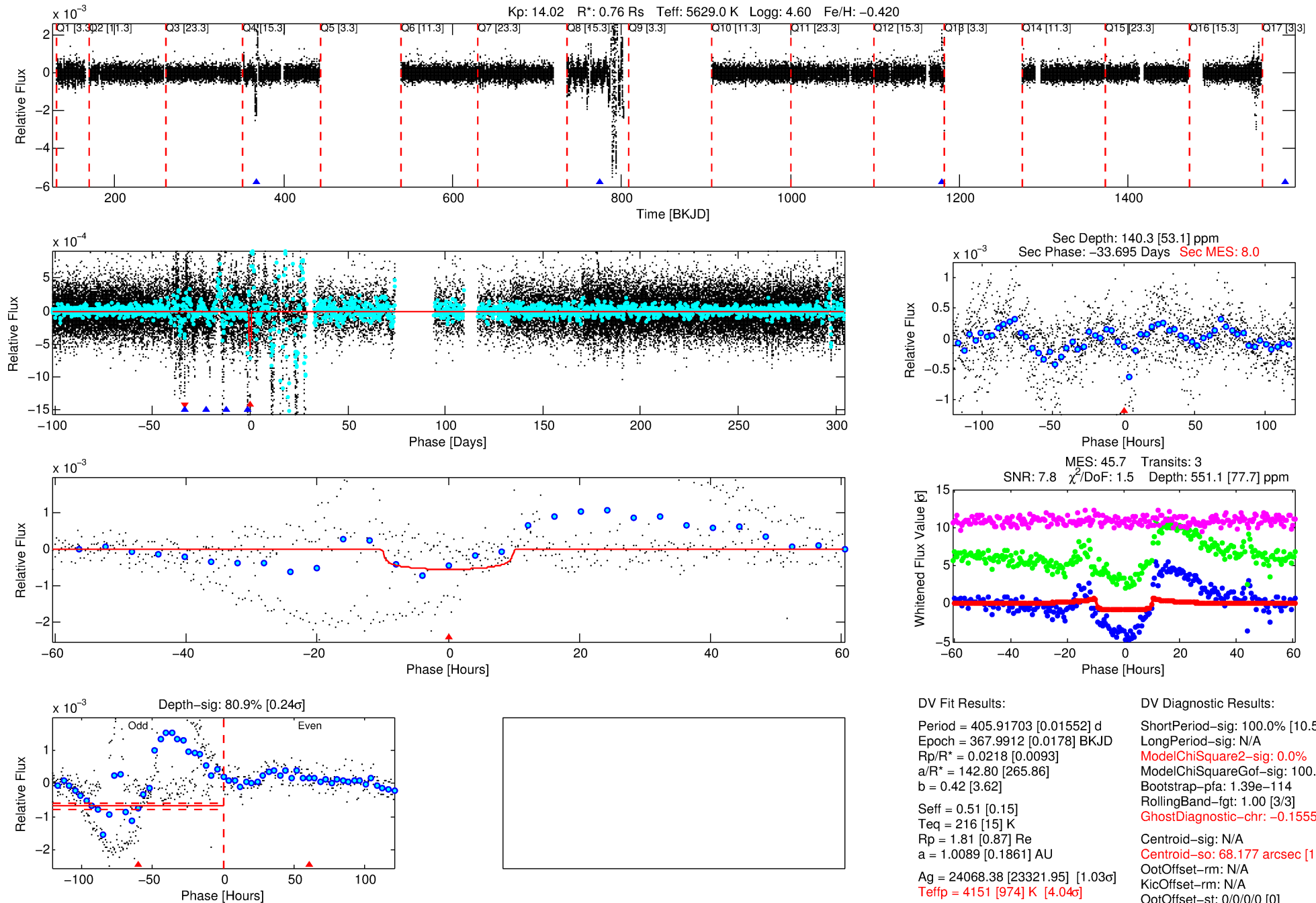
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005427752-01

No Significant Match Found

DV One-Page Summary

KIC: 5427752 Candidate: 1 of 2 Period: 405.917 d



DV Fit Results:

Period = 405.91703 [0.01552] d
 Epoch = 367.9912 [0.0178] BKJD
 Rp/R* = 0.0218 [0.0093]
 a/R* = 142.80 [265.86]
 b = 0.42 [3.62]
 Seff = 0.51 [0.15]
 Teq = 216 [15] K
 Rp = 1.81 [0.87] Re
 a = 1.0089 [0.1861] AU
 Ag = 24068.38 [23321.95] [1.03σ]
 Teff = 4151 [974] K [4.04σ]

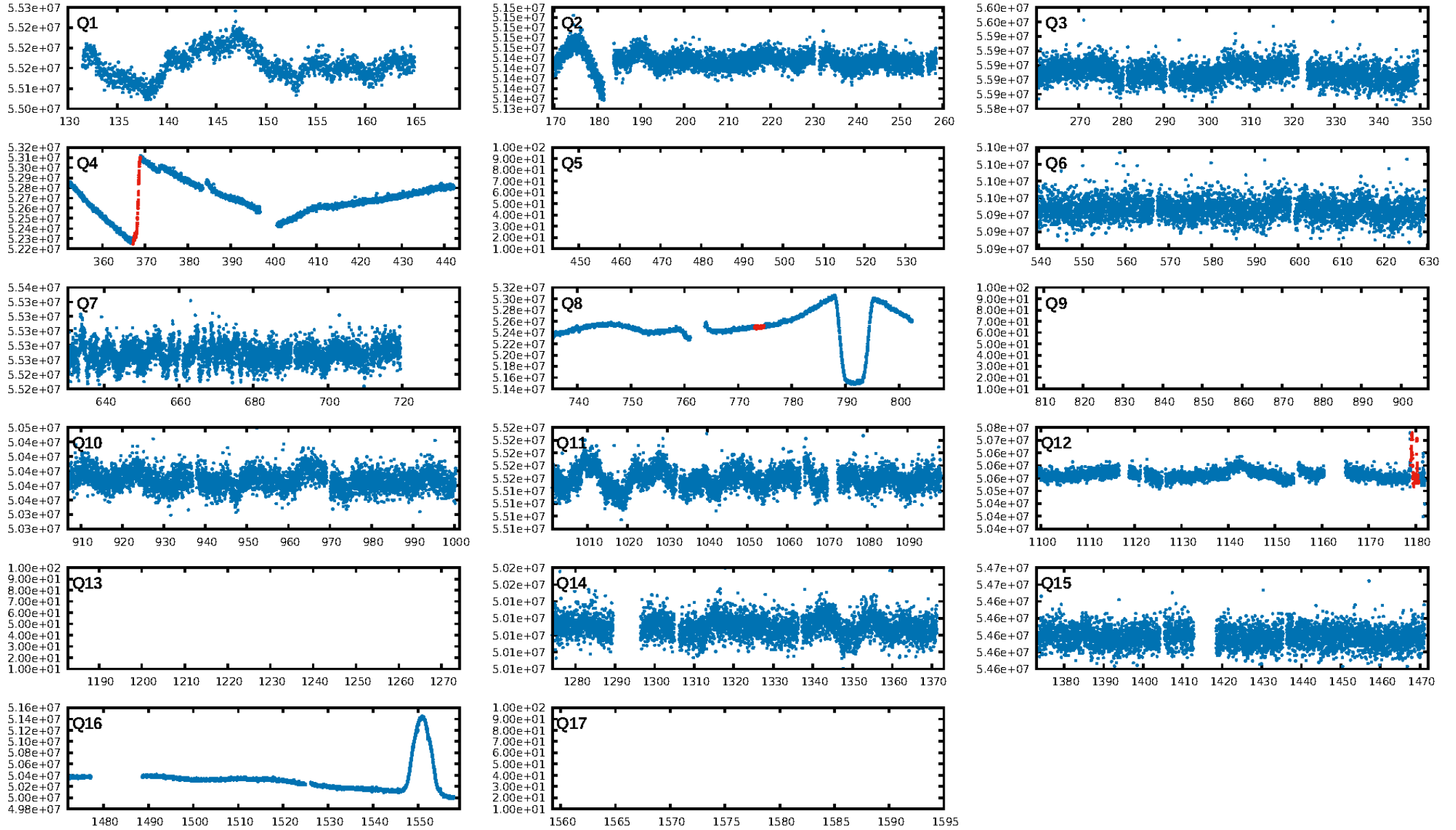
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [10.57σ]
 LongPeriod-sig: N/A
 ModelChiSquare2-sig: 0.0%
 ModelChiSquareGof-sig: 100.0%
 Bootstrap-pfa: 1.39e-114
 RollingBand-fgt: 1.00 [3/3]
 GhostDiagnostic-chr: -0.1555
 Centroid-sig: N/A
 Centroid-so: 68.177 arcsec [14.90σ]
 OotOffset-rm: N/A
 OotOffset-st: 0/0/0/0 [0]
 KicOffset-rm: N/A
 KicOffset-st: 0/0/0/0 [0]
 DiffImageQuality-fgm: N/A
 DiffImageOverlap-fno: 0.50 [1/2]

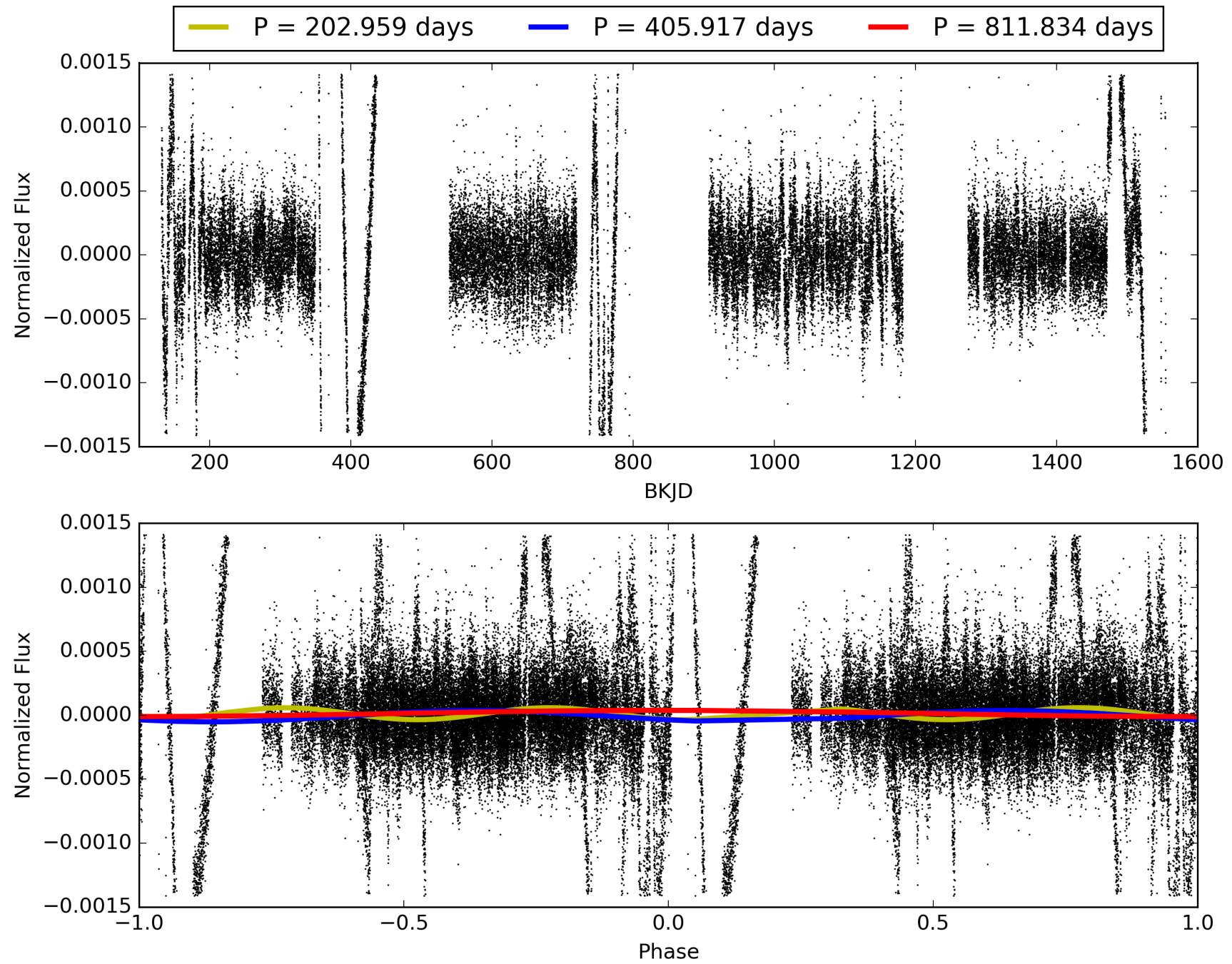
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 07:21:49 Z

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

TCE 005427752-01, PDC Light Curves

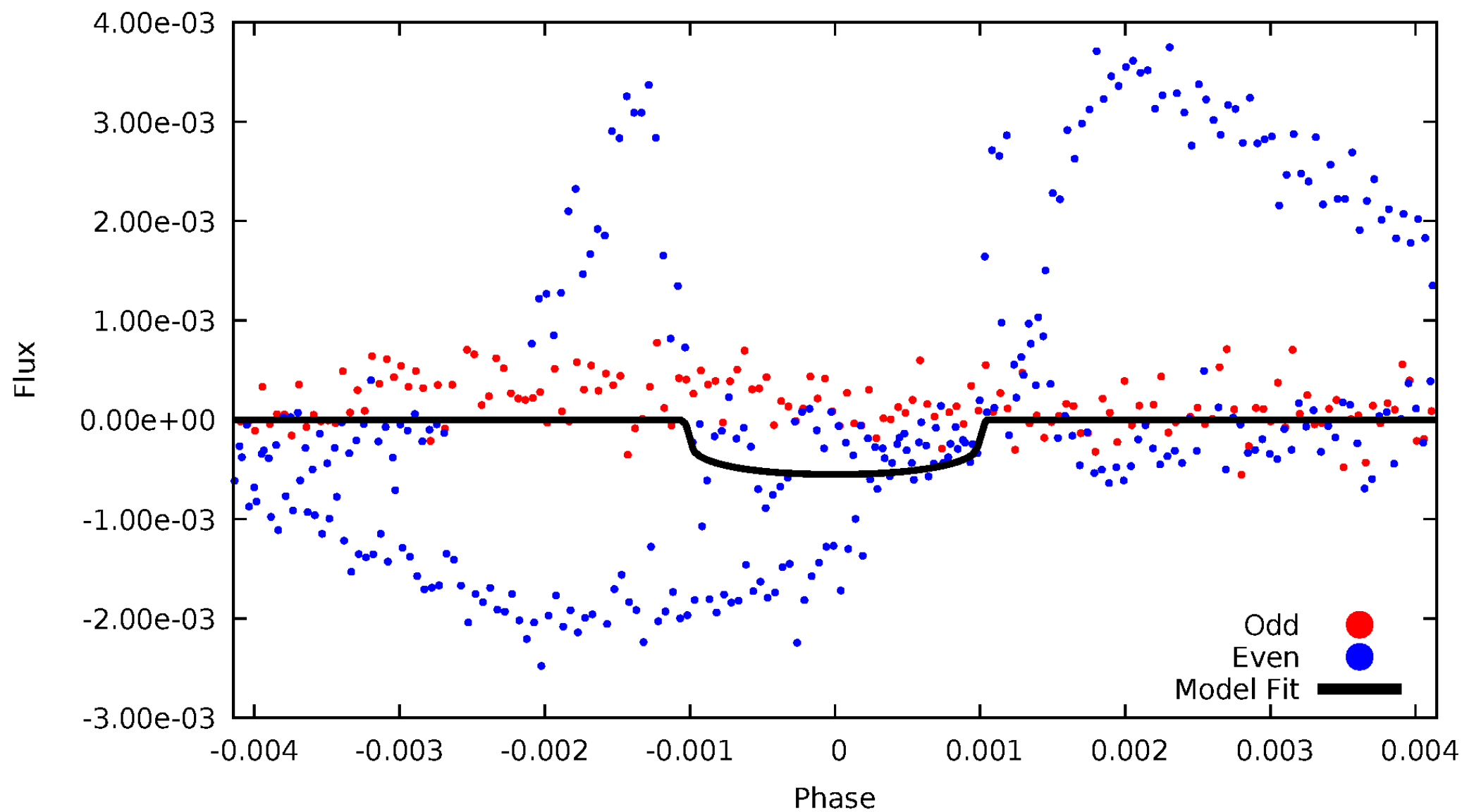


TCE 005427752-01



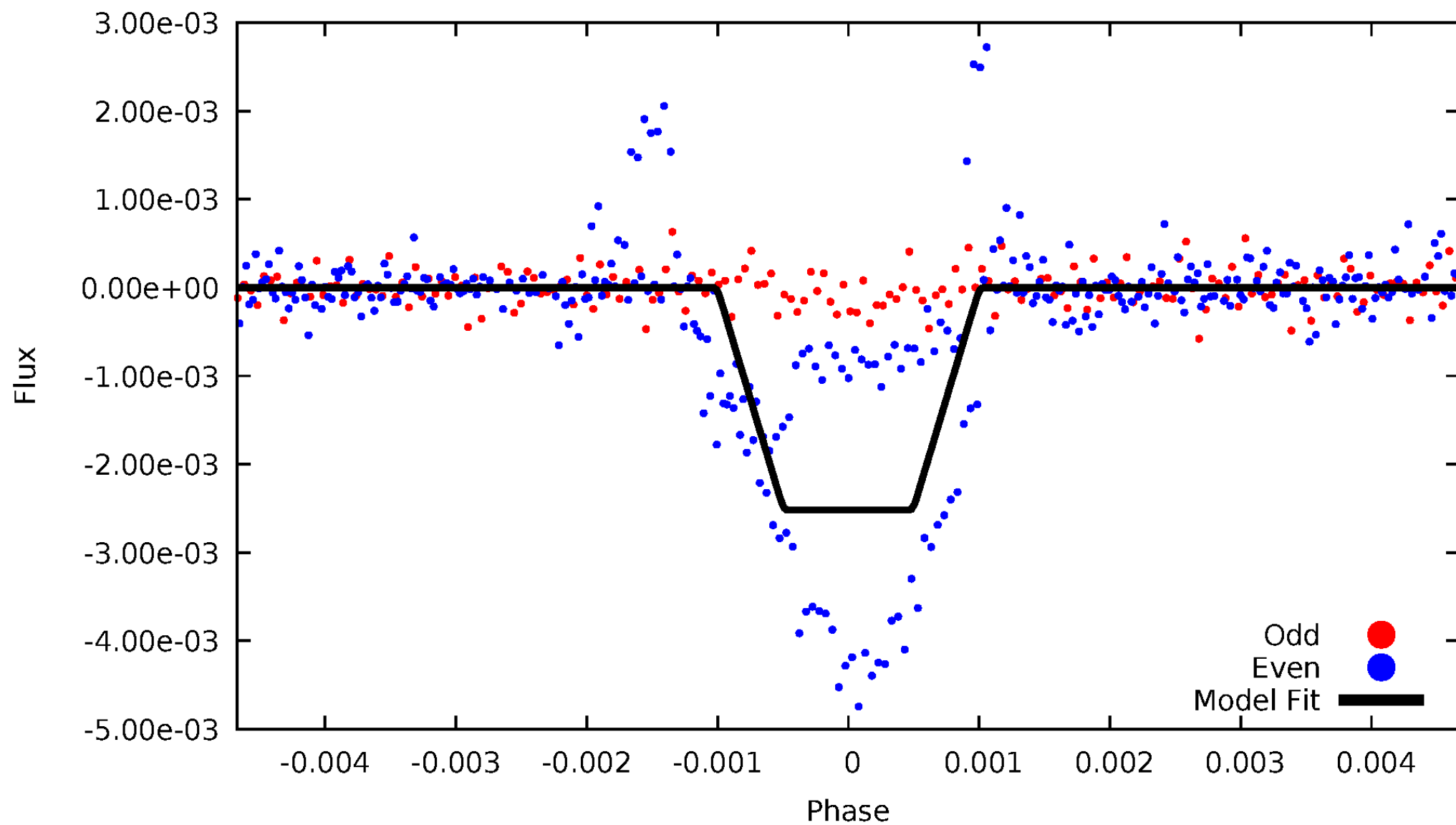
DV Odd/Even

TCE 005427752-01



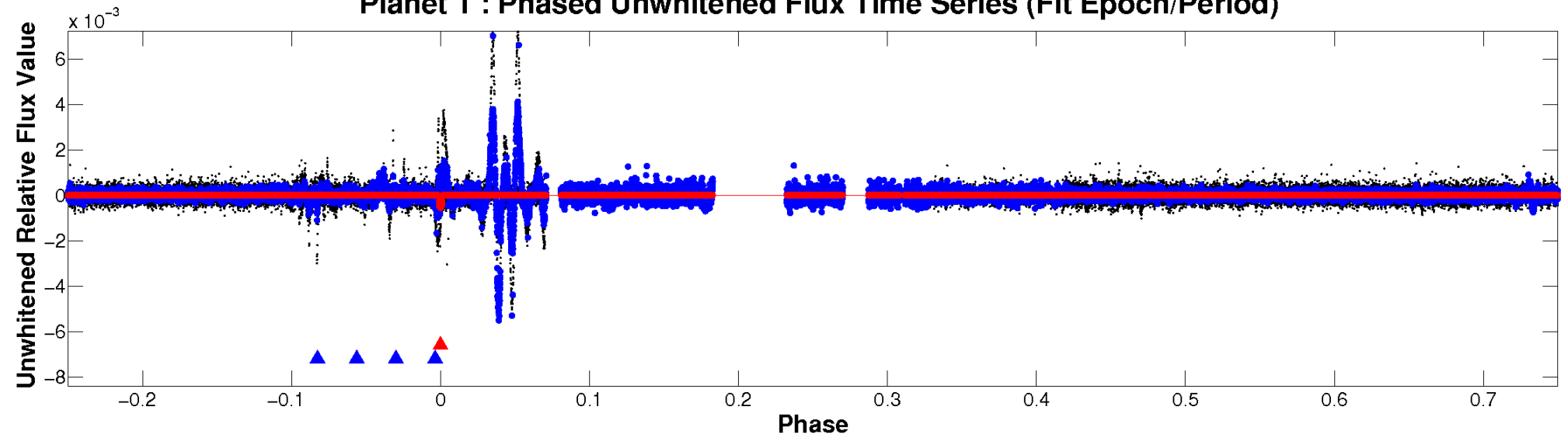
ALT Odd/Even

TCE 005427752-01

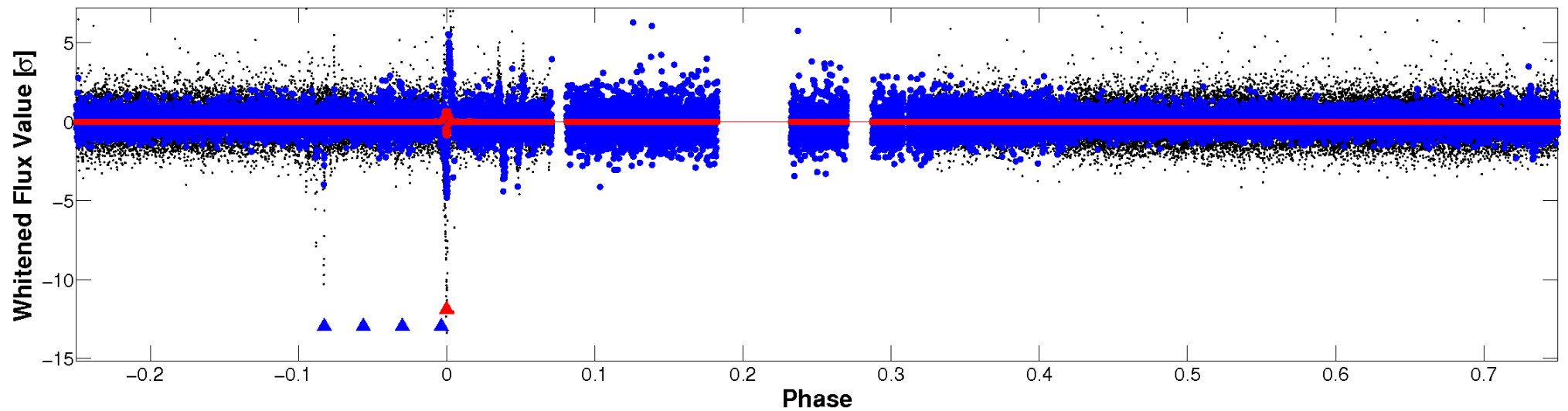


Non-Whitened Vs. Whitened Light Curve

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

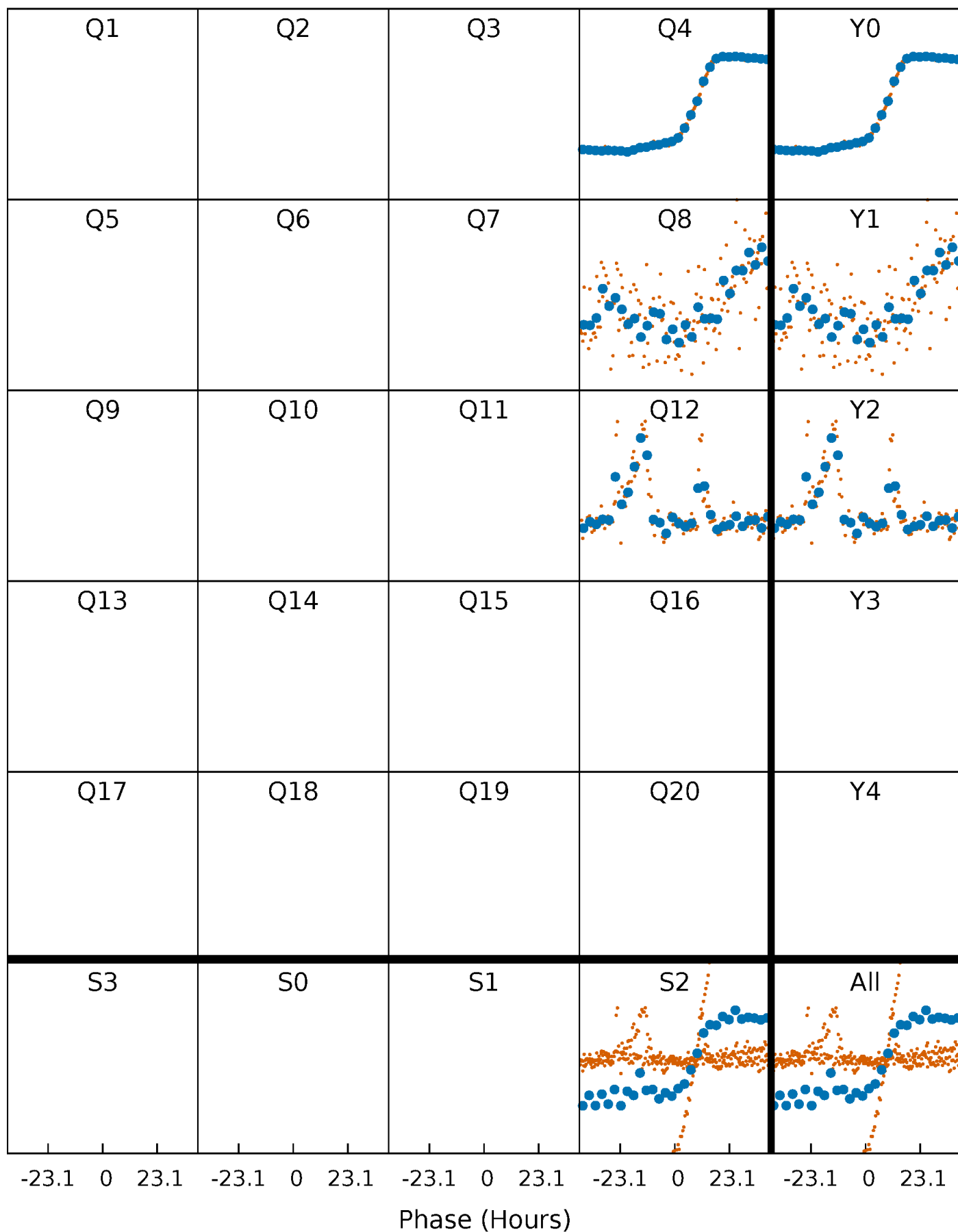


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



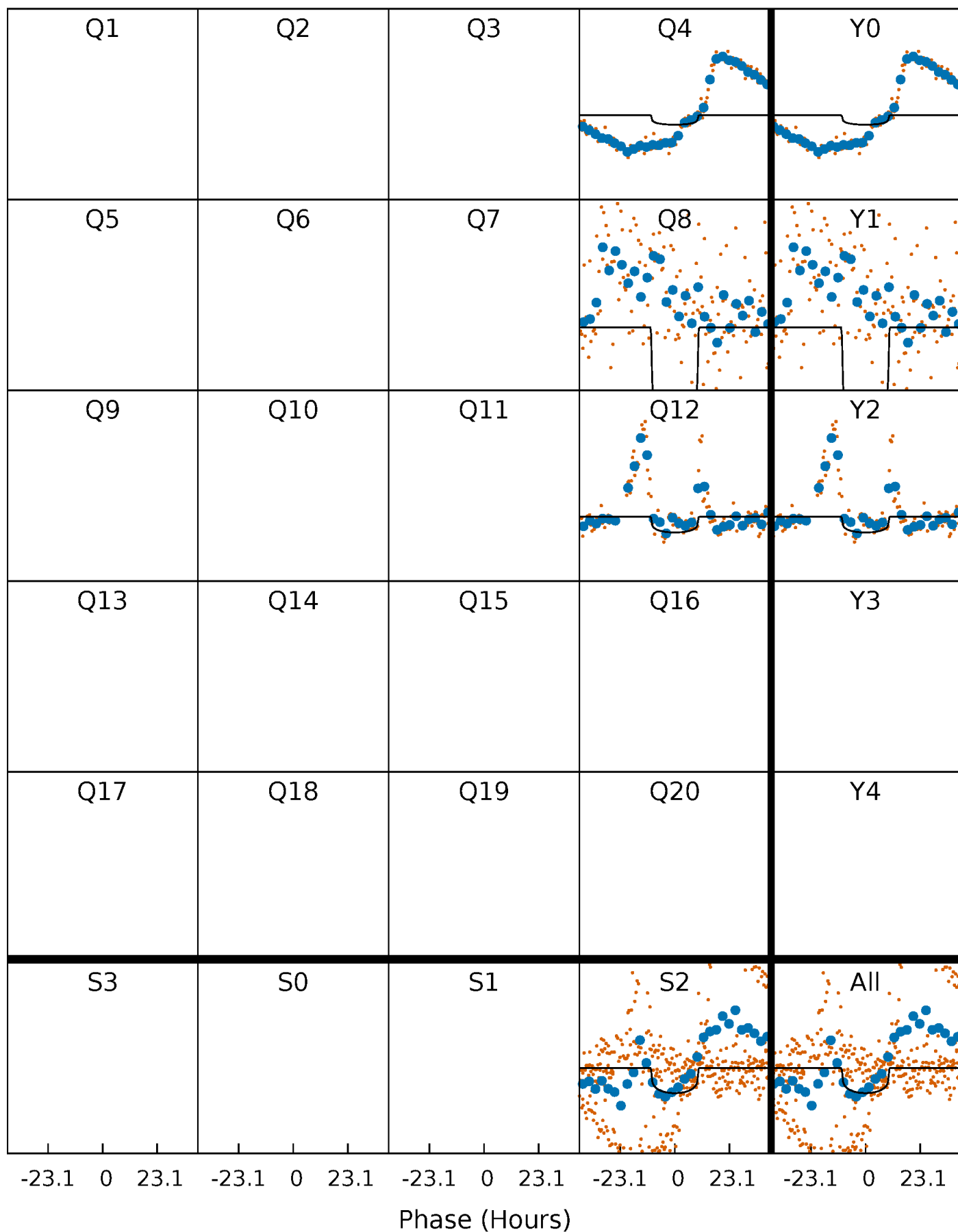
PDC Quarter-Phased Transit Curves

TCE 005427752-01 P=405.917029 Days $T_0=367.991203$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 005427752-01 P=405.917029 Days $T_0=367.991203$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

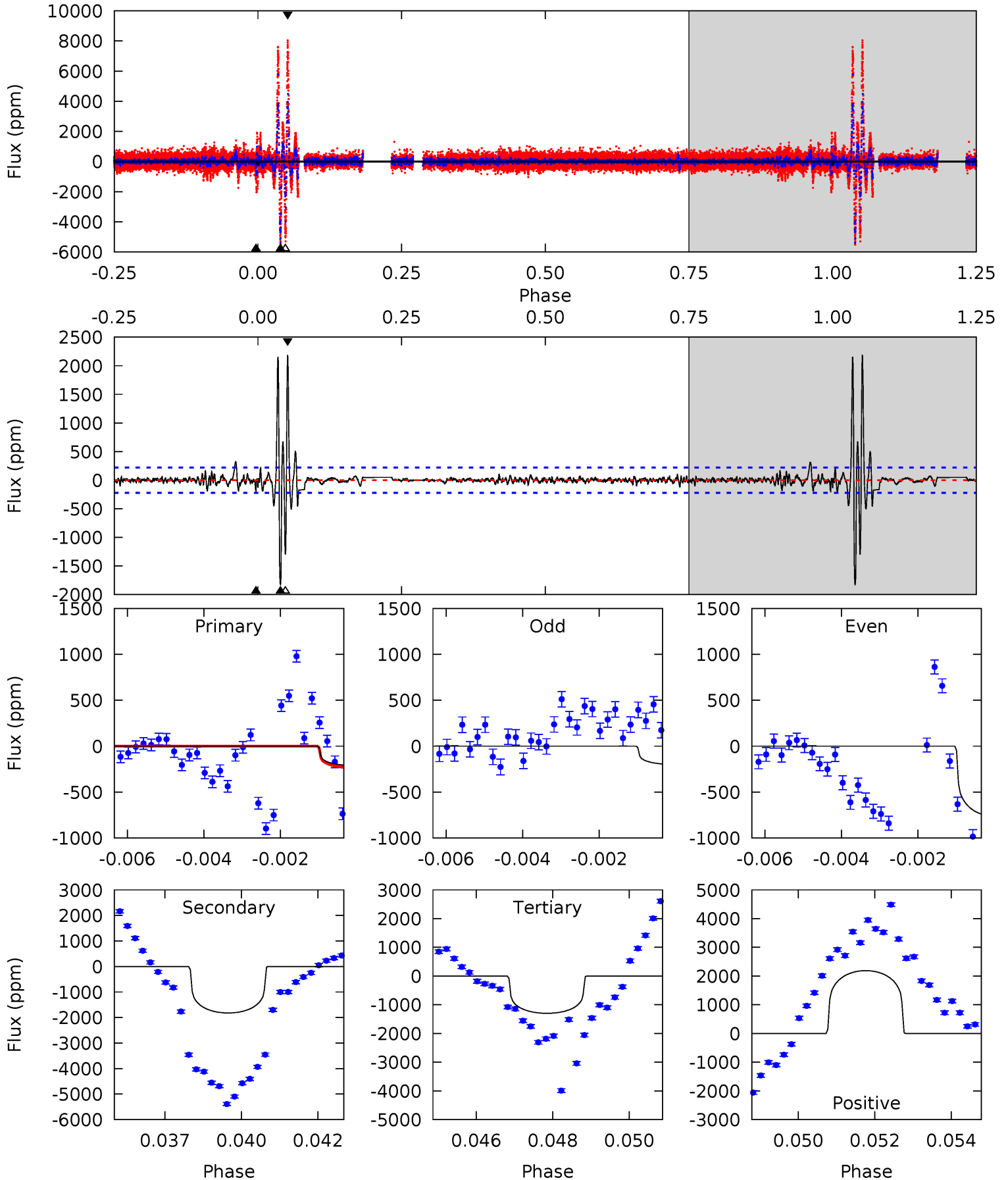
TCE 005427752-01 P=405.919481 Days $T_0=368.036952$ (BKJD)



DV Model-Shift Uniqueness Test

005427752-01, P = 405.917029 Days, E = 367.991203 Days

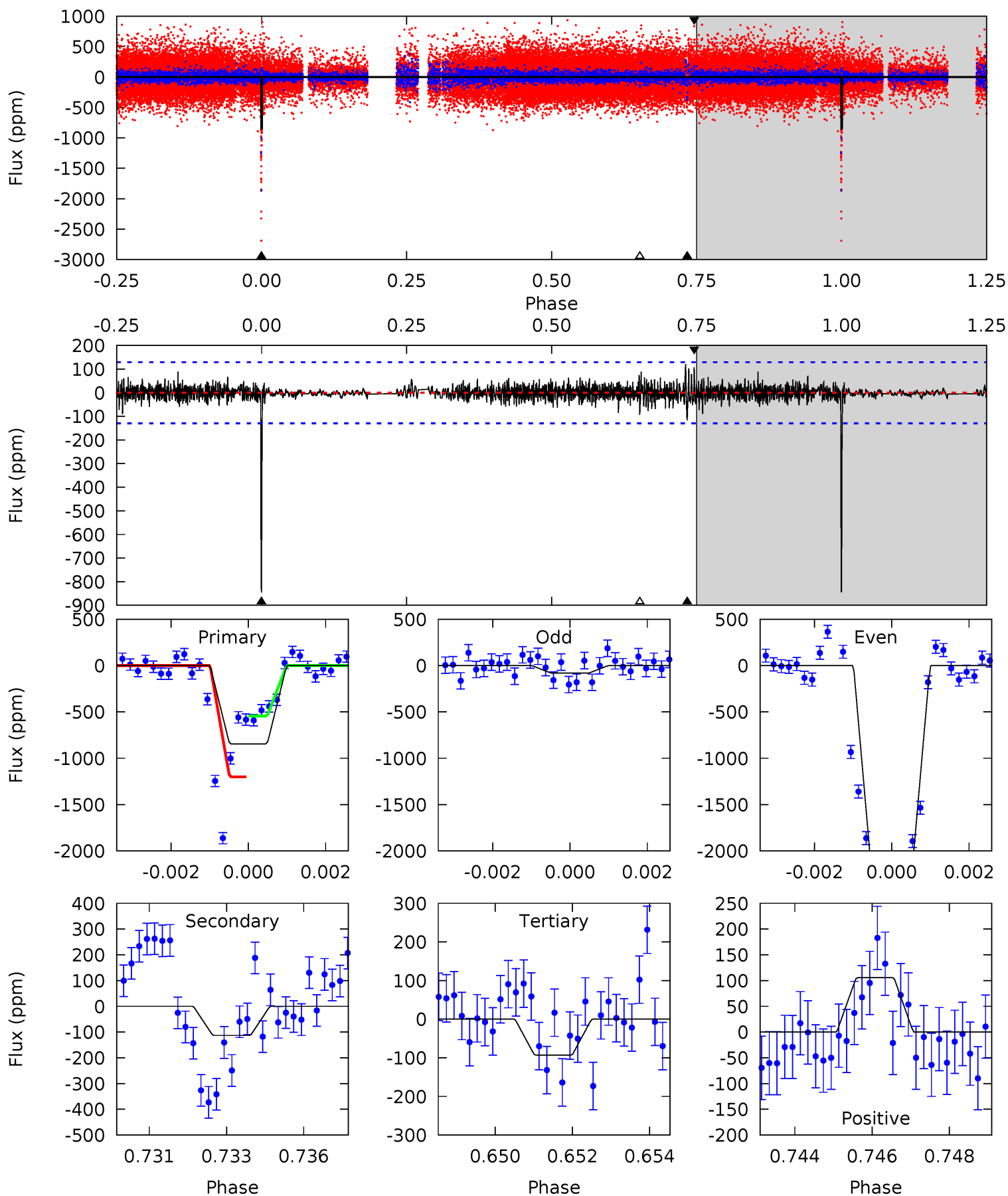
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.13	43.9	31.3	52.8	5.32	3.08	3.70	-26.2	-47.7	12.6	-8.86	6.46	1.58	0.55	0.23



Alt Model-Shift Uniqueness Test

005427752-01, P = 405.919481 Days, E = 368.036952 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.8	4.66	3.83	4.35	5.32	3.09	0.92	31.0	30.5	0.83	0.31	57.9	1.62	0.12	0



Stellar Parameters For KIC 005427752

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5629^{+152}_{-152}	$4.596^{+0.038}_{-0.143}$	$-0.420^{+0.300}_{-0.300}$	$0.760^{+0.169}_{-0.061}$	$0.839^{+0.089}_{-0.089}$	$2.689^{+0.517}_{-1.096}$
	+3%/-3%	+1%/-3%	+71%/-71%	+22%/-8%	+11%/-11%	+19%/-41%
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 005427752-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1822 ± 41	$1.86^{+0.81}_{-0.81}$	306^{+16}_{-12}	8100^{+4135}_{-1473}	$290714^{+601740}_{-147351}$
Alt.	-113 ± 24	$4.34^{+0.91}_{-0.85}$	306^{+17}_{-12}	3176^{+253}_{-185}	3329^{+2171}_{-1205}

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

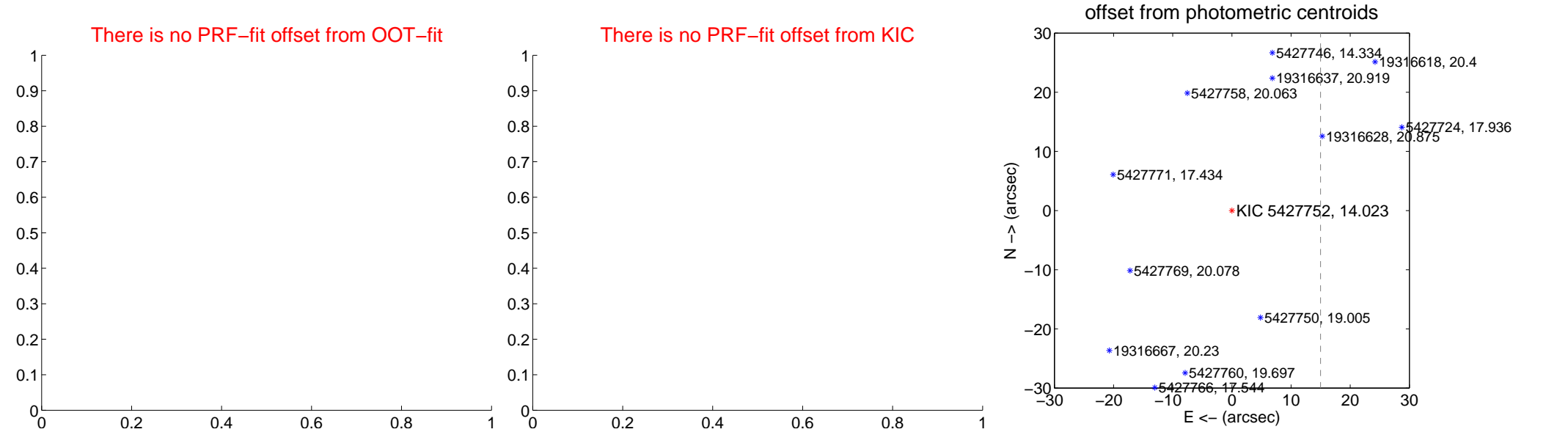
DV Centroid Data

Supplemental centroid analysis for 005427752-01. Kepler magnitude: 14.02. Transit SNR 7.81

There are 0 quarters with good PRF difference image offsets

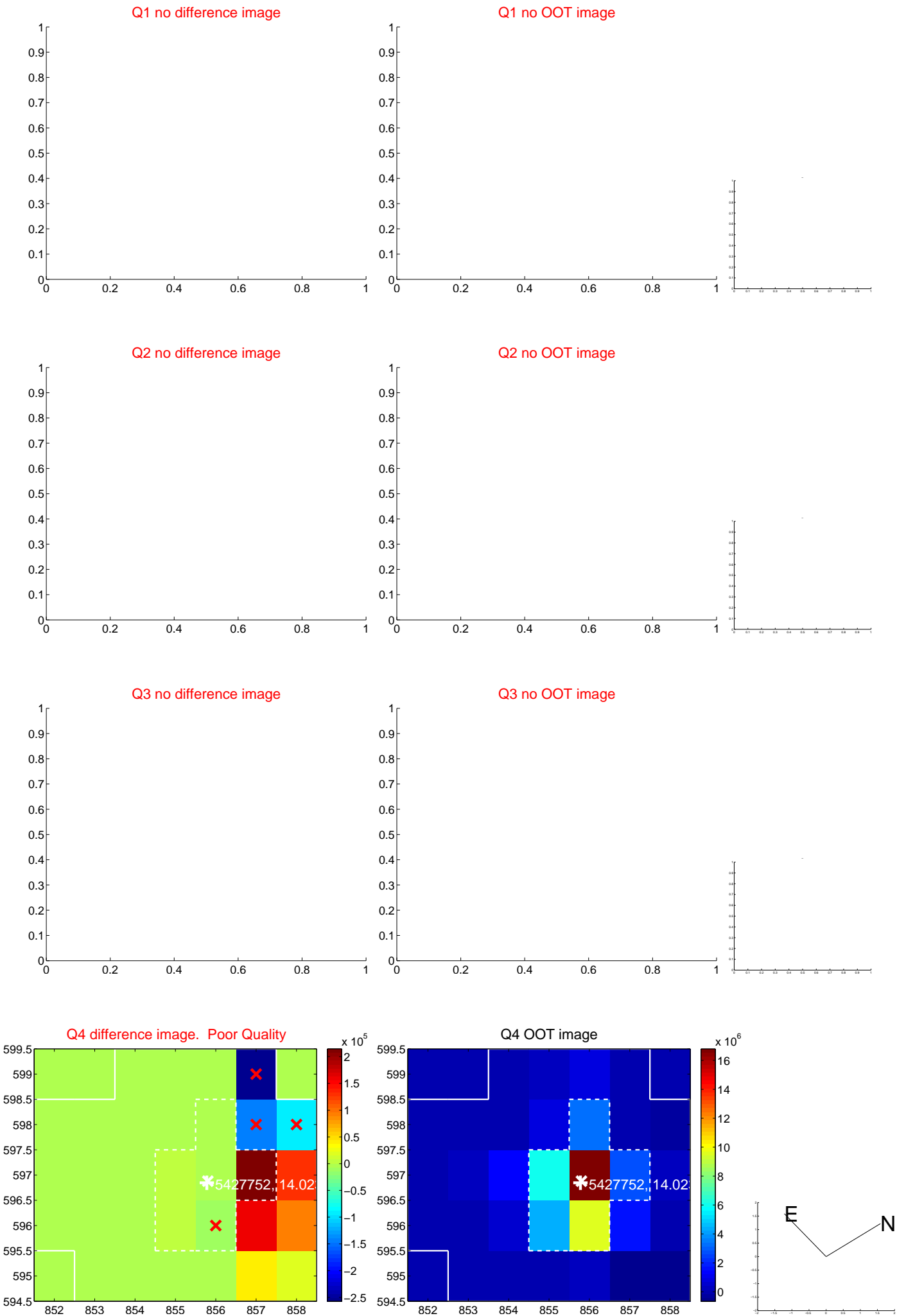
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	68.18 ± 4.57	14.90	-14.99 ± 2.53	66.51 ± 4.65

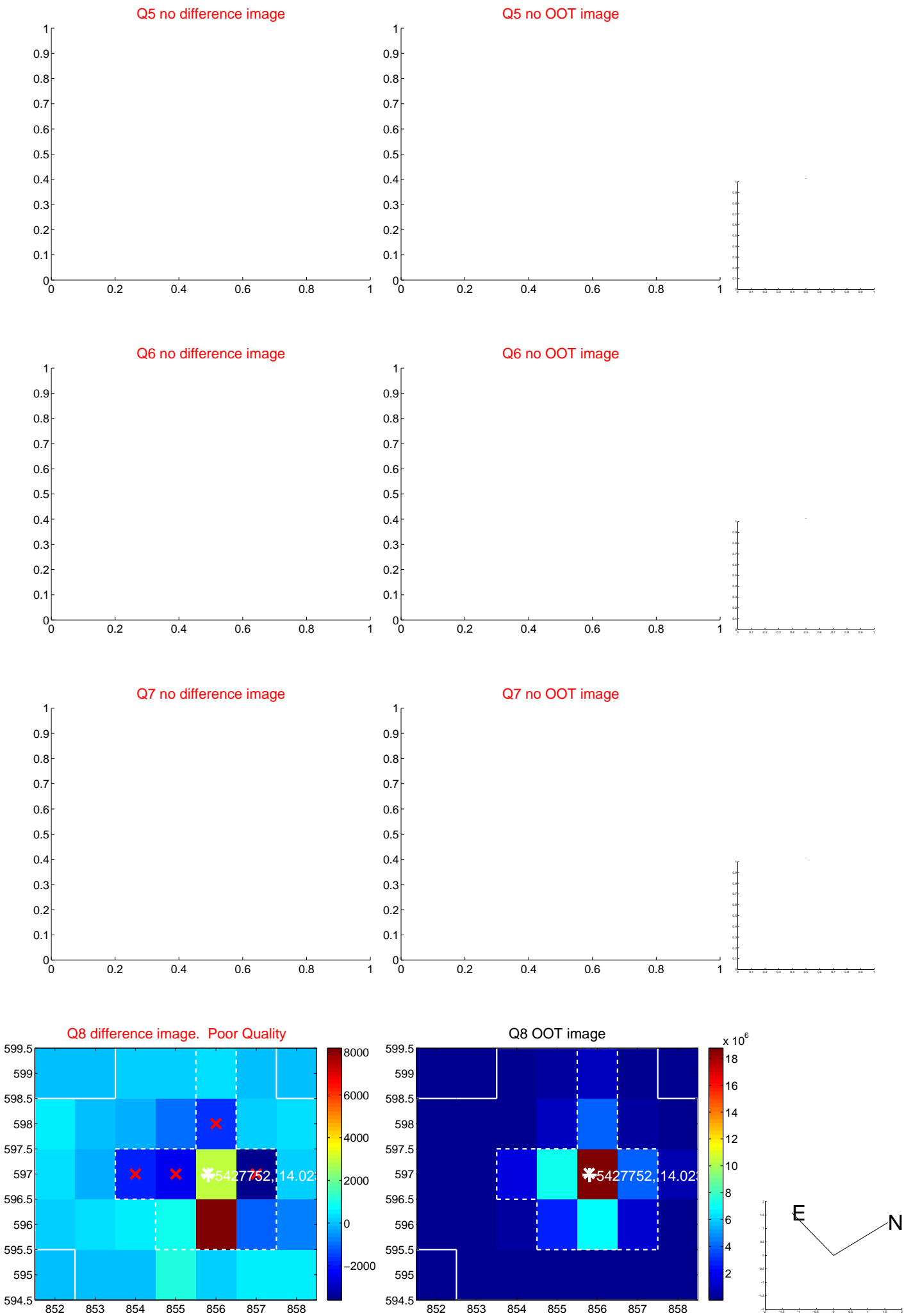


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



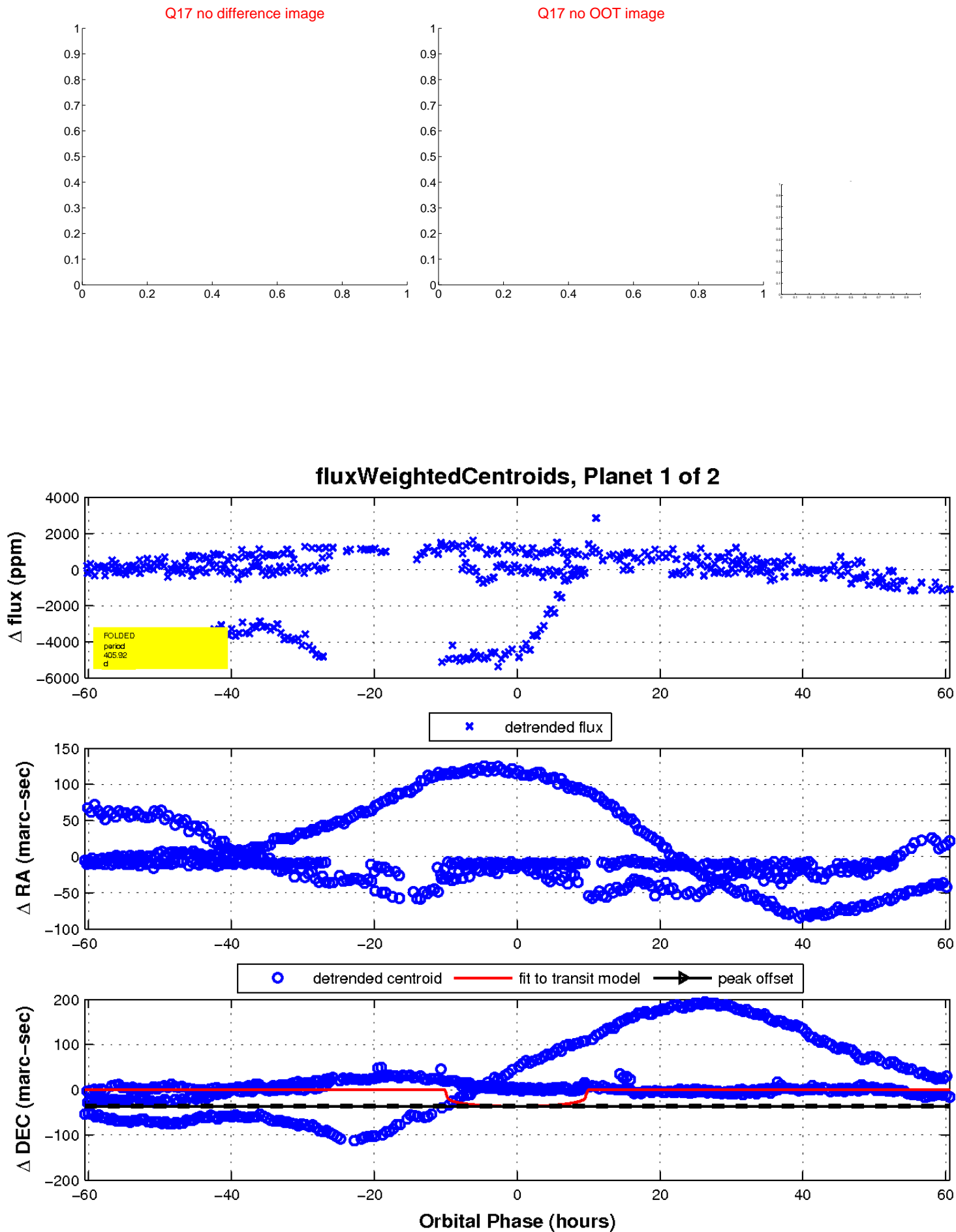
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

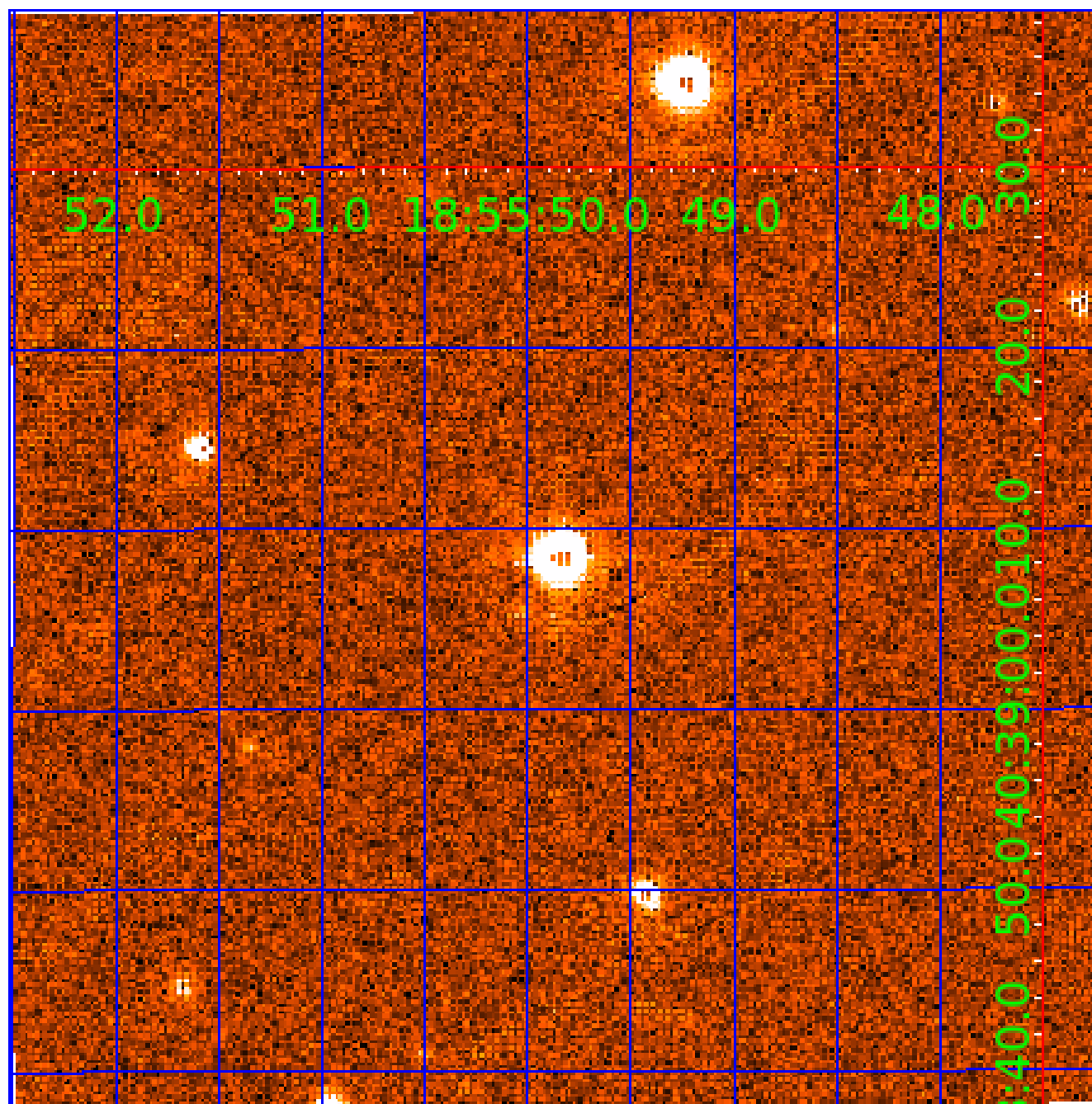


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005427752

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})
005427752-01	OBS	No	405.917029	367.991203	551.1	20.186	45.7	7.8	0.76	5629	1.81	0.51
005427752-02	OBS	No	395.229958	366.550665	929.2	13.486	18.6	15.1	0.76	5629	4.52	0.53

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005427752-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005427752-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—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.

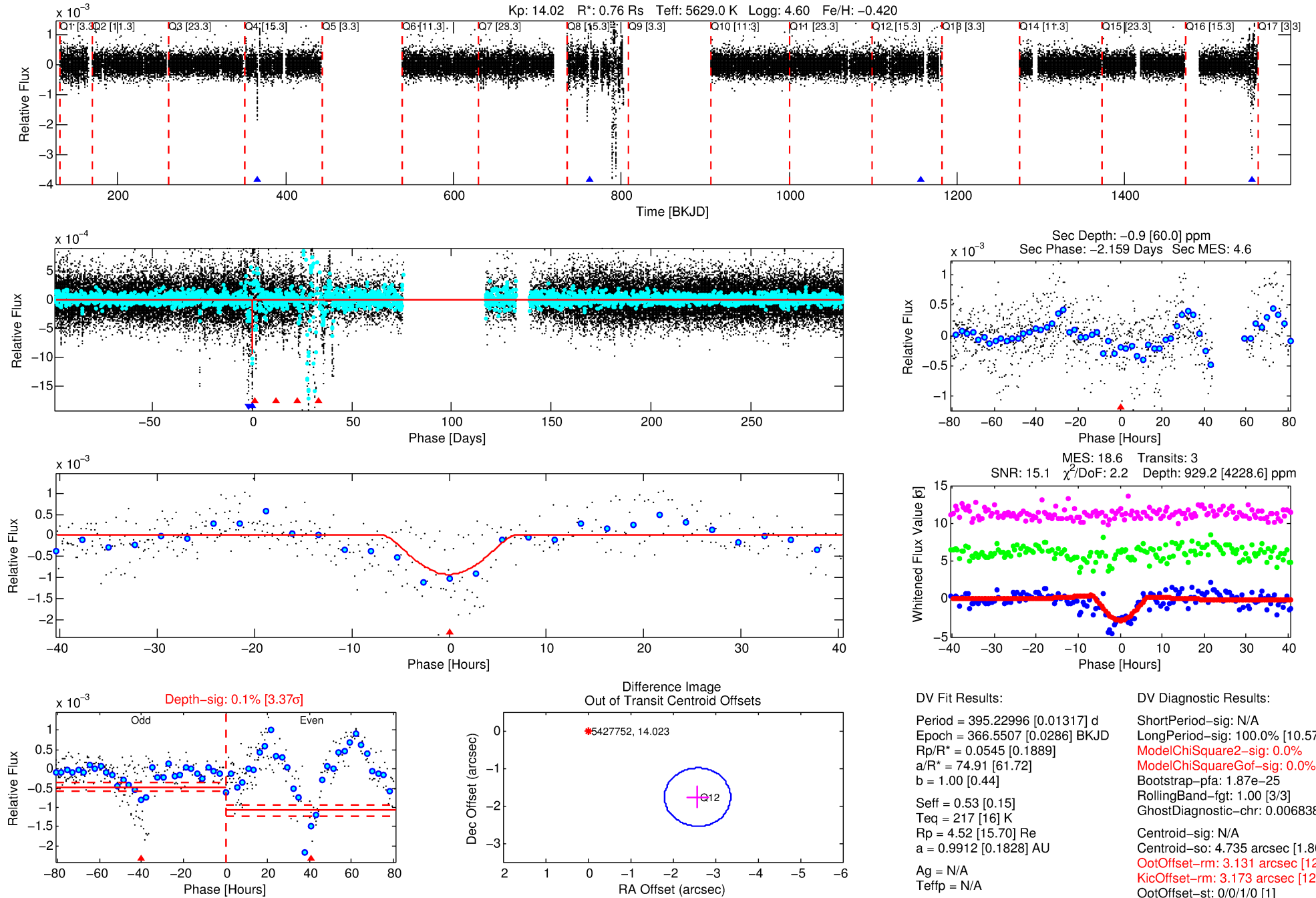
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005427752-02

No Significant Match Found

DV One-Page Summary

KIC: 5427752 Candidate: 2 of 2 Period: 395.230 d



DV Fit Results:

Period = 395.22996 [0.01317] d
Epoch = 366.5507 [0.0286] BKJD
Rp/R* = 0.0545 [0.1889]
a/R* = 74.91 [61.72]
b = 1.00 [0.44]
Seff = 0.53 [0.15]
Teq = 217 [16] K
Rp = 4.52 [15.70] Re
a = 0.9912 [0.1828] AU
Ag = N/A
Teffp = N/A

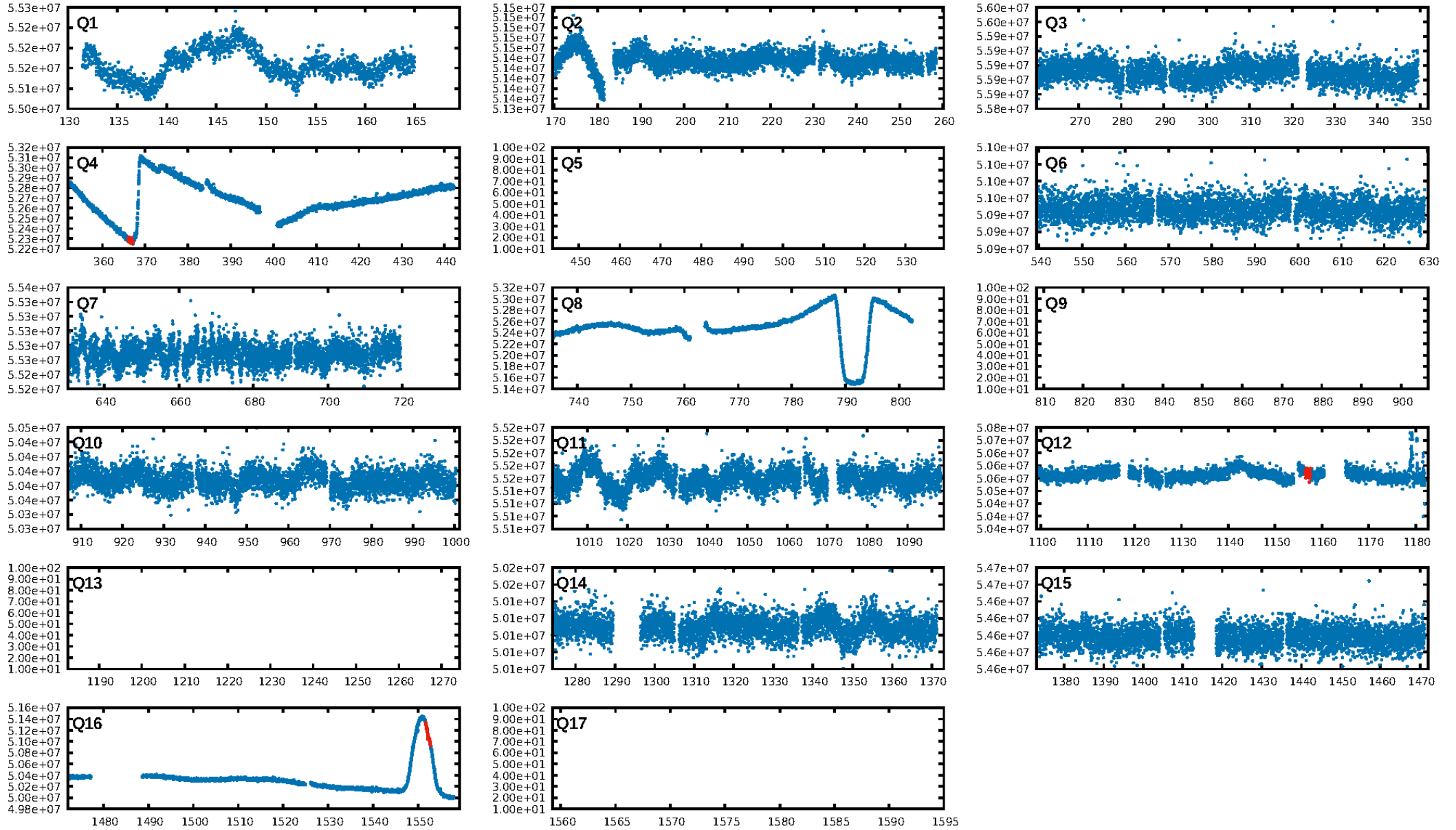
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [10.57 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 1.87e-25
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.006838
Centroid-sig: N/A
Centroid-so: 4.735 arcsec [1.80 σ]
OotOffset-rm: 3.131 arcsec [12.09 σ]
KicOffset-rm: 3.173 arcsec [12.19 σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

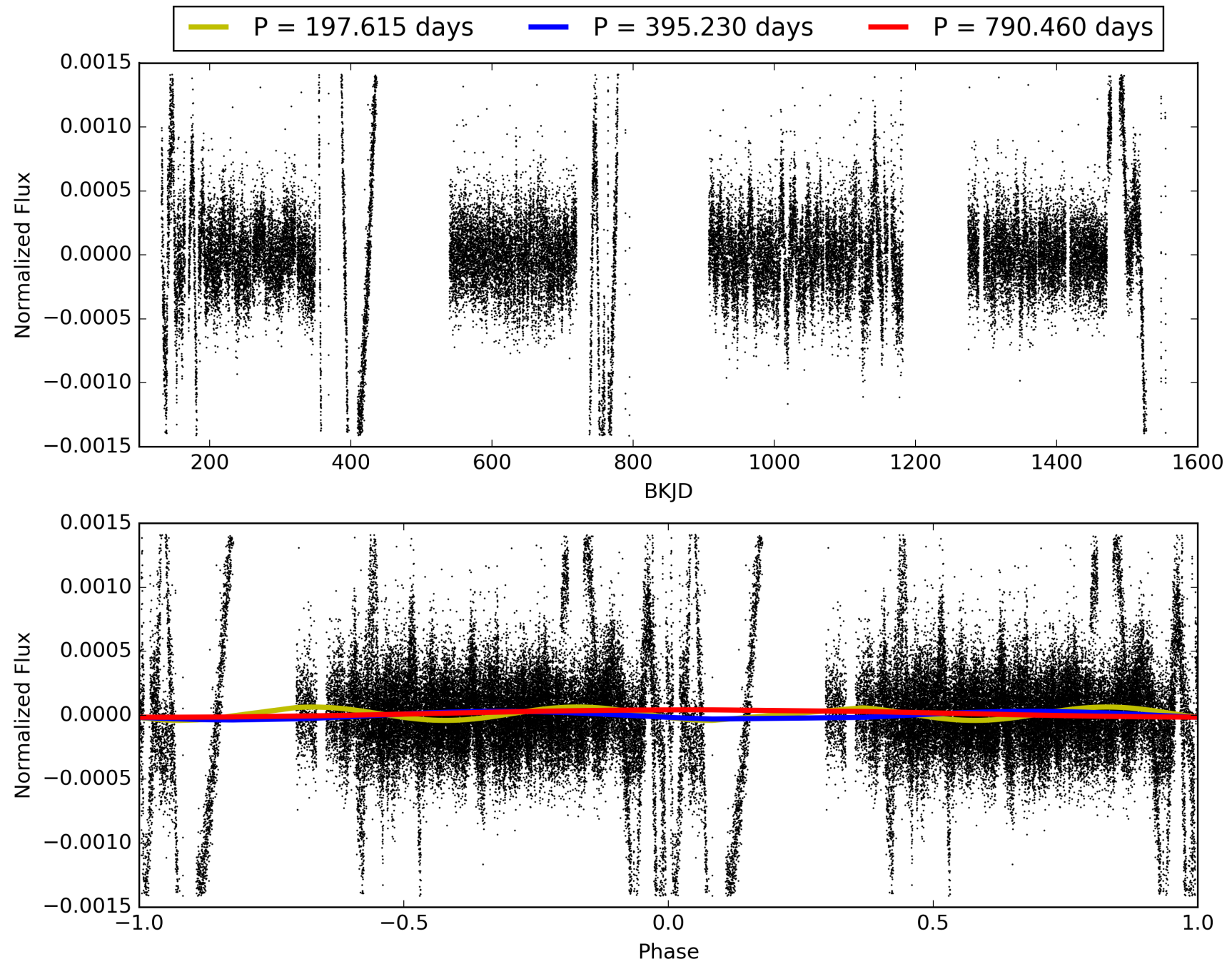
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 07:21:57 Z

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

TCE 005427752-02, PDC Light Curves

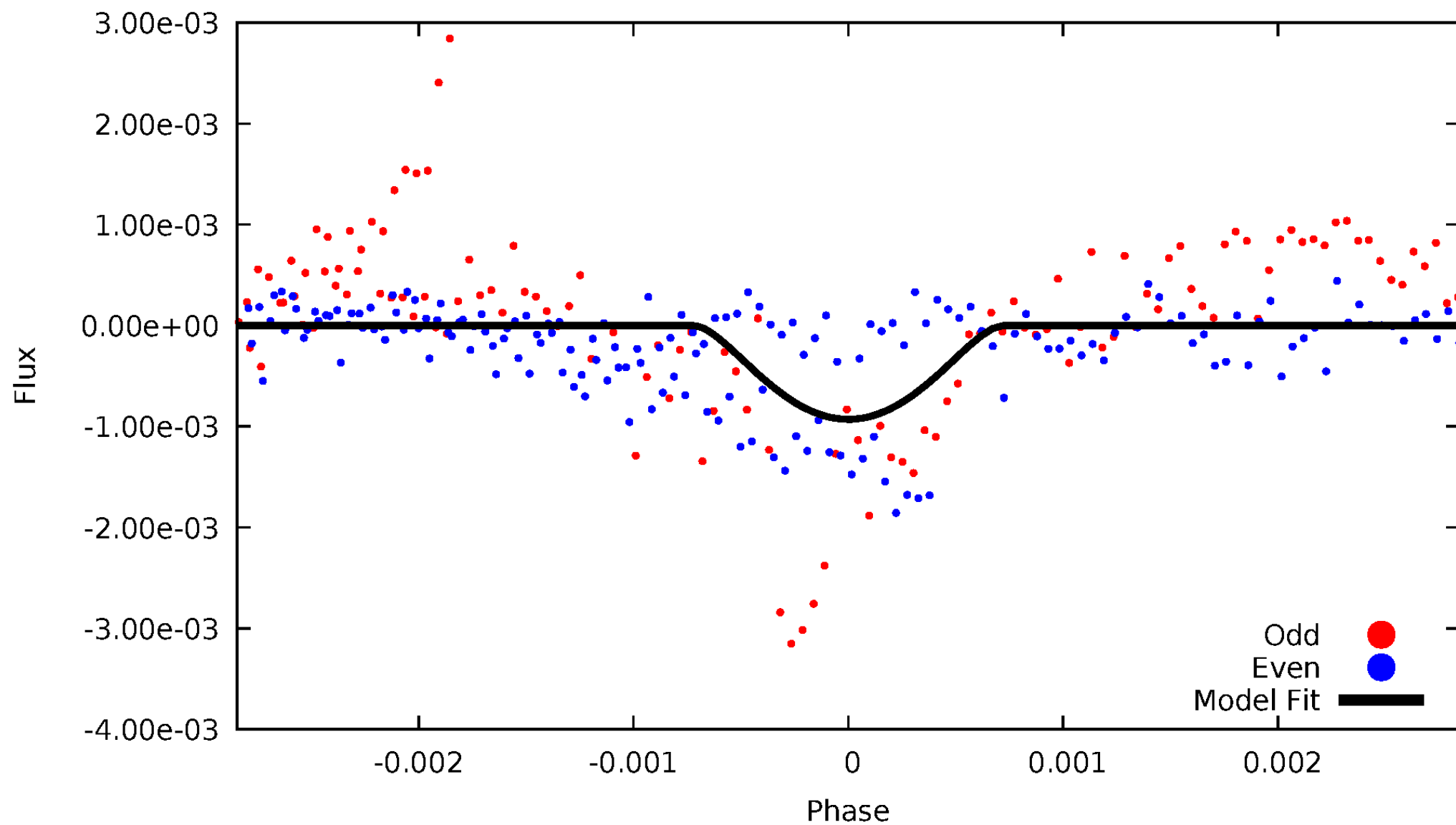


TCE 005427752-02



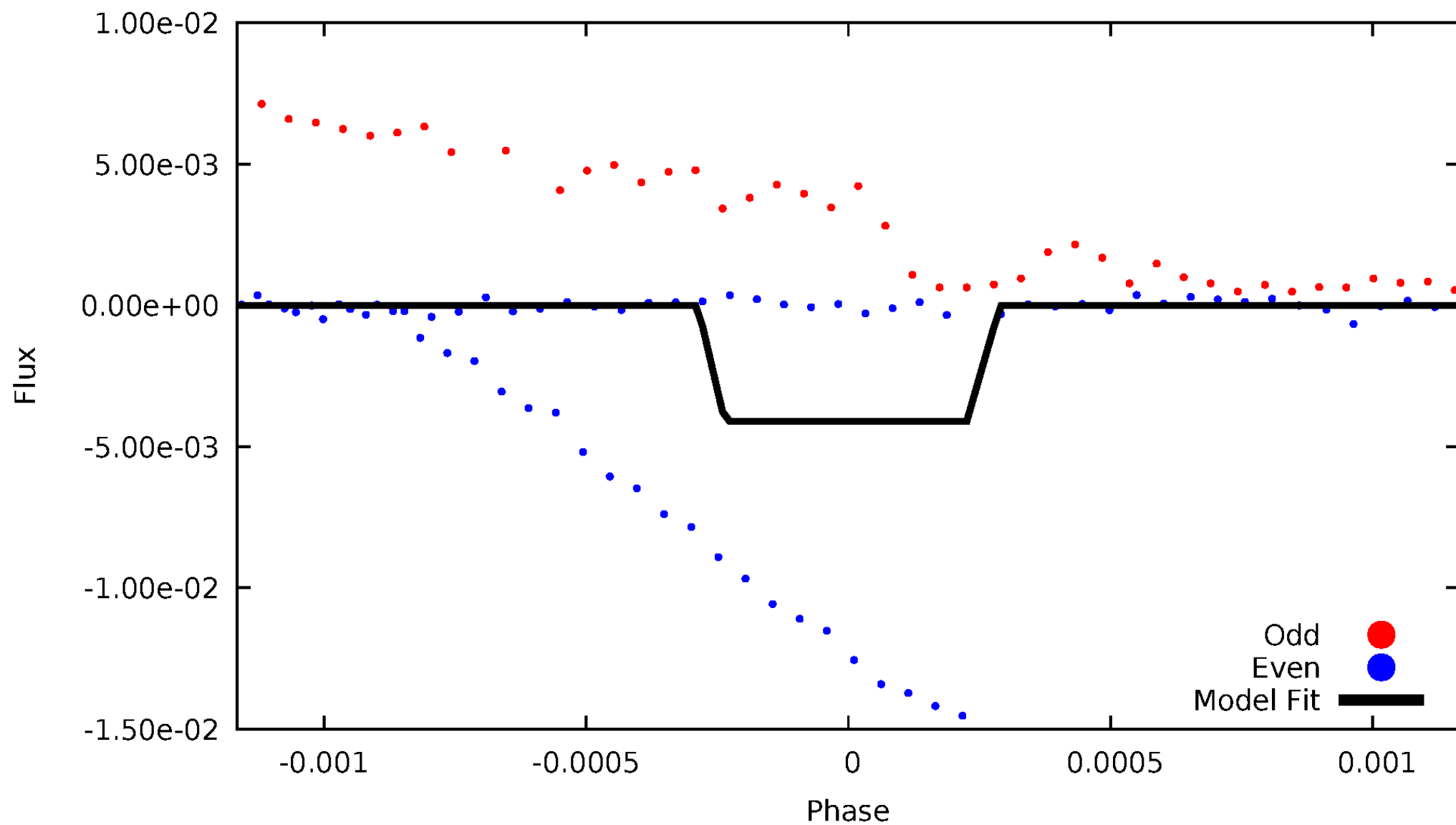
DV Odd/Even

TCE 005427752-02



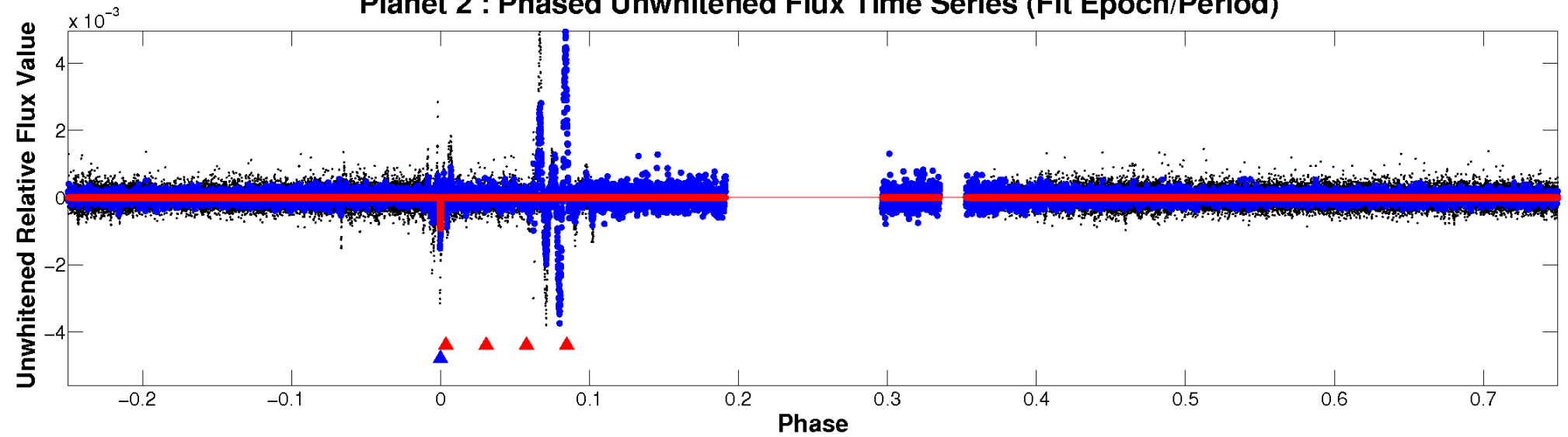
ALT Odd/Even

TCE 005427752-02

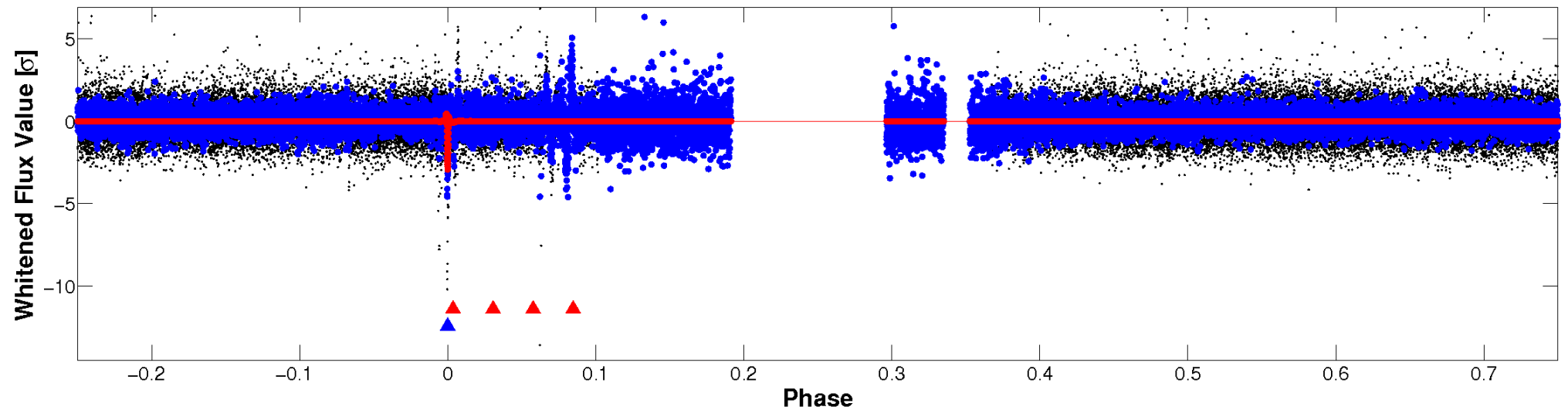


Non-Whitened Vs. Whitened Light Curve

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

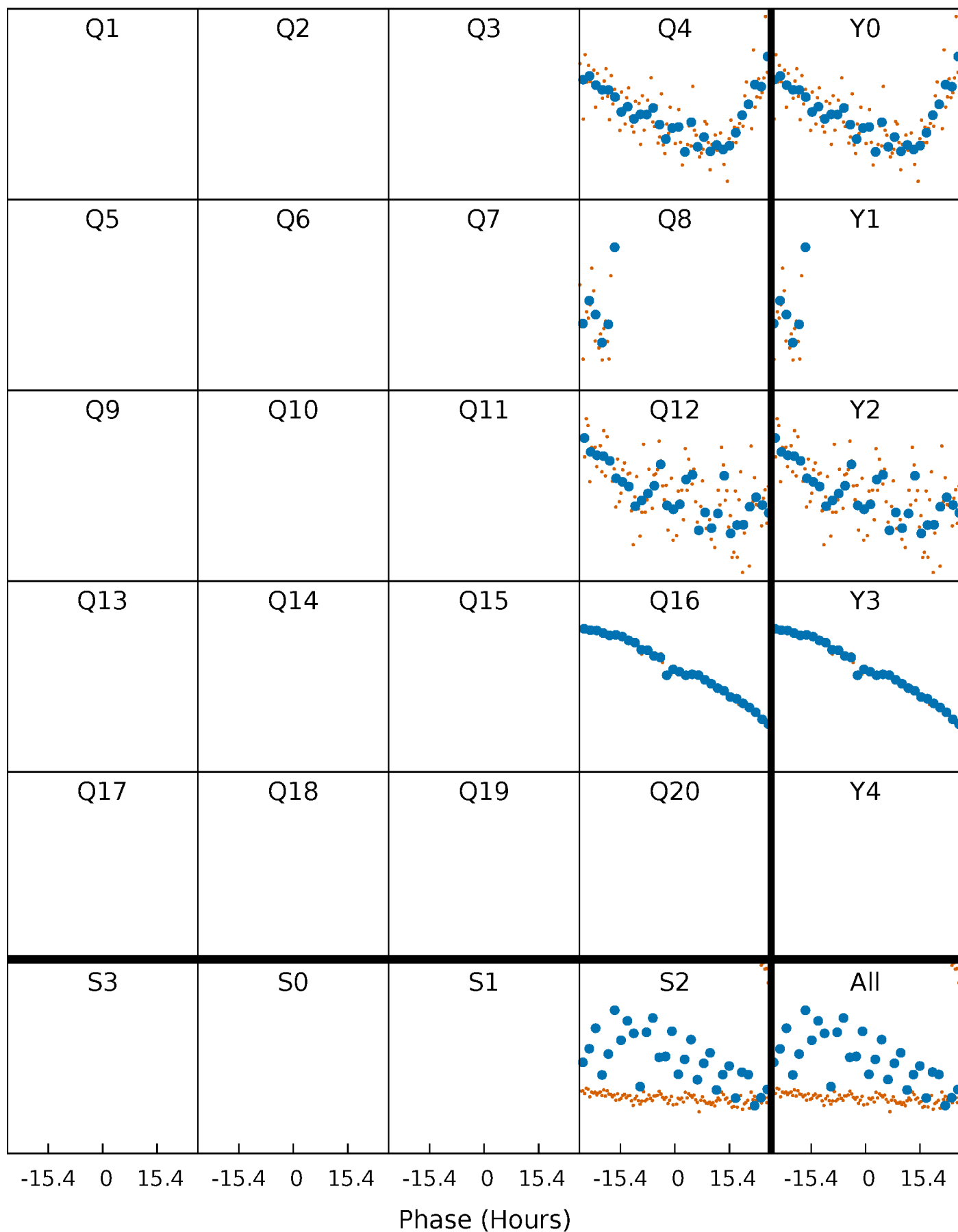


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



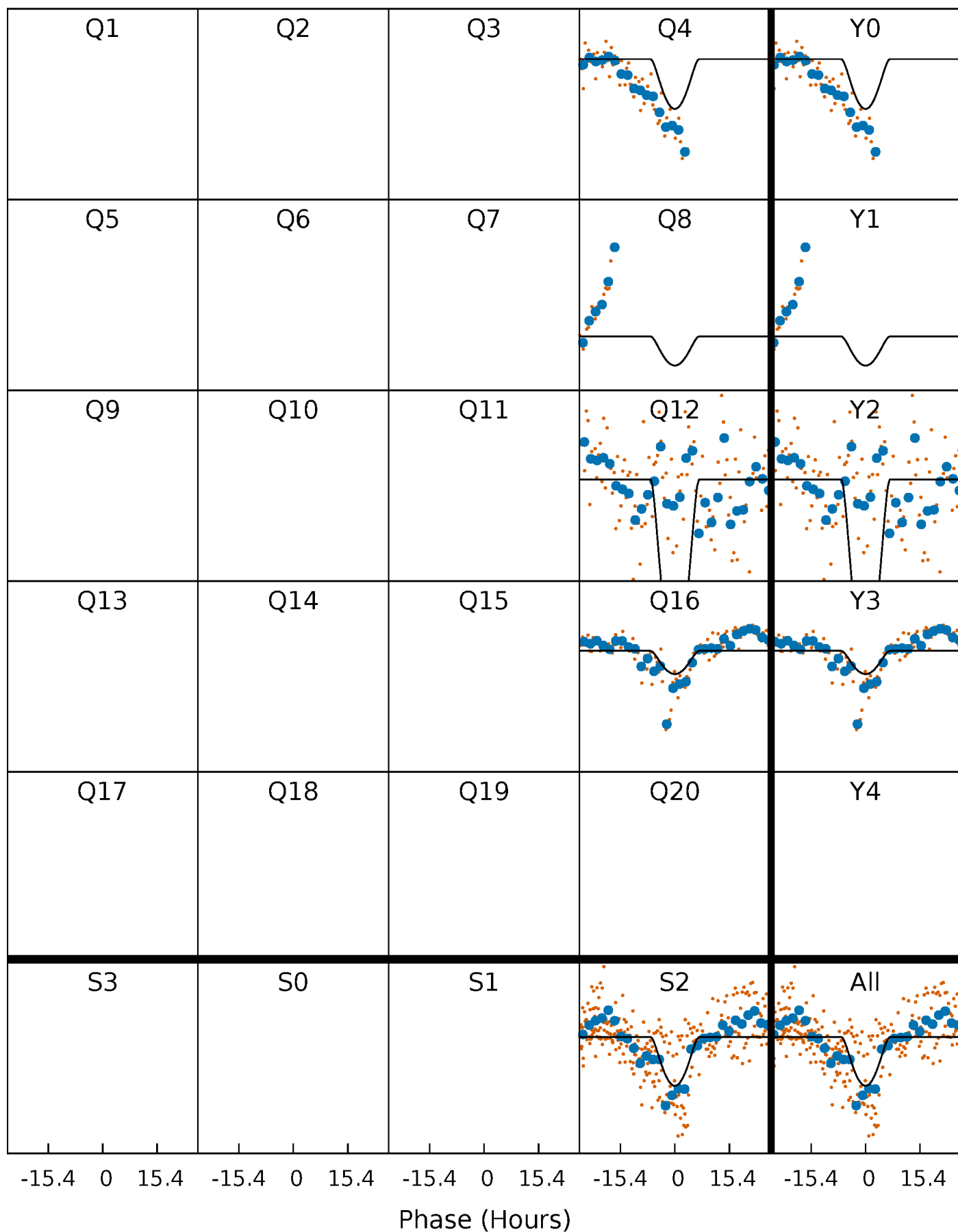
PDC Quarter-Phased Transit Curves

TCE 005427752-02 $P=395.229958$ Days $T_0=366.550665$ (BKJD)



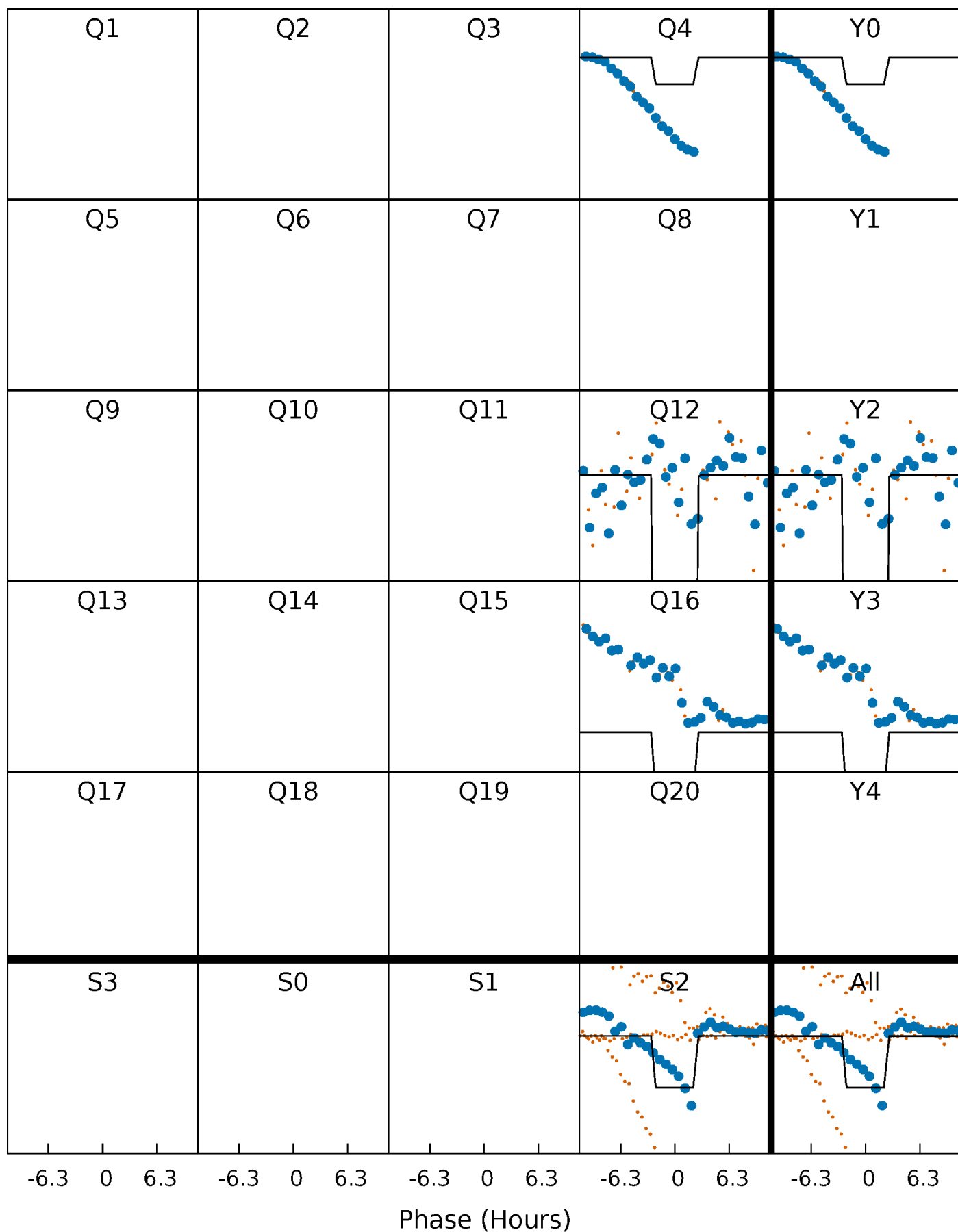
DV Quarter-Phased Transit Curves

TCE 005427752-02 $P=395.229958$ Days $T_0=366.550665$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

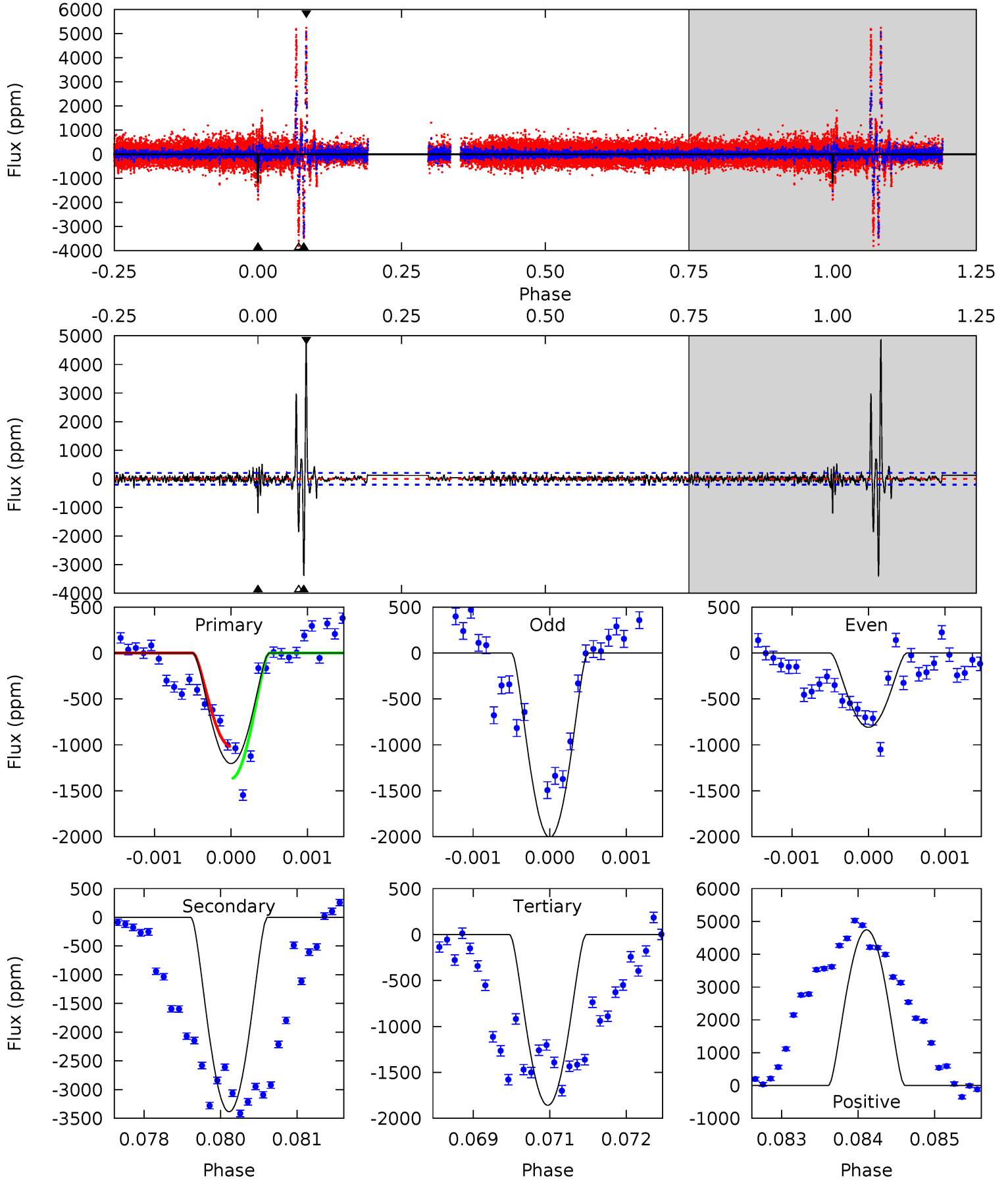
TCE 005427752-02 P=395.150995 Days $T_0=366.613925$ (BKJD)



DV Model-Shift Uniqueness Test

005427752-02, P = 395.229958 Days, E = 366.550665 Days

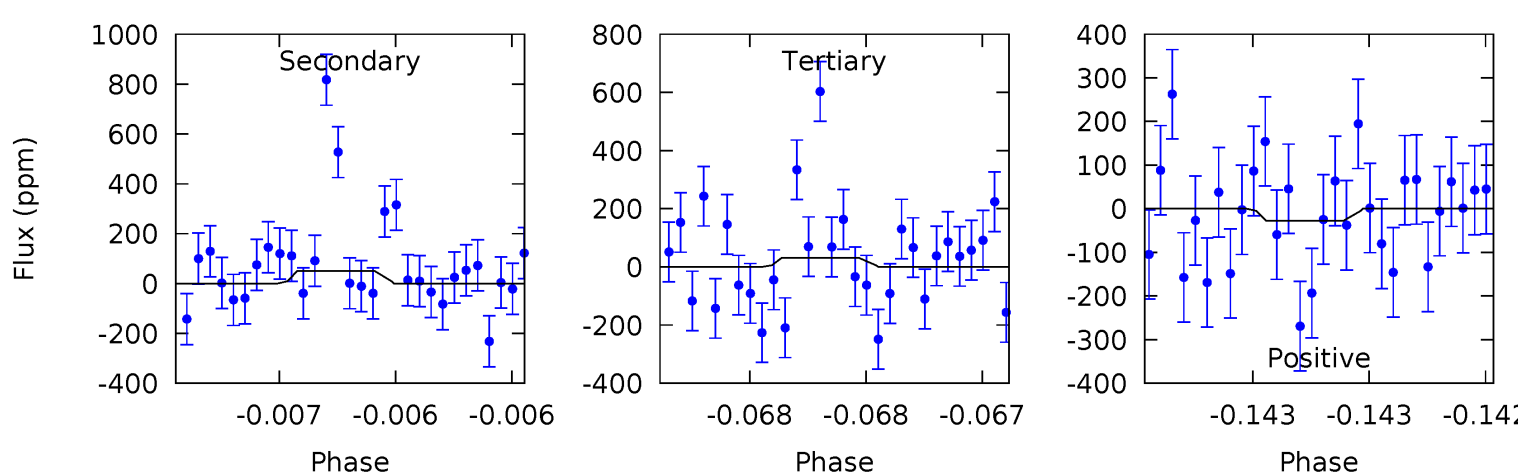
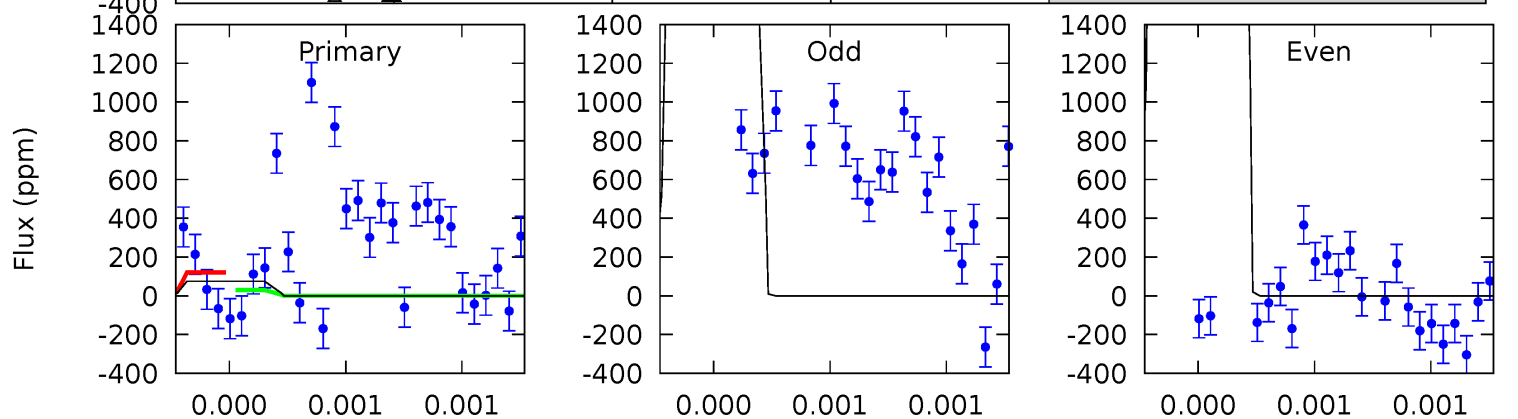
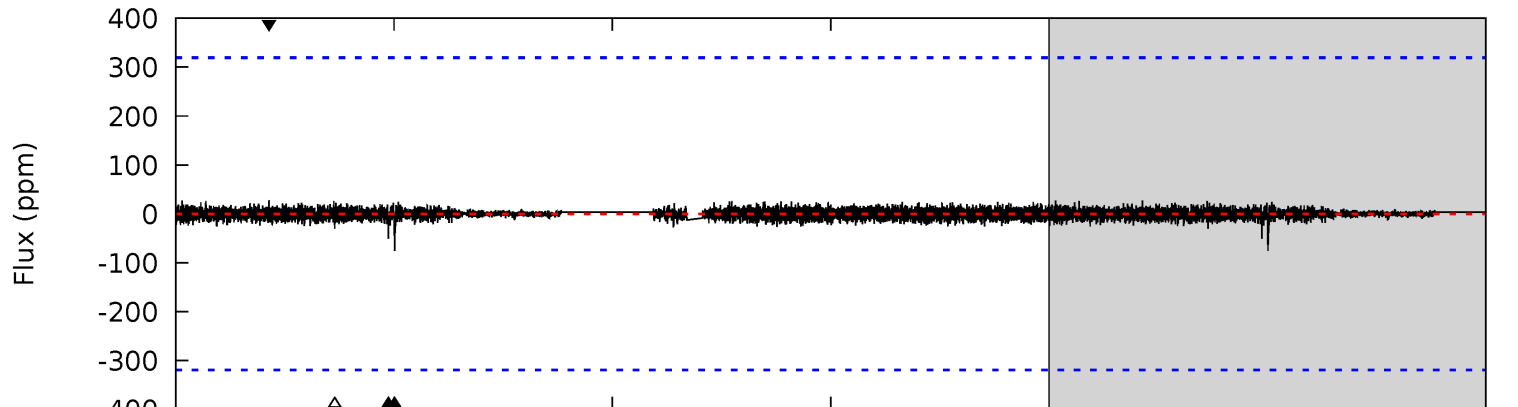
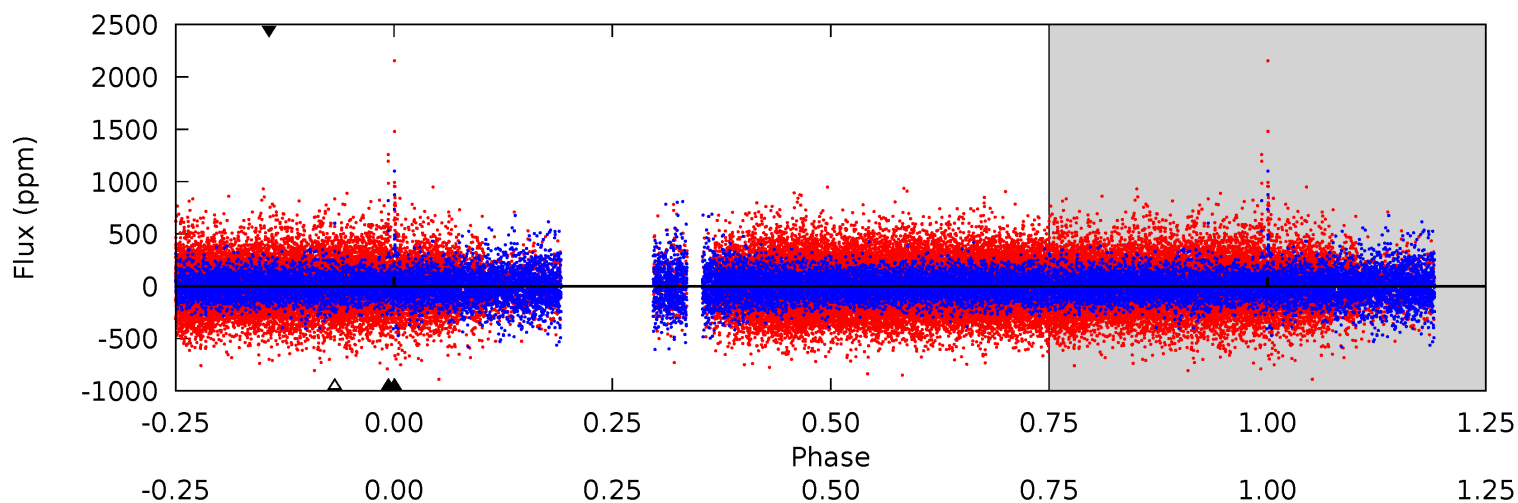
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.5	88.5	48.6	124.0	5.39	3.18	5.27	-17.1	-92.5	39.9	-35.5	15.1	0.74	0.59	3.98



Alt Model-Shift Uniqueness Test

005427752-02, P = 395.150995 Days, E = 366.613925 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.30	0.87	0.53	0.48	5.54	3.42	0.12	0.78	0.83	0.34	0.39	23.9	2561	0.27	0.78



Stellar Parameters For KIC 005427752

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5629^{+152}_{-152}	$4.596^{+0.038}_{-0.143}$	$-0.420^{+0.300}_{-0.300}$	$0.760^{+0.169}_{-0.061}$	$0.839^{+0.089}_{-0.089}$	$2.689^{+0.517}_{-1.096}$
	+3%/-3%	+1%/-3%	+71%/-71%	+22%/-8%	+11%/-11%	+19%/-41%
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 005427752-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-3386 ± 38	$12.40^{+13.05}_{-8.02}$	309^{+16}_{-12}	3921^{+2093}_{-791}	11466^{+83579}_{-8558}
Alt.	-50 ± 58	$13.31^{+13.56}_{-8.77}$	309^{+16}_{-12}	2062^{+706}_{-3723}	95^{+1127}_{-105}

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 $A_{obs} \gg 1.0$

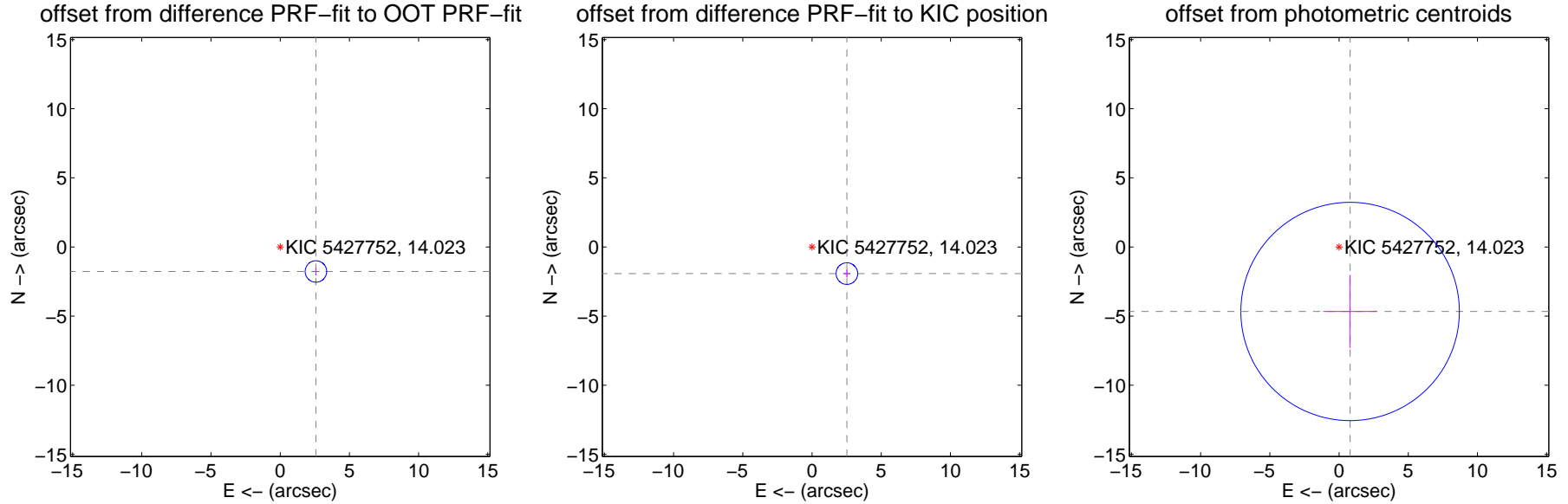
DV Centroid Data

Supplemental centroid analysis for 005427752-02. Kepler magnitude: 14.02. Transit SNR 15.09

There are 1 quarters with good PRF difference image offsets

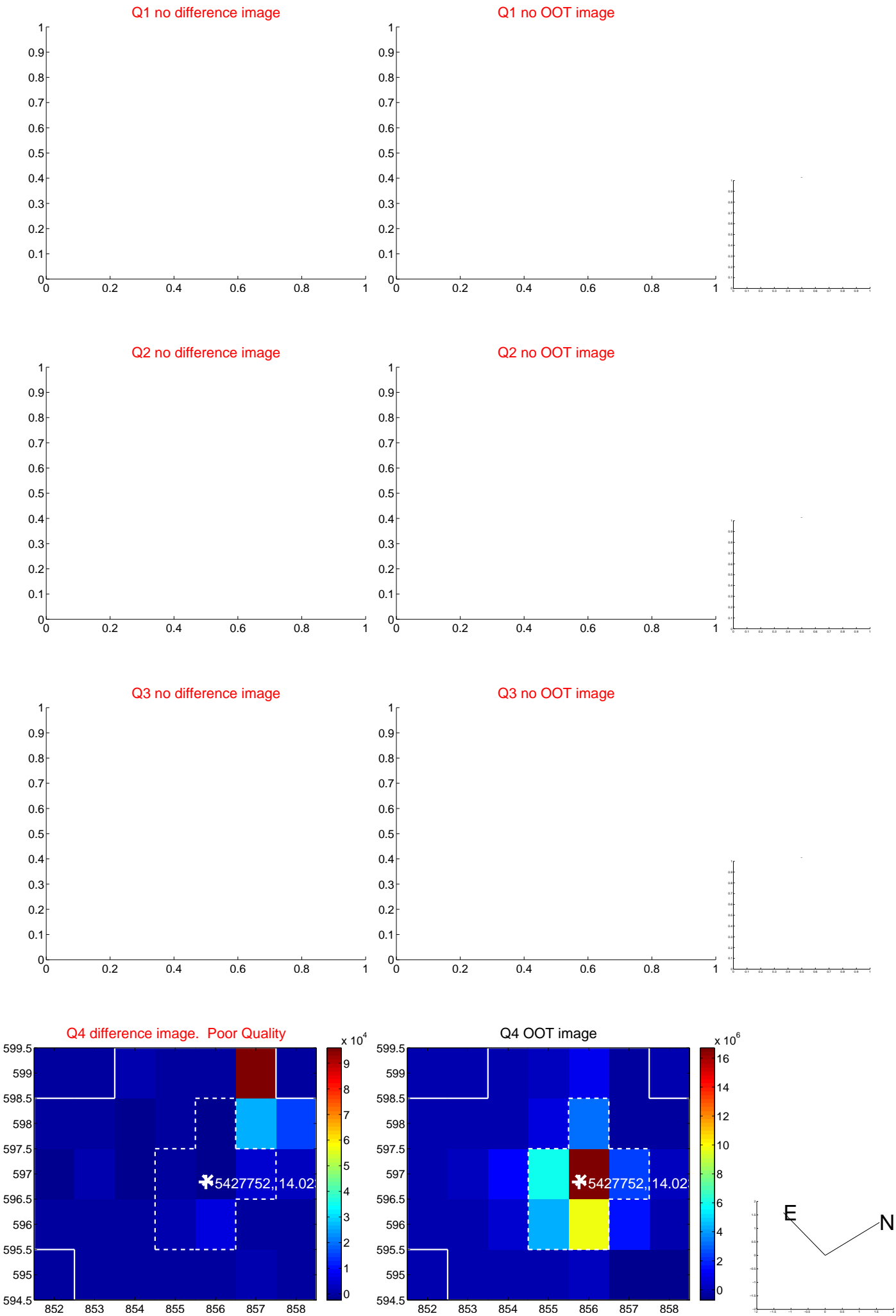
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.131 ± 0.259	12.09	-2.581 ± 0.249	-1.774 ± 0.278
PRF-fit source offset from KIC position	3.173 ± 0.260	12.19	-2.521 ± 0.249	-1.926 ± 0.278
photometric centroid source offset	4.73 ± 2.63	1.80	-0.80 ± 1.94	-4.67 ± 2.65



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.

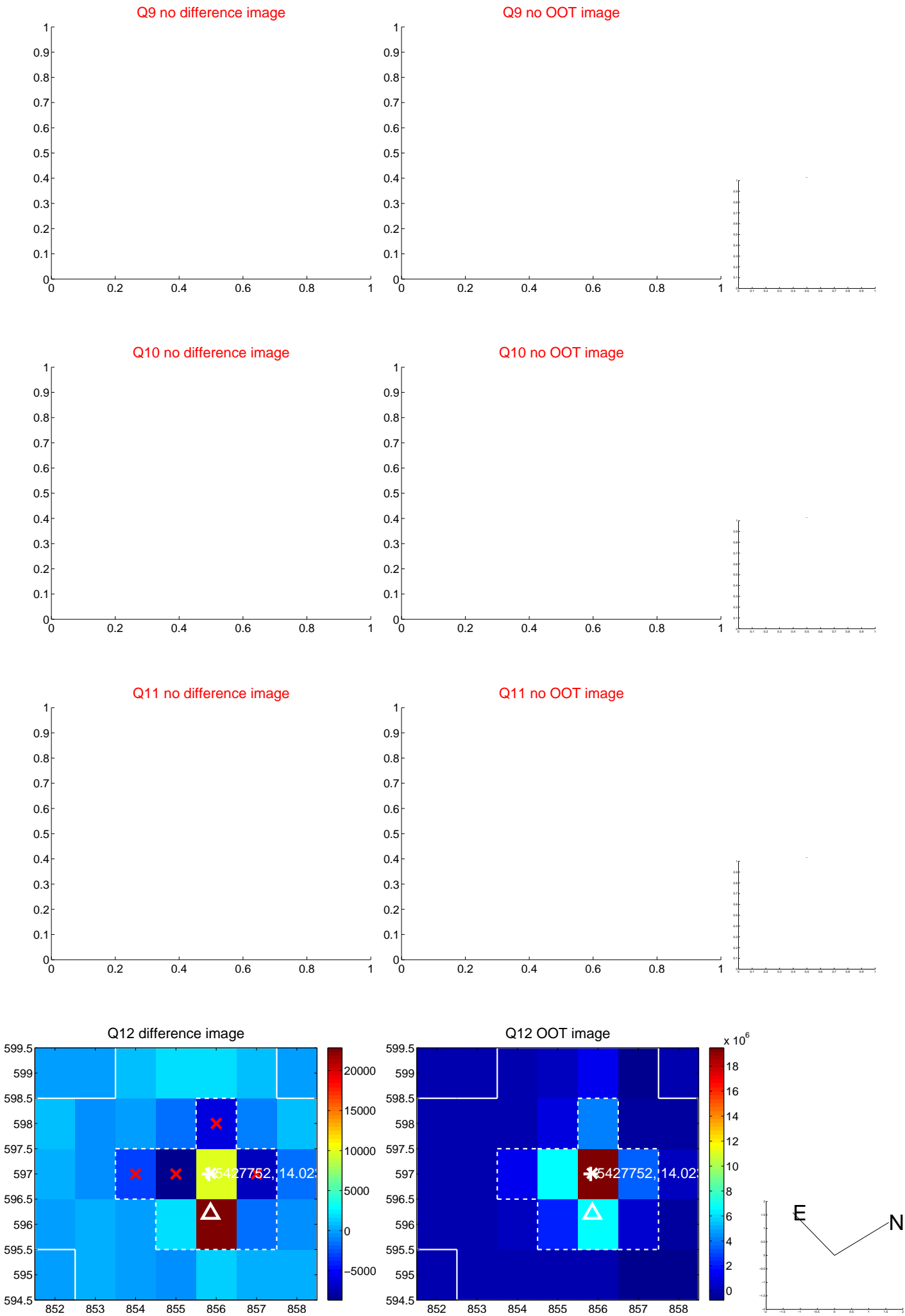
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



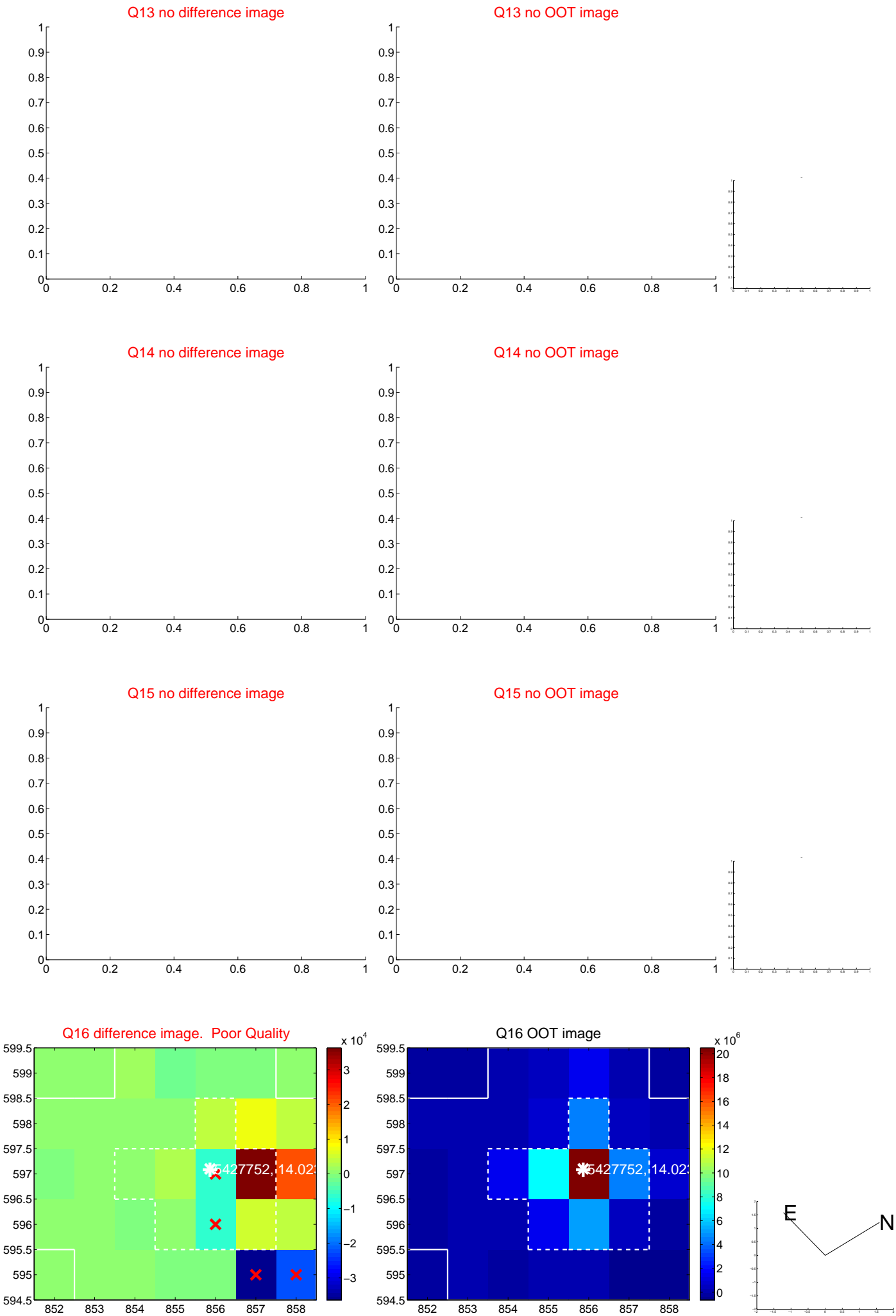
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



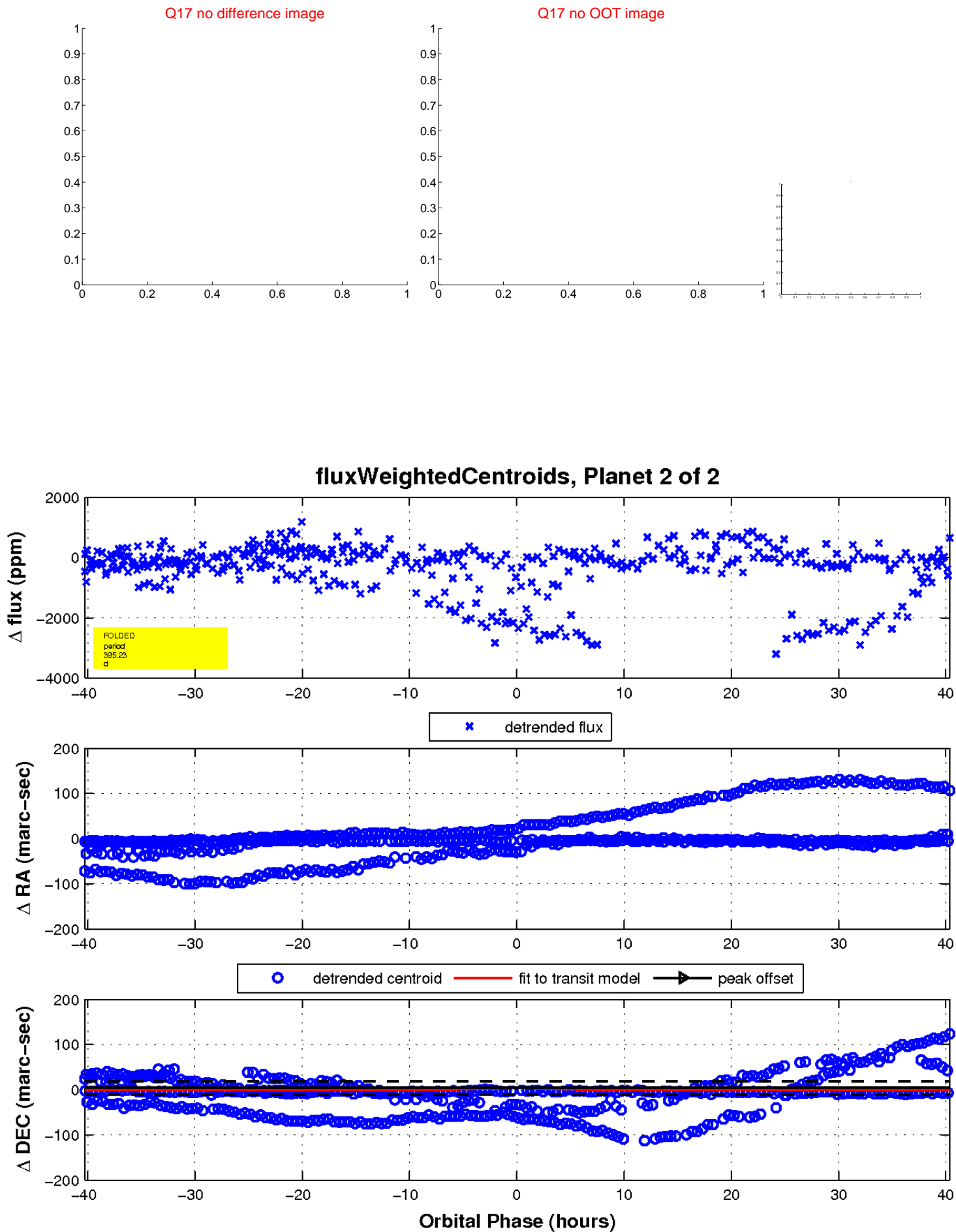
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: 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

