

KIC 005728283

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})
005728283-01	OBS	1011.01	6.198273	133.786991	47411.6	7.551	2130.5	1959.0	0.90	6038	19.85	222.65
005728283-02	OBS	No	6.198274	136.657980	2432.2	5.459	109.4	118.4	0.90	6038	4.99	222.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005728283-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
005728283-02	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.

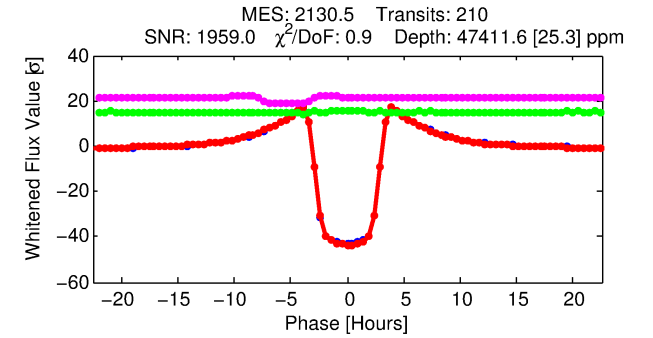
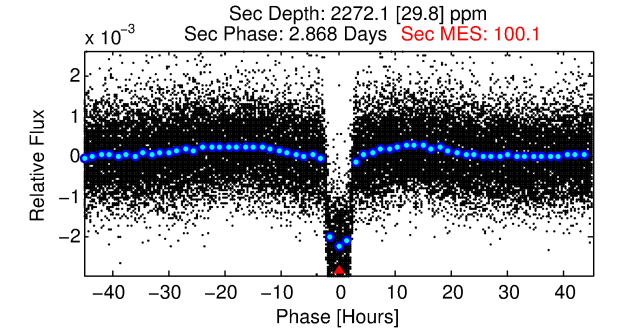
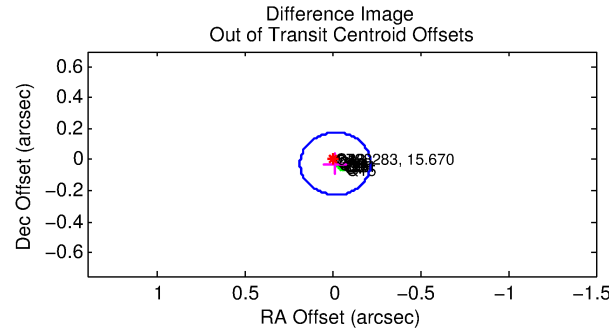
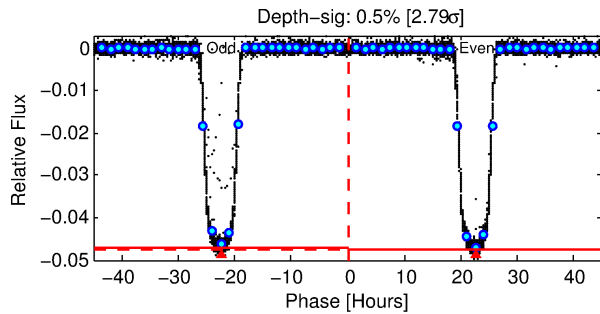
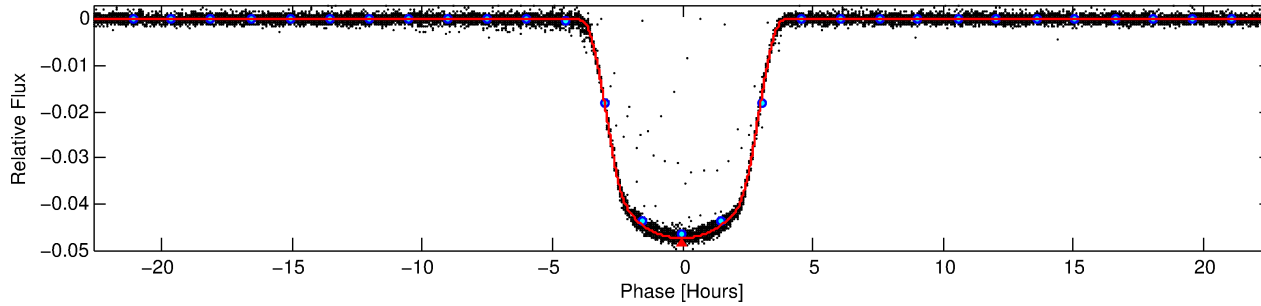
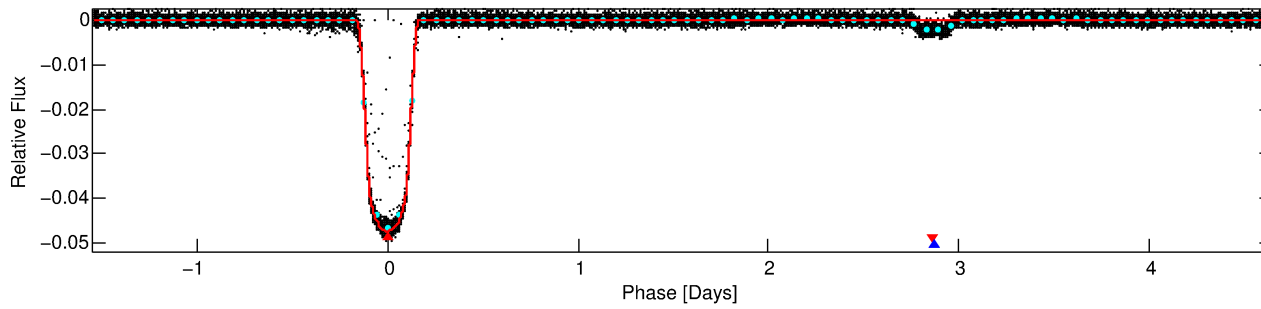
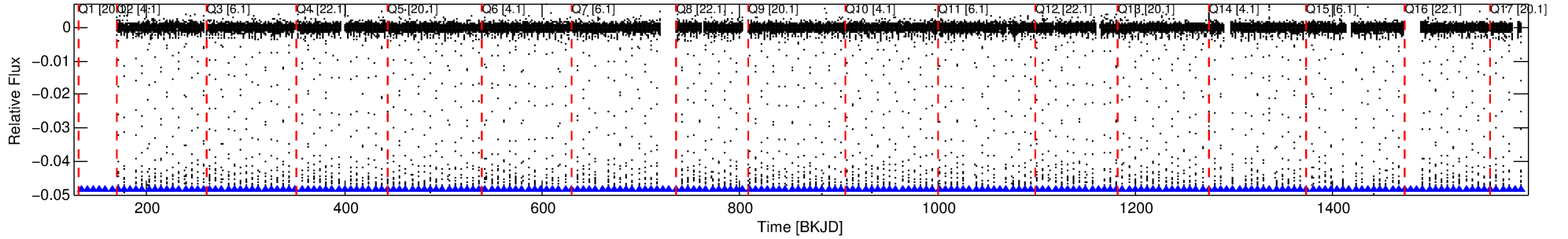
Ephemeris Match Information For 005728283-01

No Significant Match Found

DV One-Page Summary

KIC: 5728283 Candidate: 1 of 2 Period: 6.198 d
KOI: K01011.01 Corr: 0.971

Kp: 15.67 R*: 0.90 Rs Teff: 6038.0 K Logg: 4.52 Fe/H: -0.280



DV Fit Results:

Period = 6.19827 [0.00000] d
Epoch = 133.7870 [0.0001] BKJD
Rp/R* = 0.2026 [0.0001]
a/R* = 7.24 [0.01]
b = 0.36 [0.00]
Seff = 222.65 [95.01]
Teq = 985 [105] K
Rp = 19.85 [6.41] Re
a = 0.0657 [0.0180] AU
Ag = 13.68 [5.50] [2.31σ]
Teffp = 2929 [106] K [13.04σ]

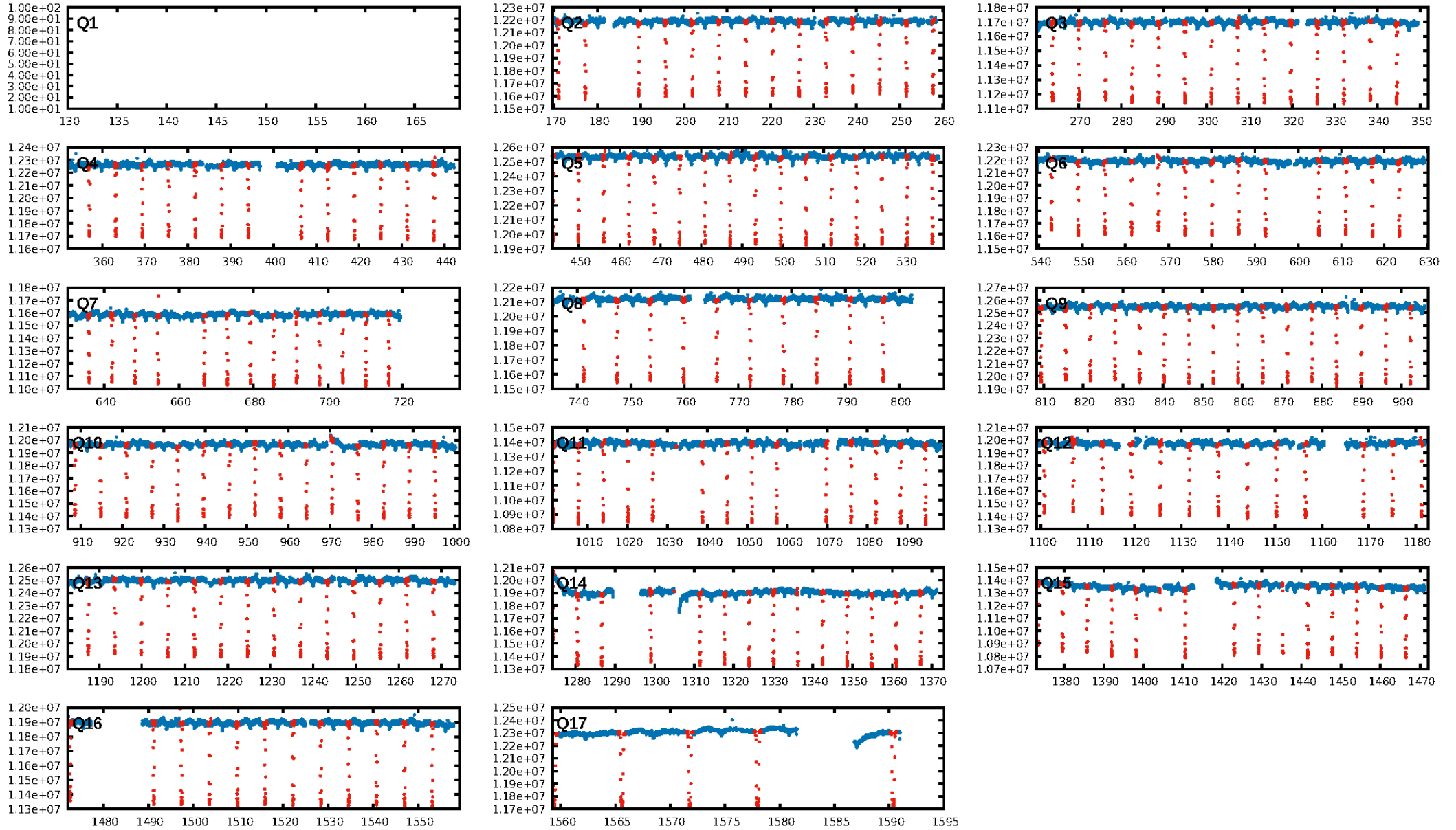
DV Diagnostic Results:

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 [205/205]
GhostDiagnostic-chr: 2.742
Centroid-sig: 0.0%
Centroid-so: 0.024 arcsec [5.39σ]
OotOffset-rm: 0.029 arcsec [0.44σ]
KicOffset-rm: 0.157 arcsec [2.31σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [16/16]

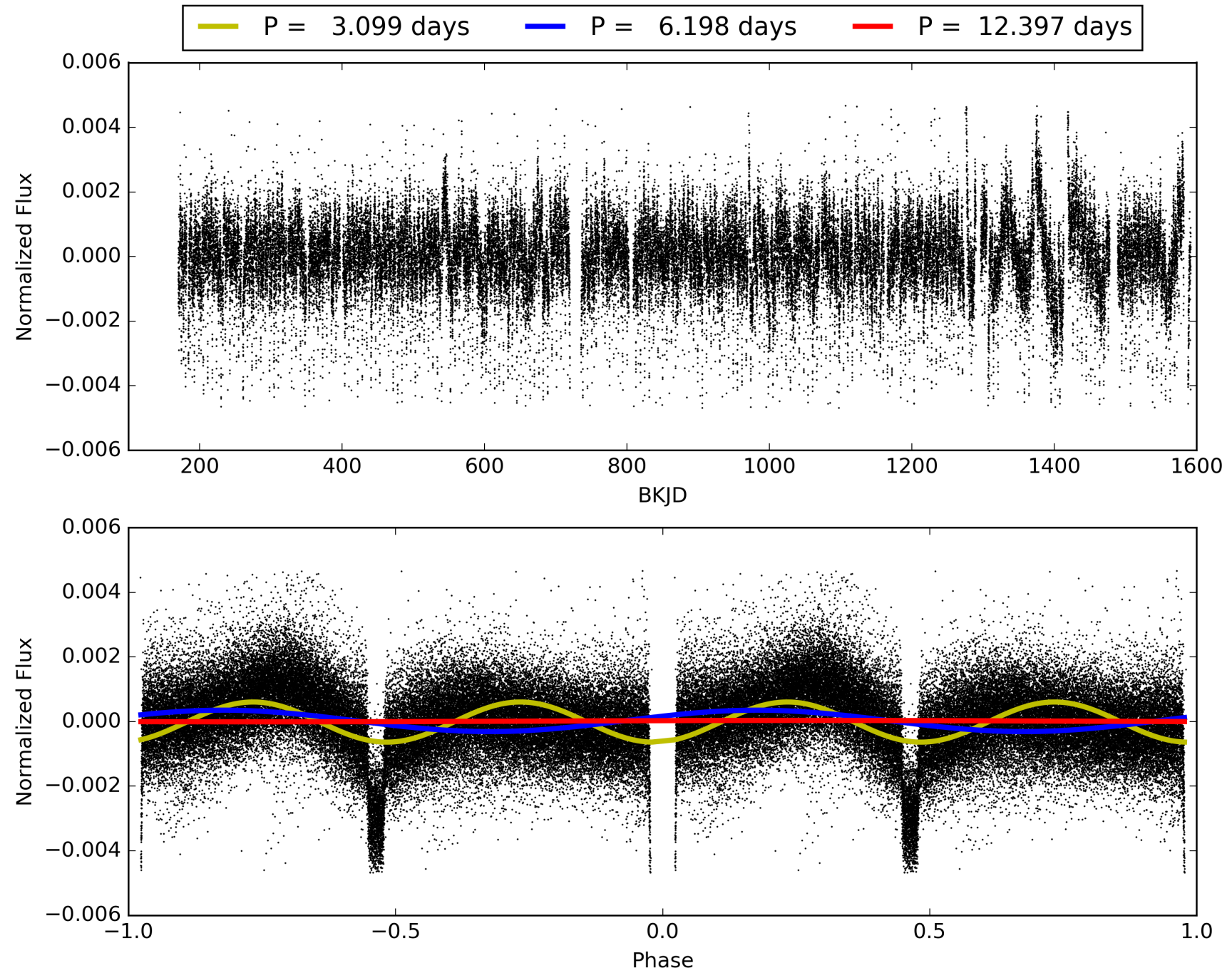
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:59:54 Z

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

TCE 005728283-01, PDC Light Curves

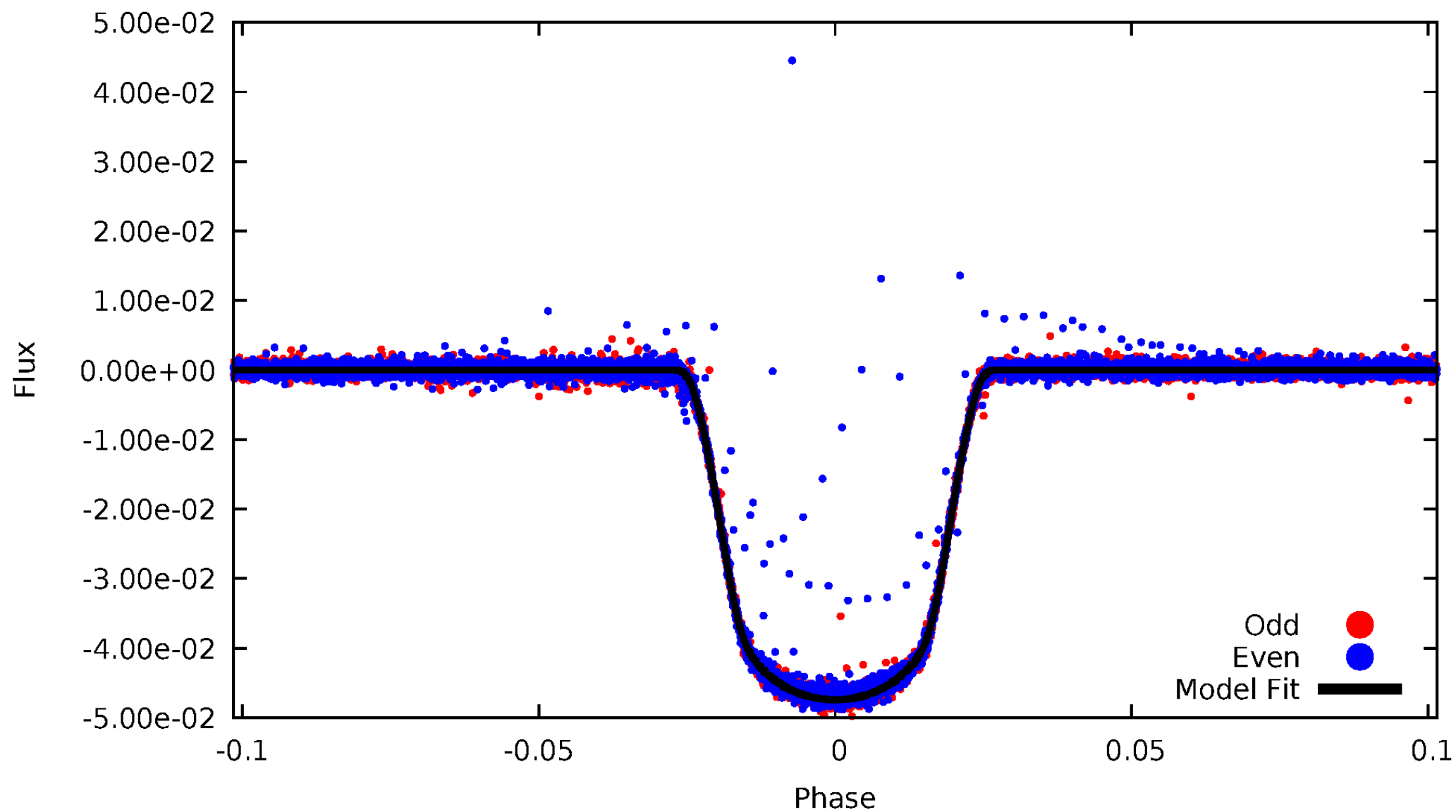


TCE 005728283-01



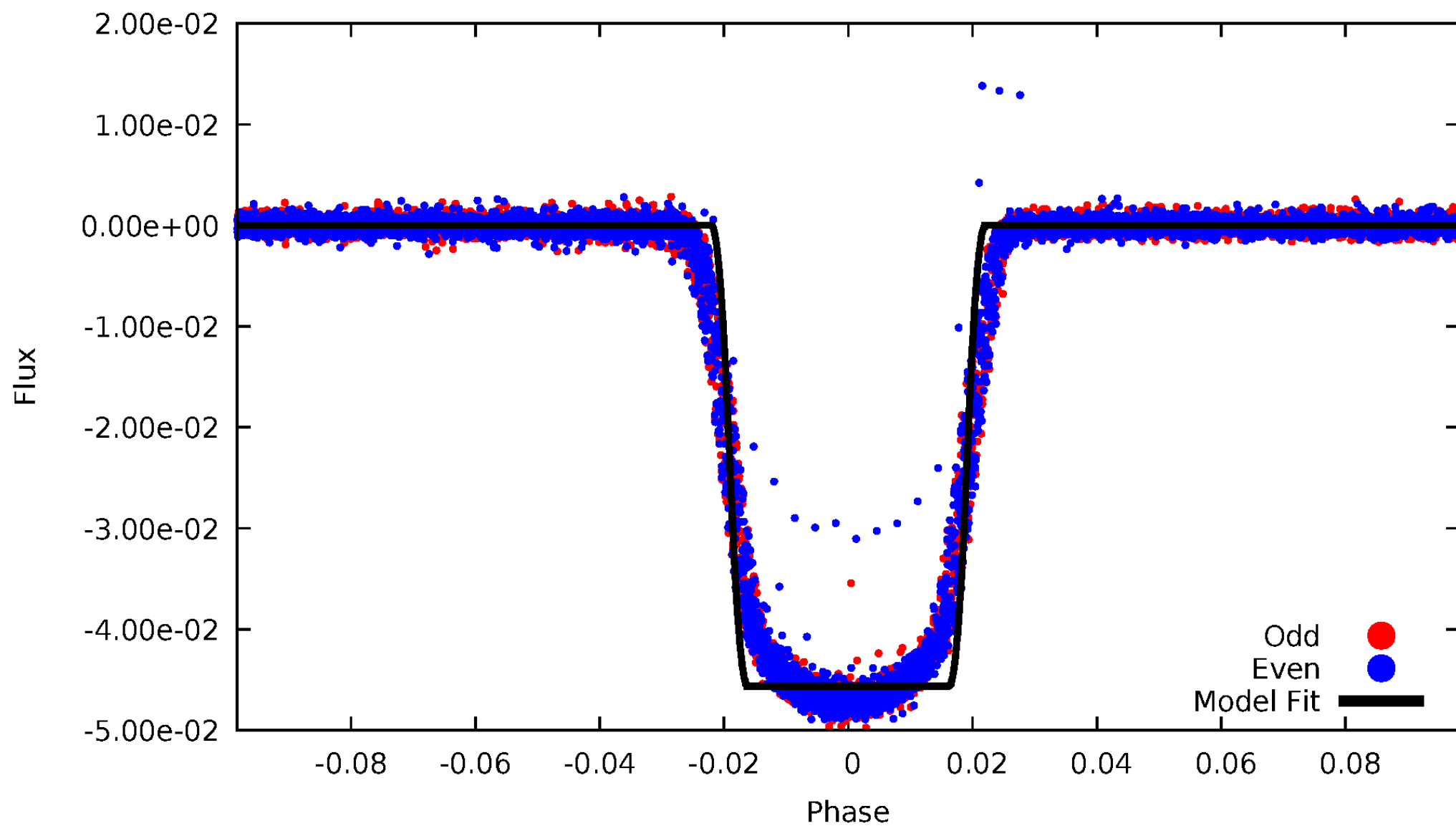
DV Odd/Even

TCE 005728283-01



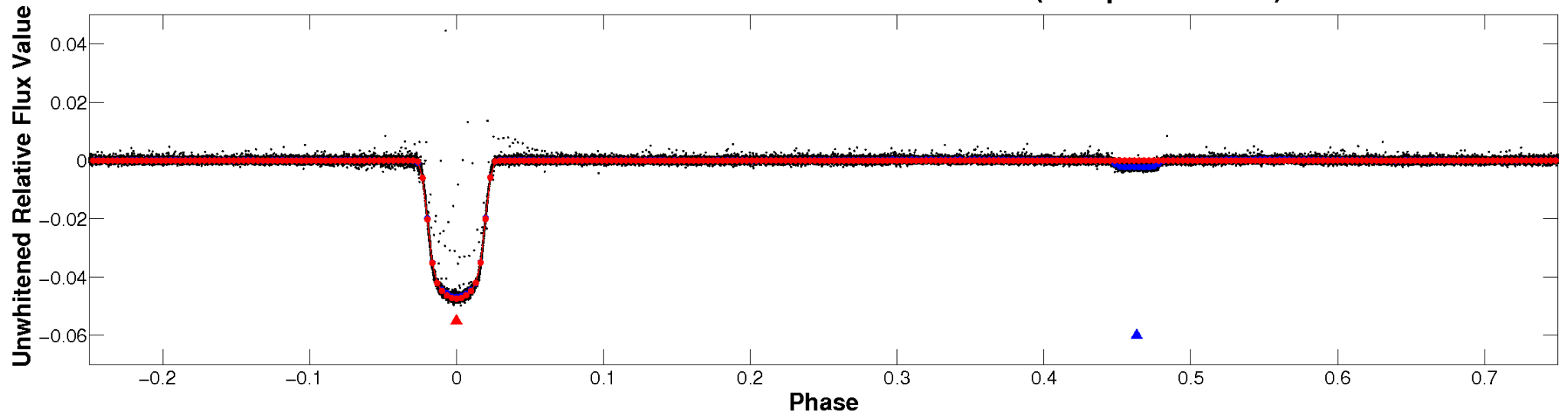
ALT Odd/Even

TCE 005728283-01

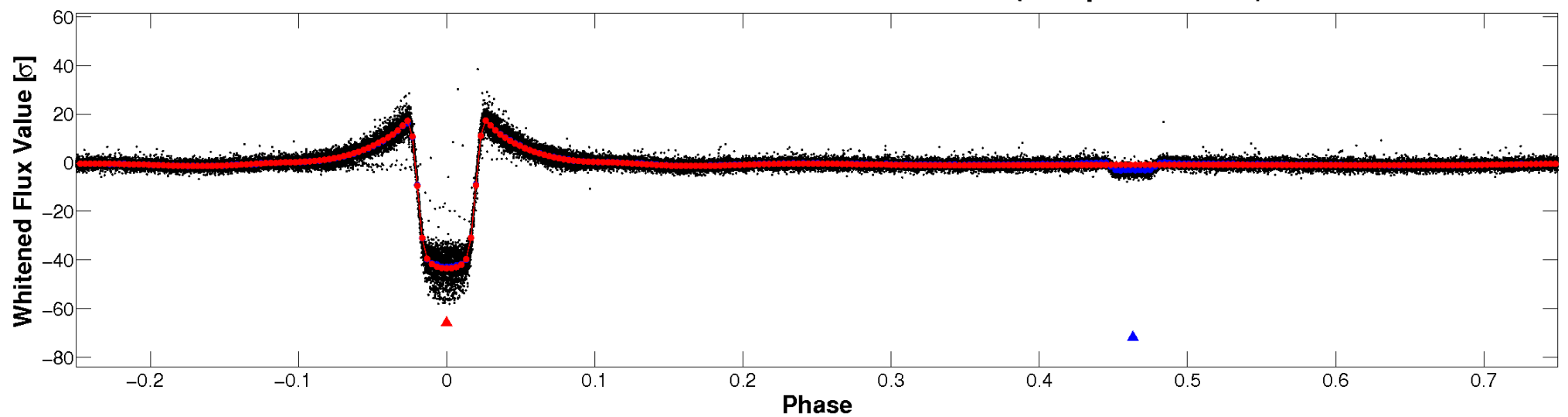


Non-Whitened Vs. Whitened Light Curve

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

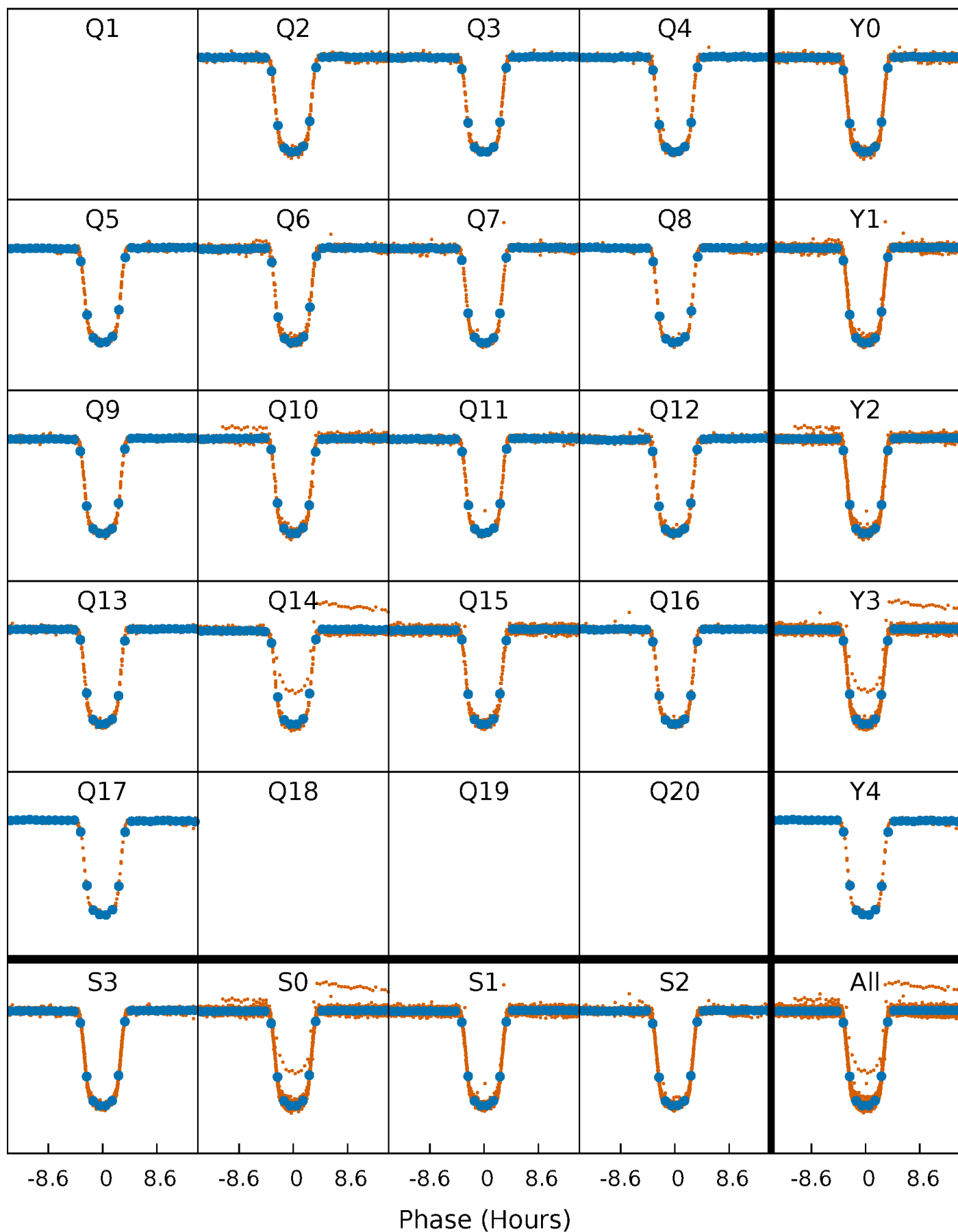


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



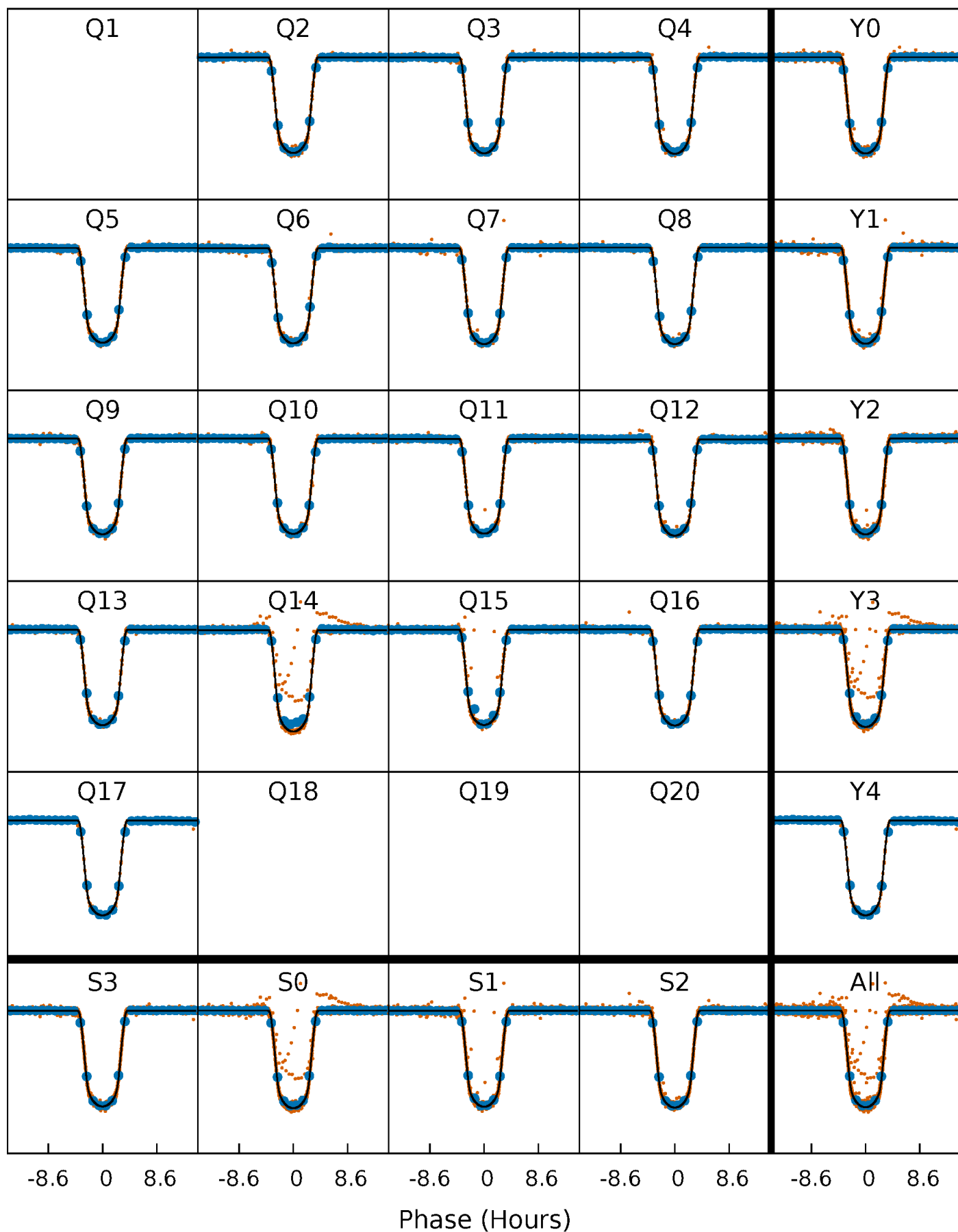
PDC Quarter-Phased Transit Curves

TCE 005728283-01 P= 6.198273 Days $T_0=133.786991$ (BKJD)



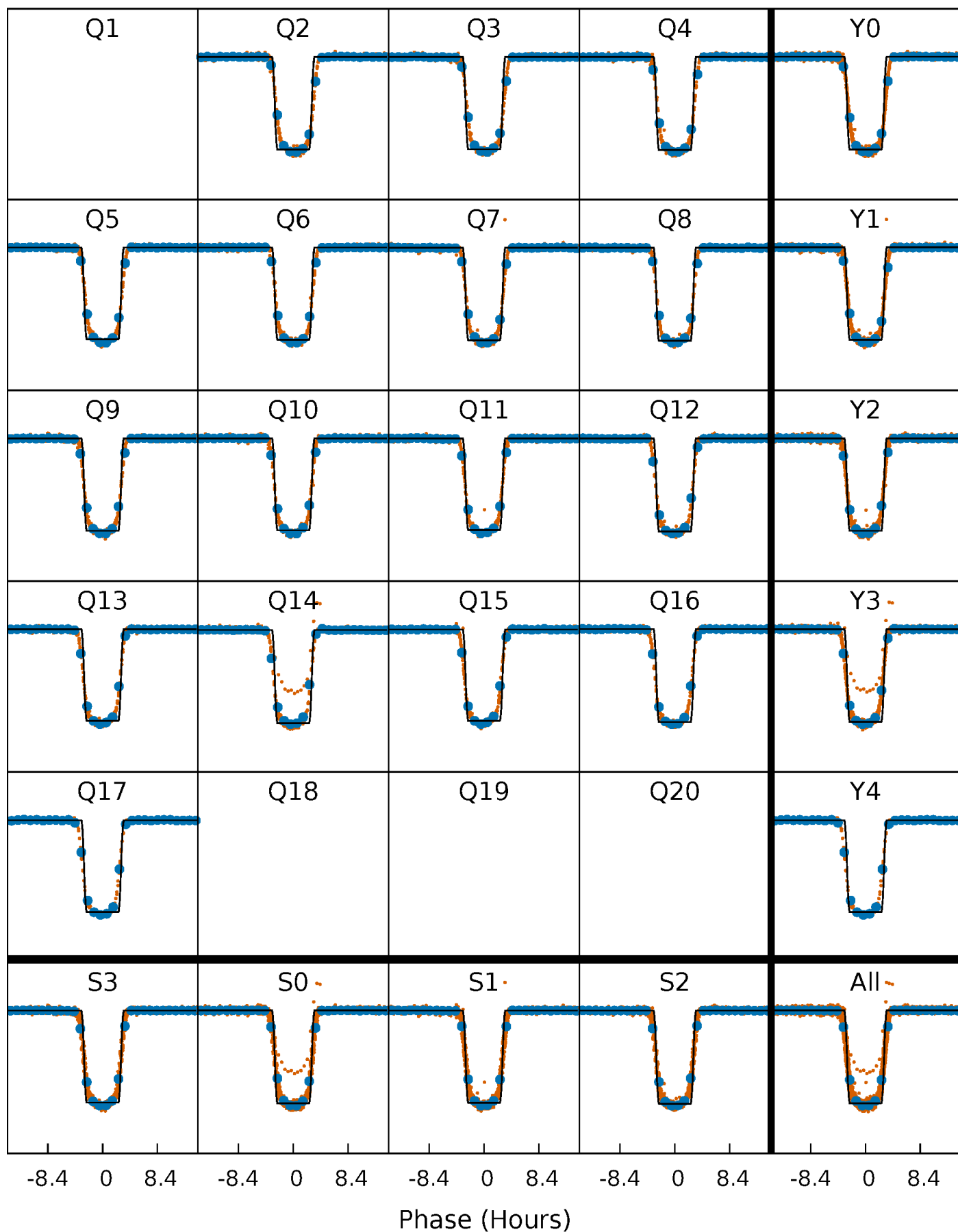
DV Quarter-Phased Transit Curves

TCE 005728283-01 P= 6.198273 Days $T_0=133.786991$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

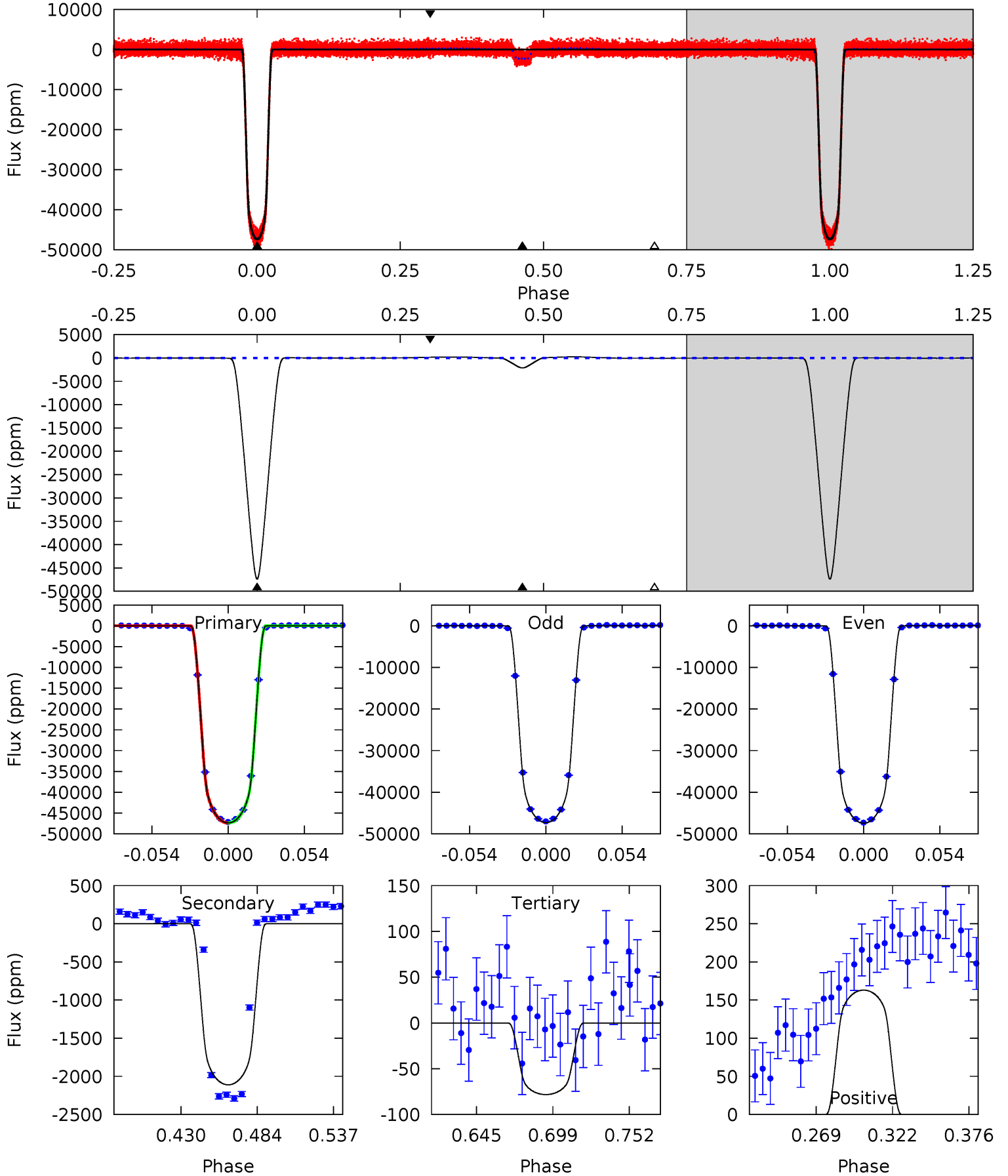
TCE 005728283-01 P= 6.198360 Days $T_0=133.776715$ (BKJD)



DV Model-Shift Uniqueness Test

005728283-01, P = 6.198273 Days, E = 133.786991 Days

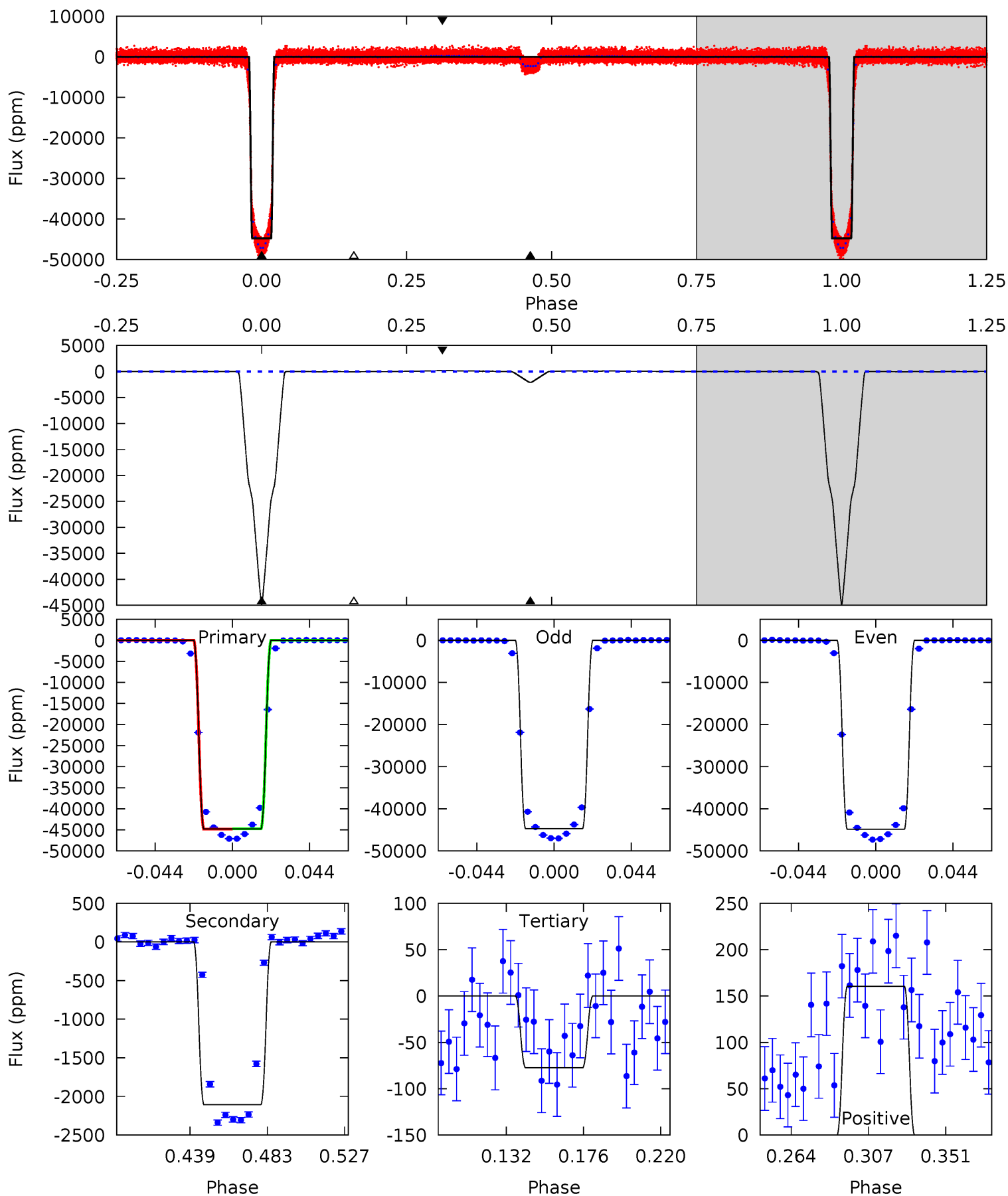
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4223	188.1	6.97	14.5	4.69	1.93	7.93	4216	4208	181.2	173.6	7.00	0.98	0.00	2.25



Alt Model-Shift Uniqueness Test

005728283-01, P = 6.198360 Days, E = 133.776715 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3489	164.1	6.04	12.5	4.73	2.01	4.34	3483	3477	158.0	151.6	6.28	1.00	0.00	3.10



Stellar Parameters For KIC 005728283

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6038^{+181}_{-217}	$4.524^{+0.039}_{-0.221}$	$-0.280^{+0.300}_{-0.300}$	$0.898^{+0.290}_{-0.097}$	$0.982^{+0.132}_{-0.120}$	$1.912^{+0.417}_{-1.043}$
	+3%/-4%	+1%/-5%	+107%/-107%	+32%/-11%	+13%/-12%	+22%/-55%
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 005728283-01 / KOI 1011.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2111 ± 11	$20.87^{+3.46}_{-1.87}$	1415^{+101}_{-75}	3385^{+65}_{-78}	12^{+2}_{-3}
Alt.	-2105 ± 13	$21.91^{+3.83}_{-1.90}$	1417^{+105}_{-73}	3325^{+65}_{-73}	10^{+2}_{-3}

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

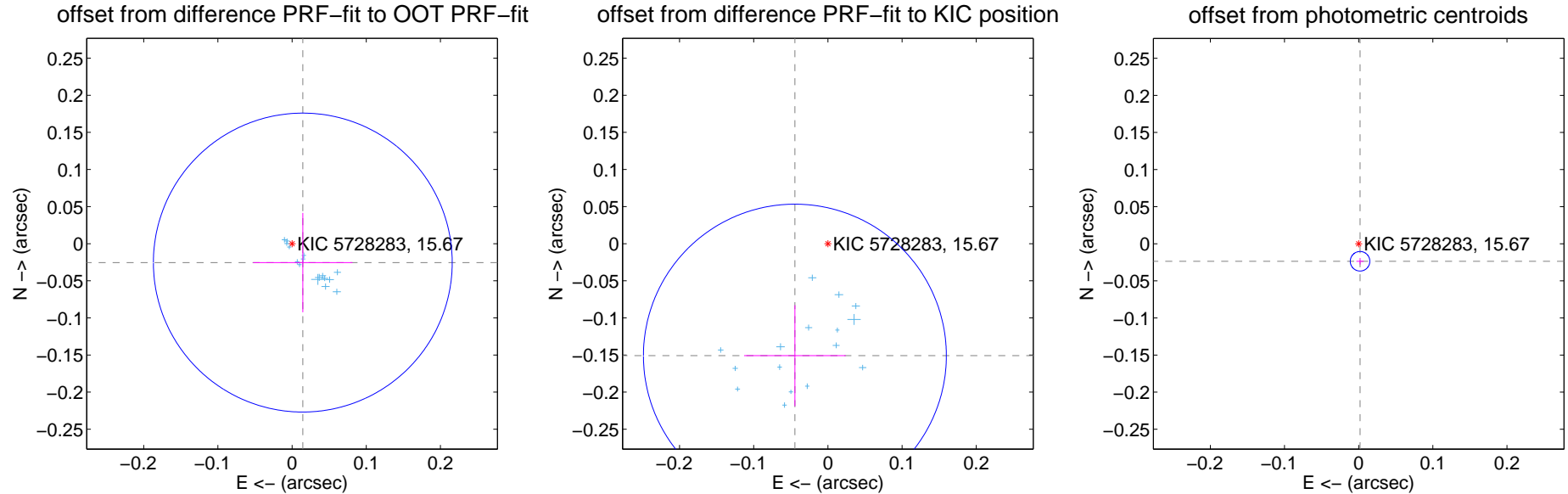
DV Centroid Data

Supplemental centroid analysis for 005728283-01. Kepler magnitude: 15.67. Transit SNR 1958.97

There are 16 quarters with good PRF difference image offsets

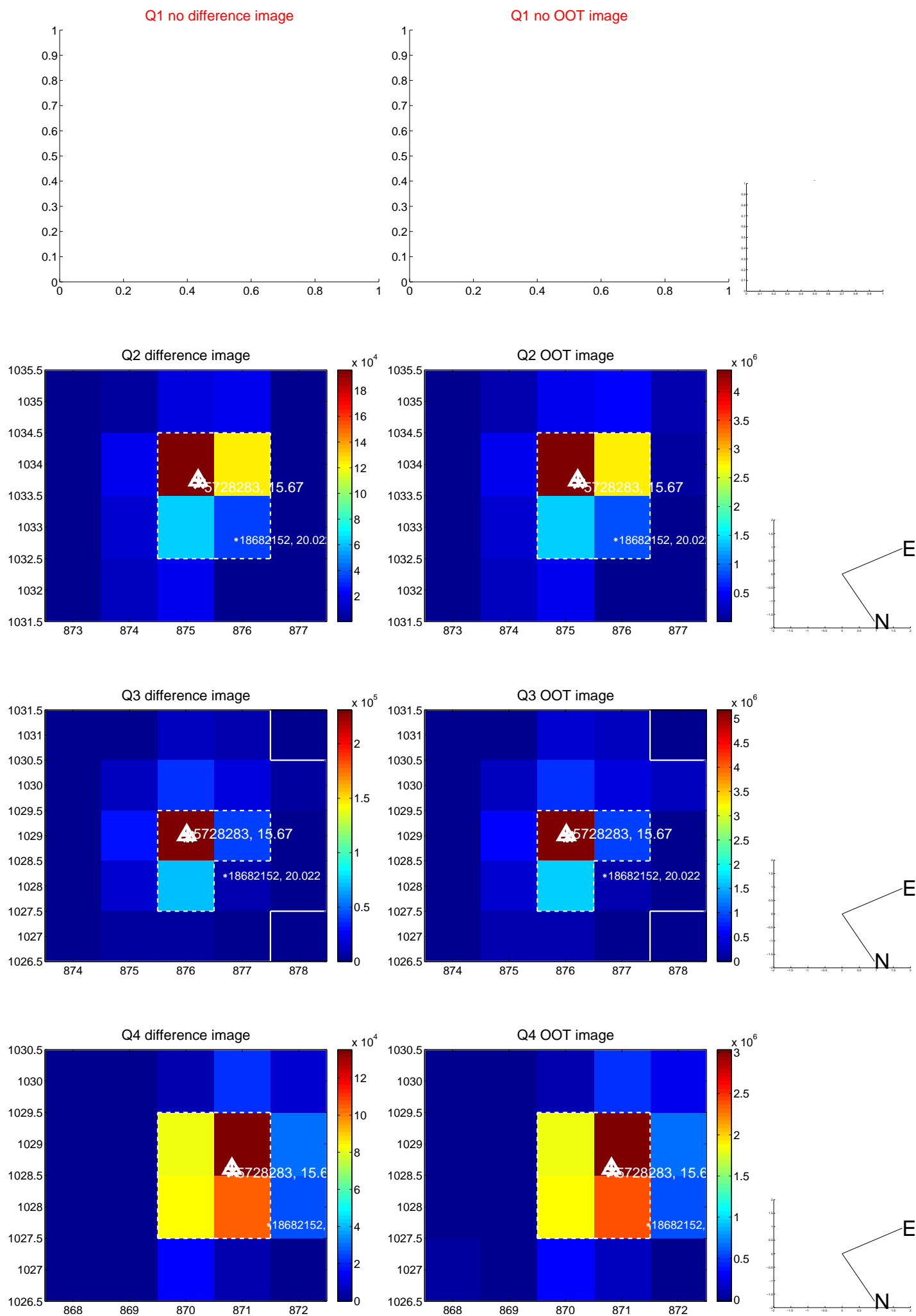
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.029 ± 0.067	0.44	-0.014 ± 0.067	-0.025 ± 0.067
PRF-fit source offset from KIC position	0.157 ± 0.068	2.31	0.044 ± 0.068	-0.151 ± 0.068
photometric centroid source offset	0.02 ± 0.00	5.39	-0.00 ± 0.00	-0.02 ± 0.00

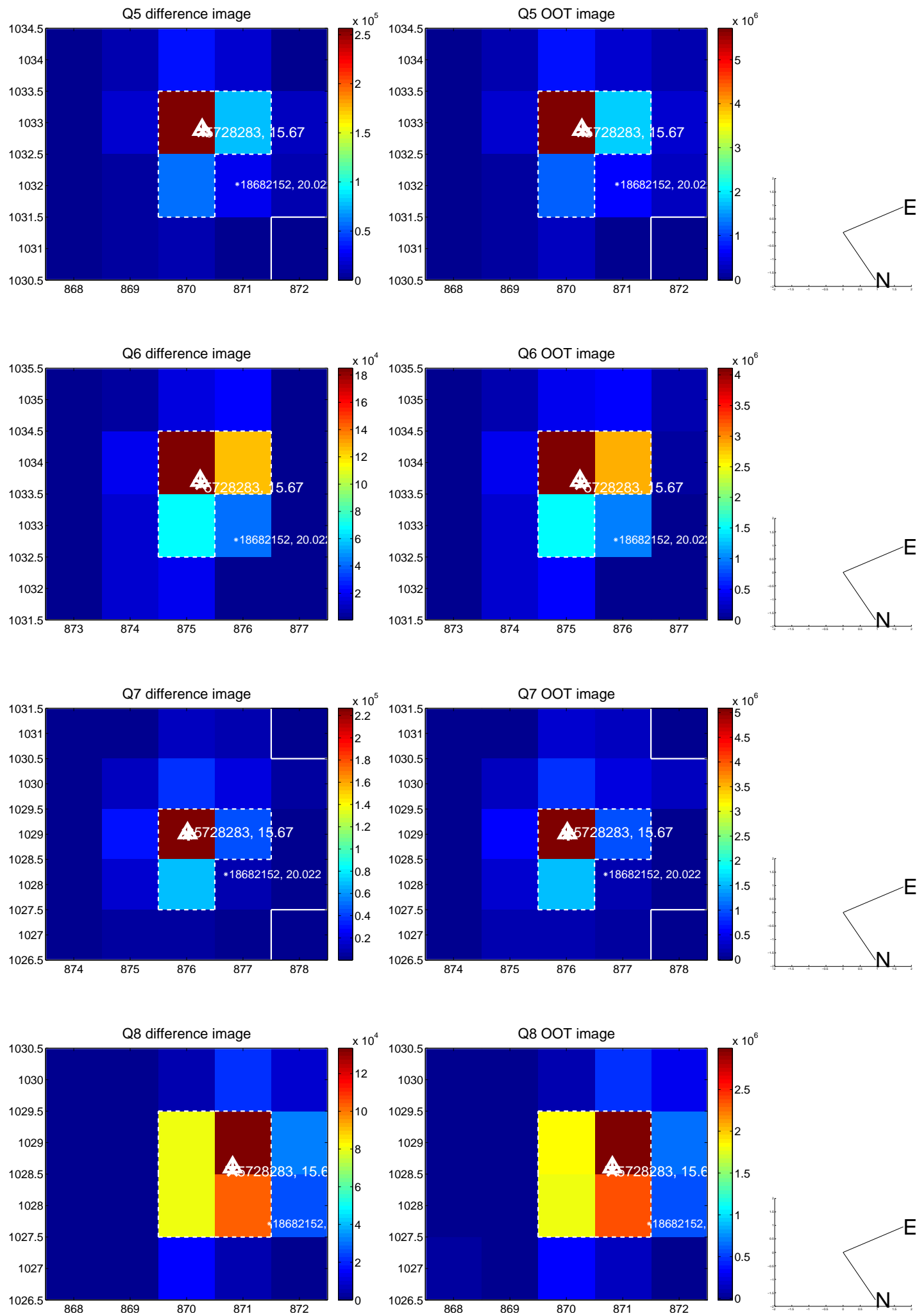


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

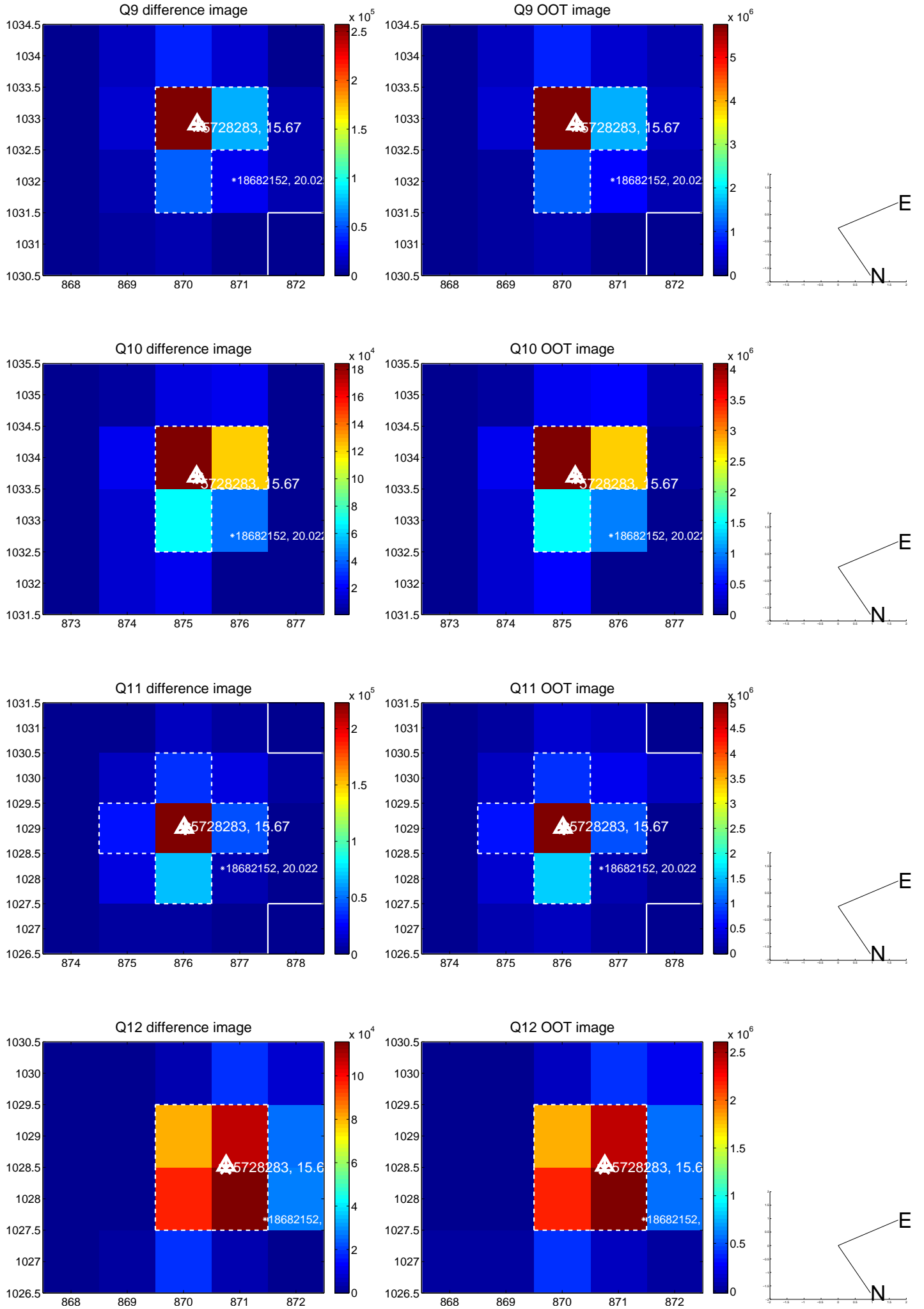
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



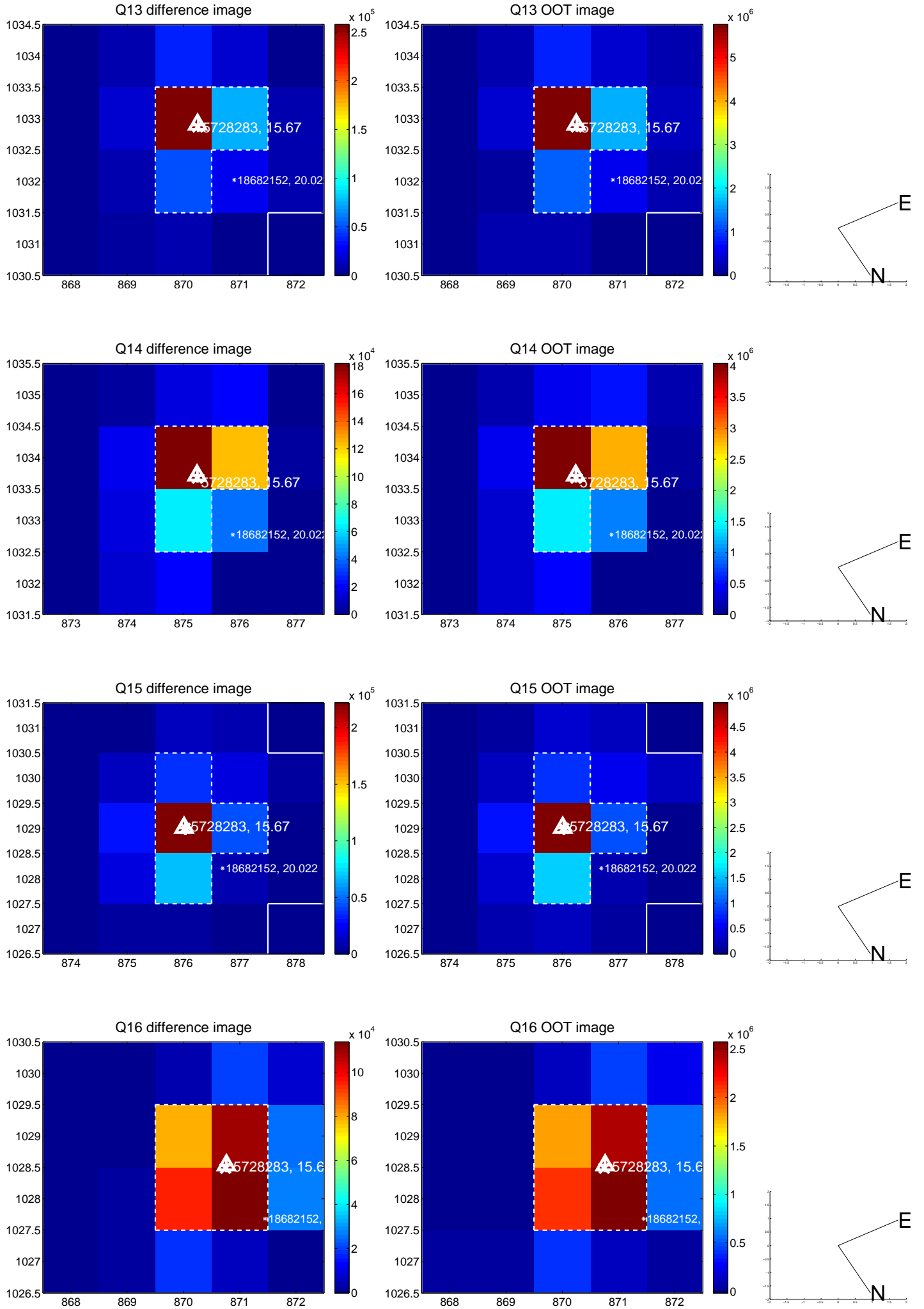
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



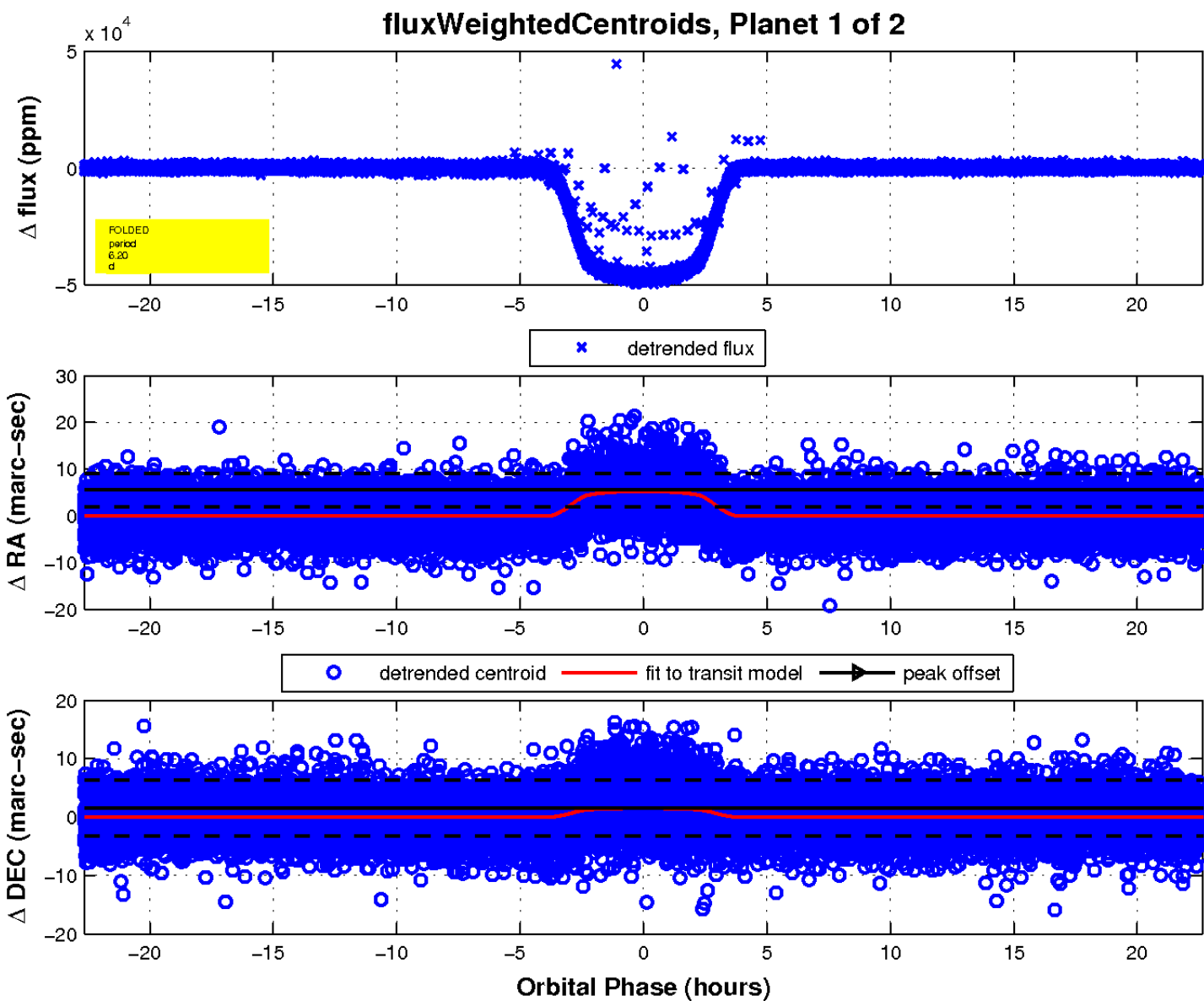
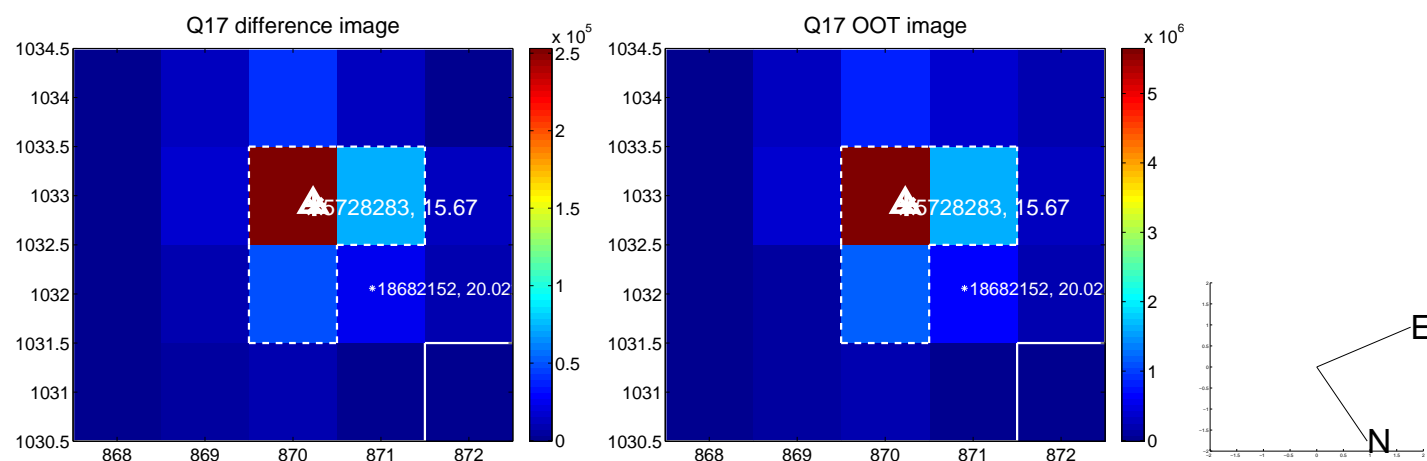
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

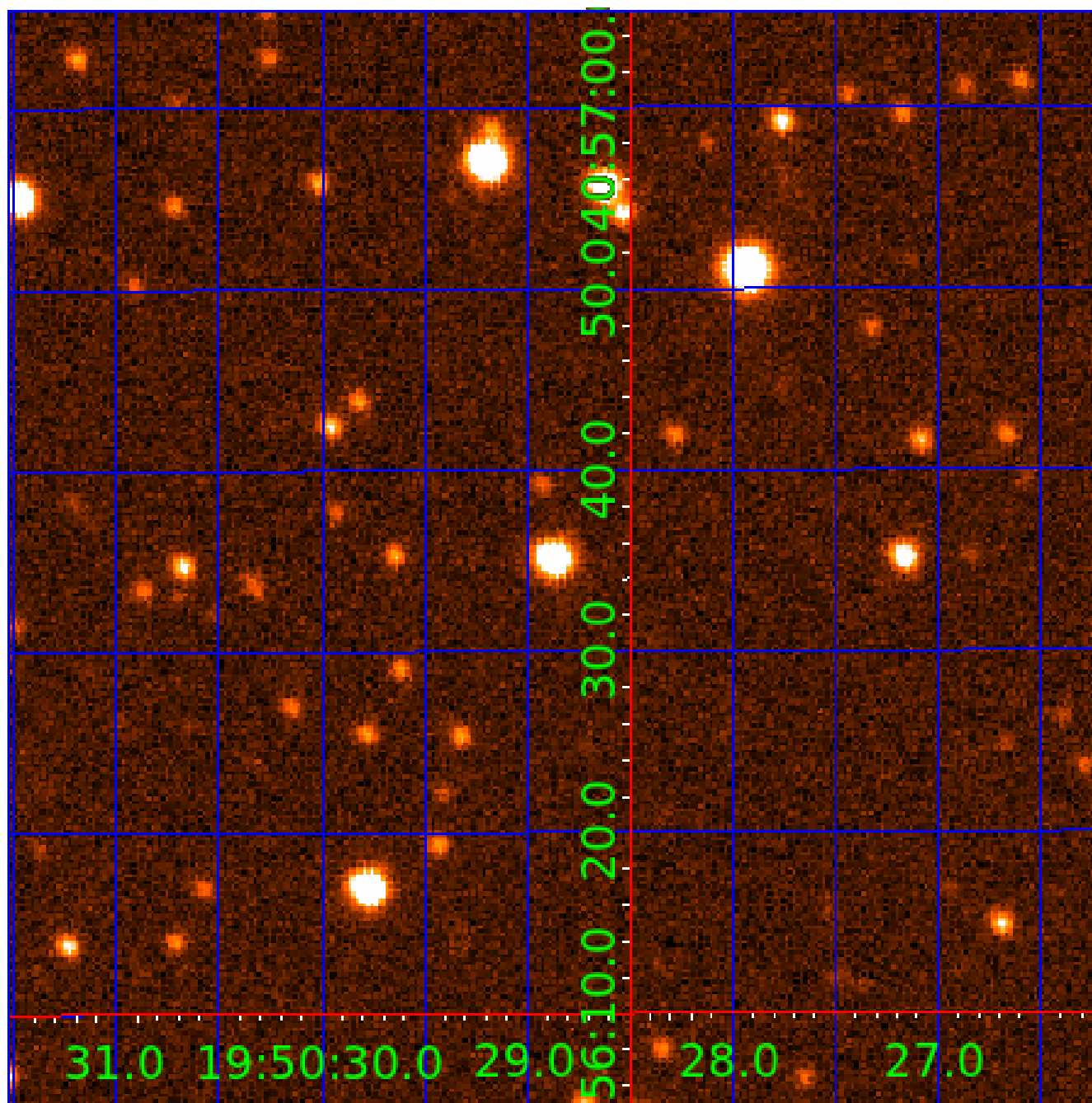


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005728283

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})
005728283-01	OBS	1011.01	6.198273	133.786991	47411.6	7.551	2130.5	1959.0	0.90	6038	19.85	222.65
005728283-02	OBS	No	6.198274	136.657980	2432.2	5.459	109.4	118.4	0.90	6038	4.99	222.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005728283-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
005728283-02	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.

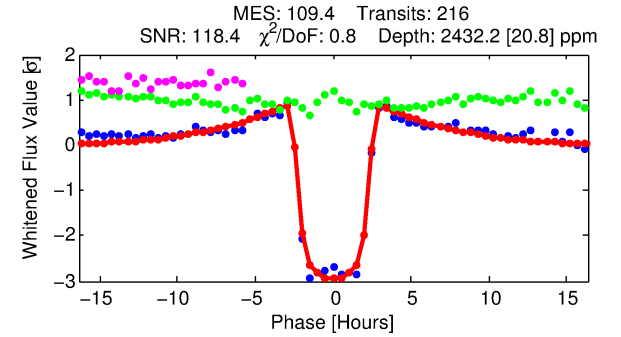
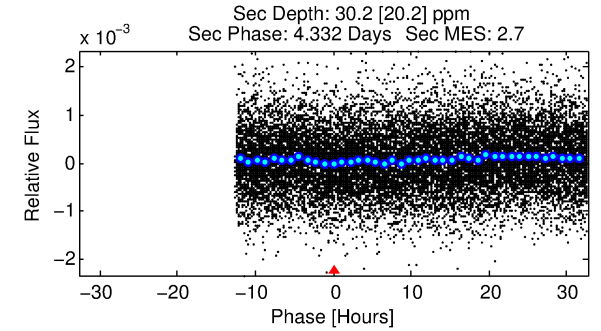
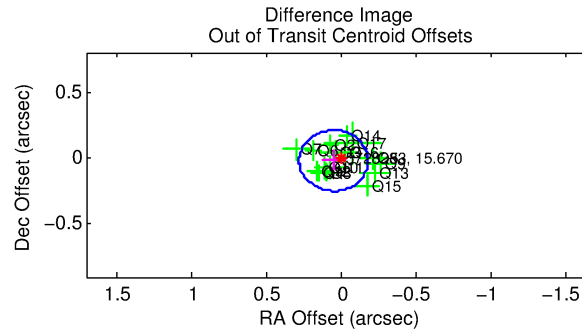
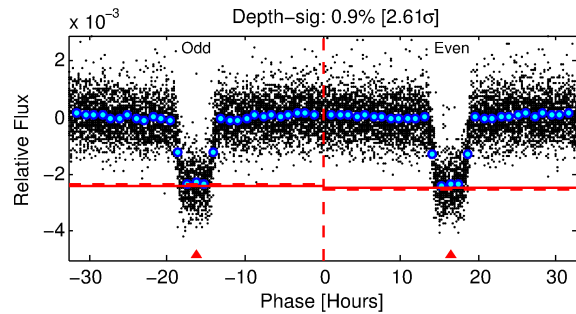
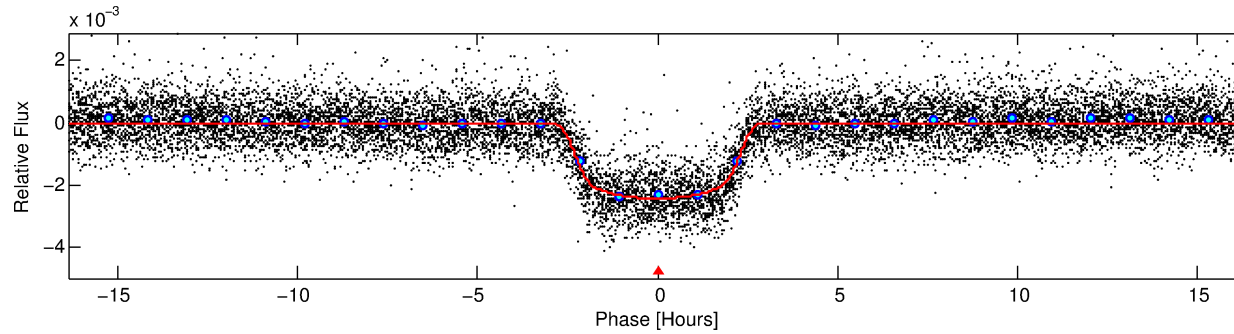
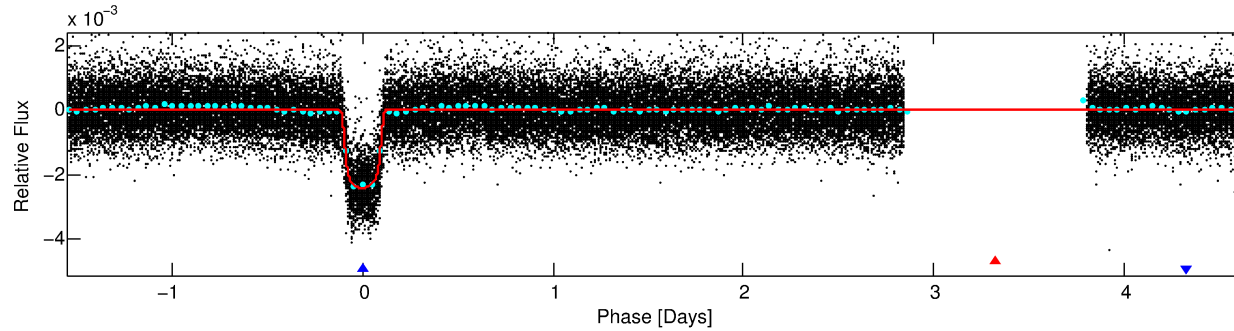
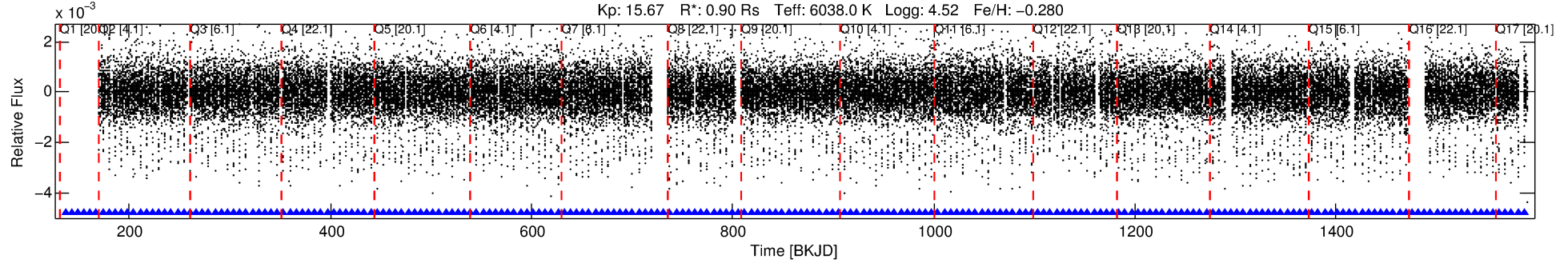
Ephemeris Match Information For 005728283-02

No Significant Match Found

DV One-Page Summary

KIC: 5728283 Candidate: 2 of 2 Period: 6.198 d
KOI: K01011 Corr: No Ephemeris Match

Kp: 15.67 R*: 0.90 Rs Teff: 6038.0 K Logg: 4.52 Fe/H: -0.280



DV Fit Results:

Period = 6.19827 [0.00001] d
Epoch = 136.6580 [0.0008] BKJD
Rp/R* = 0.0509 [0.0005]
a/R* = 5.62 [0.23]
b = 0.83 [0.02]
Seff = 222.65 [95.01]
Teff = 985 [105] K
Rp = 4.99 [1.61] Re
a = 0.0657 [0.0180] AU
Ag = 2.88 [2.25] [0.84σ]
Teffp = 1985 [339] K [2.82σ]

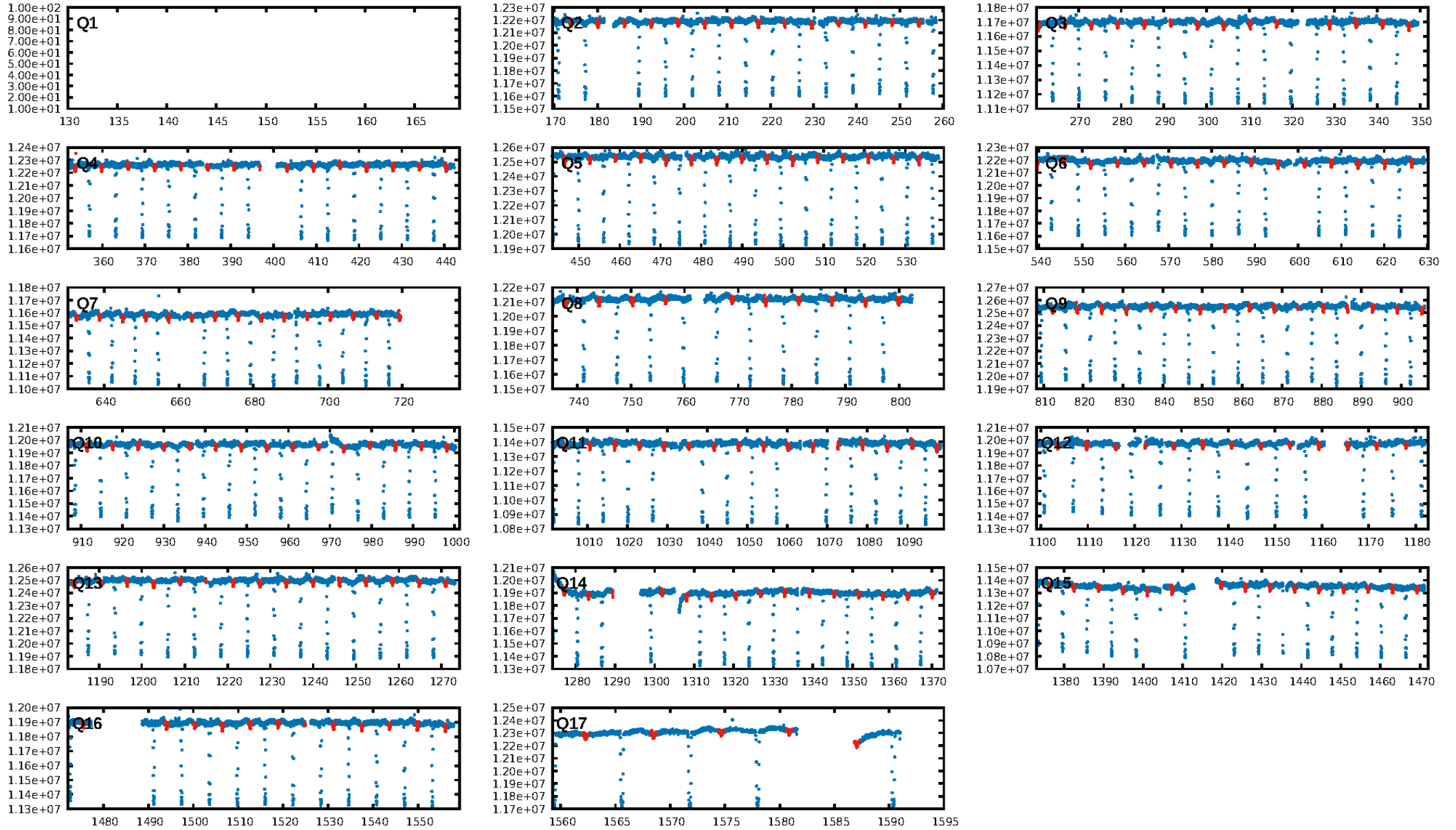
DV Diagnostic Results:

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 [211/211]
GhostDiagnostic-chr: 3.057
Centroid-sig: 0.0%
Centroid-so: 0.234 arcsec [2.45σ]
OotOffset-rm: 0.050 arcsec [0.66σ]
KicOffset-rm: 0.181 arcsec [2.39σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [16/16]

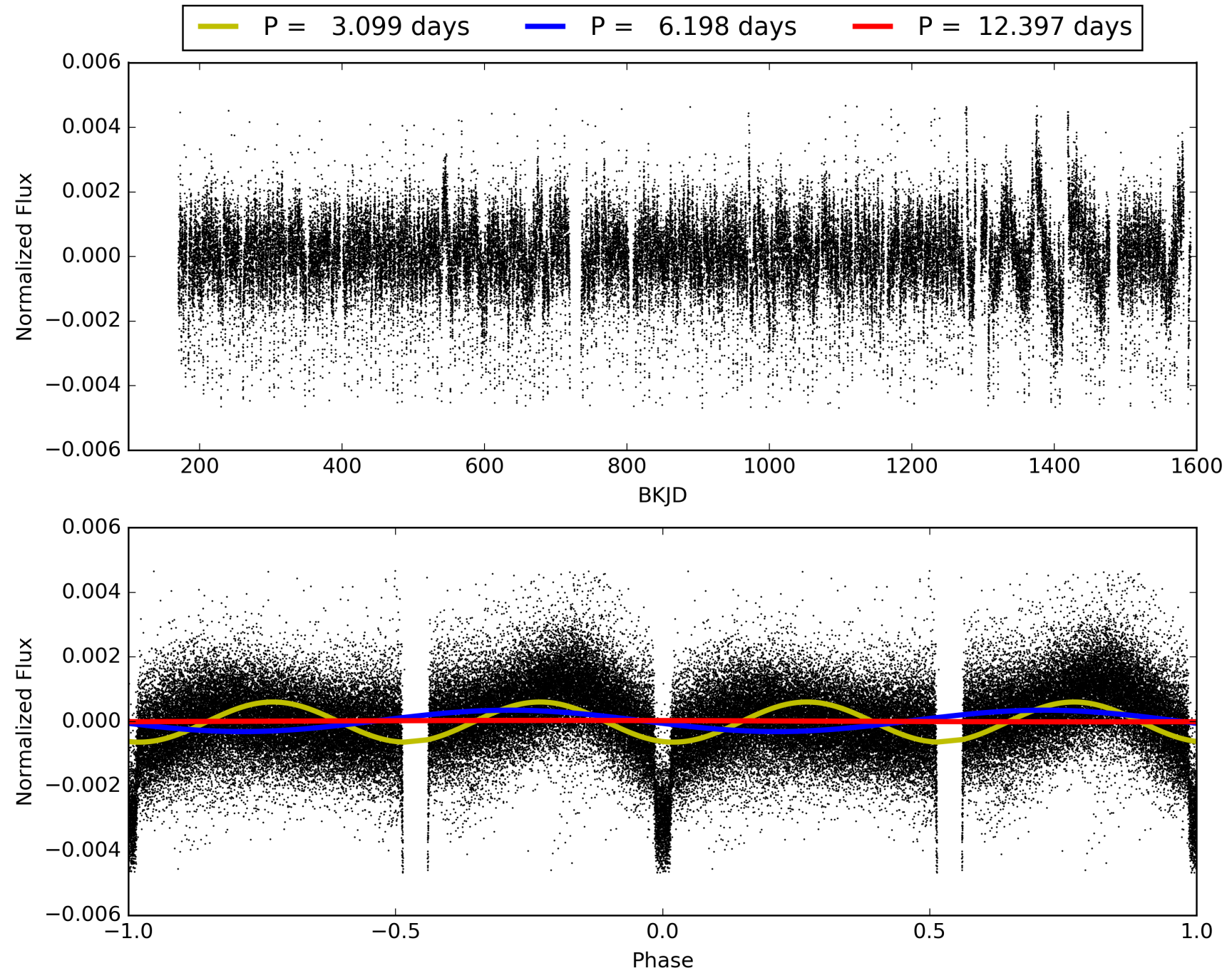
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005728283-02, PDC Light Curves

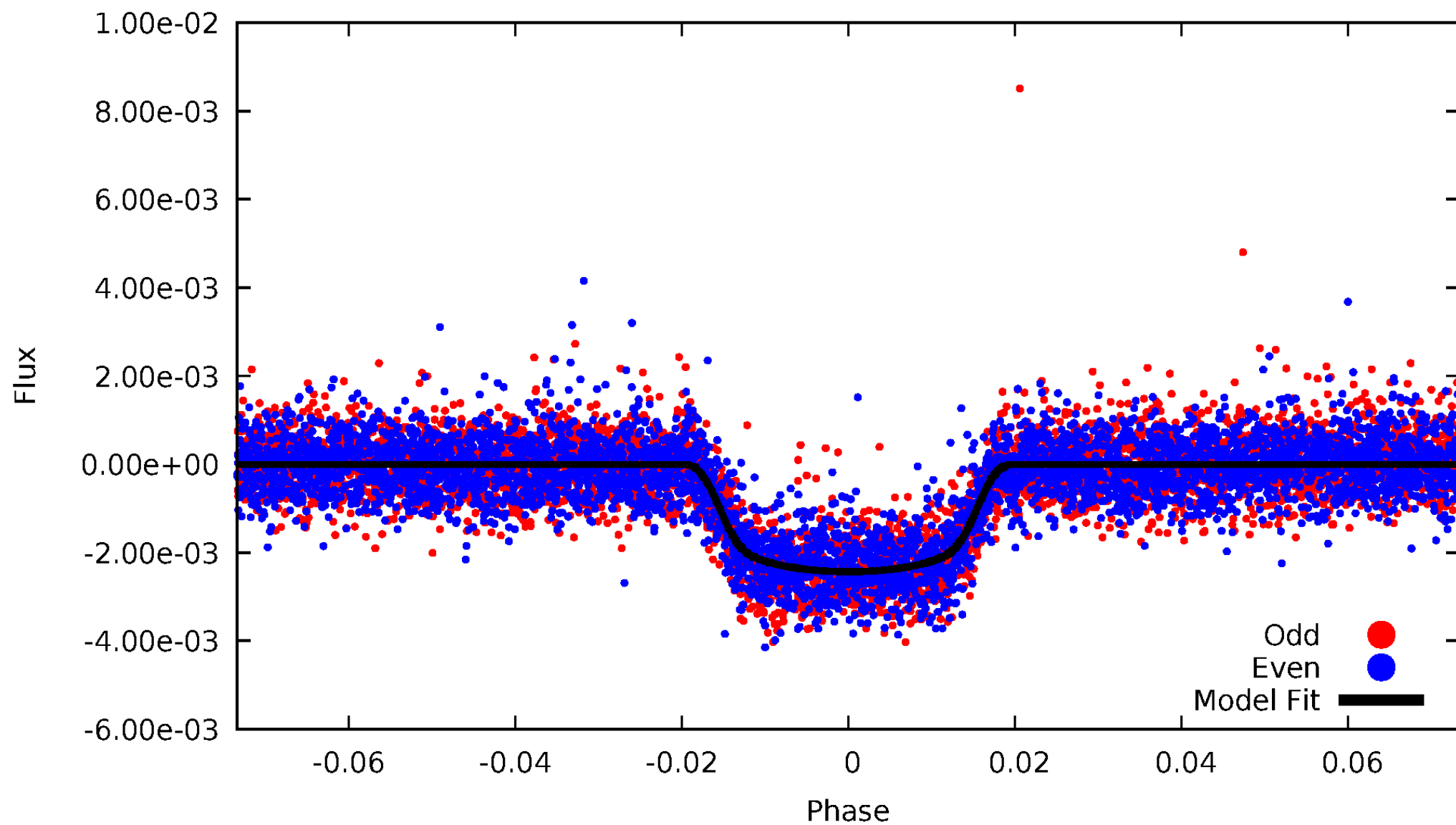


TCE 005728283-02



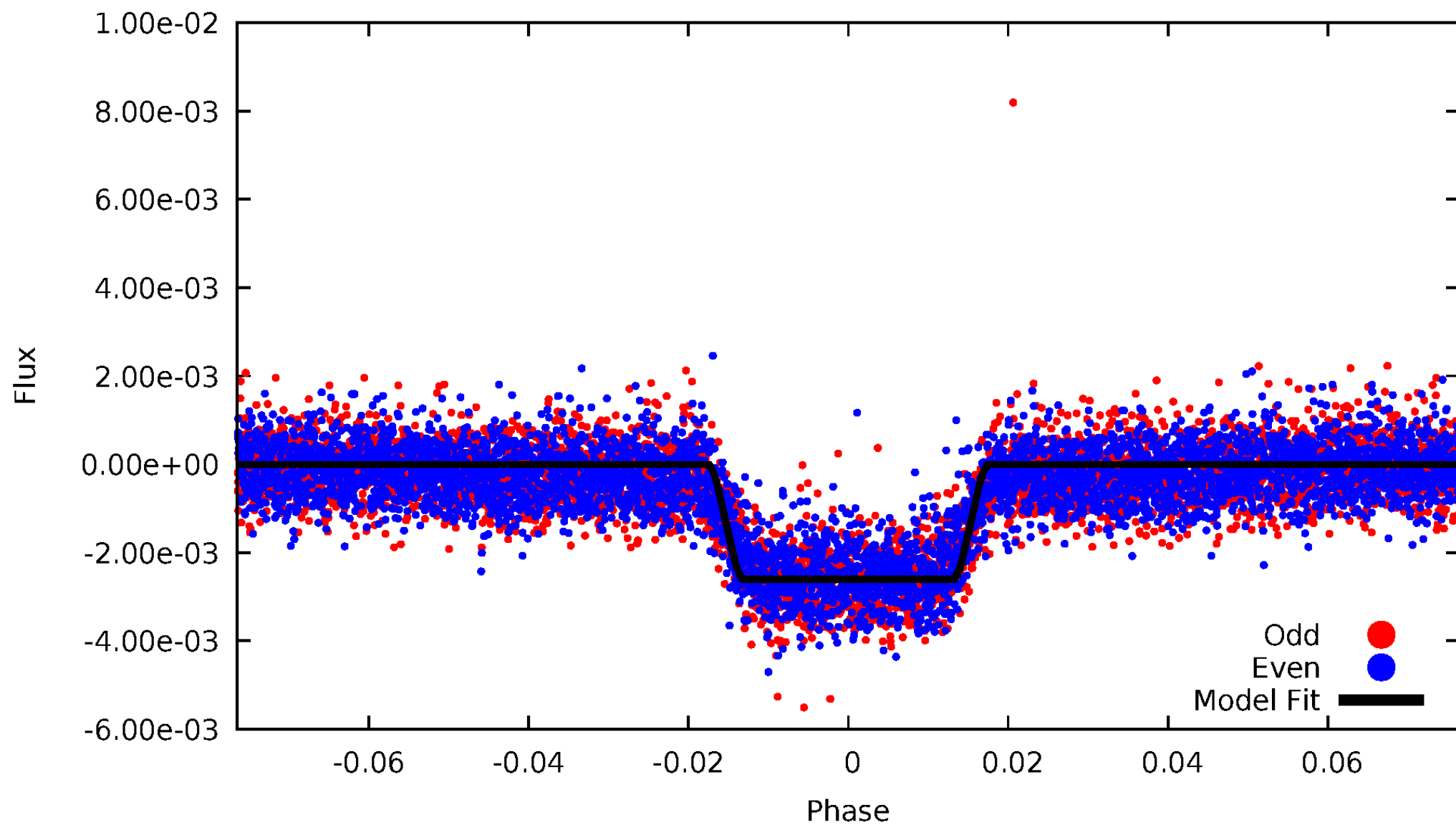
DV Odd/Even

TCE 005728283-02



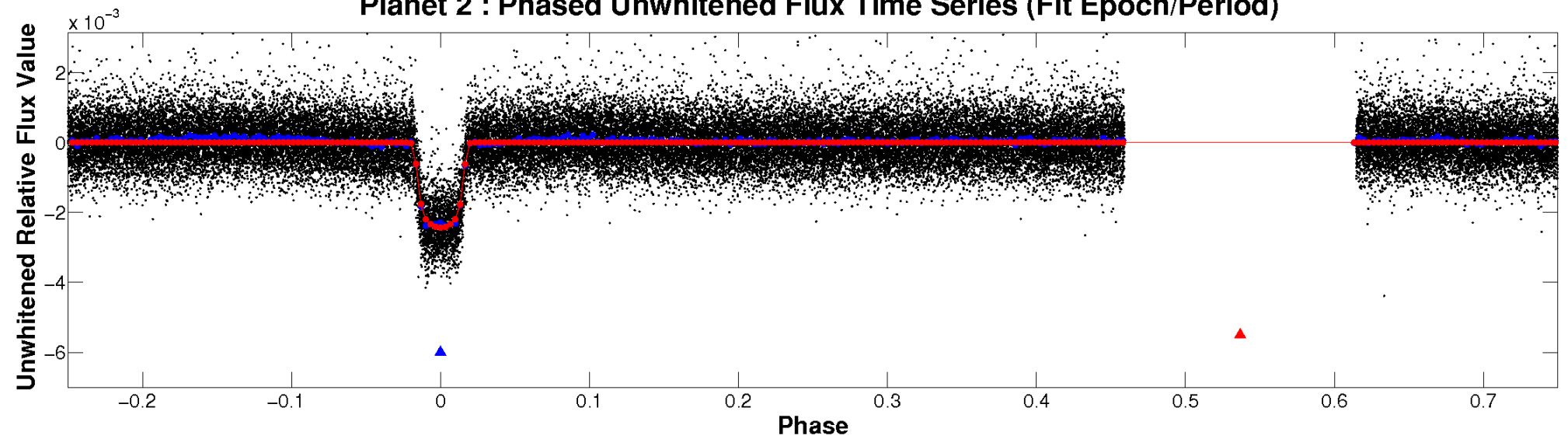
ALT Odd/Even

TCE 005728283-02

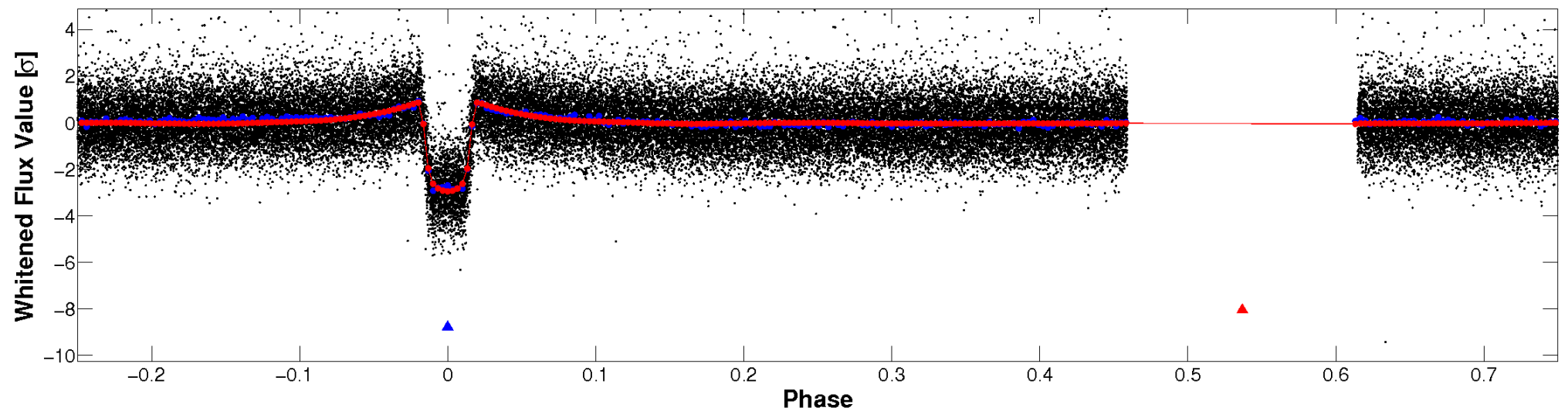


Non-Whitened Vs. Whitened Light Curve

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

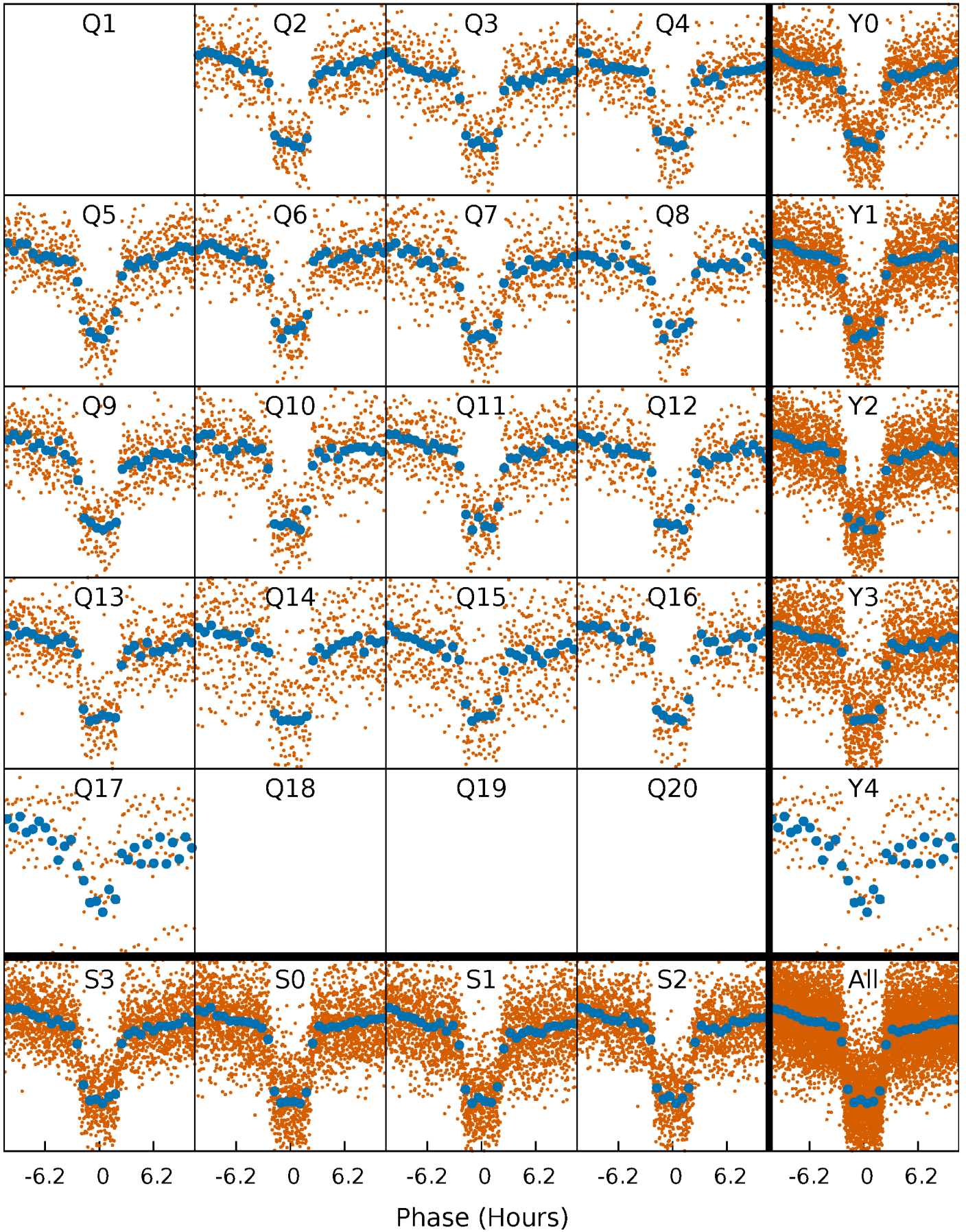


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



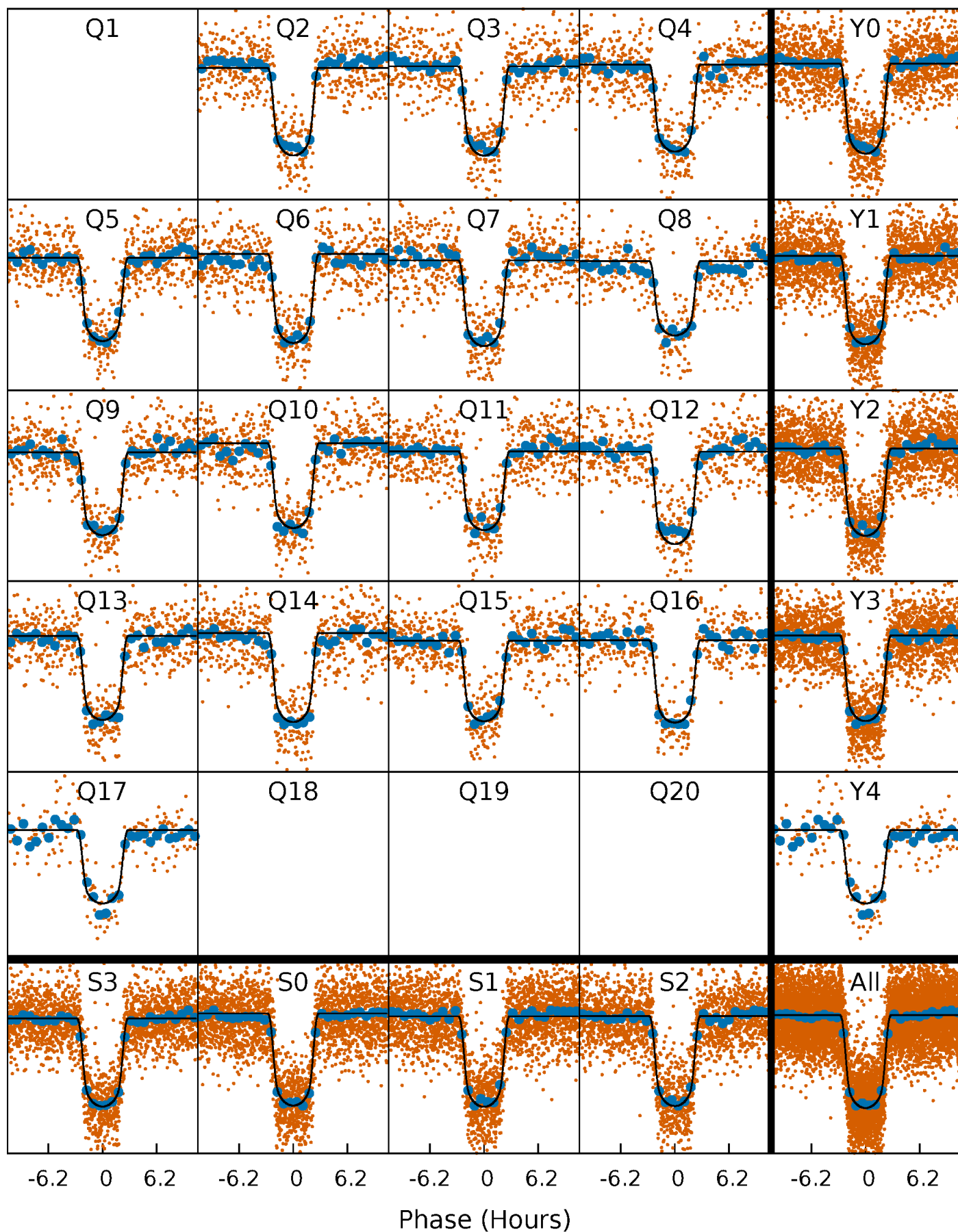
PDC Quarter-Phased Transit Curves

TCE 005728283-02 P= 6.198274 Days $T_0=136.657980$ (BKJD)



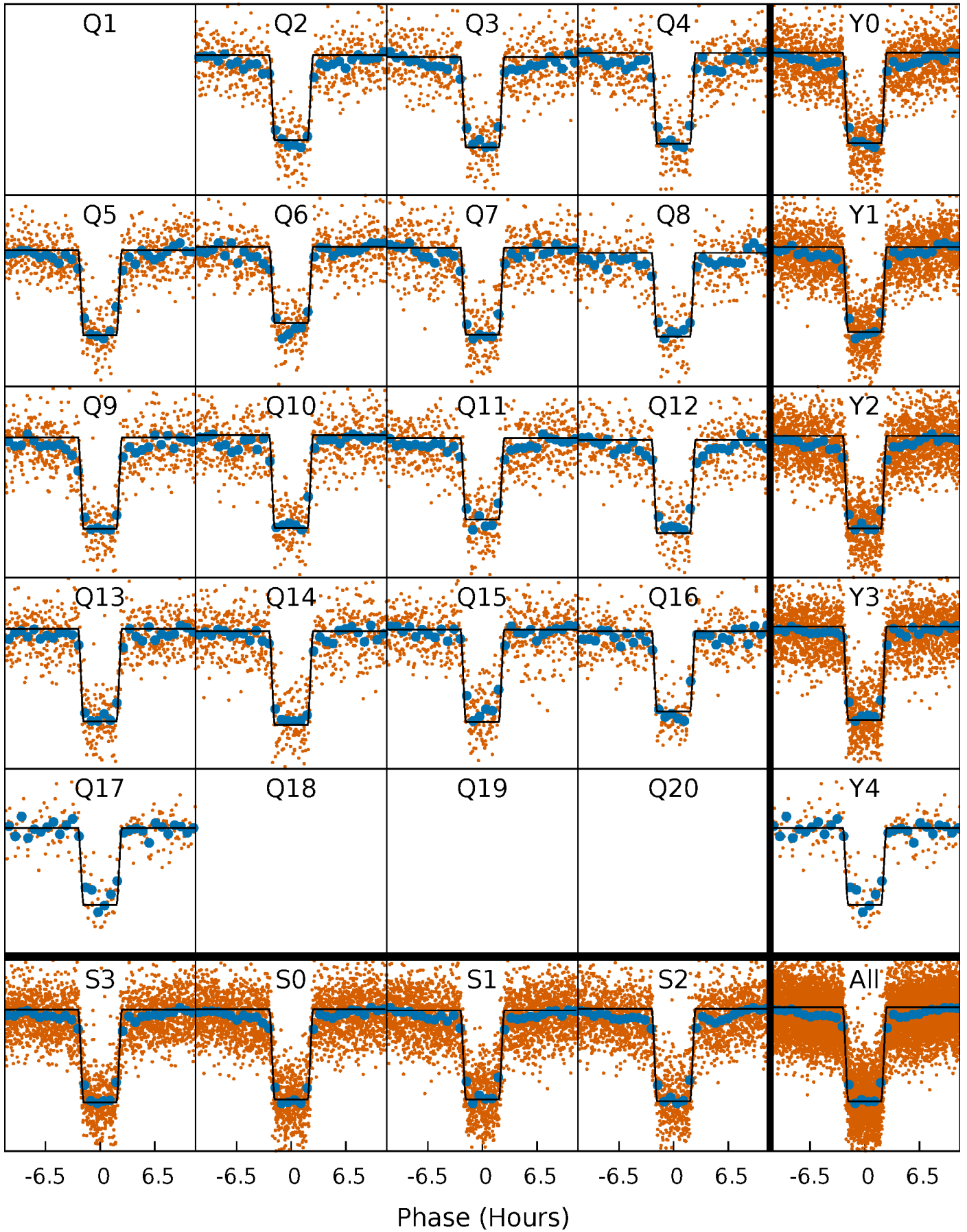
DV Quarter-Phased Transit Curves

TCE 005728283-02 P= 6.198274 Days $T_0=136.657980$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

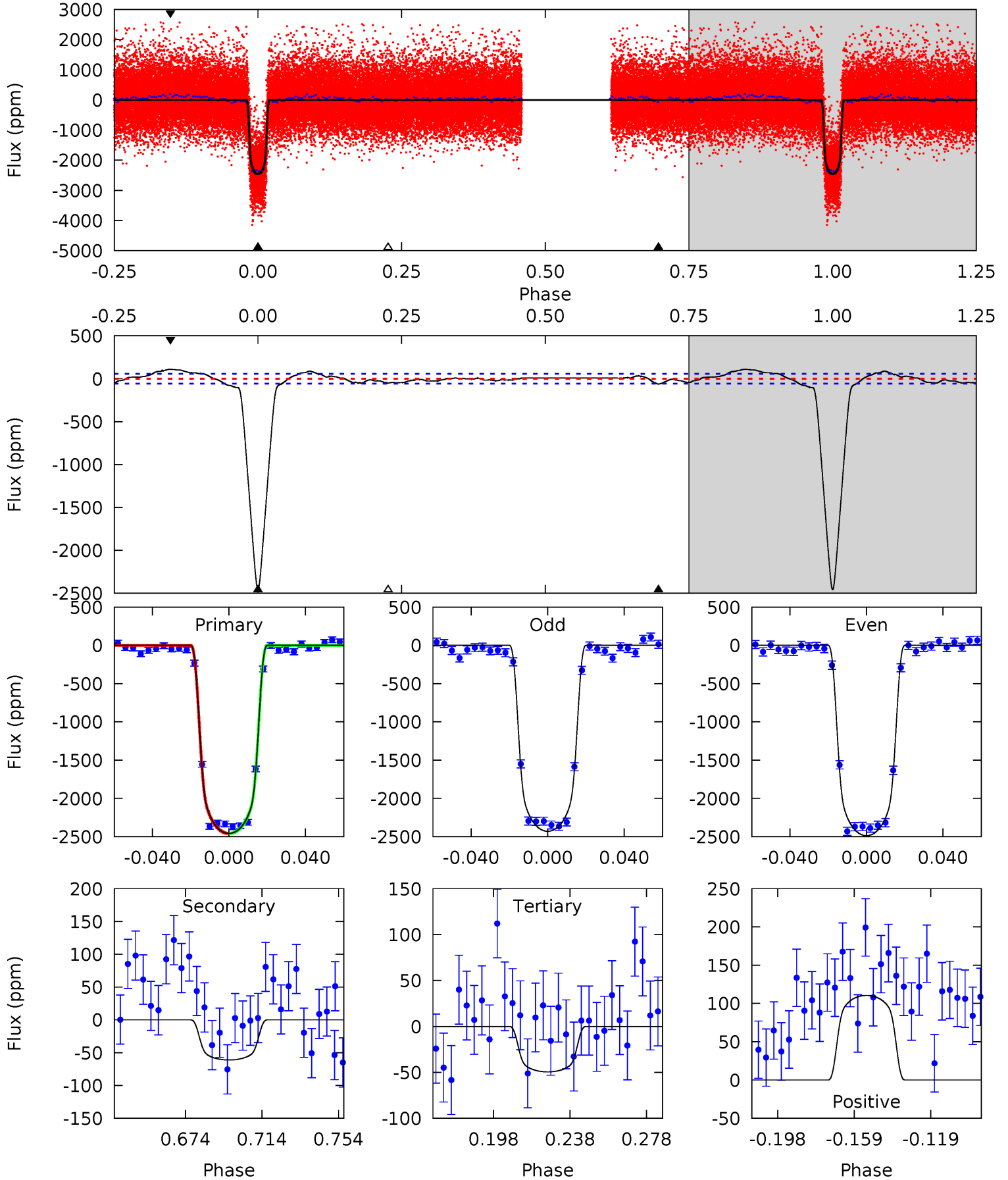
TCE 005728283-02 P= 6.198276 Days $T_0=136.657777$ (BKJD)



DV Model-Shift Uniqueness Test

005728283-02, P = 6.198274 Days, E = 136.657980 Days

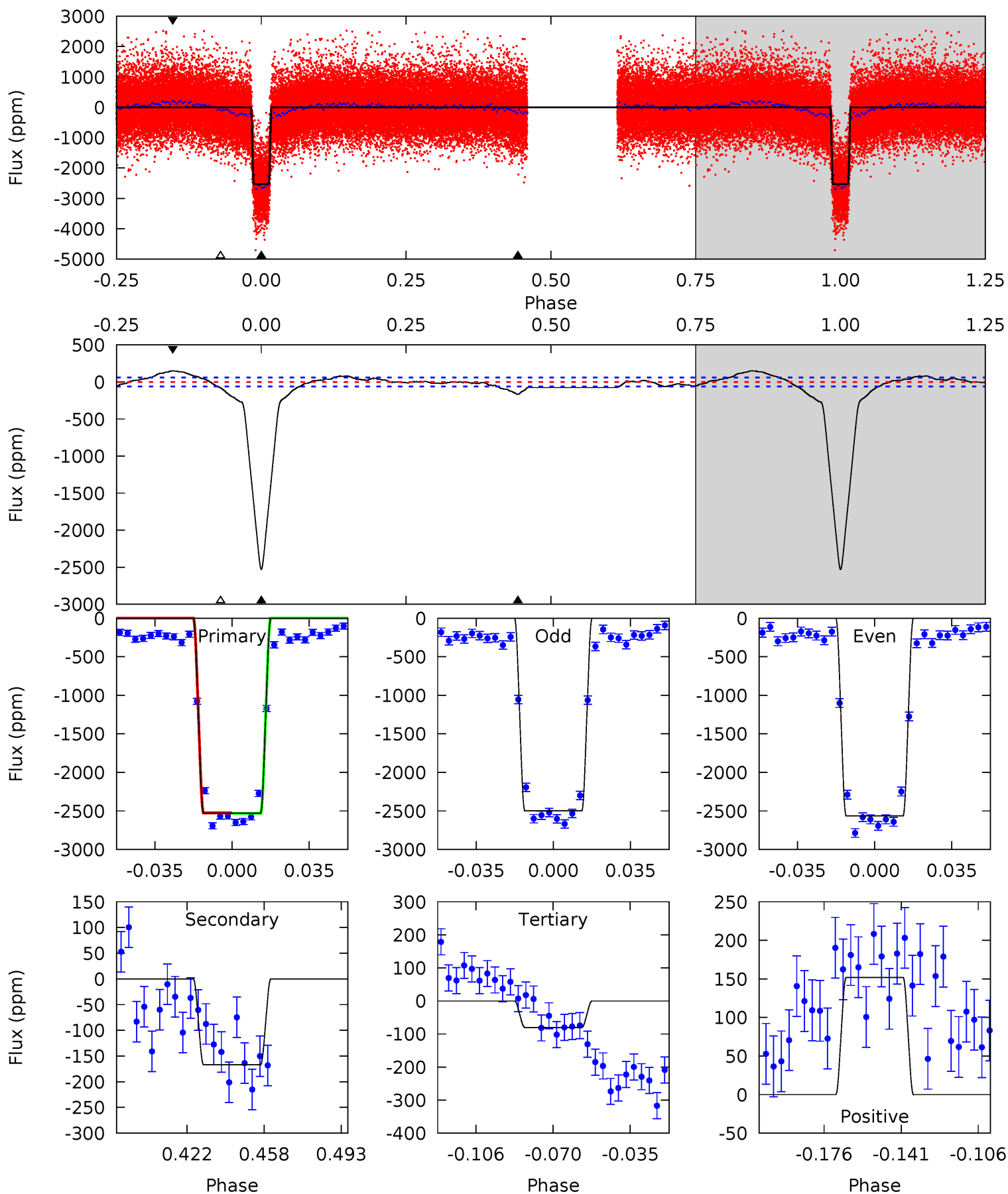
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
201.3	5.01	4.05	9.05	4.76	2.06	3.63	197.2	192.2	0.96	-4.04	2.36	0.99	0.04	0.00



Alt Model-Shift Uniqueness Test

005728283-02, P = 6.198276 Days, E = 136.657777 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
200.4	13.2	6.35	12.0	4.78	2.11	5.82	194.0	188.3	6.88	1.20	2.63	1.01	0.06	0.24



Stellar Parameters For KIC 005728283

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6038^{+181}_{-217}	$4.524^{+0.039}_{-0.221}$	$-0.280^{+0.300}_{-0.300}$	$0.898^{+0.290}_{-0.097}$	$0.982^{+0.132}_{-0.120}$	$1.912^{+0.417}_{-1.043}$
	+3%/-4%	+1%/-5%	+107%/-107%	+32%/-11%	+13%/-12%	+22%/-55%
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 005728283-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-61 ± 12	$5.23^{+0.88}_{-0.47}$	1414^{+112}_{-74}	2989^{+106}_{-107}	$5.067^{+1.465}_{-1.453}$
Alt.	-167 ± 13	$5.18^{+0.89}_{-0.41}$	1415^{+111}_{-73}	3505^{+77}_{-96}	14^{+2}_{-4}

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

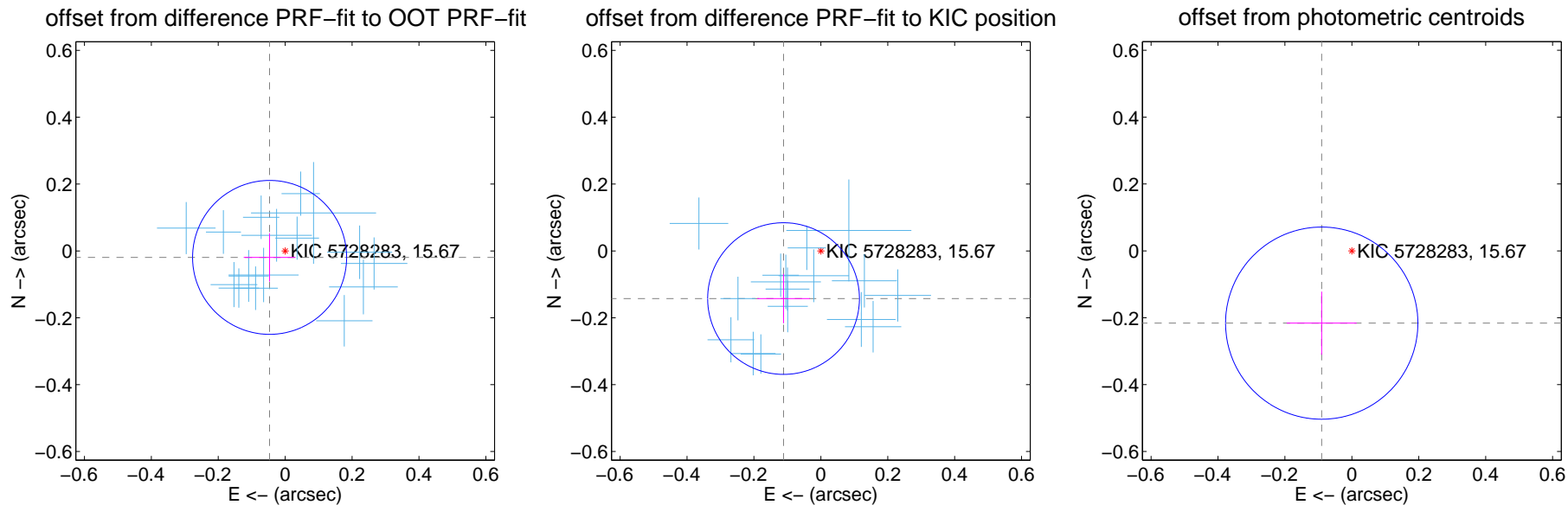
DV Centroid Data

Supplemental centroid analysis for 005728283-02. Kepler magnitude: 15.67. Transit SNR 118.44

There are 16 quarters with good PRF difference image offsets

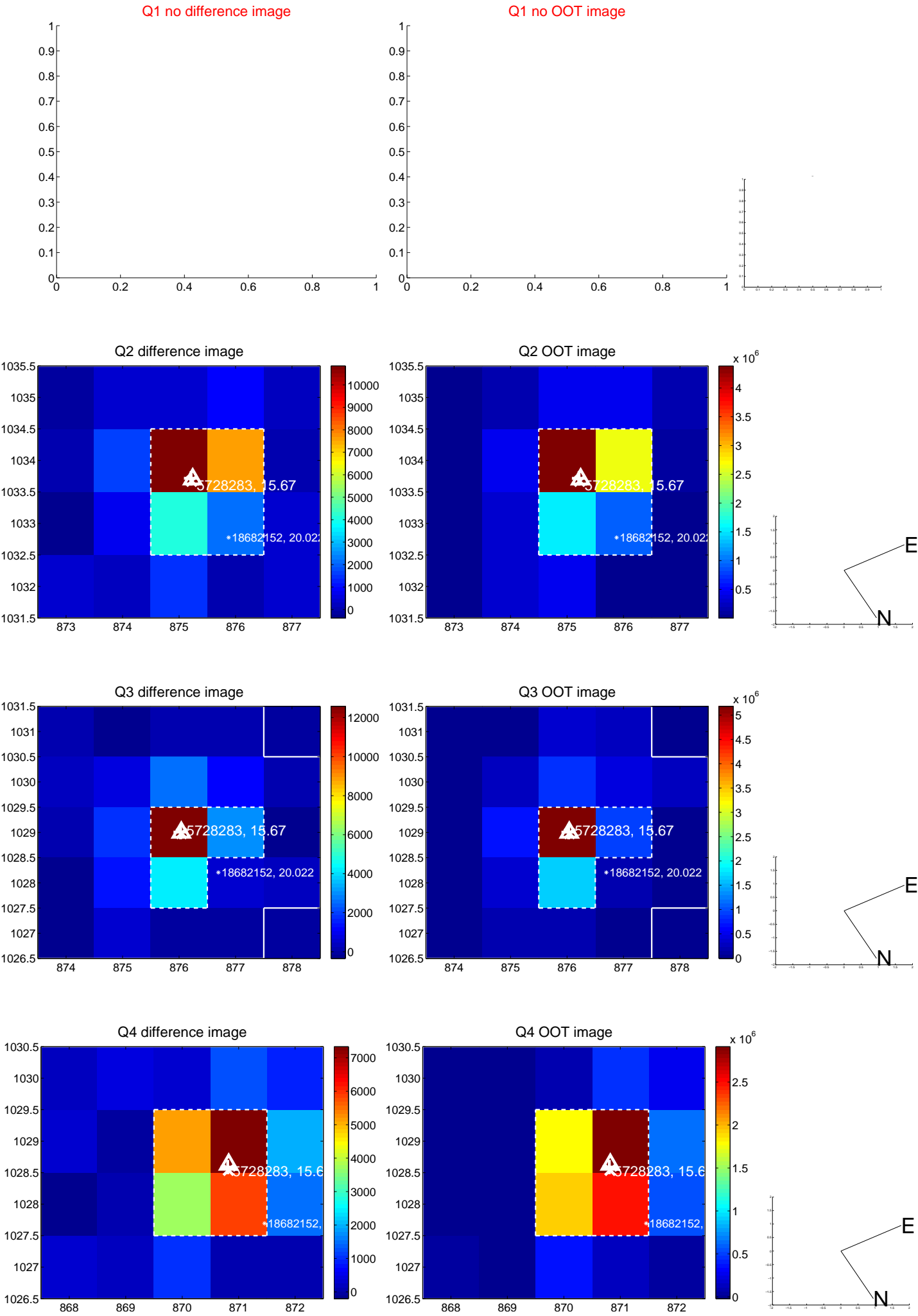
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.050 ± 0.077	0.66	0.047 ± 0.077	-0.019 ± 0.072
PRF-fit source offset from KIC position	0.181 ± 0.076	2.39	0.112 ± 0.078	-0.143 ± 0.074
photometric centroid source offset	0.23 ± 0.10	2.45	0.09 ± 0.10	-0.22 ± 0.09

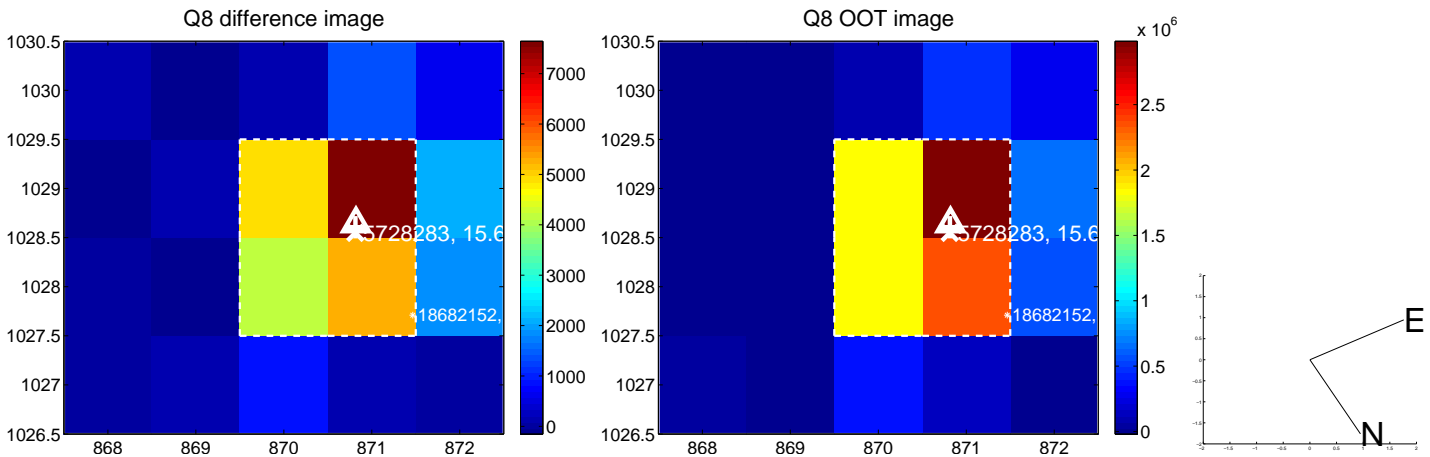
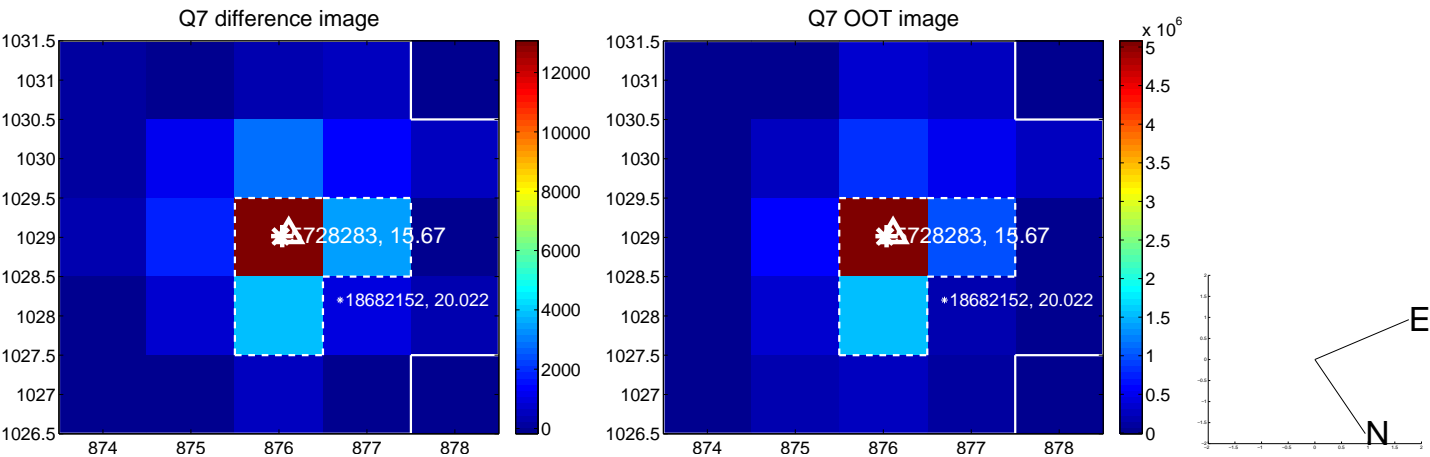
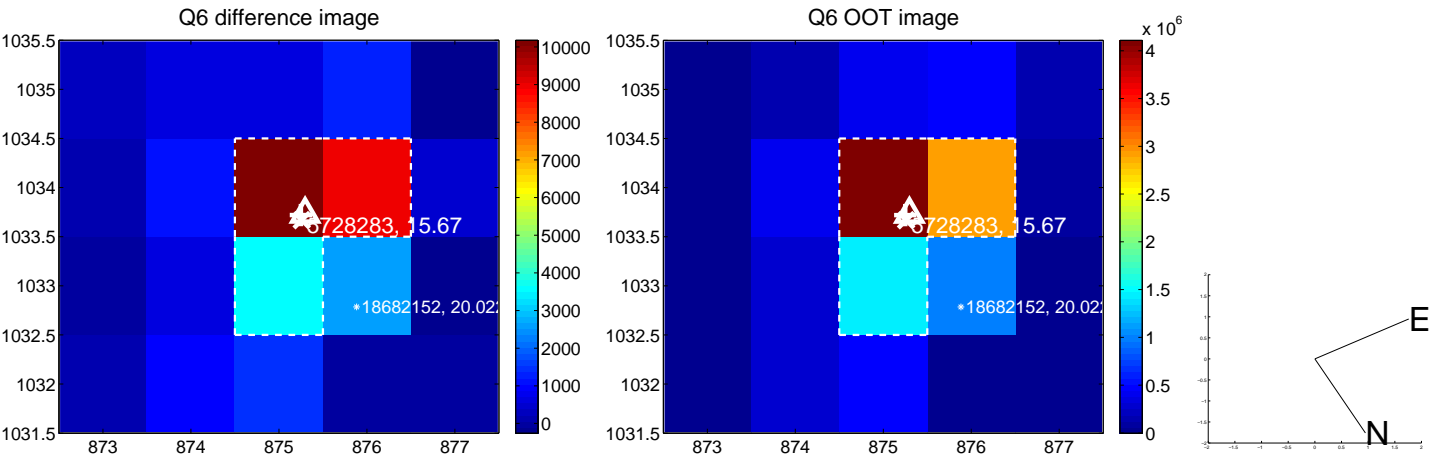
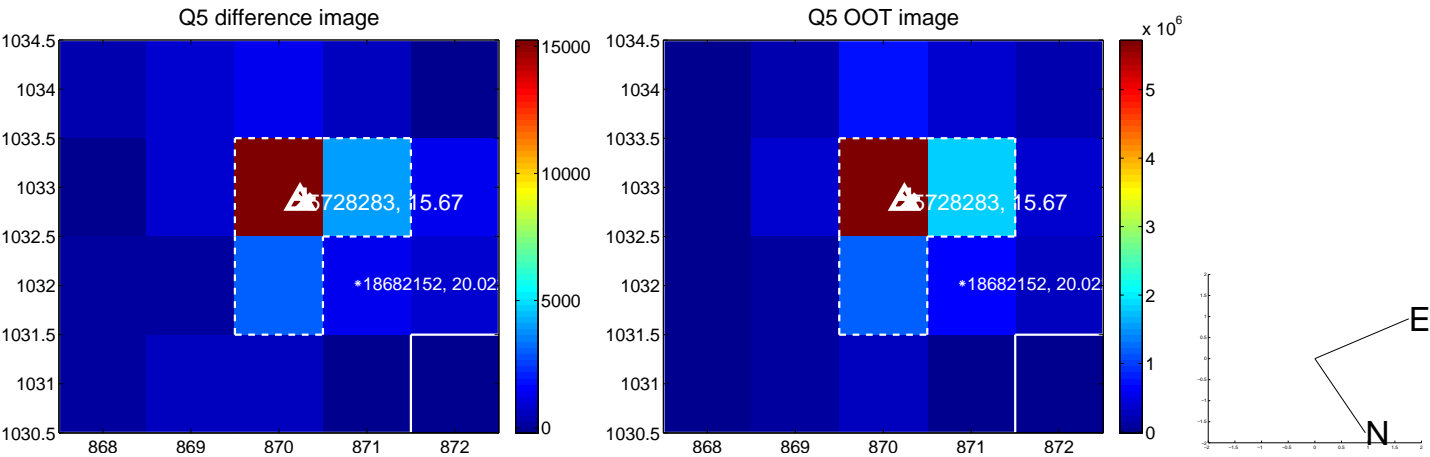


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

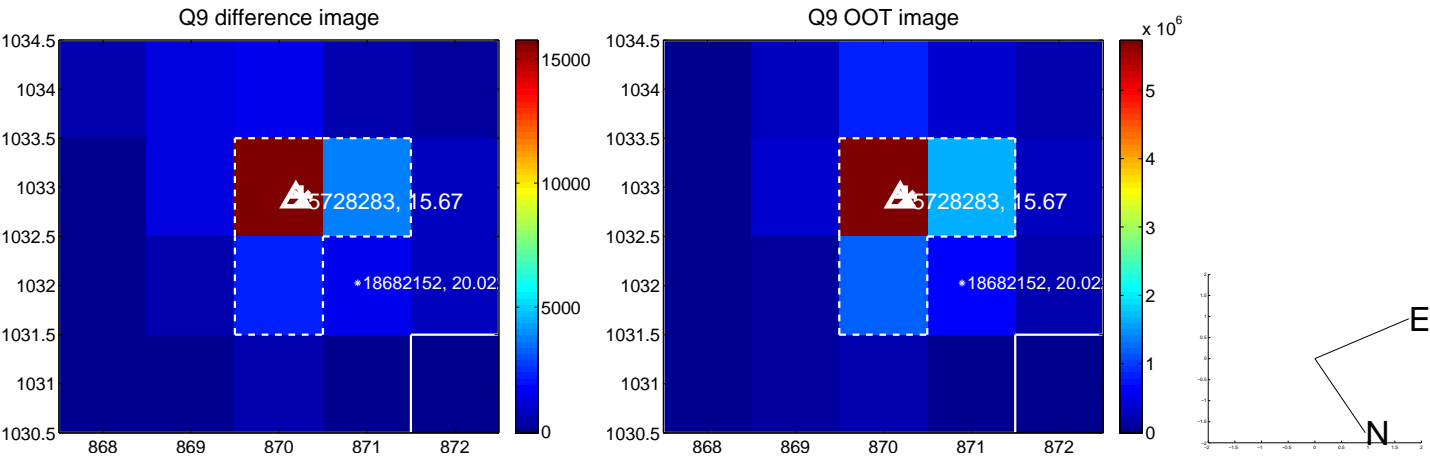
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



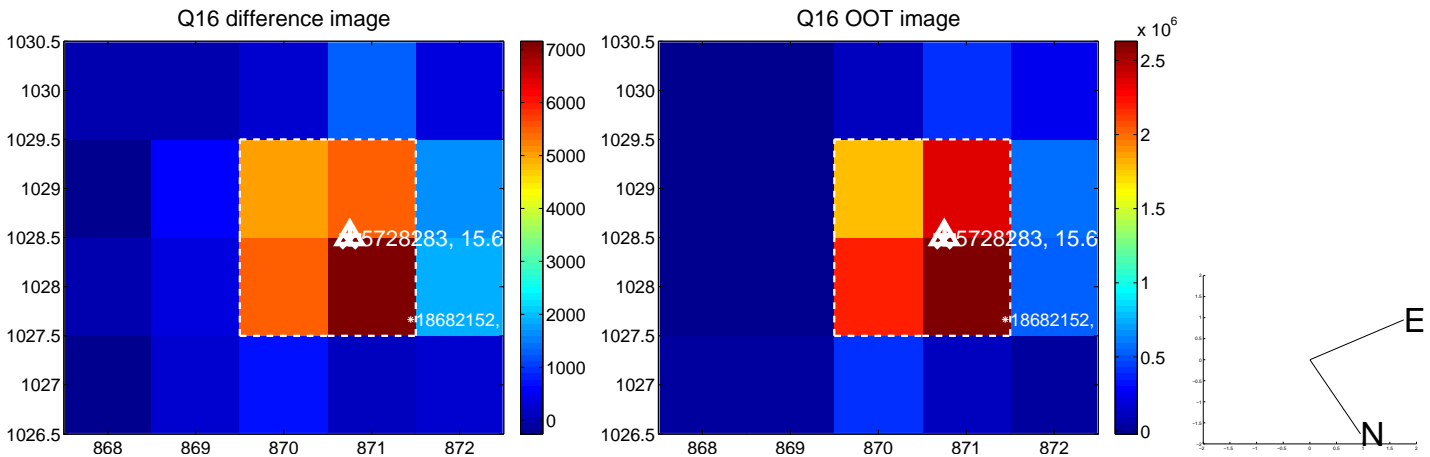
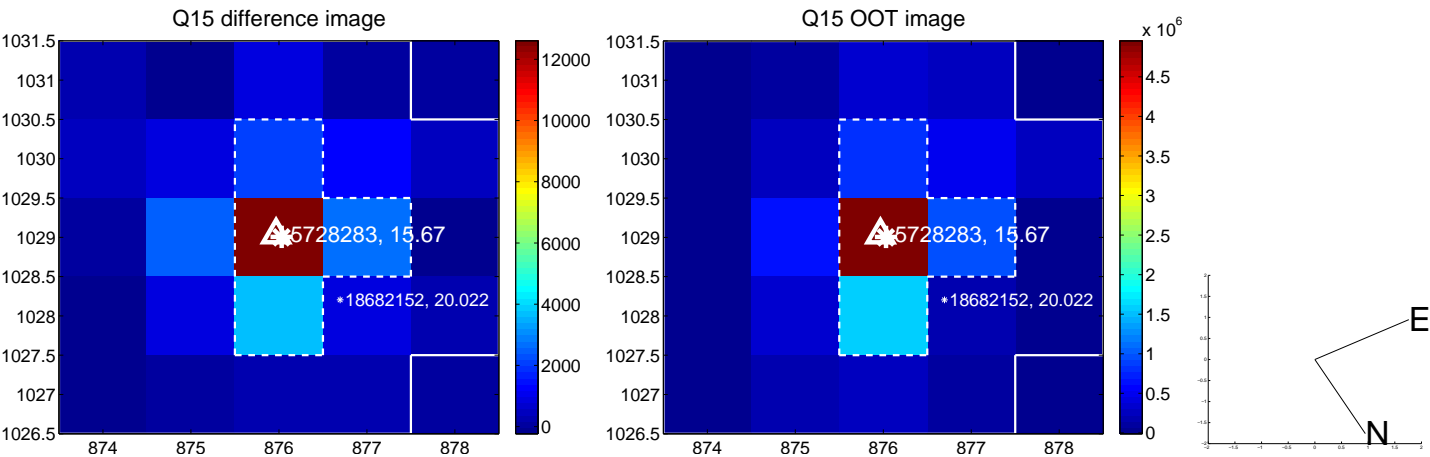
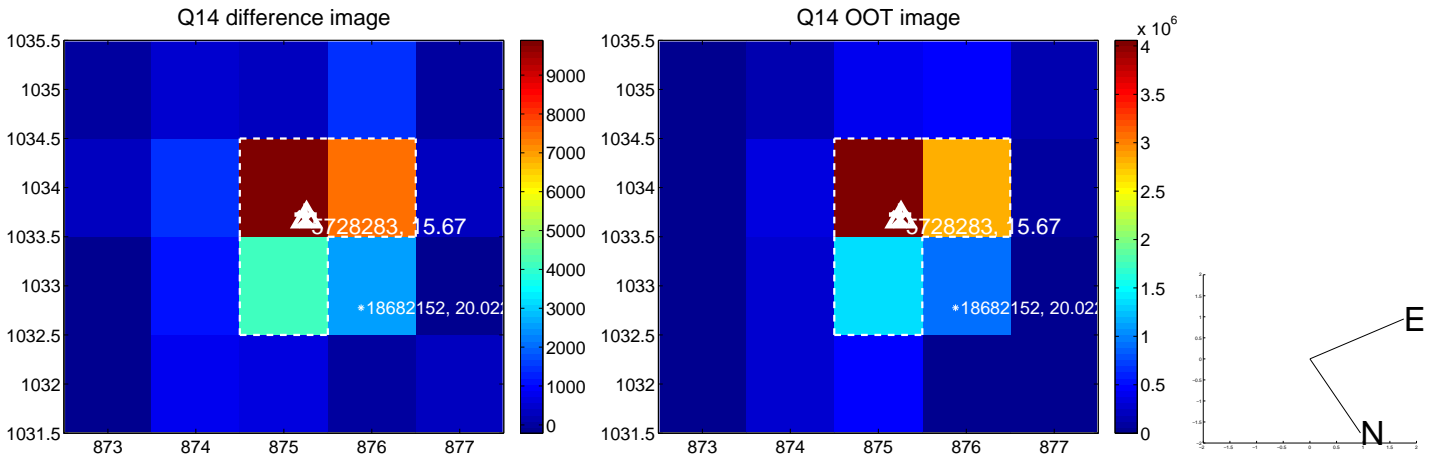
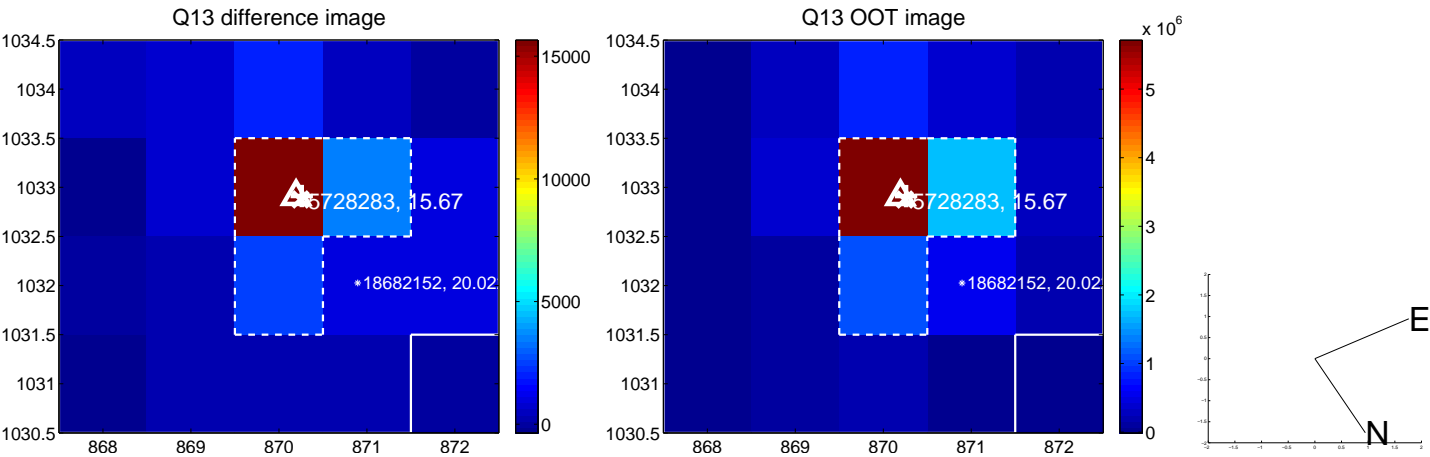
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



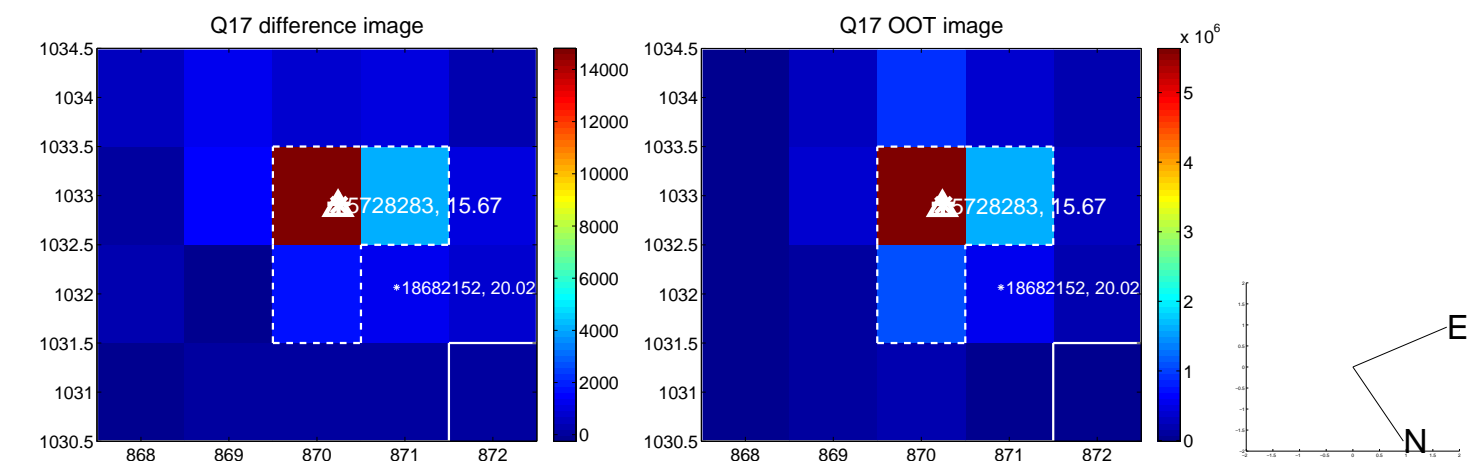
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



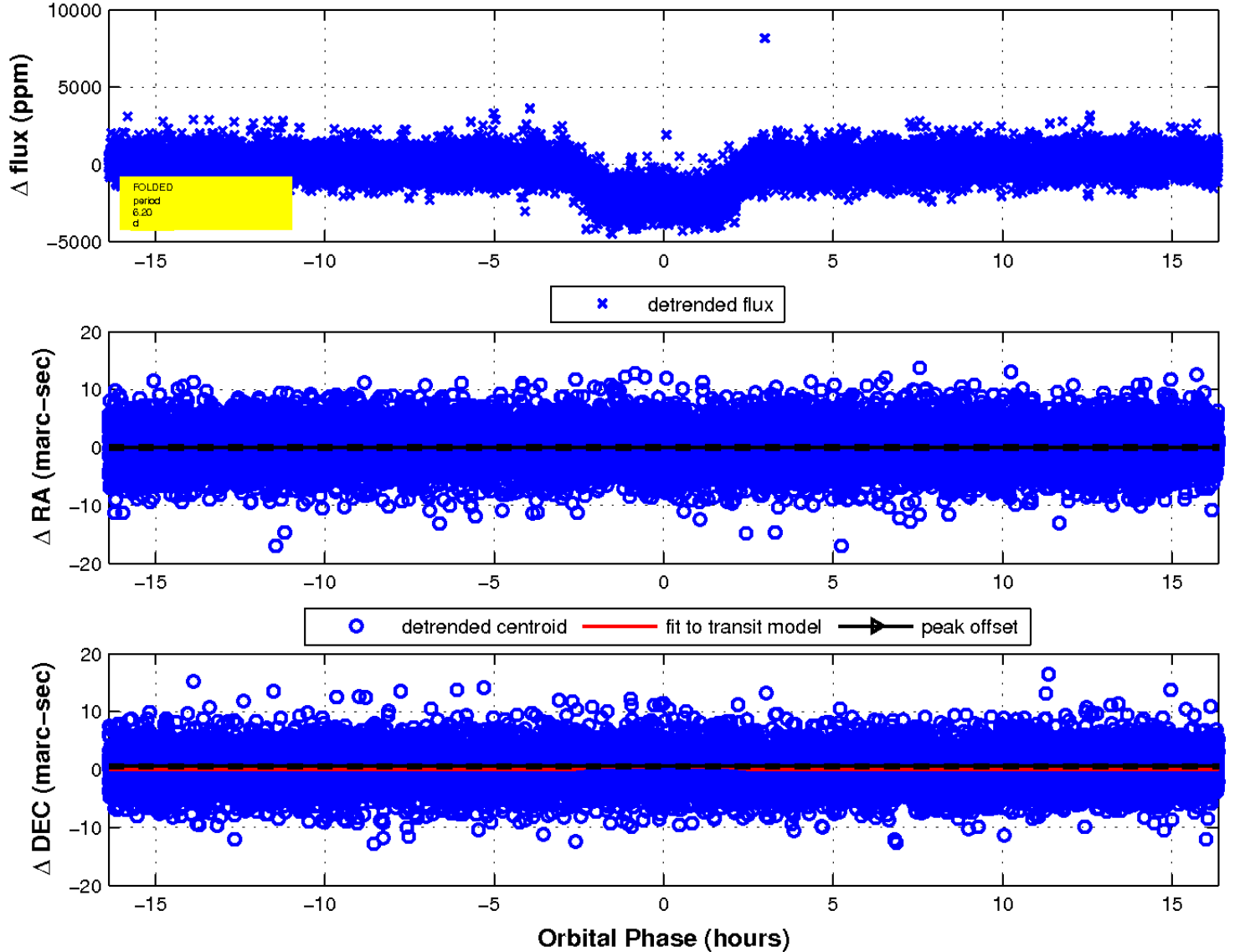
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

