

KIC 005255552

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})
005255552-01	OBS	6545.01	32.455502	137.597425	130741.4	7.404	2291.9	1273.2	0.54	4869	21.10	5.57
005255552-02	OBS	No	32.472492	155.409617	107820.7	3.828	1034.5	971.1	0.54	4869	17.73	5.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005255552-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT
005255552-02	OBS	FP	0.00	1	0	0	0	LPP_DV

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.

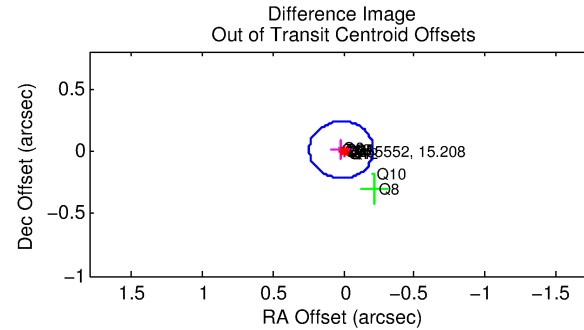
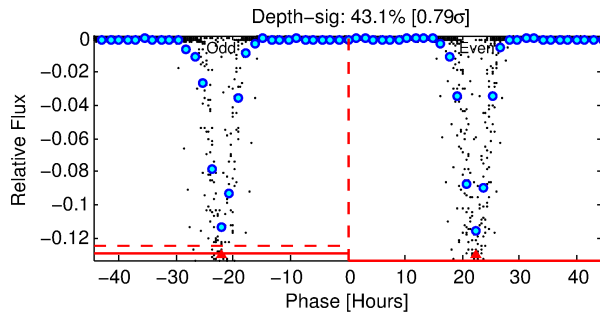
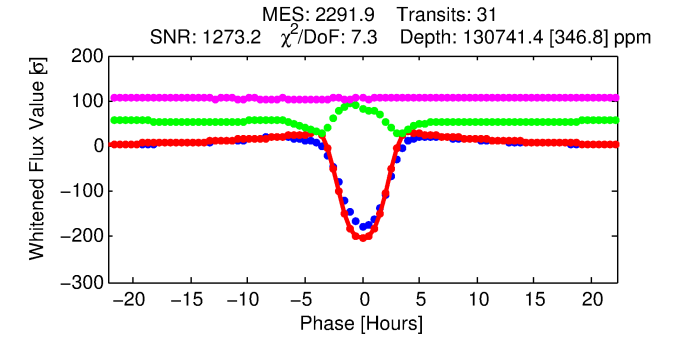
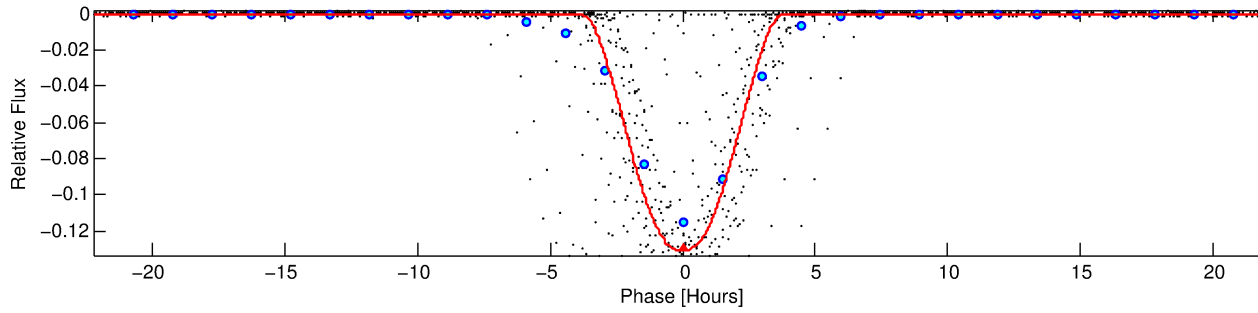
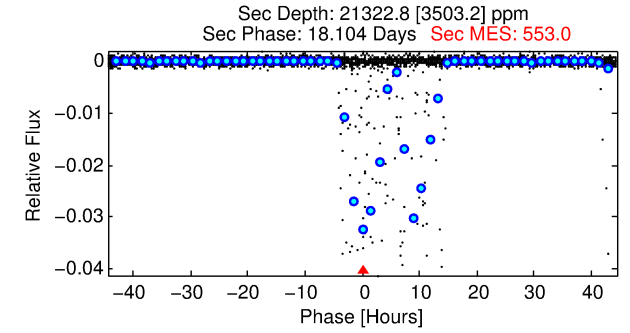
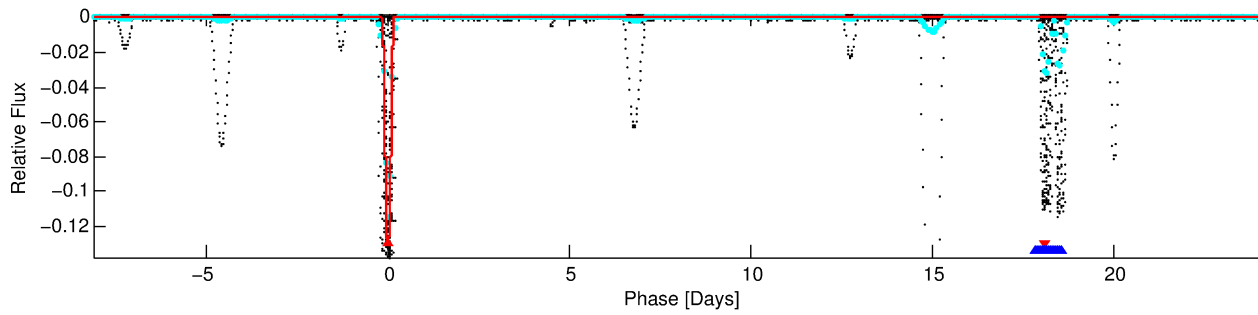
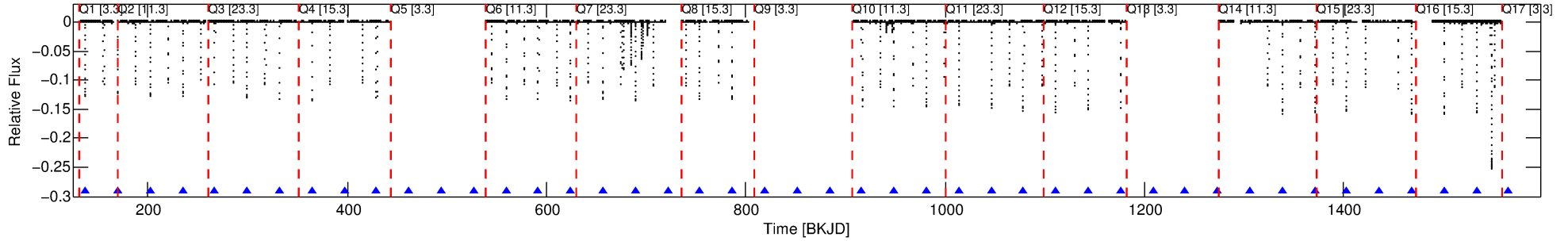
Ephemeris Match Information For 005255552-01

No Significant Match Found

DV One-Page Summary

KIC: 5255552 Candidate: 1 of 2 Period: 32.456 d
KOI: K06545.01 Corr: 0.977

Kp: 15.21 R*: 0.54 Rs Teff: 4869.0 K Logg: 4.71 Fe/H: -1.420



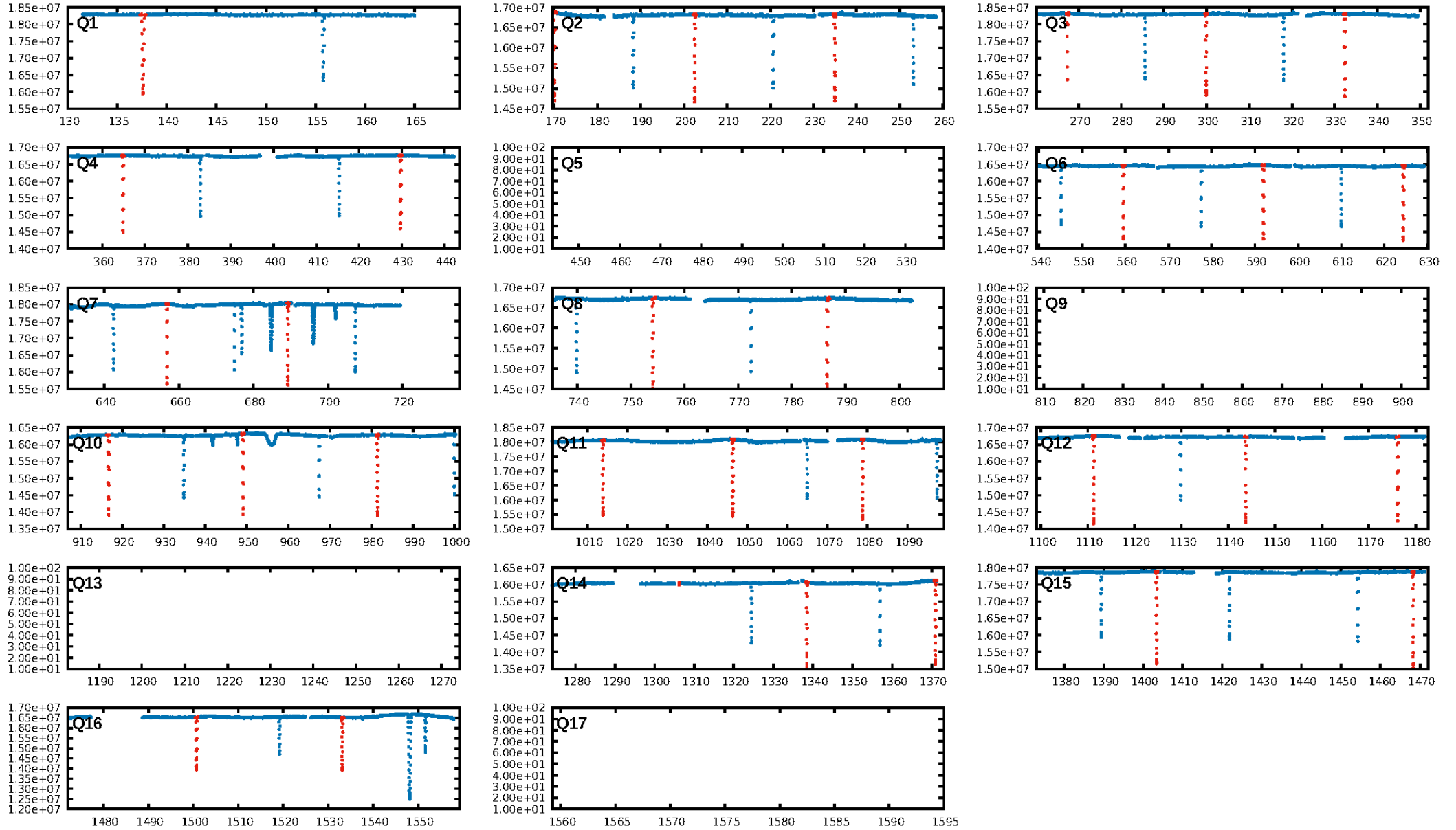
DV Fit Results:

Period = 32.45550 [0.00001] d
Epoch = 137.5974 [0.0002] BKJD
Rp/R* = 0.3560 [0.0010]
a/R* = 40.06 [0.09]
b = 0.64 [0.00]
Seff = 5.57 [0.81]
Teq = 392 [14] K
Rp = 21.10 [1.24] Re
a = 0.1633 [0.0089] AU
Ag = 703.21 [130.09] [5.40σ]
Teffp = 3118 [158] K [17.20σ]

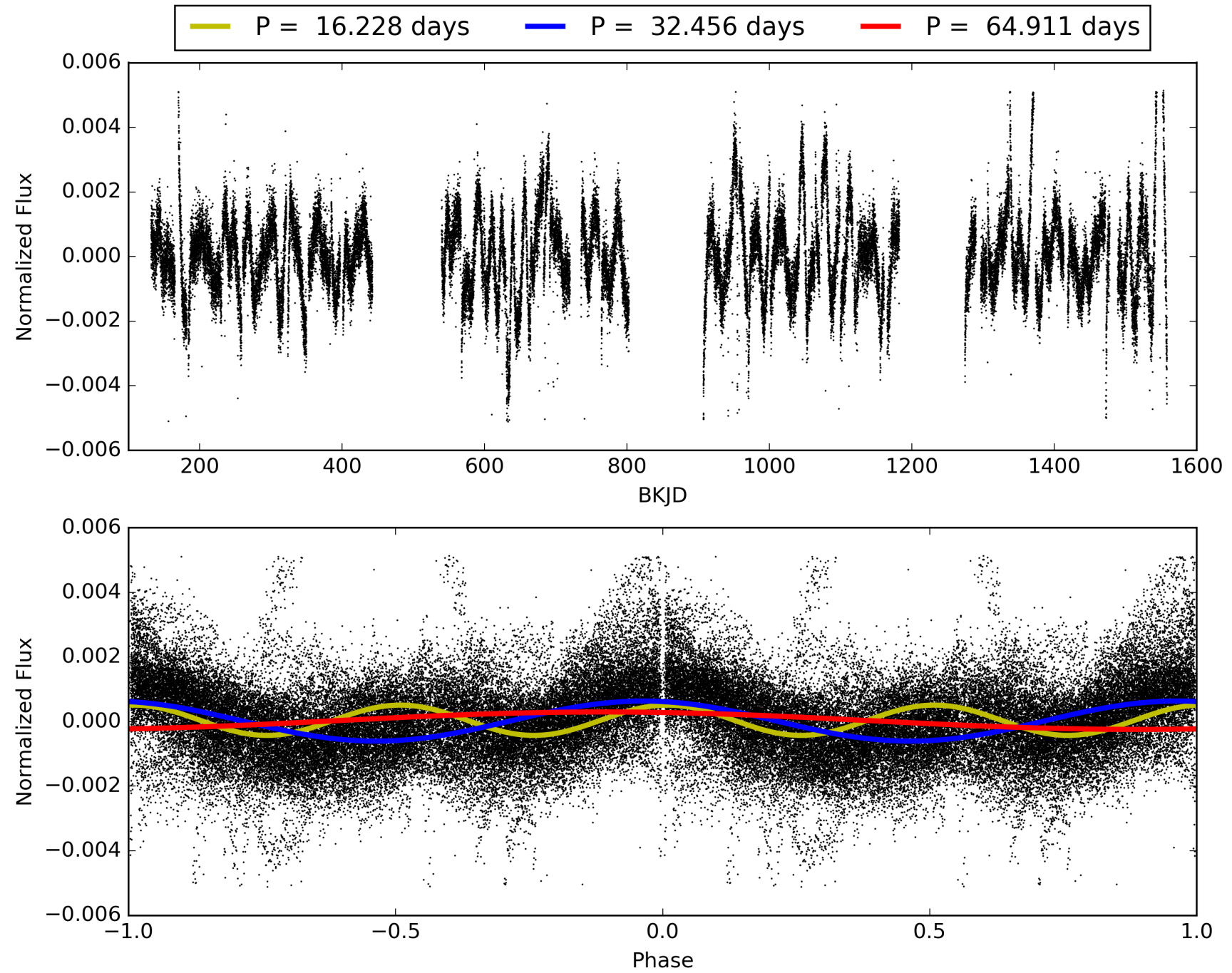
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 3.9% [0.05σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [30/30]
GhostDiagnostic-chr: 2.541
Centroid-sig: 0.0%
Centroid-so: 0.082 arcsec [18.76σ]
OotOffset-rm: 0.020 arcsec [0.26σ]
KicOffset-rm: 0.174 arcsec [2.42σ]
OotOffset-st: 3/4/4/1 [12]
KicOffset-st: 3/4/4/1 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 1.00 [12/12]

TCE 005255552-01, PDC Light Curves

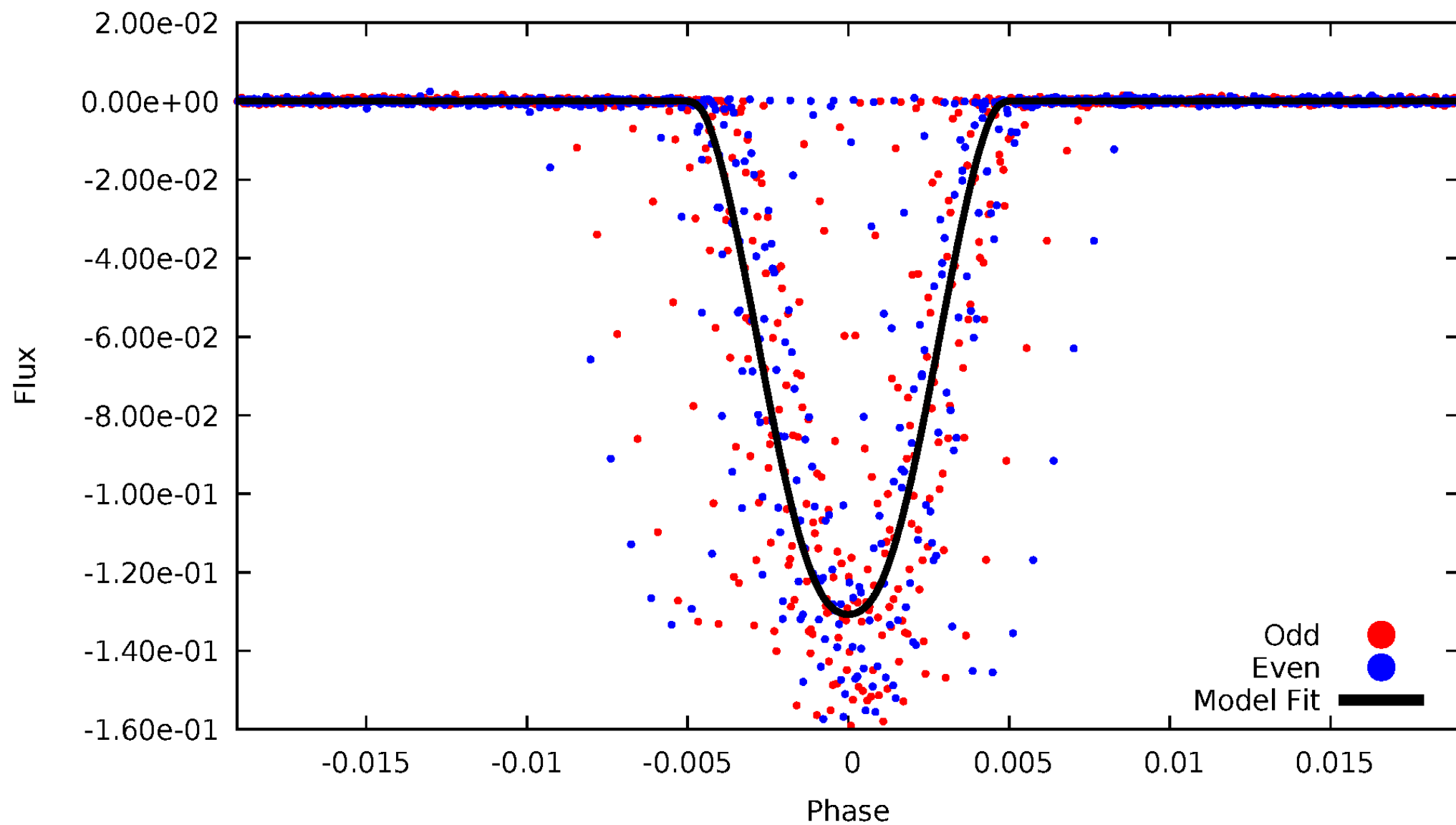


TCE 005255552-01



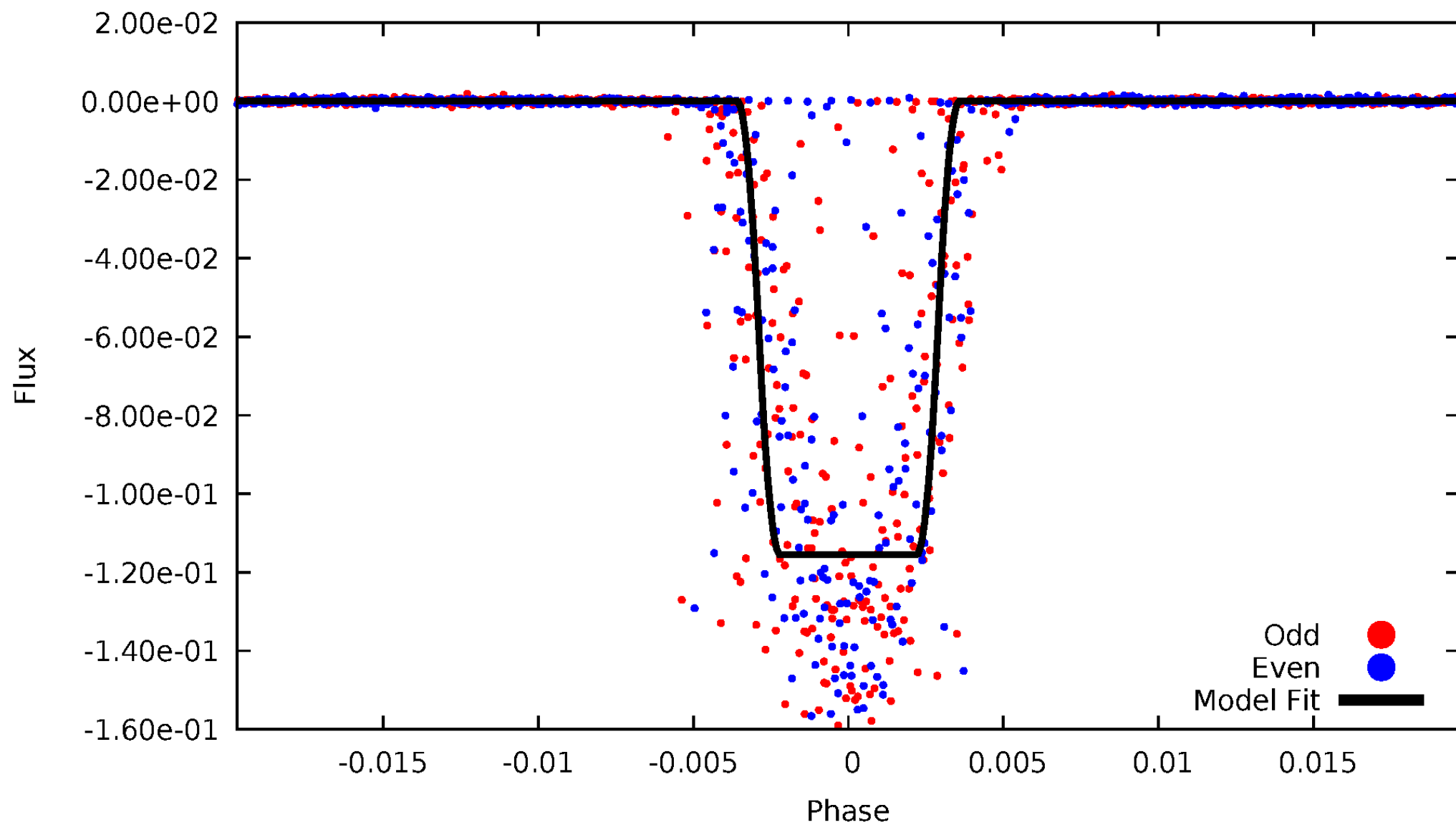
DV Odd/Even

TCE 005255552-01



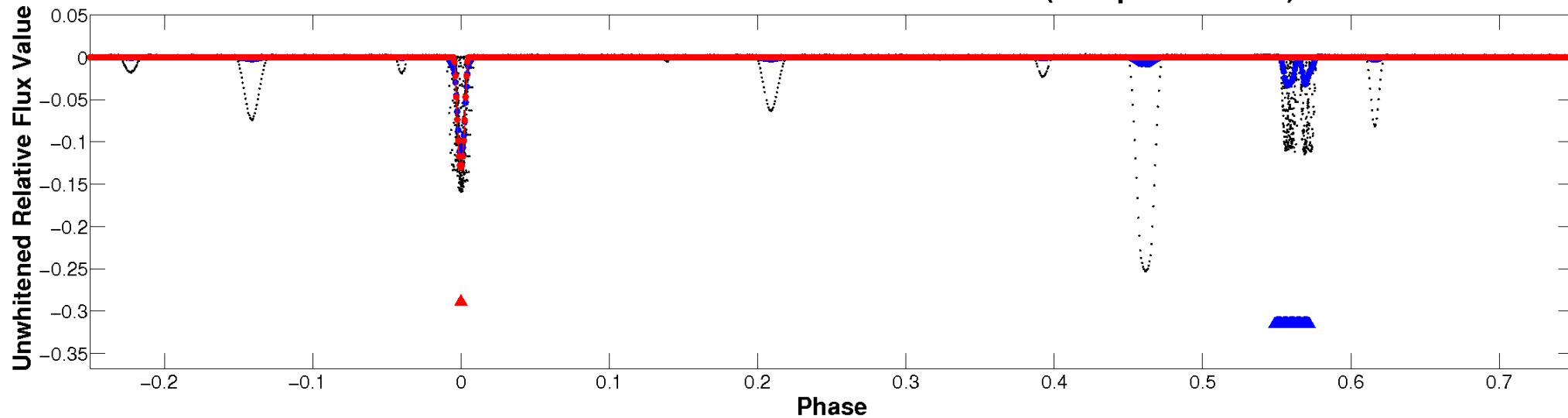
ALT Odd/Even

TCE 005255552-01

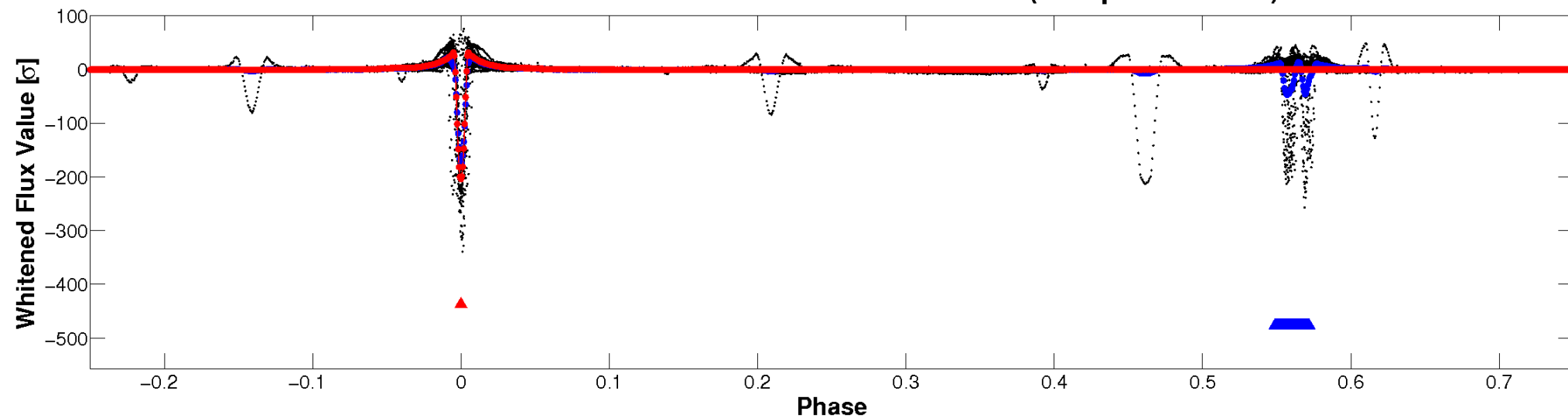


Non-Whitened Vs. Whitened Light Curve

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

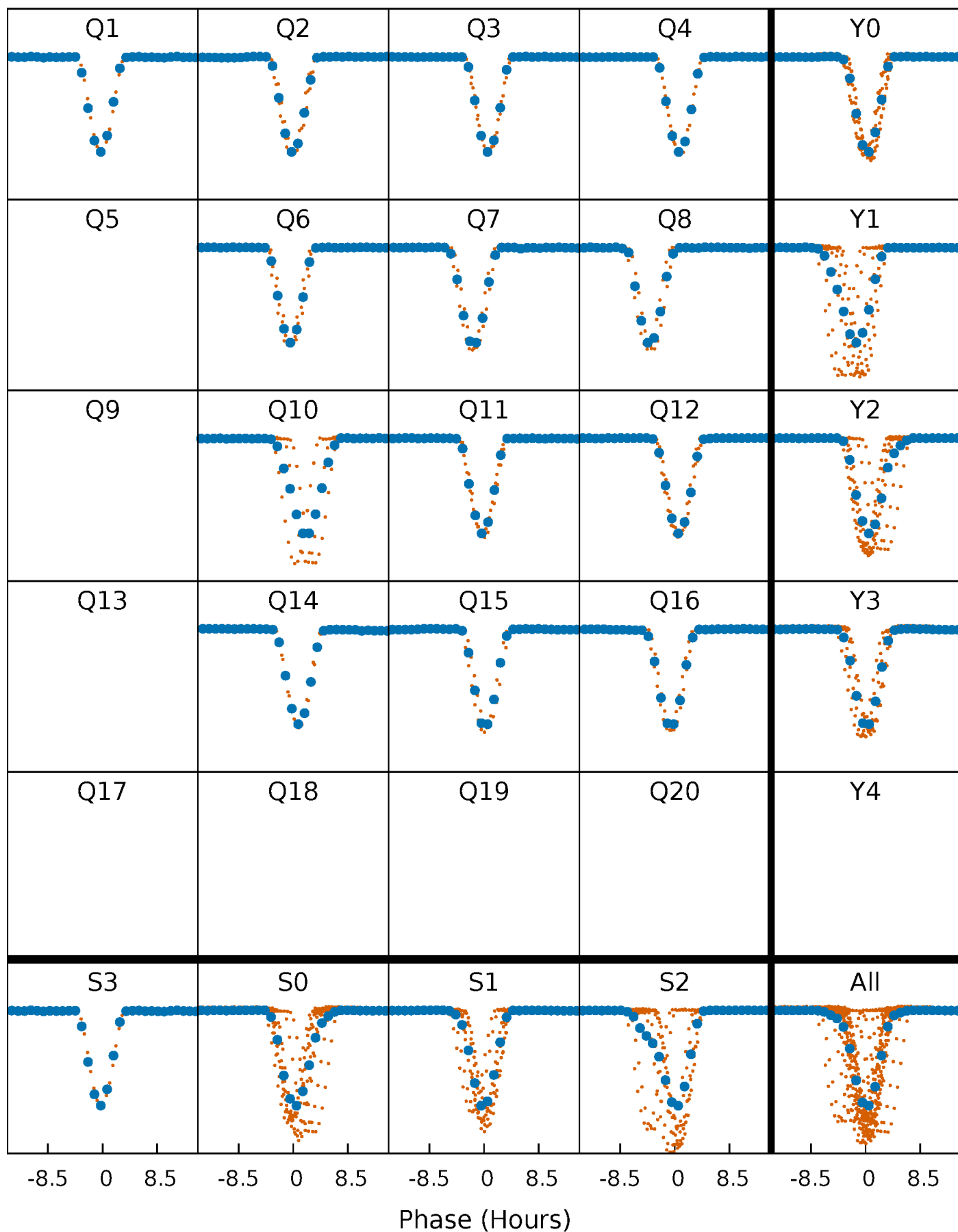


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



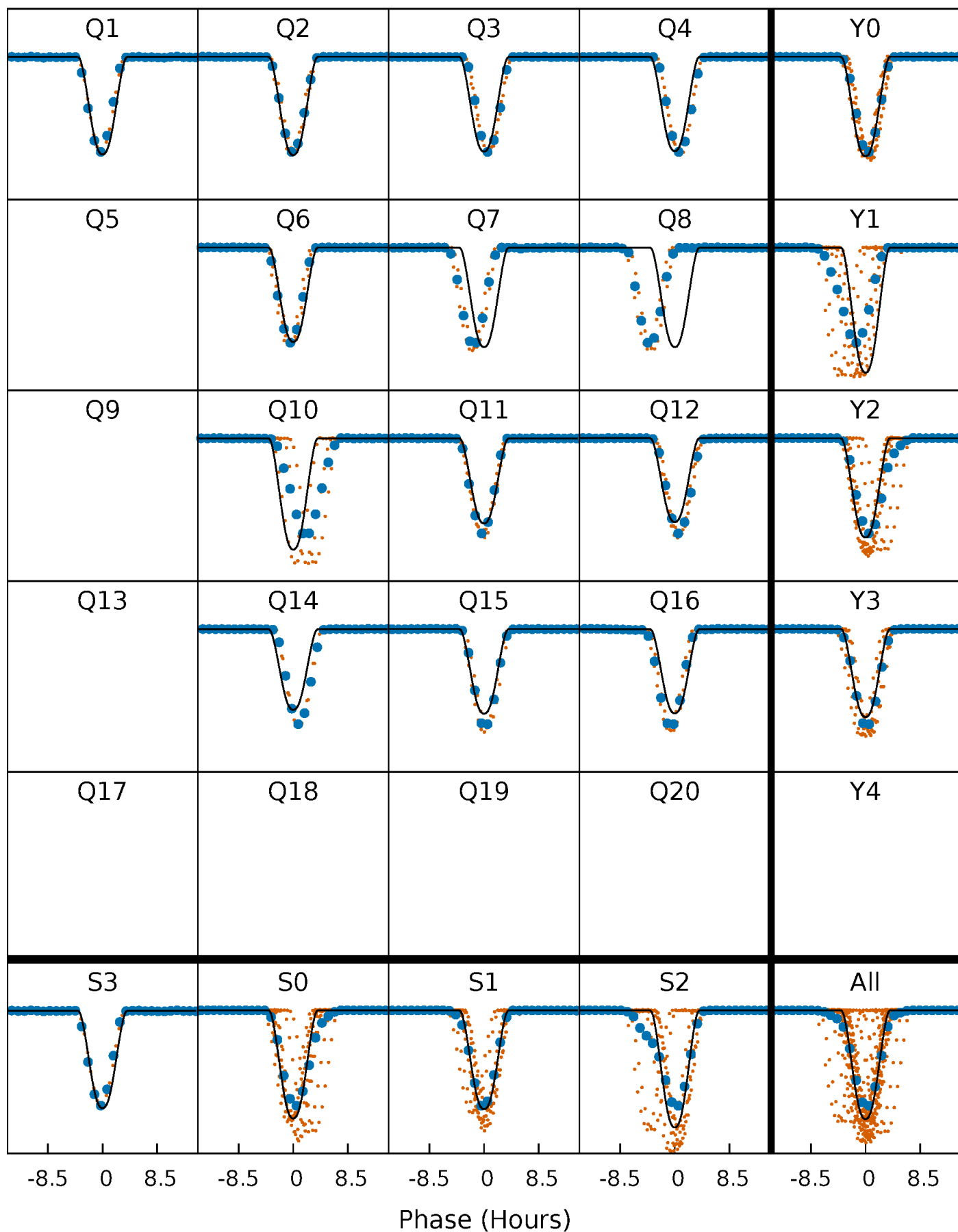
PDC Quarter-Phased Transit Curves

TCE 005255552-01 P= 32.455502 Days $T_0=137.597425$ (BKJD)



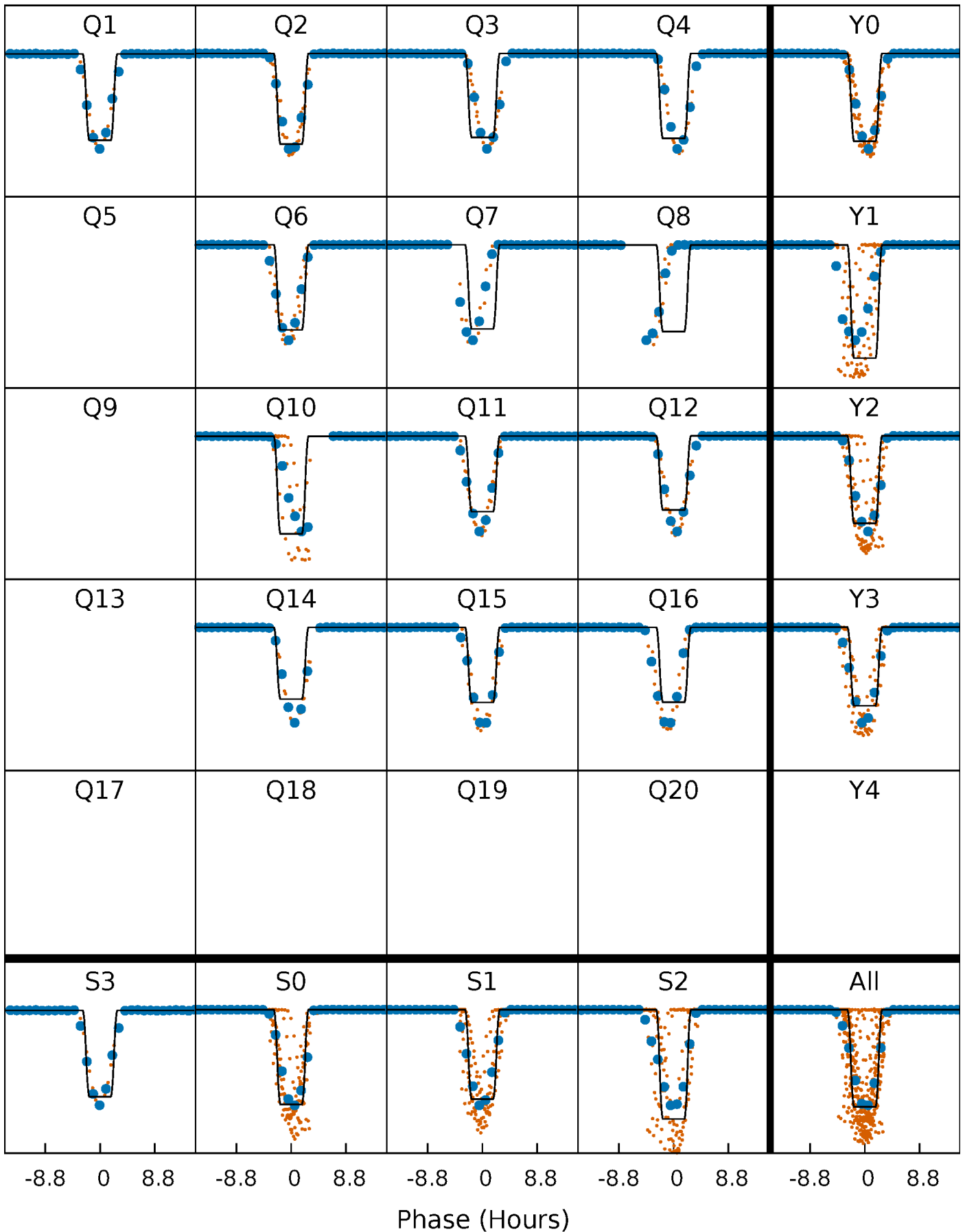
DV Quarter-Phased Transit Curves

TCE 005255552-01 P= 32.455502 Days $T_0=137.597425$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

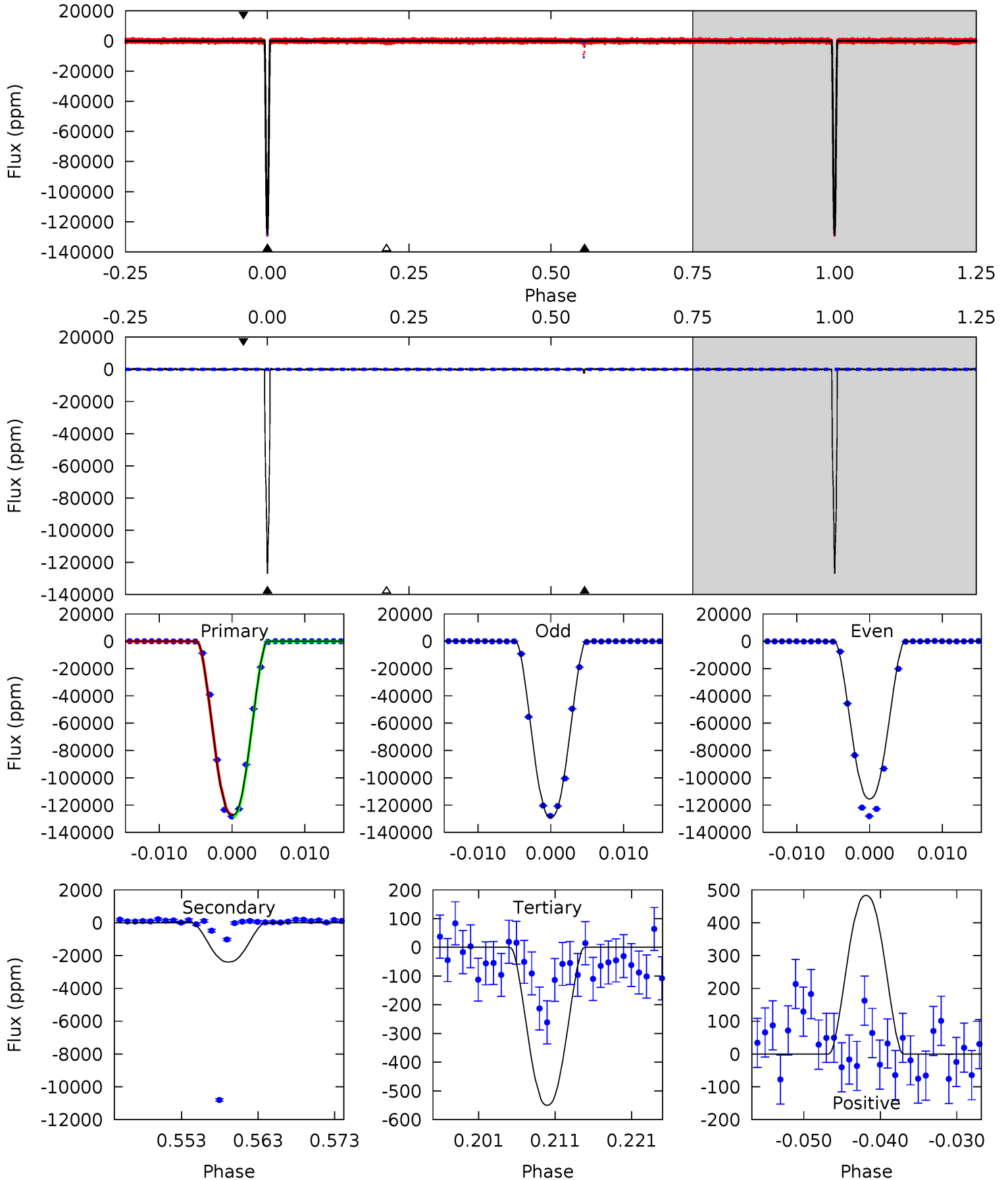
TCE 00525552-01 P= 32.455989 Days $T_0=137.590448$ (BKJD)



DV Model-Shift Uniqueness Test

005255552-01, P = 32.455502 Days, E = 105.141923 Days

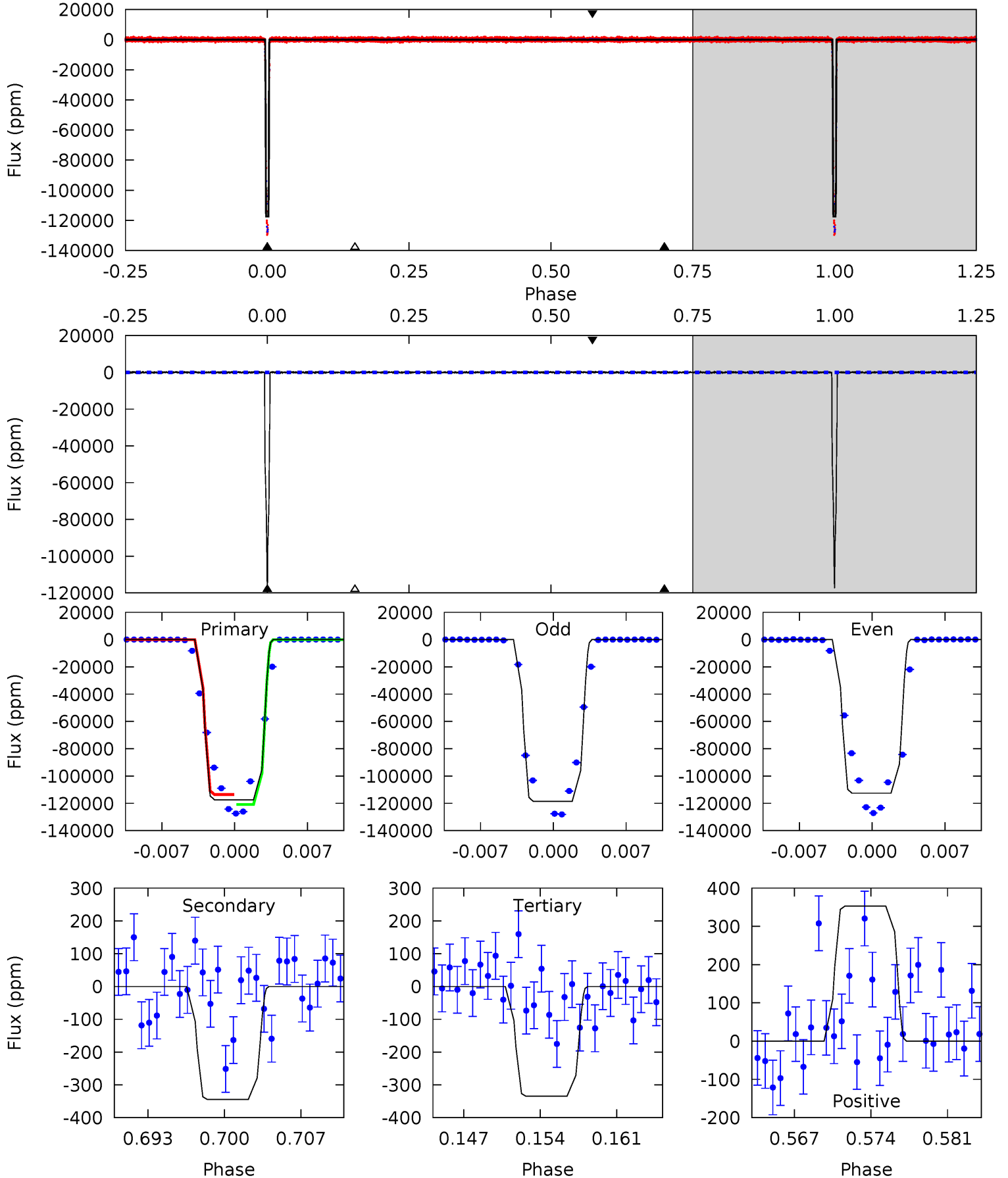
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1954	36.7	8.43	7.40	5.03	2.57	2.01	1945	1946	28.2	29.3	108.9	0.95	0.00	14.8



Alt Model-Shift Uniqueness Test

005255552-01, P = 32.455989 Days, E = 105.134459 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1354	3.97	3.86	4.07	5.09	2.70	1.11	1350	1350	0.11	-0.09	35.8	0.95	0.00	41.6



Stellar Parameters For KIC 005255552

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4869^{+144}_{-144}	$4.710^{+0.049}_{-0.025}$	$-1.420^{+0.300}_{-0.300}$	$0.543^{+0.025}_{-0.032}$	$0.552^{+0.036}_{-0.019}$	$4.852^{+0.868}_{-0.467}$
	+3%/-3%	+1%/-1%	+21%/-21%	+5%/-6%	+7%/-3%	+18%/-10%
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 005255552-01 / KOI 6545.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2386 ± 65	$21.09^{+0.64}_{-0.74}$	545^{+18}_{-19}	2586^{+49}_{-47}	80^{+5}_{-4}
Alt.	-345 ± 87	$20.08^{+0.62}_{-0.69}$	544^{+18}_{-17}	2083^{+66}_{-69}	12^{+4}_{-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 $A_{\text{obs}} \gg 1.0$

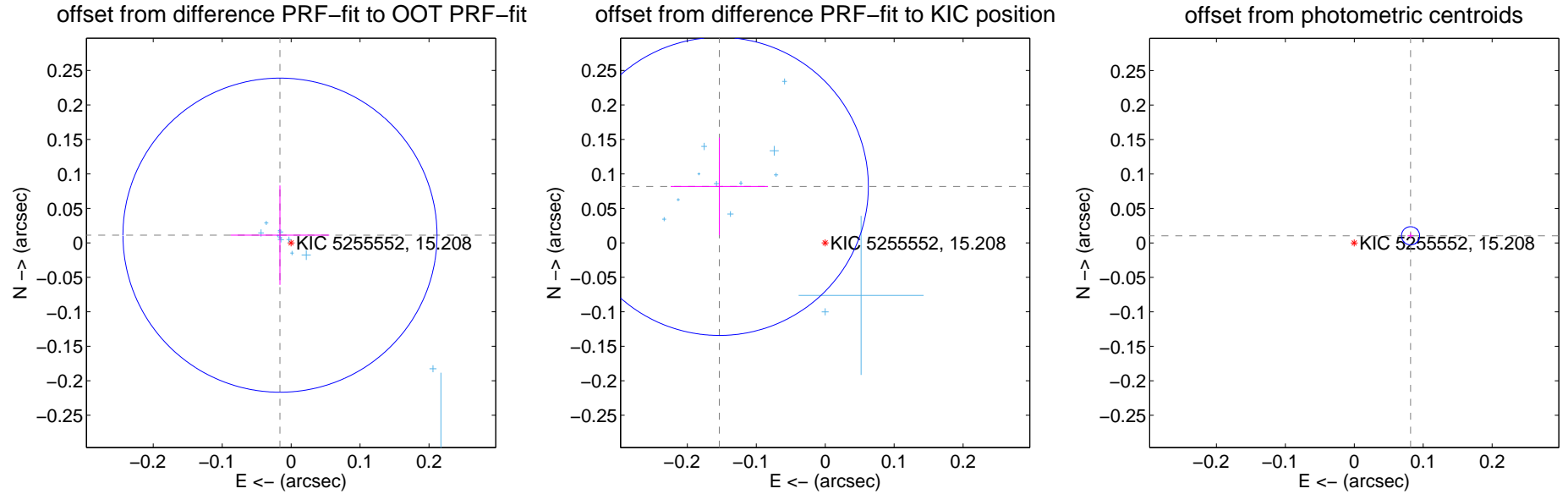
DV Centroid Data

Supplemental centroid analysis for 005255552-01. Kepler magnitude: 15.21. Transit SNR 1273.21

There are 12 quarters with good PRF difference image offsets

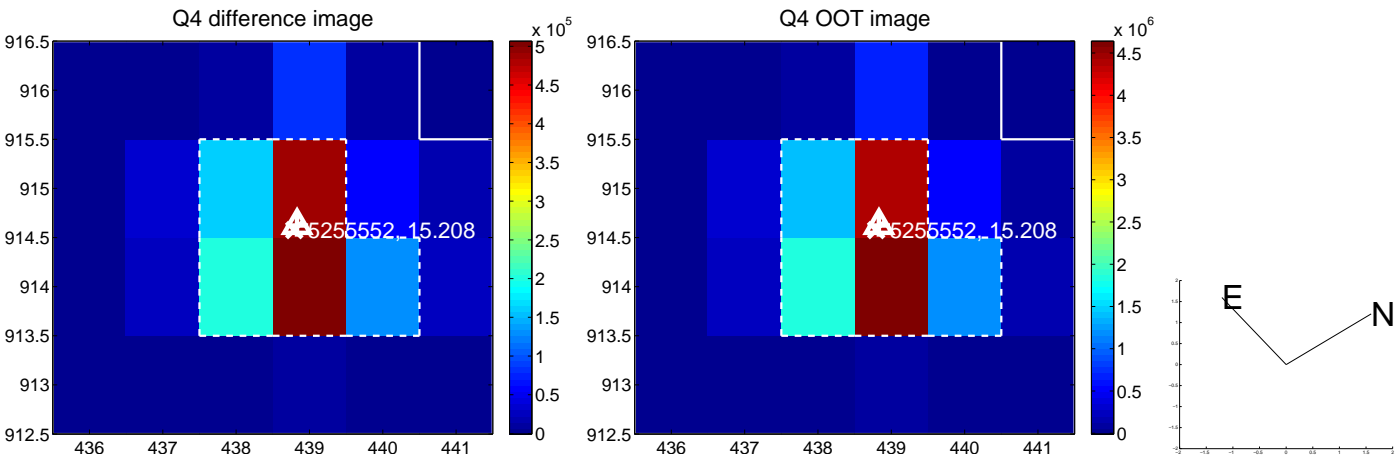
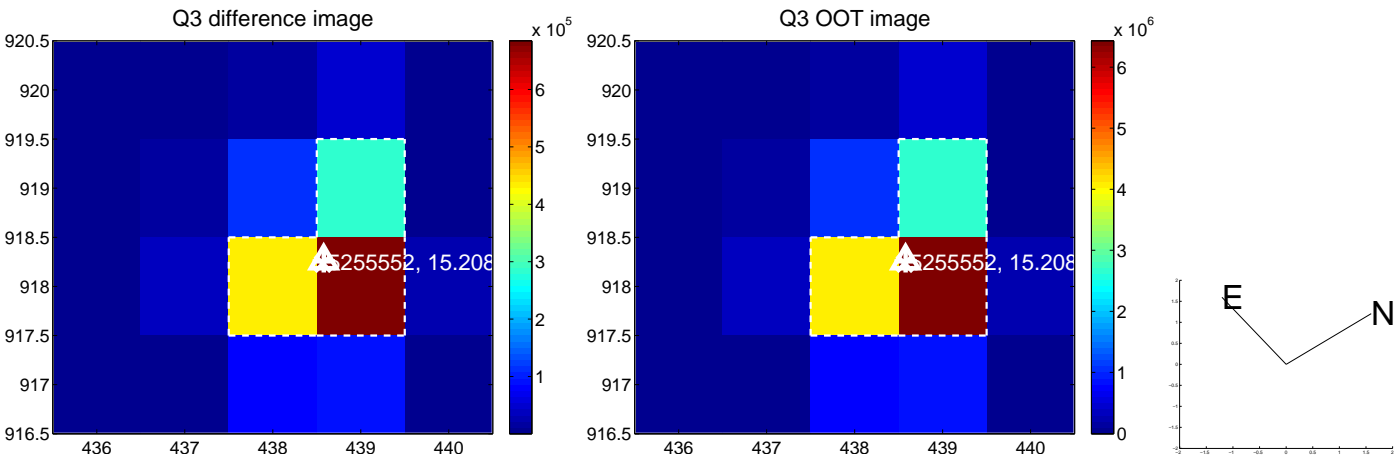
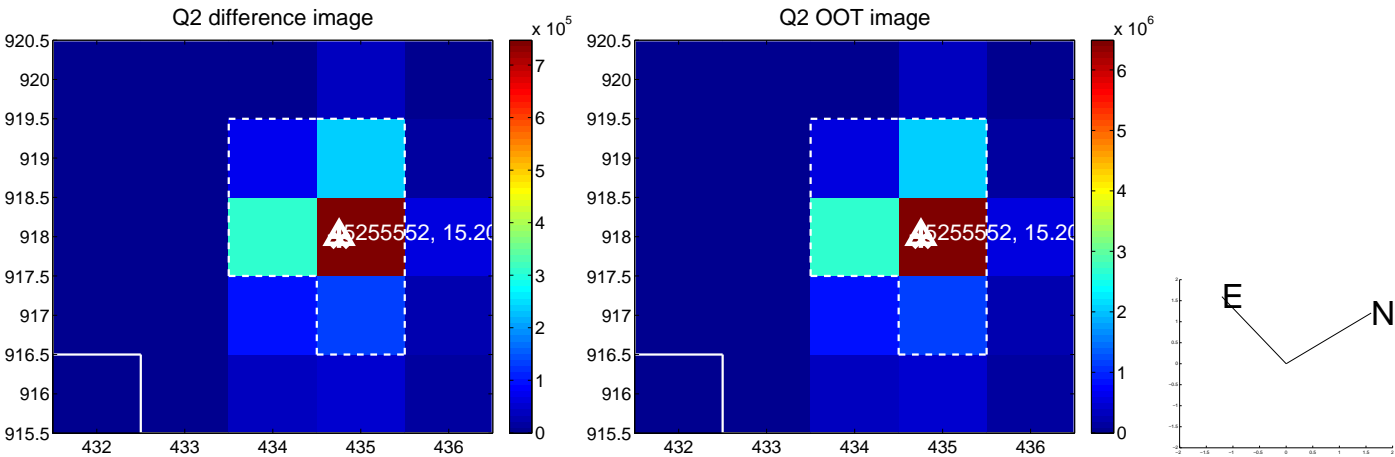
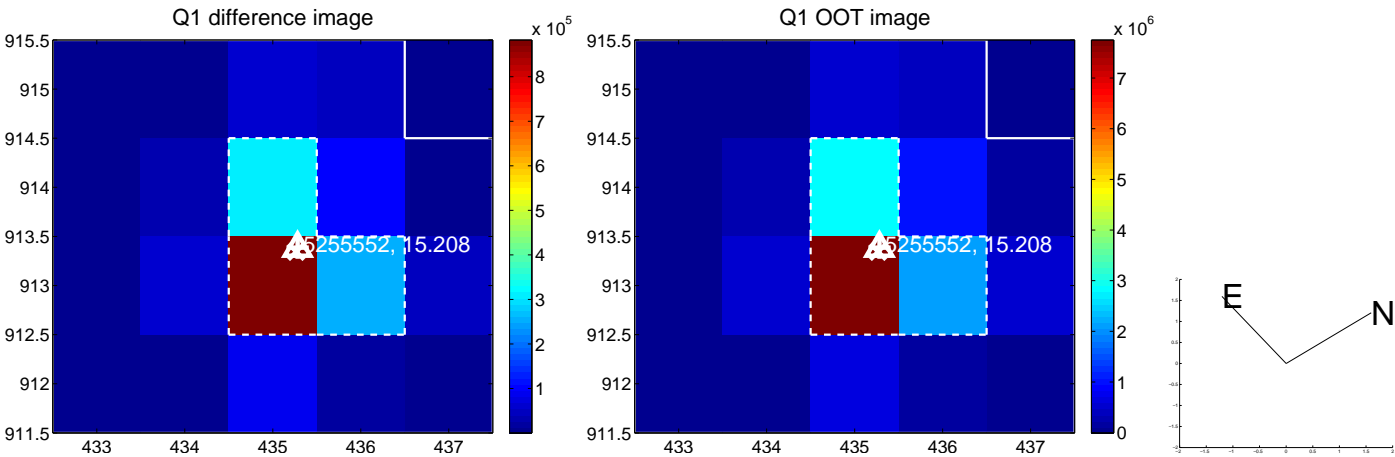
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.020 ± 0.076	0.26	0.016 ± 0.071	0.011 ± 0.072
PRF-fit source offset from KIC position	0.174 ± 0.072	2.42	0.154 ± 0.071	0.082 ± 0.071
photometric centroid source offset	0.08 ± 0.00	18.76	-0.08 ± 0.00	0.01 ± 0.00

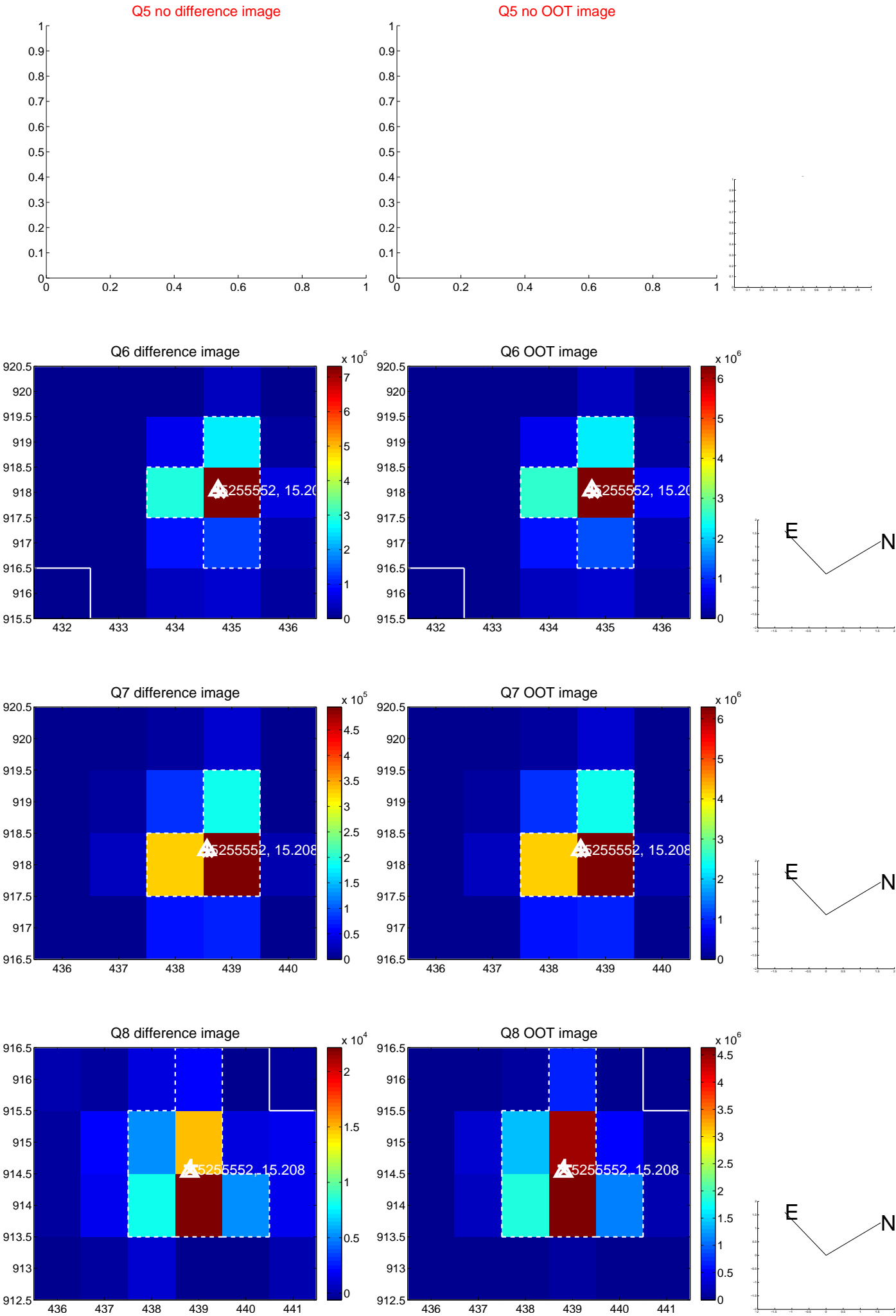


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

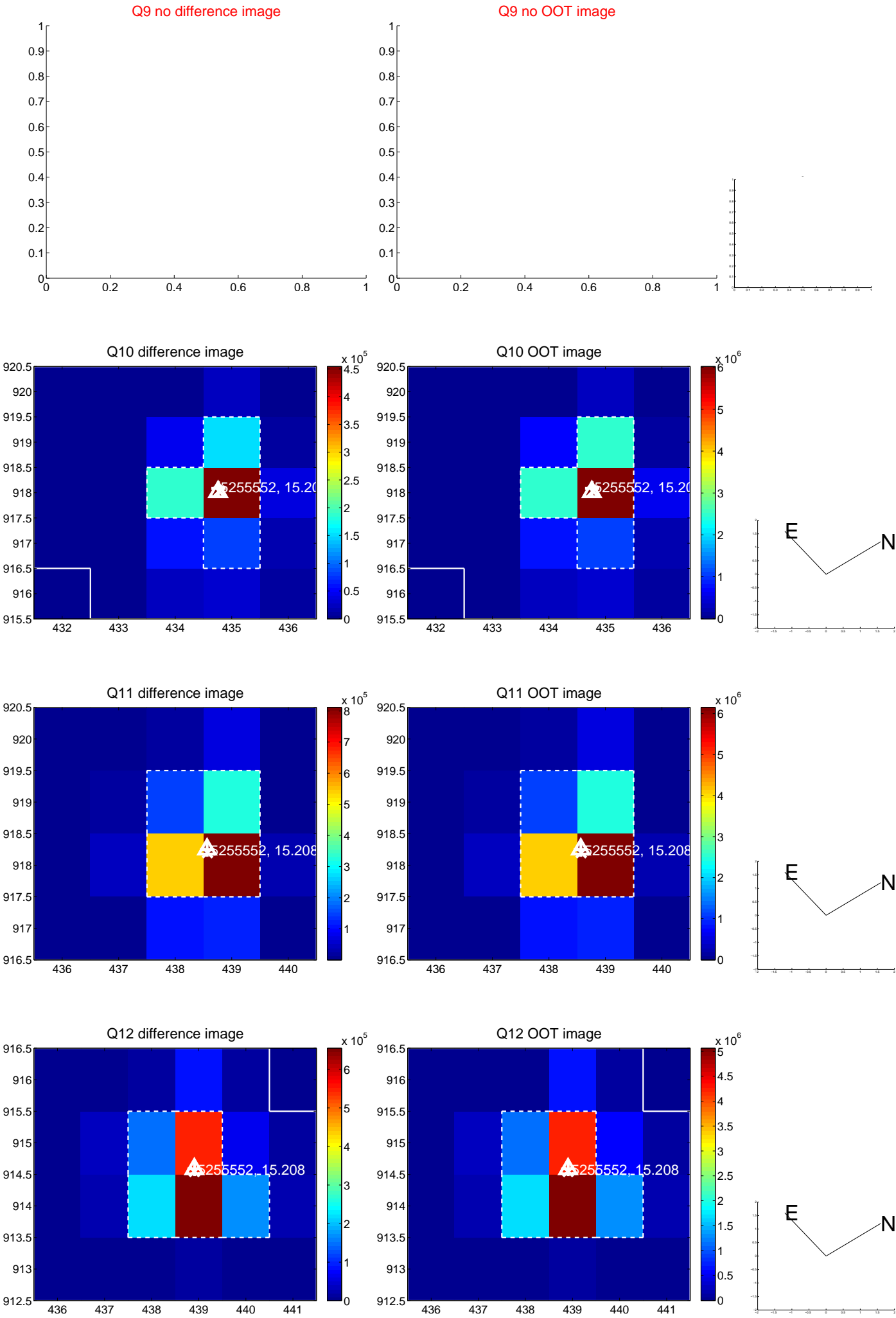
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



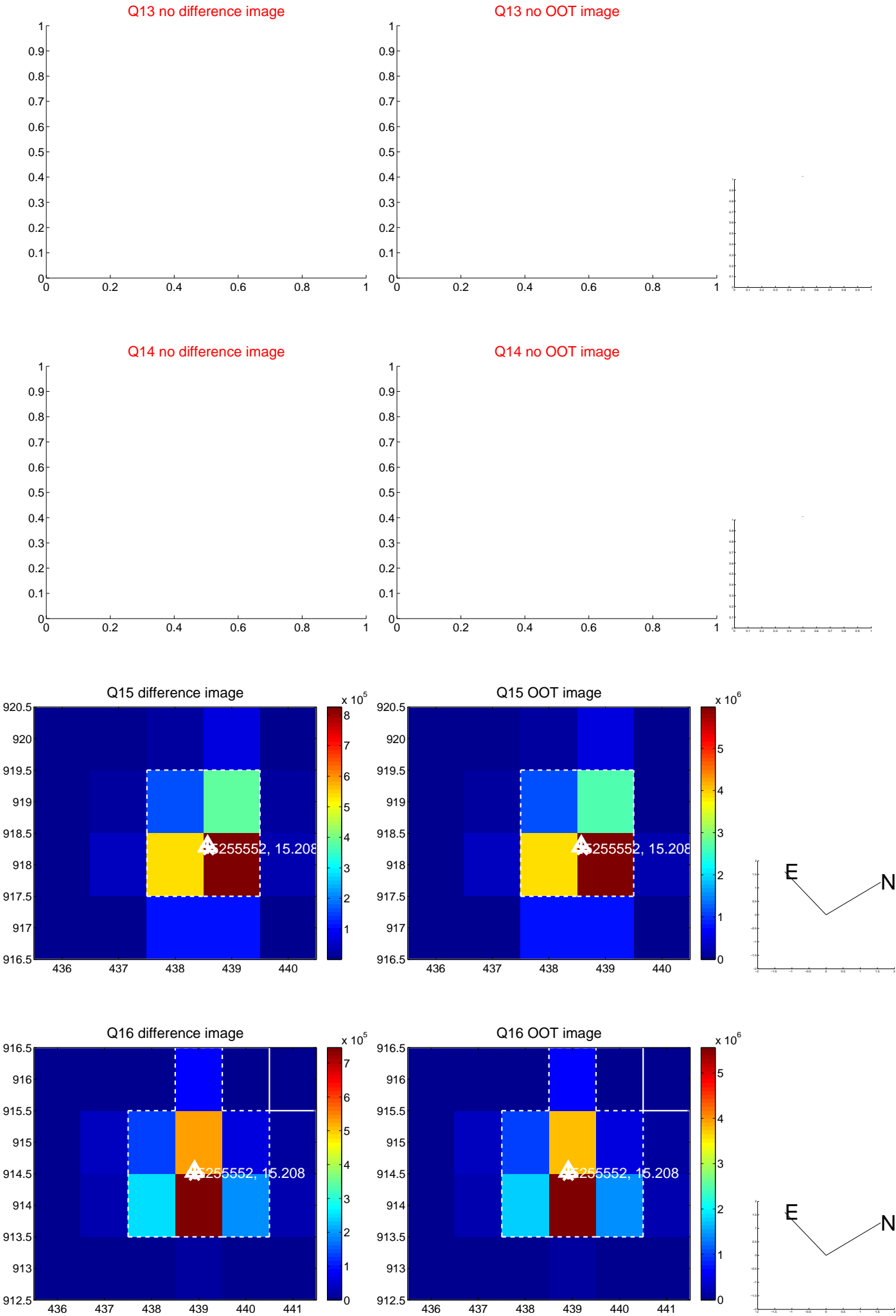
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



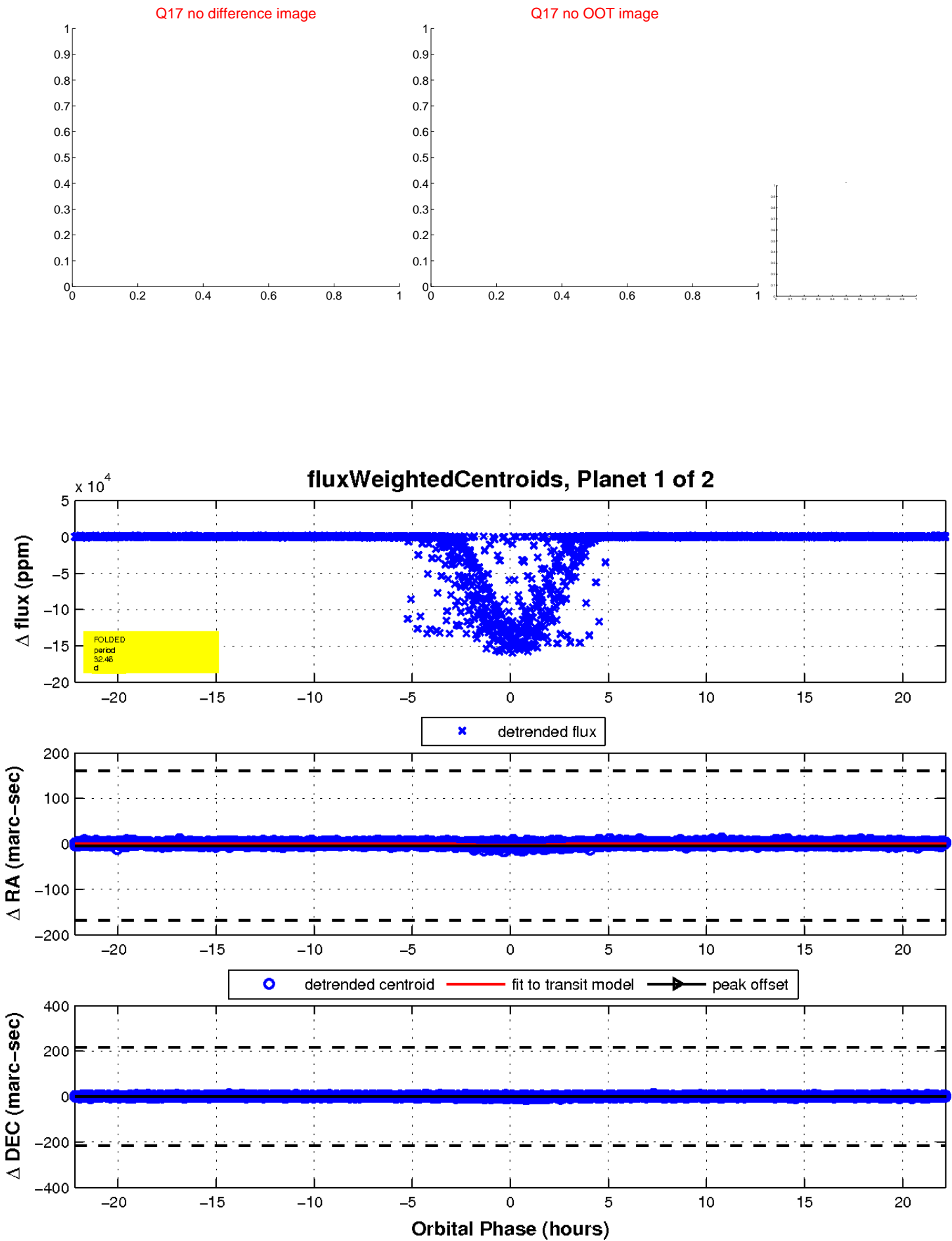
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

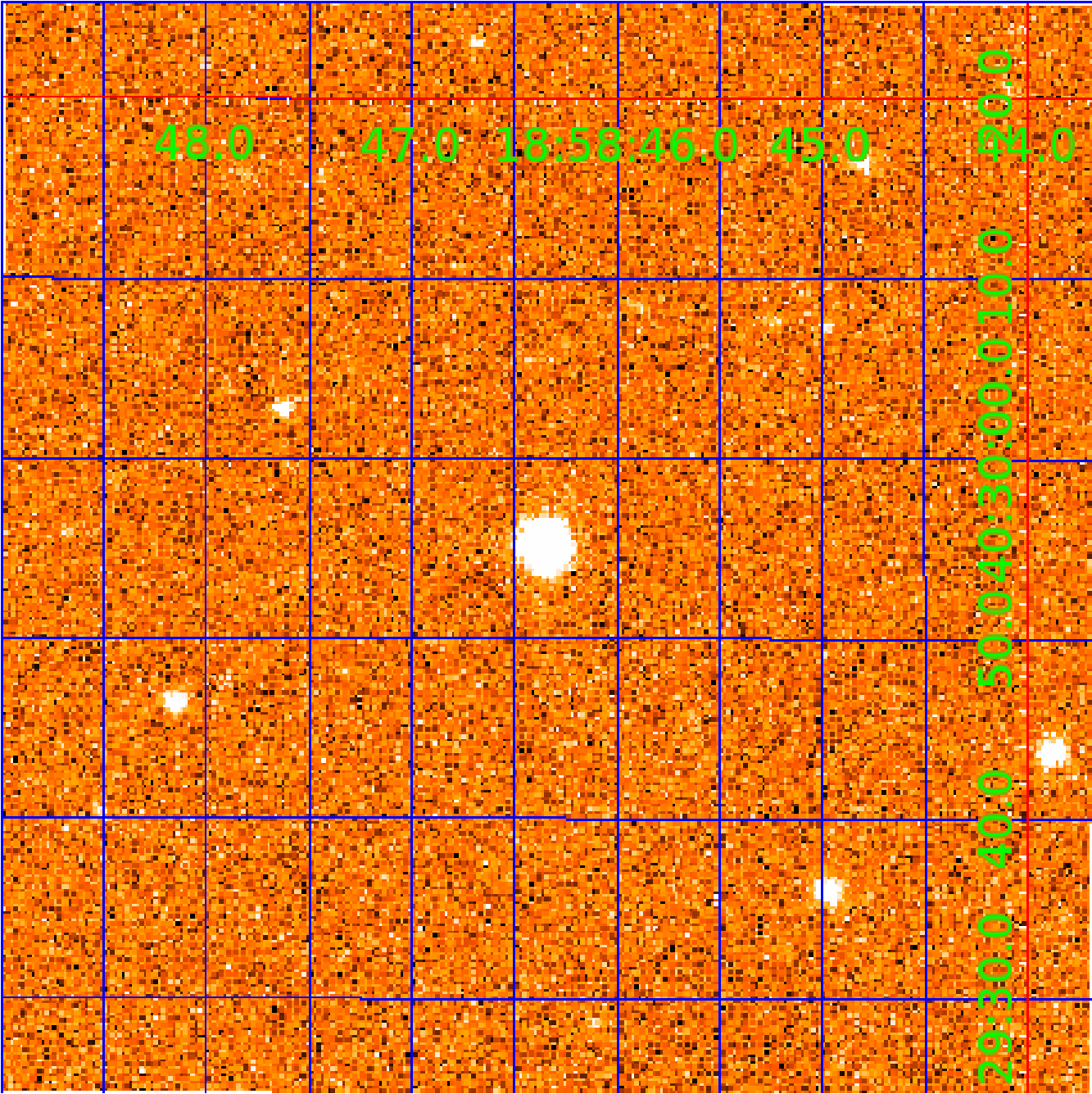


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005255552

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})
005255552-01	OBS	6545.01	32.455502	137.597425	130741.4	7.404	2291.9	1273.2	0.54	4869	21.10	5.57
005255552-02	OBS	No	32.472492	155.409617	107820.7	3.828	1034.5	971.1	0.54	4869	17.73	5.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005255552-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT
005255552-02	OBS	FP	0.00	1	0	0	0	LPP_DV

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.

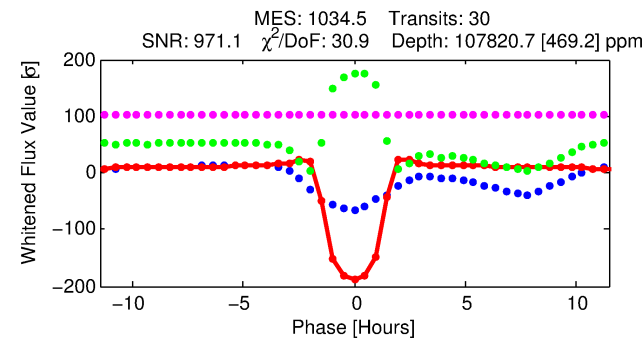
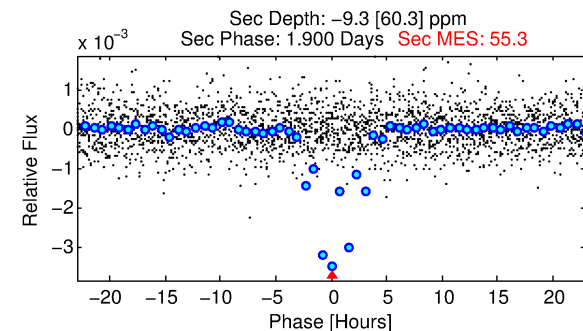
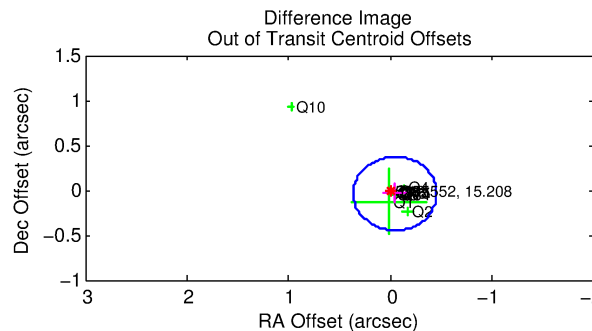
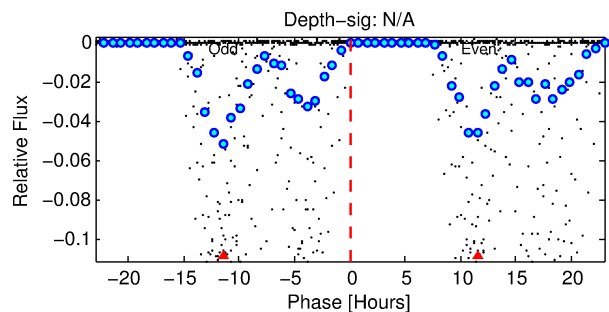
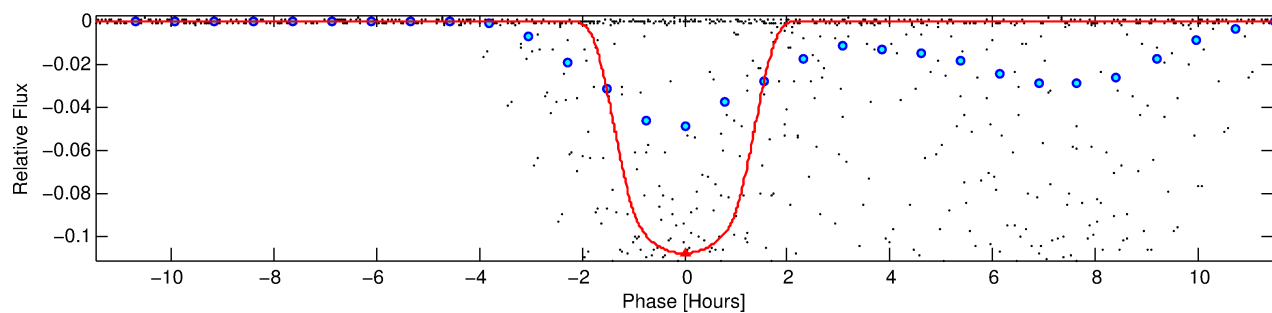
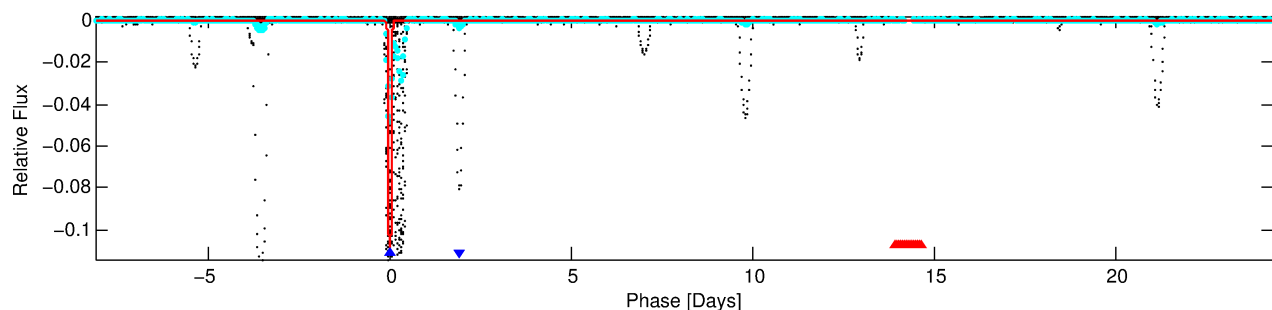
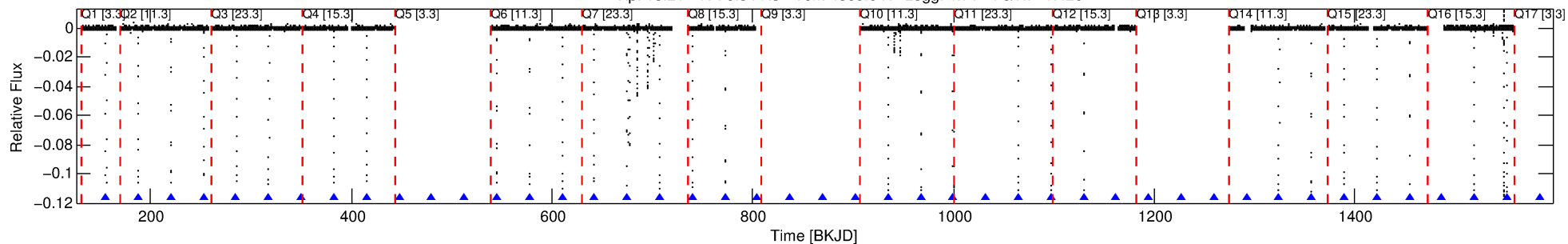
Ephemeris Match Information For 005255552-02

No Significant Match Found

DV One-Page Summary

KIC: 5255552 Candidate: 2 of 2 Period: 32.472 d
KOI: K06545 Corr: No Ephemeris Match

Kp: 15.21 R*: 0.54 Rs Teff: 4869.0 K Logg: 4.71 Fe/H: -1.420



DV Fit Results:

Period = 32.47249 [0.00001] d
Epoch = 155.4096 [0.0003] BKJD
Rp/R* = 0.2992 [0.0014]
a/R* = 84.20 [1.14]
b = 0.01 [1.08]
Seff = 5.56 [0.81]
Teq = 392 [14] K
Rp = 17.73 [1.05] Re
a = 0.1634 [0.0089] AU
Ag = N/A
Teffp = N/A

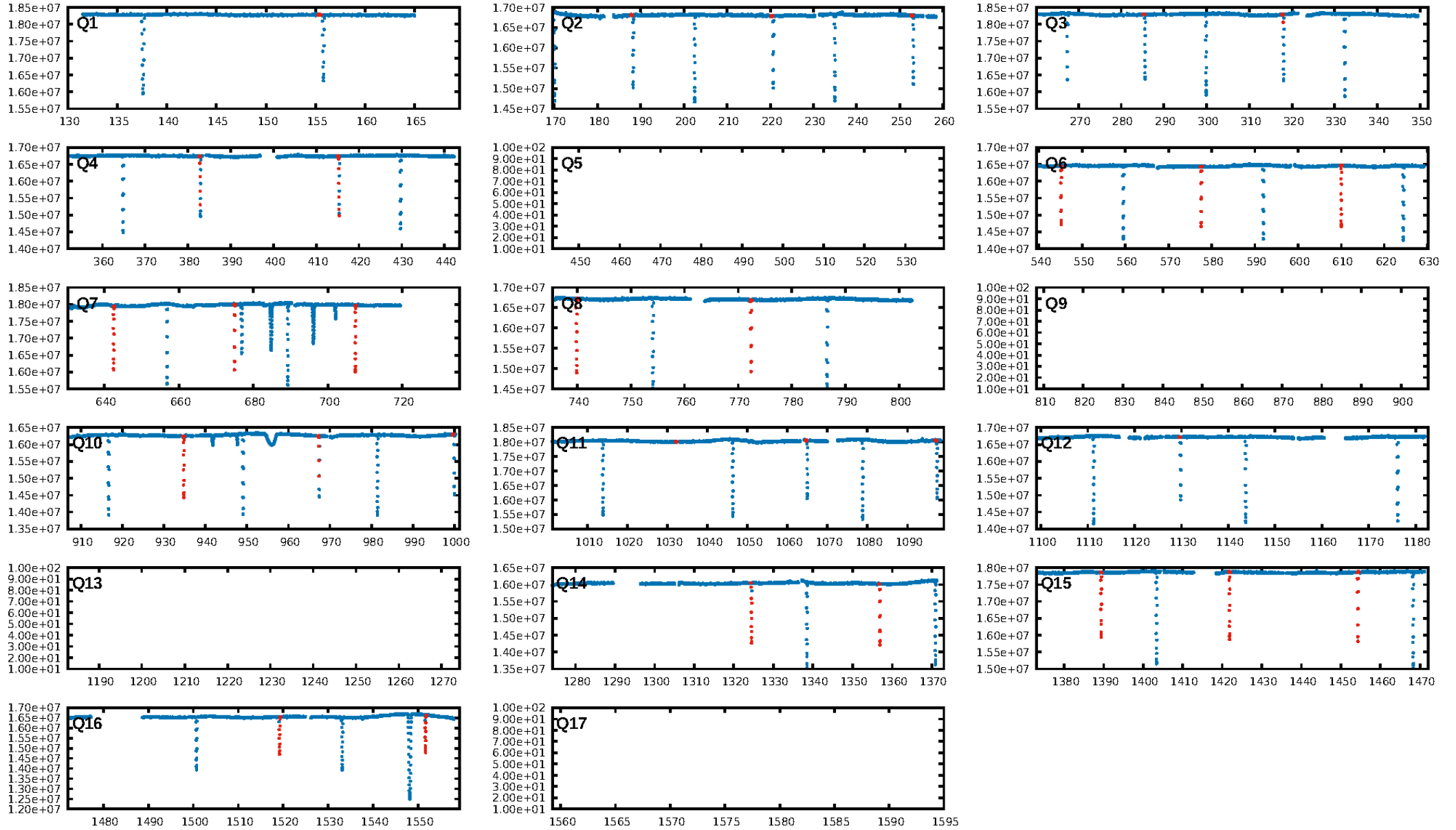
DV Diagnostic Results:

ShortPeriod-sig: 3.9% [0.05σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [29/29]
GhostDiagnostic-chr: 2.183
Centroid-sig: 0.0%
Centroid-so: 0.128 arcsec [21.00σ]
OotOffset-rm: 0.059 arcsec [0.43σ]
KicOffset-rm: 0.104 arcsec [0.80σ]
OotOffset-st: 4/3/4/1 [12]
KicOffset-st: 4/3/4/1 [12]
DiffImageQuality-fgm: 0.58 [7/12]
DiffImageOverlap-fno: 1.00 [12/12]

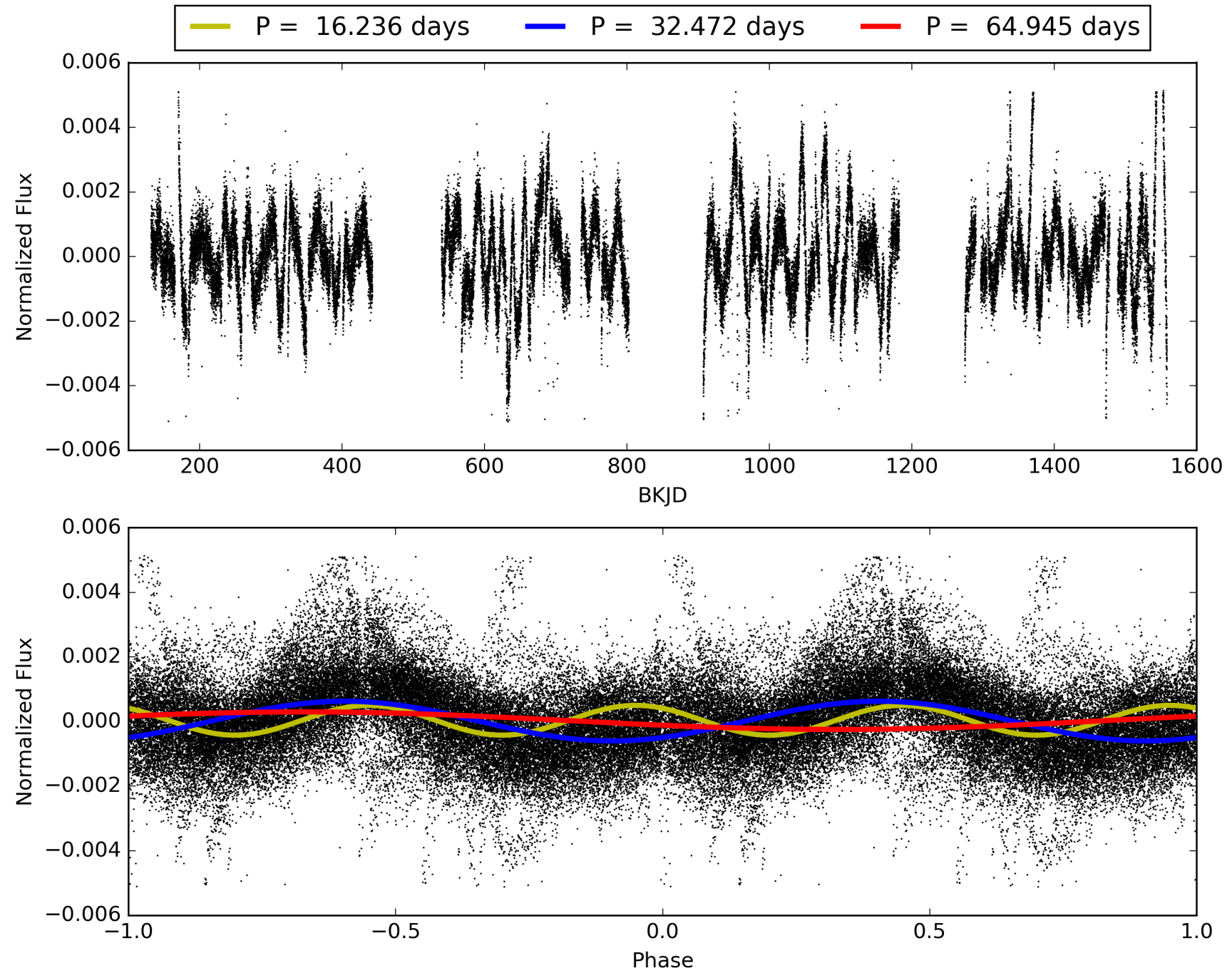
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 06:53:45 Z

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

TCE 005255552-02, PDC Light Curves

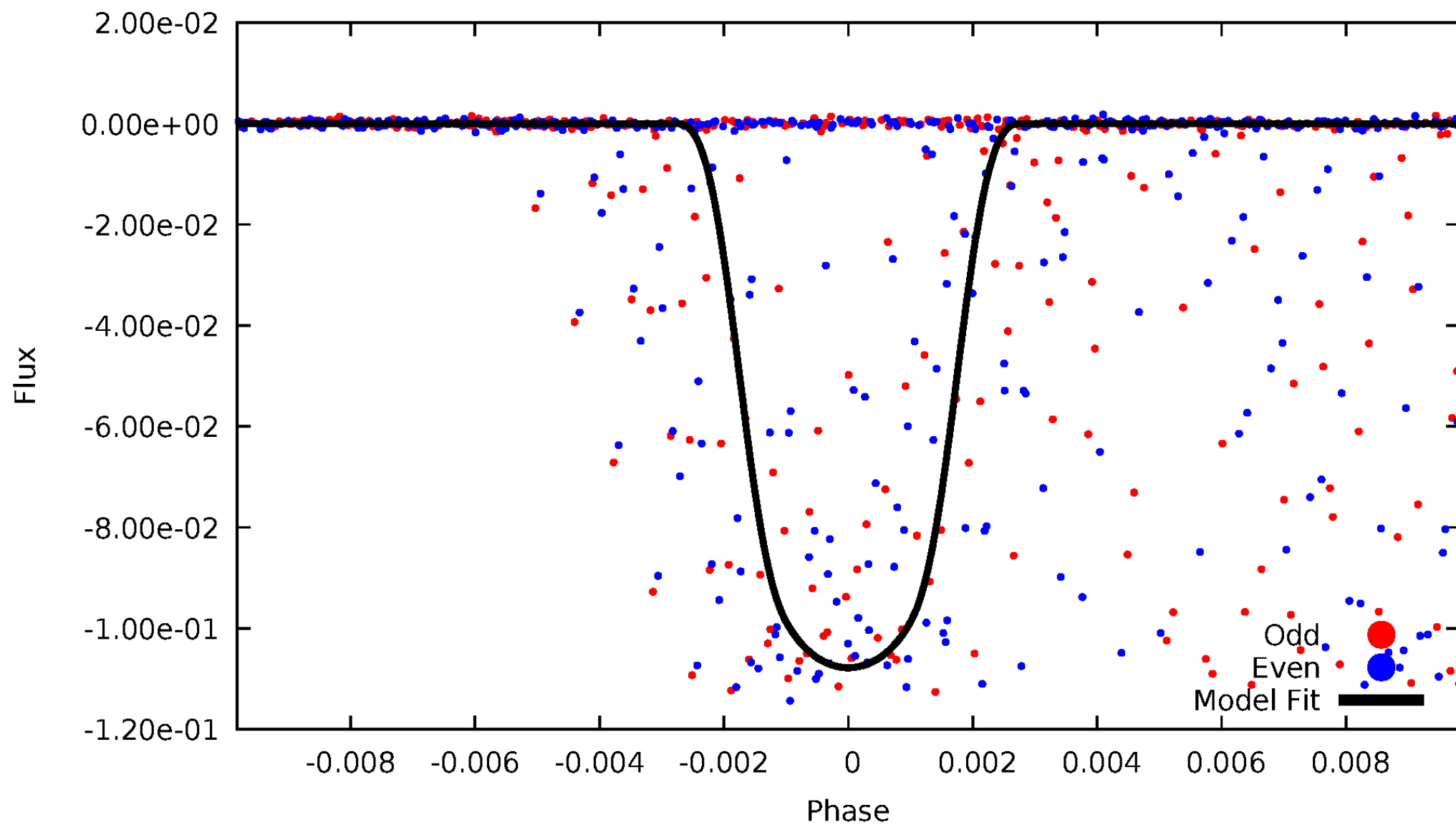


TCE 005255552-02



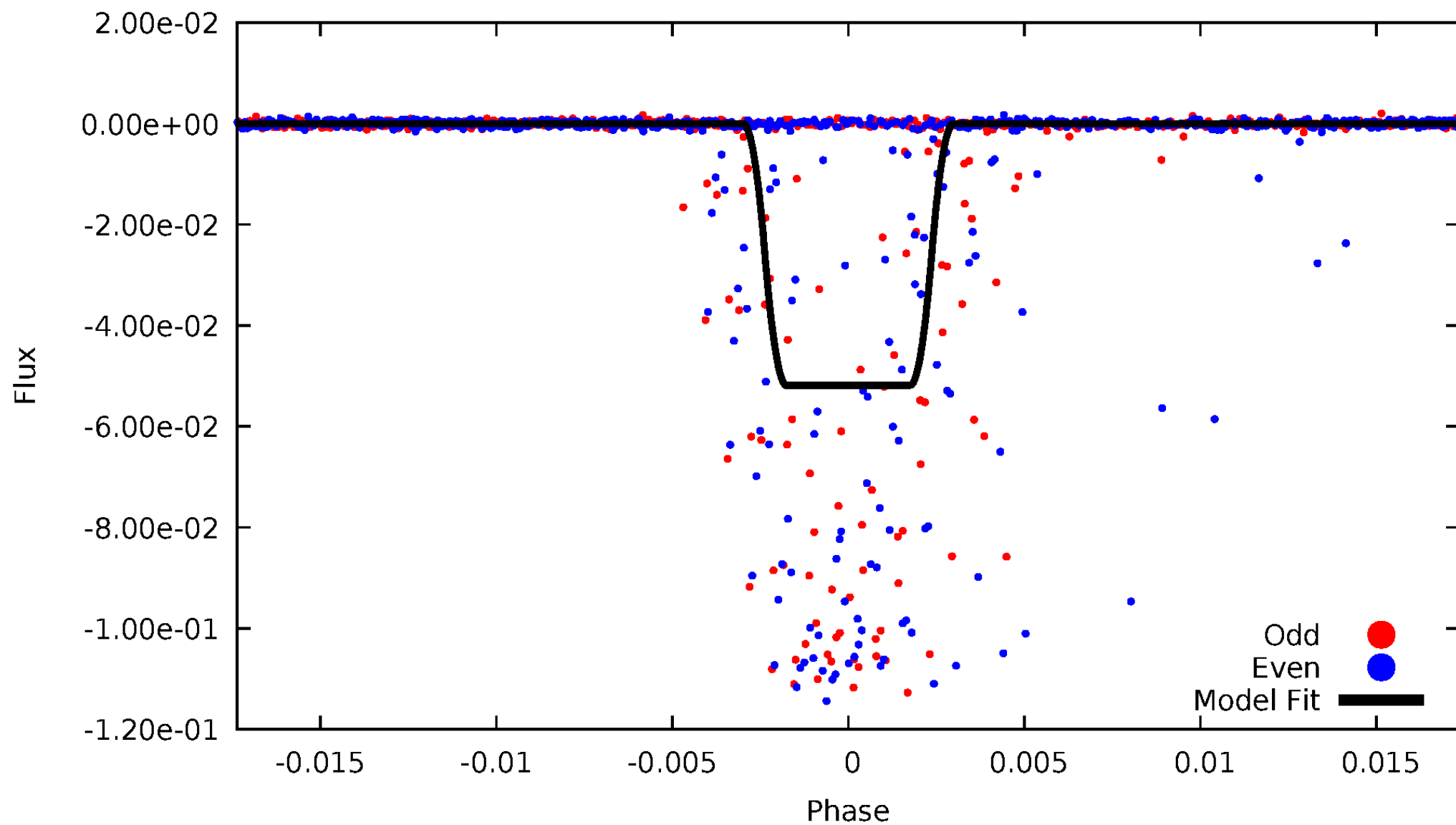
DV Odd/Even

TCE 00525552-02



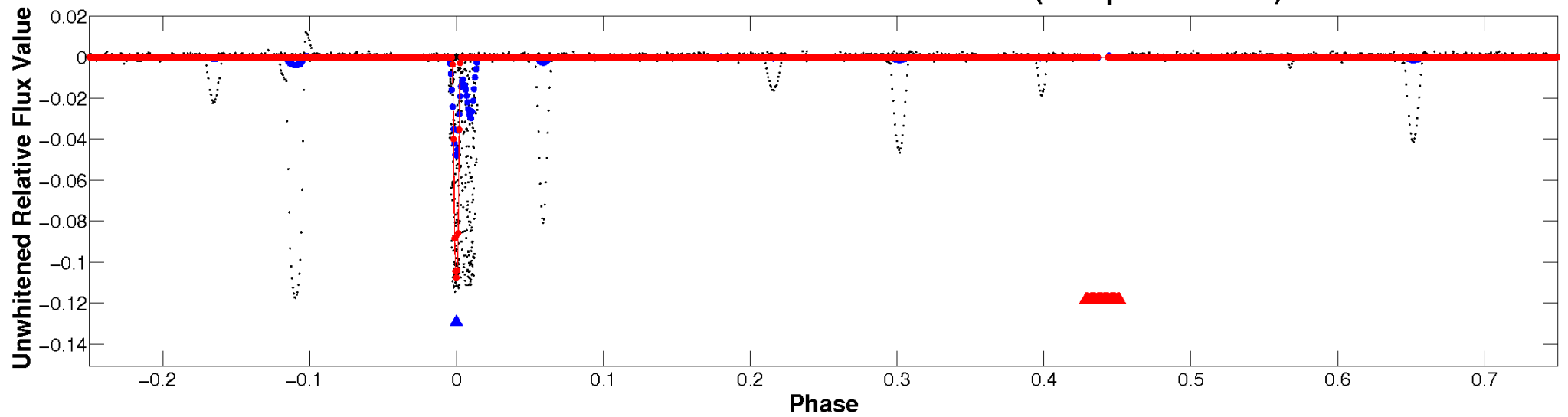
ALT Odd/Even

TCE 005255552-02

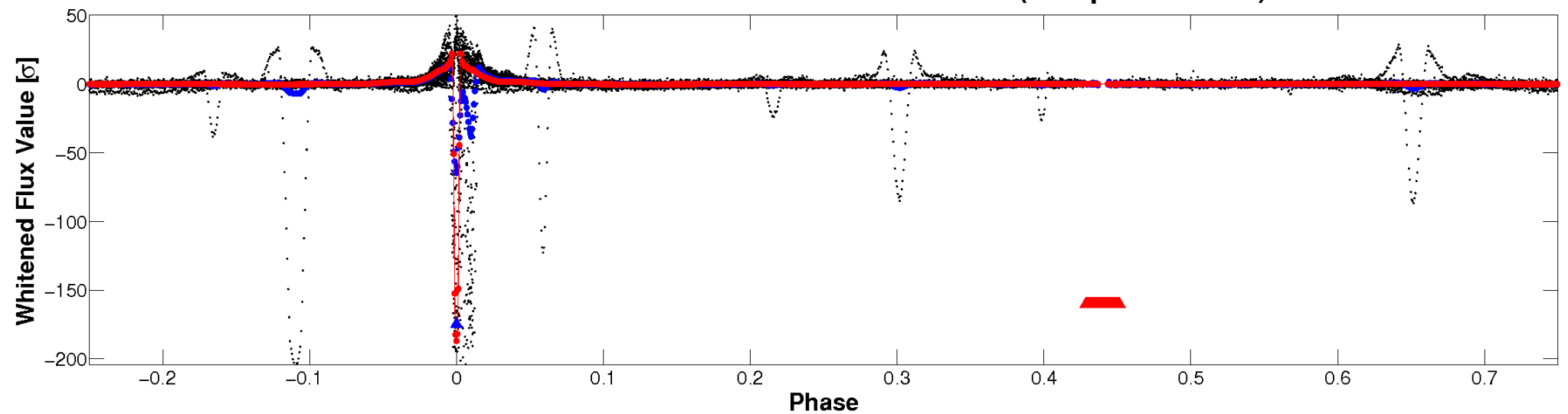


Non-Whitened Vs. Whitened Light Curve

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

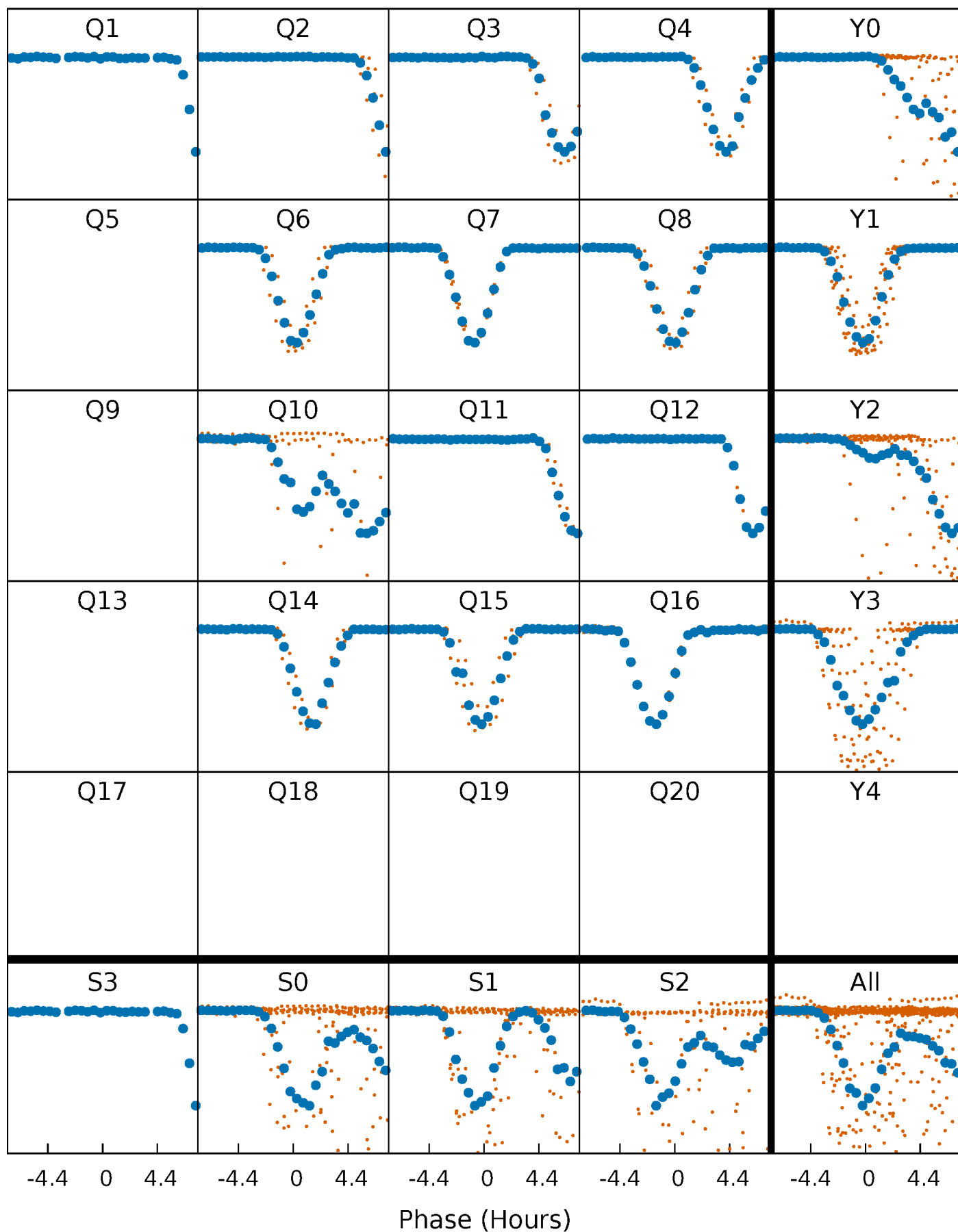


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



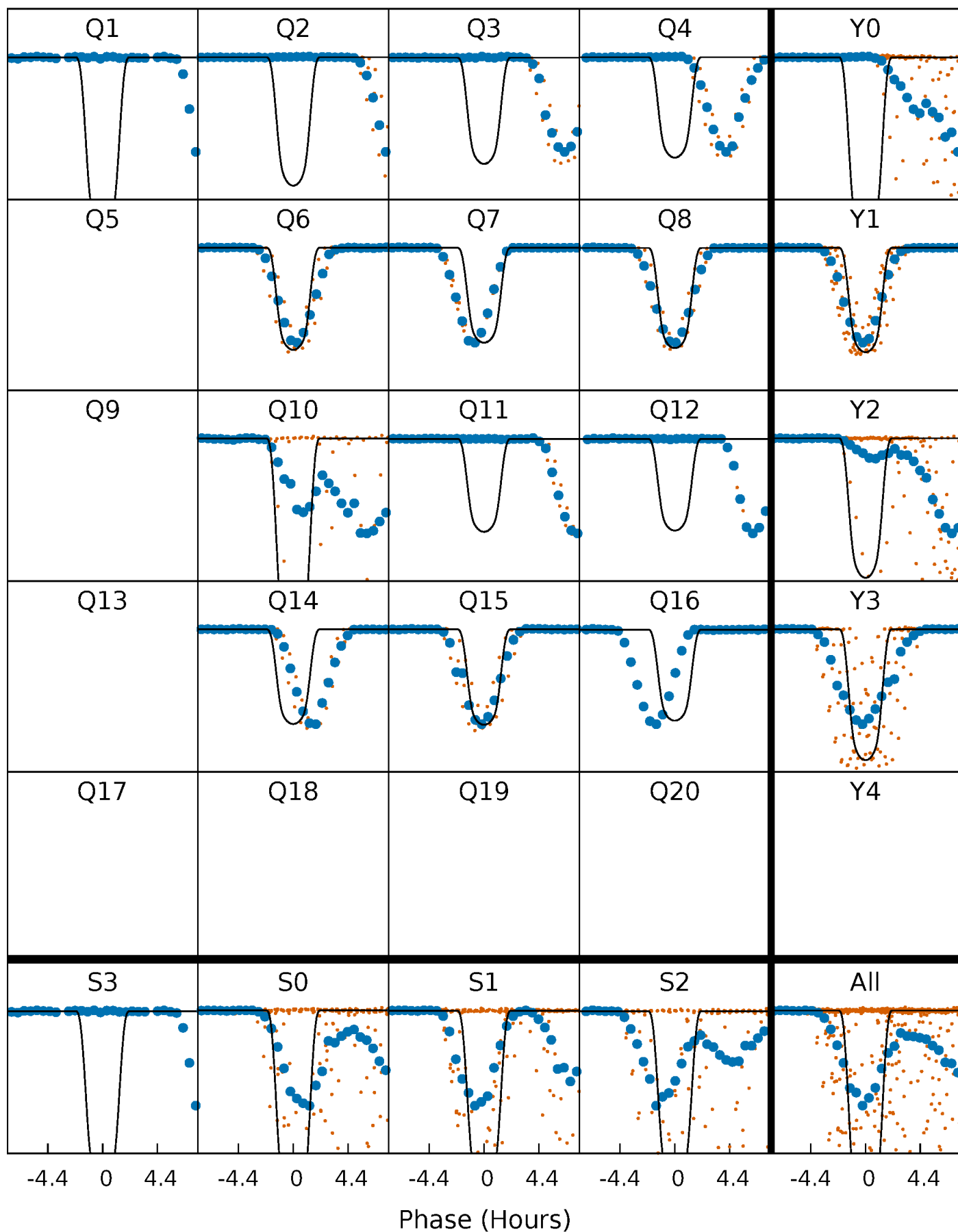
PDC Quarter-Phased Transit Curves

TCE 00525552-02 P= 32.472492 Days $T_0=155.409617$ (BKJD)



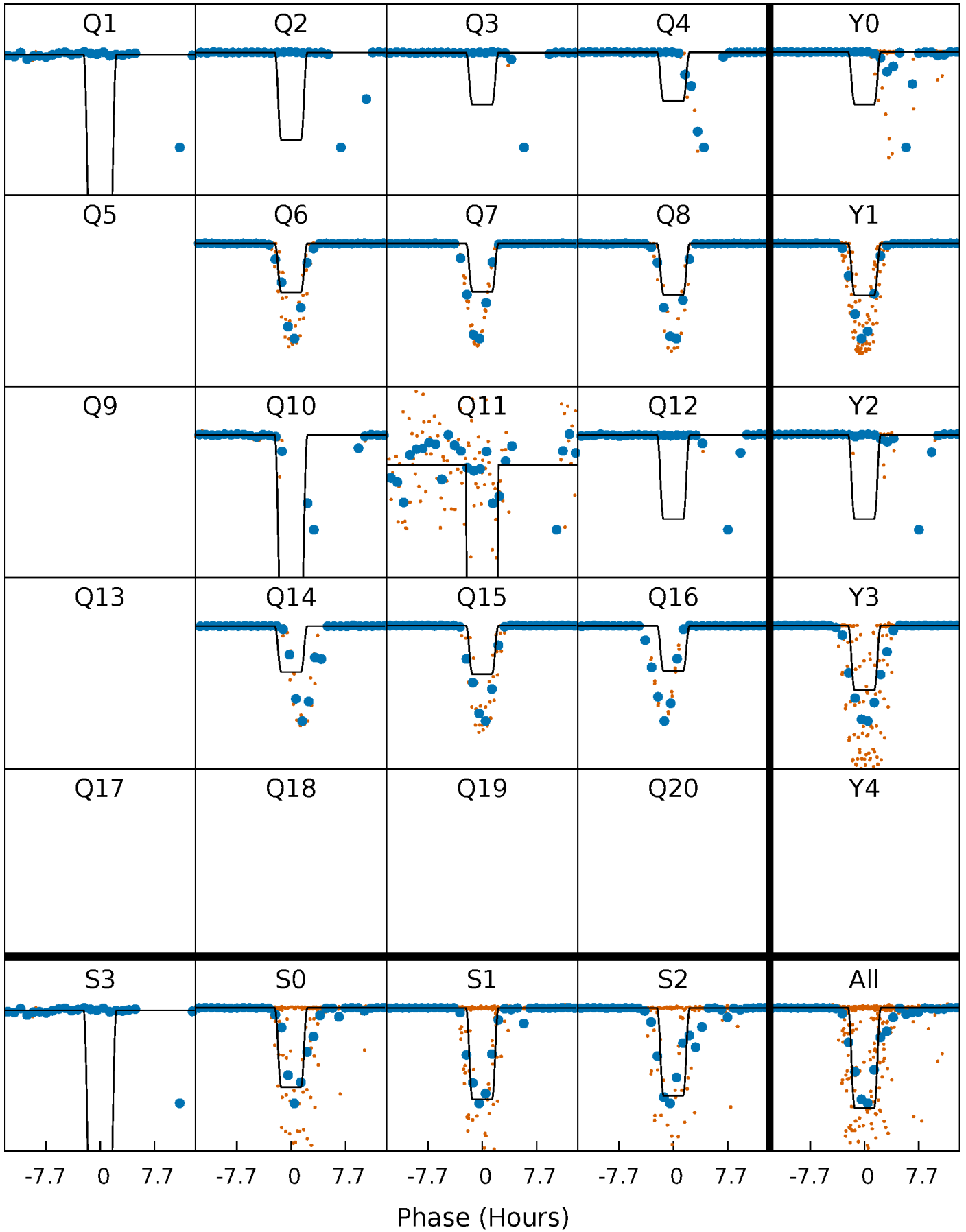
DV Quarter-Phased Transit Curves

TCE 00525552-02 P= 32.472492 Days $T_0=155.409617$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

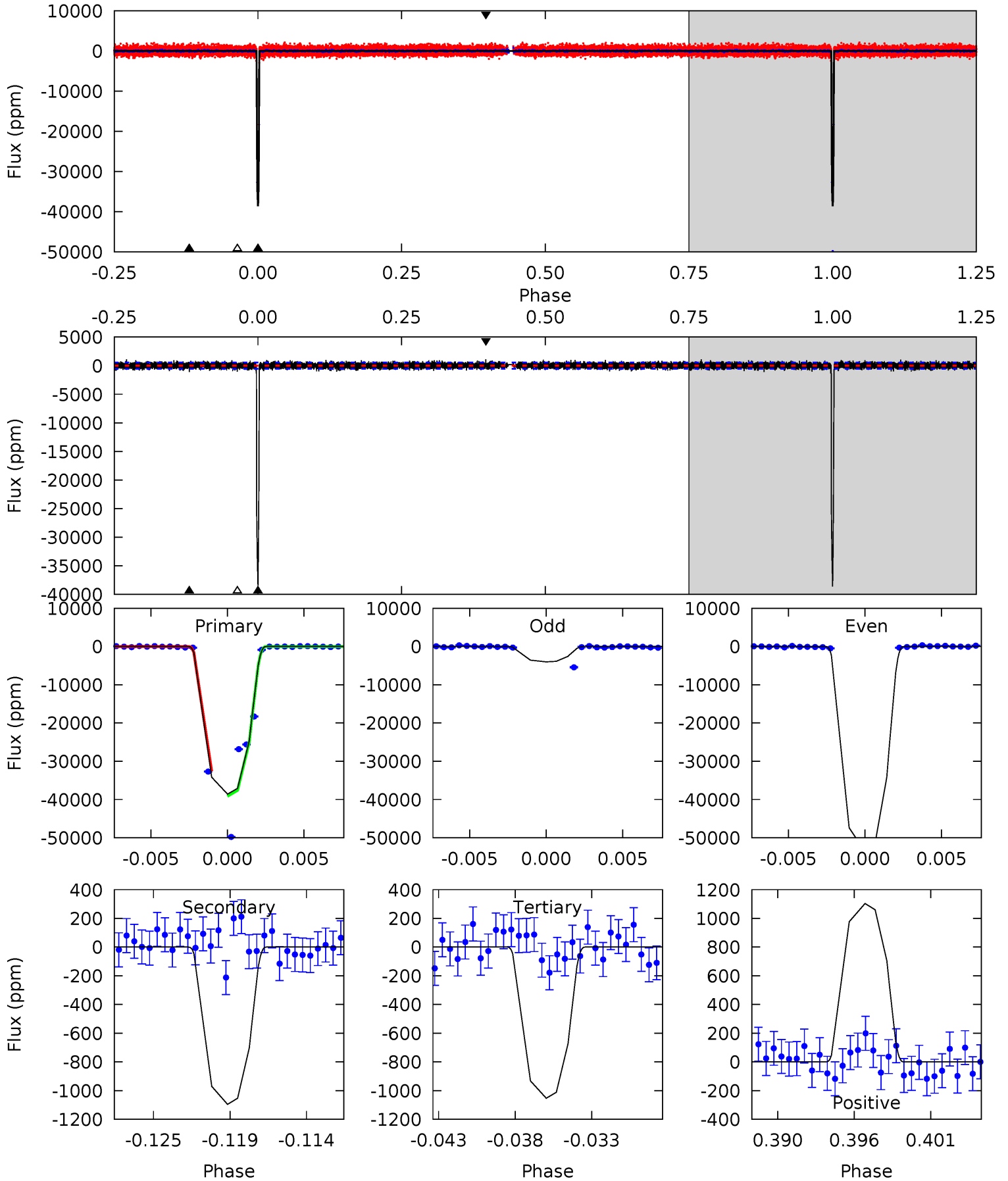
TCE 00525552-02 P= 32.472186 Days $T_0=155.411668$ (BKJD)



DV Model-Shift Uniqueness Test

005255552-02, P = 32.472492 Days, E = 122.937125 Days

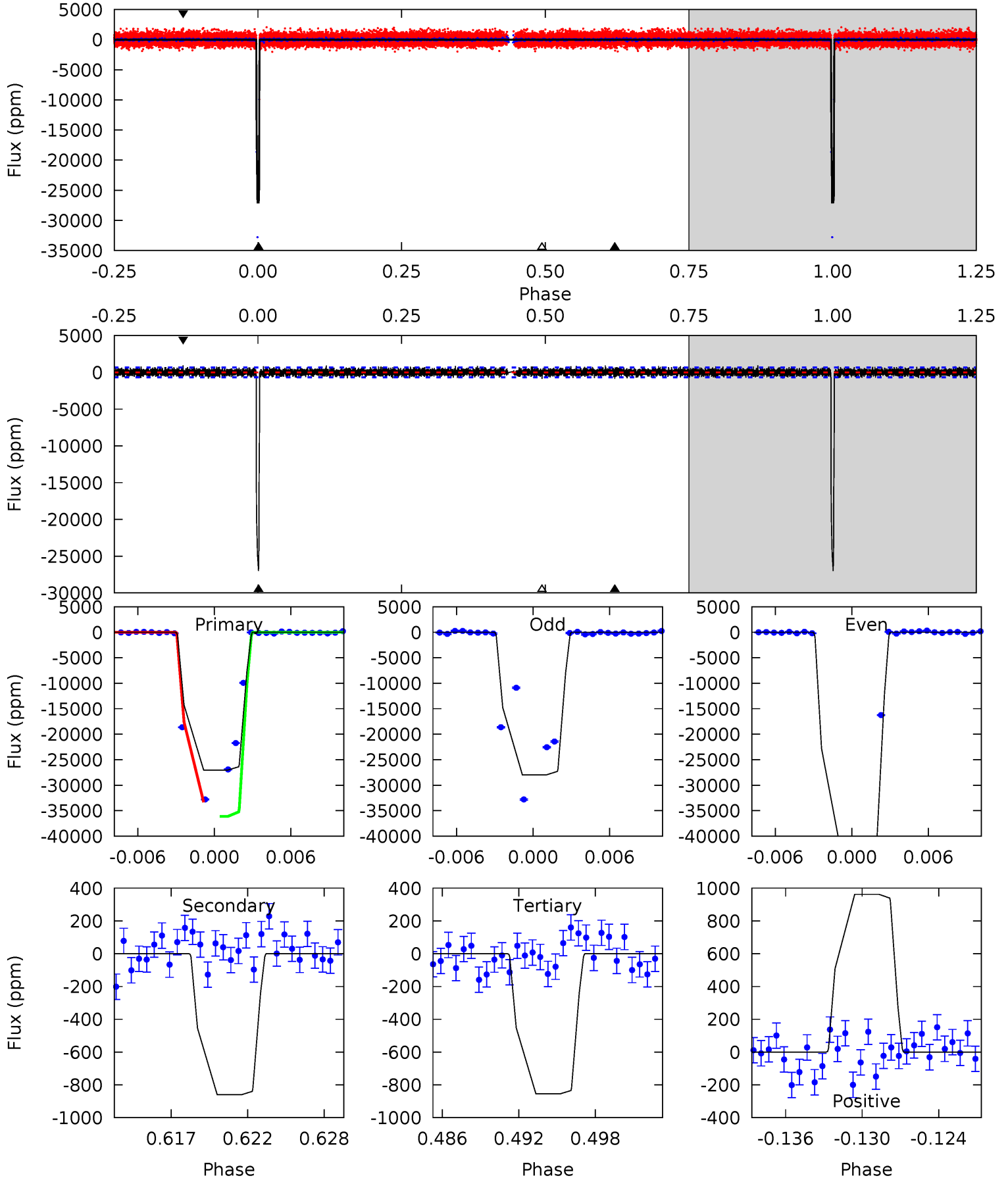
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
364.3	10.3	9.94	10.4	5.14	2.78	2.50	354.4	353.9	0.41	-0.07	222.5	0.84	0.03	0



Alt Model-Shift Uniqueness Test

005255552-02, P = 32.472186 Days, E = 122.939482 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
206.7	6.58	6.54	7.36	5.13	2.75	1.75	200.2	199.3	0.04	-0.78	64.0	1.35	0.03	0



Stellar Parameters For KIC 005255552

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4869^{+144}_{-144}	$4.710^{+0.049}_{-0.025}$	$-1.420^{+0.300}_{-0.300}$	$0.543^{+0.025}_{-0.032}$	$0.552^{+0.036}_{-0.019}$	$4.852^{+0.868}_{-0.467}$
	+3%/-3%	+1%/-1%	+21%/-21%	+5%/-6%	+7%/-3%	+18%/-10%
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 005255552-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1096 ± 106	$17.73^{+0.53}_{-0.57}$	545^{+19}_{-18}	2448^{+57}_{-48}	52^{+6}_{-6}
Alt.	-860 ± 131	$13.50^{+0.39}_{-0.49}$	546^{+19}_{-18}	2552^{+65}_{-79}	71^{+12}_{-11}

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

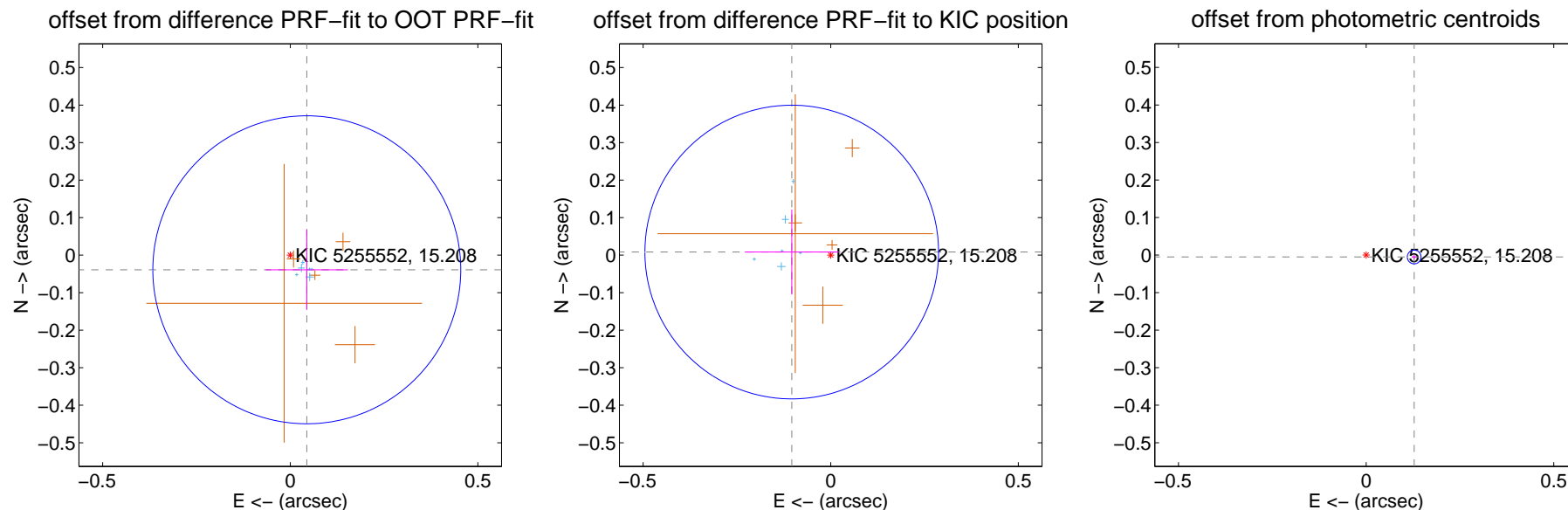
DV Centroid Data

Supplemental centroid analysis for 005255552-02. Kepler magnitude: 15.21. Transit SNR 971.10

There are 7 quarters with good PRF difference image offsets

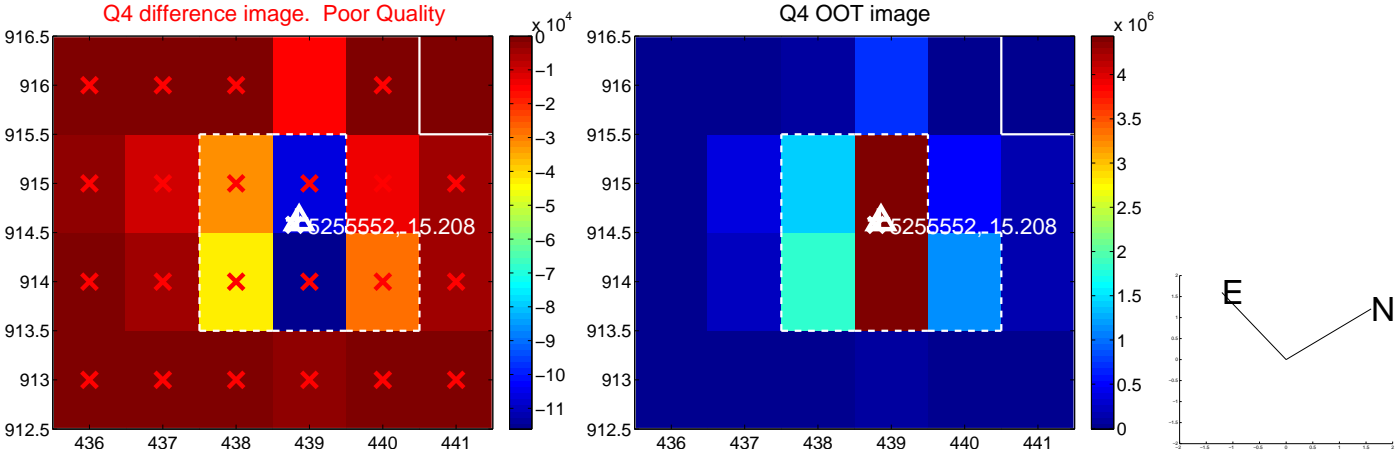
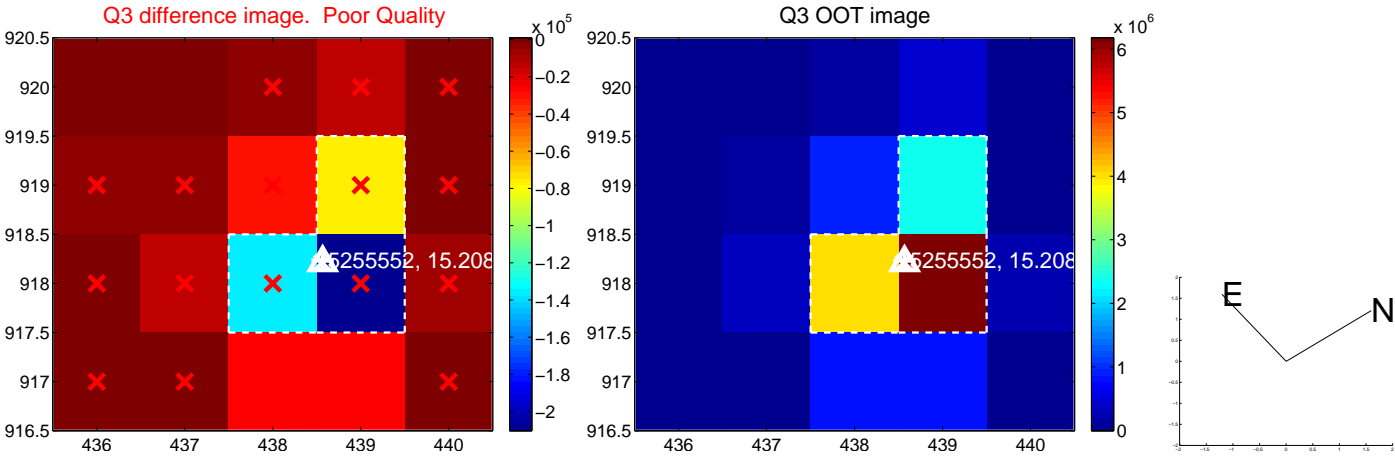
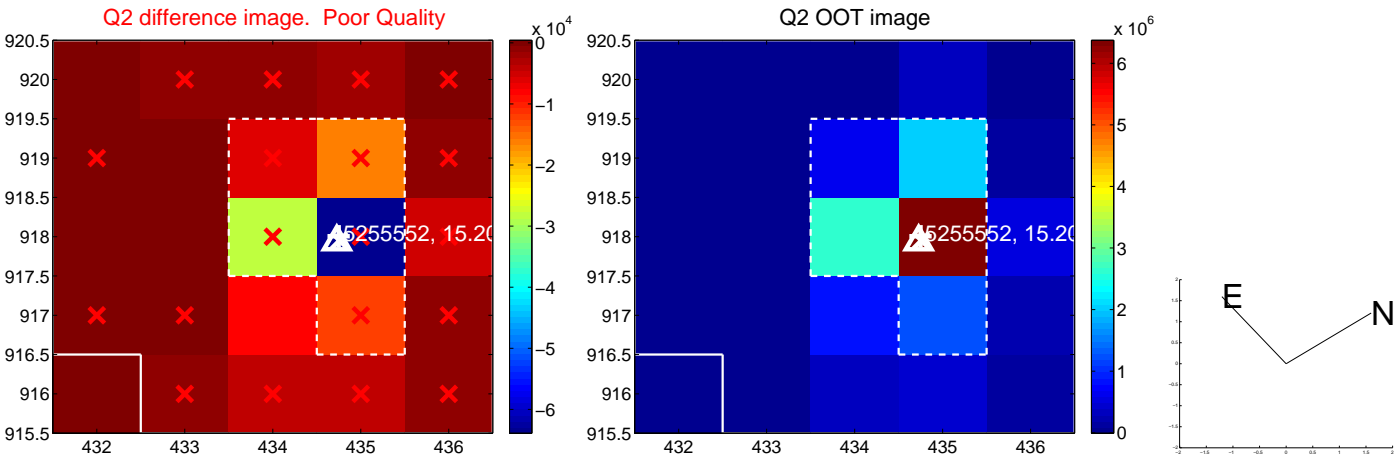
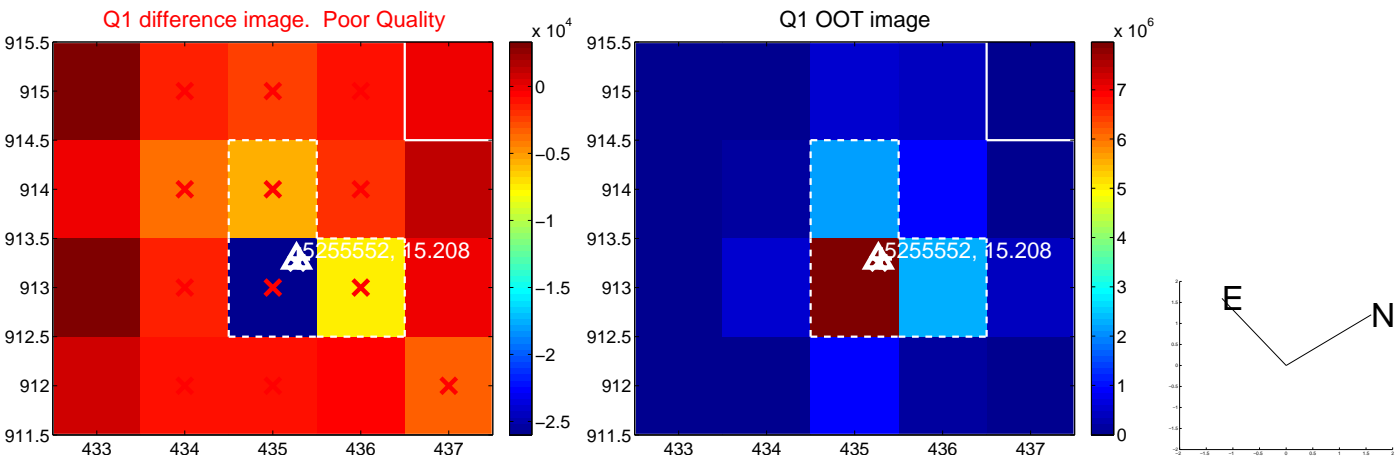
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.059 ± 0.137	0.43	-0.044 ± 0.110	-0.039 ± 0.107
PRF-fit source offset from KIC position	0.104 ± 0.130	0.80	0.104 ± 0.125	0.008 ± 0.113
photometric centroid source offset	0.13 ± 0.01	21.00	-0.13 ± 0.01	-0.01 ± 0.01

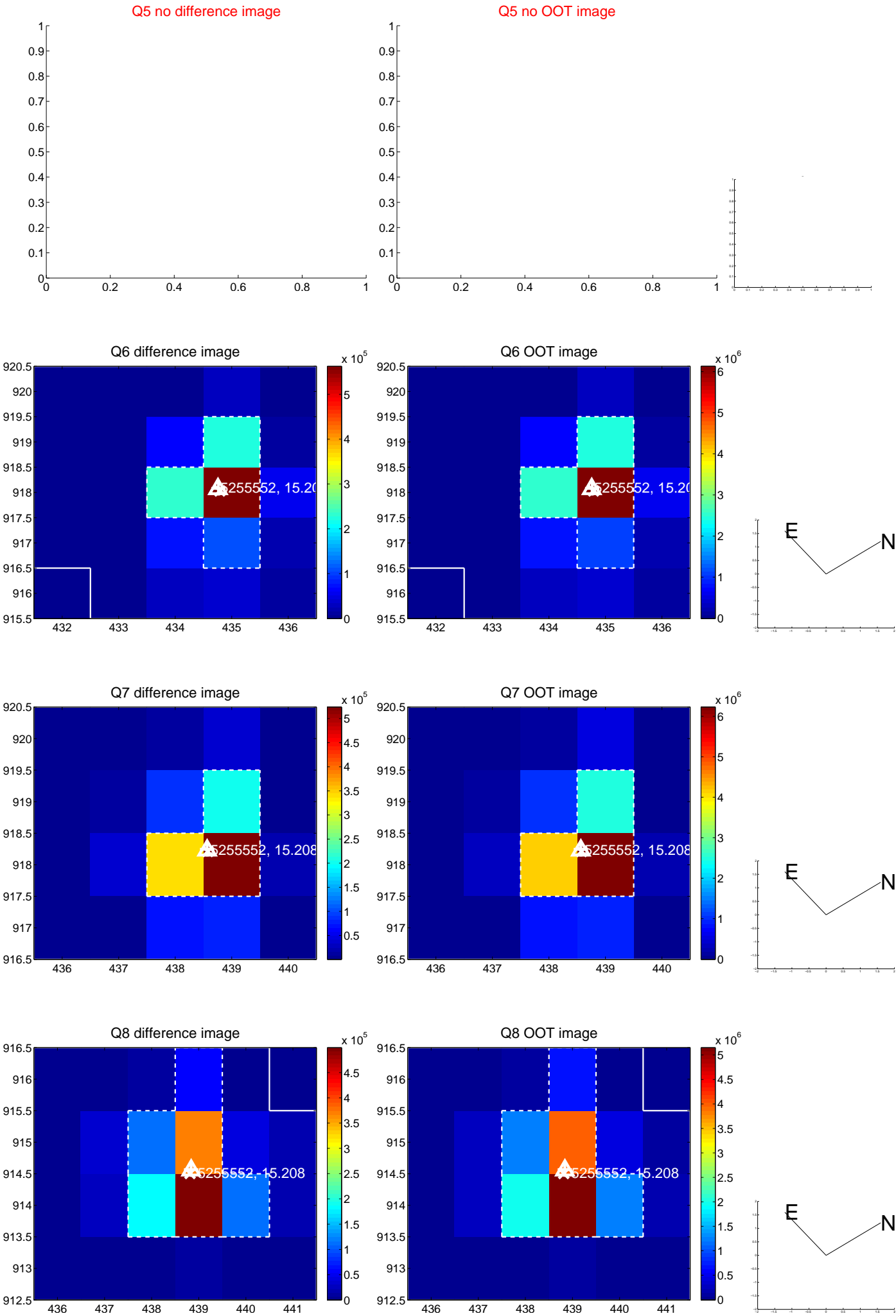


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

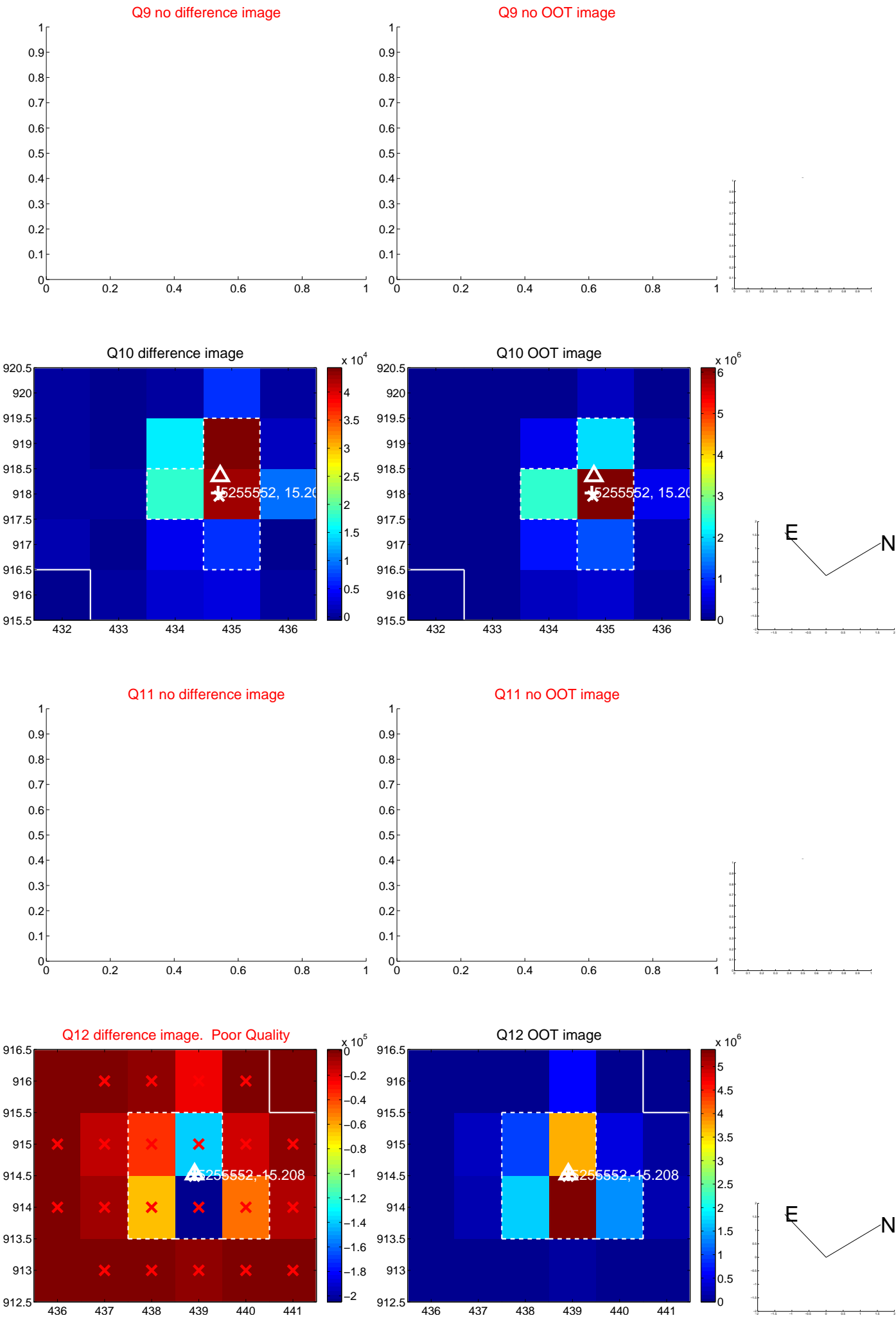
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



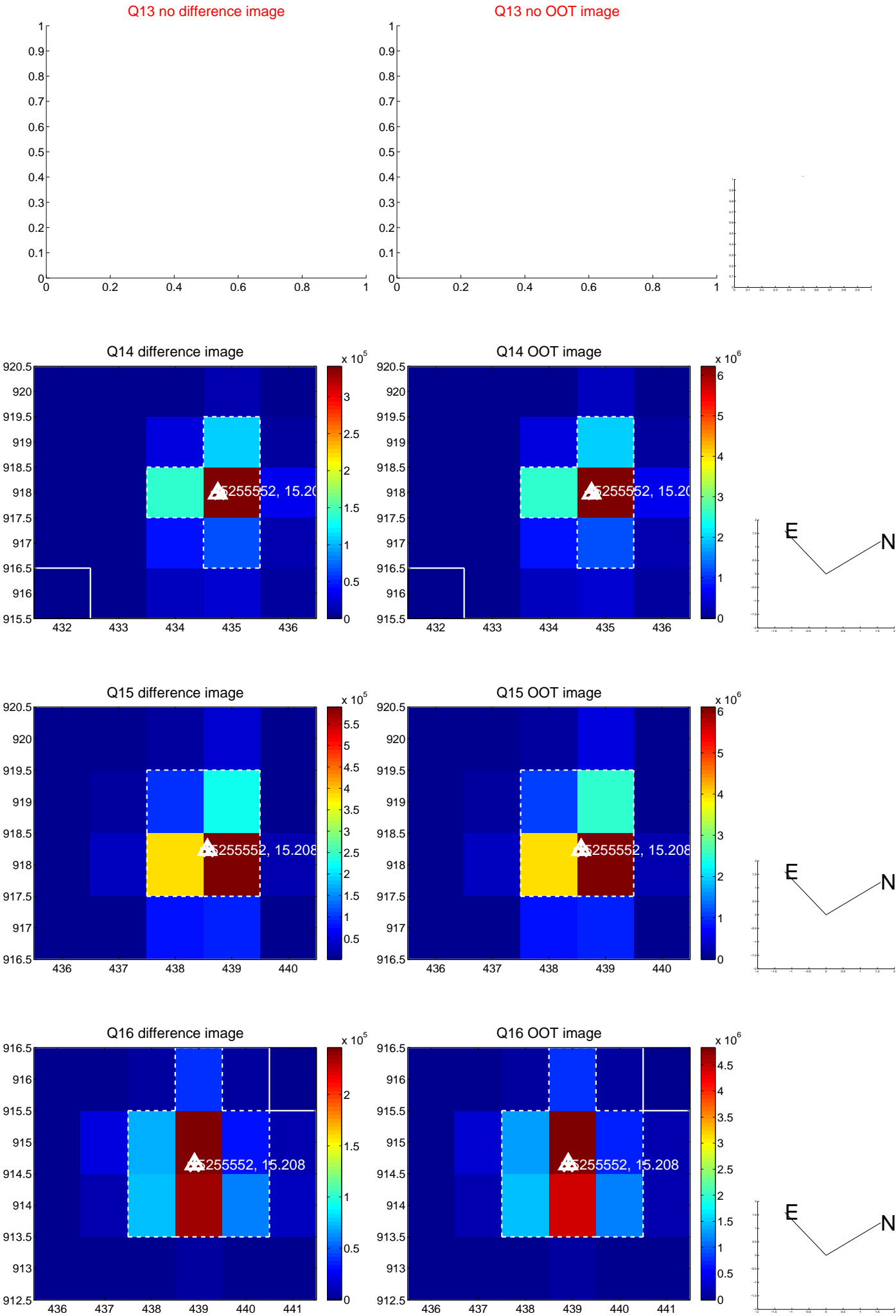
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



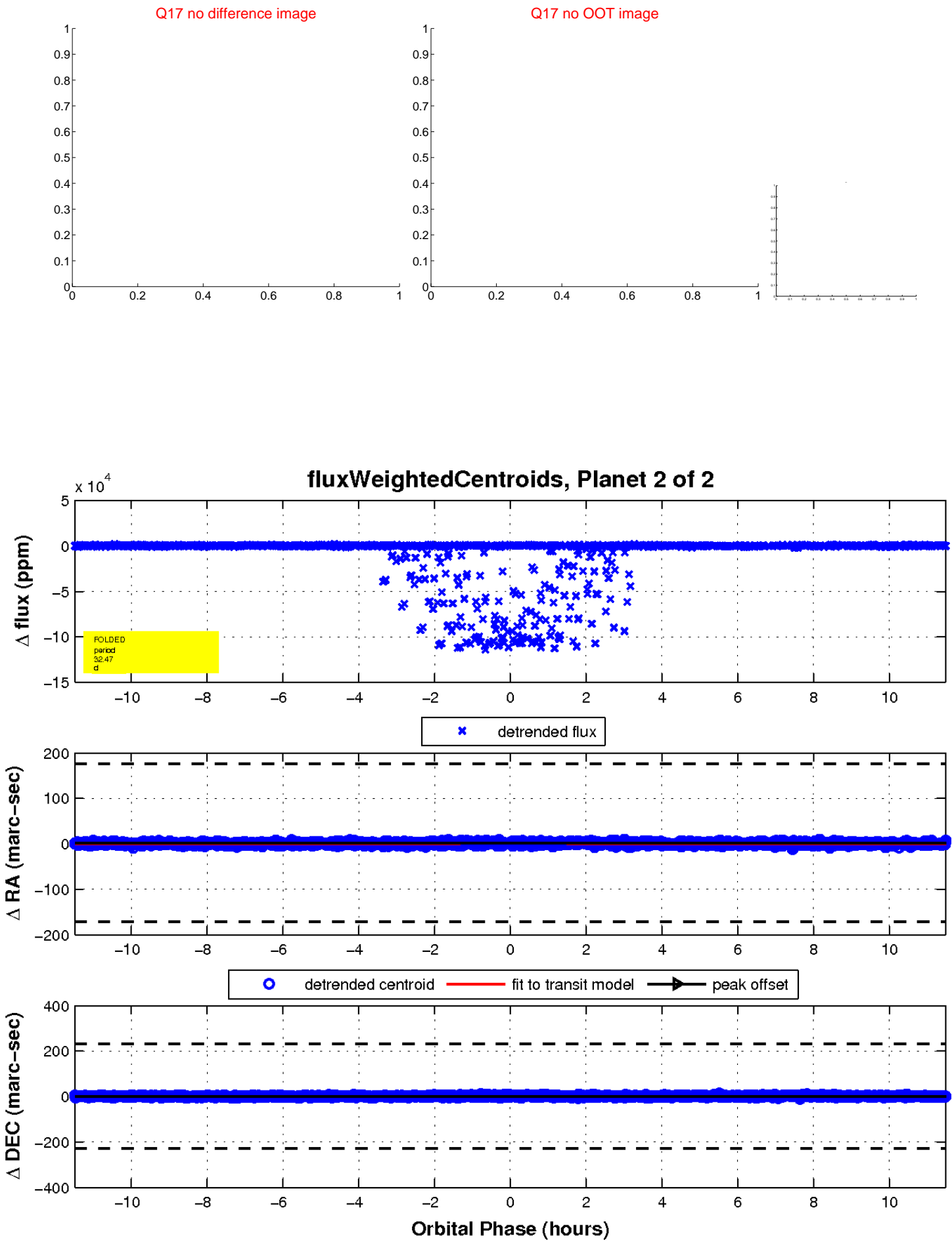
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

