

KIC 005471068

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})
005471068-01	OBS	6008.01	12.426782	141.444815	151.6	22.276	13.7	16.8	0.89	5691	1.13	66.85
005471068-02	OBS	No	12.424733	134.026273	127.5	23.480	13.0	15.3	0.89	5691	1.29	66.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005471068-01	OBS	FP	0.00	1	0	1	1	LPP_DV—HALO_GHOST—EPHEM_MATCH
005471068-02	OBS	FP	0.00	1	0	1	1	LPP_DV—SAME_NTL_PERIOD—HALO_GHOST—EPHEM_MATCH

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 005471068-01

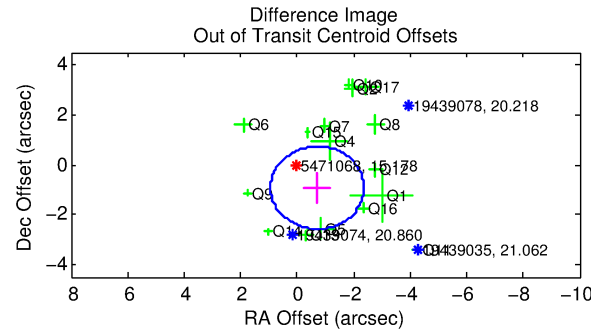
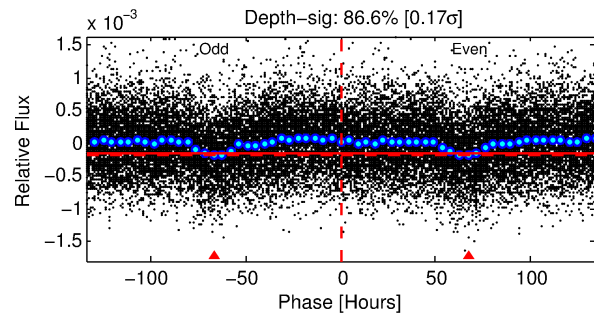
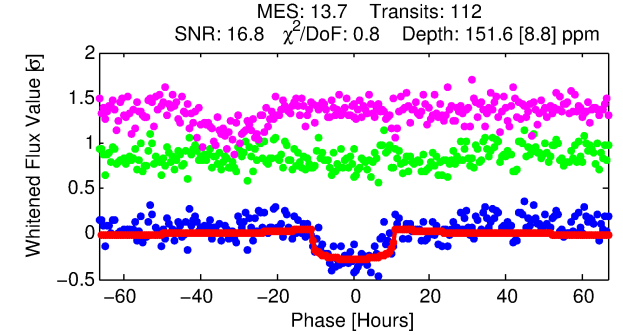
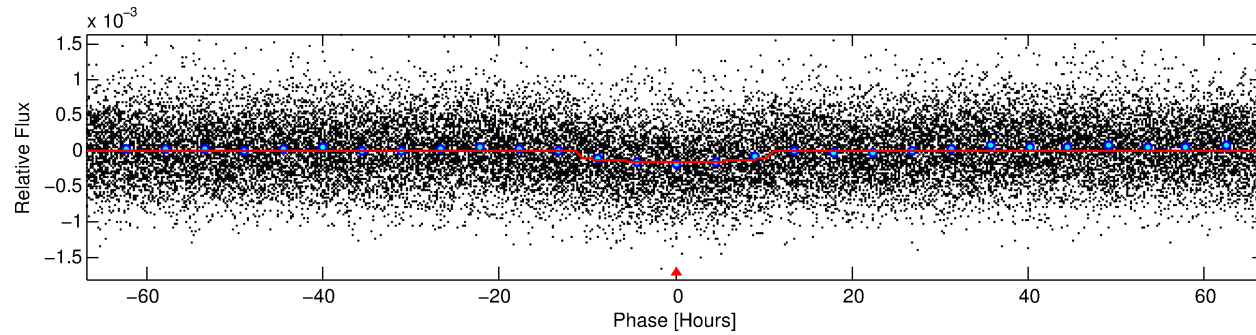
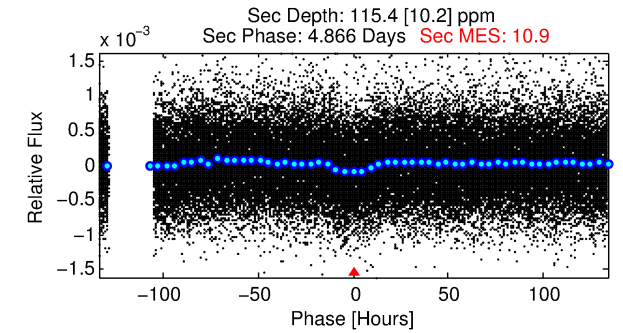
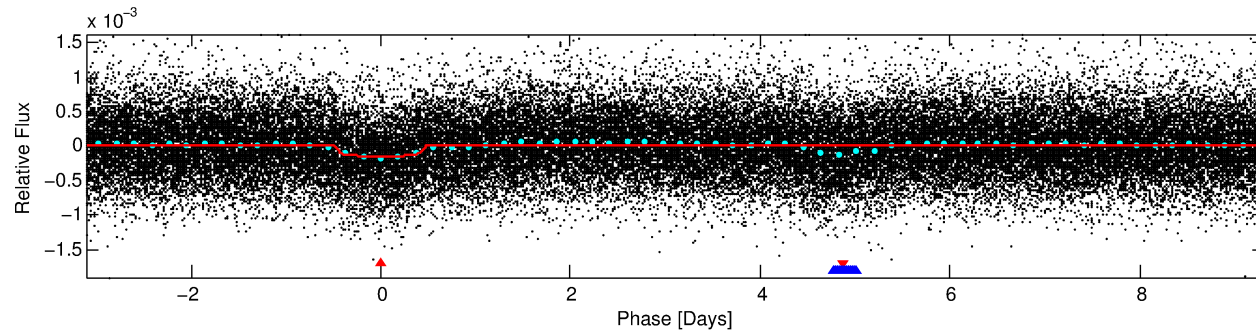
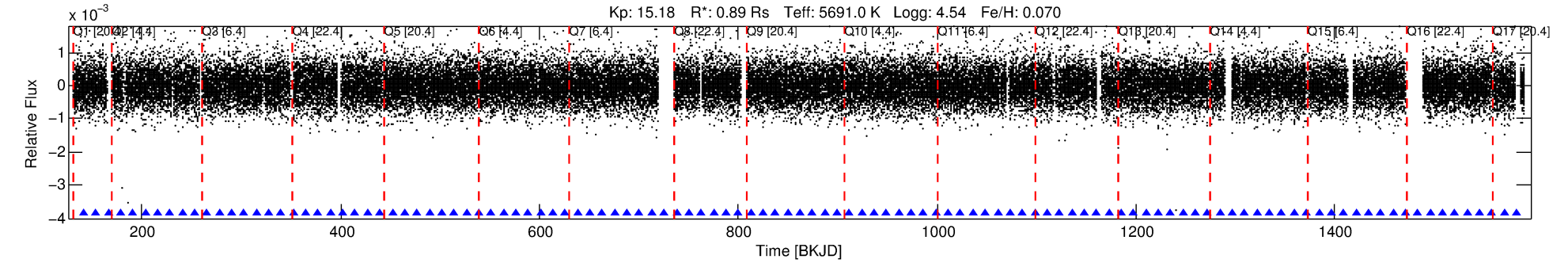
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist (μ)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
005471068-01	5471068	V380-Cyg-pri	5385723	1:1	298.8	63	-41	5.77	15.18	953.51	Direct-PRF	0	3.04	2.88

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: 5471068 Candidate: 1 of 2 Period: 12.427 d

KOI: K06008.01 Corr: 0.952



DV Fit Results:

Period = 12.42678 [0.00023] d
Epoch = 141.4448 [0.0151] BKJD
Rp/R* = 0.0116 [0.0039]
a/R* = 3.64 [4.81]
b = 0.57 [1.71]
Seff = 66.85 [25.62]
Teq = 729 [70] K
Rp = 1.13 [0.49] Re
a = 0.1052 [0.0253] AU
Ag = 552.41 [423.72] [1.30σ]
Teffp = 5465 [948] K [4.98σ]

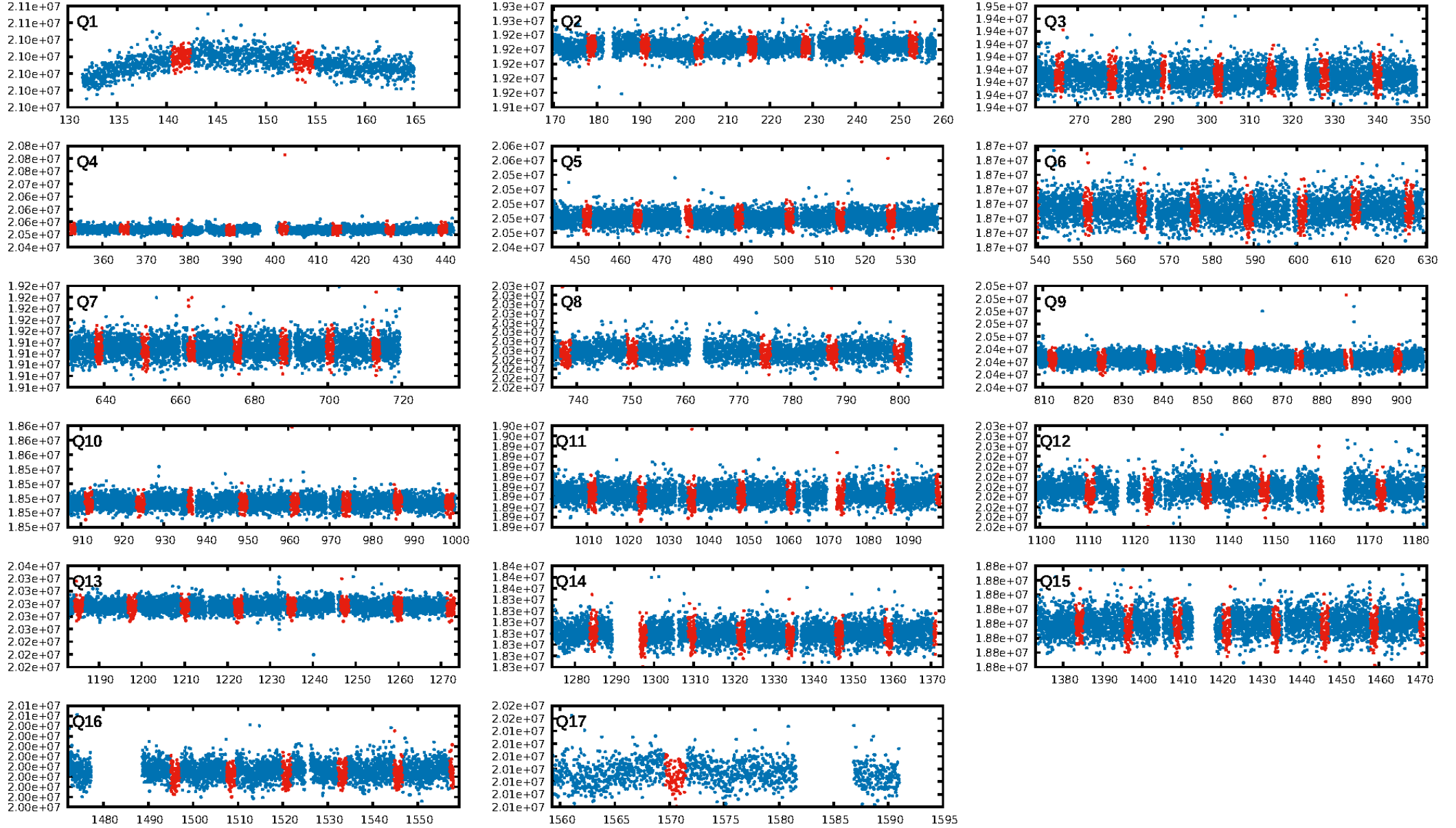
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 67.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.52e-45
RollingBand-fgt: 1.00 [109/109]
GhostDiagnostic-chr: -0.01674
Centroid-sig: 0.0%
Centroid-so: 2.145 arcsec [3.04σ]
OotOffset-rm: 1.165 arcsec [2.11σ]
KicOffset-rm: 1.076 arcsec [1.99σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 0.44 [7/16]
DiffImageOverlap-fno: 1.00 [17/17]

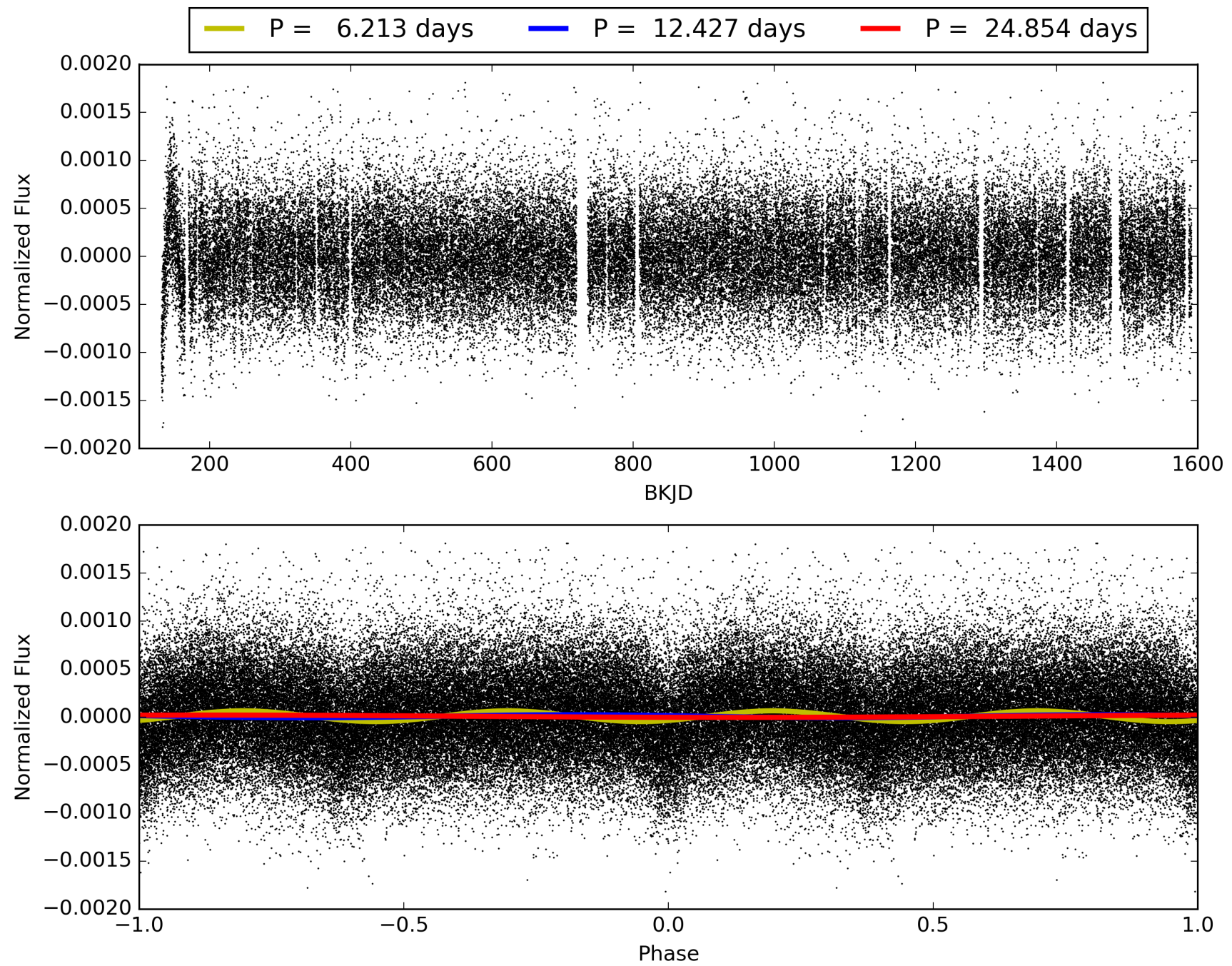
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 15:54:33 Z

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

TCE 005471068-01, PDC Light Curves

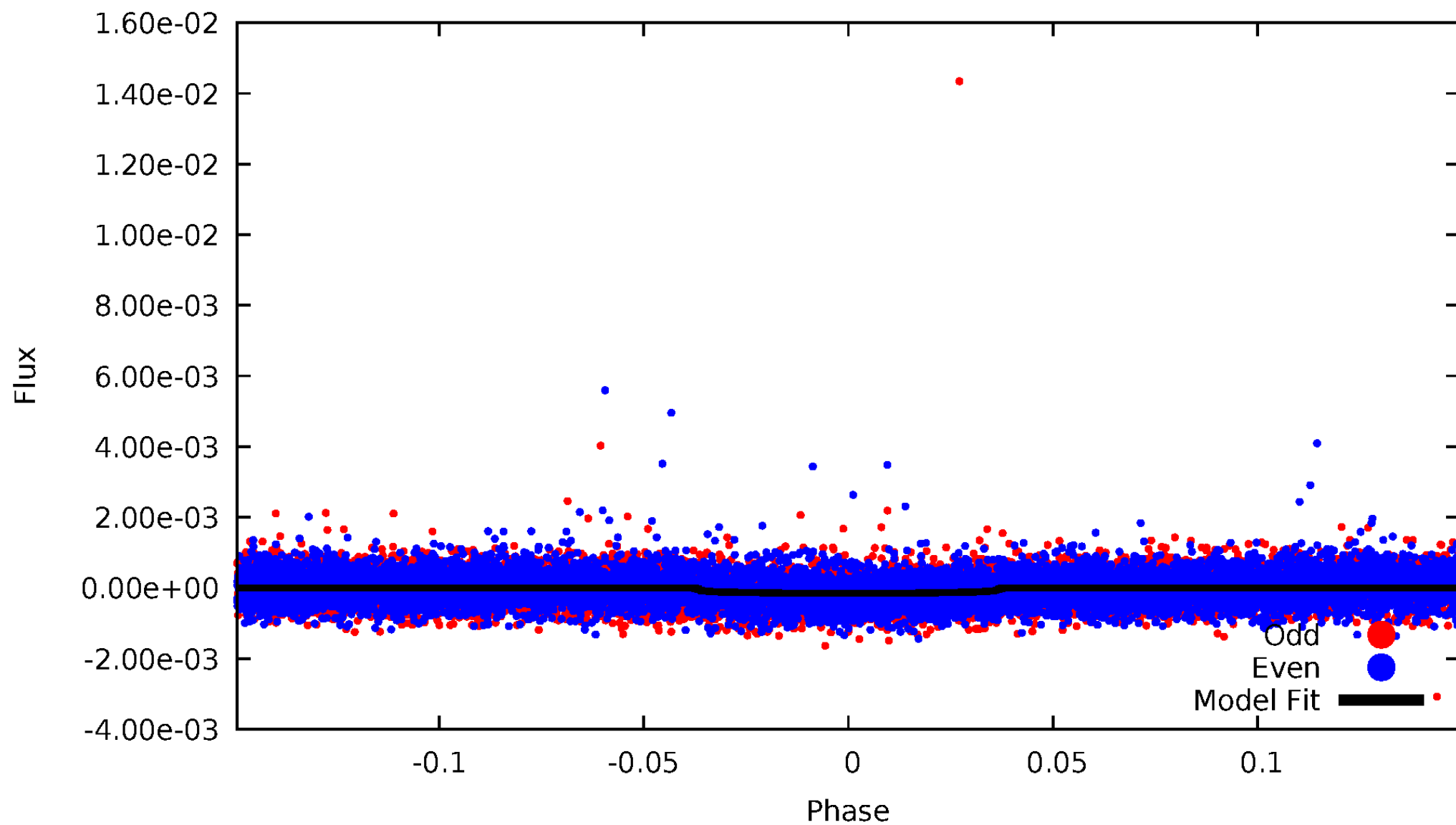


TCE 005471068-01



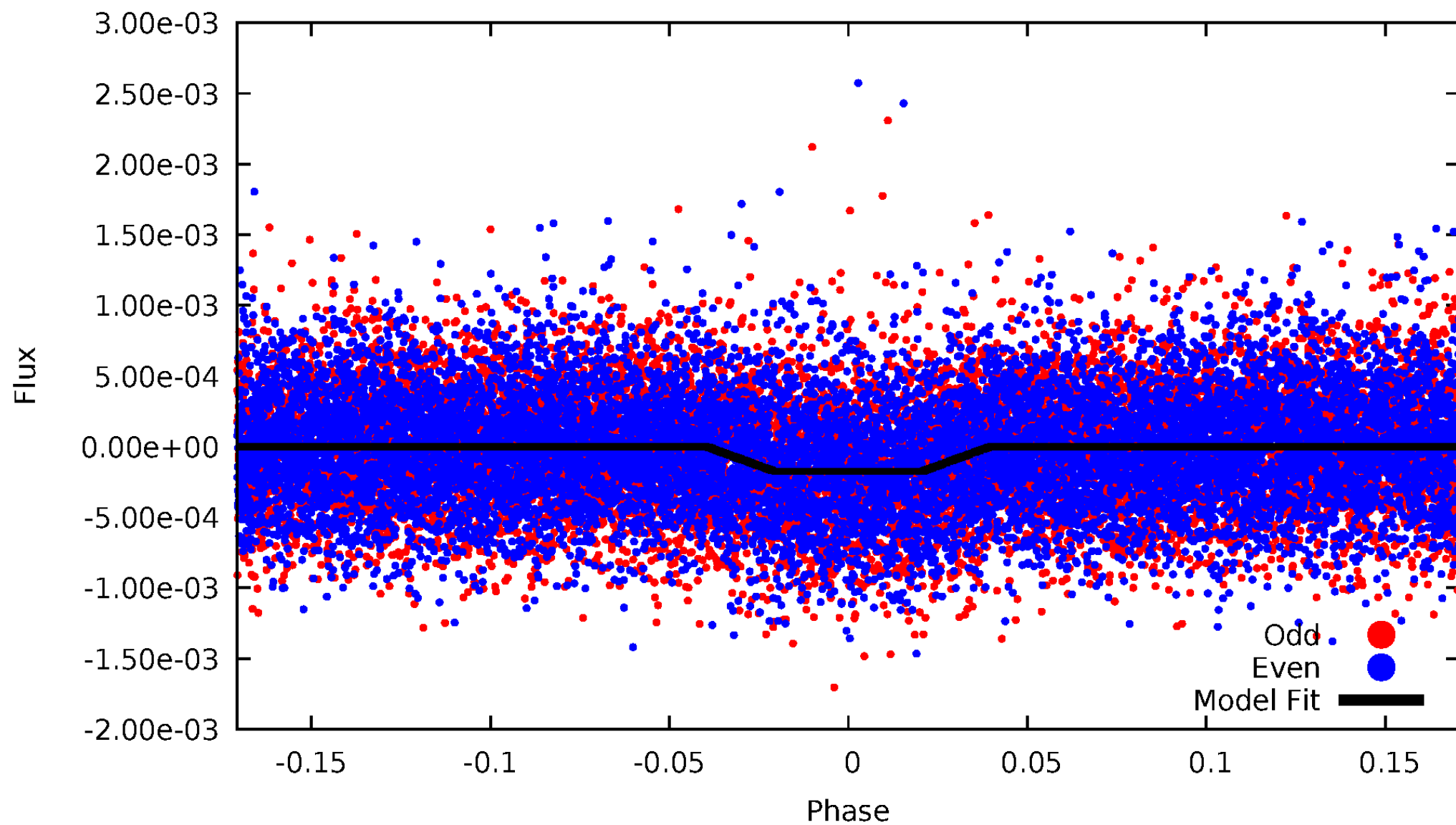
DV Odd/Even

TCE 005471068-01



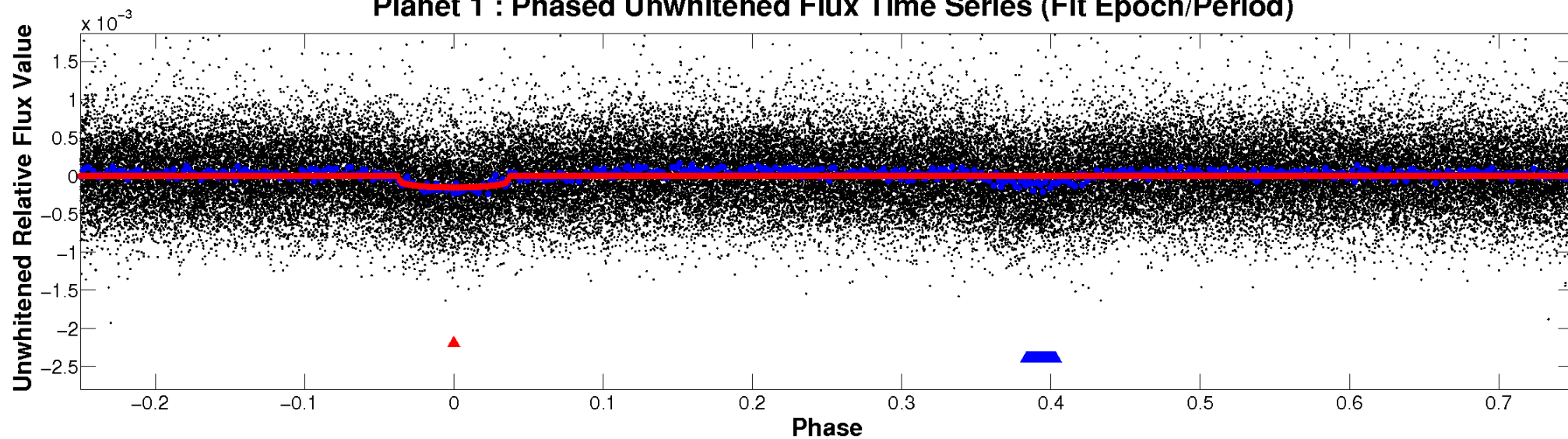
ALT Odd/Even

TCE 005471068-01

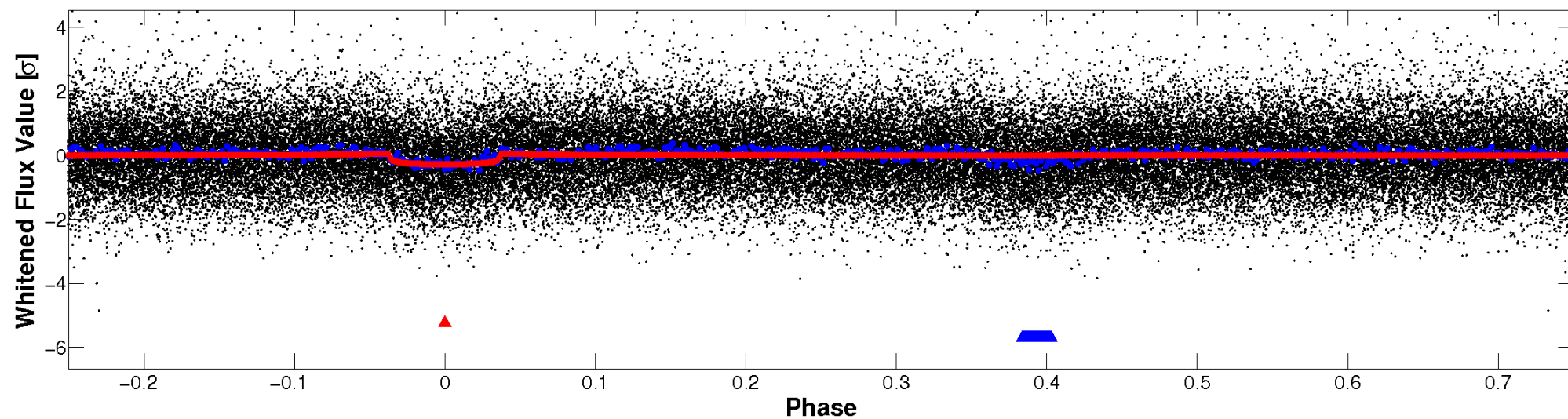


Non-Whitened Vs. Whitened Light Curve

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

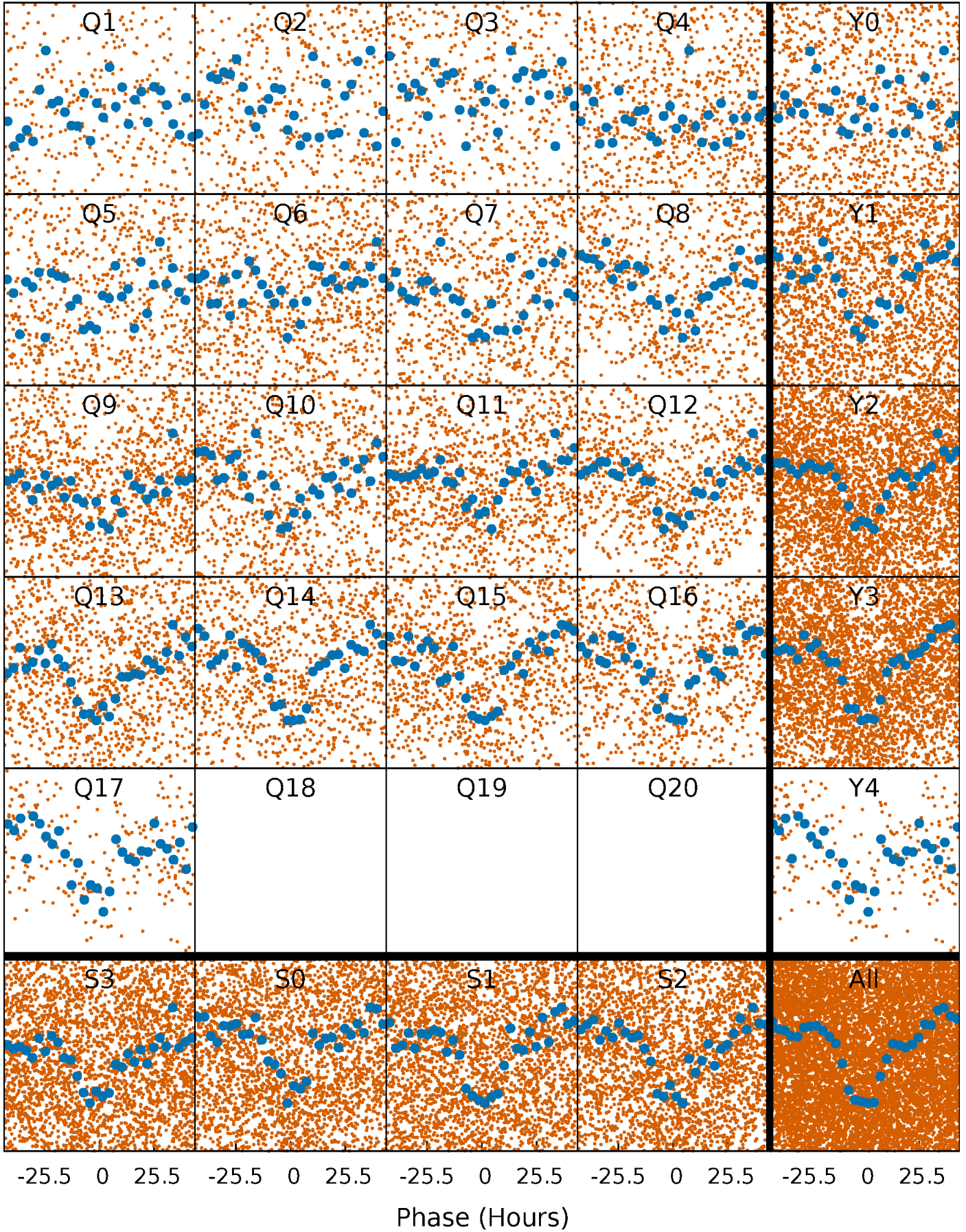


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



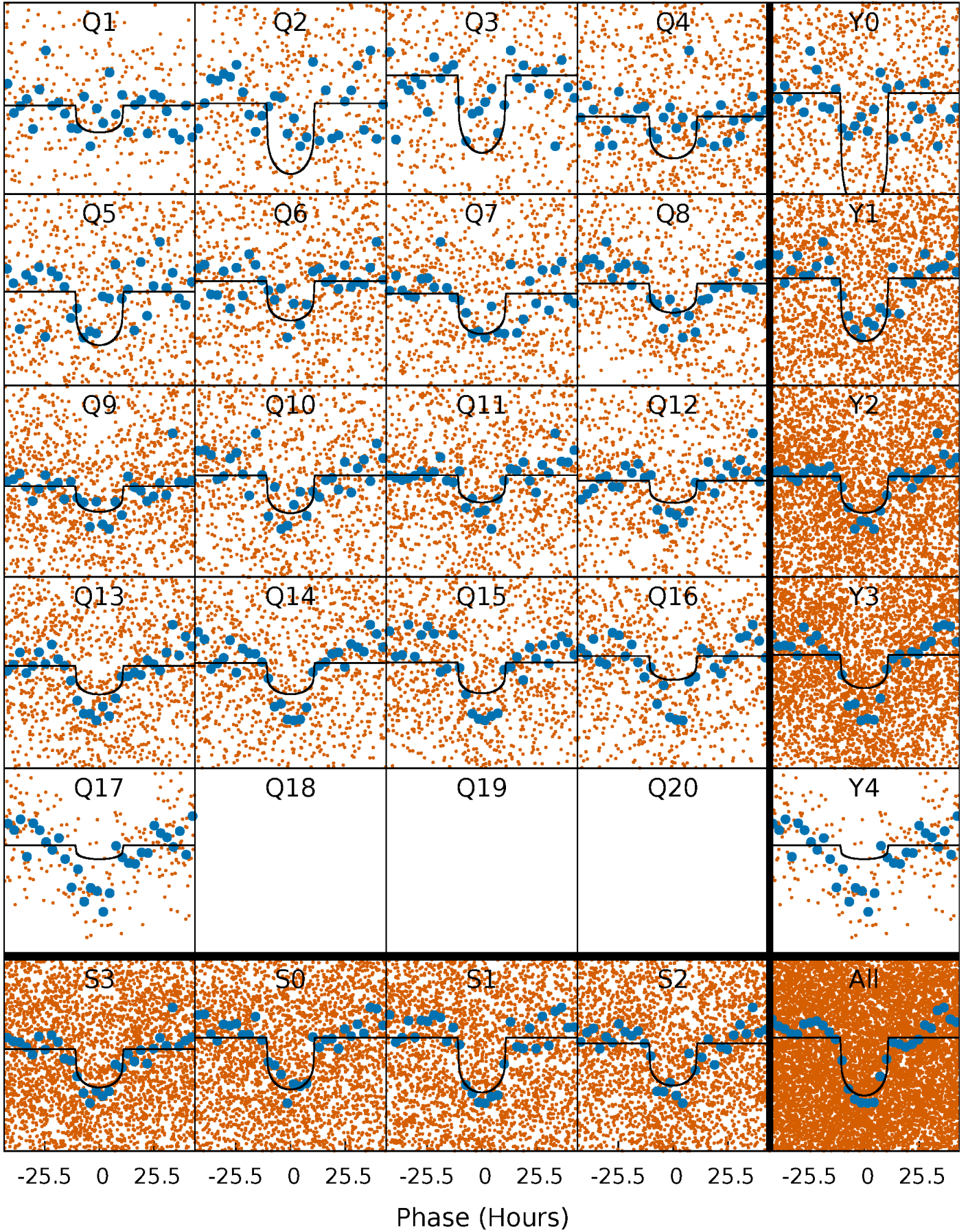
PDC Quarter-Phased Transit Curves

TCE 005471068-01 P= 12.426782 Days $T_0=141.444815$ (BKJD)



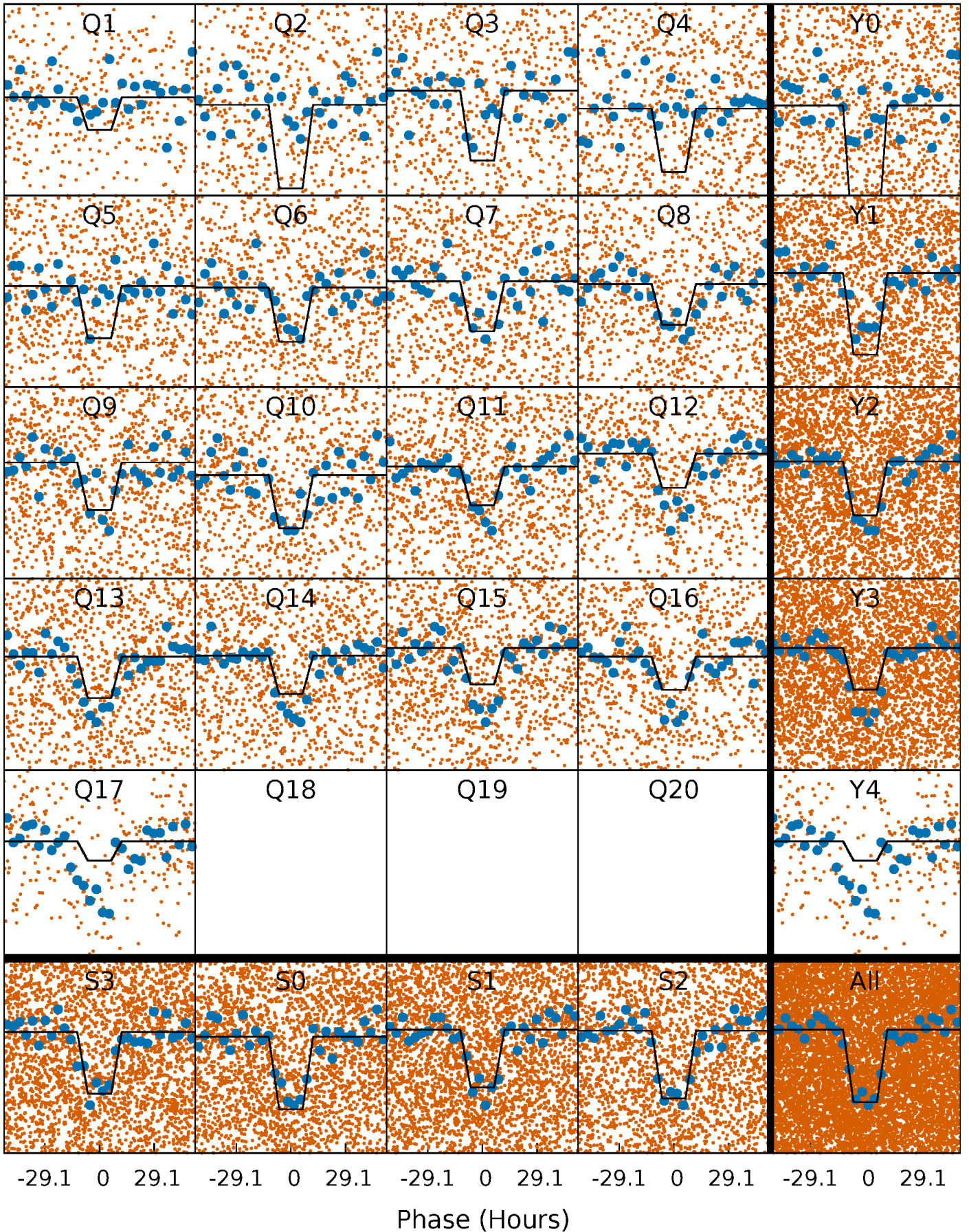
DV Quarter-Phased Transit Curves

TCE 005471068-01 P= 12.426782 Days $T_0=141.444815$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

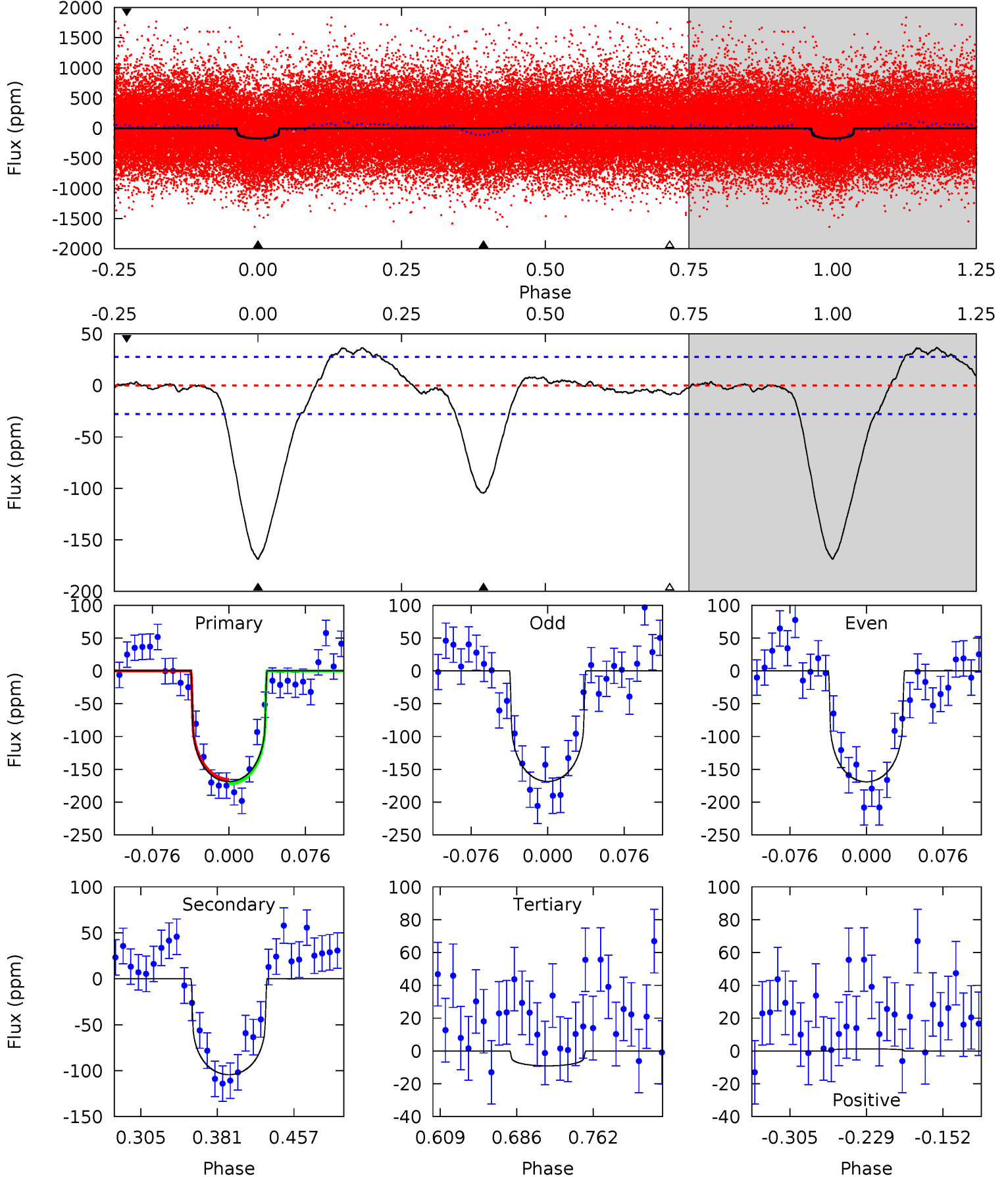
TCE 005471068-01 P= 12.426732 Days $T_0=141.427397$ (BKJD)



DV Model-Shift Uniqueness Test

005471068-01, P = 12.426782 Days, E = 129.018033 Days

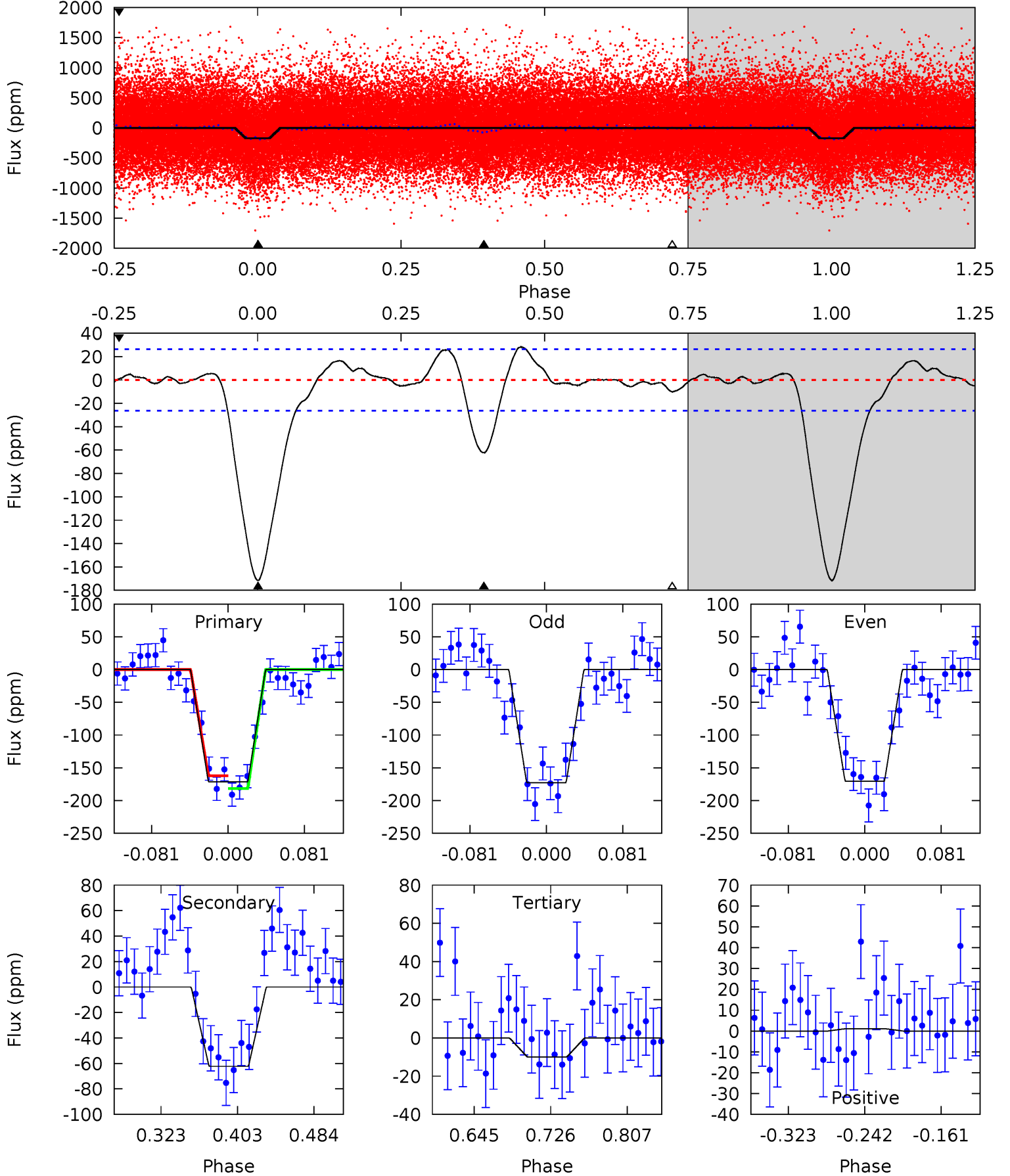
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.2	17.4	1.52	0.21	4.62	1.77	2.16	26.7	28.0	15.9	17.2	0.05	1.00	0.18	0.54



Alt Model-Shift Uniqueness Test

005471068-01, P = 12.426732 Days, E = 129.000665 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.1	10.9	1.74	0.20	4.61	1.75	1.13	28.3	29.9	9.17	10.7	0.20	0.86	0.14	1.71



Stellar Parameters For KIC 005471068

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5691^{+180}_{-200}	$4.544^{+0.033}_{-0.198}$	$0.070^{+0.250}_{-0.300}$	$0.887^{+0.248}_{-0.066}$	$1.003^{+0.100}_{-0.130}$	$2.025^{+0.375}_{-0.997}$
	+3%/-4%	+1%/-4%	+357%/-429%	+28%/-7%	+10%/-13%	+18%/-49%
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 005471068-01 / KOI 6008.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-104 ± 6	$1.20^{+0.42}_{-0.39}$	1044^{+66}_{-48}	5300^{+1207}_{-602}	426^{+570}_{-183}
Alt.	-62 ± 6	$1.31^{+0.46}_{-0.37}$	1046^{+66}_{-50}	4612^{+655}_{-478}	212^{+212}_{-97}

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 $A_{obs} \gg 1.0$

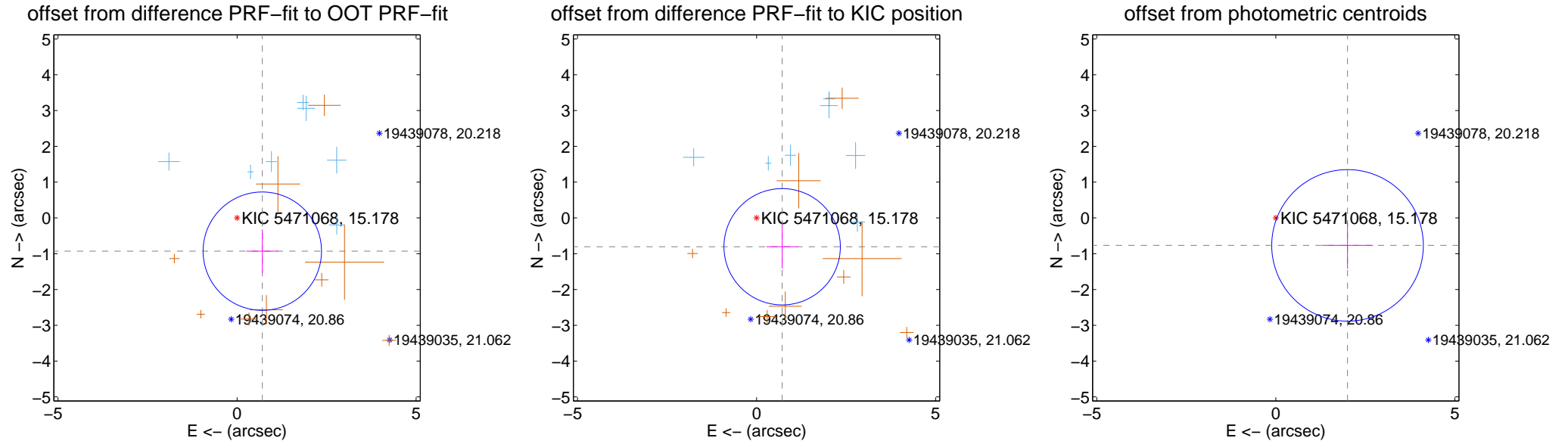
DV Centroid Data

Supplemental centroid analysis for 005471068-01. Kepler magnitude: 15.18. Transit SNR 16.83

There are 7 quarters with good PRF difference image offsets

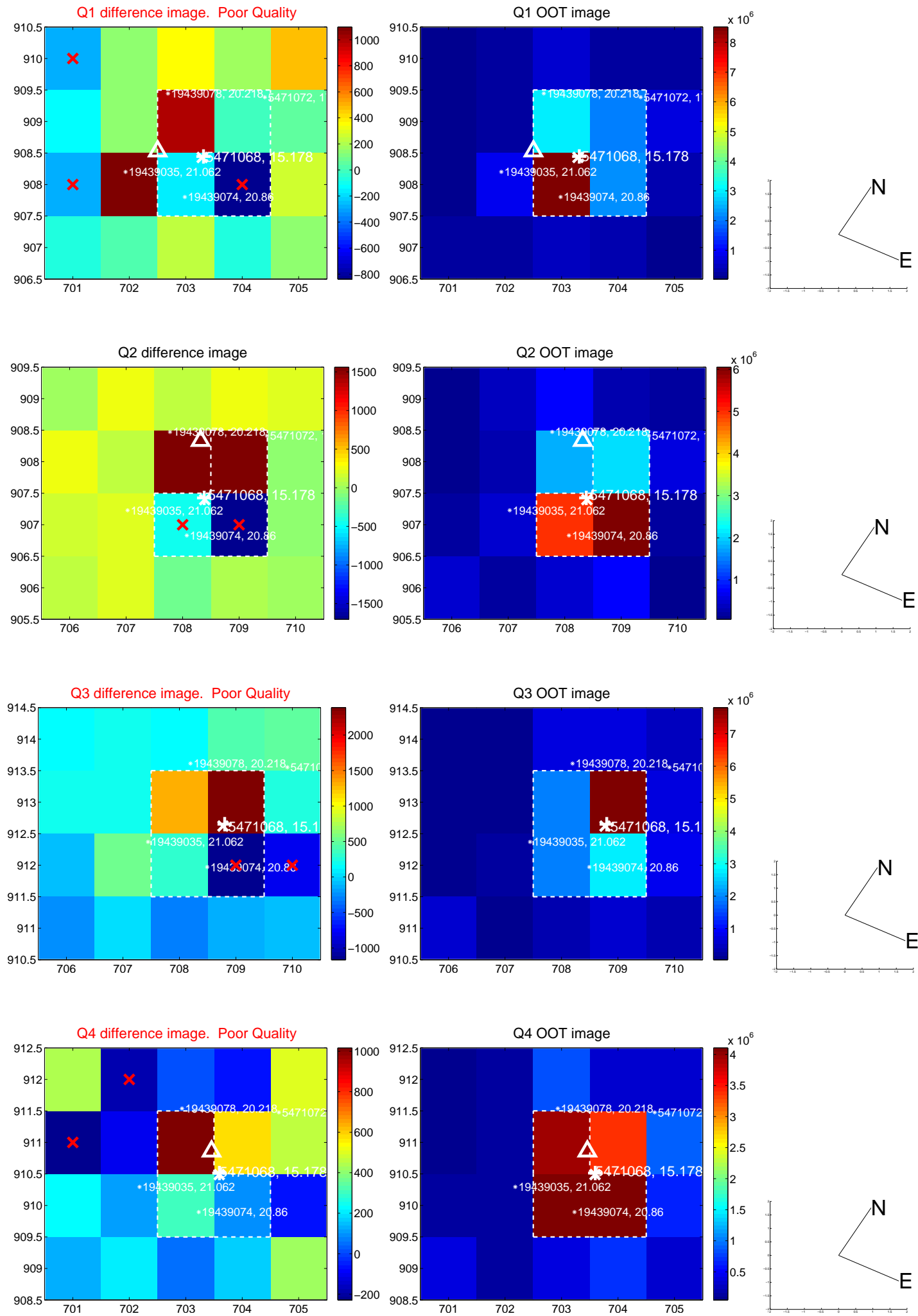
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.165 ± 0.551	2.11	-0.705 ± 0.442	-0.928 ± 0.605
PRF-fit source offset from KIC position	1.076 ± 0.542	1.99	-0.714 ± 0.440	-0.805 ± 0.610
photometric centroid source offset	2.15 ± 0.71	3.04	-2.00 ± 0.71	-0.77 ± 0.65

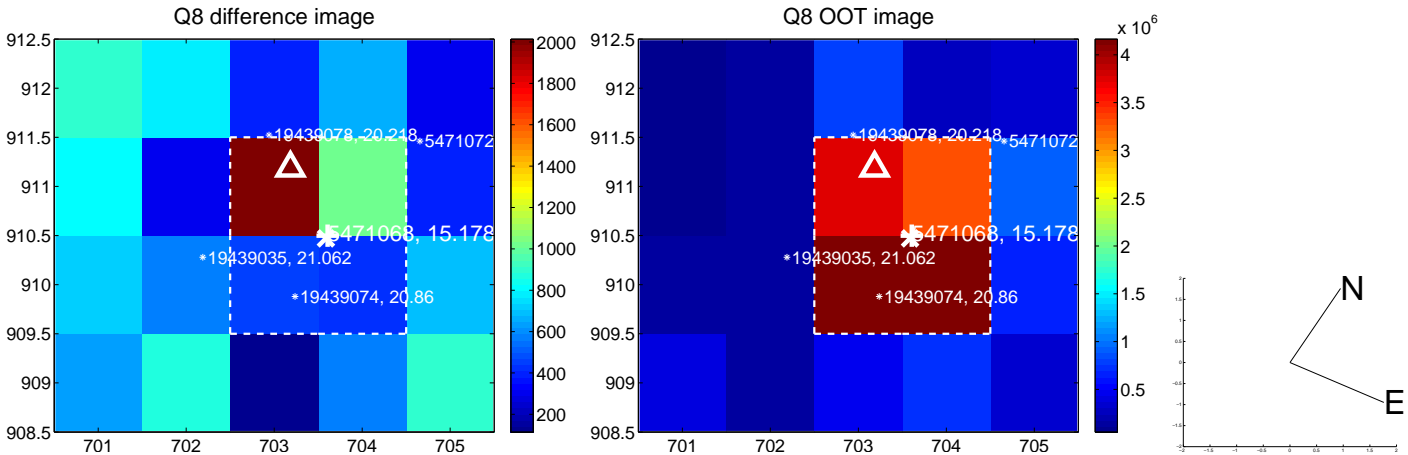
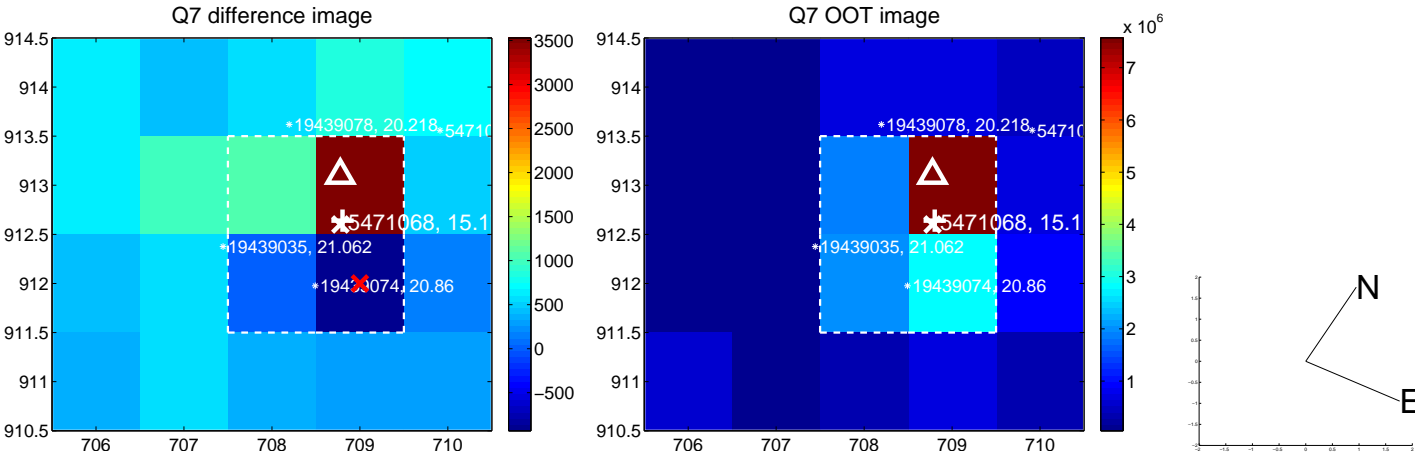
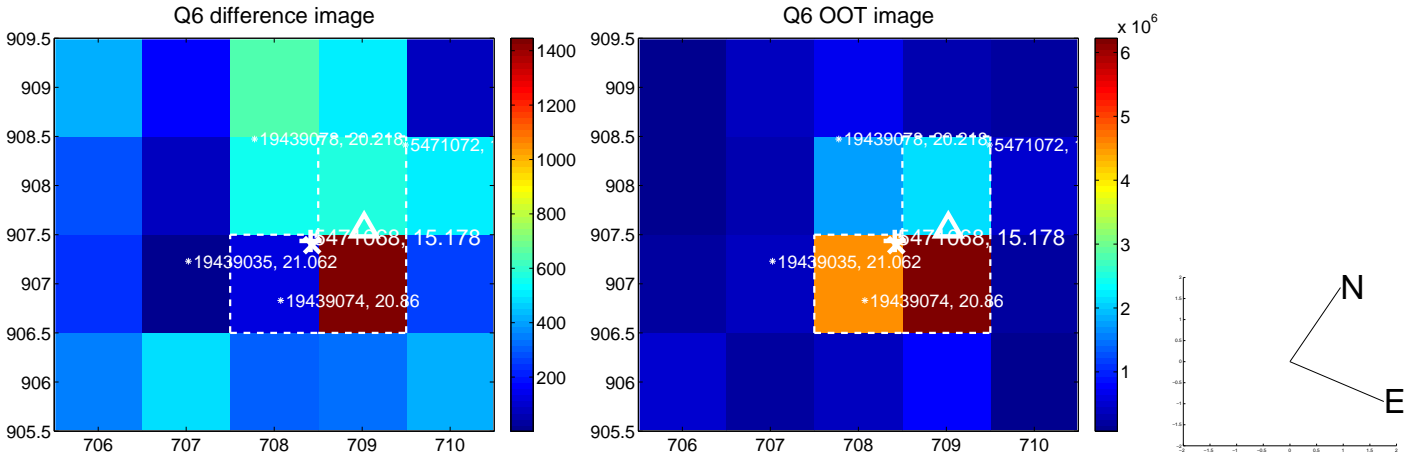
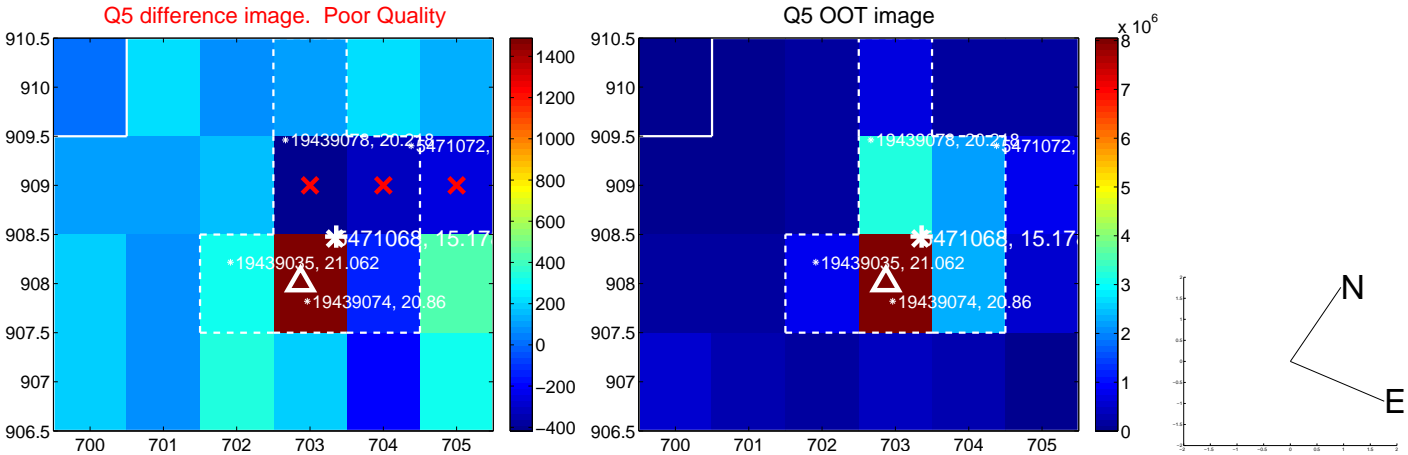


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

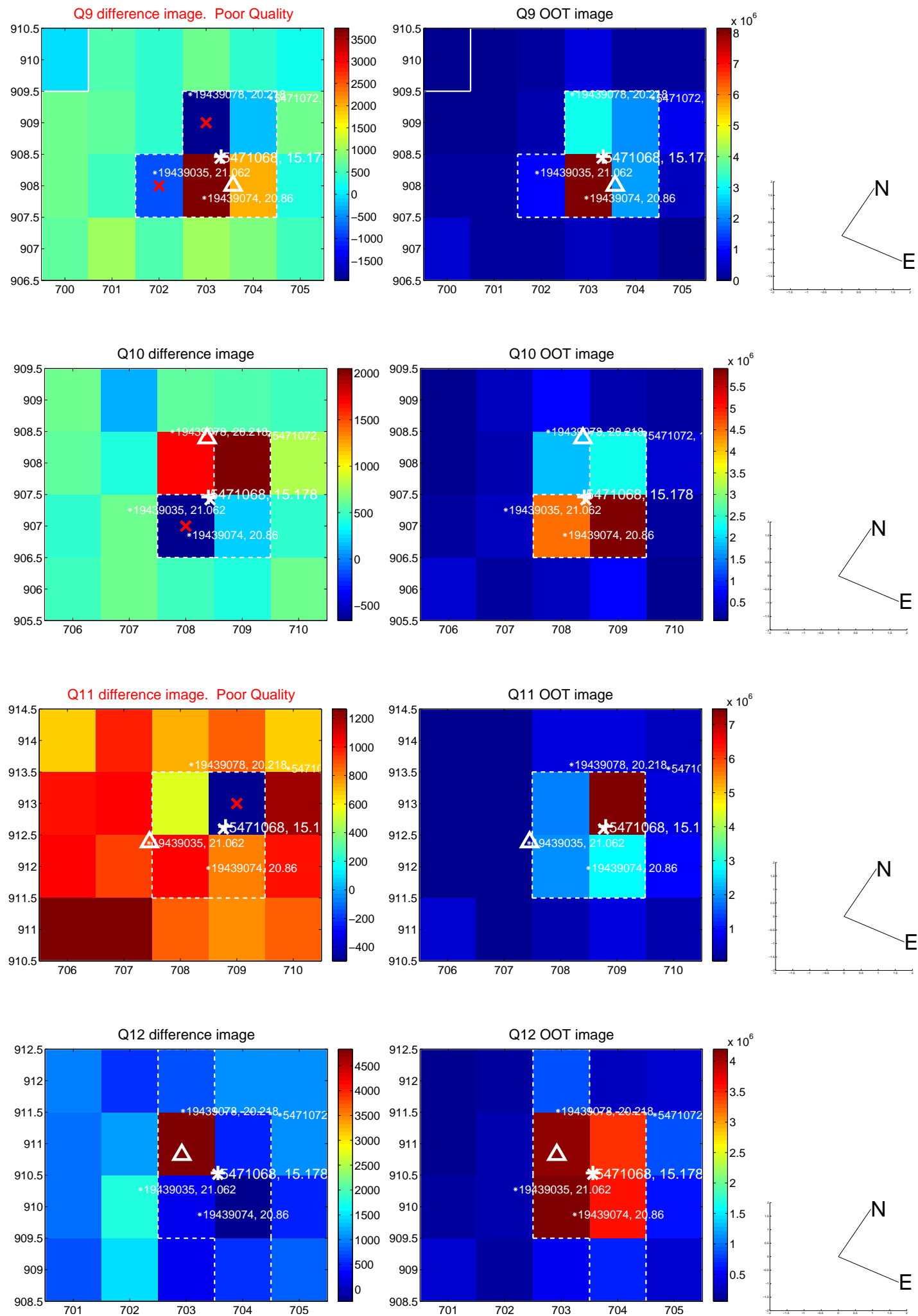
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



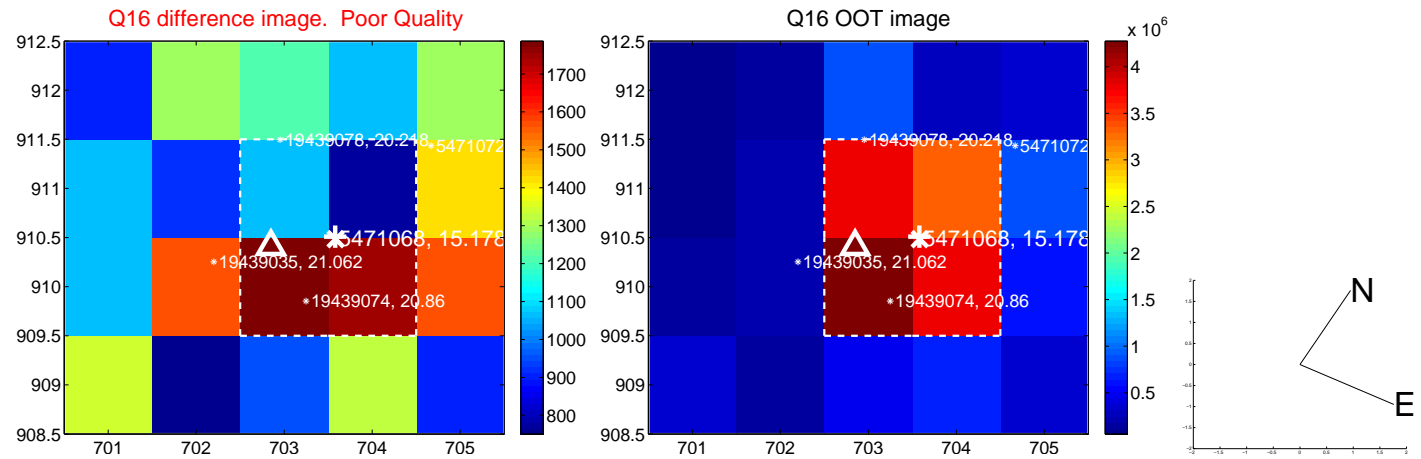
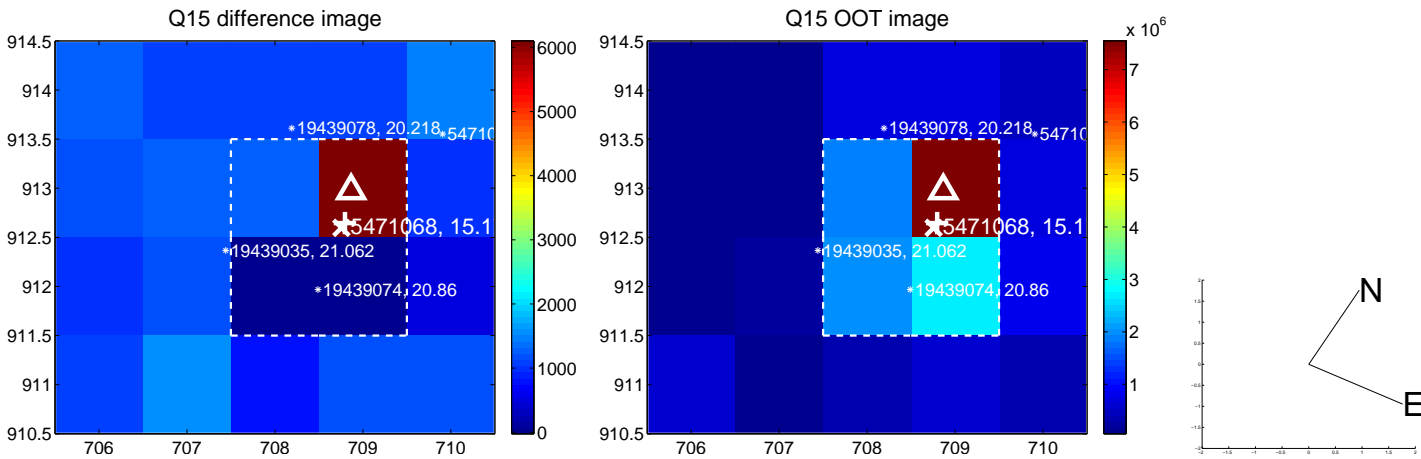
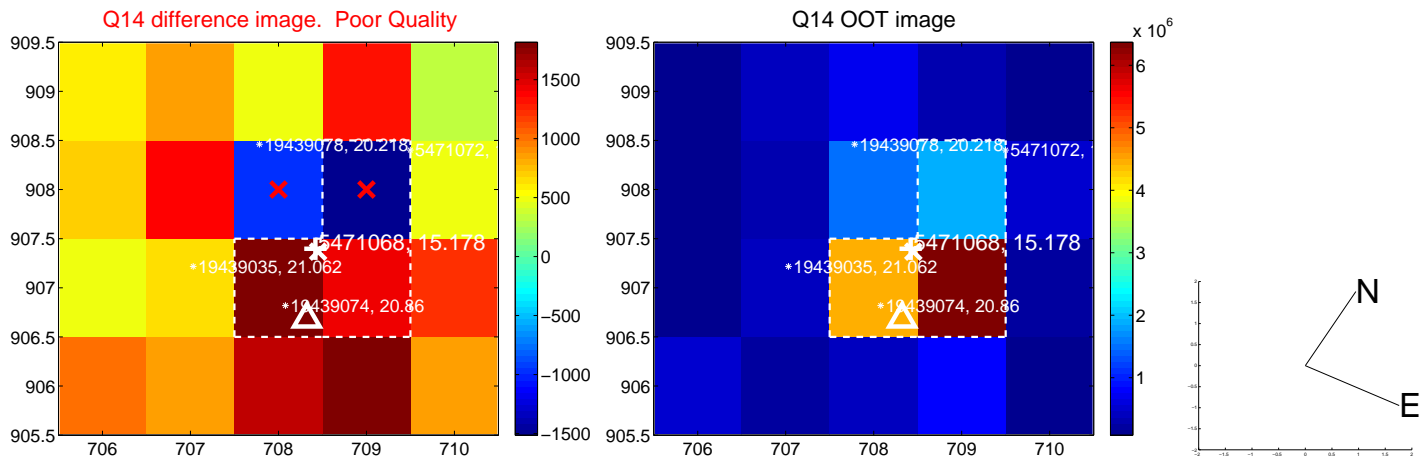
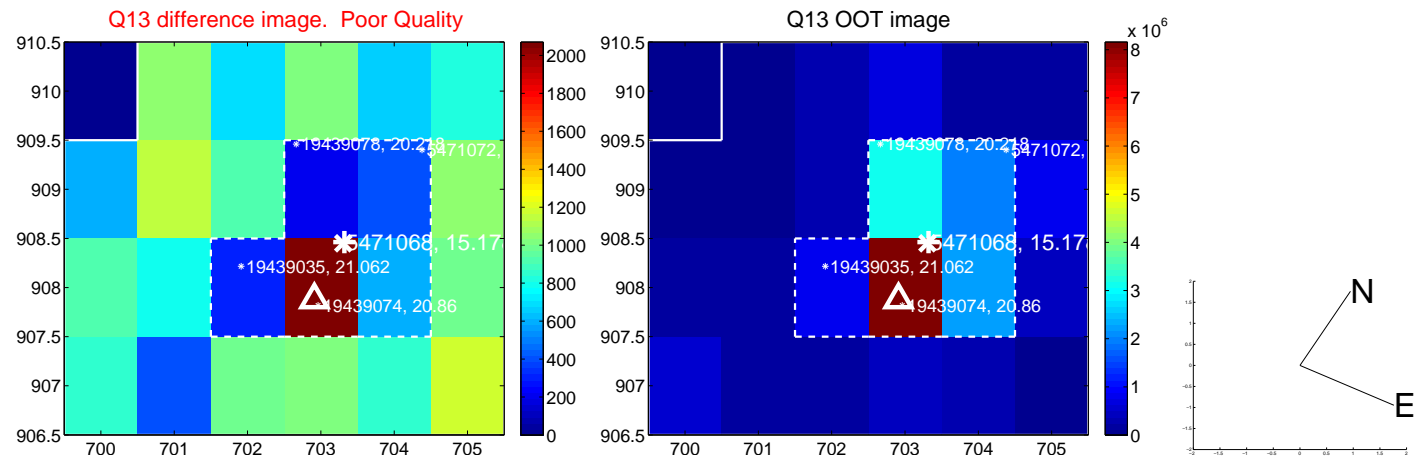
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



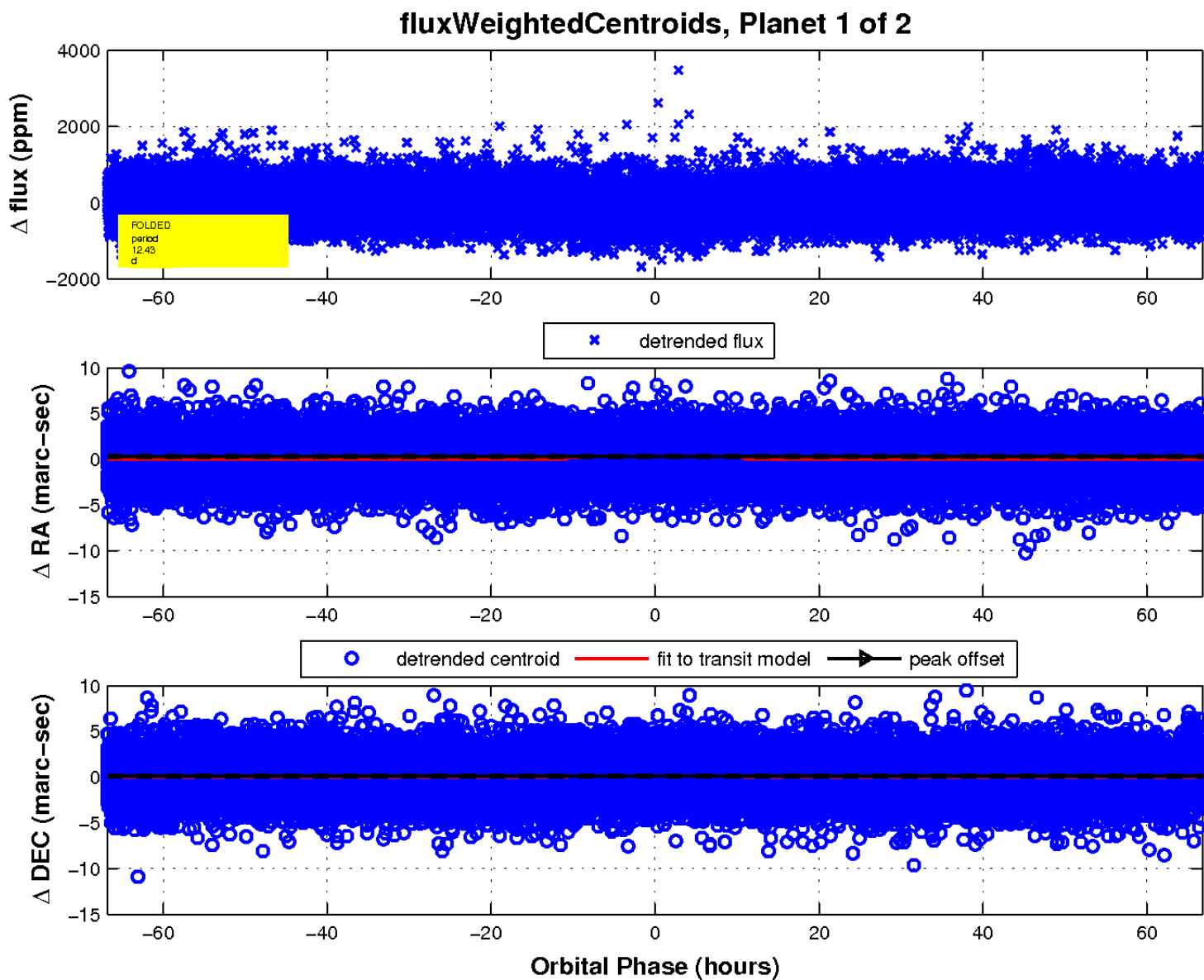
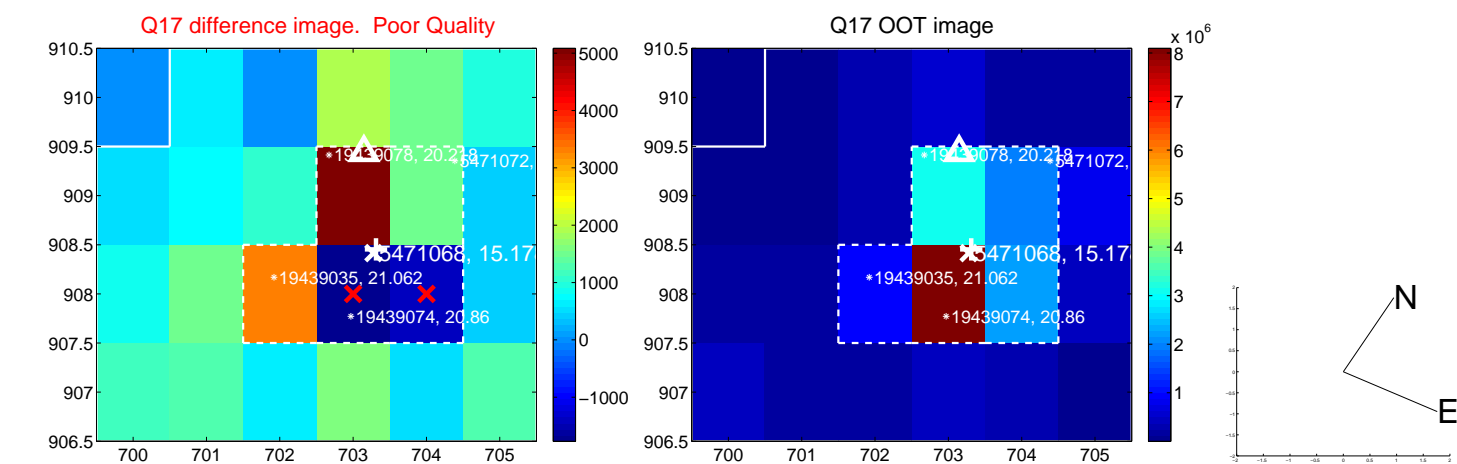
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

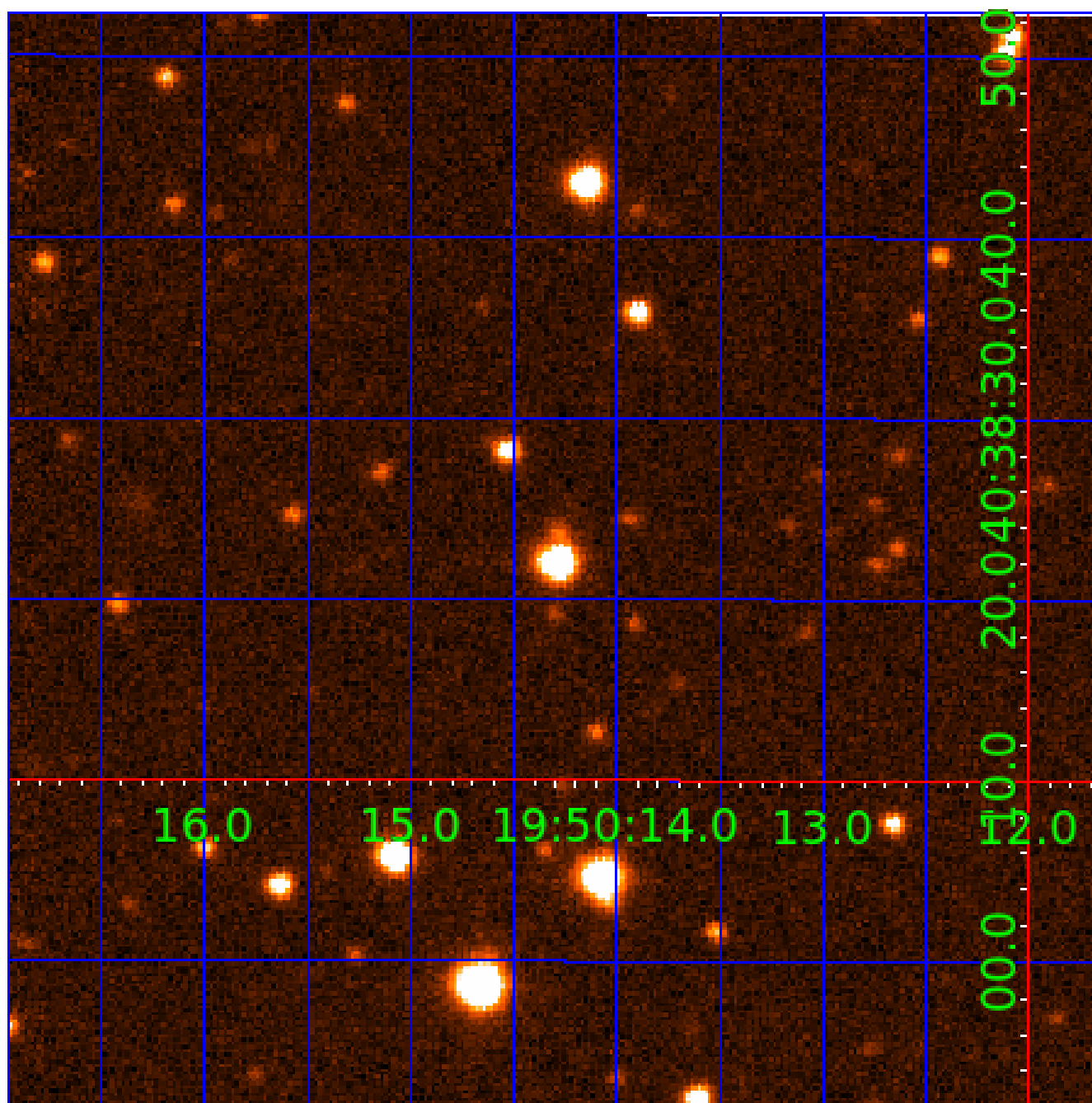


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005471068

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})
005471068-01	OBS	6008.01	12.426782	141.444815	151.6	22.276	13.7	16.8	0.89	5691	1.13	66.85
005471068-02	OBS	No	12.424733	134.026273	127.5	23.480	13.0	15.3	0.89	5691	1.29	66.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005471068-01	OBS	FP	0.00	1	0	1	1	LPP_DV—HALO_GHOST—EPHEM_MATCH
005471068-02	OBS	FP	0.00	1	0	1	1	LPP_DV—SAME_NTL_PERIOD—HALO_GHOST—EPHEM_MATCH

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 005471068-02

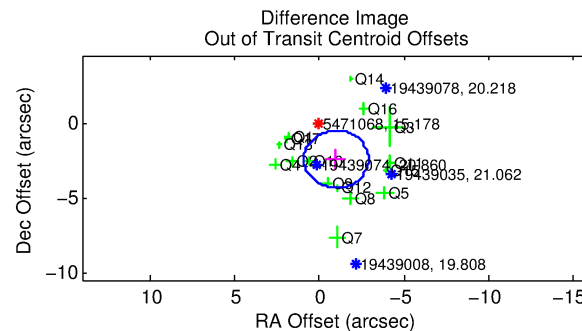
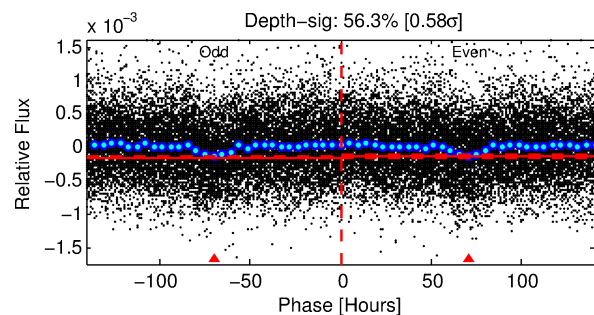
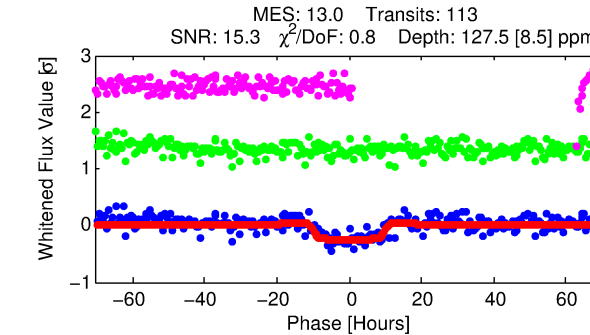
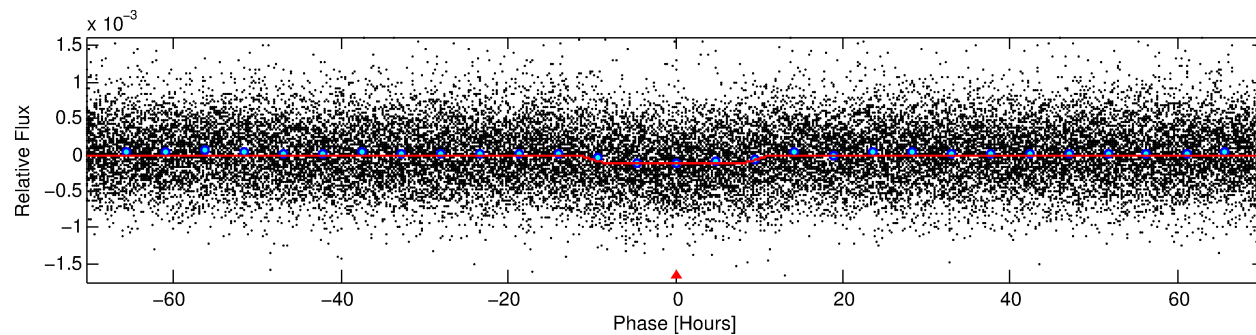
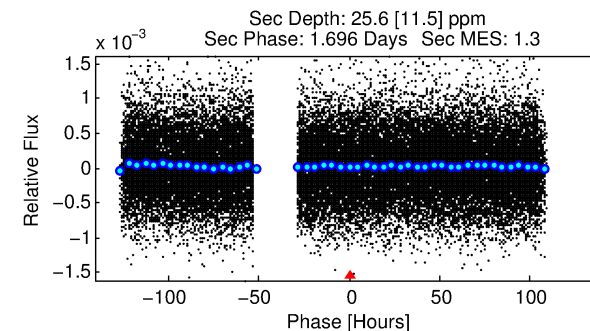
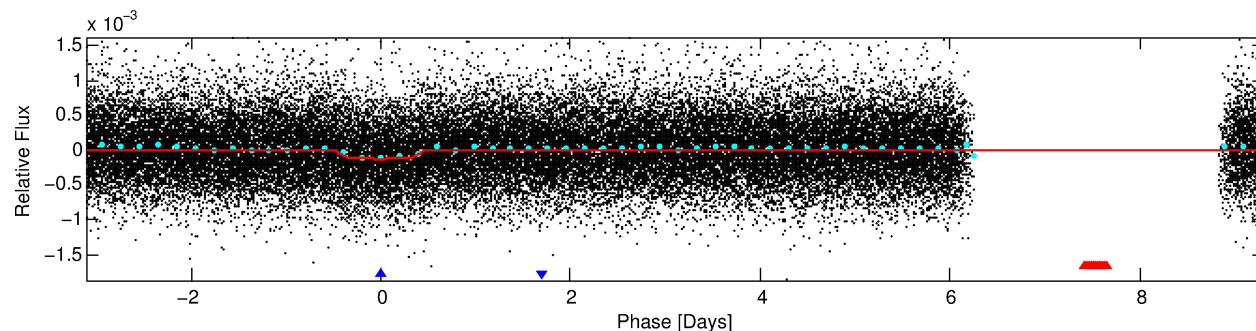
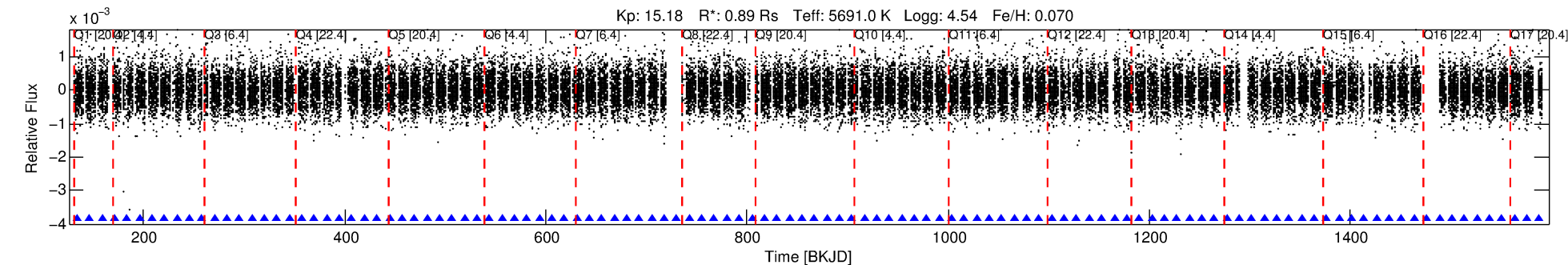
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
005471068-02	5471068	V380-Cyg-sec	5385723	1:1	298.8	63	-41	5.77	15.18	1008.10	Direct-PRF	0	2.15	2.43

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: 5471068 Candidate: 2 of 2 Period: 12.425 d

KOI: K06008 Corr: No Ephemeris Match



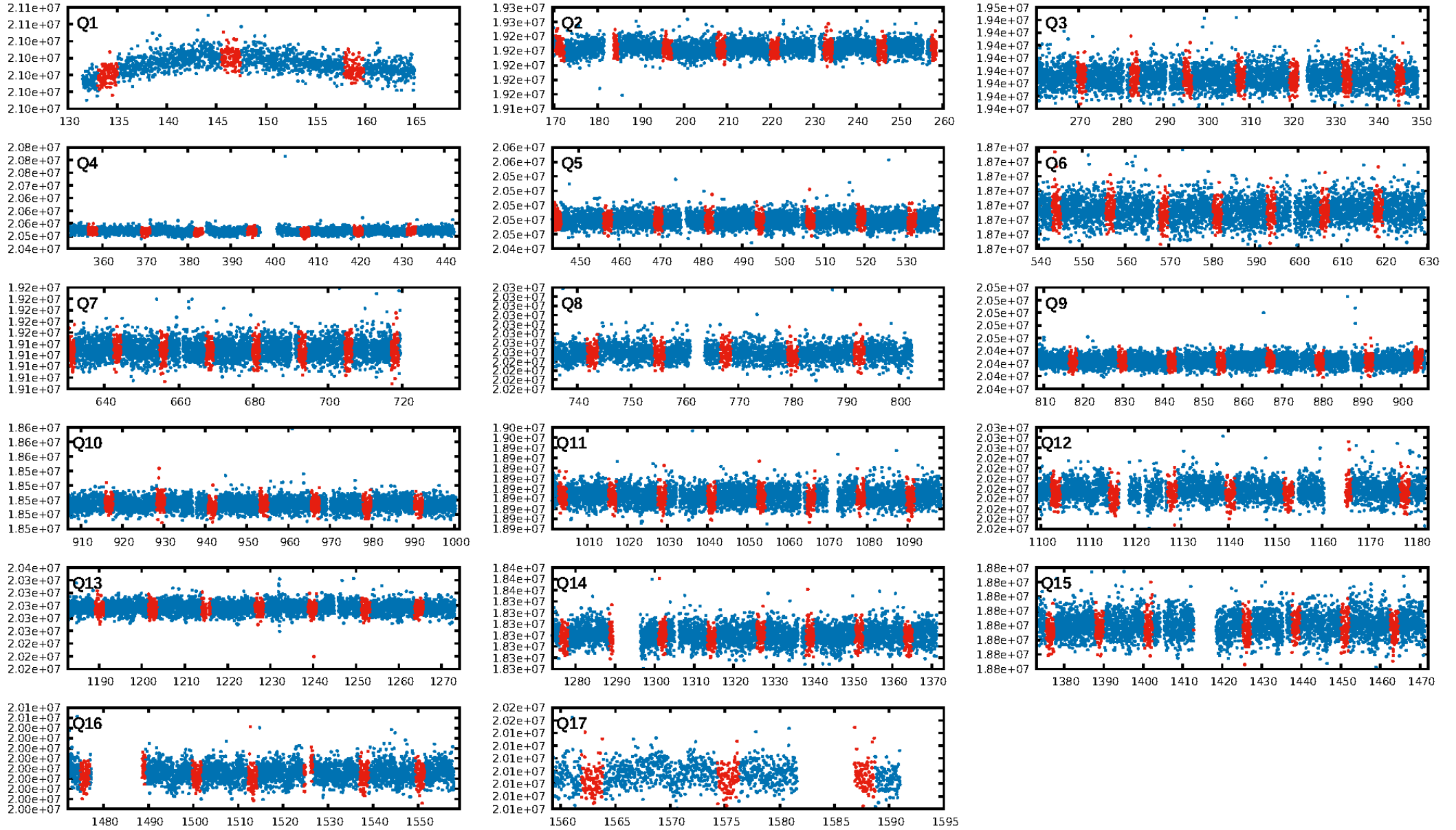
DV Fit Results:

Period = 12.42473 [0.00042] d
Epoch = 134.0263 [0.0282] BKJD
Rp/R* = 0.0133 [0.0008]
a/R* = 1.69 [0.28]
b = 0.95 [0.03]
Seff = 66.87 [25.63]
Teff = 729 [70] K
Rp = 1.29 [0.37] Re
a = 0.1052 [0.0253] AU
Ag = 94.06 [55.22] [1.69 σ]
Teffp = 3511 [428] K [6.42 σ]

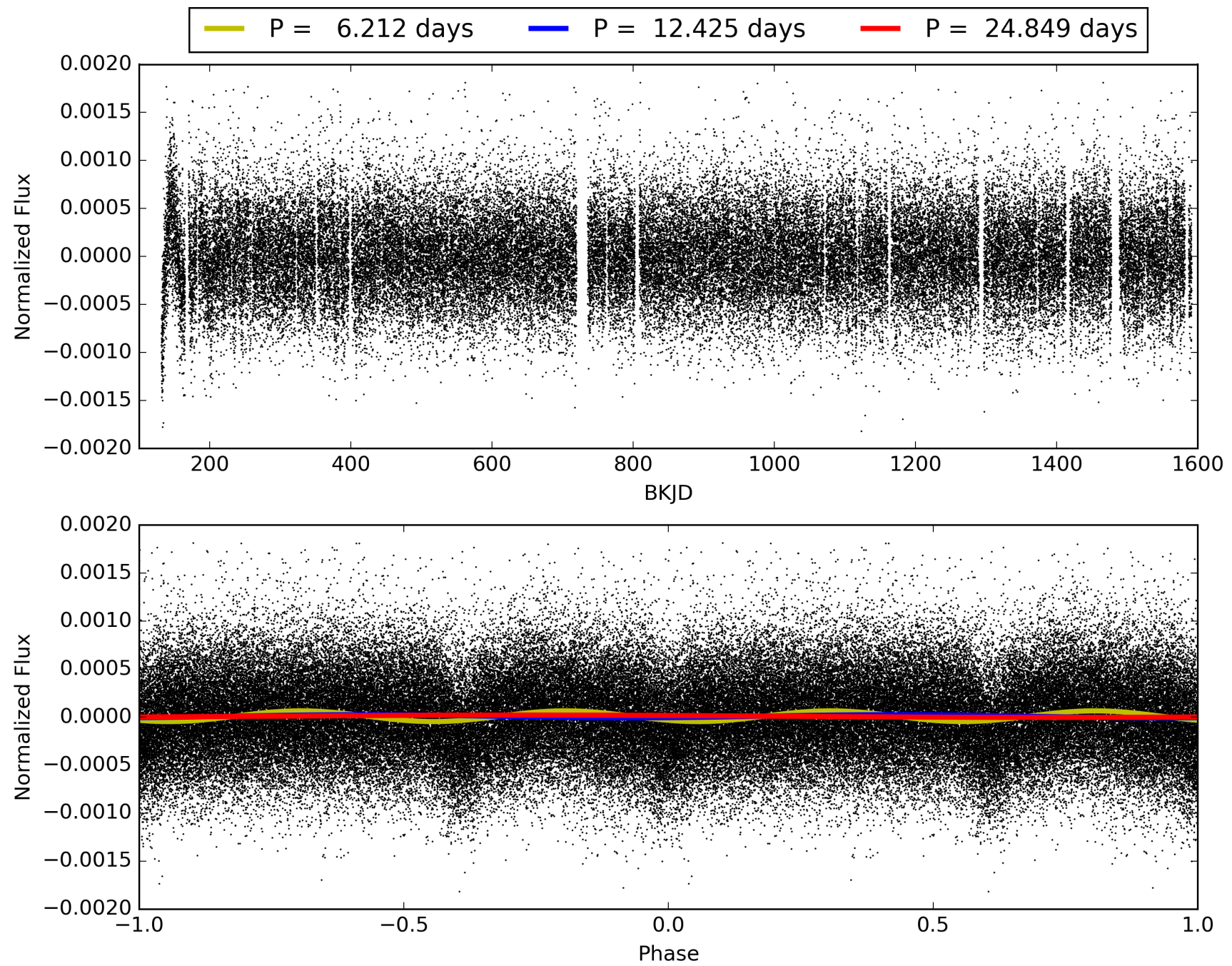
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00 σ]
ModelChiSquare2-sig: 94.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.05e-41
RollingBand-fgt: 1.00 [107/107]
GhostDiagnostic-chr: -0.05474
Centroid-sig: 0.2%
Centroid-so: 1.628 arcsec [2.11 σ]
OotOffset-rm: 2.633 arcsec [4.13 σ]
KicOffset-rm: 2.552 arcsec [4.29 σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.19 [3/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005471068-02, PDC Light Curves

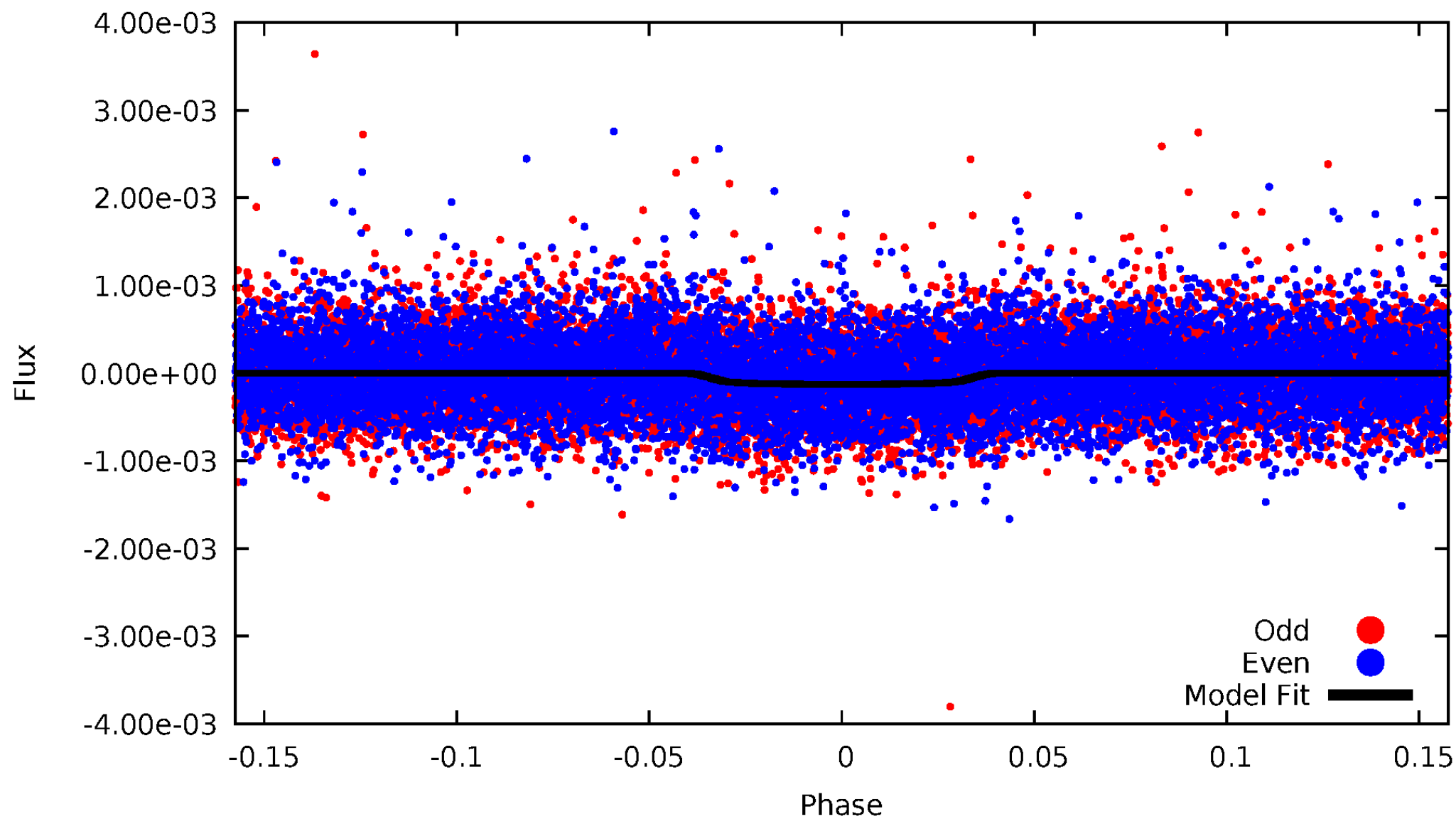


TCE 005471068-02



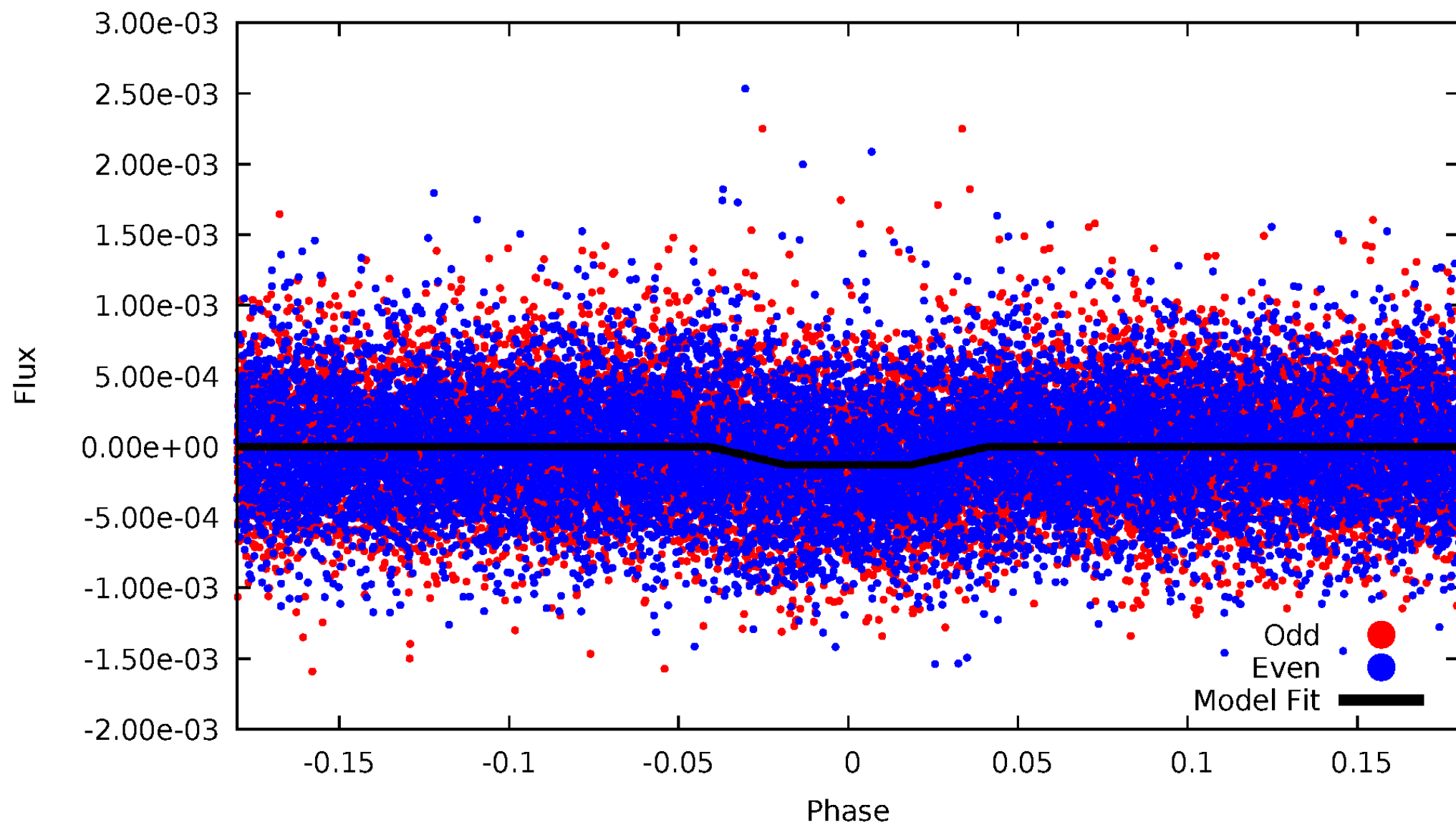
DV Odd/Even

TCE 005471068-02



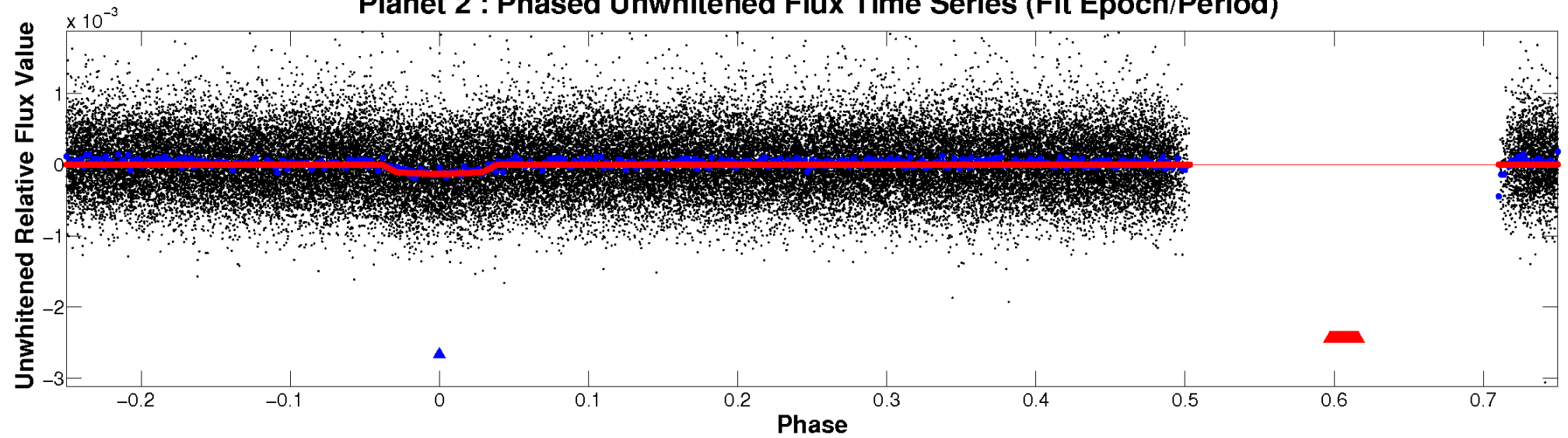
ALT Odd/Even

TCE 005471068-02

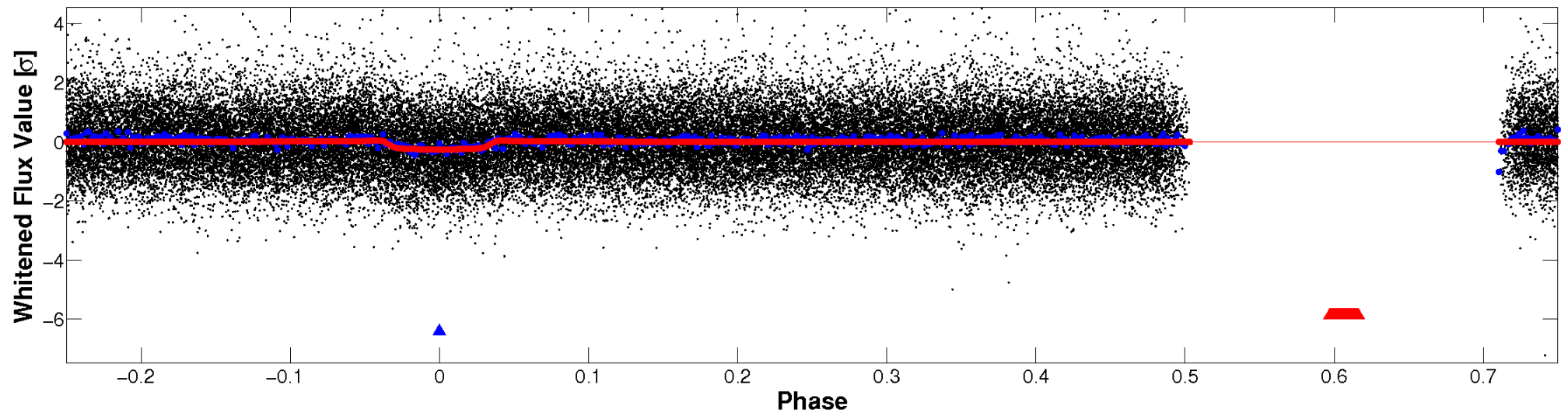


Non-Whitened Vs. Whitened Light Curve

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

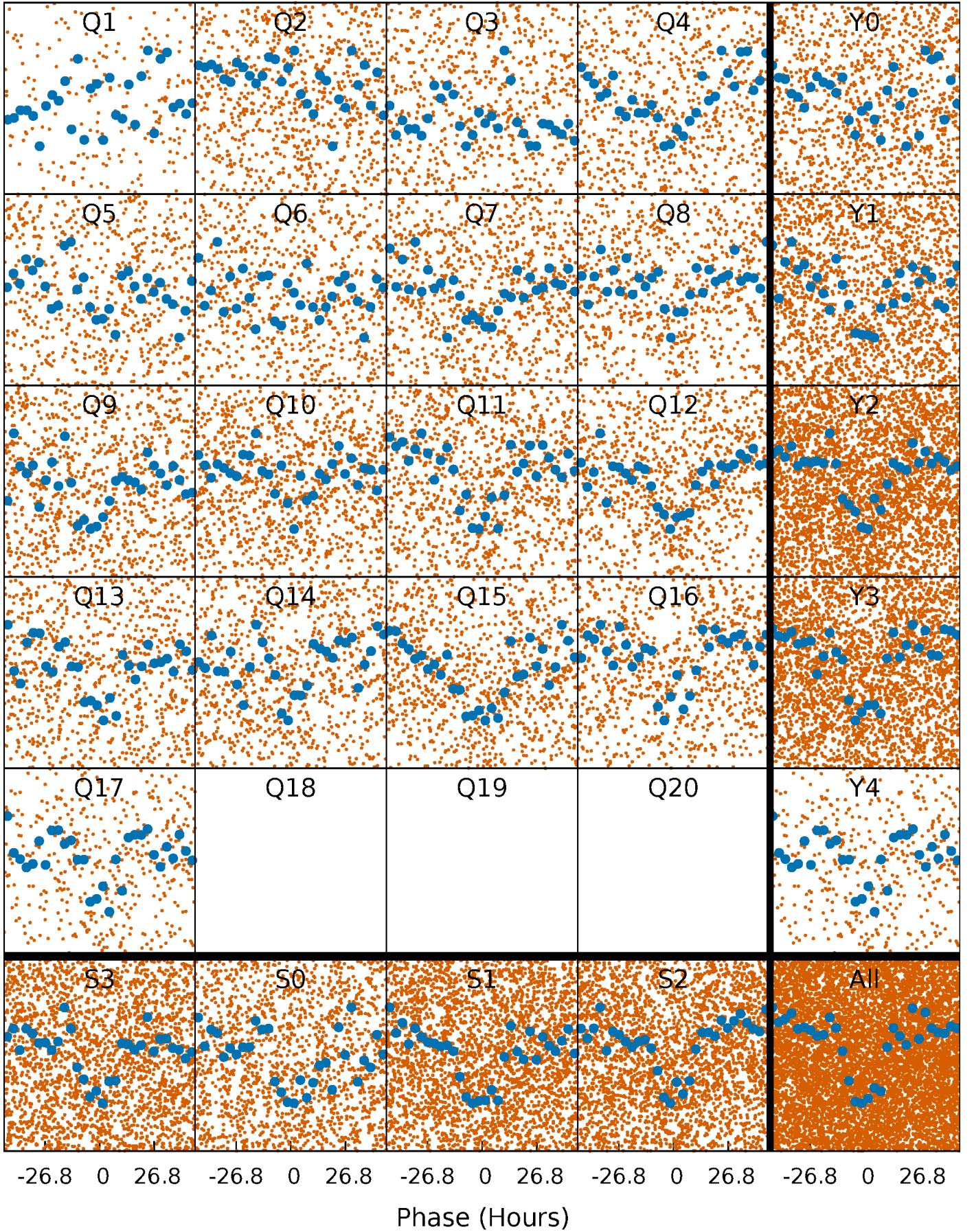


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



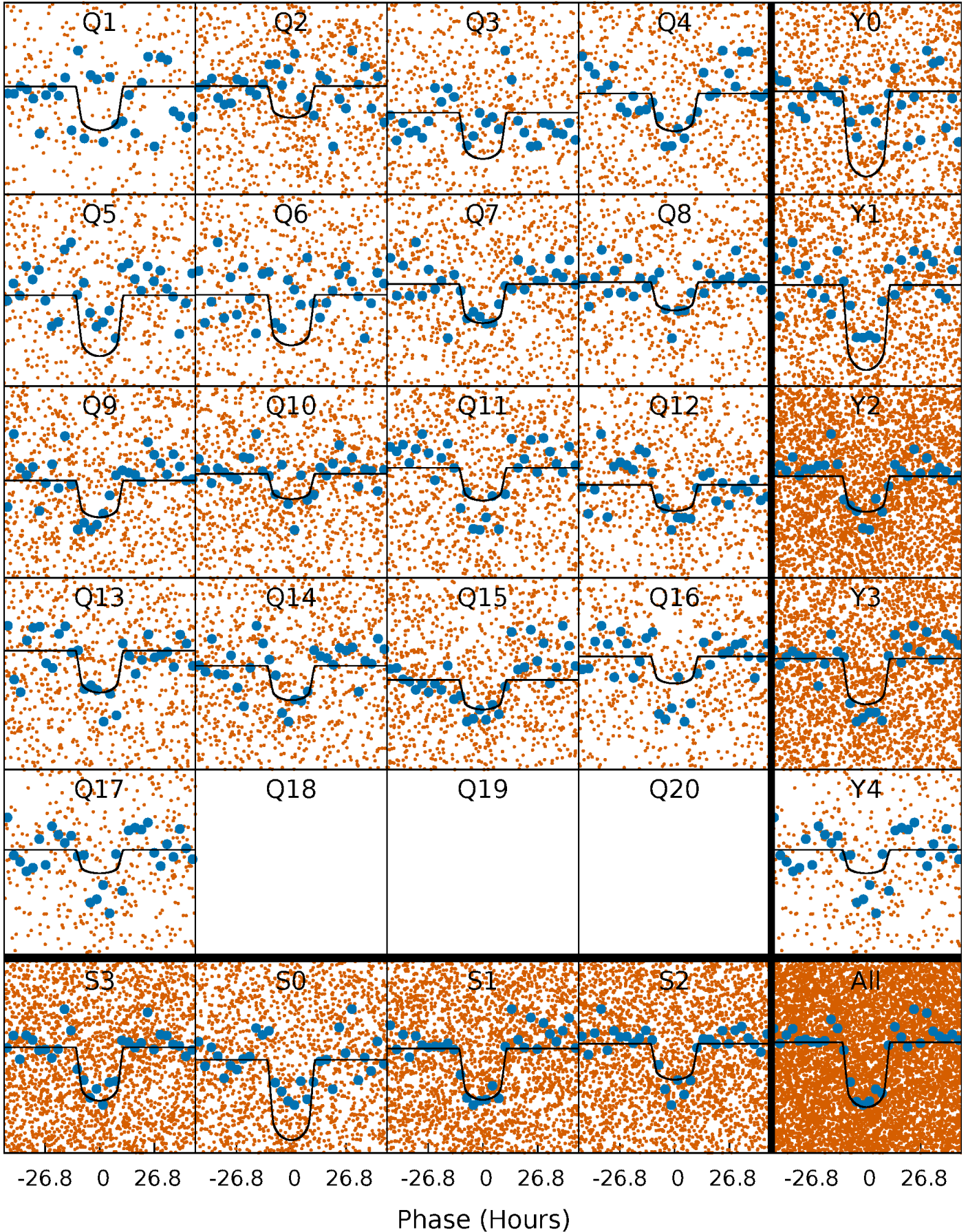
PDC Quarter-Phased Transit Curves

TCE 005471068-02 P= 12.424733 Days $T_0=134.026274$ (BKJD)



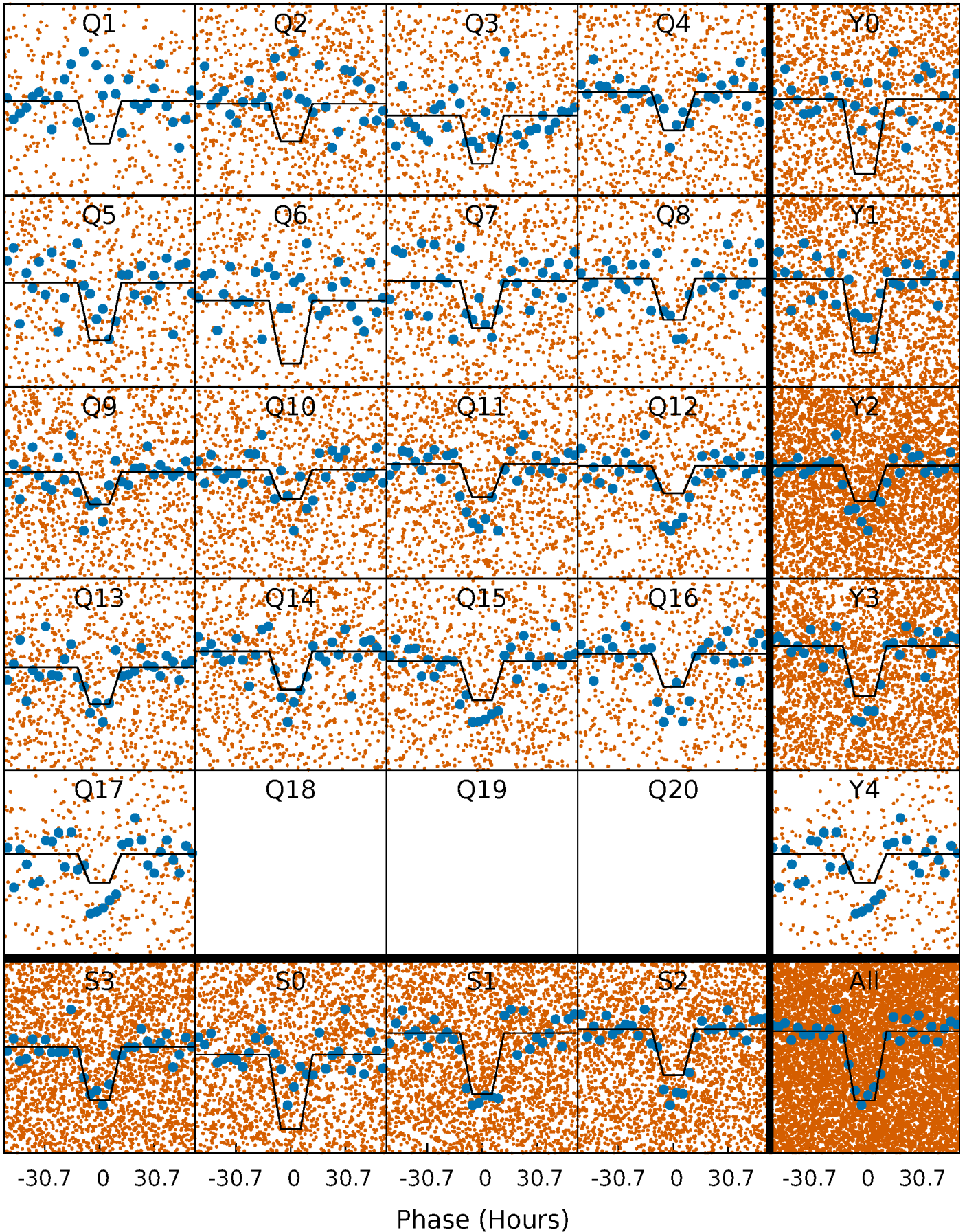
DV Quarter-Phased Transit Curves

TCE 005471068-02 P= 12.424733 Days $T_0=134.026274$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

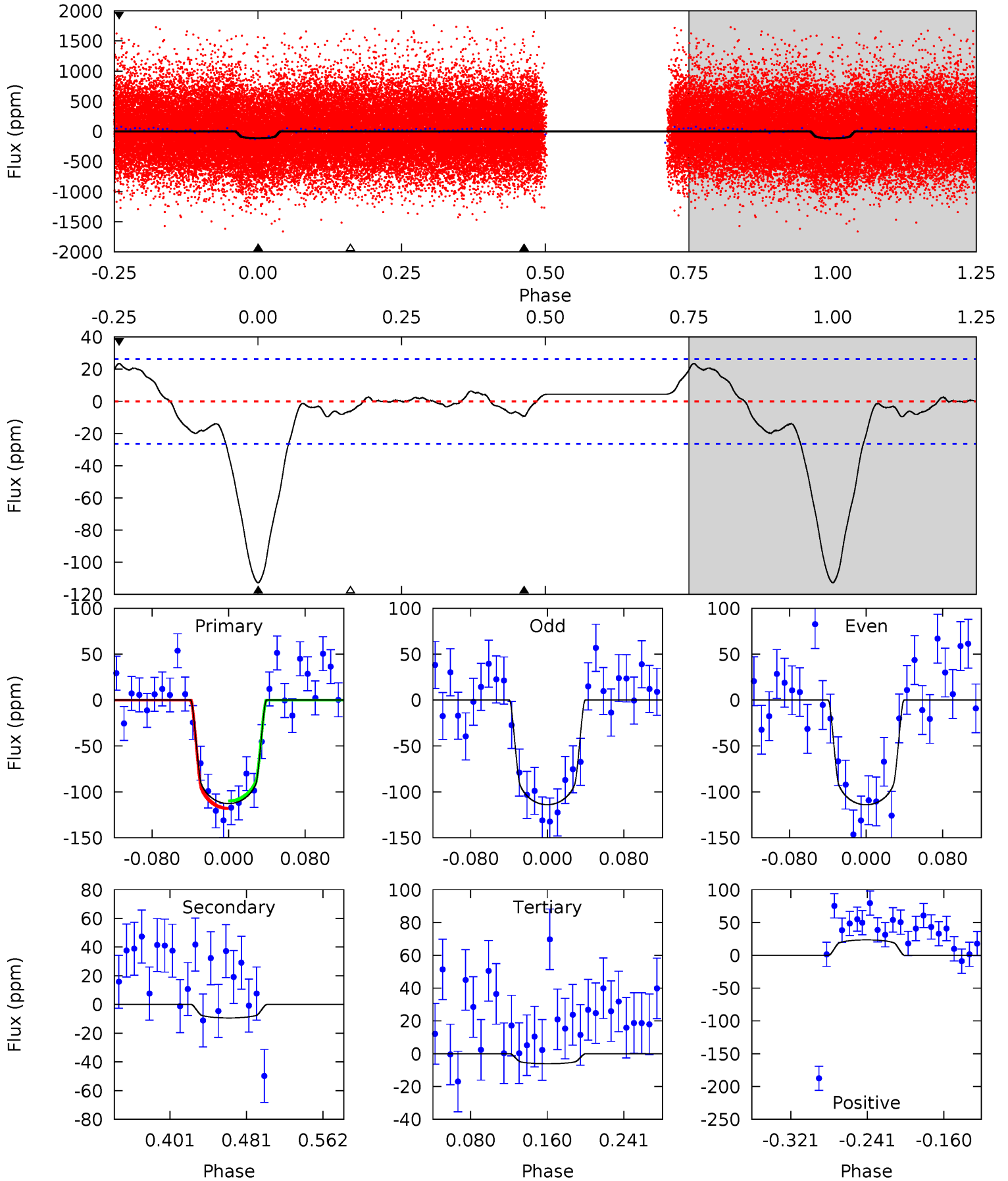
TCE 005471068-02 P= 12.425672 Days $T_0=133.946842$ (BKJD)



DV Model-Shift Uniqueness Test

005471068-02, $P = 12.424733$ Days, $E = 121.601541$ Days

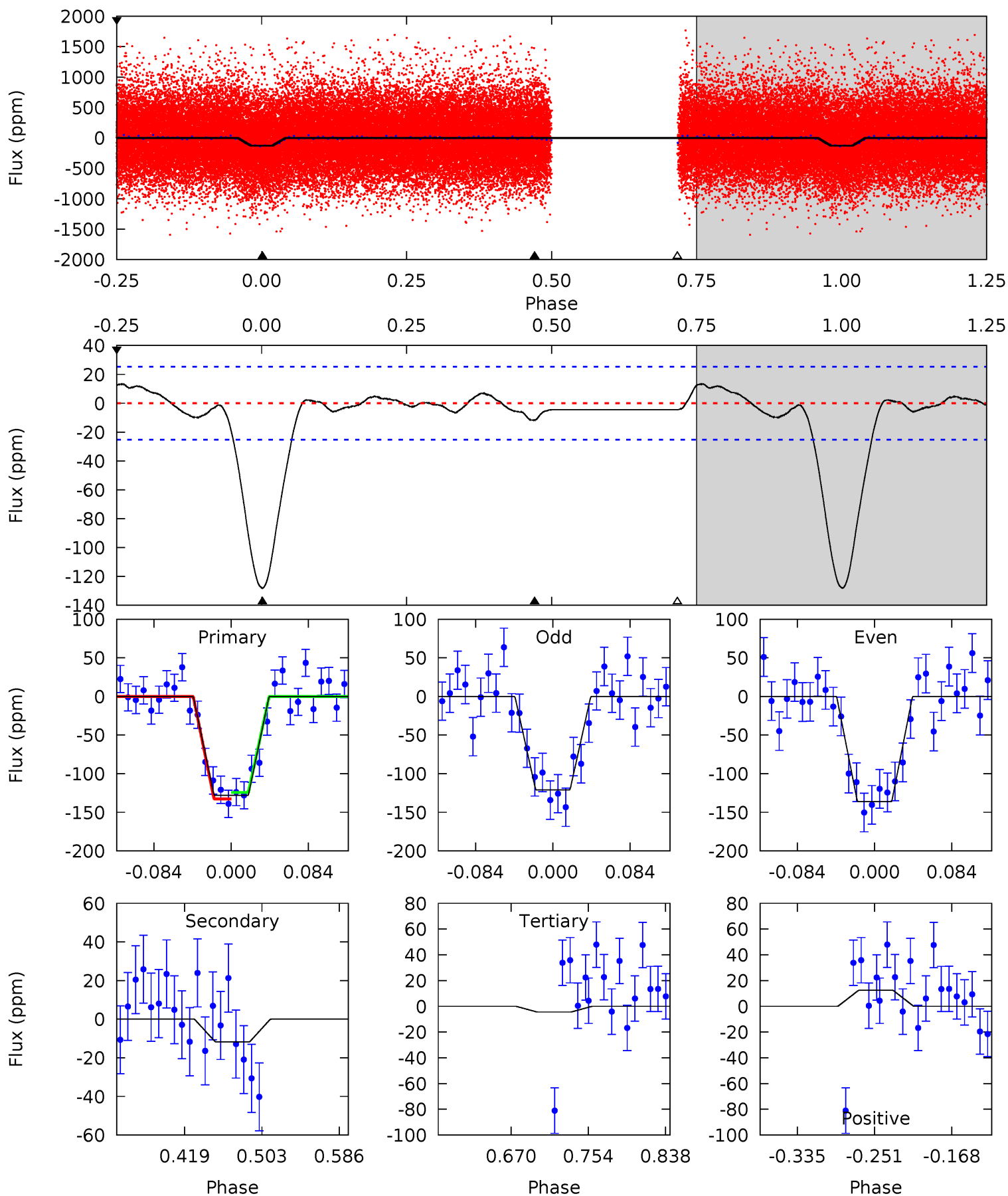
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.7	1.64	1.07	4.12	4.61	1.75	1.80	18.7	15.6	0.57	-2.48	0.01	1.01	0.17	0.72



Alt Model-Shift Uniqueness Test

005471068-02, P = 12.425672 Days, E = 121.521170 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.3	2.14	0.80	2.27	4.60	1.73	1.04	22.5	21.1	1.34	-0.13	1.39	0.95	0.09	0.75



Stellar Parameters For KIC 005471068

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5691^{+180}_{-200}	$4.544^{+0.033}_{-0.198}$	$0.070^{+0.250}_{-0.300}$	$0.887^{+0.248}_{-0.066}$	$1.003^{+0.100}_{-0.130}$	$2.025^{+0.375}_{-0.997}$
	+3%/-4%	+1%/-4%	+357%/-429%	+28%/-7%	+10%/-13%	+18%/-49%
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 005471068-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-9 ± 6	$1.33^{+0.22}_{-0.14}$	1045^{+69}_{-47}	3281^{+263}_{-421}	30^{+21}_{-19}
Alt.	-12 ± 5	$1.12^{+0.19}_{-0.11}$	1045^{+65}_{-52}	3560^{+290}_{-354}	51^{+31}_{-26}

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 $A_{obs} \gg 1.0$

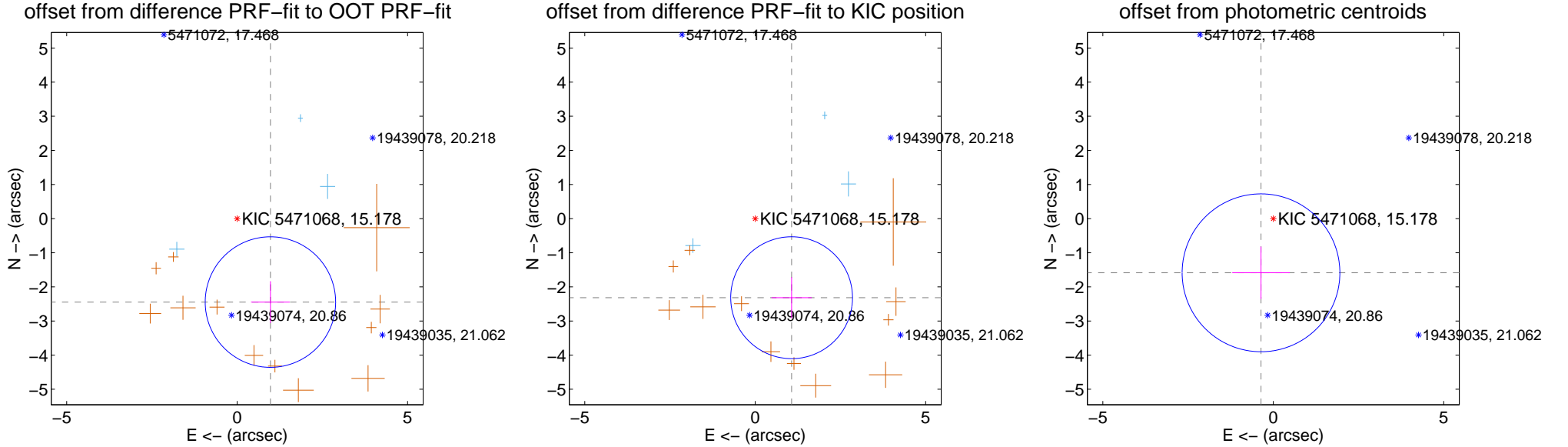
DV Centroid Data

Supplemental centroid analysis for 005471068-02. Kepler magnitude: 15.18. Transit SNR 15.35

There are 3 quarters with good PRF difference image offsets

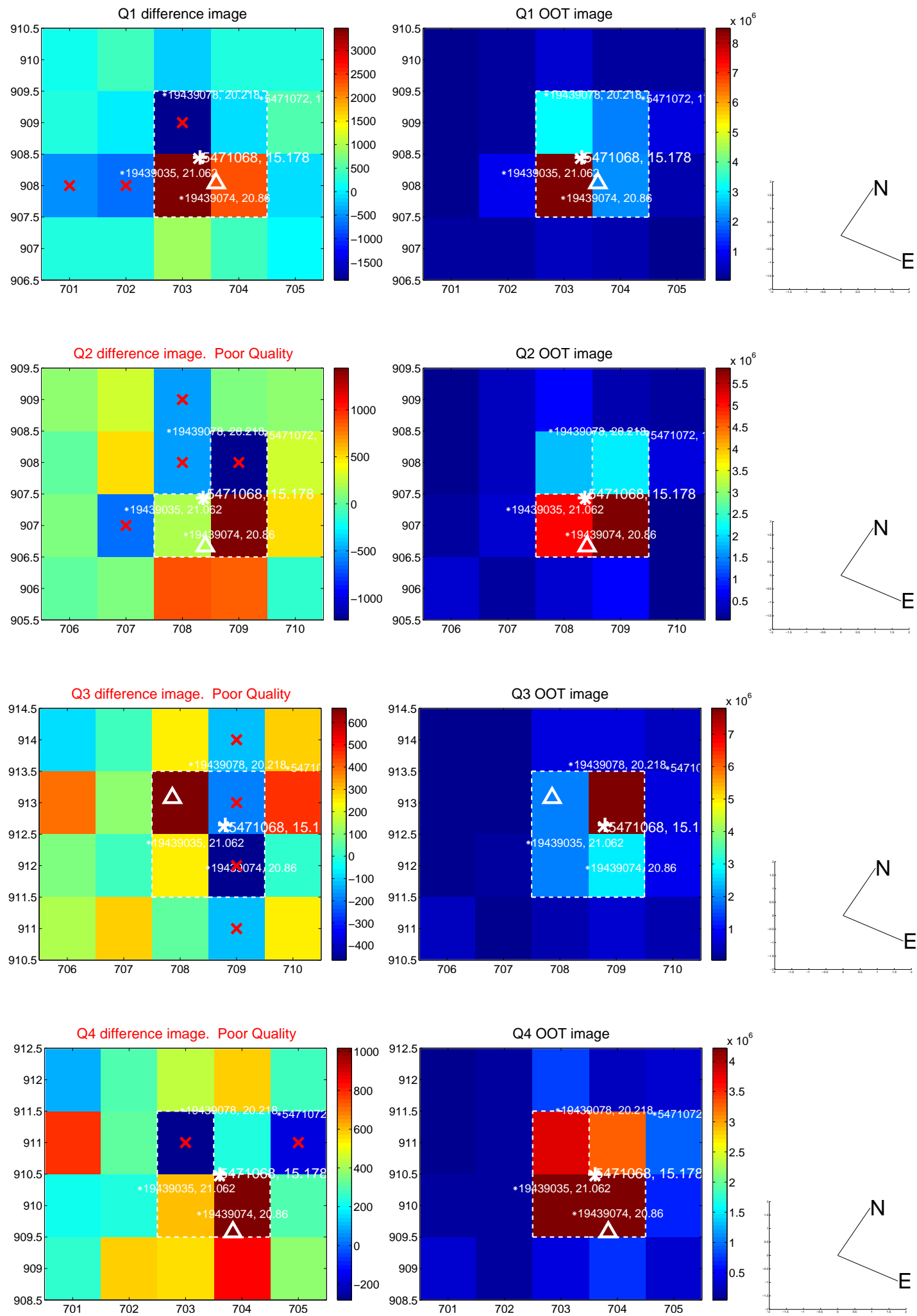
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.633 ± 0.638	4.13	-0.976 ± 0.567	-2.445 ± 0.612
PRF-fit source offset from KIC position	2.552 ± 0.595	4.29	-1.067 ± 0.589	-2.318 ± 0.602
photometric centroid source offset	1.63 ± 0.77	2.11	0.36 ± 0.84	-1.59 ± 0.77

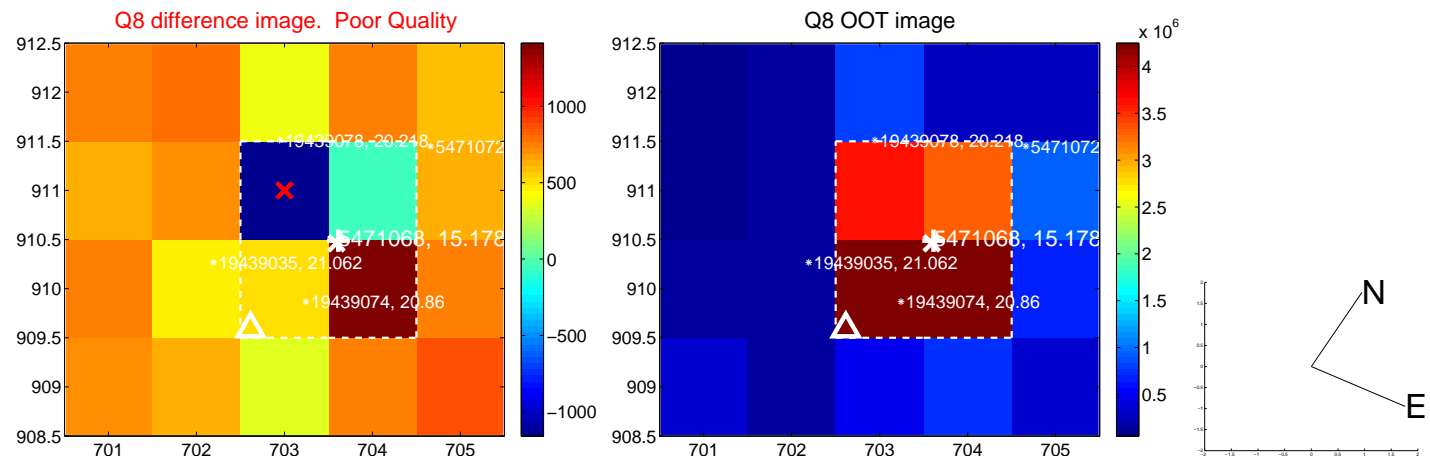
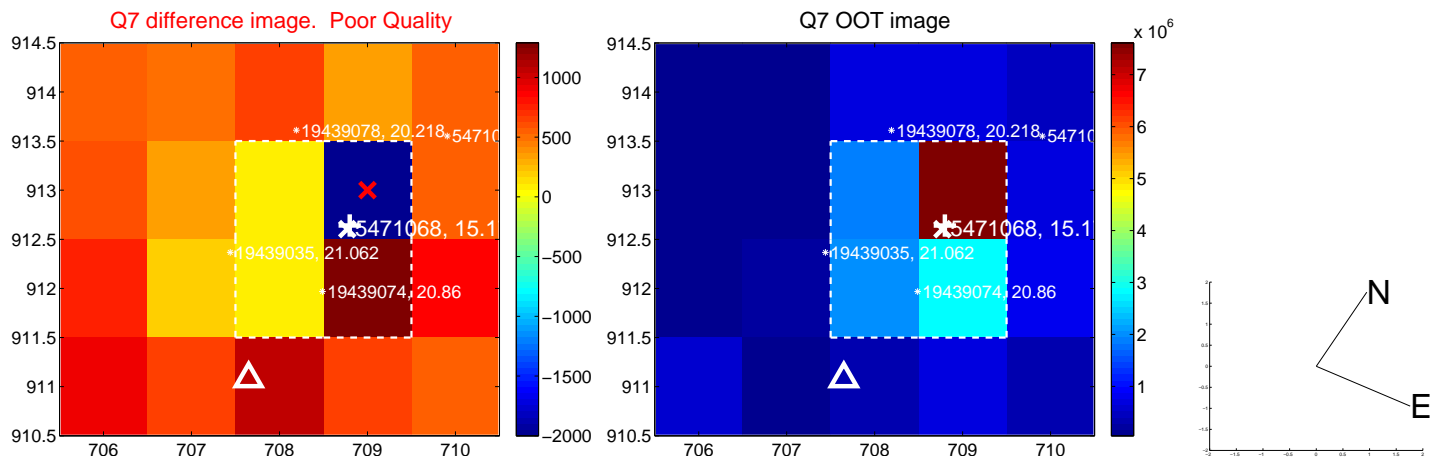
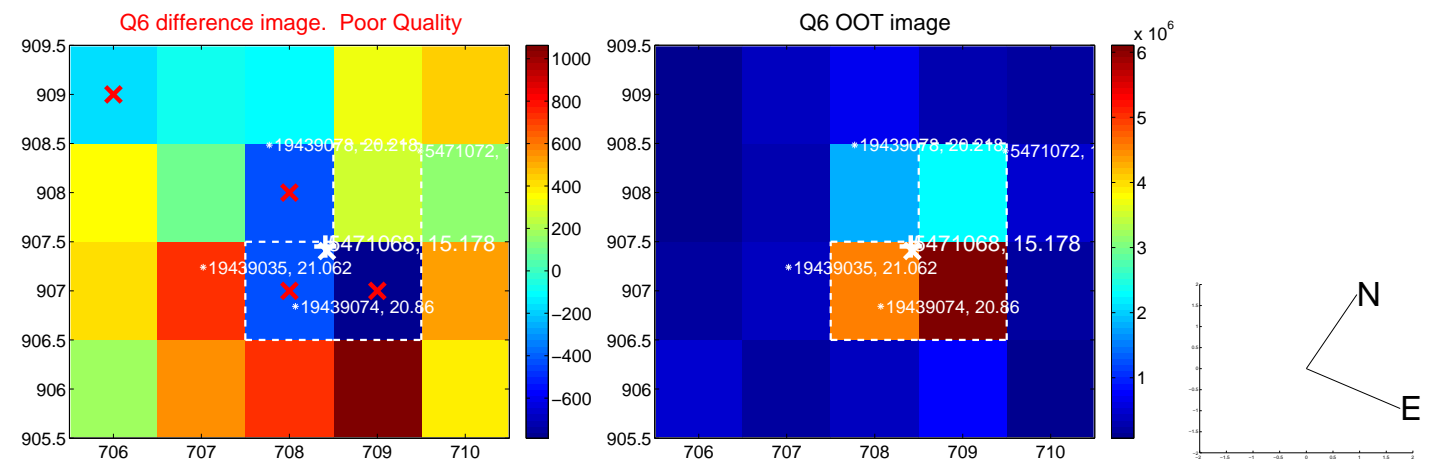
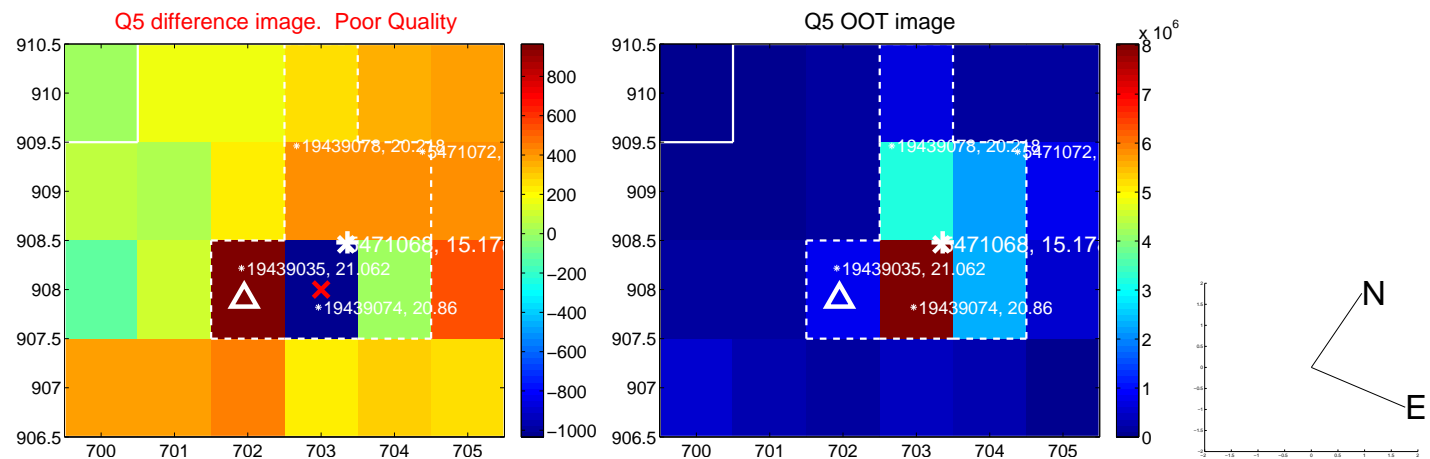


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

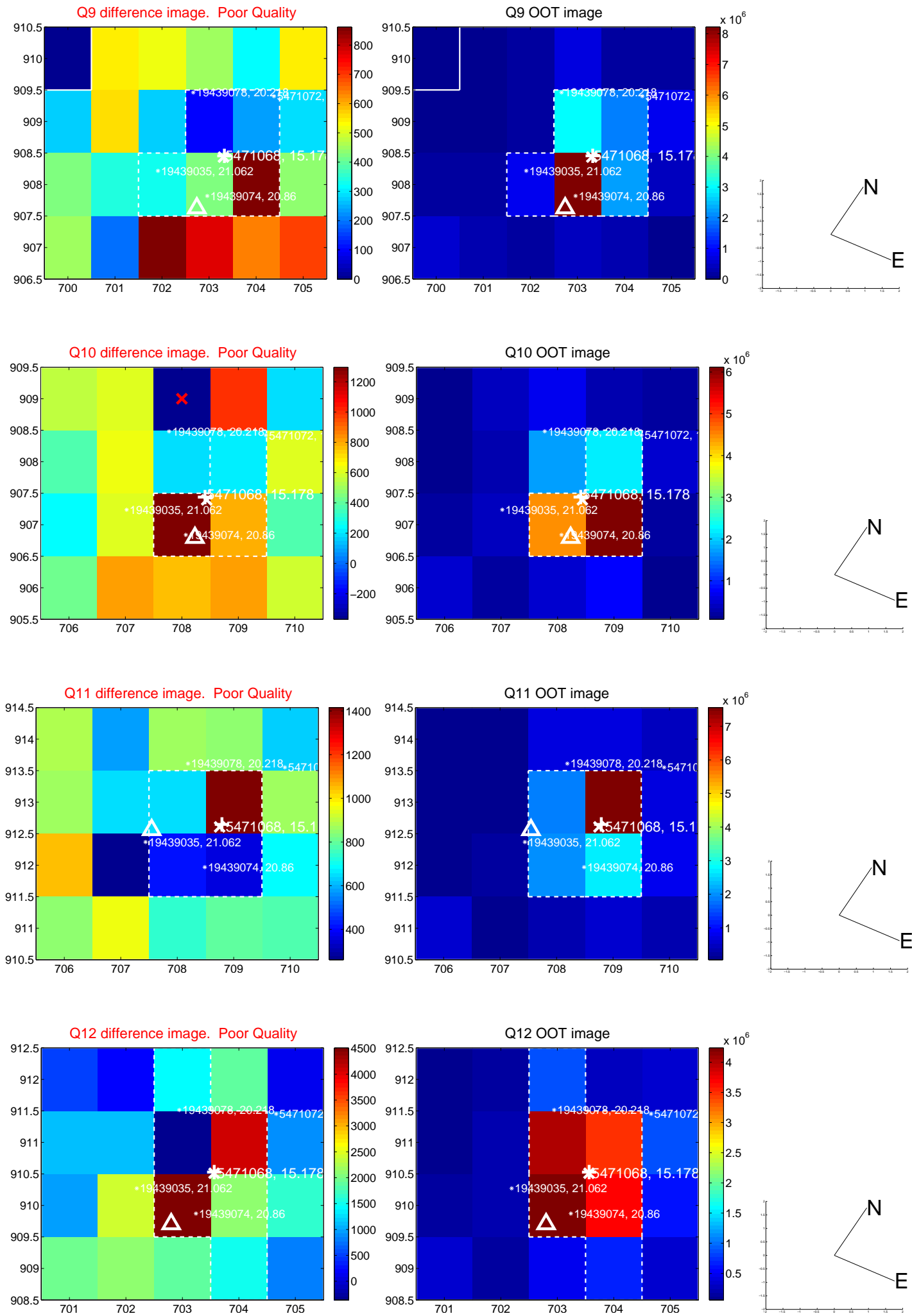
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



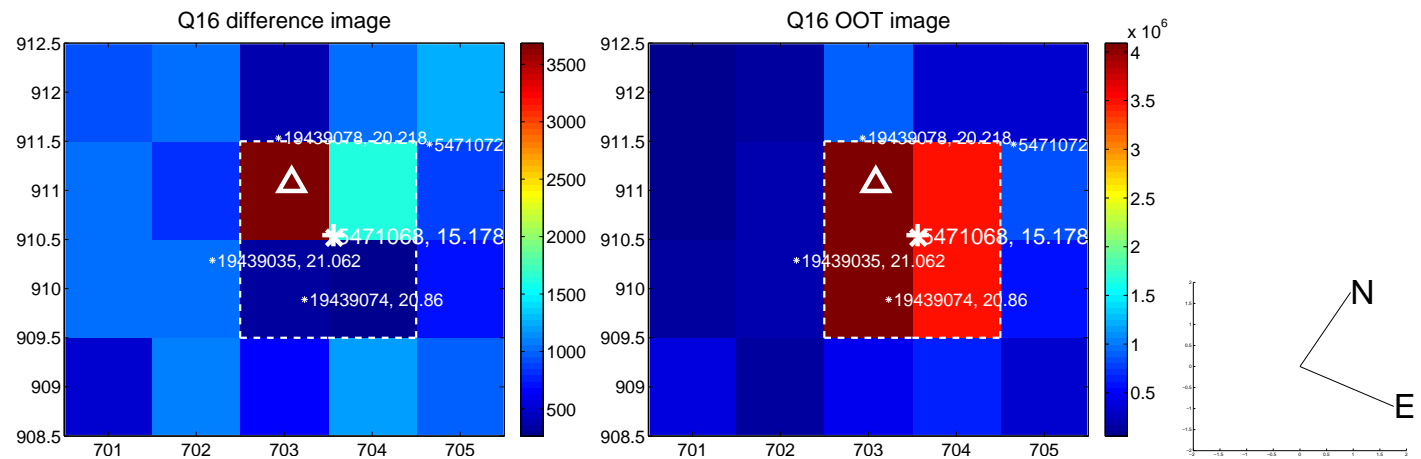
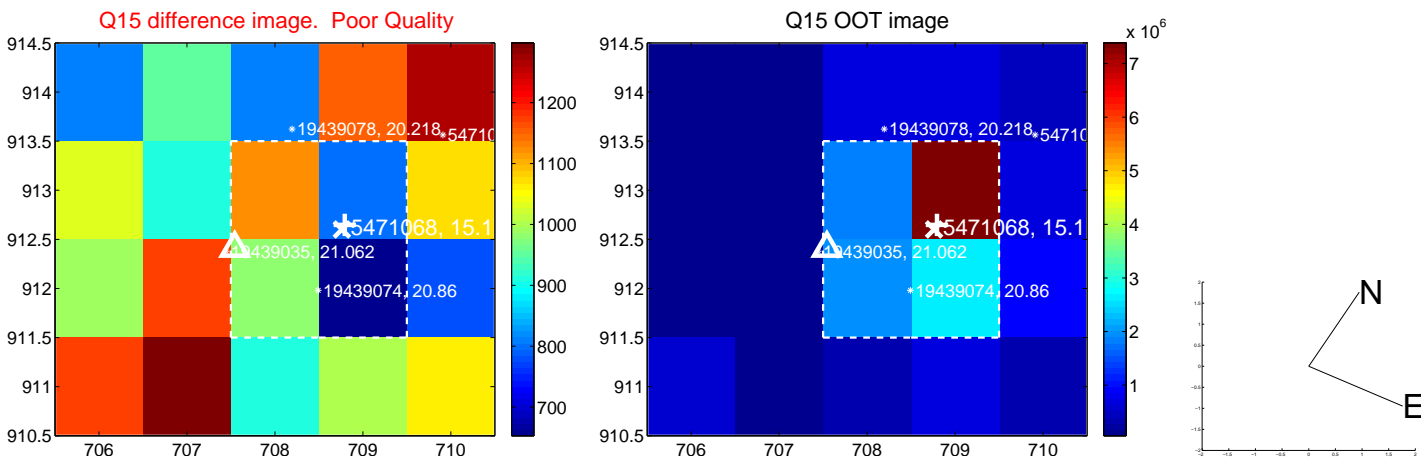
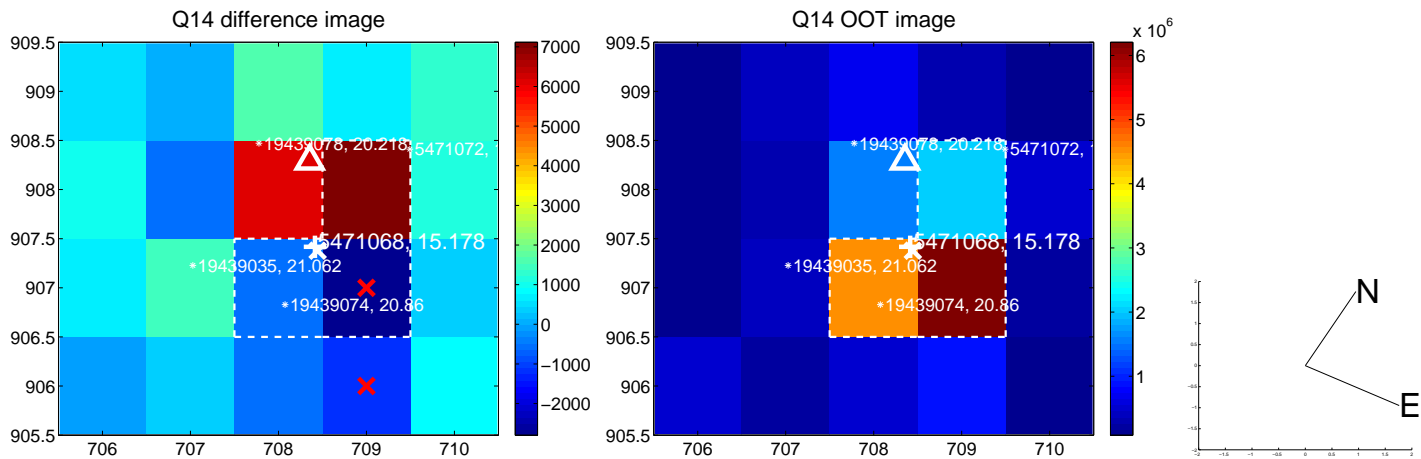
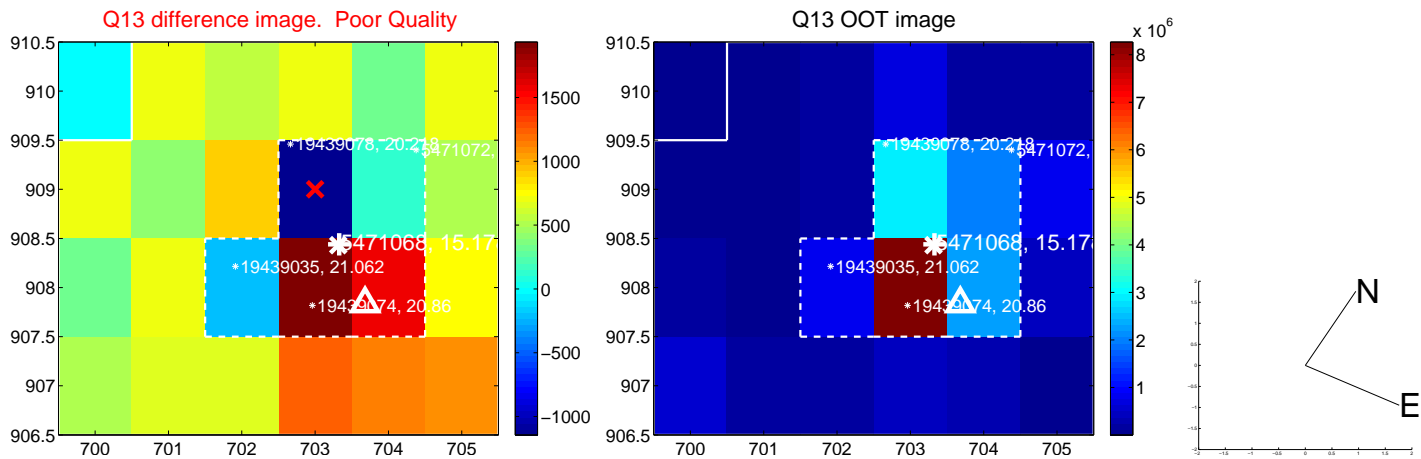
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



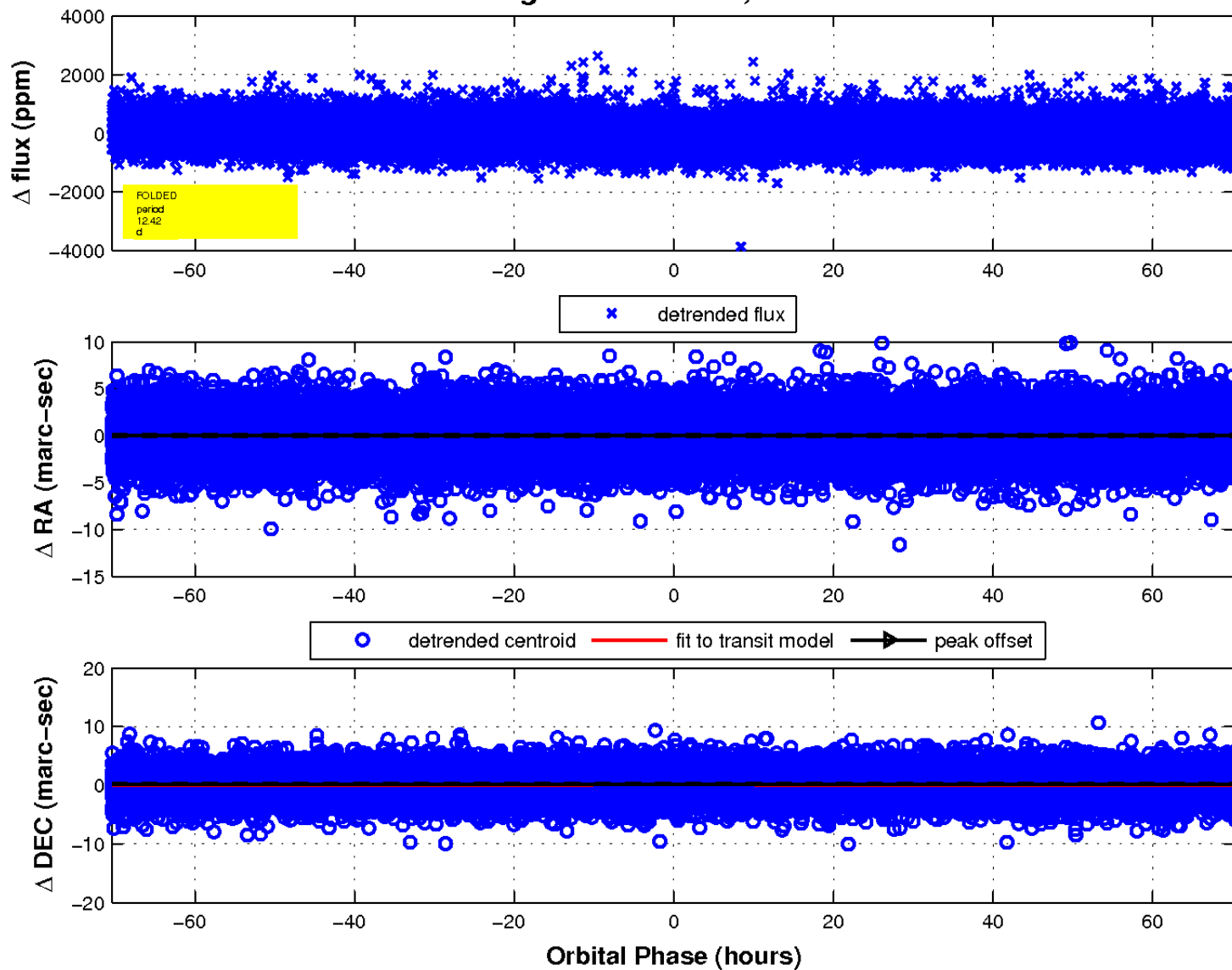
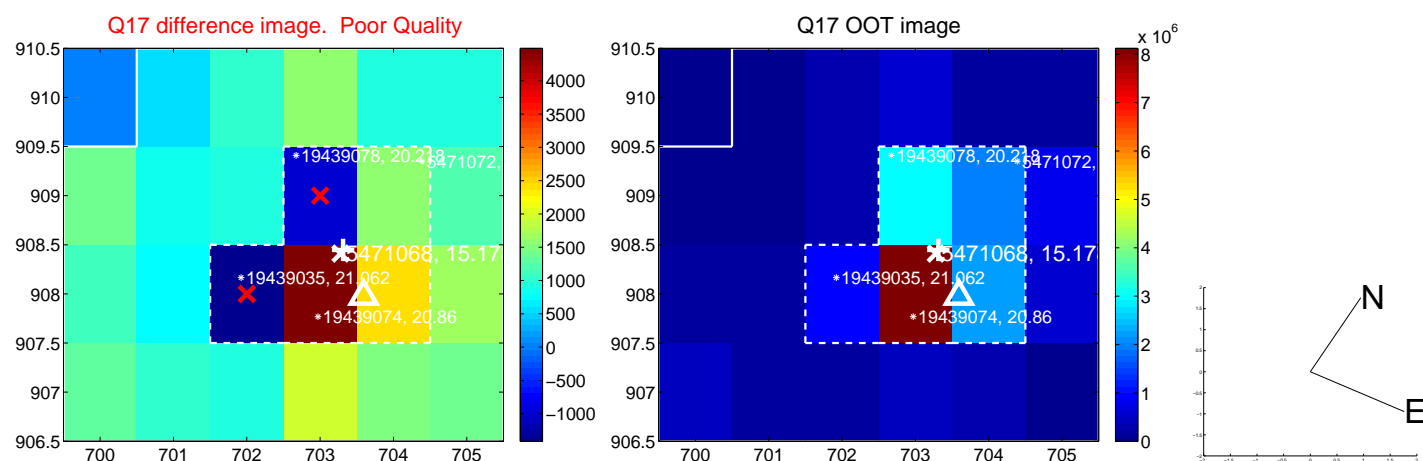
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

