

KIC 009912977

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})
009912977-01	OBS	7977.01	0.943925	131.831120	285909.5	3.500	10989.5	-1.0	1.36	5959	42.56	6325.48
009912977-02	OBS	No	4.720287	135.638573	1640.8	12.500	105.0	-1.0	1.36	5959	5.52	739.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009912977-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_ODDEVEN_ALT—CENT_NOFITS
009912977-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS

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

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

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

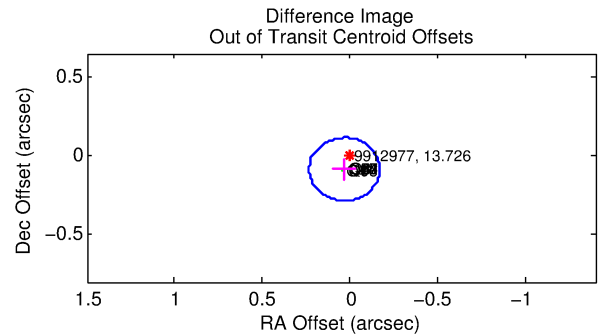
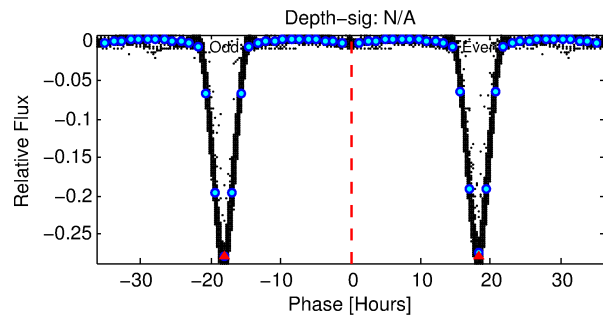
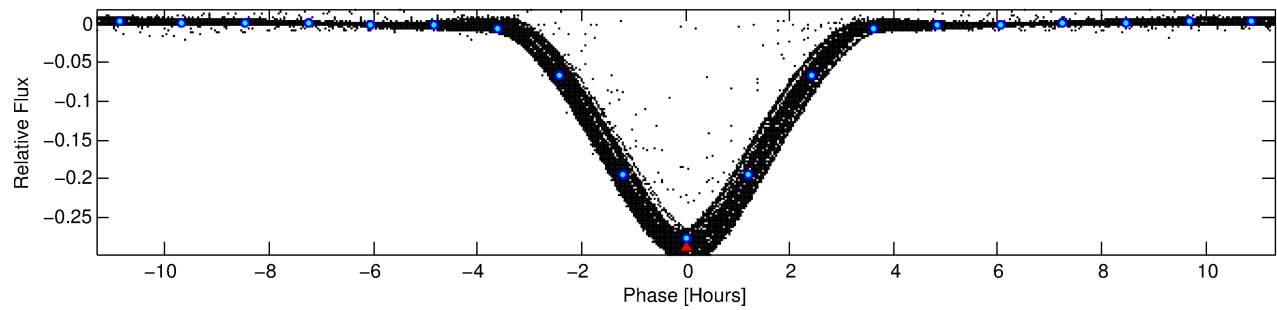
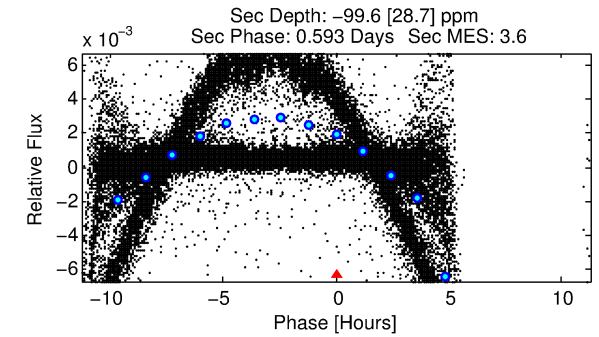
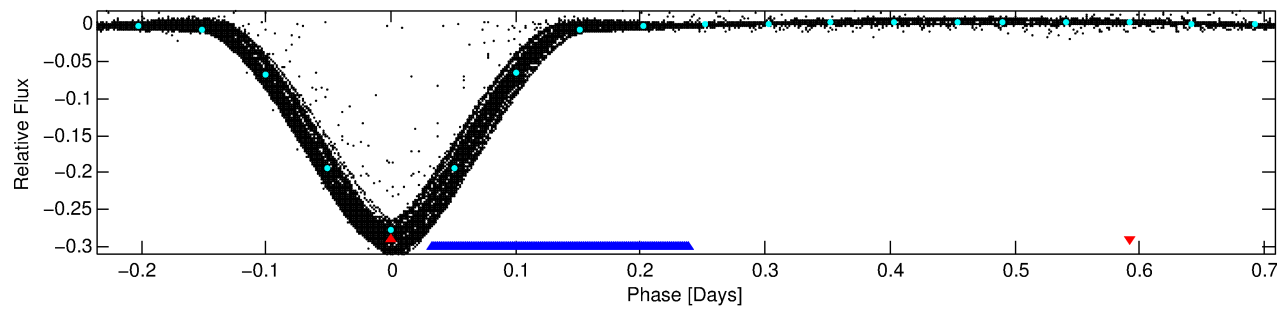
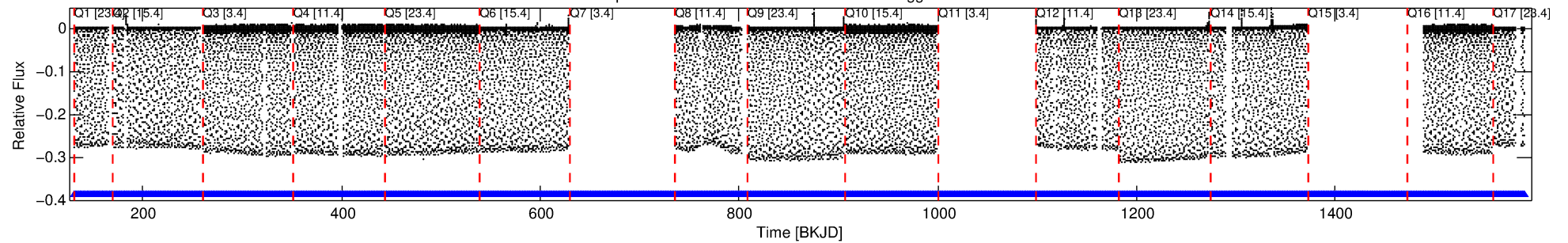
Ephemeris Match Information For 009912977-01

No Significant Match Found

DV One-Page Summary

KIC: 9912977 Candidate: 1 of 2 Period: 0.944 d

Kp: 13.73 R*: 1.36 Rs Teff: 5959.0 K Logg: 4.13 Fe/H: -0.400



TPS TCE Results:

Period = 0.94392 d
Epoch = 131.8311 BKJD

DV fit results are unavailable

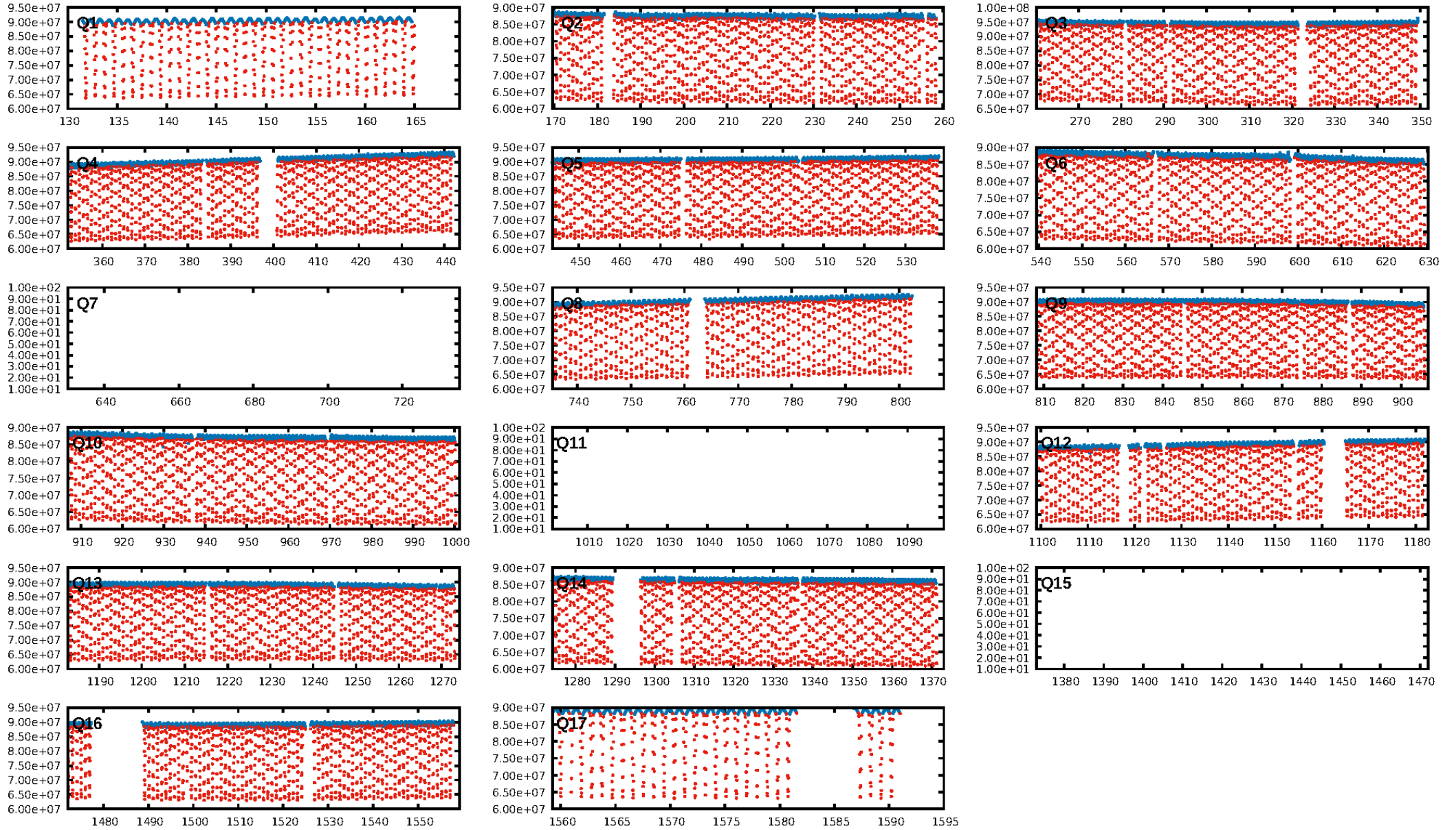
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [6.98σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1079/1079]
GhostDiagnostic-chr: 0.8478
Centroid-sig: 0.0%
Centroid-so: 0.154 arcsec [403.29σ]
OotOffset-rm: 0.091 arcsec [1.36σ]
KicOffset-rm: 0.062 arcsec [0.93σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

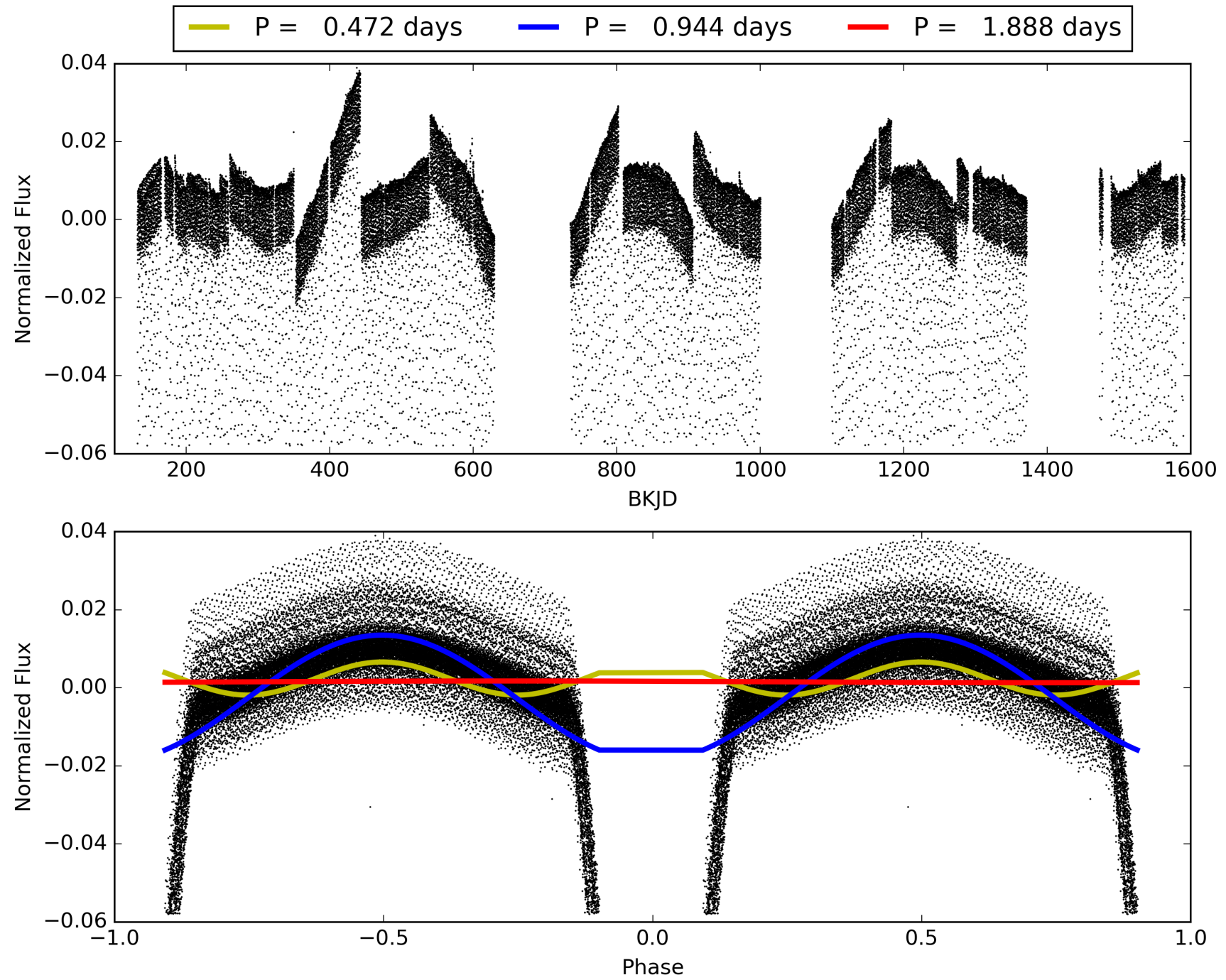
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 20:13:09 Z

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

TCE 009912977-01, PDC Light Curves

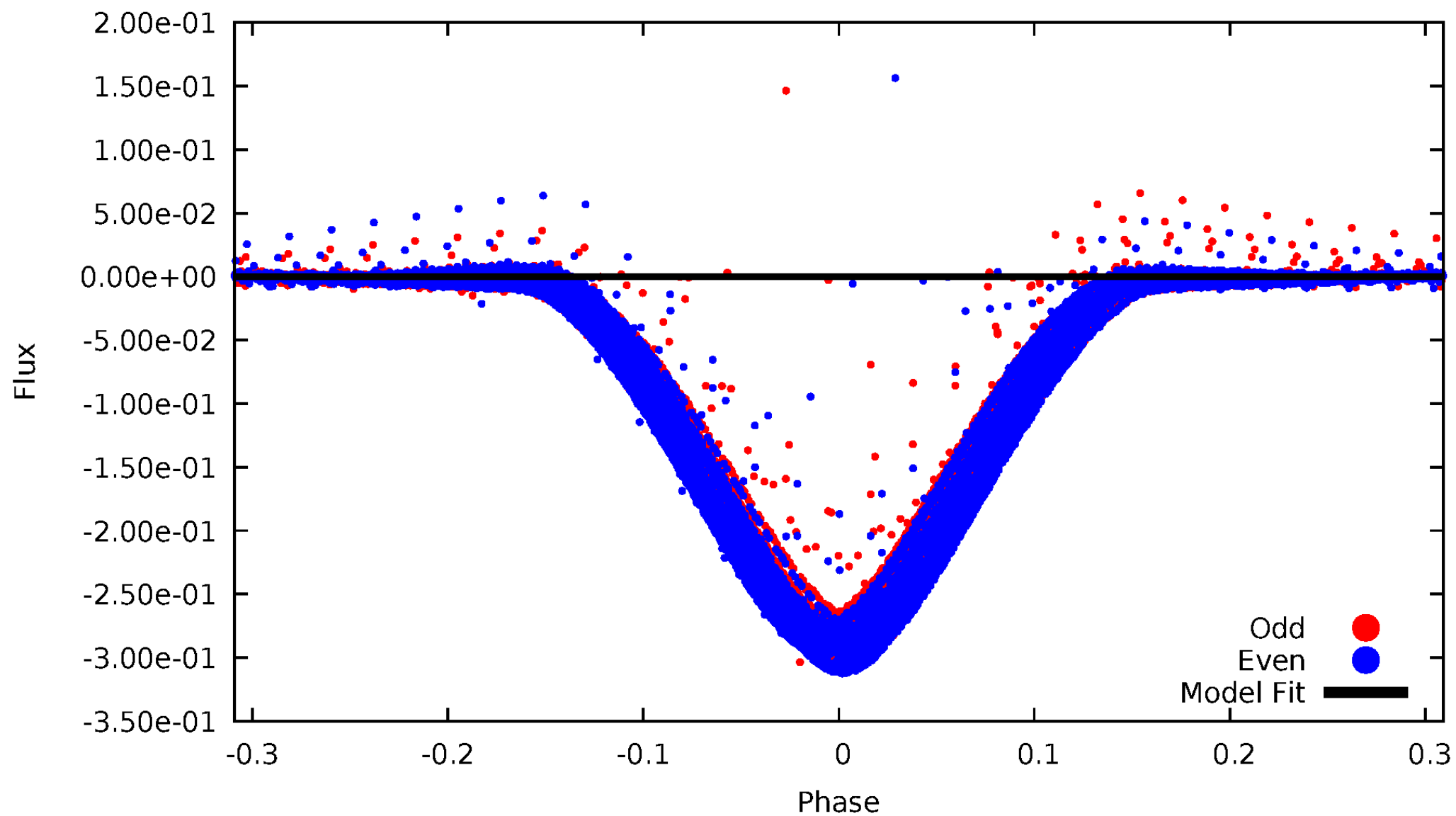


TCE 009912977-01



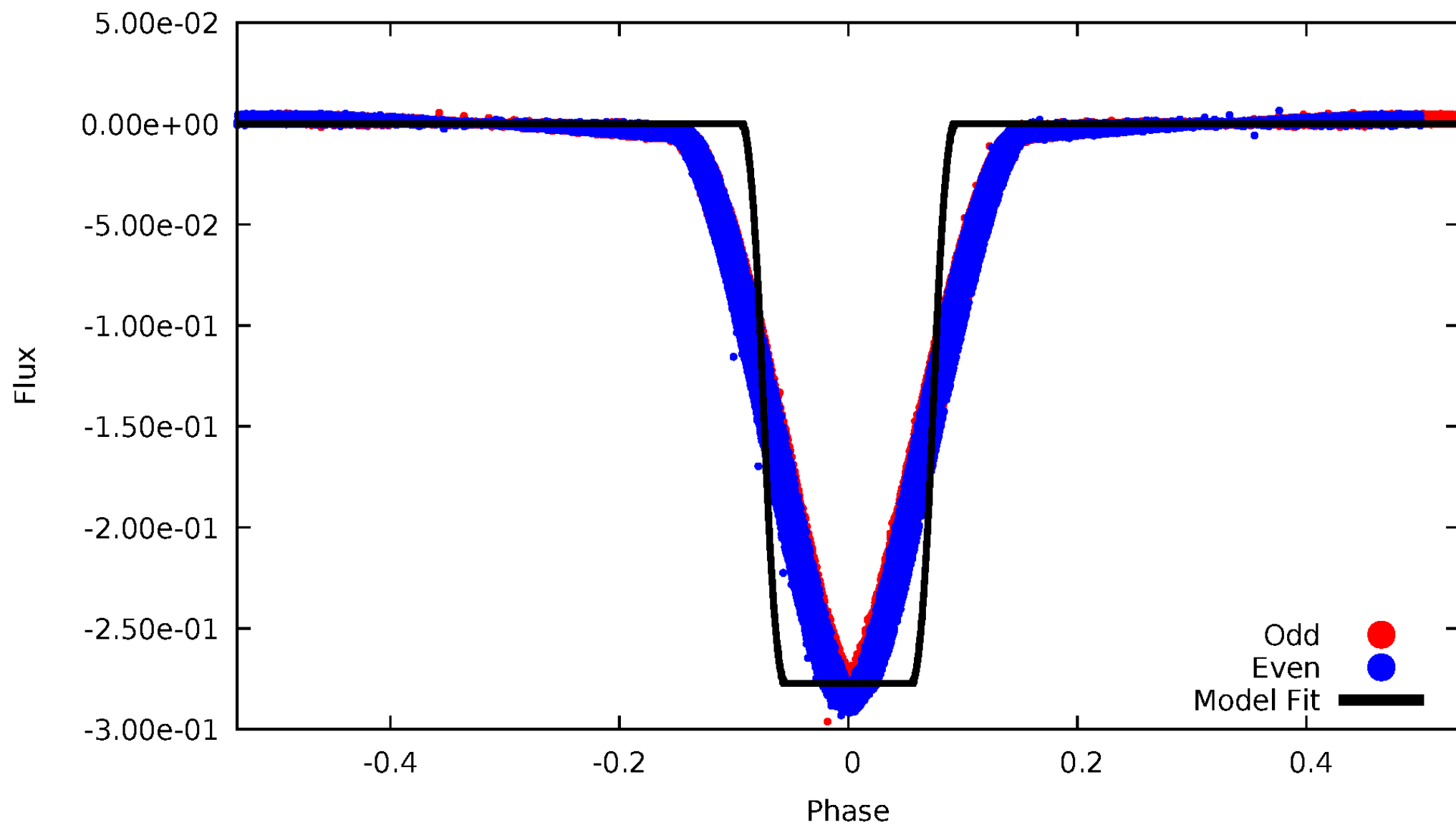
DV Odd/Even

TCE 009912977-01



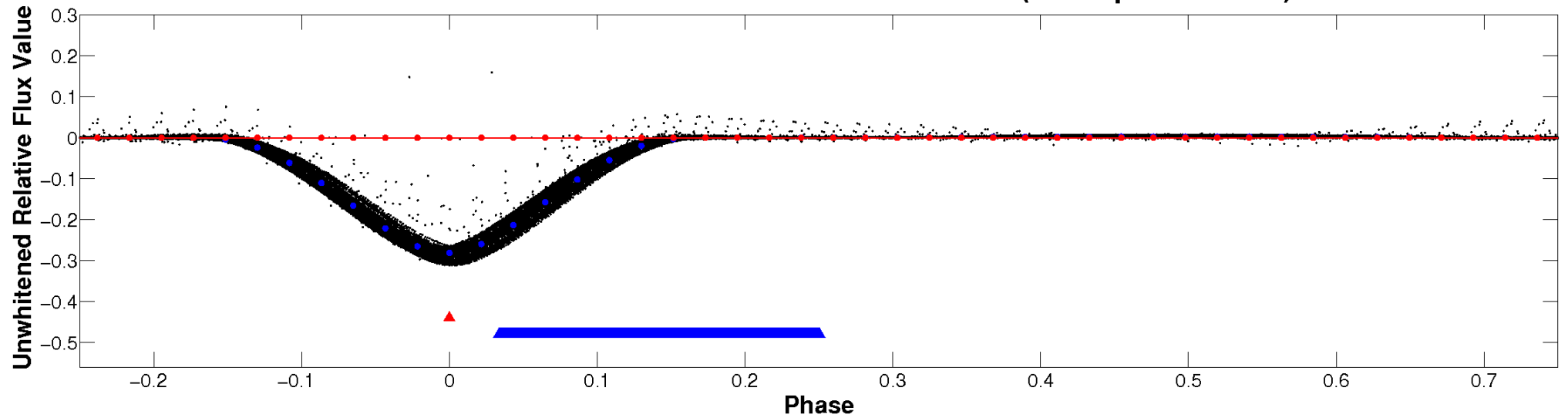
ALT Odd/Even

TCE 009912977-01



Non-Whitened Vs. Whitened Light Curve

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

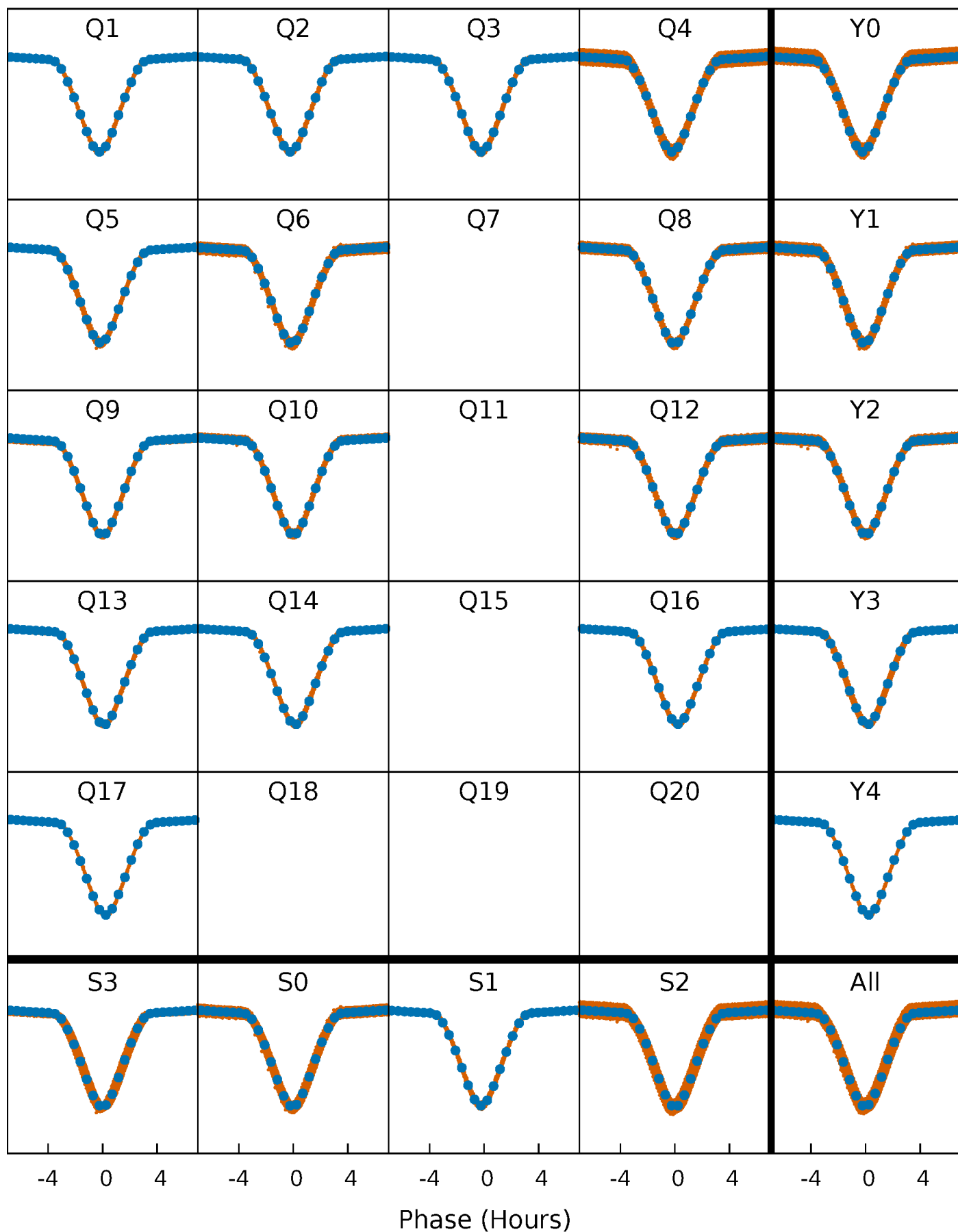


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



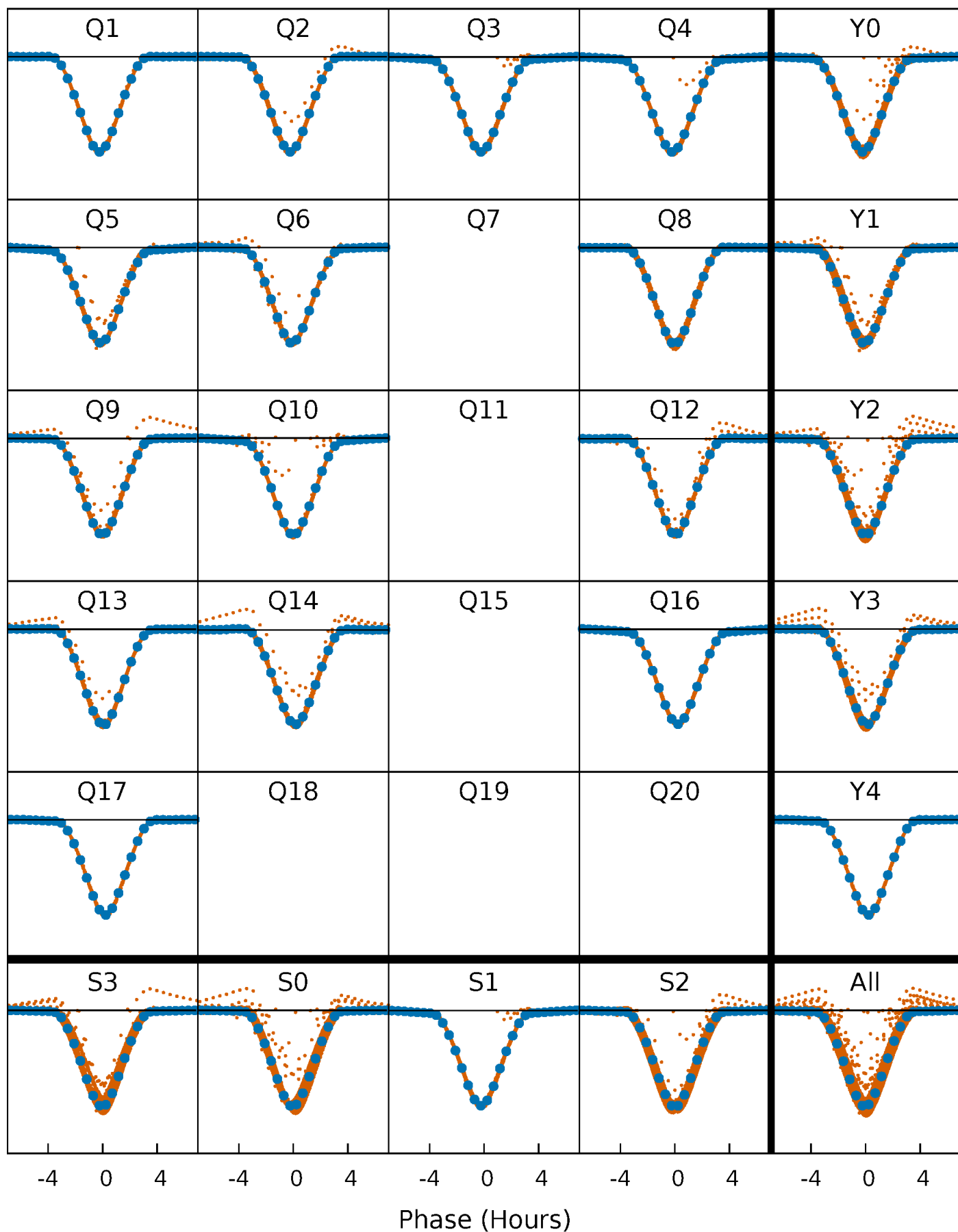
PDC Quarter-Phased Transit Curves

TCE 009912977-01 P= 0.943925 Days $T_0=131.831120$ (BKJD)



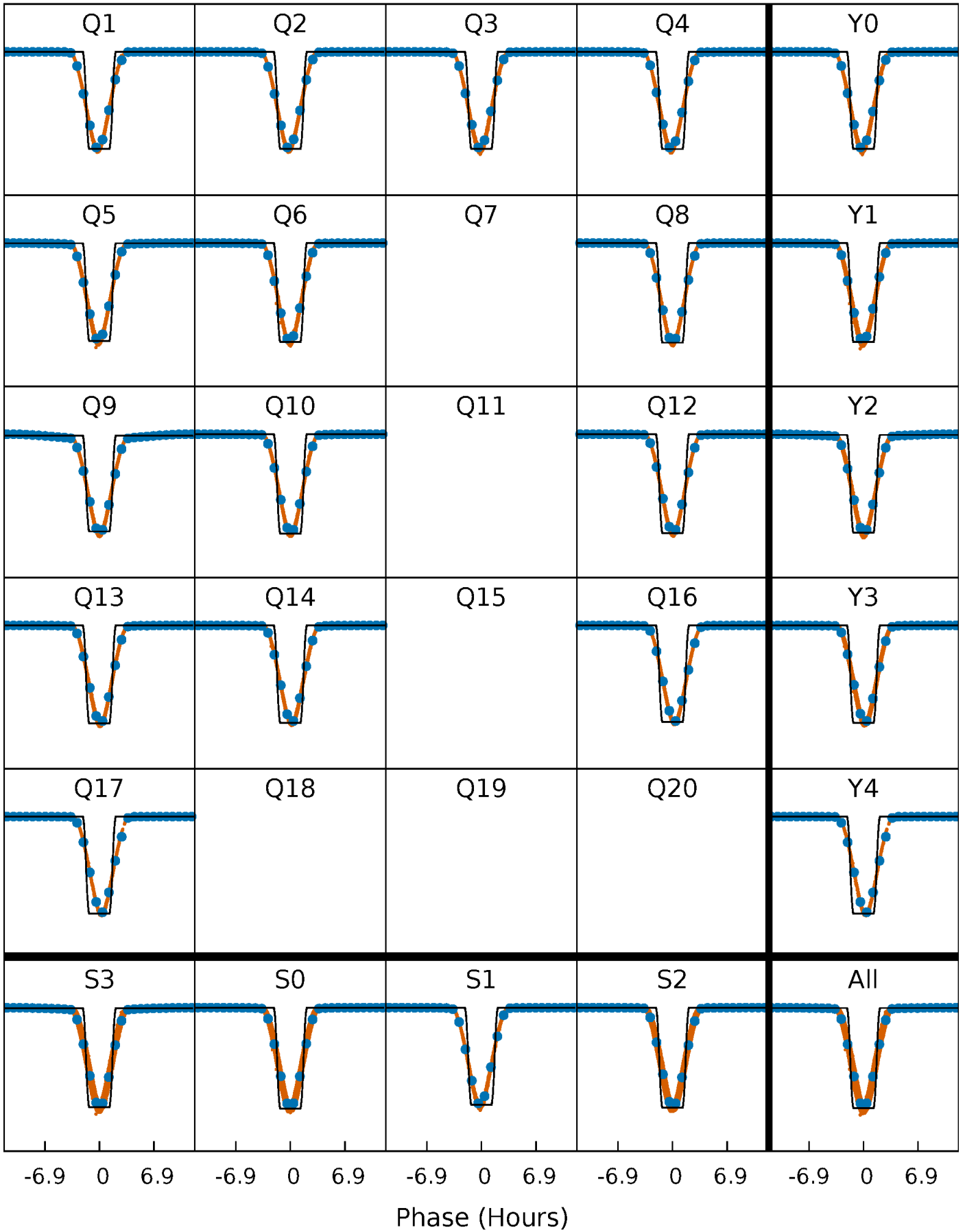
DV Quarter-Phased Transit Curves

TCE 009912977-01 P= 0.943925 Days $T_0=131.831120$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

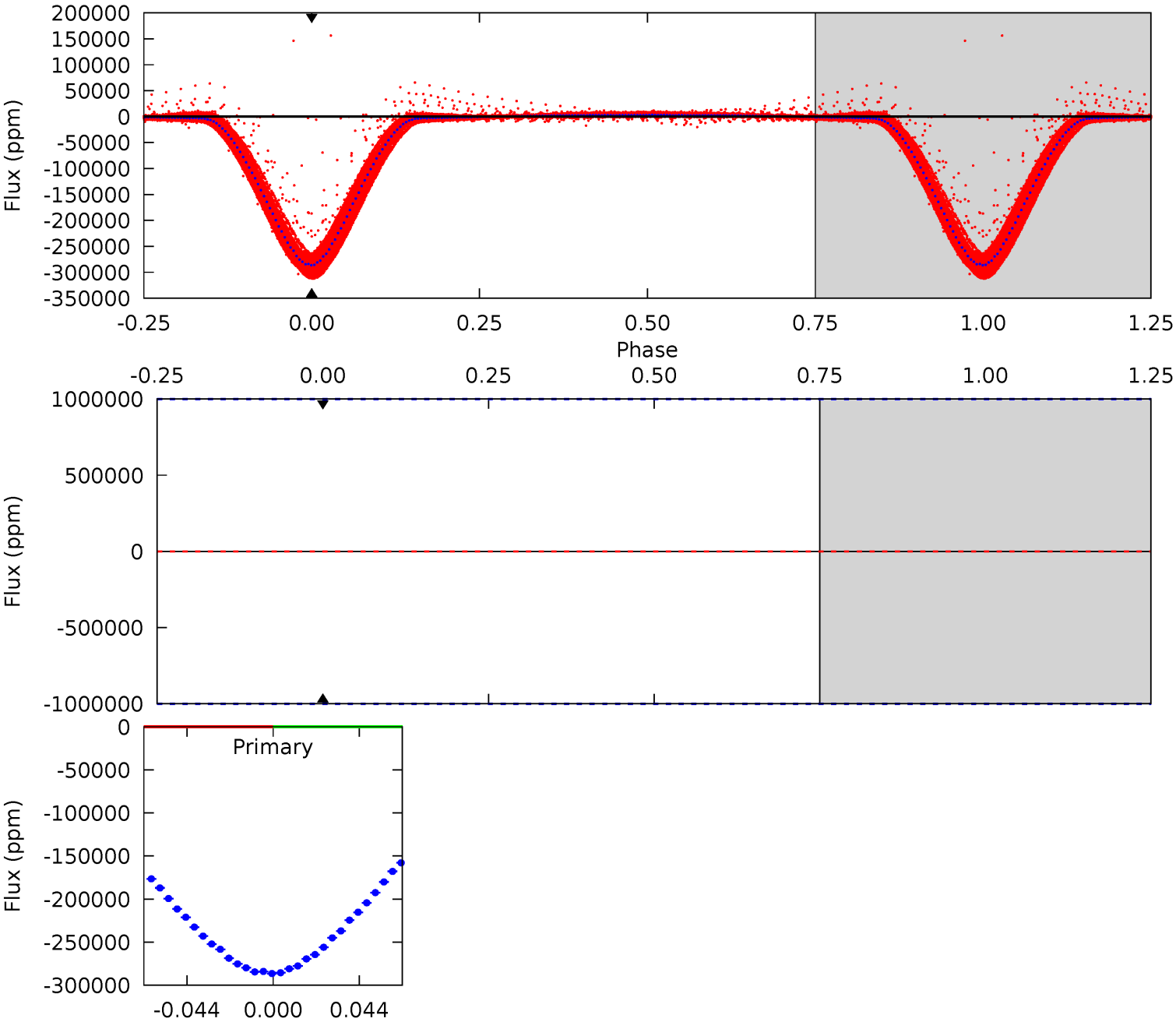
TCE 009912977-01 P= 0.943925 Days $T_0=131.829608$ (BKJD)



DV Model-Shift Uniqueness Test

009912977-01, P = 0.943925 Days, E = 130.887195 Days

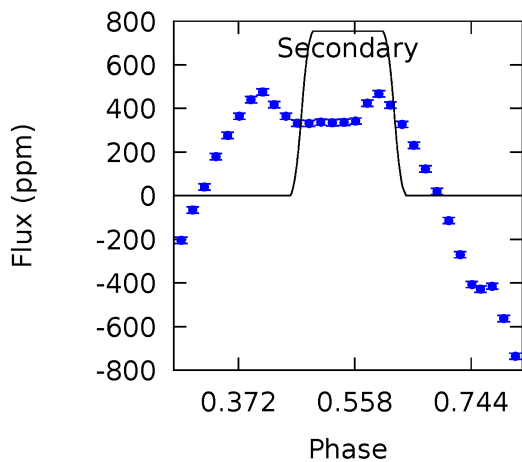
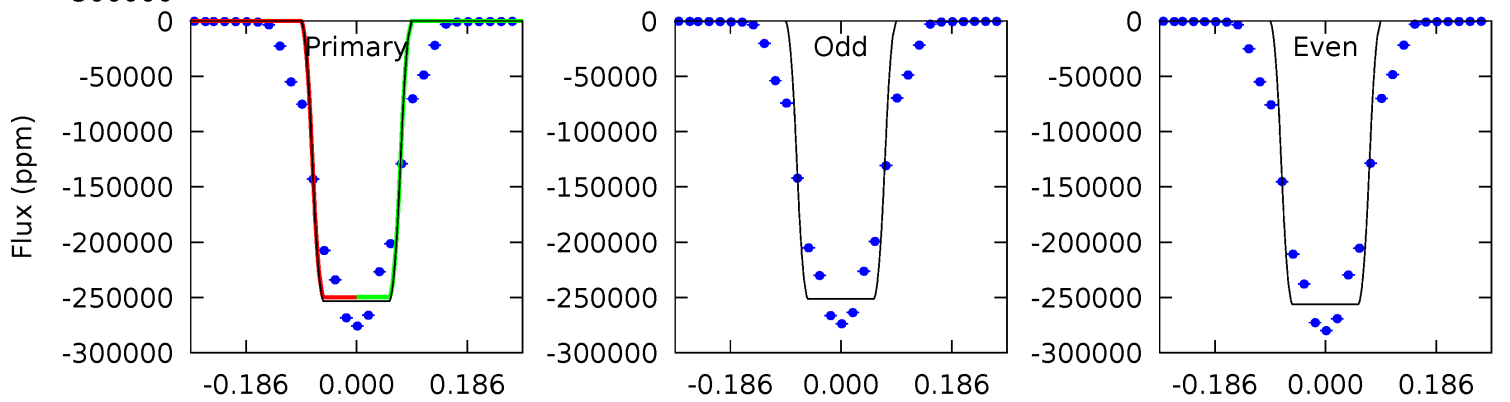
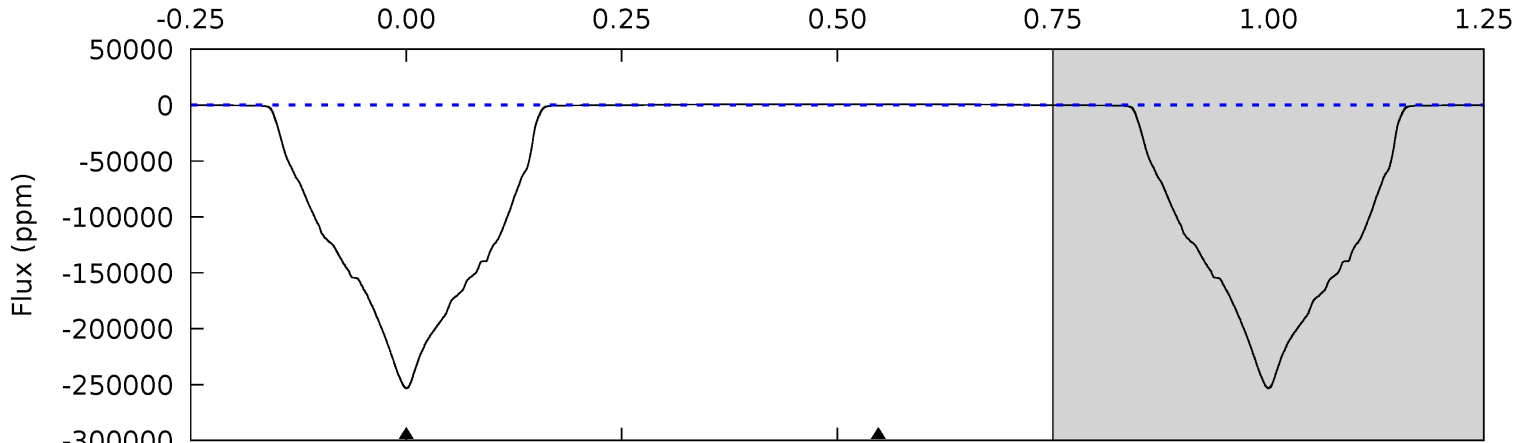
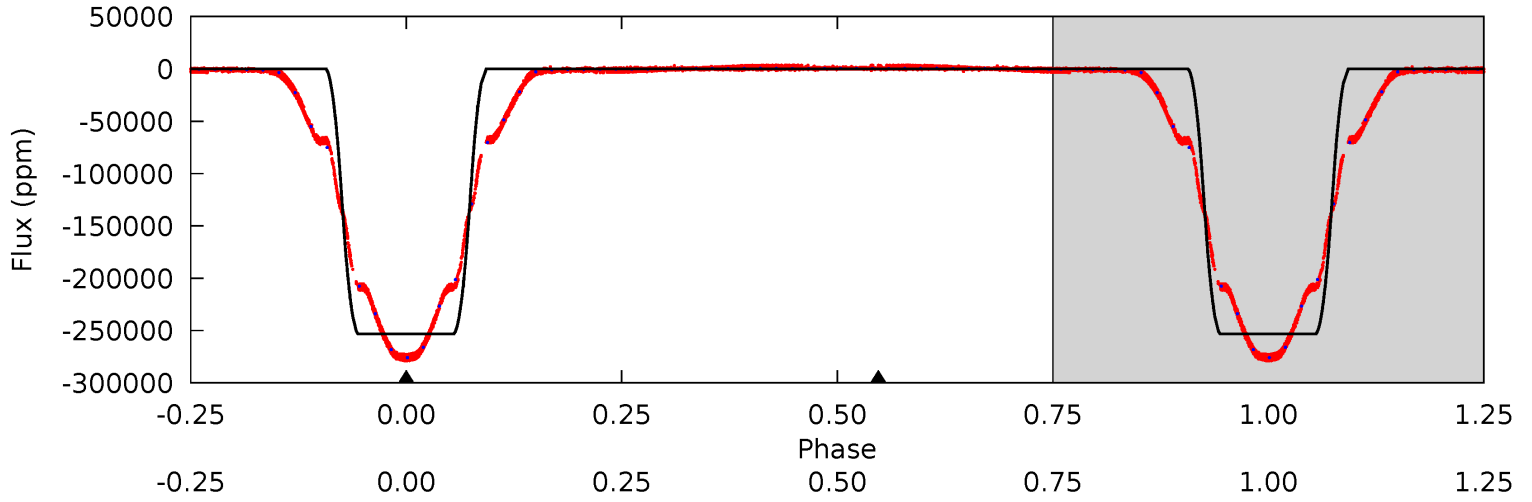
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

009912977-01, P = 0.943925 Days, E = 130.885683 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14909	-44.4	0	0	4.43	1.32	16.7	14909	14909	-44.4	-44.4	153.7	1.00	0.00	0



Stellar Parameters For KIC 009912977

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5959^{+195}_{-195}	$4.126^{+0.338}_{-0.182}$	$-0.400^{+0.300}_{-0.300}$	$1.365^{+0.381}_{-0.466}$	$0.908^{+0.131}_{-0.087}$	$0.503^{+1.165}_{-0.239}$
	+3%/-3%	+8%/-4%	+75%/-75%	+28%/-34%	+14%/-10%	+232%/-48%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 009912977-01 / KOI 7977.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$40.54^{+16.88}_{-14.26}$	3143^{+253}_{-292}	-3357^{+9924}_{-3109}	$-0.189^{+14.408}_{-11.205}$
Alt.	754 ± 17	$76.09^{+19.39}_{-19.59}$	3138^{+259}_{-315}	-3212^{+175}_{-154}	$-0.024^{+0.009}_{-0.019}$

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 $A_{obs} \gg 1.0$

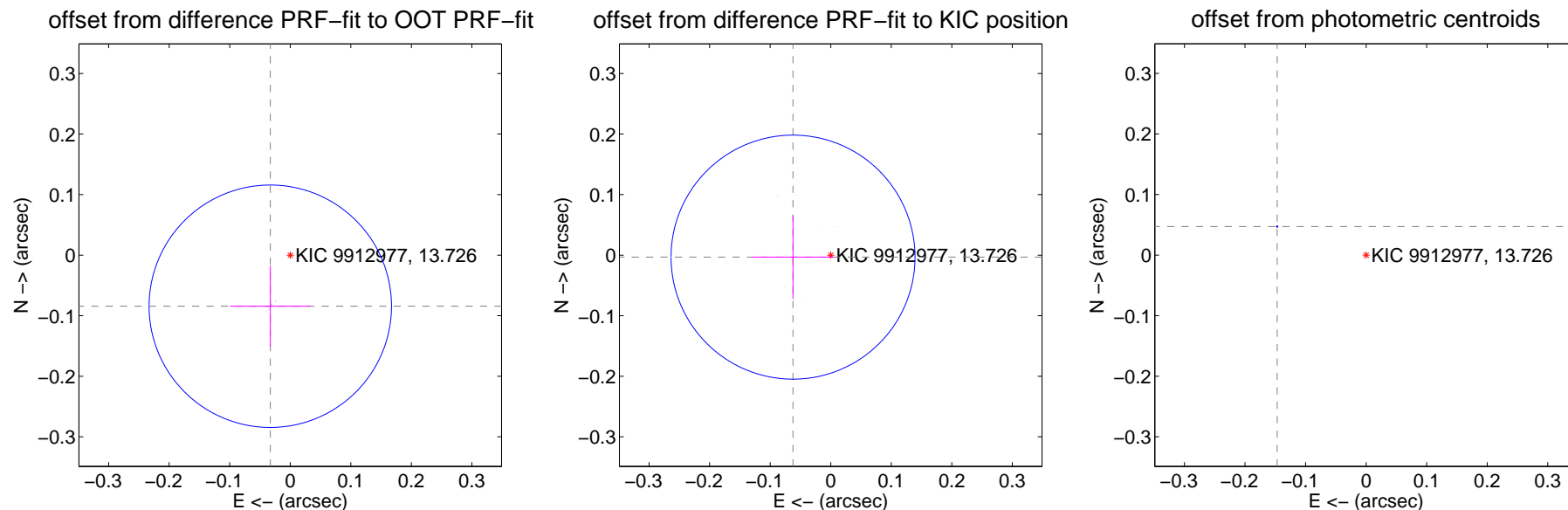
DV Centroid Data

Supplemental centroid analysis for 009912977-01. Kepler magnitude: 13.73. Transit SNR -1.00

There are 14 quarters with good PRF difference image offsets

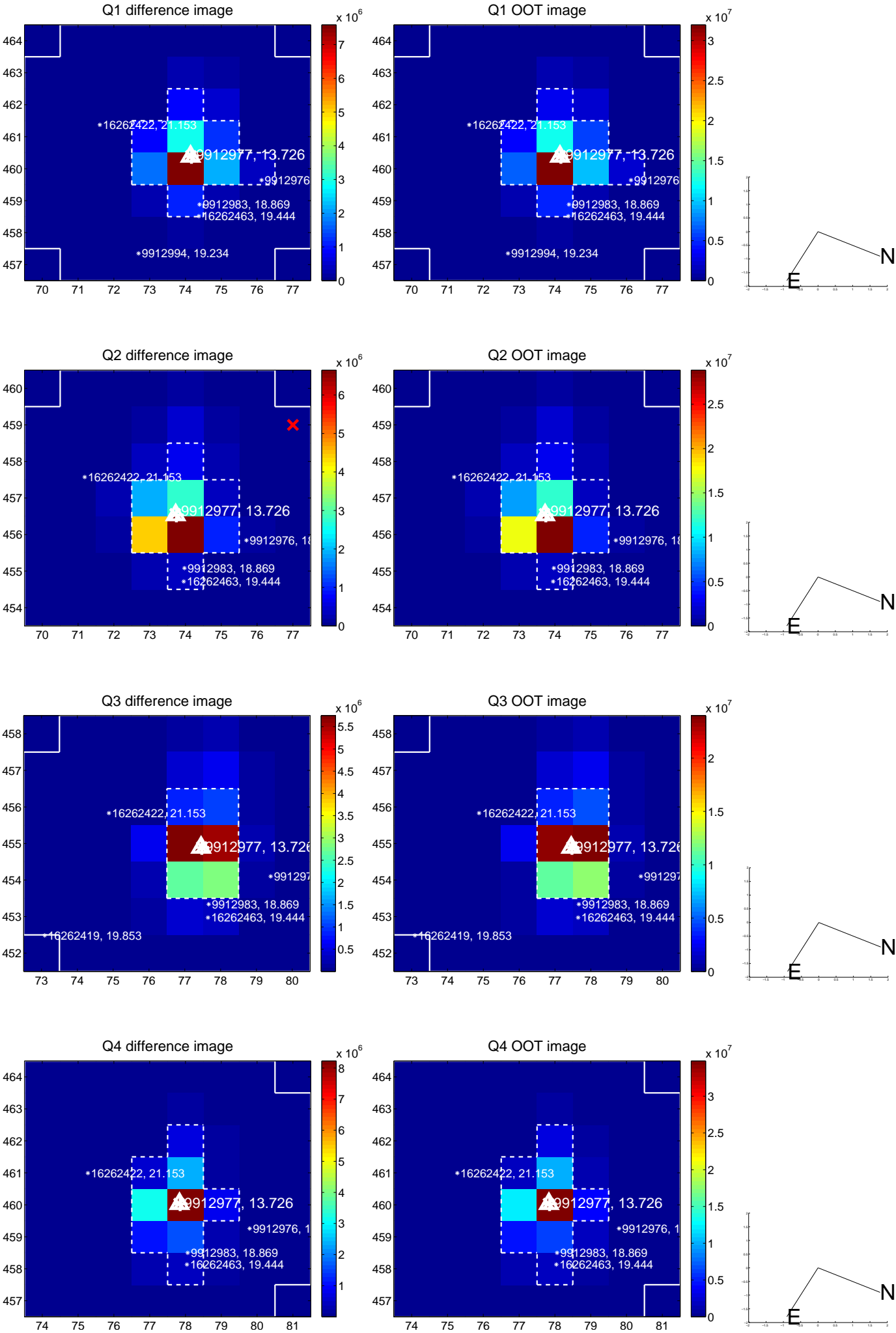
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.091 ± 0.067	1.36	0.033 ± 0.067	-0.084 ± 0.067
PRF-fit source offset from KIC position	0.062 ± 0.067	0.93	0.062 ± 0.067	-0.003 ± 0.069
photometric centroid source offset	0.15 ± 0.00	403.29	0.15 ± 0.00	0.05 ± 0.00

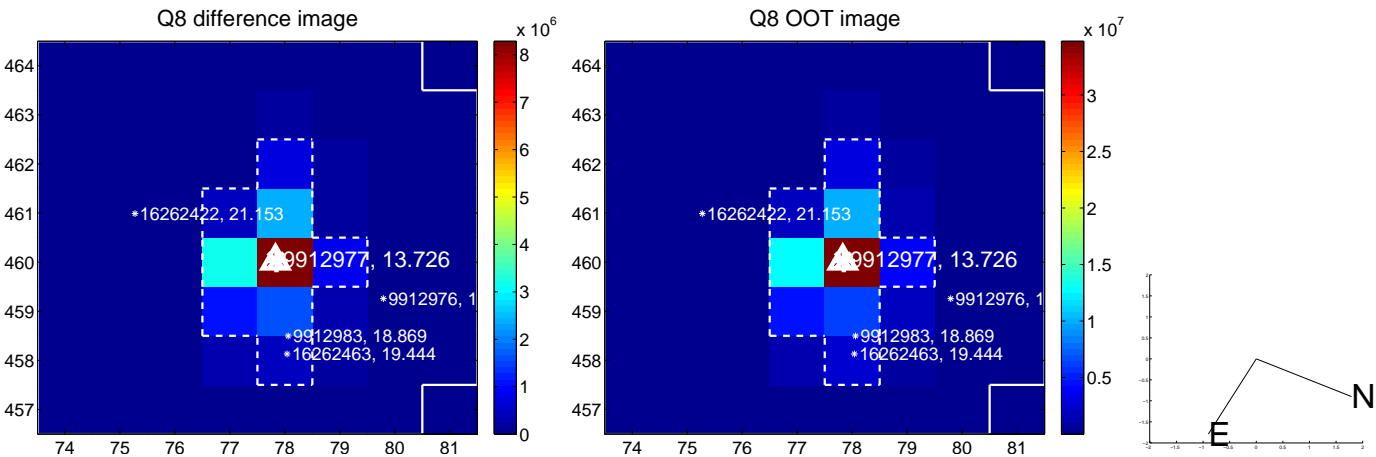
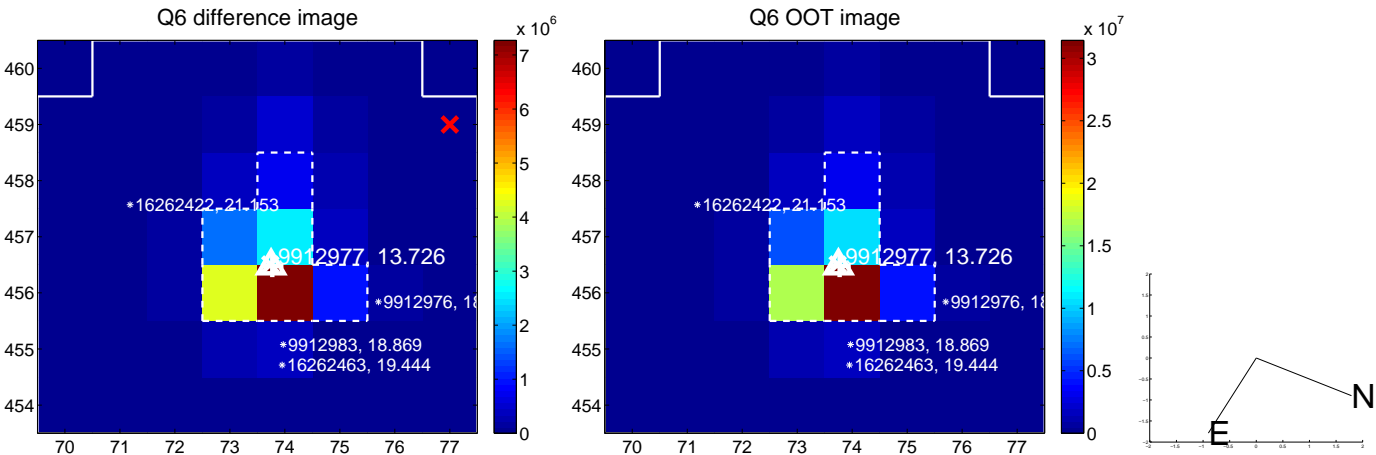
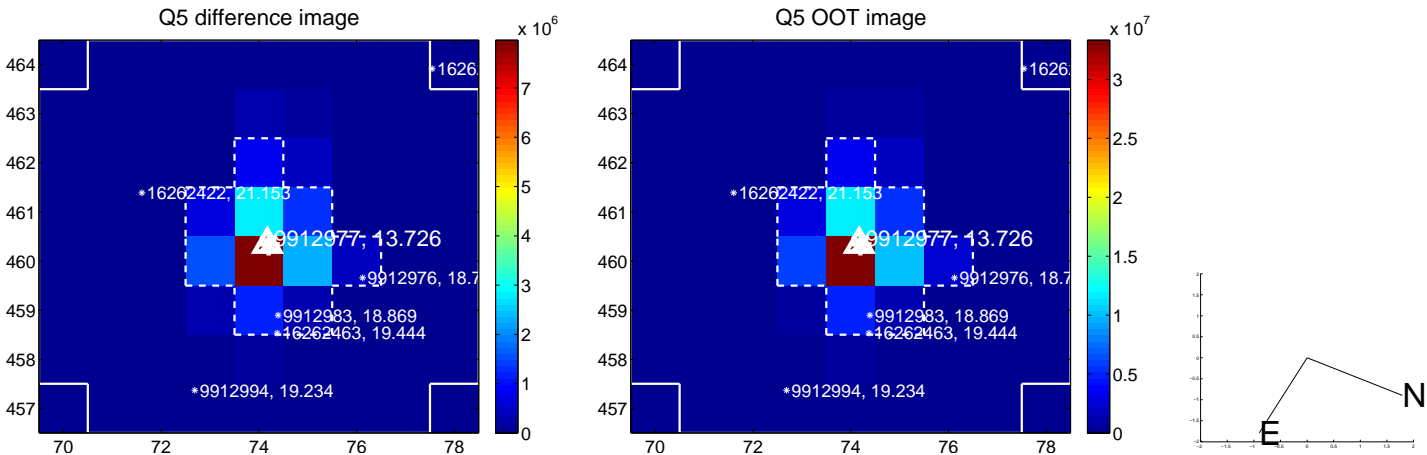


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

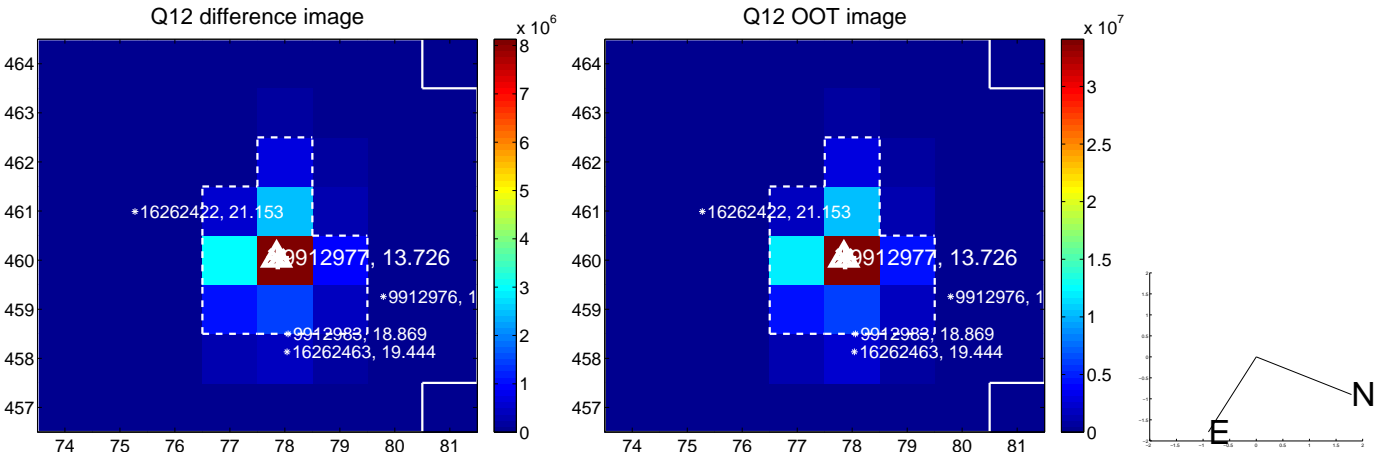
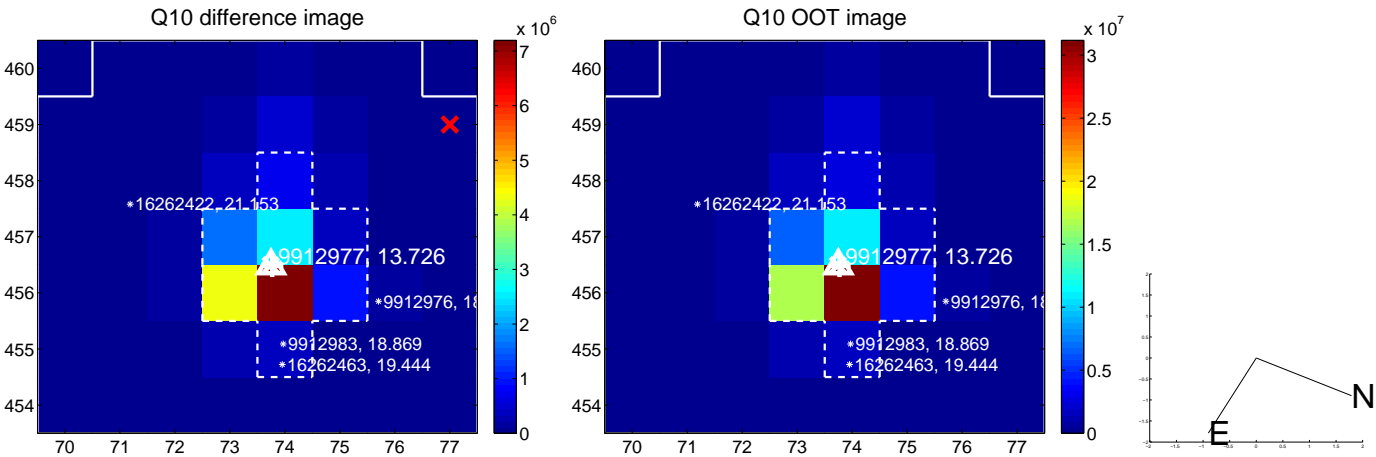
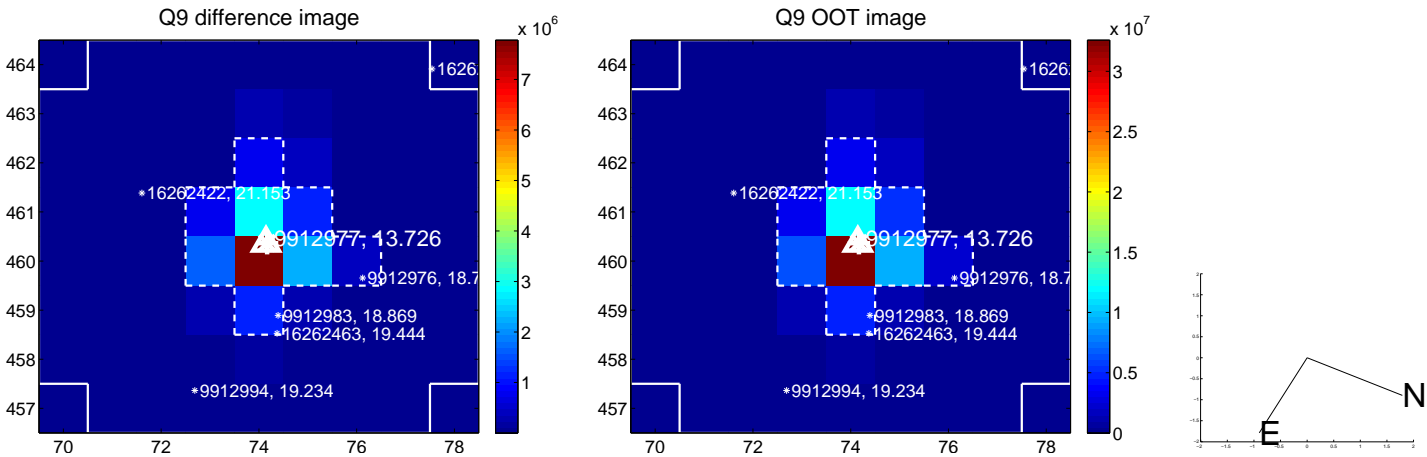
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



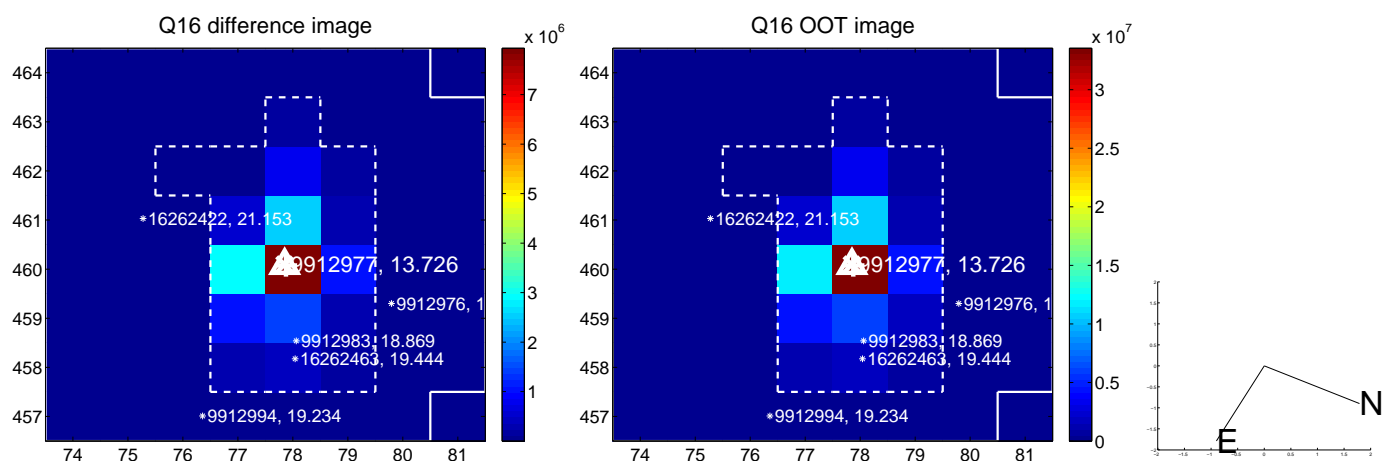
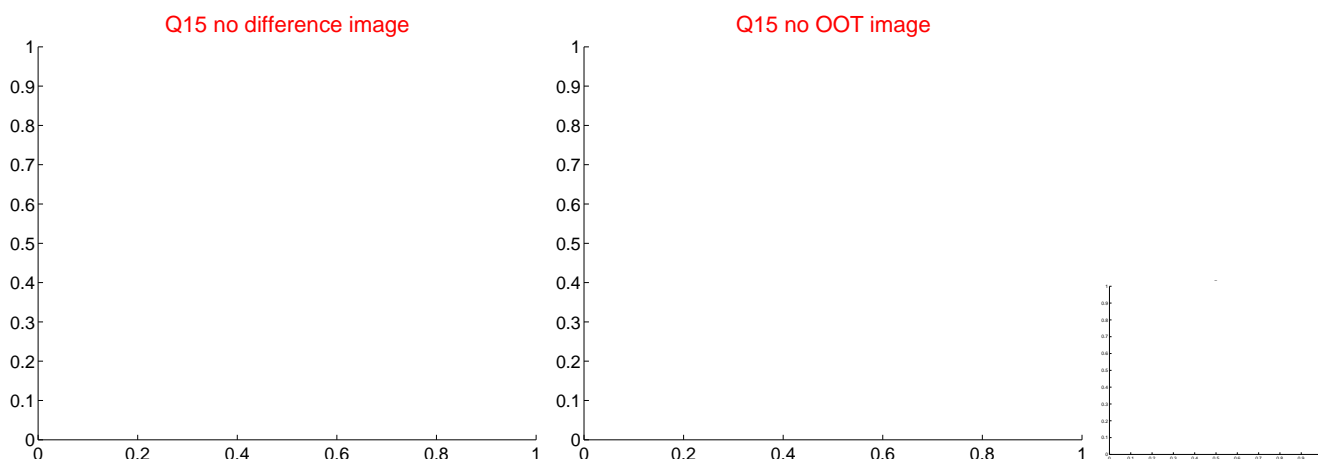
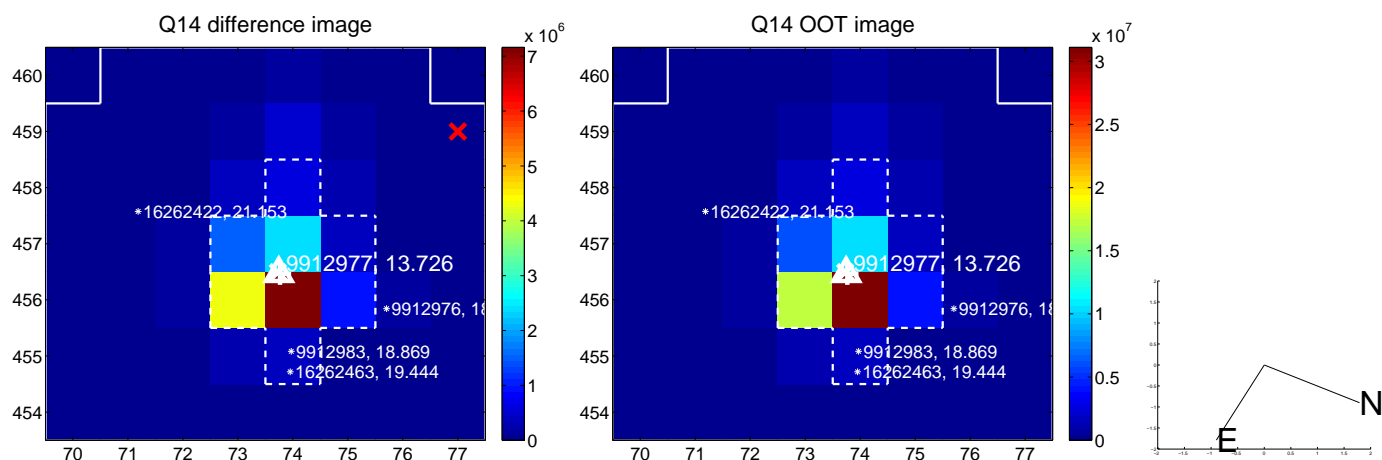
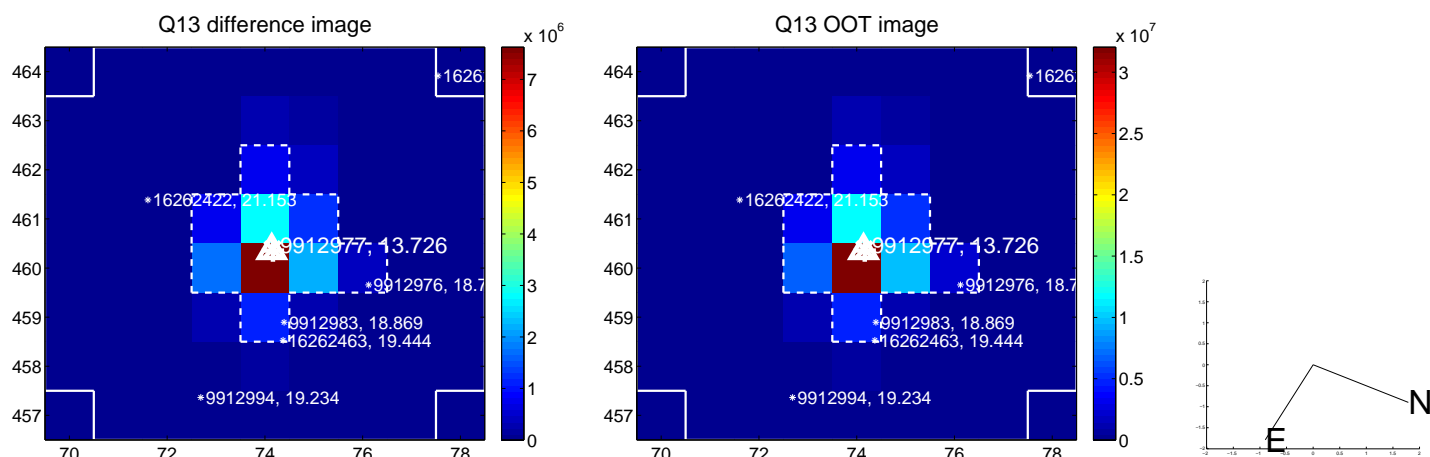
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



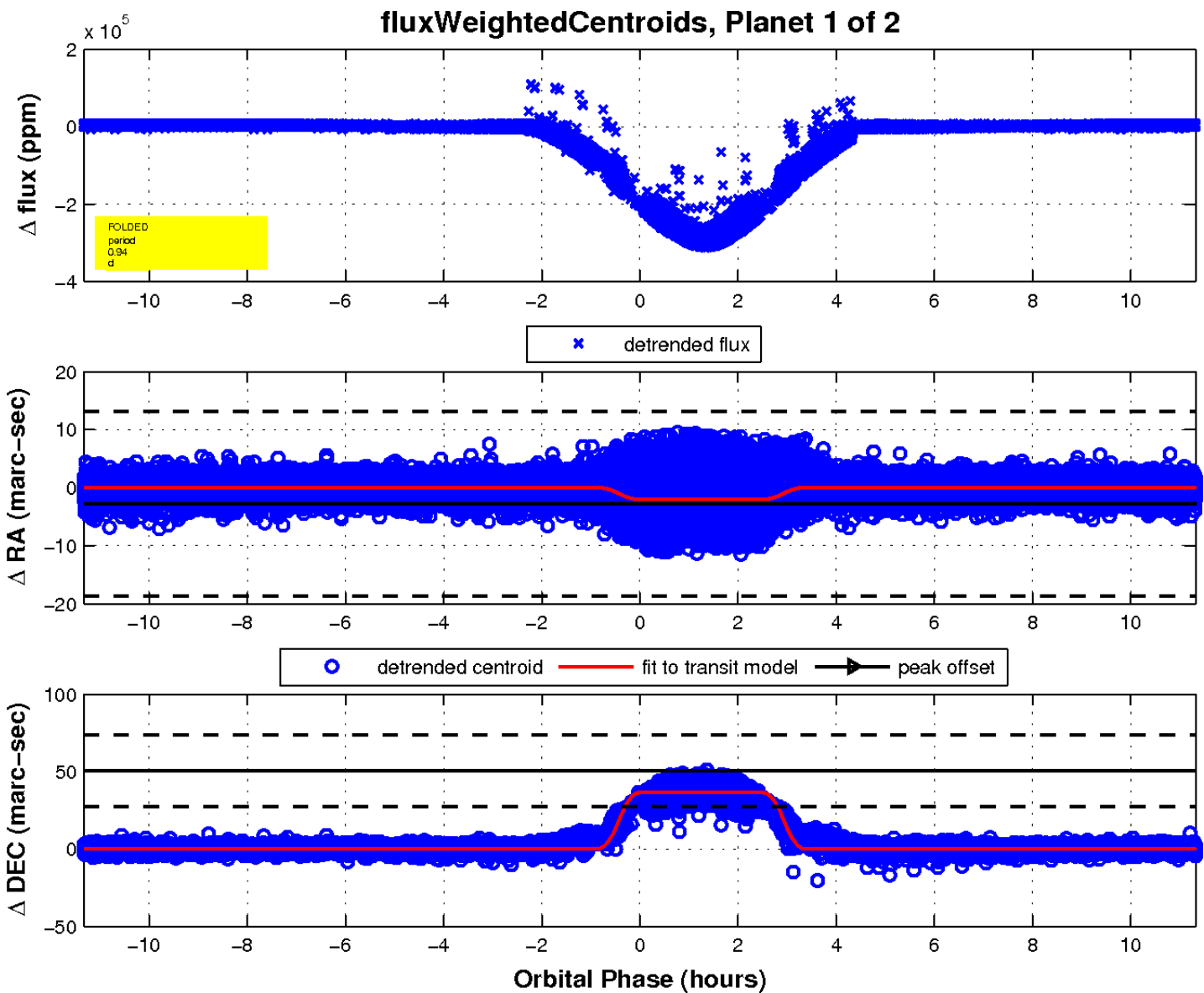
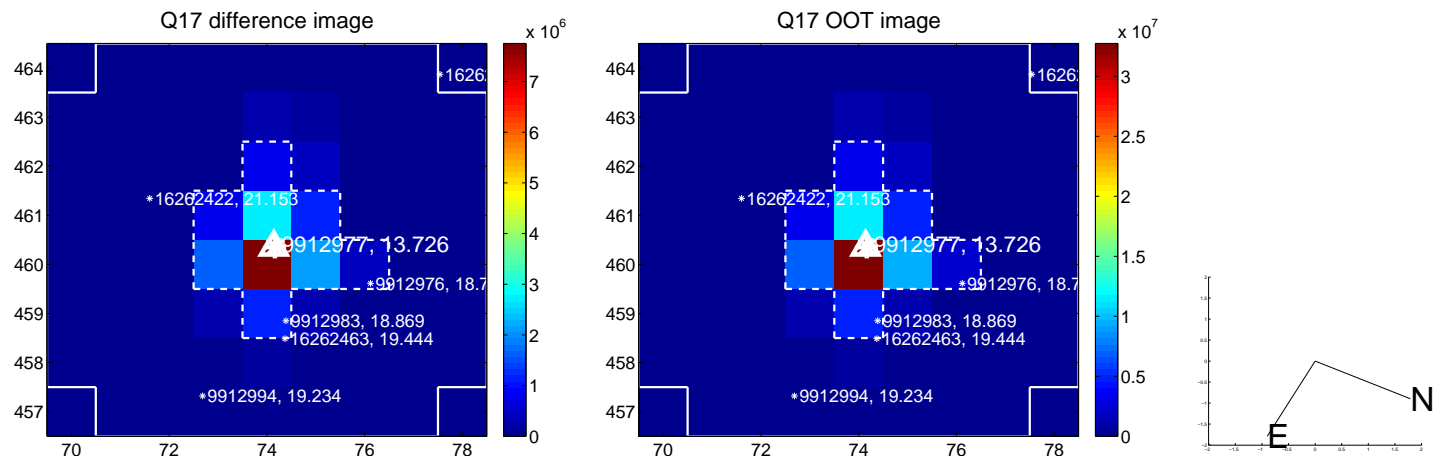
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

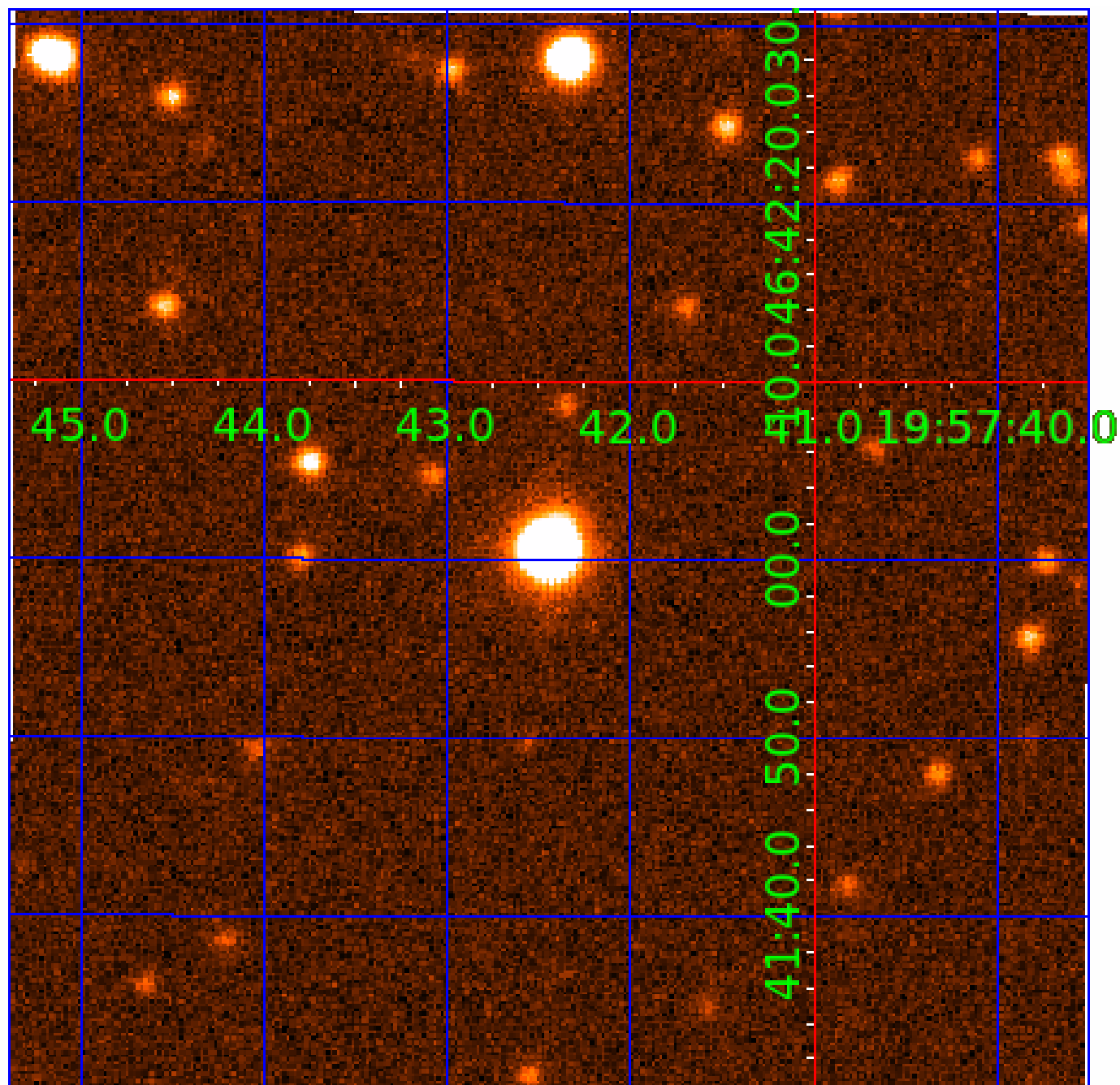


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009912977

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})
009912977-01	OBS	7977.01	0.943925	131.831120	285909.5	3.500	10989.5	-1.0	1.36	5959	42.56	6325.48
009912977-02	OBS	No	4.720287	135.638573	1640.8	12.500	105.0	-1.0	1.36	5959	5.52	739.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009912977-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_ODDEVEN_ALT—CENT_NOFITS
009912977-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS

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

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

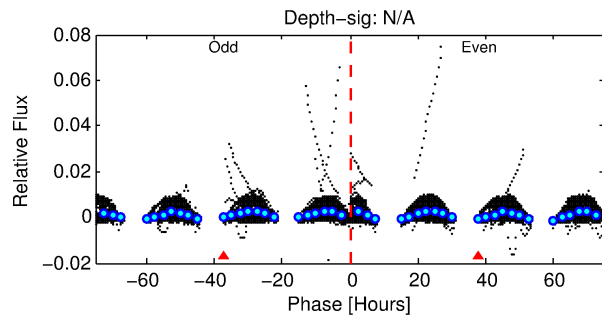
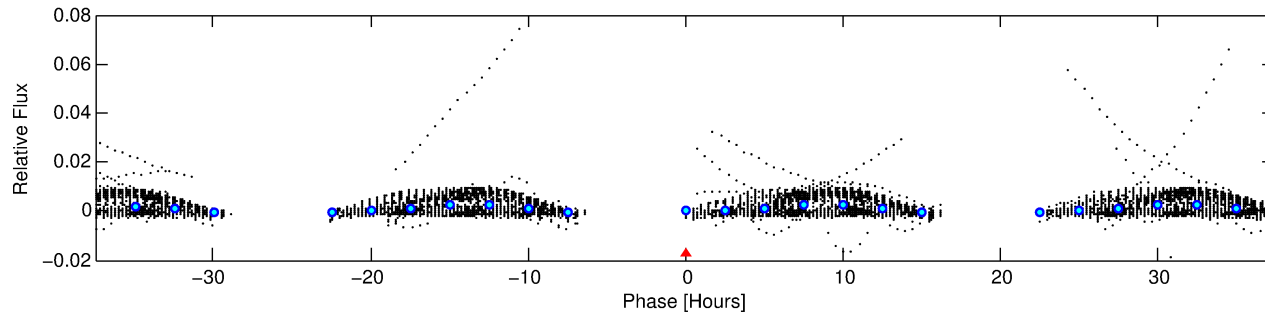
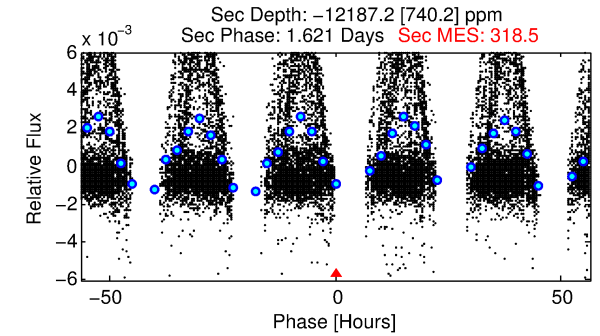
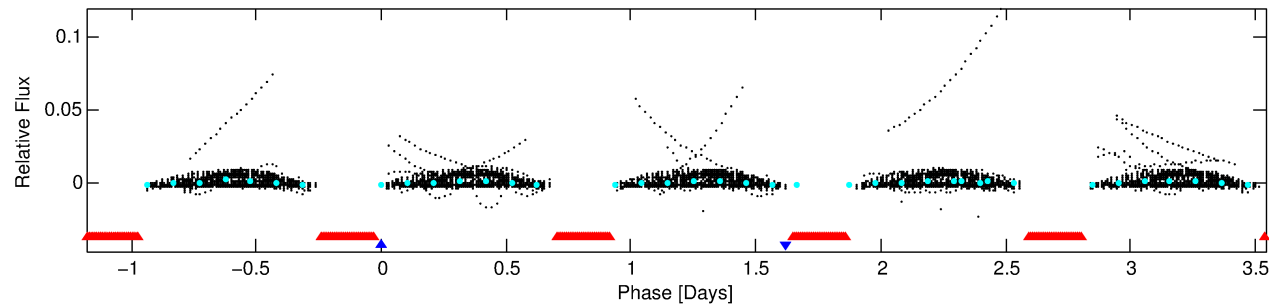
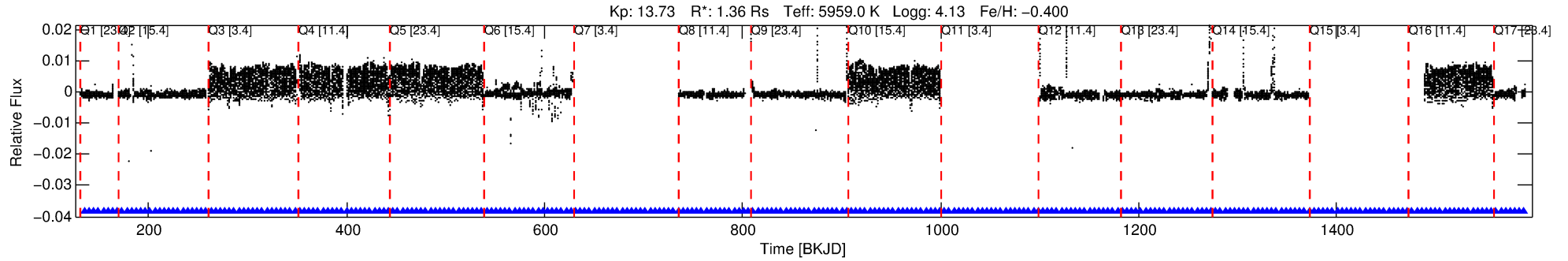
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009912977-02

No Significant Match Found

DV One-Page Summary

KIC: 9912977 Candidate: 2 of 2 Period: 4.720 d



TPS TCE Results:

Period = 4.72029 d
Epoch = 135.6386 BKJD

DV fit results are unavailable

DV Diagnostic Results:

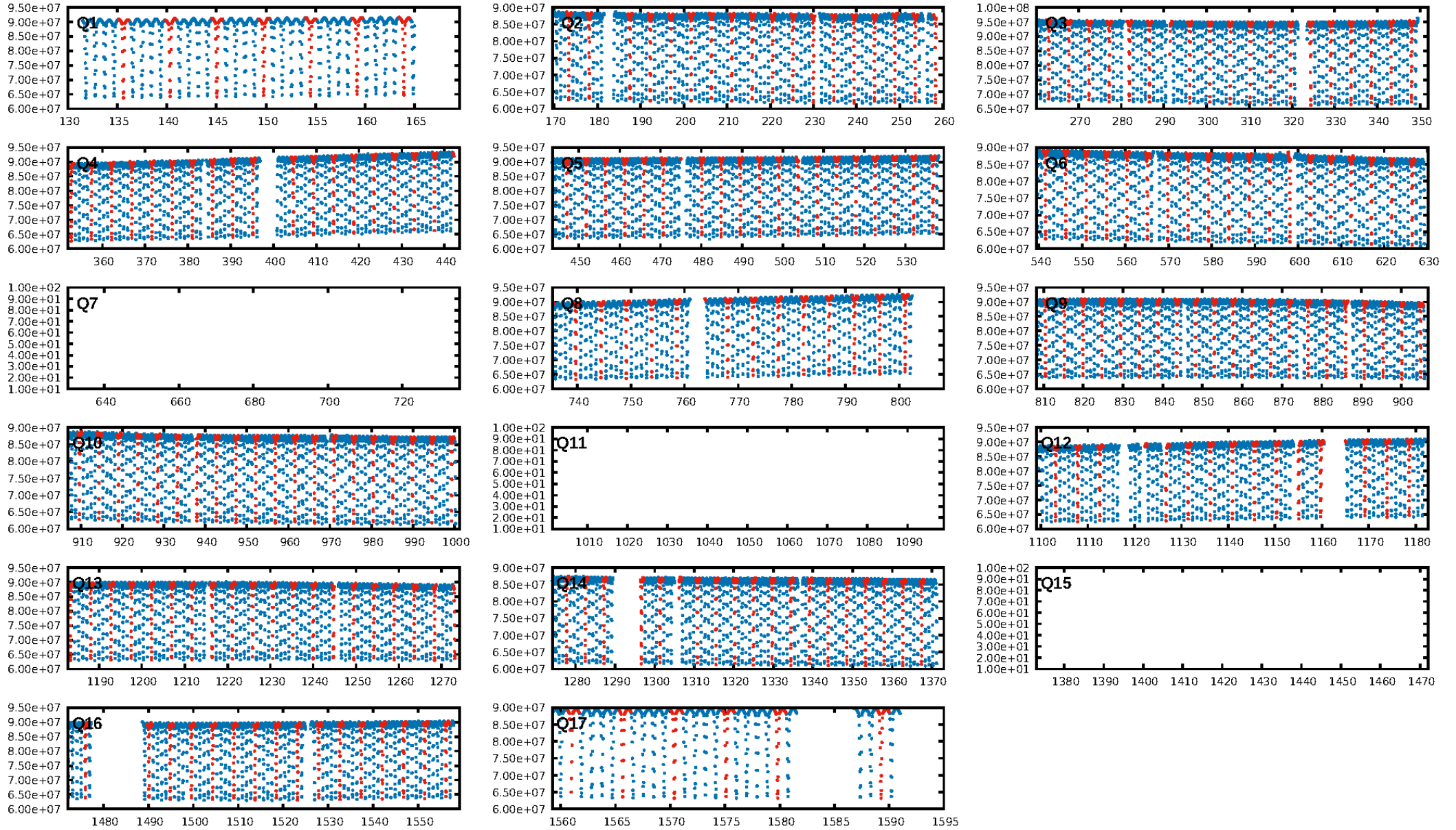
ShortPeriod-sig: 100.0% [6.98σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: N/A
GhostDiagnostic-chr: N/A

Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: N/A

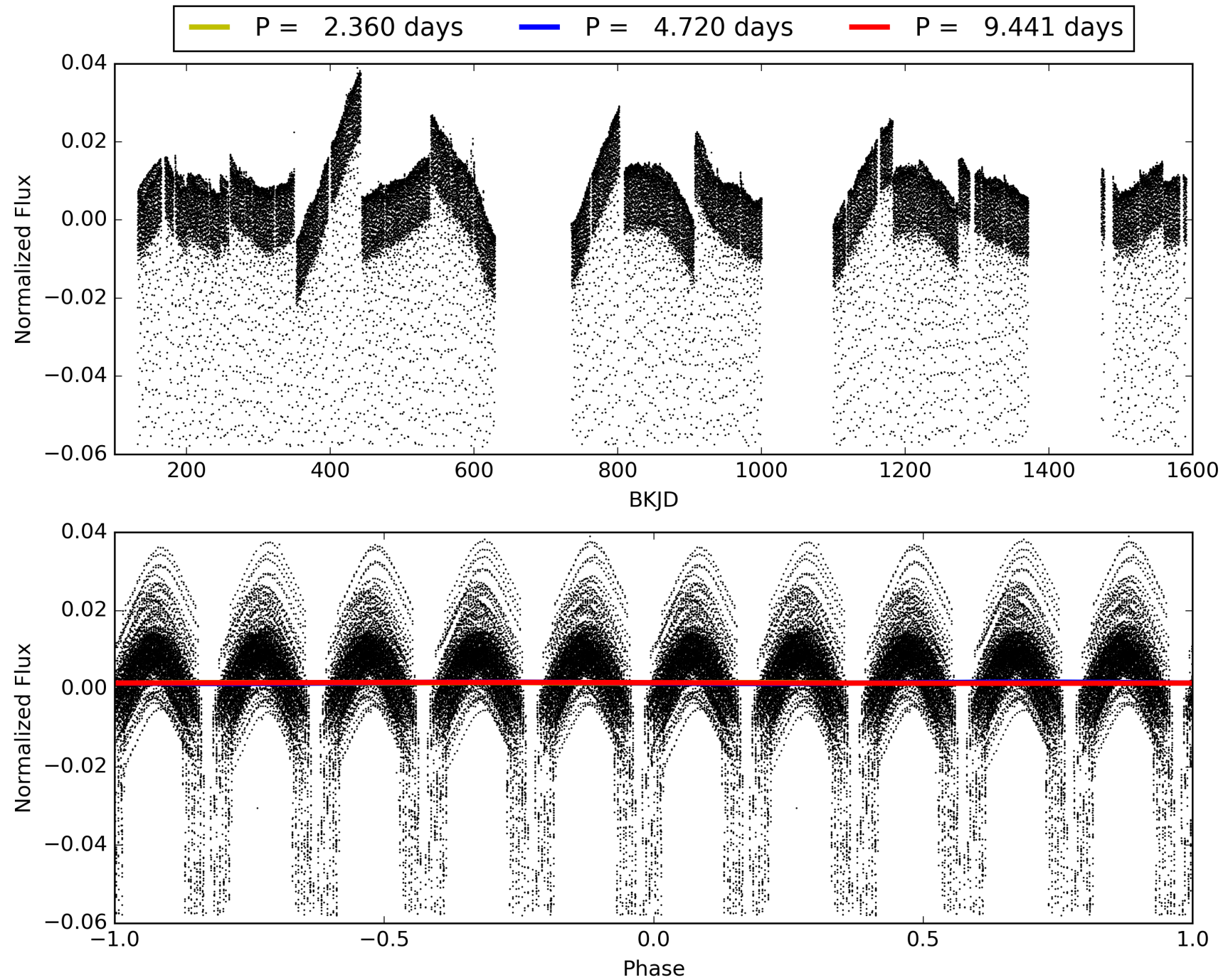
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 20:13:17 Z

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

TCE 009912977-02, PDC Light Curves

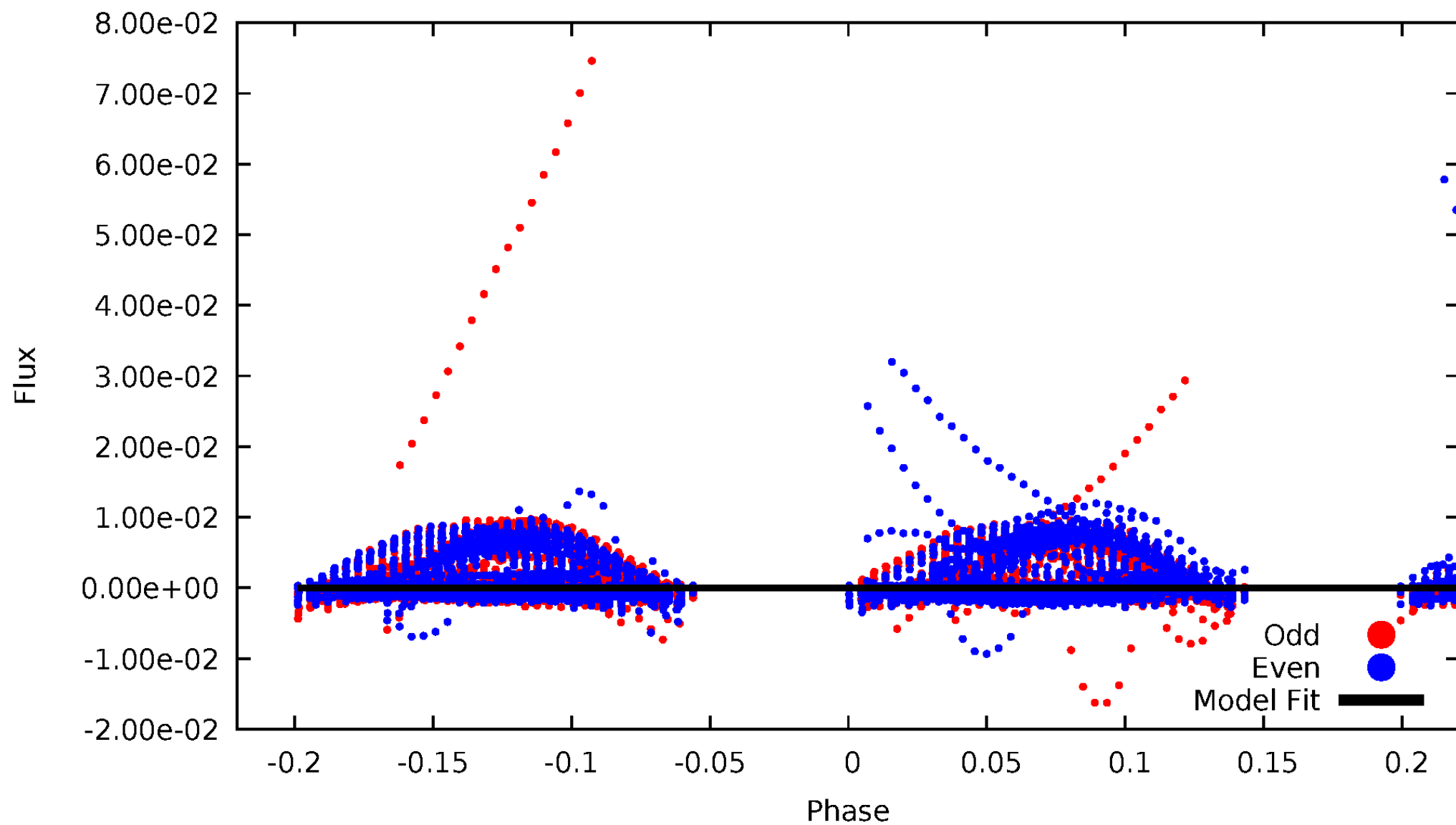


TCE 009912977-02



DV Odd/Even

TCE 009912977-02

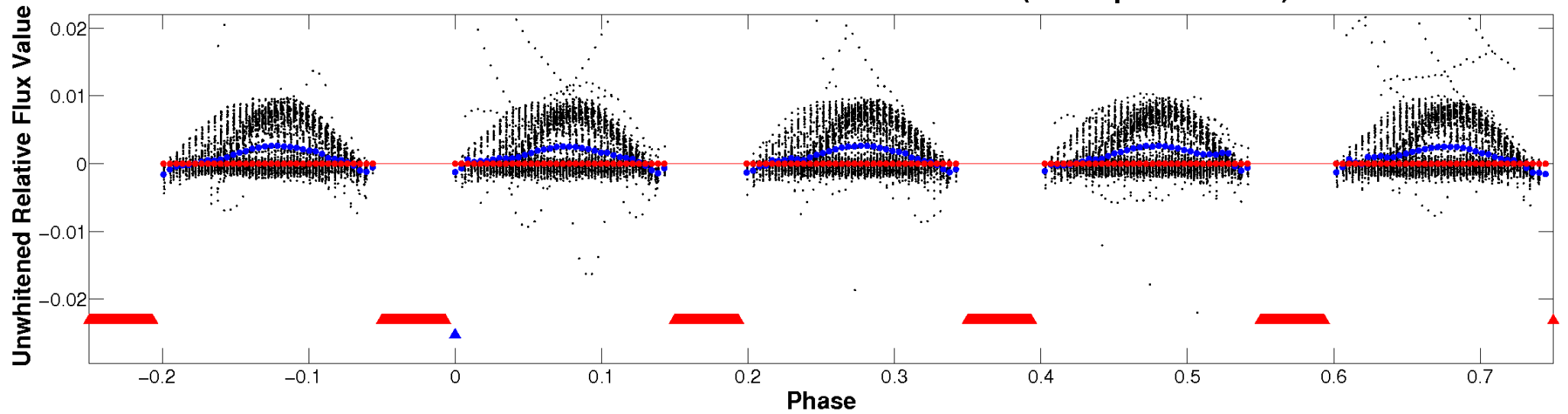


ALT Odd/Even

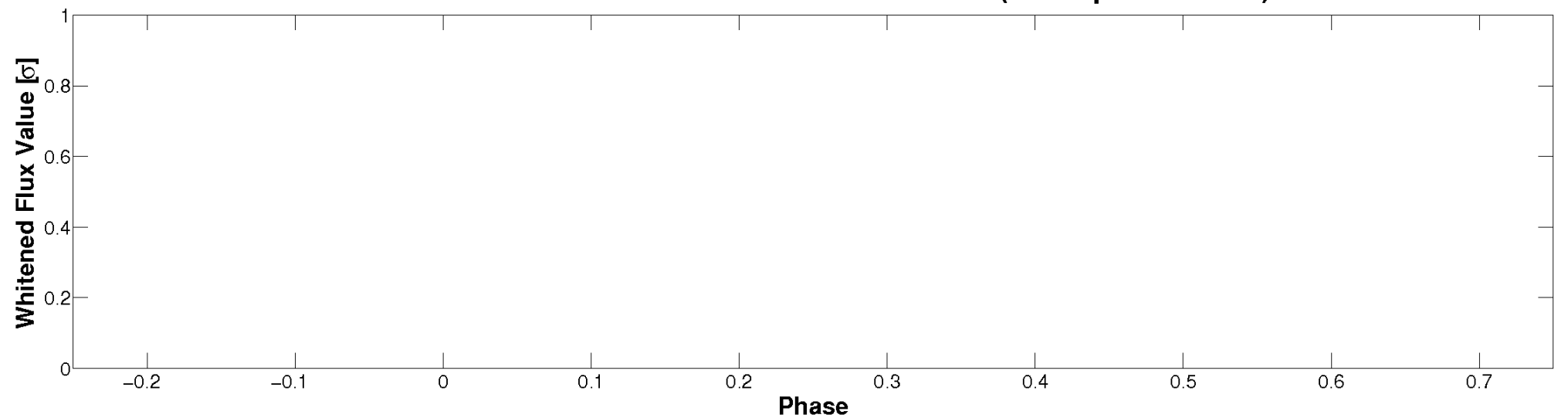
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

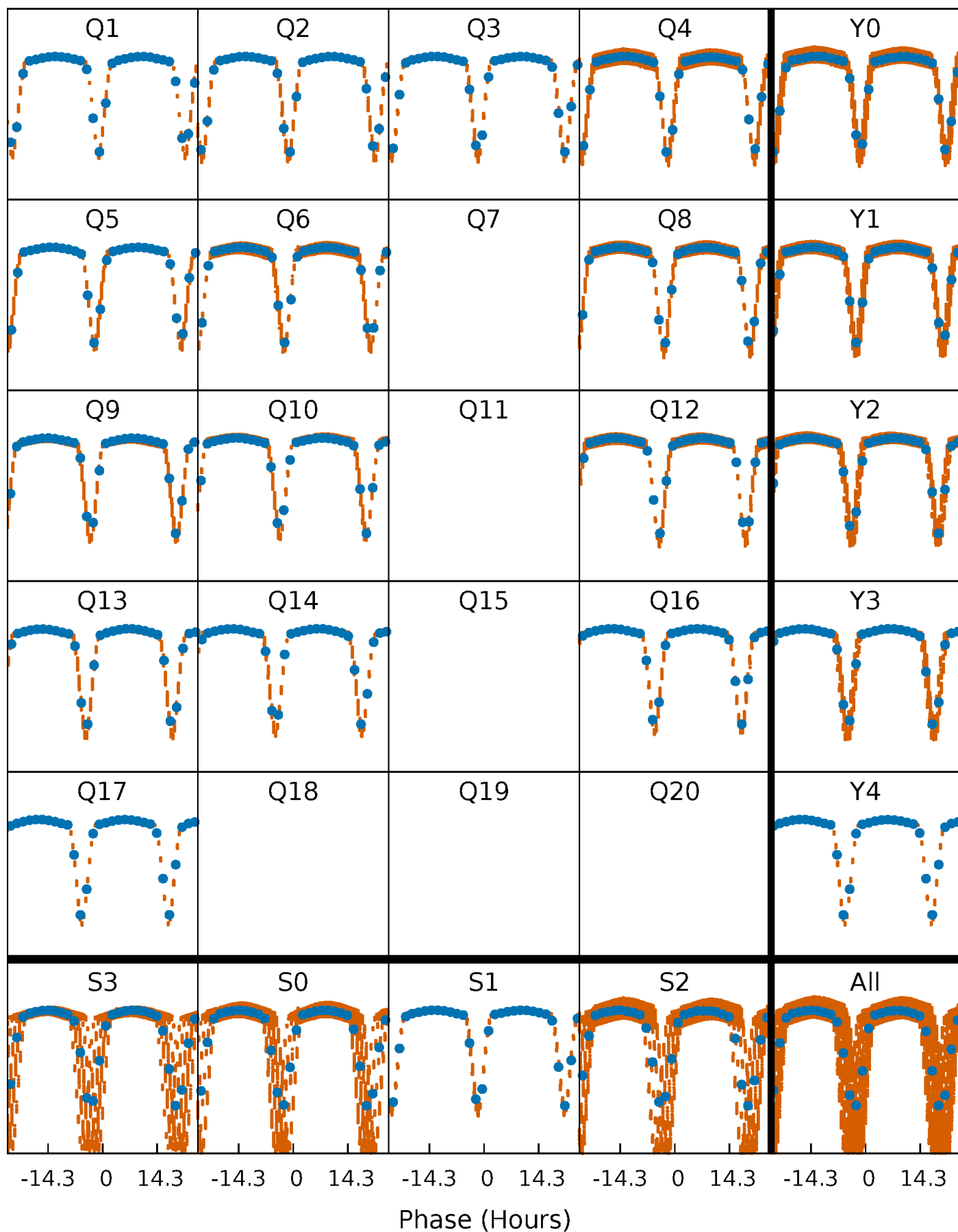


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



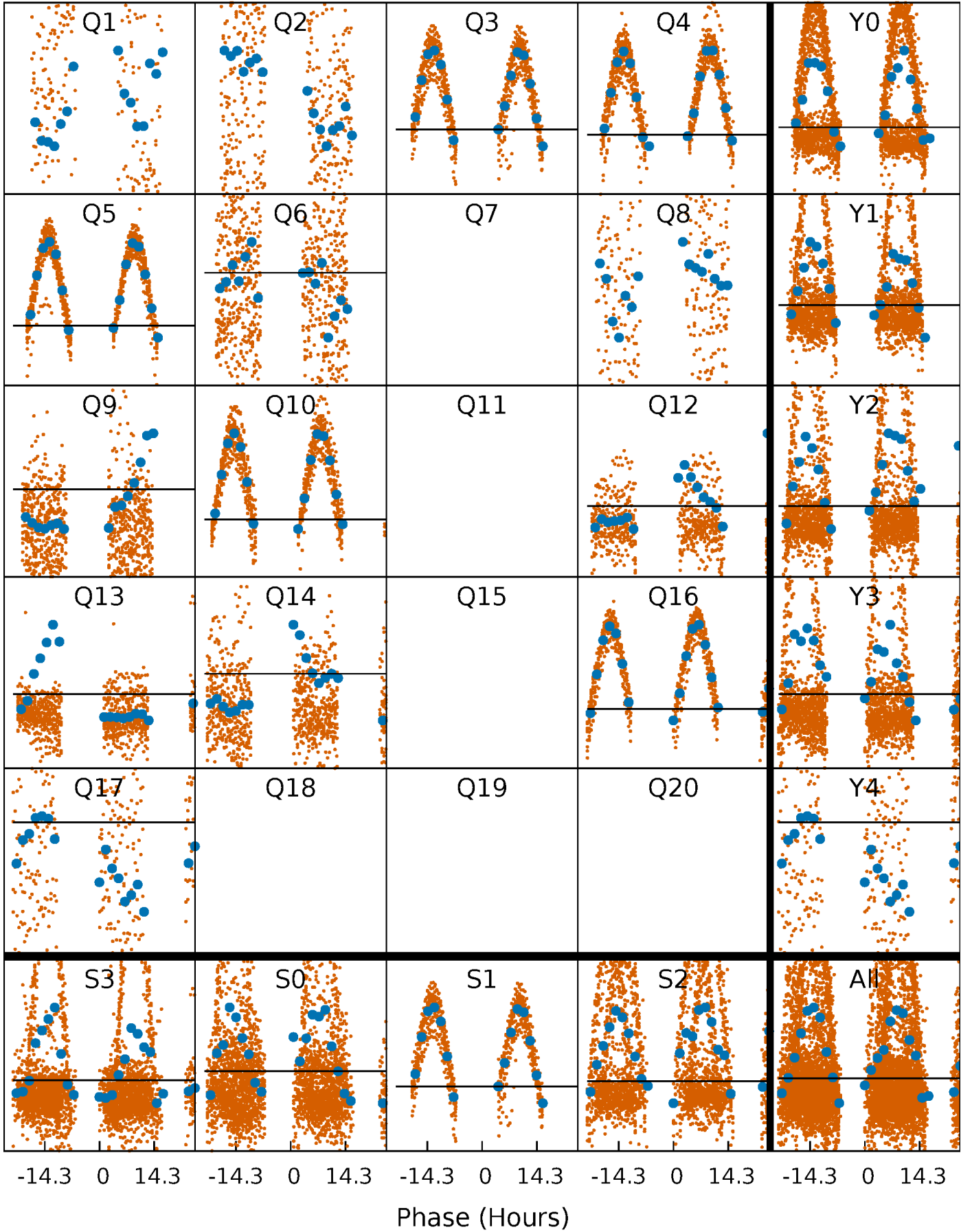
PDC Quarter-Phased Transit Curves

TCE 009912977-02 $P = 4.720287$ Days $T_0 = 135.638573$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 009912977-02 $P = 4.720287$ Days $T_0 = 135.638573$ (BKJD)

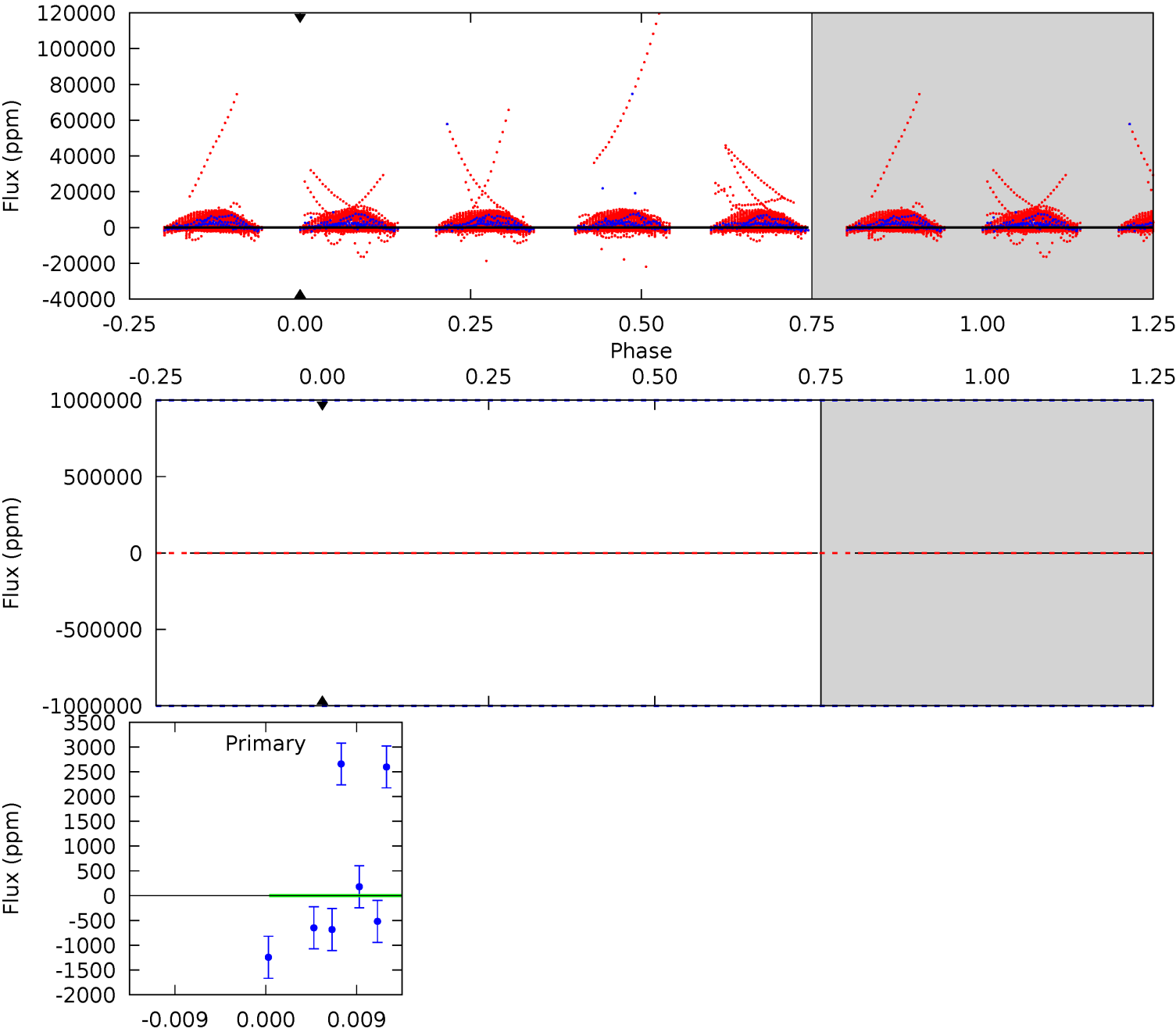


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

009912977-02, P = 4.720287 Days, E = 130.918286 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

This plot does not exist for this TCE.

Stellar Parameters For KIC 009912977

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5959^{+195}_{-195}	$4.126^{+0.338}_{-0.182}$	$-0.400^{+0.300}_{-0.300}$	$1.365^{+0.381}_{-0.466}$	$0.908^{+0.131}_{-0.087}$	$0.503^{+1.165}_{-0.239}$
	+3%/-3%	+8%/-4%	+75%/-75%	+28%/-34%	+14%/-10%	+232%/-48%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 009912977-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$11.72^{+12.91}_{-8.34}$	1842^{+165}_{-180}	3706^{+20763}_{-19553}	$6.313^{+3092.015}_{-1458.275}$
Alt.	N/A	N/A	N/A	N/A	N/A

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 $A_{obs} \gg 1.0$

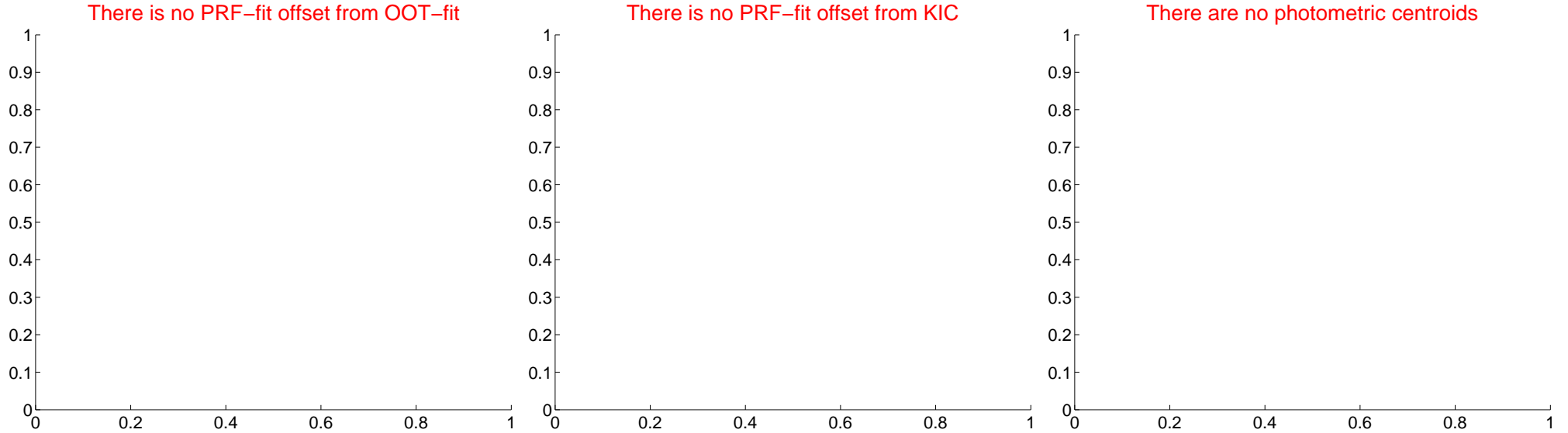
DV Centroid Data

Supplemental centroid analysis for 009912977-02. Kepler magnitude: 13.73. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	—	—	—	—

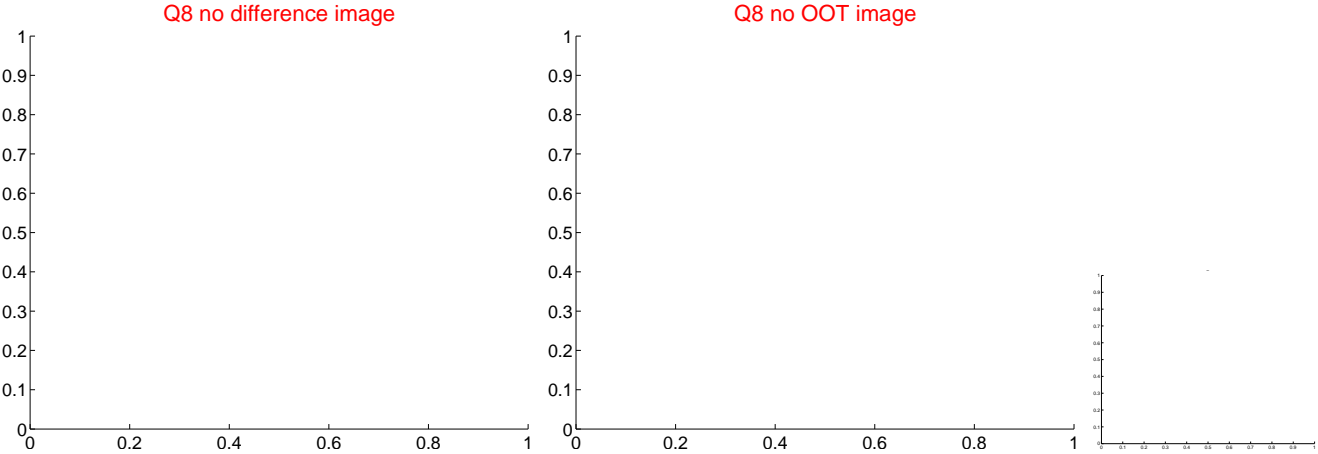
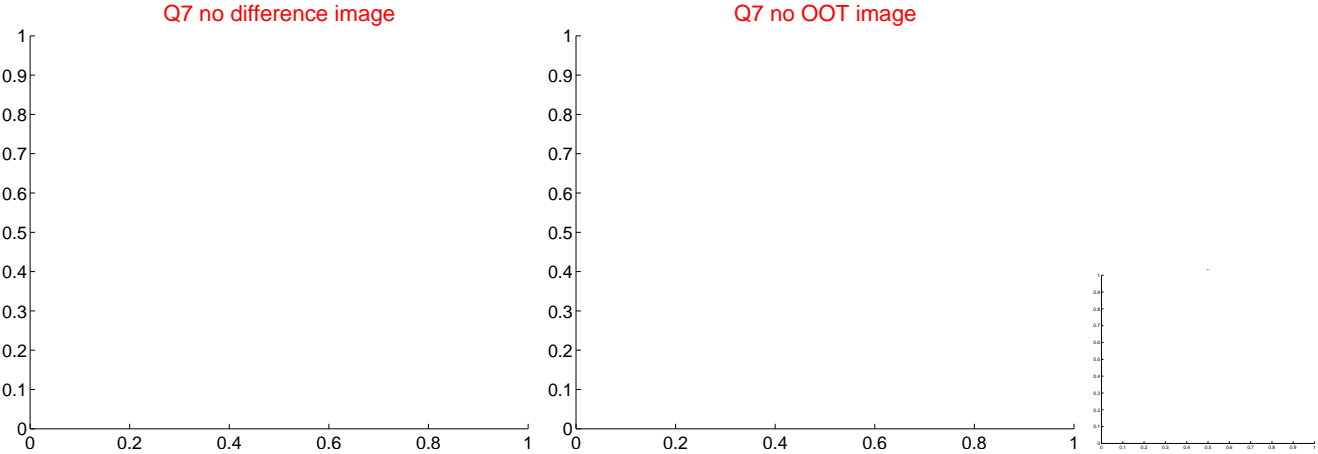
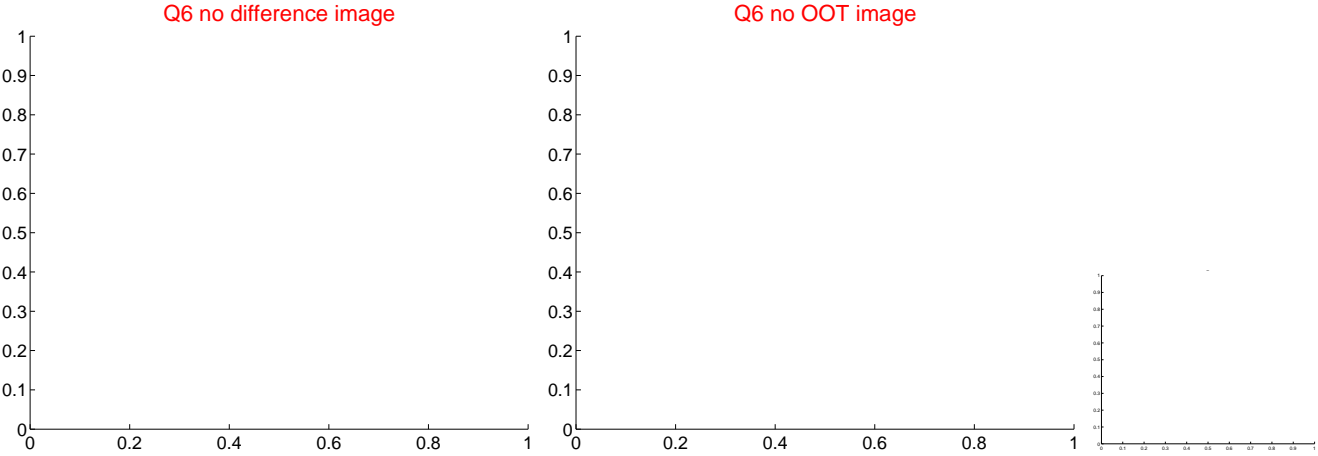
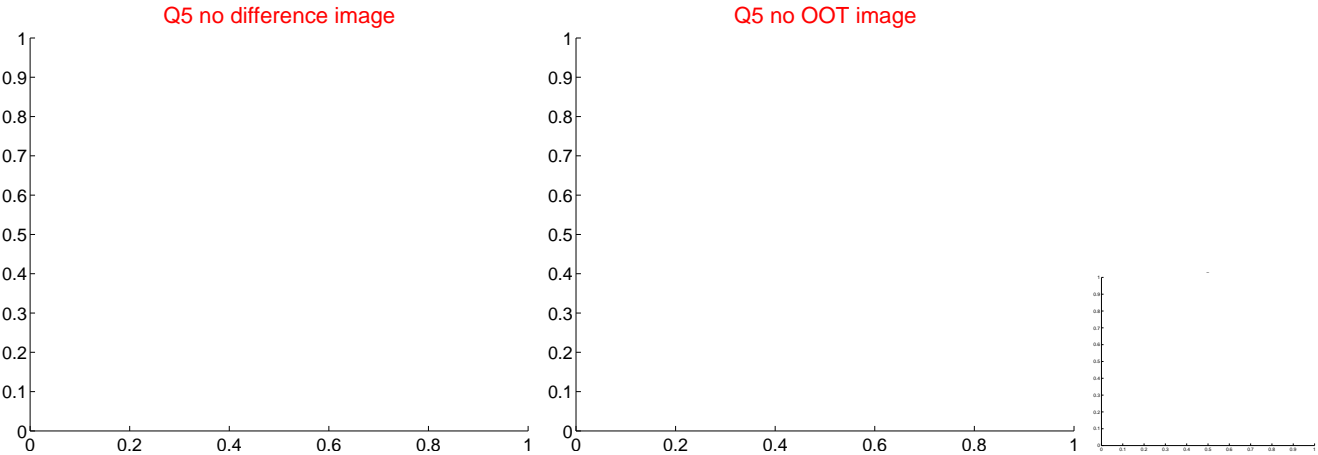


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

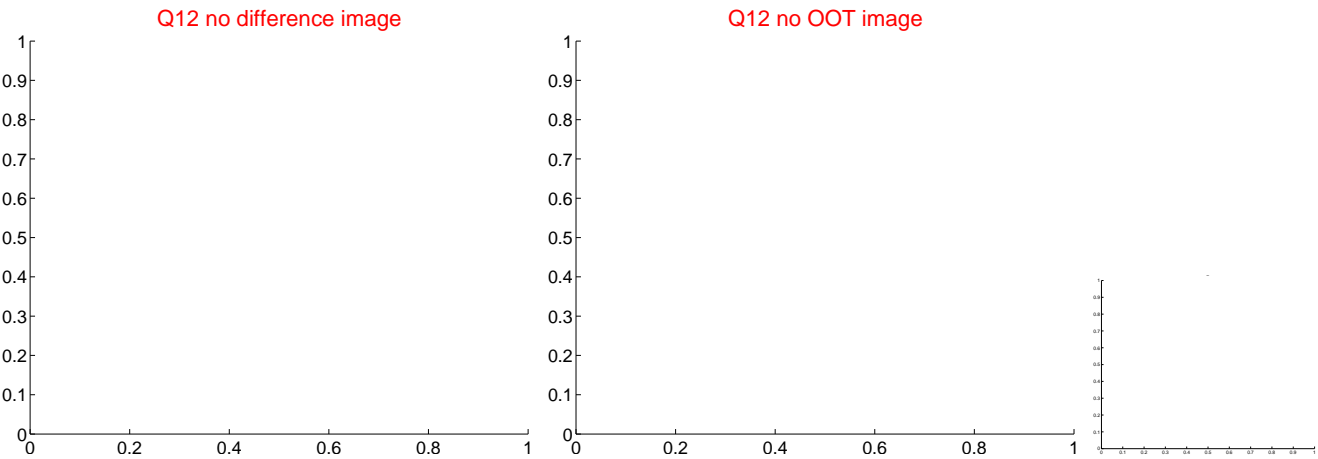
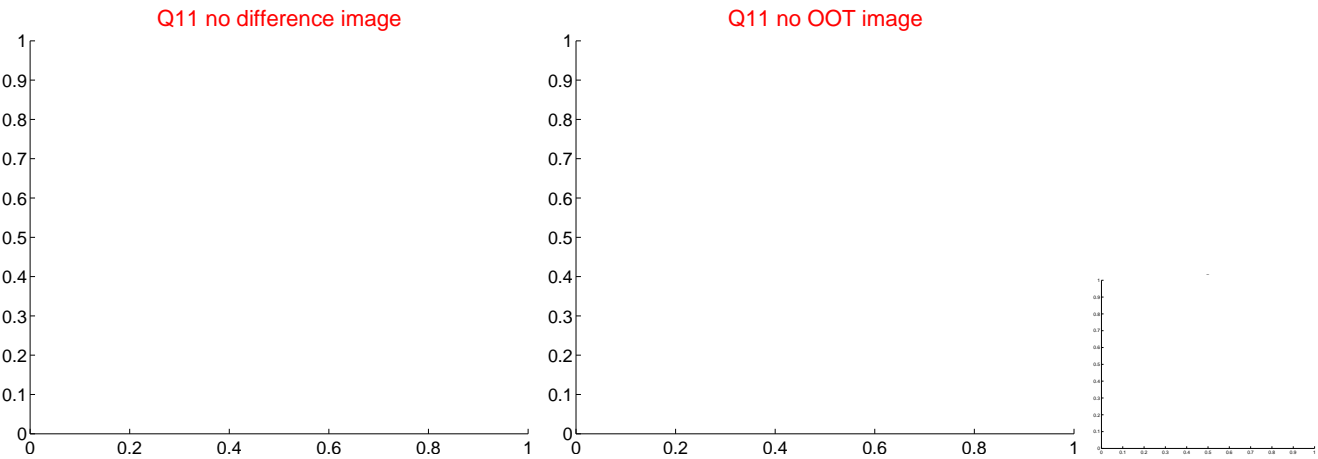
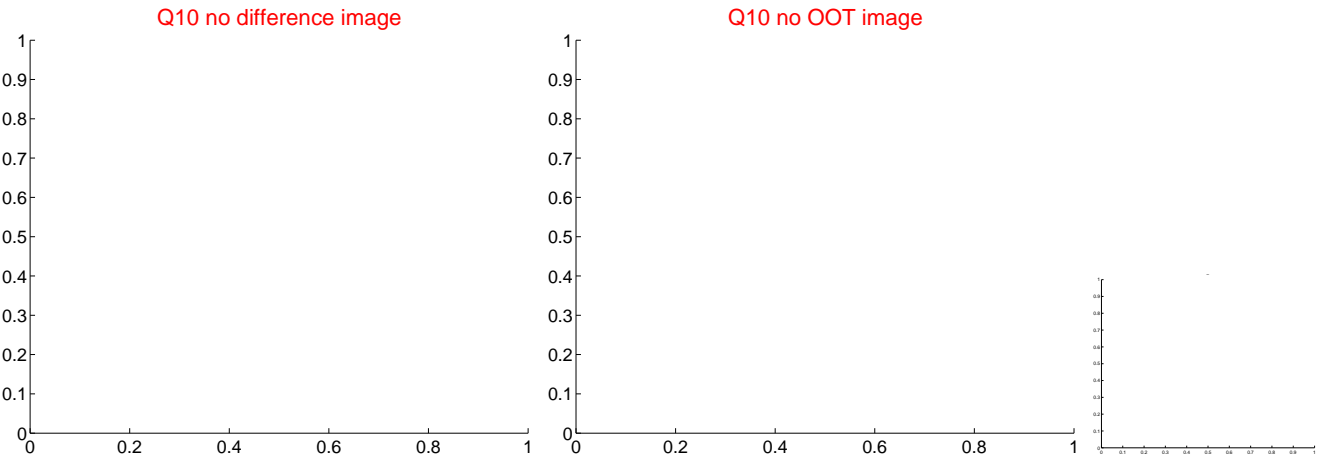
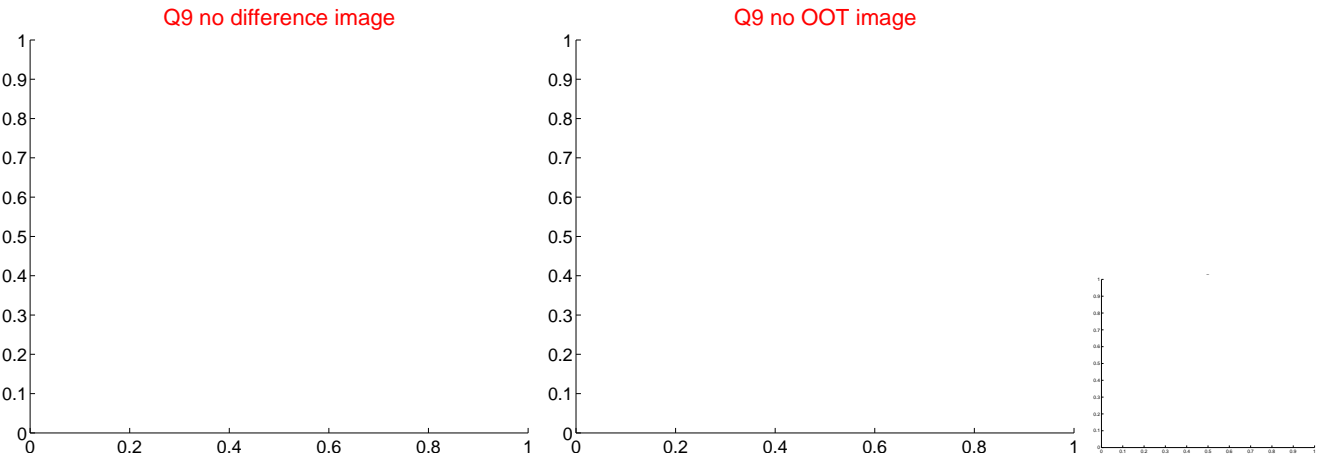
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



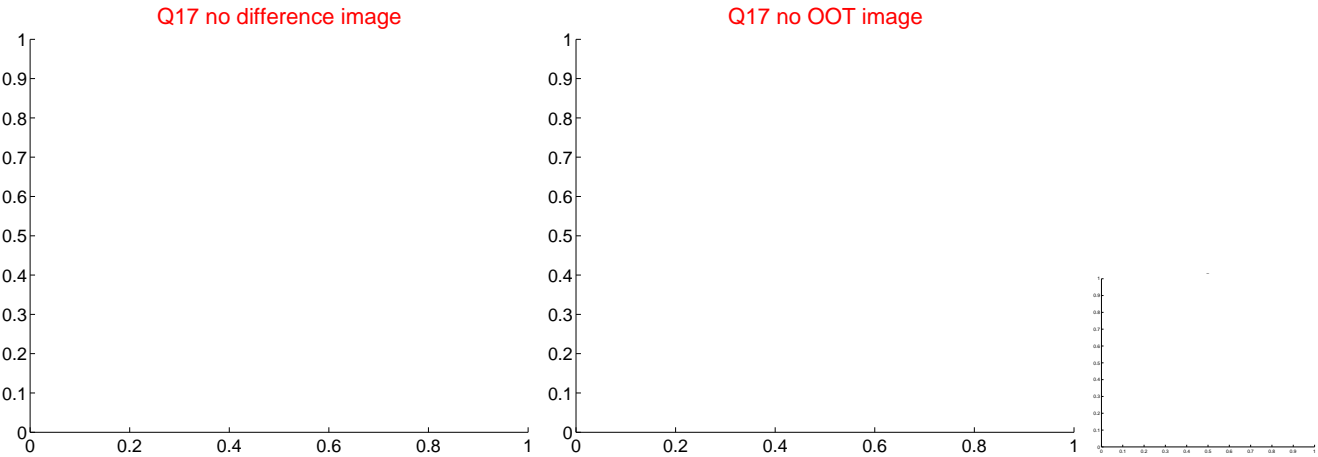
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



folded centroid time series figure for this object.

UKIRT Image

Declination

