

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})
005780782-01	OBS	No	369.146663	369.893592	2064.7	20.710	97.5	118.9	26.11	4359	198.29	131.22
005780782-02	OBS	No	369.894878	373.565961	1448.6	16.966	81.6	82.3	26.11	4359	206.01	130.87
005780782-03	OBS	No	246.340188	244.270189	398.8	12.500	46.0	-1.0	26.11	4359	49.42	225.03
005780782-04	OBS	No	184.793502	181.491110	2826.3	29.386	44.8	92.1	26.11	4359	276.25	330.14
005780782-05	OBS	No	185.516291	184.318124	406.2	15.000	53.8	-1.0	26.11	4359	49.87	328.43
005780782-06	OBS	No	582.905555	162.441375	100.5	7.883	41.5	5.2	26.11	4359	30.30	71.36
005780782-07	OBS	No	456.526196	287.257117	110.3	1.000	39.6	2.2	26.11	4359	34.58	98.85
005780782-08	OBS	No	569.190679	175.351019	517.0	10.776	38.8	15.3	26.11	4359	57.86	73.67
005780782-09	OBS	No	458.158942	202.747347	767.2	21.875	11.9	8.1	26.11	4359	92.71	98.38
005780782-10	OBS	No	192.199401	213.478149	32.3	5.697	10.7	8.1	26.11	4359	19.44	313.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005780782-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—NO_FITS—INCONSISTENT_TRANS—CENT_SATURATED
005780782-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005780782-05	OBS	FP	0.00	1	0	0	0	LPP_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005780782-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_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—HALO_GHOST
005780782-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-09	OBS	FP	0.00	1	0	1	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
005780782-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

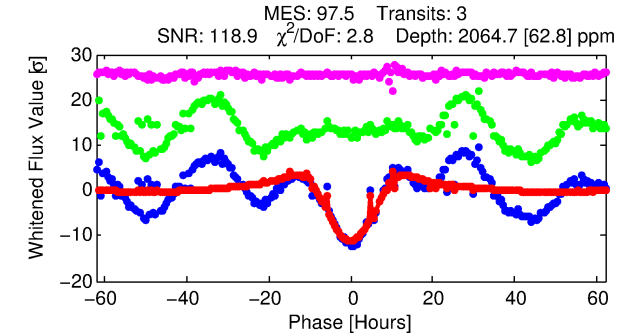
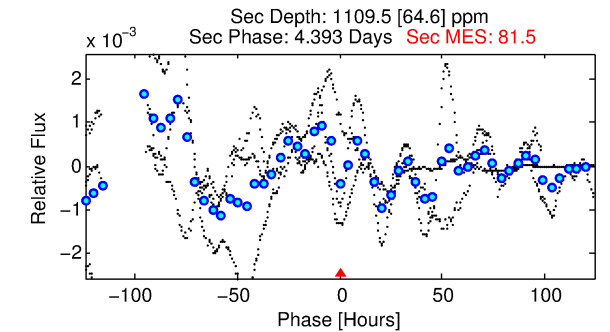
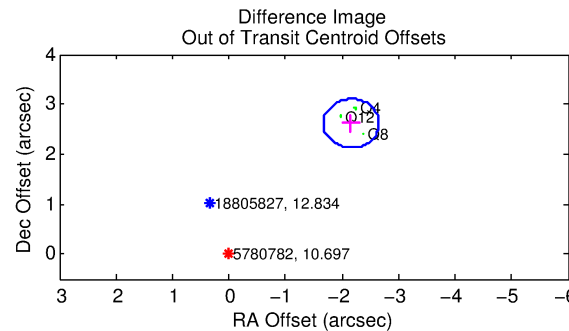
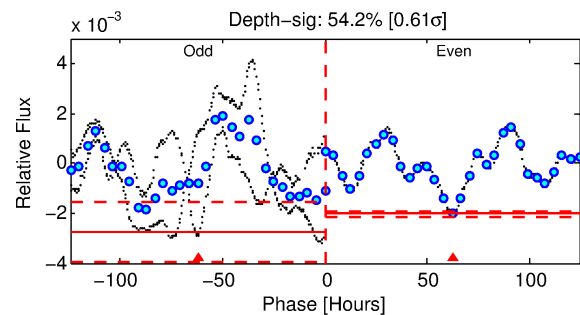
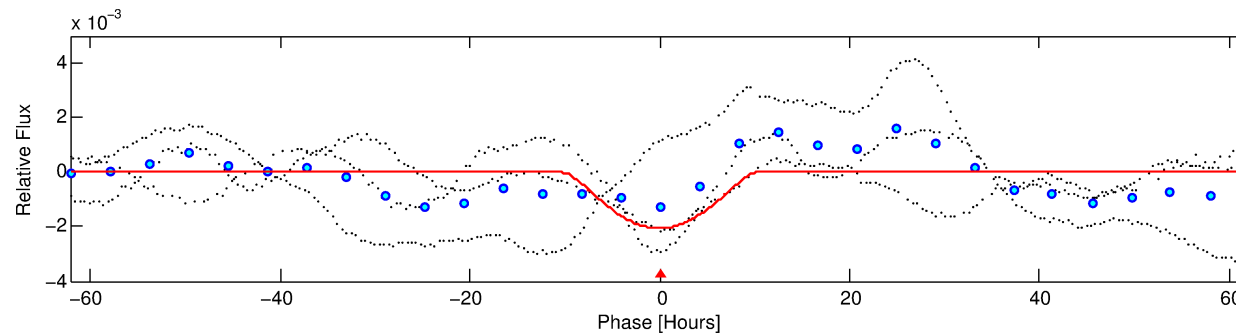
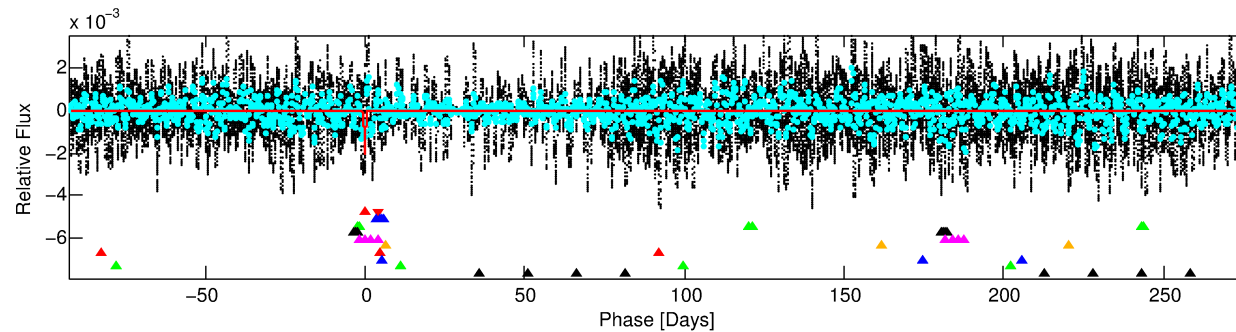
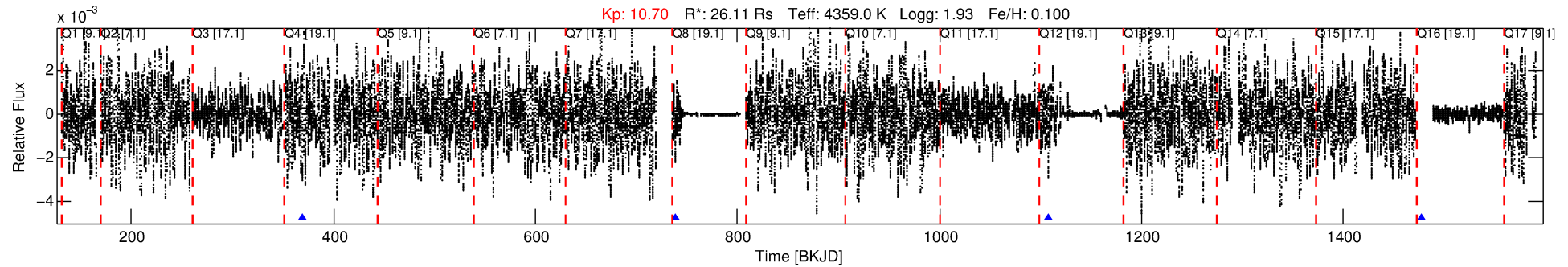
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005780782-01

No Significant Match Found

DV One-Page Summary

KIC: 5780782 Candidate: 1 of 10 Period: 369.147 d



DV Fit Results:

Period = 369.14666 [0.02653] d
Epoch = 369.8936 [0.0272] BKJD
Rp/R* = 0.0696 [0.0510]
a/R* = 59.74 [12.96]
b = 0.98 [0.09]
Seff = 131.22 [23.03]
Teq = 863 [38] K
Rp = 198.29 [151.66] Re
a = 1.2962 [0.1933] AU
Ag = 26.08 [38.44] [0.65 σ]
Teff = 3015 [1107] K [1.94 σ]

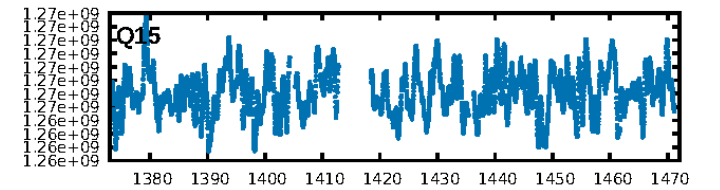
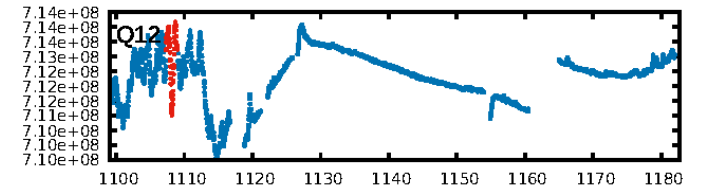
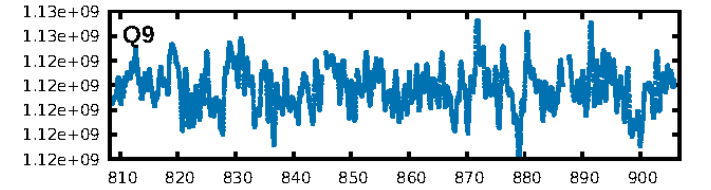
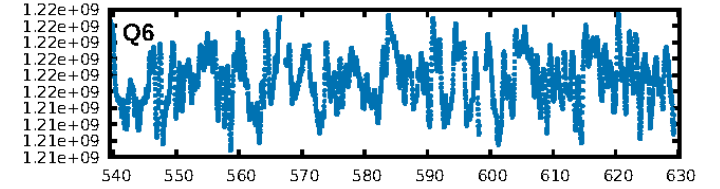
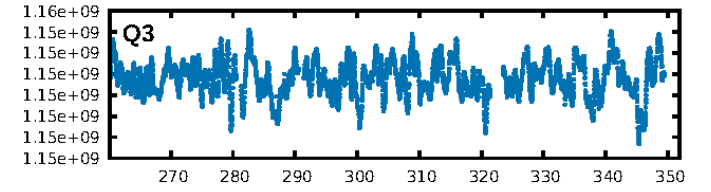
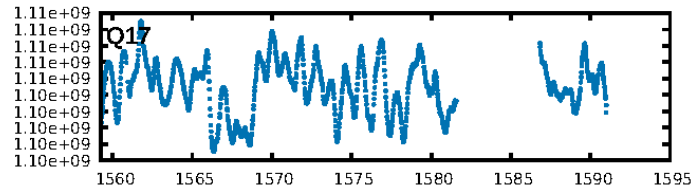
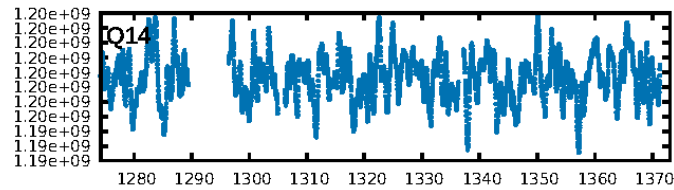
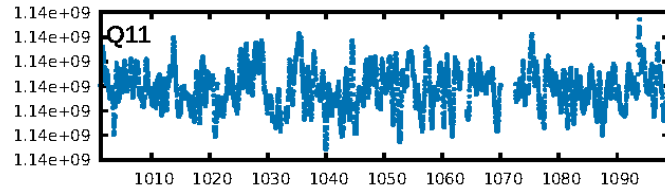
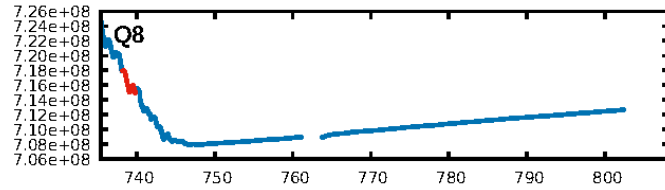
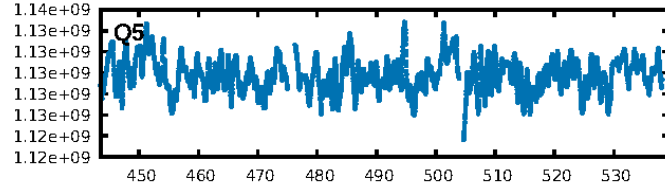
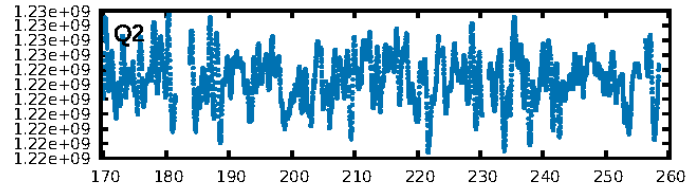
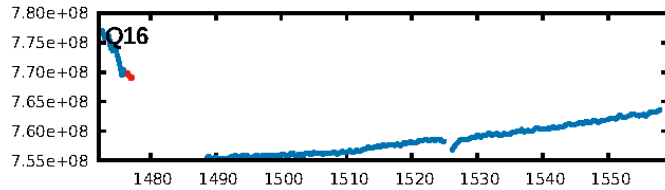
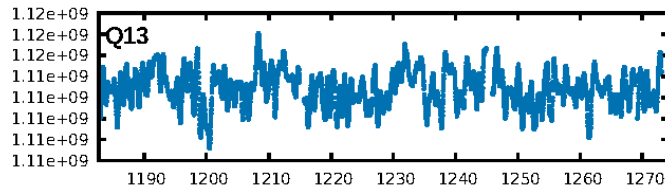
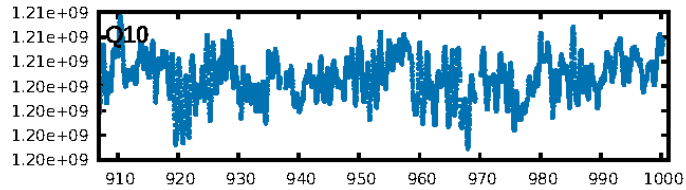
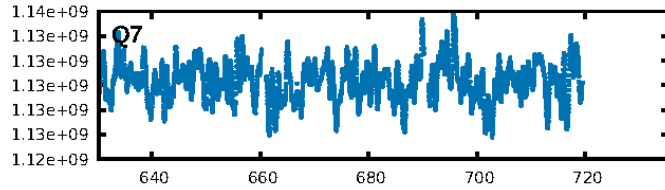
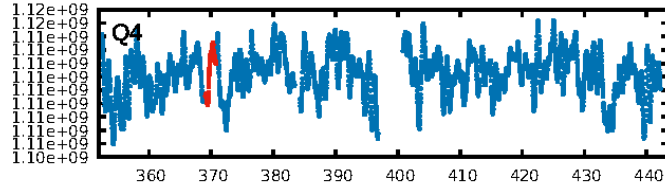
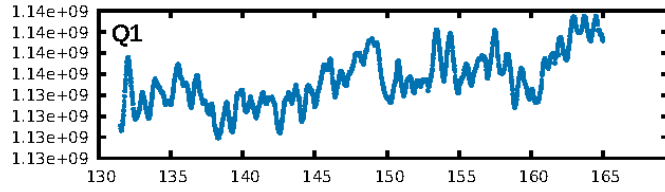
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [121.84 σ]
LongPeriod-sig: 49.8% [0.67 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGo-sig: 0.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.266
Centroid-sig: 25.4%
Centroid-so: 0.623 arcsec [1.35 σ]
OotOffset-rm: 3.393 arcsec [20.79 σ]
KicOffset-rm: 2.041 arcsec [12.87 σ]
OotOffset-st: 0/0/3/0 [3]
KicOffset-st: 0/0/3/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.00 [0/3]

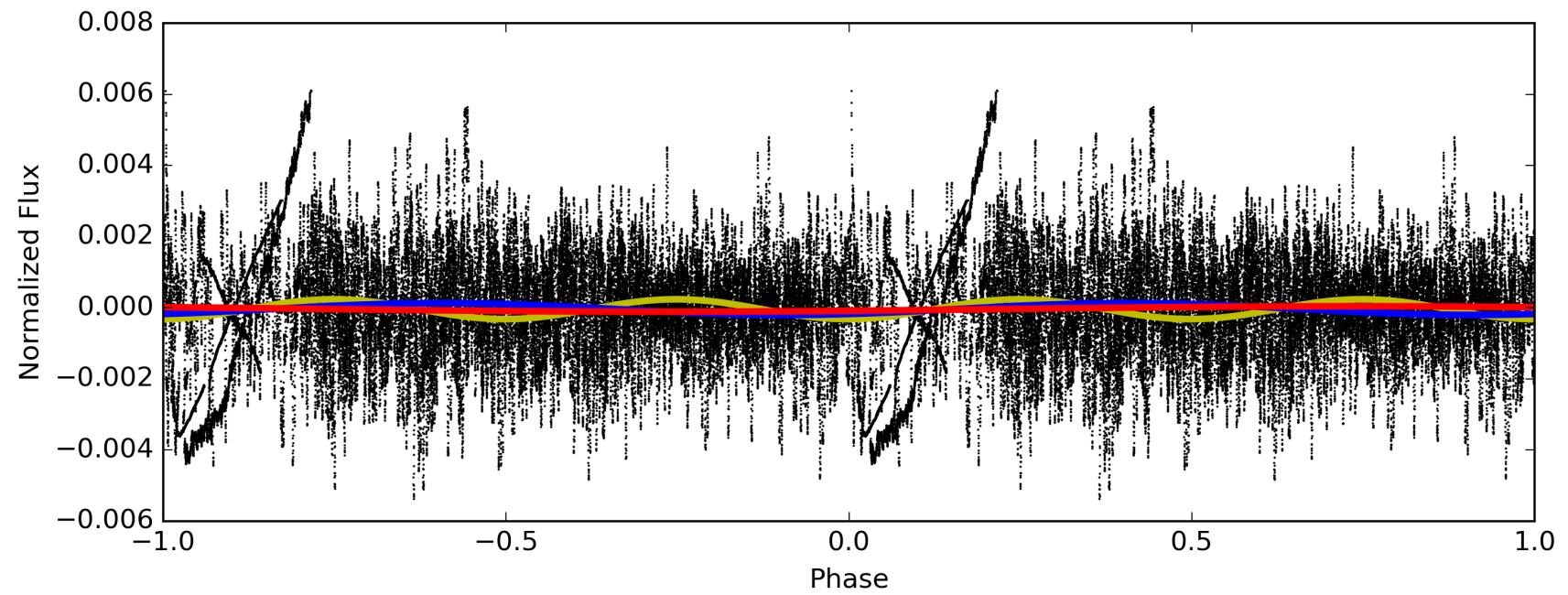
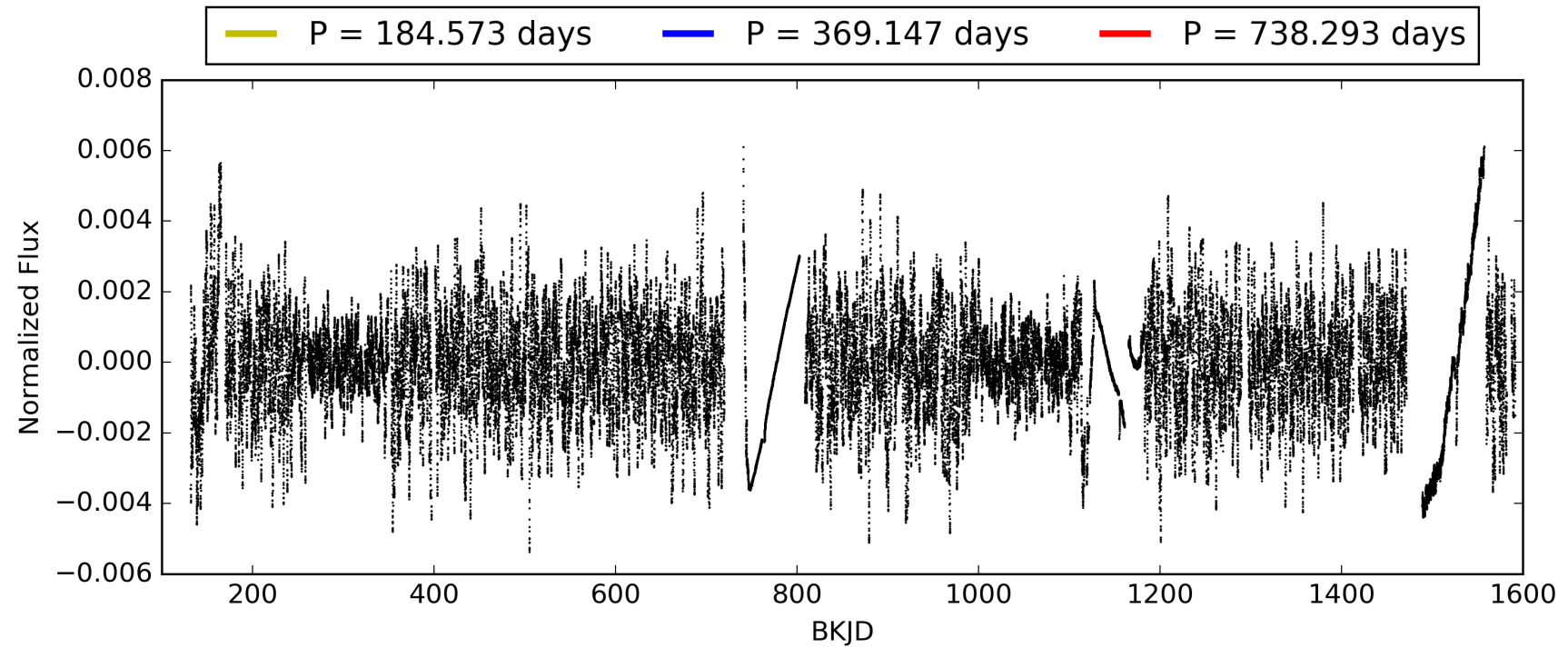
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:43:10 Z

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

TCE 005780782-01, PDC Light Curves

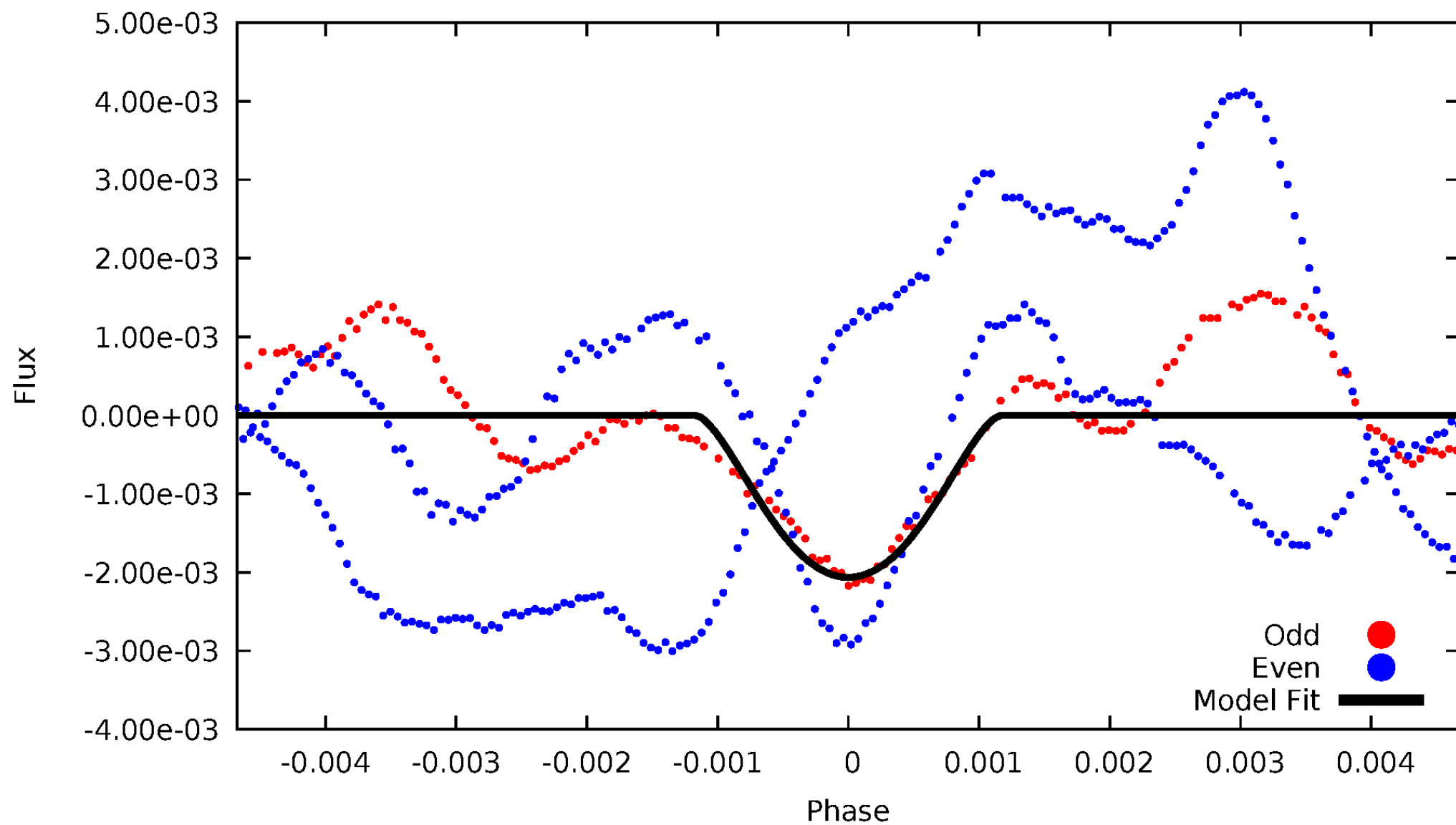


TCE 005780782-01



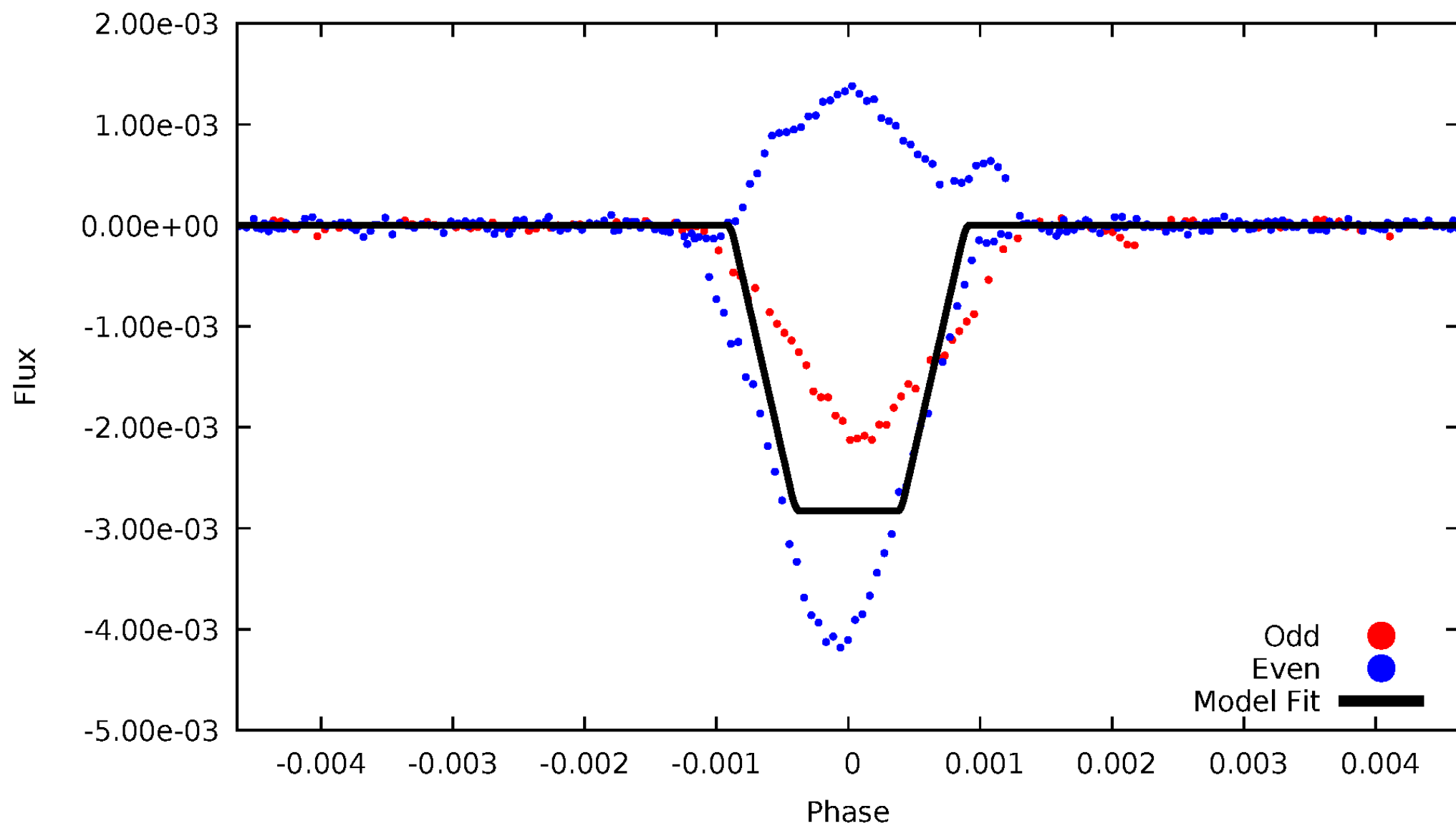
DV Odd/Even

TCE 005780782-01



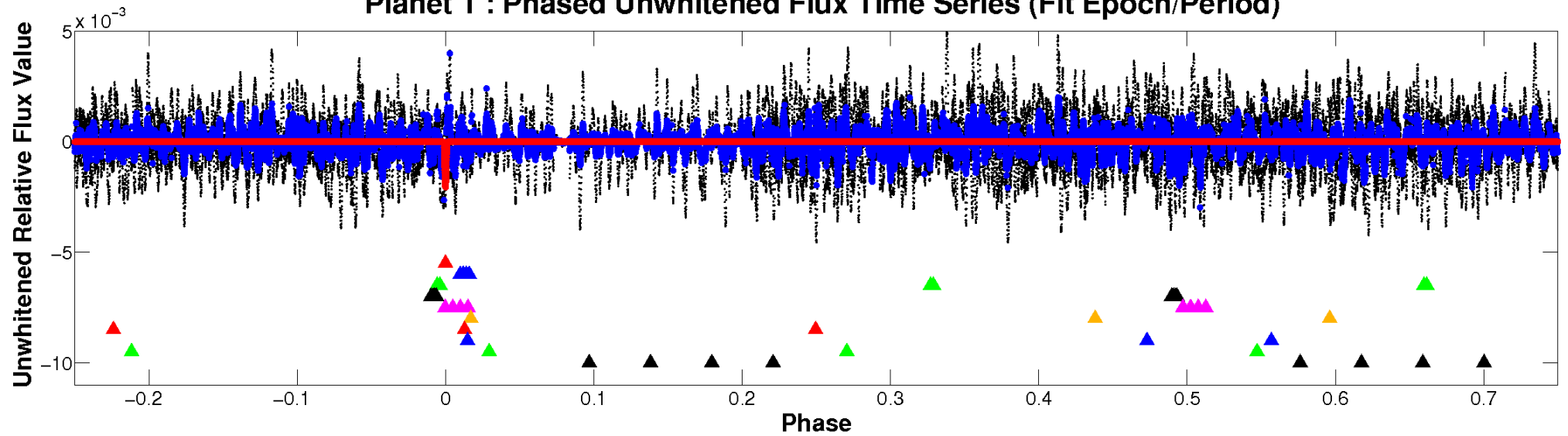
ALT Odd/Even

TCE 005780782-01

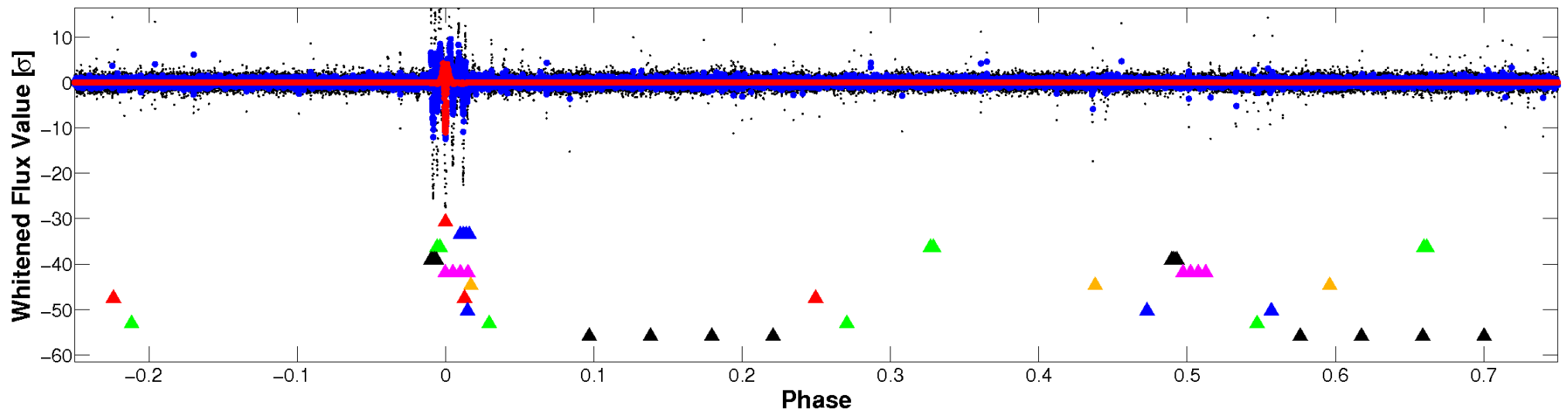


Non-Whitened Vs. Whitened Light Curve

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

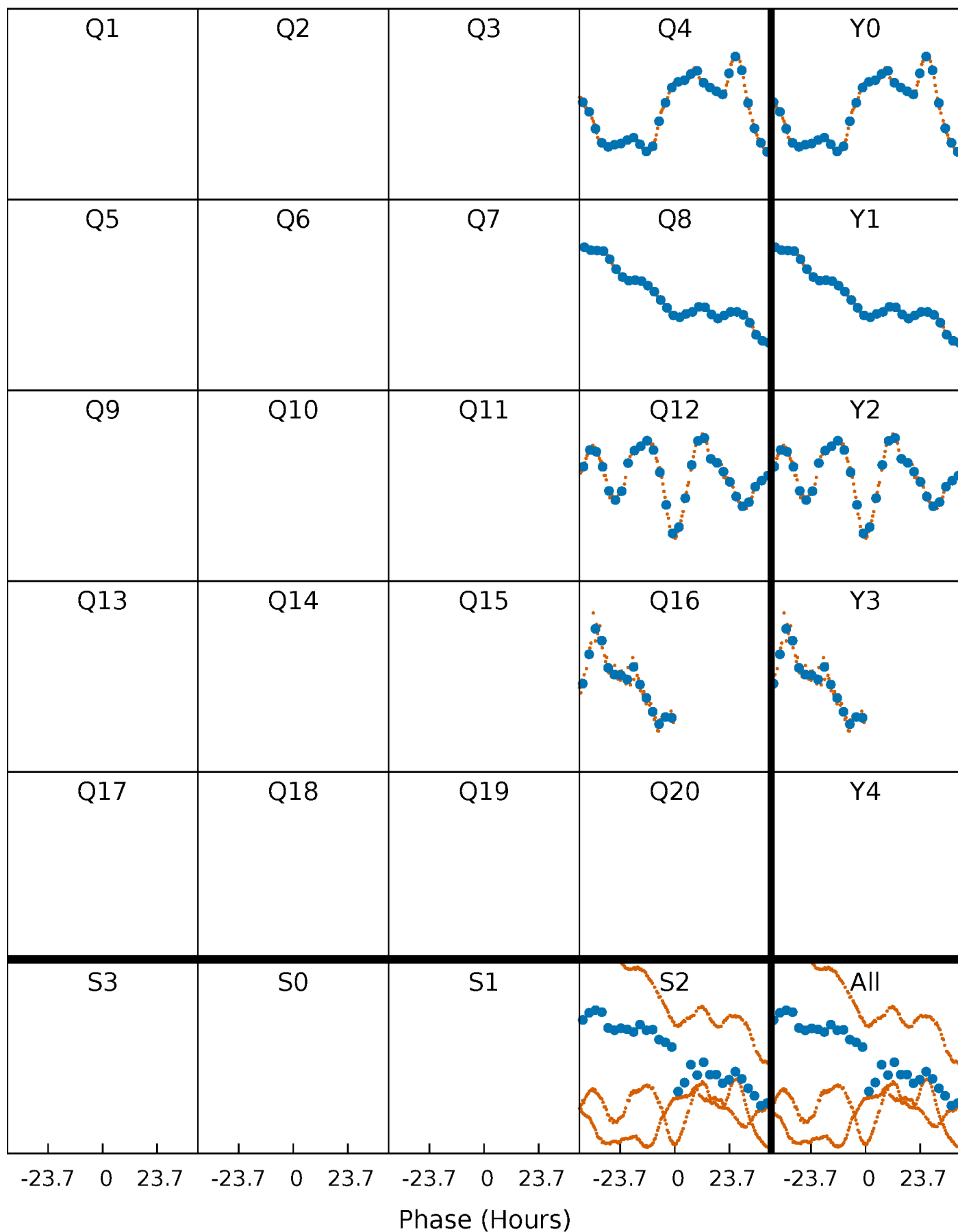


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



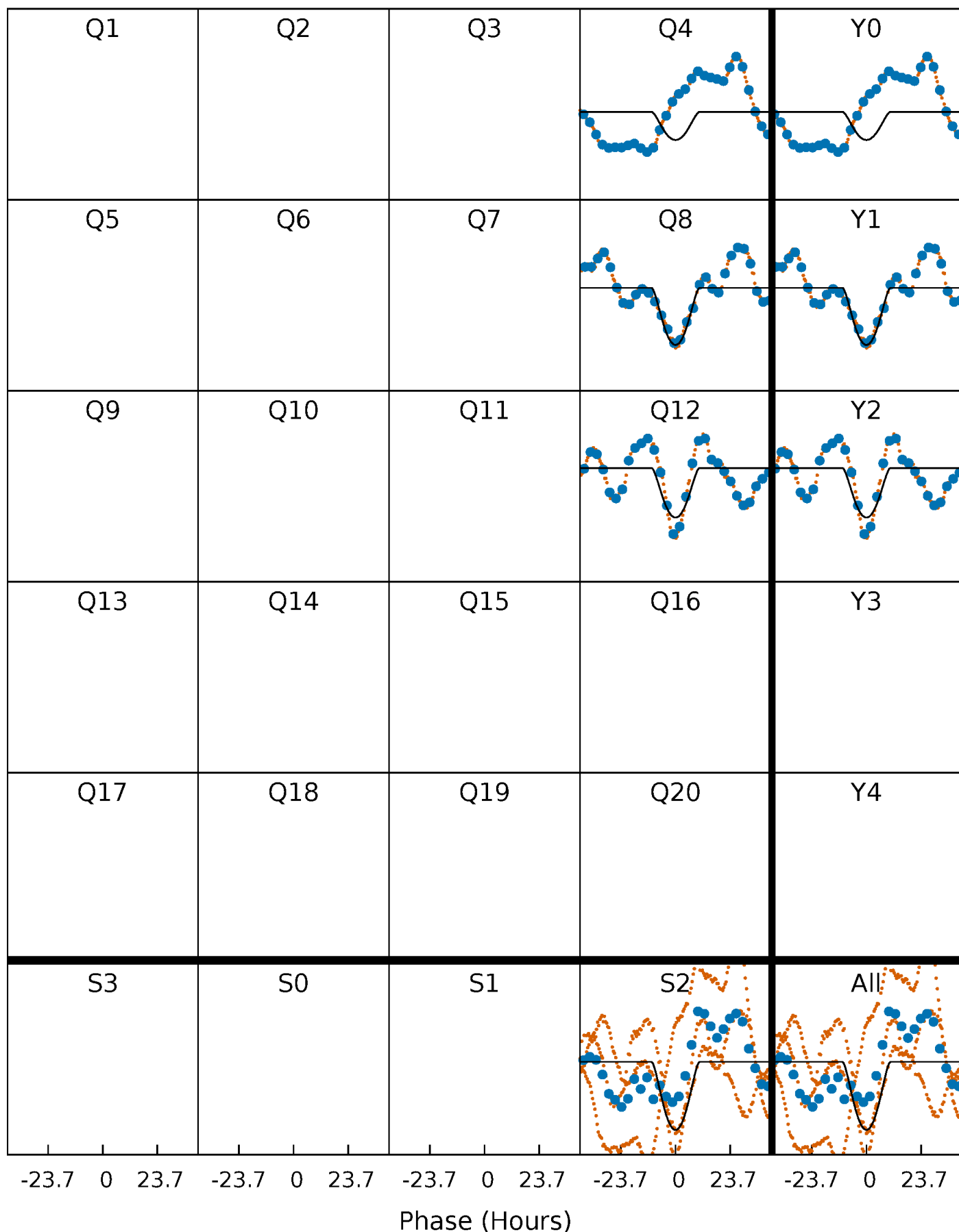
PDC Quarter-Phased Transit Curves

TCE 005780782-01 P=369.146663 Days $T_0=369.893592$ (BKJD)



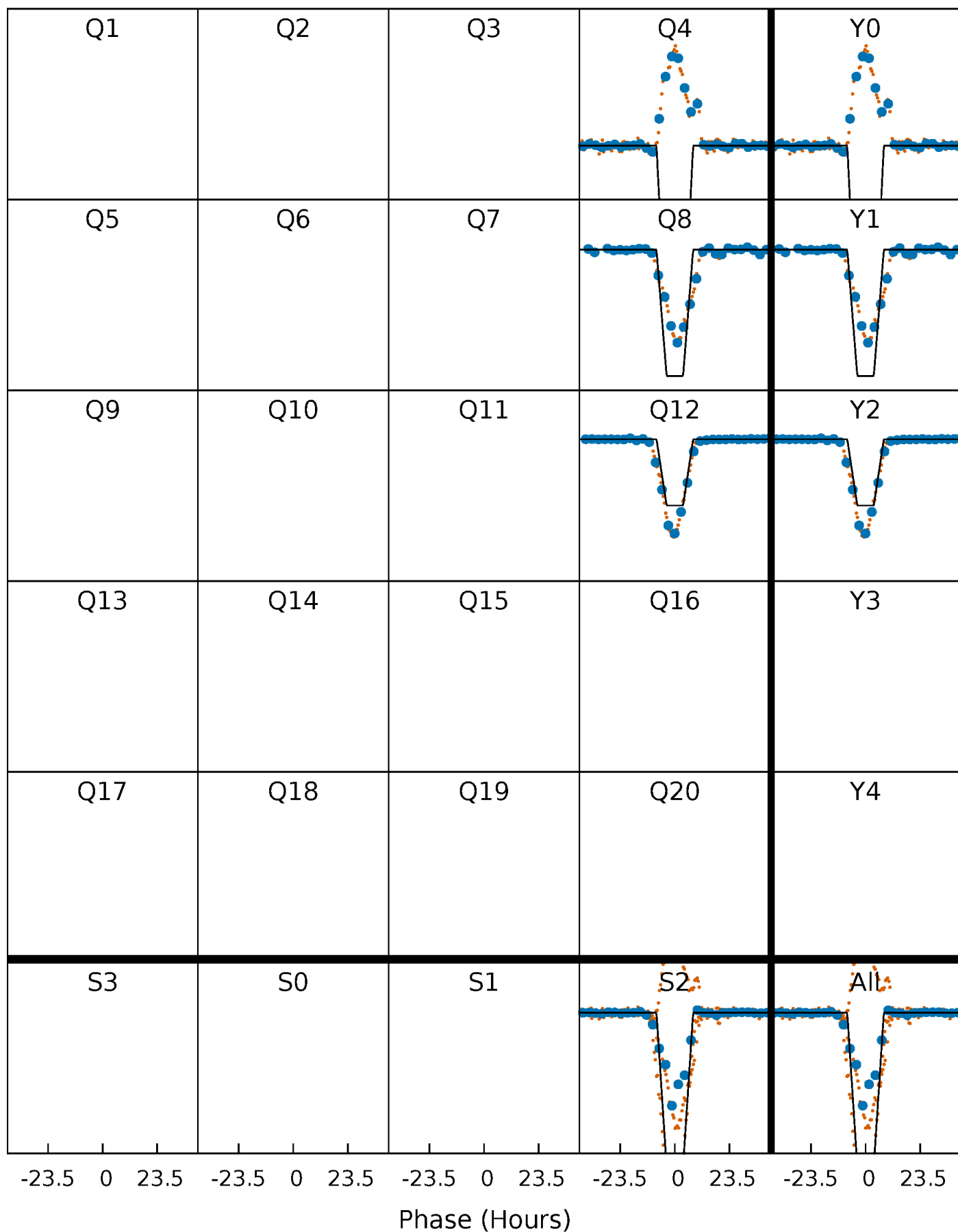
DV Quarter-Phased Transit Curves

TCE 005780782-01 P=369.146663 Days $T_0=369.893592$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

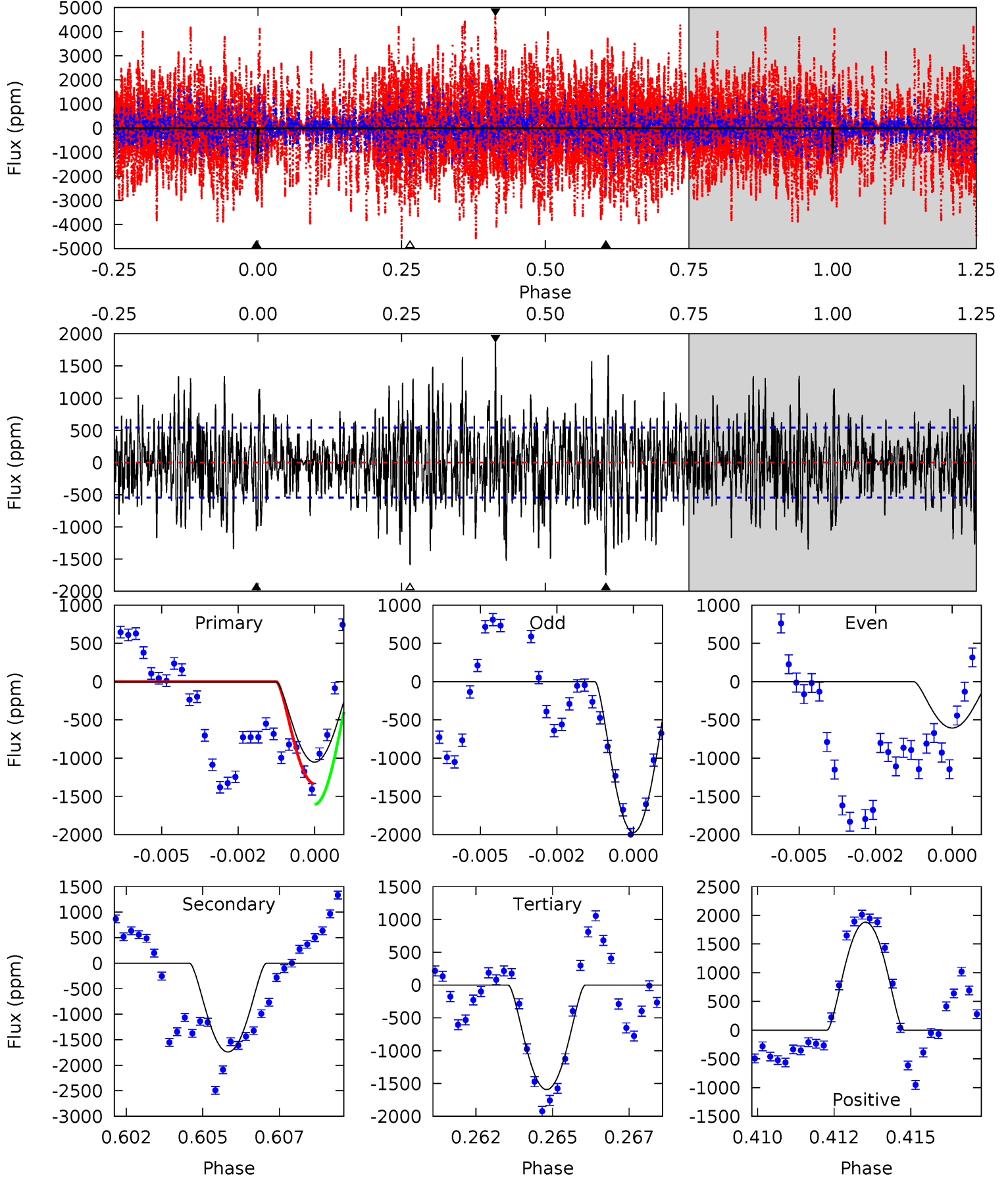
TCE 005780782-01 P=369.179940 Days $T_0=369.856426$ (BKJD)



DV Model-Shift Uniqueness Test

005780782-01, P = 369.146663 Days, E = 0.746929 Days

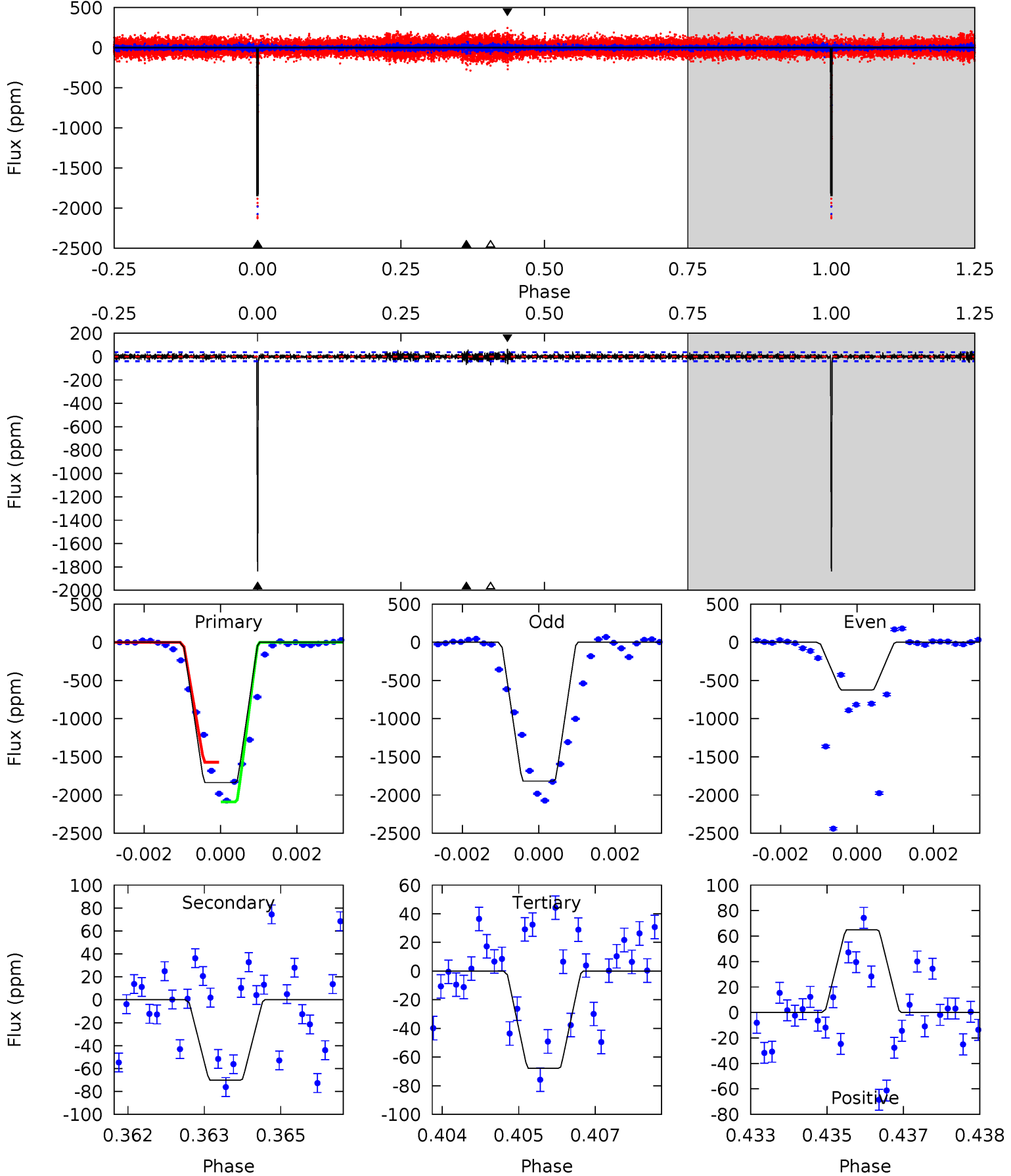
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	16.9	15.5	18.3	5.30	3.04	4.68	-5.26	-8.07	1.44	-1.37	6.02	0.54	0.52	1.28



Alt Model-Shift Uniqueness Test

005780782-01, P = 369.179940 Days, E = 0.676486 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
255.3	9.75	9.43	9.02	5.34	3.12	1.45	245.9	246.3	0.33	0.73	19.6	0.78	0.03	0



Stellar Parameters For KIC 005780782

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4359^{+39}_{-91}	$1.933^{+0.030}_{-0.030}$	$0.100^{+0.100}_{-0.200}$	$26.107^{+5.247}_{-5.771}$	$2.131^{+0.865}_{-0.865}$	$0.000^{+0.000}_{-0.000}$
	+1%/-2%	+2%/-2%	+100%/-200%	+20%/-22%	+41%/-41%	+34%/-10%
Source	SPE74	AST11	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 005780782-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1740 ± 103	$224.21^{+139.81}_{-131.59}$	1203^{+35}_{-36}	3482^{+1252}_{-454}	32^{+150}_{-19}
Alt.	-70 ± 7	$175.73^{+148.59}_{-109.01}$	1205^{+33}_{-38}	2366^{+728}_{-374}	$2.117^{+12.541}_{-1.456}$

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 $A_{obs} \gg 1.0$

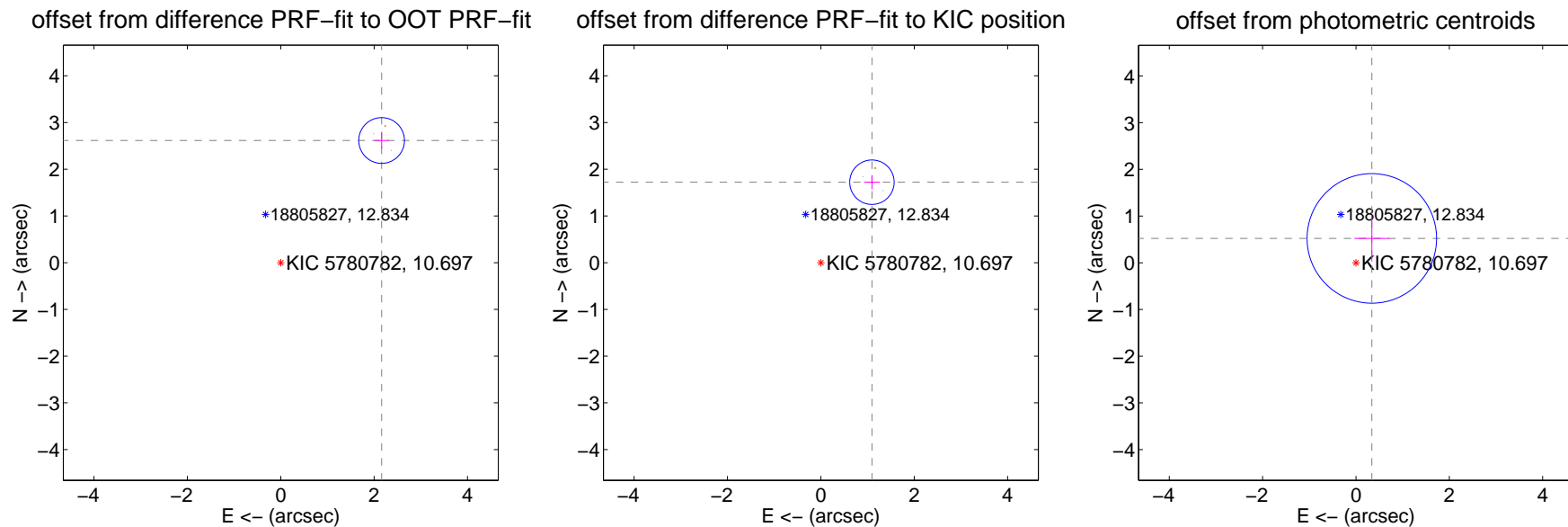
DV Centroid Data

Supplemental centroid analysis for 005780782-01. **Kepler magnitude: 10.70.** Transit SNR 118.87

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 1.43 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.393 ± 0.163	20.79	-2.161 ± 0.154	2.616 ± 0.169
PRF-fit source offset from KIC position	2.041 ± 0.159	12.87	-1.094 ± 0.173	1.723 ± 0.153
photometric centroid source offset	0.62 ± 0.46	1.35	-0.34 ± 0.37	0.52 ± 0.50



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

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

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



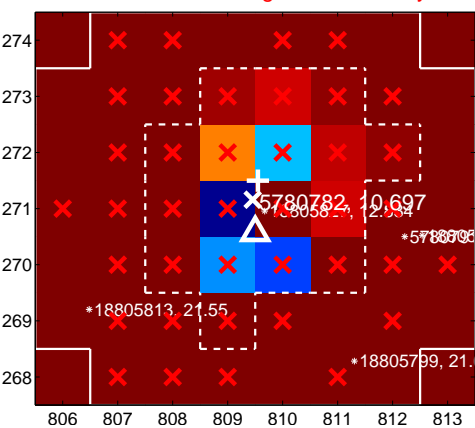
Q3 no difference image



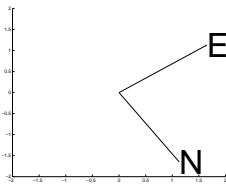
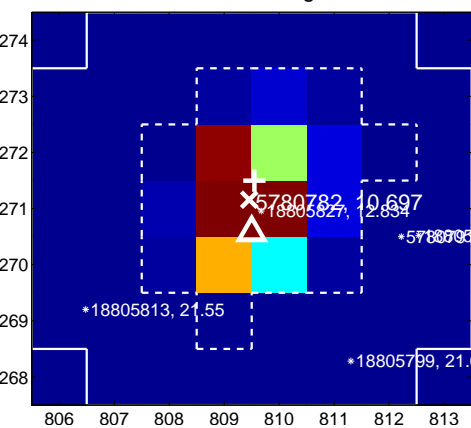
Q3 no OOT image



Q4 difference image. Poor Quality



Q4 OOT image



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

Q5 no difference image



Q5 no OOT image



Q6 no difference image



Q6 no OOT image



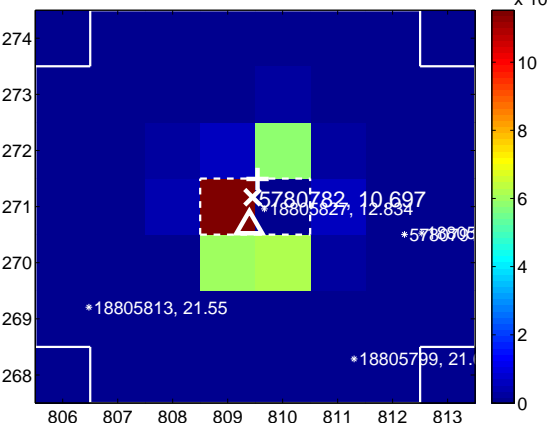
Q7 no difference image



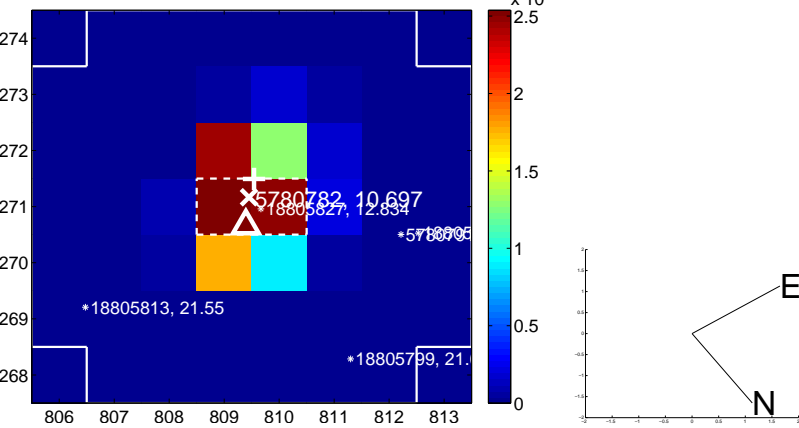
Q7 no OOT image



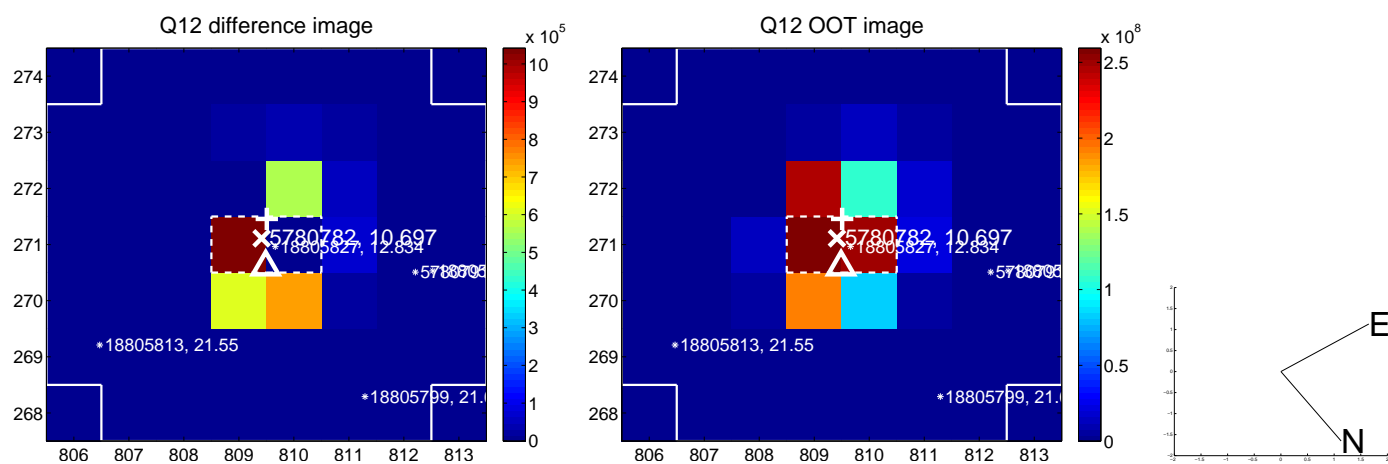
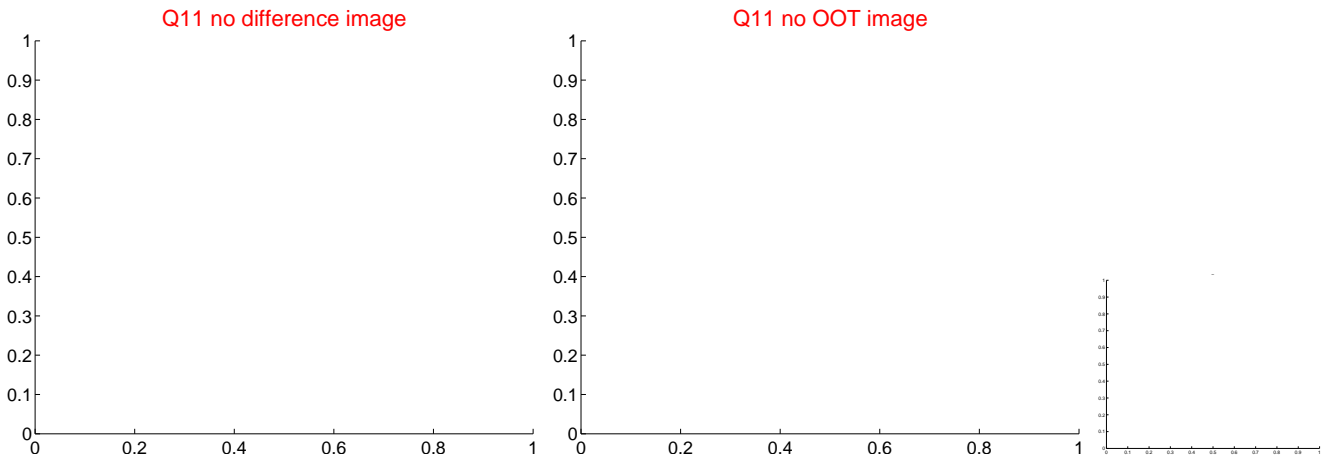
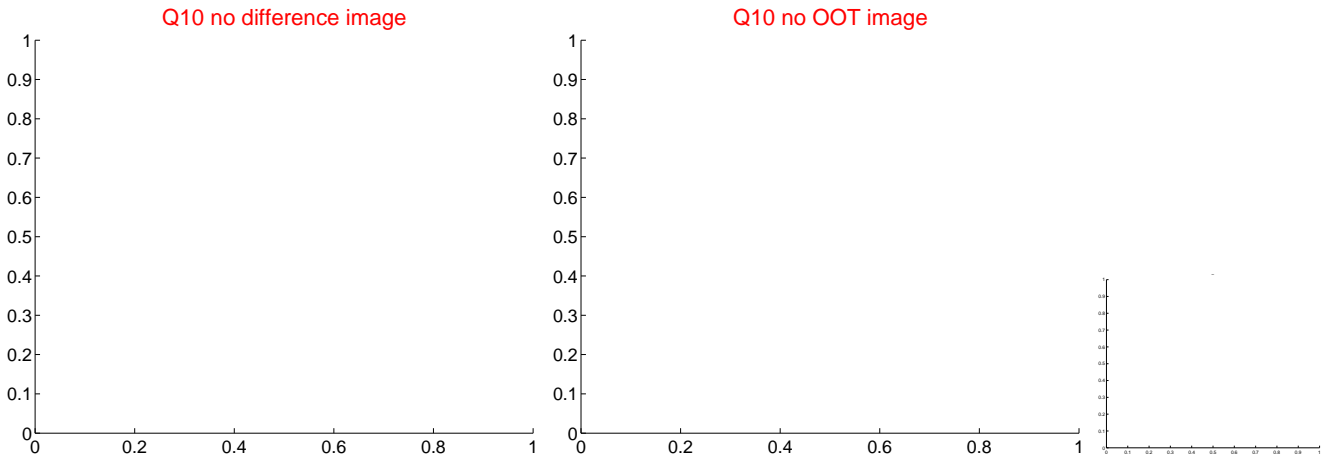
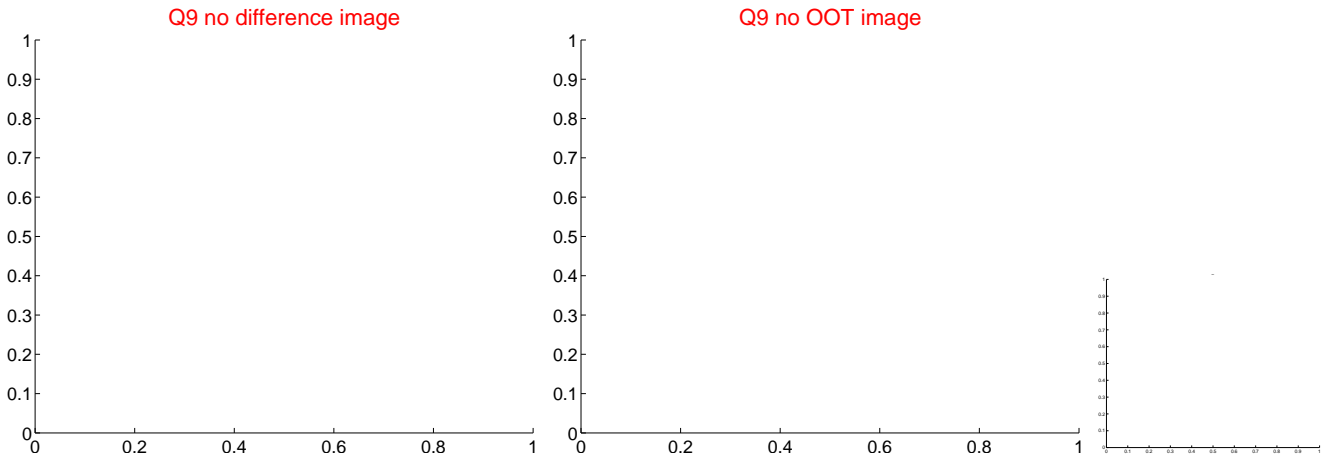
Q8 difference image



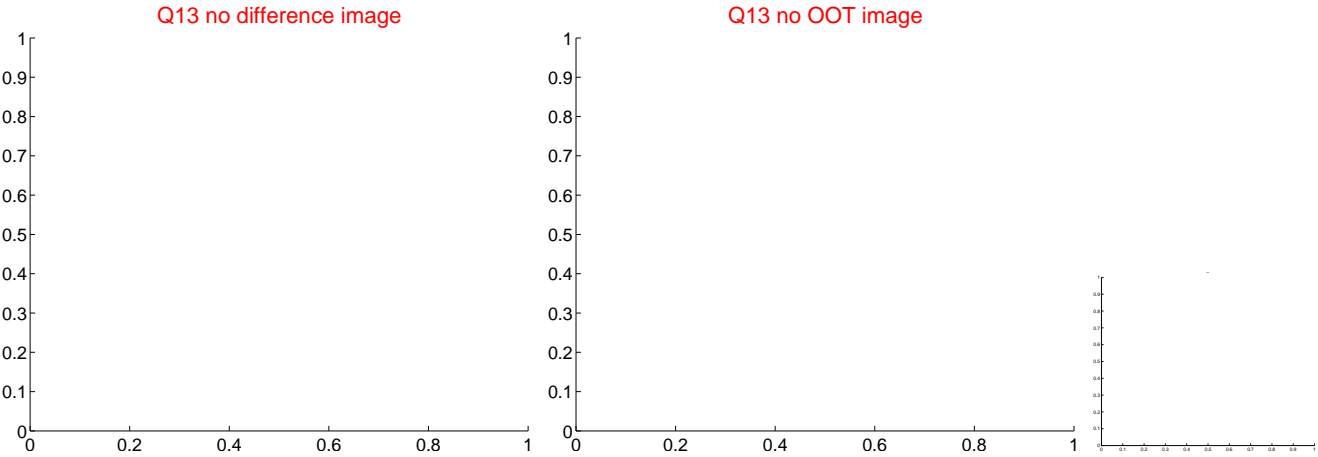
Q8 OOT image



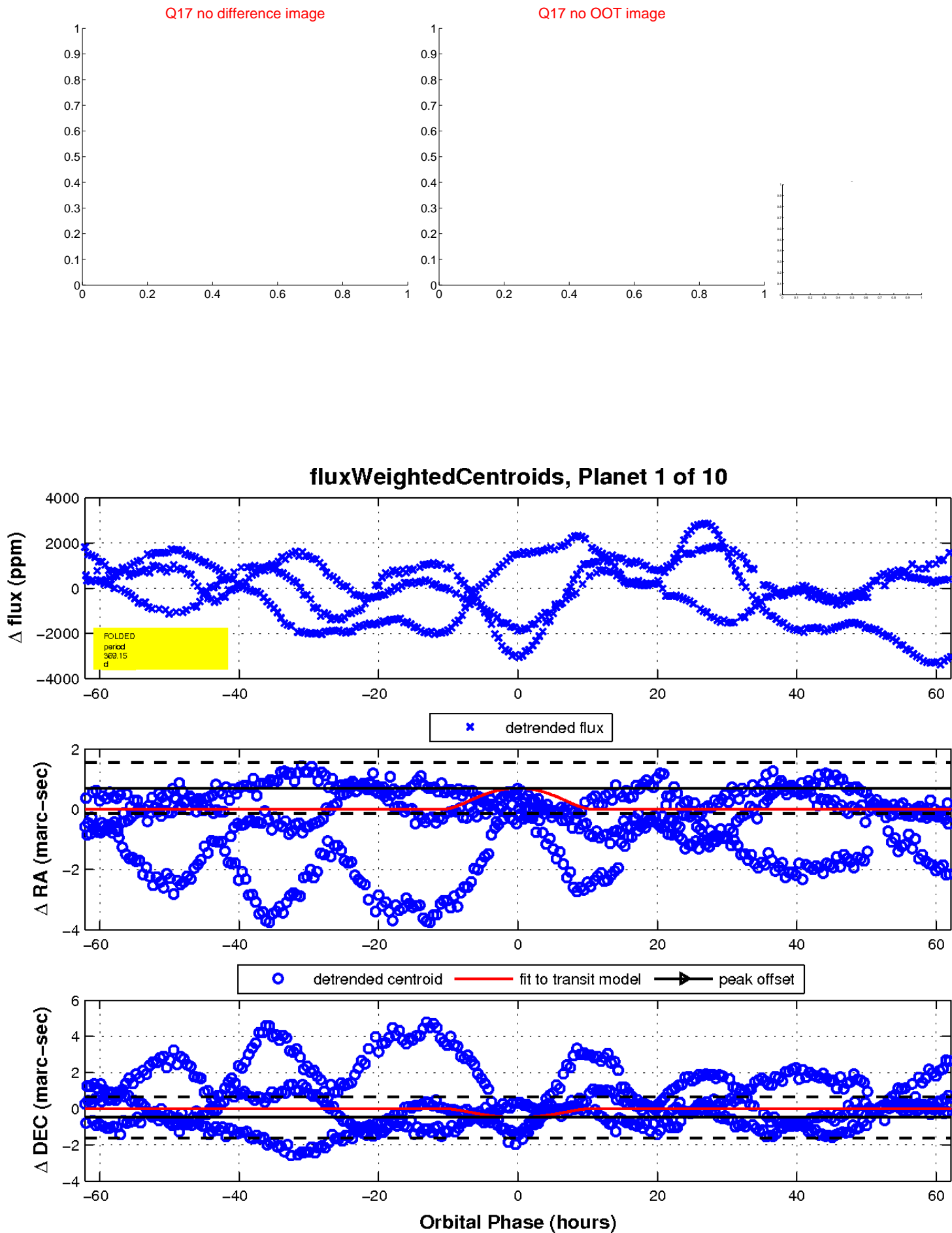
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

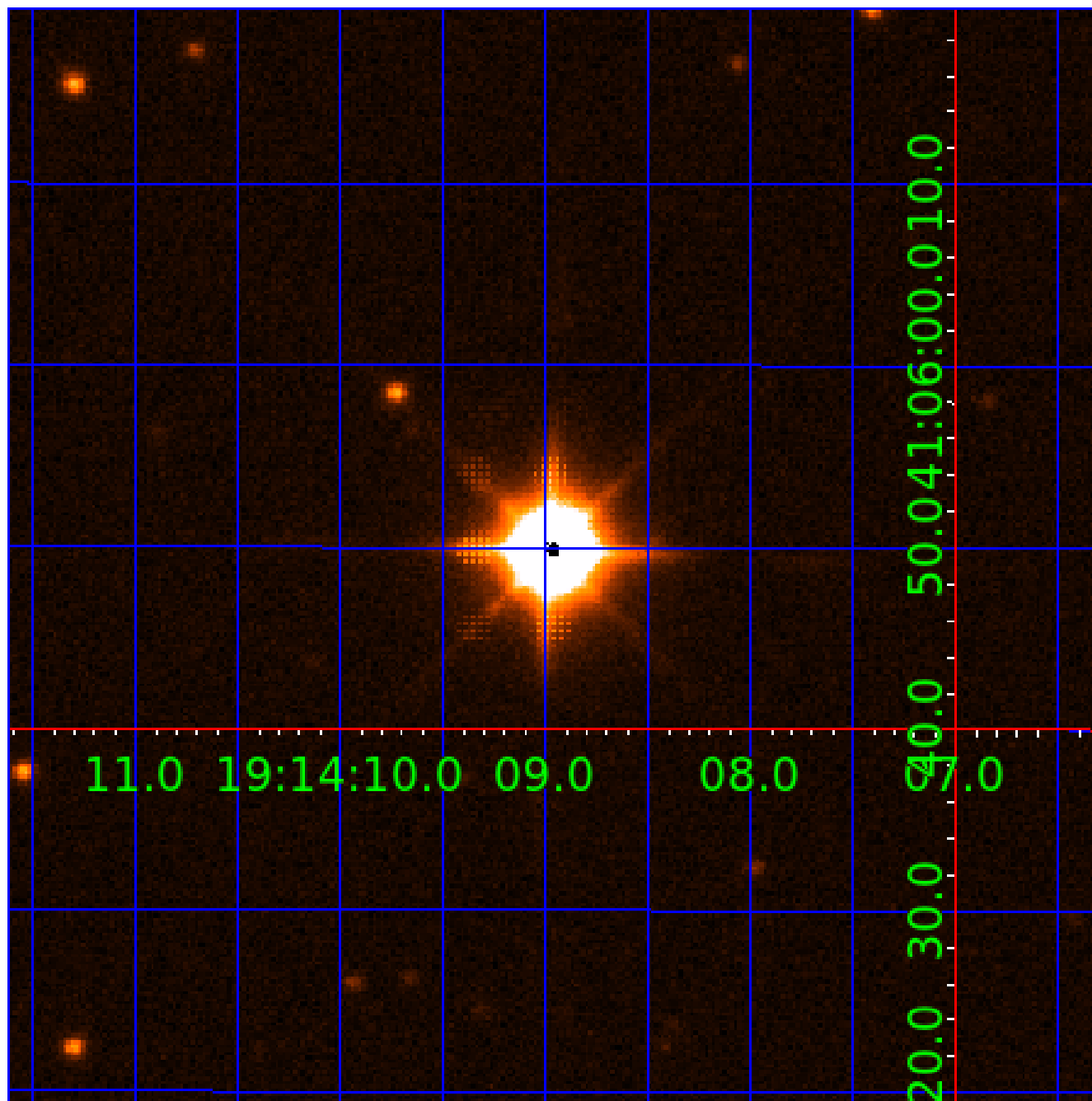


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
005780782-01	OBS	No	369.146663	369.893592	2064.7	20.710	97.5	118.9	26.11	4359	198.29	131.22
005780782-02	OBS	No	369.894878	373.565961	1448.6	16.966	81.6	82.3	26.11	4359	206.01	130.87
005780782-03	OBS	No	246.340188	244.270189	398.8	12.500	46.0	-1.0	26.11	4359	49.42	225.03
005780782-04	OBS	No	184.793502	181.491110	2826.3	29.386	44.8	92.1	26.11	4359	276.25	330.14
005780782-05	OBS	No	185.516291	184.318124	406.2	15.000	53.8	-1.0	26.11	4359	49.87	328.43
005780782-06	OBS	No	582.905555	162.441375	100.5	7.883	41.5	5.2	26.11	4359	30.30	71.36
005780782-07	OBS	No	456.526196	287.257117	110.3	1.000	39.6	2.2	26.11	4359	34.58	98.85
005780782-08	OBS	No	569.190679	175.351019	517.0	10.776	38.8	15.3	26.11	4359	57.86	73.67
005780782-09	OBS	No	458.158942	202.747347	767.2	21.875	11.9	8.1	26.11	4359	92.71	98.38
005780782-10	OBS	No	192.199401	213.478149	32.3	5.697	10.7	8.1	26.11	4359	19.44	313.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005780782-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—NO_FITS—INCONSISTENT_TRANS—CENT_SATURATED
005780782-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005780782-05	OBS	FP	0.00	1	0	0	0	LPP_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005780782-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_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—HALO_GHOST
005780782-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-09	OBS	FP	0.00	1	0	1	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
005780782-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

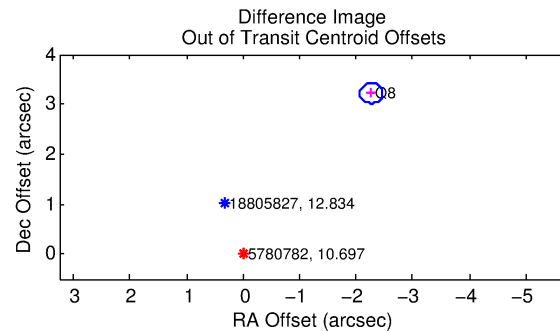
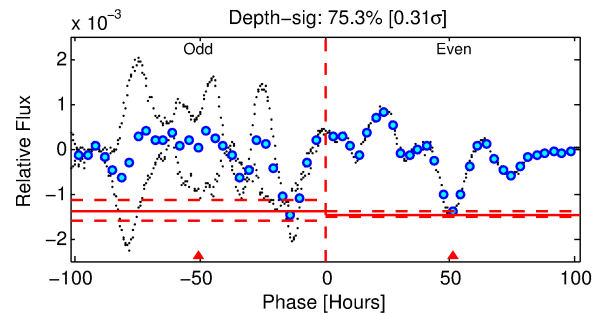
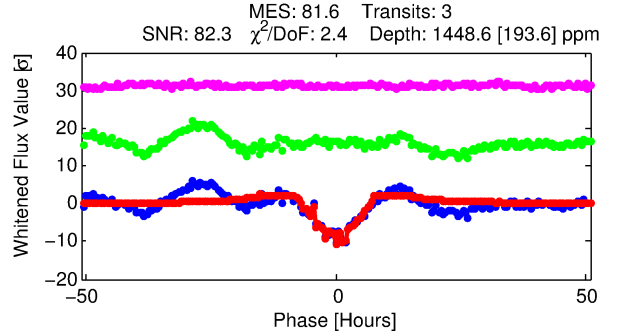
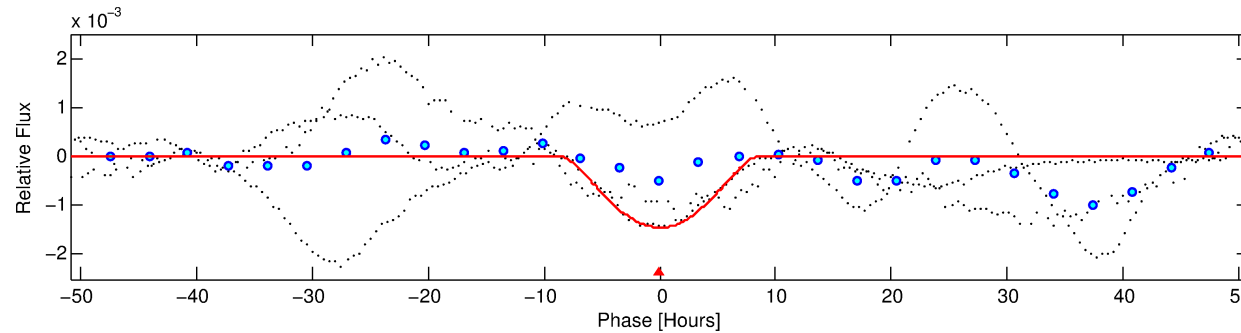
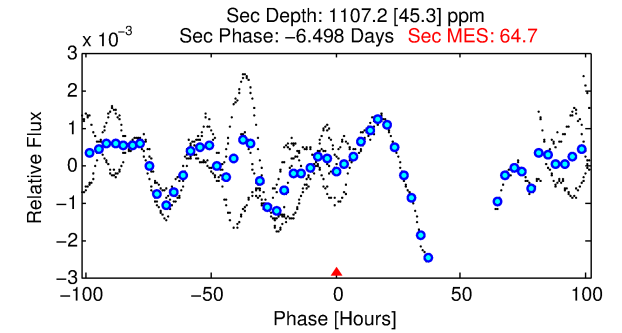
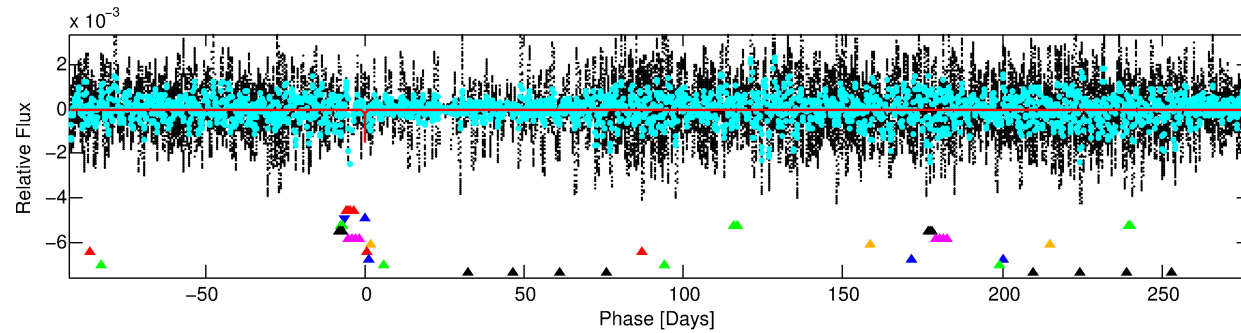
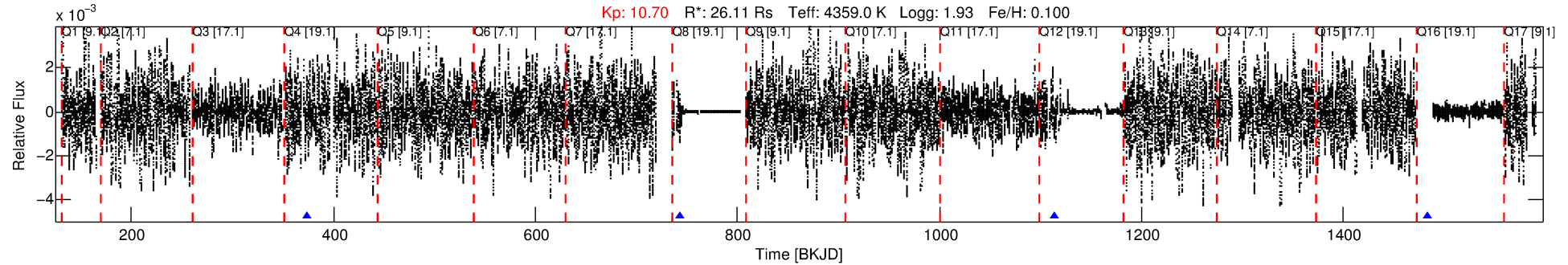
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005780782-02

No Significant Match Found

DV One-Page Summary

KIC: 5780782 Candidate: 2 of 10 Period: 369.895 d



DV Fit Results:

Period = 369.89488 [0.02432] d
Epoch = 373.5660 [0.0250] BKJD
Rp/R* = 0.0723 [0.0794]
a/R* = 64.59 [14.23]
b = 1.00 [0.12]
Seff = 130.87 [22.97]
Teq = 862 [38] K
Rp = 206.01 [230.61] Re
a = 1.2979 [0.1936] AU
Ag = 24.18 [53.21] [0.44σ]
Teff = 2957 [1624] K [1.29σ]

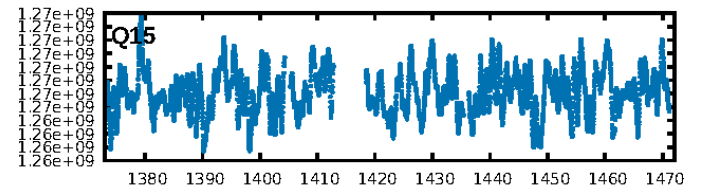
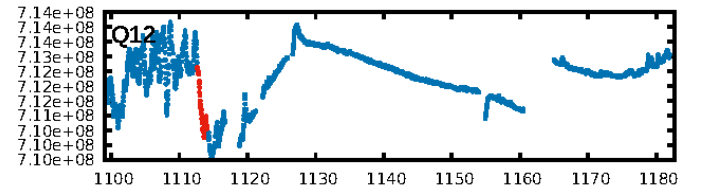
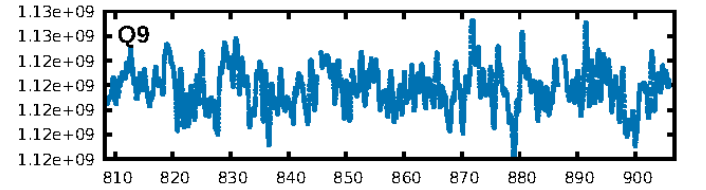
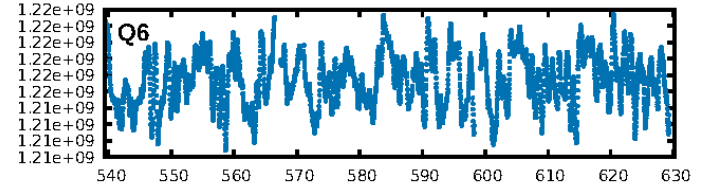
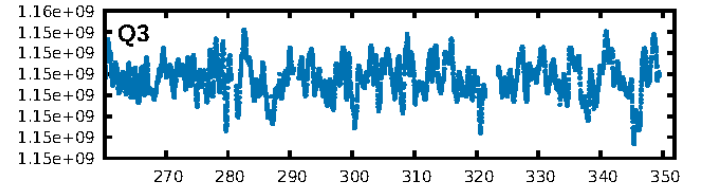
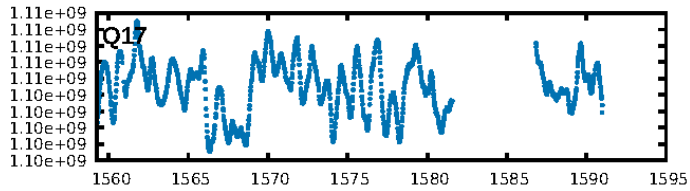
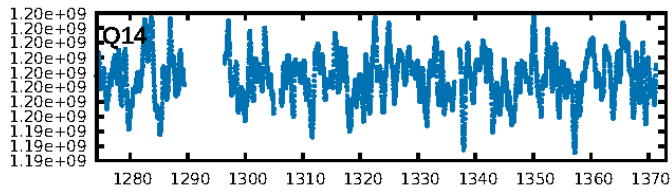
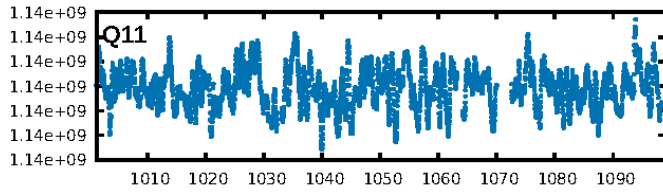
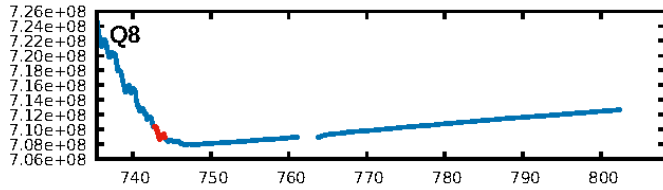
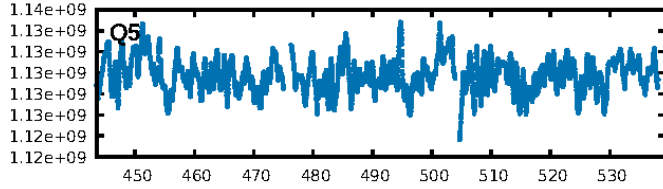
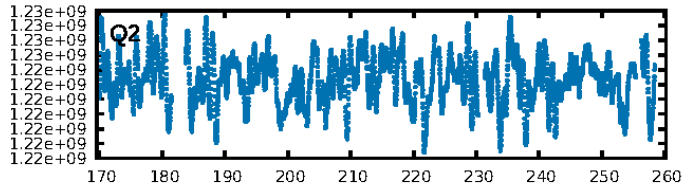
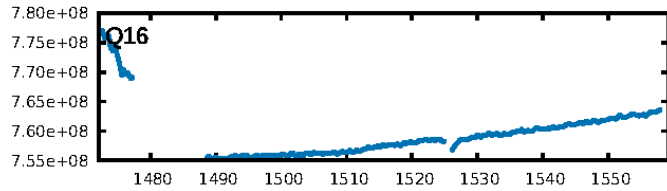
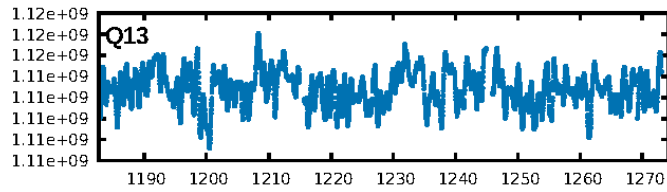
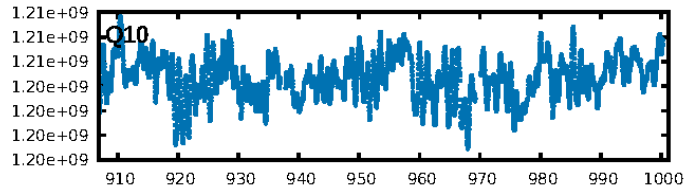
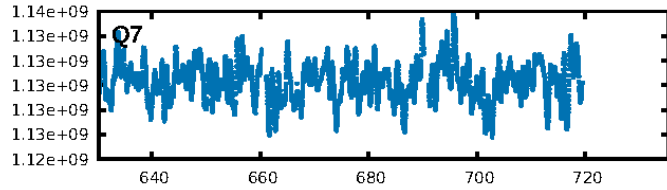
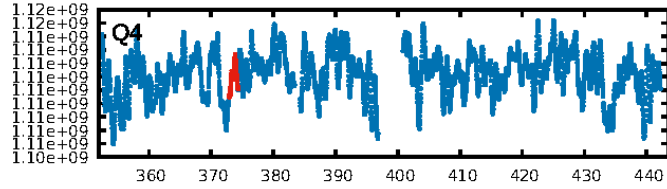
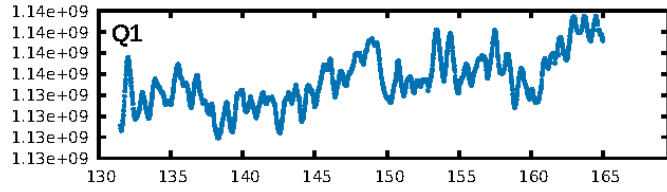
DV Diagnostic Results:

ShortPeriod-sig: 49.8% [0.67σ]
LongPeriod-sig: 100.0% [122.34σ]
ModelChiSquare2-sig: 24.9%
ModelChiSquareGof-sig: 61.2%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.5055
Centroid-sig: 67.1%
Centroid-so: 0.412 arcsec [0.75σ]
OotOffset-rm: 3.936 arcsec [58.72σ]
KicOffset-rm: 2.619 arcsec [39.07σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 0.00 [0/1]

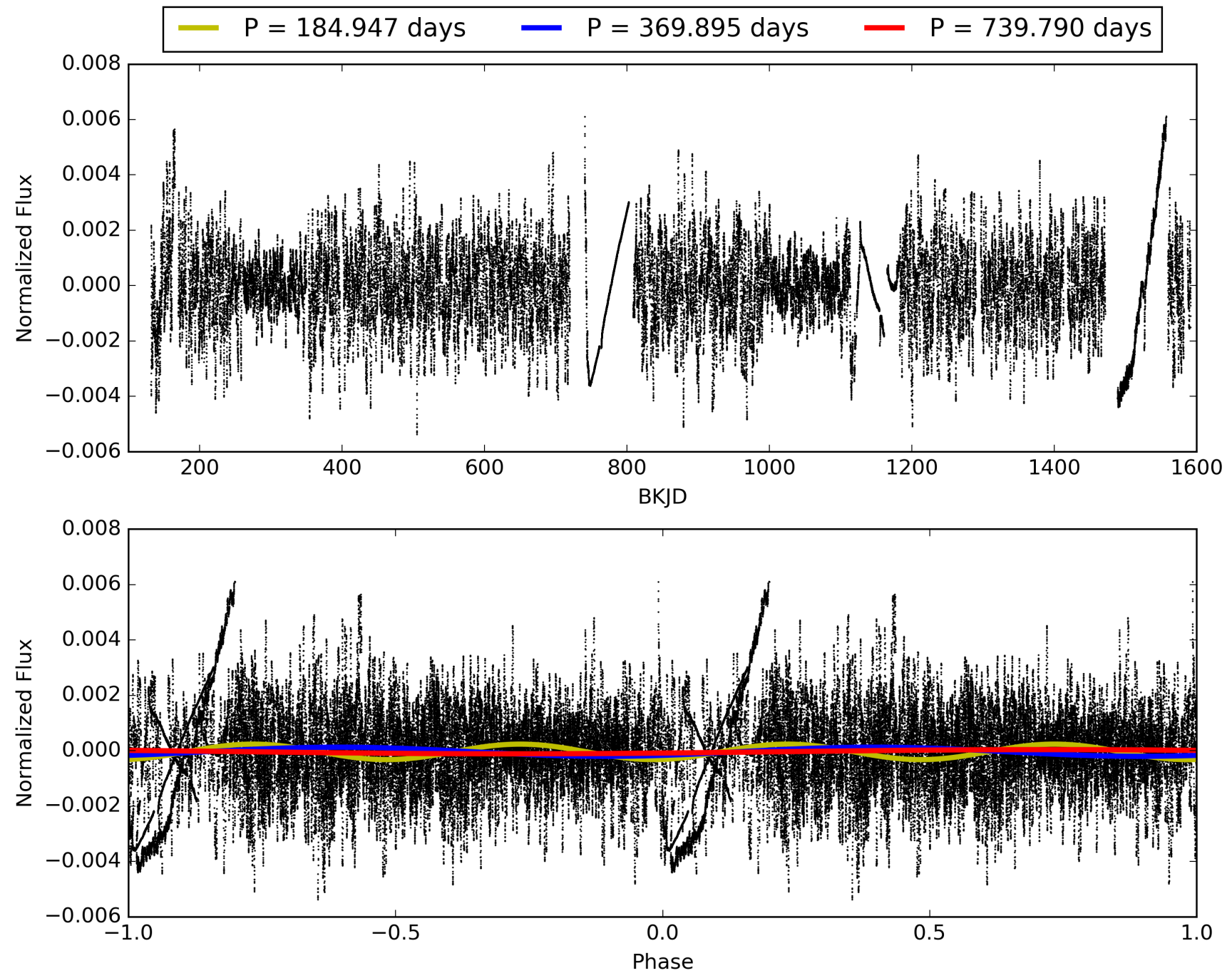
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:43:18 Z

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

TCE 005780782-02, PDC Light Curves

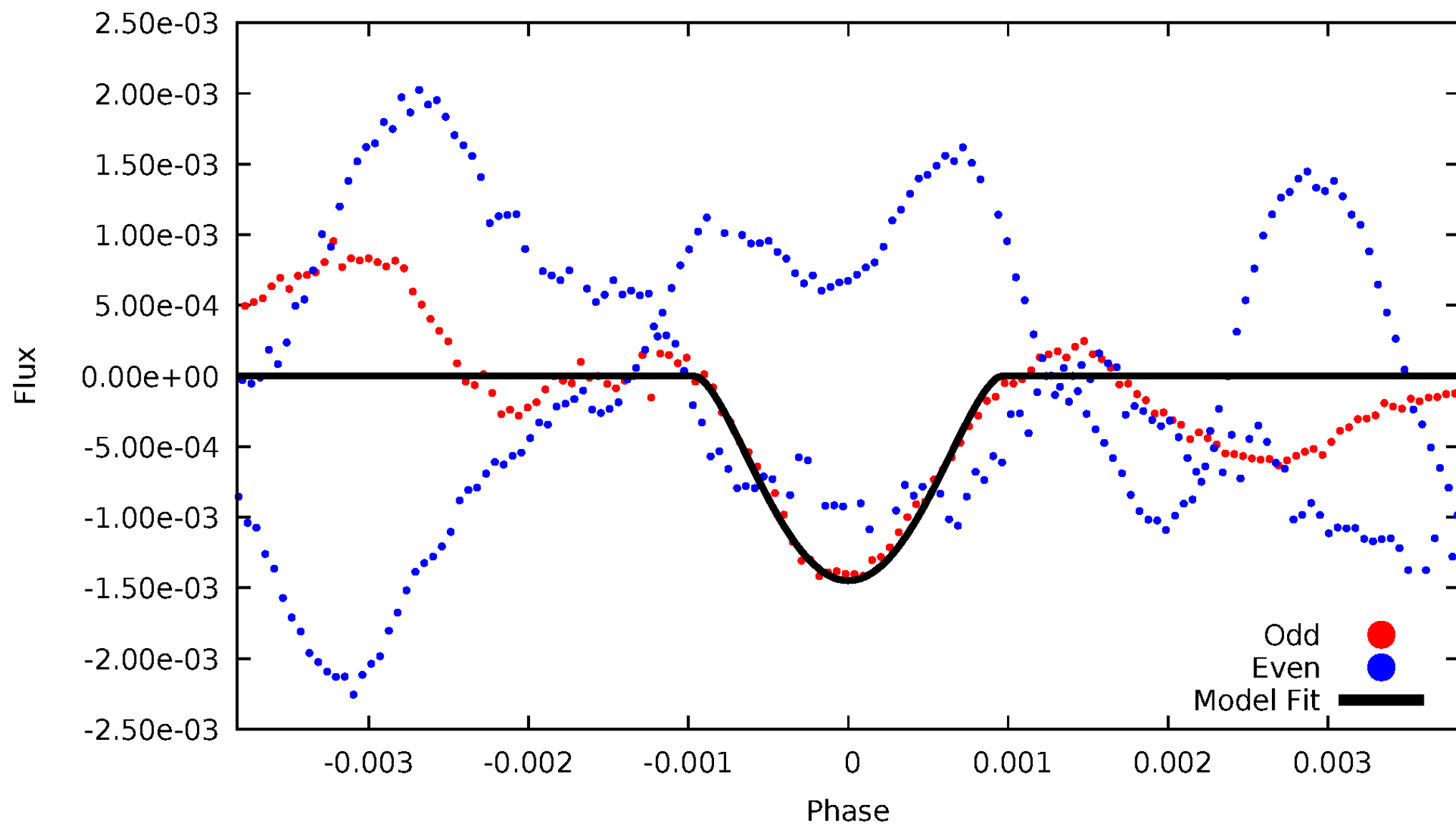


TCE 005780782-02



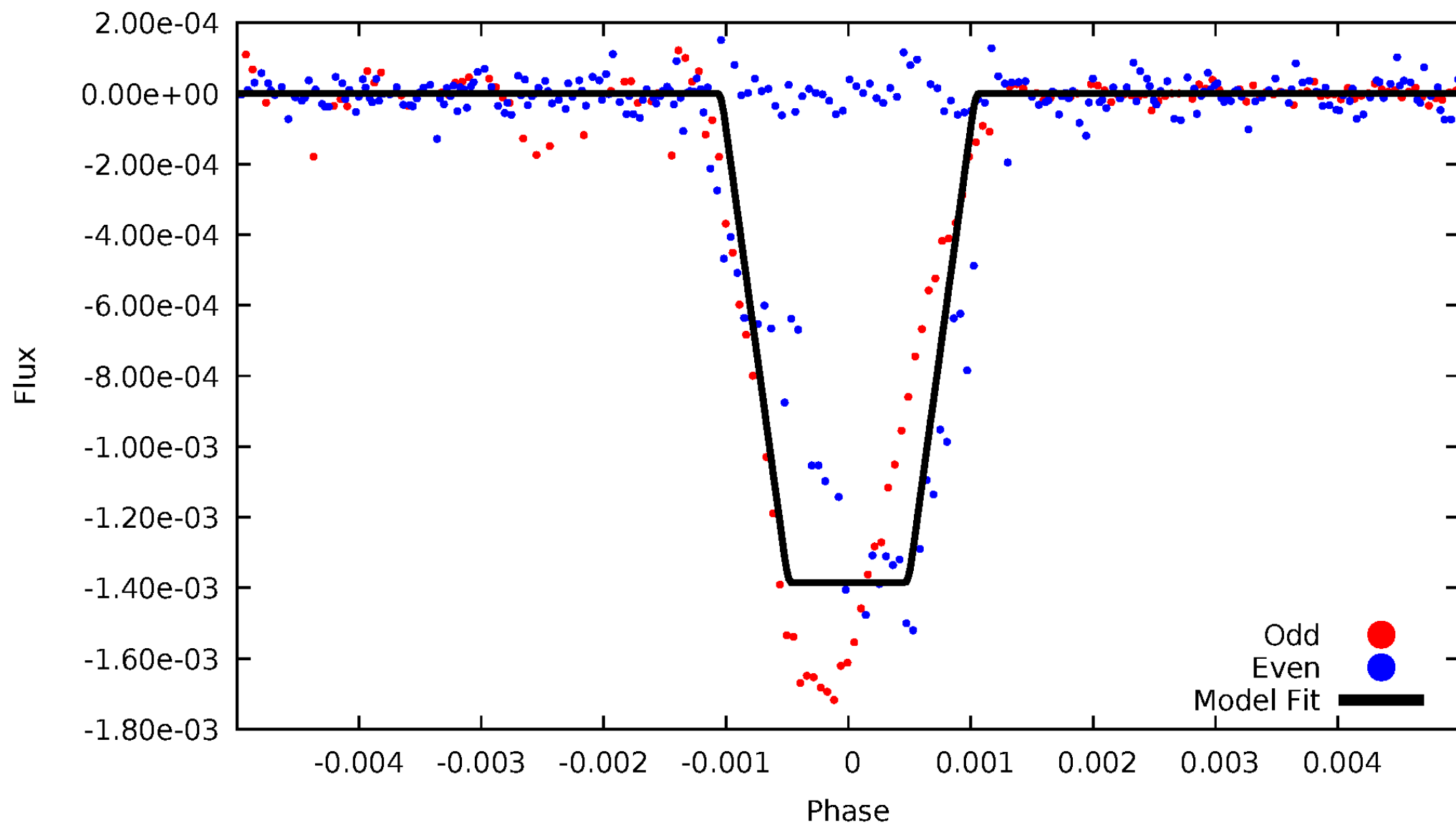
DV Odd/Even

TCE 005780782-02



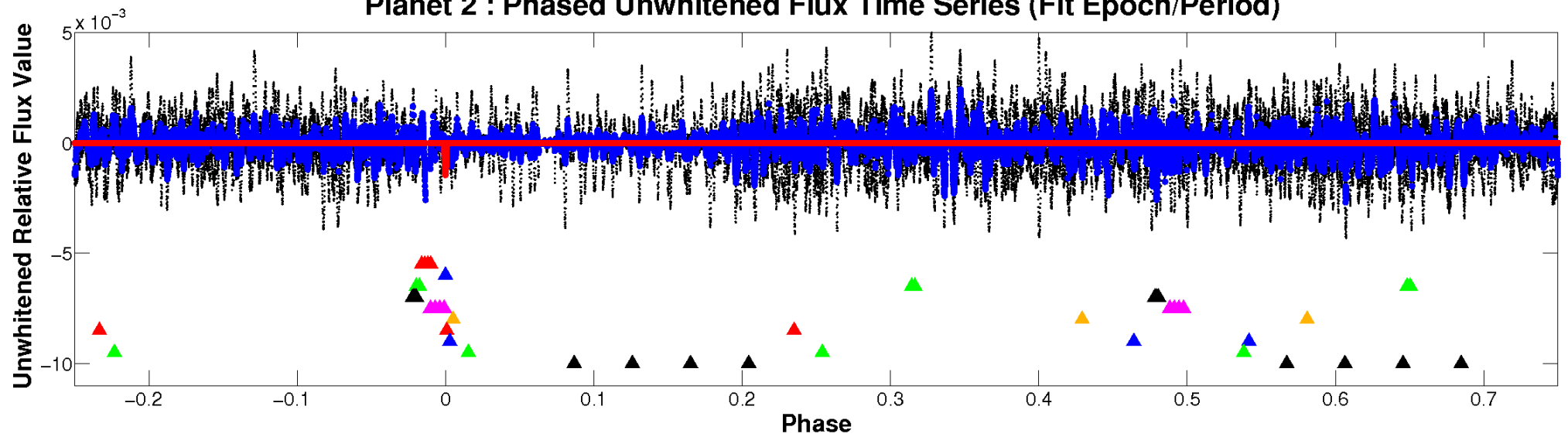
ALT Odd/Even

TCE 005780782-02

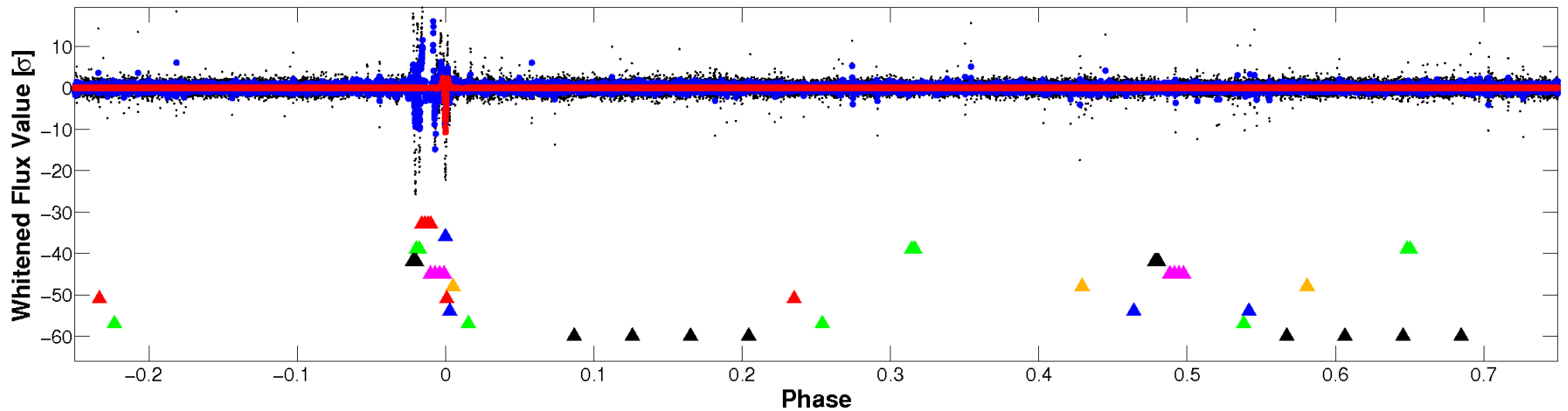


Non-Whitened Vs. Whitened Light Curve

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

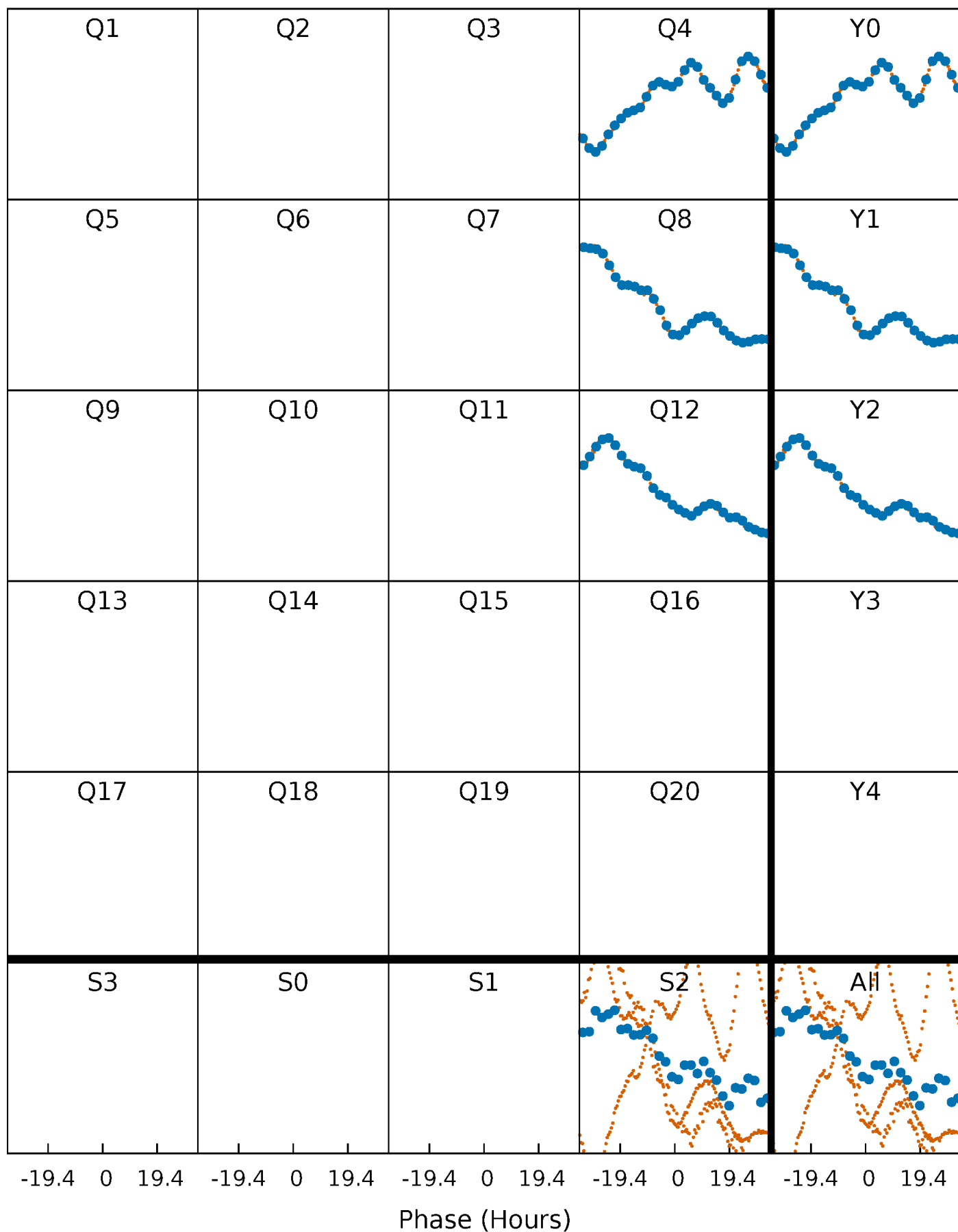


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



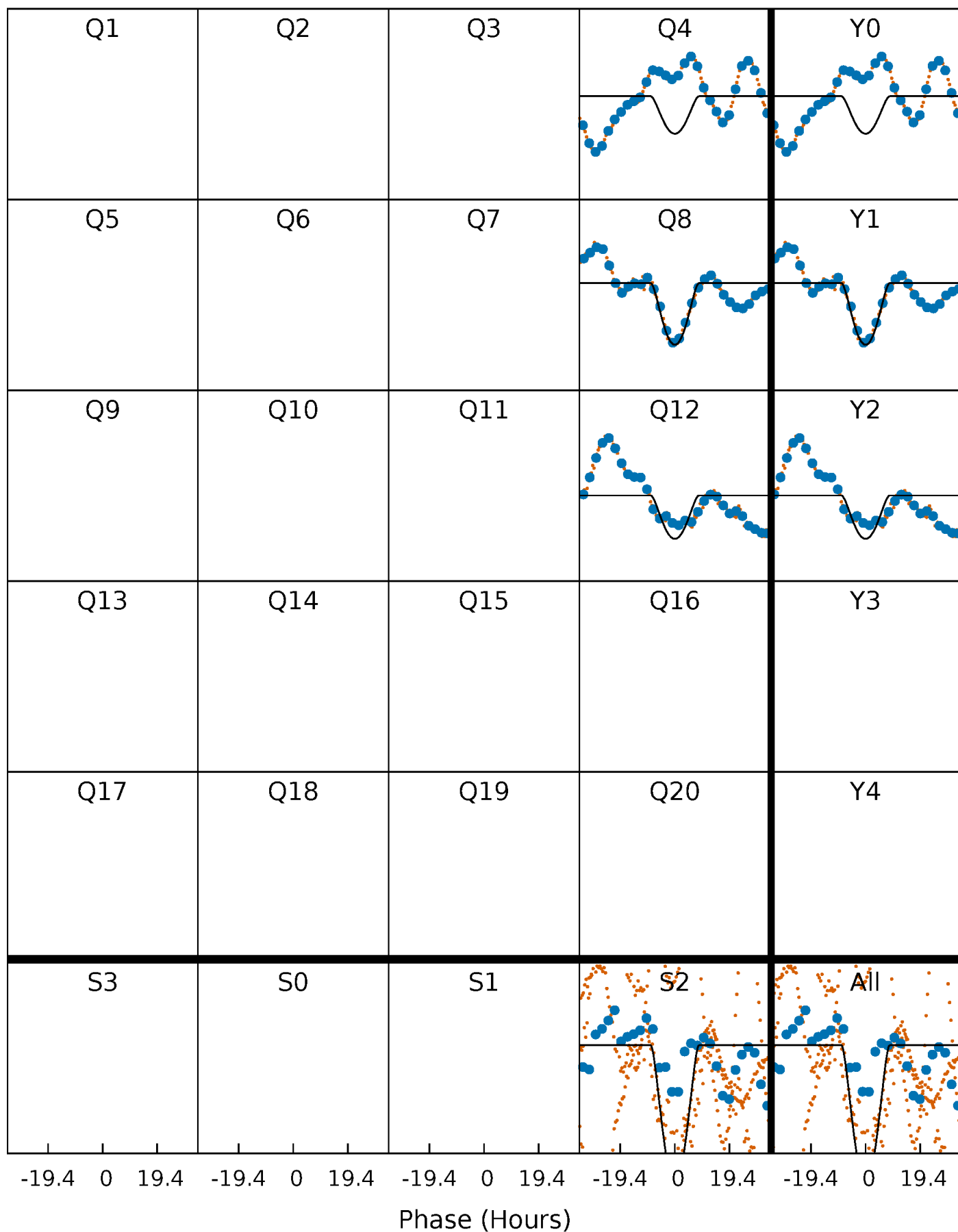
PDC Quarter-Phased Transit Curves

TCE 005780782-02 $P=369.894878$ Days $T_0=373.565961$ (BKJD)



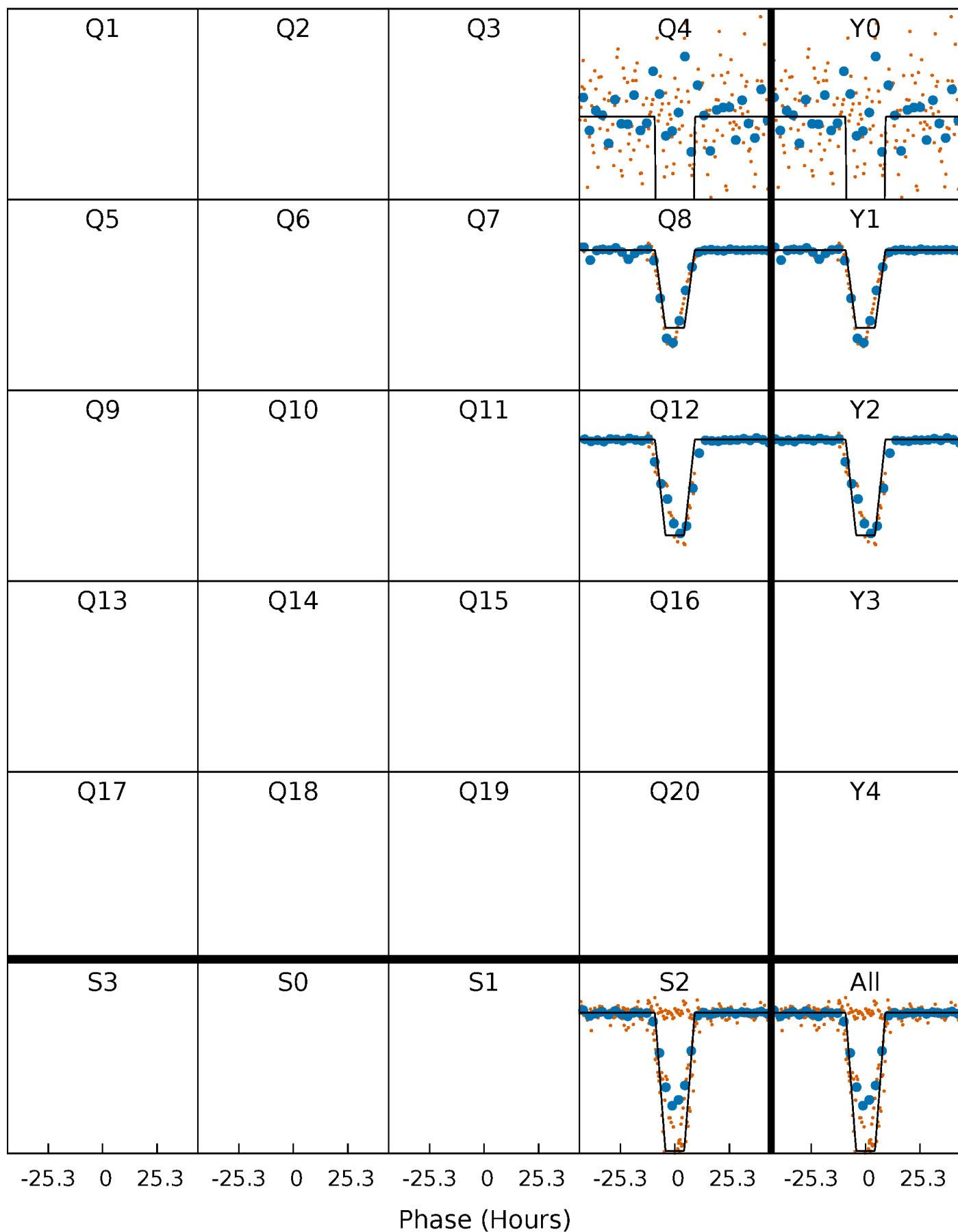
DV Quarter-Phased Transit Curves

TCE 005780782-02 $P=369.894878$ Days $T_0=373.565961$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

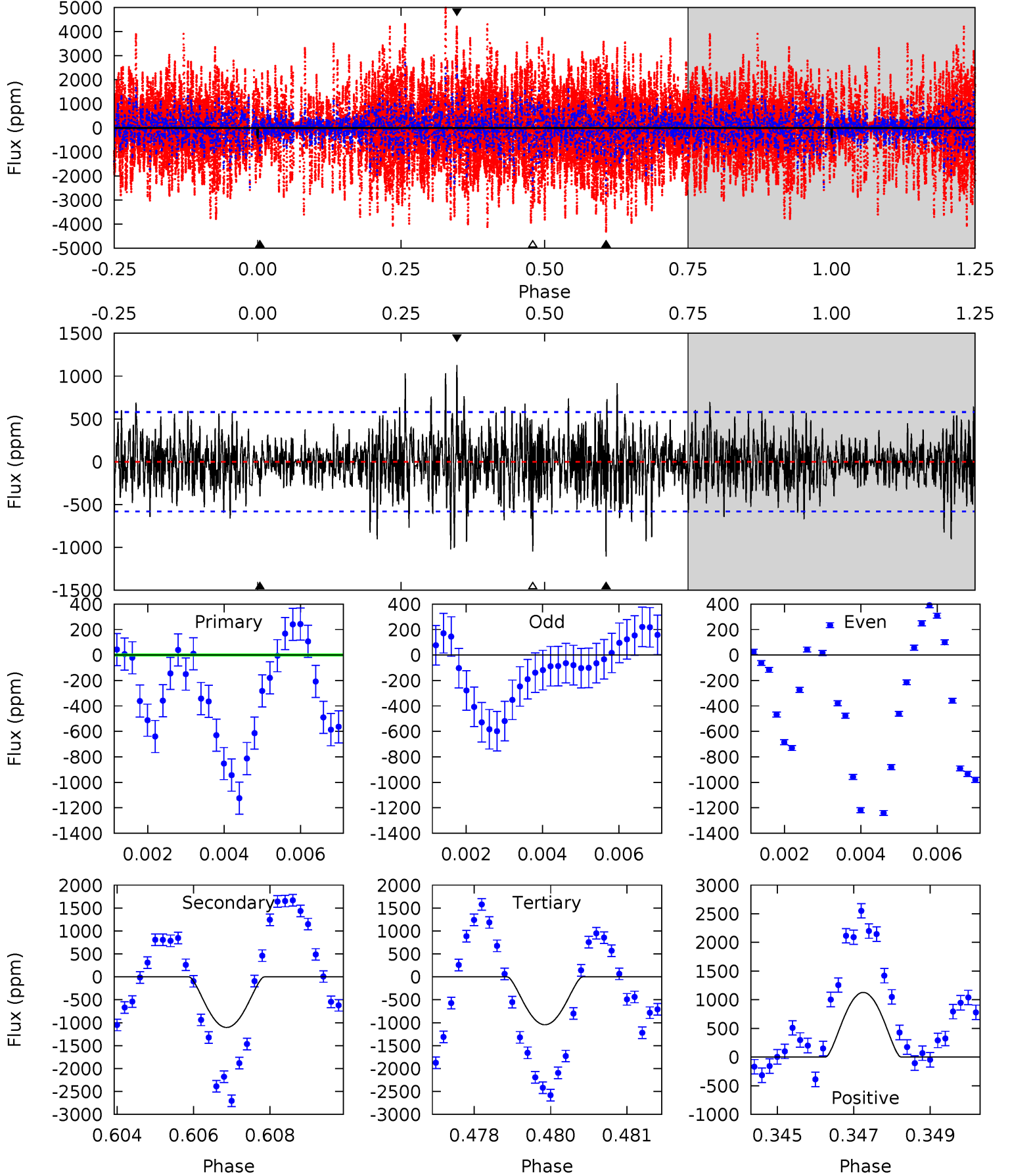
TCE 005780782-02 P=369.874681 Days $T_0=373.664138$ (BKJD)



DV Model-Shift Uniqueness Test

005780782-02, P = 369.894878 Days, E = 3.671083 Days

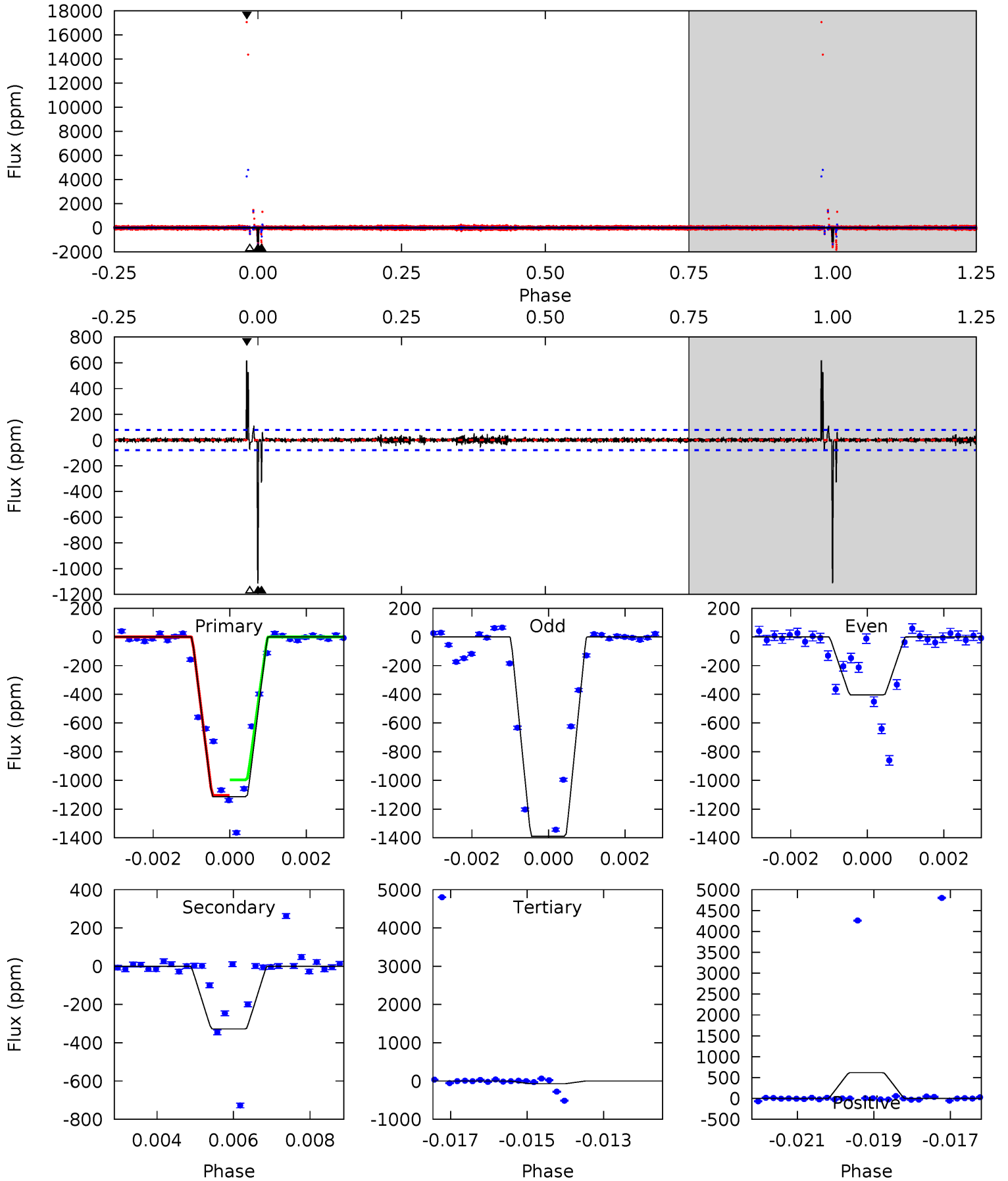
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.47	10.2	9.61	10.4	5.33	3.10	2.35	-6.14	-6.91	0.55	-0.22	5.20	0.40	0.51	0.58



Alt Model-Shift Uniqueness Test

005780782-02, P = 369.874681 Days, E = 3.789457 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
75.2	22.1	4.73	41.6	5.32	3.07	1.28	70.4	33.6	17.4	-19.5	11.5	0.70	0.36	3.48



Stellar Parameters For KIC 005780782

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4359^{+39}_{-91}	$1.933^{+0.030}_{-0.030}$	$0.100^{+0.100}_{-0.200}$	$26.107^{+5.247}_{-5.771}$	$2.131^{+0.865}_{-0.865}$	$0.000^{+0.000}_{-0.000}$
	+1%/-2%	+2%/-2%	+100%/-200%	+20%/-22%	+41%/-41%	+34%/-10%
Source	SPE74	AST11	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 005780782-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1104±109	$286.87^{+213.72}_{-186.36}$	1206^{+33}_{-41}	3028^{+1170}_{-445}	13^{+81}_{-9}
Alt.	-328±15	$207.54^{+208.11}_{-139.31}$	1205^{+34}_{-35}	2769^{+1142}_{-445}	$6.715^{+58.646}_{-4.910}$

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

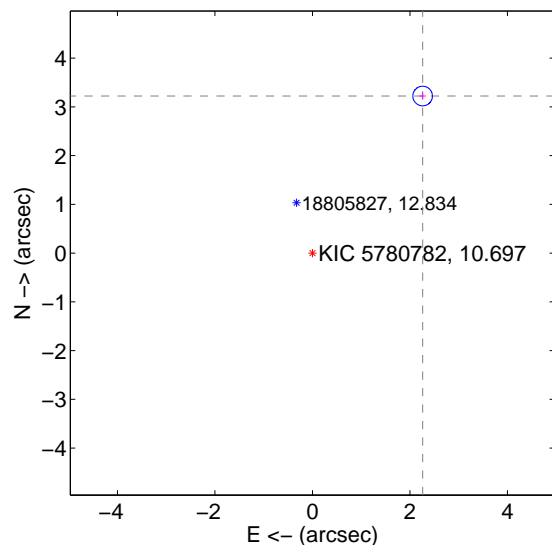
Supplemental centroid analysis for 005780782-02. **Kepler magnitude: 10.70.** Transit SNR 82.27

There are 1 quarters with good PRF difference image offsets

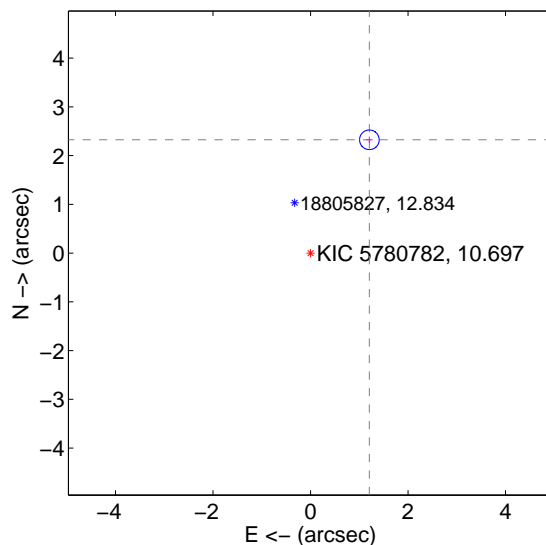
The direct PRF centroid is offset from the target star catalog position by about 1.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.936 \pm 0.067	58.72	-2.261 \pm 0.067	3.222 \pm 0.067
PRF-fit source offset from KIC position	2.619 \pm 0.067	39.07	-1.207 \pm 0.067	2.324 \pm 0.067
photometric centroid source offset	0.41 \pm 0.55	0.75	-0.29 \pm 0.47	0.30 \pm 0.62

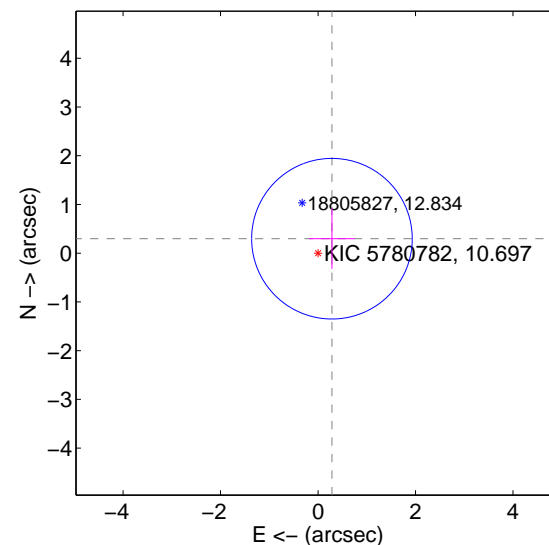
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

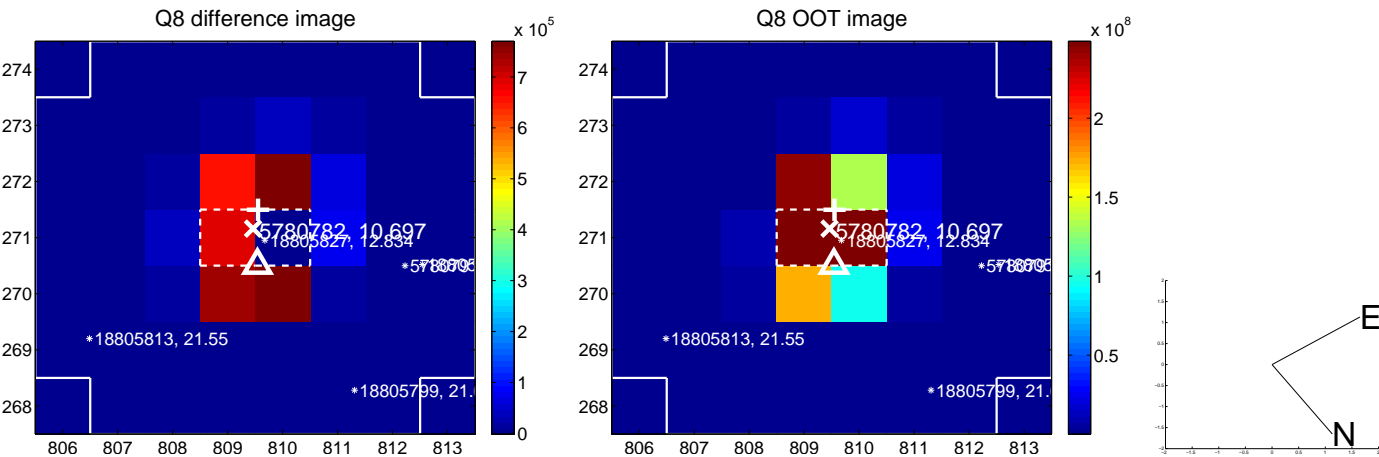


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



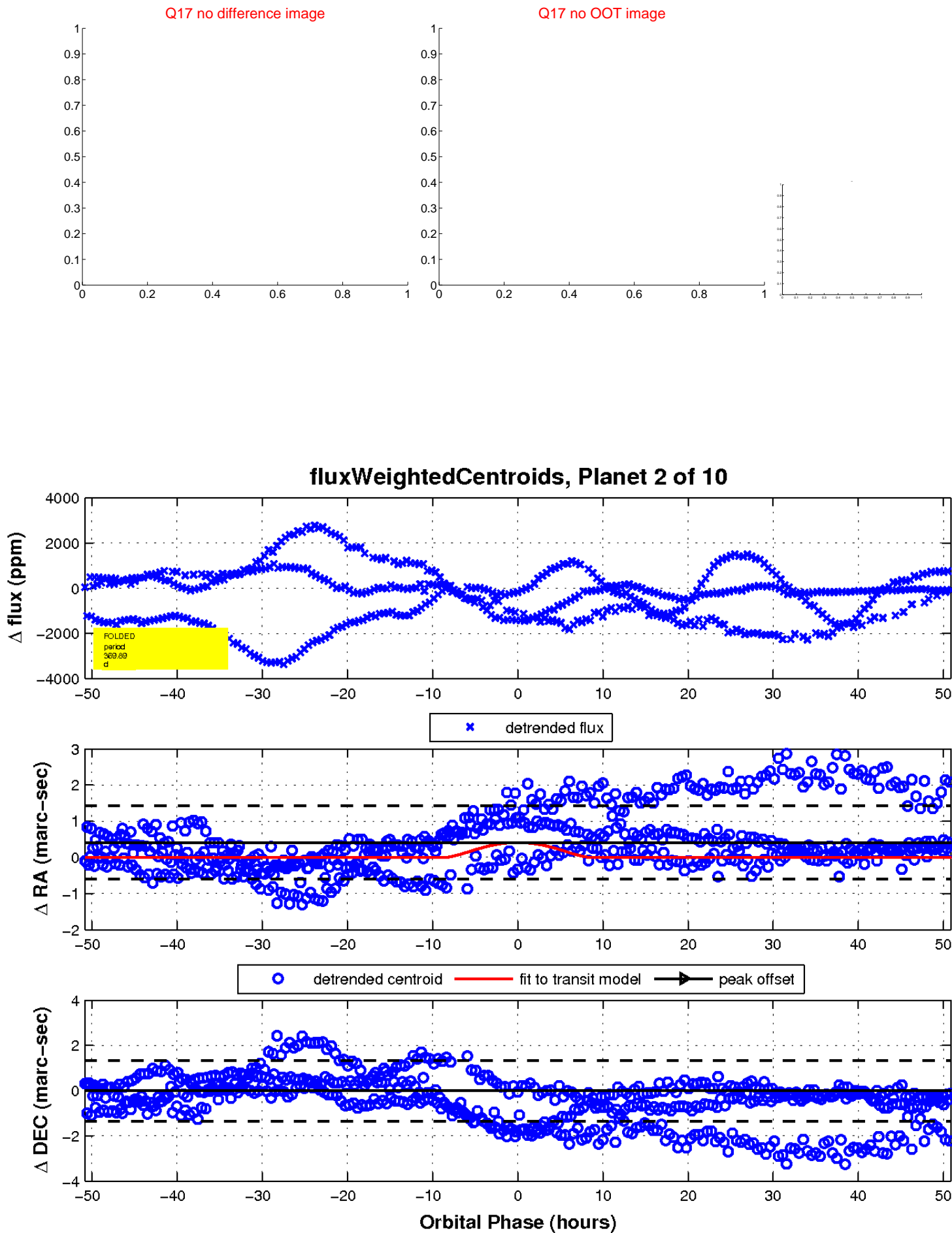
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

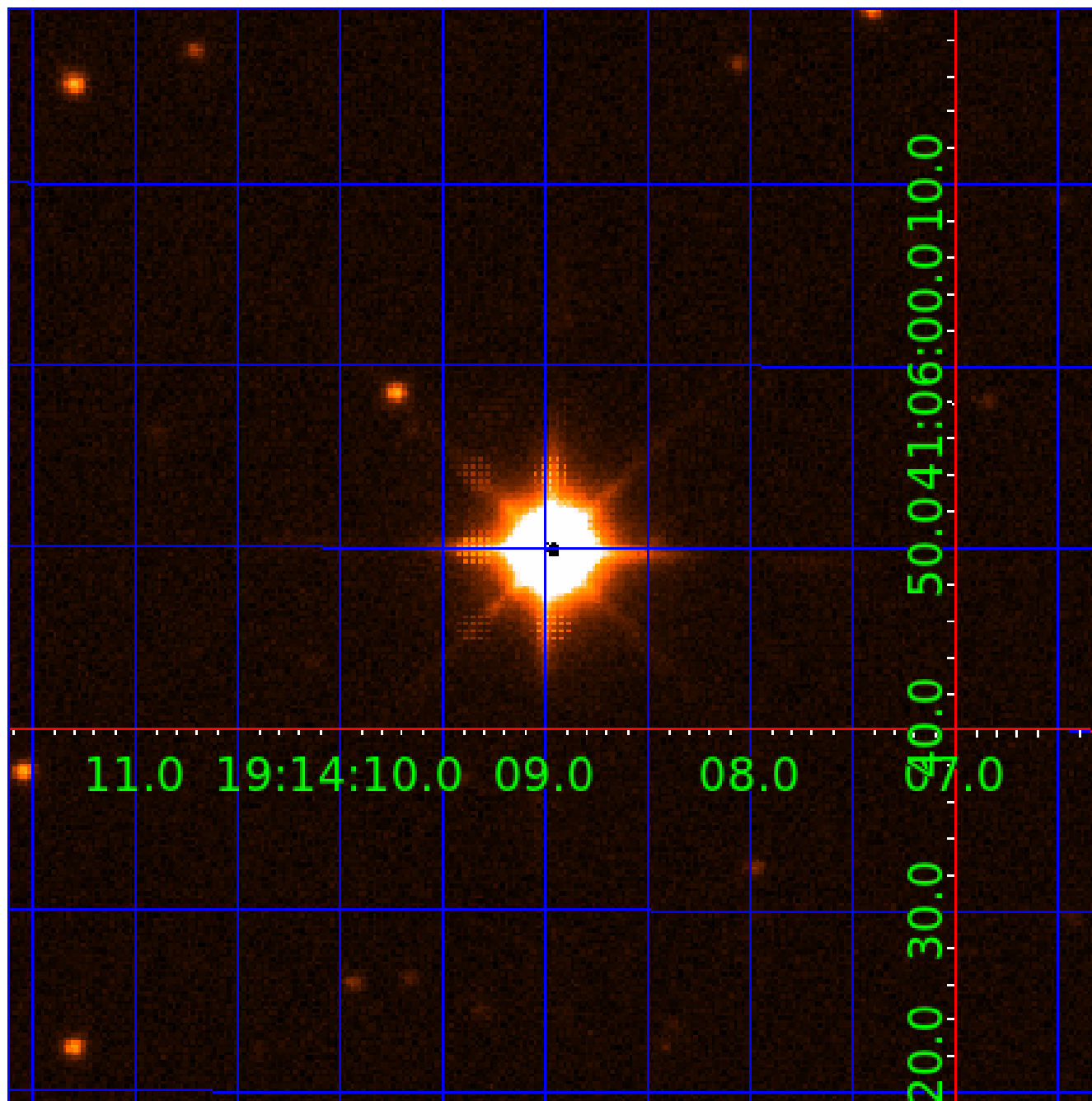


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
005780782-01	OBS	No	369.146663	369.893592	2064.7	20.710	97.5	118.9	26.11	4359	198.29	131.22
005780782-02	OBS	No	369.894878	373.565961	1448.6	16.966	81.6	82.3	26.11	4359	206.01	130.87
005780782-03	OBS	No	246.340188	244.270189	398.8	12.500	46.0	-1.0	26.11	4359	49.42	225.03
005780782-04	OBS	No	184.793502	181.491110	2826.3	29.386	44.8	92.1	26.11	4359	276.25	330.14
005780782-05	OBS	No	185.516291	184.318124	406.2	15.000	53.8	-1.0	26.11	4359	49.87	328.43
005780782-06	OBS	No	582.905555	162.441375	100.5	7.883	41.5	5.2	26.11	4359	30.30	71.36
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005780782-09	OBS	No	458.158942	202.747347	767.2	21.875	11.9	8.1	26.11	4359	92.71	98.38
005780782-10	OBS	No	192.199401	213.478149	32.3	5.697	10.7	8.1	26.11	4359	19.44	313.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005780782-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—NO_FITS—INCONSISTENT_TRANS—CENT_SATURATED
005780782-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005780782-05	OBS	FP	0.00	1	0	0	0	LPP_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005780782-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_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—HALO_GHOST
005780782-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-09	OBS	FP	0.00	1	0	1	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
005780782-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

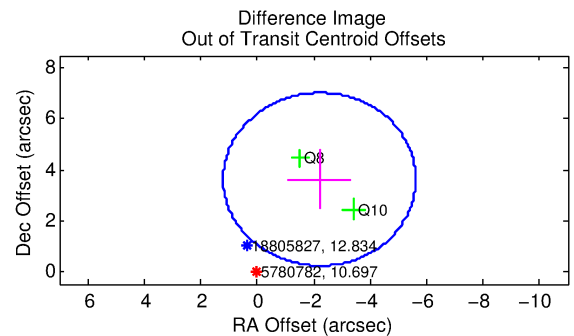
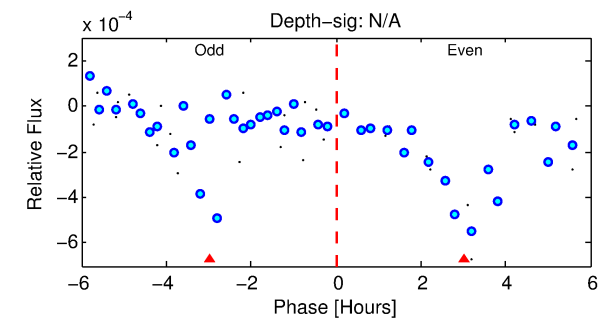
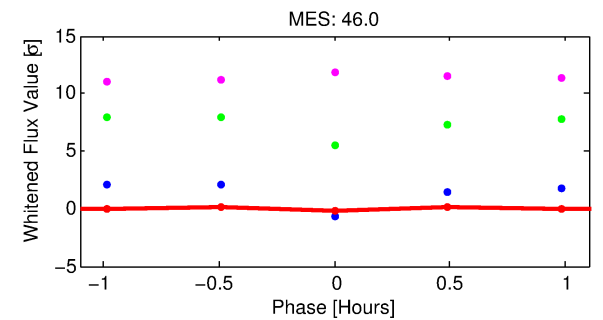
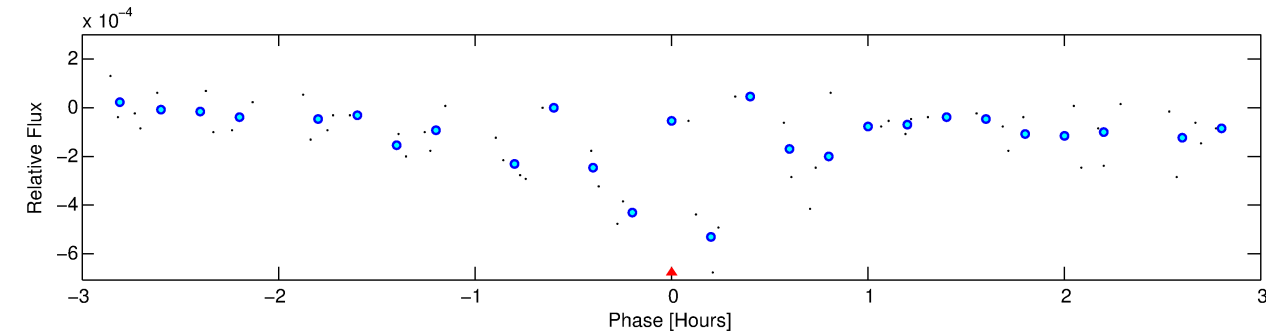
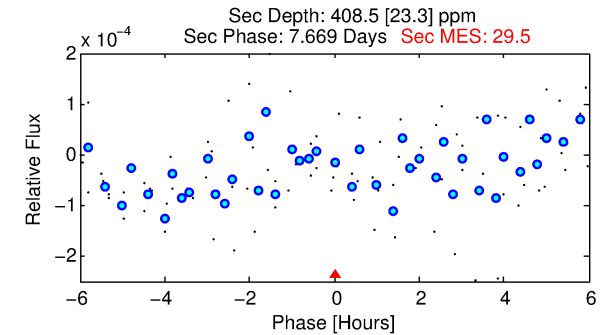
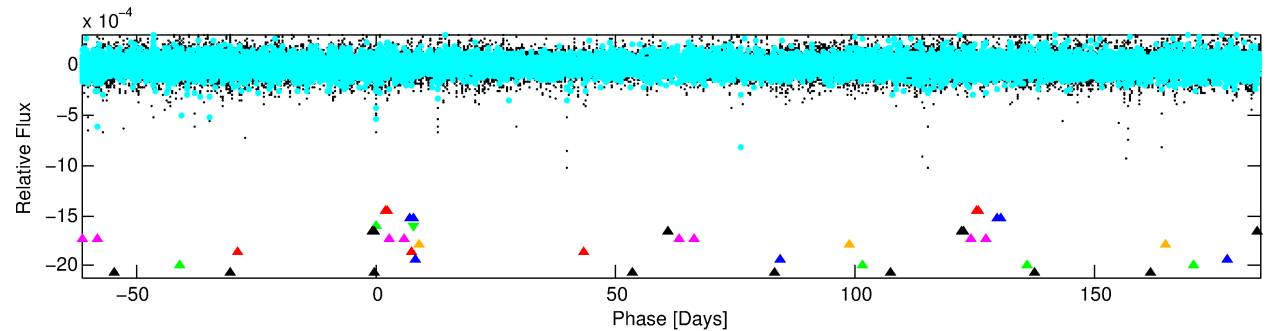
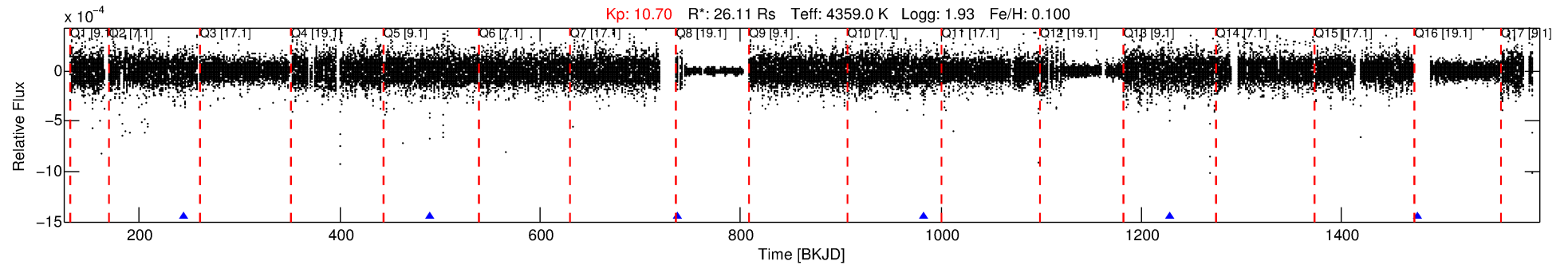
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005780782-03

No Significant Match Found

DV One-Page Summary

KIC: 5780782 Candidate: 3 of 10 Period: 246.340 d



TPS TCE Results:

Period = 246.34019 d
Epoch = 244.2702 BKJD

DV fit results are unavailable

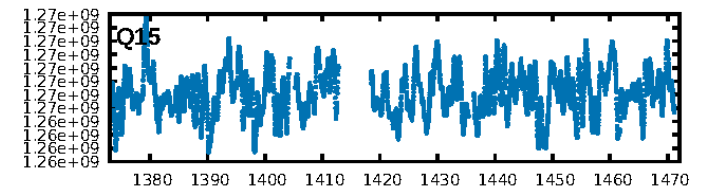
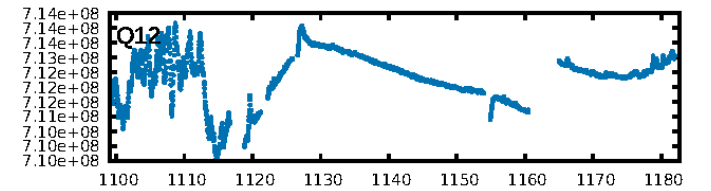
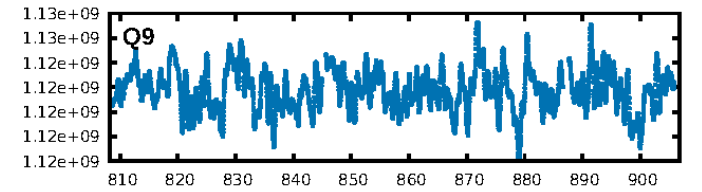
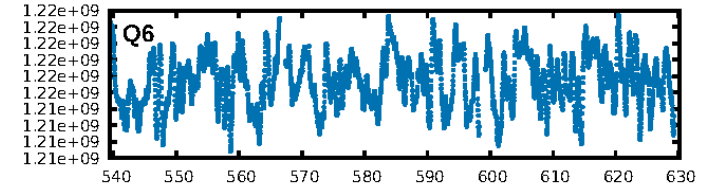
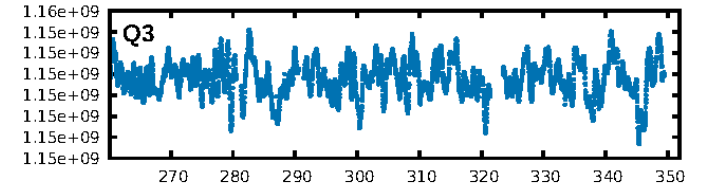
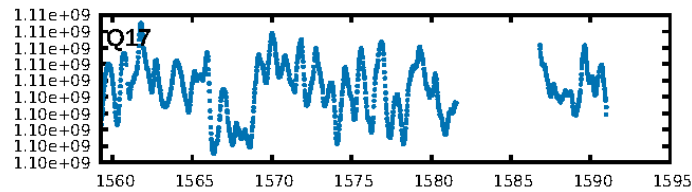
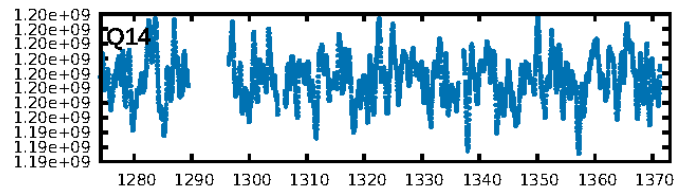
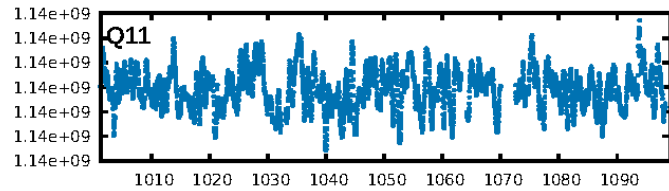
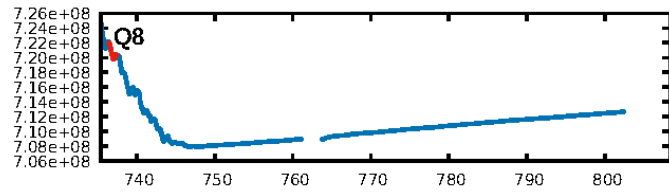
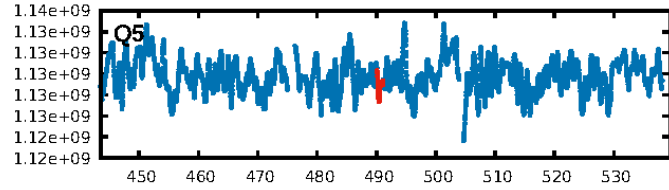
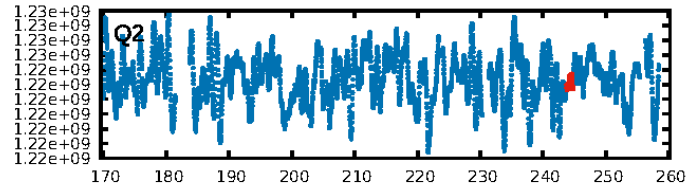
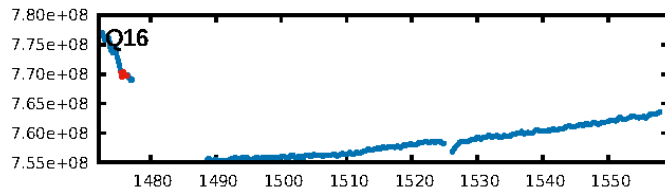
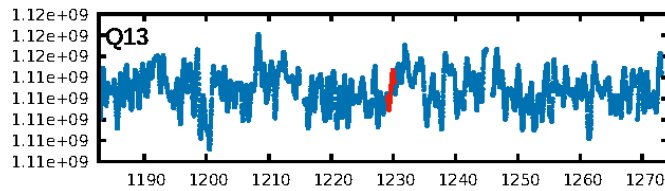
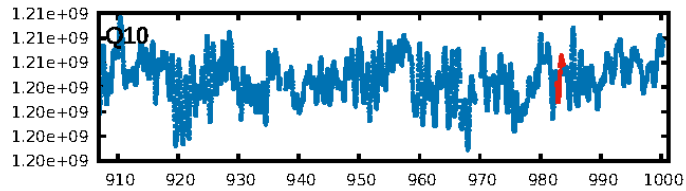
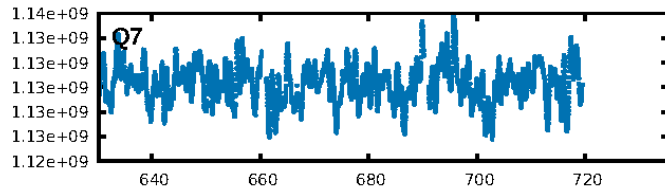
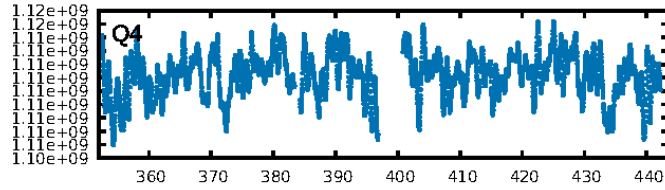
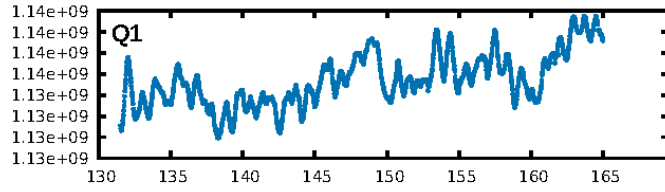
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [94.59σ]
LongPeriod-sig: 100.0% [121.84σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -2.672
Centroid-sig: 83.4%
Centroid-so: 0.413 arcsec [1.22σ]
OotOffset-rm: 4.245 arcsec [3.74σ]
KicOffset-rm: 3.209 arcsec [2.60σ]
OotOffset-st: 1/0/1/0 [2]
KicOffset-st: 1/0/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.67 [2/3]

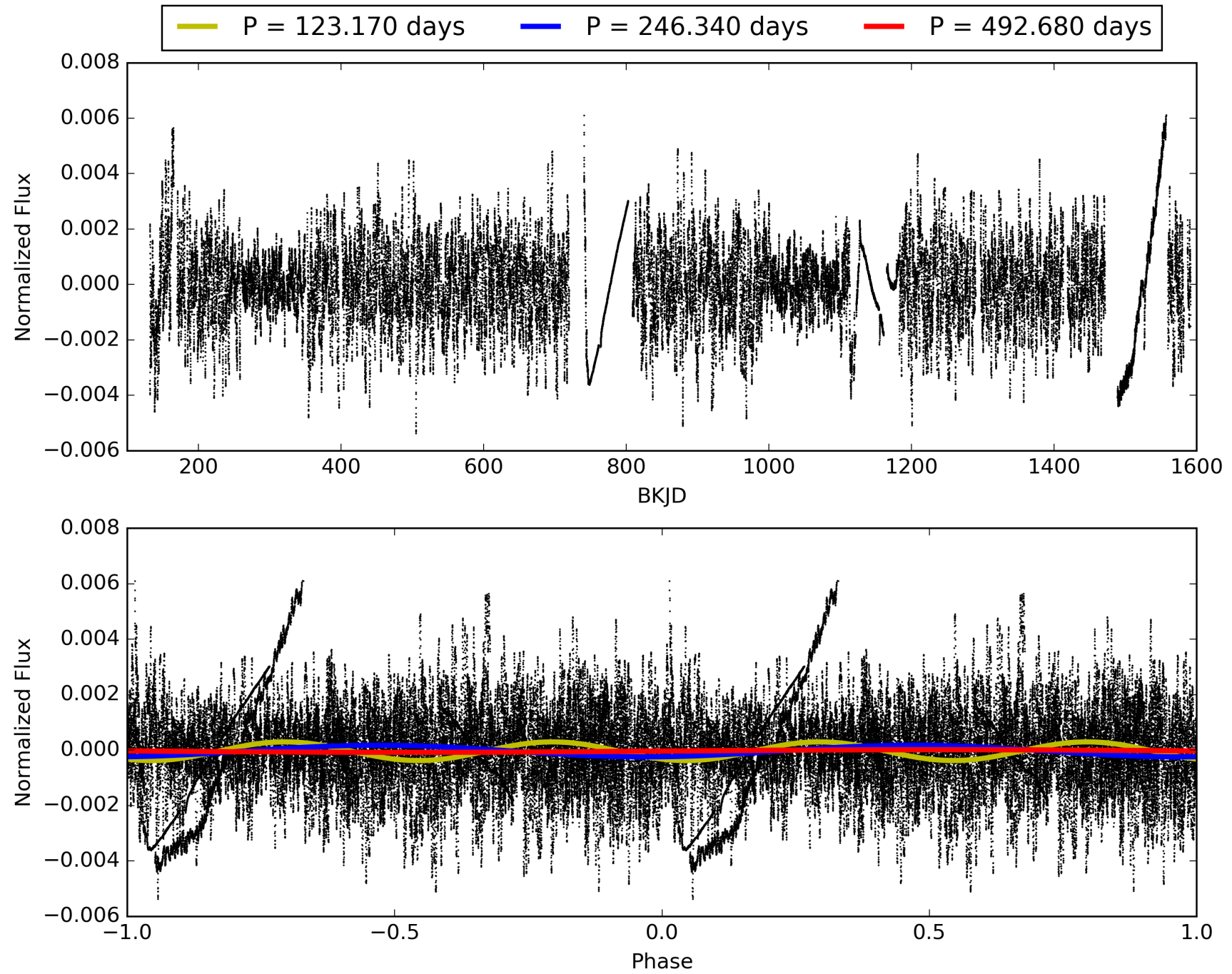
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:43:47 Z

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

TCE 005780782-03, PDC Light Curves

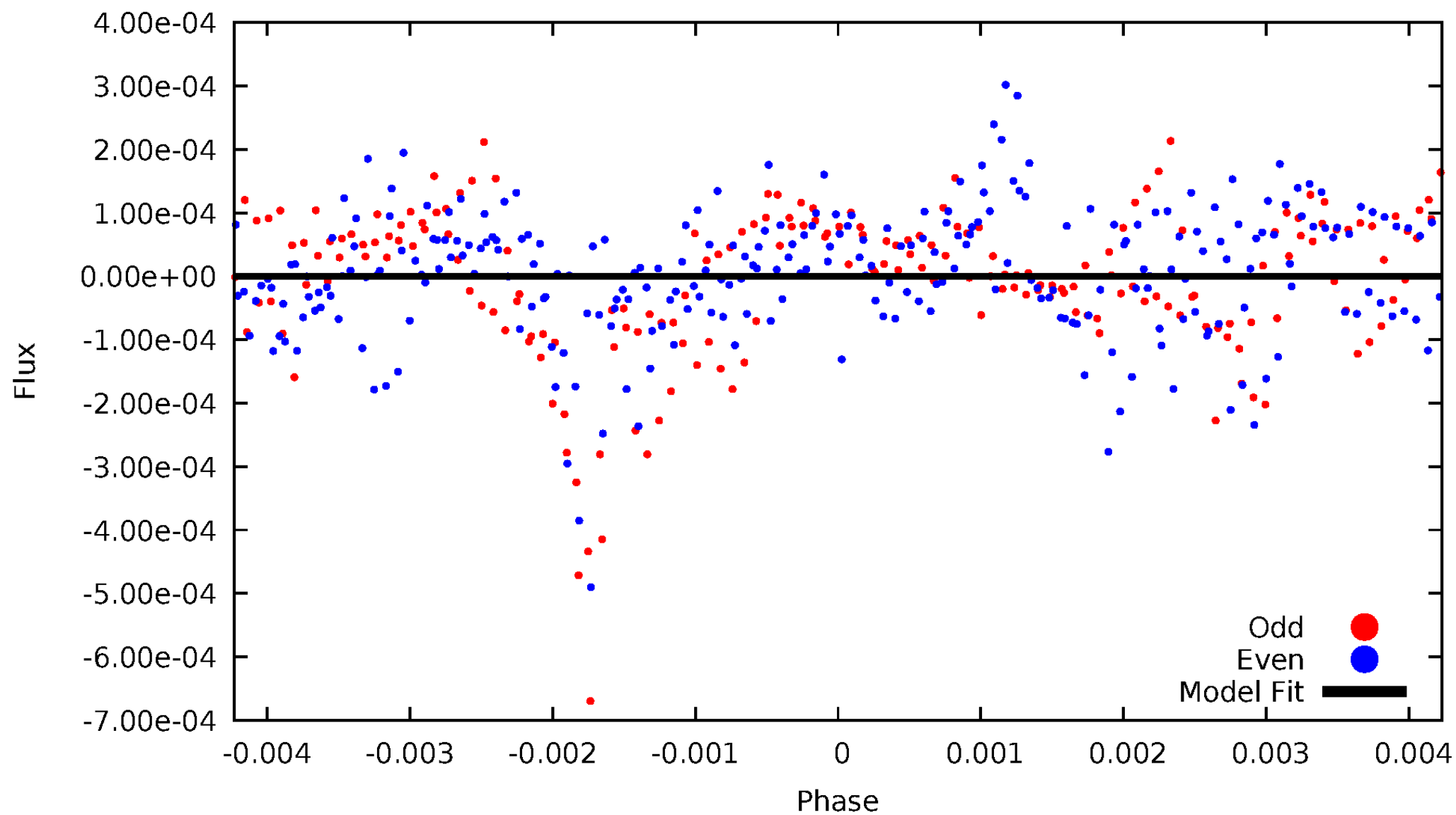


TCE 005780782-03



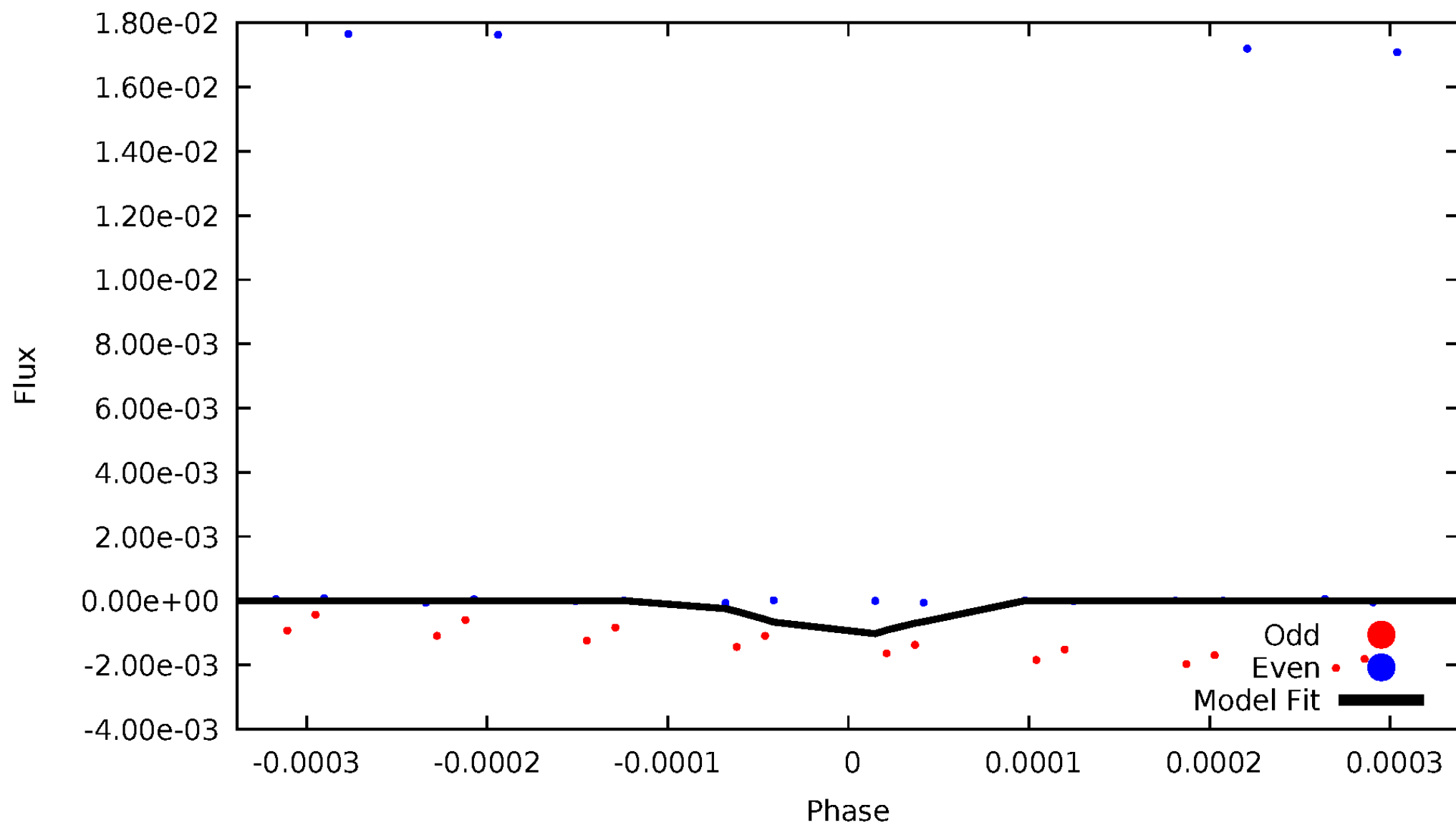
DV Odd/Even

TCE 005780782-03



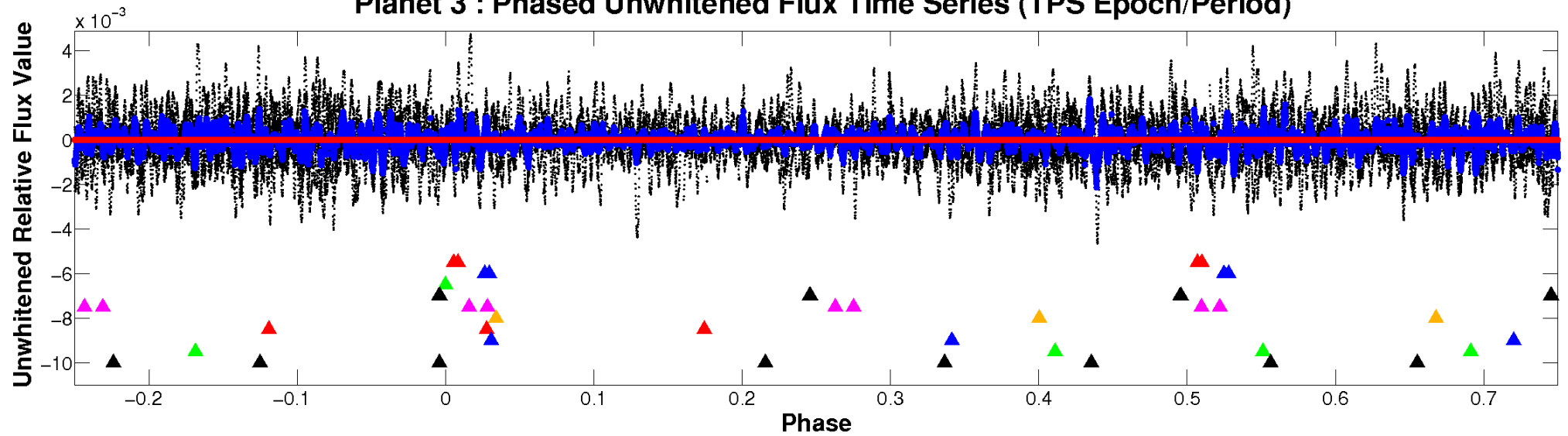
ALT Odd/Even

TCE 005780782-03

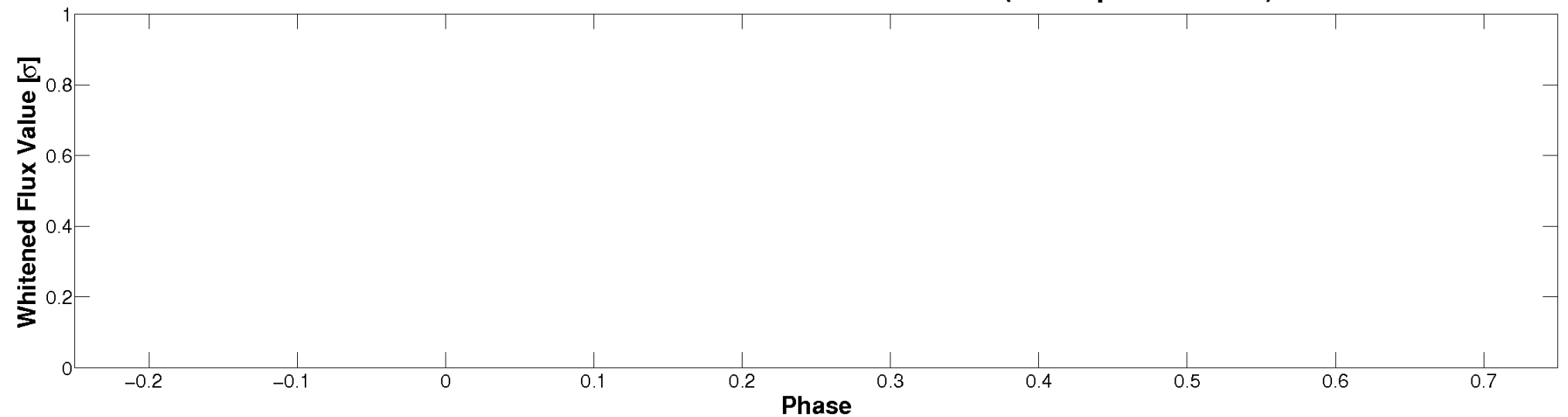


Non-Whitened Vs. Whitened Light Curve

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

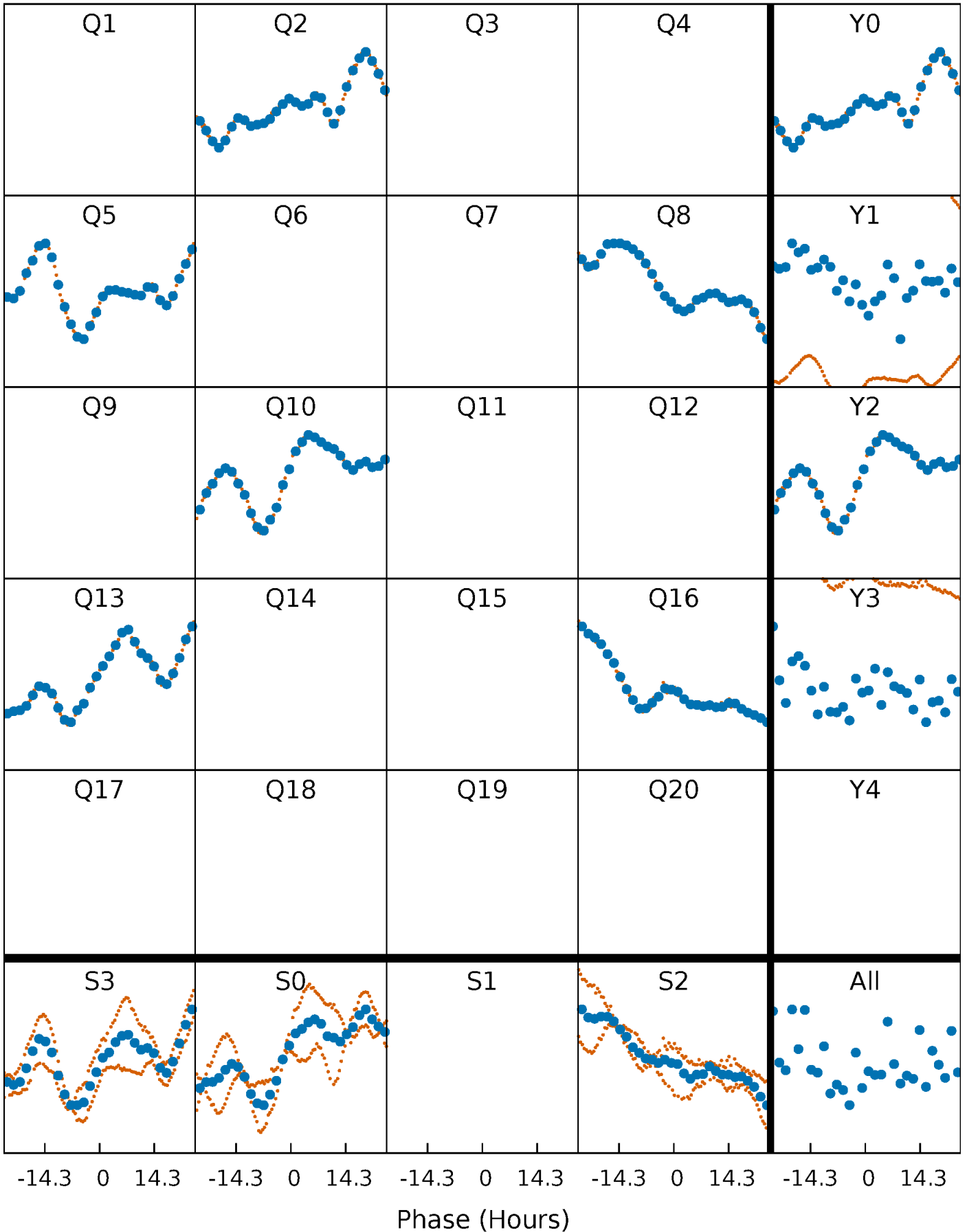


Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 005780782-03 $P=246.340188$ Days $T_0=244.270189$ (BKJD)



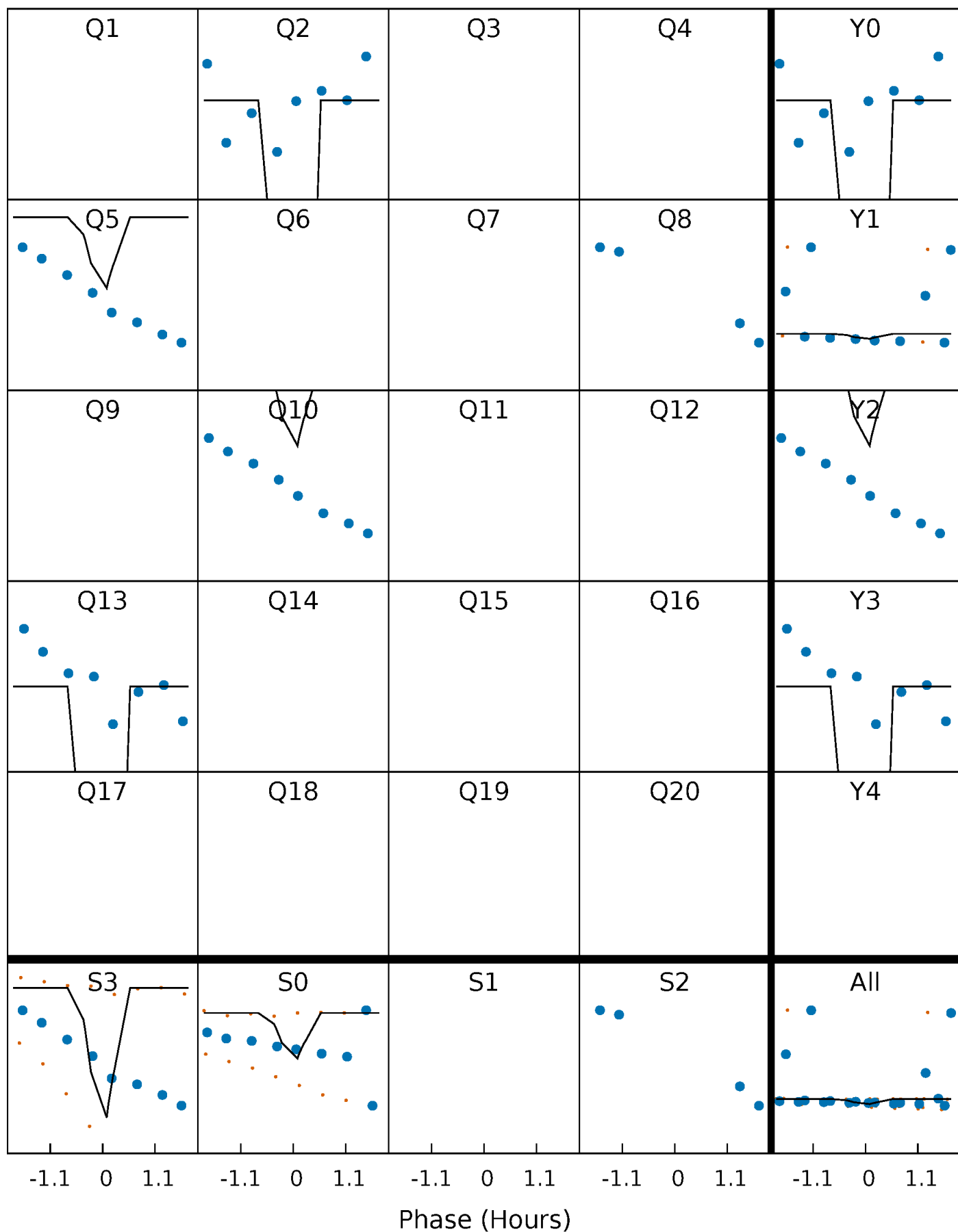
DV Quarter-Phased Transit Curves

TCE 005780782-03 $P=246.340188$ Days $T_0=244.270189$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

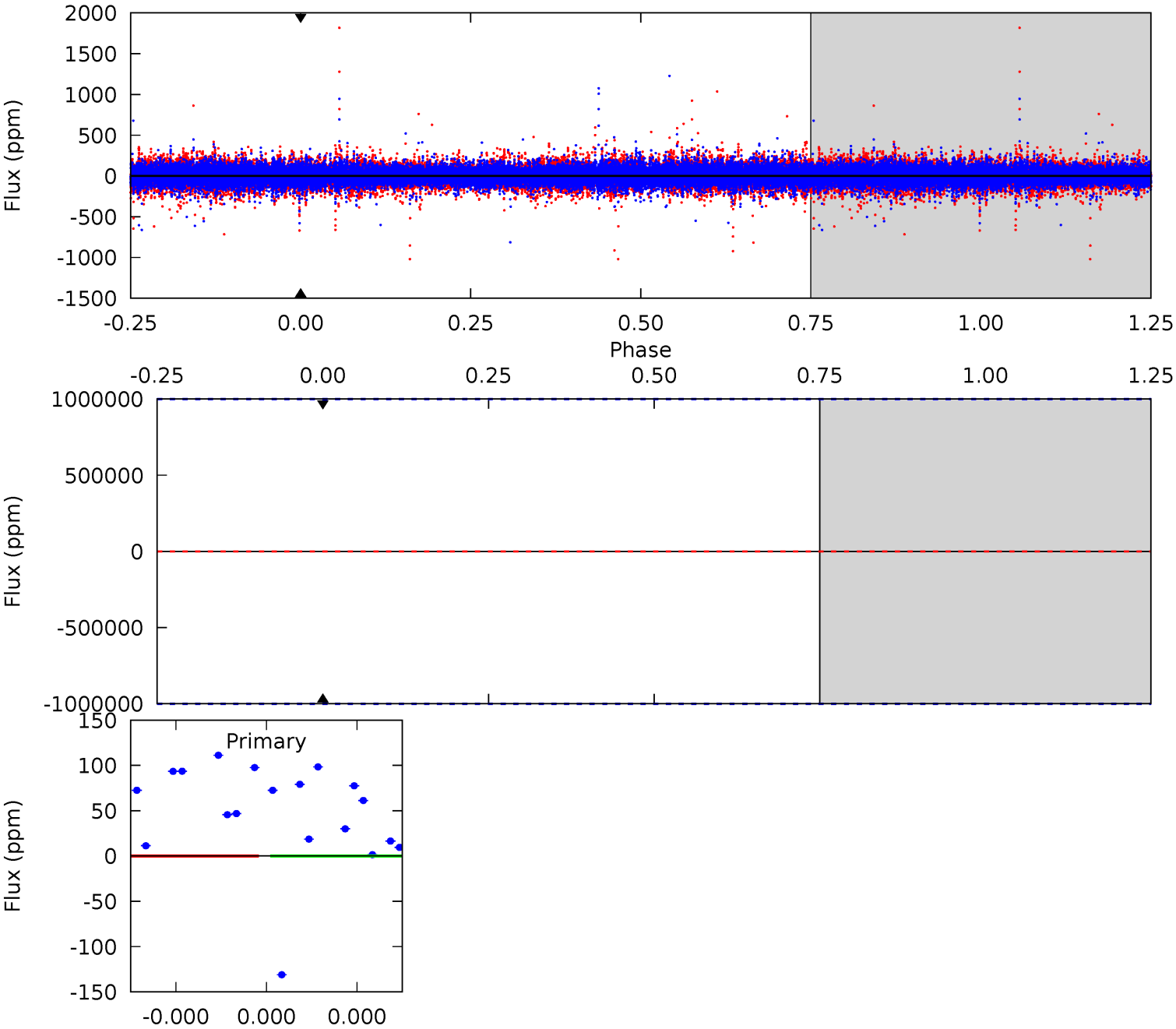
TCE 005780782-03 P=246.340188 Days $T_0=243.833839$ (BKJD)



DV Model-Shift Uniqueness Test

005780782-03, P = 246.340188 Days, E = 244.270189 Days

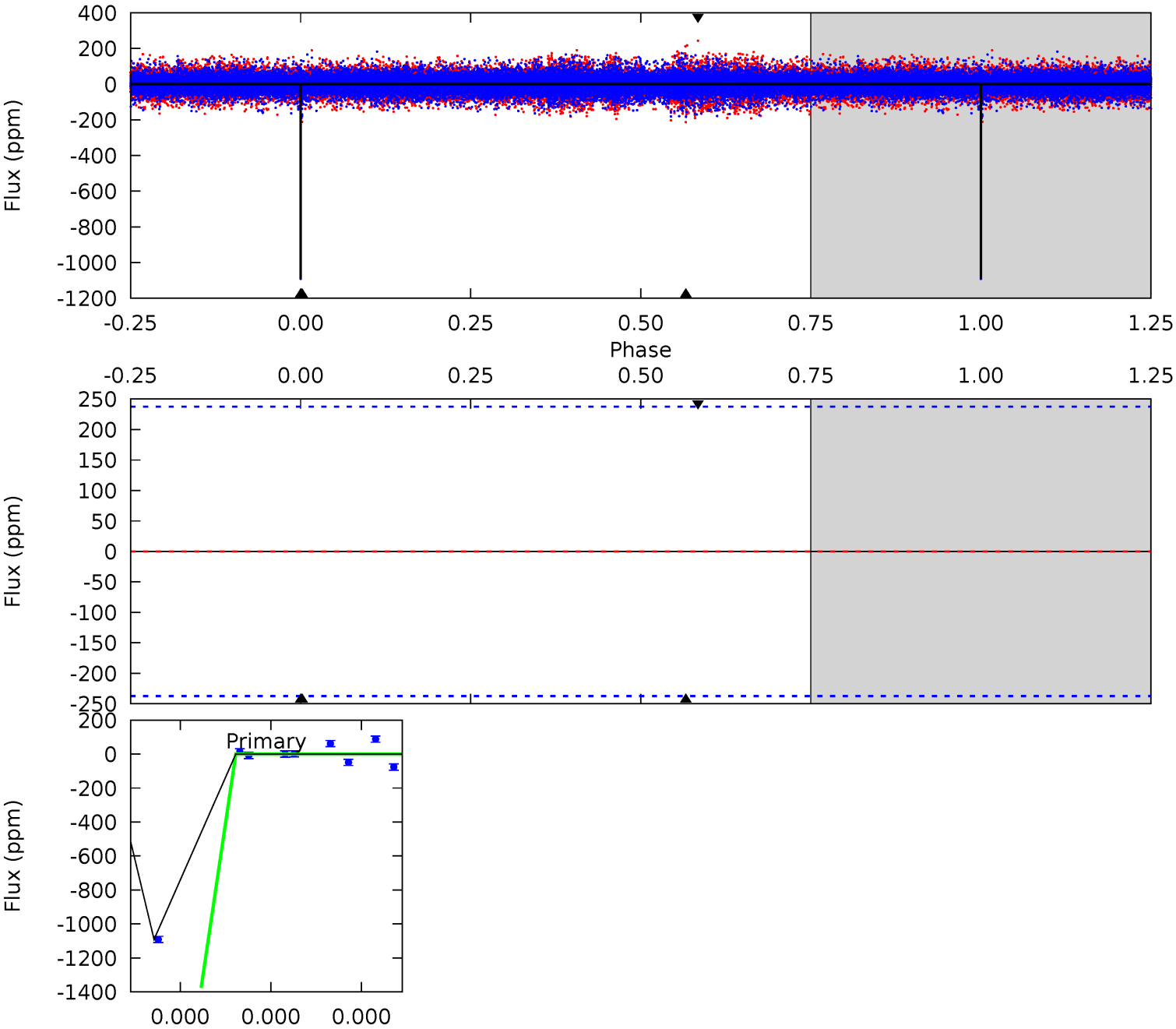
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

005780782-03, P = 246.340188 Days, E = 243.833839 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	5.77	3.78	0	0	0	0	0	32.1	1.04	0	0



Stellar Parameters For KIC 005780782

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4359^{+39}_{-91}	$1.933^{+0.030}_{-0.030}$	$0.100^{+0.100}_{-0.200}$	$26.107^{+5.247}_{-5.771}$	$2.131^{+0.865}_{-0.865}$	$0.000^{+0.000}_{-0.000}$
	+1%/-2%	+2%/-2%	+100%/-200%	+20%/-22%	+41%/-41%	+34%/-10%
Source	SPE74	AST11	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 005780782-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$207.96^{+225.19}_{-144.06}$	1384^{+35}_{-47}	3987^{+7551}_{-14047}	39^{+2412}_{-1728}
Alt.	-0 ± 41	$228.80^{+245.50}_{-150.33}$	1378^{+42}_{-42}	-2058^{+4194}_{-314}	$0.008^{+0.684}_{-0.835}$

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

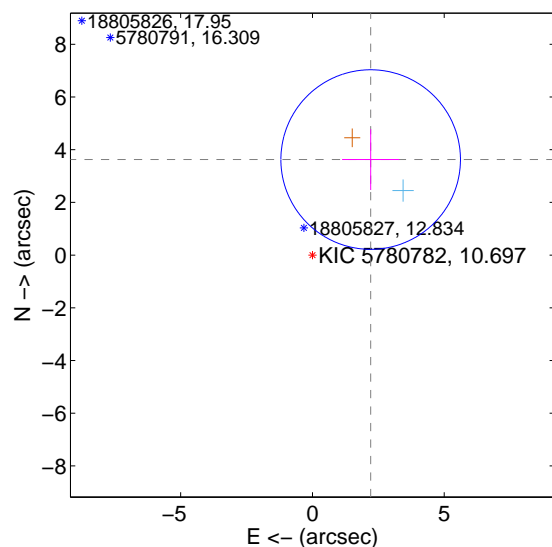
Supplemental centroid analysis for 005780782-03. **Kepler magnitude: 10.70.** Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

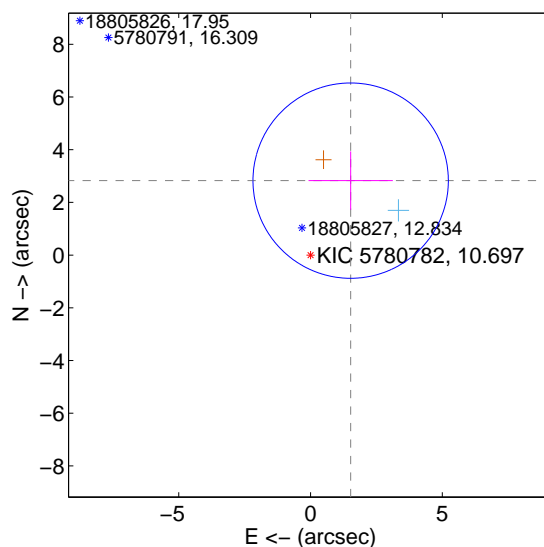
The direct PRF centroid is offset from the target star catalog position by about 0.76 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.245 ± 1.135	3.74	-2.209 ± 1.086	3.625 ± 1.153
PRF-fit source offset from KIC position	3.209 ± 1.235	2.60	-1.523 ± 1.598	2.825 ± 1.108
photometric centroid source offset	0.41 ± 0.34	1.22	-0.05 ± 0.27	0.41 ± 0.34

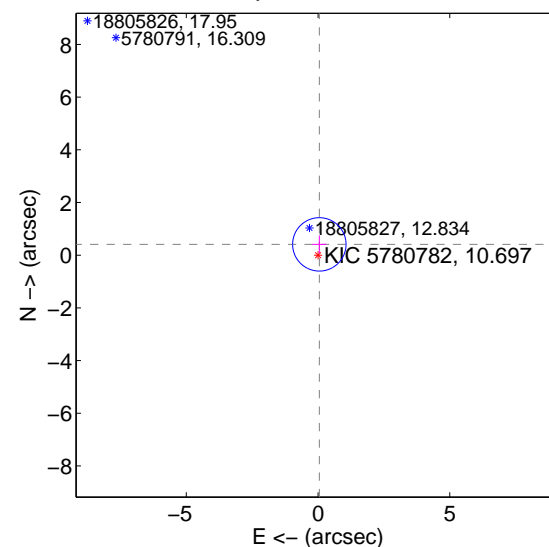
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

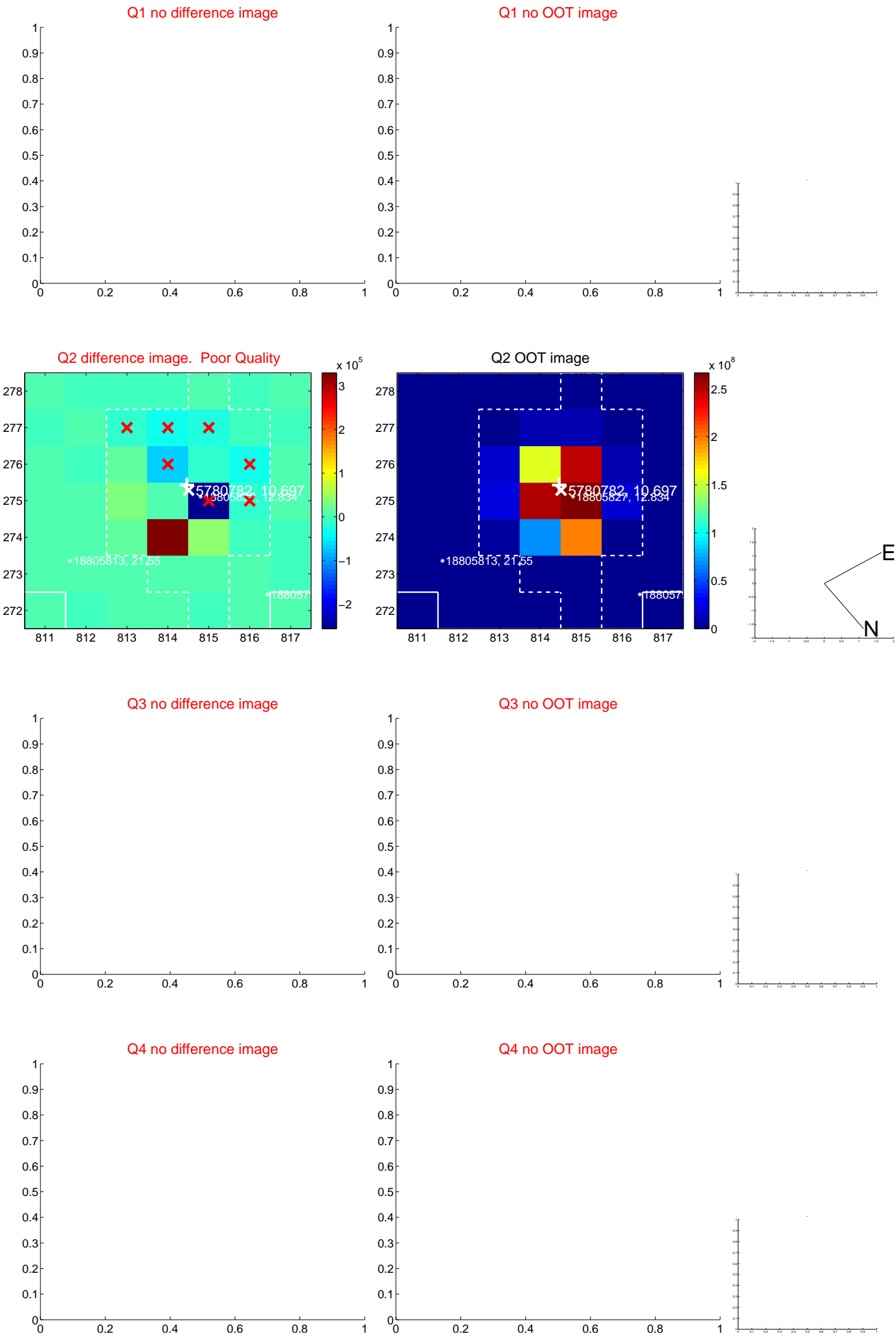


offset from photometric centroids



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.

Q5 no difference image



Q5 no OOT image



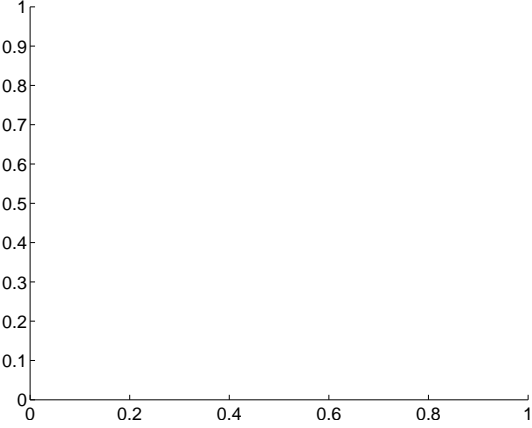
Q6 no difference image



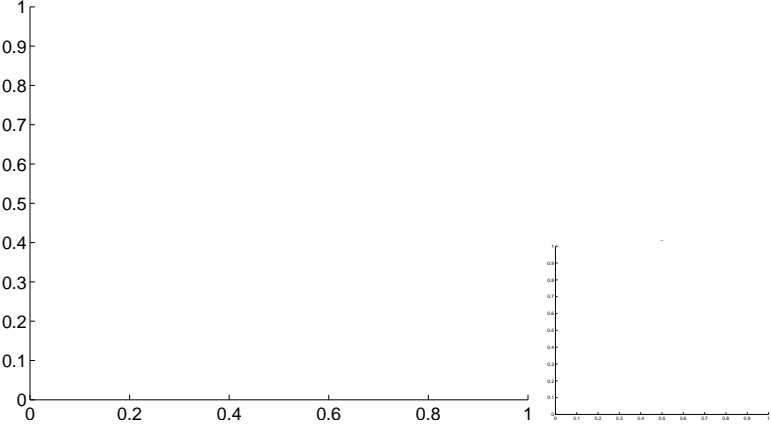
Q6 no OOT image



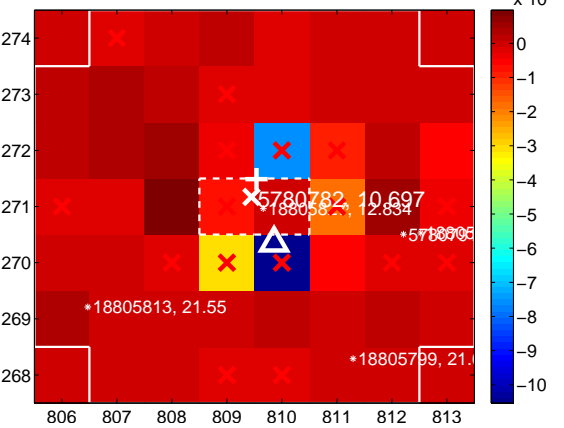
Q7 no difference image



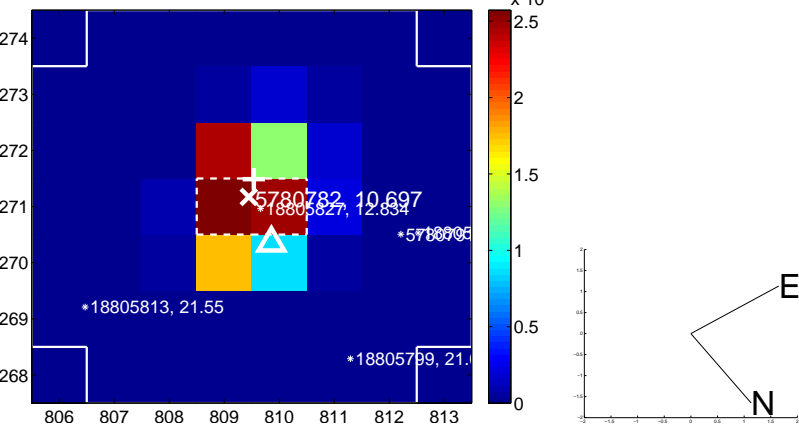
Q7 no OOT image



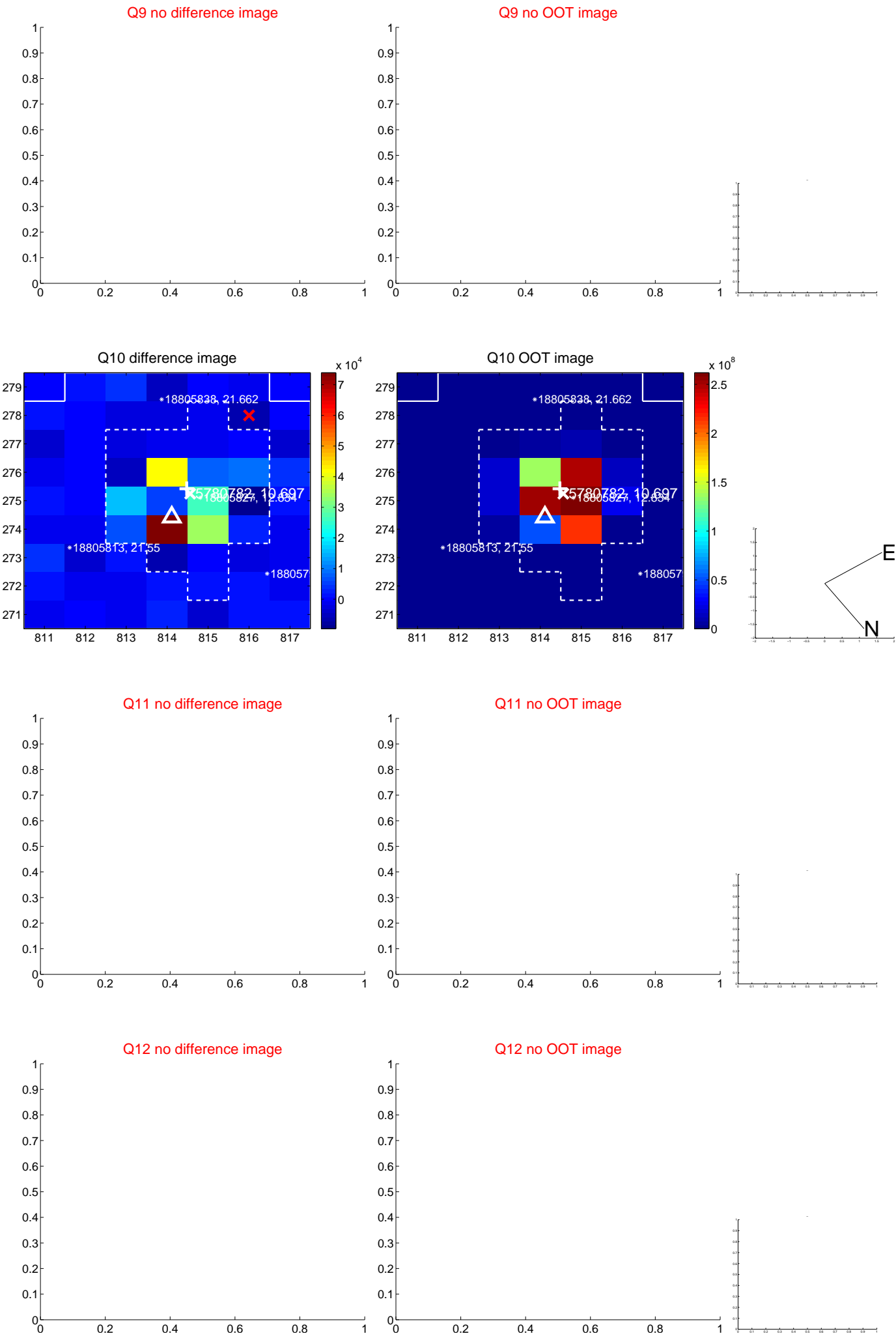
Q8 difference image. Poor Quality



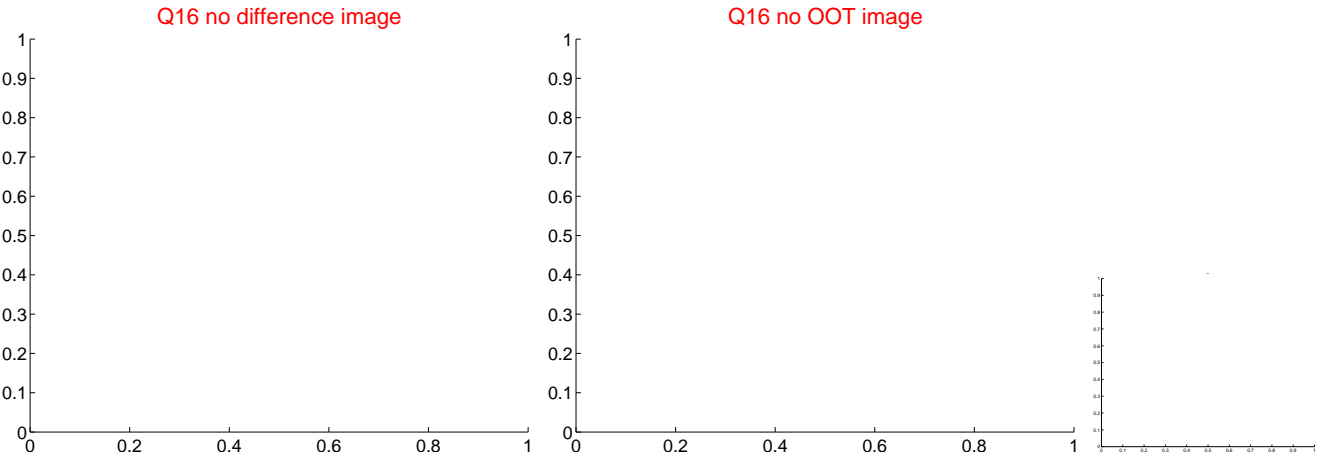
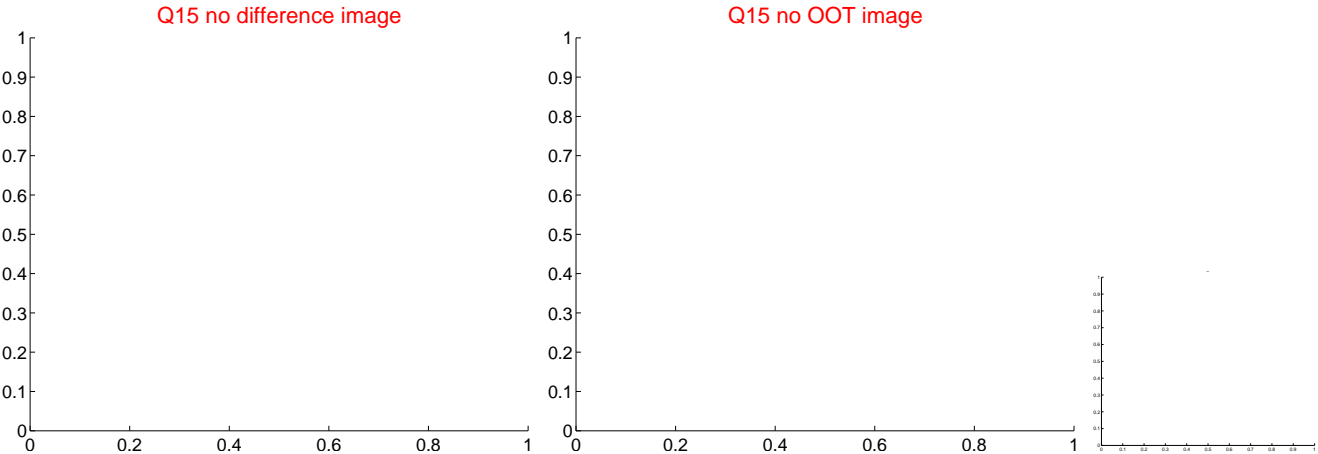
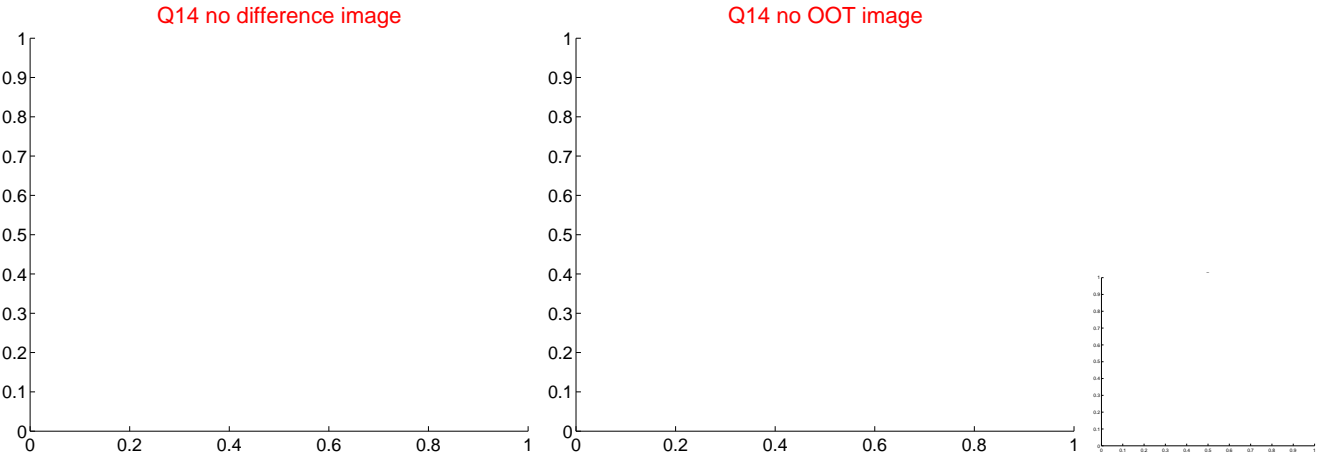
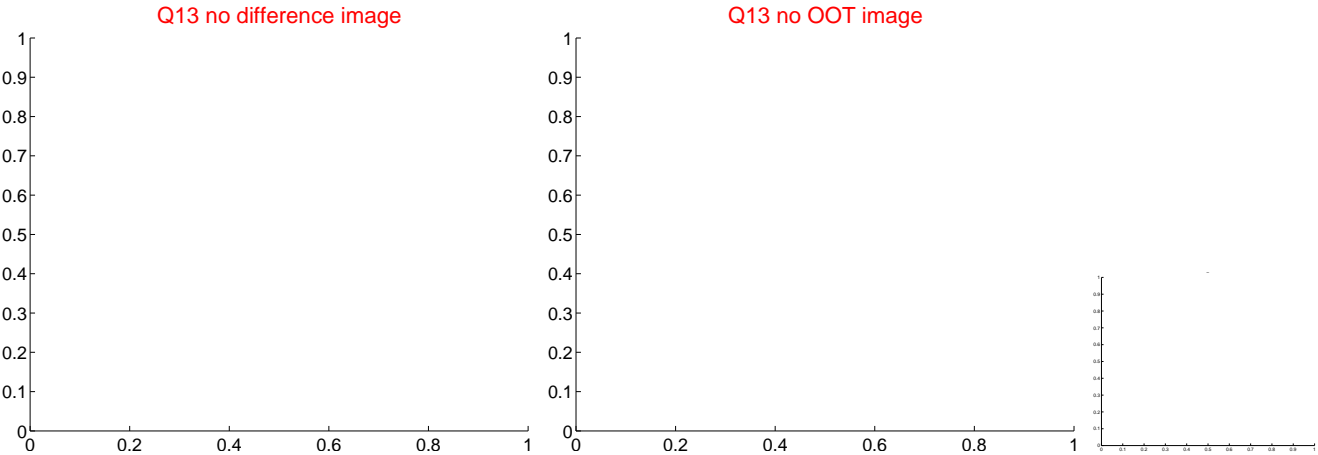
Q8 OOT image

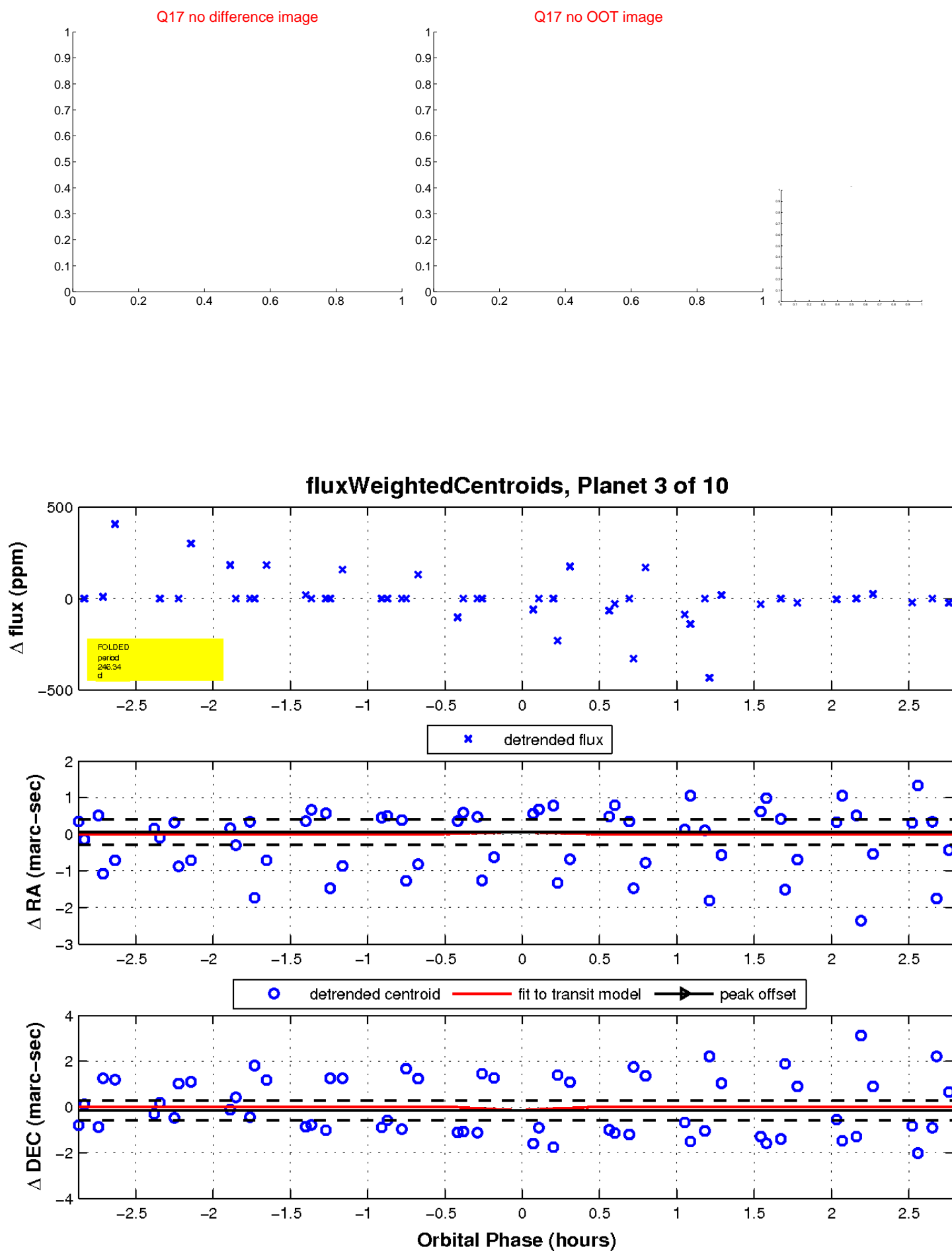


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



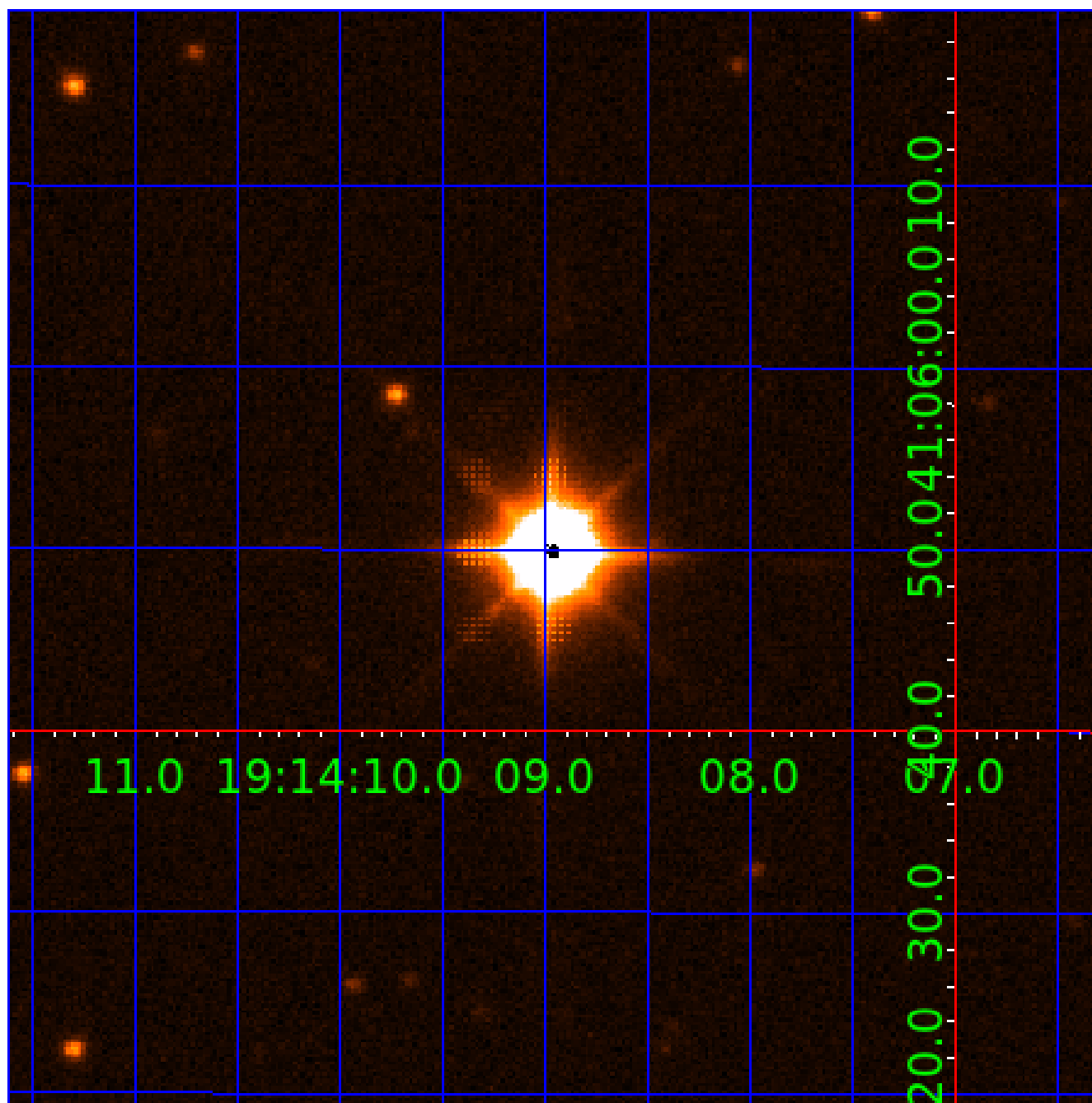
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.





UKIRT Image

Declination



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})
005780782-01	OBS	No	369.146663	369.893592	2064.7	20.710	97.5	118.9	26.11	4359	198.29	131.22
005780782-02	OBS	No	369.894878	373.565961	1448.6	16.966	81.6	82.3	26.11	4359	206.01	130.87
005780782-03	OBS	No	246.340188	244.270189	398.8	12.500	46.0	-1.0	26.11	4359	49.42	225.03
005780782-04	OBS	No	184.793502	181.491110	2826.3	29.386	44.8	92.1	26.11	4359	276.25	330.14
005780782-05	OBS	No	185.516291	184.318124	406.2	15.000	53.8	-1.0	26.11	4359	49.87	328.43
005780782-06	OBS	No	582.905555	162.441375	100.5	7.883	41.5	5.2	26.11	4359	30.30	71.36
005780782-07	OBS	No	456.526196	287.257117	110.3	1.000	39.6	2.2	26.11	4359	34.58	98.85
005780782-08	OBS	No	569.190679	175.351019	517.0	10.776	38.8	15.3	26.11	4359	57.86	73.67
005780782-09	OBS	No	458.158942	202.747347	767.2	21.875	11.9	8.1	26.11	4359	92.71	98.38
005780782-10	OBS	No	192.199401	213.478149	32.3	5.697	10.7	8.1	26.11	4359	19.44	313.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005780782-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—NO_FITS—INCONSISTENT_TRANS—CENT_SATURATED
005780782-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005780782-05	OBS	FP	0.00	1	0	0	0	LPP_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005780782-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_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—HALO_GHOST
005780782-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-09	OBS	FP	0.00	1	0	1	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
005780782-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

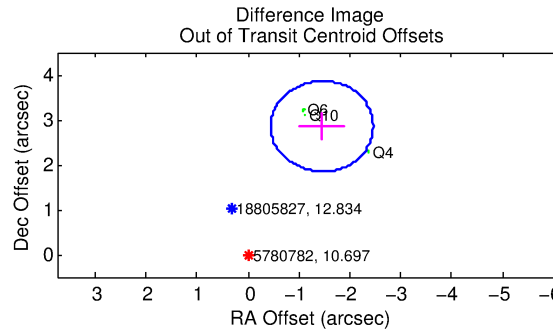
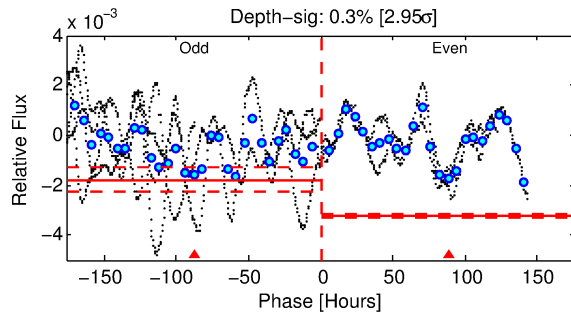
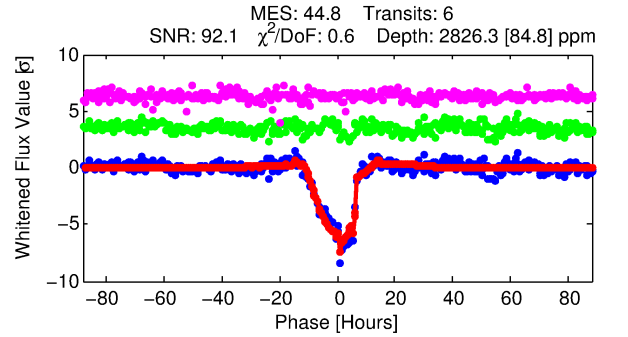
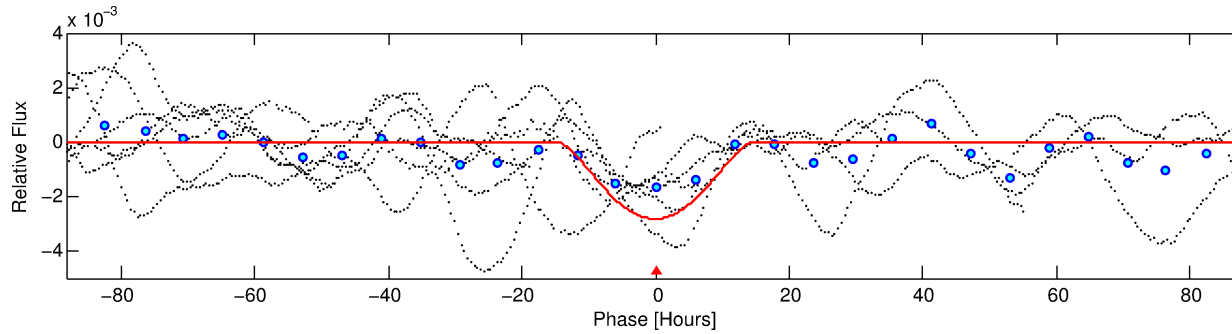
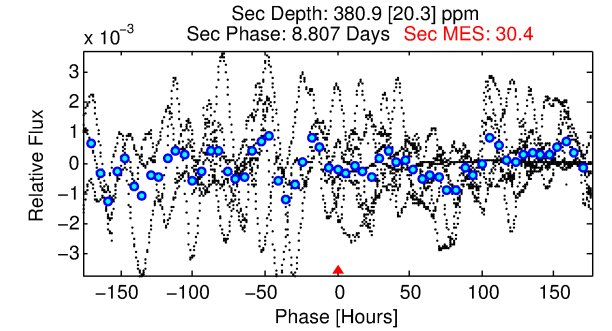
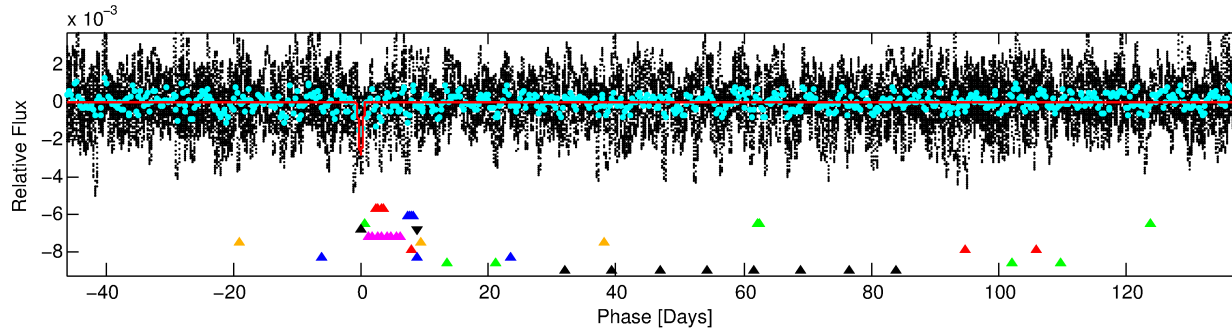
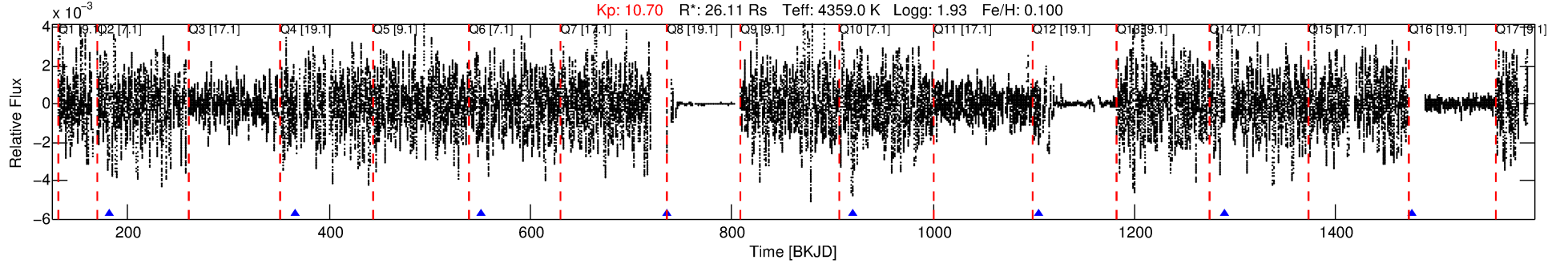
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005780782-04

No Significant Match Found

DV One-Page Summary

KIC: 5780782 Candidate: 4 of 10 Period: 184.794 d



DV Fit Results:

Period = 184.79350 [0.00546] d
Epoch = 181.4911 [0.0170] BKJD
Rp/R* = 0.0970 [0.0433]
a/R* = 21.89 [1.92]
b = 1.00 [0.06]
Seff = 330.14 [57.95]
Teq = 1087 [48] K
Rp = 276.24 [137.67] Re
a = 0.8172 [0.1219] AU
Ag = 1.83 [1.67] [0.50σ]
Teffp = 1956 [439] K [1.97σ]

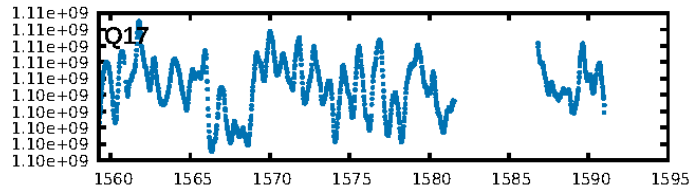
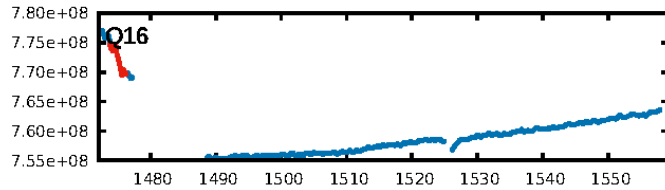
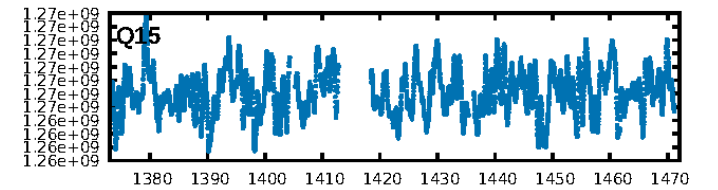
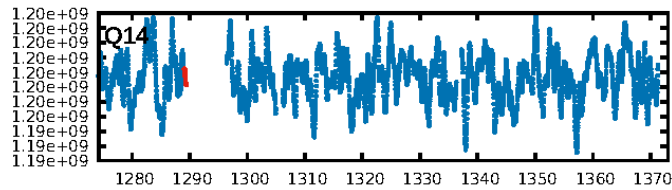
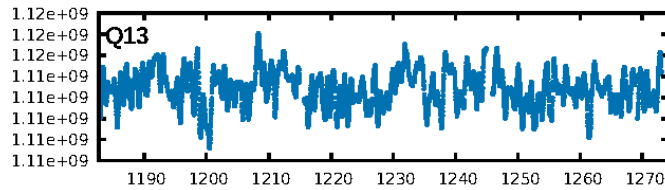
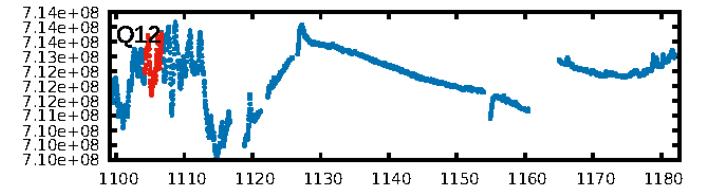
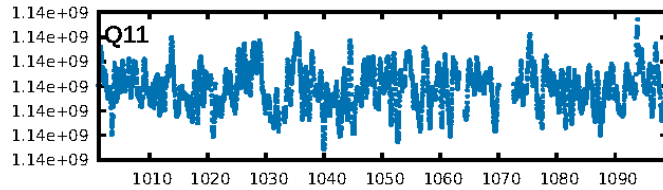
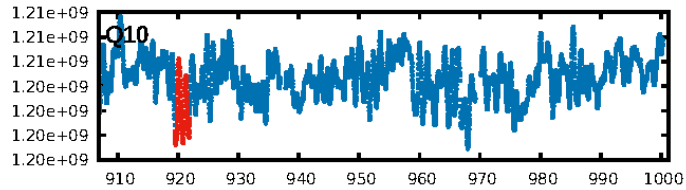
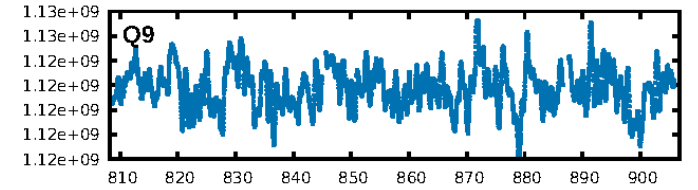
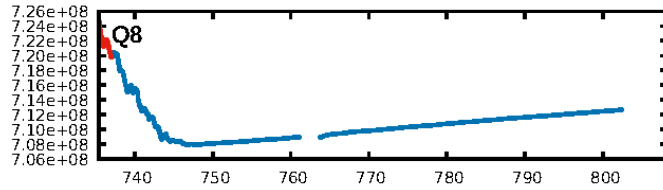
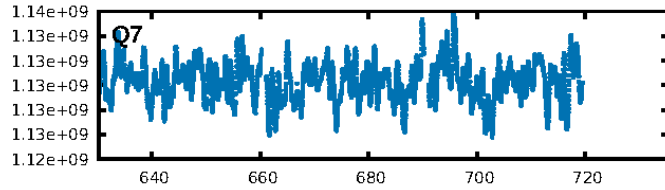
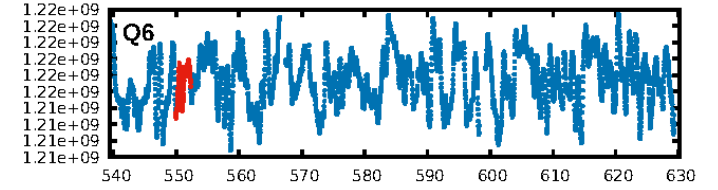
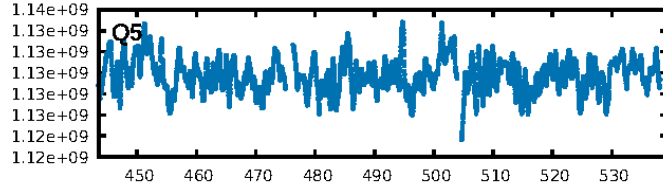
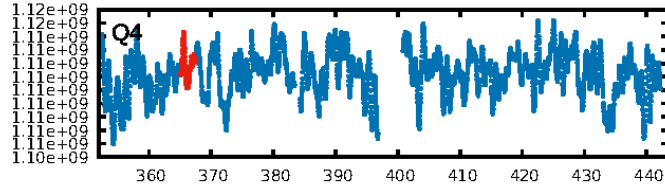
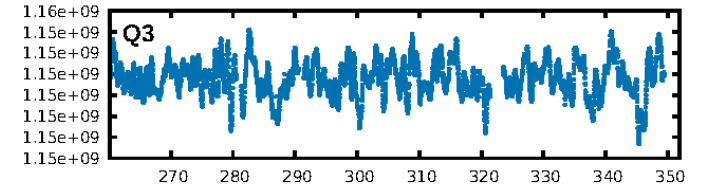
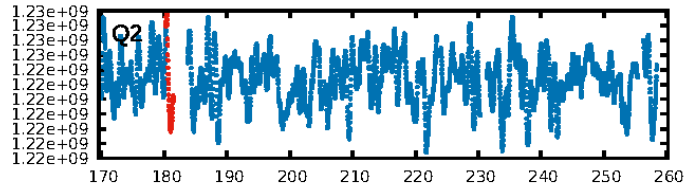
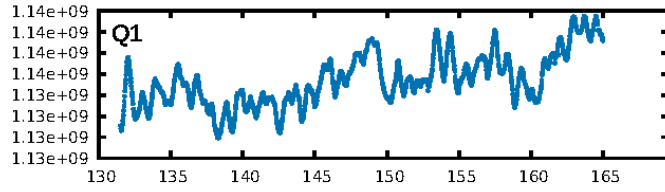
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 40.1% [0.53σ]
ModelChiSquare2-sig: 1.1%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -2.13
Centroid-sig: 2.0%
Centroid-so: 0.779 arcsec [2.38σ]
OotOffset-rm: 3.204 arcsec [9.54σ]
KicOffset-rm: 2.174 arcsec [9.05σ]
OotOffset-st: 2/0/1/0 [3]
KicOffset-st: 2/0/1/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.33 [1/3]

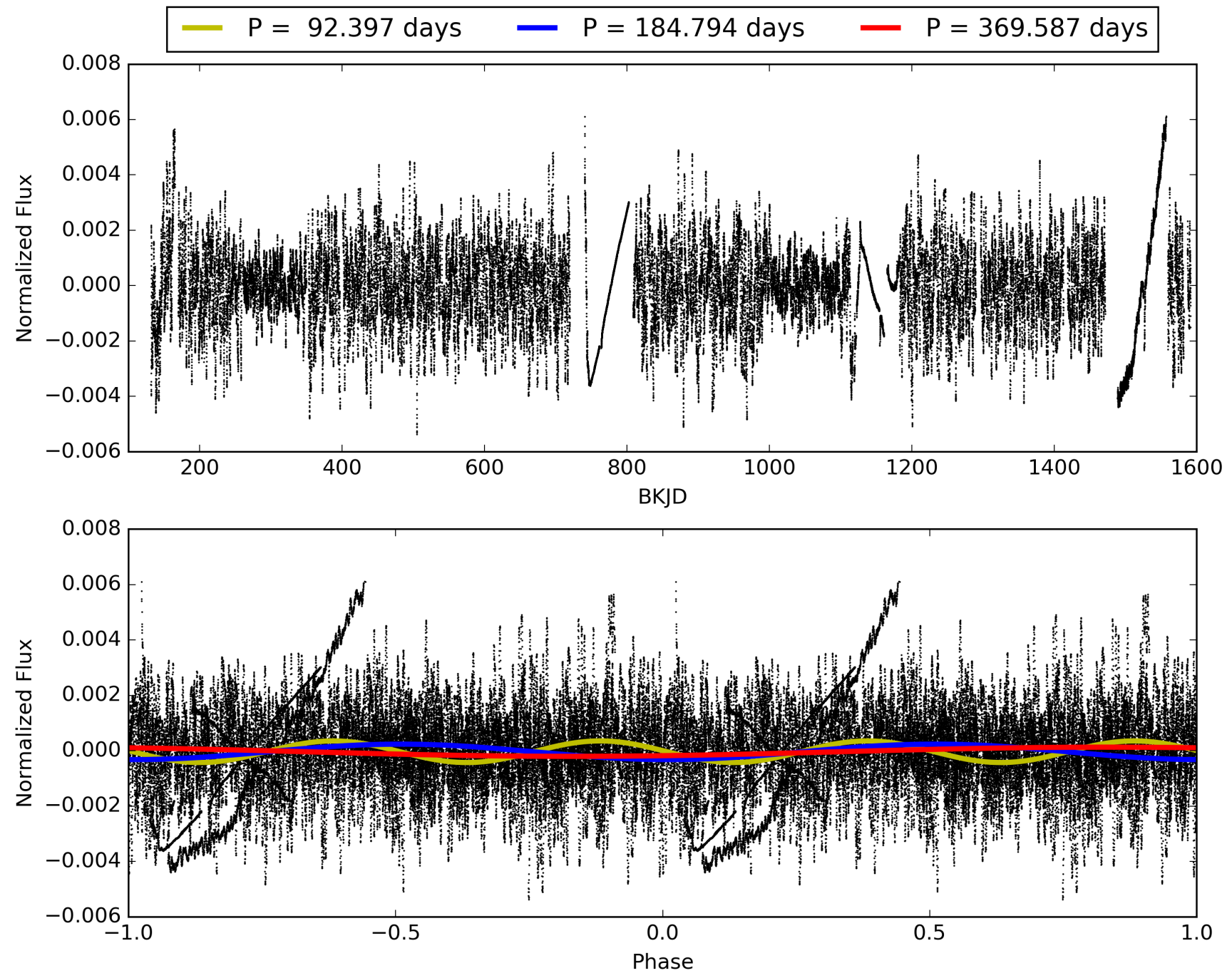
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:43:55 Z

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

TCE 005780782-04, PDC Light Curves

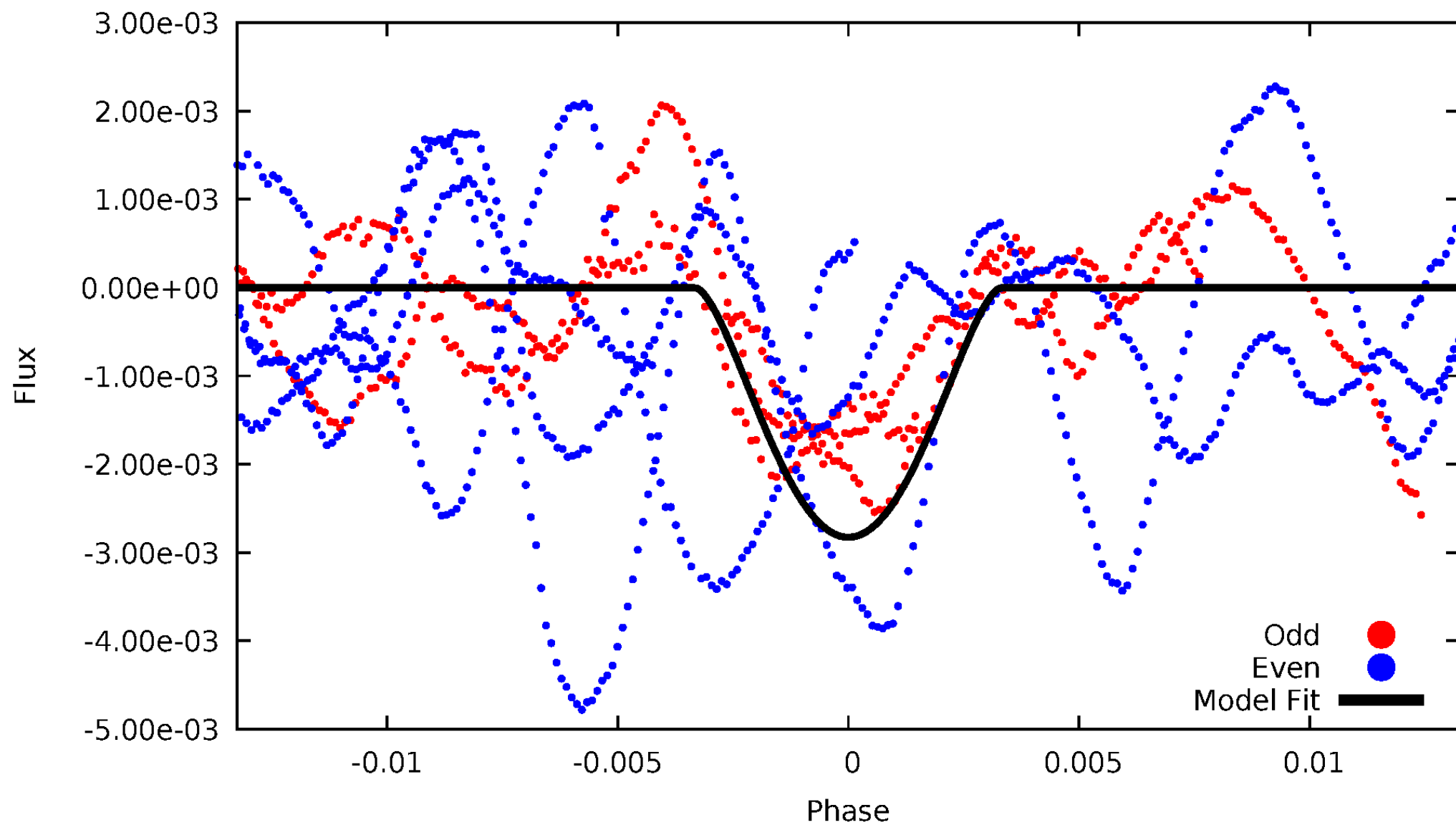


TCE 005780782-04



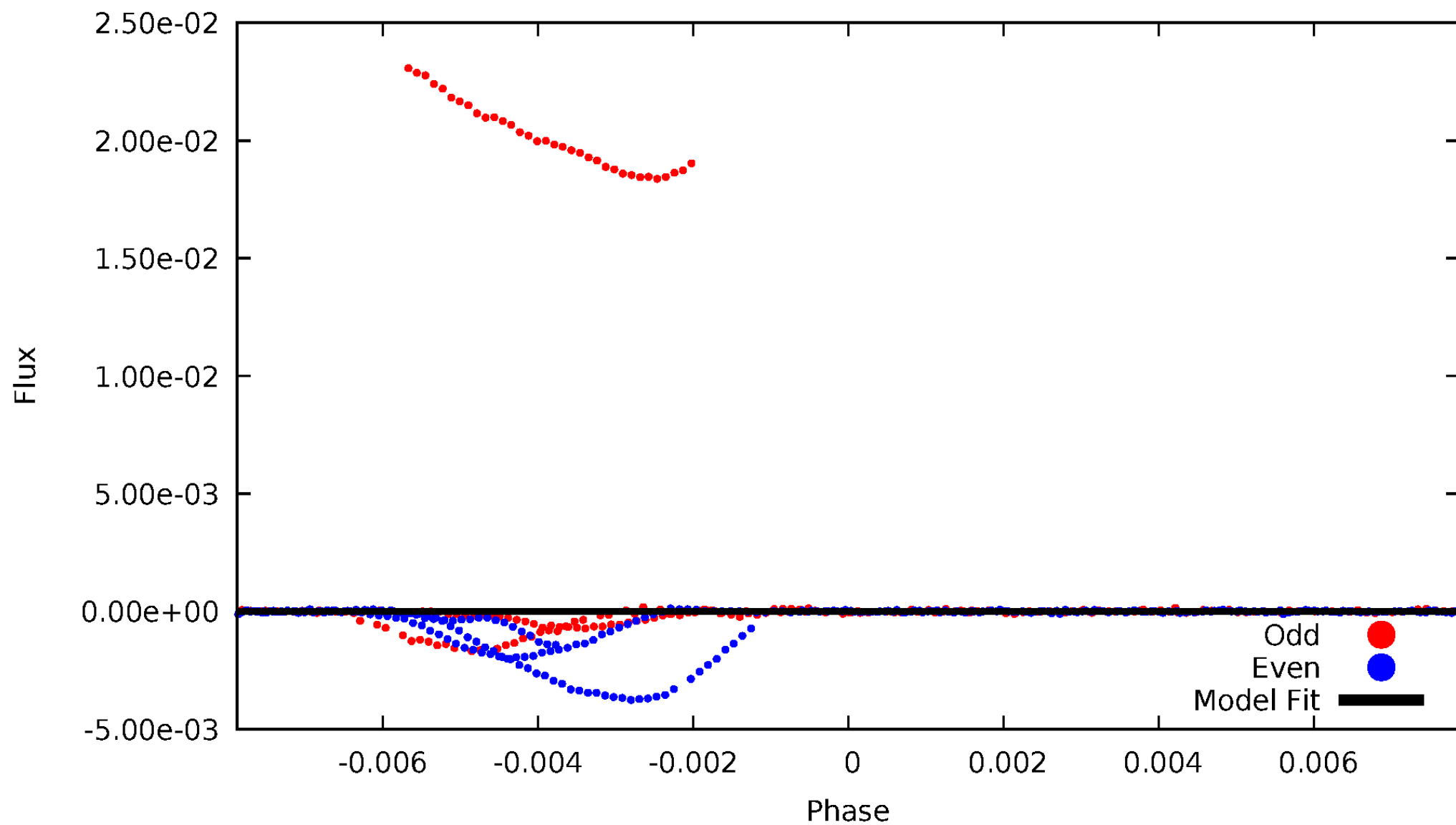
DV Odd/Even

TCE 005780782-04



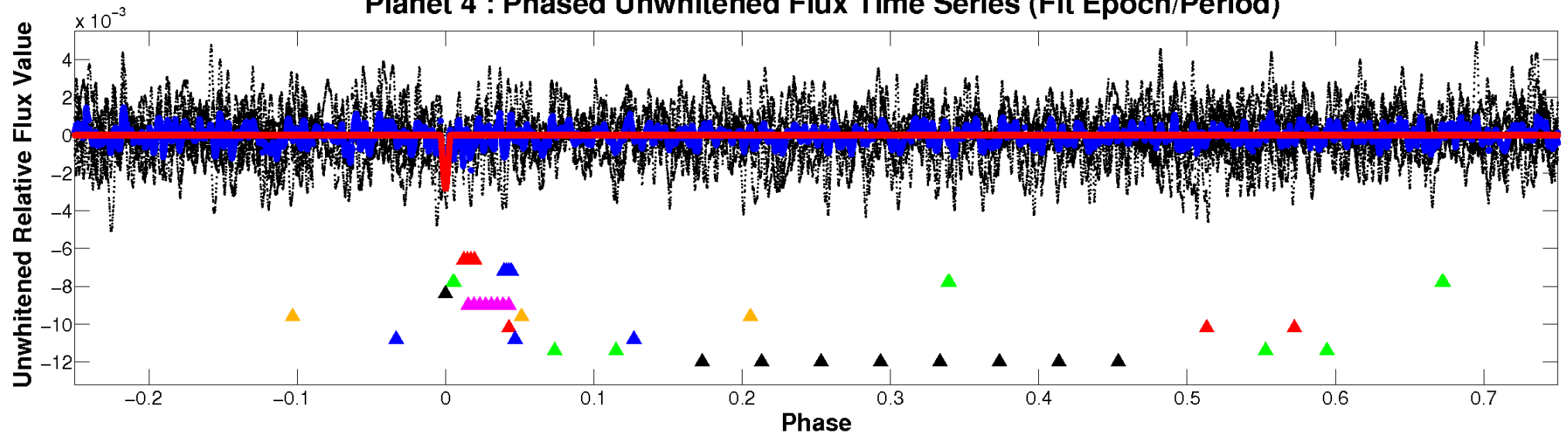
ALT Odd/Even

TCE 005780782-04

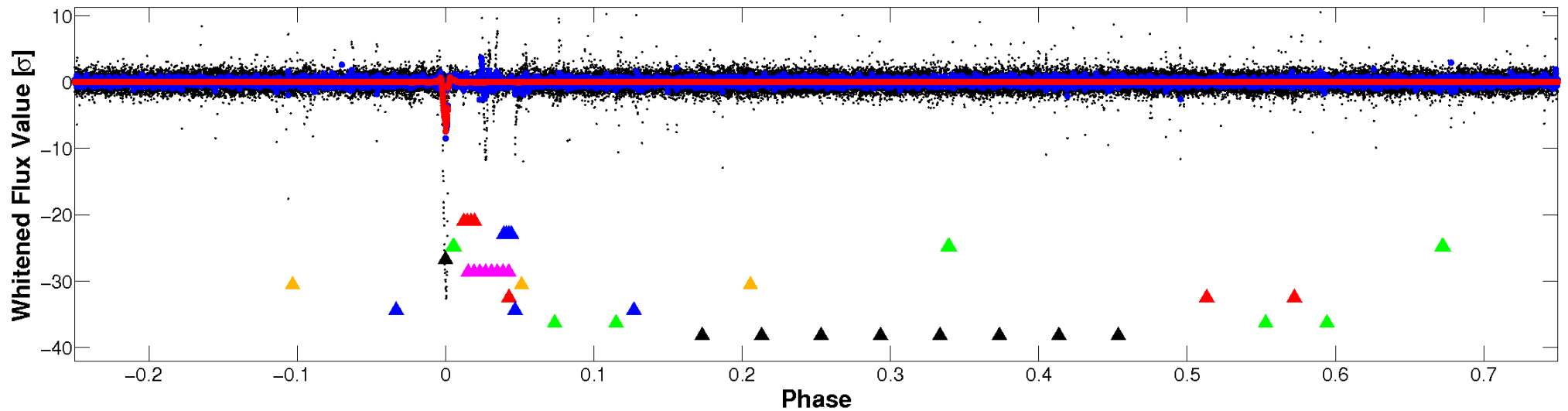


Non-Whitened Vs. Whitened Light Curve

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

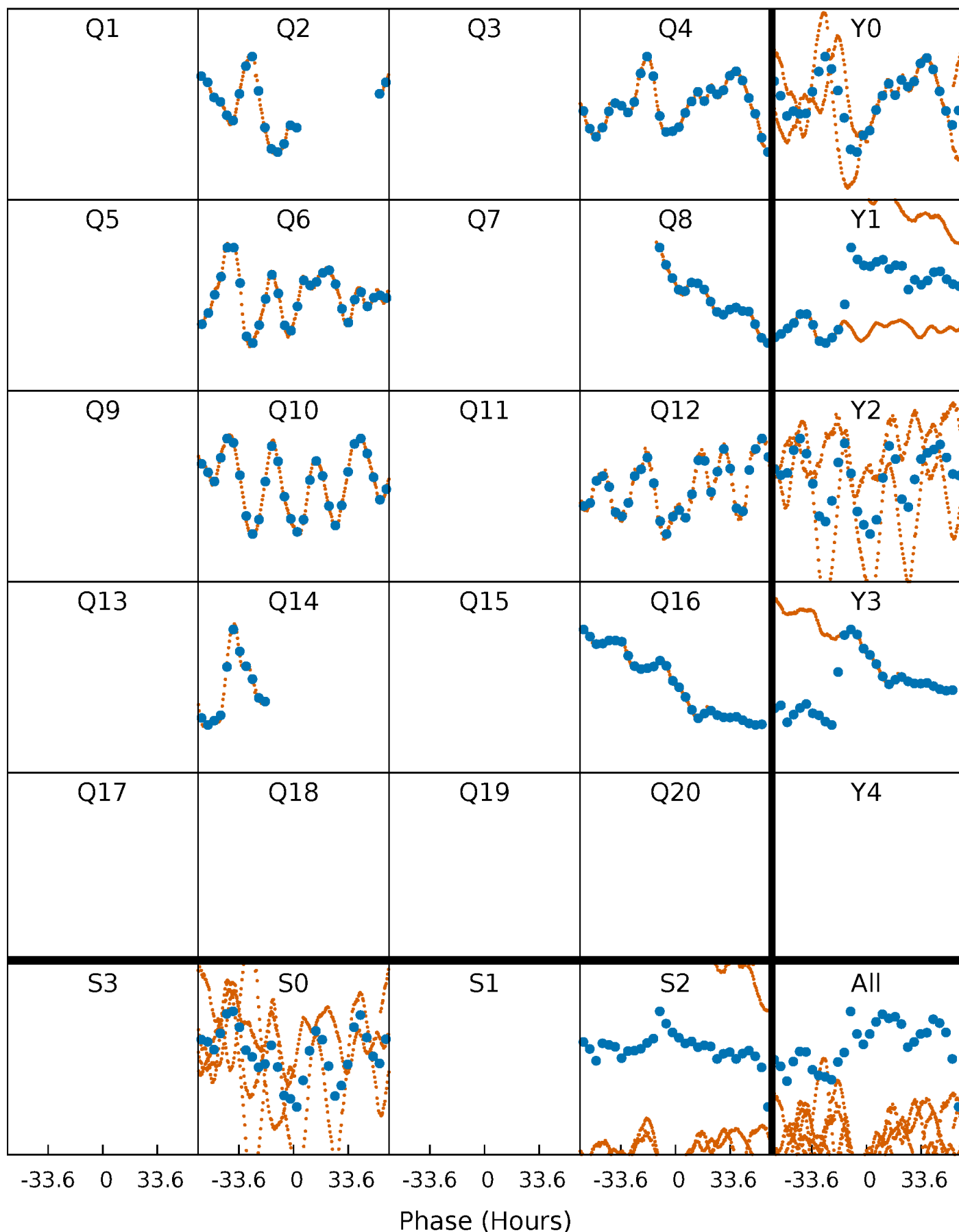


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



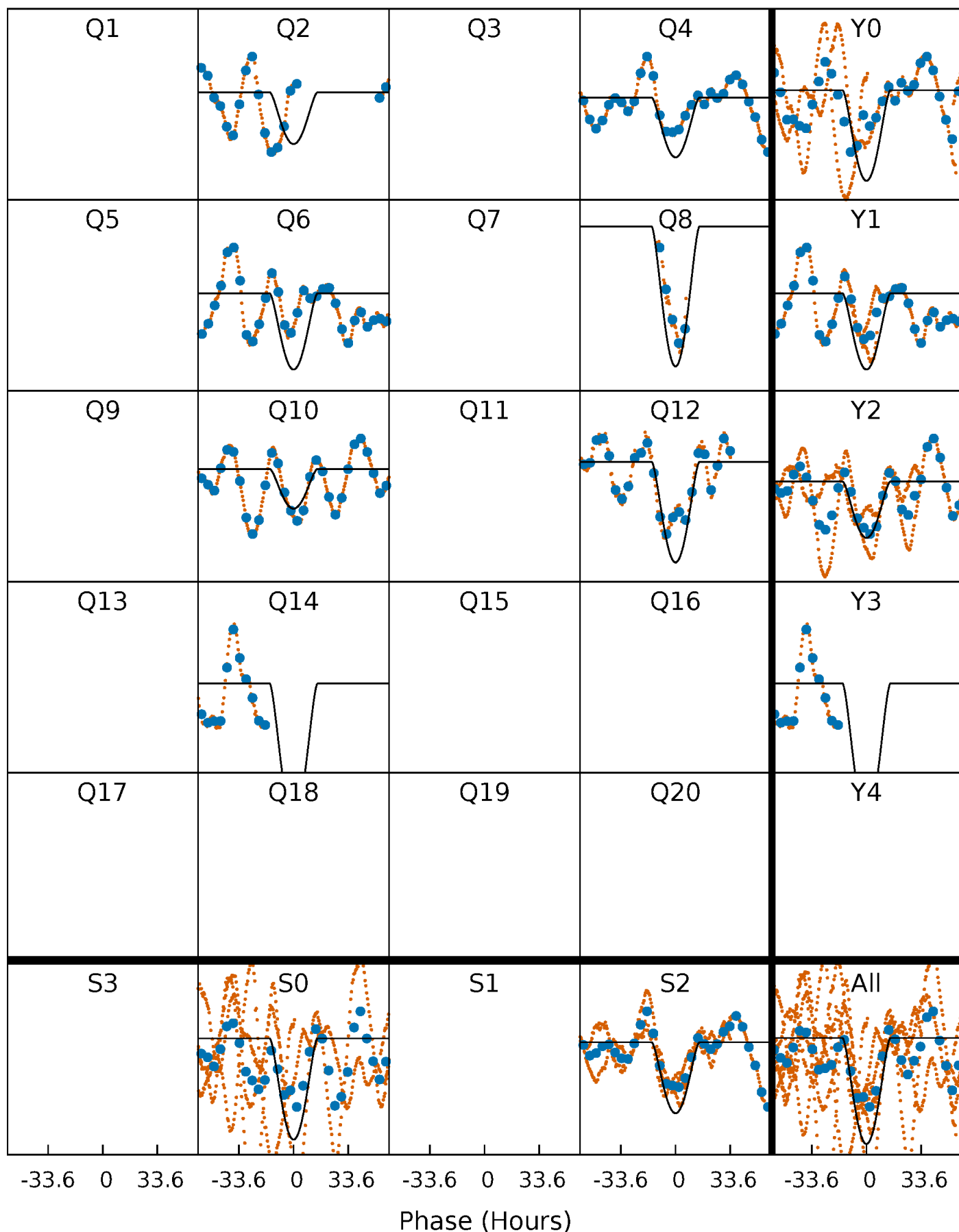
PDC Quarter-Phased Transit Curves

TCE 005780782-04 P=184.793502 Days $T_0=181.491110$ (BKJD)



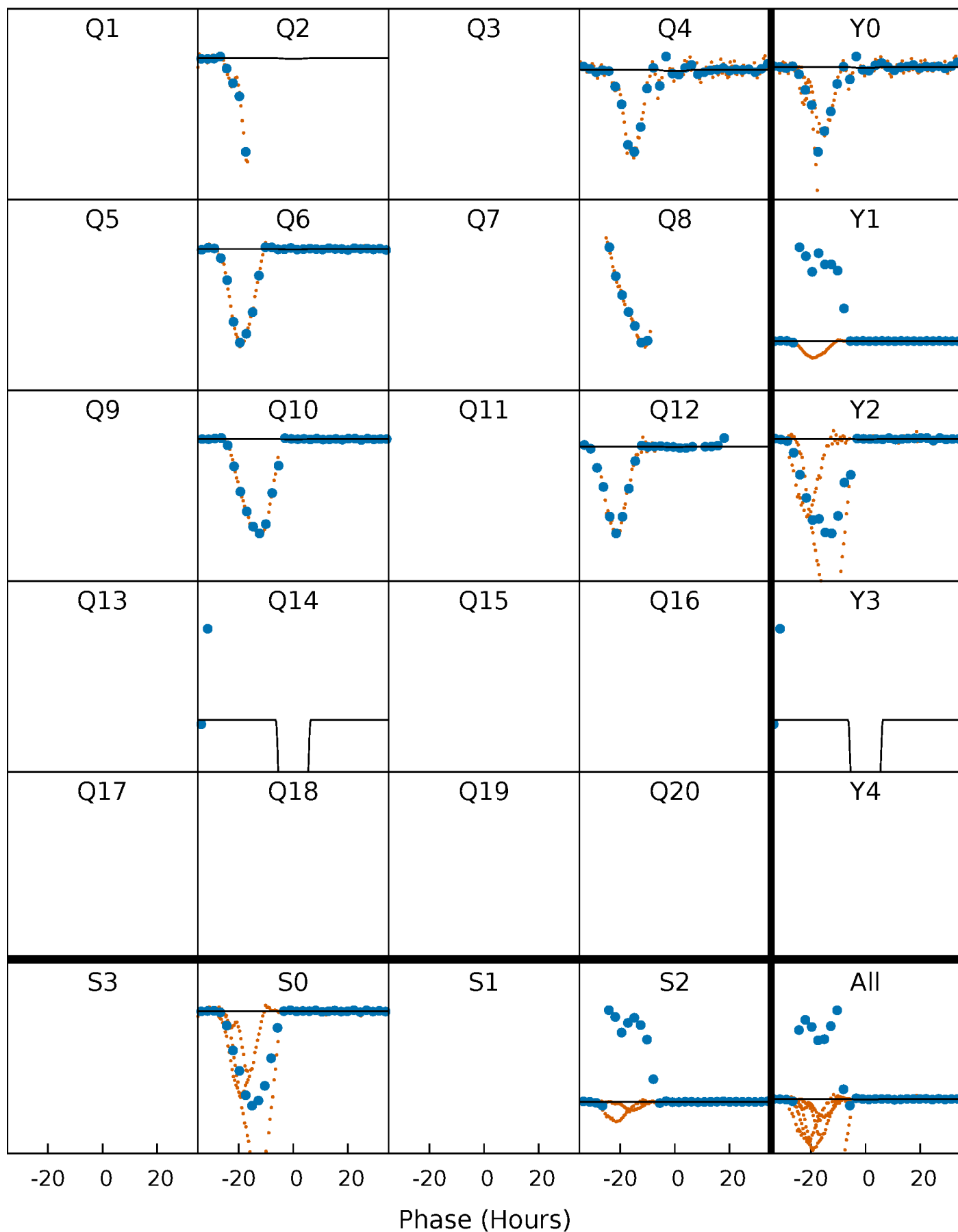
DV Quarter-Phased Transit Curves

TCE 005780782-04 P=184.793502 Days $T_0=181.491110$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

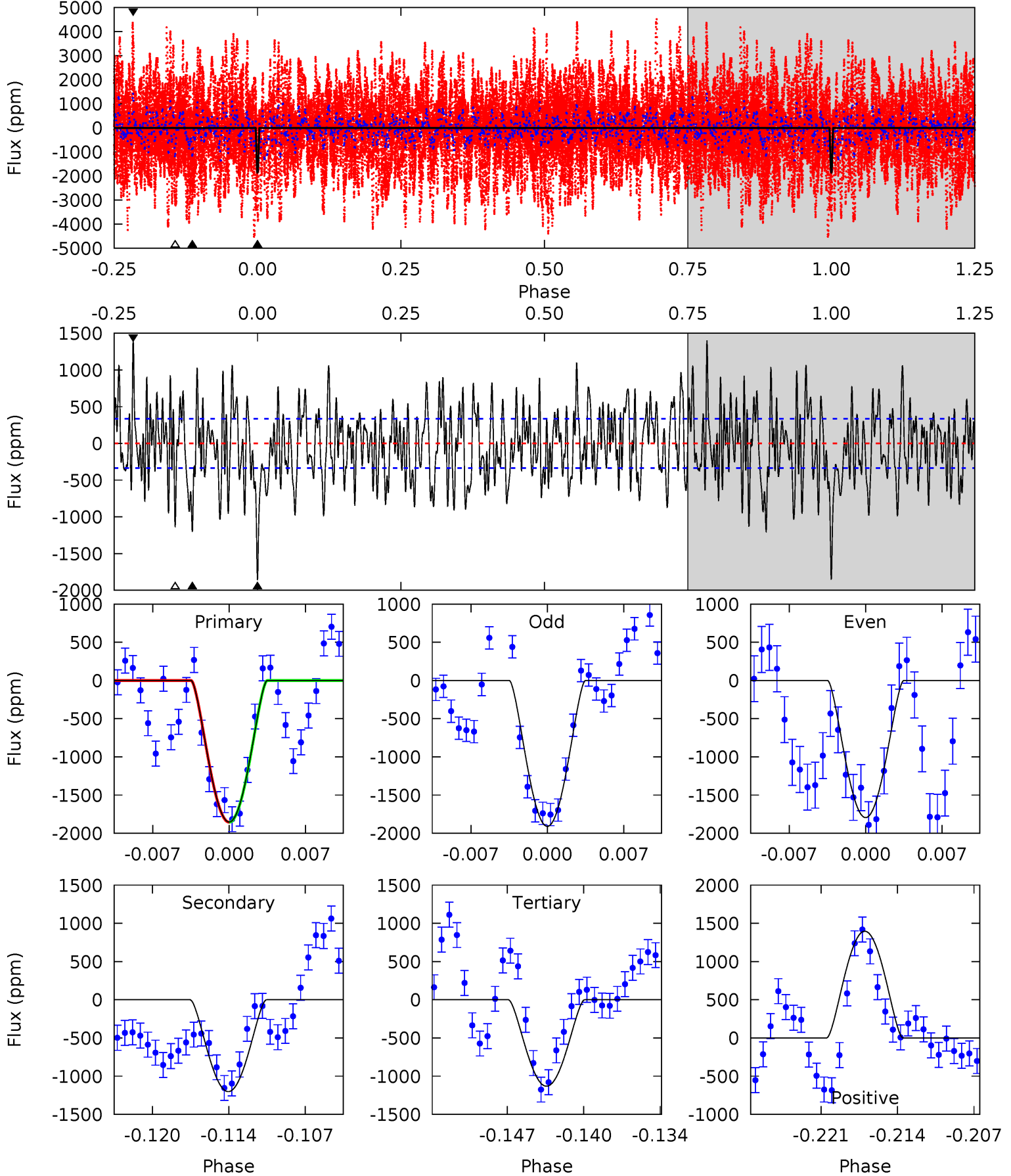
TCE 005780782-04 P=184.767061 Days $T_0=182.211587$ (BKJD)



DV Model-Shift Uniqueness Test

005780782-04, P = 184.793502 Days, E = 181.491110 Days

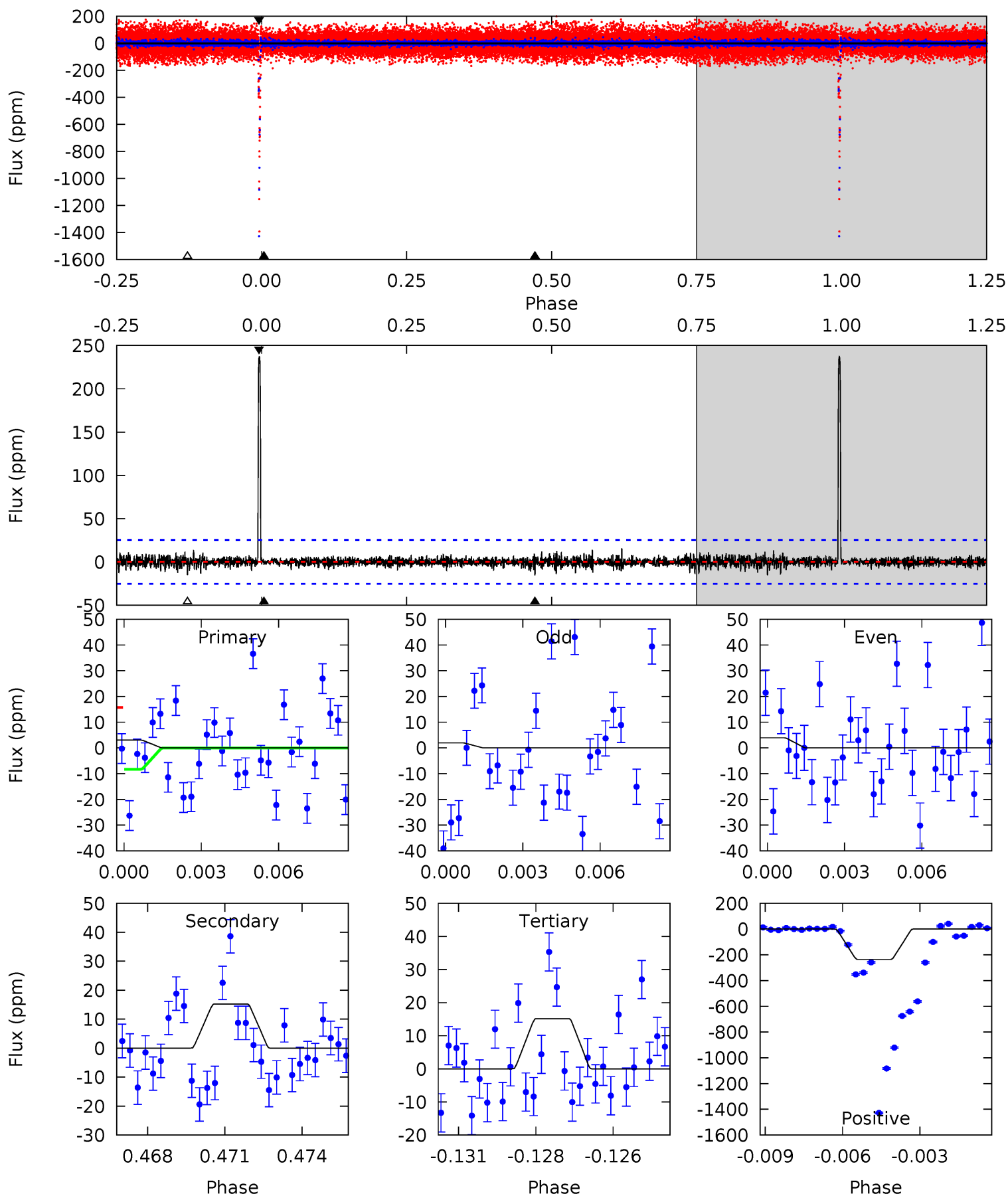
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.1	18.3	17.2	21.2	5.10	2.71	6.50	11.0	6.92	1.08	-2.95	0.89	1.01	0.43	0.00



Alt Model-Shift Uniqueness Test

005780782-04, P = 184.767061 Days, E = 182.211587 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.64	3.18	3.16	49.2	5.26	2.98	1.59	-2.52	-48.6	0.02	-46.0	0.16	0.81	0.94	0.76



Stellar Parameters For KIC 005780782

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4359^{+39}_{-91}	$1.933^{+0.030}_{-0.030}$	$0.100^{+0.100}_{-0.200}$	$26.107^{+5.247}_{-5.771}$	$2.131^{+0.865}_{-0.865}$	$0.000^{+0.000}_{-0.000}$
	+1%/-2%	+2%/-2%	+100%/-200%	+20%/-22%	+41%/-41%	+34%/-10%
Source	SPE74	AST11	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 005780782-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1202 ± 66	$287.94^{+131.98}_{-126.43}$	1517^{+42}_{-48}	3023^{+633}_{-281}	$5.340^{+12.087}_{-2.696}$
Alt.	-15 ± 5	$89.33^{+99.67}_{-64.17}$	1519^{+42}_{-48}	2203^{+1073}_{-4207}	$0.690^{+8.143}_{-0.545}$

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 $A_{obs} \gg 1.0$

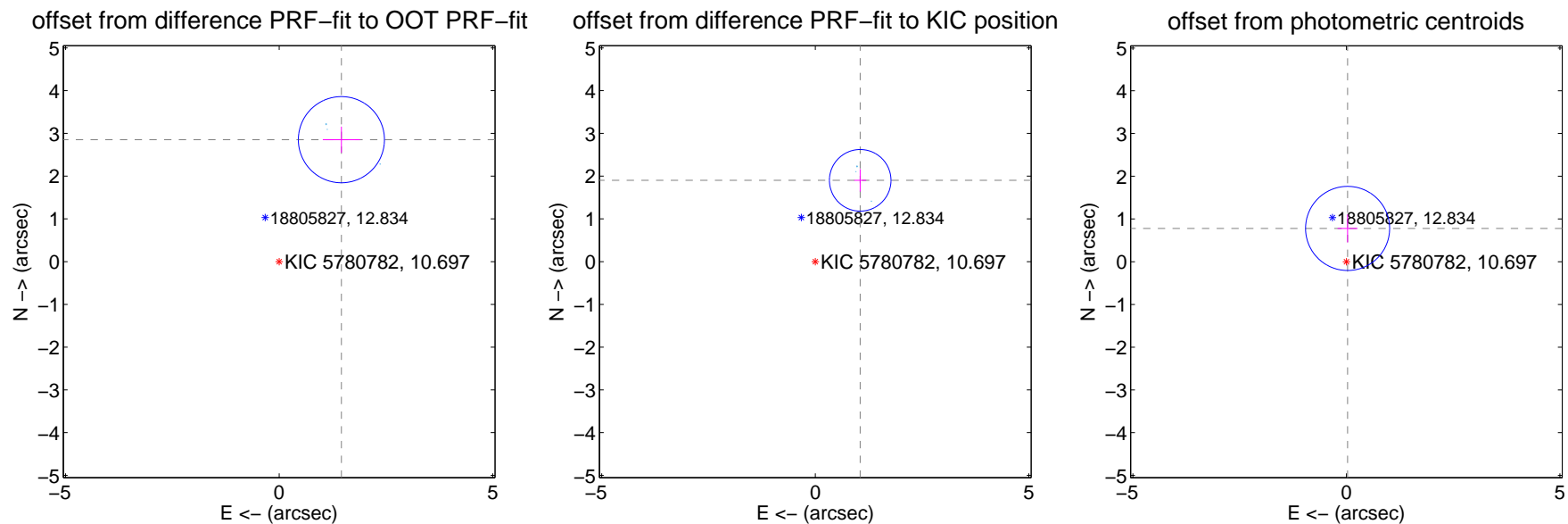
DV Centroid Data

Supplemental centroid analysis for 005780782-04. **Kepler magnitude: 10.70.** Transit SNR 92.14

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 1.00 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.204 ± 0.336	9.54	-1.458 ± 0.434	2.853 ± 0.305
PRF-fit source offset from KIC position	2.174 ± 0.240	9.05	-1.052 ± 0.140	1.902 ± 0.263
photometric centroid source offset	0.78 ± 0.33	2.38	-0.03 ± 0.24	0.78 ± 0.33



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

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

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



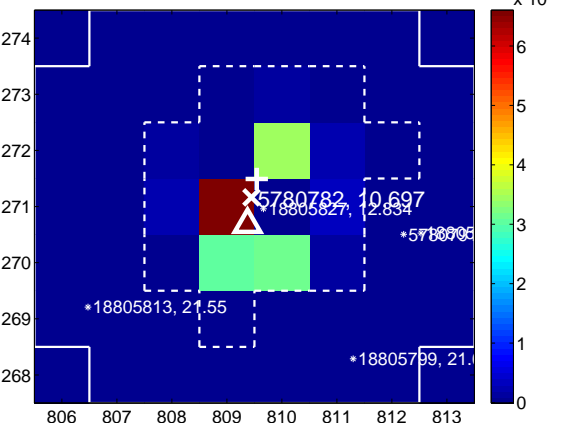
Q3 no difference image



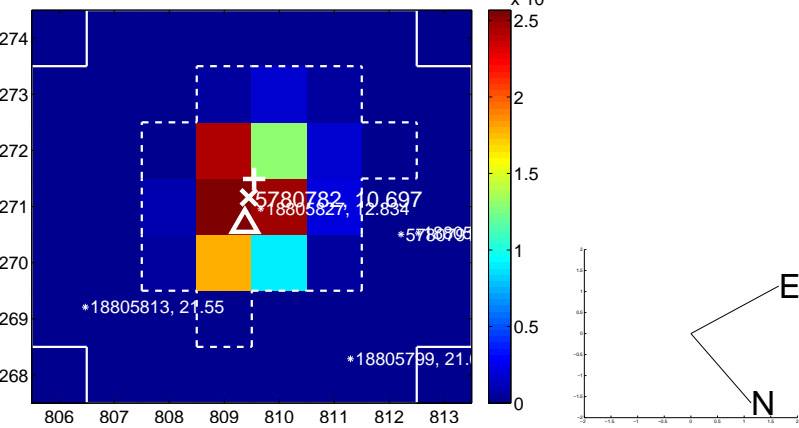
Q3 no OOT image



Q4 difference image



Q4 OOT image



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

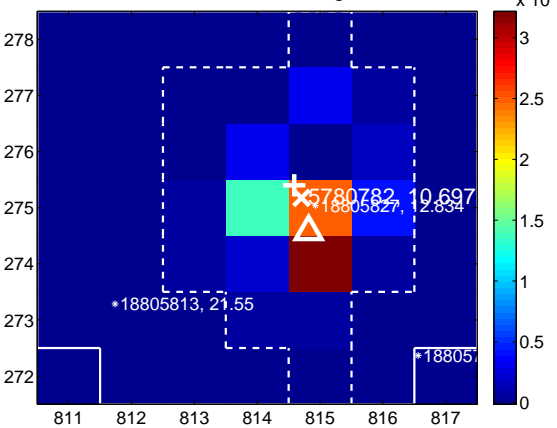
Q5 no difference image



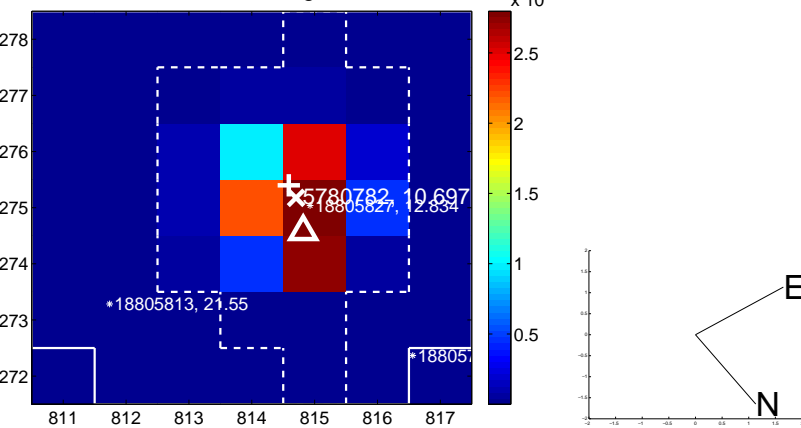
Q5 no OOT image



Q6 difference image



Q6 OOT image



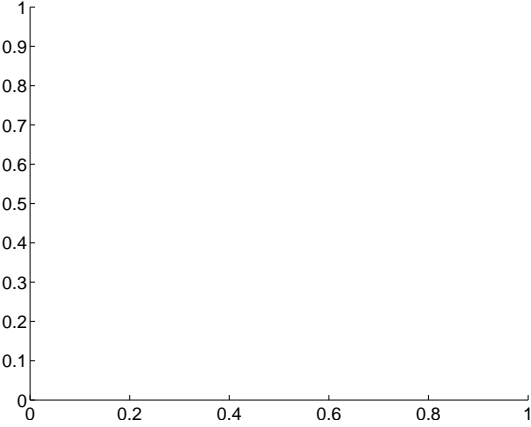
Q7 no difference image



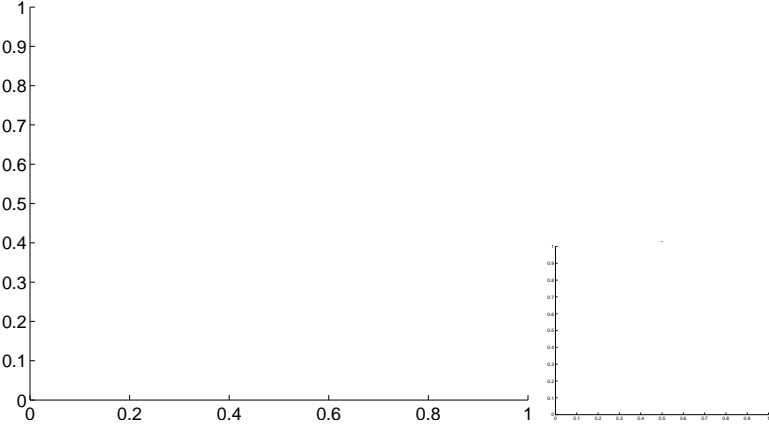
Q7 no OOT image



Q8 no difference image



Q8 no OOT image



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

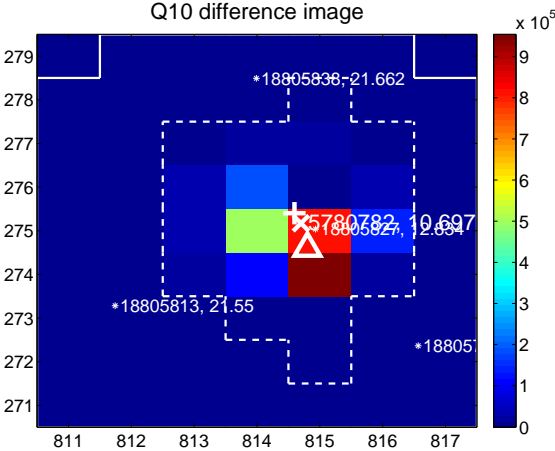
Q9 no difference image



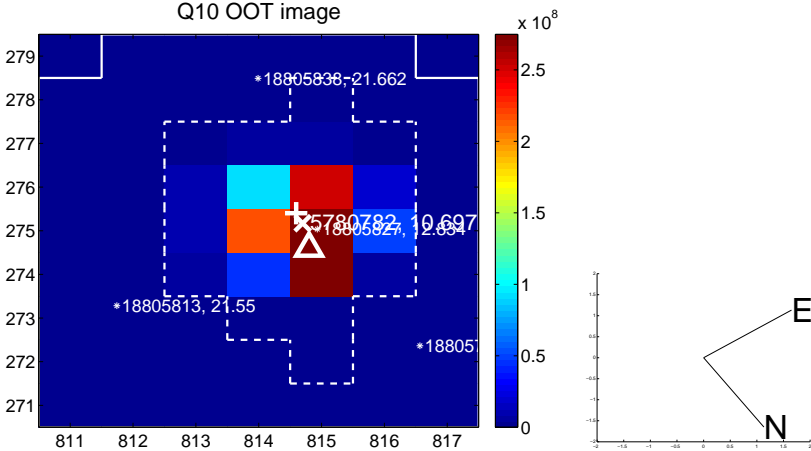
Q9 no OOT image



Q10 difference image



Q10 OOT image



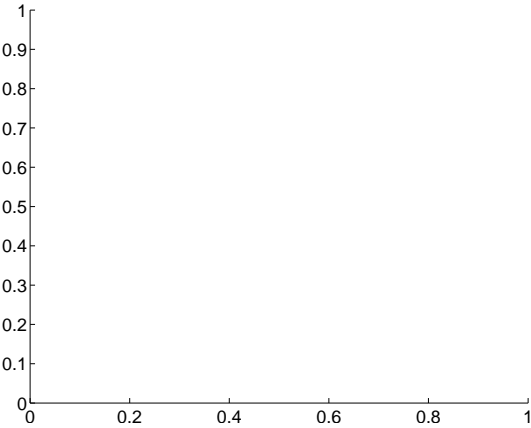
Q11 no difference image



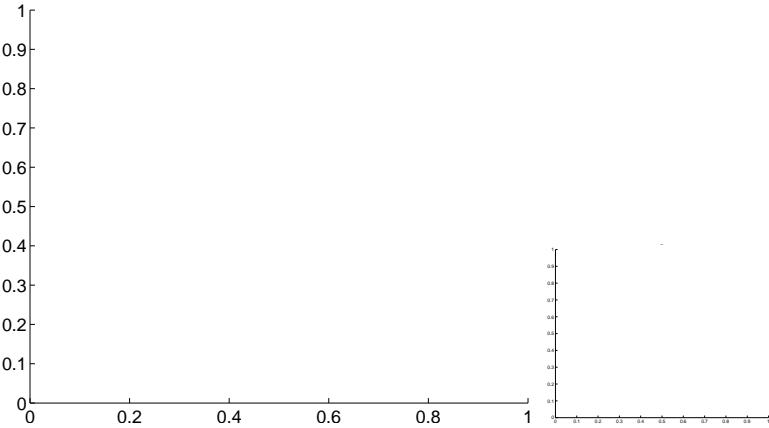
Q11 no OOT image



Q12 no difference image



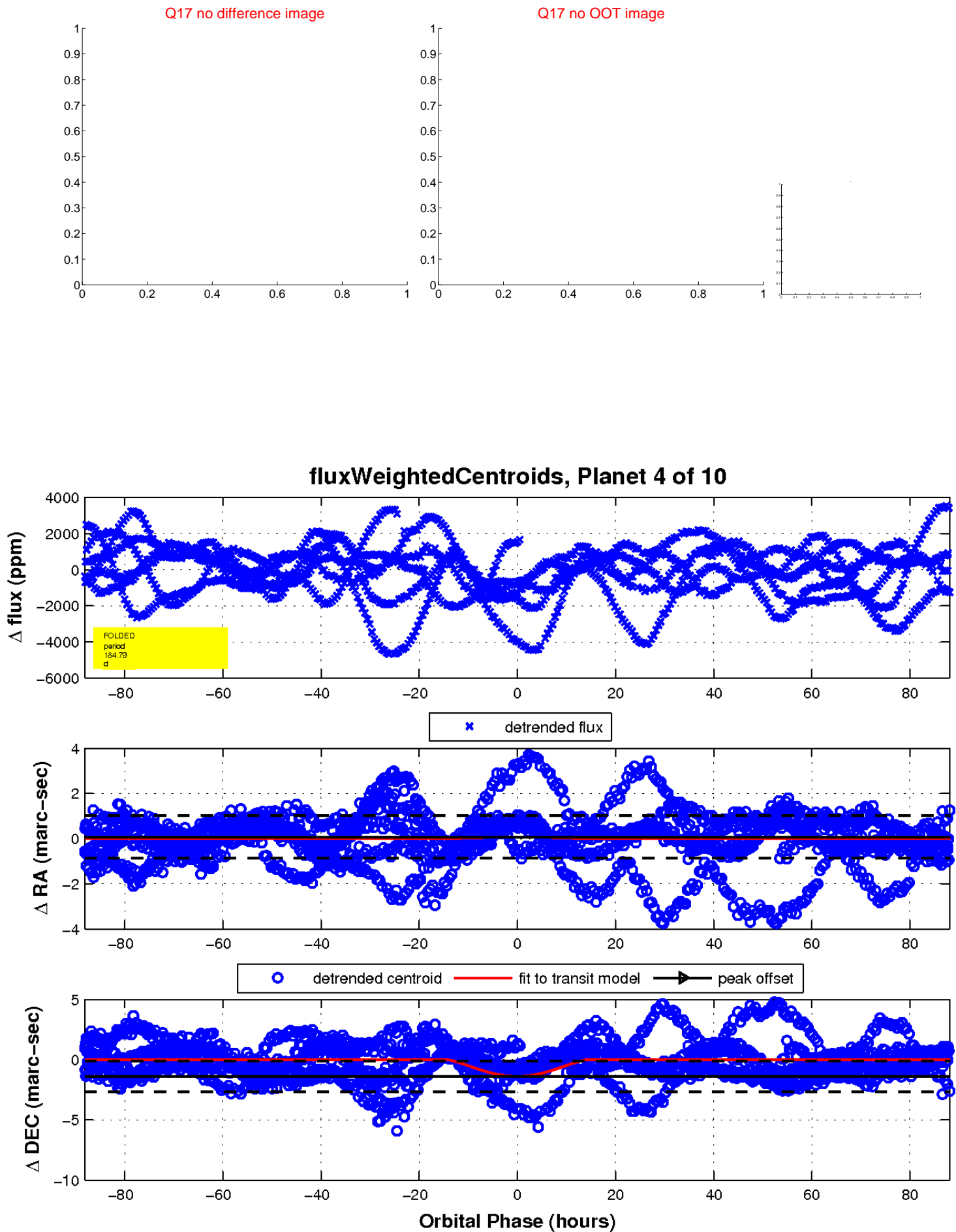
Q12 no OOT image



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

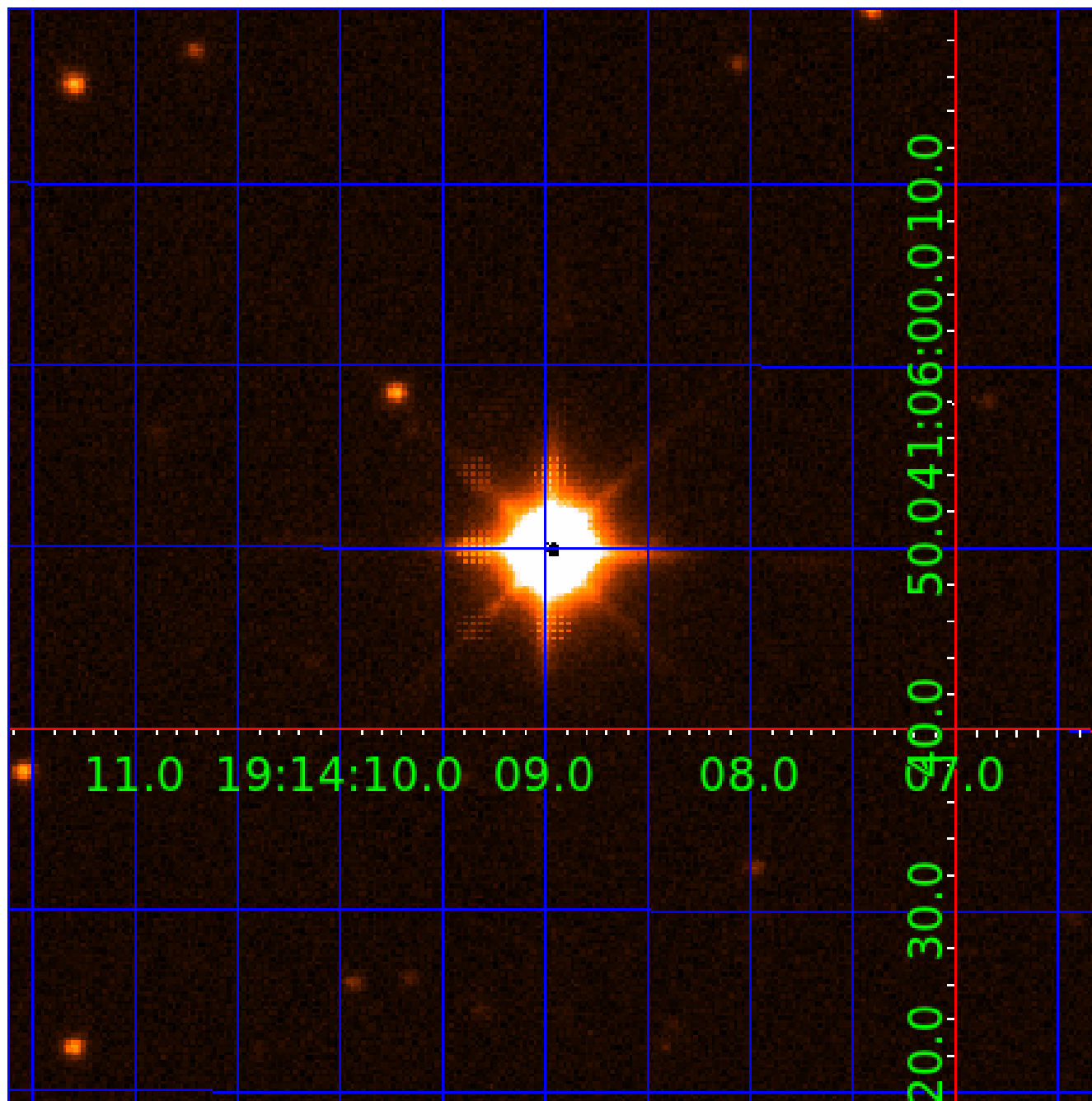


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
005780782-01	OBS	No	369.146663	369.893592	2064.7	20.710	97.5	118.9	26.11	4359	198.29	131.22
005780782-02	OBS	No	369.894878	373.565961	1448.6	16.966	81.6	82.3	26.11	4359	206.01	130.87
005780782-03	OBS	No	246.340188	244.270189	398.8	12.500	46.0	-1.0	26.11	4359	49.42	225.03
005780782-04	OBS	No	184.793502	181.491110	2826.3	29.386	44.8	92.1	26.11	4359	276.25	330.14
005780782-05	OBS	No	185.516291	184.318124	406.2	15.000	53.8	-1.0	26.11	4359	49.87	328.43
005780782-06	OBS	No	582.905555	162.441375	100.5	7.883	41.5	5.2	26.11	4359	30.30	71.36
005780782-07	OBS	No	456.526196	287.257117	110.3	1.000	39.6	2.2	26.11	4359	34.58	98.85
005780782-08	OBS	No	569.190679	175.351019	517.0	10.776	38.8	15.3	26.11	4359	57.86	73.67
005780782-09	OBS	No	458.158942	202.747347	767.2	21.875	11.9	8.1	26.11	4359	92.71	98.38
005780782-10	OBS	No	192.199401	213.478149	32.3	5.697	10.7	8.1	26.11	4359	19.44	313.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005780782-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—NO_FITS—INCONSISTENT_TRANS—CENT_SATURATED
005780782-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005780782-05	OBS	FP	0.00	1	0	0	0	LPP_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005780782-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_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—HALO_GHOST
005780782-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-09	OBS	FP	0.00	1	0	1	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
005780782-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

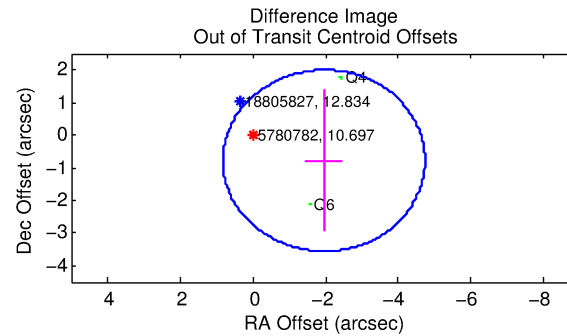
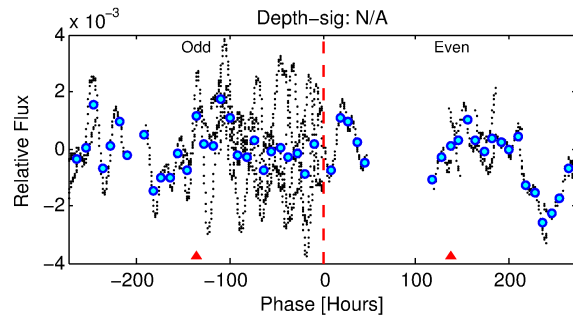
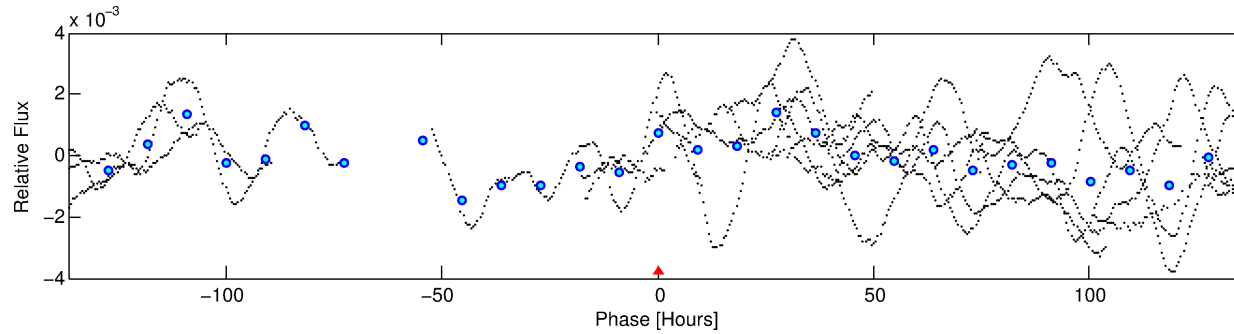
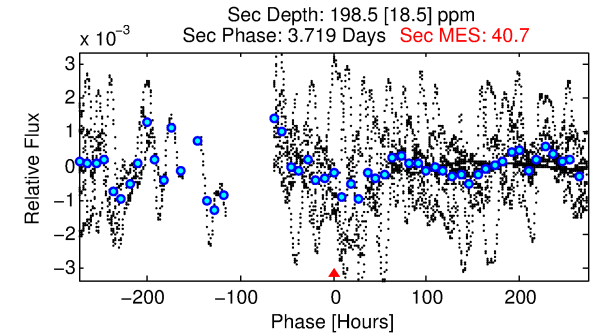
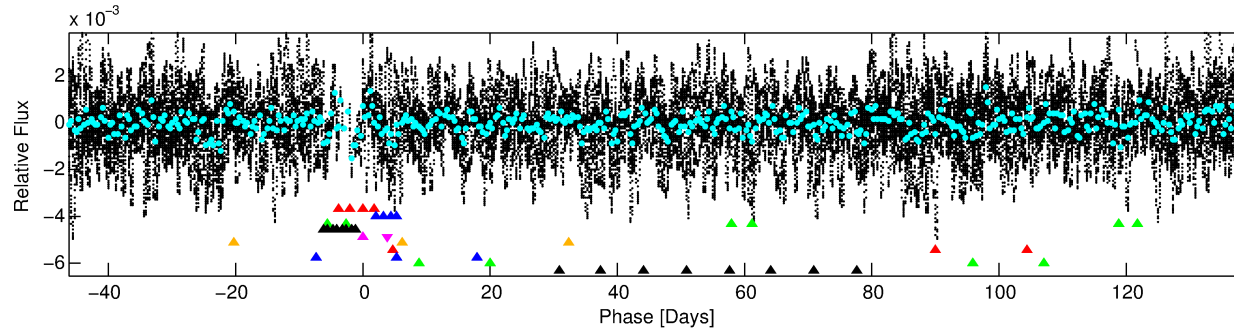
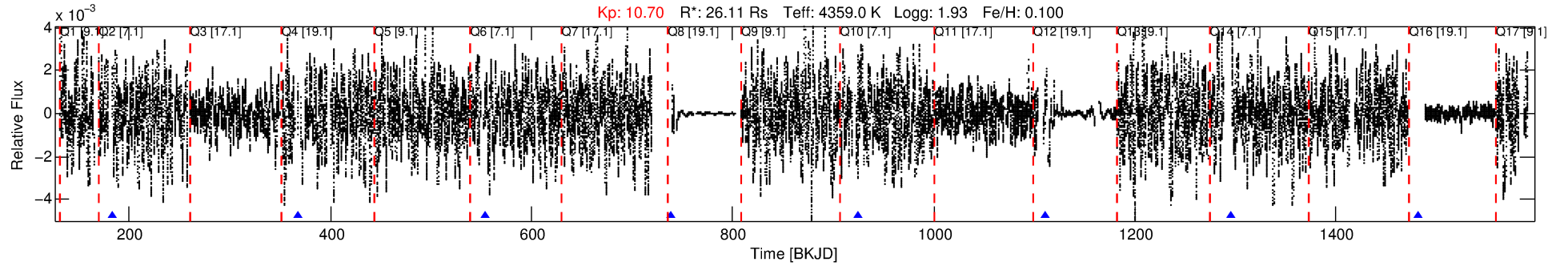
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005780782-05

No Significant Match Found

DV One-Page Summary

KIC: 5780782 Candidate: 5 of 10 Period: 185.516 d



TPS TCE Results:

Period = 185.51629 d
Epoch = 184.3181 BKJD

DV fit results are unavailable

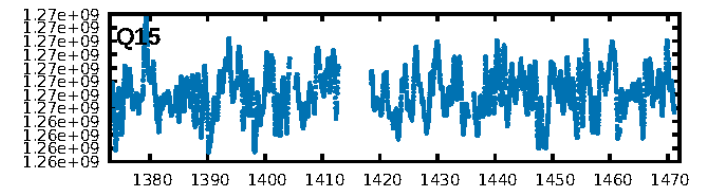
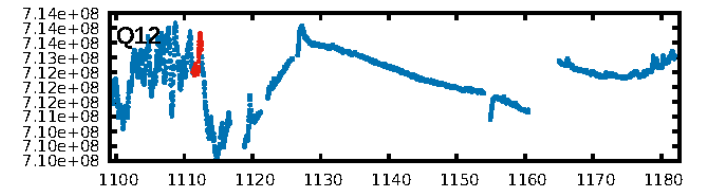
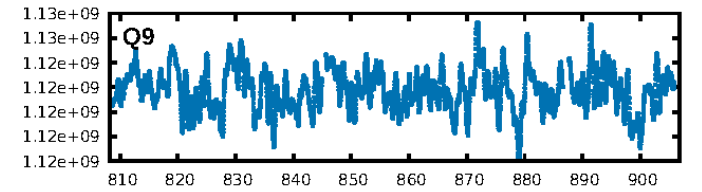
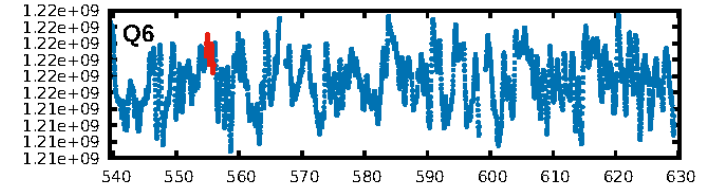
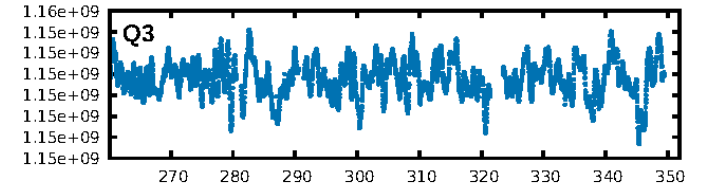
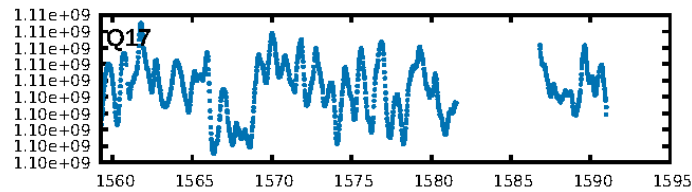
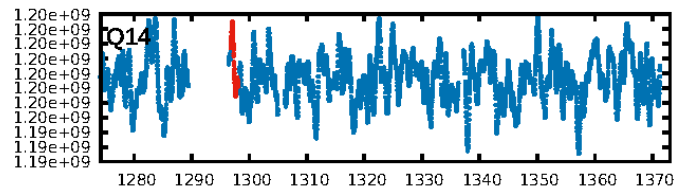
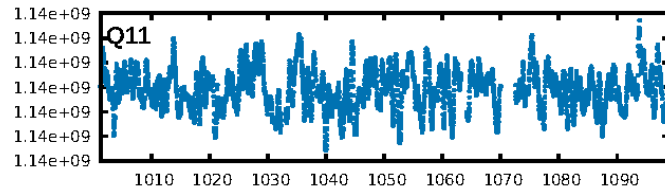
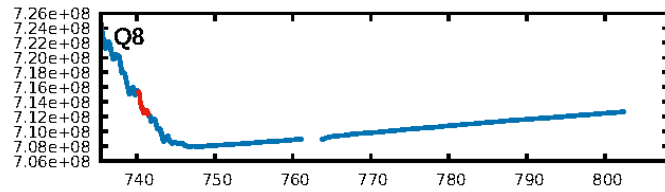
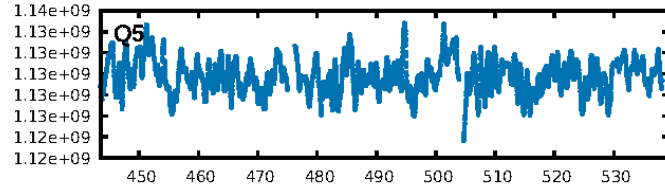
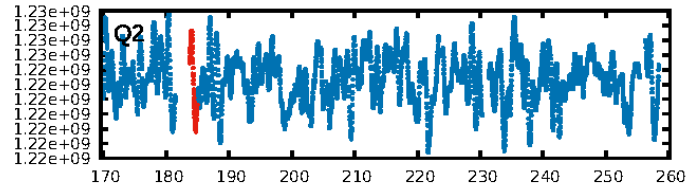
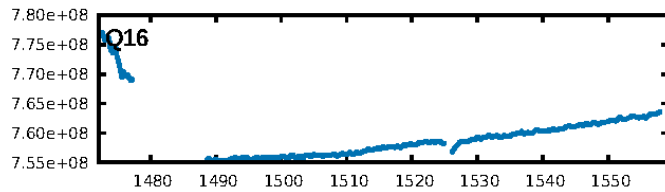
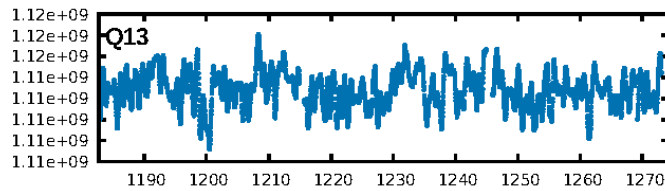
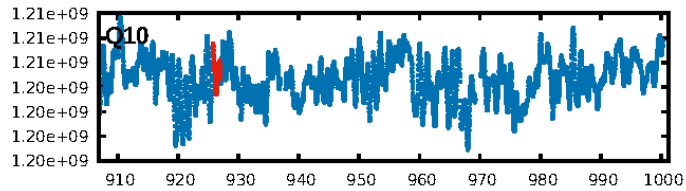
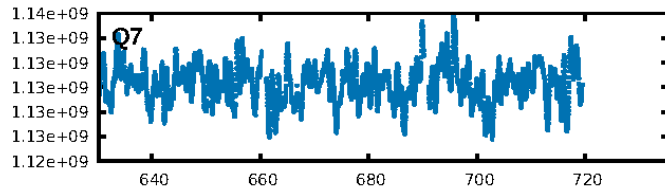
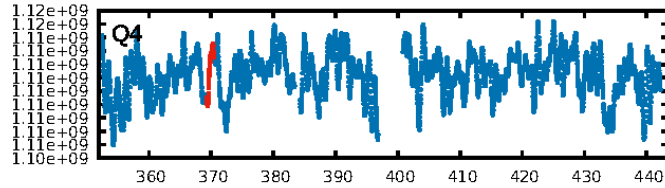
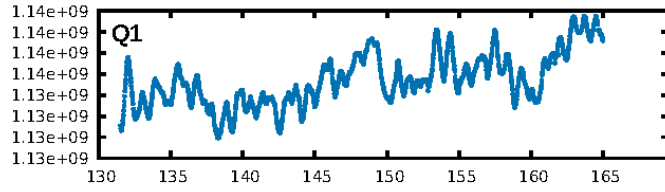
DV Diagnostic Results:

ShortPeriod-sig: 40.1% [0.53 σ]
LongPeriod-sig: 100.0% [10.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -2.781
Centroid-sig: 58.5%
Centroid-so: 11.823 arcsec [0.57 σ]
OotOffset-rm: 2.109 arcsec [2.28 σ]
KicOffset-rm: 2.239 arcsec [1.31 σ]
OotOffset-st: 1/0/1/0 [2]
KicOffset-st: 1/0/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.33 [1/3]

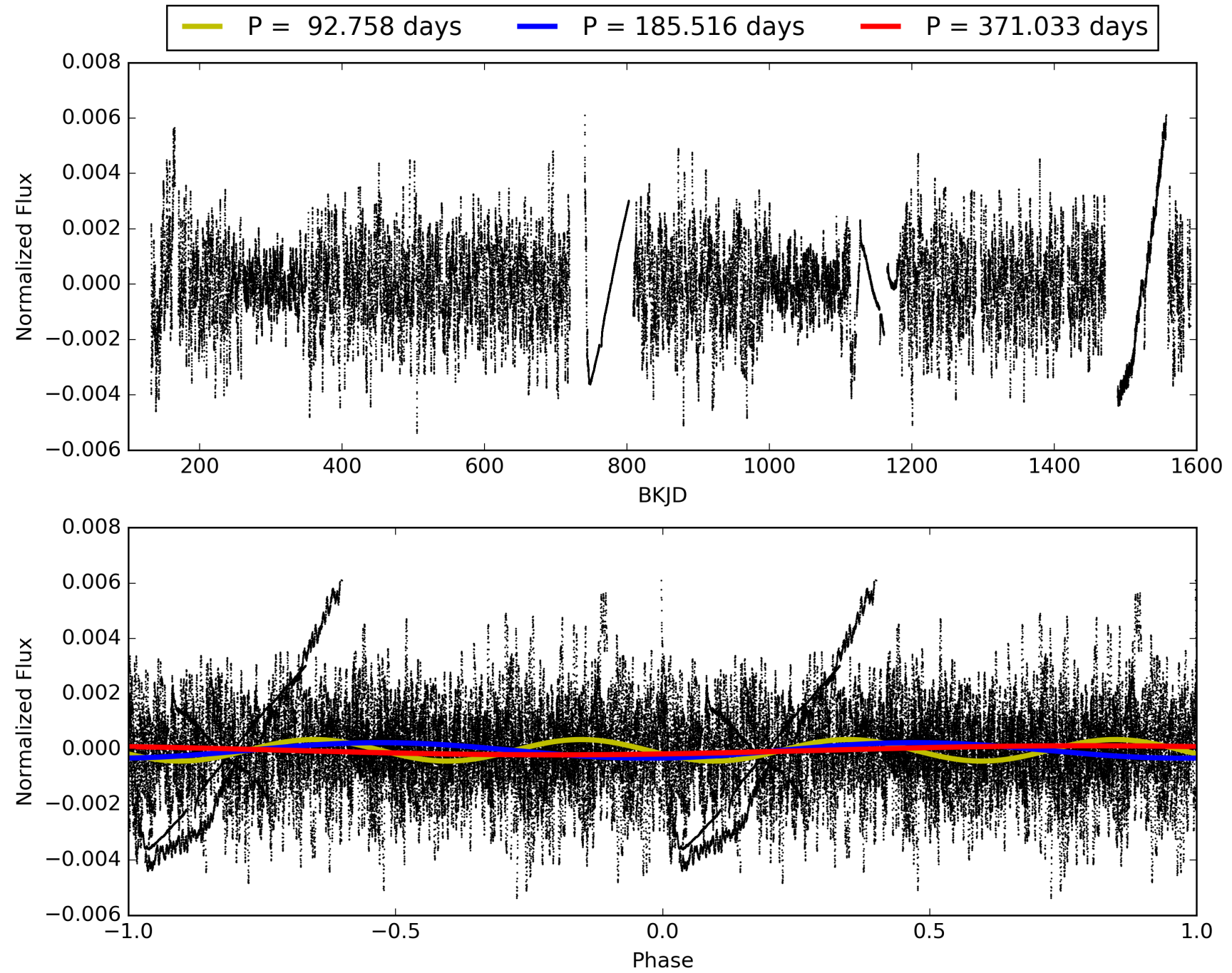
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:44:02 Z

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

TCE 005780782-05, PDC Light Curves

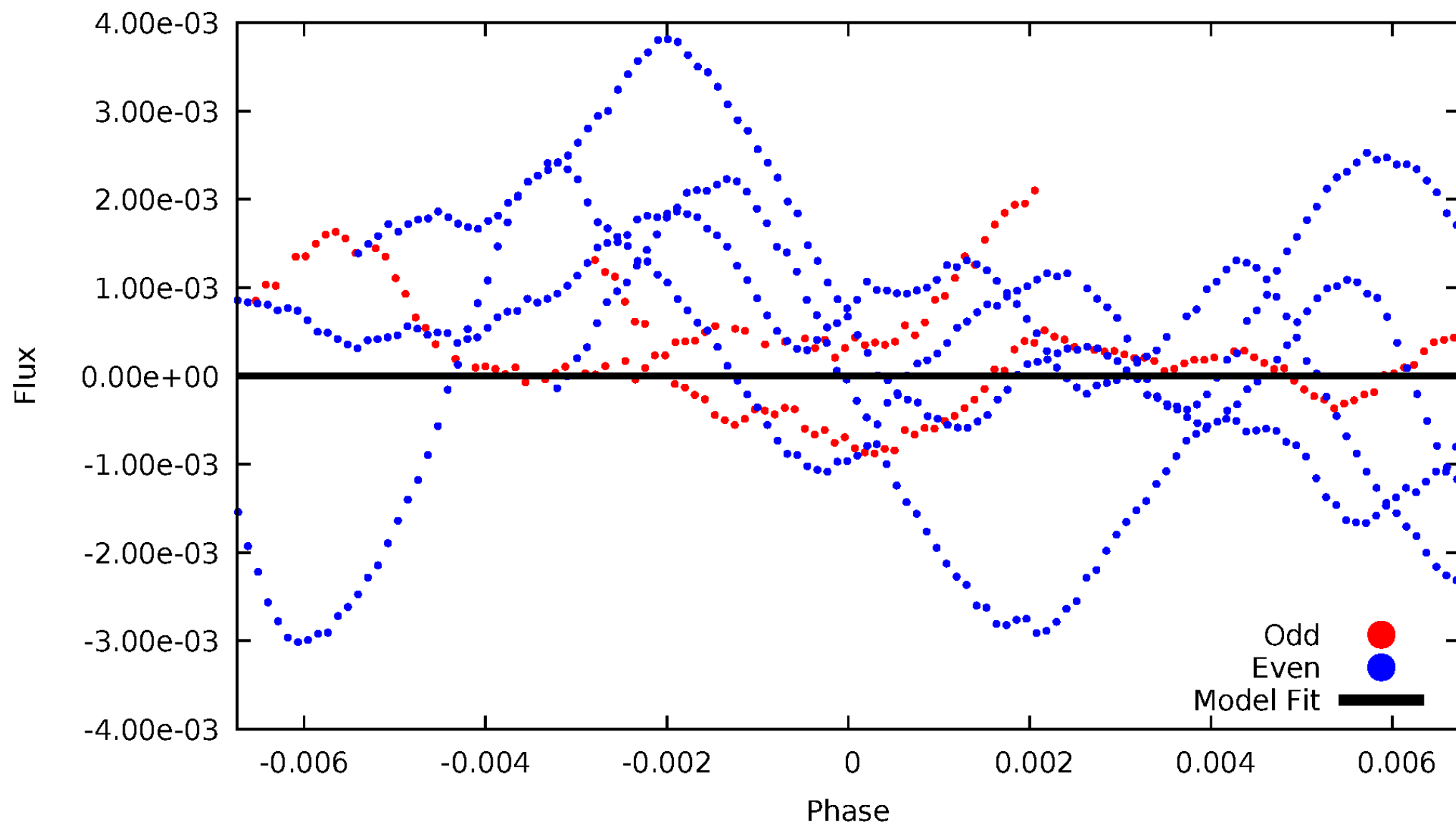


TCE 005780782-05



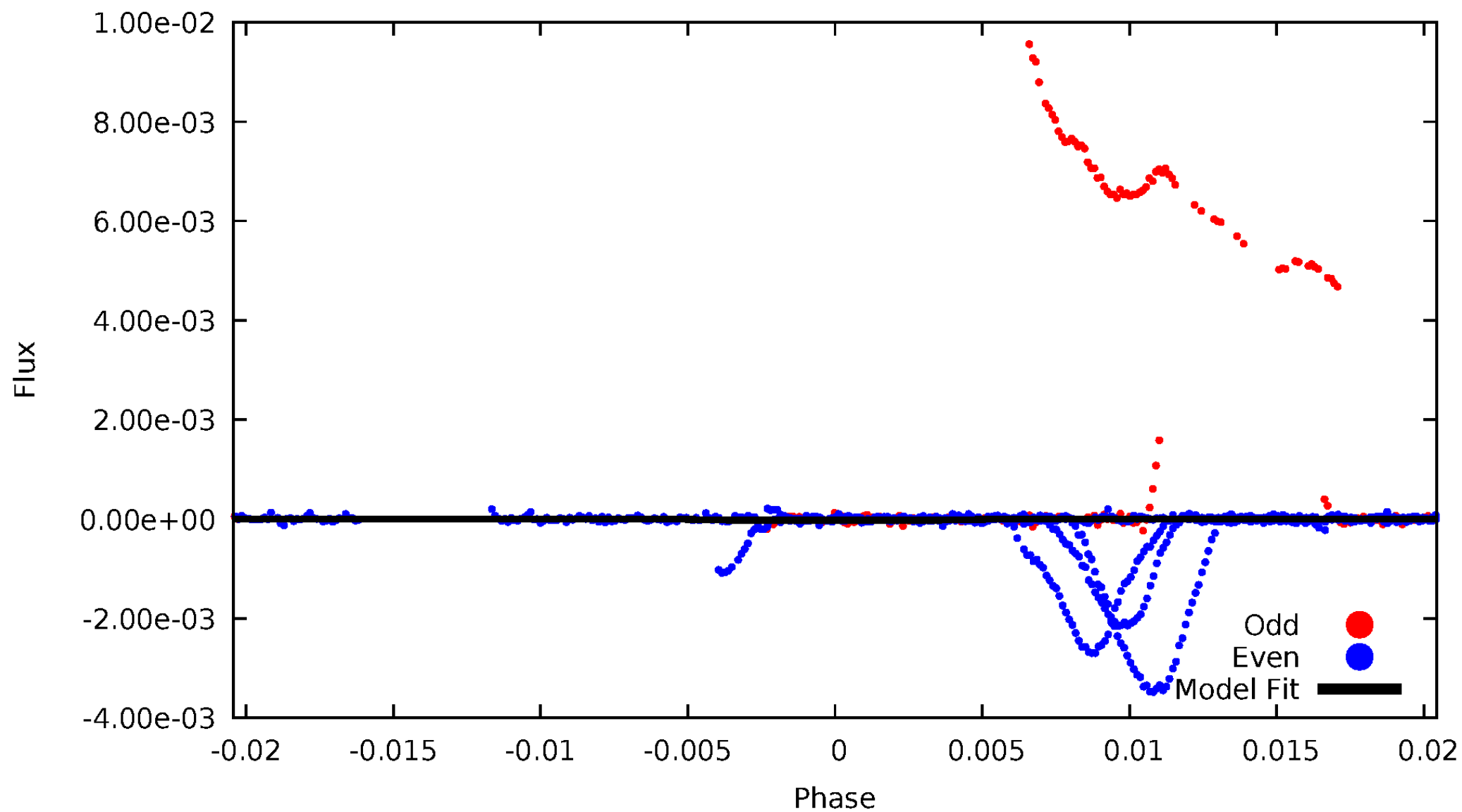
DV Odd/Even

TCE 005780782-05

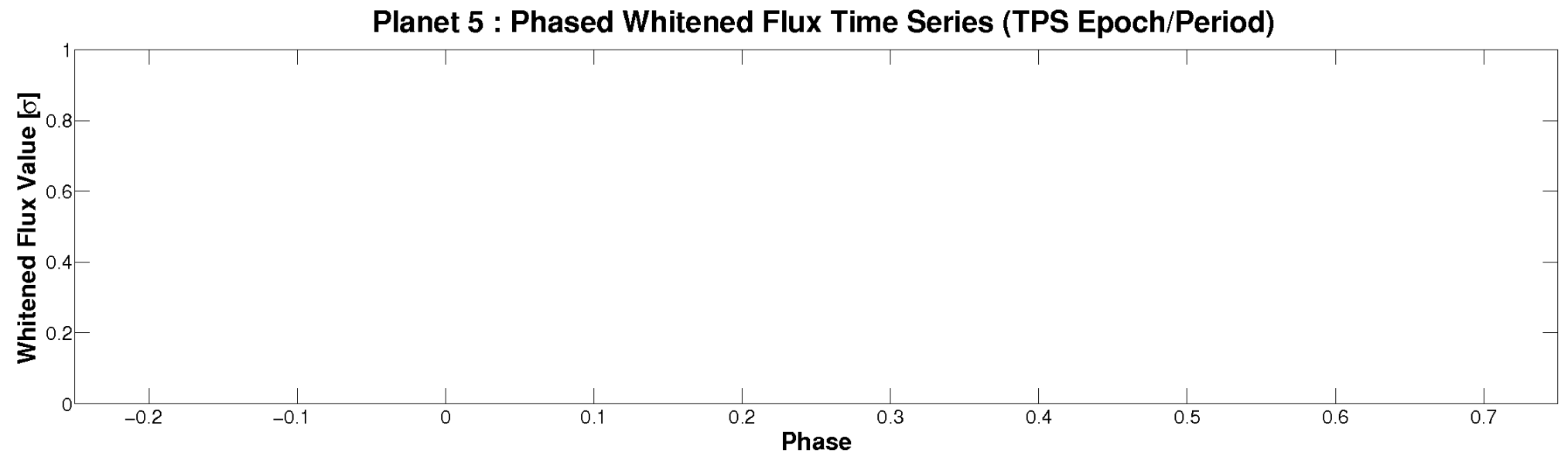
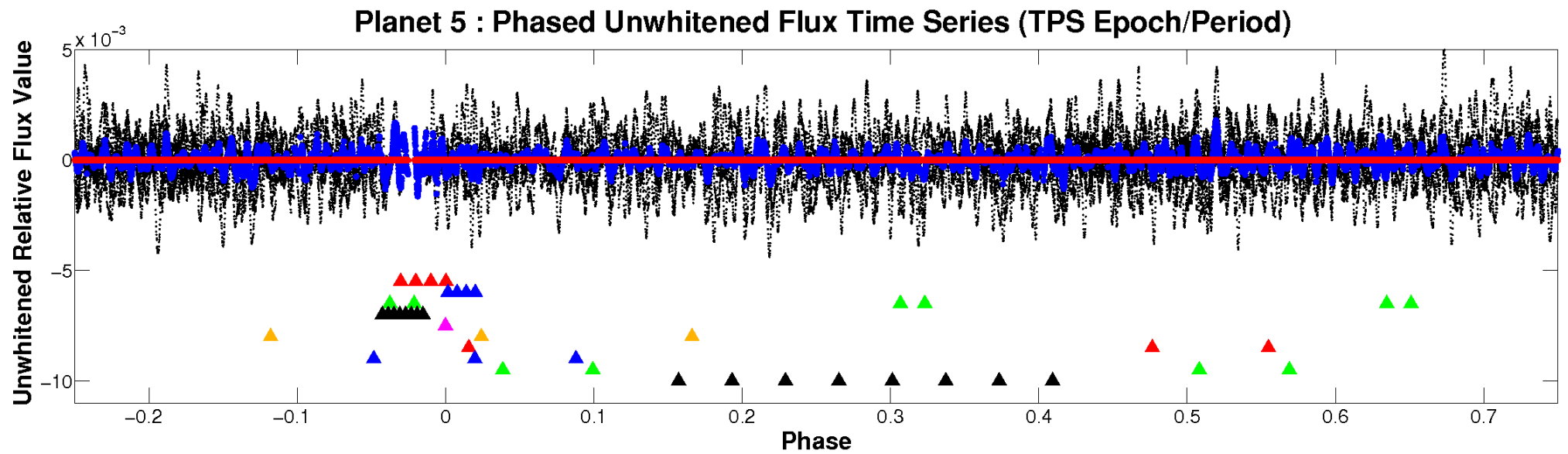


ALT Odd/Even

TCE 005780782-05

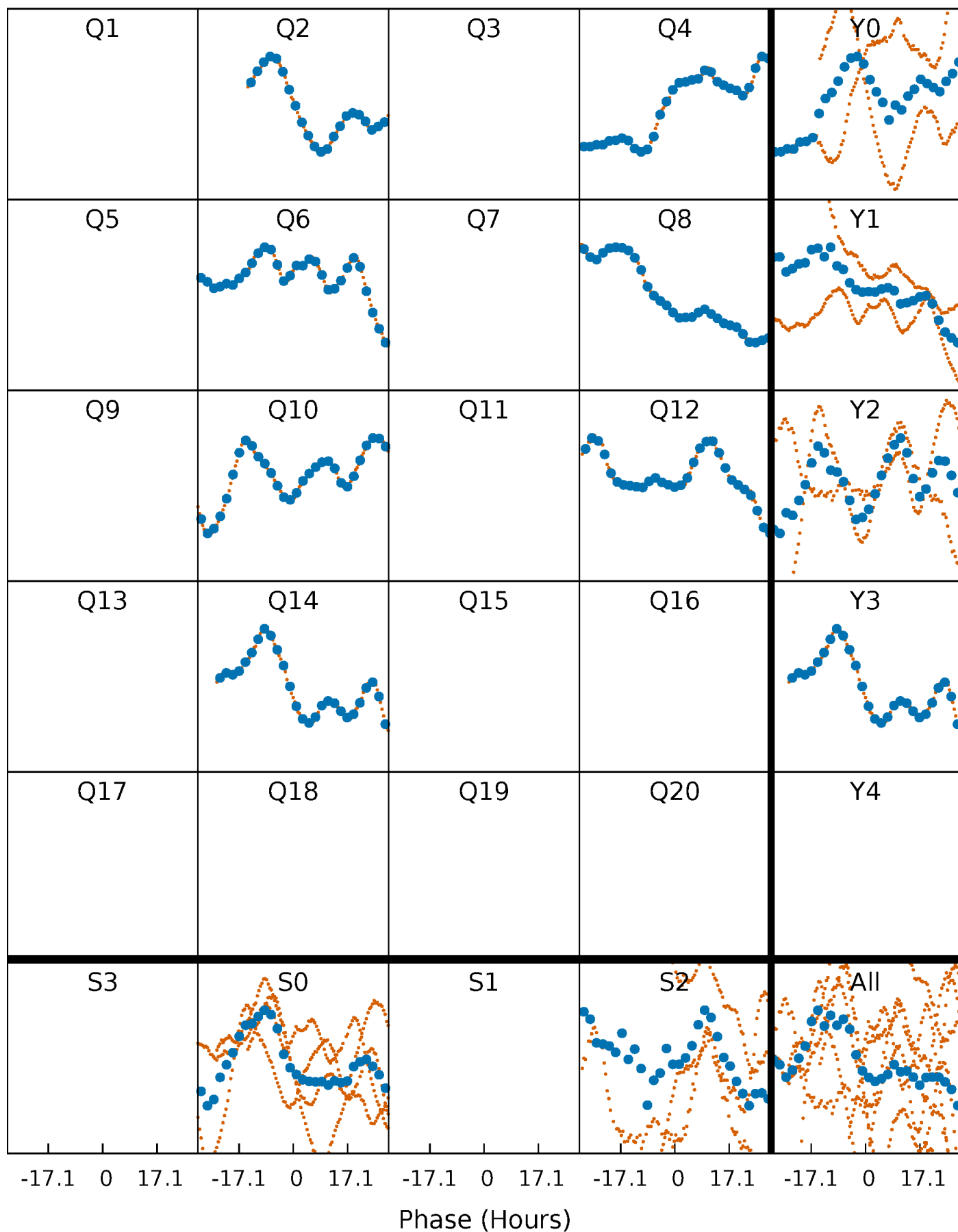


Non-Whitened Vs. Whitened Light Curve



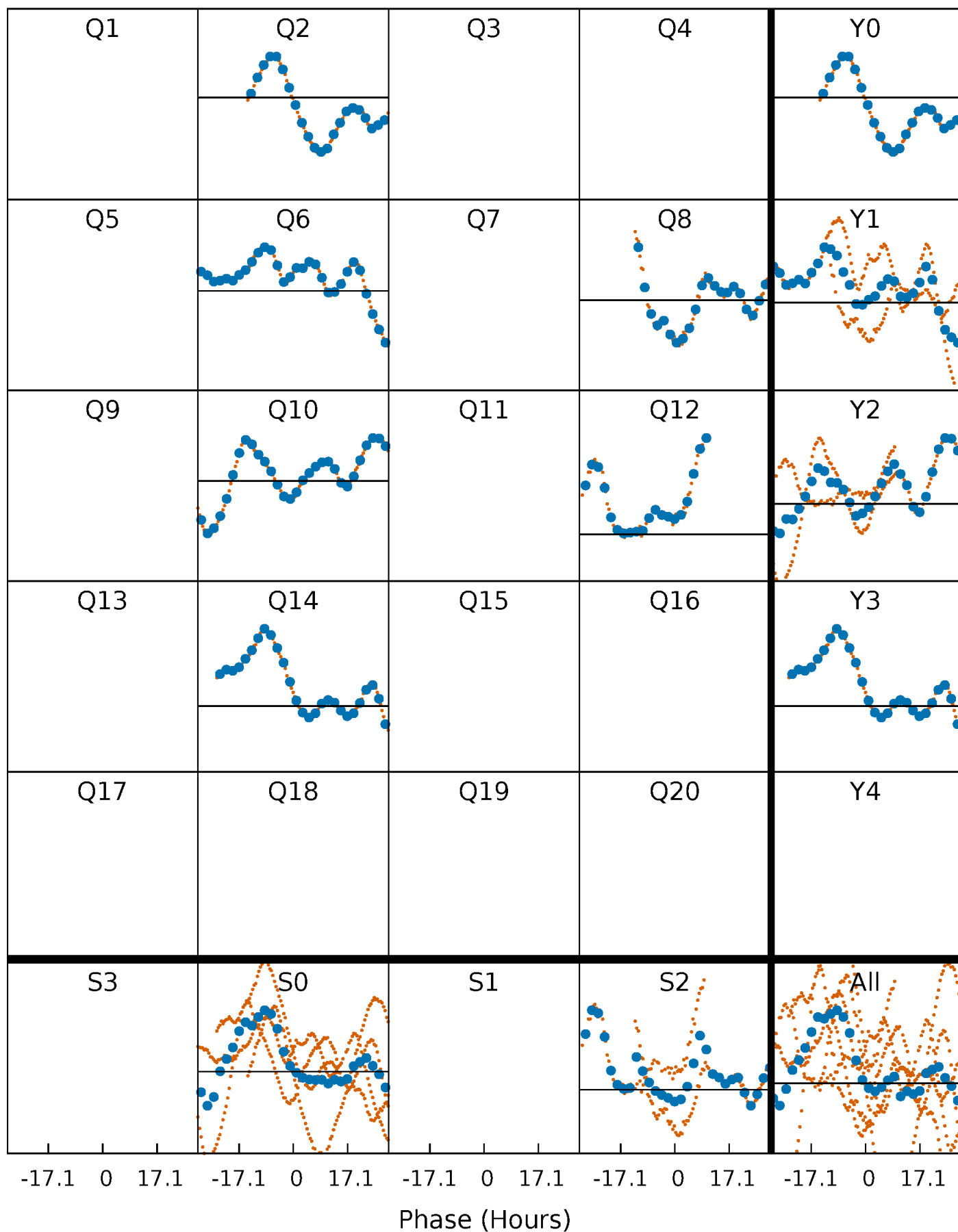
PDC Quarter-Phased Transit Curves

TCE 005780782-05 P=185.516291 Days $T_0=184.318124$ (BKJD)



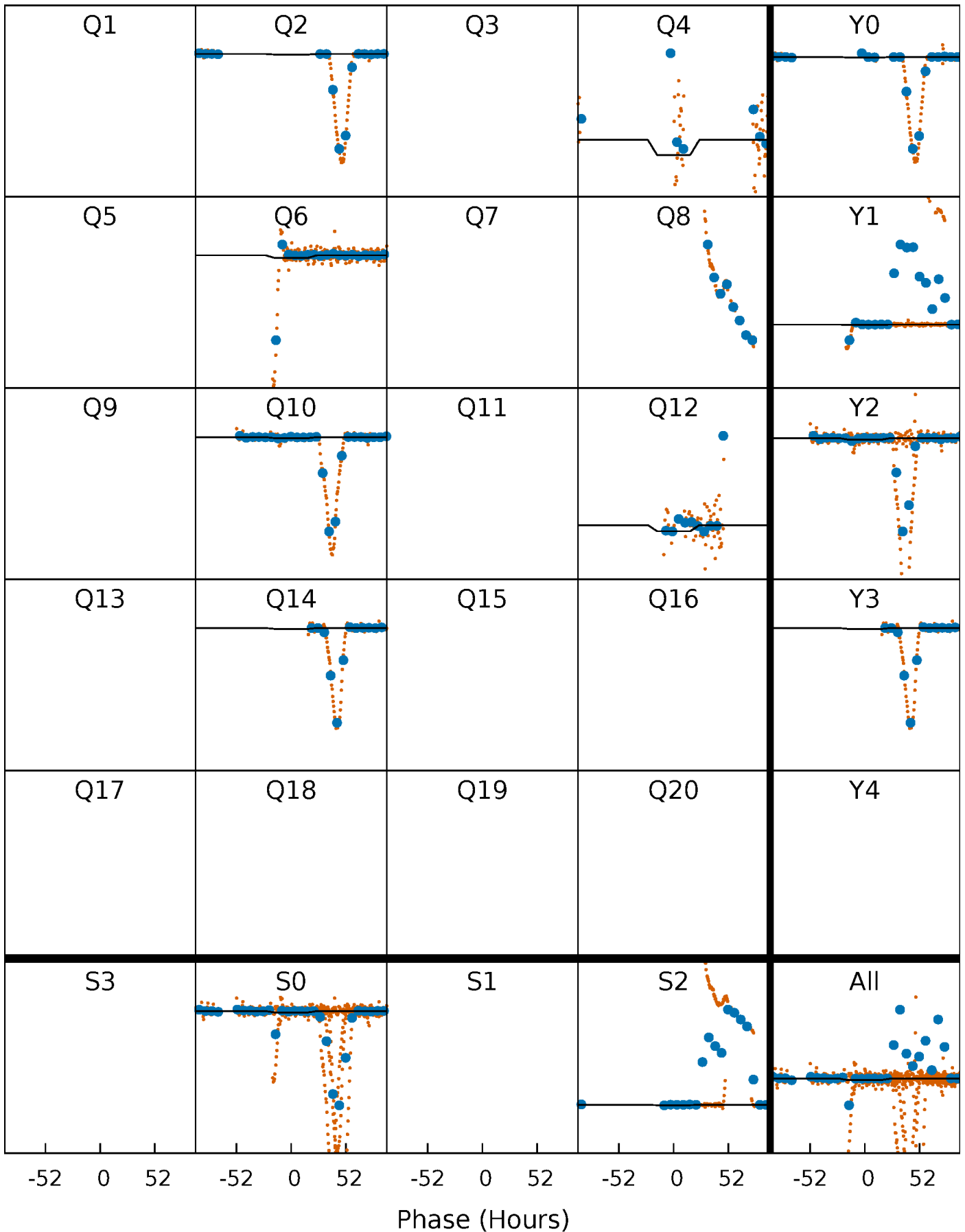
DV Quarter-Phased Transit Curves

TCE 005780782-05 $P=185.516291$ Days $T_0=184.318124$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

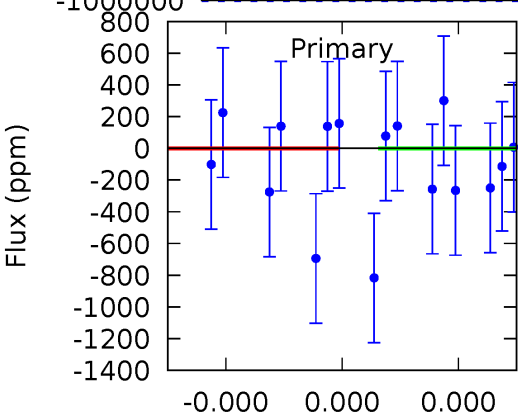
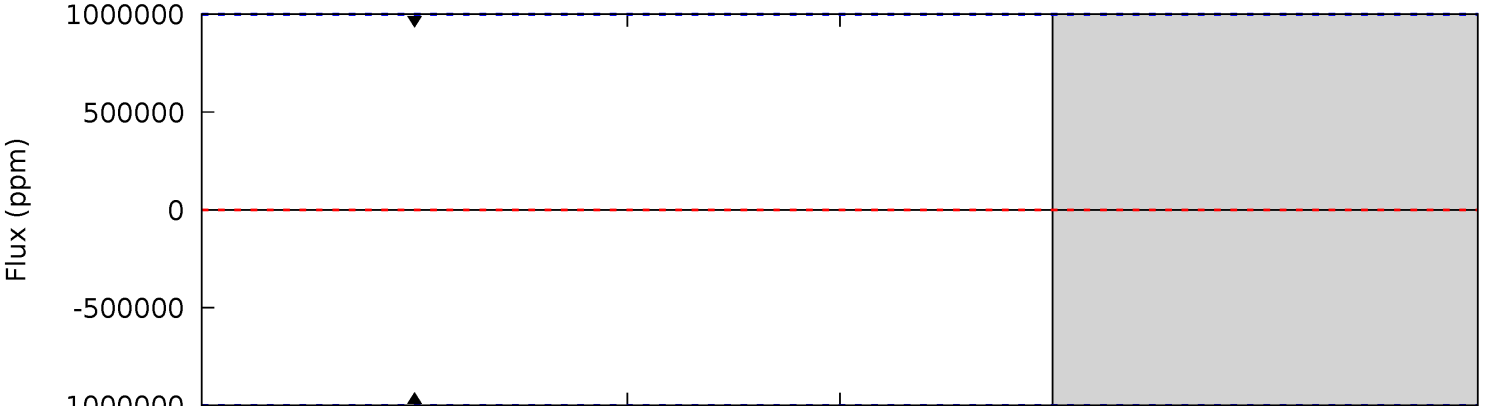
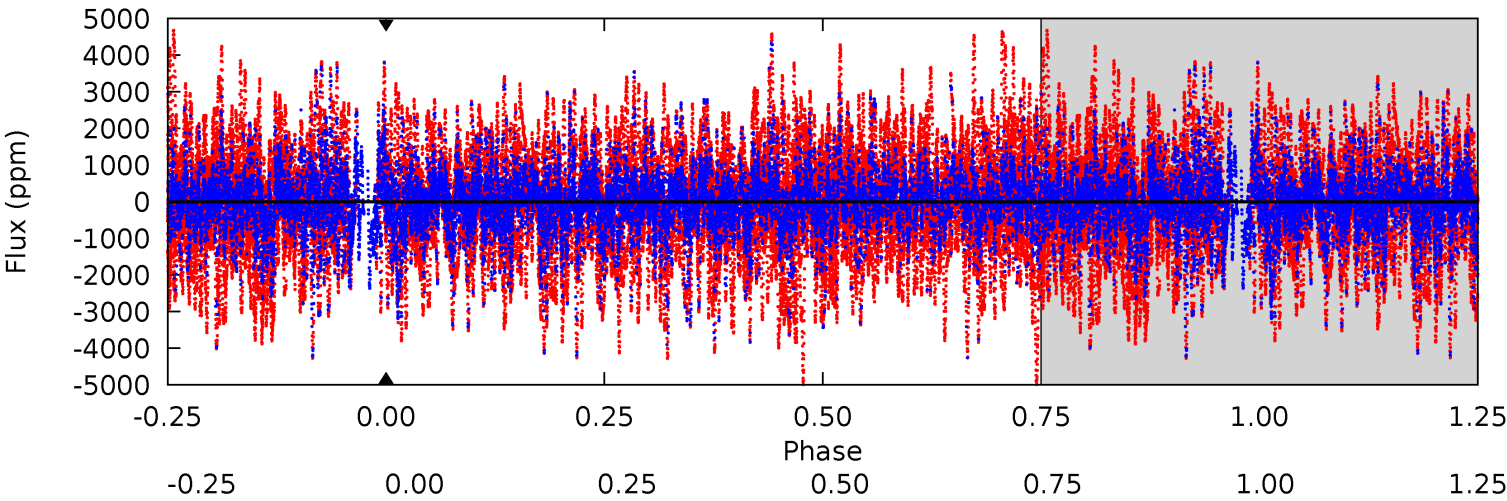
TCE 005780782-05 $P=185.516291$ Days $T_0=182.636471$ (BKJD)



DV Model-Shift Uniqueness Test

005780782-05, P = 185.516291 Days, E = 184.318124 Days

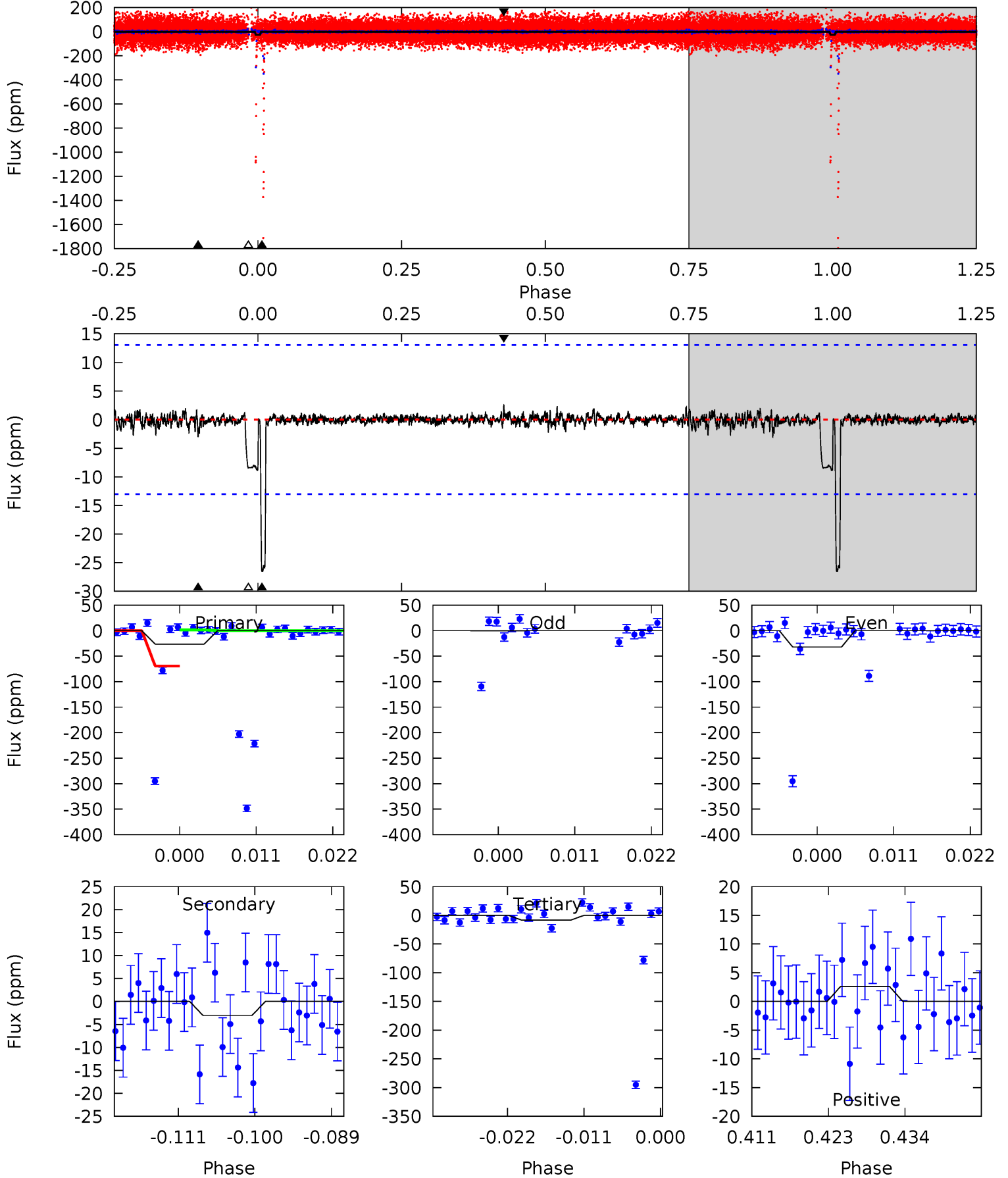
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

005780782-05, P = 185.516291 Days, E = 182.636471 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	1.17	3.24	1.00	5.01	2.54	0.26	6.96	9.19	-2.06	0.17	0.83	3.53	0.09	12.2



Stellar Parameters For KIC 005780782

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4359^{+39}_{-91}	$1.933^{+0.030}_{-0.030}$	$0.100^{+0.100}_{-0.200}$	$26.107^{+5.247}_{-5.771}$	$2.131^{+0.865}_{-0.865}$	$0.000^{+0.000}_{-0.000}$
	+1%/-2%	+2%/-2%	+100%/-200%	+20%/-22%	+41%/-41%	+34%/-10%
Source	SPE74	AST11	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 005780782-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$204.57^{+239.62}_{-146.79}$	1518^{+44}_{-45}	3251^{+10015}_{-13945}	$7.279^{+2191.871}_{-1325.598}$
Alt.	-3 ± 3	$199.13^{+221.23}_{-138.77}$	1515^{+45}_{-46}	-2114^{+444}_{-47}	$0.024^{+0.249}_{-0.021}$

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

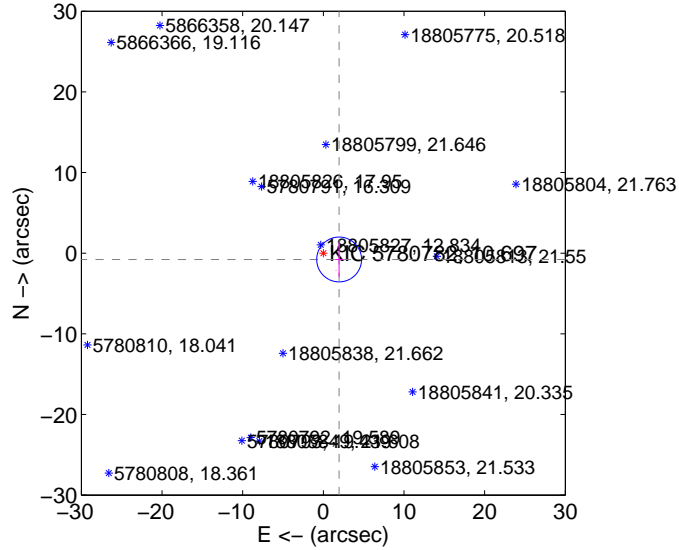
Supplemental centroid analysis for 005780782-05. **Kepler magnitude: 10.70.** Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

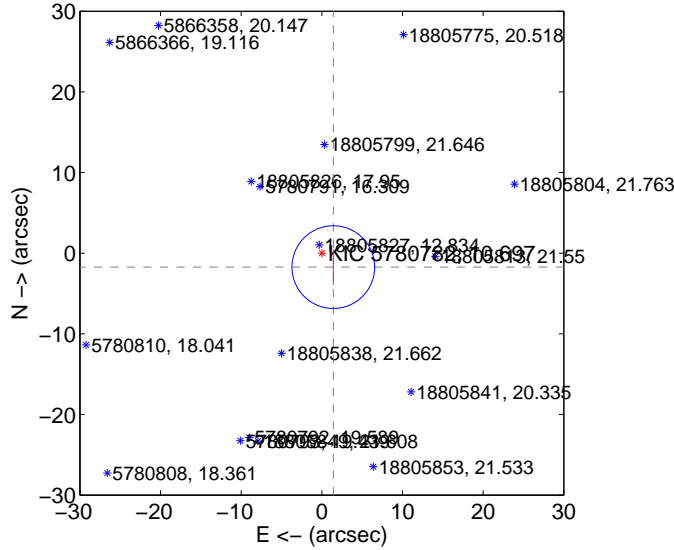
The direct PRF centroid is offset from the target star catalog position by about 0.99 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.109 ± 0.926	2.28	-1.958 ± 0.504	-0.782 ± 2.157
PRF-fit source offset from KIC position	2.239 ± 1.709	1.31	-1.421 ± 0.085	-1.730 ± 2.211
photometric centroid source offset	11.82 ± 20.57	0.57	-9.75 ± 17.87	-6.69 ± 25.36

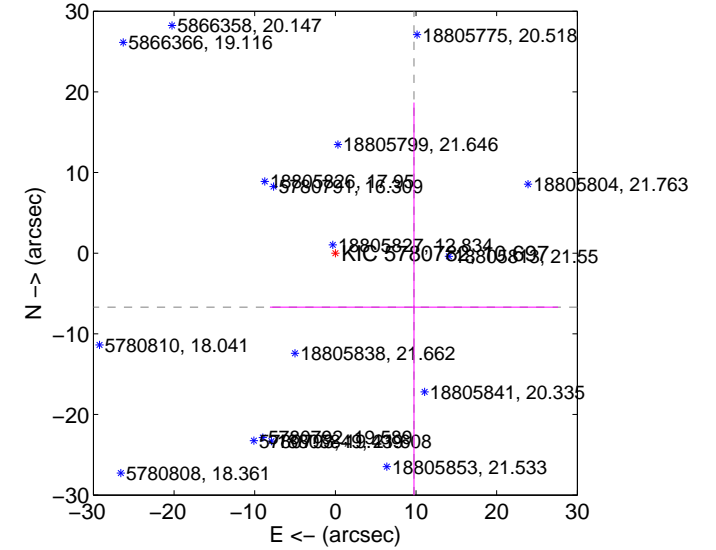
offset from difference PRF-fit to OOT PRF-fit



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.

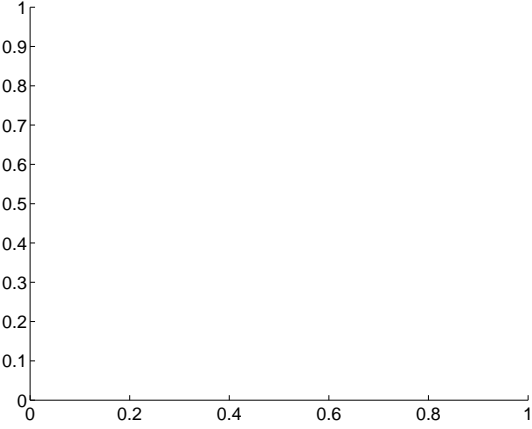
Q1 no difference image



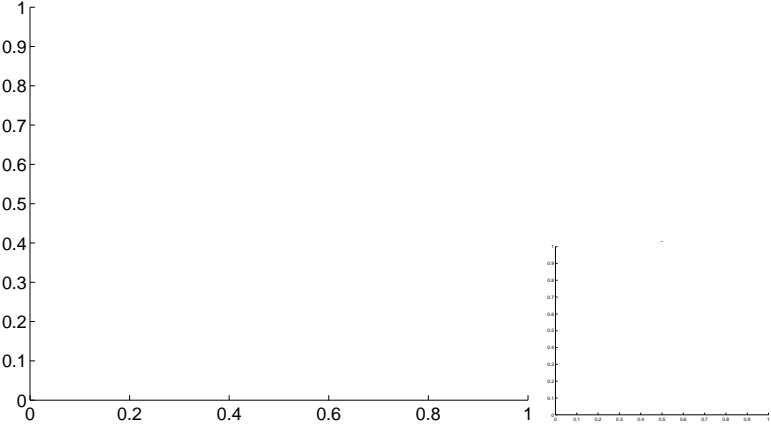
Q1 no OOT image



Q2 no difference image



Q2 no OOT image



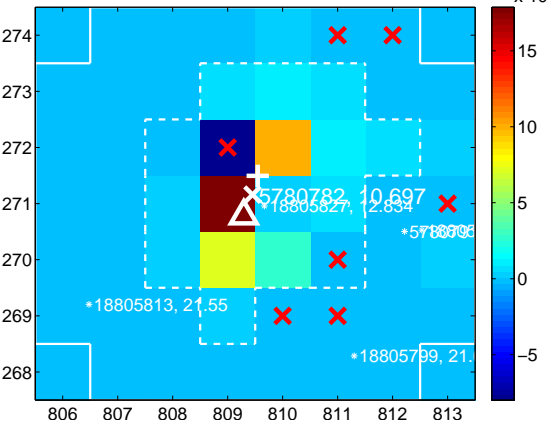
Q3 no difference image



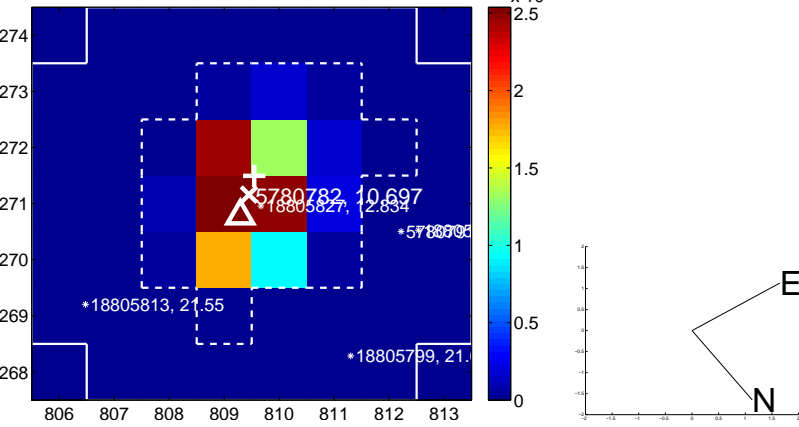
Q3 no OOT image



Q4 difference image



Q4 OOT image



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

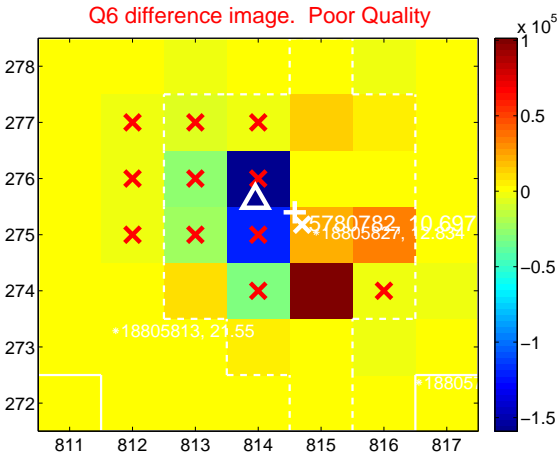
Q5 no difference image



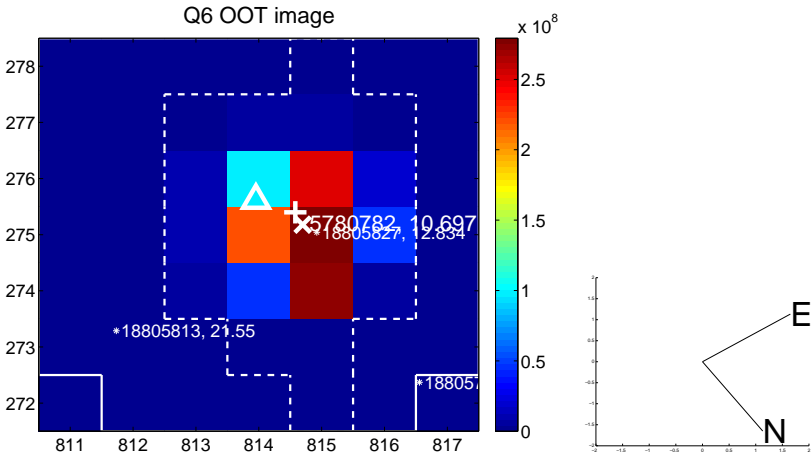
Q5 no OOT image



Q6 difference image. Poor Quality



Q6 OOT image



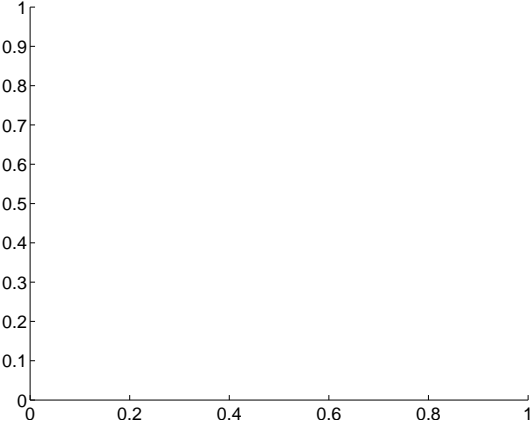
Q7 no difference image



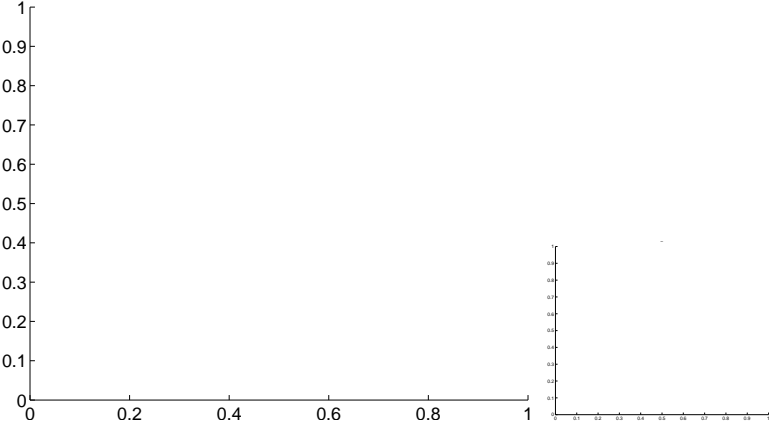
Q7 no OOT image



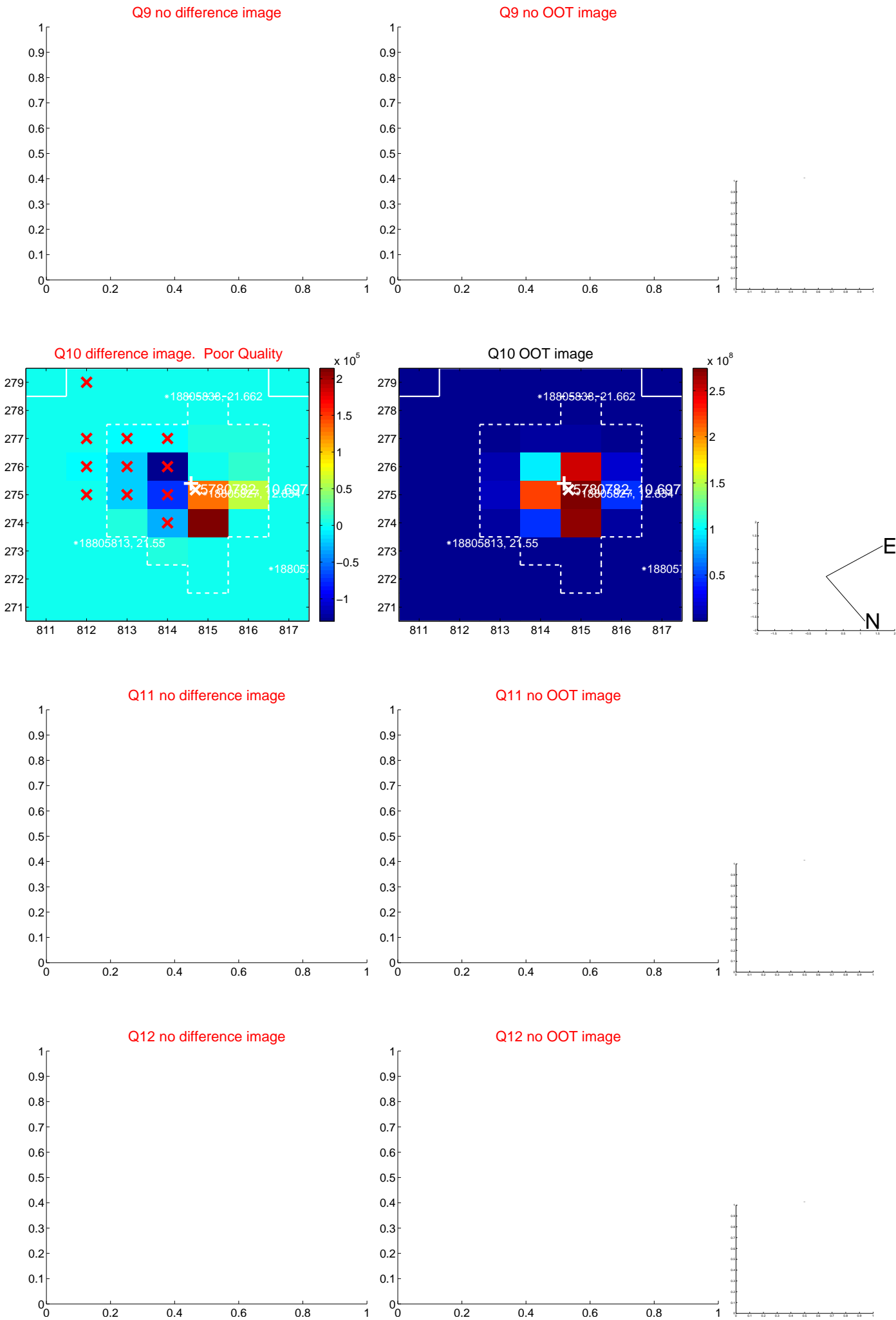
Q8 no difference image



Q8 no OOT image



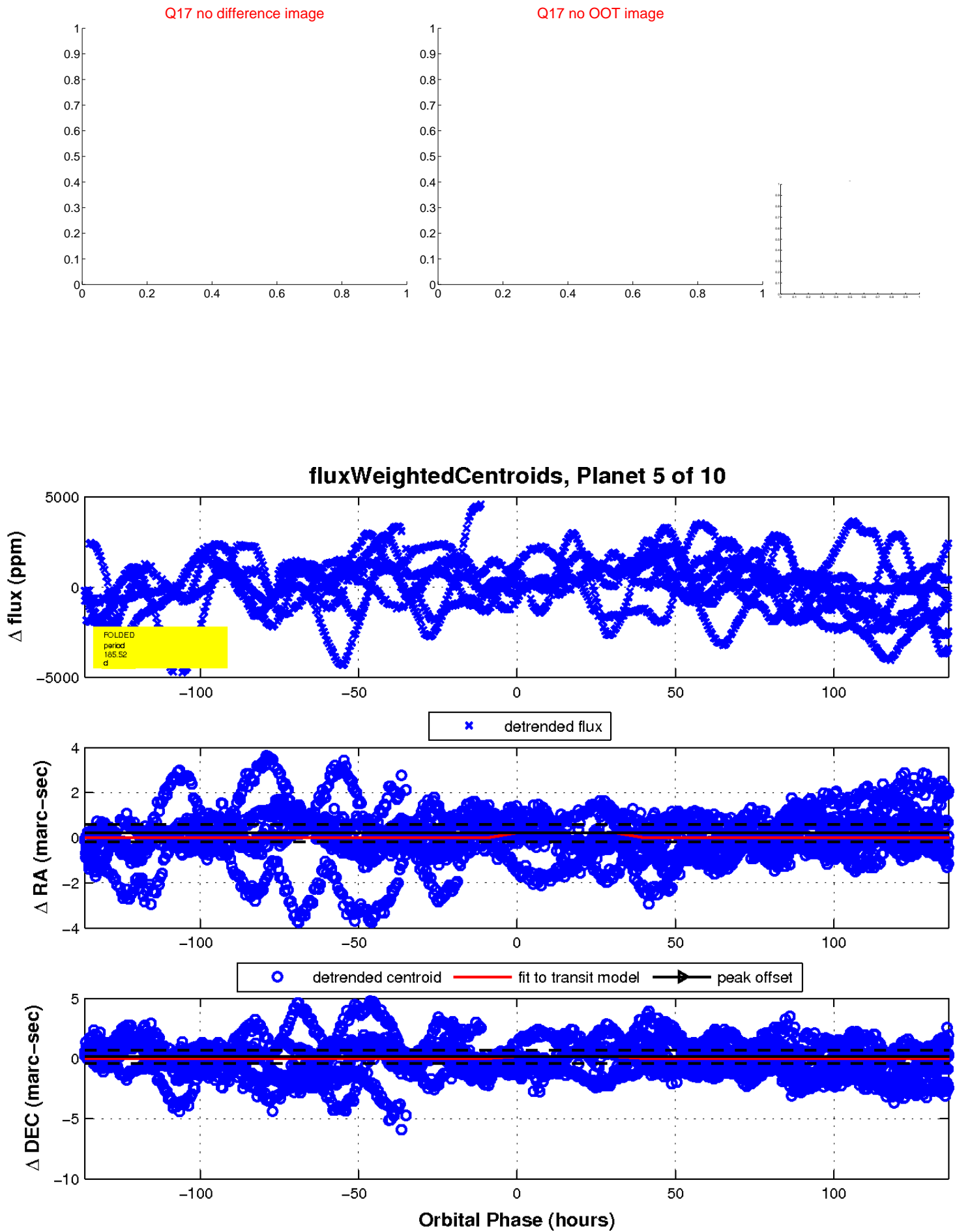
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

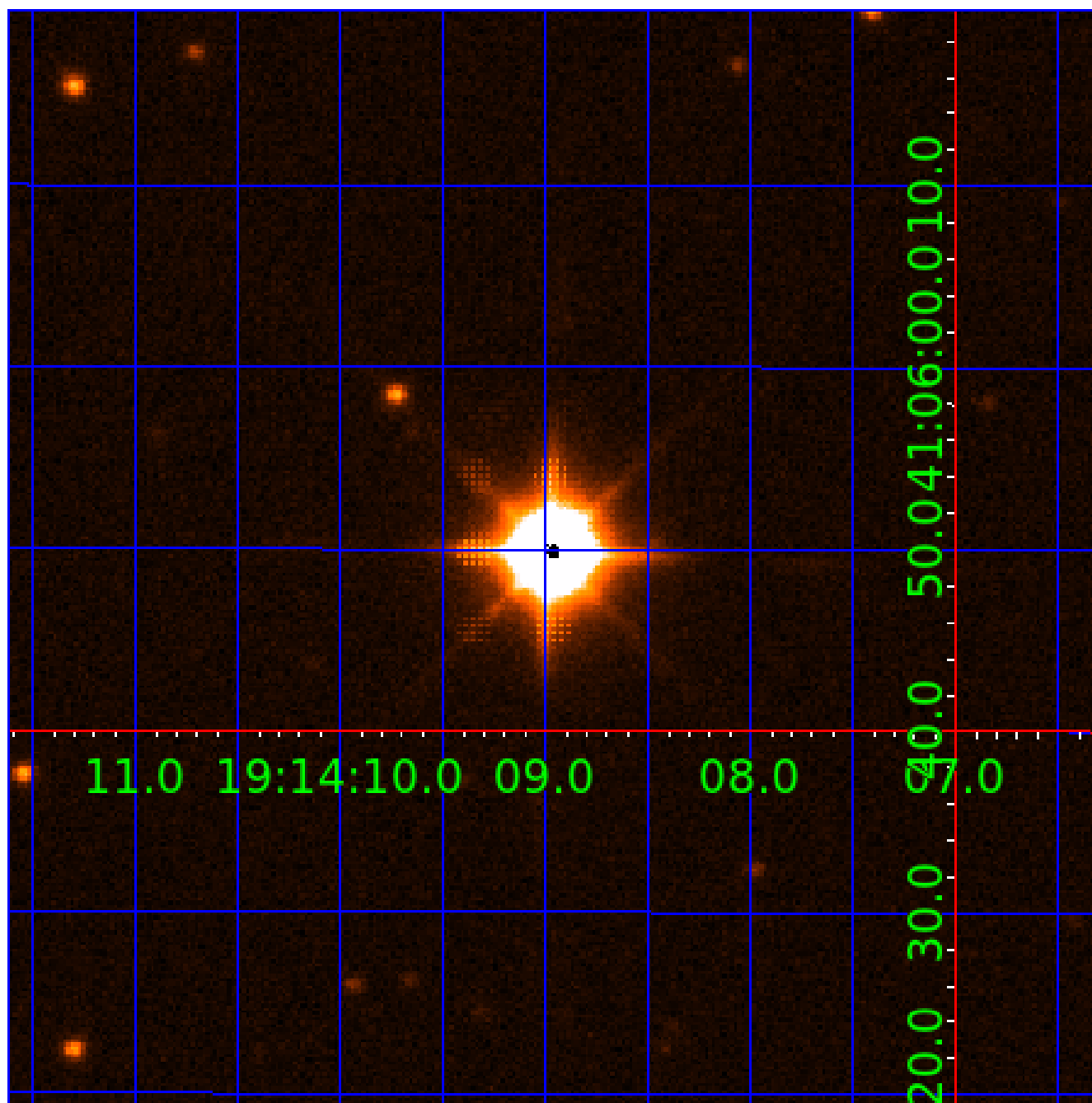


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
005780782-01	OBS	No	369.146663	369.893592	2064.7	20.710	97.5	118.9	26.11	4359	198.29	131.22
005780782-02	OBS	No	369.894878	373.565961	1448.6	16.966	81.6	82.3	26.11	4359	206.01	130.87
005780782-03	OBS	No	246.340188	244.270189	398.8	12.500	46.0	-1.0	26.11	4359	49.42	225.03
005780782-04	OBS	No	184.793502	181.491110	2826.3	29.386	44.8	92.1	26.11	4359	276.25	330.14
005780782-05	OBS	No	185.516291	184.318124	406.2	15.000	53.8	-1.0	26.11	4359	49.87	328.43
005780782-06	OBS	No	582.905555	162.441375	100.5	7.883	41.5	5.2	26.11	4359	30.30	71.36
005780782-07	OBS	No	456.526196	287.257117	110.3	1.000	39.6	2.2	26.11	4359	34.58	98.85
005780782-08	OBS	No	569.190679	175.351019	517.0	10.776	38.8	15.3	26.11	4359	57.86	73.67
005780782-09	OBS	No	458.158942	202.747347	767.2	21.875	11.9	8.1	26.11	4359	92.71	98.38
005780782-10	OBS	No	192.199401	213.478149	32.3	5.697	10.7	8.1	26.11	4359	19.44	313.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005780782-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—NO_FITS—INCONSISTENT_TRANS—CENT_SATURATED
005780782-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005780782-05	OBS	FP	0.00	1	0	0	0	LPP_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005780782-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_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—HALO_GHOST
005780782-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-09	OBS	FP	0.00	1	0	1	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
005780782-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

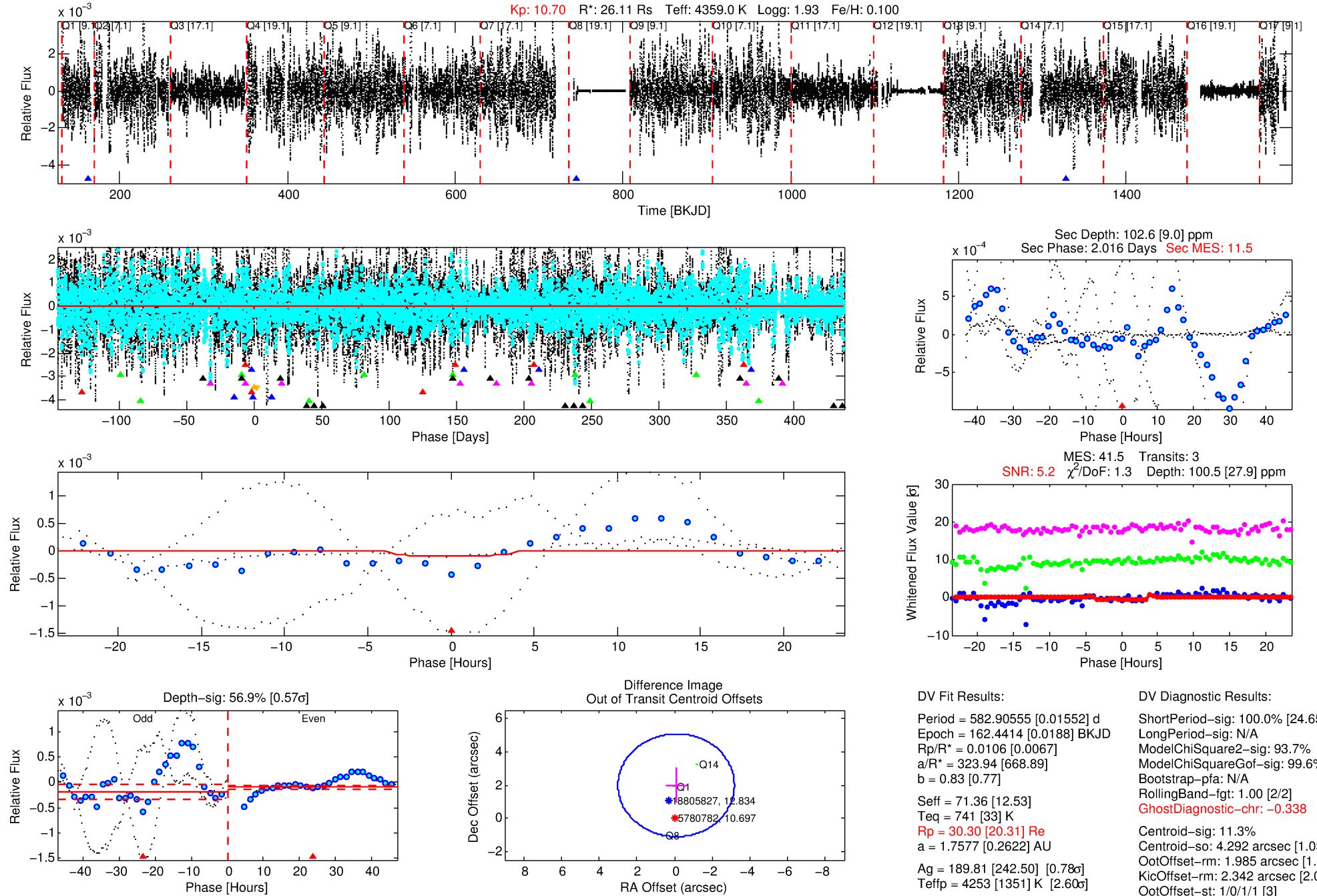
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005780782-06

No Significant Match Found

DV One-Page Summary

KIC: 5780782 Candidate: 6 of 10 Period: 582.906 d



DV Fit Results:

Period = 582.90555 [0.01552] d
Epoch = 162.4414 [0.0188] BKJD
Rp/R* = 0.0106 [0.0067]
a/R* = 323.94 [668.89]
b = 0.83 [0.77]
Seff = 71.36 [12.53]
Teq = 741 [33] K
Rp = 30.30 [20.31] Re
a = 1.7577 [0.2622] AU
Ag = 189.81 [242.50] [0.78σ]
Teffp = 4253 [1351] K [2.60σ]

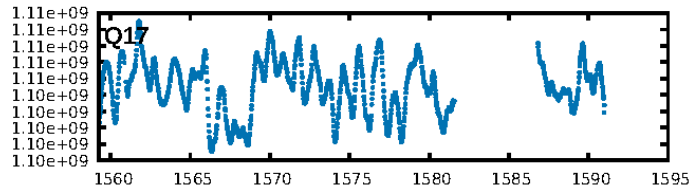
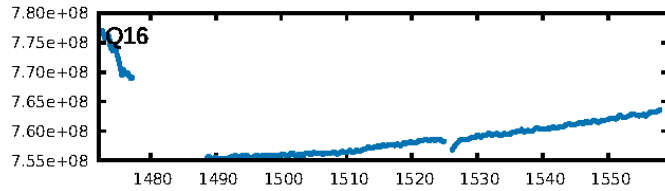
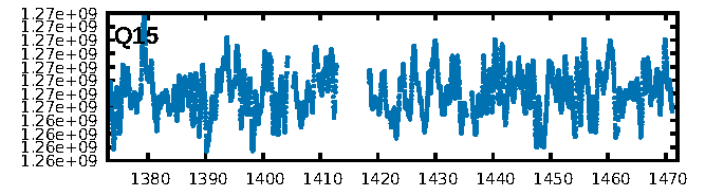
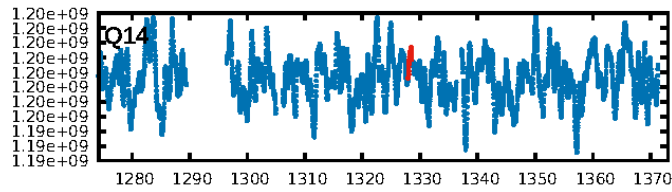
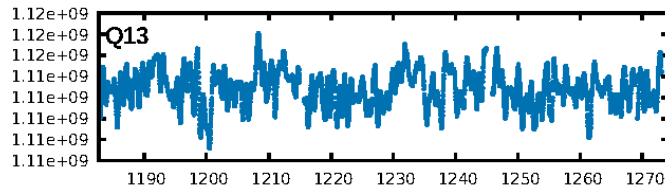
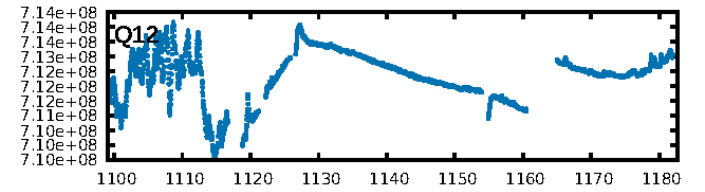
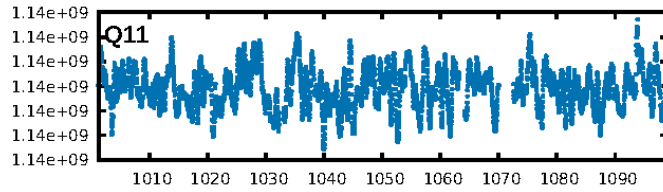
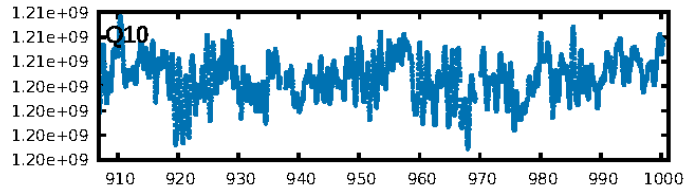
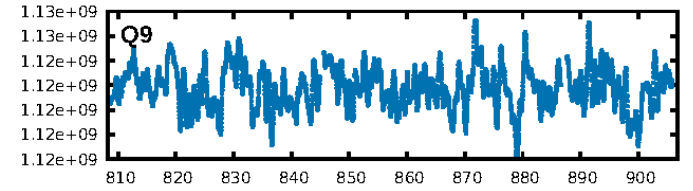
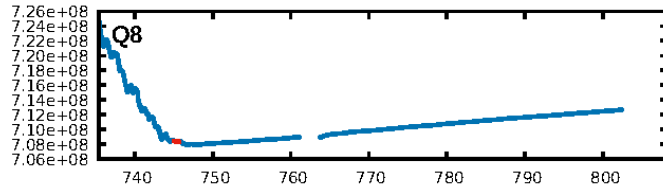
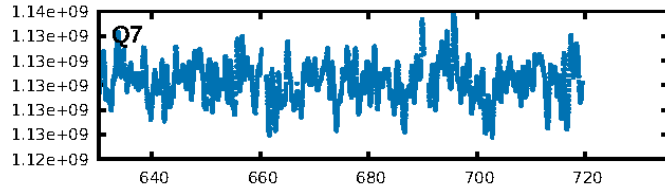
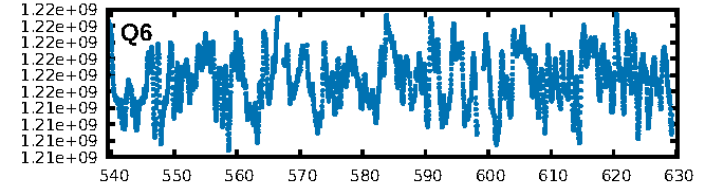
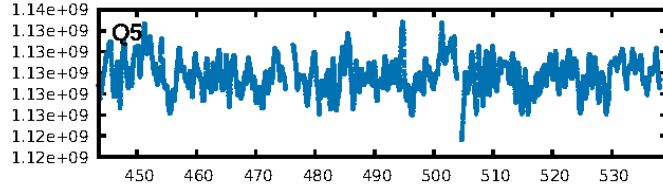
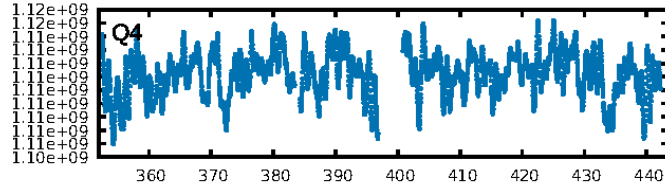
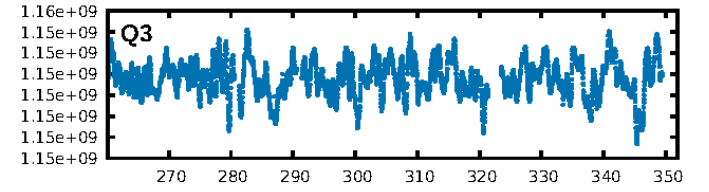
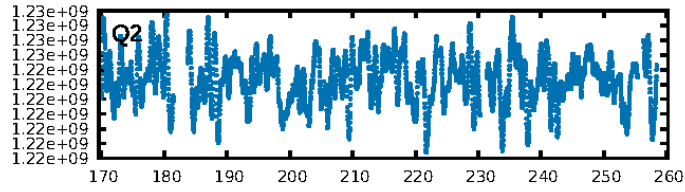
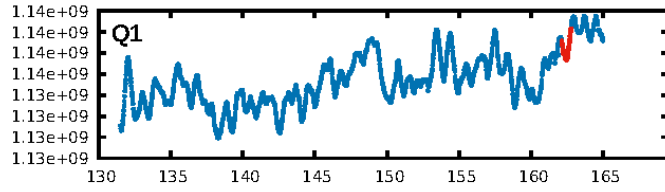
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [24.65σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 93.7%
ModelChiSquareGof-sig: 99.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -0.338
Centroid-sig: 11.3%
Centroid-so: 4.292 arcsec [1.03σ]
OotOffset-rm: 1.985 arcsec [1.93σ]
KicOffset-rm: 2.342 arcsec [2.00σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.67 [2/3]

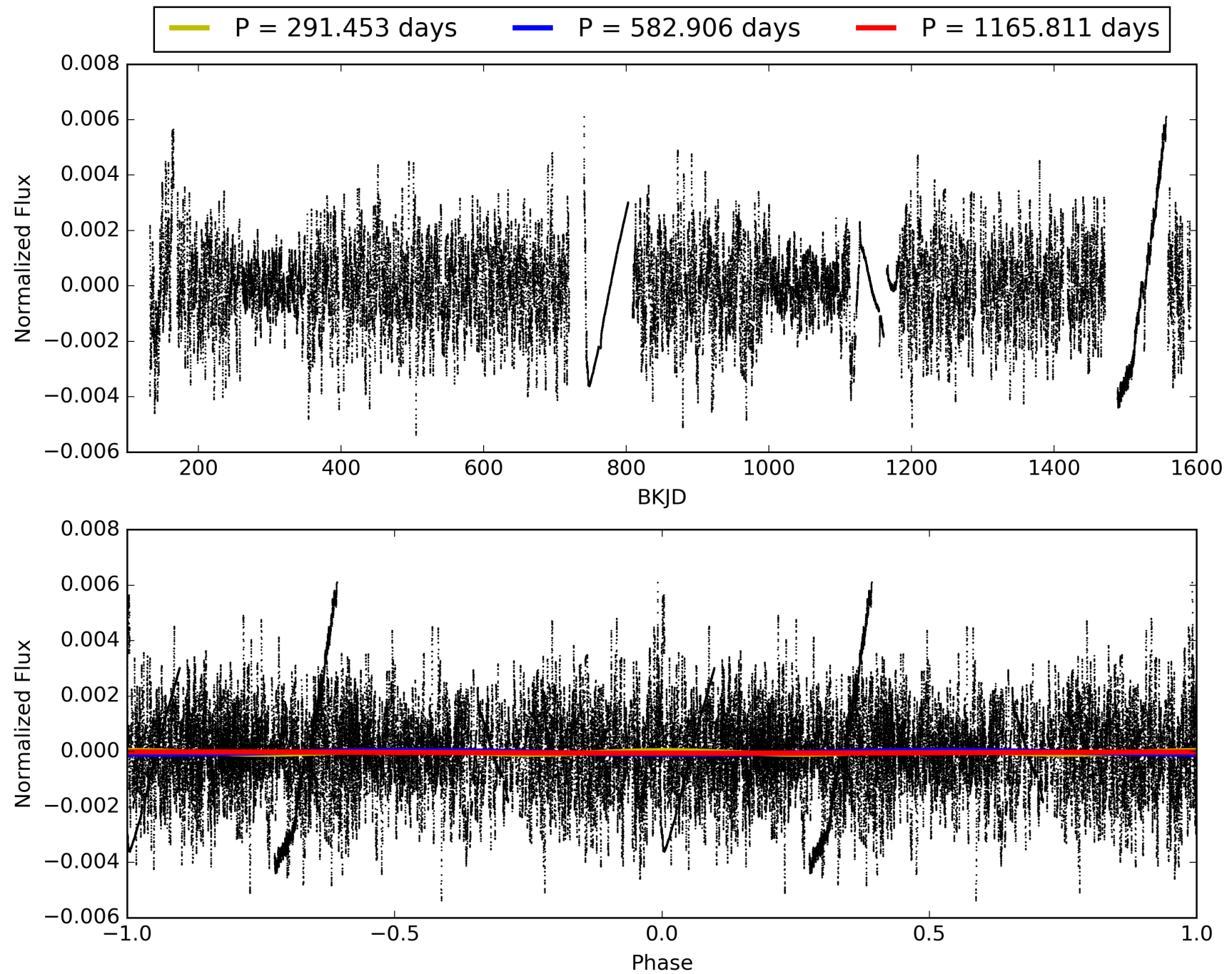
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:44:15 Z

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

TCE 005780782-06, PDC Light Curves

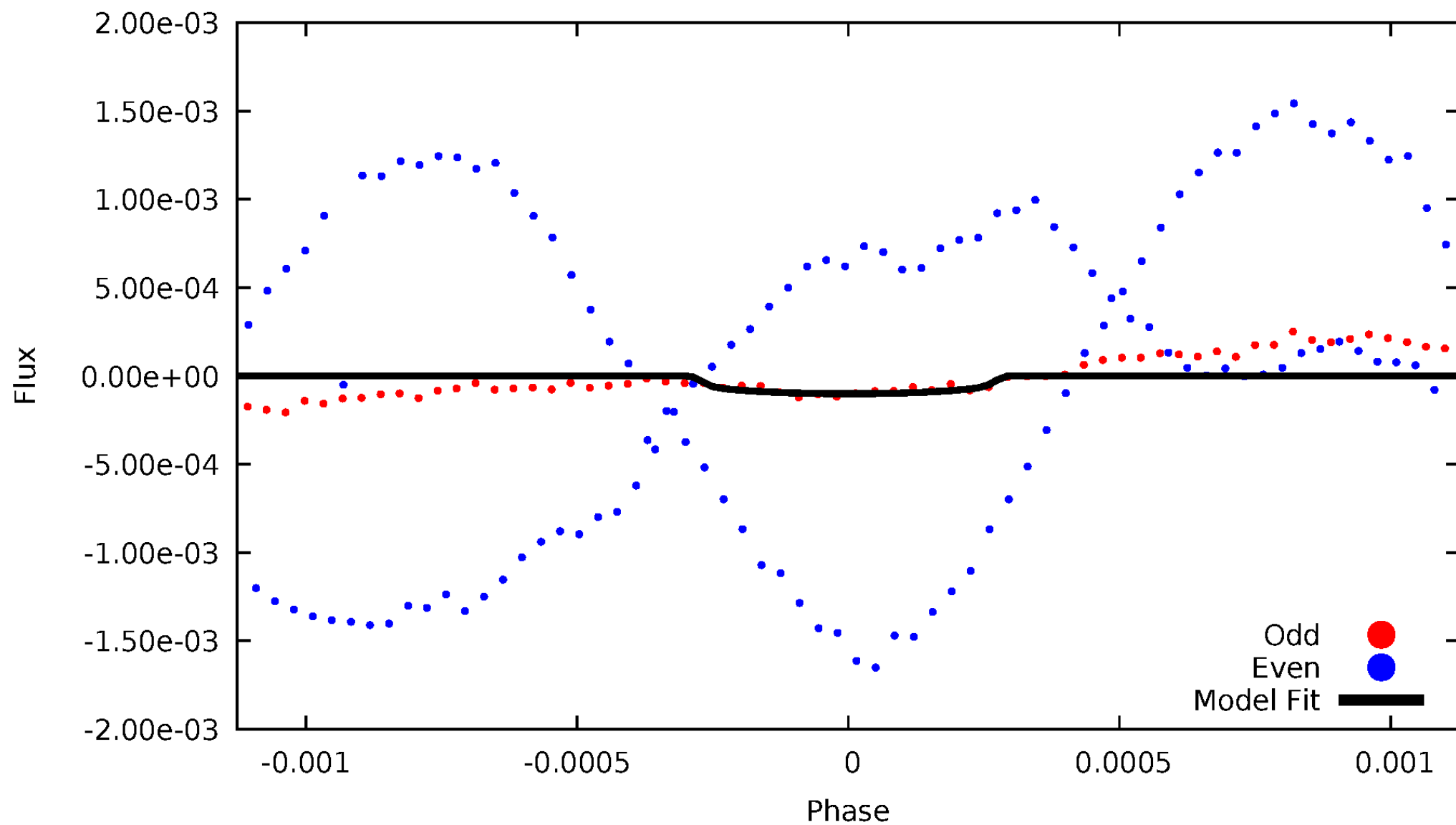


TCE 005780782-06



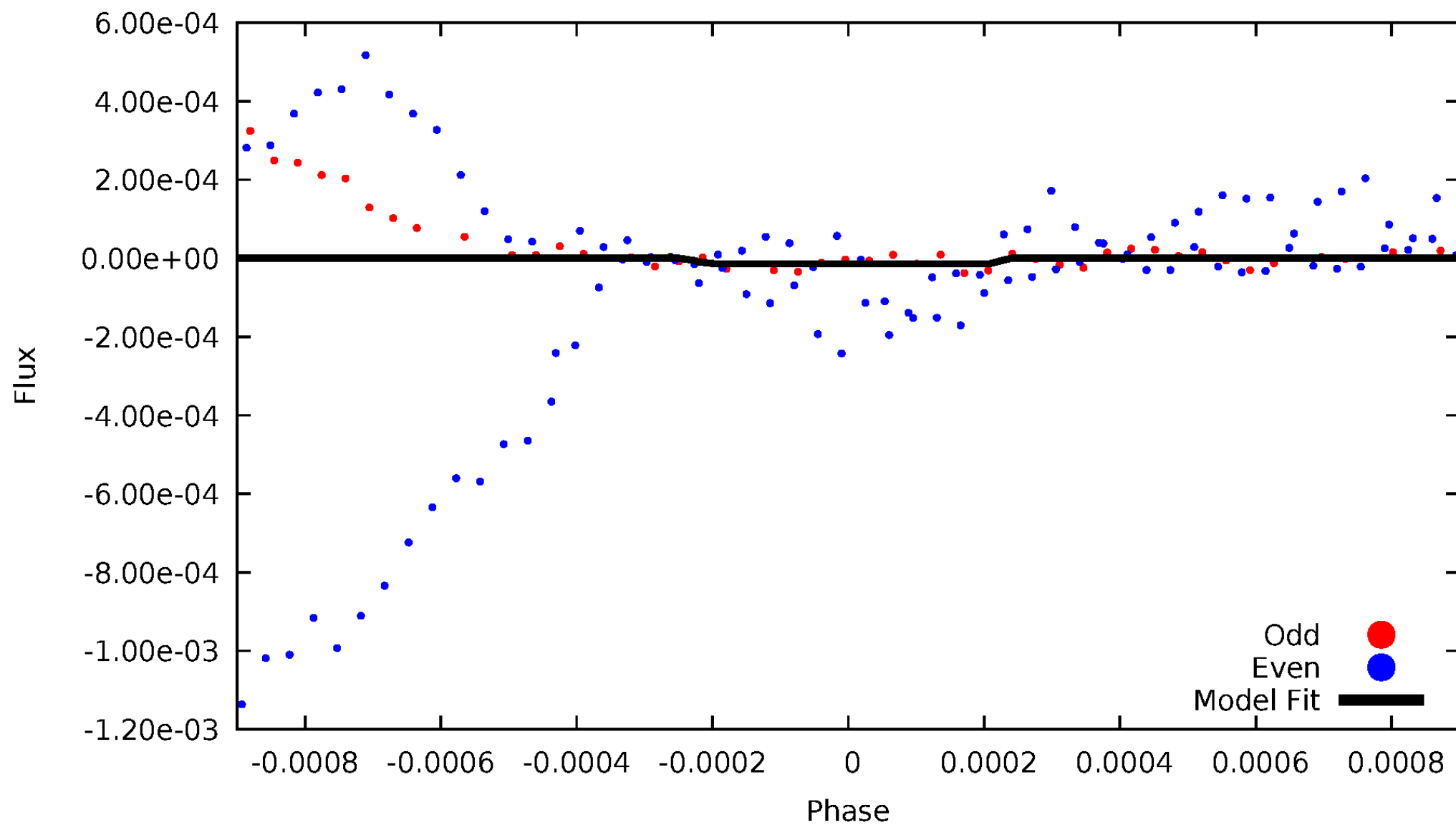
DV Odd/Even

TCE 005780782-06



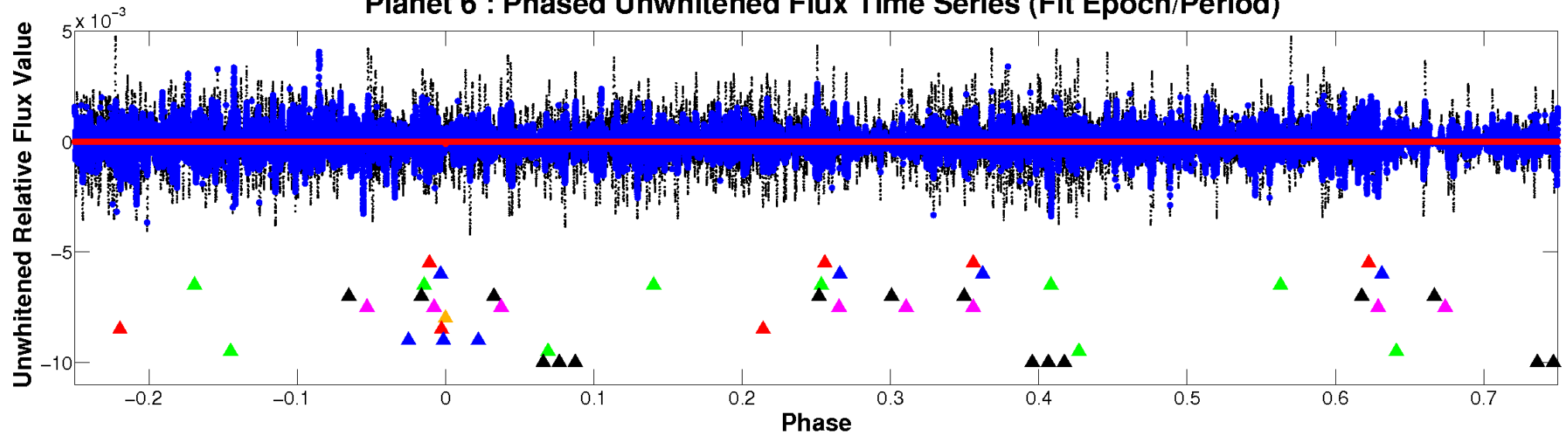
ALT Odd/Even

TCE 005780782-06

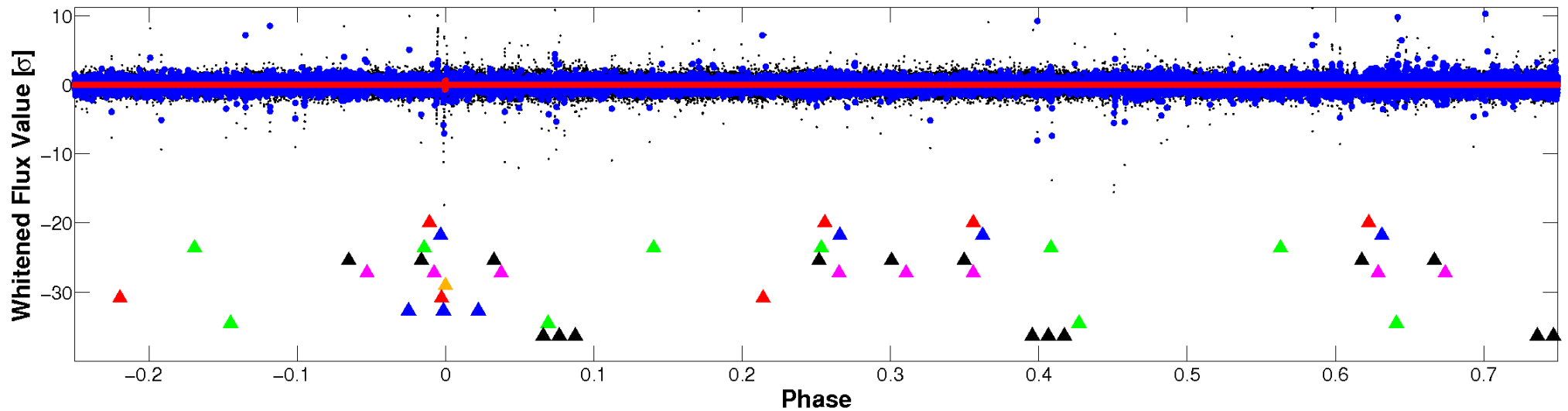


Non-Whitened Vs. Whitened Light Curve

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

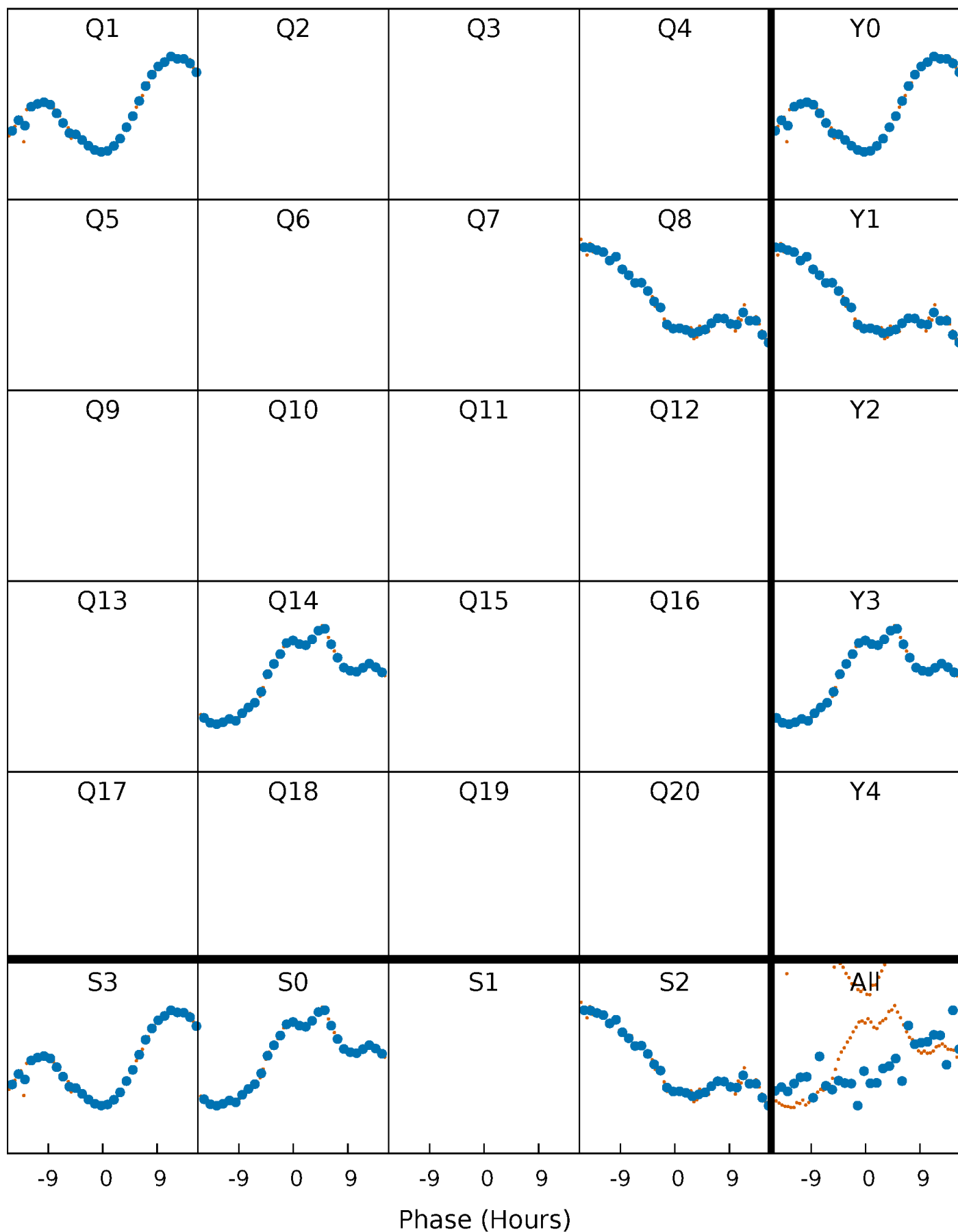


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



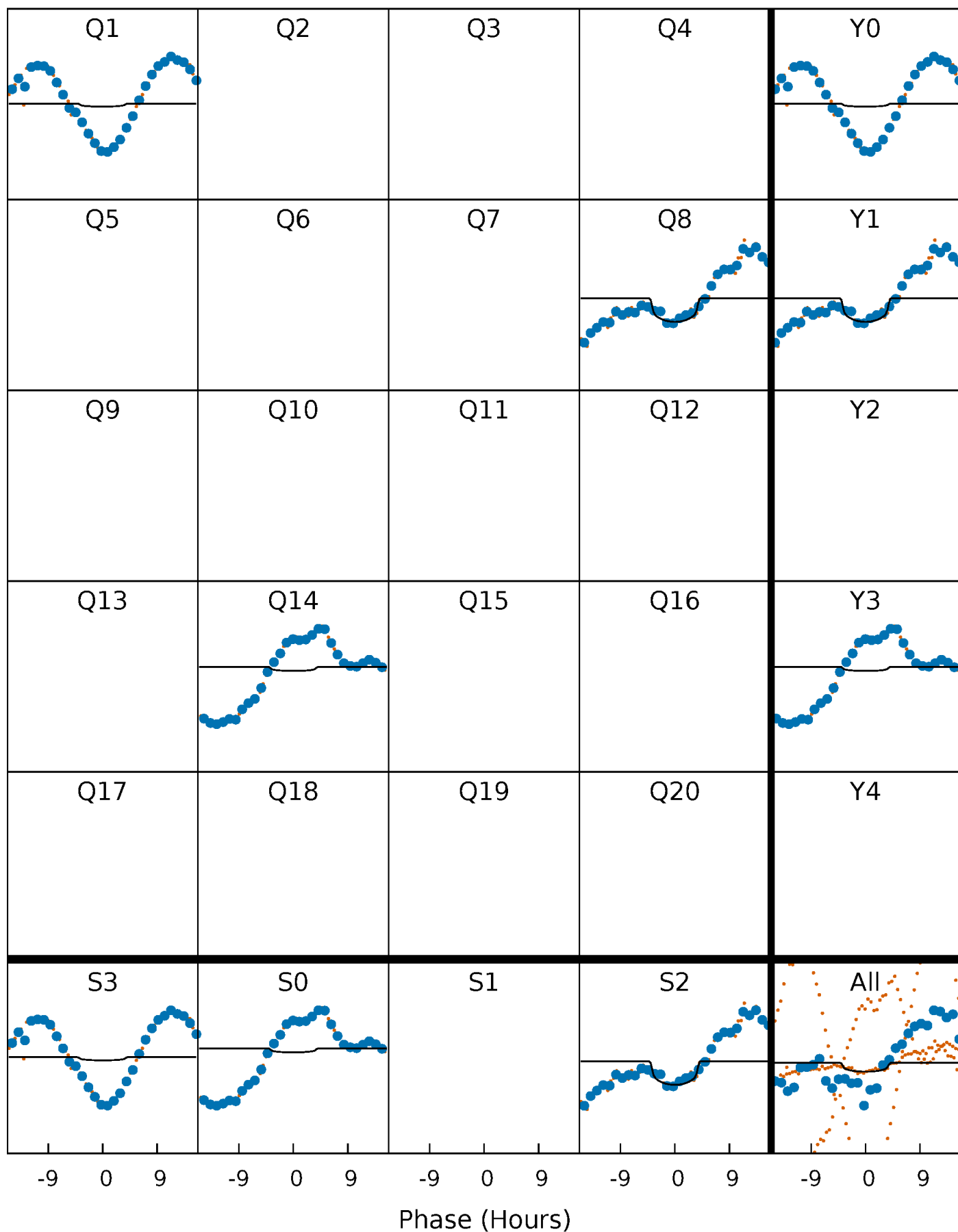
PDC Quarter-Phased Transit Curves

TCE 005780782-06 P=582.905555 Days $T_0=162.441375$ (BKJD)



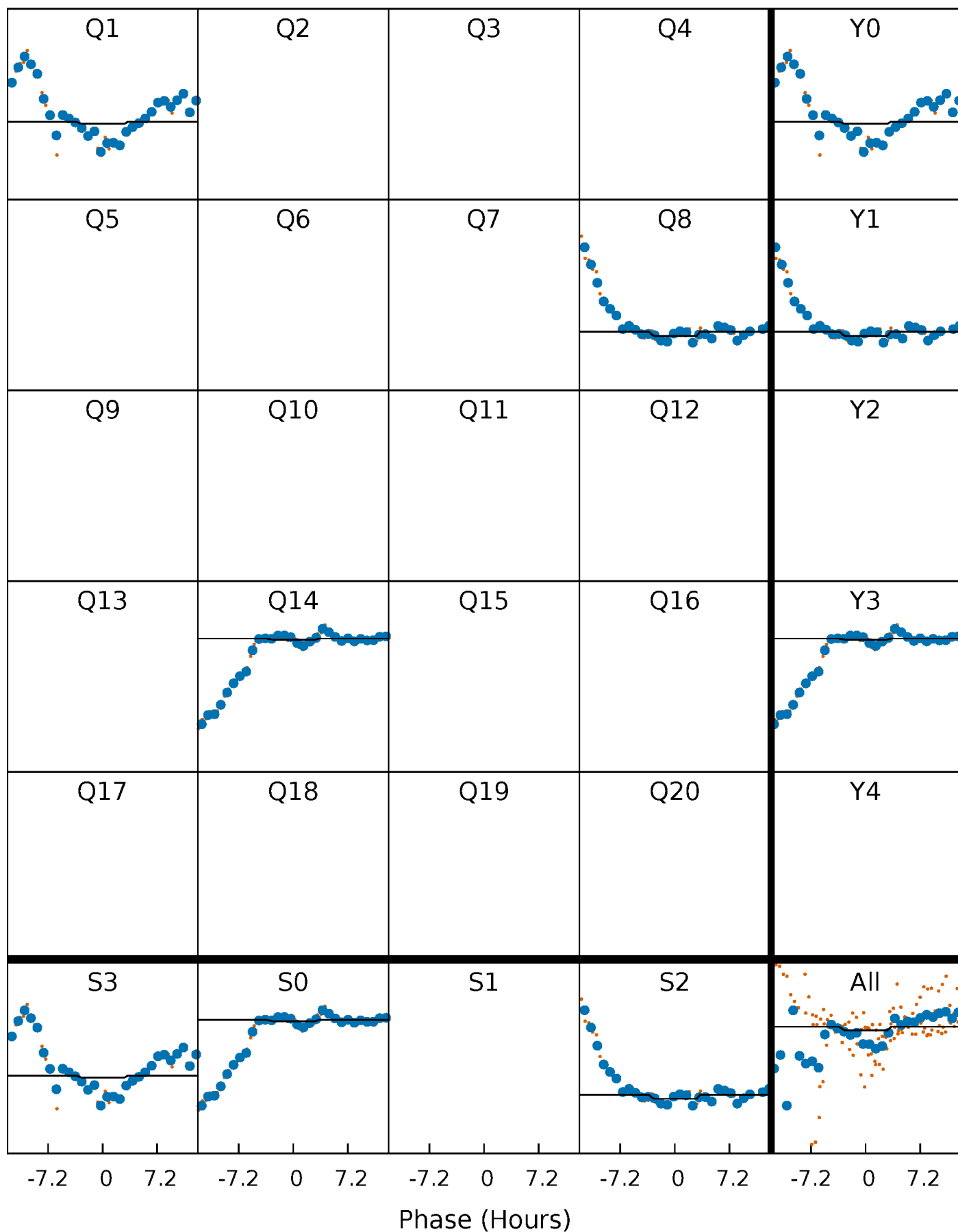
DV Quarter-Phased Transit Curves

TCE 005780782-06 $P=582.905555$ Days $T_0=162.441375$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

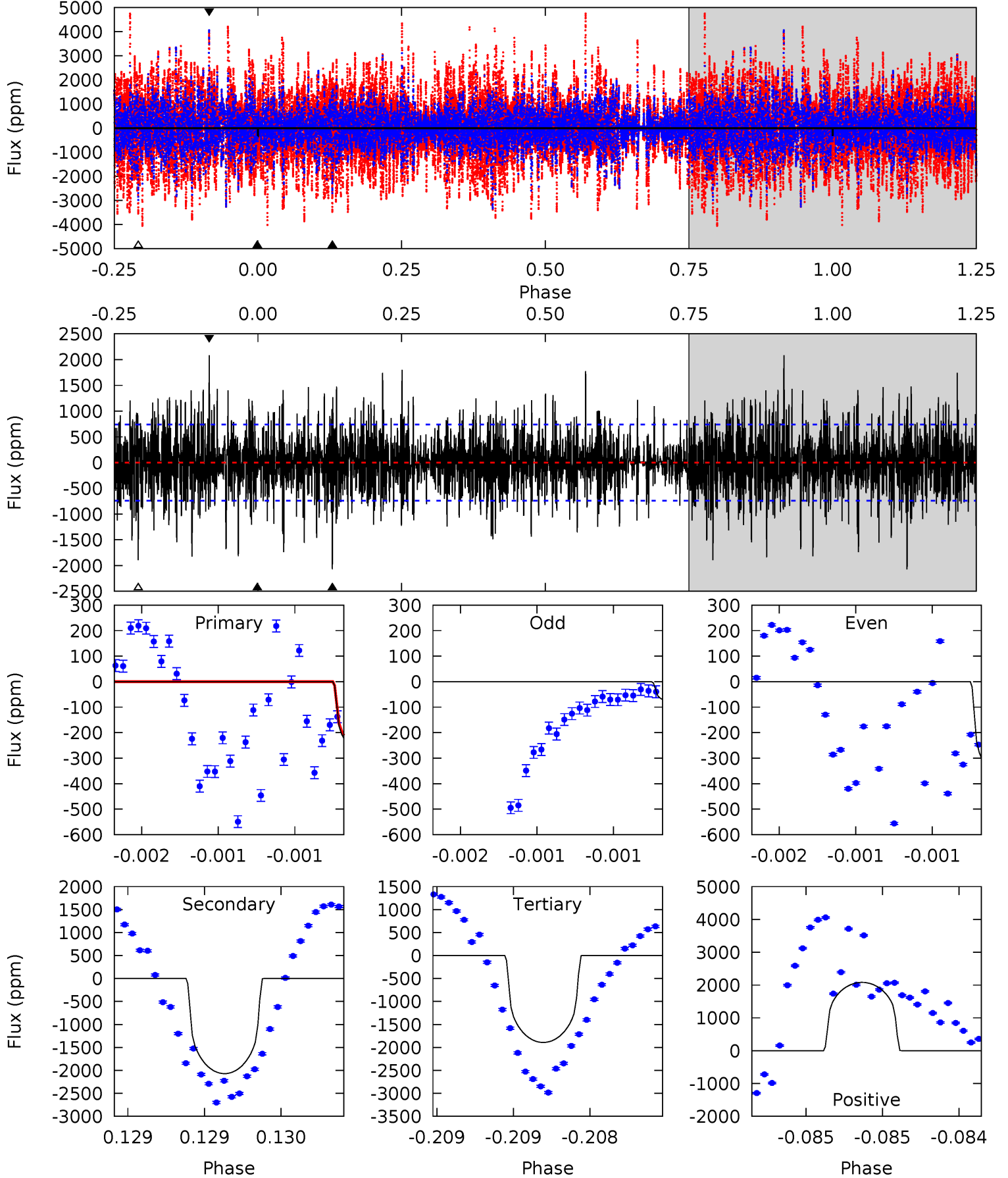
TCE 005780782-06 P=582.901355 Days $T_0=162.476501$ (BKJD)



DV Model-Shift Uniqueness Test

005780782-06, P = 582.905555 Days, E = 162.441375 Days

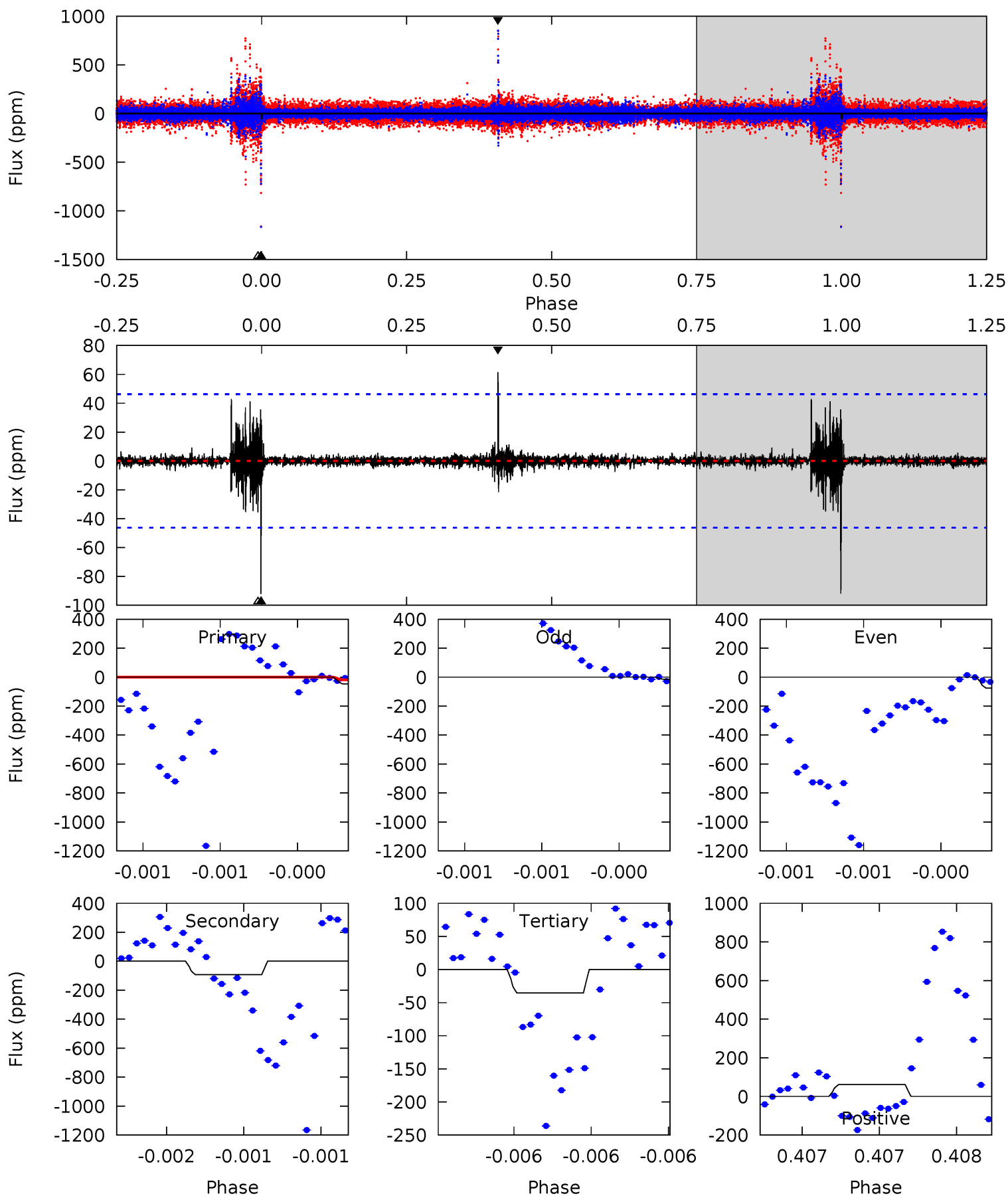
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.19	15.5	14.2	15.6	5.54	3.43	3.50	-12.0	-13.4	1.34	-0.07	1.03	3.17	0.50	0.12



Alt Model-Shift Uniqueness Test

005780782-06, P = 582.901355 Days, E = 162.476501 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.68	11.1	4.28	7.42	5.59	3.50	0.45	1.40	-1.74	6.84	3.70	1.64	3.22	0.40	3.12



Stellar Parameters For KIC 005780782

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4359^{+39}_{-91}	$1.933^{+0.030}_{-0.030}$	$0.100^{+0.100}_{-0.200}$	$26.107^{+5.247}_{-5.771}$	$2.131^{+0.865}_{-0.865}$	$0.000^{+0.000}_{-0.000}$
	+1%/-2%	+2%/-2%	+100%/-200%	+20%/-22%	+41%/-41%	+34%/-10%
Source	SPE74	AST11	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 005780782-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2071 ± 134	$31.12^{+20.74}_{-17.99}$	1039^{+28}_{-33}	8828^{+9007}_{-2103}	3618^{+15524}_{-2210}
Alt.	-92 ± 8	$18.64^{+15.54}_{-13.07}$	1036^{+31}_{-33}	5145^{+4907}_{-1147}	478^{+4553}_{-347}

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 $A_{obs} \gg 1.0$

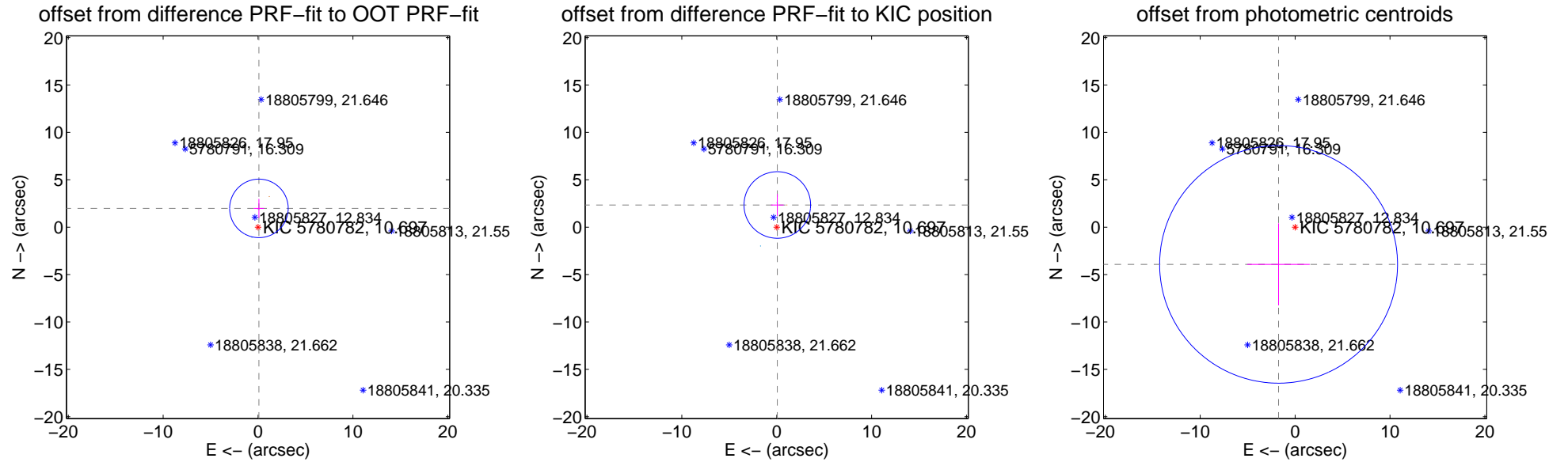
DV Centroid Data

Supplemental centroid analysis for 005780782-06. **Kepler magnitude: 10.70.** Transit SNR 5.19

There are 2 quarters with good PRF difference image offsets

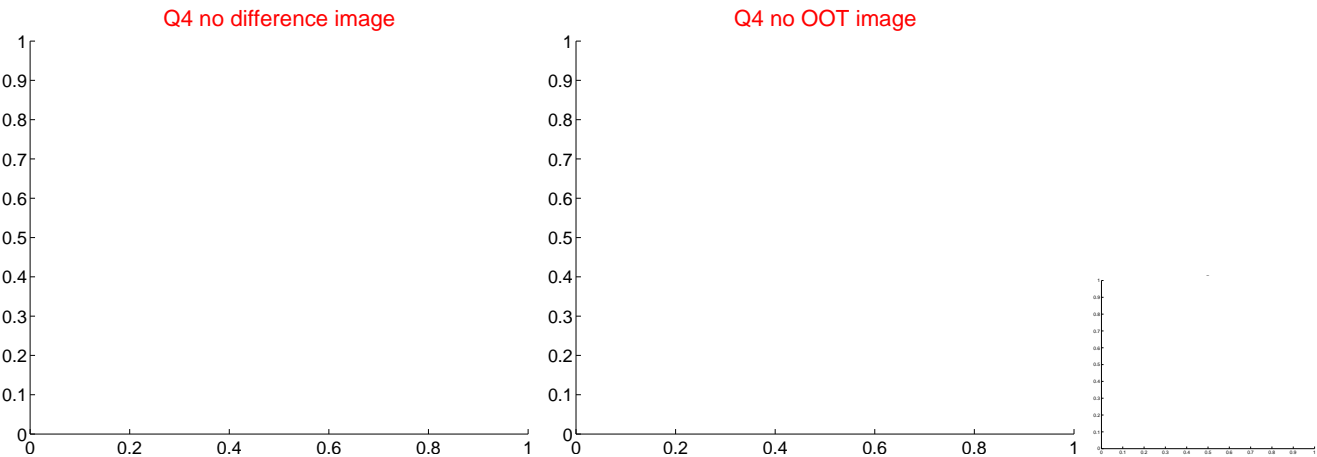
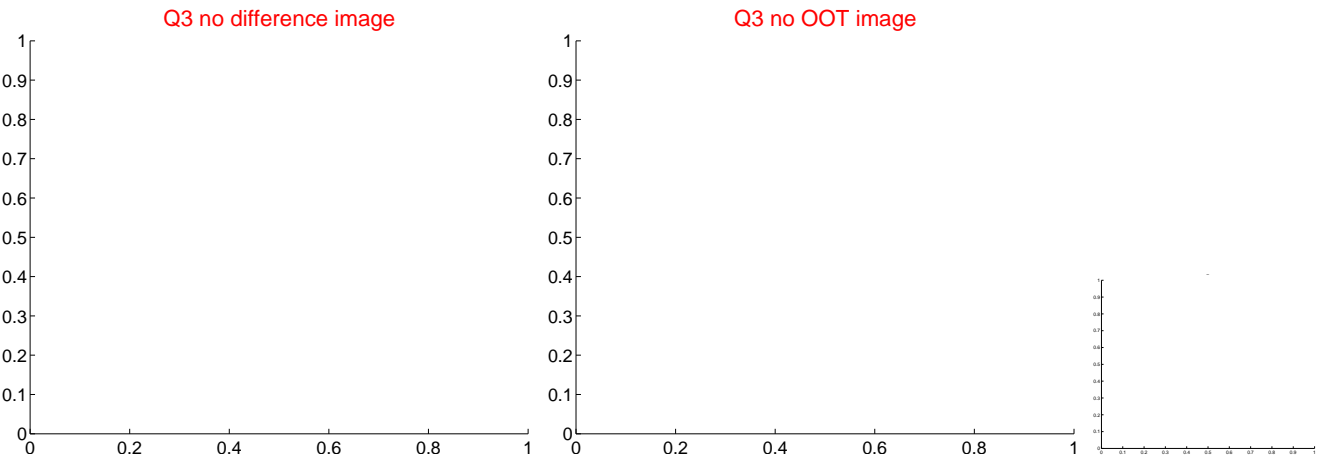
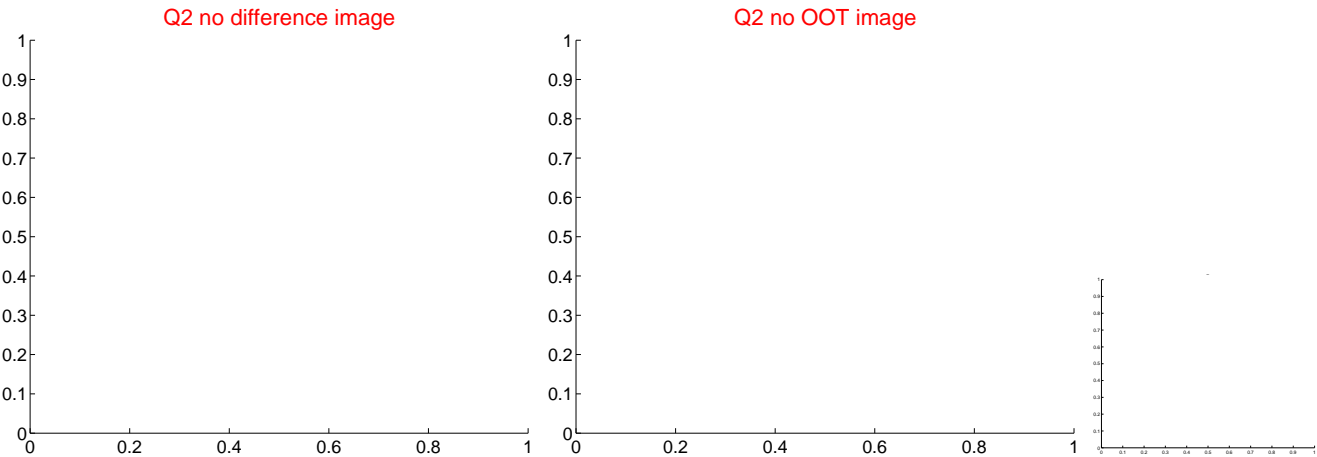
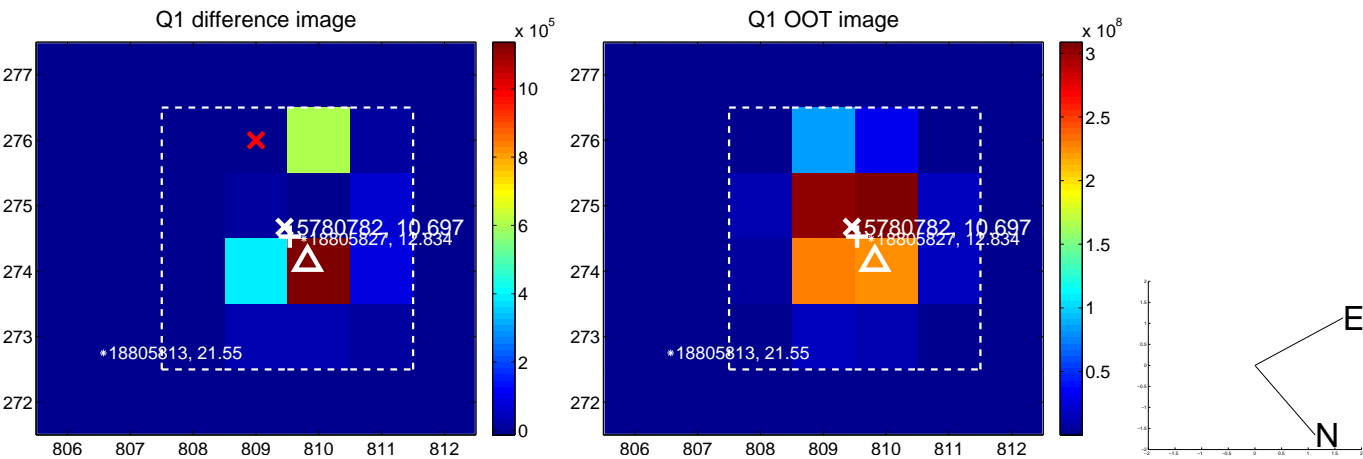
The direct PRF centroid is offset from the target star catalog position by about 0.90 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.985 ± 1.029	1.93	-0.093 ± 0.543	1.983 ± 1.007
PRF-fit source offset from KIC position	2.342 ± 1.170	2.00	-0.061 ± 0.673	2.341 ± 1.155
photometric centroid source offset	4.29 ± 4.18	1.03	1.74 ± 3.28	-3.92 ± 4.33

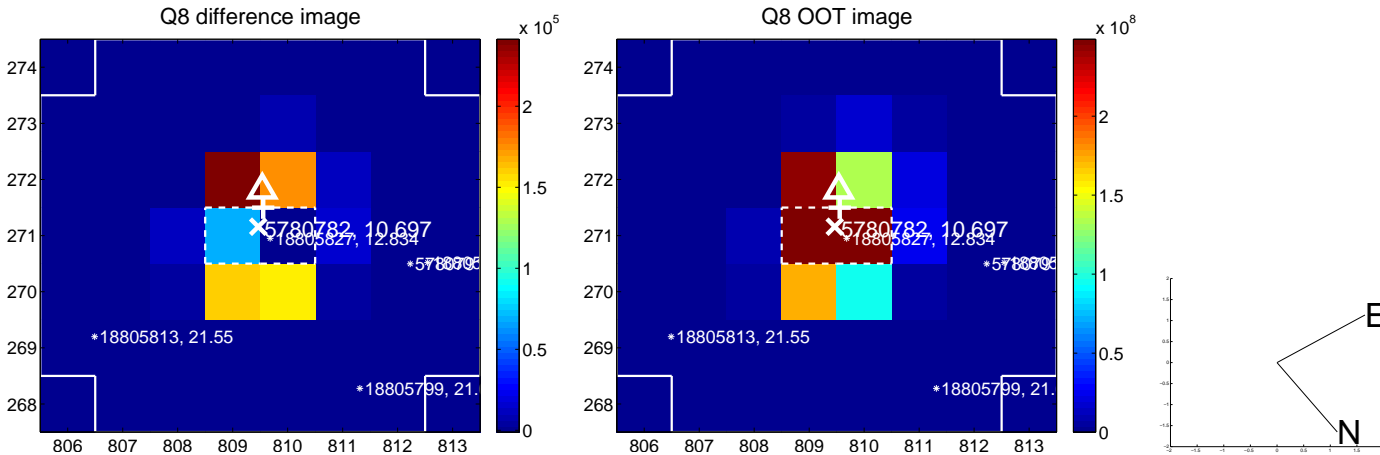
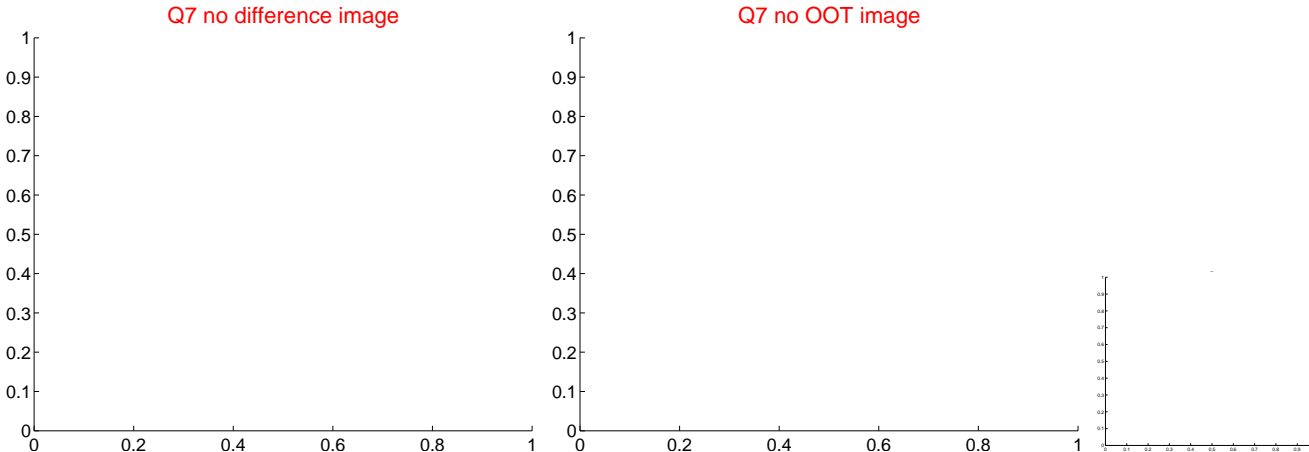
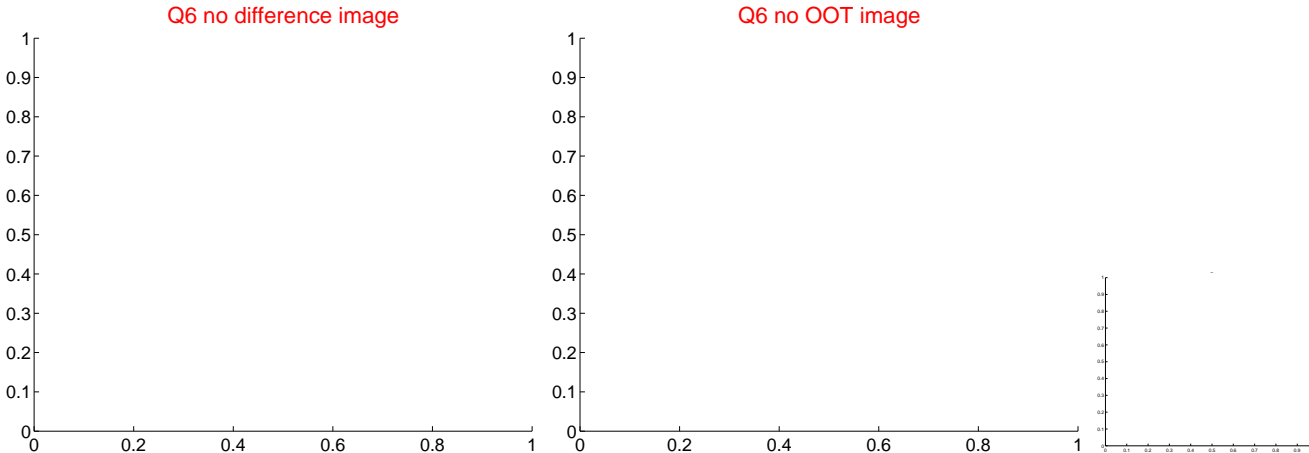
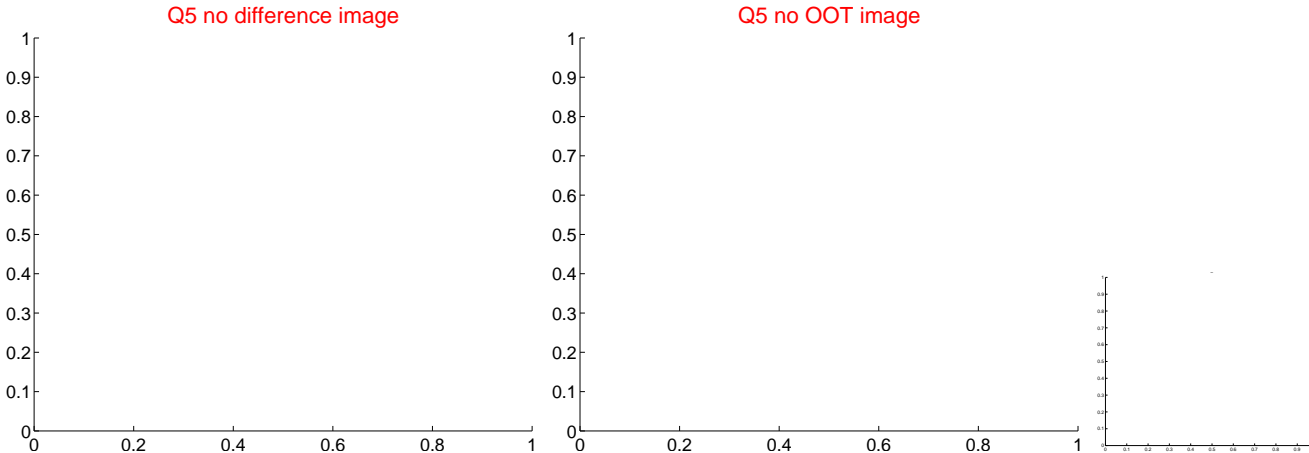


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

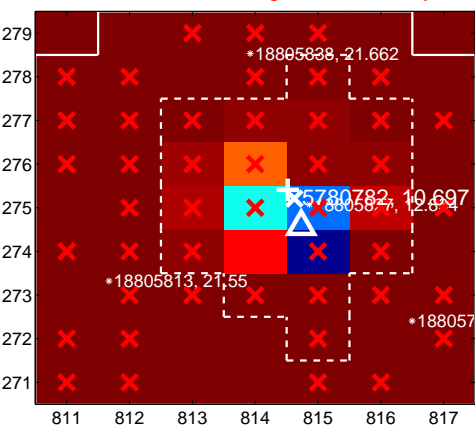
Q13 no difference image



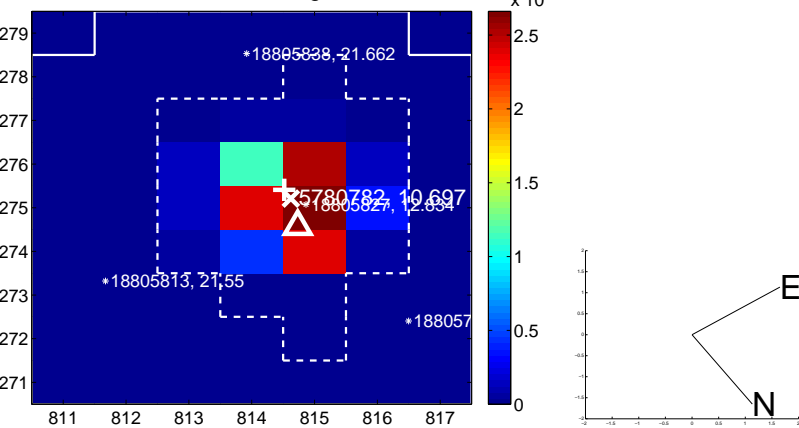
Q13 no OOT image



Q14 difference image. Poor Quality



Q14 OOT image



Q15 no difference image



Q15 no OOT image



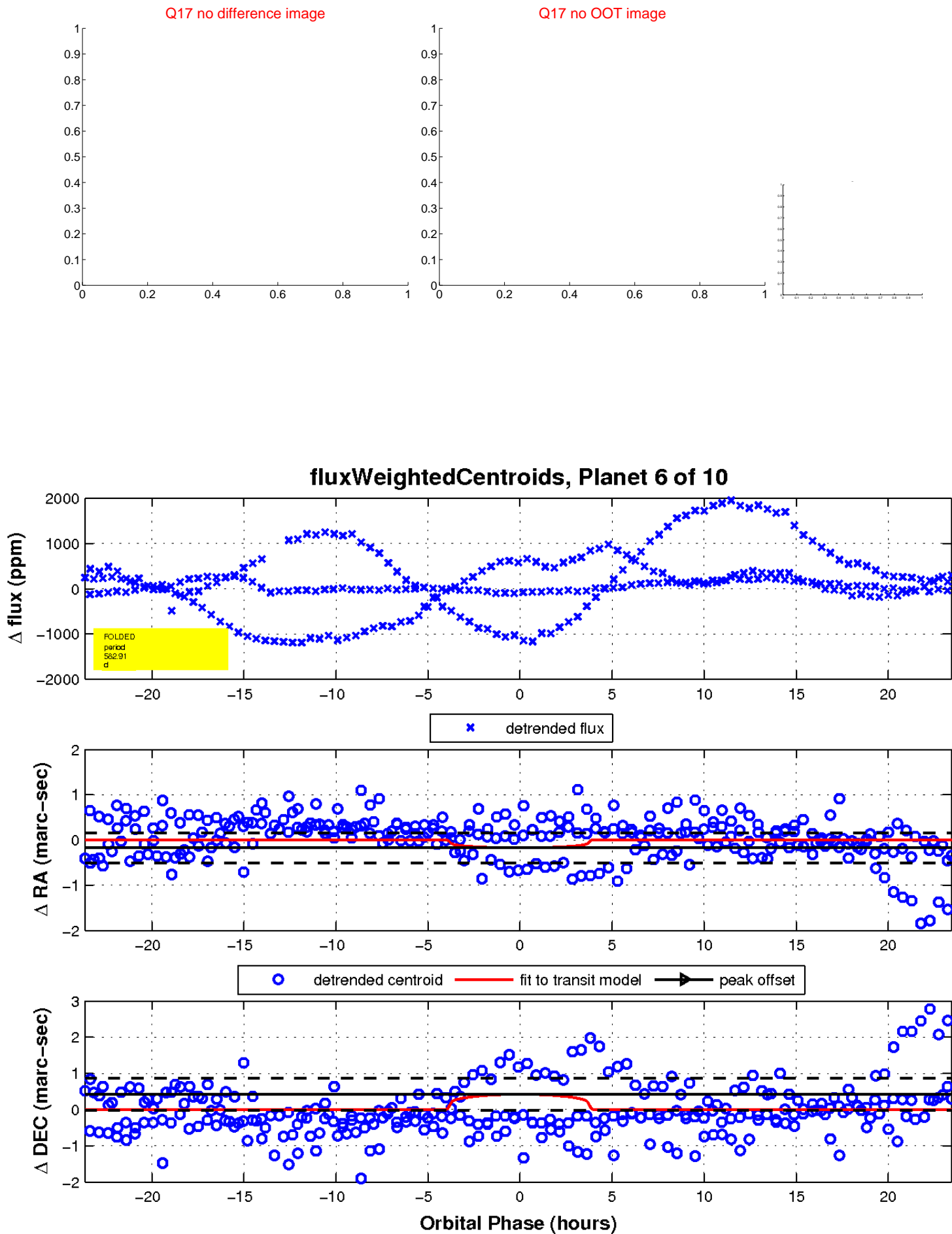
Q16 no difference image



Q16 no OOT image

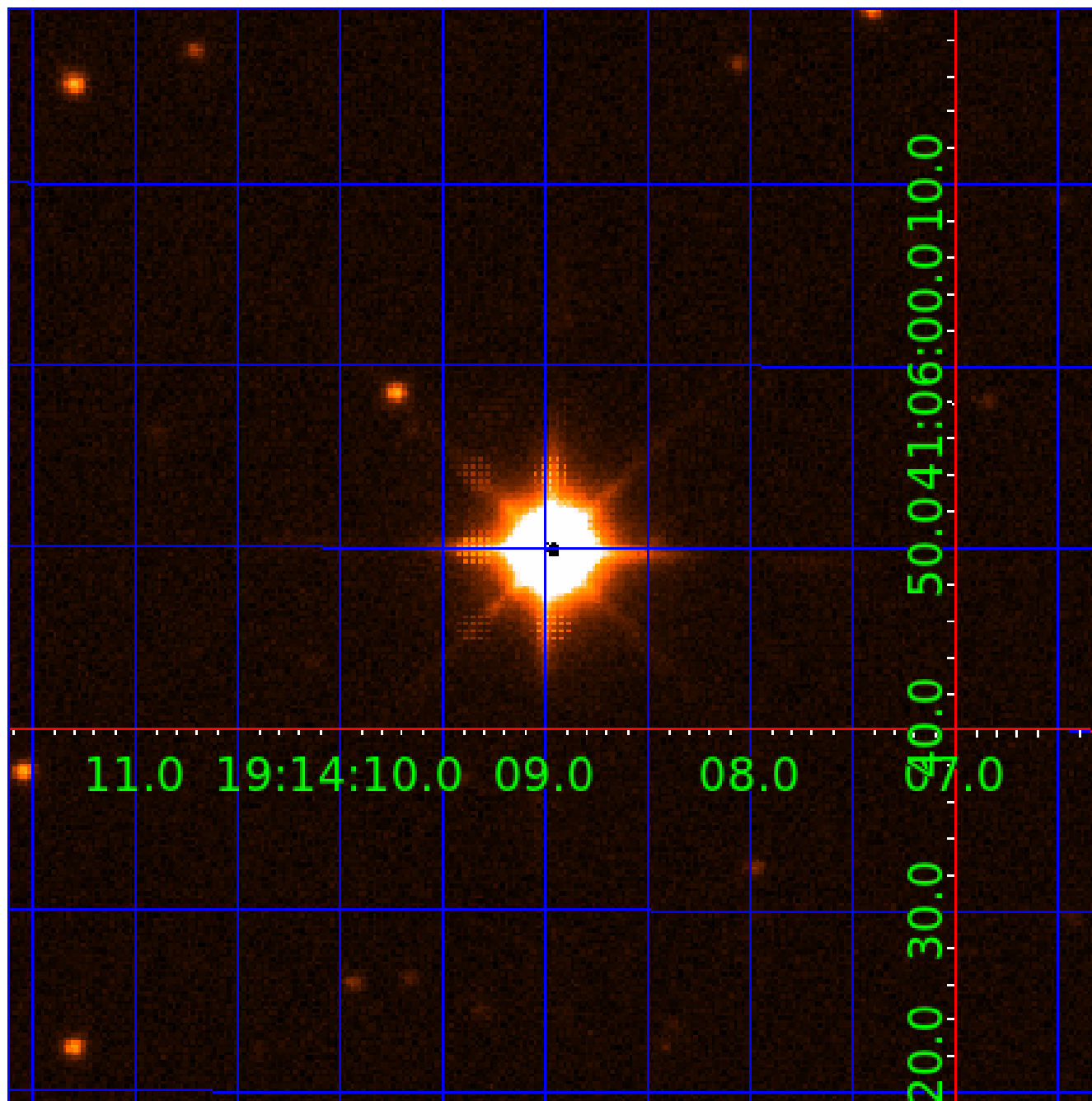


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
005780782-01	OBS	No	369.146663	369.893592	2064.7	20.710	97.5	118.9	26.11	4359	198.29	131.22
005780782-02	OBS	No	369.894878	373.565961	1448.6	16.966	81.6	82.3	26.11	4359	206.01	130.87
005780782-03	OBS	No	246.340188	244.270189	398.8	12.500	46.0	-1.0	26.11	4359	49.42	225.03
005780782-04	OBS	No	184.793502	181.491110	2826.3	29.386	44.8	92.1	26.11	4359	276.25	330.14
005780782-05	OBS	No	185.516291	184.318124	406.2	15.000	53.8	-1.0	26.11	4359	49.87	328.43
005780782-06	OBS	No	582.905555	162.441375	100.5	7.883	41.5	5.2	26.11	4359	30.30	71.36
005780782-07	OBS	No	456.526196	287.257117	110.3	1.000	39.6	2.2	26.11	4359	34.58	98.85
005780782-08	OBS	No	569.190679	175.351019	517.0	10.776	38.8	15.3	26.11	4359	57.86	73.67
005780782-09	OBS	No	458.158942	202.747347	767.2	21.875	11.9	8.1	26.11	4359	92.71	98.38
005780782-10	OBS	No	192.199401	213.478149	32.3	5.697	10.7	8.1	26.11	4359	19.44	313.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005780782-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—NO_FITS—INCONSISTENT_TRANS—CENT_SATURATED
005780782-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005780782-05	OBS	FP	0.00	1	0	0	0	LPP_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005780782-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_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—HALO_GHOST
005780782-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-09	OBS	FP	0.00	1	0	1	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
005780782-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

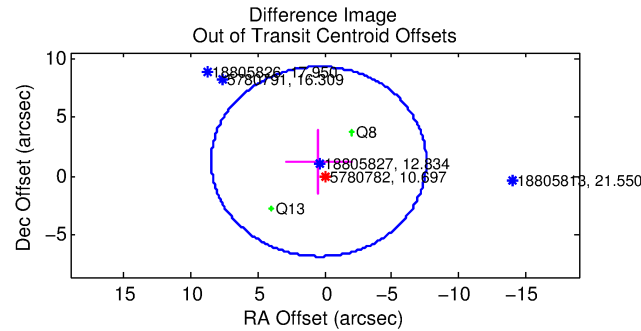
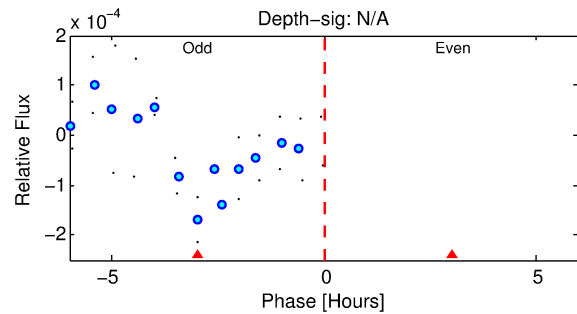
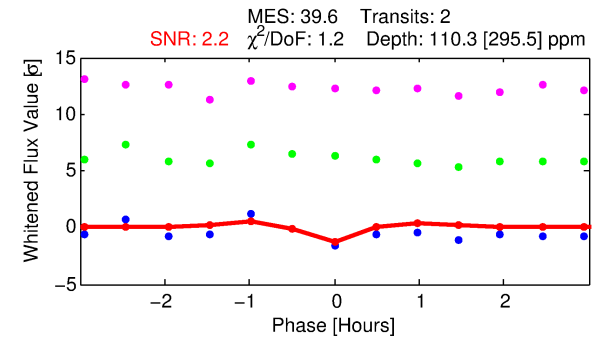
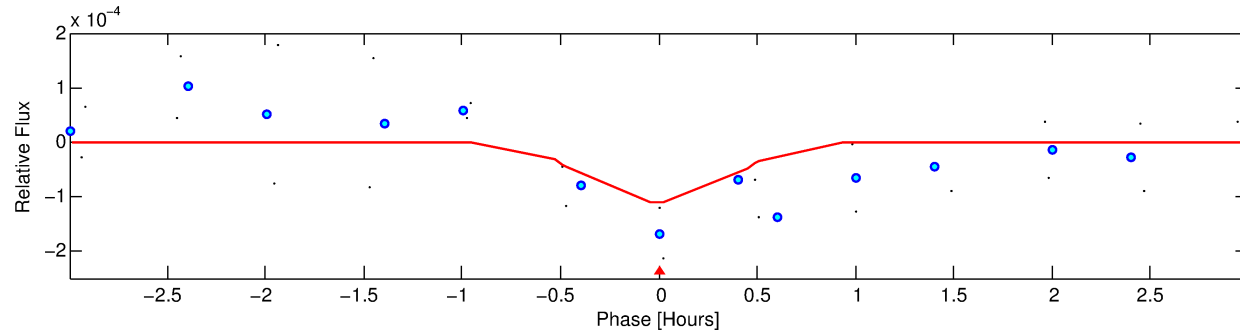
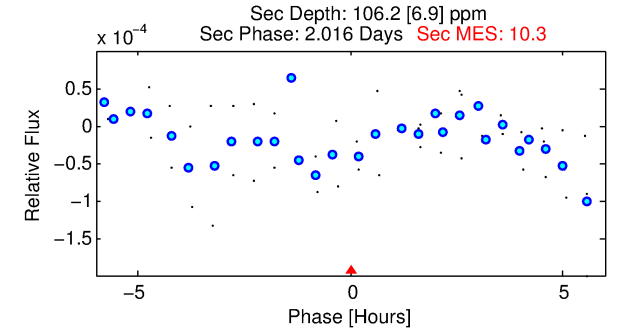
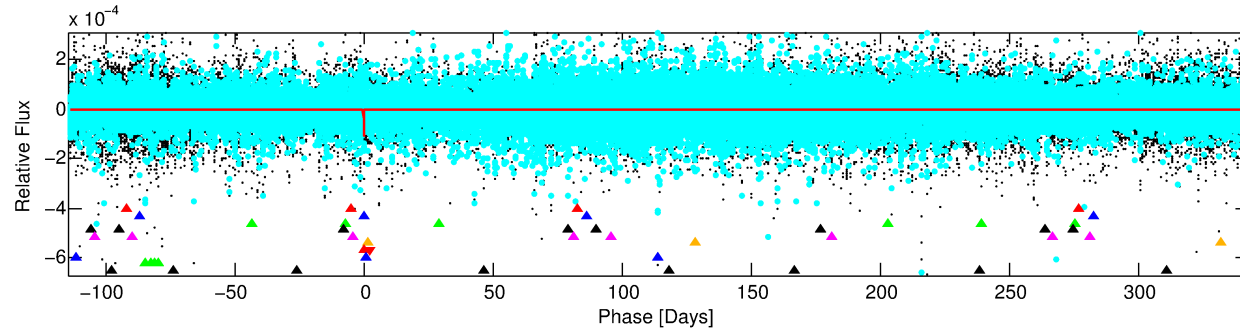
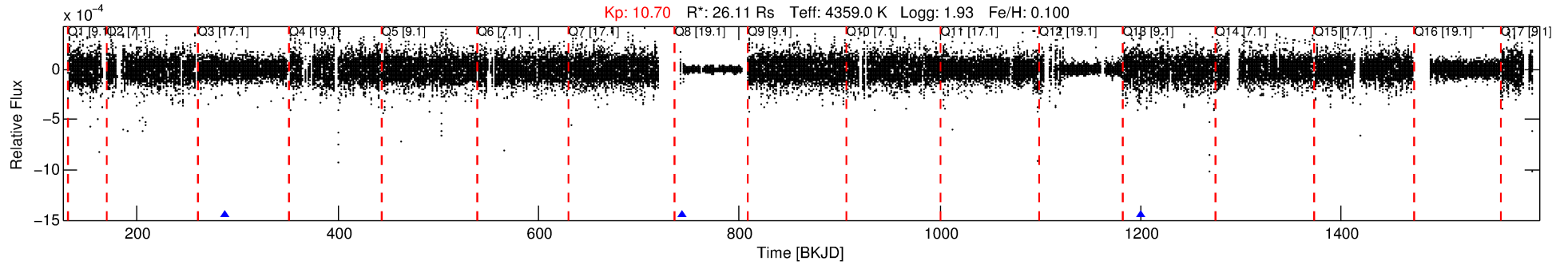
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005780782-07

No Significant Match Found

DV One-Page Summary

KIC: 5780782 Candidate: 7 of 10 Period: 456.526 d



DV Fit Results:

Period = 456.52620 [0.01084] d
Epoch = 287.2571 [0.0155] BKJD
Rp/R* = 0.0121 [0.5997]
a/R* = 1609.77 [275731.57]
b = 0.90 [37.37]
Seff = 98.85 [17.35]
Teq = 804 [35] K
Rp = 34.58 [1708.61] Re
a = 1.4934 [0.2228] AU
Ag = 108.97 [10768.68] [0.01σ]
Teffp = 4016 [99232] K [0.03σ]

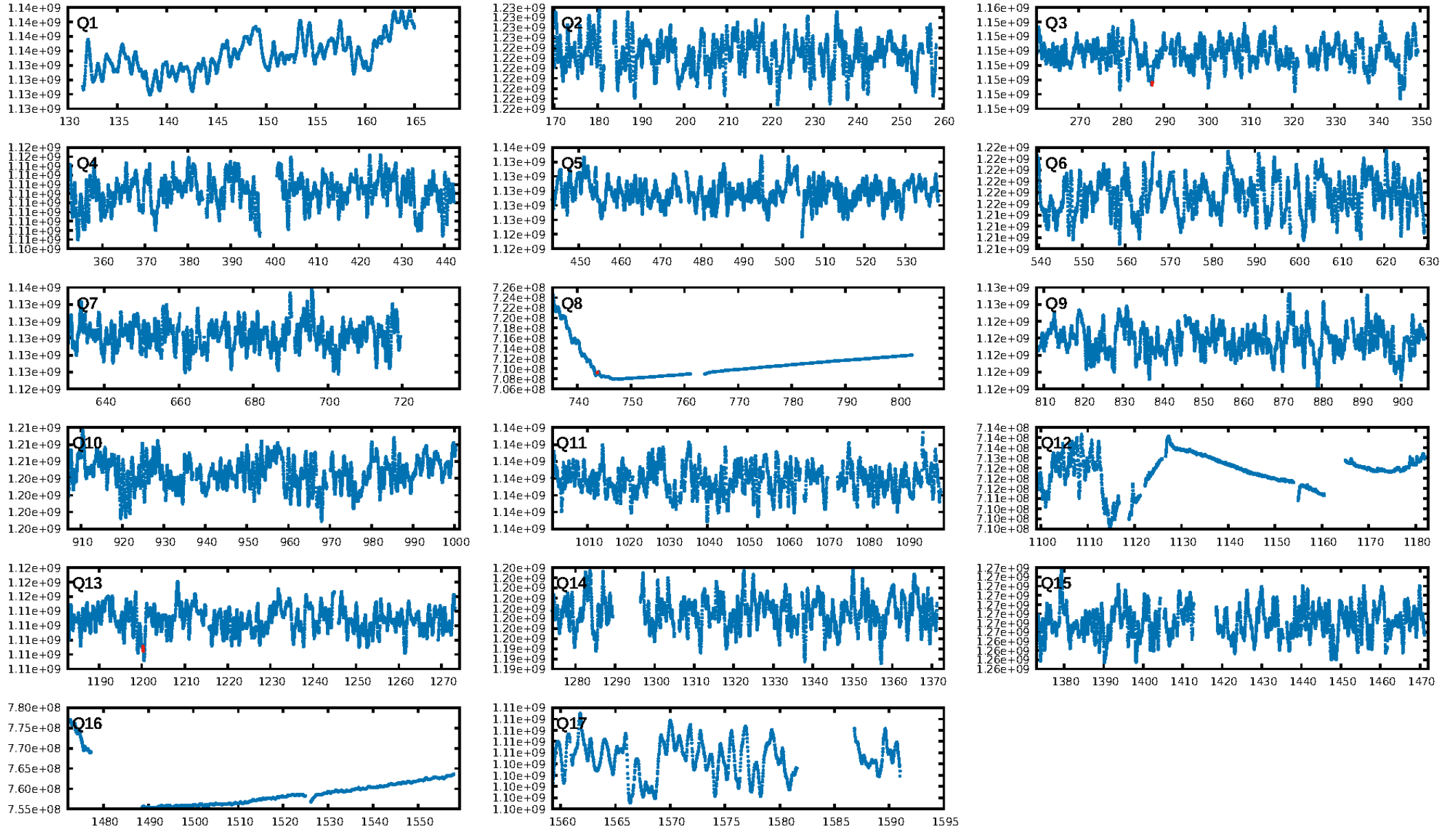
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [122.34σ]
LongPeriod-sig: 92.6% [1.79σ]
ModelChiSquare2-sig: 92.2%
ModelChiSquareGof-sig: 99.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 0.1726
Centroid-sig: 49.7%
Centroid-so: 2.478 arcsec [0.92σ]
OotOffset-rm: 1.334 arcsec [0.50σ]
KicOffset-rm: 1.326 arcsec [0.54σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 0.67 [2/3]

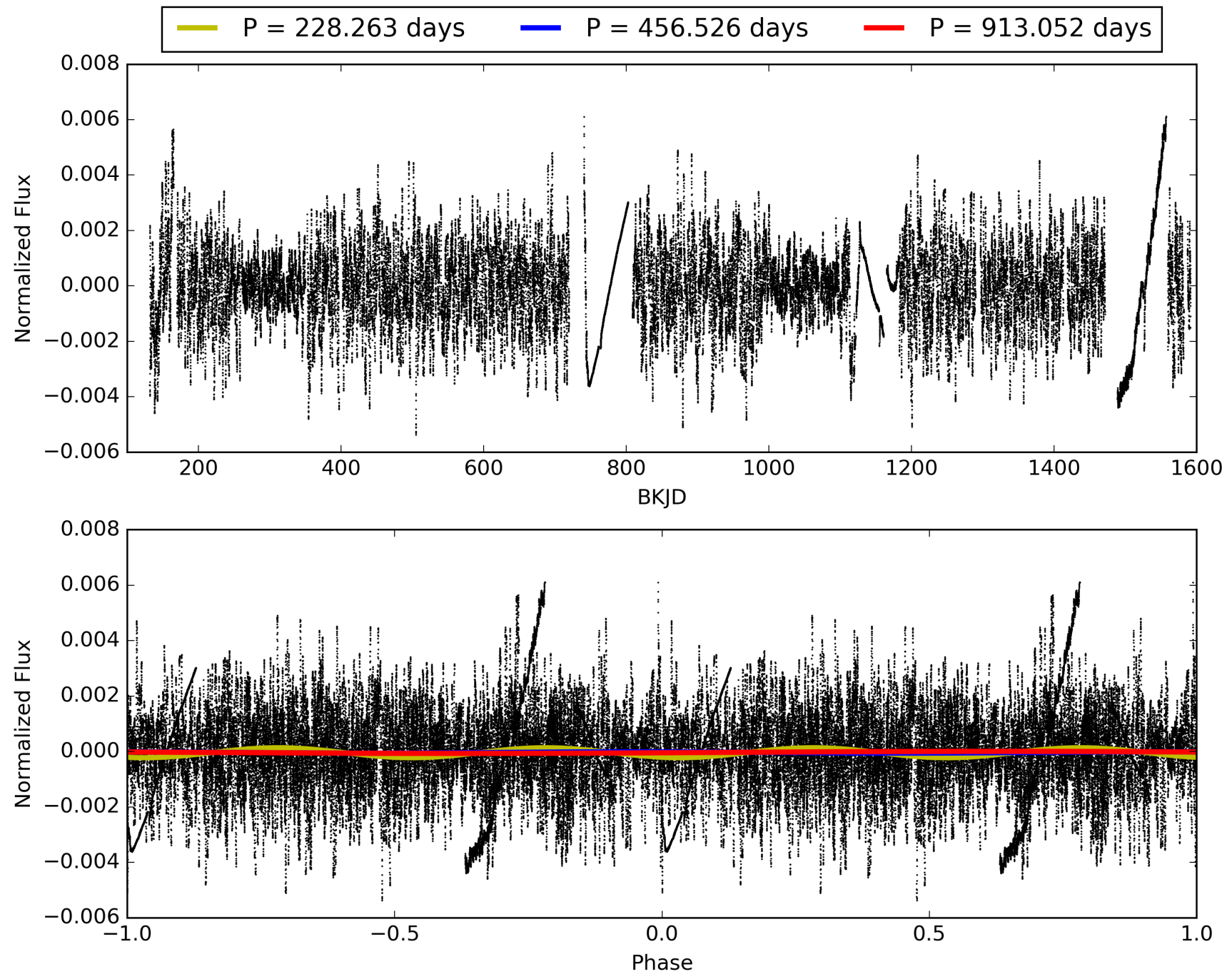
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:45:05 Z

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

TCE 005780782-07, PDC Light Curves

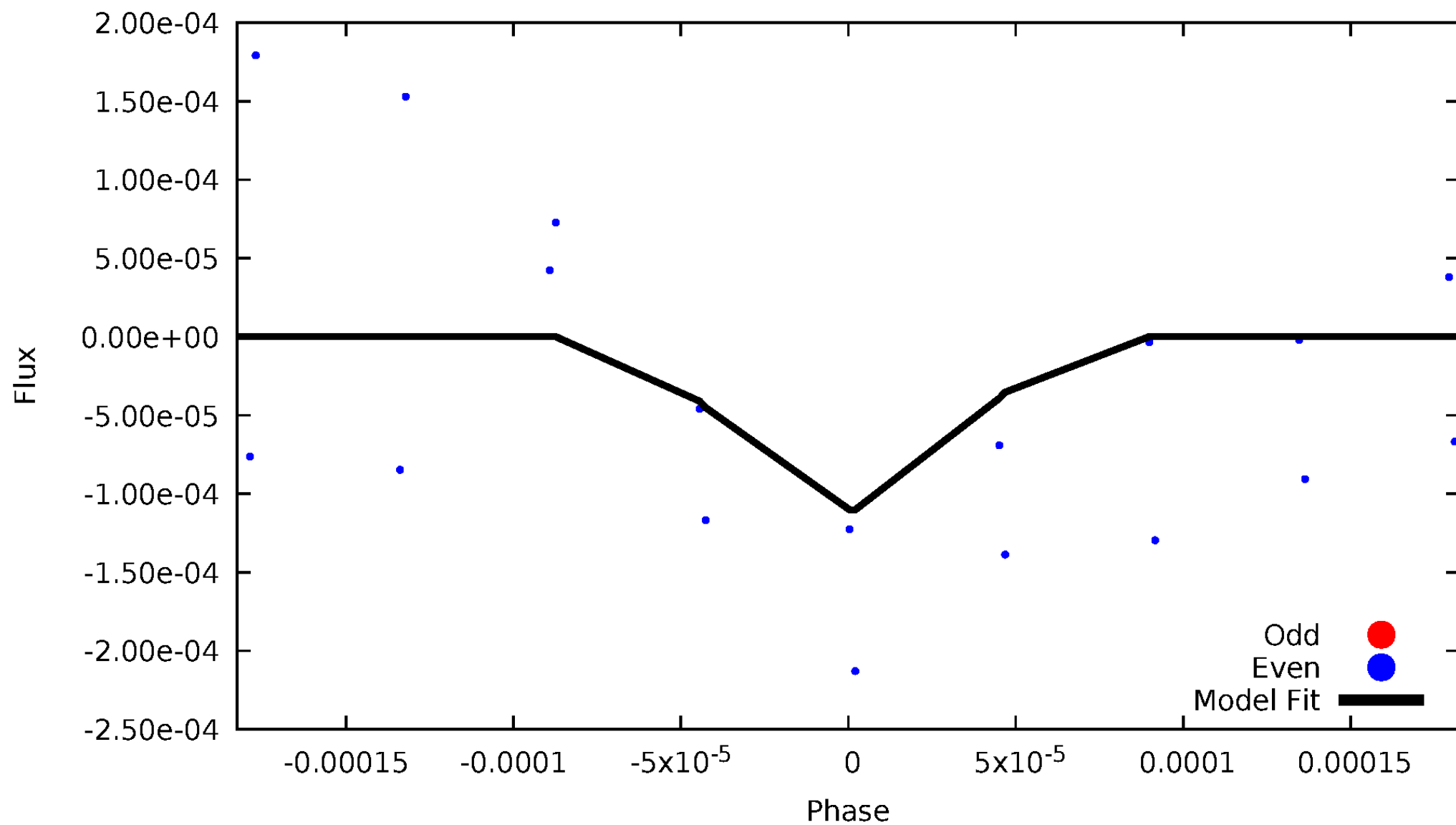


TCE 005780782-07



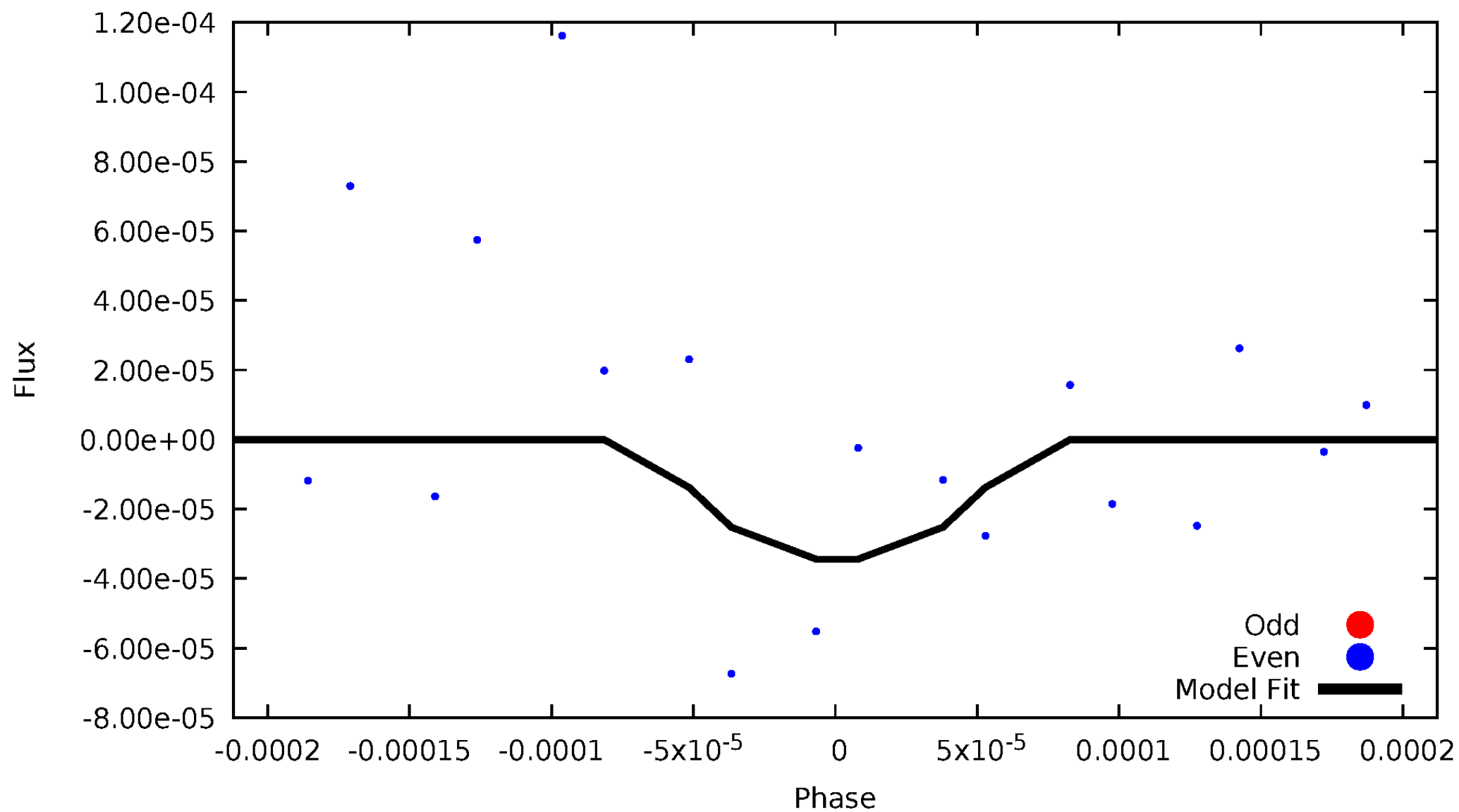
DV Odd/Even

TCE 005780782-07

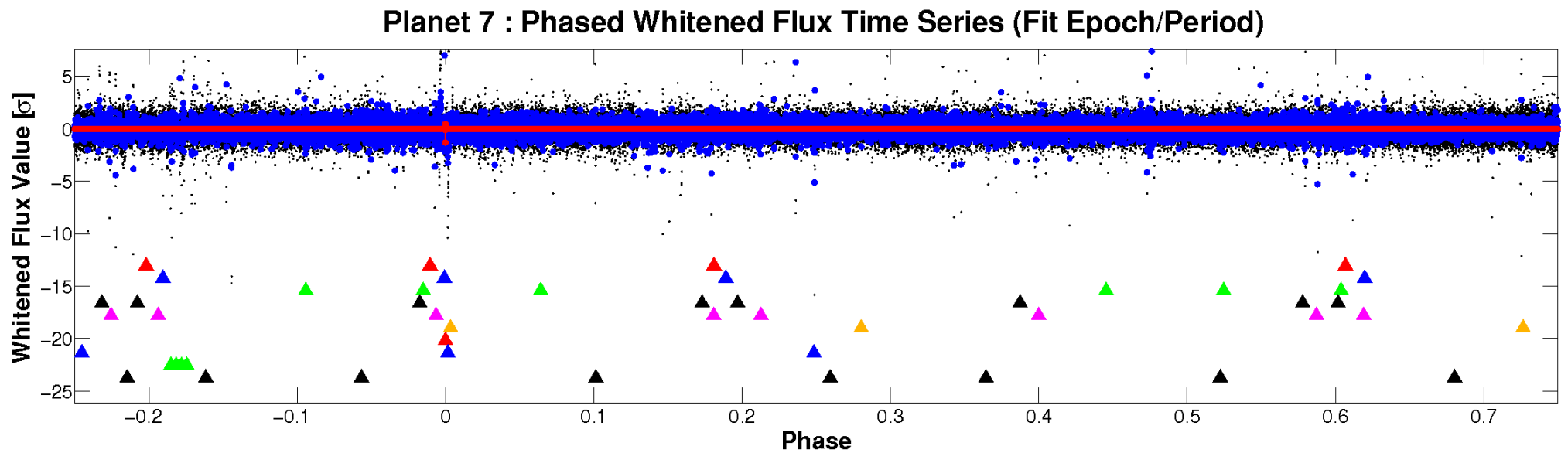
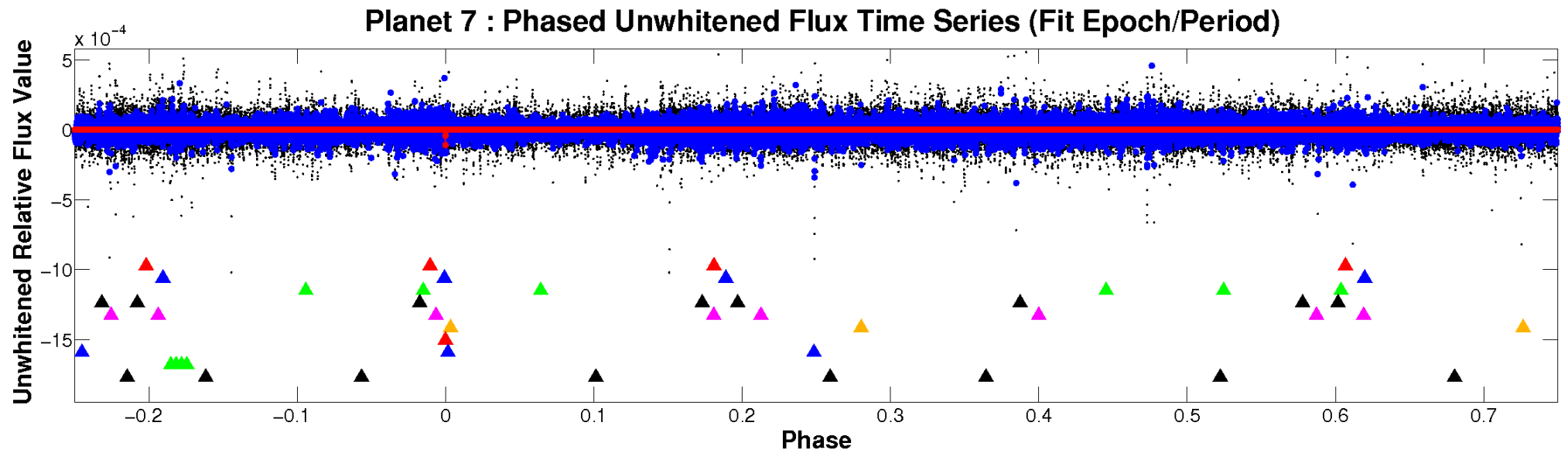


ALT Odd/Even

TCE 005780782-07

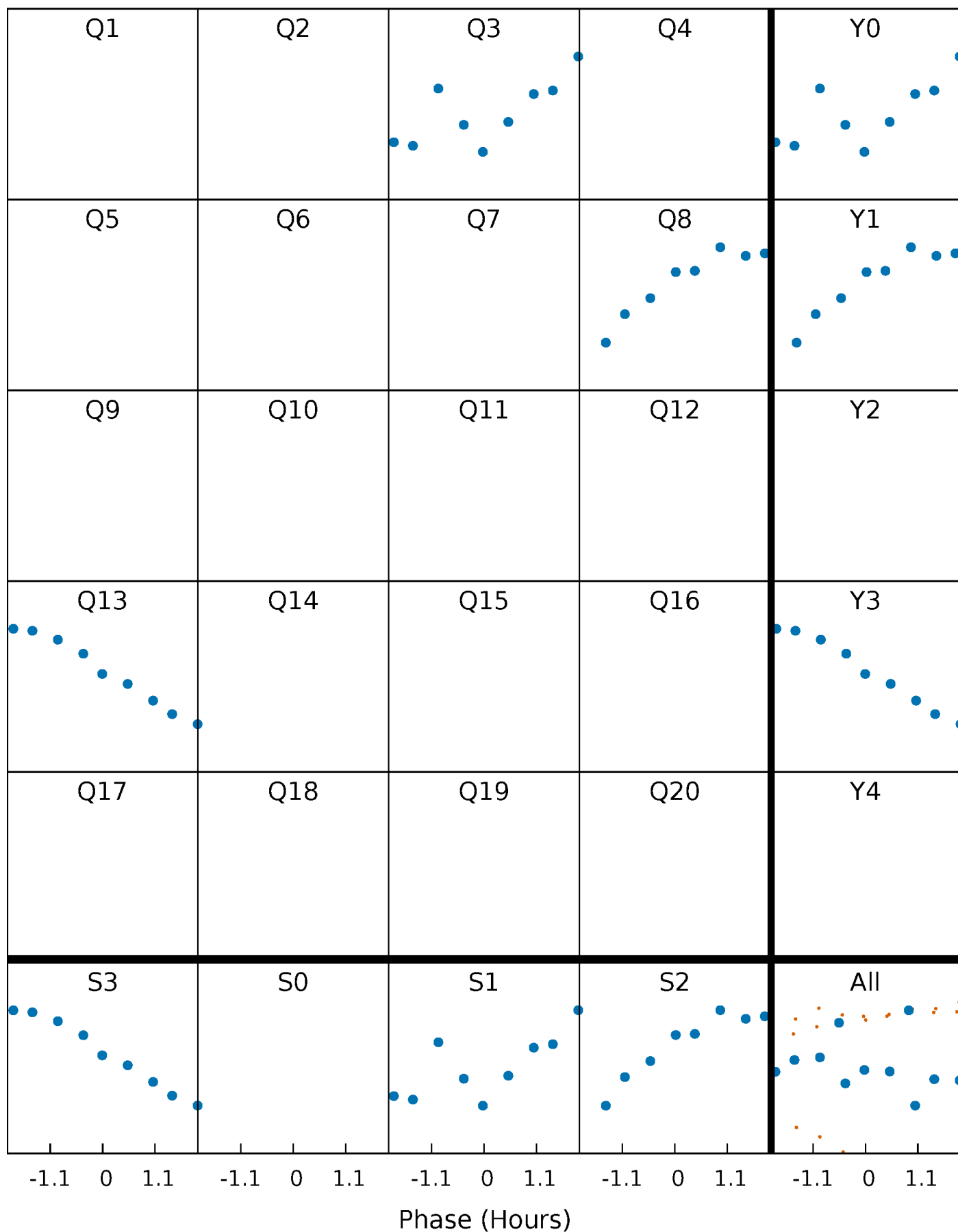


Non-Whitened Vs. Whitened Light Curve



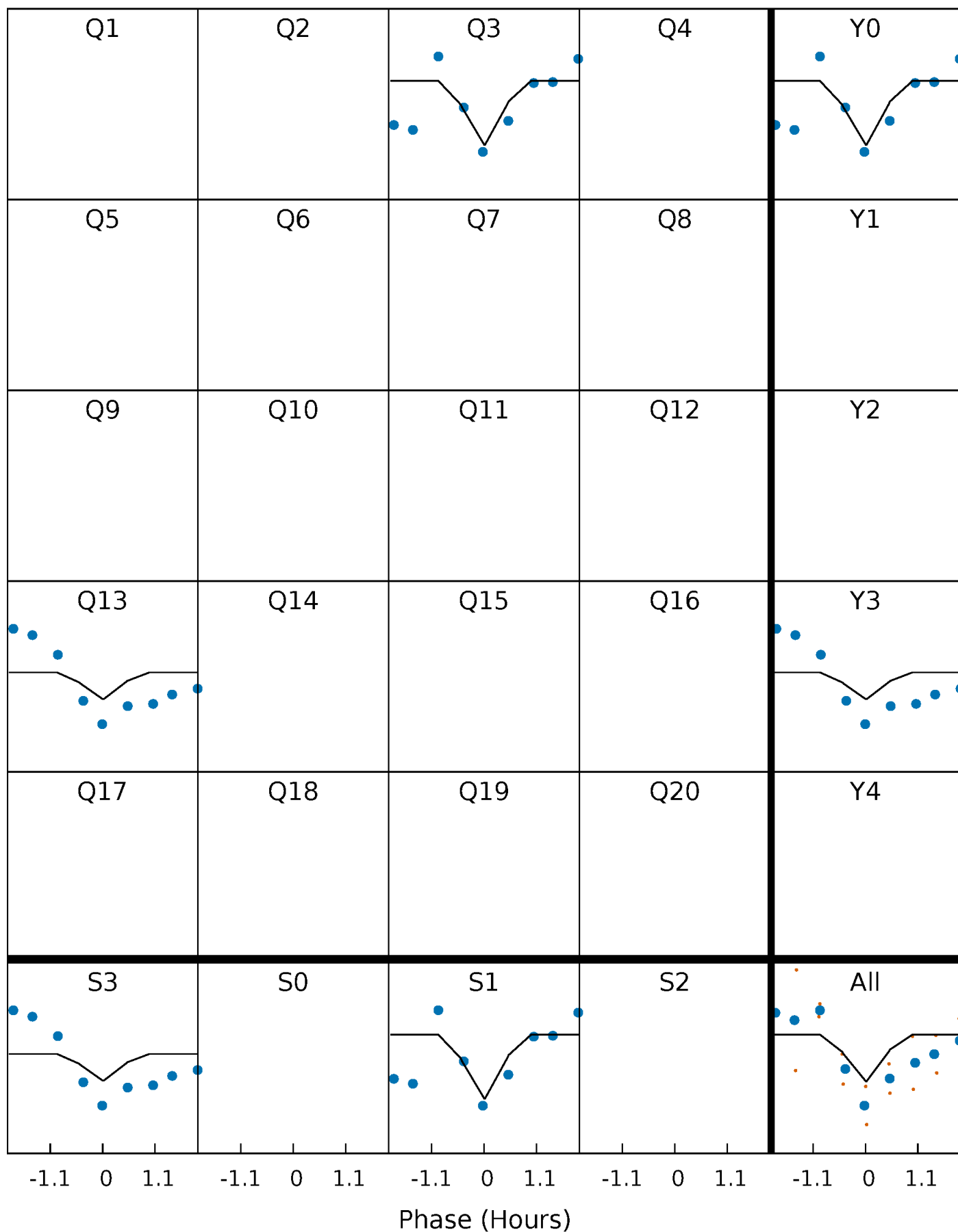
PDC Quarter-Phased Transit Curves

TCE 005780782-07 $P=456.526196$ Days $T_0=287.257117$ (BKJD)



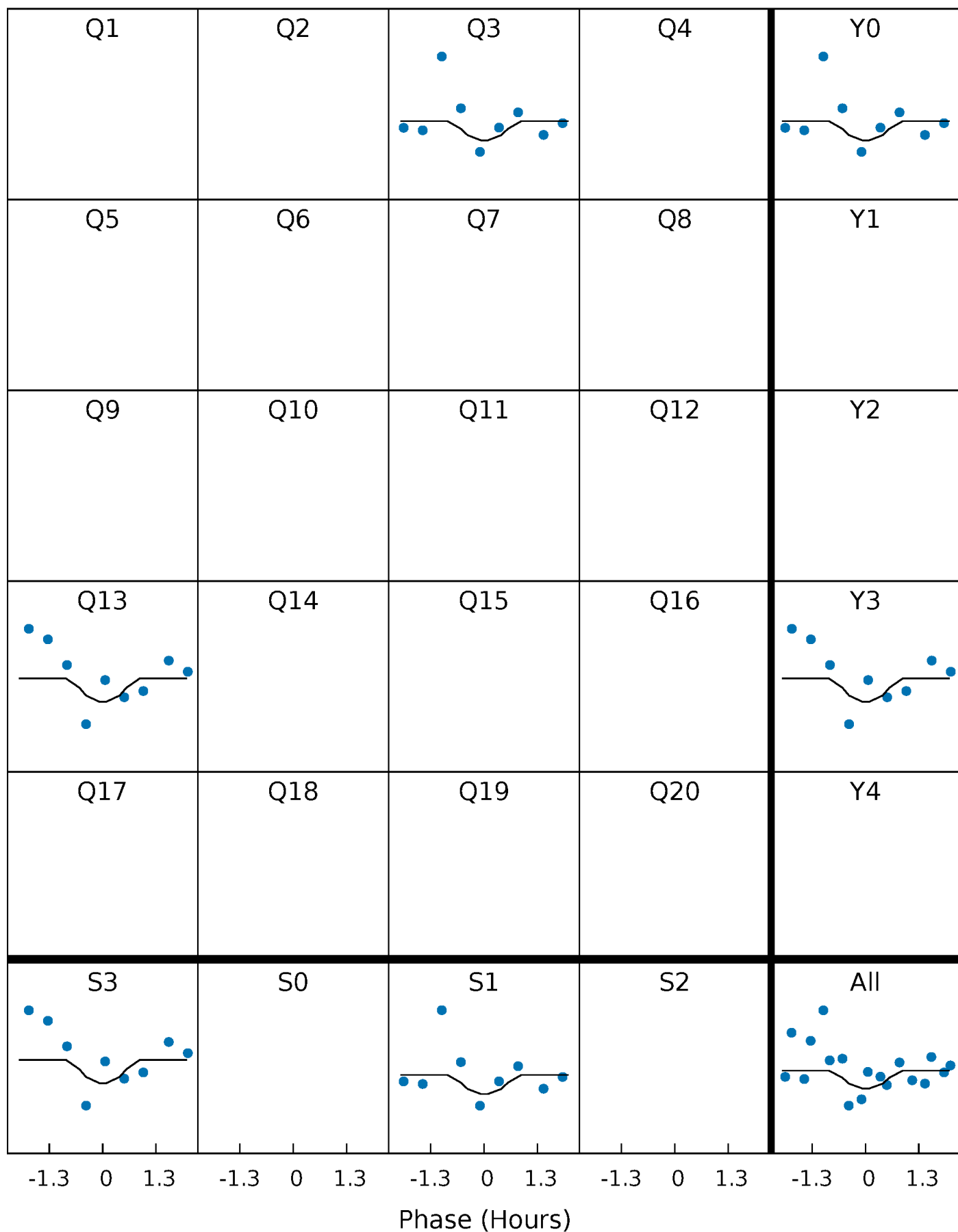
DV Quarter-Phased Transit Curves

TCE 005780782-07 P=456.526196 Days $T_0=287.257117$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

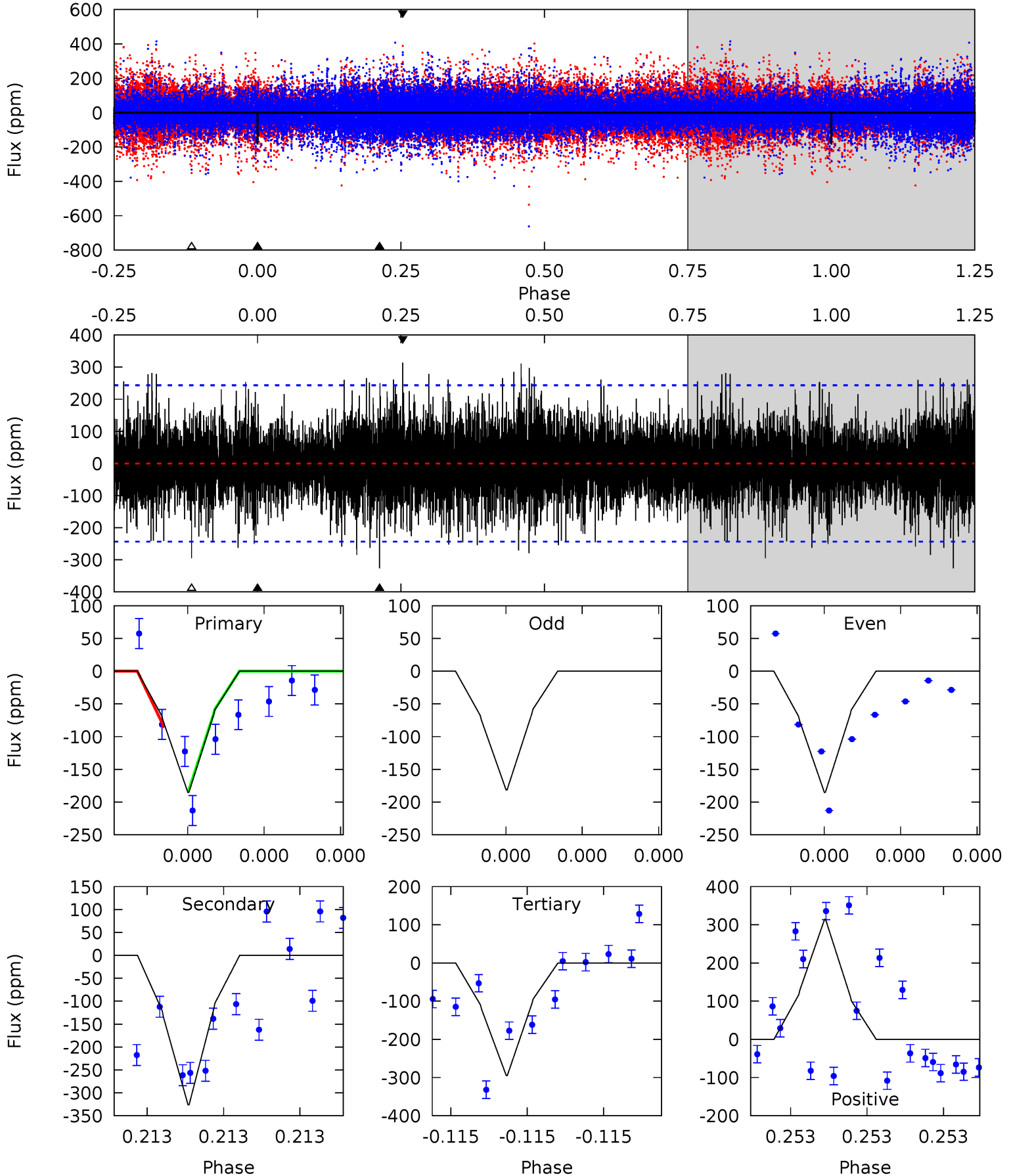
TCE 005780782-07 P=456.533409 Days $T_0=287.260379$ (BKJD)



DV Model-Shift Uniqueness Test

005780782-07, P = 456.526196 Days, E = 287.257117 Days

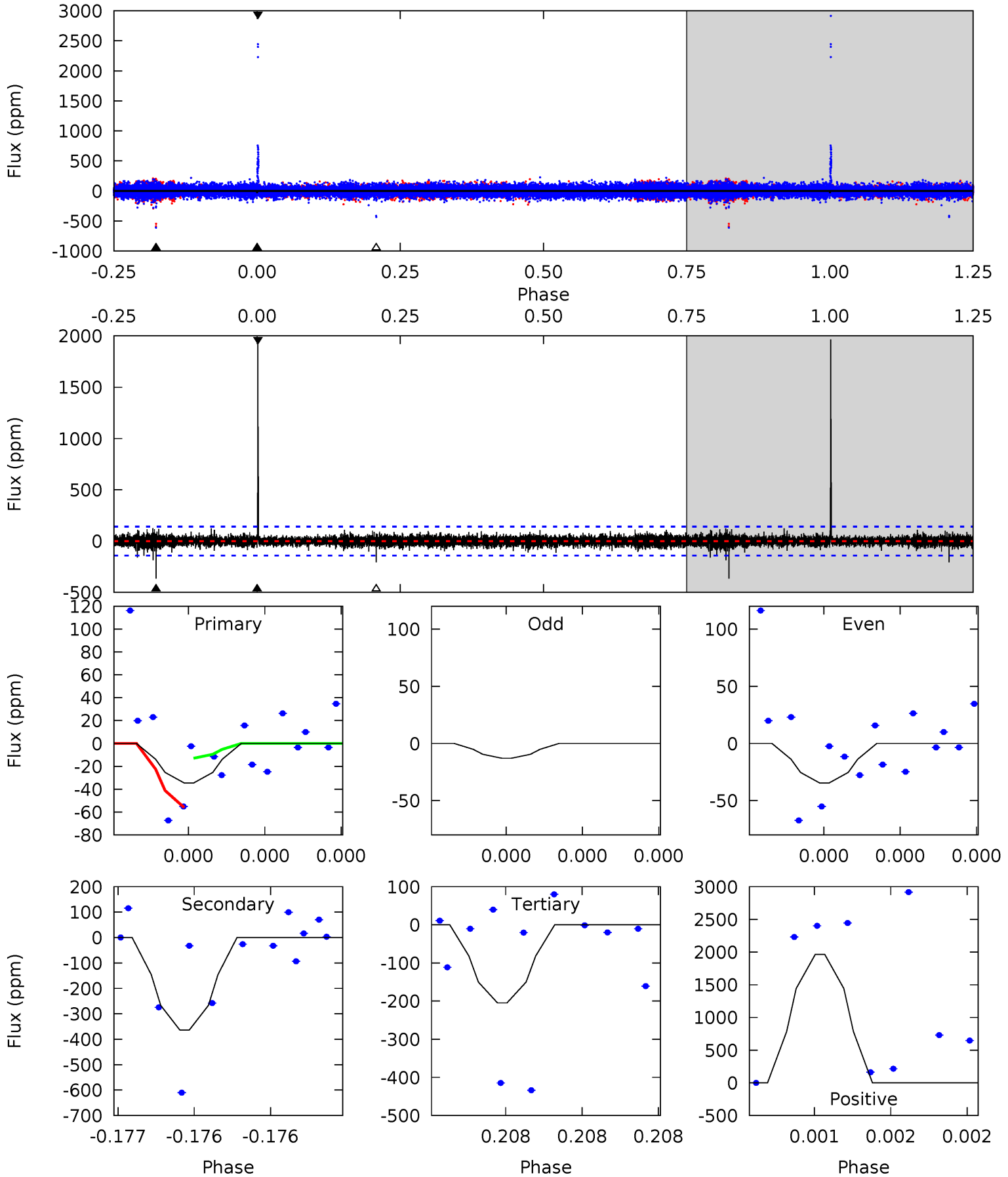
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.42	7.78	7.03	7.49	5.80	3.82	1.59	-2.61	-3.07	0.75	0.29	0.07	1.00	0.49	0.00



Alt Model-Shift Uniqueness Test

005780782-07, P = 456.533409 Days, E = 287.260379 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.43	15.0	8.46	81.2	5.82	3.85	1.43	-7.04	-79.8	6.58	-66.2	0.52	1.00	0.84	0.81



Stellar Parameters For KIC 005780782

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4359^{+39}_{-91}	$1.933^{+0.030}_{-0.030}$	$0.100^{+0.100}_{-0.200}$	$26.107^{+5.247}_{-5.771}$	$2.131^{+0.865}_{-0.865}$	$0.000^{+0.000}_{-0.000}$
	+1%/-2%	+2%/-2%	+100%/-200%	+20%/-22%	+41%/-41%	+34%/-10%
Source	SPE74	AST11	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 005780782-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-326 ± 42	$1207.70^{+1401.57}_{-836.37}$	1124^{+31}_{-39}	-1459^{+3837}_{-394}	$0.283^{+2.593}_{-0.219}$
Alt.	-364 ± 24	$1142.59^{+1353.47}_{-837.67}$	1123^{+32}_{-34}	1668^{+877}_{-3509}	$0.379^{+4.365}_{-0.302}$

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

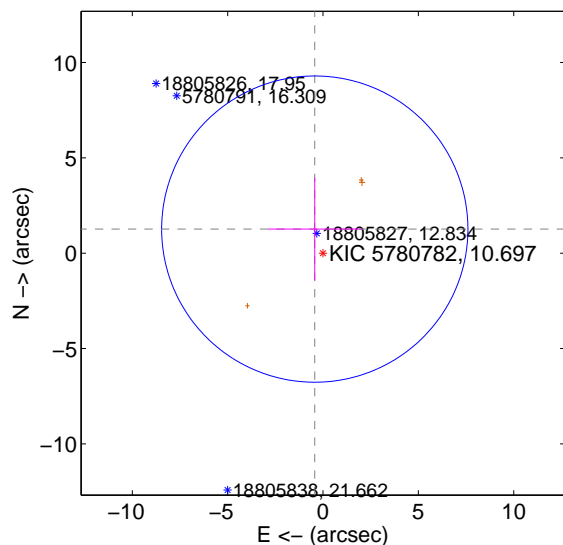
Supplemental centroid analysis for 005780782-07. **Kepler magnitude: 10.70.** Transit SNR 2.21

There are 0 quarters with good PRF difference image offsets

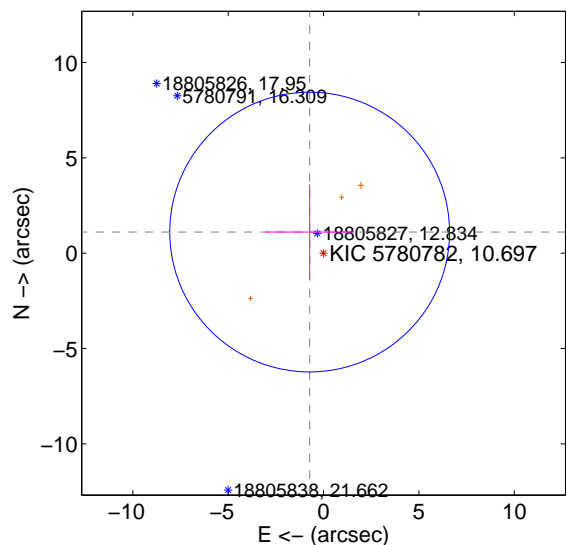
The direct PRF centroid is offset from the target star catalog position by about 0.41 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.334 ± 2.676	0.50	0.433 ± 2.450	1.262 ± 2.702
PRF-fit source offset from KIC position	1.326 ± 2.444	0.54	0.730 ± 2.336	1.107 ± 2.490
photometric centroid source offset	2.48 ± 2.70	0.92	-2.38 ± 2.66	0.71 ± 3.08

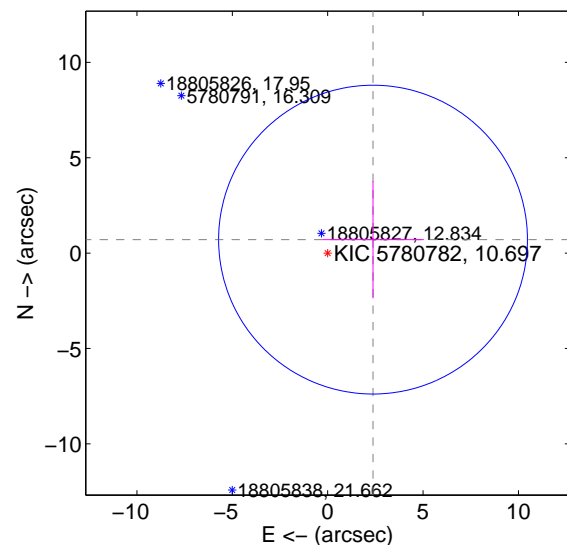
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

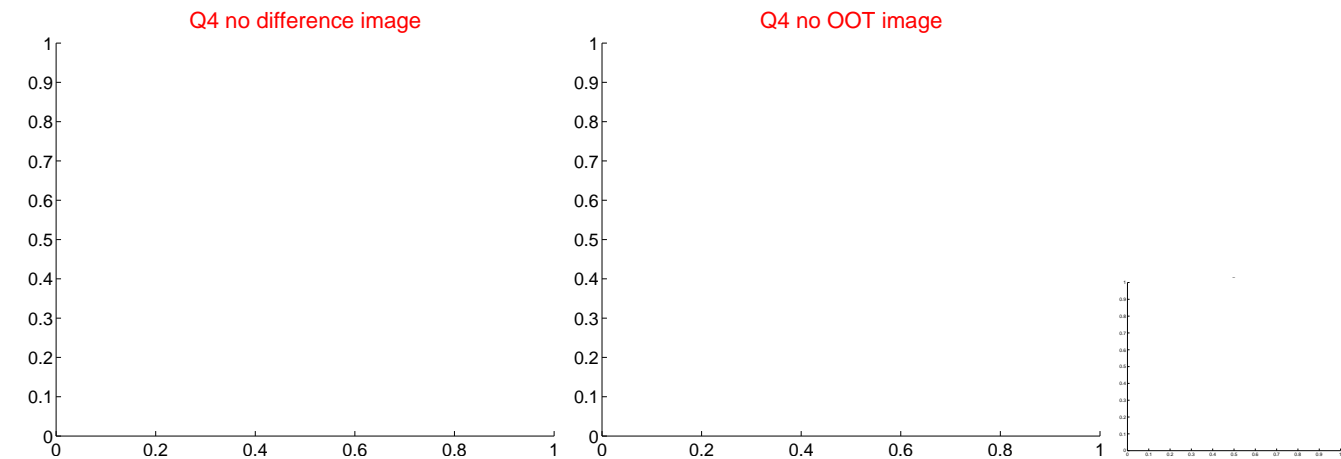
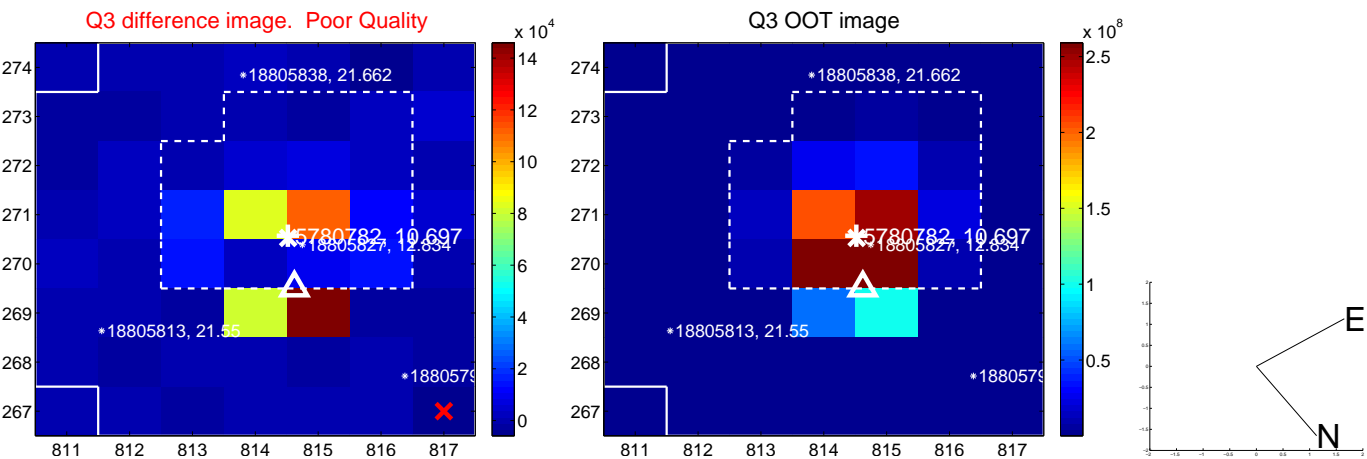
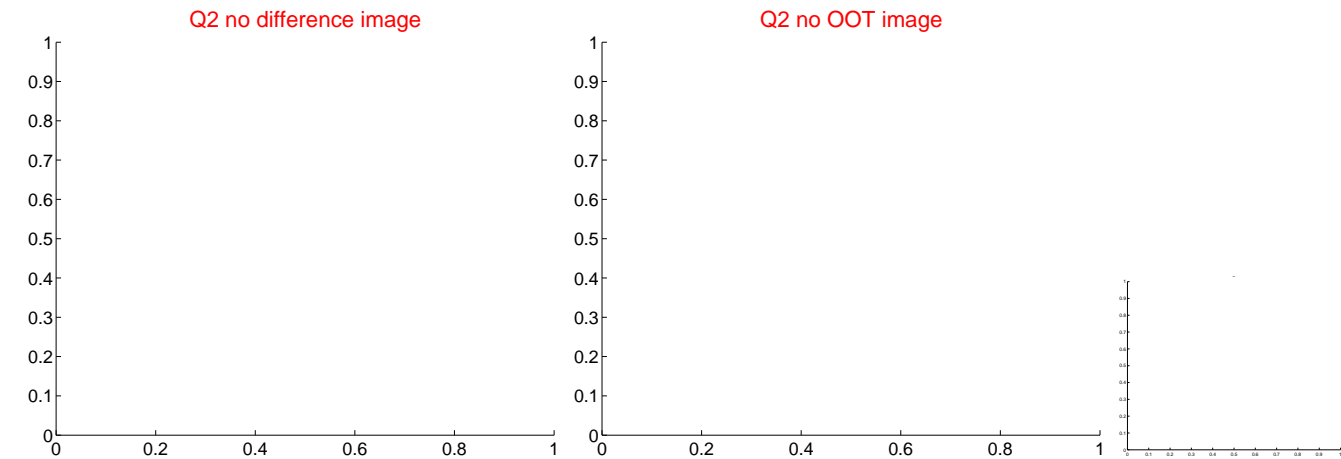


offset from photometric centroids



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.

Q5 no difference image



Q5 no OOT image



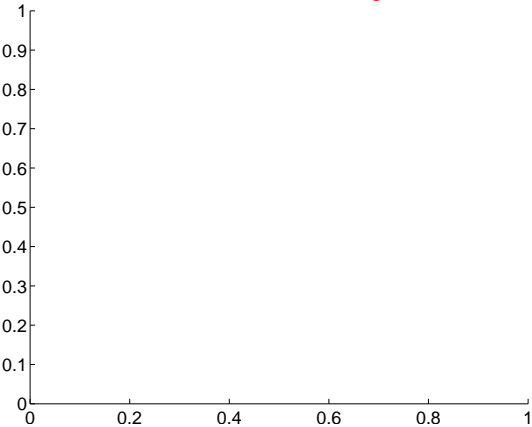
Q6 no difference image



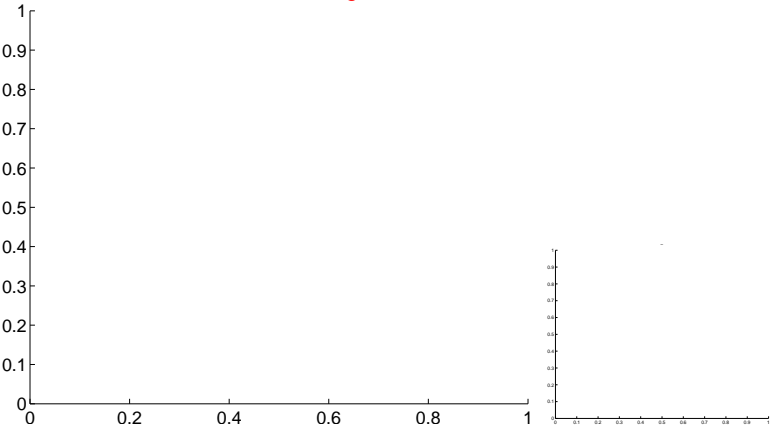
Q6 no OOT image



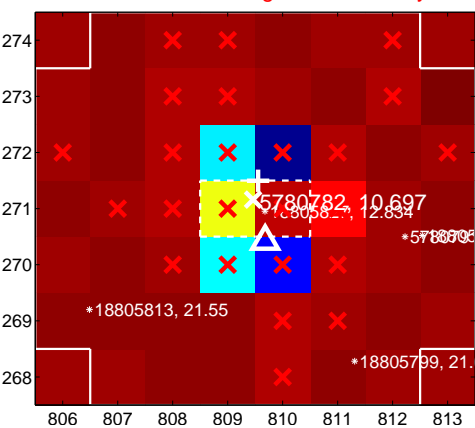
Q7 no difference image



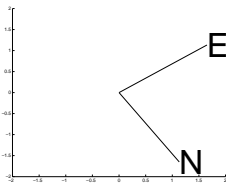
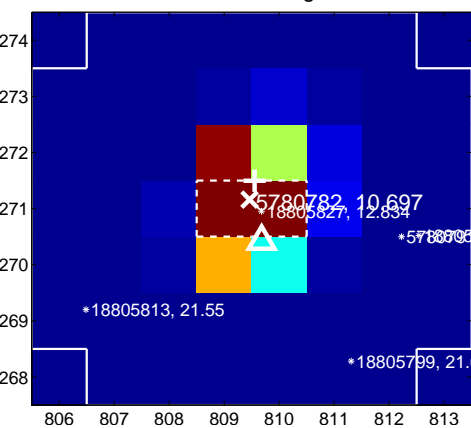
Q7 no OOT image



Q8 difference image. Poor Quality



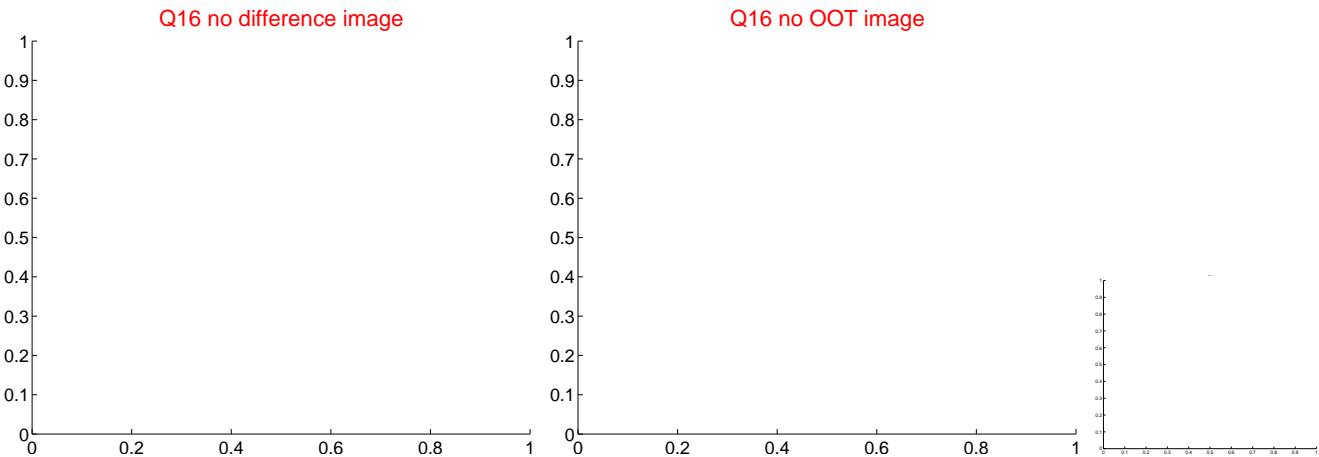
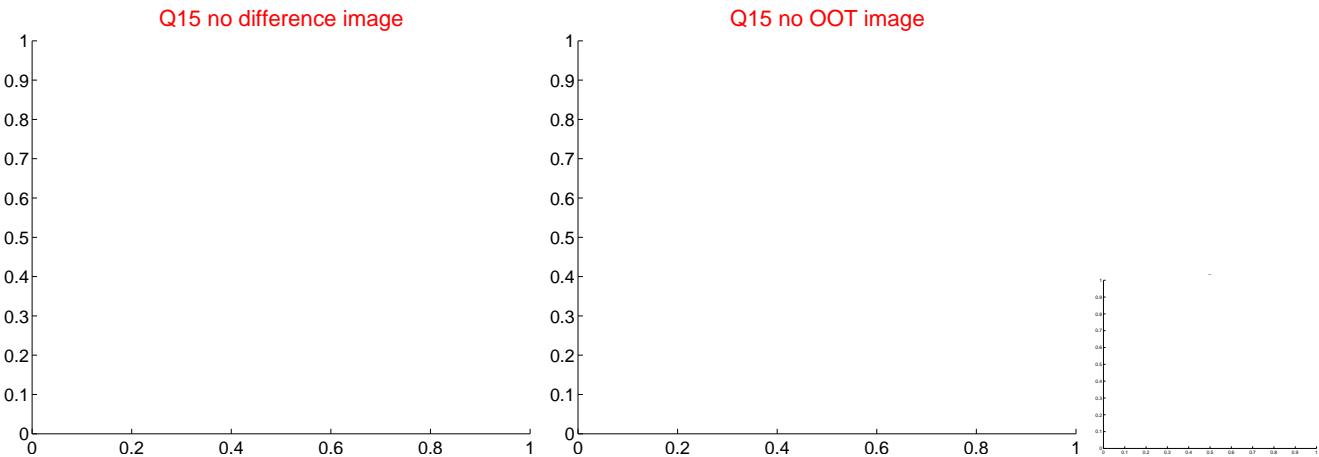
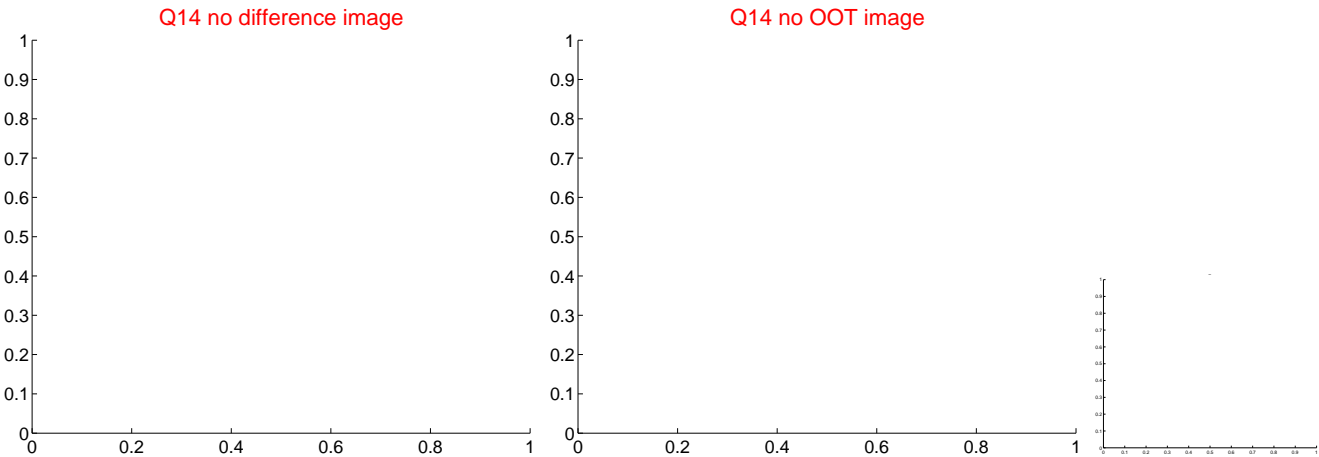
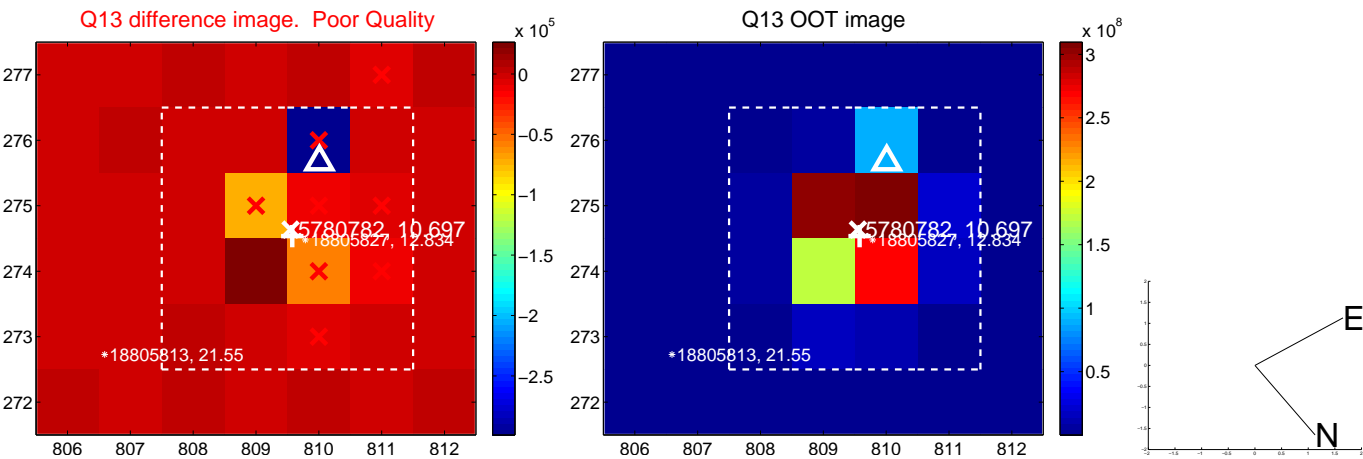
Q8 OOT image



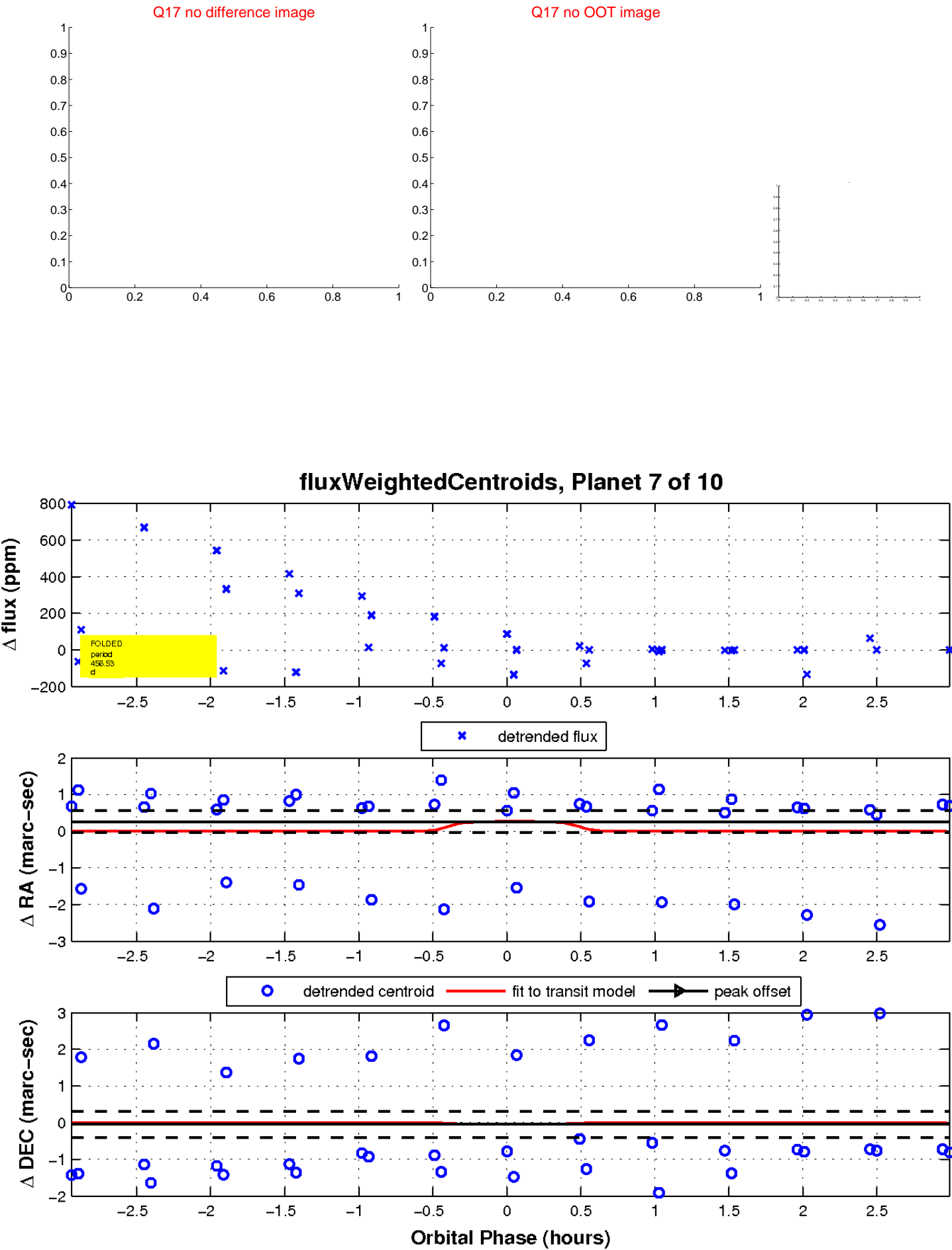
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

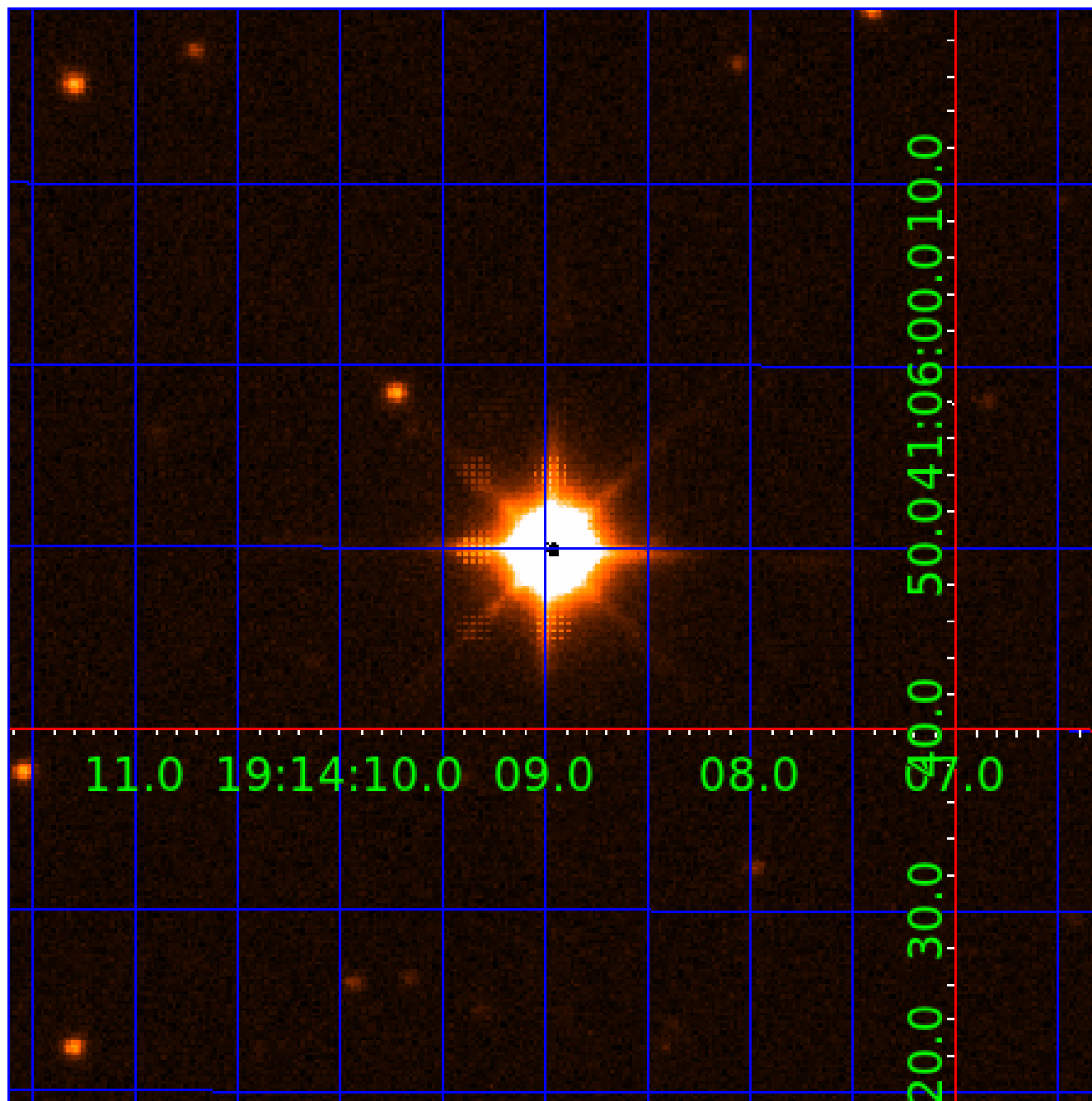


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
005780782-01	OBS	No	369.146663	369.893592	2064.7	20.710	97.5	118.9	26.11	4359	198.29	131.22
005780782-02	OBS	No	369.894878	373.565961	1448.6	16.966	81.6	82.3	26.11	4359	206.01	130.87
005780782-03	OBS	No	246.340188	244.270189	398.8	12.500	46.0	-1.0	26.11	4359	49.42	225.03
005780782-04	OBS	No	184.793502	181.491110	2826.3	29.386	44.8	92.1	26.11	4359	276.25	330.14
005780782-05	OBS	No	185.516291	184.318124	406.2	15.000	53.8	-1.0	26.11	4359	49.87	328.43
005780782-06	OBS	No	582.905555	162.441375	100.5	7.883	41.5	5.2	26.11	4359	30.30	71.36
005780782-07	OBS	No	456.526196	287.257117	110.3	1.000	39.6	2.2	26.11	4359	34.58	98.85
005780782-08	OBS	No	569.190679	175.351019	517.0	10.776	38.8	15.3	26.11	4359	57.86	73.67
005780782-09	OBS	No	458.158942	202.747347	767.2	21.875	11.9	8.1	26.11	4359	92.71	98.38
005780782-10	OBS	No	192.199401	213.478149	32.3	5.697	10.7	8.1	26.11	4359	19.44	313.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005780782-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—NO_FITS—INCONSISTENT_TRANS—CENT_SATURATED
005780782-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005780782-05	OBS	FP	0.00	1	0	0	0	LPP_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005780782-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_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—HALO_GHOST
005780782-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-09	OBS	FP	0.00	1	0	1	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
005780782-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

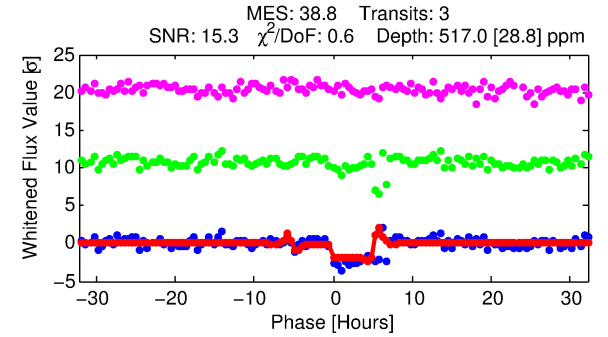
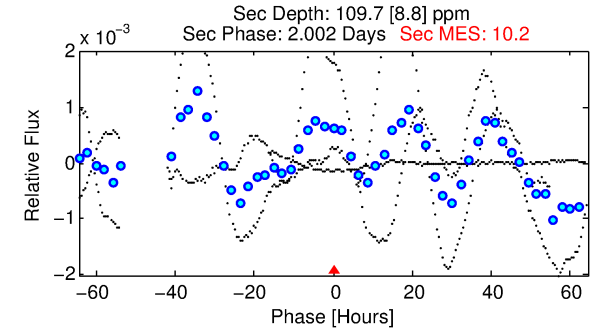
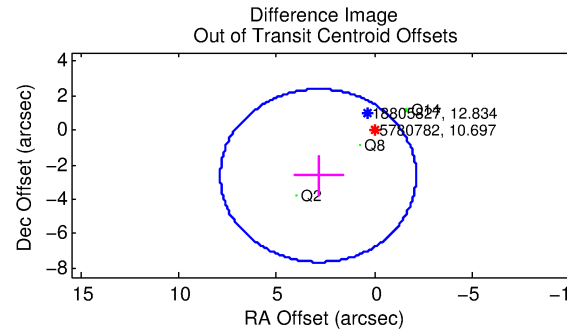
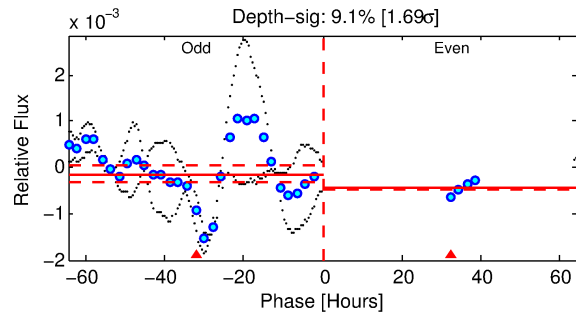
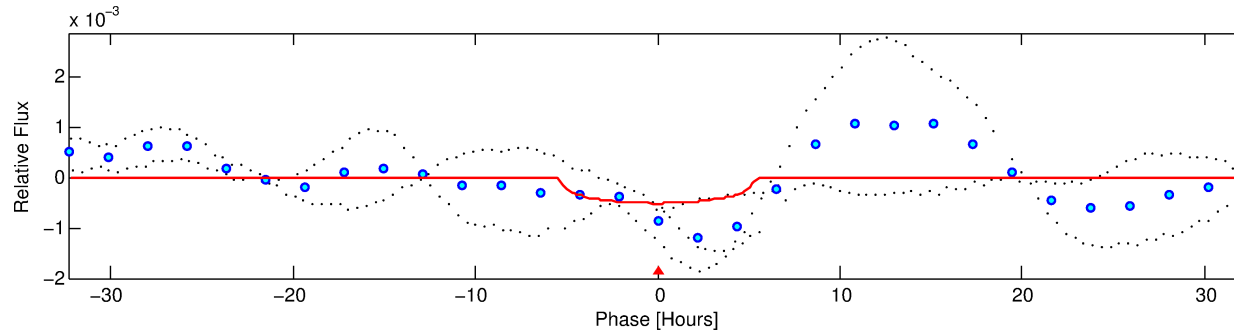
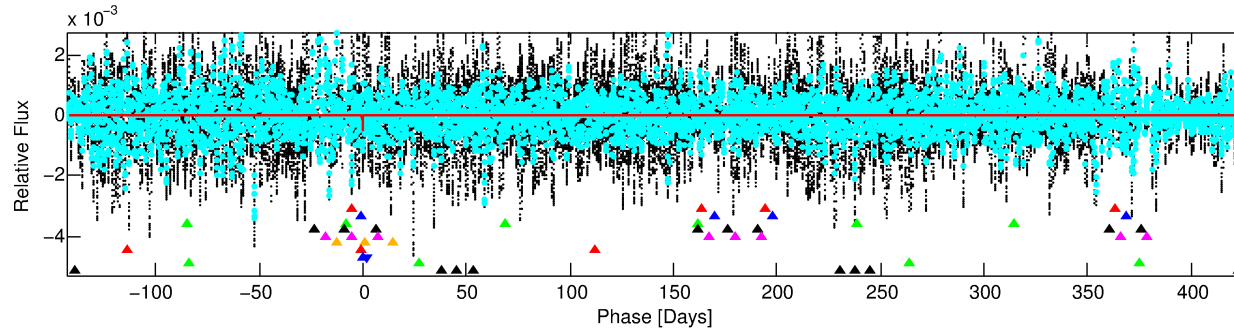
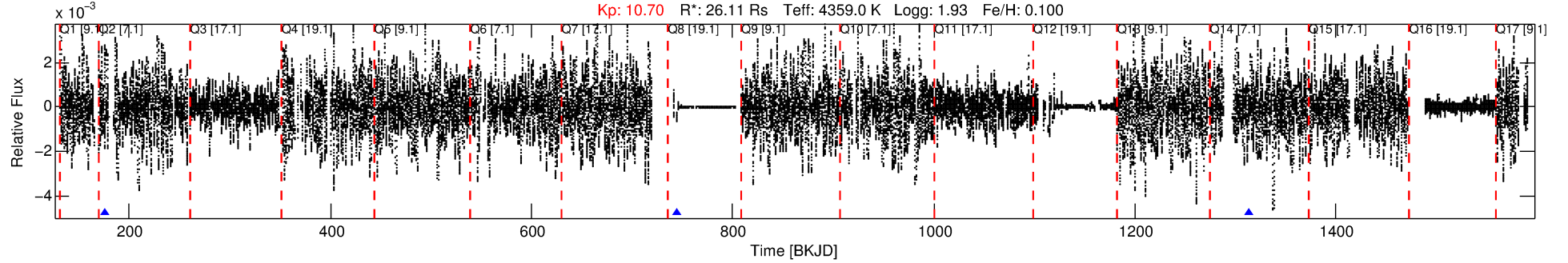
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005780782-08

No Significant Match Found

DV One-Page Summary

KIC: 5780782 Candidate: 8 of 10 Period: 569.191 d



DV Fit Results:

Period = 569.19068 [0.00201] d
Epoch = 175.3510 [0.0033] BKJD
Rp/R* = 0.0203 [0.0047]
a/R* = 380.81 [251.73]
b = 0.39 [1.46]
Seff = 73.67 [12.93]
Teq = 747 [33] K
Rp = 57.86 [18.43] Re
a = 1.7300 [0.2580] AU
Ag = 53.97 [26.48] [2.00 σ]
Teffp = 3130 [370] K [6.41 σ]

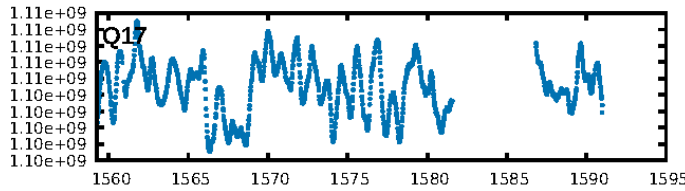
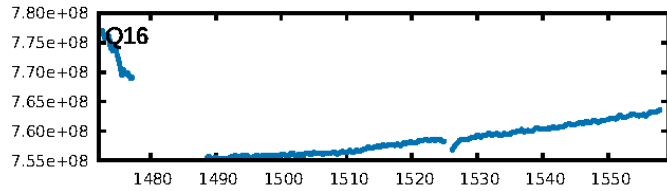
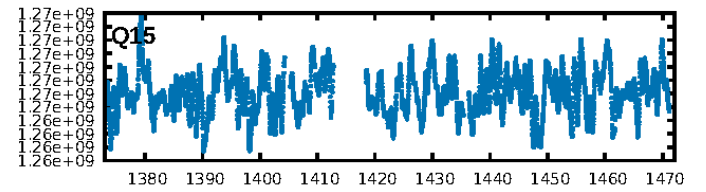
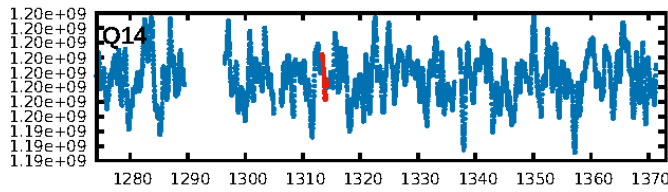
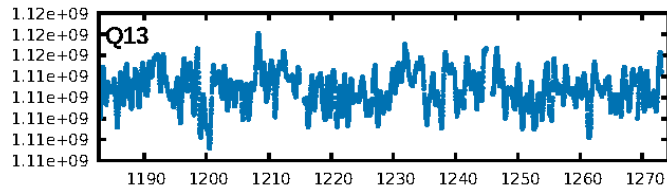
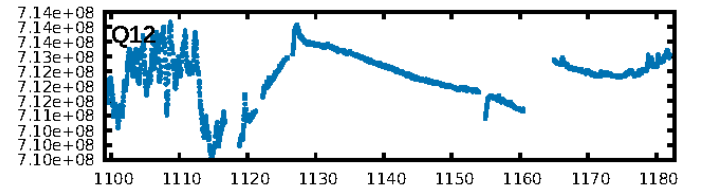
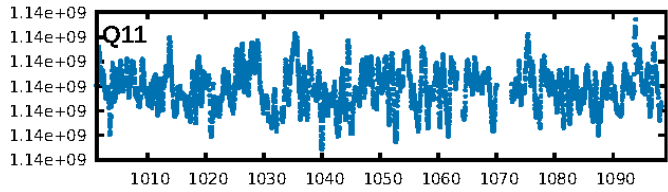
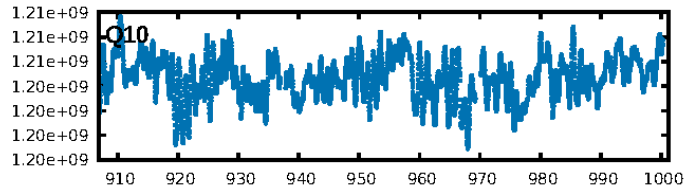
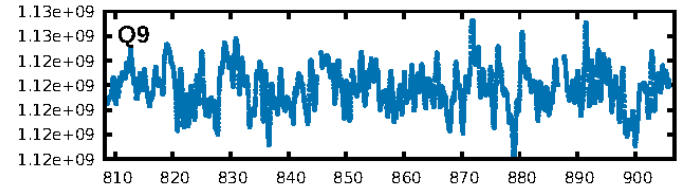
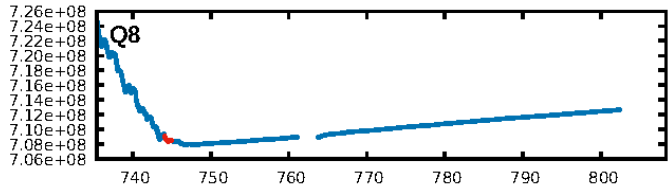
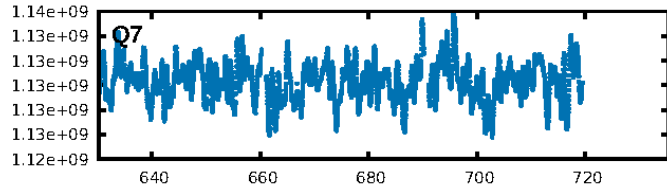
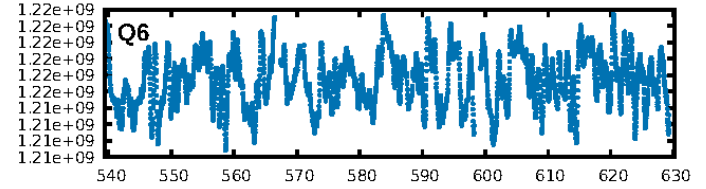
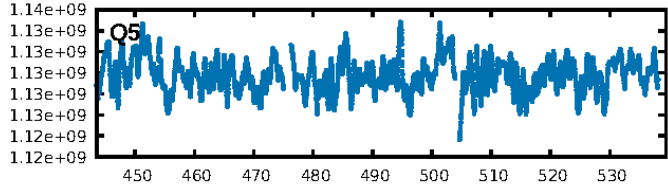
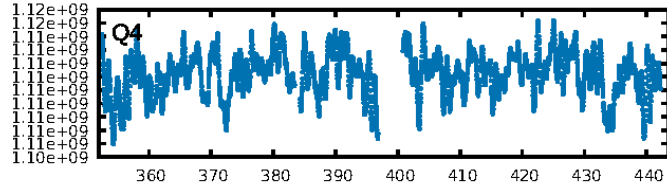
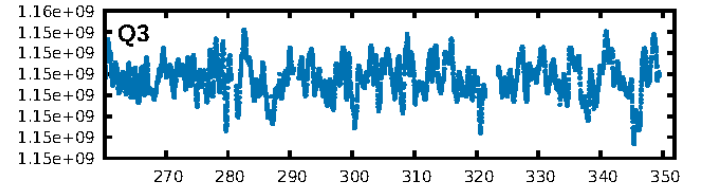
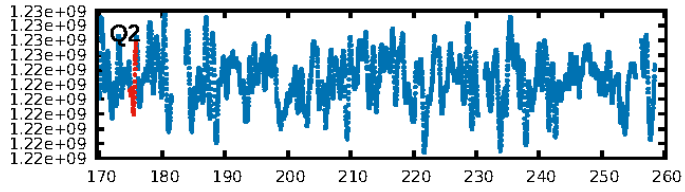
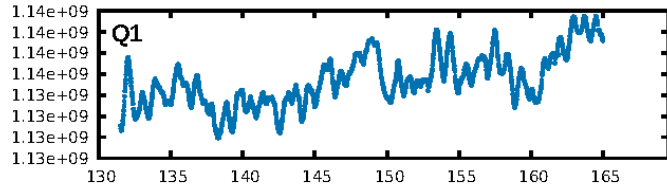
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [109.28 σ]
LongPeriod-sig: 100.0% [24.65 σ]
ModelChiSquare2-sig: 62.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.5221
Centroid-sig: 67.5%
Centroid-so: 0.496 arcsec [0.61 σ]
OotOffset-rm: 3.900 arcsec [2.34 σ]
OotOffset-st: 2/0/1/0 [3]
KicOffset-rm: 4.821 arcsec [2.85 σ]
KicOffset-st: 2/0/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.67 [2/3]

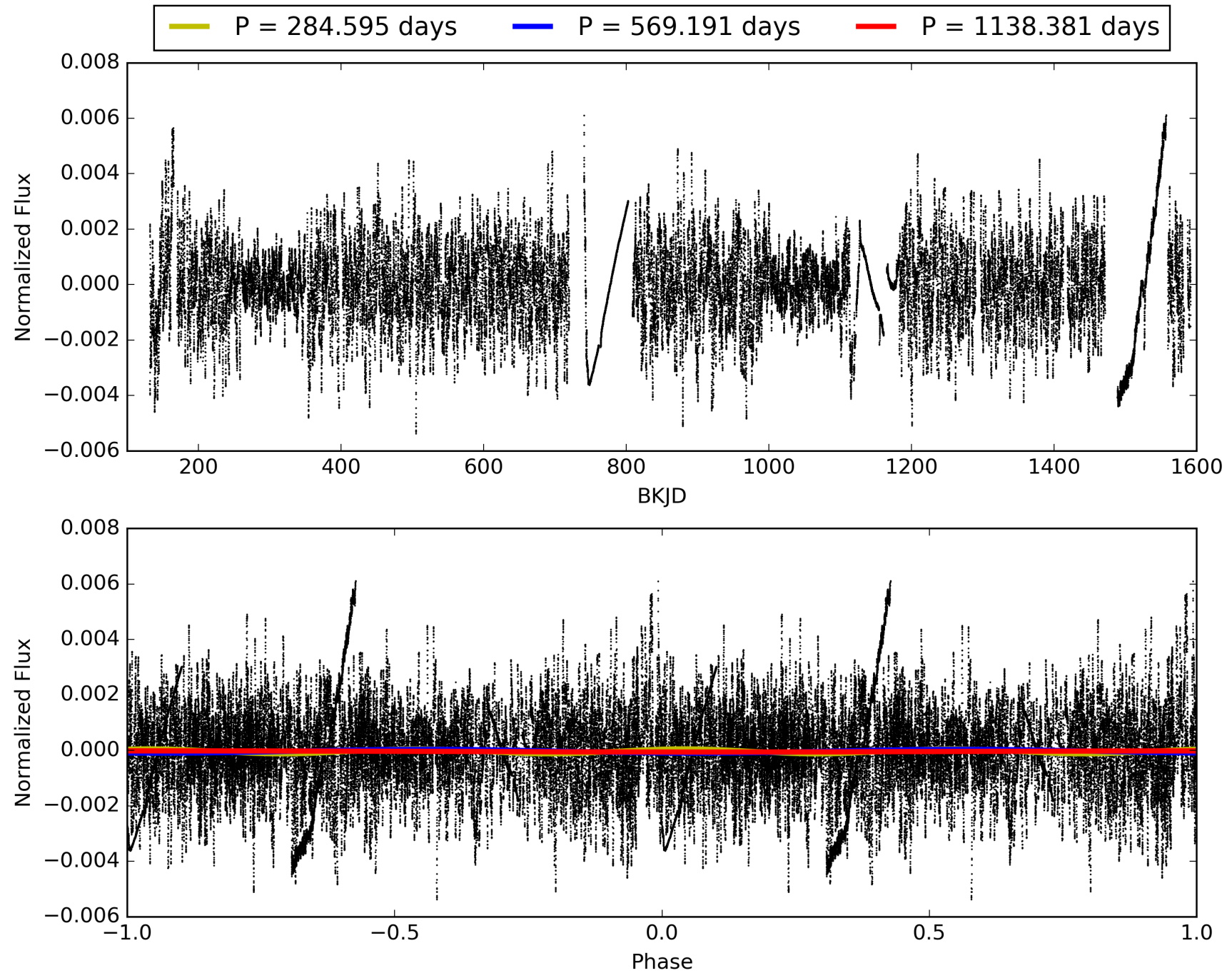
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:45:17 Z

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

TCE 005780782-08, PDC Light Curves

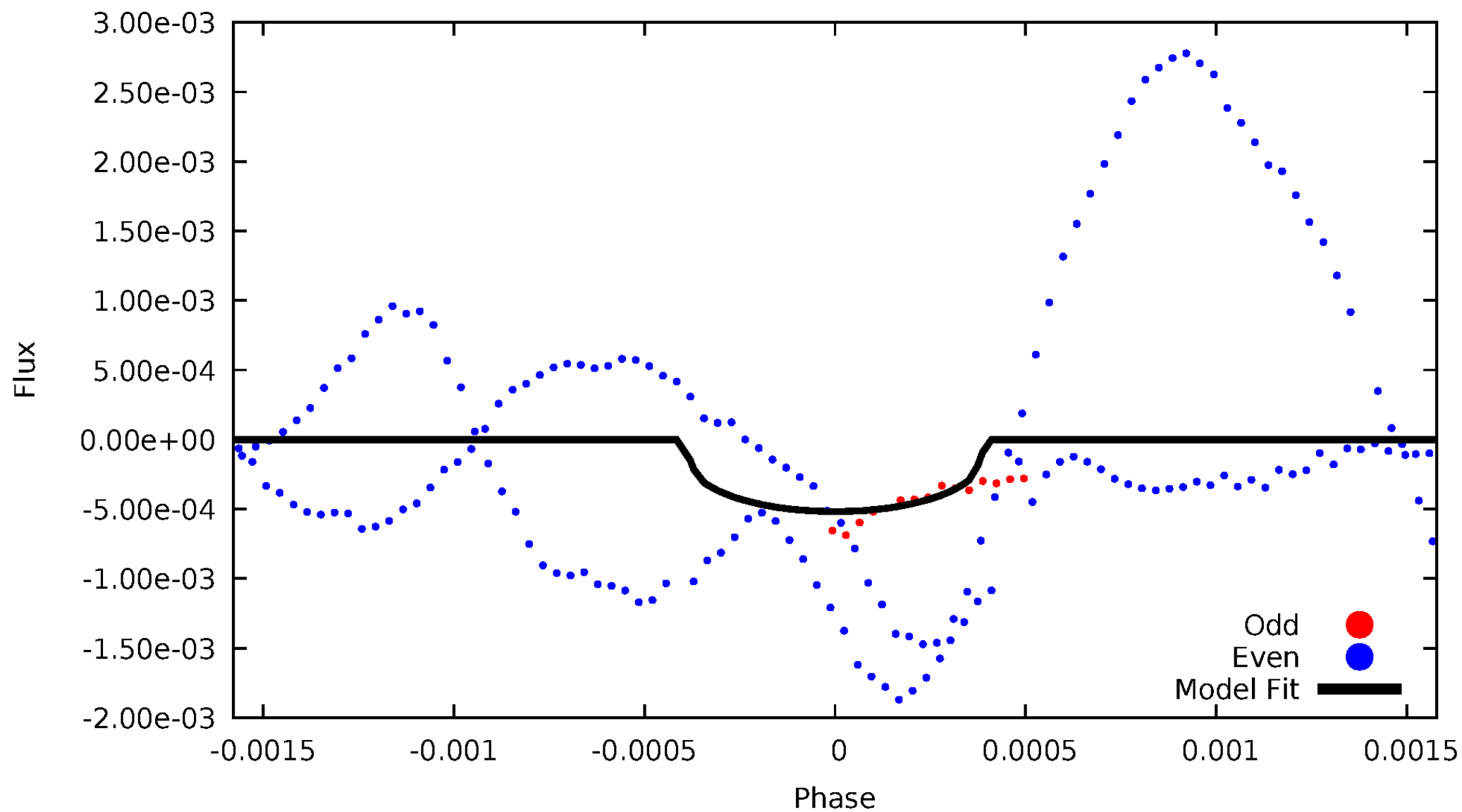


TCE 005780782-08



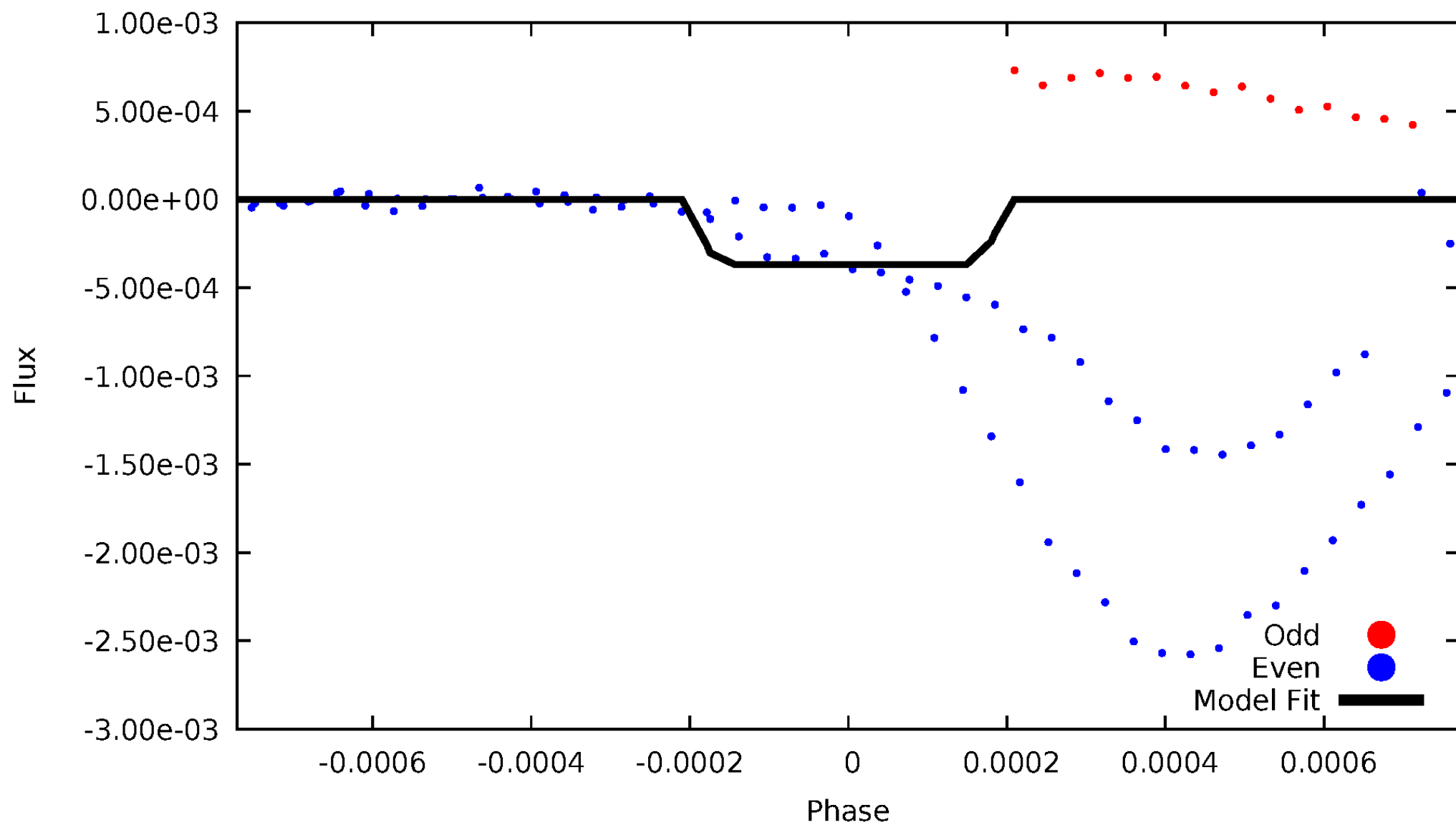
DV Odd/Even

TCE 005780782-08



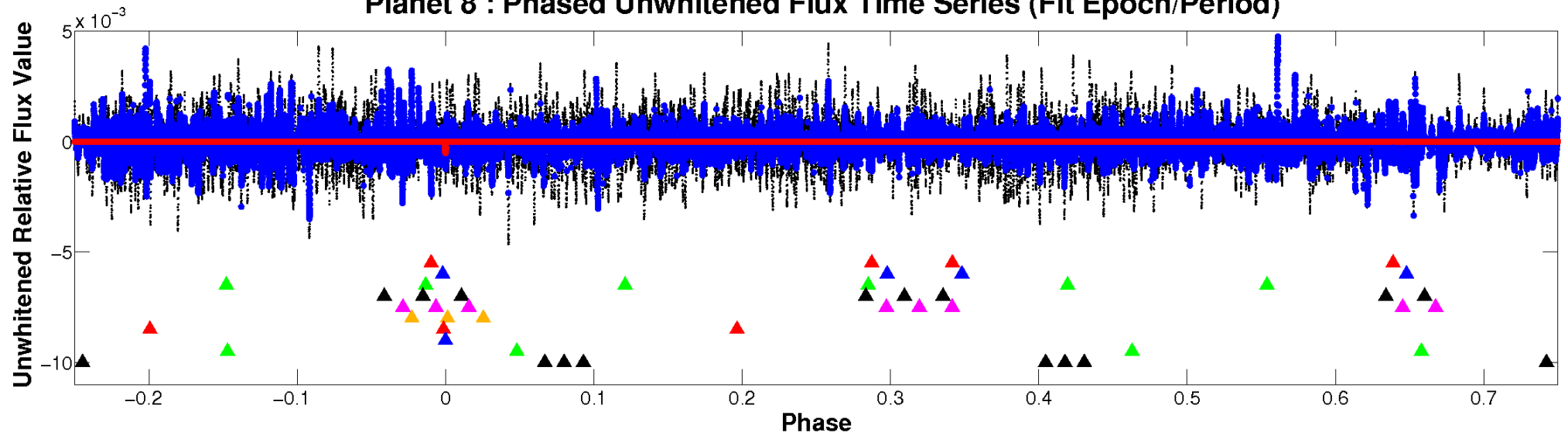
ALT Odd/Even

TCE 005780782-08

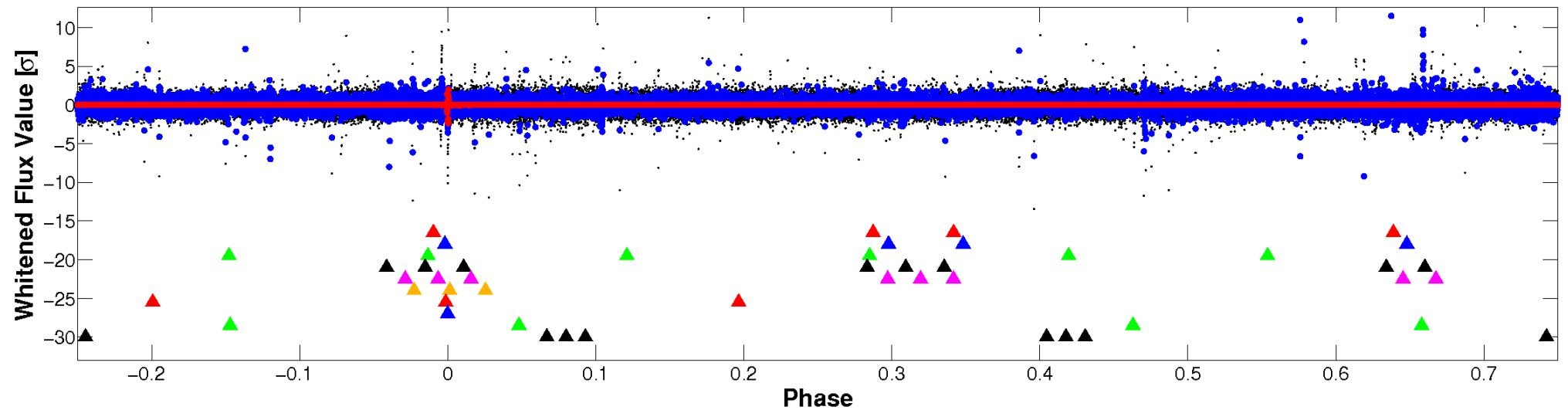


Non-Whitened Vs. Whitened Light Curve

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

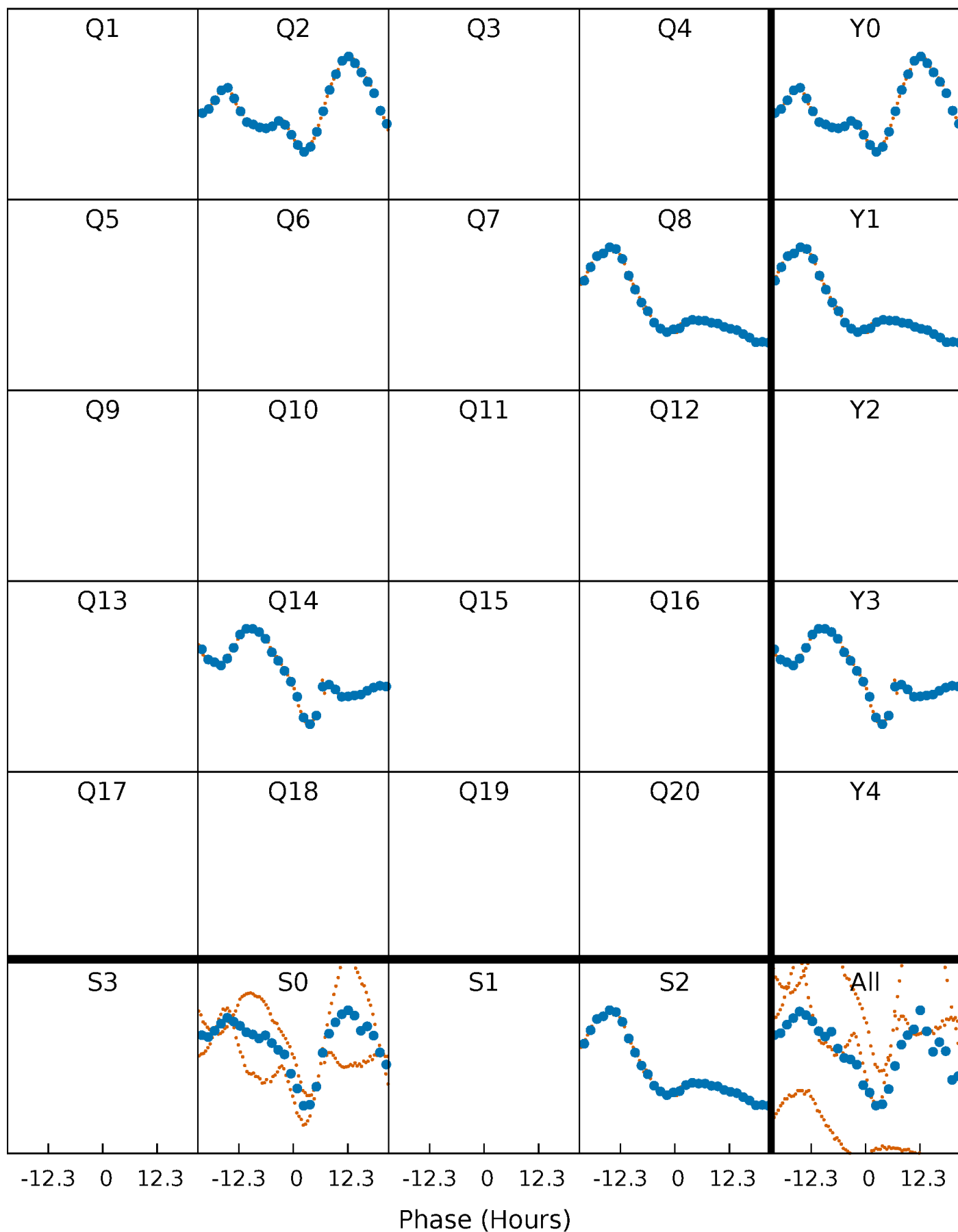


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



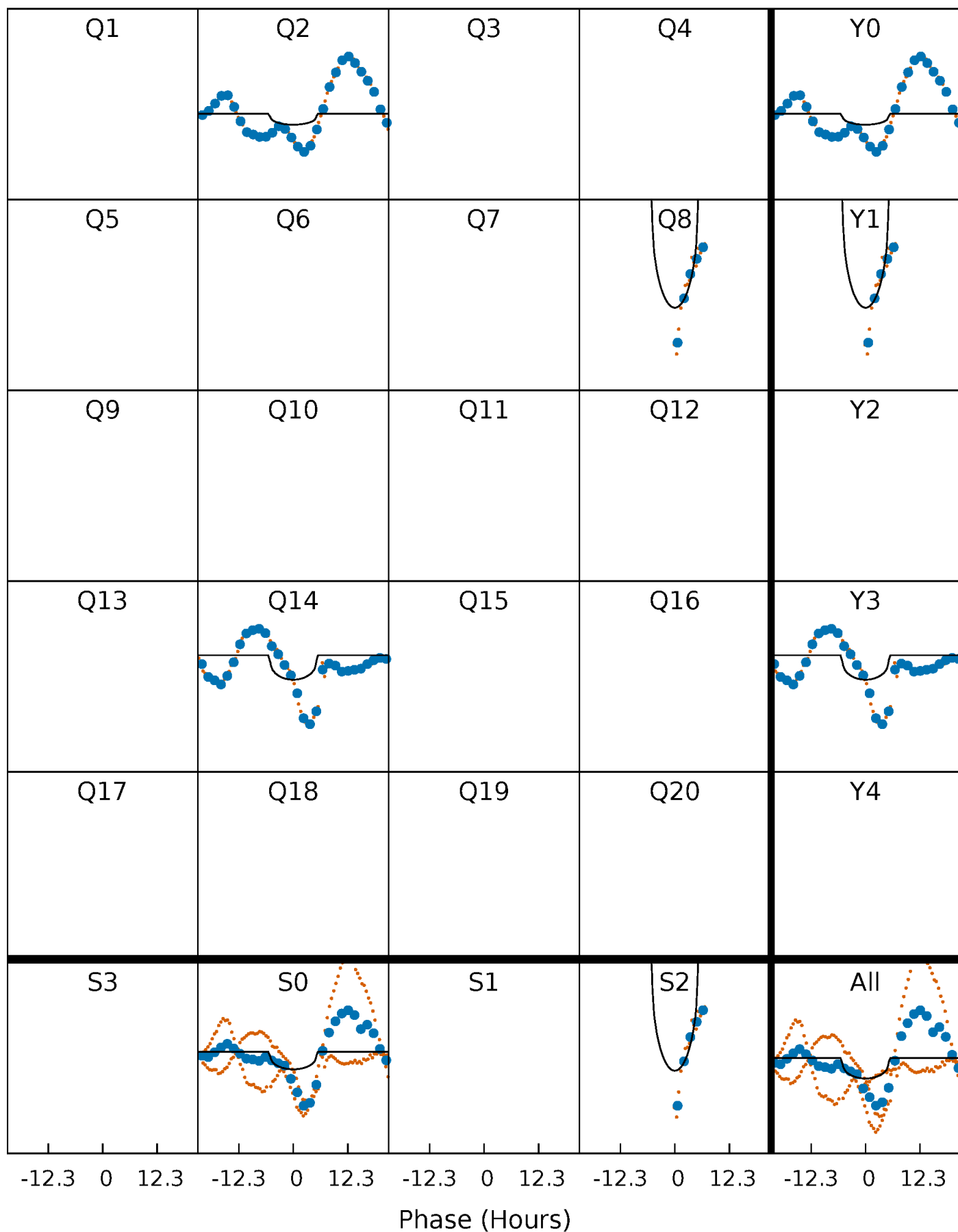
PDC Quarter-Phased Transit Curves

TCE 005780782-08 P=569.190678 Days $T_0=175.351019$ (BKJD)



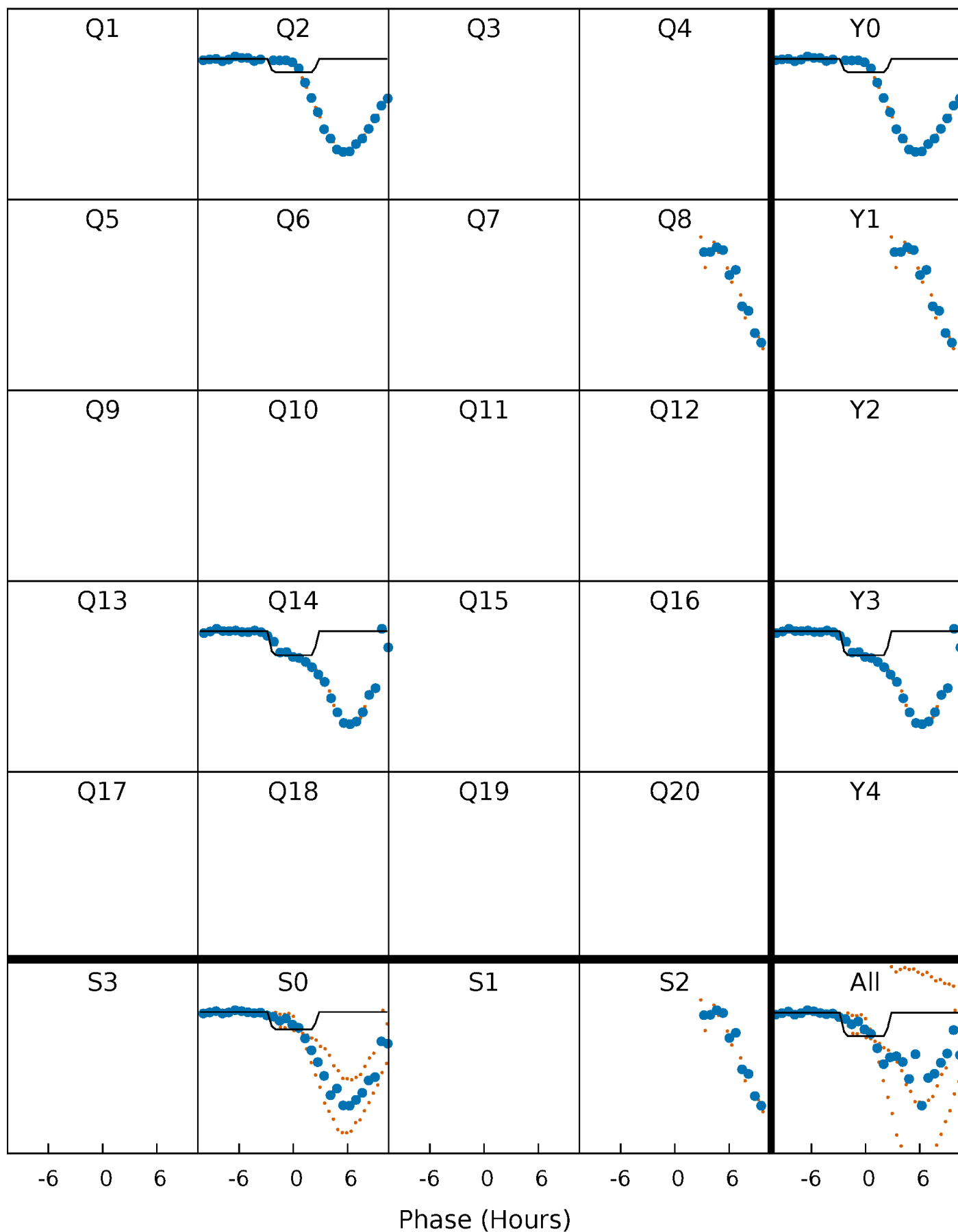
DV Quarter-Phased Transit Curves

TCE 005780782-08 P=569.190678 Days $T_0=175.351019$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

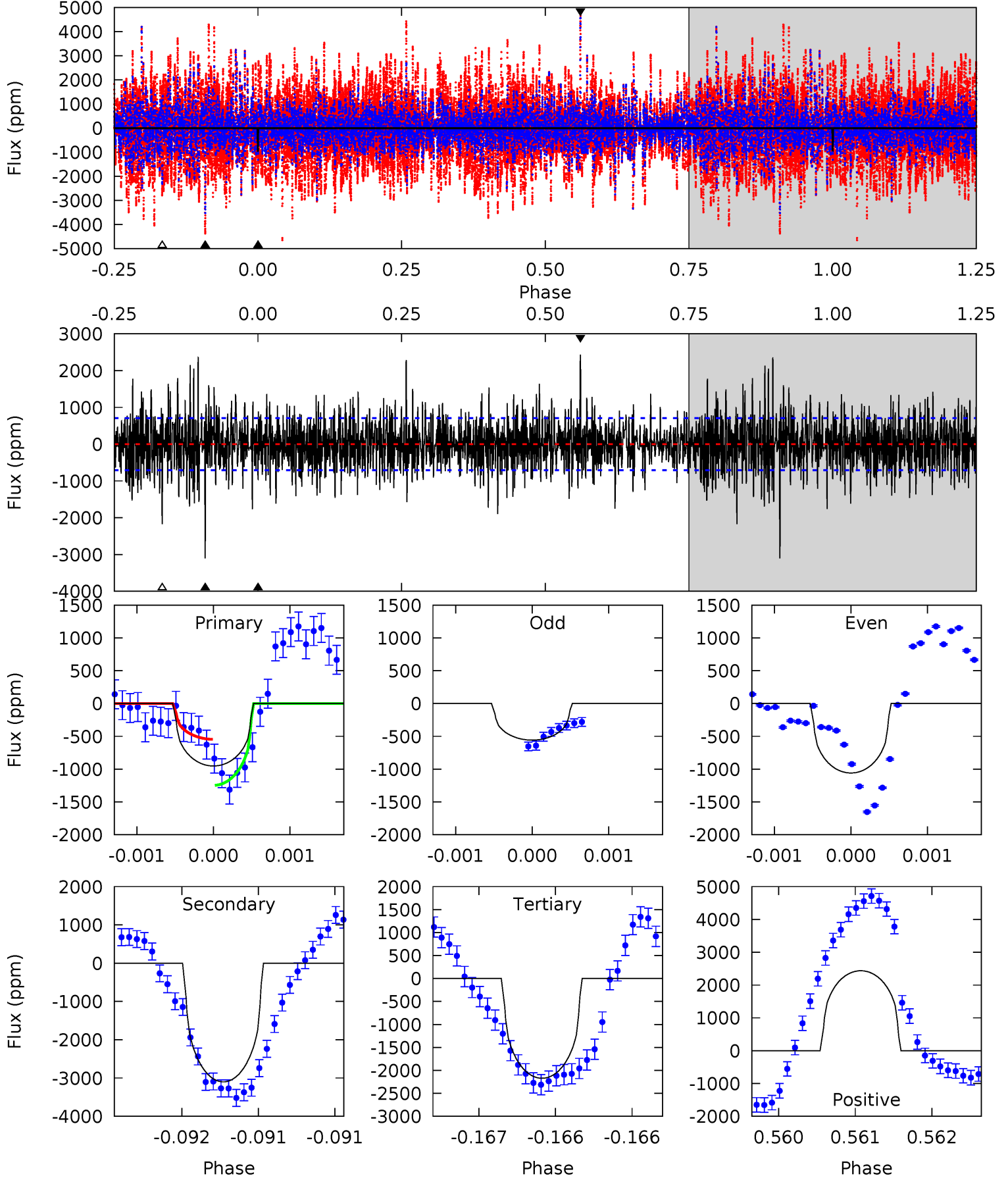
TCE 005780782-08 P=569.176814 Days $T_0=175.241534$ (BKJD)



DV Model-Shift Uniqueness Test

005780782-08, P = 569.190678 Days, E = 175.351019 Days

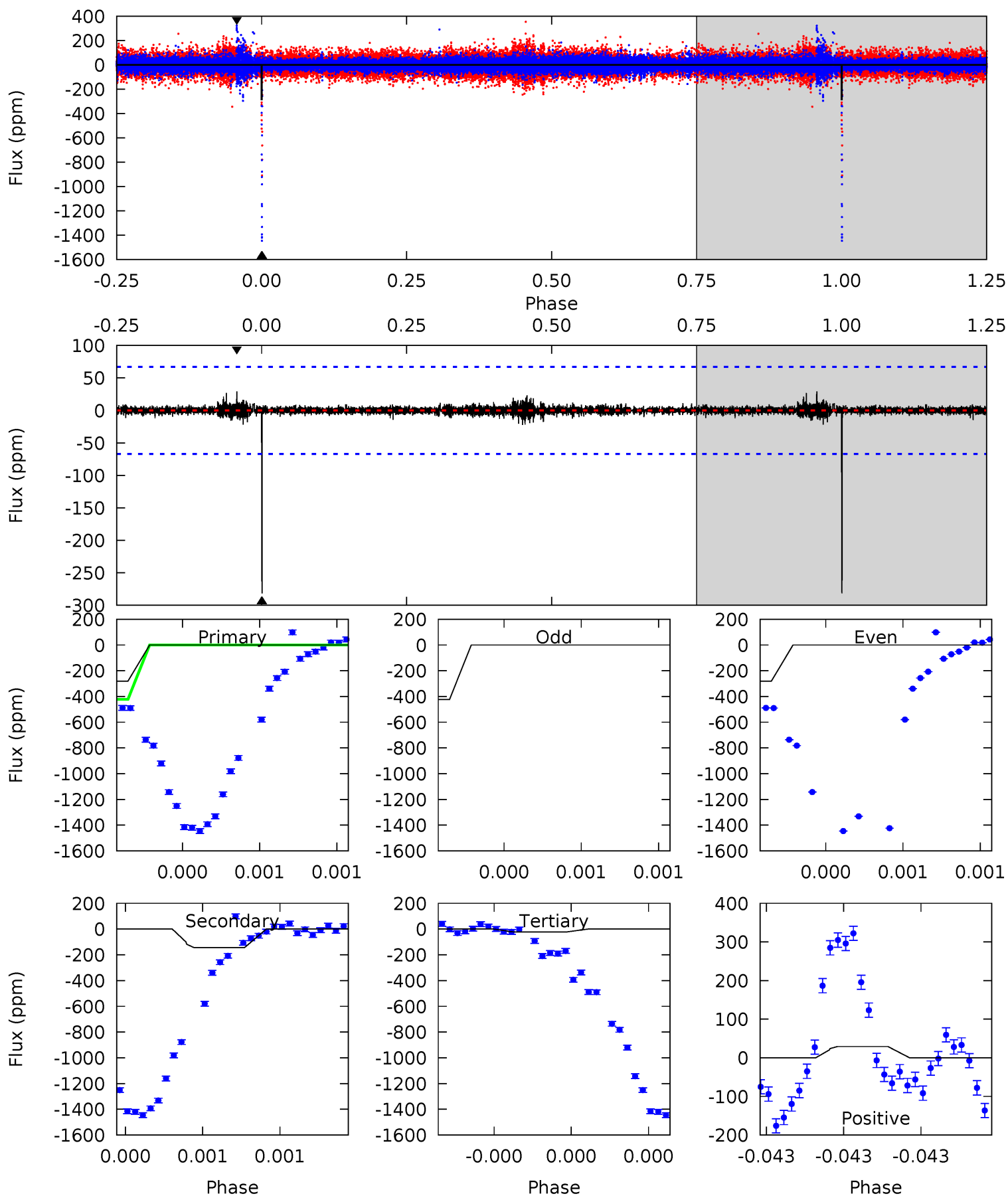
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.39	24.1	16.9	18.9	5.50	3.36	4.13	-9.46	-11.5	7.20	5.15	1.55	1.18	0.44	2.63



Alt Model-Shift Uniqueness Test

005780782-08, P = 569.176814 Days, E = 175.241534 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.6	12.1	1.93	2.45	5.62	3.55	0.30	21.7	21.1	10.1	9.61	6.44	1.00	0.09	11.4



Stellar Parameters For KIC 005780782

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4359^{+39}_{-91}	$1.933^{+0.030}_{-0.030}$	$0.100^{+0.100}_{-0.200}$	$26.107^{+5.247}_{-5.771}$	$2.131^{+0.865}_{-0.865}$	$0.000^{+0.000}_{-0.000}$
	+1%/-2%	+2%/-2%	+100%/-200%	+20%/-22%	+41%/-41%	+34%/-10%
Source	SPE74	AST11	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 005780782-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-3100 ± 129	$58.43^{+18.05}_{-14.78}$	1043^{+29}_{-30}	6887^{+1060}_{-780}	1556^{+1038}_{-592}
Alt.	-144 ± 12	$55.99^{+16.21}_{-15.07}$	1043^{+28}_{-30}	3664^{+339}_{-261}	76^{+55}_{-27}

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

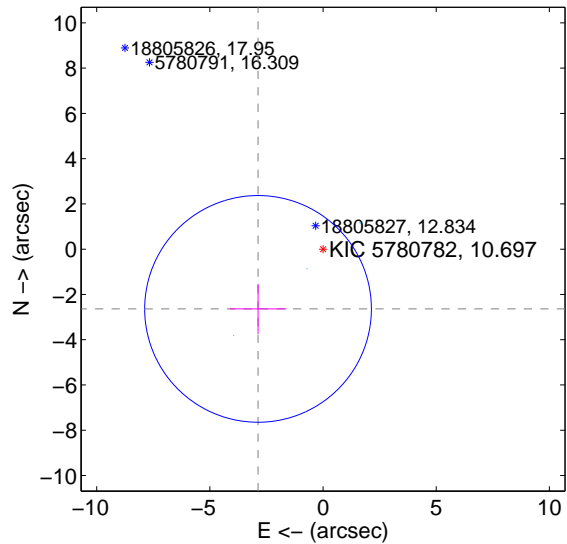
Supplemental centroid analysis for 005780782-08. **Kepler magnitude: 10.70.** Transit SNR 15.28

There are 2 quarters with good PRF difference image offsets

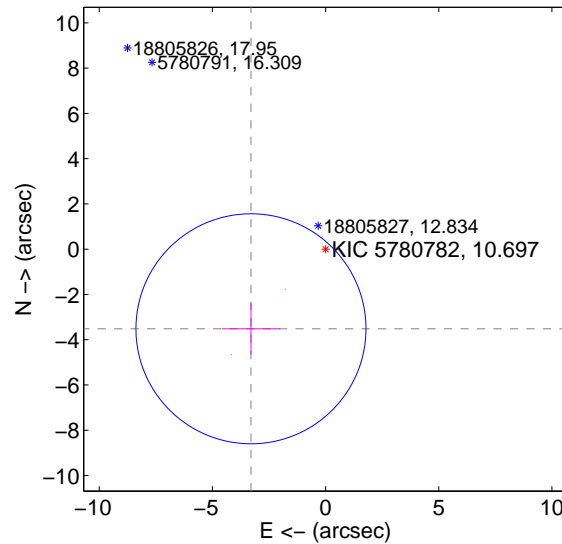
The direct PRF centroid is offset from the target star catalog position by about 0.97 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.900 ± 1.669	2.34	2.872 ± 1.252	-2.639 ± 1.107
PRF-fit source offset from KIC position	4.821 ± 1.694	2.85	3.297 ± 1.291	-3.518 ± 1.127
photometric centroid source offset	0.50 ± 0.81	0.61	0.39 ± 0.72	0.31 ± 0.95

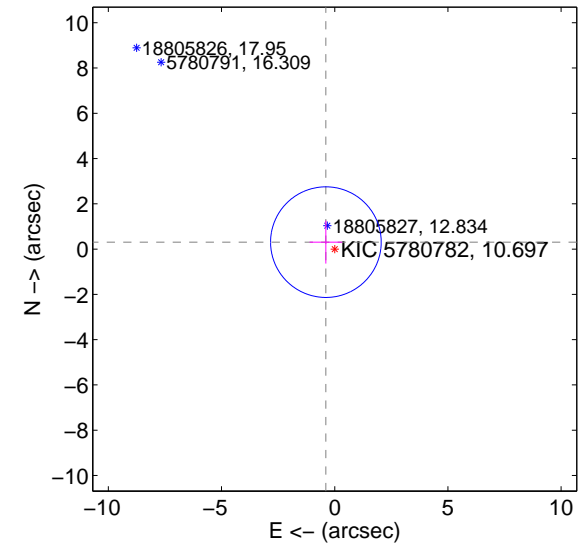
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

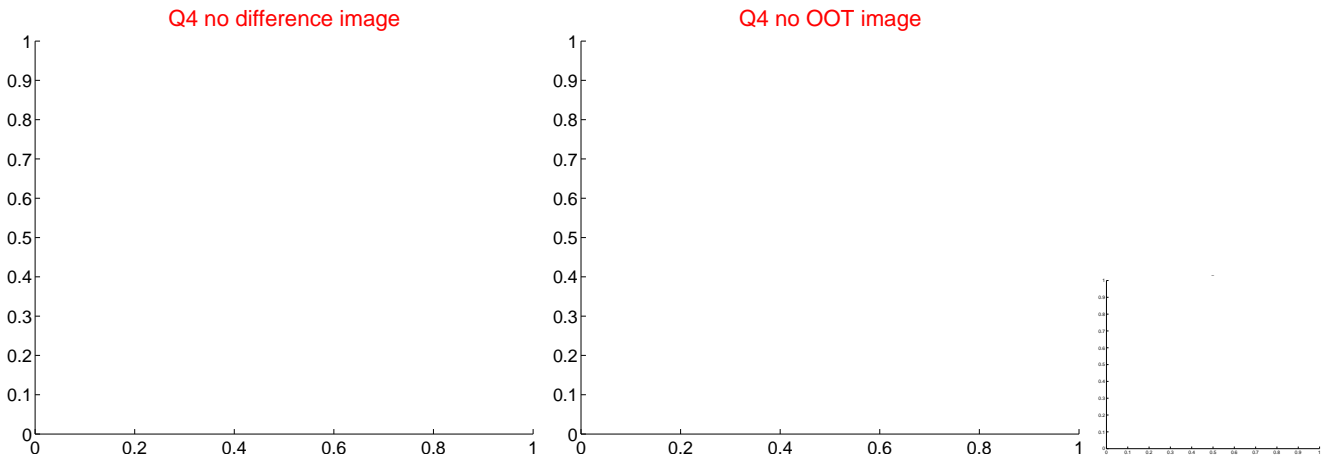
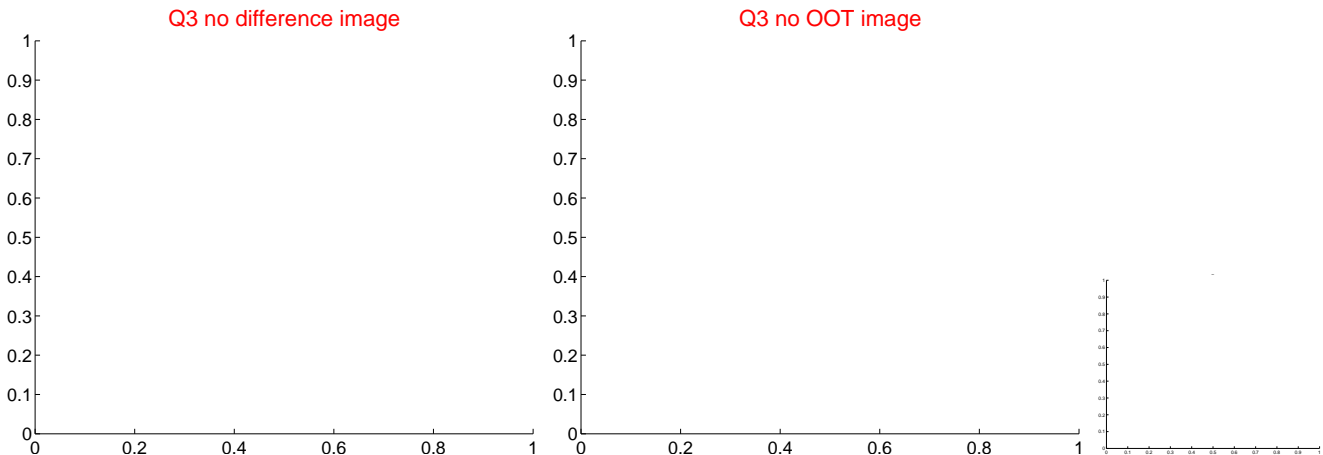
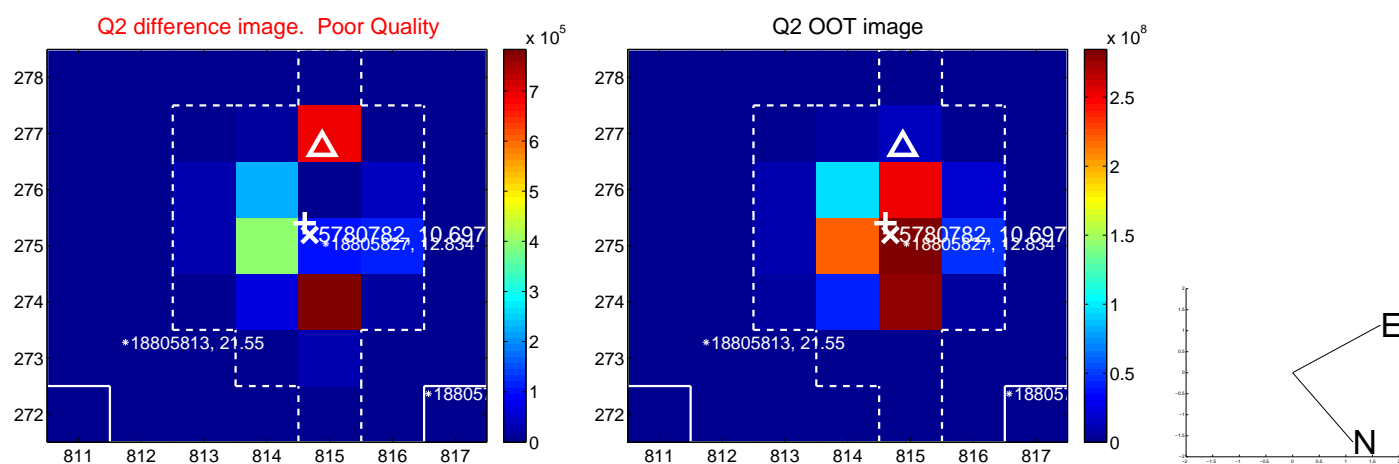
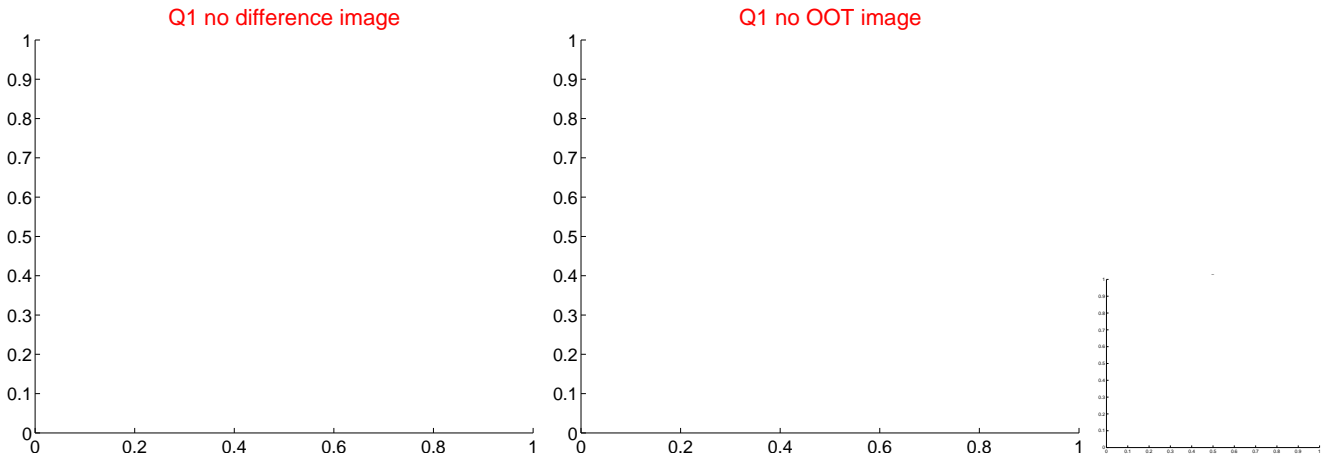


offset from photometric centroids



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

Q5 no difference image



Q5 no OOT image



Q6 no difference image



Q6 no OOT image



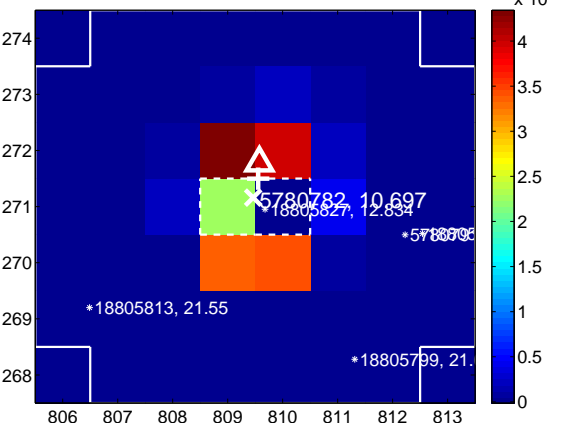
Q7 no difference image



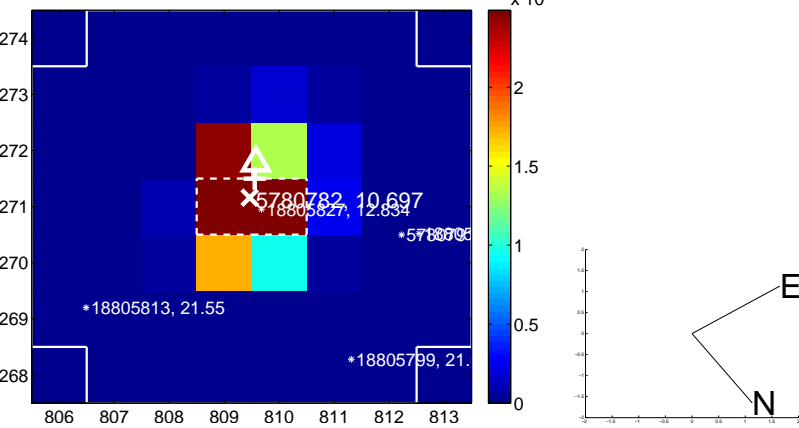
Q7 no OOT image



Q8 difference image



Q8 OOT image



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



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

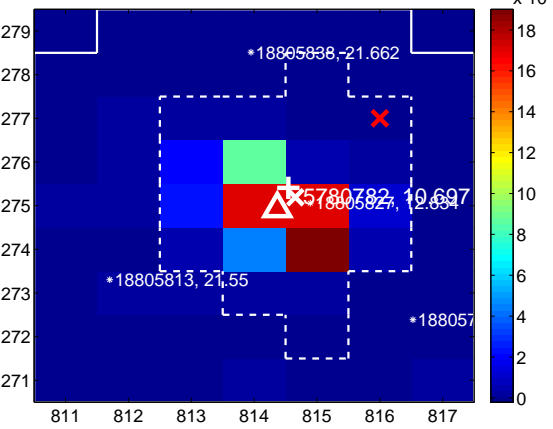
Q13 no difference image



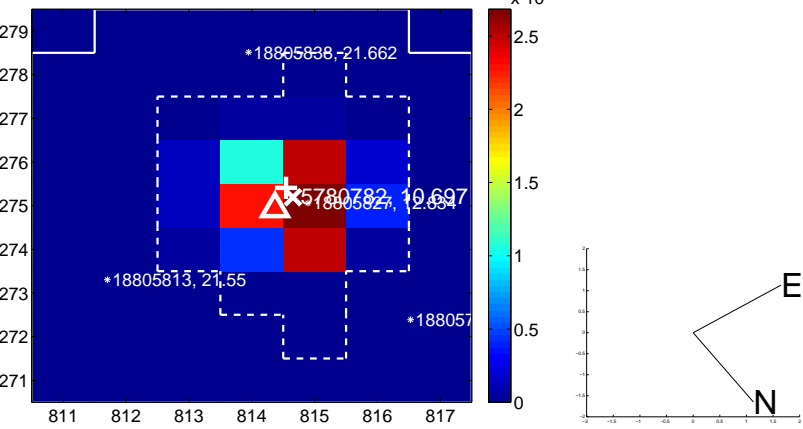
Q13 no OOT image



Q14 difference image



Q14 OOT image



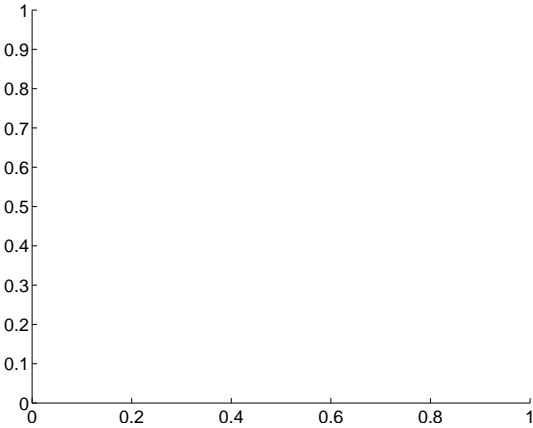
Q15 no difference image



Q15 no OOT image



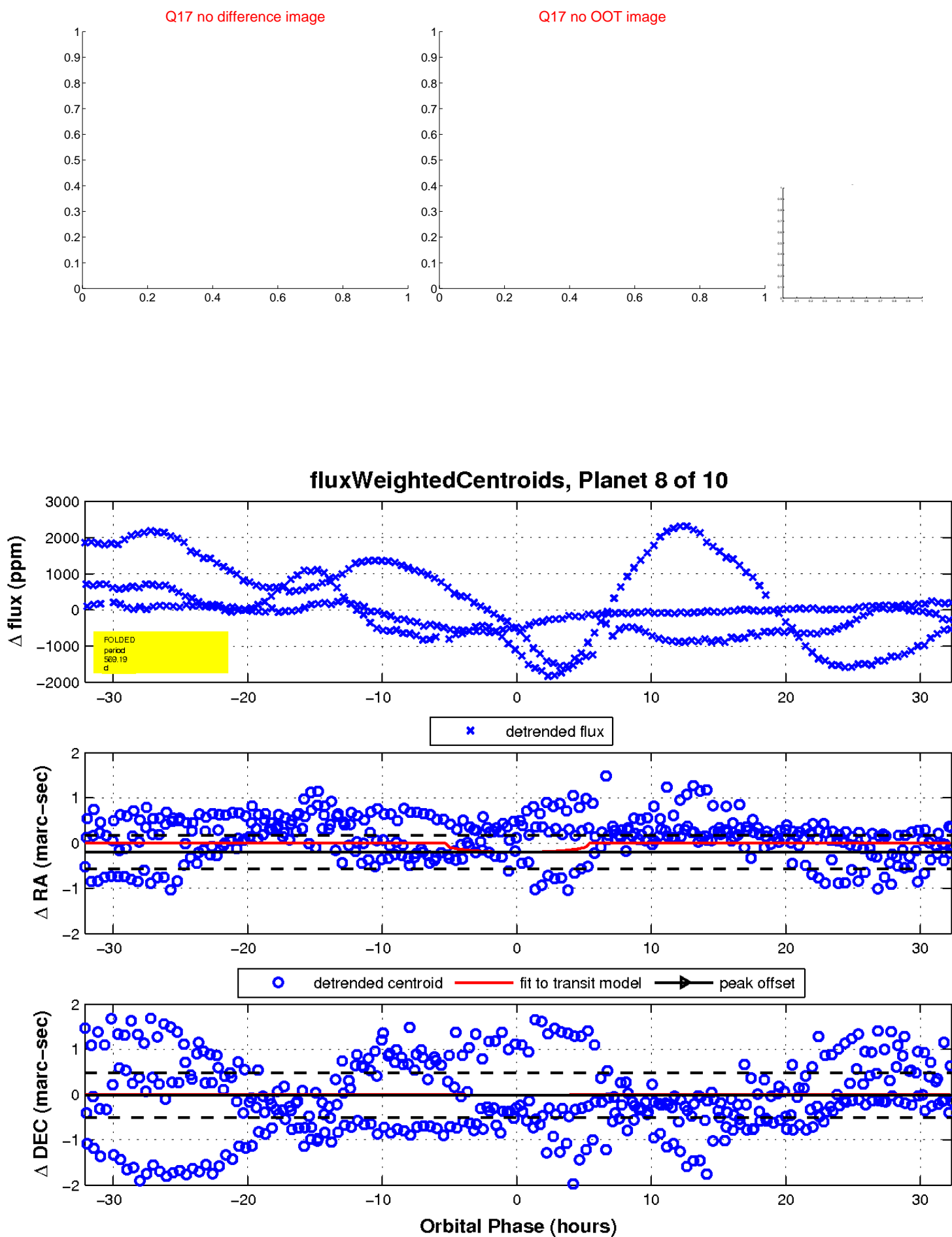
Q16 no difference image



Q16 no OOT image

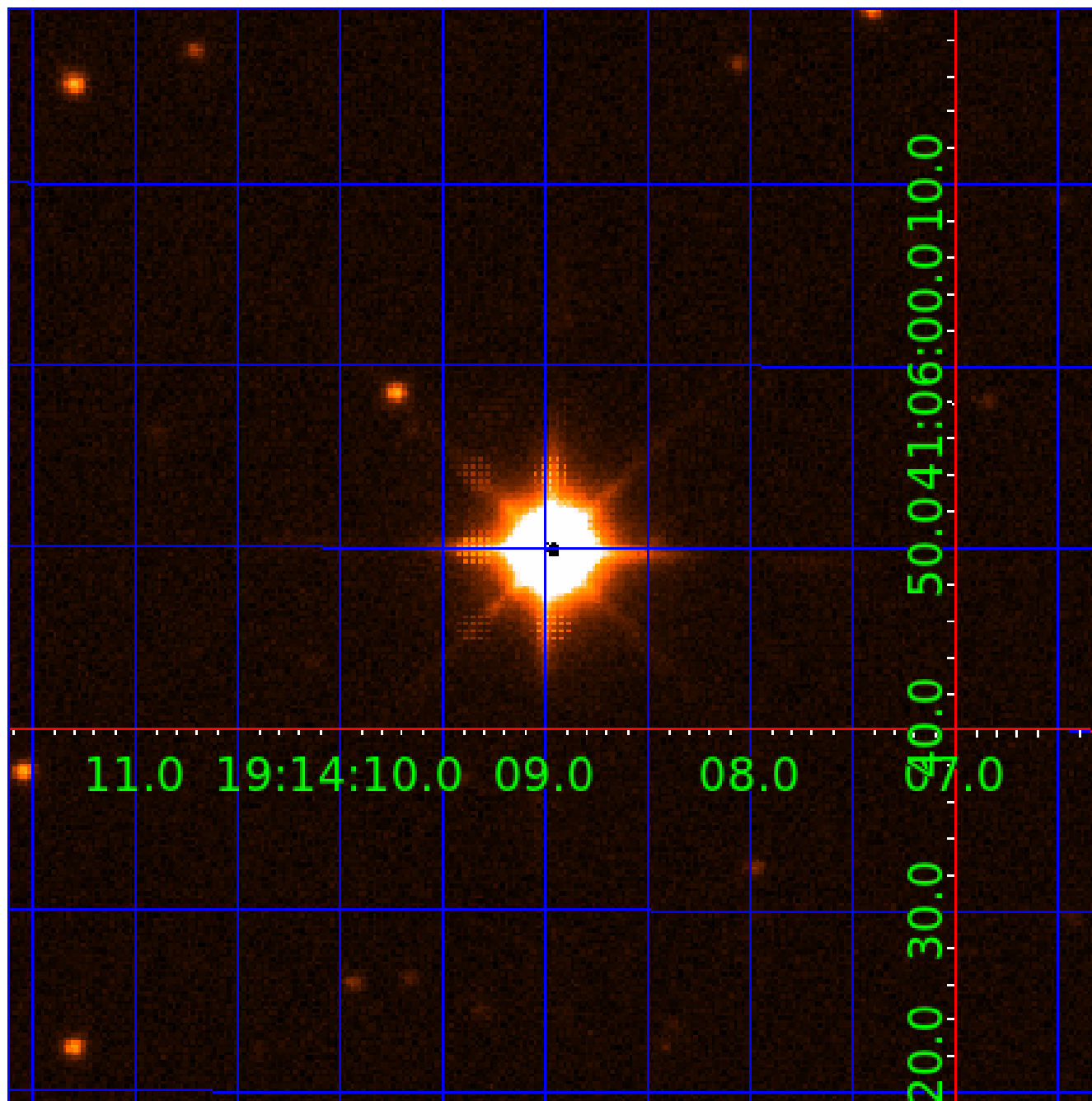


white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
005780782-01	OBS	No	369.146663	369.893592	2064.7	20.710	97.5	118.9	26.11	4359	198.29	131.22
005780782-02	OBS	No	369.894878	373.565961	1448.6	16.966	81.6	82.3	26.11	4359	206.01	130.87
005780782-03	OBS	No	246.340188	244.270189	398.8	12.500	46.0	-1.0	26.11	4359	49.42	225.03
005780782-04	OBS	No	184.793502	181.491110	2826.3	29.386	44.8	92.1	26.11	4359	276.25	330.14
005780782-05	OBS	No	185.516291	184.318124	406.2	15.000	53.8	-1.0	26.11	4359	49.87	328.43
005780782-06	OBS	No	582.905555	162.441375	100.5	7.883	41.5	5.2	26.11	4359	30.30	71.36
005780782-07	OBS	No	456.526196	287.257117	110.3	1.000	39.6	2.2	26.11	4359	34.58	98.85
005780782-08	OBS	No	569.190679	175.351019	517.0	10.776	38.8	15.3	26.11	4359	57.86	73.67
005780782-09	OBS	No	458.158942	202.747347	767.2	21.875	11.9	8.1	26.11	4359	92.71	98.38
005780782-10	OBS	No	192.199401	213.478149	32.3	5.697	10.7	8.1	26.11	4359	19.44	313.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005780782-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—NO_FITS—INCONSISTENT_TRANS—CENT_SATURATED
005780782-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005780782-05	OBS	FP	0.00	1	0	0	0	LPP_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005780782-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_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—HALO_GHOST
005780782-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-09	OBS	FP	0.00	1	0	1	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
005780782-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

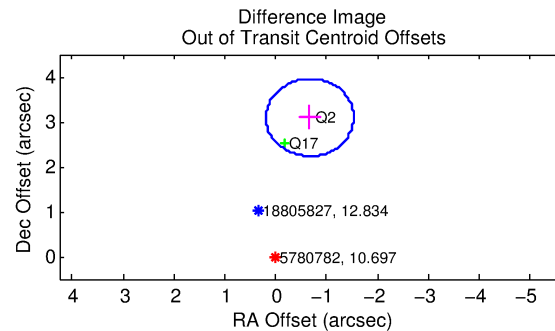
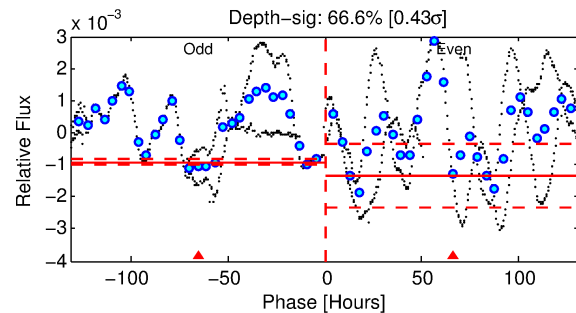
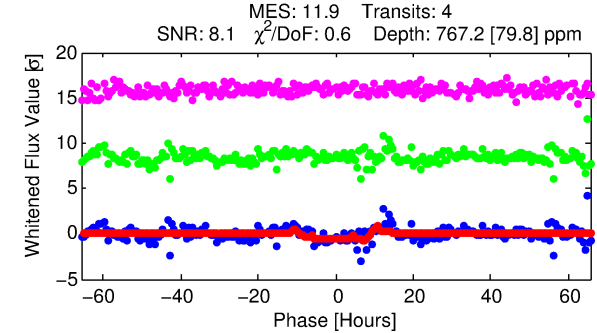
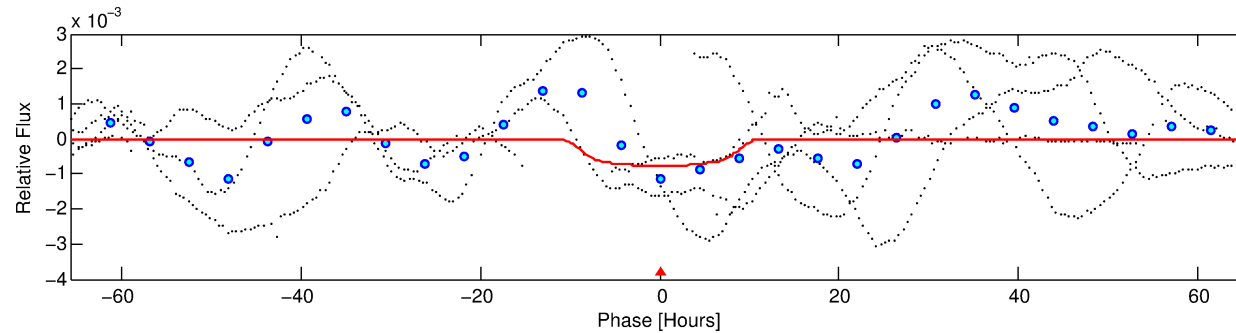
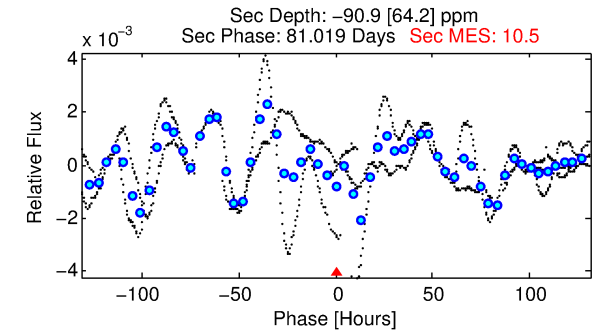
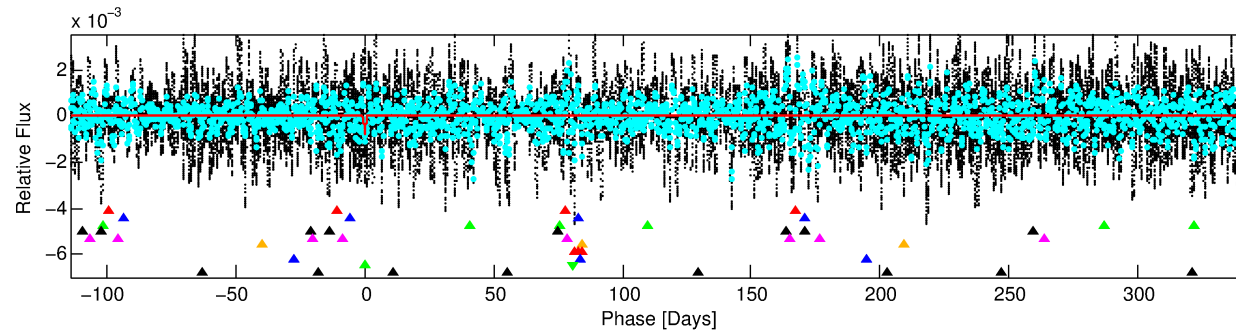
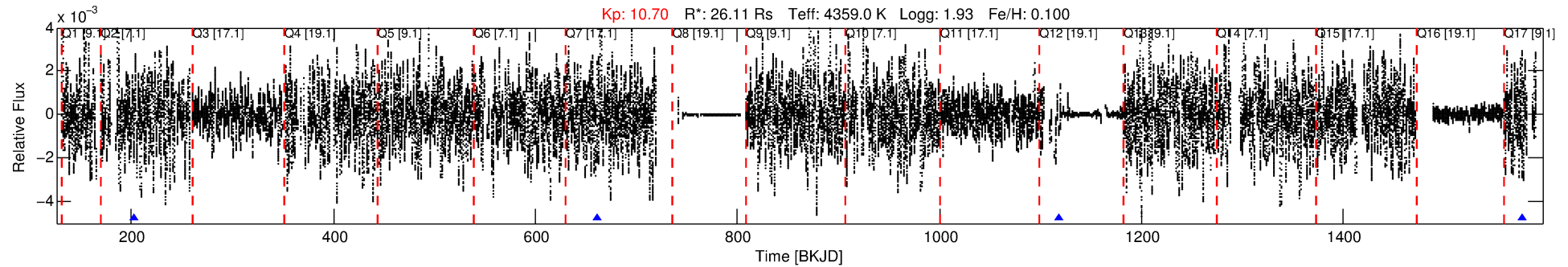
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005780782-09

No Significant Match Found

DV One-Page Summary

KIC: 5780782 Candidate: 9 of 10 Period: 458.159 d



DV Fit Results:

Period = 458.15894 [0.01037] d
Epoch = 202.7473 [0.0195] BKJD
Rp/R* = 0.0325 [0.0018]
a/R* = 75.01 [5.35]
b = 0.92 [0.01]
Seff = 98.38 [17.27]
Teq = 803 [35] K
Re = 92.71 [21.10] Re
a = 1.4970 [0.2233] AU
Ag = N/A
Teff = N/A

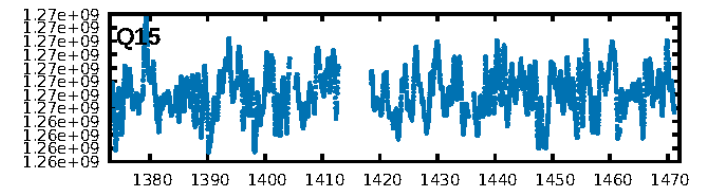
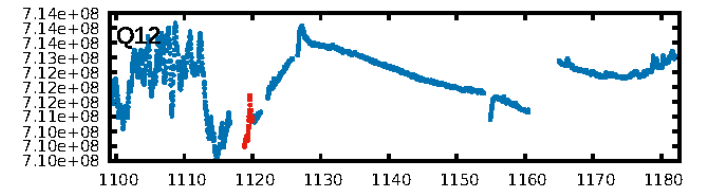
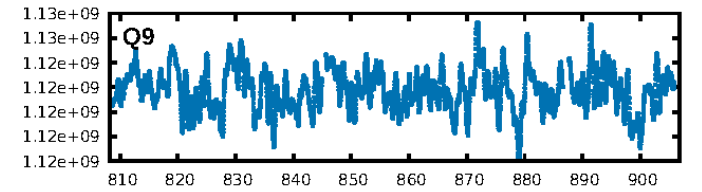
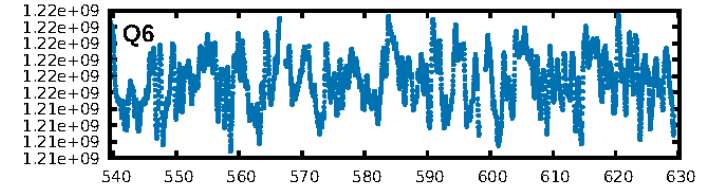
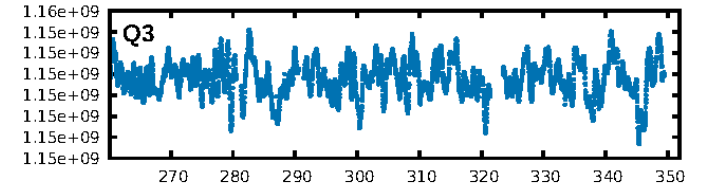
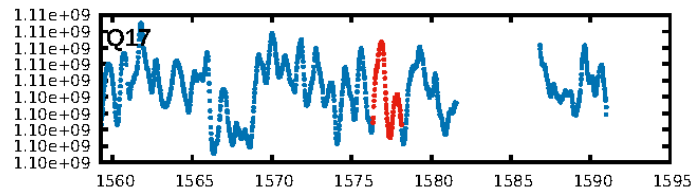
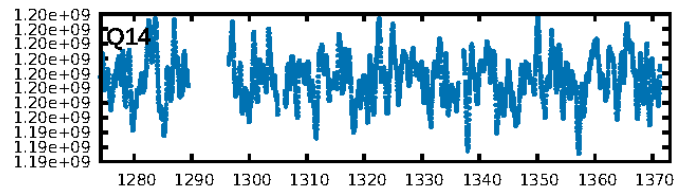
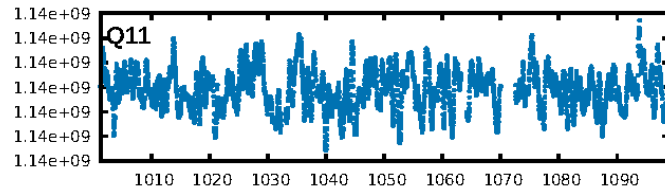
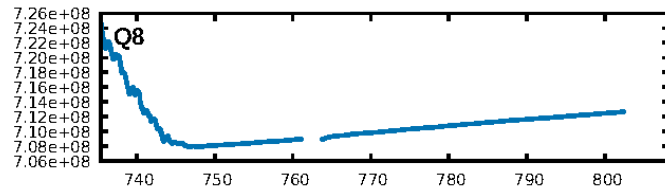
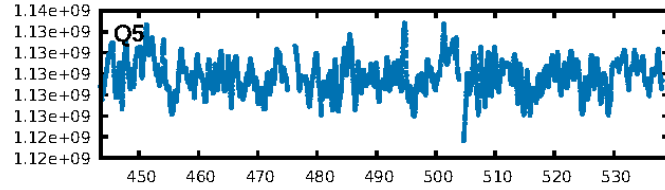
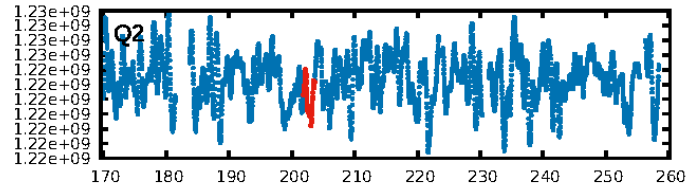
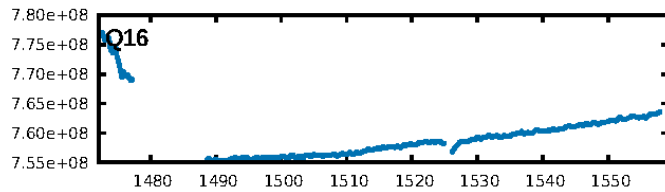
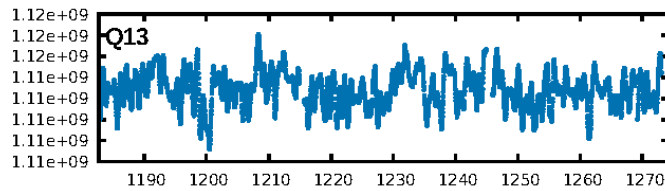
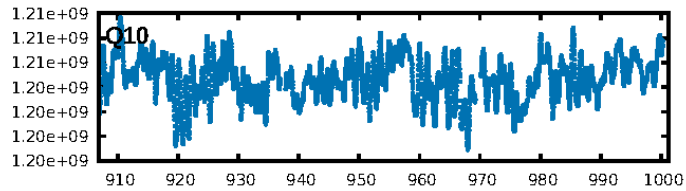
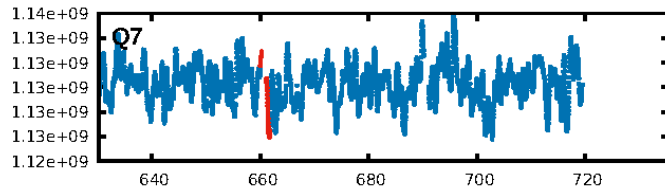
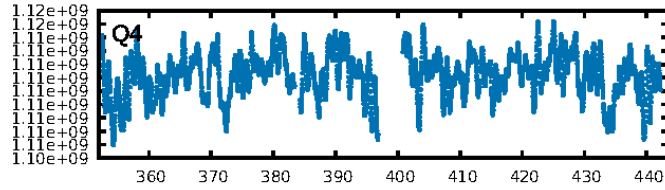
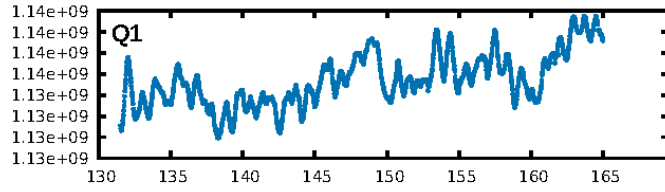
DV Diagnostic Results:

ShortPeriod-sig: 92.6% [1.79σ]
LongPeriod-sig: 100.0% [109.28σ]
ModelChiSquare2-sig: 22.5%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.1092
Centroid-sig: 1.9%
Centroid-so: 0.698 arcsec [1.13σ]
OotOffset-rm: 3.166 arcsec [11.02σ]
KicOffset-rm: 2.357 arcsec [8.28σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-st: 1/0/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

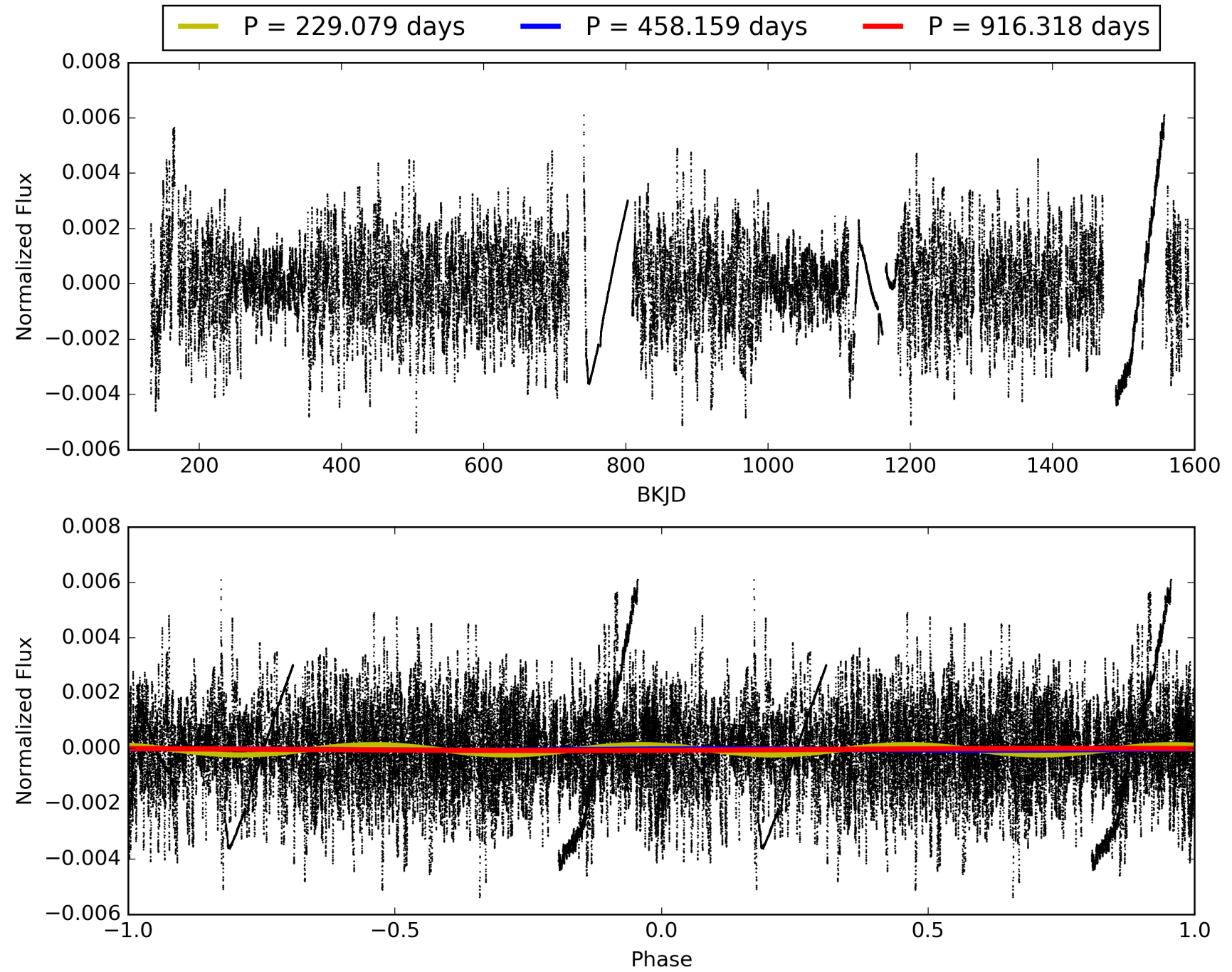
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:45:25 Z

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

TCE 005780782-09, PDC Light Curves

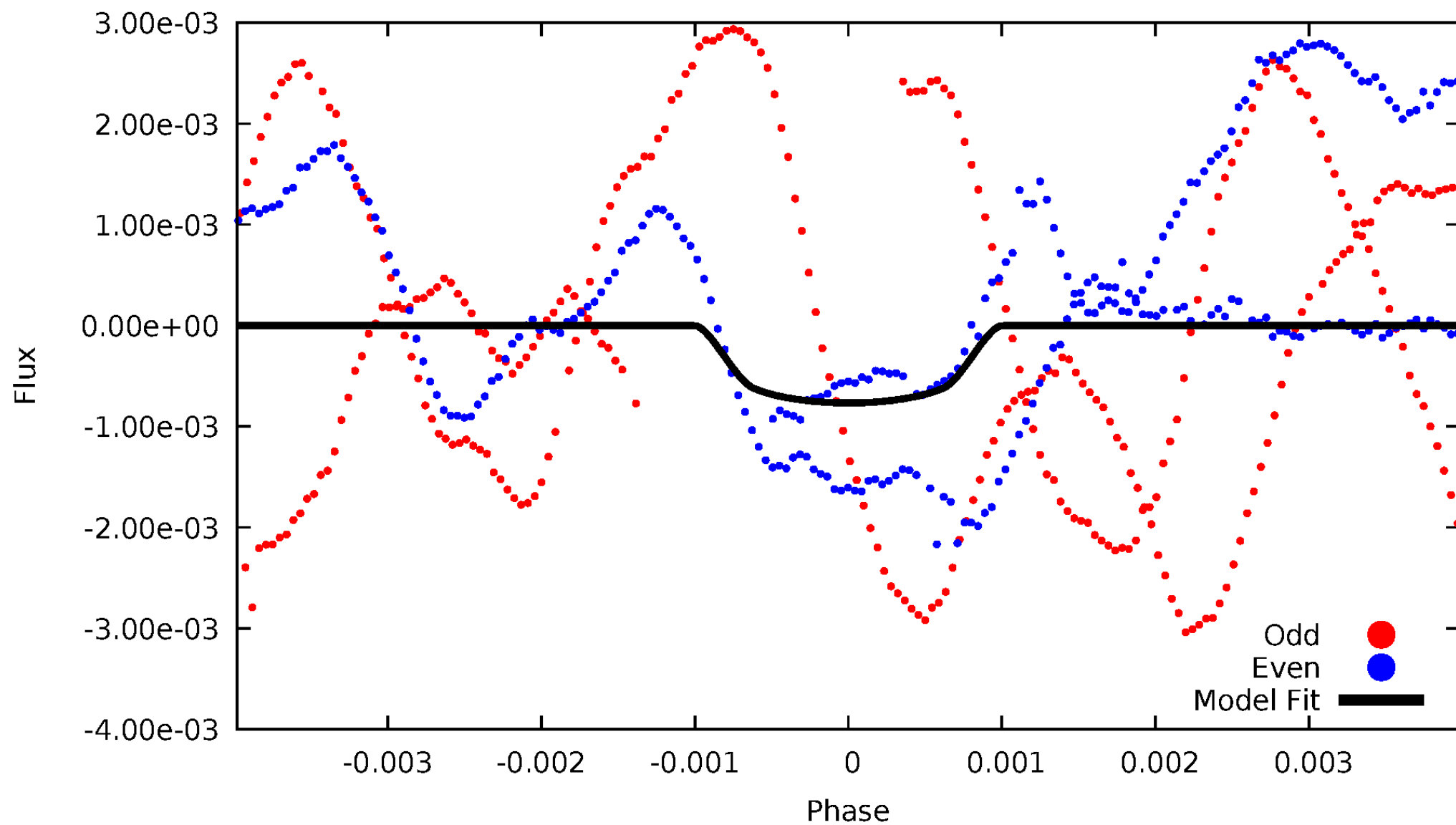


TCE 005780782-09



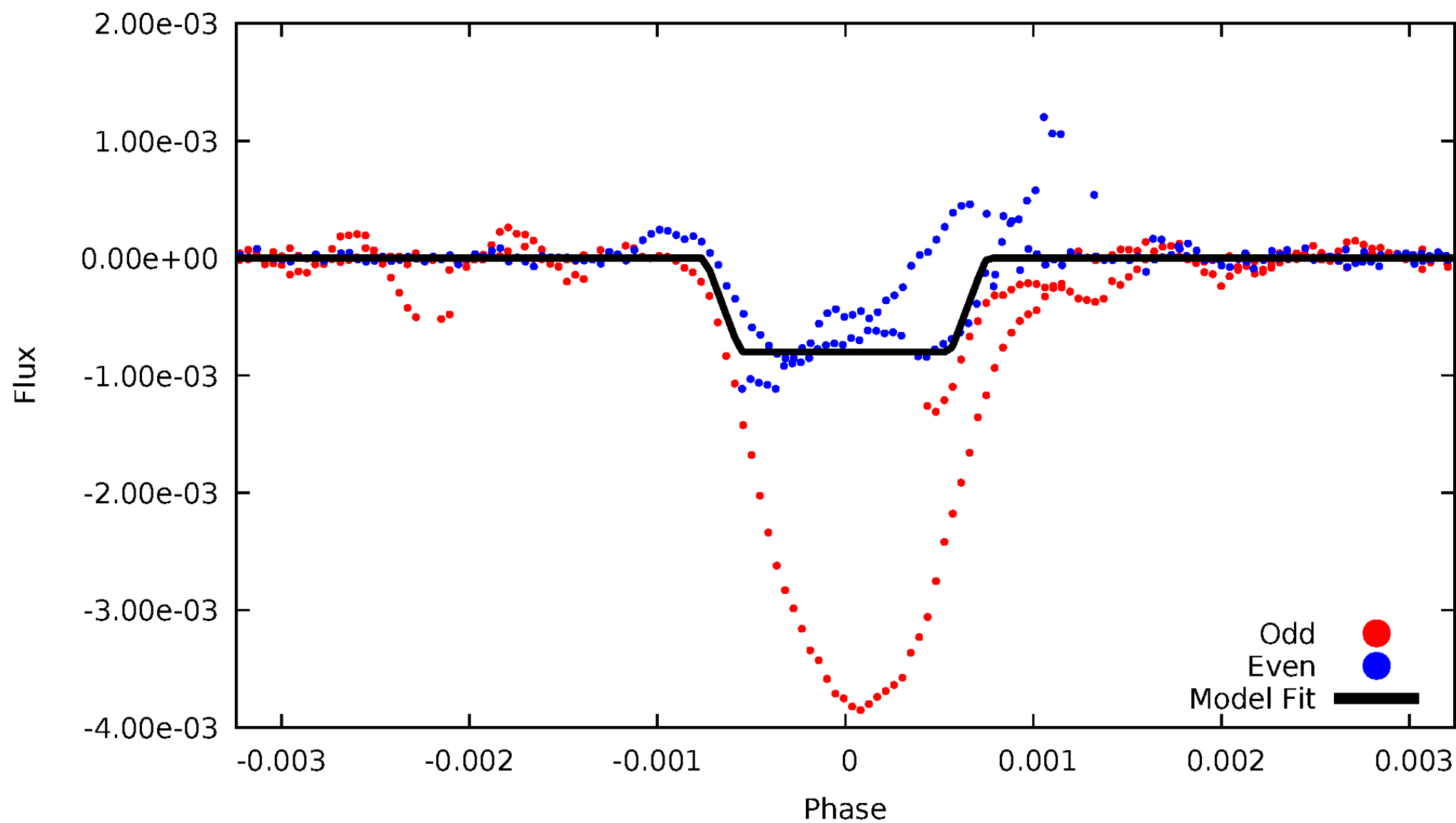
DV Odd/Even

TCE 005780782-09



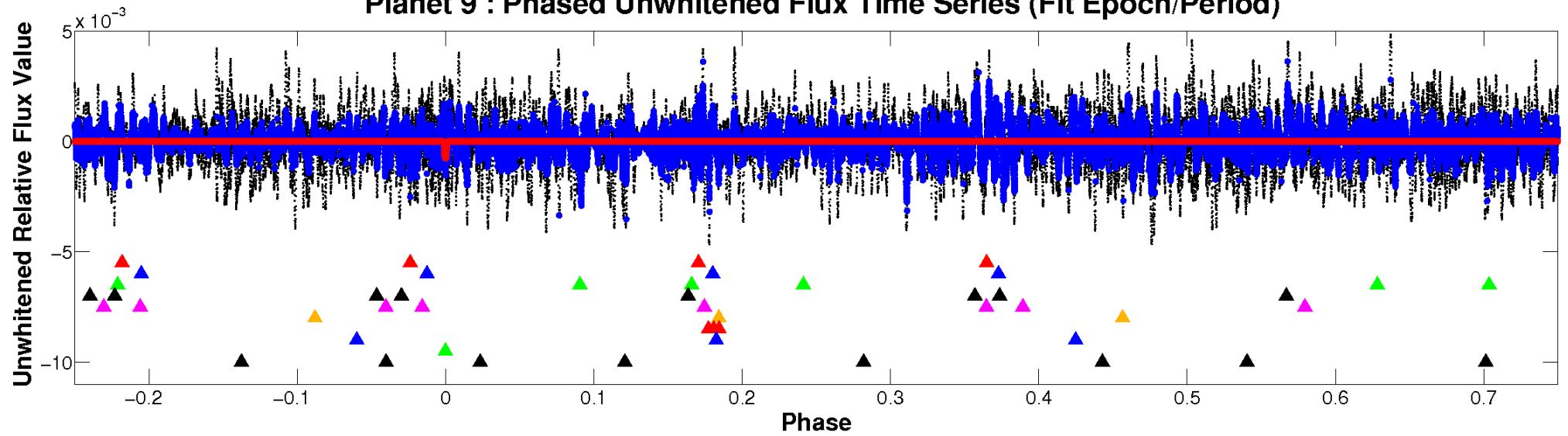
ALT Odd/Even

TCE 005780782-09

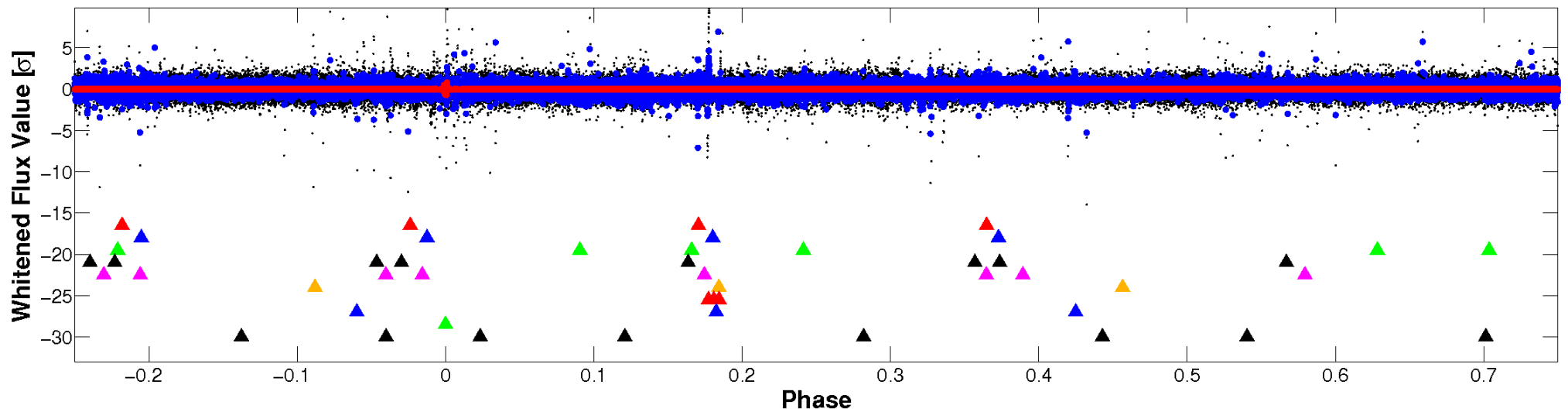


Non-Whitened Vs. Whitened Light Curve

Planet 9 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

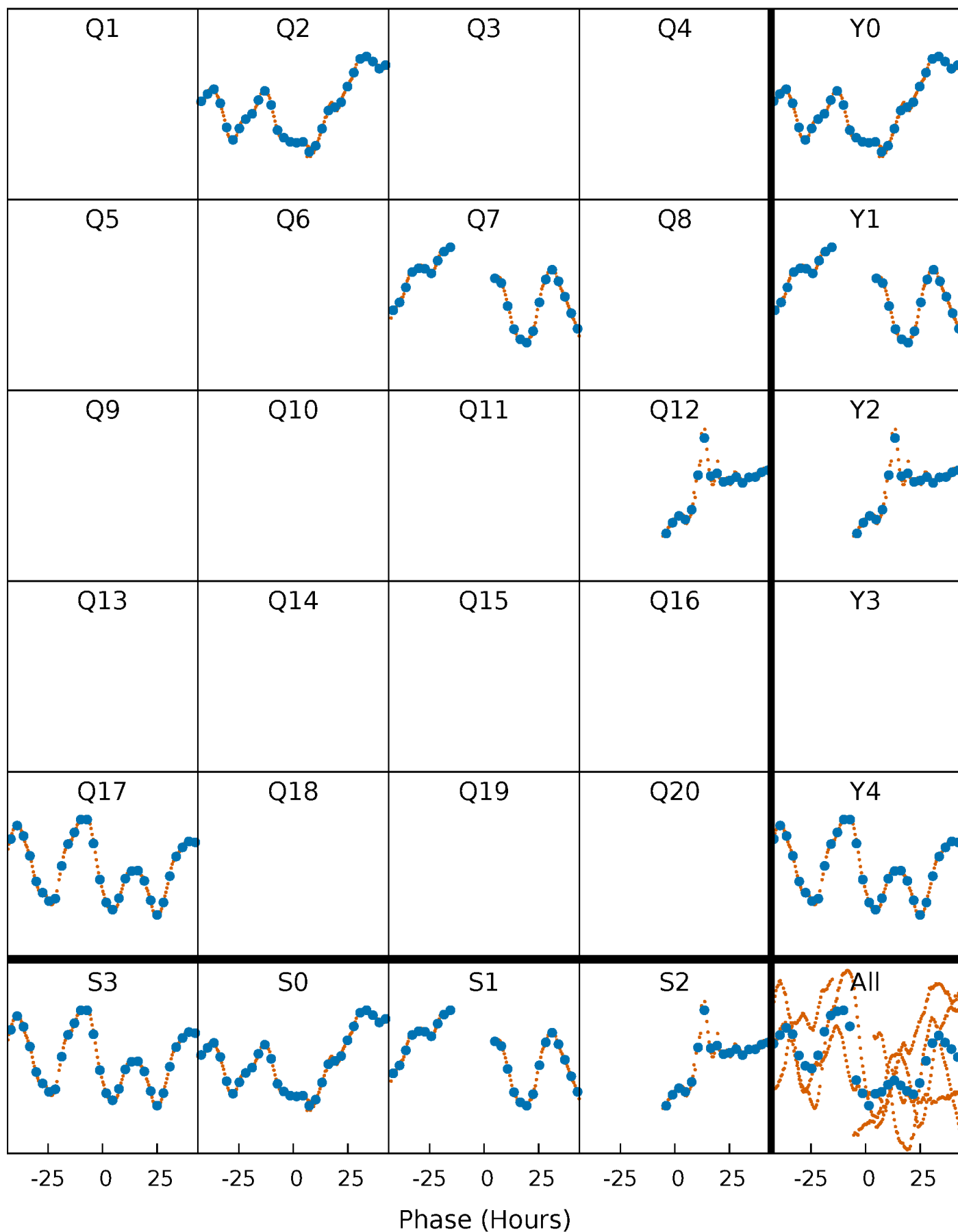


Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)



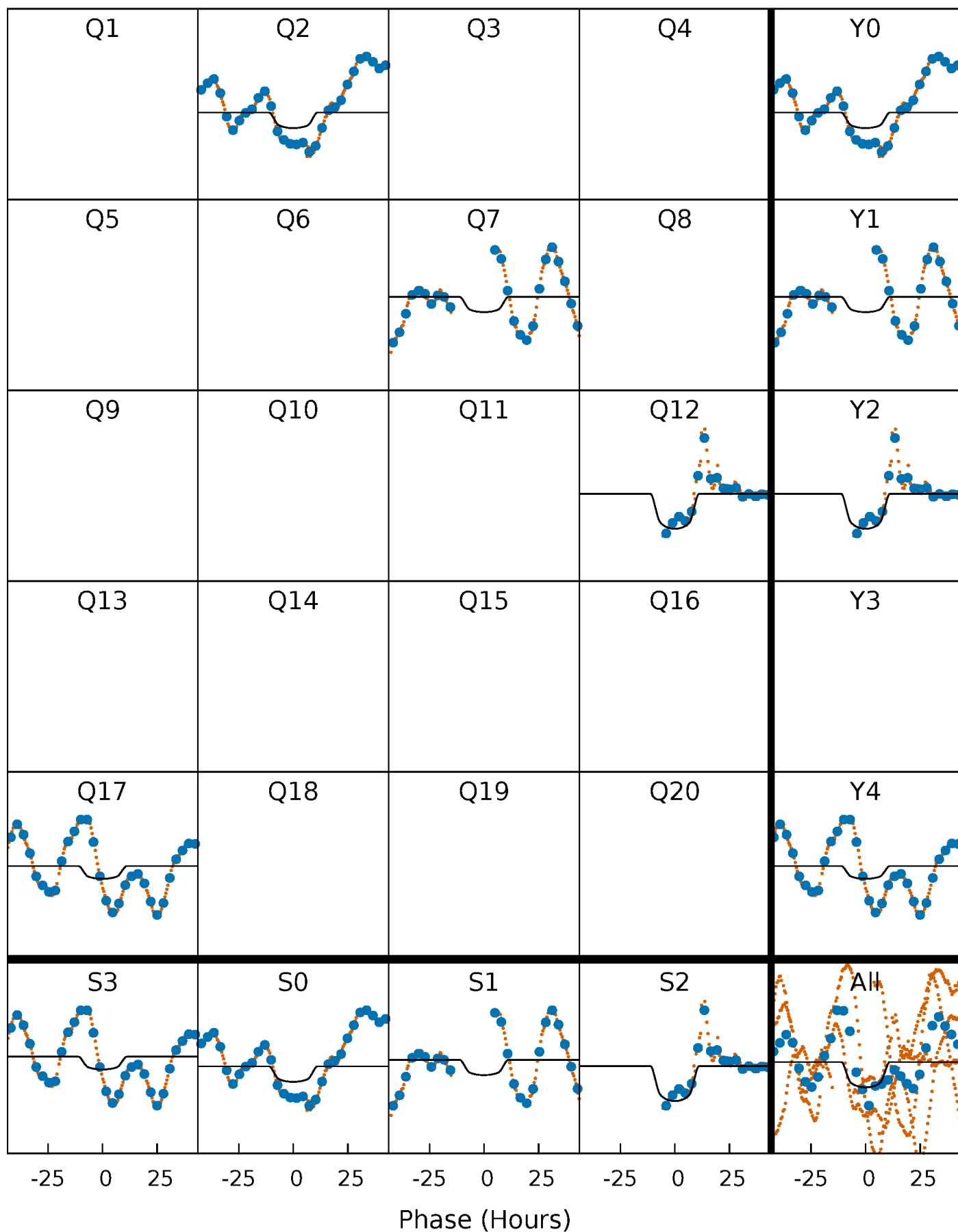
PDC Quarter-Phased Transit Curves

TCE 005780782-09 $P=458.158942$ Days $T_0=202.747347$ (BKJD)



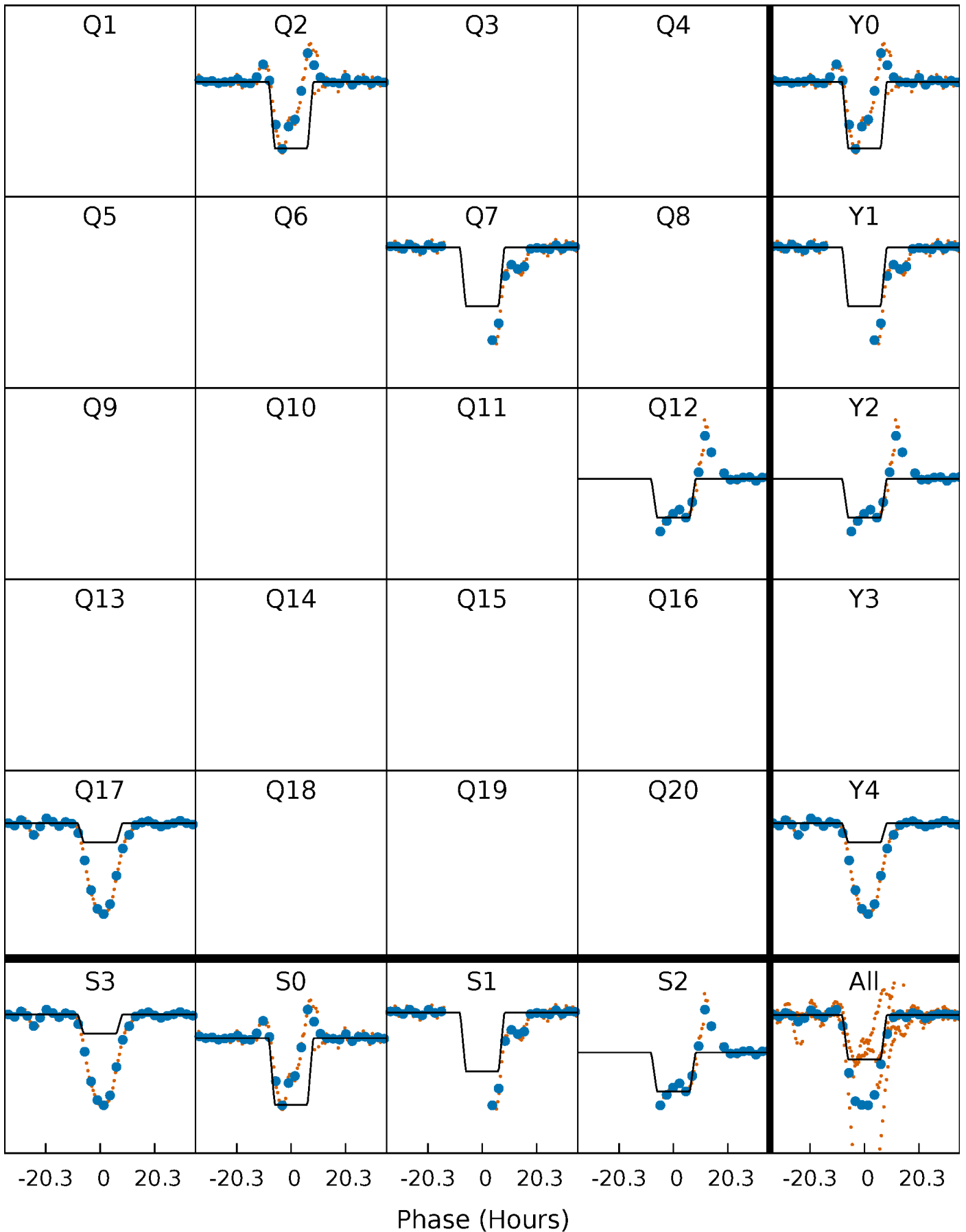
DV Quarter-Phased Transit Curves

TCE 005780782-09 P=458.158942 Days $T_0=202.747347$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

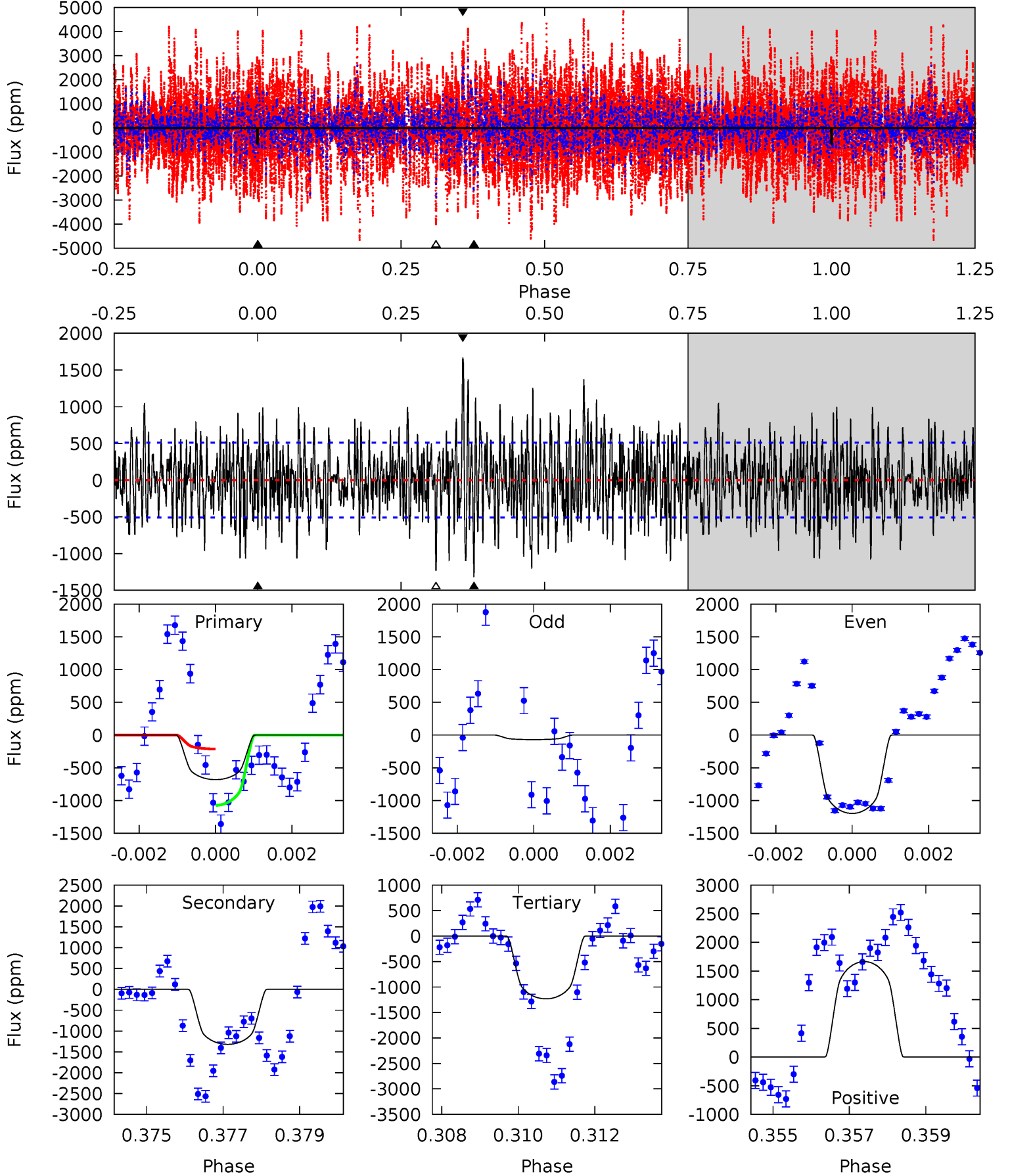
TCE 005780782-09 $P=458.222583$ Days $T_0=202.646979$ (BKJD)



DV Model-Shift Uniqueness Test

005780782-09, P = 458.158942 Days, E = 202.747347 Days

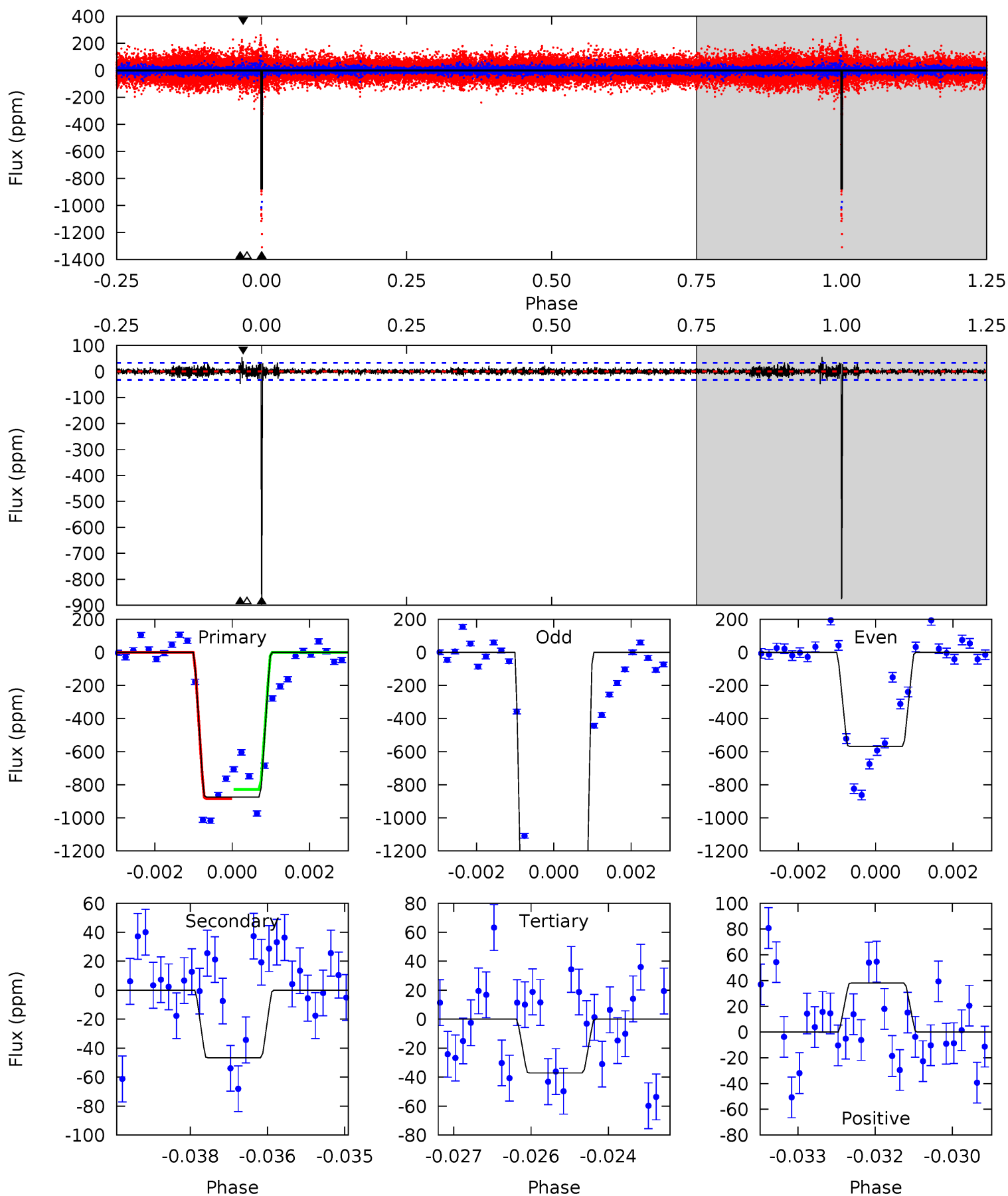
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.12	13.8	12.9	17.4	5.33	3.10	4.28	-5.75	-10.3	0.92	-3.61	5.77	0.04	0.56	4.43



Alt Model-Shift Uniqueness Test

005780782-09, P = 458.222583 Days, E = 202.646979 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
141.0	7.52	5.98	6.13	5.38	3.17	0.94	135.0	134.8	1.53	1.38	240.4	1.31	0.06	4.61



Stellar Parameters For KIC 005780782

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4359^{+39}_{-91}	$1.933^{+0.030}_{-0.030}$	$0.100^{+0.100}_{-0.200}$	$26.107^{+5.247}_{-5.771}$	$2.131^{+0.865}_{-0.865}$	$0.000^{+0.000}_{-0.000}$
	+1%/-2%	+2%/-2%	+100%/-200%	+20%/-22%	+41%/-41%	+34%/-10%
Source	SPE74	AST11	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 005780782-09 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1321 ± 96	$95.60^{+13.23}_{-14.30}$	1123^{+30}_{-35}	4529^{+142}_{-135}	187^{+36}_{-26}
Alt.	-47 ± 6	$82.84^{+13.15}_{-11.94}$	1123^{+32}_{-36}	2767^{+74}_{-84}	$8.730^{+1.969}_{-1.772}$

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

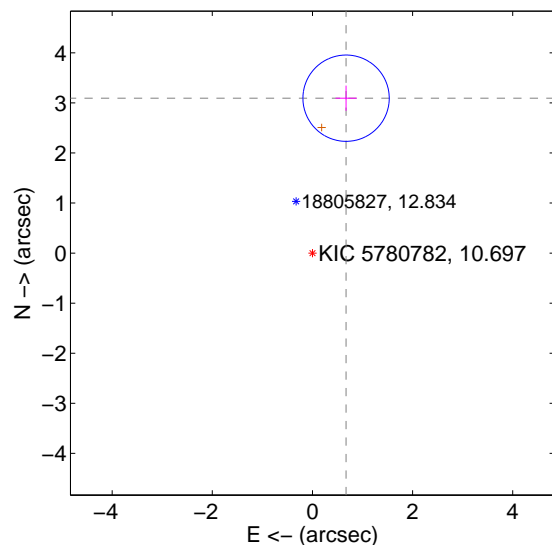
Supplemental centroid analysis for 005780782-09. **Kepler magnitude: 10.70.** Transit SNR 8.11

There are 1 quarters with good PRF difference image offsets

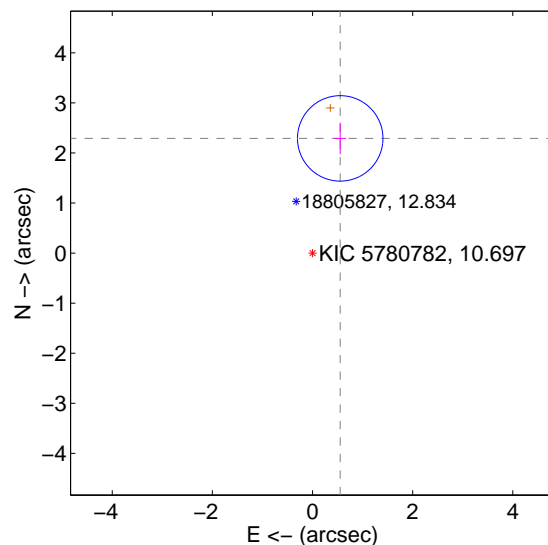
The direct PRF centroid is offset from the target star catalog position by about 0.43 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.166 ± 0.287	11.02	-0.672 ± 0.212	3.094 ± 0.251
PRF-fit source offset from KIC position	2.357 ± 0.284	8.28	-0.553 ± 0.120	2.291 ± 0.316
photometric centroid source offset	0.70 ± 0.62	1.13	0.28 ± 0.37	-0.64 ± 0.65

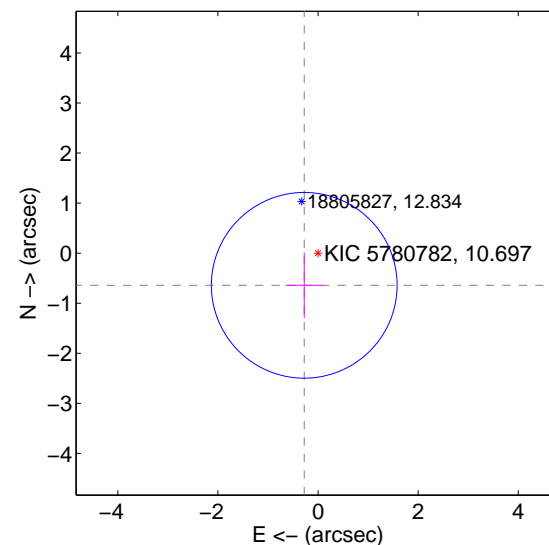
offset from difference PRF-fit to OOT PRF-fit



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

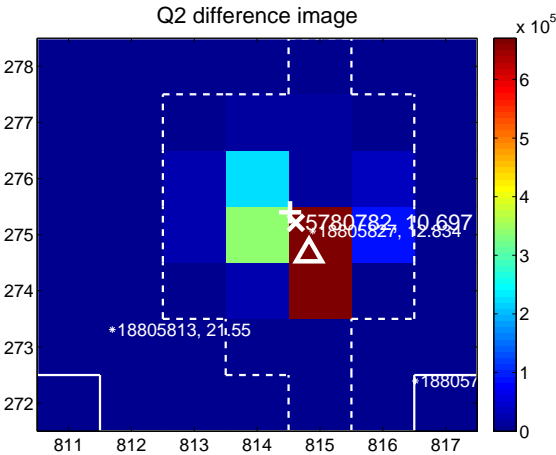
Q1 no difference image



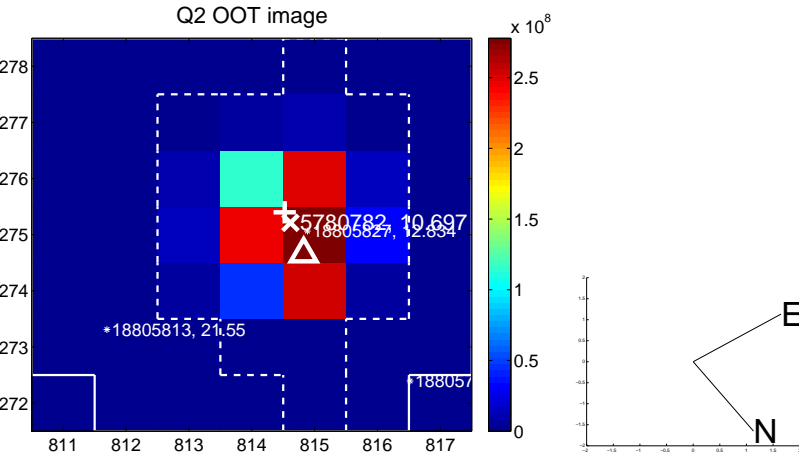
Q1 no OOT image



Q2 difference image



Q2 OOT image



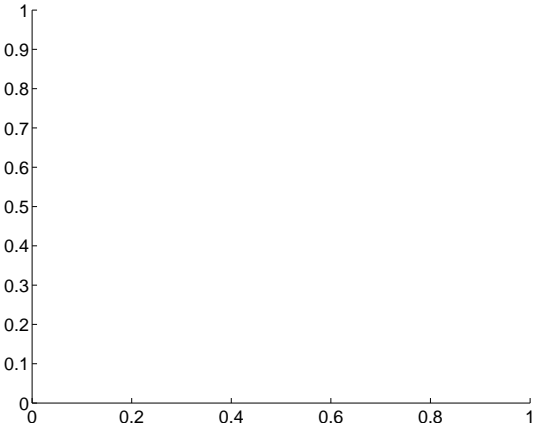
Q3 no difference image



Q3 no OOT image



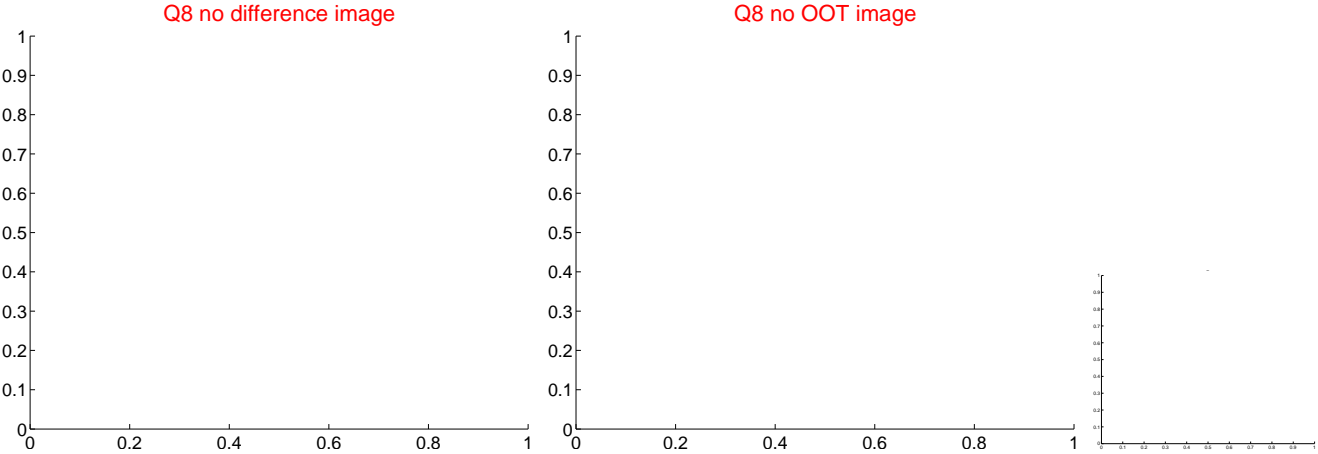
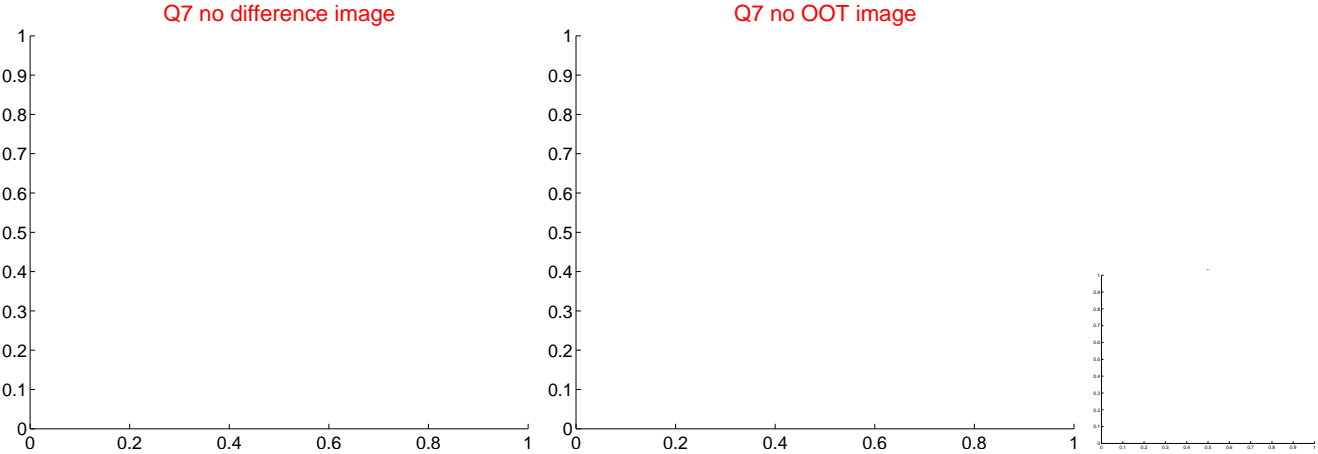
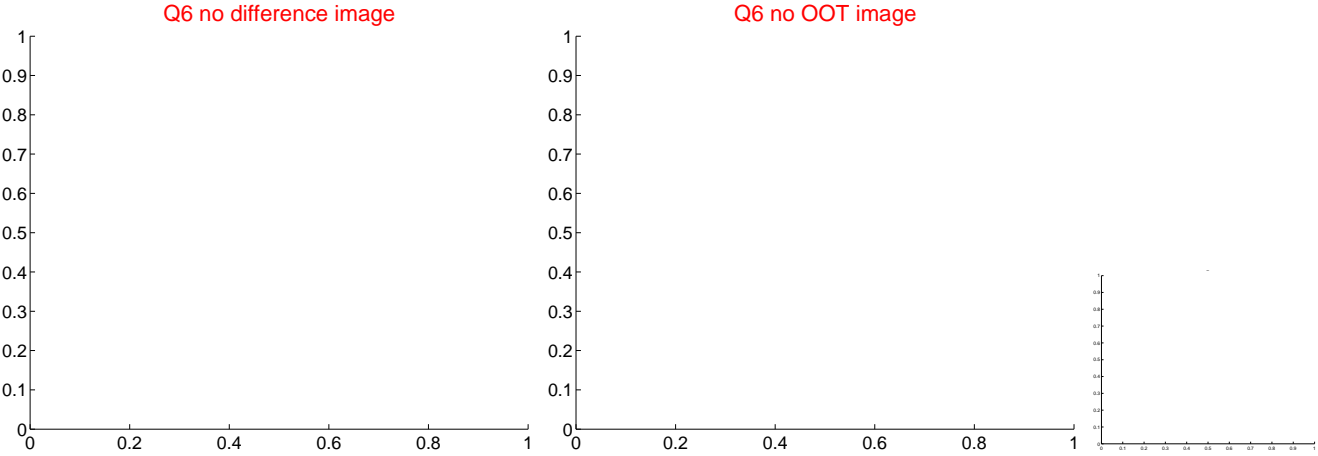
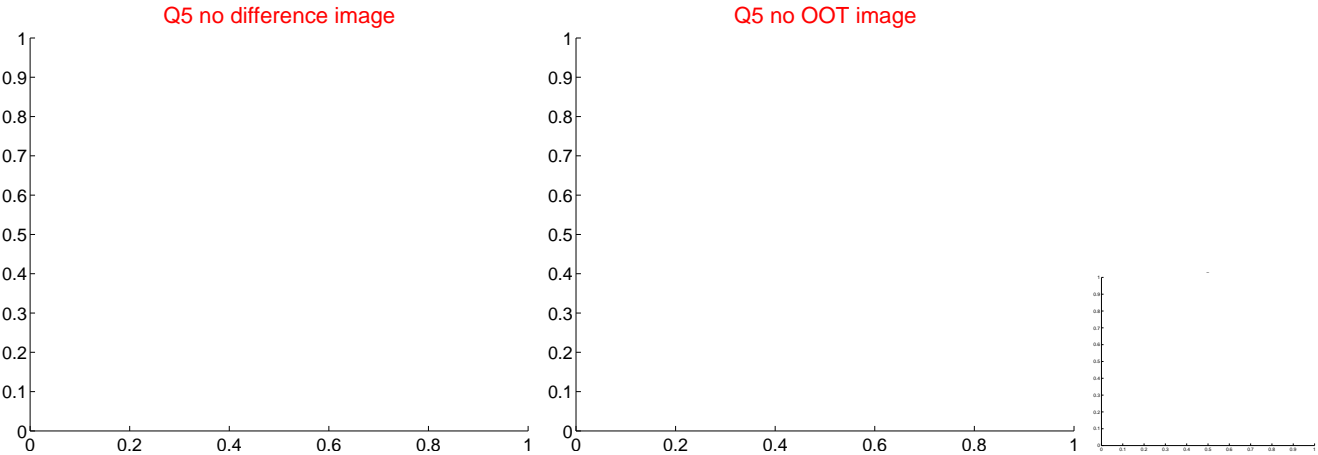
Q4 no difference image



Q4 no OOT image



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



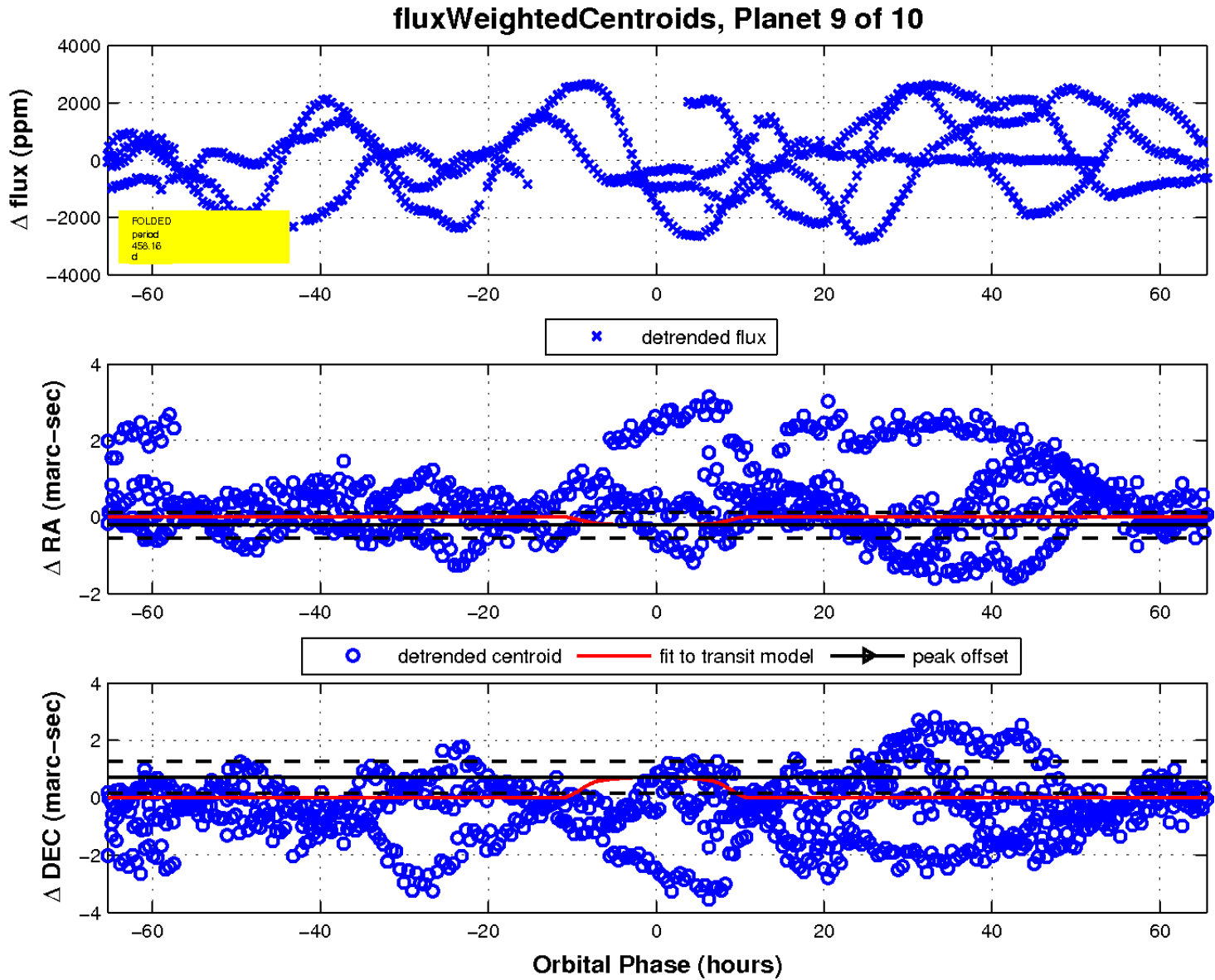
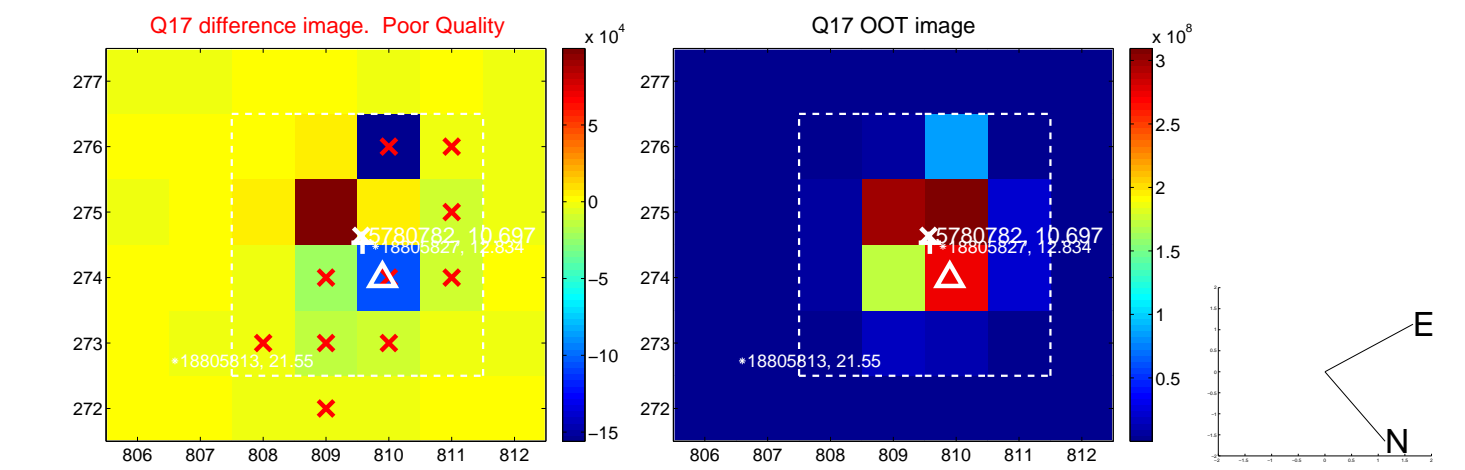
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

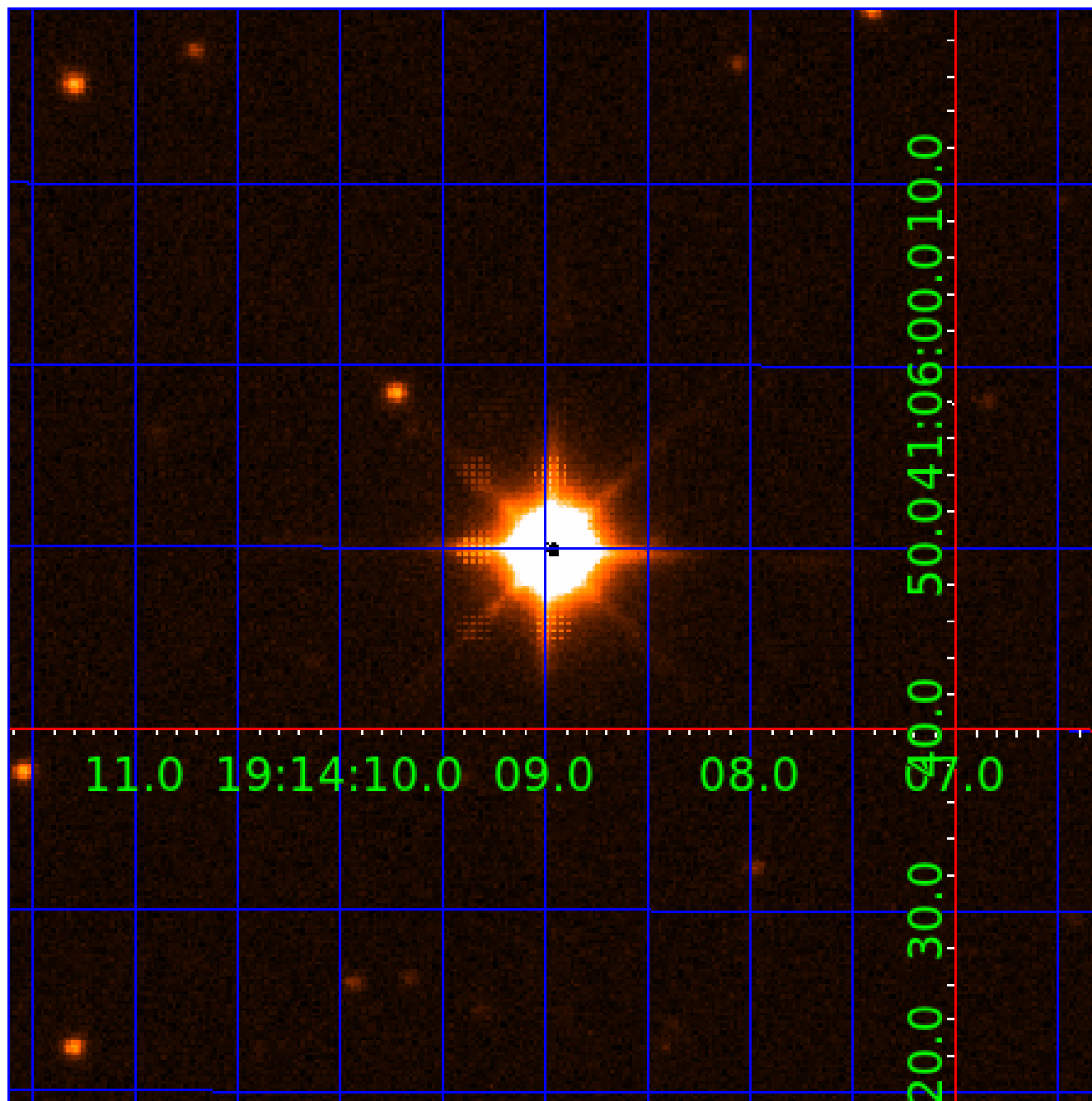


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
005780782-01	OBS	No	369.146663	369.893592	2064.7	20.710	97.5	118.9	26.11	4359	198.29	131.22
005780782-02	OBS	No	369.894878	373.565961	1448.6	16.966	81.6	82.3	26.11	4359	206.01	130.87
005780782-03	OBS	No	246.340188	244.270189	398.8	12.500	46.0	-1.0	26.11	4359	49.42	225.03
005780782-04	OBS	No	184.793502	181.491110	2826.3	29.386	44.8	92.1	26.11	4359	276.25	330.14
005780782-05	OBS	No	185.516291	184.318124	406.2	15.000	53.8	-1.0	26.11	4359	49.87	328.43
005780782-06	OBS	No	582.905555	162.441375	100.5	7.883	41.5	5.2	26.11	4359	30.30	71.36
005780782-07	OBS	No	456.526196	287.257117	110.3	1.000	39.6	2.2	26.11	4359	34.58	98.85
005780782-08	OBS	No	569.190679	175.351019	517.0	10.776	38.8	15.3	26.11	4359	57.86	73.67
005780782-09	OBS	No	458.158942	202.747347	767.2	21.875	11.9	8.1	26.11	4359	92.71	98.38
005780782-10	OBS	No	192.199401	213.478149	32.3	5.697	10.7	8.1	26.11	4359	19.44	313.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005780782-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—NO_FITS—INCONSISTENT_TRANS—CENT_SATURATED
005780782-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005780782-05	OBS	FP	0.00	1	0	0	0	LPP_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005780782-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_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—HALO_GHOST
005780782-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005780782-09	OBS	FP	0.00	1	0	1	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
005780782-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

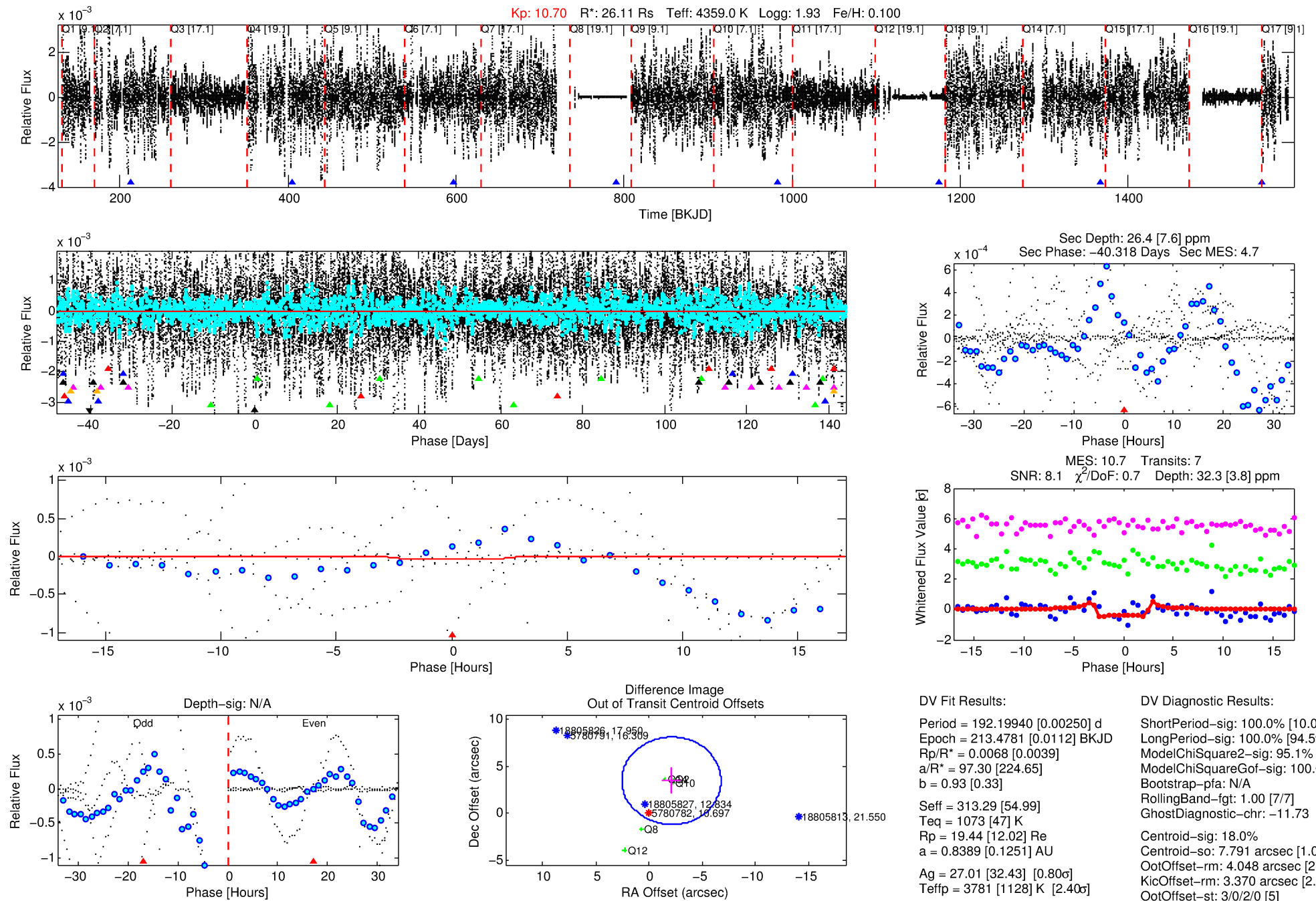
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005780782-10

No Significant Match Found

DV One-Page Summary

KIC: 5780782 Candidate: 10 of 10 Period: 192.199 d



DV Fit Results:

Period = 192.19940 [0.00250] d
 Epoch = 213.4781 [0.0112] BKJD
 Rp/R* = 0.0068 [0.0039]
 a/R* = 97.30 [224.65]
 b = 0.93 [0.33]
 Seff = 313.29 [54.99]
 Teq = 1073 [47] K
 Rp = 19.44 [12.02] Re
 a = 0.8389 [0.1251] AU
 Ag = 27.01 [32.43] [0.80σ]
 Tefp = 3781 [1128] K [2.40σ]

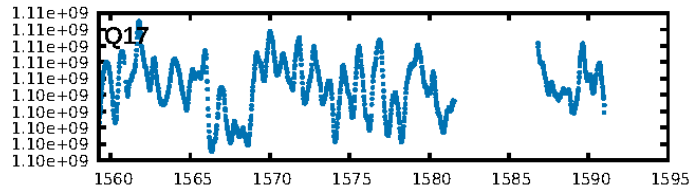
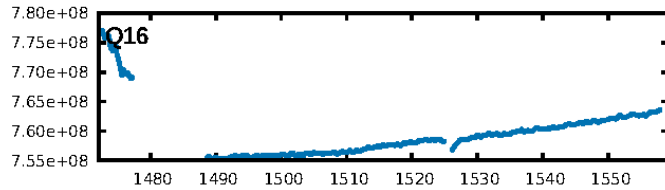
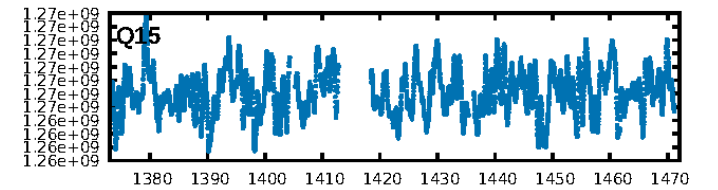
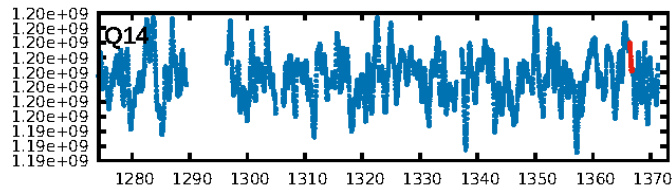
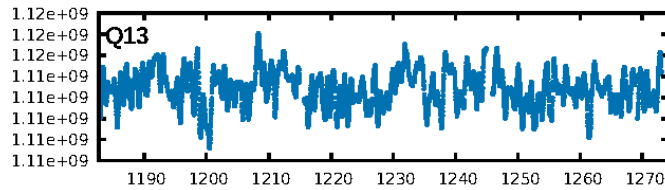
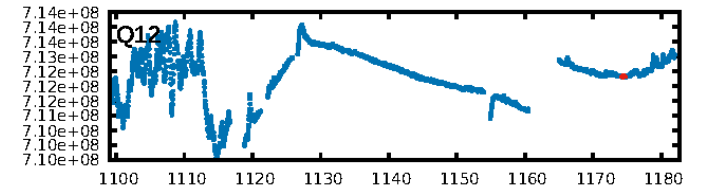
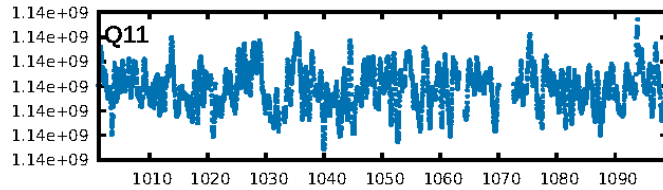
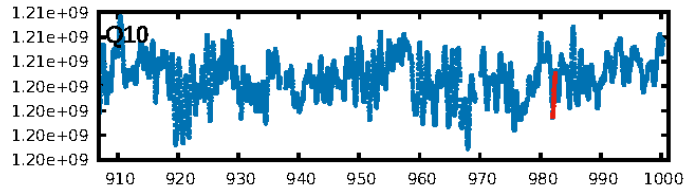
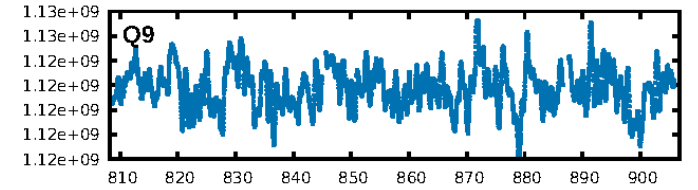
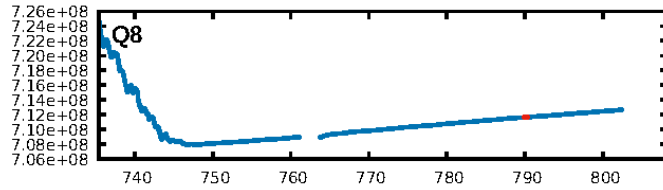
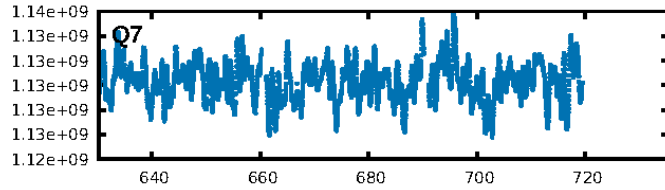
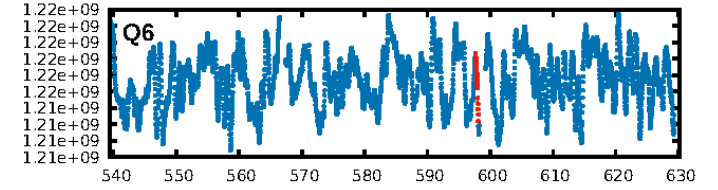
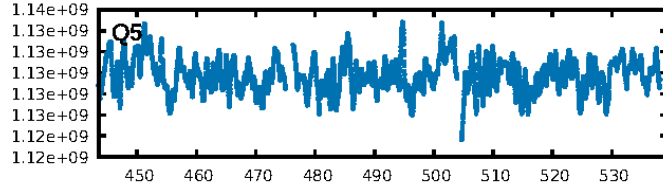
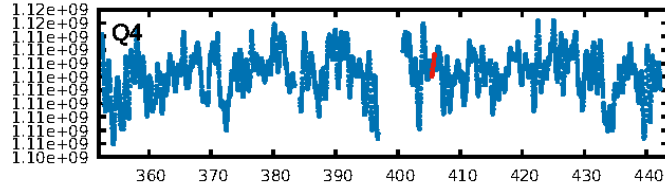
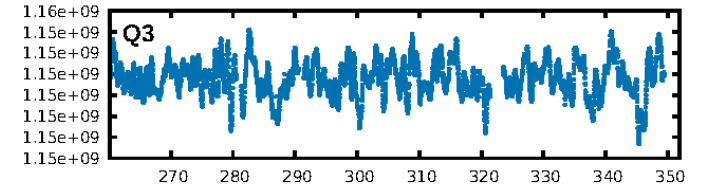
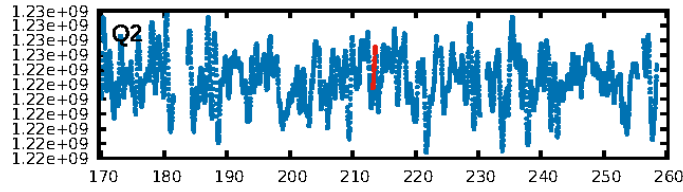
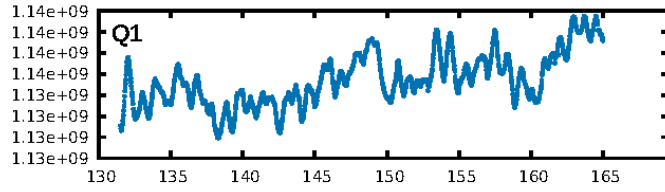
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [10.00σ]
 LongPeriod-sig: 100.0% [94.59σ]
 ModelChiSquare2-sig: 95.1%
 ModelChiSquareGof-sig: 100.0%
 Bootstrap-pfa: N/A
 RollingBand-fgt: 1.00 [7/7]
 GhostDiagnostic-chr: -11.73
 Centroid-sig: 18.0%
 Centroid-so: 7.791 arcsec [1.04σ]
 OotOffset-rm: 4.048 arcsec [2.61σ]
 KicOffset-rm: 3.370 arcsec [2.59σ]
 OotOffset-st: 3/0/2/0 [5]
 KicOffset-st: 3/0/2/0 [5]
 DiffImageQuality-fgm: 0.60 [3/5]
 DiffImageOverlap-fno: 1.00 [6/6]

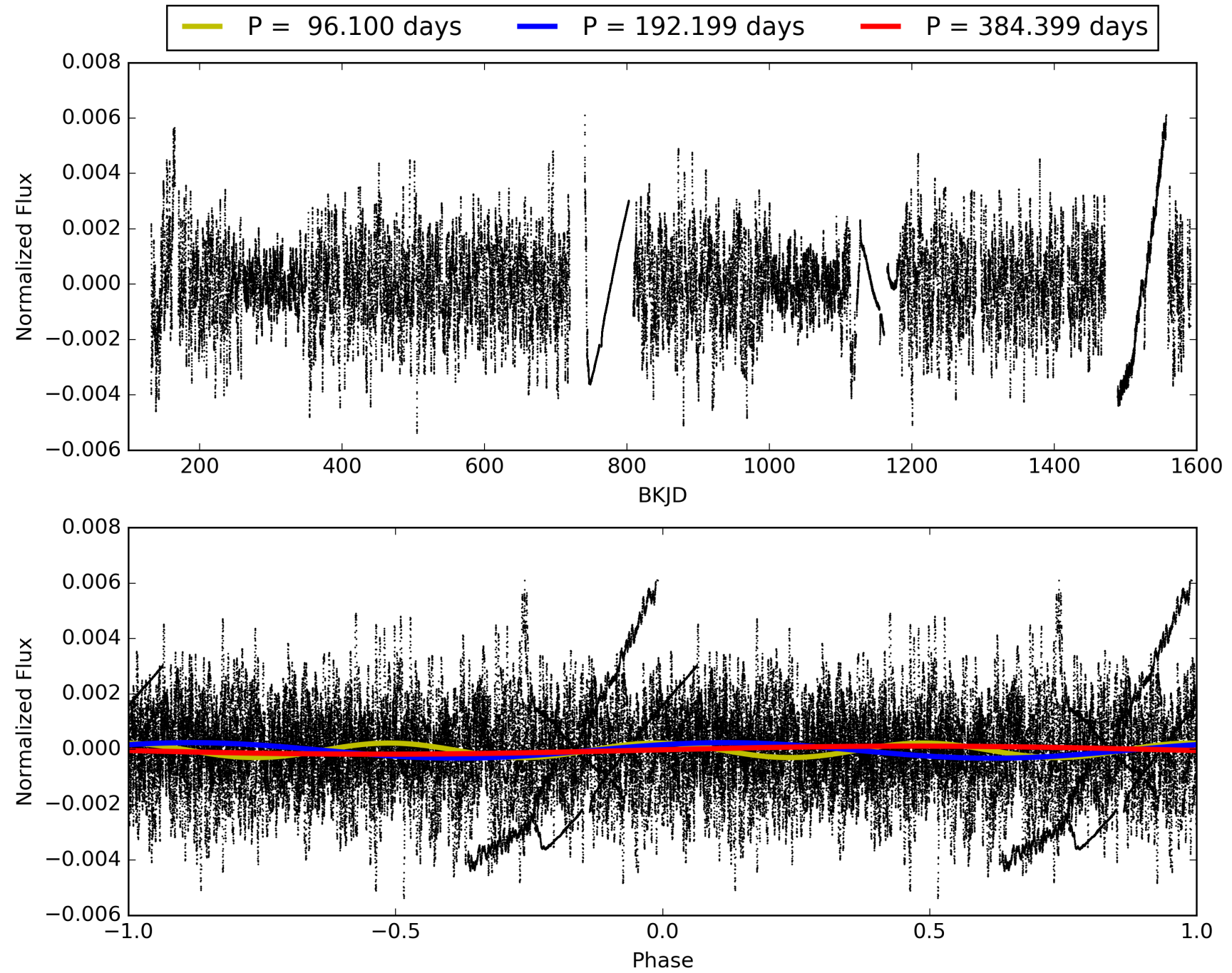
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:45:33 Z

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

TCE 005780782-10, PDC Light Curves

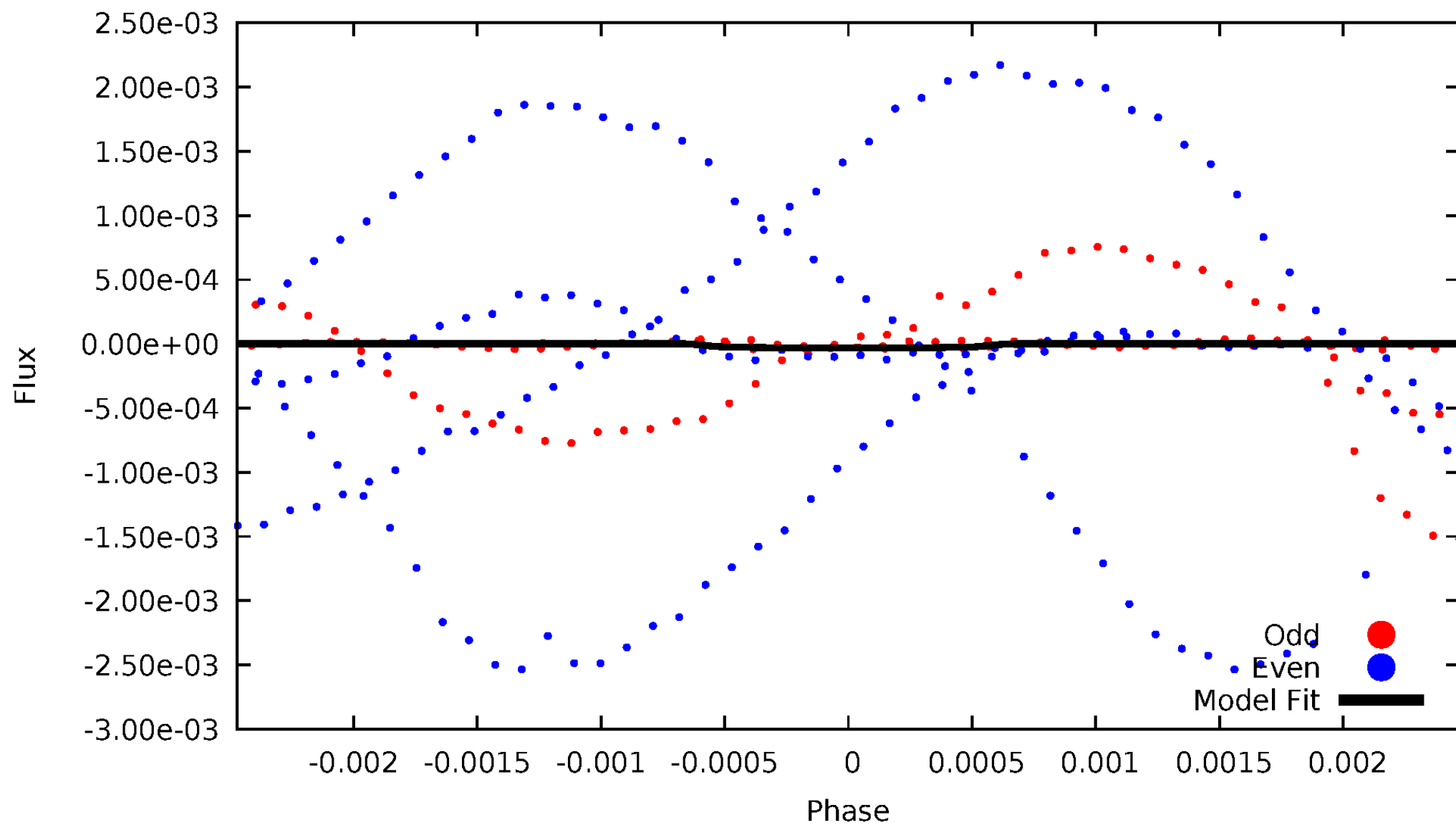


TCE 005780782-10



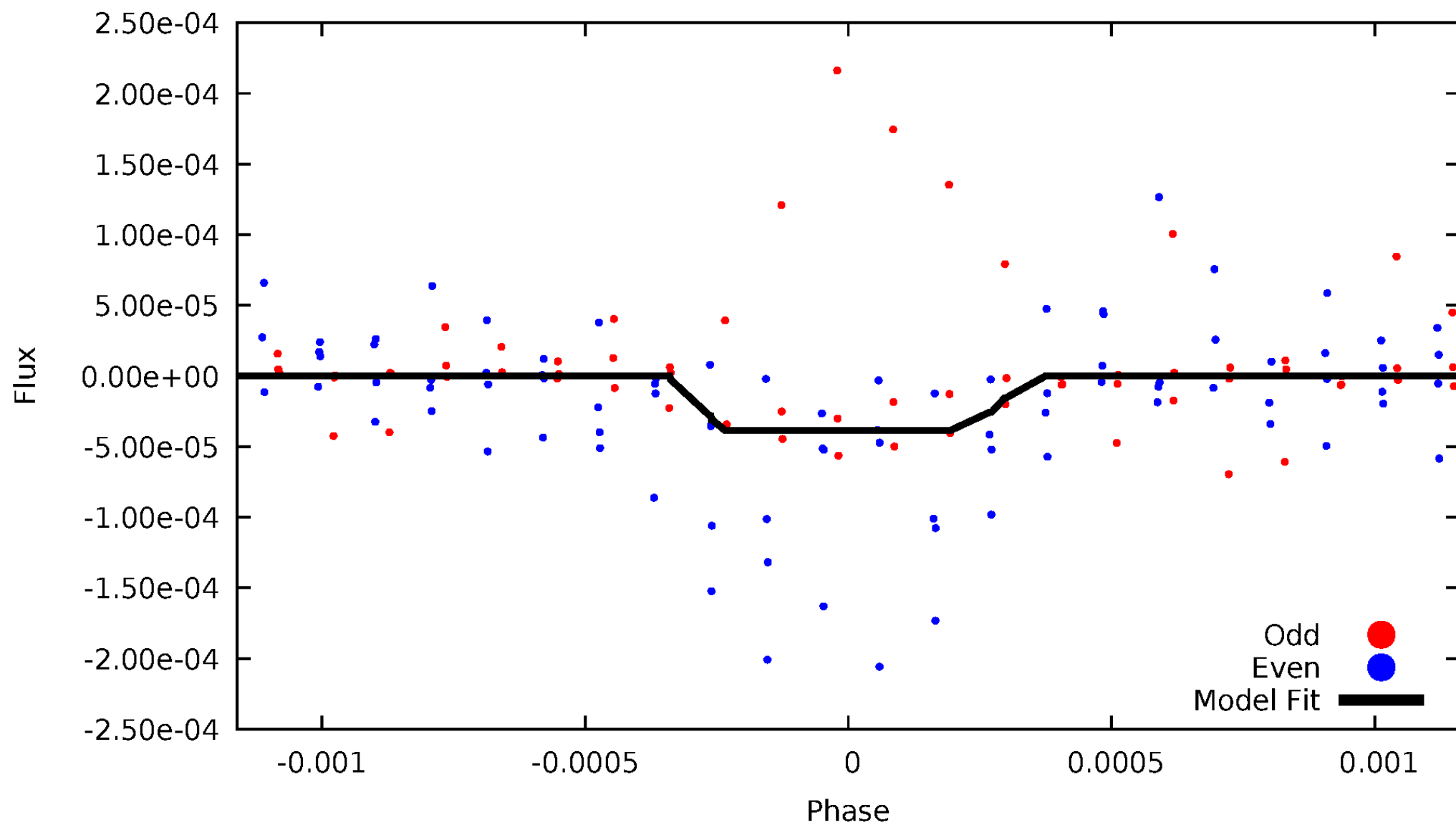
DV Odd/Even

TCE 005780782-10



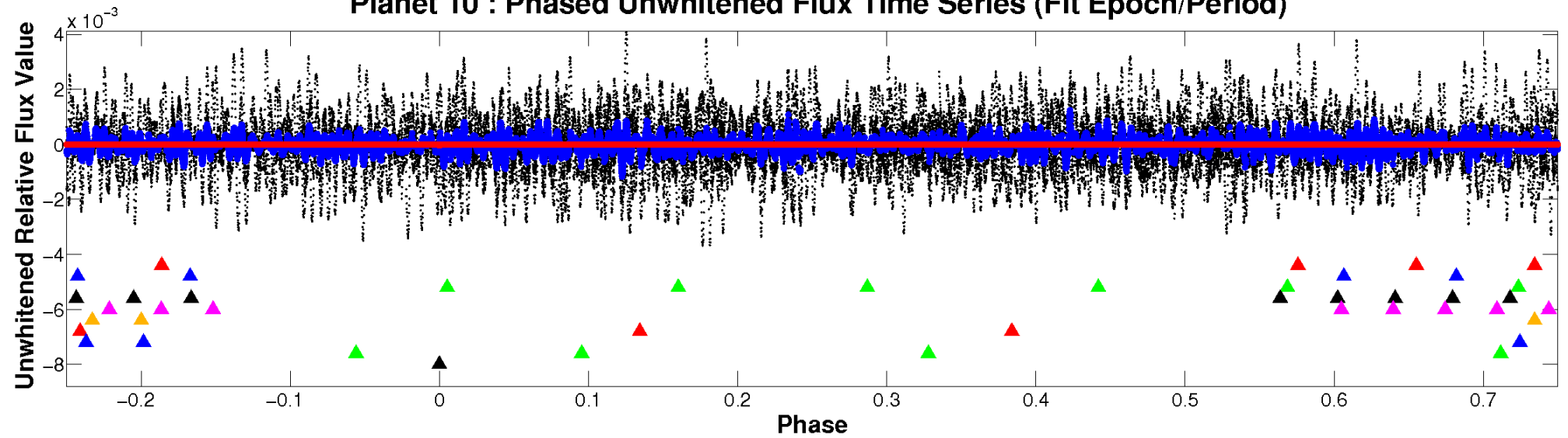
ALT Odd/Even

TCE 005780782-10

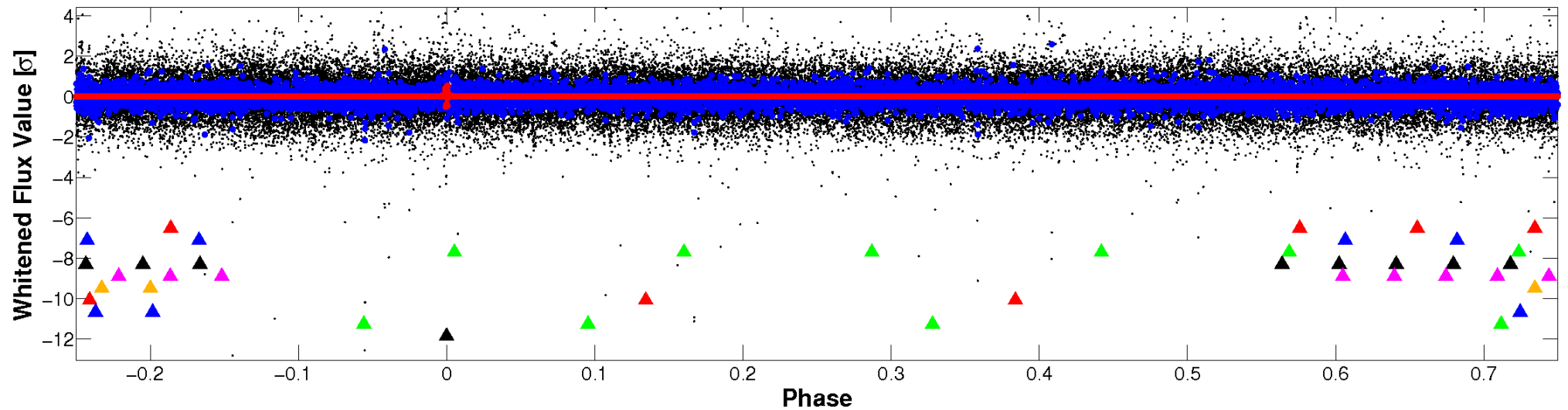


Non-Whitened Vs. Whitened Light Curve

Planet 10 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

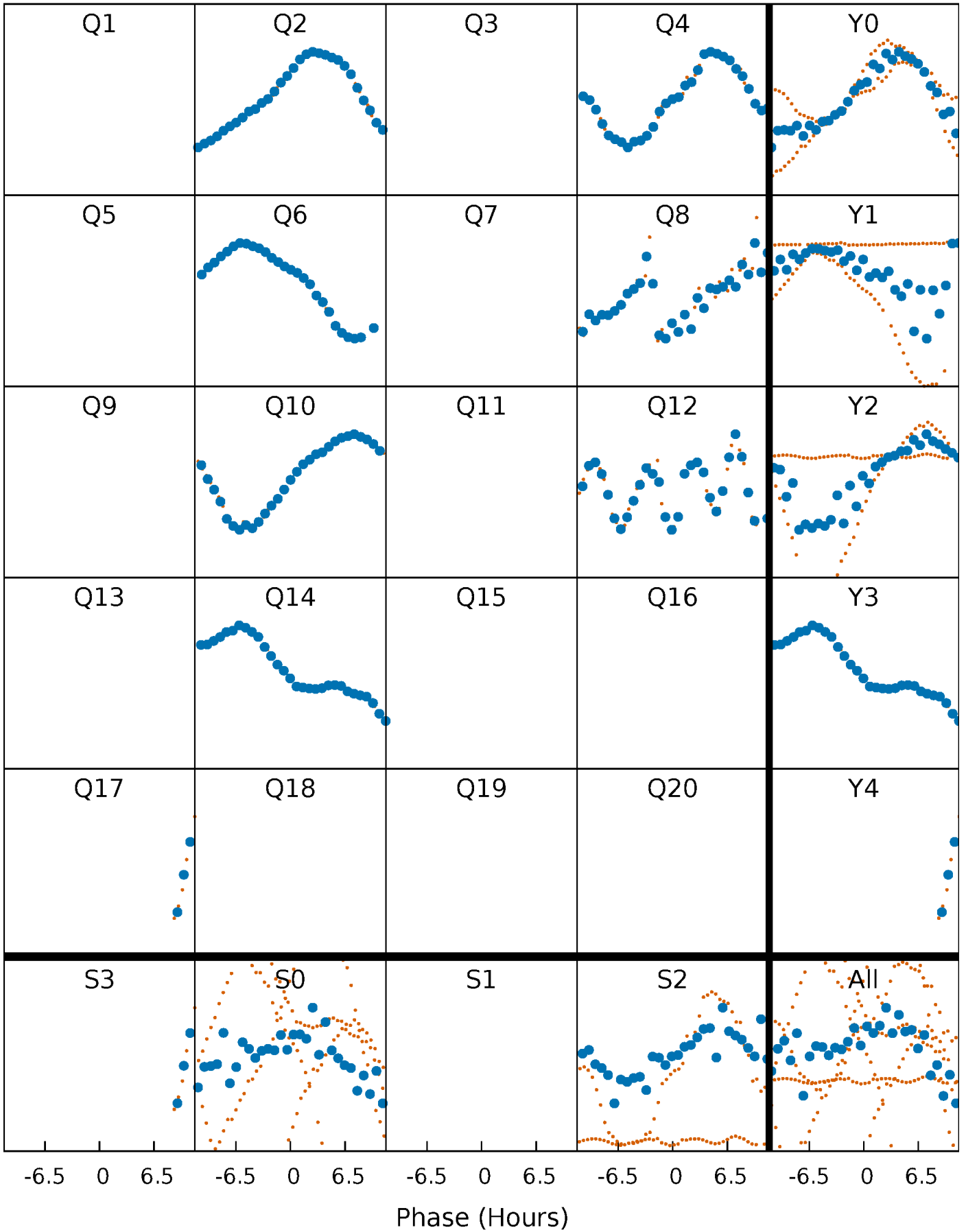


Planet 10 : Phased Whitened Flux Time Series (Fit Epoch/Period)



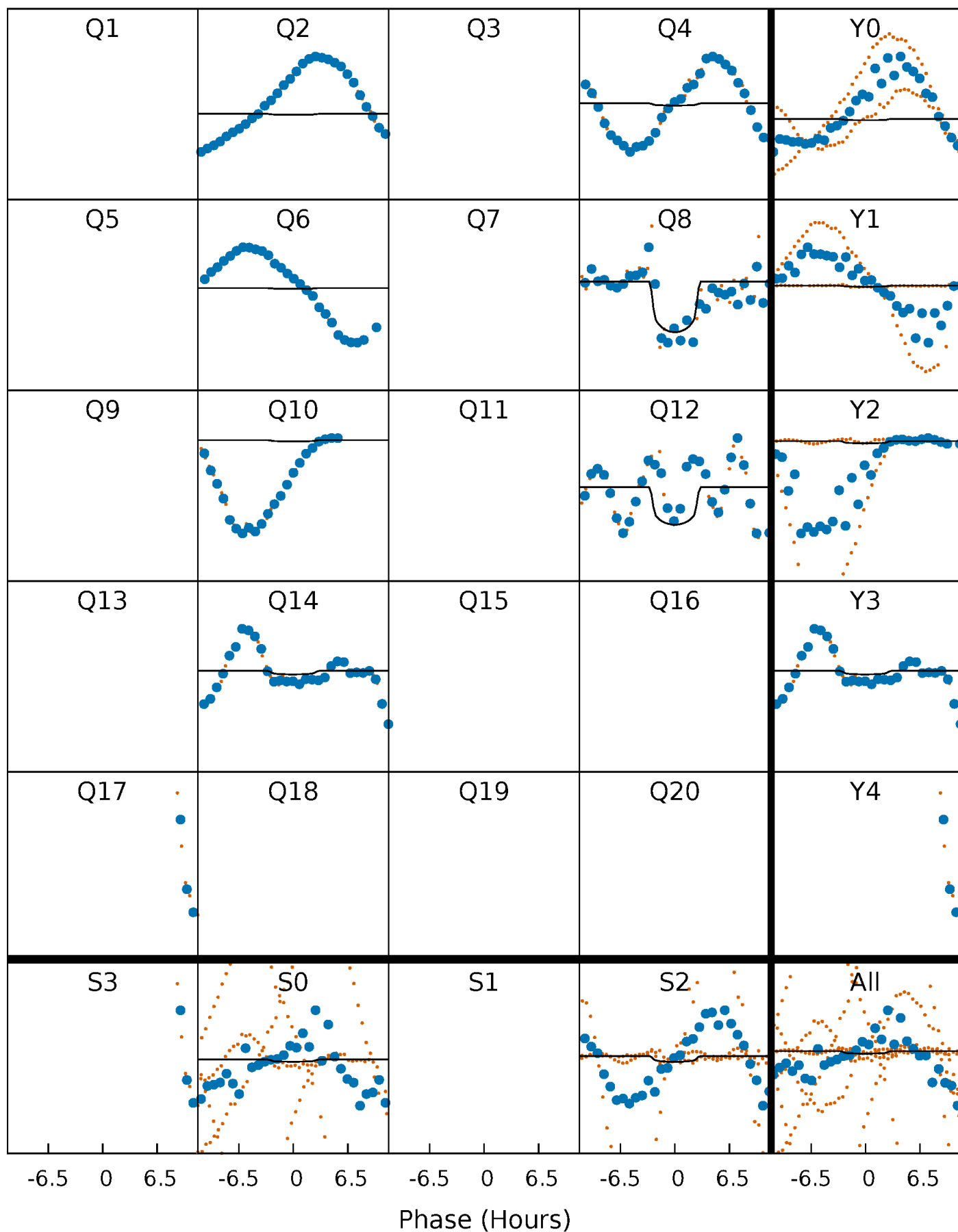
PDC Quarter-Phased Transit Curves

TCE 005780782-10 P=192.199401 Days $T_0=213.478150$ (BKJD)



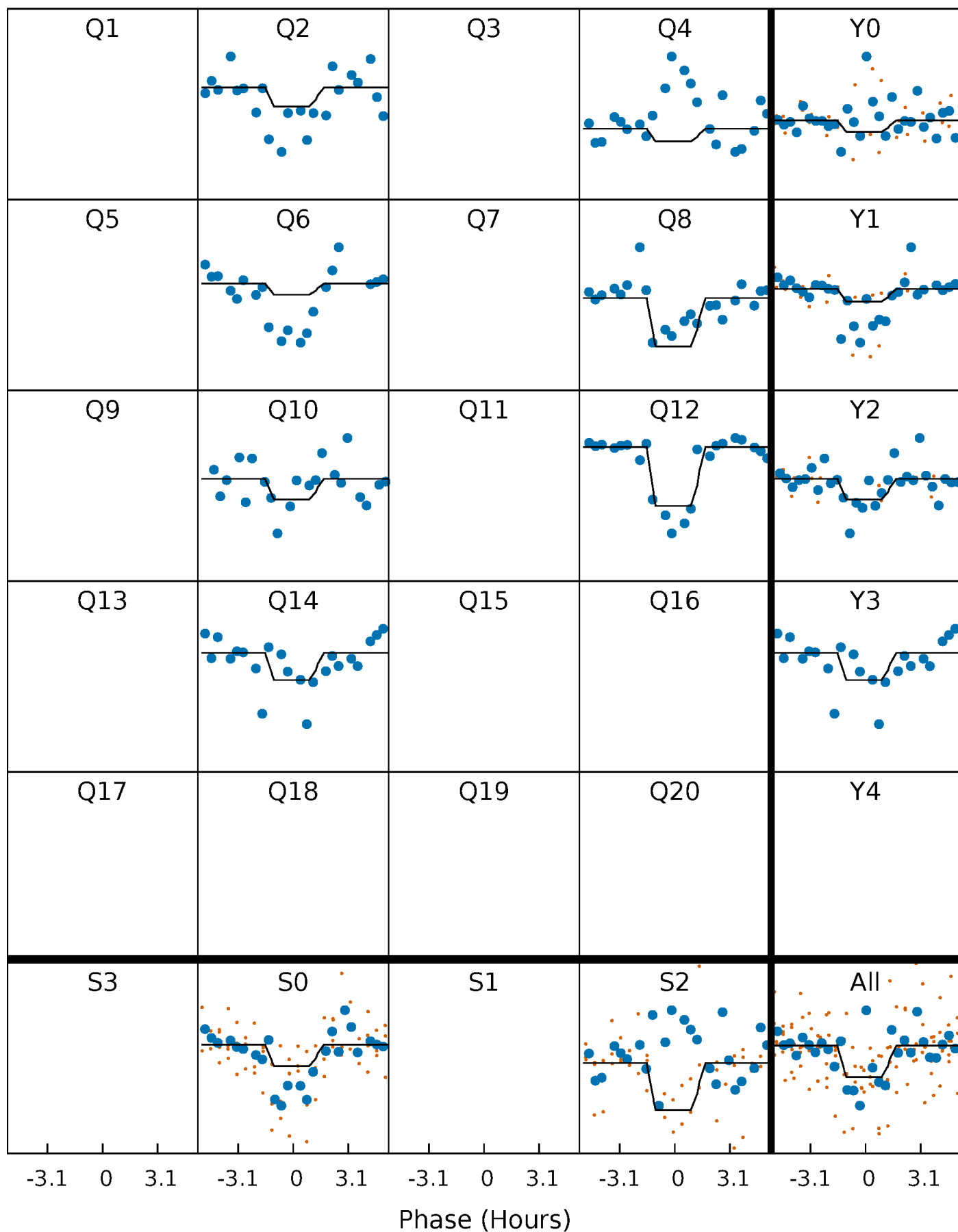
DV Quarter-Phased Transit Curves

TCE 005780782-10 P=192.199401 Days $T_0=213.478150$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

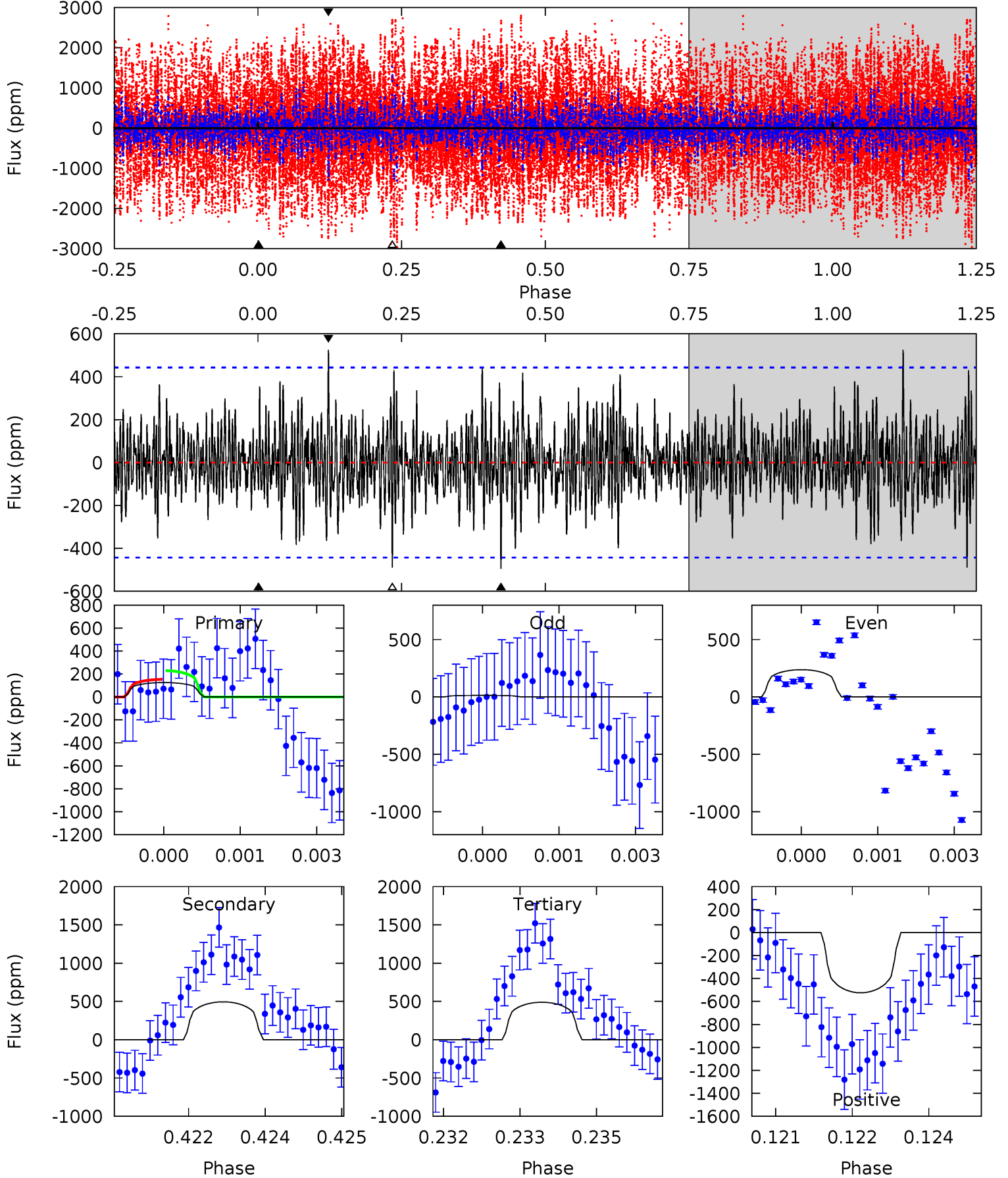
TCE 005780782-10 P=192.208656 Days $T_0=213.421333$ (BKJD)



DV Model-Shift Uniqueness Test

005780782-10, P = 192.199401 Days, E = 21.278749 Days

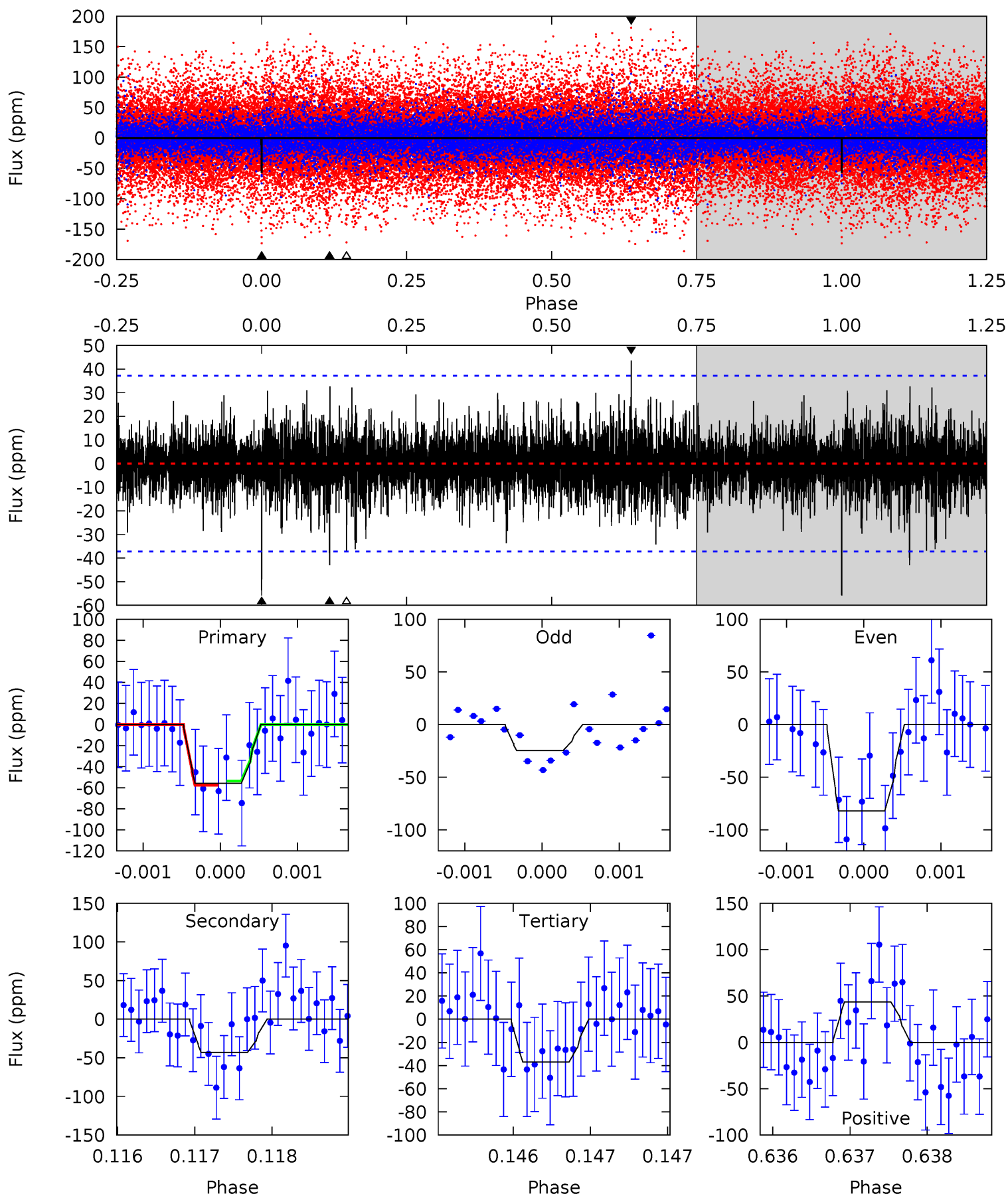
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.53	6.04	5.98	6.40	5.41	3.22	1.65	-4.45	-4.87	0.06	-0.36	1.42	-16.4	0.51	0.48



Alt Model-Shift Uniqueness Test

005780782-10, P = 192.208656 Days, E = 21.212677 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.27	6.37	5.46	6.47	5.51	3.38	1.32	2.81	1.80	0.91	-0.10	4.19	1.02	0.44	0.29



Stellar Parameters For KIC 005780782

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4359^{+39}_{-91}	$1.933^{+0.030}_{-0.030}$	$0.100^{+0.100}_{-0.200}$	$26.107^{+5.247}_{-5.771}$	$2.131^{+0.865}_{-0.865}$	$0.000^{+0.000}_{-0.000}$
	+1%/-2%	+2%/-2%	+100%/-200%	+20%/-22%	+41%/-41%	+34%/-10%
Source	SPE74	AST11	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 005780782-10 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-495 ± 82	$20.18^{+11.26}_{-9.88}$	1500^{+42}_{-51}	7426^{+4295}_{-1559}	472^{+1338}_{-276}
Alt.	-43 ± 7	$18.79^{+11.37}_{-9.97}$	1500^{+43}_{-51}	4309^{+1890}_{-617}	46^{+181}_{-27}

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

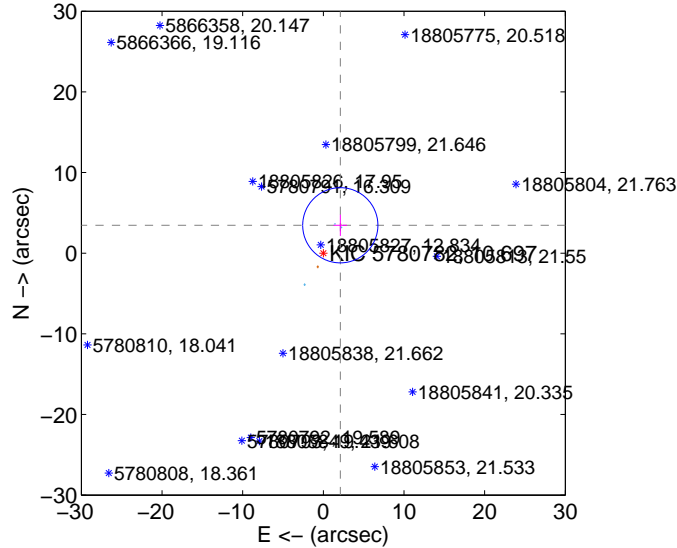
Supplemental centroid analysis for 005780782-10. **Kepler magnitude: 10.70.** Transit SNR 8.05

There are 3 quarters with good PRF difference image offsets

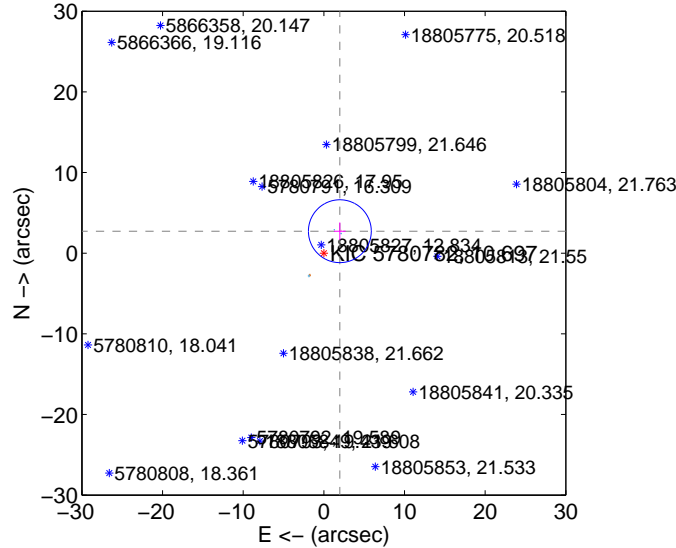
The direct PRF centroid is offset from the target star catalog position by about 0.73 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.048 ± 1.554	2.61	-2.103 ± 0.827	3.459 ± 1.325
PRF-fit source offset from KIC position	3.370 ± 1.299	2.59	-1.984 ± 0.724	2.724 ± 1.089
photometric centroid source offset	7.79 ± 7.48	1.04	-5.73 ± 6.45	-5.28 ± 8.54

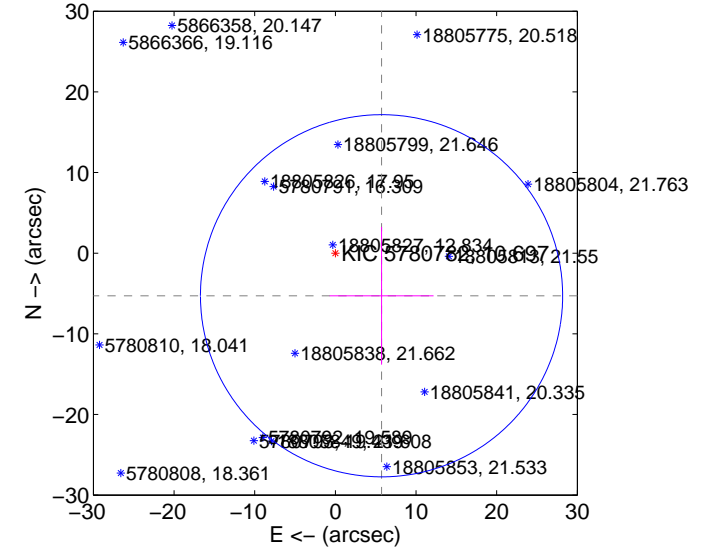
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

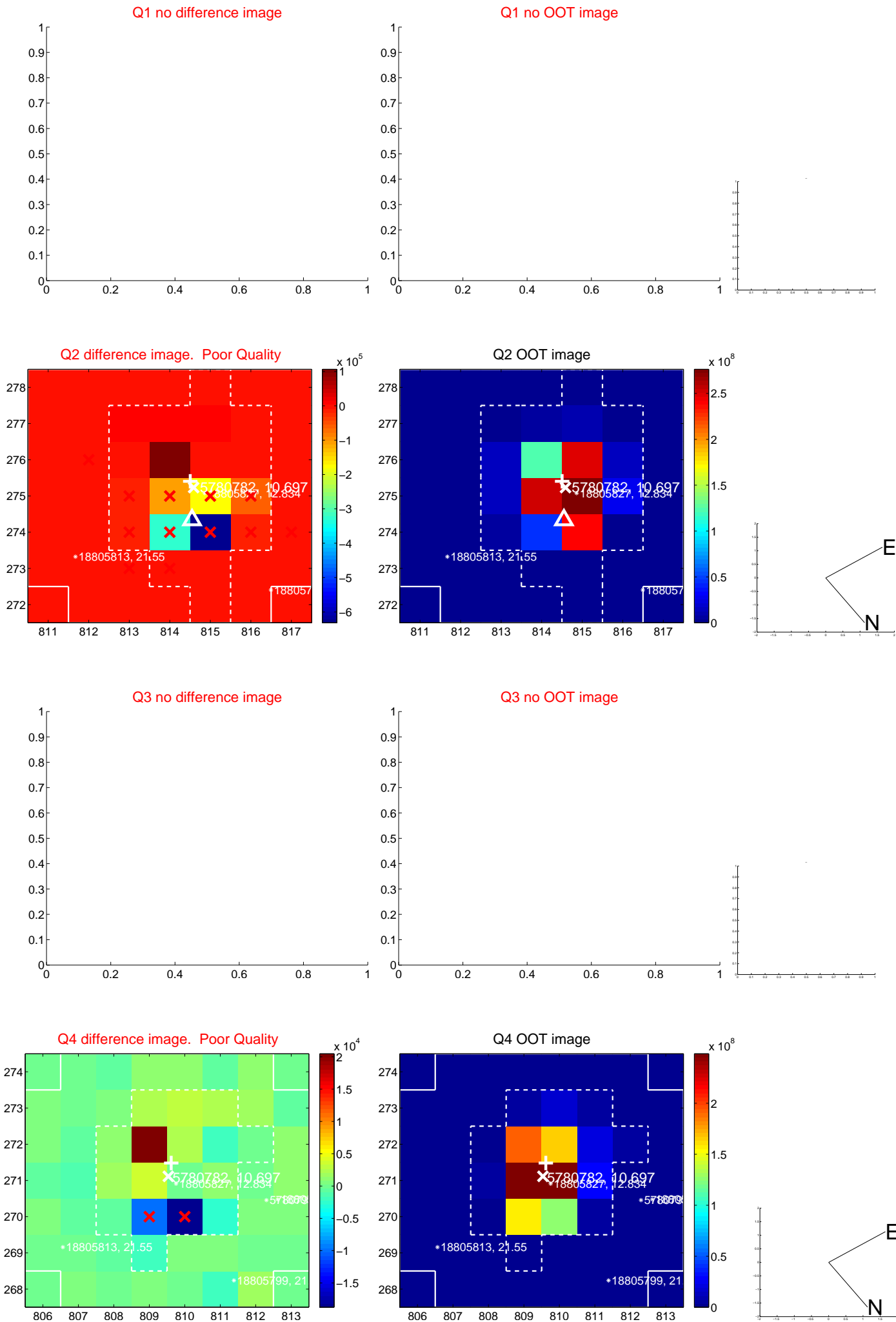


offset from photometric centroids

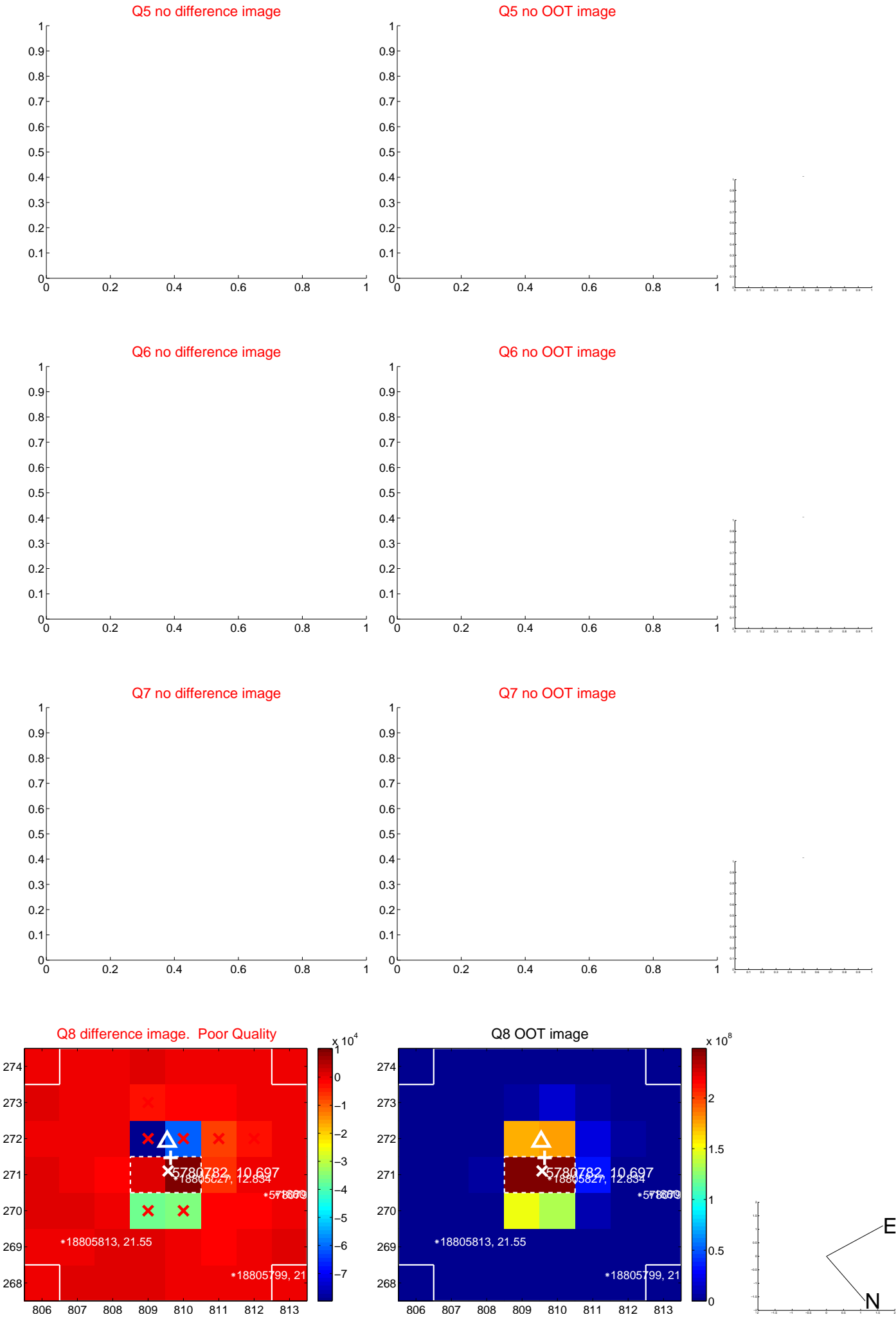


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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



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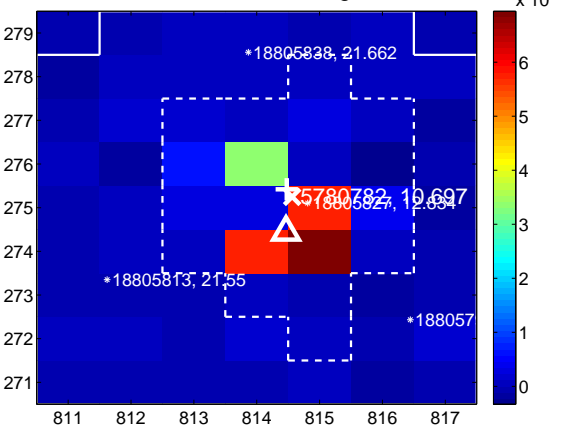
Q9 no difference image



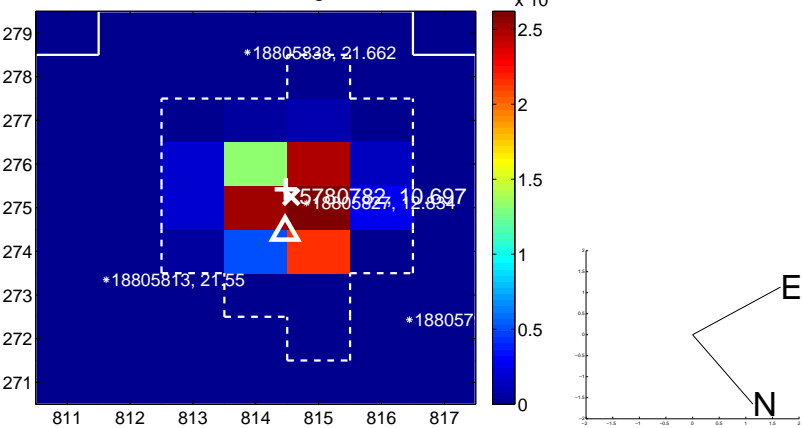
Q9 no OOT image



Q10 difference image



Q10 OOT image



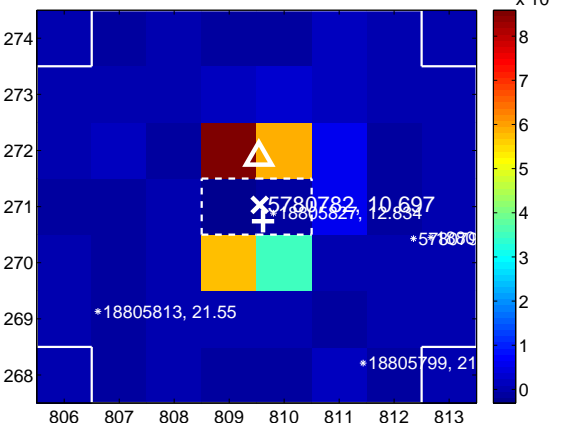
Q11 no difference image



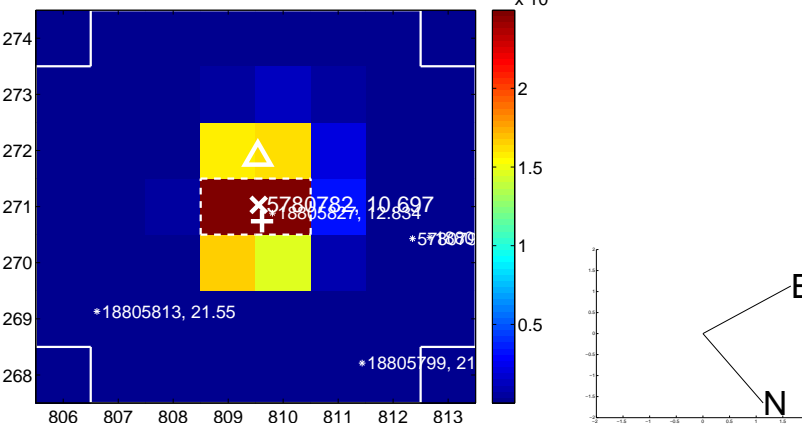
Q11 no OOT image



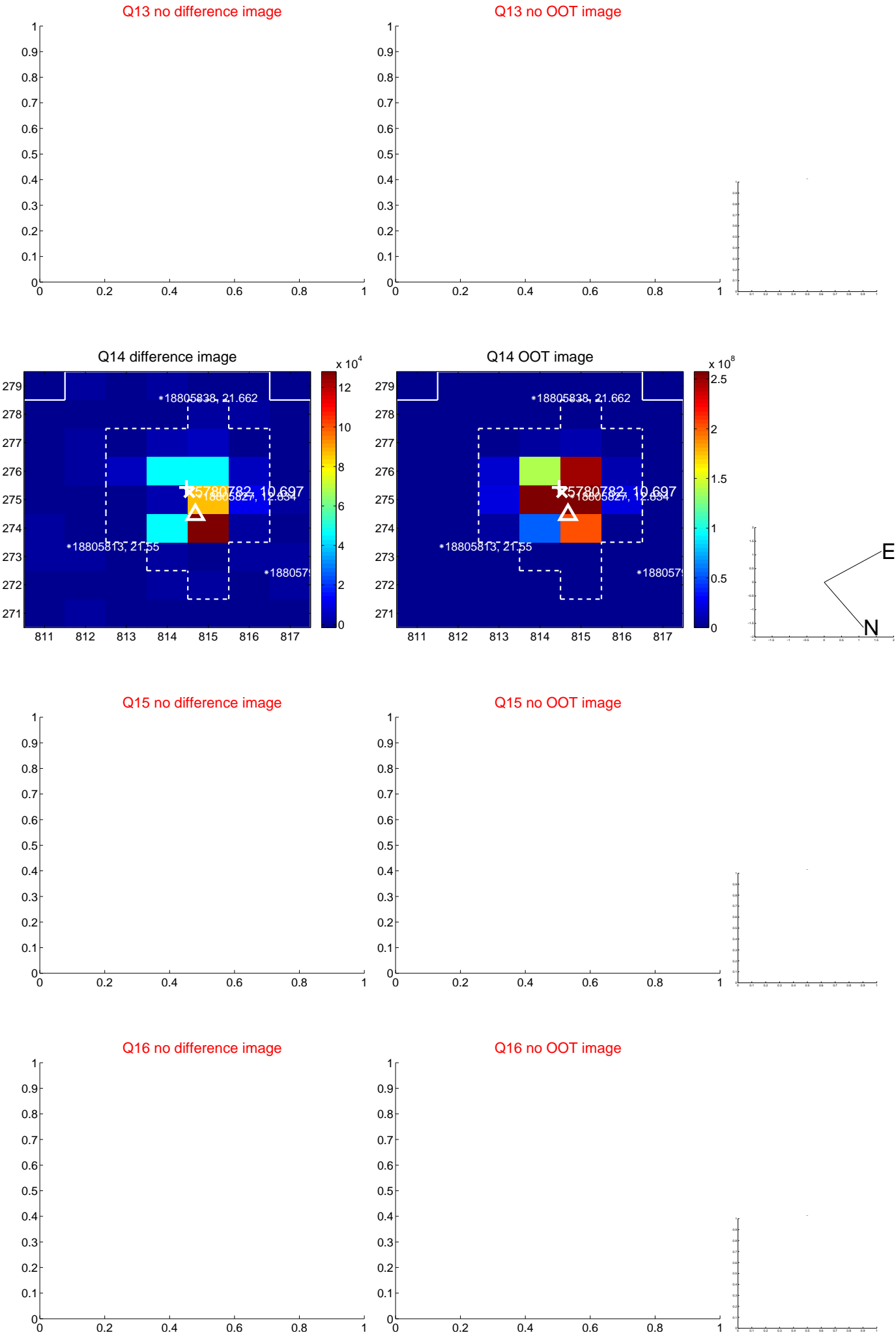
Q12 difference image



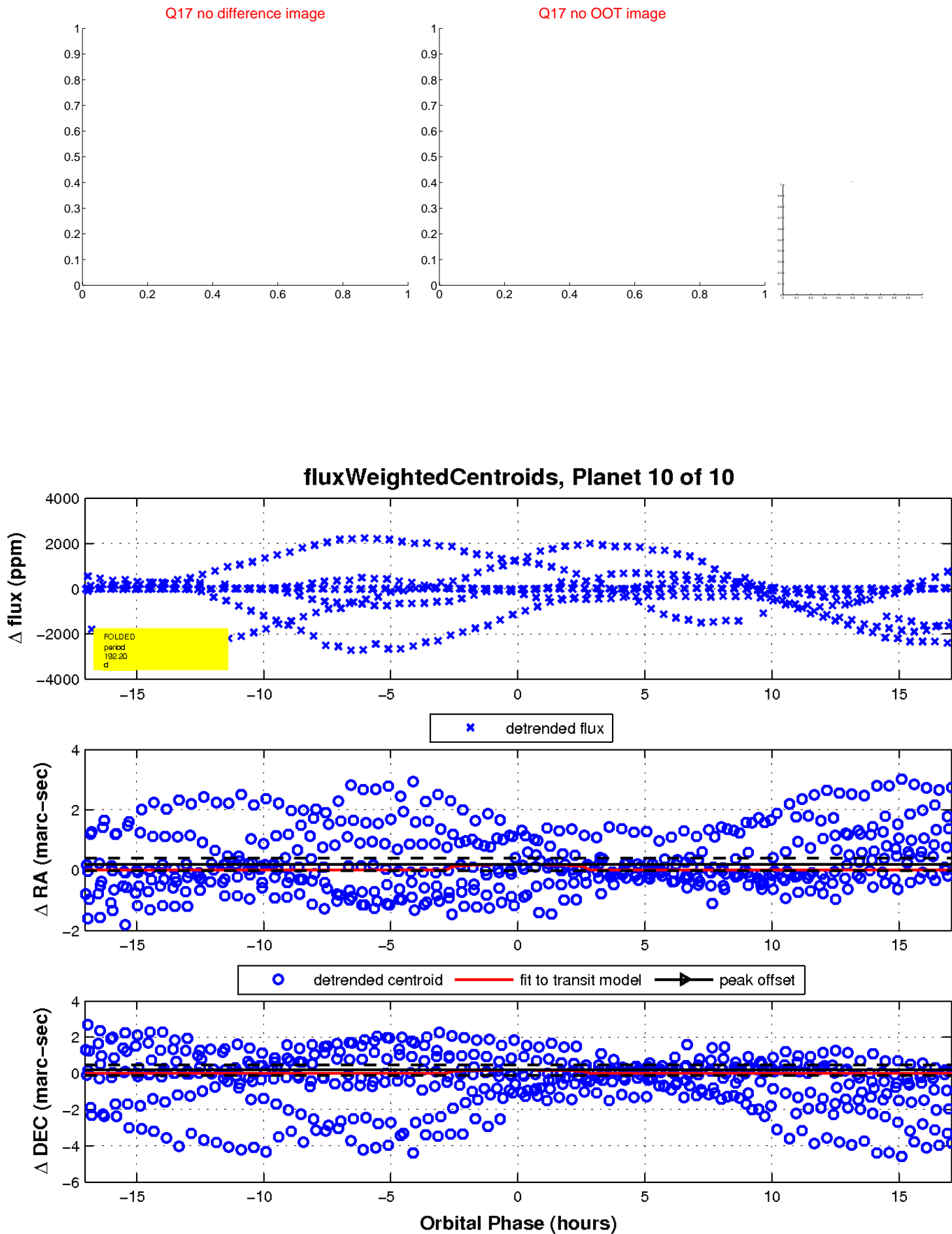
Q12 OOT image



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



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



UKIRT Image

Declination

