

KIC 005535280

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})
005535280-01	OBS	6597.01	74.985293	146.138996	105540.2	6.231	2895.6	2372.1	0.91	5955	43.21	7.70
005535280-02	OBS	No	74.985300	138.619507	74423.3	6.337	2059.9	1713.8	0.91	5955	35.61	7.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005535280-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_ODDEVEN_DV—DEEP_V_SHAPED—HAS_SEC_TCE
005535280-02	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.

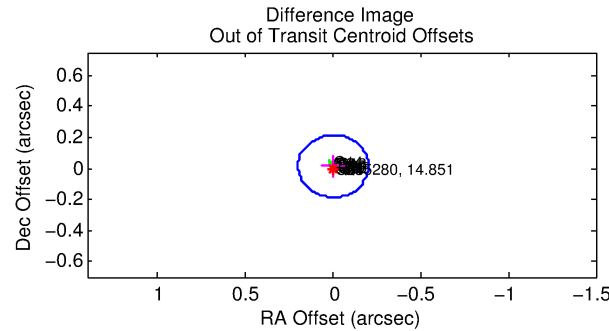
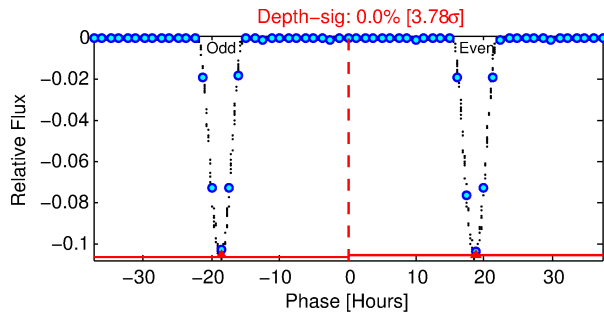
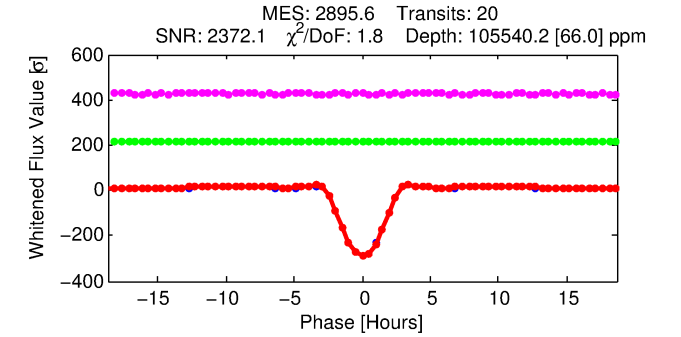
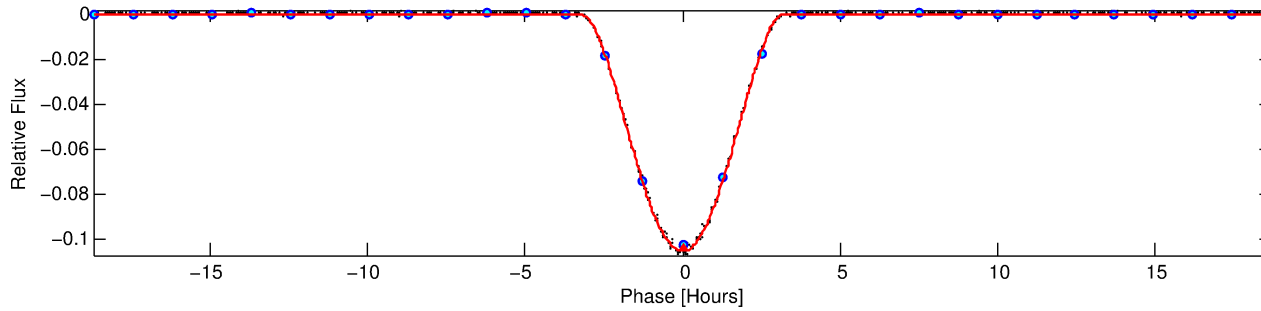
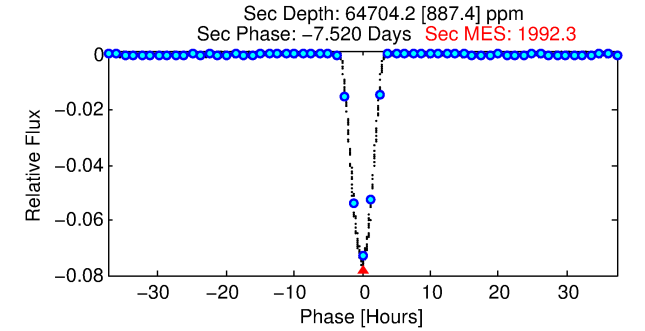
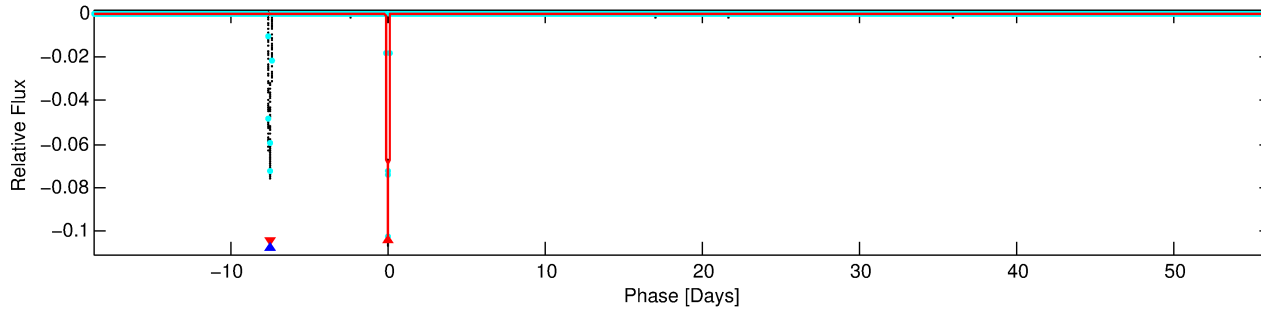
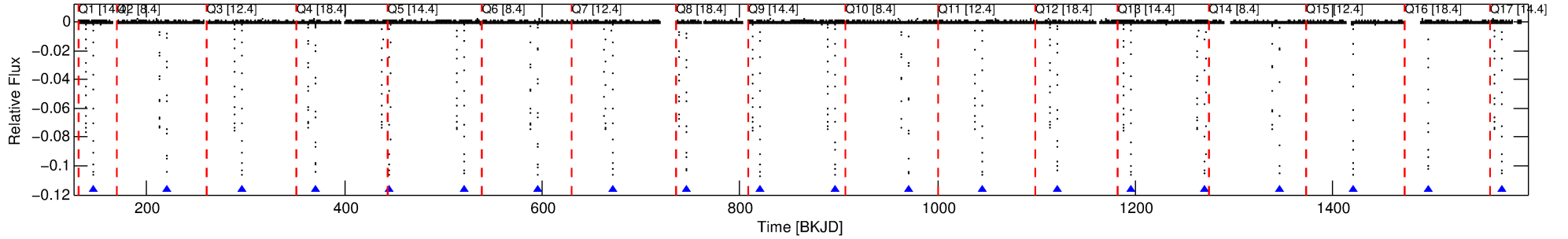
Ephemeris Match Information For 005535280-01

No Significant Match Found

DV One-Page Summary

KIC: 5535280 Candidate: 1 of 2 Period: 74.985 d
KOI: K06597.01 Corr: 0.999

Kp: 14.85 R*: 0.91 Rs Teff: 5955.0 K Logg: 4.52 Fe/H: -0.160



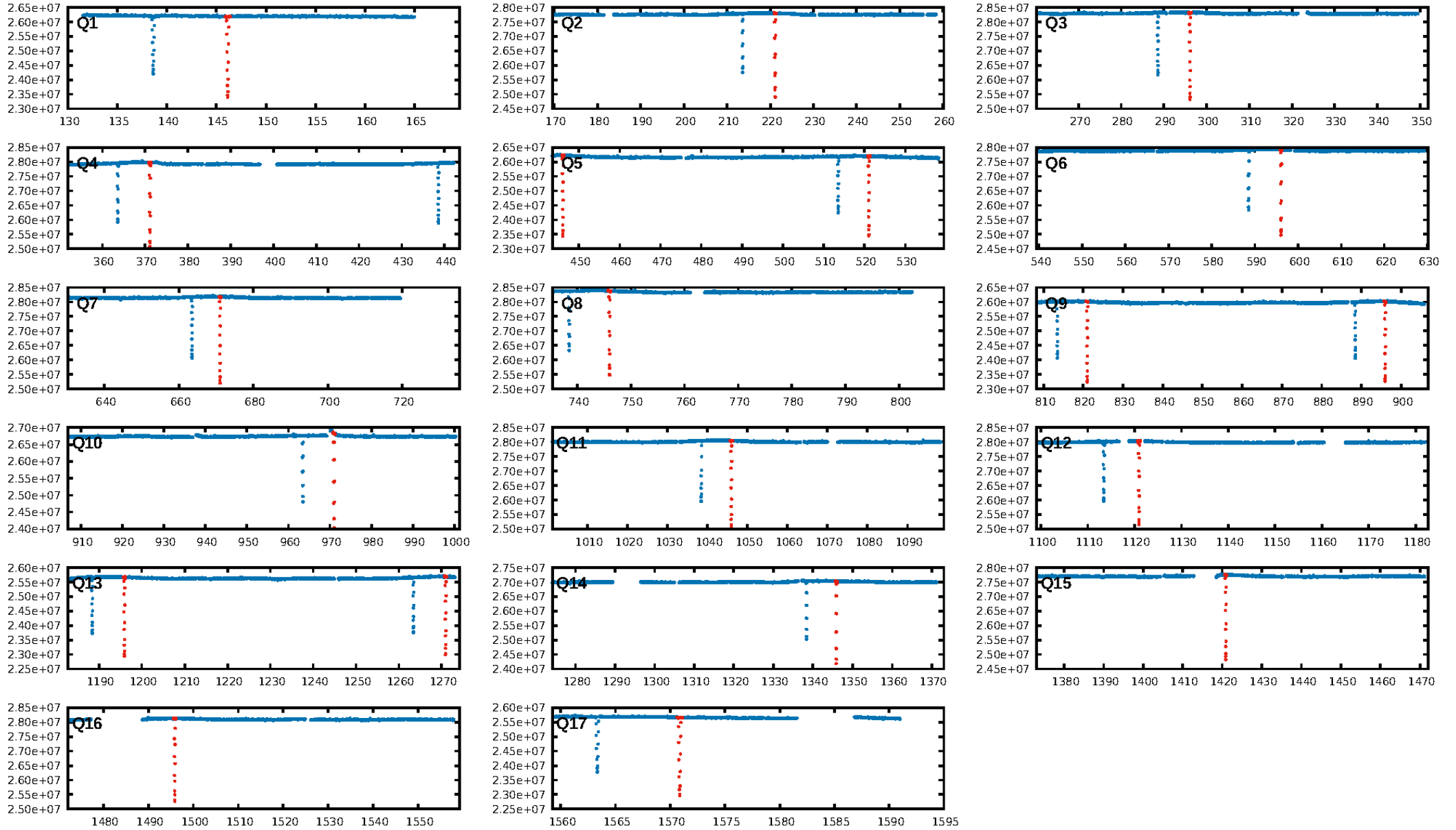
DV Fit Results:

Period = 74.98529 [0.00001] d
Epoch = 146.1390 [0.0001] BKJD
Rp/R* = 0.4351 [0.0251]
a/R* = 102.57 [0.19]
b = 0.90 [0.04]
Seff = 7.70 [3.07]
Teq = 425 [42] K
Rp = 43.21 [12.87] Re
a = 0.3481 [0.0885] AU
Ag = 2310.64 [919.61] [2.51σ]
Teffp = 4553 [190] K [21.17σ]

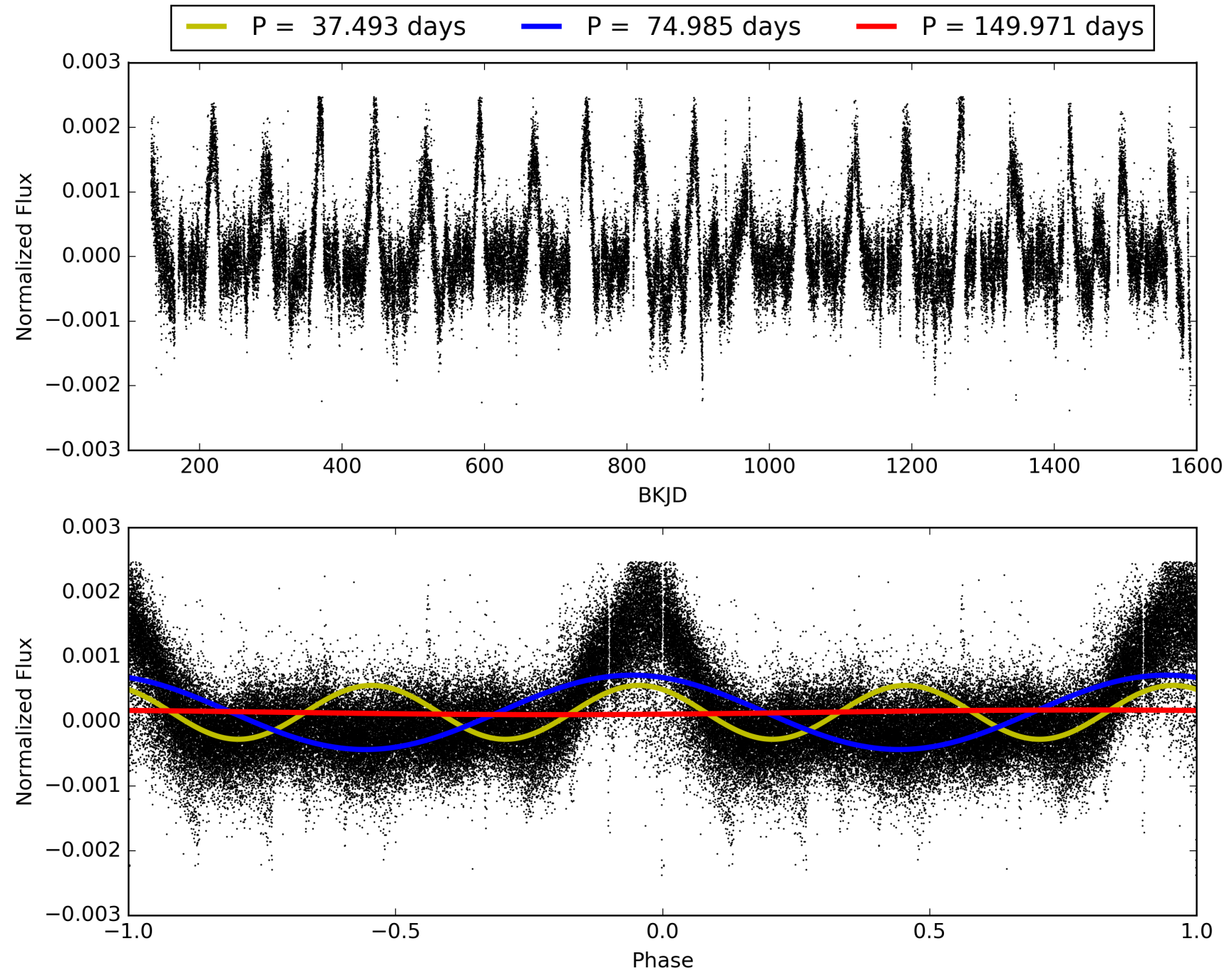
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [18/18]
GhostDiagnostic-chr: 14.79
Centroid-sig: 0.0%
Centroid-so: 0.118 arcsec [25.61σ]
OotOffset-rm: 0.015 arcsec [0.22σ]
KicOffset-rm: 0.092 arcsec [1.35σ]
OotOffset-st: 3/4/3/5 [15]
KicOffset-st: 3/4/3/5 [15]
DiffImageQuality-fgm: 1.00 [15/15]
DiffImageOverlap-fno: 1.00 [15/15]

TCE 005535280-01, PDC Light Curves

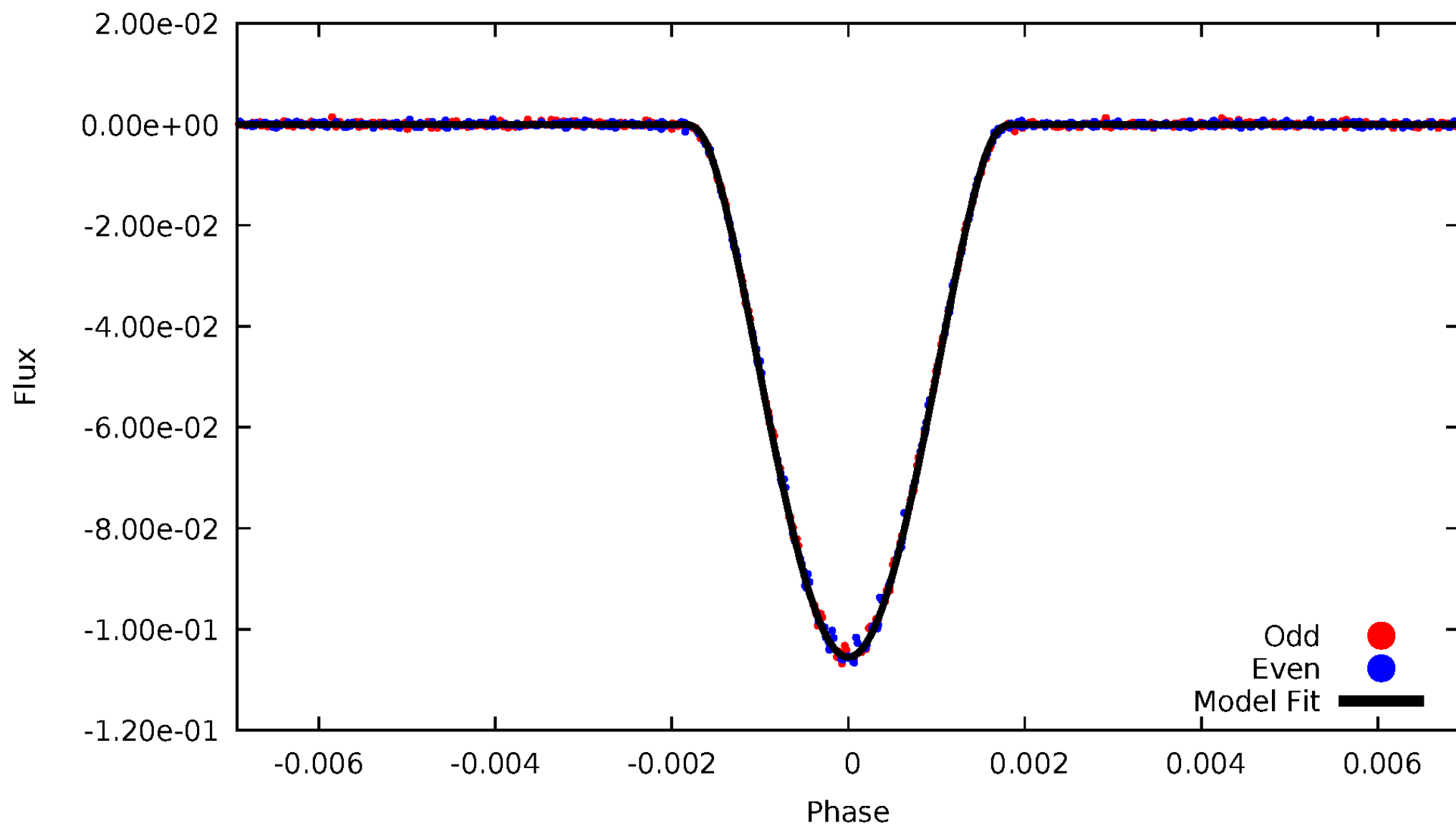


TCE 005535280-01



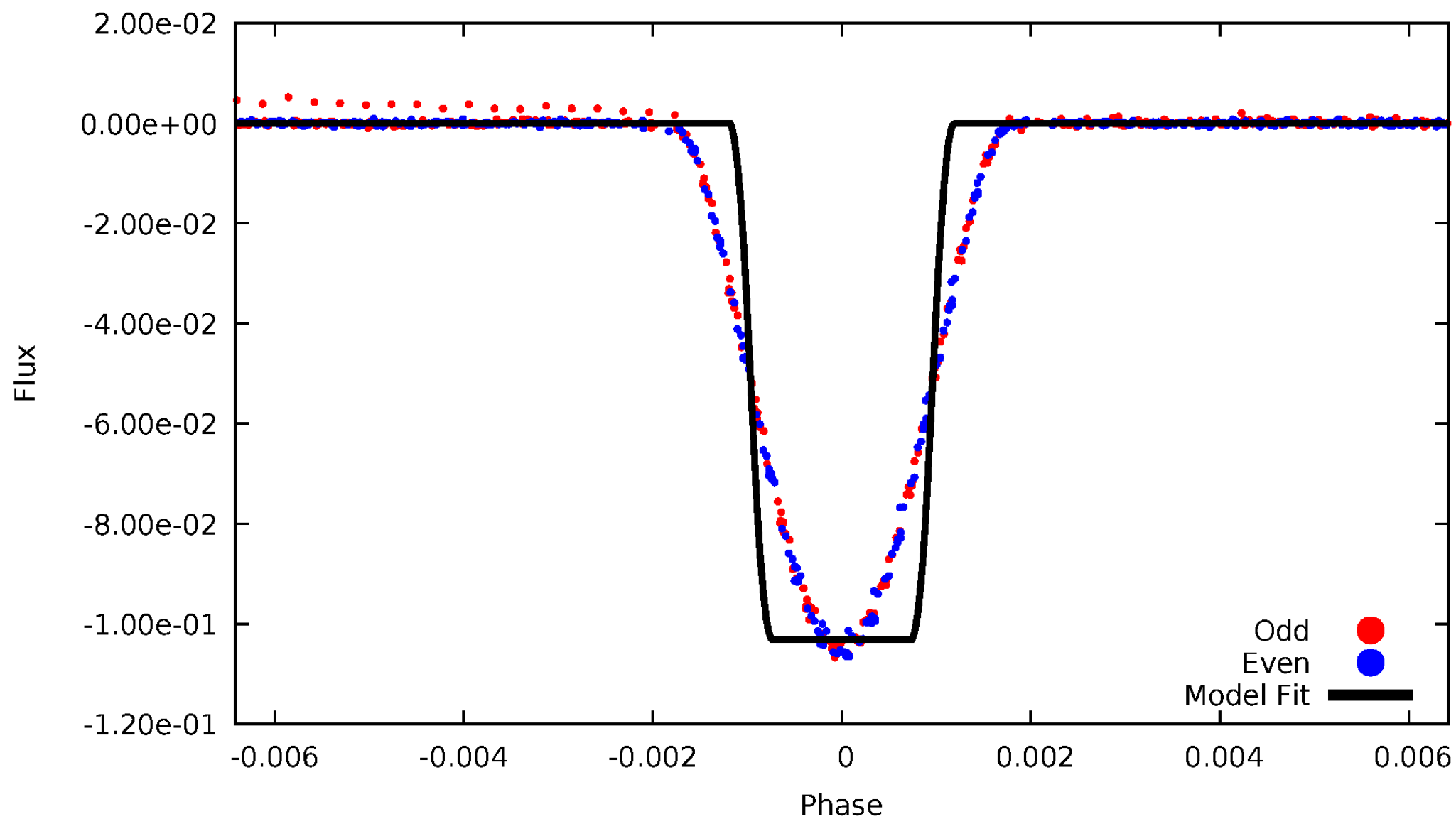
DV Odd/Even

TCE 005535280-01



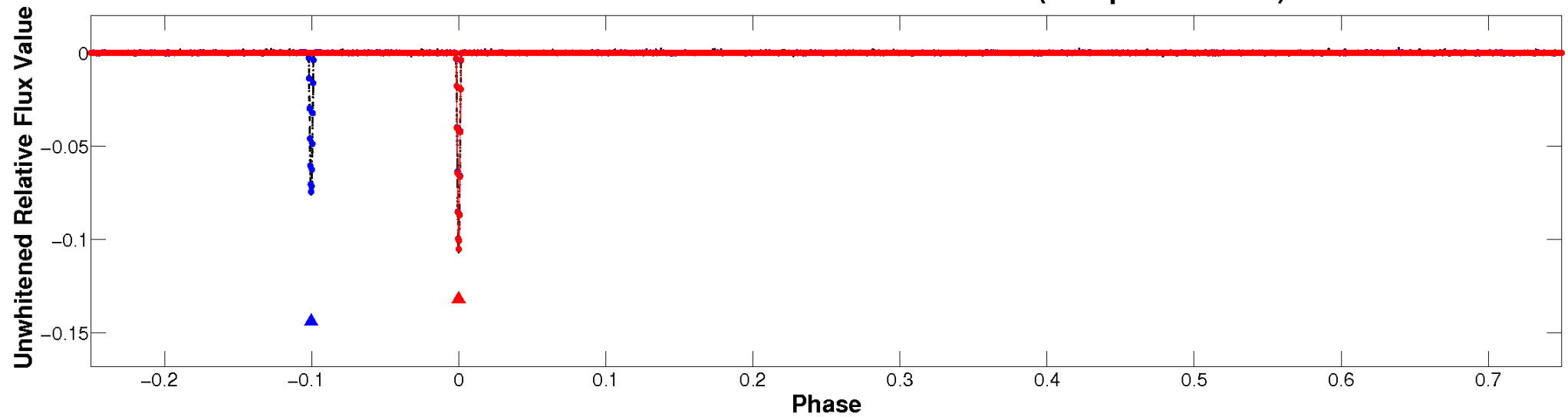
ALT Odd/Even

TCE 005535280-01

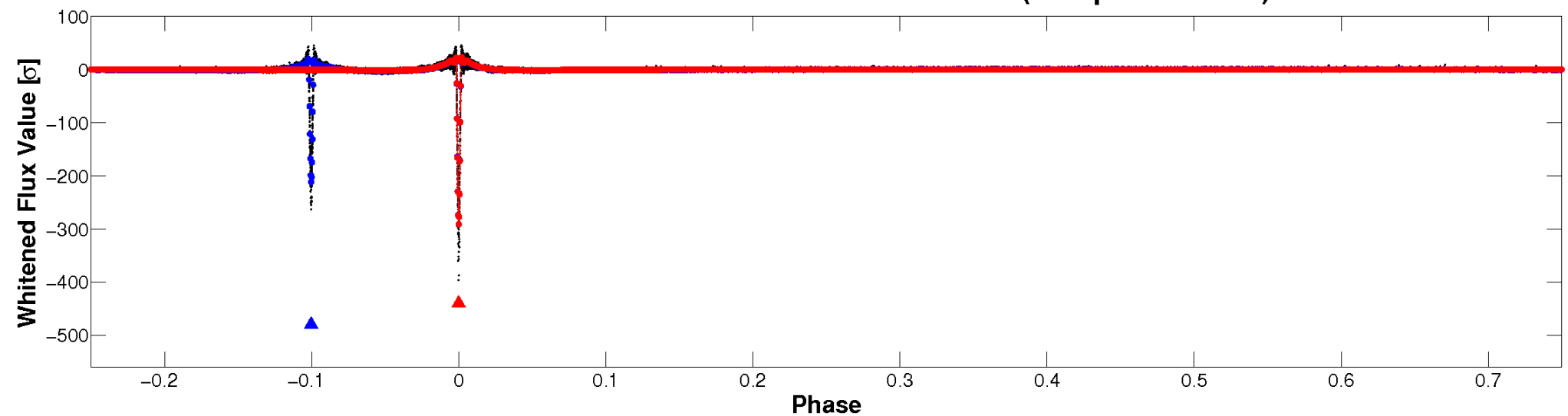


Non-Whitened Vs. Whitened Light Curve

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

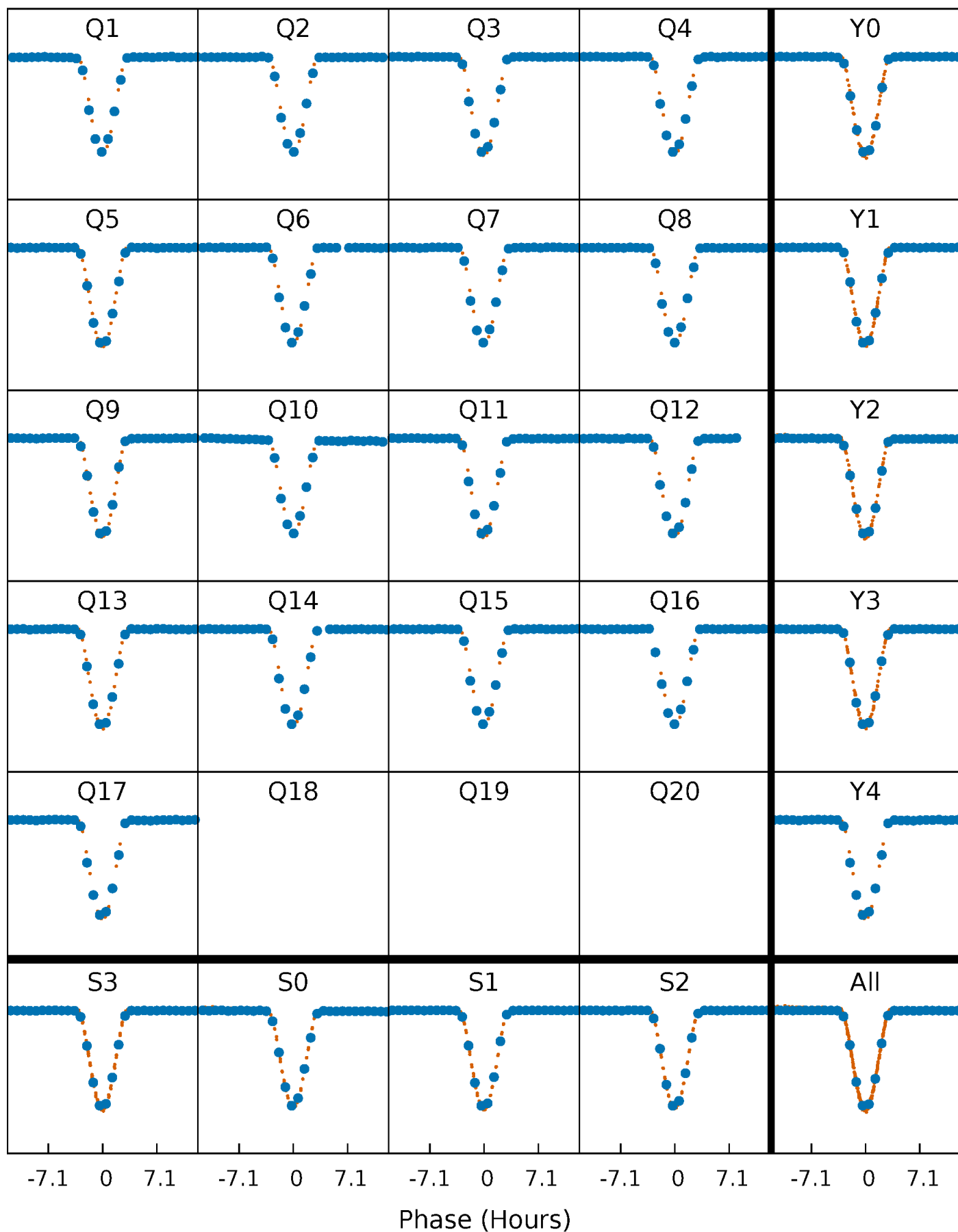


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



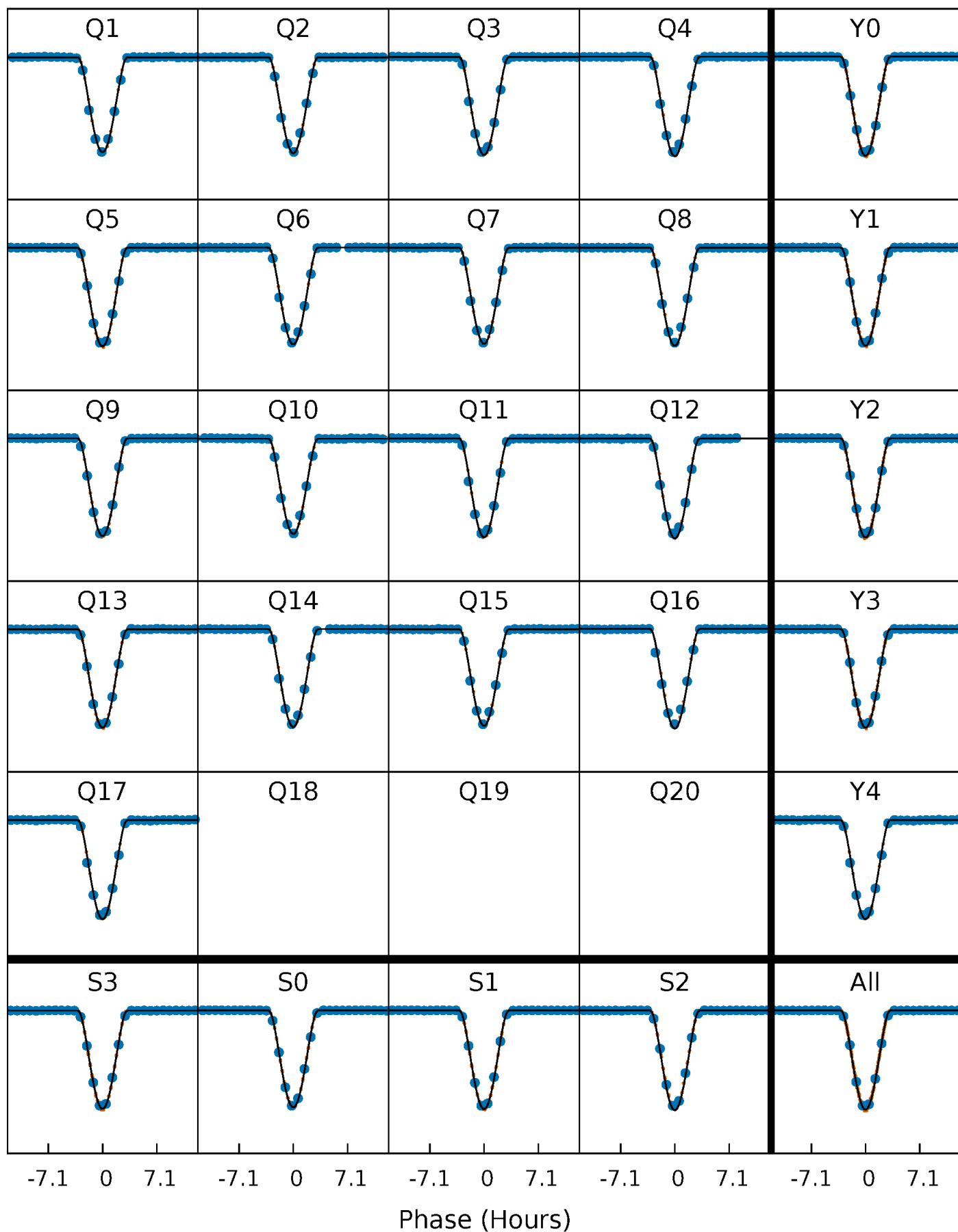
PDC Quarter-Phased Transit Curves

TCE 005535280-01 P= 74.985293 Days $T_0=146.138996$ (BKJD)



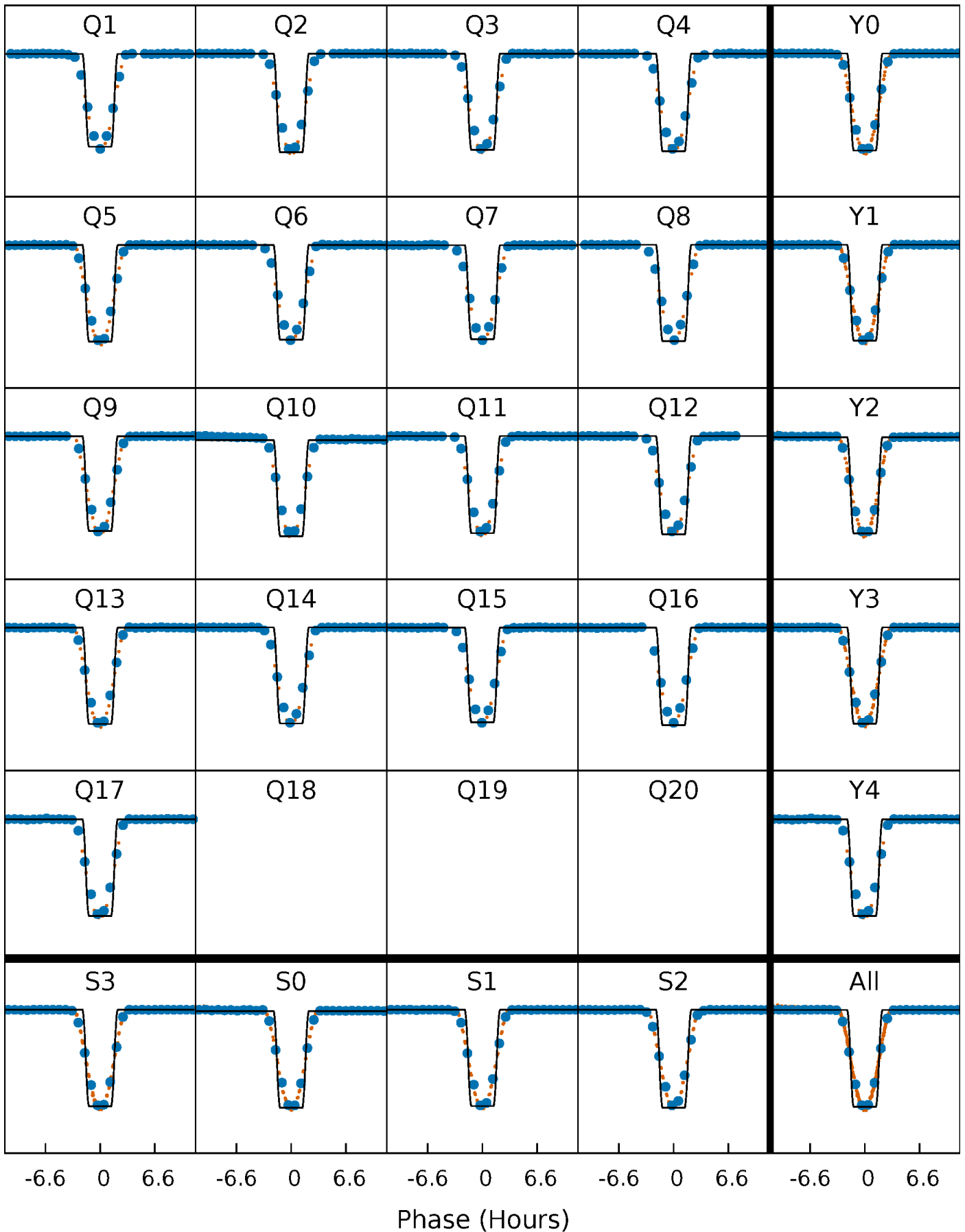
DV Quarter-Phased Transit Curves

TCE 005535280-01 P= 74.985293 Days $T_0=146.138996$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

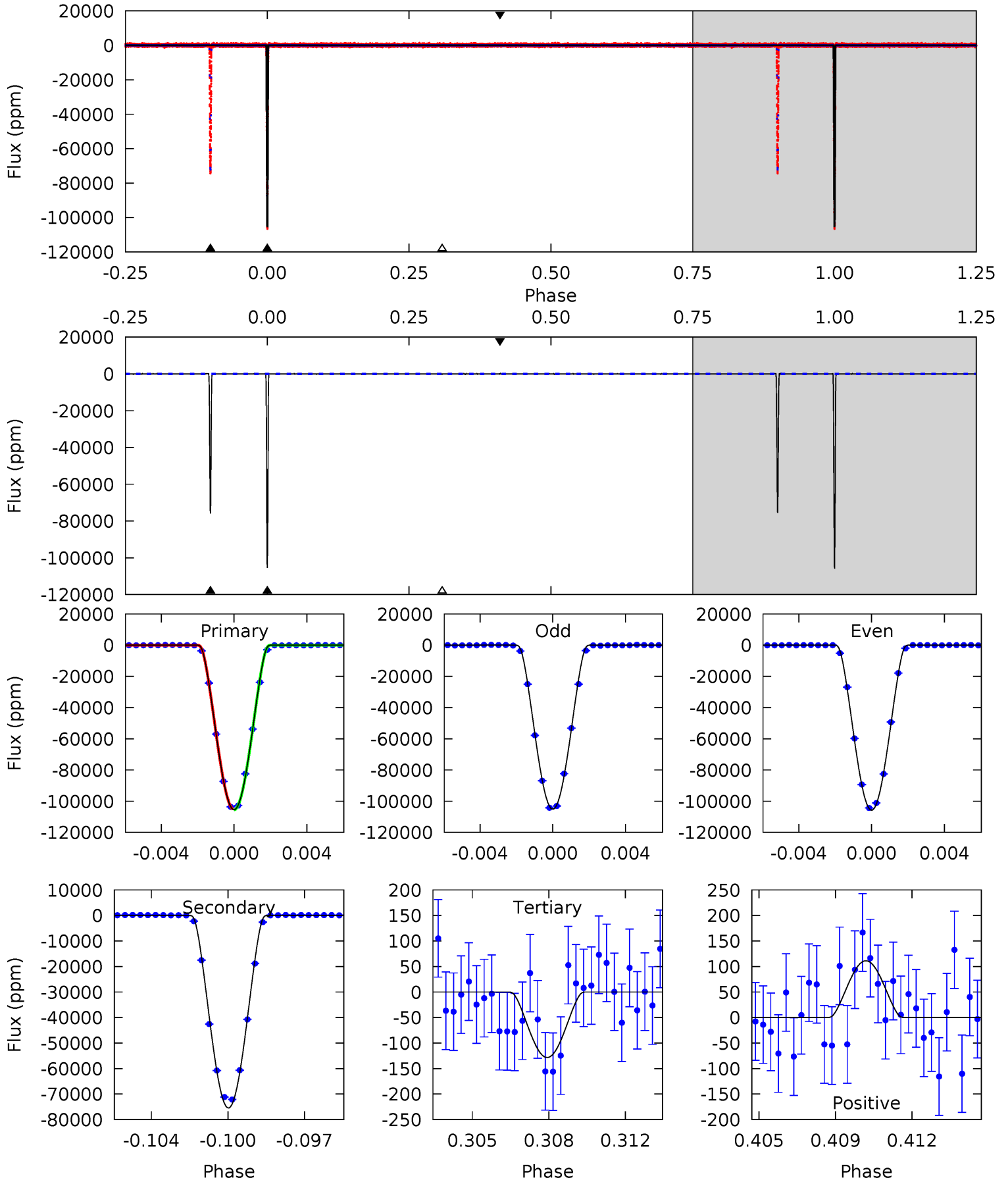
TCE 005535280-01 P= 74.985452 Days $T_0=146.137488$ (BKJD)



DV Model-Shift Uniqueness Test

005535280-01, P = 74.985293 Days, E = 71.153703 Days

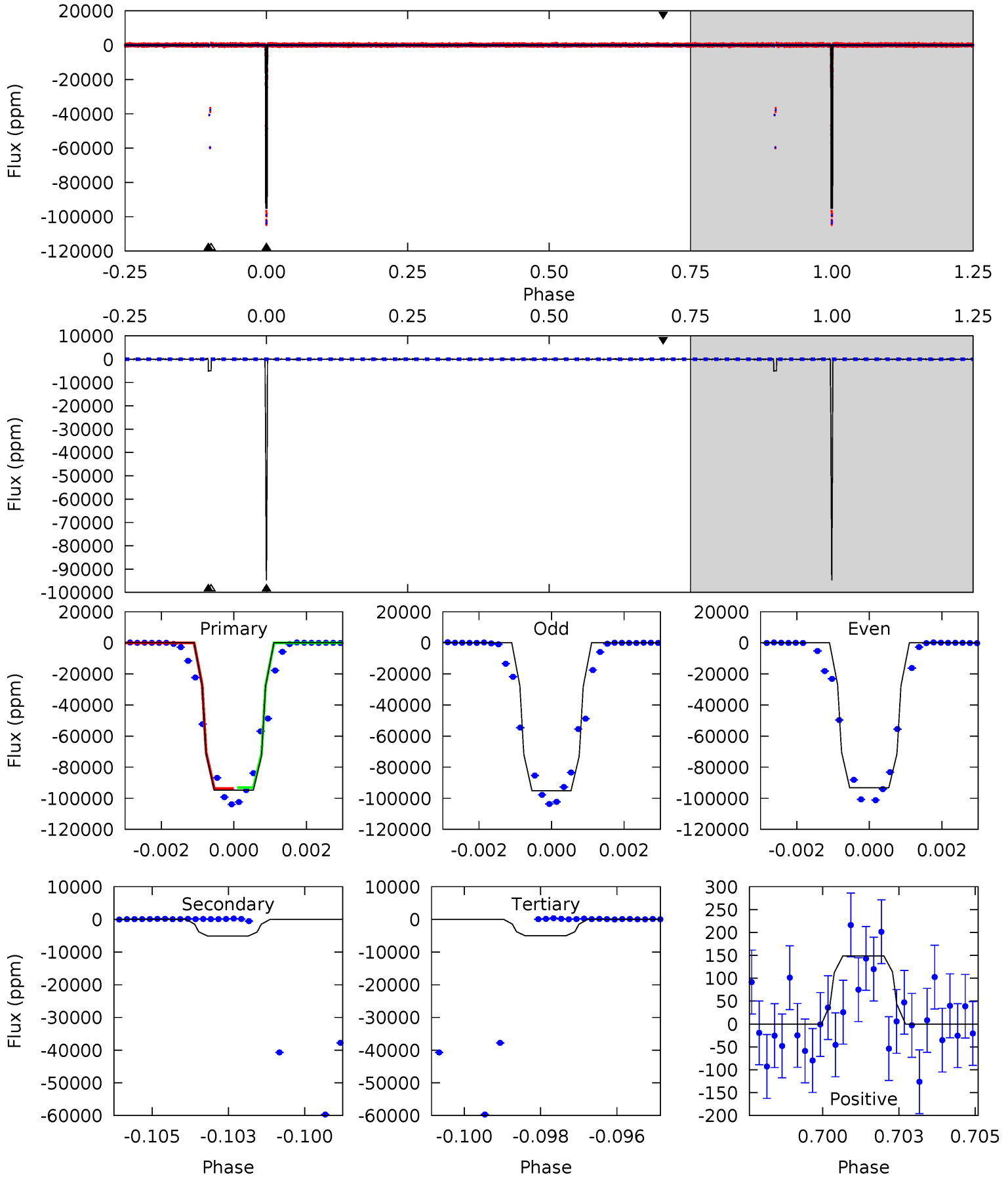
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5151	3685	6.27	5.43	5.21	2.90	1.82	5145	5145	3678	3679	15.9	1.00	0.00	0



Alt Model-Shift Uniqueness Test

005535280-01, P = 74.985452 Days, E = 71.152036 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1534	81.9	80.8	2.41	5.30	3.04	2.27	1453	1532	1.07	79.5	19.1	1.00	0.00	3.84



Stellar Parameters For KIC 005535280

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5955^{+161}_{-179}	$4.520^{+0.037}_{-0.213}$	$-0.160^{+0.300}_{-0.300}$	$0.910^{+0.266}_{-0.089}$	$0.999^{+0.119}_{-0.132}$	$1.869^{+0.397}_{-1.013}$
	+3%/-3%	+1%/-5%	+188%/-188%	+29%/-10%	+12%/-13%	+21%/-54%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005535280-01 / KOI 6597.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-75451 ± 20	$45.15^{+7.60}_{-4.44}$	611^{+45}_{-29}	4925^{+173}_{-164}	2627^{+527}_{-669}
Alt.	-5060 ± 62	$33.19^{+5.32}_{-3.95}$	609^{+39}_{-28}	3348^{+101}_{-97}	298^{+79}_{-70}

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 $A_{obs} \gg 1.0$

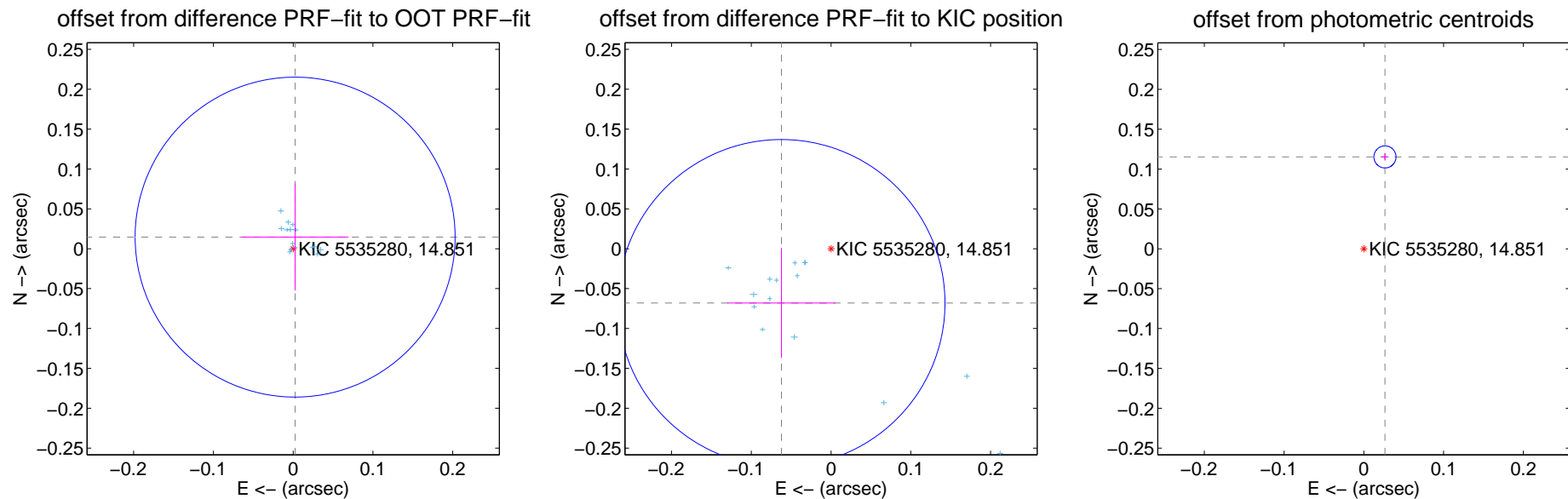
DV Centroid Data

Supplemental centroid analysis for 005535280-01. Kepler magnitude: 14.85. Transit SNR 2372.11

There are 15 quarters with good PRF difference image offsets

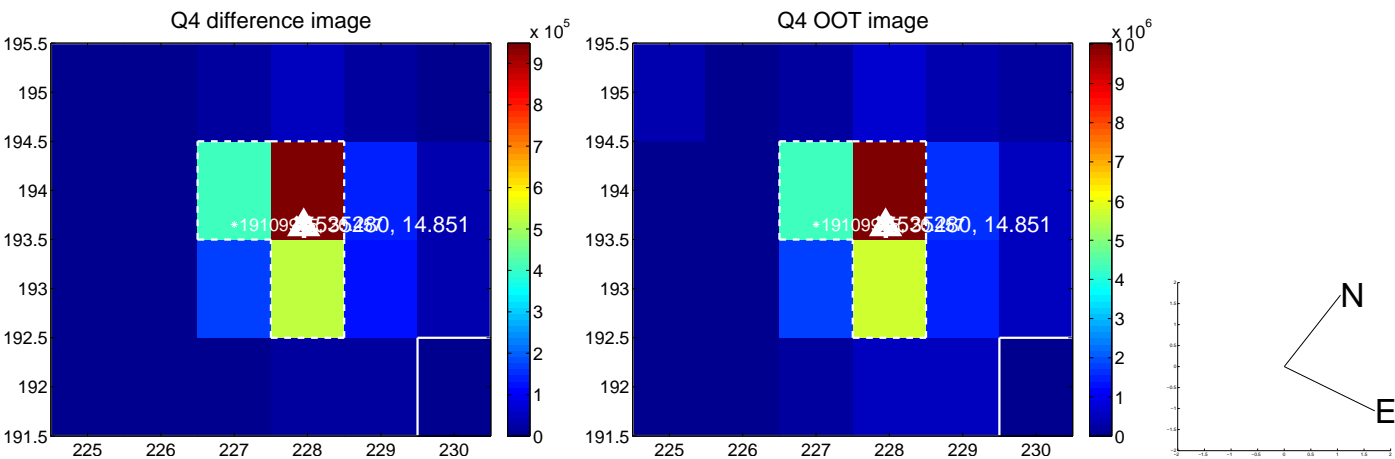
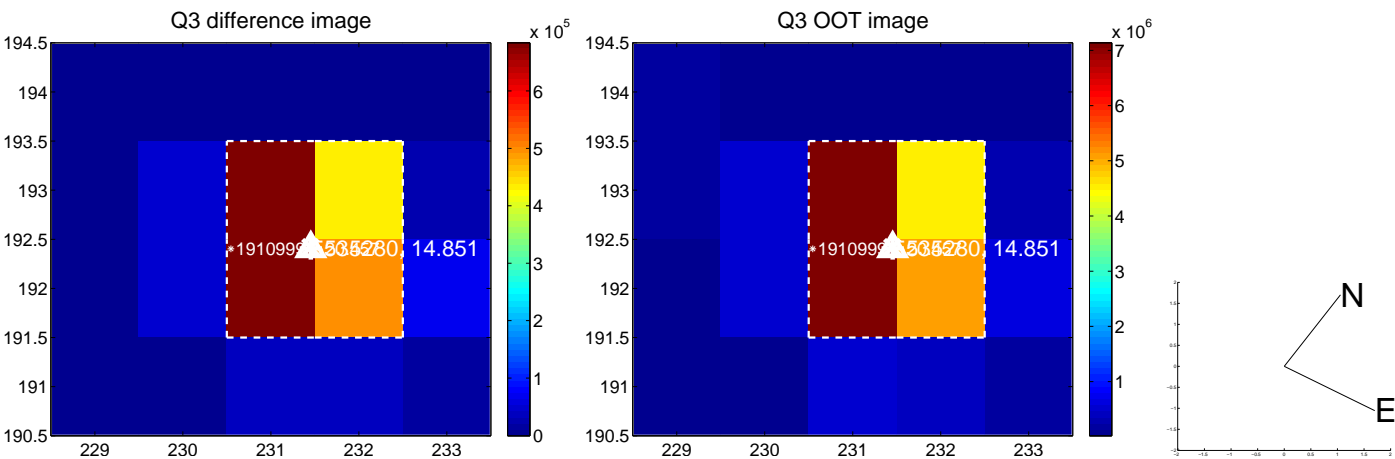
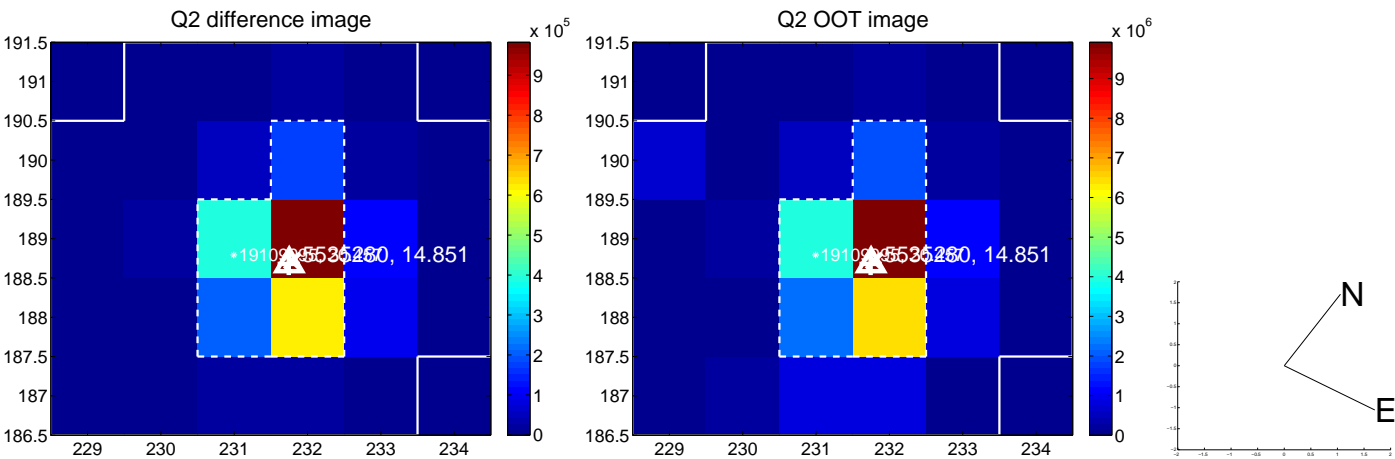
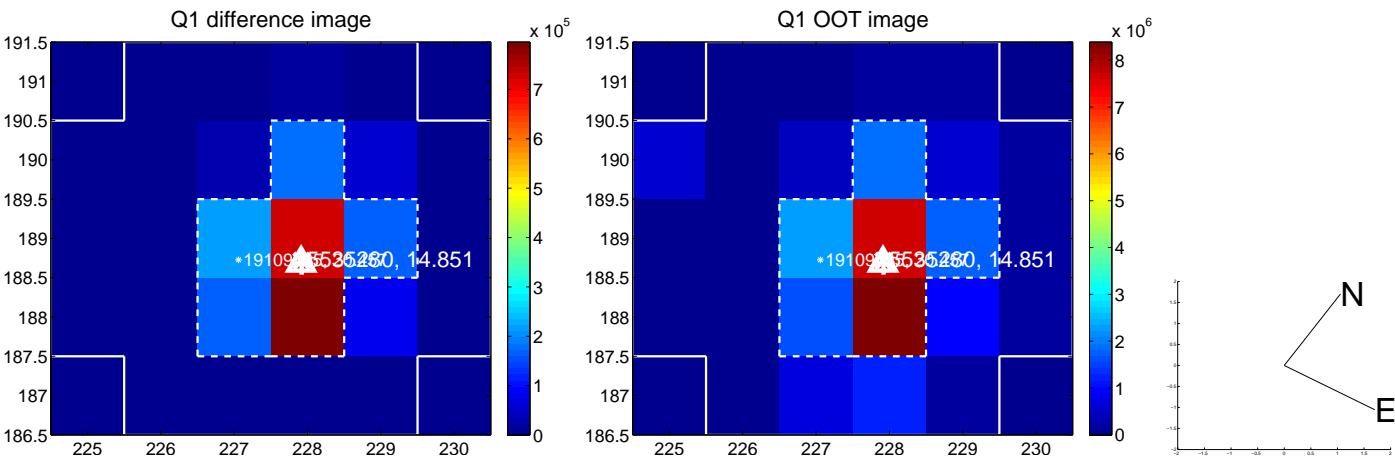
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.015 ± 0.067	0.22	-0.002 ± 0.067	0.015 ± 0.067
PRF-fit source offset from KIC position	0.092 ± 0.068	1.35	0.062 ± 0.068	-0.068 ± 0.069
photometric centroid source offset	0.12 ± 0.00	25.61	-0.03 ± 0.00	0.12 ± 0.00

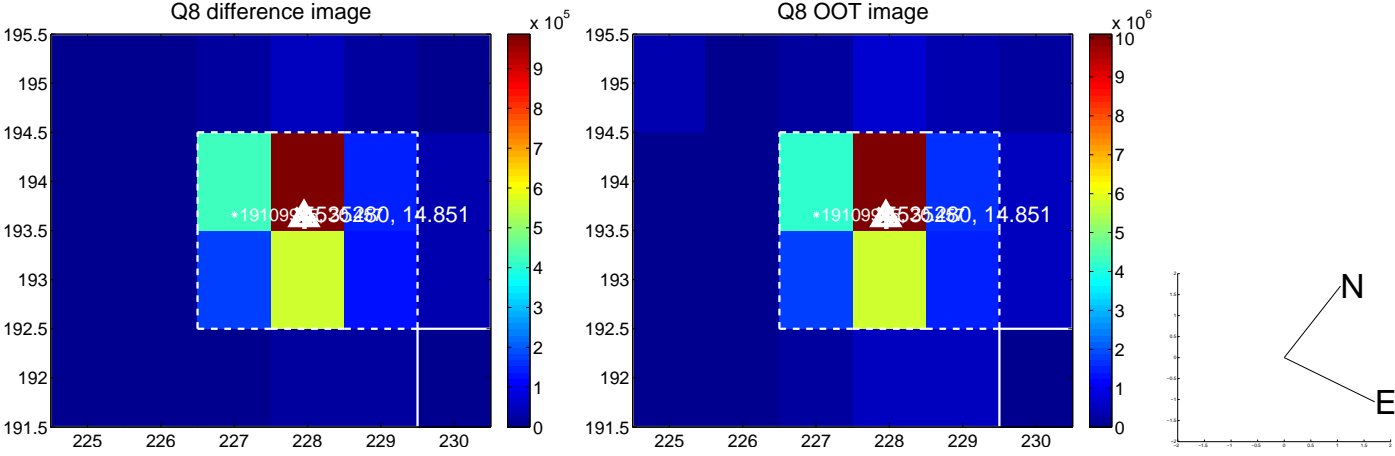
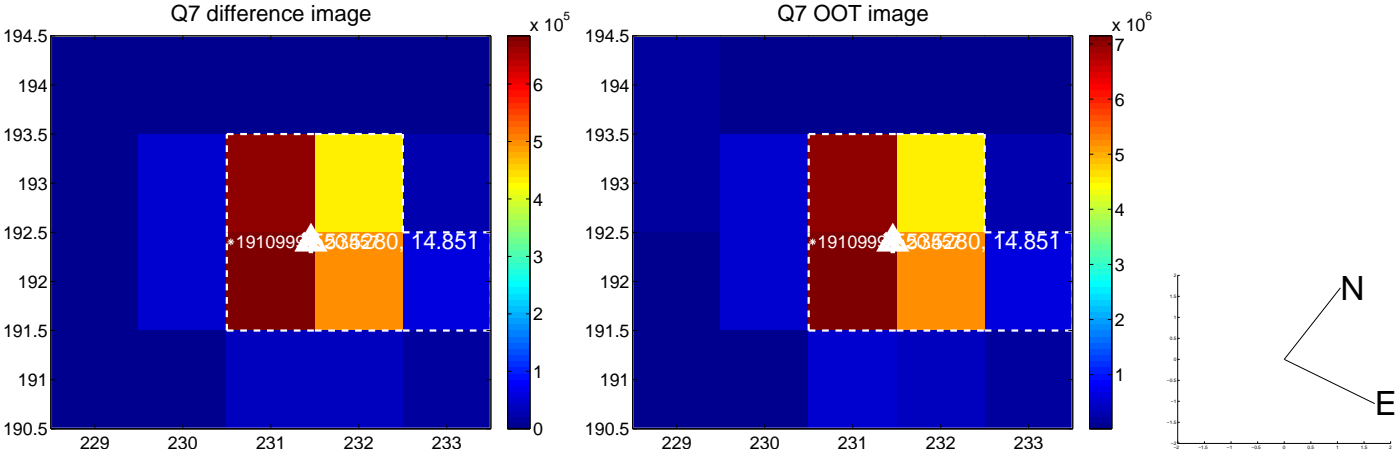
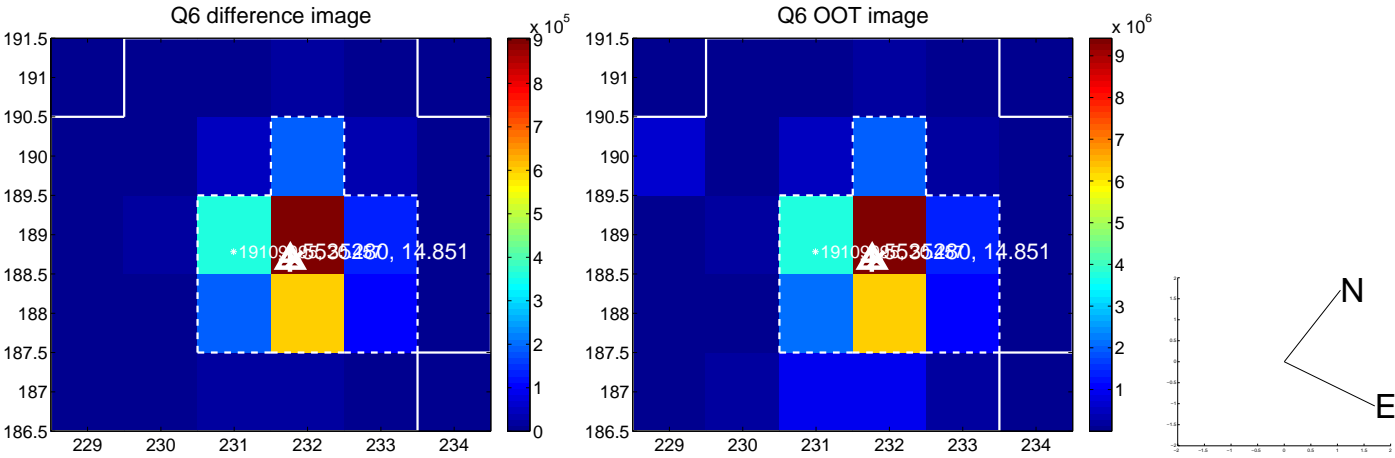
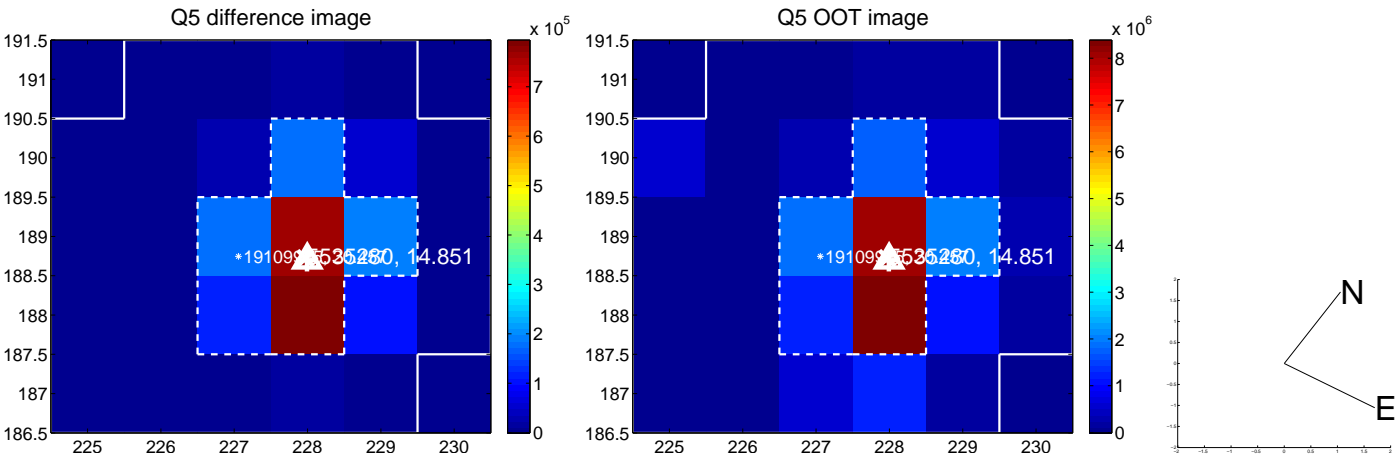


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

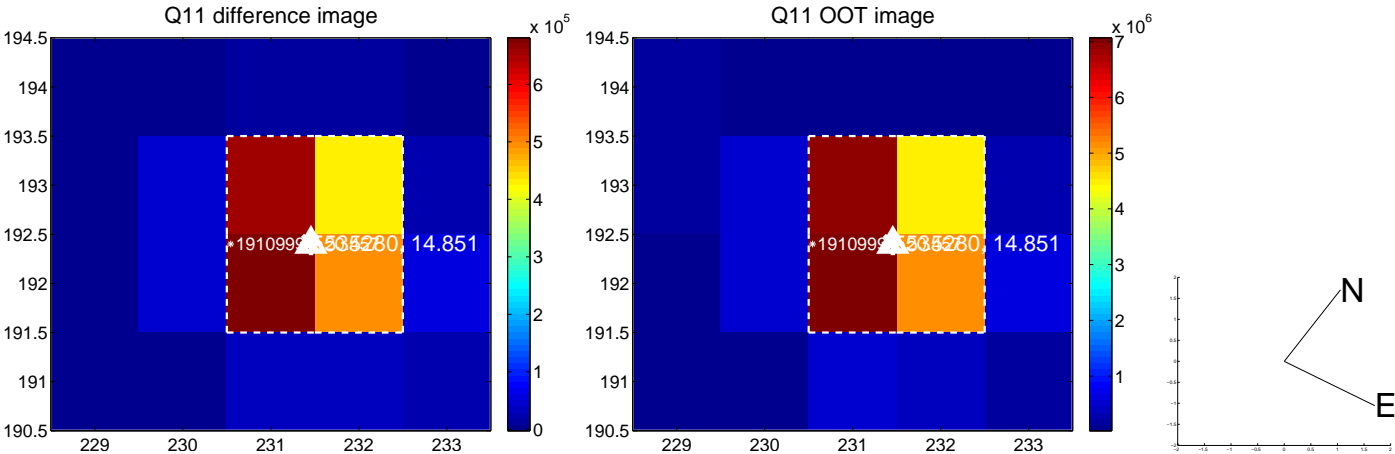
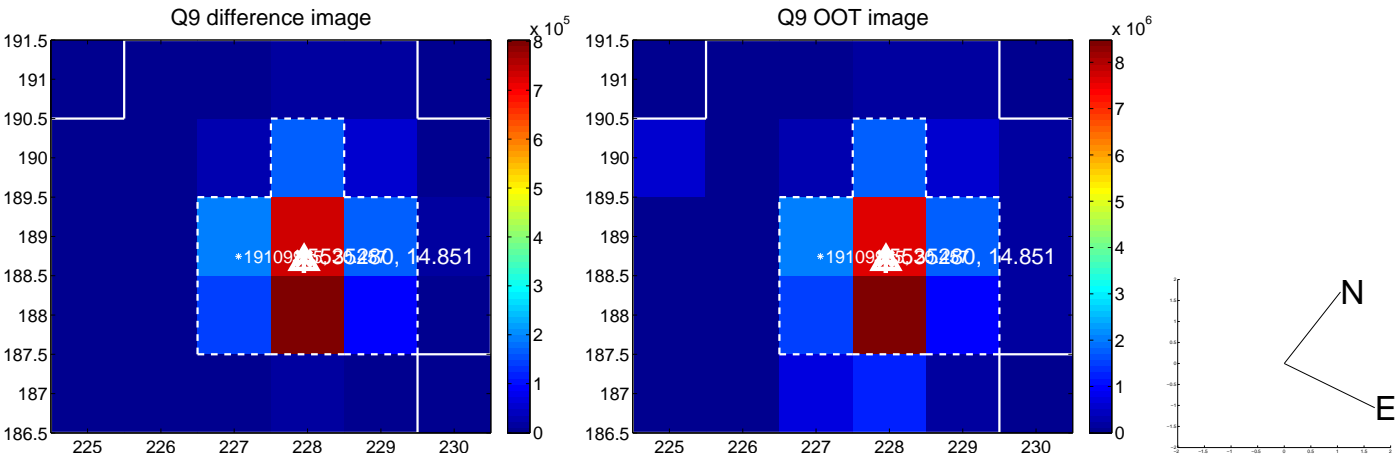
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



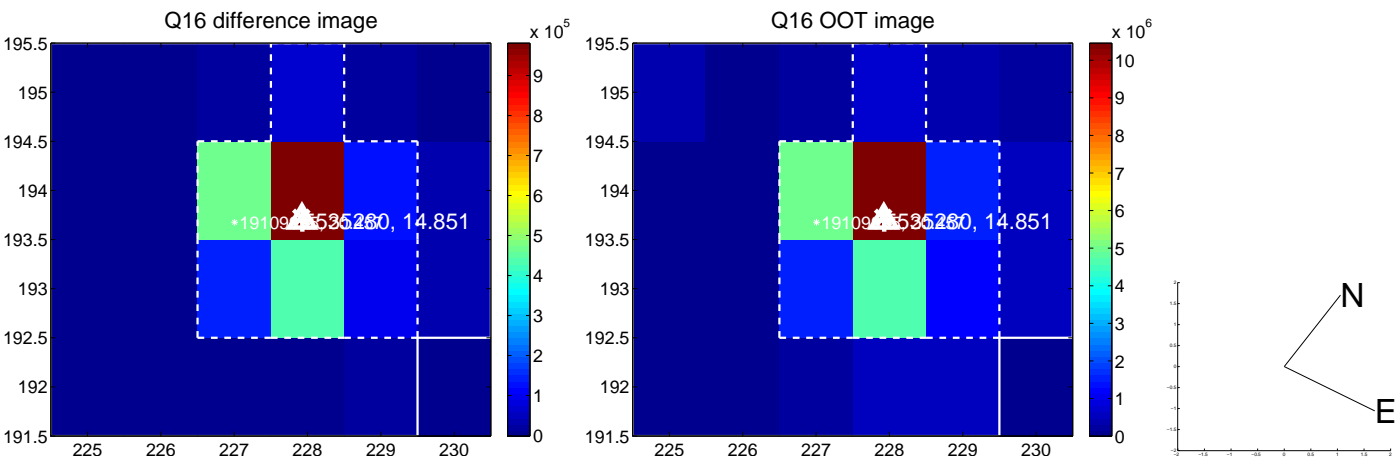
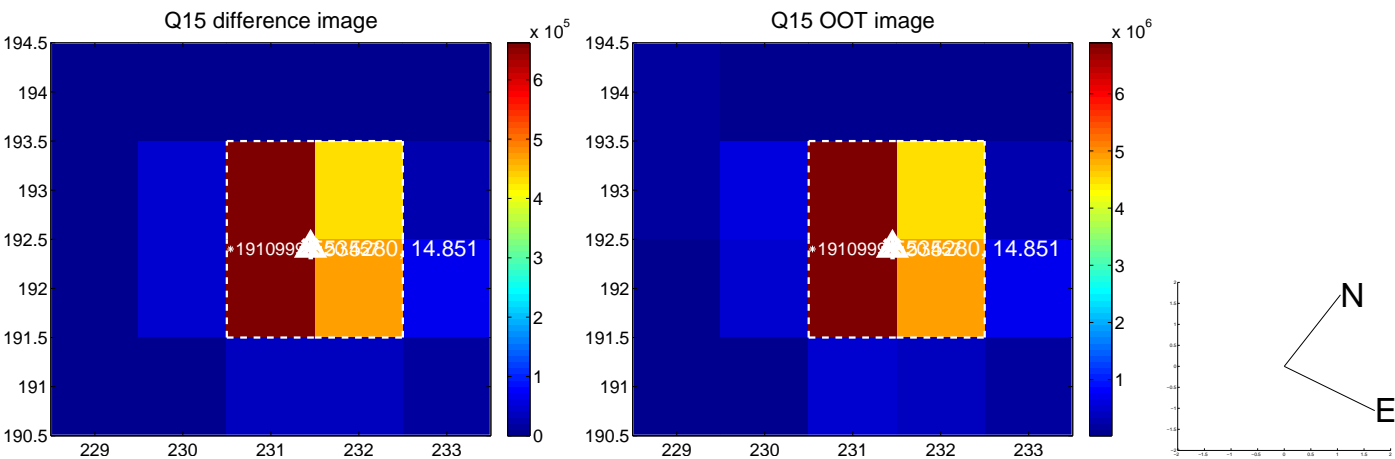
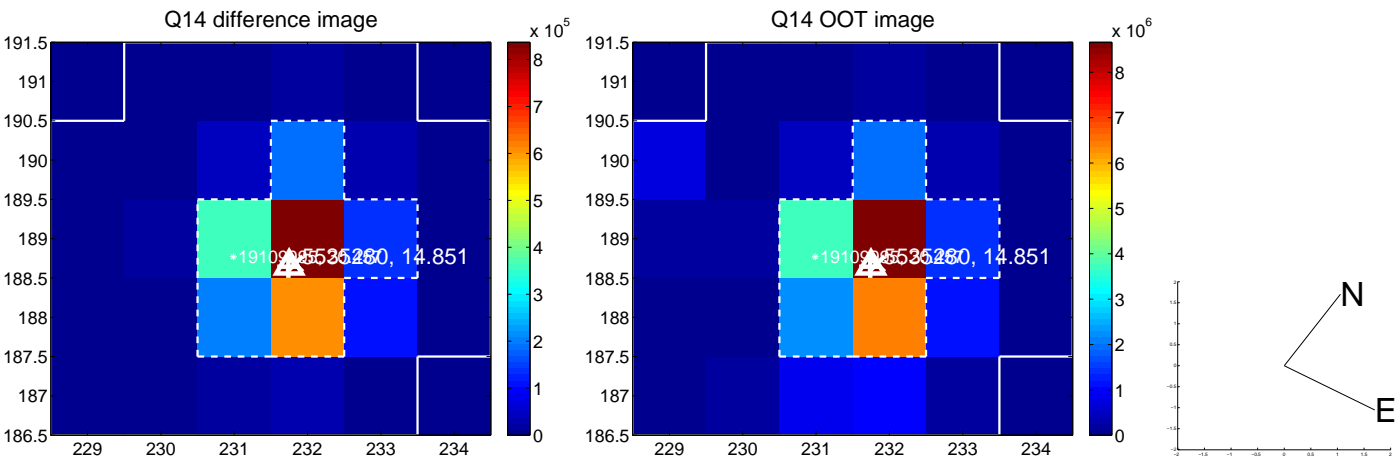
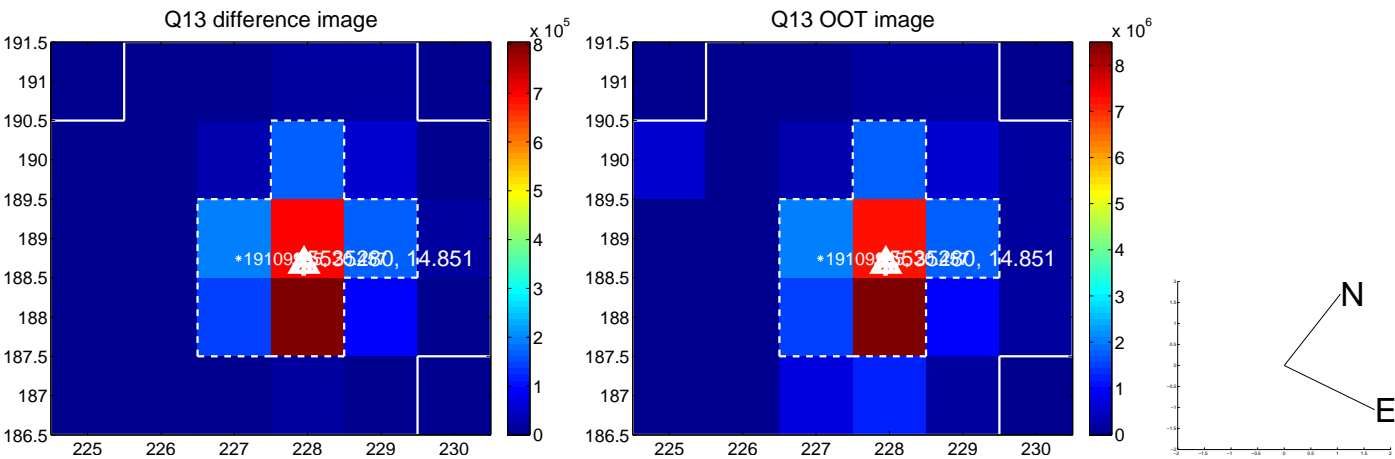
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



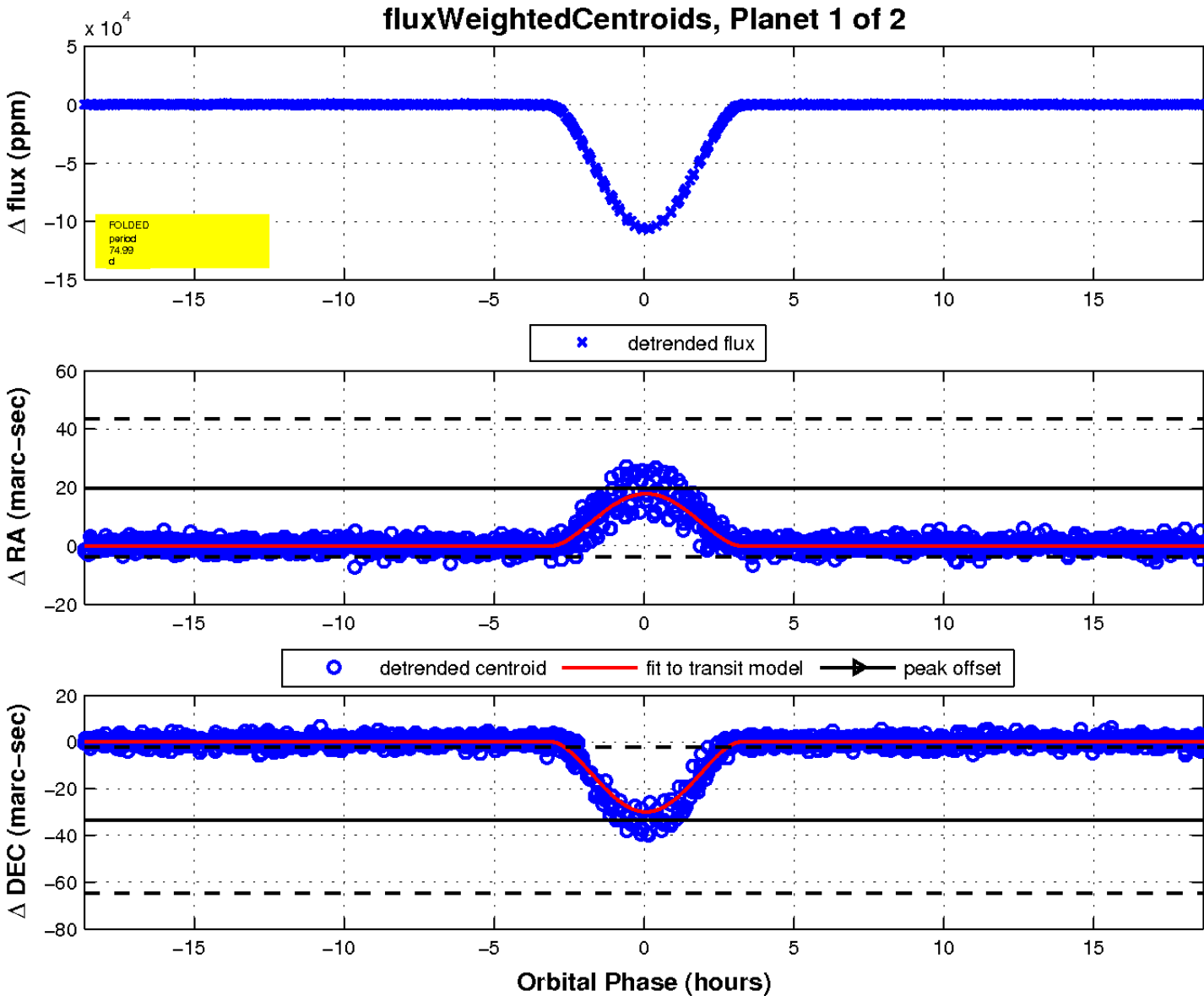
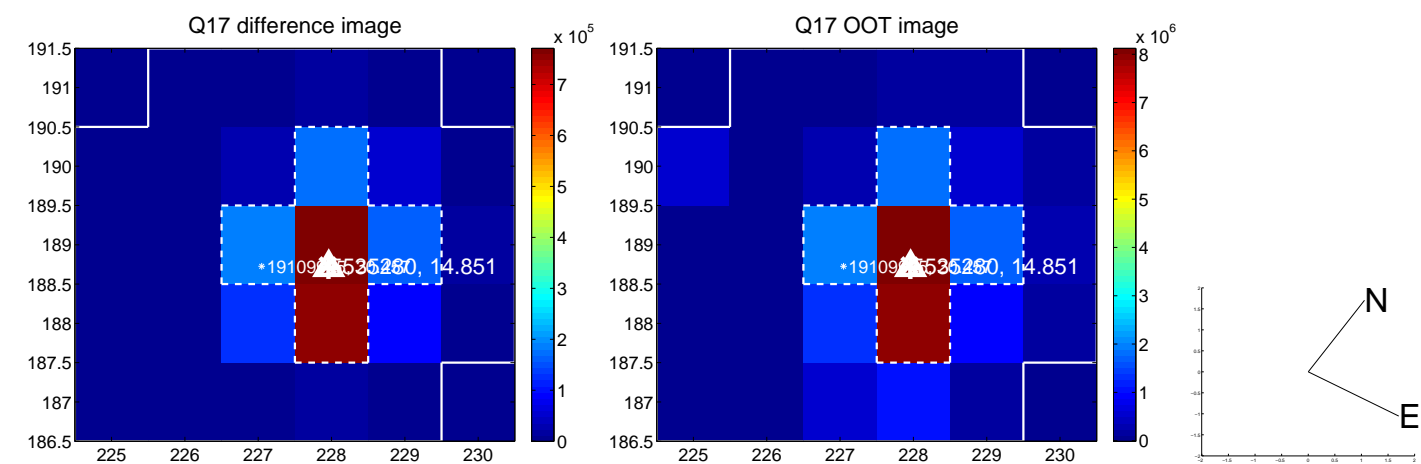
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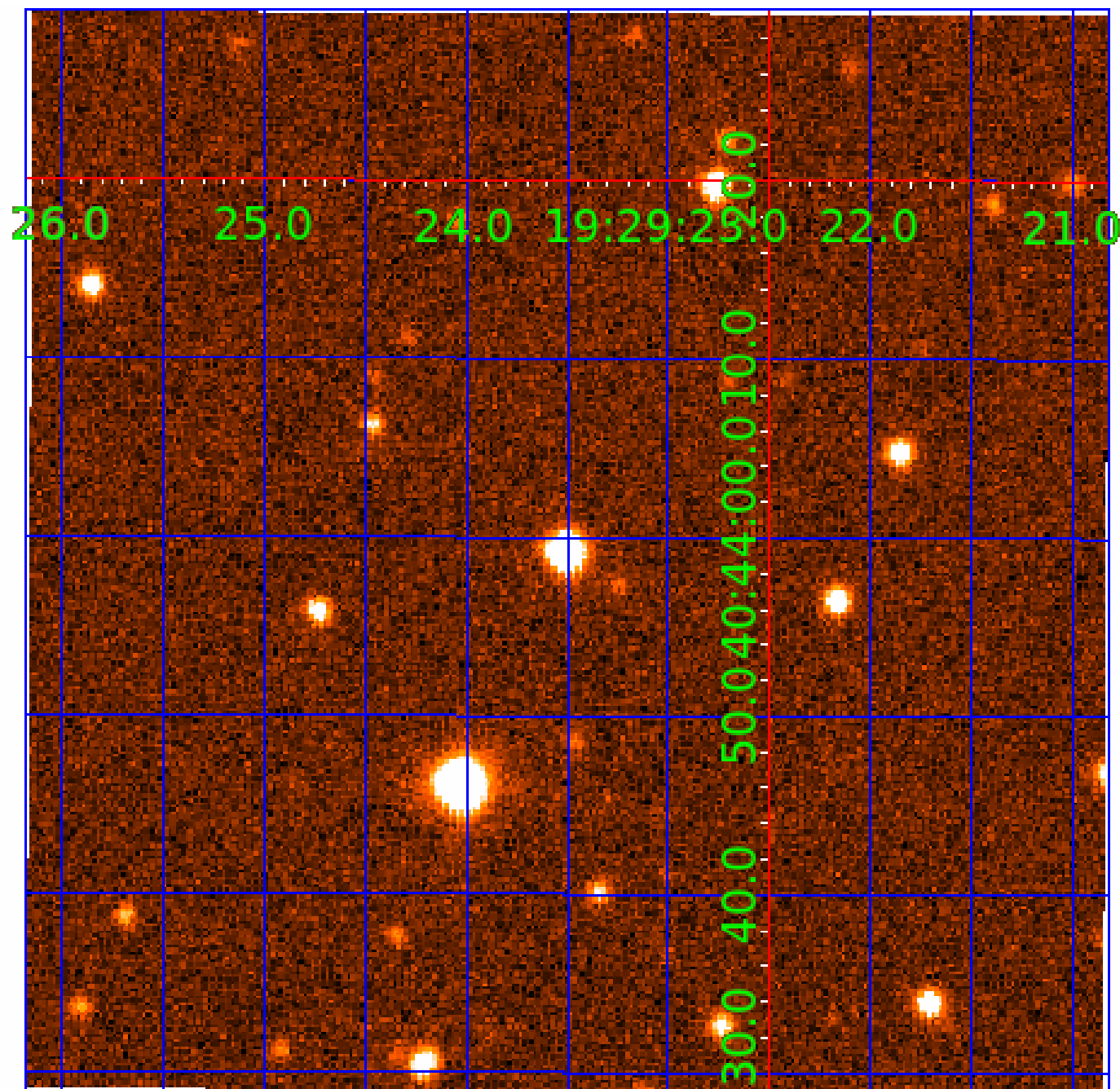


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UKIRT Image

Declination



KIC 005535280

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})
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005535280-02	OBS	No	74.985300	138.619507	74423.3	6.337	2059.9	1713.8	0.91	5955	35.61	7.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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005535280-02	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.

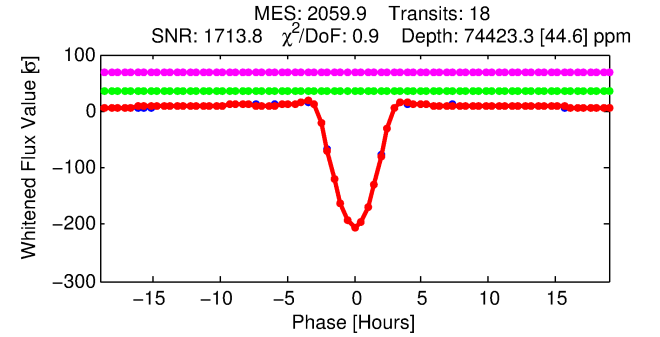
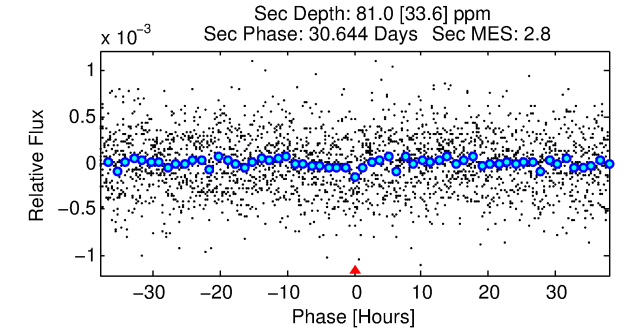
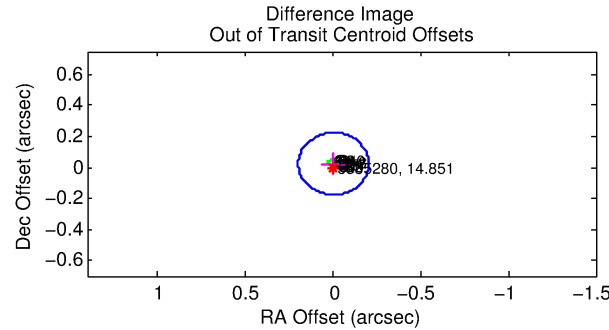
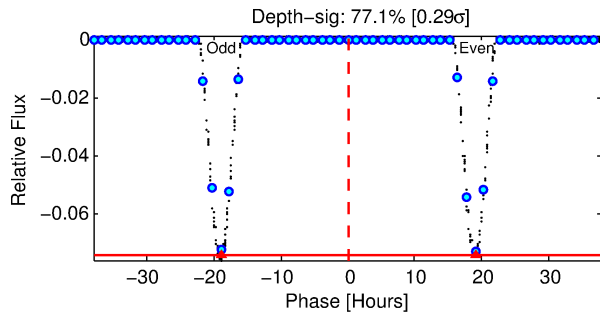
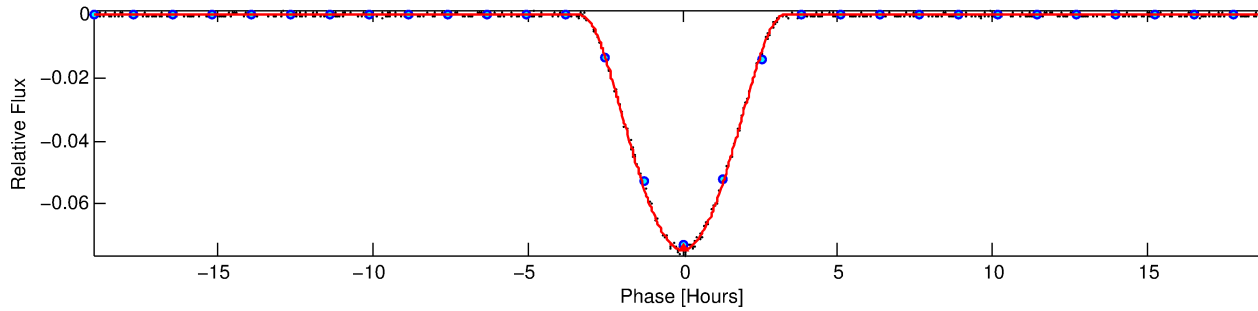
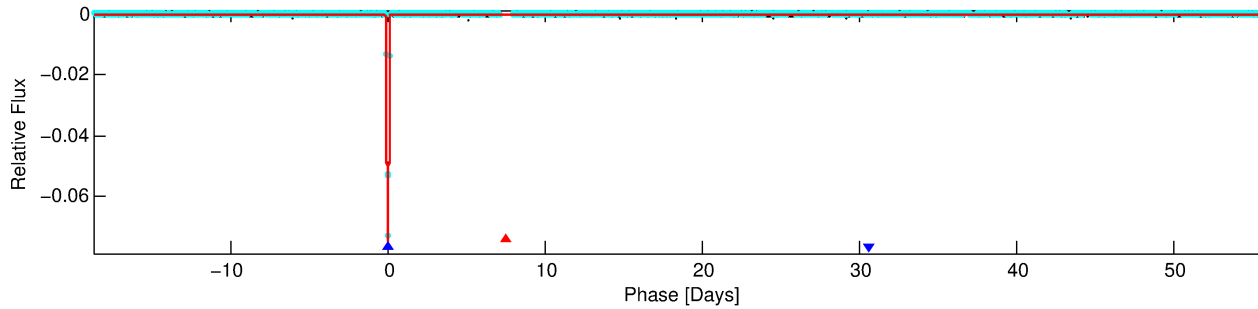
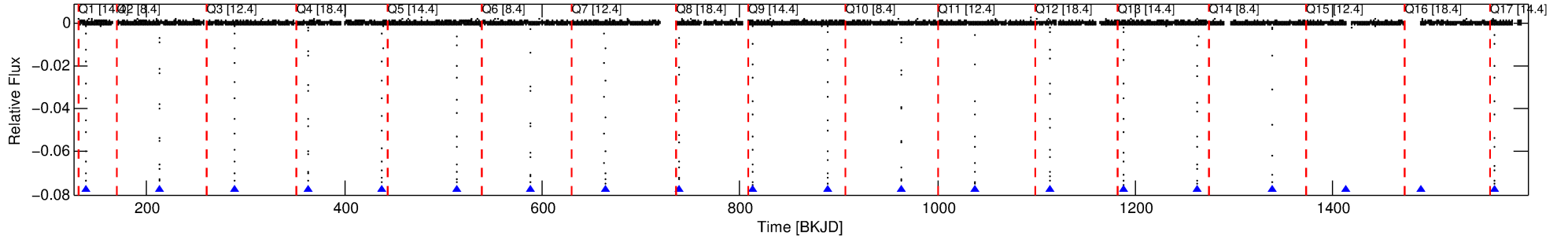
Ephemeris Match Information For 005535280-02

No Significant Match Found

DV One-Page Summary

KIC: 5535280 Candidate: 2 of 2 Period: 74.985 d
KOI: K06597 Corr: No Ephemeris Match

Kp: 14.85 R*: 0.91 Rs Teff: 5955.0 K Logg: 4.52 Fe/H: -0.160



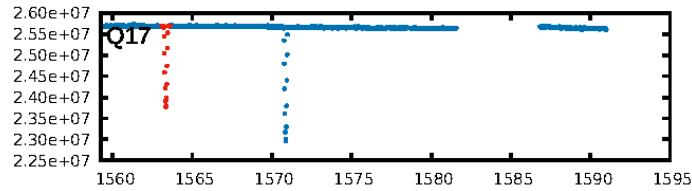
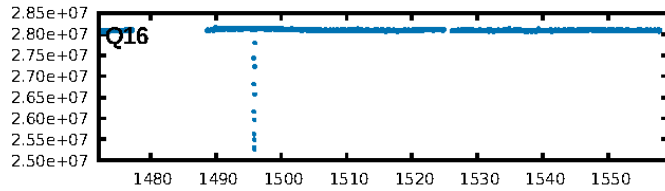
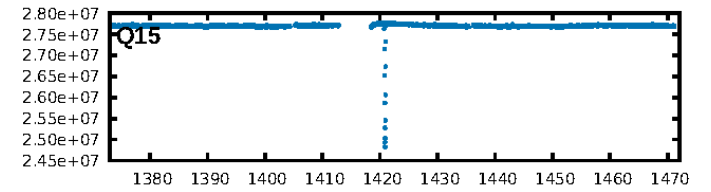
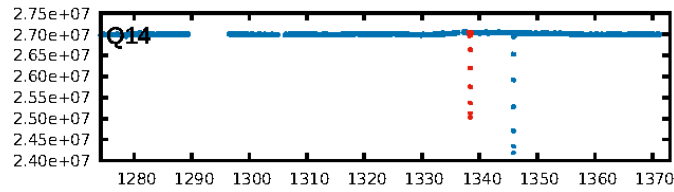
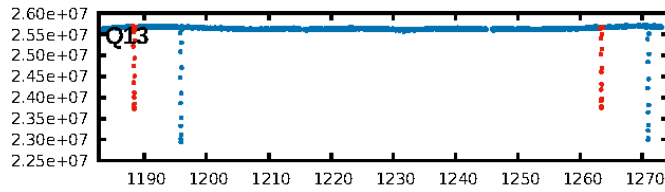
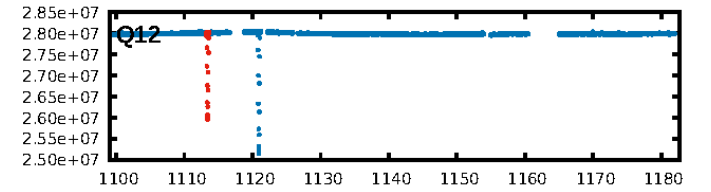
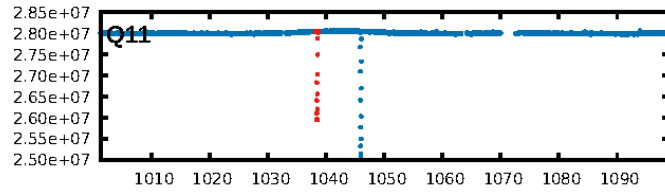
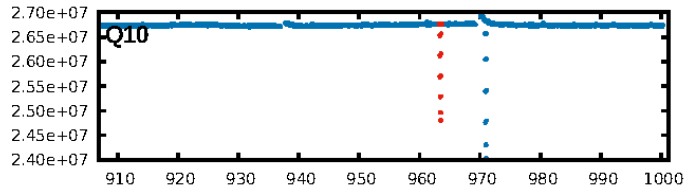
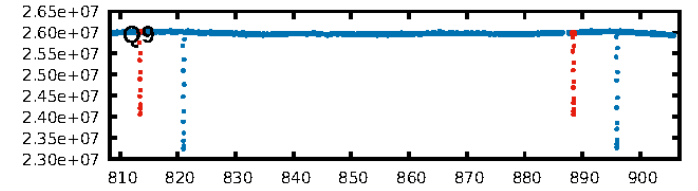
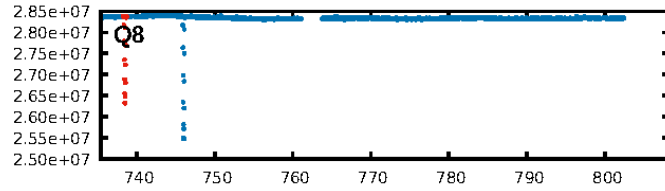
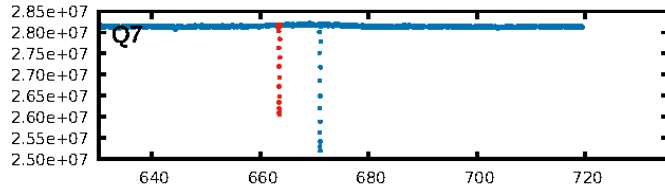
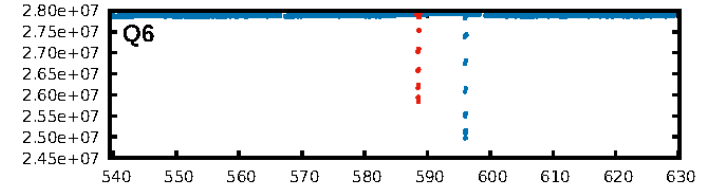
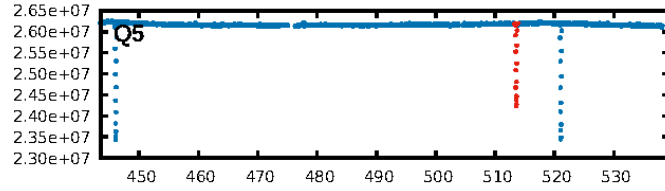
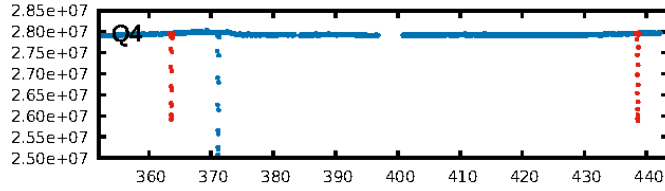
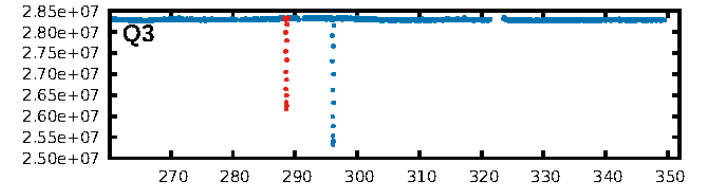
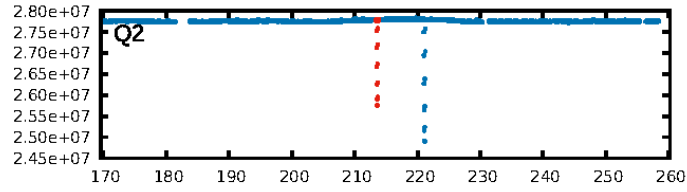
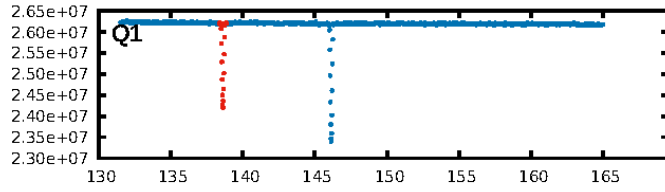
DV Fit Results:

Period = 74.98530 [0.00001] d
Epoch = 138.6195 [0.0001] BKJD
Rp/R* = 0.3586 [0.0101]
a/R* = 91.69 [0.11]
b = 0.90 [0.02]
Seff = 7.70 [3.07]
Teq = 425 [42] K
Rp = 35.61 [10.46] Re
a = 0.3481 [0.0885] AU
Ag = 4.26 [2.41] [1.35σ]
Teffp = 944 [103] K [4.67σ]

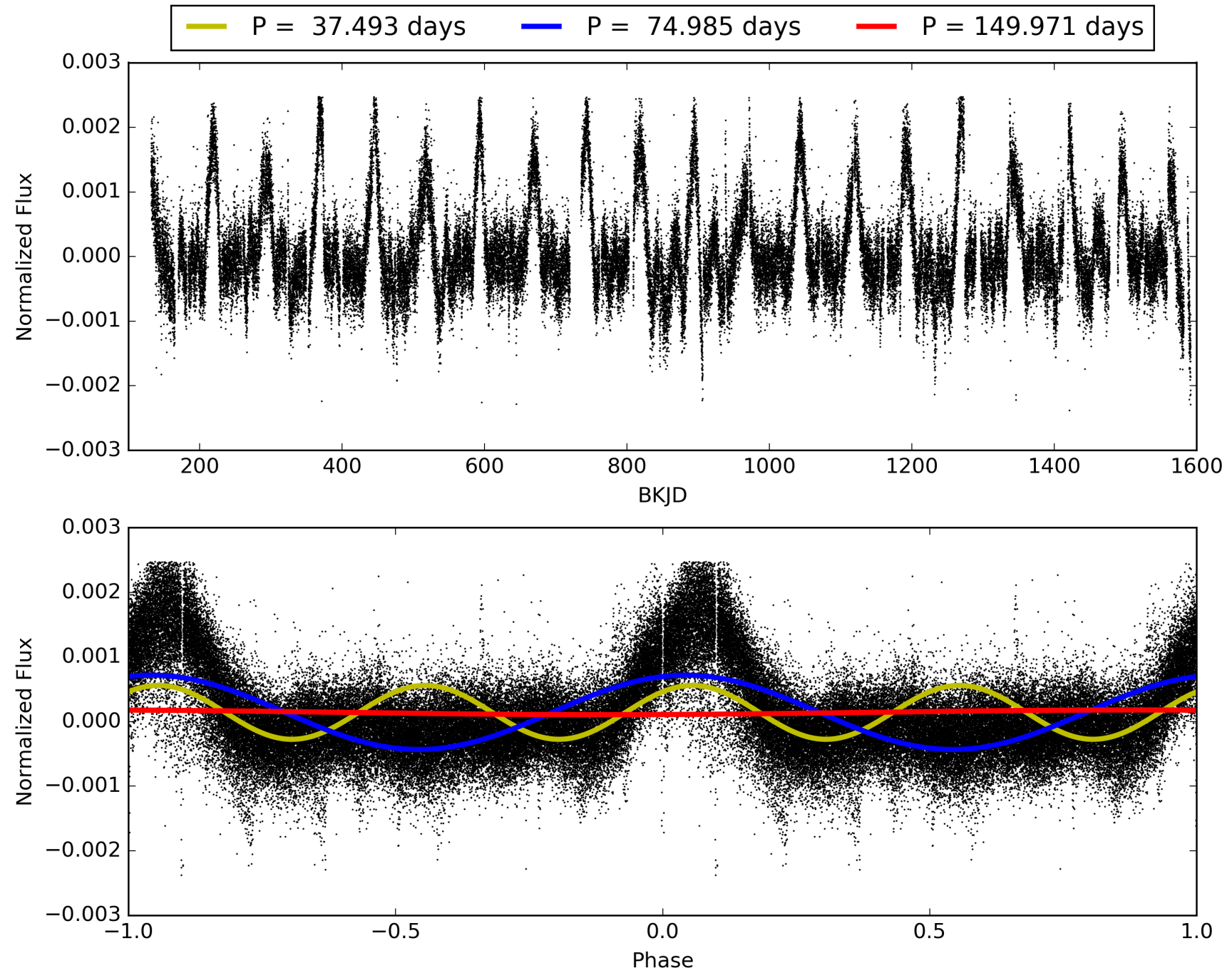
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 85.1%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [16/16]
GhostDiagnostic-chr: 14.57
Centroid-sig: 0.0%
Centroid-so: 0.015 arcsec [2.22σ]
OotOffset-rm: 0.024 arcsec [0.36σ]
KicOffset-rm: 0.108 arcsec [1.56σ]
OotOffset-st: 3/2/2/5 [12]
KicOffset-st: 3/2/2/5 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 1.00 [12/12]

TCE 005535280-02, PDC Light Curves

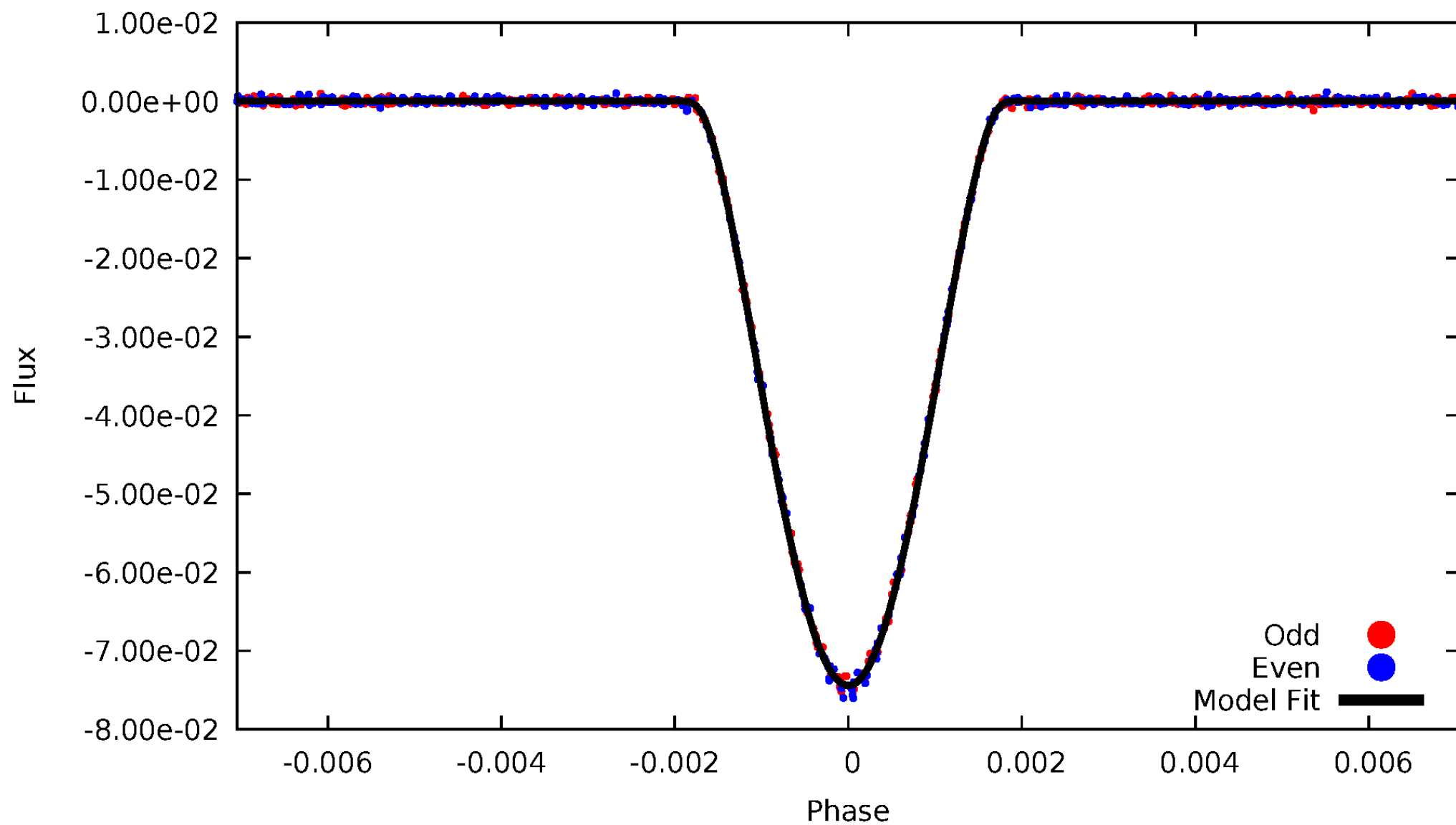


TCE 005535280-02



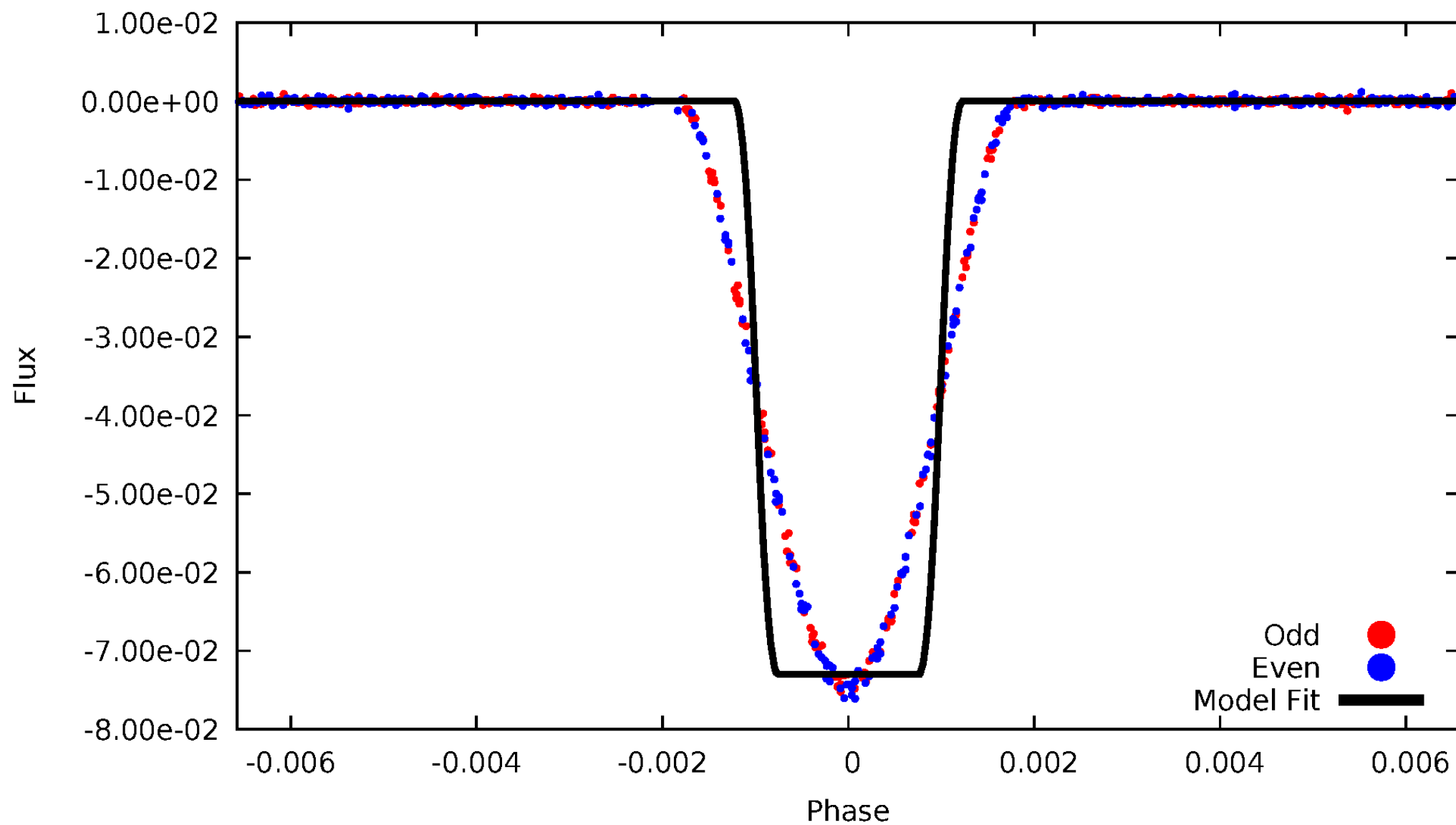
DV Odd/Even

TCE 005535280-02



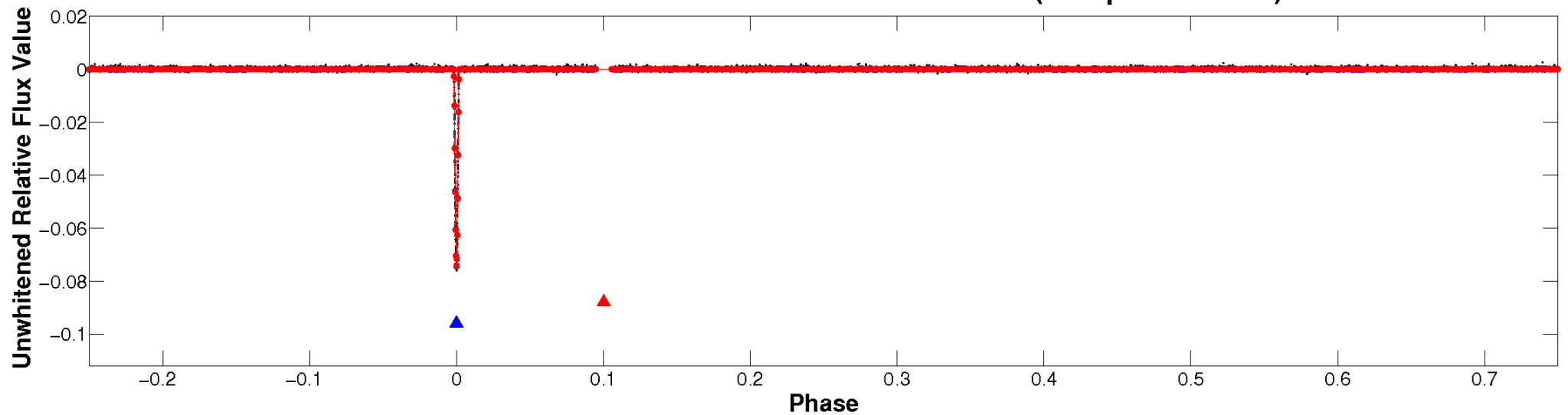
ALT Odd/Even

TCE 005535280-02

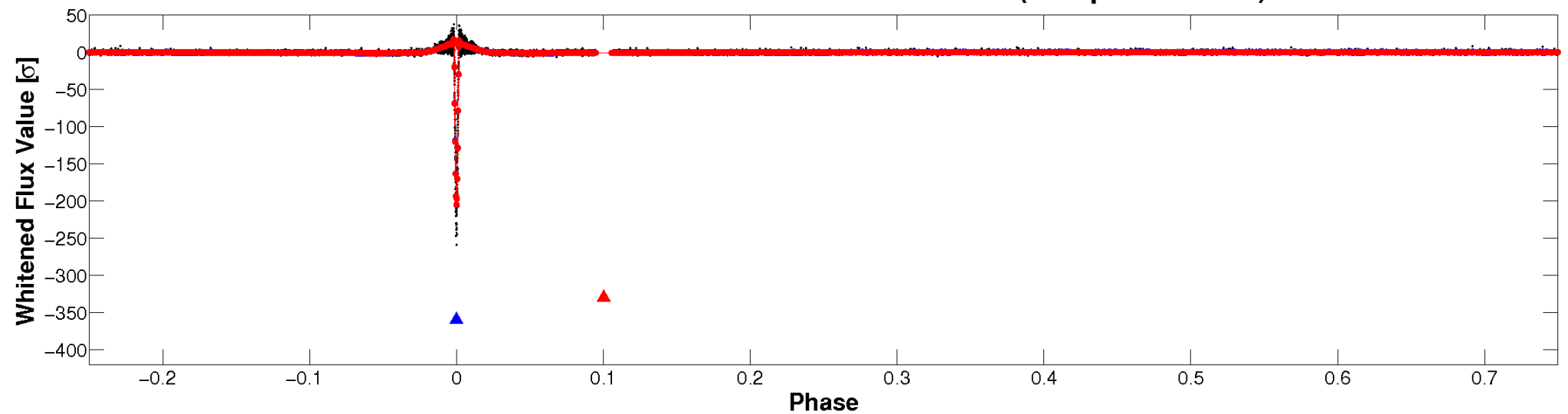


Non-Whitened Vs. Whitened Light Curve

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

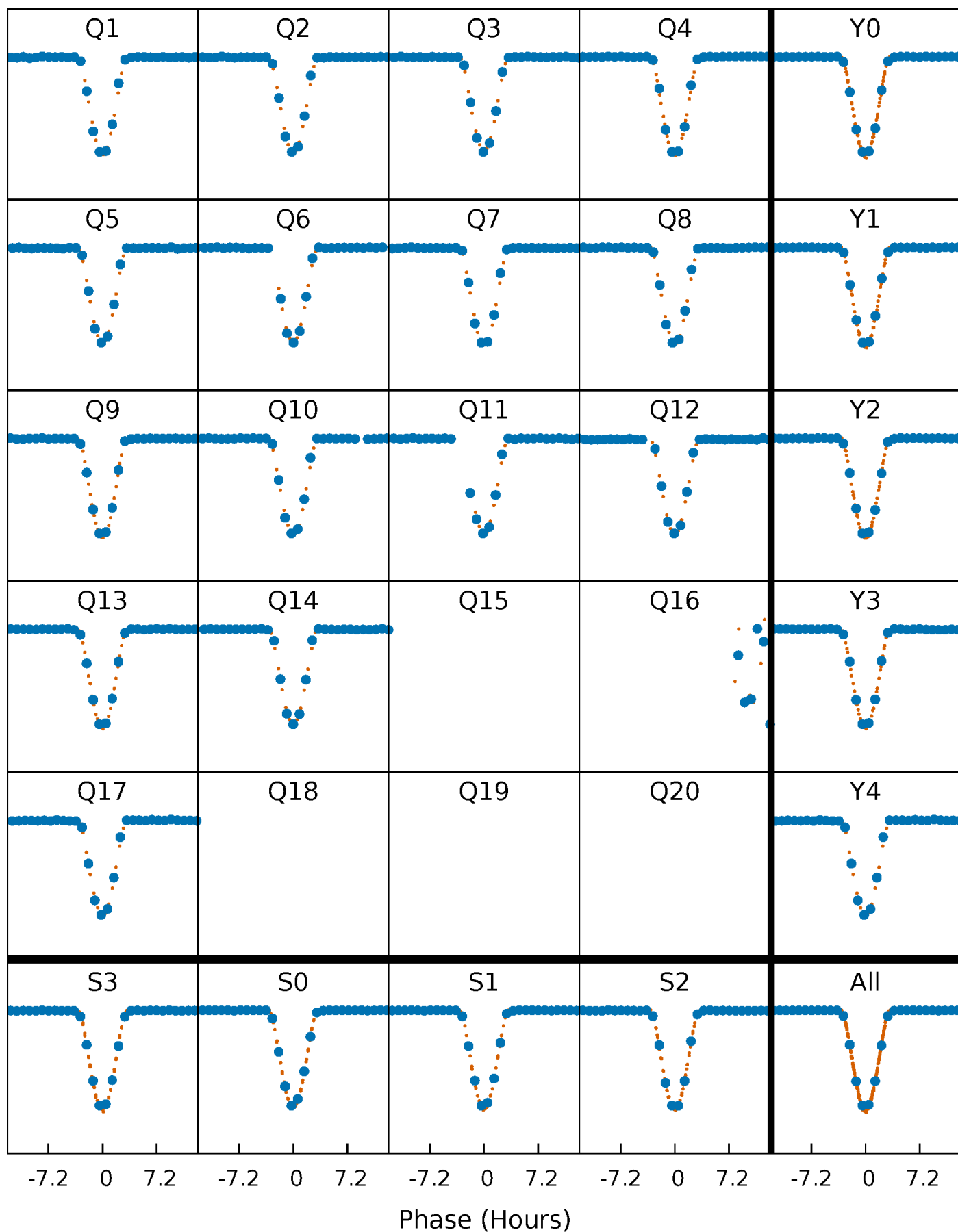


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



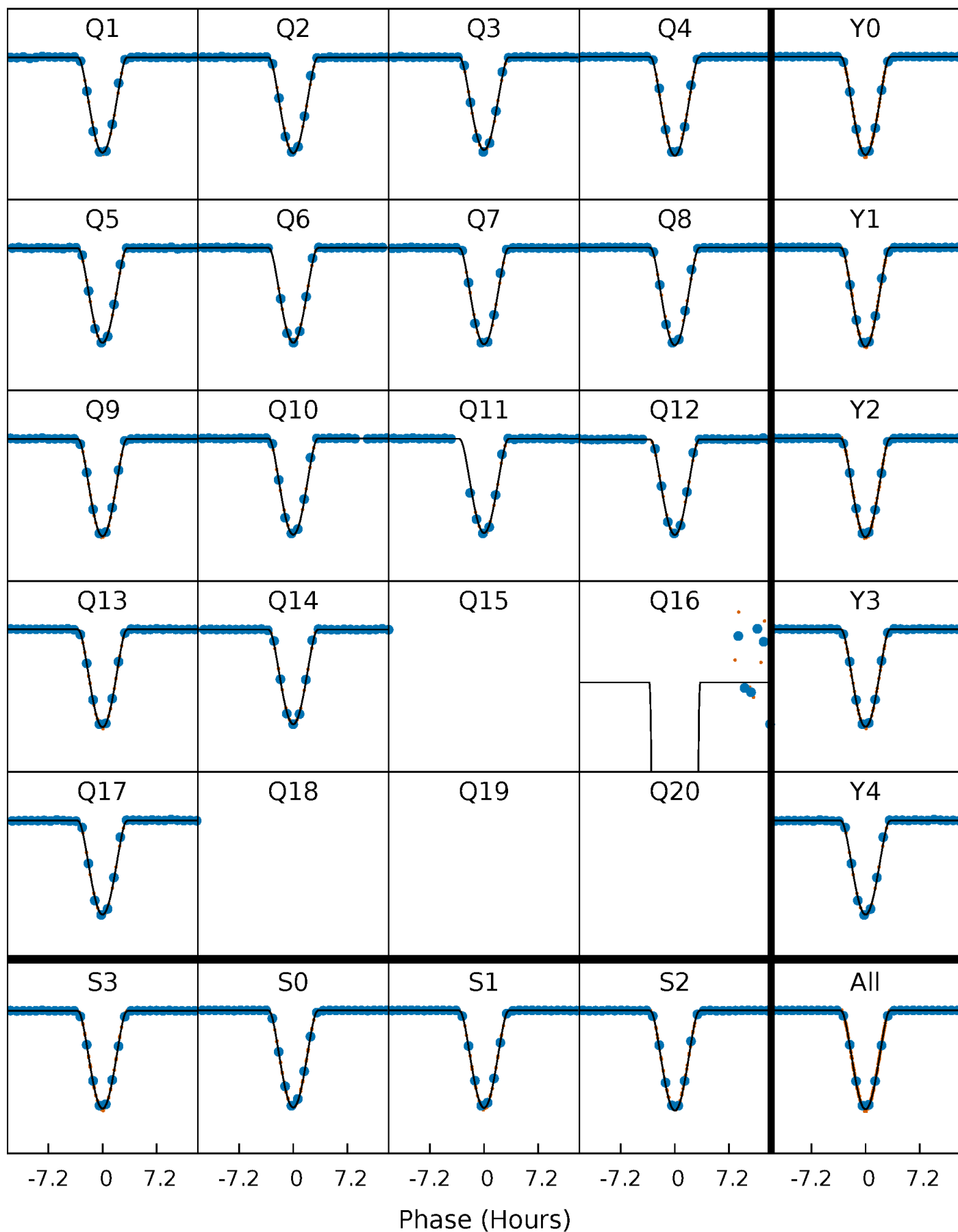
PDC Quarter-Phased Transit Curves

TCE 005535280-02 P= 74.985300 Days $T_0=138.619507$ (BKJD)



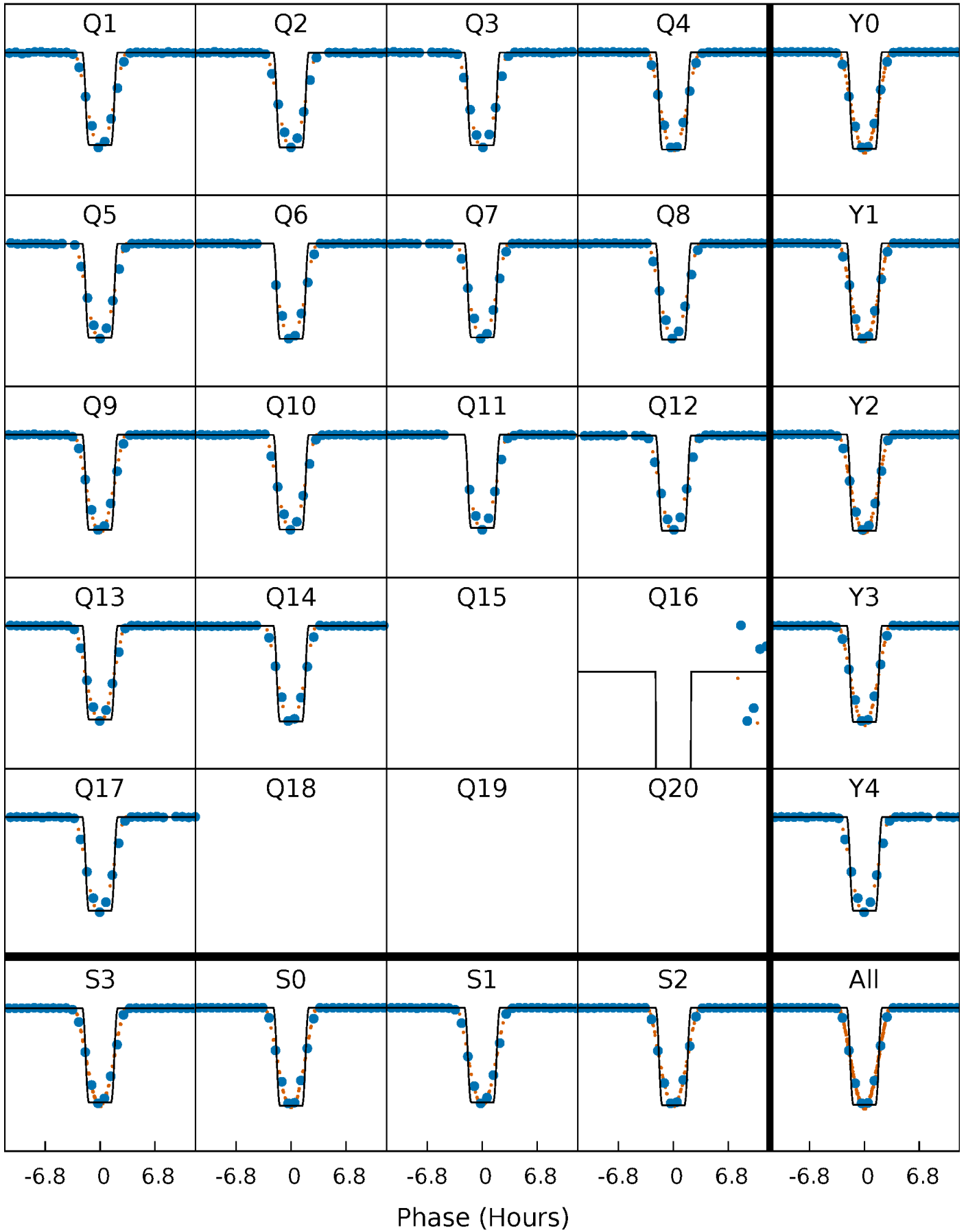
DV Quarter-Phased Transit Curves

TCE 005535280-02 P= 74.985300 Days $T_0=138.619507$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

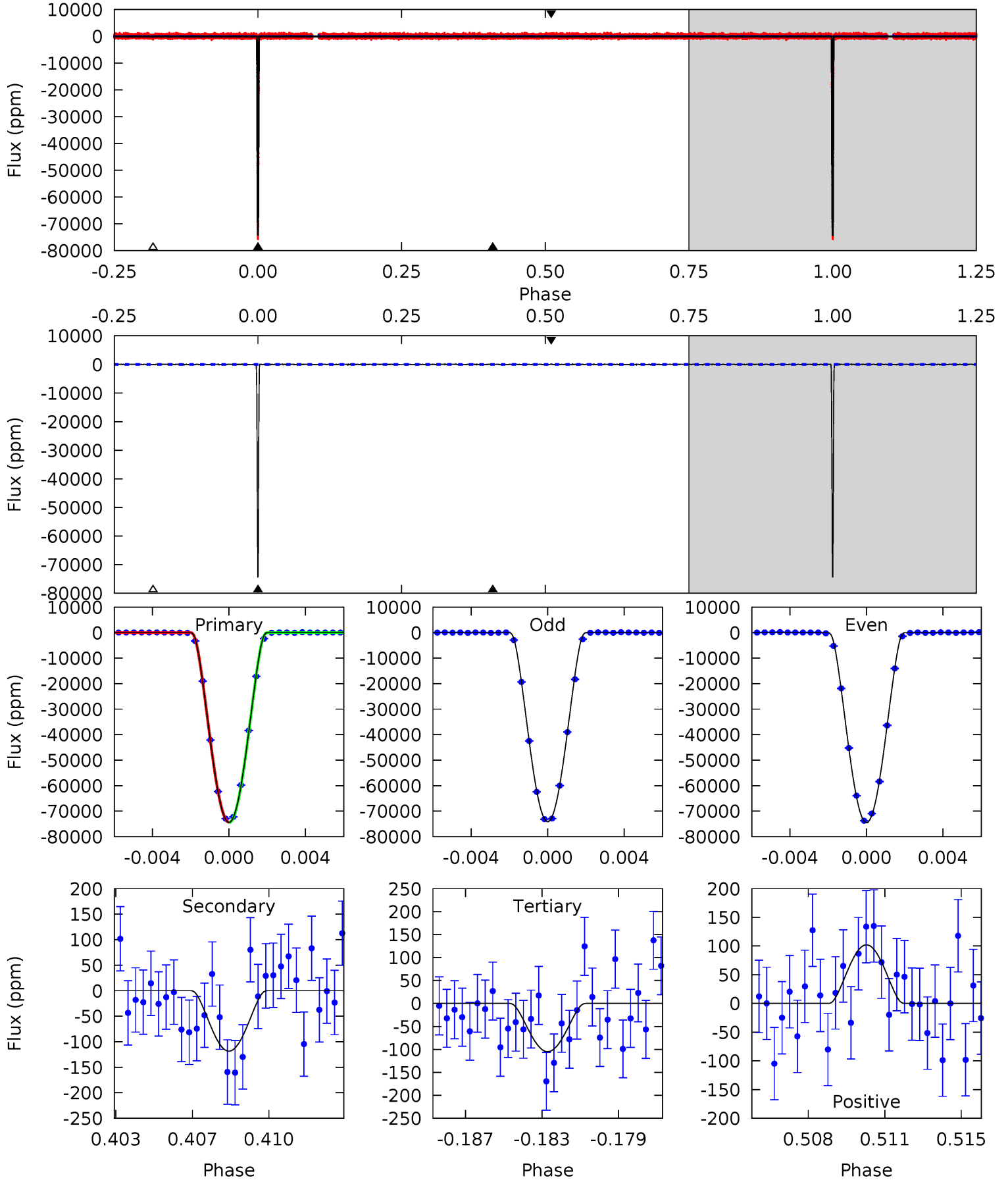
TCE 005535280-02 P= 74.985452 Days $T_0=138.618242$ (BKJD)



DV Model-Shift Uniqueness Test

005535280-02, P = 74.985300 Days, E = 63.634207 Days

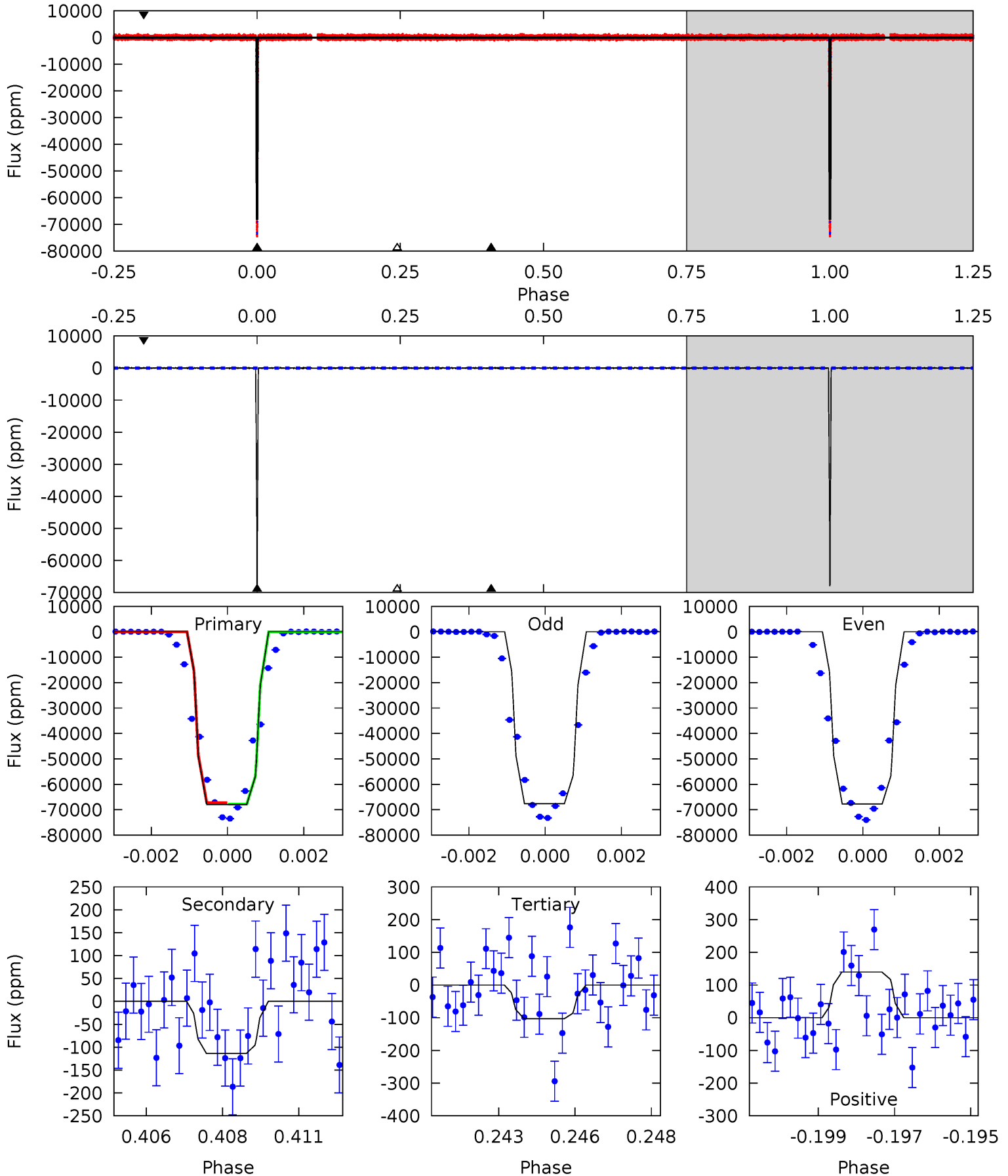
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3576	5.69	5.04	4.90	5.21	2.90	1.58	3571	3571	0.64	0.78	10.1	1.00	0.00	4.06



Alt Model-Shift Uniqueness Test

005535280-02, P = 74.985452 Days, E = 63.632790 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2049	3.44	3.12	4.21	5.29	3.03	1.22	2046	2045	0.32	-0.78	1.83	1.00	0.00	8.26



Stellar Parameters For KIC 005535280

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5955^{+161}_{-179}	$4.520^{+0.037}_{-0.213}$	$-0.160^{+0.300}_{-0.300}$	$0.910^{+0.266}_{-0.089}$	$0.999^{+0.119}_{-0.132}$	$1.869^{+0.397}_{-1.013}$
	+3%/-3%	+1%/-5%	+188%/-188%	+29%/-10%	+12%/-13%	+21%/-54%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005535280-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-118 ± 21	$37.12^{+5.78}_{-3.20}$	608^{+45}_{-26}	2018^{+47}_{-51}	$5.418^{+1.516}_{-1.411}$
Alt.	-114 ± 33	$27.99^{+4.32}_{-2.66}$	611^{+38}_{-28}	2140^{+72}_{-89}	$9.235^{+3.375}_{-3.234}$

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

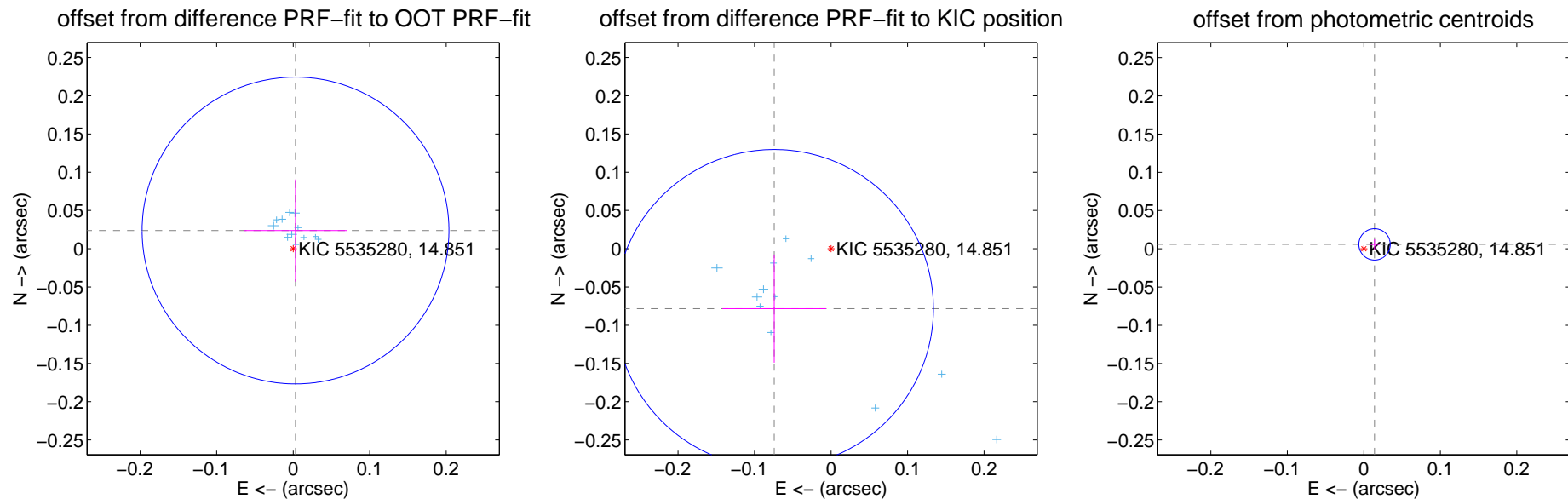
DV Centroid Data

Supplemental centroid analysis for 005535280-02. Kepler magnitude: 14.85. Transit SNR 1713.83

There are 12 quarters with good PRF difference image offsets

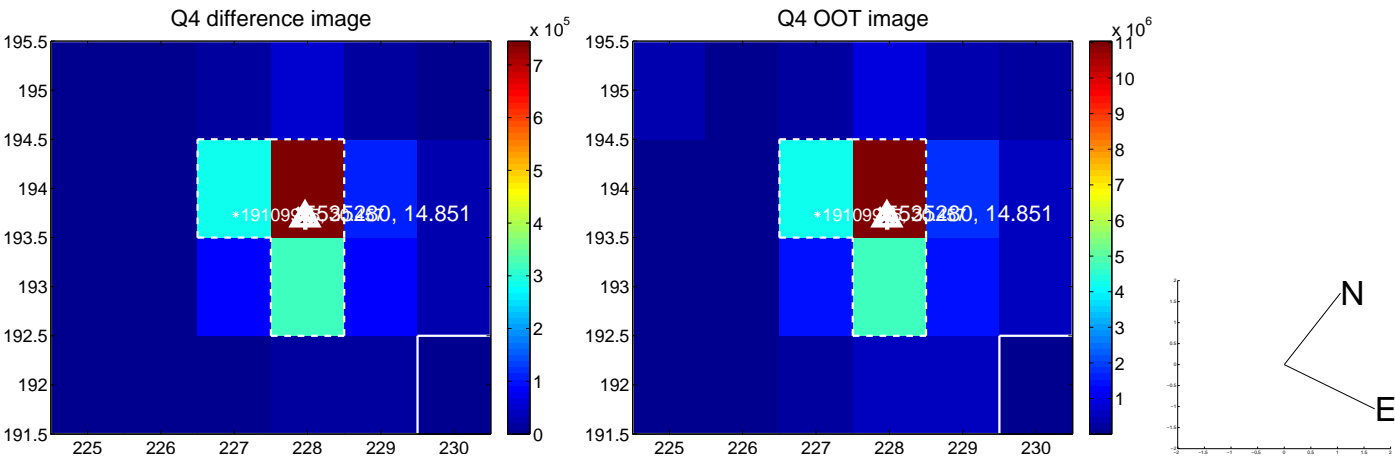
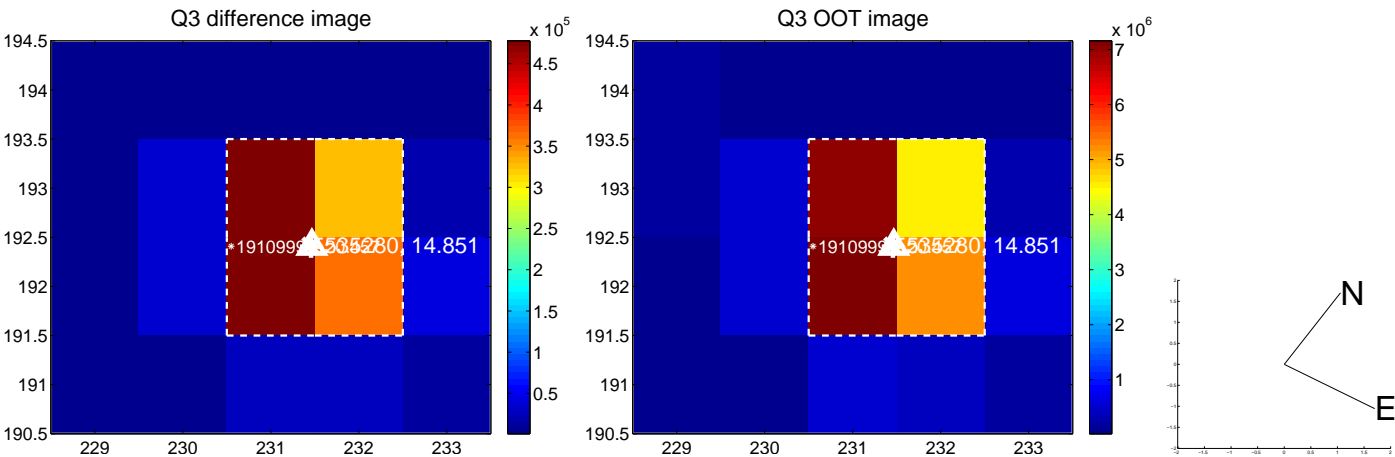
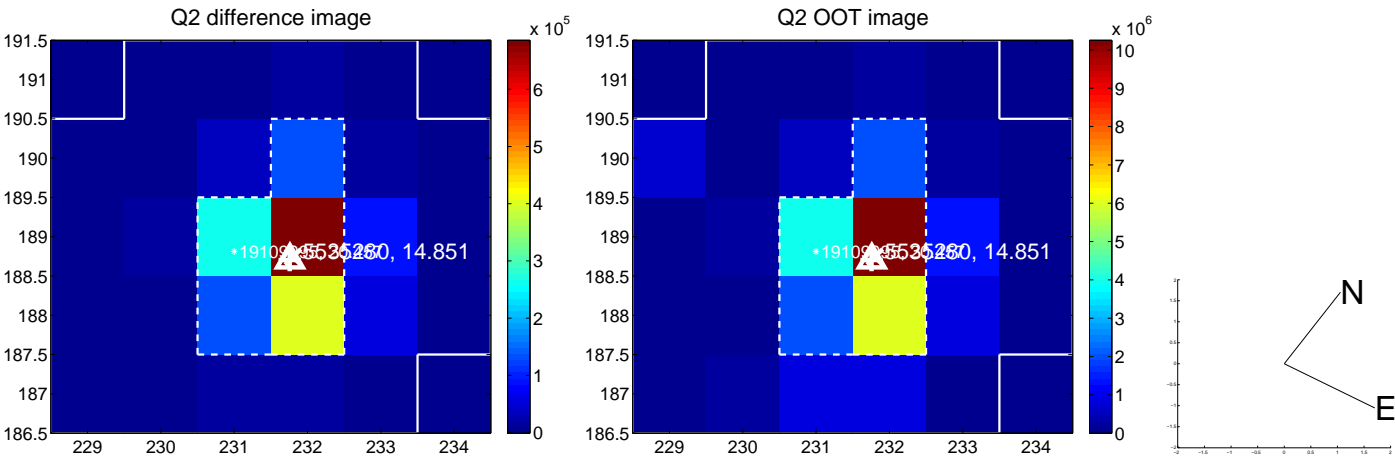
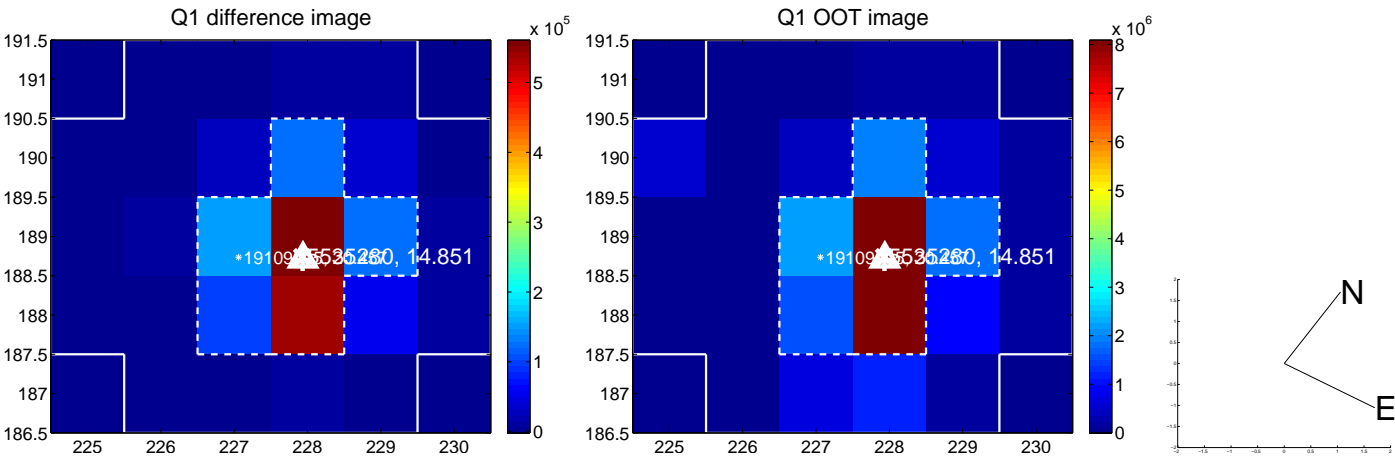
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.024 ± 0.067	0.36	-0.003 ± 0.067	0.024 ± 0.067
PRF-fit source offset from KIC position	0.108 ± 0.069	1.56	0.074 ± 0.068	-0.078 ± 0.071
photometric centroid source offset	0.02 ± 0.01	2.22	-0.01 ± 0.01	0.01 ± 0.01

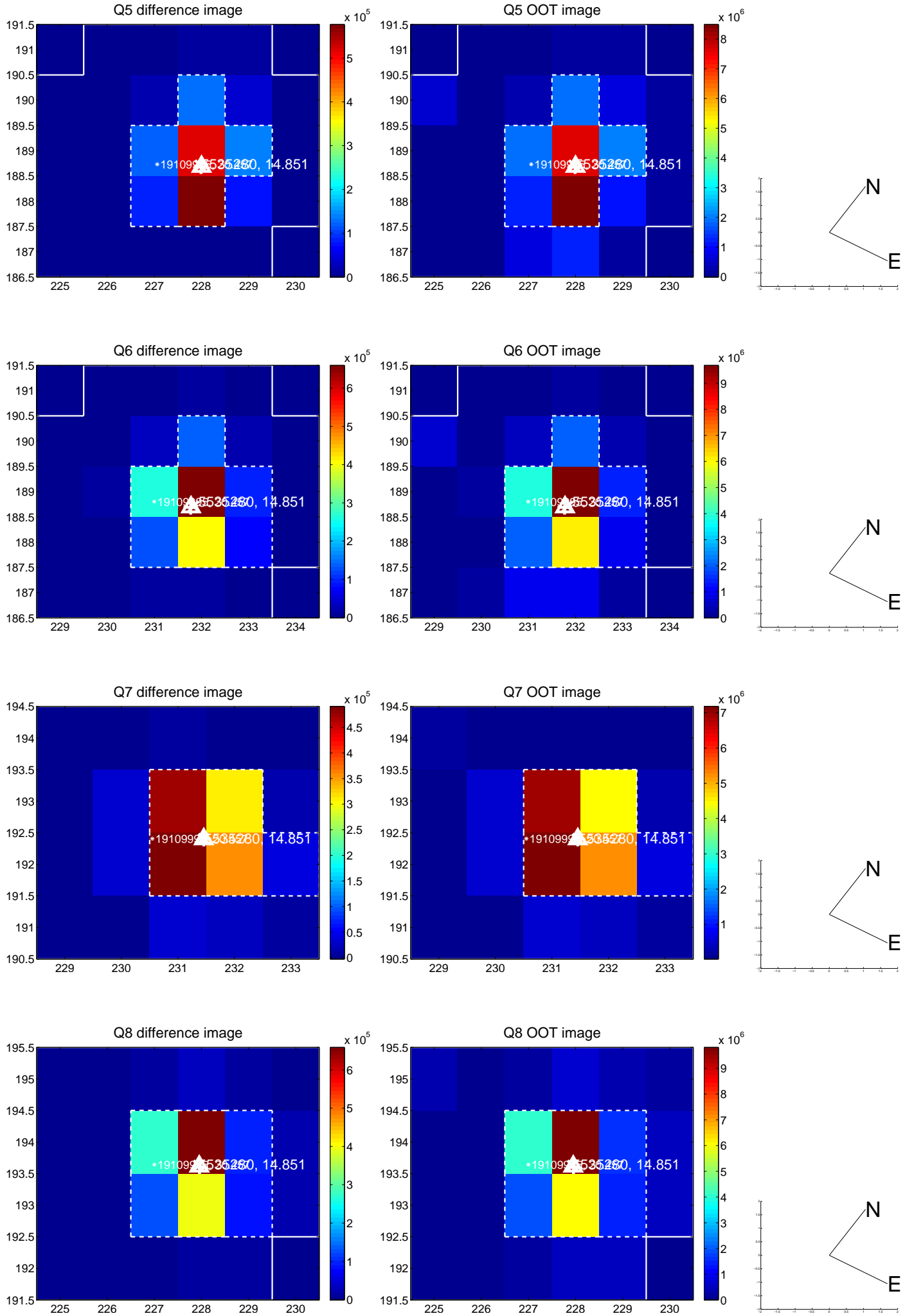


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

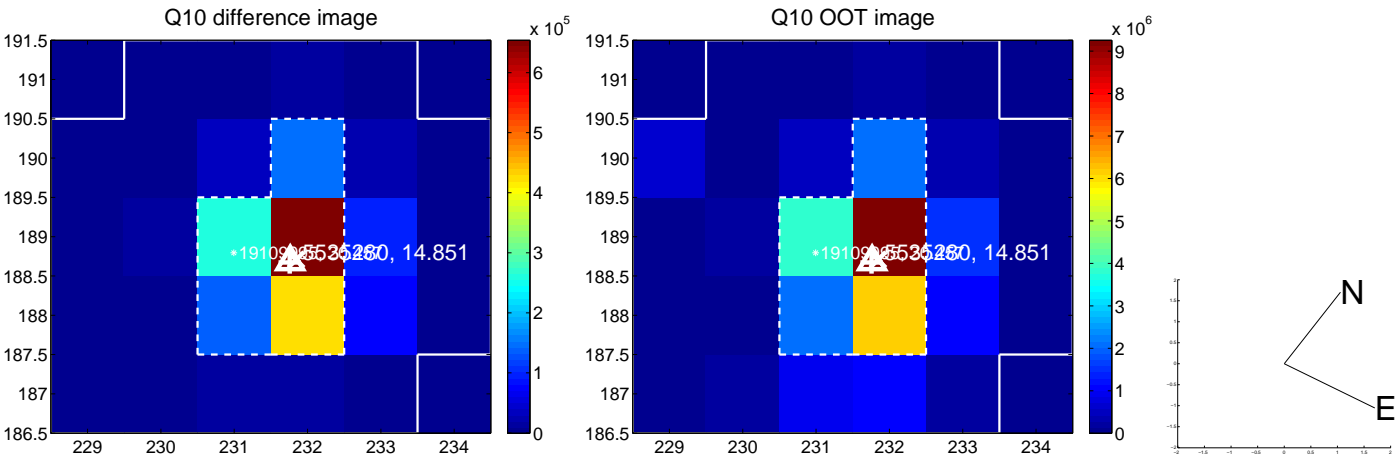
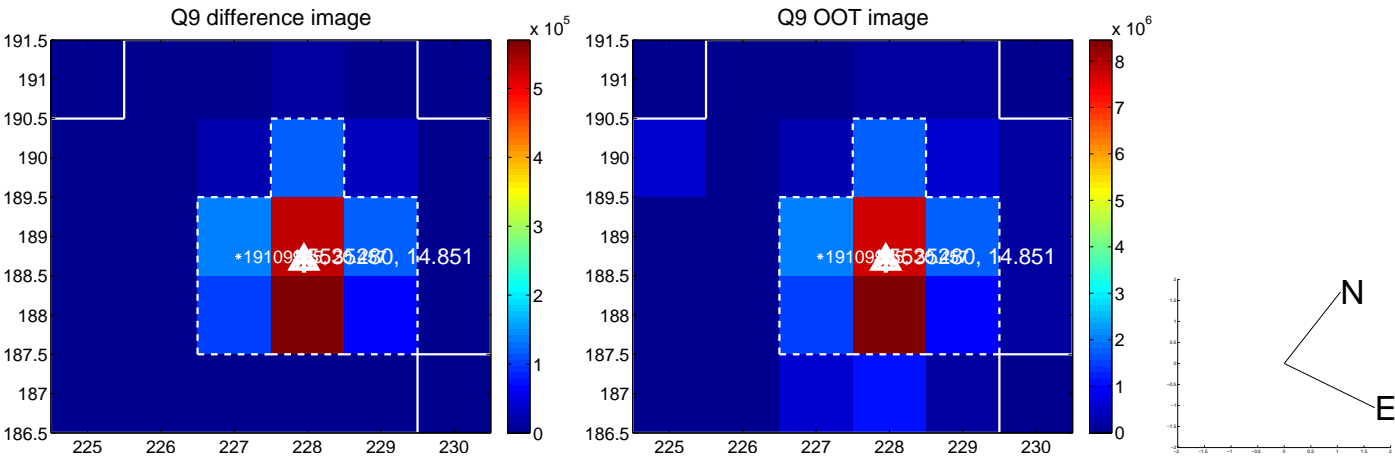
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



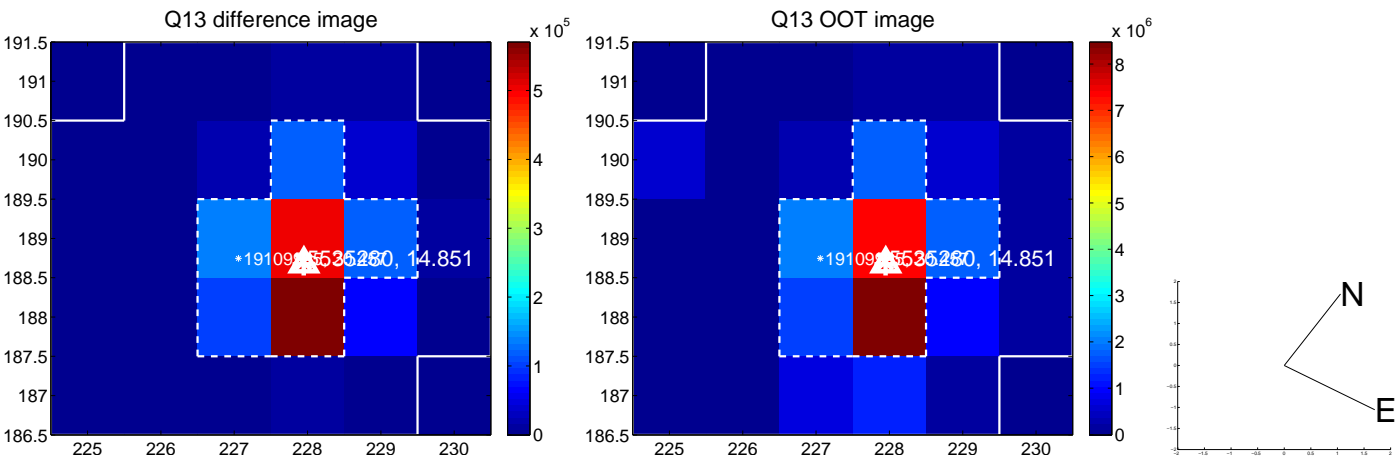
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



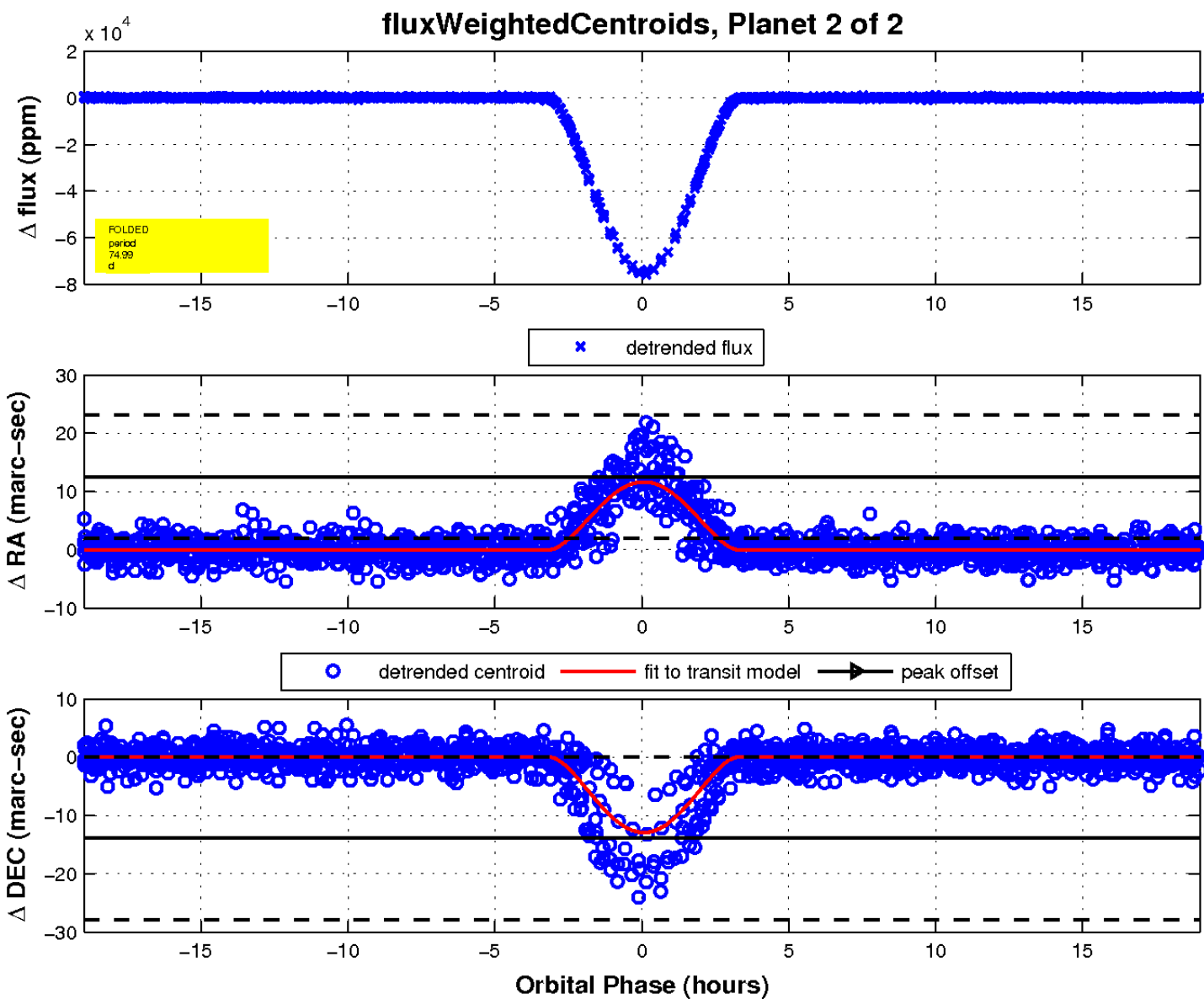
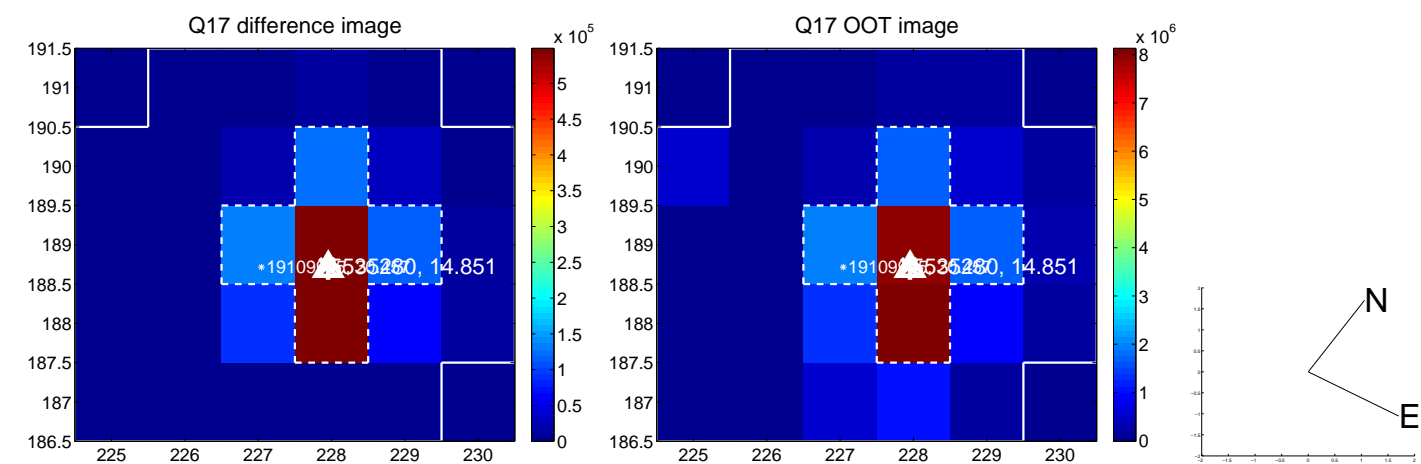
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

