

KIC 009899577

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})
009899577-01	OBS	7247.01	1.332505	132.089321	73.3	4.428	14.3	14.4	0.76	5309	0.69	831.26
009899577-02	OBS	No	278.037493	224.334115	971.1	0.967	15.3	4.3	0.76	5309	2.57	0.67
009899577-03	OBS	No	450.464327	481.696785	734.0	17.830	9.1	6.9	0.76	5309	2.02	0.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009899577-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
009899577-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009899577-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—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.

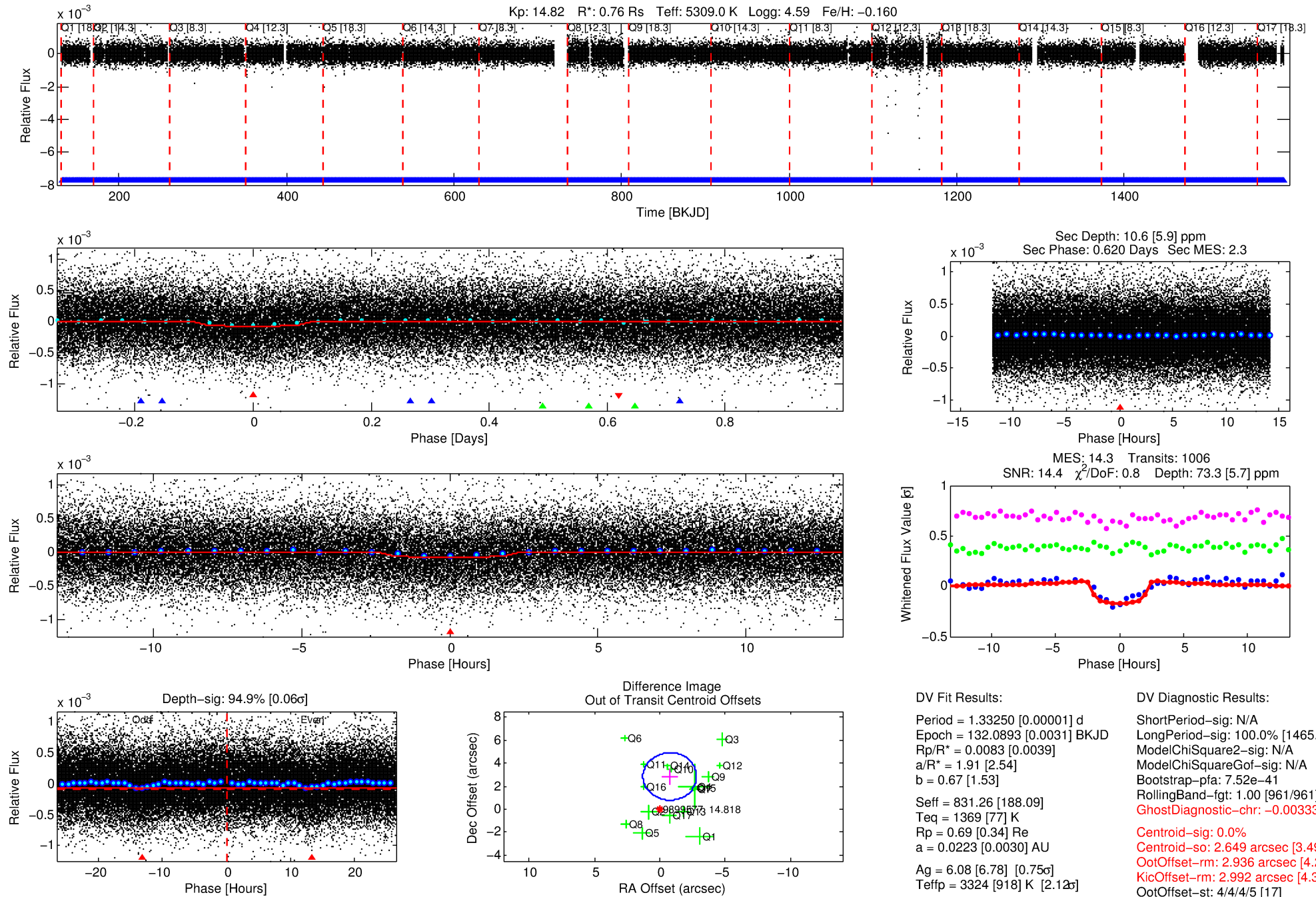
Ephemeris Match Information For 009899577-01

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
009899577-01	9899577	BR-Cyg-pri	9899416	1:1	149.9	-25	28	10.03	14.82	9162.60	Direct-PRF	0	3.67	2.79

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

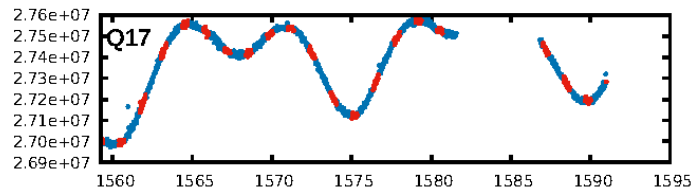
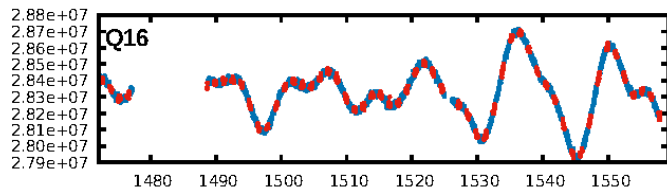
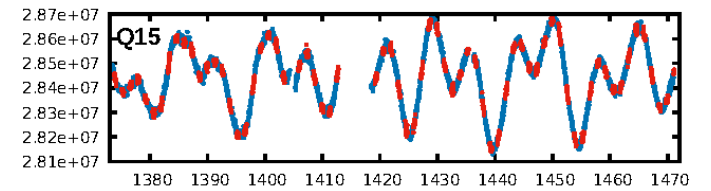
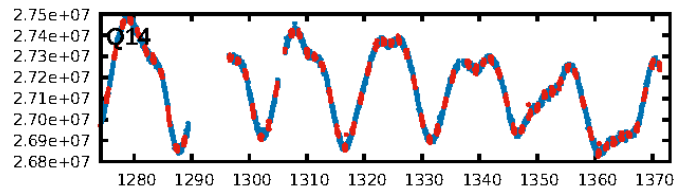
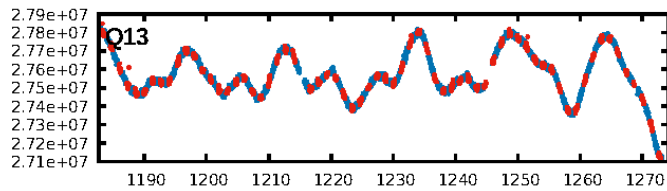
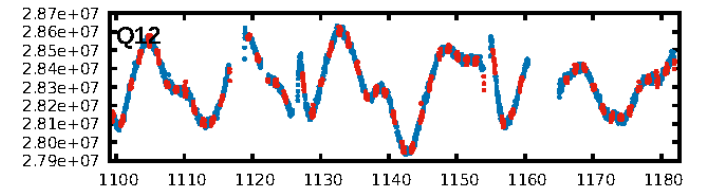
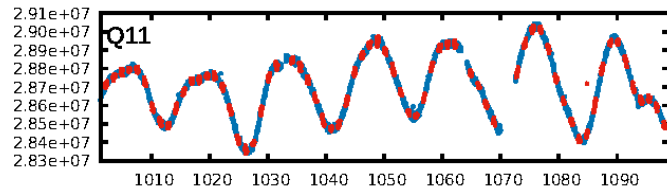
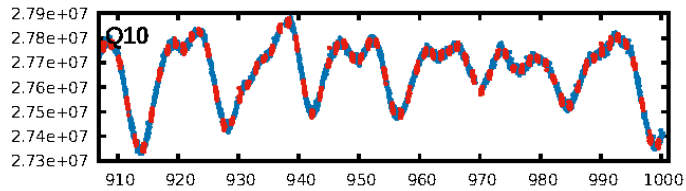
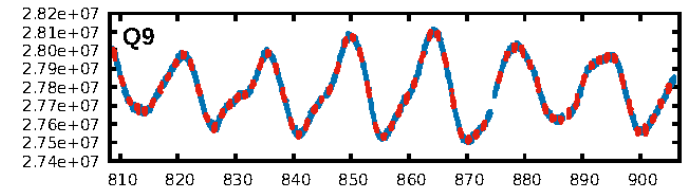
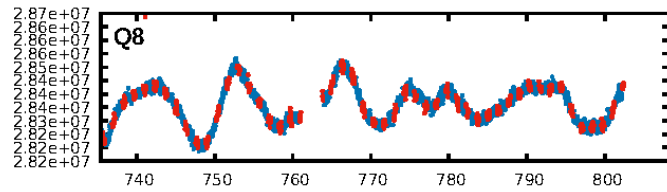
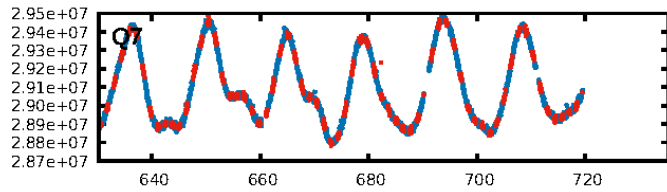
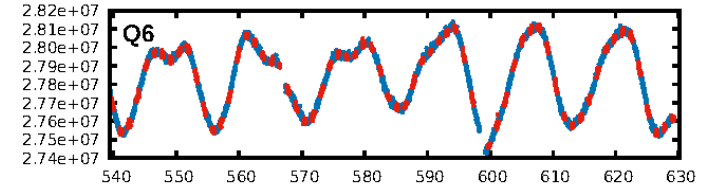
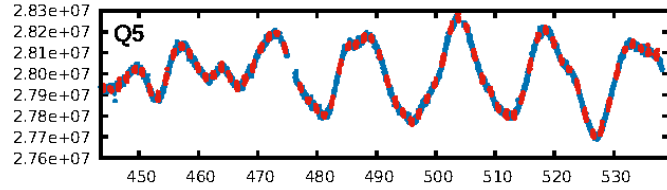
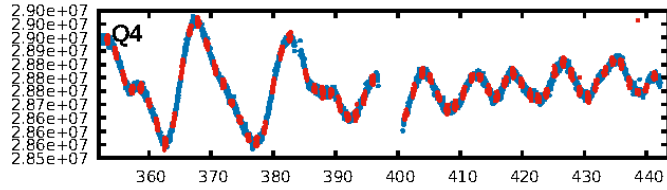
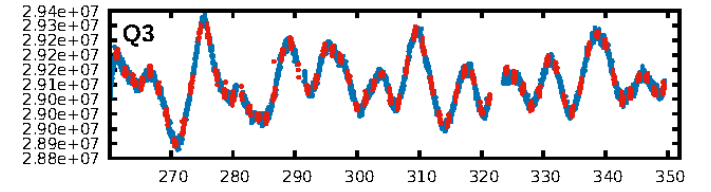
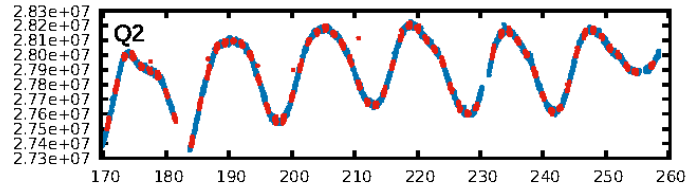
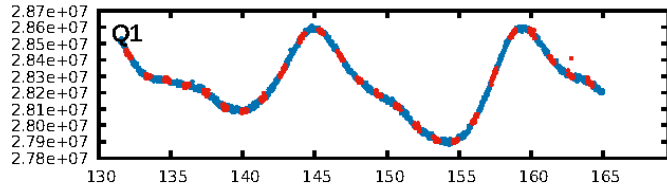
KIC: 9899577 Candidate: 1 of 3 Period: 1.333 d
KOI: K07247.01 Corr: 0.851



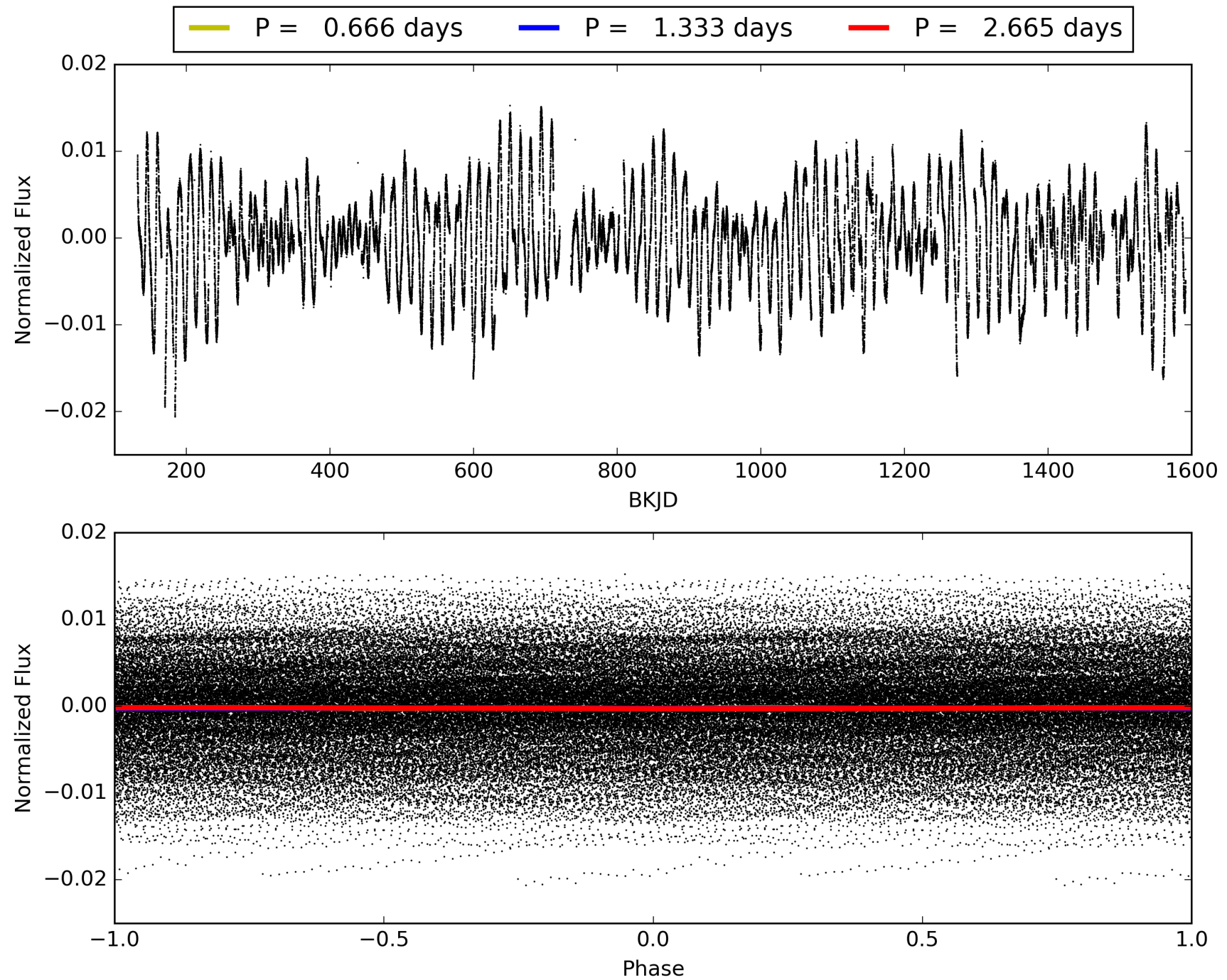
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009899577-01, PDC Light Curves

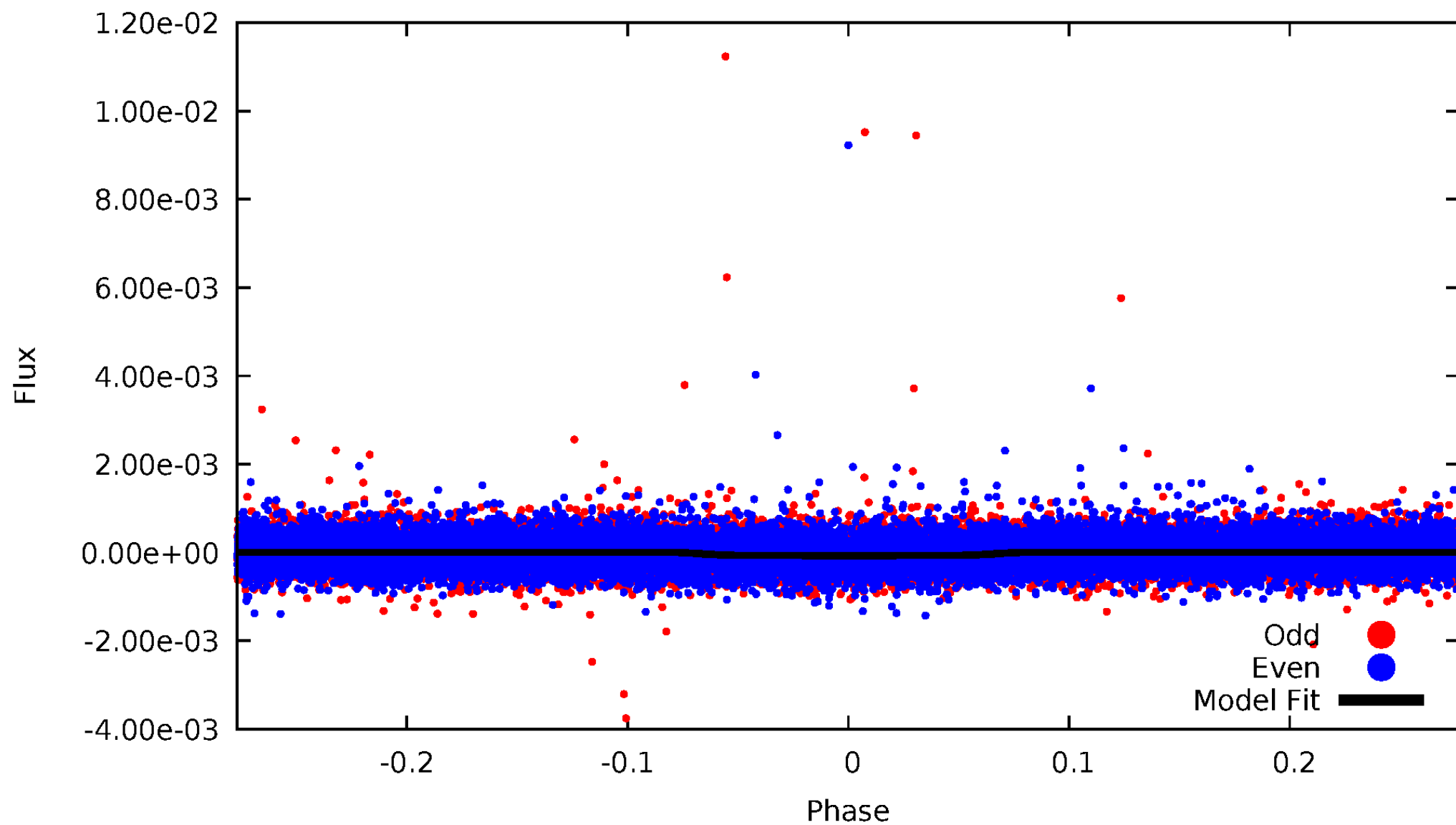


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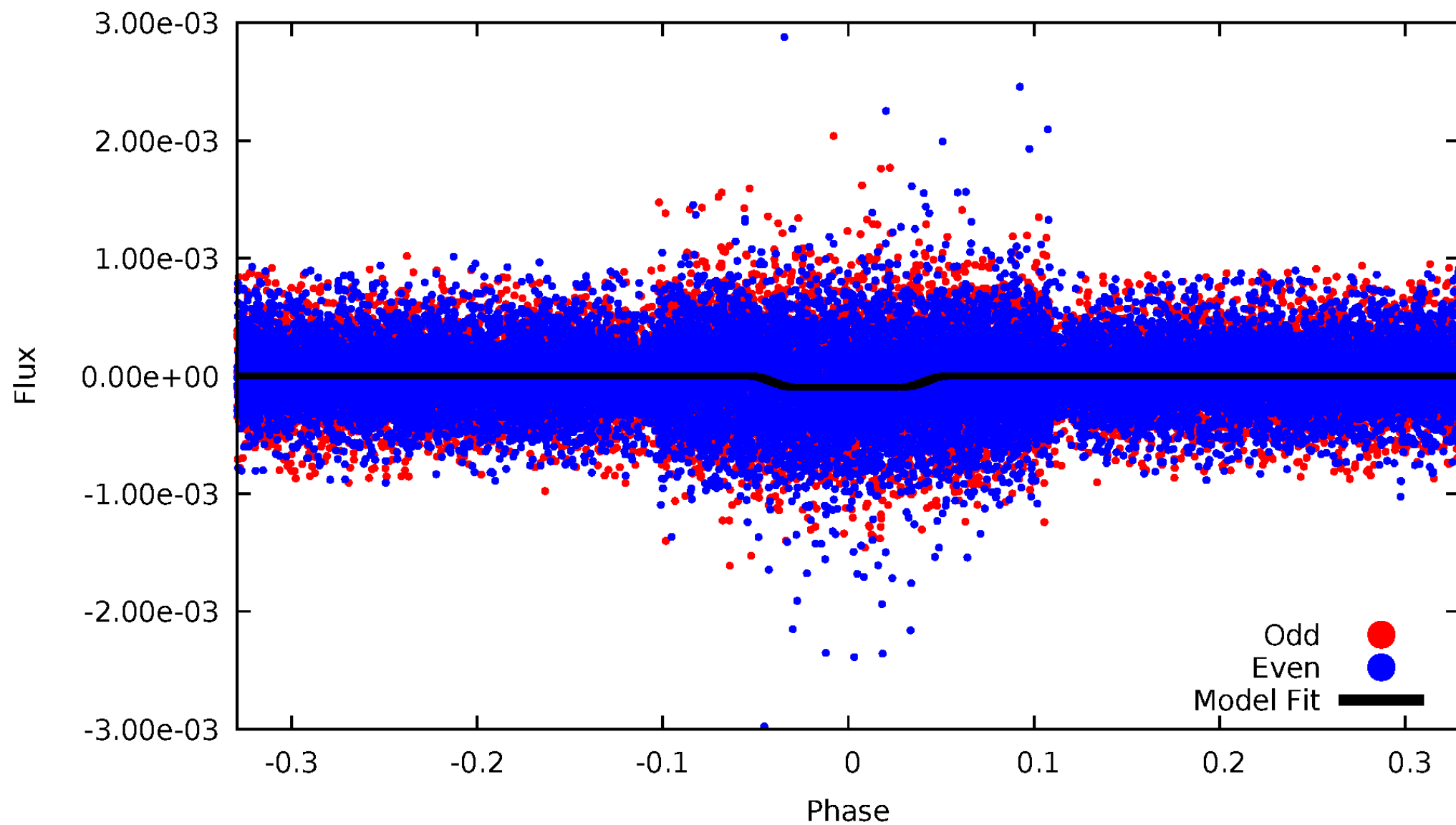
DV Odd/Even

TCE 009899577-01

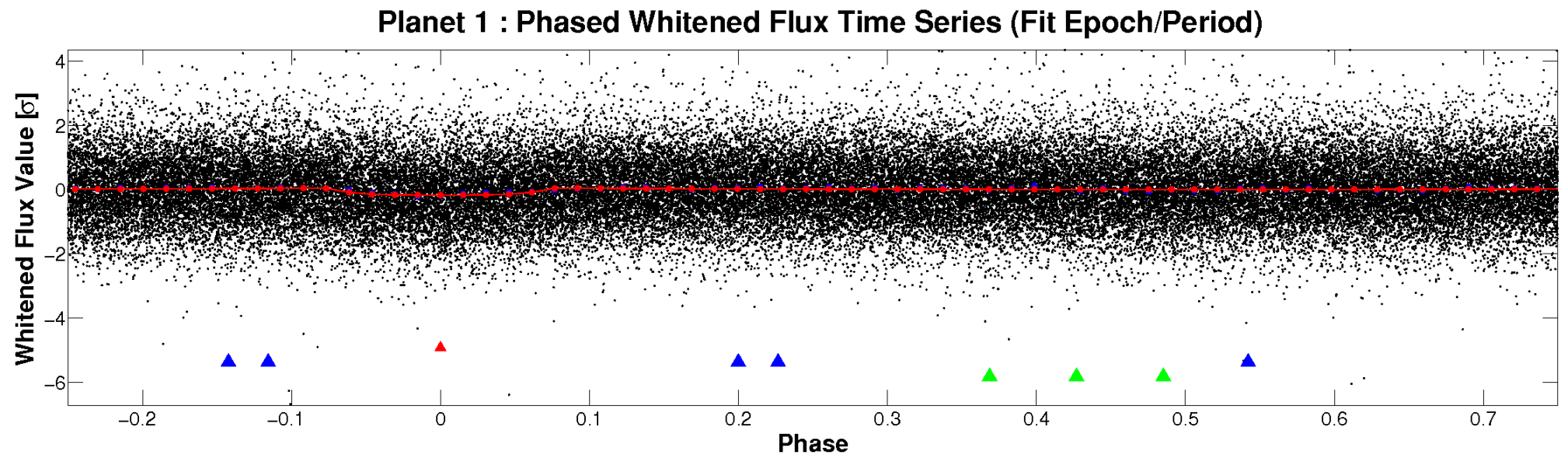
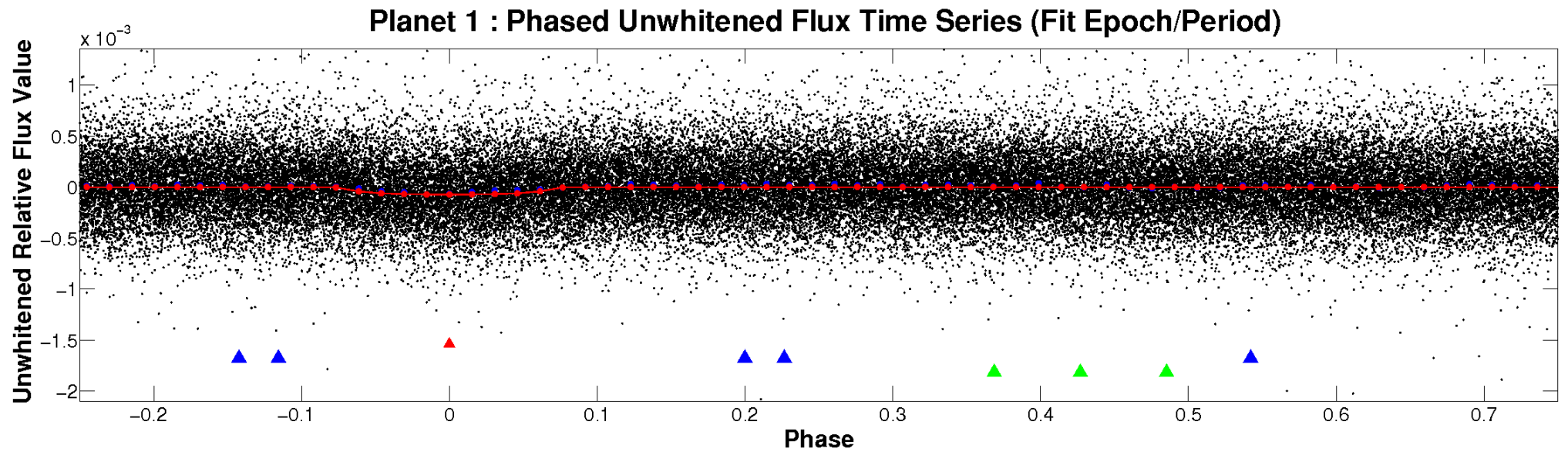


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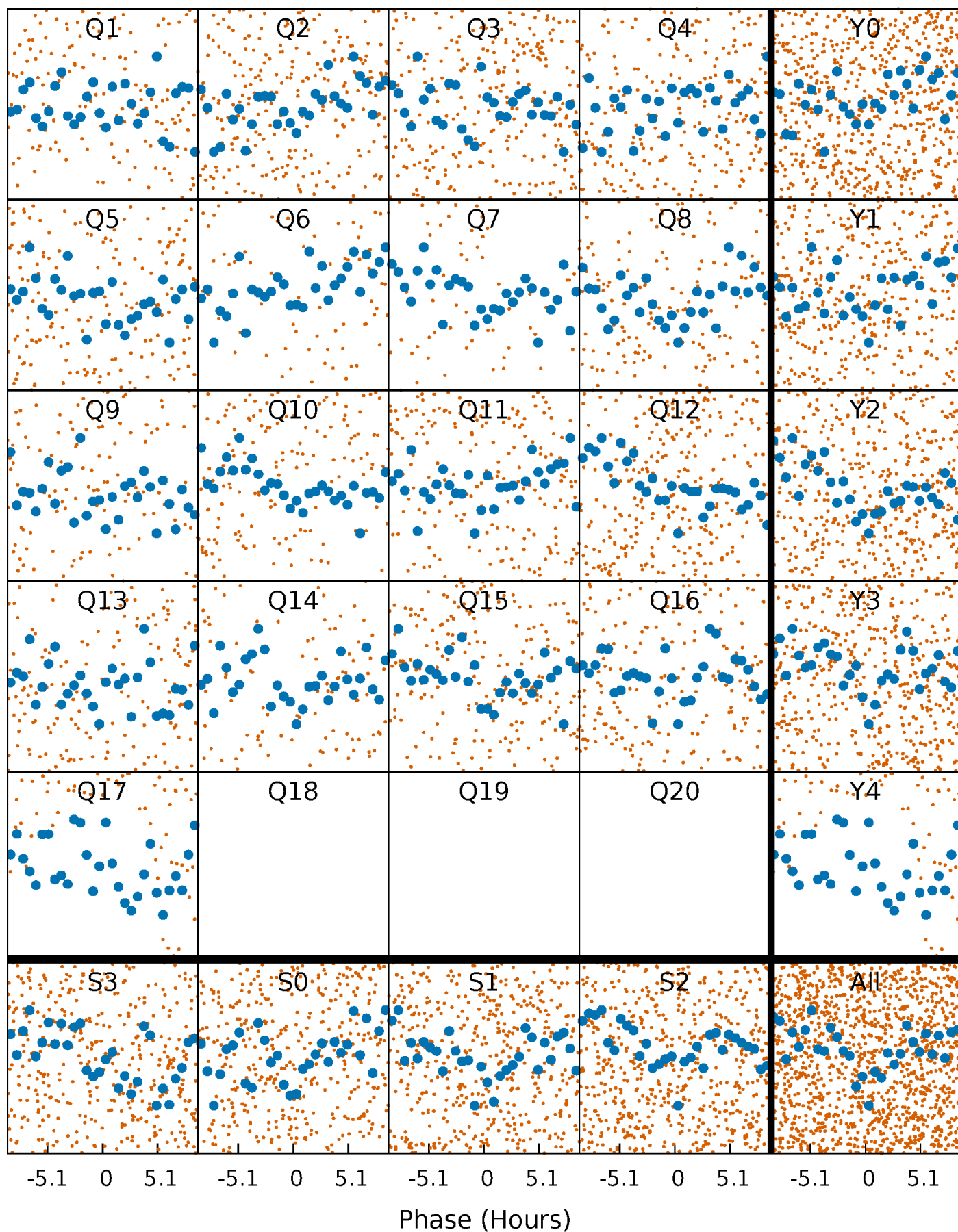


Non-Whitened Vs. Whitened Light Curve



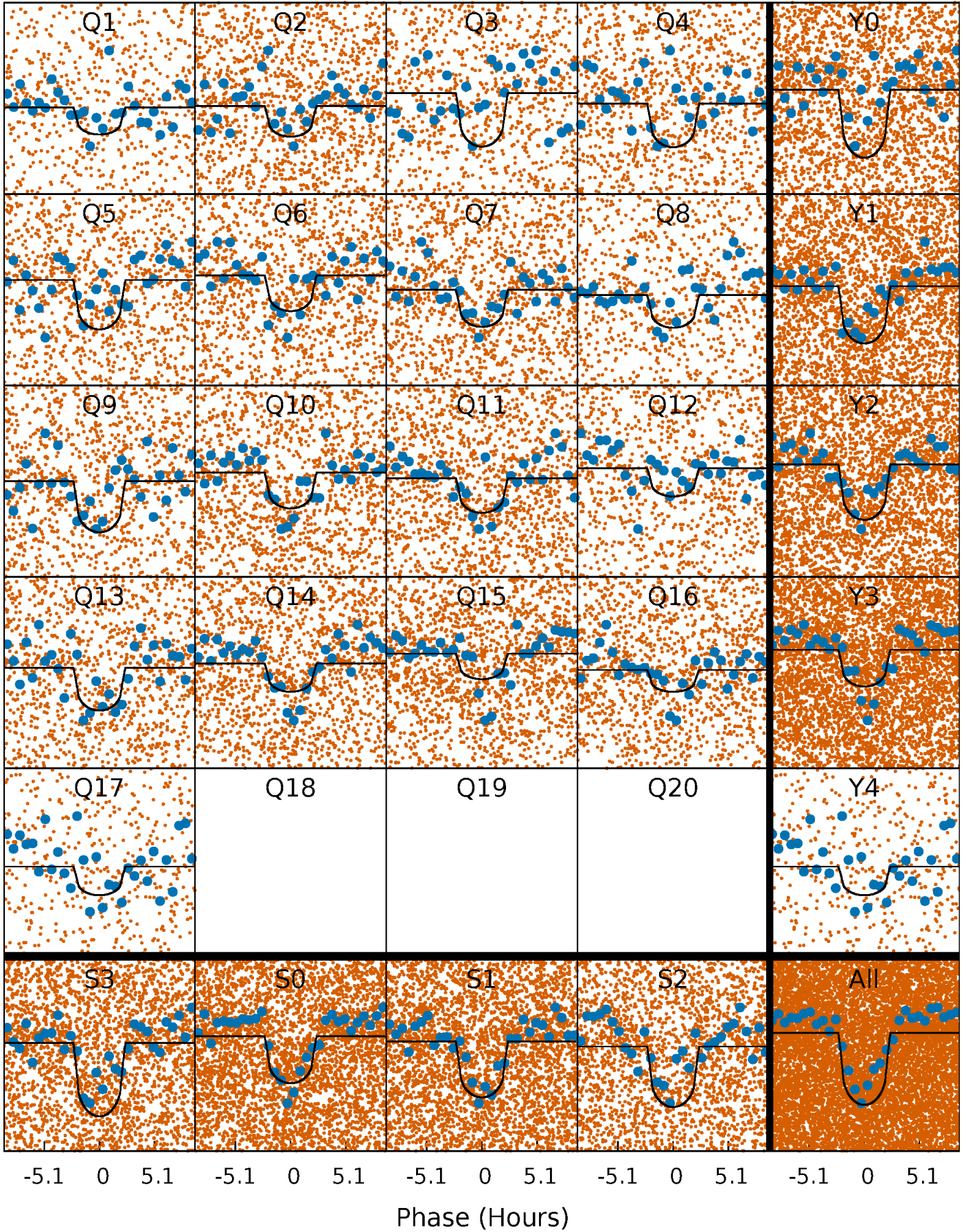
PDC Quarter-Phased Transit Curves

TCE 009899577-01 P= 1.332505 Days $T_0=132.089321$ (BKJD)



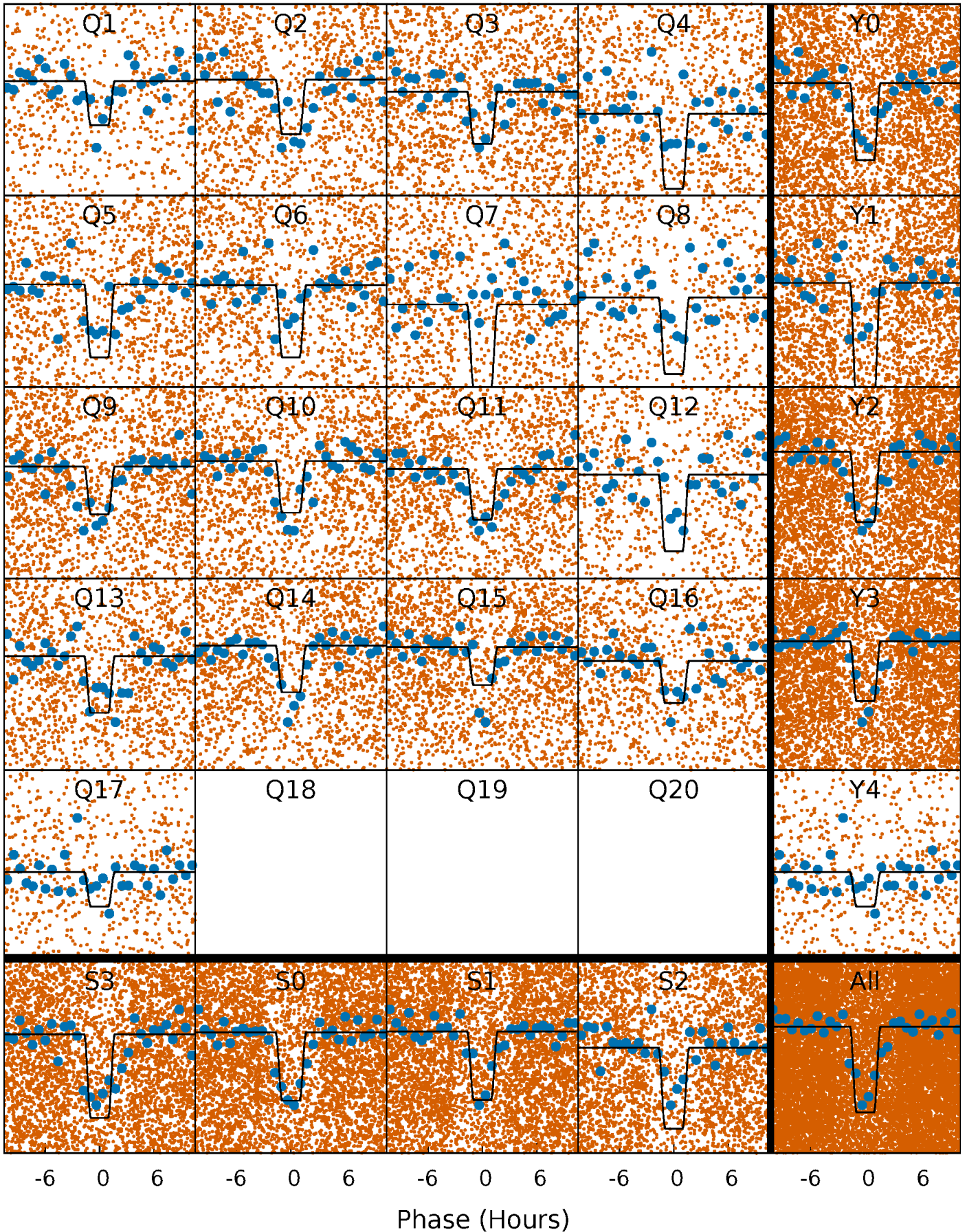
DV Quarter-Phased Transit Curves

TCE 009899577-01 P= 1.332505 Days $T_0=132.089321$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

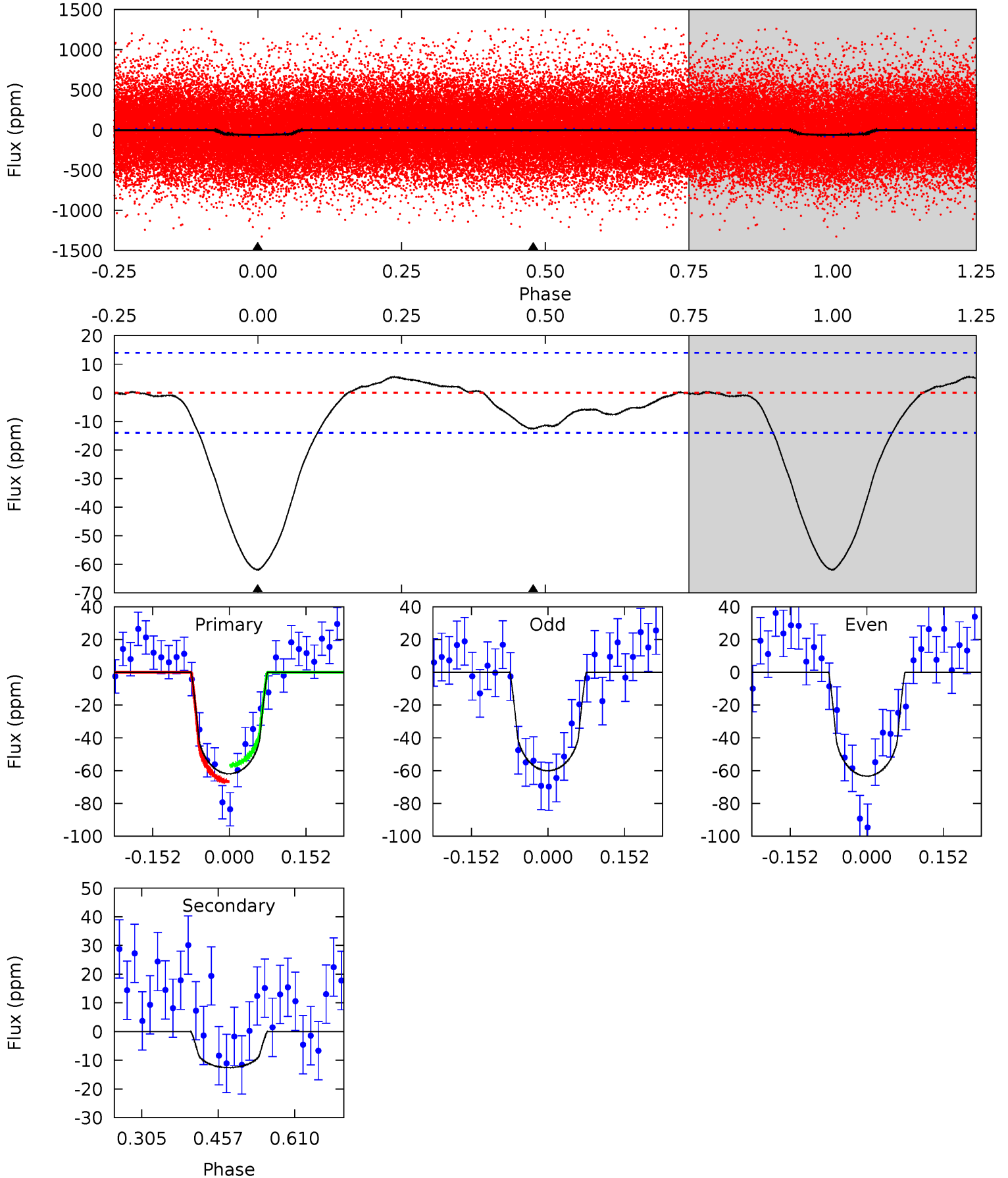
TCE 009899577-01 P= 1.332549 Days $T_0=132.059270$ (BKJD)



DV Model-Shift Uniqueness Test

009899577-01, P = 1.332505 Days, E = 130.756816 Days

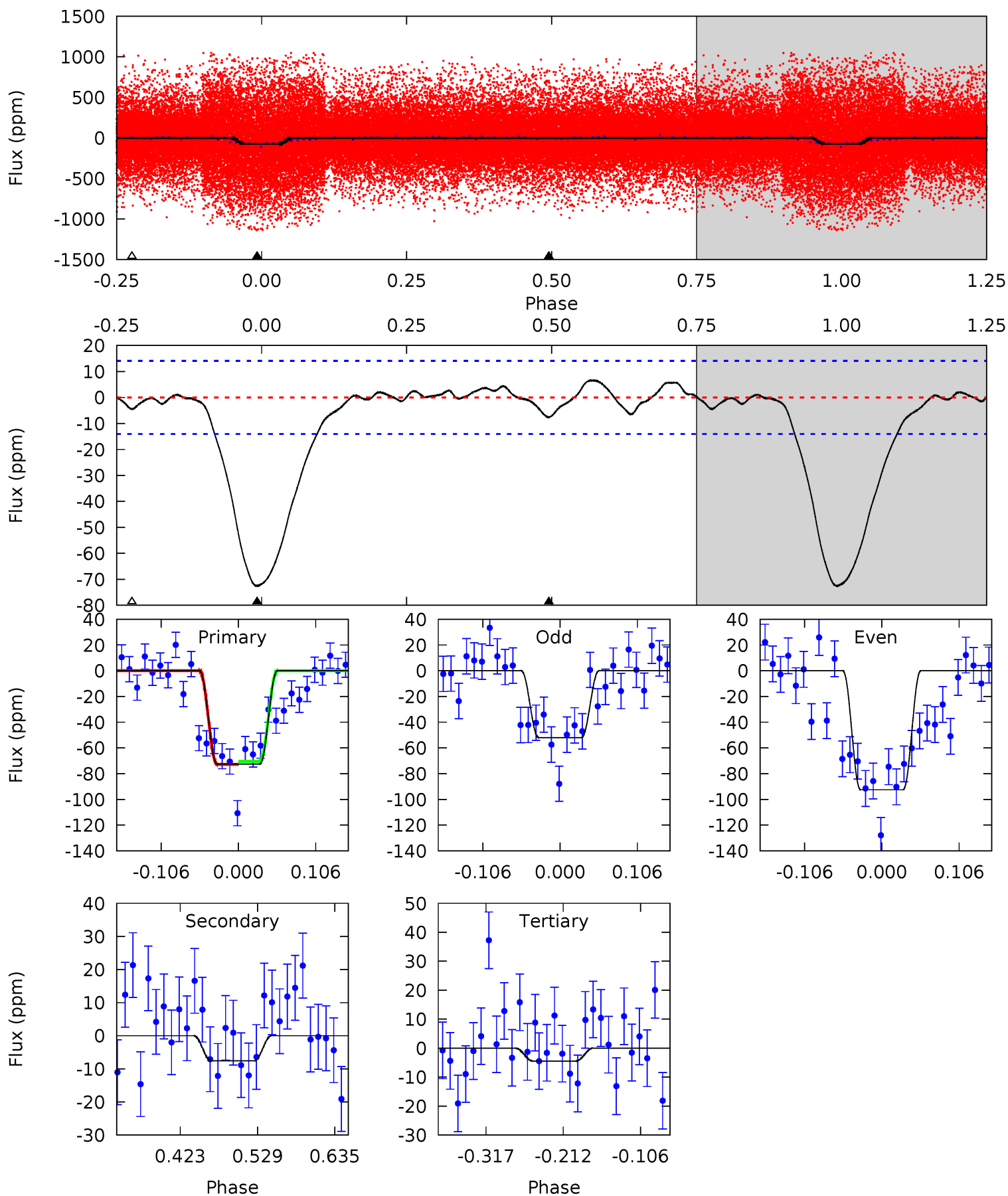
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.8	4.01	0	0	4.48	1.43	1.02	19.8	19.8	4.01	4.01	0.52	0.81	0.08	1.60



Alt Model-Shift Uniqueness Test

009899577-01, P = 1.332549 Days, E = 130.726721 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.5	2.46	1.44	0	4.55	1.62	0.99	22.0	23.5	1.02	2.46	6.57	1.08	0.08	0.38



Stellar Parameters For KIC 009899577

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5309^{+159}_{-143}	$4.595^{+0.032}_{-0.104}$	$-0.160^{+0.300}_{-0.300}$	$0.763^{+0.122}_{-0.066}$	$0.843^{+0.078}_{-0.096}$	$2.669^{+0.454}_{-0.816}$
	+3%/-3%	+1%/-2%	+188%/-188%	+16%/-9%	+9%/-11%	+17%/-31%
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 009899577-01 / KOI 7247.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-13 ± 3	$0.72^{+0.33}_{-0.33}$	1945^{+86}_{-69}	3735^{+1072}_{-454}	$6.133^{+17.799}_{-3.227}$
Alt.	-8 ± 3	$0.84^{+0.34}_{-0.34}$	1947^{+76}_{-74}	3240^{+721}_{-404}	$2.741^{+5.679}_{-1.539}$

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

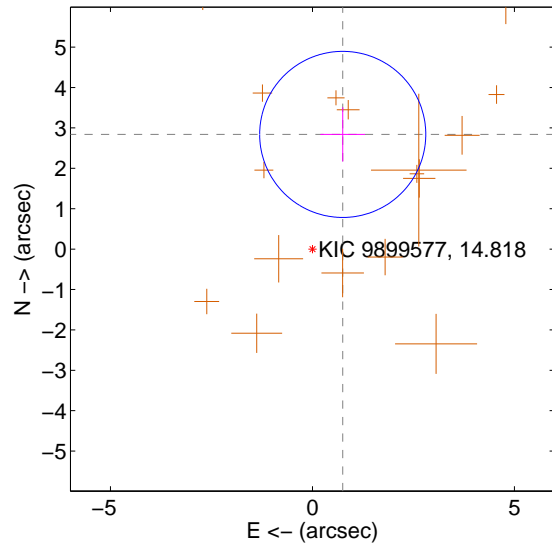
Supplemental centroid analysis for 009899577-01. Kepler magnitude: 14.82. Transit SNR 14.41

There are 0 quarters with good PRF difference image offsets

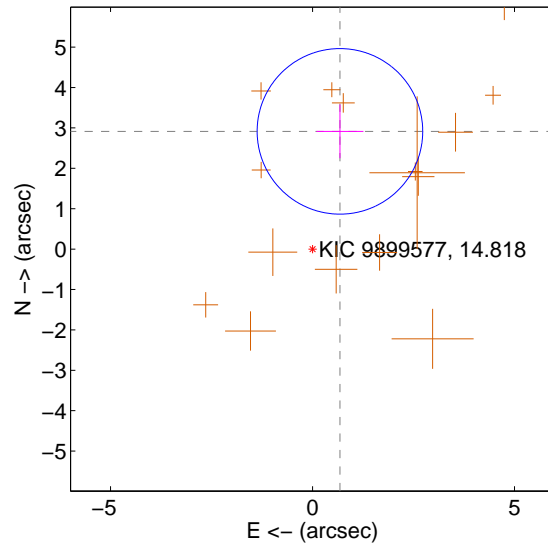
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.936 ± 0.685	4.29	-0.750 ± 0.553	2.839 ± 0.673
PRF-fit source offset from KIC position	2.992 ± 0.683	4.38	-0.678 ± 0.582	2.914 ± 0.664
photometric centroid source offset	2.65 ± 0.76	3.49	-1.81 ± 0.72	1.94 ± 0.79

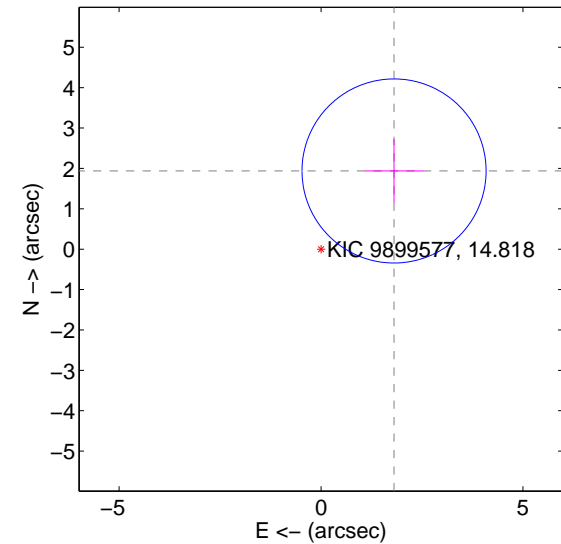
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

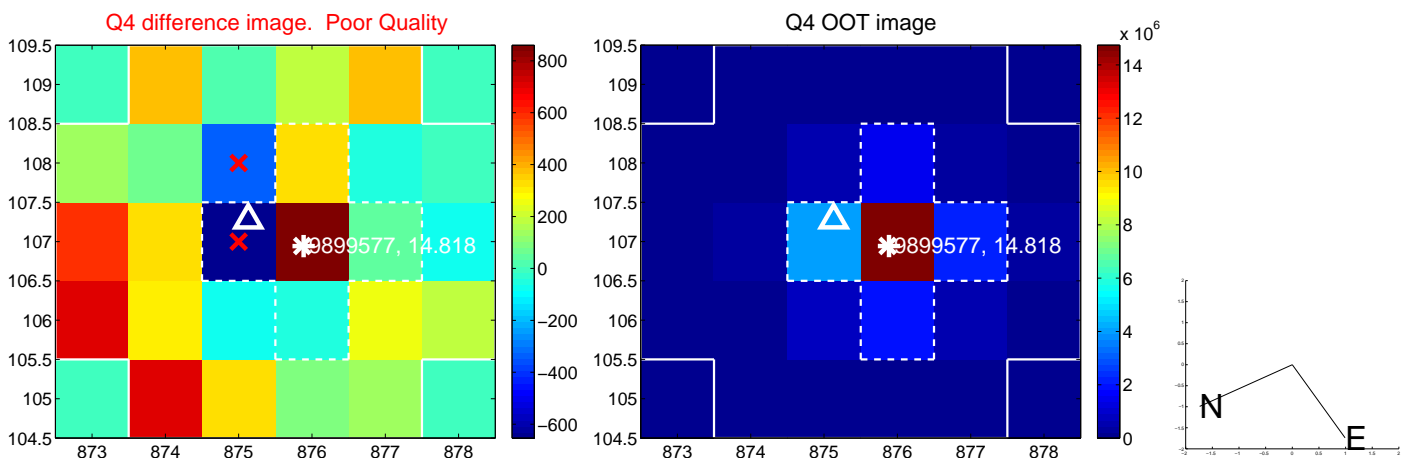
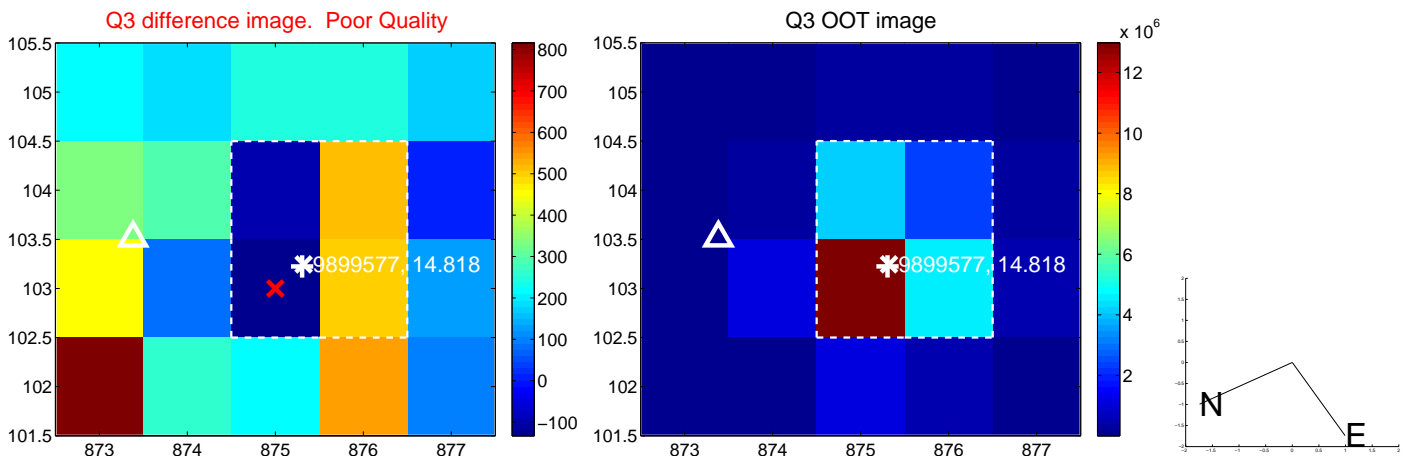
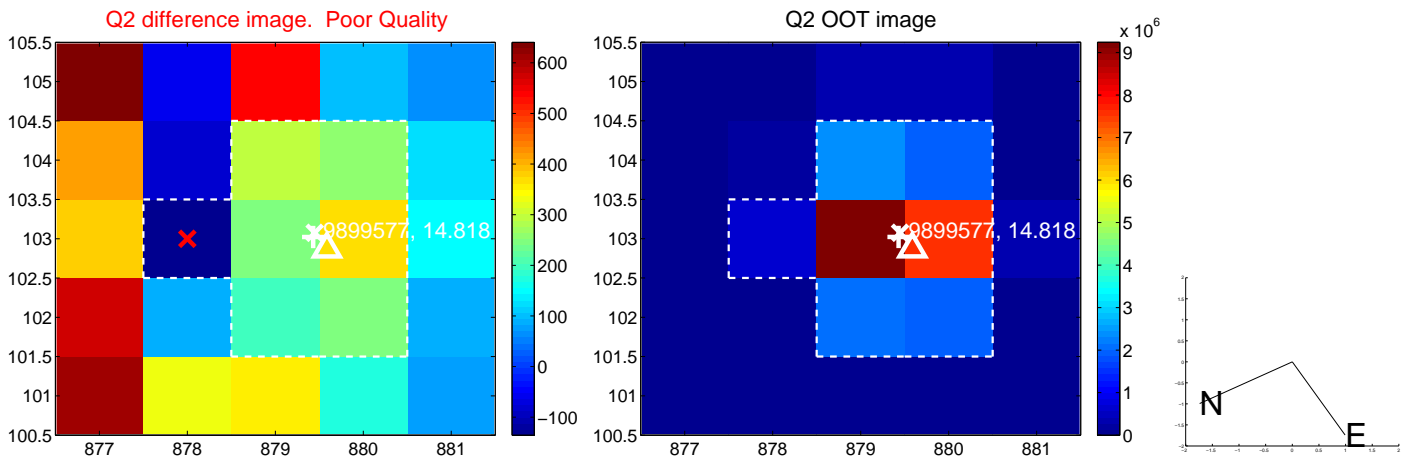
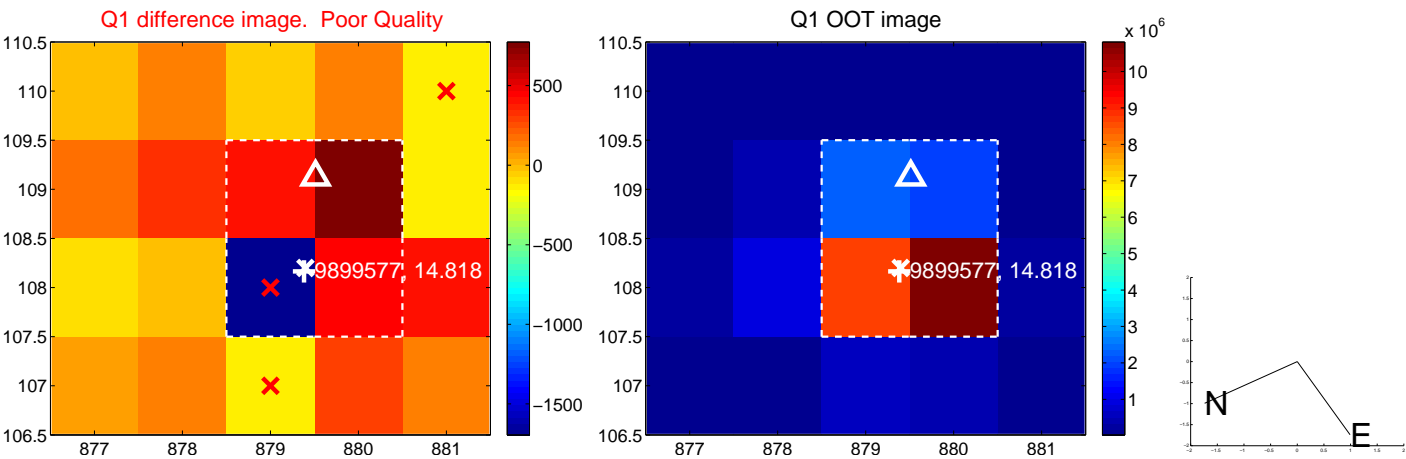


offset from photometric centroids

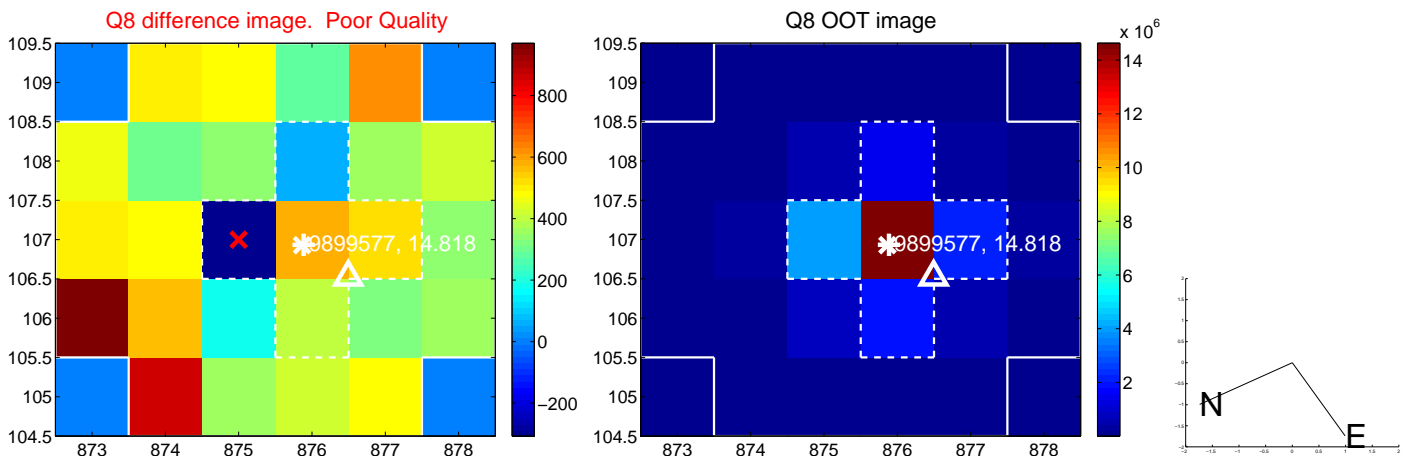
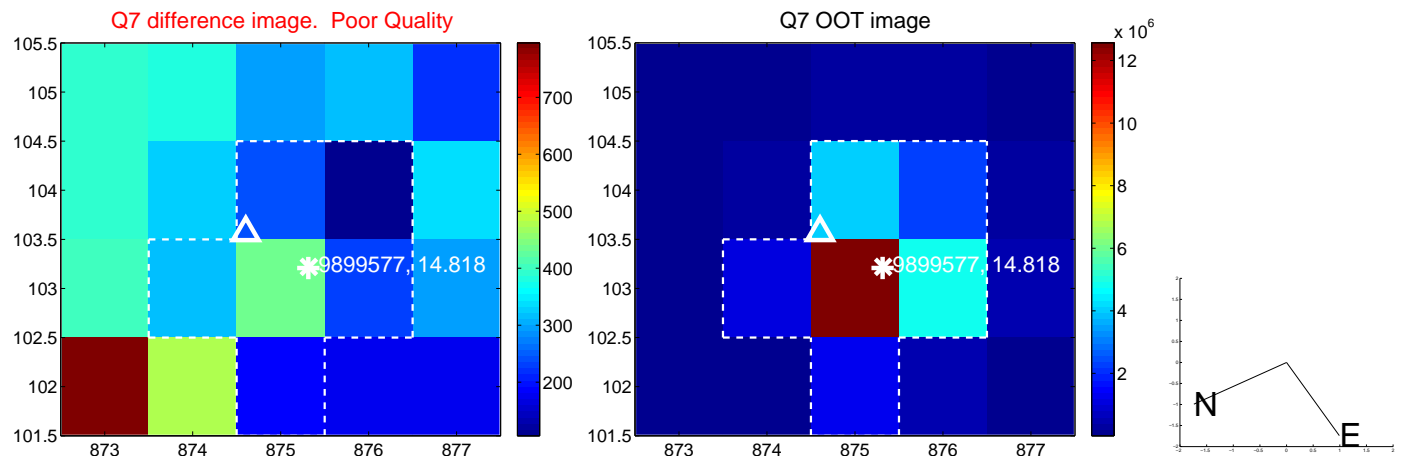
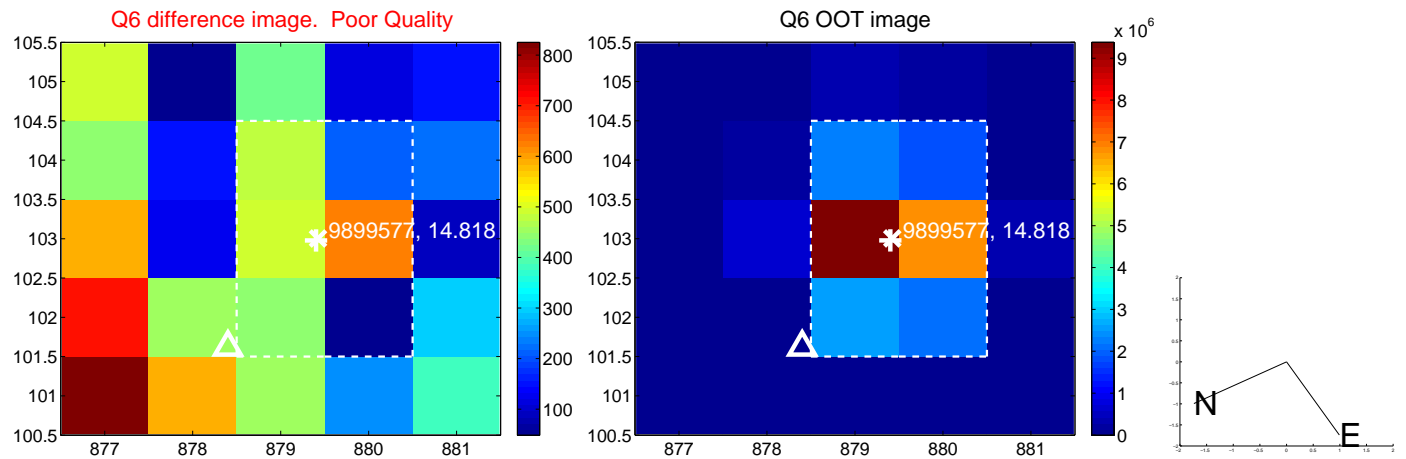
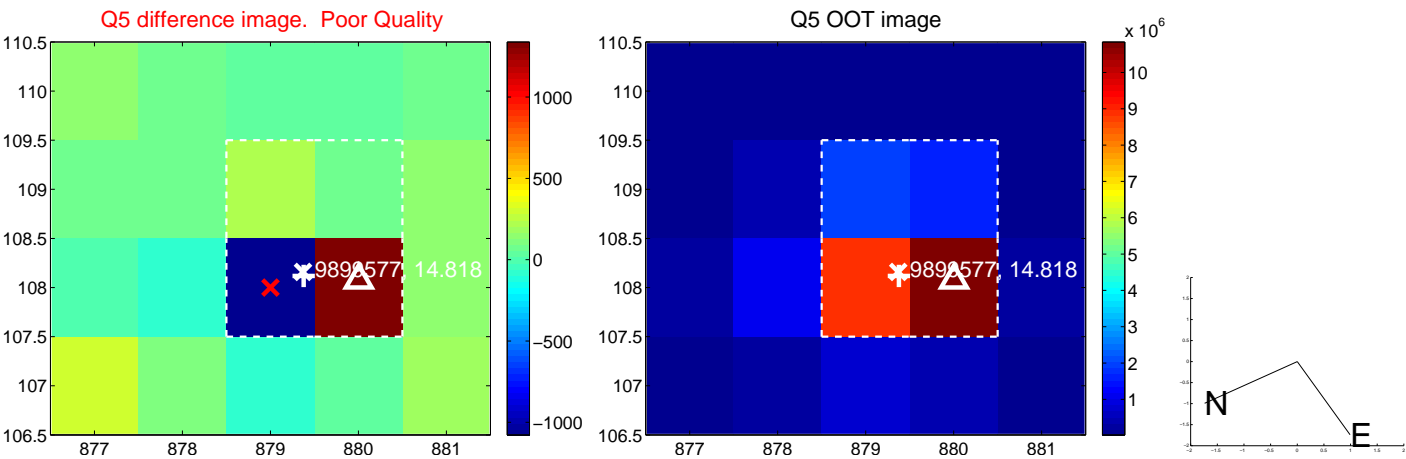


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

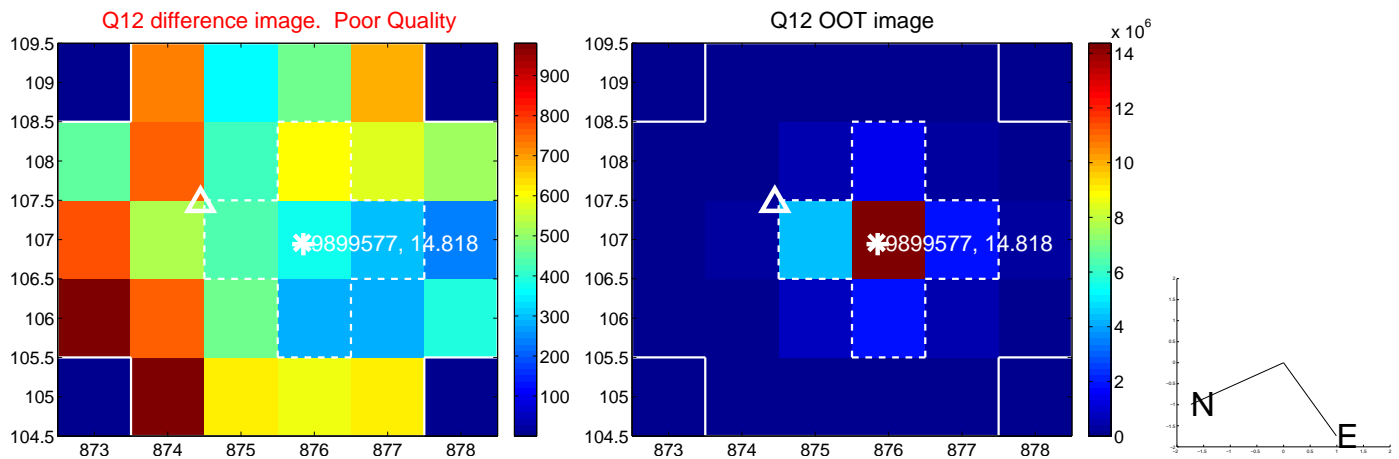
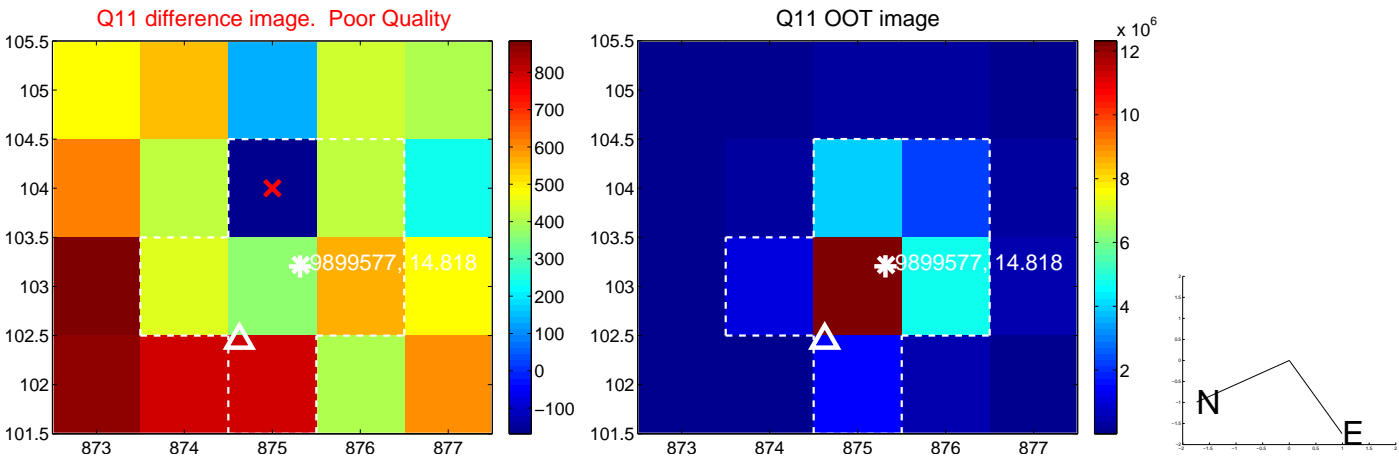
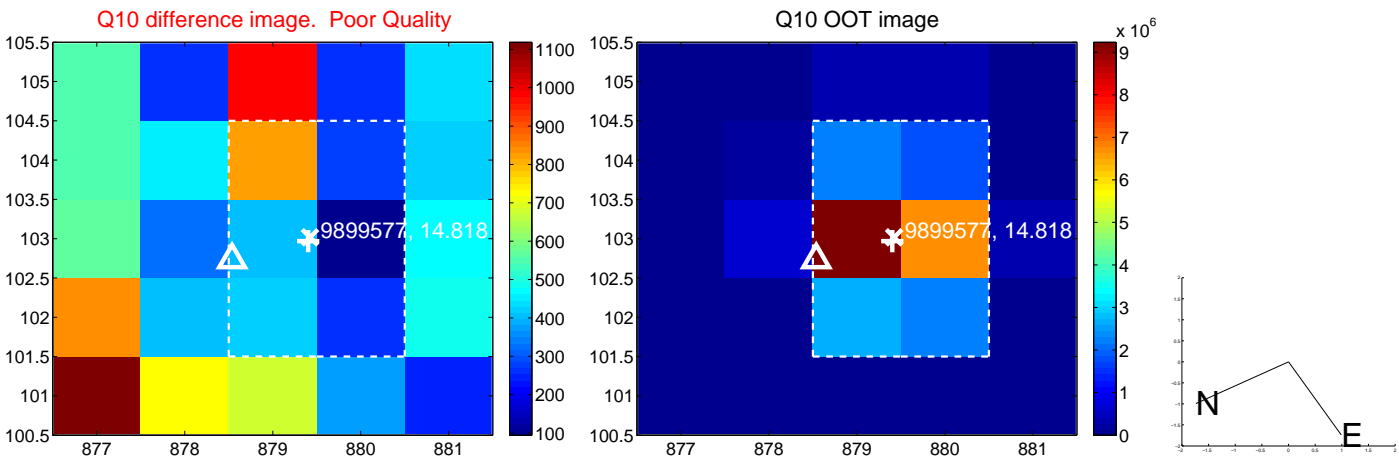
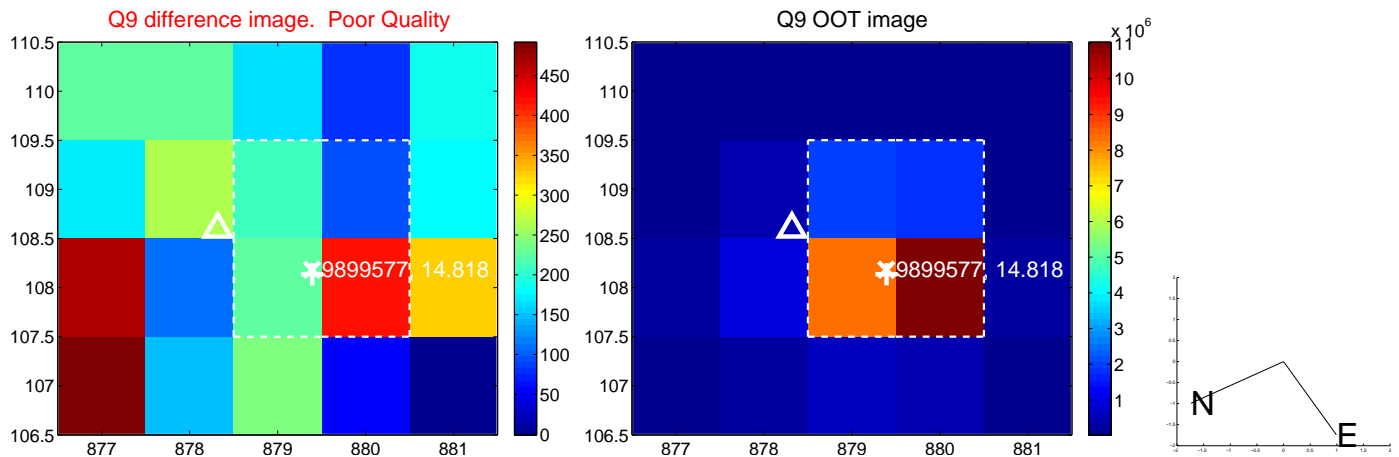
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



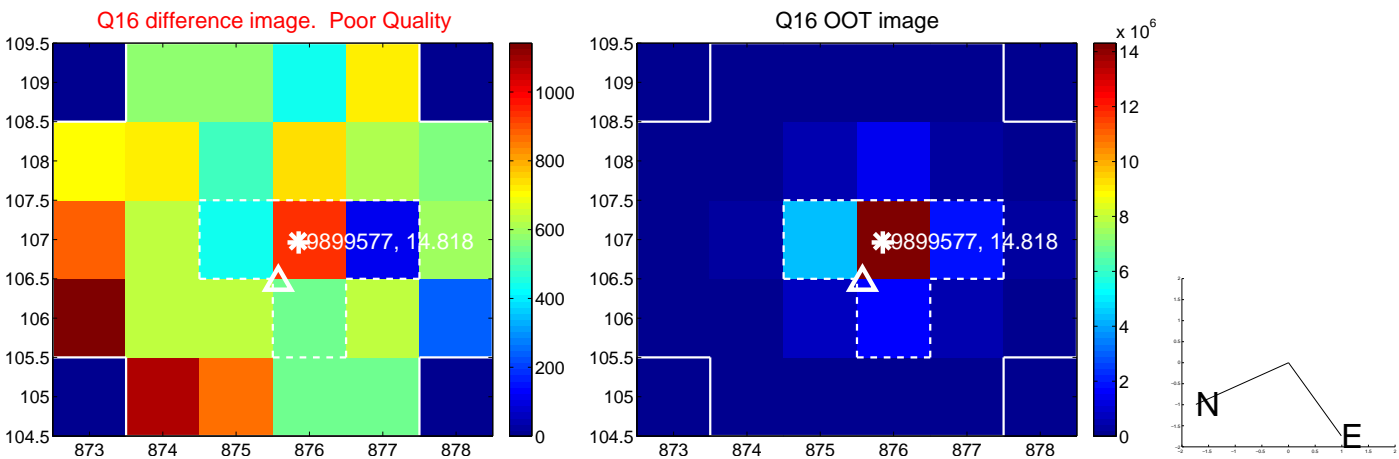
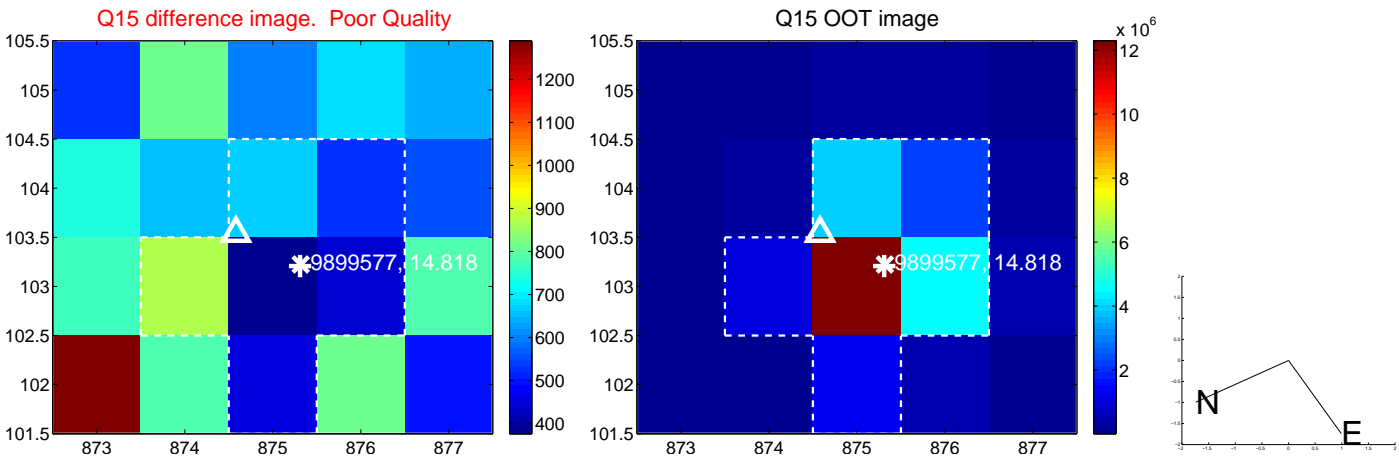
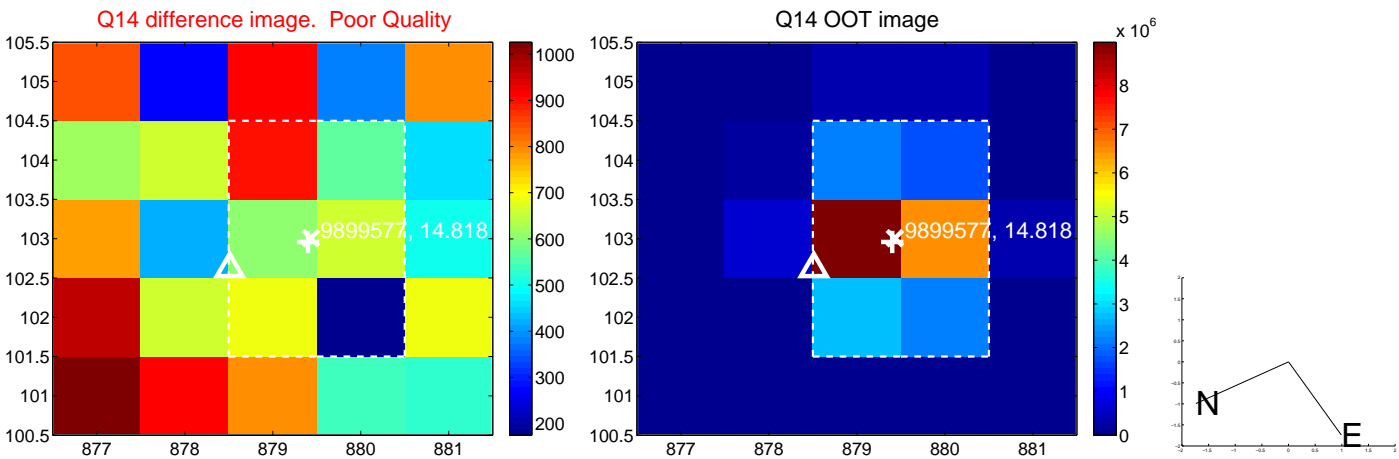
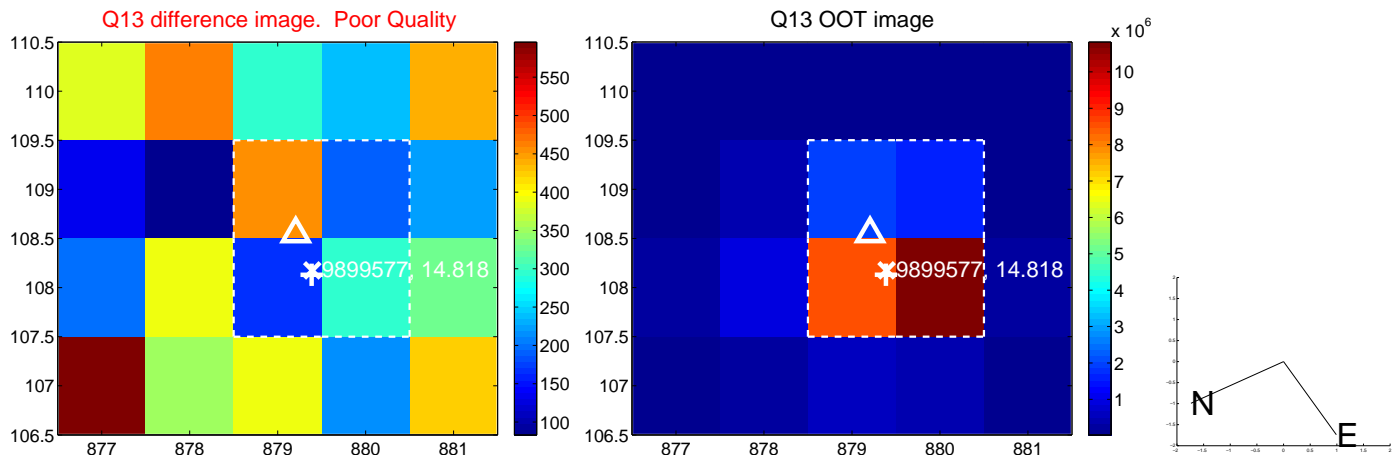
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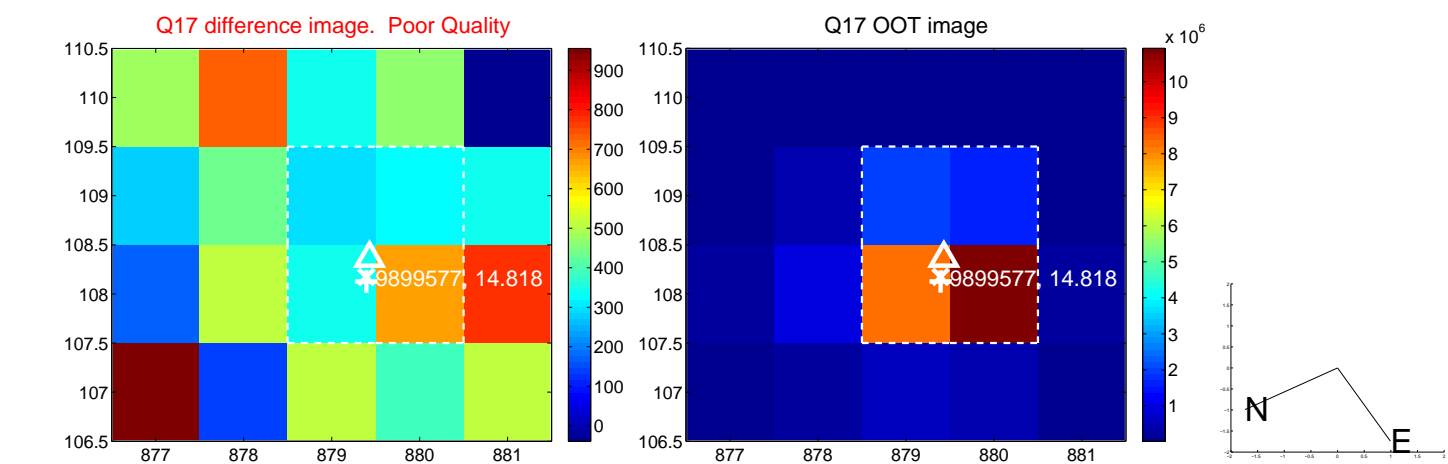
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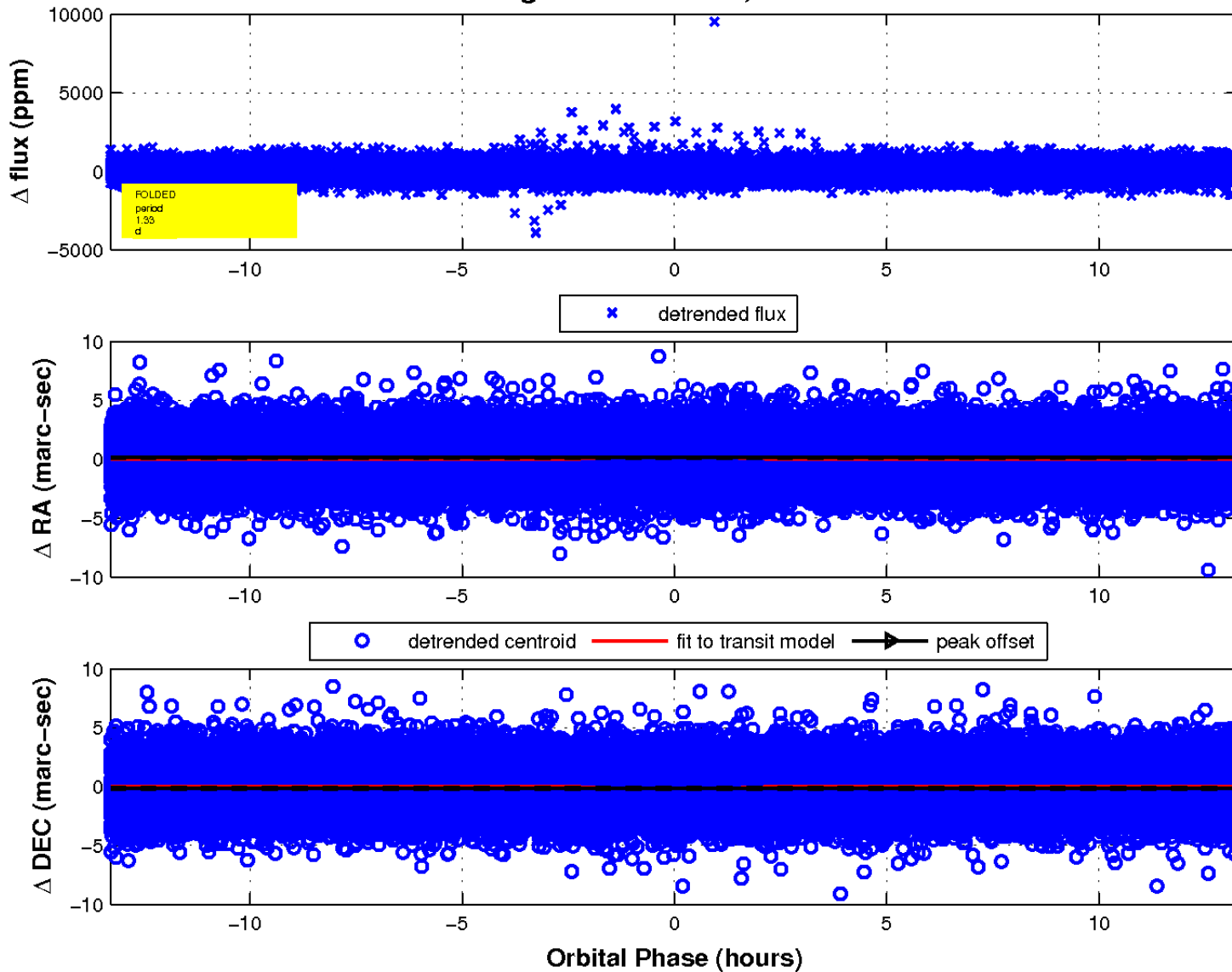
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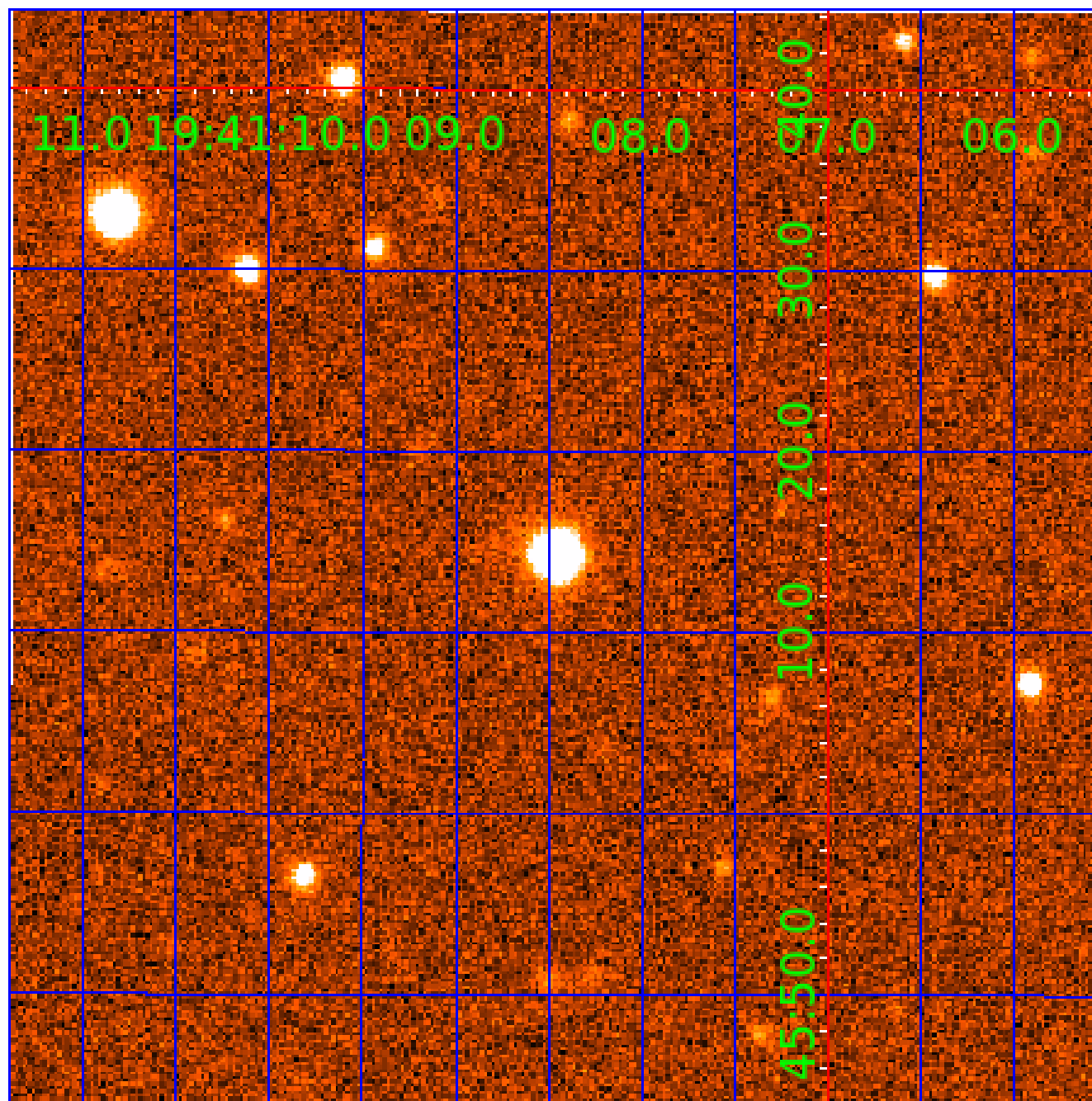


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 009899577

Q1-17 DR25 TCE Parameters

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Robovetter Results

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009899577-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009899577-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—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 009899577-02

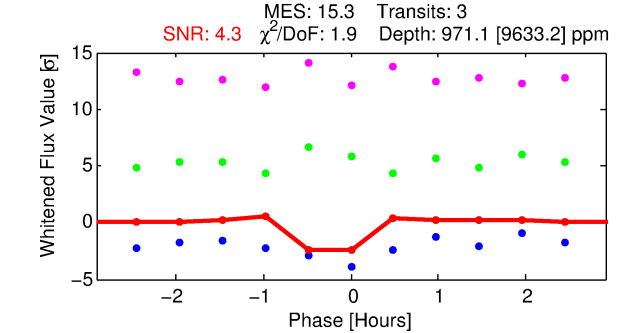
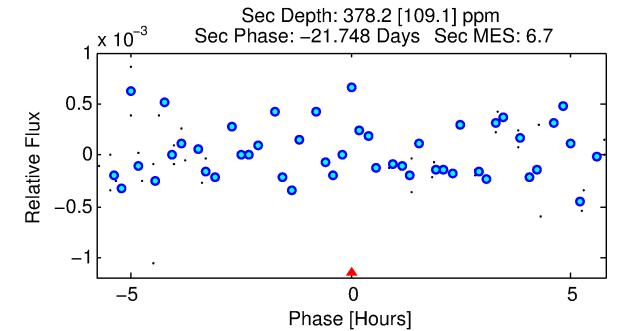
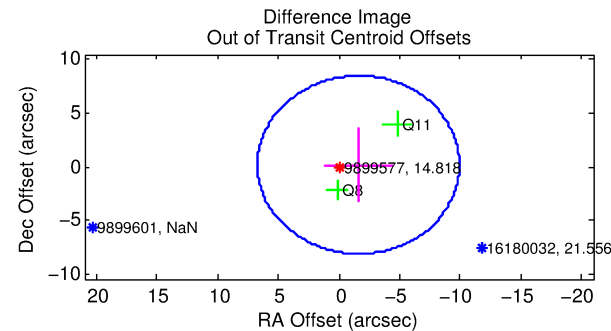
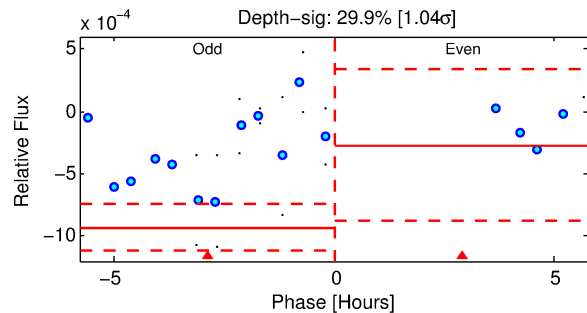
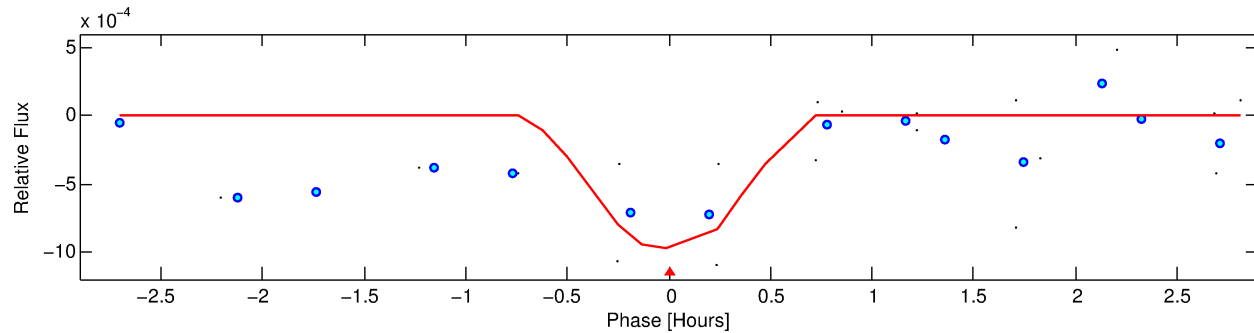
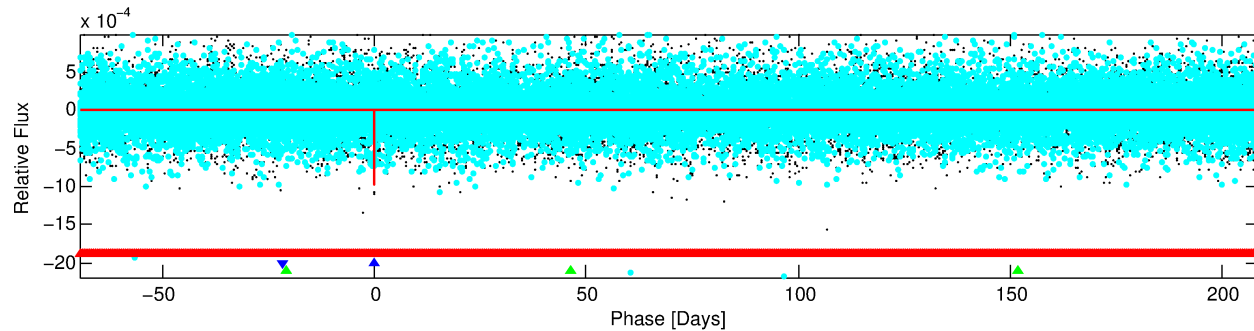
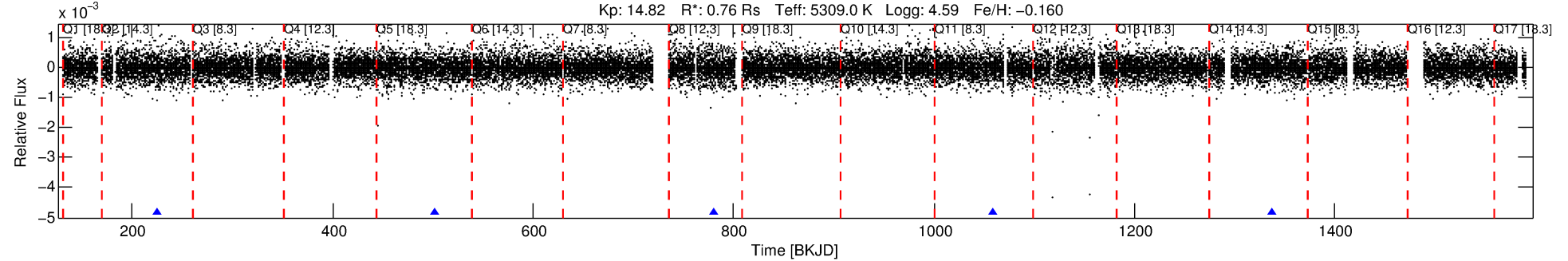
No Significant Match Found

DV One-Page Summary

KIC: 9899577 Candidate: 2 of 3 Period: 278.037 d

KOI: K07247 Corr: No Ephemeris Match

Kp: 14.82 R*: 0.76 Rs Teff: 5309.0 K Logg: 4.59 Fe/H: -0.160



DV Fit Results:

Period = 278.03749 [0.00542] d
Epoch = 224.3341 [0.0105] BKJD
Rp/R* = 0.0309 [0.2150]
a/R* = 1655.37 [82703.80]
b = 0.70 [30.50]
Seff = 0.67 [0.15]
Teq = 231 [13] K
Rp = 2.57 [17.91] Re
a = 0.7854 [0.1046] AU
Ag = 19396.09 [270075.95] [0.07σ]
Teffp = 4212 [14661] K [0.2σ]

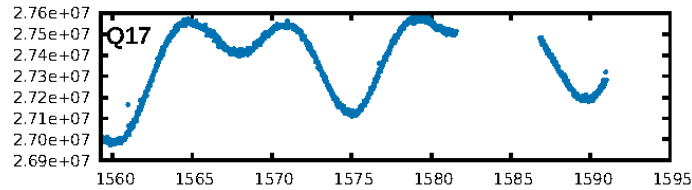
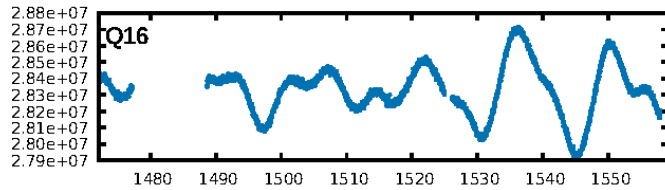
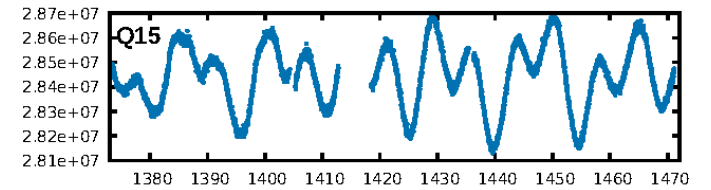
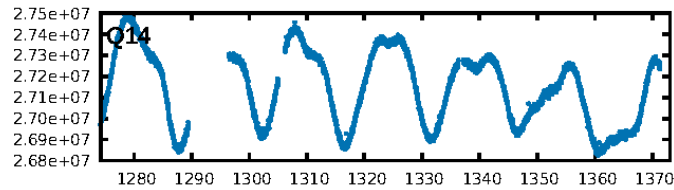
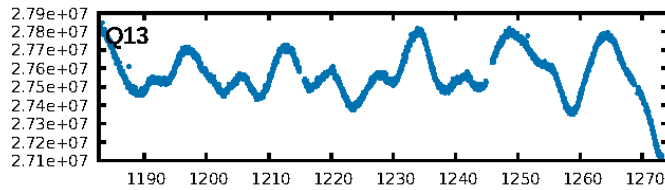
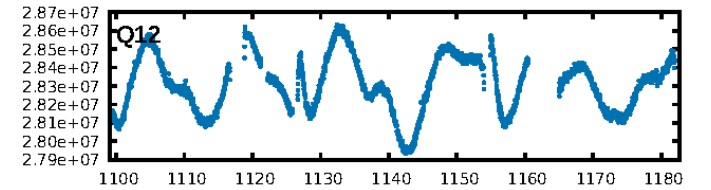
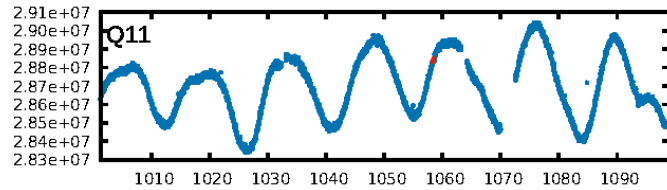
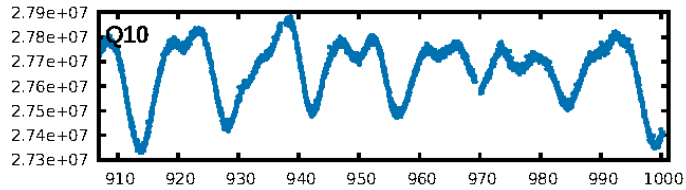
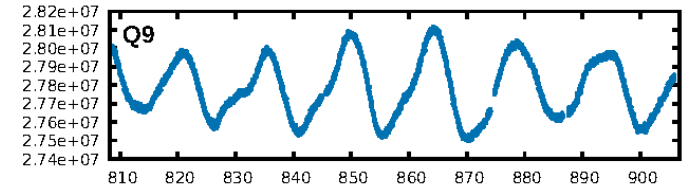
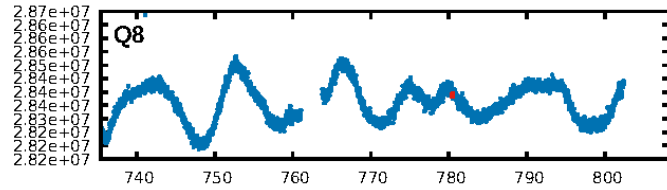
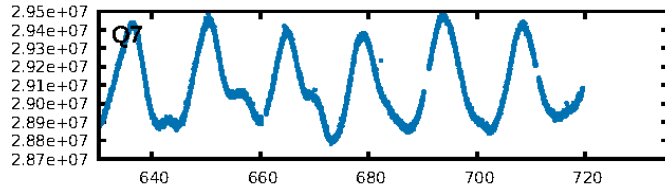
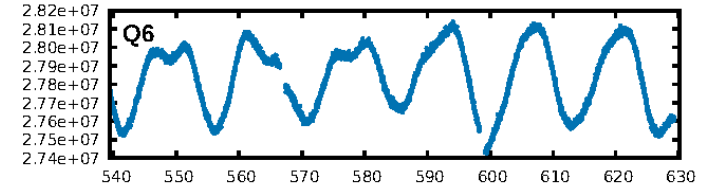
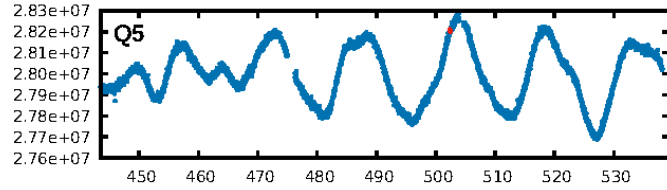
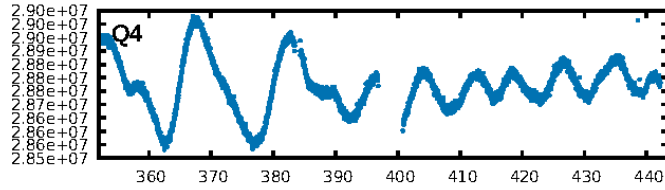
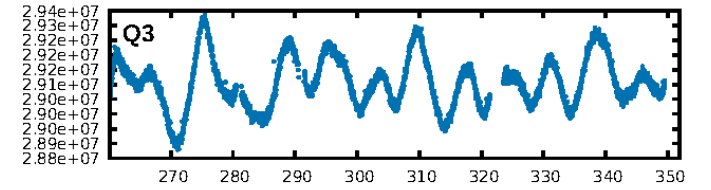
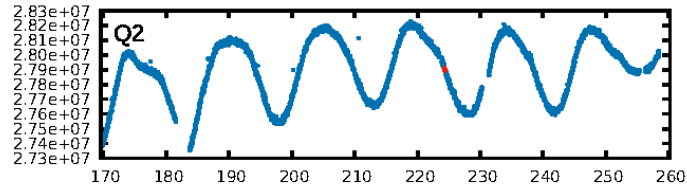
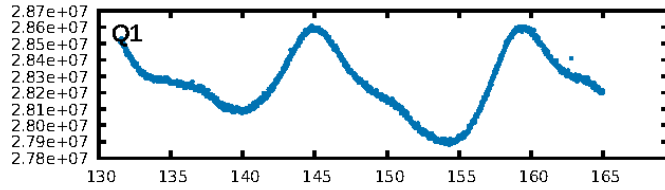
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1465.06σ]
LongPeriod-sig: 100.0% [231.76σ]
ModelChiSquare2-sig: 56.1%
ModelChiSquareGof-sig: 89.8%
Bootstrap-pfa: 2.21e-15
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.8446
Centroid-sig: 68.7%
Centroid-so: 1.287 arcsec [0.65σ]
OotOffset-rm: 1.622 arcsec [0.58σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-rm: 1.593 arcsec [0.57σ]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.25 [1/4]

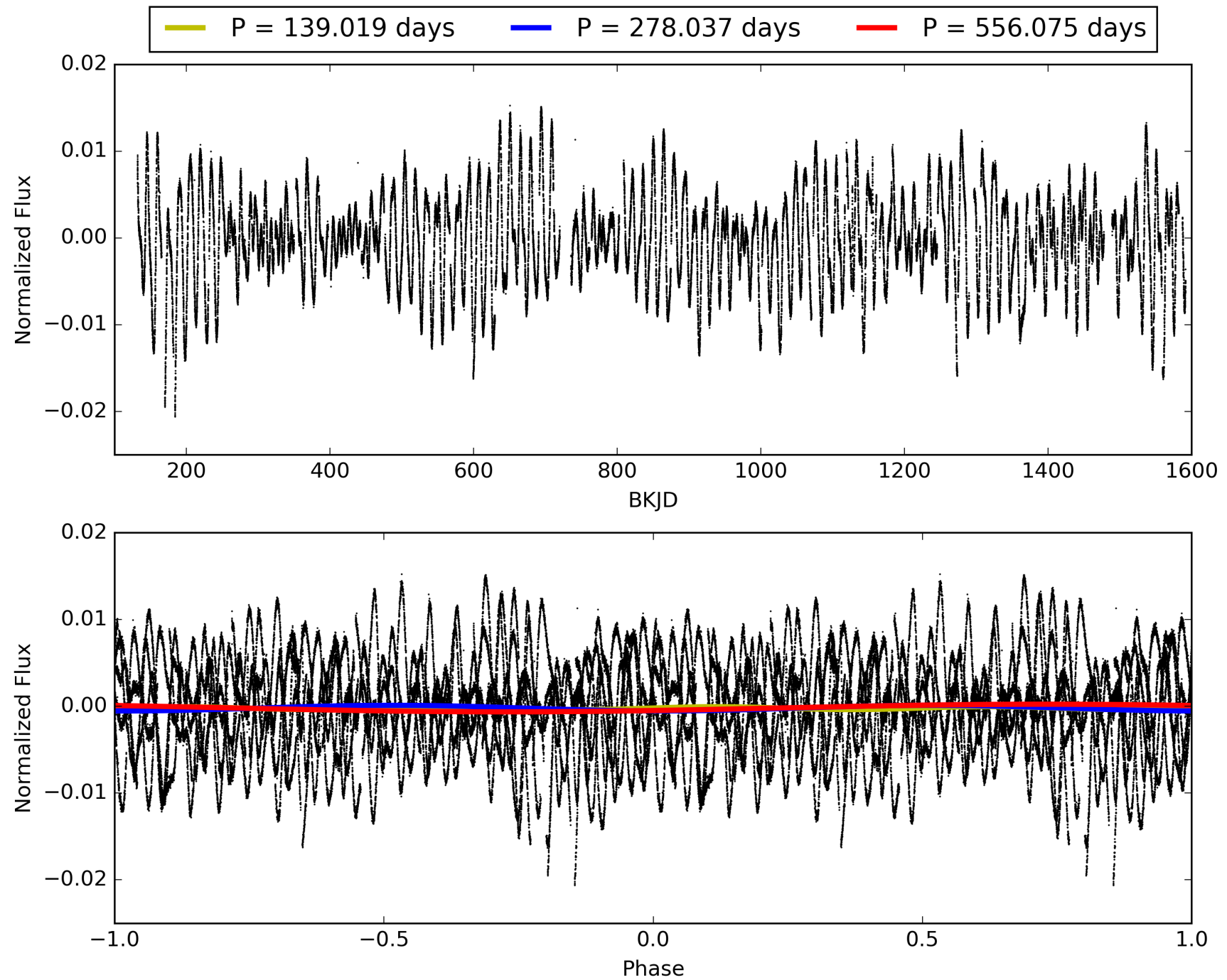
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:00:52 Z

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

TCE 009899577-02, PDC Light Curves

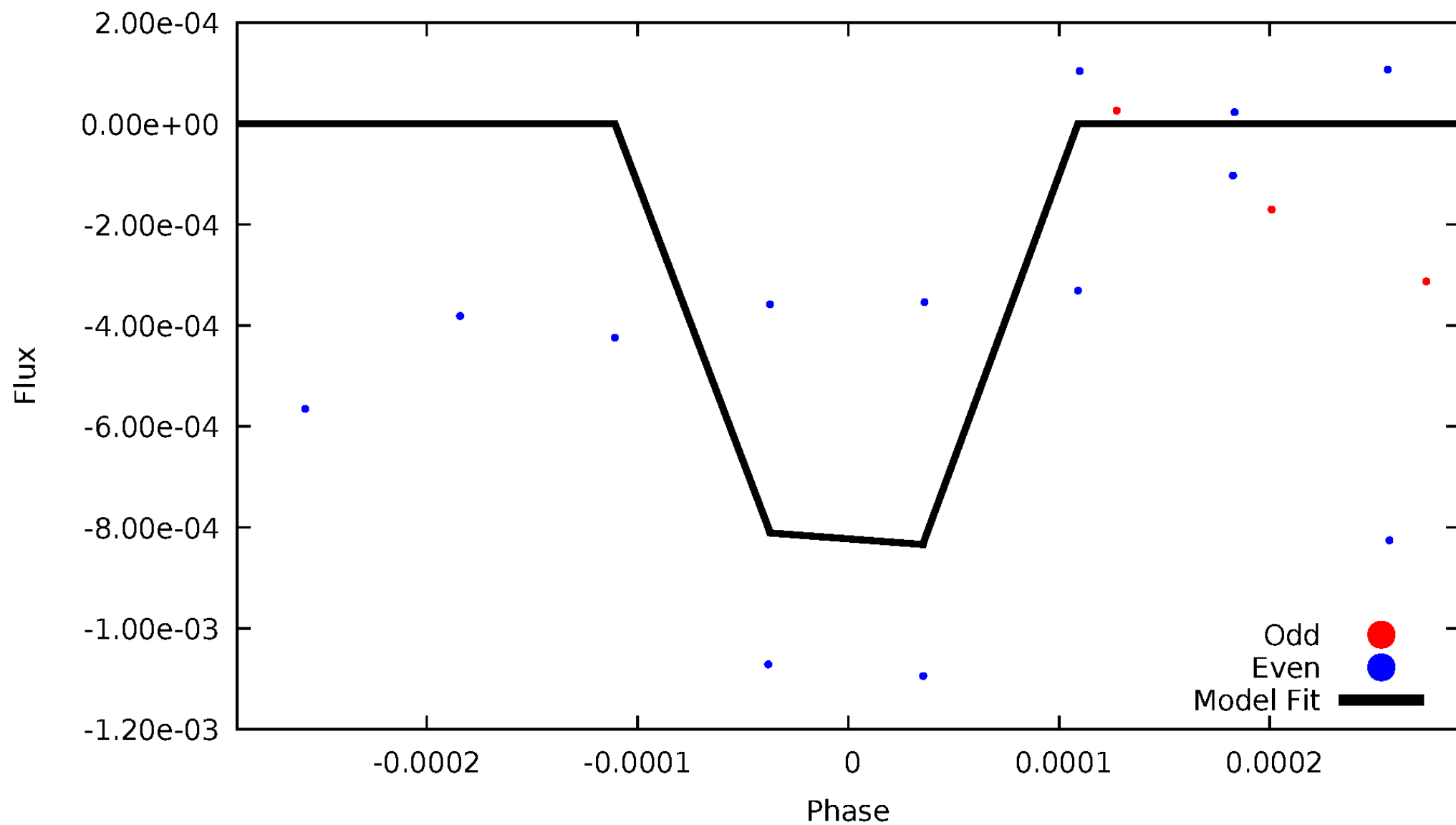


TCE 009899577-02



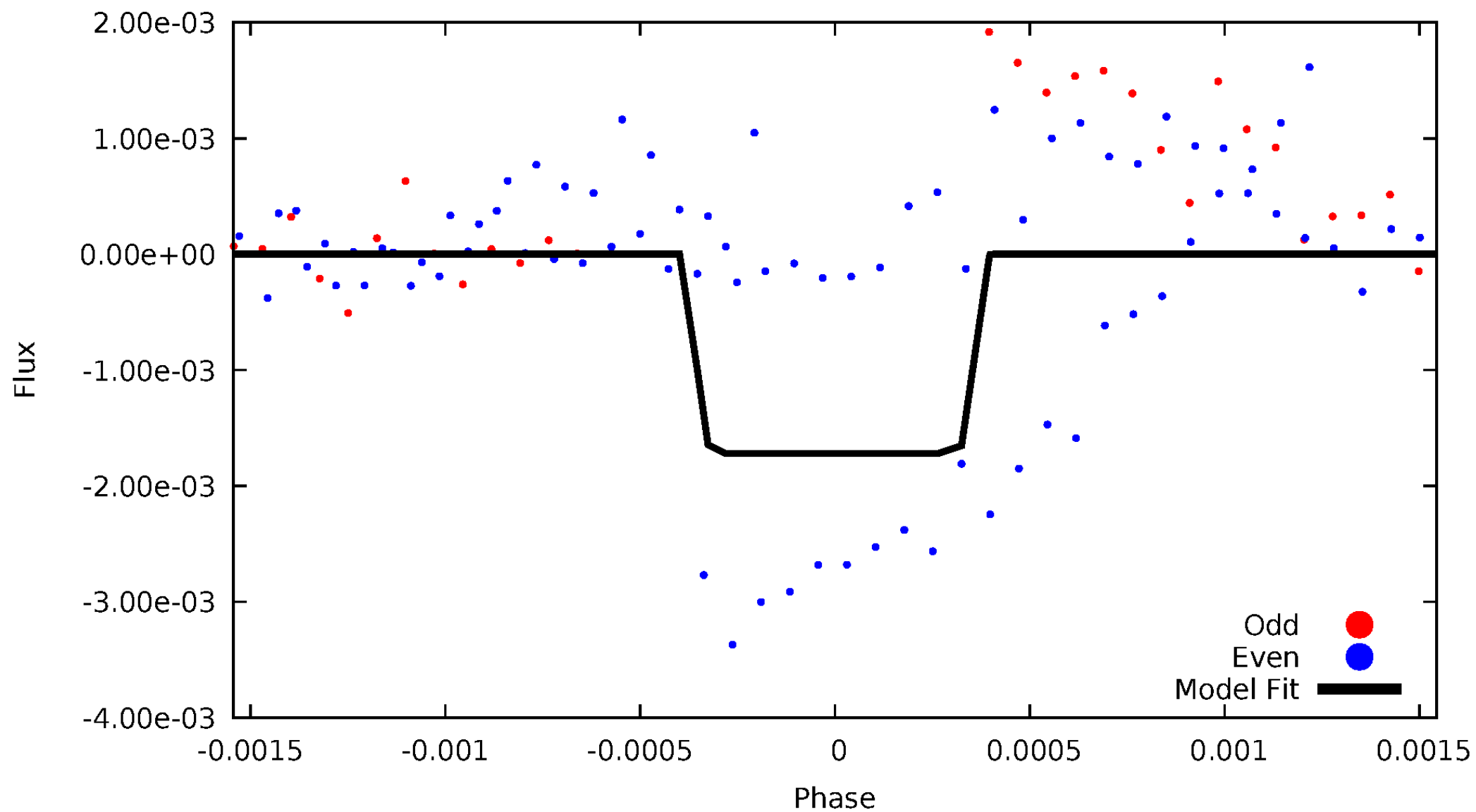
DV Odd/Even

TCE 009899577-02



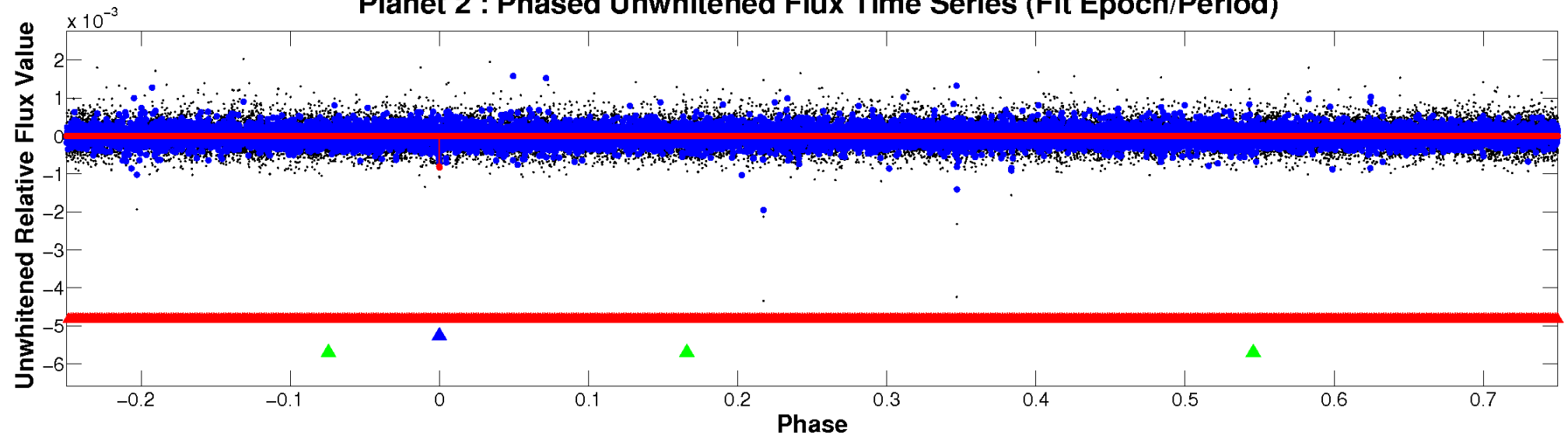
ALT Odd/Even

TCE 009899577-02

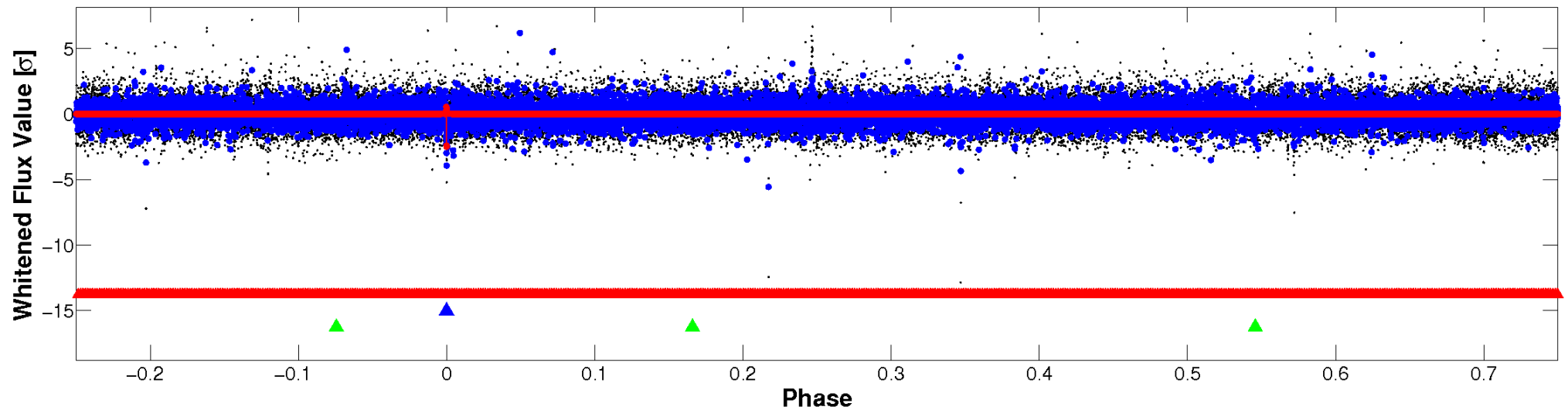


Non-Whitened Vs. Whitened Light Curve

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

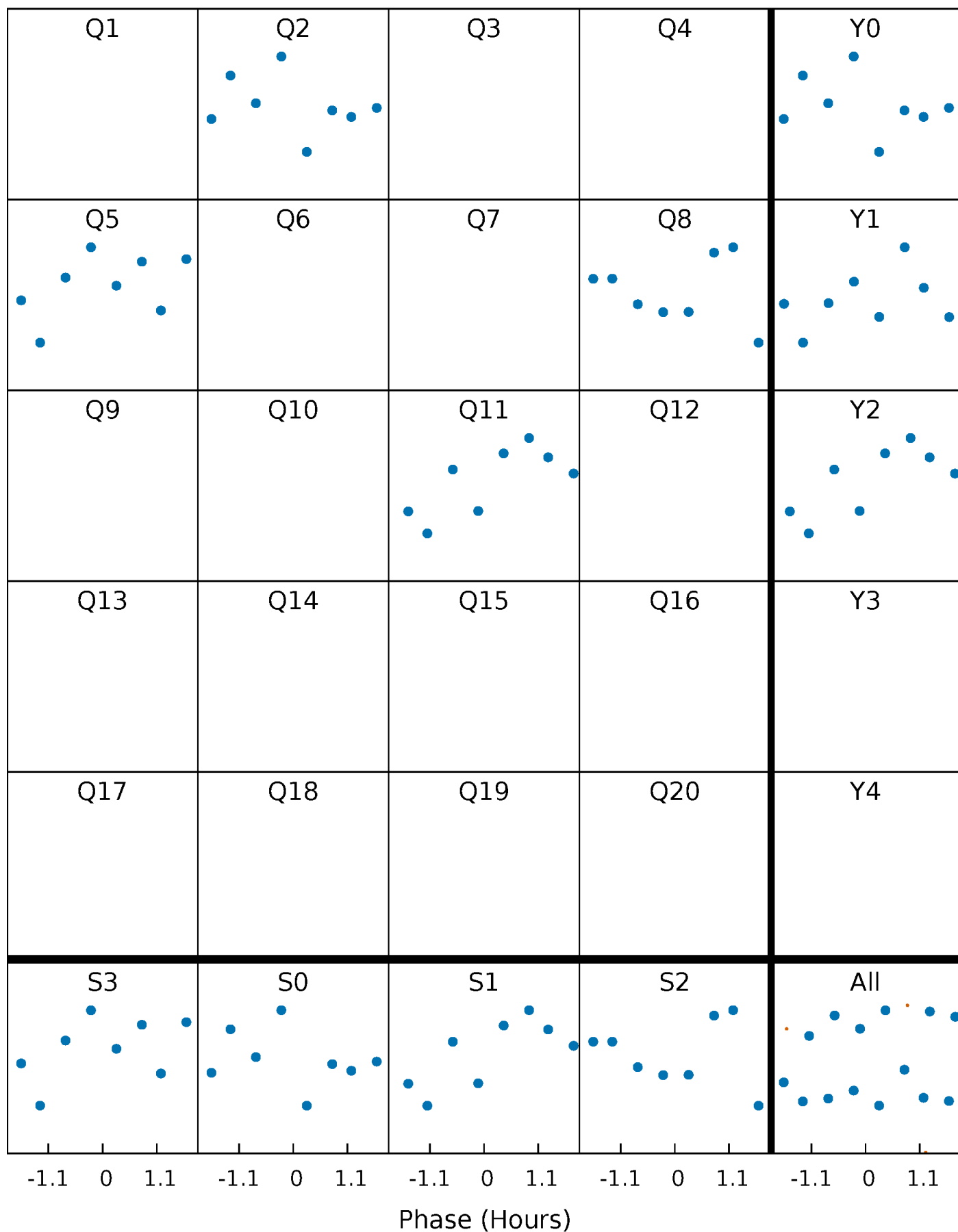


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



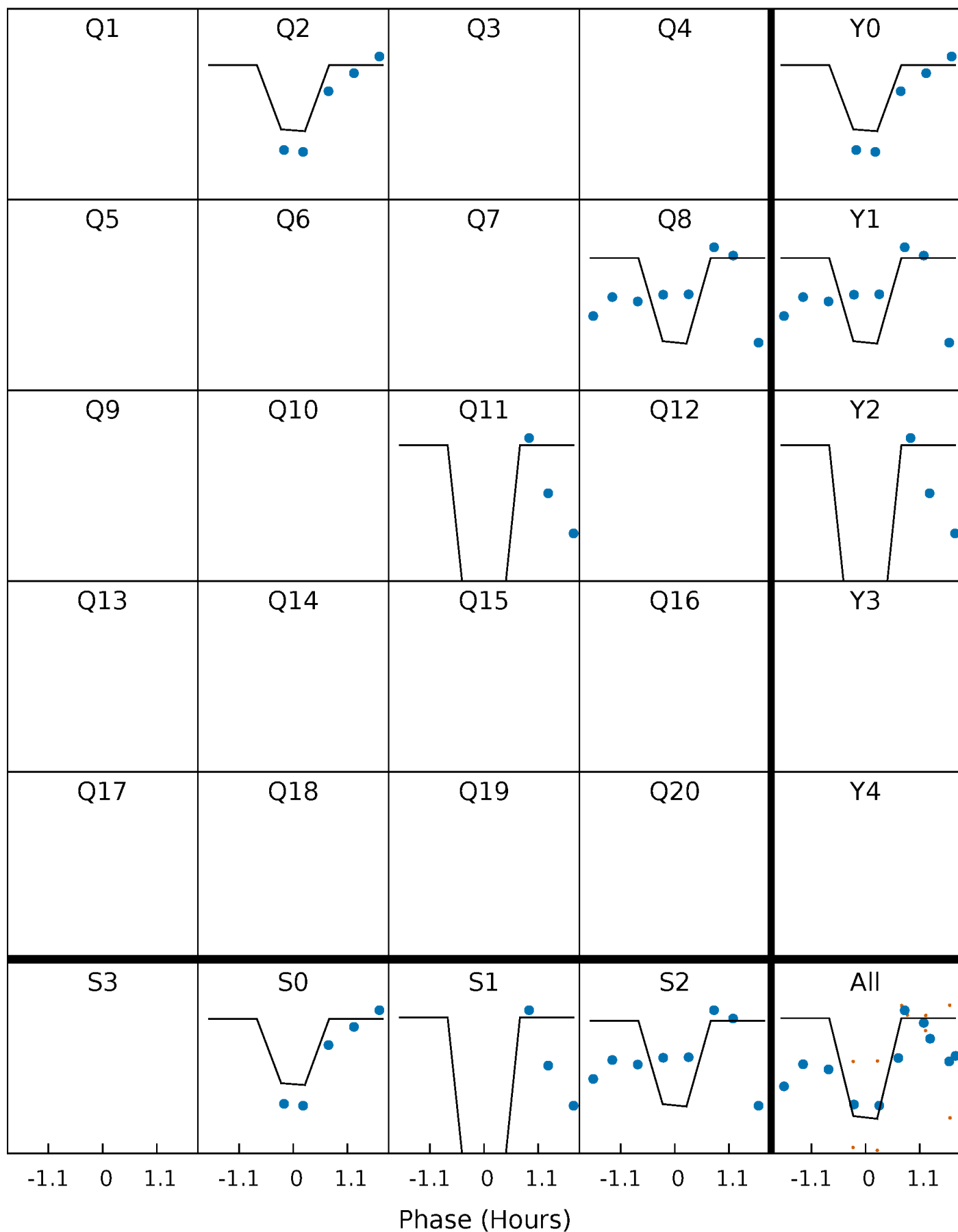
PDC Quarter-Phased Transit Curves

TCE 009899577-02 $P=278.037493$ Days $T_0=224.334115$ (BKJD)



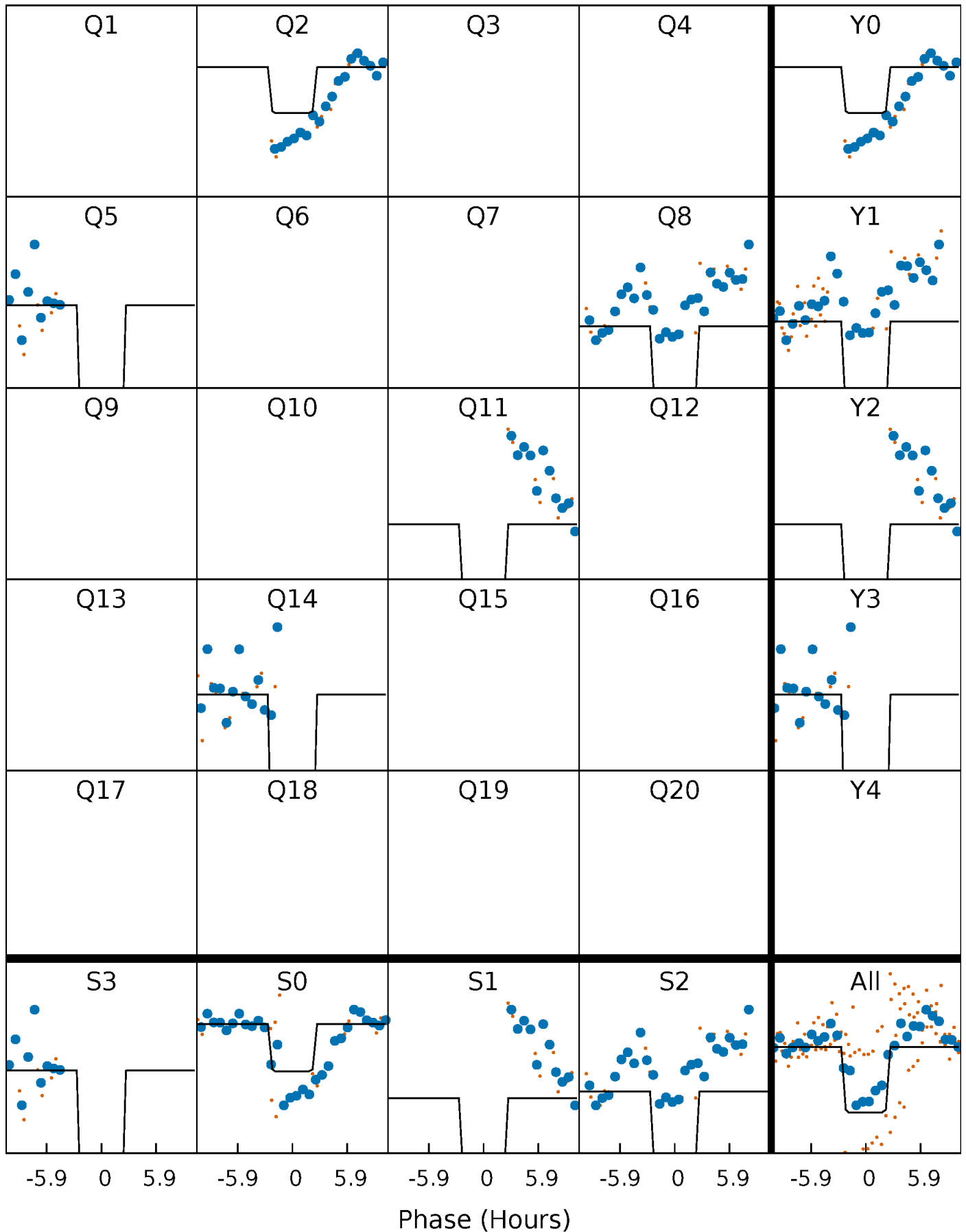
DV Quarter-Phased Transit Curves

TCE 009899577-02 P=278.037493 Days $T_0=224.334115$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

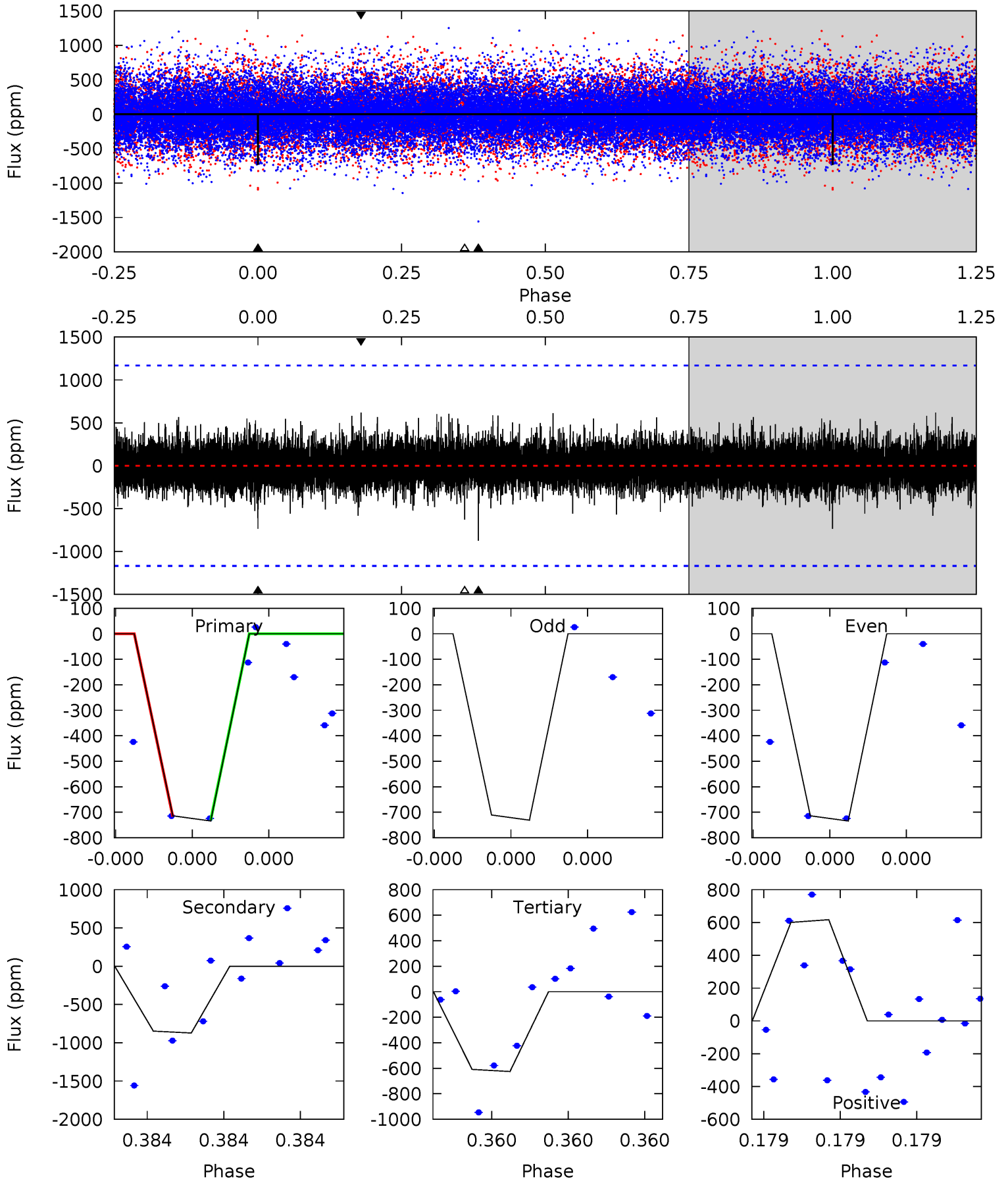
TCE 009899577-02 P=277.984961 Days $T_0=224.417103$ (BKJD)



DV Model-Shift Uniqueness Test

009899577-02, P = 278.037493 Days, E = 224.334115 Days

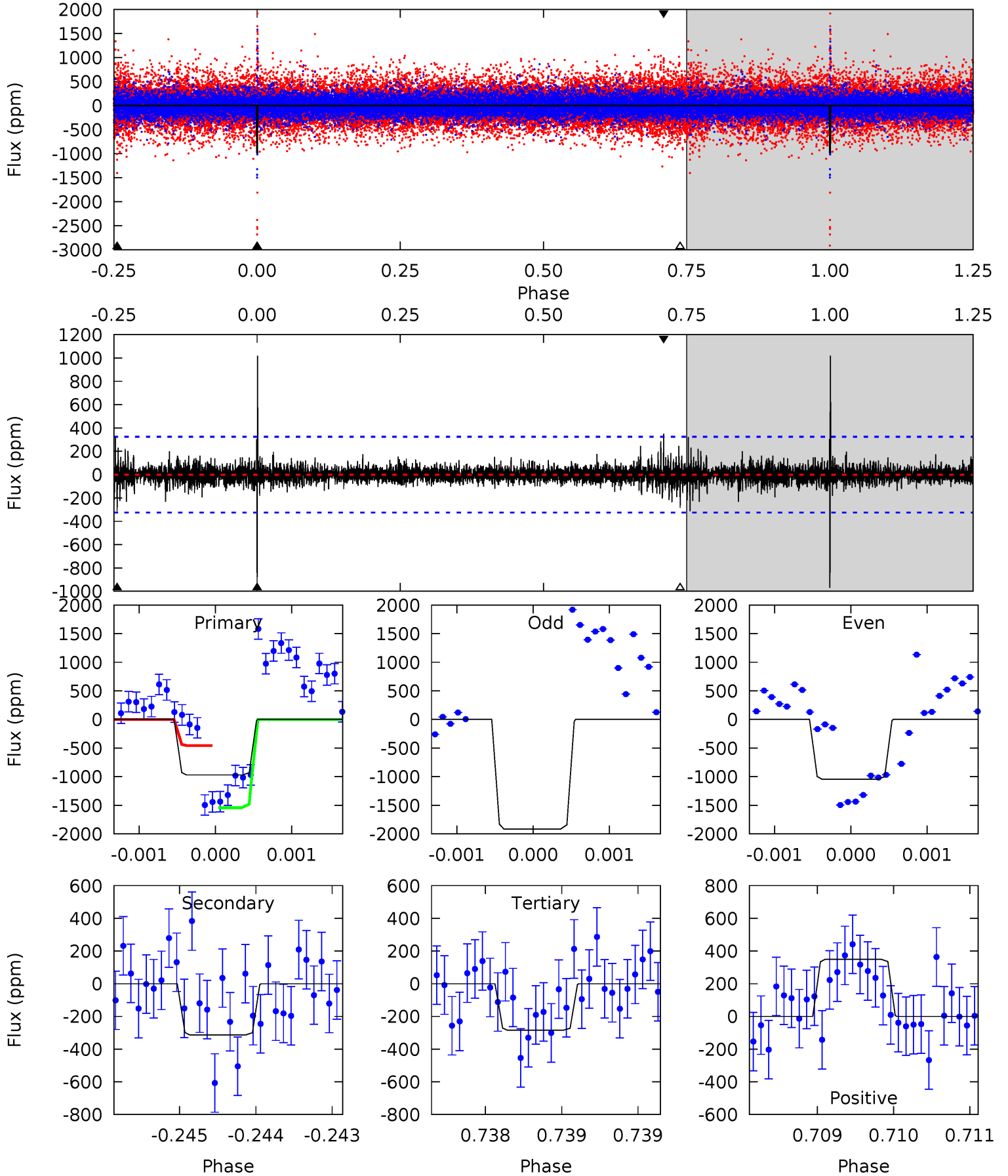
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.63	4.31	3.10	3.05	5.78	3.80	0.70	0.54	0.58	1.22	1.26	0.01	1.00	0.41	0.00



Alt Model-Shift Uniqueness Test

009899577-02, P = 277.984961 Days, E = 224.417103 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.4	5.30	4.81	5.92	5.51	3.38	0.85	11.6	10.5	0.49	-0.62	3.32	-41.3	0.51	8.18



Stellar Parameters For KIC 009899577

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5309^{+159}_{-143}	$4.595^{+0.032}_{-0.104}$	$-0.160^{+0.300}_{-0.300}$	$0.763^{+0.122}_{-0.066}$	$0.843^{+0.078}_{-0.096}$	$2.669^{+0.454}_{-0.816}$
	+3%/-3%	+1%/-2%	+188%/-188%	+16%/-9%	+9%/-11%	+17%/-31%
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 009899577-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-872 ± 202	$13.28^{+14.88}_{-9.45}$	327^{+15}_{-12}	2993^{+1441}_{-558}	1676^{+16997}_{-1327}
Alt.	-313 ± 59	$13.28^{+13.45}_{-9.39}$	326^{+15}_{-11}	2574^{+1071}_{-371}	561^{+5710}_{-422}

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

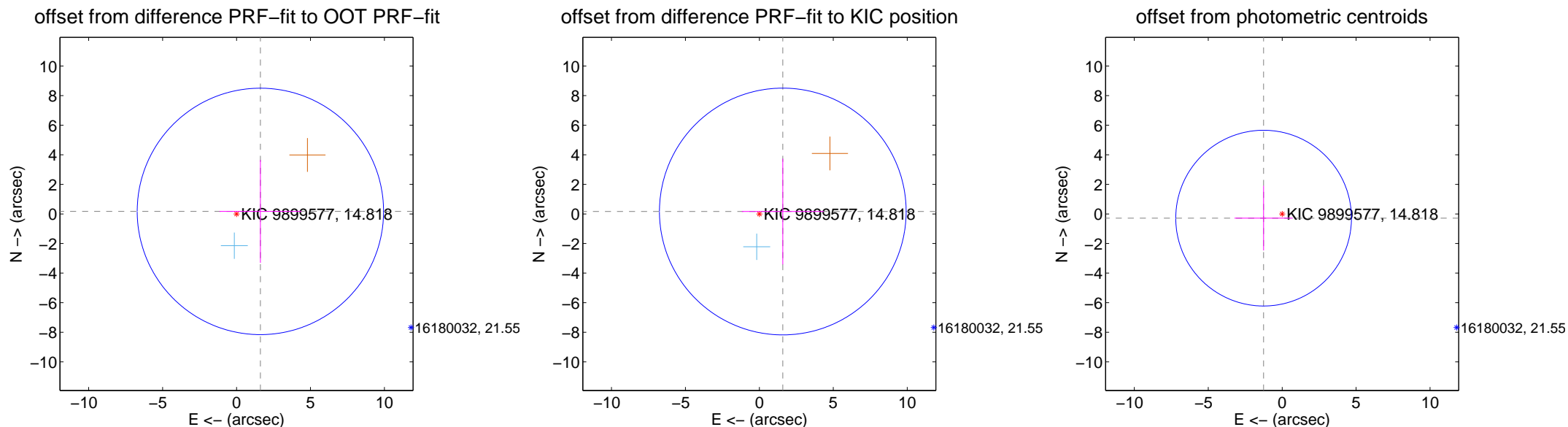
DV Centroid Data

Supplemental centroid analysis for 009899577-02. Kepler magnitude: 14.82. Transit SNR 4.31

There are 1 quarters with good PRF difference image offsets

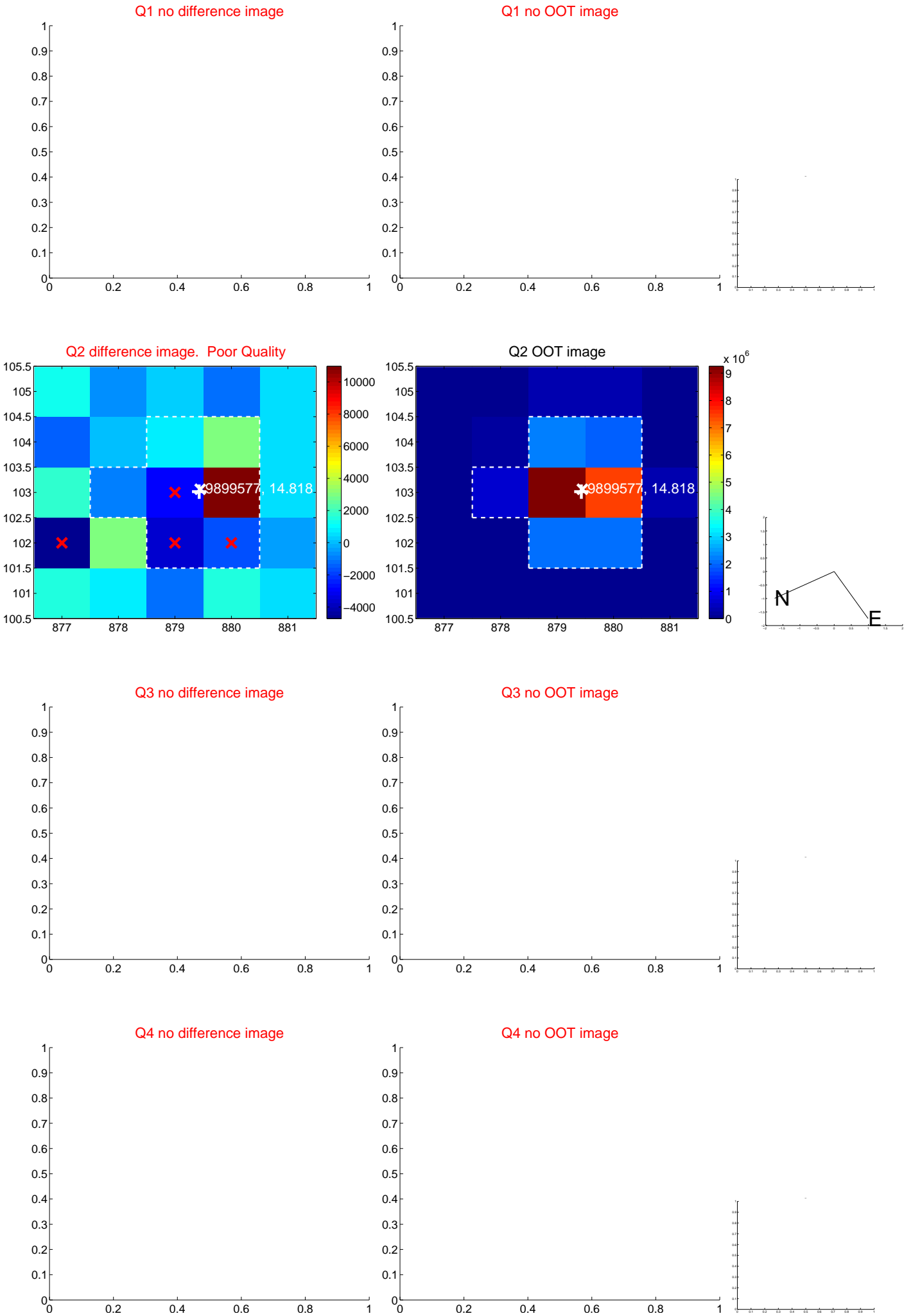
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.622 ± 2.777	0.58	-1.613 ± 2.768	0.171 ± 3.475
PRF-fit source offset from KIC position	1.593 ± 2.780	0.57	-1.585 ± 2.771	0.164 ± 3.573
photometric centroid source offset	1.29 ± 1.98	0.65	1.26 ± 1.97	-0.28 ± 2.18

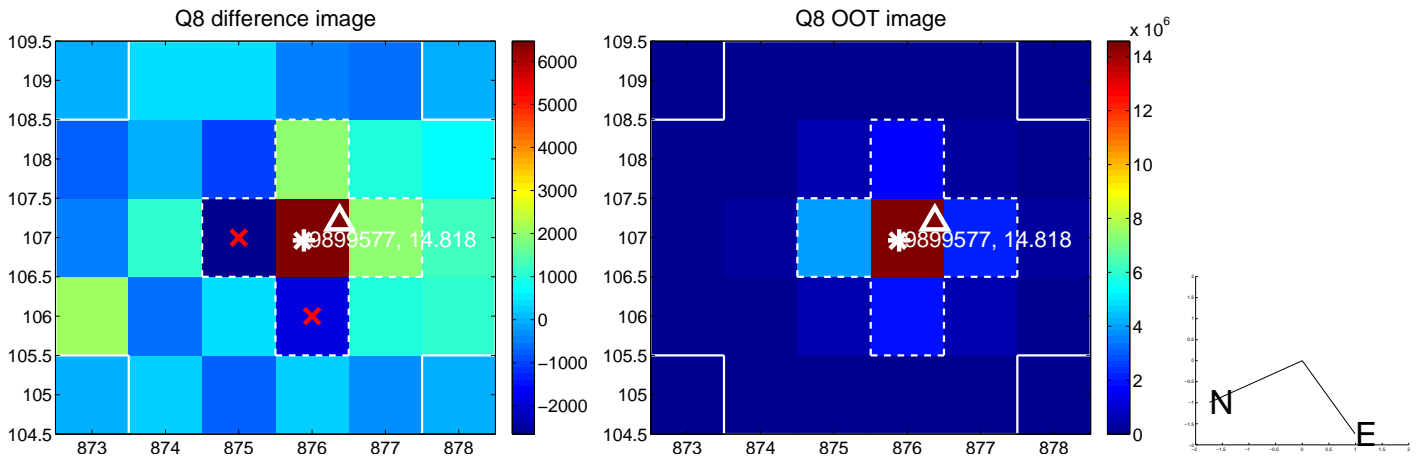
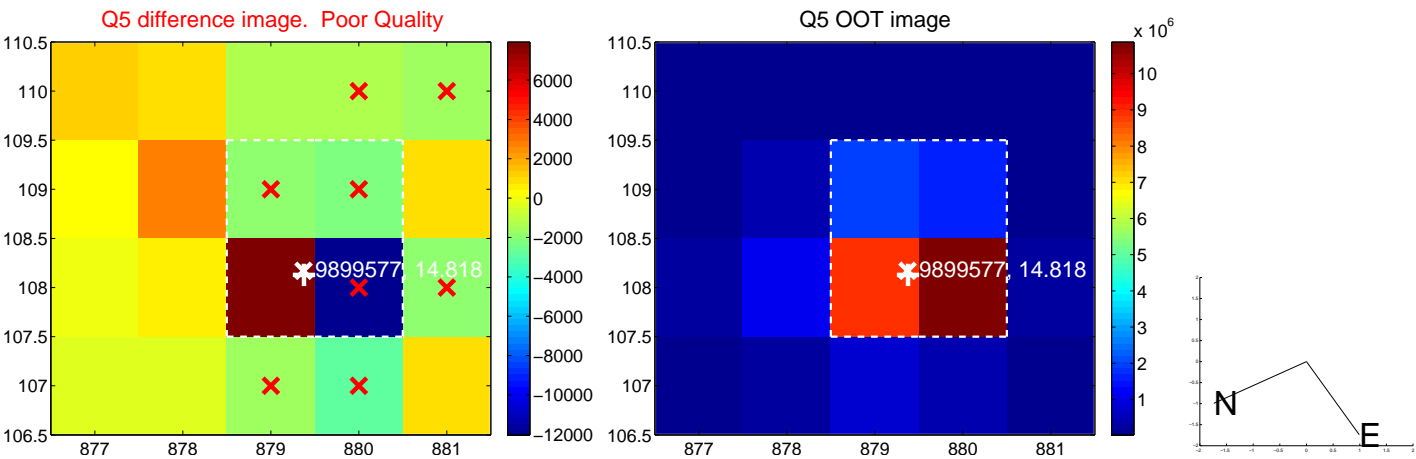


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

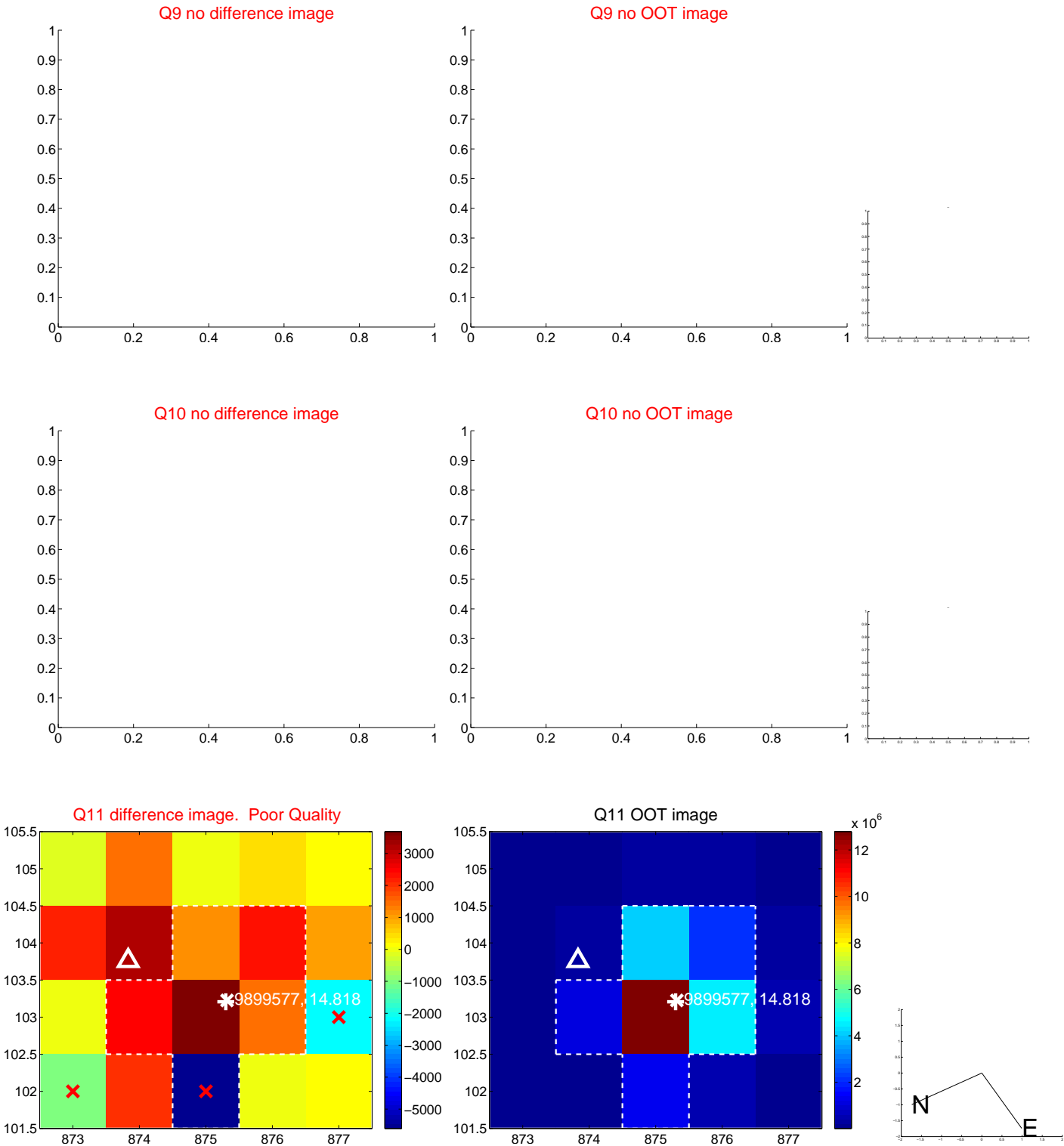
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



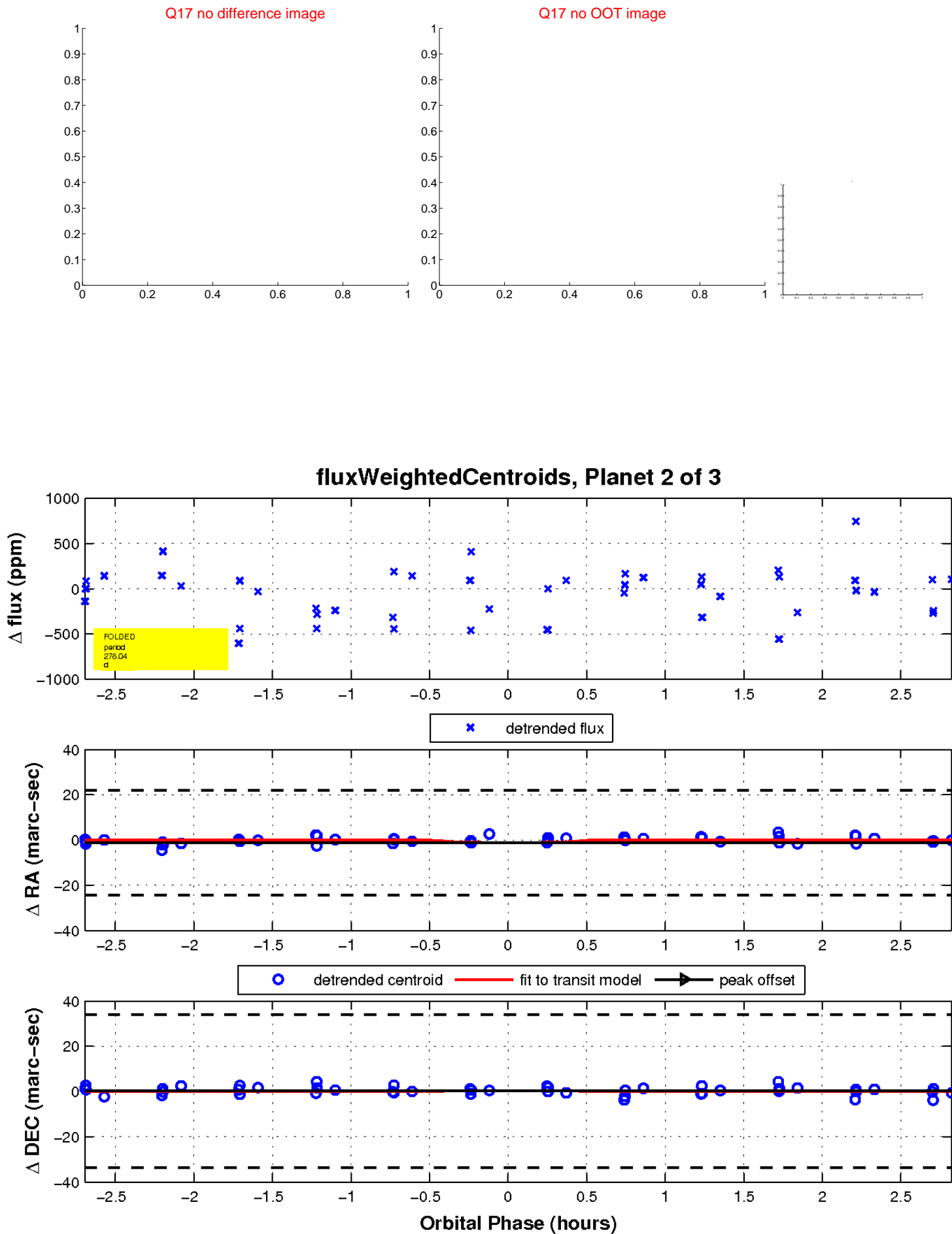
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

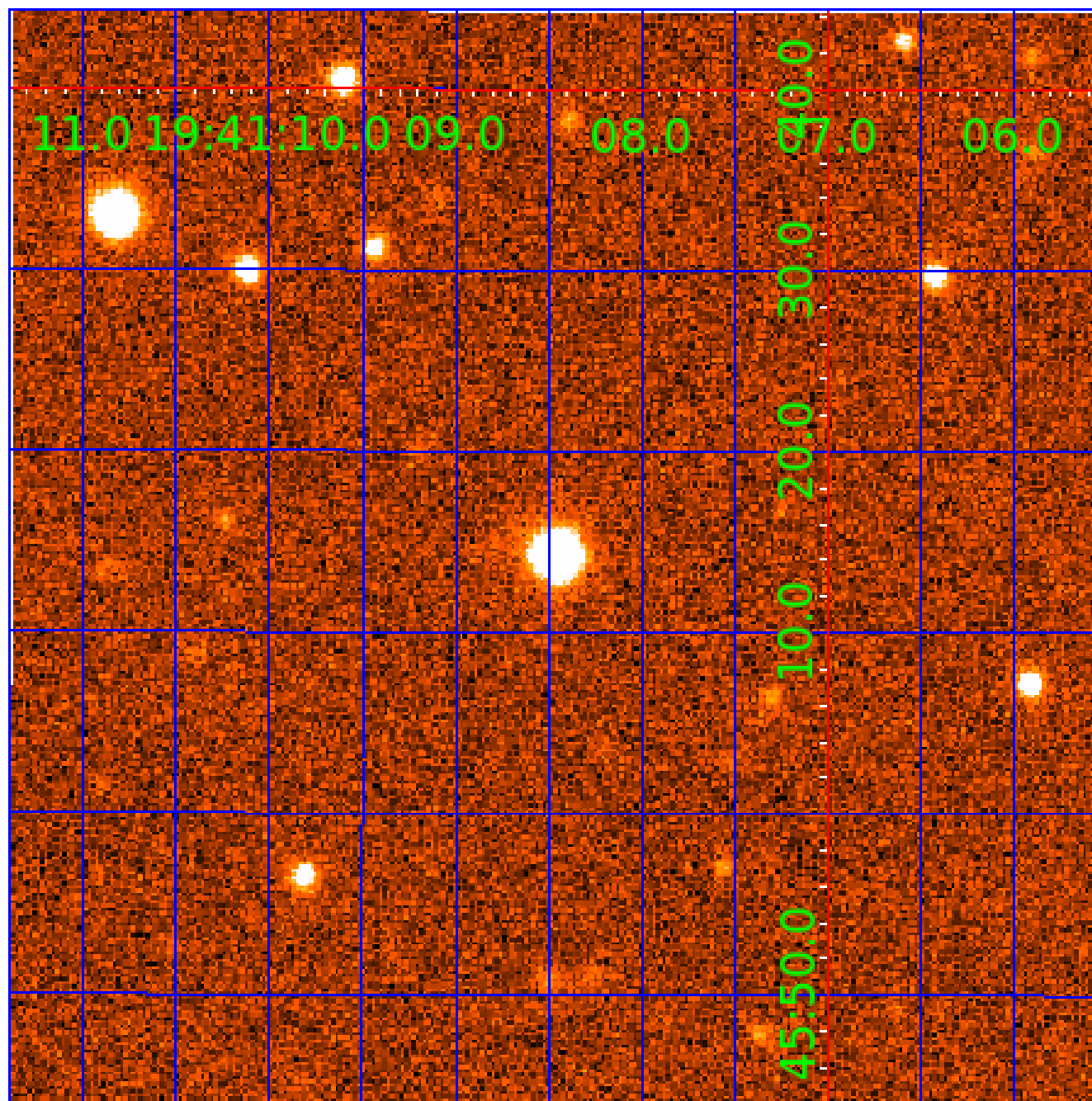


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009899577

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})
009899577-01	OBS	7247.01	1.332505	132.089321	73.3	4.428	14.3	14.4	0.76	5309	0.69	831.26
009899577-02	OBS	No	278.037493	224.334115	971.1	0.967	15.3	4.3	0.76	5309	2.57	0.67
009899577-03	OBS	No	450.464327	481.696785	734.0	17.830	9.1	6.9	0.76	5309	2.02	0.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009899577-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
009899577-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009899577-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—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.

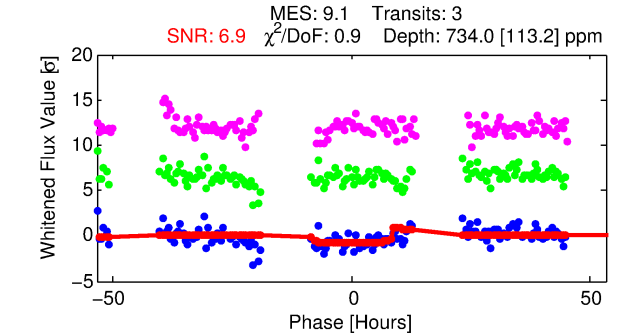
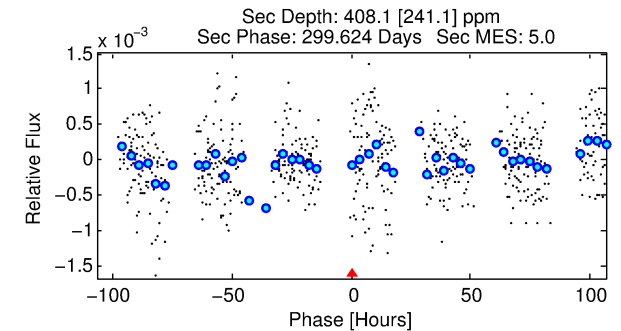
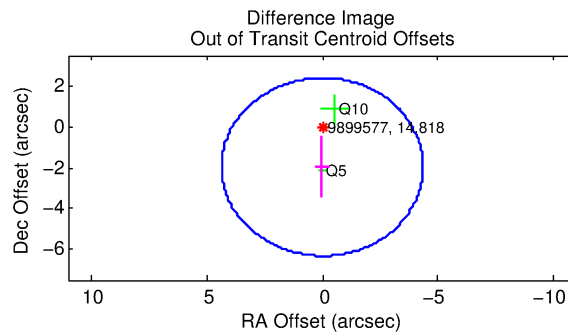
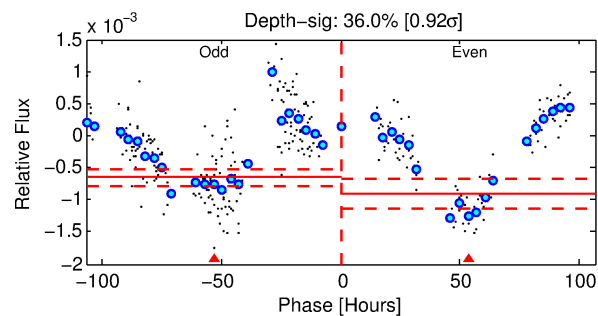
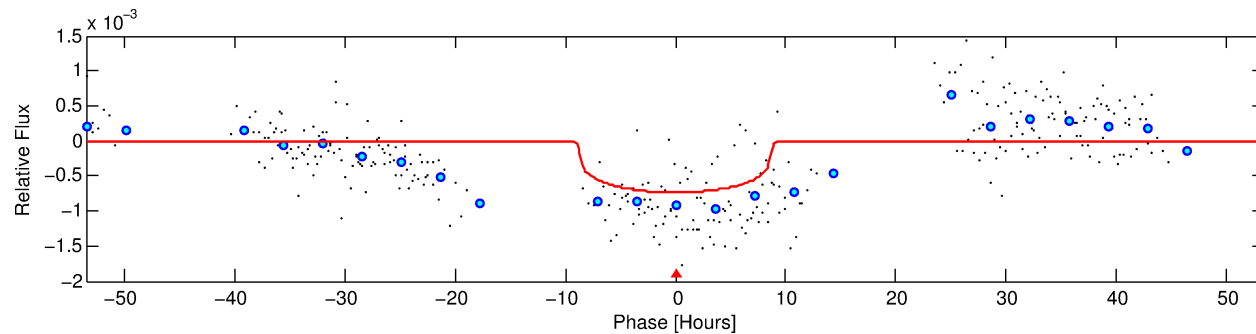
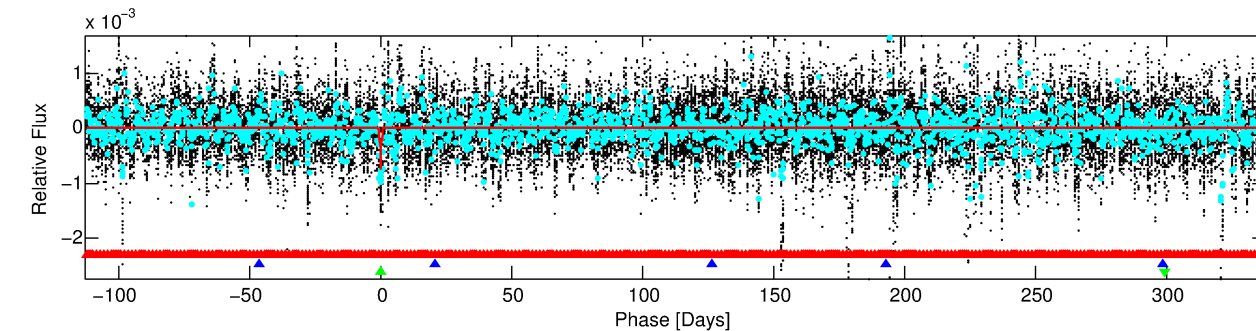
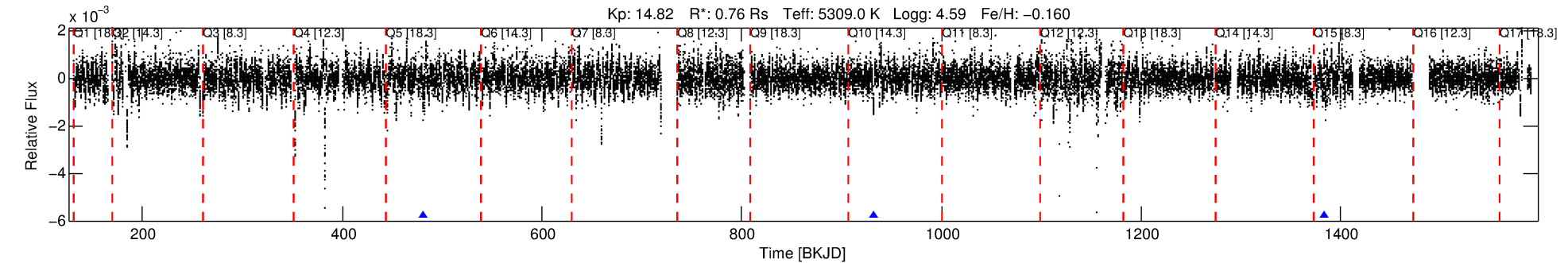
Ephemeris Match Information For 009899577-03

No Significant Match Found

DV One-Page Summary

KIC: 9899577 Candidate: 3 of 3 Period: 450.464 d
KOI: K07247 Corr: No Ephemeris Match

Kp: 14.82 R*: 0.76 Rs Teff: 5309.0 K Logg: 4.59 Fe/H: -0.160



DV Fit Results:

Period = 450.46433 [0.01399] d
Epoch = 481.6968 [0.0254] BKJD
Rp/R* = 0.0243 [0.0181]
a/R* = 197.43 [558.81]
b = 0.05 [52.93]
Seff = 0.35 [0.08]
Teff = 197 [11] K
Rp = 2.02 [1.54] Re
a = 1.0835 [0.1443] AU
Ag = 64452.08 [103901.35] [0.62σ]
Teffp = 4842 [1943] K [2.39σ]

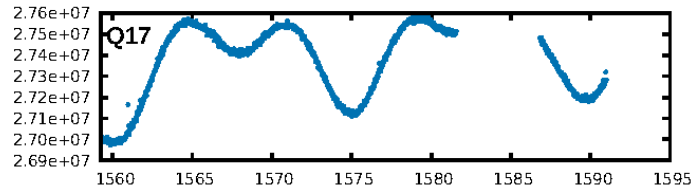
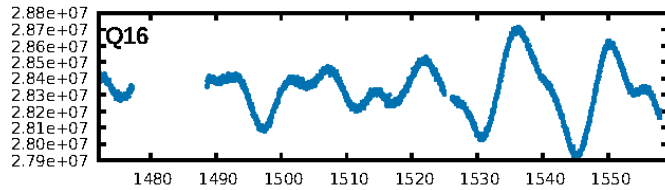
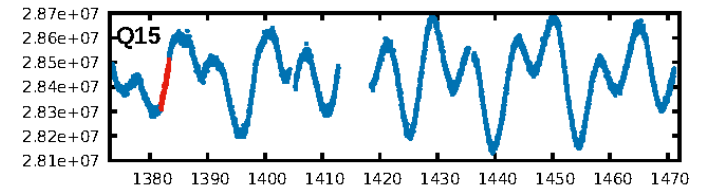
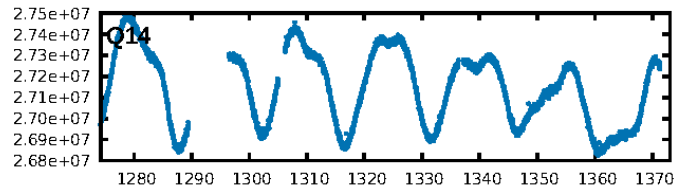
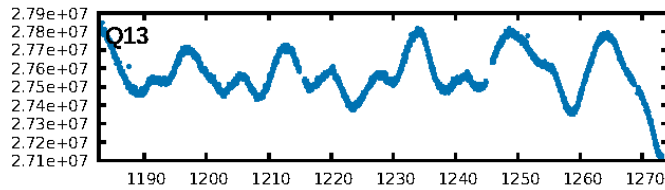
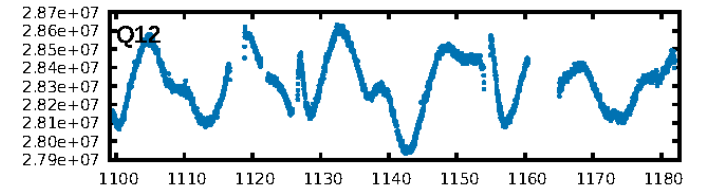
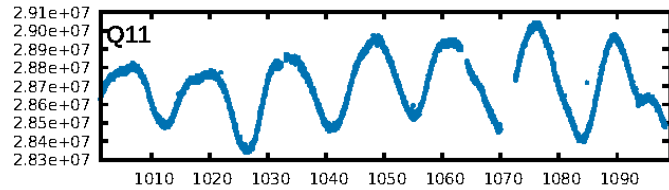
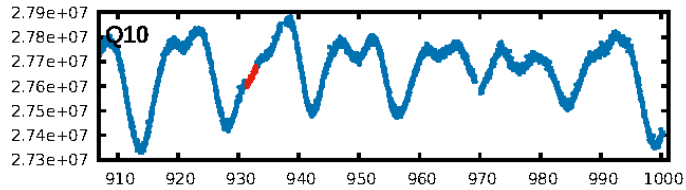
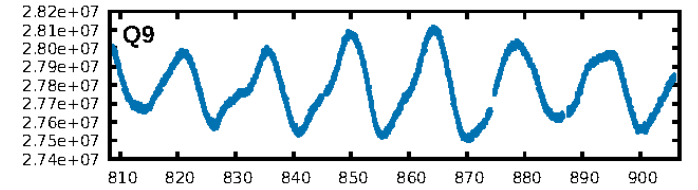
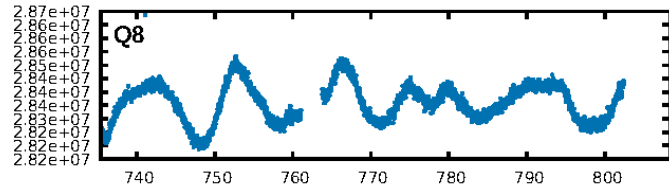
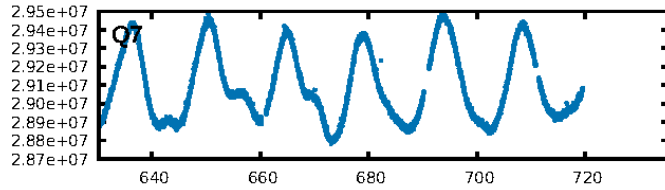
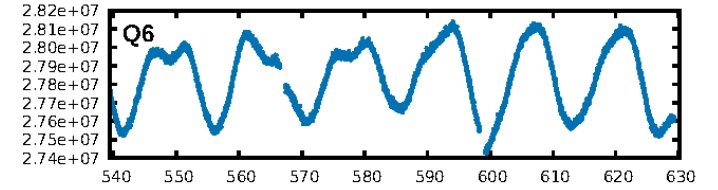
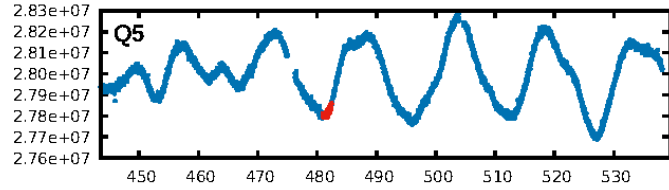
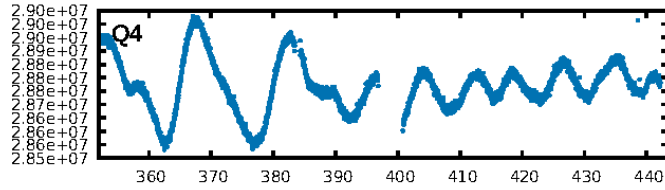
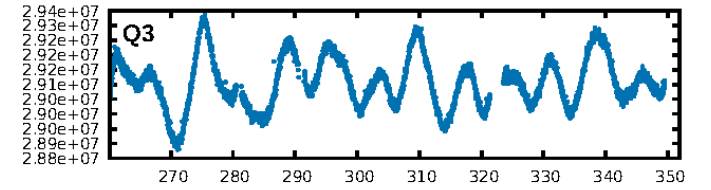
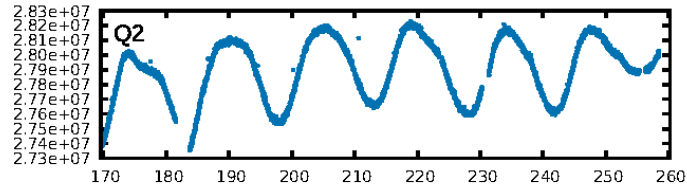
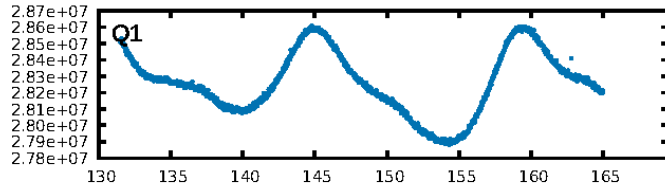
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [231.76σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 21.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.10e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -4.257
Centroid-sig: 7.4%
Centroid-so: 0.906 arcsec [1.22σ]
OotOffset-rm: 1.966 arcsec [1.35σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-rm: 1.942 arcsec [1.05σ]
KicOffset-st: 1/0/0/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.00 [0/3]

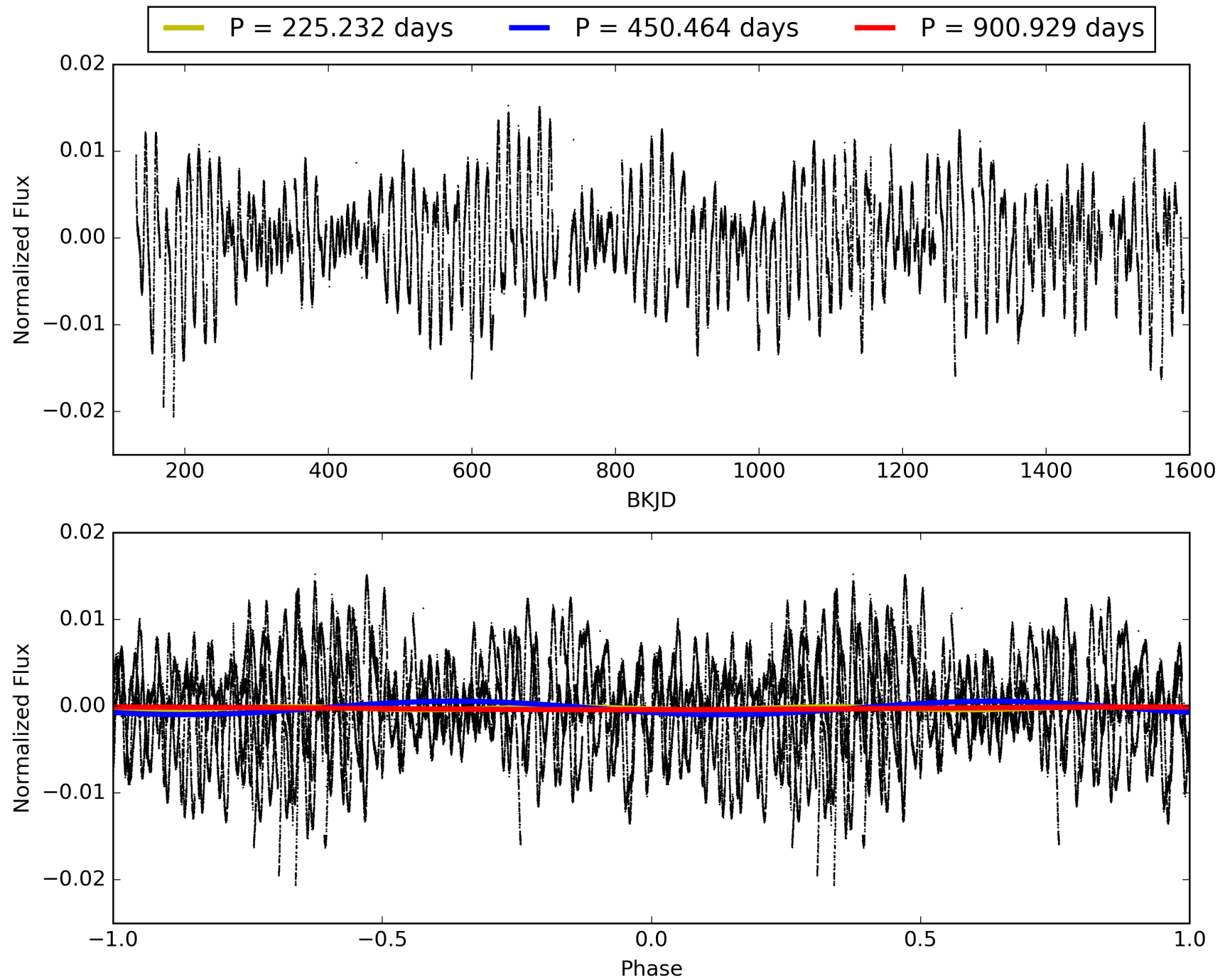
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:01:00 Z

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

TCE 009899577-03, PDC Light Curves

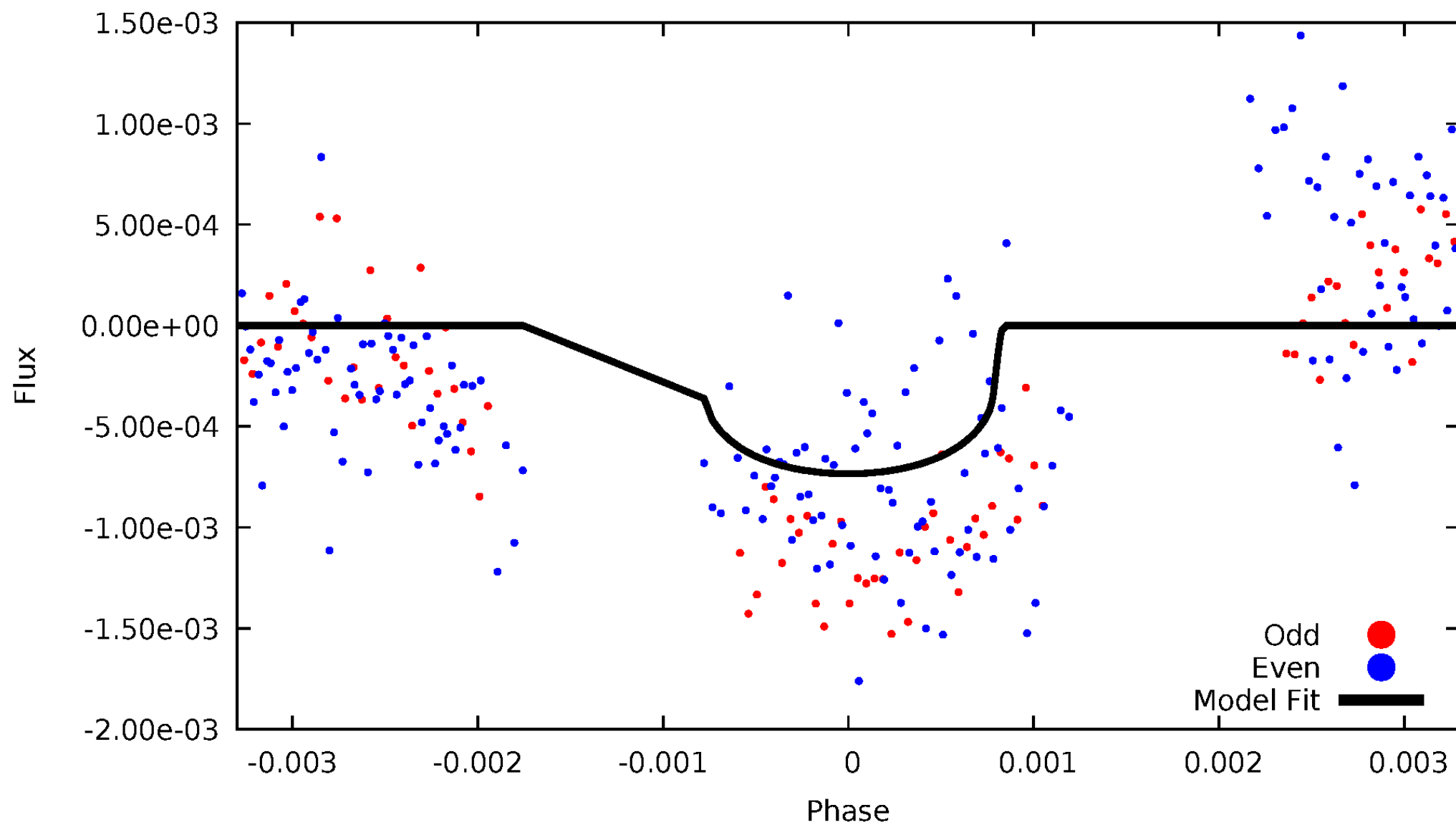


TCE 009899577-03



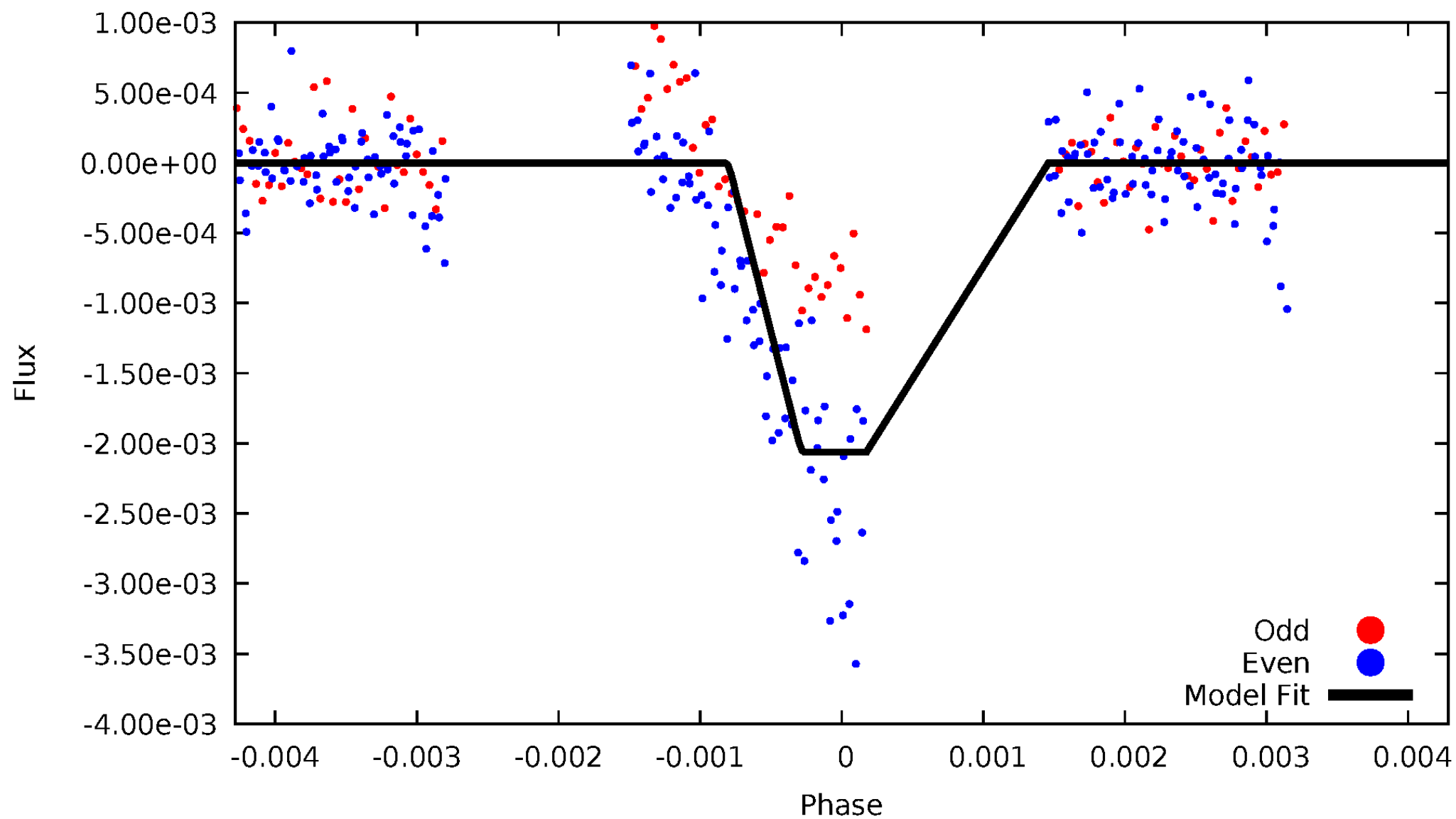
DV Odd/Even

TCE 009899577-03



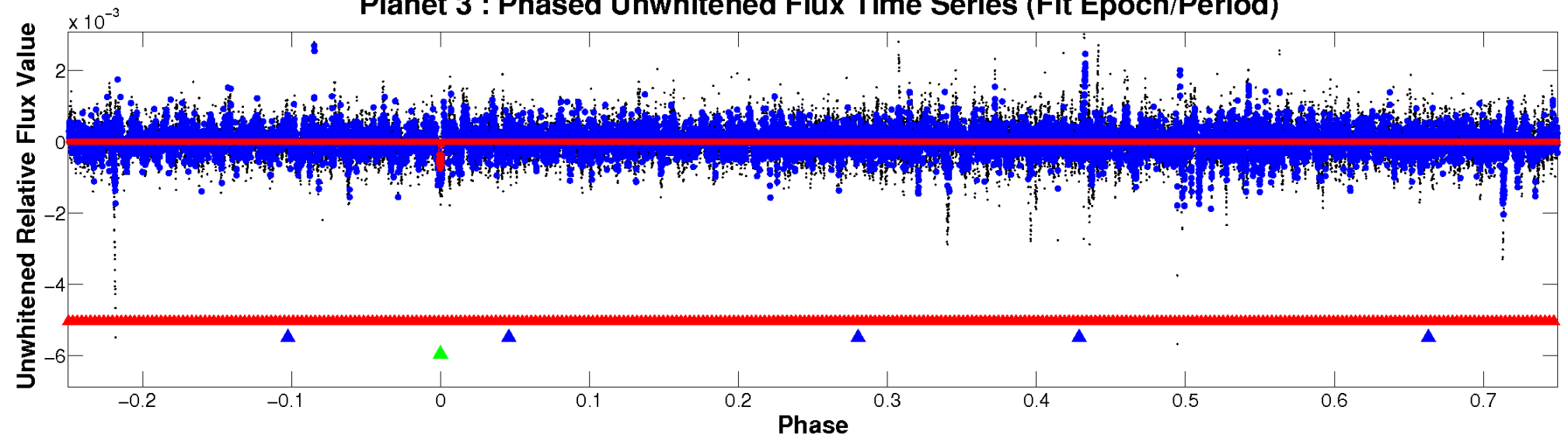
ALT Odd/Even

TCE 009899577-03

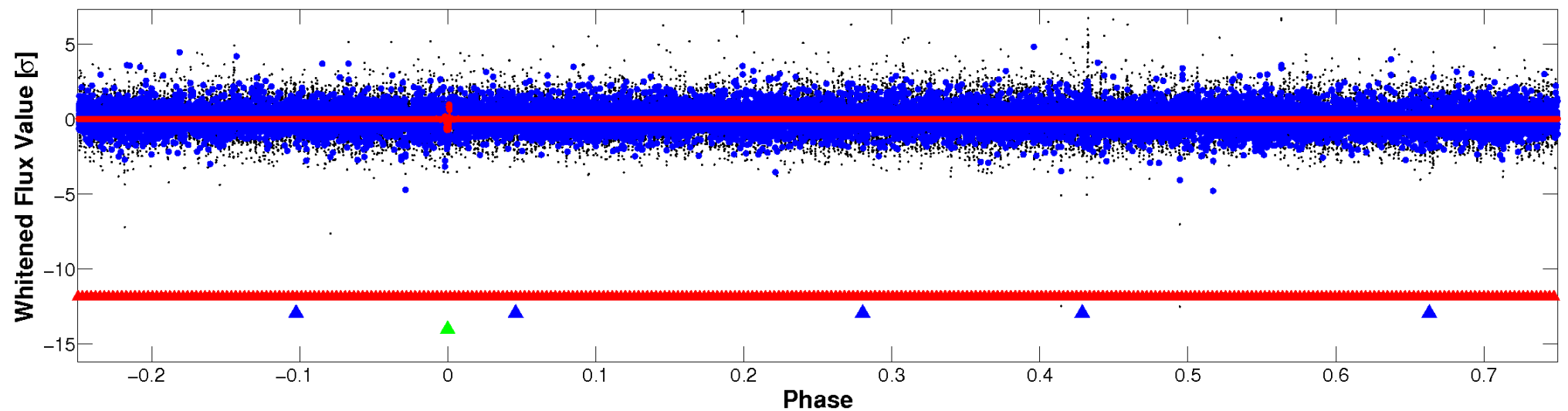


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

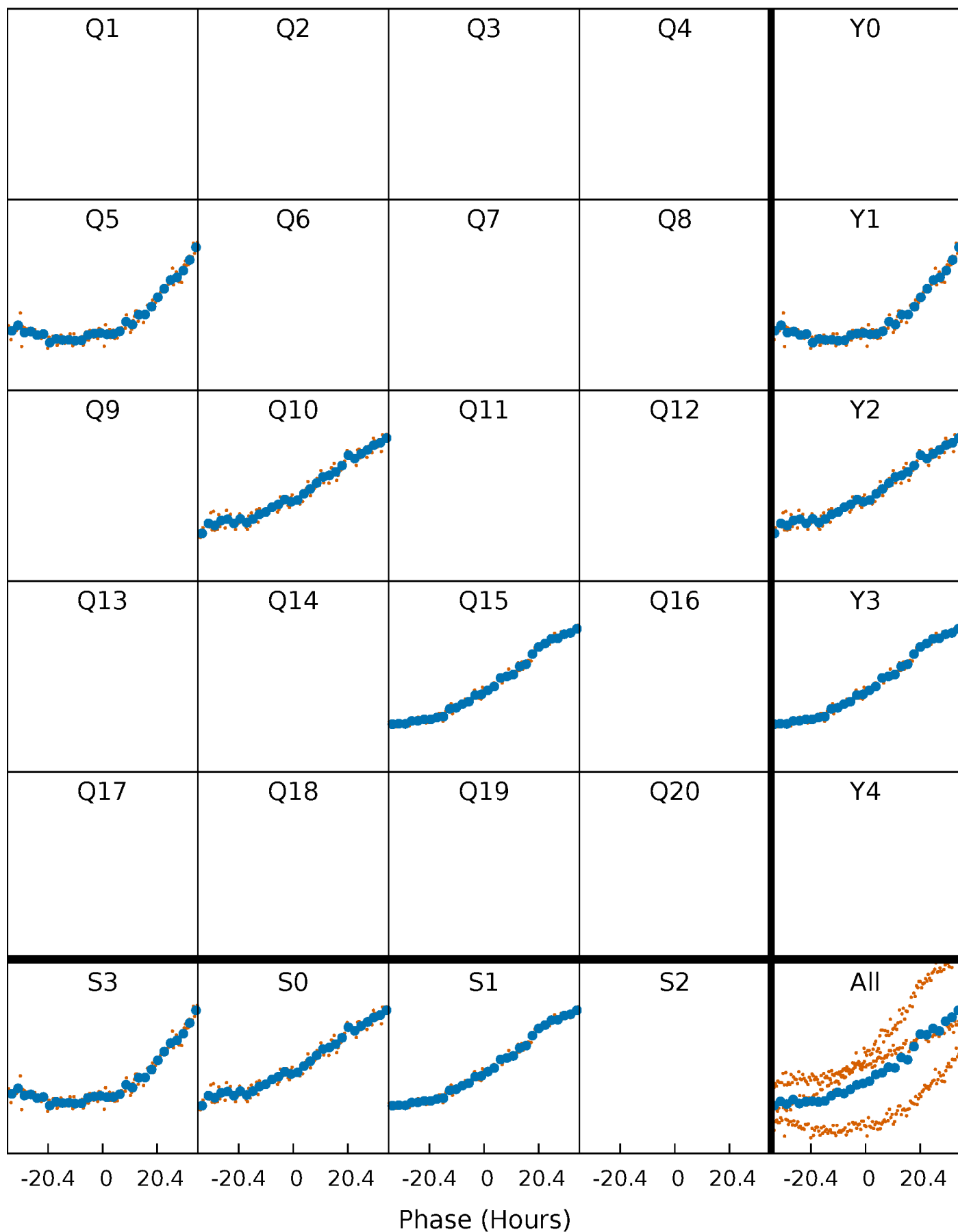


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 009899577-03 $P=450.464327$ Days $T_0=481.696785$ (BKJD)



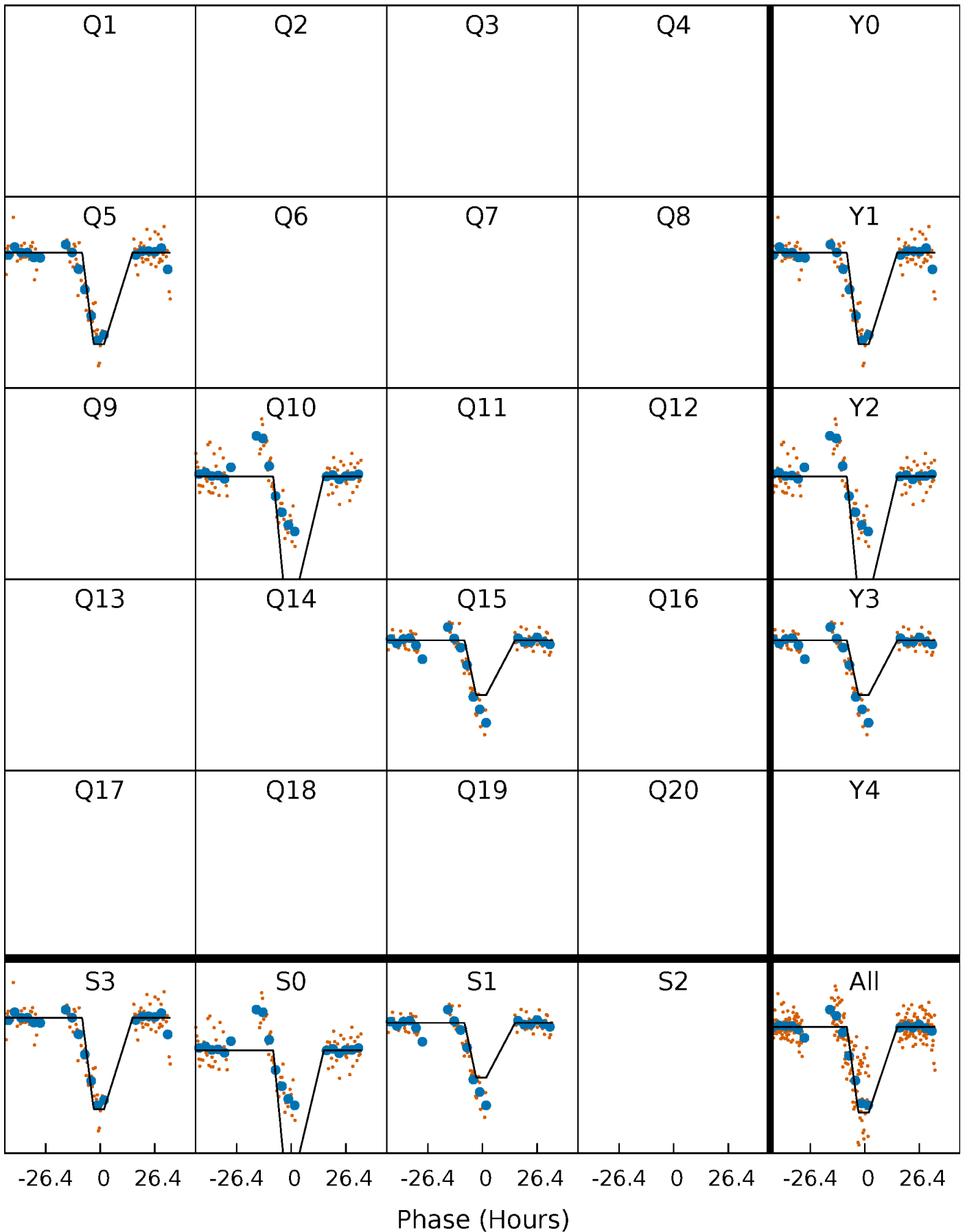
DV Quarter-Phased Transit Curves

TCE 009899577-03 $P=450.464327$ Days $T_0=481.696785$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

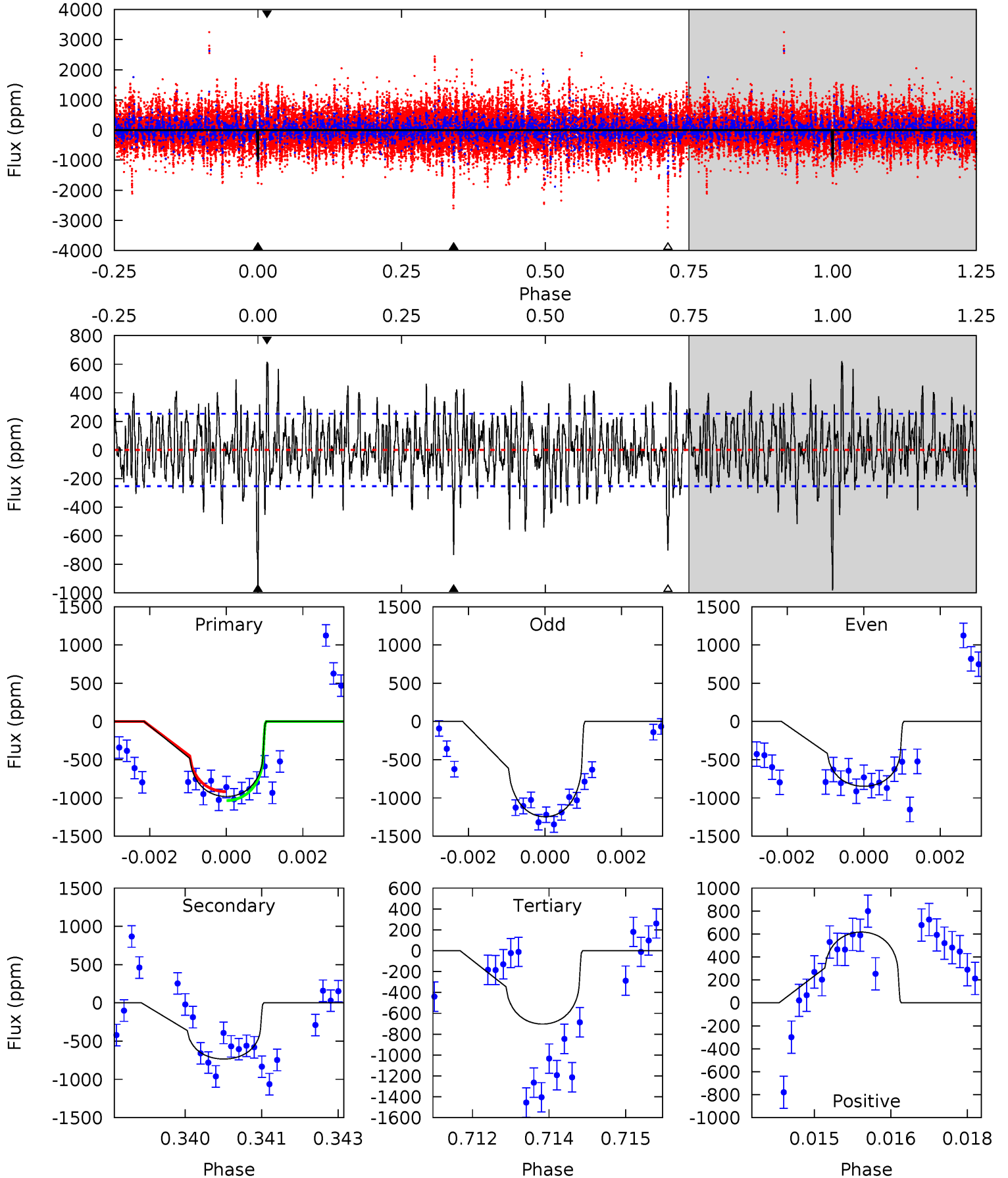
TCE 009899577-03 $P=450.389718$ Days $T_0=482.165336$ (BKJD)



DV Model-Shift Uniqueness Test

009899577-03, P = 450.464327 Days, E = 31.232458 Days

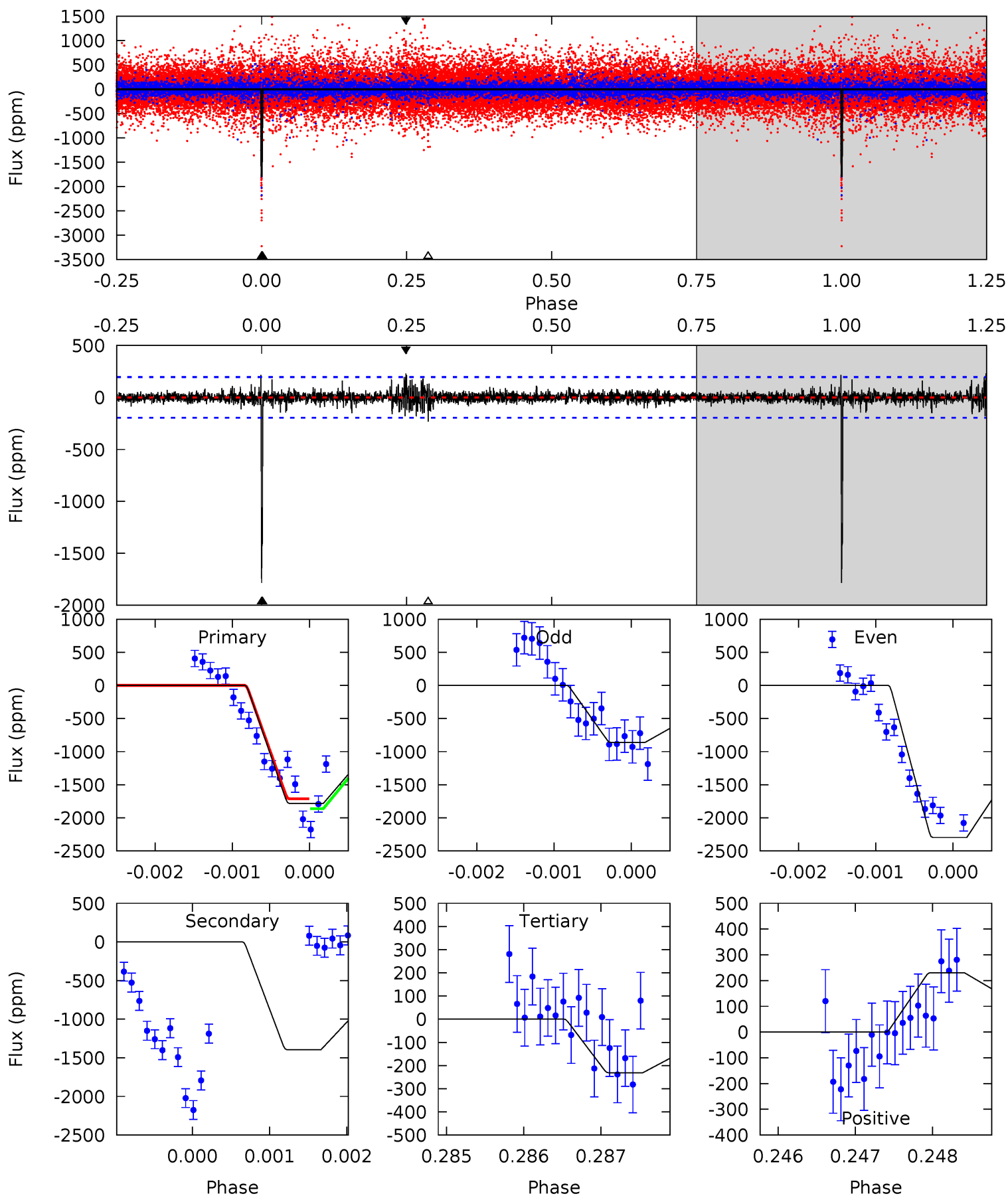
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.7	15.5	14.8	13.0	5.36	3.15	3.79	5.87	7.68	0.66	2.48	3.67	0.89	0.39	1.22



Alt Model-Shift Uniqueness Test

009899577-03, $P = 450.389718$ Days, $E = 31.775618$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
49.6	38.9	6.44	6.42	5.45	3.30	0.92	43.2	43.2	32.4	32.4	19.1	0.97	0.11	1.44



Stellar Parameters For KIC 009899577

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5309^{+159}_{-143}	$4.595^{+0.032}_{-0.104}$	$-0.160^{+0.300}_{-0.300}$	$0.763^{+0.122}_{-0.066}$	$0.843^{+0.078}_{-0.096}$	$2.669^{+0.454}_{-0.816}$
	+3%/-3%	+1%/-2%	+188%/-188%	+16%/-9%	+9%/-11%	+17%/-31%
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 009899577-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-734 ± 47	$2.39^{+1.51}_{-1.39}$	279^{+12}_{-11}	5260^{+3030}_{-960}	$82703^{+364911}_{-51955}$
Alt.	-1395 ± 36	$3.85^{+1.58}_{-1.57}$	279^{+13}_{-10}	4903^{+1355}_{-609}	$60703^{+111467}_{-30530}$

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

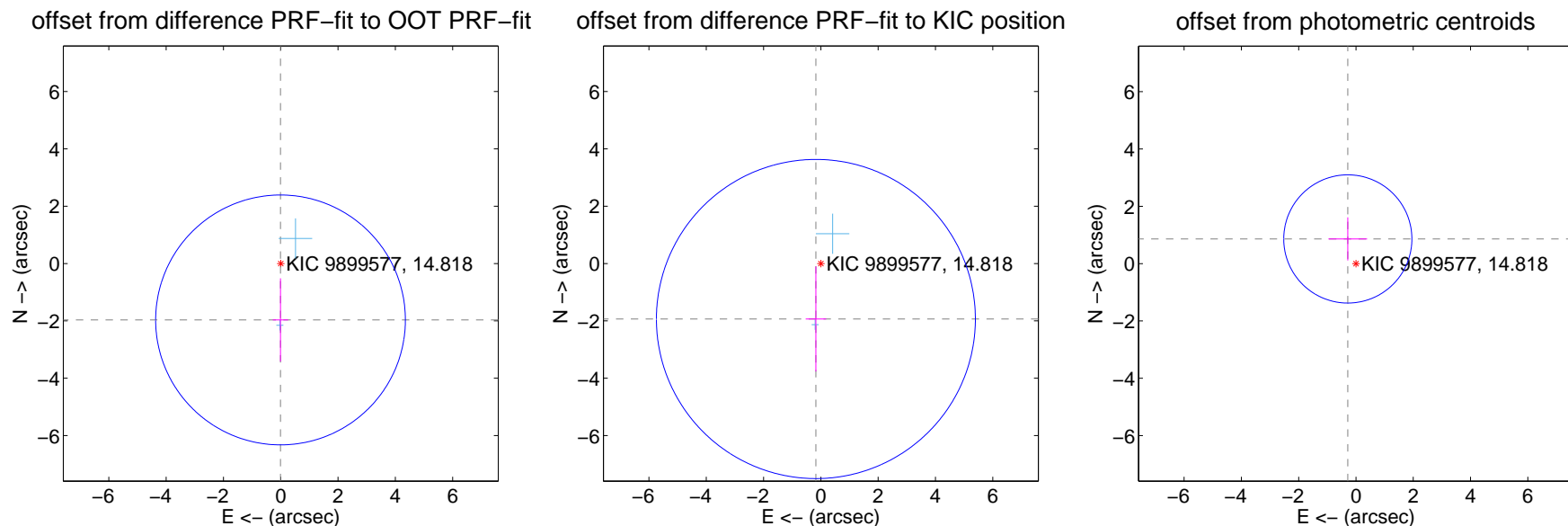
DV Centroid Data

Supplemental centroid analysis for 009899577-03. Kepler magnitude: 14.82. Transit SNR 6.94

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.966 ± 1.452	1.35	0.008 ± 0.269	-1.966 ± 1.451
PRF-fit source offset from KIC position	1.942 ± 1.855	1.05	0.173 ± 0.358	-1.934 ± 1.831
photometric centroid source offset	0.91 ± 0.75	1.22	0.28 ± 0.68	0.86 ± 0.75

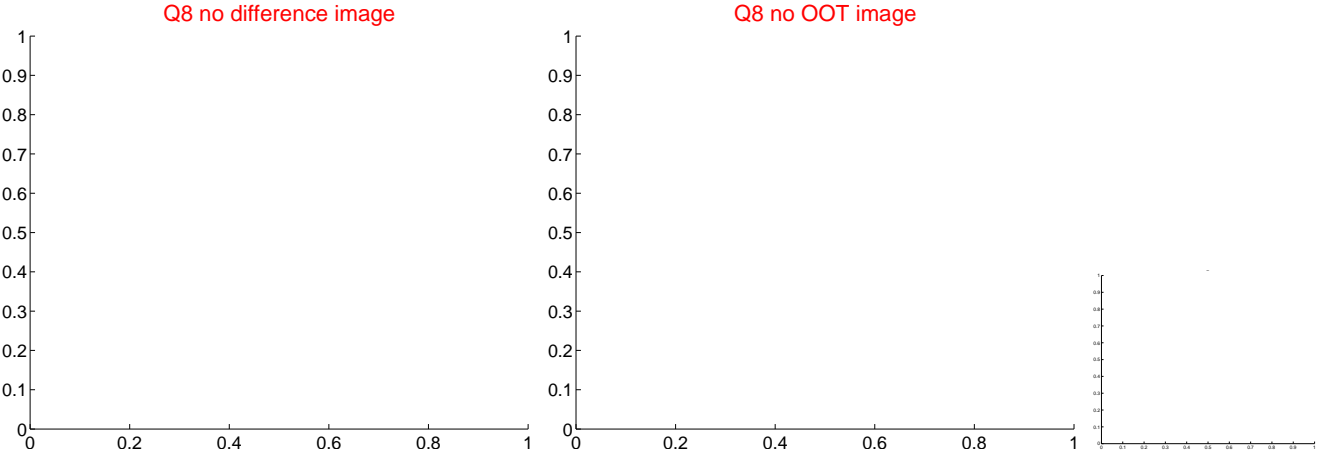
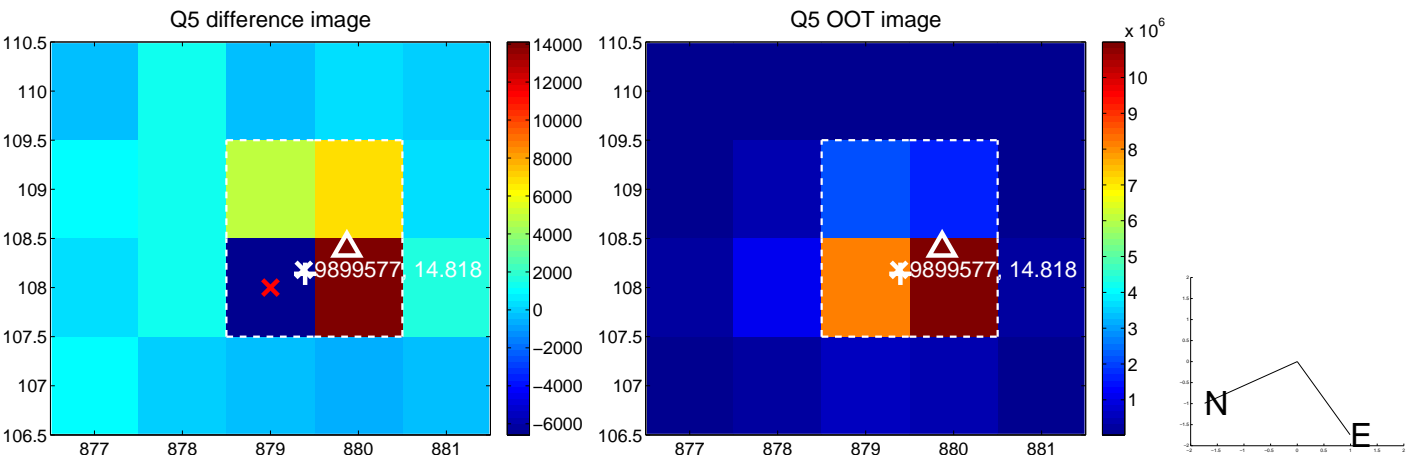


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

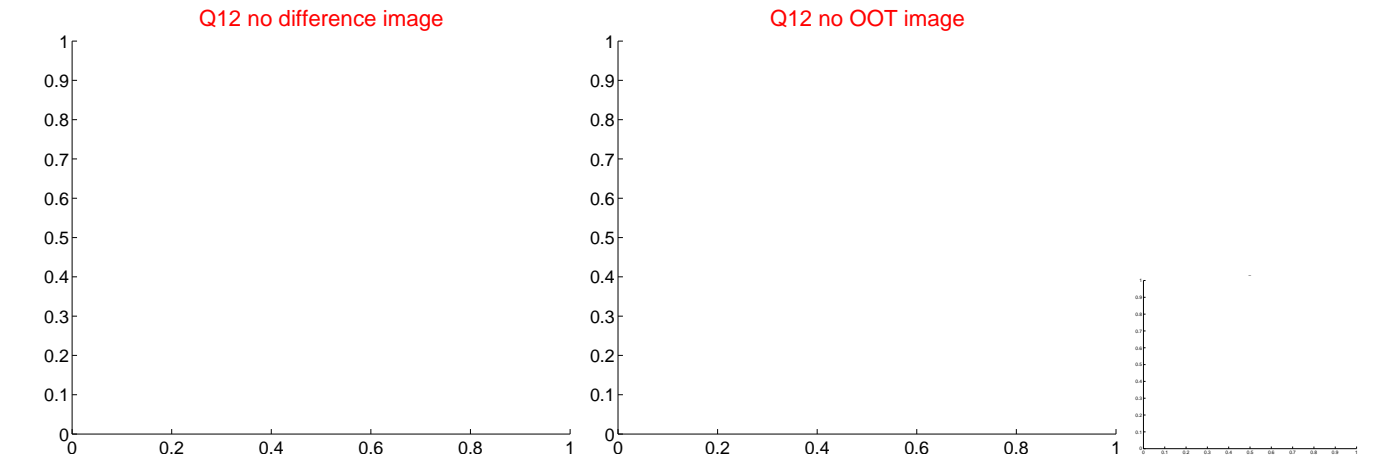
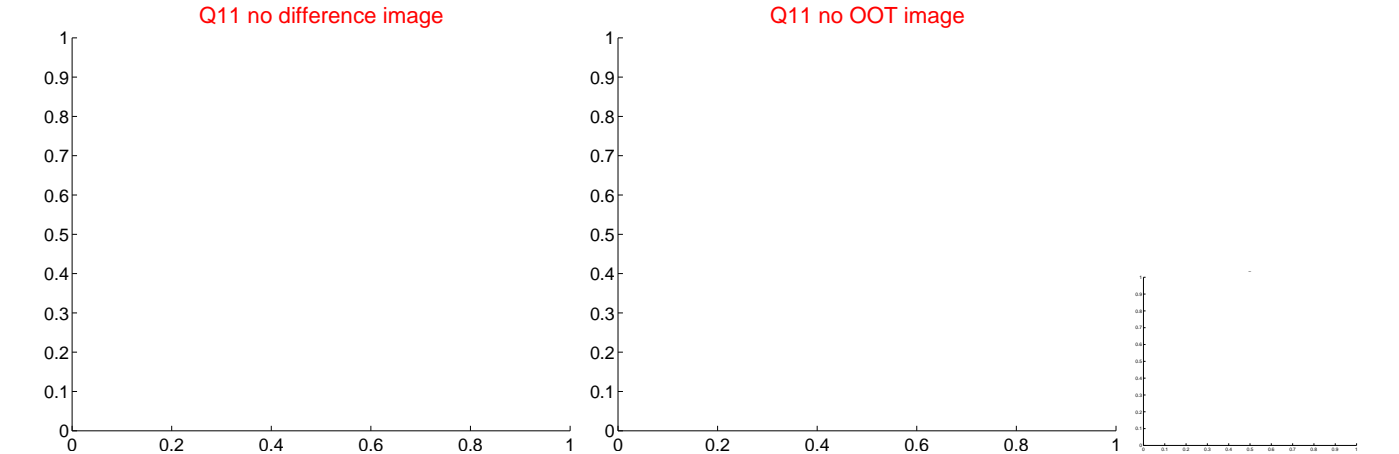
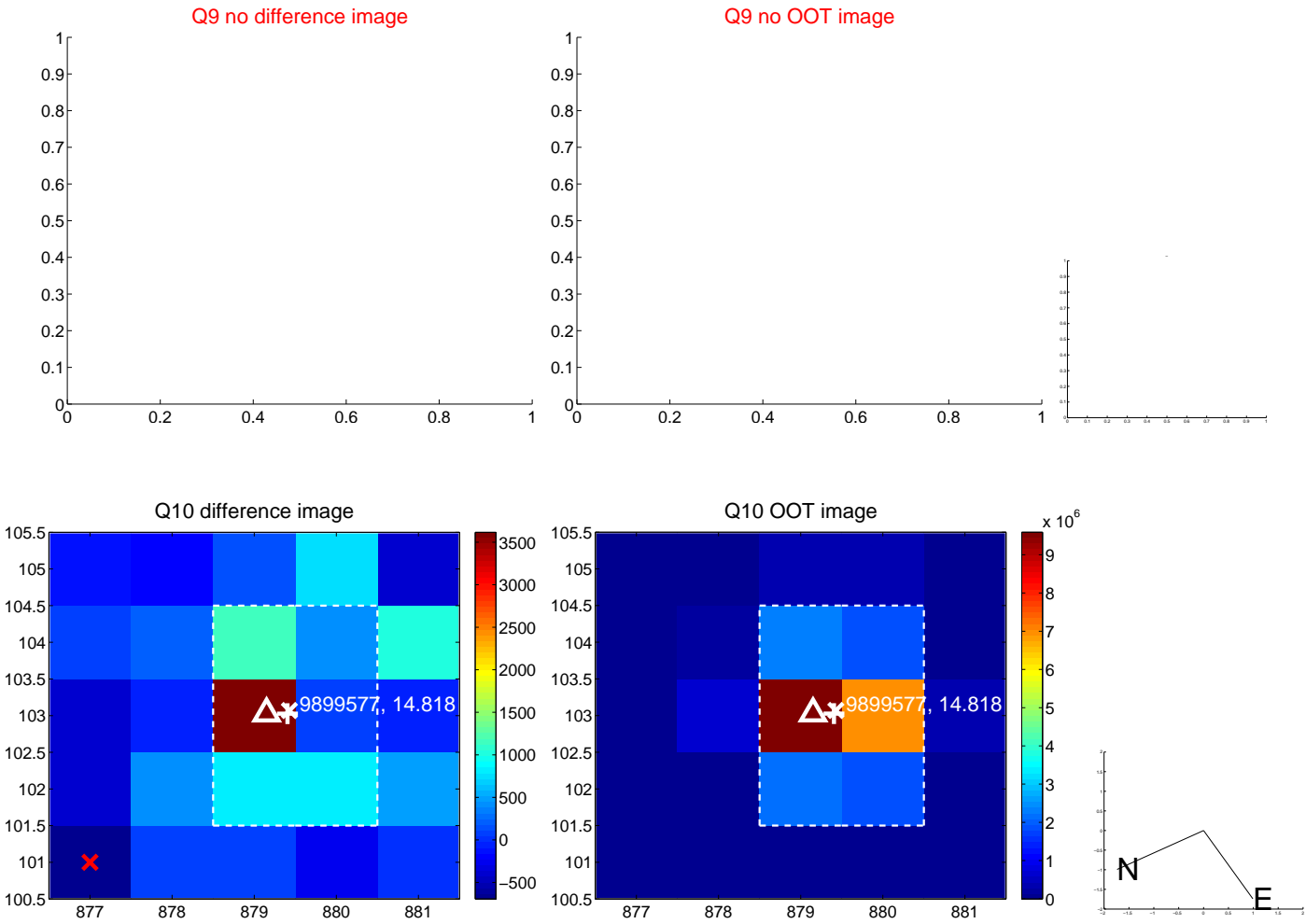
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



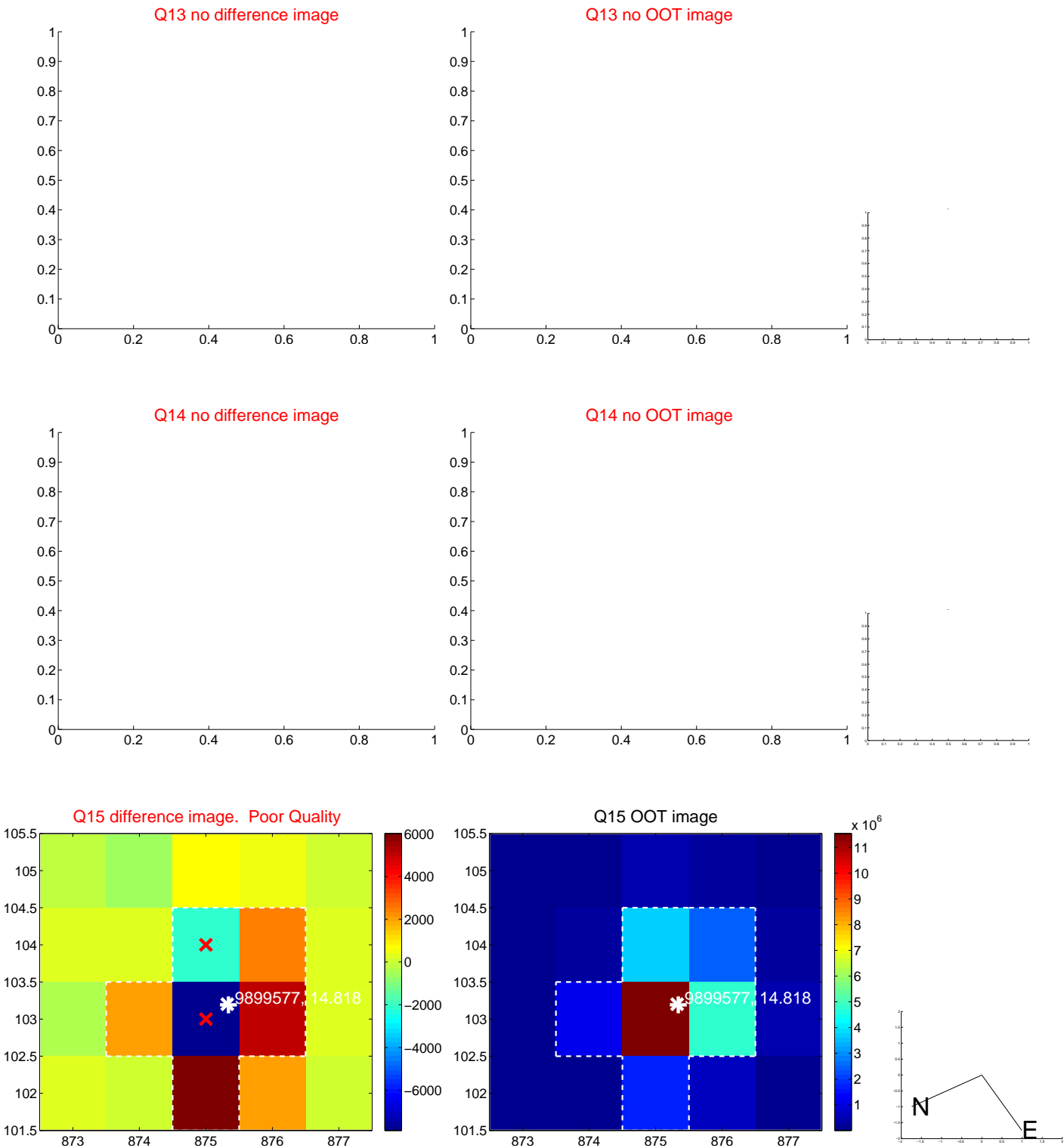
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



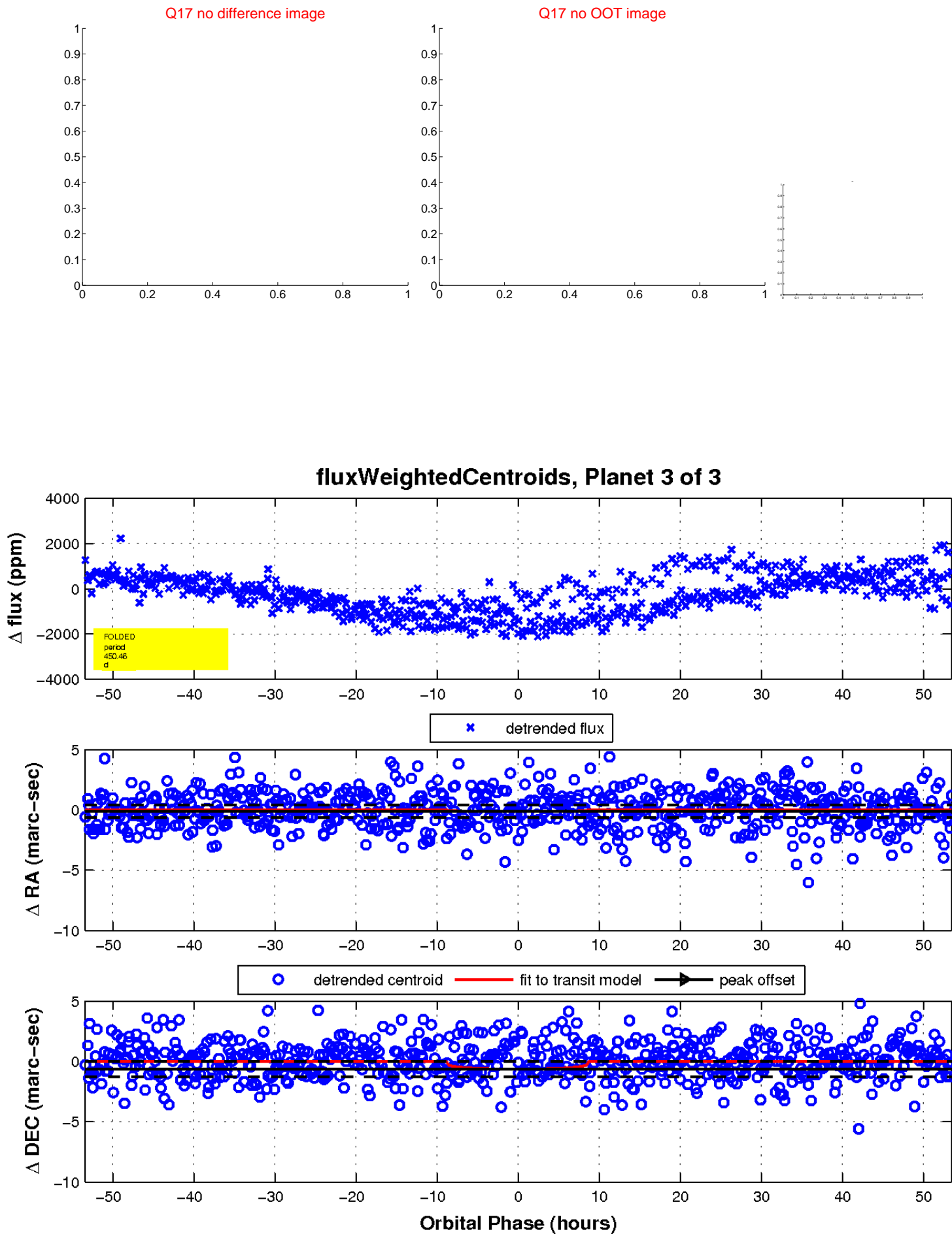
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: 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.



UKIRT Image

Declination

