

KIC 008128067

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})
008128067-01	OBS	4314.01	12.429478	133.780378	817.3	5.757	13.0	13.8	0.75	5492	2.75	47.35
008128067-02	OBS	No	12.429432	140.240339	759.5	2.886	10.9	11.8	0.75	5492	3.52	47.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008128067-01	OBS	FP	0.00	0	1	0	0	HAS_SEC_TCE—CENT_KIC_POS
008128067-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_KIC_POS—HALO_GHOST

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 008128067-01

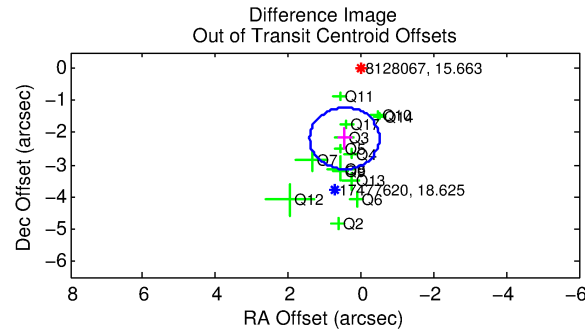
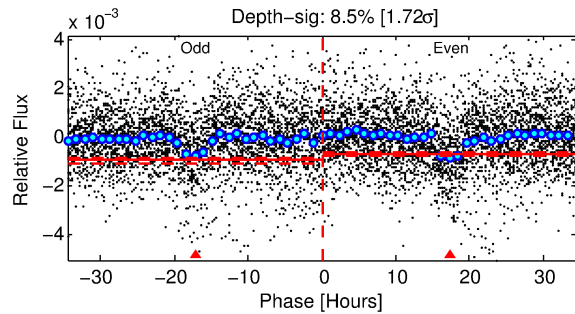
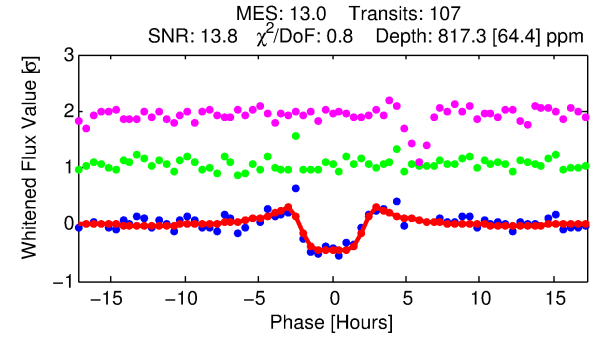
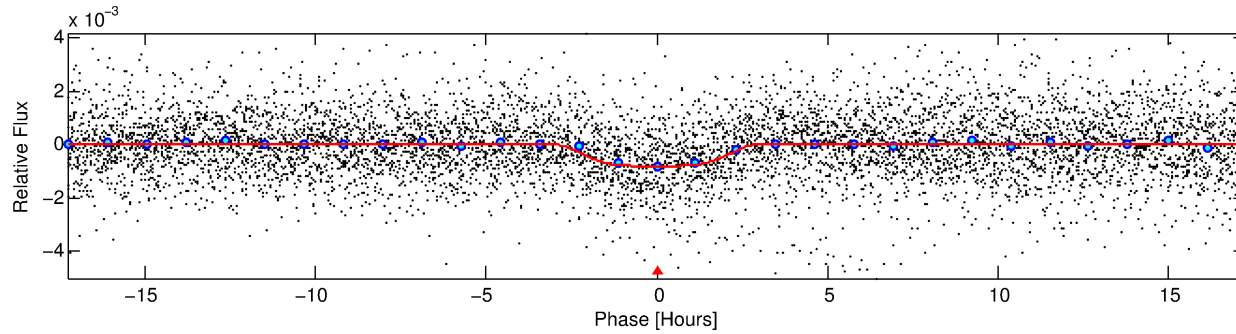
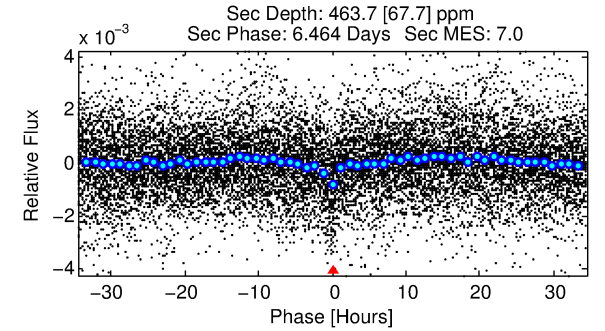
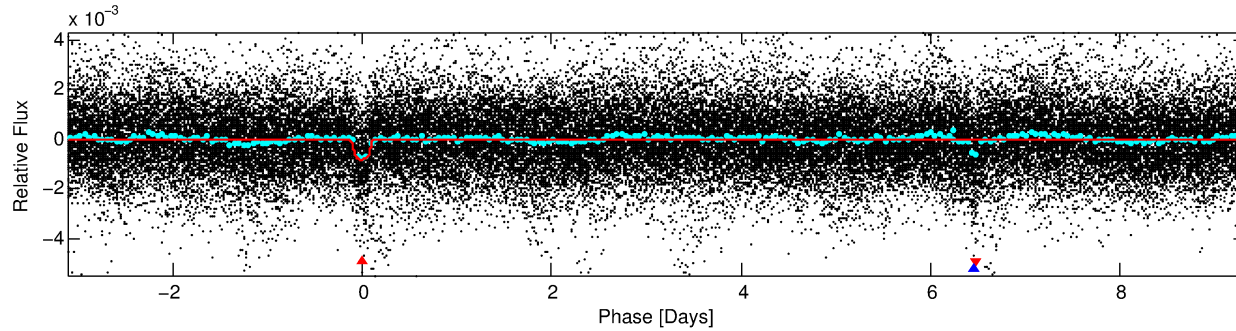
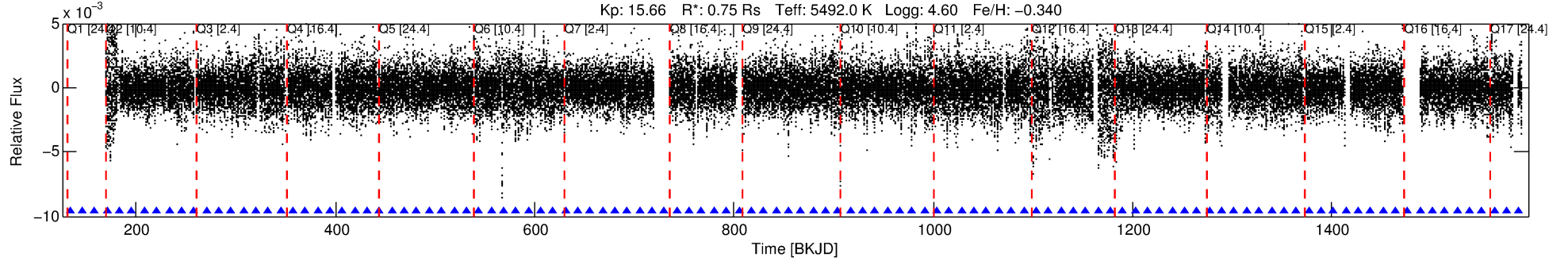
No Significant Match Found

DV One-Page Summary

KIC: 8128067 Candidate: 1 of 2 Period: 12.429 d

KOI: K04314 Corr: No Ephemeris Match

Kp: 15.66 R*: 0.75 Rs Teff: 5492.0 K Logg: 4.60 Fe/H: -0.340



DV Fit Results:

Period = 12.42948 [0.00010] d
Epoch = 133.7804 [0.0063] BKJD
Rp/R* = 0.0335 [0.0017]
a/R* = 6.80 [0.71]
b = 0.95 [0.01]
Seff = 47.35 [12.62]
Teq = 669 [45] K
Rp = 2.75 [0.57] Re
a = 0.0987 [0.0165] AU
Ag = 328.08 [97.70] [3.35σ]
Teffp = 4401 [236] K [15.51σ]

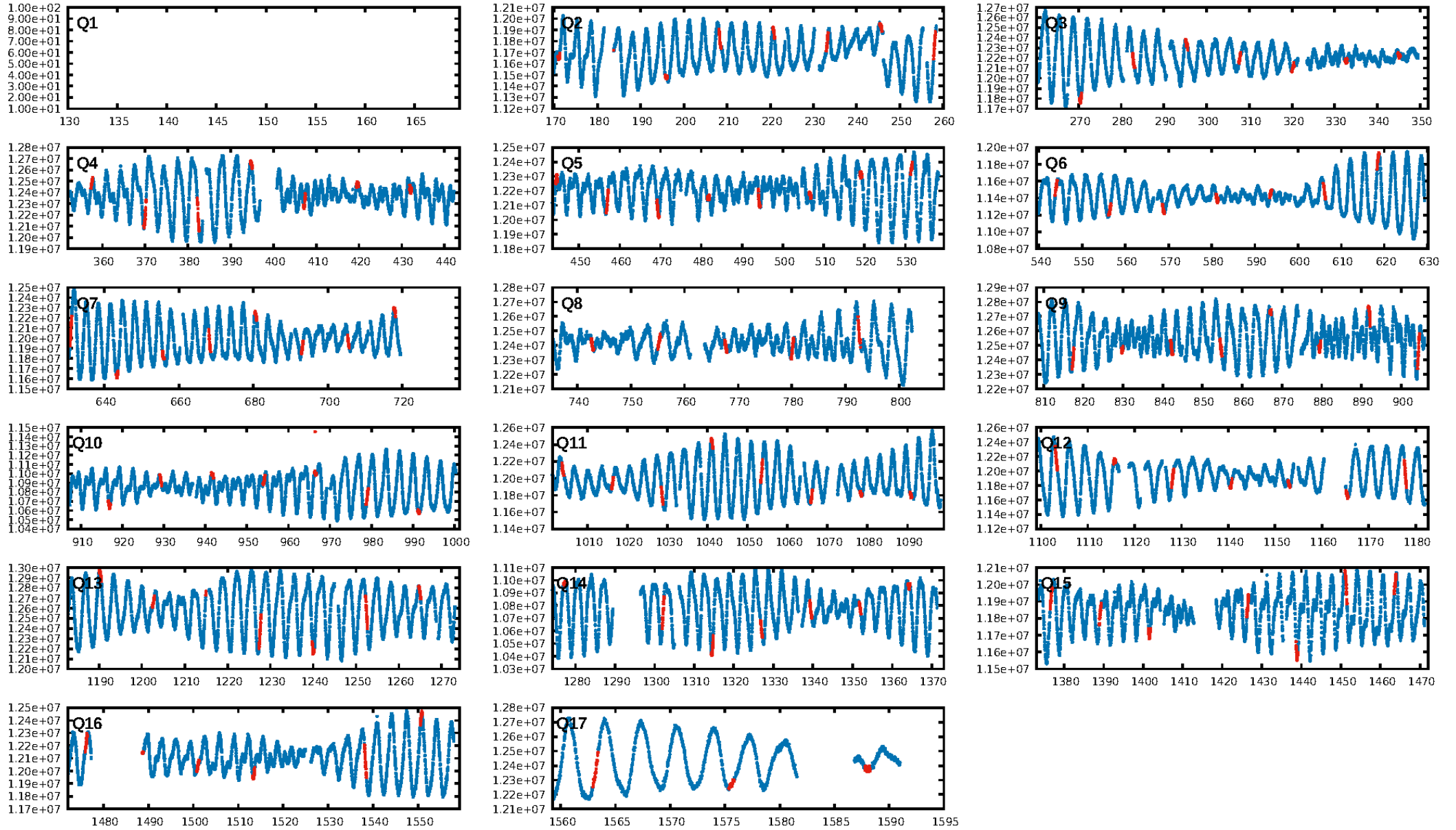
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 95.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.28e-35
RollingBand-fgt: 1.00 [104/104]
GhostDiagnostic-chr: 0.6613
Centroid-sig: 0.0%
Centroid-so: 5.355 arcsec [8.92σ]
OotOffset-rm: 2.227 arcsec [6.98σ]
KicOffset-rm: 2.599 arcsec [8.17σ]
OotOffset-st: 4/3/3/4 [14]
KicOffset-st: 4/3/3/4 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [16/16]

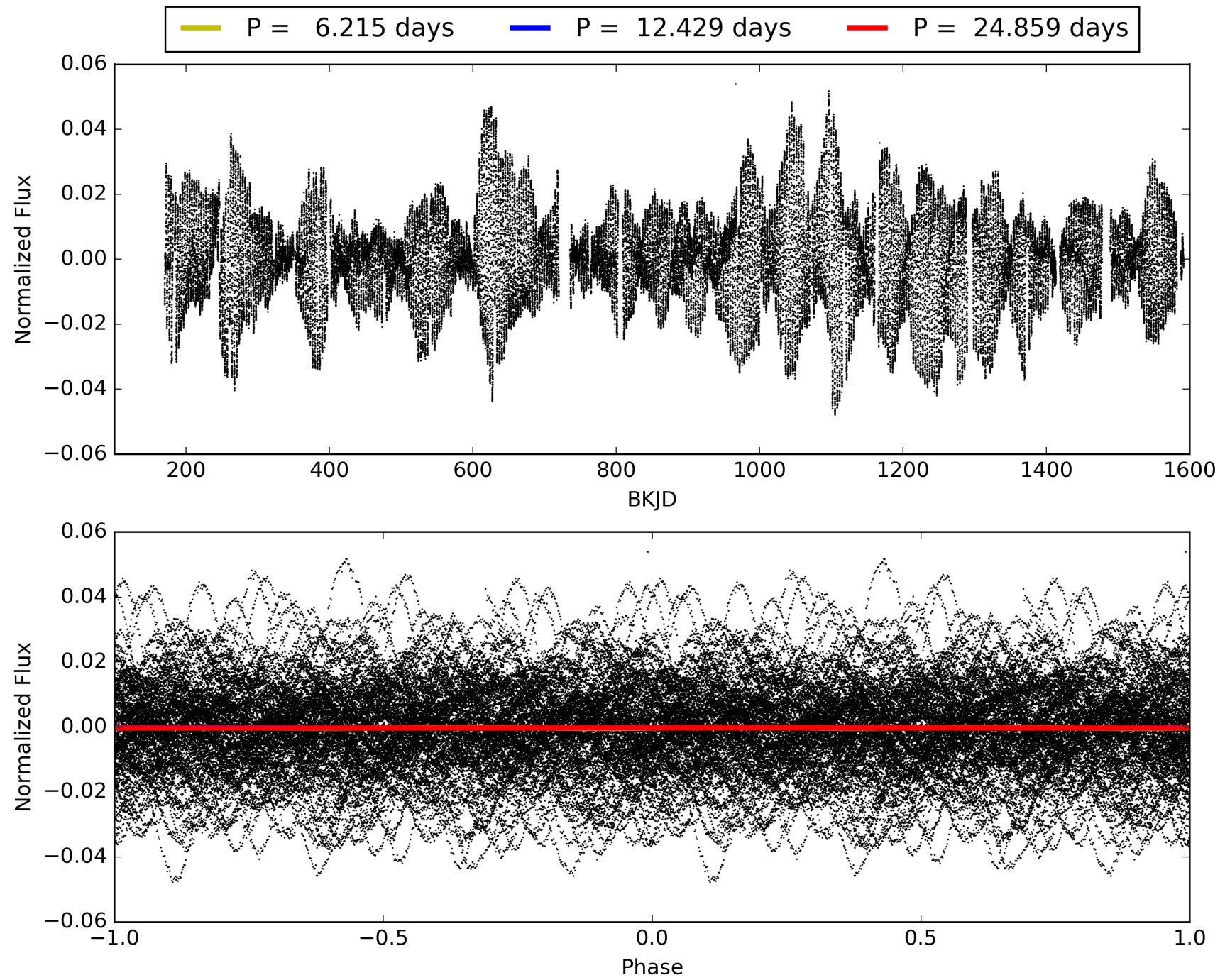
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:31:50 Z

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

TCE 008128067-01, PDC Light Curves

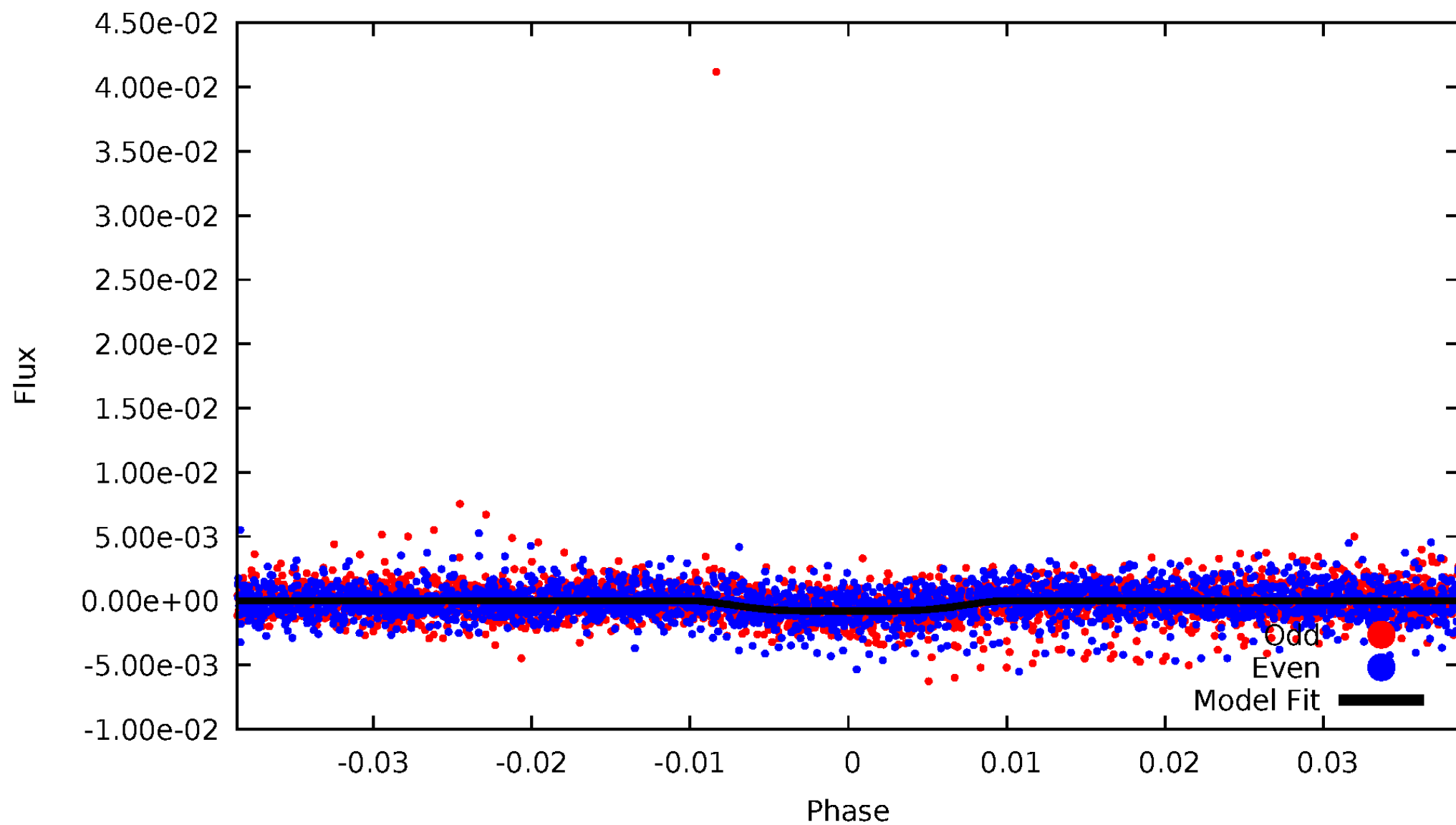


TCE 008128067-01



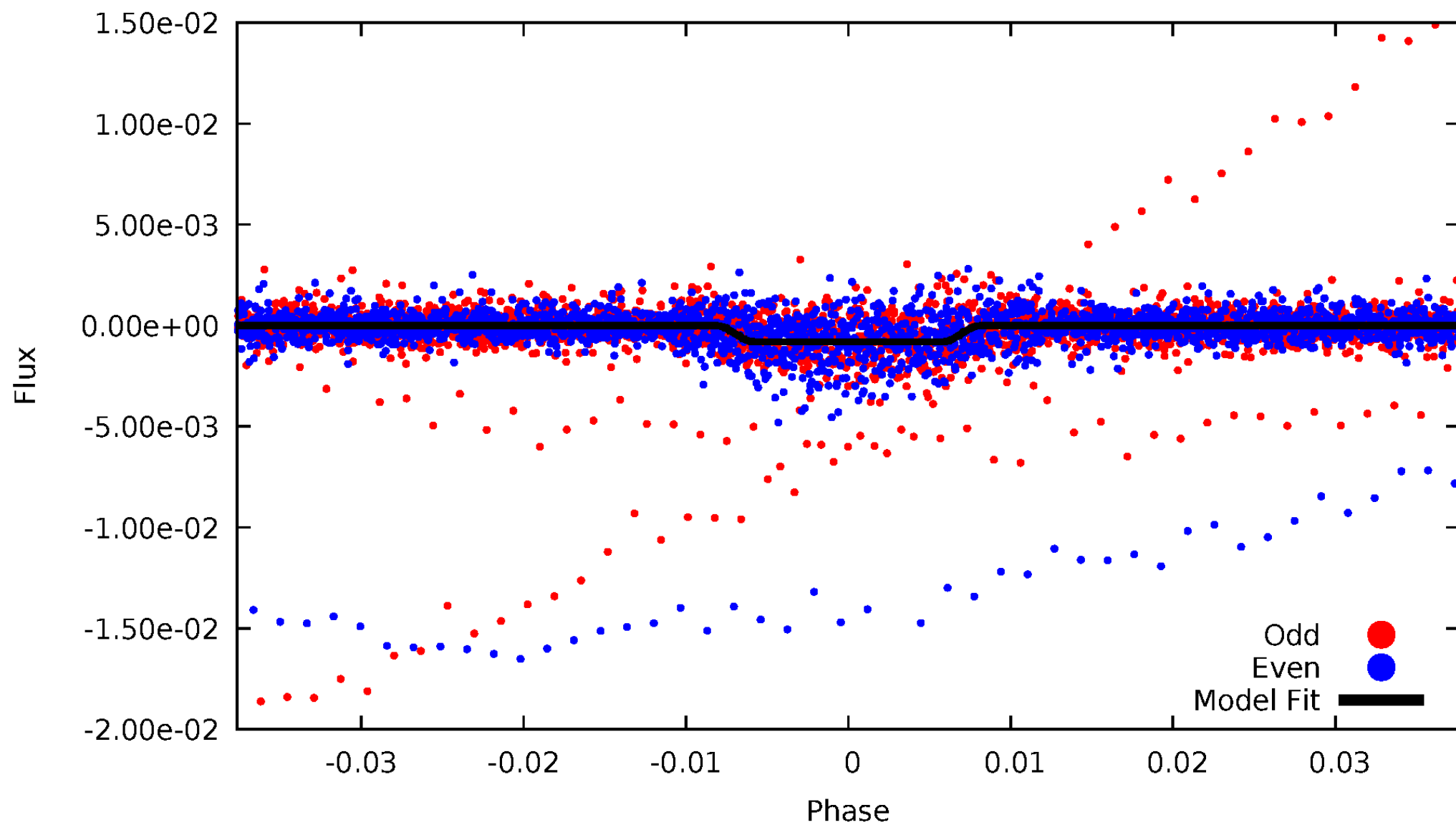
DV Odd/Even

TCE 008128067-01

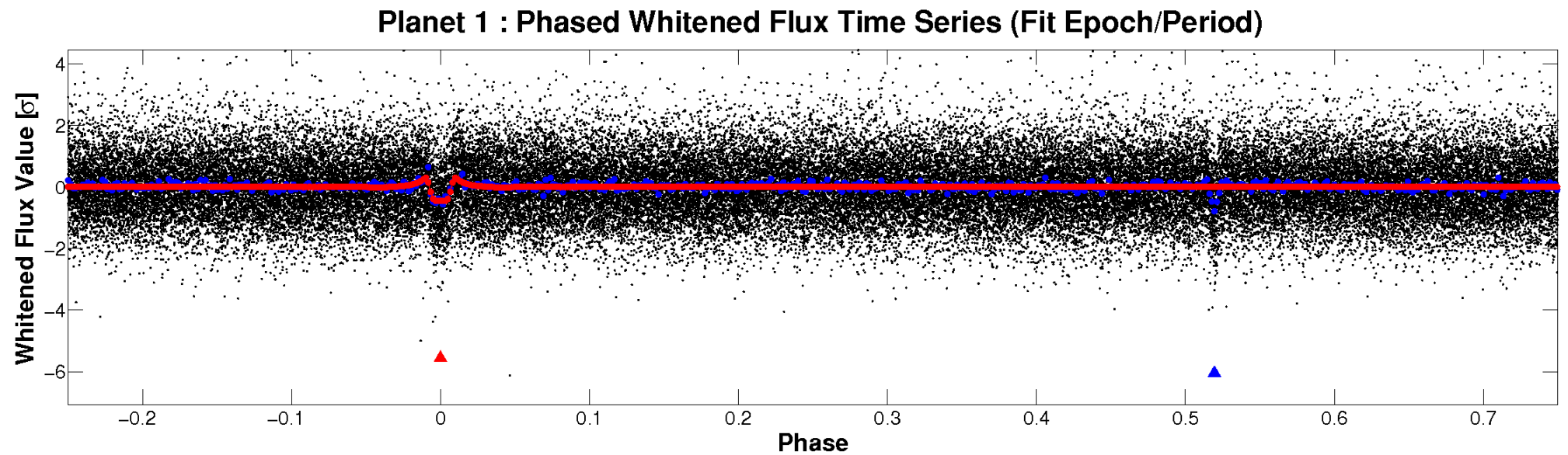
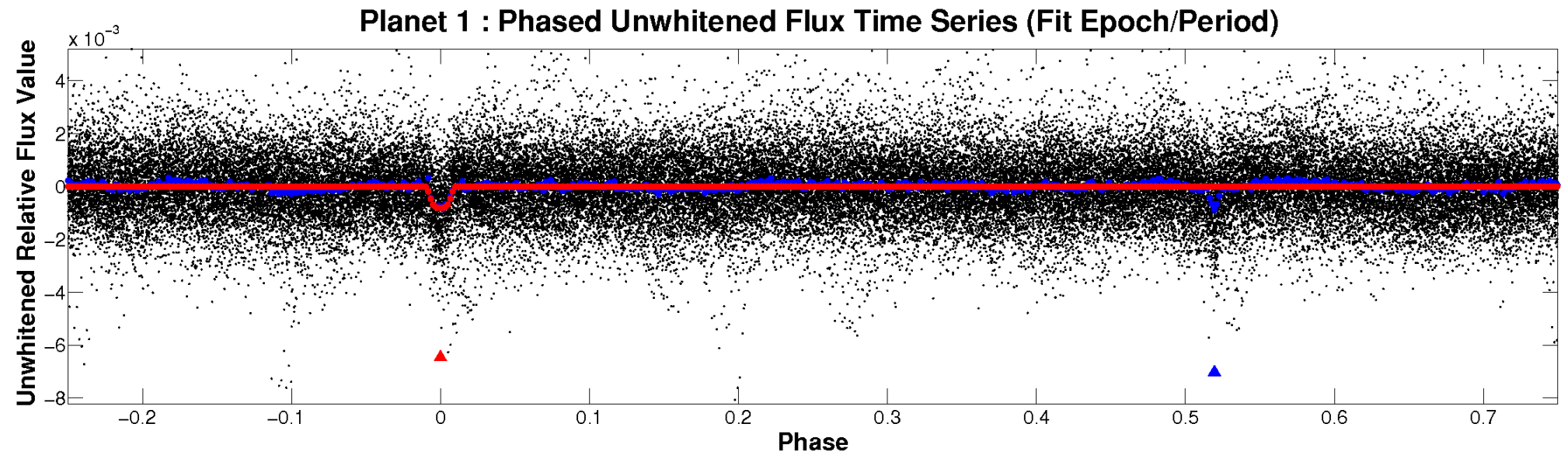


ALT Odd/Even

TCE 008128067-01

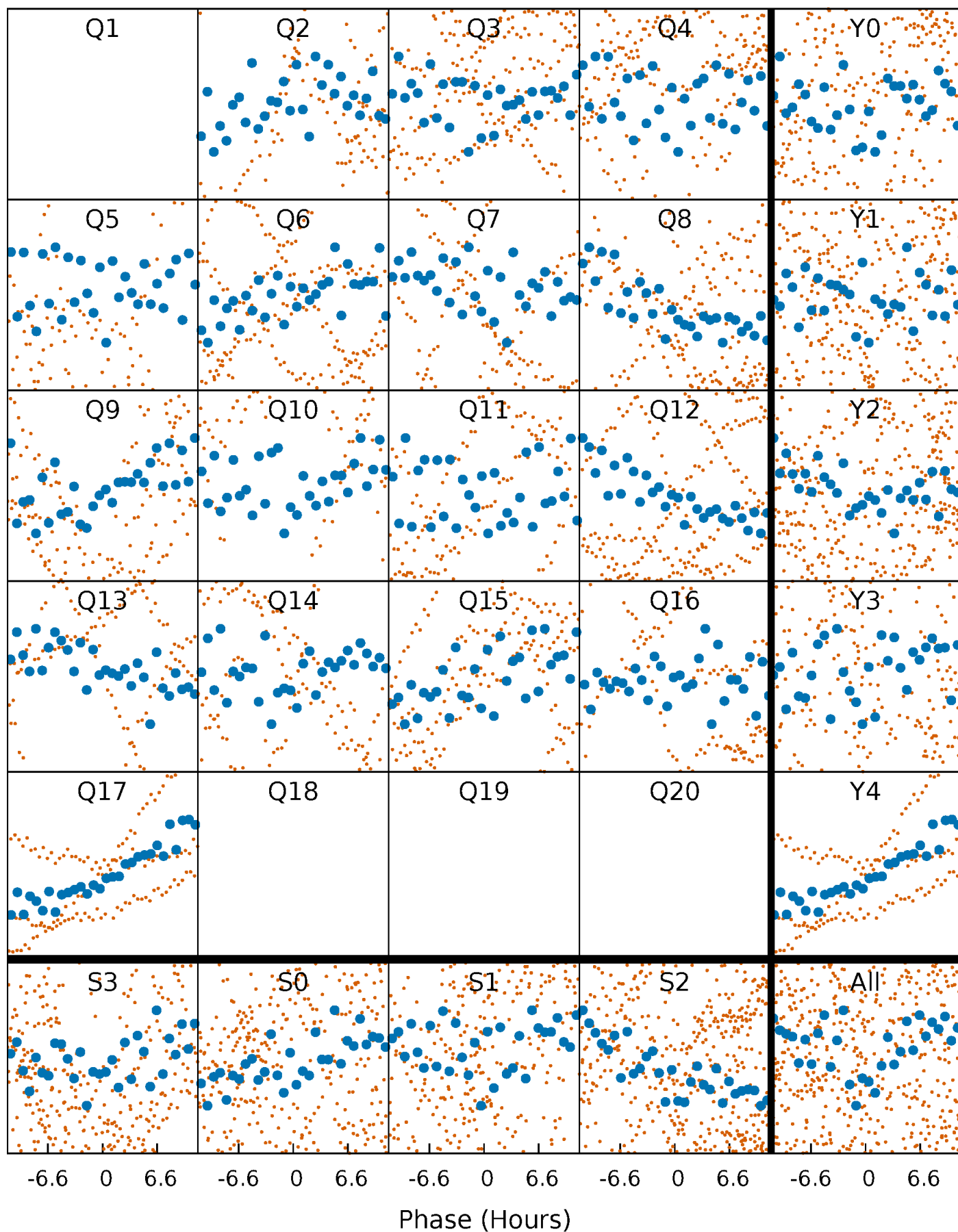


Non-Whitened Vs. Whitened Light Curve



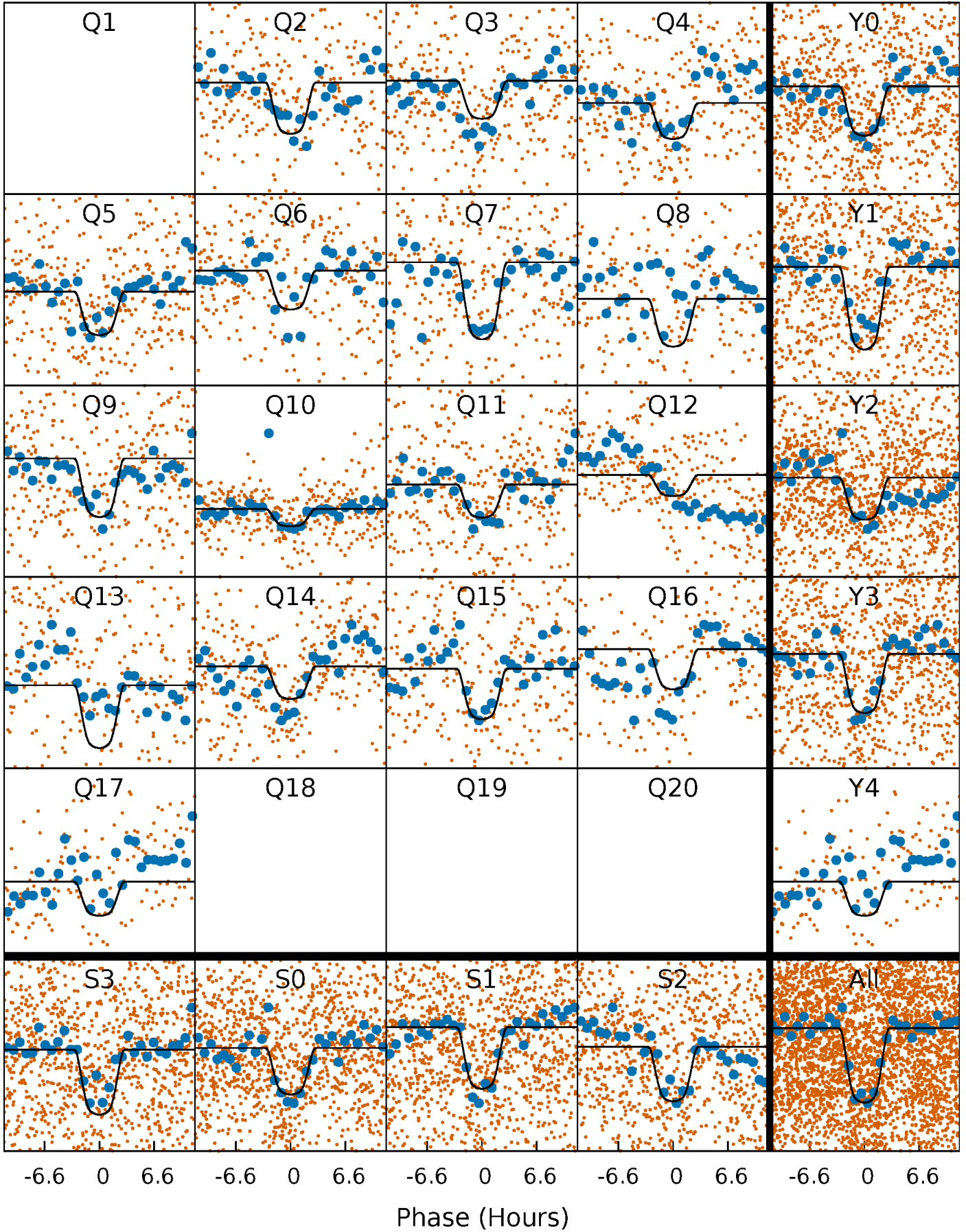
PDC Quarter-Phased Transit Curves

TCE 008128067-01 P= 12.429478 Days $T_0=133.780378$ (BKJD)



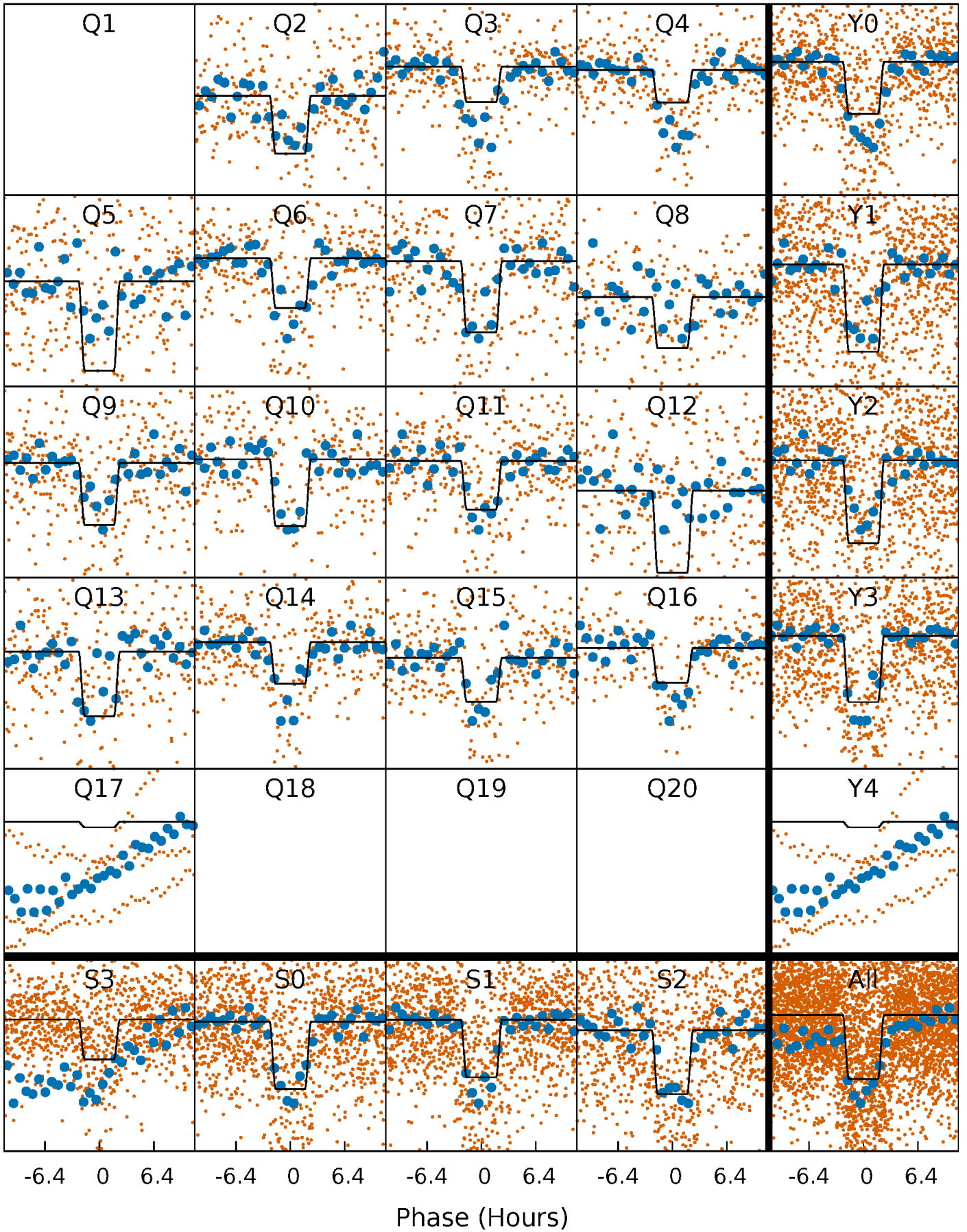
DV Quarter-Phased Transit Curves

TCE 008128067-01 P= 12.429478 Days $T_0=133.780378$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

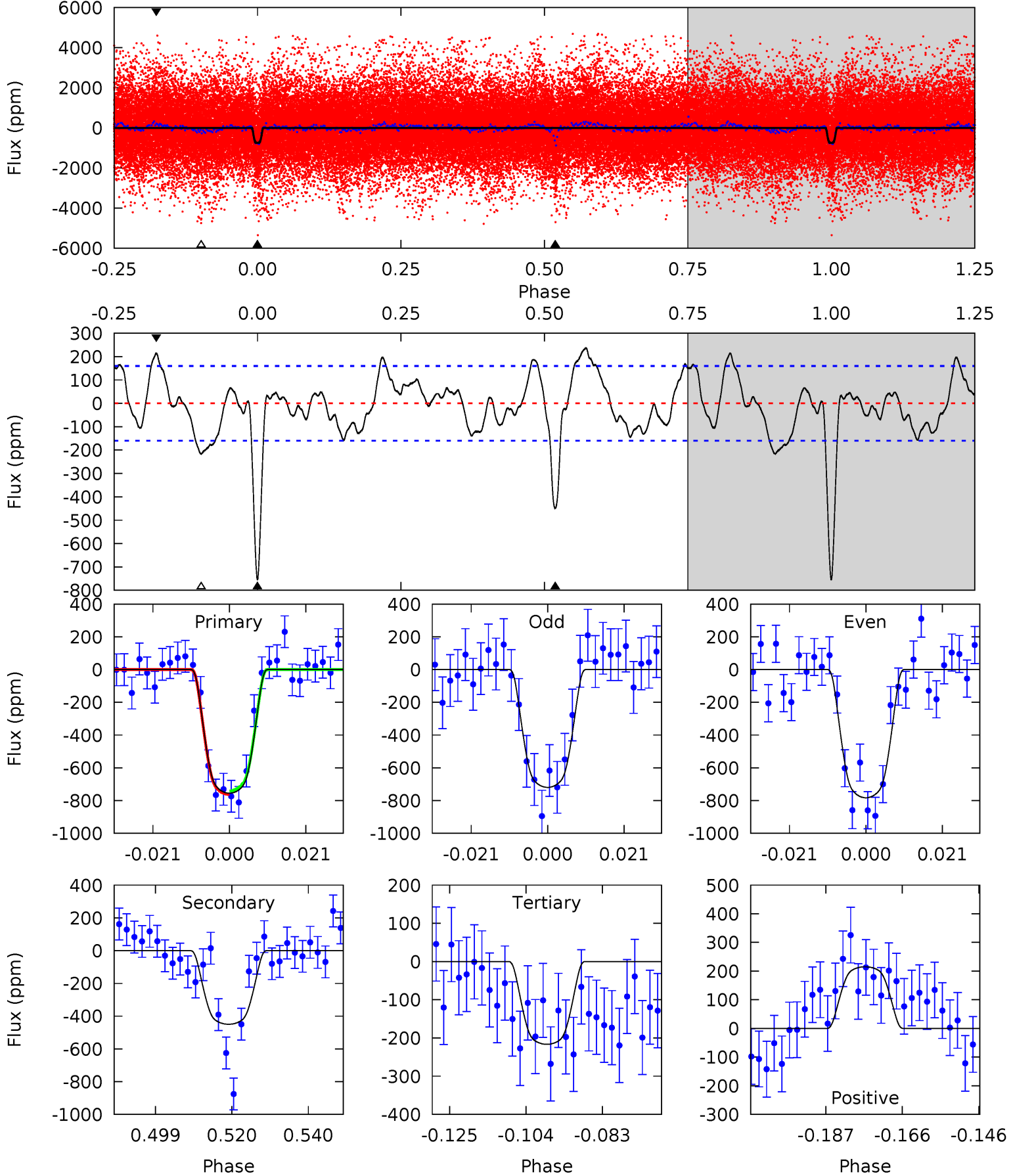
TCE 008128067-01 P= 12.429522 Days $T_0=133.774458$ (BKJD)



DV Model-Shift Uniqueness Test

008128067-01, $P = 12.429478$ Days, $E = 133.780378$ Days

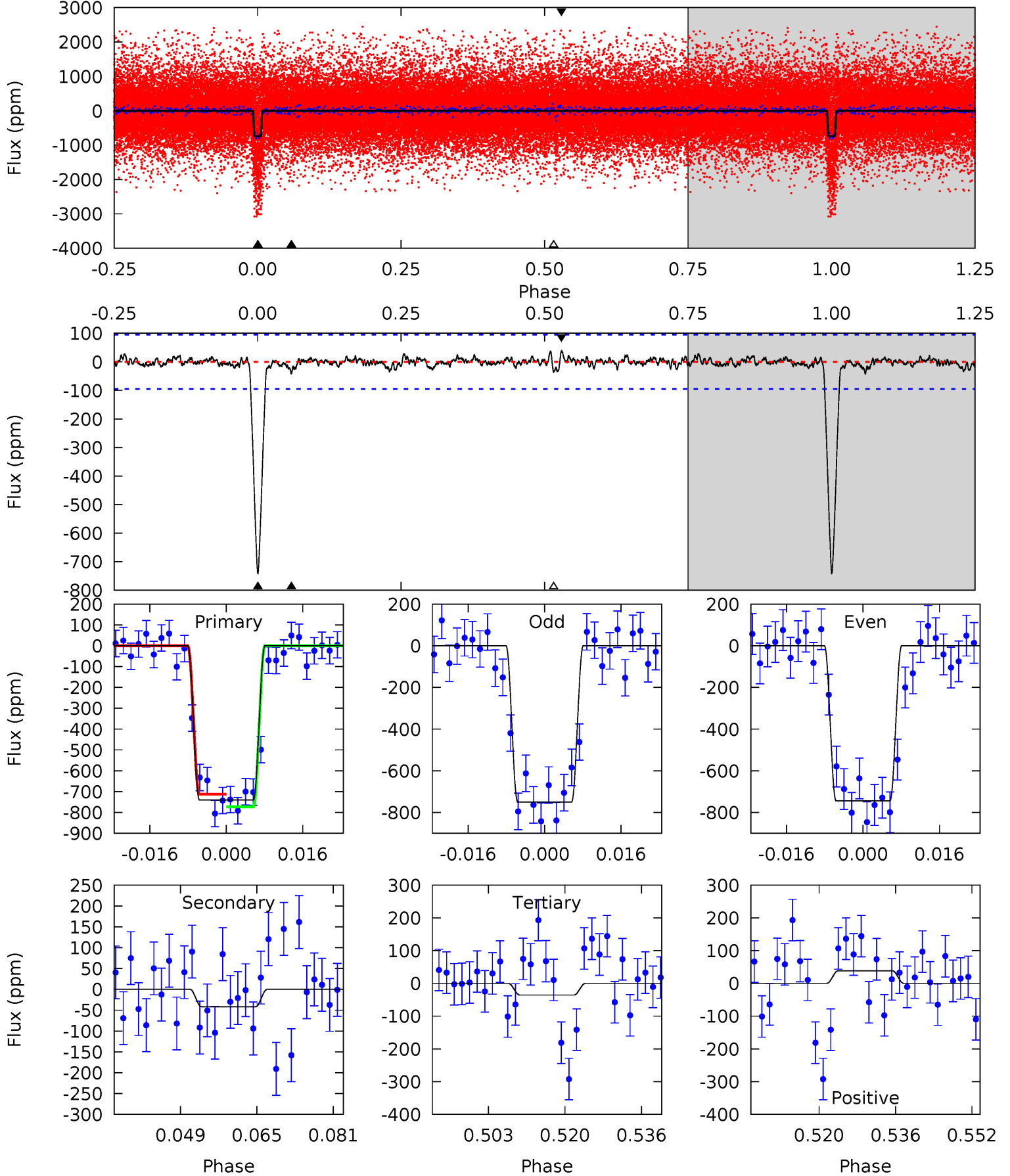
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.1	13.7	6.62	6.57	4.88	2.31	3.05	16.4	16.5	7.12	7.17	0.97	0.94	0.24	0.33



Alt Model-Shift Uniqueness Test

008128067-01, P = 12.429522 Days, E = 133.774458 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.3	2.15	1.85	1.99	4.93	2.40	0.56	36.4	36.3	0.31	0.16	0.14	1.38	0.05	1.56



Stellar Parameters For KIC 008128067

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5492^{+164}_{-164}	$4.604^{+0.032}_{-0.128}$	$-0.340^{+0.300}_{-0.300}$	$0.752^{+0.152}_{-0.061}$	$0.841^{+0.081}_{-0.098}$	$2.791^{+0.476}_{-1.055}$
	+3%/-3%	+1%/-3%	+88%/-88%	+20%/-8%	+10%/-12%	+17%/-38%
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 008128067-01 / KOI 4314.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-450 ± 33	$2.84^{+0.35}_{-0.24}$	950^{+49}_{-34}	4524^{+174}_{-164}	295^{+54}_{-53}
Alt.	-42 ± 19	$2.42^{+0.27}_{-0.23}$	953^{+49}_{-37}	3202^{+215}_{-300}	37^{+20}_{-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 $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

DV Centroid Data

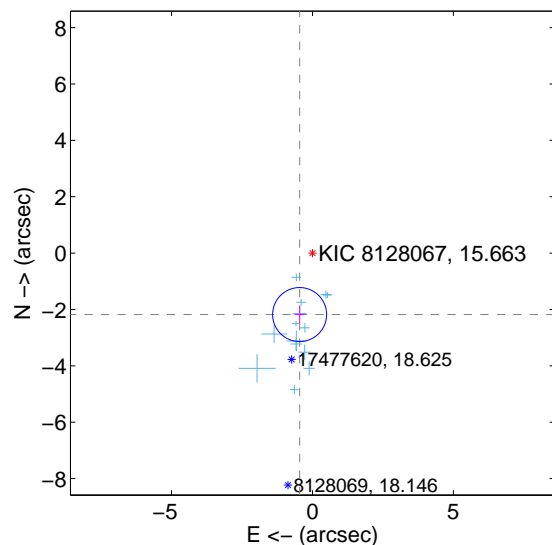
Supplemental centroid analysis for 008128067-01. Kepler magnitude: 15.66. Transit SNR 13.85

There are 14 quarters with good PRF difference image offsets

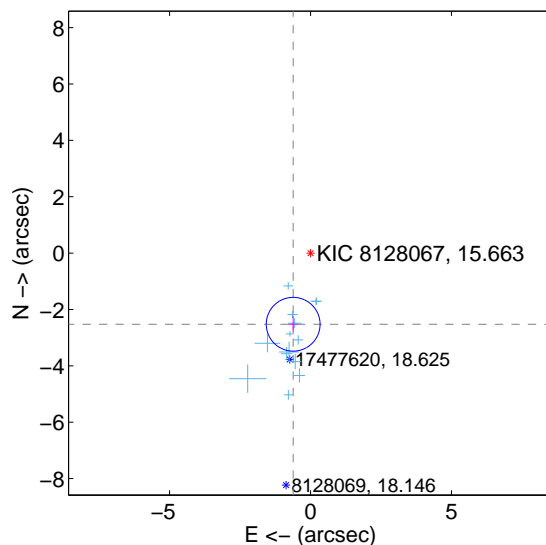
The direct PRF centroid is offset from the target star catalog position by about 0.50 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.227 ± 0.319	6.98	0.455 ± 0.179	-2.180 ± 0.310
PRF-fit source offset from KIC position	2.599 ± 0.318	8.17	0.616 ± 0.167	-2.525 ± 0.310
photometric centroid source offset	5.35 ± 0.60	8.92	2.61 ± 0.41	-4.68 ± 0.65

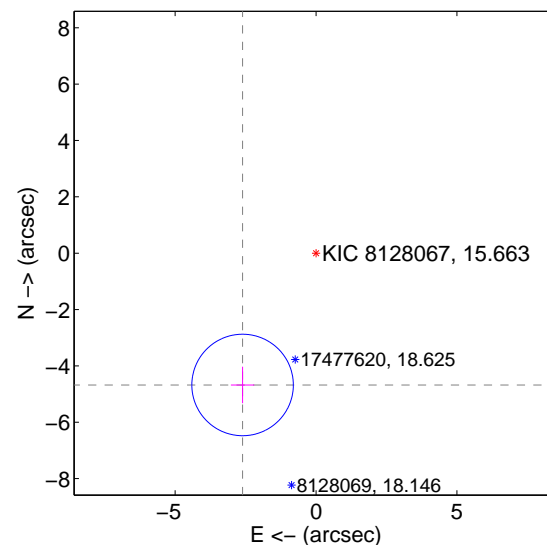
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



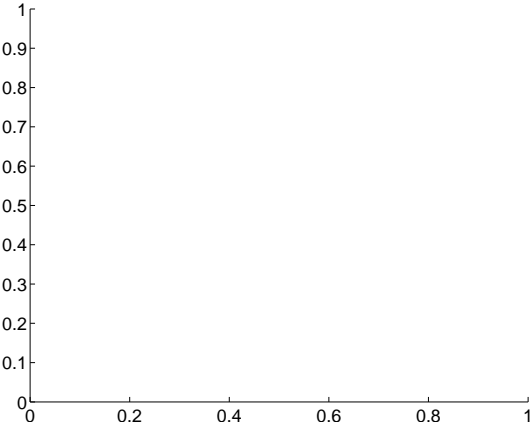
offset from photometric centroids



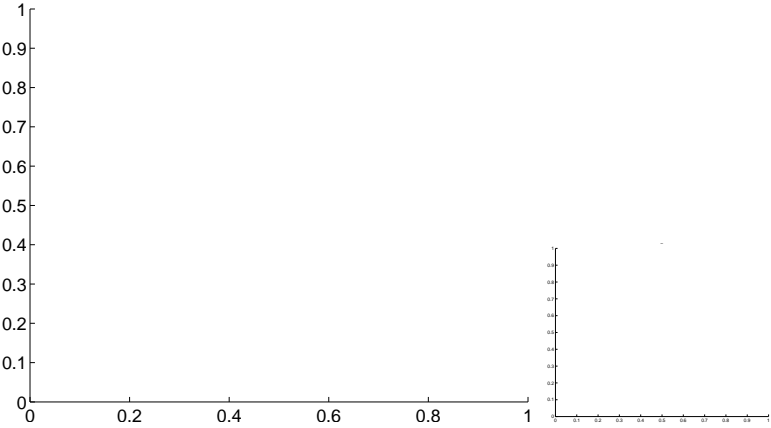
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

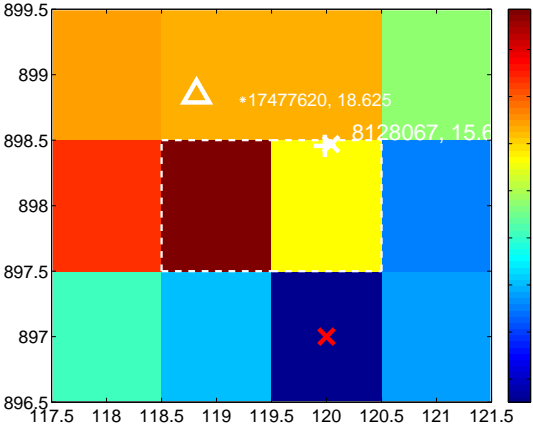
Q1 no difference image



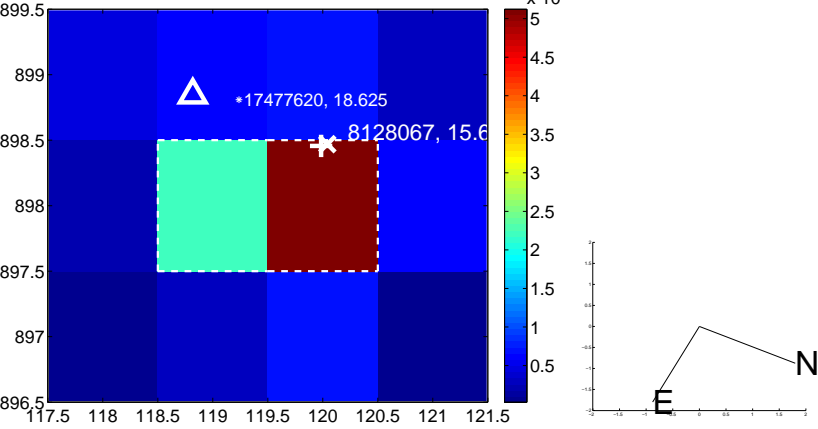
Q1 no OOT image



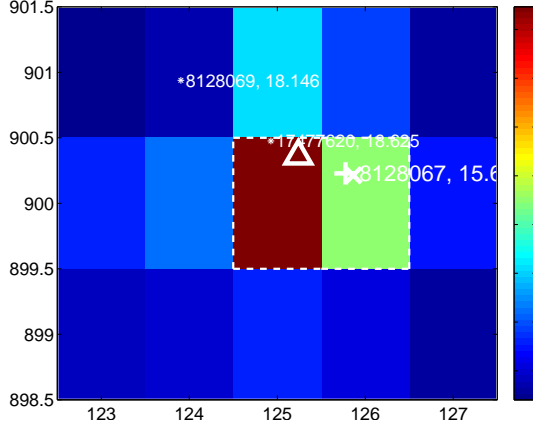
Q2 difference image



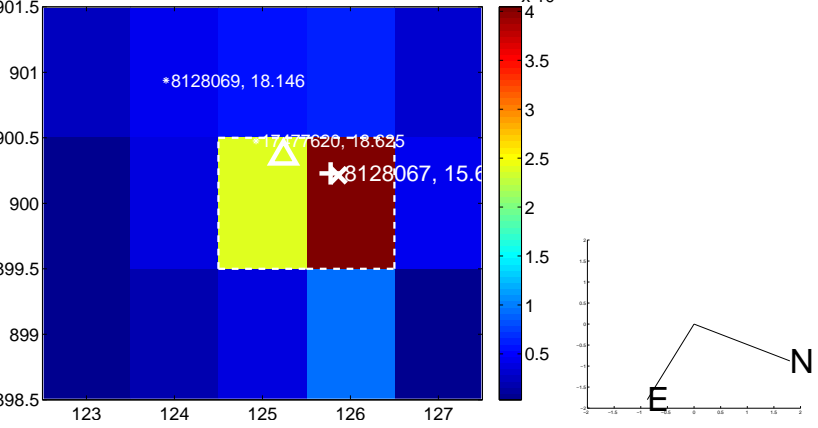
Q2 OOT image



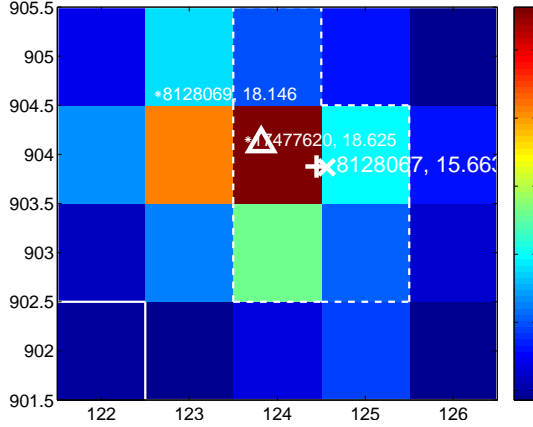
Q3 difference image



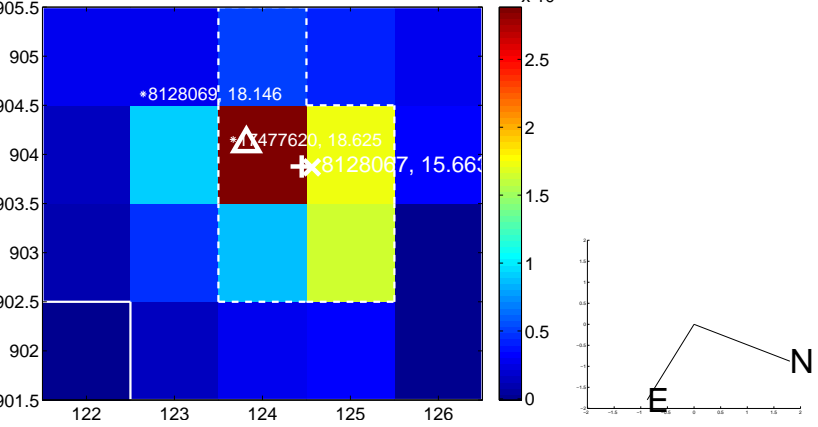
Q3 OOT image



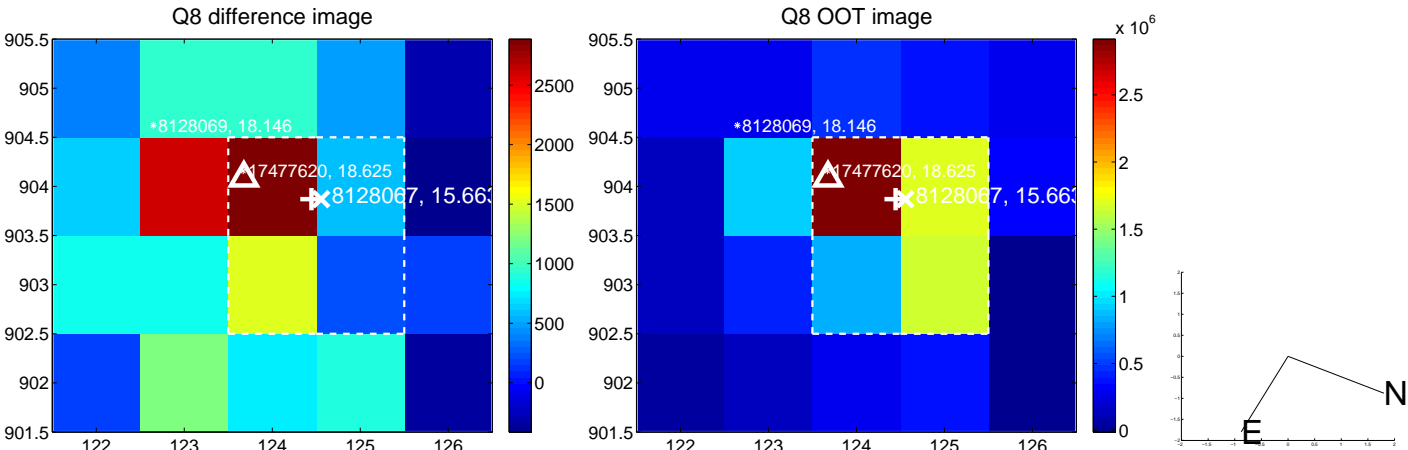
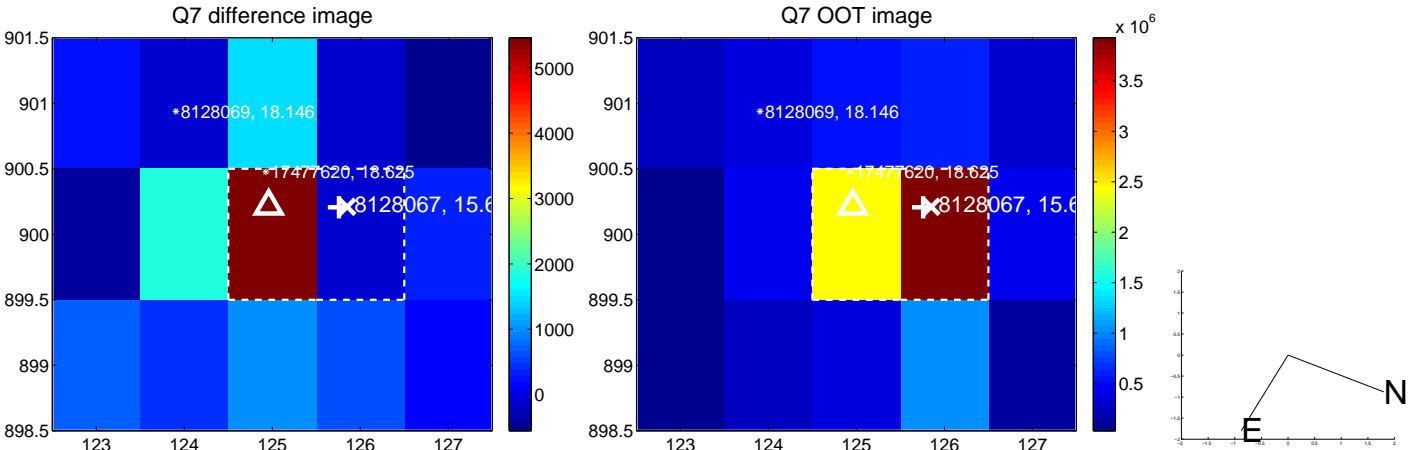
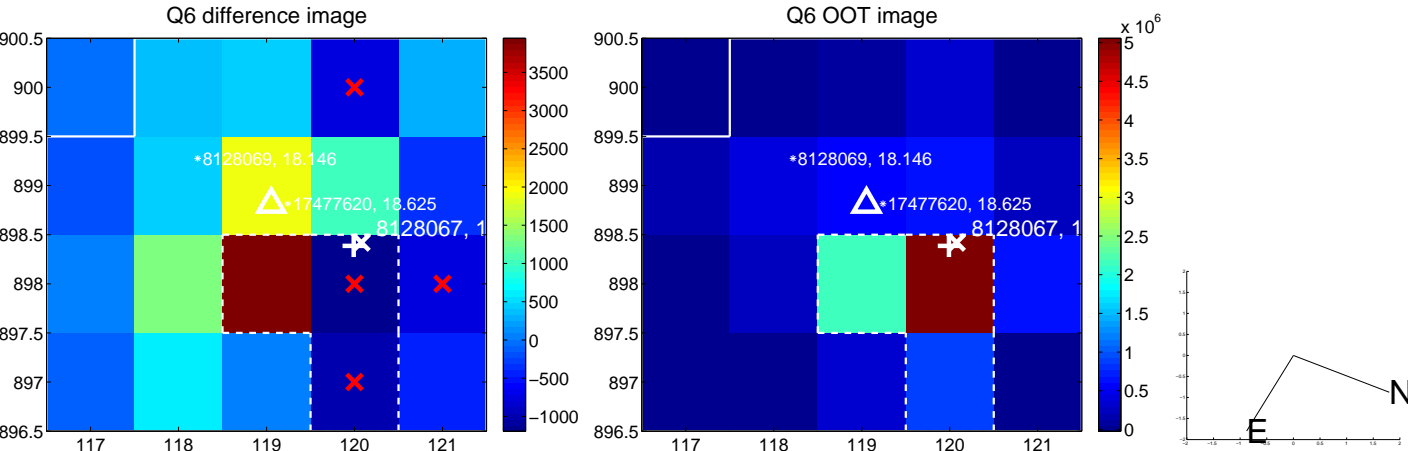
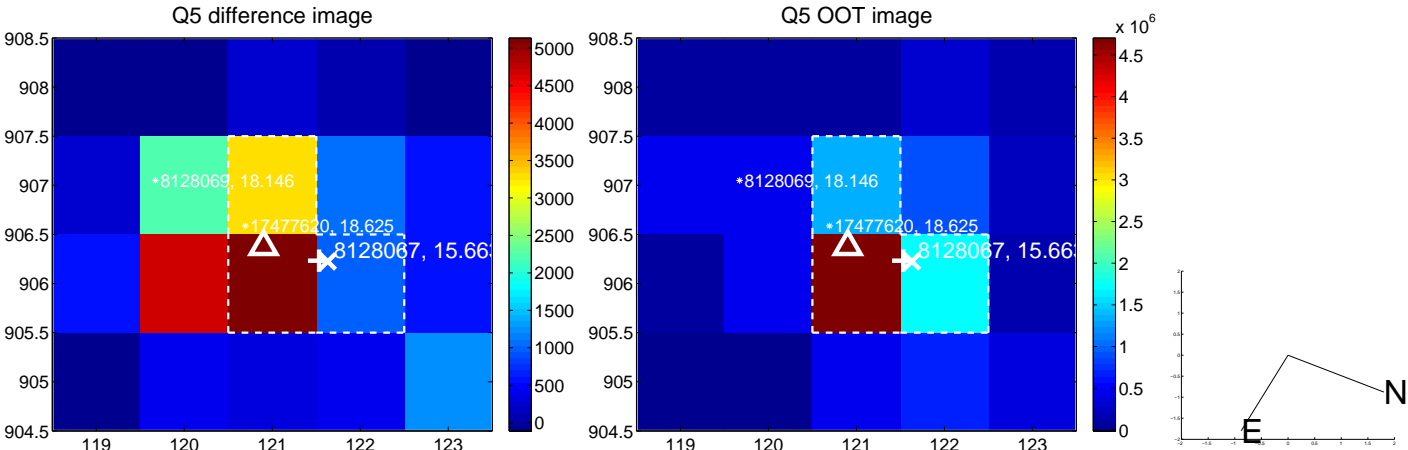
Q4 difference image



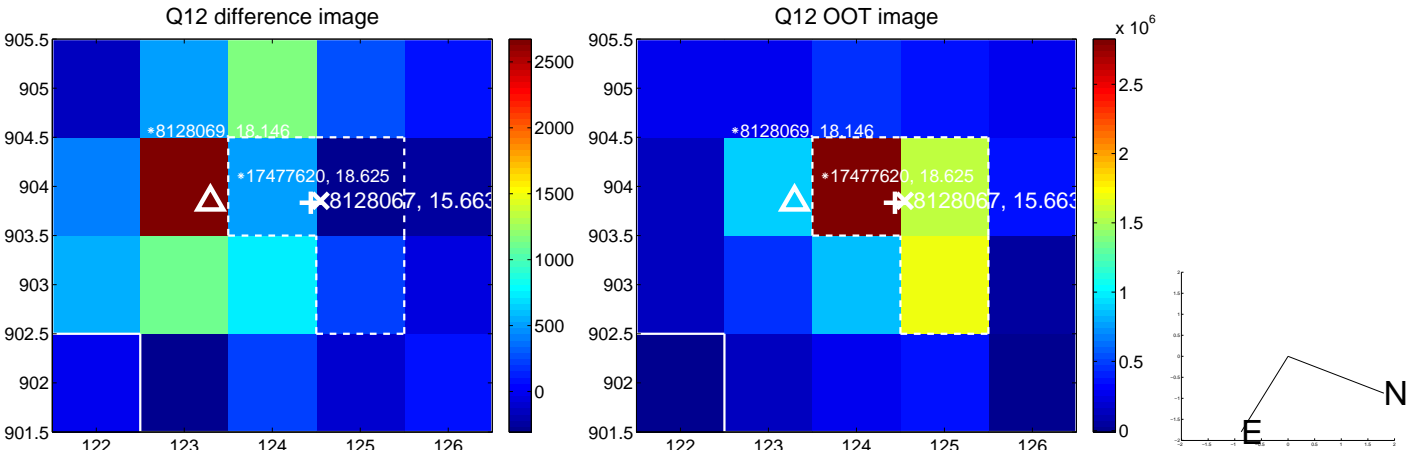
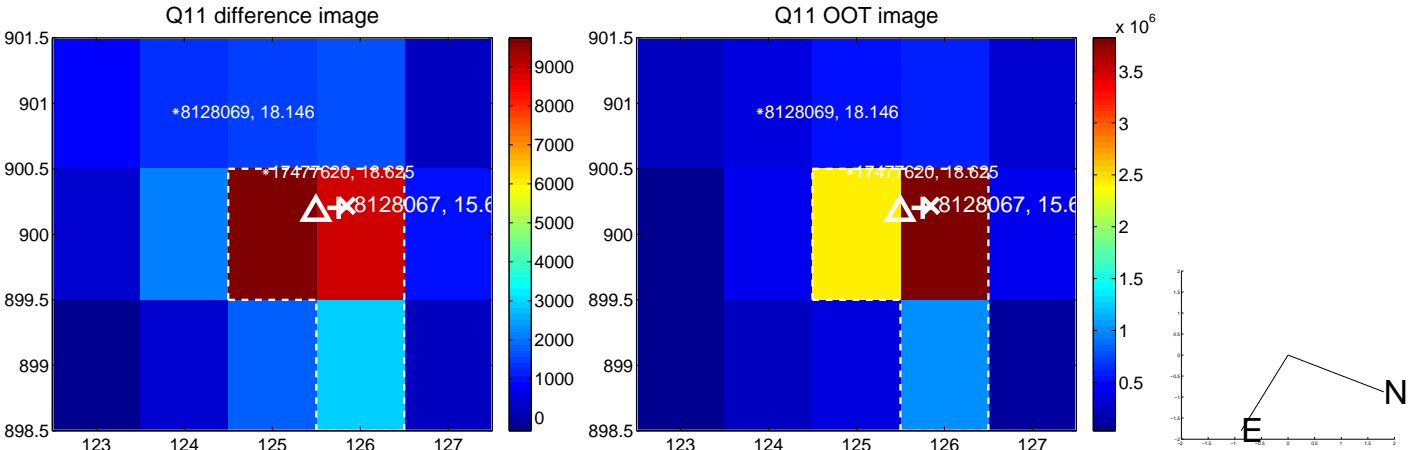
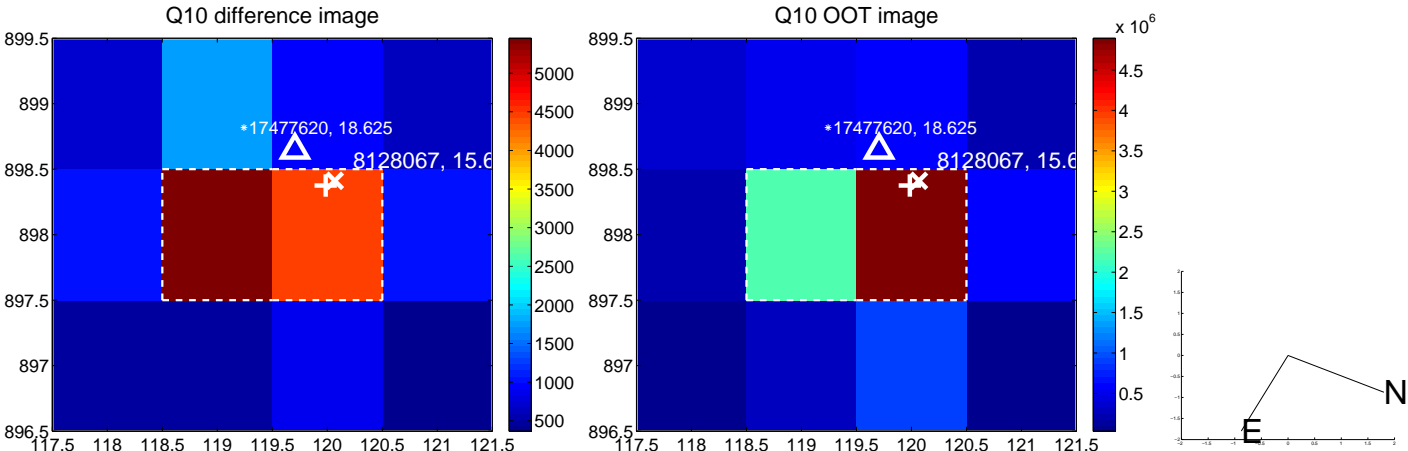
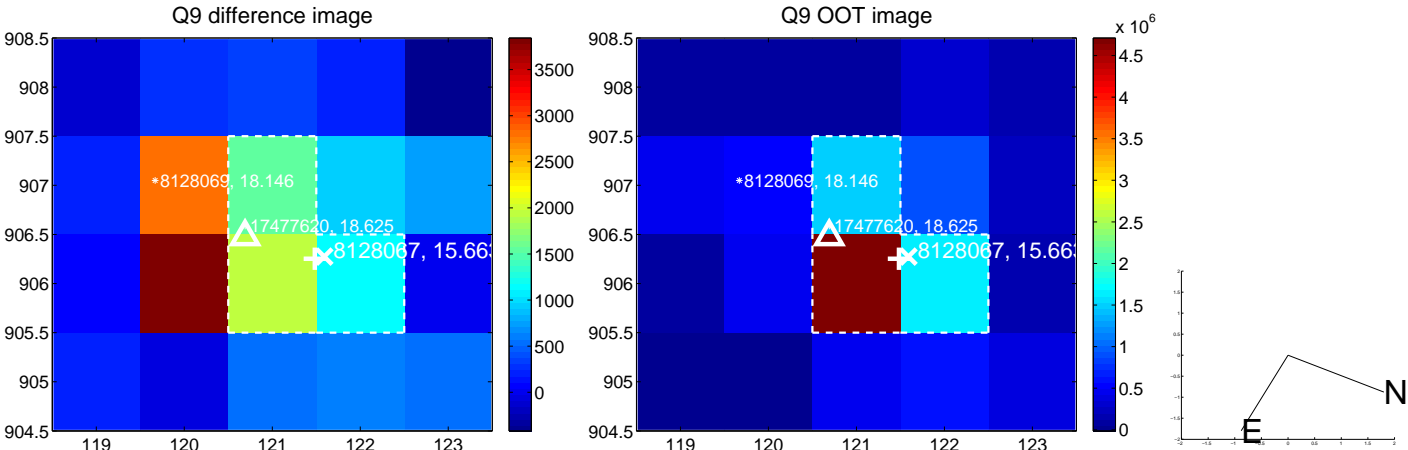
Q4 OOT image



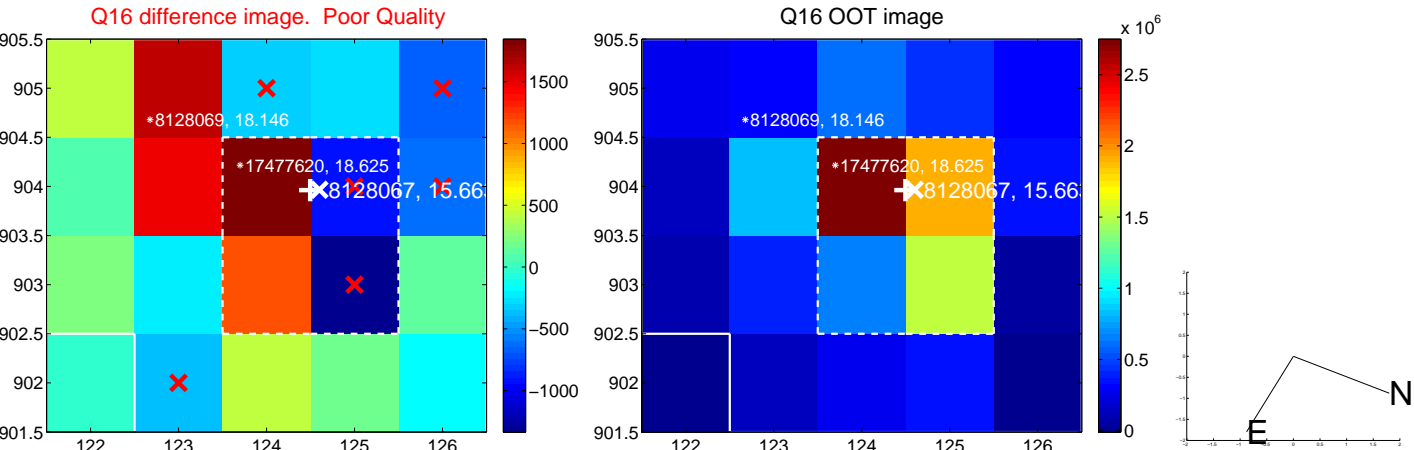
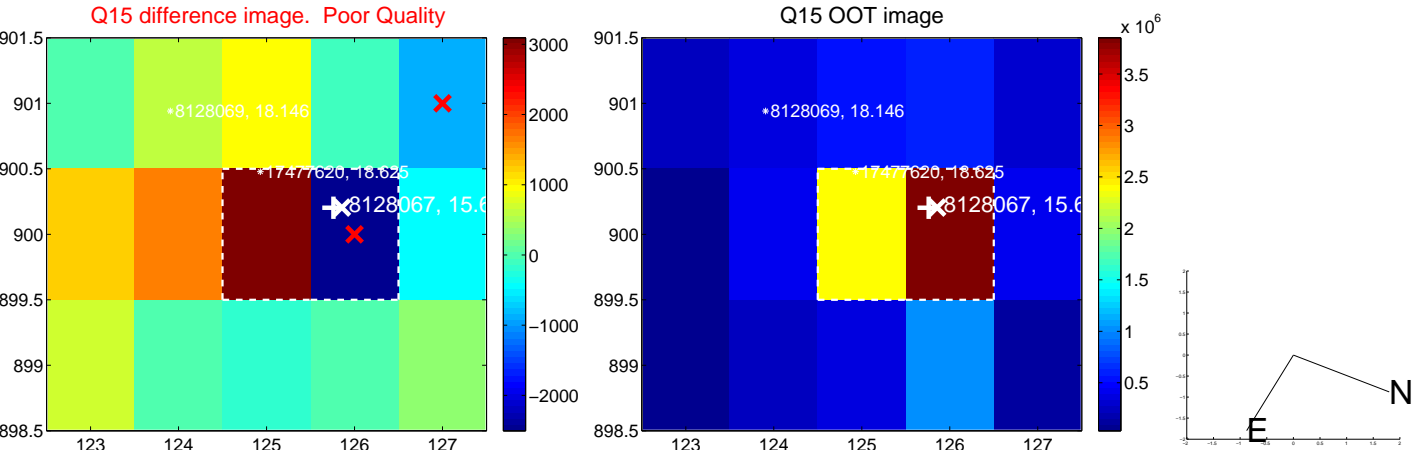
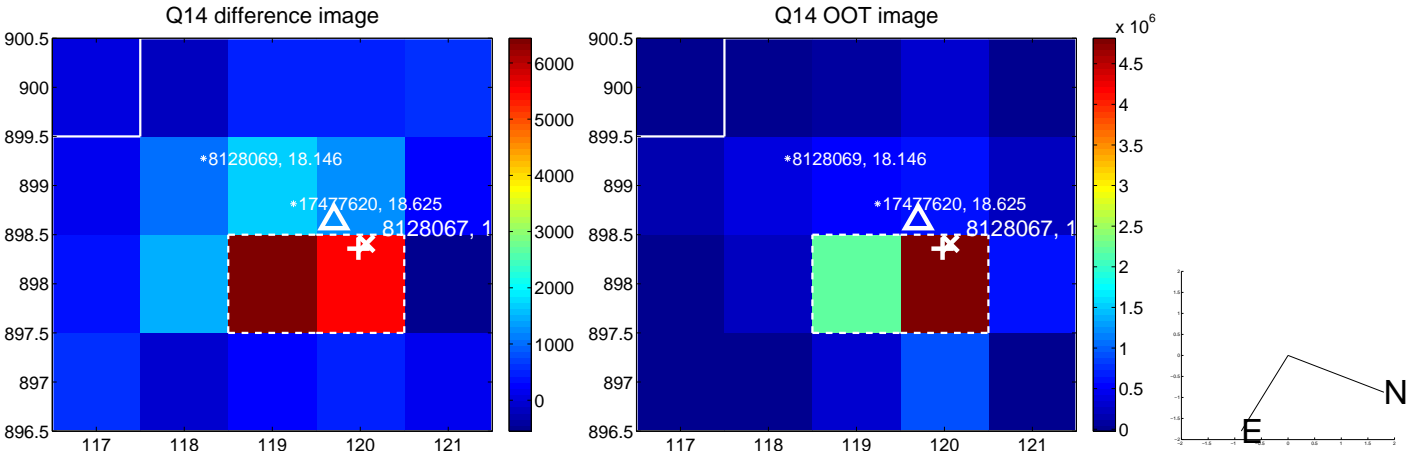
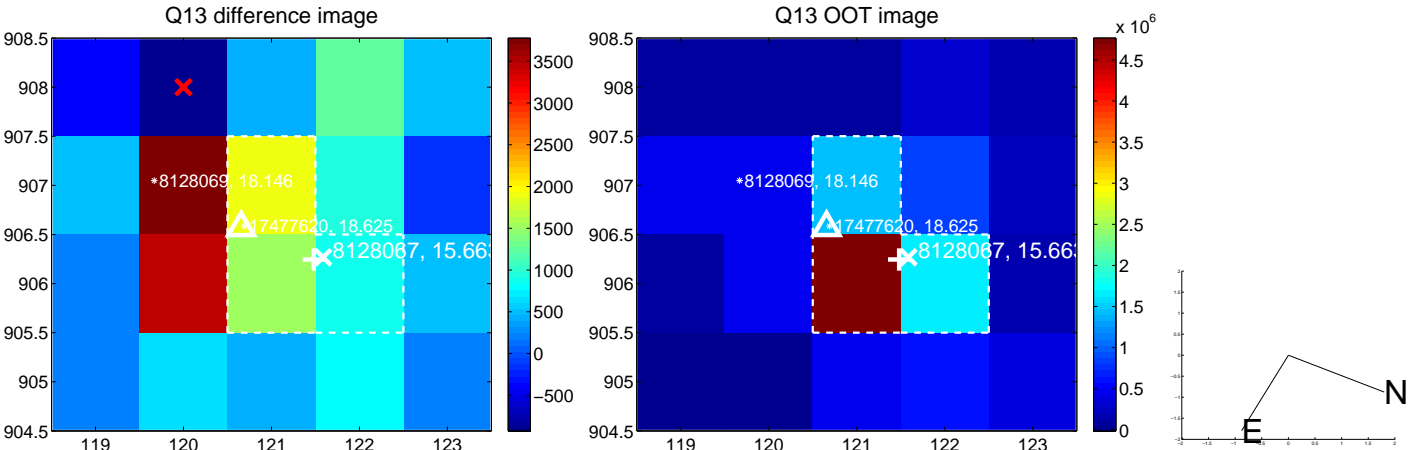
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



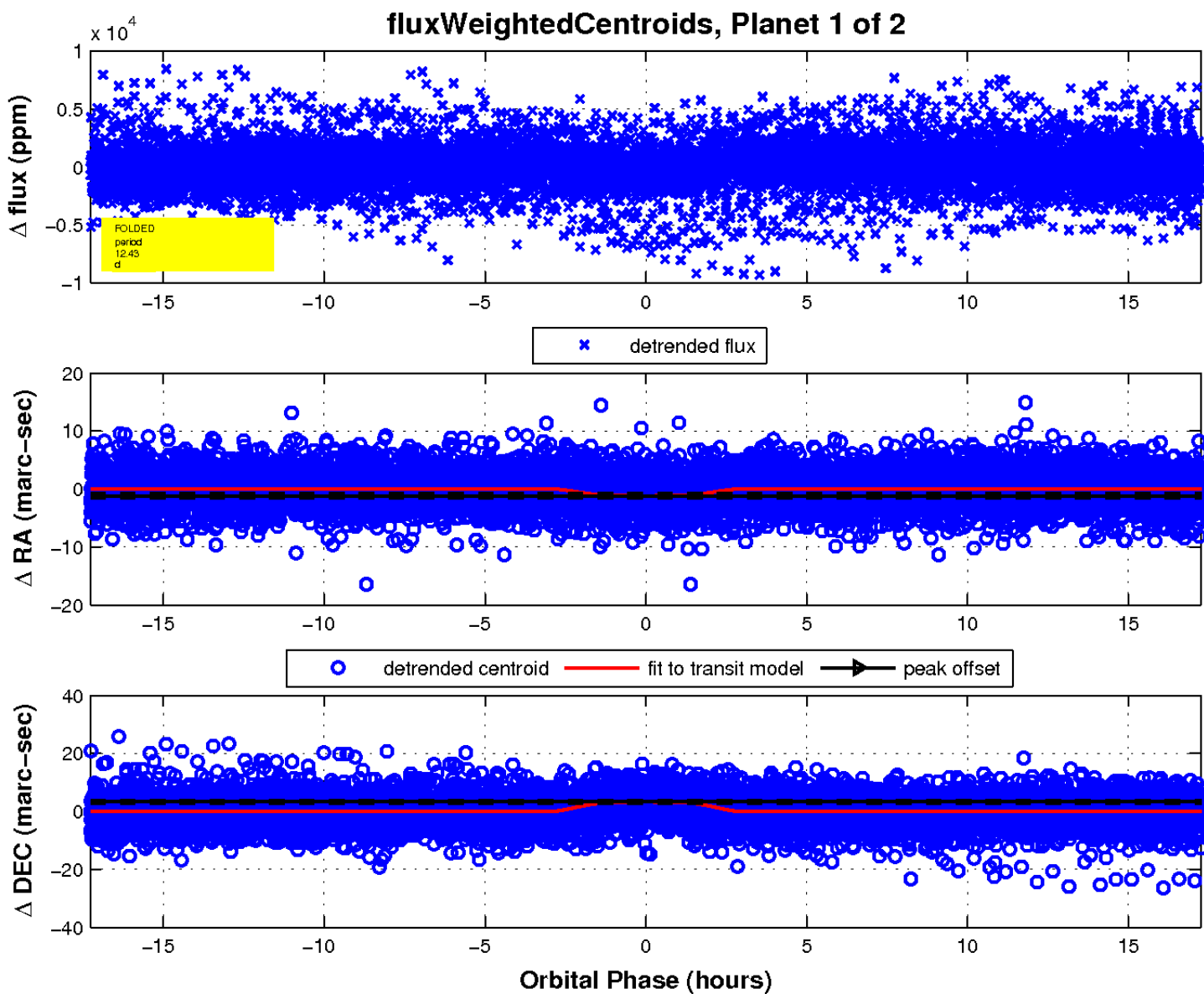
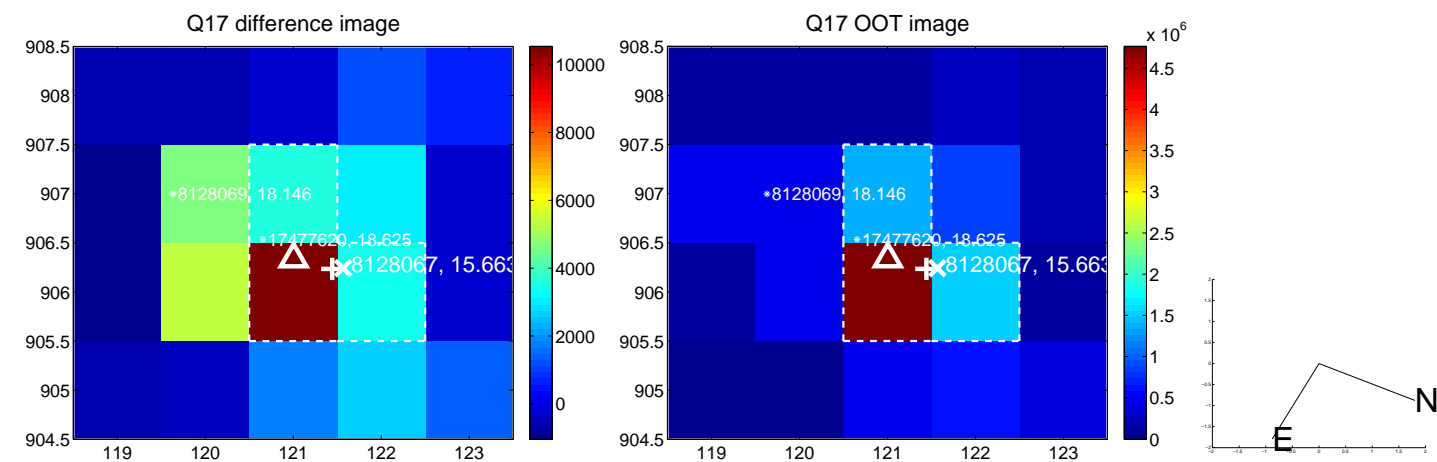
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

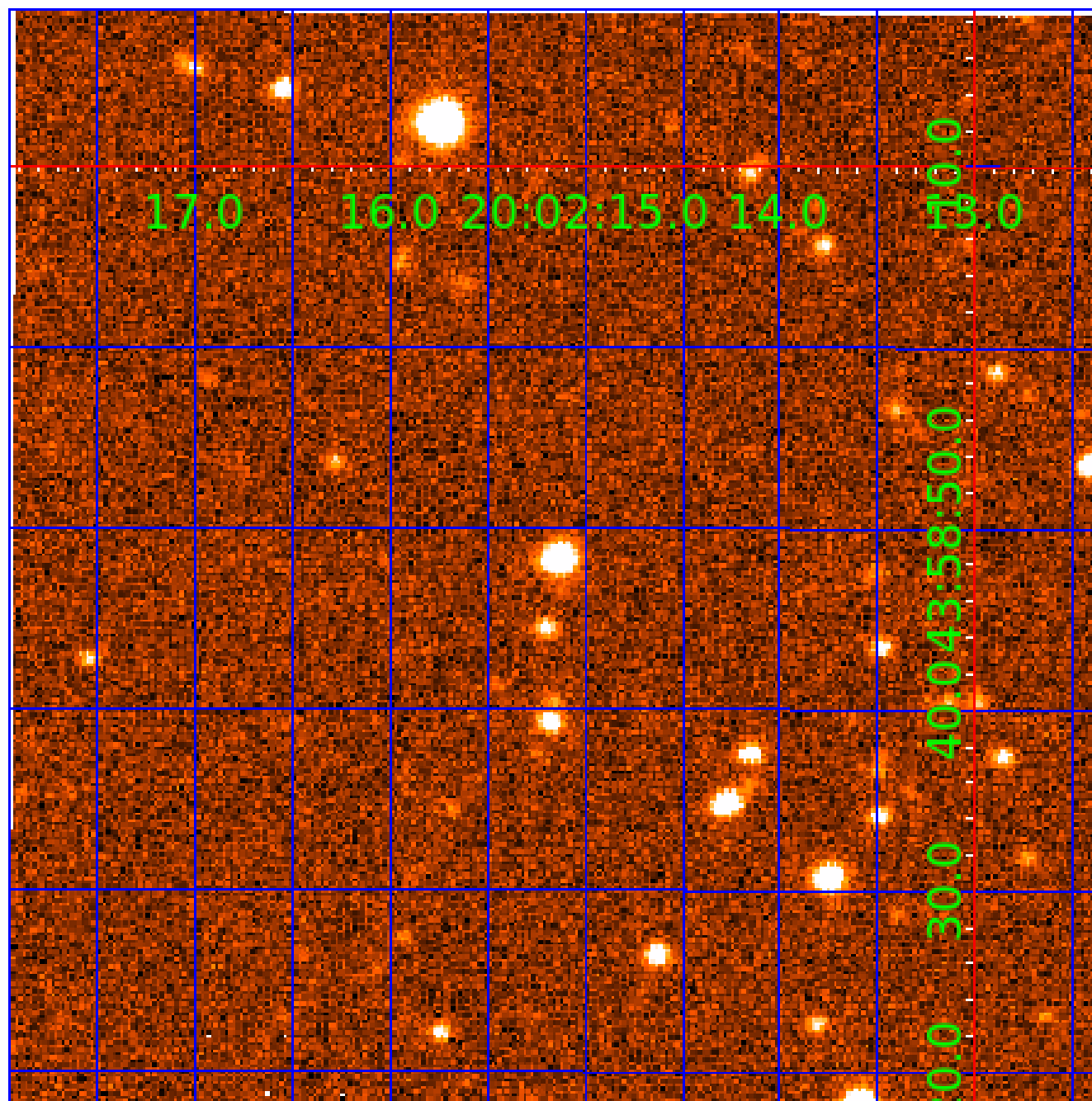


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008128067

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})
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008128067-02	OBS	No	12.429432	140.240339	759.5	2.886	10.9	11.8	0.75	5492	3.52	47.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008128067-01	OBS	FP	0.00	0	1	0	0	HAS_SEC_TCE—CENT_KIC_POS
008128067-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_KIC_POS—HALO_GHOST

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.

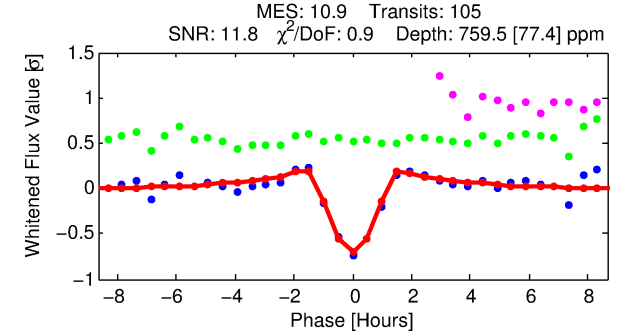
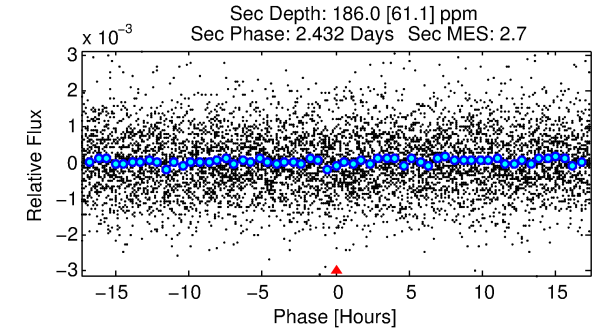
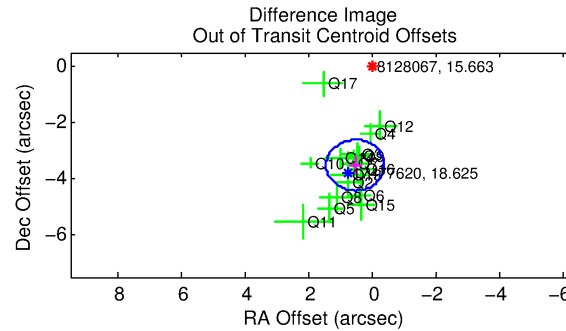
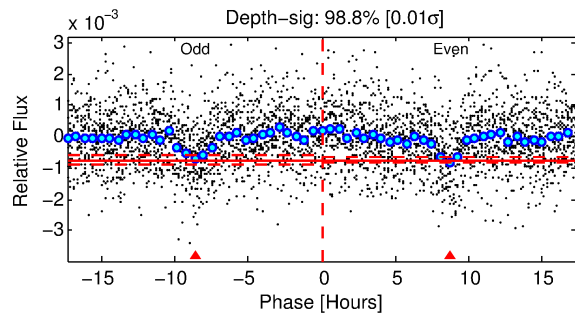
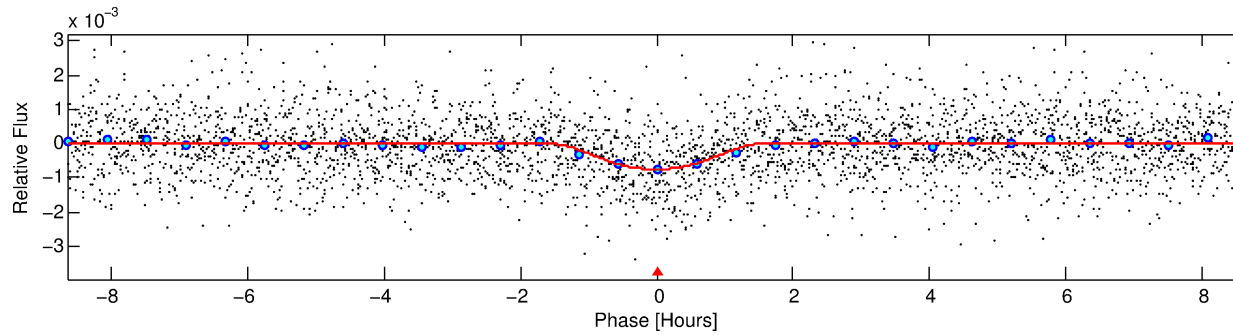
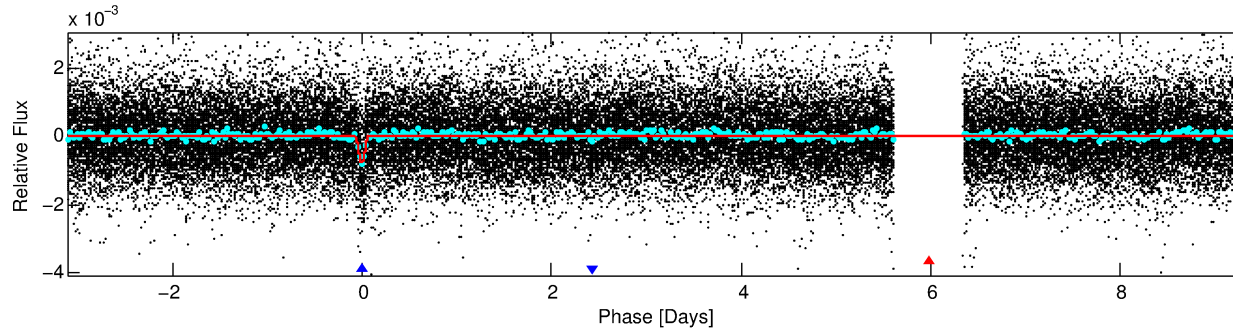
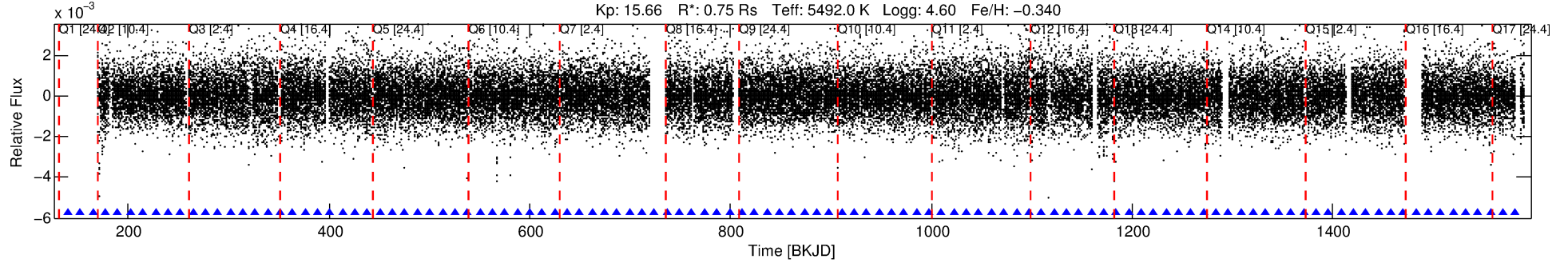
Ephemeris Match Information For 008128067-02

No Significant Match Found

DV One-Page Summary

KIC: 8128067 Candidate: 2 of 2 Period: 12.429 d
KOI: K04314 Corr: No Ephemeris Match

Kp: 15.66 R*: 0.75 Rs Teff: 5492.0 K Logg: 4.60 Fe/H: -0.340



DV Fit Results:

Period = 12.42943 [0.00007] d
Epoch = 140.2403 [0.0049] BKJD
Rp/R* = 0.0429 [0.0688]
a/R* = 11.02 [5.67]
b = 0.99 [0.12]
Seff = 47.35 [12.62]
Teq = 669 [45] K
Rp = 3.52 [5.69] Re
a = 0.0987 [0.0165] AU
Ag = 80.36 [259.85] [0.31σ]
Teff = 3096 [2498] K [0.97σ]

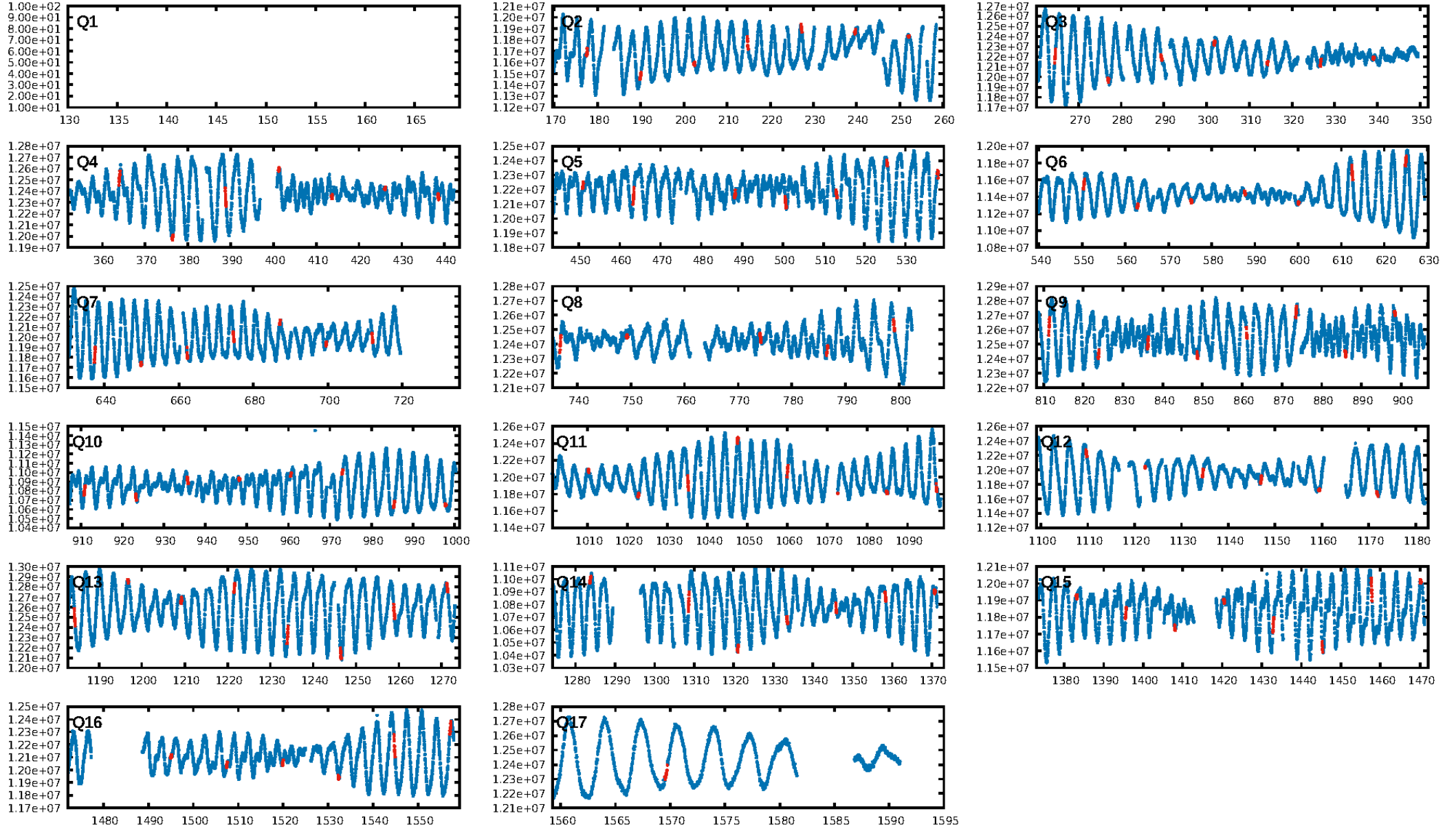
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 92.7%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 2.13e-25
RollingBand-fgt: 1.00 [104/104]
GhostDiagnostic-chr: 0.1938
Centroid-sig: 0.0%
Centroid-so: 6.283 arcsec [6.87σ]
OotOffset-rm: 3.568 arcsec [11.79σ]
KicOffset-rm: 3.890 arcsec [12.61σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.94 [15/16]
DiffImageOverlap-fno: 1.00 [16/16]

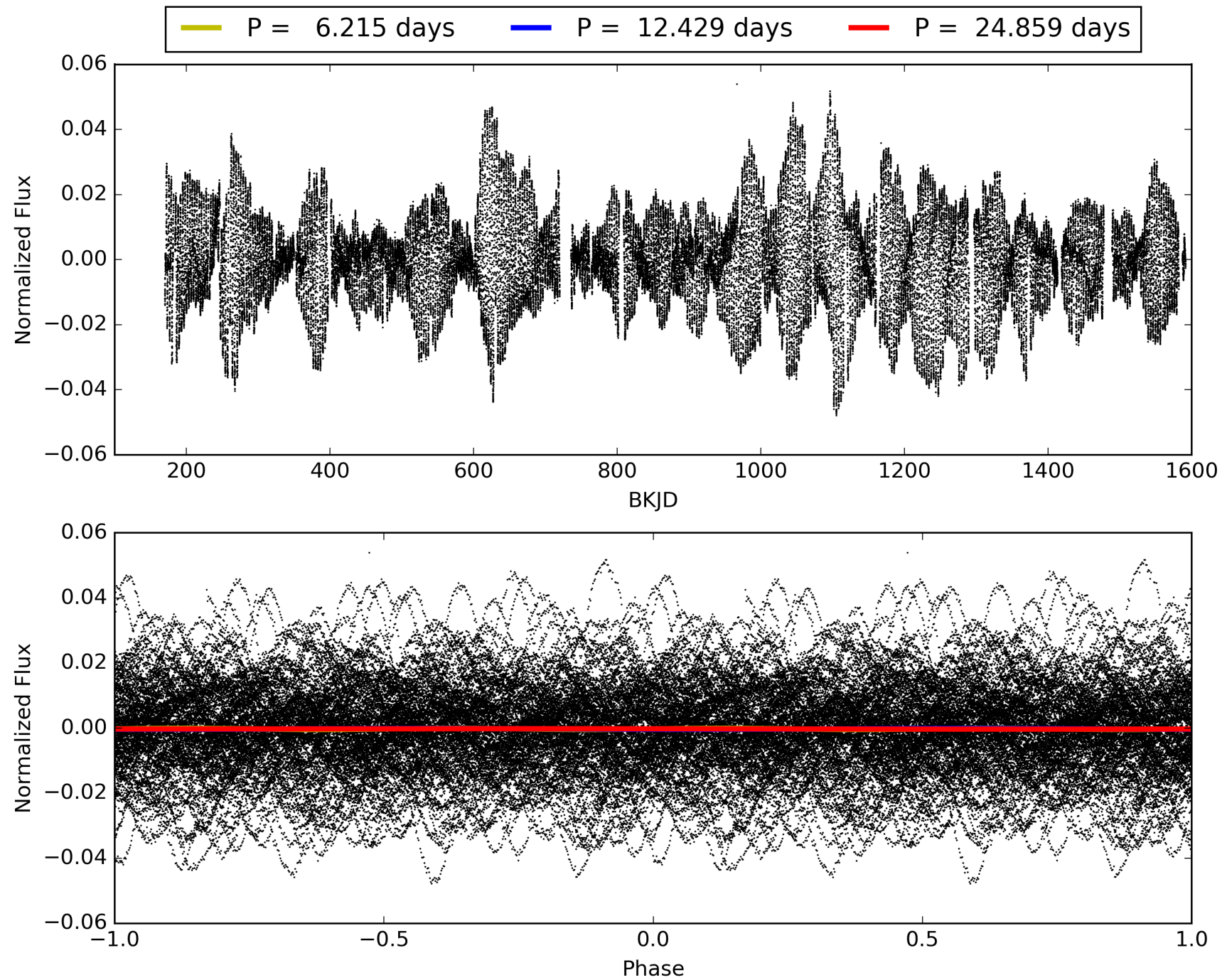
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:31:57 Z

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

TCE 008128067-02, PDC Light Curves

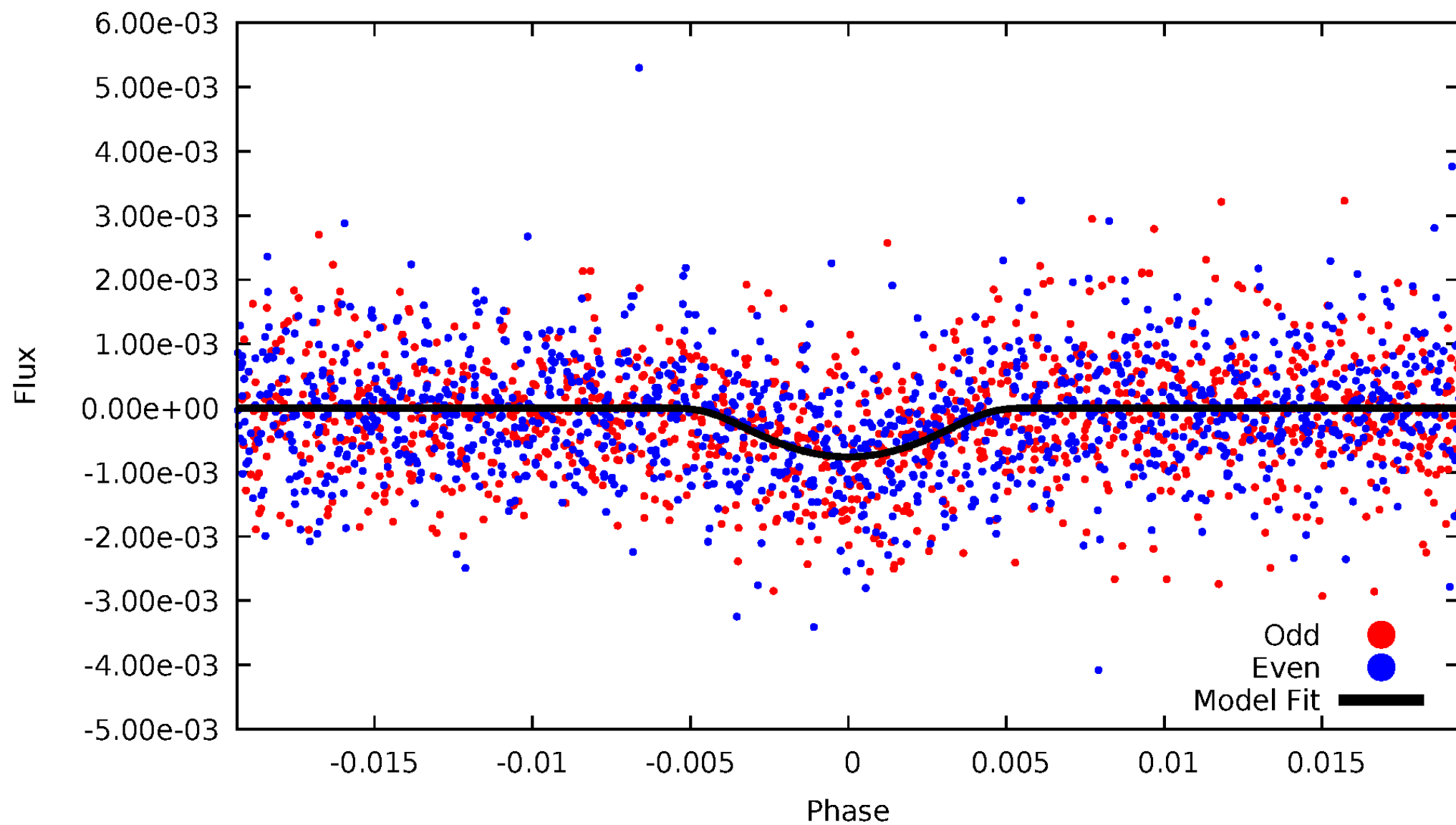


TCE 008128067-02



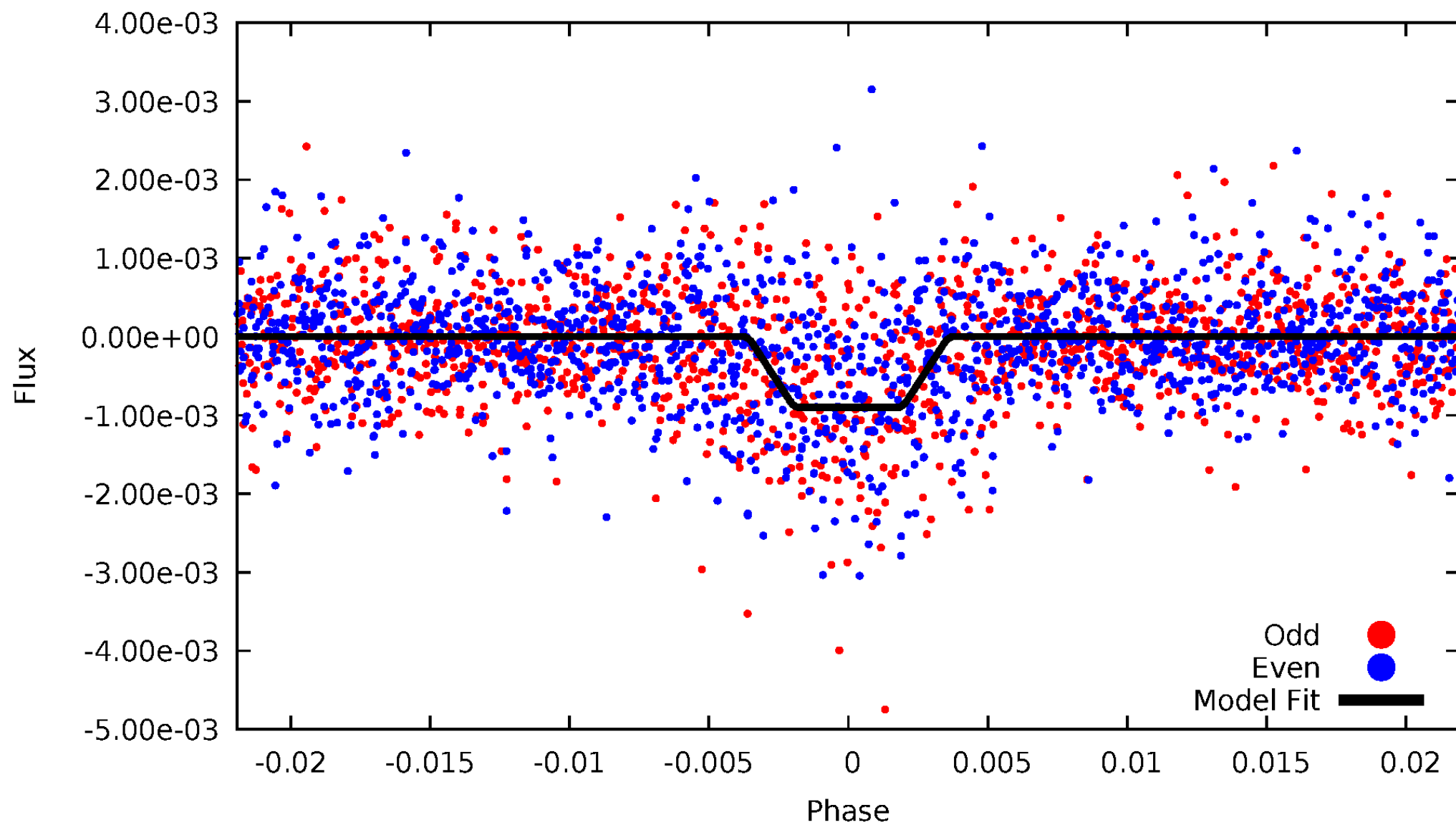
DV Odd/Even

TCE 008128067-02



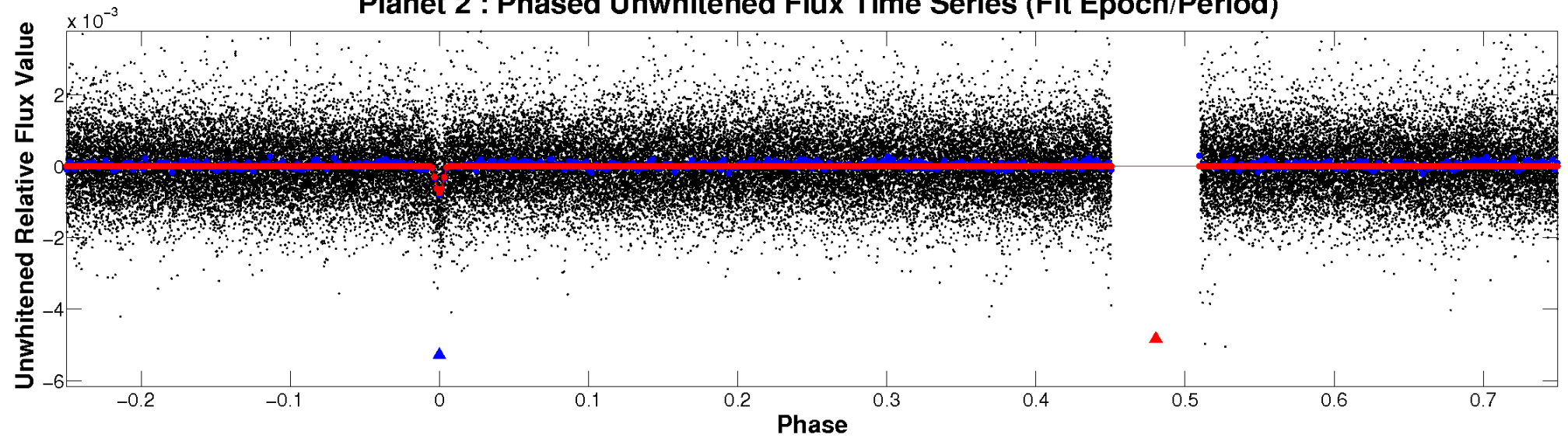
ALT Odd/Even

TCE 008128067-02

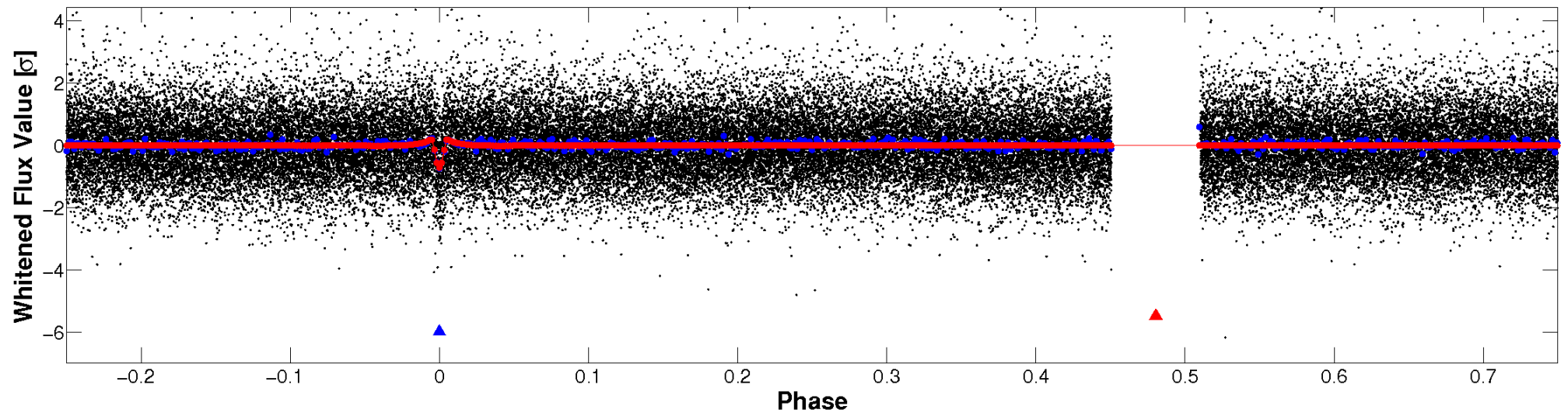


Non-Whitened Vs. Whitened Light Curve

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

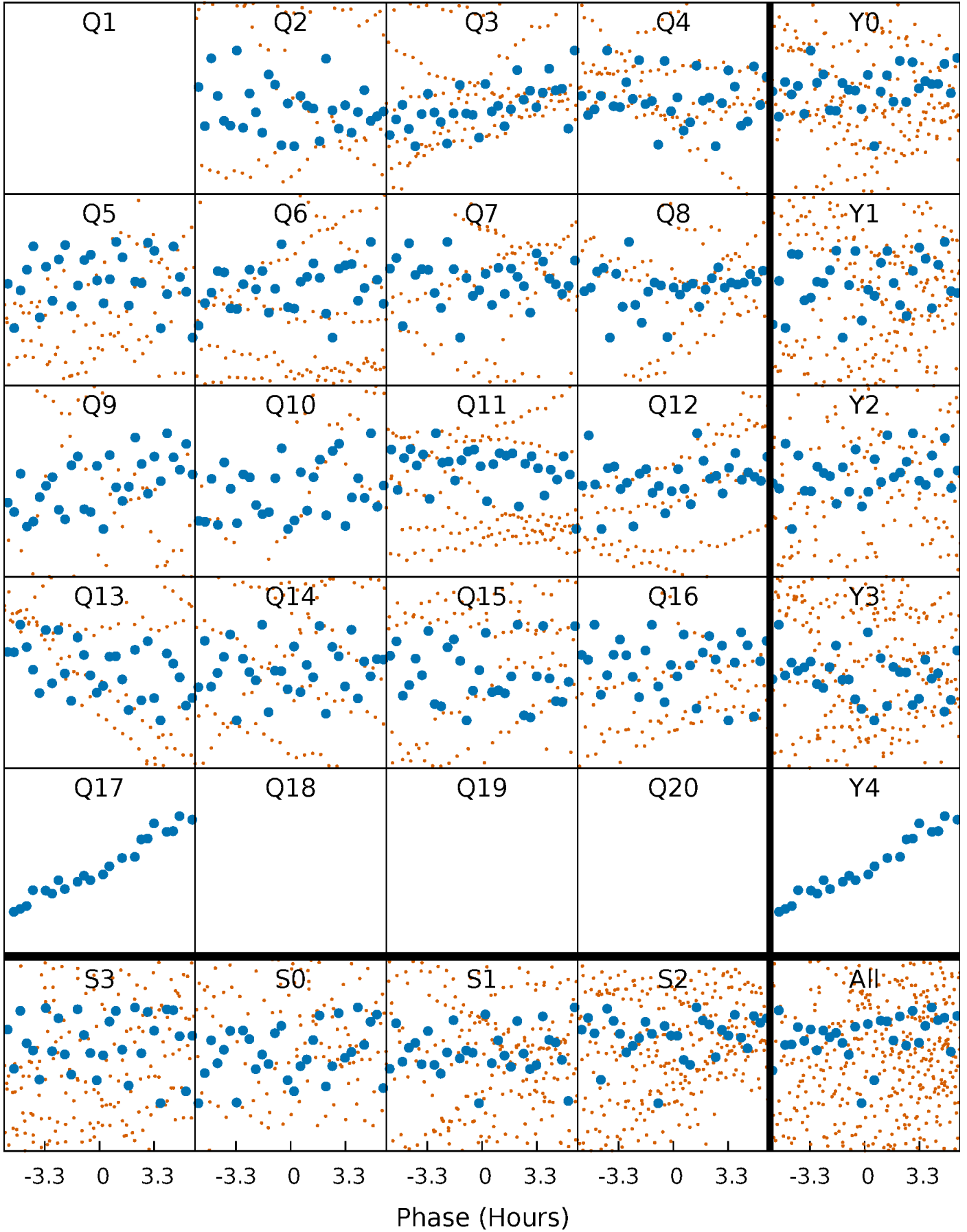


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



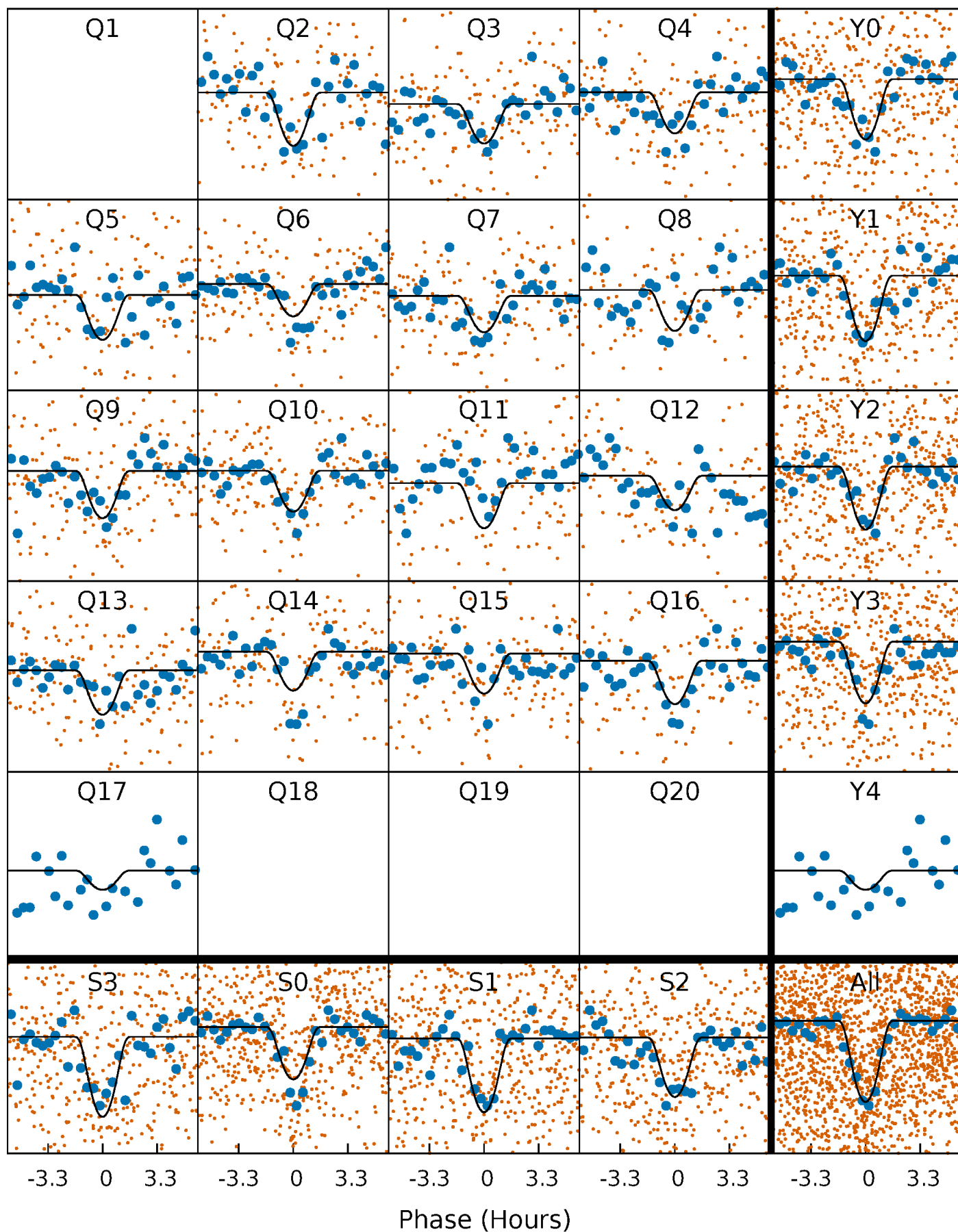
PDC Quarter-Phased Transit Curves

TCE 008128067-02 P= 12.429432 Days $T_0=140.240339$ (BKJD)



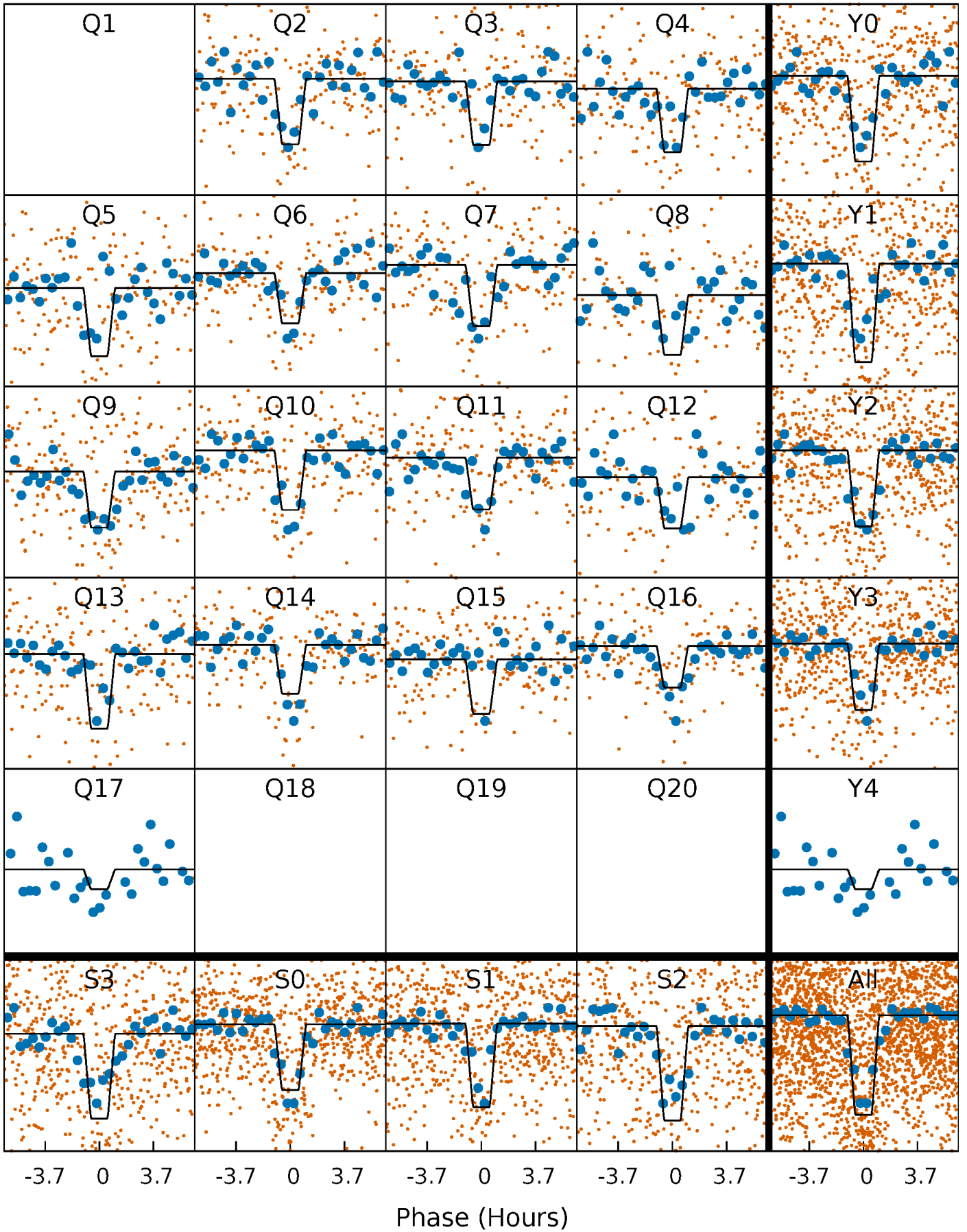
DV Quarter-Phased Transit Curves

TCE 008128067-02 P= 12.429432 Days $T_0=140.240339$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

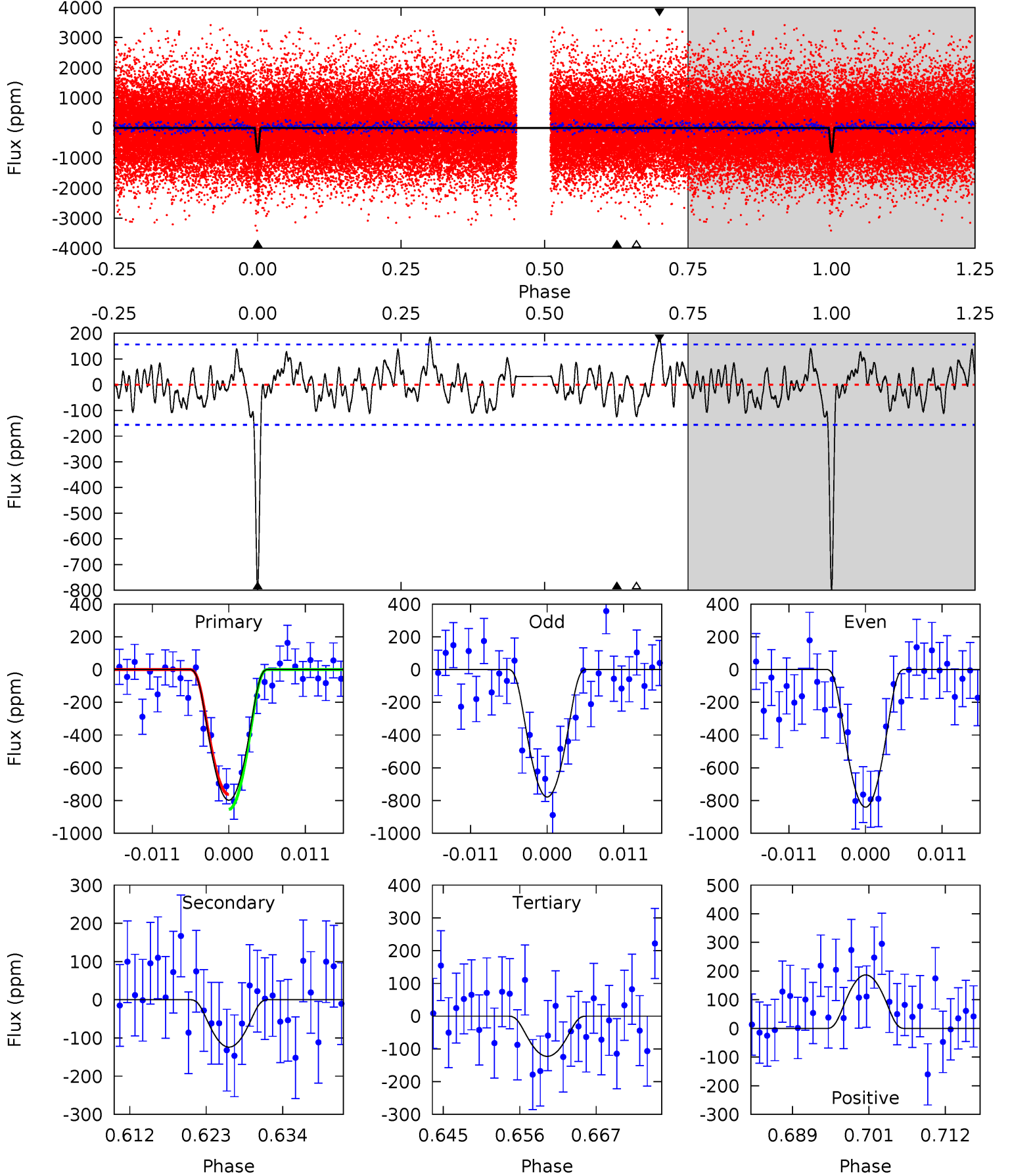
TCE 008128067-02 P= 12.429327 Days $T_0=140.250150$ (BKJD)



DV Model-Shift Uniqueness Test

008128067-02, $P = 12.429432$ Days, $E = 140.240339$ Days

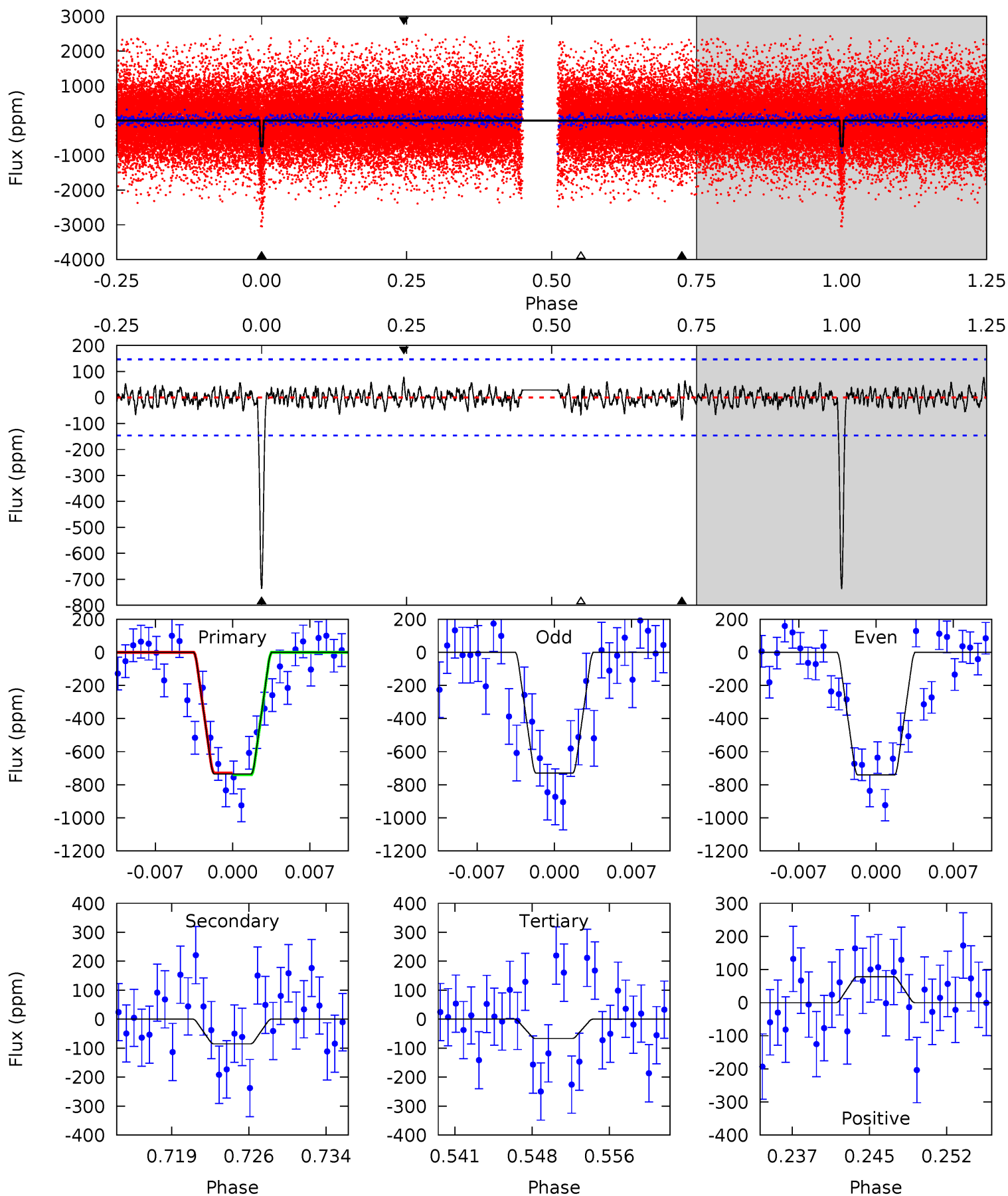
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.5	3.96	3.93	5.97	5.01	2.54	1.81	21.6	19.6	0.04	-2.00	1.00	0.98	0.19	1.45



Alt Model-Shift Uniqueness Test

008128067-02, $P = 12.429327$ Days, $E = 140.250150$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.5	2.96	2.32	2.71	5.08	2.68	0.78	23.2	22.8	0.64	0.24	0.20	1.18	0.10	0.20



Stellar Parameters For KIC 008128067

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5492^{+164}_{-164}	$4.604^{+0.032}_{-0.128}$	$-0.340^{+0.300}_{-0.300}$	$0.752^{+0.152}_{-0.061}$	$0.841^{+0.081}_{-0.098}$	$2.791^{+0.476}_{-1.055}$
	+3%/-3%	+1%/-3%	+88%/-88%	+20%/-8%	+10%/-12%	+17%/-38%
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 008128067-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-124 ± 31	$5.59^{+5.31}_{-3.71}$	955^{+45}_{-41}	2930^{+1210}_{-480}	21^{+150}_{-15}
Alt.	-85 ± 29	$5.13^{+4.96}_{-3.51}$	951^{+48}_{-39}	2821^{+1270}_{-465}	16^{+150}_{-12}

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

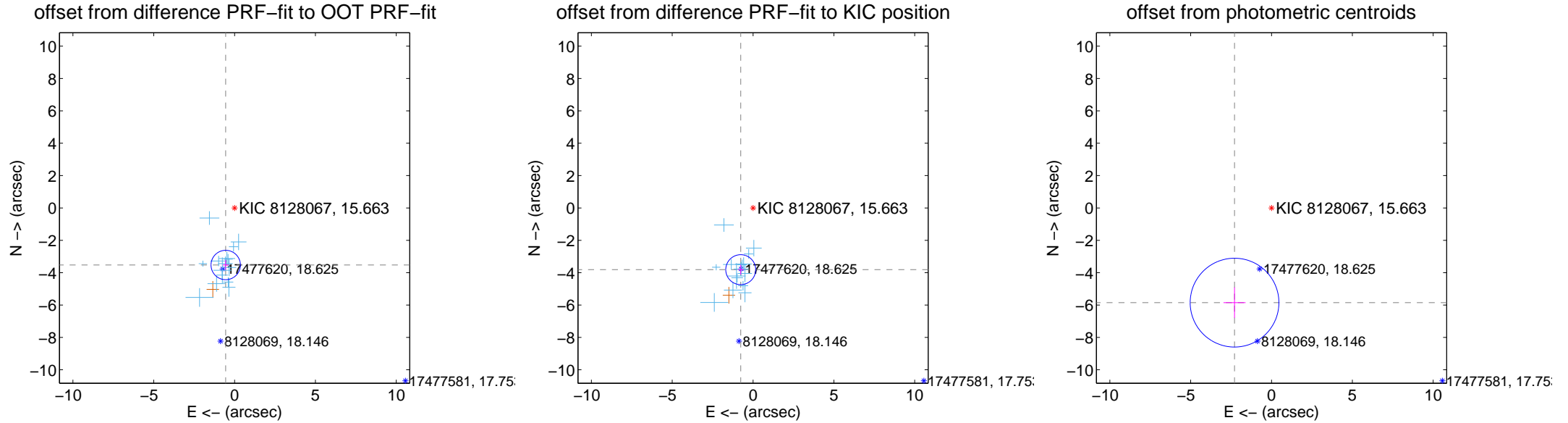
DV Centroid Data

Supplemental centroid analysis for 008128067-02. Kepler magnitude: 15.66. Transit SNR 11.85

There are 15 quarters with good PRF difference image offsets

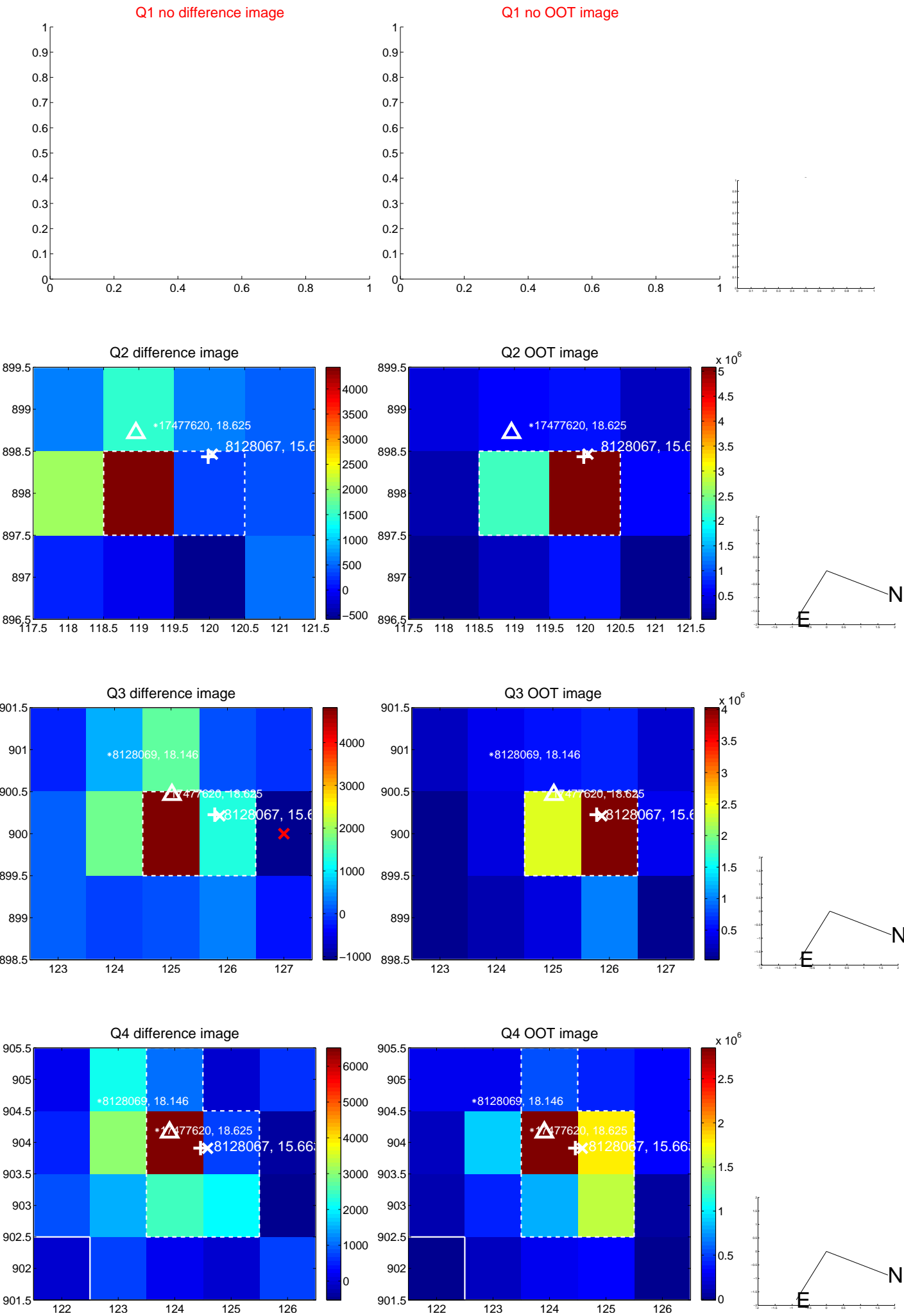
The direct PRF centroid is offset from the target star catalog position by about 0.50 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.568 ± 0.303	11.79	0.549 ± 0.174	-3.526 ± 0.297
PRF-fit source offset from KIC position	3.890 ± 0.308	12.61	0.763 ± 0.181	-3.814 ± 0.305
photometric centroid source offset	6.28 ± 0.91	6.87	2.29 ± 0.68	-5.85 ± 0.95

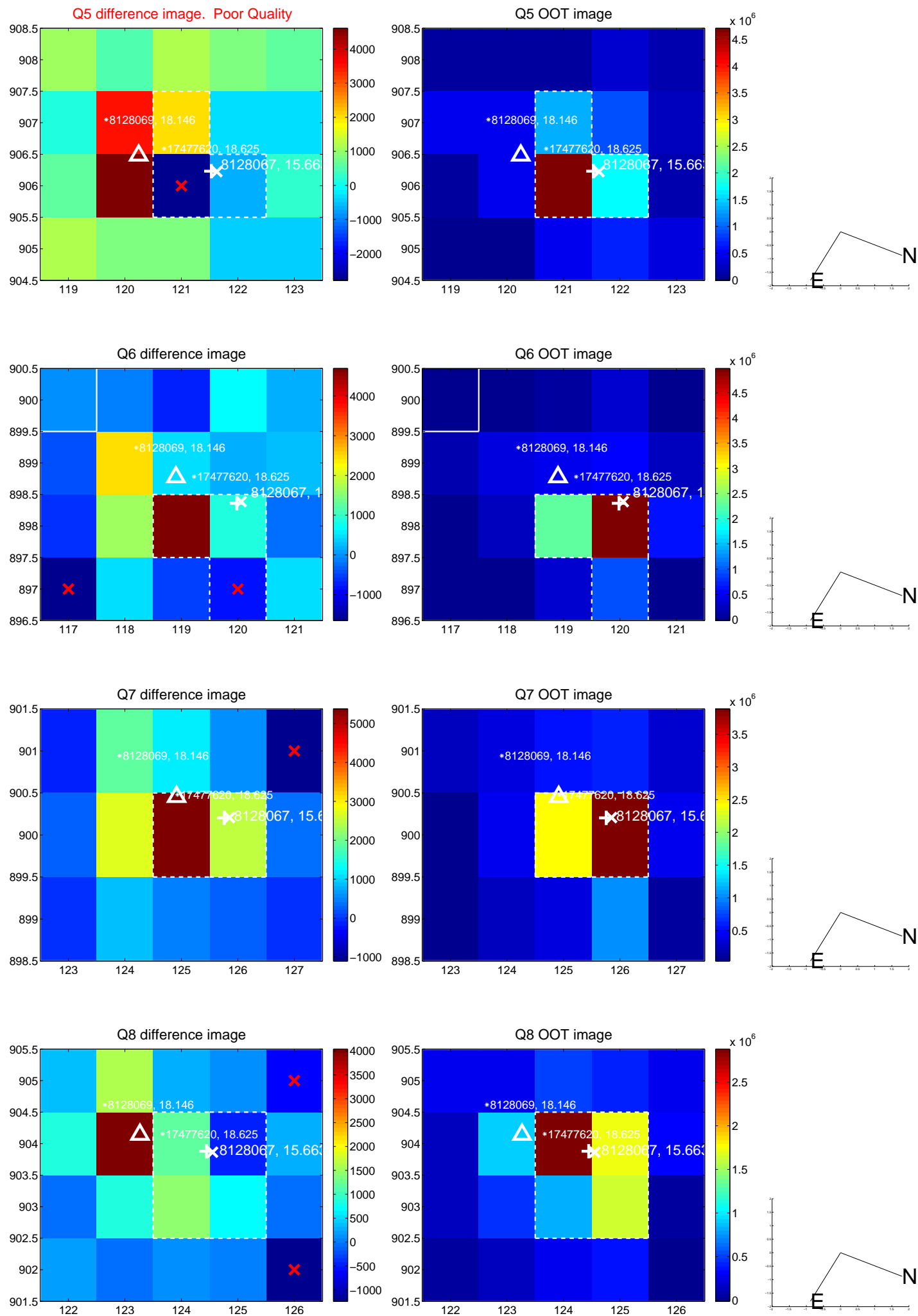


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

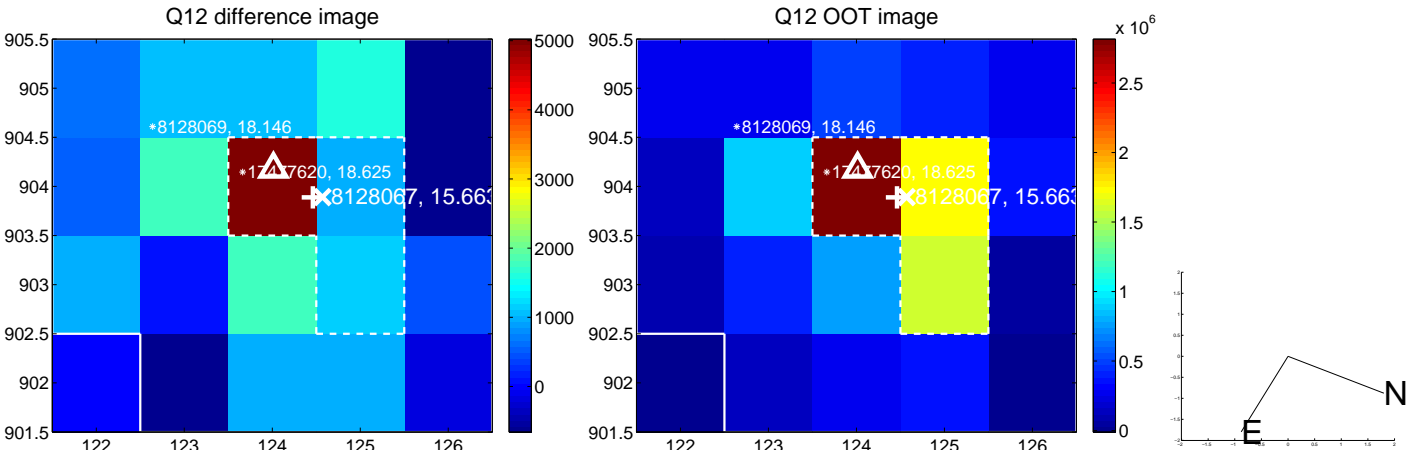
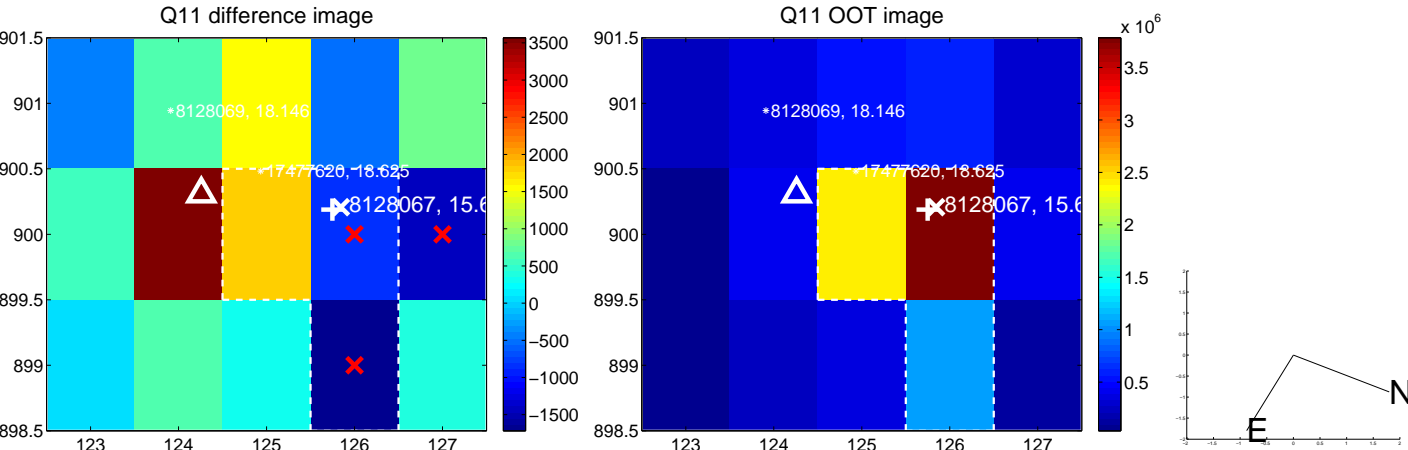
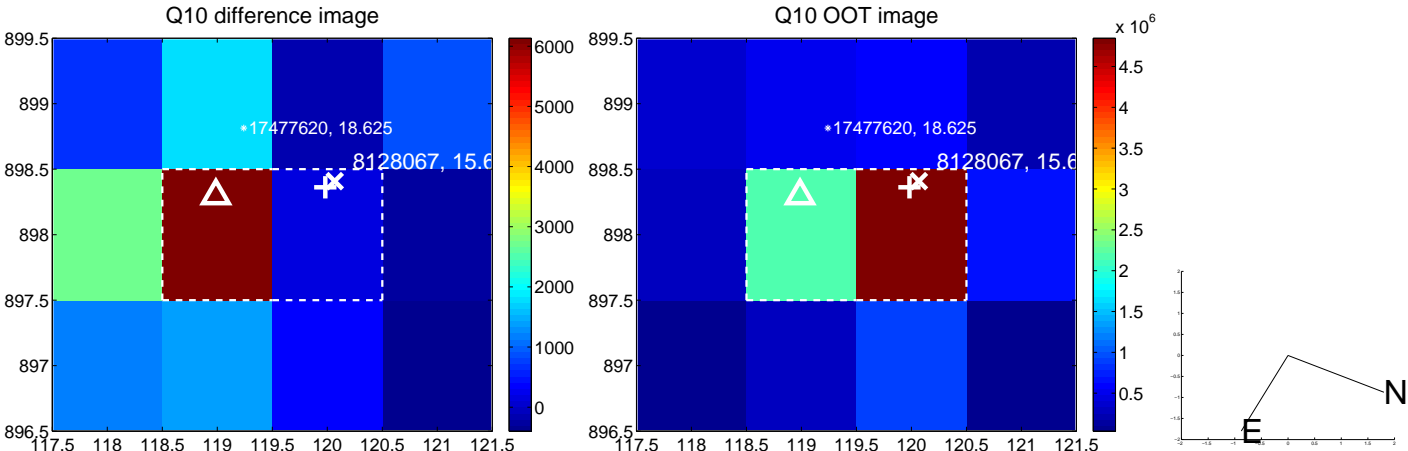
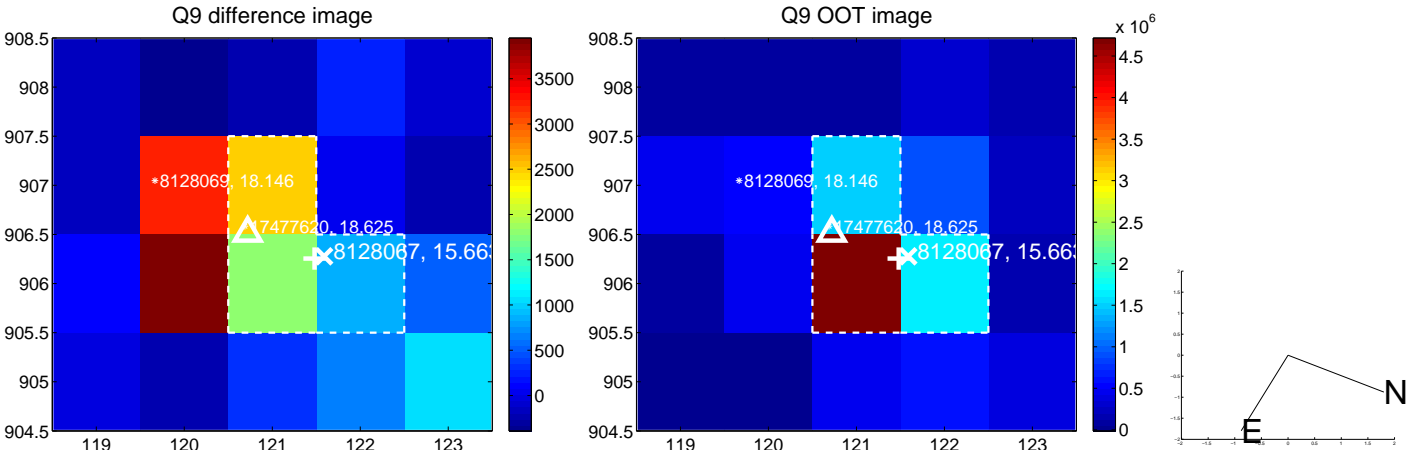
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



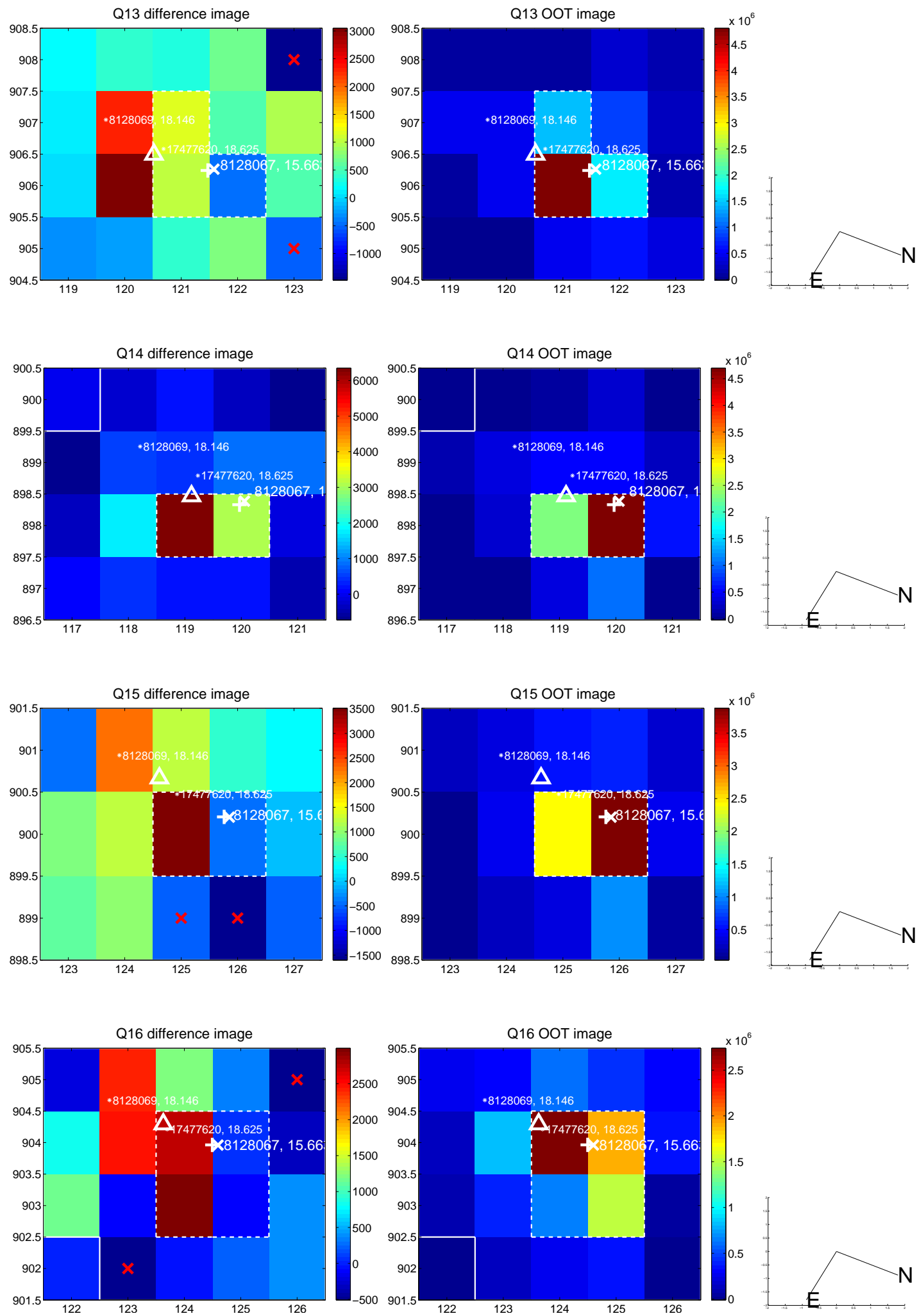
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



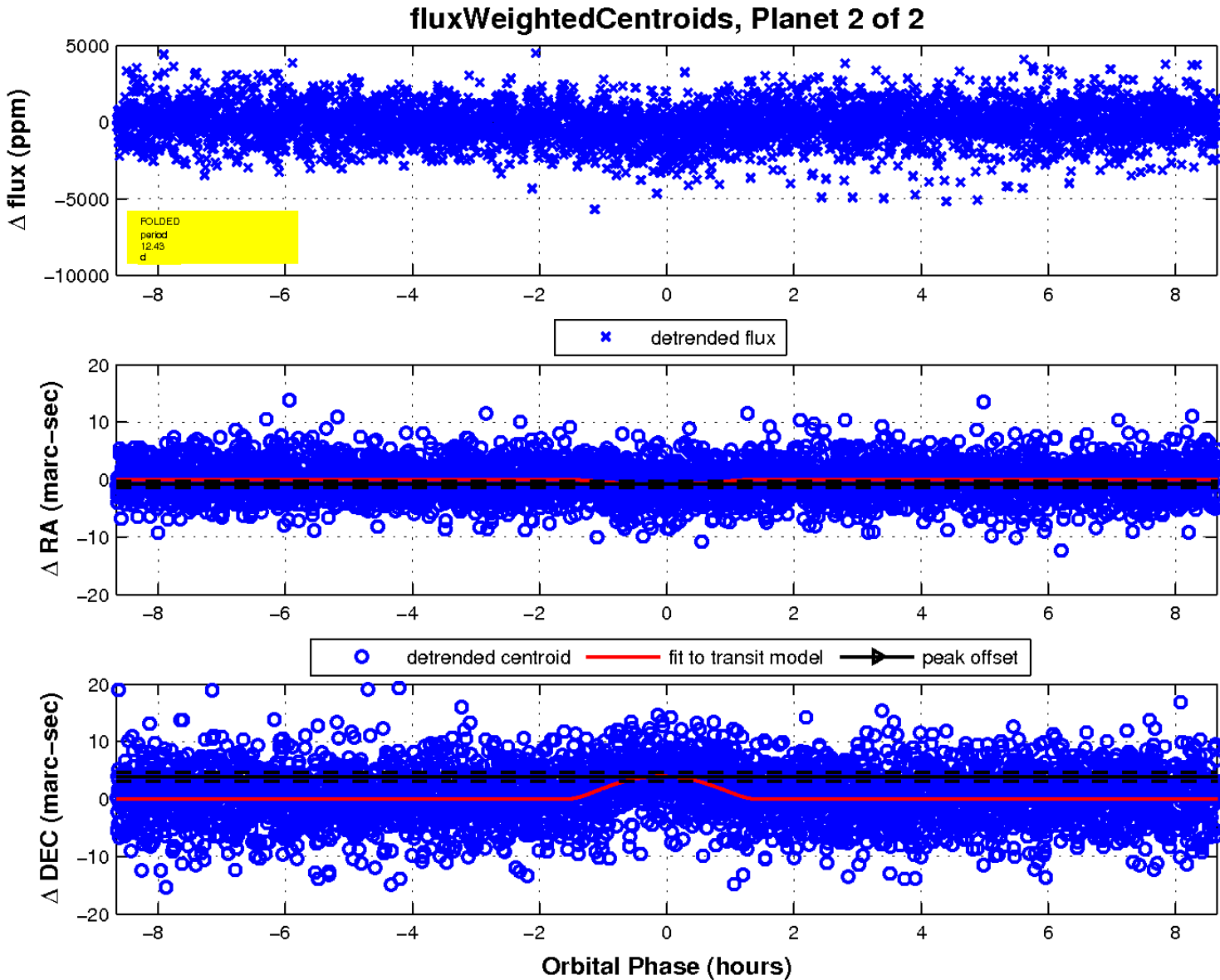
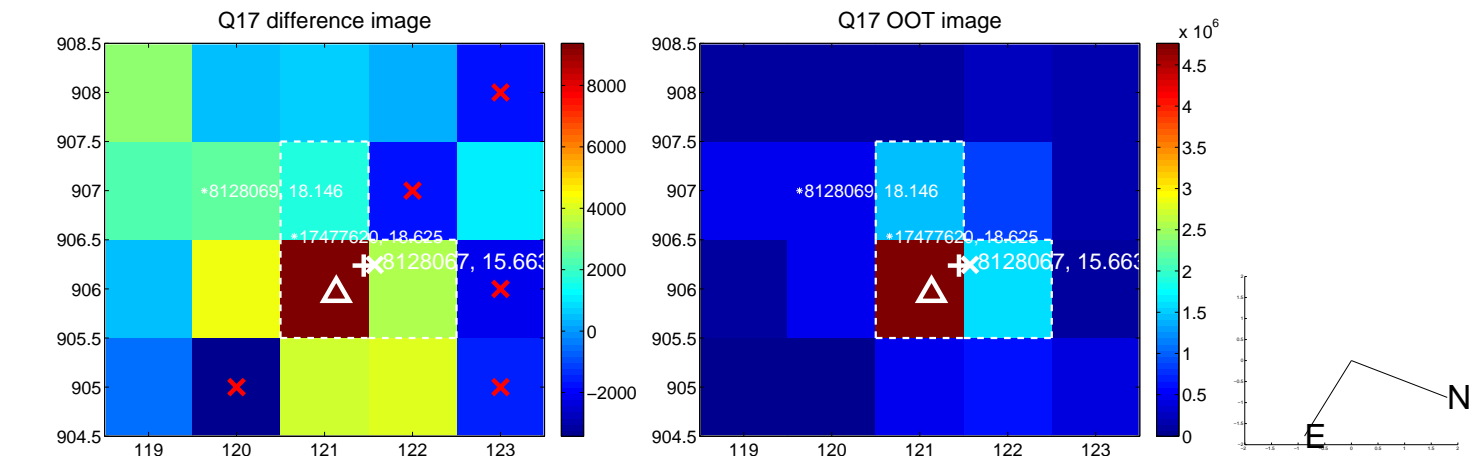
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

