

KIC 007969912

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})
007969912-01	OBS	No	1.245041	131.803677	51.2	3.944	9.5	10.1	0.80	5168	0.69	959.94
007969912-02	OBS	No	501.108235	140.841041	660.8	3.230	9.6	6.7	0.80	5168	2.03	0.32

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007969912-01	OBS	FP	0.00	1	0	0	0	LPP_DV
007969912-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

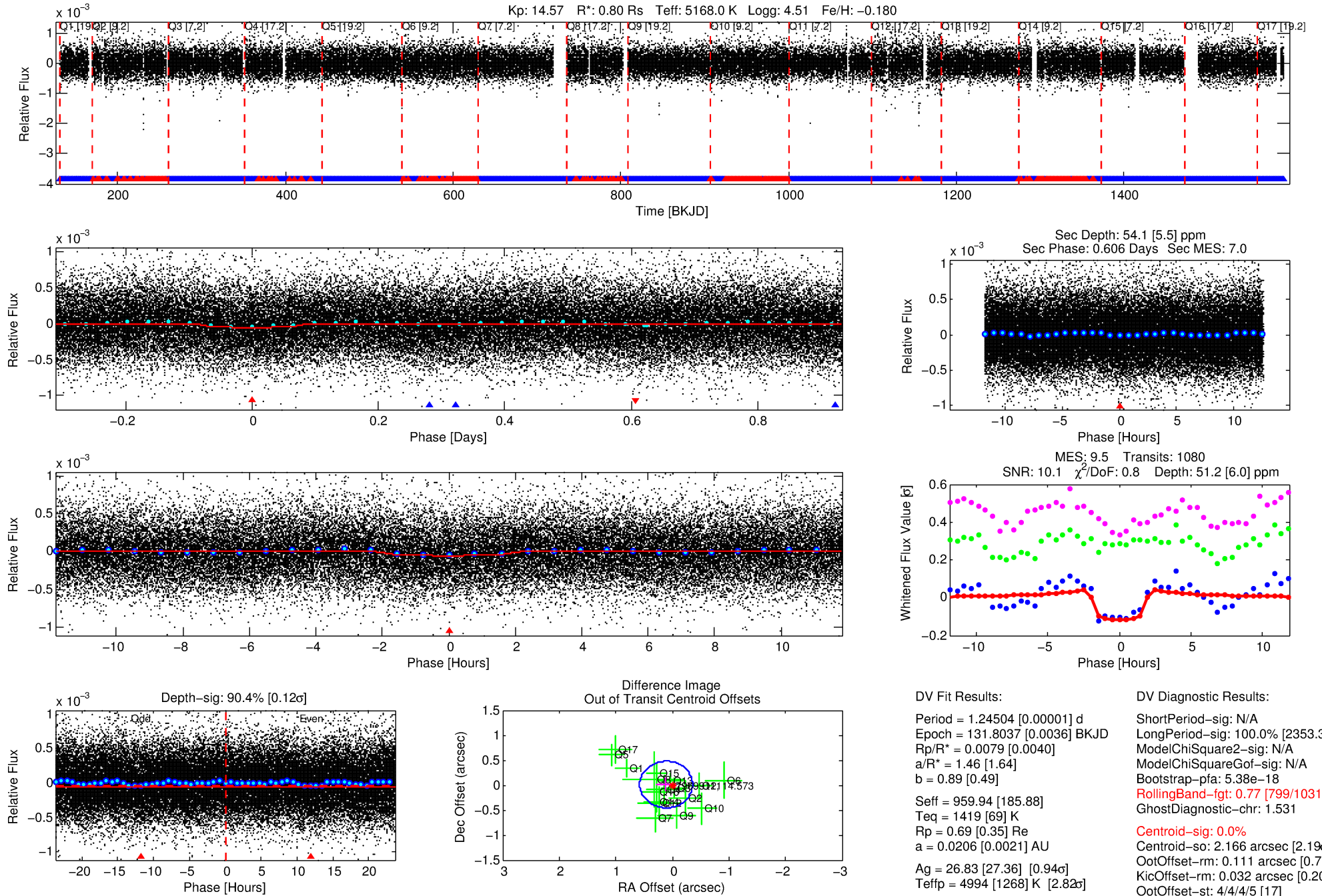
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007969912-01

No Significant Match Found

DV One-Page Summary

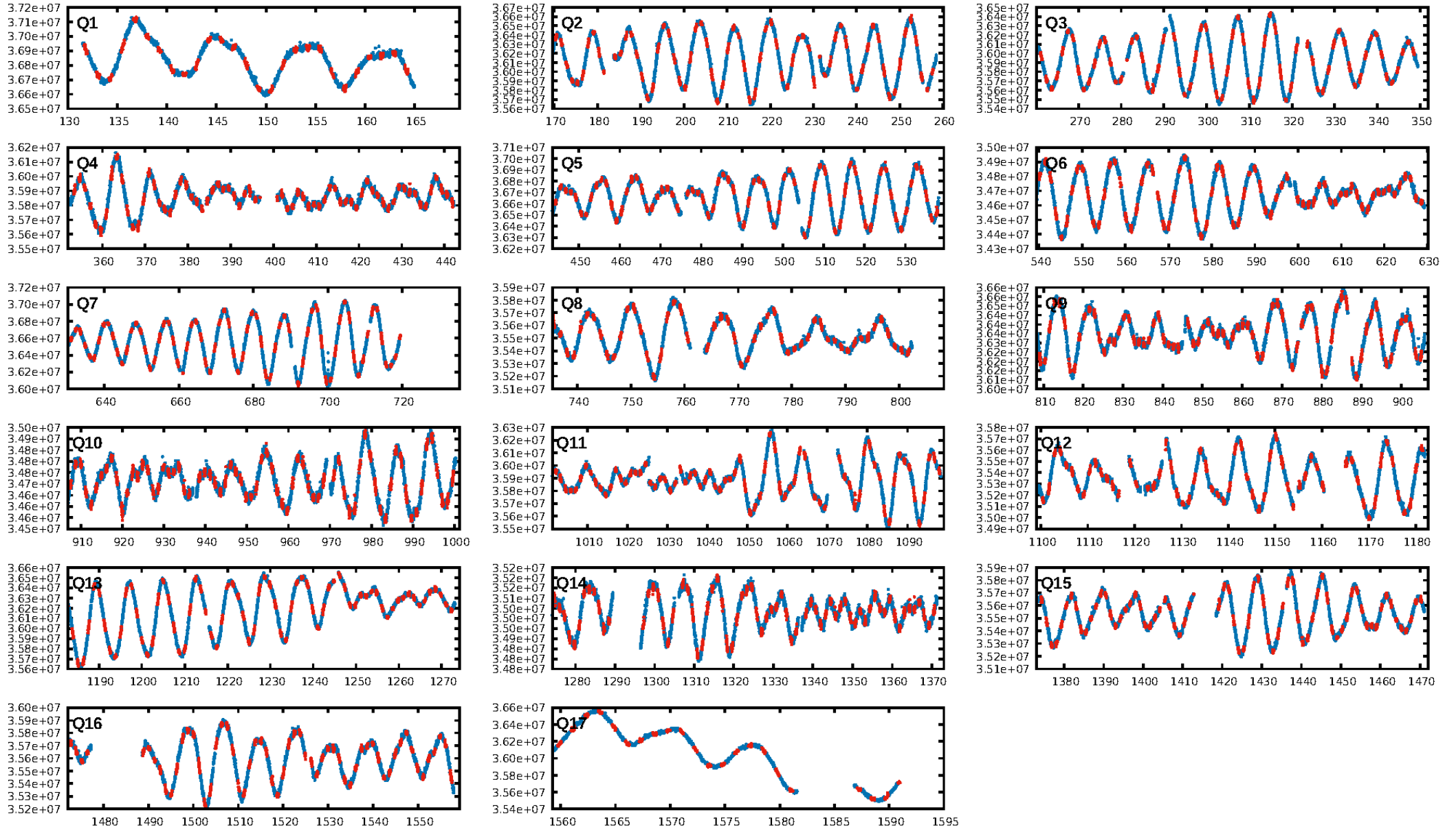
KIC: 7969912 Candidate: 1 of 2 Period: 1.245 d



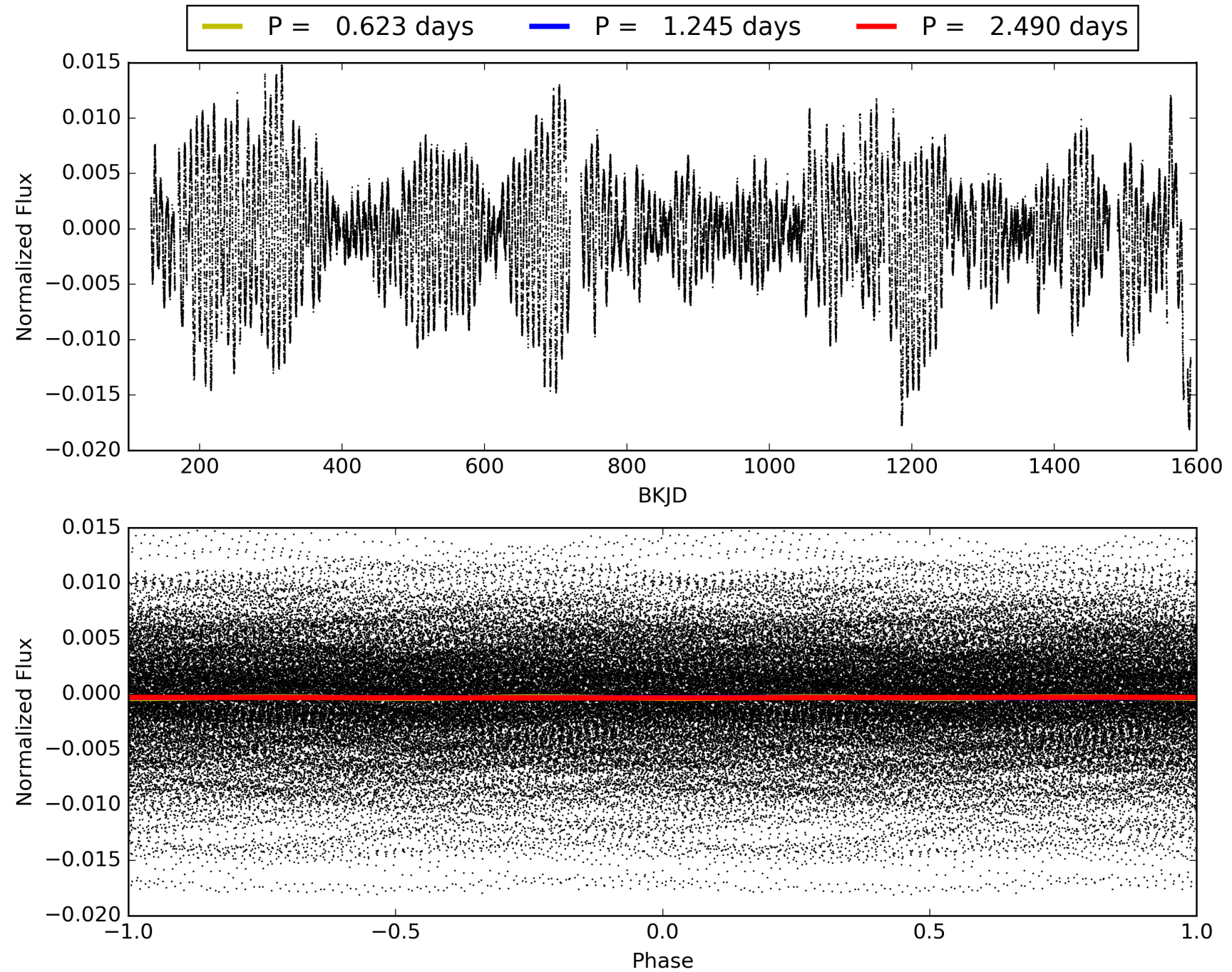
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 16:06:28 Z

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

TCE 007969912-01, PDC Light Curves

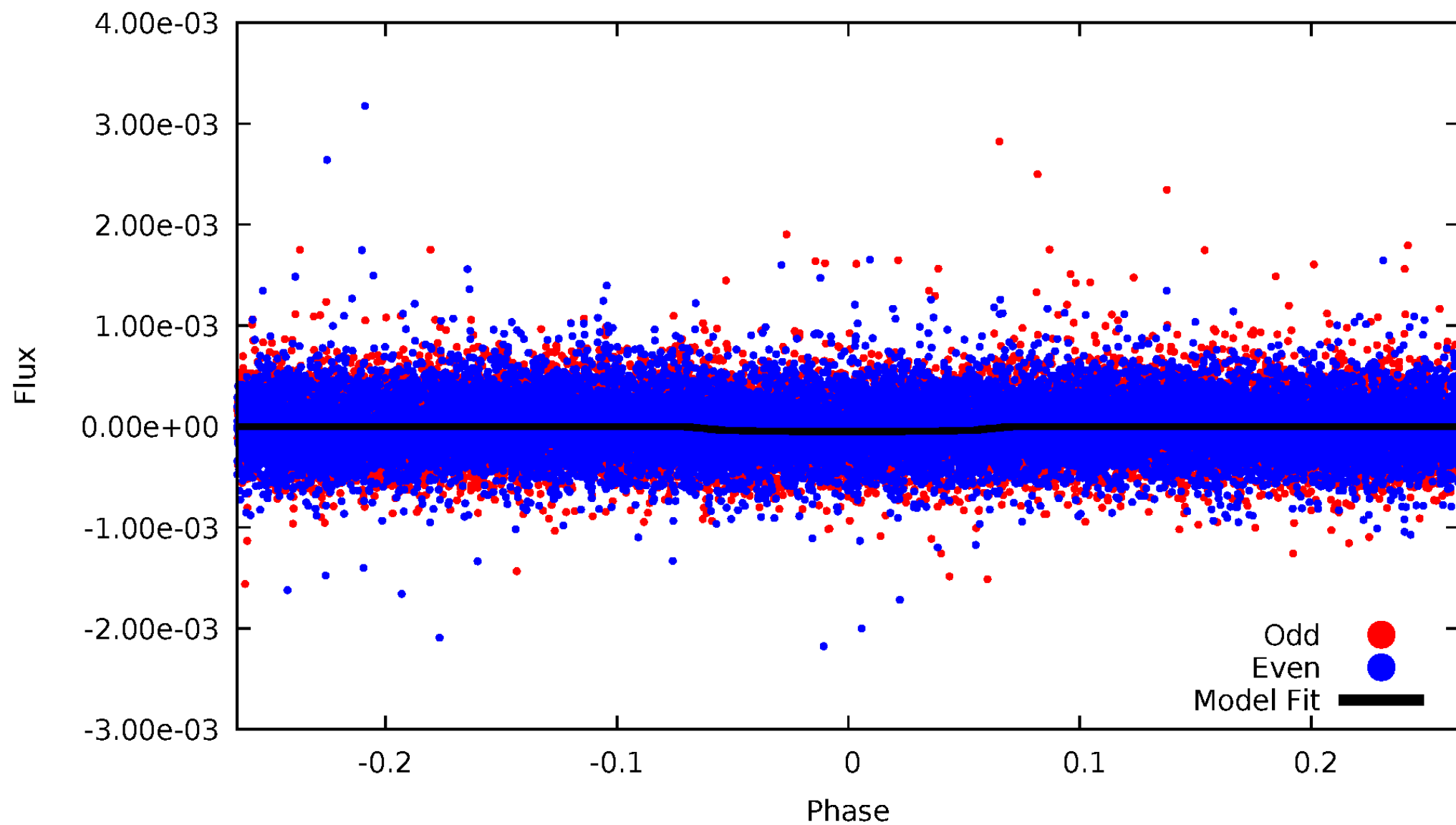


TCE 007969912-01



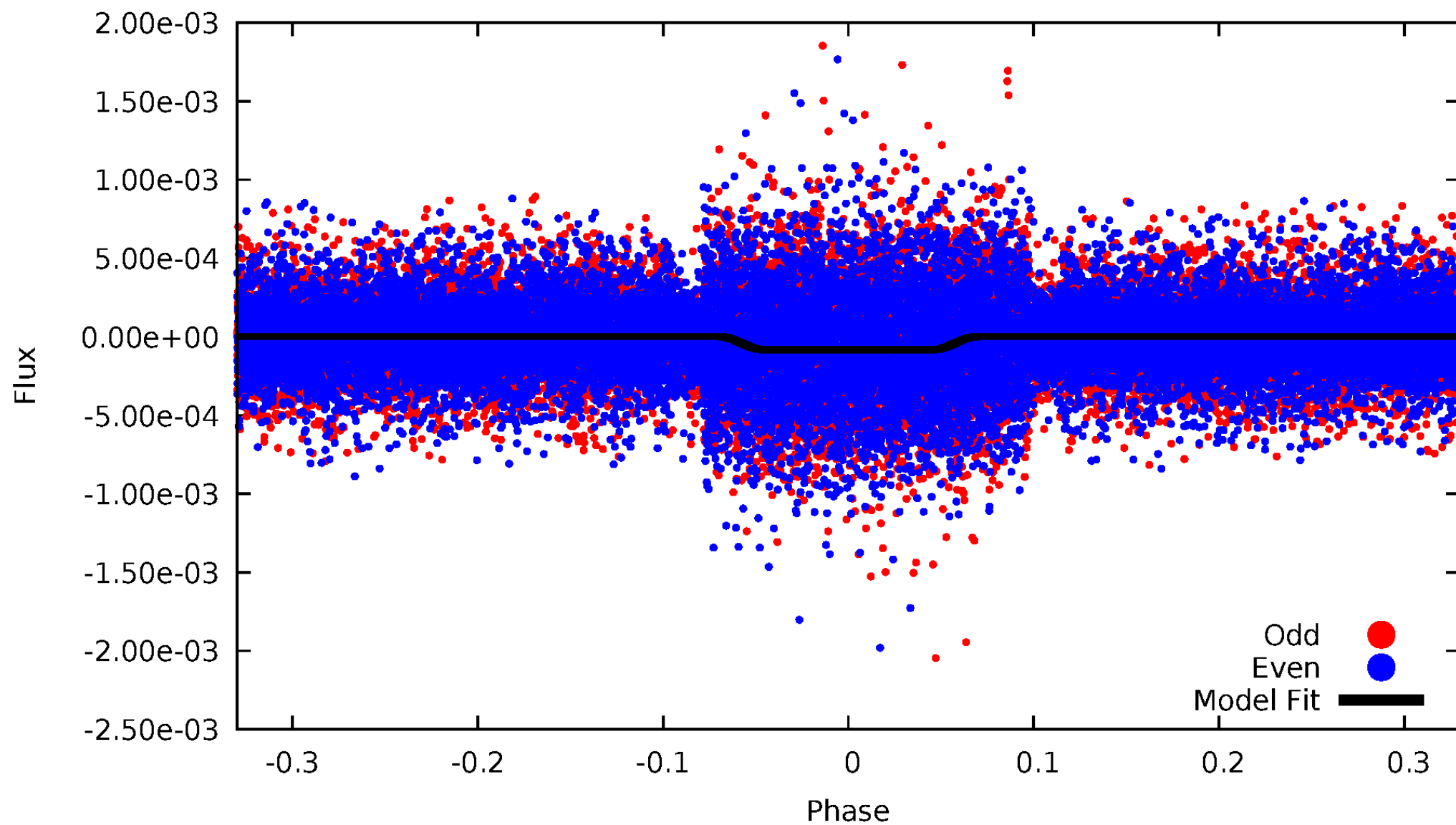
DV Odd/Even

TCE 007969912-01

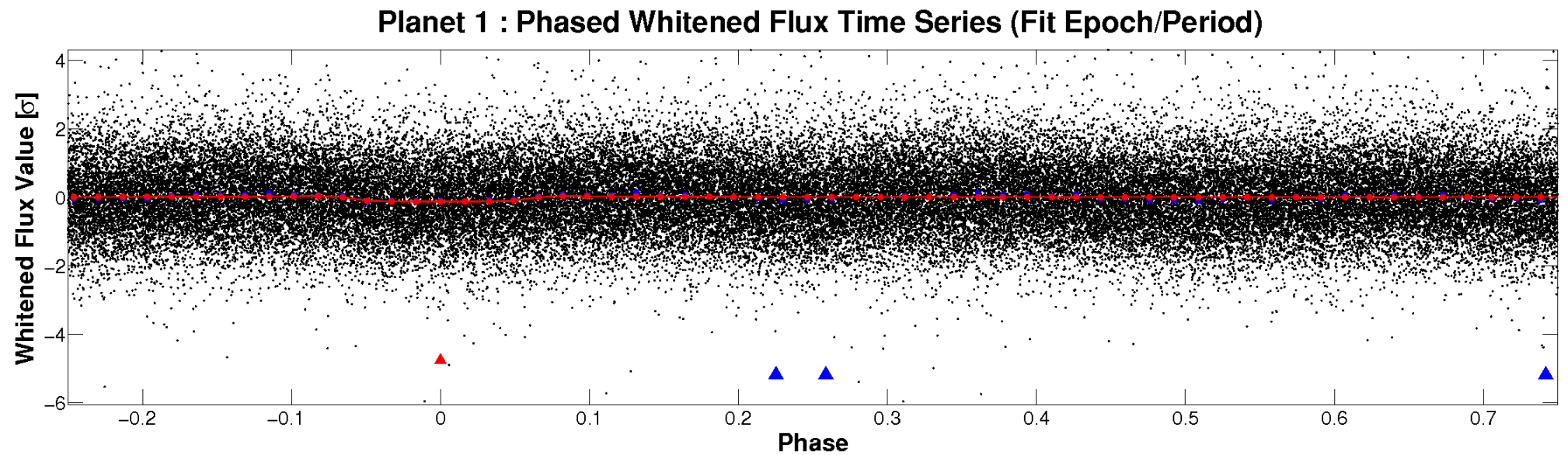
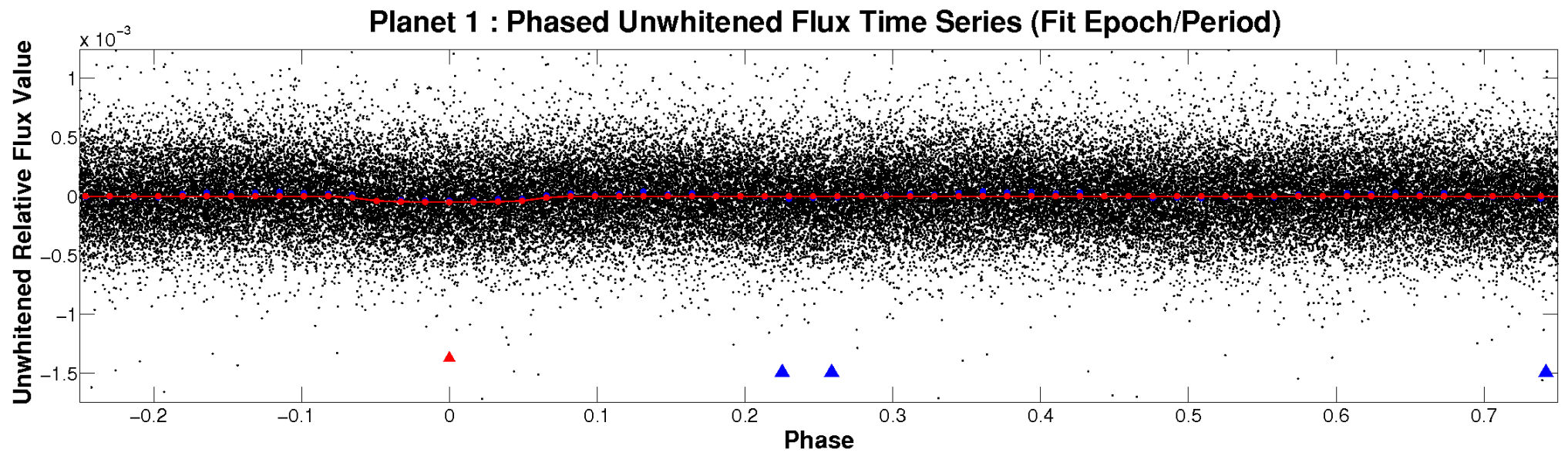


ALT Odd/Even

TCE 007969912-01

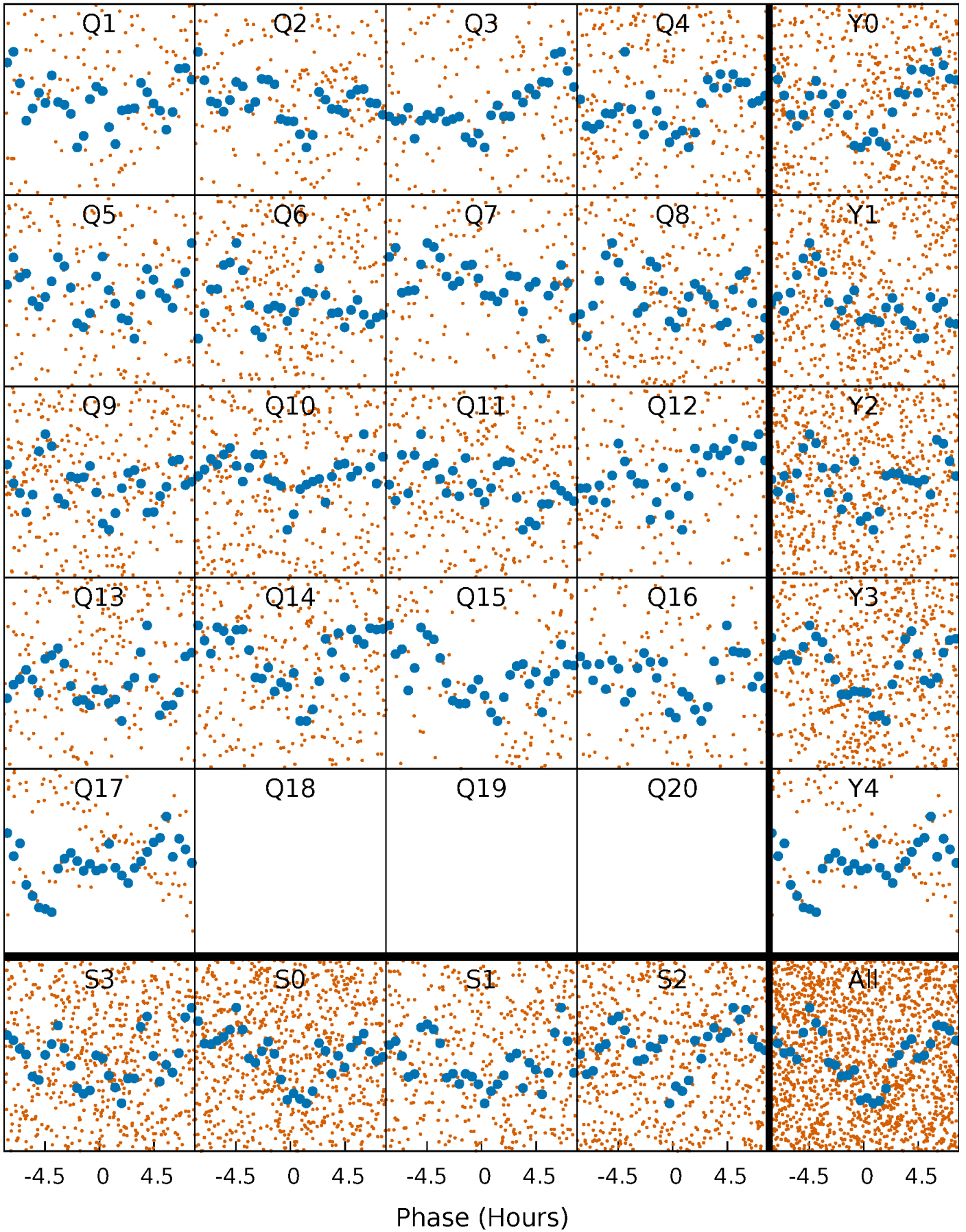


Non-Whitened Vs. Whitened Light Curve



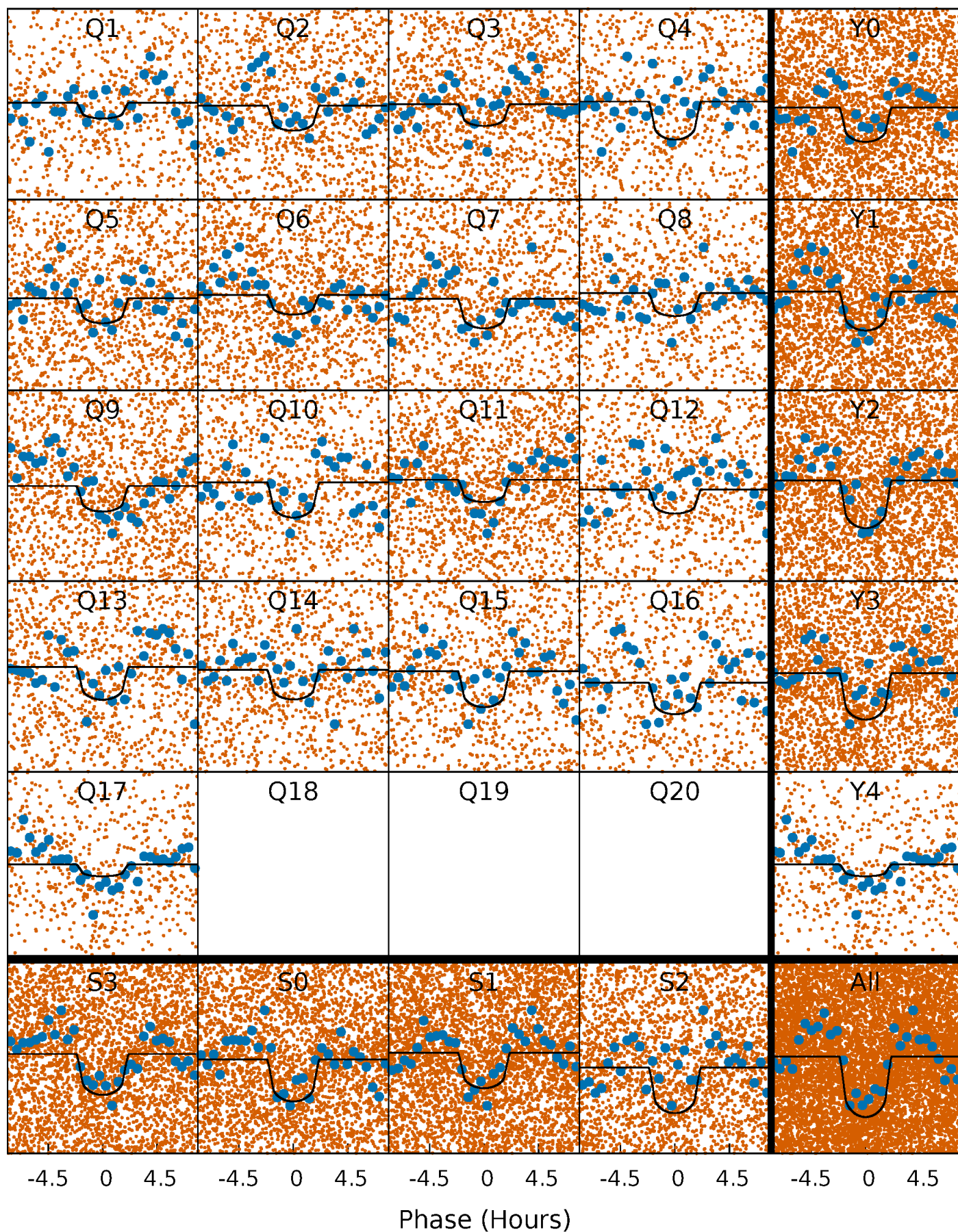
PDC Quarter-Phased Transit Curves

TCE 007969912-01 P= 1.245041 Days $T_0=131.803677$ (BKJD)



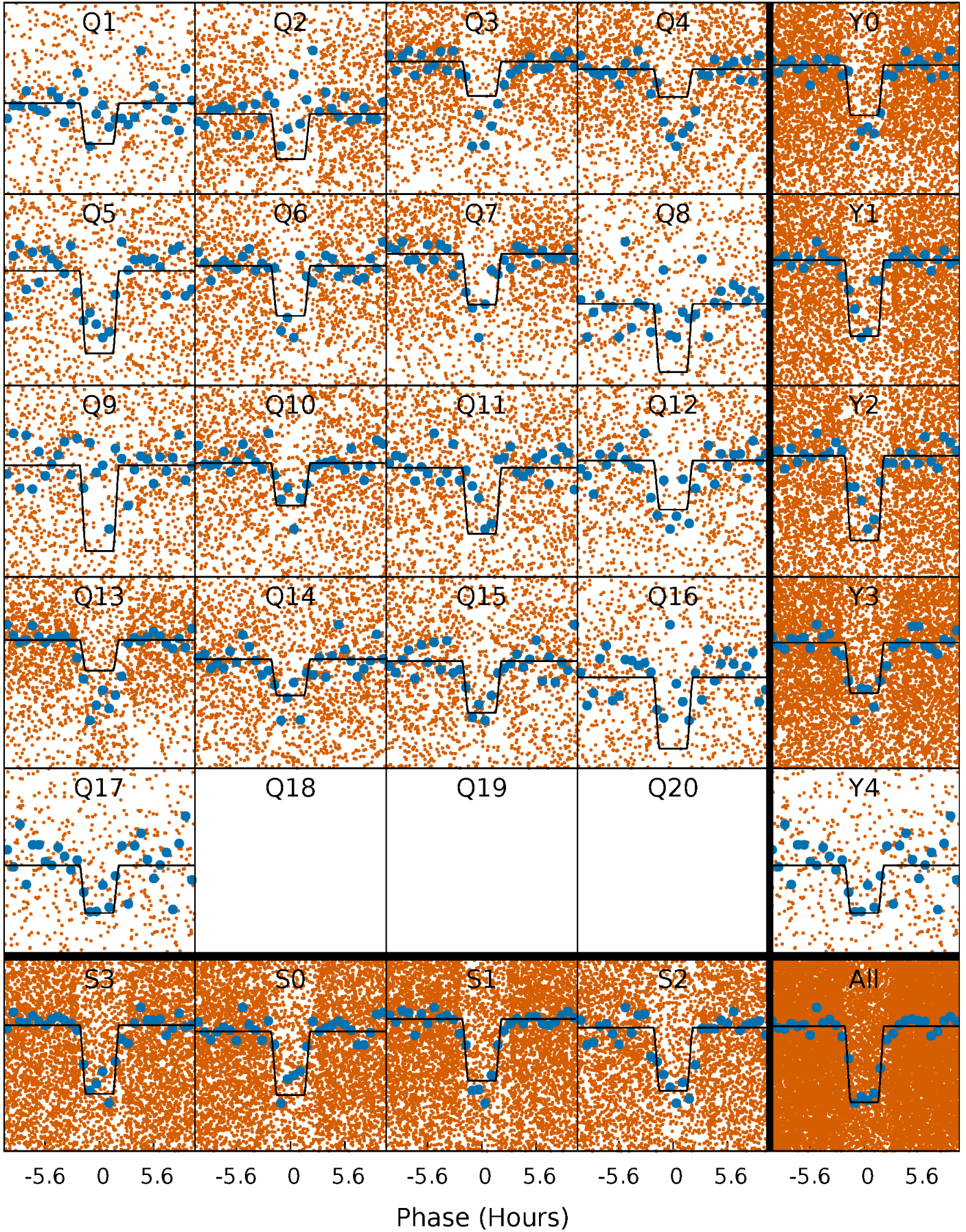
DV Quarter-Phased Transit Curves

TCE 007969912-01 P= 1.245041 Days $T_0=131.803677$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

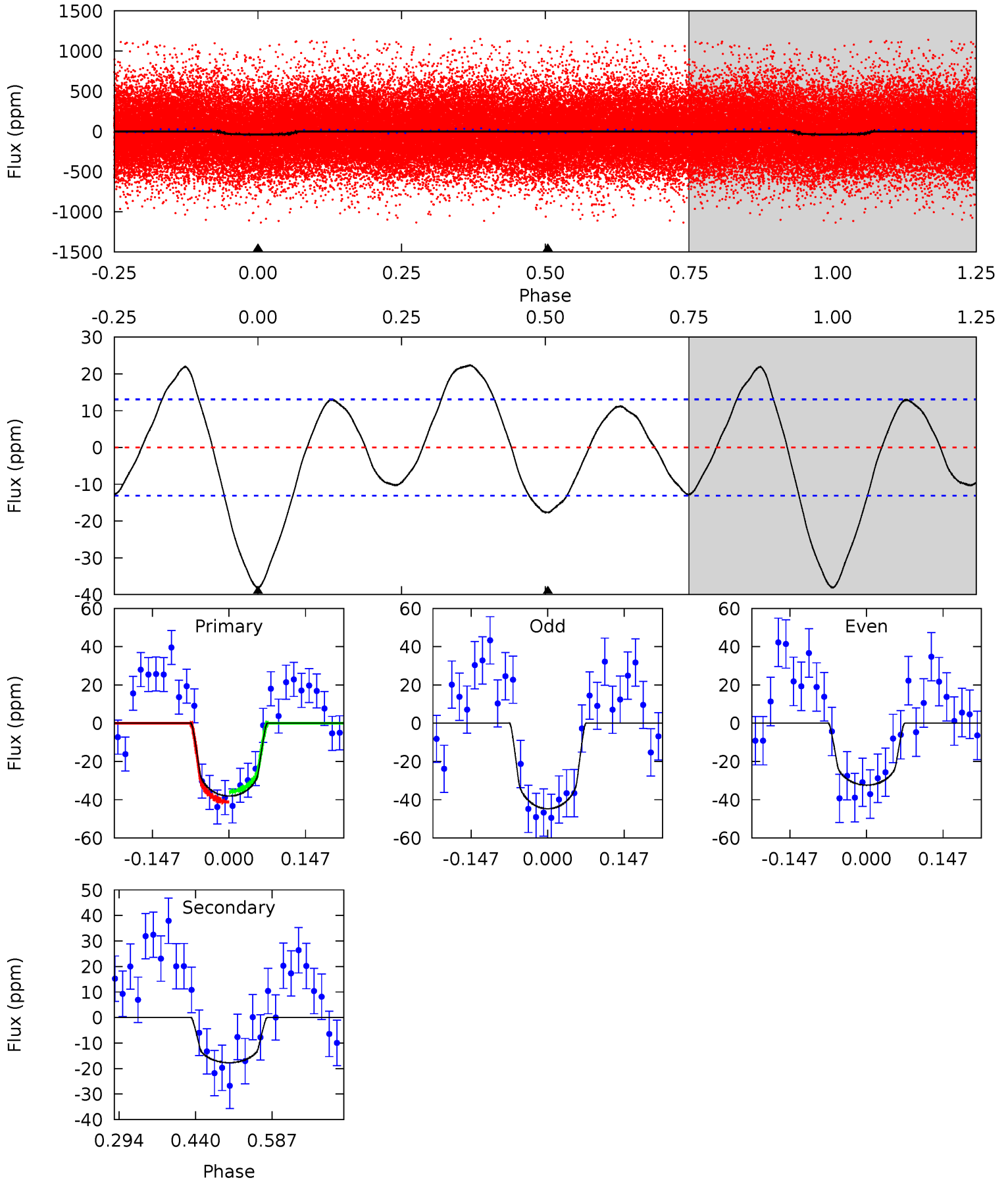
TCE 007969912-01 P= 1.245058 Days $T_0=131.786064$ (BKJD)



DV Model-Shift Uniqueness Test

007969912-01, P = 1.245041 Days, E = 130.558636 Days

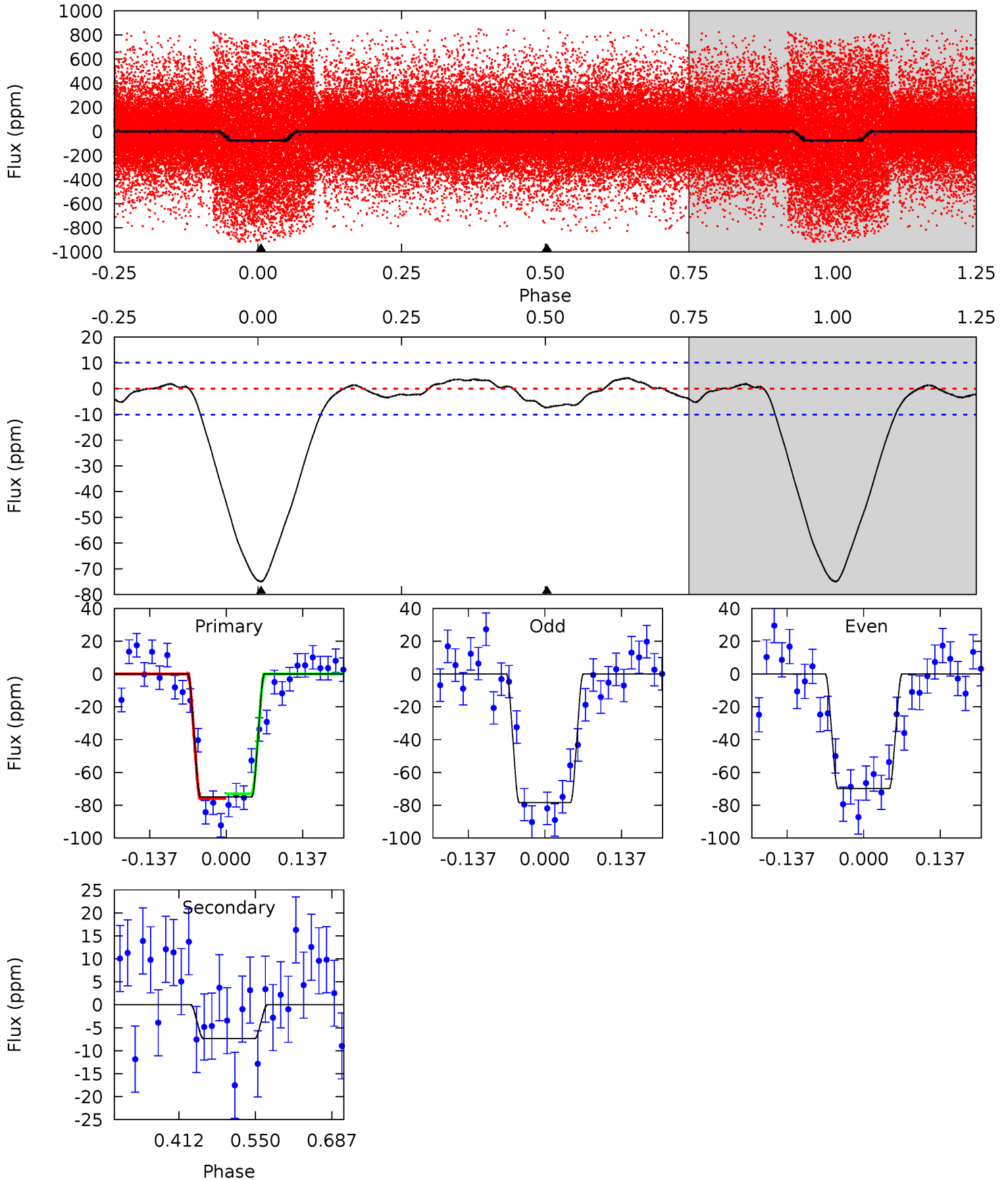
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	6.06	0	0	4.48	1.45	3.34	13.0	13.0	6.06	6.06	2.12	0.98	0.37	0.93



Alt Model-Shift Uniqueness Test

007969912-01, P = 1.245058 Days, E = 130.541006 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.3	3.28	0	0	4.50	1.49	1.02	33.3	33.3	3.28	3.28	1.90	1.11	0.05	0.65



Stellar Parameters For KIC 007969912

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5168^{+153}_{-138}	$4.509^{+0.085}_{-0.077}$	$-0.180^{+0.300}_{-0.300}$	$0.797^{+0.086}_{-0.096}$	$0.749^{+0.103}_{-0.059}$	$2.082^{+0.801}_{-0.485}$
	+3%/-3%	+2%/-2%	+167%/-167%	+11%/-12%	+14%/-8%	+38%/-23%
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 007969912-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-18 ± 3	$0.69^{+0.34}_{-0.34}$	1986^{+83}_{-84}	4010^{+1286}_{-558}	$8.638^{+23.707}_{-4.891}$
Alt.	-7 ± 2	$0.79^{+0.38}_{-0.32}$	1985^{+85}_{-73}	3265^{+645}_{-443}	$2.759^{+4.804}_{-1.608}$

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 $A_{obs} \gg 1.0$

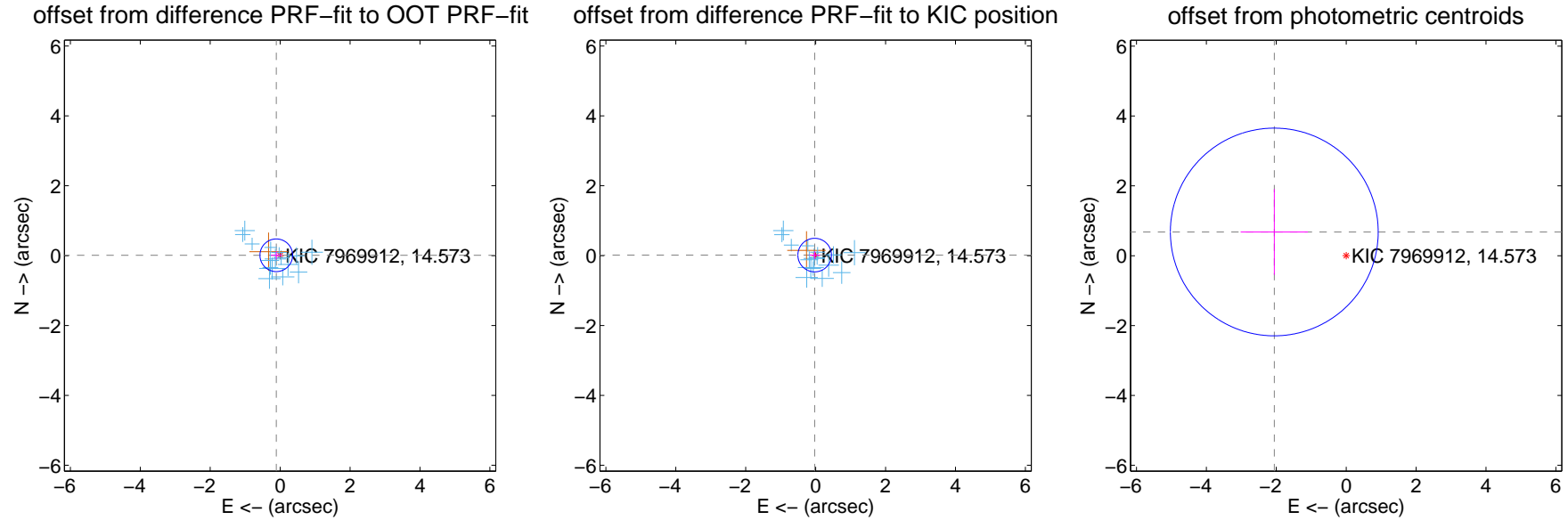
DV Centroid Data

Supplemental centroid analysis for 007969912-01. Kepler magnitude: 14.57. Transit SNR 10.05

There are 16 quarters with good PRF difference image offsets

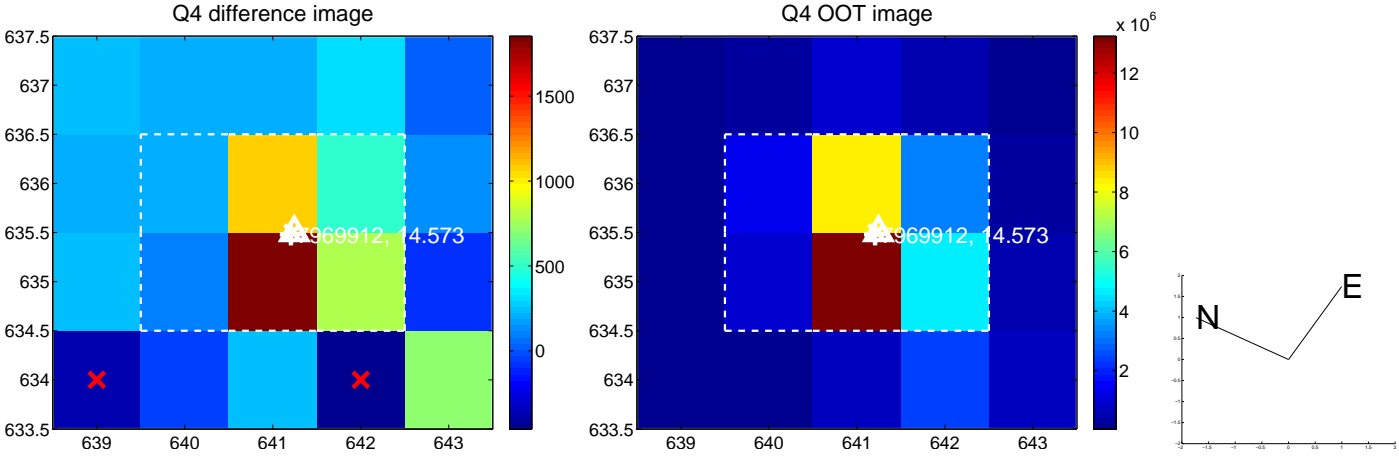
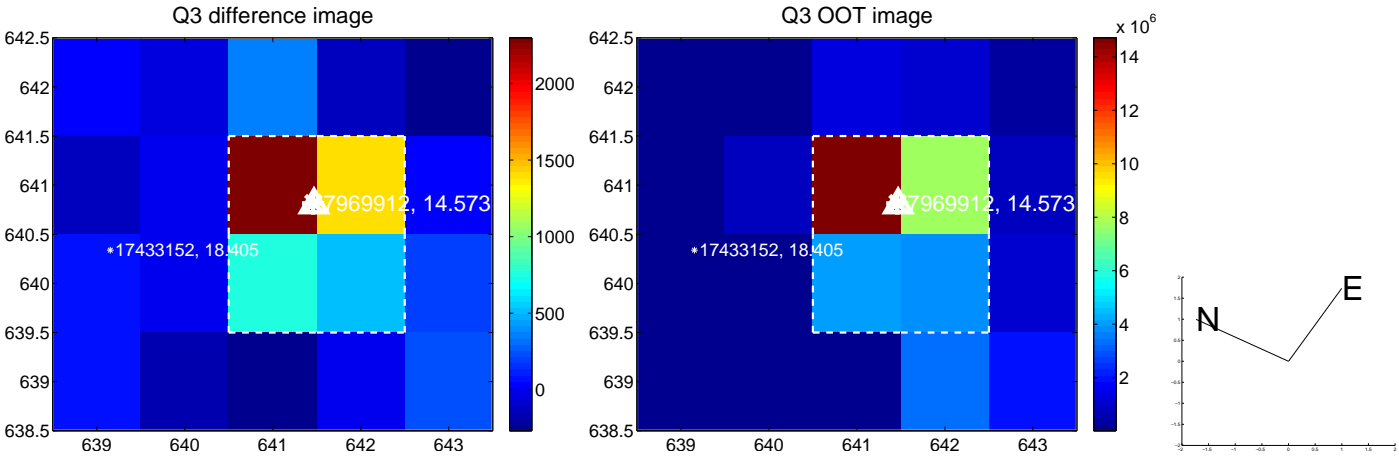
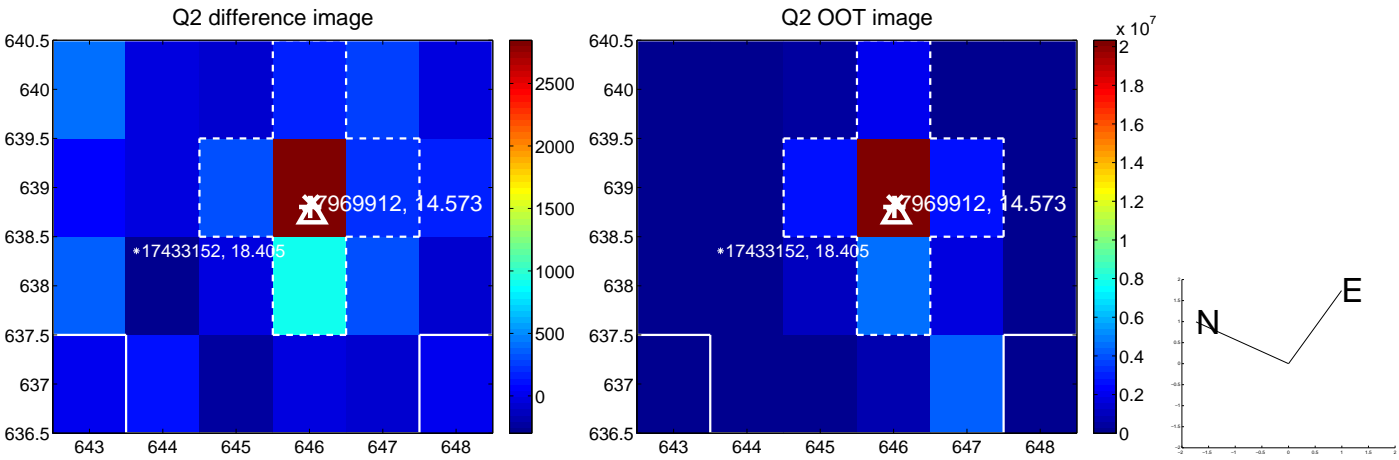
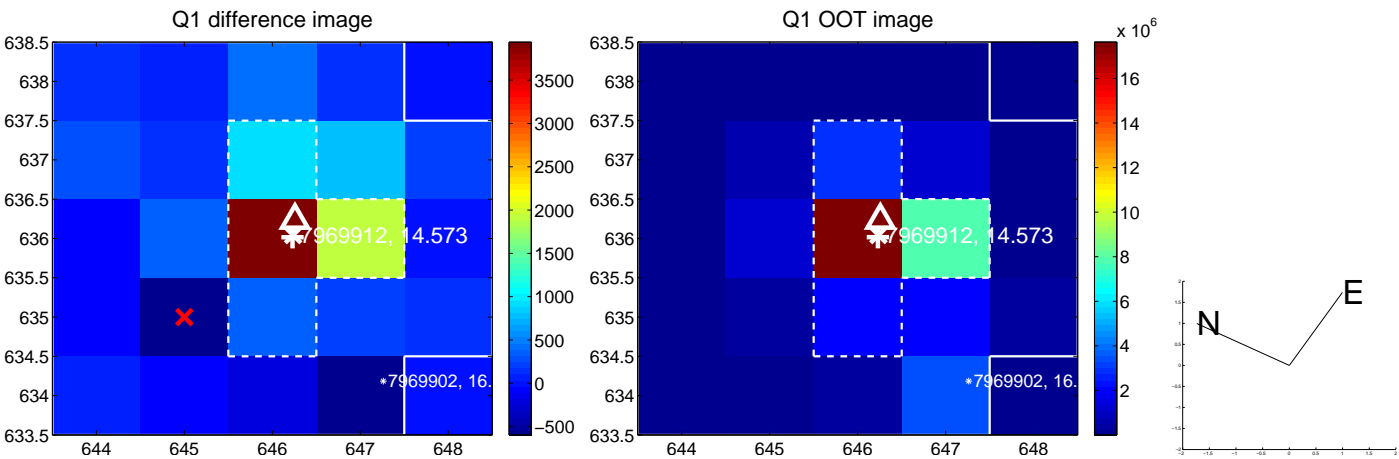
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.111 ± 0.156	0.71	0.110 ± 0.156	0.011 ± 0.117
PRF-fit source offset from KIC position	0.032 ± 0.160	0.20	0.028 ± 0.149	0.016 ± 0.113
photometric centroid source offset	2.17 ± 0.99	2.19	2.06 ± 0.96	0.68 ± 1.23

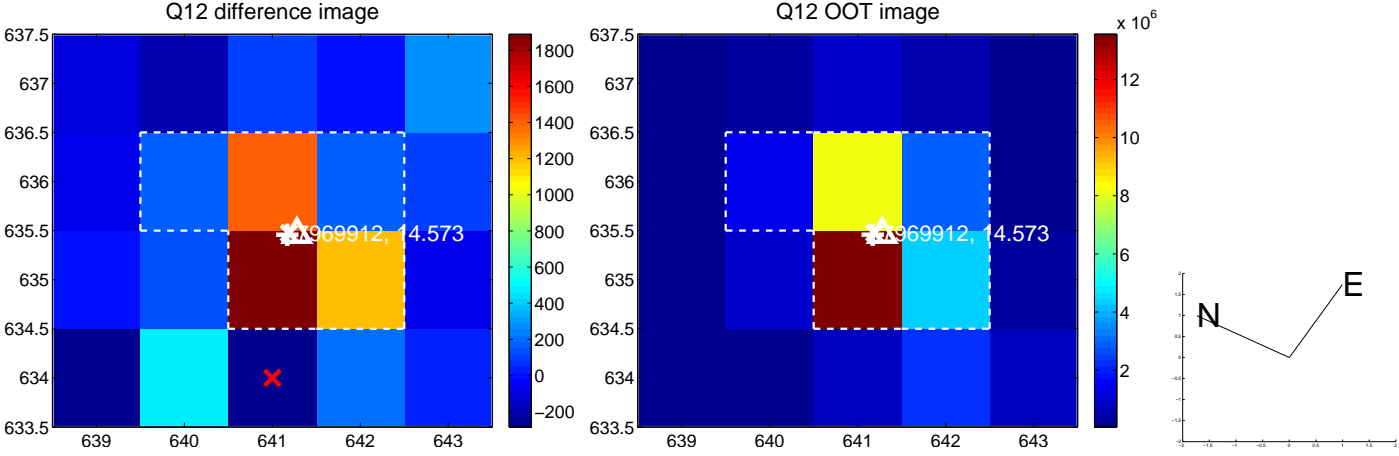
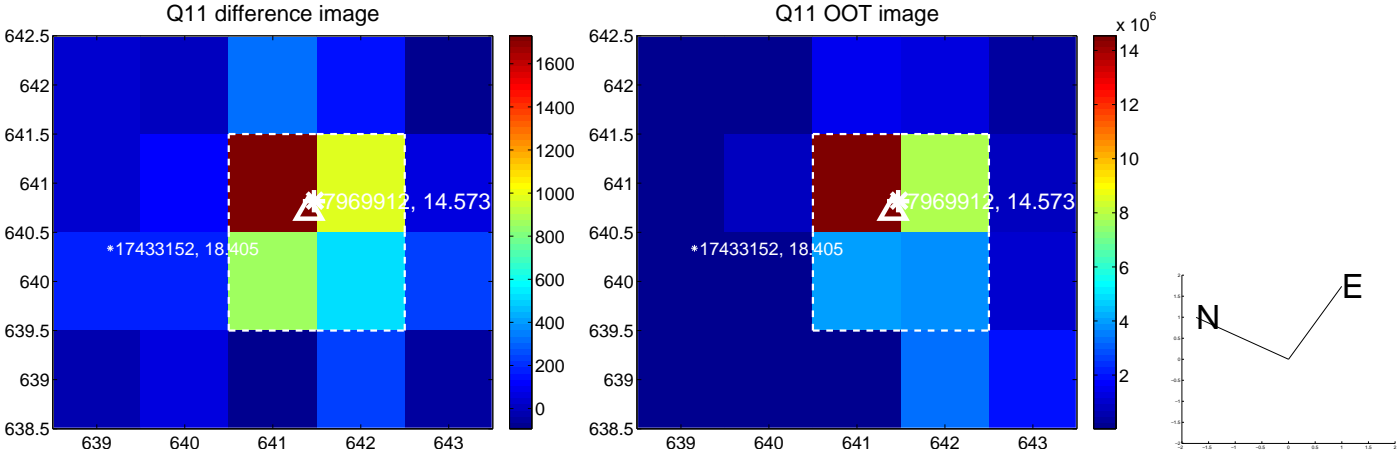
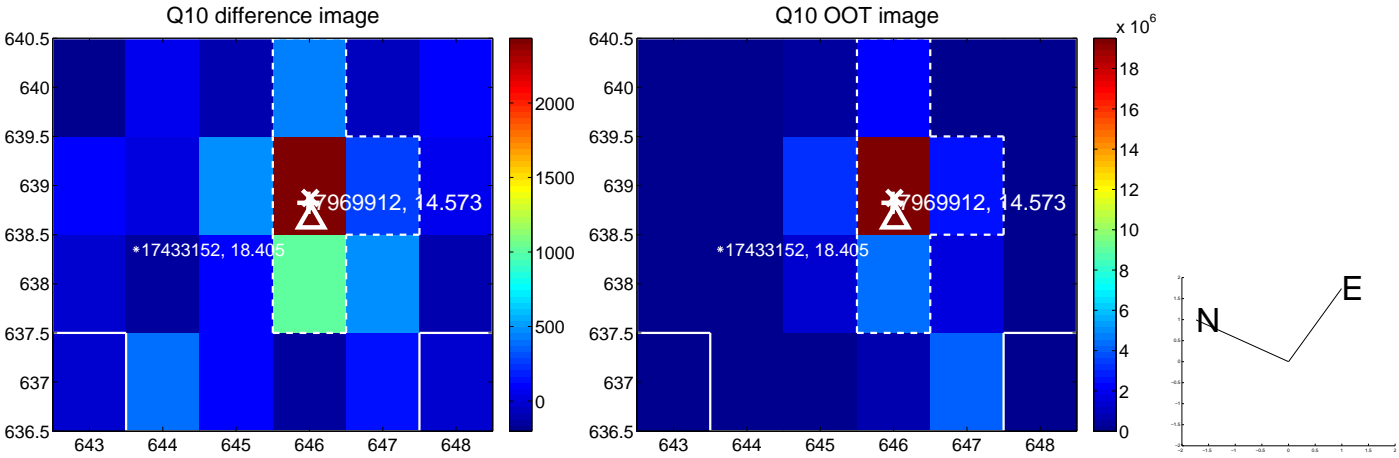
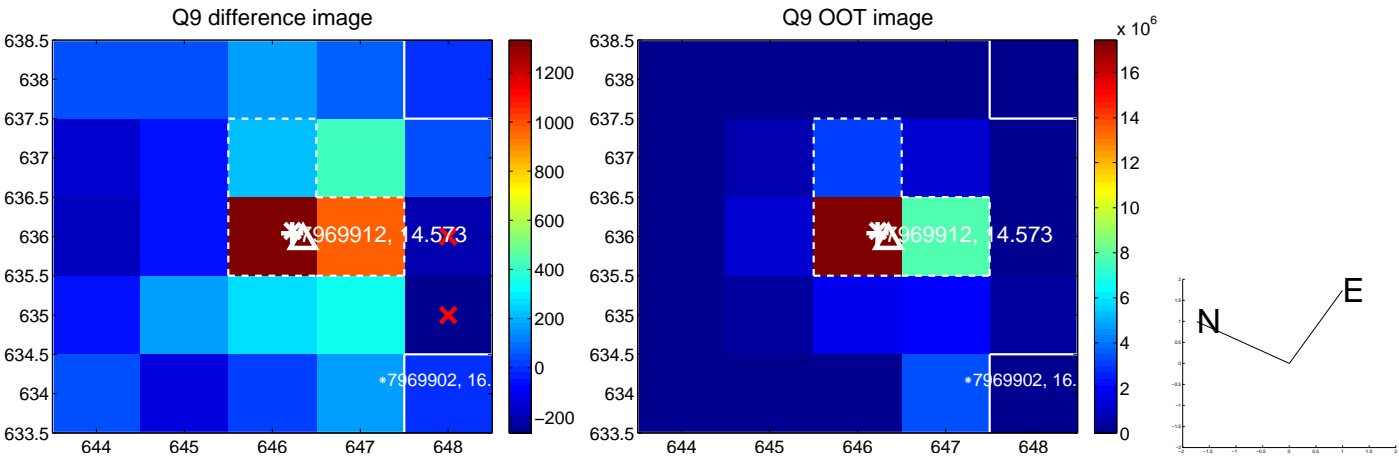


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

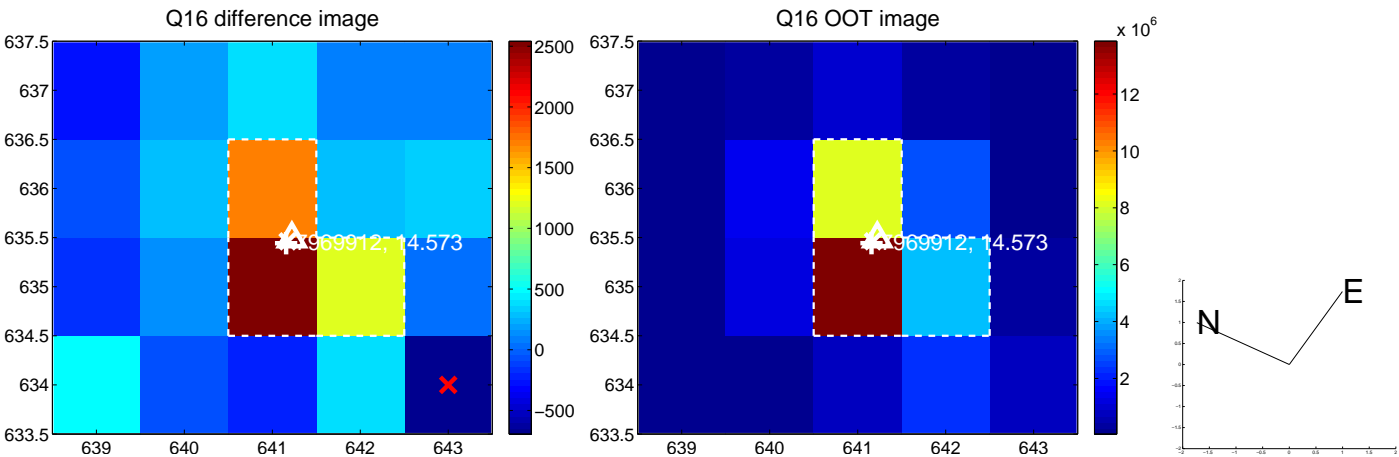
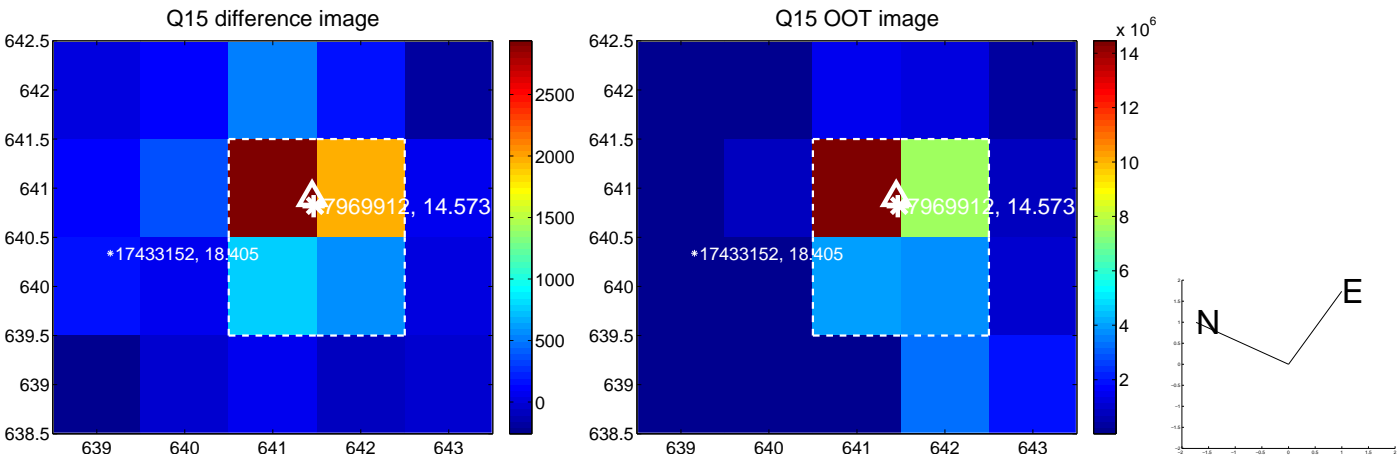
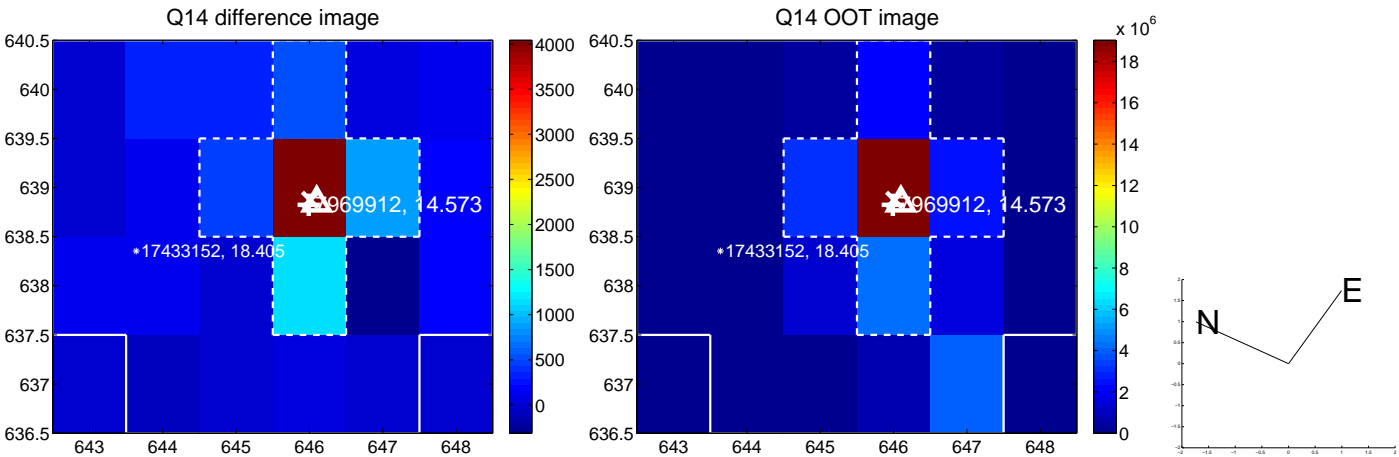
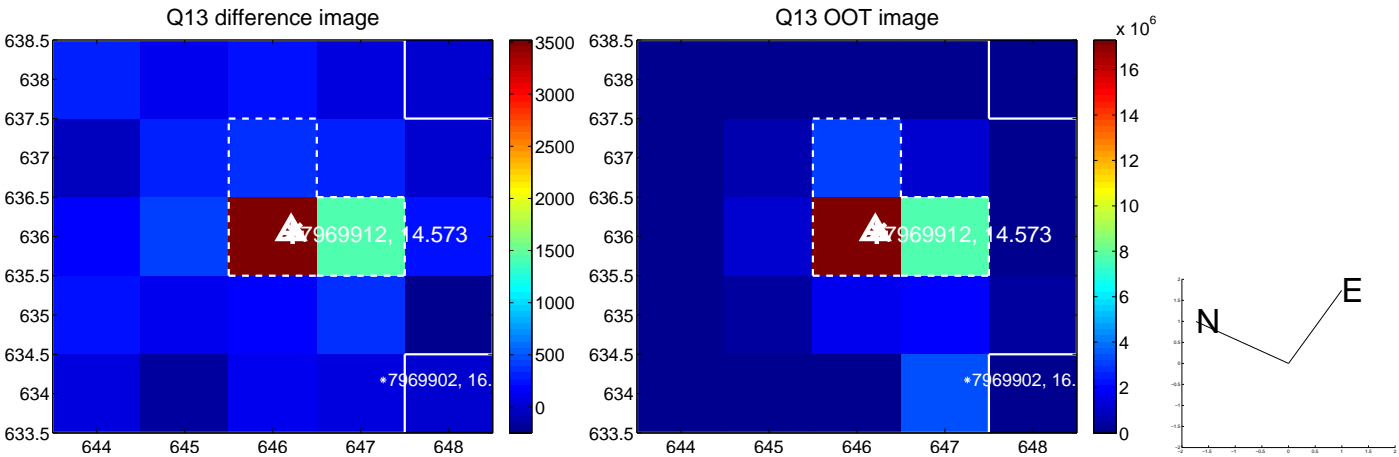
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



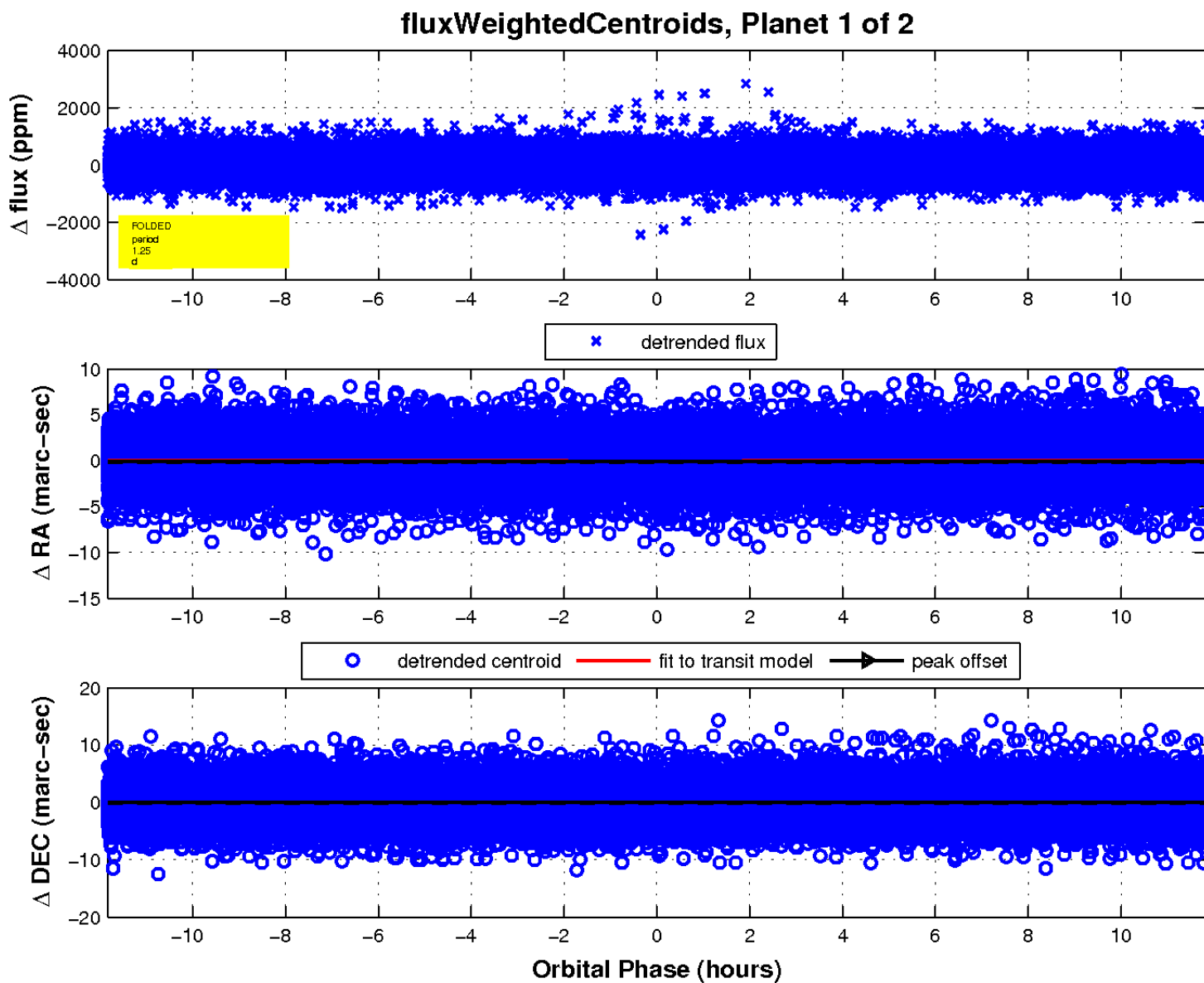
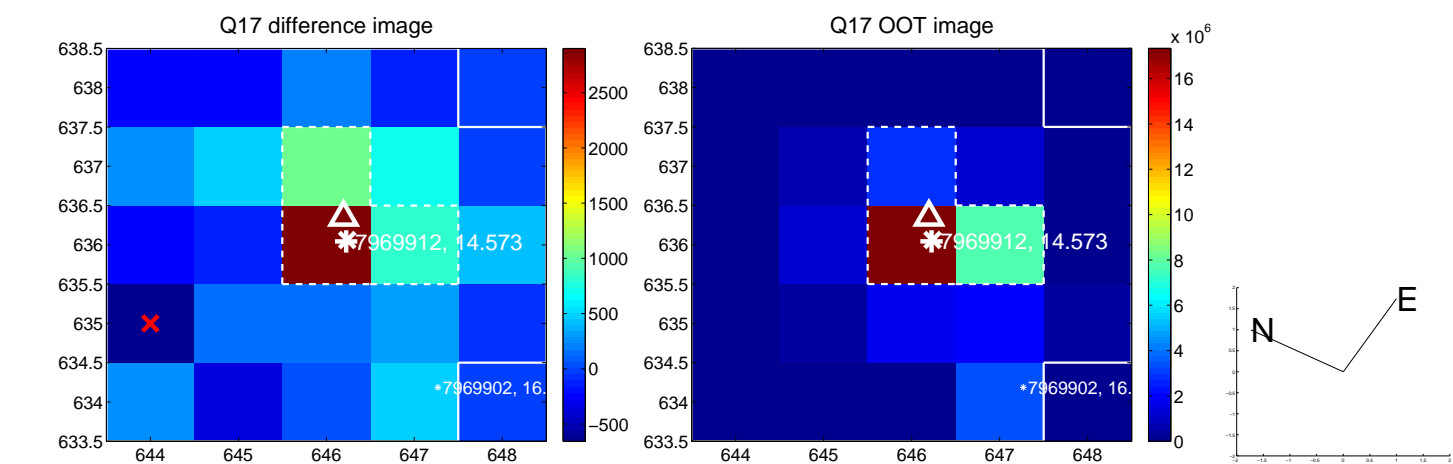
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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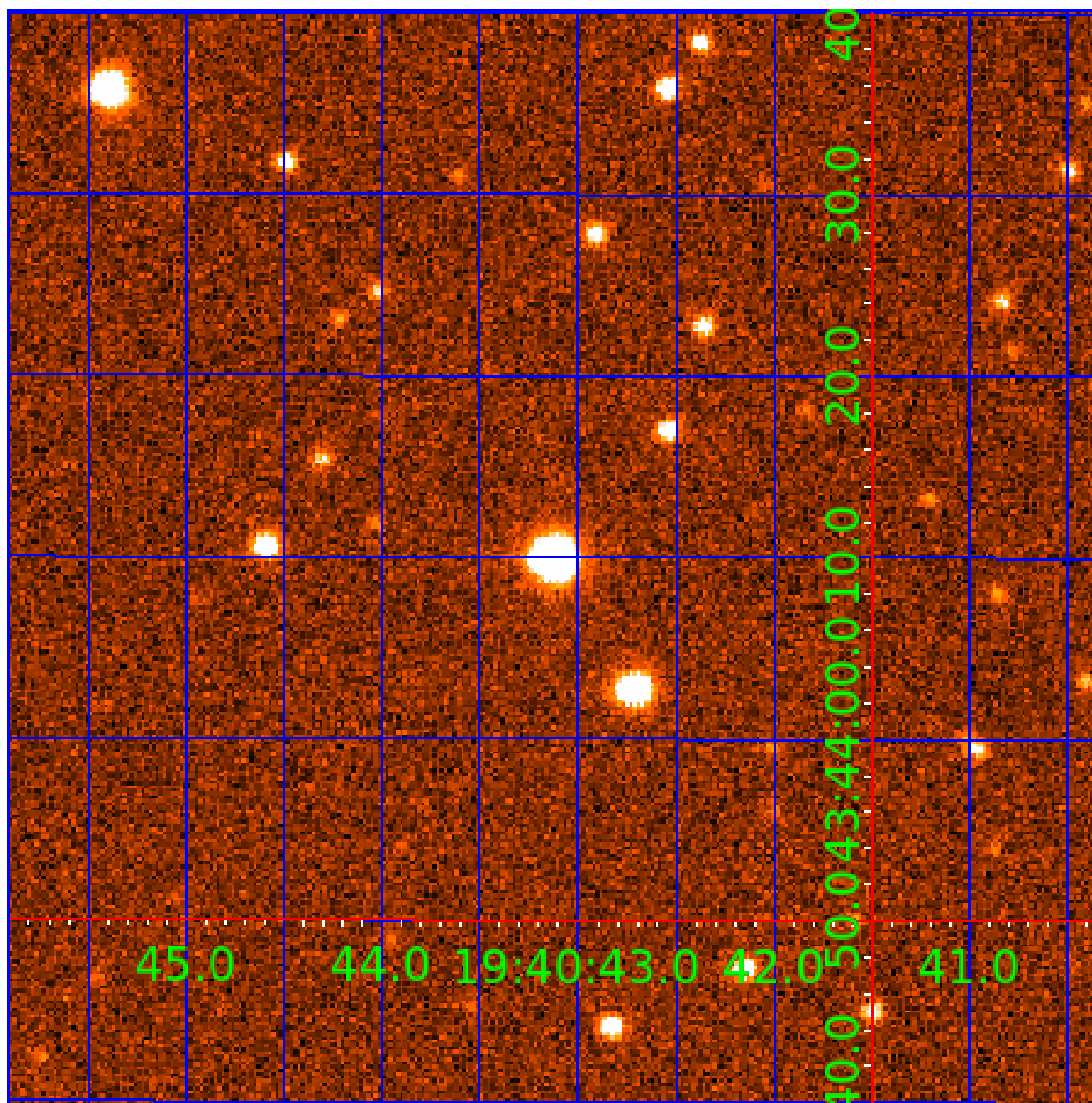


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007969912

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})
007969912-01	OBS	No	1.245041	131.803677	51.2	3.944	9.5	10.1	0.80	5168	0.69	959.94
007969912-02	OBS	No	501.108235	140.841041	660.8	3.230	9.6	6.7	0.80	5168	2.03	0.32

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007969912-01	OBS	FP	0.00	1	0	0	0	LPP_DV
007969912-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

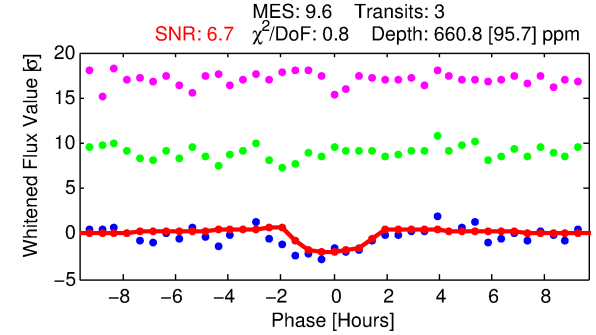
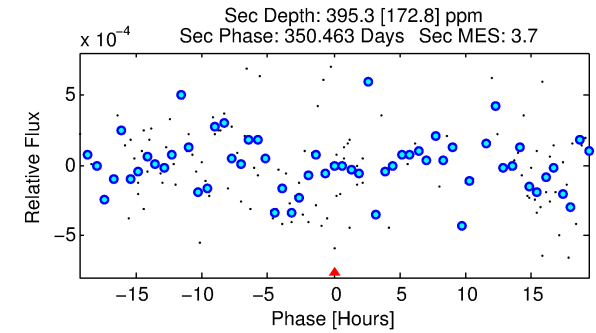
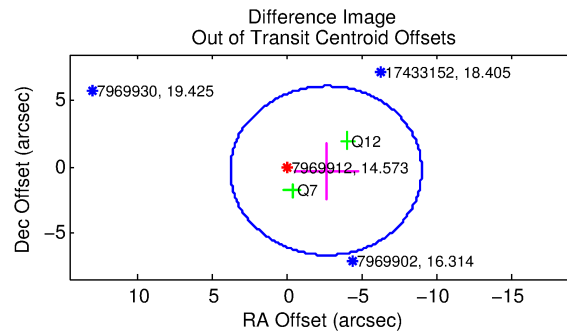
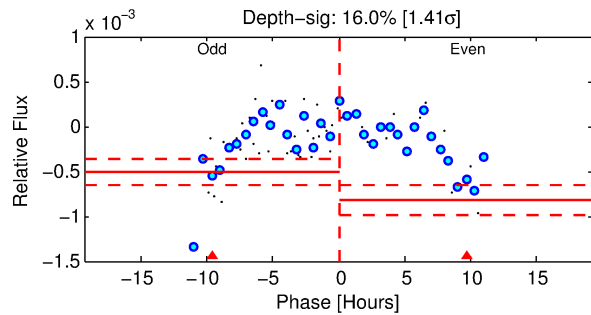
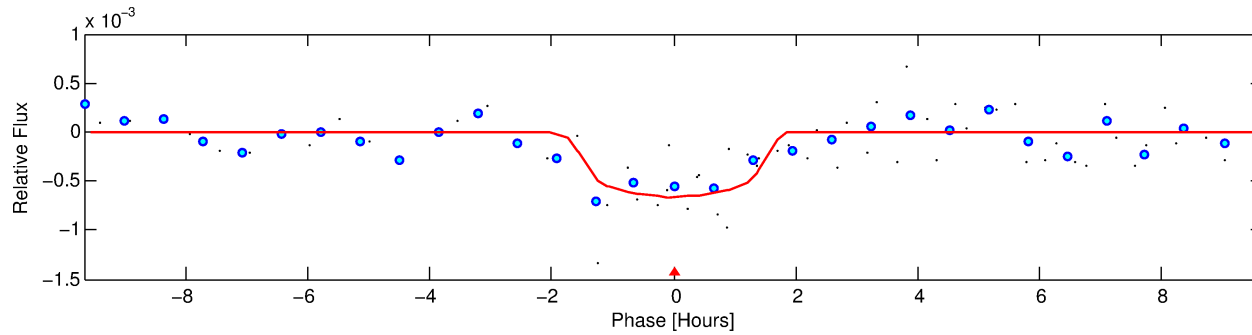
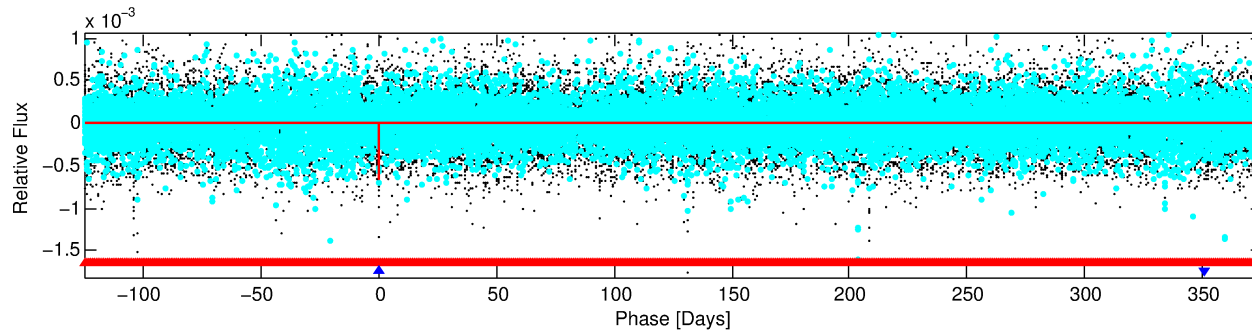
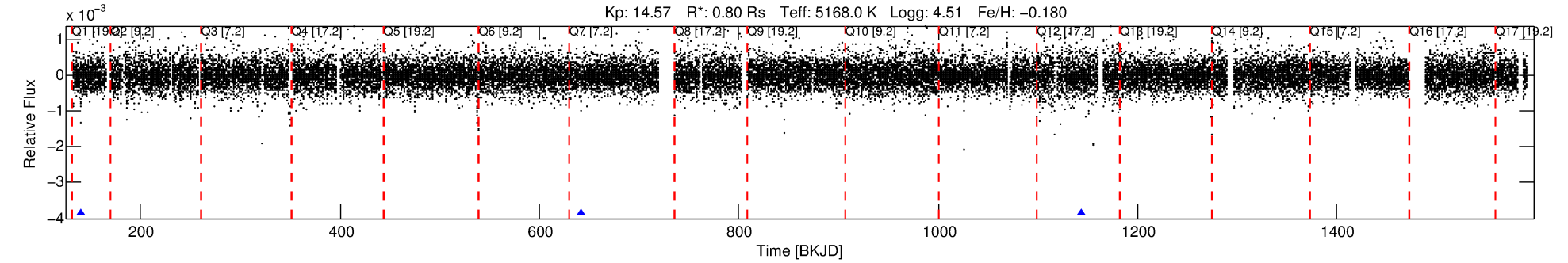
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007969912-02

No Significant Match Found

DV One-Page Summary

KIC: 7969912 Candidate: 2 of 2 Period: 501.108 d



DV Fit Results:

Period = 501.10824 [0.00703] d
Epoch = 140.8410 [0.0087] BKJD
Rp/R* = 0.0234 [0.0934]
a/R* = 1138.18 [16655.39]
b = 0.35 [36.70]
Seff = 0.32 [0.06]
Teq = 192 [9] K
Rp = 2.03 [8.13] Re
a = 1.1210 [0.1160] AU
Ag = 66049.91 [528637.24] [0.12 σ]
Teffp = 4765 [9533] K [0.48 σ]

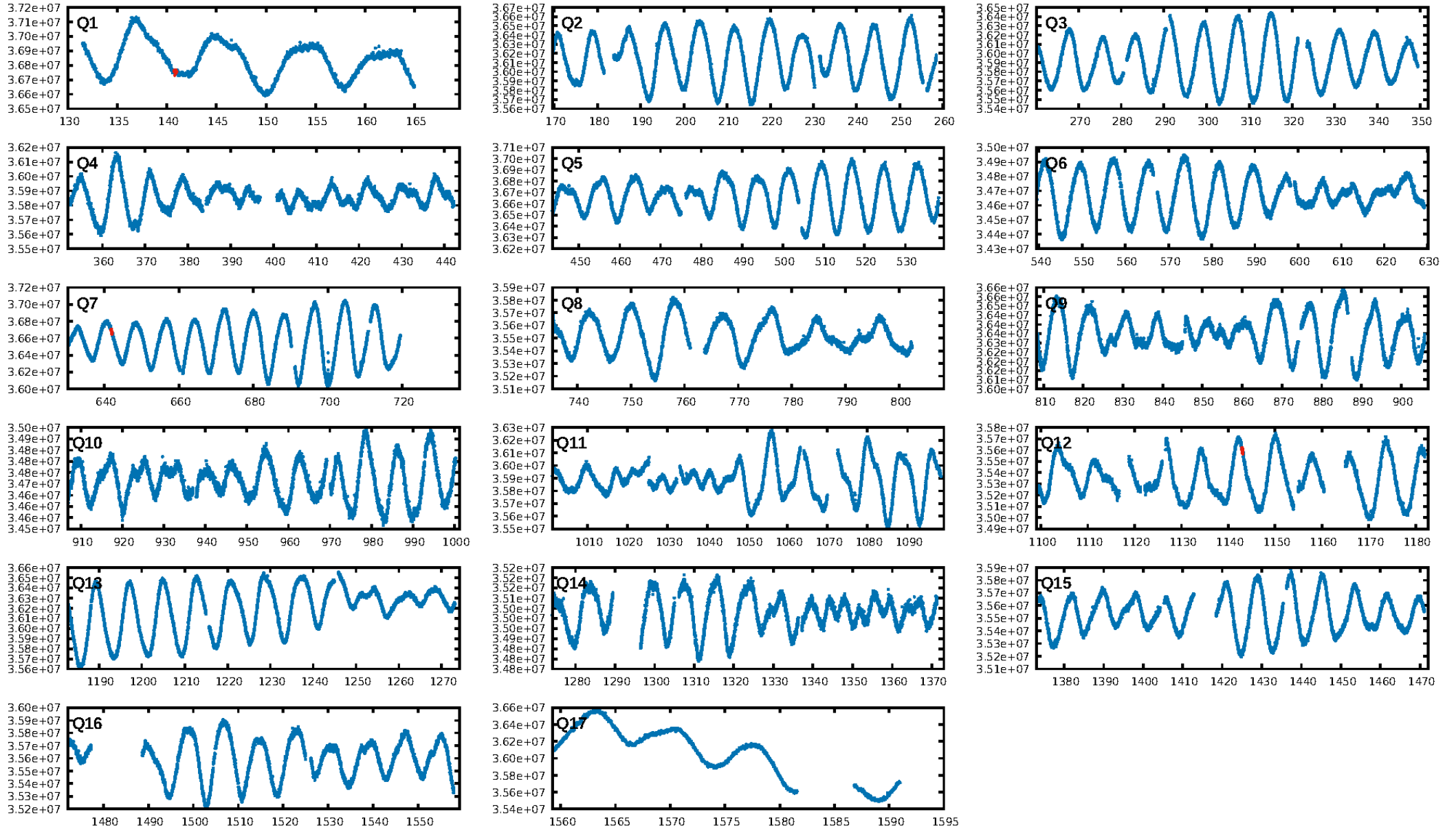
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [2353.31 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 6.2%
ModelChiSquareGof-sig: 97.9%
Bootstrap-pfa: 7.44e-08
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -0.6121
Centroid-sig: 51.2%
Centroid-so: 0.676 arcsec [0.30 σ]
OotOffset-rm: 2.675 arcsec [1.25 σ]
KicOffset-rm: 2.764 arcsec [1.29 σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.00 [0/3]

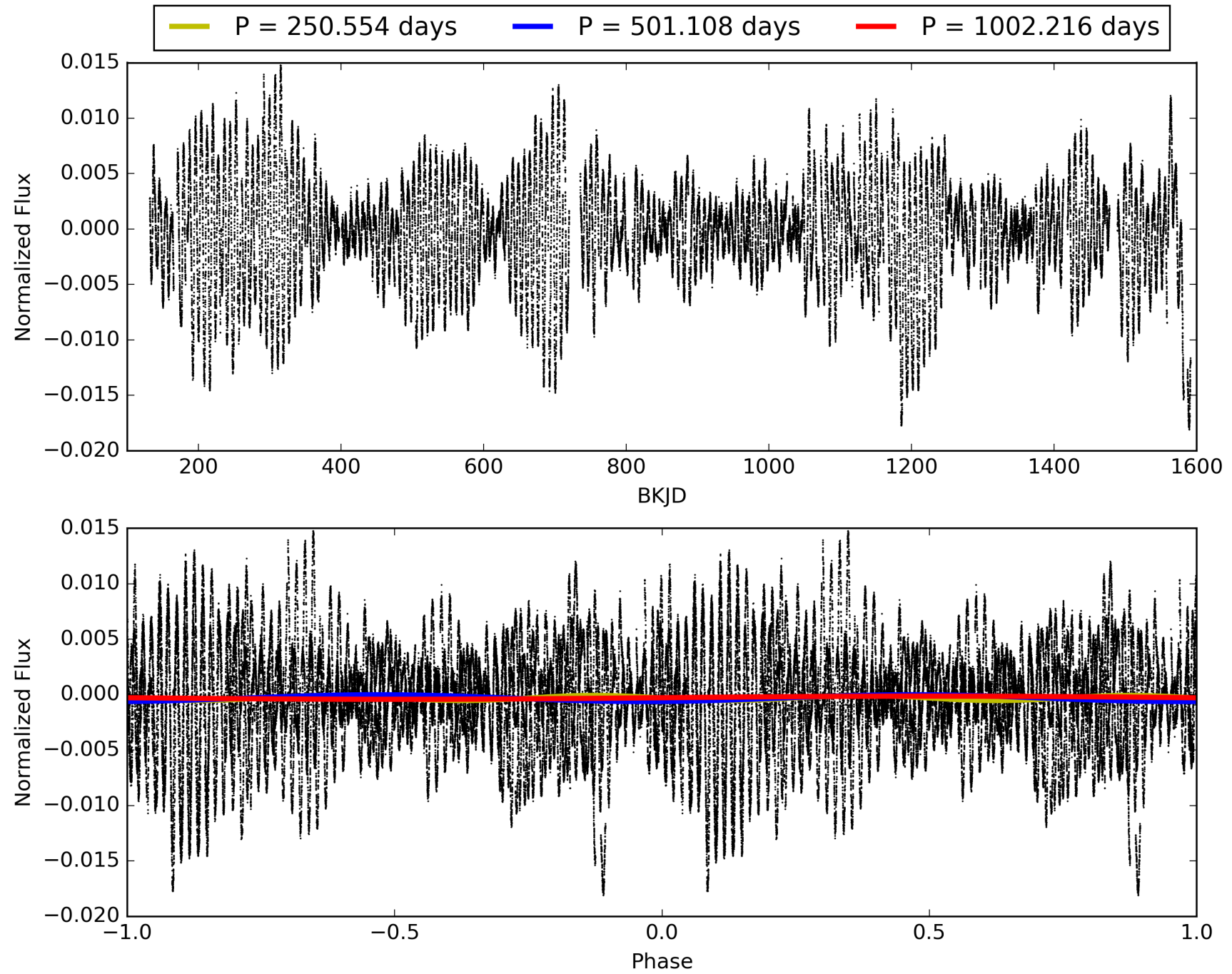
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 16:06:47 Z

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

TCE 007969912-02, PDC Light Curves

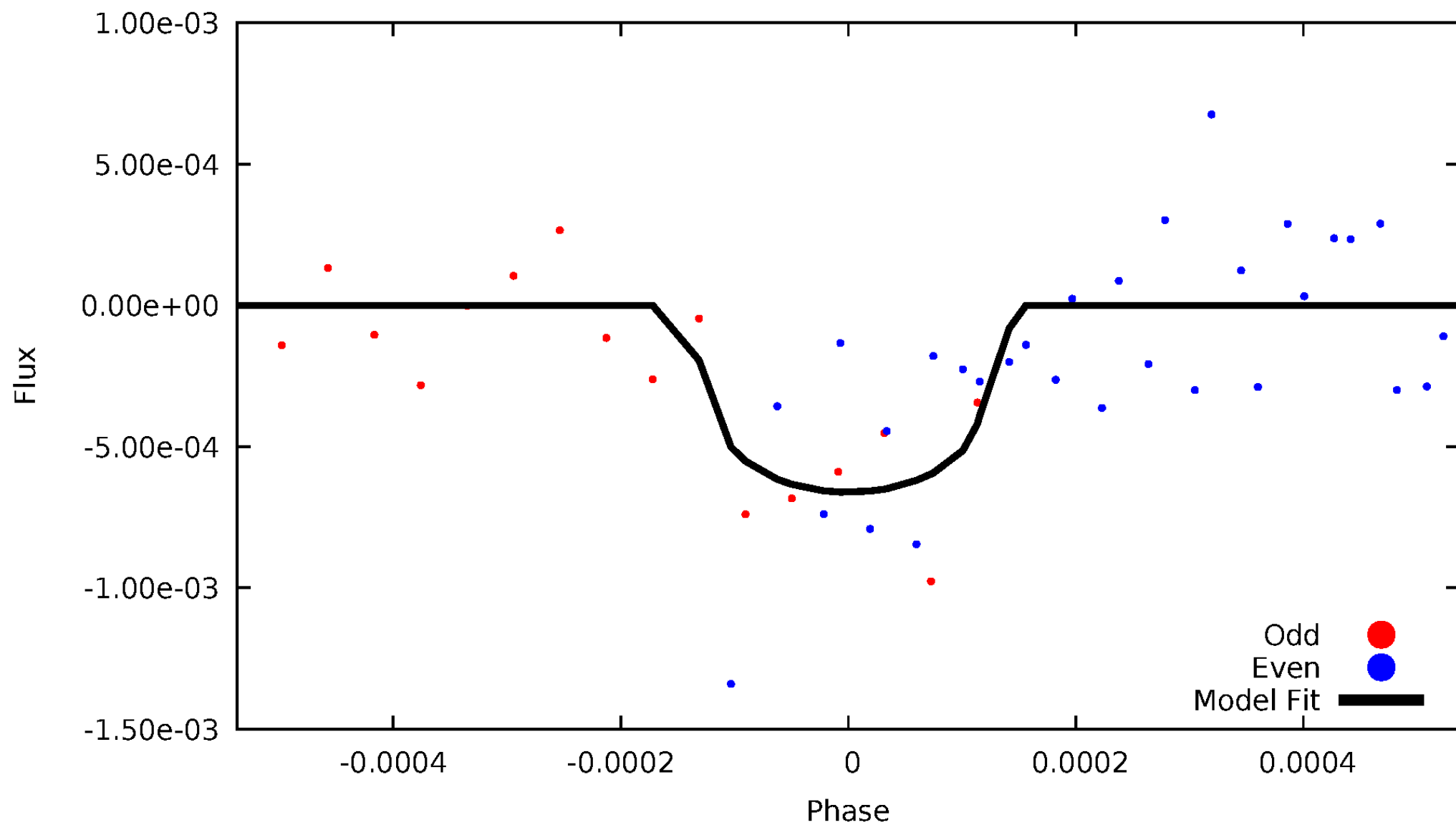


TCE 007969912-02



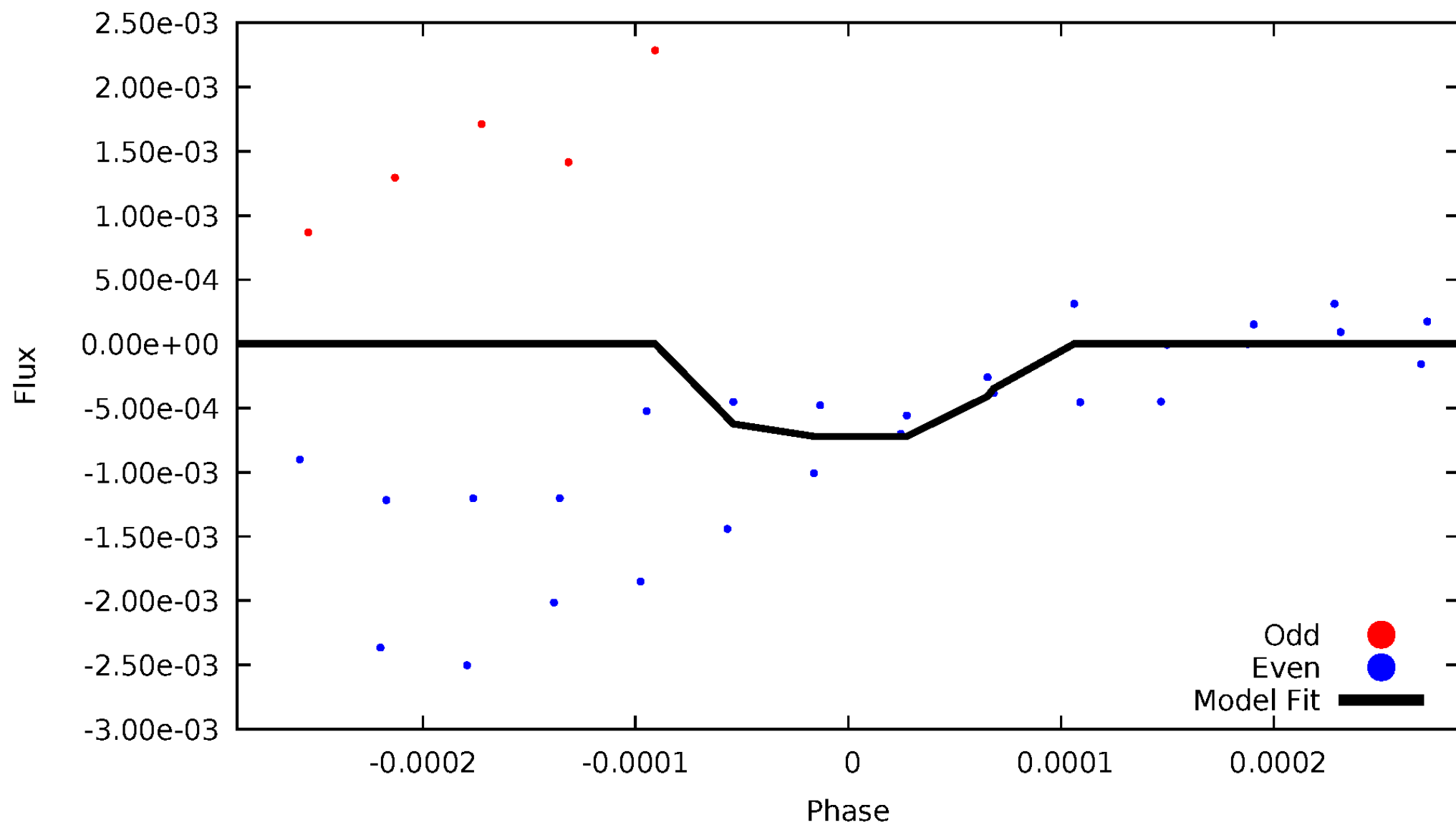
DV Odd/Even

TCE 007969912-02



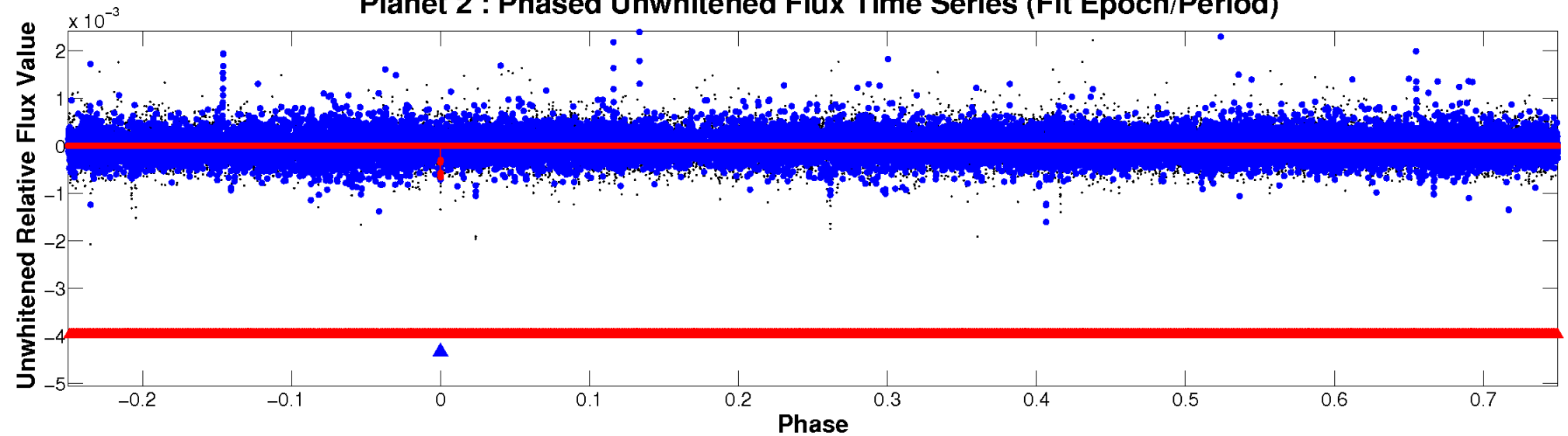
ALT Odd/Even

TCE 007969912-02

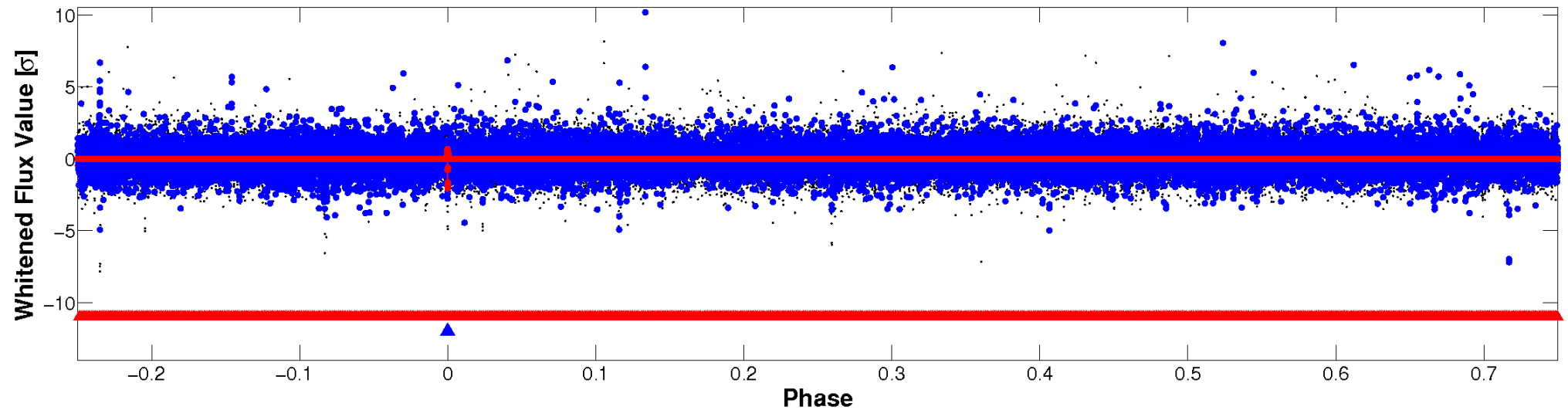


Non-Whitened Vs. Whitened Light Curve

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

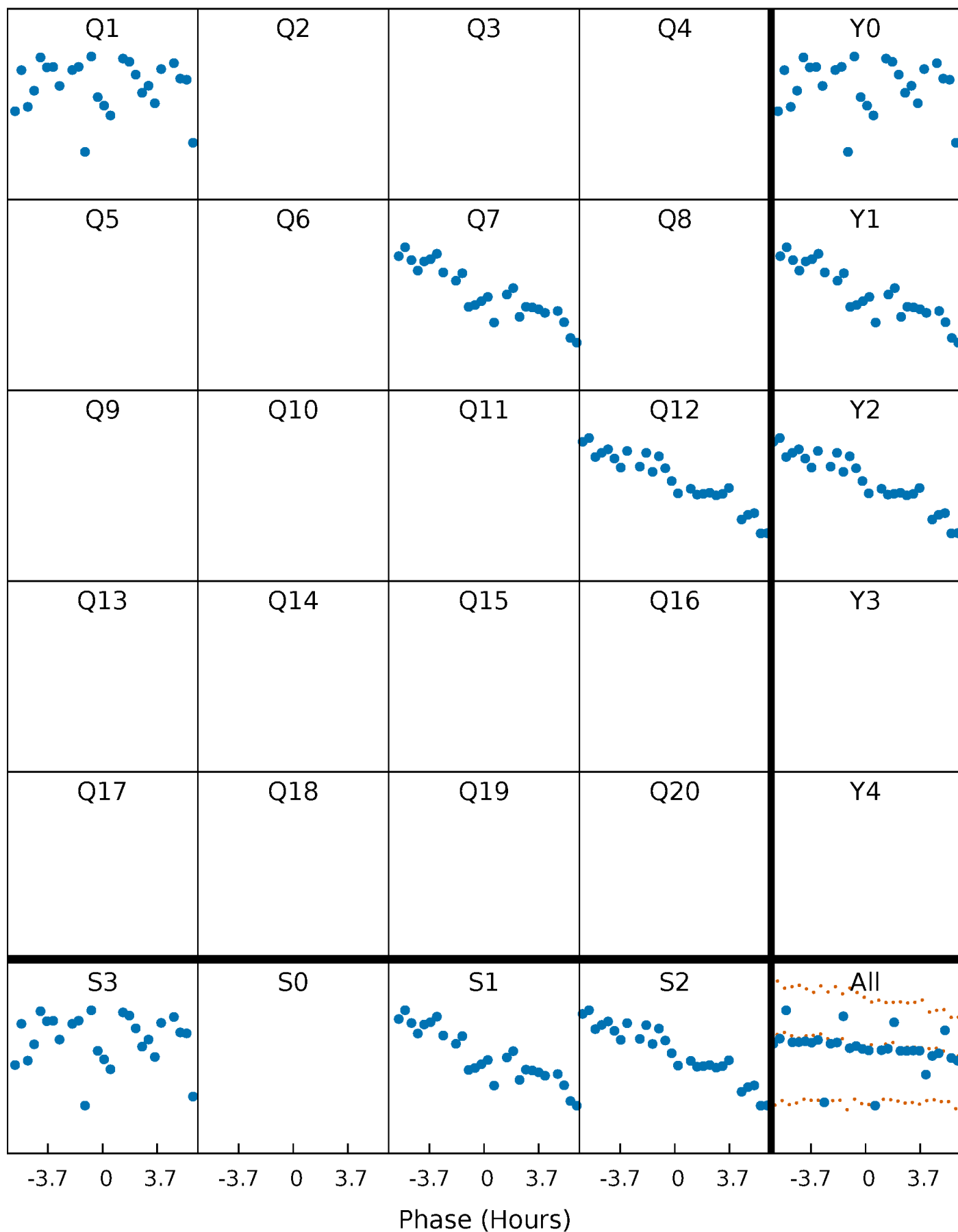


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



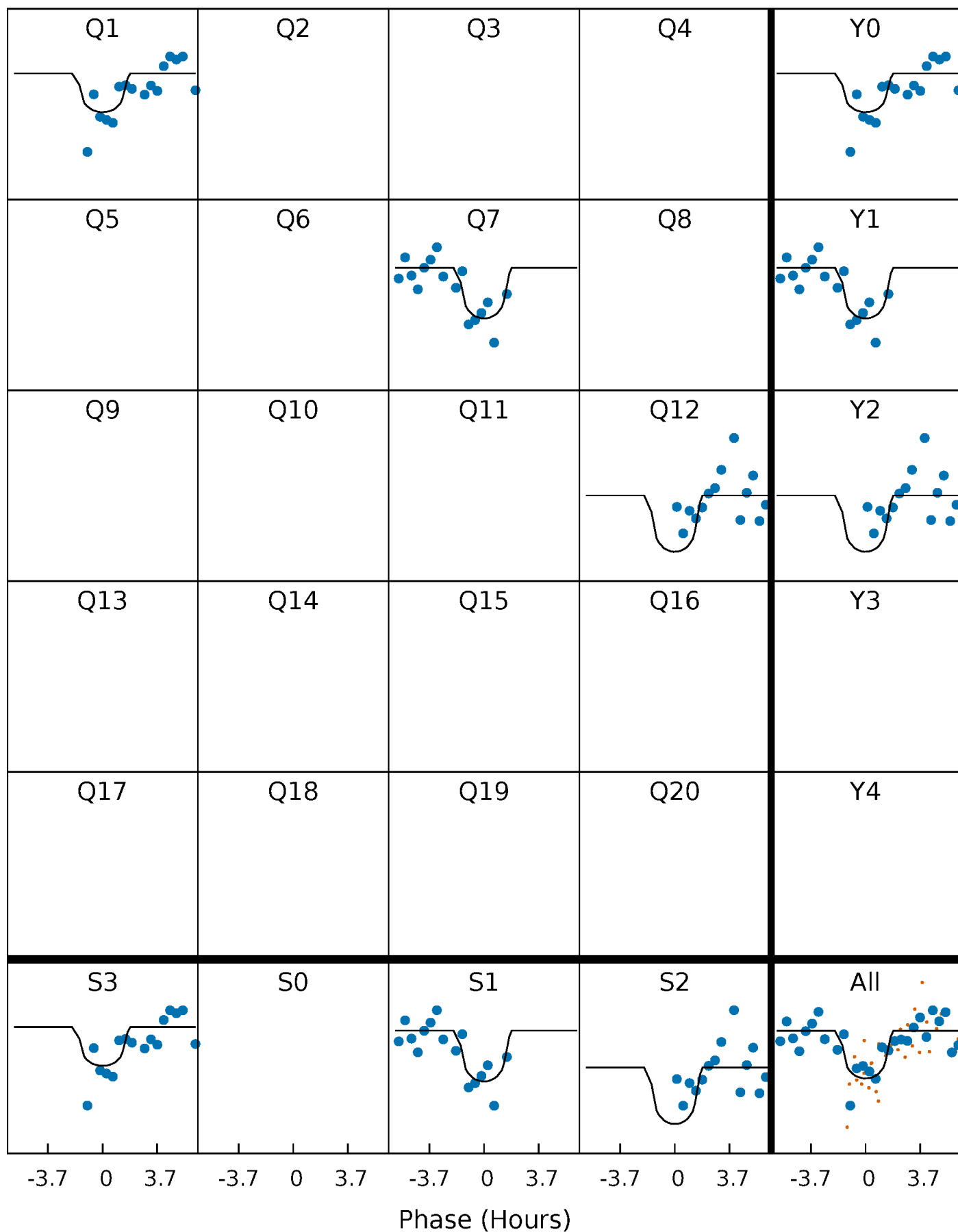
PDC Quarter-Phased Transit Curves

TCE 007969912-02 P=501.108235 Days $T_0=140.841041$ (BKJD)



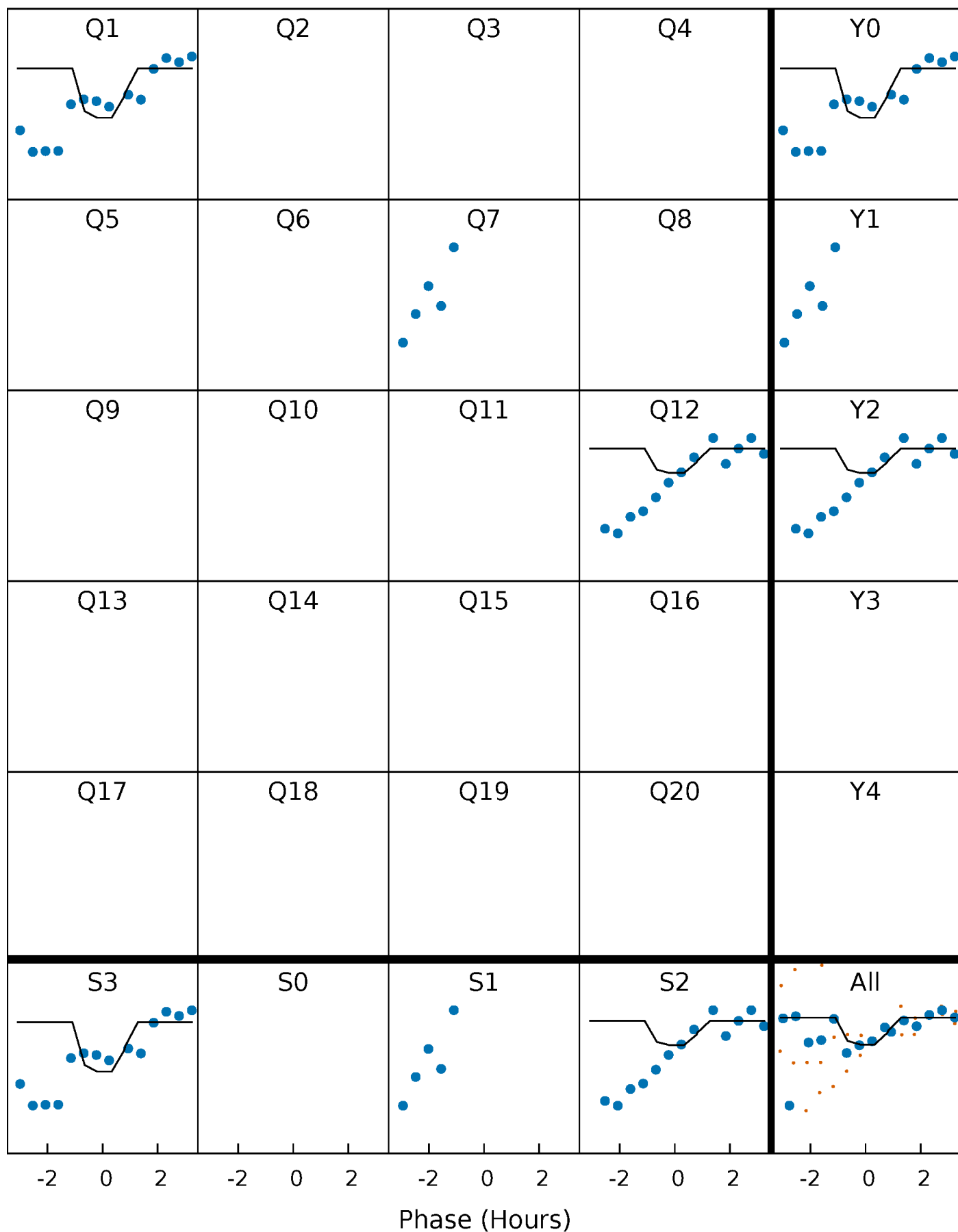
DV Quarter-Phased Transit Curves

TCE 007969912-02 P=501.108235 Days $T_0=140.841041$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

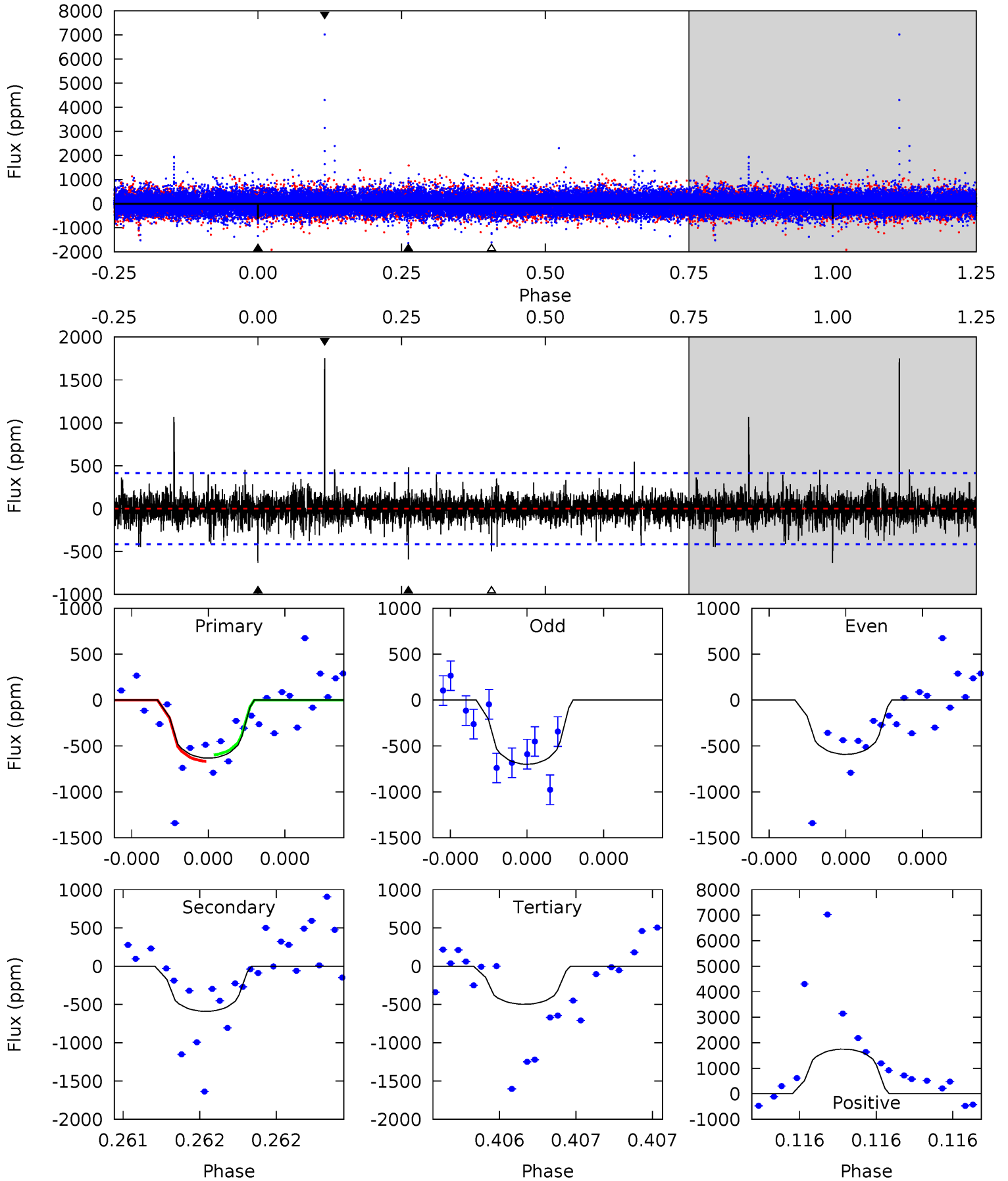
TCE 007969912-02 P=501.112625 Days $T_0=140.939013$ (BKJD)



DV Model-Shift Uniqueness Test

007969912-02, P = 501.108235 Days, E = 140.841041 Days

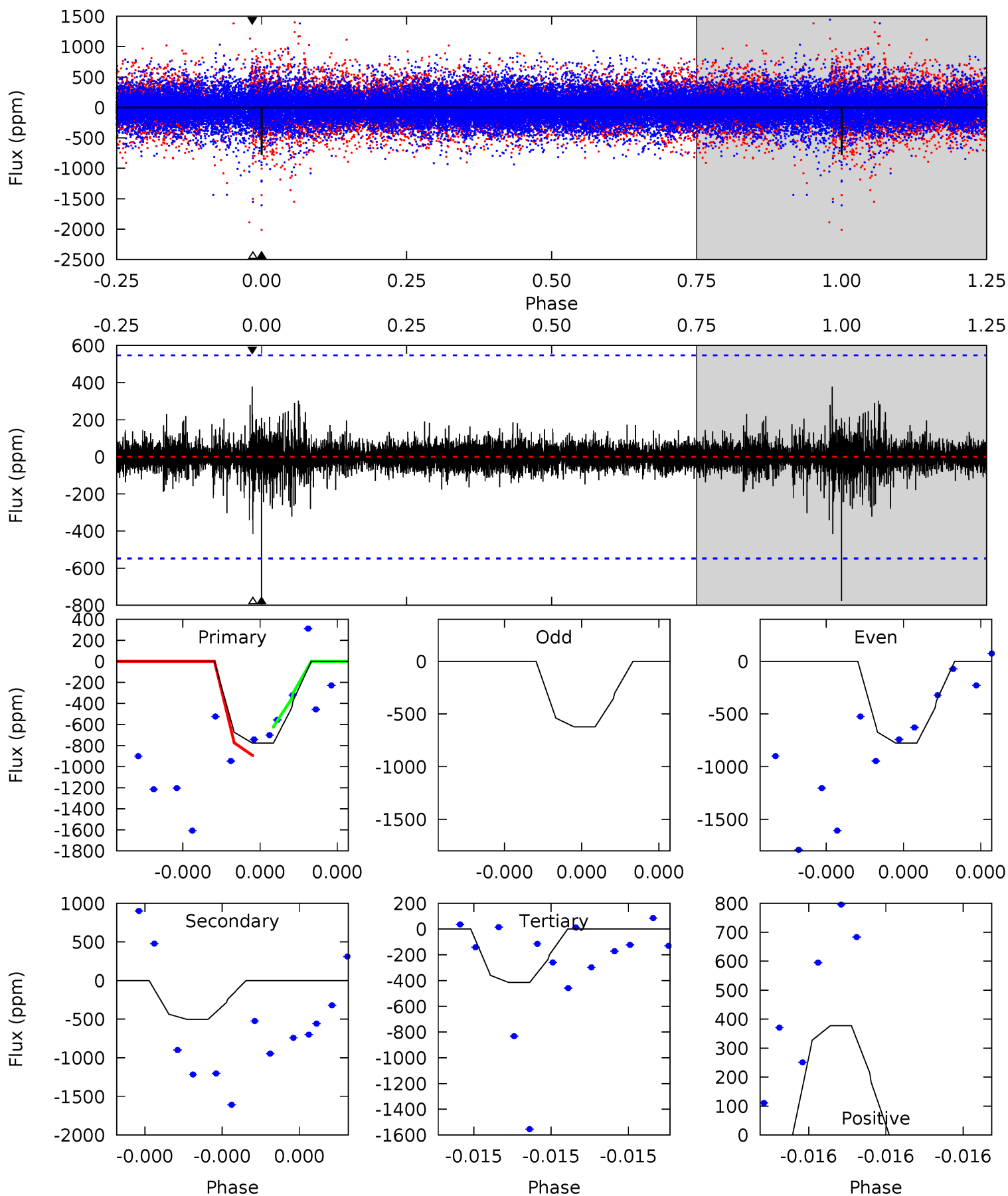
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.68	8.09	6.82	24.1	5.69	3.65	1.40	1.86	-15.4	1.27	-16.0	0.73	0.84	0.73	0.47



Alt Model-Shift Uniqueness Test

007969912-02, P = 501.112625 Days, E = 140.939013 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.18	5.29	4.37	3.98	5.77	3.77	0.46	3.81	4.20	0.92	1.31	1.04	1.00	0.33	1.36



Stellar Parameters For KIC 007969912

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5168^{+153}_{-138}	$4.509^{+0.085}_{-0.077}$	$-0.180^{+0.300}_{-0.300}$	$0.797^{+0.086}_{-0.096}$	$0.749^{+0.103}_{-0.059}$	$2.082^{+0.801}_{-0.485}$
	+3%/-3%	+2%/-2%	+167%/-167%	+11%/-12%	+14%/-8%	+38%/-23%
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 007969912-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-589 ± 73	$6.42^{+6.85}_{-4.27}$	269^{+12}_{-12}	3438^{+1719}_{-649}	9961^{+78211}_{-7649}
Alt.	-502 ± 95	$6.70^{+6.04}_{-4.51}$	269^{+10}_{-11}	3288^{+1641}_{-550}	7764^{+65677}_{-5745}

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 $A_{obs} \gg 1.0$

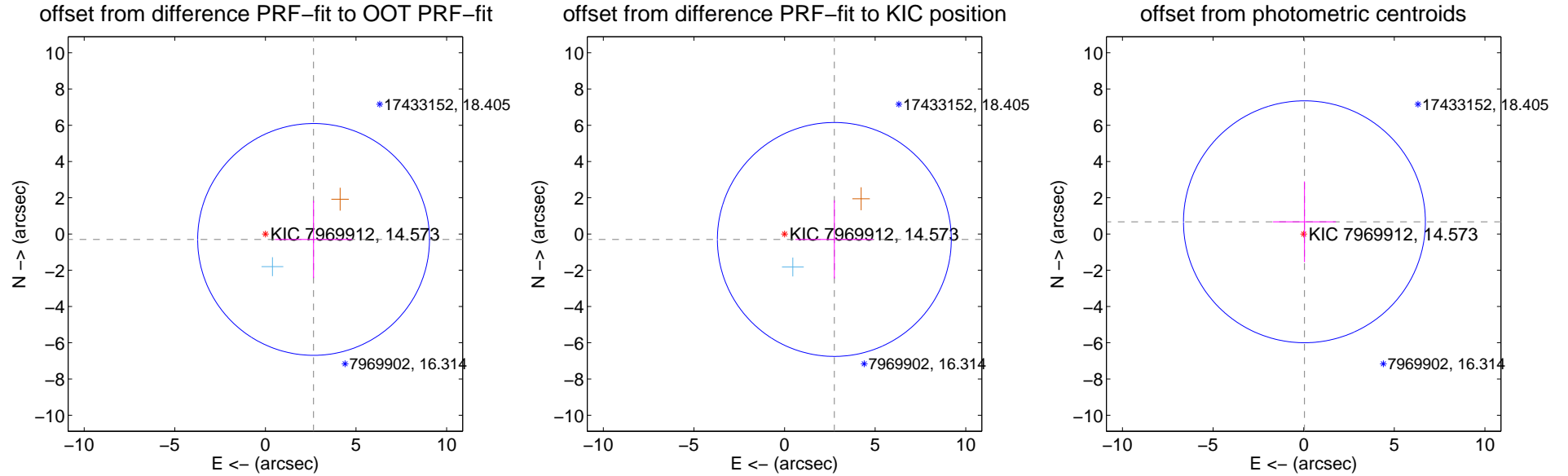
DV Centroid Data

Supplemental centroid analysis for 007969912-02. Kepler magnitude: 14.57. Transit SNR 6.72

There are 1 quarters with good PRF difference image offsets

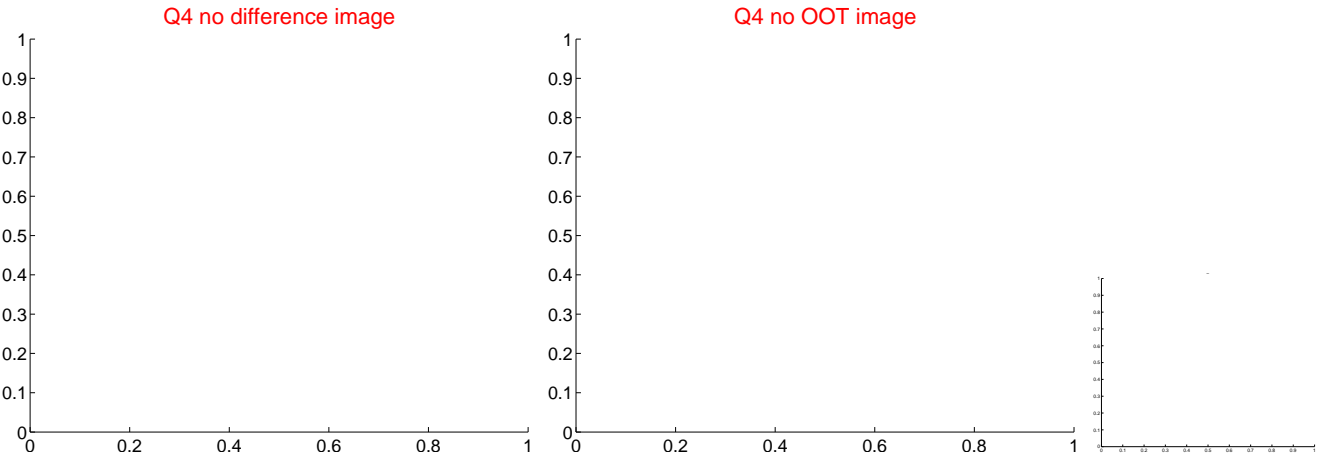
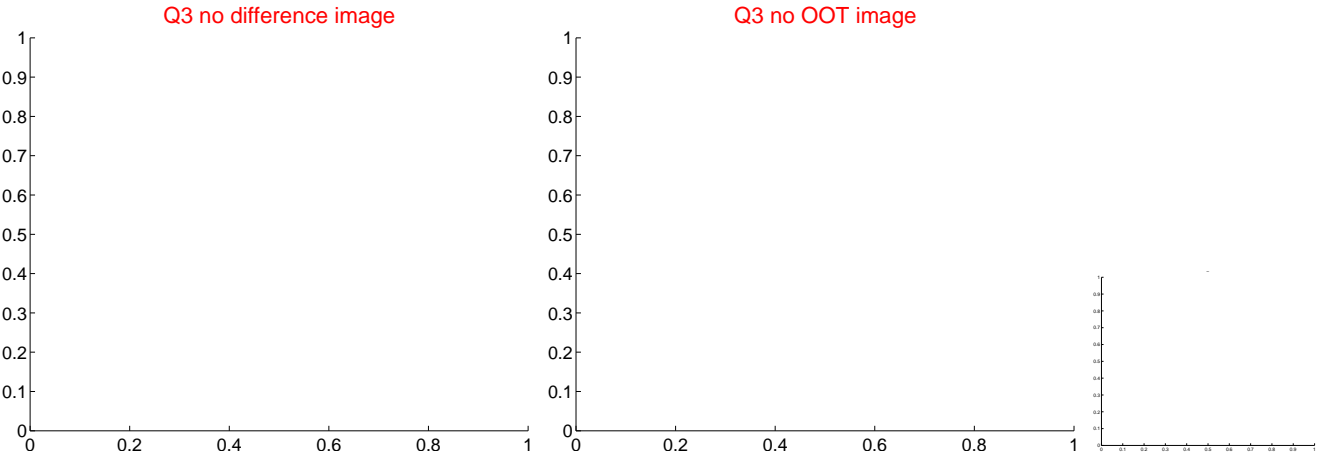
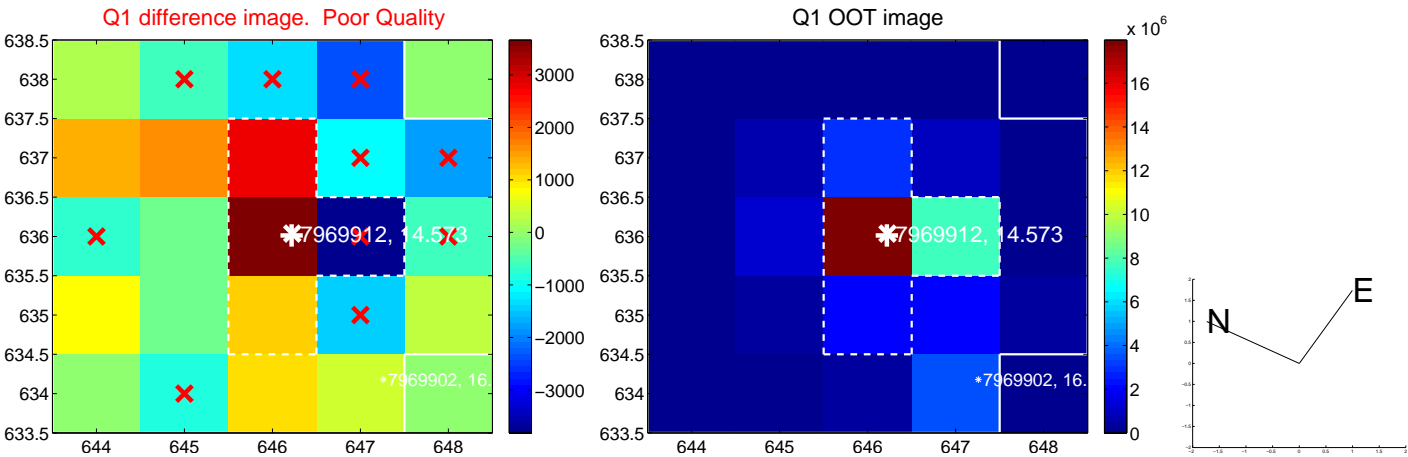
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.675 ± 2.132	1.25	-2.658 ± 2.132	-0.299 ± 2.136
PRF-fit source offset from KIC position	2.764 ± 2.151	1.29	-2.748 ± 2.151	-0.300 ± 2.159
photometric centroid source offset	0.68 ± 2.22	0.30	-0.04 ± 1.73	0.67 ± 2.23

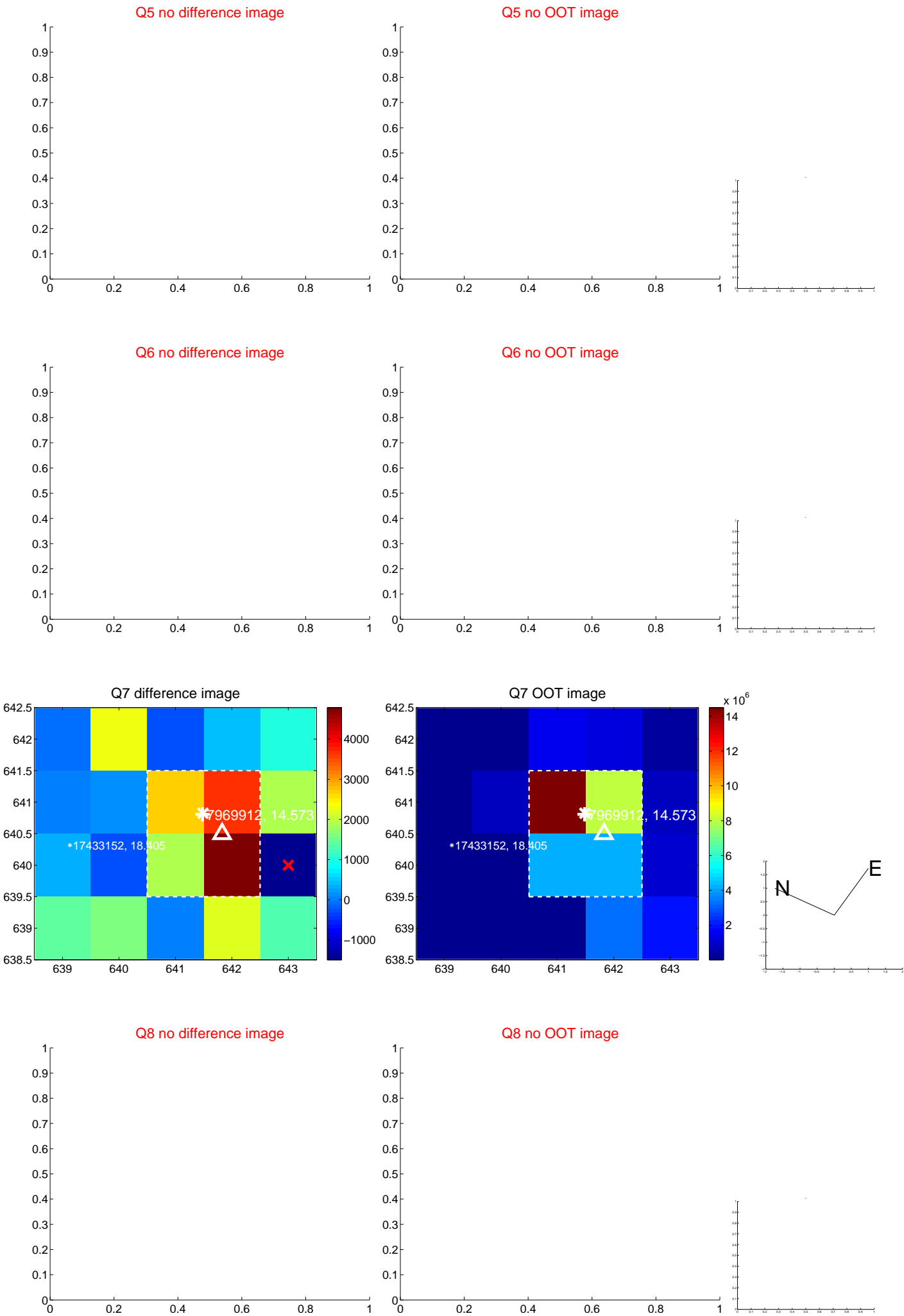


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

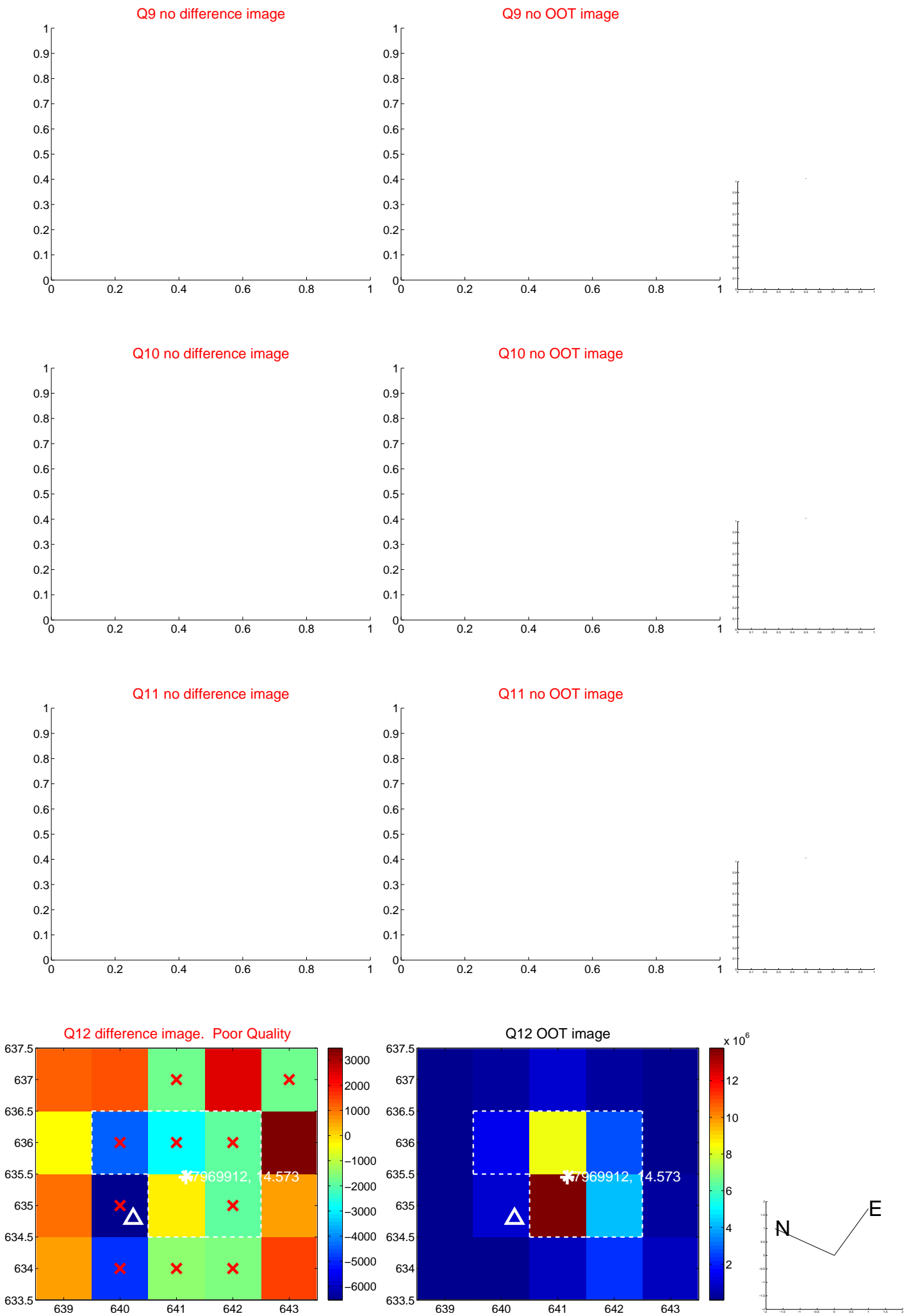
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



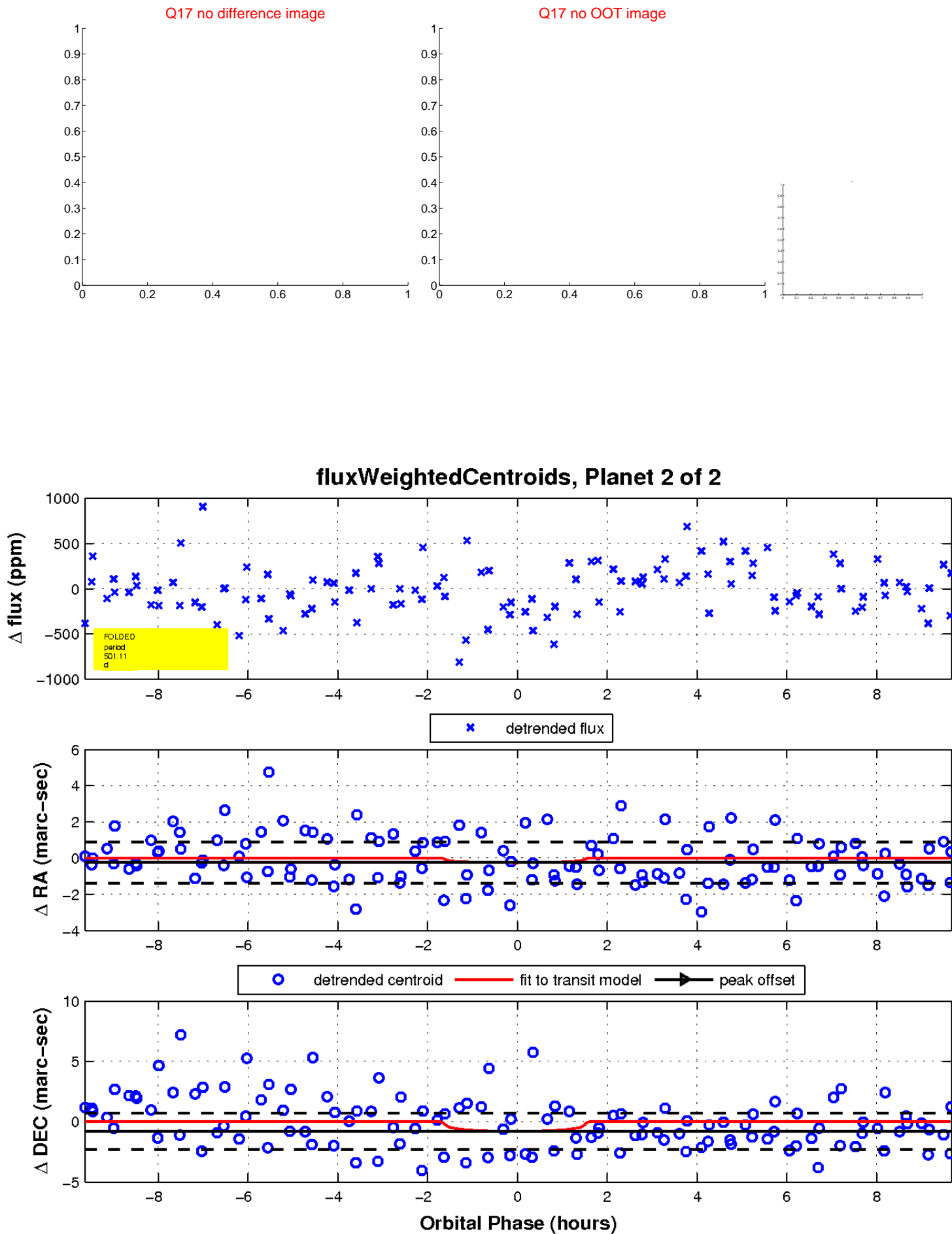
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

