

KIC 010332789

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})
010332789-01	OBS	7311.01	18.740725	135.207220	125879.4	5.210	3512.5	3020.8	1.00	6122	35.70	62.55
010332789-02	OBS	No	18.740704	145.616549	5202.0	8.454	177.6	176.6	1.00	6122	8.19	62.55
010332789-03	OBS	No	288.996240	226.801475	2402.0	7.037	16.9	12.2	1.00	6122	4.88	1.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010332789-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
010332789-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
010332789-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE_ZUMA—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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 010332789-01

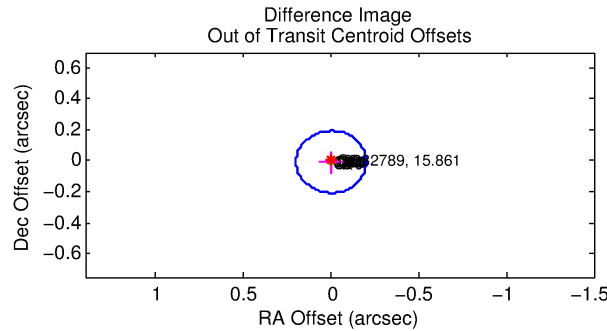
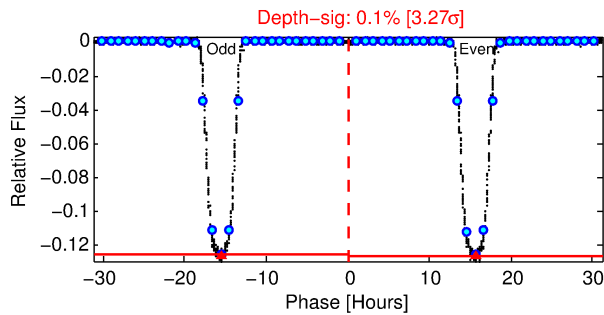
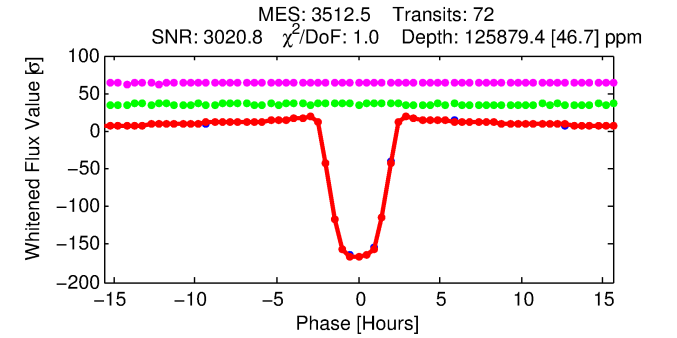
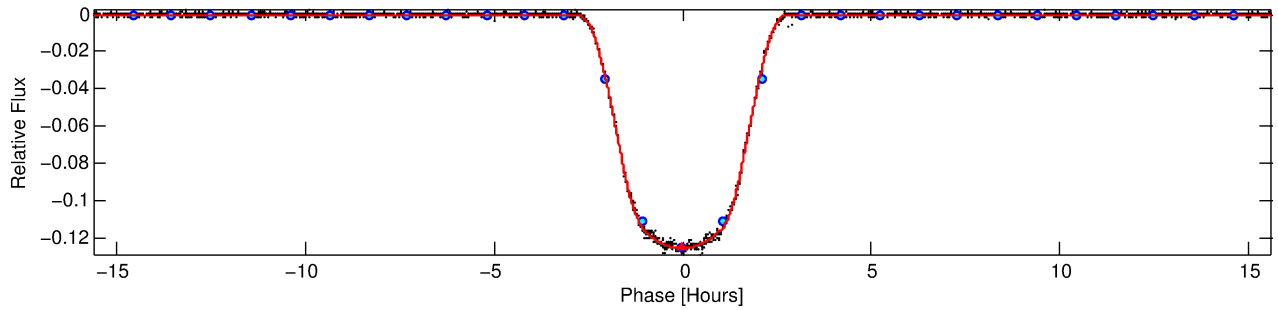
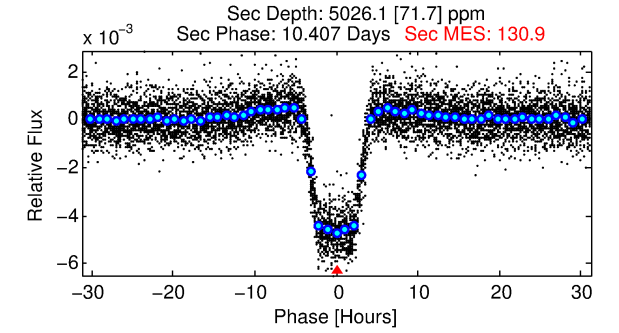
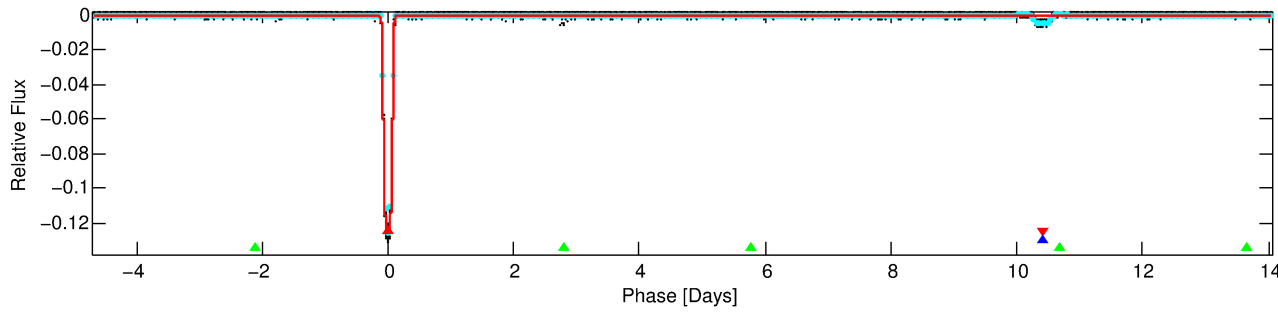
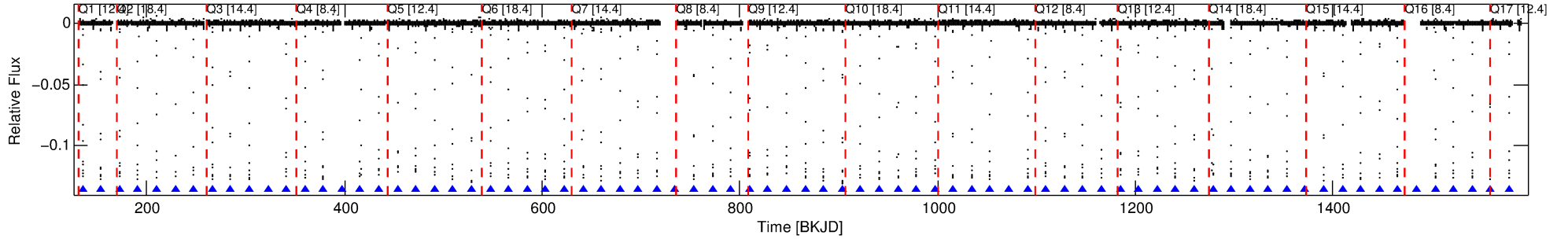
No Significant Match Found

DV One-Page Summary

KIC: 10332789 Candidate: 1 of 3 Period: 18.741 d

KOI: K07311.01 Corr: 0.998

Kp: 15.86 R*: 1.00 Rs Teff: 6122.0 K Logg: 4.47 Fe/H: -0.100



DV Fit Results:

Period = 18.74073 [0.00000] d
Epoch = 135.2072 [0.0000] BKJD
Rp/R* = 0.3284 [0.0001]
a/R* = 35.98 [0.03]
b = 0.23 [0.00]
Seff = 62.55 [24.37]
Teq = 717 [70] K
Rp = 35.70 [10.43] Re
a = 0.1413 [0.0350] AU
Ag = 43.31 [15.76] [2.68σ]
Teffp = 2844 [100] K [17.45σ]

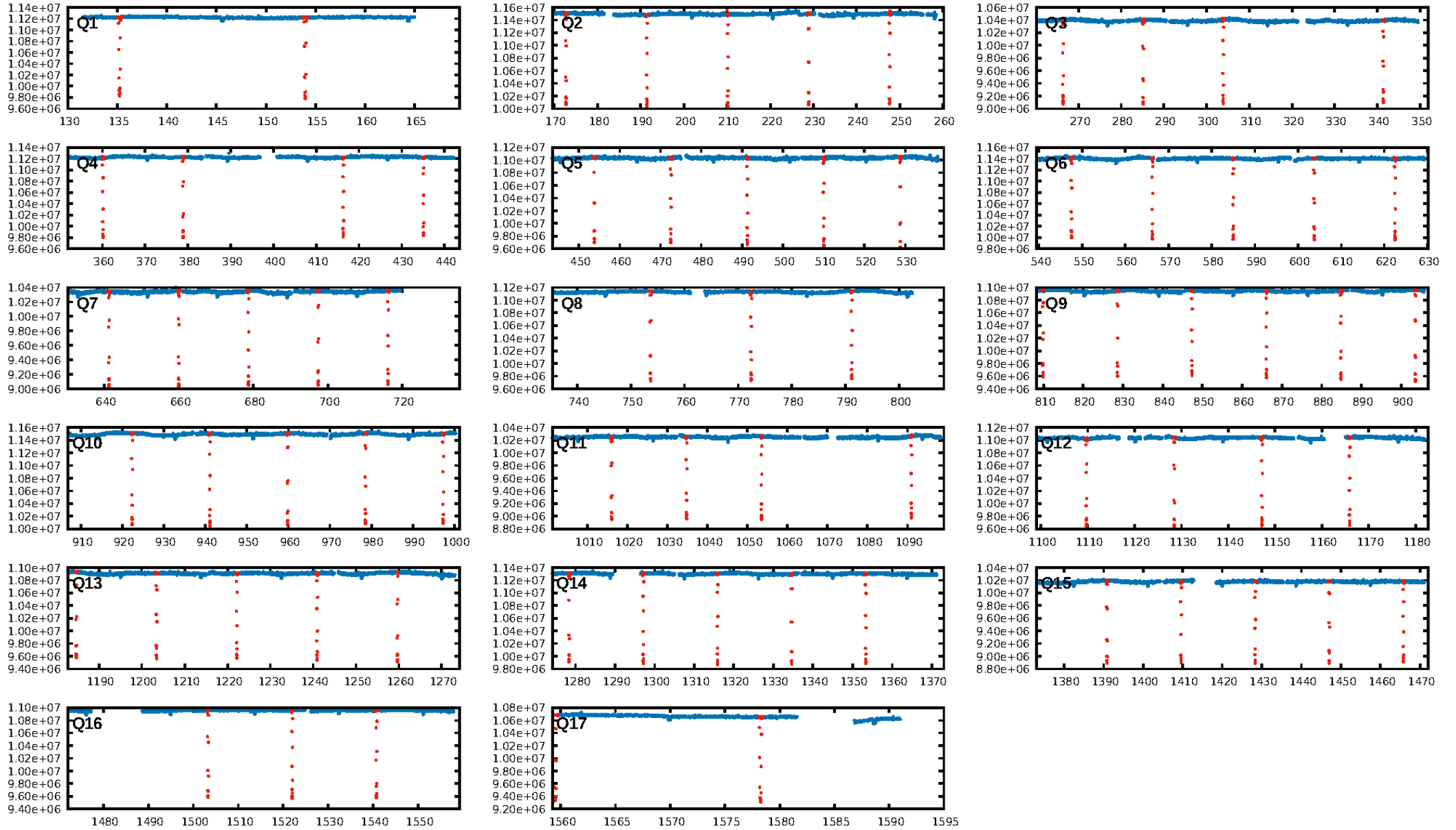
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [740.76σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 7.5%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [68/68]
GhostDiagnostic-chr: 3.117
Centroid-sig: 0.0%
Centroid-so: 0.148 arcsec [43.94σ]
OotOffset-rm: 0.007 arcsec [0.11σ]
KicOffset-rm: 0.083 arcsec [1.23σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

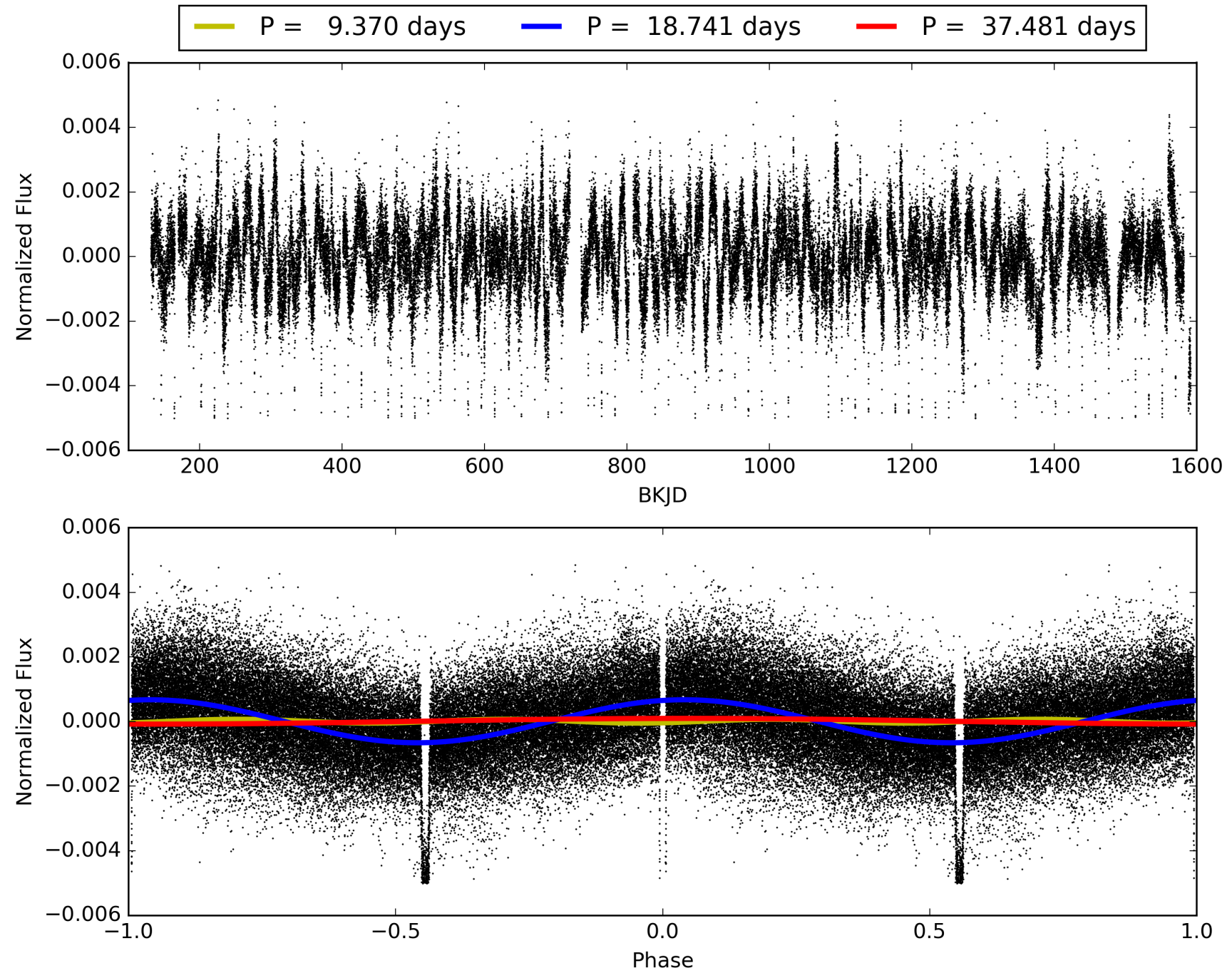
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:57:57 Z

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

TCE 010332789-01, PDC Light Curves

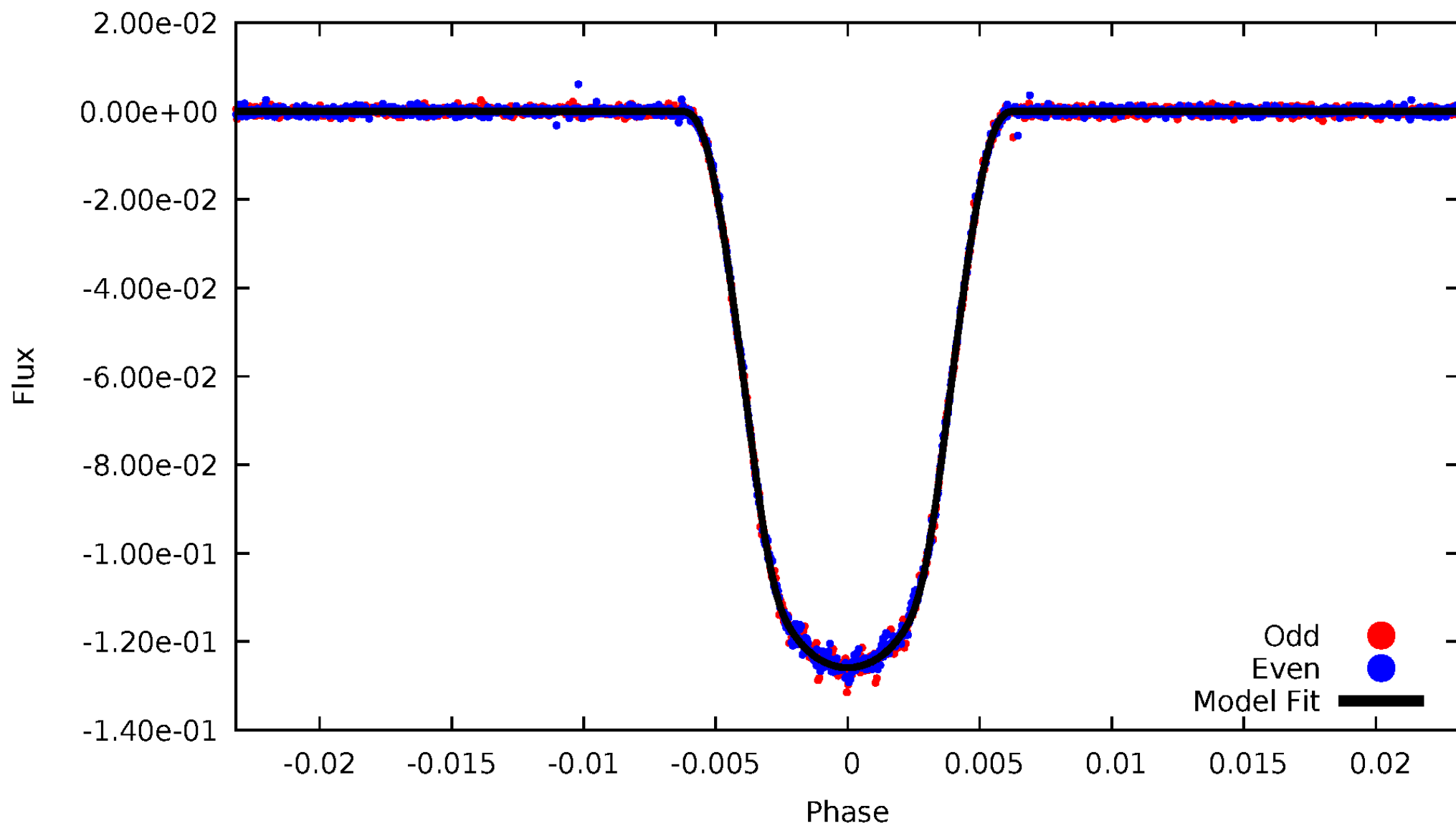


TCE 010332789-01



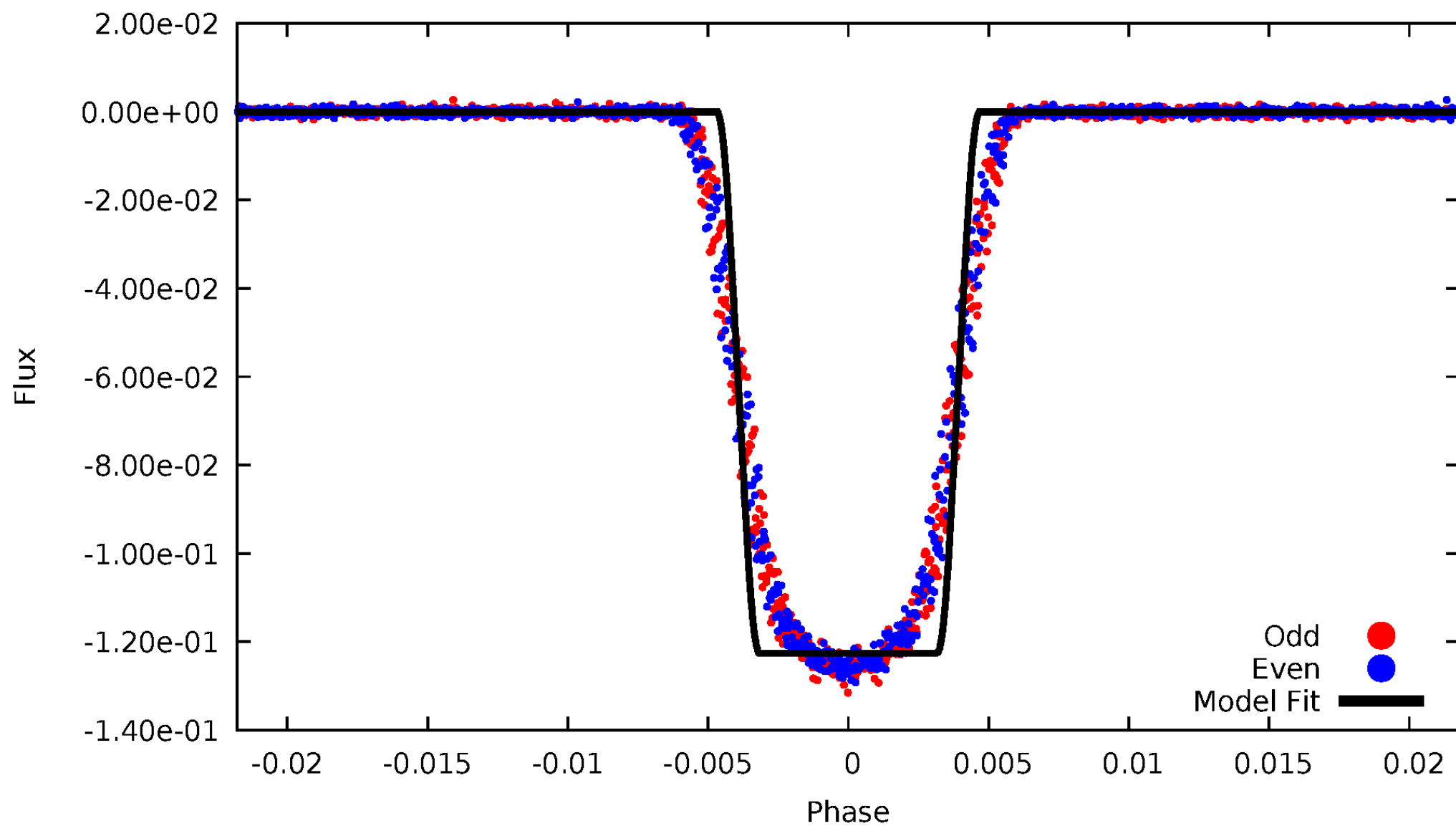
DV Odd/Even

TCE 010332789-01



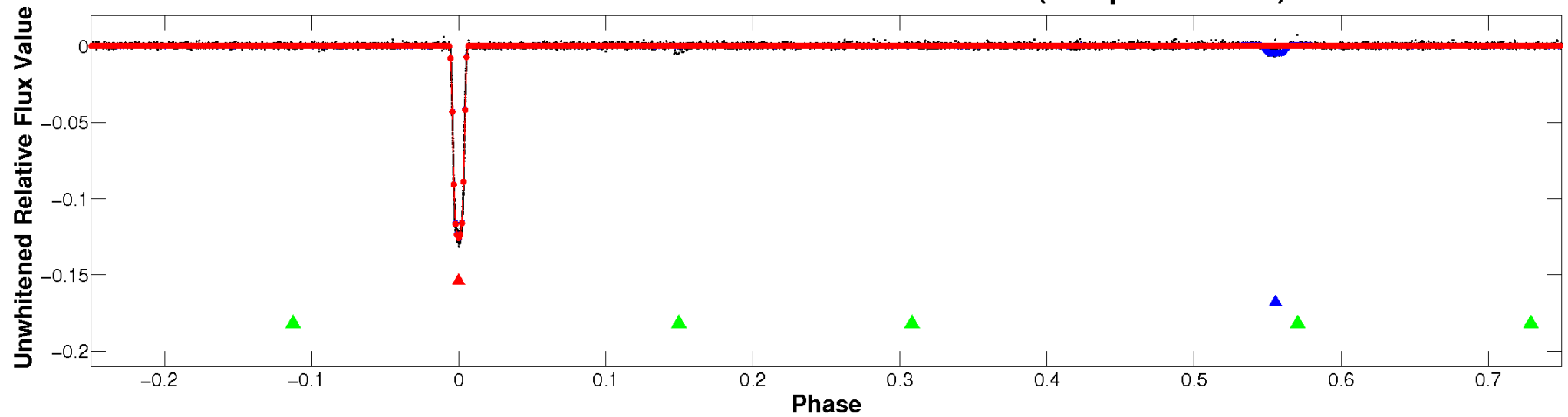
ALT Odd/Even

TCE 010332789-01

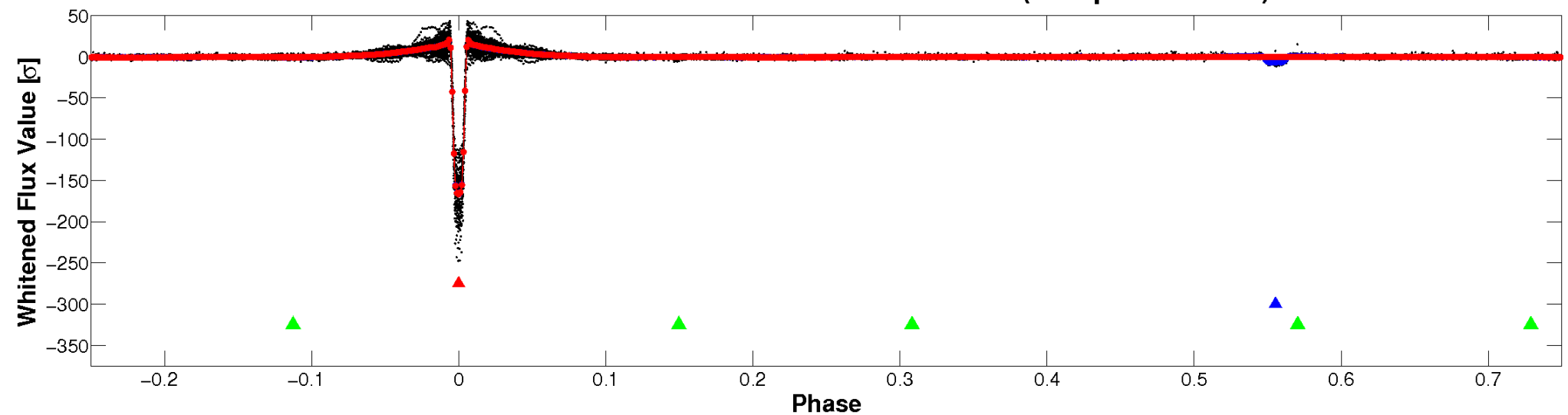


Non-Whitened Vs. Whitened Light Curve

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

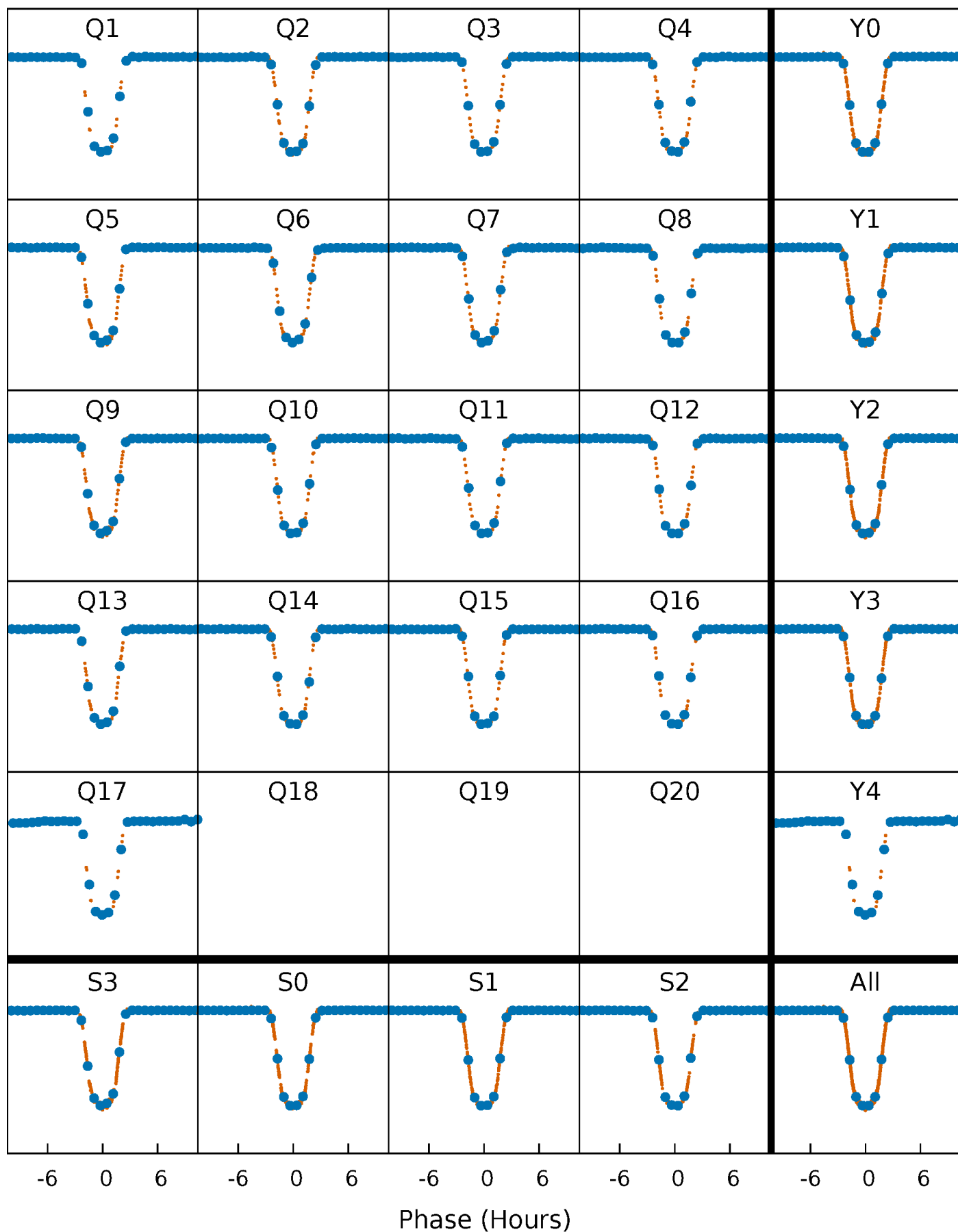


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



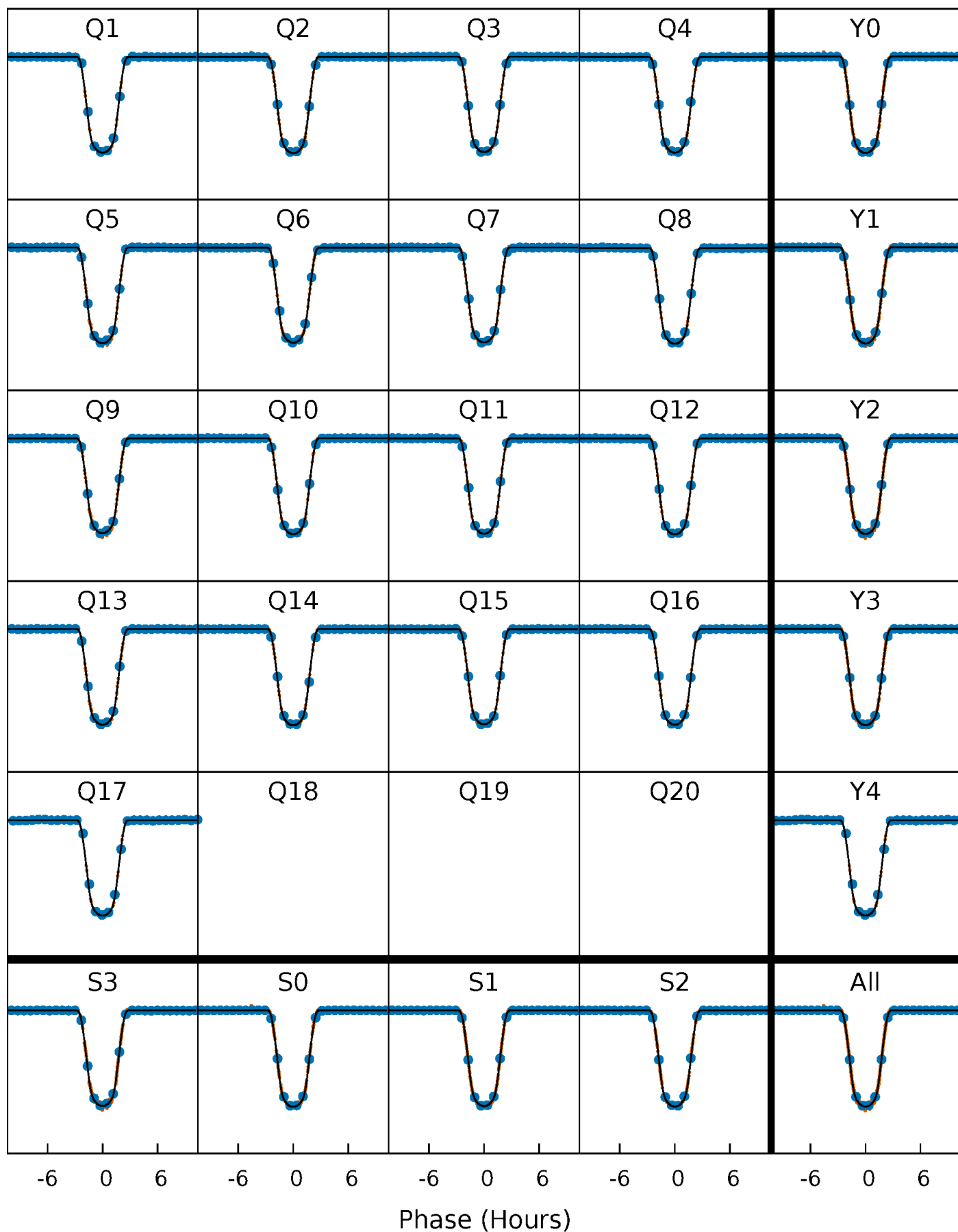
PDC Quarter-Phased Transit Curves

TCE 010332789-01 P= 18.740725 Days $T_0=135.207220$ (BKJD)



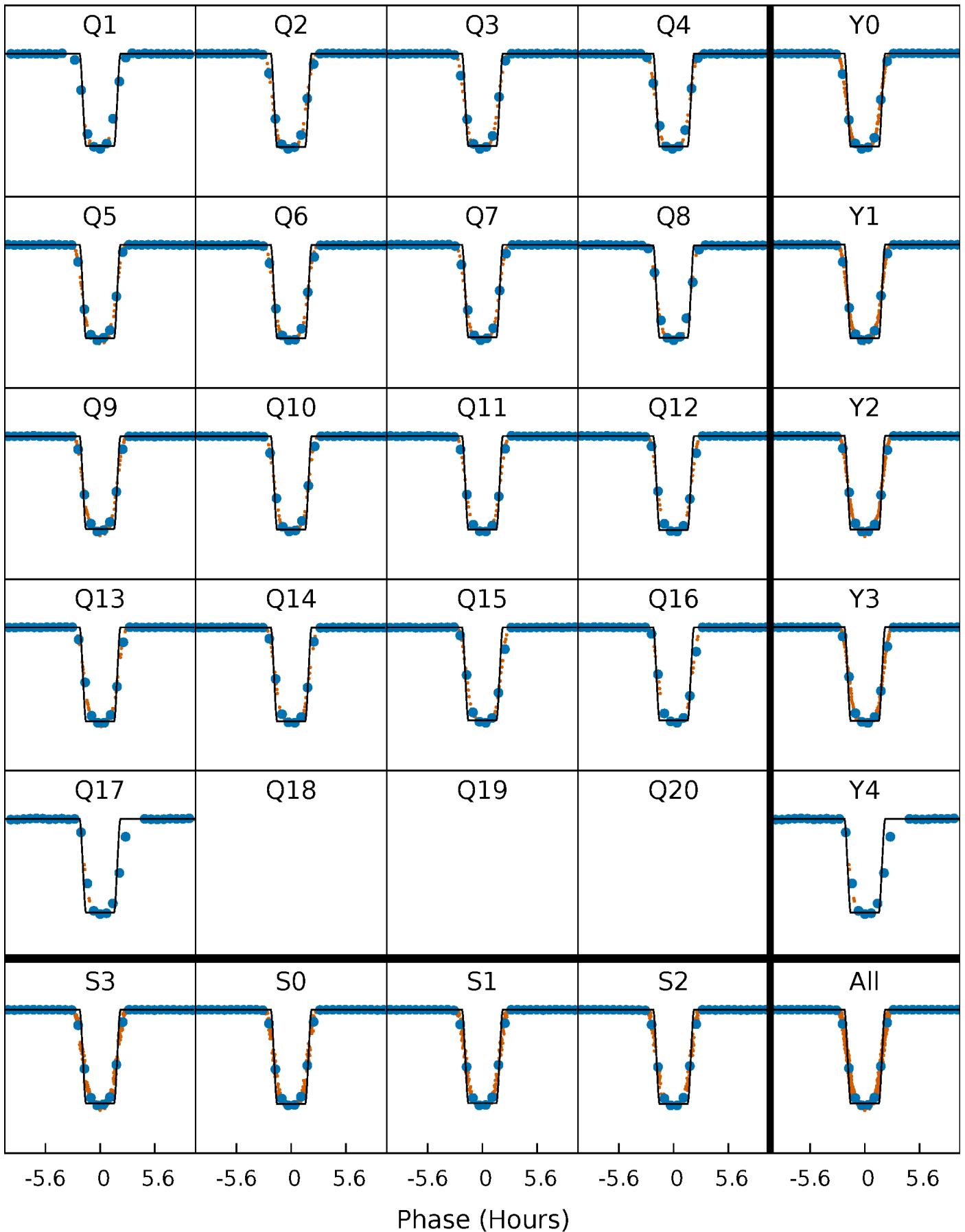
DV Quarter-Phased Transit Curves

TCE 010332789-01 P= 18.740725 Days $T_0=135.207220$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

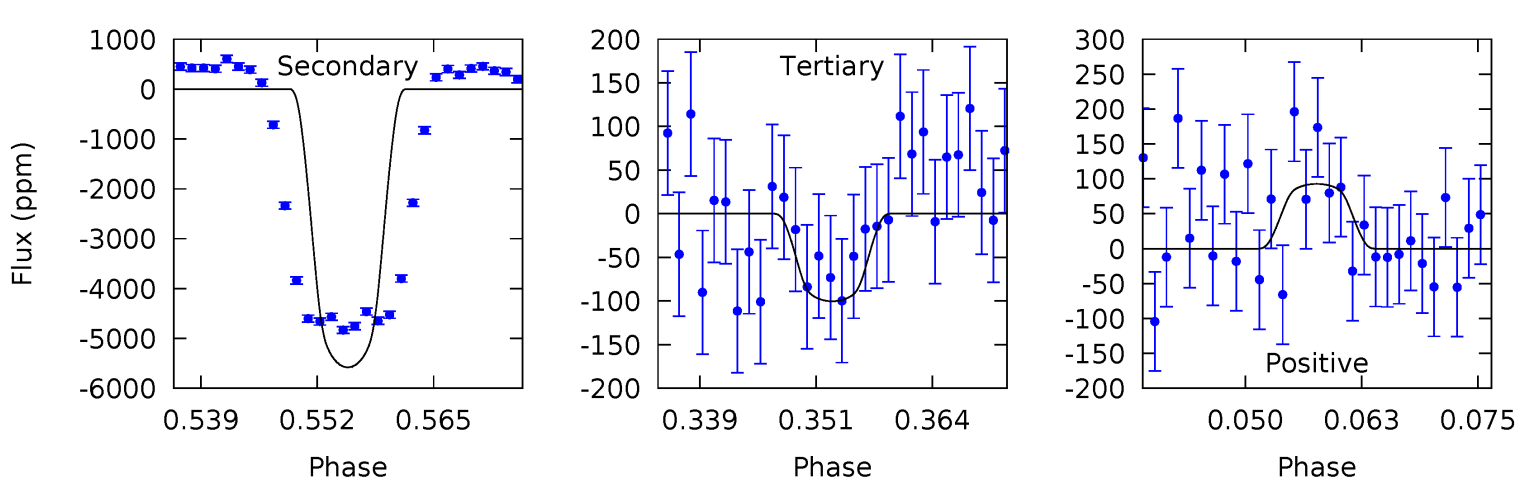
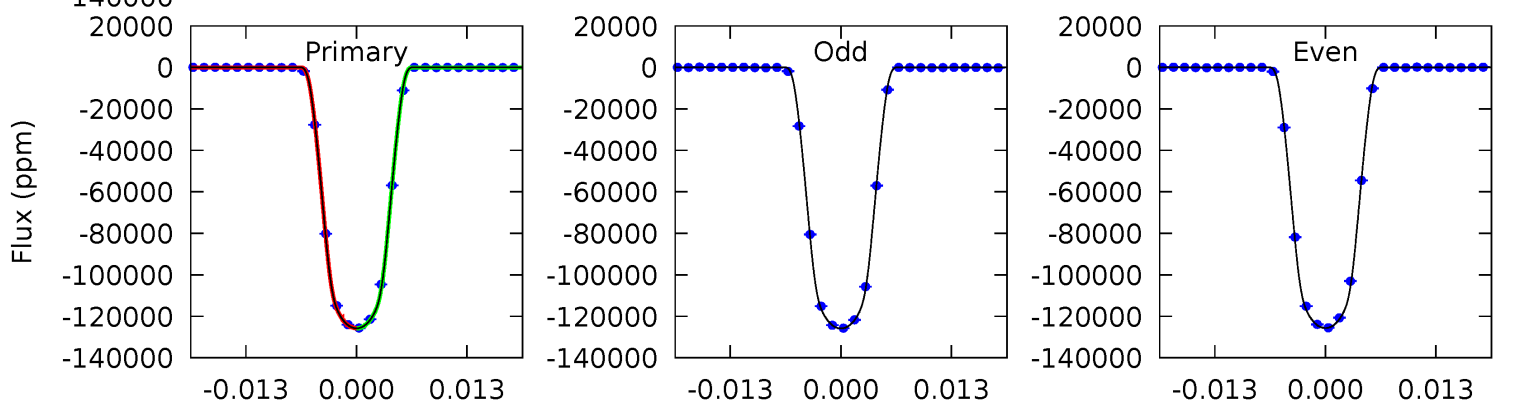
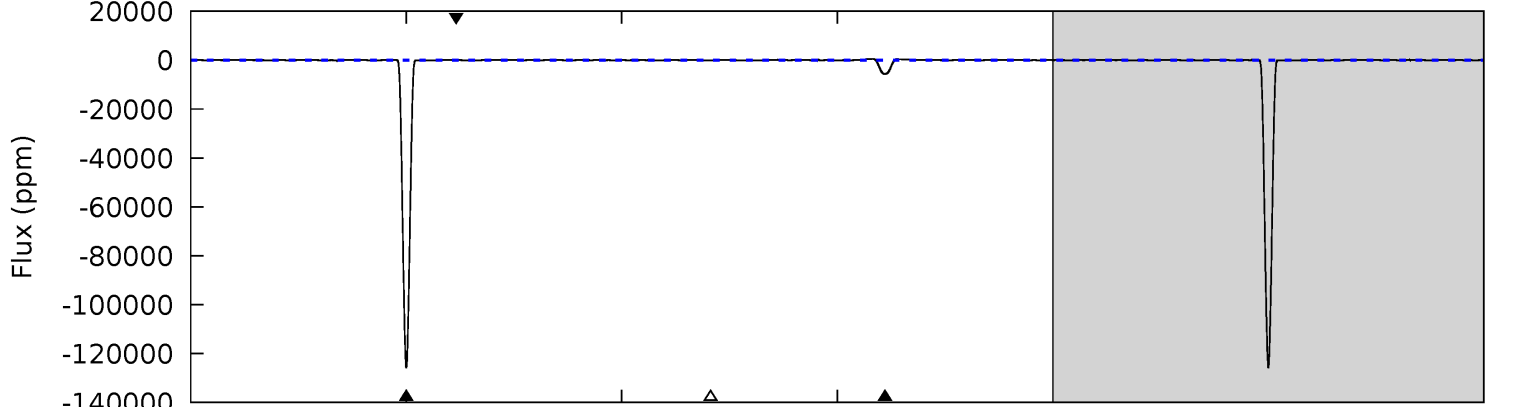
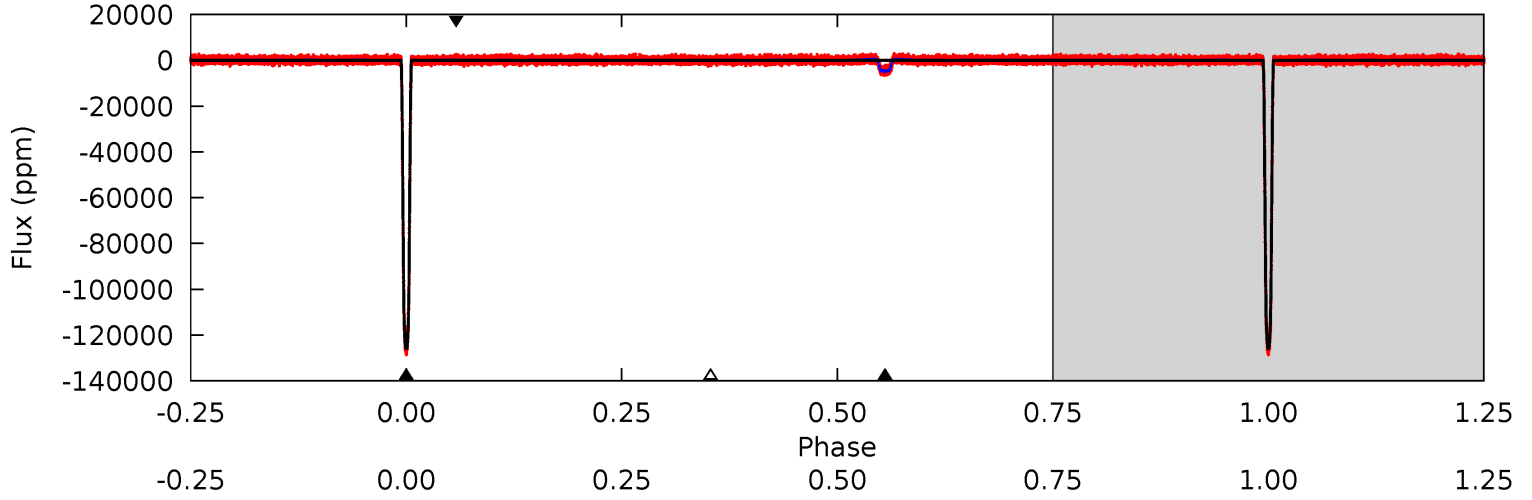
TCE 010332789-01 P= 18.740547 Days $T_0=135.214107$ (BKJD)



DV Model-Shift Uniqueness Test

010332789-01, P = 18.740725 Days, E = 116.466495 Days

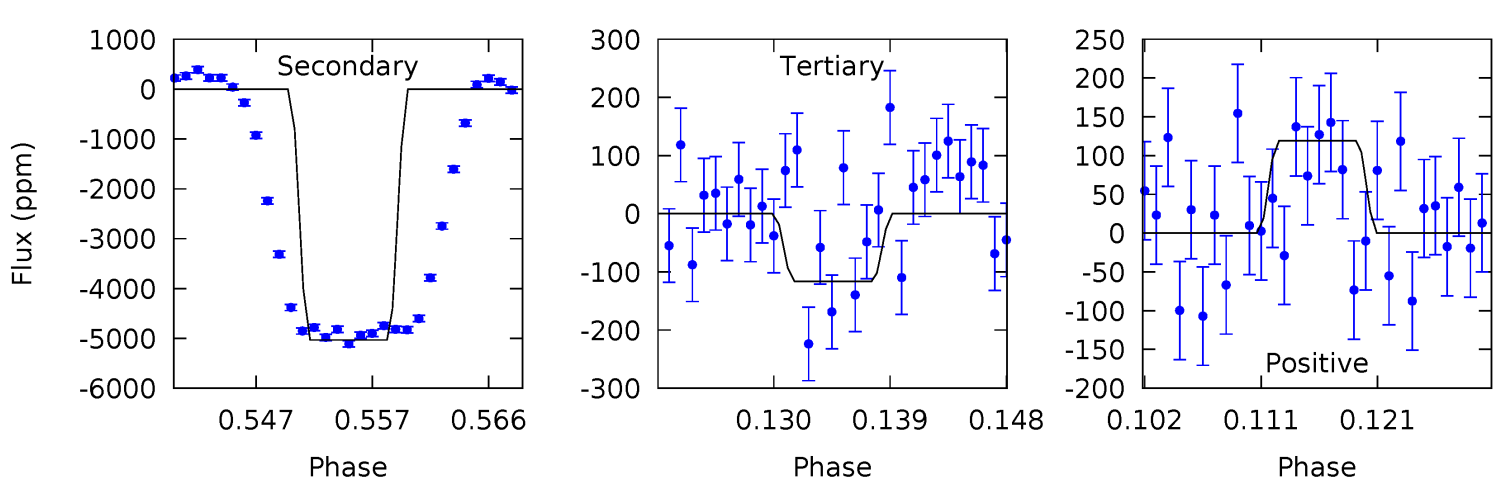
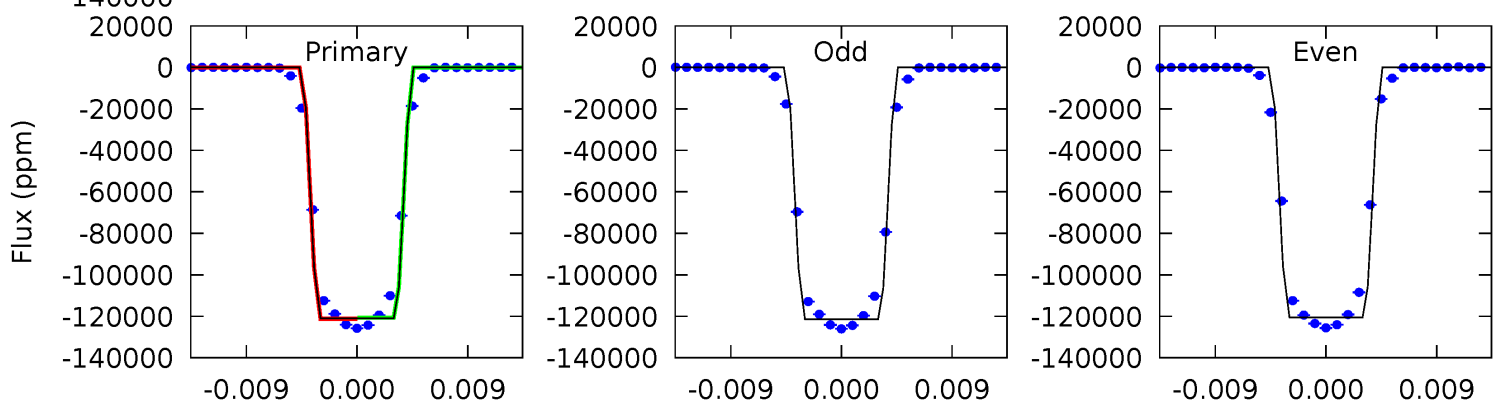
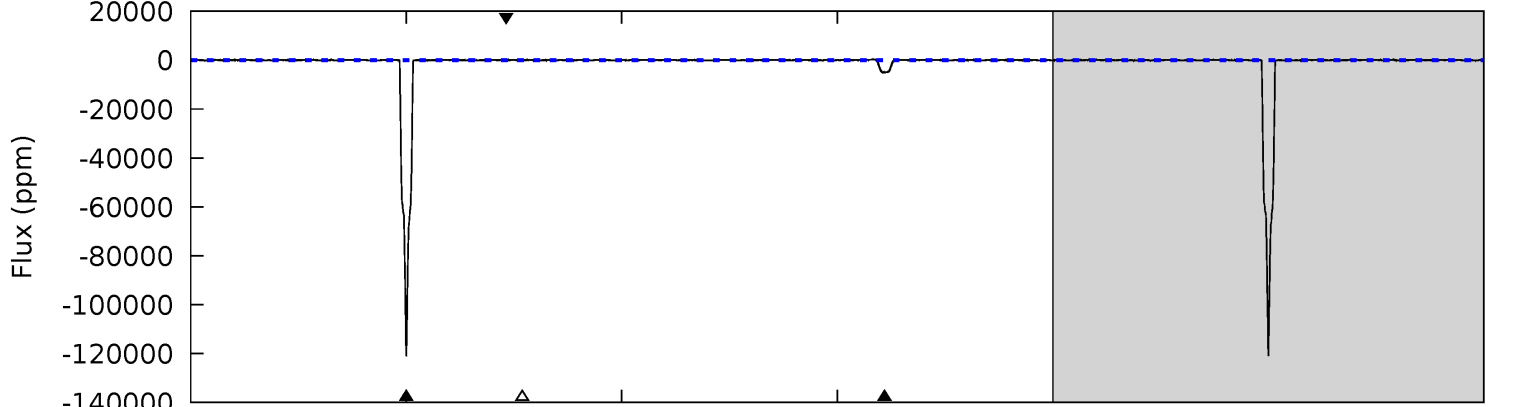
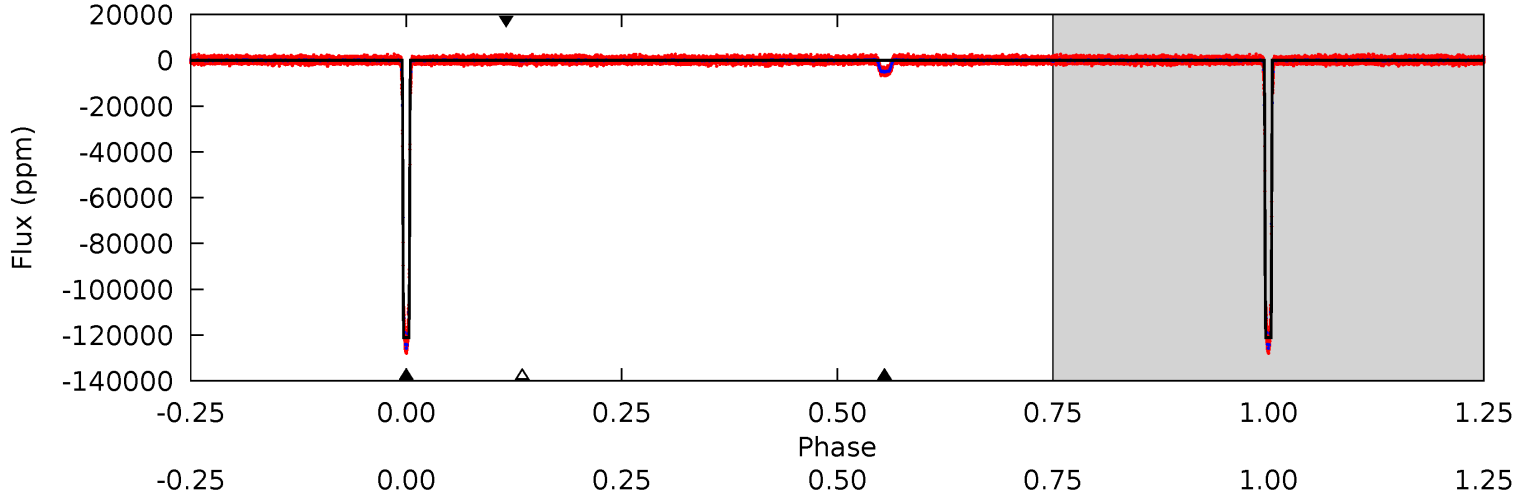
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5532	245.5	4.41	4.08	4.98	2.50	3.36	5528	5528	241.0	241.4	4.66	1.00	0.00	1.41



Alt Model-Shift Uniqueness Test

010332789-01, P = 18.740547 Days, E = 116.473560 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3373	140.2	3.25	3.32	5.04	2.60	1.45	3369	3369	136.9	136.9	13.1	1.00	0.00	5.80



Stellar Parameters For KIC 010332789

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6122^{+171}_{-214}	$4.471^{+0.050}_{-0.200}$	$-0.100^{+0.250}_{-0.300}$	$0.996^{+0.291}_{-0.104}$	$1.070^{+0.137}_{-0.137}$	$1.526^{+0.413}_{-0.788}$
	+3%/-3%	+1%/-4%	+250%/-300%	+29%/-10%	+13%/-13%	+27%/-52%
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 010332789-01 / KOI 7311.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-5580 ± 23	$36.71^{+6.02}_{-2.93}$	1023^{+70}_{-51}	3431^{+62}_{-76}	45^{+6}_{-11}
Alt.	-5032 ± 36	$39.27^{+6.39}_{-3.08}$	1022^{+74}_{-49}	3307^{+61}_{-68}	36^{+5}_{-8}

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

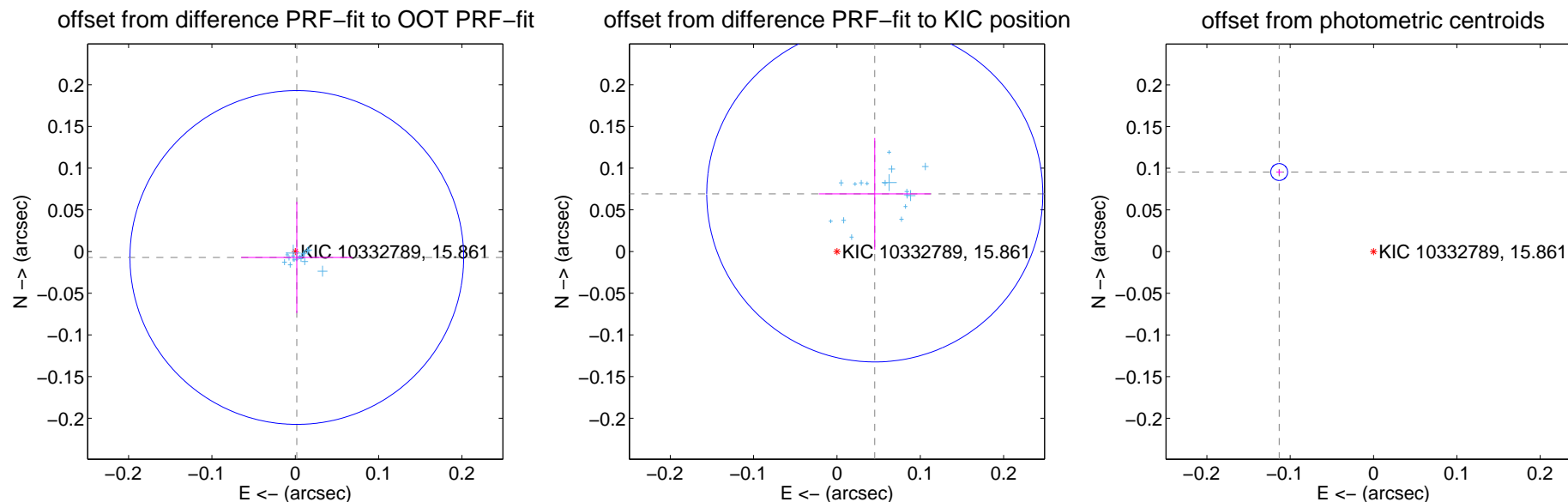
DV Centroid Data

Supplemental centroid analysis for 010332789-01. Kepler magnitude: 15.86. Transit SNR 3020.82

There are 17 quarters with good PRF difference image offsets

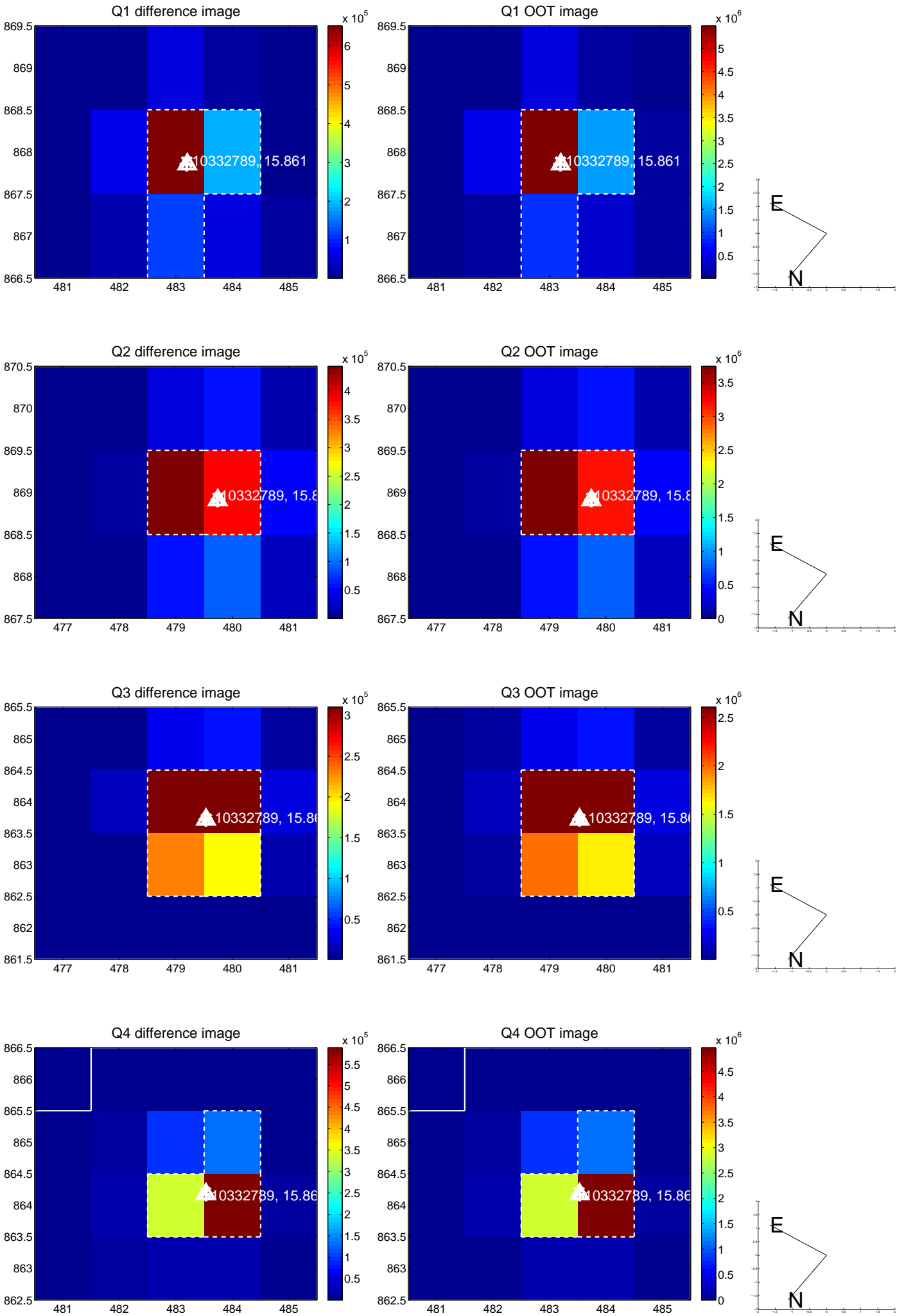
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.007 ± 0.067	0.11	-0.002 ± 0.067	-0.007 ± 0.067
PRF-fit source offset from KIC position	0.083 ± 0.067	1.23	-0.045 ± 0.067	0.069 ± 0.067
photometric centroid source offset	0.15 ± 0.00	43.94	0.11 ± 0.00	0.10 ± 0.00

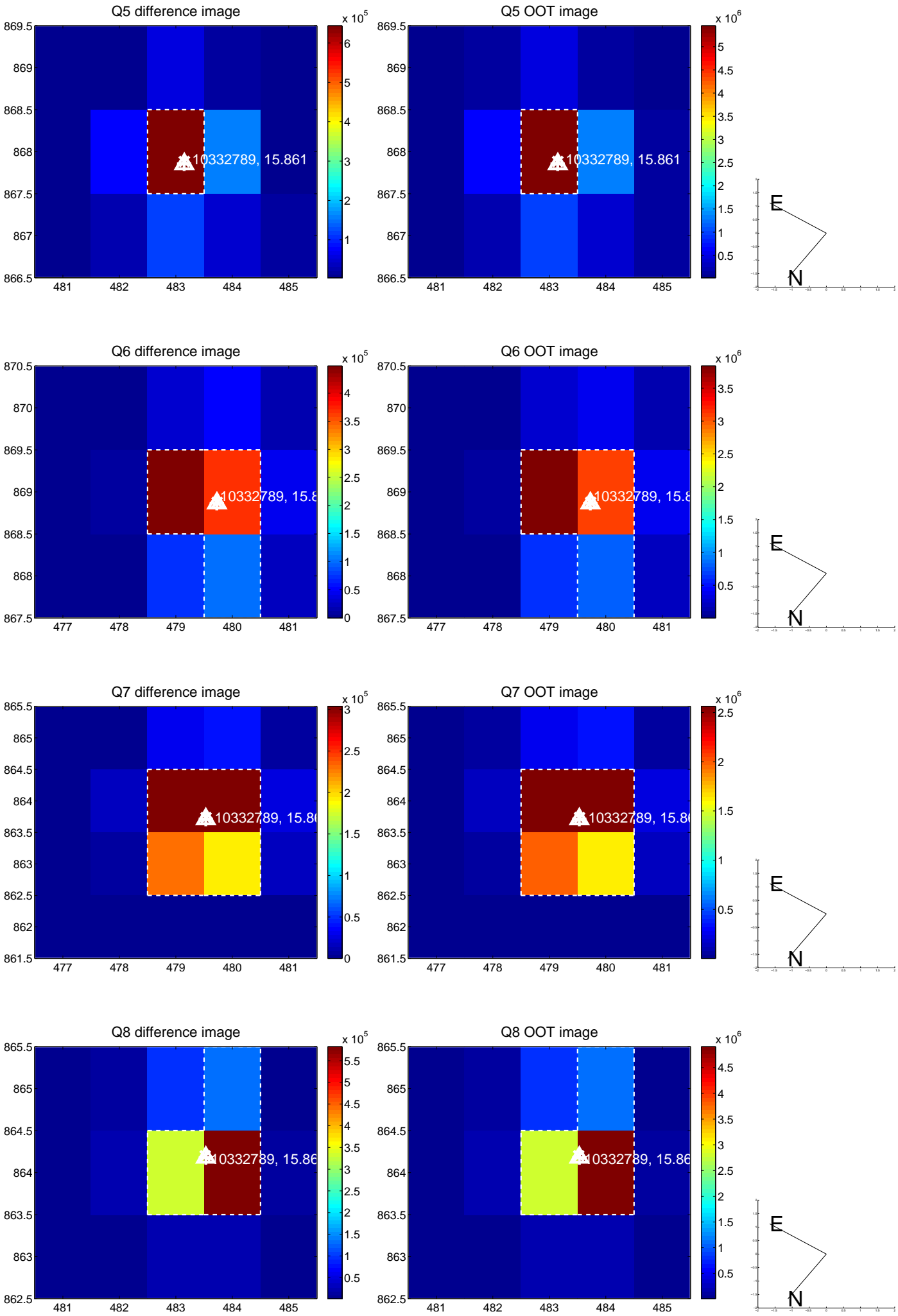


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

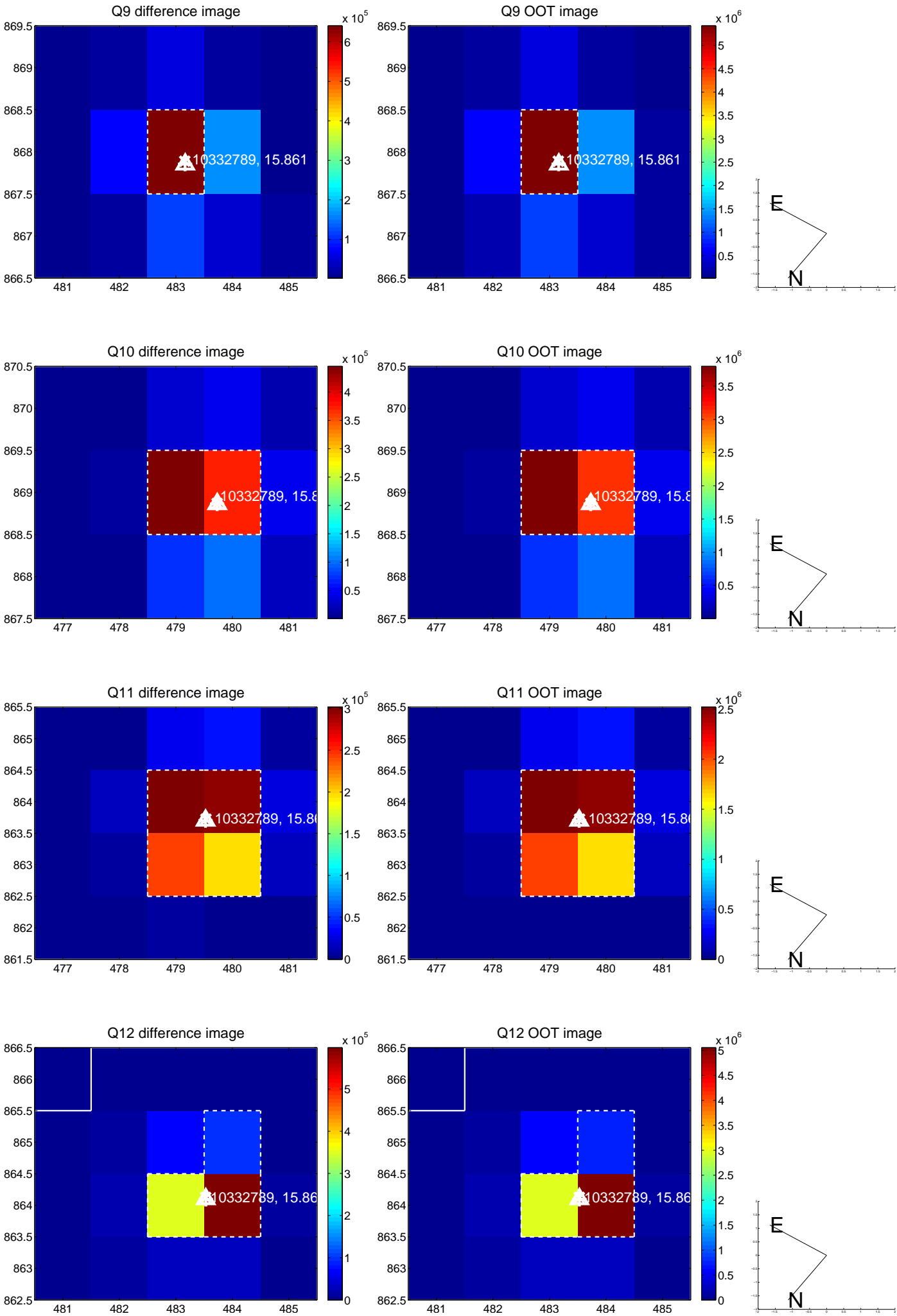
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



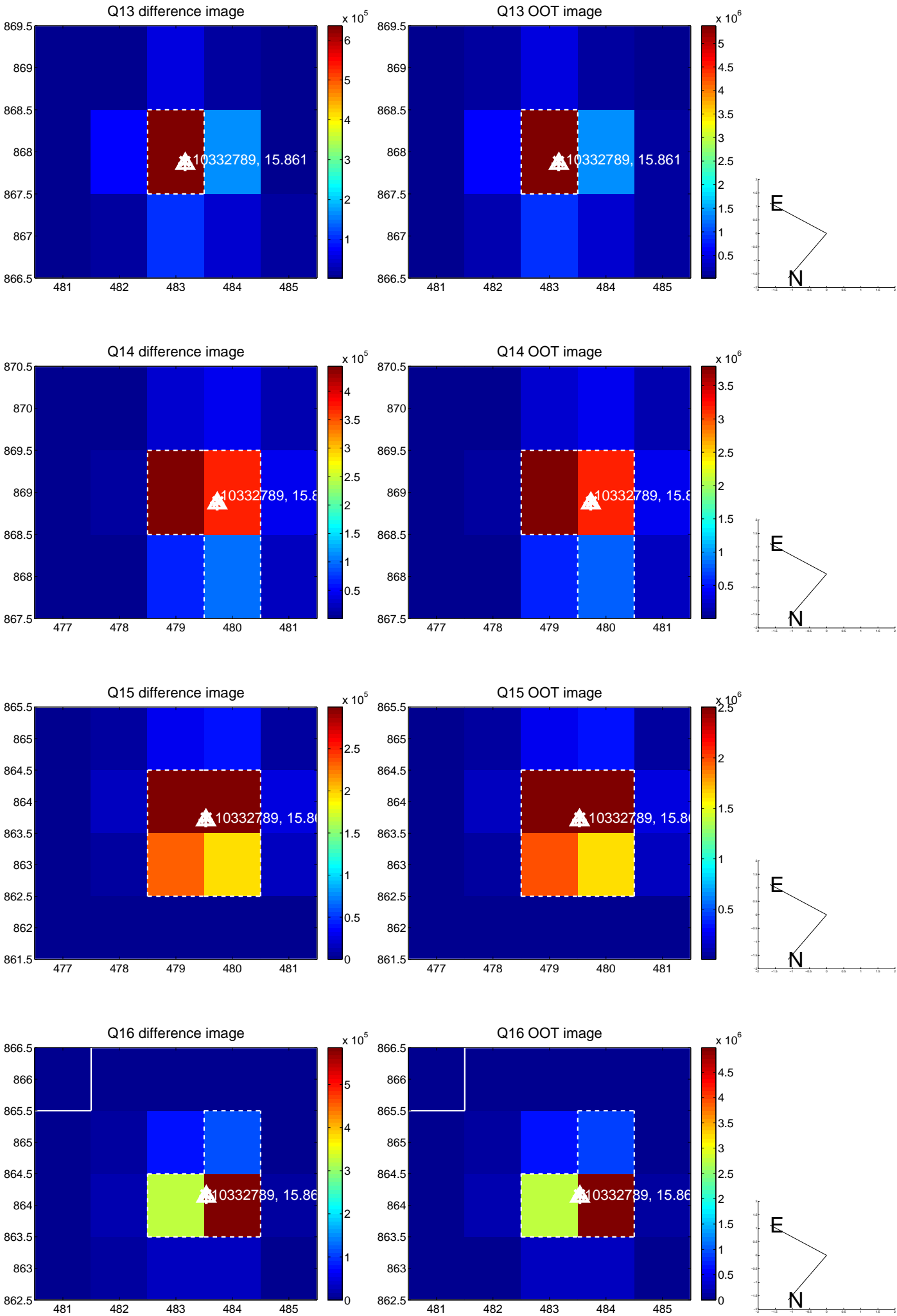
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



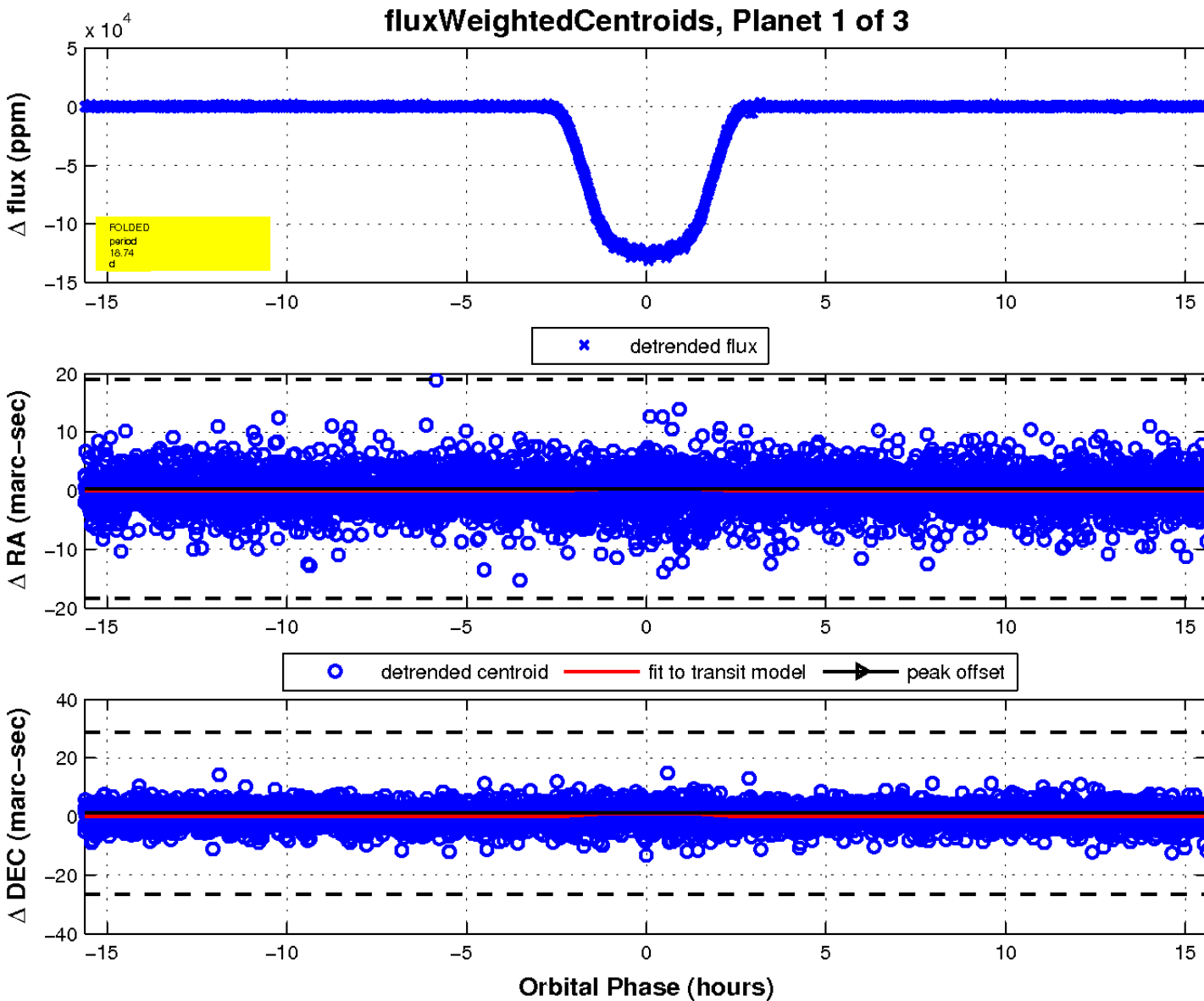
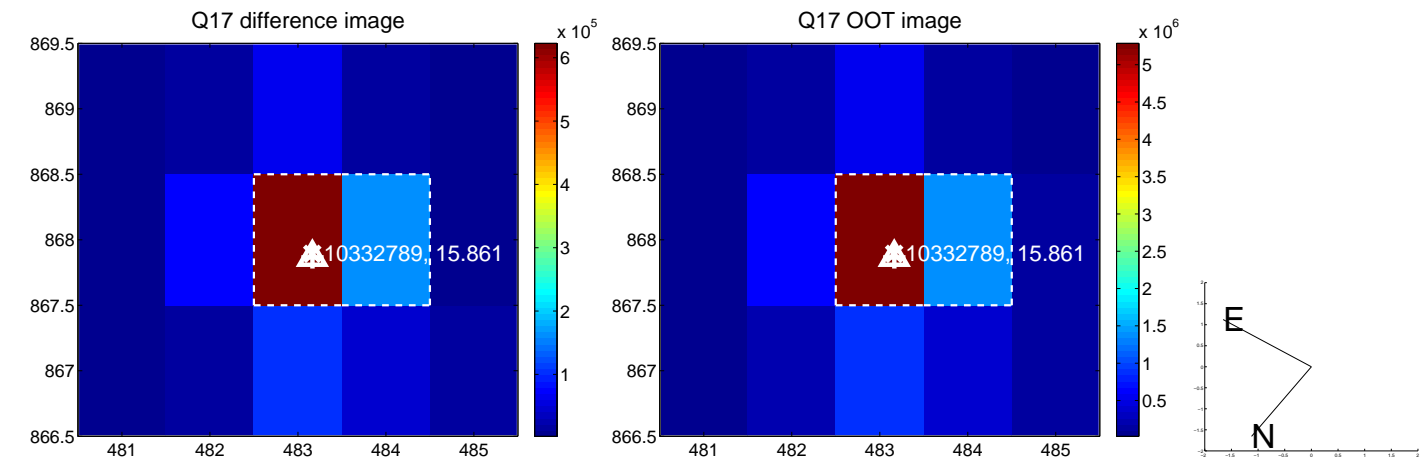
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

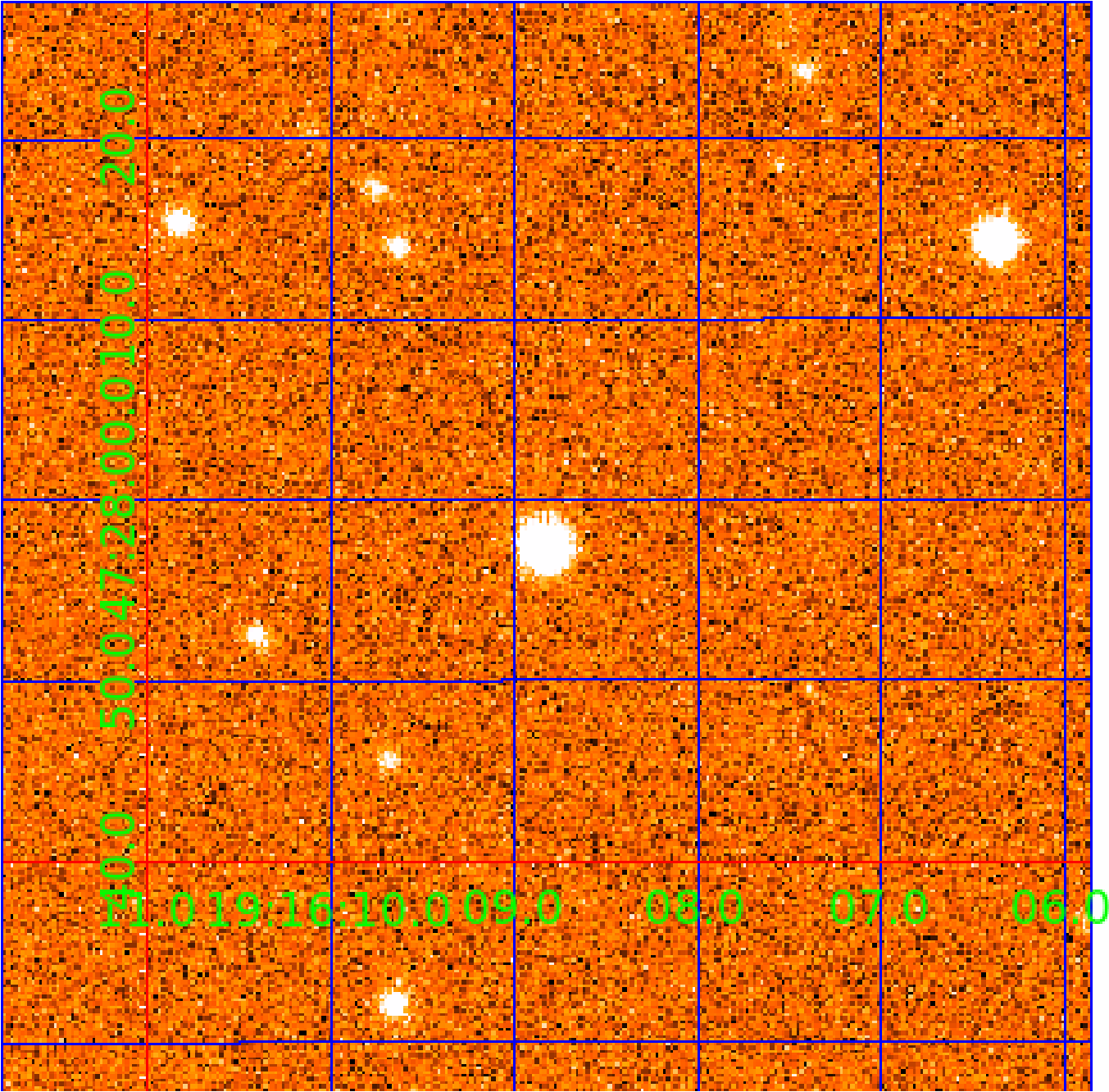


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010332789

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})
010332789-01	OBS	7311.01	18.740725	135.207220	125879.4	5.210	3512.5	3020.8	1.00	6122	35.70	62.55
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010332789-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
010332789-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
010332789-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE_ZUMA—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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.

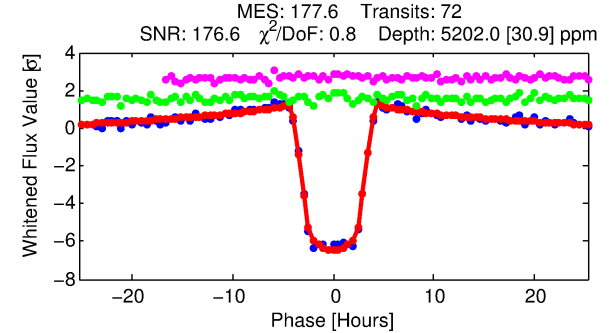
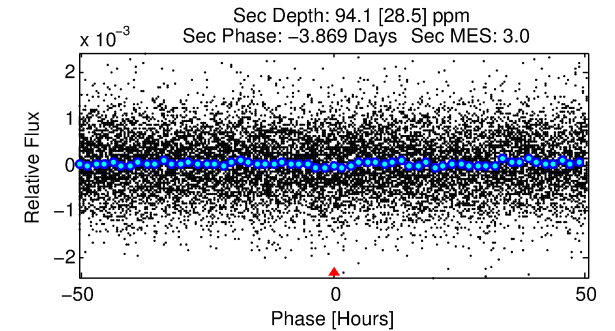
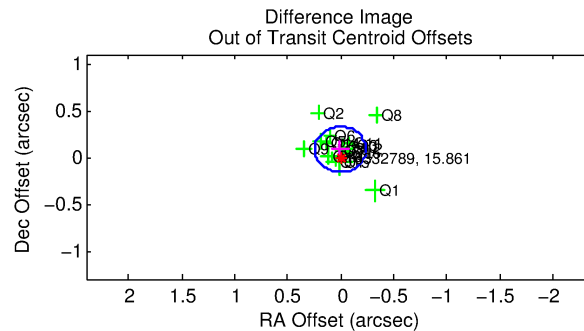
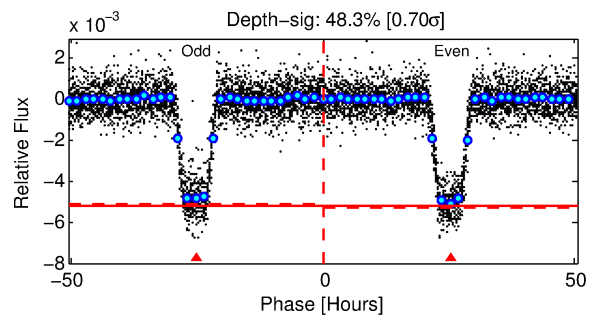
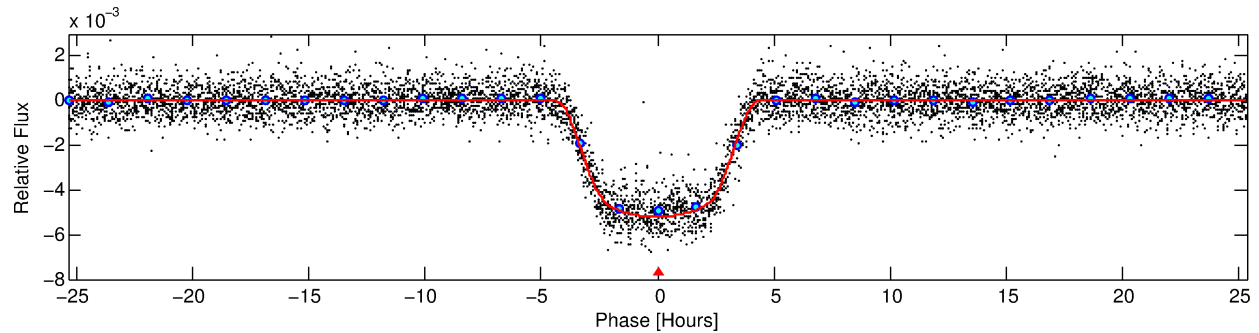
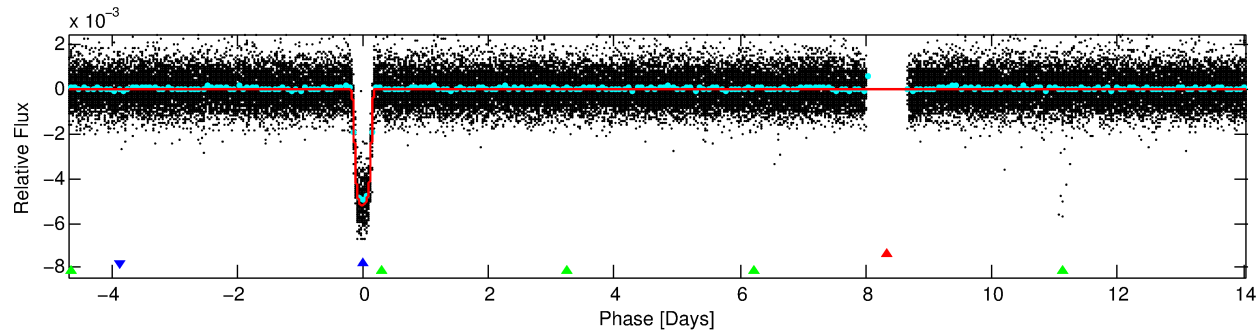
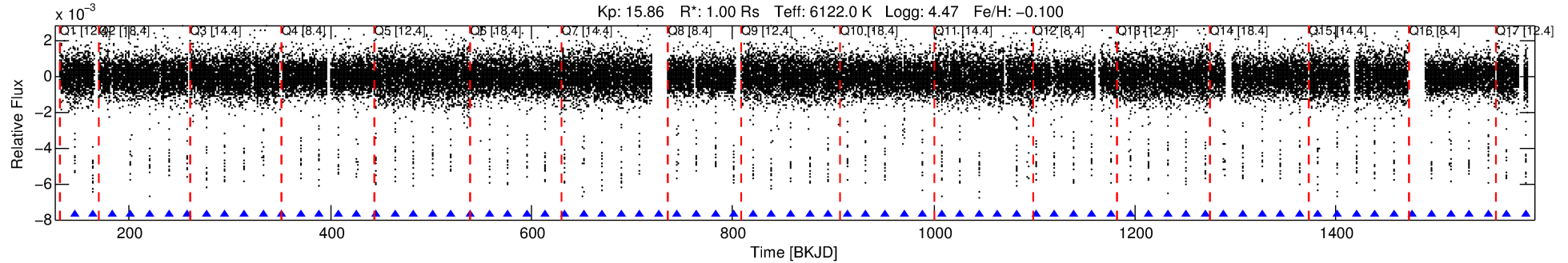
Ephemeris Match Information For 010332789-02

No Significant Match Found

DV One-Page Summary

KIC: 10332789 Candidate: 2 of 3 Period: 18.741 d
KOI: K07311 Corr: No Ephemeris Match

Kp: 15.86 R*: 1.00 Rs Teff: 6122.0 K Logg: 4.47 Fe/H: -0.100



DV Fit Results:

Period = 18.74070 [0.00002] d
Epoch = 145.6165 [0.0010] BKJD
Rp/R* = 0.0753 [0.0004]
a/R* = 11.15 [0.17]
b = 0.85 [0.01]
Seff = 62.55 [24.37]
Teq = 717 [70] K
Rp = 8.19 [2.39] Re
a = 0.1413 [0.0350] AU
Ag = 15.42 [7.30] [1.97σ]
Teffp = 2197 [184] K [7.54σ]

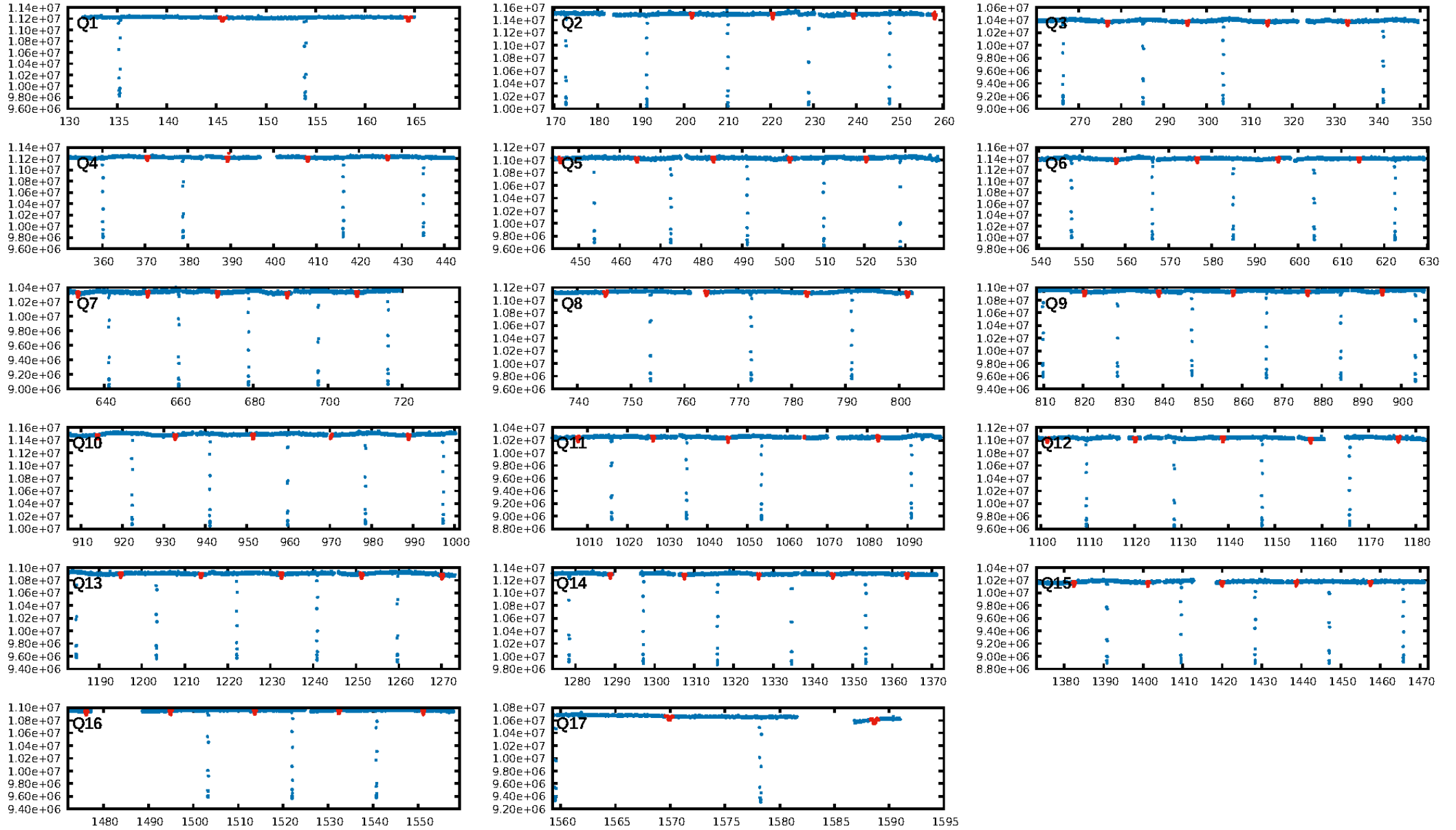
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 27.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [68/68]
GhostDiagnostic-chr: 3.788
Centroid-sig: 0.1%
Centroid-so: 0.302 arcsec [4.82σ]
OotOffset-rm: 0.084 arcsec [1.04σ]
KicOffset-rm: 0.167 arcsec [2.20σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

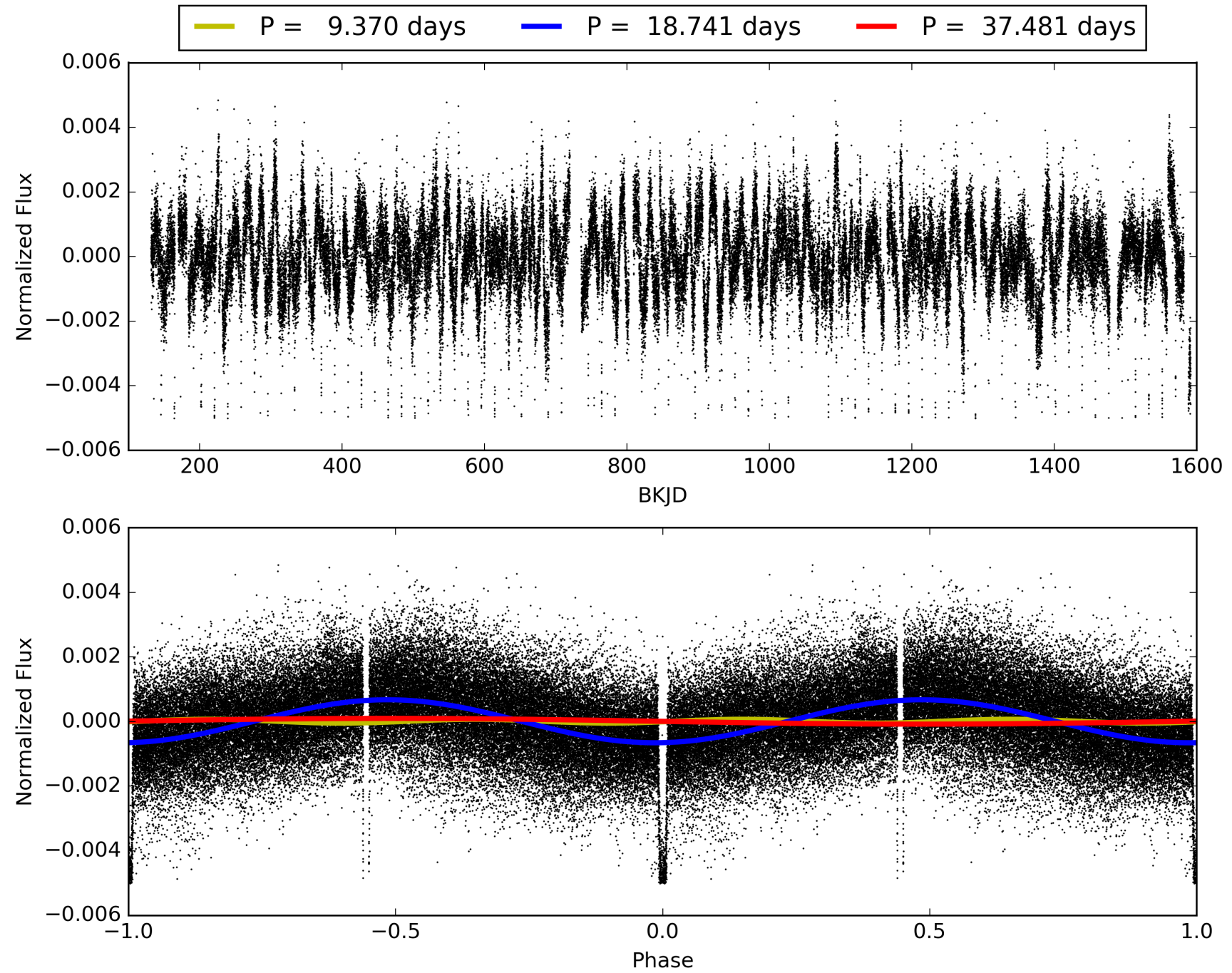
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:58:03 Z

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

TCE 010332789-02, PDC Light Curves

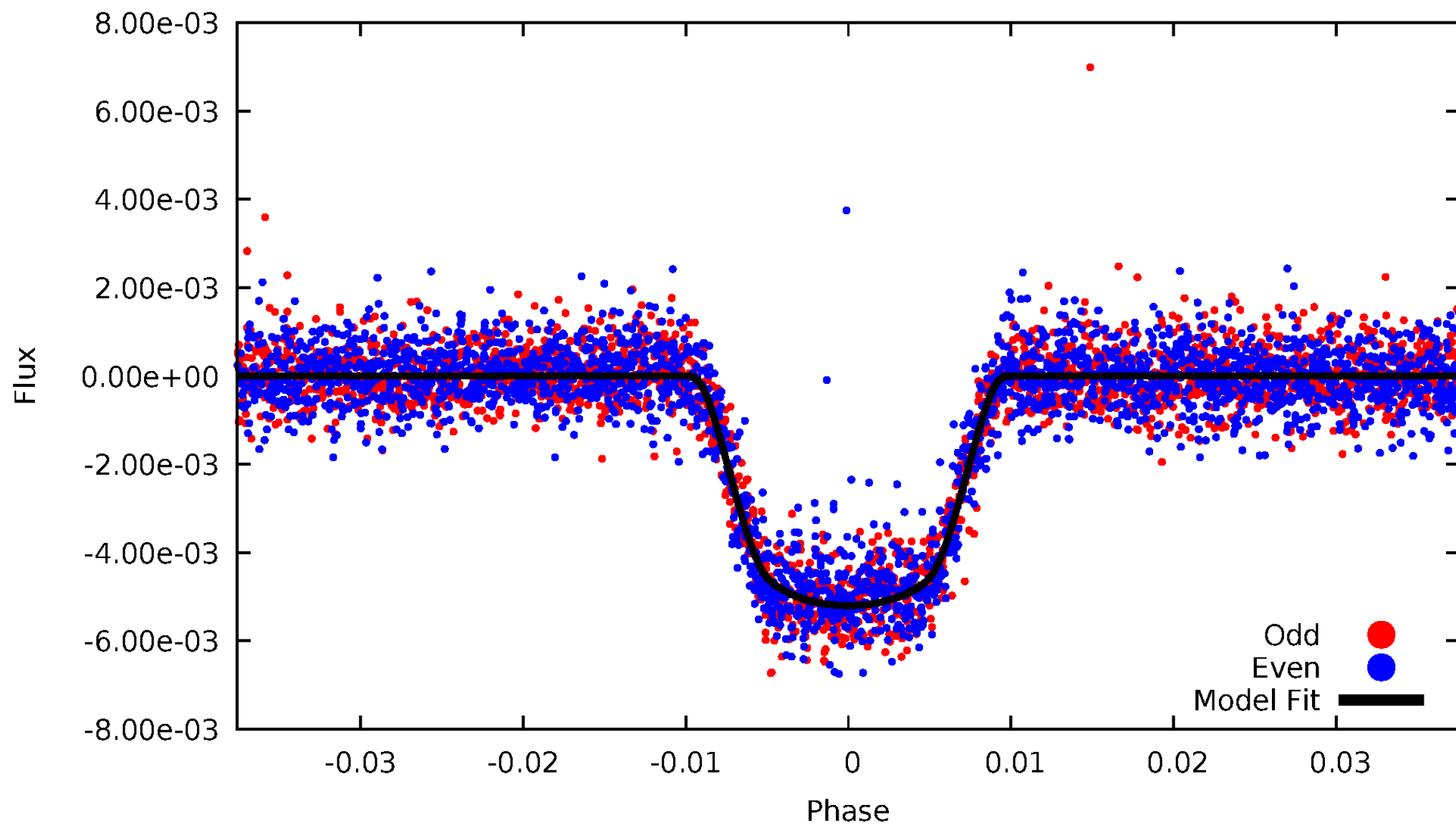


TCE 010332789-02



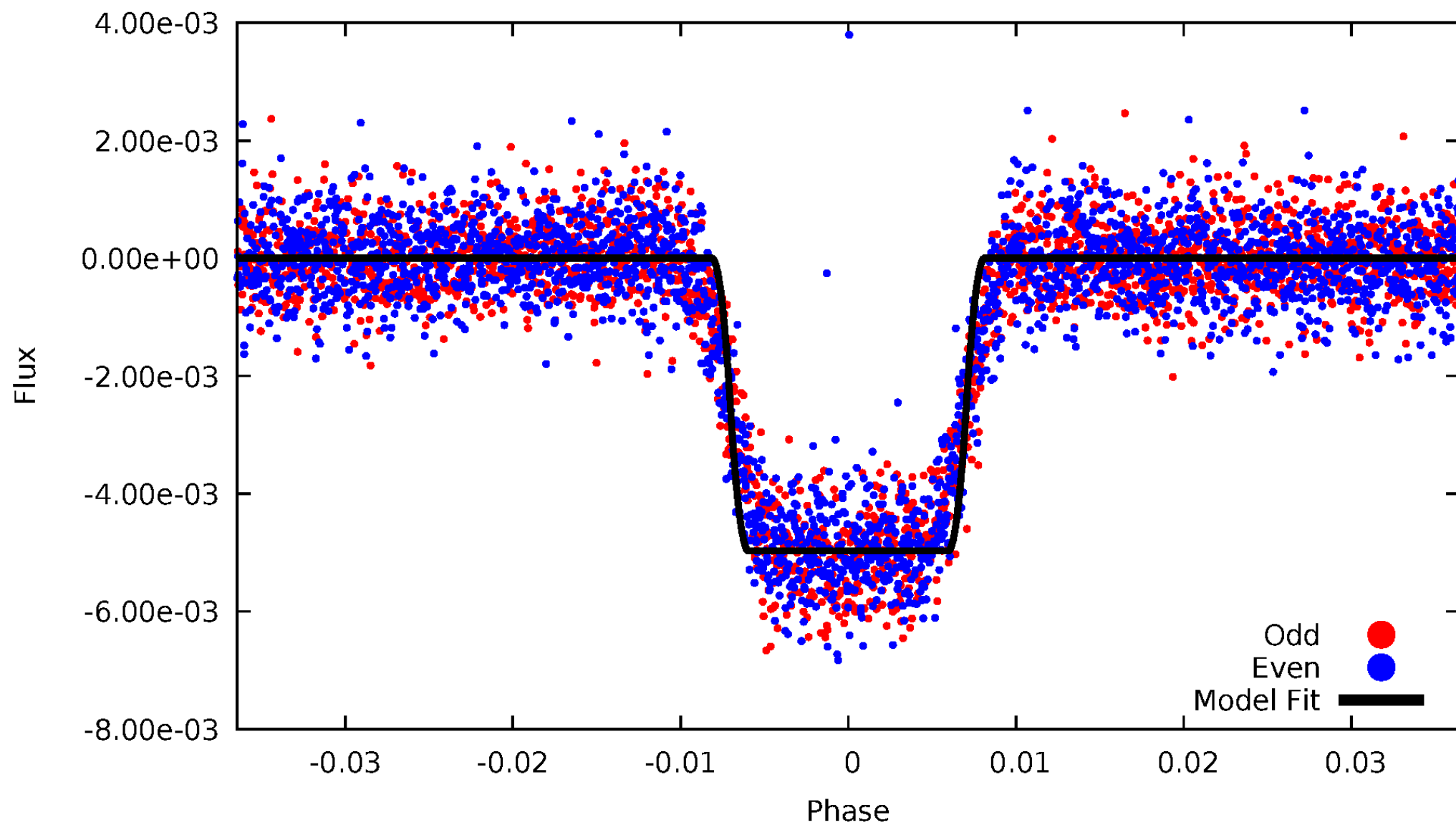
DV Odd/Even

TCE 010332789-02



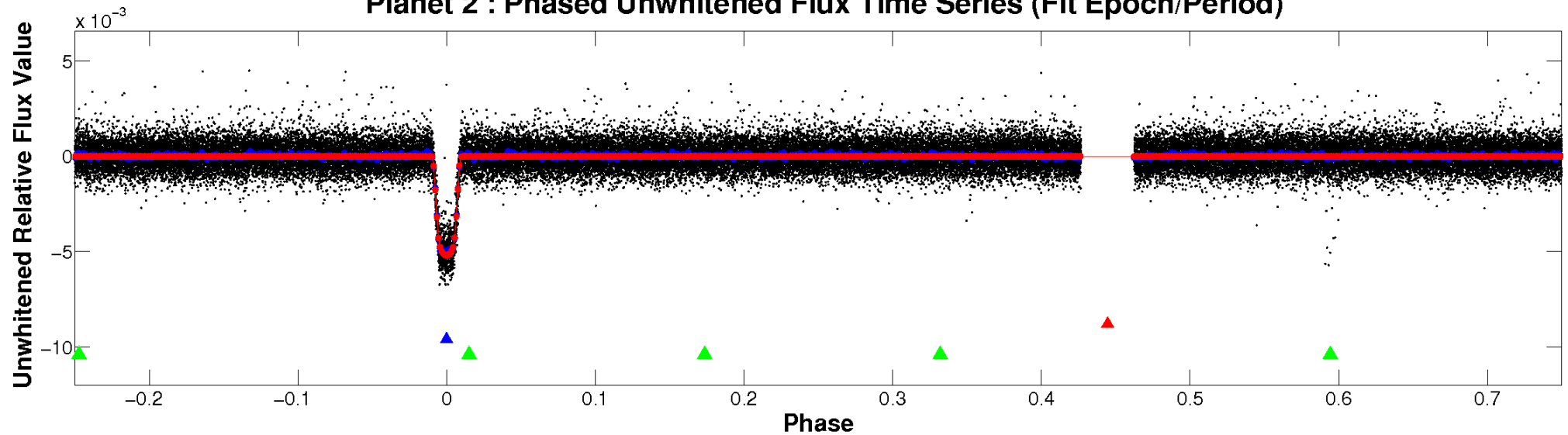
ALT Odd/Even

TCE 010332789-02

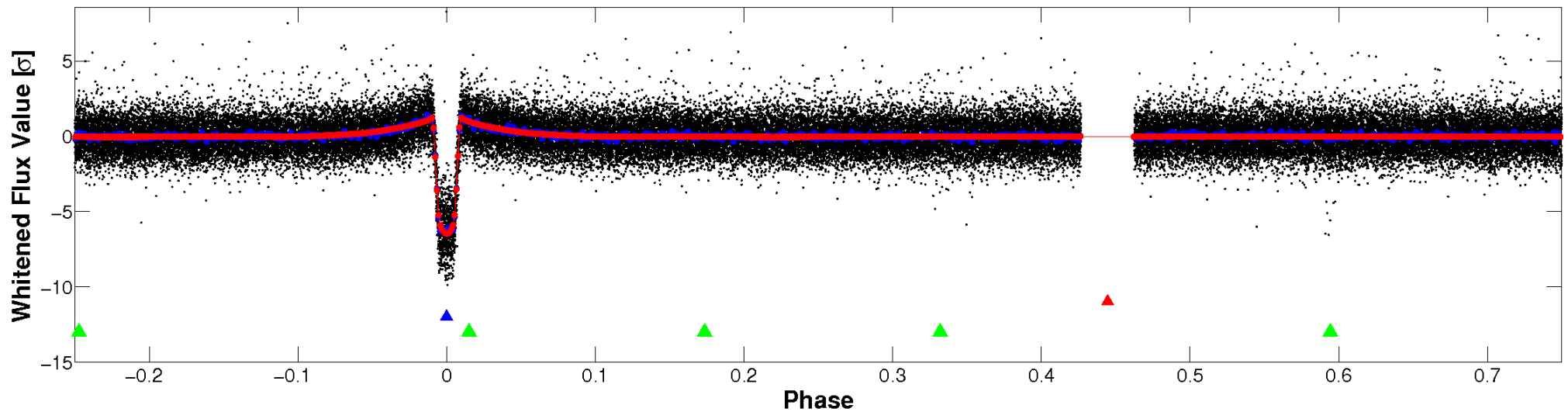


Non-Whitened Vs. Whitened Light Curve

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

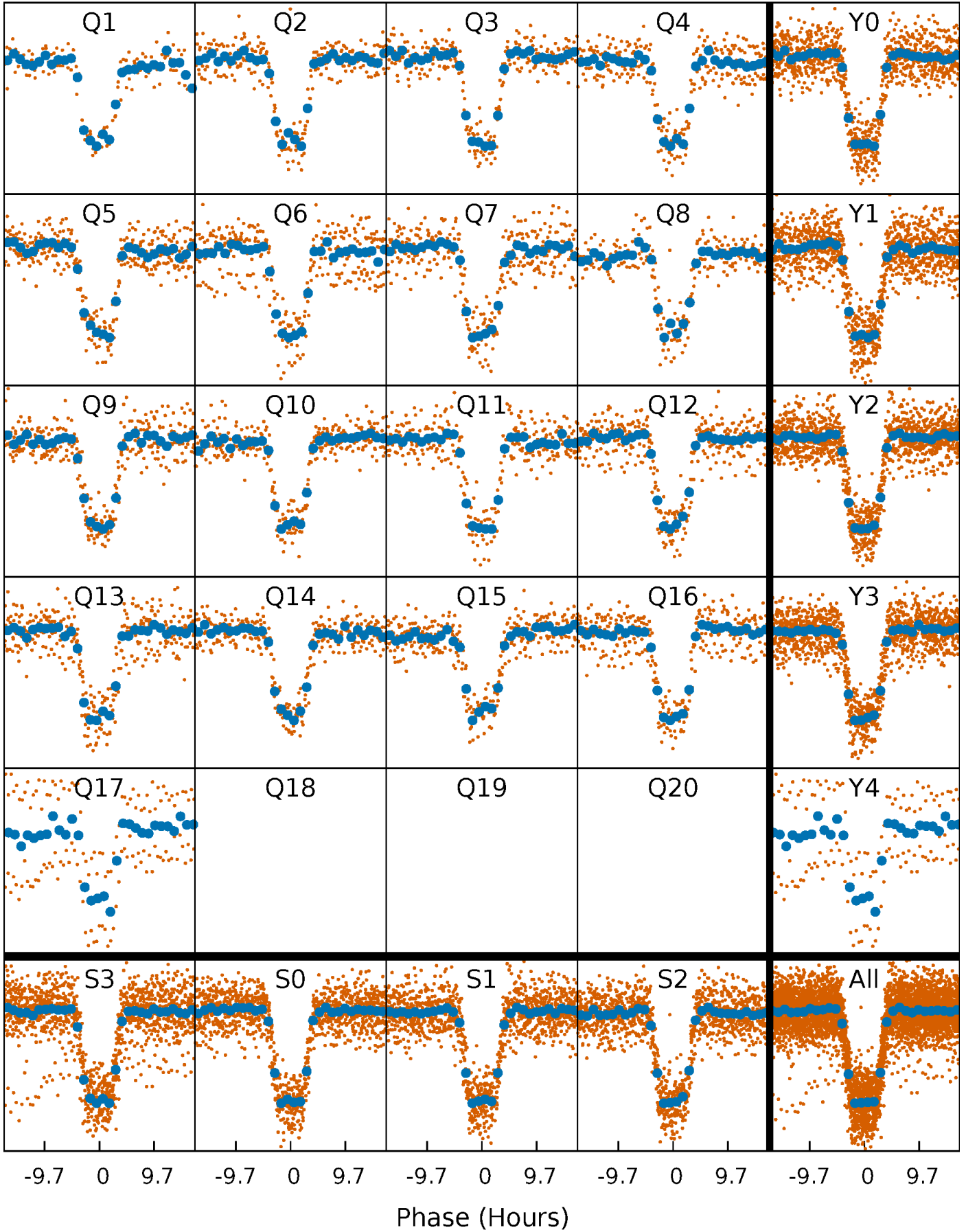


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



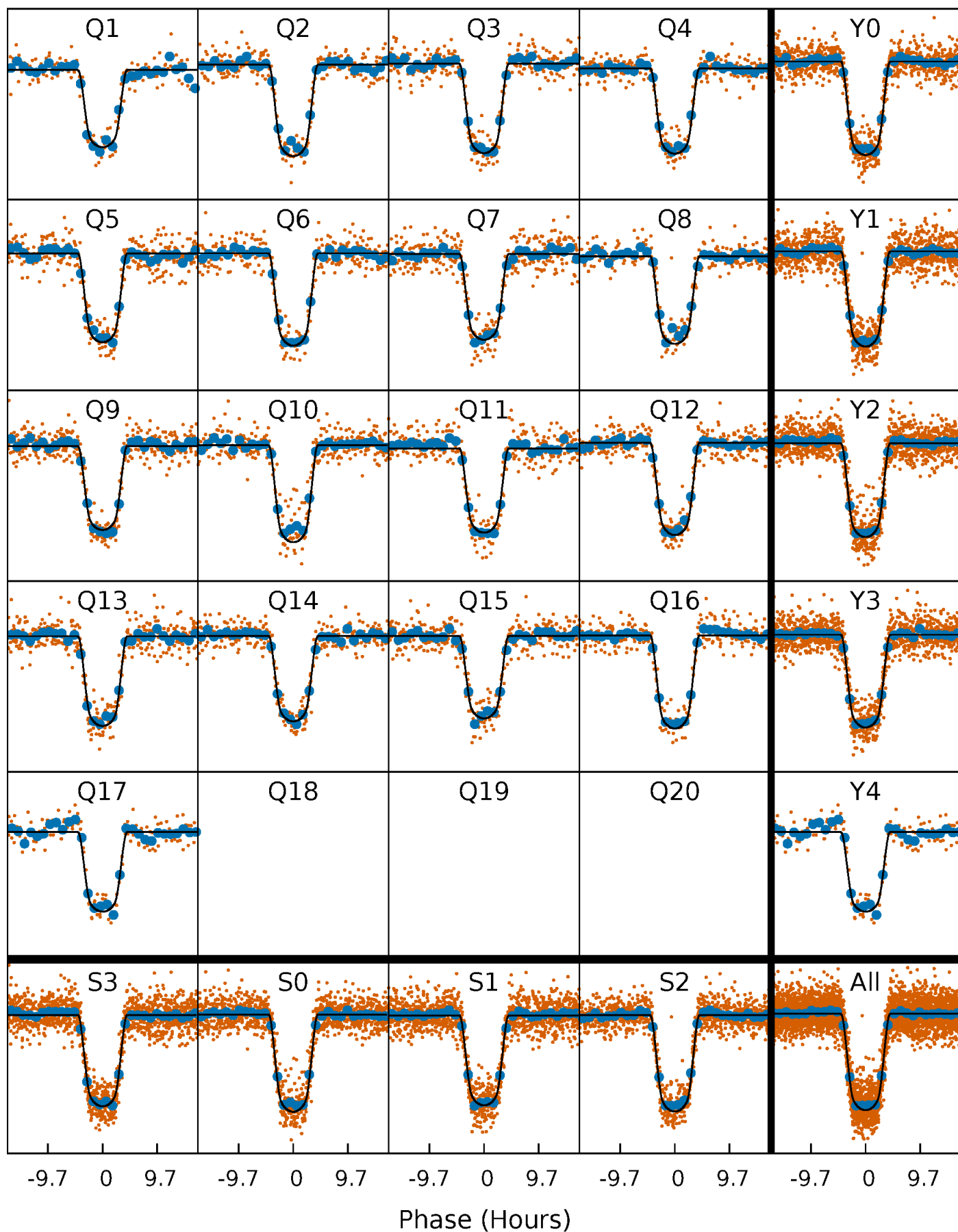
PDC Quarter-Phased Transit Curves

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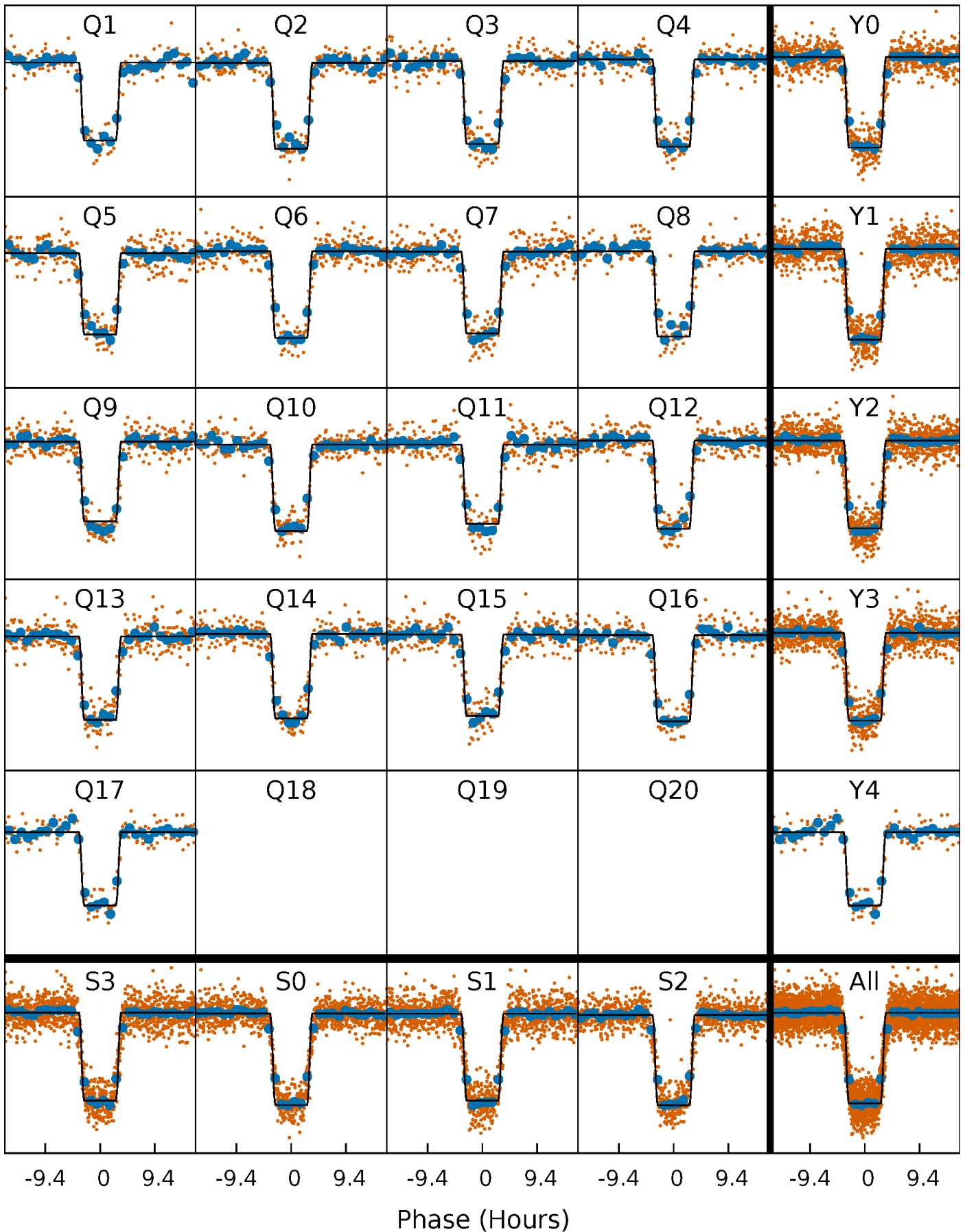
DV Quarter-Phased Transit Curves

TCE 010332789-02 P= 18.740704 Days $T_0=145.616549$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

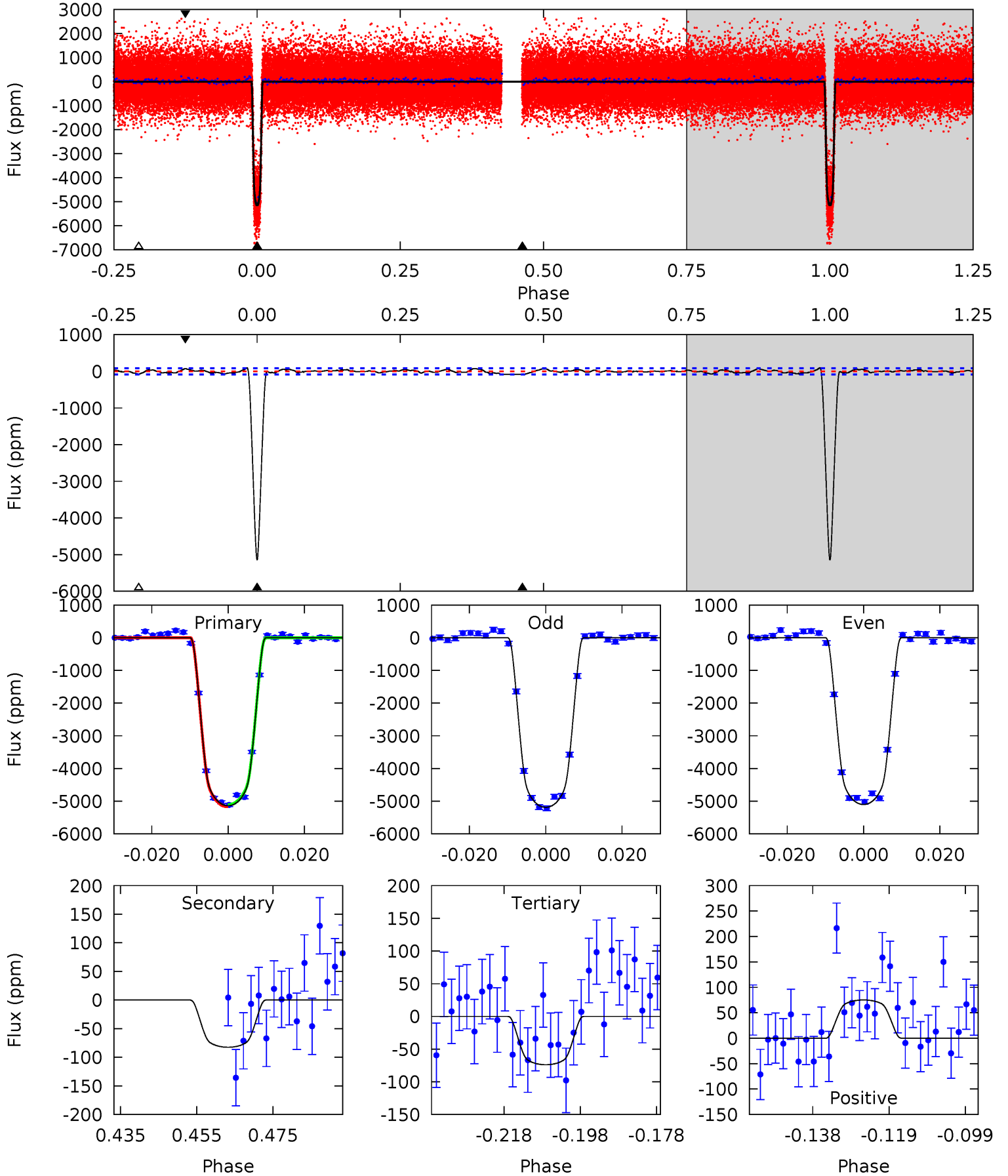
TCE 010332789-02 P= 18.740792 Days $T_0=145.612902$ (BKJD)



DV Model-Shift Uniqueness Test

010332789-02, P = 18.740704 Days, E = 126.875845 Days

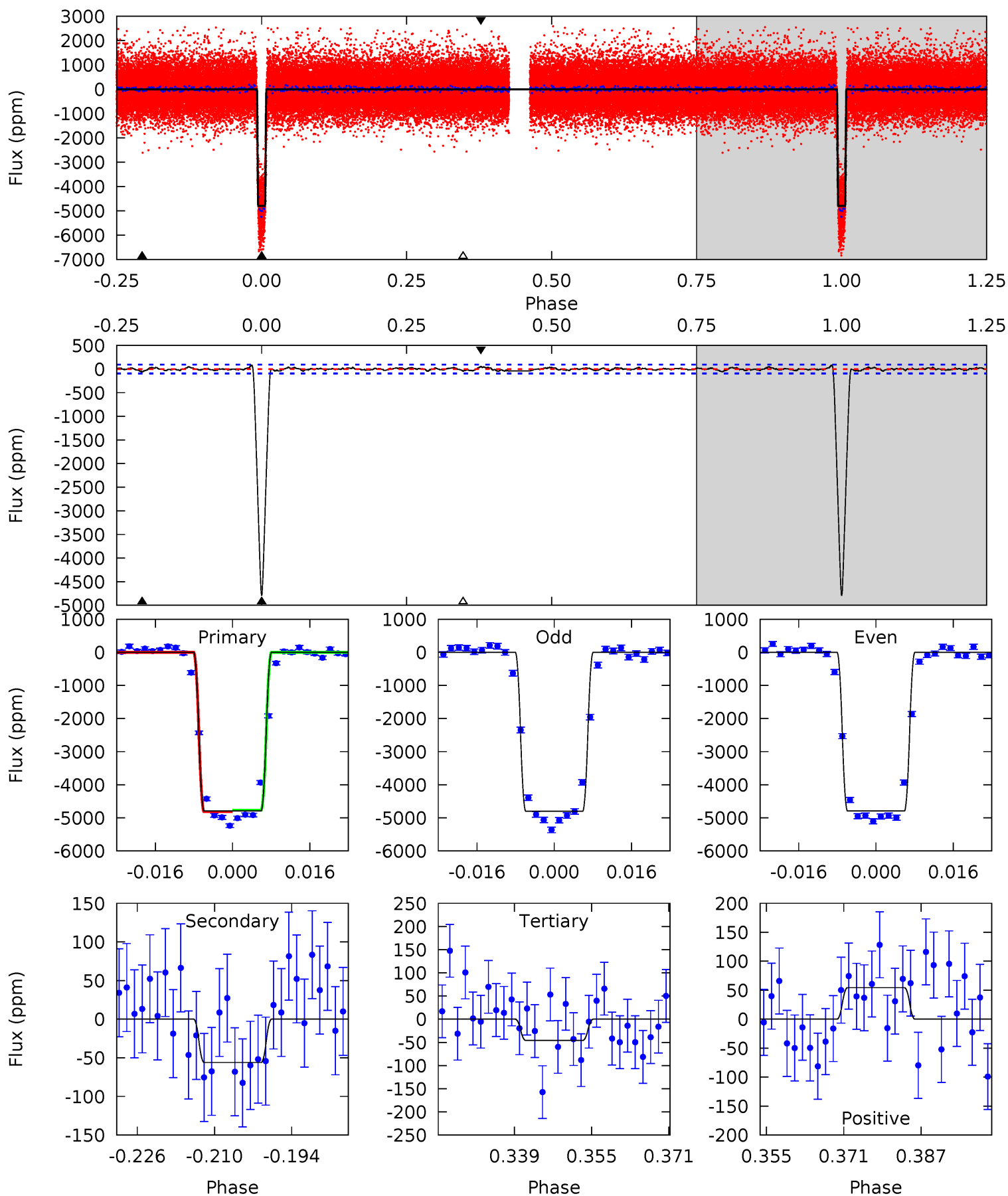
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
292.7	4.70	4.21	4.28	4.89	2.33	1.73	288.5	288.5	0.49	0.42	2.47	0.99	0.02	1.68



Alt Model-Shift Uniqueness Test

010332789-02, P = 18.740792 Days, E = 126.872110 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
253.0	2.96	2.42	2.87	4.93	2.41	1.00	250.6	250.2	0.54	0.09	0.23	1.00	0.02	1.28



Stellar Parameters For KIC 010332789

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6122^{+171}_{-214}	$4.471^{+0.050}_{-0.200}$	$-0.100^{+0.250}_{-0.300}$	$0.996^{+0.291}_{-0.104}$	$1.070^{+0.137}_{-0.137}$	$1.526^{+0.413}_{-0.788}$
	+3%/-3%	+1%/-4%	+250%/-300%	+29%/-10%	+13%/-13%	+27%/-52%
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 010332789-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-82 ± 18	$8.38^{+1.37}_{-0.62}$	1020^{+75}_{-50}	2835^{+95}_{-106}	12^{+4}_{-3}
Alt.	-56 ± 19	$7.93^{+1.27}_{-0.66}$	1028^{+71}_{-52}	2738^{+122}_{-154}	$9.141^{+3.861}_{-3.523}$

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

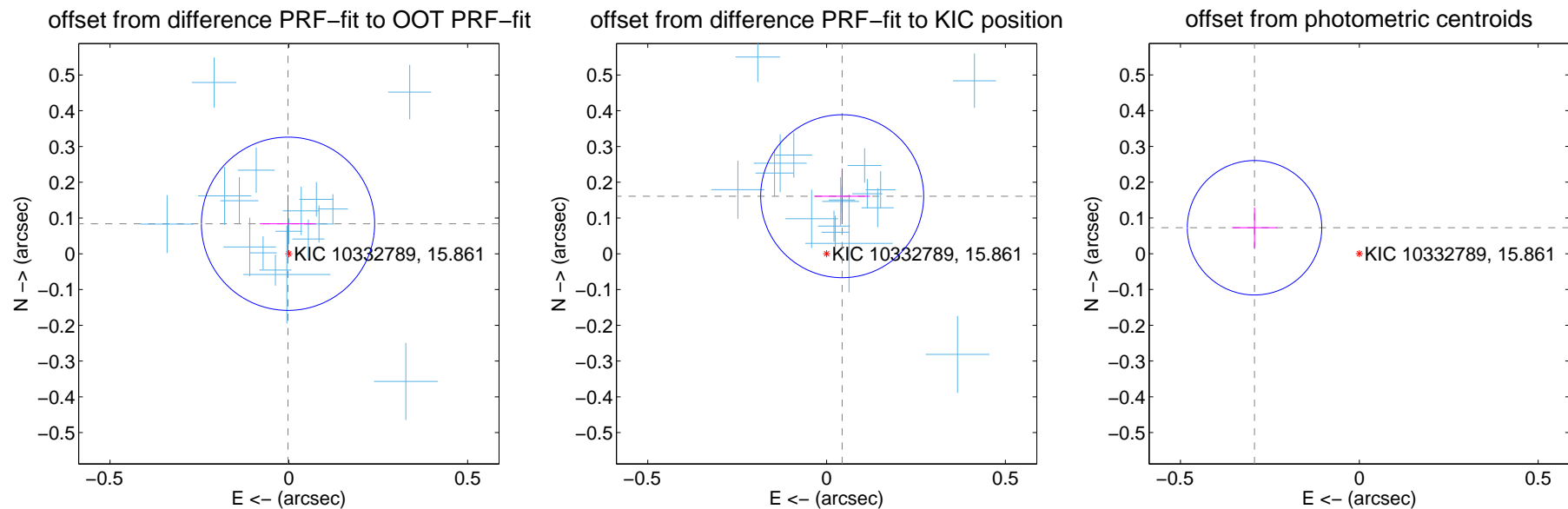
DV Centroid Data

Supplemental centroid analysis for 010332789-02. Kepler magnitude: 15.86. Transit SNR 176.65

There are 17 quarters with good PRF difference image offsets

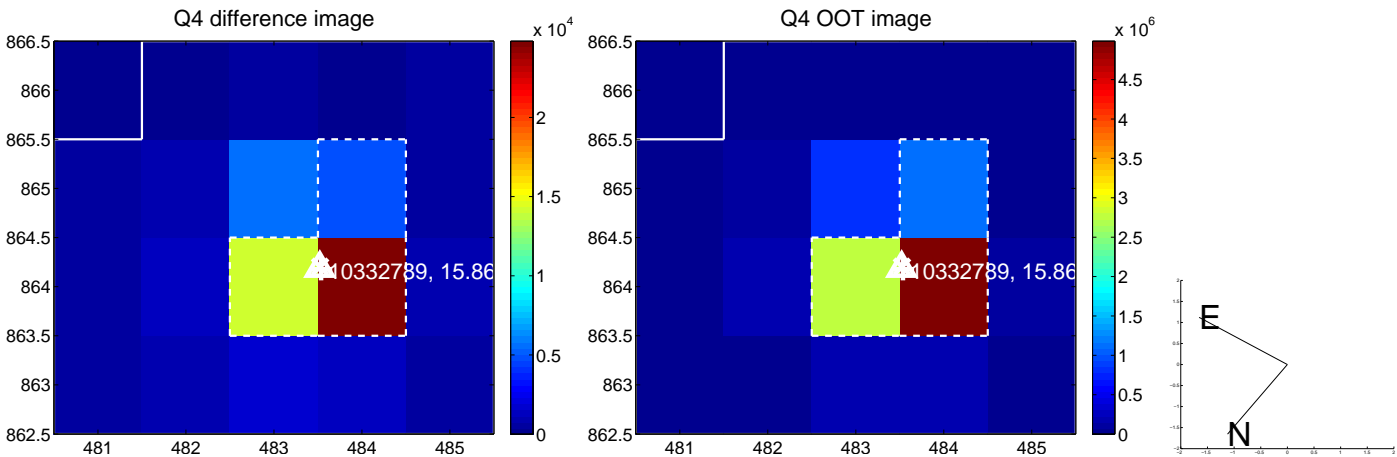
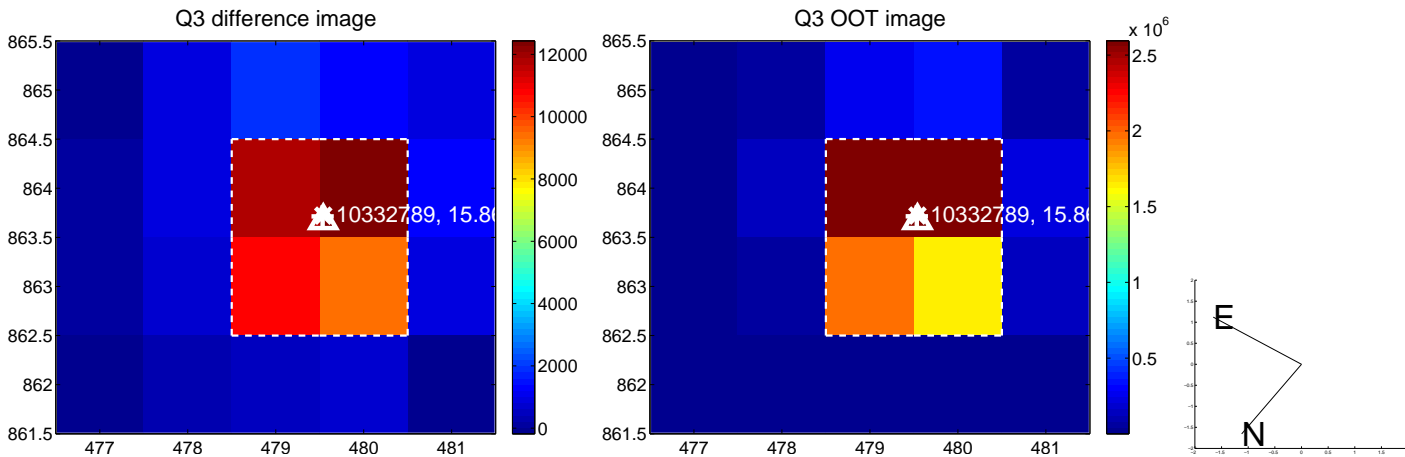
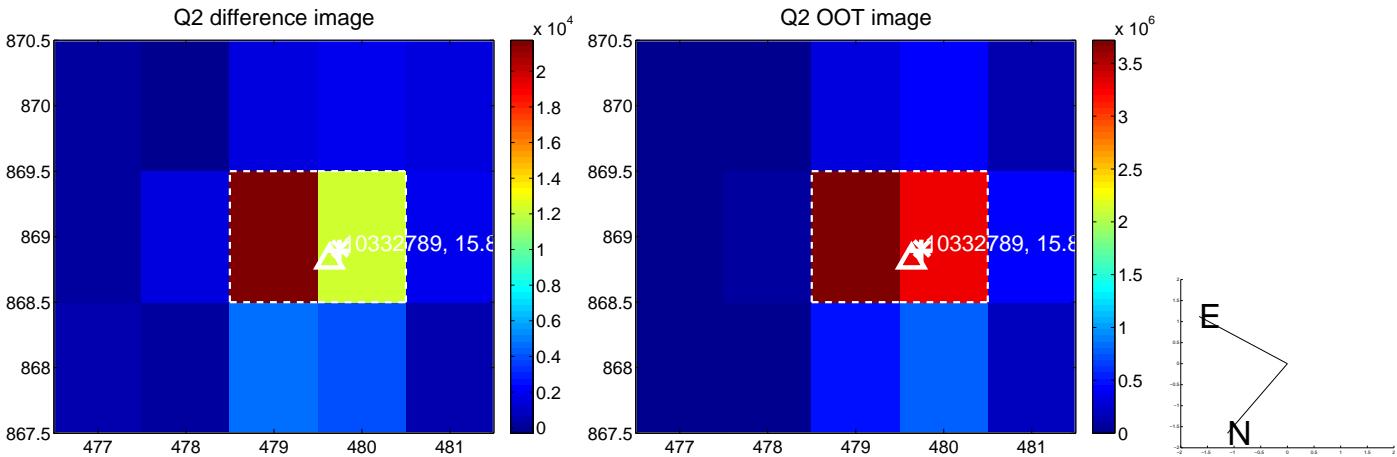
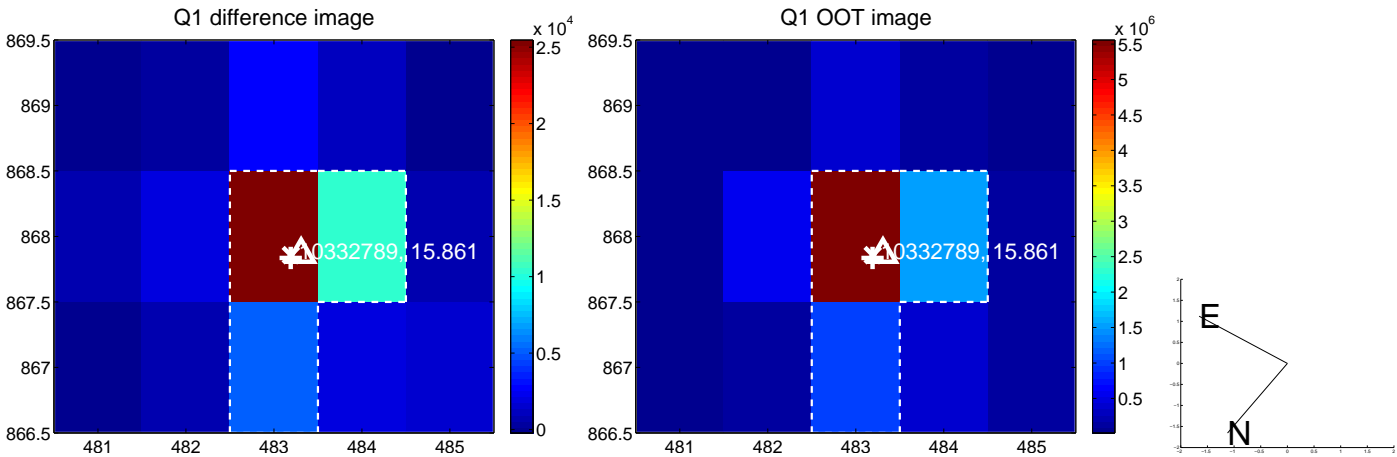
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.084 ± 0.081	1.04	0.002 ± 0.079	0.084 ± 0.081
PRF-fit source offset from KIC position	0.167 ± 0.076	2.20	-0.044 ± 0.078	0.161 ± 0.078
photometric centroid source offset	0.30 ± 0.06	4.82	0.29 ± 0.06	0.07 ± 0.06

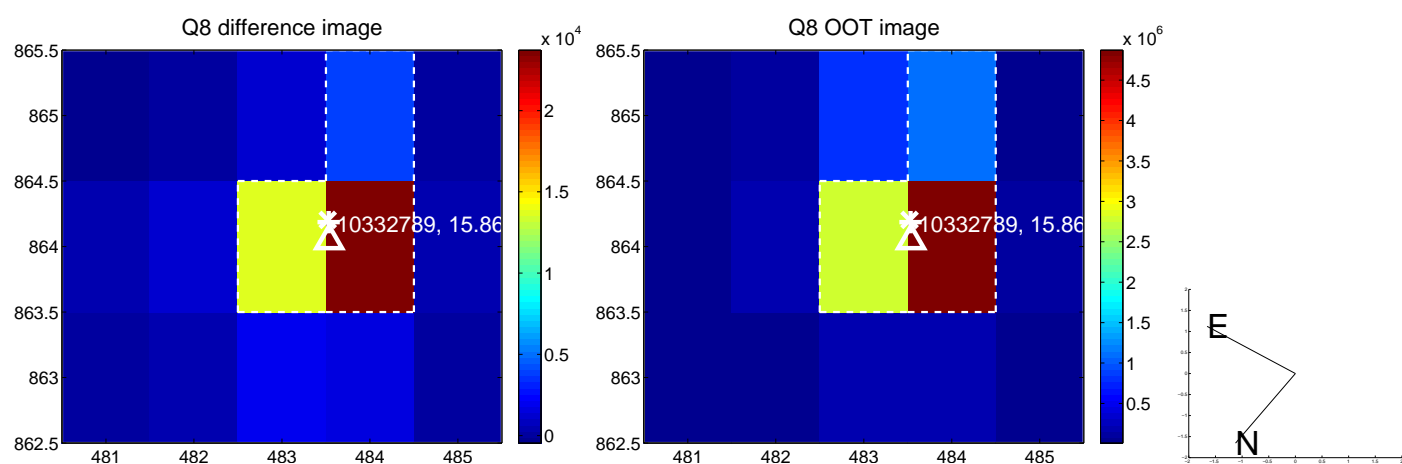
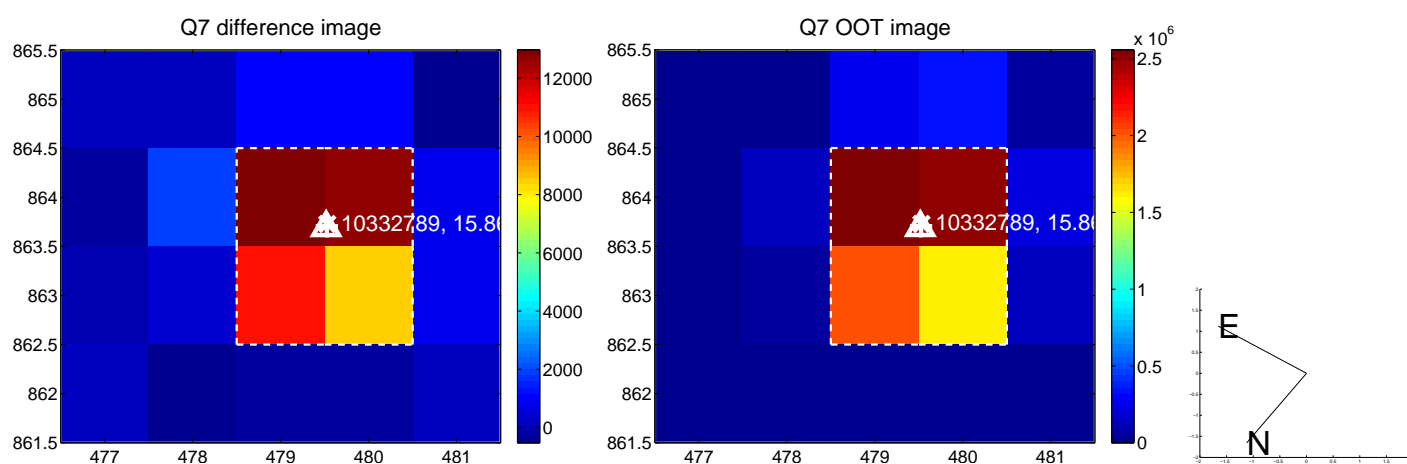
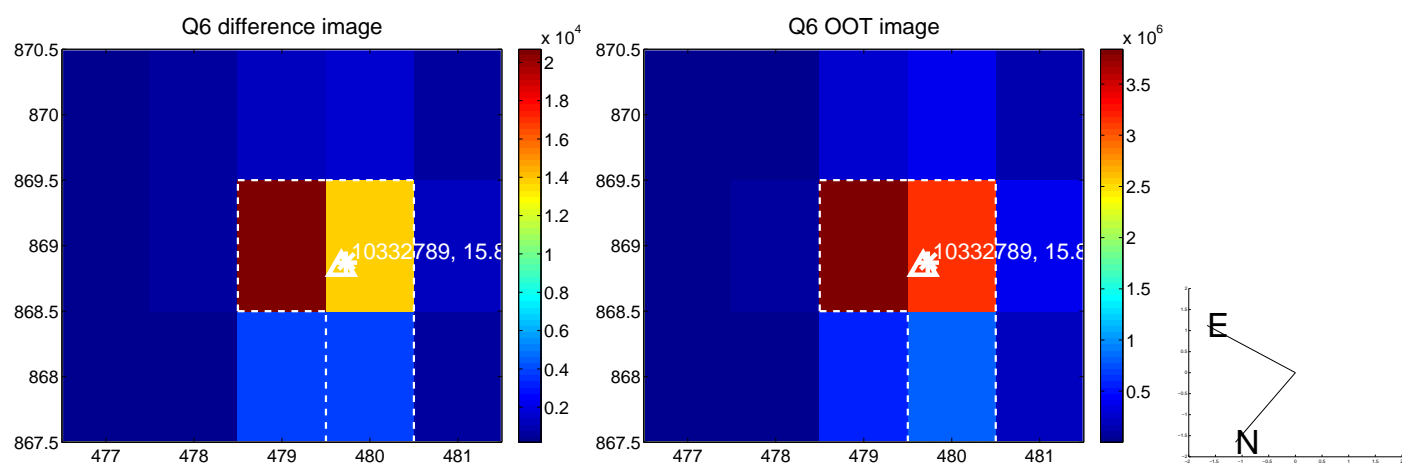
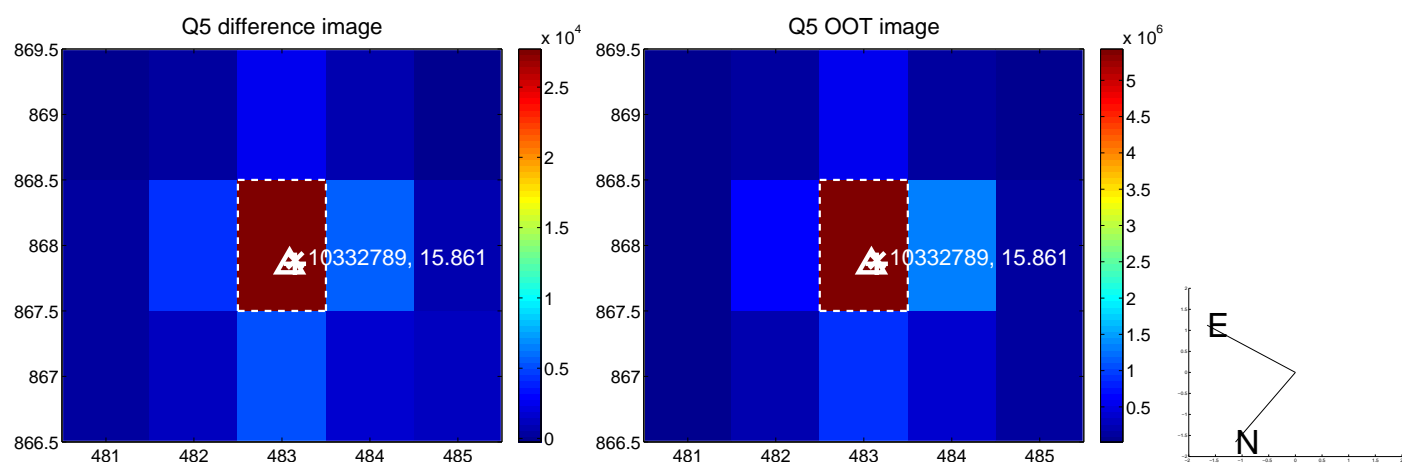


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

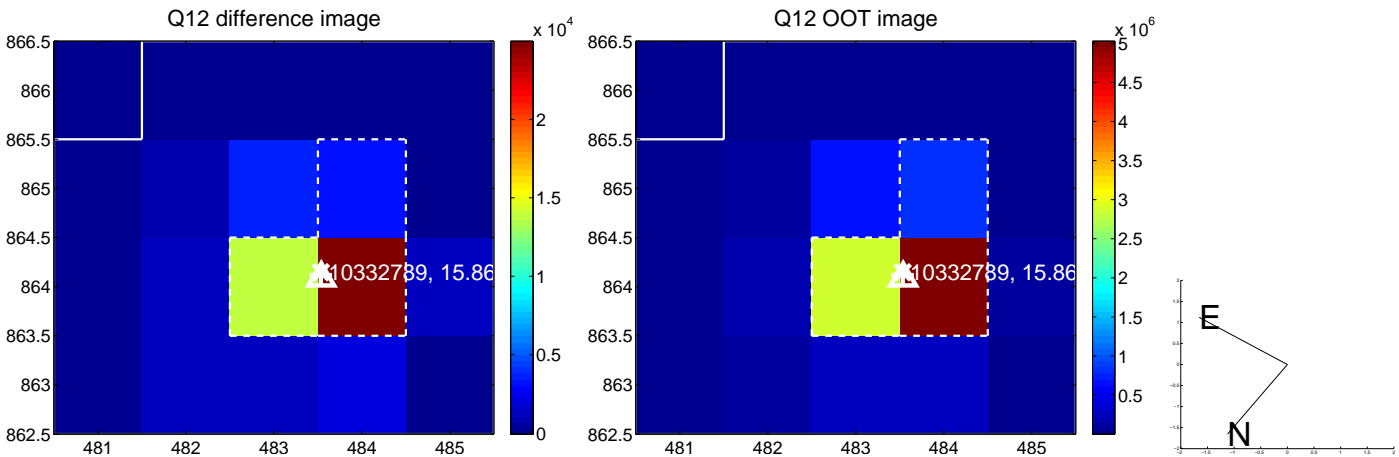
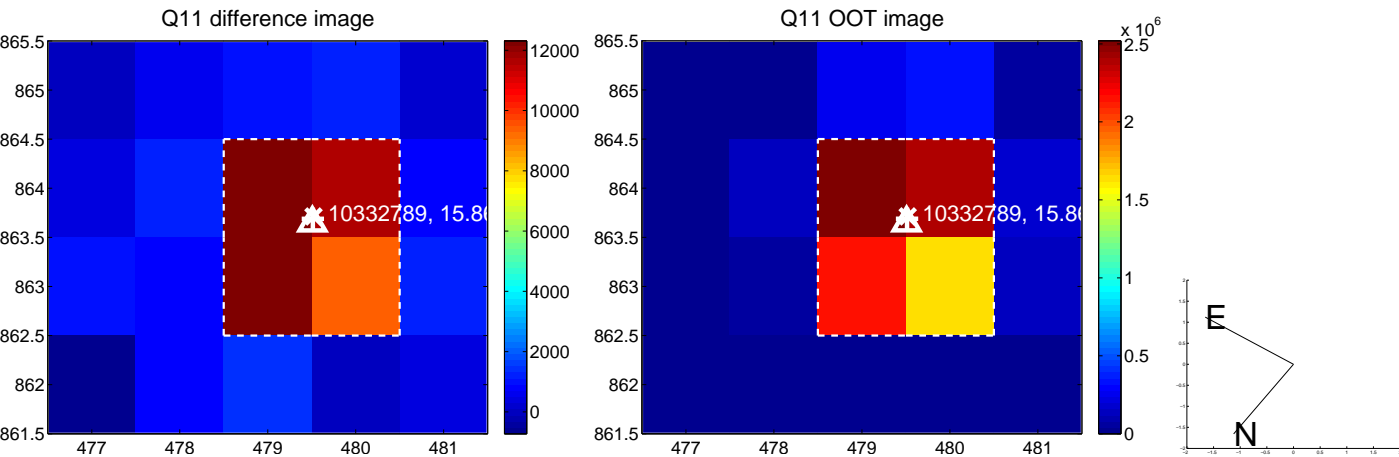
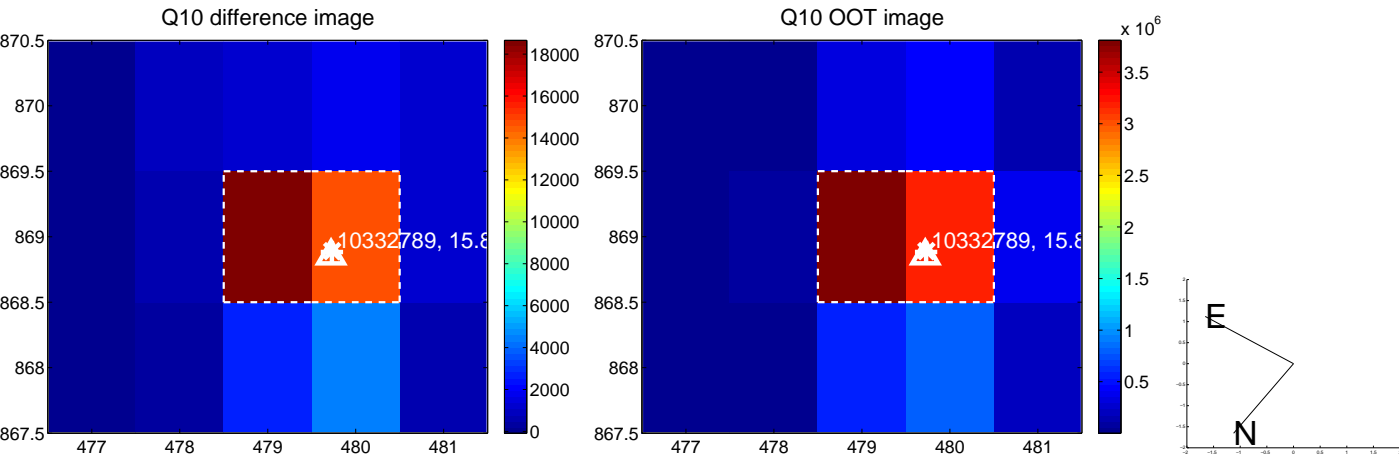
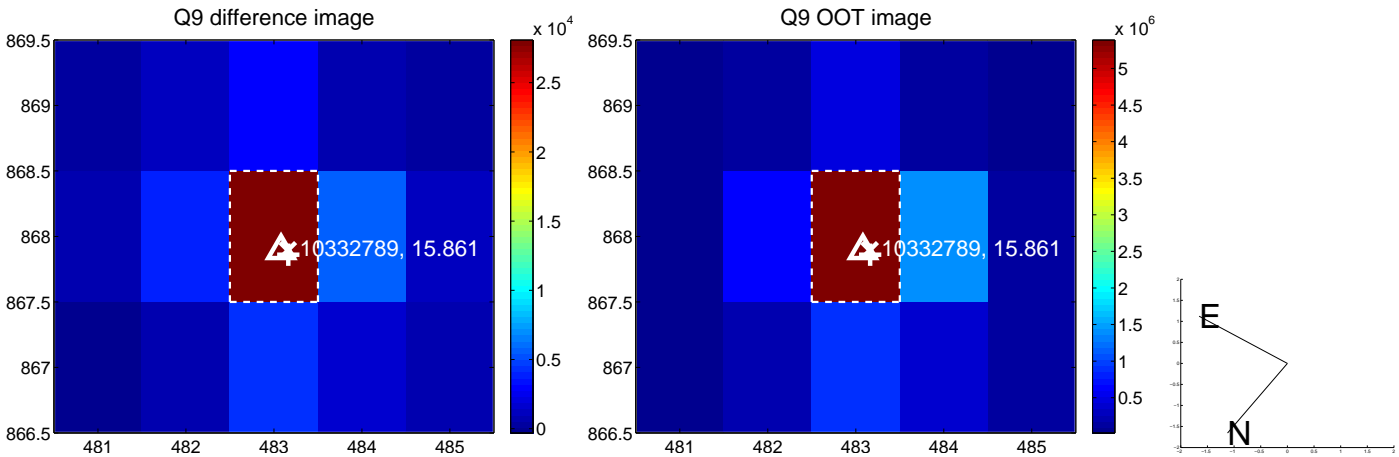
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



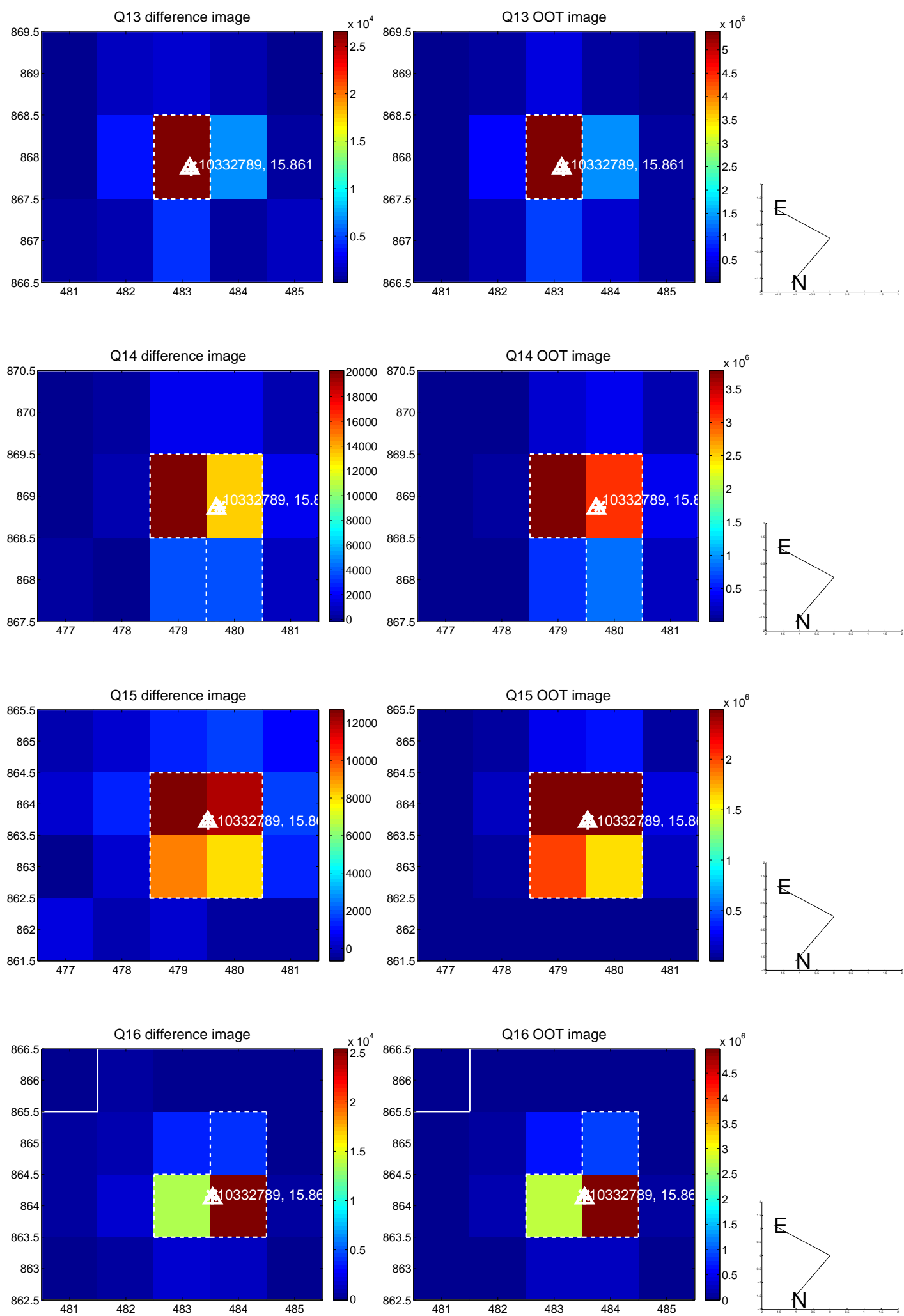
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



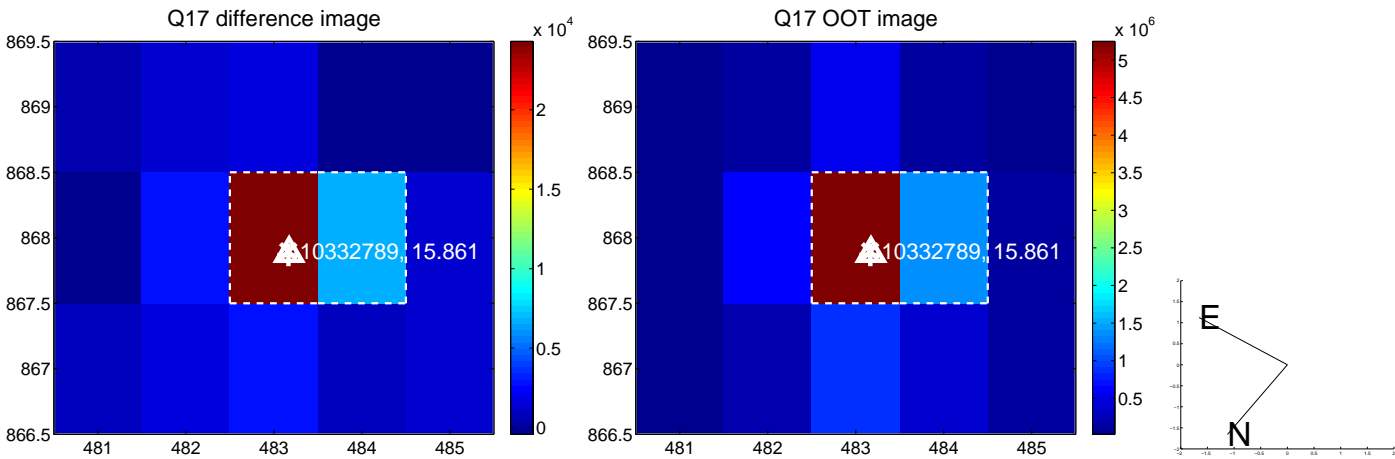
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



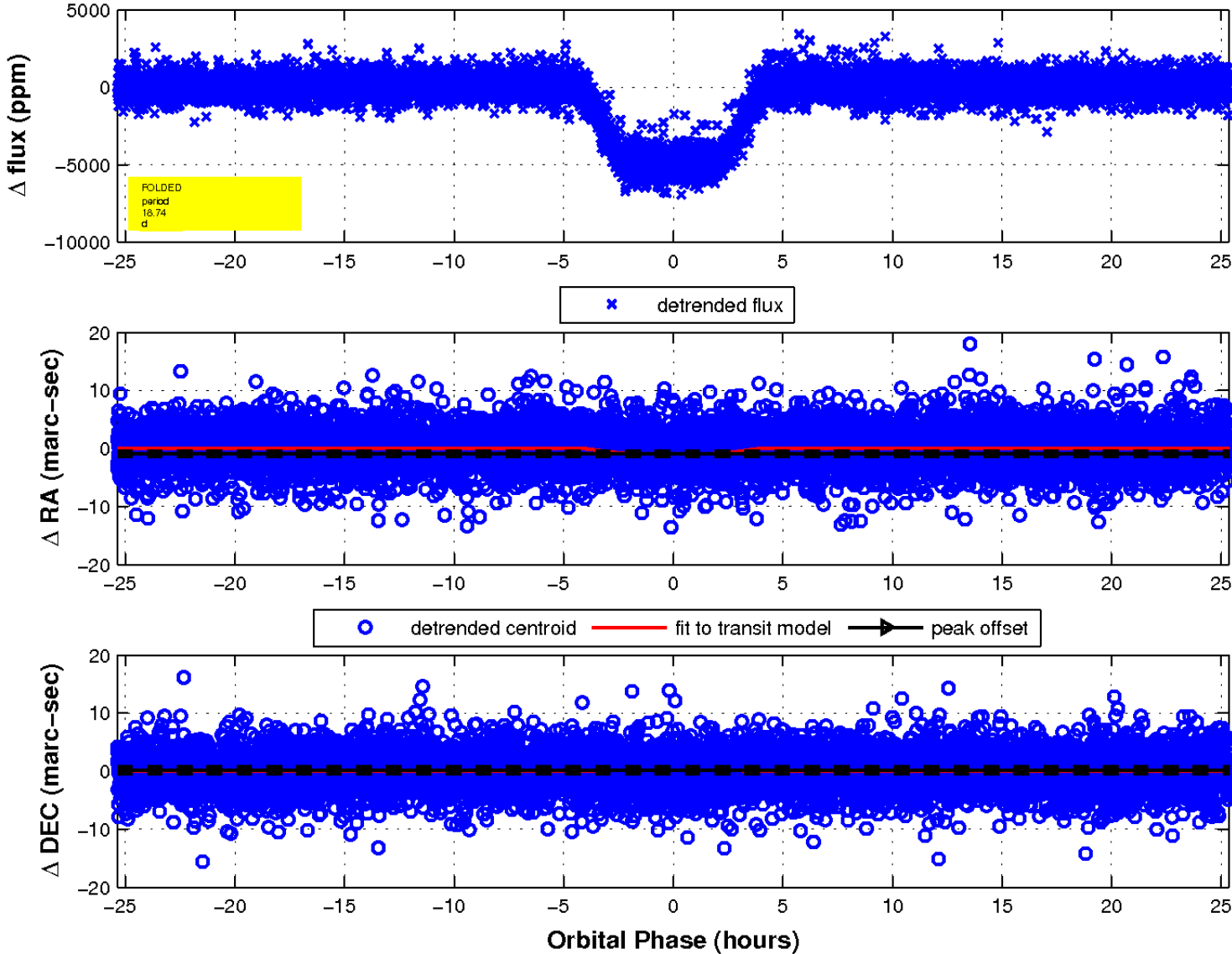
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

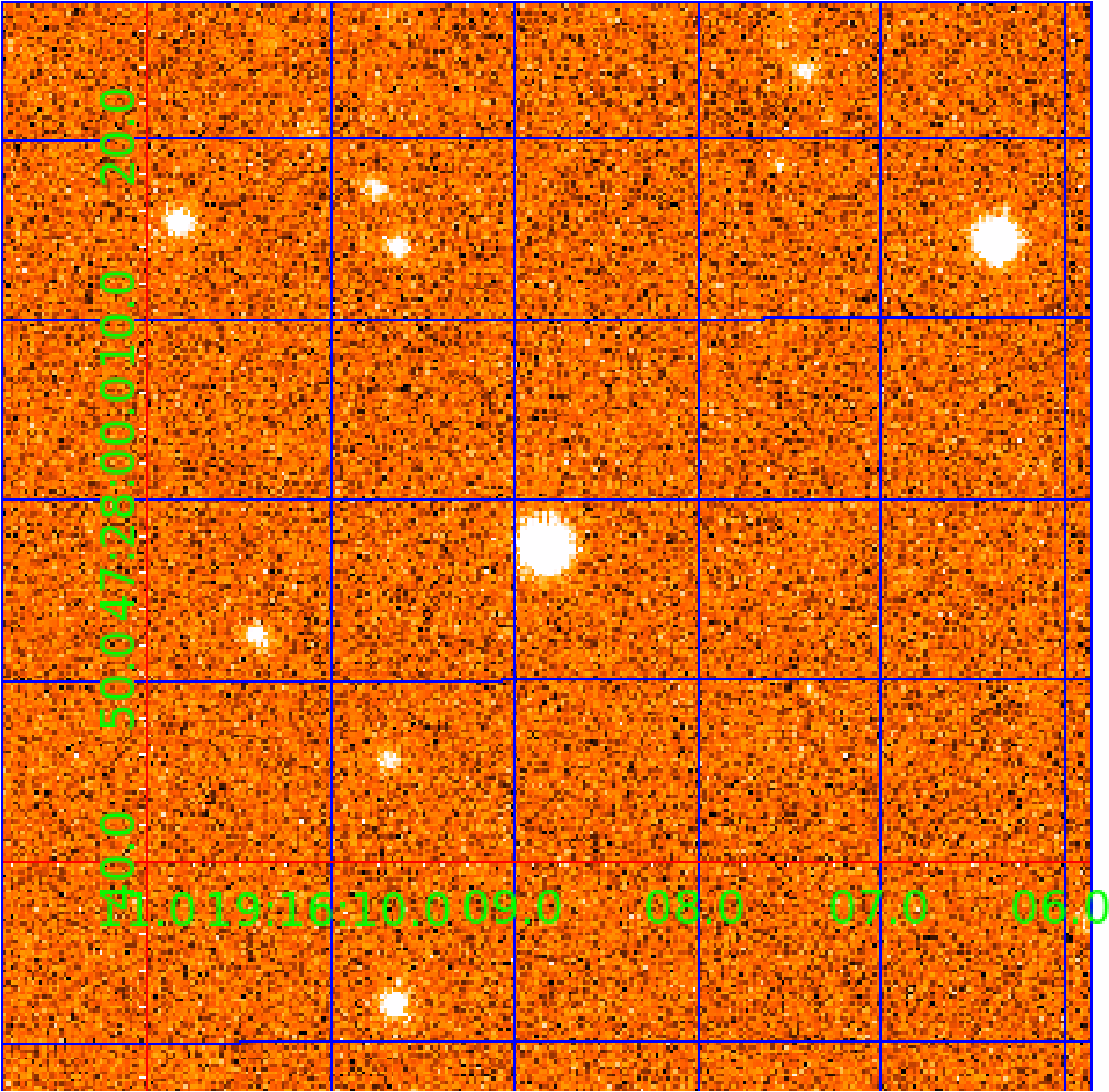


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 010332789

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})
010332789-01	OBS	7311.01	18.740725	135.207220	125879.4	5.210	3512.5	3020.8	1.00	6122	35.70	62.55
010332789-02	OBS	No	18.740704	145.616549	5202.0	8.454	177.6	176.6	1.00	6122	8.19	62.55
010332789-03	OBS	No	288.996240	226.801475	2402.0	7.037	16.9	12.2	1.00	6122	4.88	1.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010332789-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
010332789-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
010332789-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE_ZUMA—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

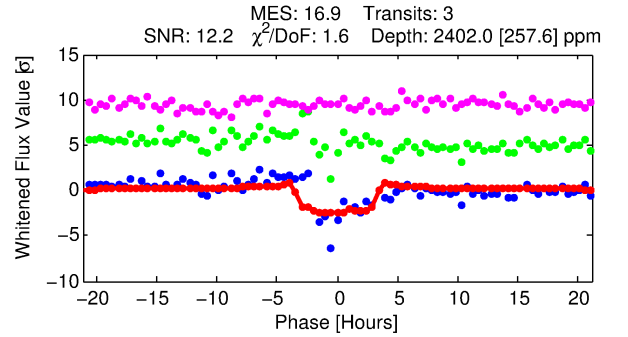
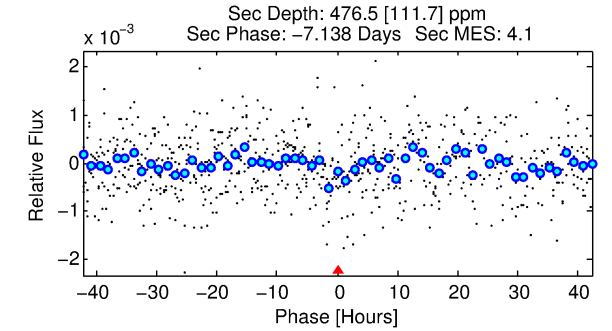
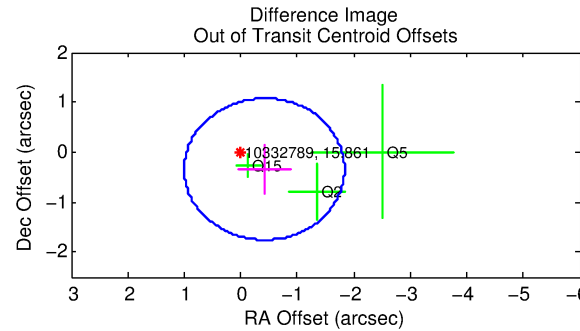
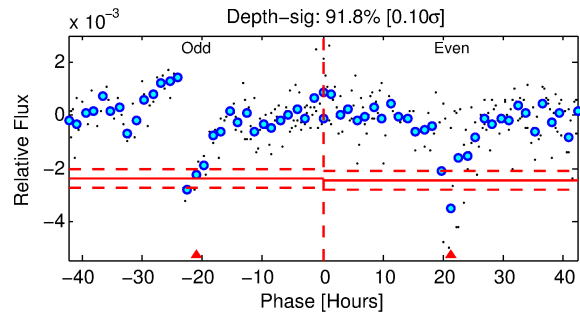
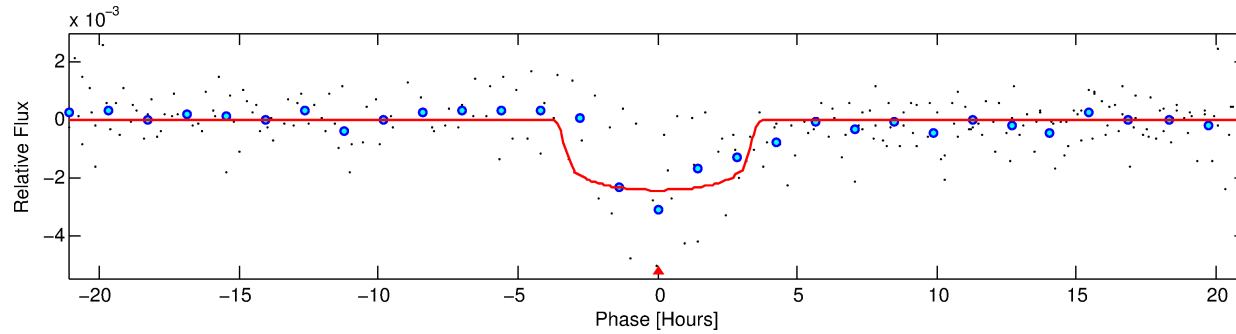
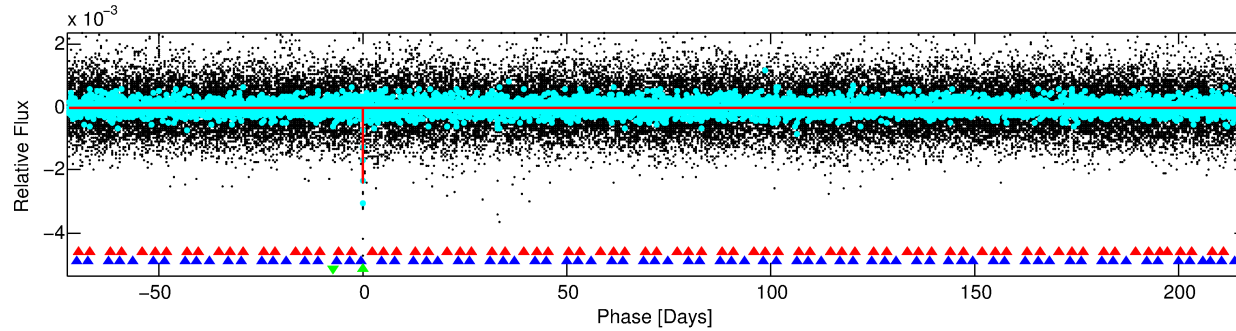
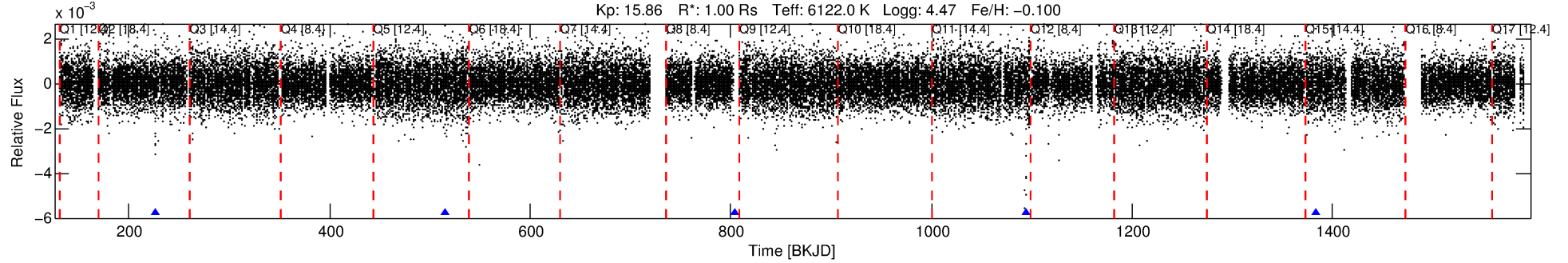
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010332789-03

No Significant Match Found

DV One-Page Summary

KIC: 10332789 Candidate: 3 of 3 Period: 288.996 d
KOI: K07311 Corr: No Ephemeris Match



DV Fit Results:

Period = 288.99624 [0.00488] d
Epoch = 226.8015 [0.0068] BKJD
Rp/R* = 0.0449 [0.0251]
a/R* = 323.99 [865.87]
b = 0.16 [16.39]
Seff = 1.63 [0.63]
Teq = 288 [28] K
Rp = 4.89 [3.08] Re
a = 0.8752 [0.2171] AU
Ag = 8414.34 [10091.49] [0.83 σ]
Teffp = 4266 [1228] K [3.24 σ]

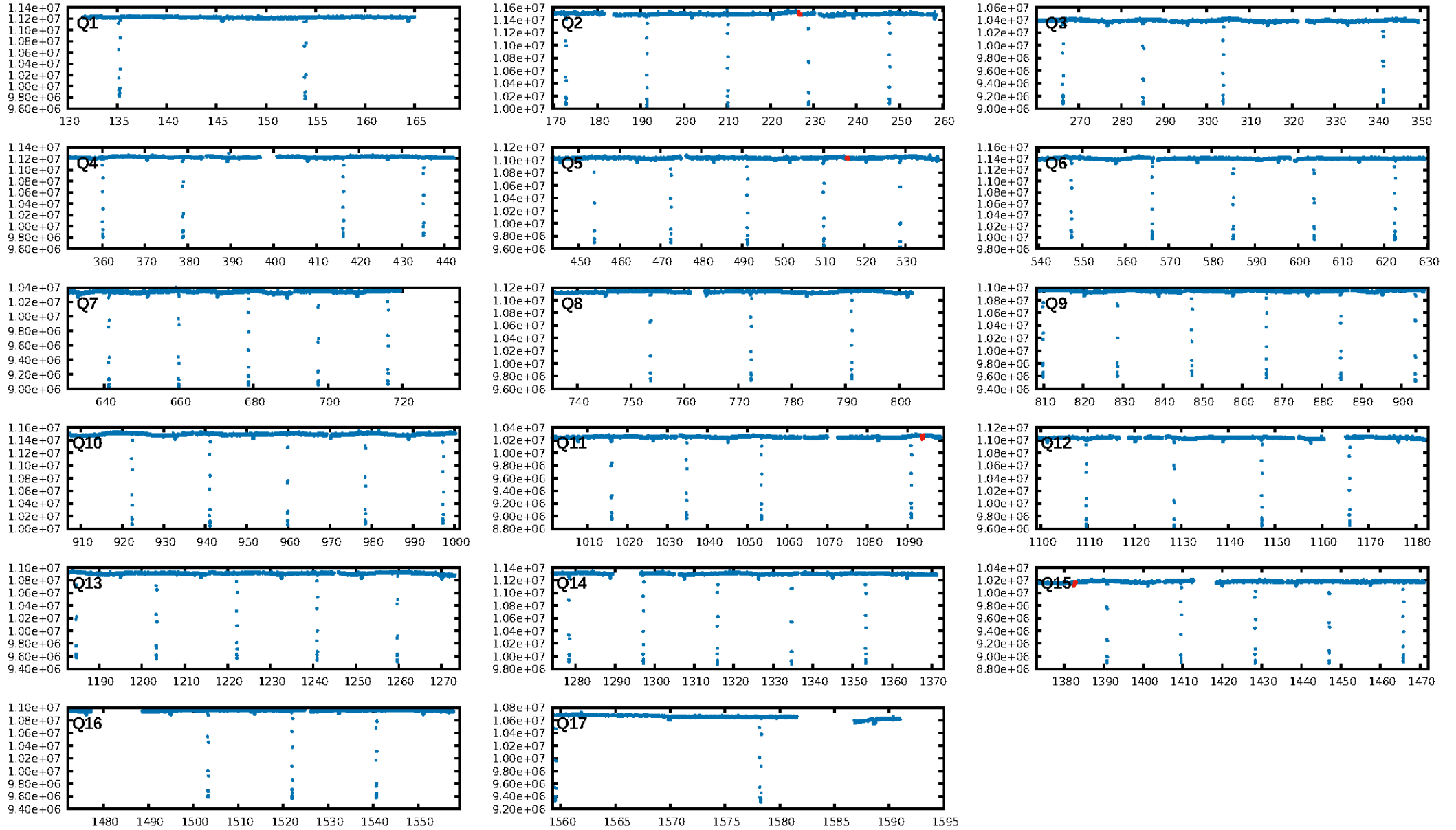
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [740.76 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 21.5%
Bootstrap-pfa: 1.76e-30
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -2.122
Centroid-sig: 54.6%
Centroid-so: 0.322 arcsec [0.52 σ]
OotOffset-rm: 0.540 arcsec [1.14 σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-rm: 0.519 arcsec [1.11 σ]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.67 [2/3]

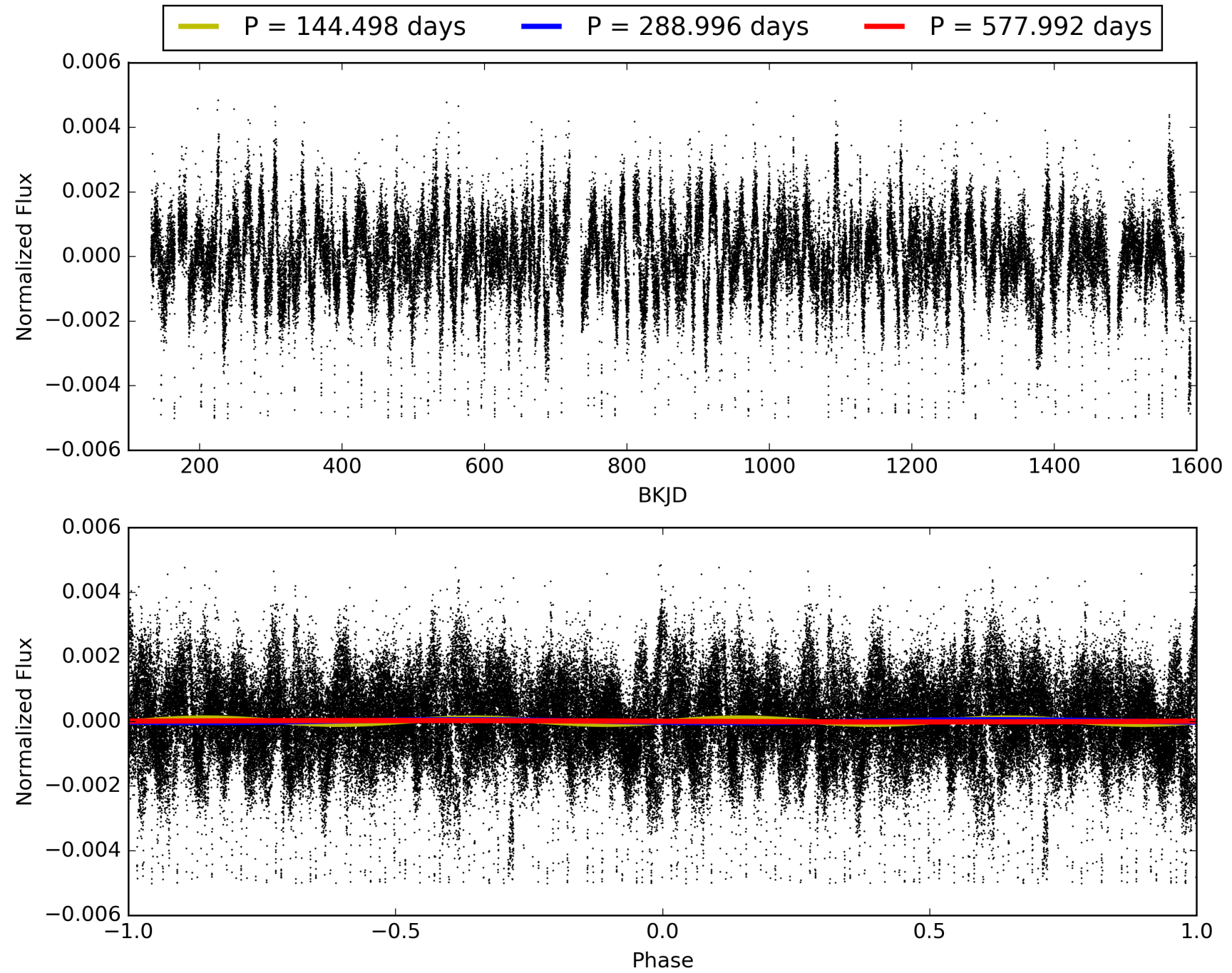
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:58:12 Z

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

TCE 010332789-03, PDC Light Curves

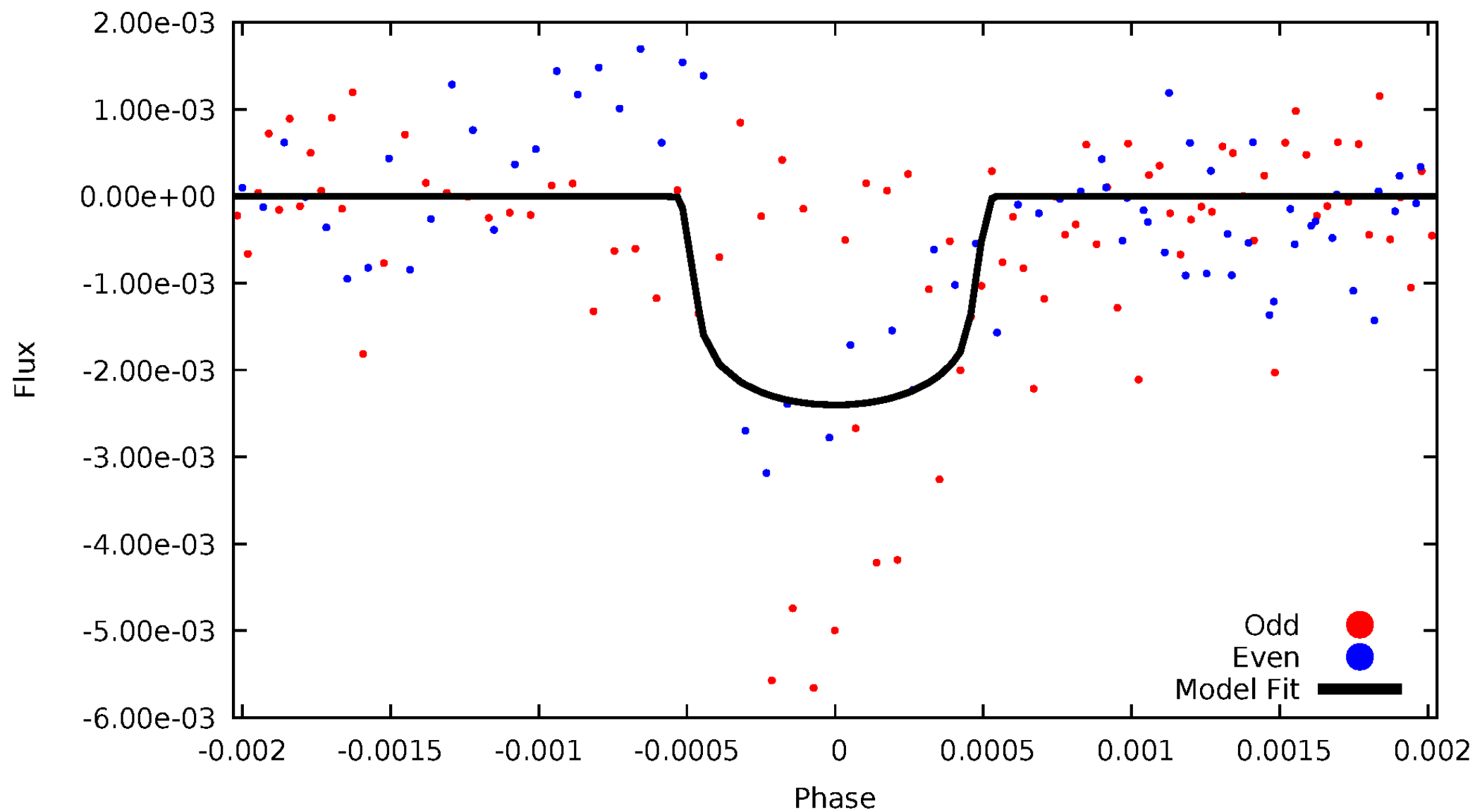


TCE 010332789-03



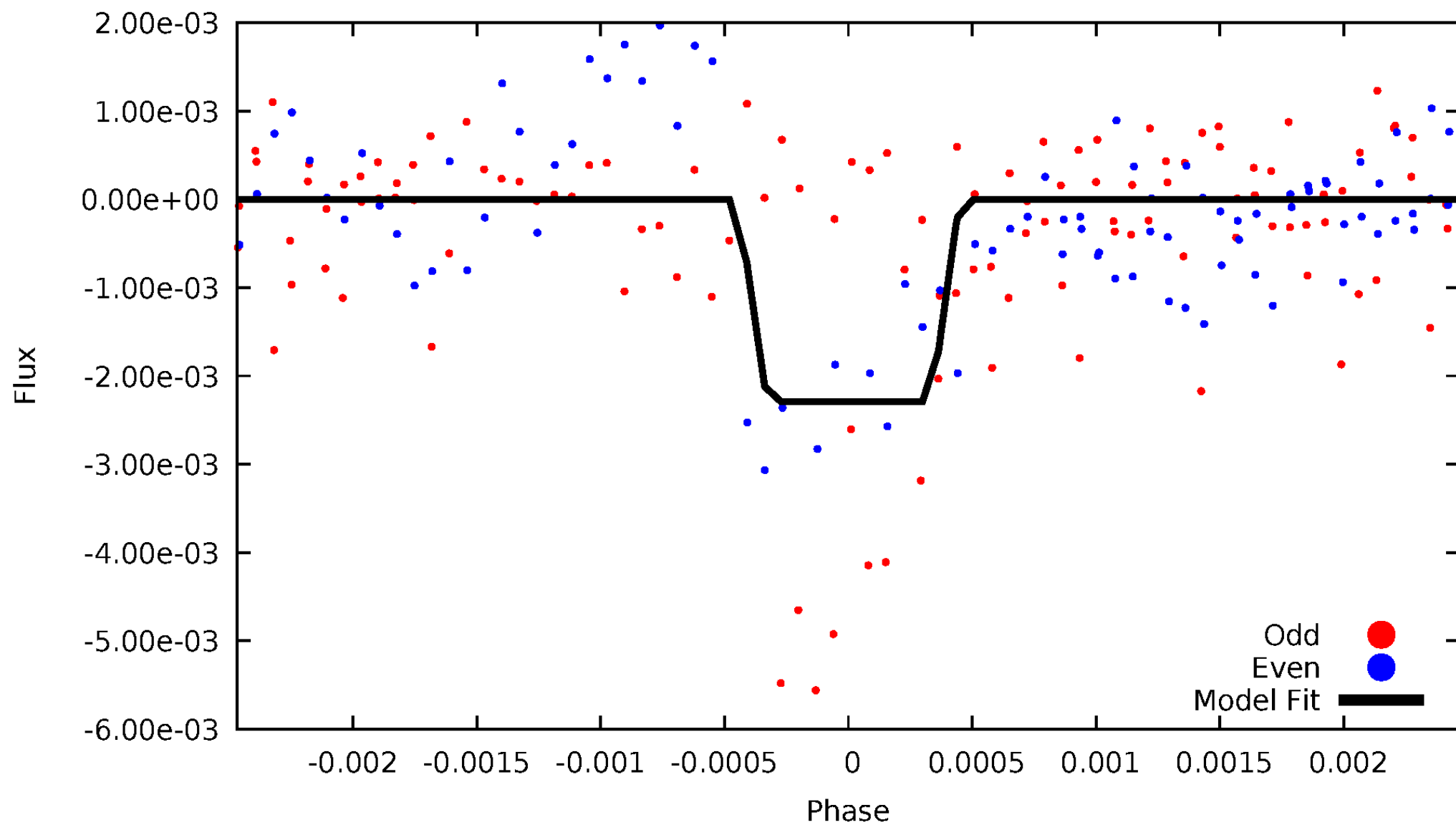
DV Odd/Even

TCE 010332789-03



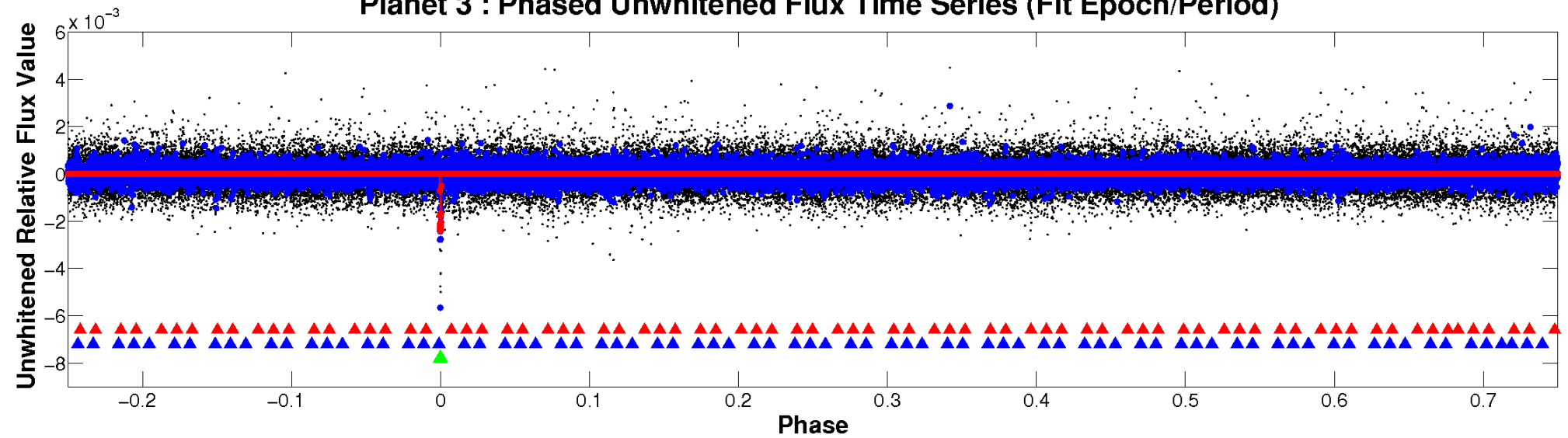
ALT Odd/Even

TCE 010332789-03

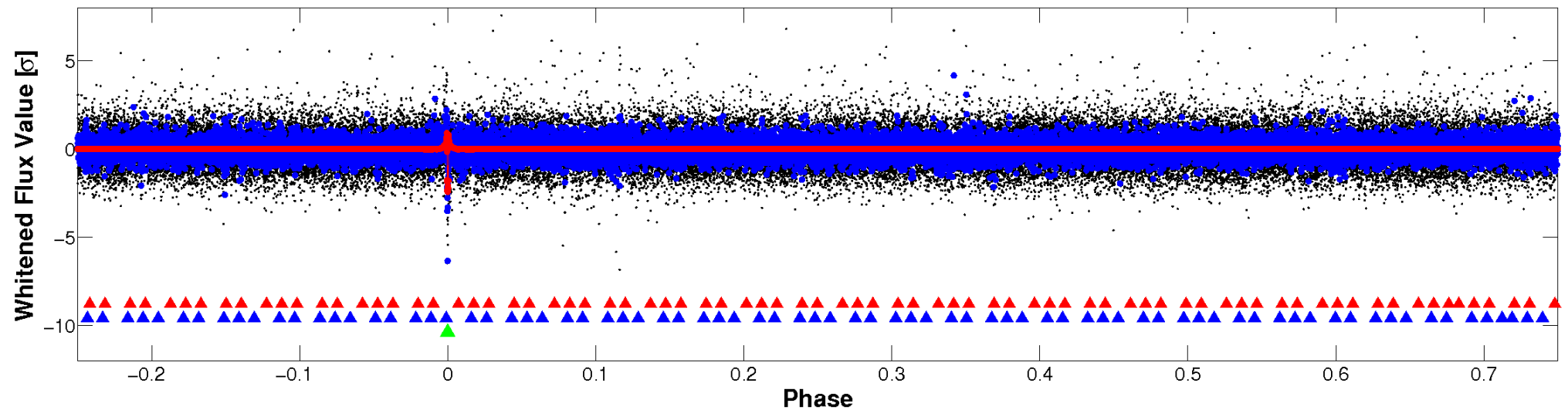


Non-Whitened Vs. Whitened Light Curve

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

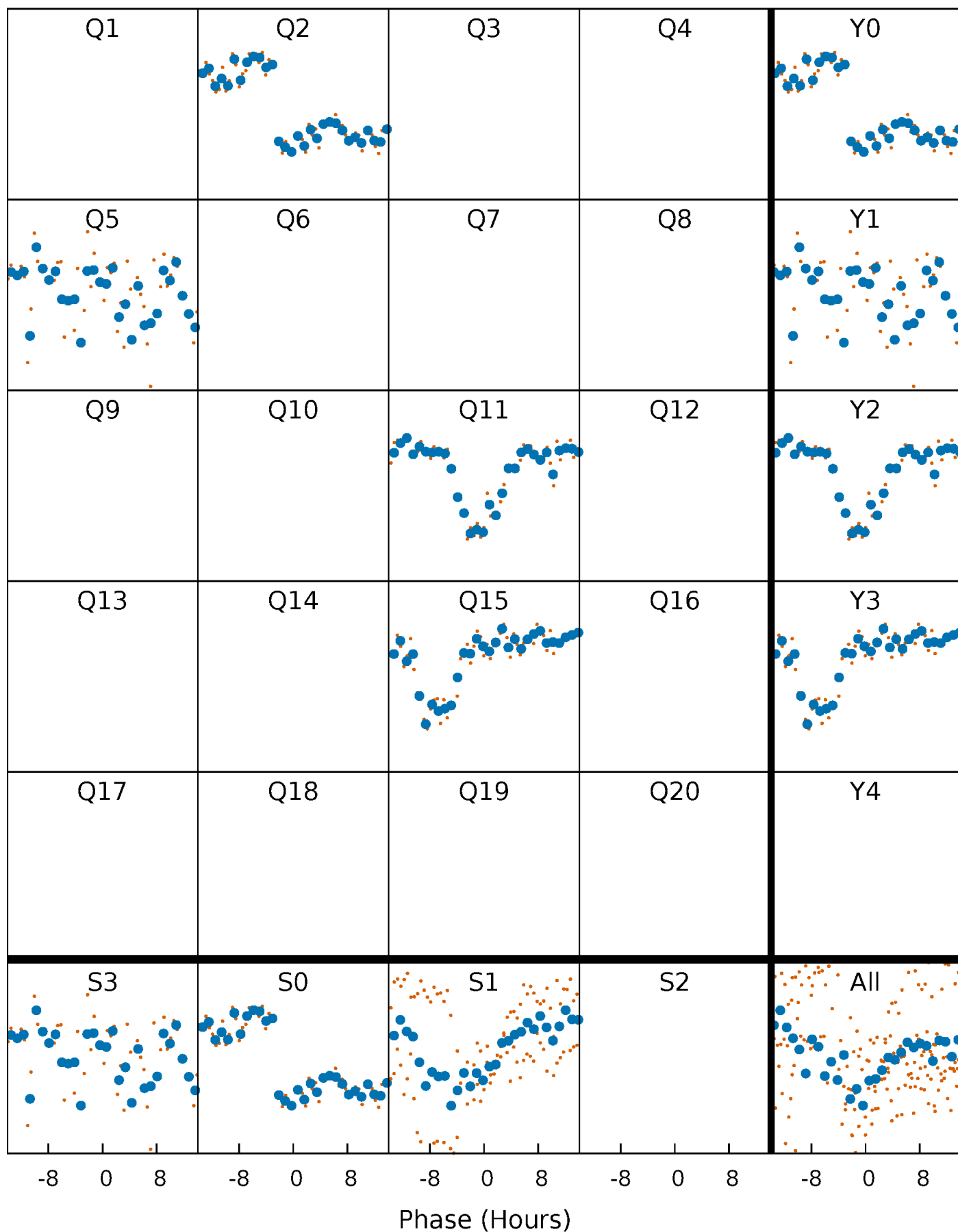


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



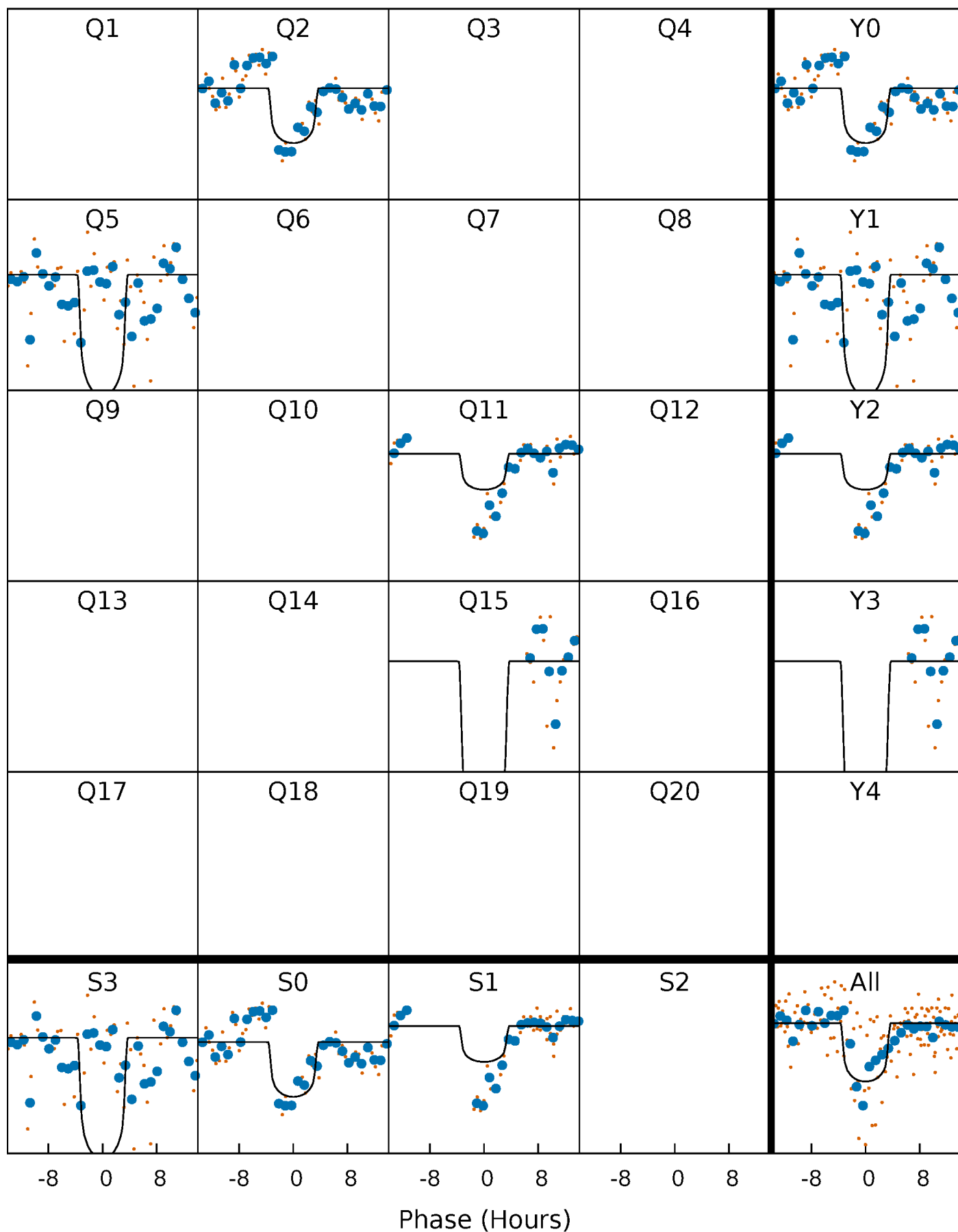
PDC Quarter-Phased Transit Curves

TCE 010332789-03 P=288.996240 Days $T_0=226.801475$ (BKJD)



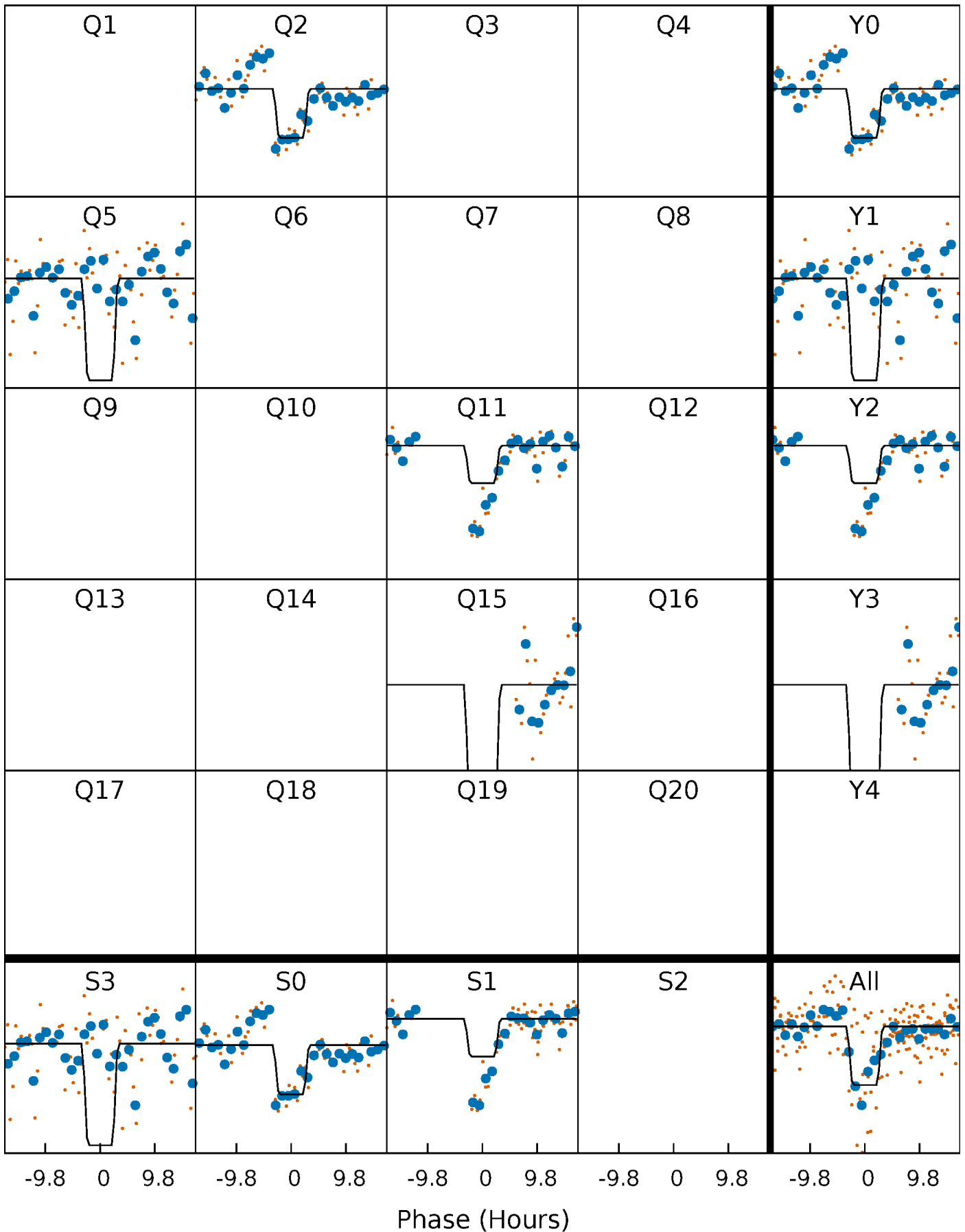
DV Quarter-Phased Transit Curves

TCE 010332789-03 $P=288.996240$ Days $T_0=226.801475$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

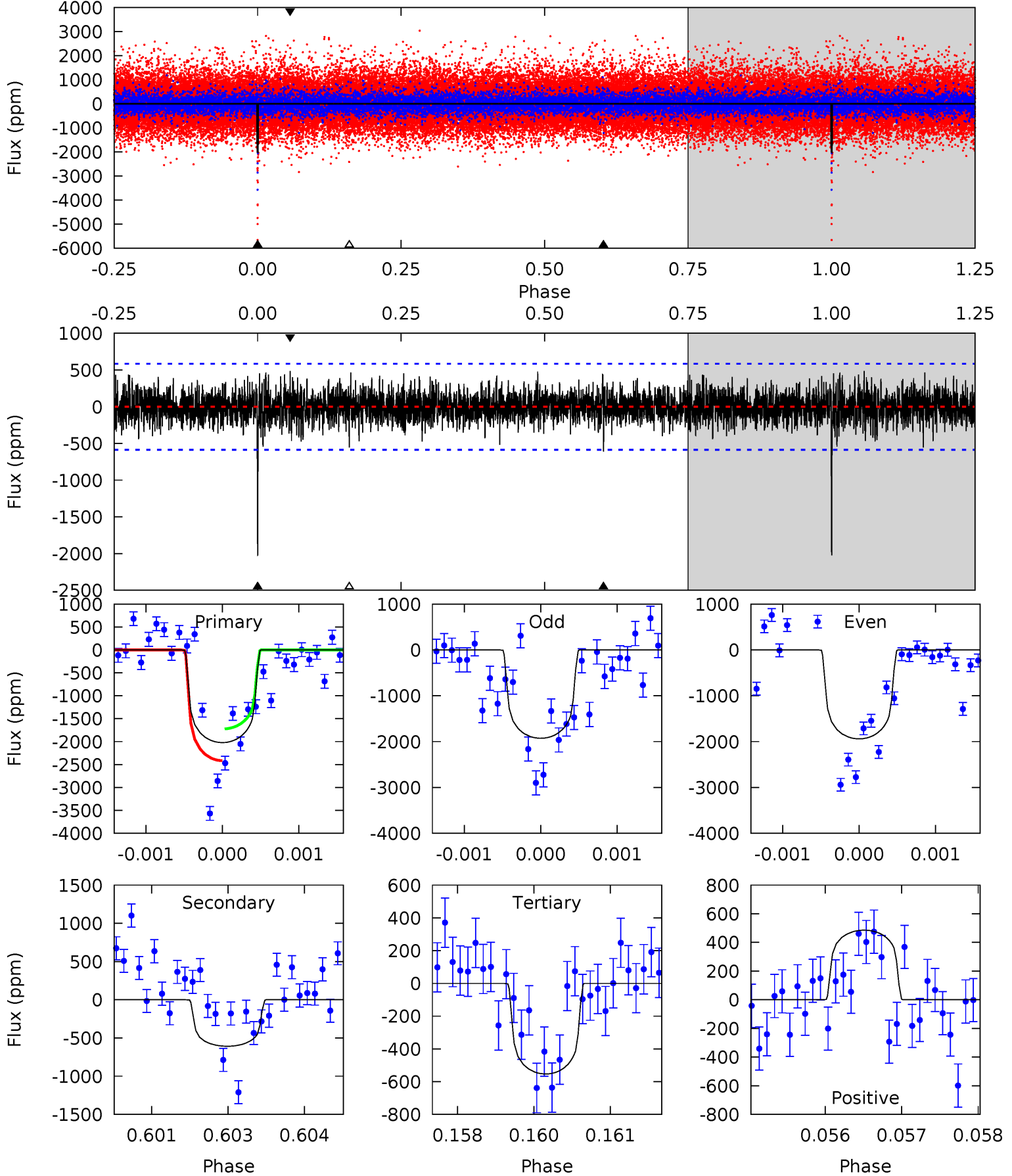
TCE 010332789-03 $P=288.991839$ Days $T_0=226.831735$ (BKJD)



DV Model-Shift Uniqueness Test

010332789-03, P = 288.996240 Days, E = 226.801475 Days

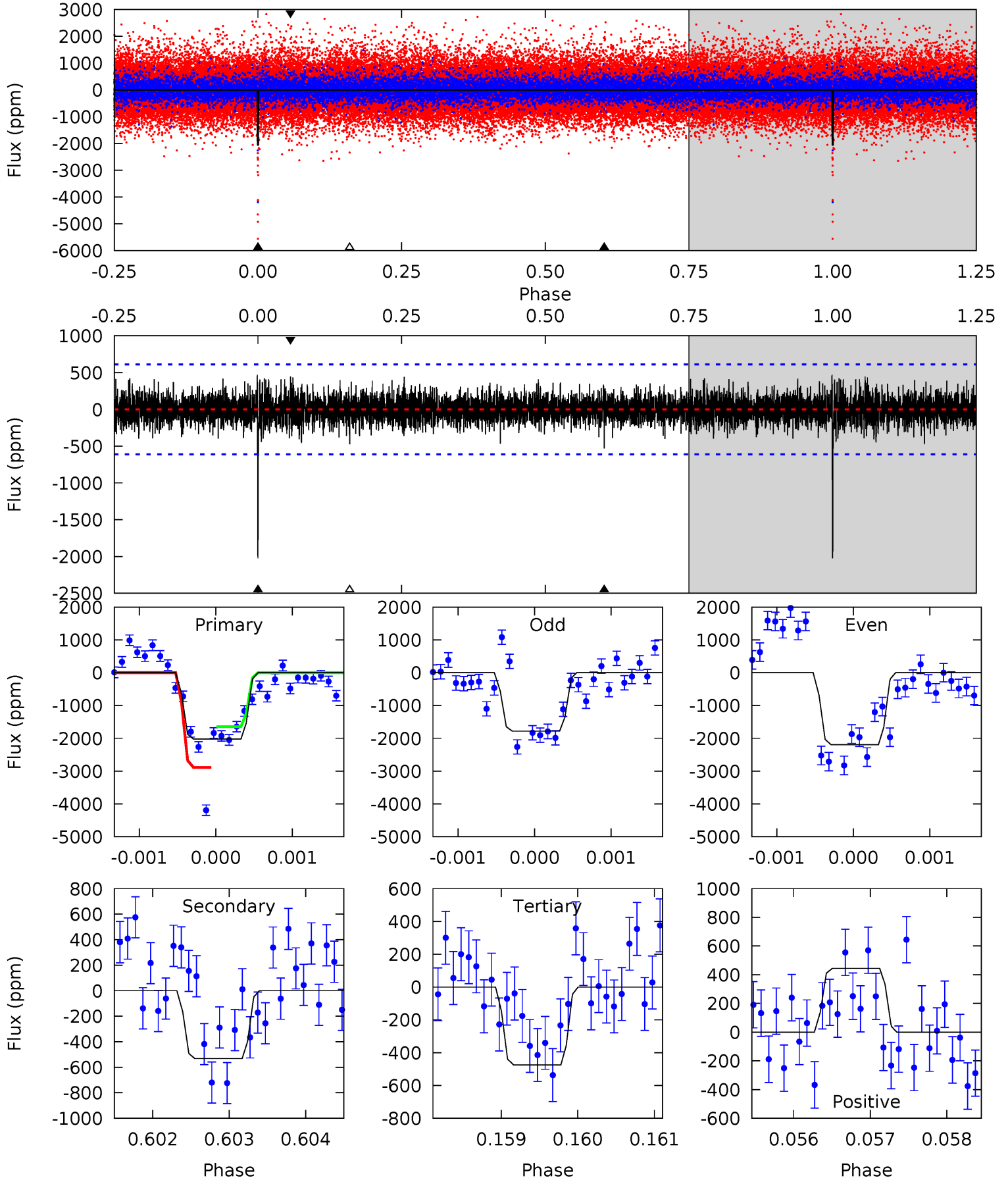
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.8	5.65	5.14	4.51	5.44	3.27	1.29	13.6	14.3	0.51	1.14	0.06	1.14	0.19	3.18



Alt Model-Shift Uniqueness Test

010332789-03, P = 288.991839 Days, E = 226.831735 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.1	4.76	4.25	3.98	5.47	3.32	1.10	13.9	14.2	0.51	0.78	1.81	0.97	0.19	5.23



Stellar Parameters For KIC 010332789

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6122^{+171}_{-214}	$4.471^{+0.050}_{-0.200}$	$-0.100^{+0.250}_{-0.300}$	$0.996^{+0.291}_{-0.104}$	$1.070^{+0.137}_{-0.137}$	$1.526^{+0.413}_{-0.788}$
	+3%/-3%	+1%/-4%	+250%/-300%	+29%/-10%	+13%/-13%	+27%/-52%
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 010332789-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-608 ± 108	$5.21^{+3.07}_{-2.51}$	411^{+29}_{-20}	4630^{+1535}_{-744}	9074^{+23233}_{-5459}
Alt.	-532 ± 112	$5.48^{+2.90}_{-2.71}$	411^{+26}_{-20}	4457^{+1576}_{-654}	7524^{+22023}_{-4559}

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

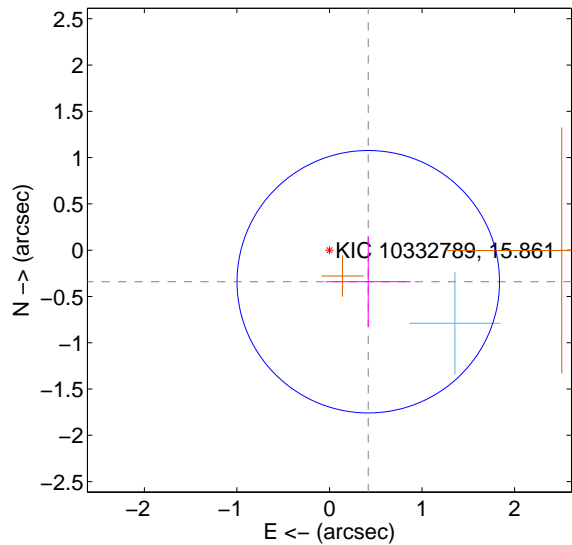
Supplemental centroid analysis for 010332789-03. Kepler magnitude: 15.86. Transit SNR 12.18

There are 1 quarters with good PRF difference image offsets

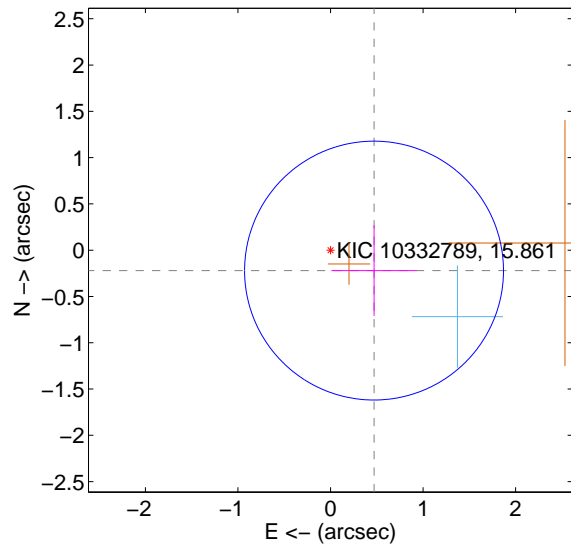
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.540 ± 0.473	1.14	-0.419 ± 0.461	-0.341 ± 0.490
PRF-fit source offset from KIC position	0.519 ± 0.466	1.11	-0.470 ± 0.461	-0.221 ± 0.490
photometric centroid source offset	0.32 ± 0.62	0.52	0.25 ± 0.65	-0.21 ± 0.57

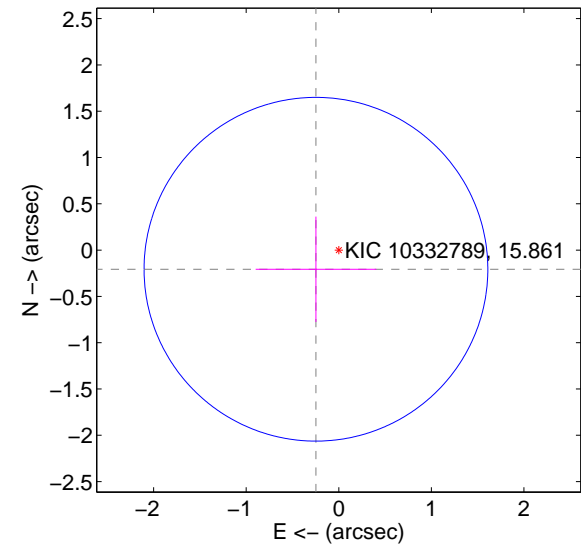
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

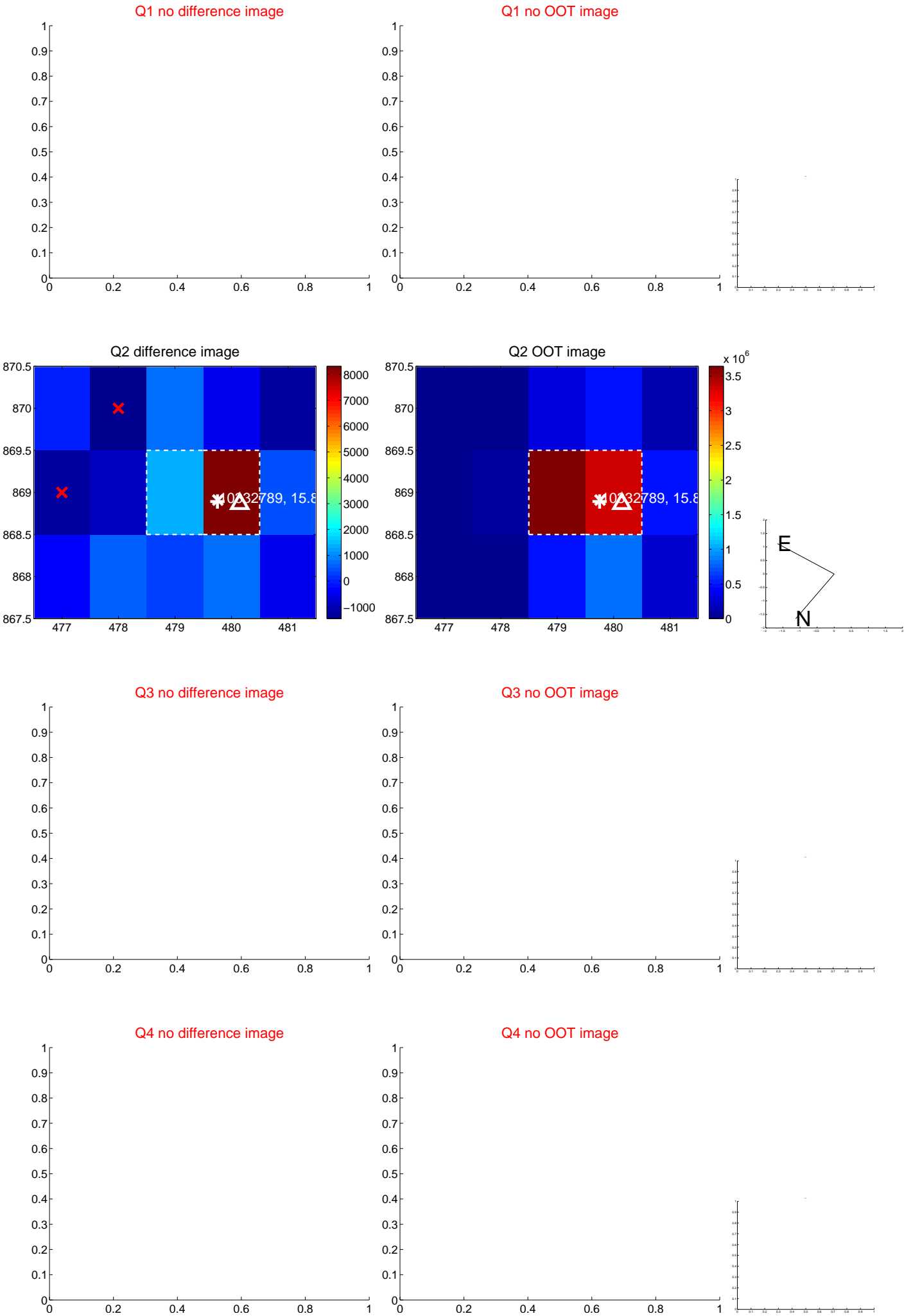


offset from photometric centroids

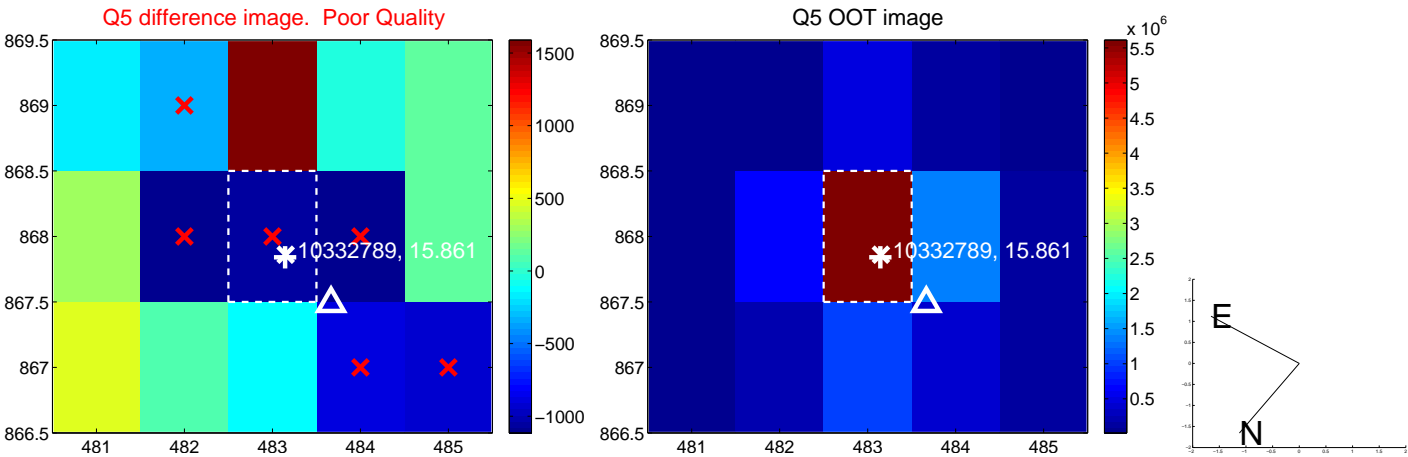


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



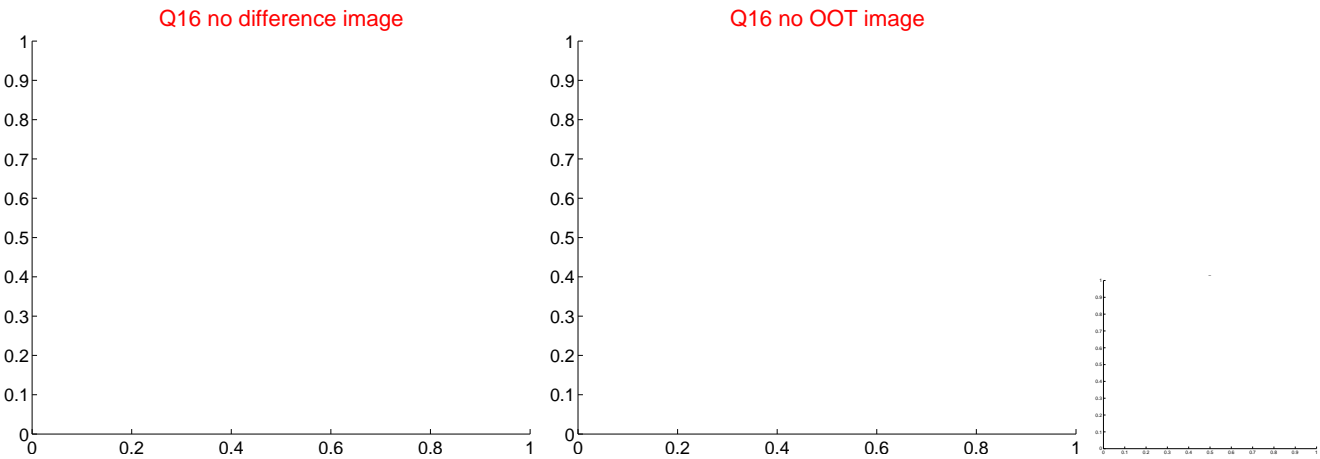
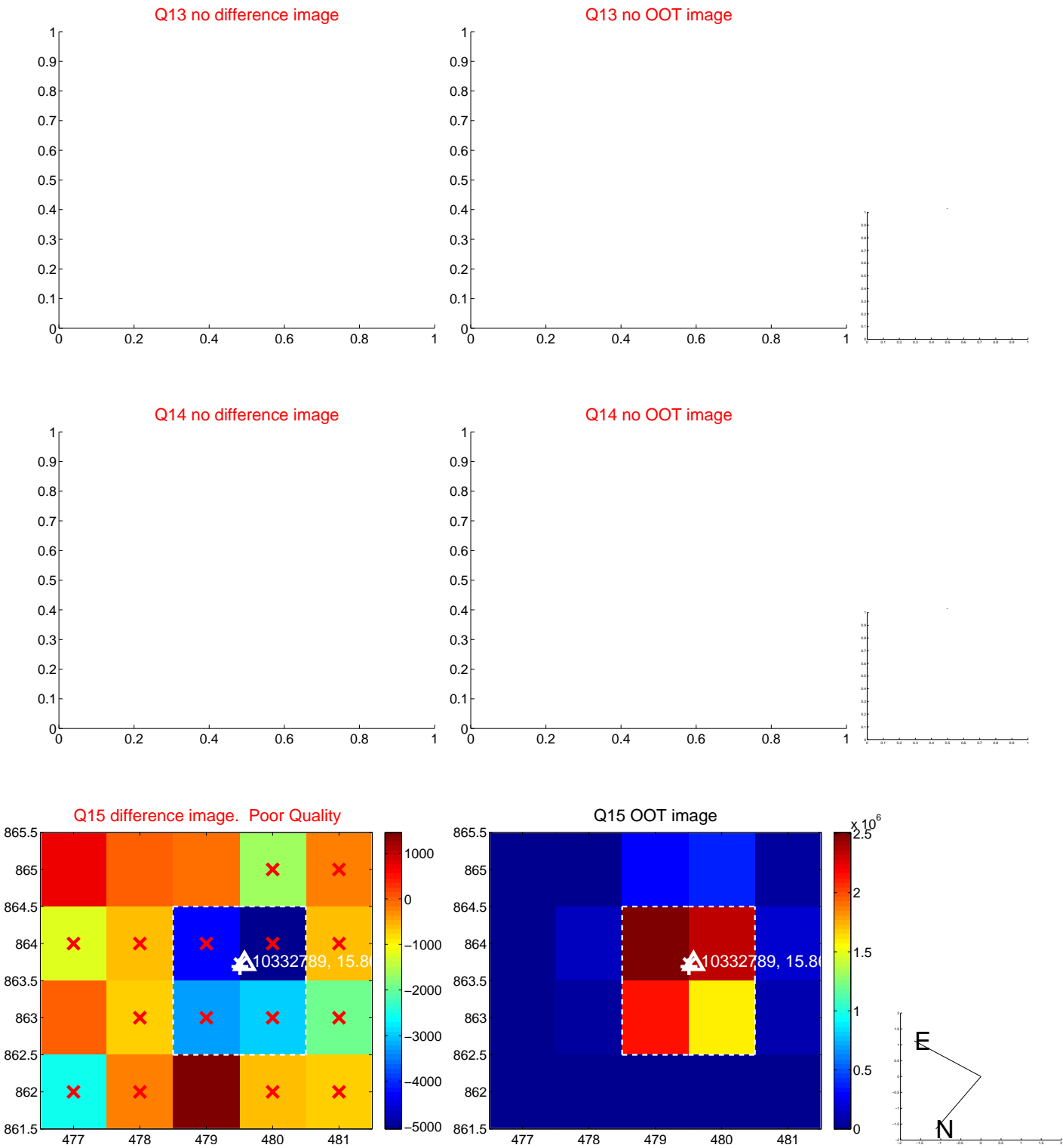
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



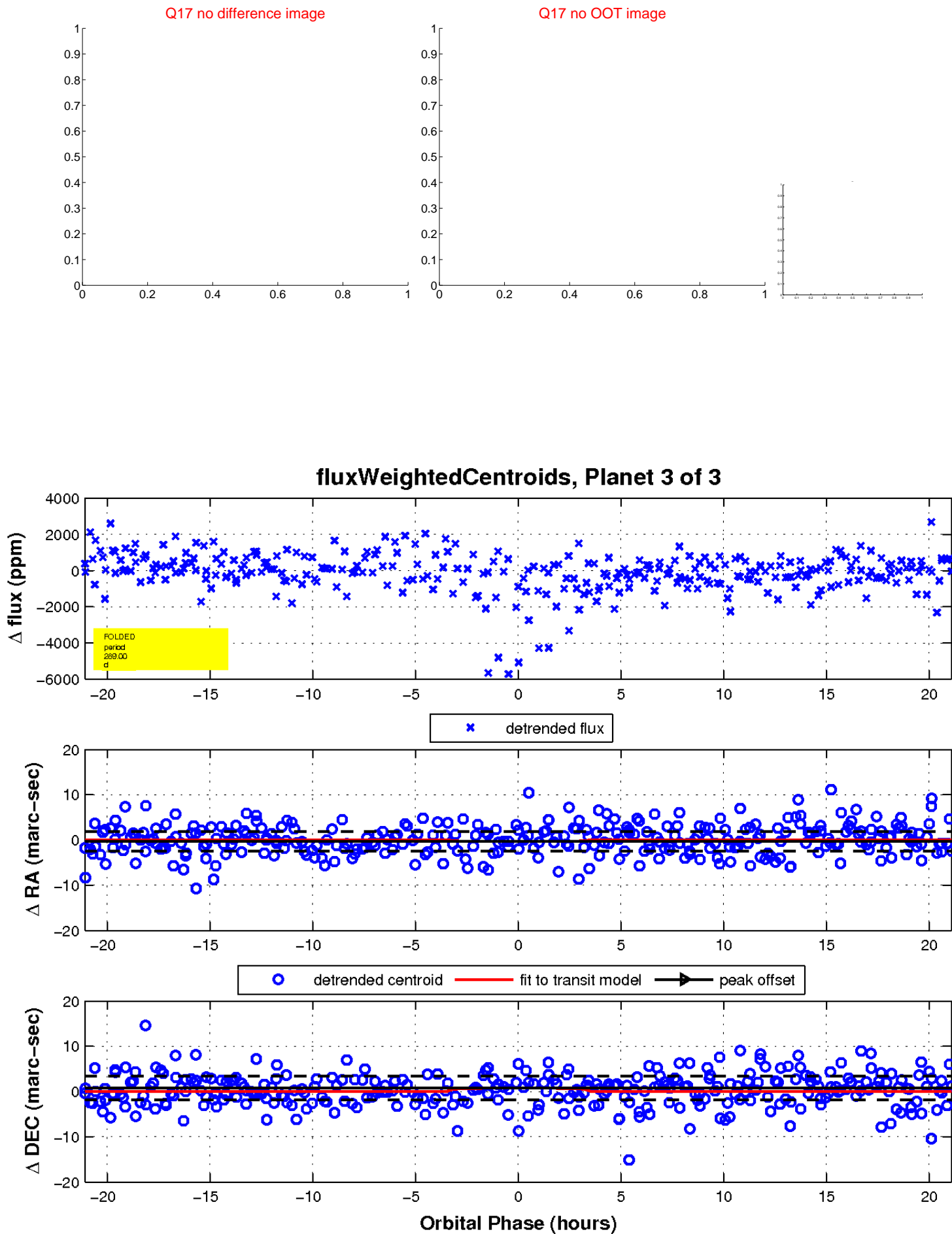
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

