

KIC 006225654

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})
006225654-01	OBS	No	11.070610	136.983540	59.2	30.189	7.2	7.0	1.47	5864	1.24	250.45
006225654-02	OBS	No	11.068071	140.706143	172.4	55.487	8.1	15.6	1.47	5864	3.89	250.52

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006225654-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
006225654-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

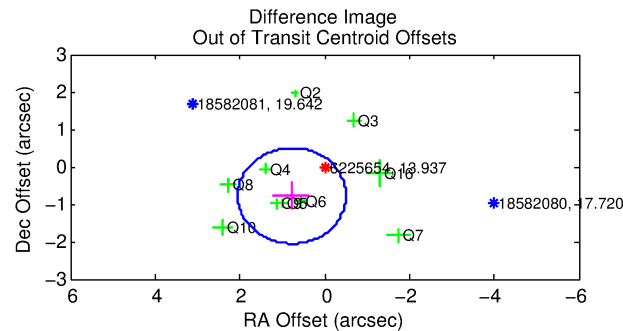
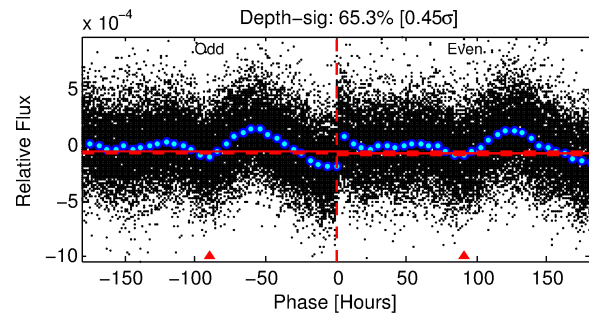
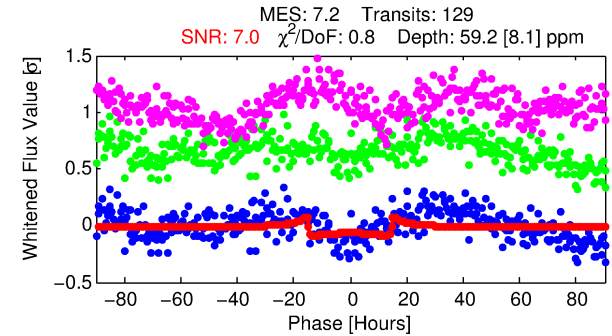
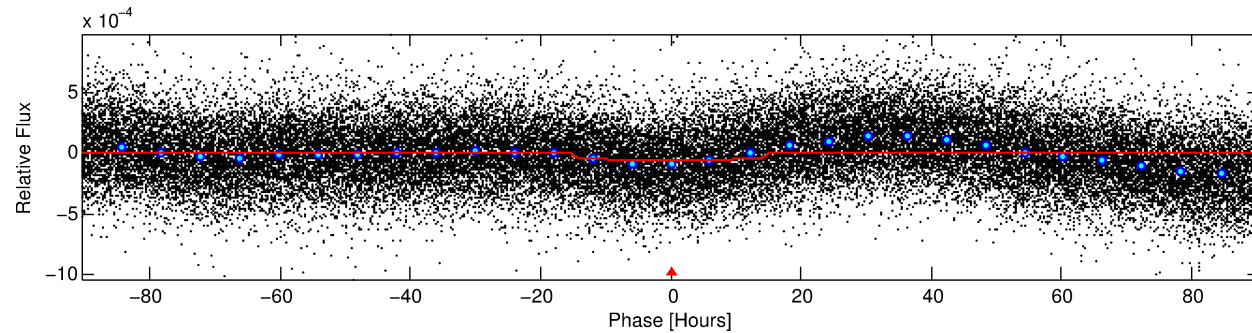
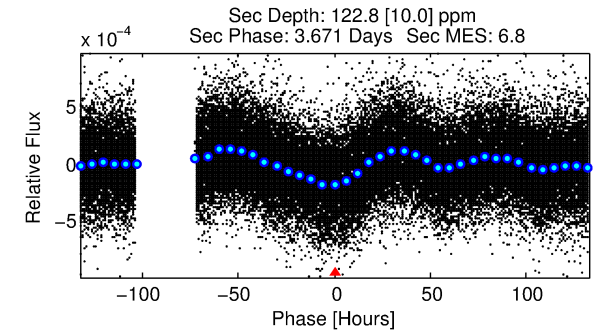
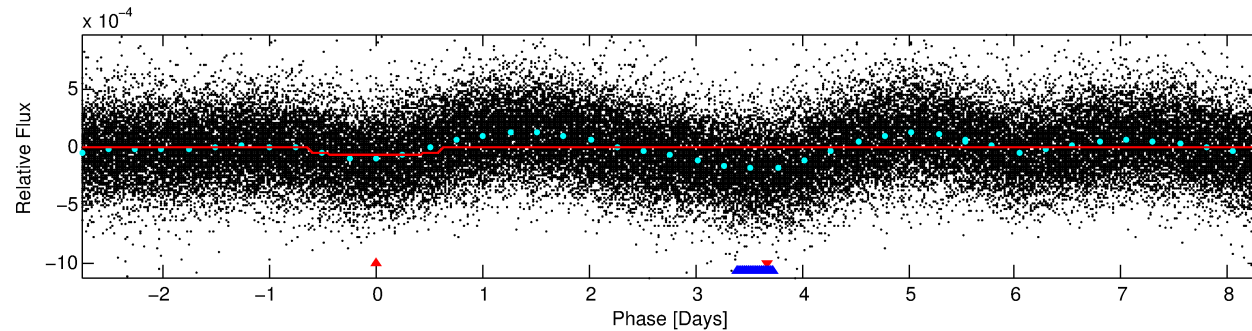
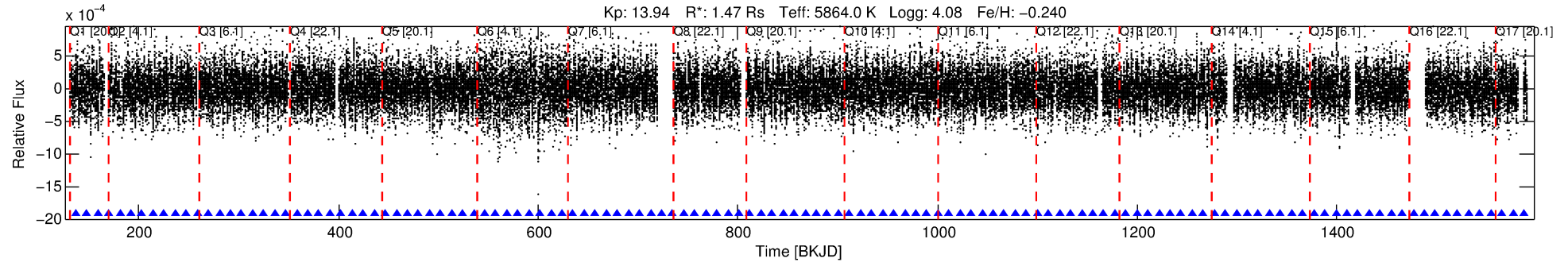
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006225654-01

No Significant Match Found

DV One-Page Summary

KIC: 6225654 Candidate: 1 of 2 Period: 11.071 d



DV Fit Results:

Period = 11.07061 [0.00027] d
Epoch = 136.9835 [0.0194] BKJD
Rp/R* = 0.0077 [0.0011]
a/R* = 2.01 [0.85]
b = 0.77 [0.30]
Seff = 250.45 [165.53]
Teq = 1014 [168] K
Rp = 1.24 [0.50] Re
a = 0.0957 [0.0375] AU
Ag = 403.70 [287.18] [1.40σ]
Teffp = 7030 [551] K [10.44σ]

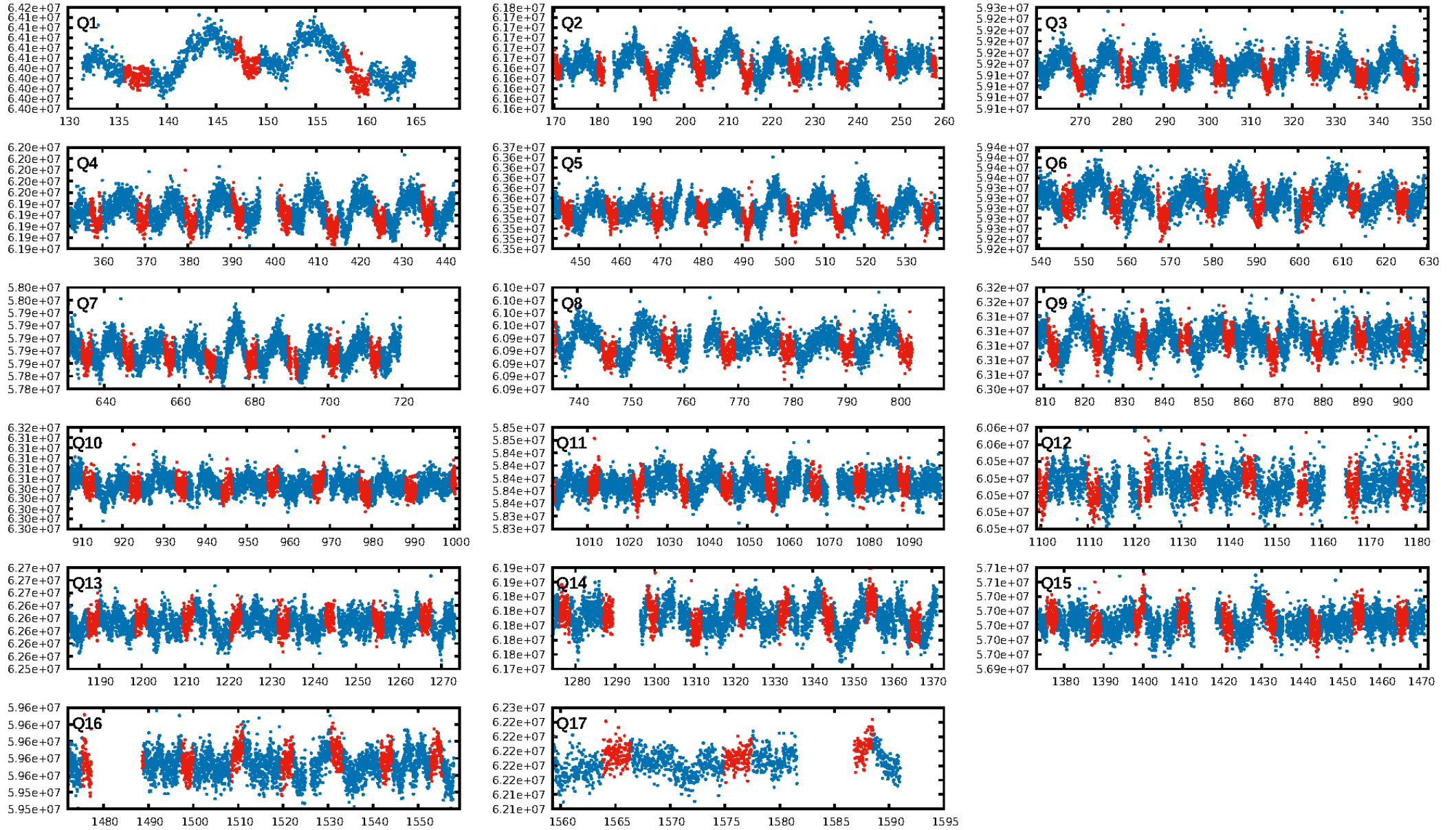
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.87e-12
RollingBand-fgt: 1.00 [123/123]
GhostDiagnostic-chr: 3.64
Centroid-sig: 0.0%
Centroid-so: 0.930 arcsec [1.37σ]
OotOffset-rm: 1.099 arcsec [2.58σ]
KicOffset-rm: 1.271 arcsec [3.24σ]
OotOffset-st: 3/2/3/2 [10]
KicOffset-st: 3/2/3/2 [10]
DiffImageQuality-fgm: 0.90 [9/10]
DiffImageOverlap-fno: 1.00 [17/17]

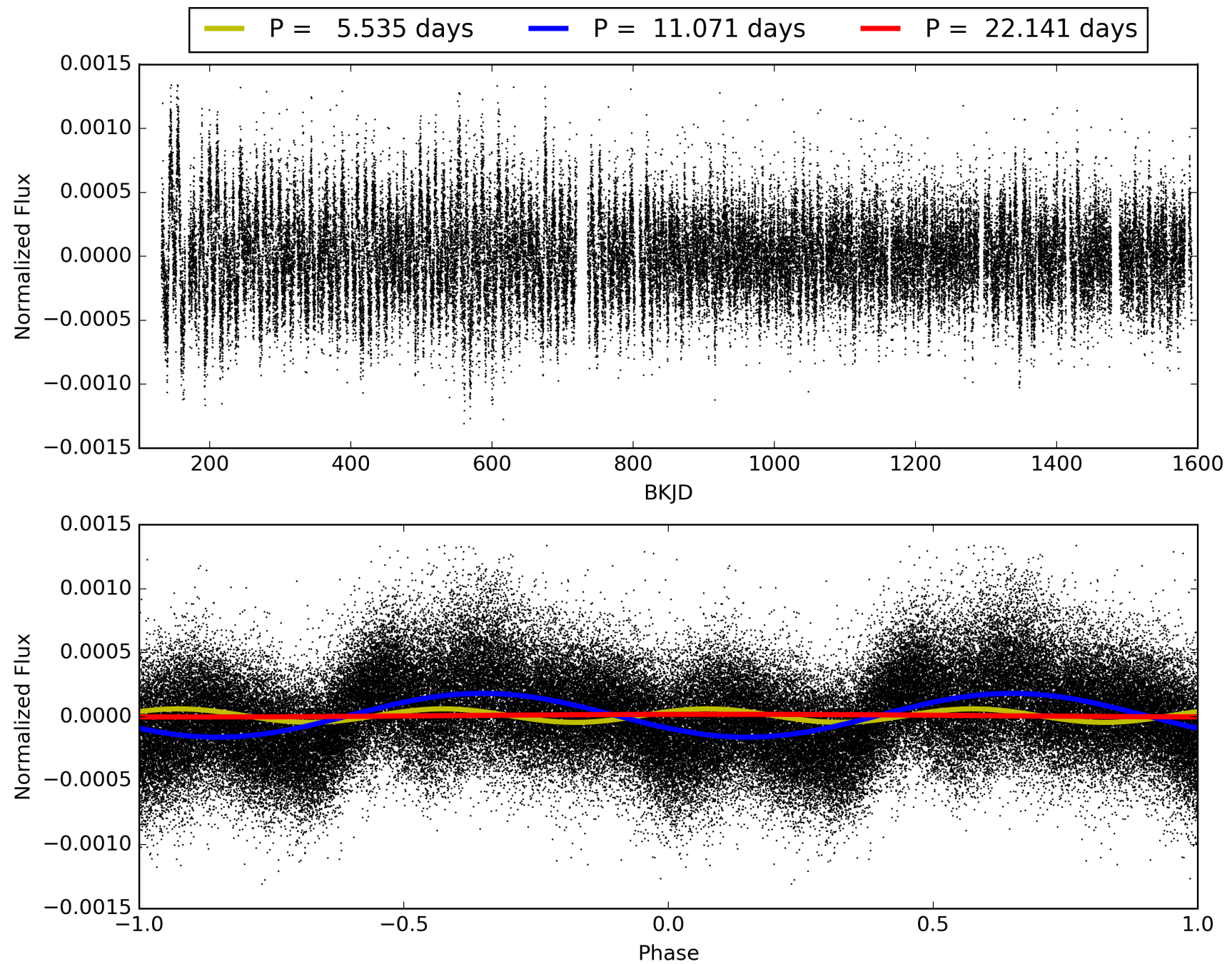
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:17:07 Z

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

TCE 006225654-01, PDC Light Curves

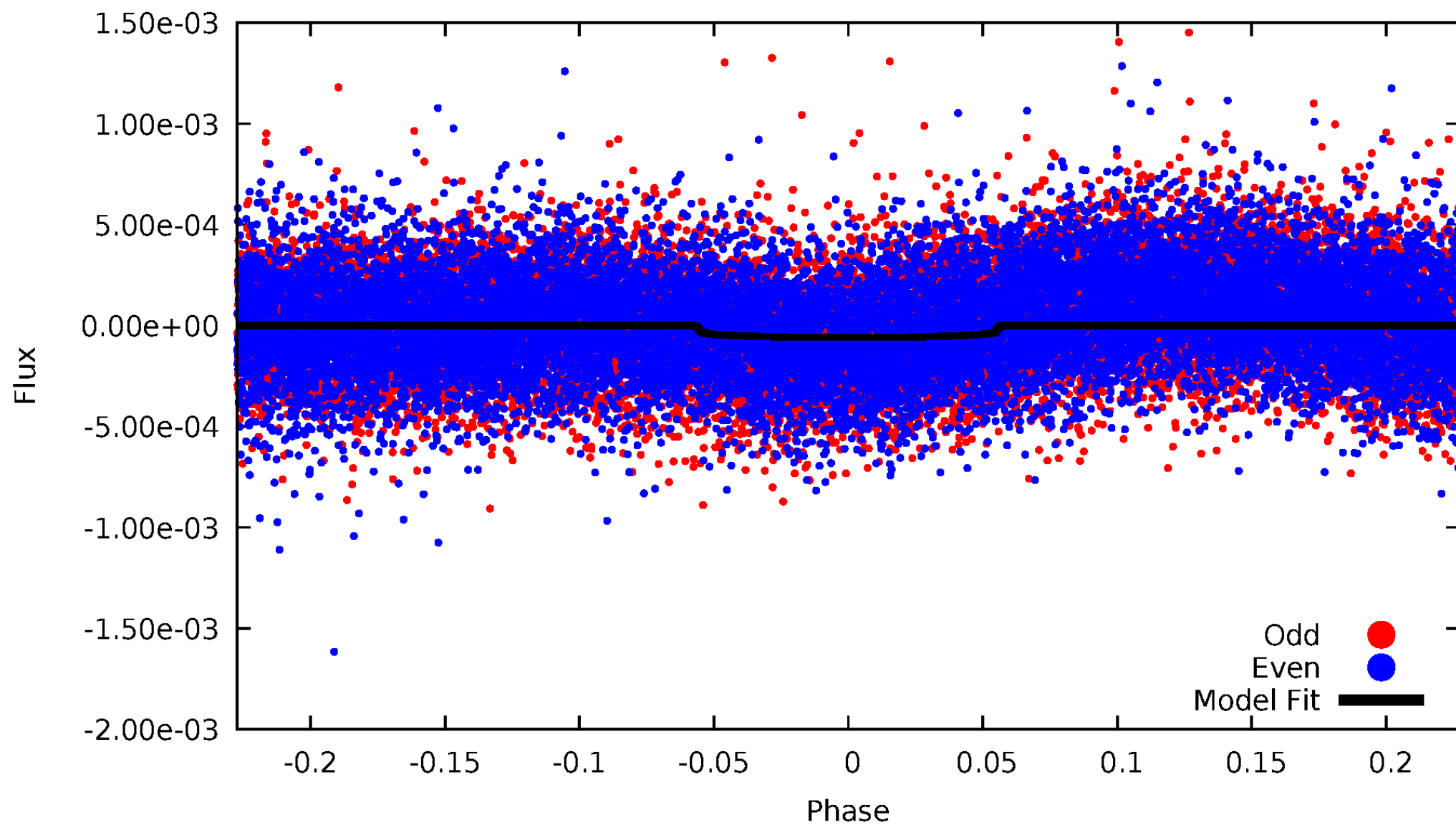


TCE 006225654-01



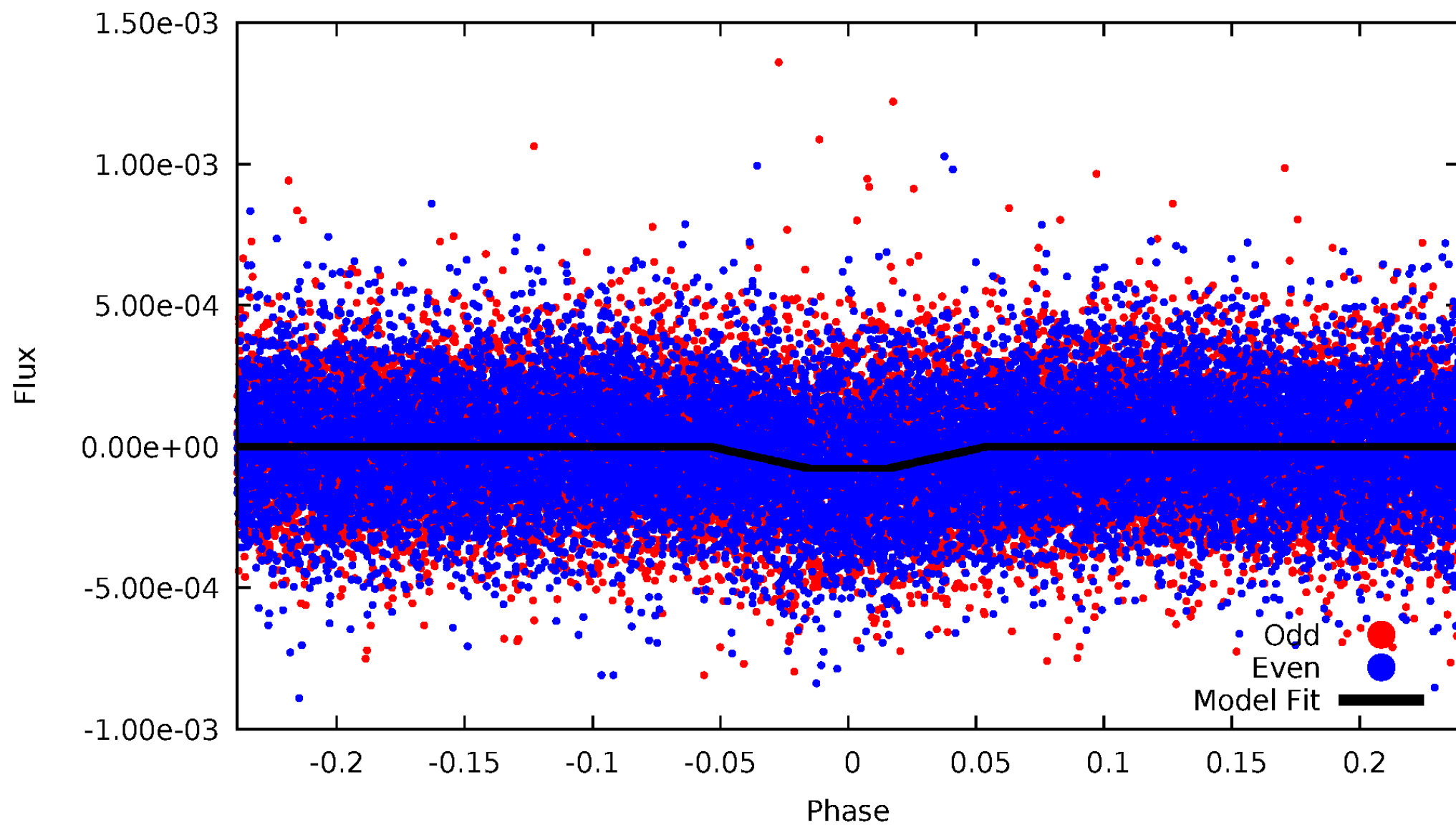
DV Odd/Even

TCE 006225654-01

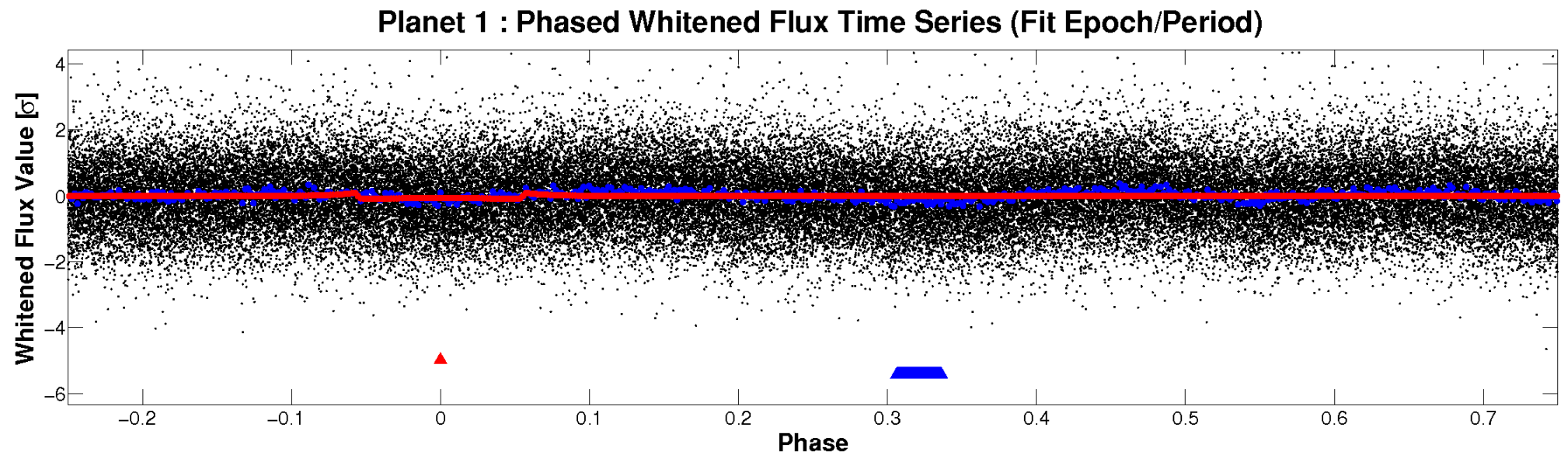
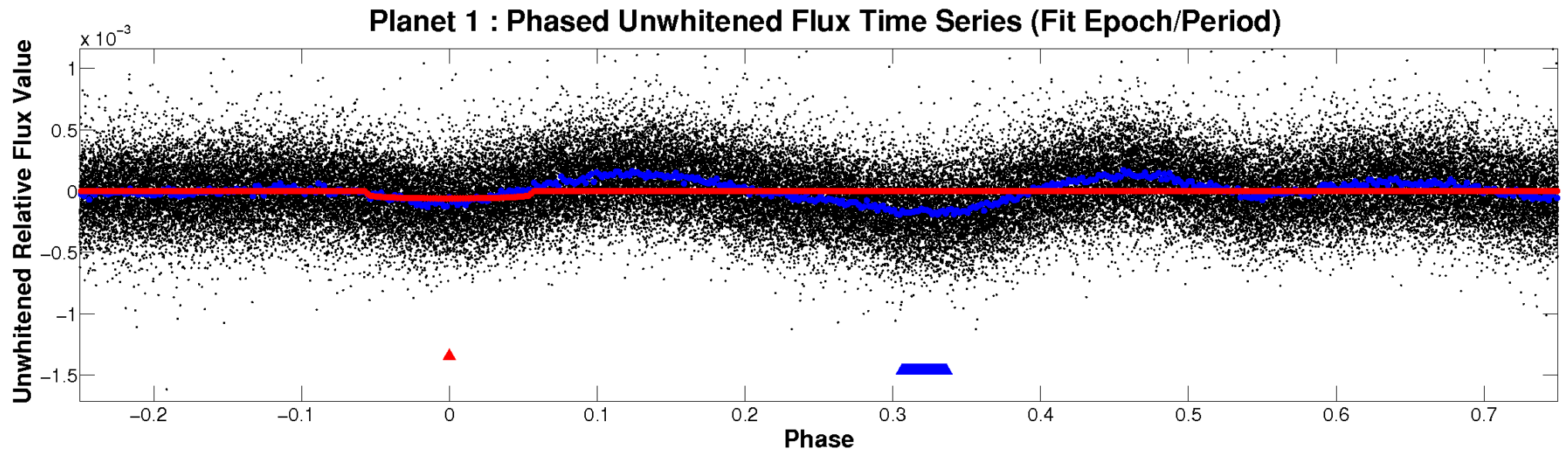


ALT Odd/Even

TCE 006225654-01

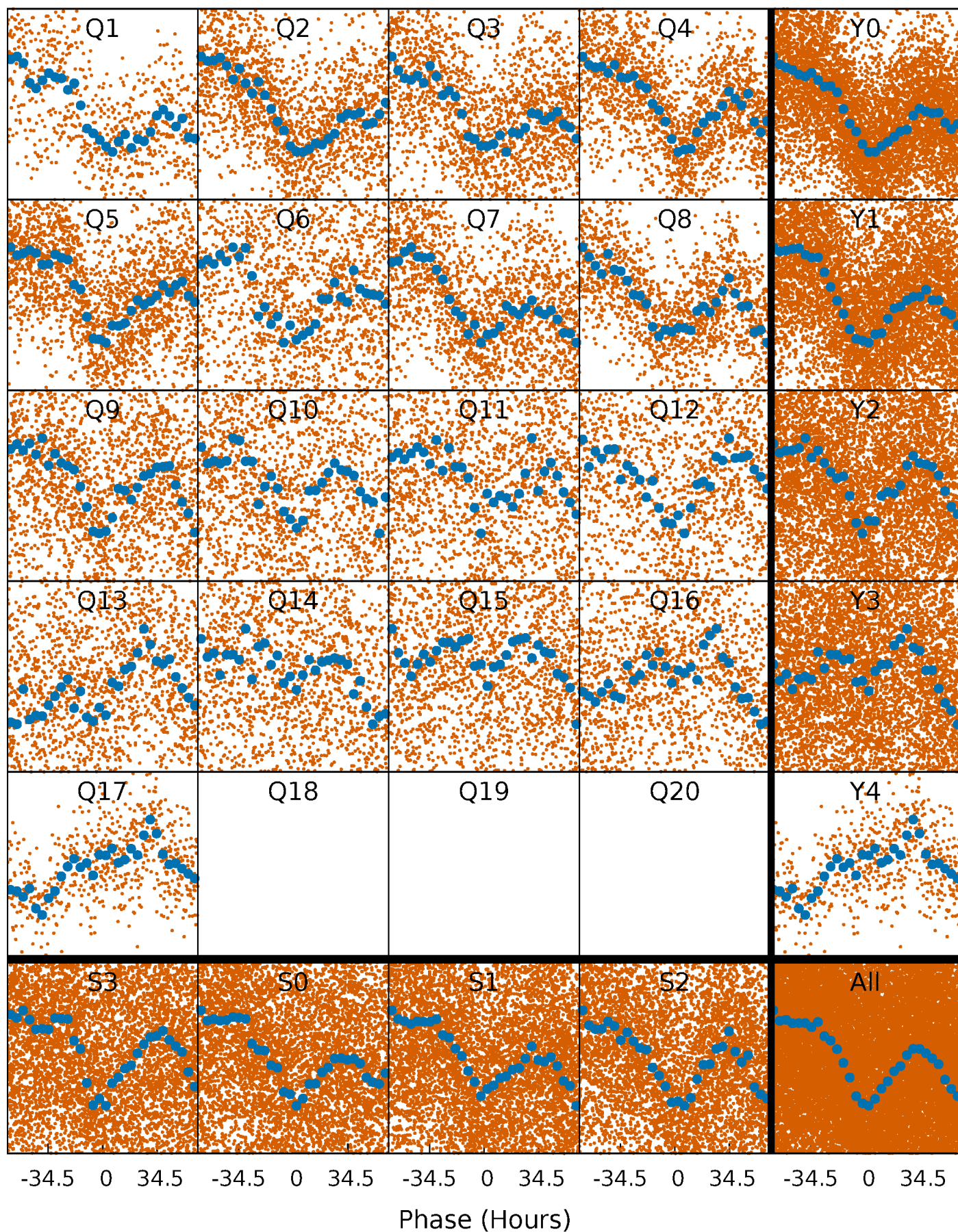


Non-Whitened Vs. Whitened Light Curve



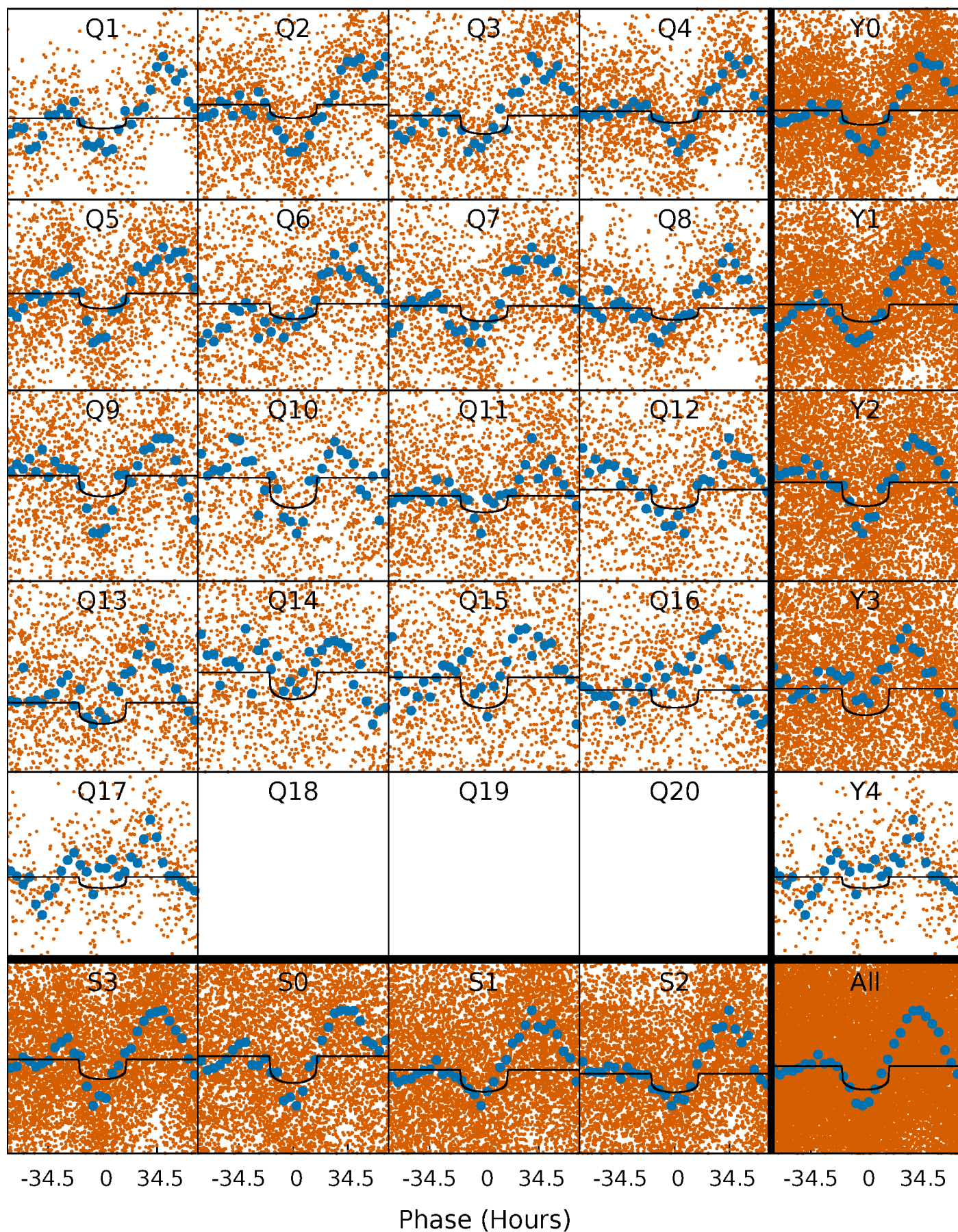
PDC Quarter-Phased Transit Curves

TCE 006225654-01 P= 11.070610 Days $T_0=136.983540$ (BKJD)



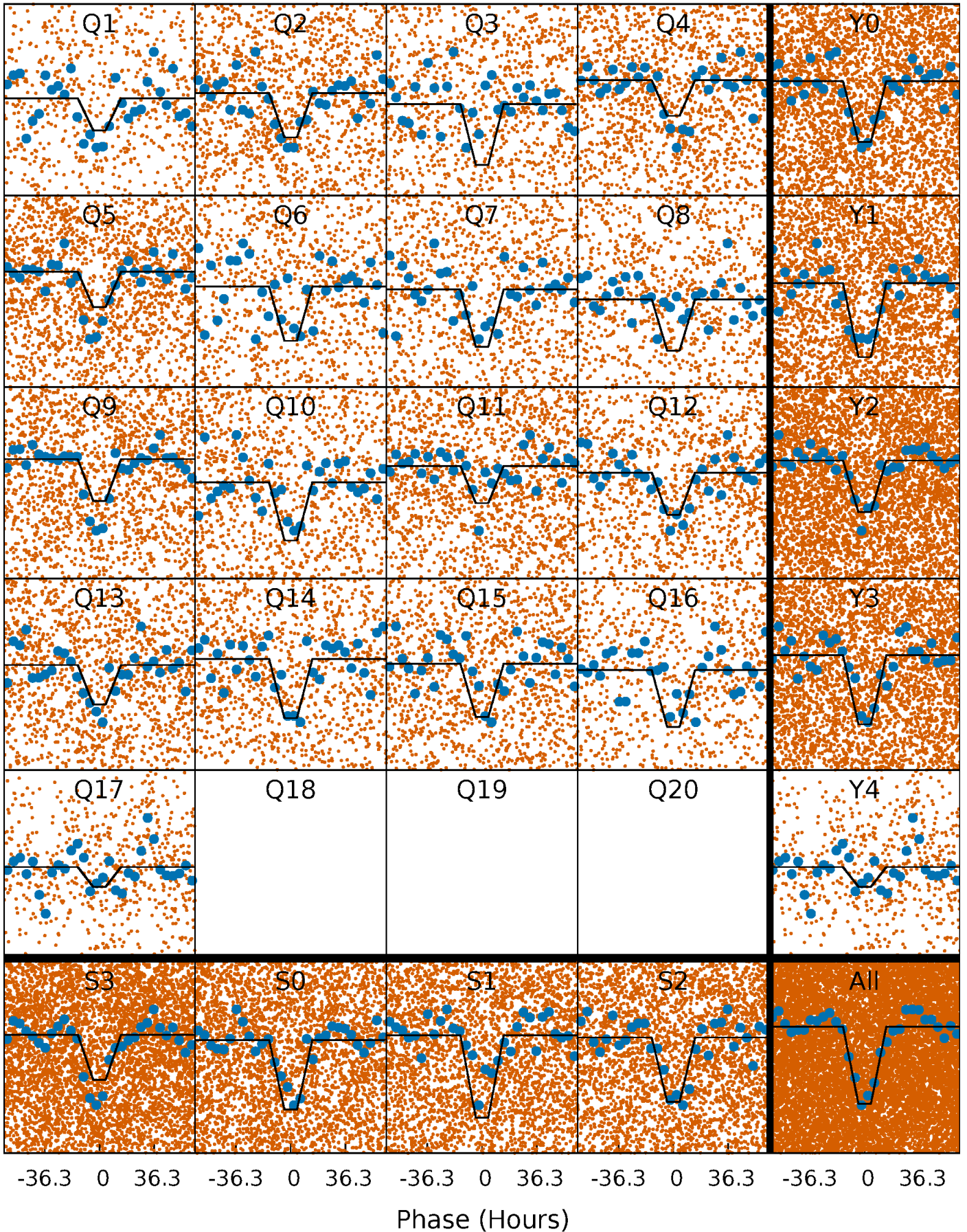
DV Quarter-Phased Transit Curves

TCE 006225654-01 P= 11.070610 Days $T_0=136.983540$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

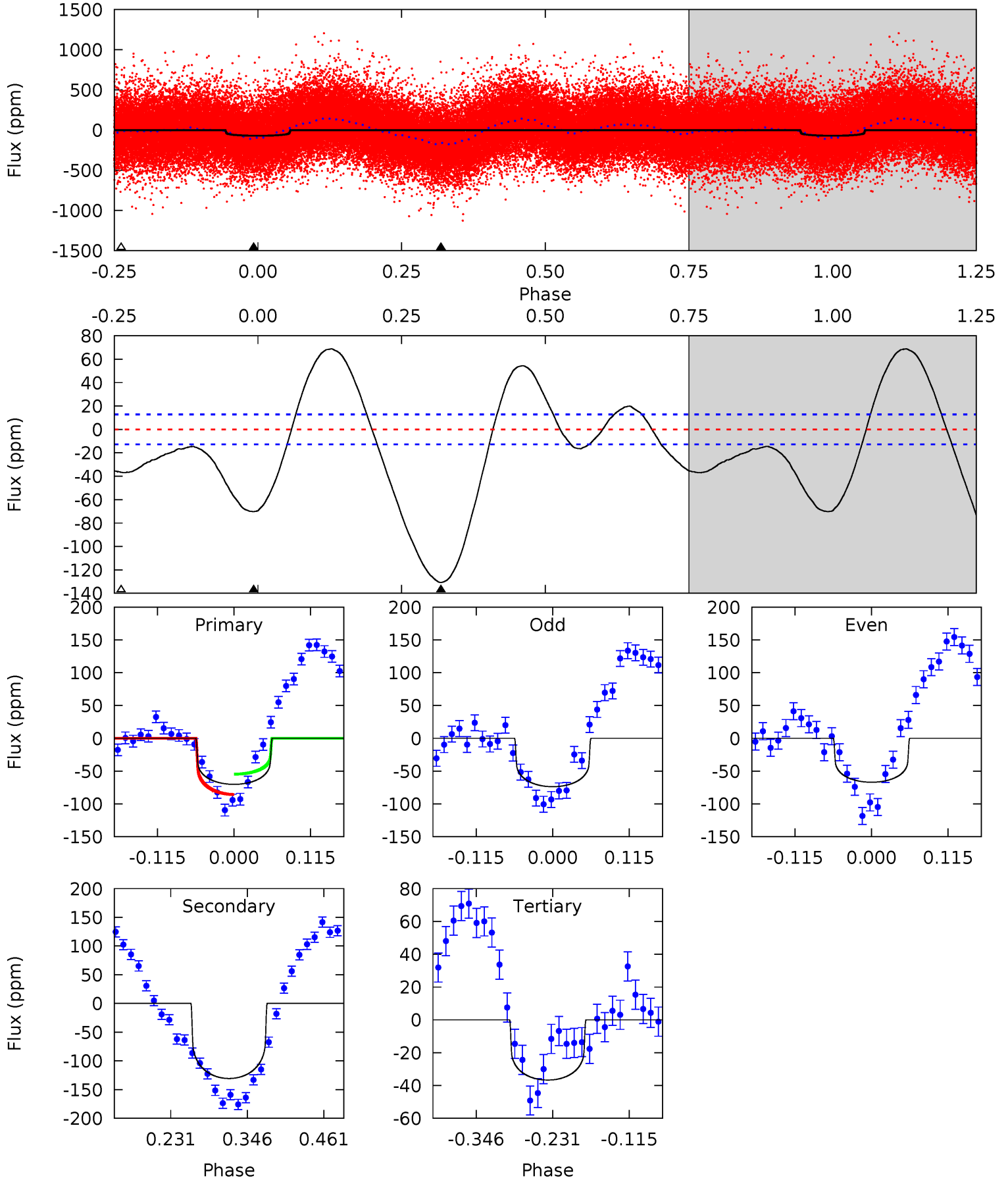
TCE 006225654-01 P= 11.069359 Days $T_0=137.059046$ (BKJD)



DV Model-Shift Uniqueness Test

006225654-01, P = 11.070610 Days, E = 125.912930 Days

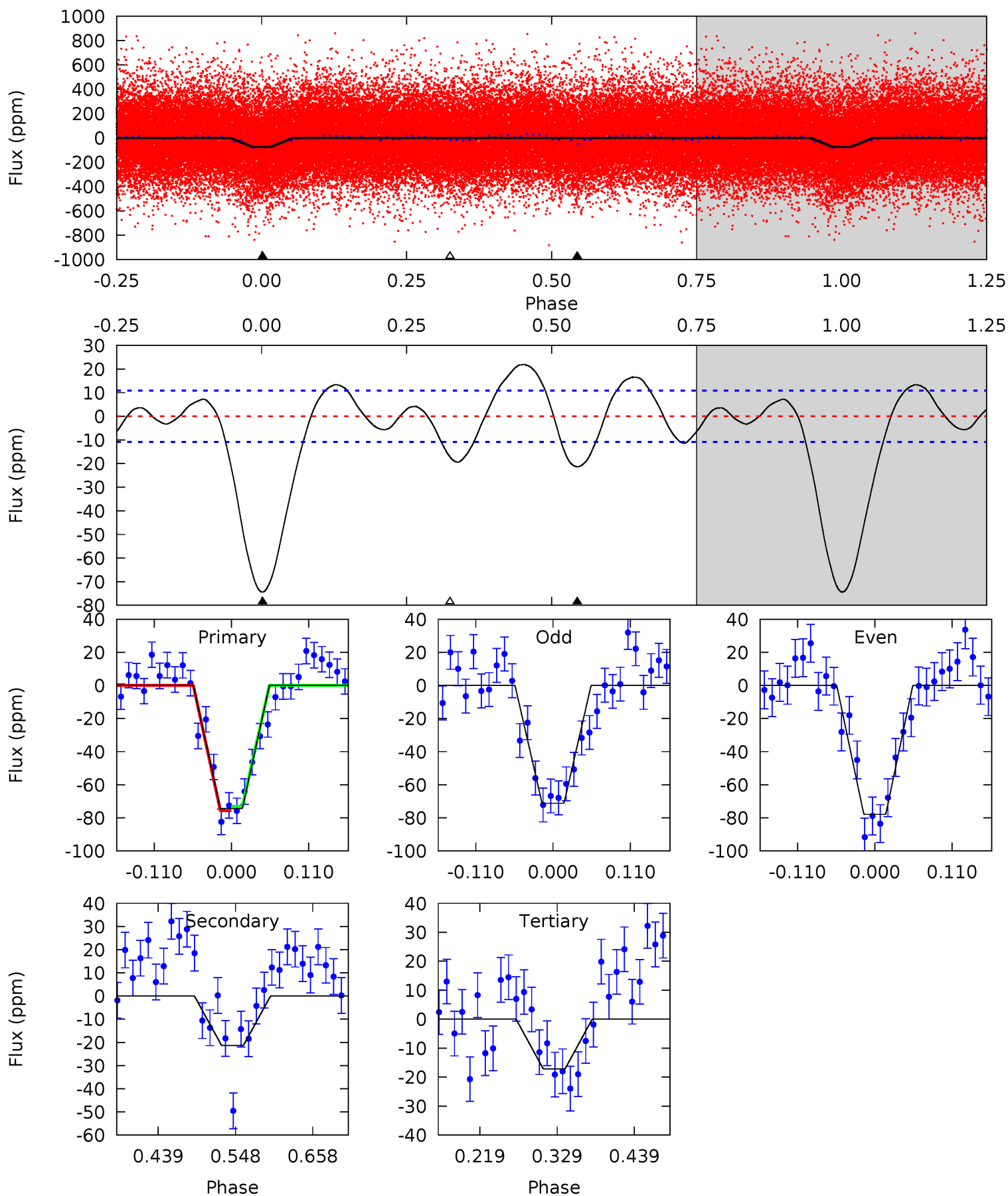
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.9	46.4	13.0	0	4.53	1.57	11.4	11.9	24.9	33.4	46.4	1.20	0.84	0.35	5.46



Alt Model-Shift Uniqueness Test

006225654-01, P = 11.069359 Days, E = 125.989687 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.1	8.91	7.16	0	4.55	1.60	3.63	23.9	31.1	1.76	8.91	1.40	0.81	0.23	0.58



Stellar Parameters For KIC 006225654

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5864^{+177}_{-159}	$4.082^{+0.390}_{-0.156}$	$-0.240^{+0.300}_{-0.300}$	$1.472^{+0.372}_{-0.558}$	$0.956^{+0.130}_{-0.117}$	$0.422^{+1.098}_{-0.175}$
	+3%/-3%	+10%/-4%	+125%/-125%	+25%/-38%	+14%/-12%	+260%/-41%
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 006225654-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-131 ± 3	$1.21^{+0.28}_{-0.28}$	1400^{+107}_{-141}	7185^{+719}_{-531}	455^{+319}_{-148}
Alt.	-21 ± 2	$1.35^{+0.28}_{-0.32}$	1388^{+104}_{-165}	4432^{+286}_{-237}	60^{+42}_{-20}

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 $A_{obs} \gg 1.0$

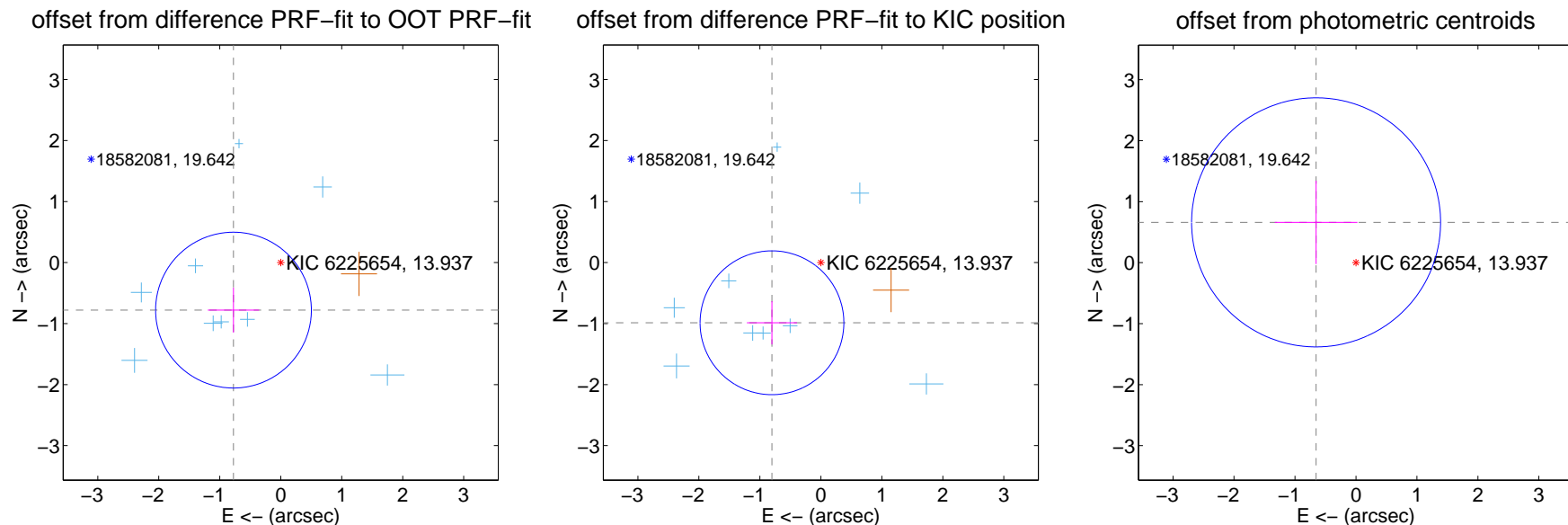
DV Centroid Data

Supplemental centroid analysis for 006225654-01. Kepler magnitude: 13.94. Transit SNR 7.01

There are 9 quarters with good PRF difference image offsets

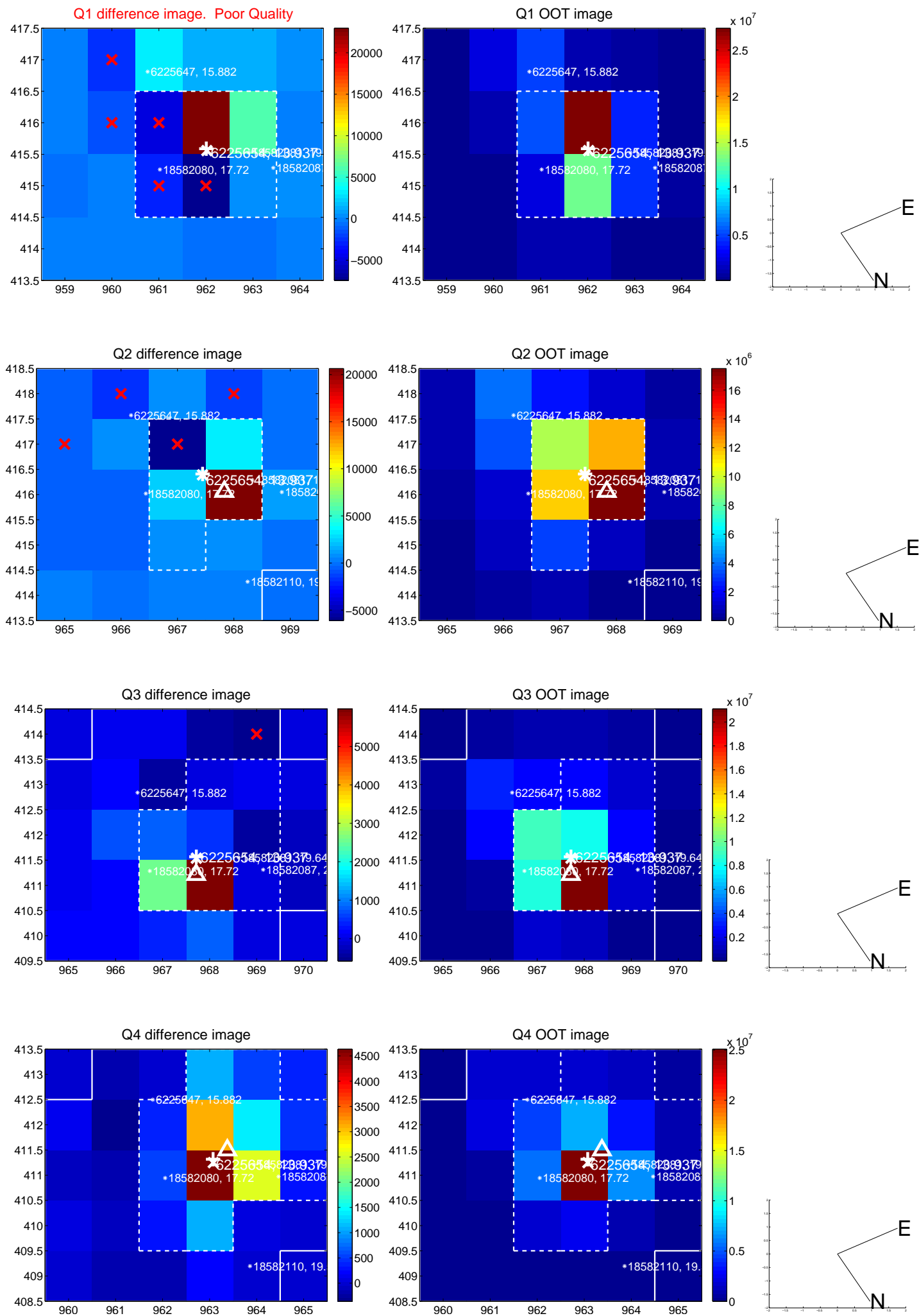
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.099 ± 0.426	2.58	0.775 ± 0.420	-0.779 ± 0.369
PRF-fit source offset from KIC position	1.271 ± 0.393	3.24	0.802 ± 0.410	-0.986 ± 0.354
photometric centroid source offset	0.93 ± 0.68	1.37	0.65 ± 0.68	0.66 ± 0.68

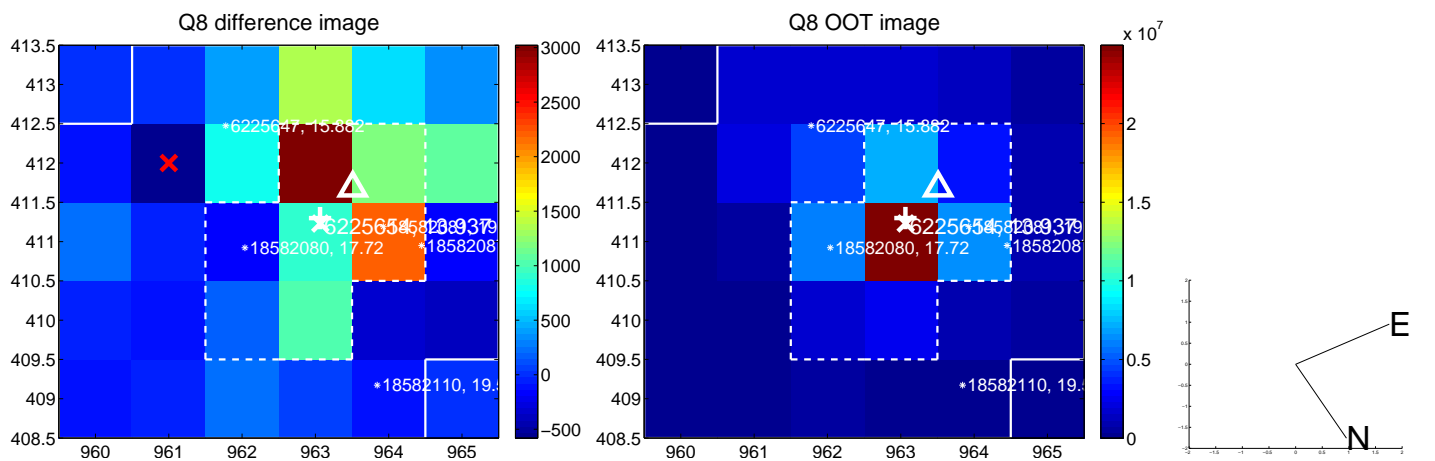
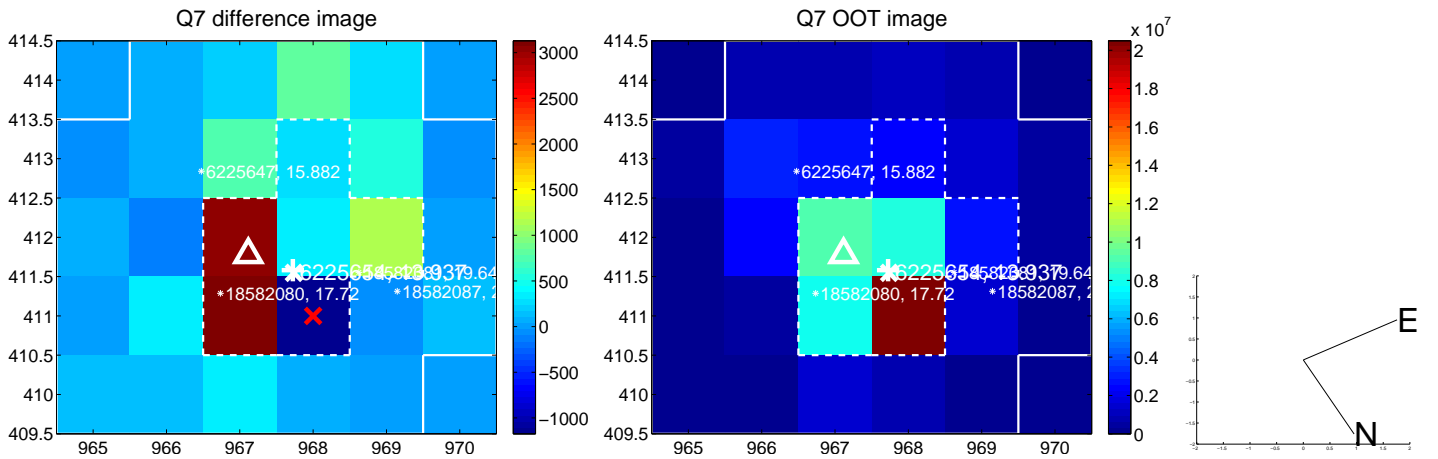
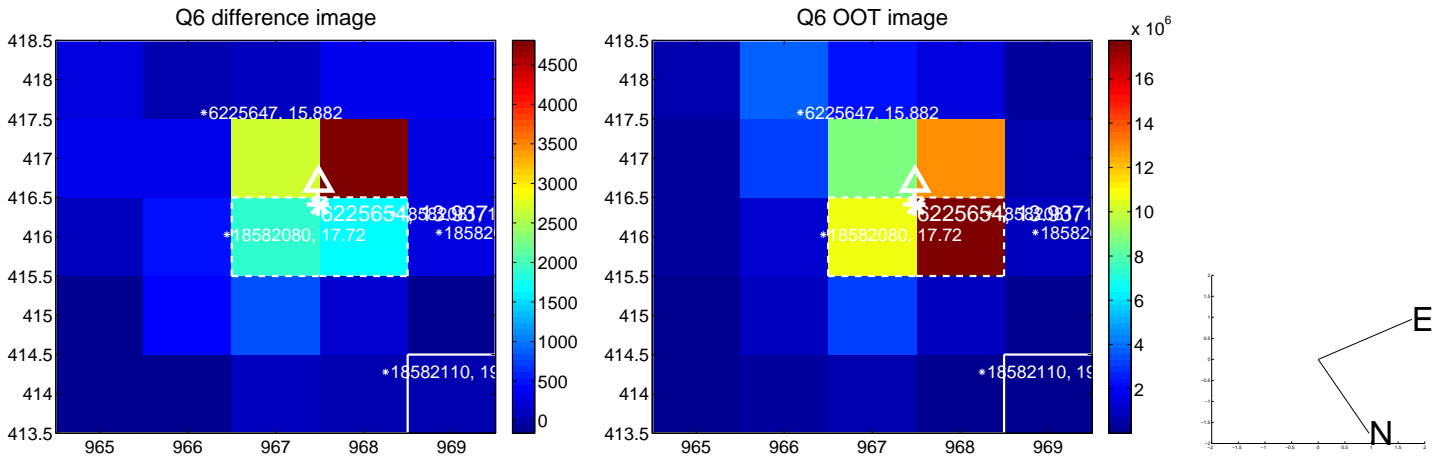
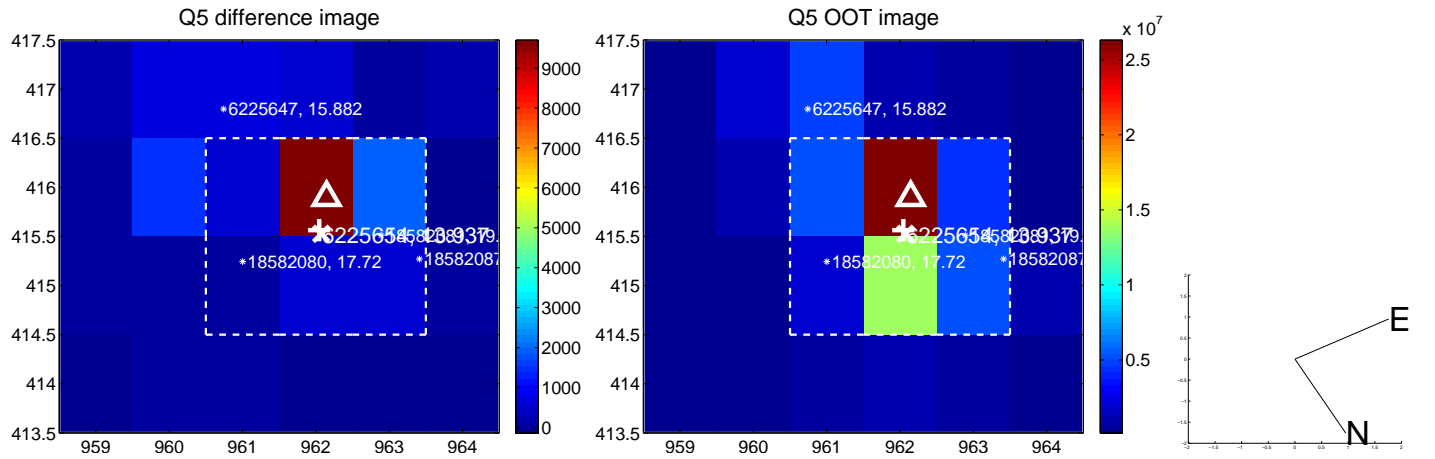


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

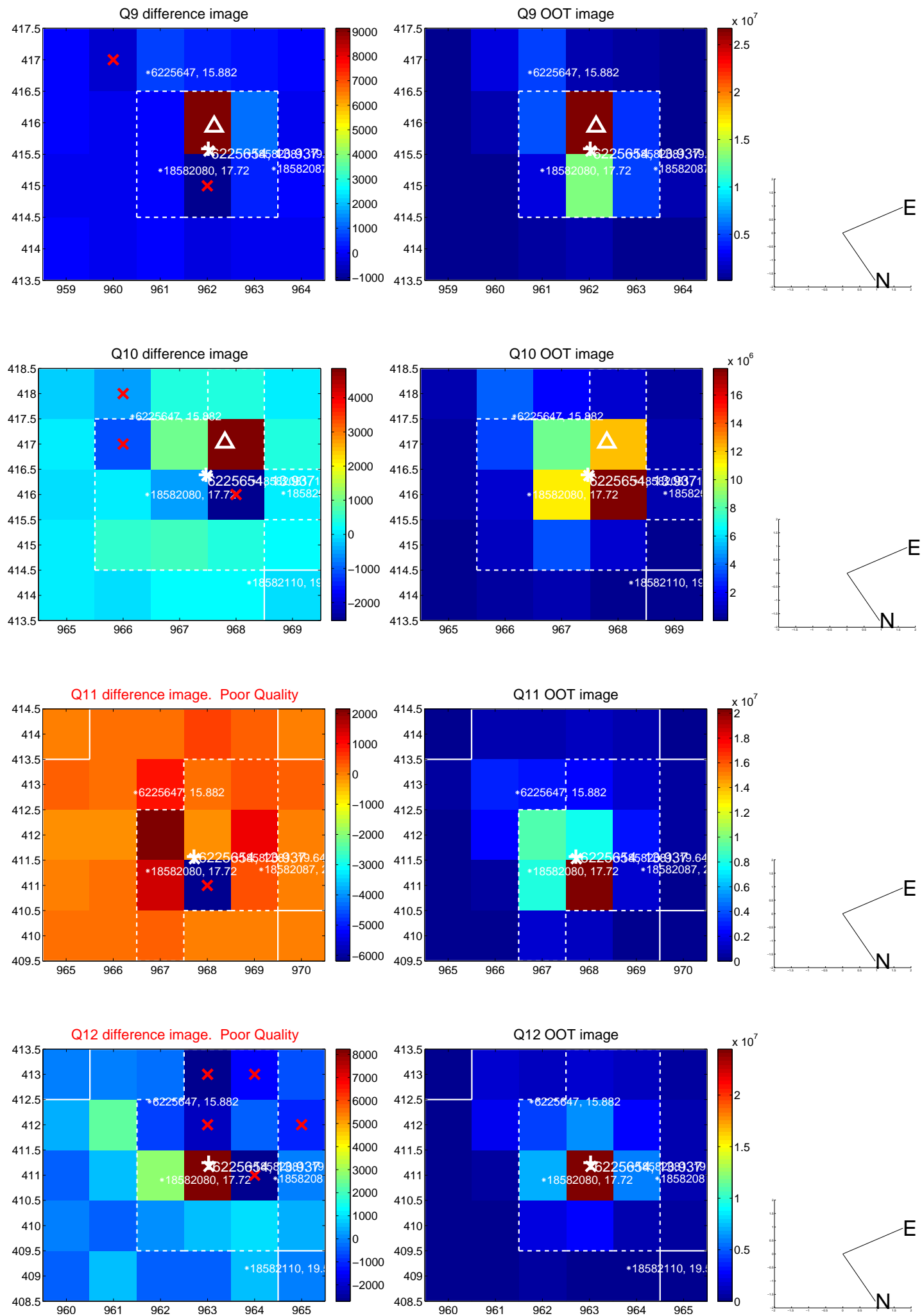
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



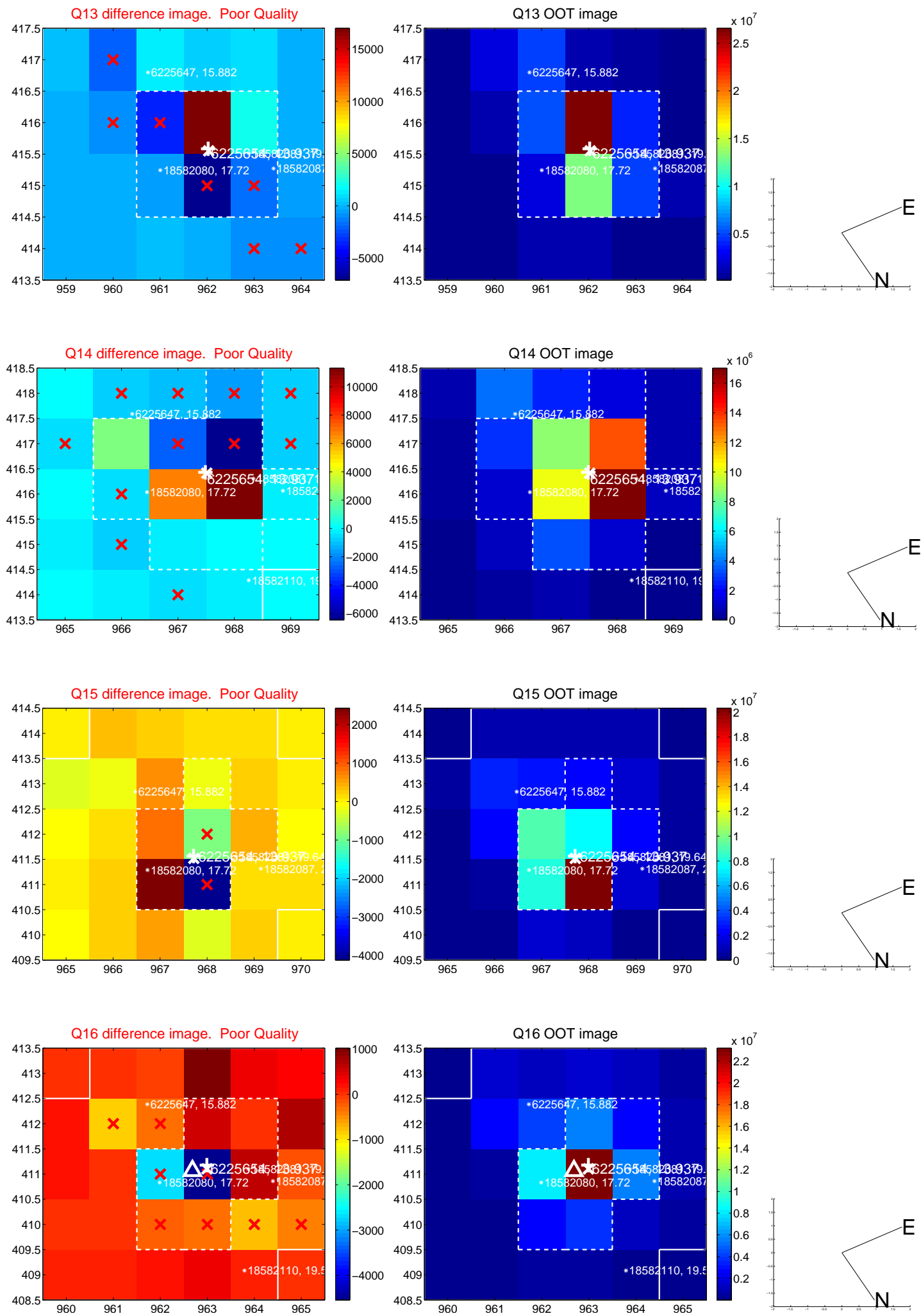
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



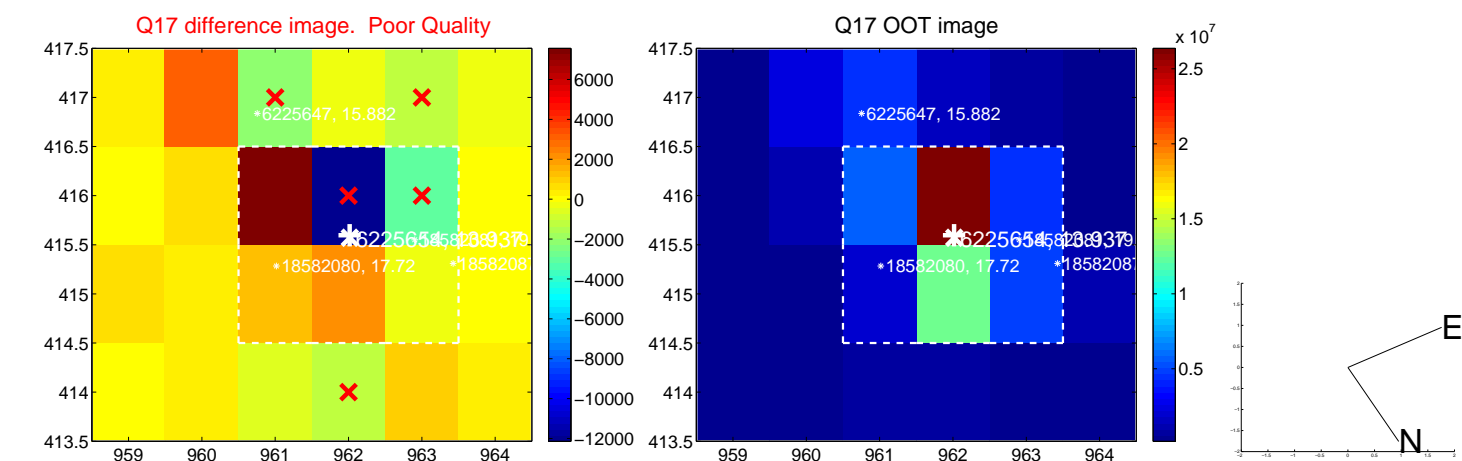
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



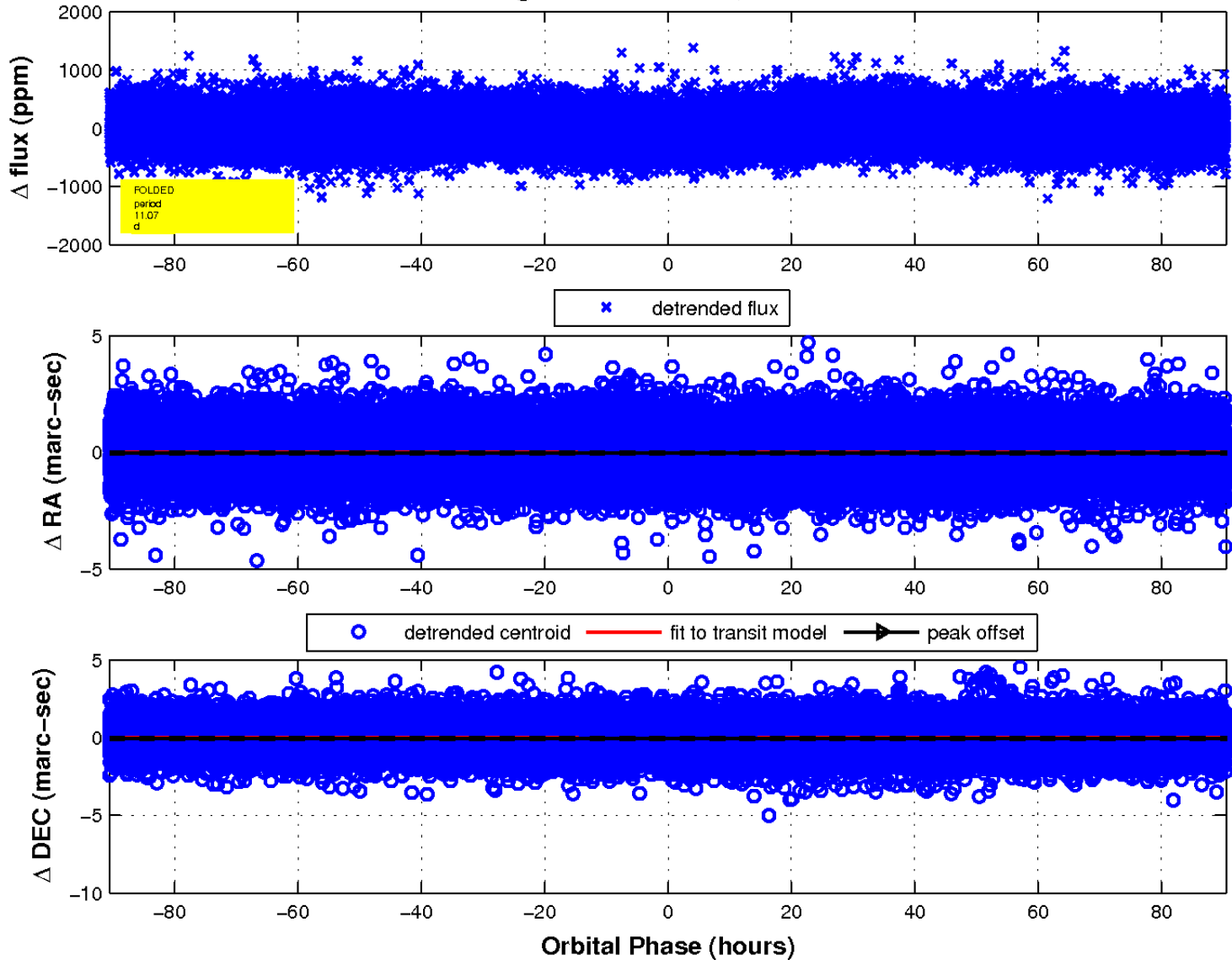
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

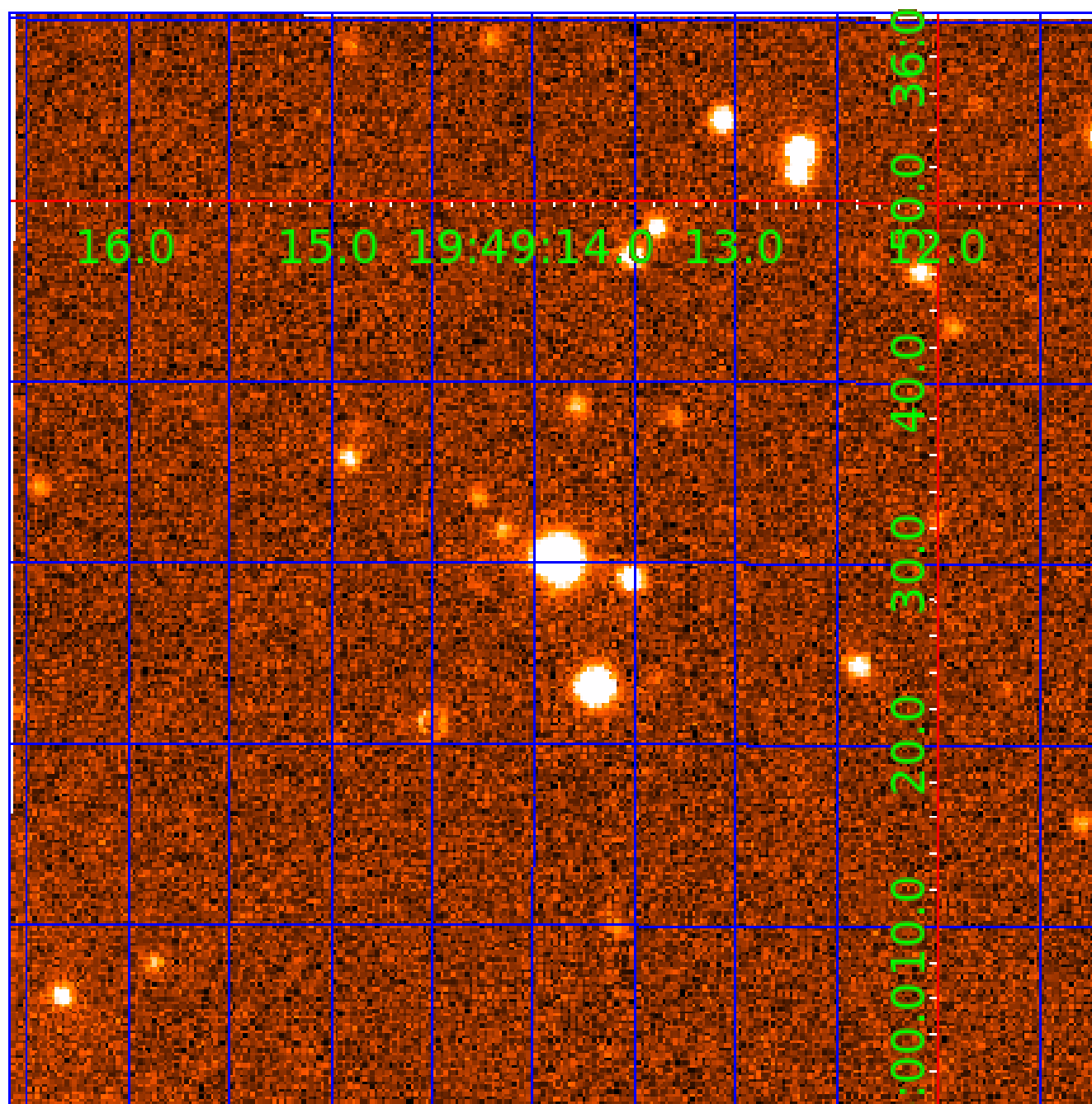


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 006225654

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})
006225654-01	OBS	No	11.070610	136.983540	59.2	30.189	7.2	7.0	1.47	5864	1.24	250.45
006225654-02	OBS	No	11.068071	140.706143	172.4	55.487	8.1	15.6	1.47	5864	3.89	250.52

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006225654-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
006225654-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

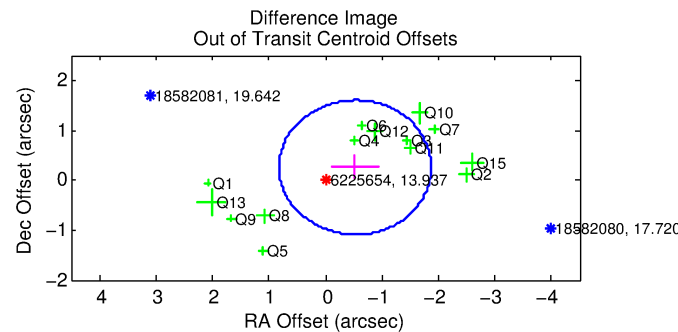
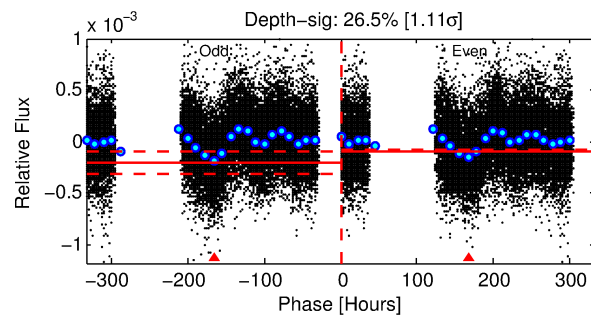
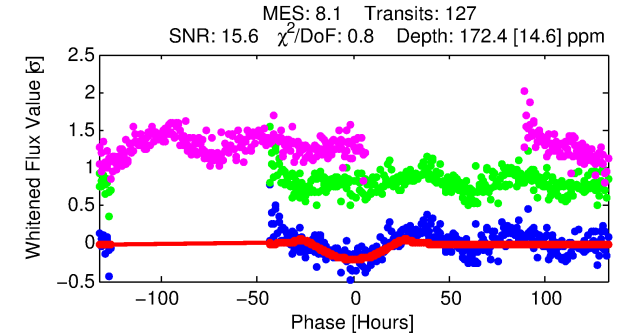
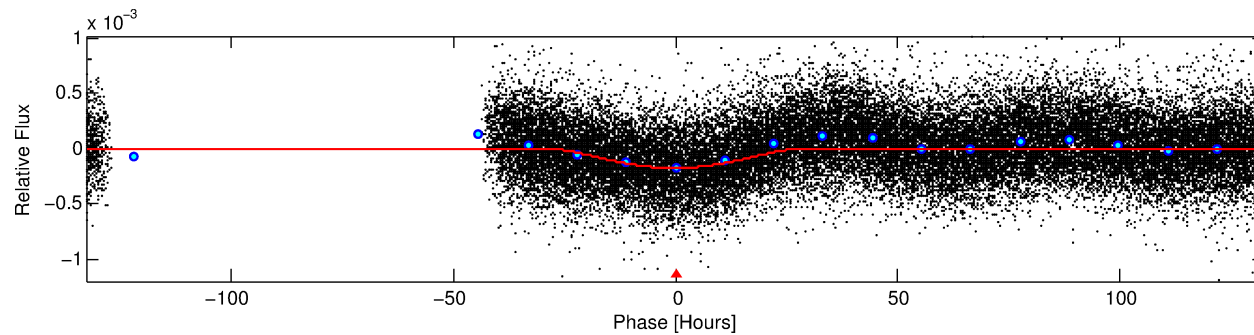
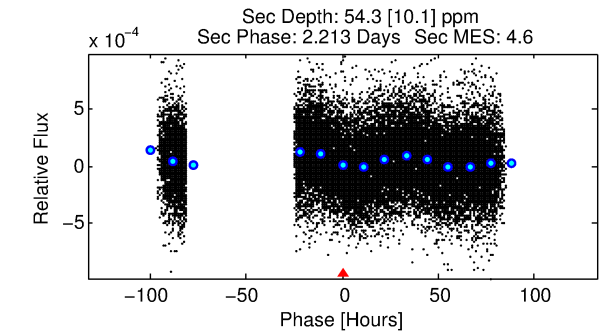
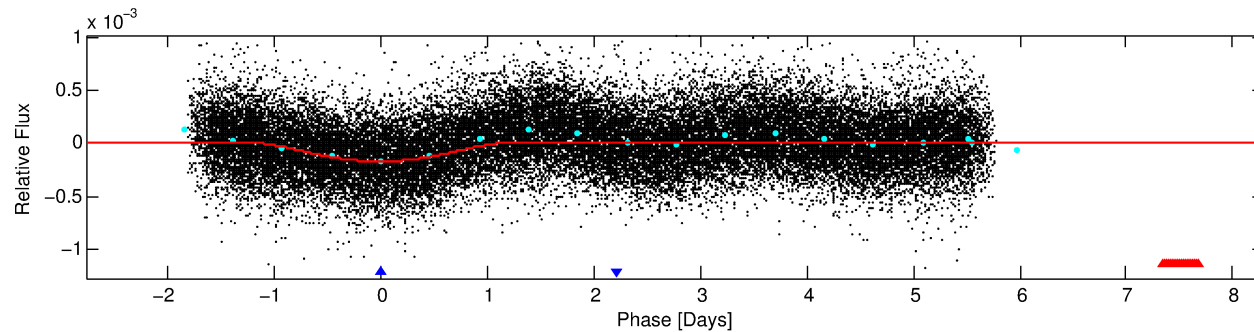
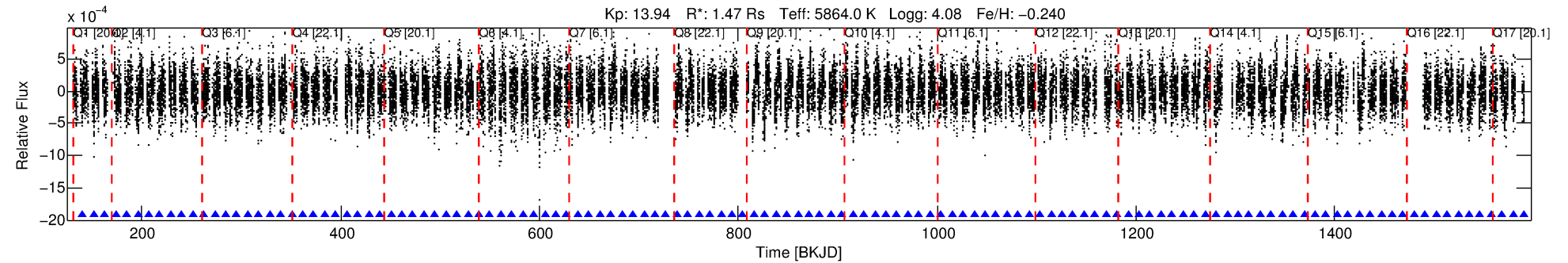
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006225654-02

No Significant Match Found

DV One-Page Summary

KIC: 6225654 Candidate: 2 of 2 Period: 11.068 d



DV Fit Results:

Period = 11.06807 [0.00087] d
Epoch = 140.7061 [0.0644] BKJD
Rp/R* = 0.0242 [0.0218]
a/R* = 1.06 [0.01]
b = 1.00 [0.03]
Seff = 250.52 [165.58]
Teff = 1014 [168] K
Rp = 3.89 [3.80] Re
a = 0.0957 [0.0375] AU
Ag = 18.12 [34.85] [0.49σ]
Teffp = 3236 [1468] K [1.50σ]

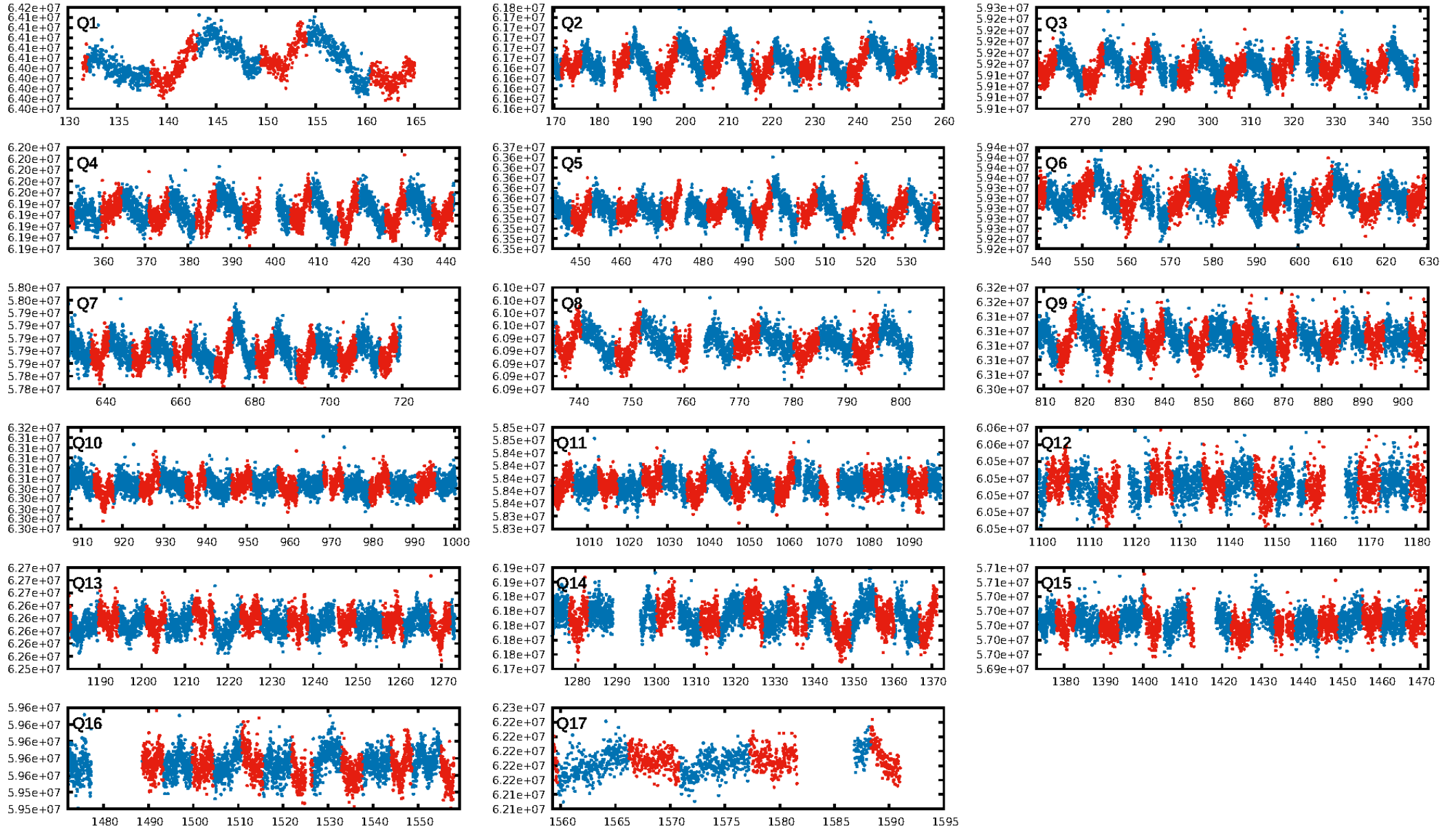
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.21e-14
RollingBand-fgt: 1.00 [121/121]
GhostDiagnostic-chr: 1.348
Centroid-sig: 0.6%
Centroid-so: 0.292 arcsec [1.18σ]
OotOffset-rm: 0.584 arcsec [1.30σ]
KicOffset-rm: 0.481 arcsec [1.03σ]
OotOffset-st: 3/4/3/4 [14]
KicOffset-st: 3/4/3/4 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.00 [0/16]

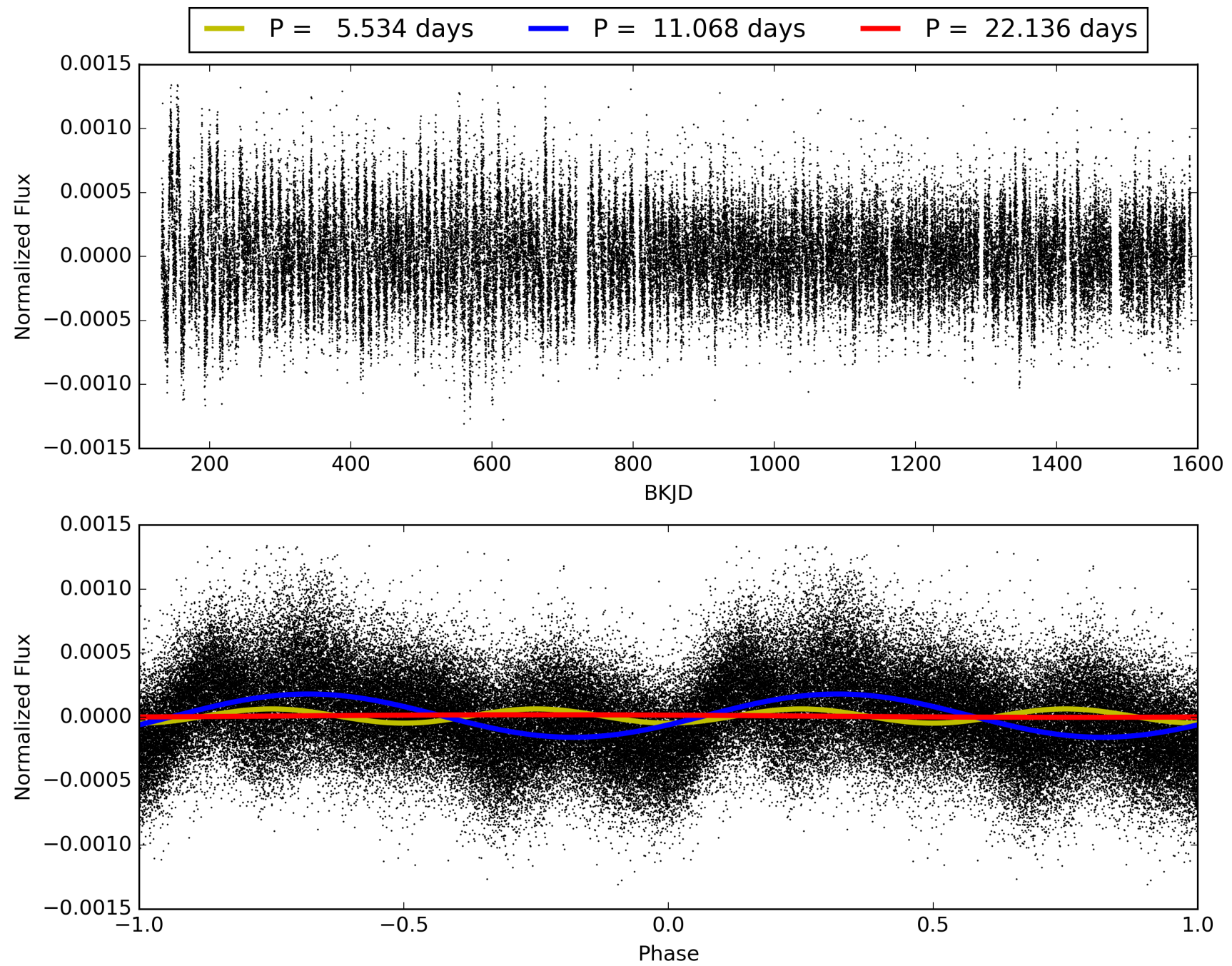
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:17:21 Z

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

TCE 006225654-02, PDC Light Curves

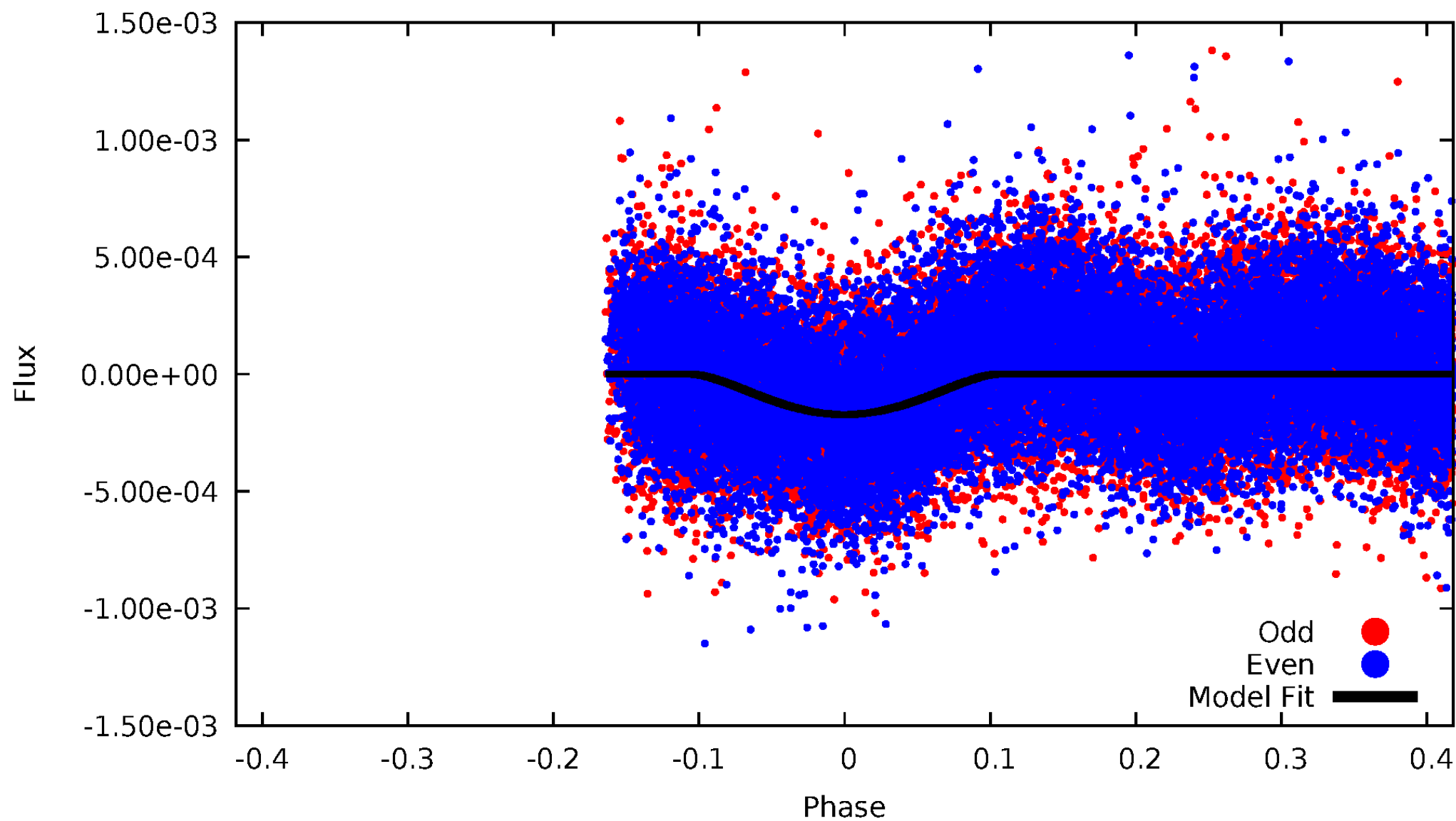


TCE 006225654-02



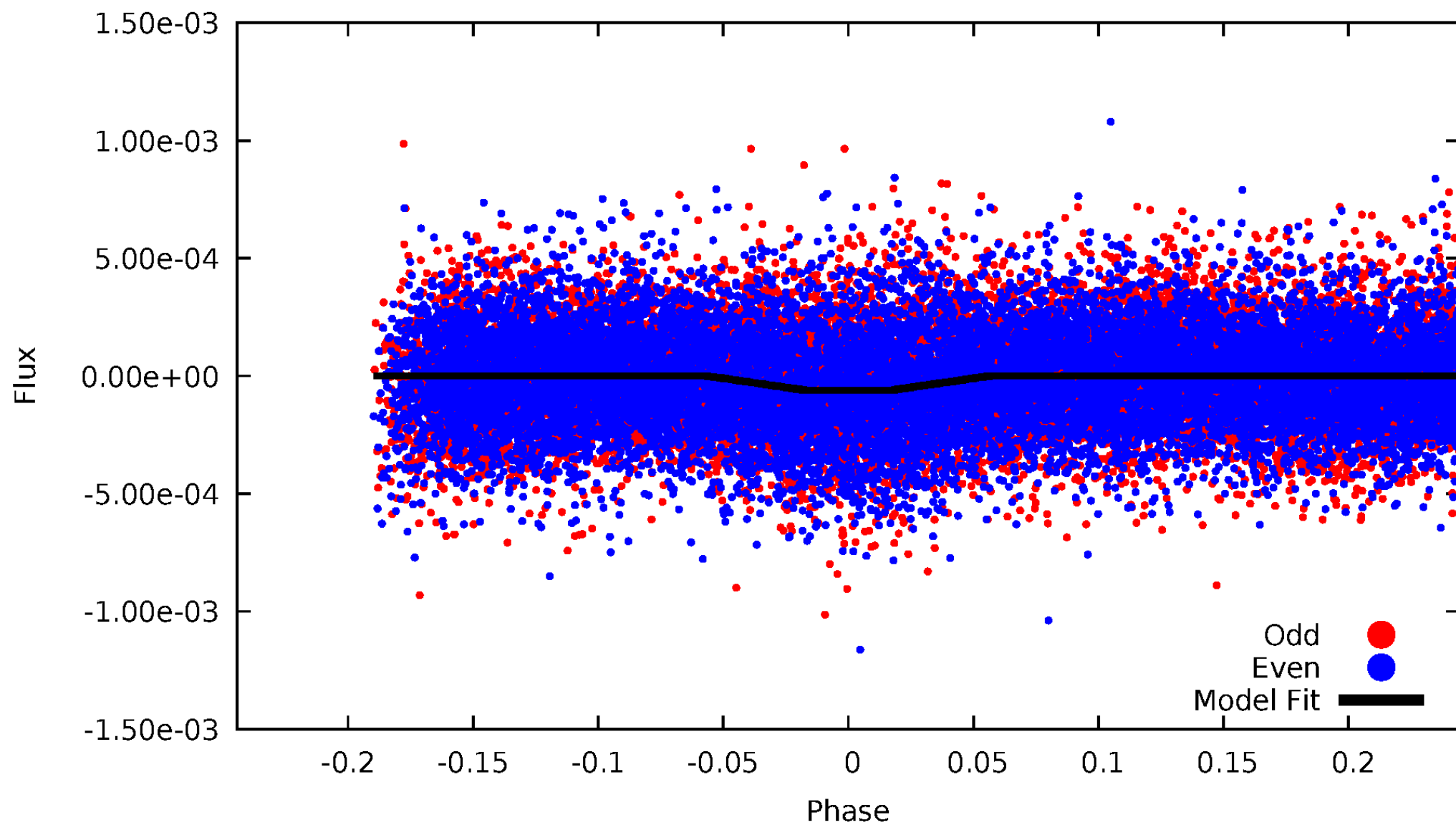
DV Odd/Even

TCE 006225654-02



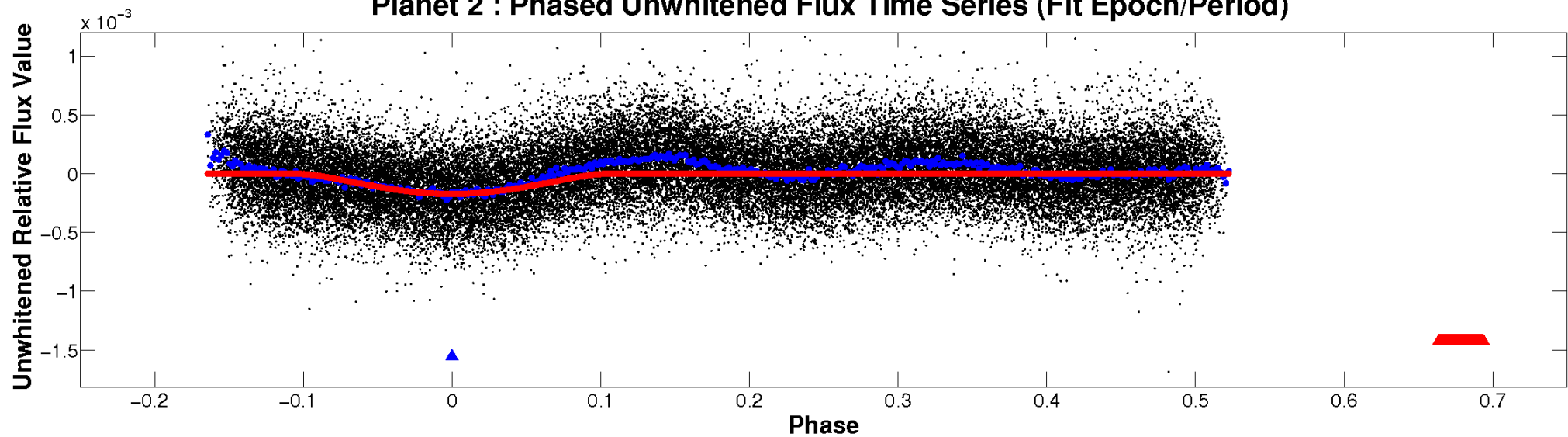
ALT Odd/Even

TCE 006225654-02

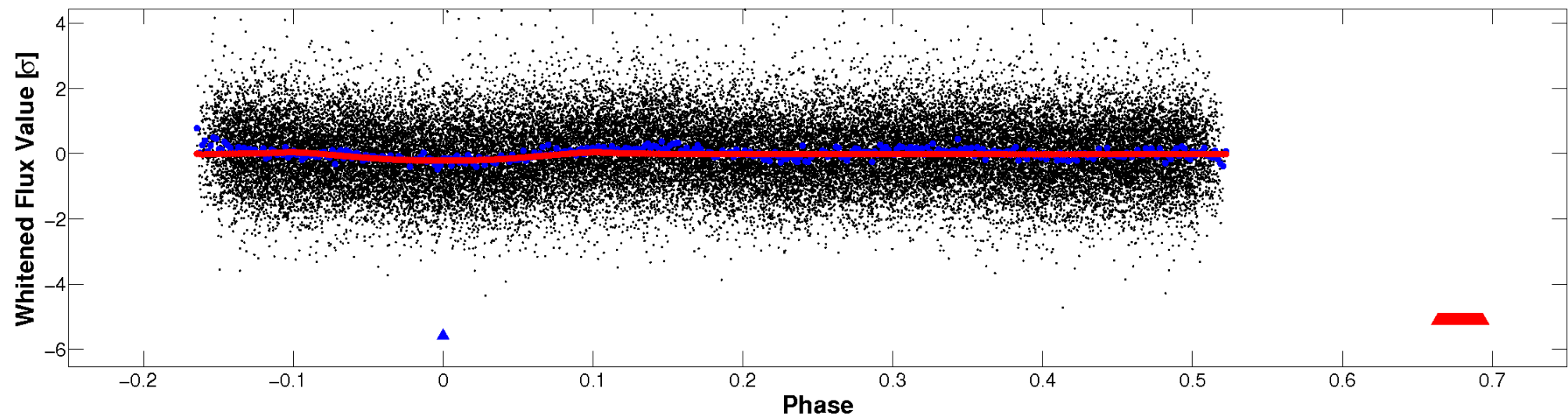


Non-Whitened Vs. Whitened Light Curve

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

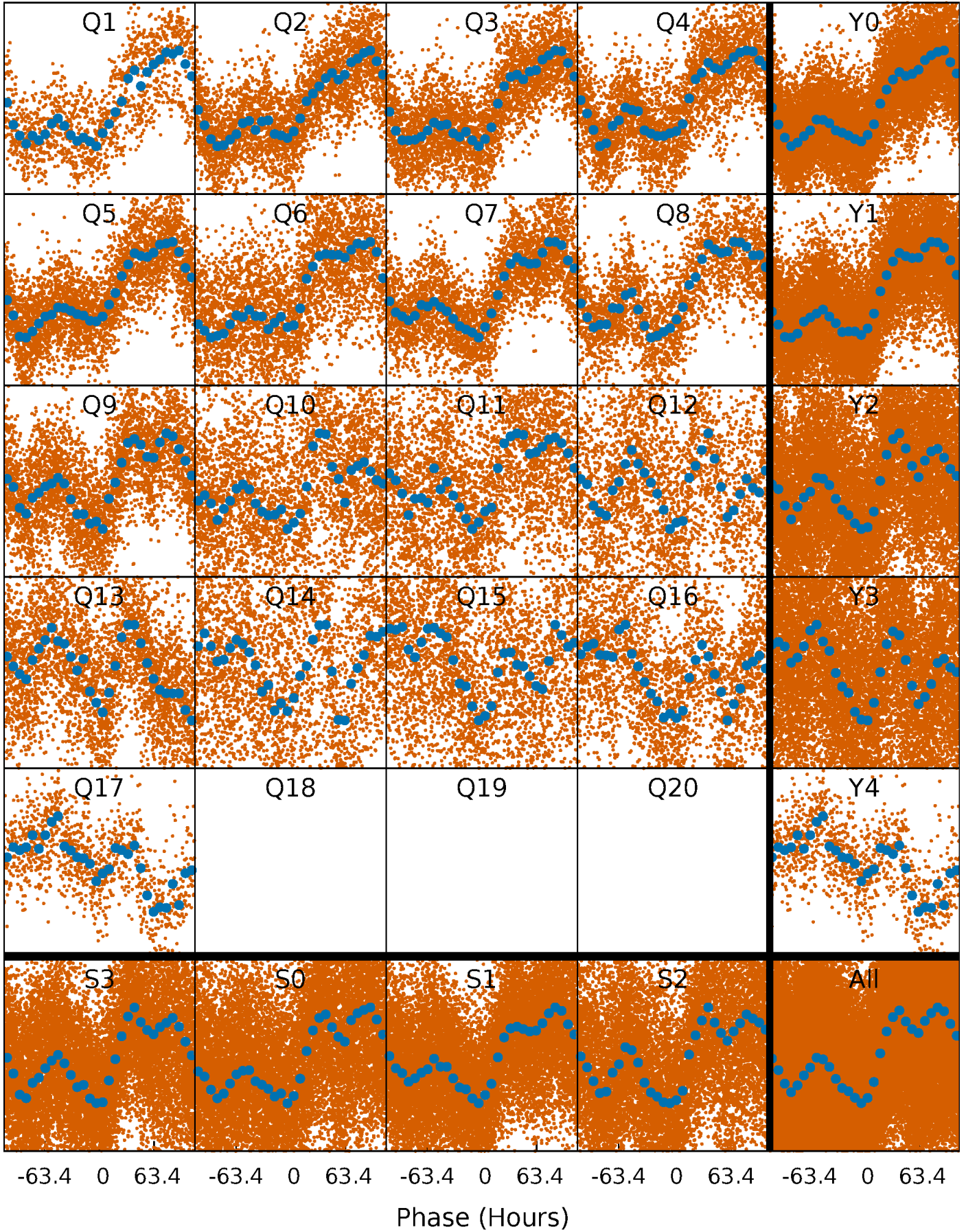


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



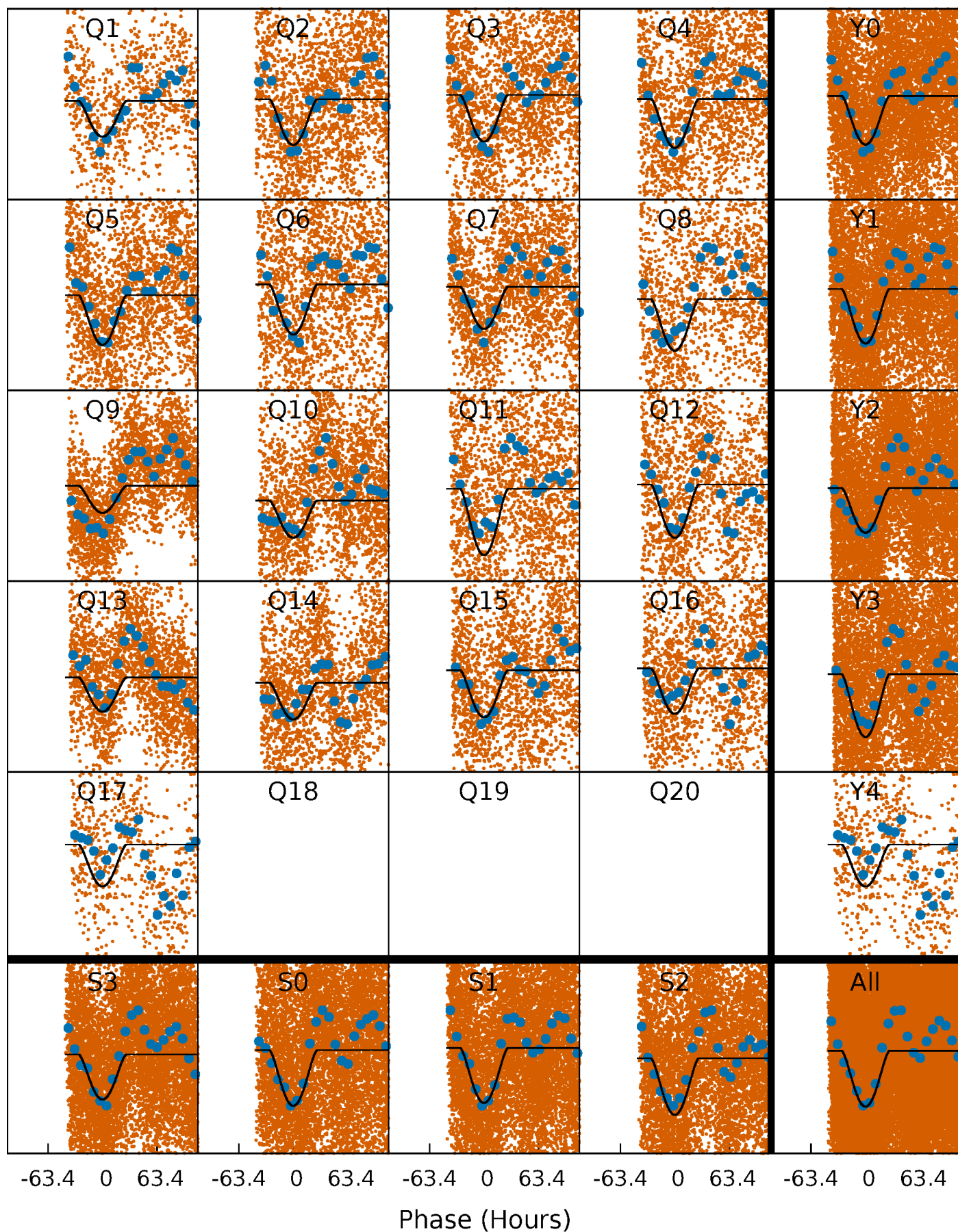
PDC Quarter-Phased Transit Curves

TCE 006225654-02 P= 11.068071 Days $T_0=140.706143$ (BKJD)



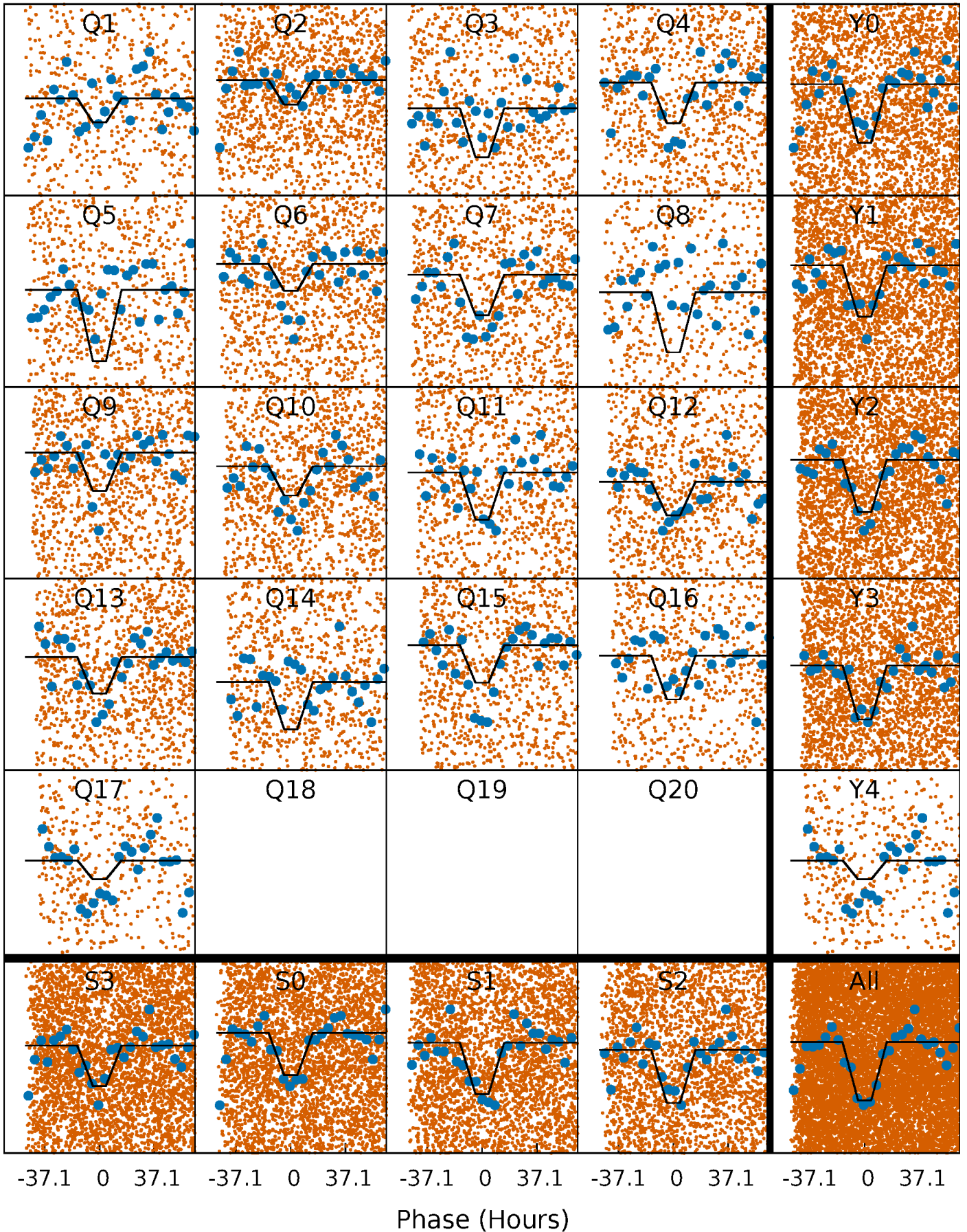
DV Quarter-Phased Transit Curves

TCE 006225654-02 P= 11.068071 Days $T_0=140.706143$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

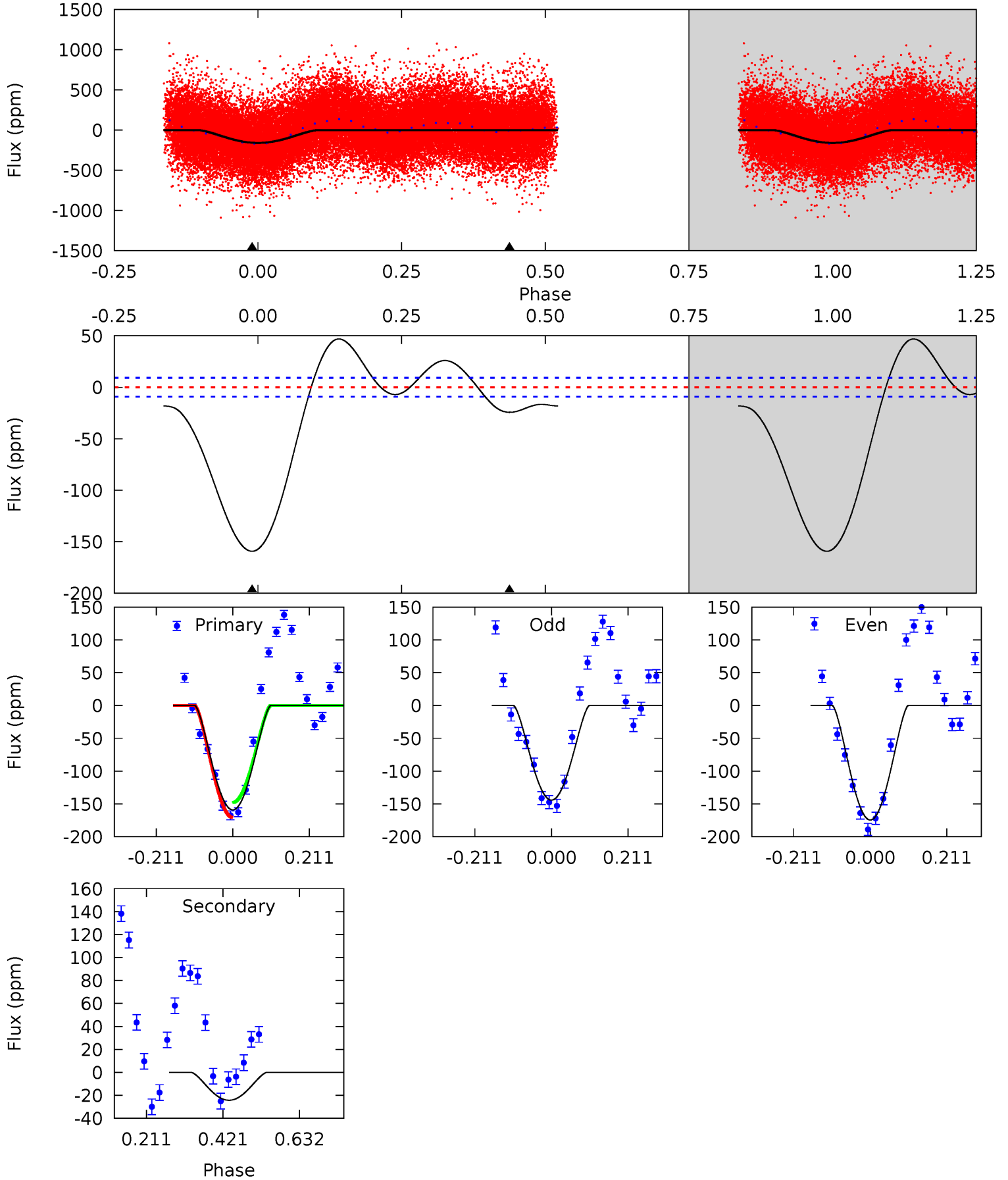
TCE 006225654-02 P= 11.067465 Days $T_0=140.989044$ (BKJD)



DV Model-Shift Uniqueness Test

006225654-02, P = 11.068071 Days, E = 129.638072 Days

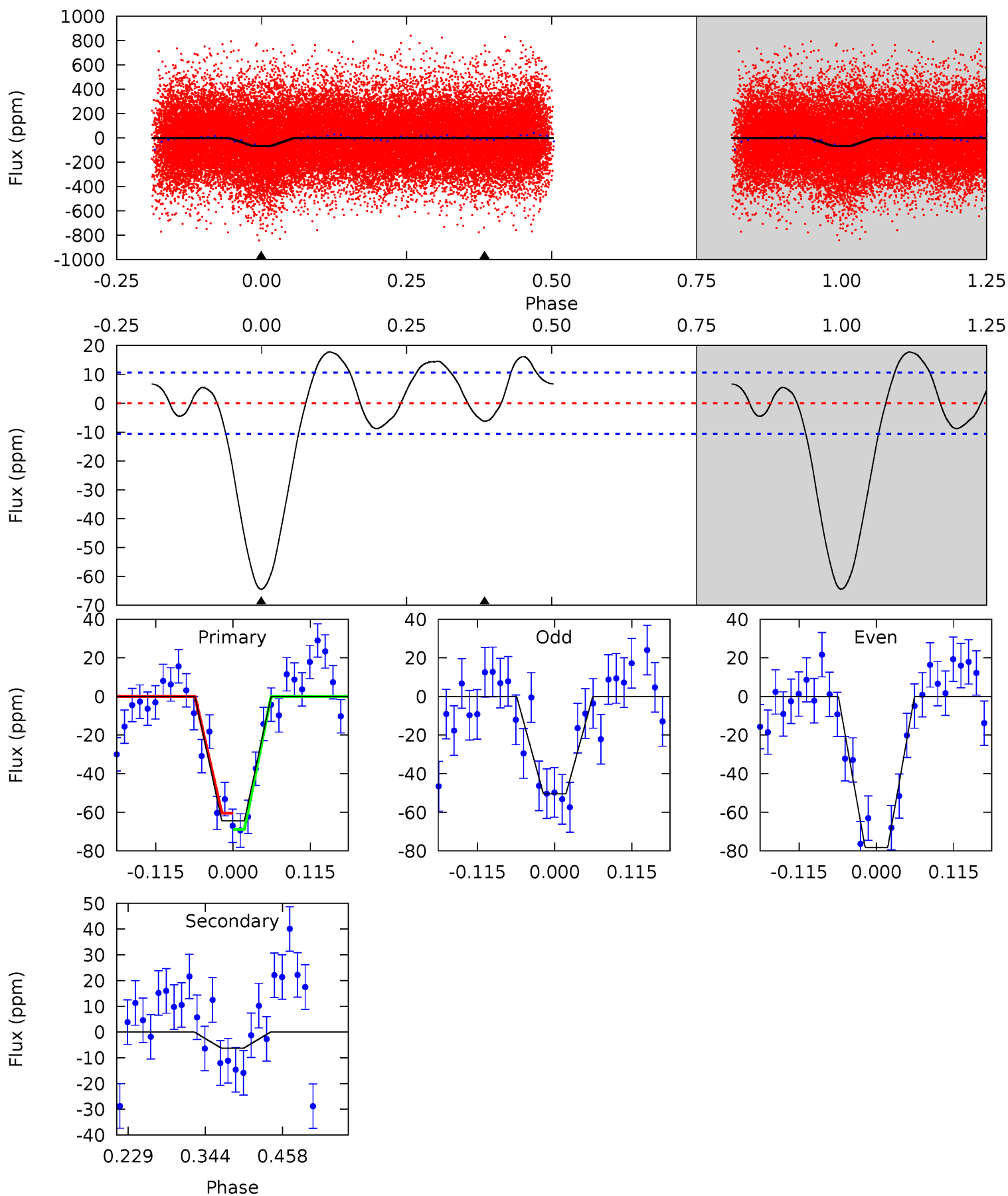
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
77.0	11.8	0	0	4.41	1.25	5.03	77.0	77.0	11.8	11.8	7.35	1.00	0.23	5.15



Alt Model-Shift Uniqueness Test

006225654-02, P = 11.067465 Days, E = 129.921579 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.5	2.66	0	0	4.54	1.58	3.45	27.5	27.5	2.66	2.66	5.94	1.45	0.22	1.73



Stellar Parameters For KIC 006225654

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5864^{+177}_{-159}	$4.082^{+0.390}_{-0.156}$	$-0.240^{+0.300}_{-0.300}$	$1.472^{+0.372}_{-0.558}$	$0.956^{+0.130}_{-0.117}$	$0.422^{+1.098}_{-0.175}$
	+3%/-3%	+10%/-4%	+125%/-125%	+25%/-38%	+14%/-12%	+260%/-41%
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 006225654-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-24 ± 2	$4.01^{+3.17}_{-2.38}$	1400^{+112}_{-140}	3127^{+1050}_{-472}	$7.672^{+35.358}_{-5.265}$
Alt.	-6 ± 2	$2.76^{+2.79}_{-1.82}$	1401^{+110}_{-161}	2825^{+1153}_{-543}	$3.984^{+28.253}_{-3.122}$

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 $A_{obs} \gg 1.0$

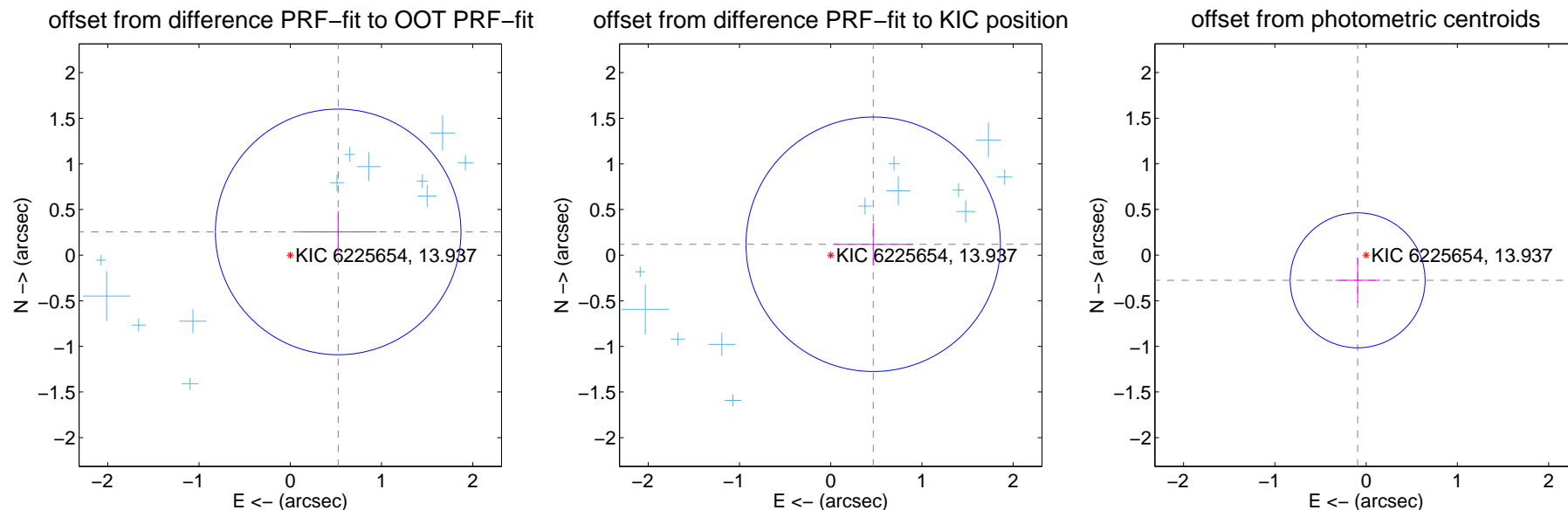
DV Centroid Data

Supplemental centroid analysis for 006225654-02. Kepler magnitude: 13.94. Transit SNR 15.57

There are 14 quarters with good PRF difference image offsets

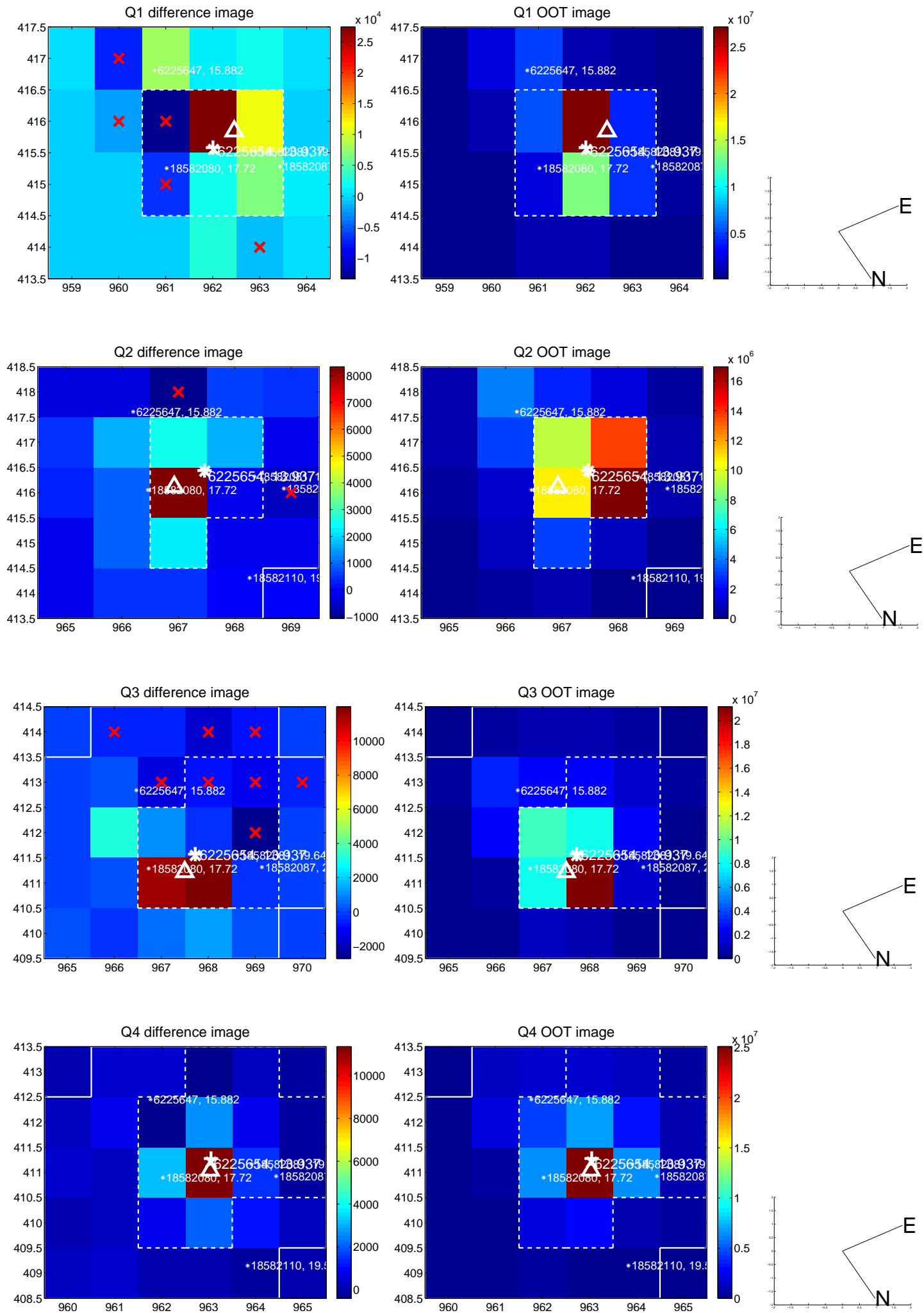
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.584 ± 0.449	1.30	-0.525 ± 0.421	0.255 ± 0.227
PRF-fit source offset from KIC position	0.481 ± 0.465	1.03	-0.466 ± 0.440	0.119 ± 0.234
photometric centroid source offset	0.29 ± 0.25	1.18	0.09 ± 0.24	-0.28 ± 0.25

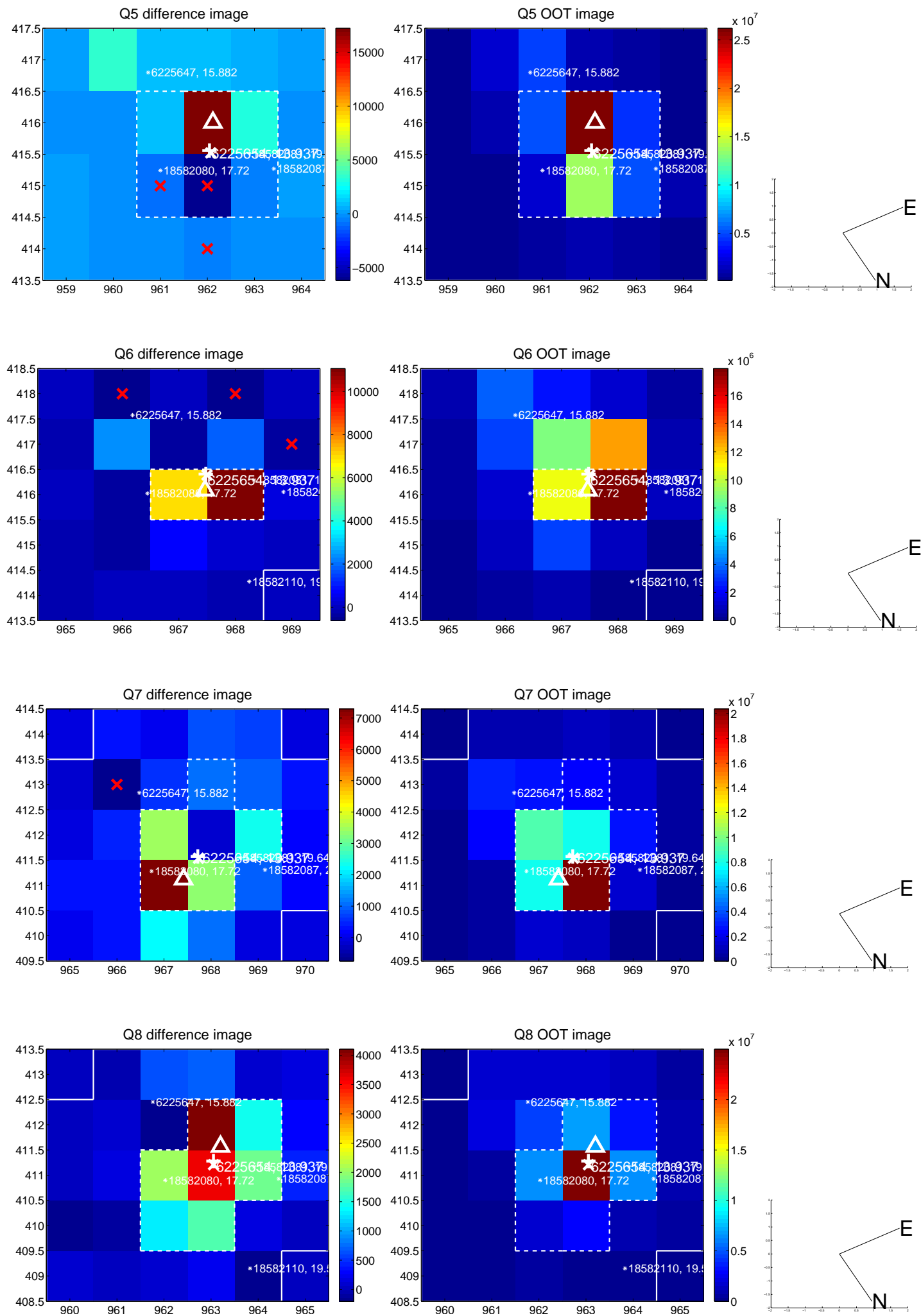


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

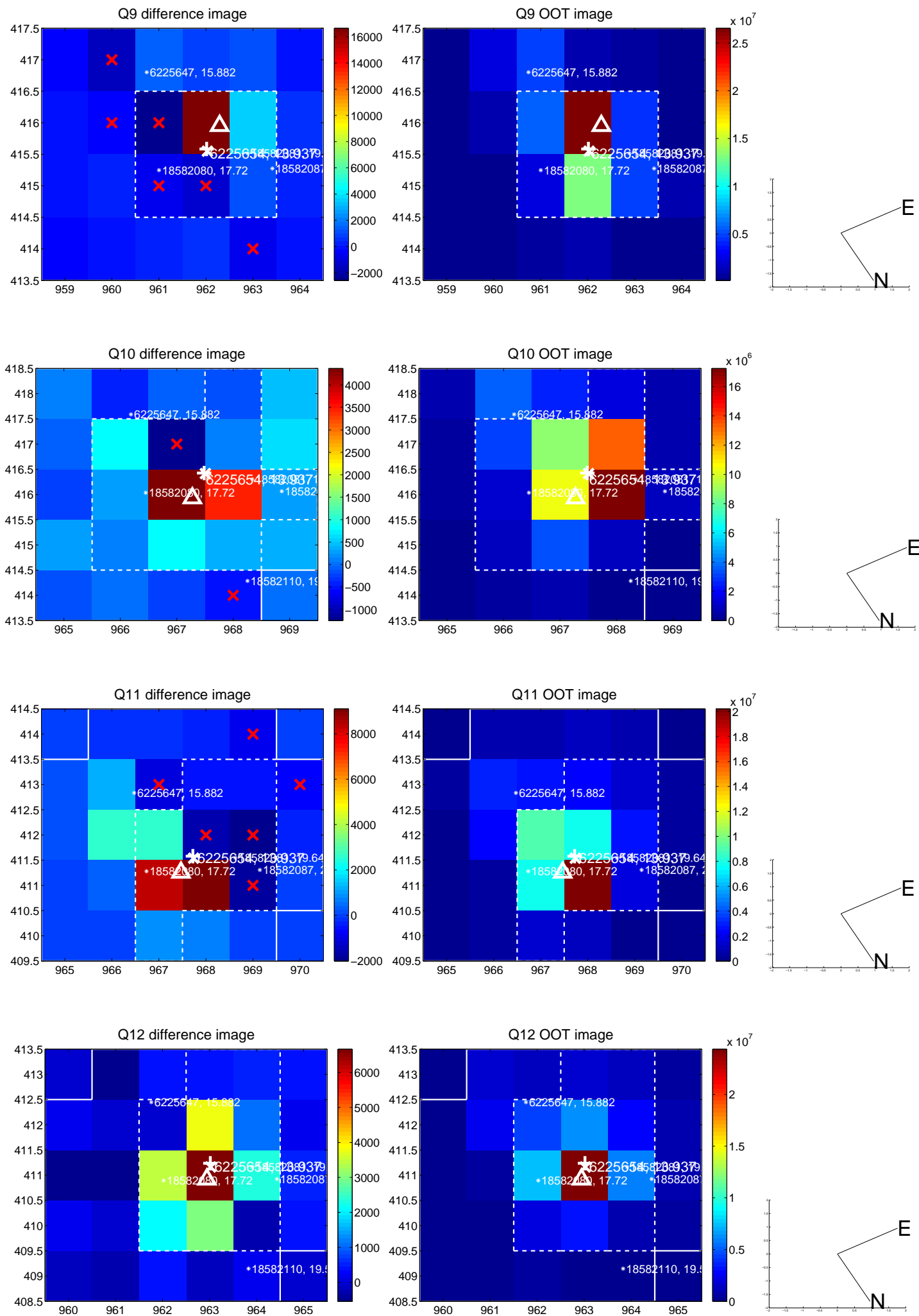
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



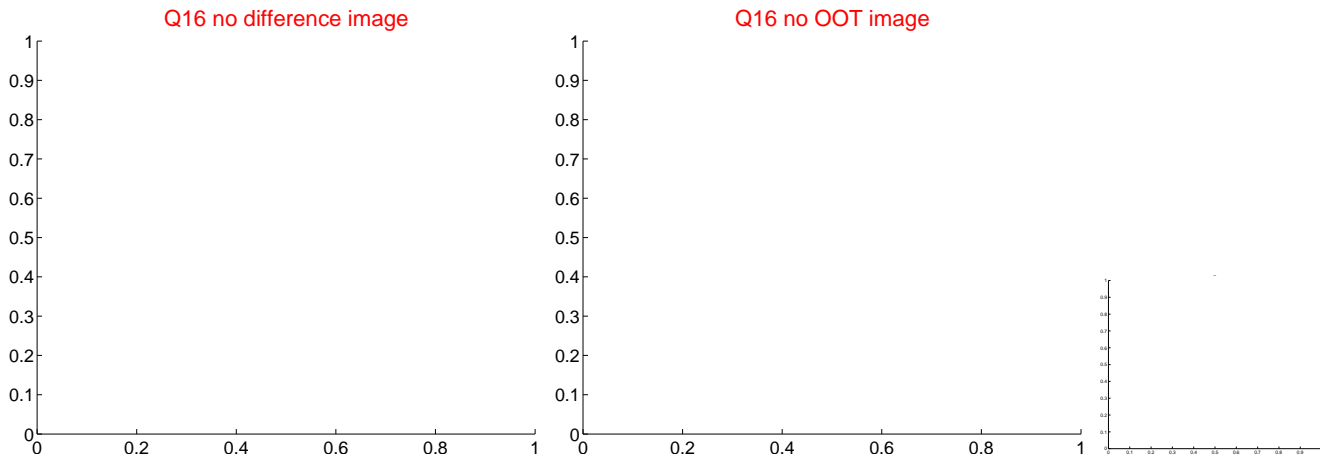
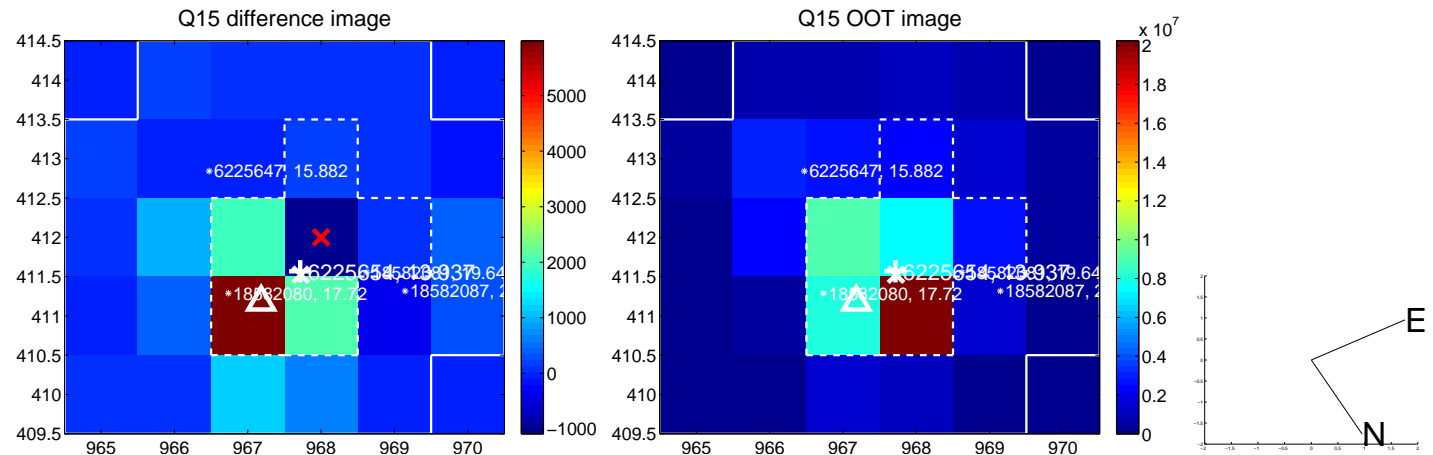
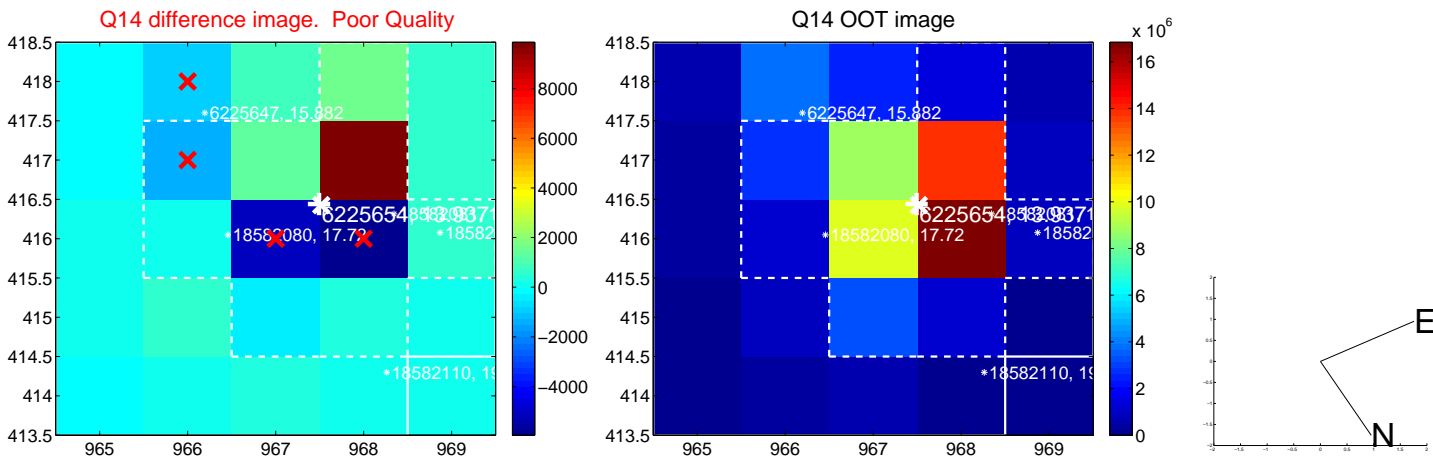
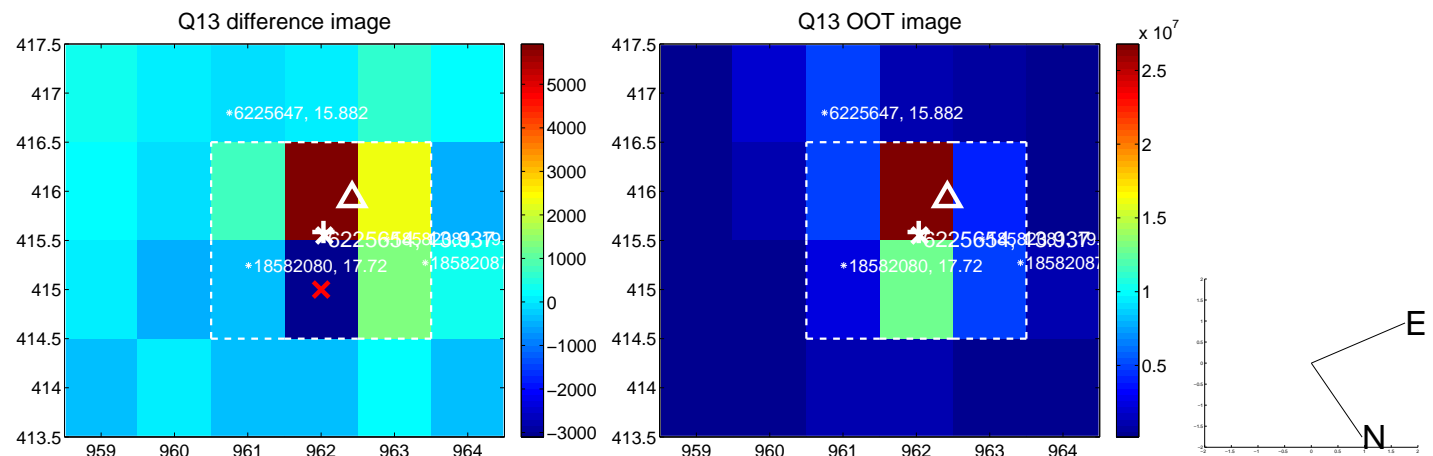
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



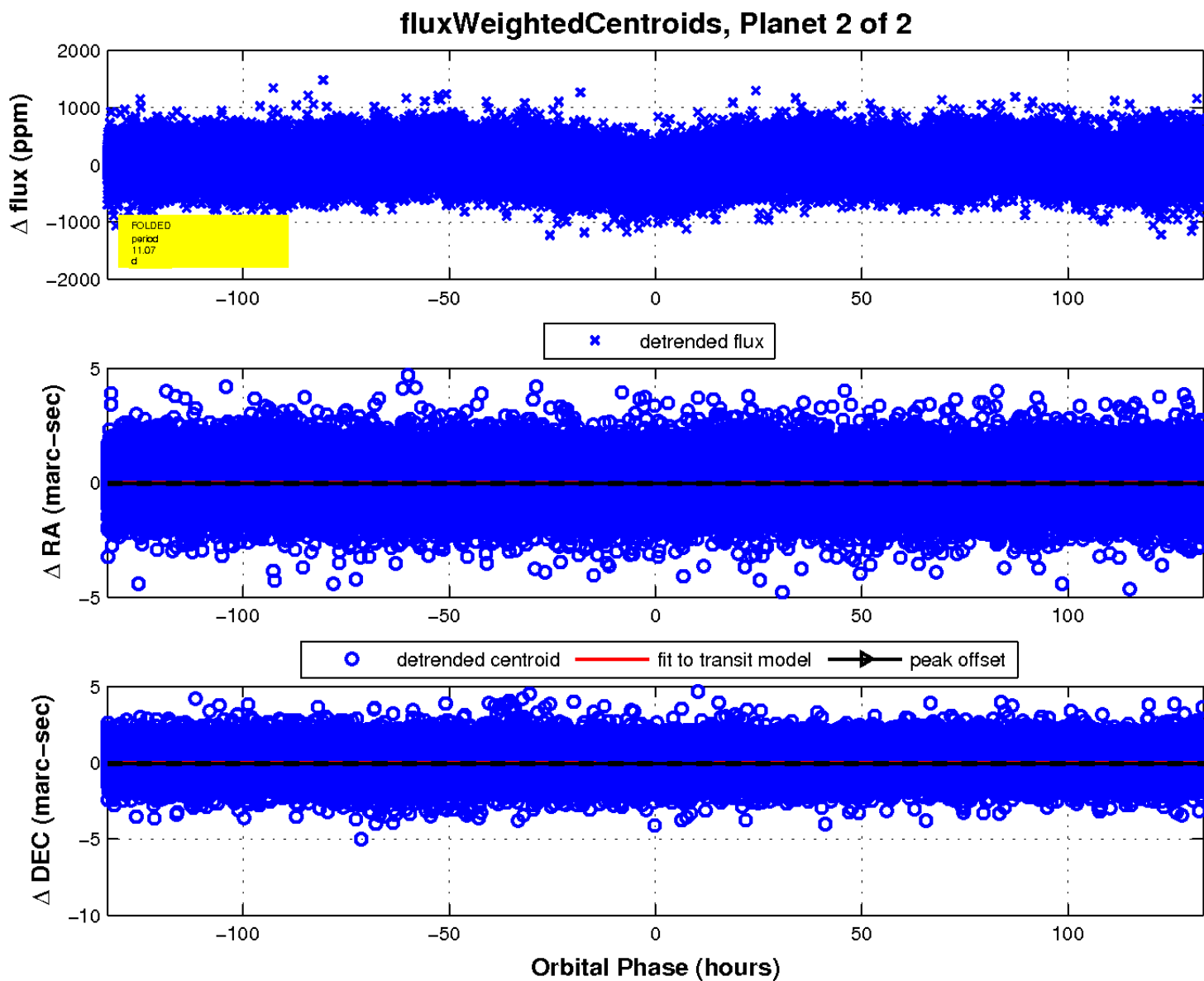
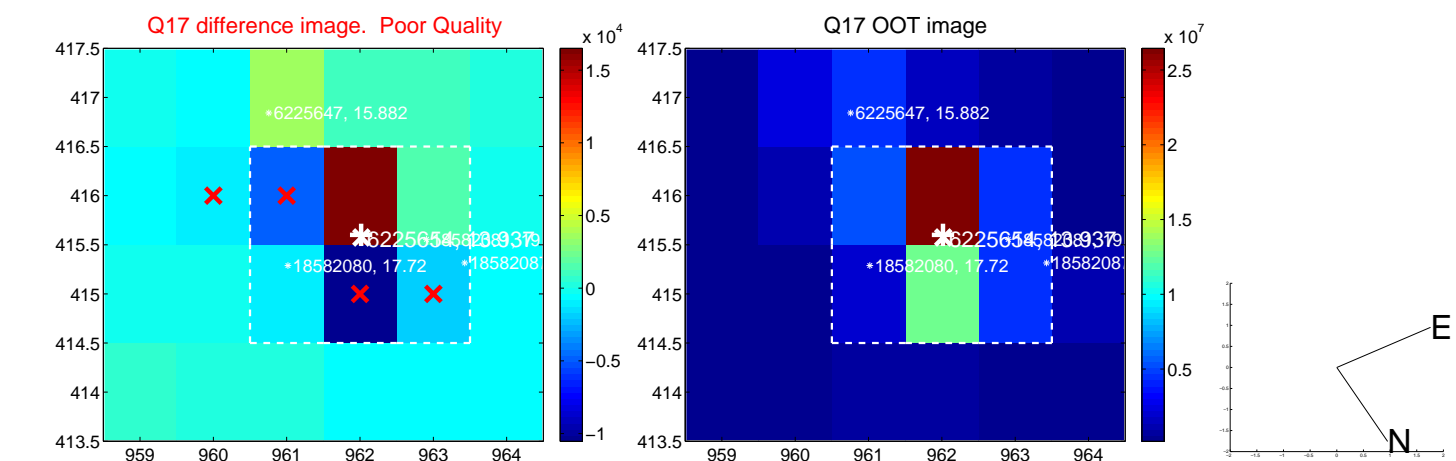
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

