

KIC 007212066

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})
007212066-01	OBS	3610.01	3.840490	134.447733	39578.0	2.865	2023.0	1426.7	0.82	5731	26.77	318.84
007212066-02	OBS	No	3.840493	132.533306	9142.2	2.781	481.5	472.7	0.82	5731	14.25	318.83

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007212066-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
007212066-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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.

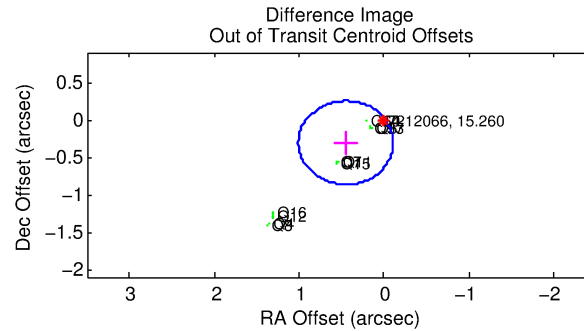
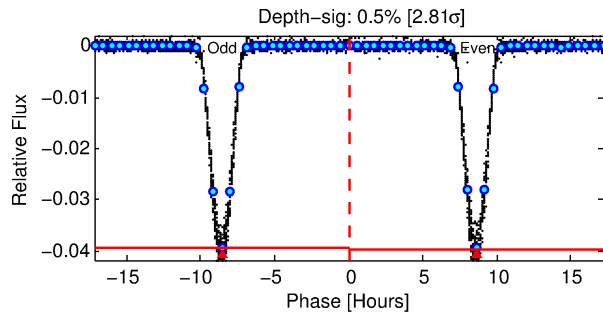
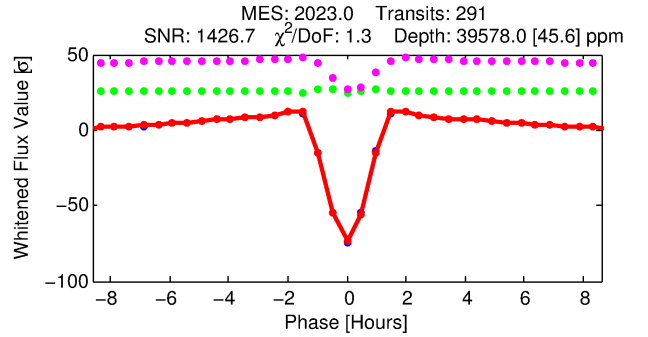
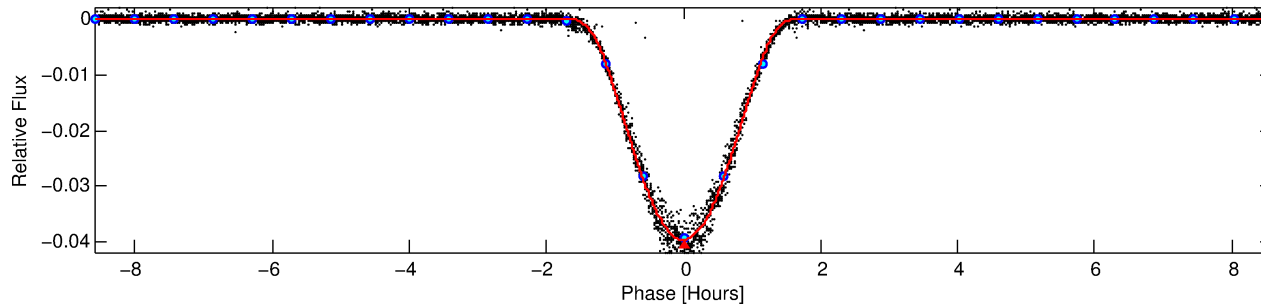
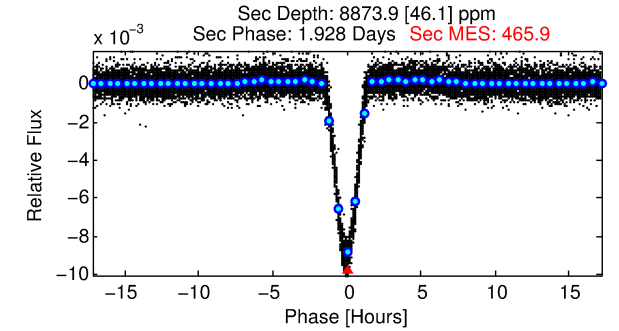
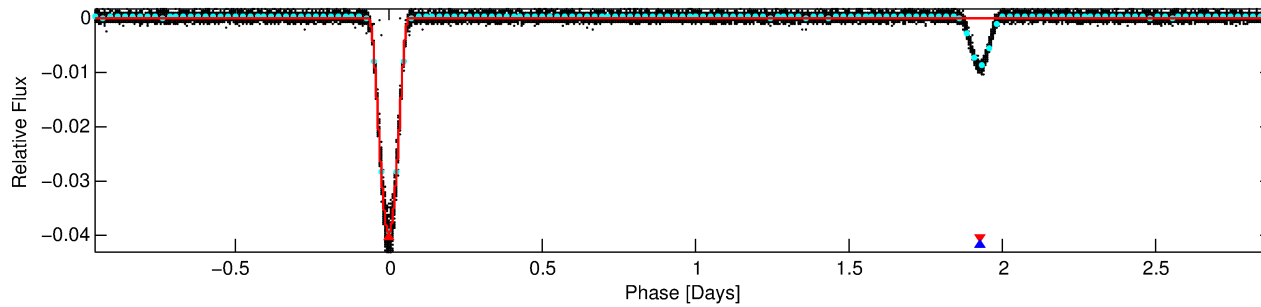
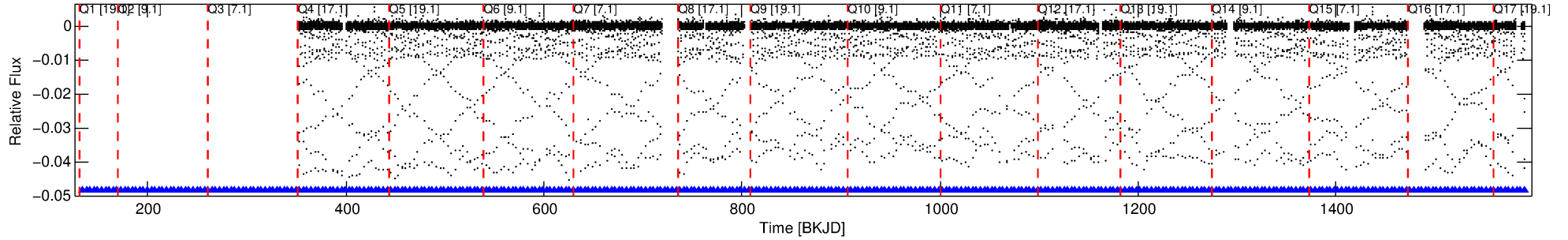
Ephemeris Match Information For 007212066-01

No Significant Match Found

DV One-Page Summary

KIC: 7212066 Candidate: 1 of 2 Period: 3.840 d
KOI: K03610.01 Corr: 0.997

Kp: 15.26 R*: 0.82 Rs Teff: 5731.0 K Logg: 4.53 Fe/H: -0.400



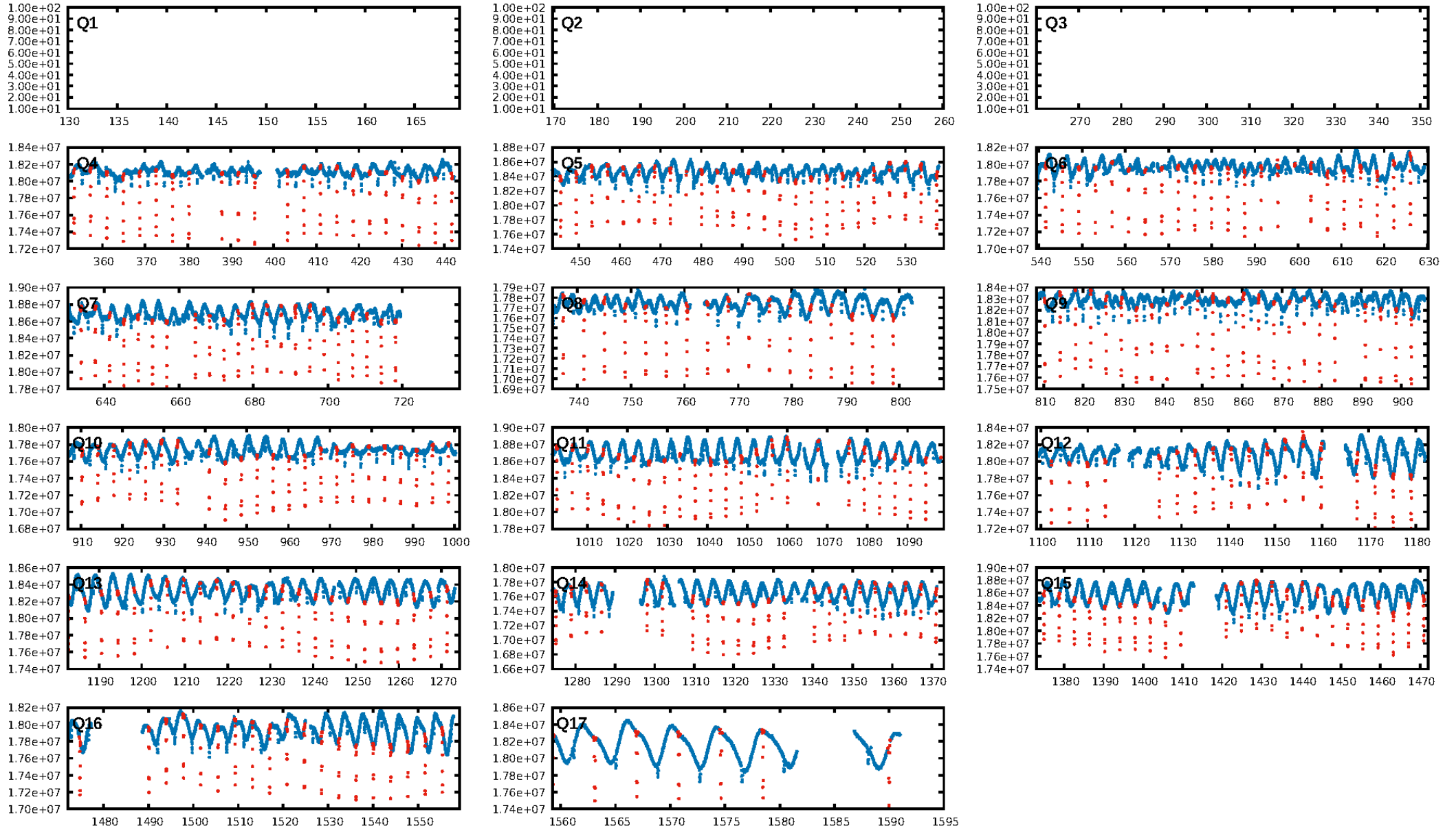
DV Fit Results:

Period = 3.84049 [0.00000] d
Epoch = 134.4477 [0.0000] BKJD
Rp/R* = 0.2981 [0.0143]
a/R* = 8.86 [0.02]
b = 0.97 [0.02]
Seff = 318.84 [107.01]
Teff = 1078 [90] K
Rp = 26.77 [7.17] Re
a = 0.0453 [0.0098] AU
Ag = 13.99 [4.52] [2.88σ]
Teffp = 3222 [132] K [13.42σ]

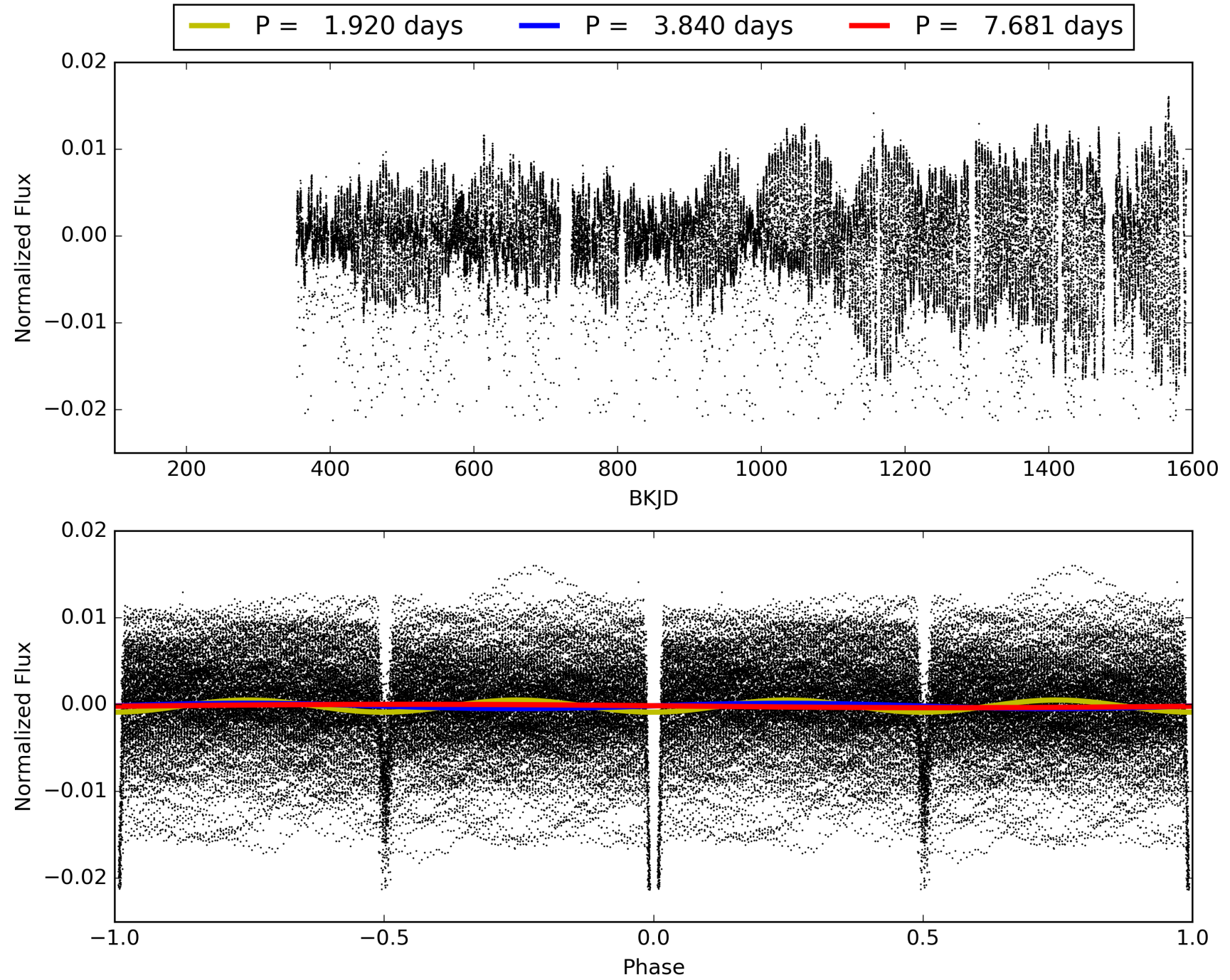
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [284/284]
GhostDiagnostic-chr: 3.876
Centroid-sig: 0.0%
Centroid-so: 0.890 arcsec [156.29σ]
OotOffset-rm: 0.544 arcsec [2.92σ]
KicOffset-rm: 0.044 arcsec [0.62σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 007212066-01, PDC Light Curves

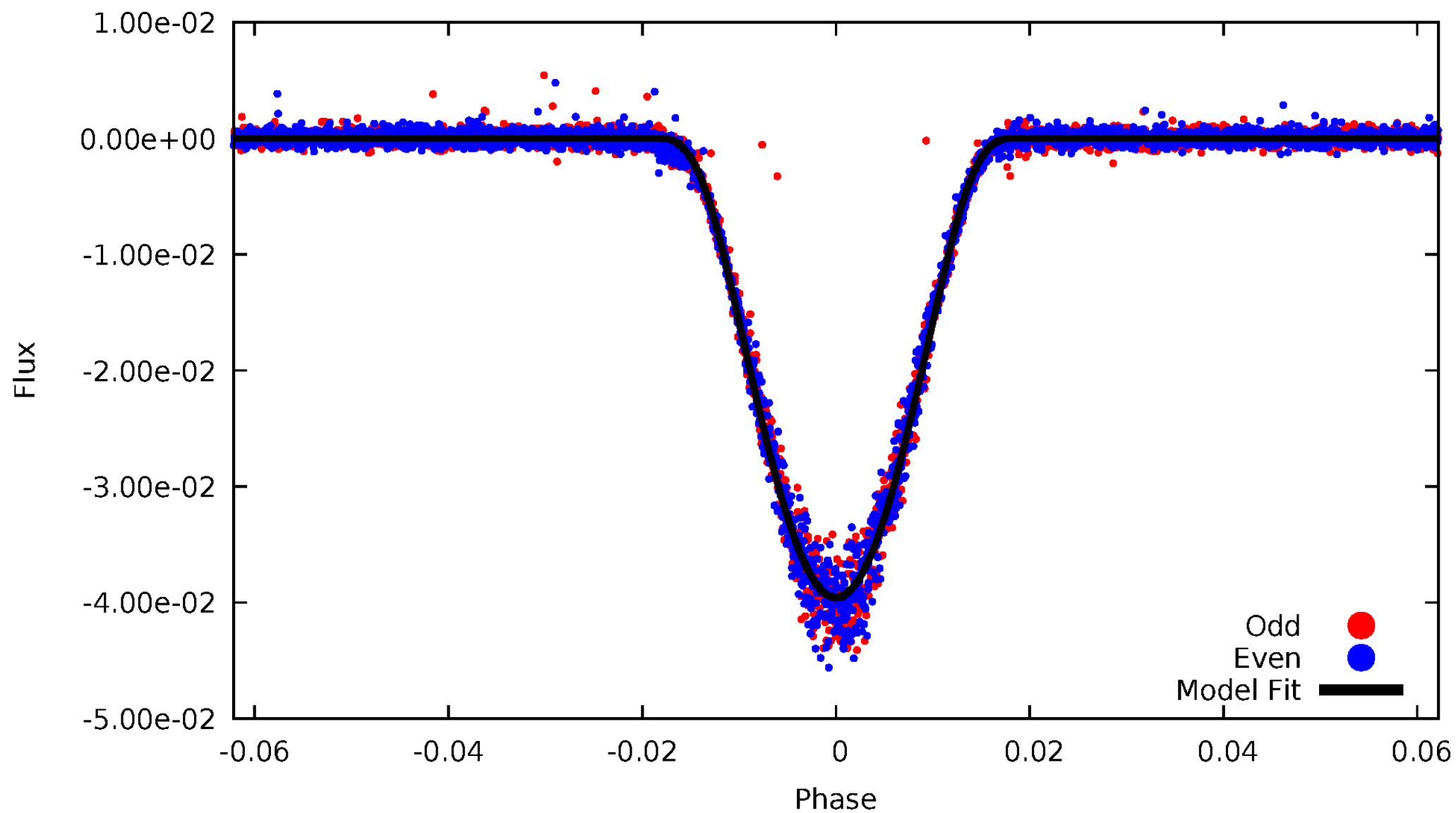


TCE 007212066-01



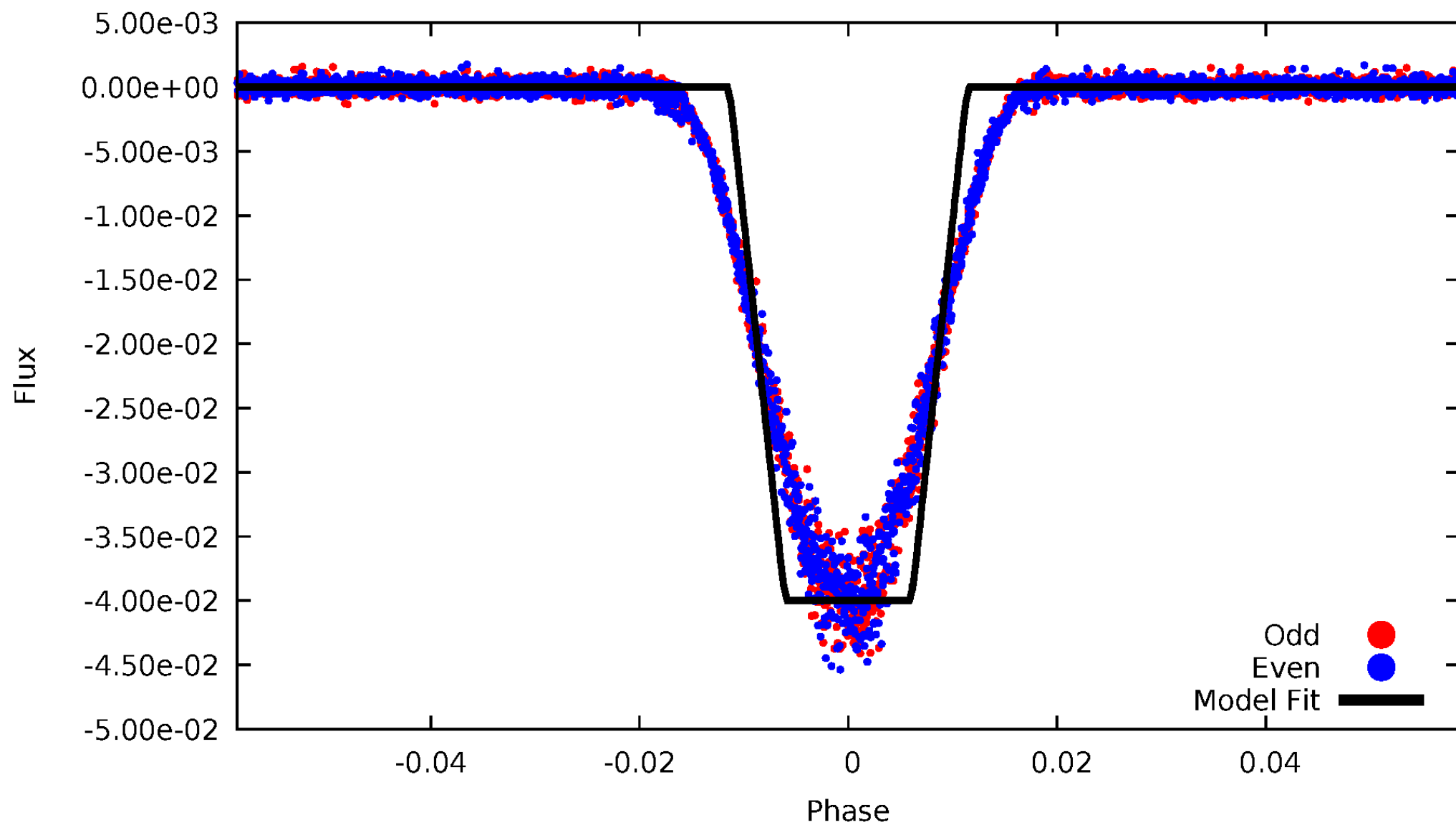
DV Odd/Even

TCE 007212066-01



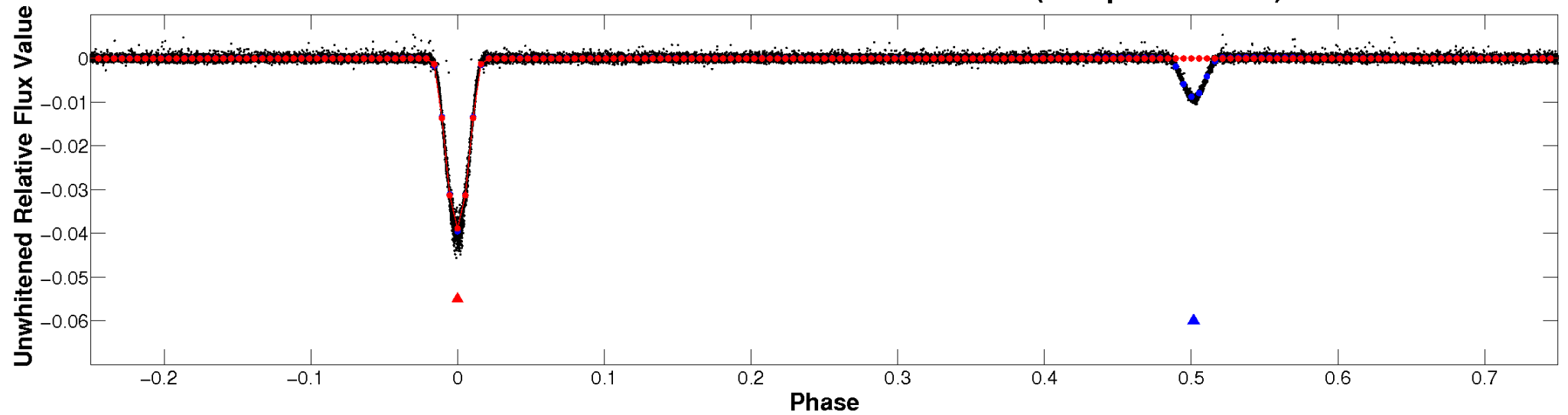
ALT Odd/Even

TCE 007212066-01

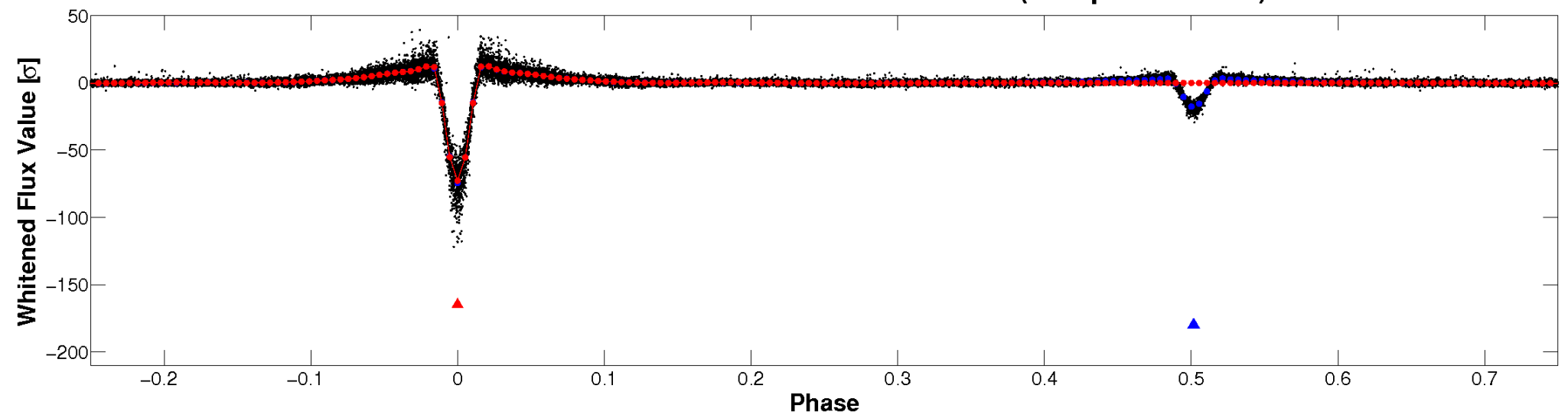


Non-Whitened Vs. Whitened Light Curve

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

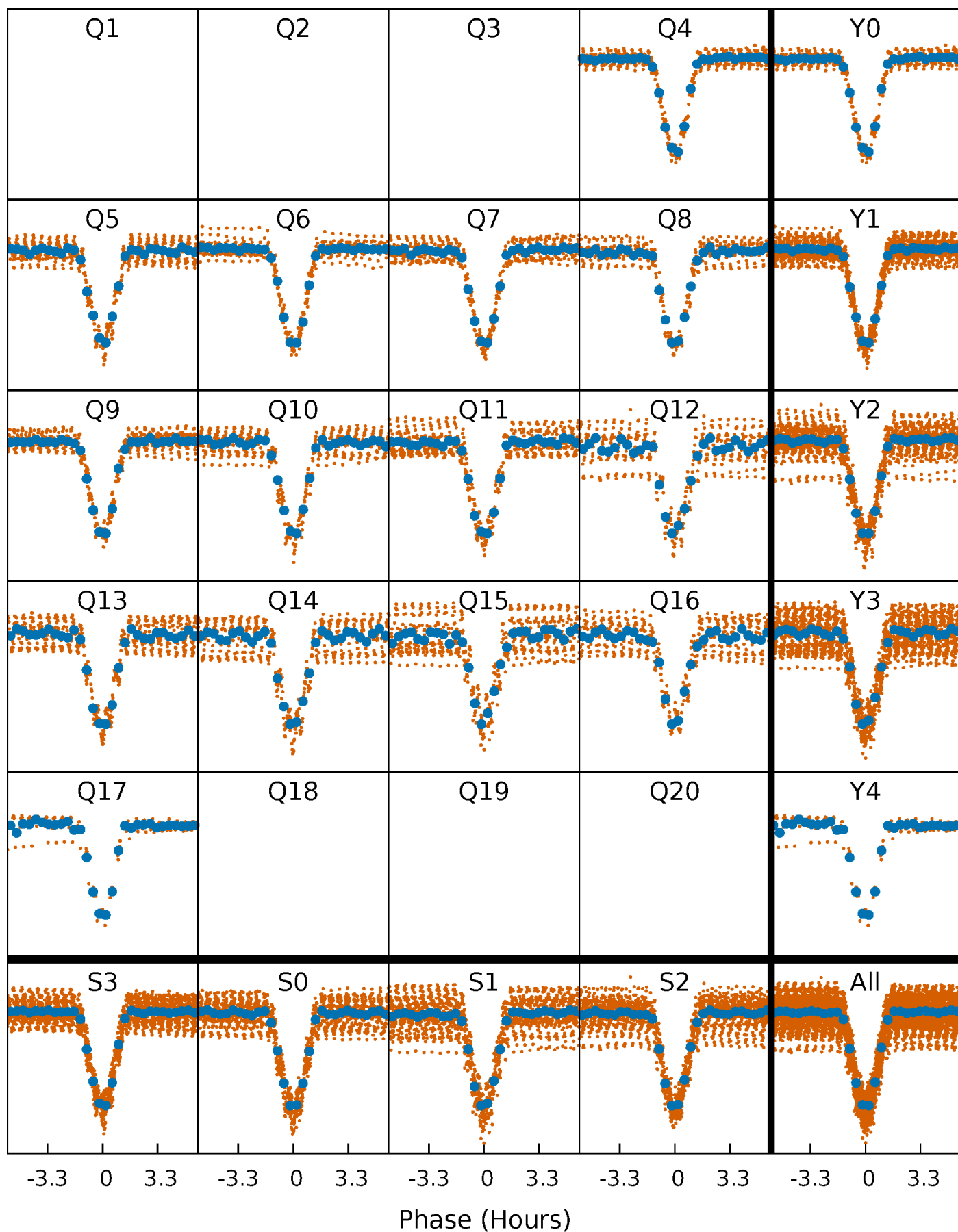


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



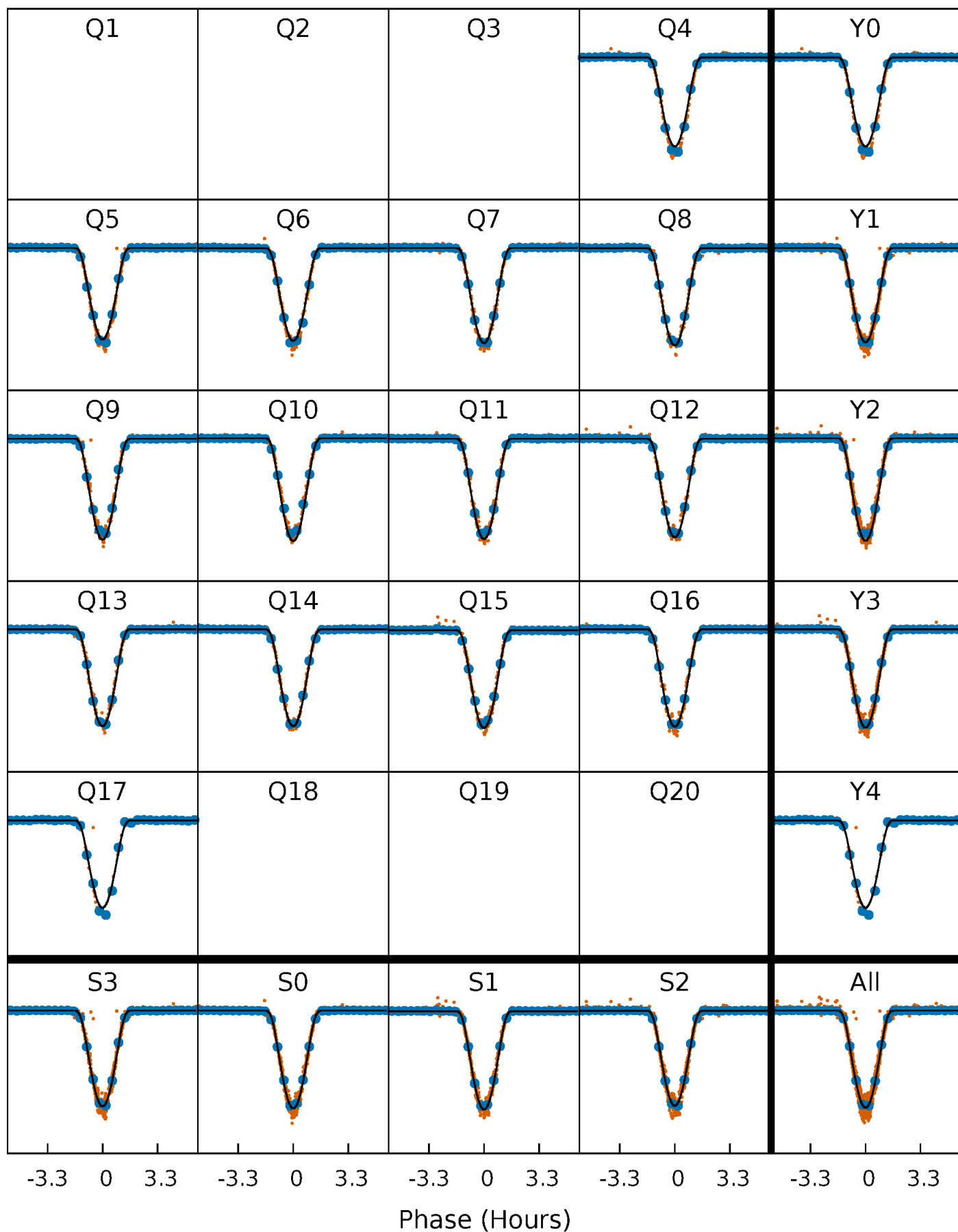
PDC Quarter-Phased Transit Curves

TCE 007212066-01 P= 3.840490 Days $T_0=134.447733$ (BKJD)



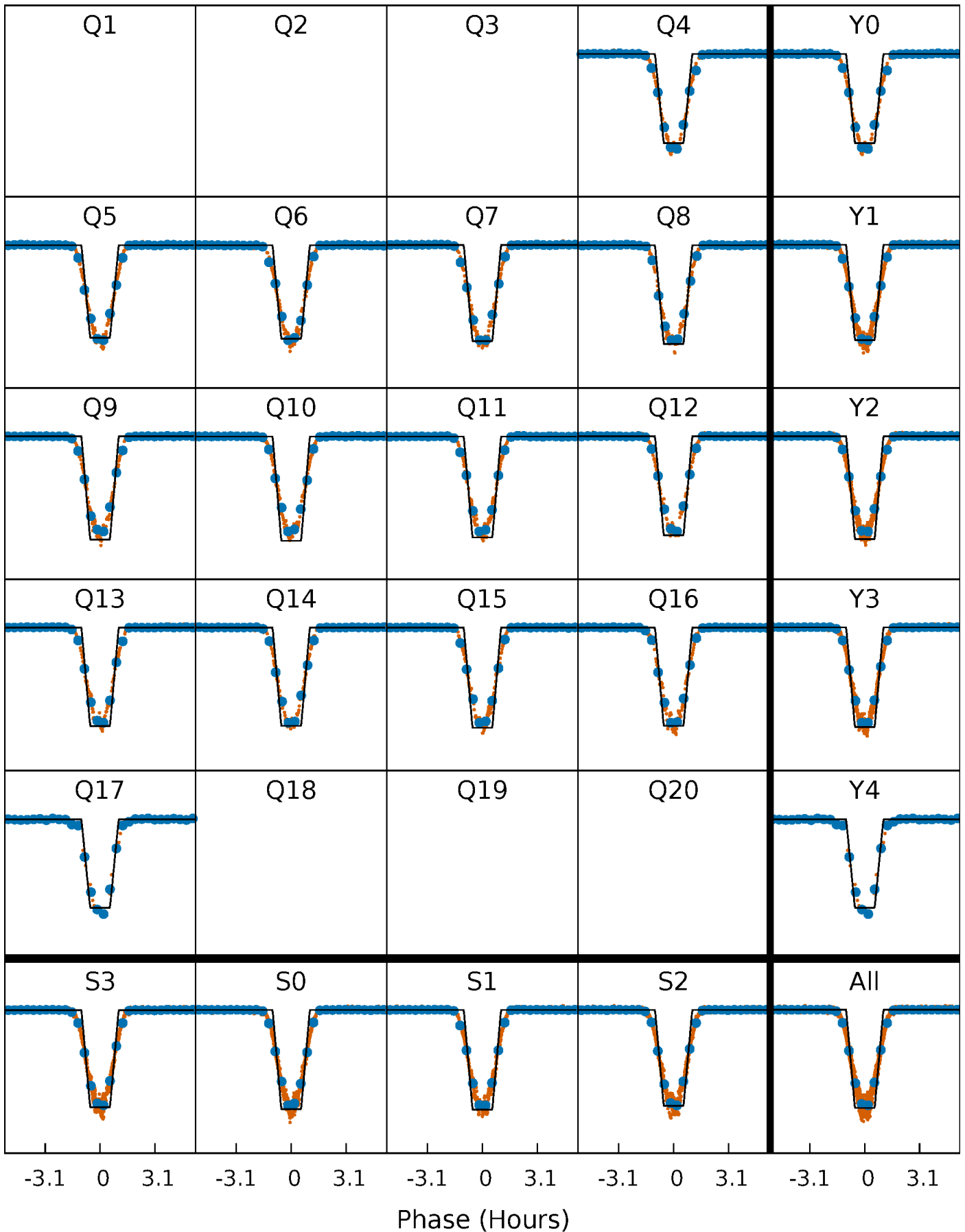
DV Quarter-Phased Transit Curves

TCE 007212066-01 P= 3.840490 Days $T_0=134.447733$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

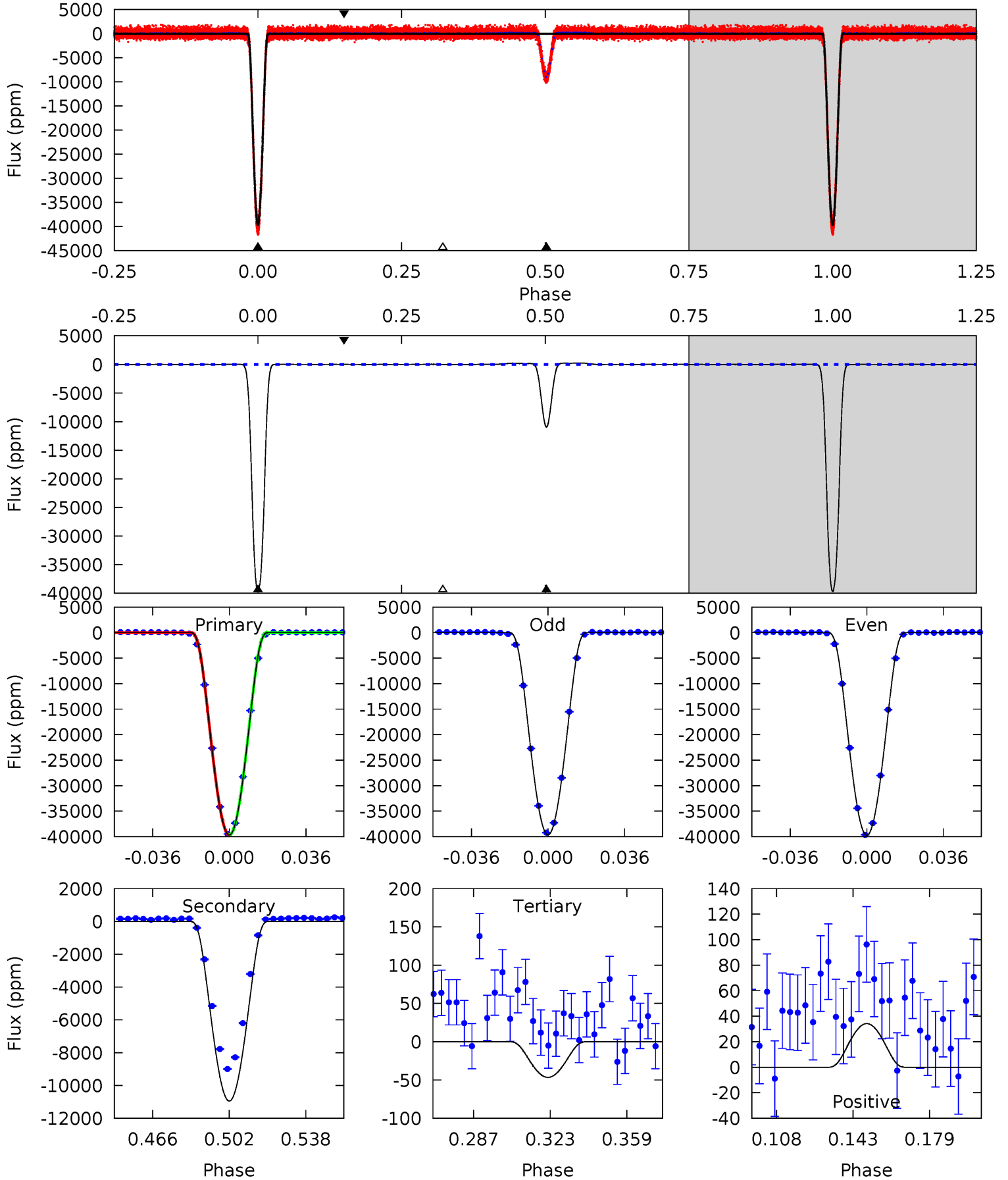
TCE 007212066-01 P= 3.840488 Days $T_0=134.447929$ (BKJD)



DV Model-Shift Uniqueness Test

007212066-01, P = 3.840490 Days, E = 134.447733 Days

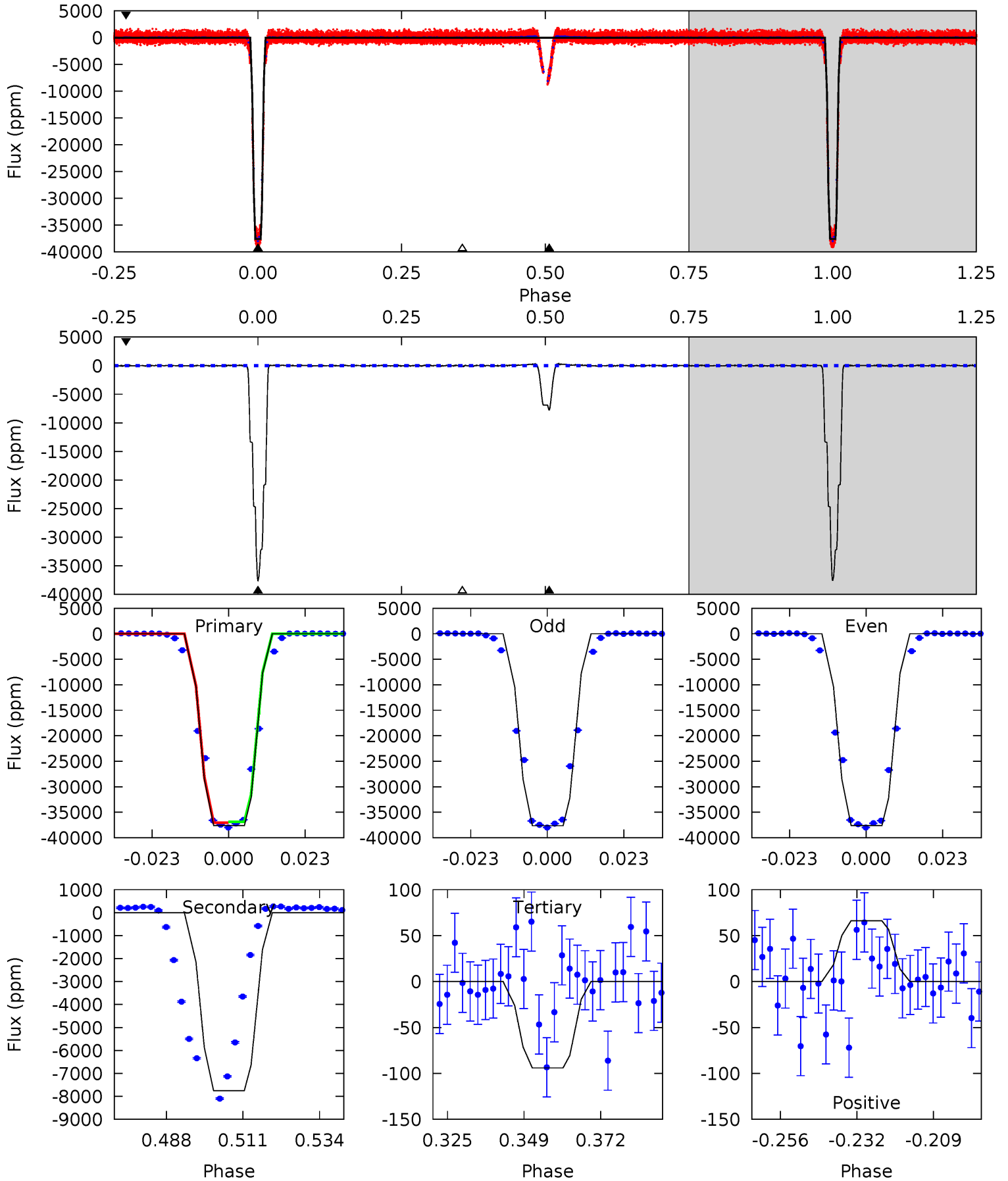
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3619	998.4	4.25	3.12	4.78	2.10	5.38	3615	3616	994.1	995.3	3.51	0.99	0.01	0.51



Alt Model-Shift Uniqueness Test

007212066-01, P = 3.840488 Days, E = 134.447929 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1835	378.3	4.59	3.23	4.86	2.27	2.42	1830	1832	373.7	375.0	0.34	1.00	0.01	4.43



Stellar Parameters For KIC 007212066

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5731^{+190}_{-190}	$4.532^{+0.066}_{-0.165}$	$-0.400^{+0.300}_{-0.300}$	$0.823^{+0.217}_{-0.087}$	$0.841^{+0.105}_{-0.079}$	$2.121^{+0.609}_{-0.940}$
	+3%/-3%	+1%/-4%	+75%/-75%	+26%/-11%	+12%/-9%	+29%/-44%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007212066-01 / KOI 3610.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-10947 ± 11	$27.27^{+3.70}_{-2.37}$	1527^{+91}_{-77}	3781^{+109}_{-119}	17^{+3}_{-3}
Alt.	-7752 ± 20	$18.47^{+2.63}_{-2.00}$	1525^{+102}_{-74}	4085^{+148}_{-147}	26^{+6}_{-6}

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

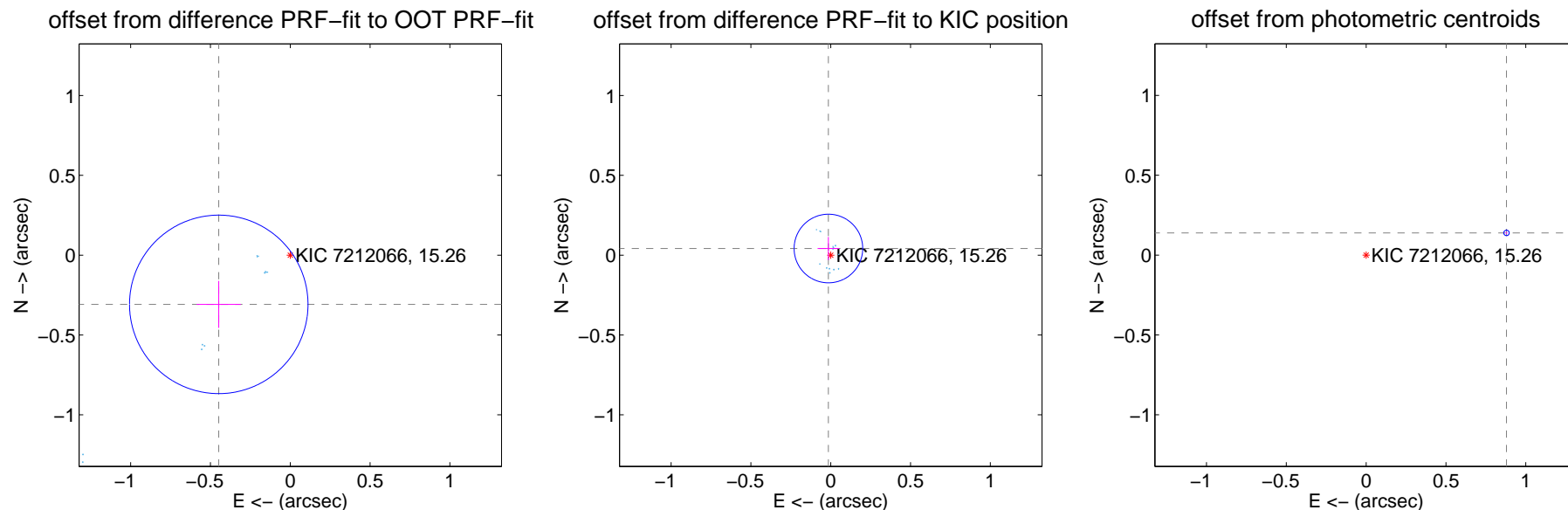
DV Centroid Data

Supplemental centroid analysis for 007212066-01. Kepler magnitude: 15.26. Transit SNR 1426.67

There are 14 quarters with good PRF difference image offsets

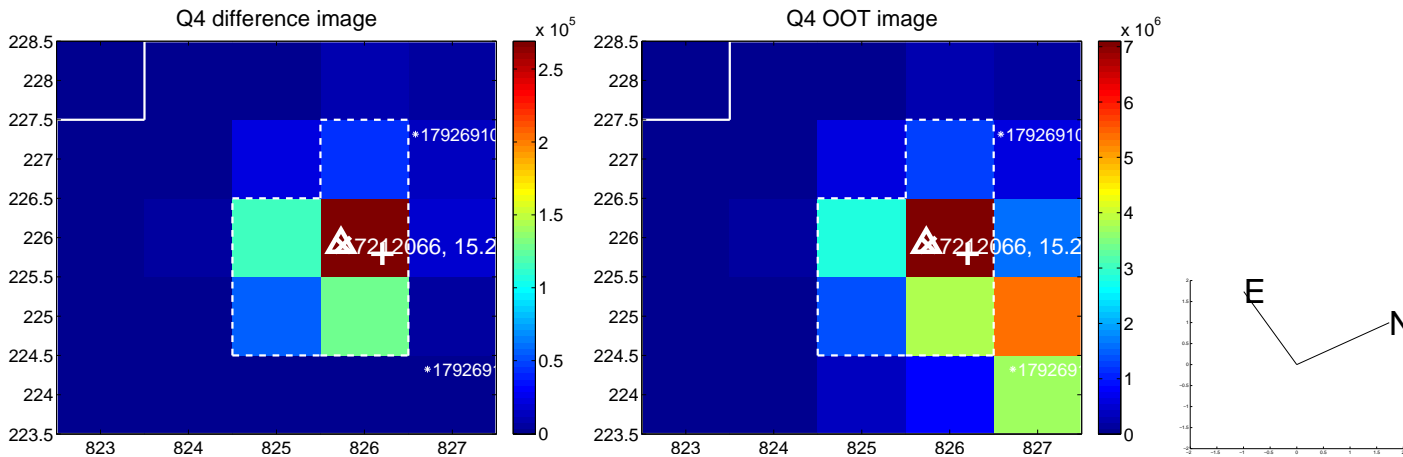
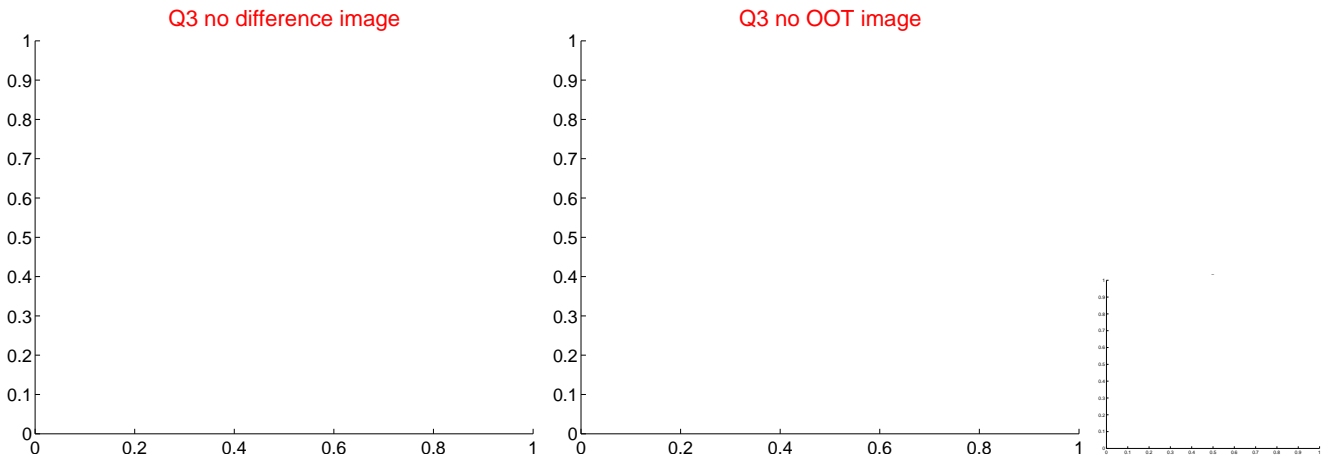
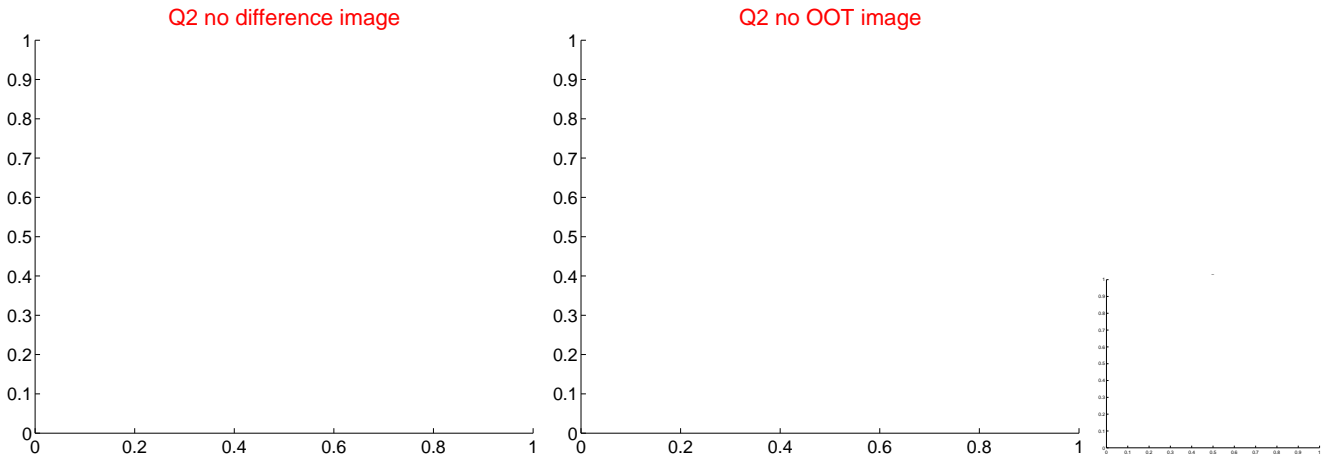
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.544 ± 0.186	2.92	0.448 ± 0.139	-0.308 ± 0.147
PRF-fit source offset from KIC position	0.044 ± 0.072	0.62	0.014 ± 0.068	0.042 ± 0.072
photometric centroid source offset	0.89 ± 0.01	156.29	-0.88 ± 0.01	0.14 ± 0.00

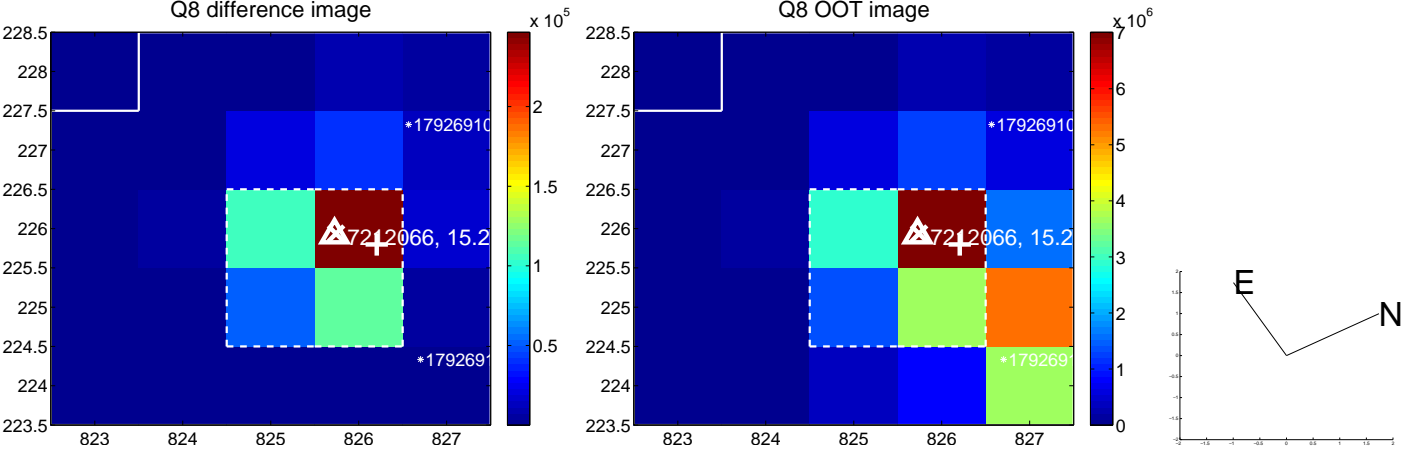
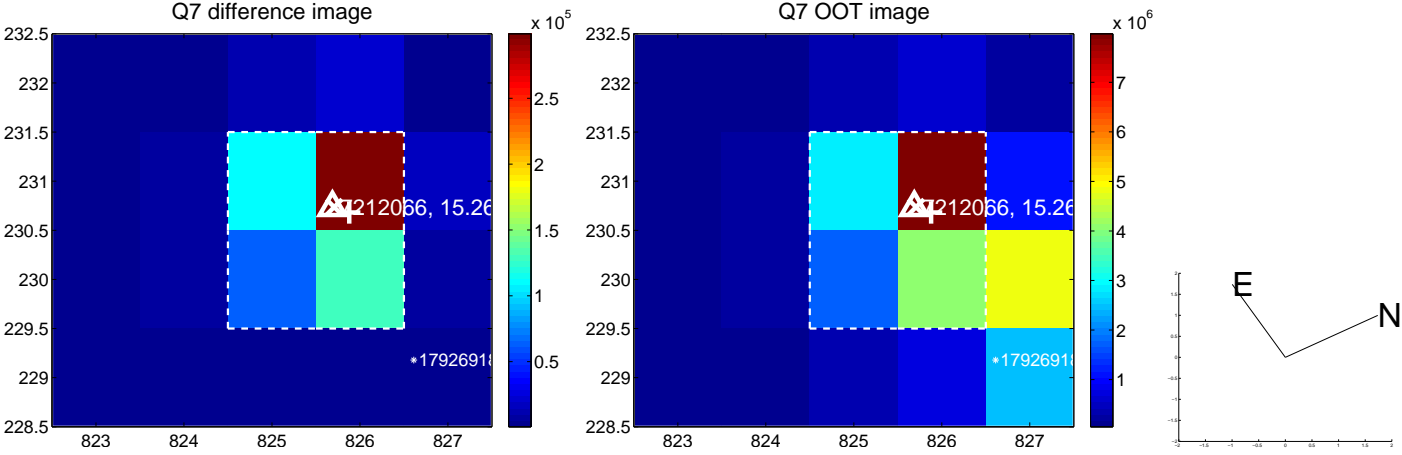
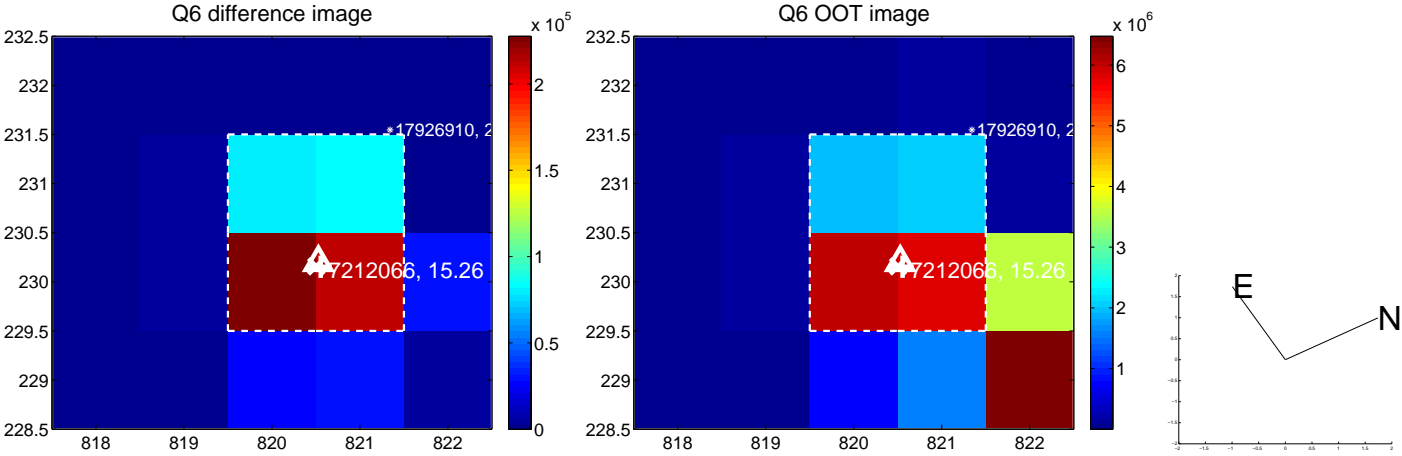
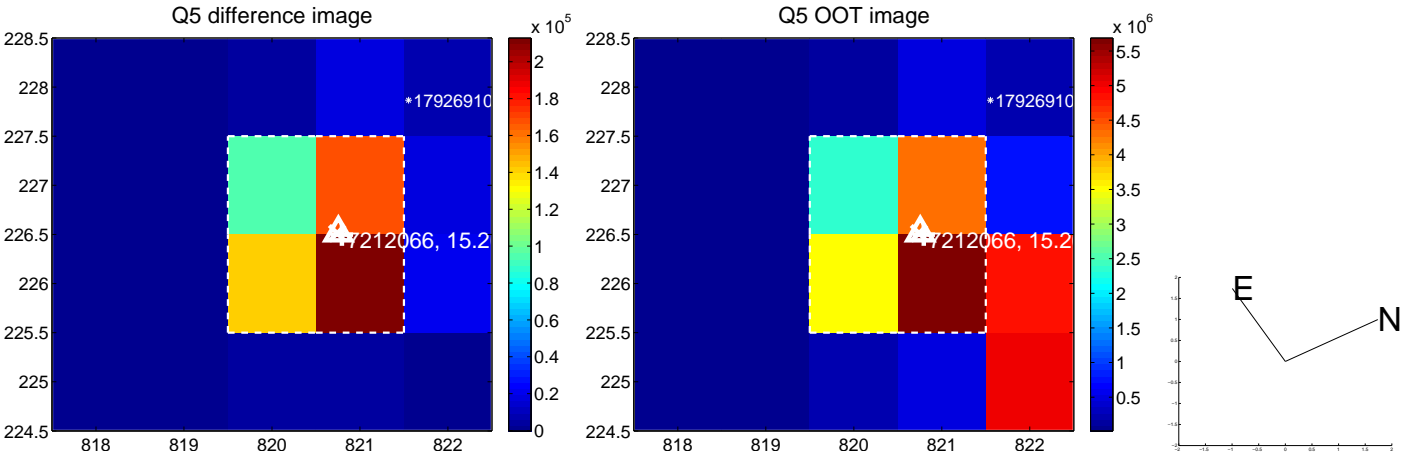


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

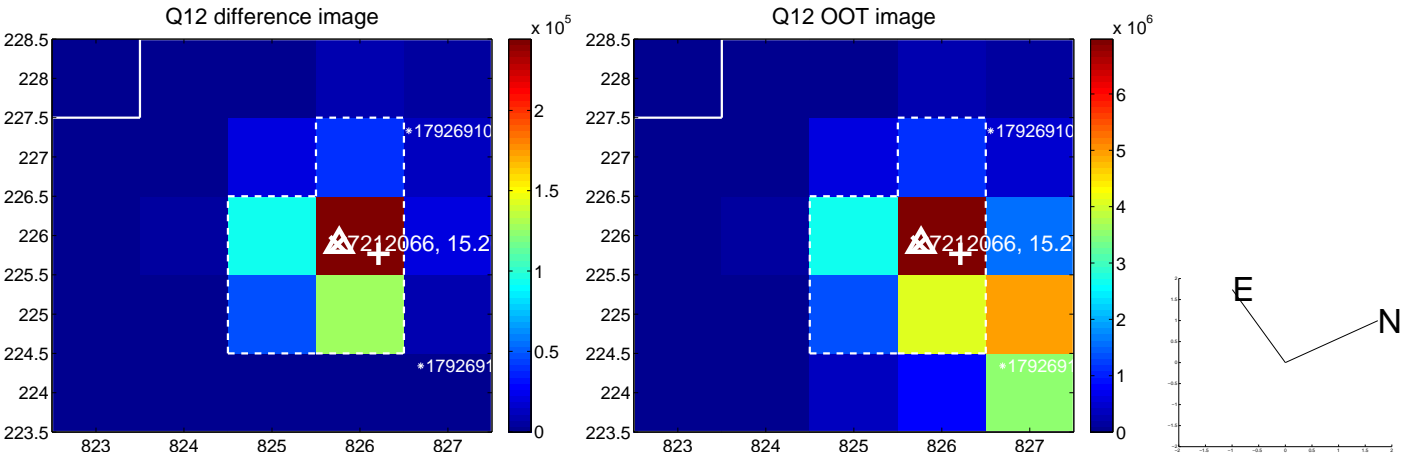
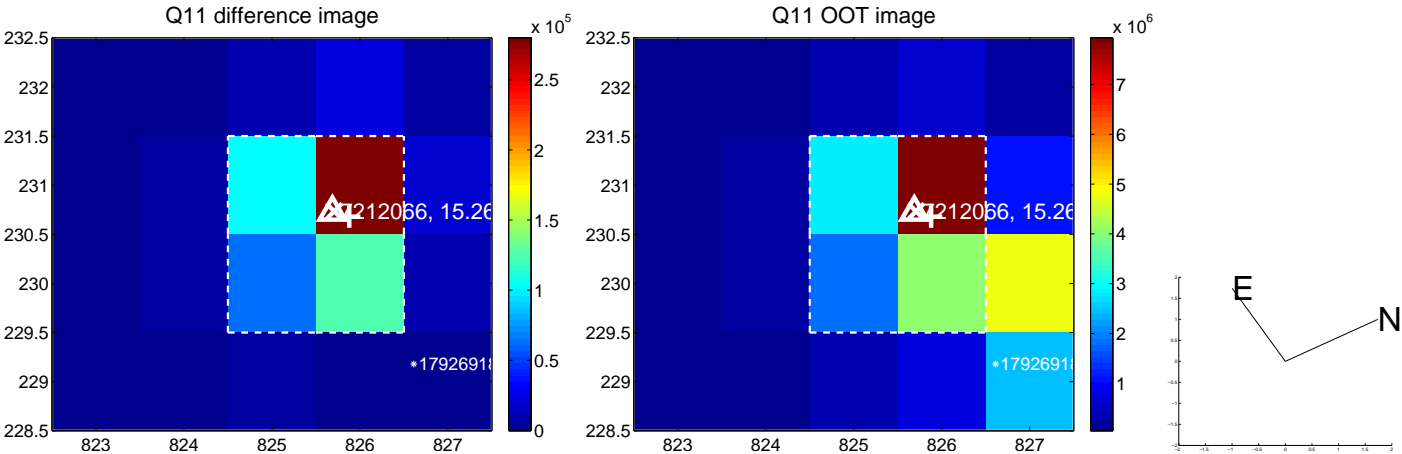
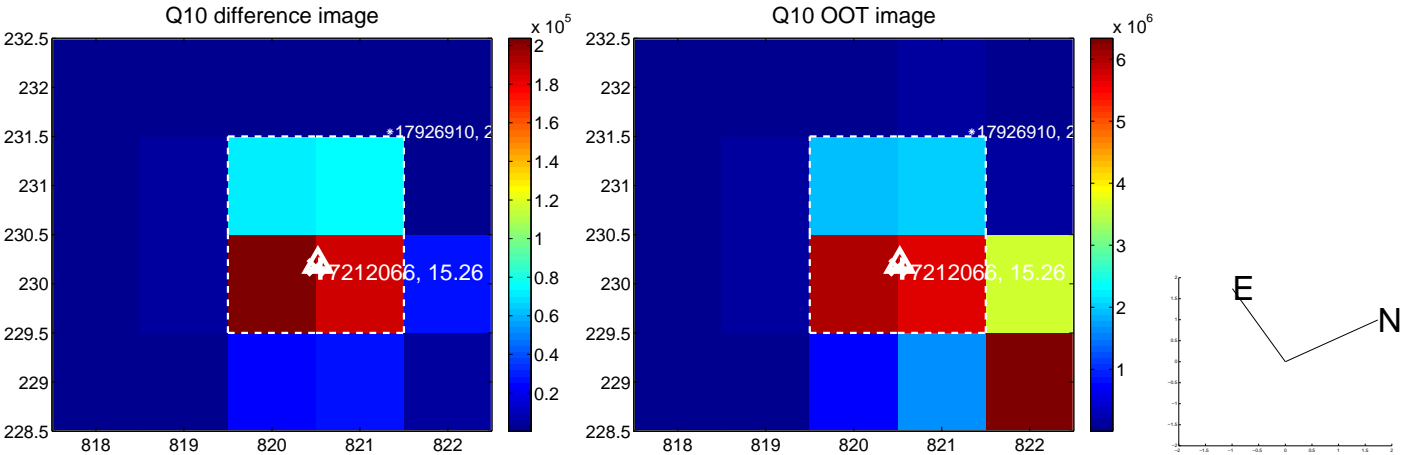
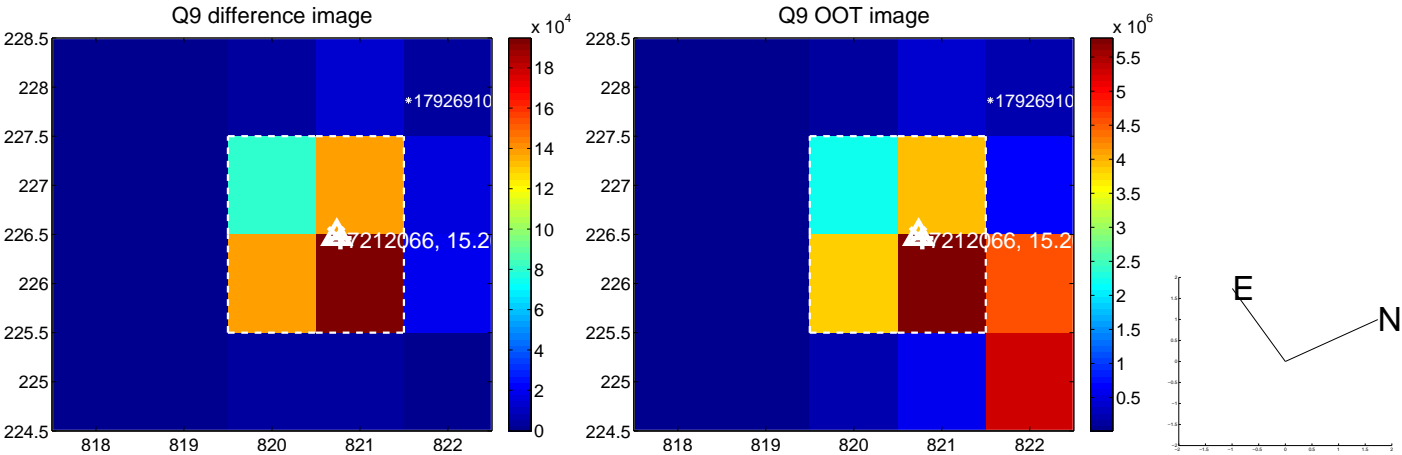
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



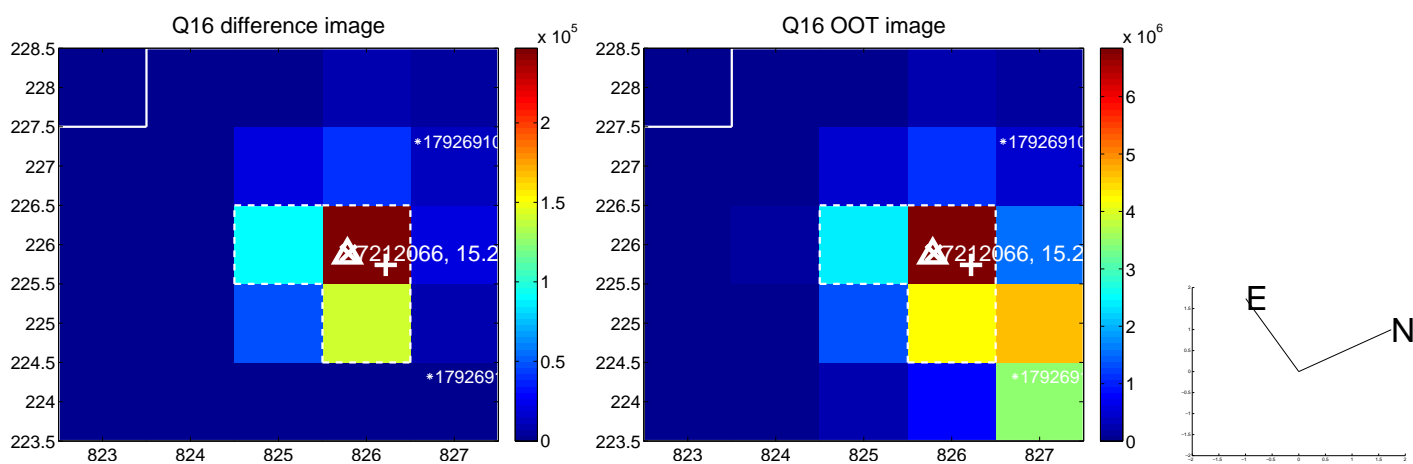
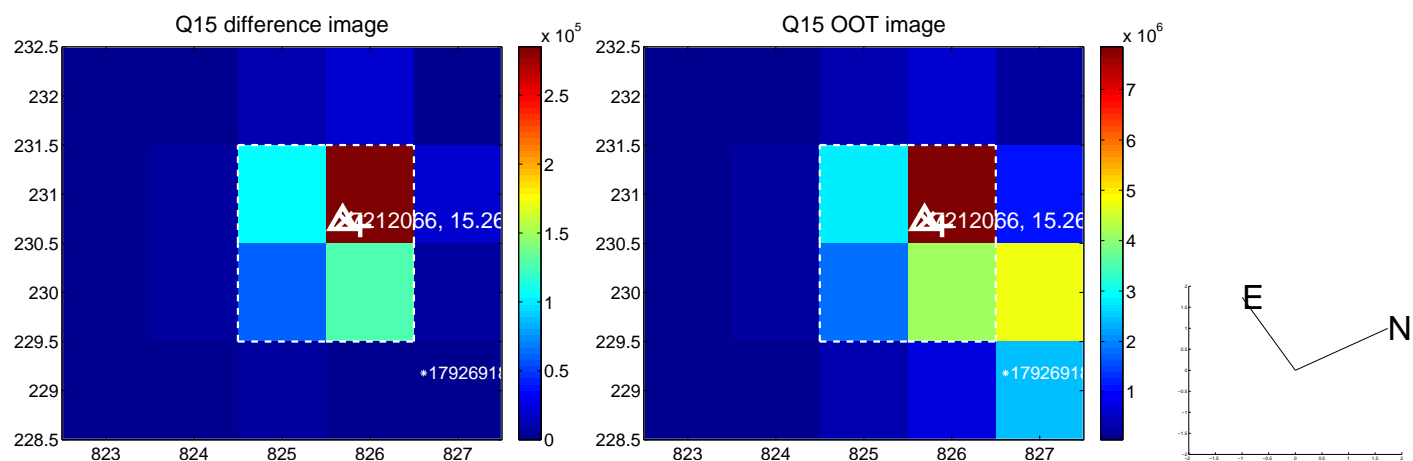
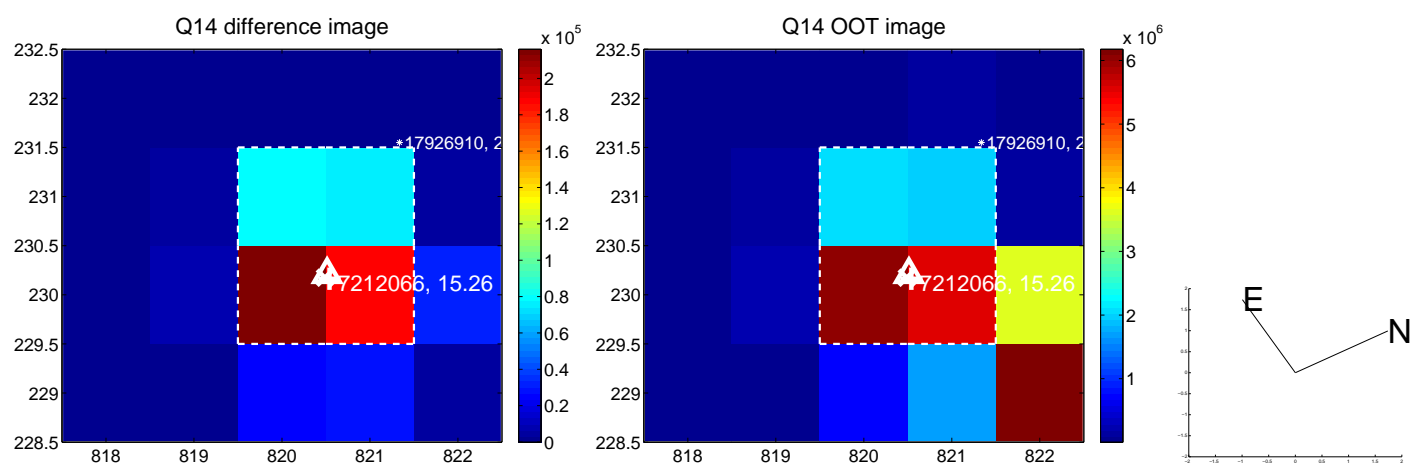
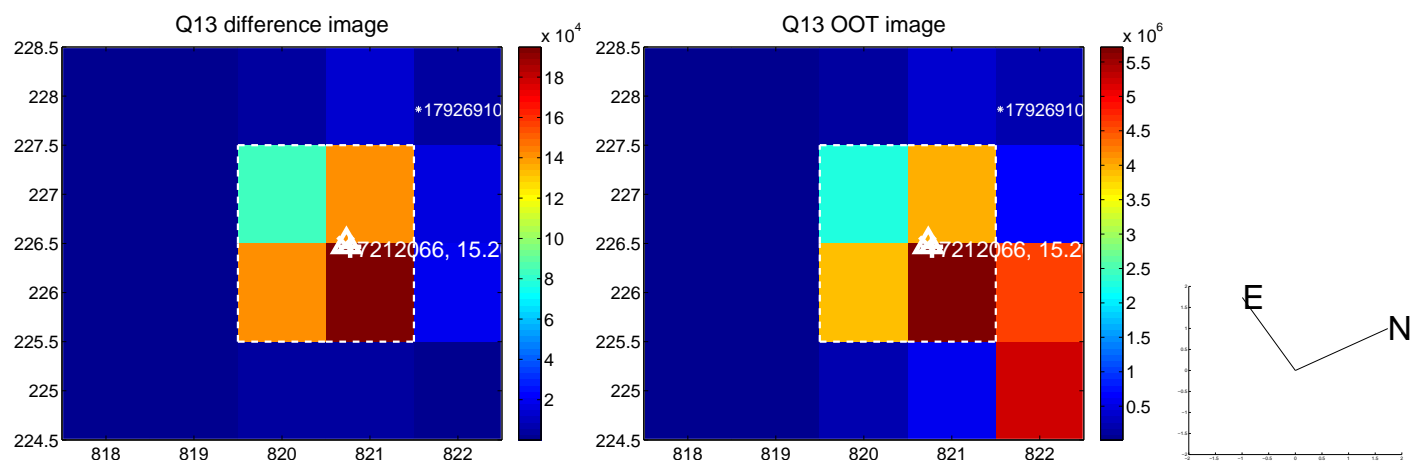
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



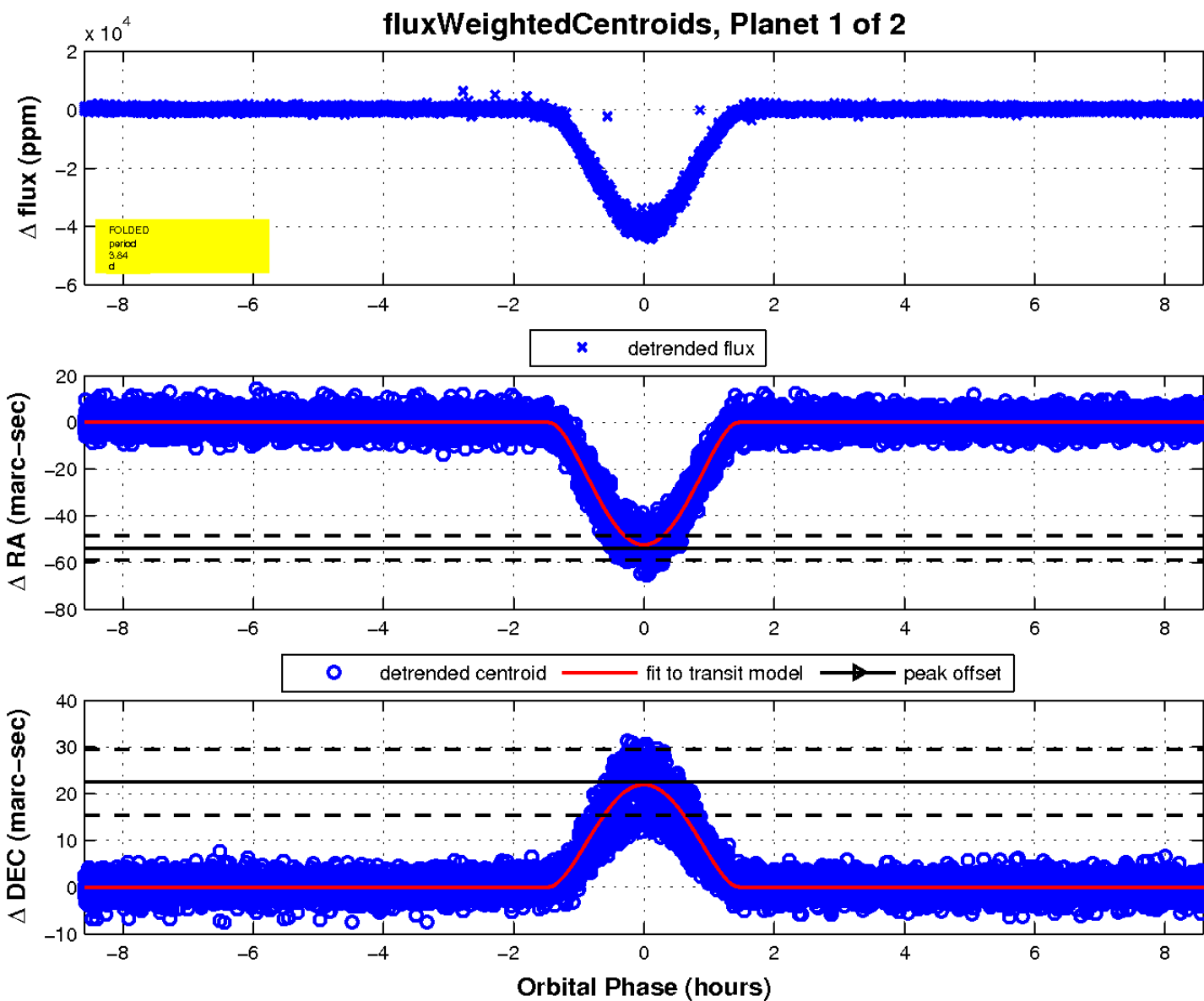
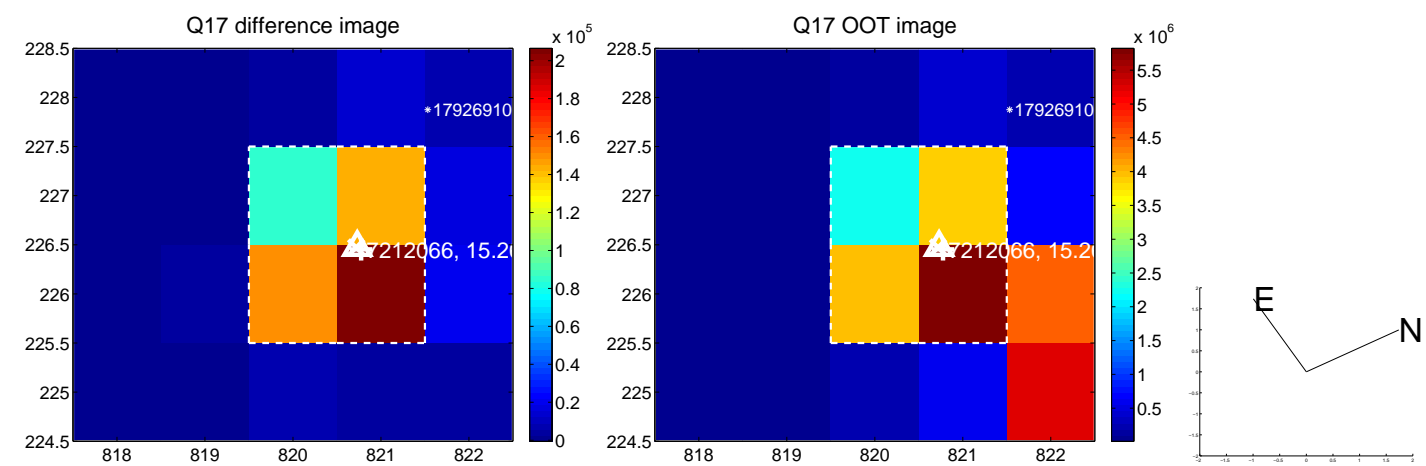
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



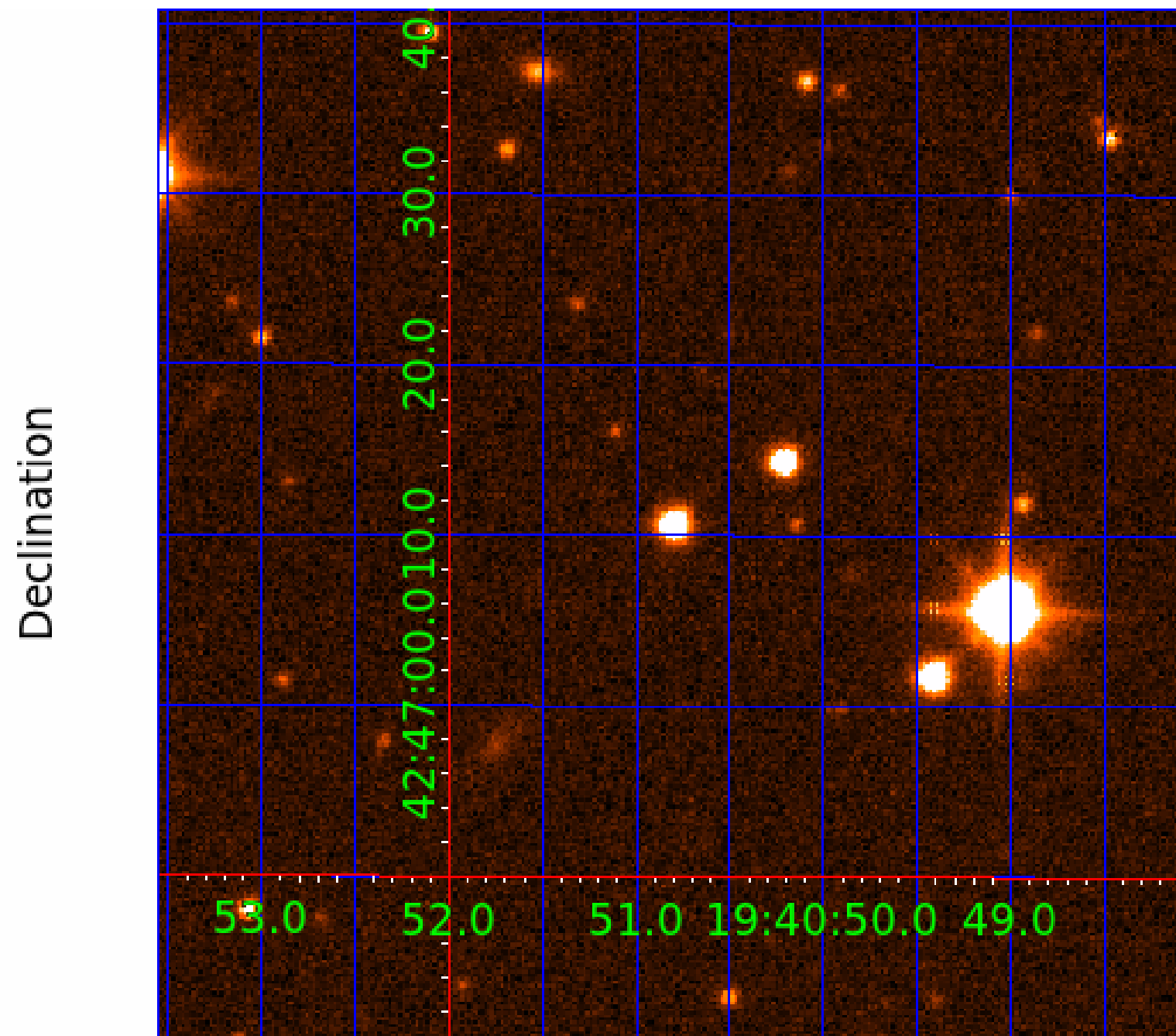
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image



KIC 007212066

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})
007212066-01	OBS	3610.01	3.840490	134.447733	39578.0	2.865	2023.0	1426.7	0.82	5731	26.77	318.84
007212066-02	OBS	No	3.840493	132.533306	9142.2	2.781	481.5	472.7	0.82	5731	14.25	318.83

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007212066-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
007212066-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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.

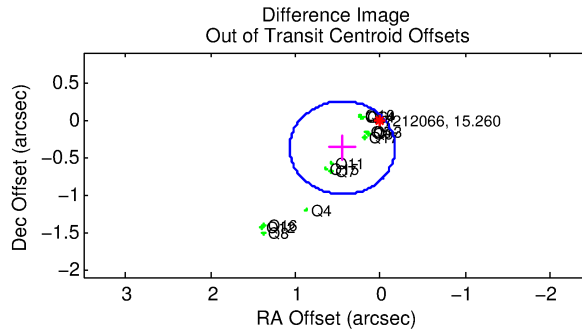
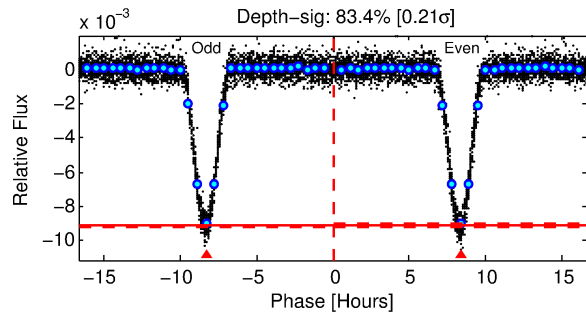
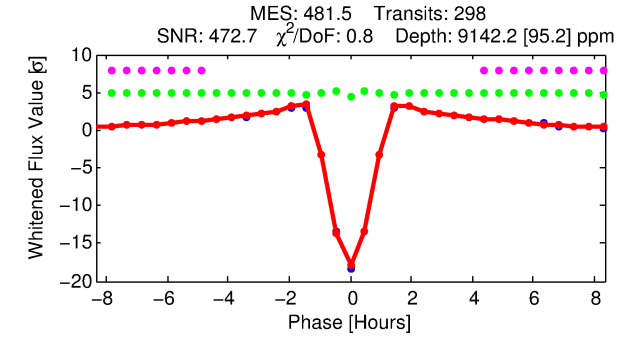
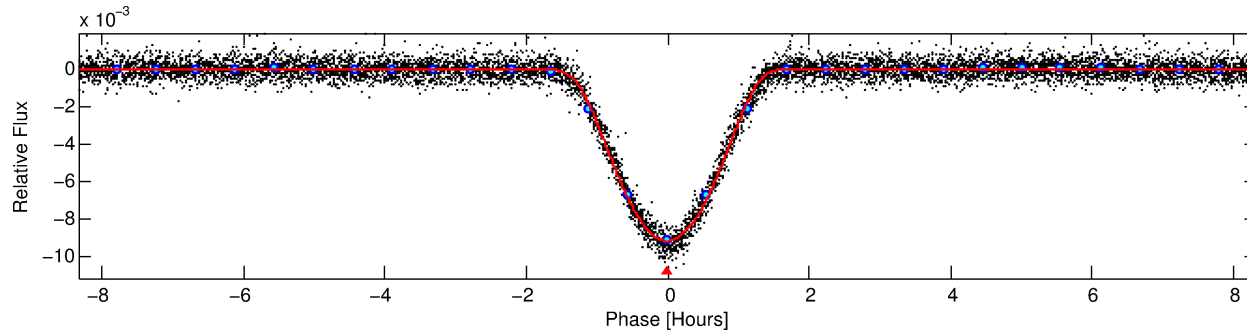
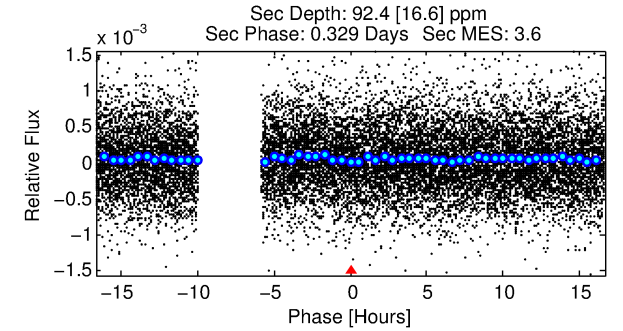
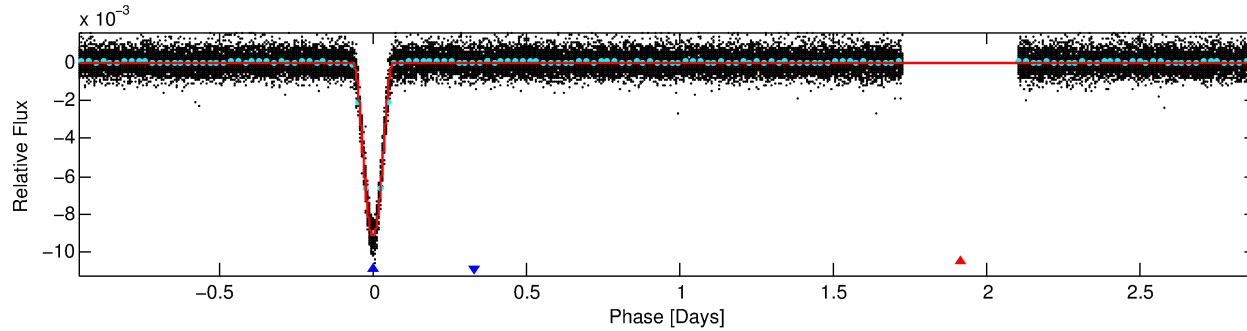
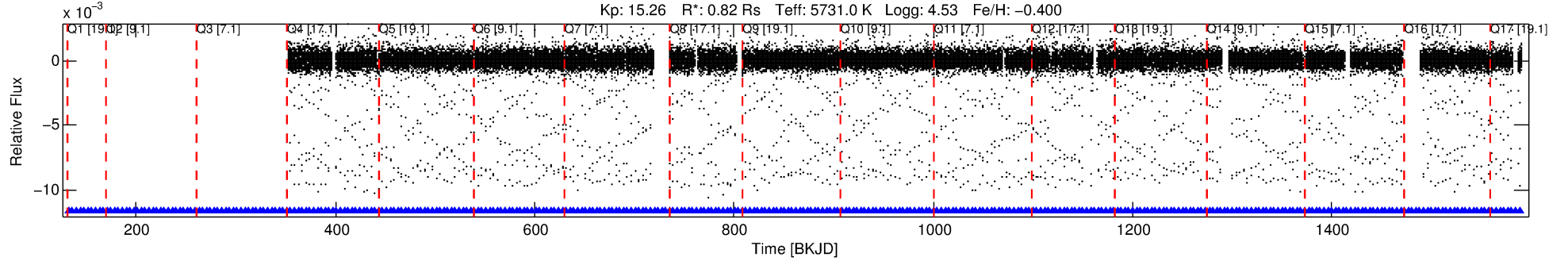
Ephemeris Match Information For 007212066-02

No Significant Match Found

DV One-Page Summary

KIC: 7212066 Candidate: 2 of 2 Period: 3.840 d
KOI: K03610 Corr: No Ephemeris Match

Kp: 15.26 R*: 0.82 Rs Teff: 5731.0 K Logg: 4.53 Fe/H: -0.400



DV Fit Results:

Period = 3.84049 [0.00000] d
Epoch = 132.5333 [0.0001] BKJD
Rp/R* = 0.1587 [0.0181]
a/R* = 6.27 [0.10]
b = 1.00 [0.03]
Seff = 318.84 [107.01]
Teq = 1078 [90] K
Rp = 14.25 [4.10] Re
a = 0.0453 [0.0098] AU
Ag = 0.51 [0.22] [-2.23σ]
Teffp = 1410 [113] K [2.31σ]

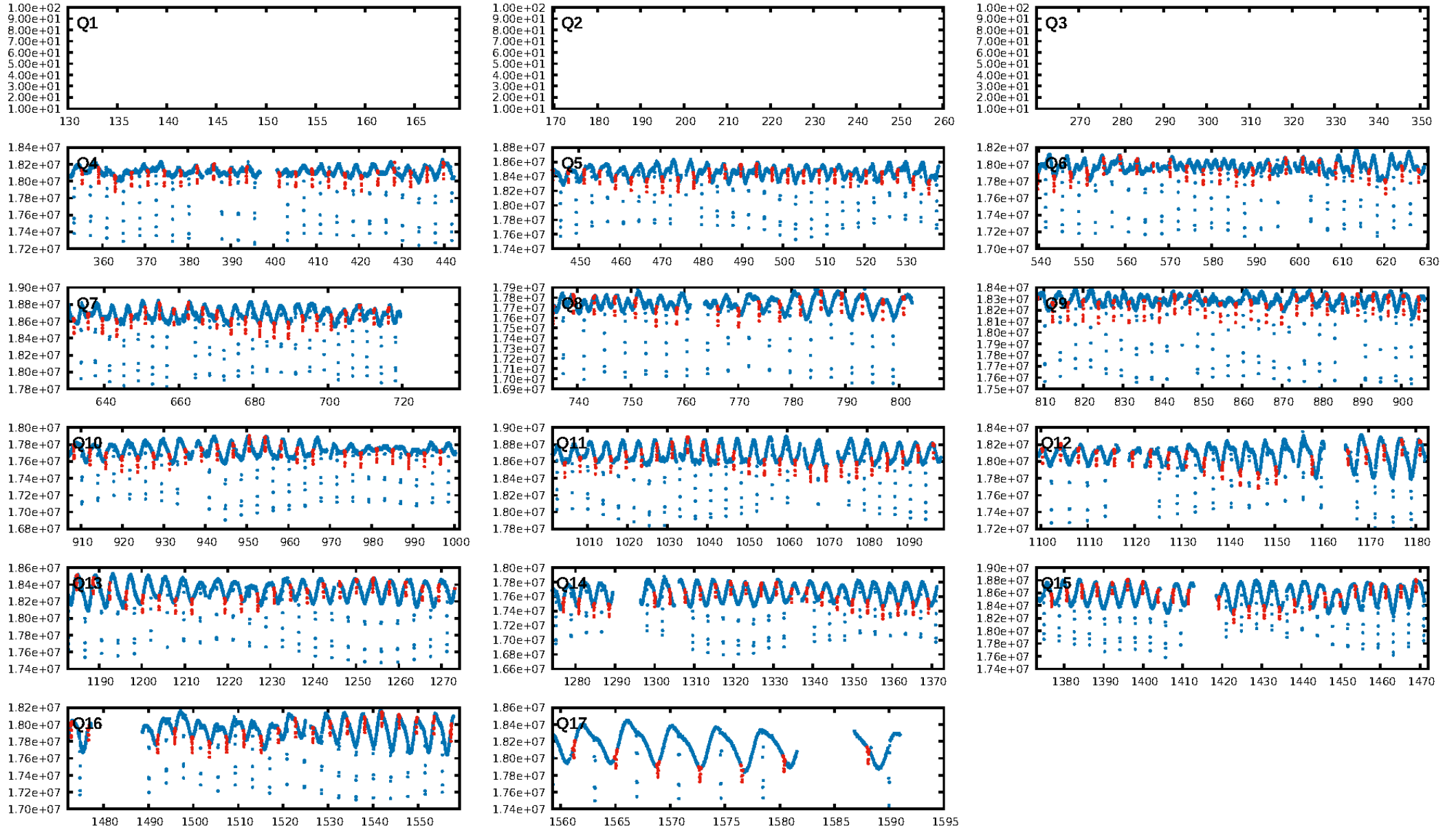
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [291/291]
GhostDiagnostic-chr: 4.934
Centroid-sig: 0.0%
Centroid-so: 1.756 arcsec [73.17σ]
OotOffset-rm: 0.582 arcsec [2.81σ]
KicOffset-rm: 0.041 arcsec [0.57σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

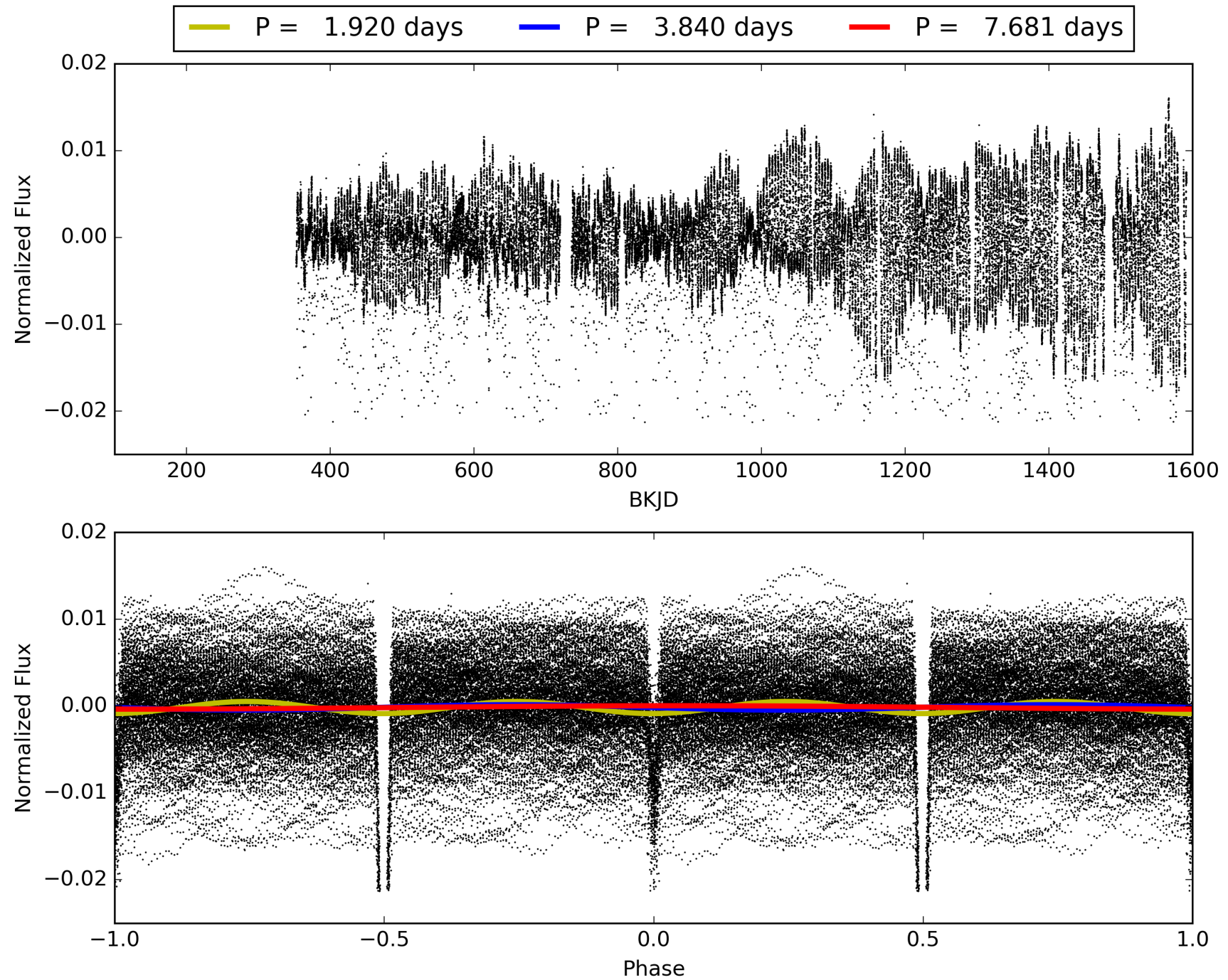
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 07:28:30 Z

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

TCE 007212066-02, PDC Light Curves

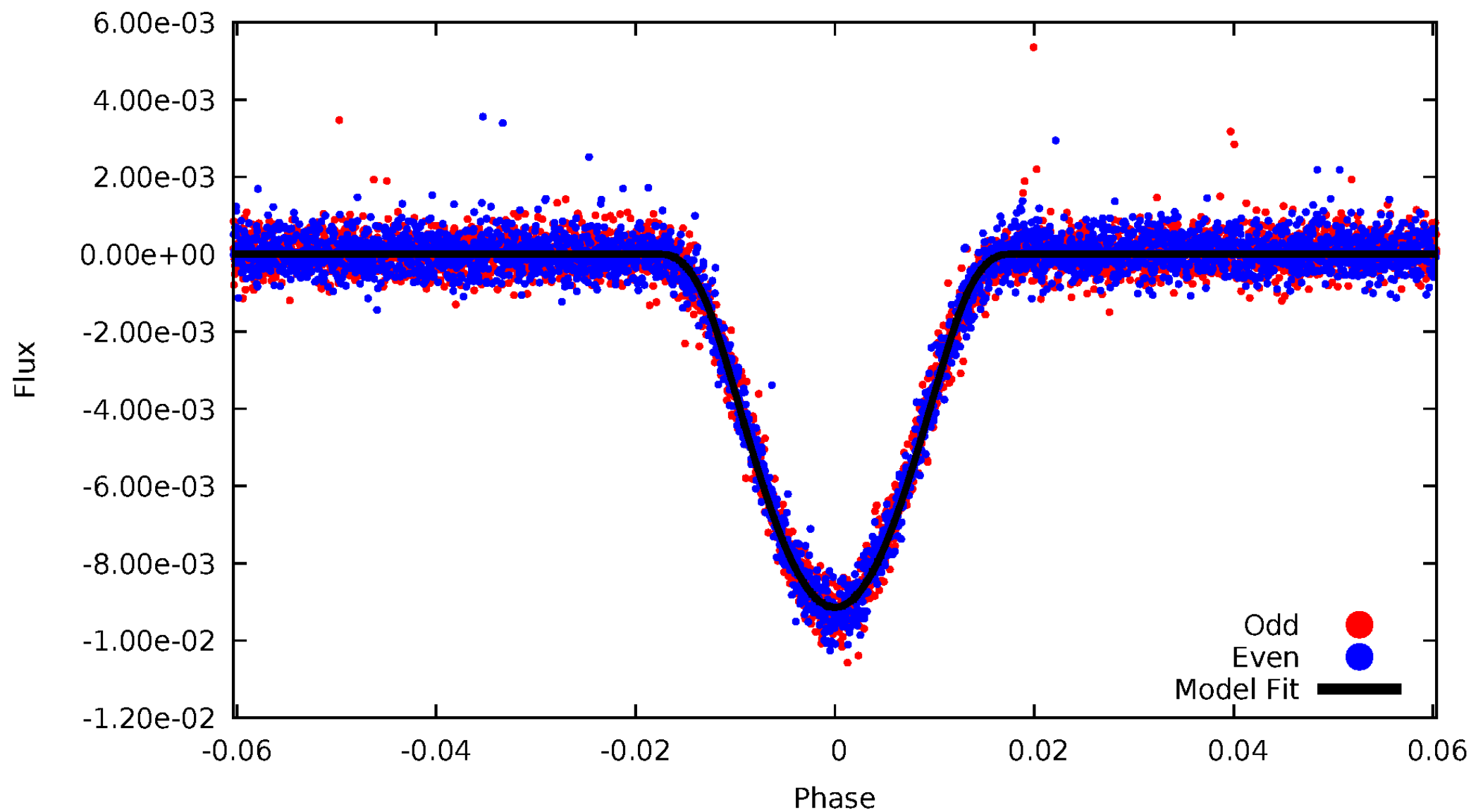


TCE 007212066-02



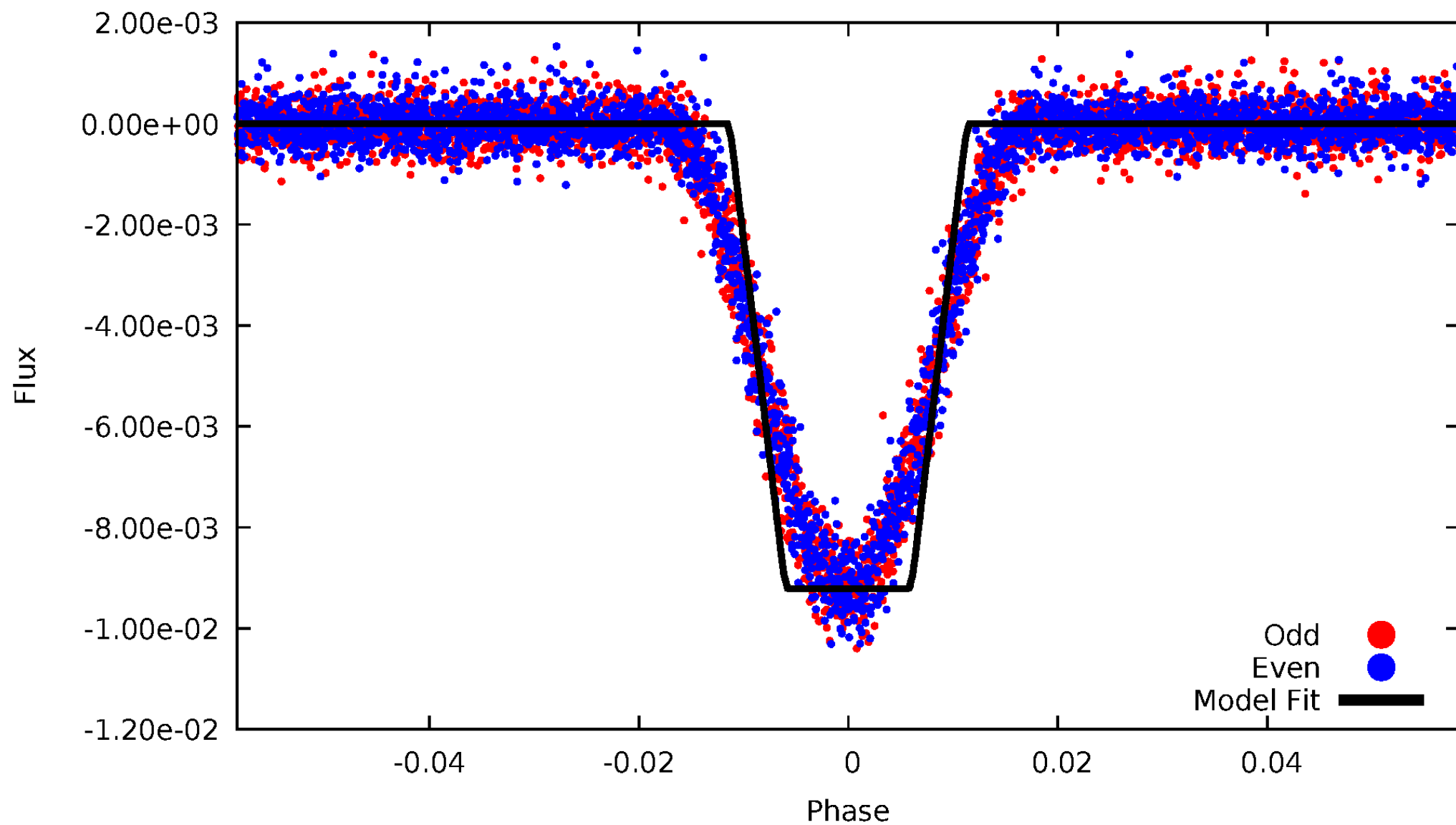
DV Odd/Even

TCE 007212066-02



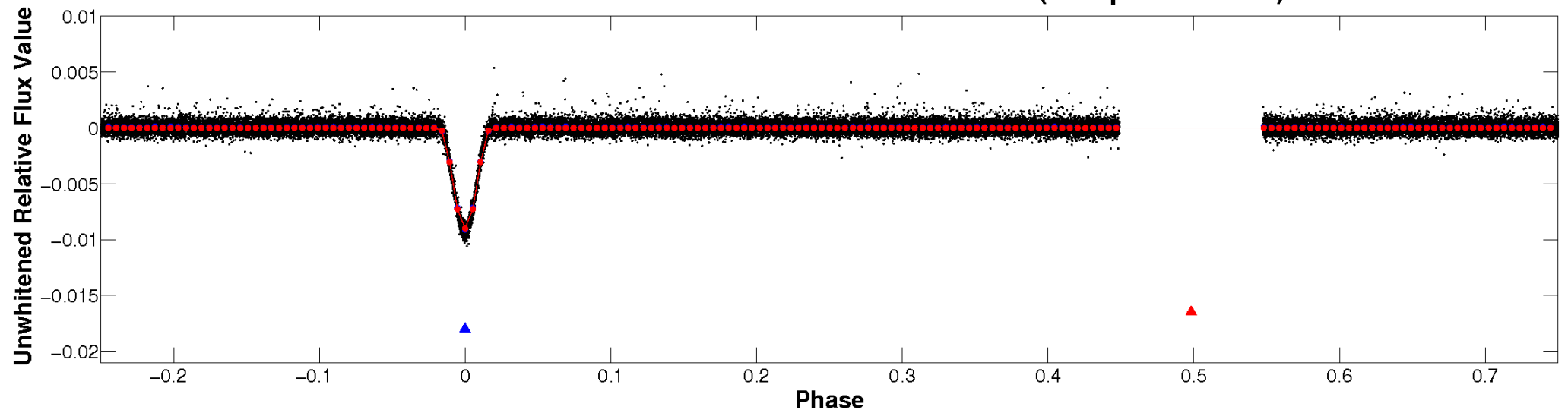
ALT Odd/Even

TCE 007212066-02

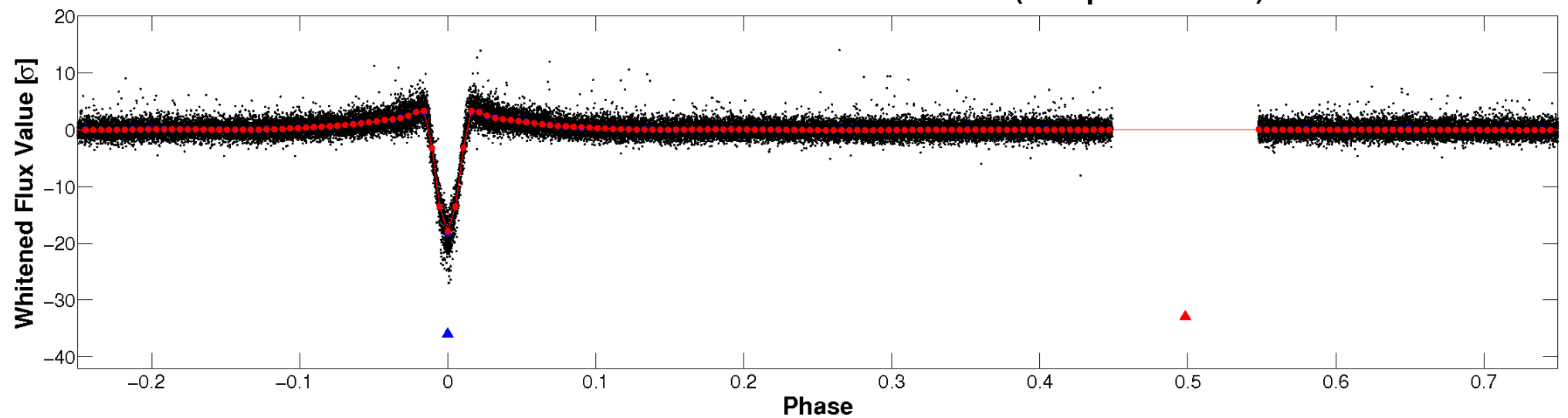


Non-Whitened Vs. Whitened Light Curve

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

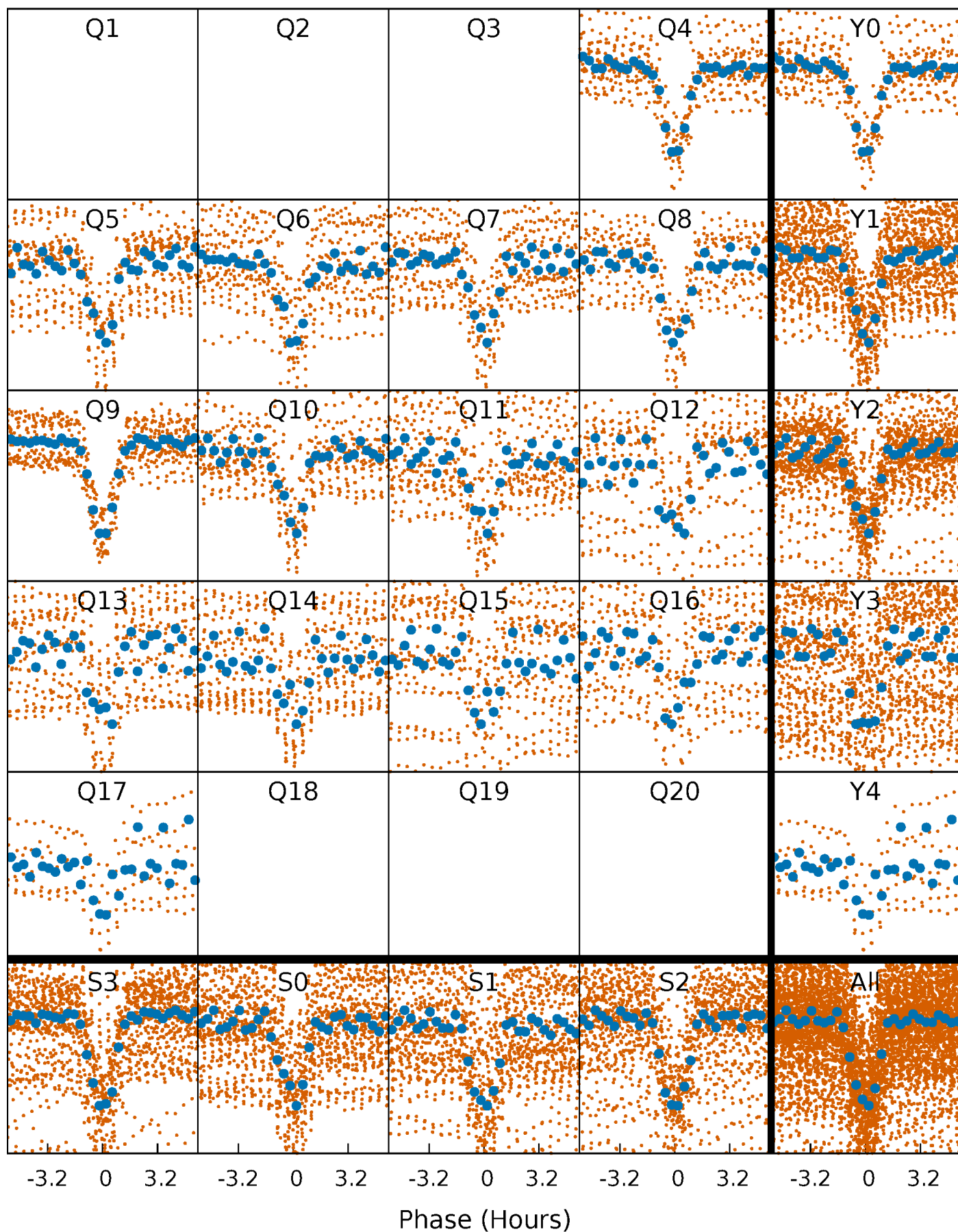


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



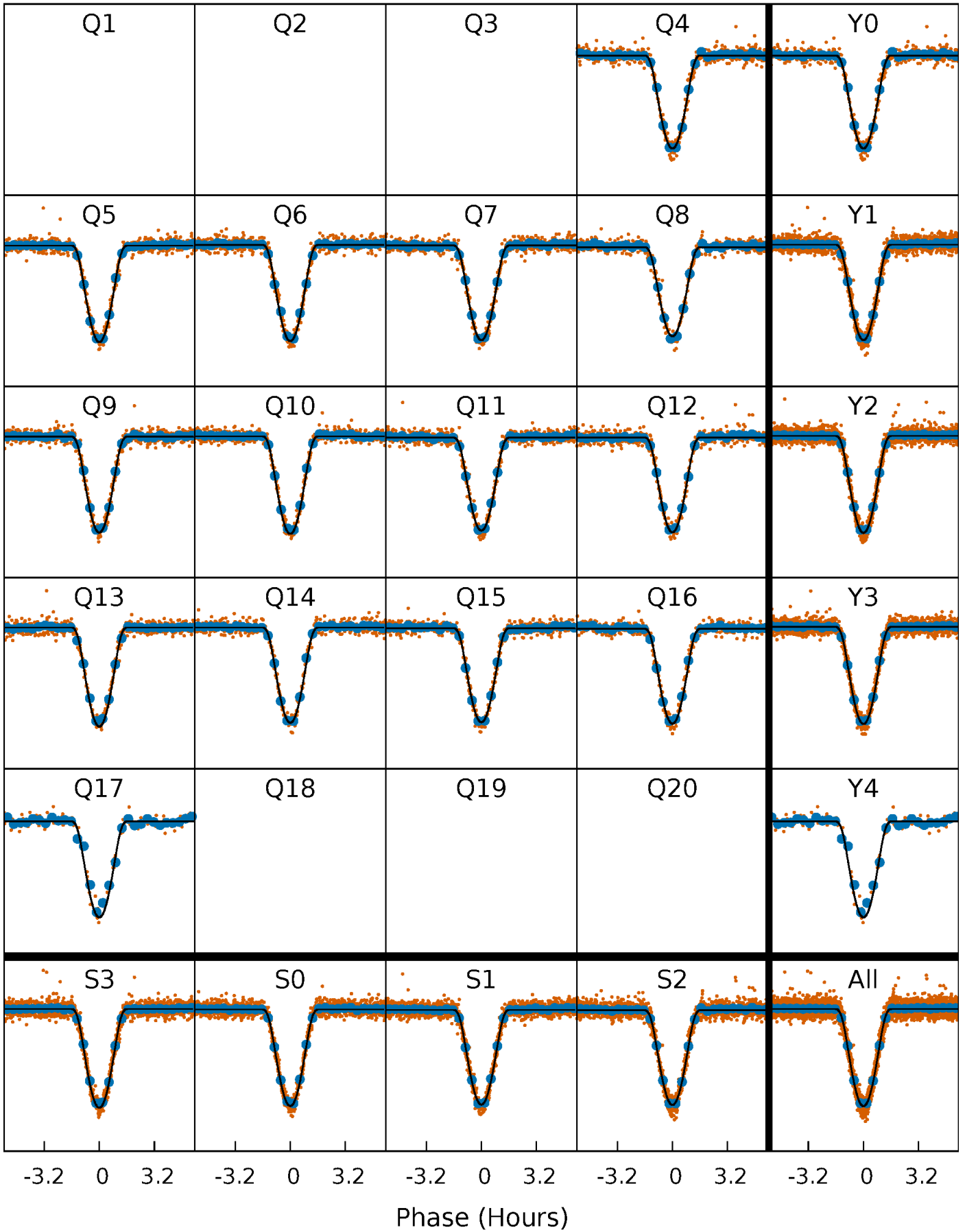
PDC Quarter-Phased Transit Curves

TCE 007212066-02 P= 3.840493 Days $T_0=132.533306$ (BKJD)



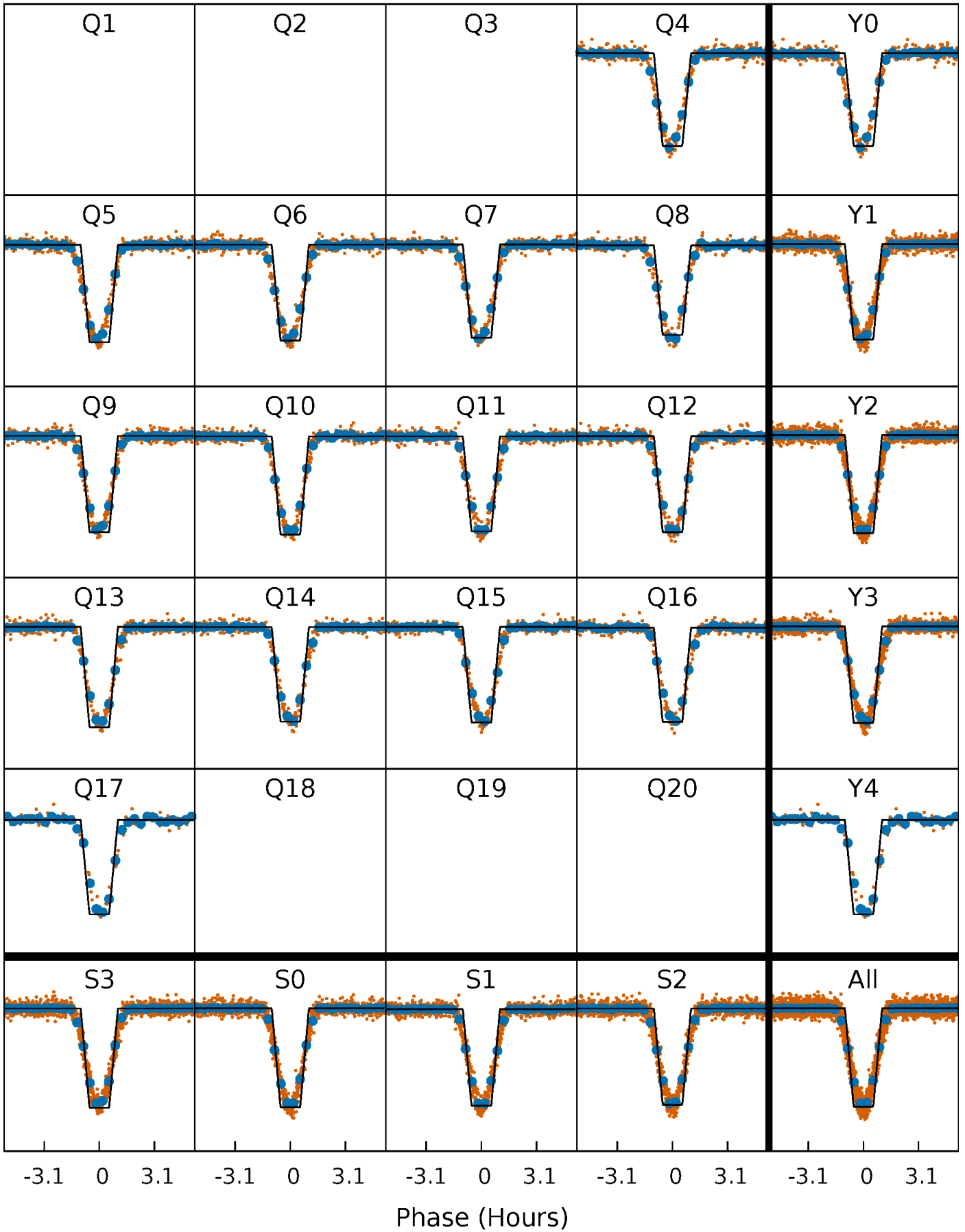
DV Quarter-Phased Transit Curves

TCE 007212066-02 P= 3.840493 Days $T_0=132.533306$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

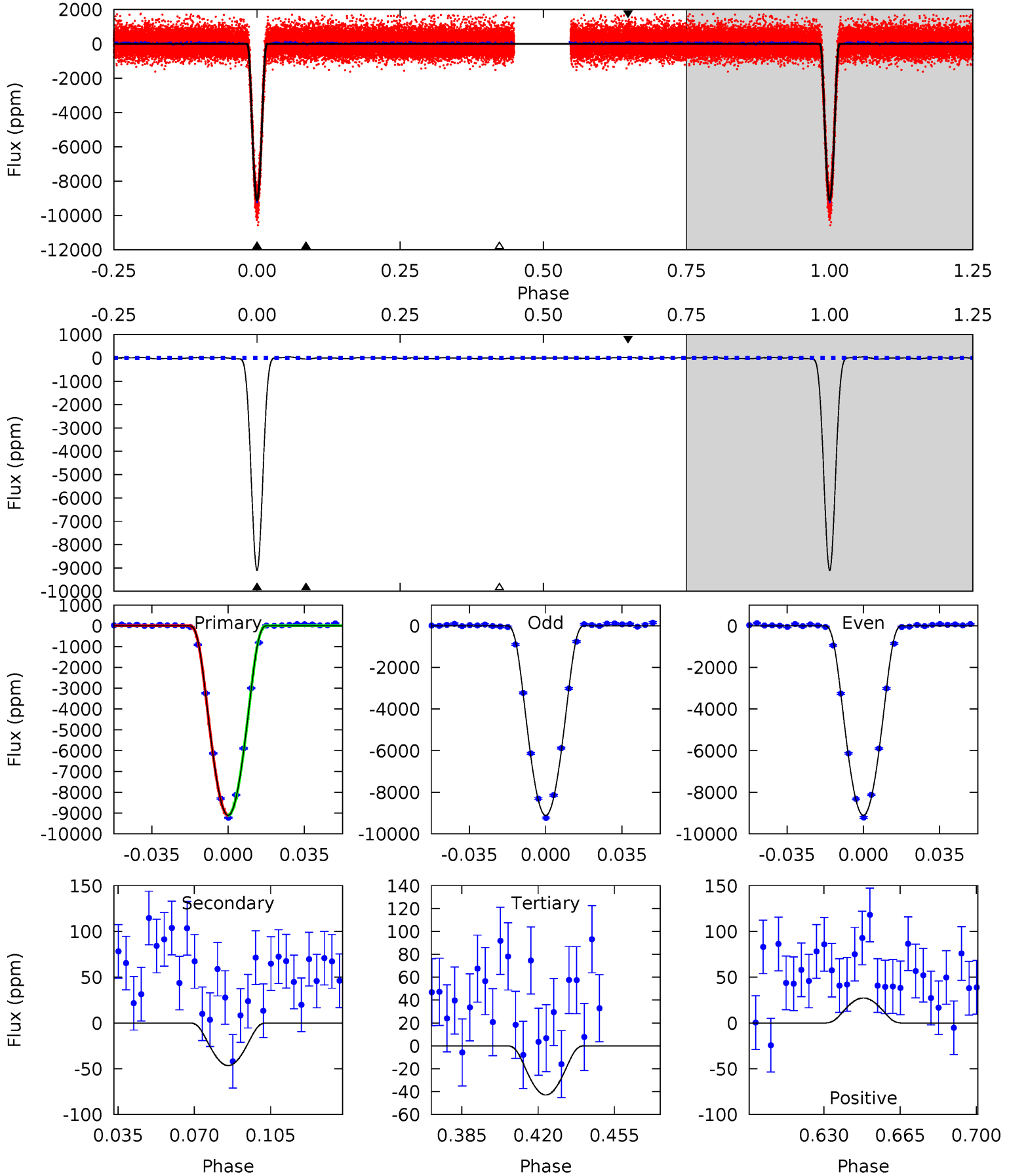
TCE 007212066-02 P= 3.840462 Days $T_0=132.540230$ (BKJD)



DV Model-Shift Uniqueness Test

007212066-02, P = 3.840493 Days, E = 132.533306 Days

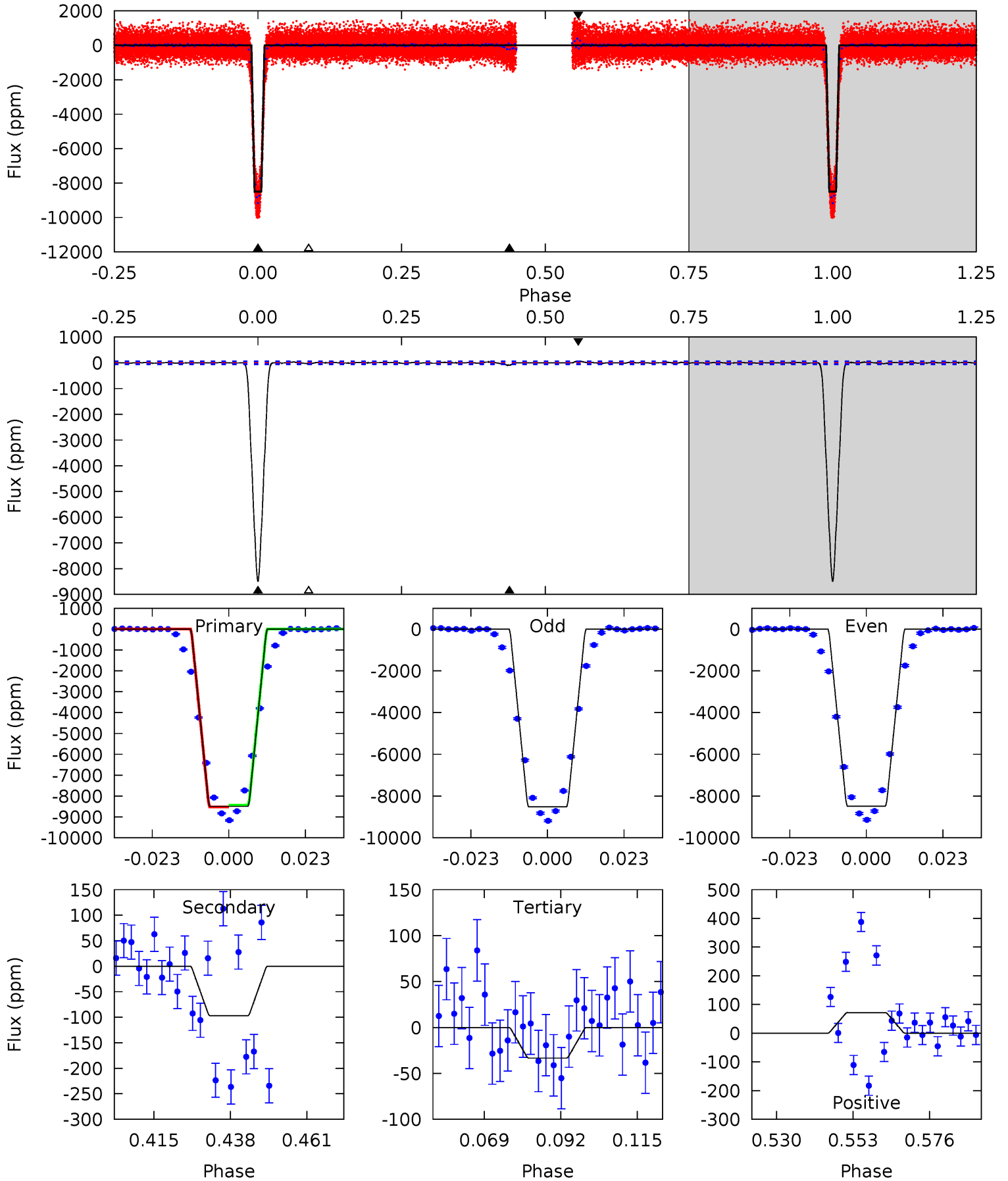
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
940.8	4.80	4.44	2.81	4.78	2.11	1.63	936.4	938.0	0.36	1.99	0.34	1.00	0.00	0.08



Alt Model-Shift Uniqueness Test

007212066-02, P = 3.840462 Days, E = 132.540230 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
755.3	8.62	2.97	6.39	4.86	2.27	1.14	752.3	748.9	5.66	2.24	1.33	1.01	0.01	3.81



Stellar Parameters For KIC 007212066

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5731^{+190}_{-190}	$4.532^{+0.066}_{-0.165}$	$-0.400^{+0.300}_{-0.300}$	$0.823^{+0.217}_{-0.087}$	$0.841^{+0.105}_{-0.079}$	$2.121^{+0.609}_{-0.940}$
	+3%/-3%	+1%/-4%	+75%/-75%	+26%/-11%	+12%/-9%	+29%/-44%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007212066-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-46 ± 10	$14.68^{+2.46}_{-2.01}$	1530^{+100}_{-73}	-1880^{+3639}_{-173}	$0.235^{+0.101}_{-0.069}$
Alt.	-97 ± 11	$8.85^{+1.89}_{-1.71}$	1524^{+102}_{-71}	2561^{+182}_{-157}	$1.388^{+0.786}_{-0.454}$

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

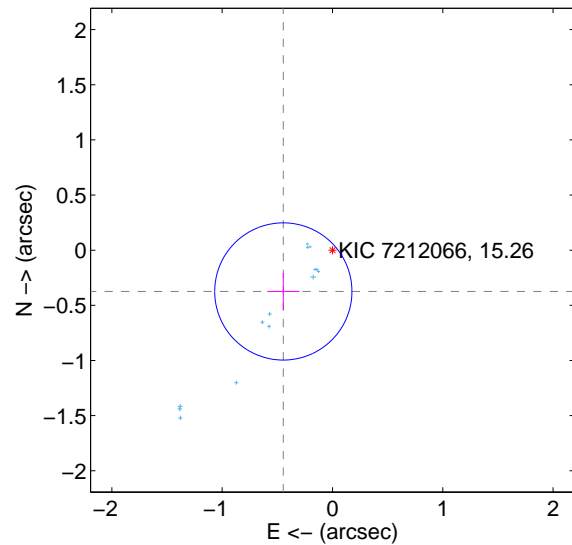
Supplemental centroid analysis for 007212066-02. Kepler magnitude: 15.26. Transit SNR 472.72

There are 14 quarters with good PRF difference image offsets

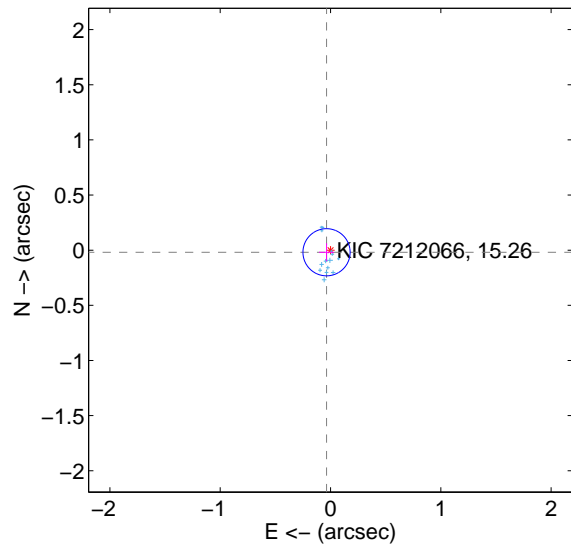
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.582 ± 0.207	2.81	0.446 ± 0.146	-0.374 ± 0.167
PRF-fit source offset from KIC position	0.041 ± 0.071	0.57	0.036 ± 0.068	-0.019 ± 0.081
photometric centroid source offset	1.76 ± 0.02	73.17	-1.73 ± 0.02	0.28 ± 0.02

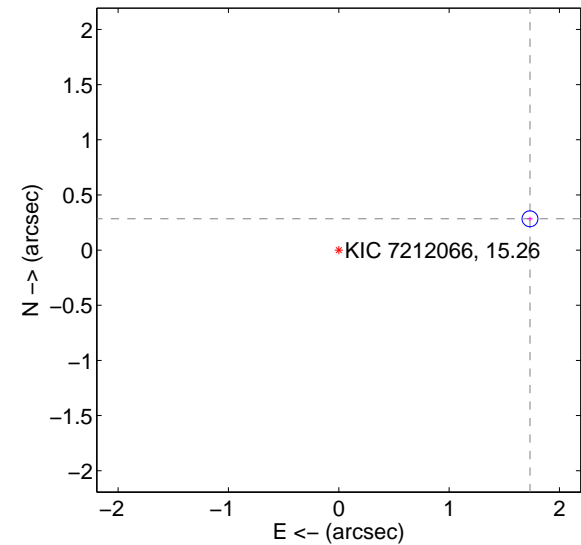
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

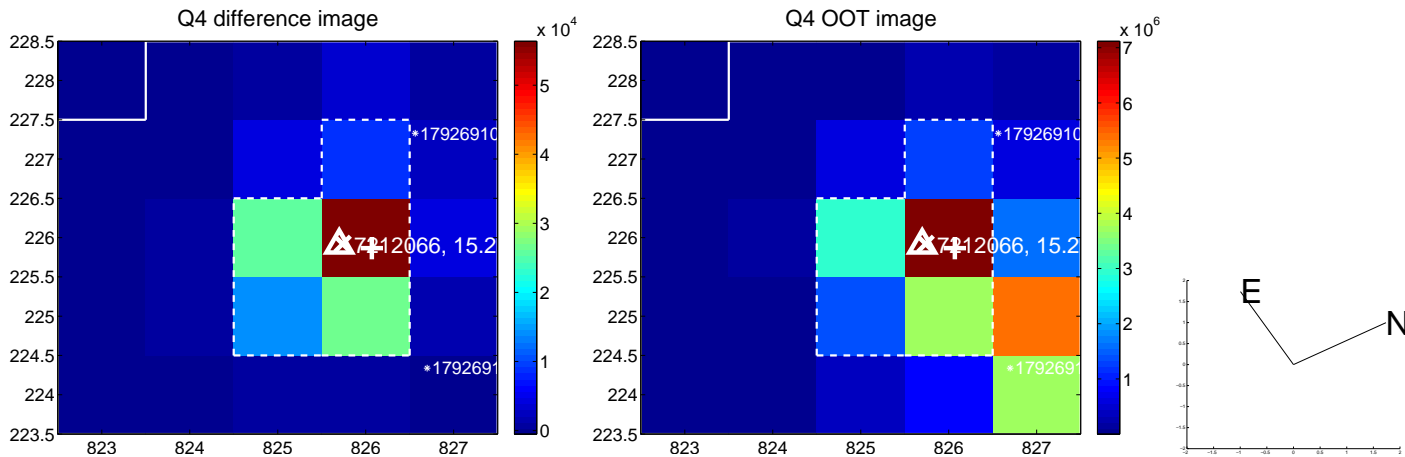
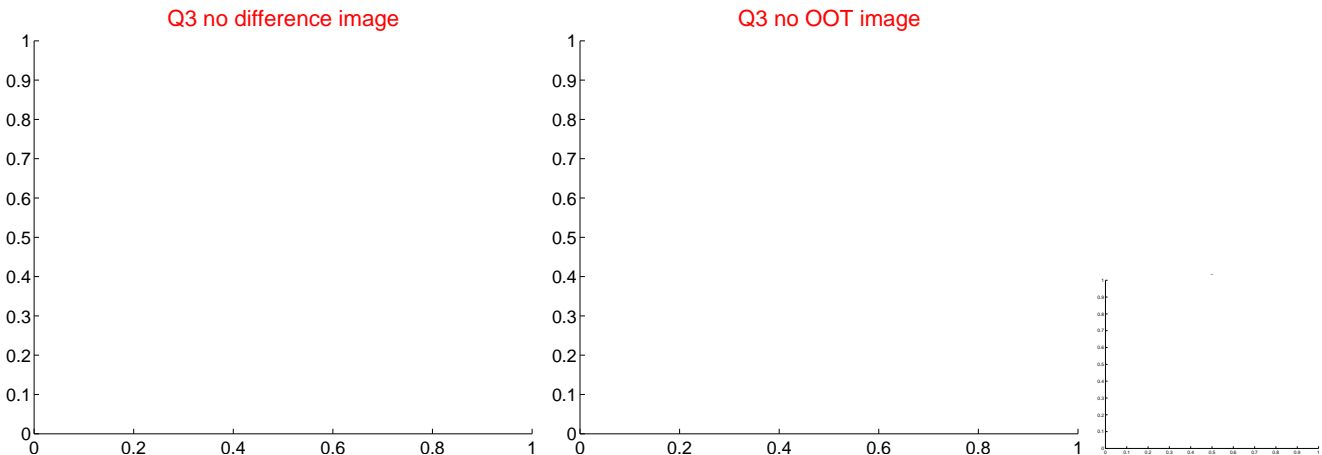
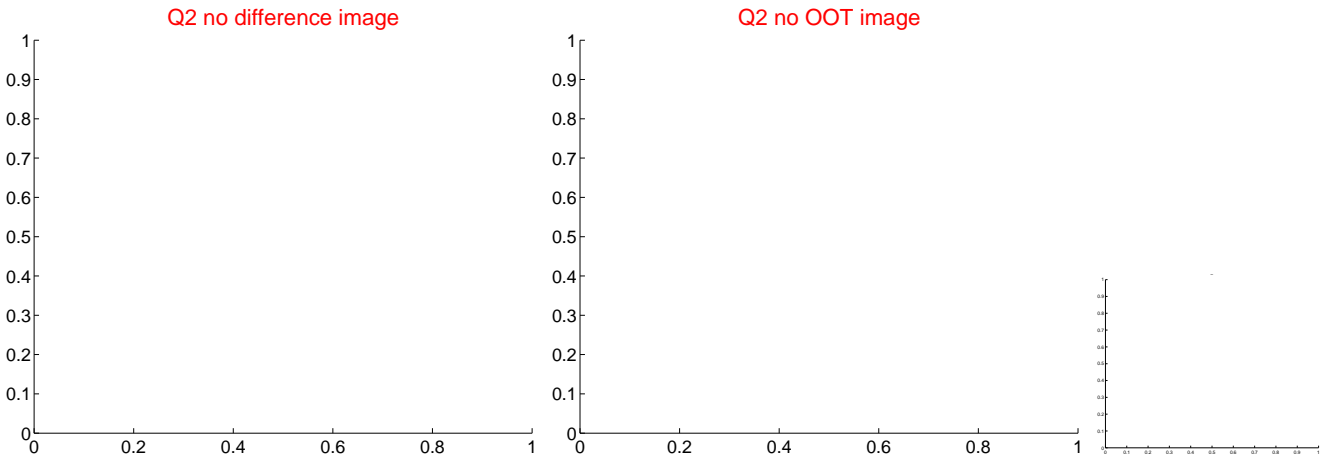
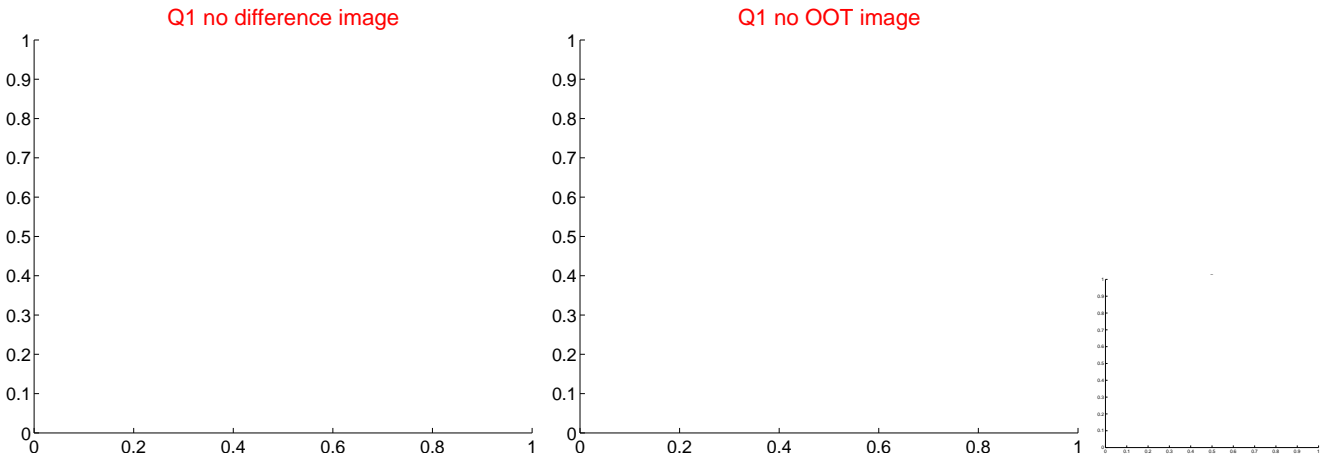


offset from photometric centroids

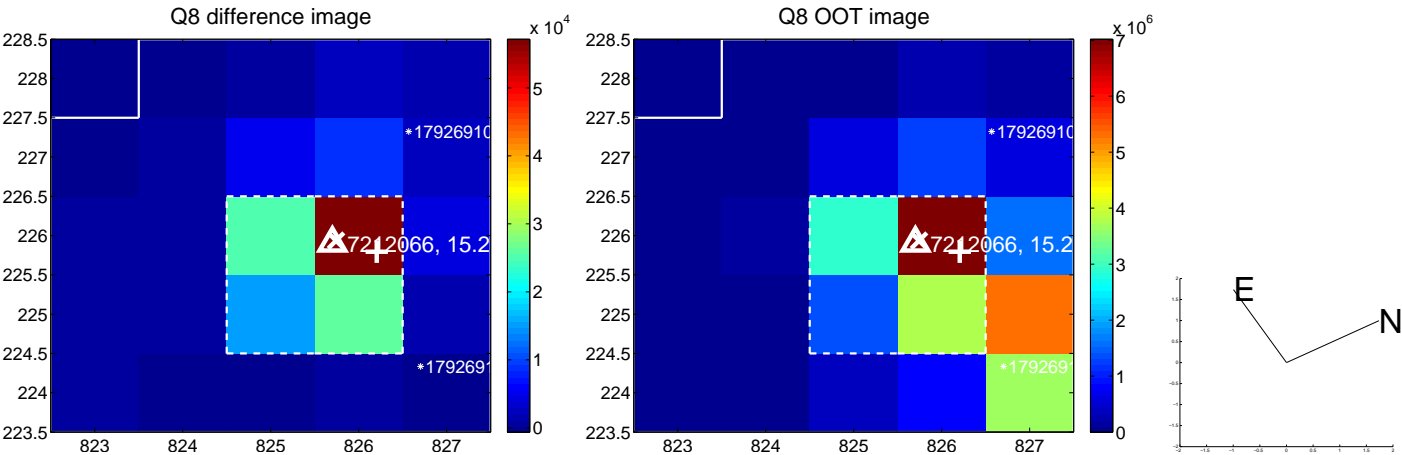
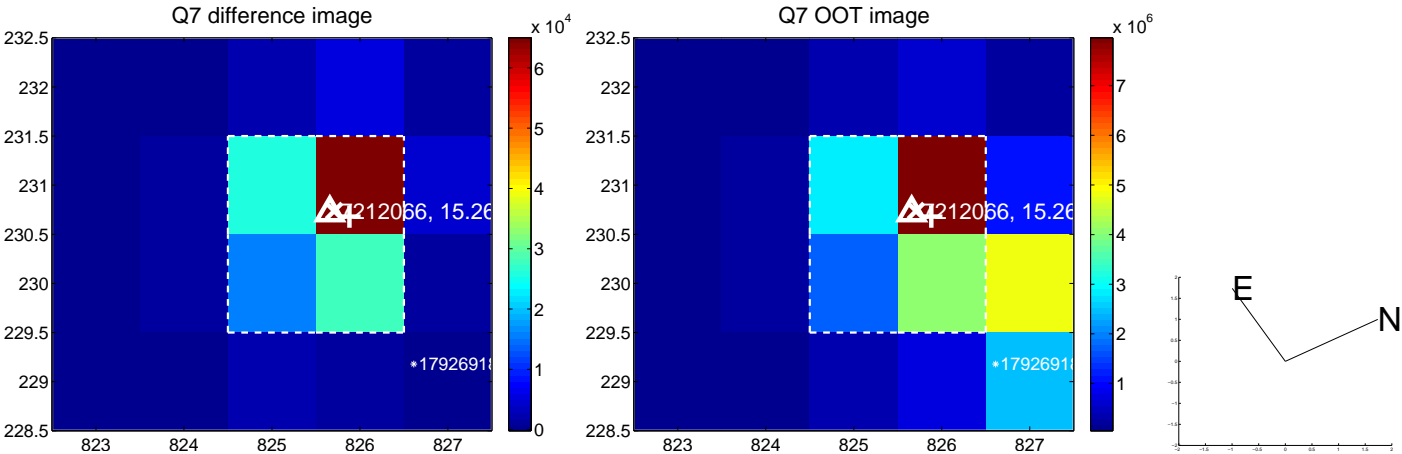
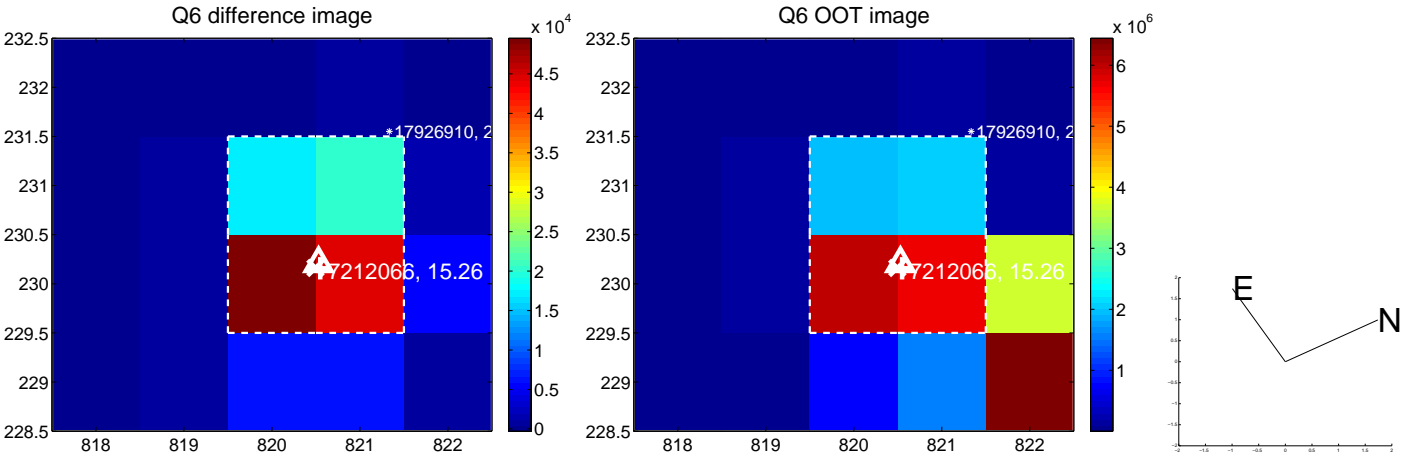
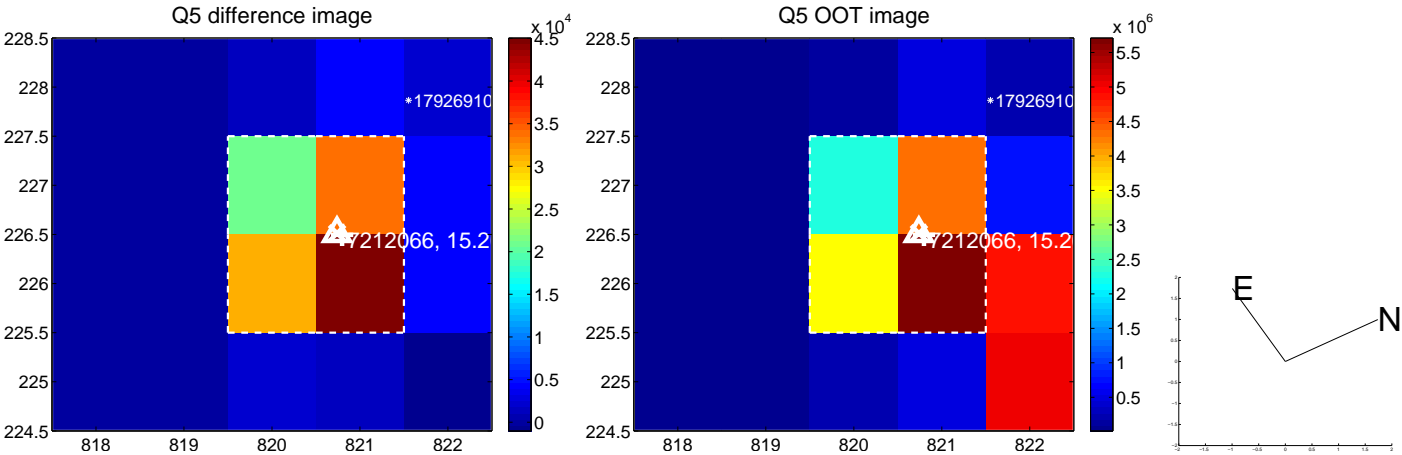


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

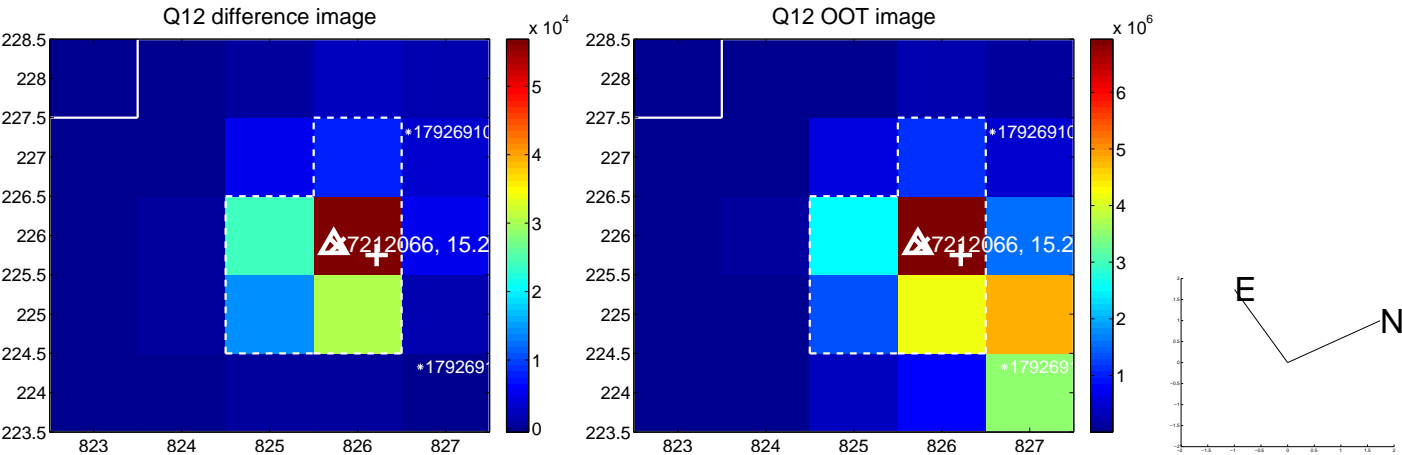
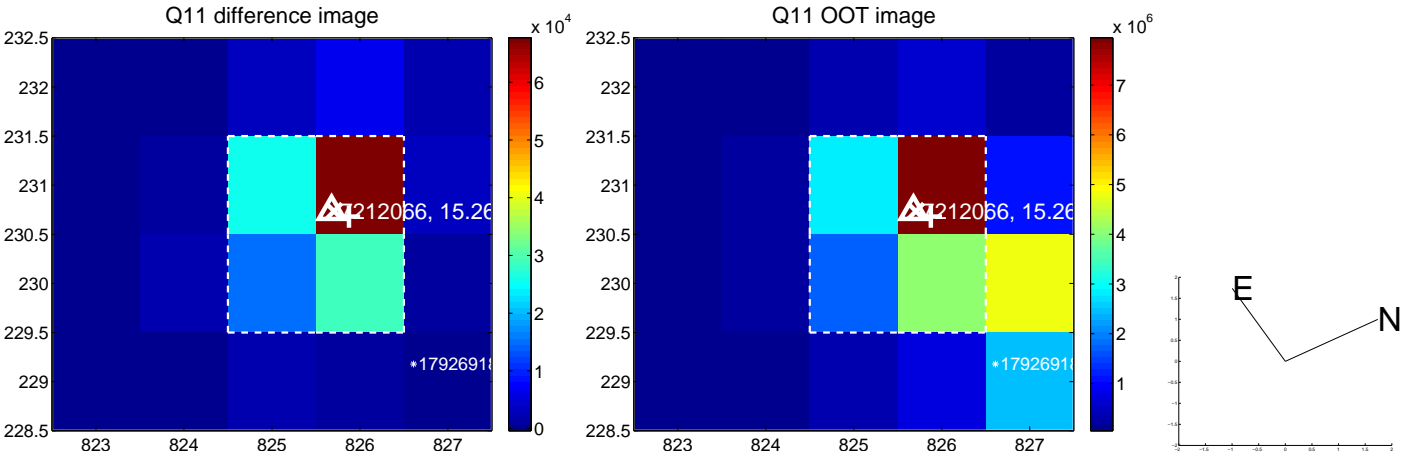
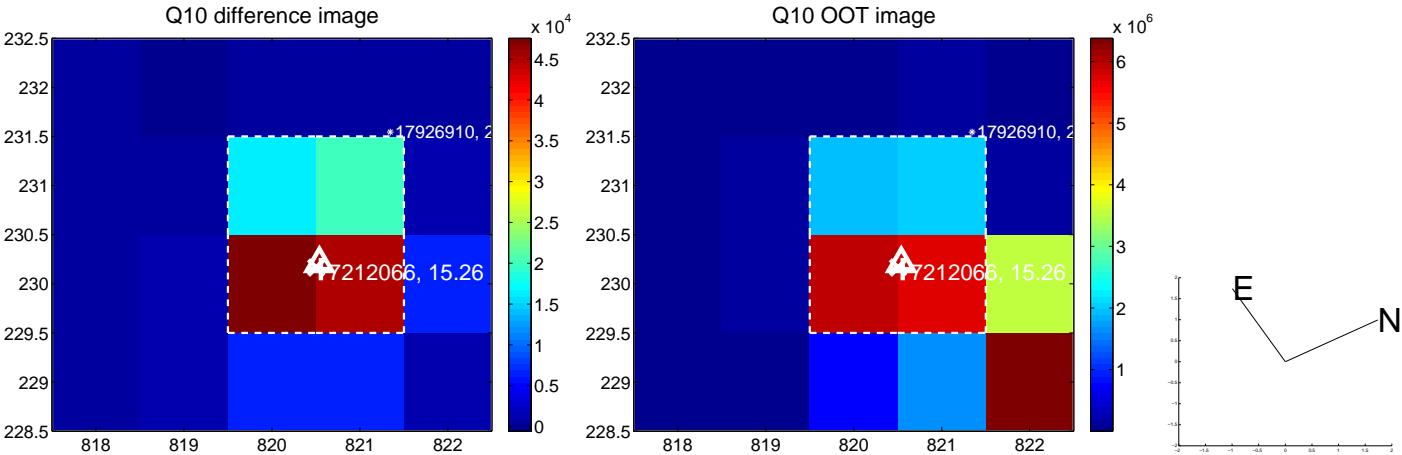
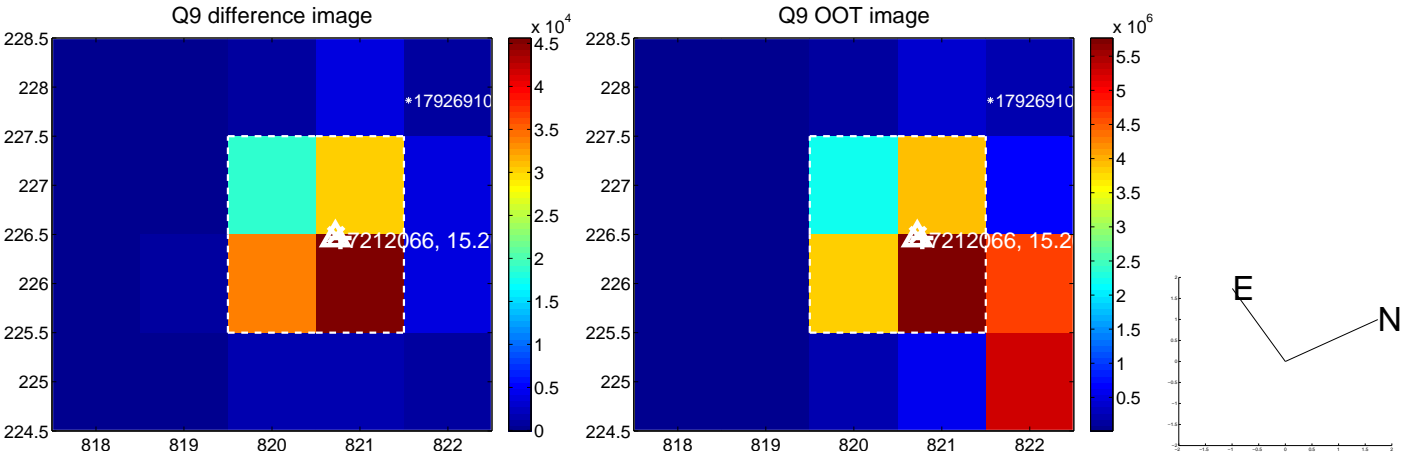
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



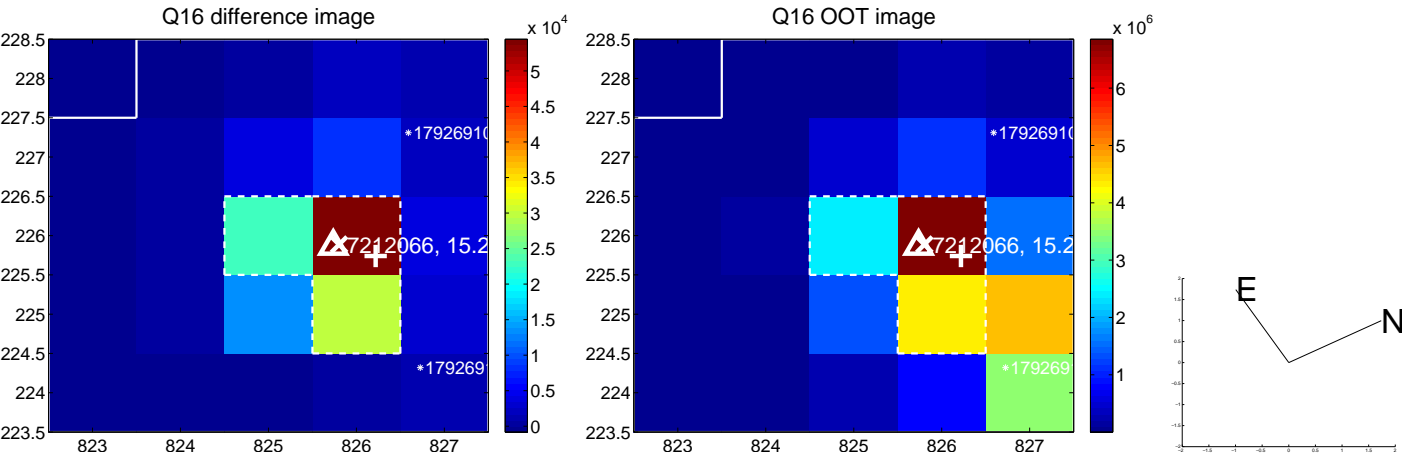
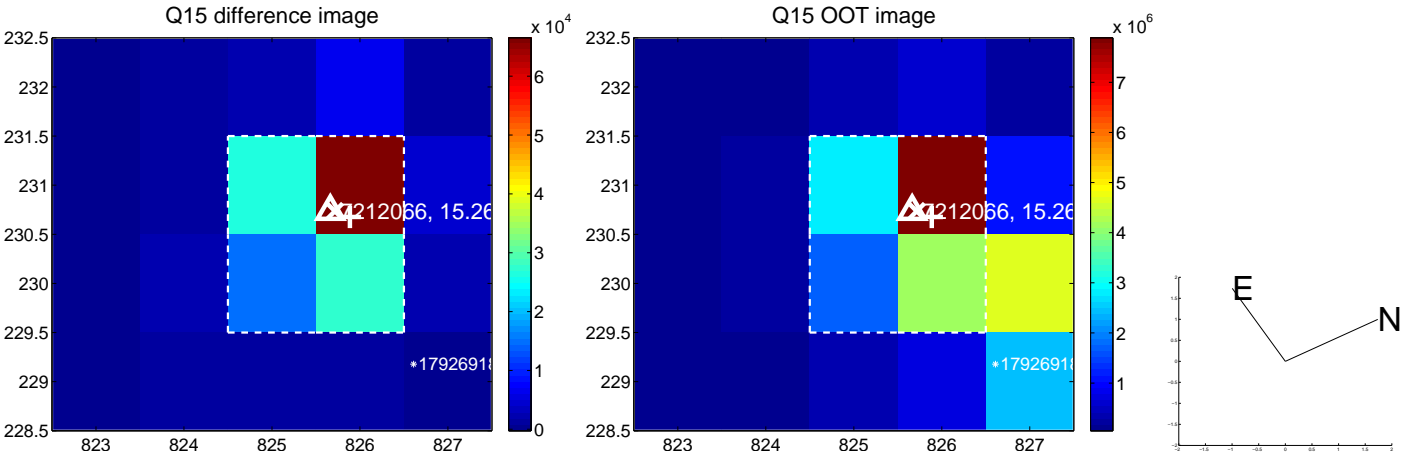
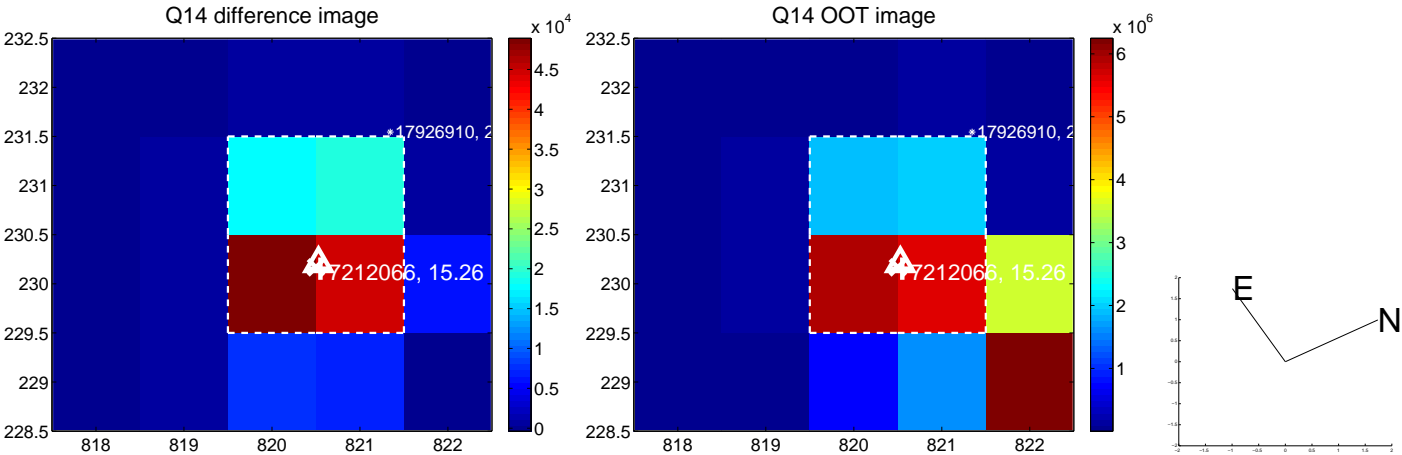
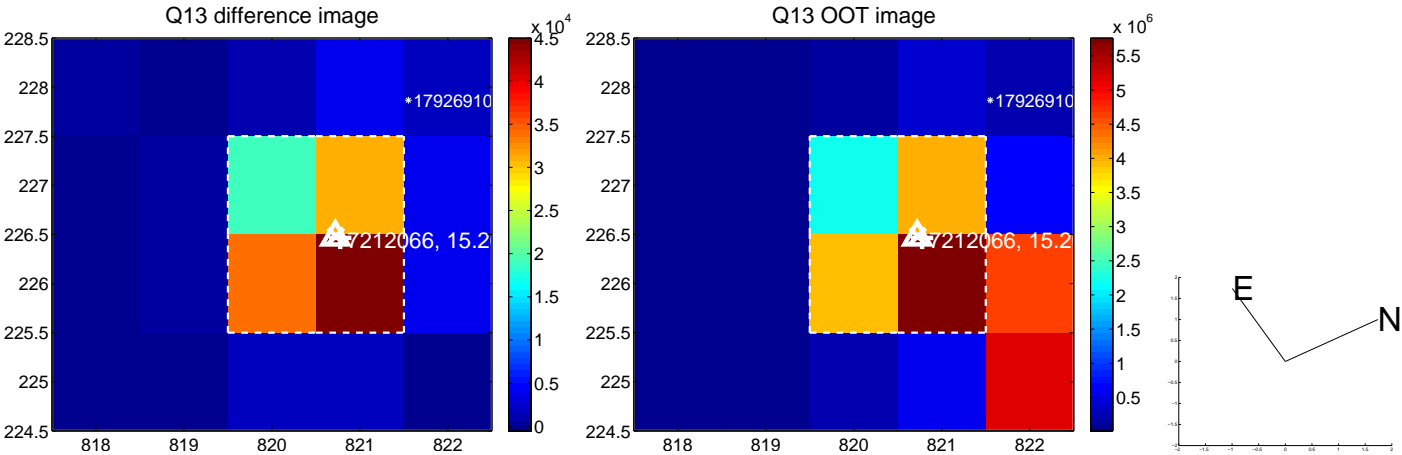
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



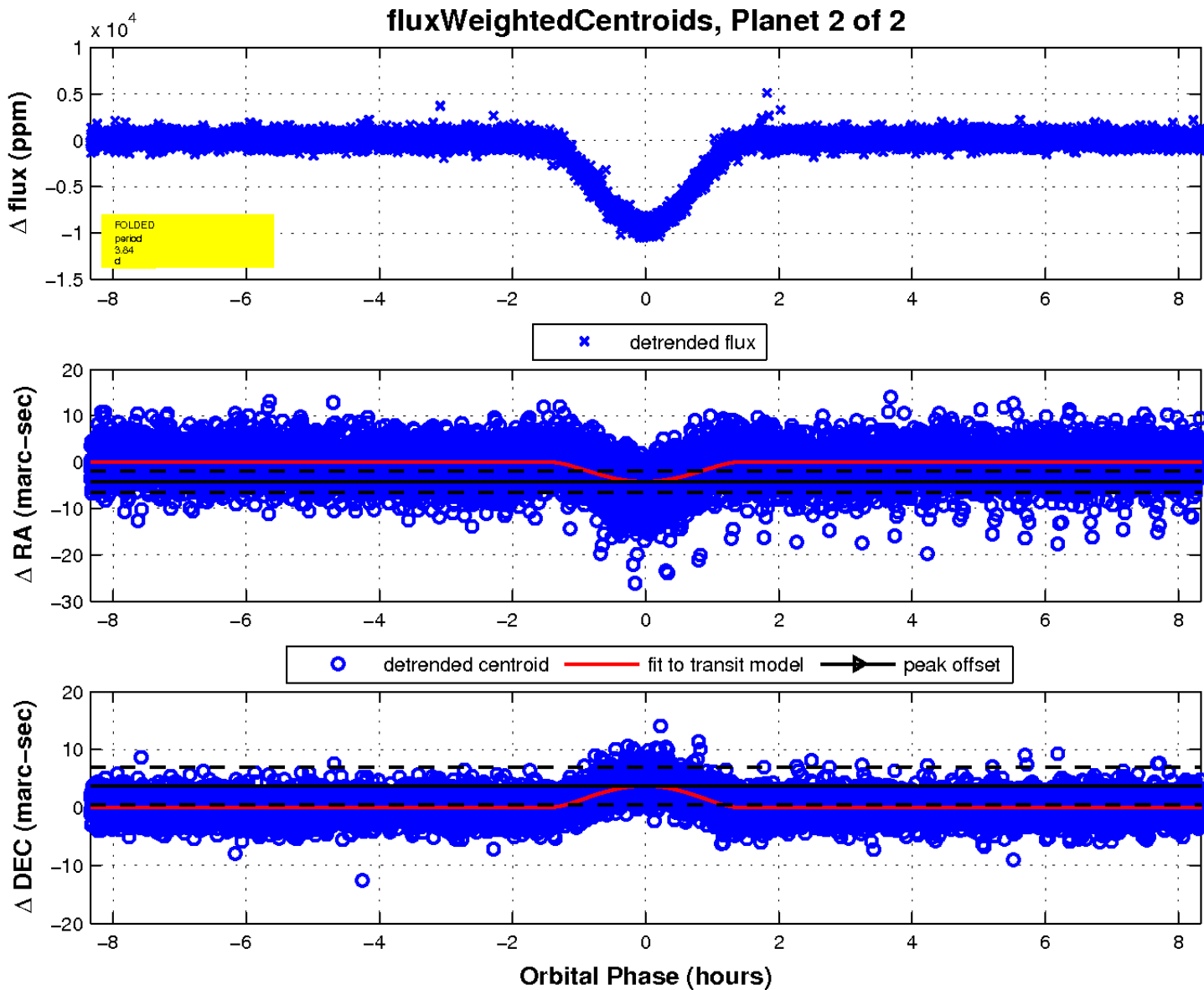
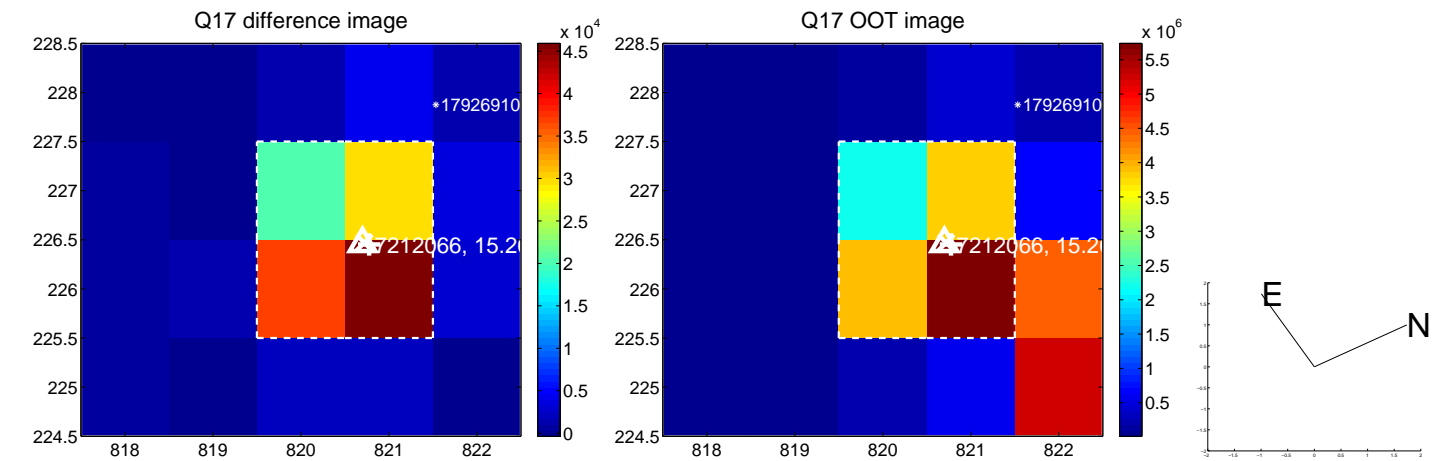
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

