

KIC 010976930

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})
010976930-01	OBS	No	350.673946	270.837223	134.5	5.000	11.0	-1.0	3.01	6197	3.50	9.64
010976930-02	OBS	No	467.641238	243.229975	620.6	10.832	14.6	4.4	3.01	6197	7.70	6.57
010976930-03	OBS	No	222.010537	306.902886	160.0	2.687	12.1	2.6	3.01	6197	3.82	17.73

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010976930-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010976930-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010976930-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA_TRACKER—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST

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

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

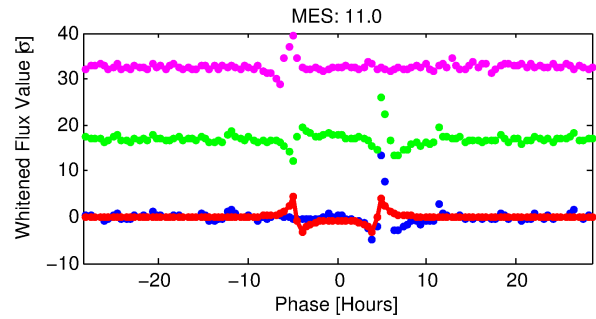
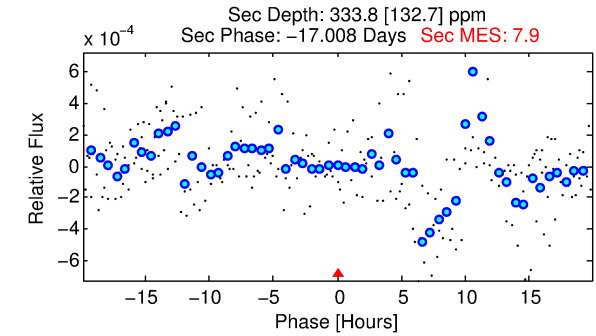
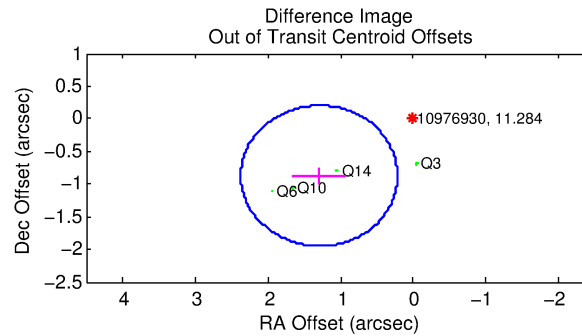
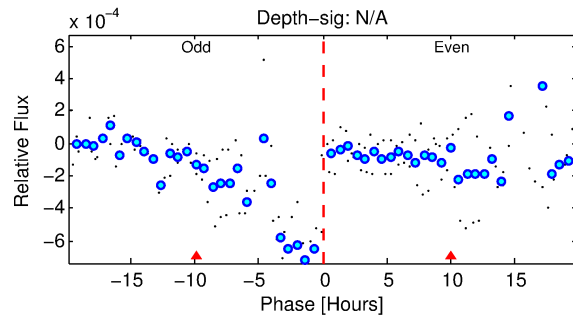
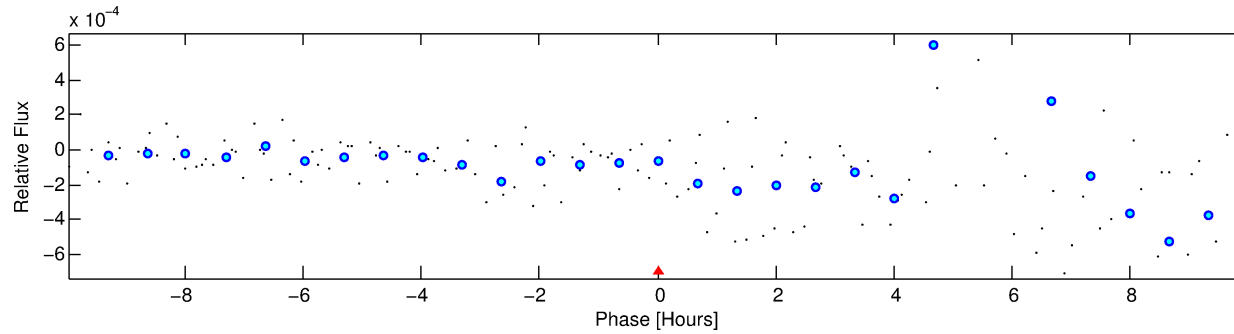
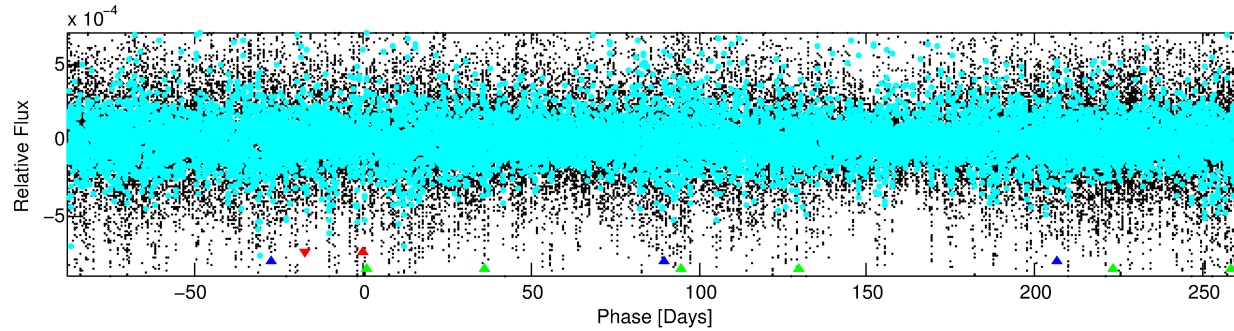
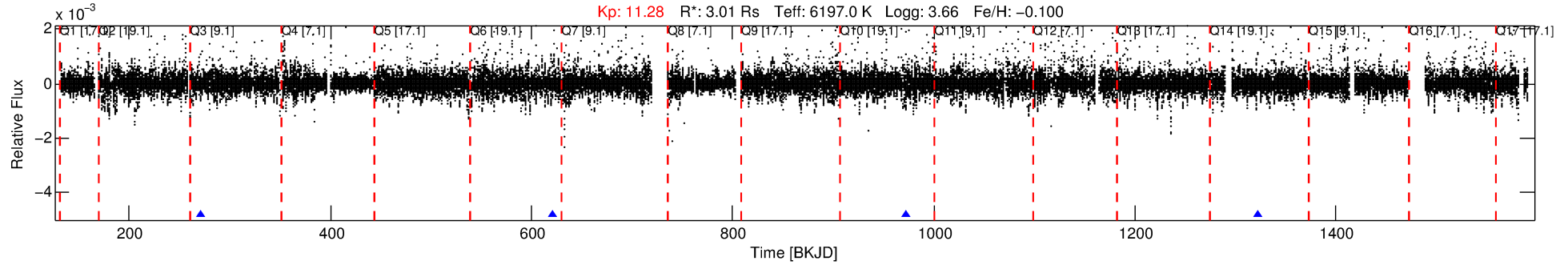
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010976930-01

No Significant Match Found

DV One-Page Summary

KIC: 10976930 Candidate: 1 of 3 Period: 350.674 d



TPS TCE Results:

Period = 350.67395 d
Epoch = 270.8372 BKJD

DV fit results are unavailable

DV Diagnostic Results:

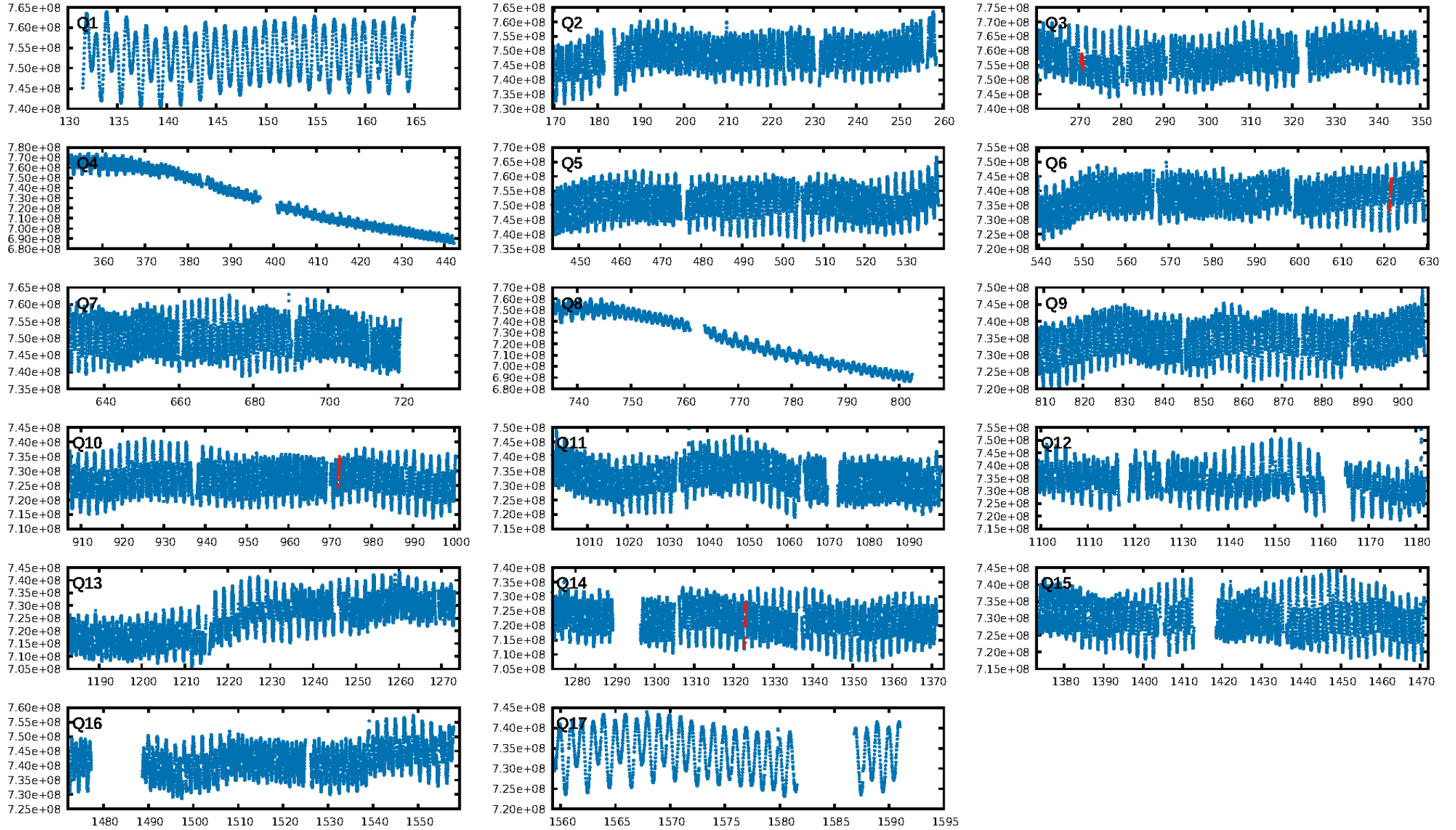
ShortPeriod-sig: 100.0% [544.01σ]
LongPeriod-sig: 100.0% [235.30σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.46e-08
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.6614

Centroid-sig: 54.7%
Centroid-so: 5.809 arcsec [0.60σ]
OotOffset-rm: 1.561 arcsec [4.35σ]
OotOffset-st: 3/1/0/0 [4]
KicOffset-st: 3/1/0/0 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 1.00 [4/4]

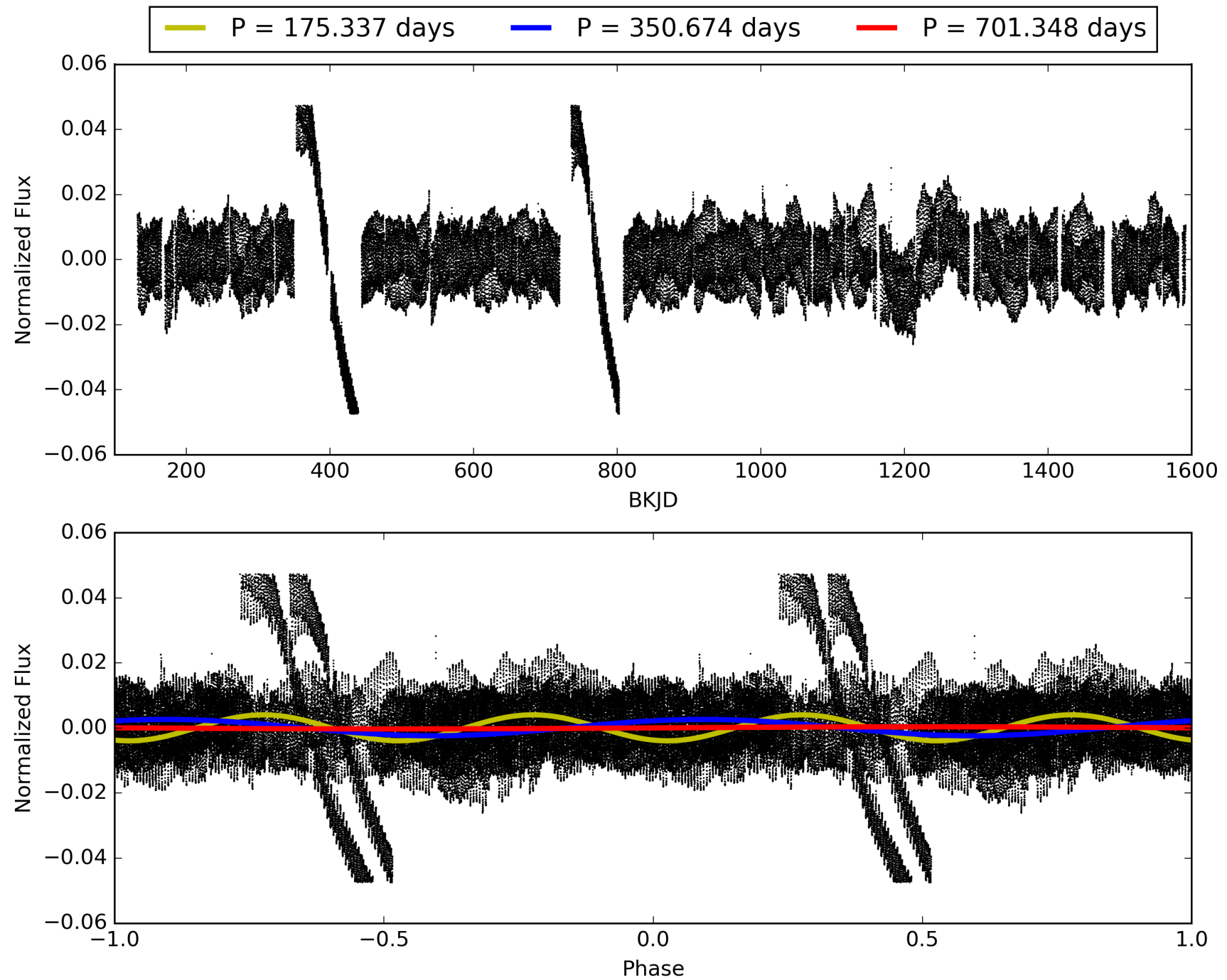
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:38:59 Z

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

TCE 010976930-01, PDC Light Curves

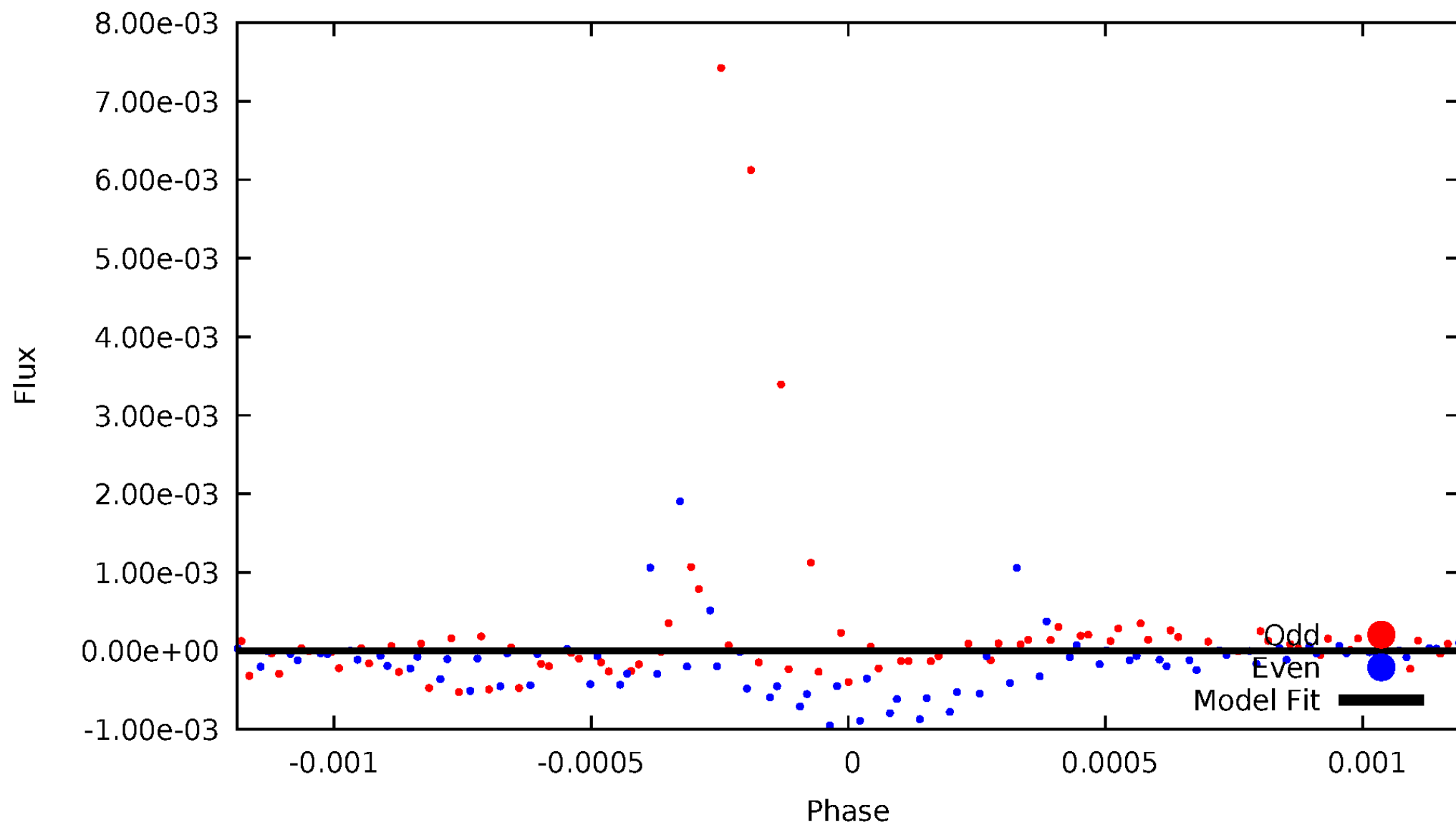


TCE 010976930-01



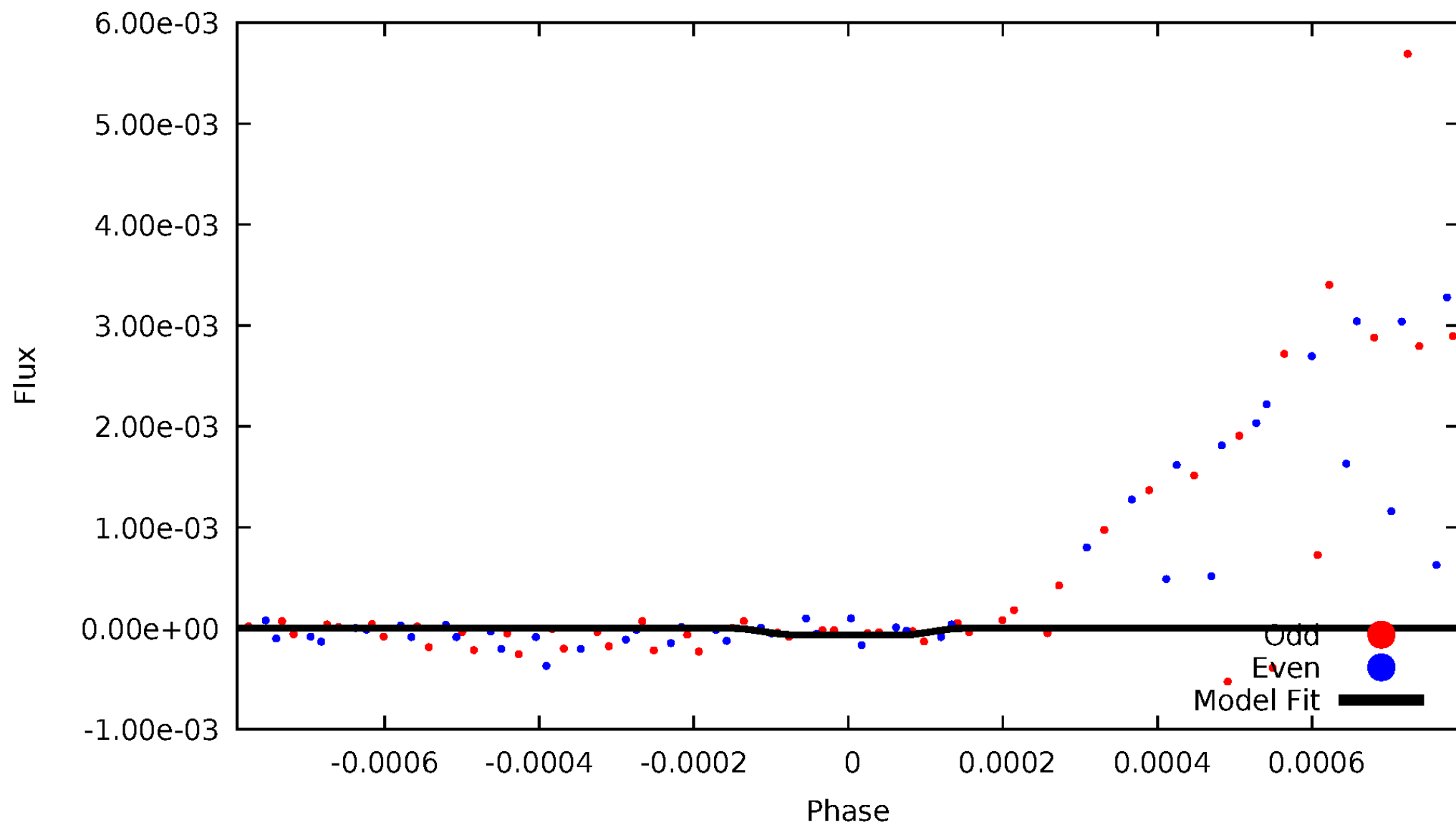
DV Odd/Even

TCE 010976930-01

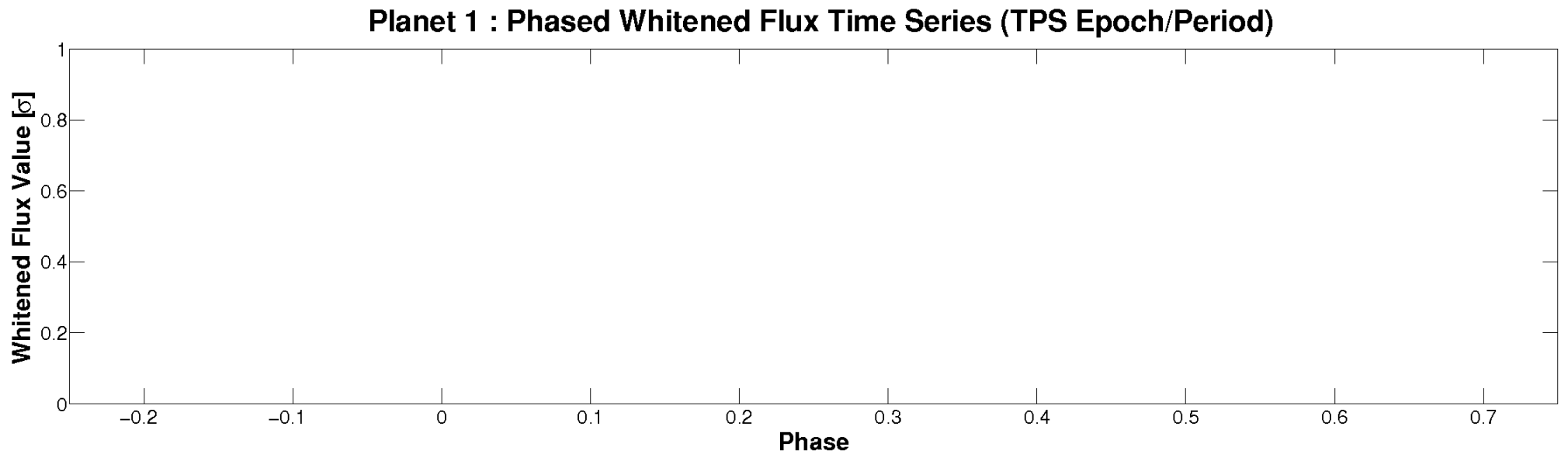
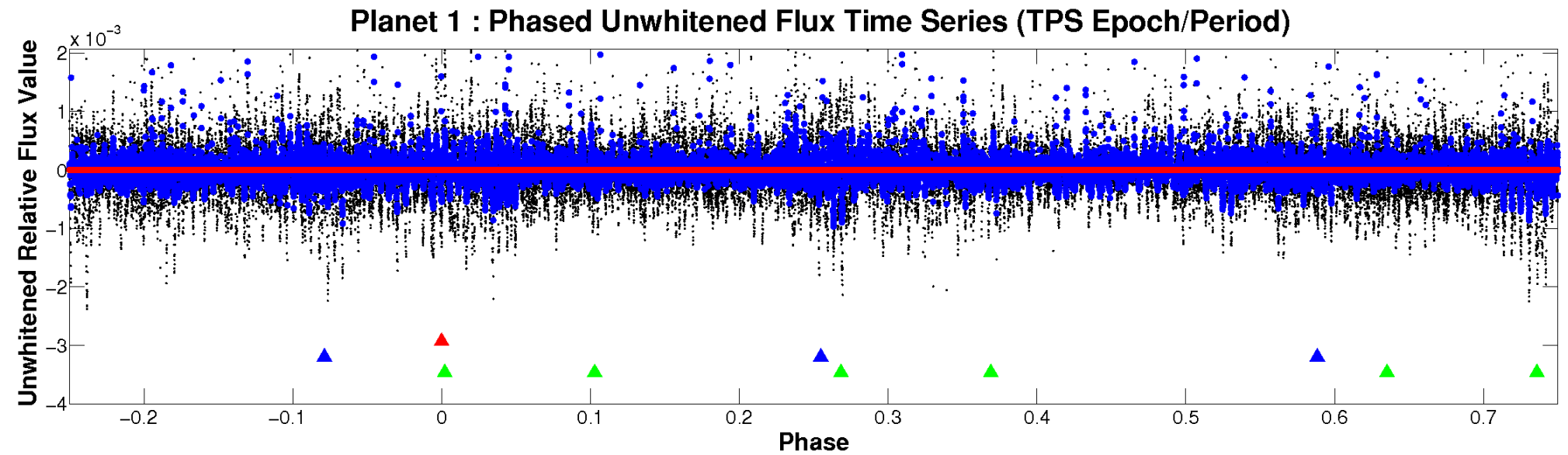


ALT Odd/Even

TCE 010976930-01

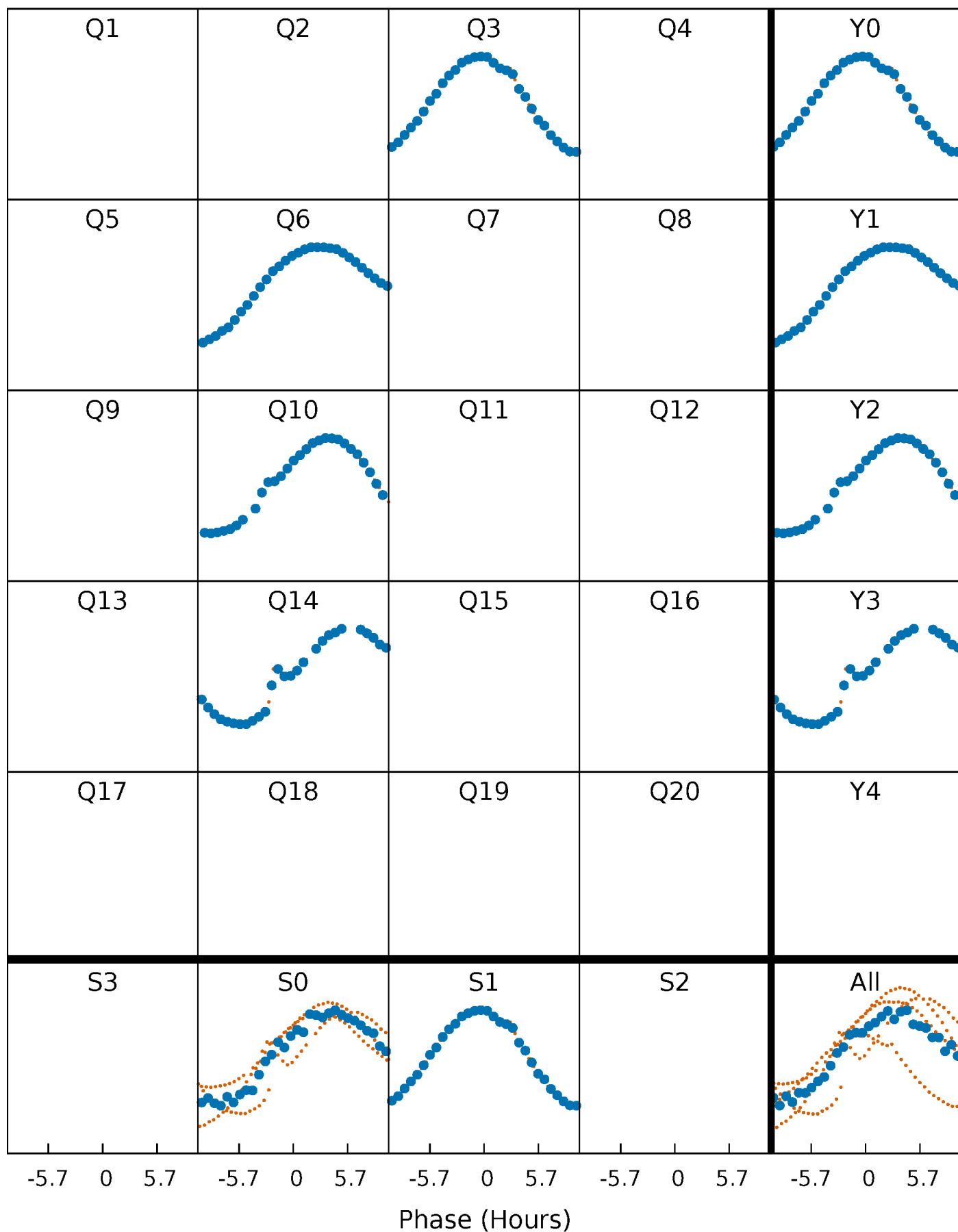


Non-Whitened Vs. Whitened Light Curve



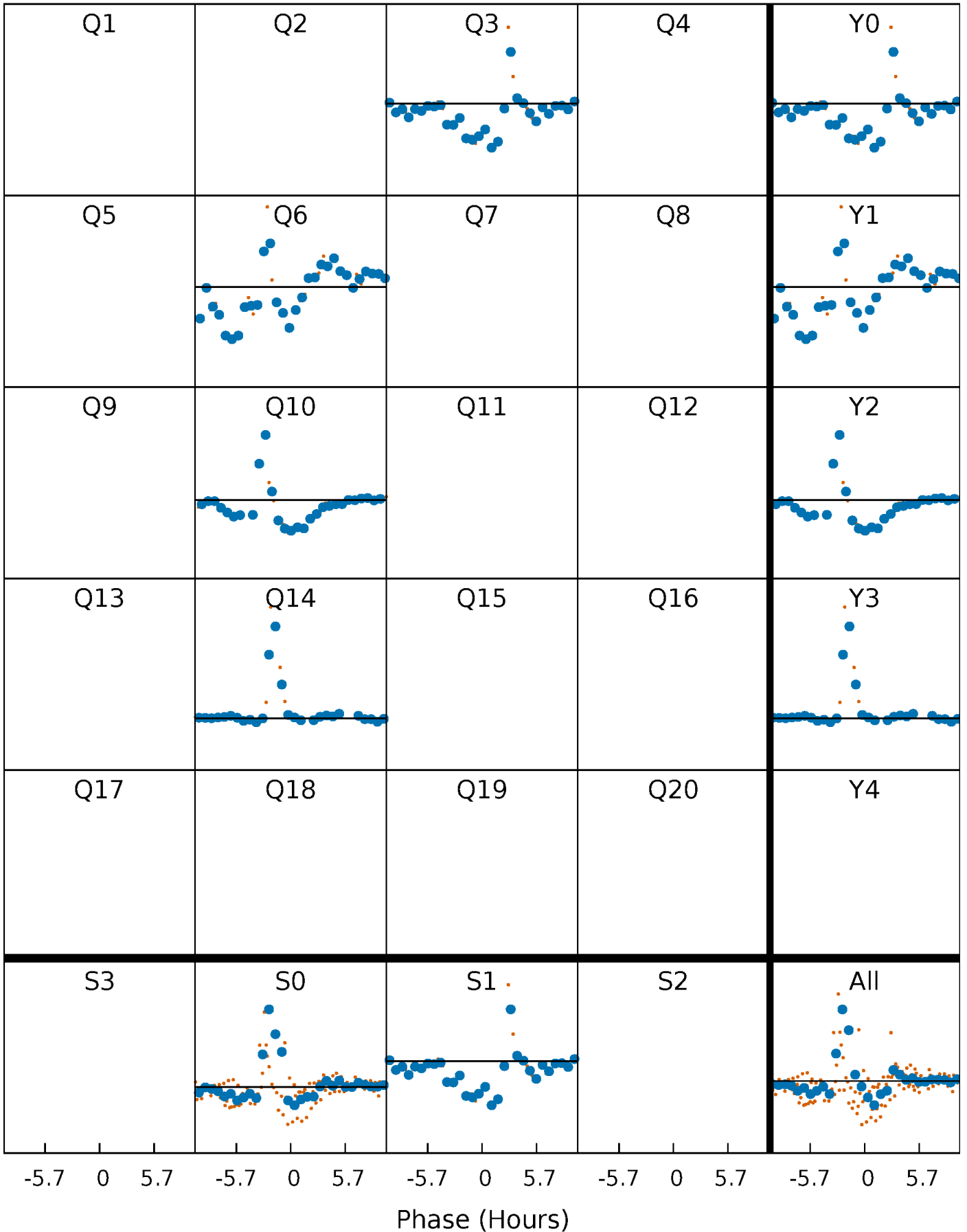
PDC Quarter-Phased Transit Curves

TCE 010976930-01 P=350.673946 Days $T_0=270.837223$ (BKJD)



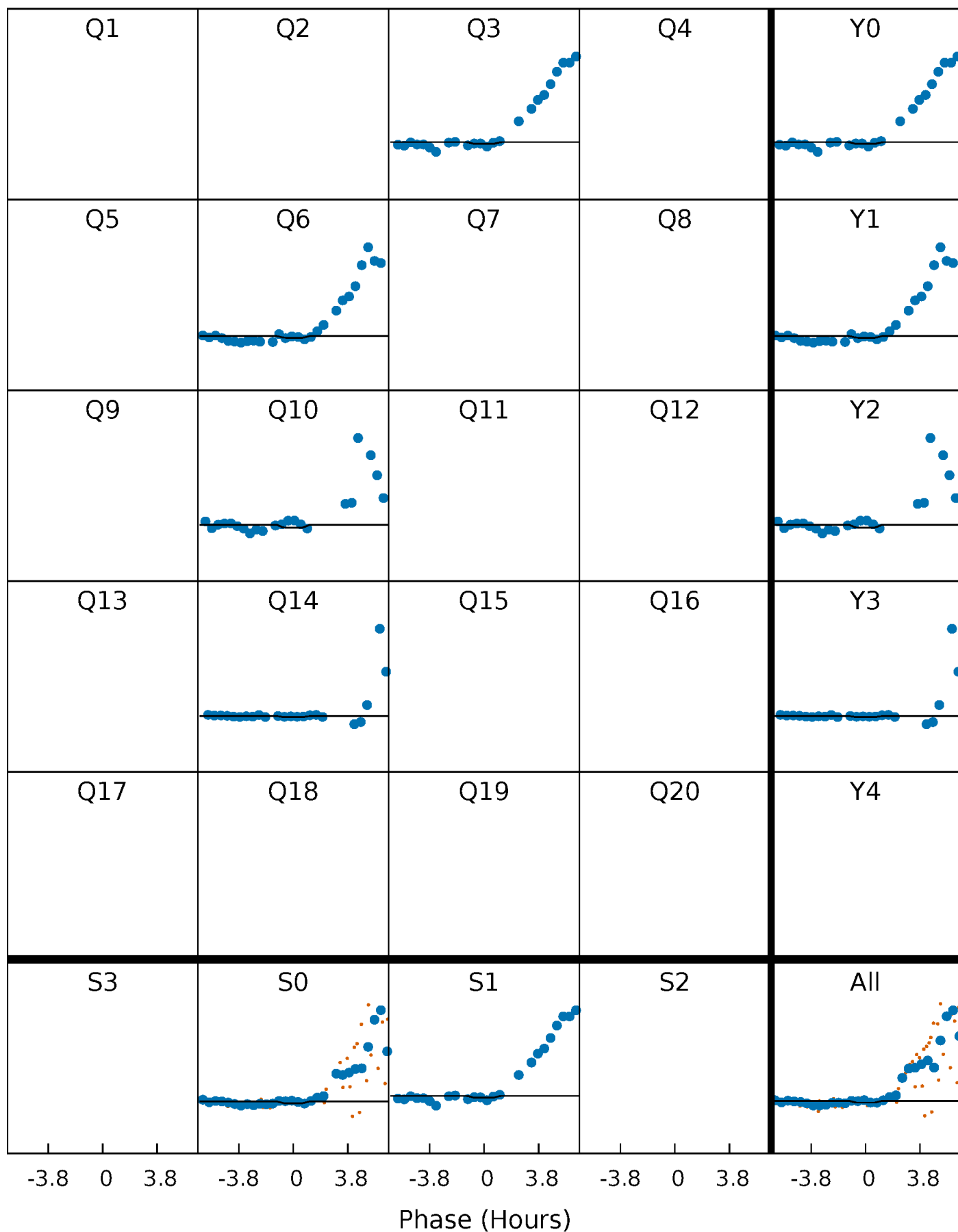
DV Quarter-Phased Transit Curves

TCE 010976930-01 P=350.673946 Days $T_0=270.837223$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

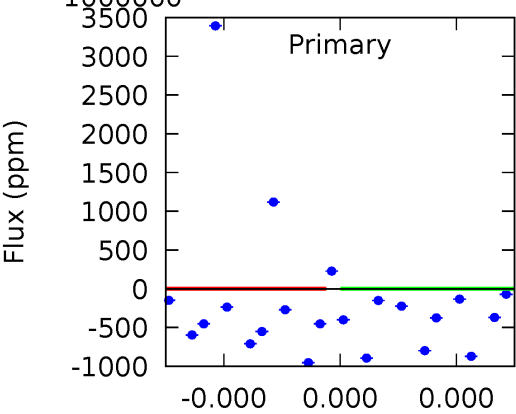
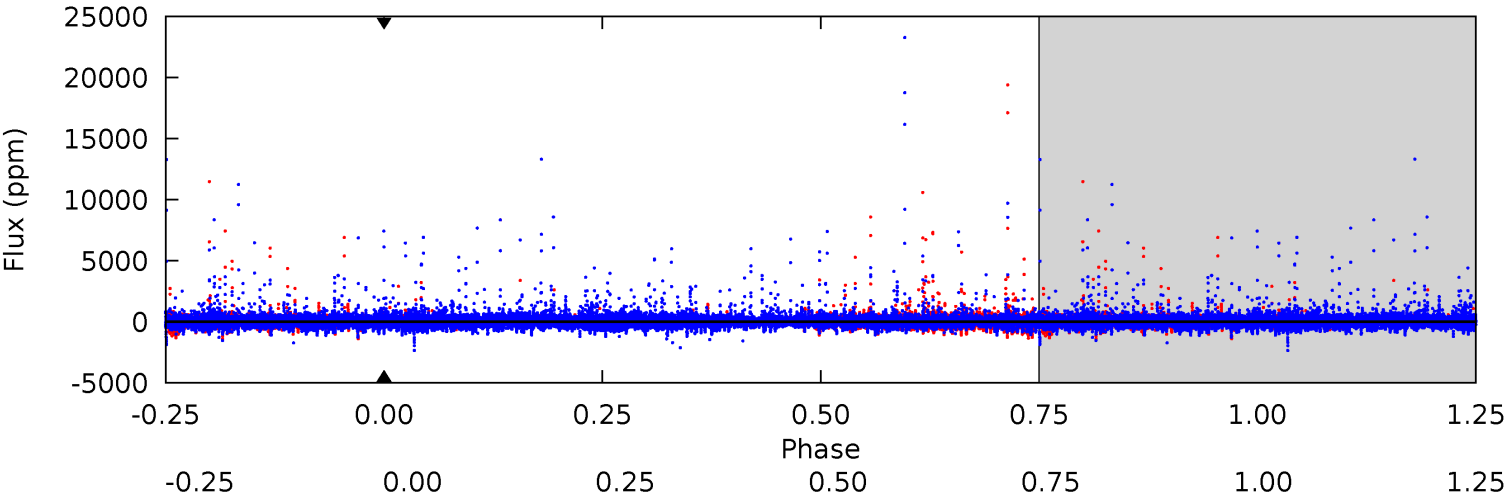
TCE 010976930-01 P=350.673946 Days $T_0=270.516964$ (BKJD)



DV Model-Shift Uniqueness Test

010976930-01, P = 350.673946 Days, E = 270.837223 Days

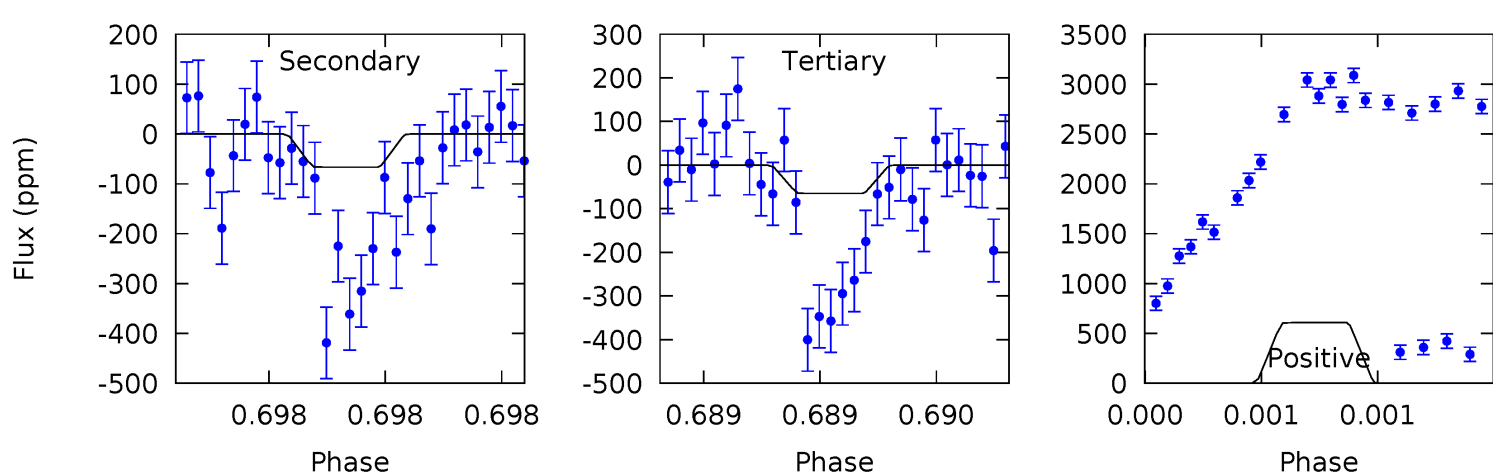
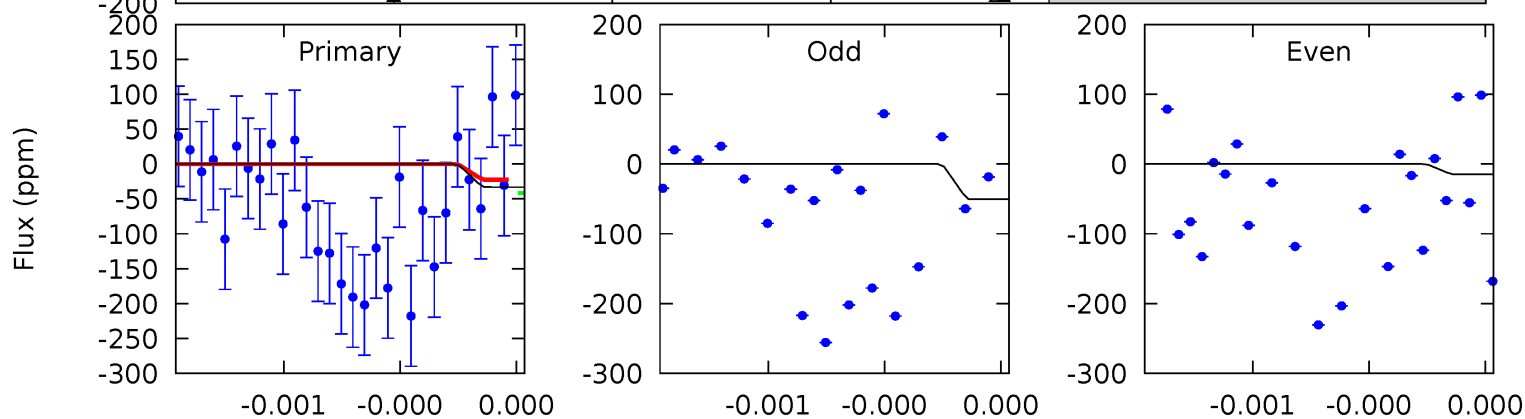
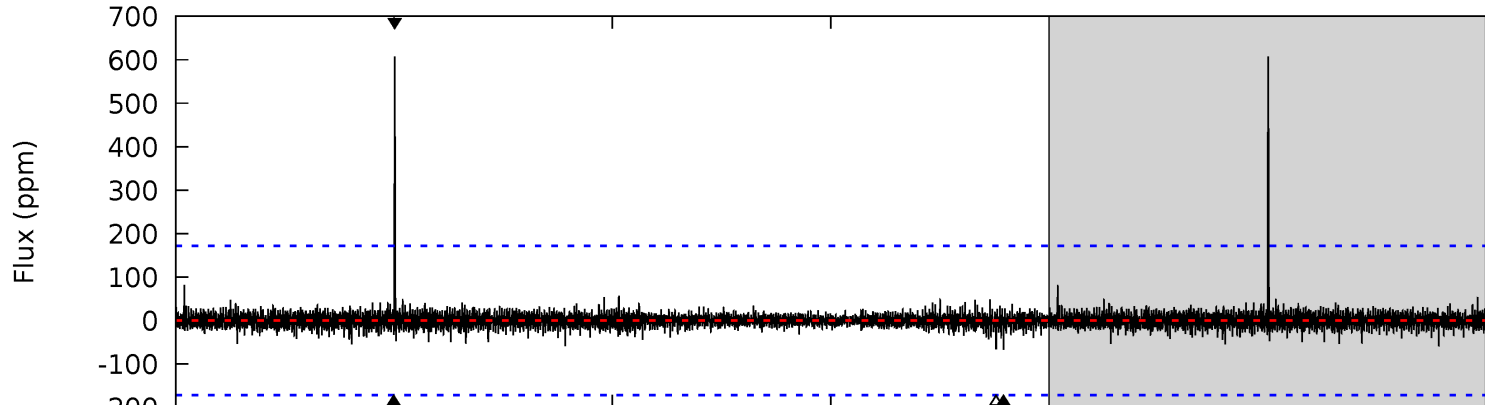
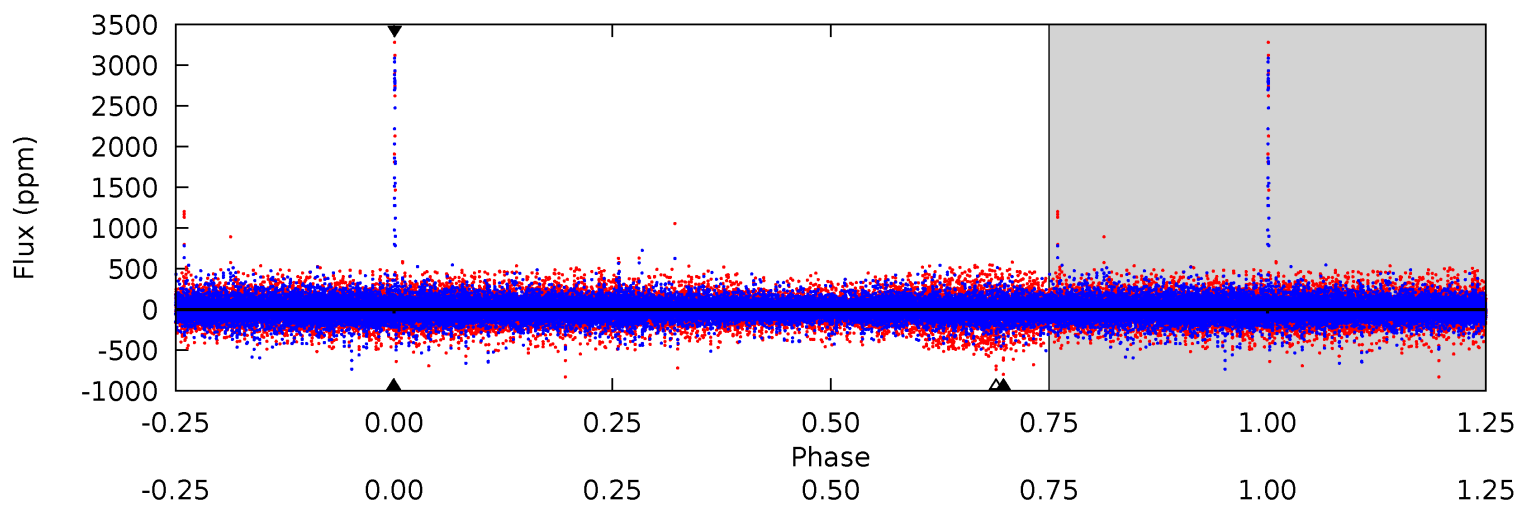
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010976930-01, P = 350.673946 Days, E = 270.516964 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.09	2.20	2.14	20.1	5.68	3.64	0.56	-1.05	-19.0	0.05	-17.9	0.47	0.63	0.90	0.32



Stellar Parameters For KIC 010976930

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6197^{+167}_{-186}	$3.657^{+0.595}_{-0.105}$	$-0.100^{+0.300}_{-0.300}$	$3.010^{+0.556}_{-1.780}$	$1.499^{+0.190}_{-0.444}$	$0.077^{+0.665}_{-0.026}$
	+3%/-3%	+16%/-3%	+300%/-300%	+18%/-59%	+13%/-30%	+860%/-34%
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 010976930-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$19.45^{+21.40}_{-14.17}$	604^{+48}_{-89}	3761^{+30781}_{-26948}	$488^{+447657}_{-283680}$
Alt.	-66 ± 30	$19.89^{+22.79}_{-14.33}$	609^{+44}_{-91}	2820^{+1336}_{-503}	97^{+1299}_{-76}

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

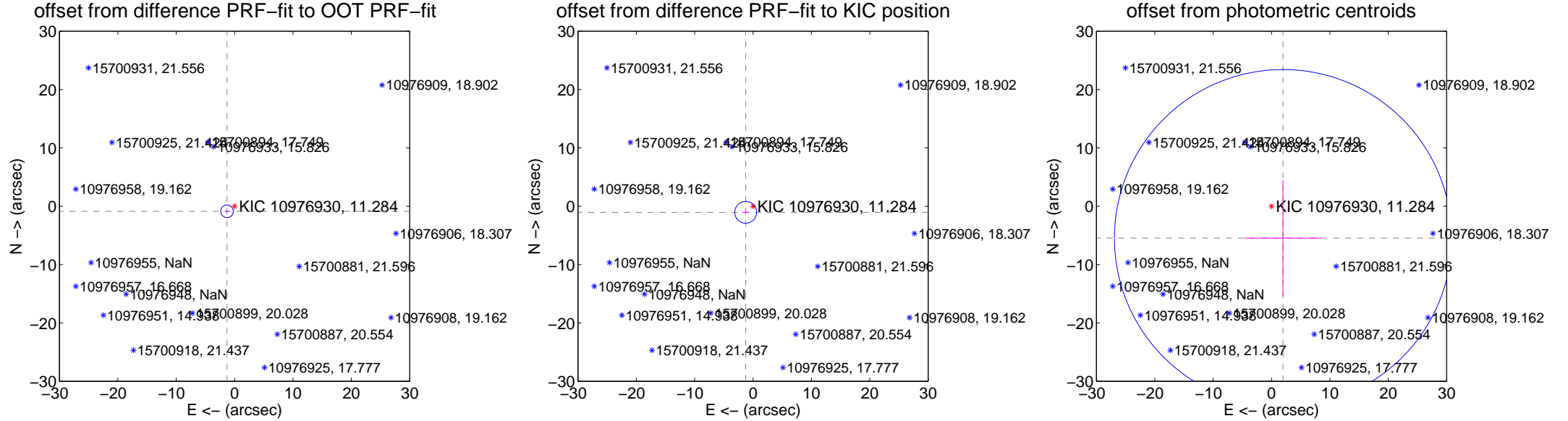
DV Centroid Data

Supplemental centroid analysis for 010976930-01. **Kepler magnitude: 11.28.** Transit SNR -1.00

There are 4 quarters with good PRF difference image offsets

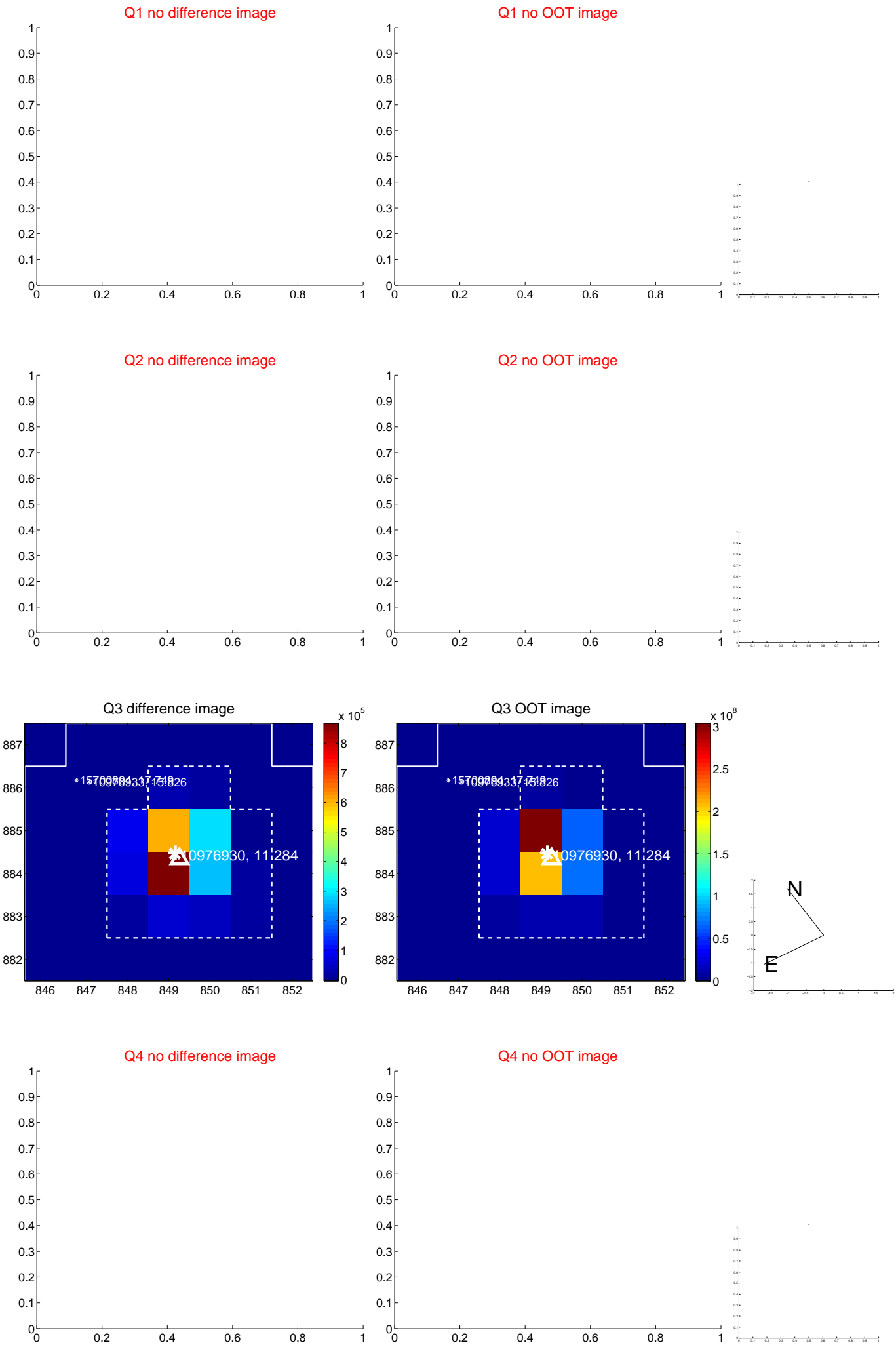
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.561 ± 0.359	4.35	1.295 ± 0.366	-0.873 ± 0.120
PRF-fit source offset from KIC position	1.634 ± 0.624	2.62	1.263 ± 0.597	-1.037 ± 0.267
photometric centroid source offset	5.81 ± 9.63	0.60	-1.97 ± 6.59	-5.46 ± 9.96



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.

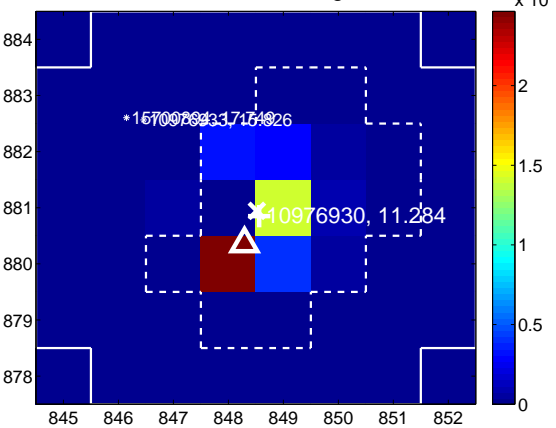
Q5 no difference image



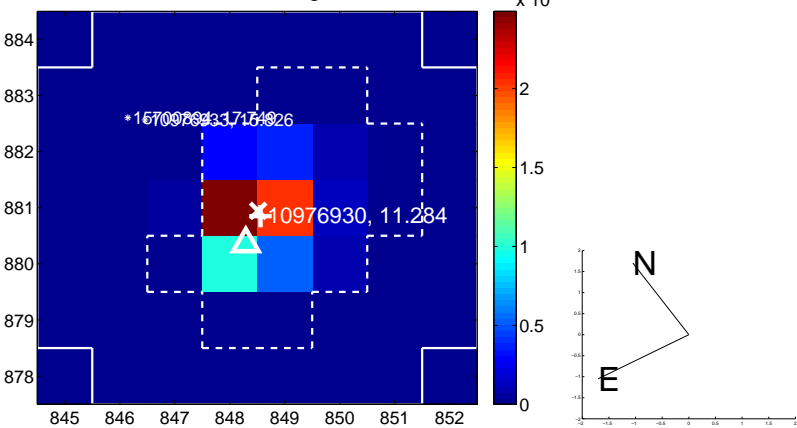
Q5 no OOT image



Q6 difference image



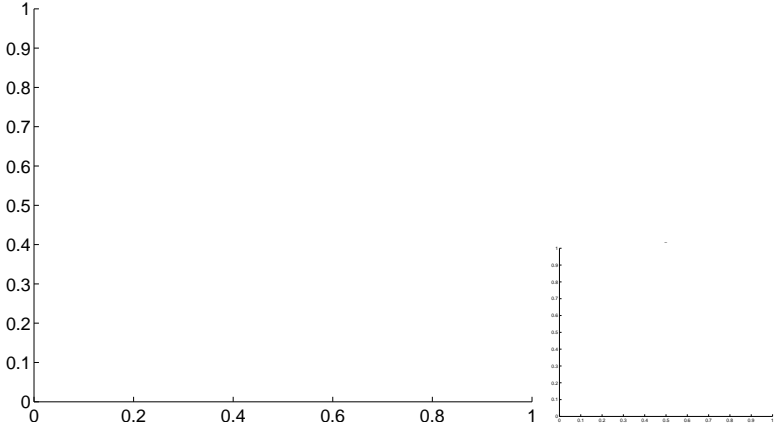
Q6 OOT image



Q7 no difference image



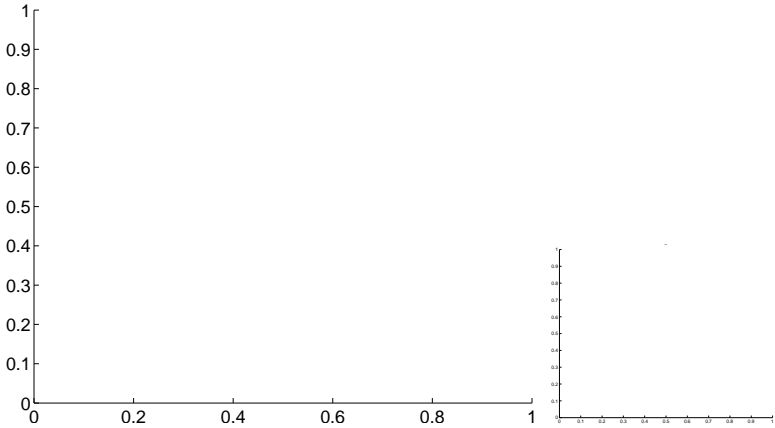
Q7 no OOT image



Q8 no difference image



Q8 no OOT image



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

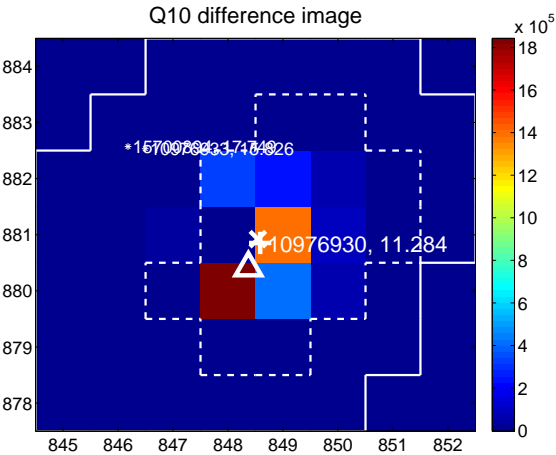
Q9 no difference image



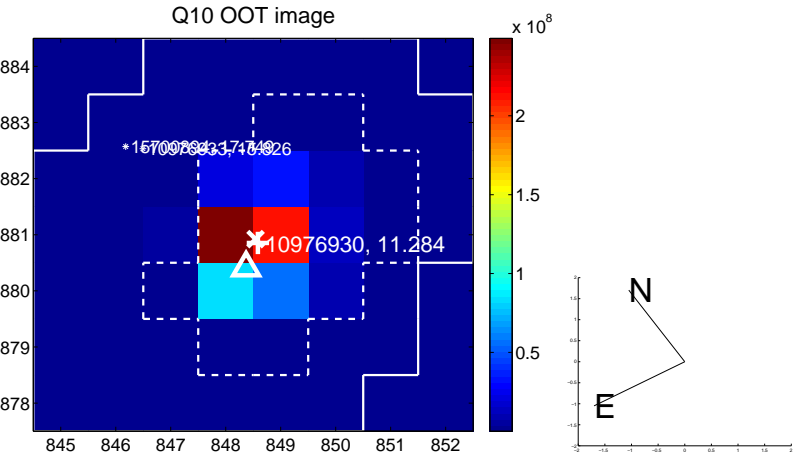
Q9 no OOT image



Q10 difference image



Q10 OOT image



Q11 no difference image



Q11 no OOT image



Q12 no difference image



Q12 no OOT image



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

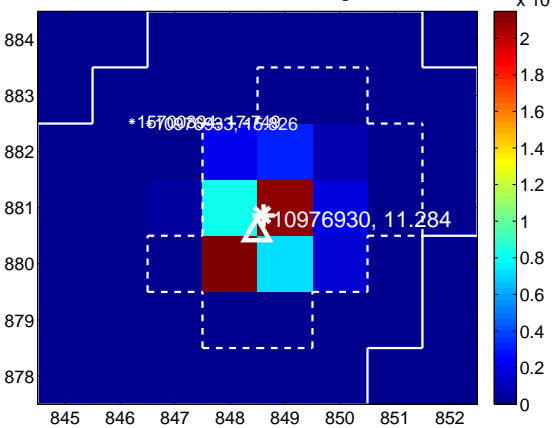
Q13 no difference image



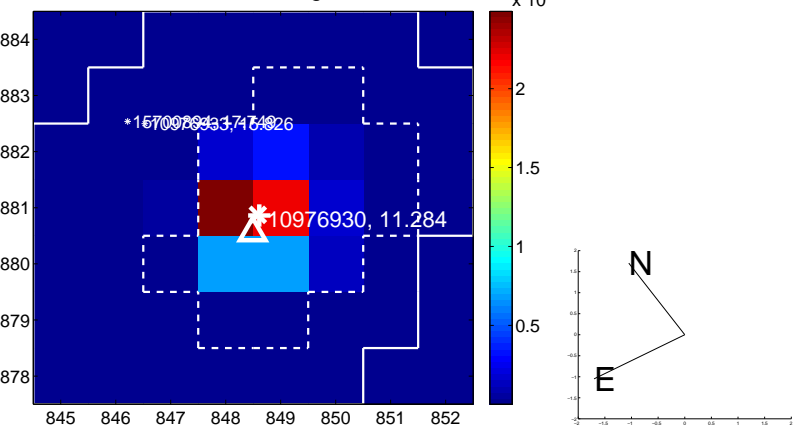
Q13 no OOT image



Q14 difference image



Q14 OOT image



Q15 no difference image



Q15 no OOT image



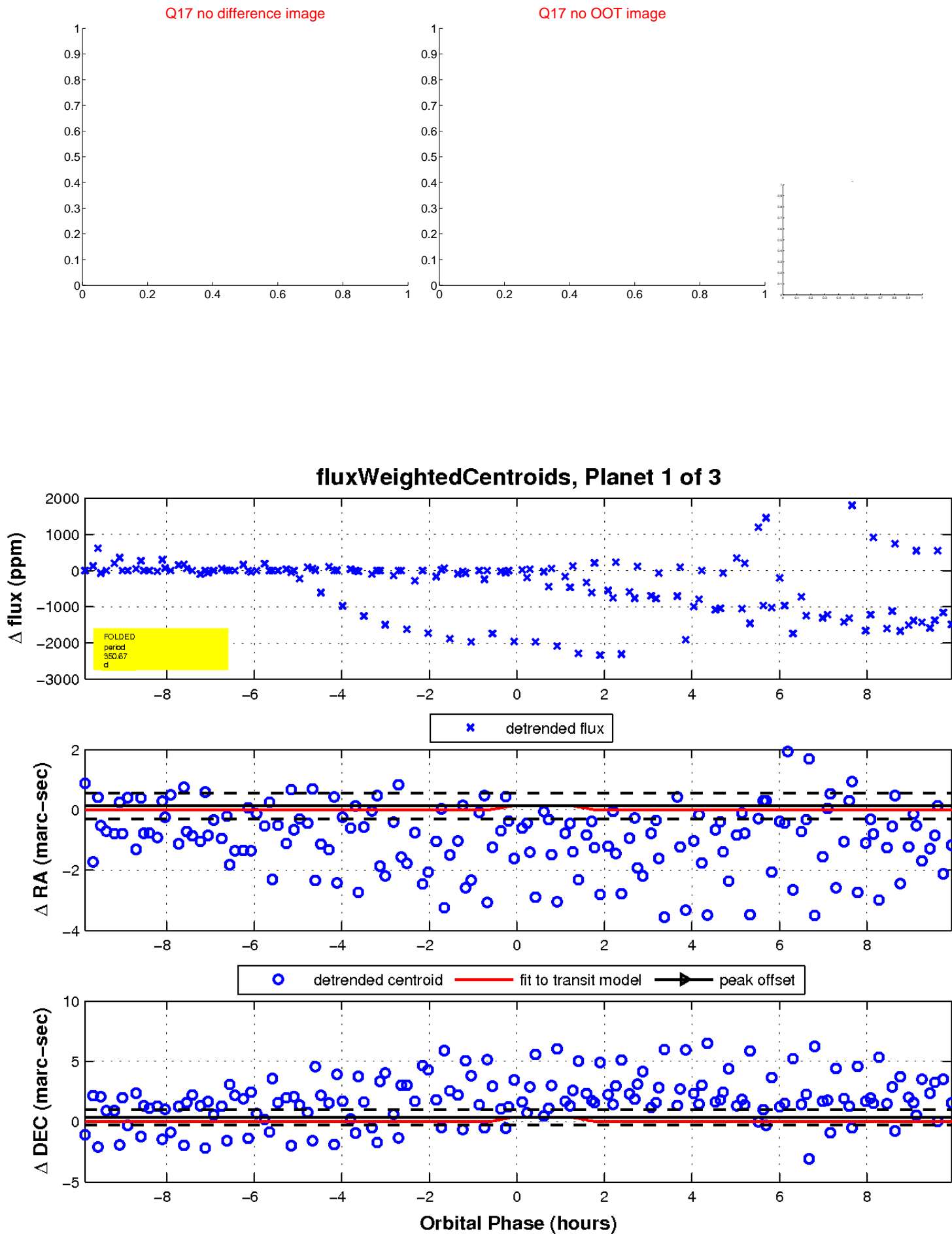
Q16 no difference image



Q16 no OOT image

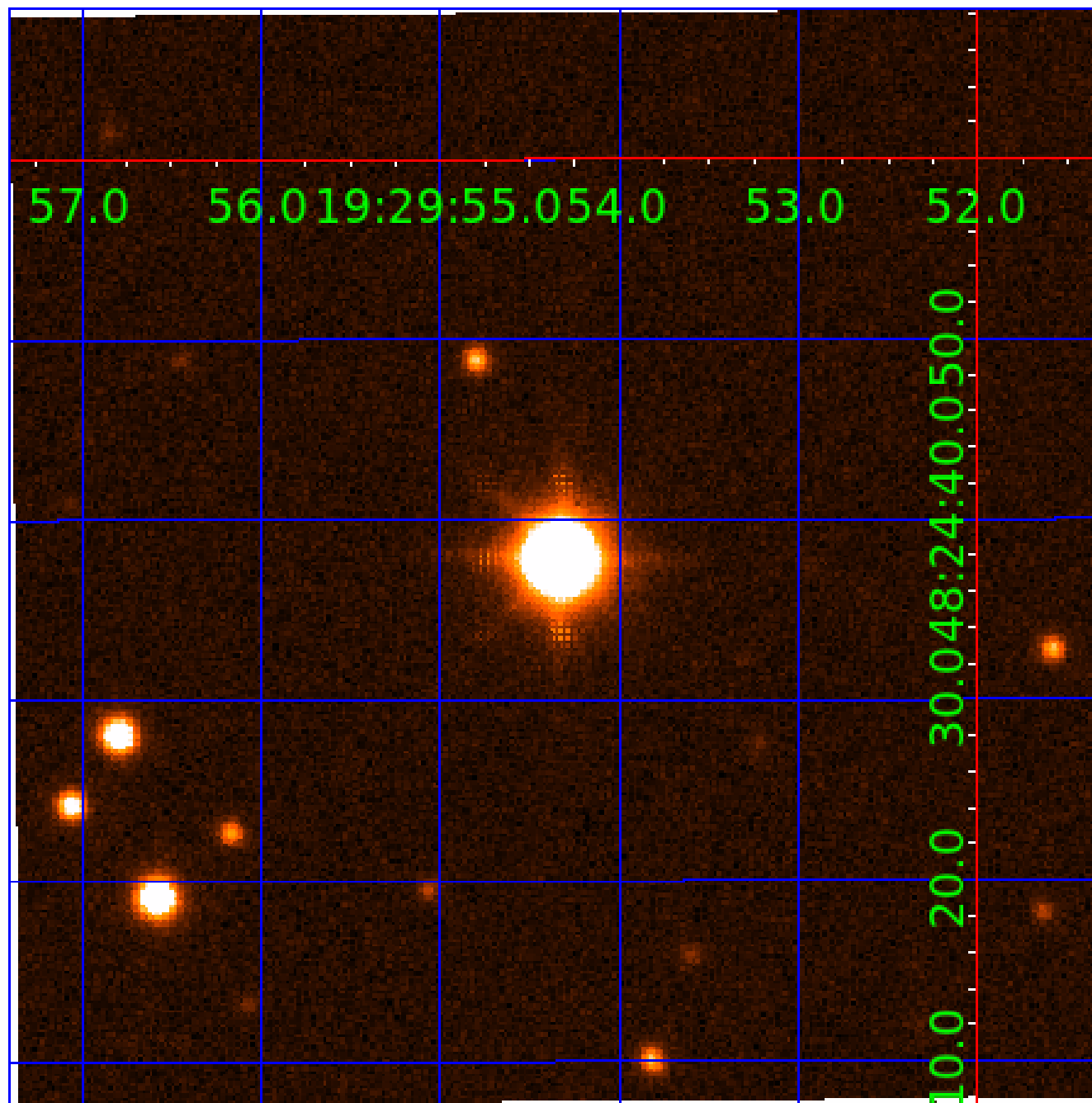


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010976930

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})
010976930-01	OBS	No	350.673946	270.837223	134.5	5.000	11.0	-1.0	3.01	6197	3.50	9.64
010976930-02	OBS	No	467.641238	243.229975	620.6	10.832	14.6	4.4	3.01	6197	7.70	6.57
010976930-03	OBS	No	222.010537	306.902886	160.0	2.687	12.1	2.6	3.01	6197	3.82	17.73

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010976930-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010976930-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010976930-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA_TRACKER—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST

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

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

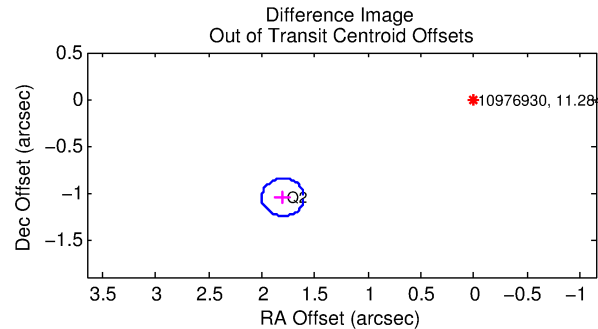
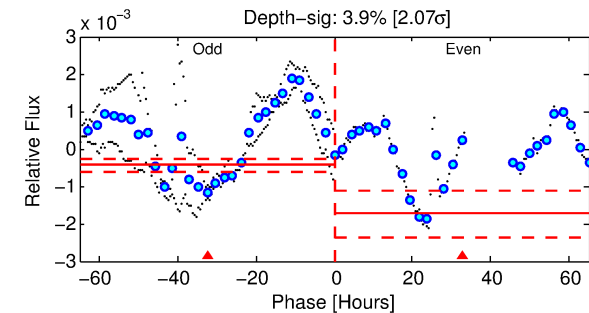
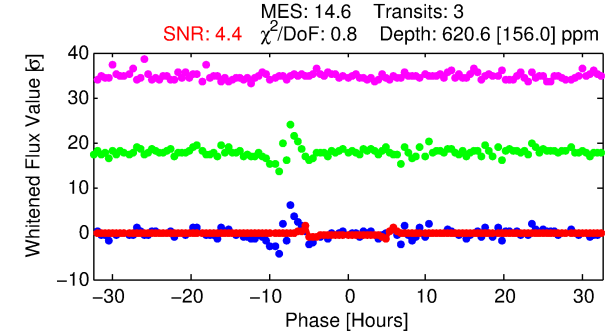
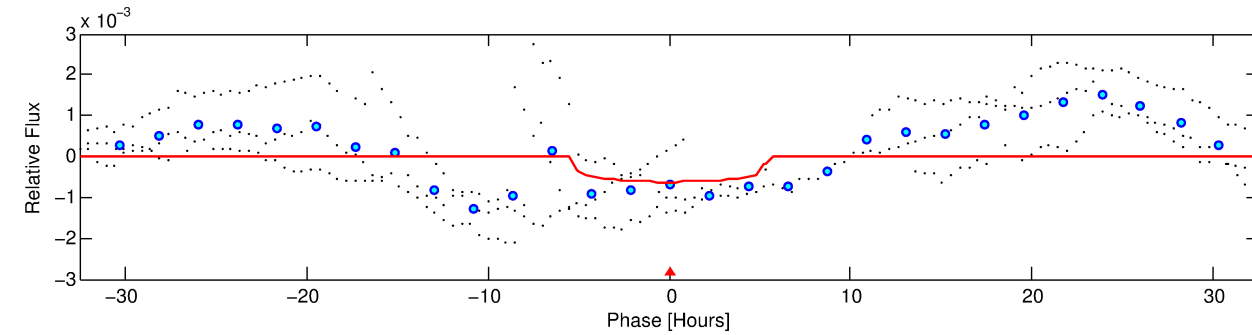
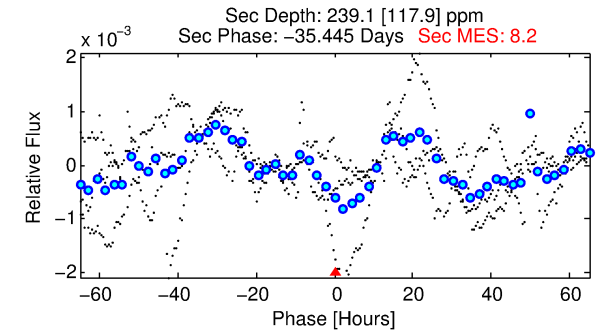
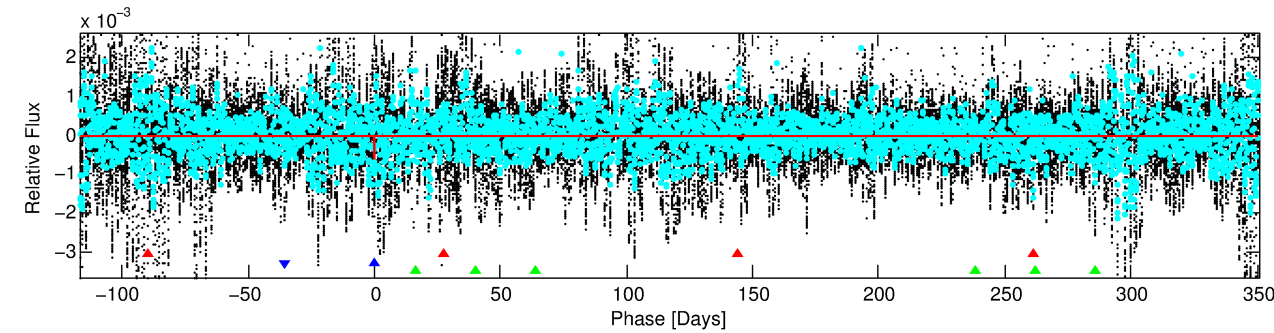
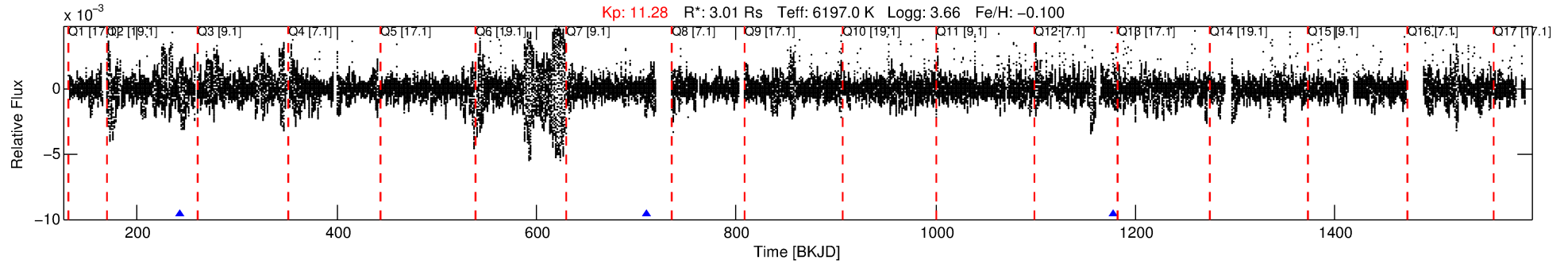
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010976930-02

No Significant Match Found

DV One-Page Summary

KIC: 10976930 Candidate: 2 of 3 Period: 467.641 d



DV Fit Results:

Period = 467.64124 [0.00363] d
Epoch = 243.2300 [0.0047] BKJD
Rp/R* = 0.0234 [0.0075]
a/R* = 297.94 [391.13]
b = 0.48 [2.09]
Seff = 6.57 [6.58]
Teq = 408 [102] K
Rp = 7.70 [5.19] Re
a = 1.3501 [0.8145] AU
Ag = 4042.63 [5188.26] [0.78σ]
Teff = 5033 [1031] K [4.46σ]

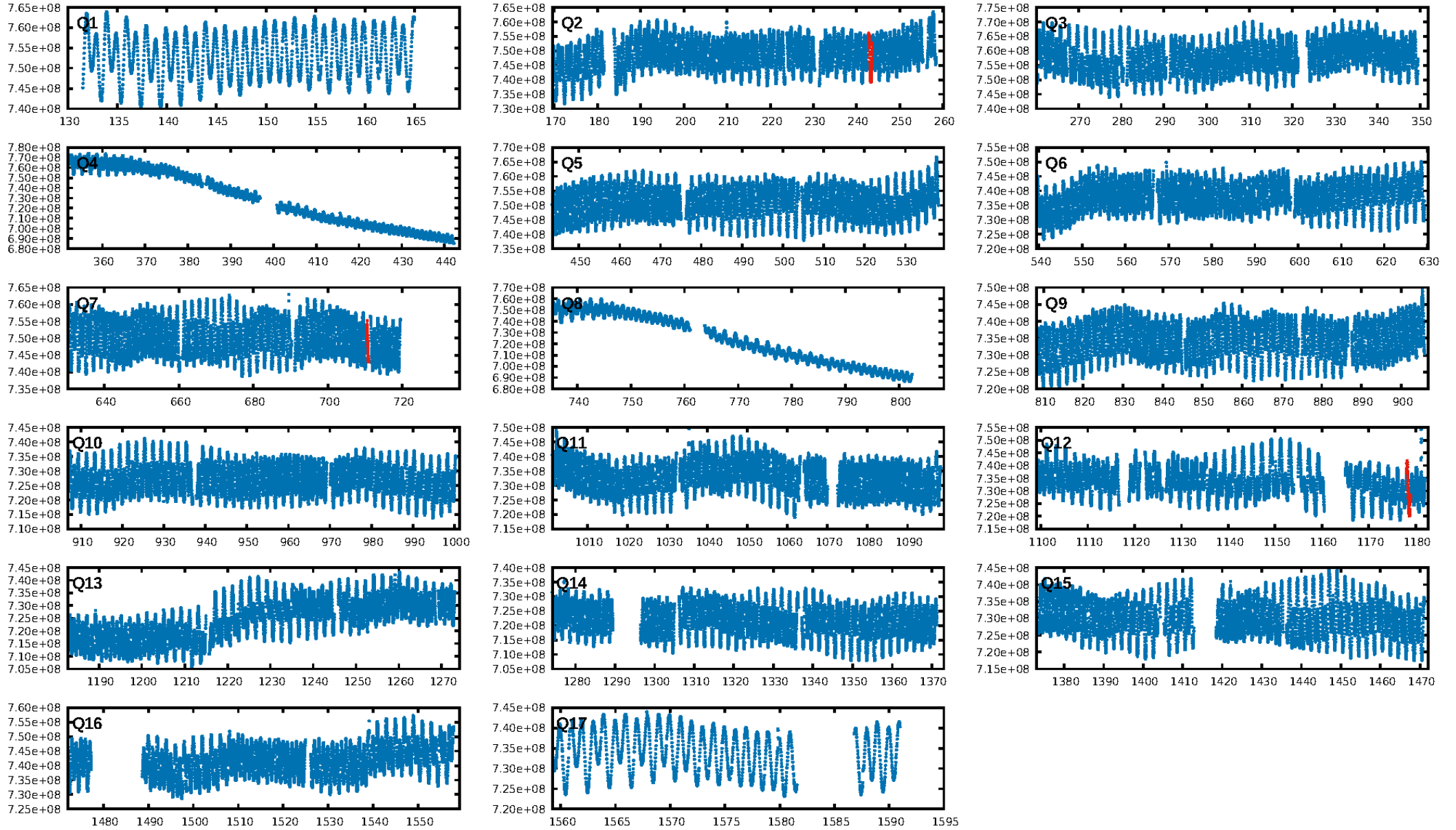
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [235.30σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 30.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.10e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -2.116
Centroid-sig: 13.3%
Centroid-so: 1.867 arcsec [1.11σ]
OotOffset-rm: 2.085 arcsec [31.24σ]
KicOffset-rm: 2.234 arcsec [33.48σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [1/1]

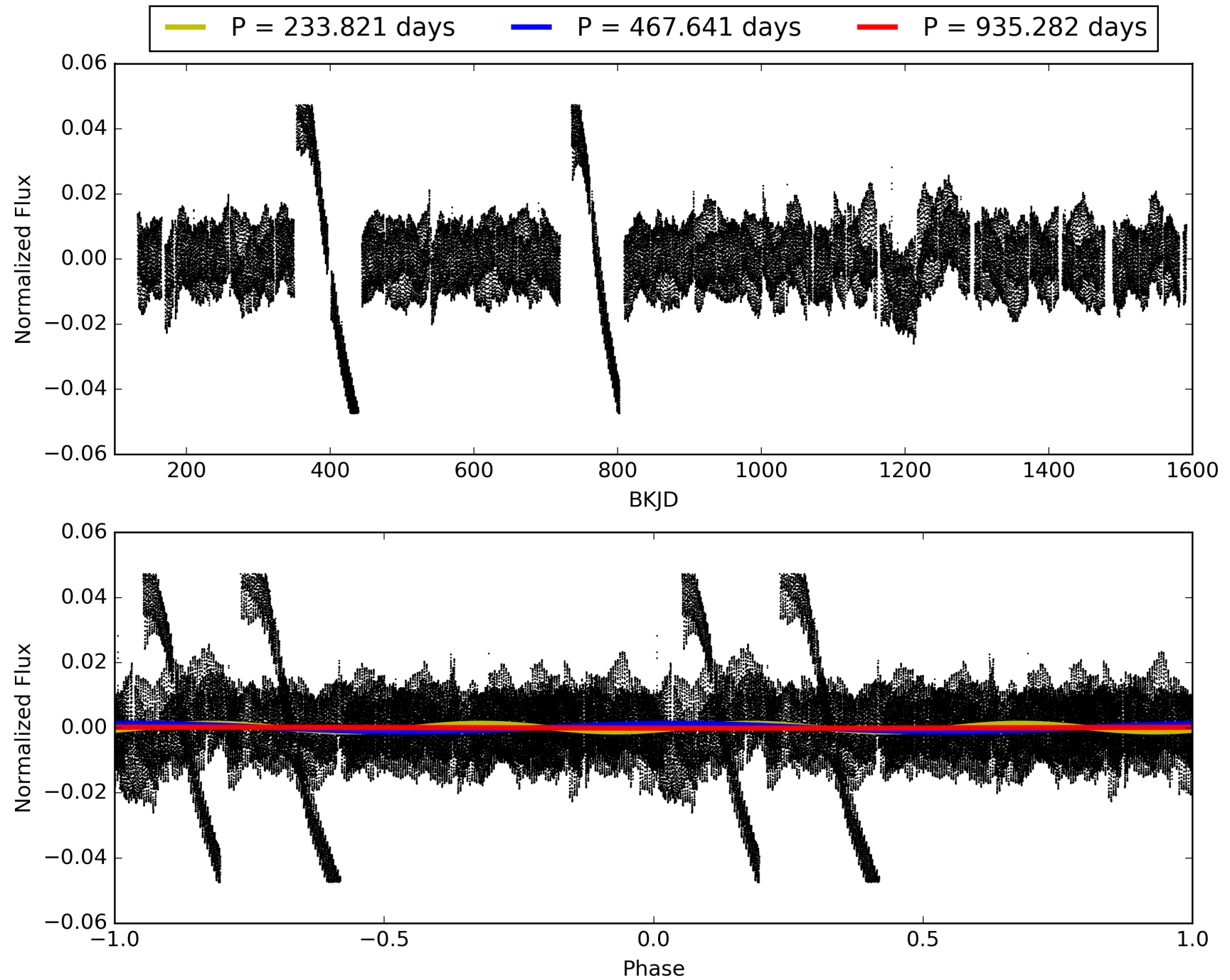
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:39:09 Z

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

TCE 010976930-02, PDC Light Curves

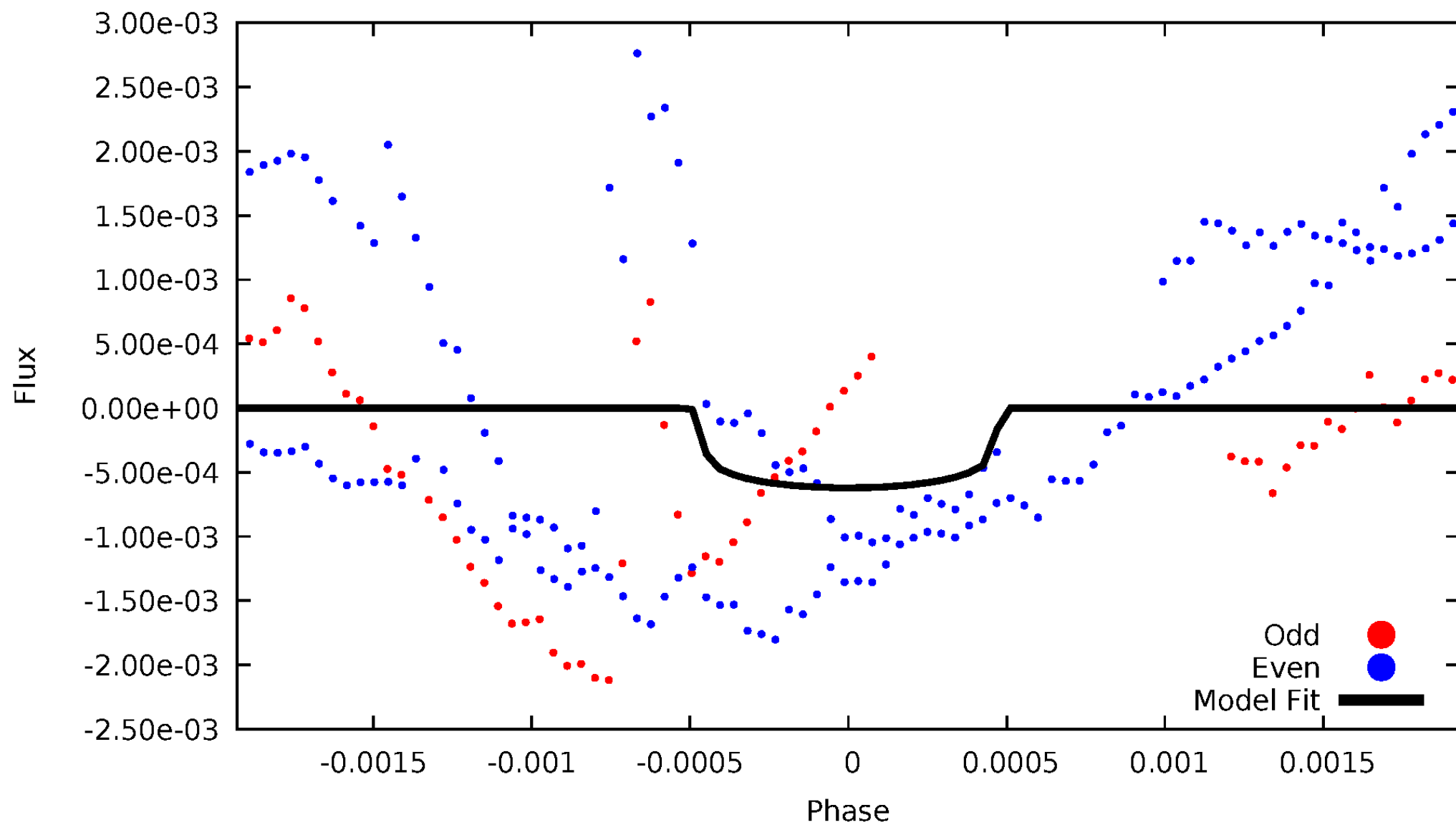


TCE 010976930-02



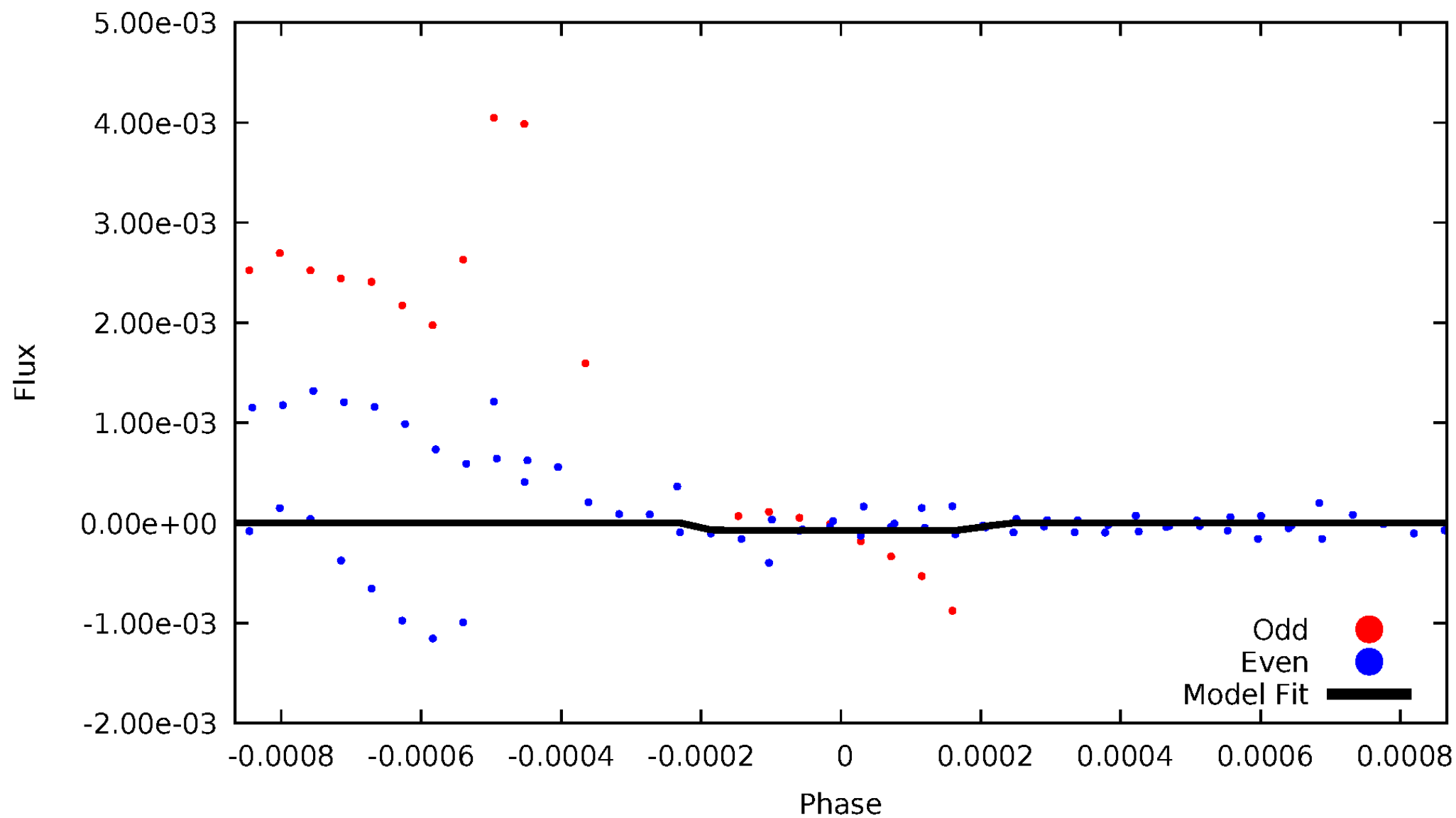
DV Odd/Even

TCE 010976930-02



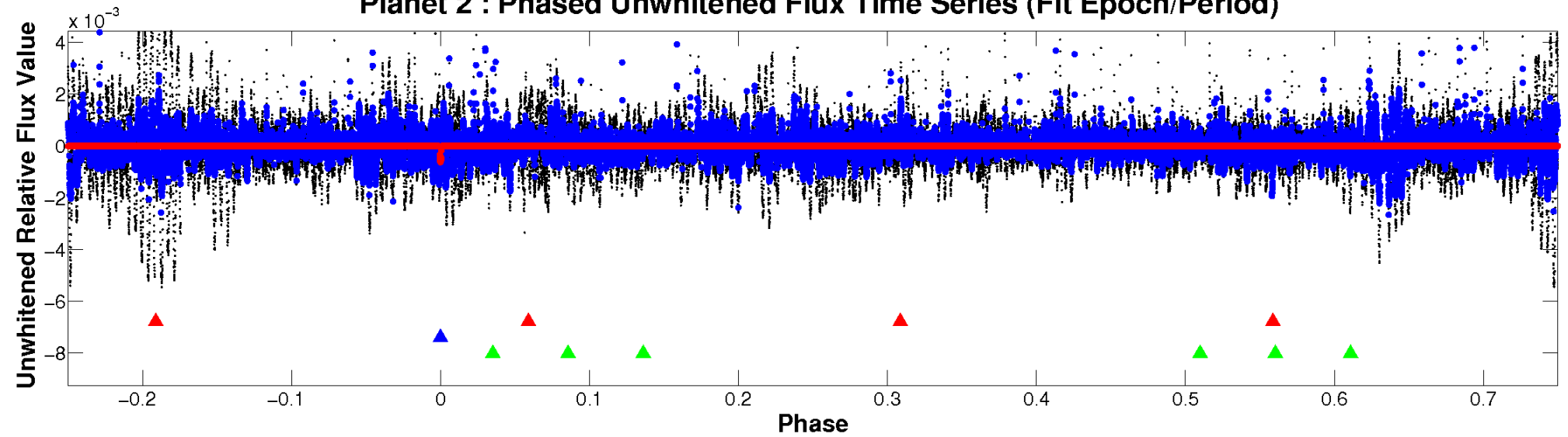
ALT Odd/Even

TCE 010976930-02

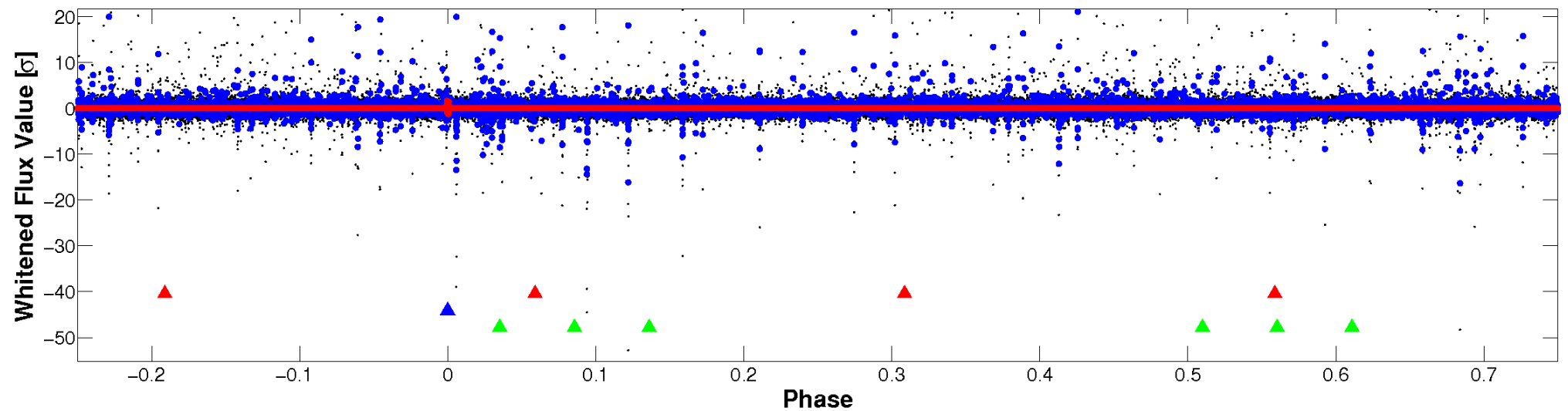


Non-Whitened Vs. Whitened Light Curve

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

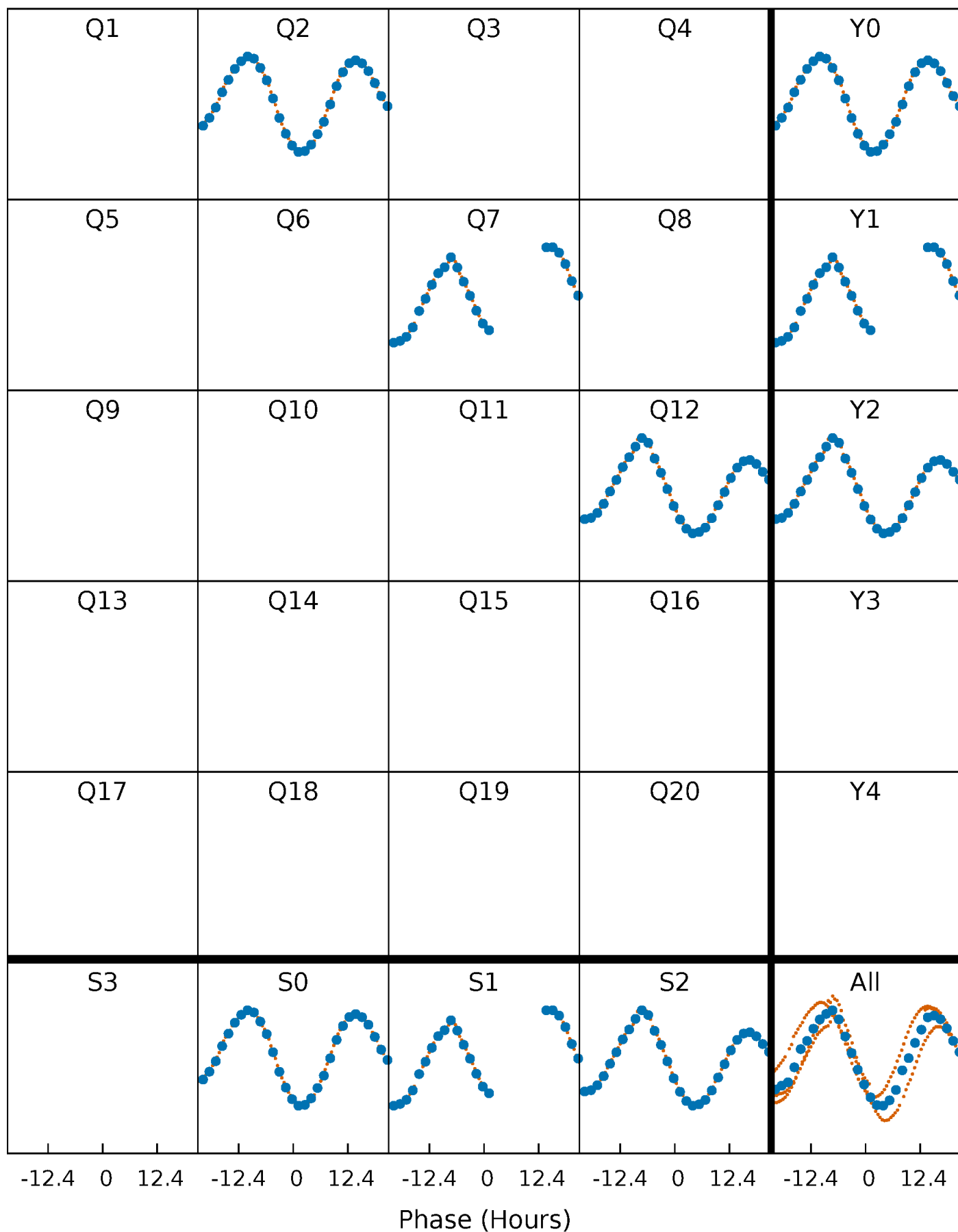


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



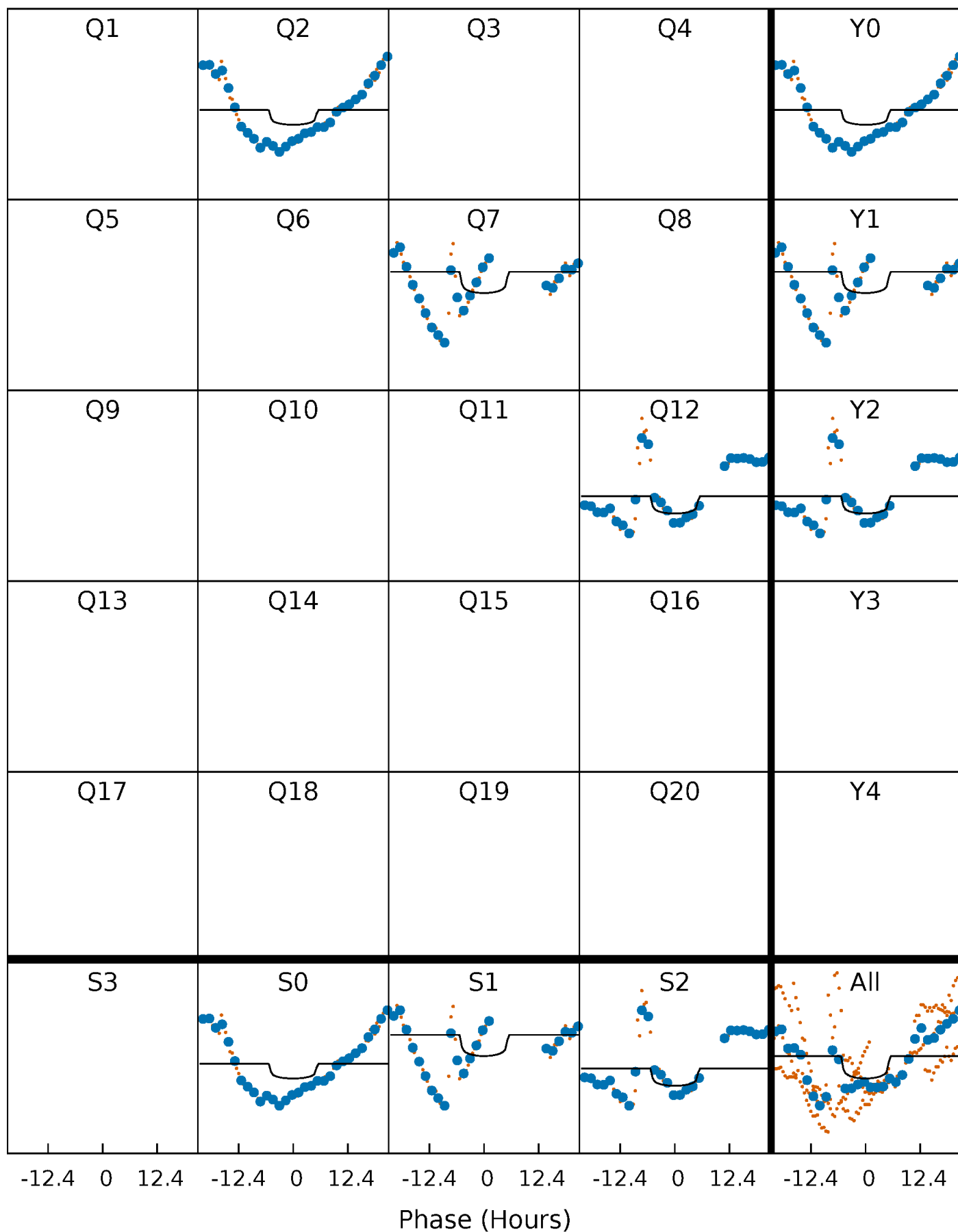
PDC Quarter-Phased Transit Curves

TCE 010976930-02 P=467.641237 Days $T_0=243.229975$ (BKJD)



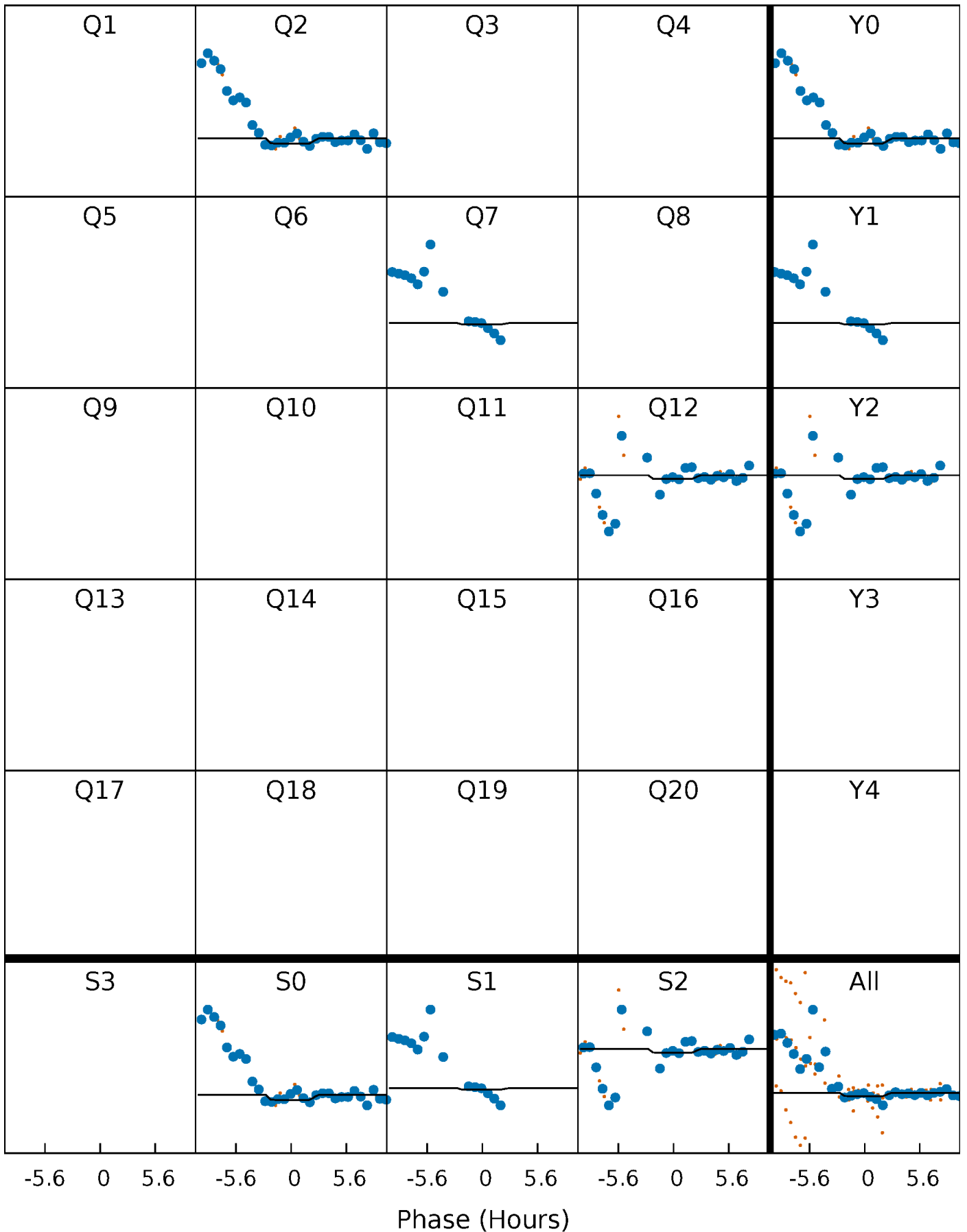
DV Quarter-Phased Transit Curves

TCE 010976930-02 P=467.641237 Days $T_0=243.229975$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

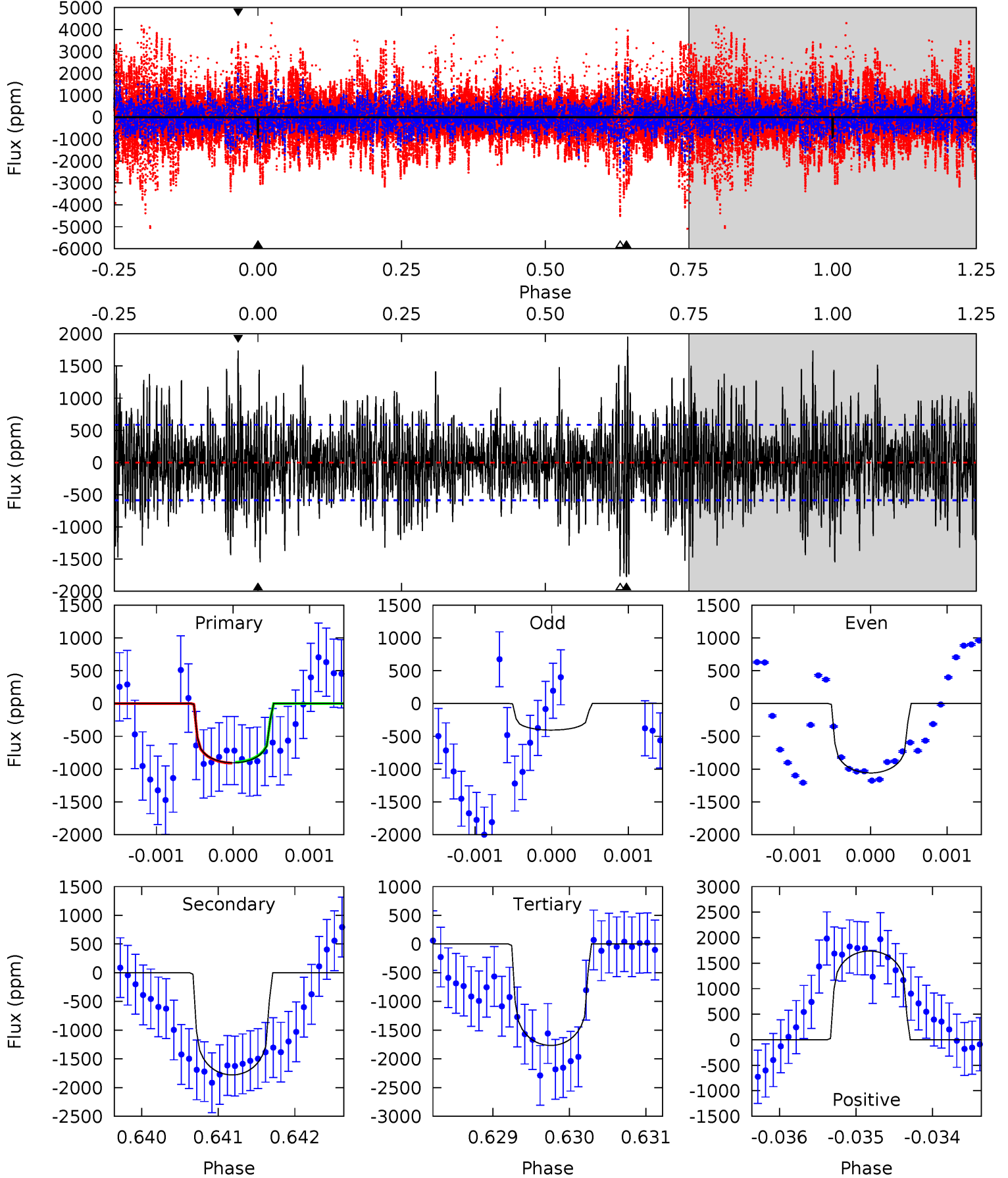
TCE 010976930-02 P=467.601587 Days $T_0=243.188578$ (BKJD)



DV Model-Shift Uniqueness Test

010976930-02, P = 467.641237 Days, E = 243.229975 Days

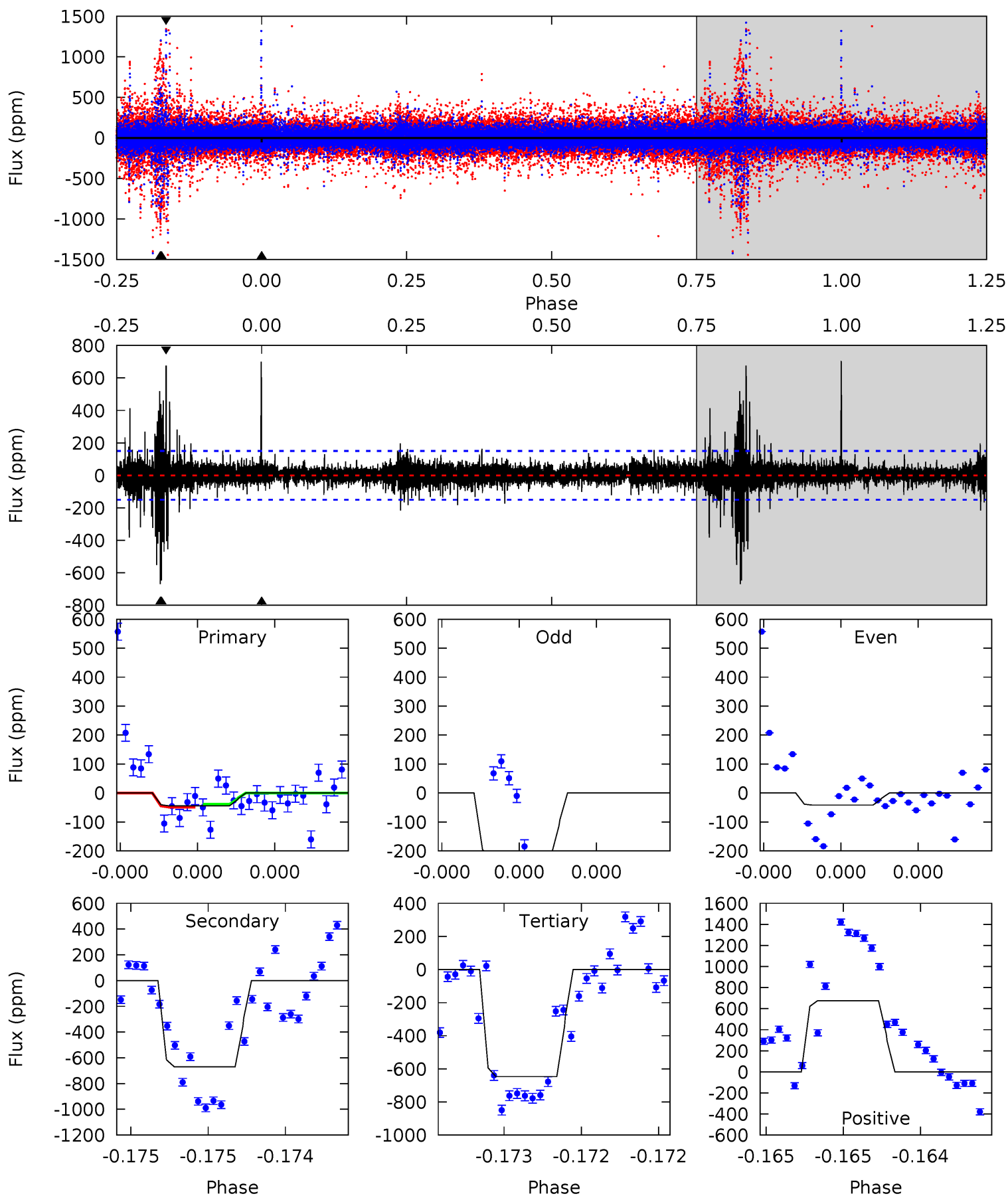
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.42	16.6	16.4	16.2	5.46	3.30	4.41	-8.03	-7.77	0.13	0.39	2.16	1.26	0.52	0.06



Alt Model-Shift Uniqueness Test

010976930-02, P = 467.601587 Days, E = 243.188578 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.65	24.9	24.1	25.2	5.61	3.54	2.12	-22.5	-23.5	0.83	-0.25	1.69	1.90	0.51	0.17



Stellar Parameters For KIC 010976930

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6197^{+167}_{-186}	$3.657^{+0.595}_{-0.105}$	$-0.100^{+0.300}_{-0.300}$	$3.010^{+0.556}_{-1.780}$	$1.499^{+0.190}_{-0.444}$	$0.077^{+0.665}_{-0.026}$
	+3%/-3%	+16%/-3%	+300%/-300%	+18%/-59%	+13%/-30%	+860%/-34%
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 010976930-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1779 ± 107	$6.70^{+3.04}_{-2.67}$	554^{+42}_{-79}	8791^{+2938}_{-1469}	38950^{+65345}_{-20048}
Alt.	-669 ± 27	$2.79^{+2.20}_{-1.68}$	554^{+43}_{-83}	11490^{+16778}_{-3600}	$86192^{+454443}_{-58827}$

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

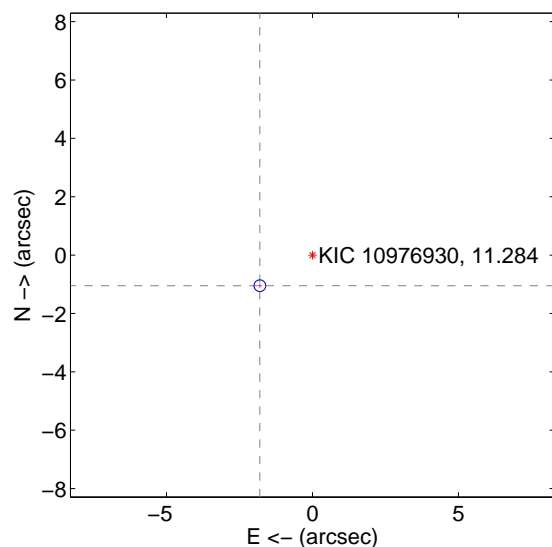
Supplemental centroid analysis for 010976930-02. **Kepler magnitude: 11.28.** Transit SNR 4.43

There are 1 quarters with good PRF difference image offsets

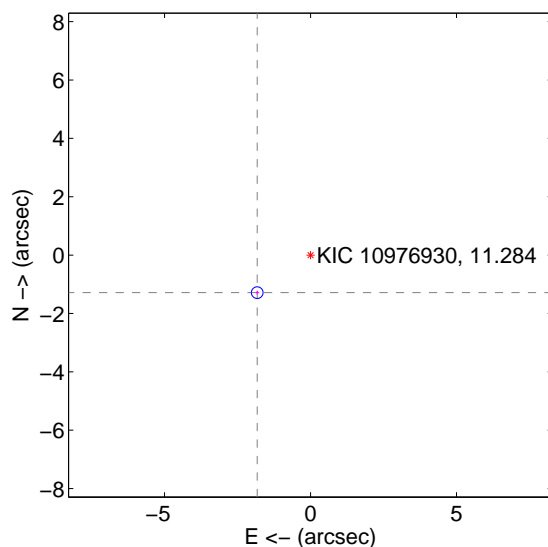
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.085 ± 0.067	31.24	1.802 ± 0.067	-1.048 ± 0.067
PRF-fit source offset from KIC position	2.234 ± 0.067	33.48	1.826 ± 0.067	-1.286 ± 0.067
photometric centroid source offset	1.87 ± 1.68	1.11	0.72 ± 1.06	-1.72 ± 1.77

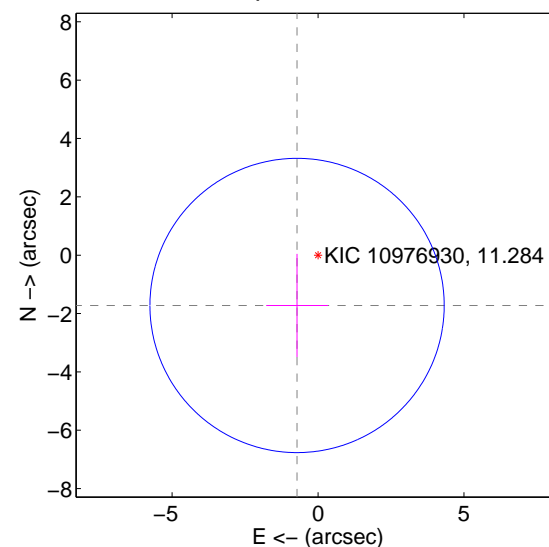
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

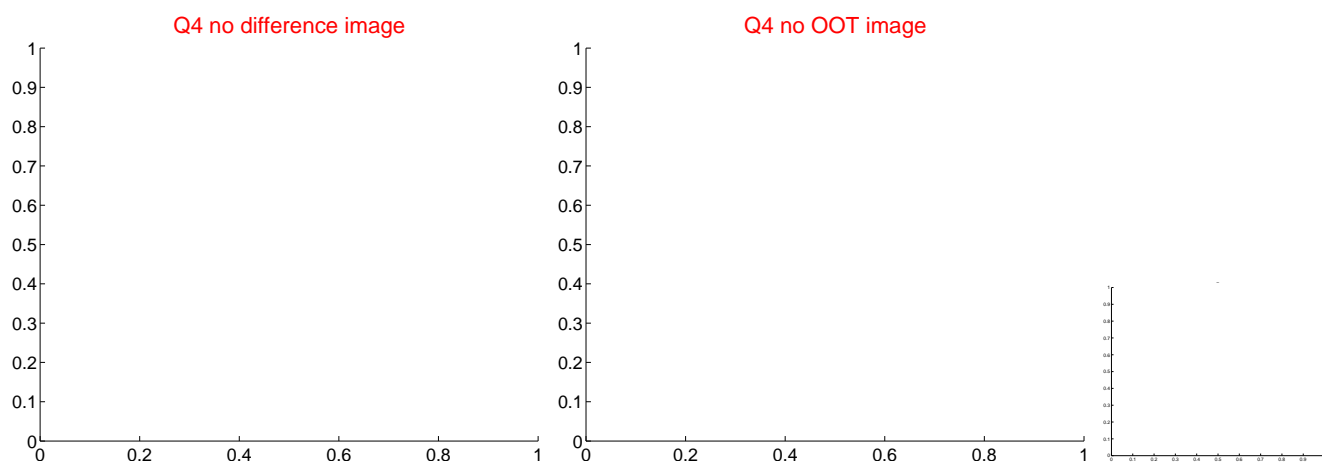
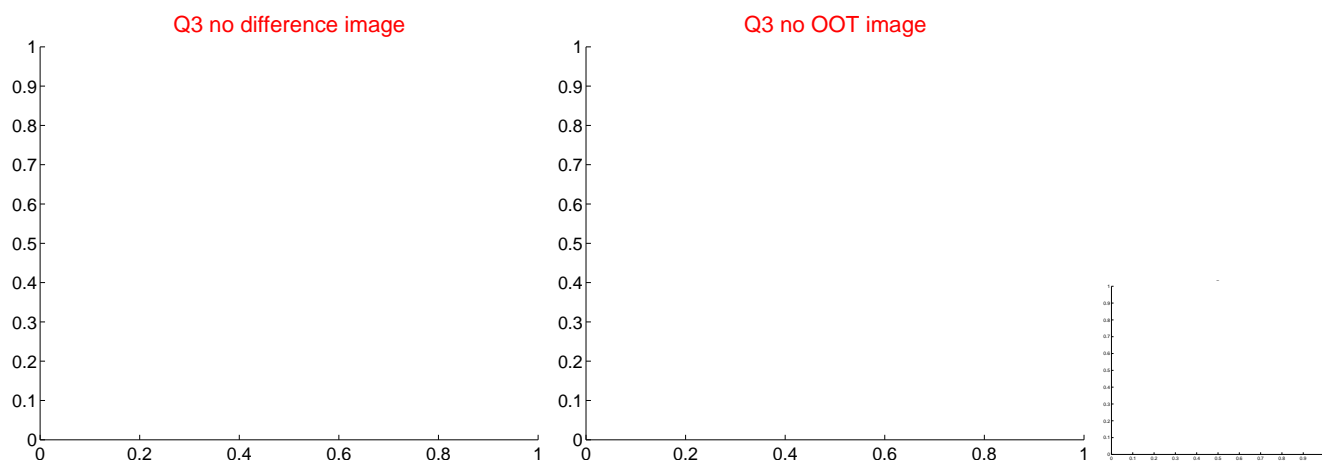
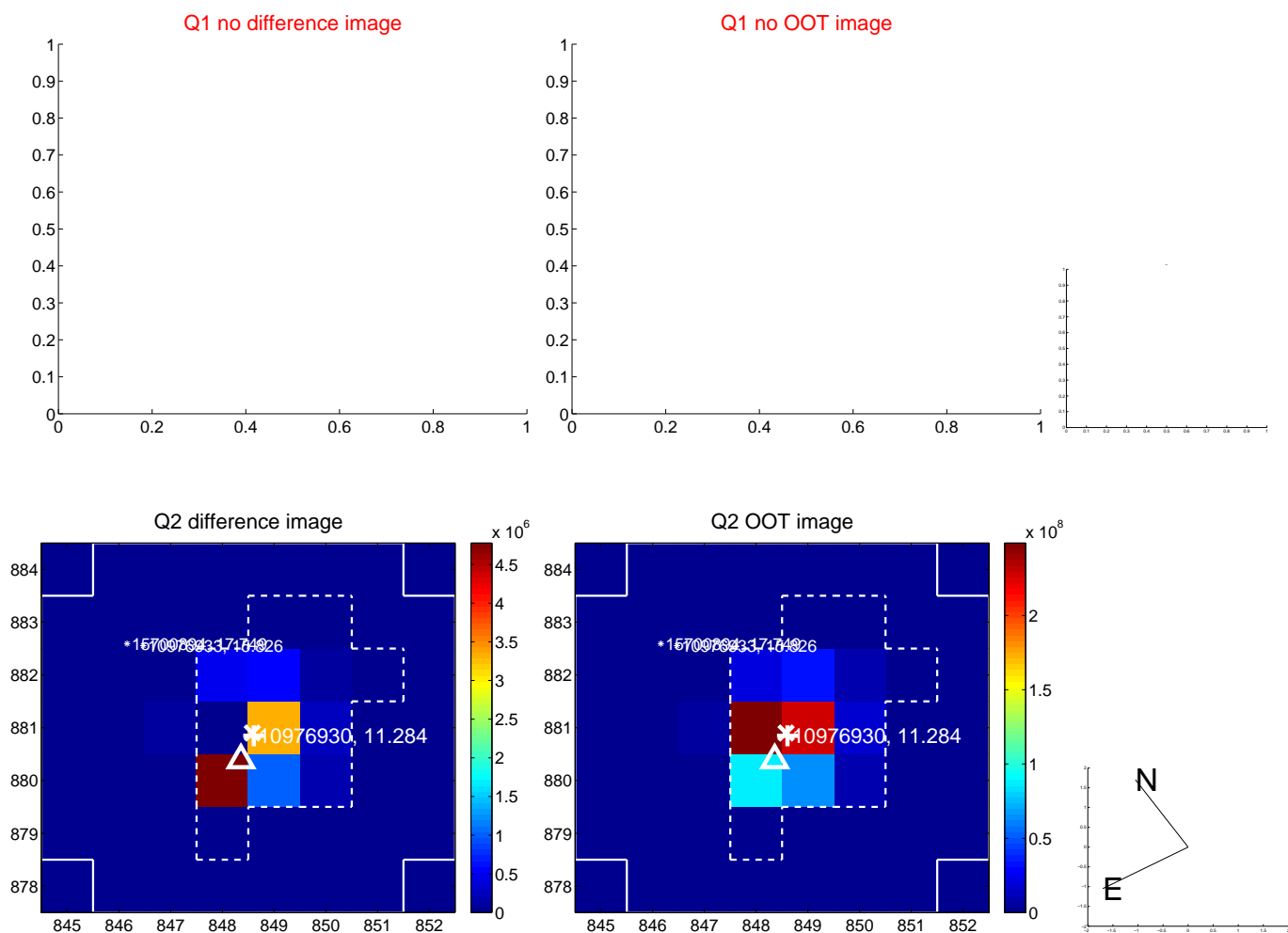


offset from photometric centroids



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.

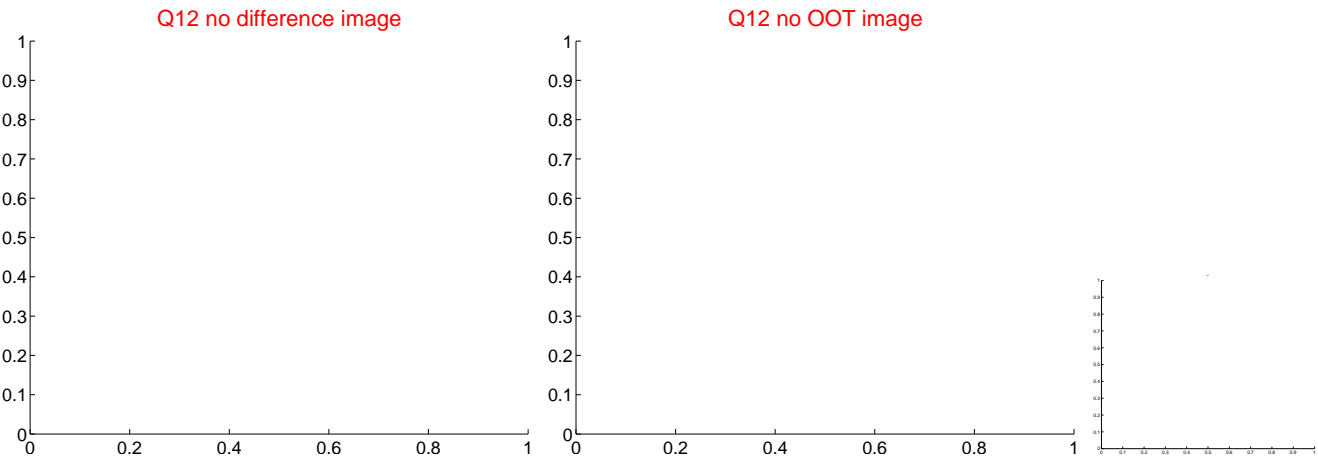
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



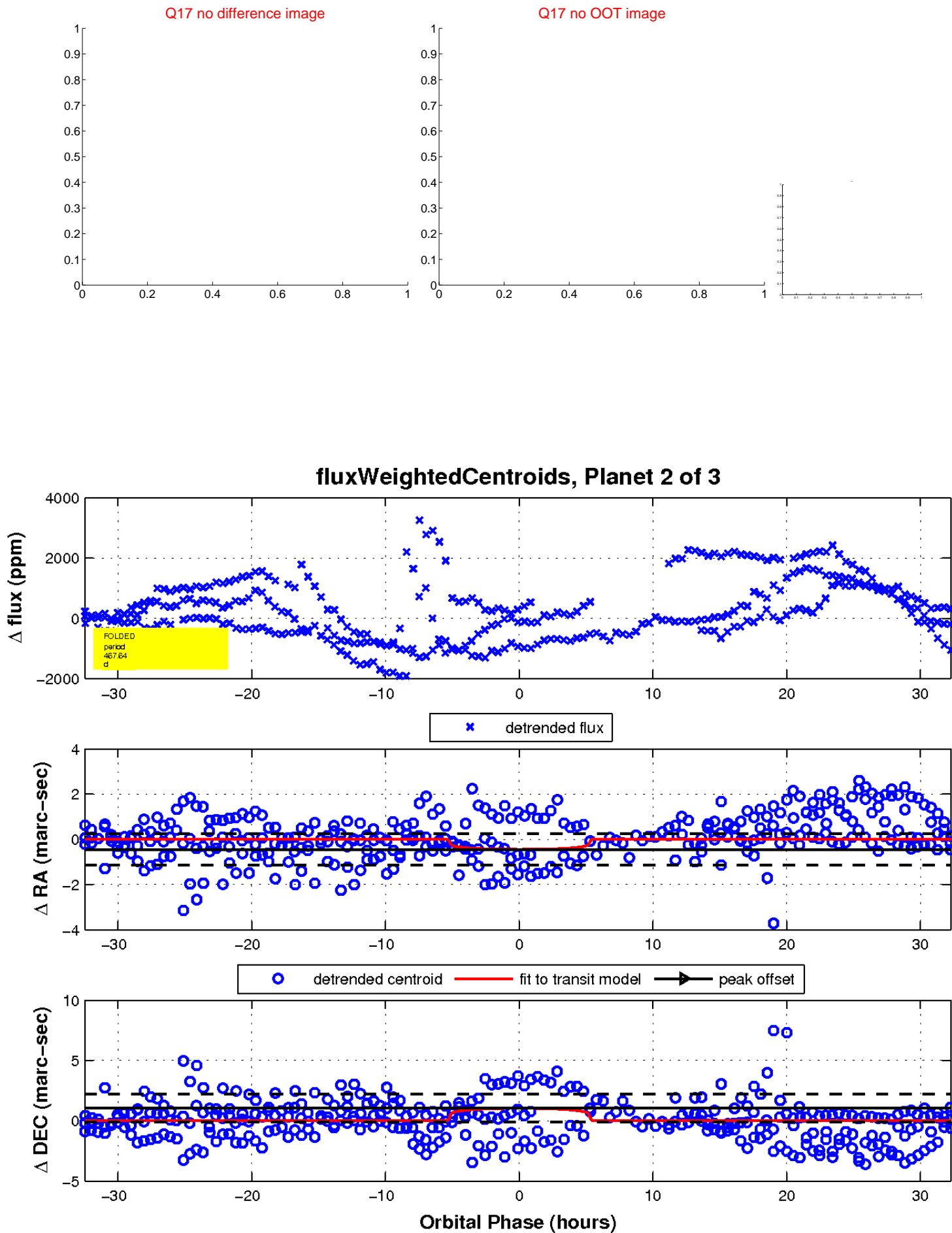
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

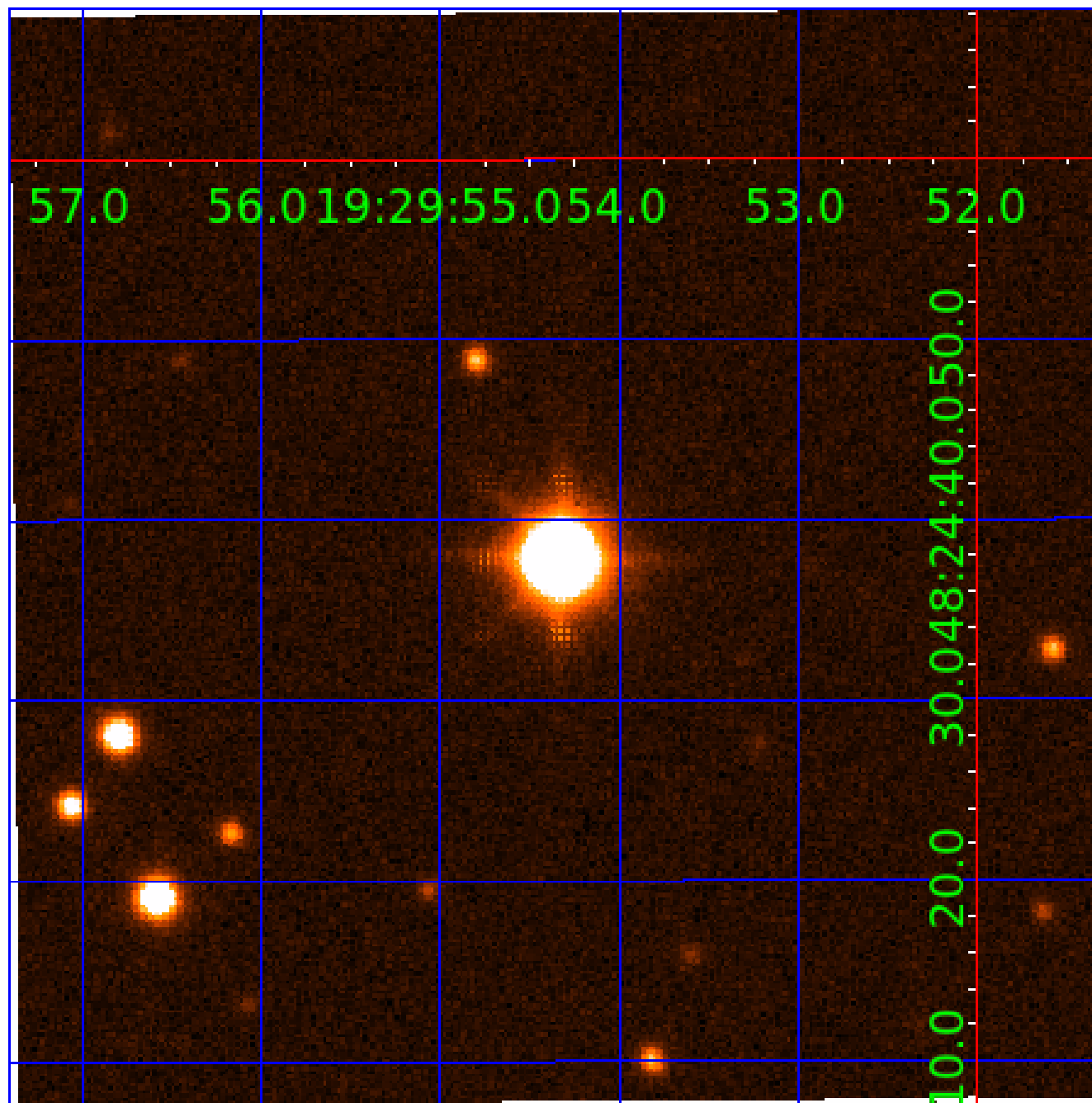


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010976930

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})
010976930-01	OBS	No	350.673946	270.837223	134.5	5.000	11.0	-1.0	3.01	6197	3.50	9.64
010976930-02	OBS	No	467.641238	243.229975	620.6	10.832	14.6	4.4	3.01	6197	7.70	6.57
010976930-03	OBS	No	222.010537	306.902886	160.0	2.687	12.1	2.6	3.01	6197	3.82	17.73

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010976930-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010976930-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010976930-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA_TRACKER—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST

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

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

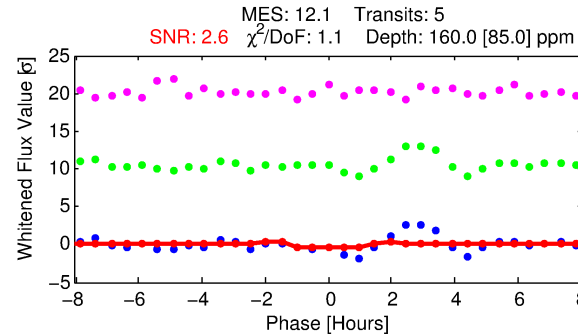
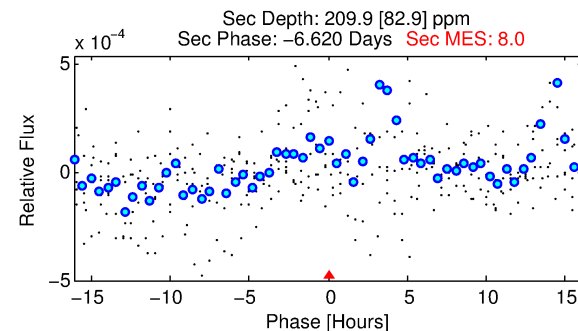
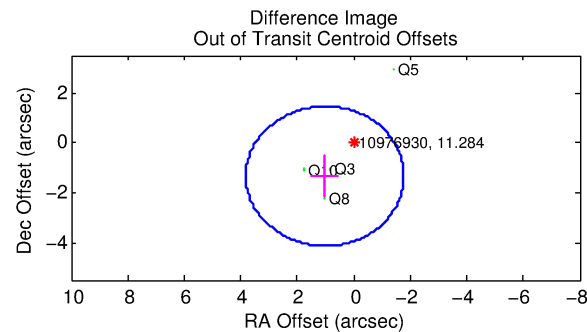
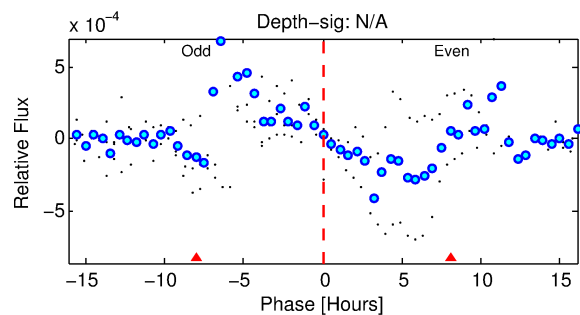
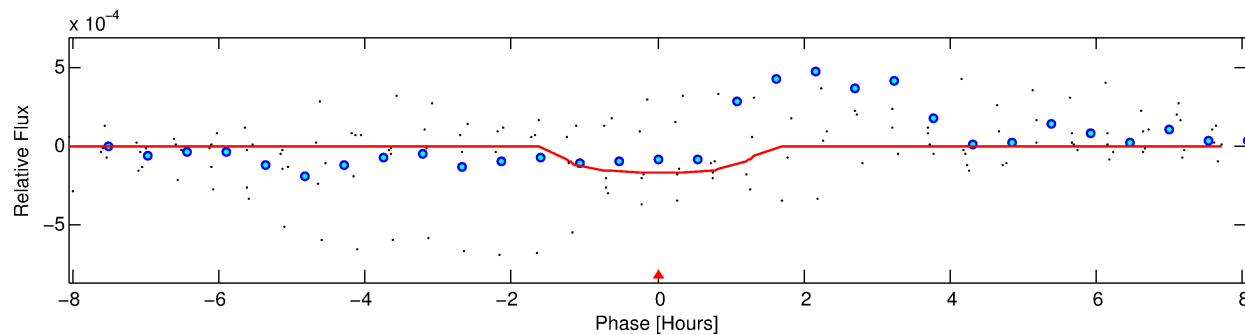
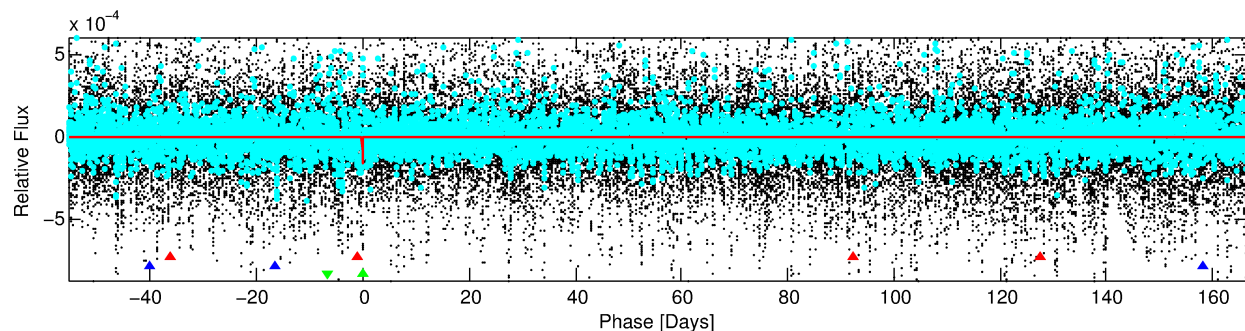
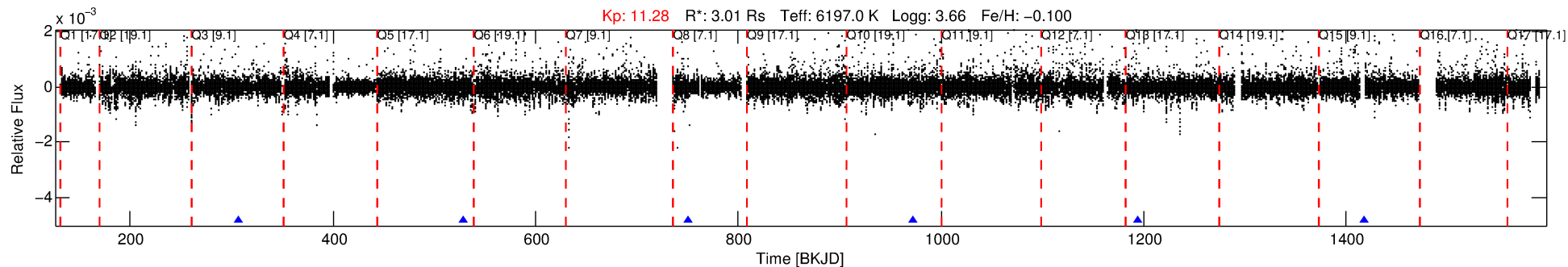
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010976930-03

No Significant Match Found

DV One-Page Summary

KIC: 10976930 Candidate: 3 of 3 Period: 222.011 d



DV Fit Results:

Period = 222.01054 [0.00443] d
Epoch = 306.9029 [0.0121] BKJD
Rp/R* = 0.0116 [0.0419]
a/R* = 638.17 [11359.77]
b = 0.04 [496.76]
Seff = 17.74 [17.77]
Teq = 523 [131] K
Rp = 3.82 [13.95] Re
a = 0.8216 [0.4957] AU
Ag = 5351.24 [39029.18] [0.14σ]
Teffp = 6920 [12501] K [0.51σ]

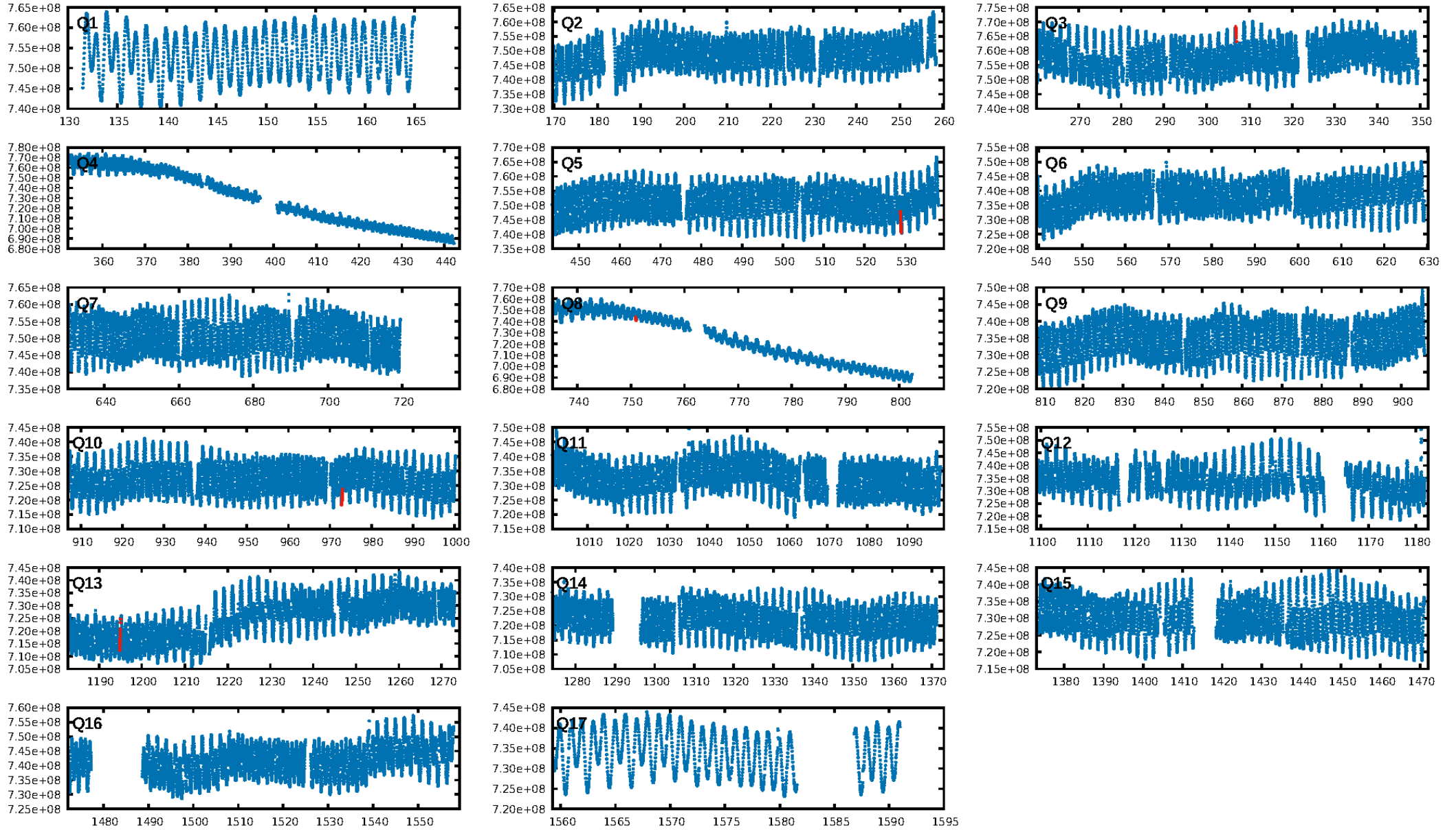
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [544.01σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 72.6%
Bootstrap-pfa: 1.71e-10
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -0.07249
Centroid-sig: 45.1%
Centroid-so: 2.656 arcsec [0.74σ]
OotOffset-rm: 1.688 arcsec [1.81σ]
KicOffset-rm: 1.749 arcsec [1.43σ]
OotOffset-st: 1/1/1/1 [4]
KicOffset-st: 1/1/1/1 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 1.00 [5/5]

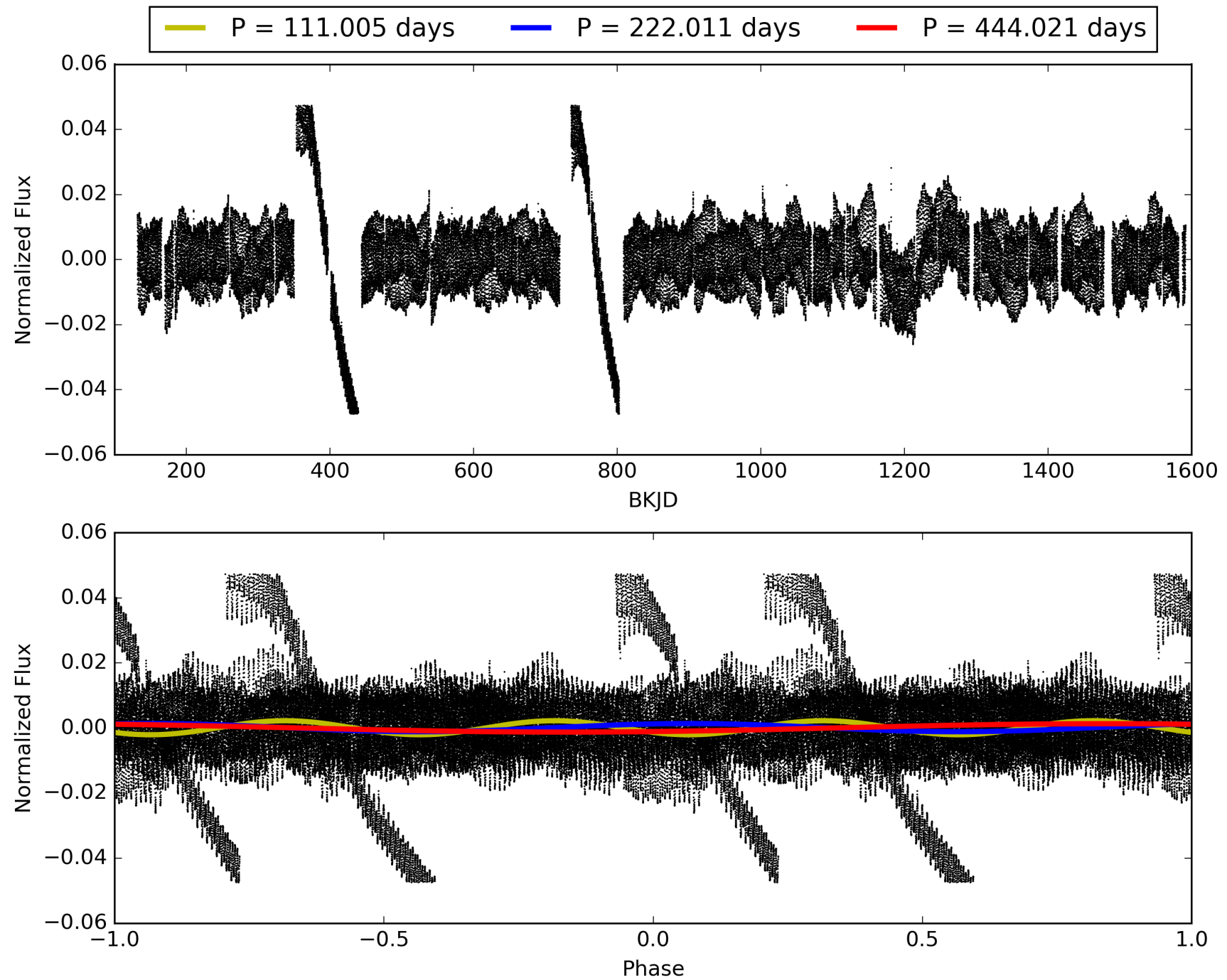
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:39:22 Z

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

TCE 010976930-03, PDC Light Curves

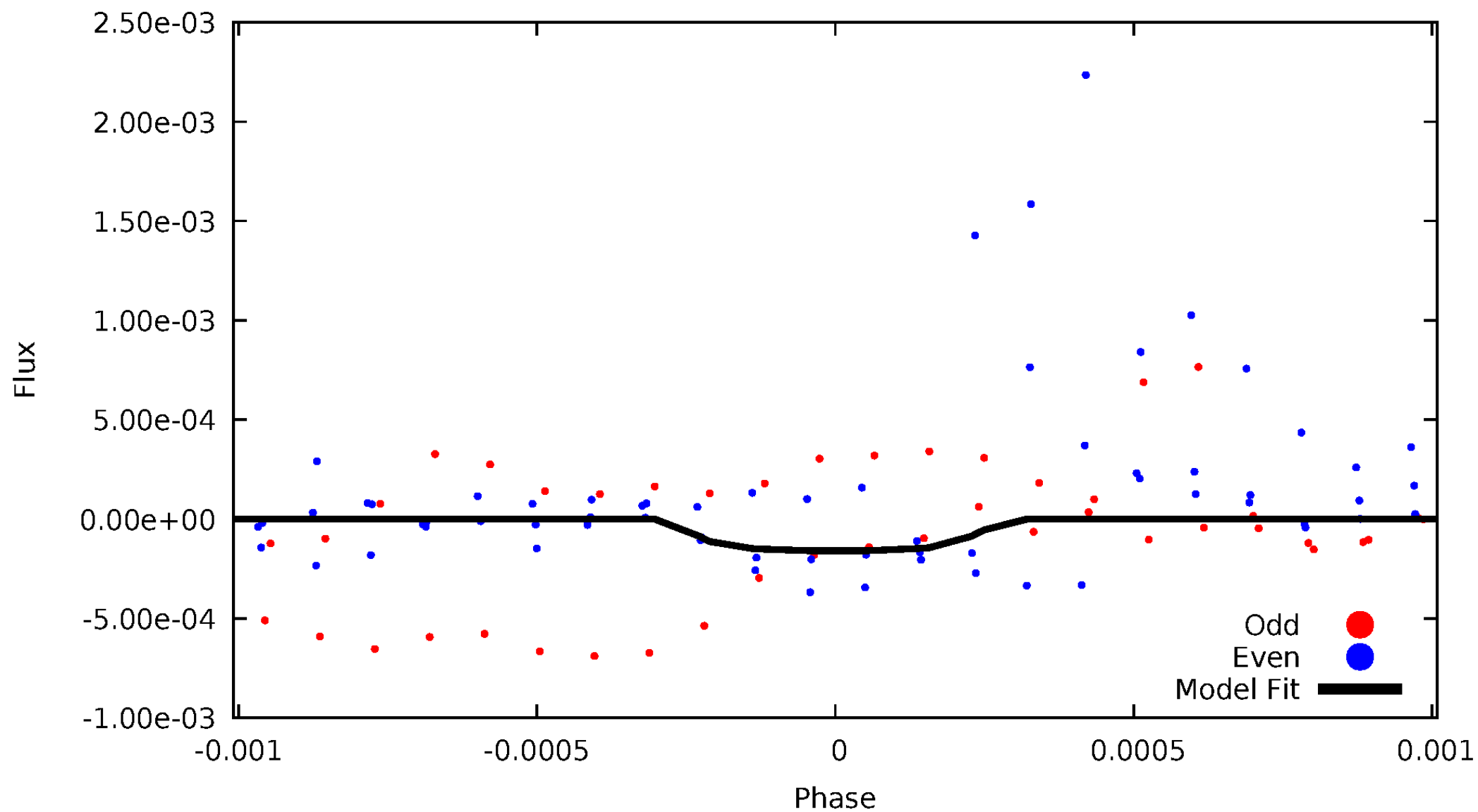


TCE 010976930-03



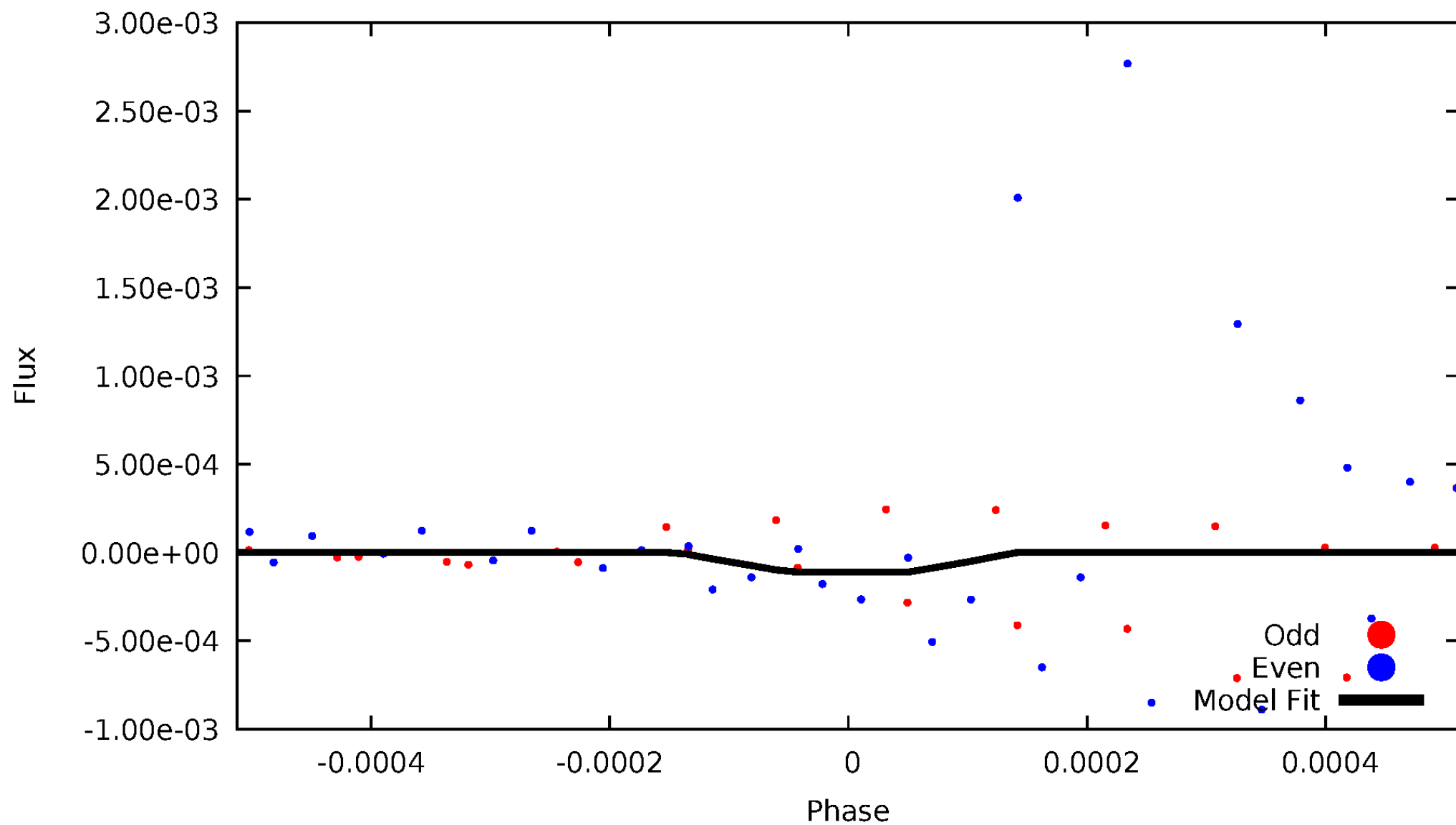
DV Odd/Even

TCE 010976930-03



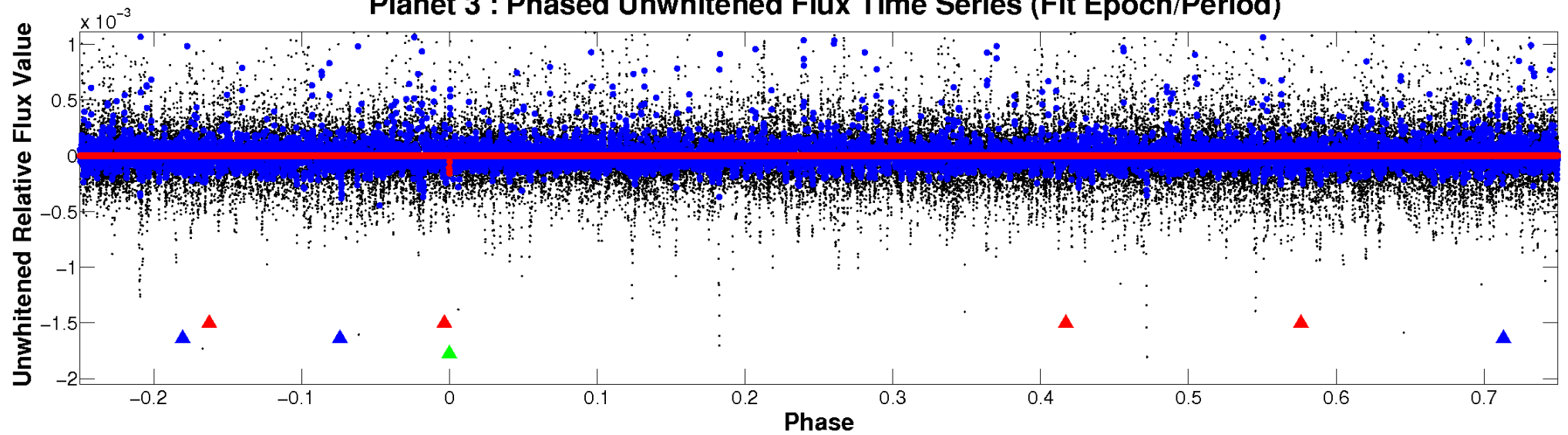
ALT Odd/Even

TCE 010976930-03

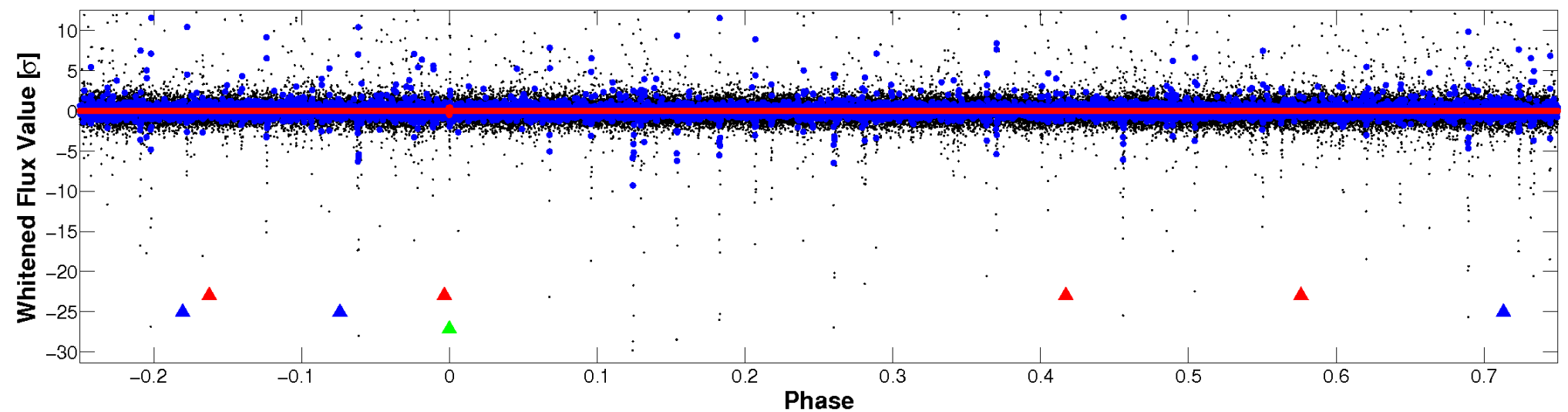


Non-Whitened Vs. Whitened Light Curve

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

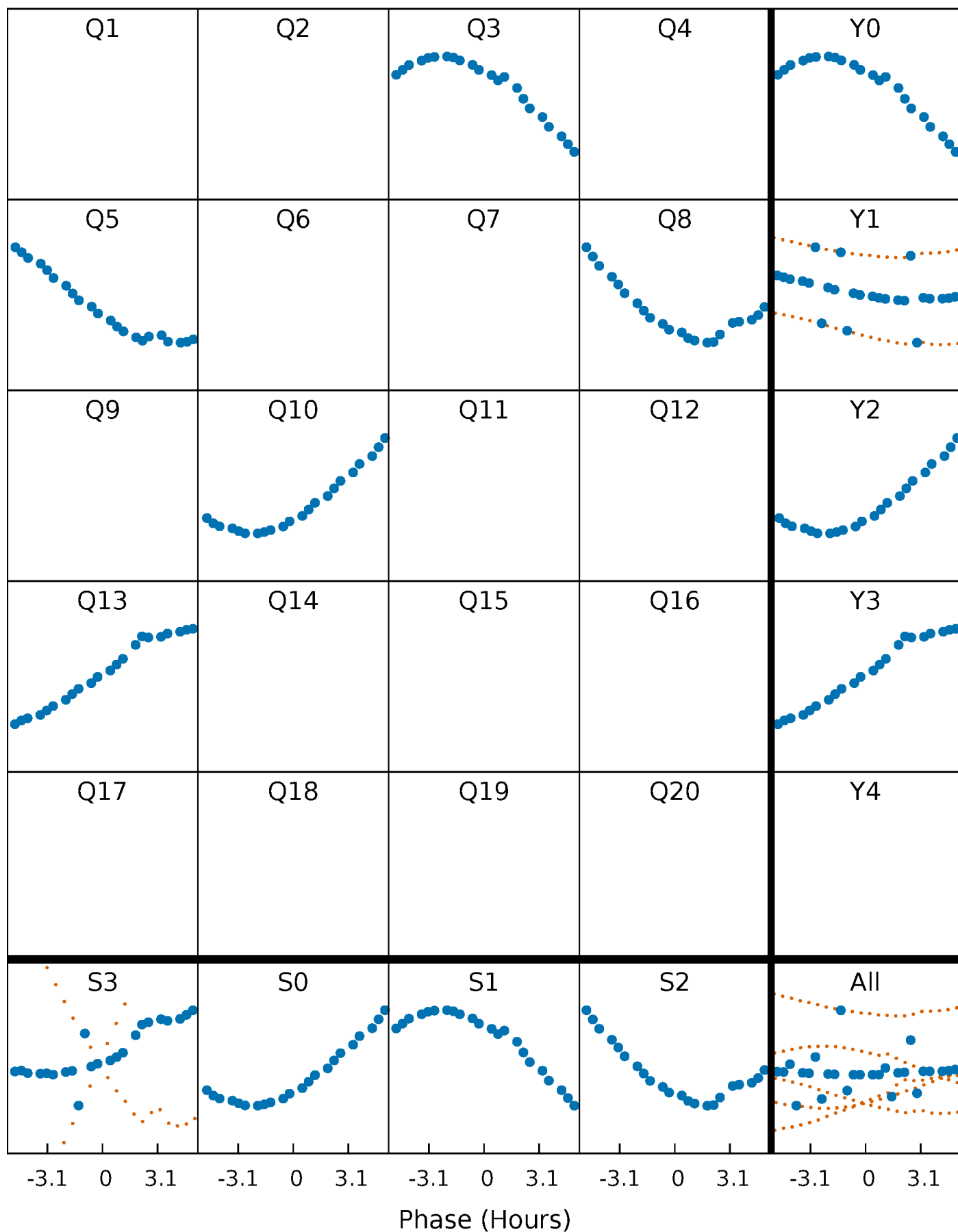


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



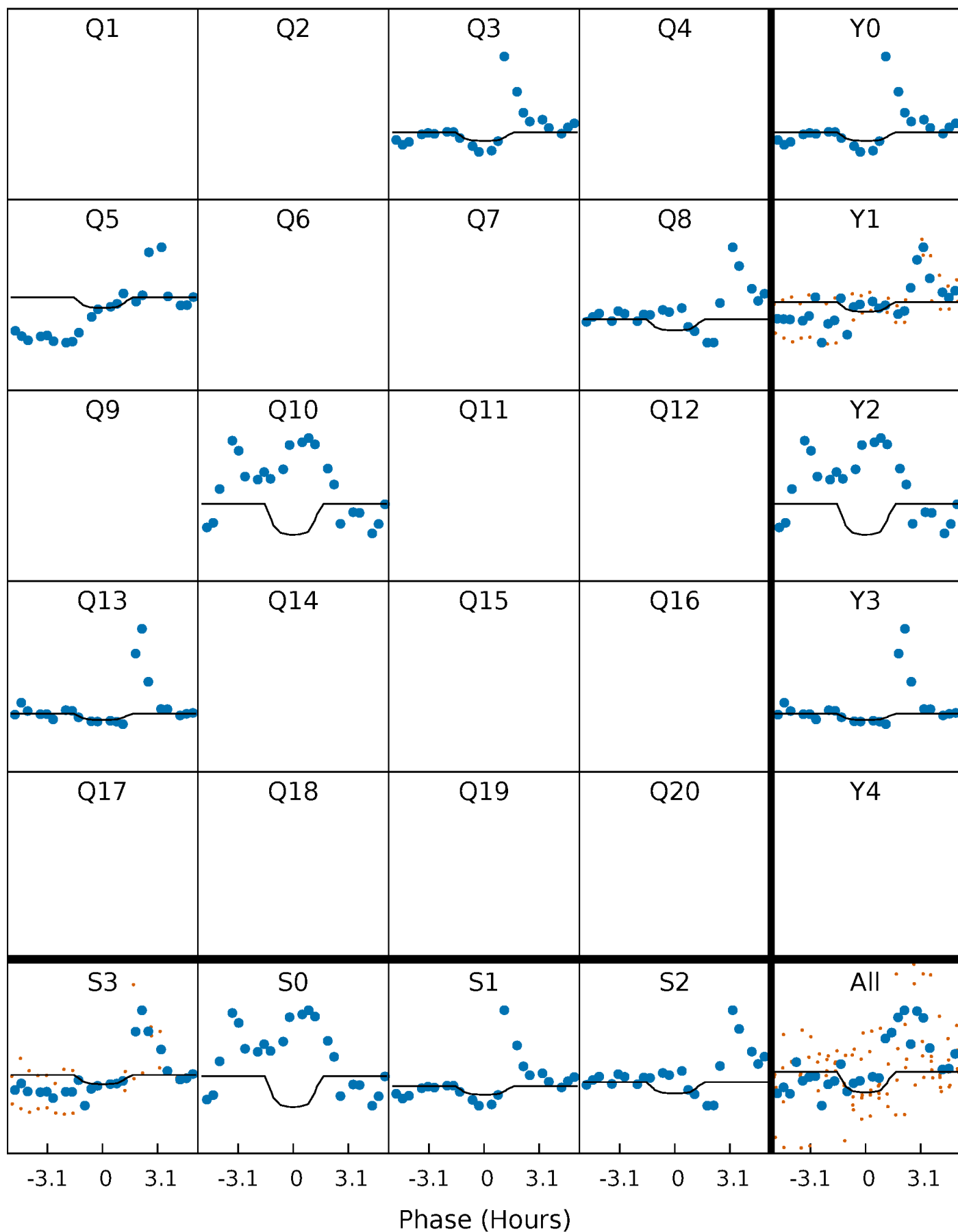
PDC Quarter-Phased Transit Curves

TCE 010976930-03 P=222.010537 Days $T_0=306.902886$ (BKJD)



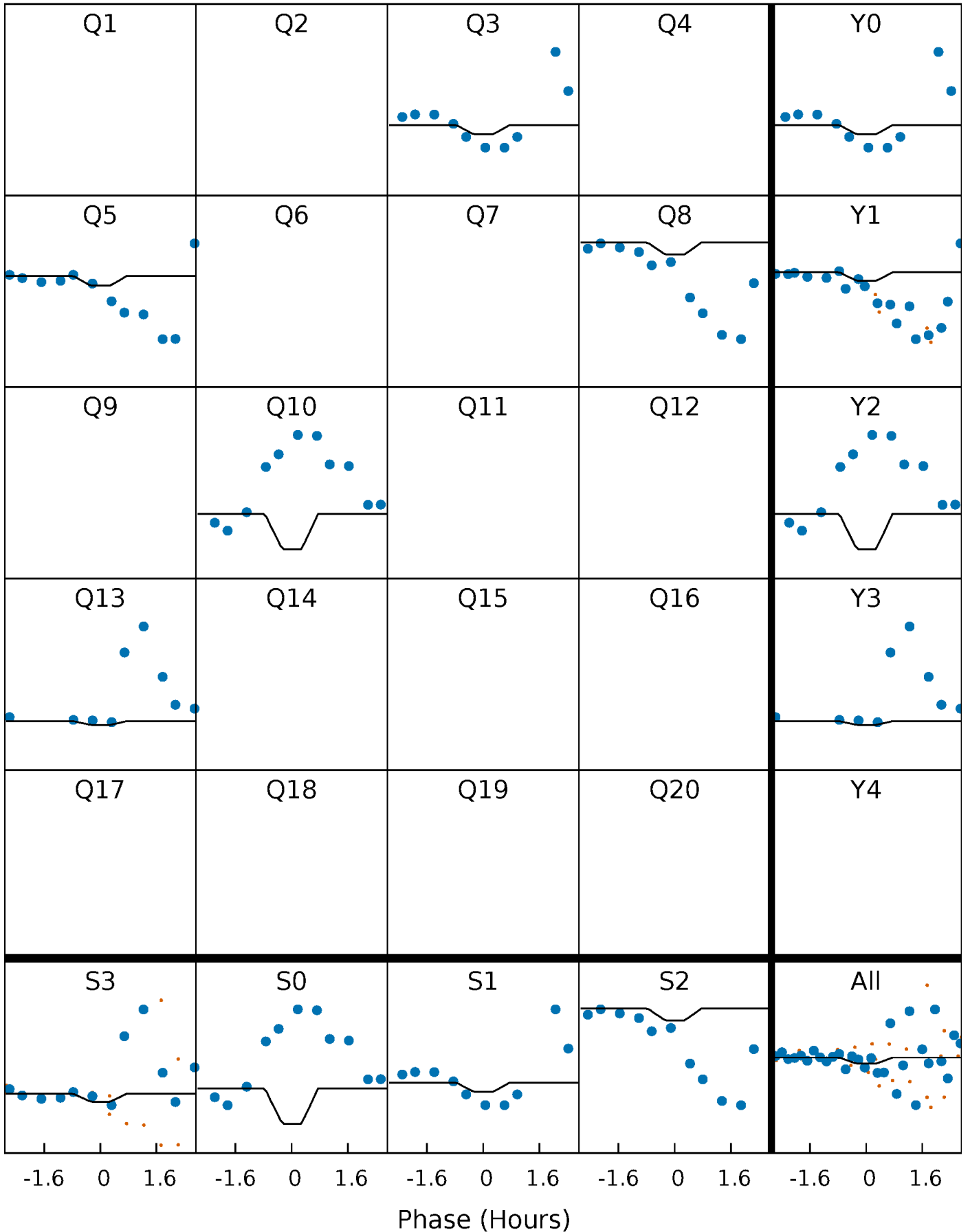
DV Quarter-Phased Transit Curves

TCE 010976930-03 P=222.010537 Days $T_0=306.902886$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

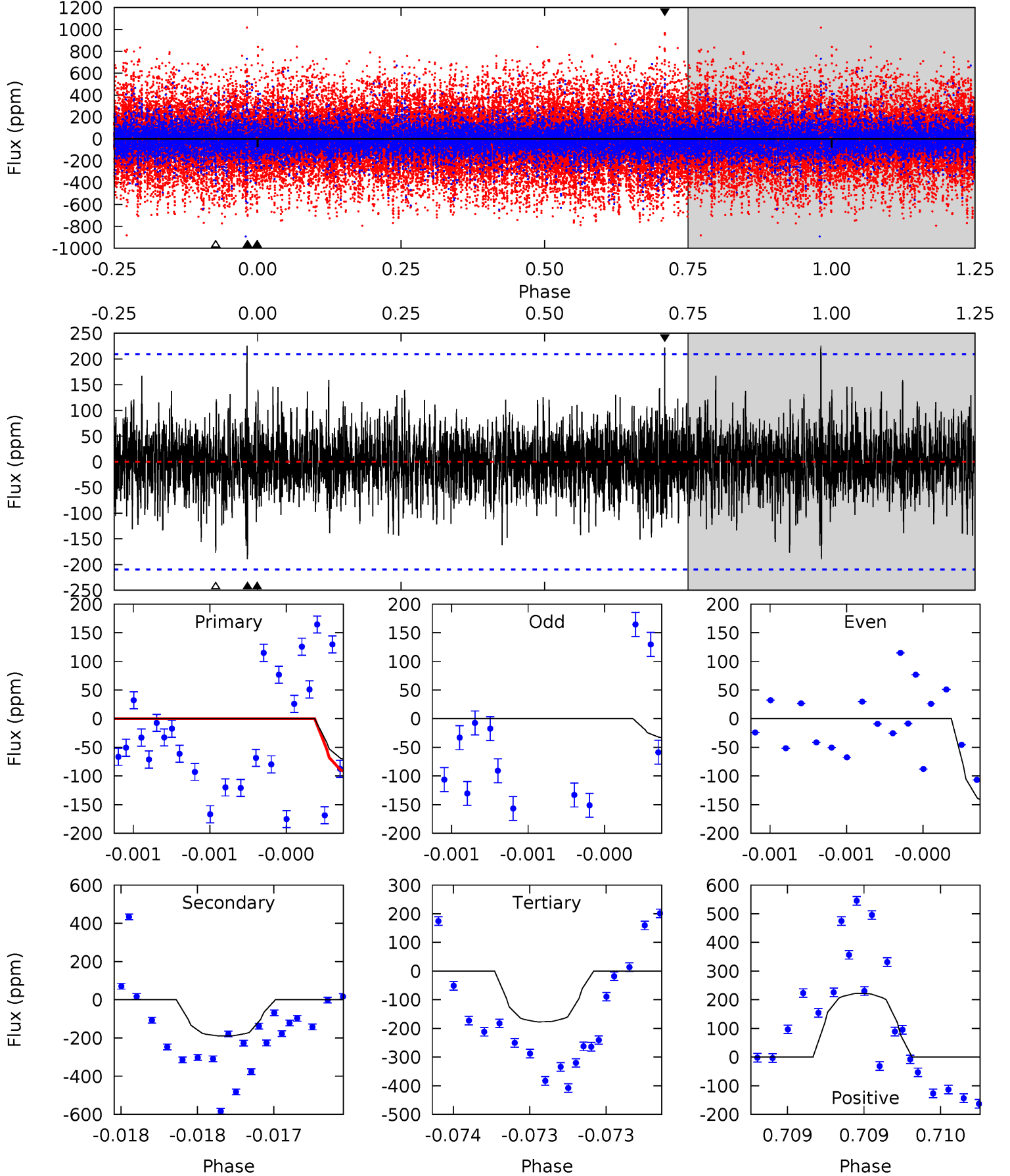
TCE 010976930-03 $P=222.023768$ Days $T_0=306.891185$ (BKJD)



DV Model-Shift Uniqueness Test

010976930-03, $P = 222.010537$ Days, $E = 84.892349$ Days

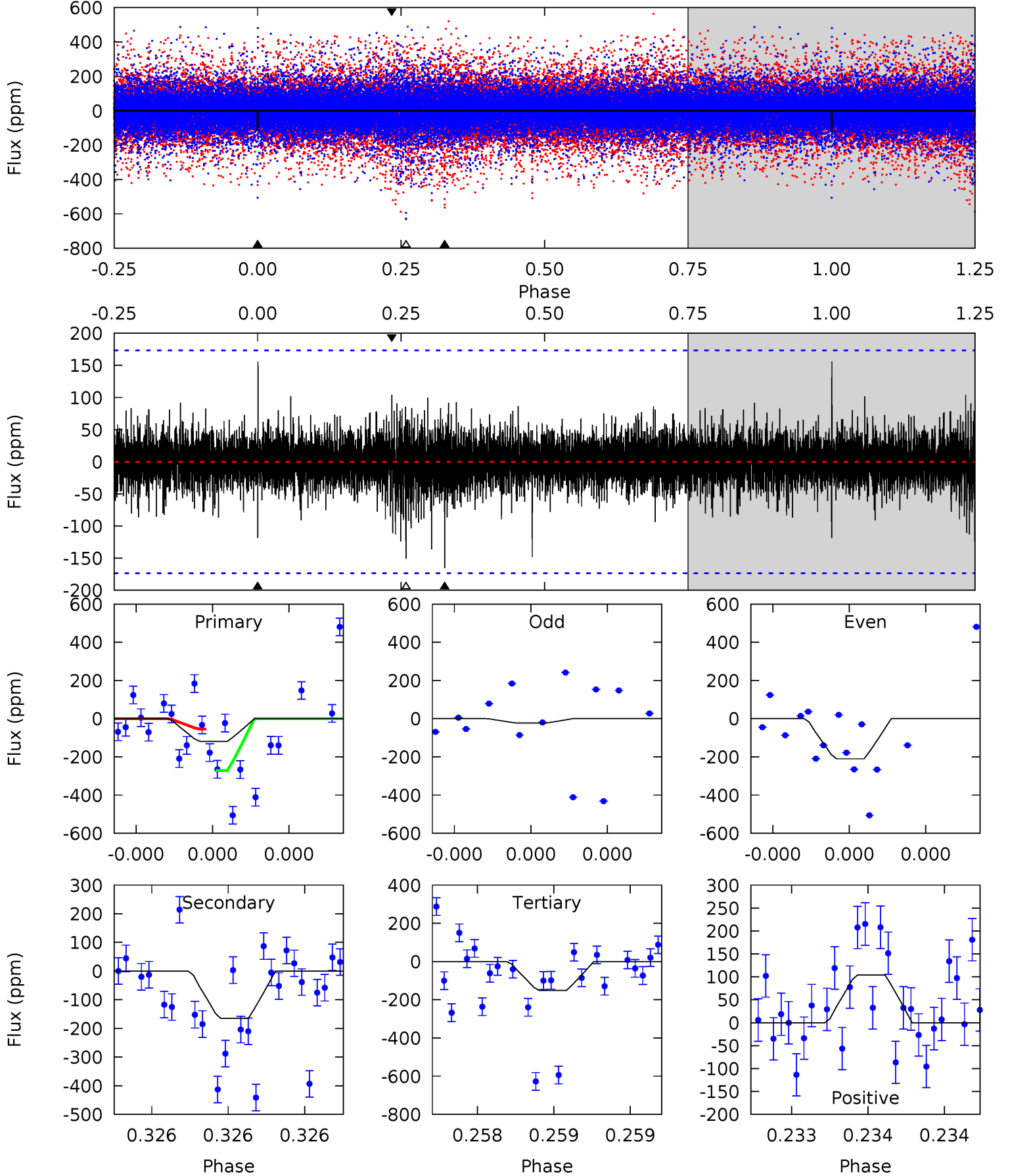
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.99	5.05	4.72	5.92	5.58	3.49	1.19	-2.73	-3.93	0.33	-0.87	1.49	0.38	0.54	0.62



Alt Model-Shift Uniqueness Test

010976930-03, $P = 222.023768$ Days, $E = 84.867417$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.90	5.42	4.95	3.42	5.69	3.65	0.80	-1.05	0.48	0.47	2.00	2.65	0.65	0.49	3.42



Stellar Parameters For KIC 010976930

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6197^{+167}_{-186}	$3.657^{+0.595}_{-0.105}$	$-0.100^{+0.300}_{-0.300}$	$3.010^{+0.556}_{-1.780}$	$1.499^{+0.190}_{-0.444}$	$0.077^{+0.665}_{-0.026}$
	+3%/-3%	+16%/-3%	+300%/-300%	+18%/-59%	+13%/-30%	+860%/-34%
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 010976930-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-189 ± 38	$9.46^{+10.36}_{-6.50}$	710^{+54}_{-104}	4166^{+2746}_{-840}	768^{+5810}_{-601}
Alt.	-165 ± 30	$9.19^{+11.54}_{-6.56}$	712^{+49}_{-106}	4188^{+2911}_{-915}	717^{+8104}_{-565}

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 $A_{obs} \gg 1.0$

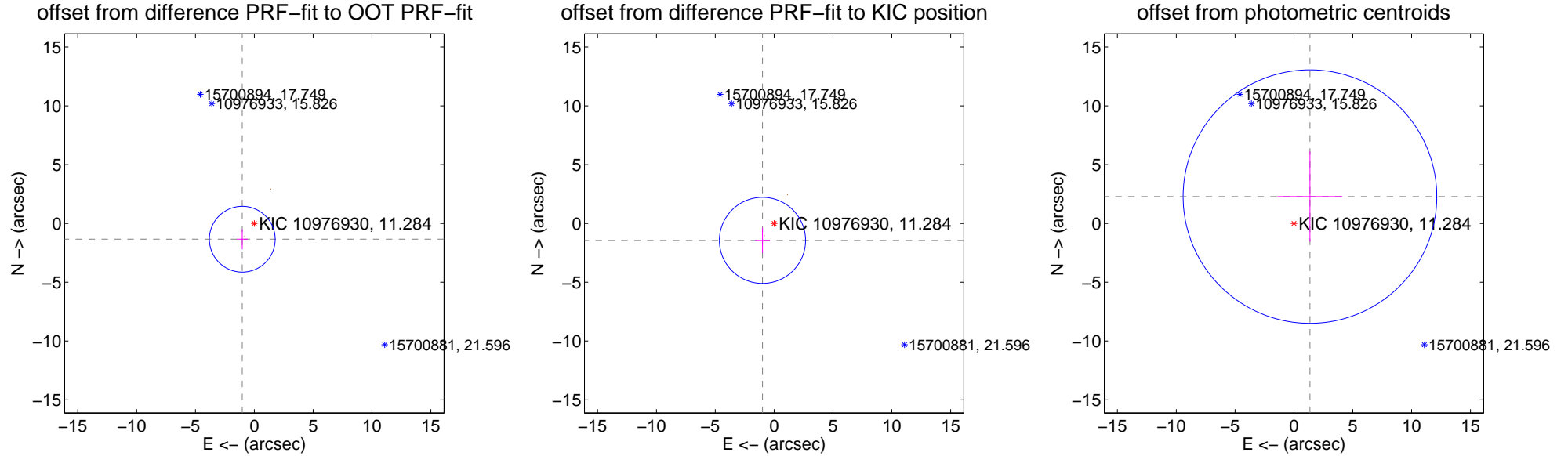
DV Centroid Data

Supplemental centroid analysis for 010976930-03. **Kepler magnitude: 11.28.** Transit SNR 2.58

There are 2 quarters with good PRF difference image offsets

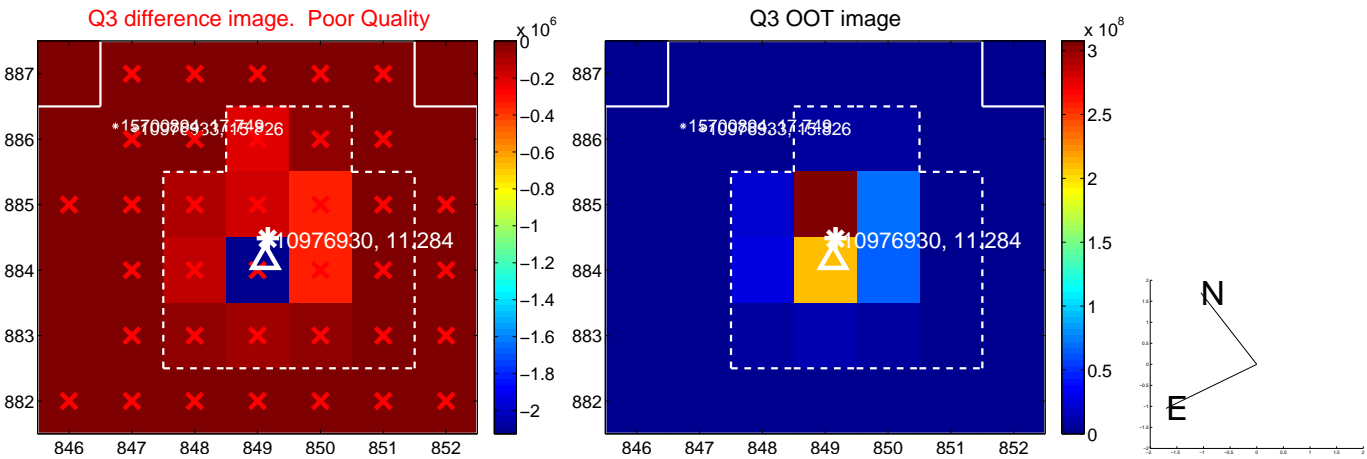
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.688 ± 0.932	1.81	1.023 ± 0.465	-1.342 ± 0.845
PRF-fit source offset from KIC position	1.749 ± 1.220	1.43	0.990 ± 0.627	-1.442 ± 1.068
photometric centroid source offset	2.66 ± 3.59	0.74	-1.36 ± 2.76	2.28 ± 3.84

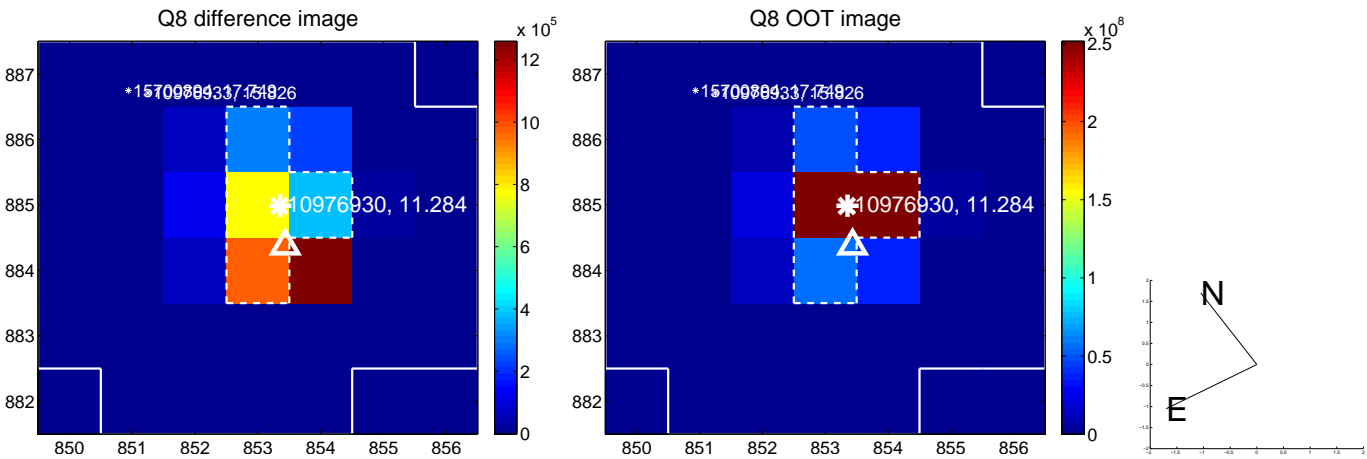
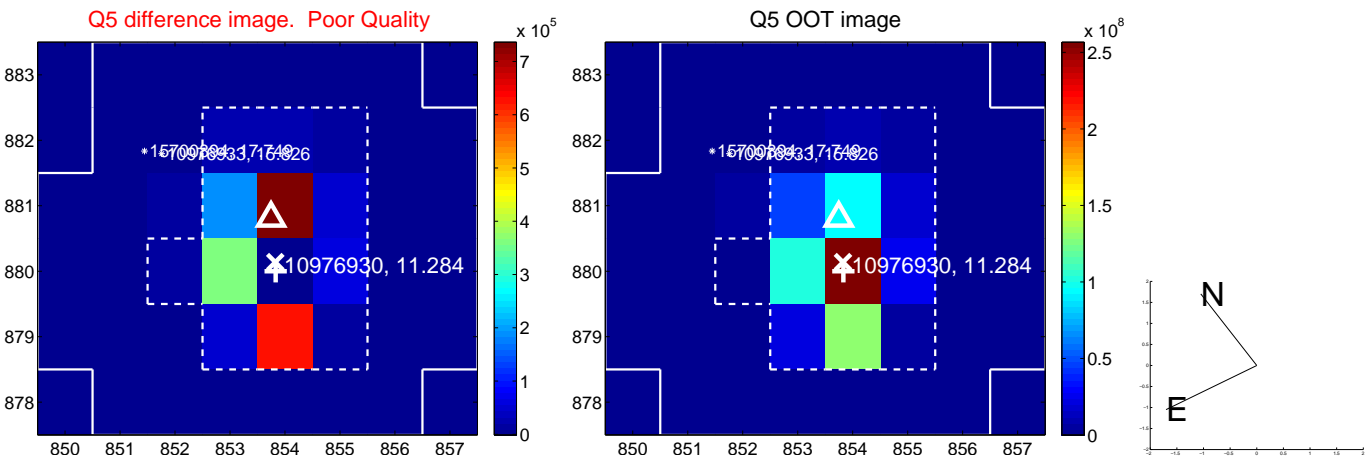


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

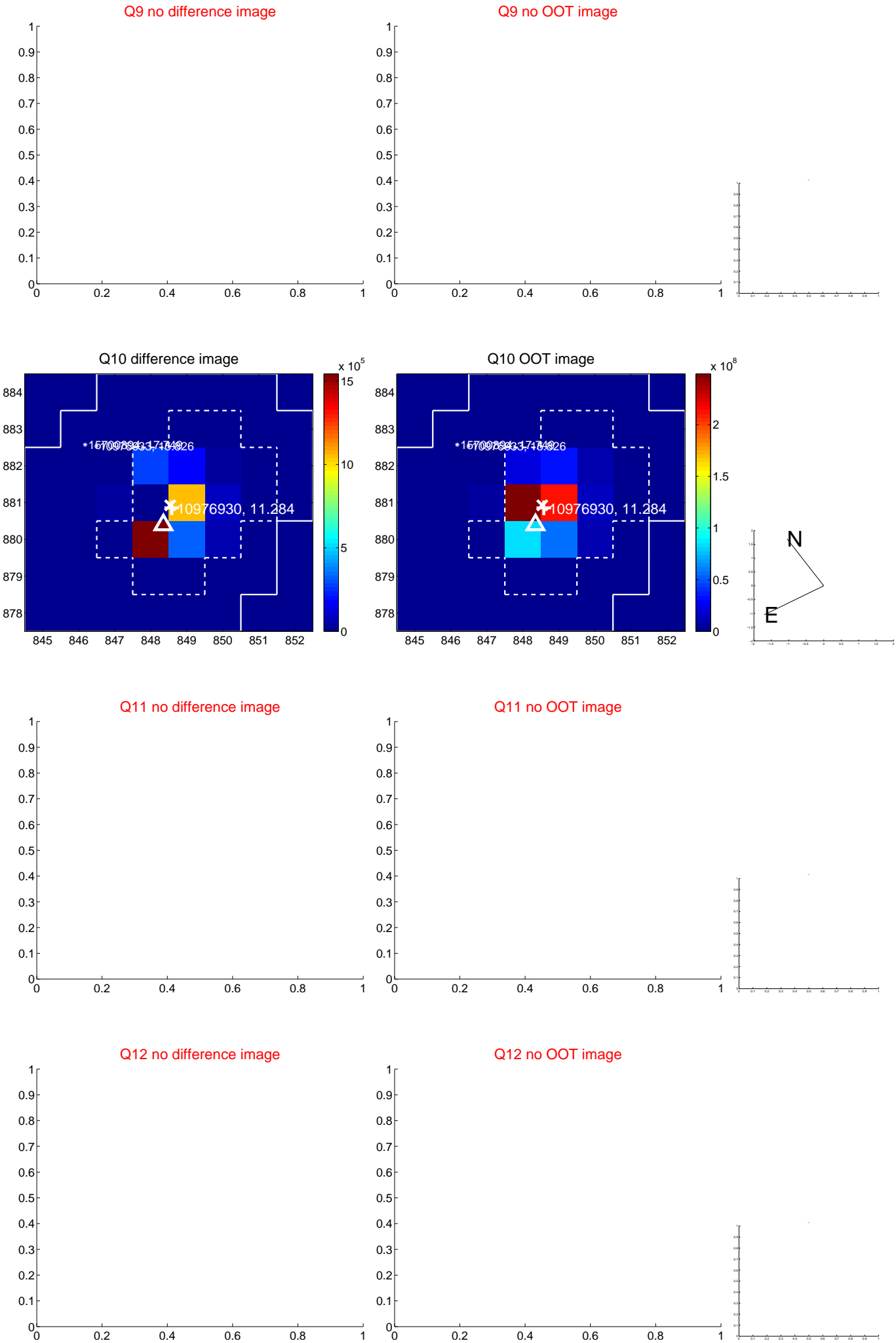
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



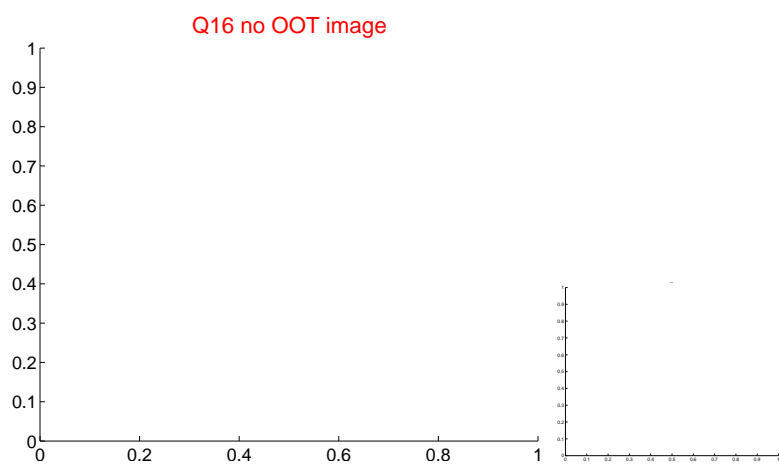
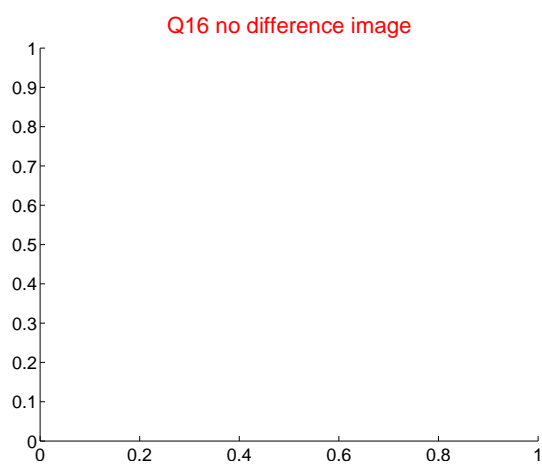
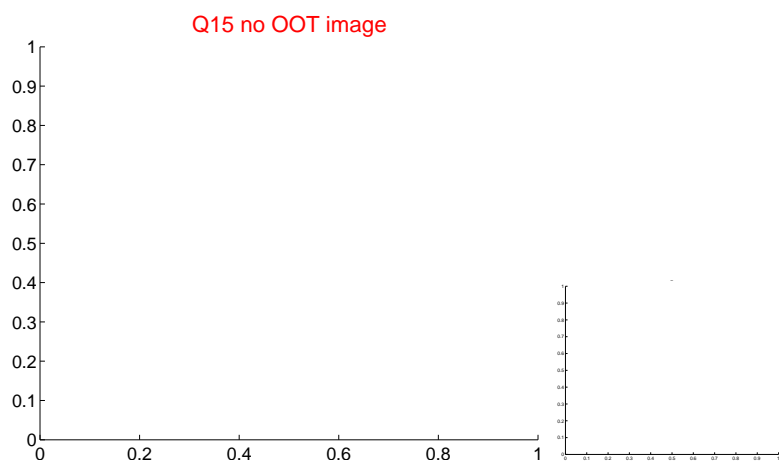
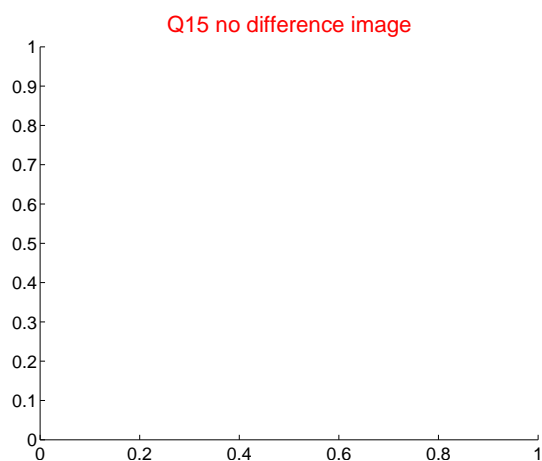
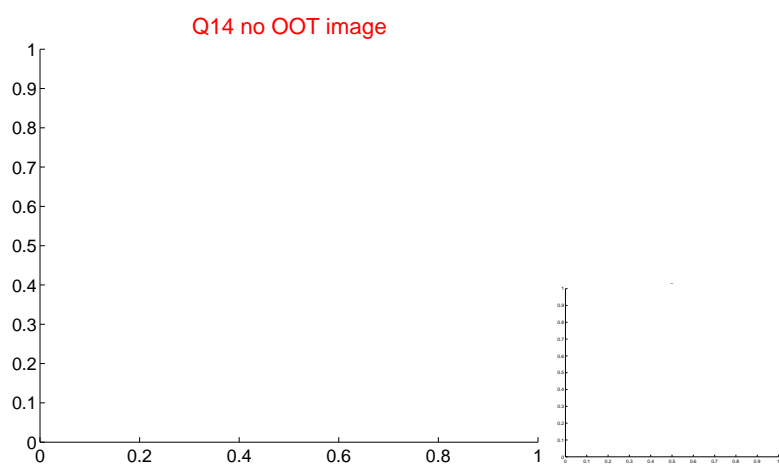
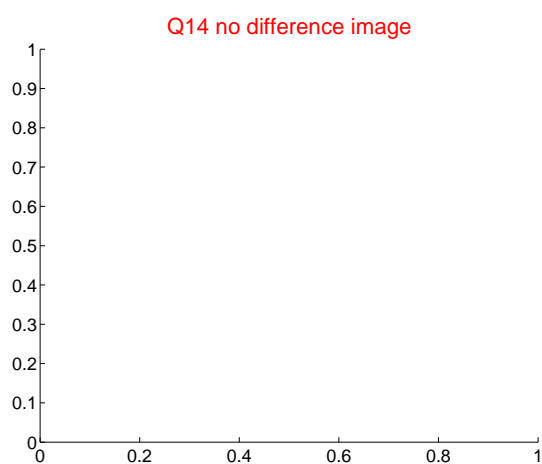
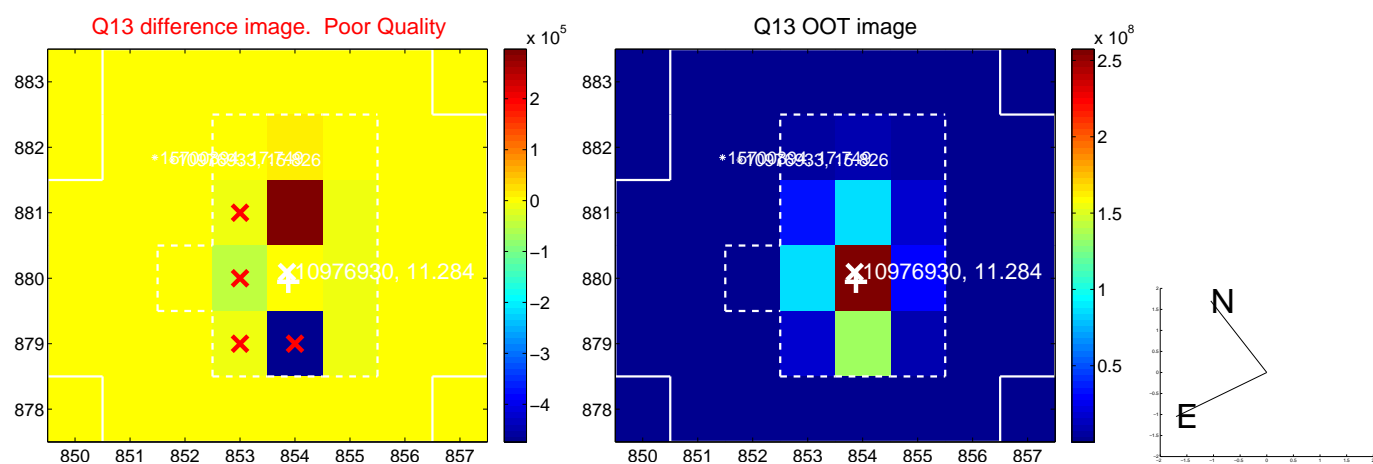
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



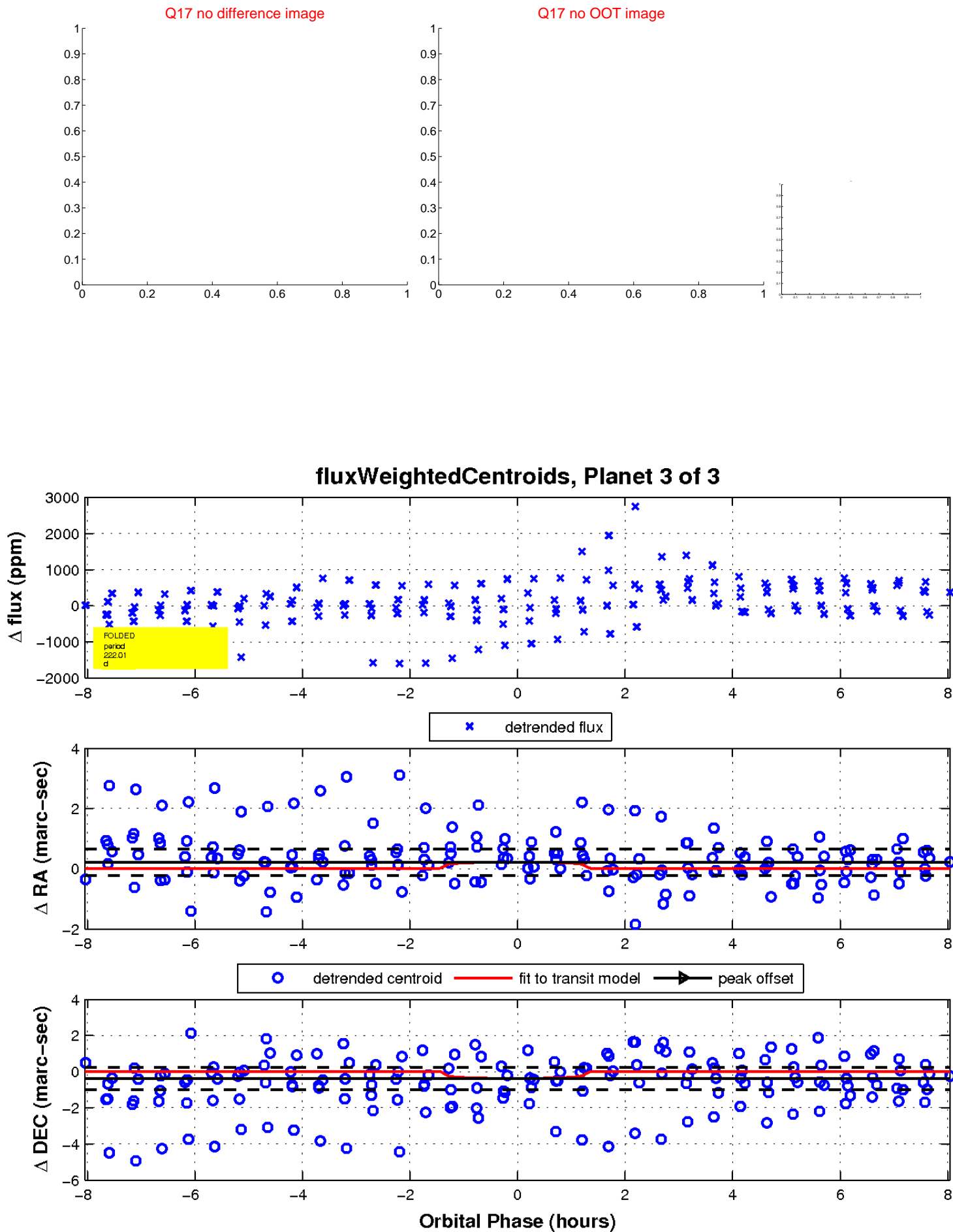
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

