

KIC 011081504

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})
011081504-01	OBS	4287.01	13.123102	136.081044	40.0	2.046	10.1	10.9	1.67	6134	1.31	266.34
011081504-02	OBS	4287.02	9.618201	138.353837	26.3	4.319	9.4	9.8	1.67	6134	1.02	403.05

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011081504-01	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
011081504-02	OBS	PC	1.00	0	0	0	0	CENT_SATURATED

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

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

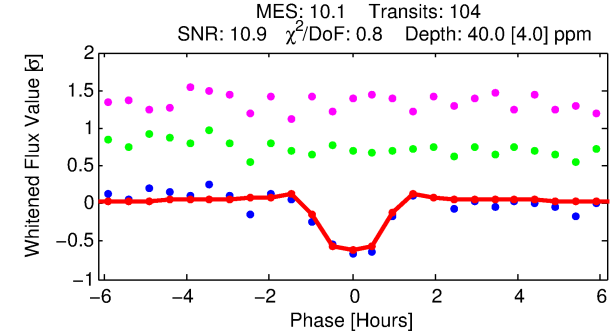
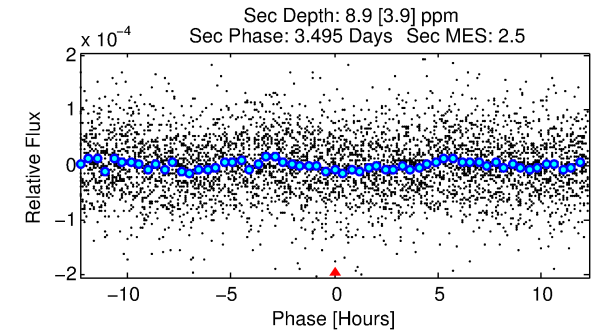
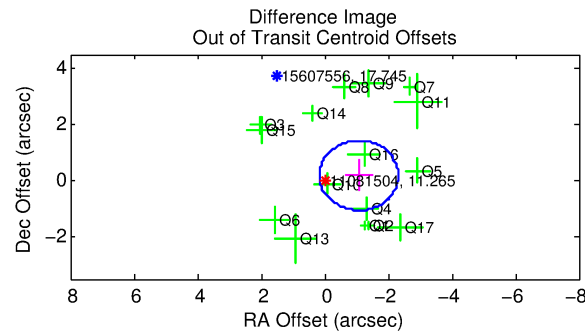
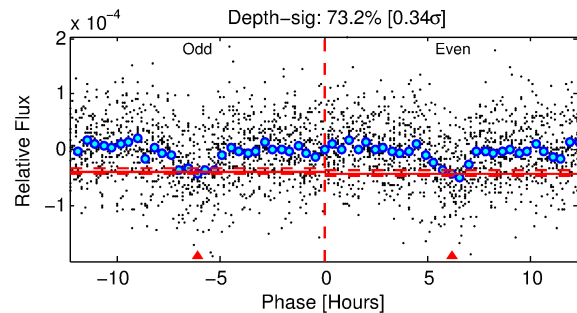
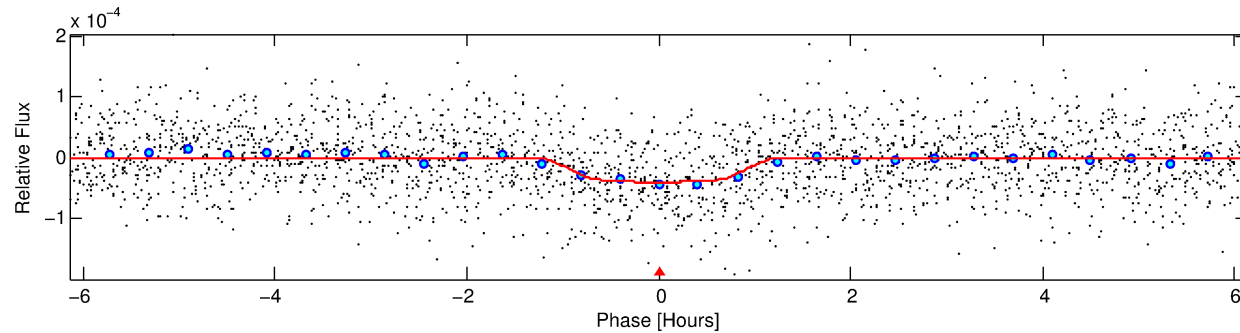
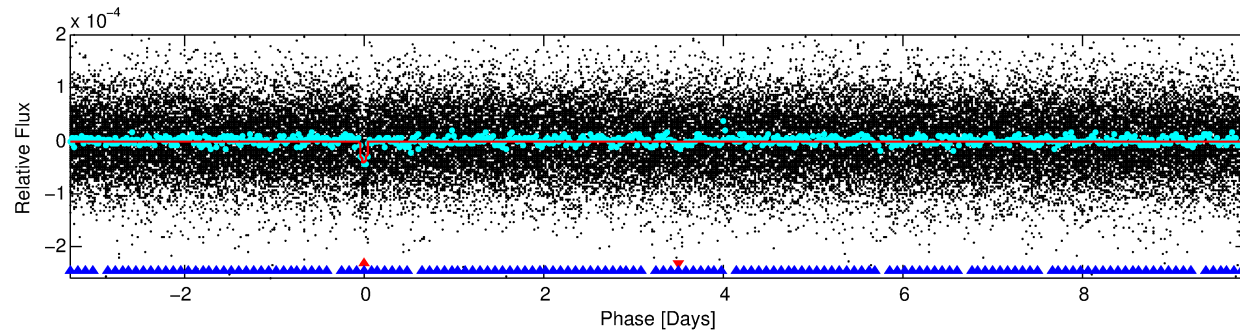
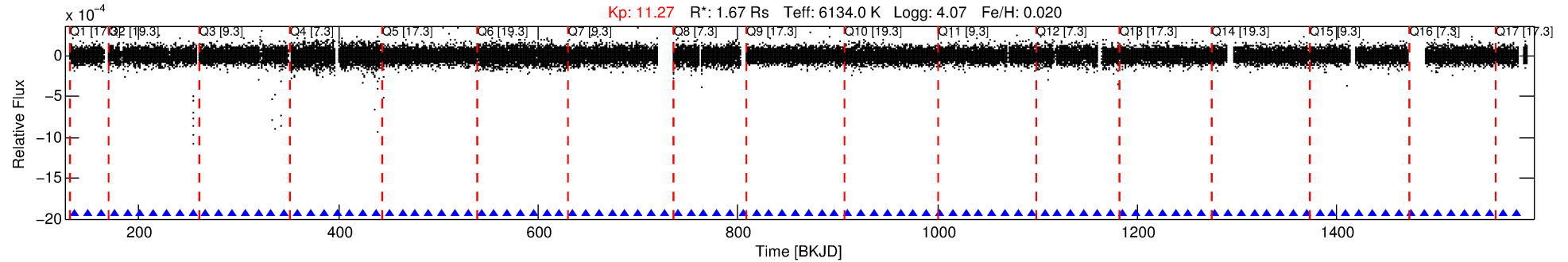
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011081504-01

No Significant Match Found

DV One-Page Summary

KIC: 11081504 Candidate: 1 of 2 Period: 13.123 d
KOI: K04287.01 Corr: 0.960



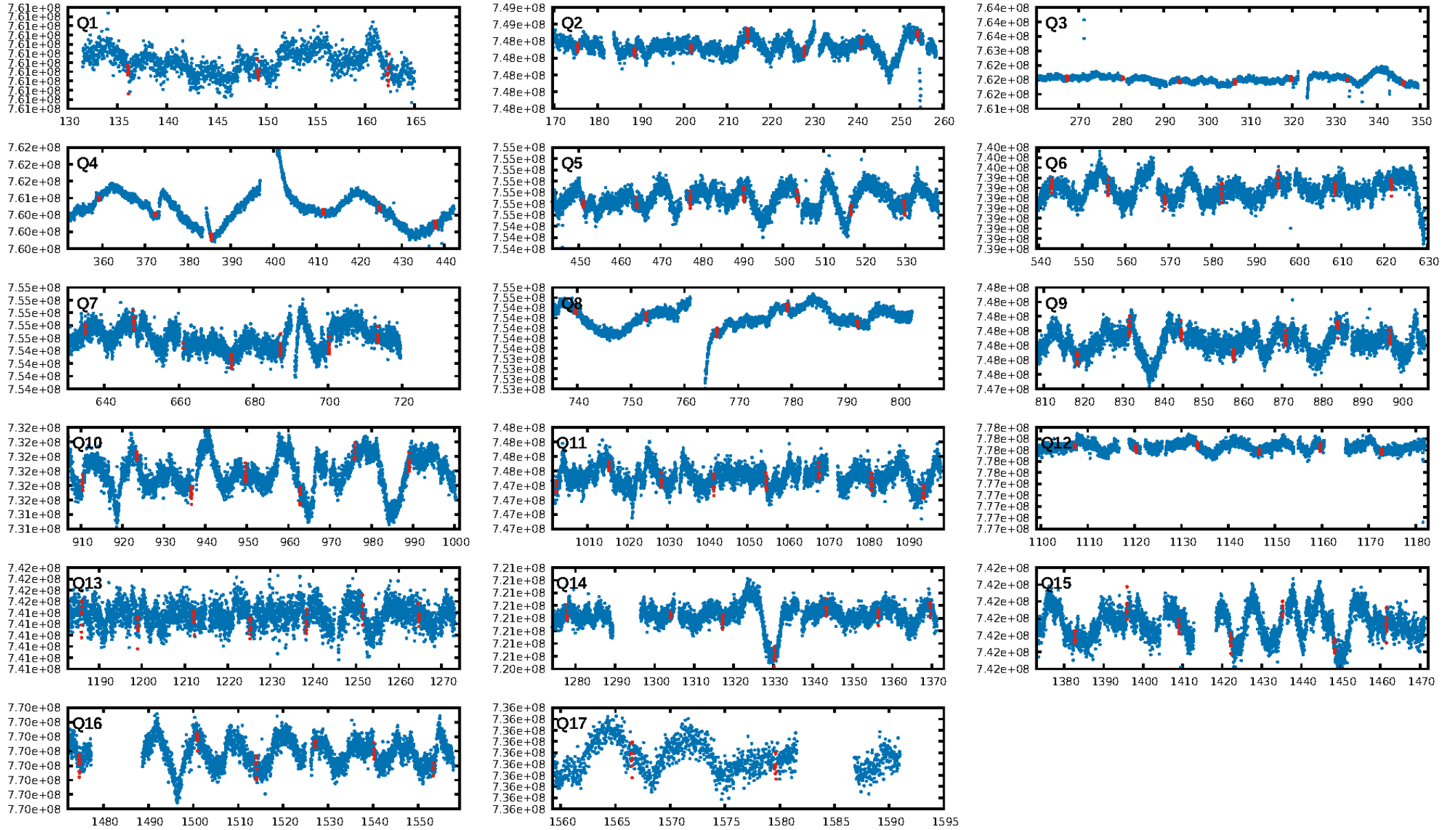
DV Fit Results:

Period = 13.12310 [0.00006] d
Epoch = 136.0810 [0.0038] BKJD
Rp/R* = 0.0072 [0.0028]
a/R* = 17.05 [36.73]
b = 0.95 [0.25]
Seff = 266.34 [86.36]
Teq = 1030 [84] K
Rp = 1.31 [0.58] Re
a = 0.1149 [0.0230] AU
Ag = 37.58 [35.79] [1.02 σ]
Teffp = 3943 [890] K [3.26 σ]

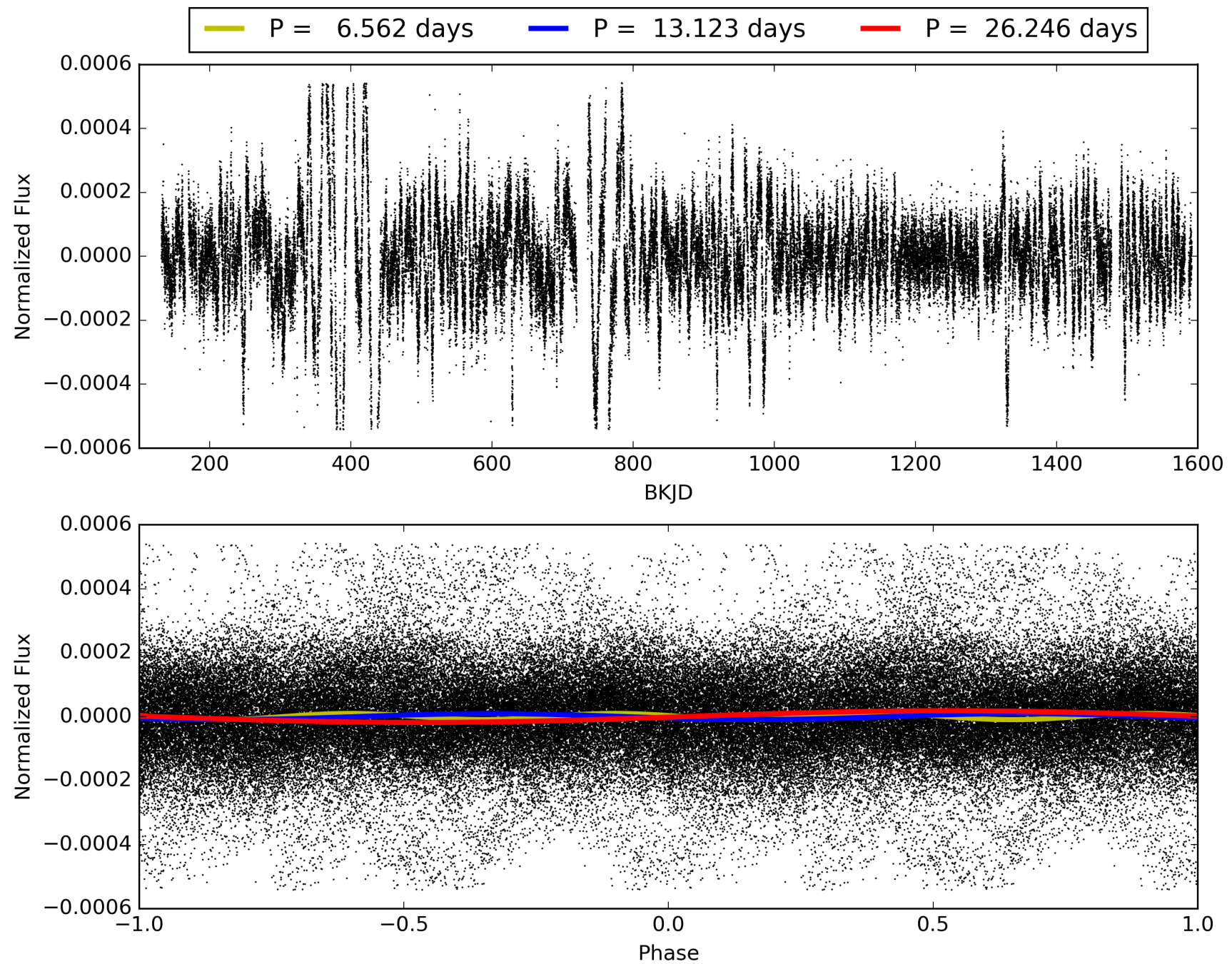
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [17.60 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 3.45e-19
RollingBand-fgt: 1.00 [99/99]
GhostDiagnostic-chr: 2.046
Centroid-sig: 3.0%
Centroid-so: 1.410 arcsec [1.94 σ]
OotOffset-rm: 1.086 arcsec [2.62 σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-rm: 1.198 arcsec [3.02 σ]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.50 [8/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 011081504-01, PDC Light Curves

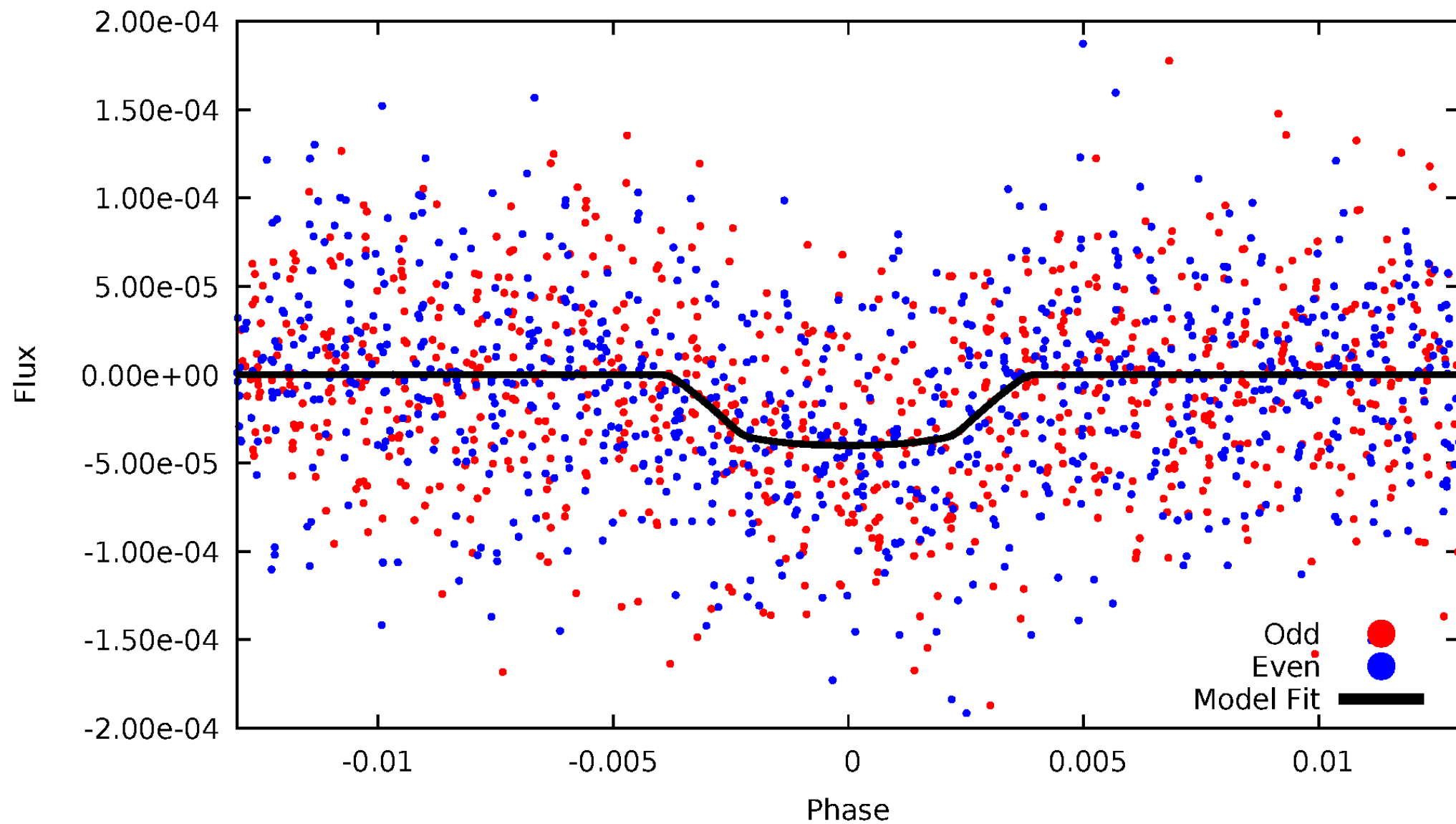


TCE 011081504-01



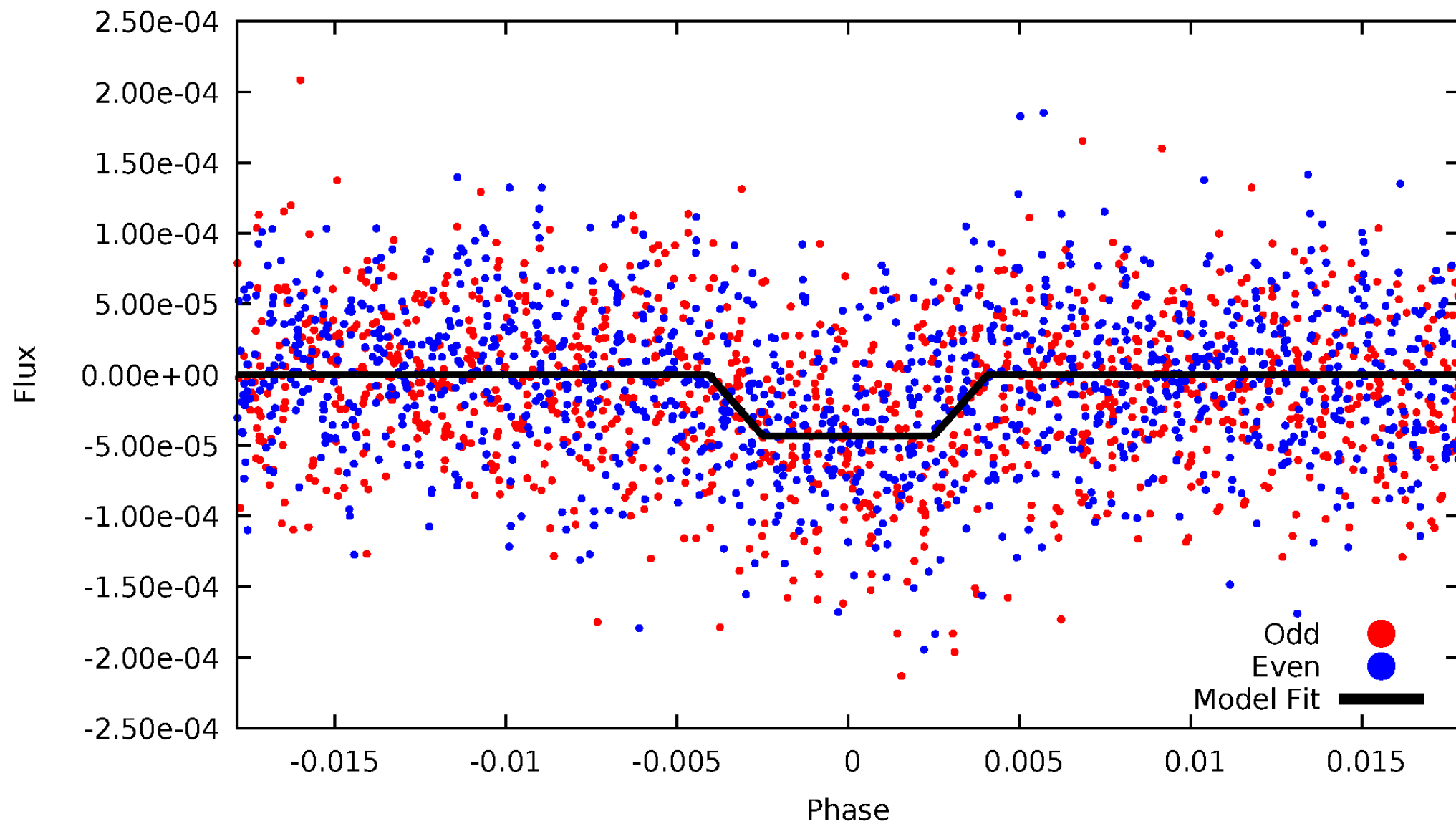
DV Odd/Even

TCE 011081504-01



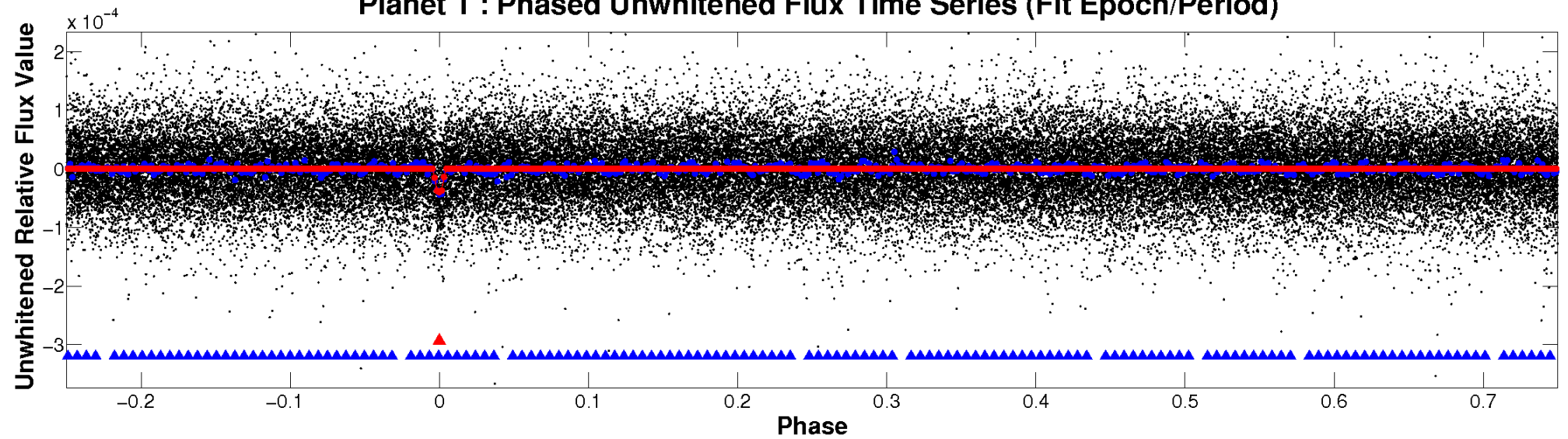
ALT Odd/Even

TCE 011081504-01

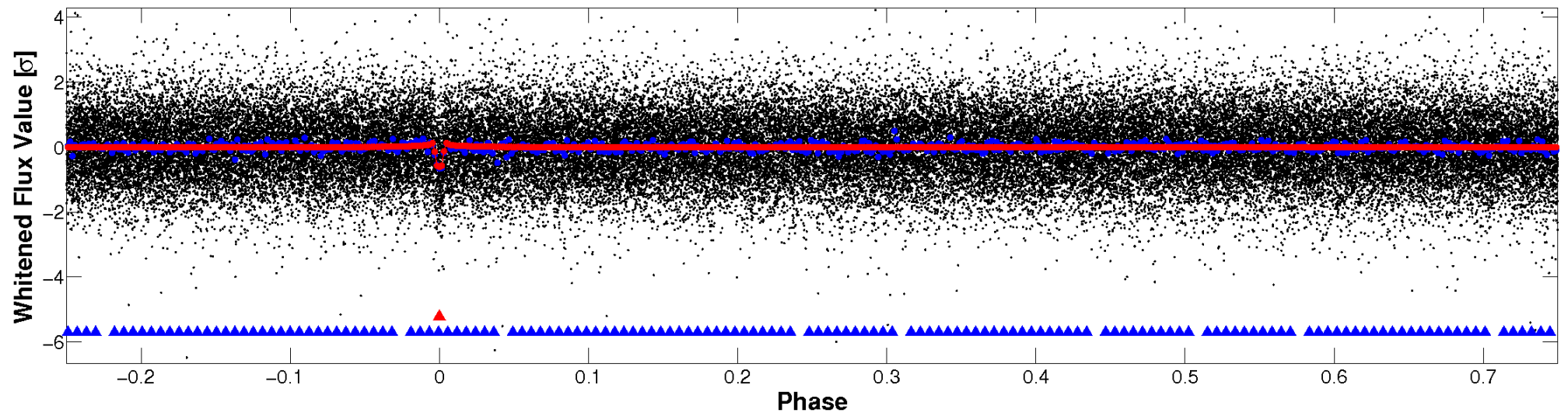


Non-Whitened Vs. Whitened Light Curve

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

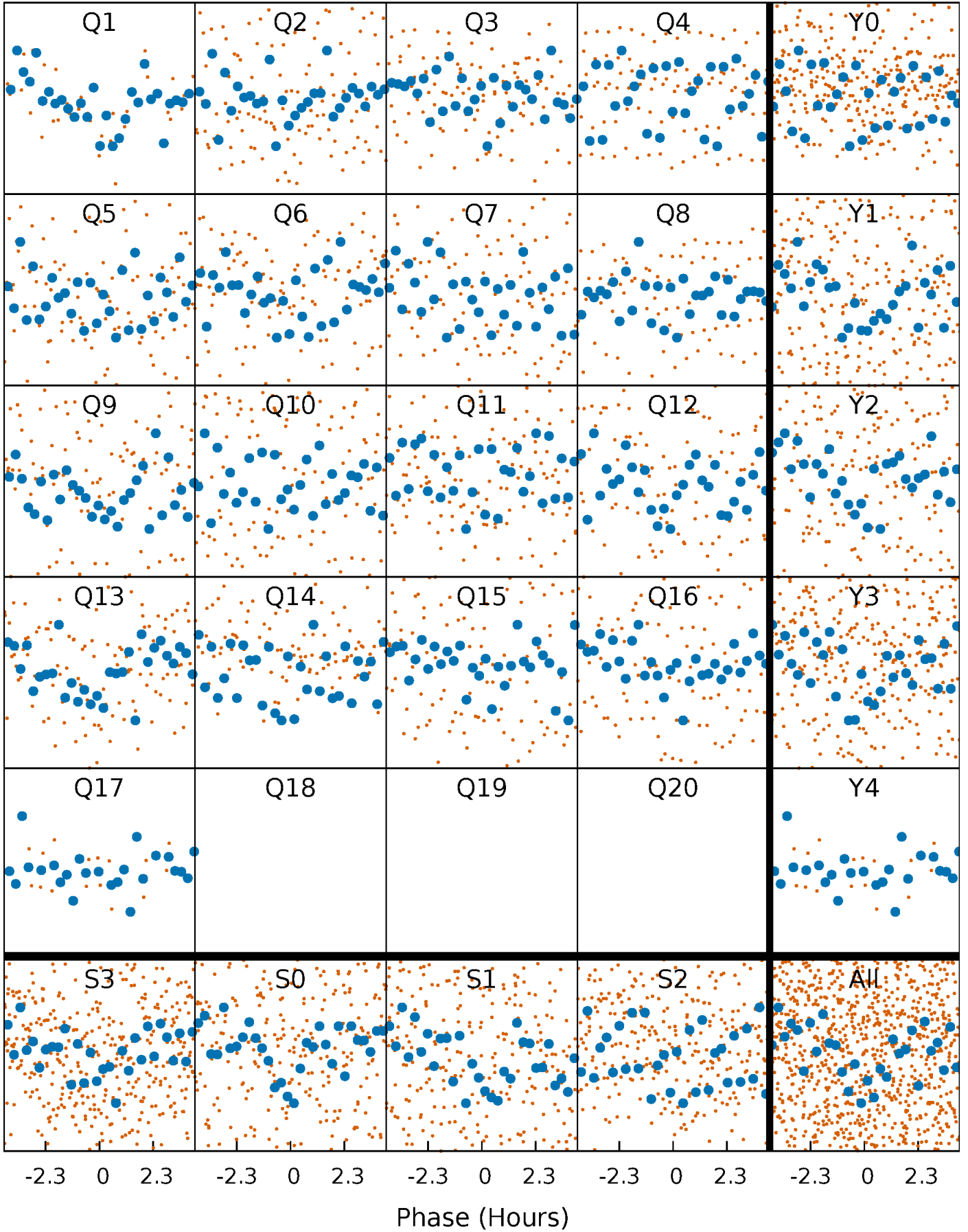


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



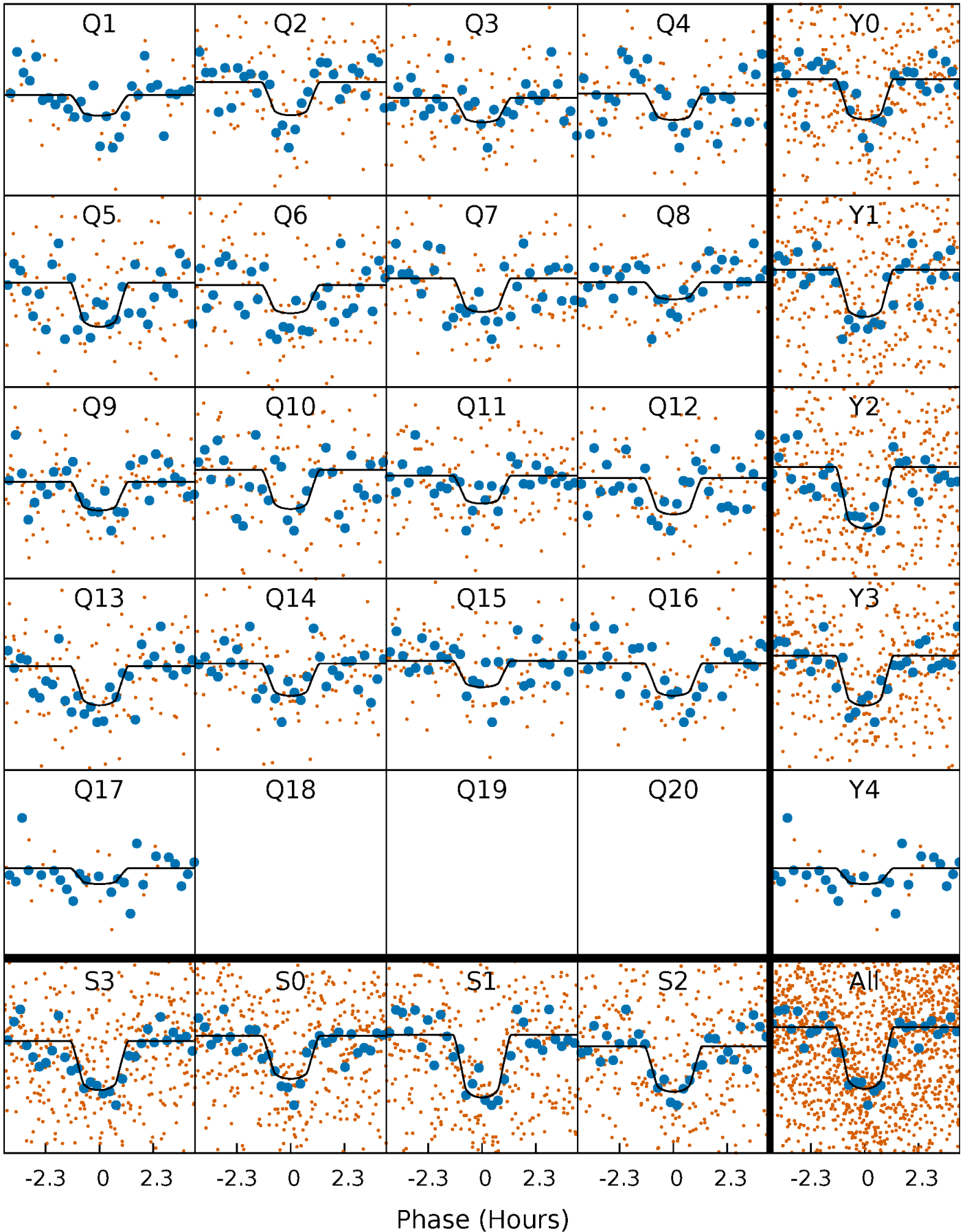
PDC Quarter-Phased Transit Curves

TCE 011081504-01 P= 13.123102 Days $T_0=136.081044$ (BKJD)



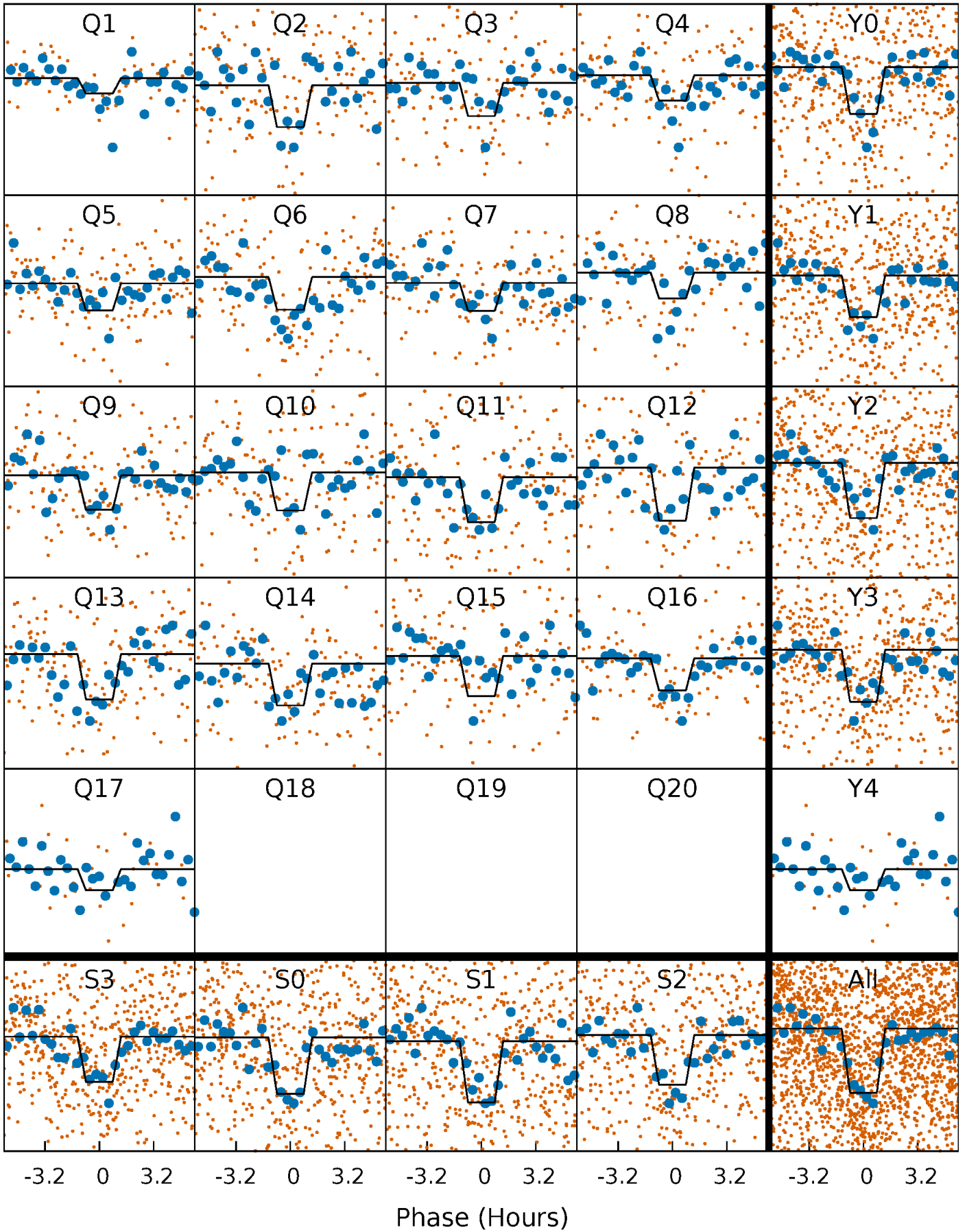
DV Quarter-Phased Transit Curves

TCE 011081504-01 P= 13.123102 Days $T_0=136.081044$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

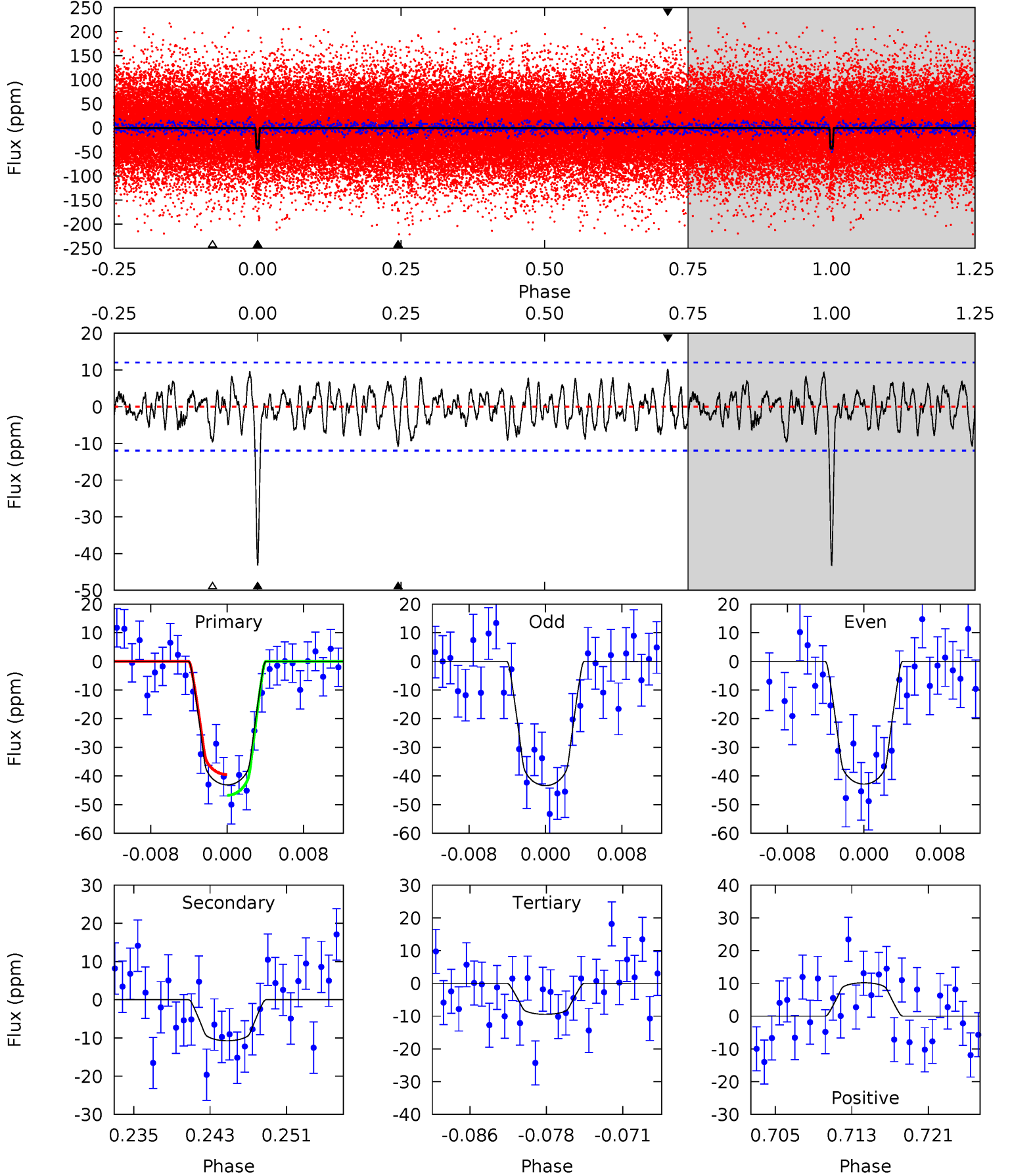
TCE 011081504-01 P= 13.123099 Days $T_0=136.080810$ (BKJD)



DV Model-Shift Uniqueness Test

011081504-01, P = 13.123102 Days, E = 122.957942 Days

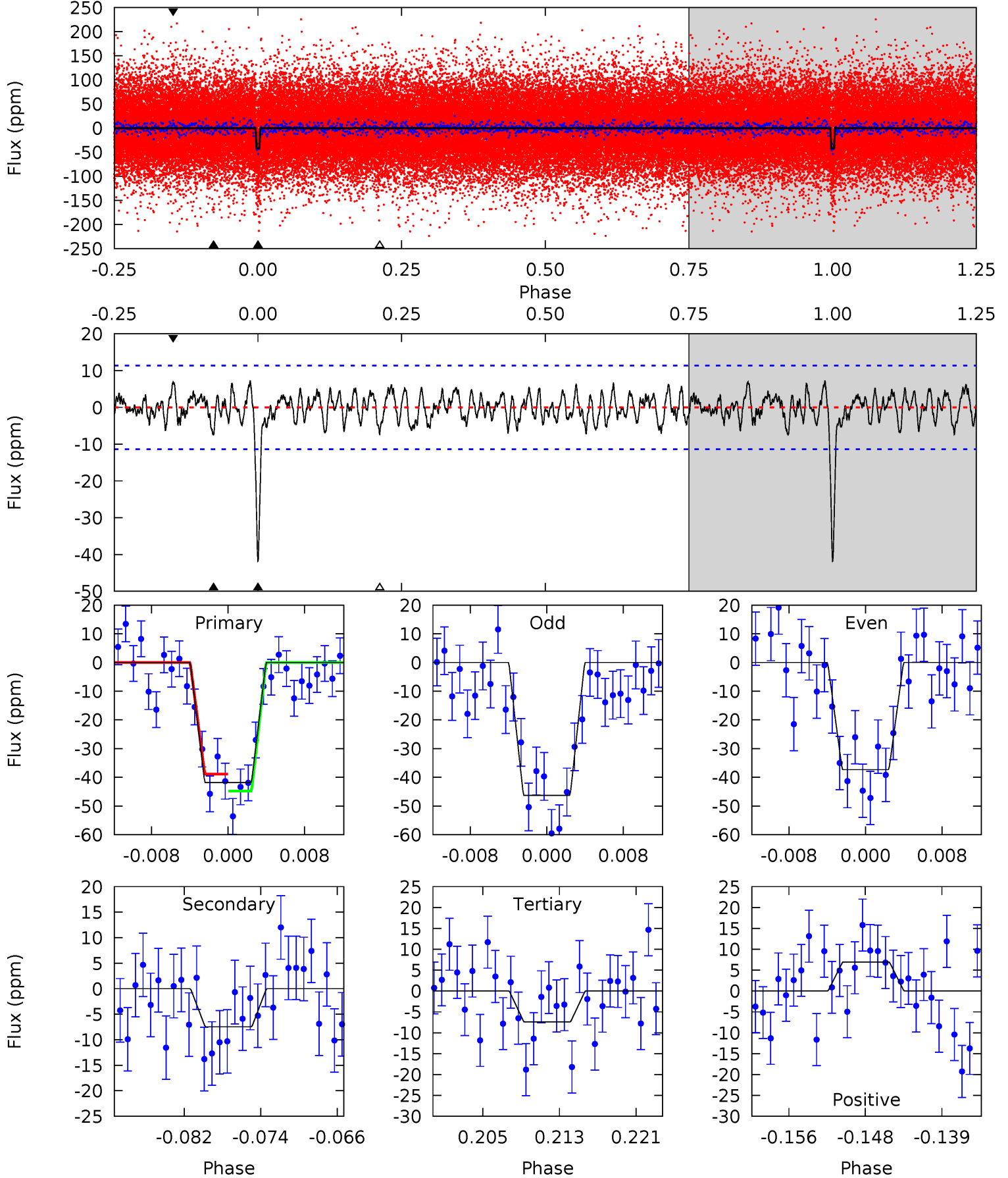
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.2	4.54	4.00	4.31	5.07	2.66	1.61	14.2	13.9	0.54	0.23	0.11	1.06	0.19	1.53



Alt Model-Shift Uniqueness Test

011081504-01, P = 13.123099 Days, E = 122.957711 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.6	3.32	3.29	3.10	5.06	2.64	1.34	15.3	15.5	0.03	0.22	2.00	0.99	0.15	1.32



Stellar Parameters For KIC 011081504

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6134^{+124}_{-124}	$4.065^{+0.182}_{-0.098}$	$0.020^{+0.150}_{-0.150}$	$1.665^{+0.293}_{-0.358}$	$1.173^{+0.143}_{-0.107}$	$0.358^{+0.325}_{-0.126}$
	+2%/-2%	+4%/-2%	+750%/-750%	+18%/-22%	+12%/-9%	+91%/-35%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 011081504-01 / KOI 4287.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-11 ± 2	$1.27^{+0.51}_{-0.48}$	1434^{+70}_{-84}	4360^{+995}_{-559}	47^{+80}_{-24}
Alt.	-7 ± 2	$1.15^{+0.55}_{-0.47}$	1429^{+68}_{-84}	4199^{+990}_{-564}	39^{+77}_{-22}

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 $A_{obs} \gg 1.0$

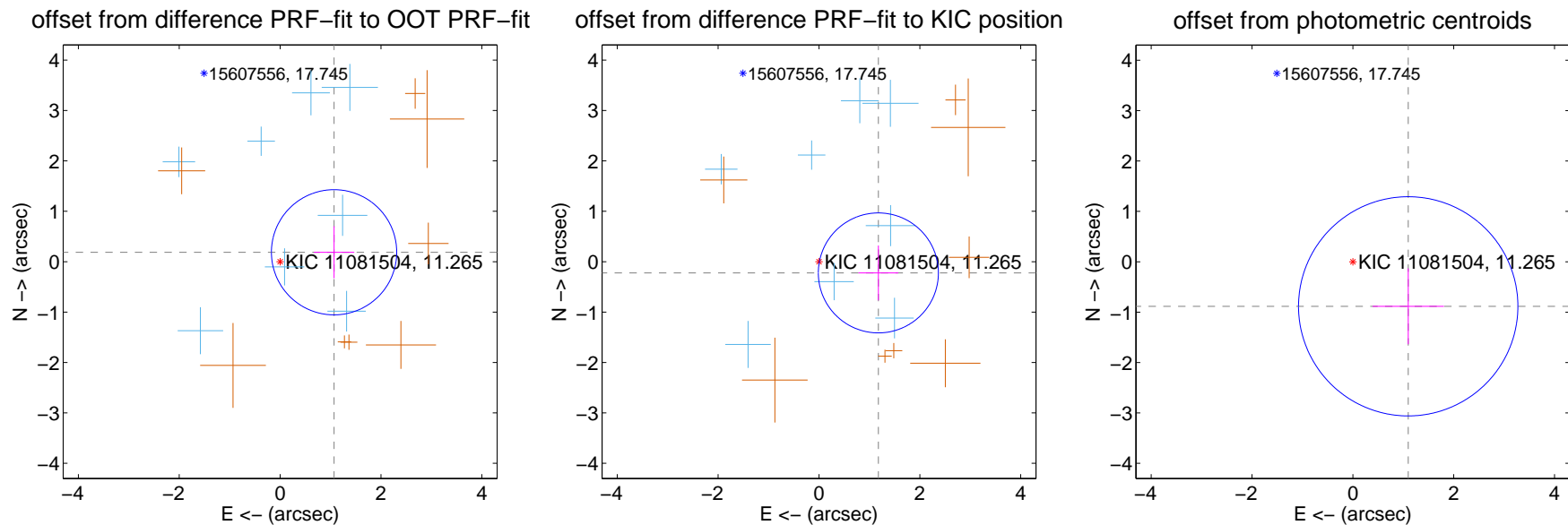
DV Centroid Data

Supplemental centroid analysis for 011081504-01. **Kepler magnitude: 11.27.** Transit SNR 10.87

There are 8 quarters with good PRF difference image offsets

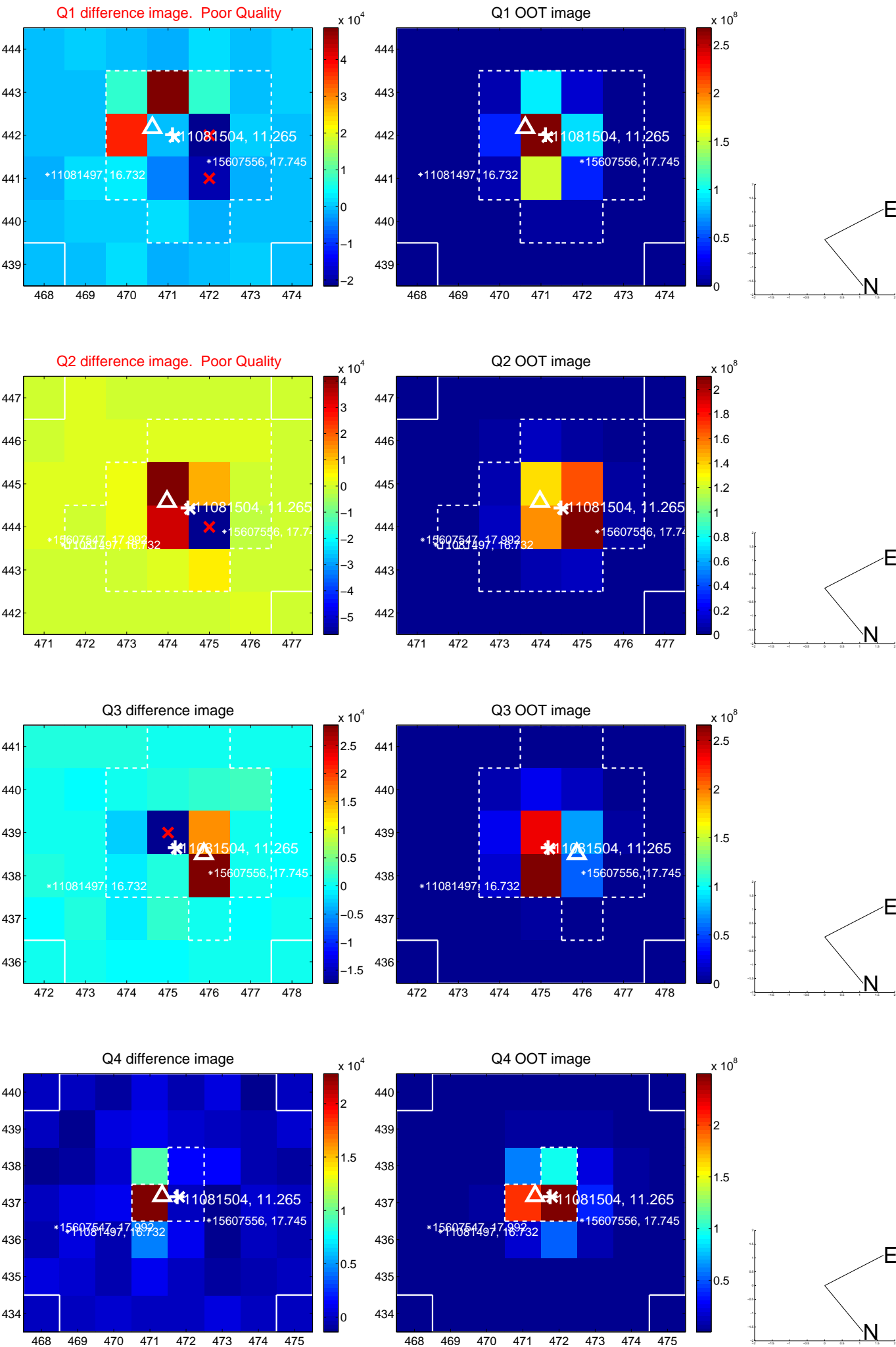
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.086 ± 0.414	2.62	-1.070 ± 0.401	0.187 ± 0.517
PRF-fit source offset from KIC position	1.198 ± 0.397	3.02	-1.178 ± 0.395	-0.223 ± 0.544
photometric centroid source offset	1.41 ± 0.73	1.94	-1.10 ± 0.71	-0.88 ± 0.75

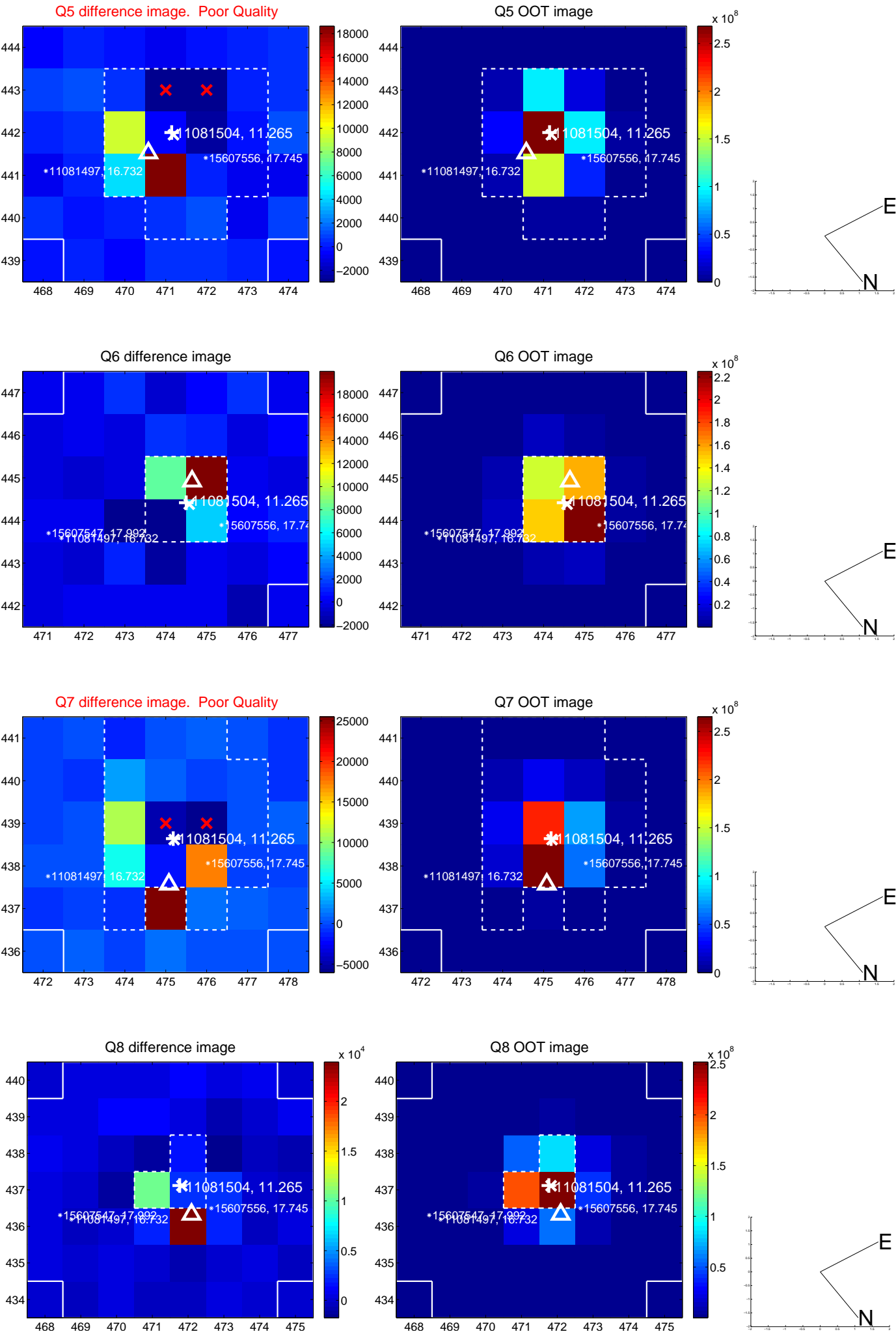


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

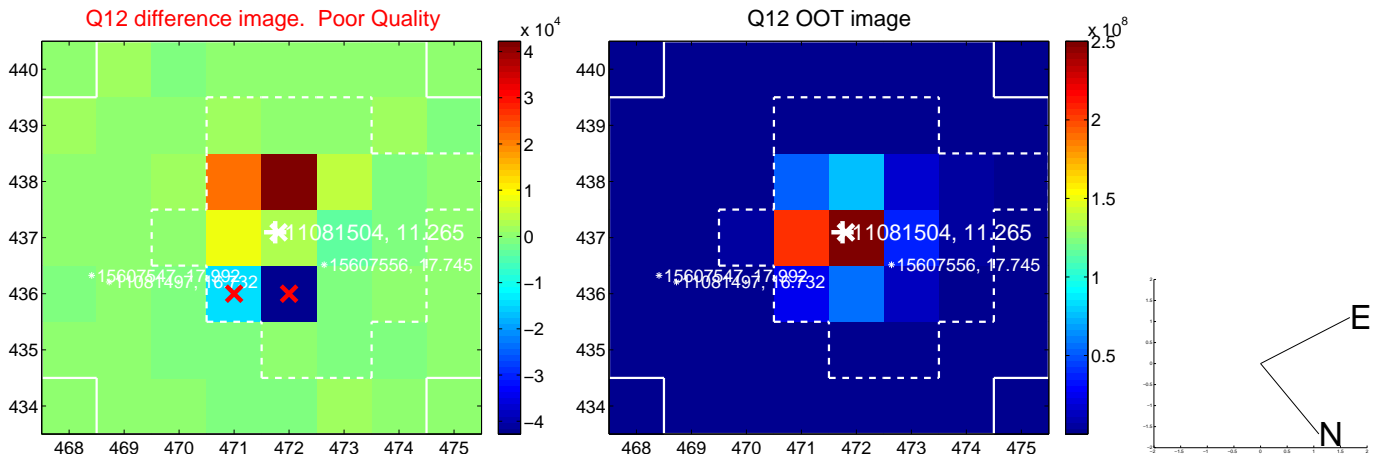
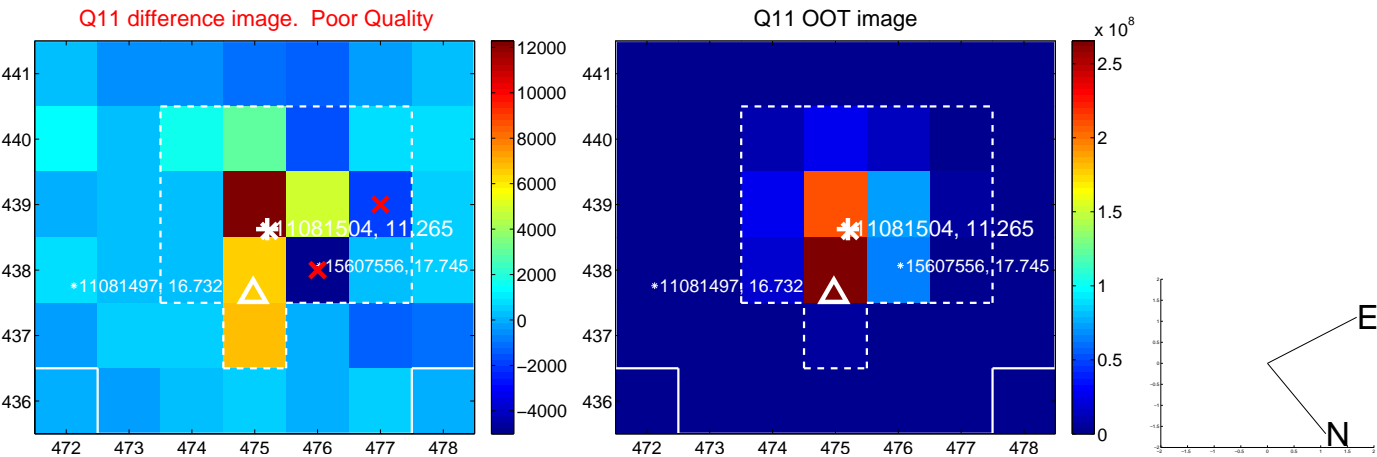
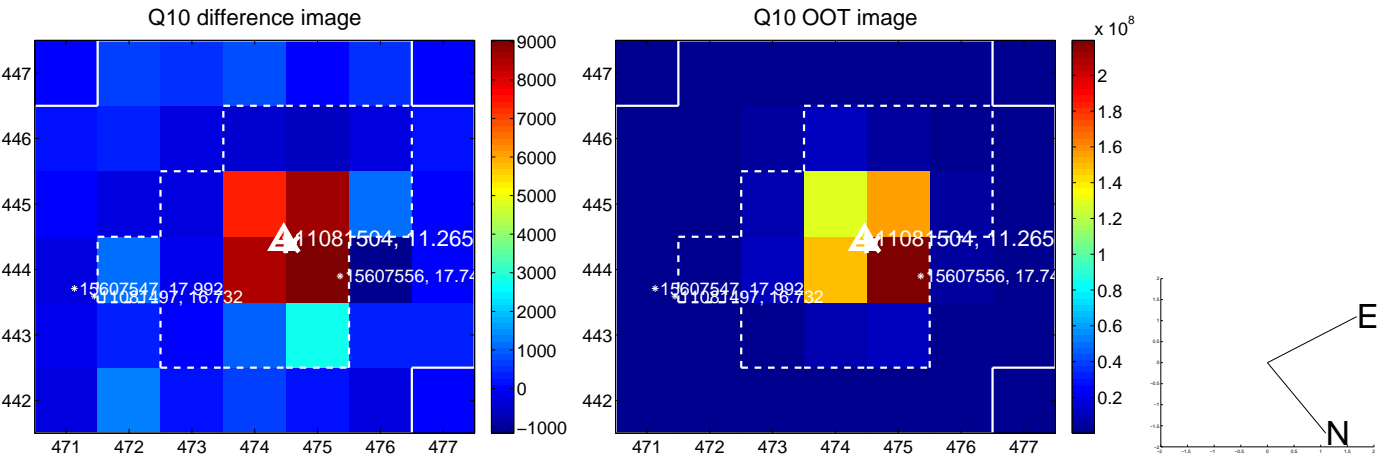
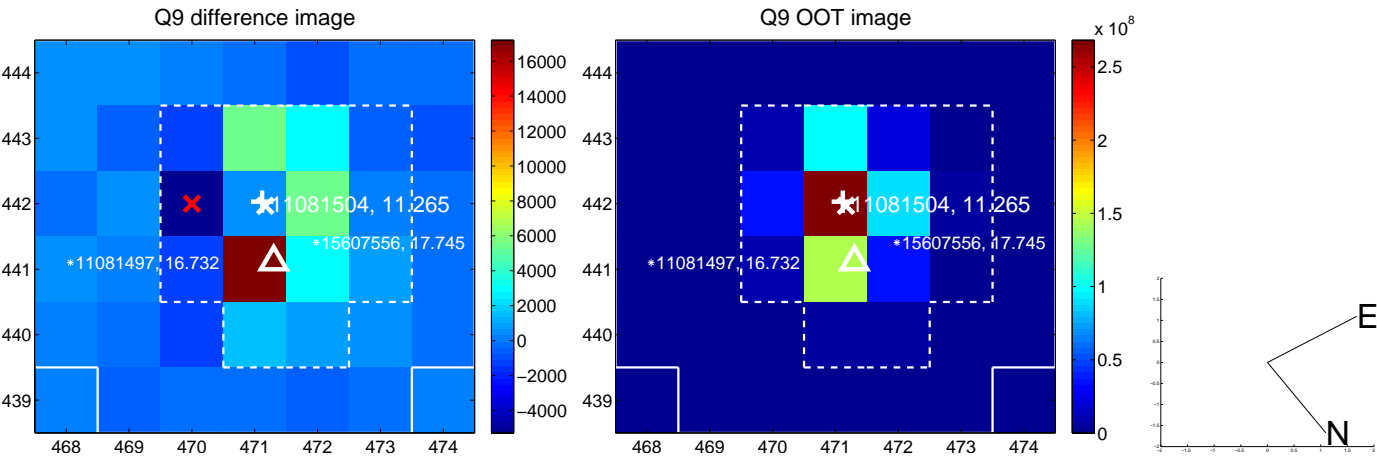
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



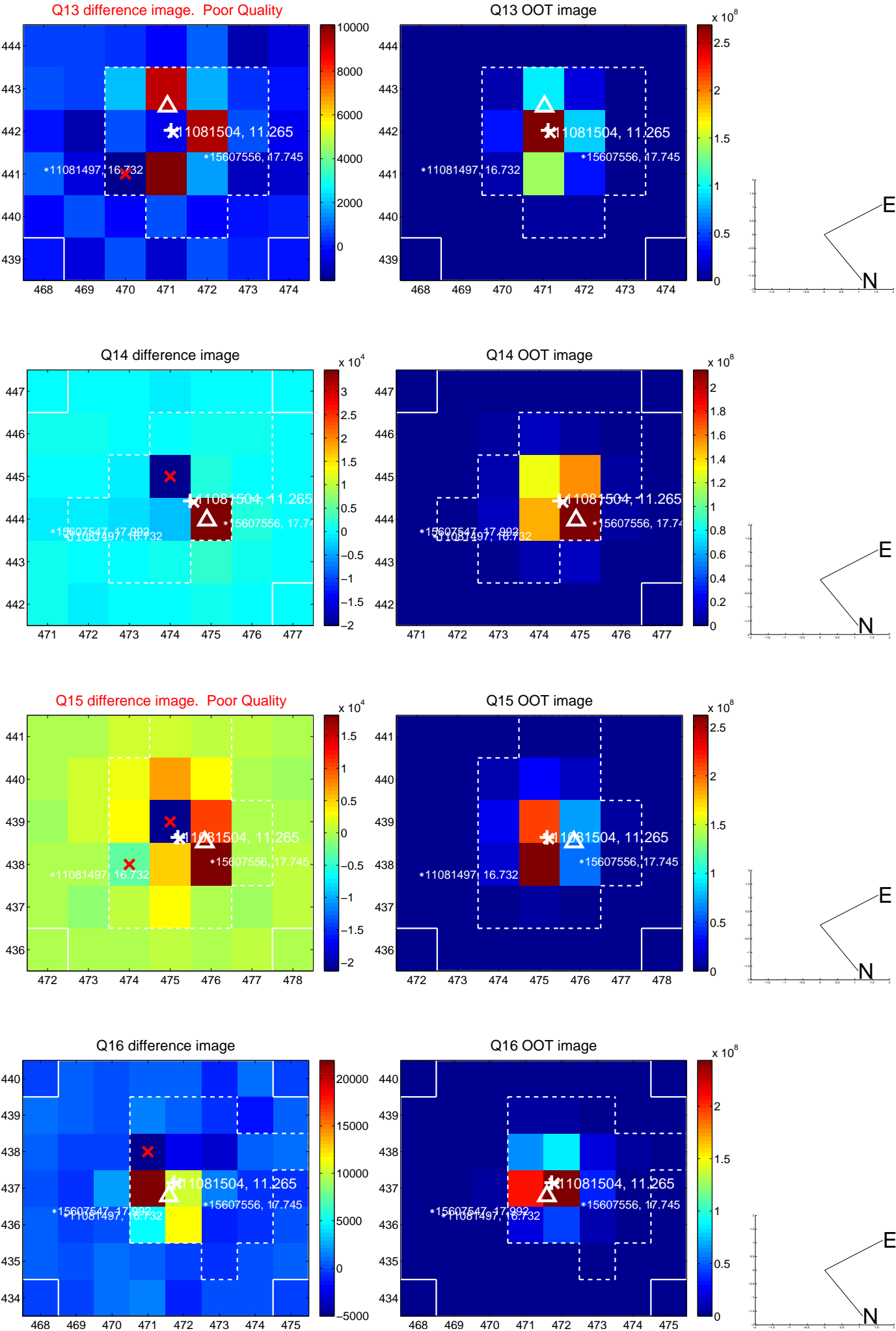
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



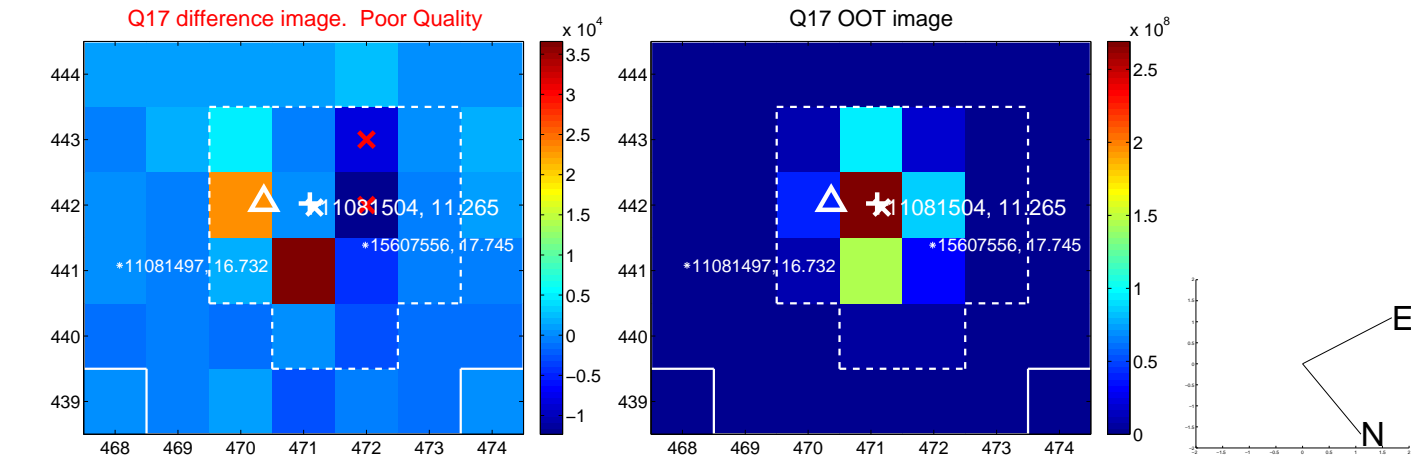
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



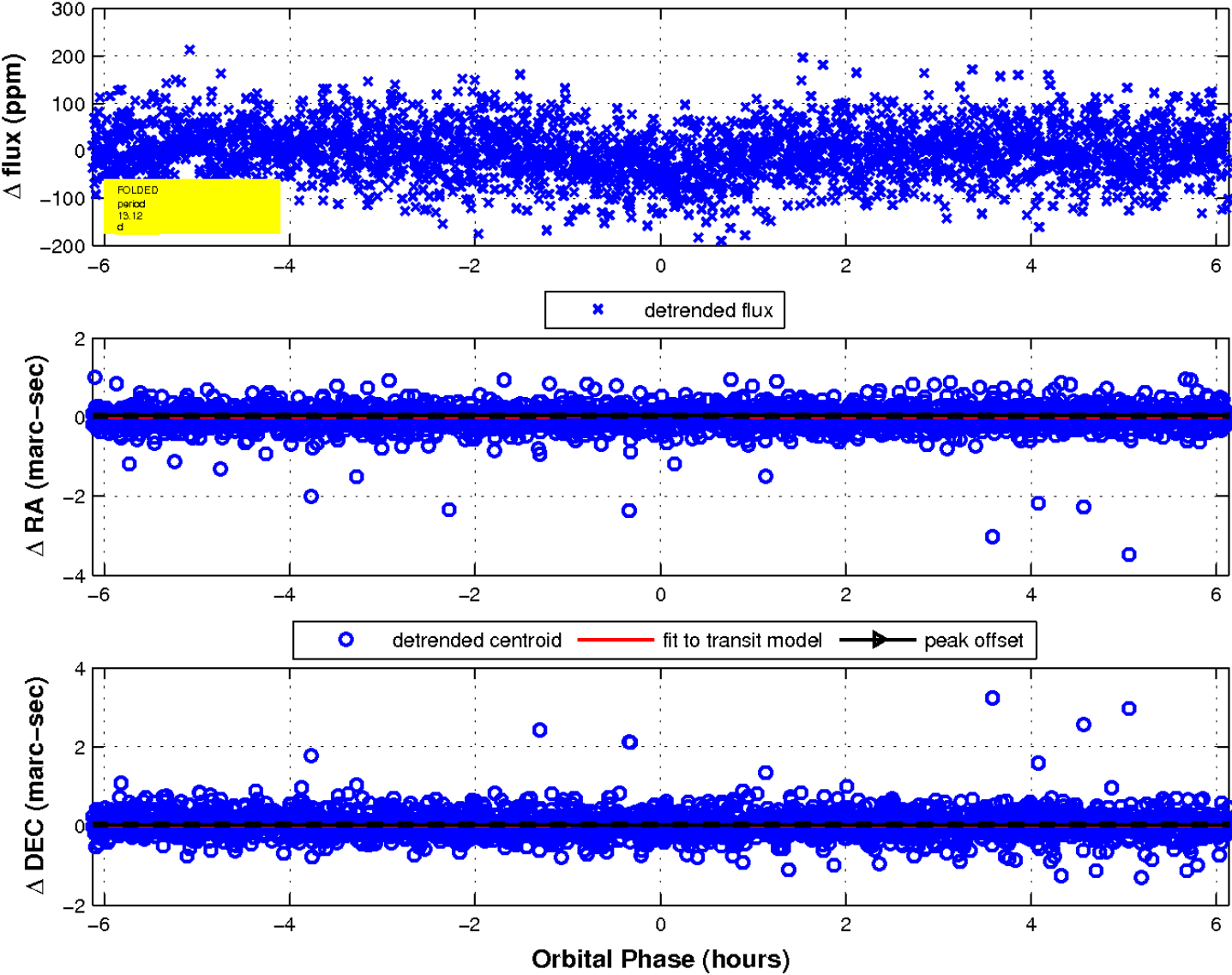
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



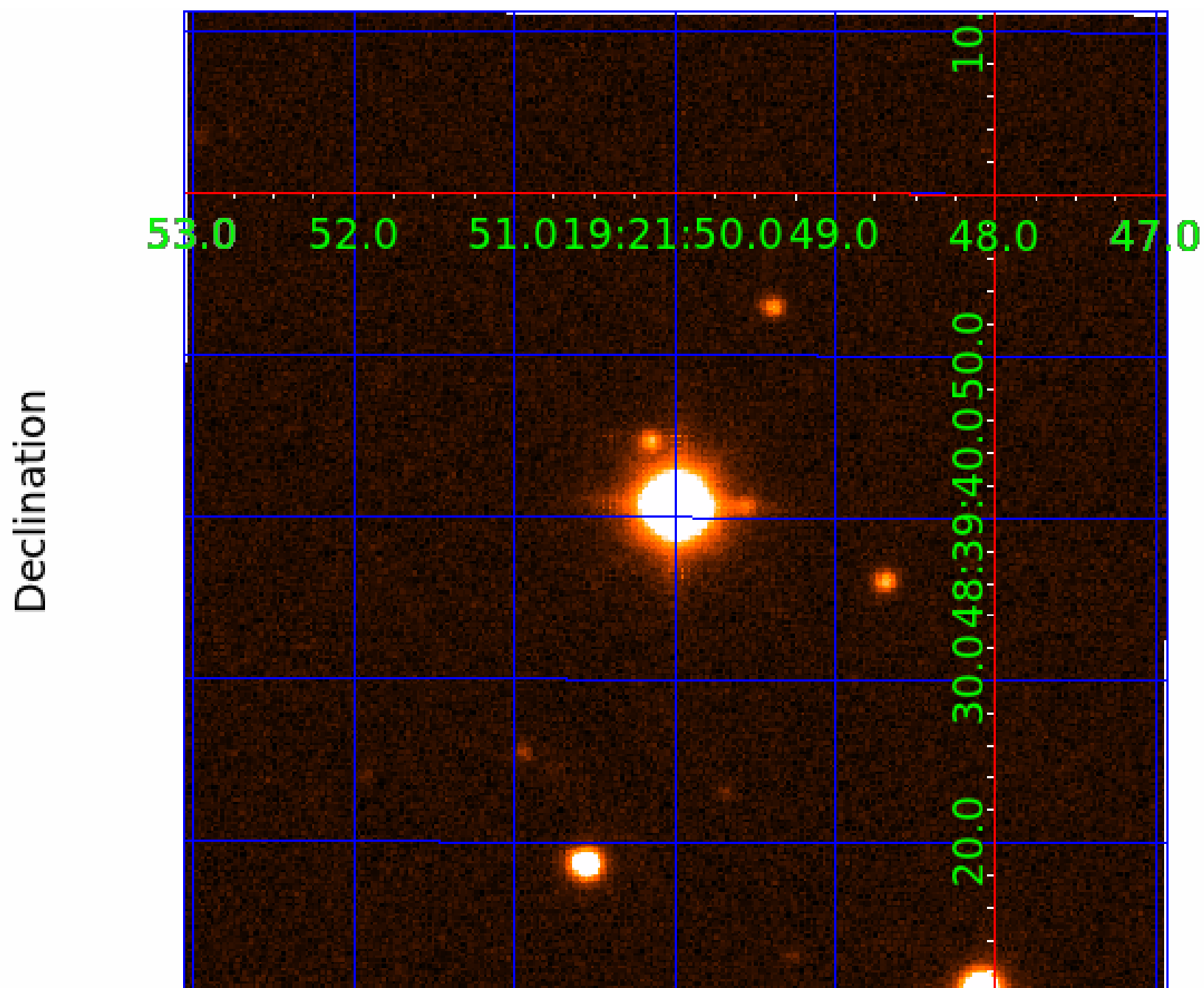
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 2



UKIRT Image



KIC 011081504

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})
011081504-01	OBS	4287.01	13.123102	136.081044	40.0	2.046	10.1	10.9	1.67	6134	1.31	266.34
011081504-02	OBS	4287.02	9.618201	138.353837	26.3	4.319	9.4	9.8	1.67	6134	1.02	403.05

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011081504-01	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
011081504-02	OBS	PC	1.00	0	0	0	0	CENT_SATURATED

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

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

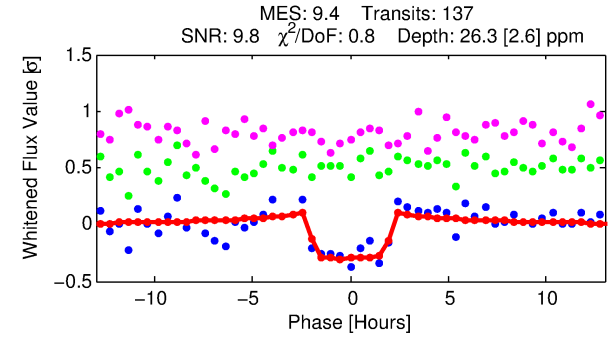
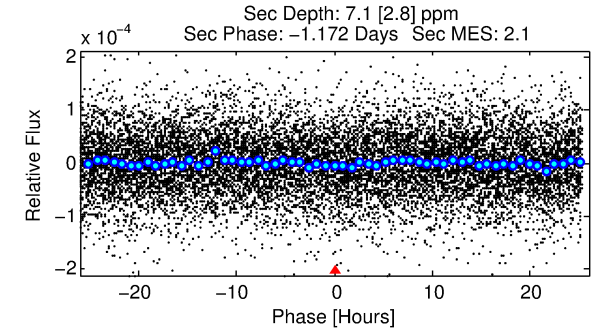
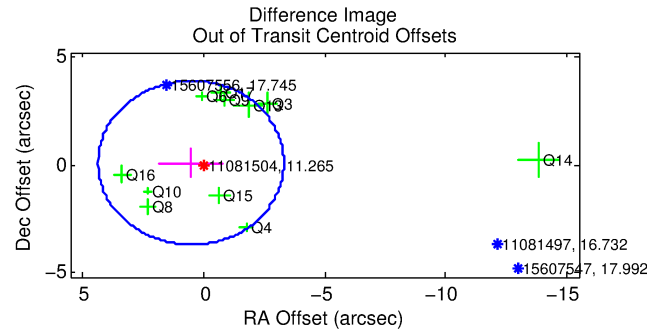
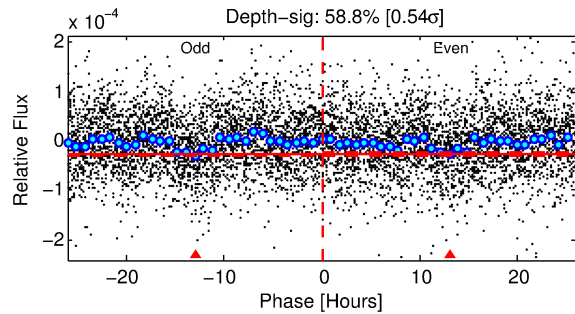
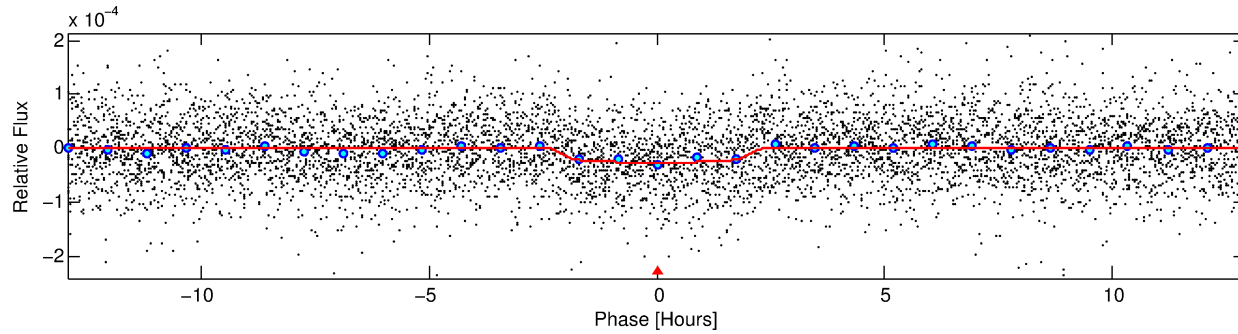
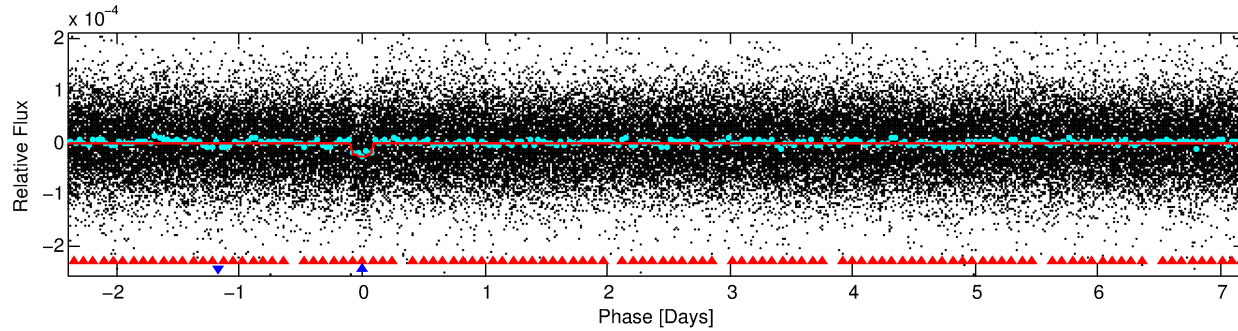
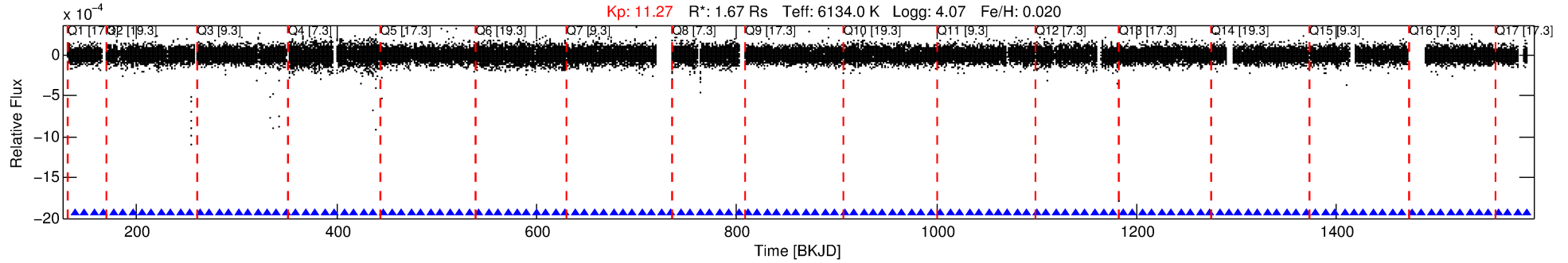
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011081504-02

No Significant Match Found

DV One-Page Summary

KIC: 11081504 Candidate: 2 of 2 Period: 9.618 d
KOI: K04287.02 Corr: 0.951



DV Fit Results:

Period = 9.61820 [0.00007] d
Epoch = 138.3538 [0.0059] BKJD
Rp/R* = 0.0056 [0.0018]
a/R* = 6.99 [11.82]
b = 0.92 [0.29]
Seff = 403.05 [130.69]
Teq = 1143 [93] K
Rp = 1.02 [0.40] Re
a = 0.0934 [0.0187] AU
Ag = 32.52 [26.61] [1.18 σ]
Teffp = 4218 [802] K [3.81 σ]

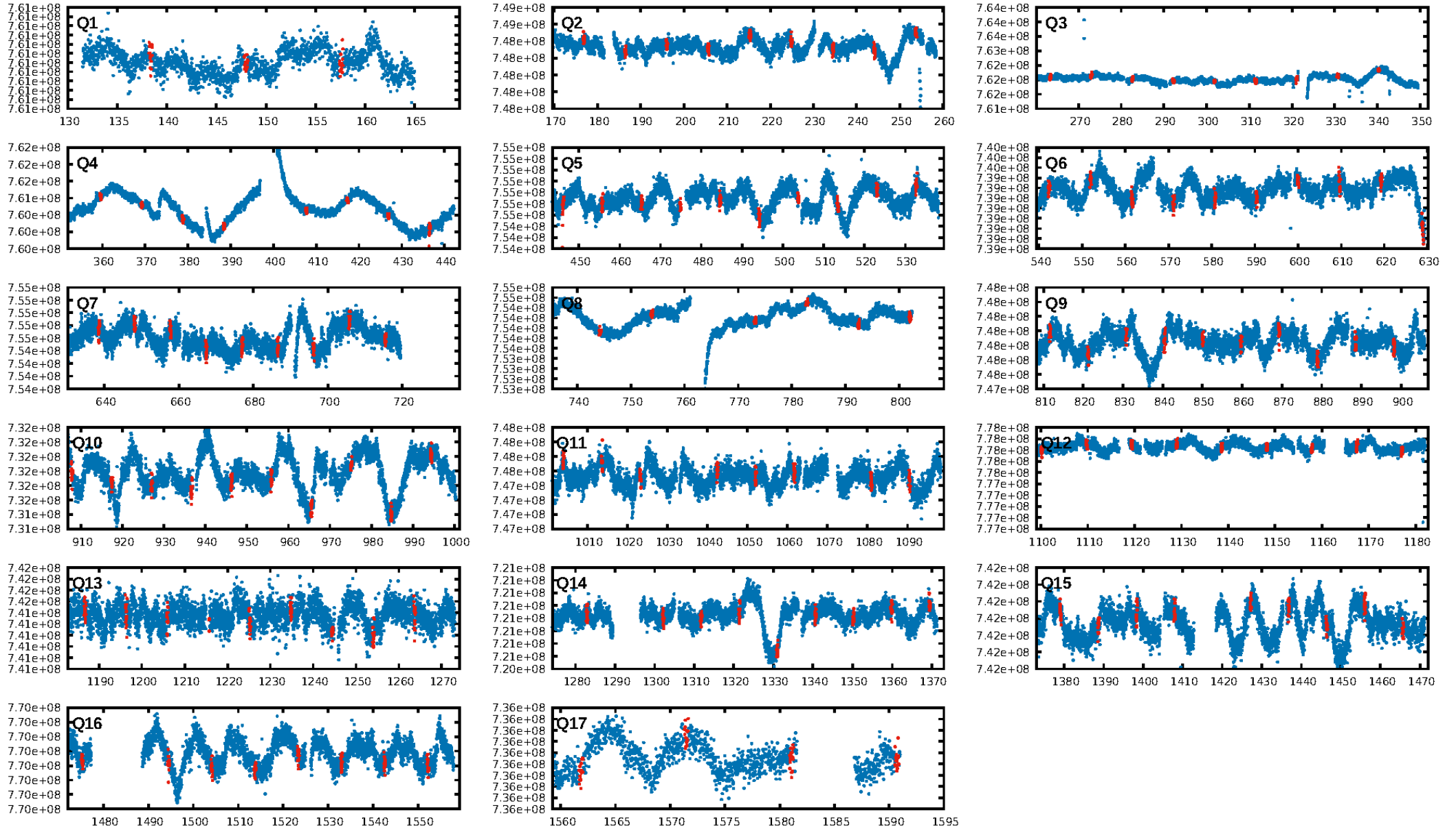
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [17.60 σ]
ModelChiSquare2-sig: 99.9%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 4.97e-17
RollingBand-fgt: 1.00 [130/130]
GhostDiagnostic-chr: 1.63
Centroid-sig: 41.2%
Centroid-so: 0.800 arcsec [1.09 σ]
OotOffset-rm: 0.525 arcsec [0.41 σ]
KicOffset-rm: 0.394 arcsec [0.32 σ]
OotOffset-st: 3/2/3/3 [11]
KicOffset-st: 3/2/3/3 [11]
DiffImageQuality-fgm: 0.73 [8/11]
DiffImageOverlap-fno: 1.00 [17/17]

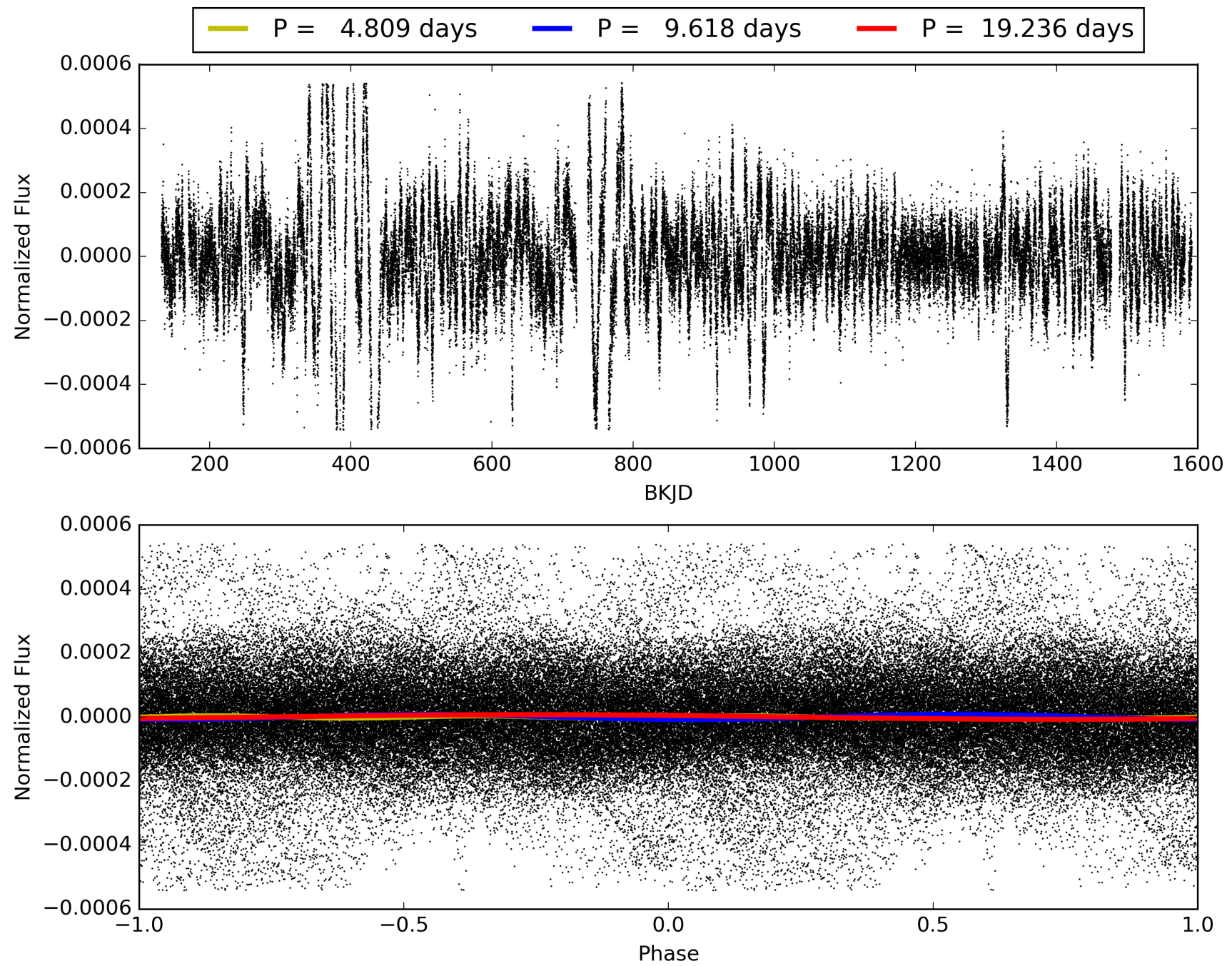
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 13:52:30 Z

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

TCE 011081504-02, PDC Light Curves

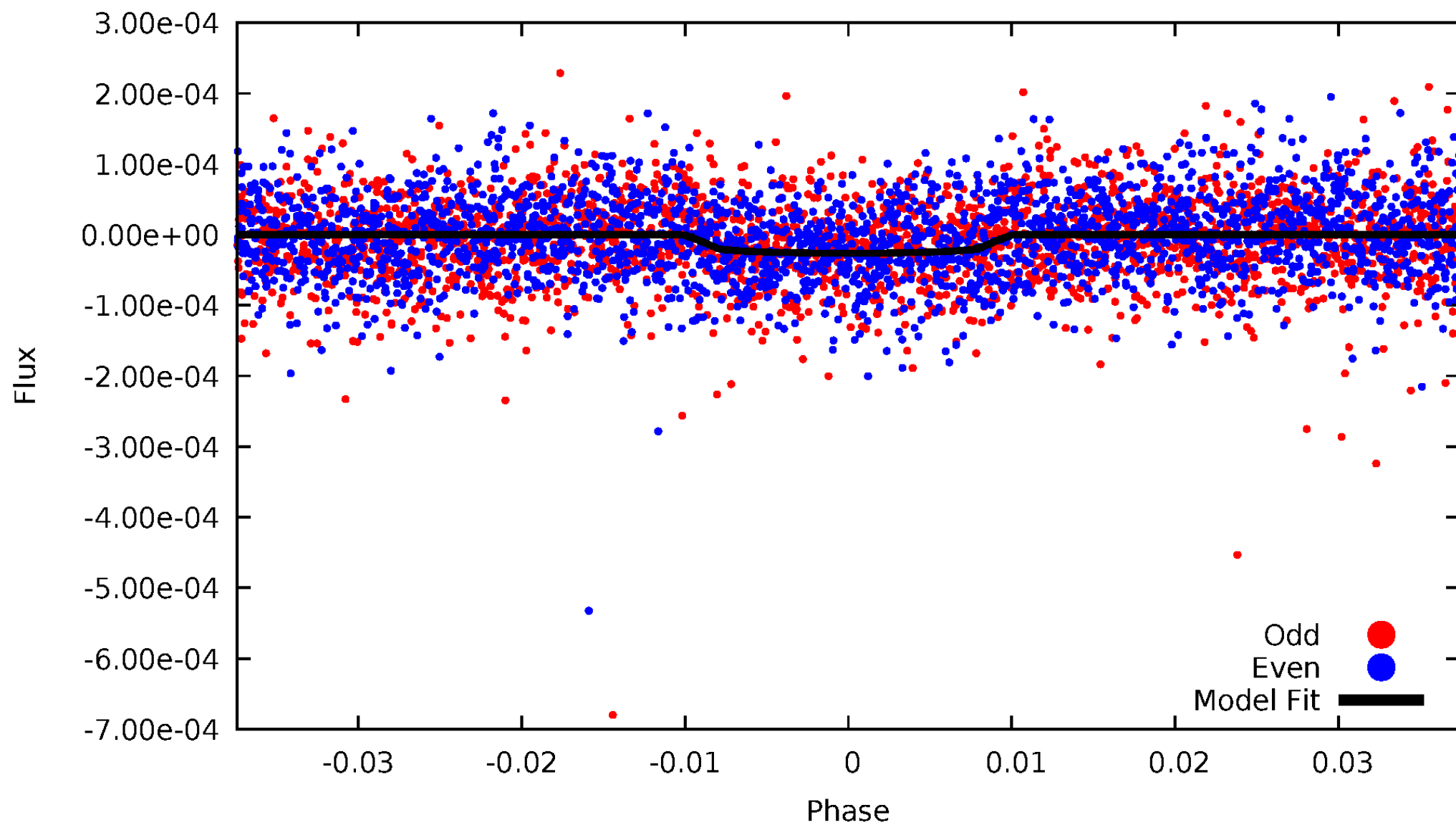


TCE 011081504-02



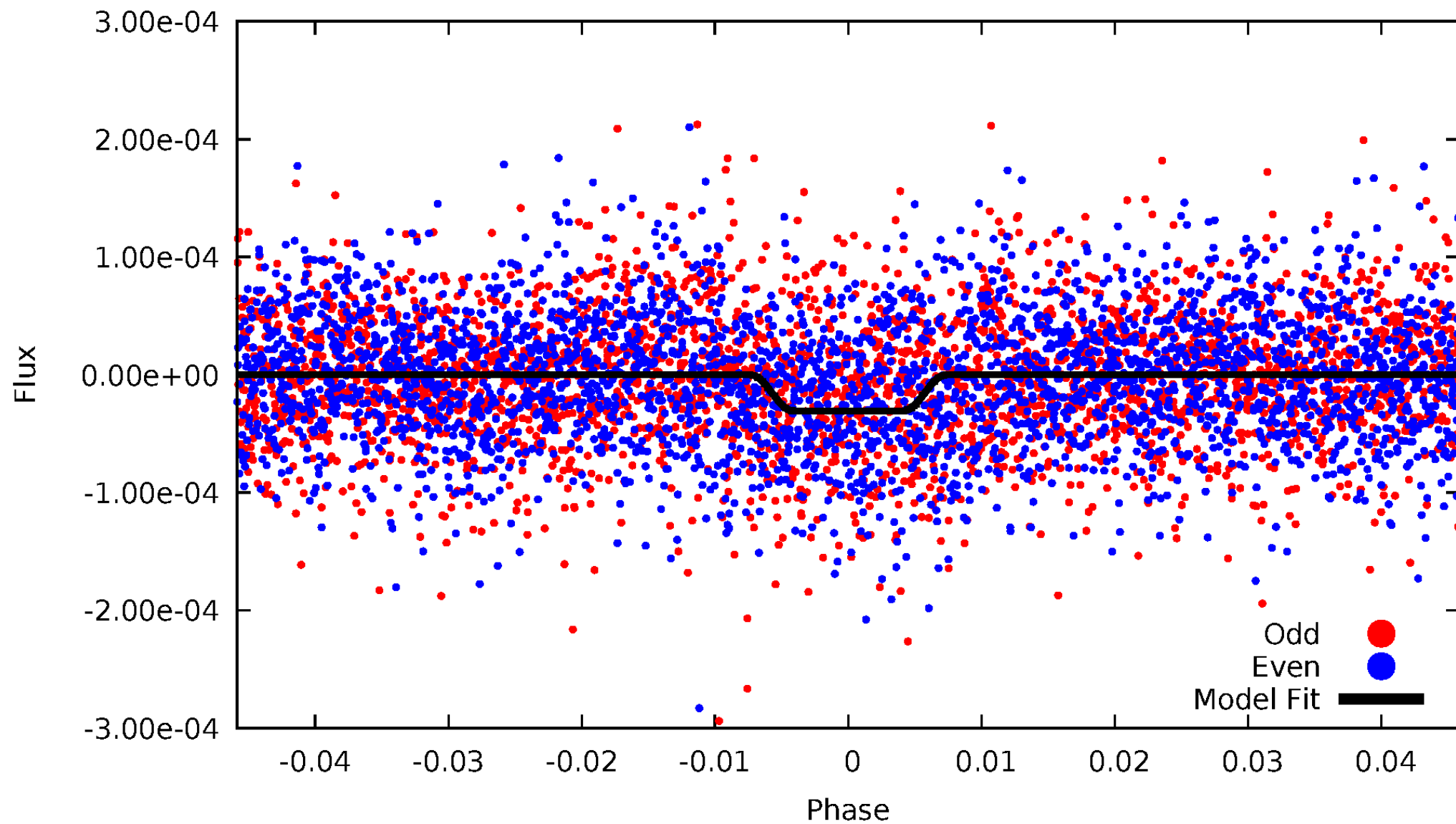
DV Odd/Even

TCE 011081504-02



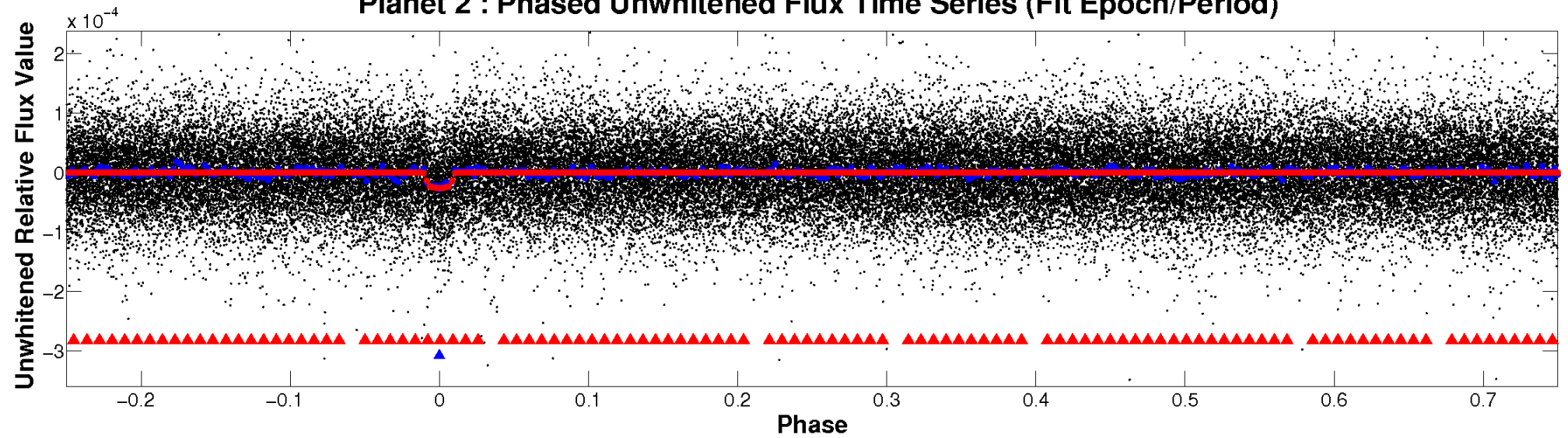
ALT Odd/Even

TCE 011081504-02

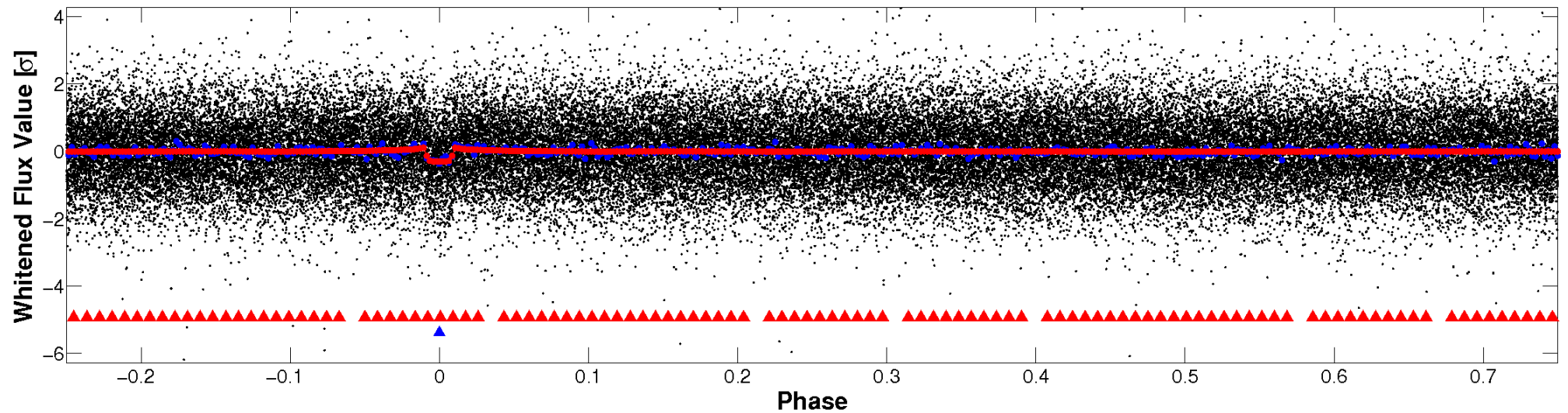


Non-Whitened Vs. Whitened Light Curve

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

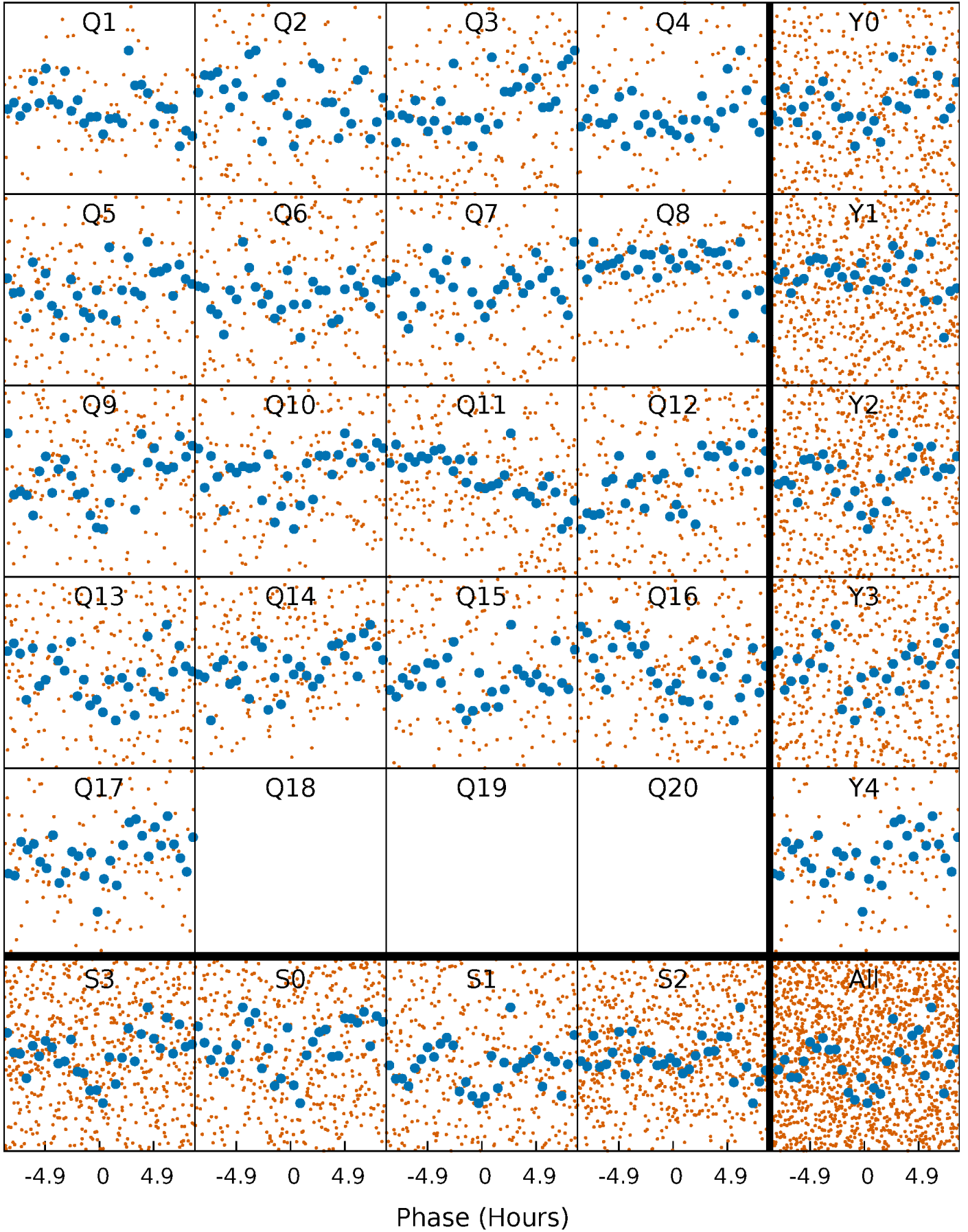


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



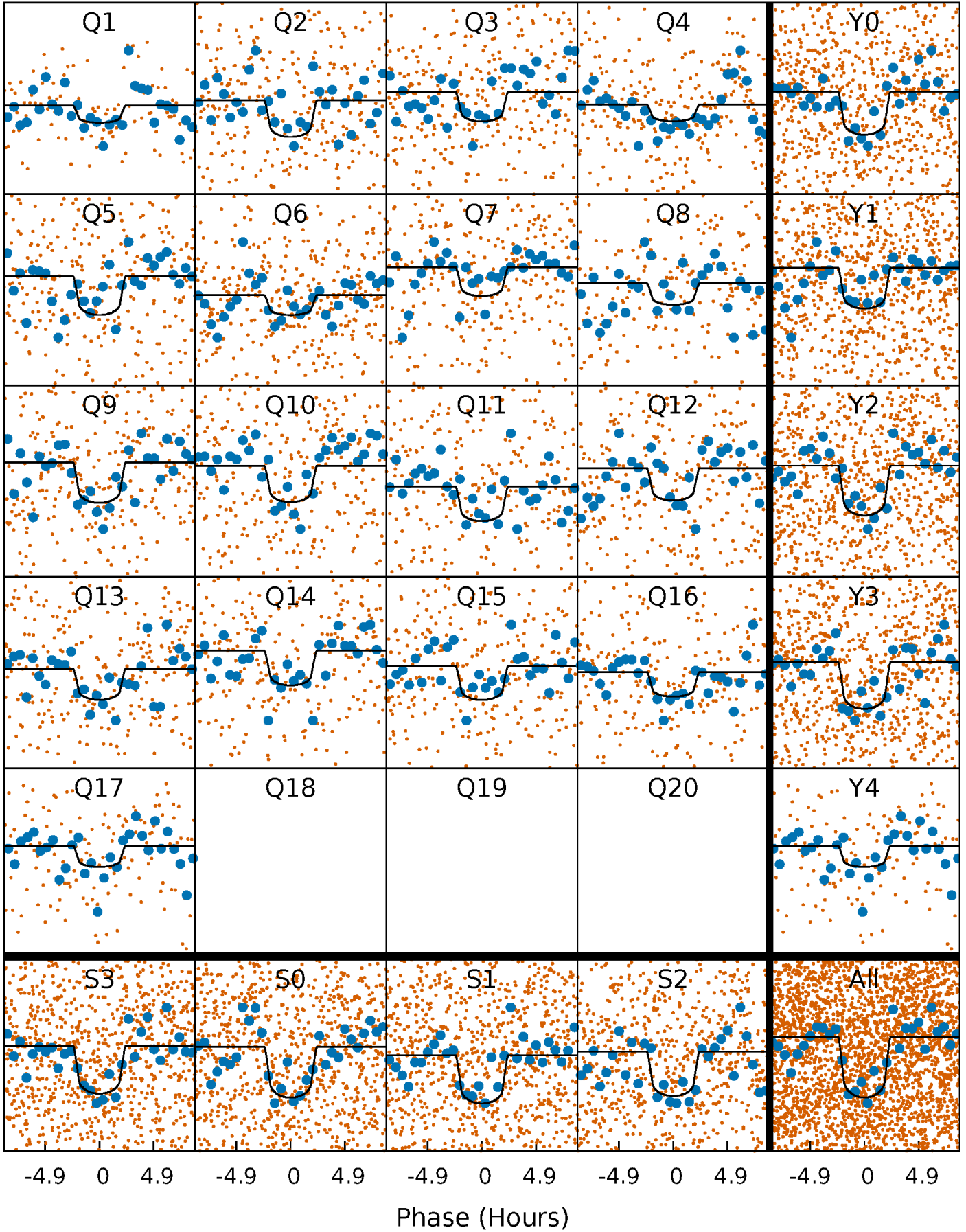
PDC Quarter-Phased Transit Curves

TCE 011081504-02 P= 9.618202 Days $T_0=138.353837$ (BKJD)



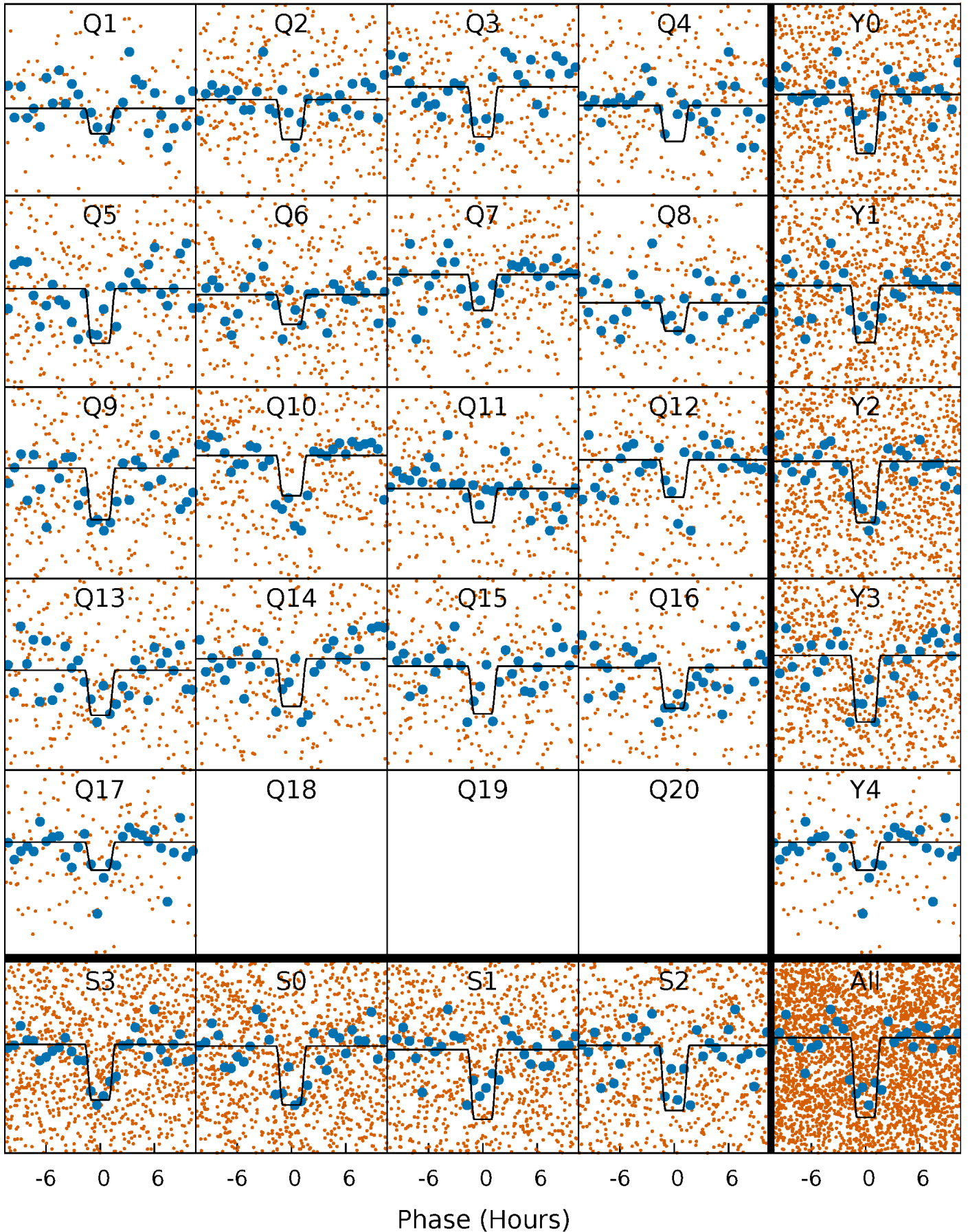
DV Quarter-Phased Transit Curves

TCE 011081504-02 P= 9.618202 Days $T_0=138.353837$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

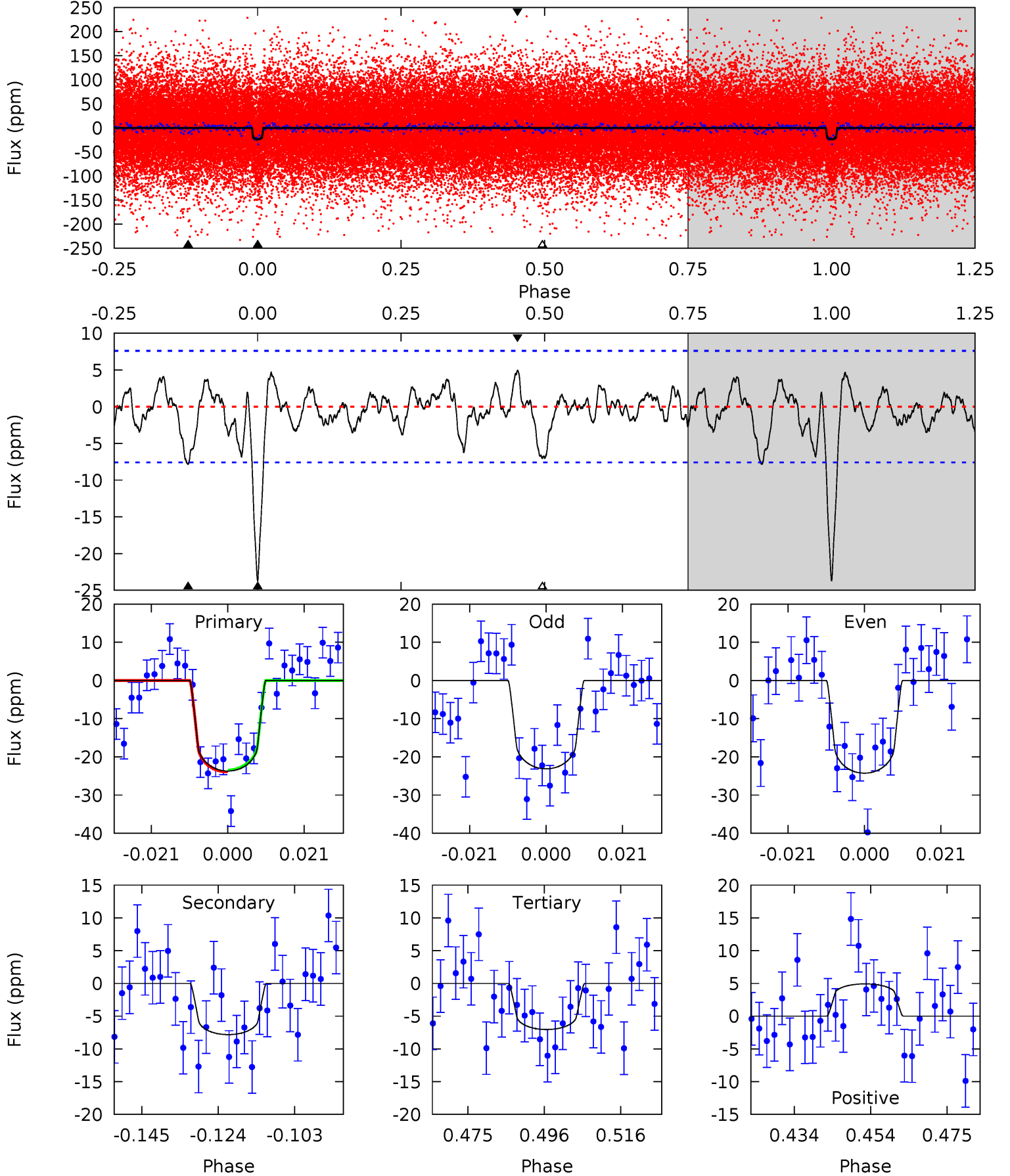
TCE 011081504-02 P= 9.618277 Days $T_0=138.347040$ (BKJD)



DV Model-Shift Uniqueness Test

011081504-02, P = 9.618202 Days, E = 128.735635 Days

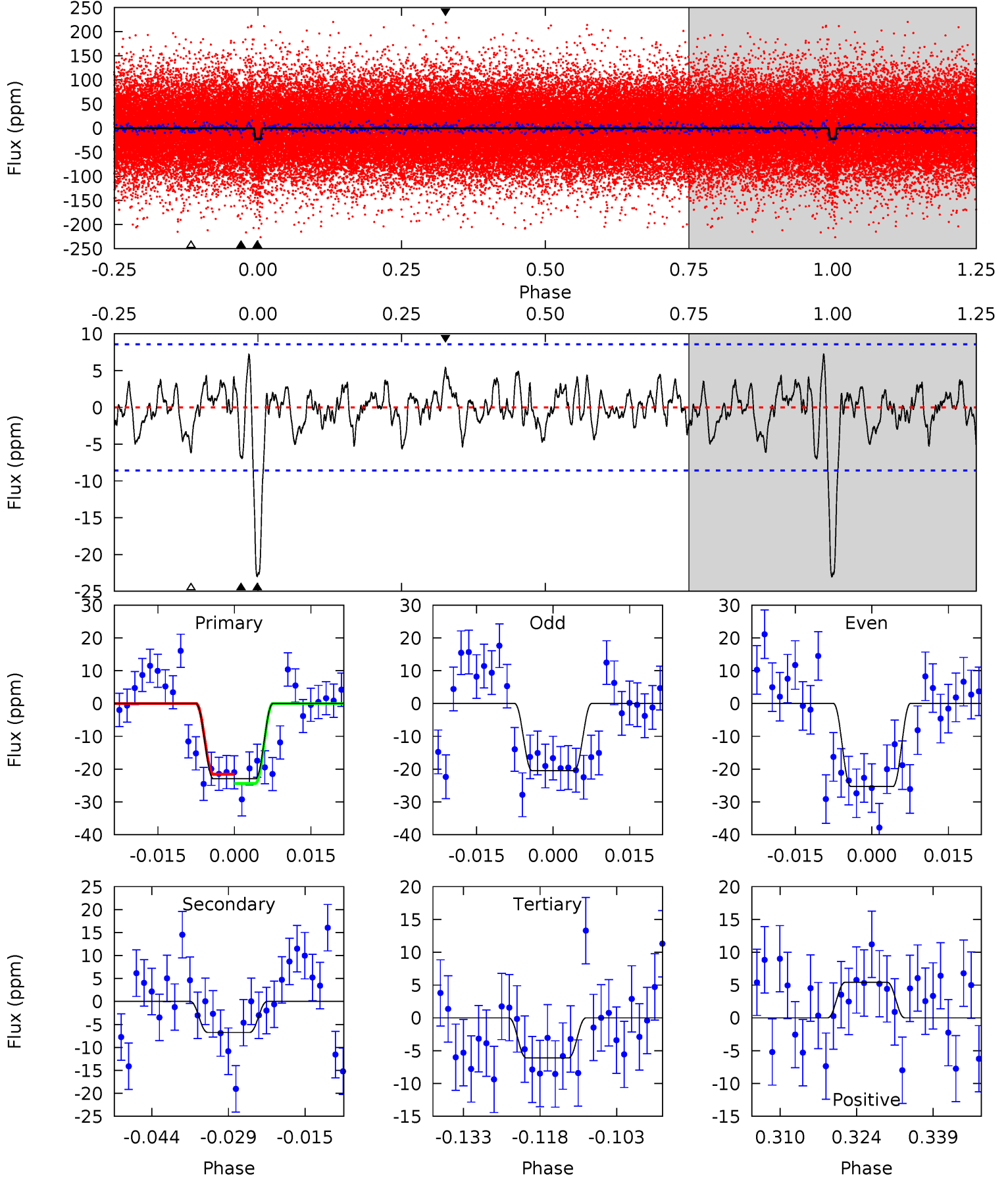
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.2	5.03	4.53	3.16	4.89	2.31	1.41	10.7	12.1	0.50	1.87	0.37	1.06	0.17	0.16



Alt Model-Shift Uniqueness Test

011081504-02, P = 9.618277 Days, E = 128.728763 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	3.90	3.54	3.13	4.95	2.44	1.23	9.73	10.1	0.36	0.76	1.38	1.00	0.24	0.80



Stellar Parameters For KIC 011081504

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6134^{+124}_{-124}	$4.065^{+0.182}_{-0.098}$	$0.020^{+0.150}_{-0.150}$	$1.665^{+0.293}_{-0.358}$	$1.173^{+0.143}_{-0.107}$	$0.358^{+0.325}_{-0.126}$
	+2%/-2%	+4%/-2%	+750%/-750%	+18%/-22%	+12%/-9%	+91%/-35%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 011081504-02 / KOI 4287.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-8 ± 2	$1.02^{+0.34}_{-0.32}$	1589^{+77}_{-90}	4482^{+801}_{-467}	36^{+41}_{-17}
Alt.	-7 ± 2	$0.98^{+0.35}_{-0.35}$	1577^{+79}_{-96}	4416^{+810}_{-492}	35^{+48}_{-18}

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

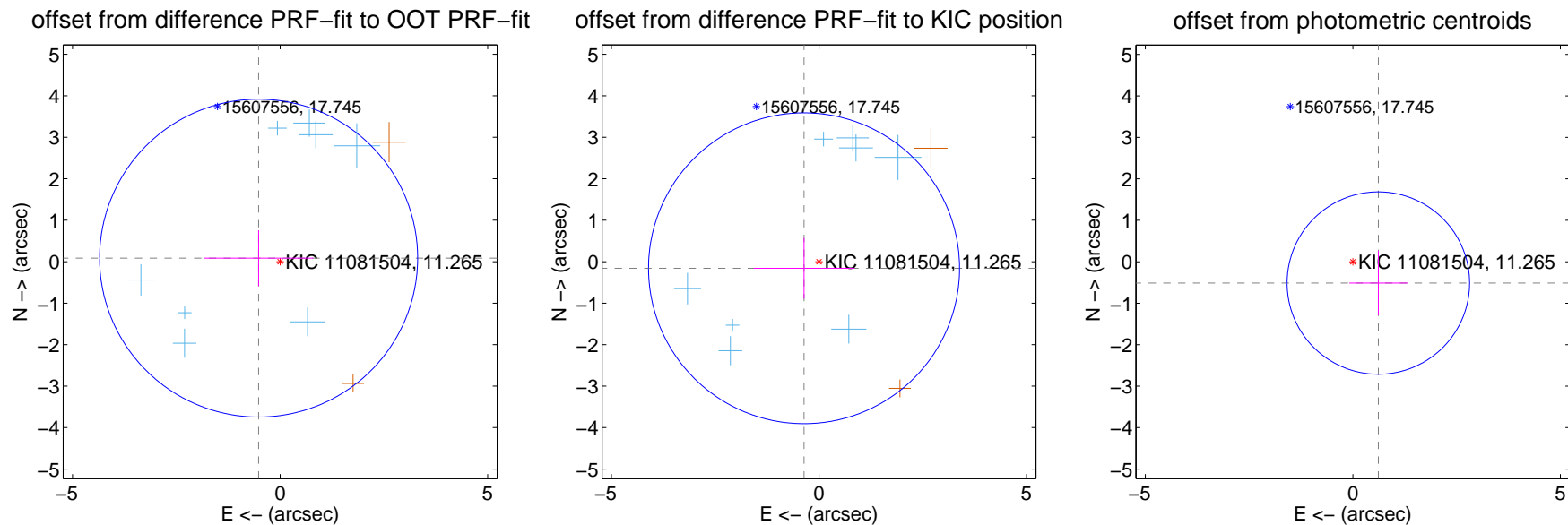
DV Centroid Data

Supplemental centroid analysis for 011081504-02. **Kepler magnitude: 11.27.** Transit SNR 9.76

There are 8 quarters with good PRF difference image offsets

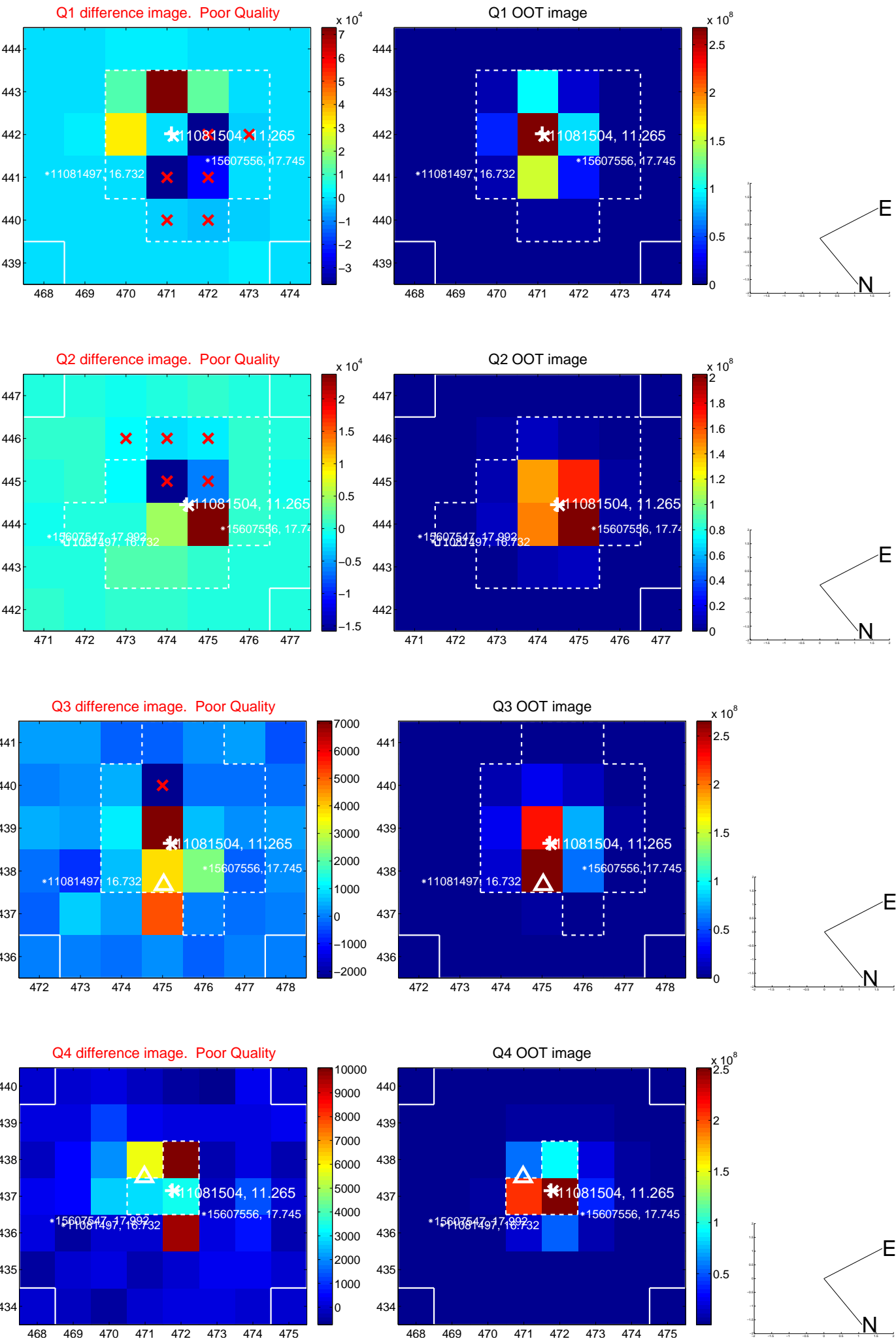
The direct PRF centroid is offset from the target star catalog position by about 0.37 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.525 ± 1.277	0.41	0.518 ± 1.313	0.086 ± 0.673
PRF-fit source offset from KIC position	0.394 ± 1.249	0.32	0.360 ± 1.213	-0.159 ± 0.732
photometric centroid source offset	0.80 ± 0.73	1.09	-0.61 ± 0.70	-0.51 ± 0.78

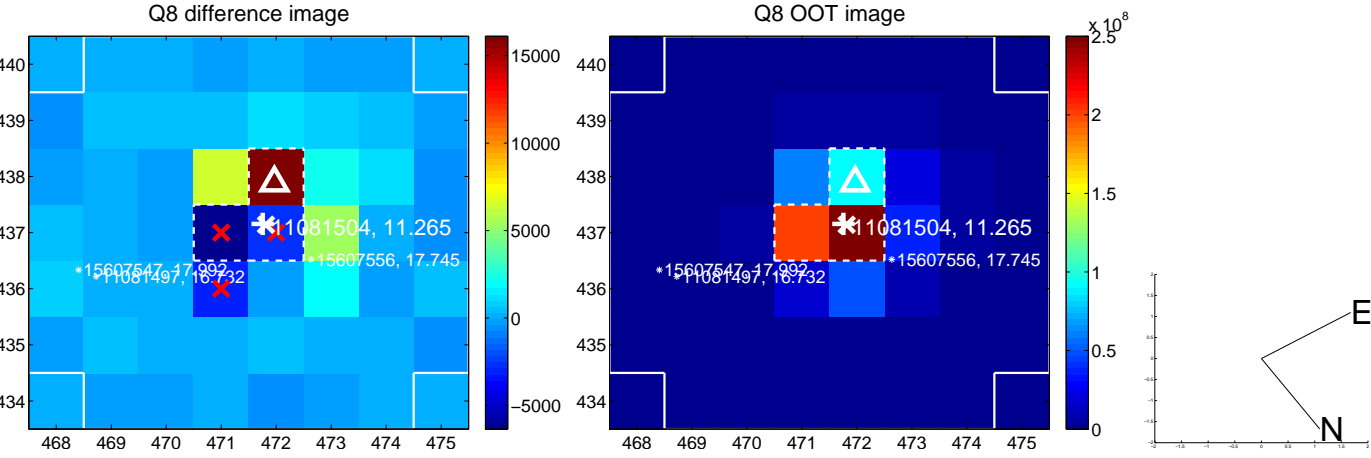
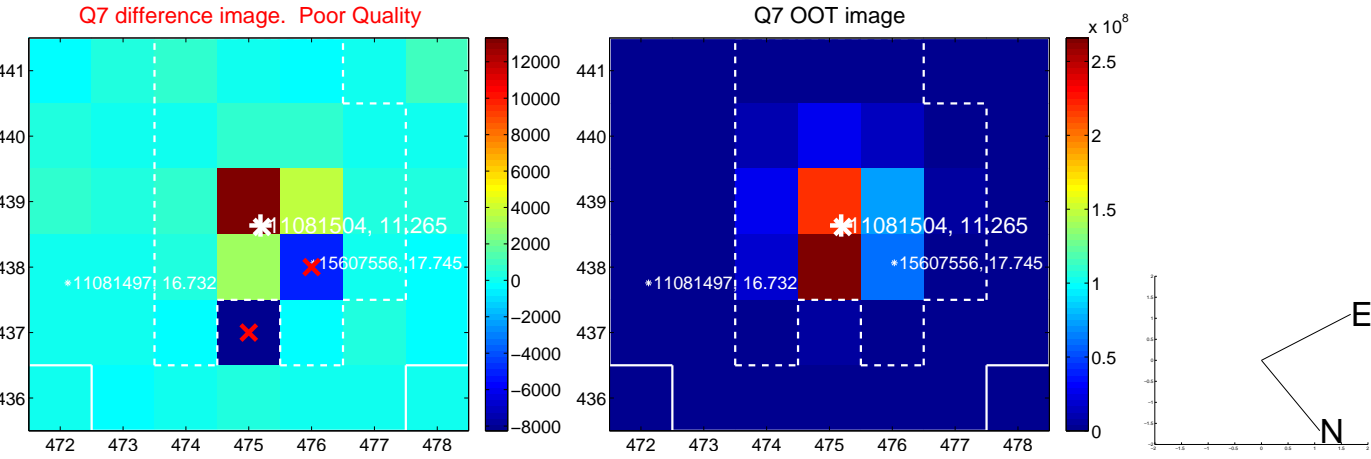
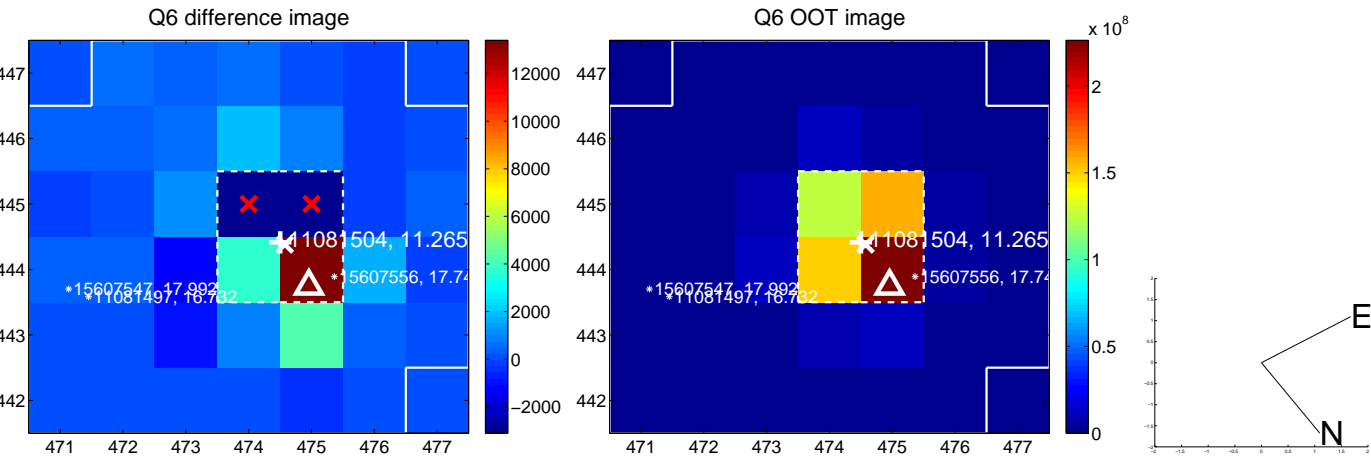
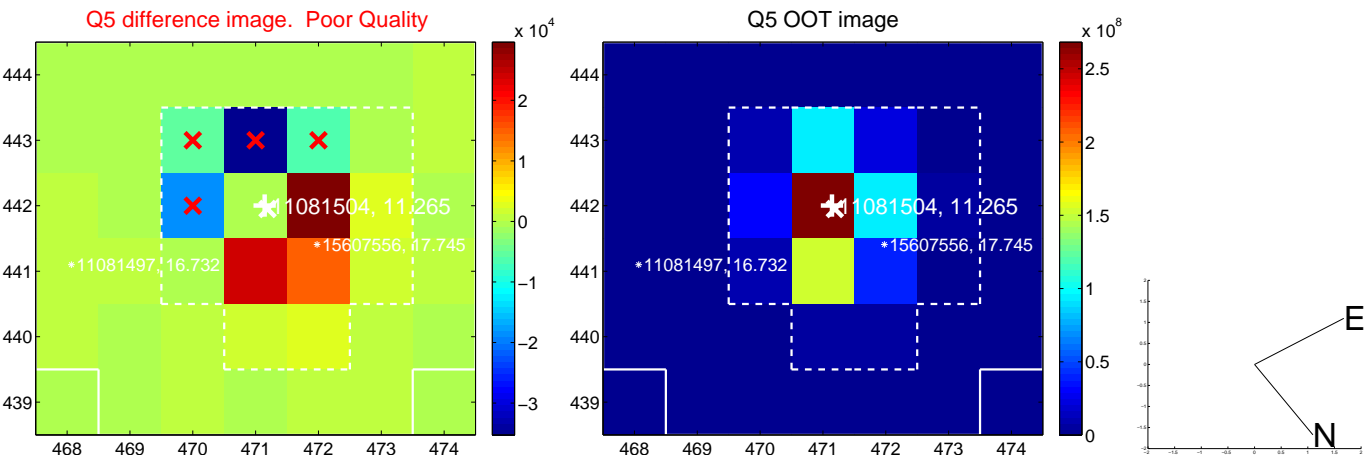


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

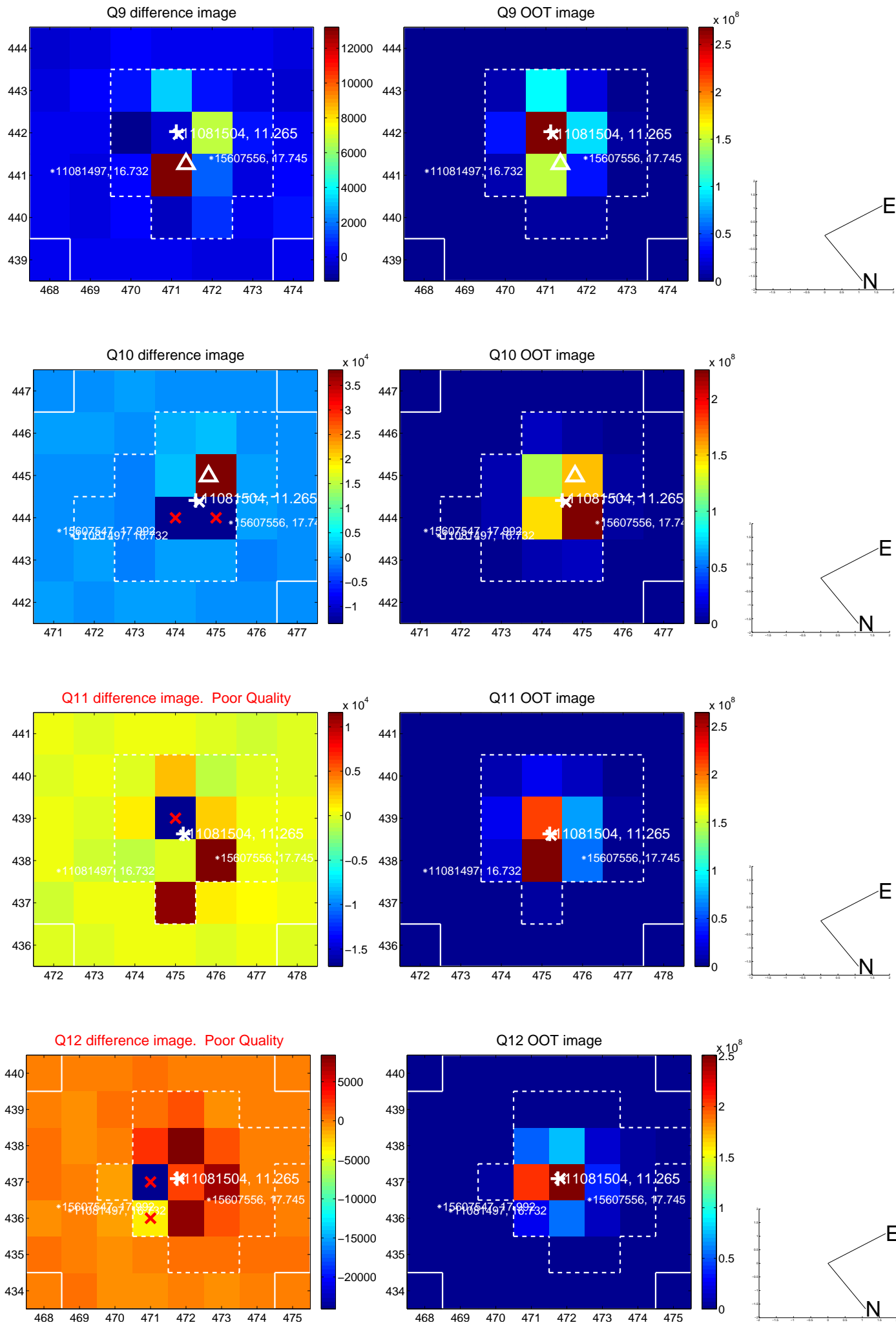
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



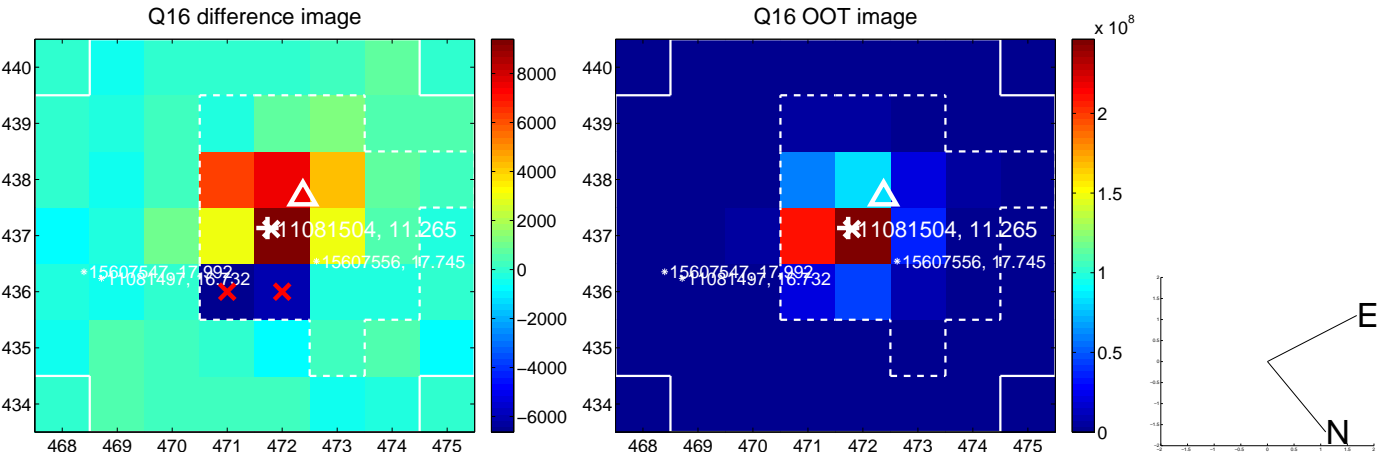
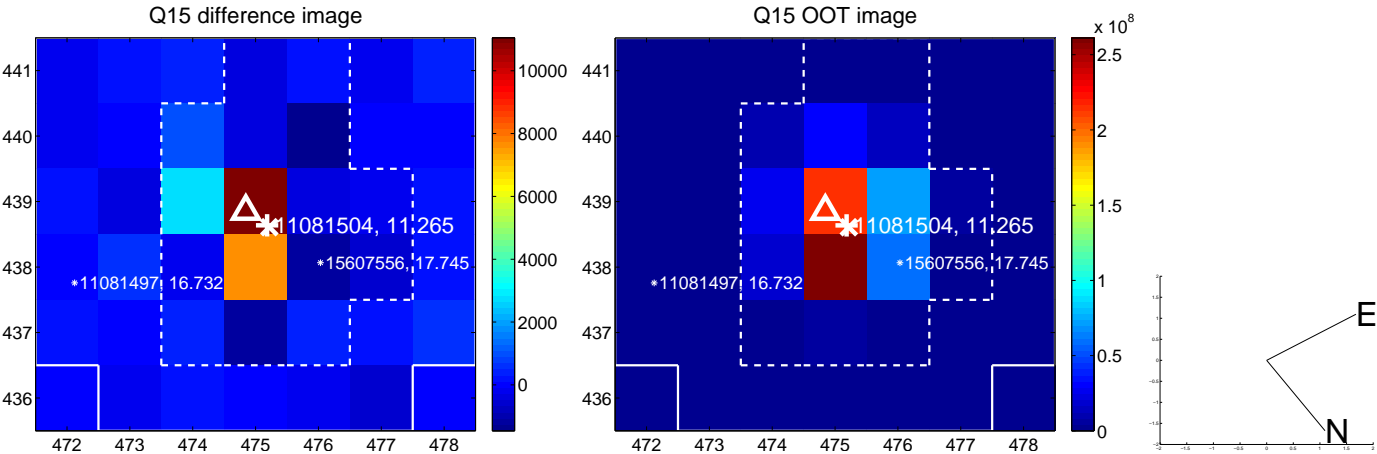
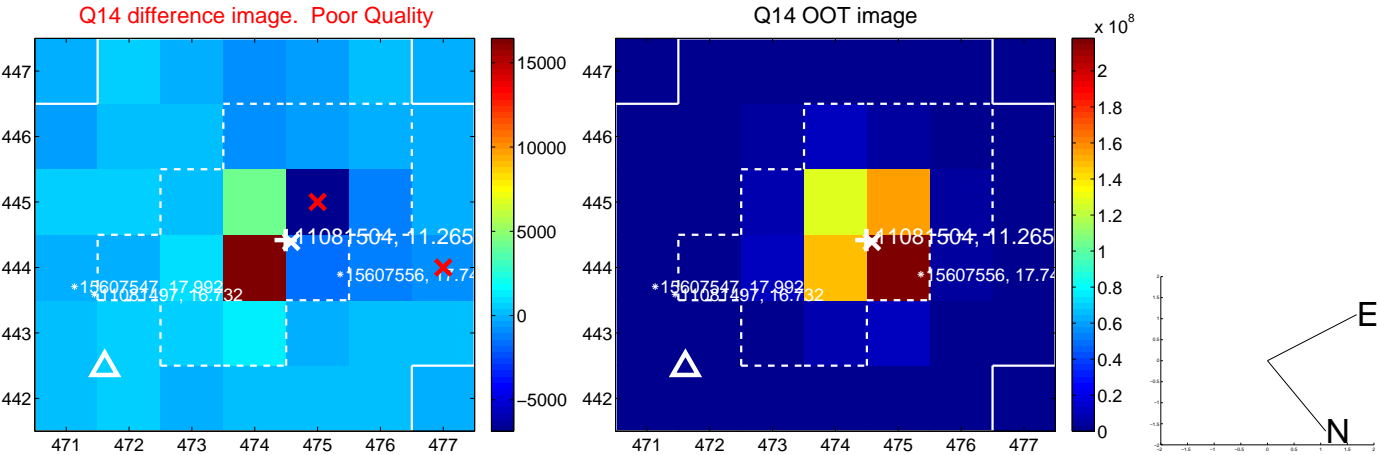
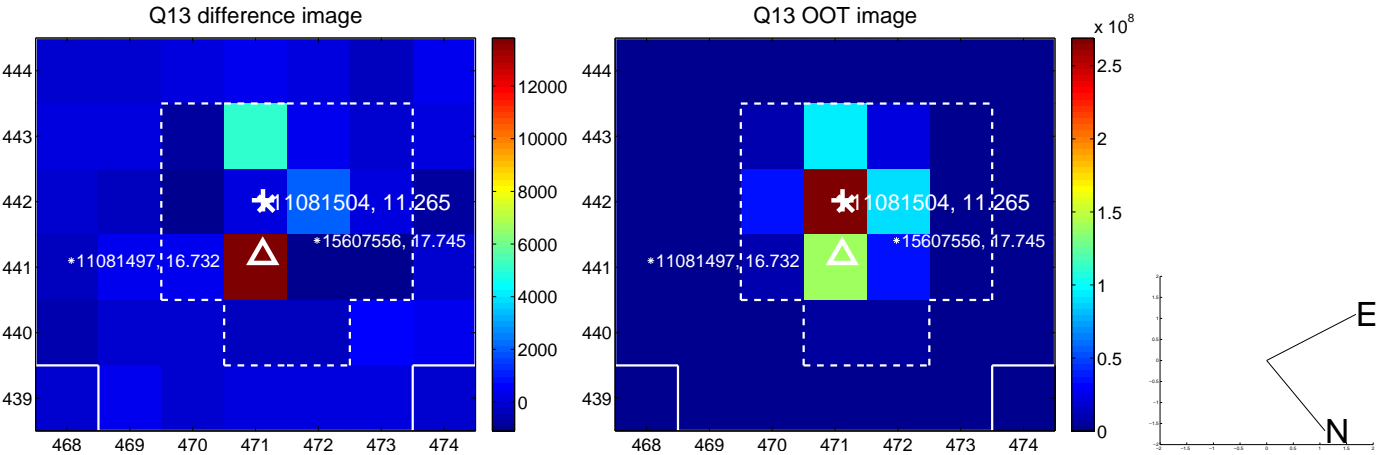
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



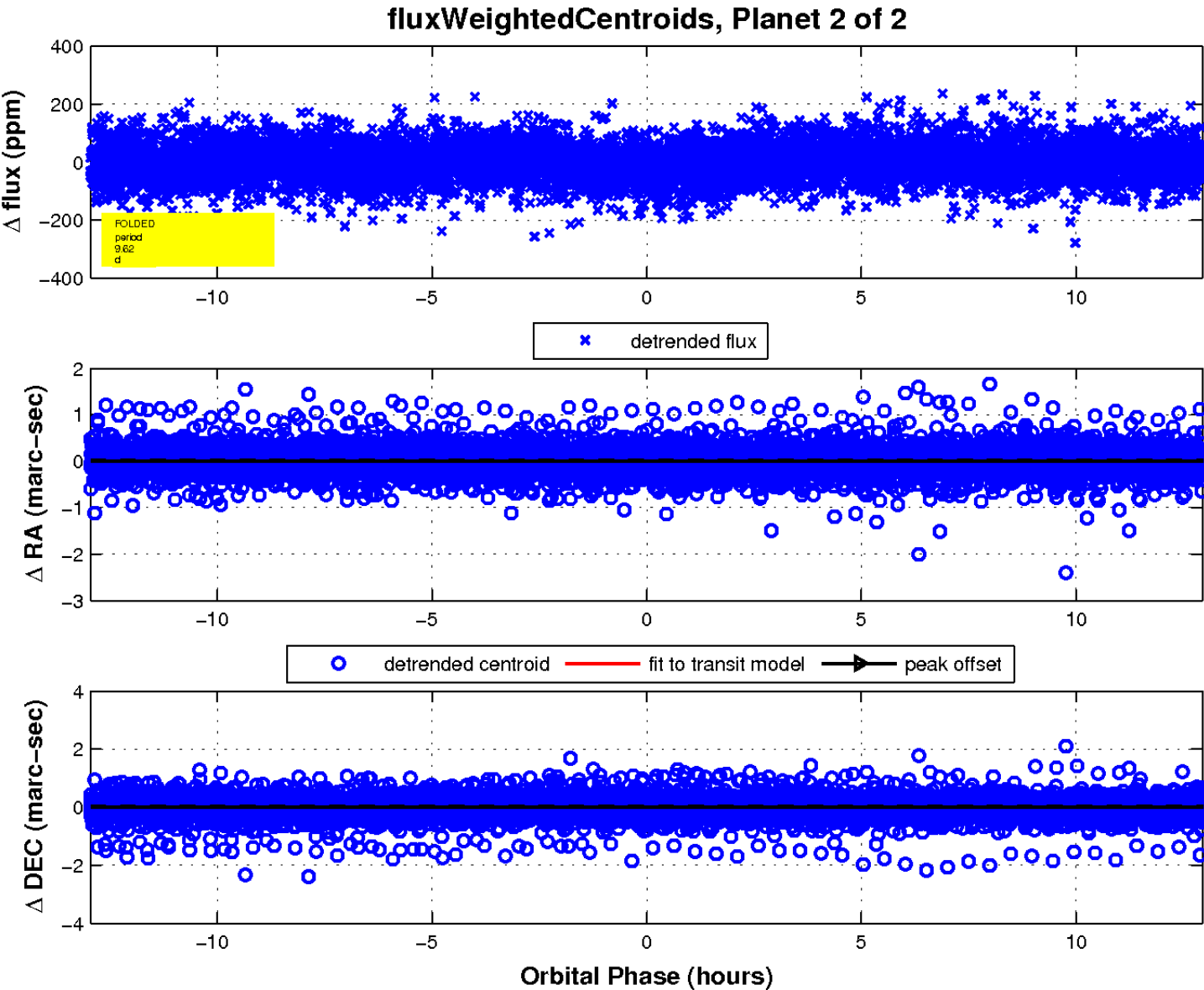
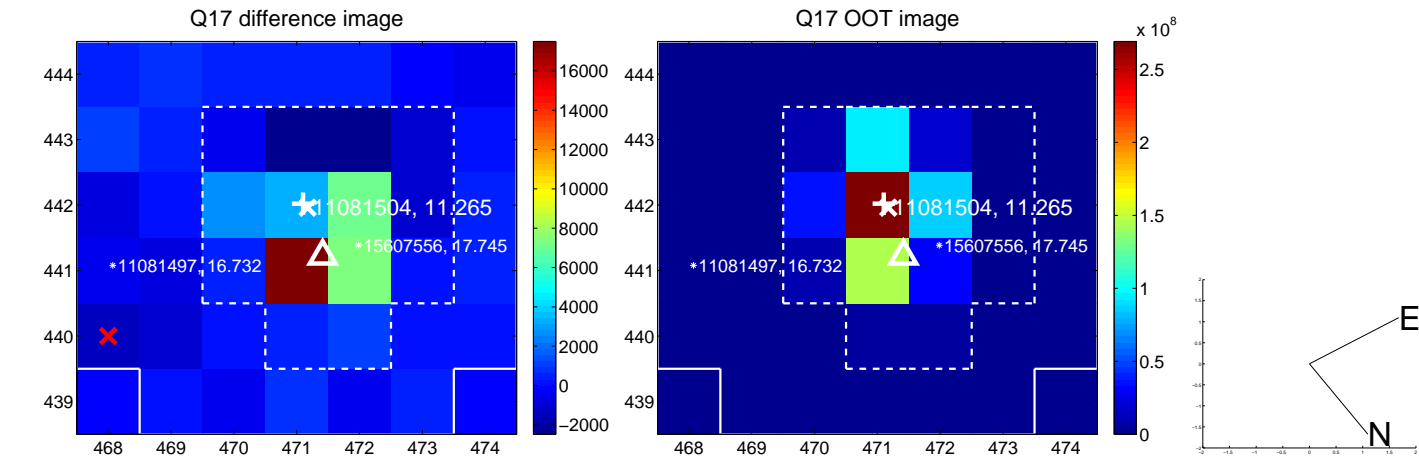
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

