

KIC 004482738

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})
004482738-01	OBS	6418.01	0.866332	132.074735	85.5	1.348	12.3	13.8	4.53	4936	5.01	0.00
004482738-02	OBS	No	0.866349	131.630475	84.5	1.233	11.1	14.0	4.53	4936	5.09	0.00
004482738-03	OBS	No	154.586596	276.101452	568.3	3.671	7.8	7.0	4.53	4936	12.17	38.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004482738-01	OBS	FP	0.00	1	0	1	1	MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
004482738-02	OBS	FP	0.00	1	0	1	1	MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
004482738-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—MOD_NONUNIQ_ALT—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 004482738-01

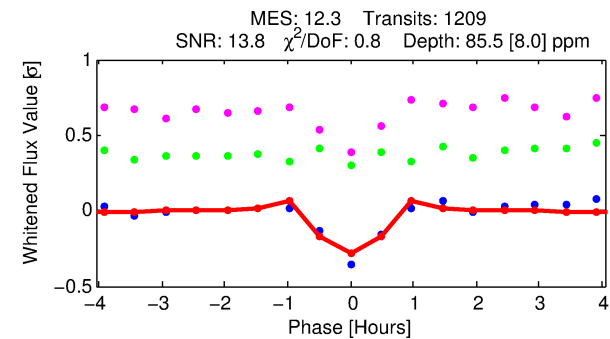
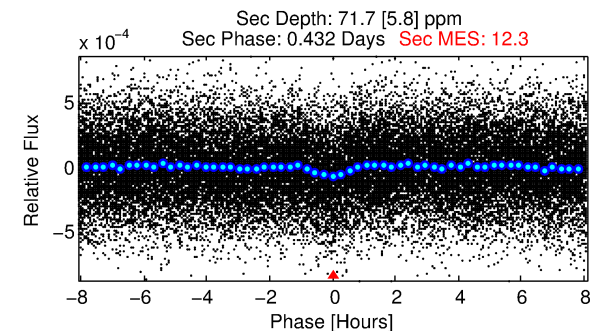
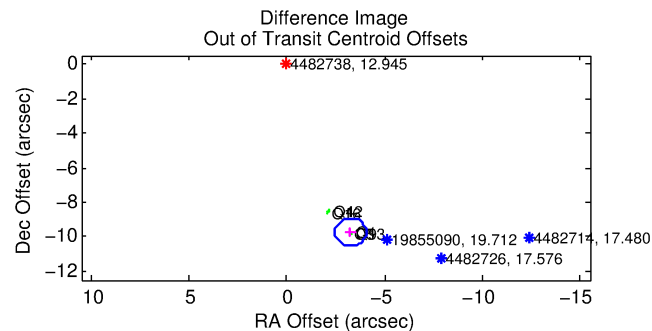
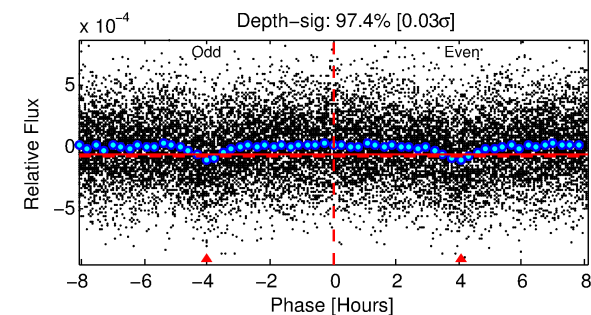
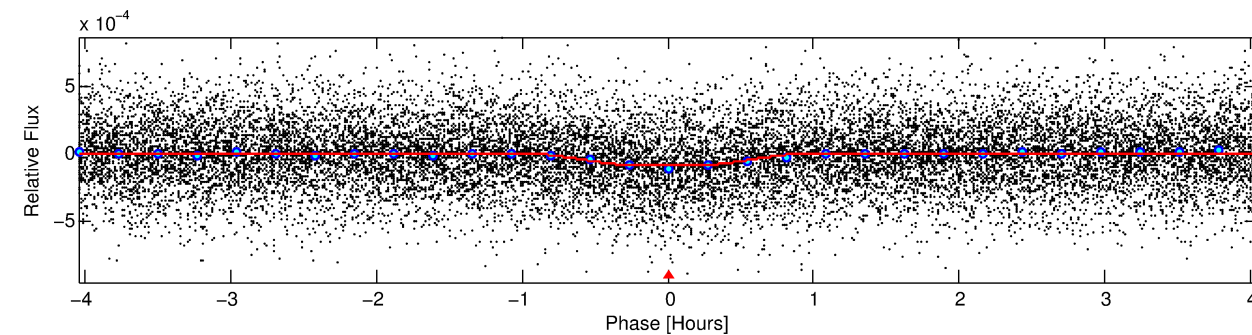
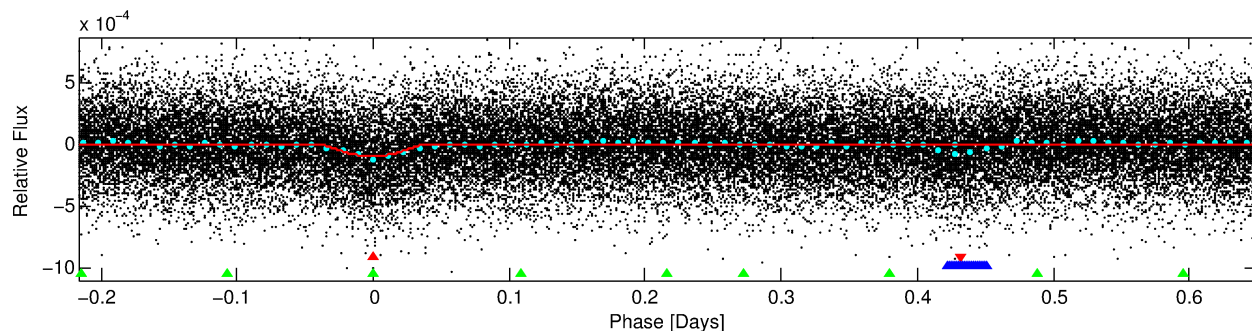
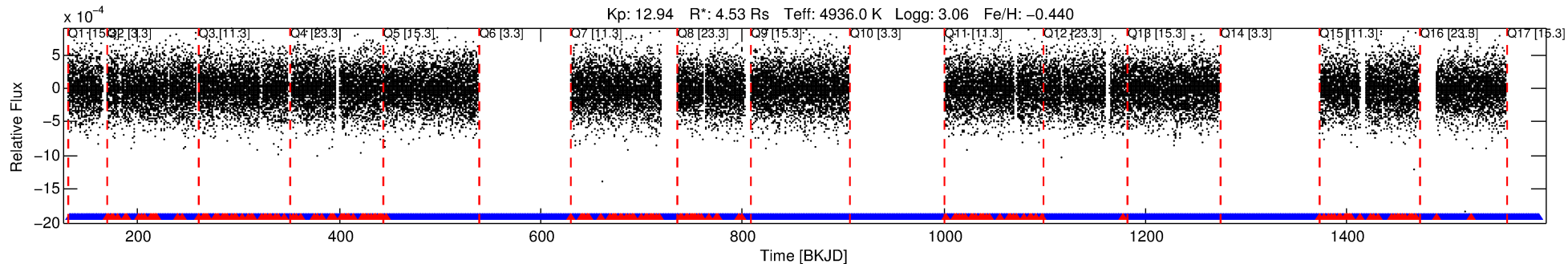
TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist ($''$)	Δ Row	Δ Col	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ_P	σ_T
004482738-01	4482738	004579598-02	4579598	1:1	136.2	-34	-2	13.79	12.95	0.30	Direct-PRF	1	0.33	0.44

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 4482738 Candidate: 1 of 3 Period: 0.866 d
KOI: K06418.01 Corr: 0.815

Kp: 12.94 R*: 4.53 Rs Teff: 4936.0 K Logg: 3.06 Fe/H: -0.440



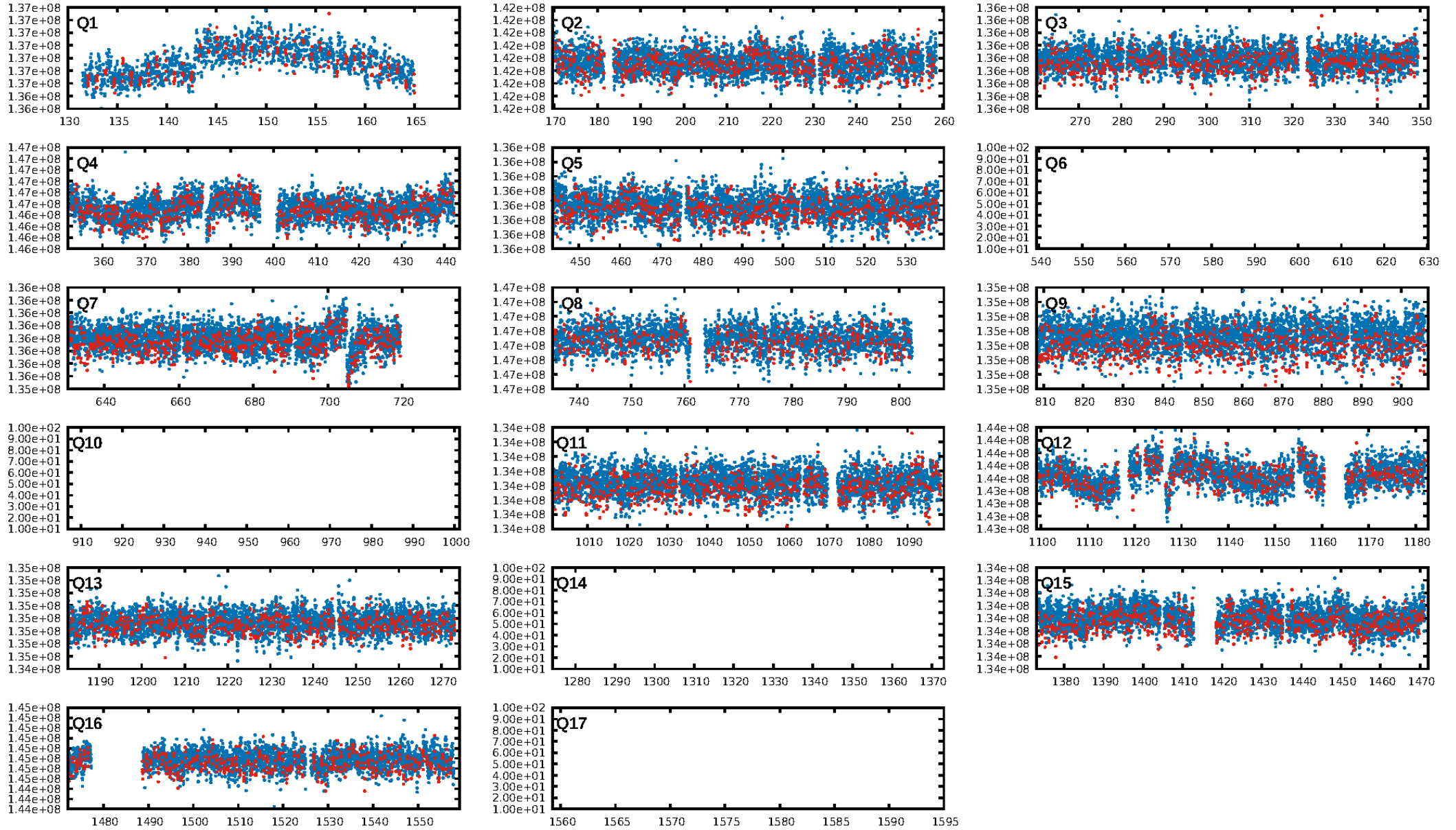
DV Fit Results:

Period = 0.86633 [0.00001] d
Epoch = 132.0747 [0.0011] BKJD
Rp/R* = 0.0101 [0.0047]
a/R* = 2.57 [4.06]
b = 0.88 [0.47]
Seff = N/A
Teq = N/A
Rp = 5.01 [2.57] Re
a = N/A
Ag = N/A
Teff = N/A

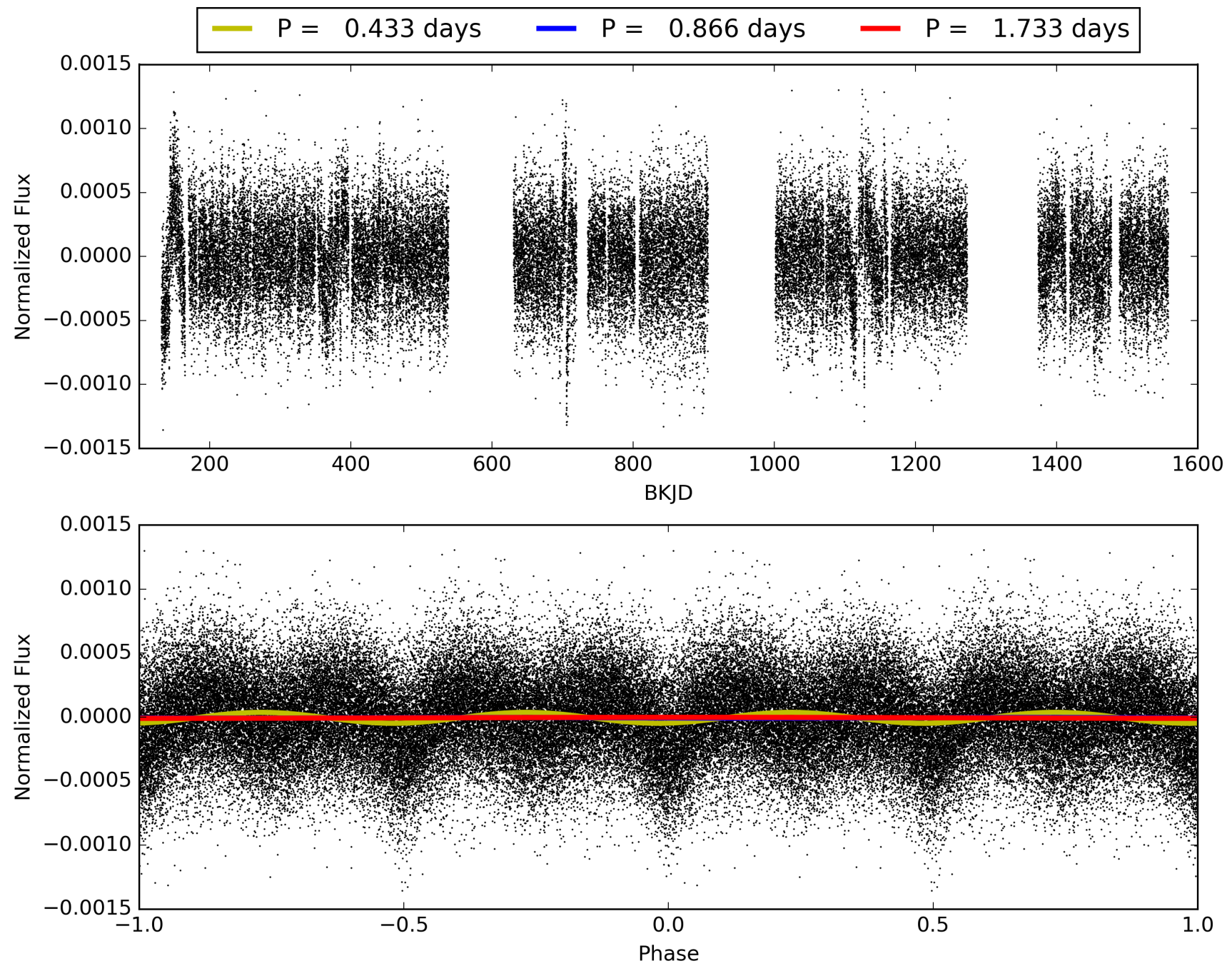
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.52e-31
RollingBand-fgt: 0.84 [988/1170]
GhostDiagnostic-chr: -0.1392
Centroid-sig: N/A
Centroid-so: 120.492 arcsec [108.74σ]
OotOffset-rm: 10.264 arcsec [38.31σ]
KicOffset-rm: 10.237 arcsec [35.44σ]
OotOffset-st: 0/0/3/4 [7]
KicOffset-st: 0/0/3/4 [7]
DiffImageQuality-fgm: 1.00 [7/7]
DiffImageOverlap-fno: 1.00 [13/13]

TCE 004482738-01, PDC Light Curves

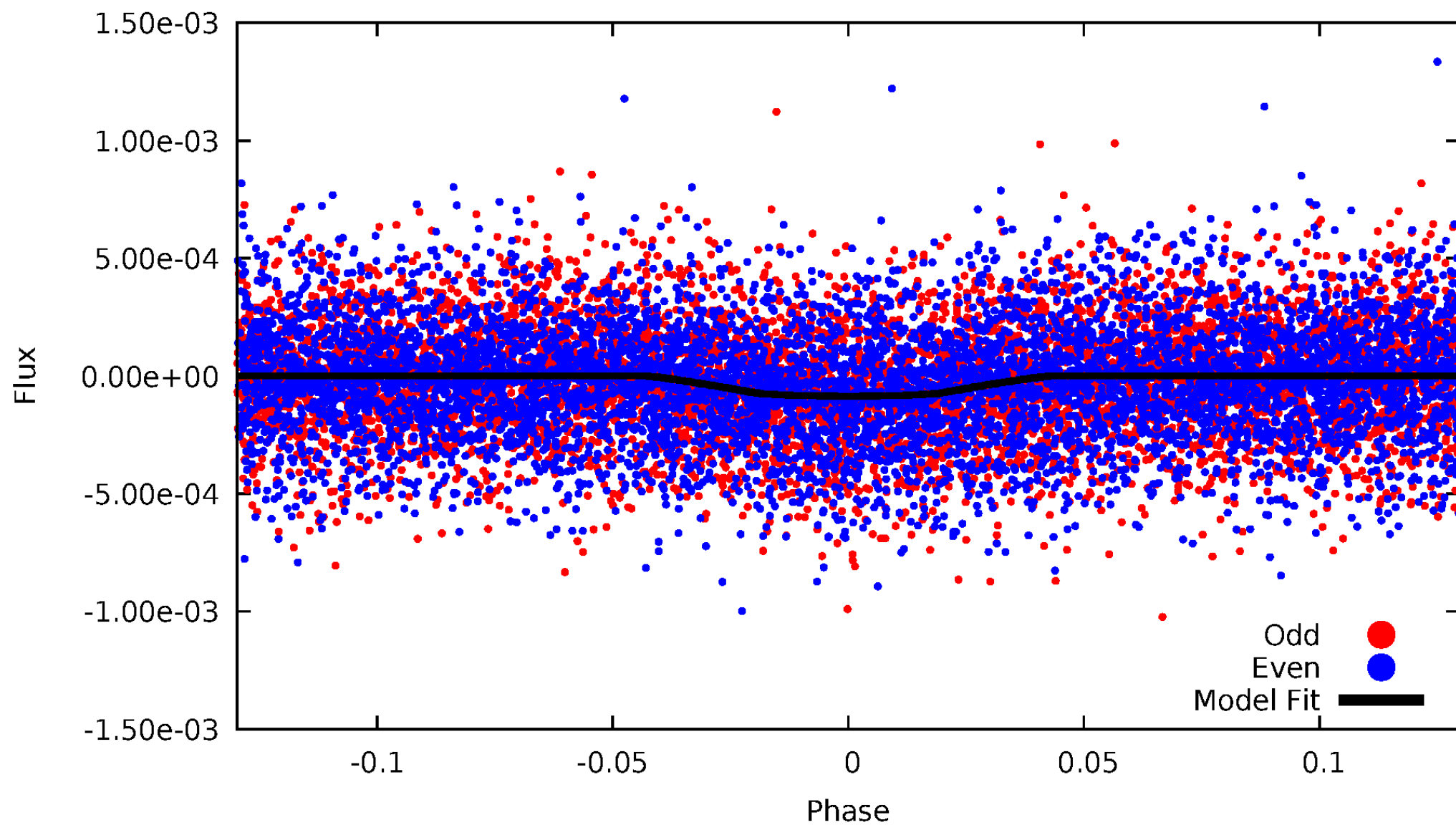


TCE 004482738-01



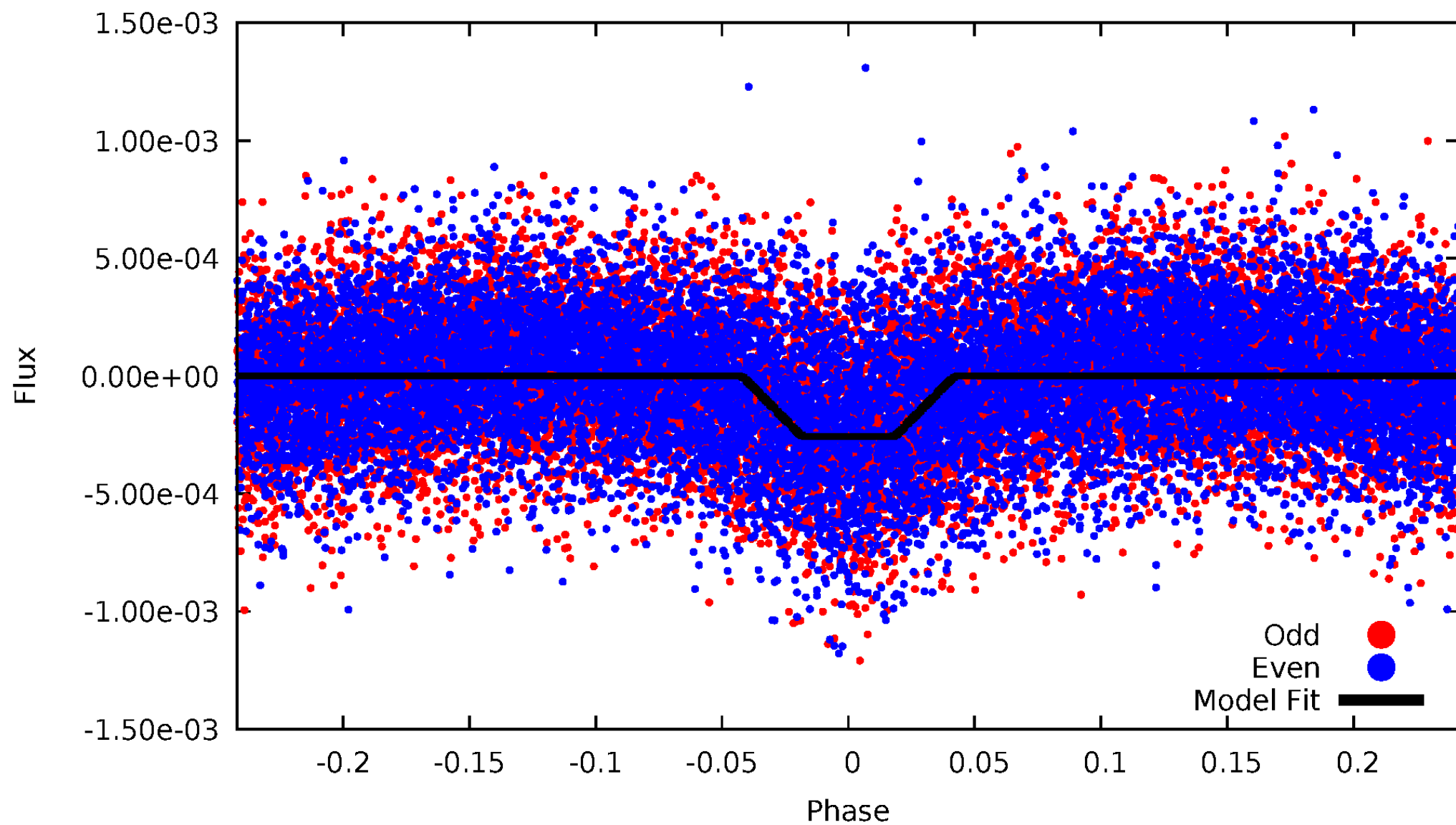
DV Odd/Even

TCE 004482738-01



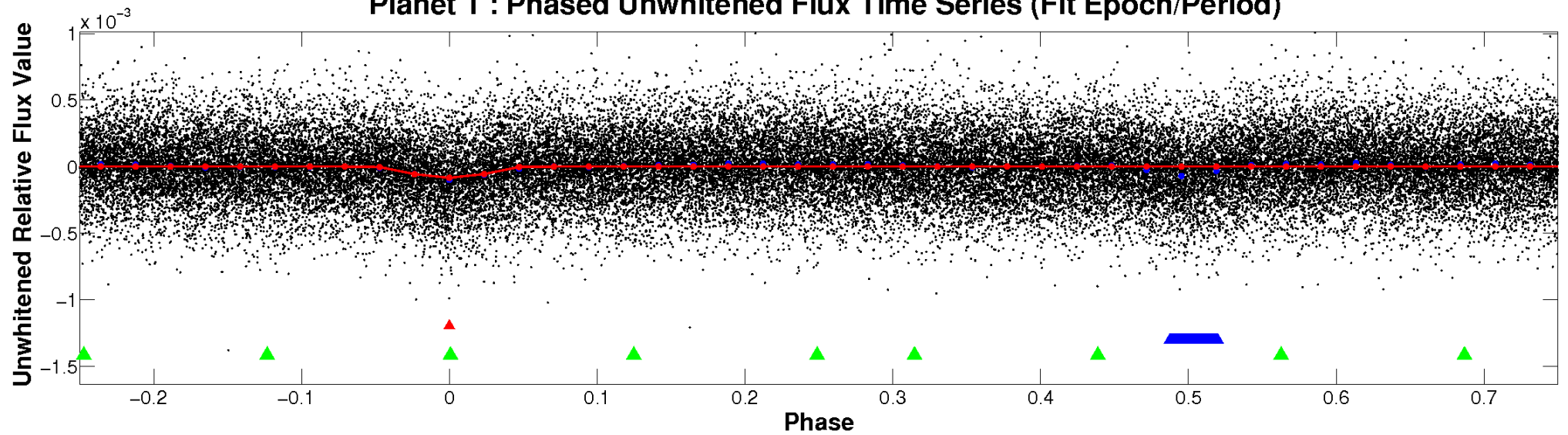
ALT Odd/Even

TCE 004482738-01

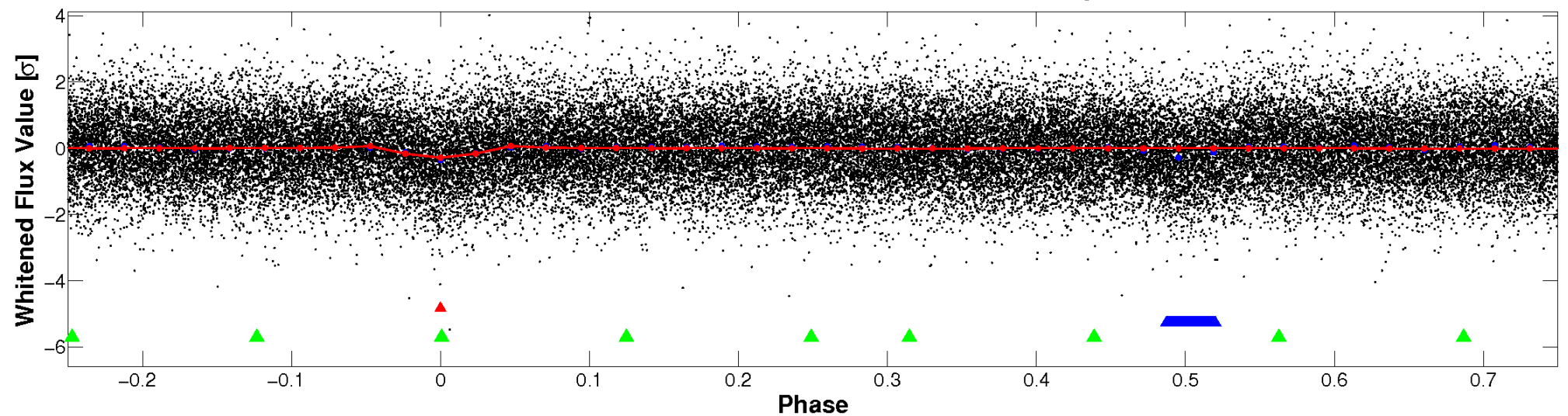


Non-Whitened Vs. Whitened Light Curve

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

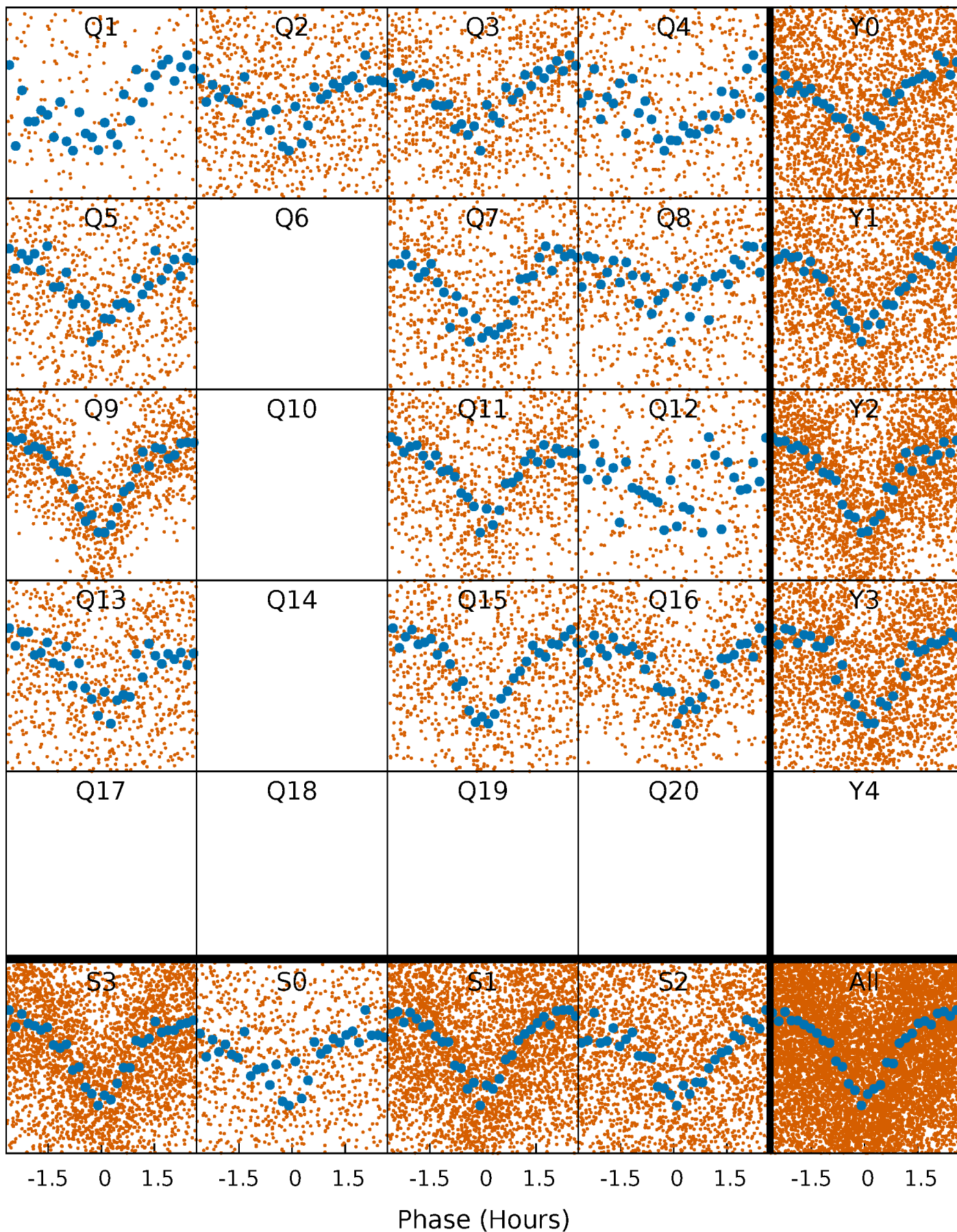


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



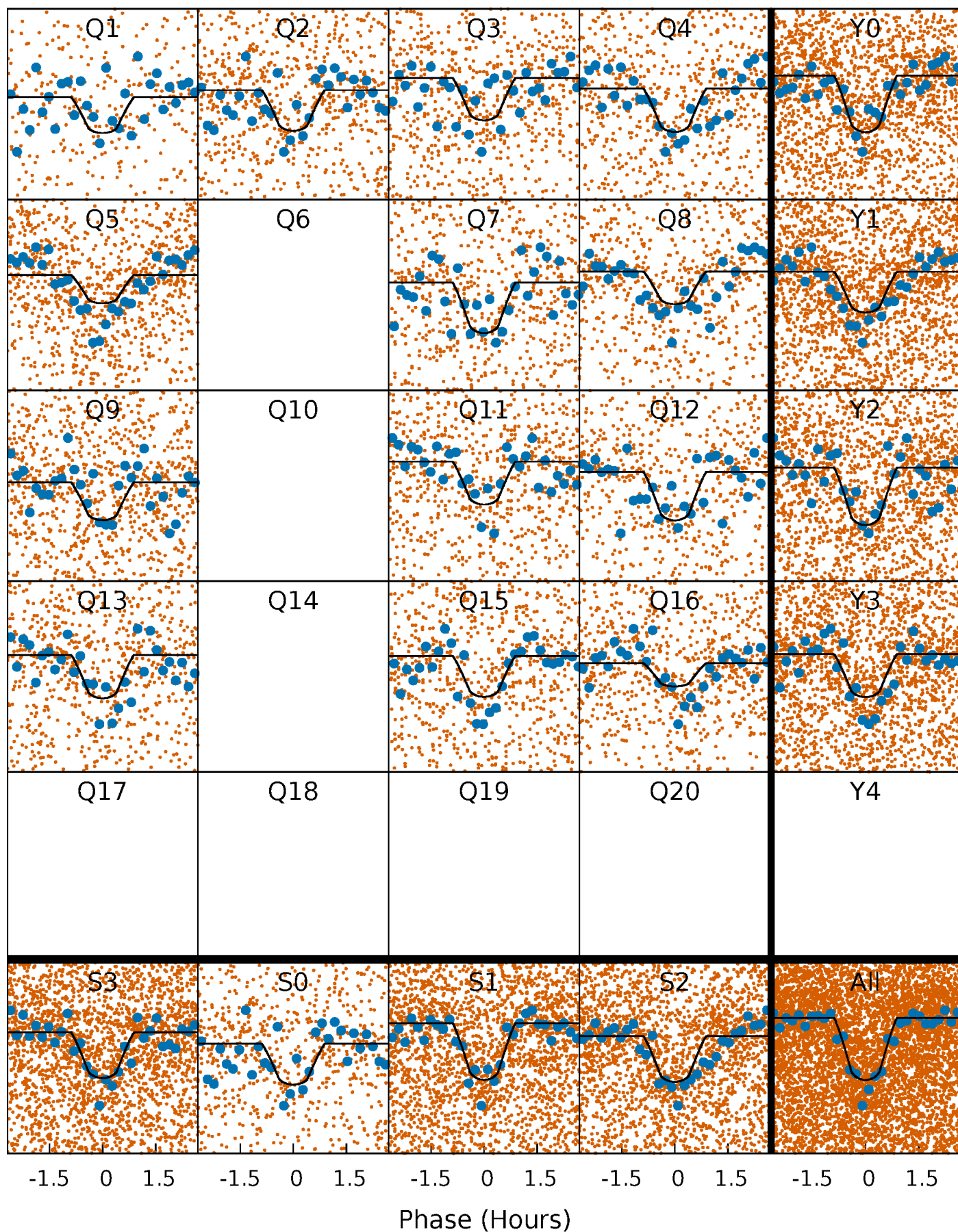
PDC Quarter-Phased Transit Curves

TCE 004482738-01 P= 0.866332 Days $T_0=132.074735$ (BKJD)



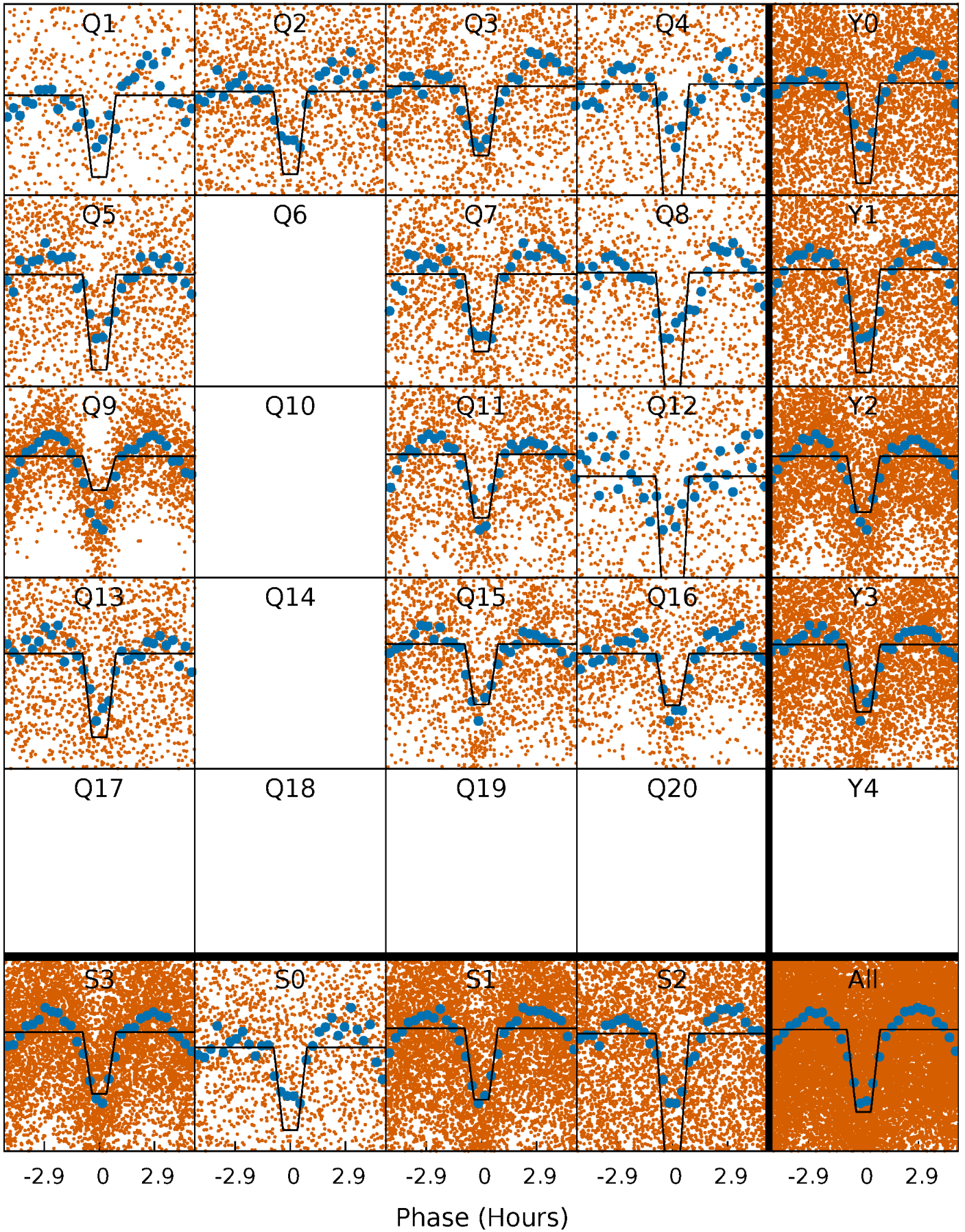
DV Quarter-Phased Transit Curves

TCE 004482738-01 P= 0.866332 Days $T_0=132.074735$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

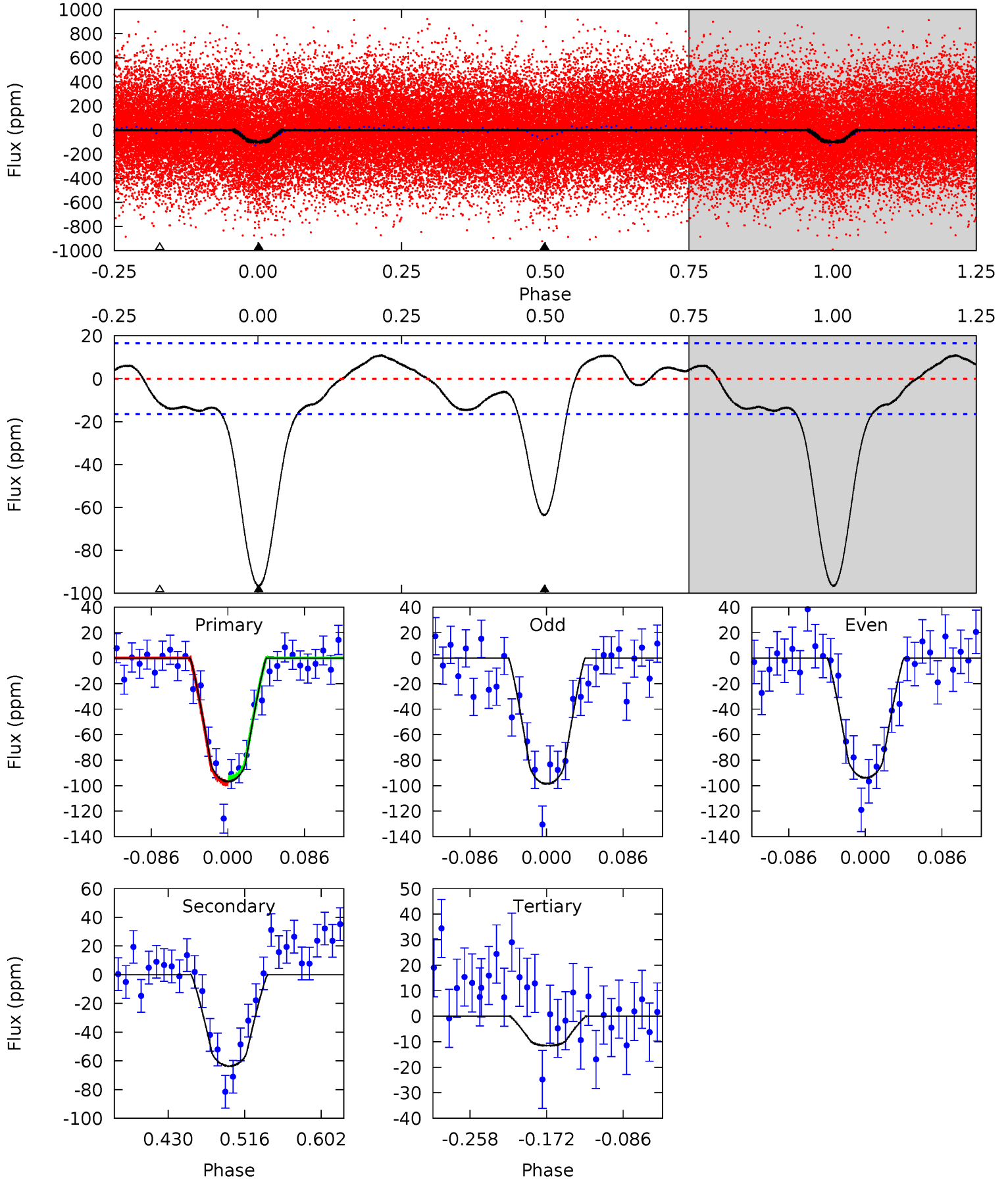
TCE 004482738-01 P= 0.866343 Days $T_0=132.065445$ (BKJD)



DV Model-Shift Uniqueness Test

004482738-01, P = 0.866332 Days, E = 131.208403 Days

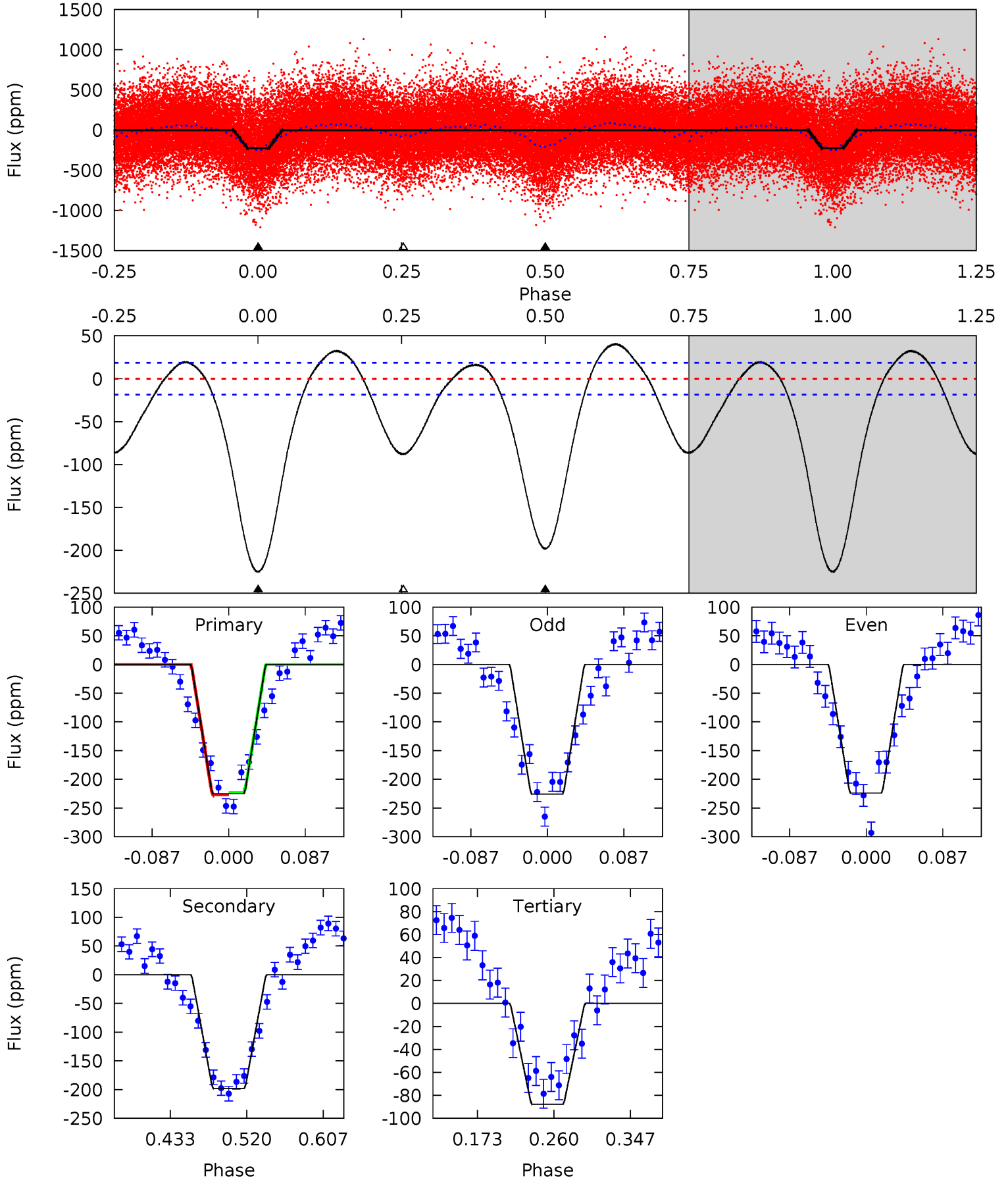
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.9	17.7	3.22	0	4.60	1.72	2.38	23.7	26.9	14.5	17.7	0.66	1.07	0.10	0.49



Alt Model-Shift Uniqueness Test

004482738-01, P = 0.866343 Days, E = 131.199102 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
55.8	49.1	21.8	0	4.59	1.71	9.80	34.0	55.8	27.3	49.1	0.24	1.01	0.15	0.52



Stellar Parameters For KIC 004482738

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4936^{+109}_{-69}	$3.055^{+0.028}_{-0.031}$	$-0.440^{+0.250}_{-0.150}$	$4.527^{+1.003}_{-0.106}$	$0.848^{+0.394}_{-0.021}$	$0.013^{+0.001}_{-0.003}$
	+2%/-1%	+1%/-1%	+57%/-34%	+22%/-2%	+46%/-2%	+9%/-21%
Source	PHO56	AST56	PHO56	DSEP		

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

Secondary Eclipse Parameters for KIC 004482738-01 / KOI 6418.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-64 ± 4	$5.28^{+2.28}_{-2.21}$	4995^{+128}_{-91}	3277^{+1872}_{-6910}	$0.363^{+0.667}_{-0.182}$
Alt.	-198 ± 4	$8.08^{+2.30}_{-2.40}$	5001^{+122}_{-97}	3915^{+1080}_{-6435}	$0.487^{+0.470}_{-0.197}$

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

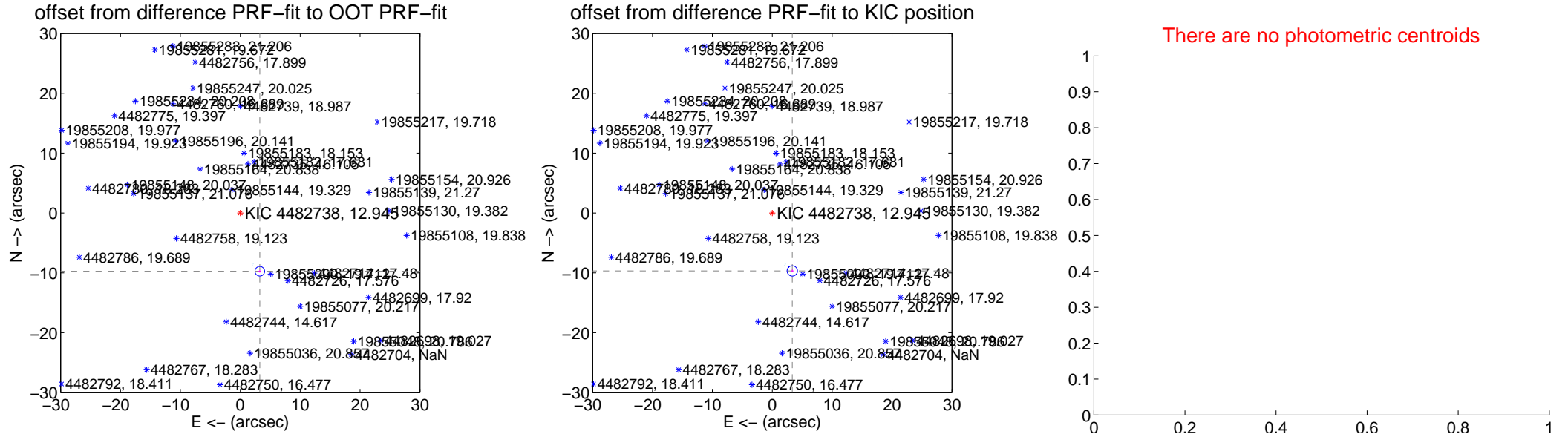
DV Centroid Data

Supplemental centroid analysis for 004482738-01. Kepler magnitude: 12.95. Transit SNR 13.76

There are 7 quarters with good PRF difference image offsets

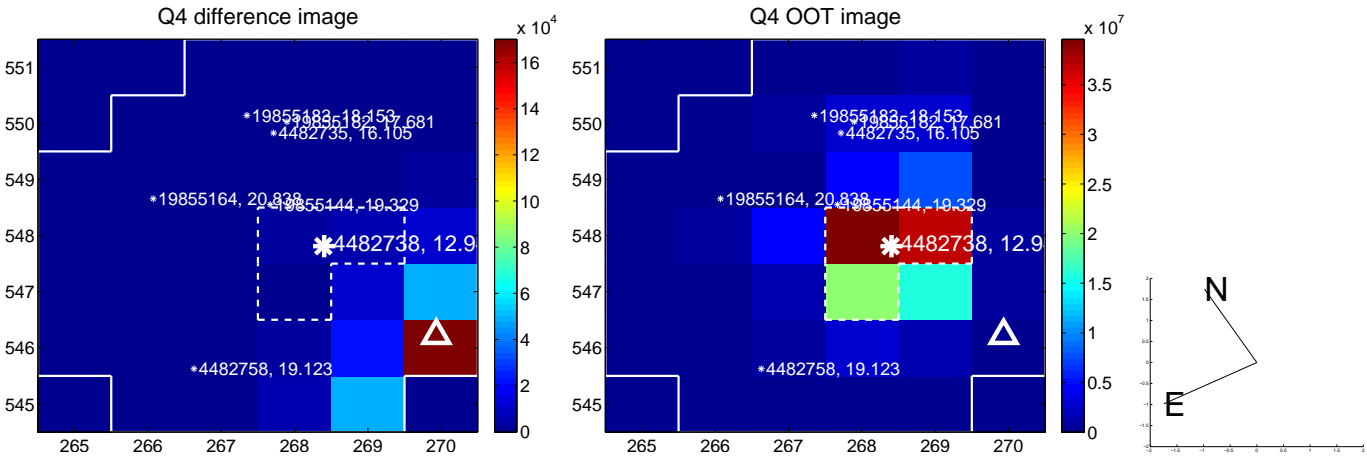
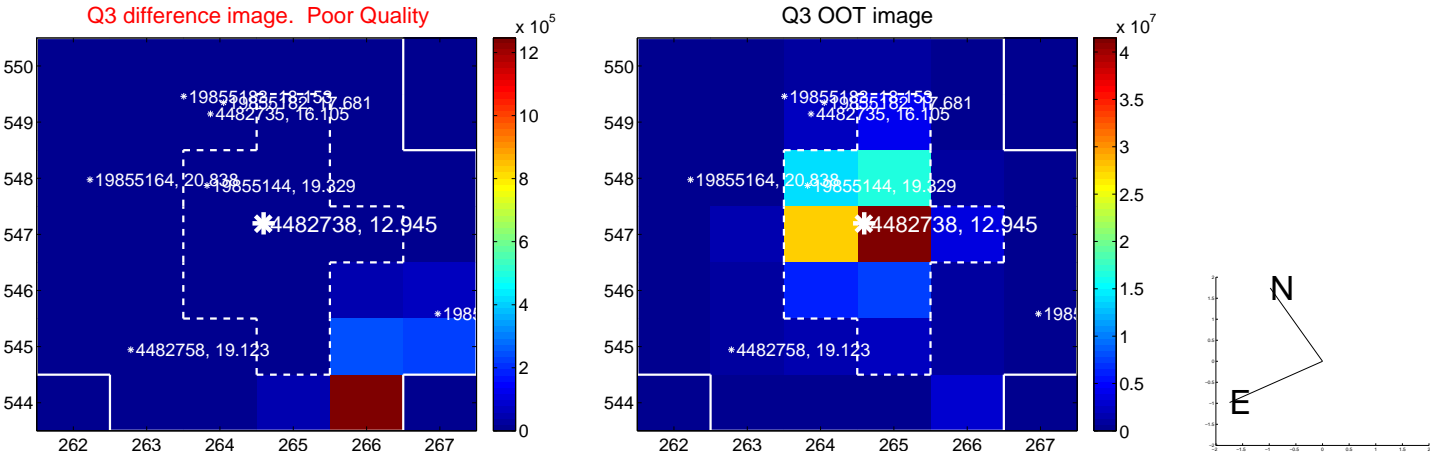
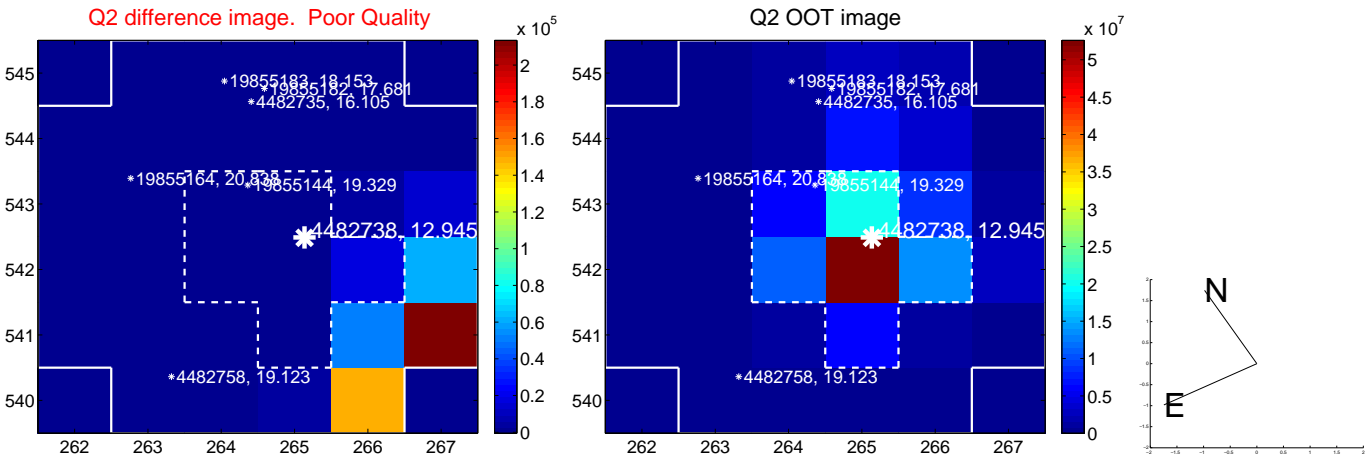
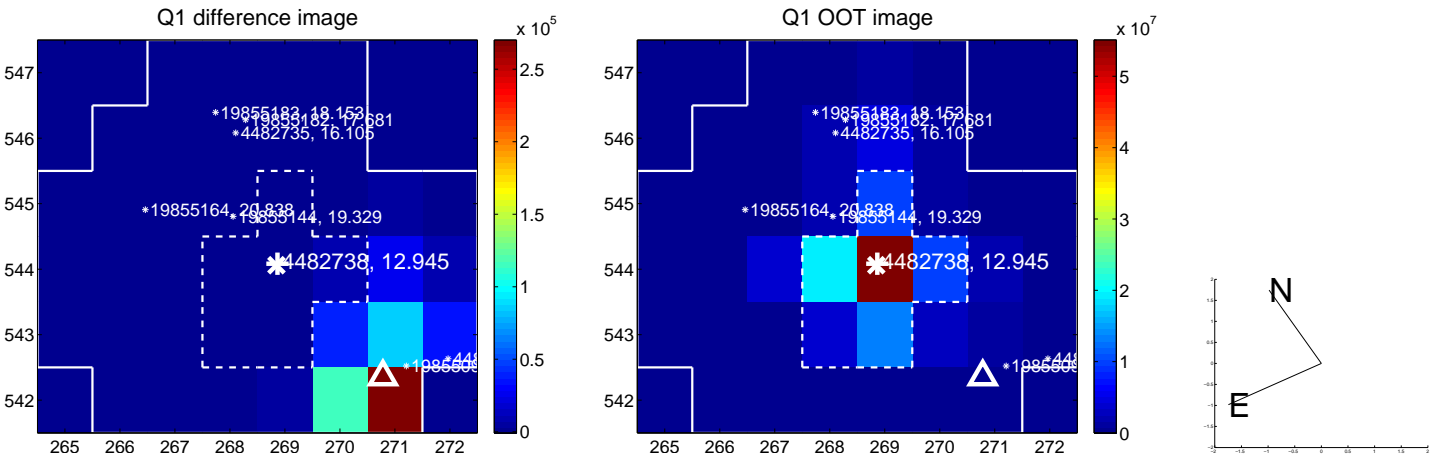
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	10.264 \pm 0.268	38.31	-3.261 \pm 0.211	-9.732 \pm 0.218
PRF-fit source offset from KIC position	10.237 \pm 0.289	35.44	-3.346 \pm 0.238	-9.674 \pm 0.229
photometric centroid source offset	—	—	—	—

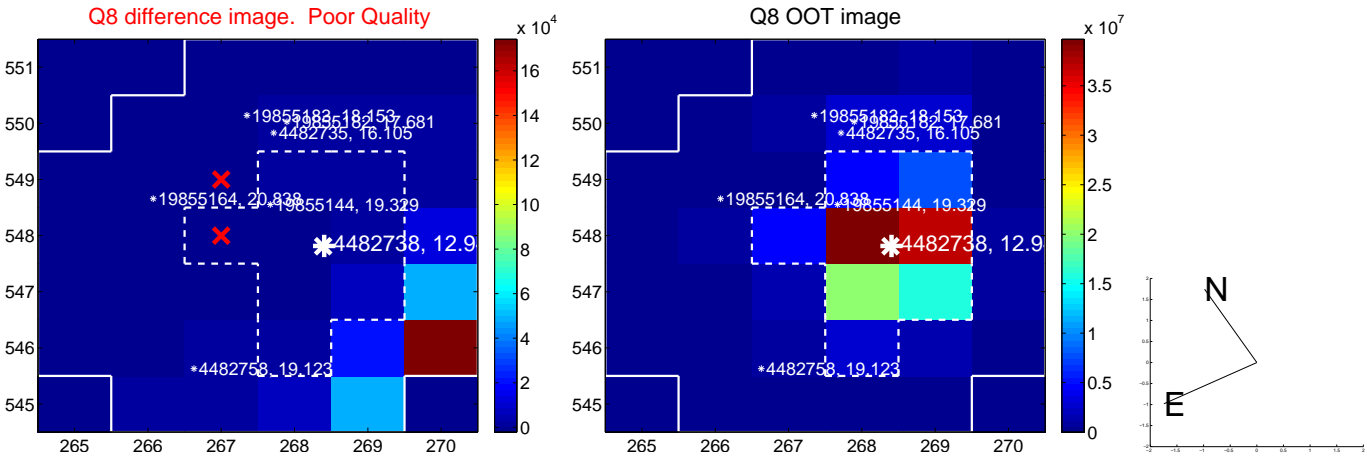
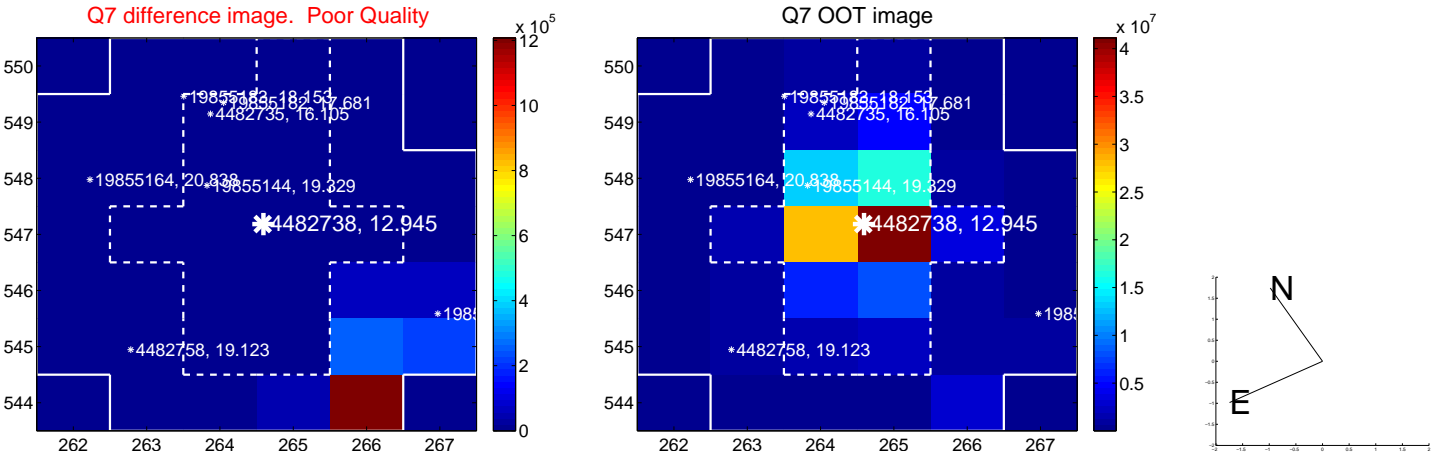
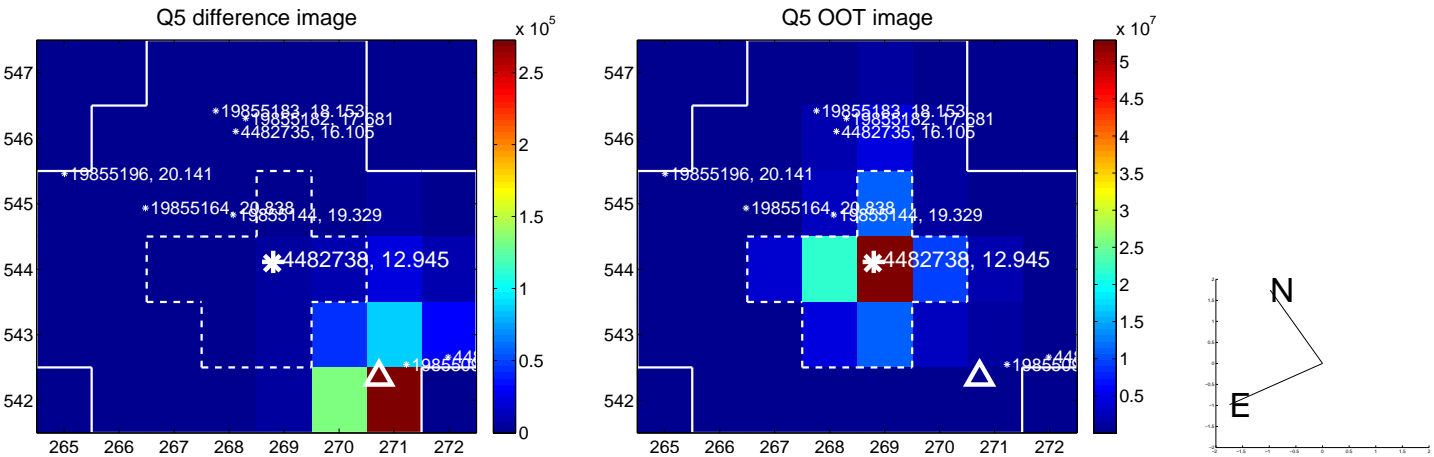


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

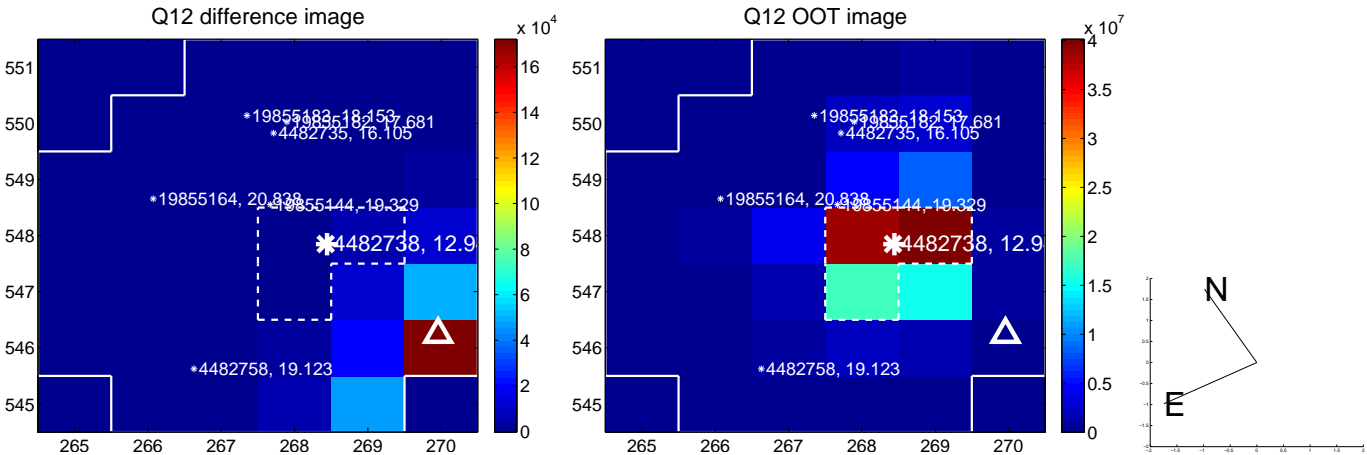
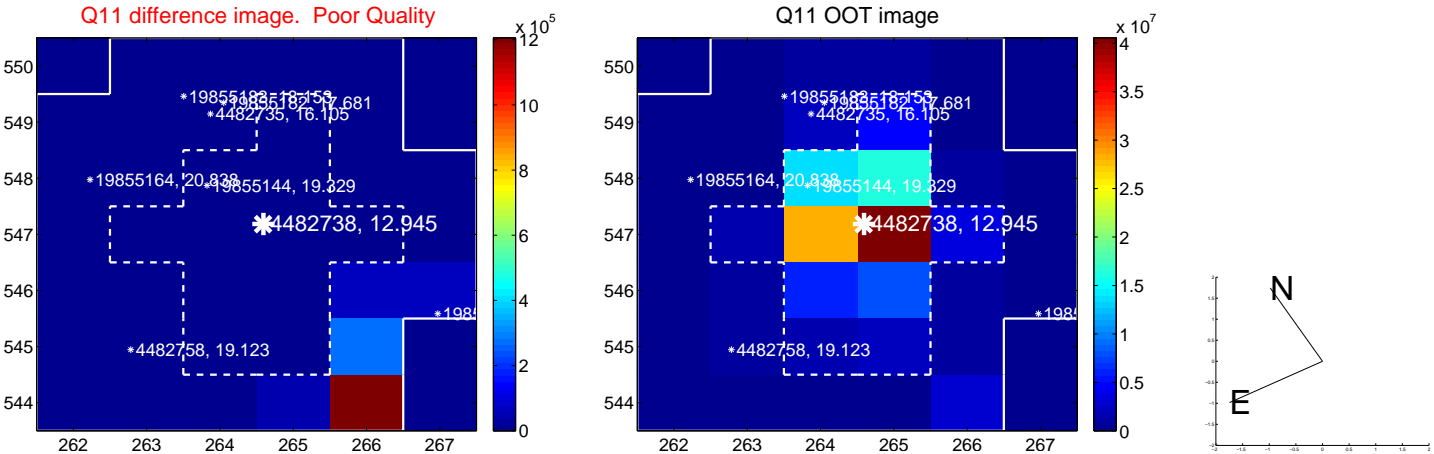
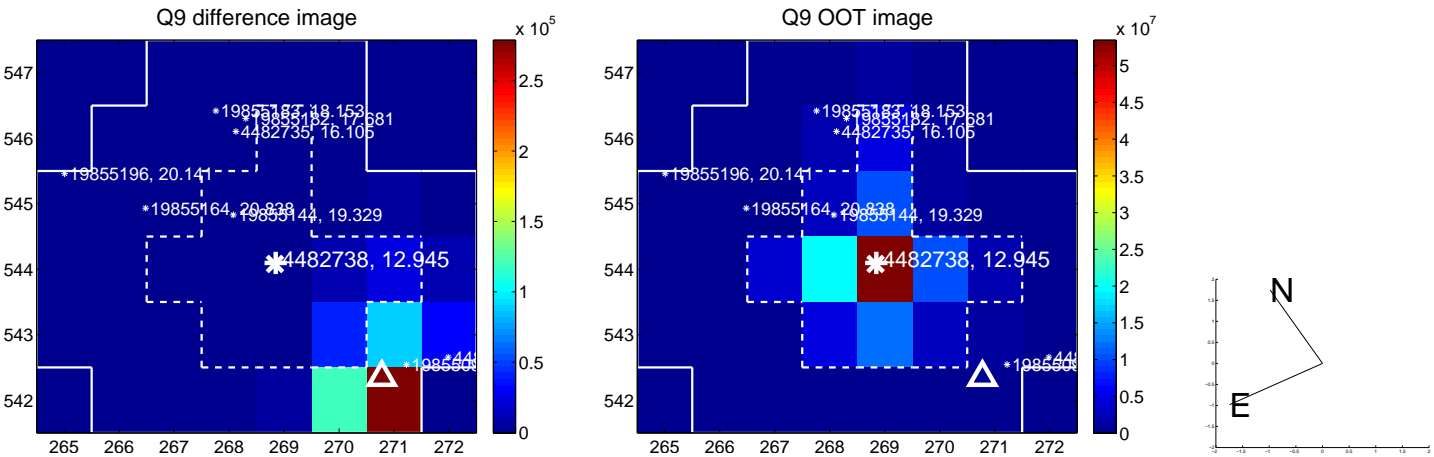
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



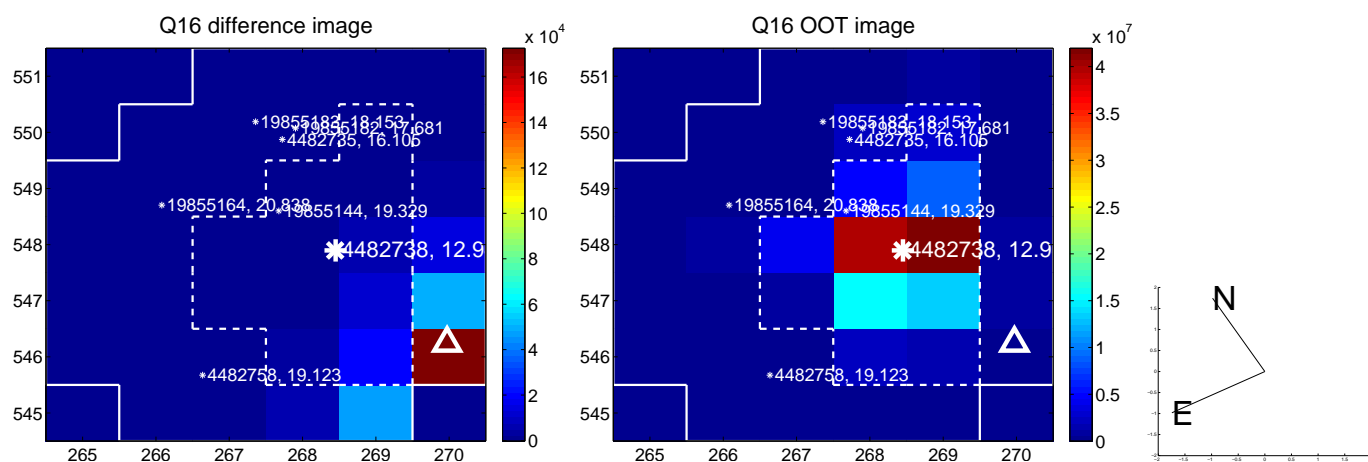
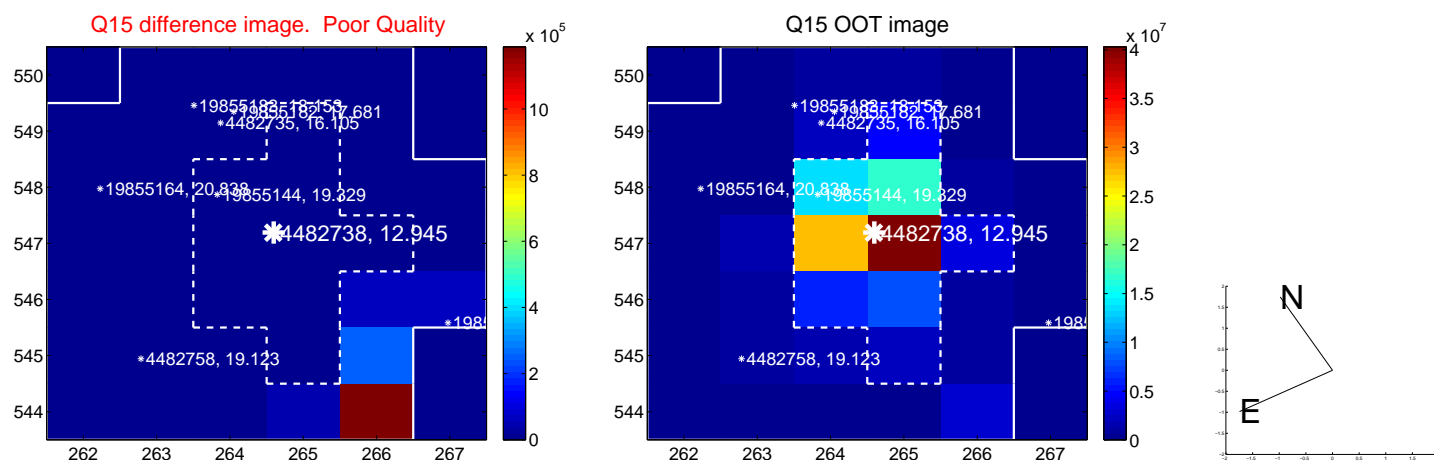
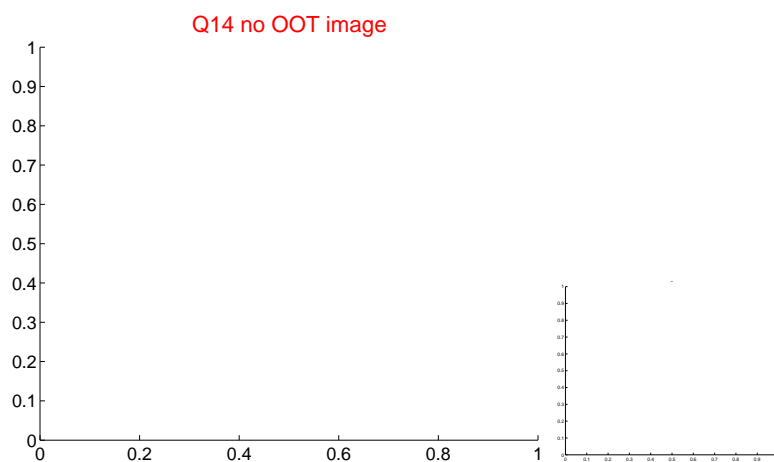
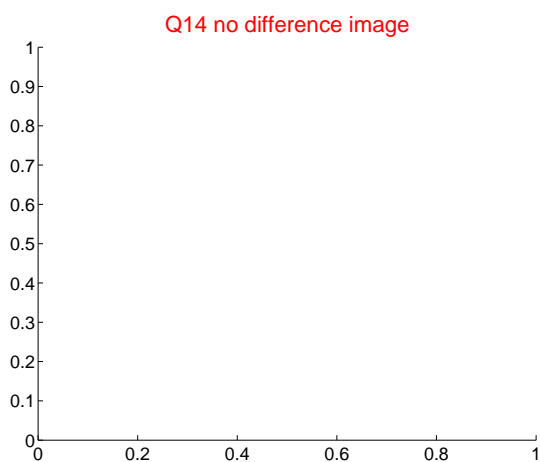
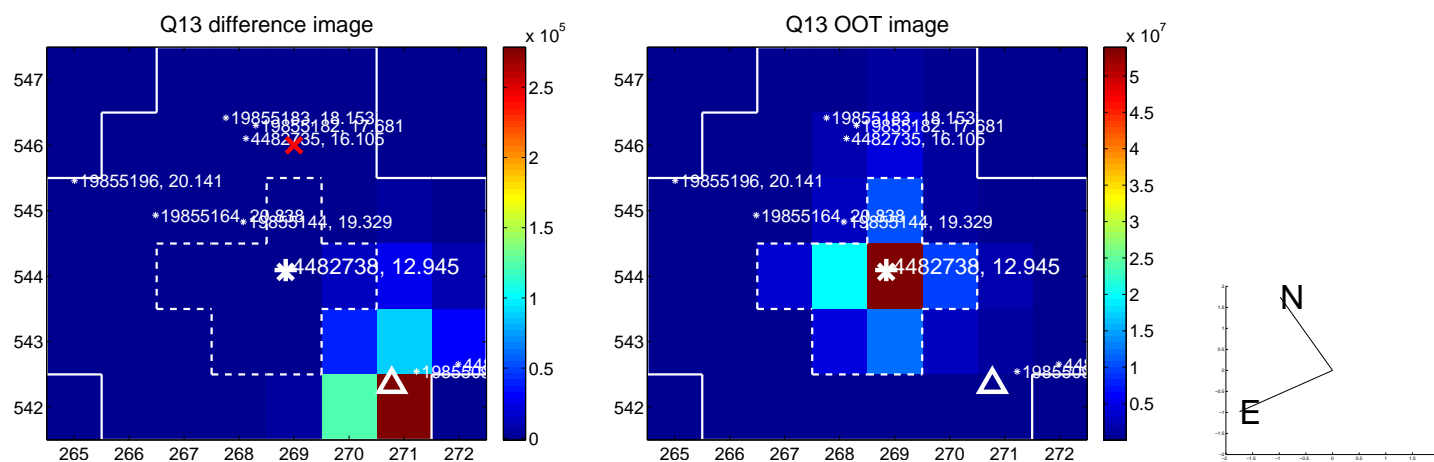
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



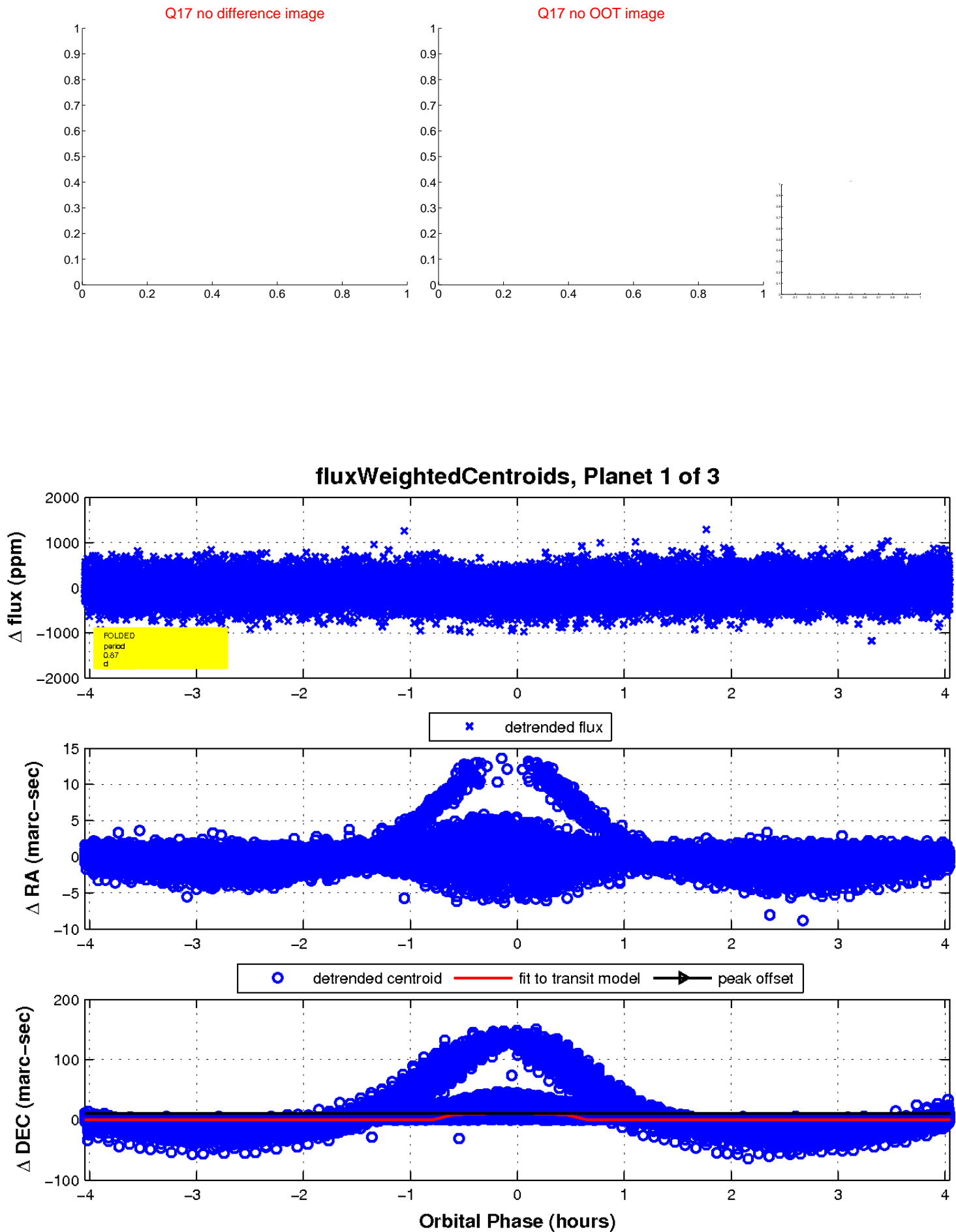
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

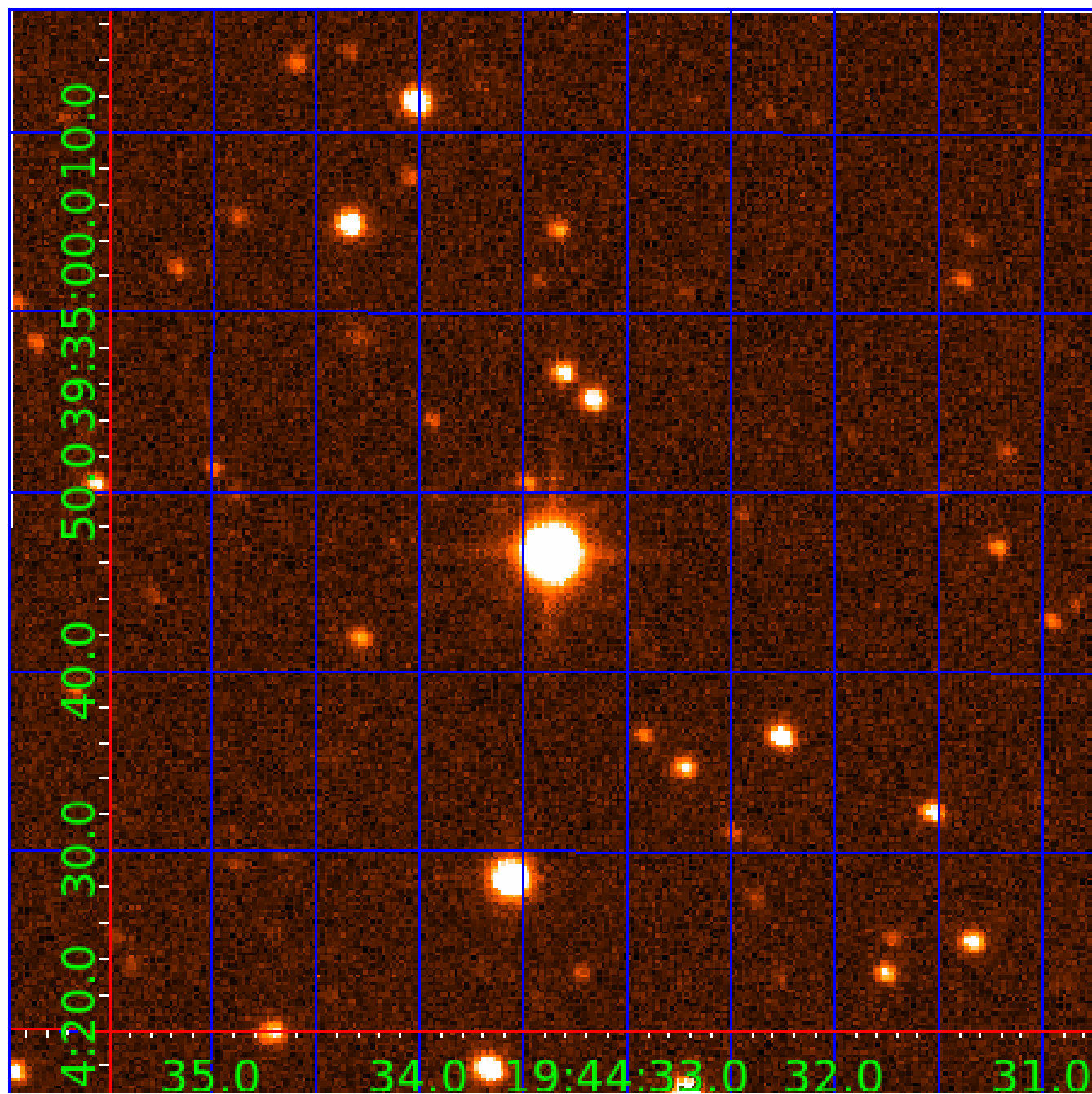


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004482738

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})
004482738-01	OBS	6418.01	0.866332	132.074735	85.5	1.348	12.3	13.8	4.53	4936	5.01	0.00
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004482738-03	OBS	No	154.586596	276.101452	568.3	3.671	7.8	7.0	4.53	4936	12.17	38.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004482738-01	OBS	FP	0.00	1	0	1	1	MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
004482738-02	OBS	FP	0.00	1	0	1	1	MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
004482738-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—MOD_NONUNIQ_ALT—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 004482738-02

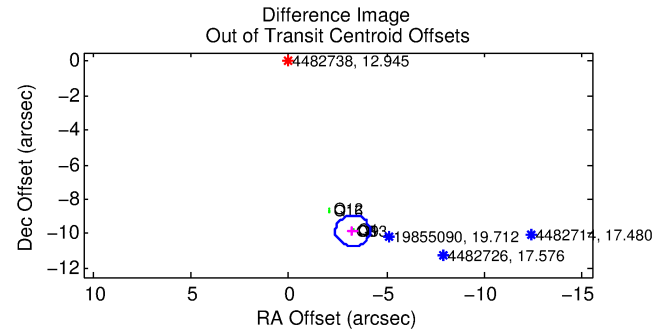
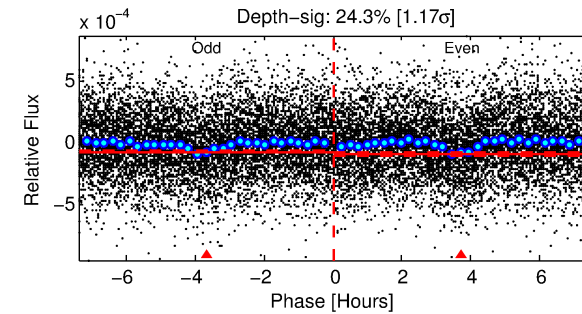
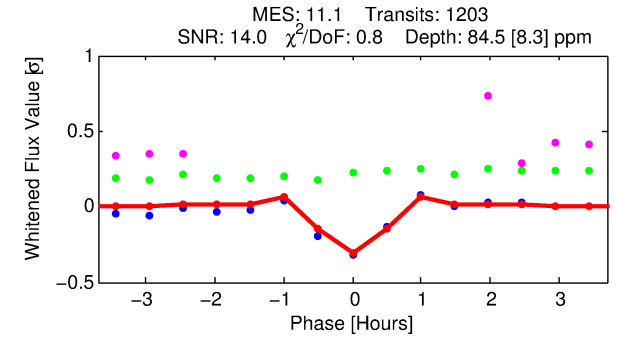
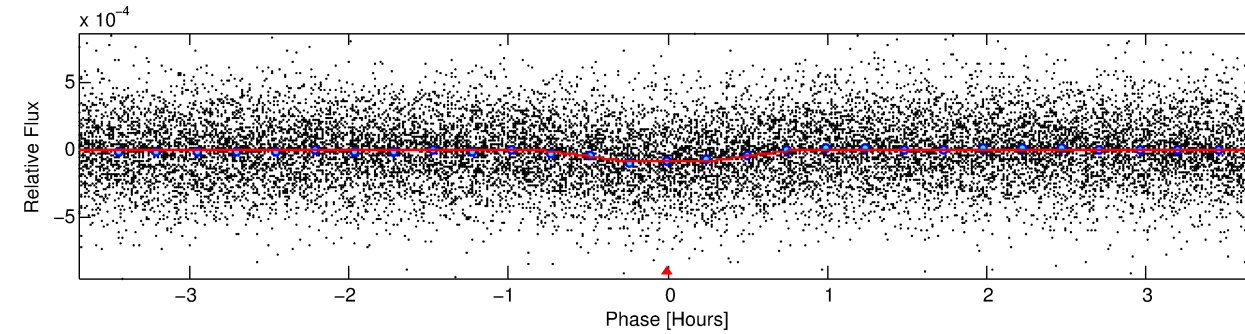
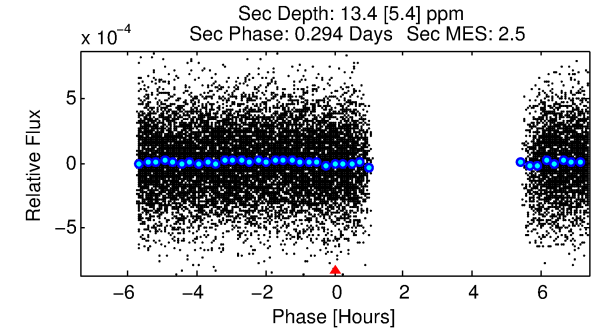
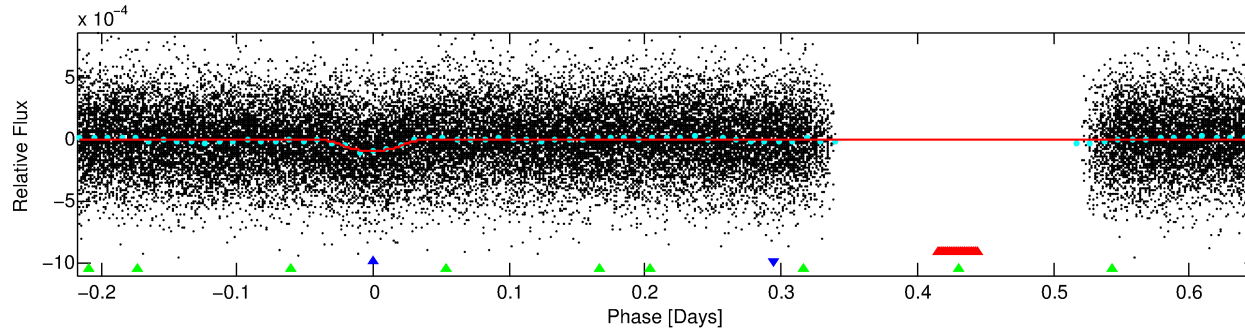
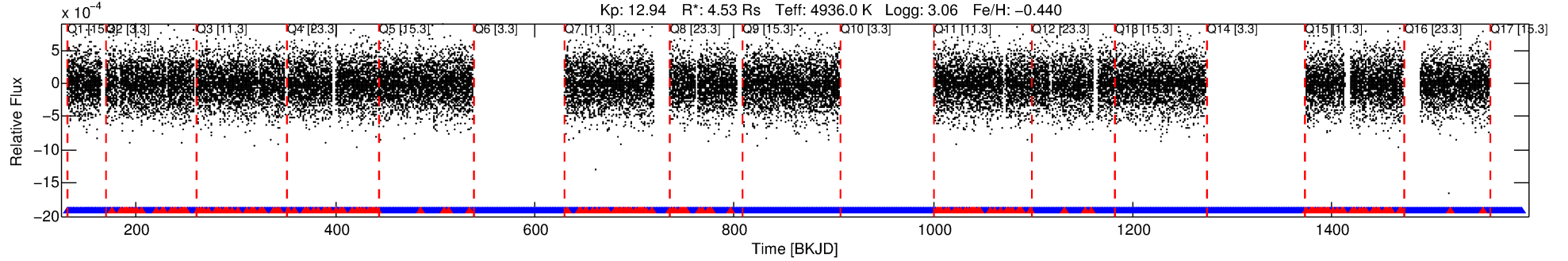
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
004482738-02	4482738	4414.01	4579598	1:1	136.2	-34	-2	13.79	12.95	1.45	Direct-PRF	1	0.46	0.06

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 4482738 Candidate: 2 of 3 Period: 0.866 d
KOI: K06418 Corr: No Ephemeris Match

Kp: 12.94 R*: 4.53 Rs Teff: 4936.0 K Logg: 3.06 Fe/H: -0.440



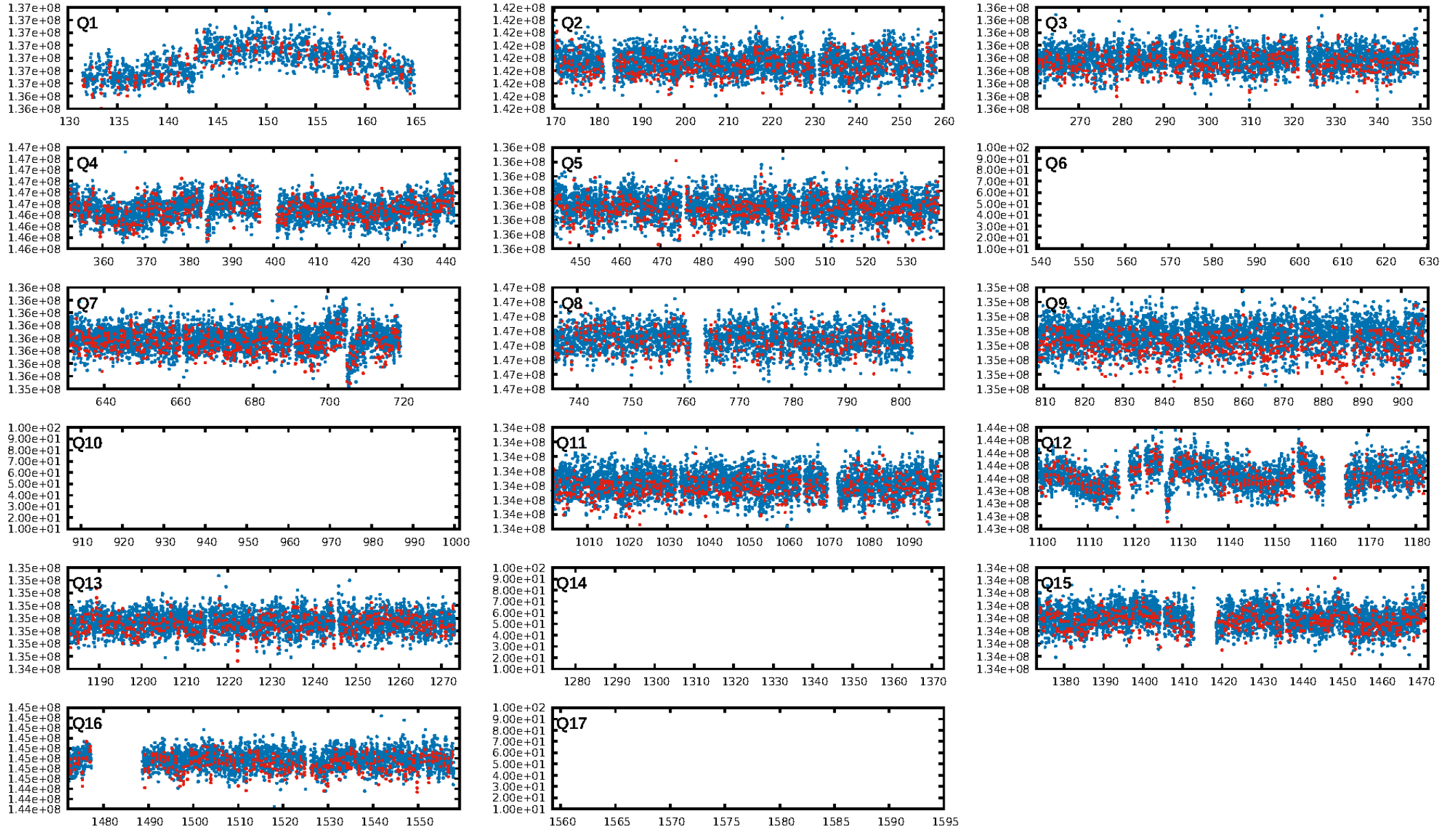
DV Fit Results:

Period = 0.86635 [0.00001] d
Epoch = 131.6305 [0.0011] BKJD
Rp/R* = 0.0103 [0.0056]
a/R* = 2.61 [4.95]
b = 0.90 [0.47]
Seff = N/A
Teq = N/A
Rp = 5.09 [2.98] Re
a = N/A
Ag = N/A
Teff = N/A

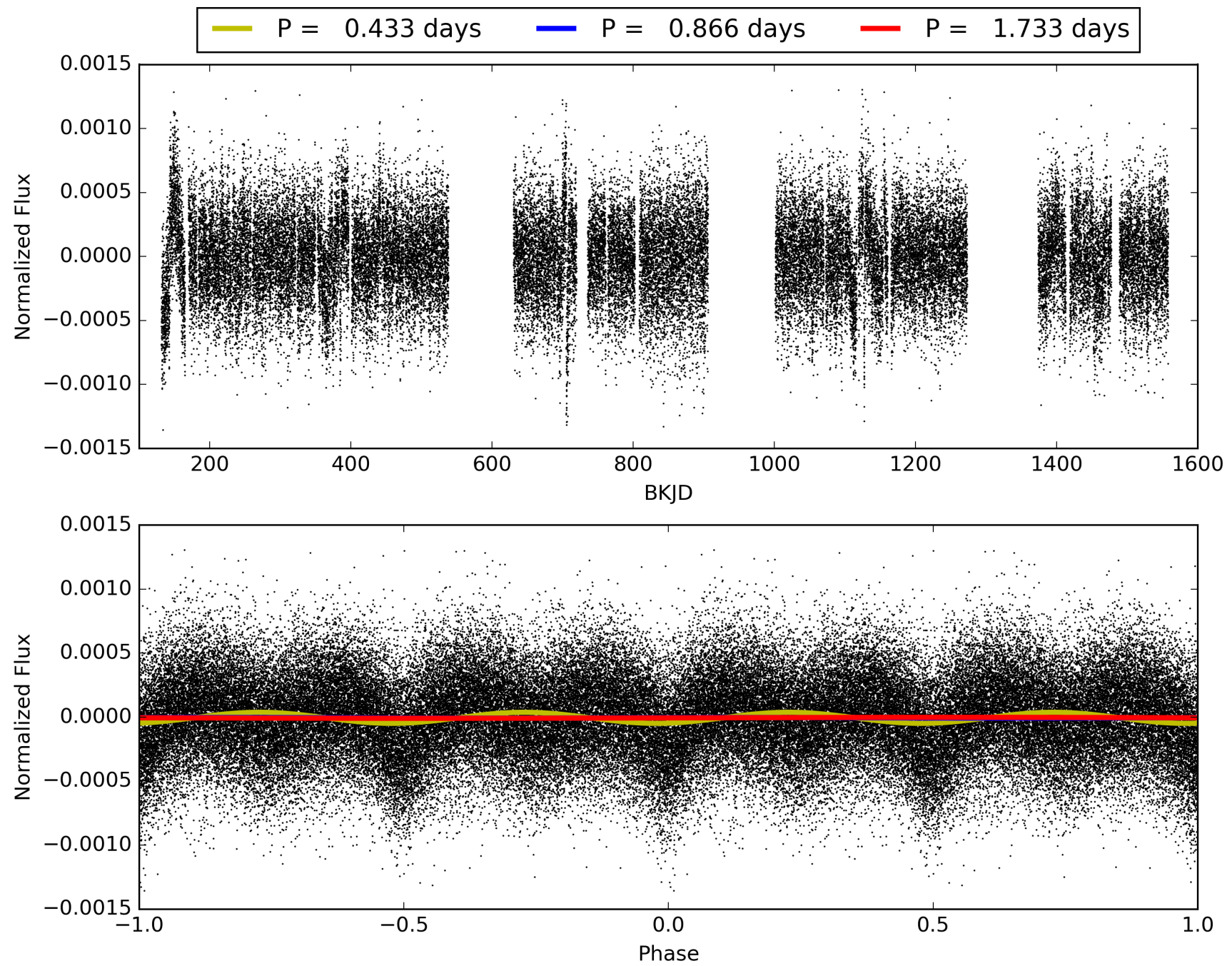
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [952.75σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.51e-26
RollingBand-fgt: 0.84 [972/1164]
GhostDiagnostic-chr: -0.1681
Centroid-sig: N/A
Centroid-so: 132.532 arcsec [116.64σ]
OotOffset-rm: 10.349 arcsec [35.00σ]
KicOffset-rm: 10.332 arcsec [30.29σ]
OotOffset-st: 0/0/2/4 [6]
KicOffset-st: 0/0/2/4 [6]
DiffImageQuality-fgm: 1.00 [6/6]
DiffImageOverlap-fno: 1.00 [13/13]

TCE 004482738-02, PDC Light Curves

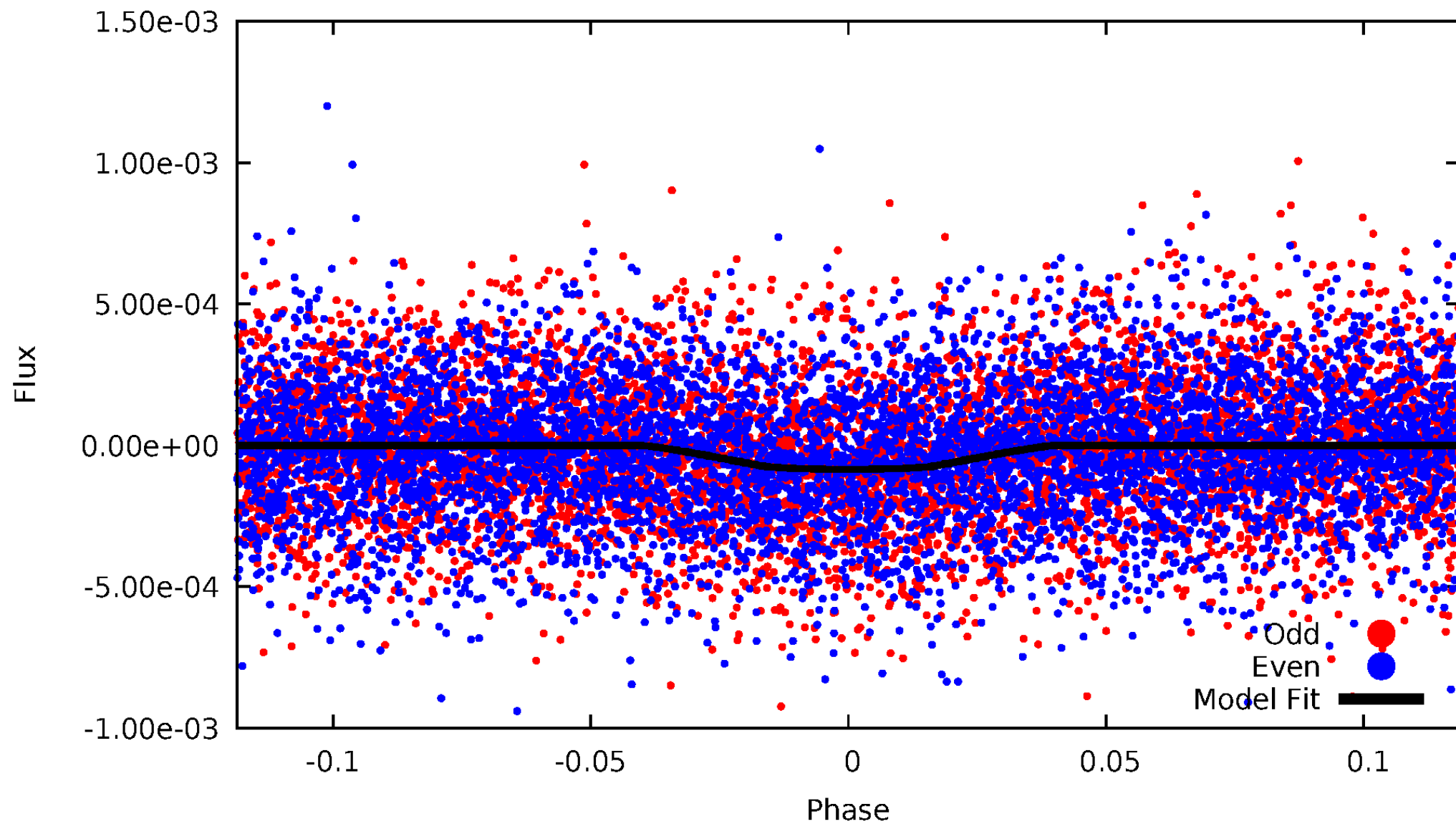


TCE 004482738-02



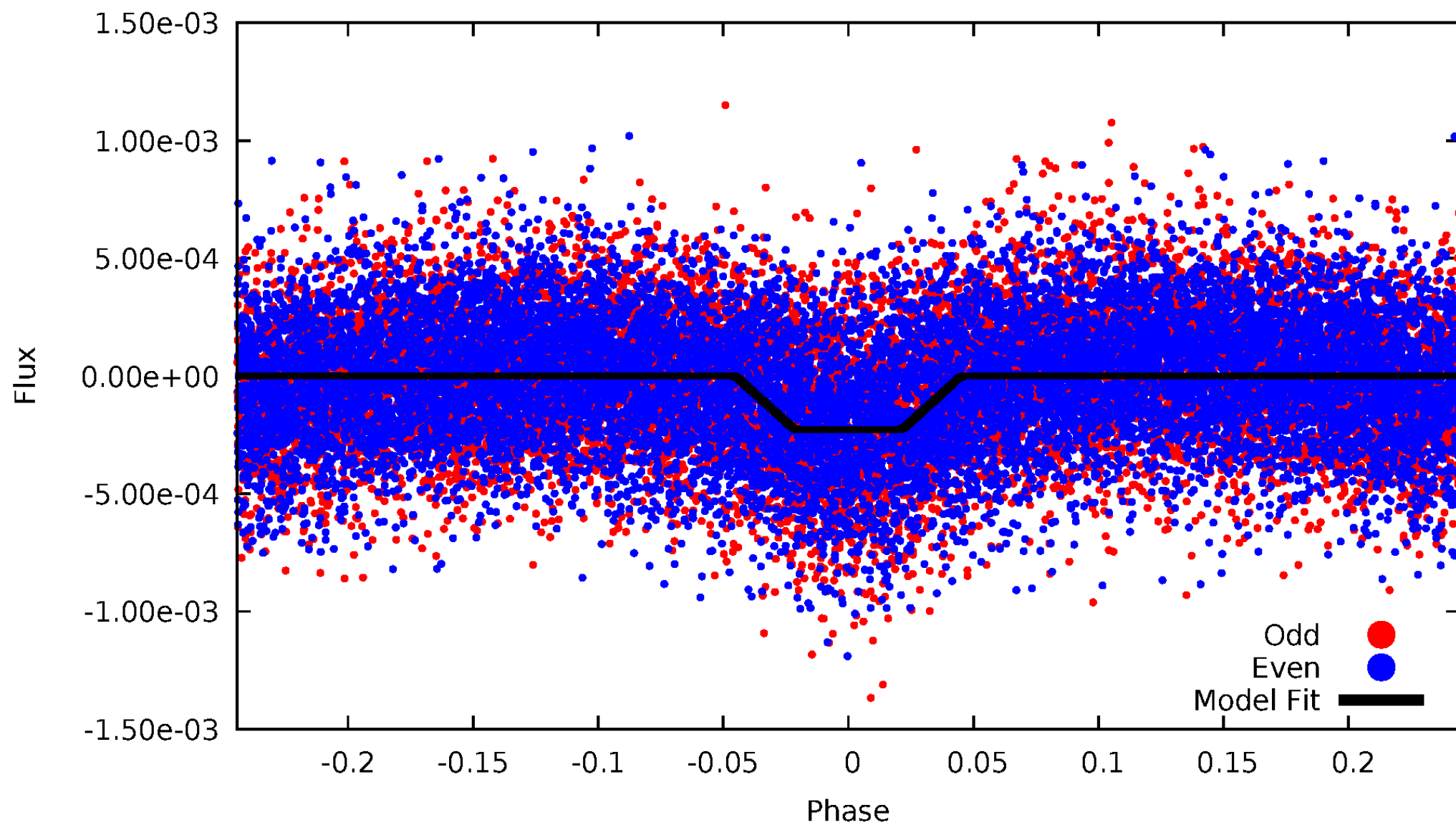
DV Odd/Even

TCE 004482738-02



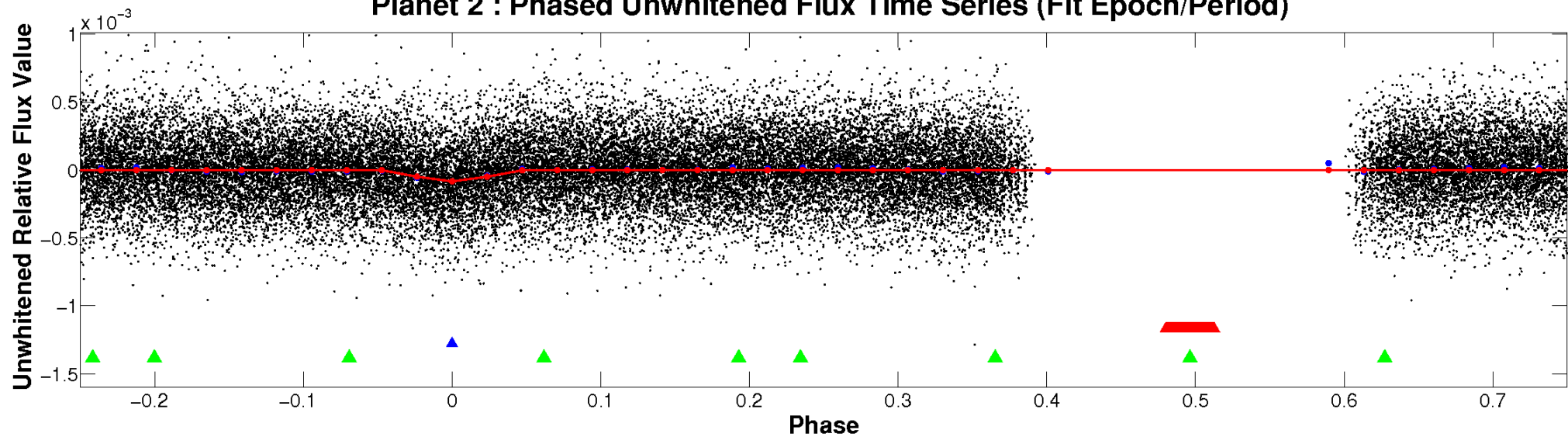
ALT Odd/Even

TCE 004482738-02

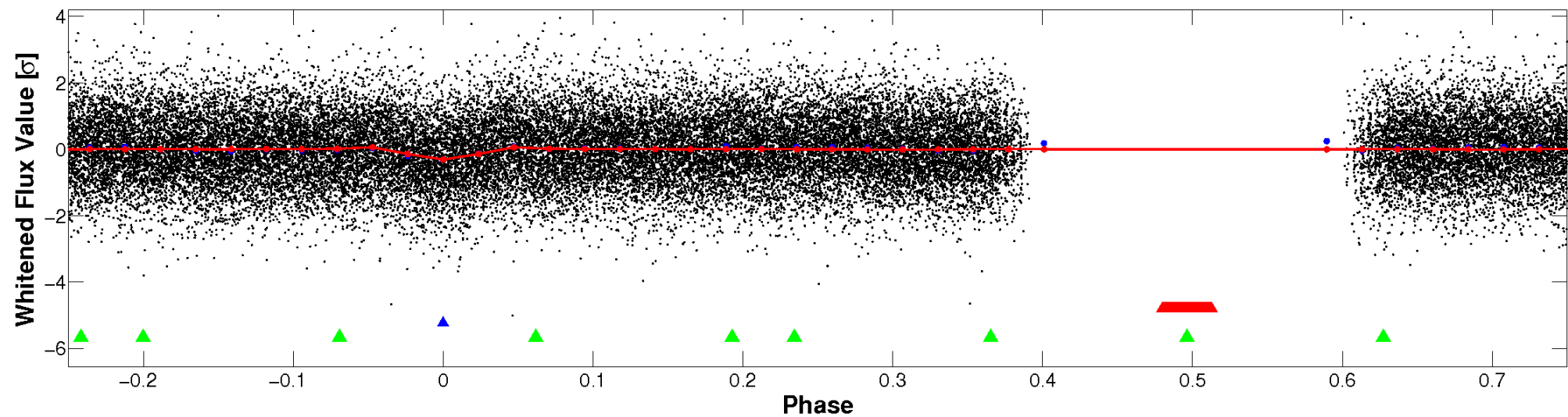


Non-Whitened Vs. Whitened Light Curve

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

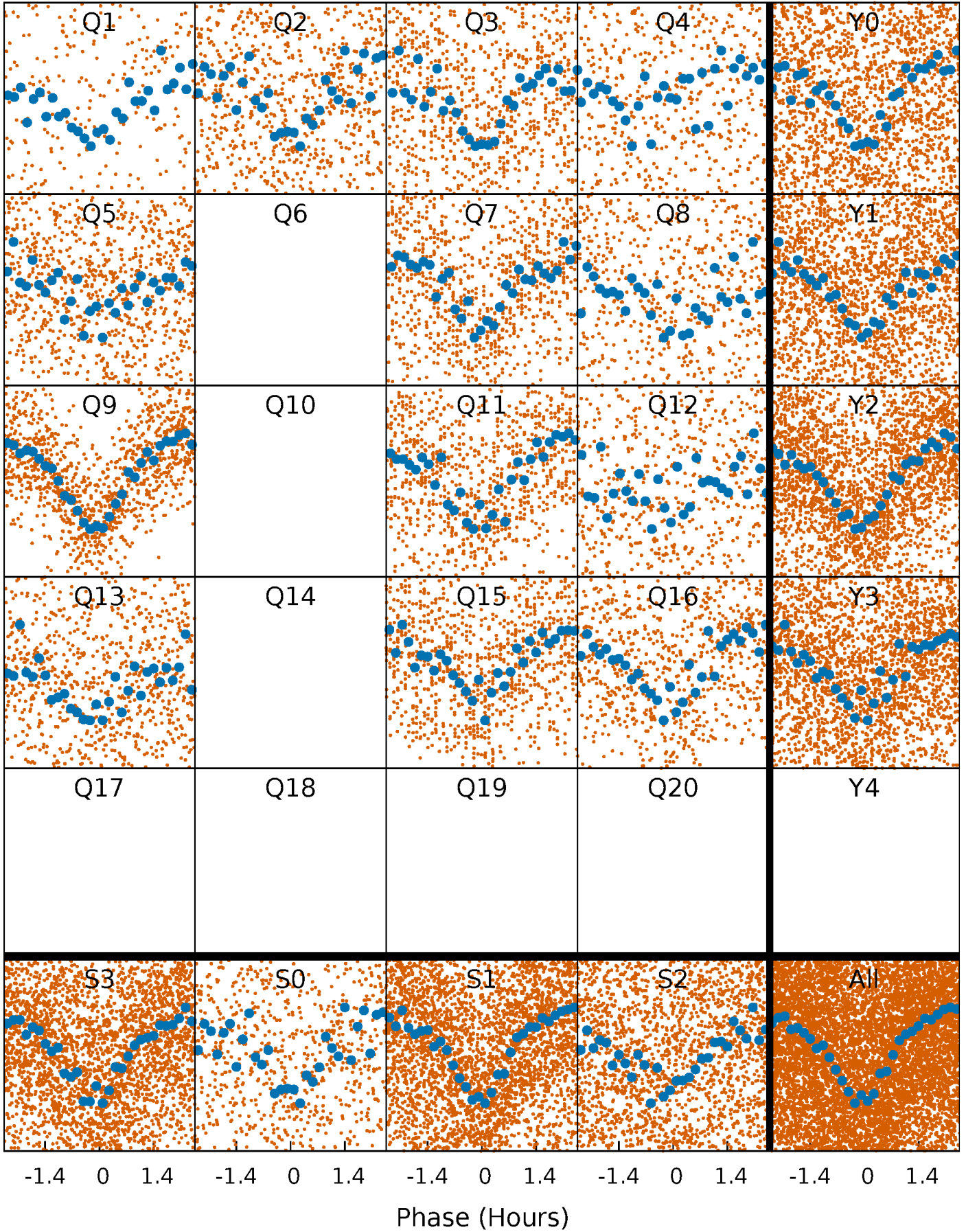


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



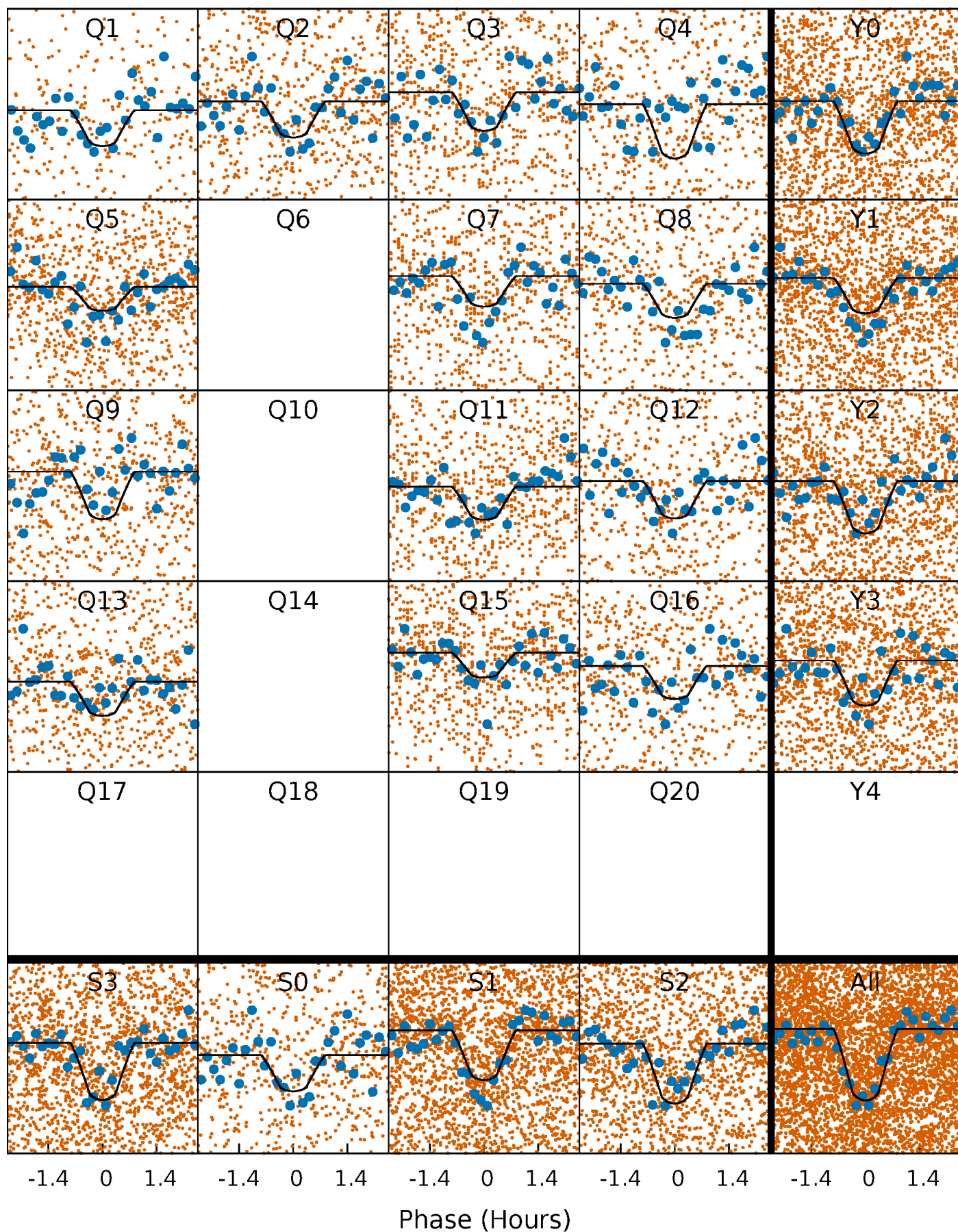
PDC Quarter-Phased Transit Curves

TCE 004482738-02 P= 0.866349 Days $T_0=131.630475$ (BKJD)



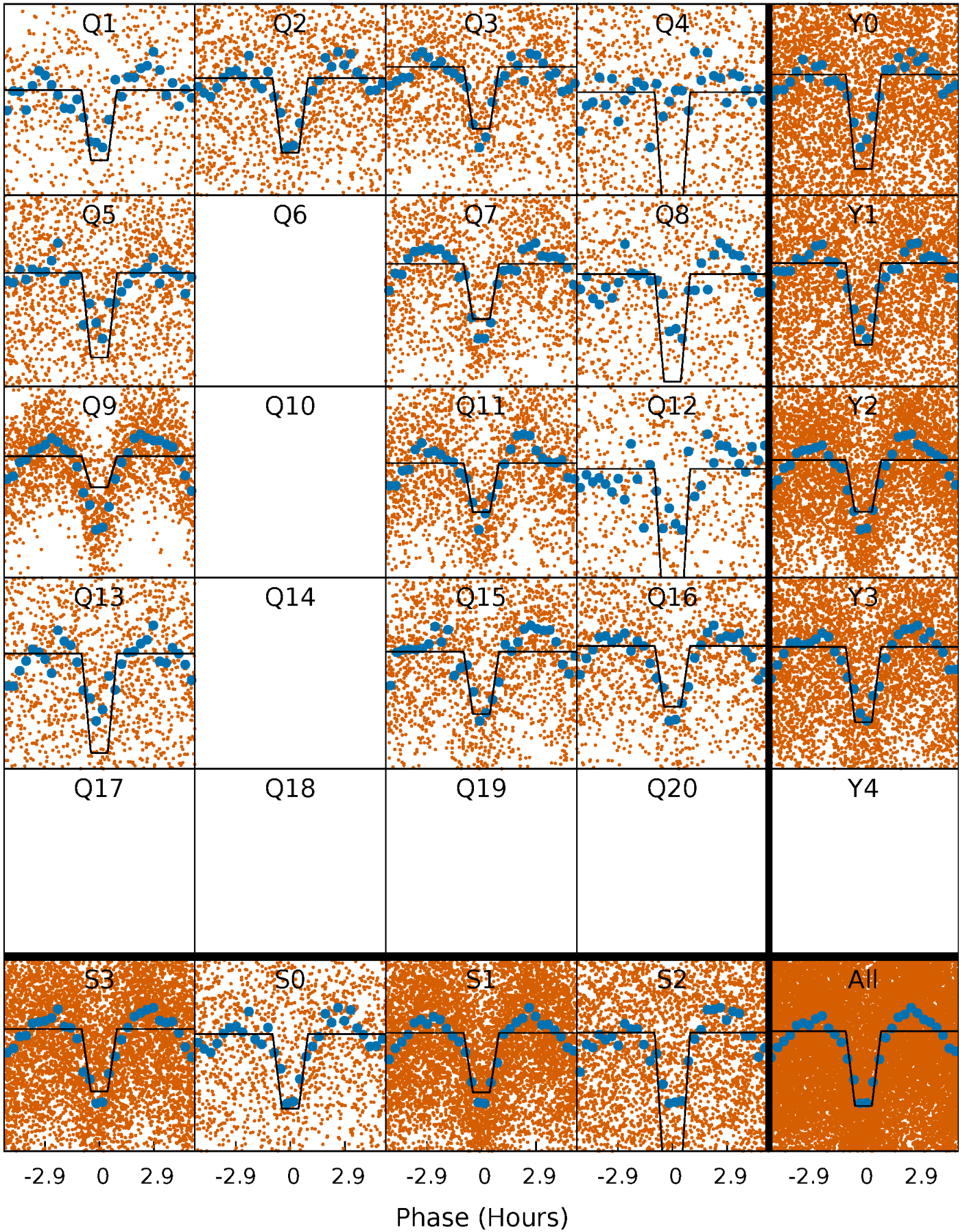
DV Quarter-Phased Transit Curves

TCE 004482738-02 $P = 0.866349$ Days $T_0 = 131.630475$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

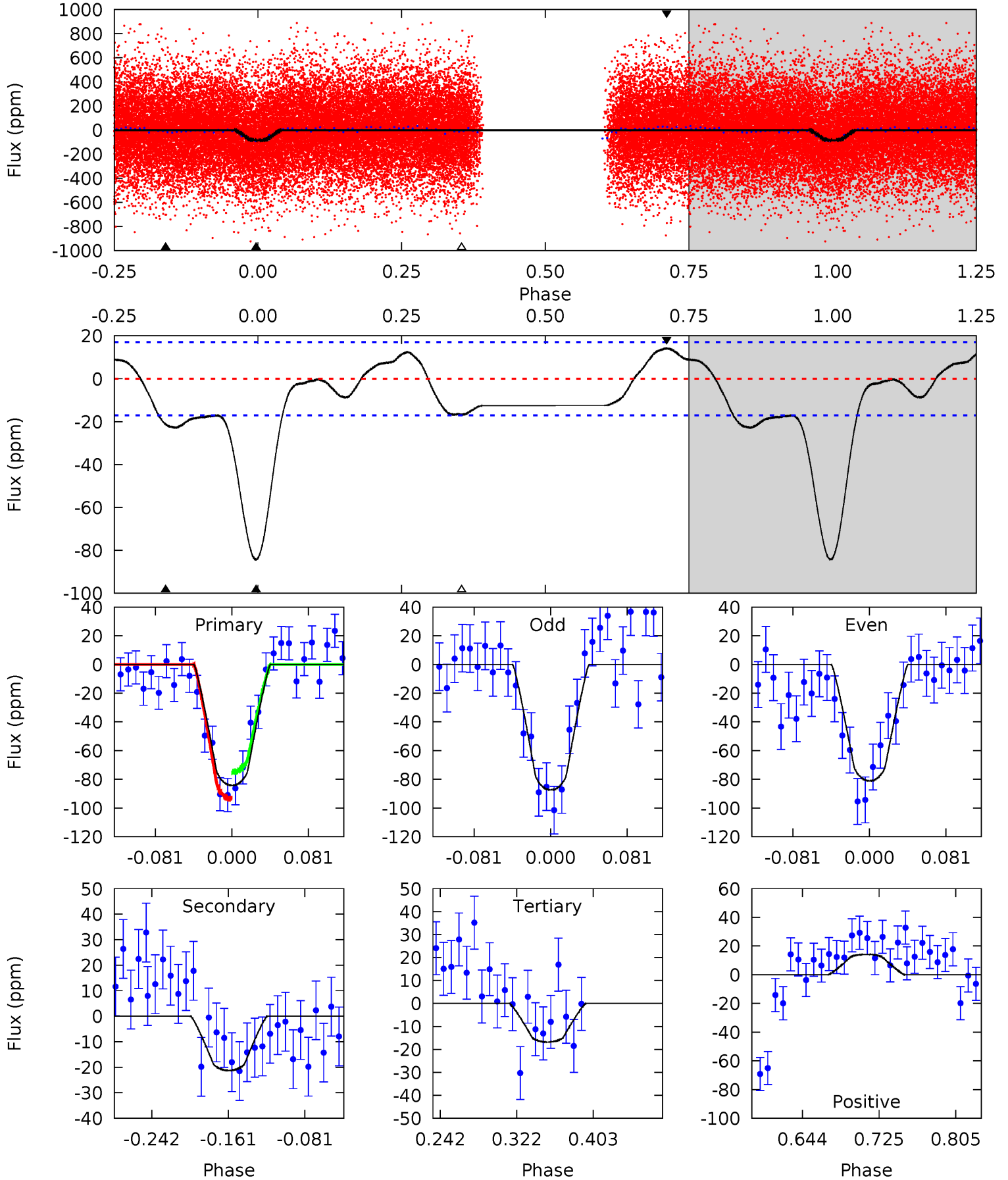
TCE 004482738-02 P= 0.866343 Days $T_0=131.631334$ (BKJD)



DV Model-Shift Uniqueness Test

004482738-02, P = 0.866349 Days, E = 130.764126 Days

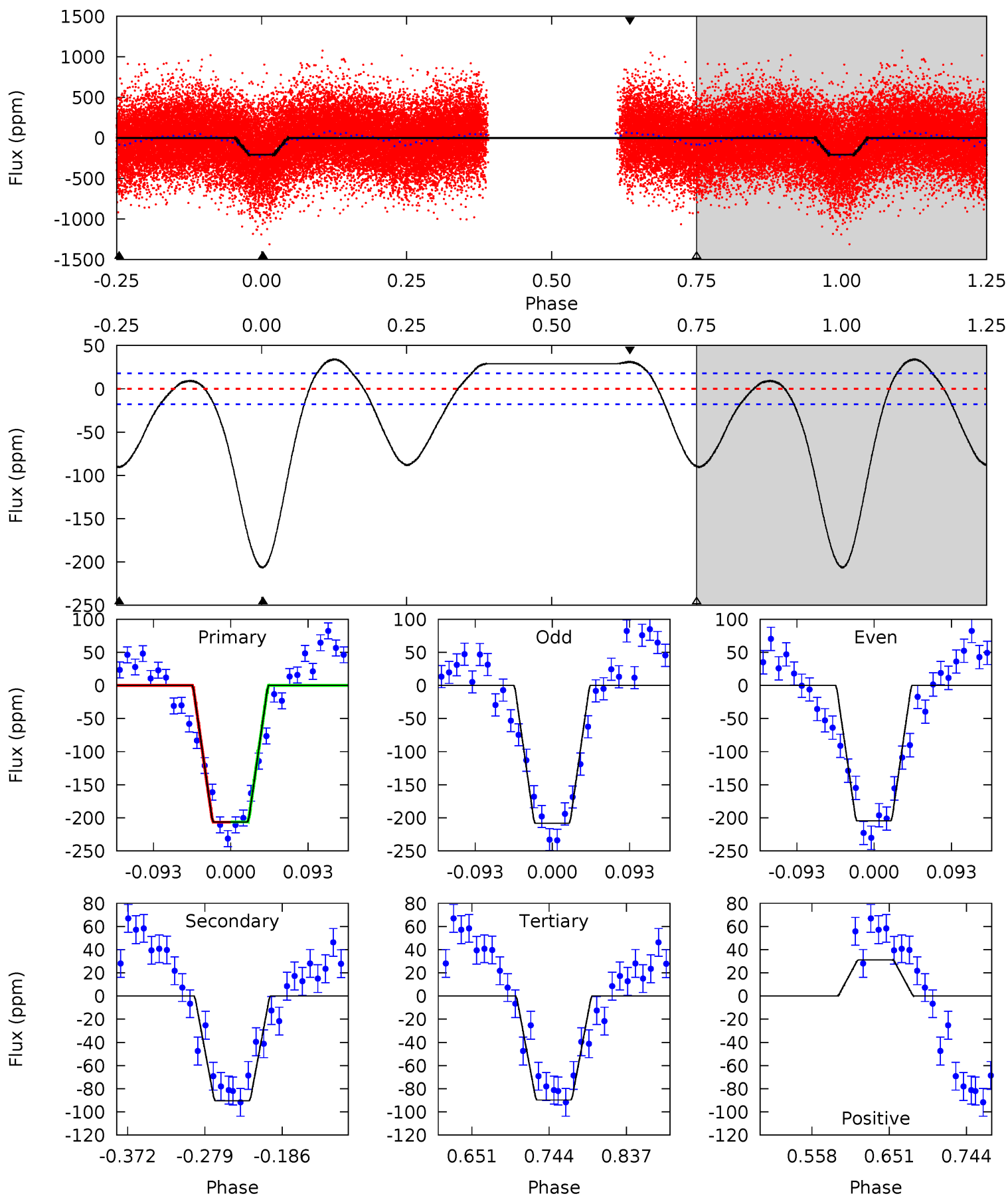
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.8	5.75	4.55	3.84	4.61	1.75	2.56	18.2	19.0	1.20	1.92	0.87	0.99	0.14	2.57



Alt Model-Shift Uniqueness Test

004482738-02, P = 0.866343 Days, E = 130.764991 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
52.6	23.0	22.9	7.97	4.58	1.68	10.2	29.7	44.6	0.17	15.1	0.47	1.01	0.14	0.05



Stellar Parameters For KIC 004482738

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4936^{+109}_{-69}	$3.055^{+0.028}_{-0.031}$	$-0.440^{+0.250}_{-0.150}$	$4.527^{+1.003}_{-0.106}$	$0.848^{+0.394}_{-0.021}$	$0.013^{+0.001}_{-0.003}$
	+2%/-1%	+1%/-1%	+57%/-34%	+22%/-2%	+46%/-2%	+9%/-21%
Source	PHO56	AST56	PHO56	DSEP		

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

Secondary Eclipse Parameters for KIC 004482738-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-21 ± 4	$5.27^{+2.83}_{-2.66}$	4983^{+129}_{-83}	-3881^{+7932}_{-232}	$0.121^{+0.414}_{-0.069}$
Alt.	-90 ± 4	$7.62^{+2.82}_{-2.43}$	5002^{+129}_{-97}	-3199^{+7274}_{-646}	$0.247^{+0.283}_{-0.113}$

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 $A_{obs} \gg 1.0$

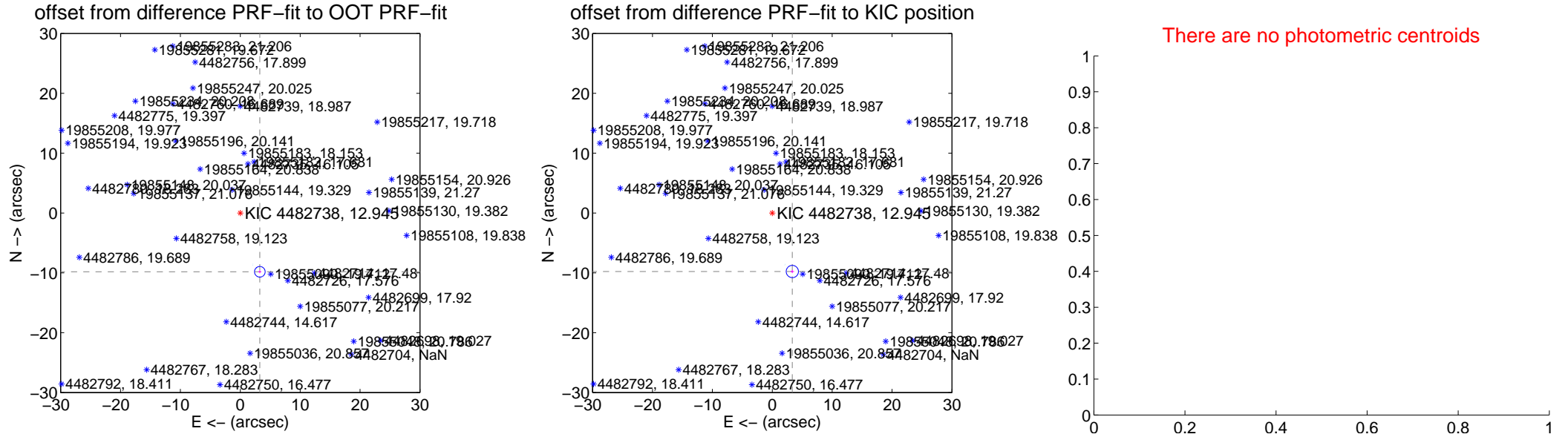
DV Centroid Data

Supplemental centroid analysis for 004482738-02. Kepler magnitude: 12.95. Transit SNR 14.00

There are 6 quarters with good PRF difference image offsets

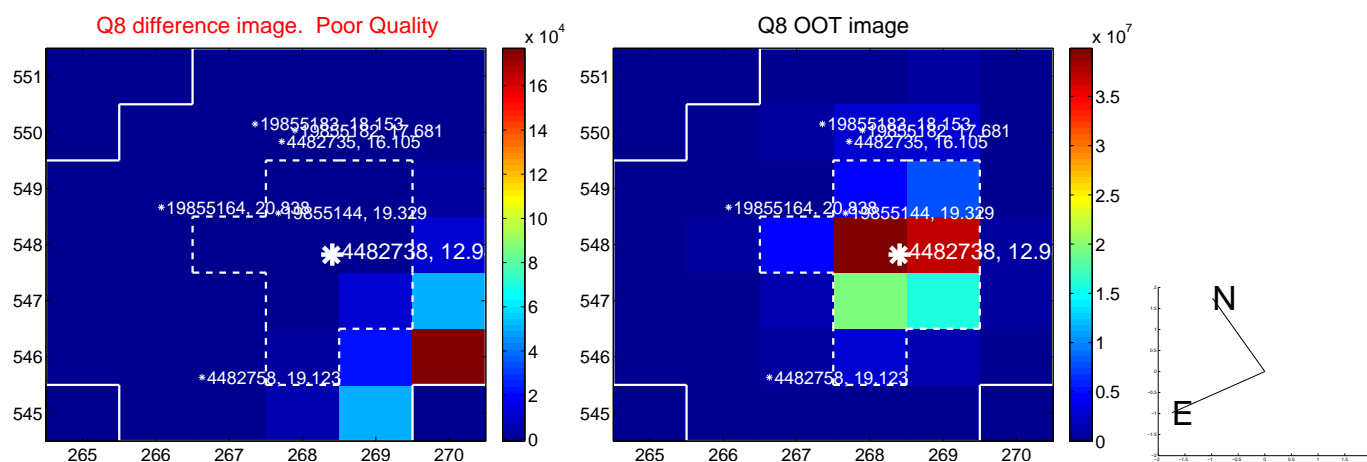
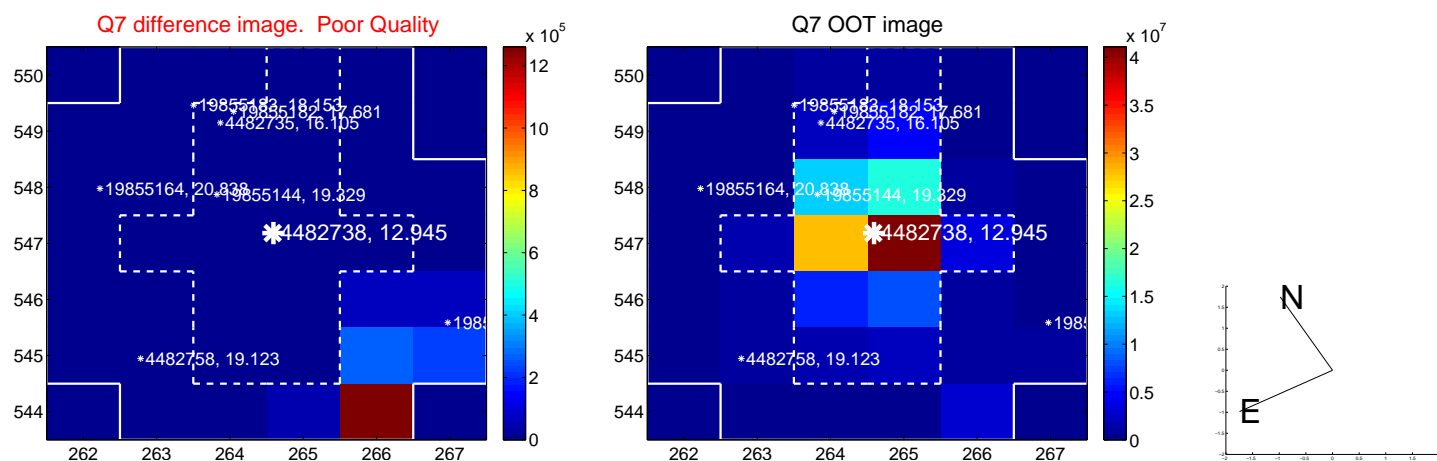
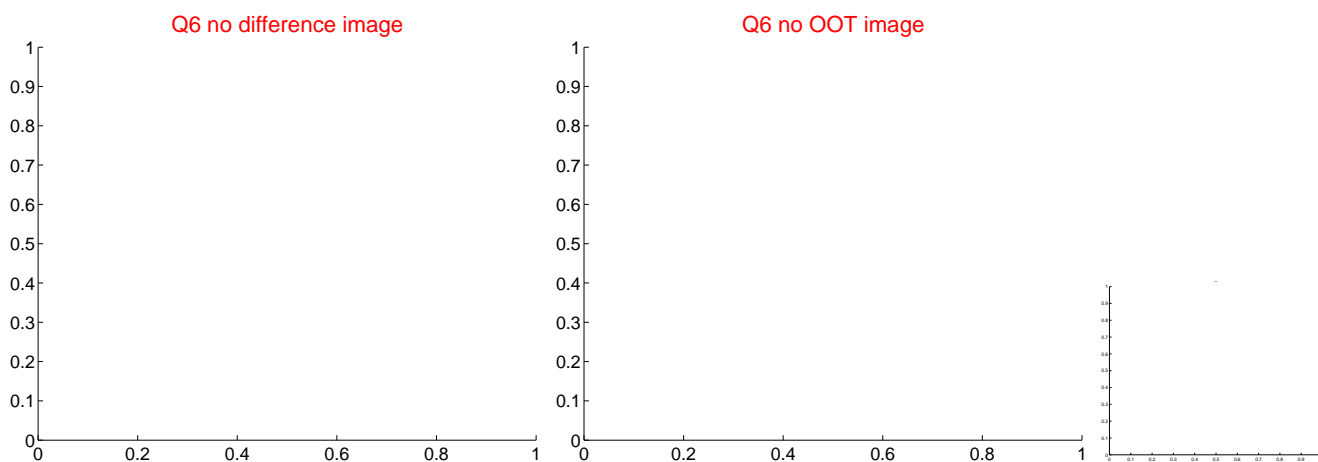
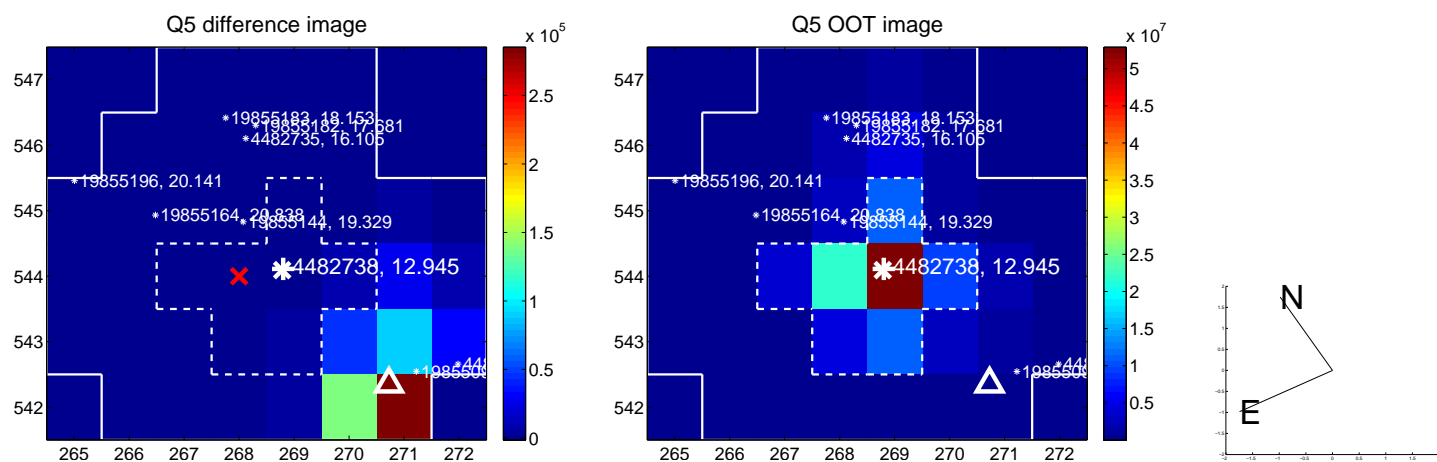
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	10.349 \pm 0.296	35.00	-3.263 \pm 0.234	-9.821 \pm 0.239
PRF-fit source offset from KIC position	10.332 \pm 0.341	30.29	-3.350 \pm 0.294	-9.774 \pm 0.265
photometric centroid source offset	—	—	—	—

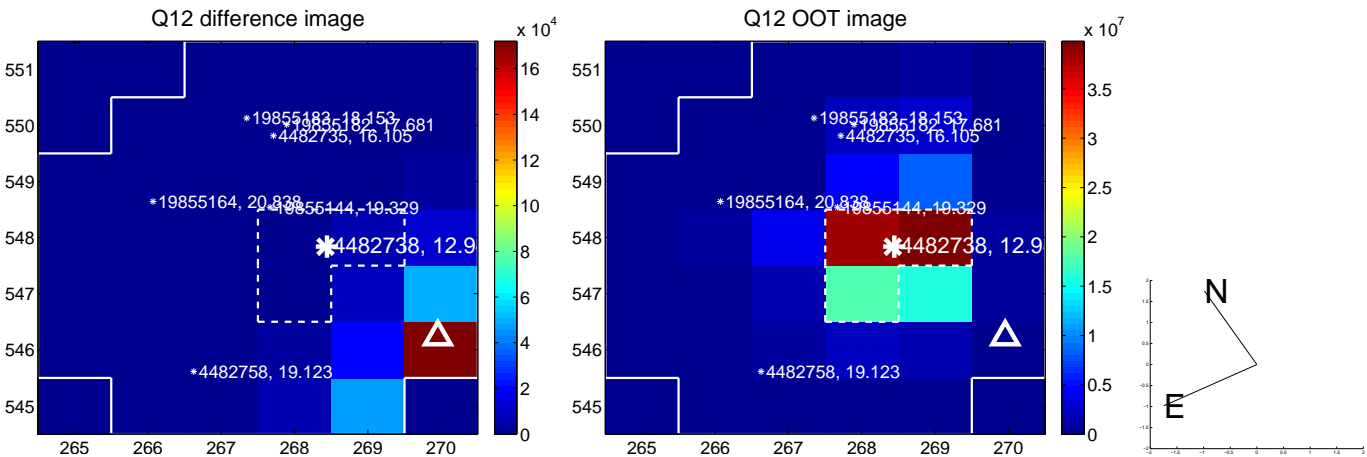
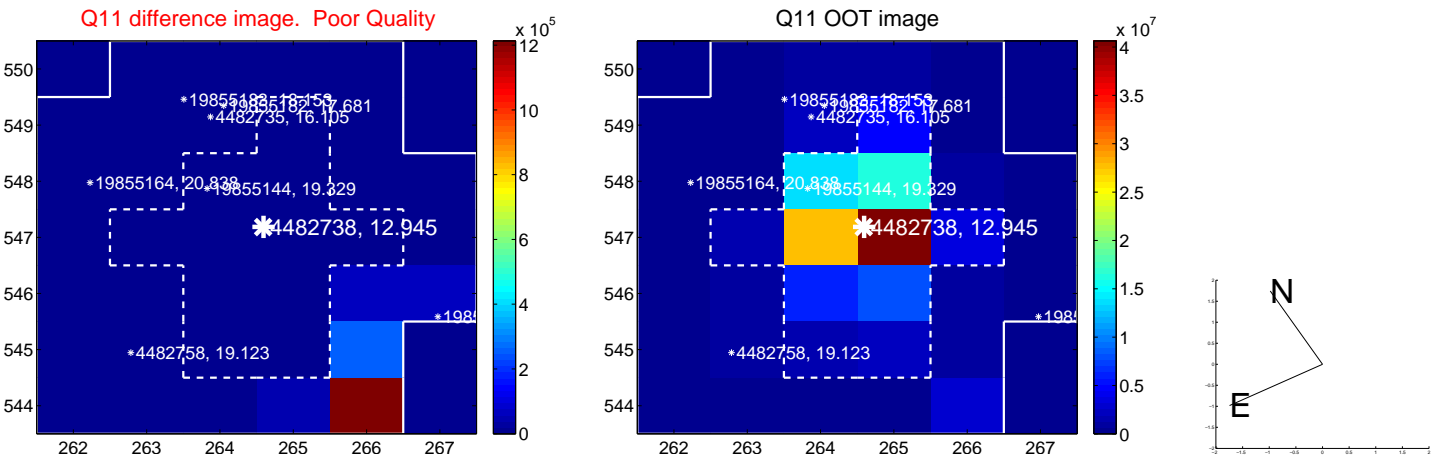
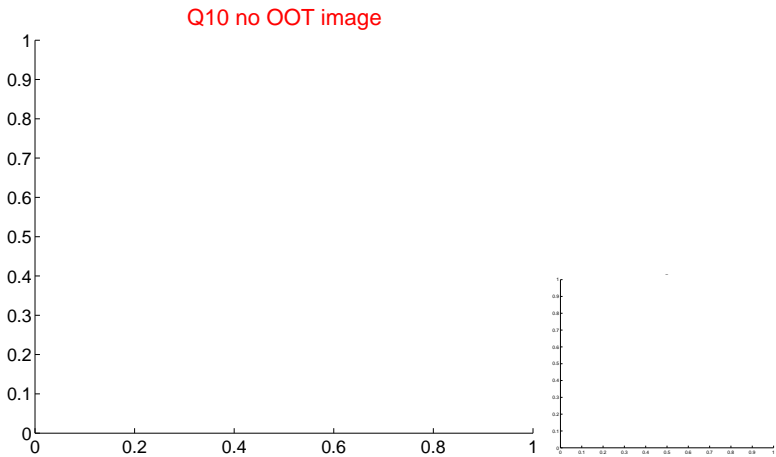
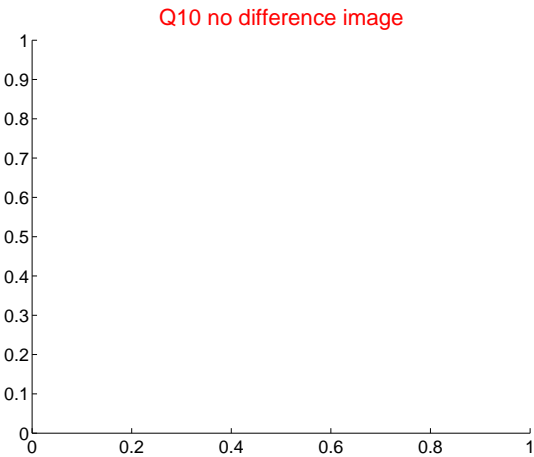
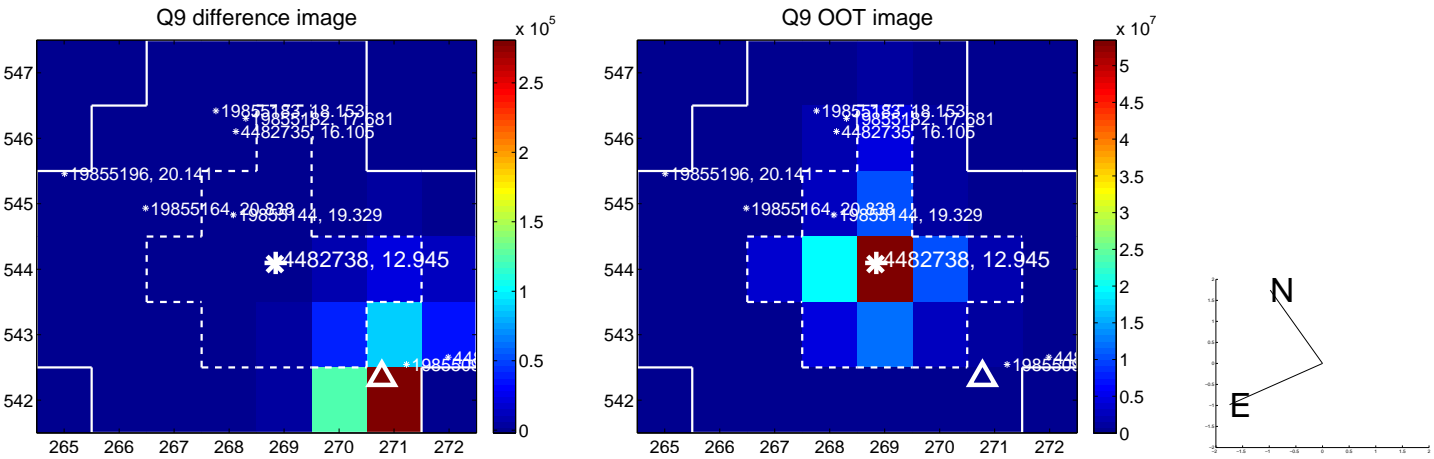


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

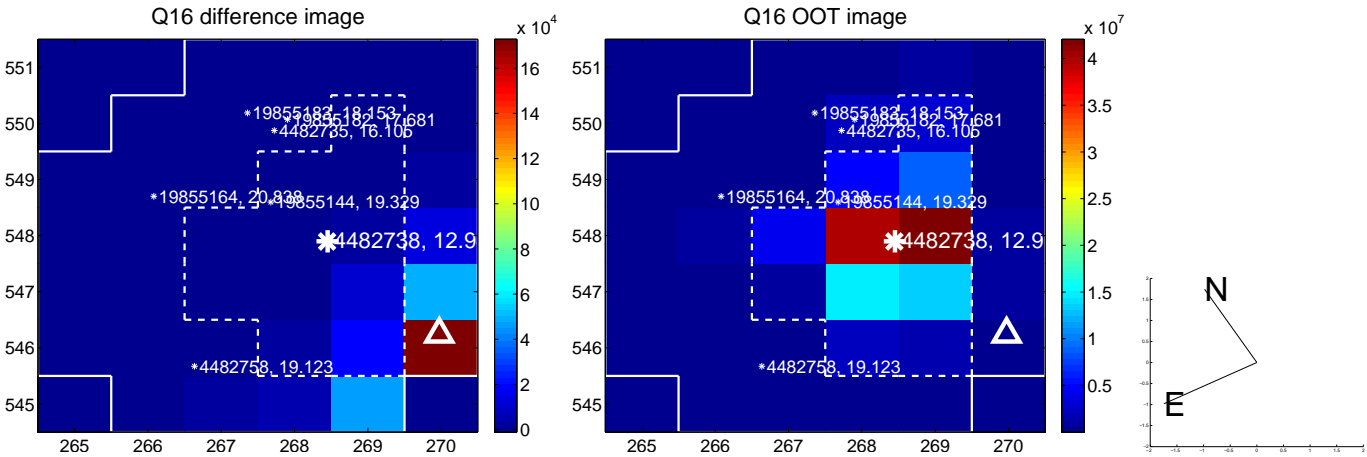
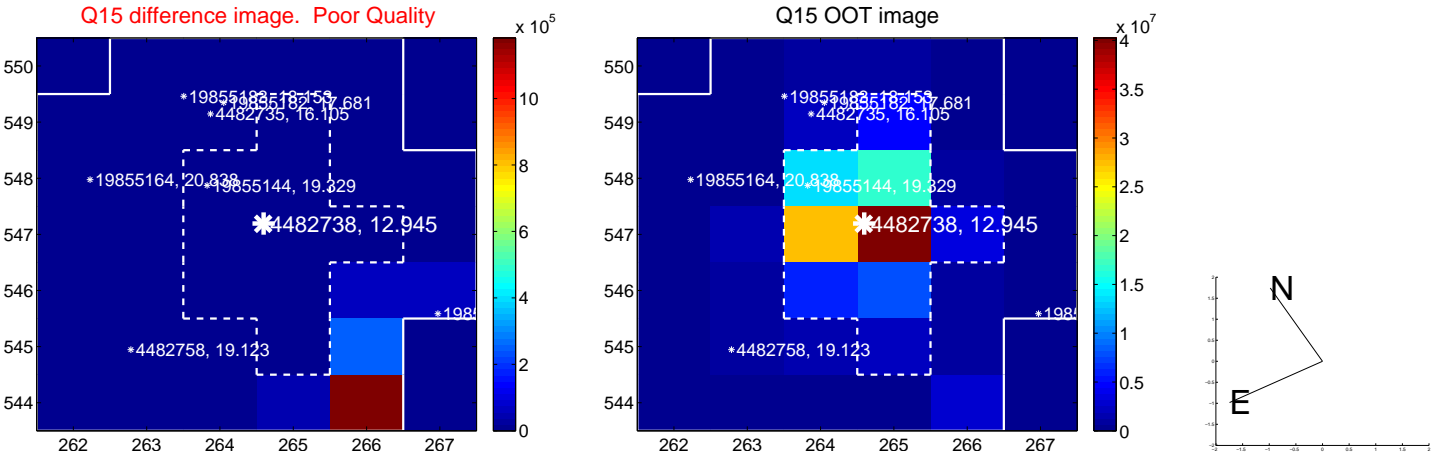
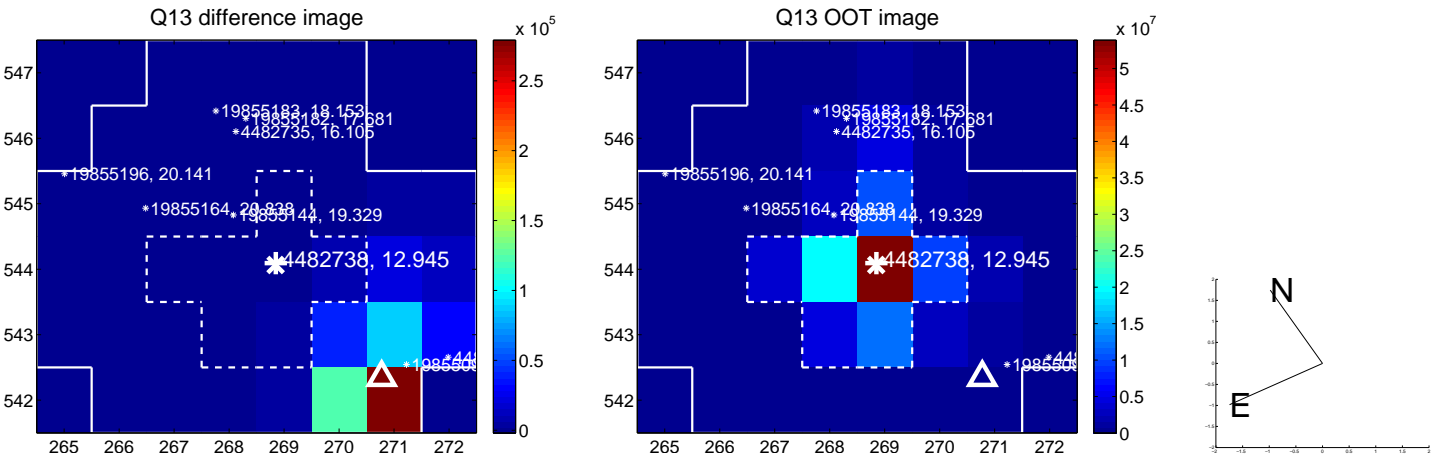
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



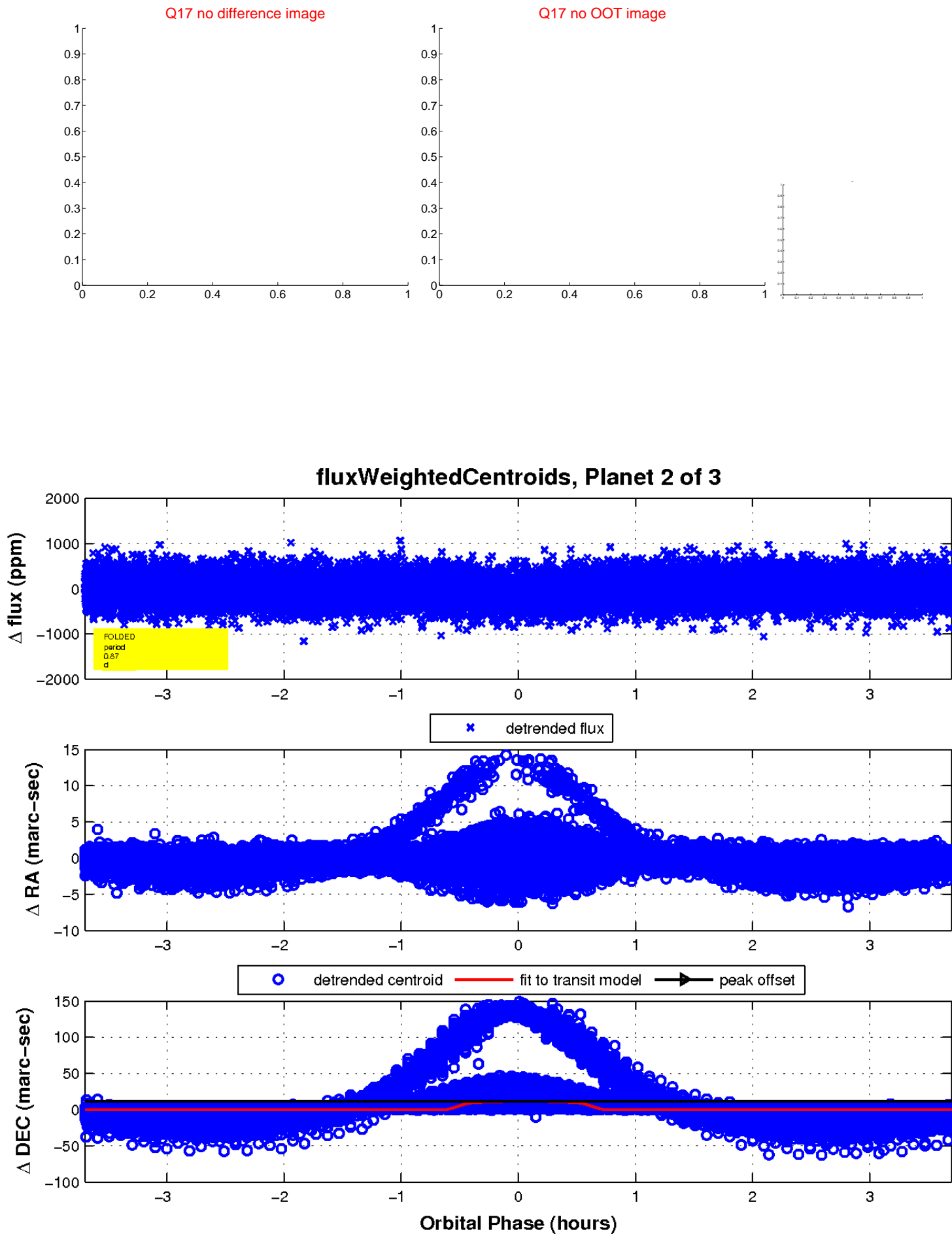
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

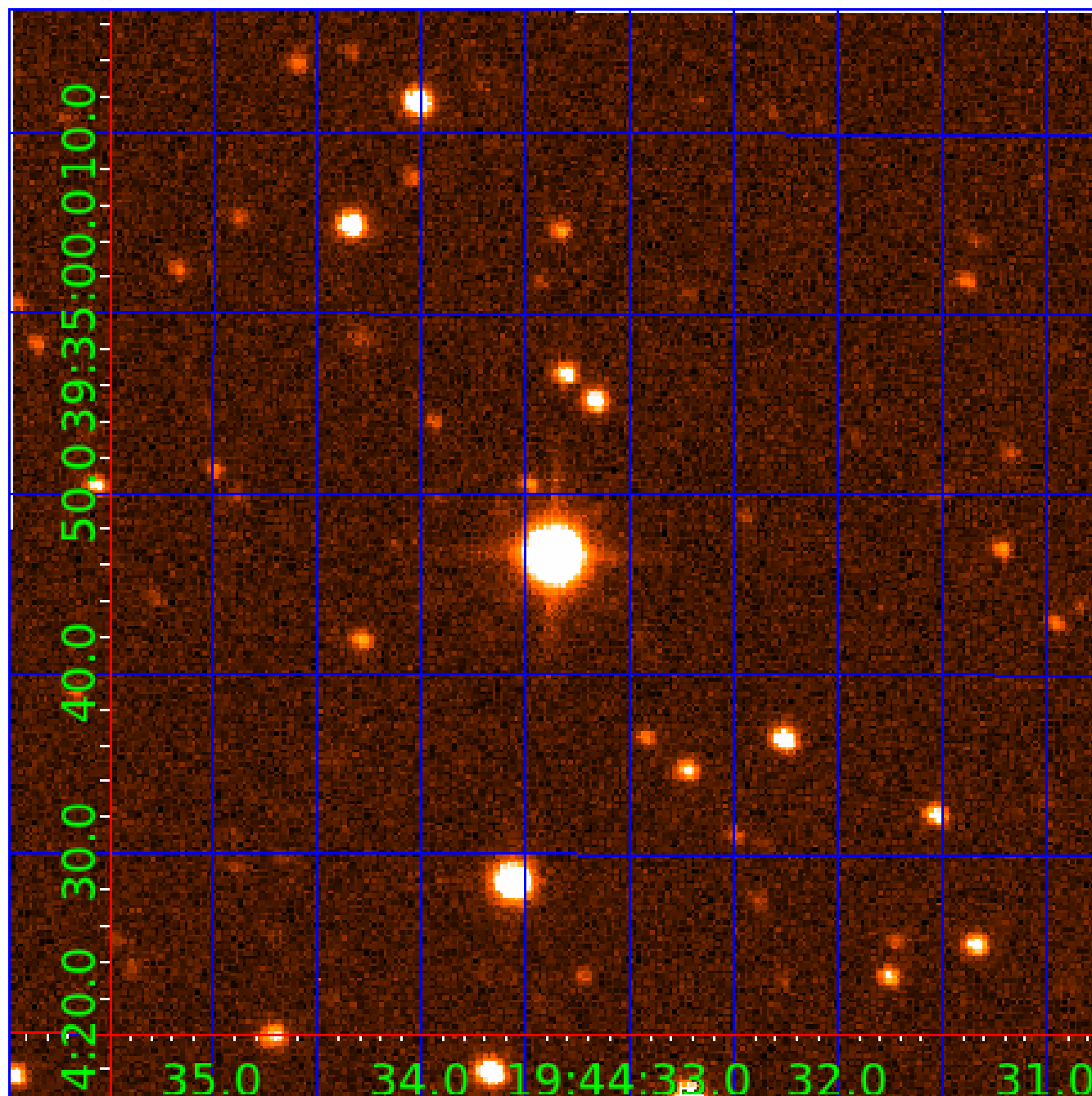


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004482738

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})
004482738-01	OBS	6418.01	0.866332	132.074735	85.5	1.348	12.3	13.8	4.53	4936	5.01	0.00
004482738-02	OBS	No	0.866349	131.630475	84.5	1.233	11.1	14.0	4.53	4936	5.09	0.00
004482738-03	OBS	No	154.586596	276.101452	568.3	3.671	7.8	7.0	4.53	4936	12.17	38.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004482738-01	OBS	FP	0.00	1	0	1	1	MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
004482738-02	OBS	FP	0.00	1	0	1	1	MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
004482738-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—MOD_NONUNIQ_ALT—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.

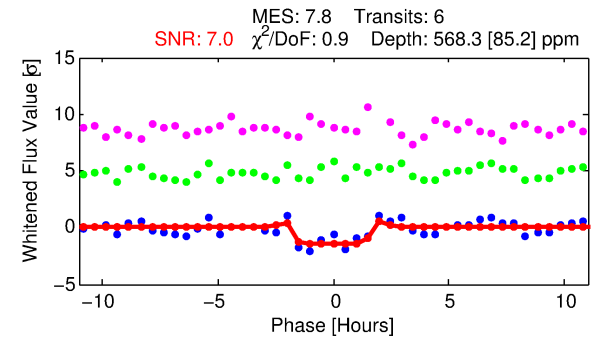
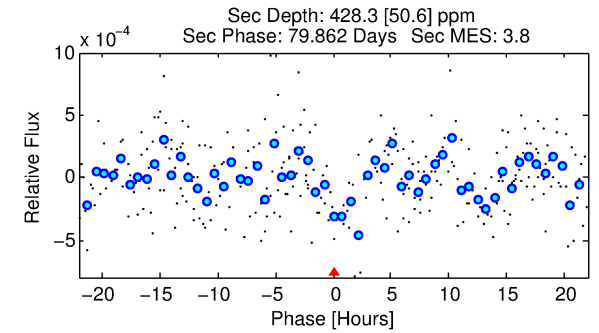
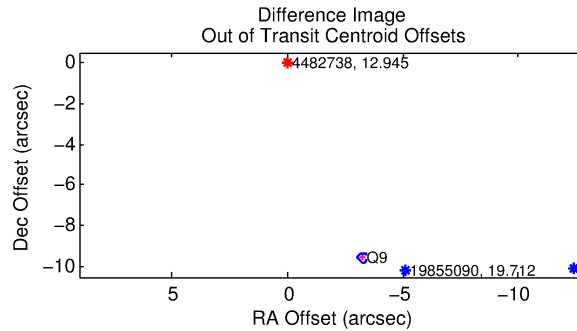
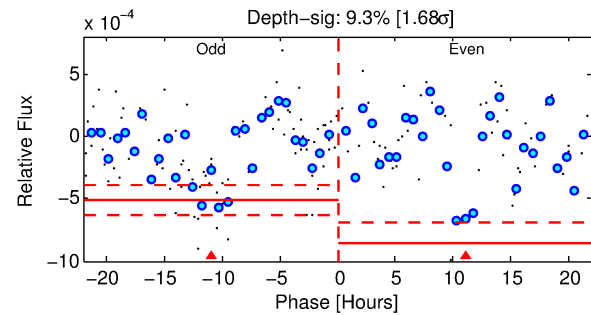
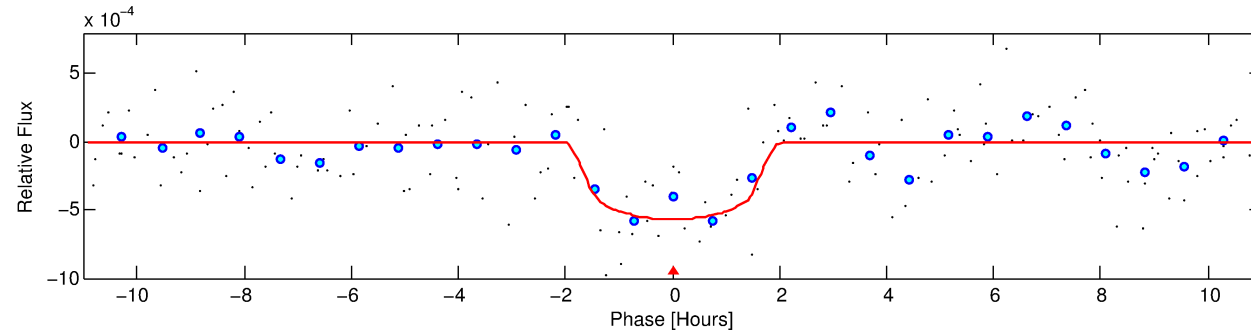
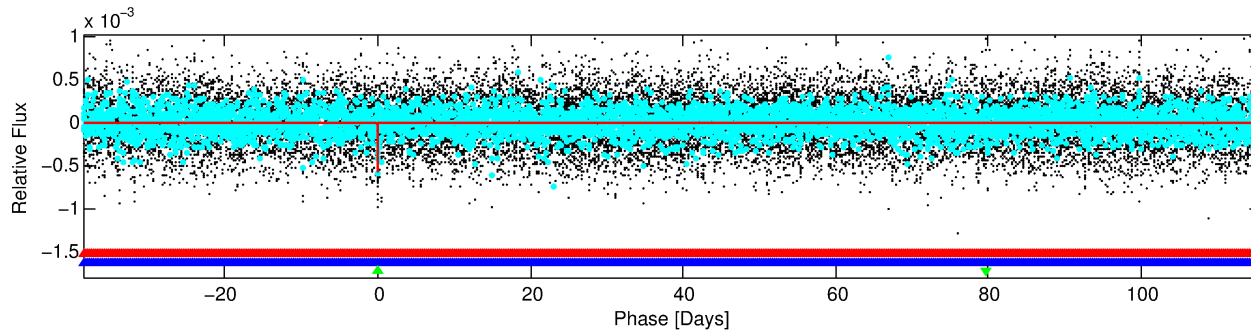
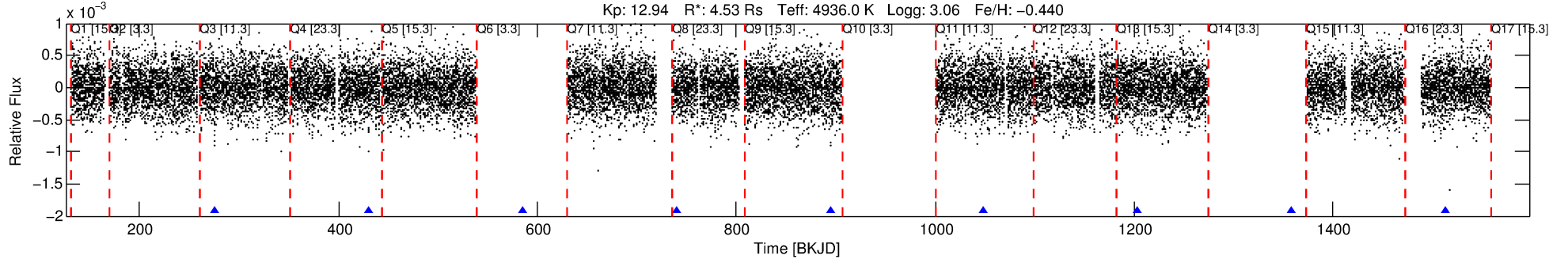
Ephemeris Match Information For 004482738-03

No Significant Match Found

DV One-Page Summary

KIC: 4482738 Candidate: 3 of 3 Period: 154.587 d
KOI: K06418 Corr: No Ephemeris Match

Kp: 12.94 R*: 4.53 Rs Teff: 4936.0 K Logg: 3.06 Fe/H: -0.440



DV Fit Results:

Period = 154.58660 [0.00123] d
Epoch = 276.1015 [0.0078] BKJD
Rp/R* = 0.0246 [0.0158]
a/R* = 200.18 [479.06]
b = 0.81 [1.01]
Seff = 38.26 [6.83]
Teq = 634 [28] K
Rp = 12.17 [8.24] Re
a = 0.5338 [0.0799] AU
Ag = 453.31 [586.86] [0.77σ]
Teff = 4524 [1457] K [2.67σ]

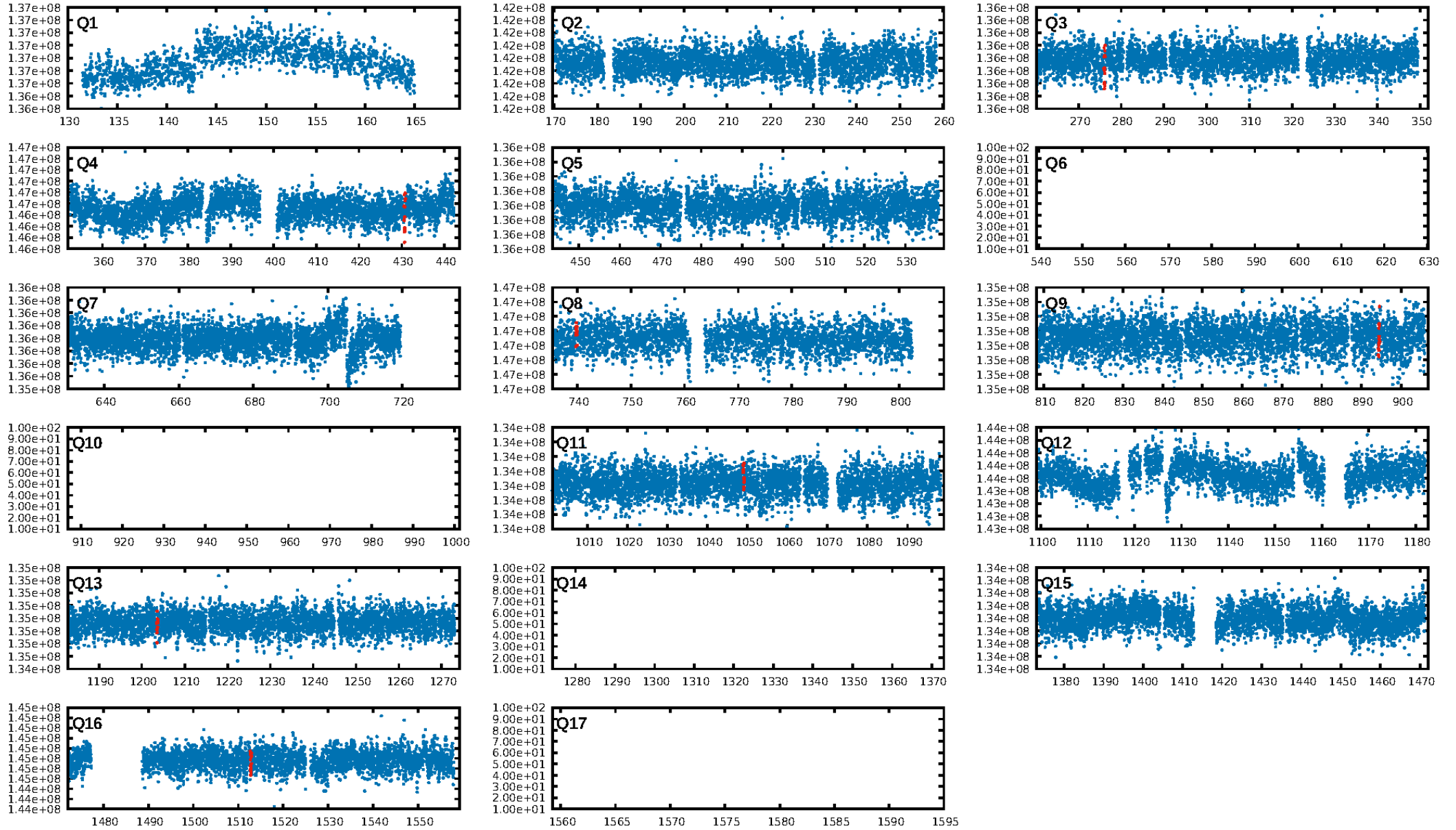
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [952.75σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 26.0%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 1.73e-11
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 0.973
Centroid-sig: N/A
Centroid-so: 1.139 arcsec [1.26σ]
OotOffset-rm: 10.086 arcsec [132.24σ]
KicOffset-rm: 10.061 arcsec [131.91σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 0.00 [0/7]

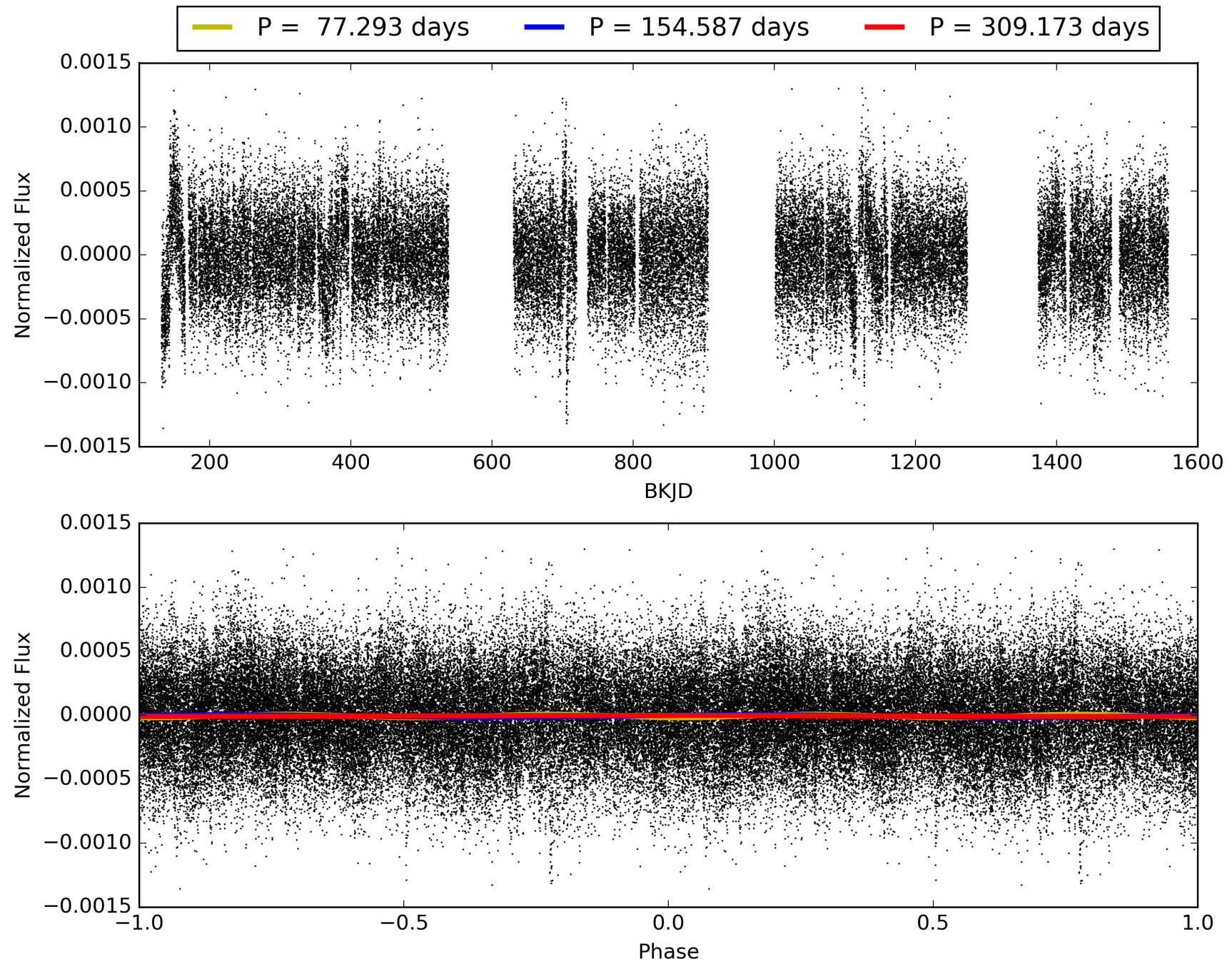
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:35:11 Z

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

TCE 004482738-03, PDC Light Curves

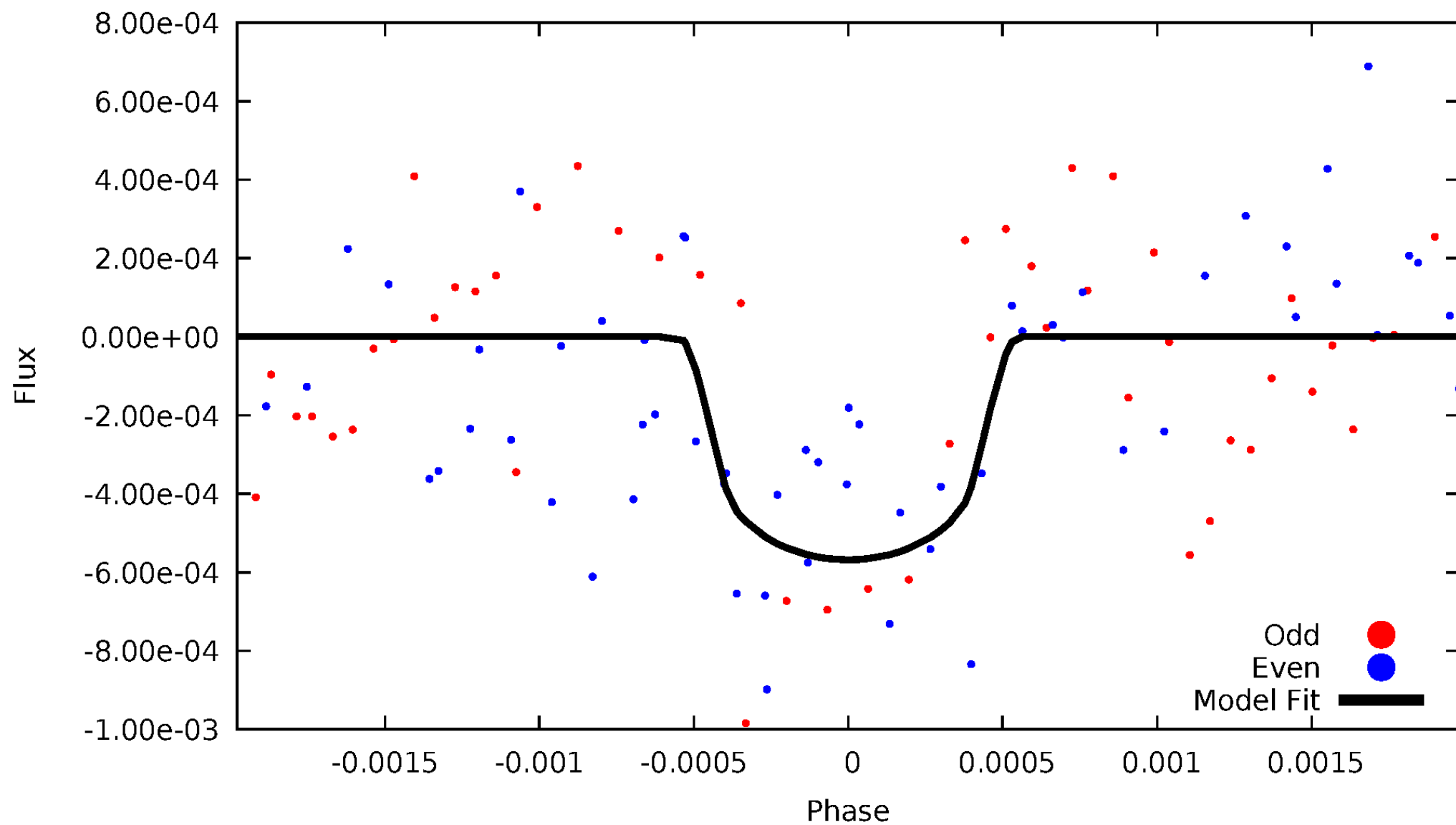


TCE 004482738-03



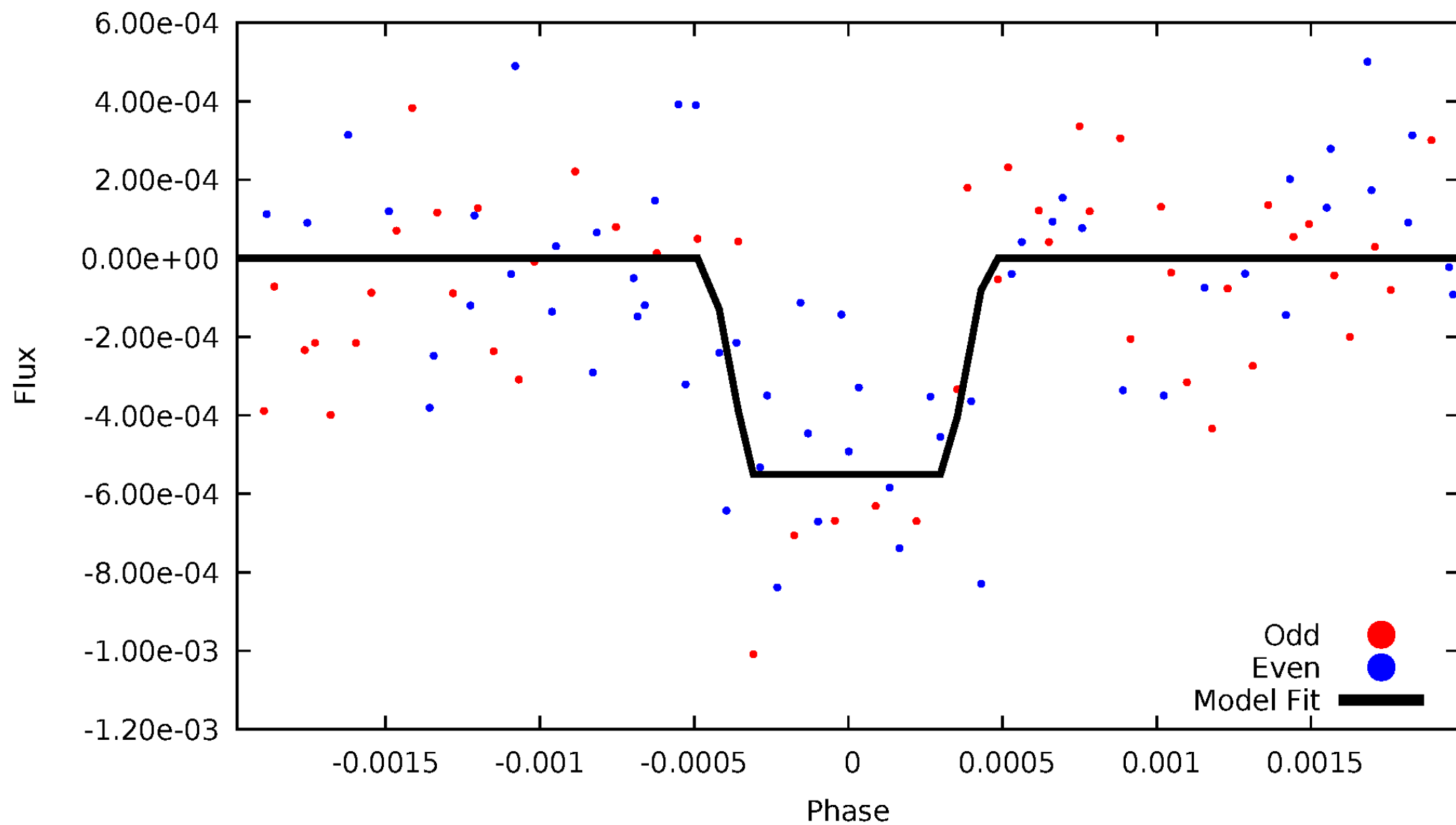
DV Odd/Even

TCE 004482738-03



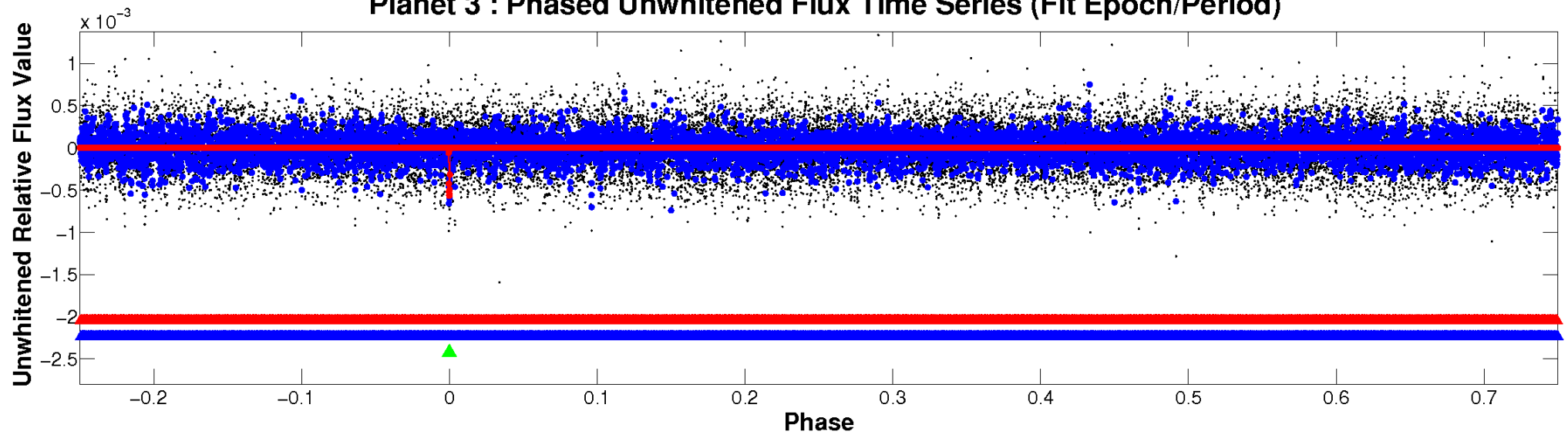
ALT Odd/Even

TCE 004482738-03

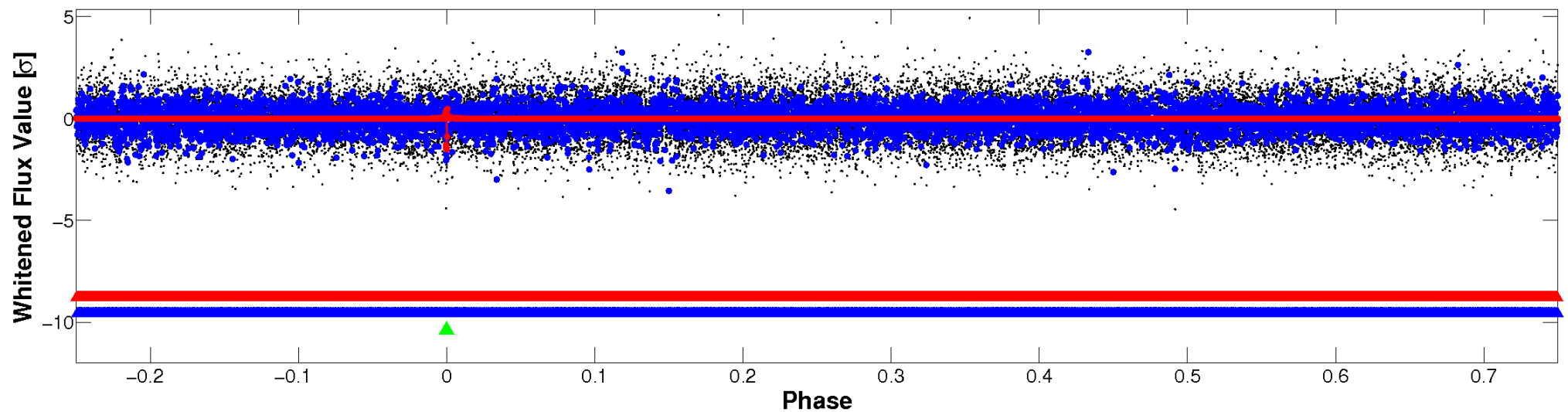


Non-Whitened Vs. Whitened Light Curve

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

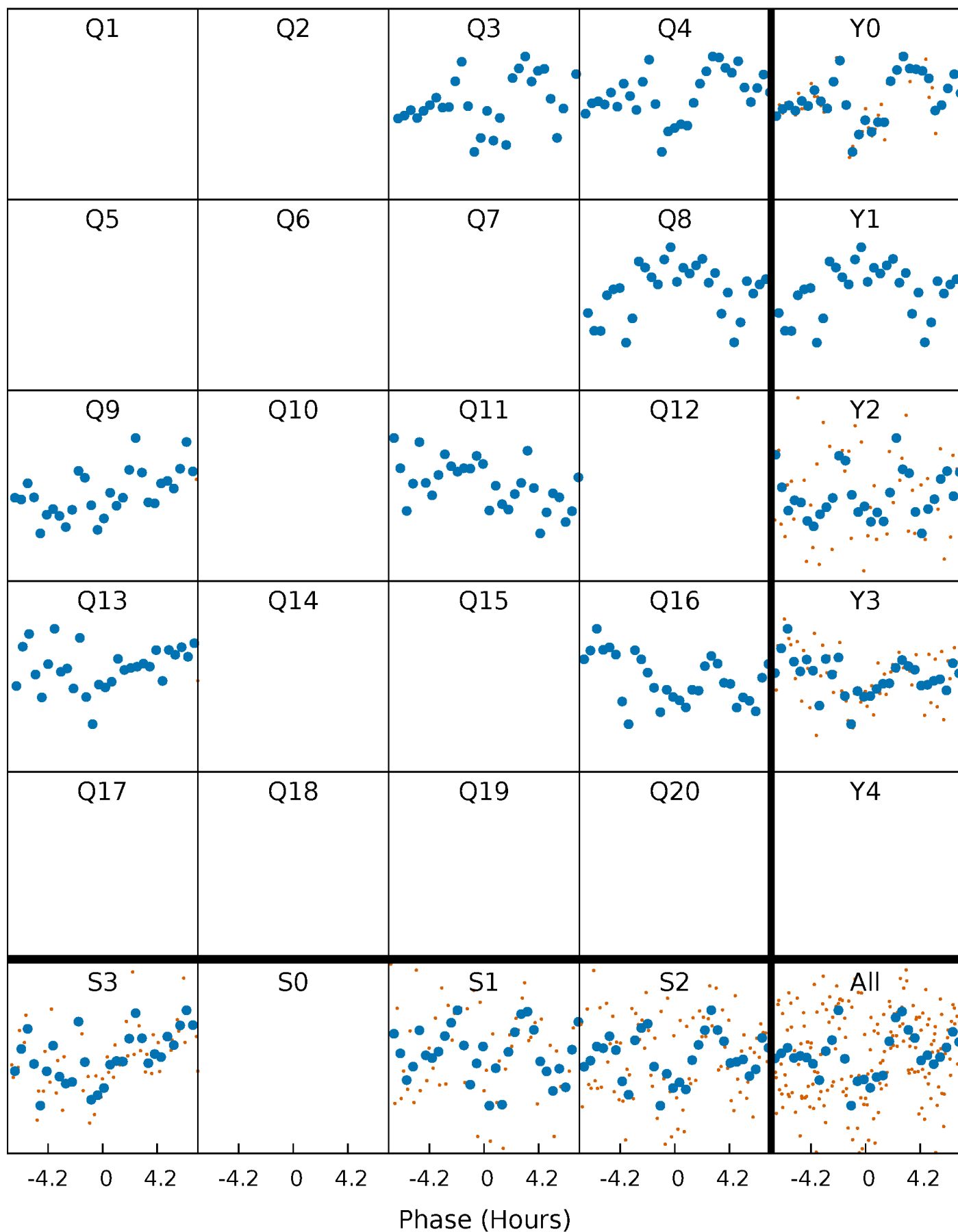


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



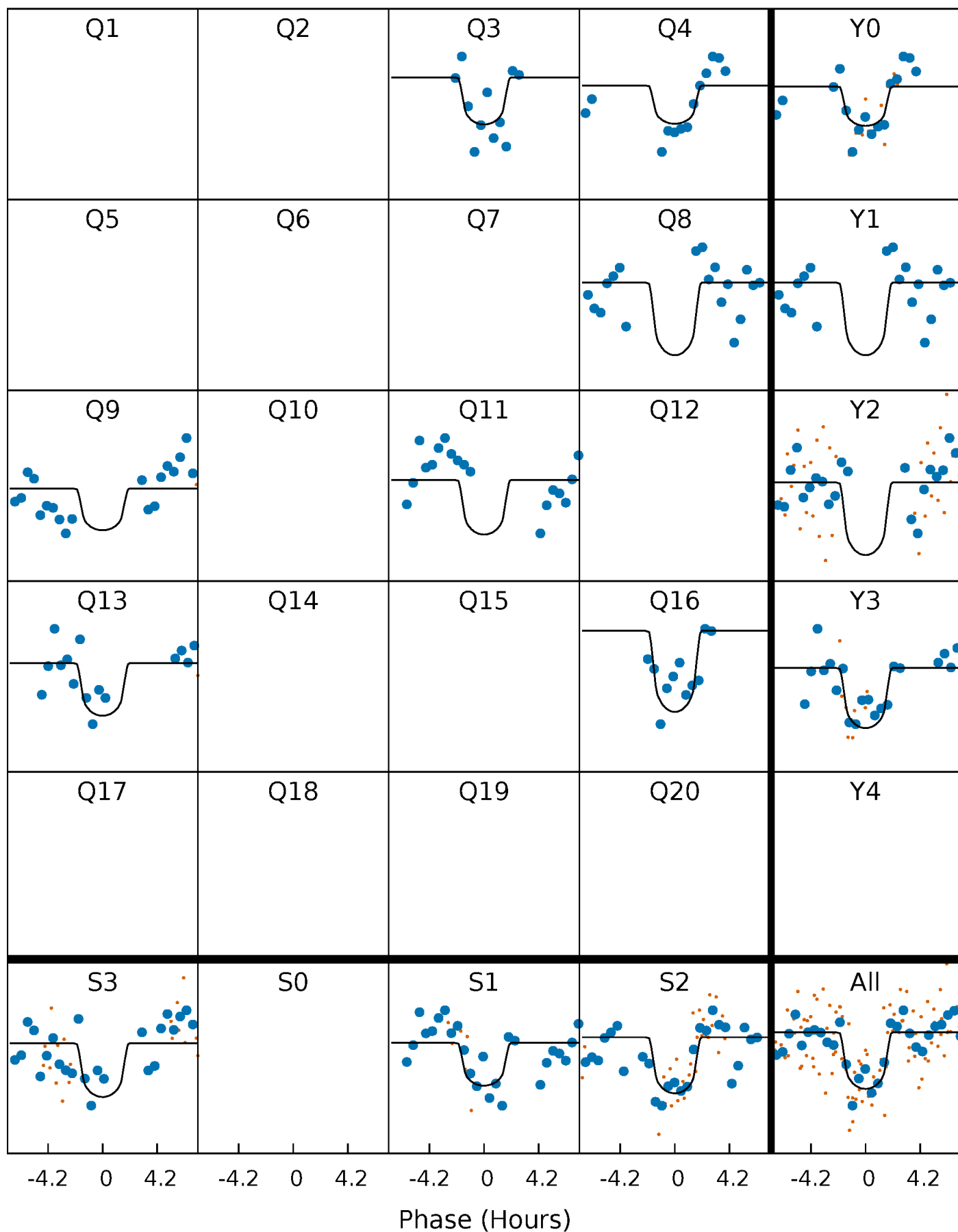
PDC Quarter-Phased Transit Curves

TCE 004482738-03 P=154.586596 Days $T_0=276.101452$ (BKJD)



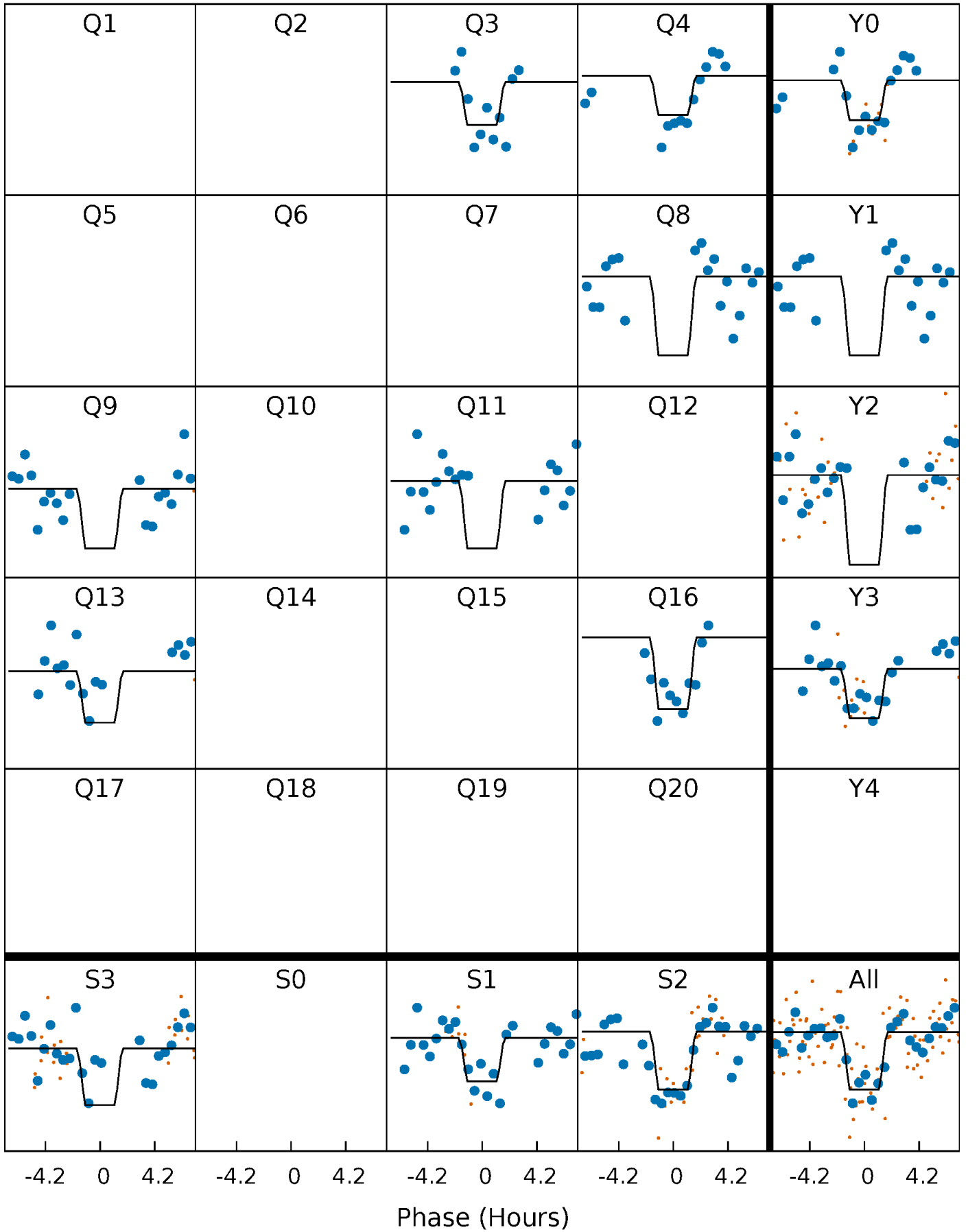
DV Quarter-Phased Transit Curves

TCE 004482738-03 $P=154.586596$ Days $T_0=276.101452$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

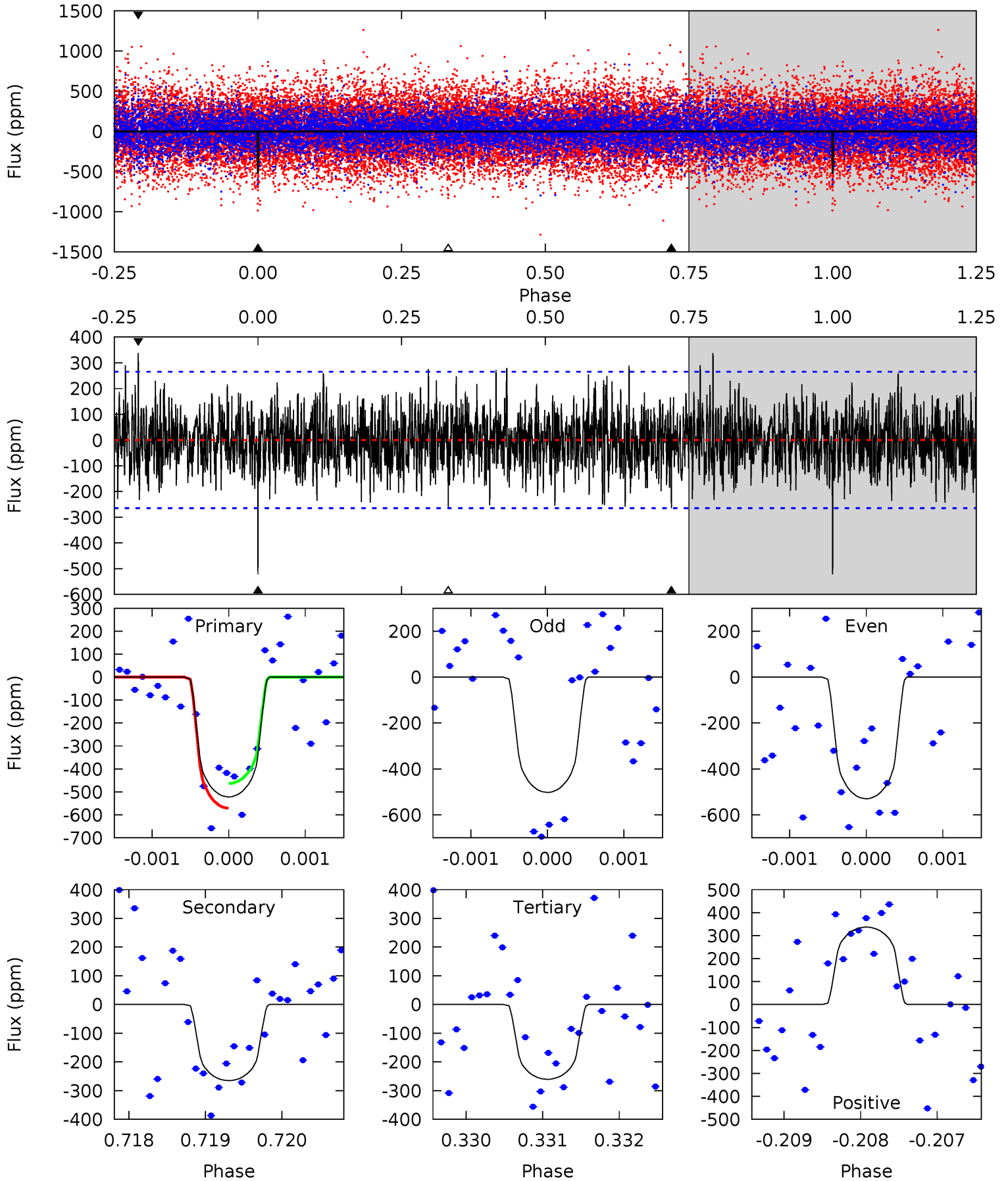
TCE 004482738-03 $P=154.587884$ Days $T_0=276.096375$ (BKJD)



DV Model-Shift Uniqueness Test

004482738-03, P = 154.586596 Days, E = 121.514856 Days

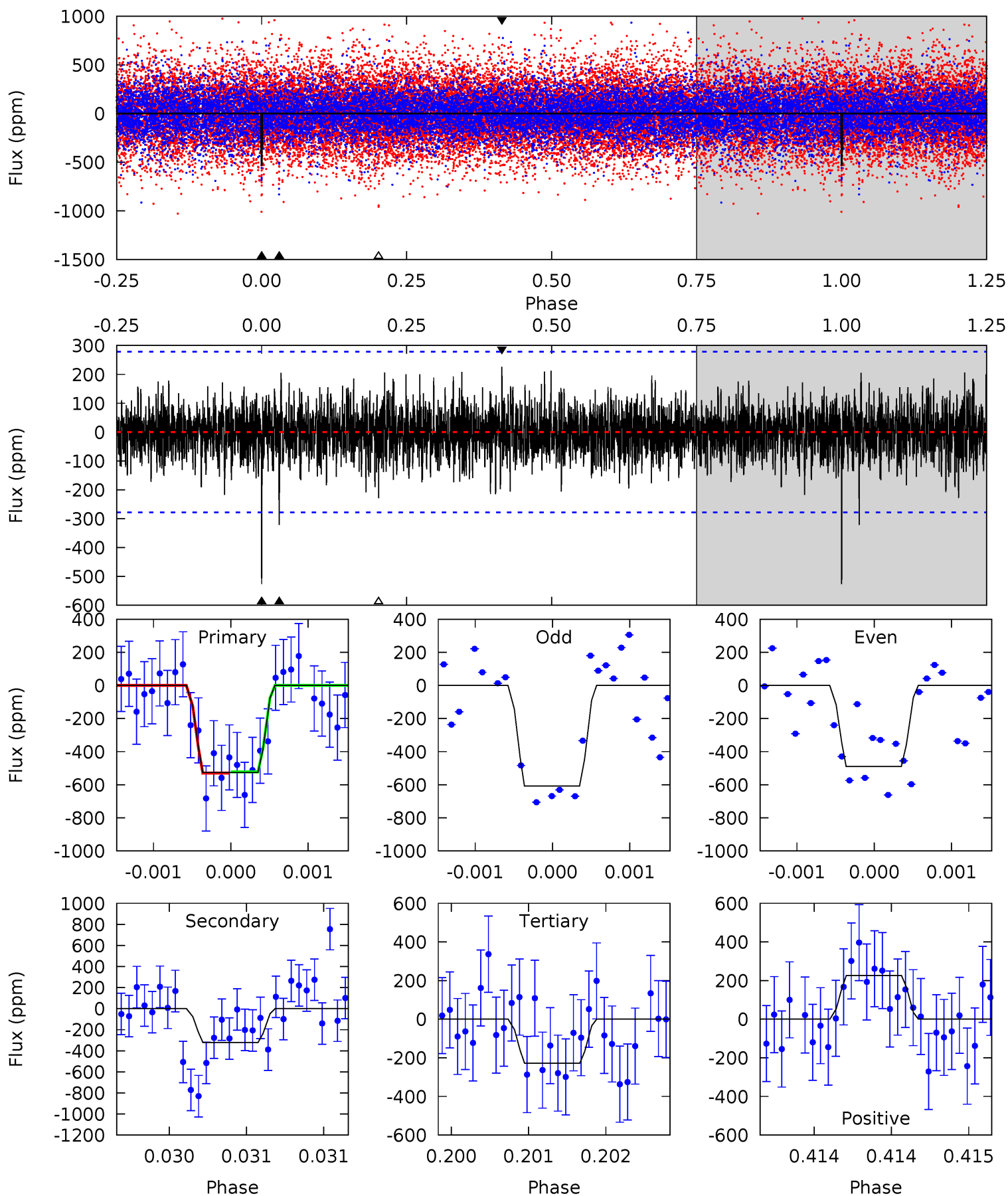
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	5.45	5.35	6.92	5.44	3.27	1.76	5.37	3.80	0.09	-1.48	0.27	0.63	0.39	1.10



Alt Model-Shift Uniqueness Test

004482738-03, P = 154.587884 Days, E = 121.508491 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	6.32	4.50	4.45	5.48	3.34	1.29	5.87	5.91	1.82	1.87	1.12	0.95	0.30	0.07



Stellar Parameters For KIC 004482738

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4936^{+109}_{-69}	$3.055^{+0.028}_{-0.031}$	$-0.440^{+0.250}_{-0.150}$	$4.527^{+1.003}_{-0.106}$	$0.848^{+0.394}_{-0.021}$	$0.013^{+0.001}_{-0.003}$
	+2%/-1%	+1%/-1%	+57%/-34%	+22%/-2%	+46%/-2%	+9%/-21%
Source	PHO56	AST56	PHO56	DSEP		

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

Secondary Eclipse Parameters for KIC 004482738-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-265 ± 49	$12.94^{+7.78}_{-7.24}$	886^{+21}_{-15}	4090^{+1673}_{-589}	244^{+1078}_{-147}
Alt.	-321 ± 51	$12.23^{+7.51}_{-6.62}$	887^{+23}_{-16}	4352^{+1765}_{-674}	333^{+1313}_{-203}

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

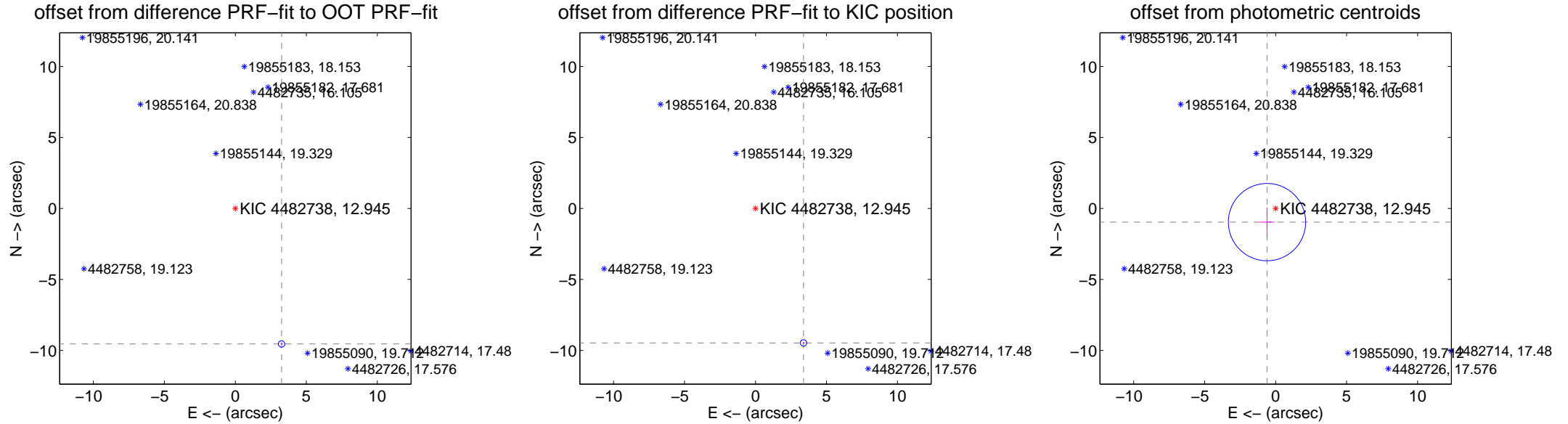
DV Centroid Data

Supplemental centroid analysis for 004482738-03. Kepler magnitude: 12.95. Transit SNR 7.01

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	10.086 ± 0.076	132.24	-3.258 ± 0.076	-9.545 ± 0.076
PRF-fit source offset from KIC position	10.061 ± 0.076	131.91	-3.385 ± 0.076	-9.474 ± 0.076
photometric centroid source offset	1.14 ± 0.91	1.26	0.61 ± 0.52	-0.96 ± 1.02



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.

Q1 no difference image



Q1 no OOT image



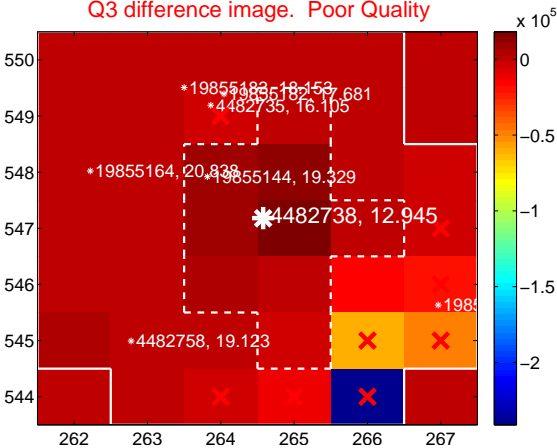
Q2 no difference image



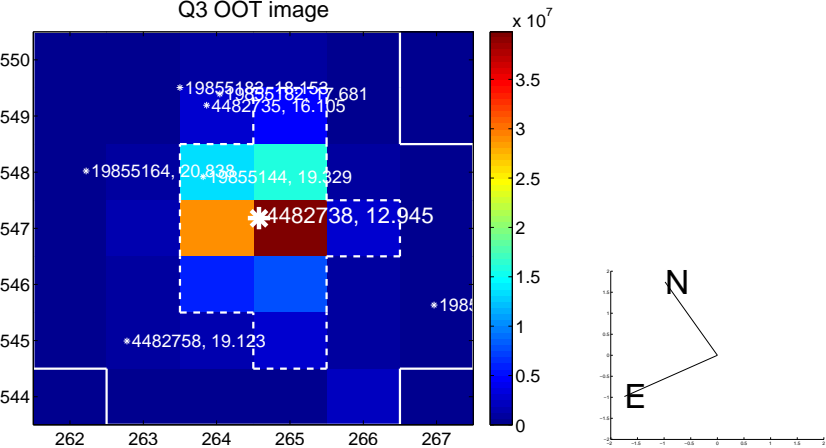
Q2 no OOT image



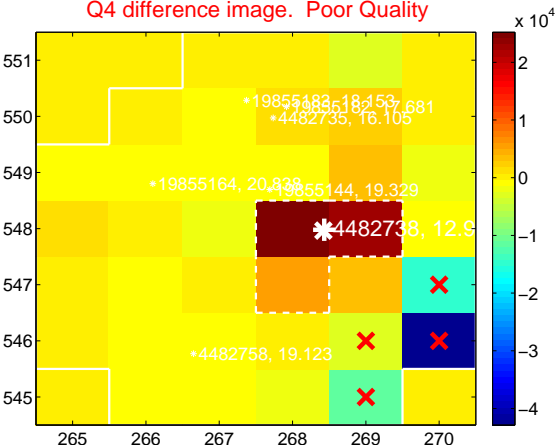
Q3 difference image. Poor Quality



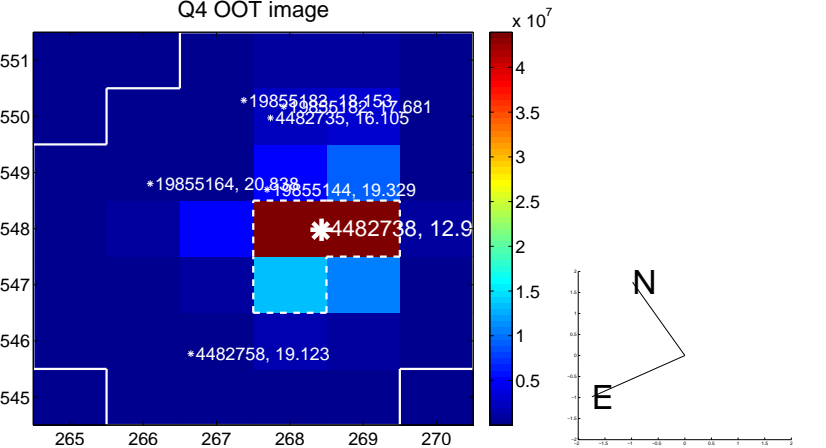
Q3 OOT image



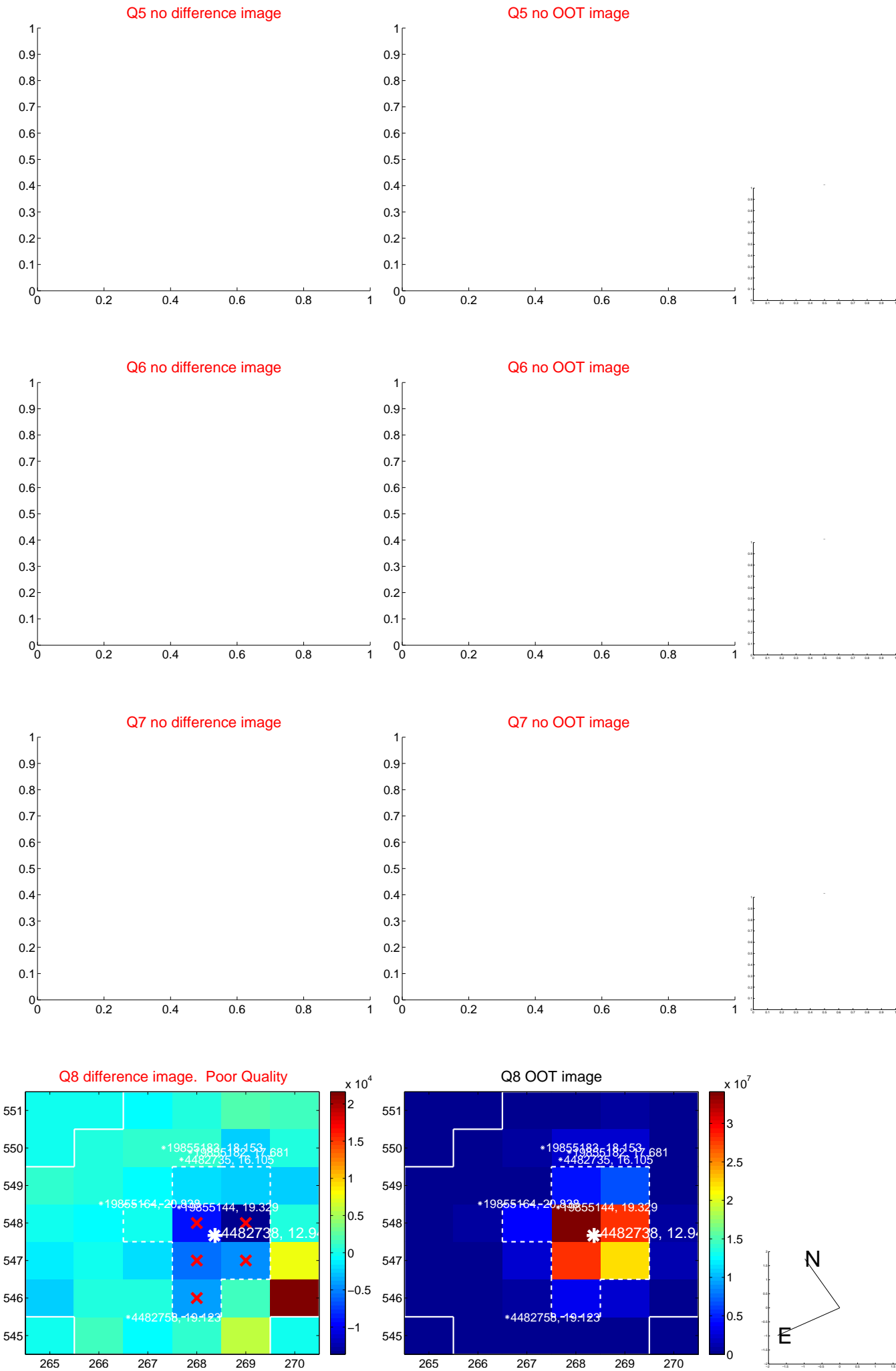
Q4 difference image. Poor Quality



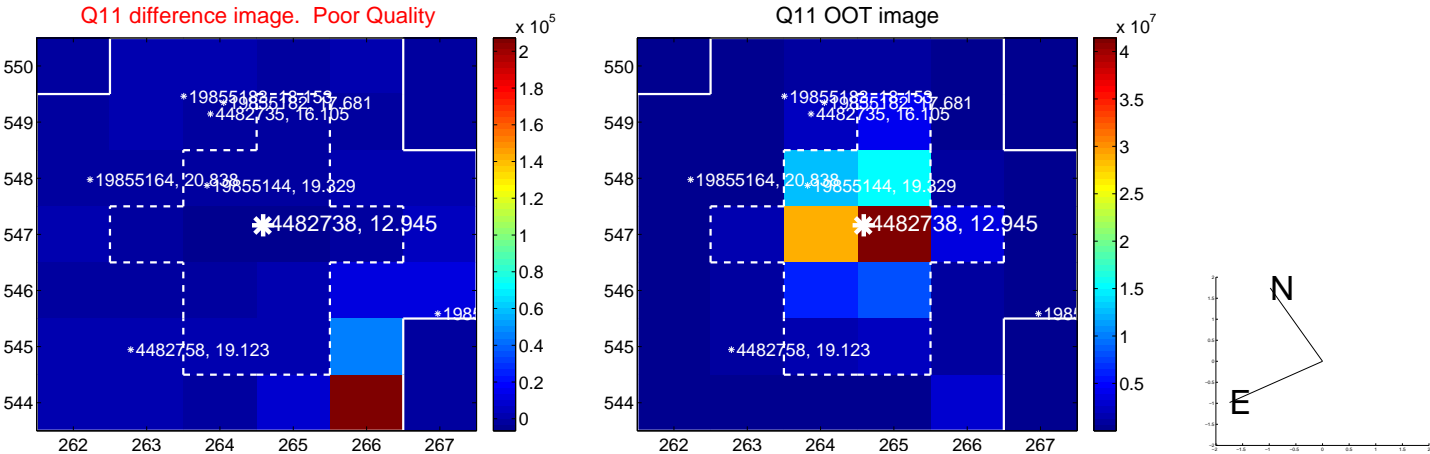
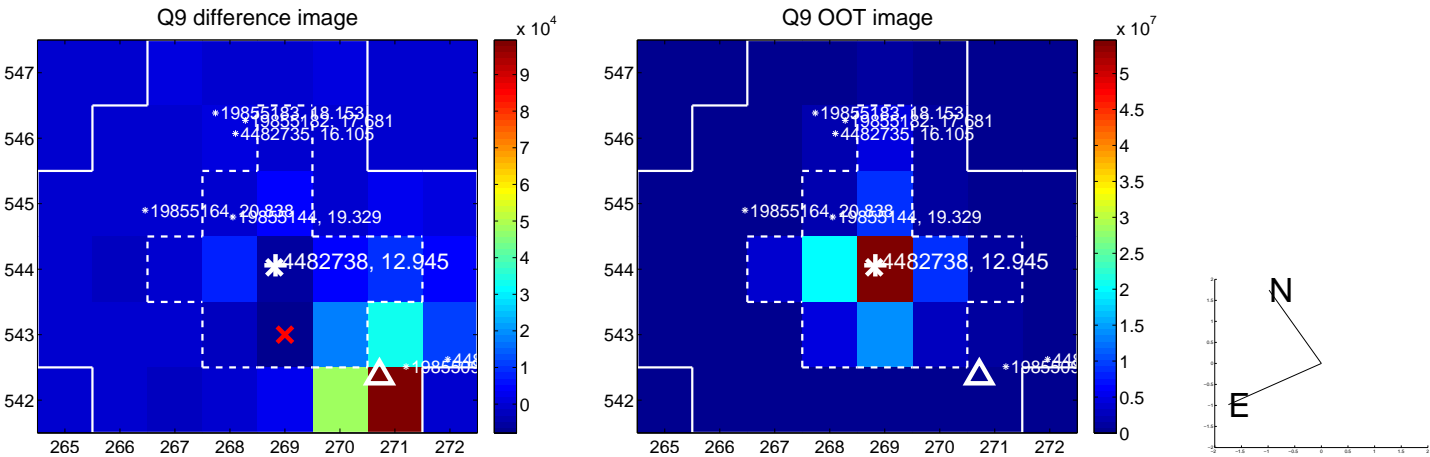
Q4 OOT image



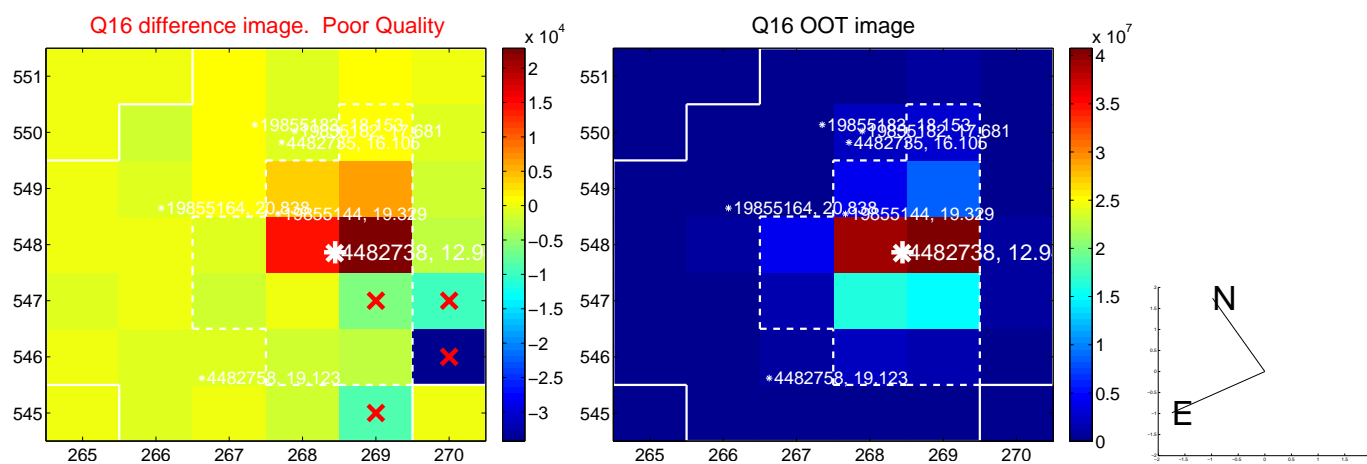
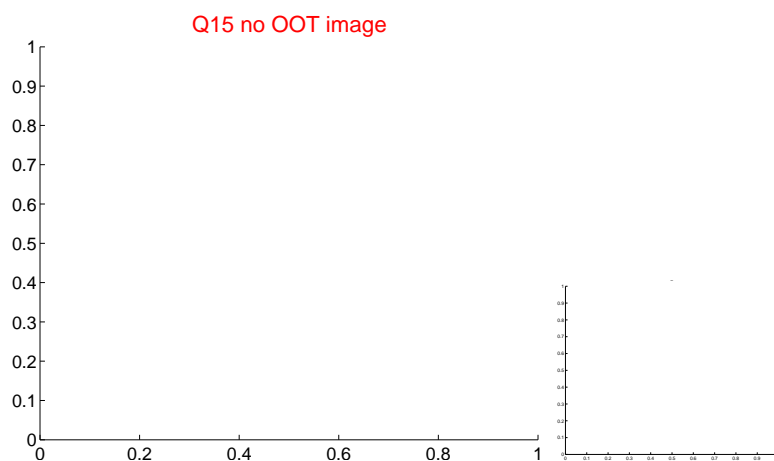
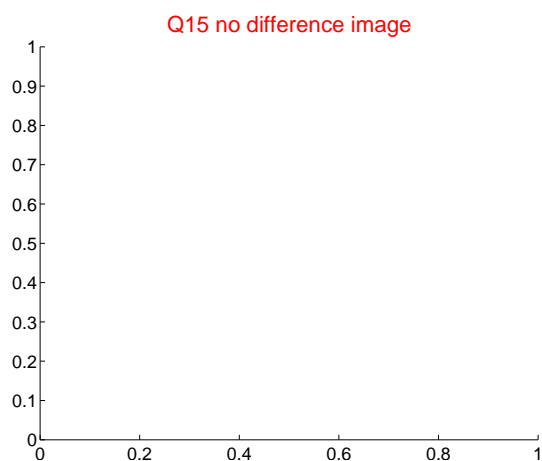
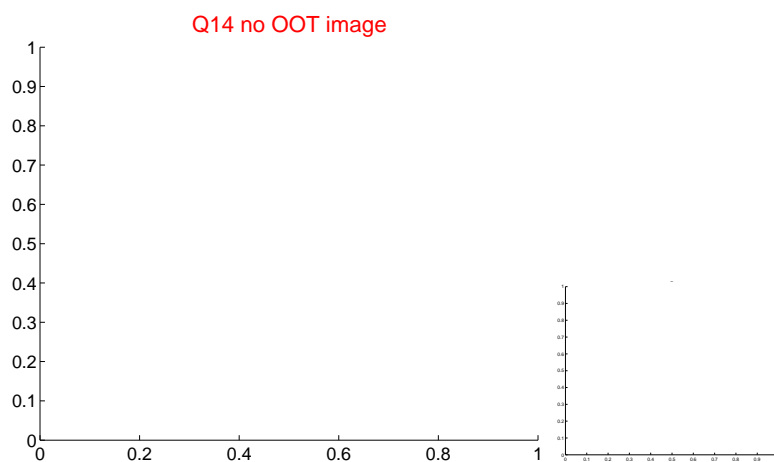
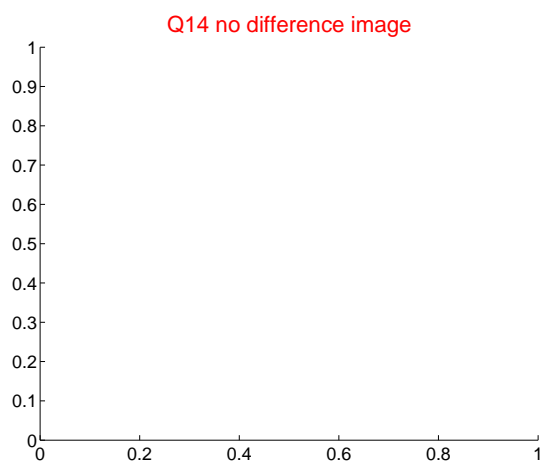
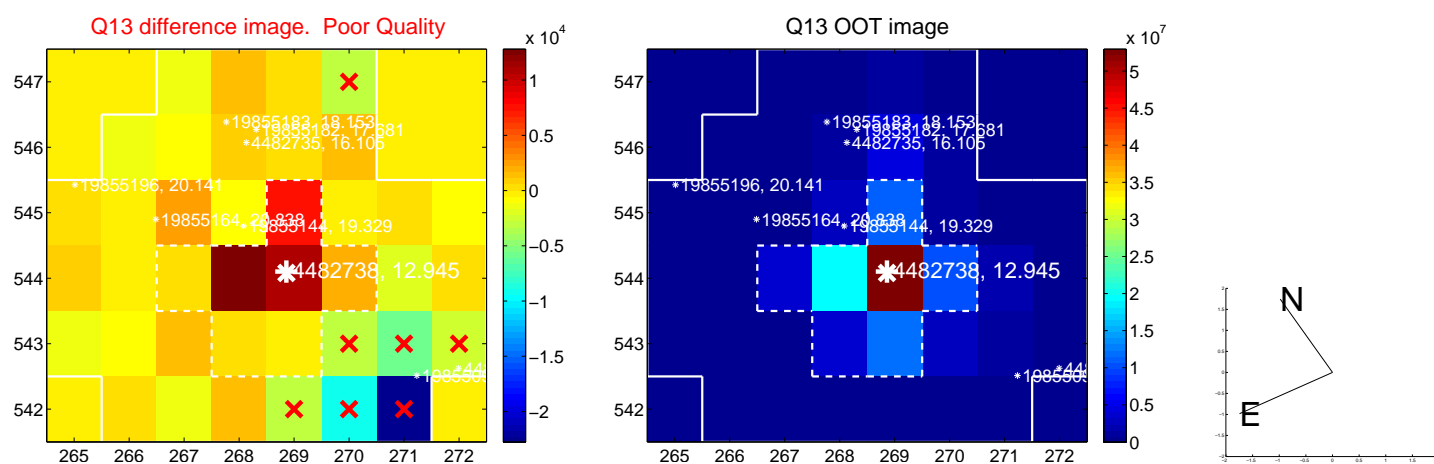
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



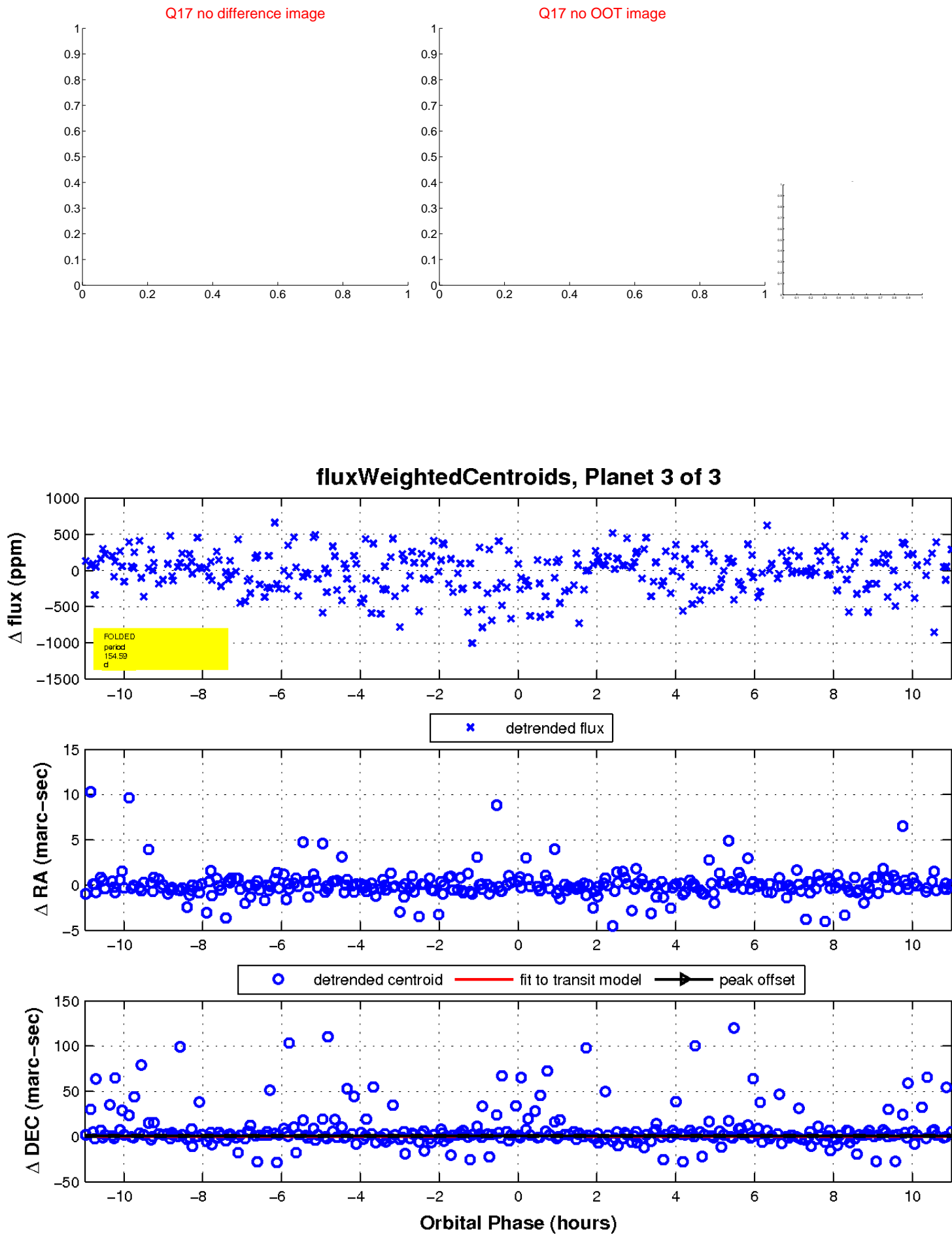
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

