

KIC 010936427

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})
010936427-01	OBS	7390.01	14.361304	138.829614	456976.8	9.000	17068.8	-1.0	0.67	5229	28.99	29.52
010936427-02	OBS	No	14.361228	131.667651	93762.4	7.500	6979.2	-1.0	0.67	5229	20.26	29.52

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010936427-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—MOD_ODDEVEN_ALT—HAS_SEC_TCE—CENT_NOFITS
010936427-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

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.

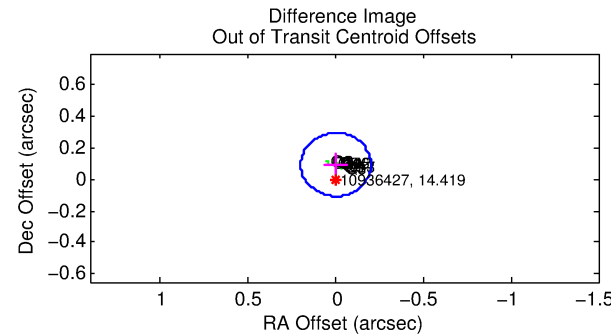
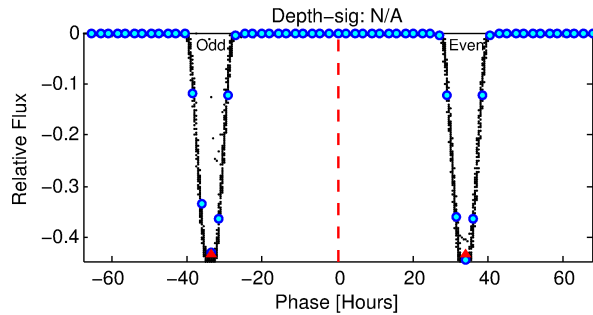
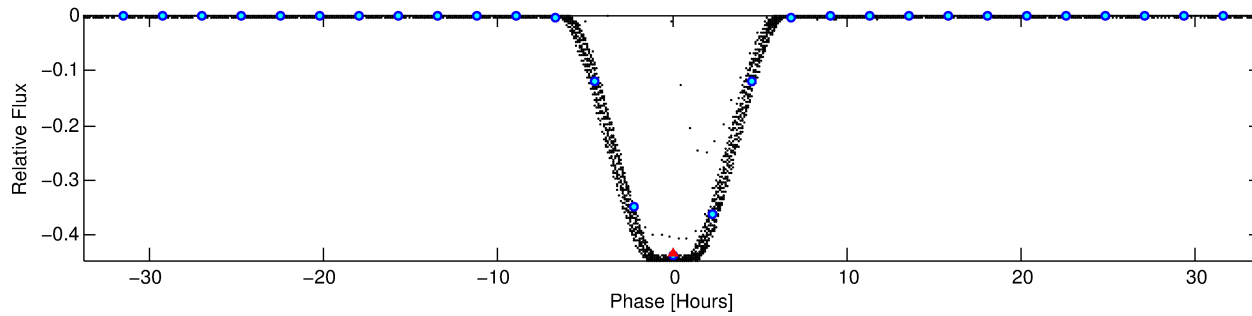
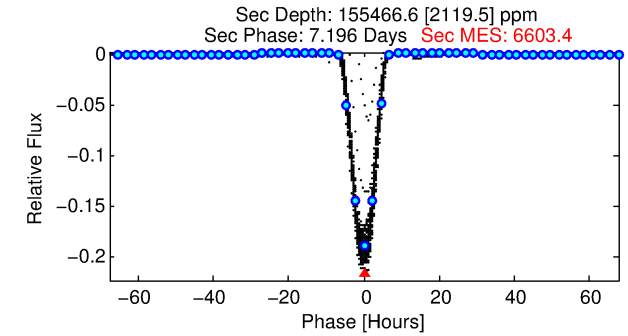
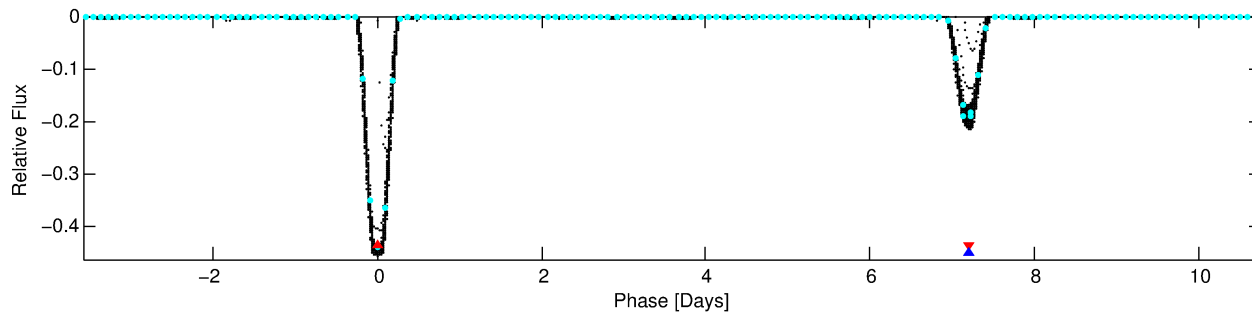
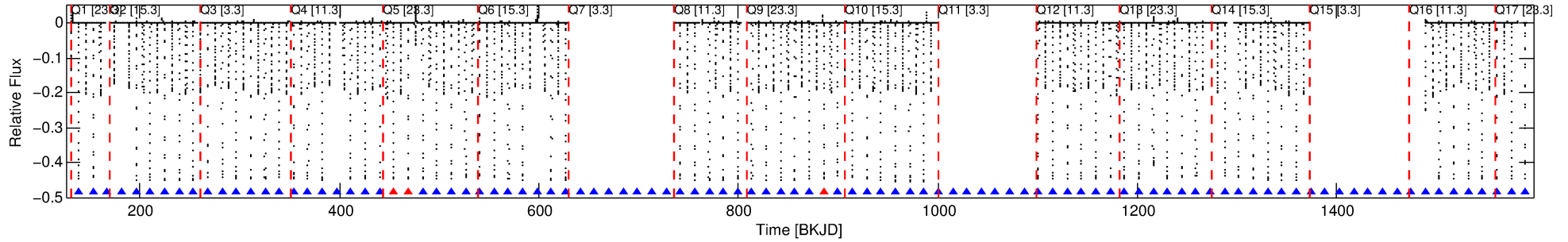
Ephemeris Match Information For 010936427-01

No Significant Match Found

DV One-Page Summary

KIC: 10936427 Candidate: 1 of 2 Period: 14.361 d
KOI: K07390.01 Corr: 0.822

Kp: 14.42 R*: 0.67 Rs Teff: 5229.0 K Logg: 4.61 Fe/H: -0.740



TPS TCE Results:

Period = 14.36130 d
Epoch = 138.8296 BKJD

DV fit results are unavailable

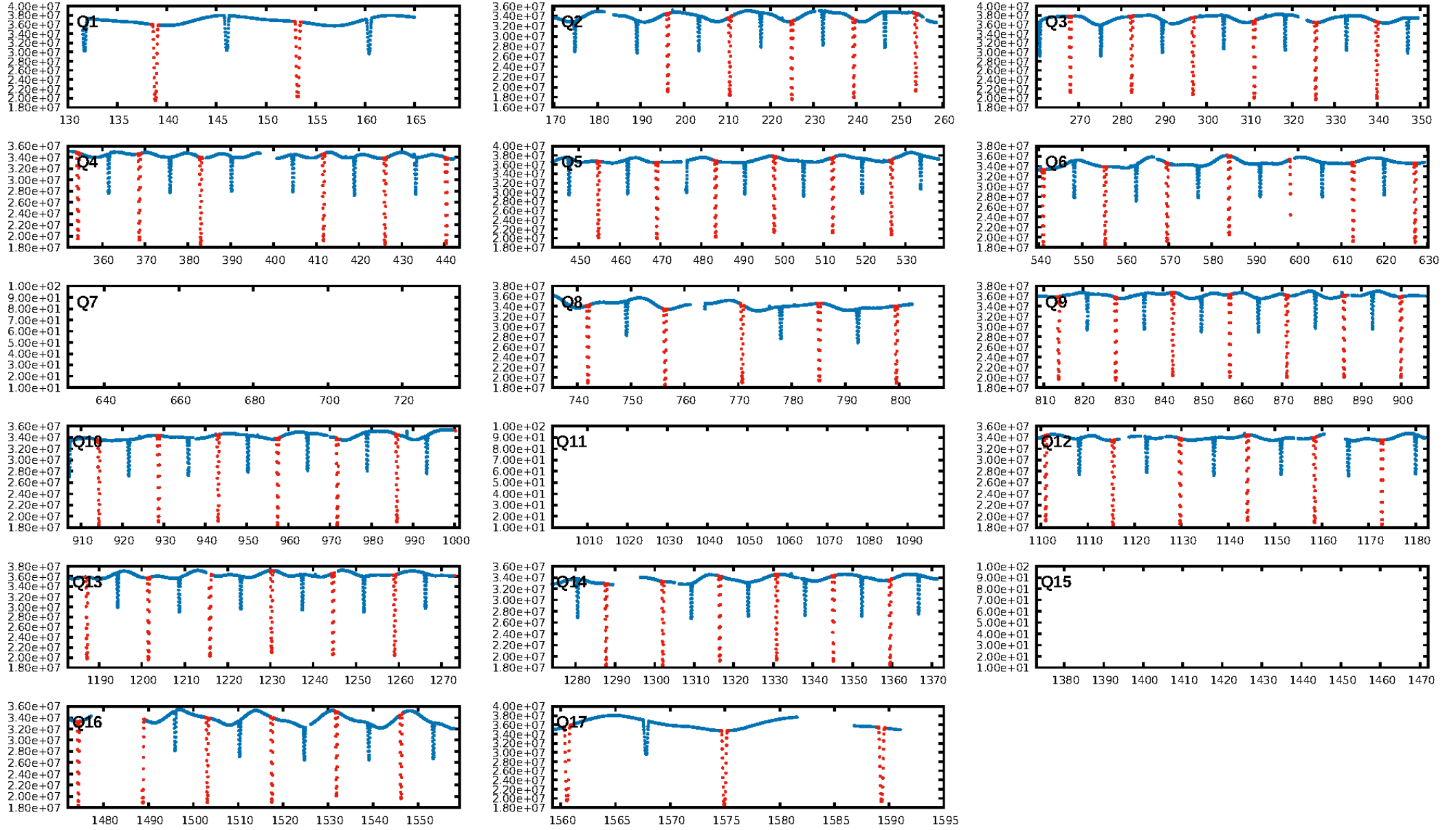
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.96 [68/71]
GhostDiagnostic-chr: 0.7775
Centroid-sig: N/A
Centroid-so: 0.295 arcsec [457.92 σ]
OotOffset-rm: 0.095 arcsec [1.42 σ]
KicOffset-rm: 0.026 arcsec [0.37 σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
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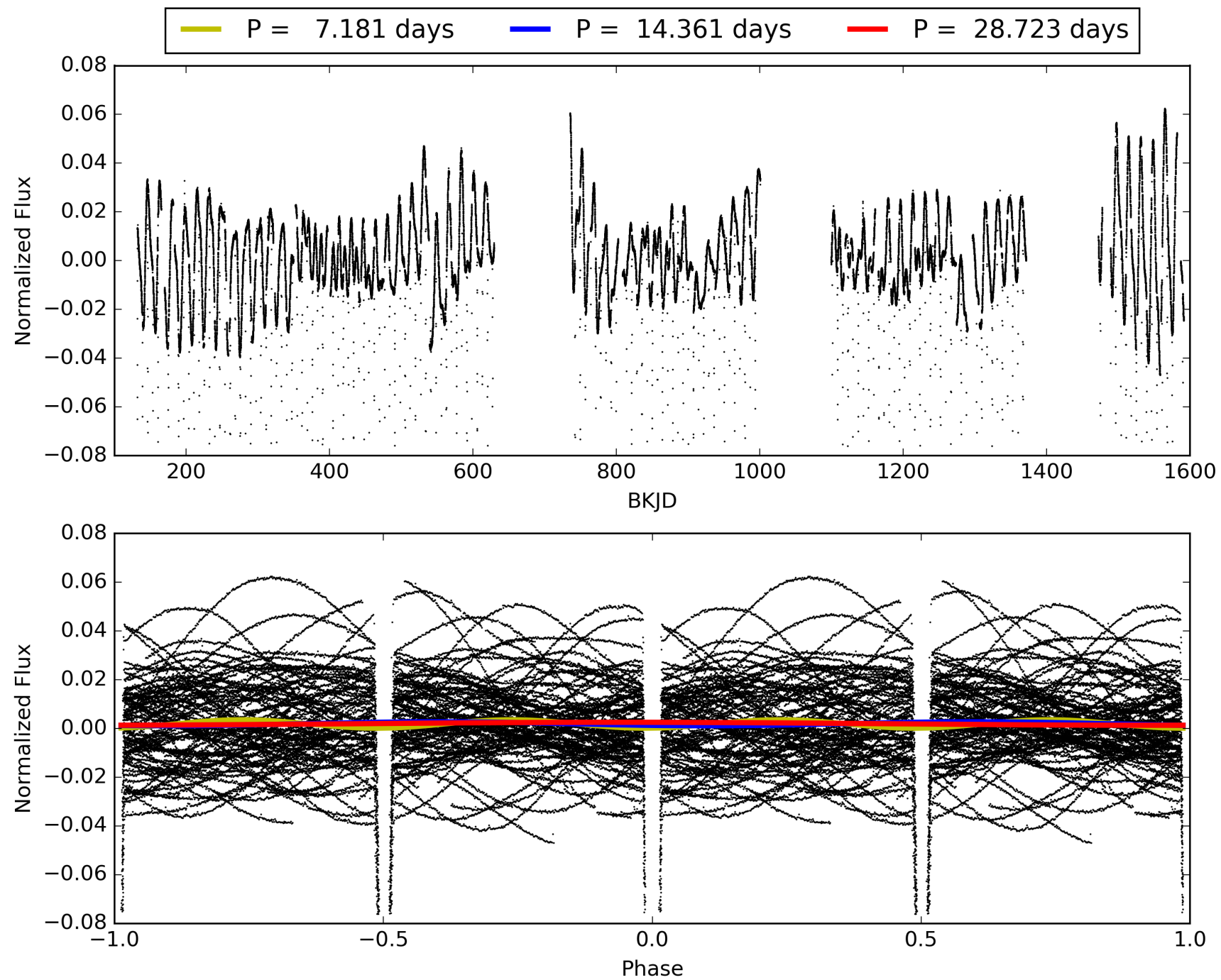
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:21:20 Z

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

TCE 010936427-01, PDC Light Curves

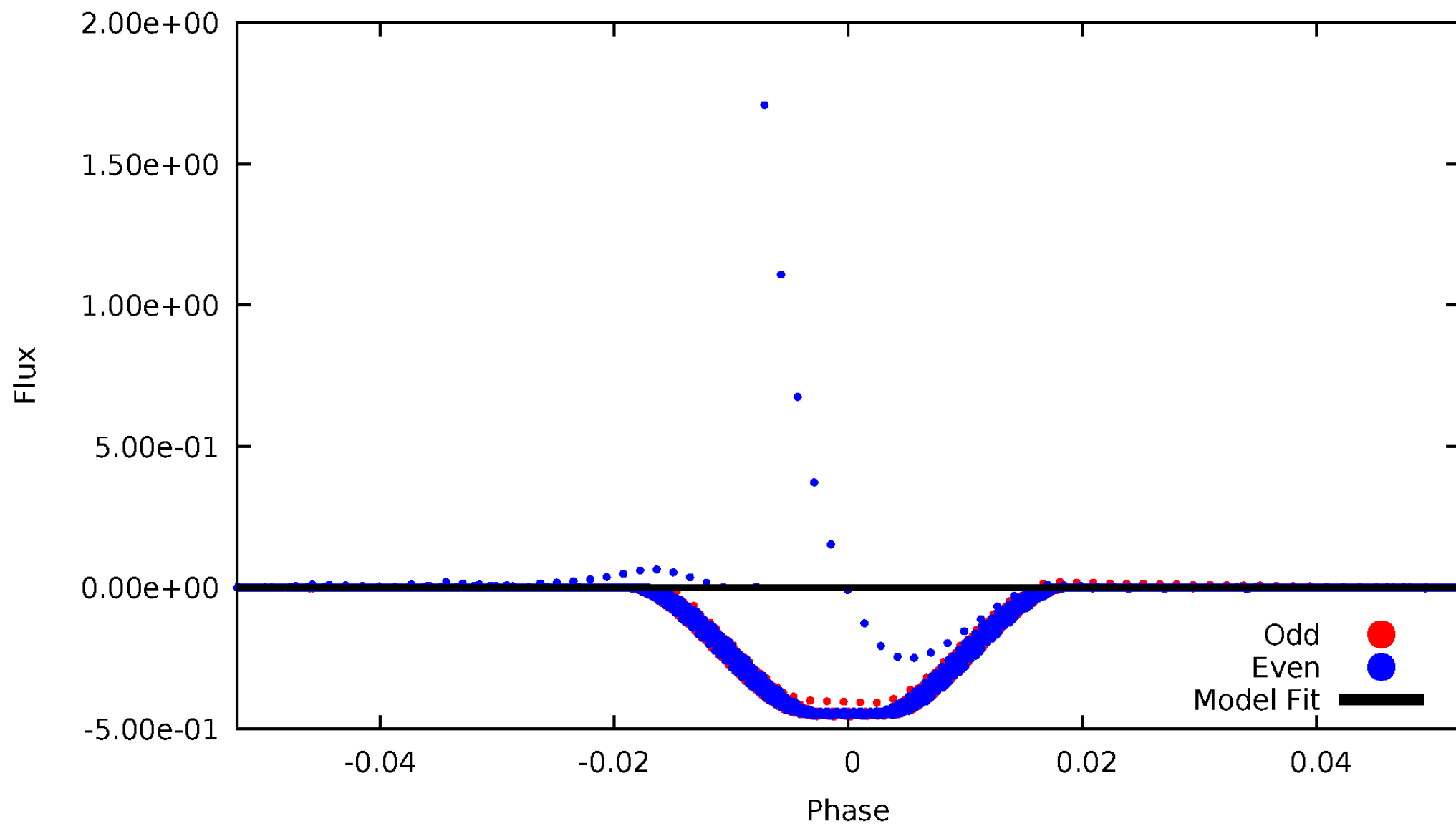


TCE 010936427-01



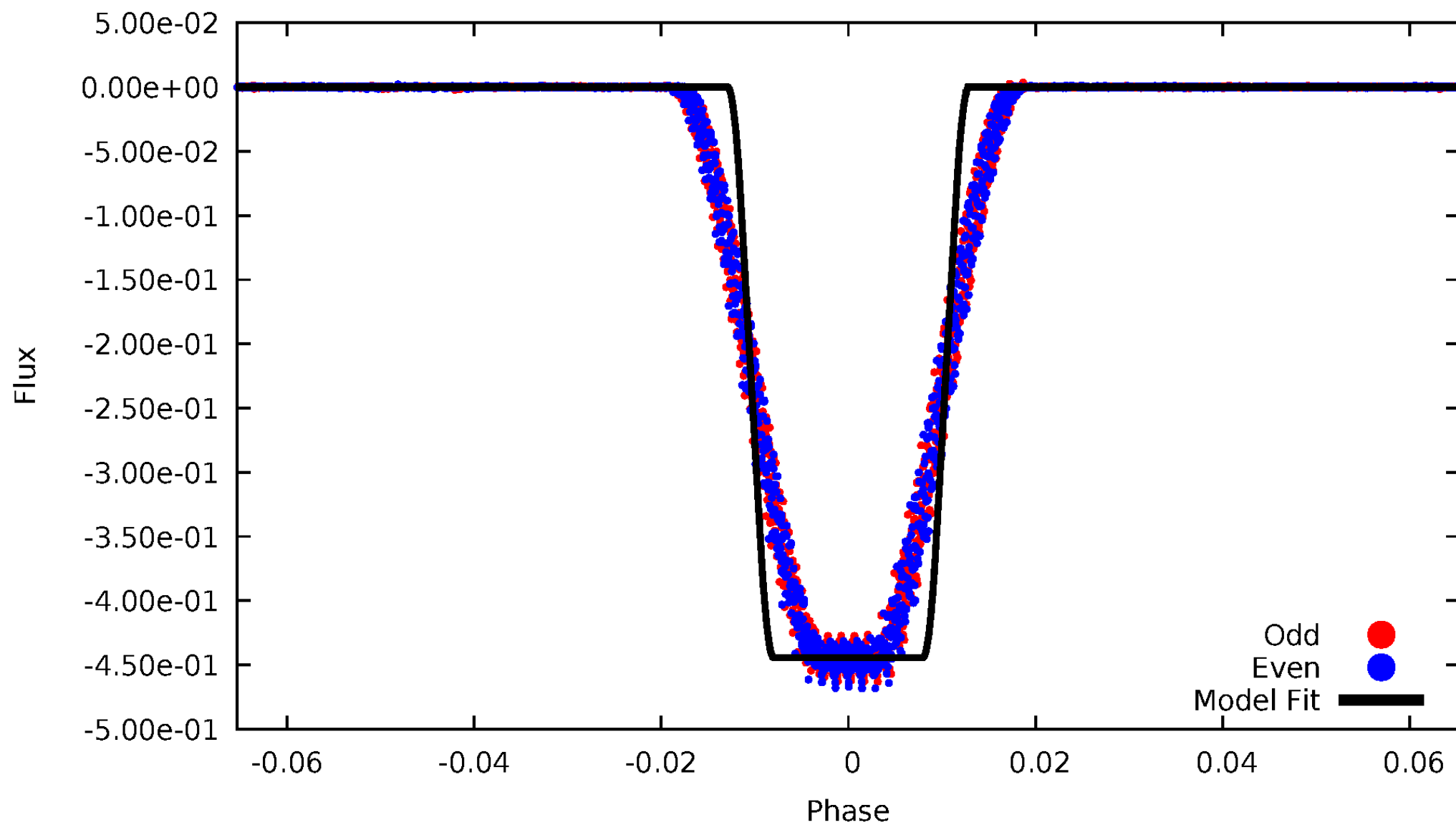
DV Odd/Even

TCE 010936427-01



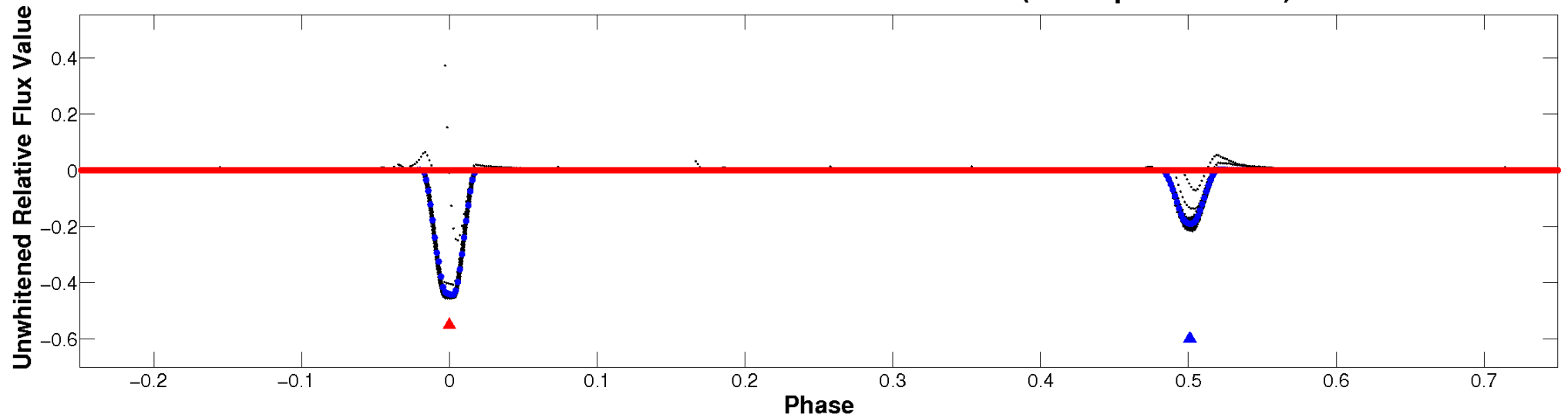
ALT Odd/Even

TCE 010936427-01



Non-Whitened Vs. Whitened Light Curve

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

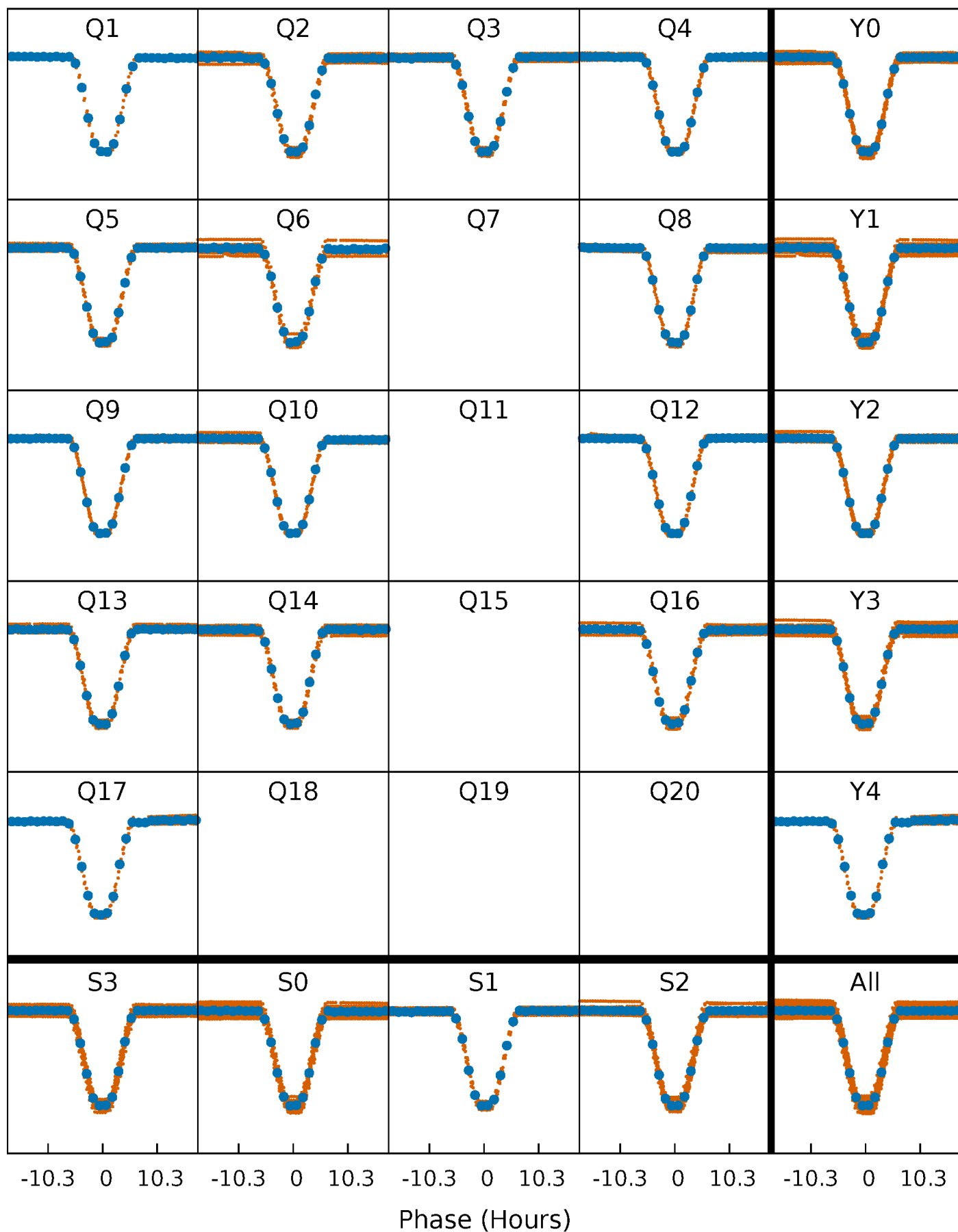


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



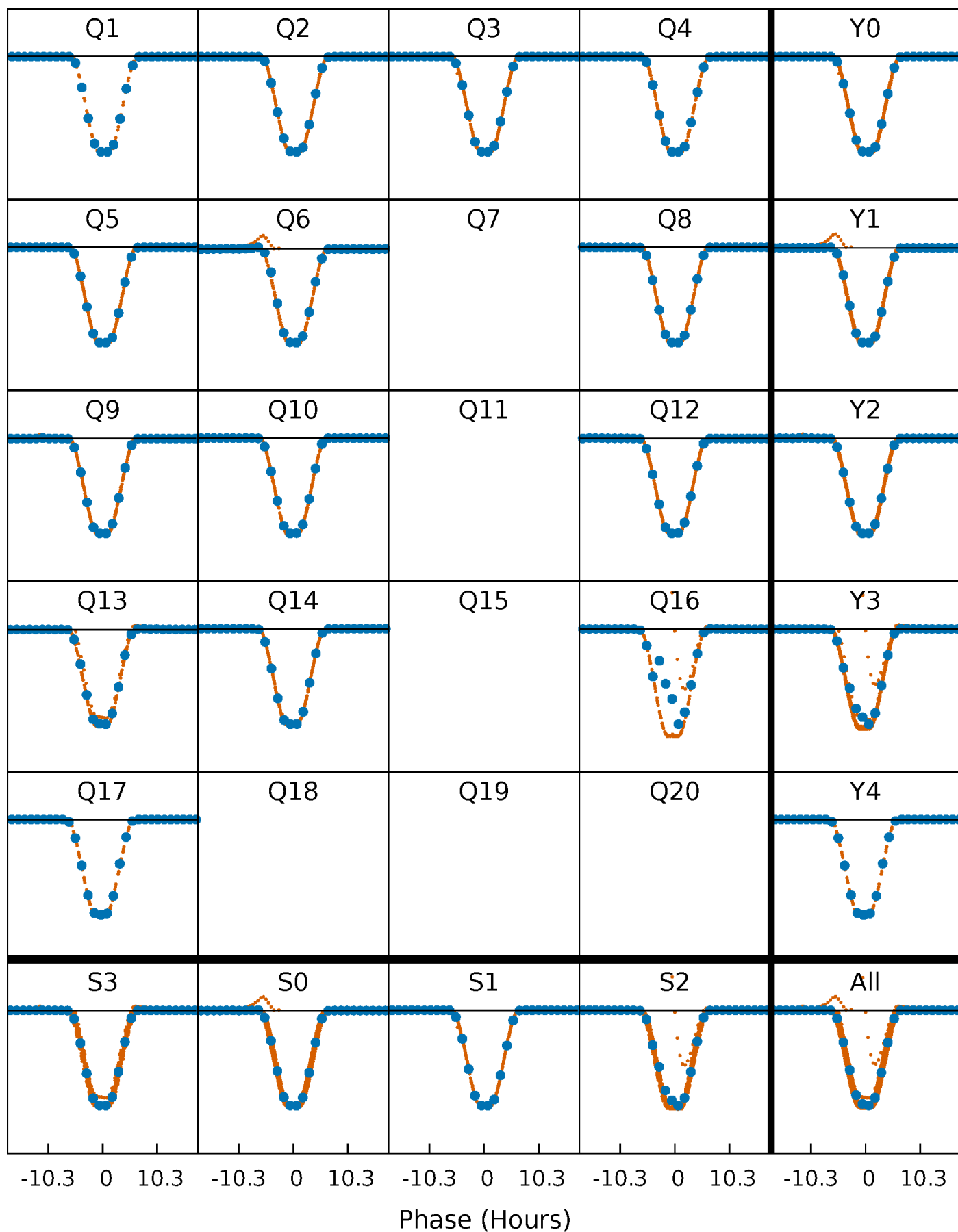
PDC Quarter-Phased Transit Curves

TCE 010936427-01 P= 14.361304 Days $T_0=138.829614$ (BKJD)



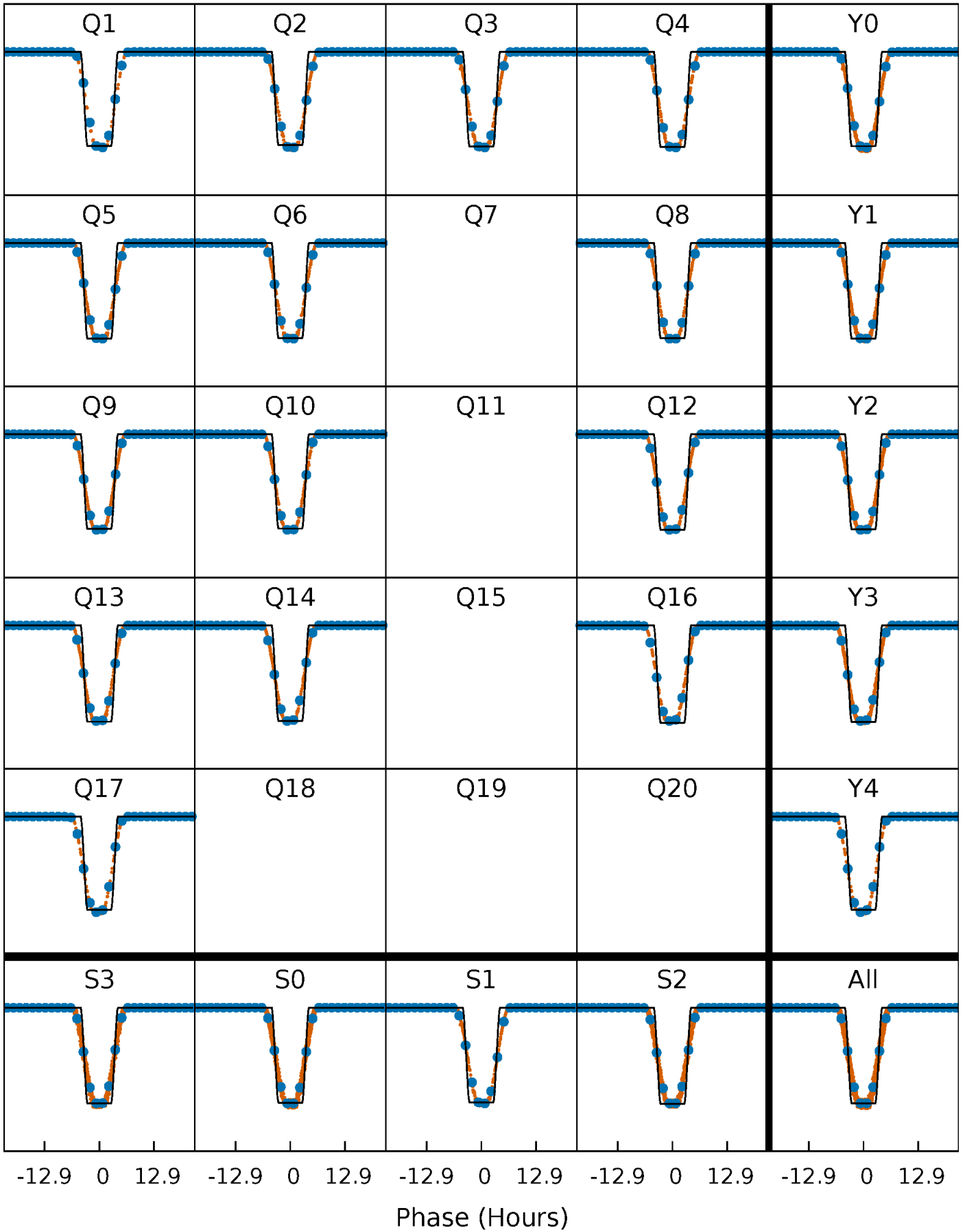
DV Quarter-Phased Transit Curves

TCE 010936427-01 P= 14.361304 Days $T_0=138.829614$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

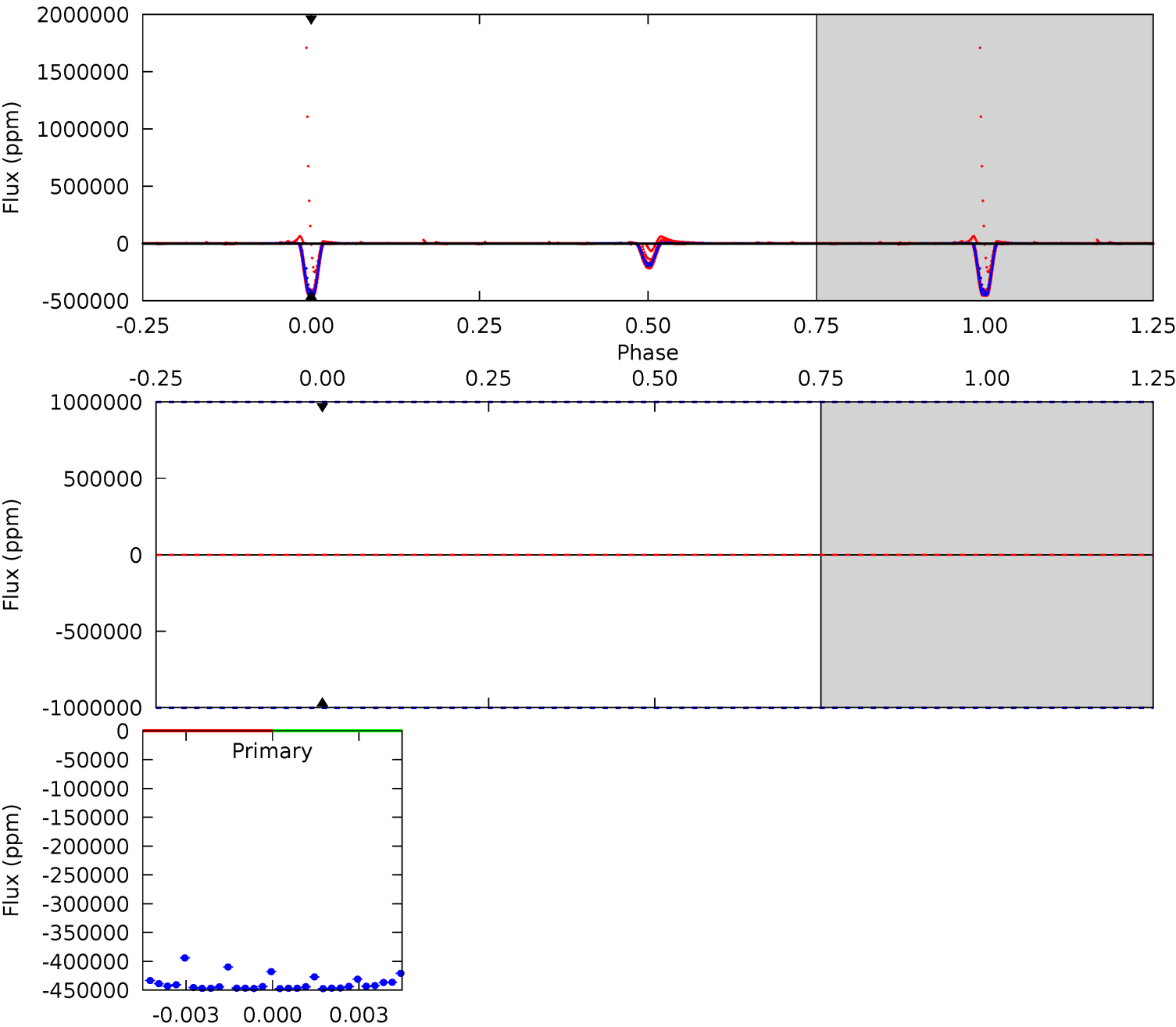
TCE 010936427-01 P= 14.361304 Days $T_0=138.829271$ (BKJD)



DV Model-Shift Uniqueness Test

010936427-01, P = 14.361304 Days, E = 124.468310 Days

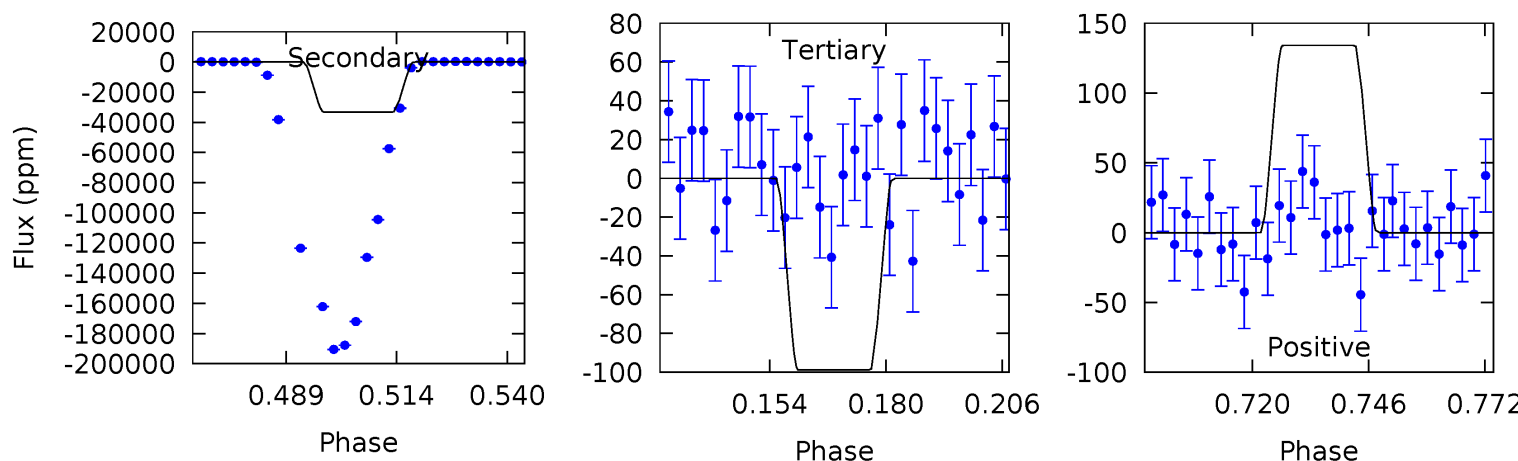
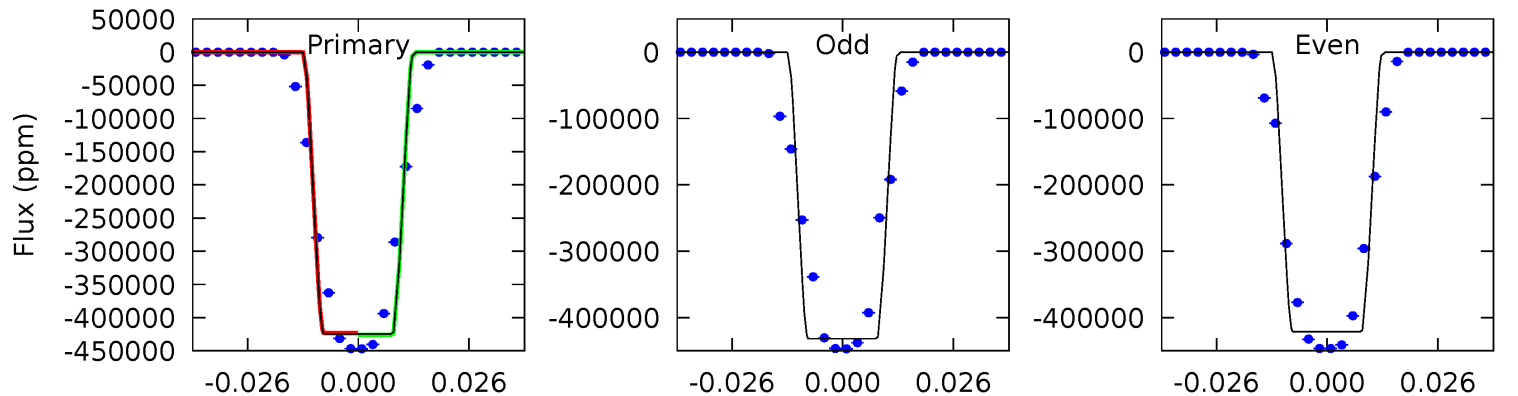
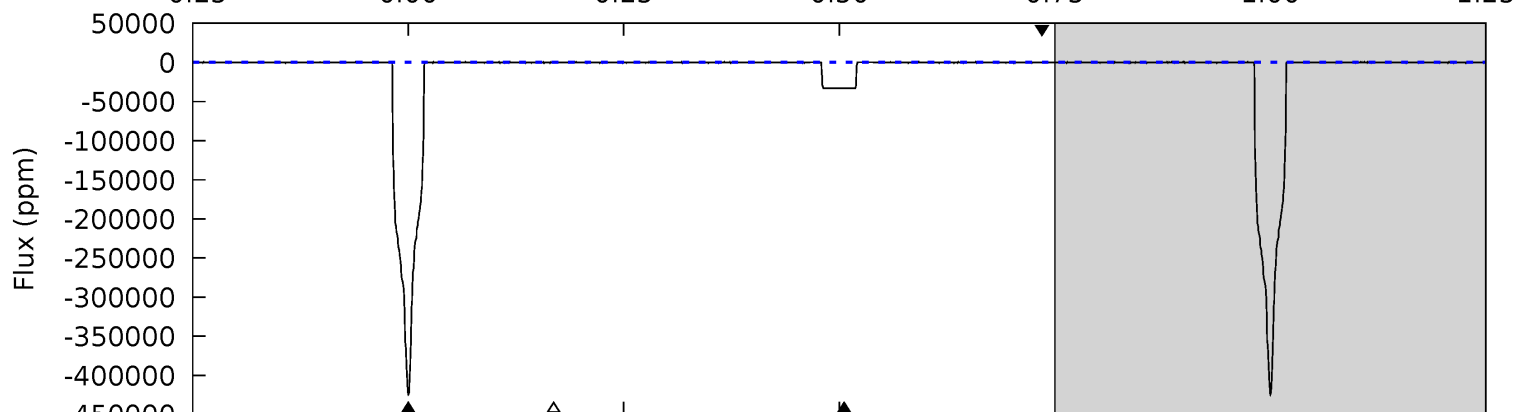
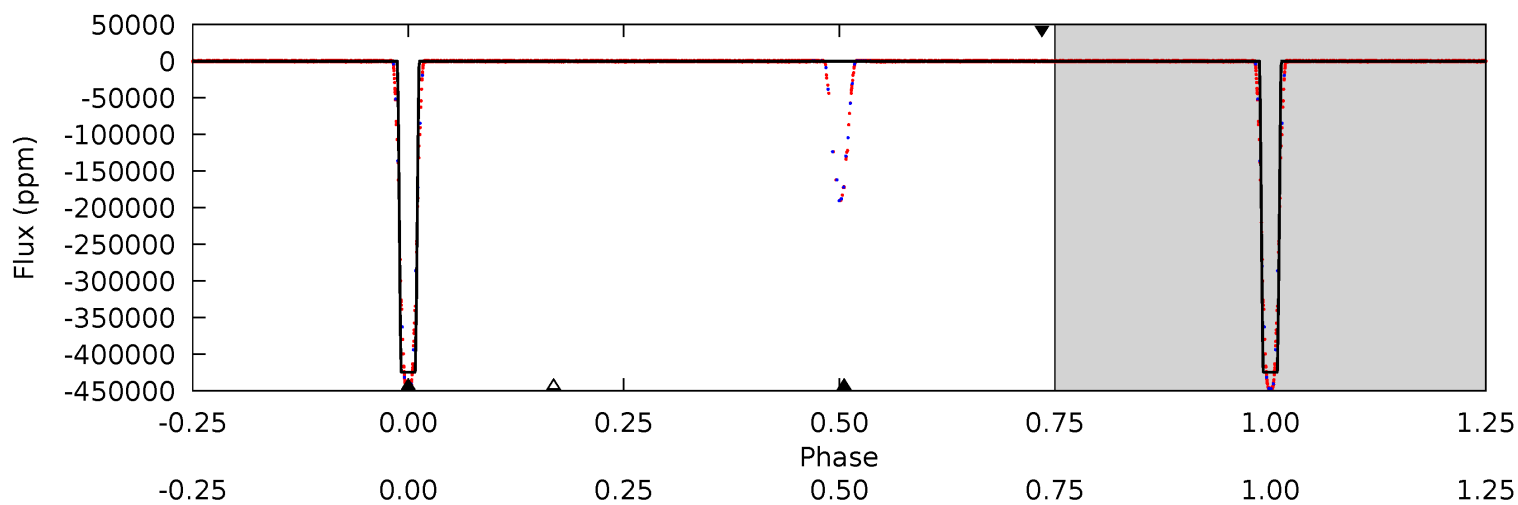
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010936427-01, P = 14.361304 Days, E = 124.467967 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14262	1117	3.32	4.51	4.84	2.23	5.08	14259	14258	1113	1112	81.3	1.00	0.00	0



Stellar Parameters For KIC 010936427

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5229^{+156}_{-140}	$4.607^{+0.072}_{-0.048}$	$-0.740^{+0.300}_{-0.300}$	$0.668^{+0.064}_{-0.057}$	$0.659^{+0.070}_{-0.033}$	$3.110^{+0.895}_{-0.581}$
	+3%/-3%	+2%/-1%	+41%/-41%	+10%/-9%	+11%/-5%	+29%/-19%
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 010936427-01 / KOI 7390.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$28.95^{+7.20}_{-7.64}$	827^{+30}_{-27}	2756^{+2164}_{-7497}	21^{+813}_{-695}
Alt.	-33229 ± 30	$47.81^{+7.84}_{-7.49}$	829^{+29}_{-28}	3303^{+192}_{-146}	85^{+33}_{-22}

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 $A_{obs} \gg 1.0$

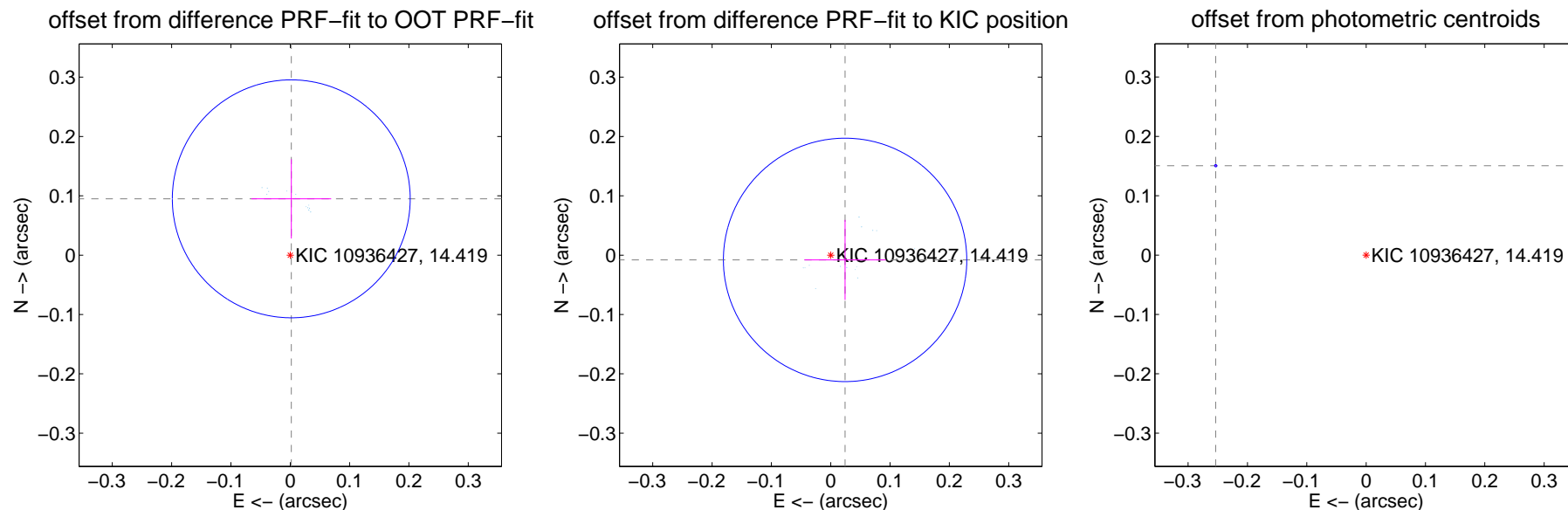
DV Centroid Data

Supplemental centroid analysis for 010936427-01. Kepler magnitude: 14.42. Transit SNR -1.00

There are 14 quarters with good PRF difference image offsets

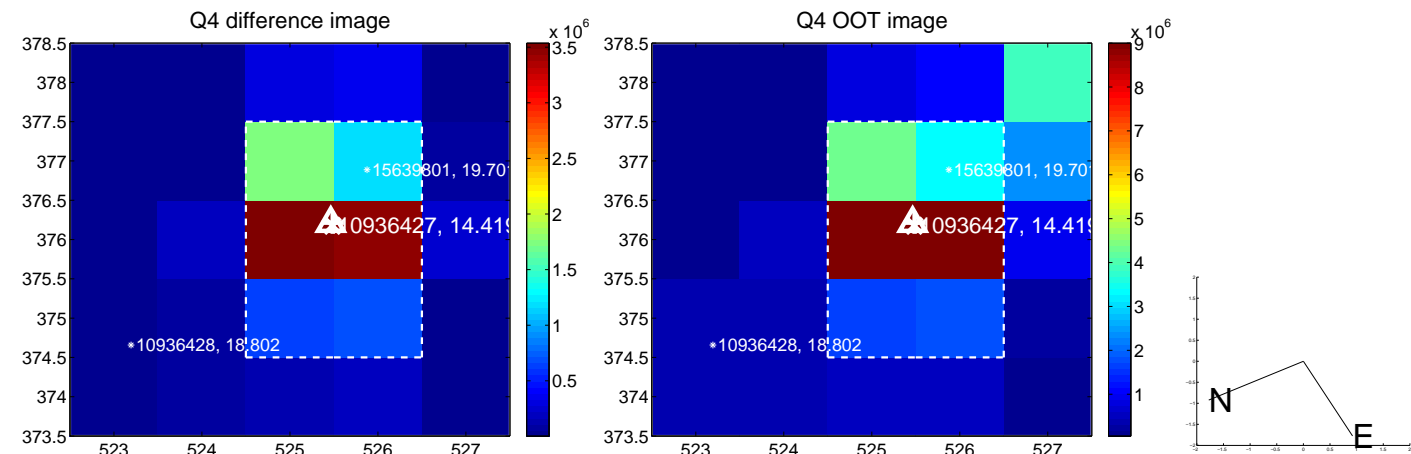
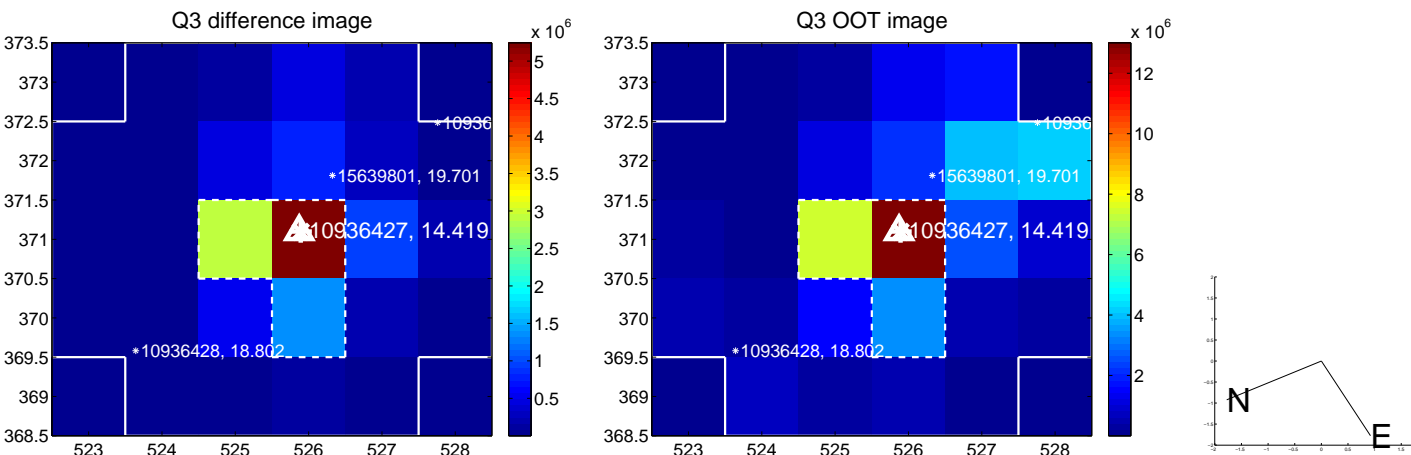
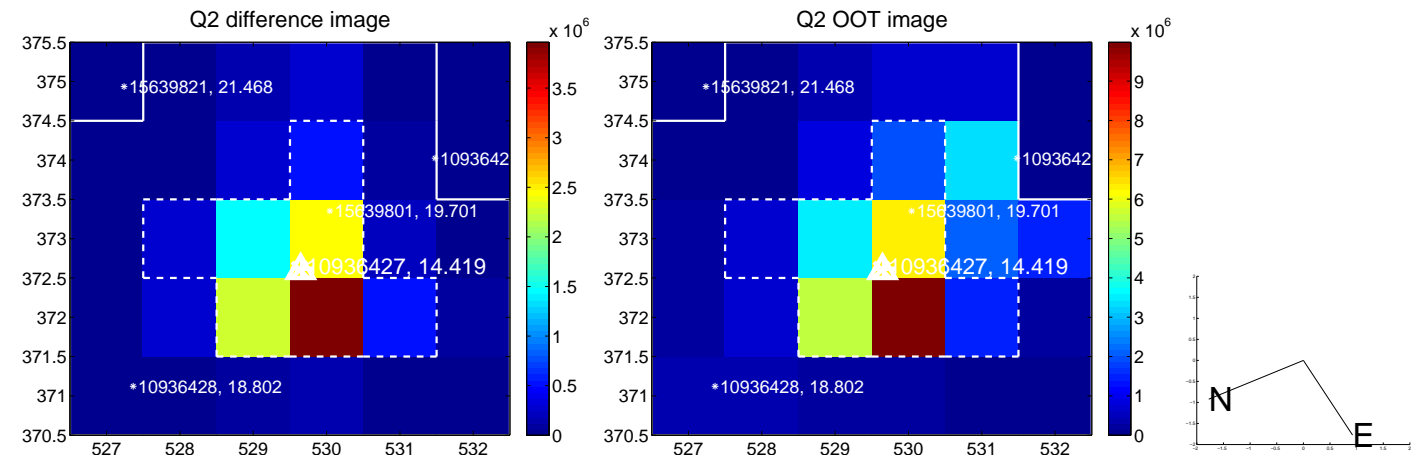
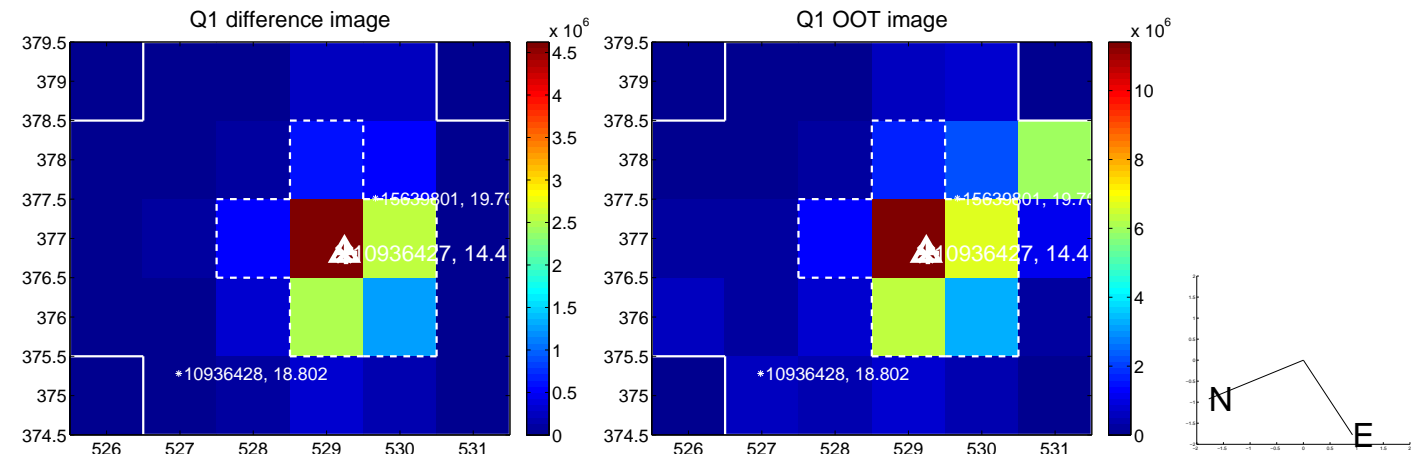
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.095 ± 0.067	1.42	-0.002 ± 0.067	0.095 ± 0.067
PRF-fit source offset from KIC position	0.026 ± 0.068	0.37	-0.024 ± 0.068	-0.008 ± 0.067
photometric centroid source offset	0.29 ± 0.00	457.92	0.25 ± 0.00	0.15 ± 0.00

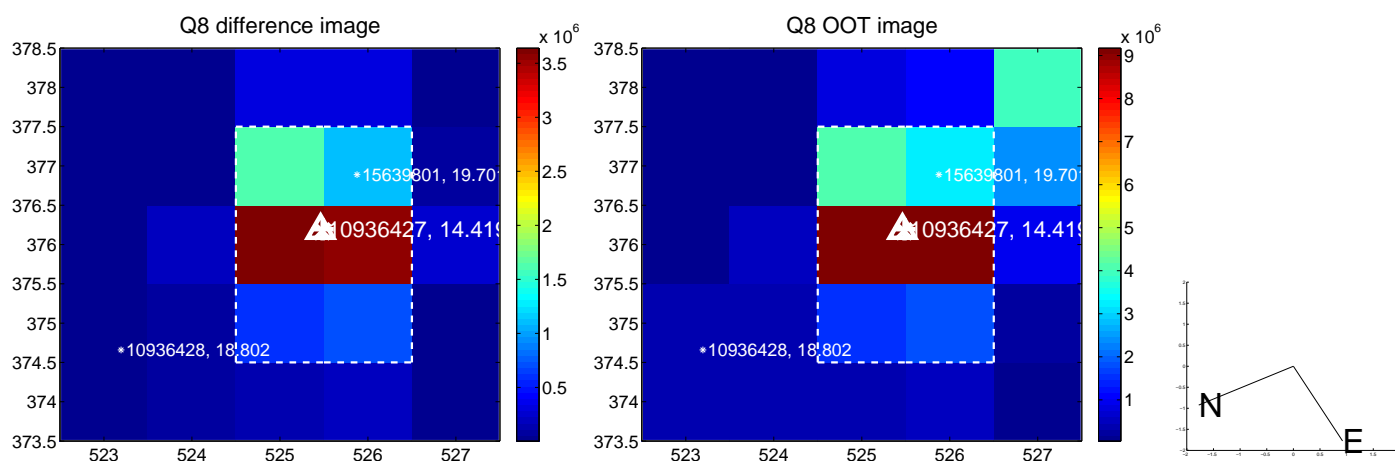
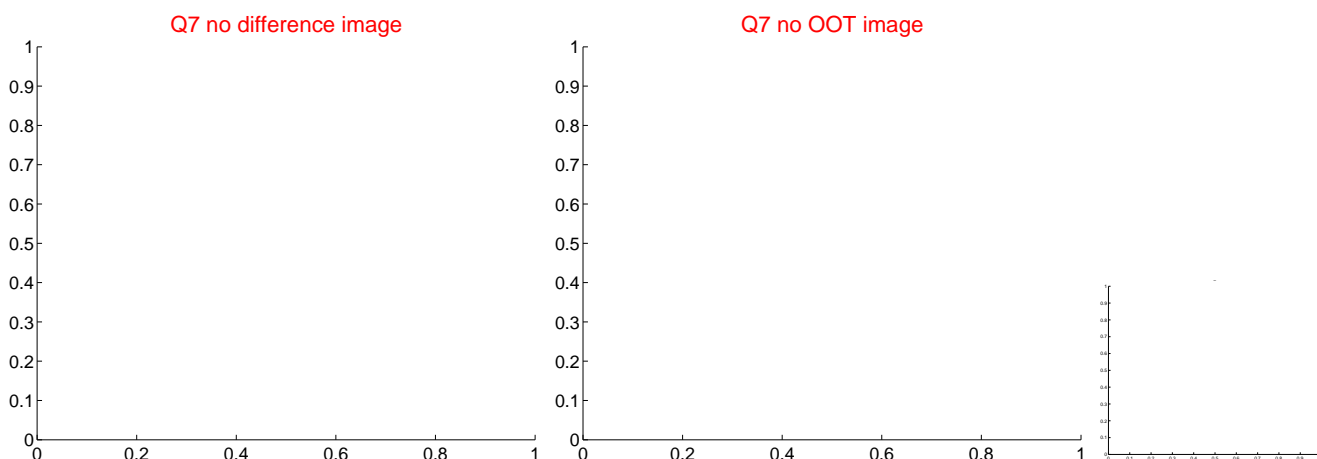
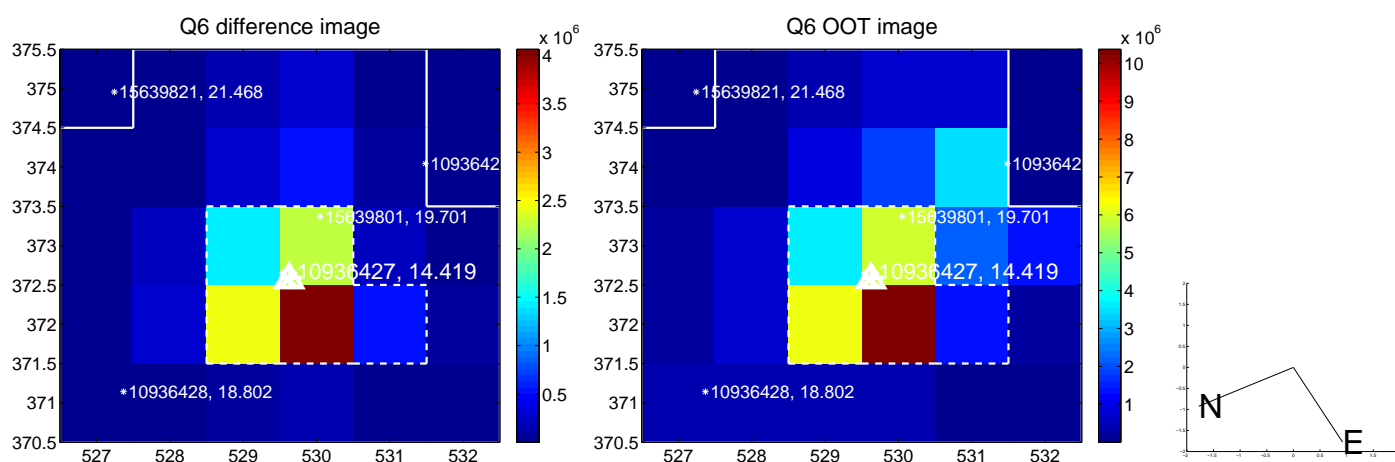
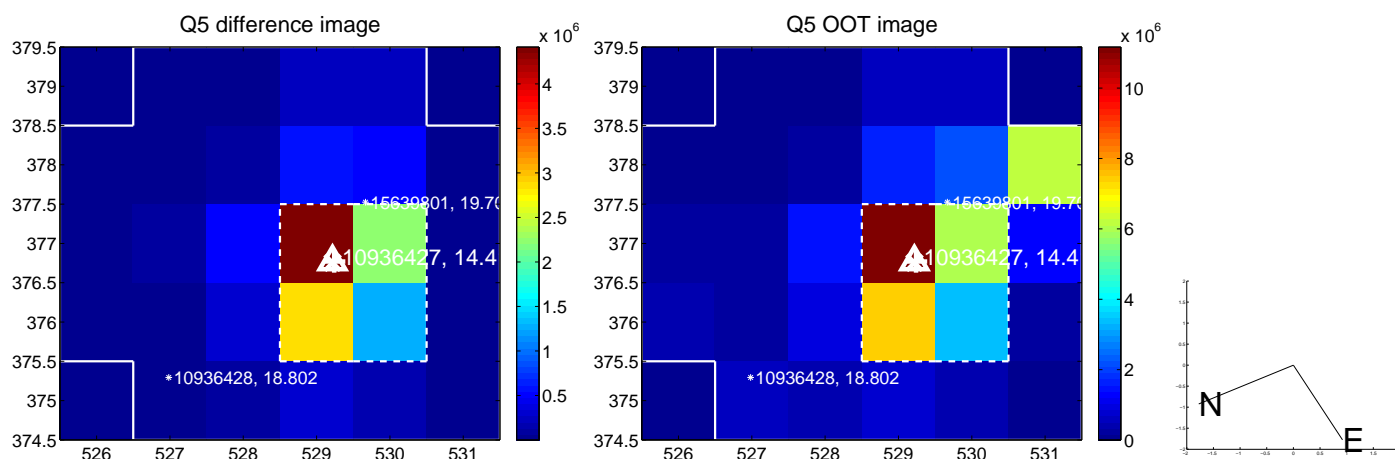


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

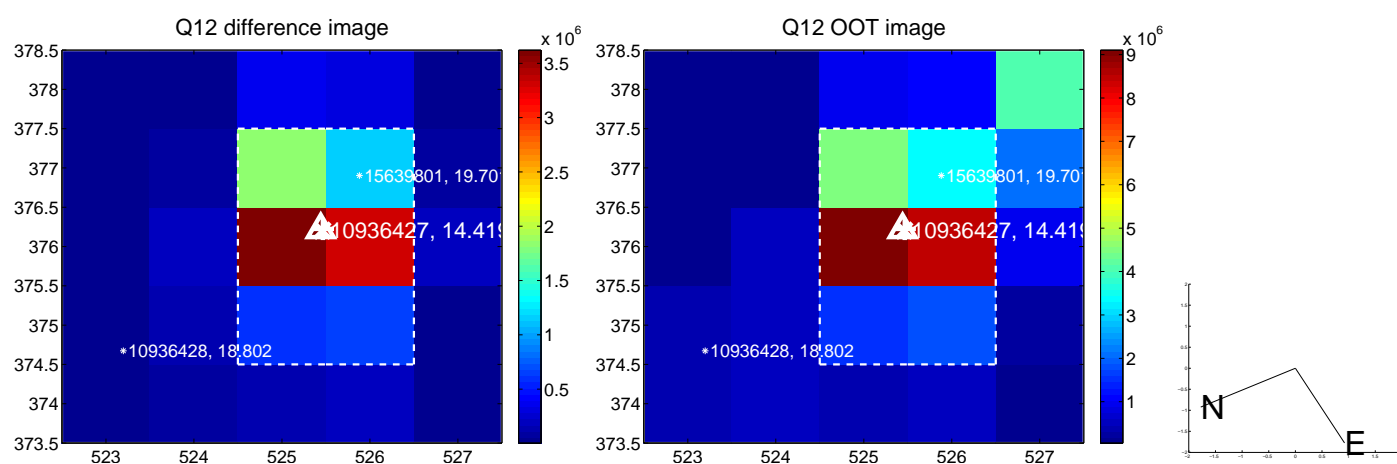
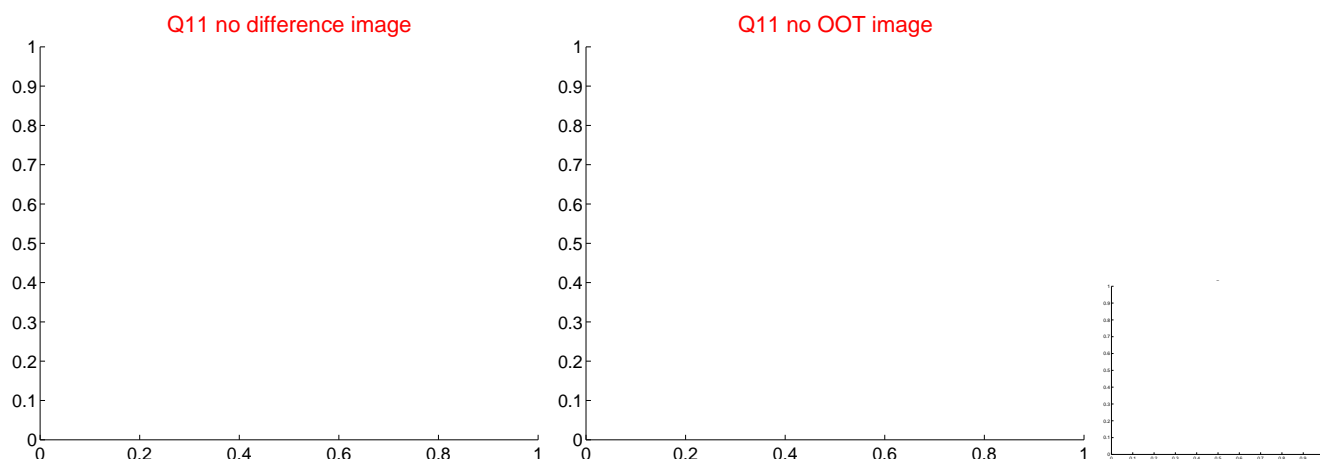
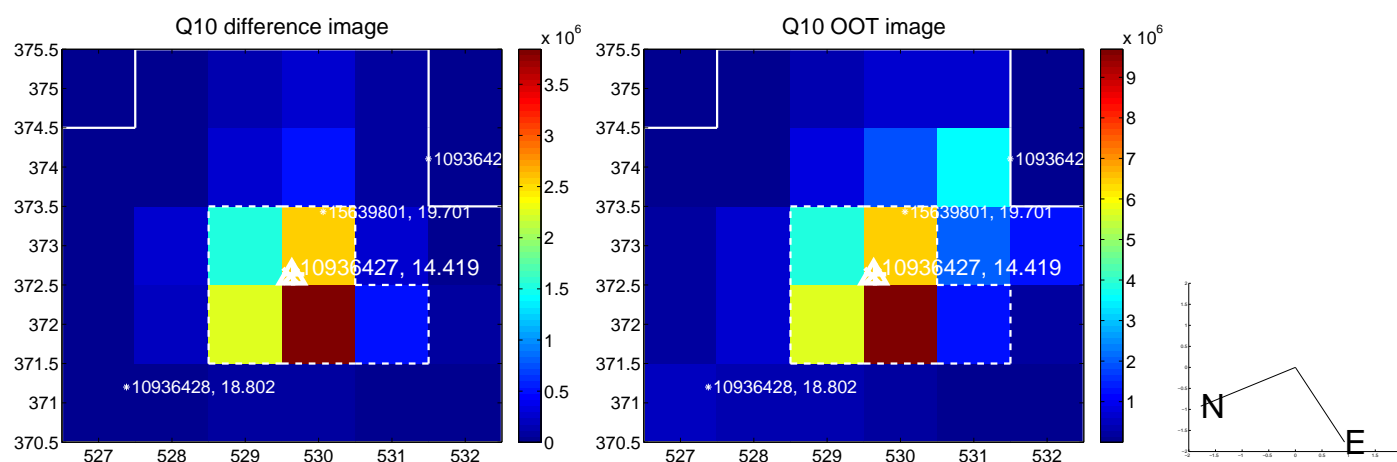
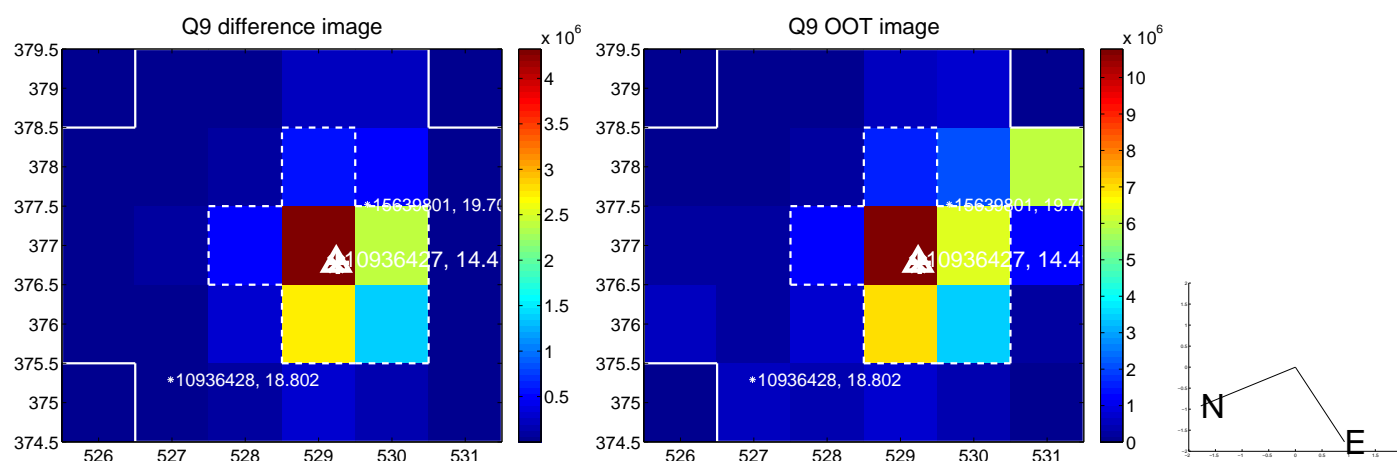
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



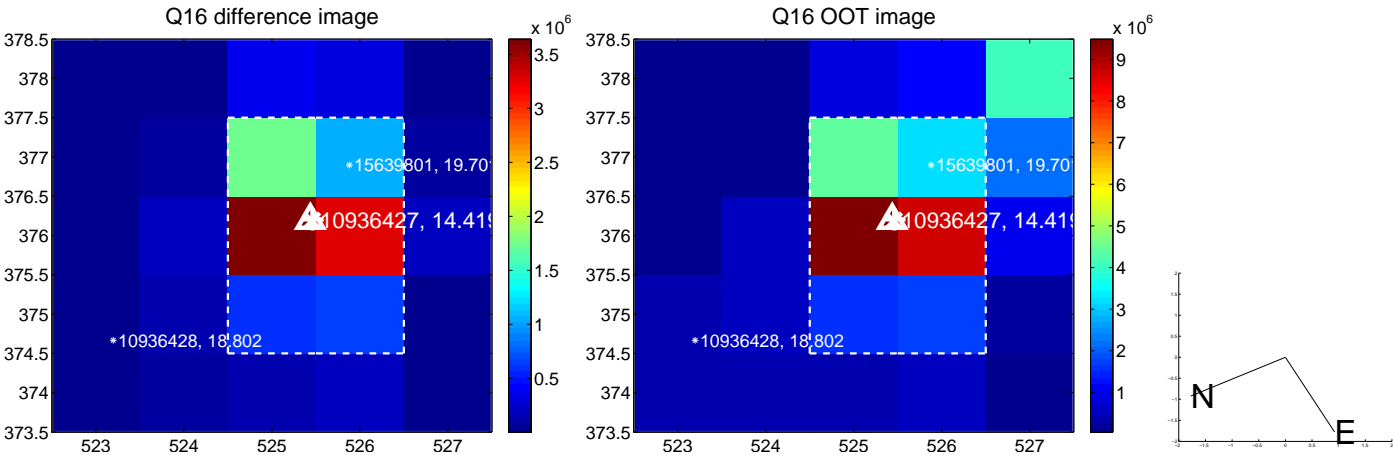
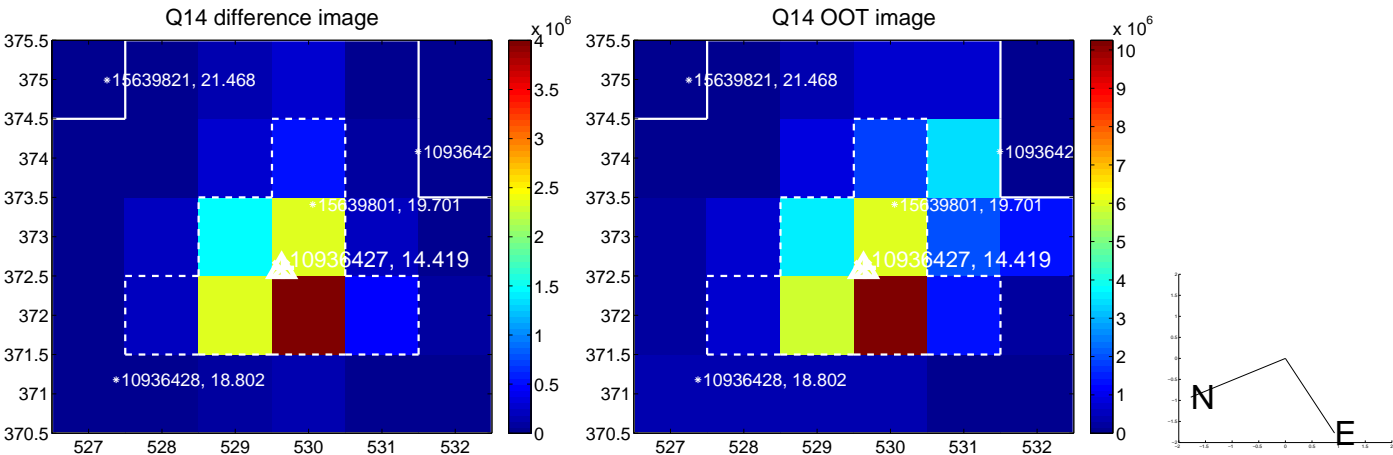
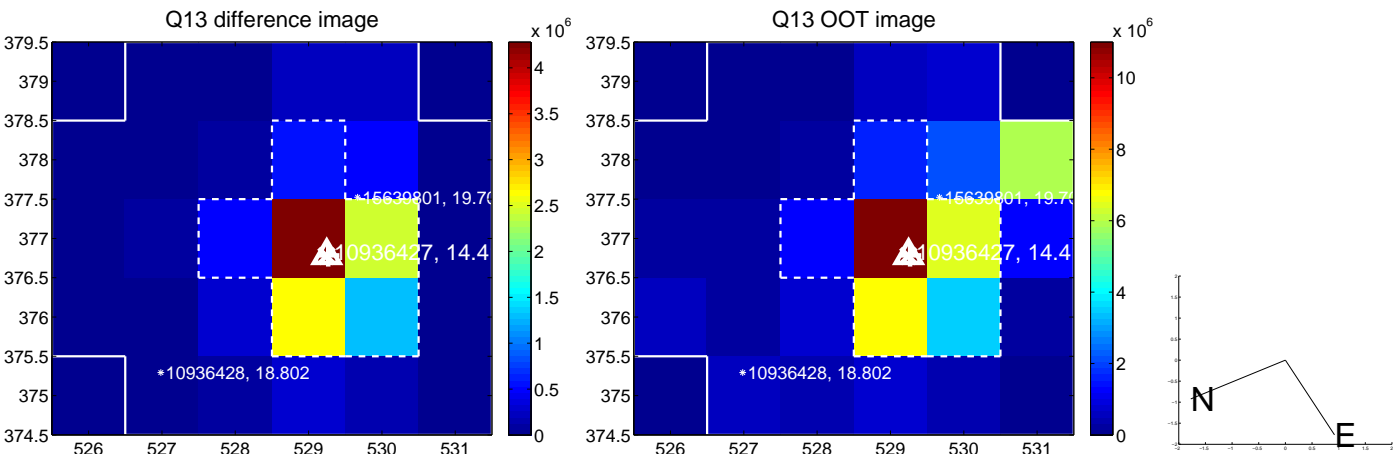
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



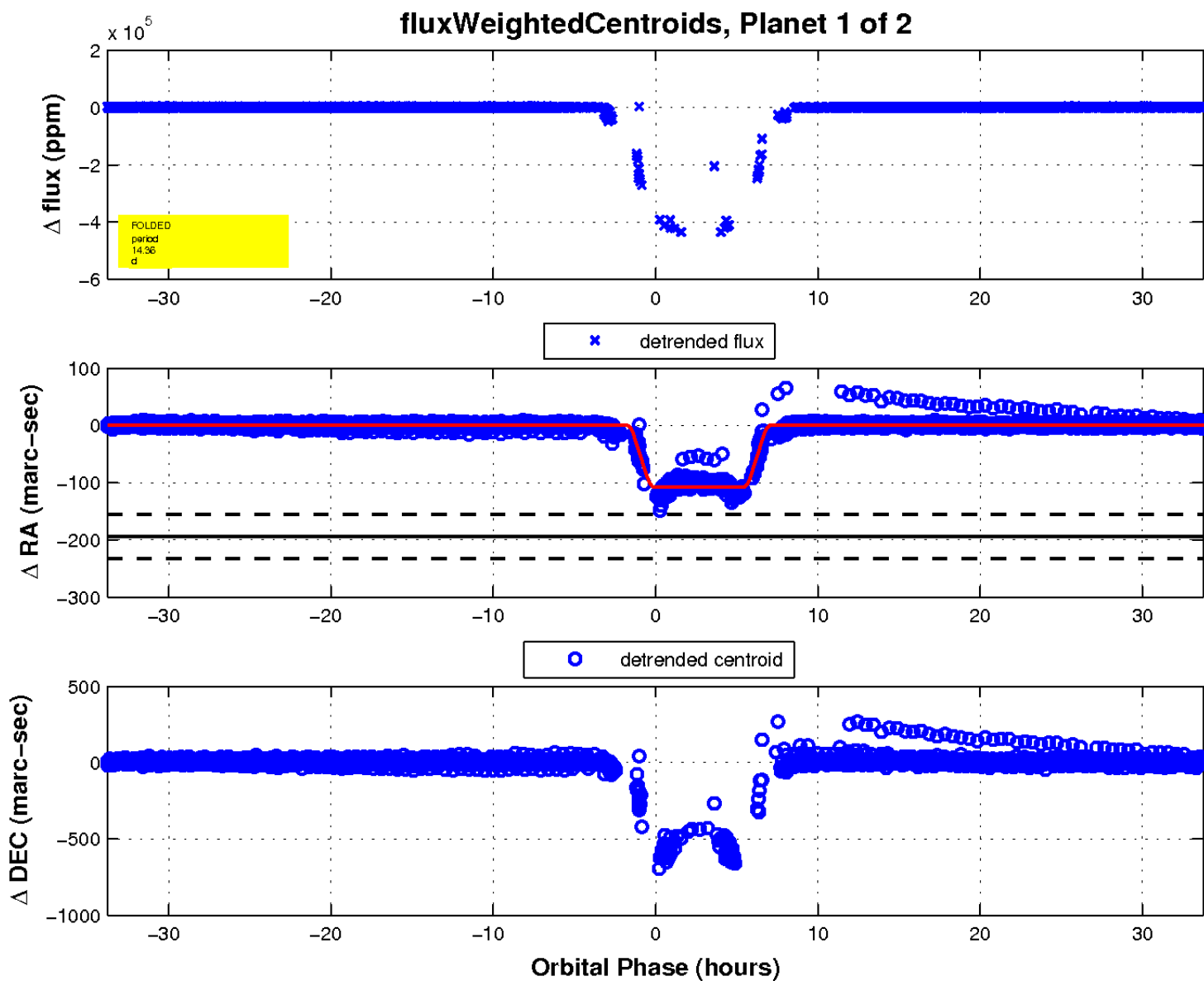
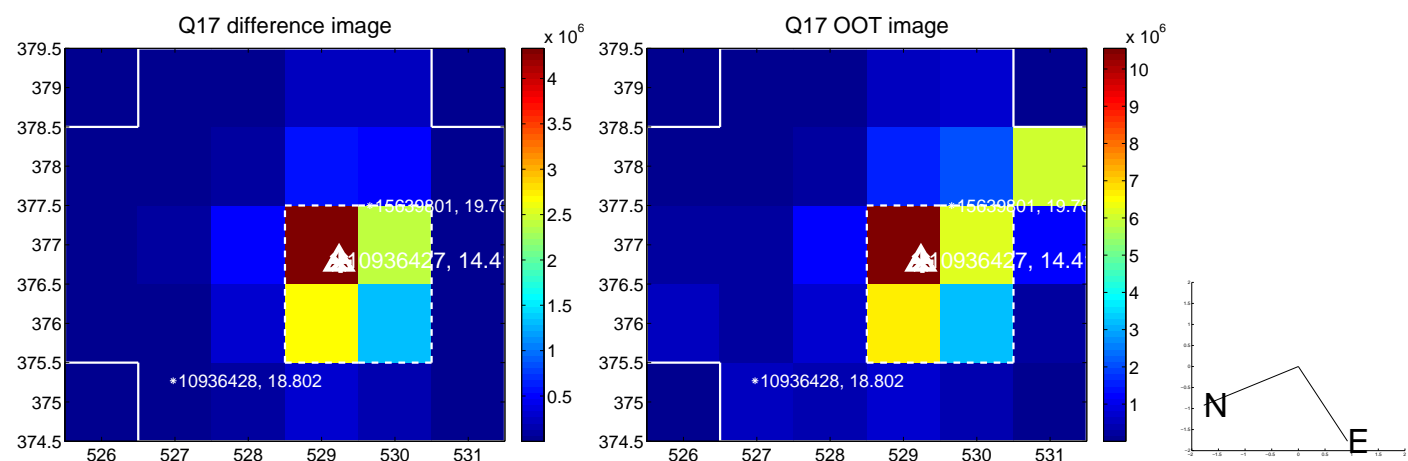
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



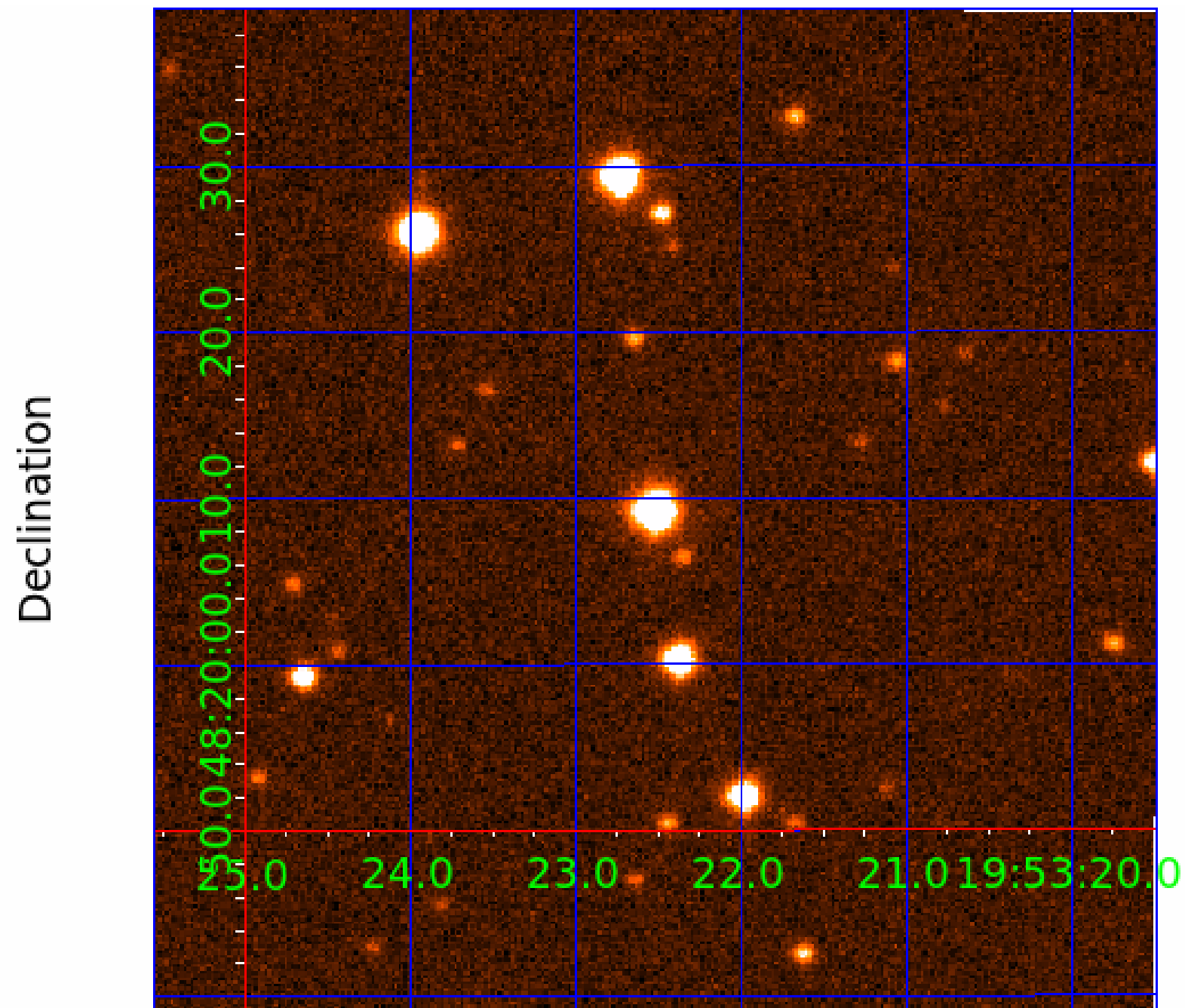
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 010936427

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})
010936427-01	OBS	7390.01	14.361304	138.829614	456976.8	9.000	17068.8	-1.0	0.67	5229	28.99	29.52
010936427-02	OBS	No	14.361228	131.667651	93762.4	7.500	6979.2	-1.0	0.67	5229	20.26	29.52

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010936427-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—MOD_ODDEVEN_ALT—HAS_SEC_TCE—CENT_NOFITS
010936427-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

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.

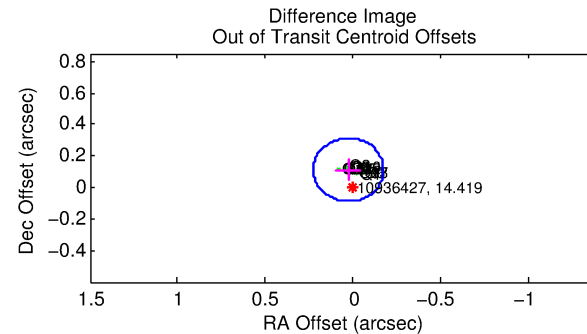
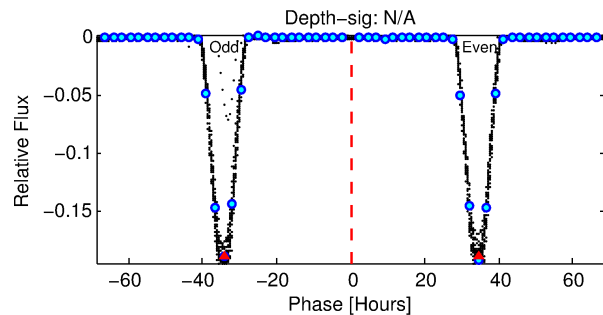
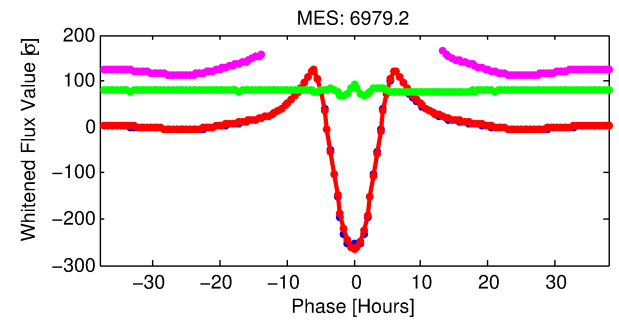
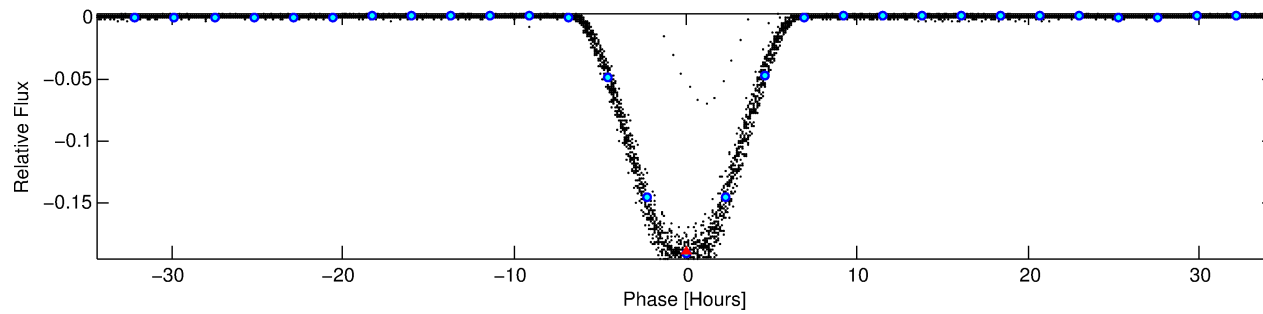
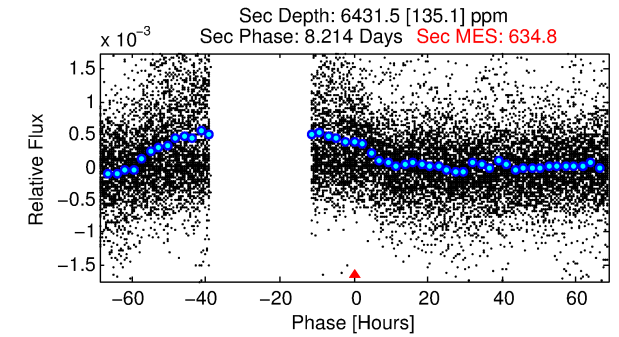
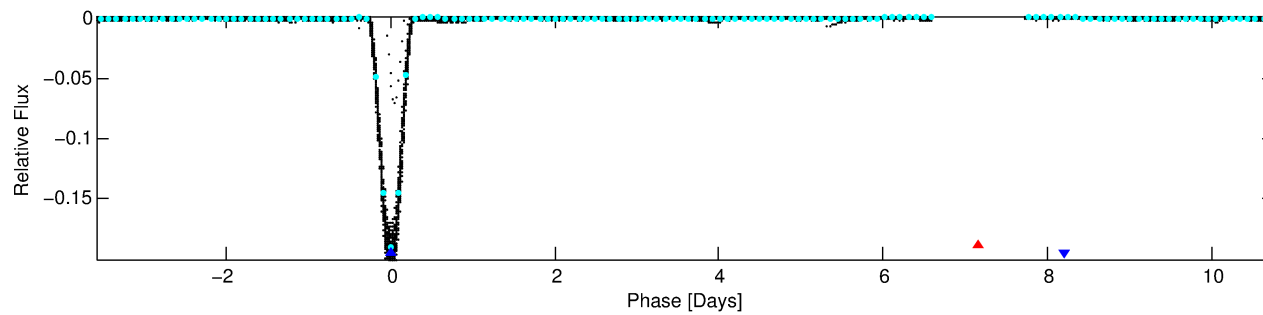
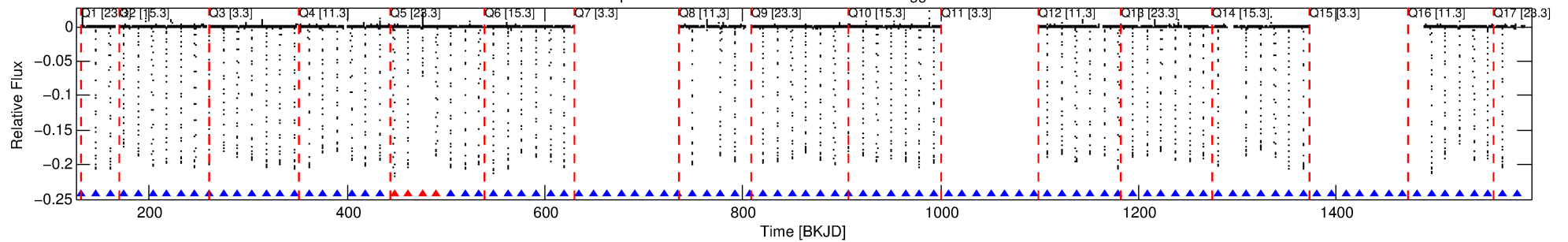
Ephemeris Match Information For 010936427-02

No Significant Match Found

DV One-Page Summary

KIC: 10936427 Candidate: 2 of 2 Period: 14.361 d
KOI: K07390 Corr: No Ephemeris Match

Kp: 14.42 R*: 0.67 Rs Teff: 5229.0 K Logg: 4.61 Fe/H: -0.740



TPS TCE Results:

Period = 14.36123 d
Epoch = 131.6677 BKJD

DV fit results are unavailable

DV Diagnostic Results:

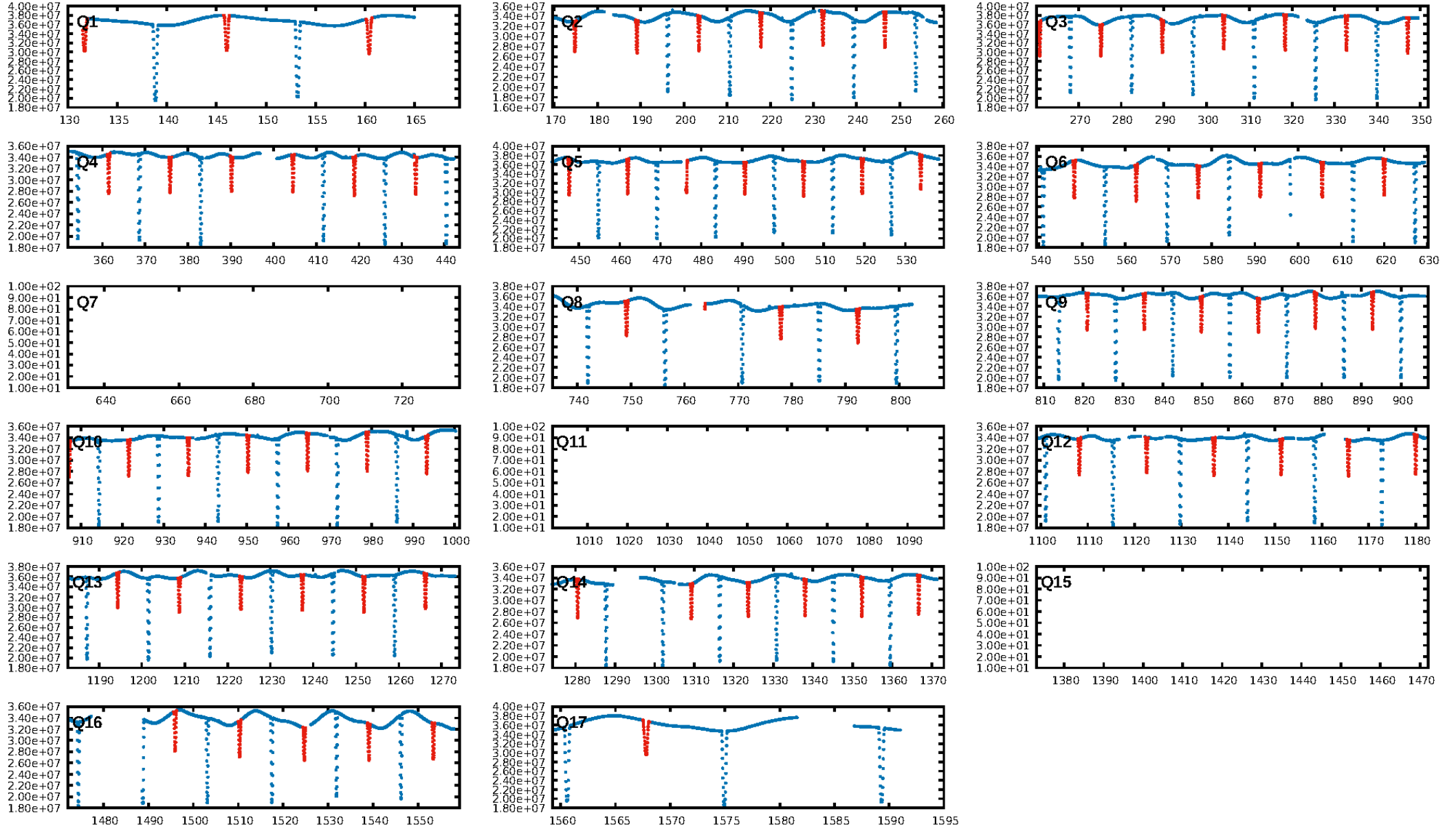
ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.94 [68/72]
GhostDiagnostic-chr: 0.5366

Centroid-sig: N/A
Centroid-so: 0.266 arcsec [192.40σ]
OotOffset-rm: 0.116 arcsec [1.73σ]
KicOffset-rm: 0.015 arcsec [0.22σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
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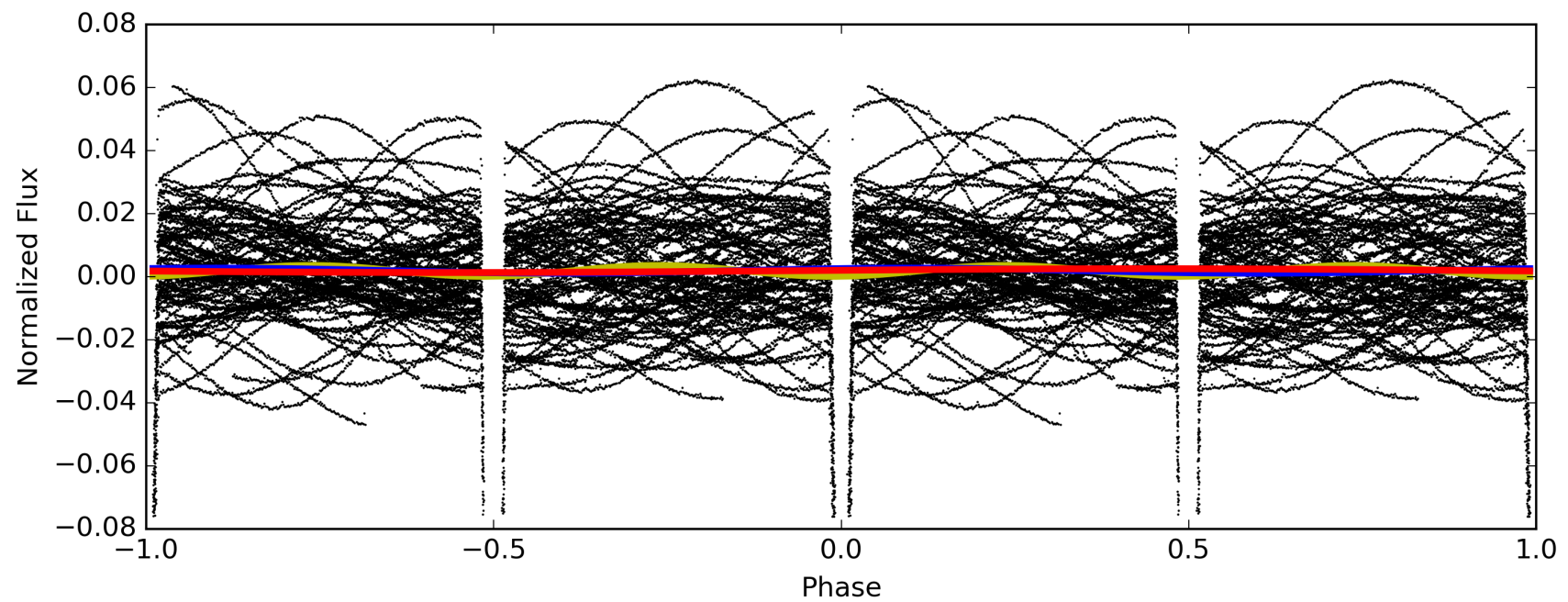
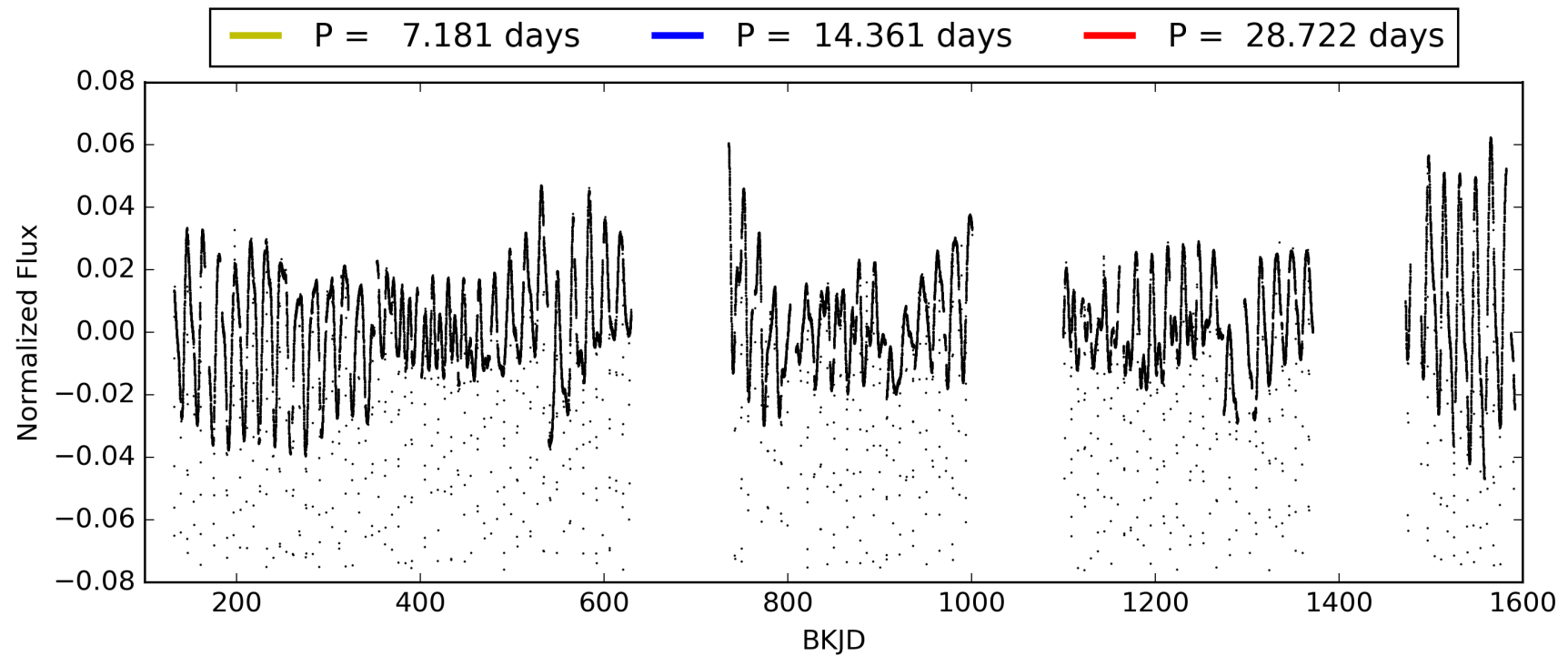
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:21:24 Z

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

TCE 010936427-02, PDC Light Curves

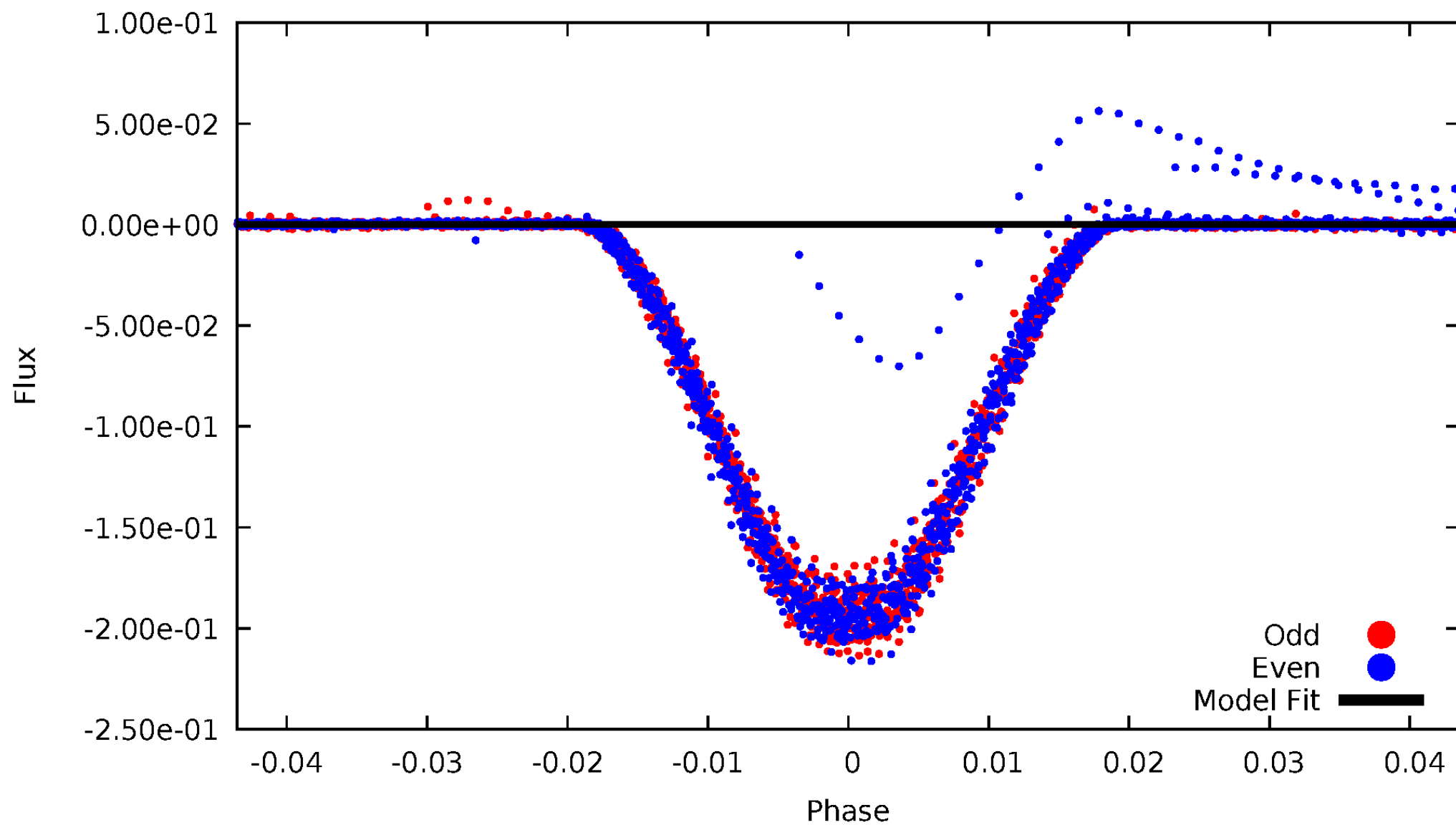


TCE 010936427-02



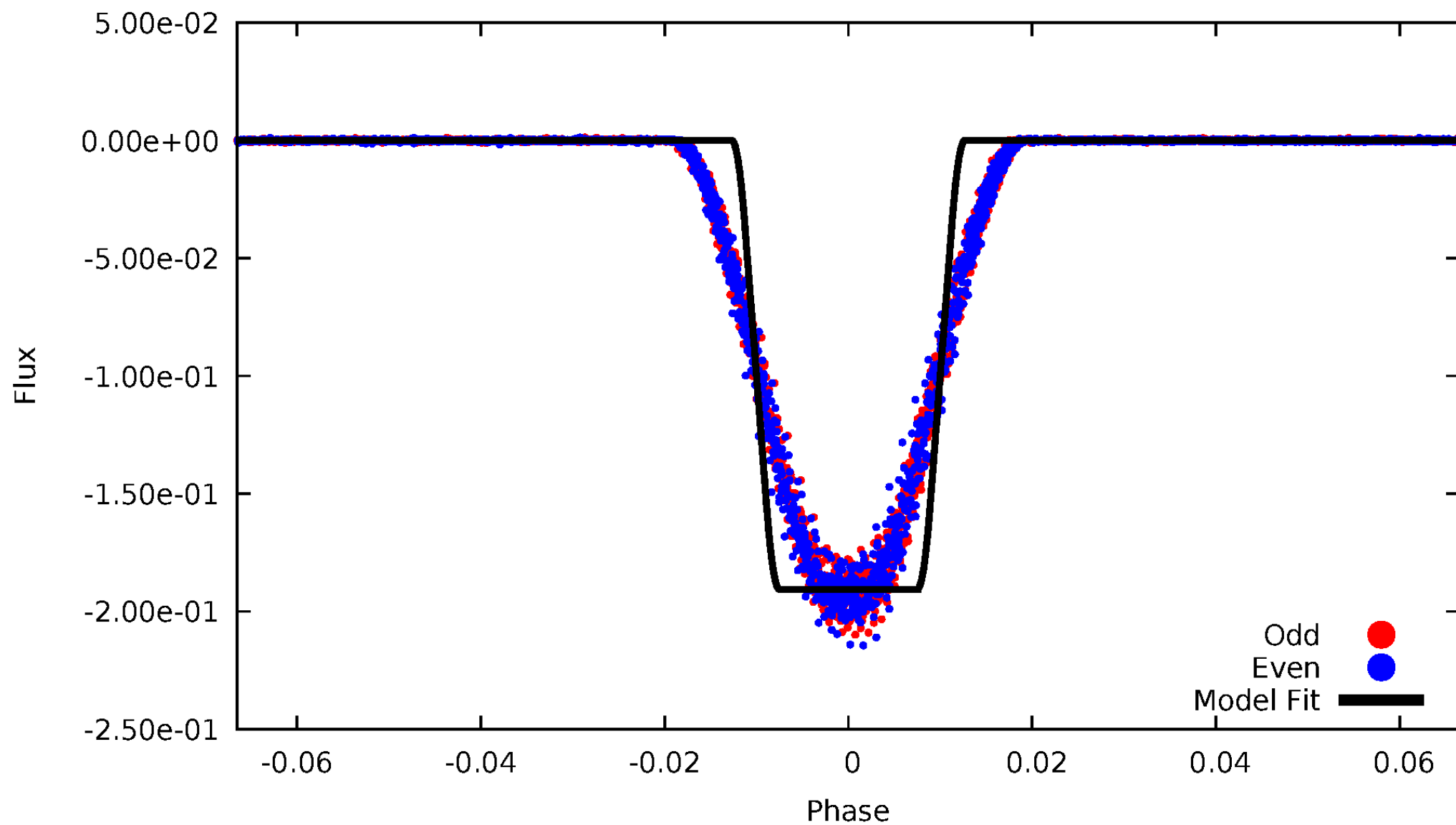
DV Odd/Even

TCE 010936427-02



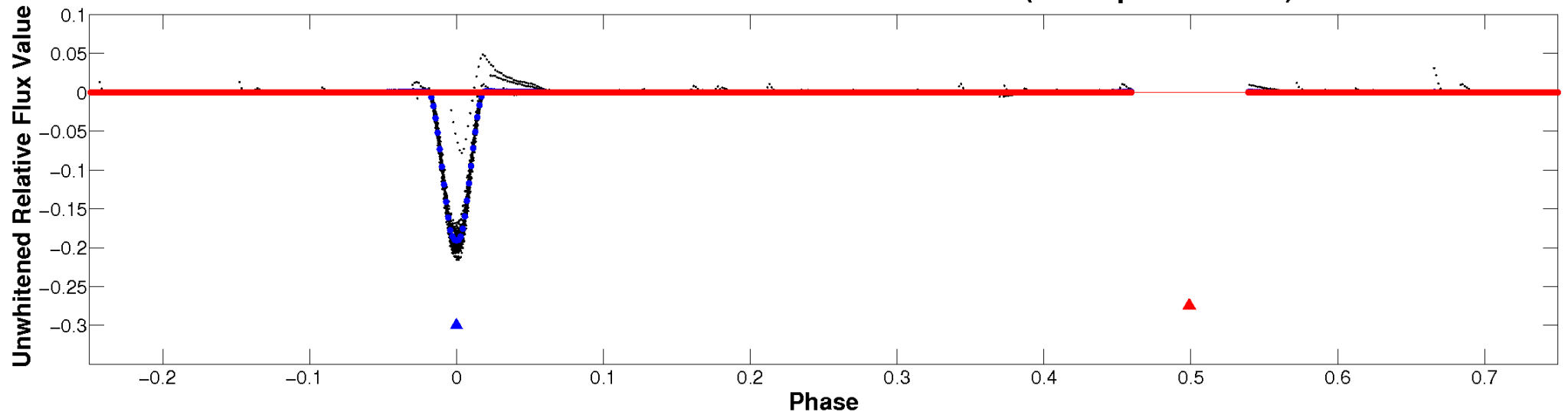
ALT Odd/Even

TCE 010936427-02

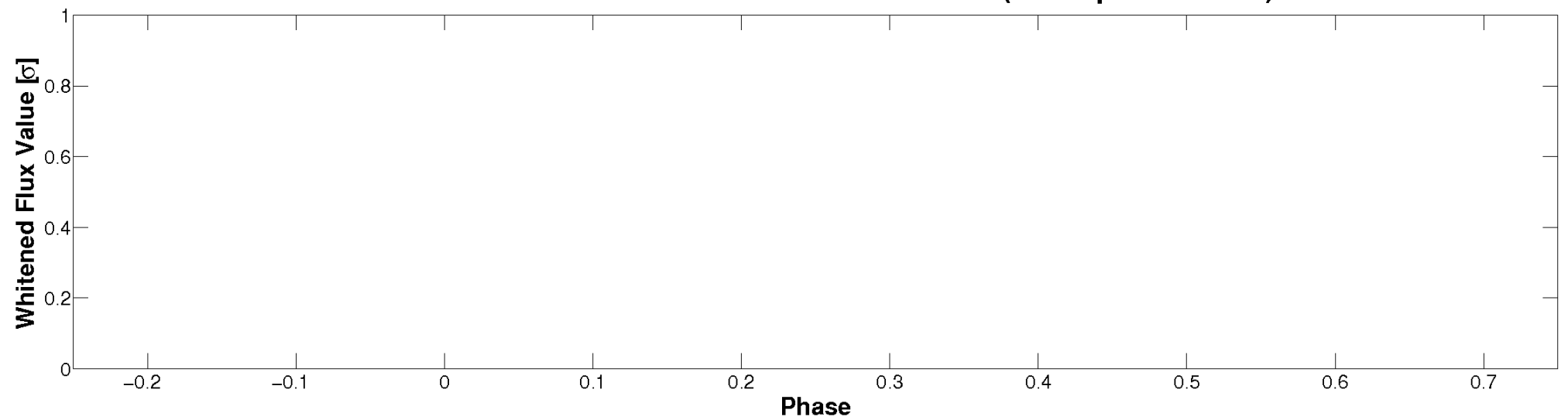


Non-Whitened Vs. Whitened Light Curve

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

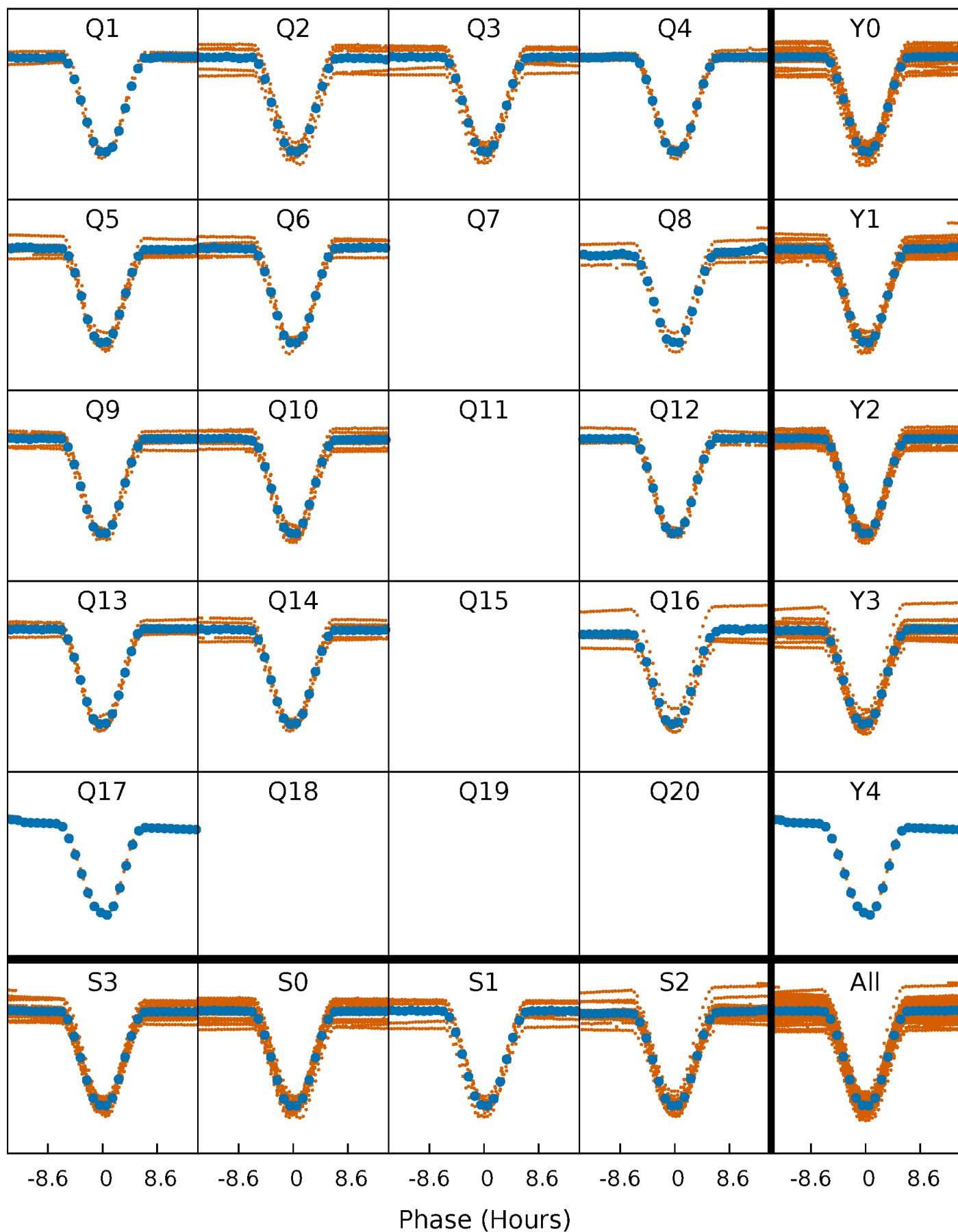


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



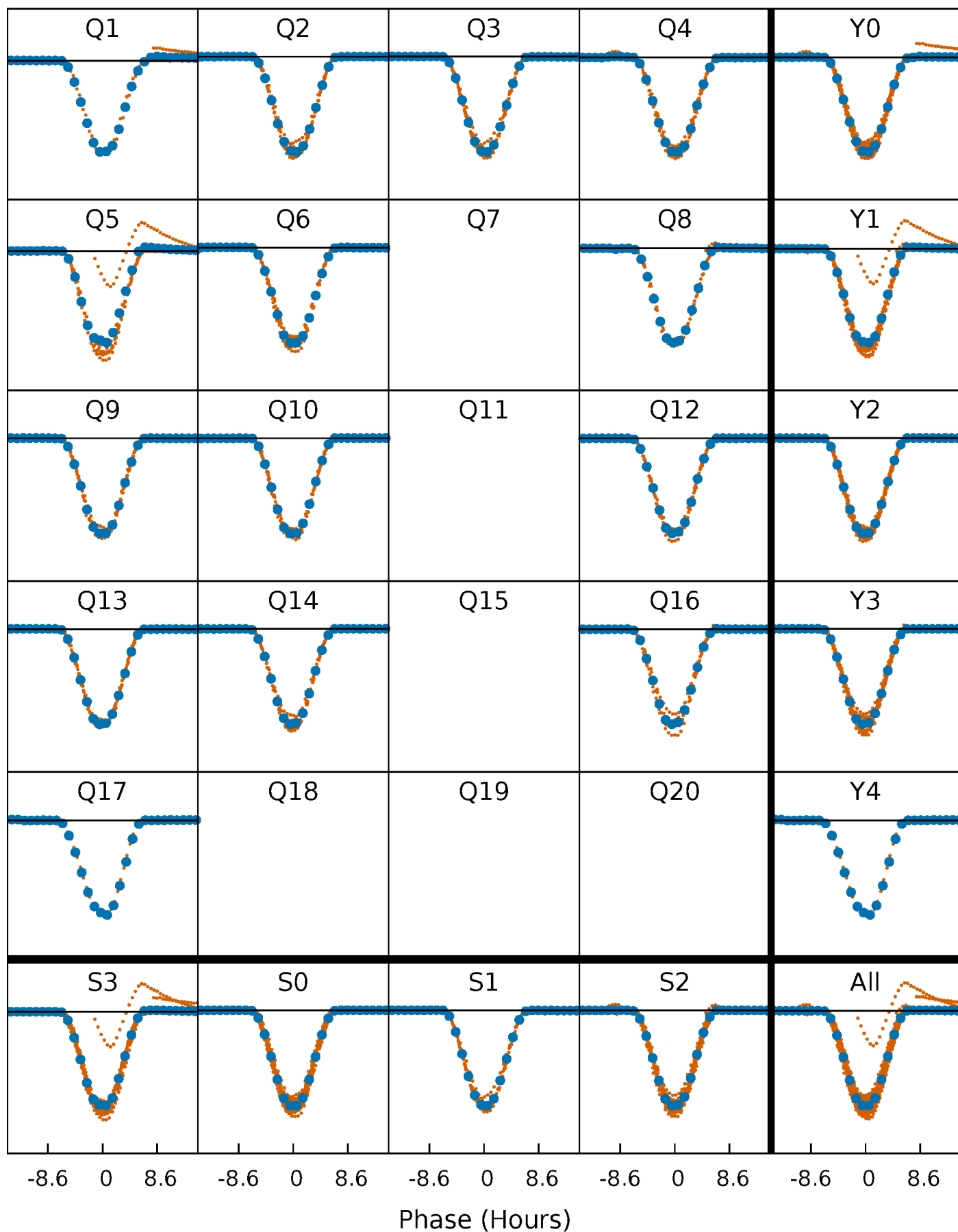
PDC Quarter-Phased Transit Curves

TCE 010936427-02 P= 14.361228 Days $T_0=131.667651$ (BKJD)



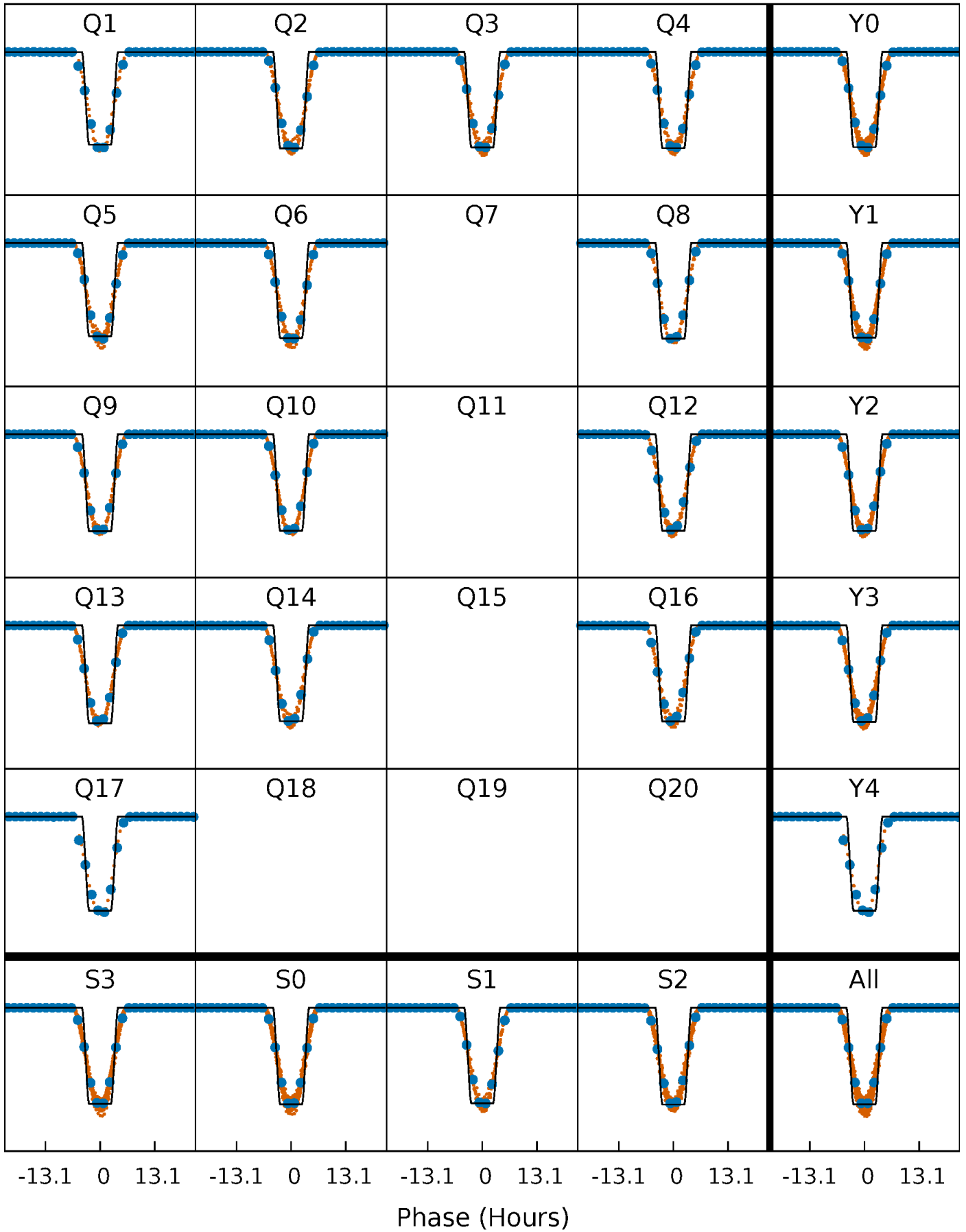
DV Quarter-Phased Transit Curves

TCE 010936427-02 P= 14.361228 Days $T_0=131.667651$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

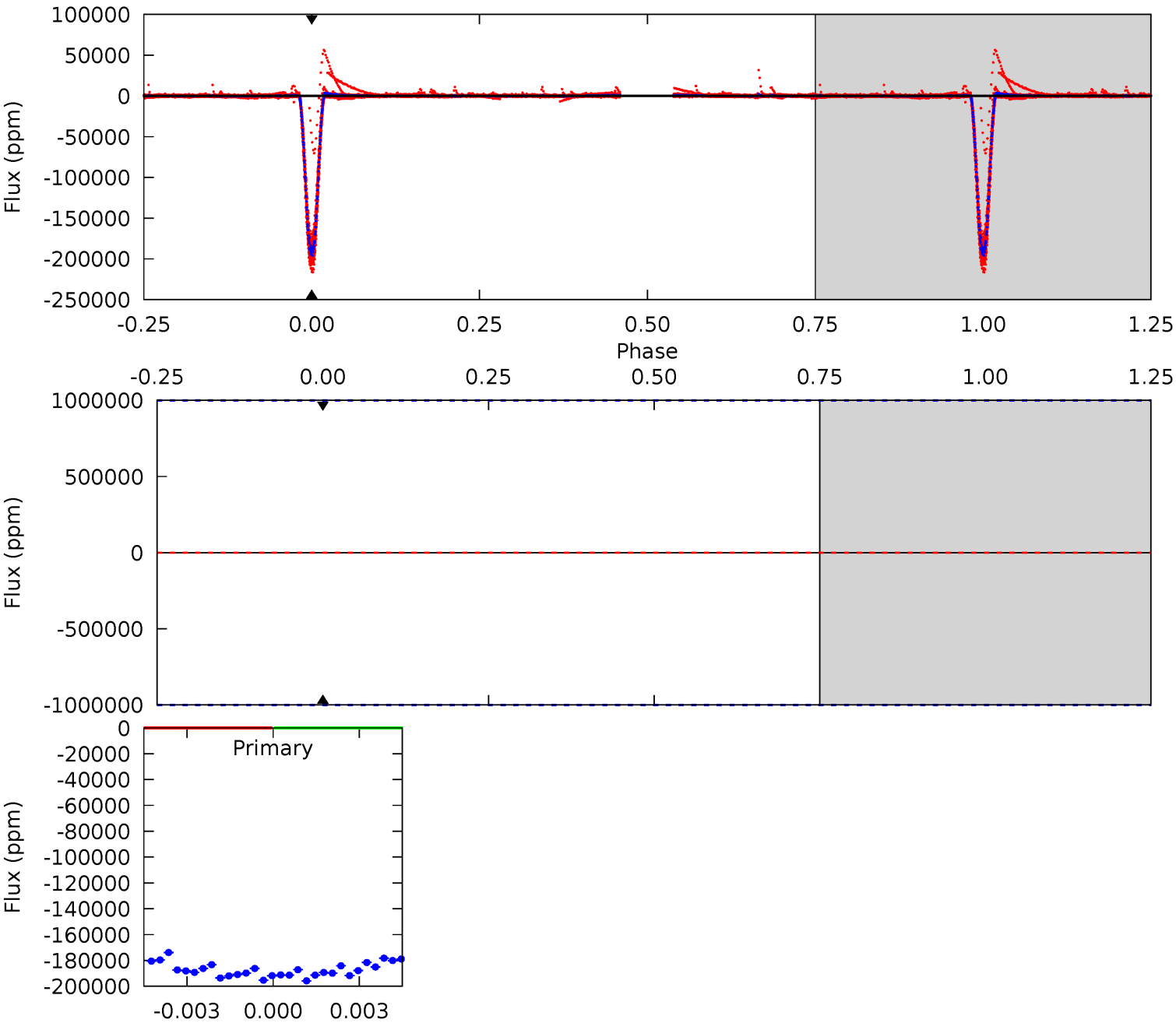
TCE 010936427-02 P= 14.361228 Days $T_0=131.667722$ (BKJD)



DV Model-Shift Uniqueness Test

010936427-02, P = 14.361228 Days, E = 131.667651 Days

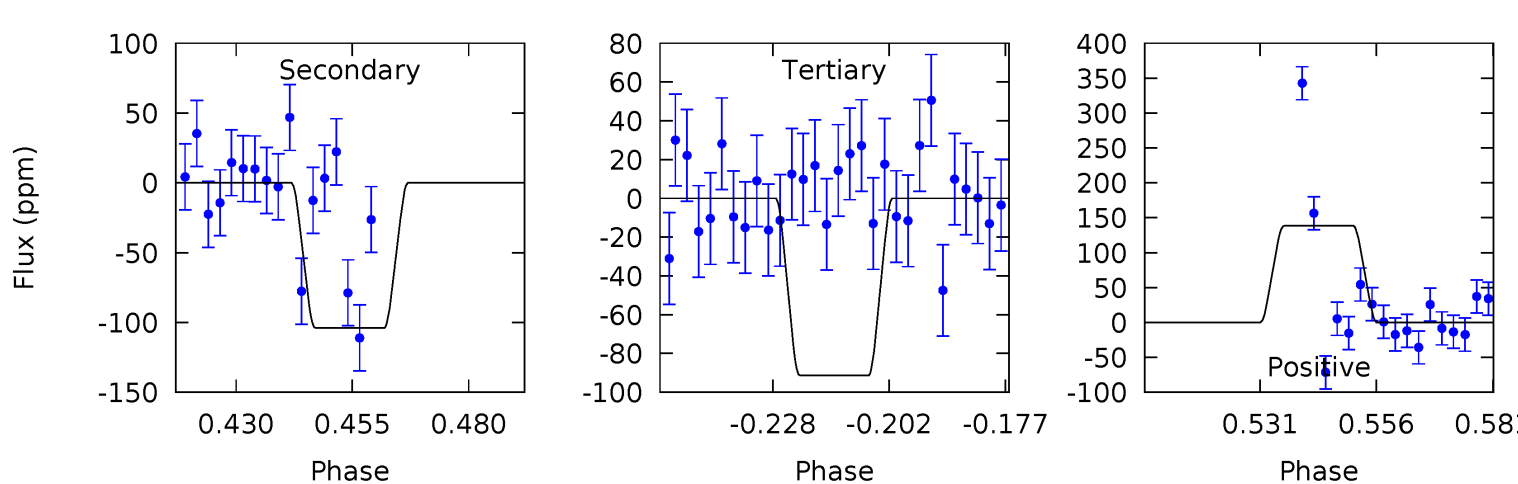
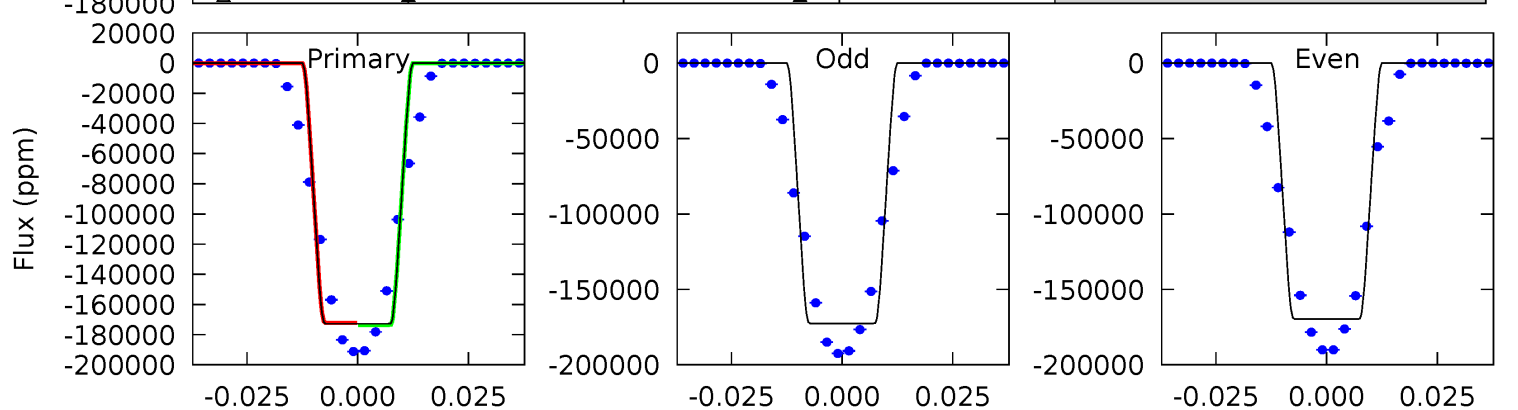
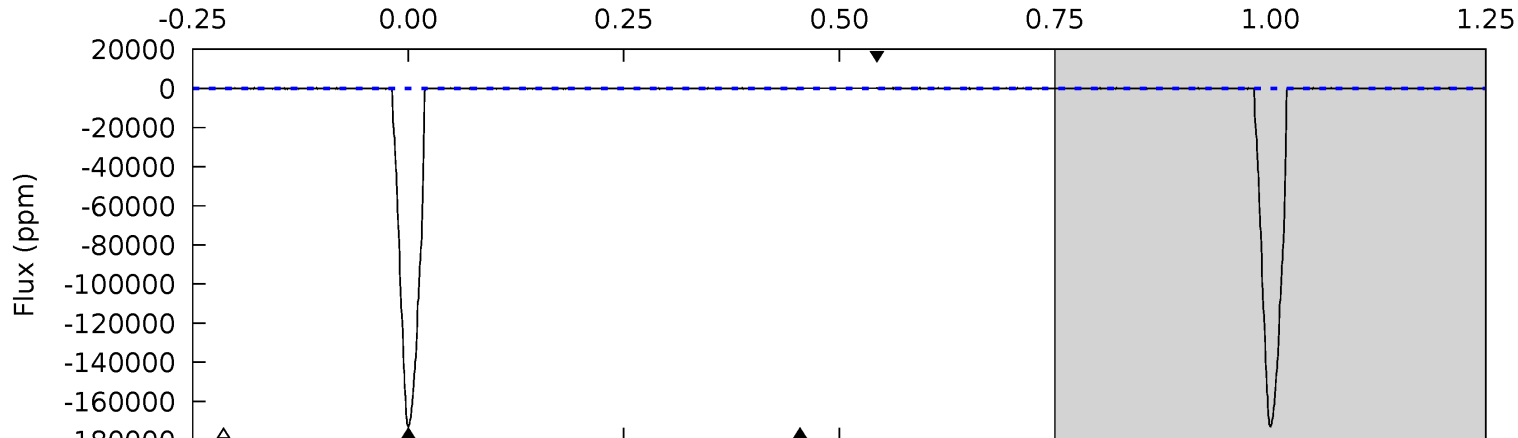
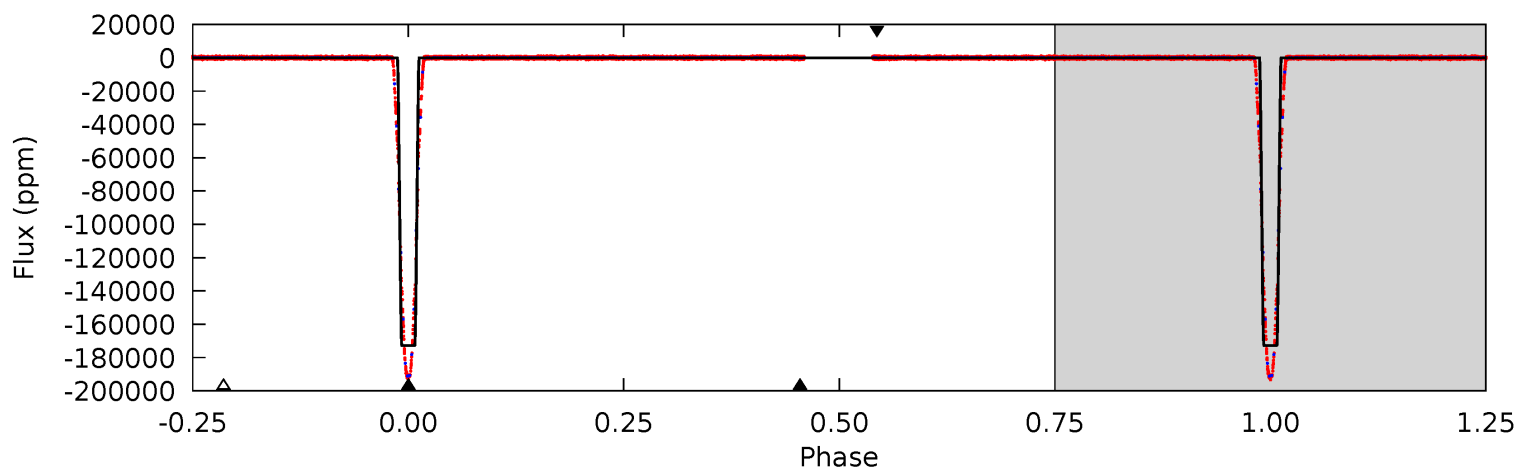
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010936427-02, P = 14.361228 Days, E = 131.667722 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7336	4.42	3.88	5.89	4.85	2.24	1.12	7332	7330	0.54	-1.47	62.2	1.00	0.00	0



Stellar Parameters For KIC 010936427

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5229^{+156}_{-140}	$4.607^{+0.072}_{-0.048}$	$-0.740^{+0.300}_{-0.300}$	$0.668^{+0.064}_{-0.057}$	$0.659^{+0.070}_{-0.033}$	$3.110^{+0.895}_{-0.581}$
	+3%/-3%	+2%/-1%	+41%/-41%	+10%/-9%	+11%/-5%	+29%/-19%
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 010936427-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$19.74^{+7.91}_{-7.66}$	827^{+31}_{-29}	3048^{+2874}_{-8638}	48^{+1802}_{-1456}
Alt.	-104 ± 24	$31.71^{+7.68}_{-7.94}$	827^{+32}_{-29}	1704^{+167}_{-231}	$0.577^{+0.481}_{-0.231}$

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 $A_{obs} \gg 1.0$

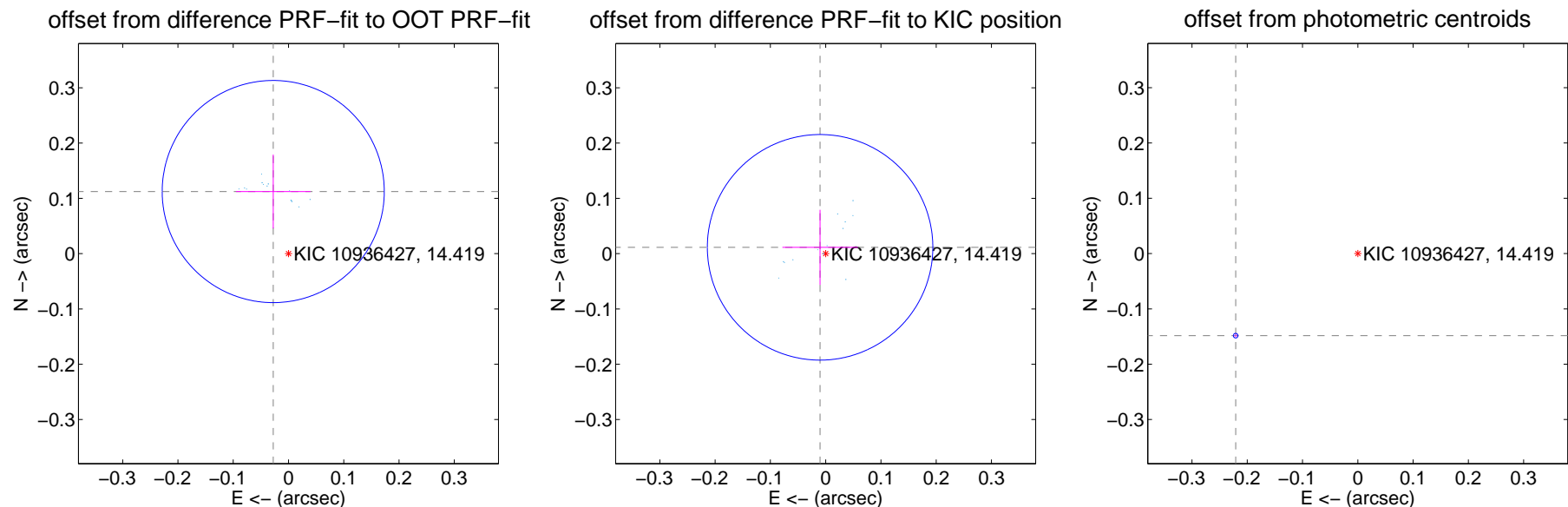
DV Centroid Data

Supplemental centroid analysis for 010936427-02. Kepler magnitude: 14.42. Transit SNR -1.00

There are 14 quarters with good PRF difference image offsets

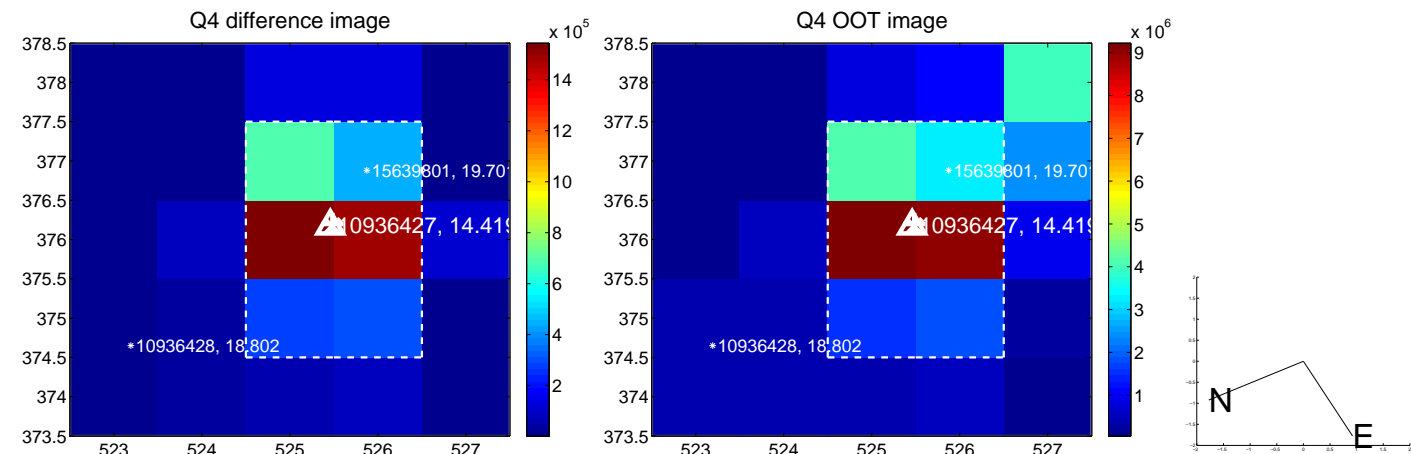
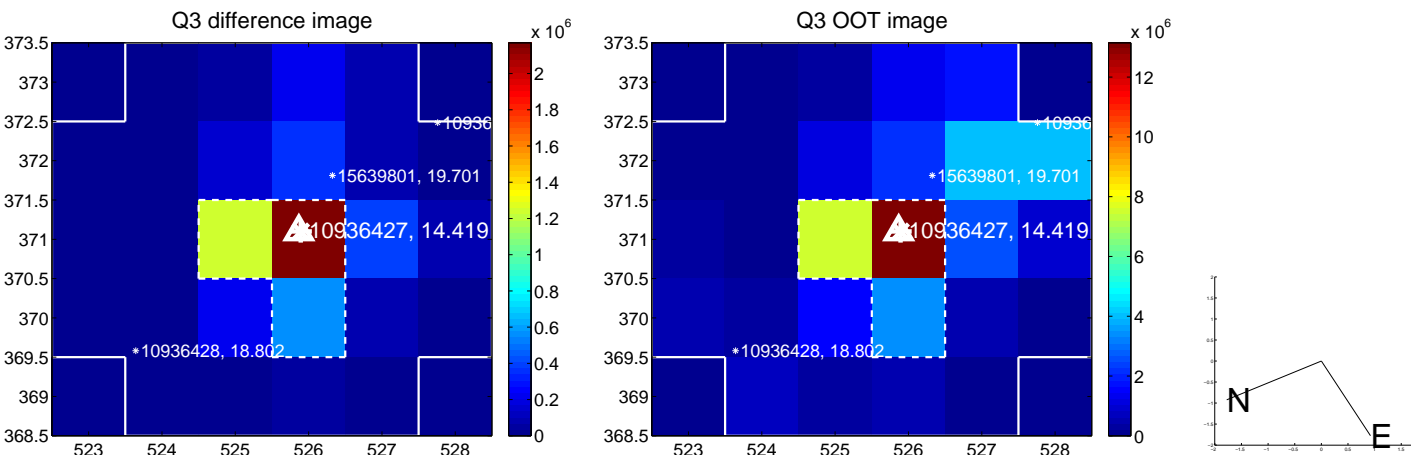
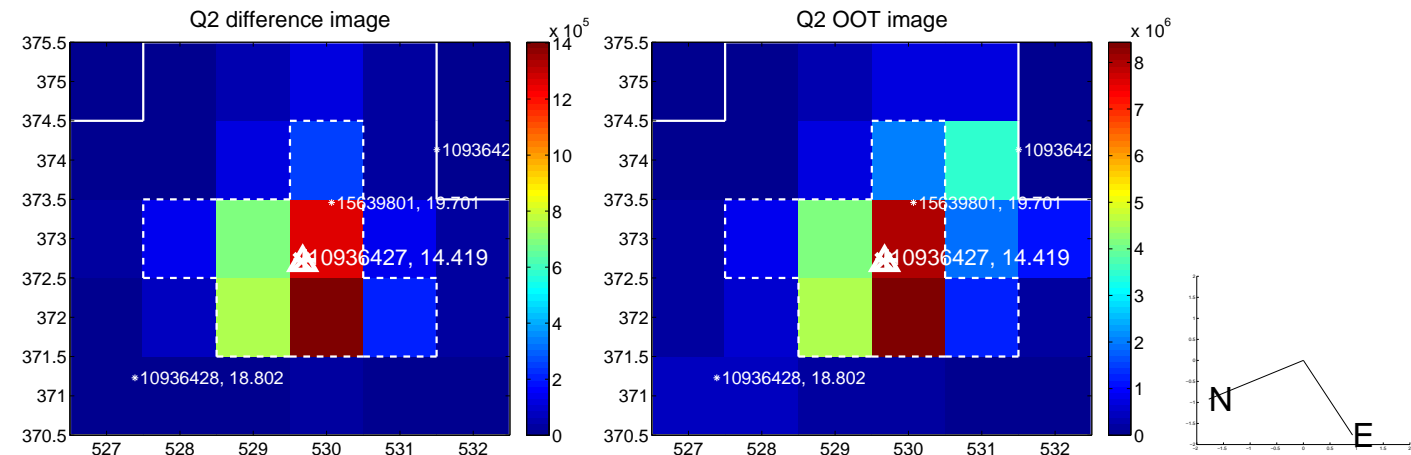
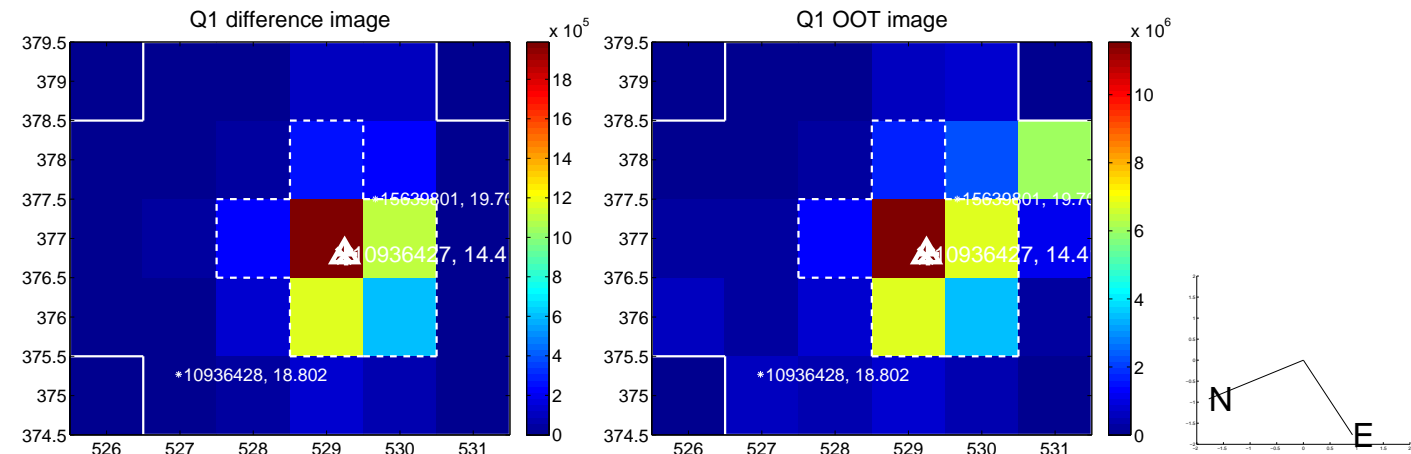
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.116 ± 0.067	1.73	0.028 ± 0.067	0.112 ± 0.067
PRF-fit source offset from KIC position	0.015 ± 0.068	0.22	0.010 ± 0.068	0.011 ± 0.068
photometric centroid source offset	0.27 ± 0.00	192.40	0.22 ± 0.00	-0.15 ± 0.00

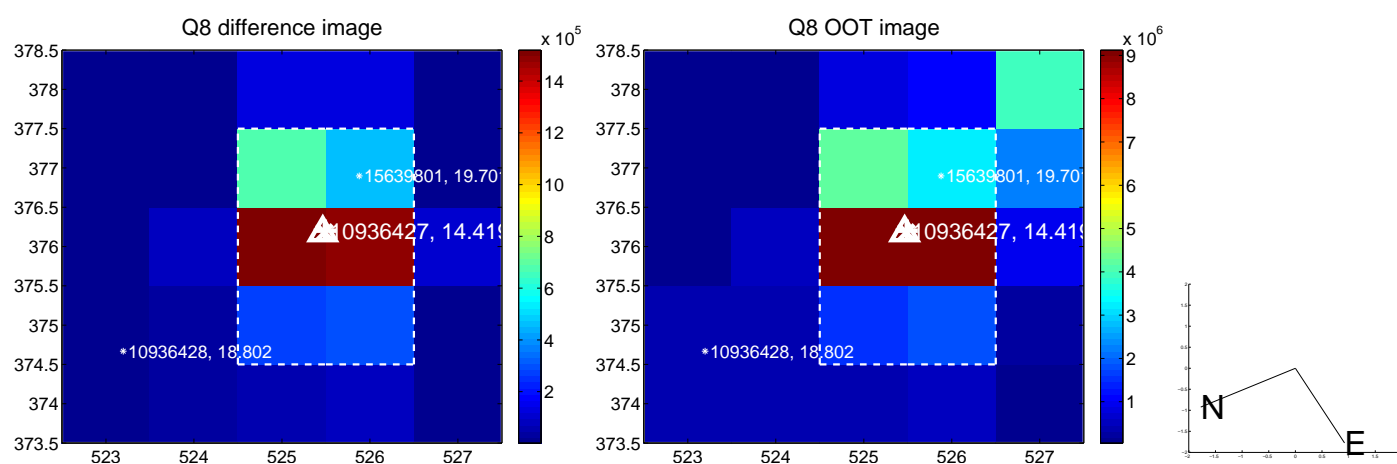
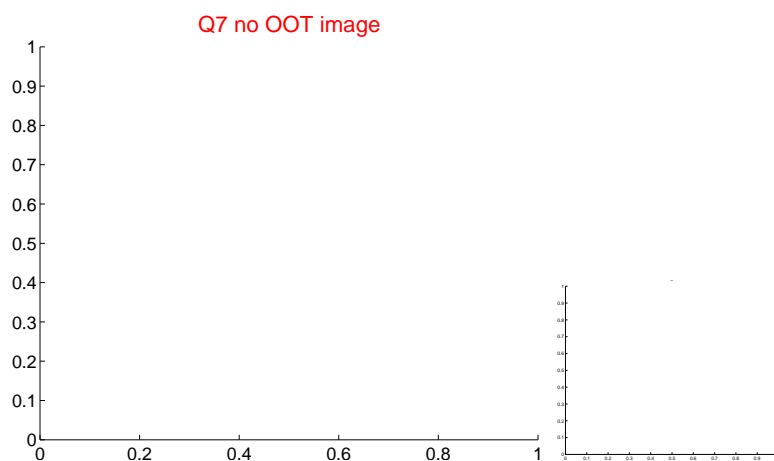
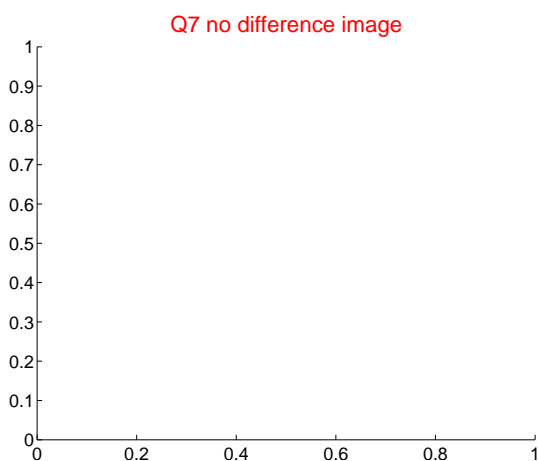
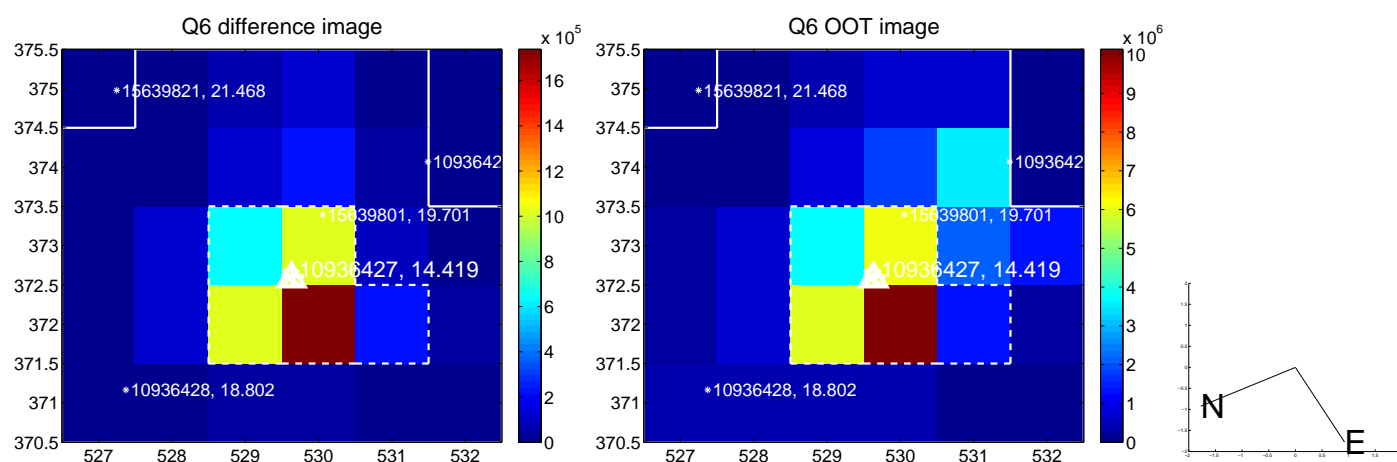
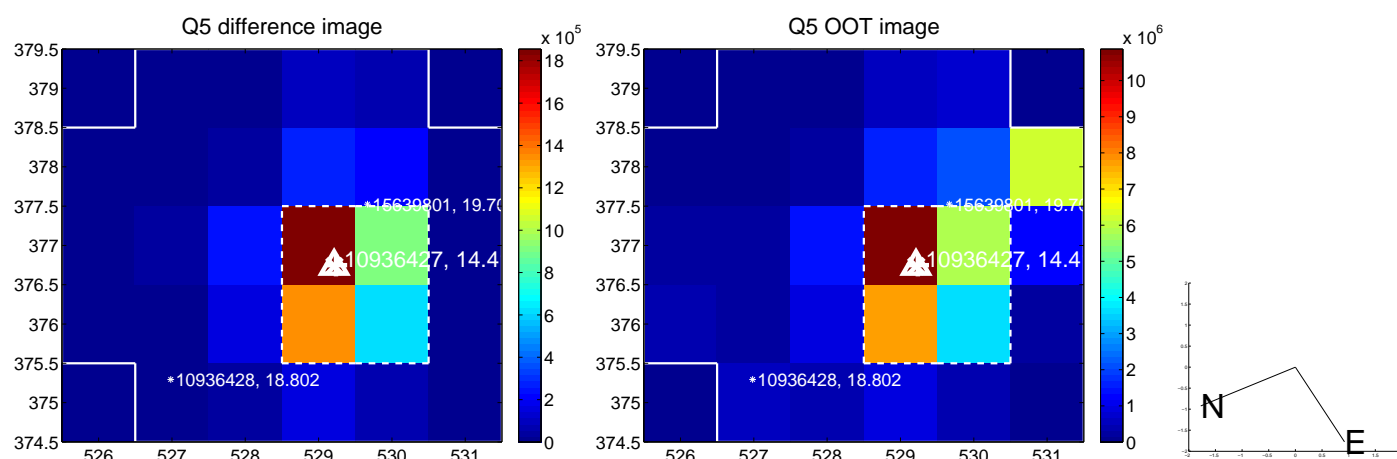


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

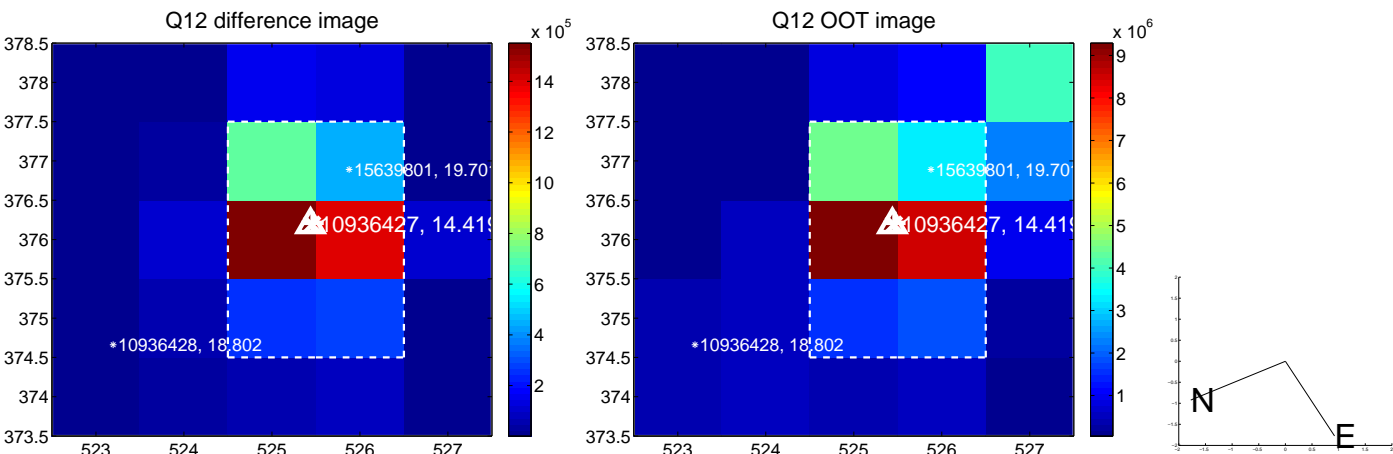
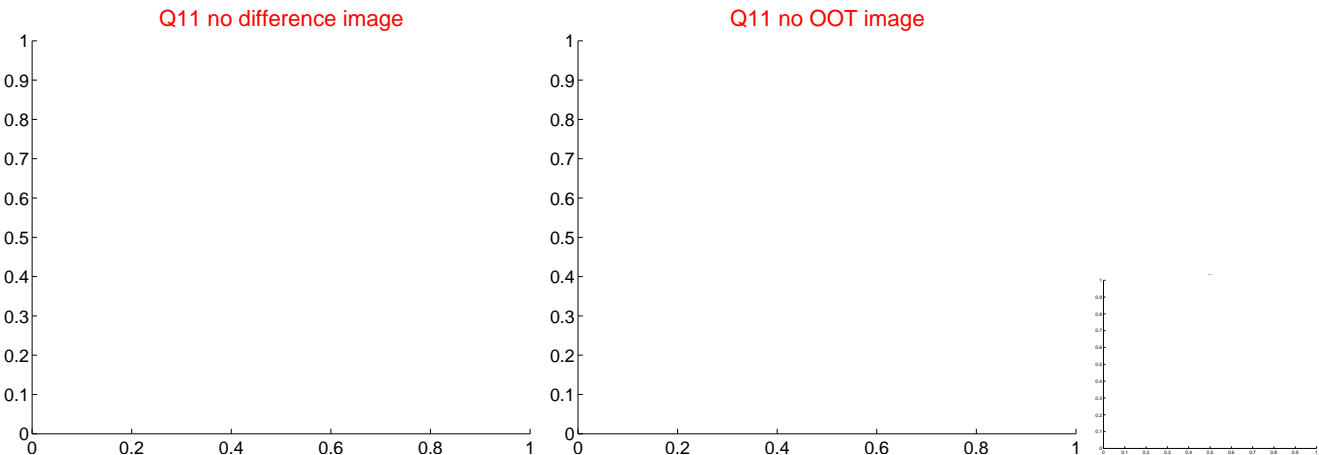
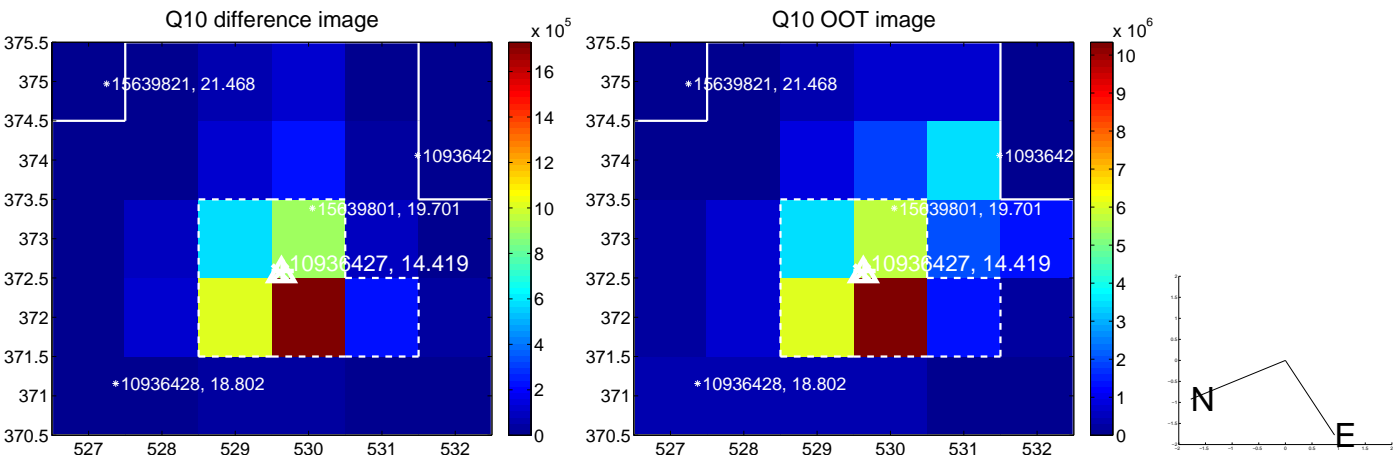
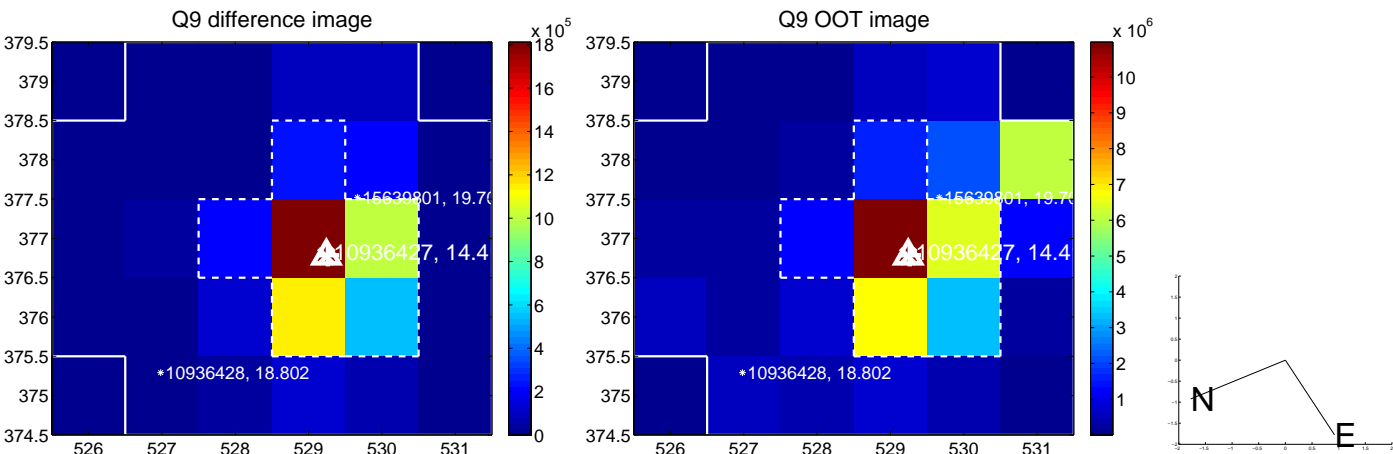
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



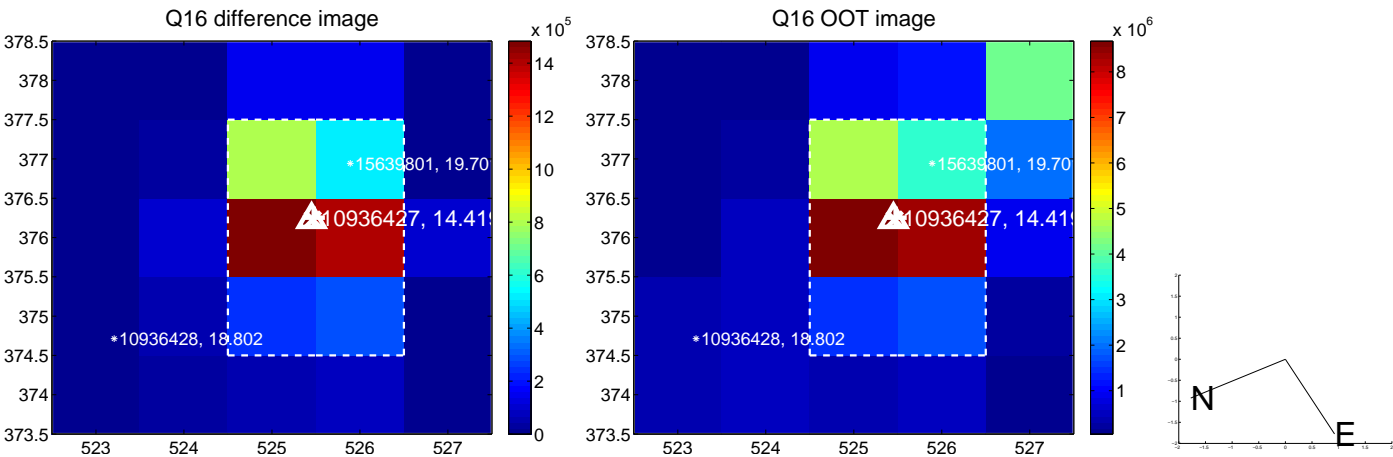
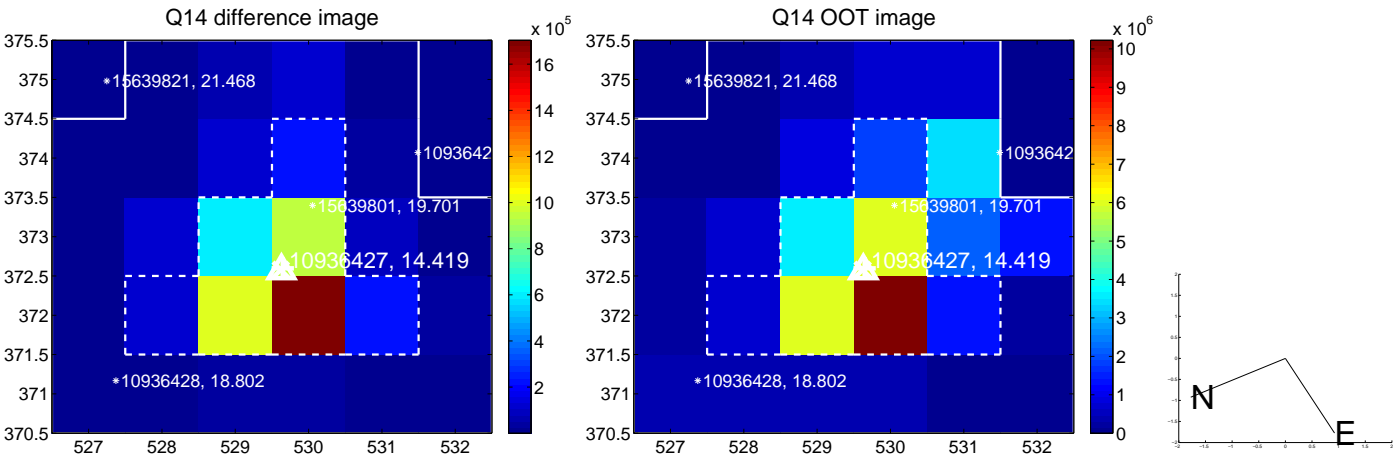
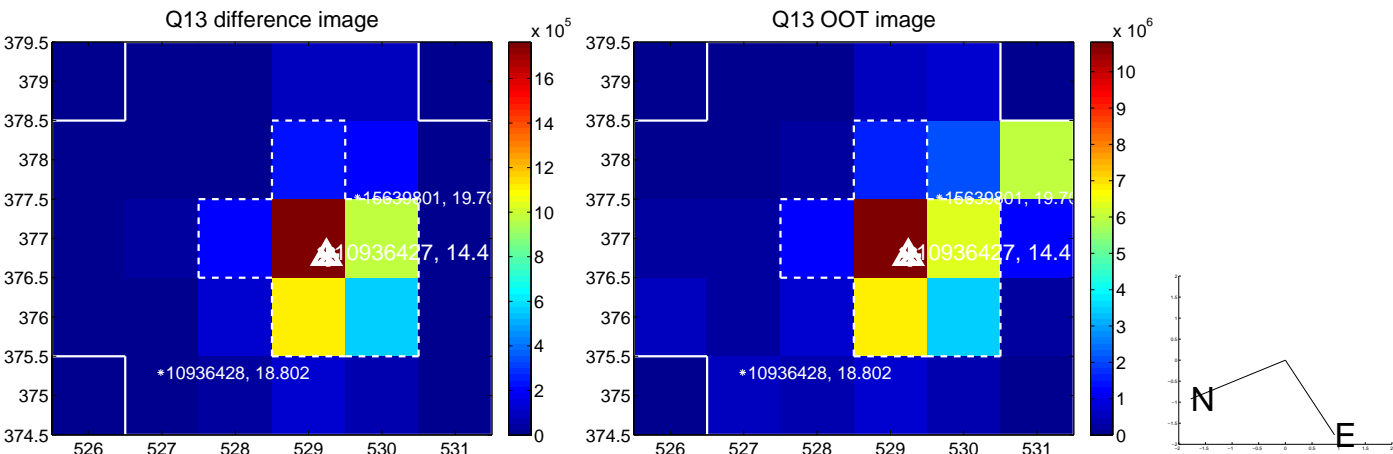
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



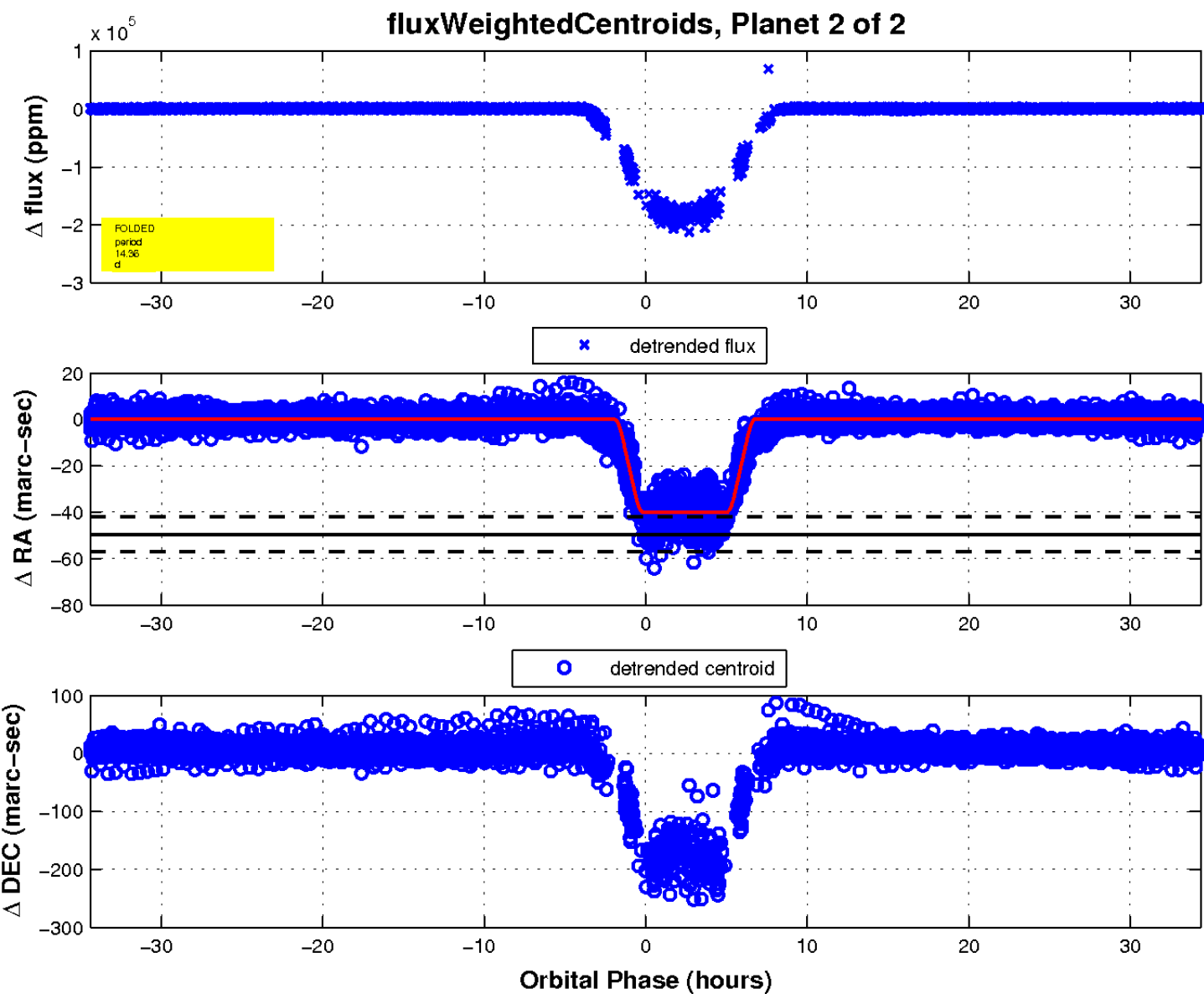
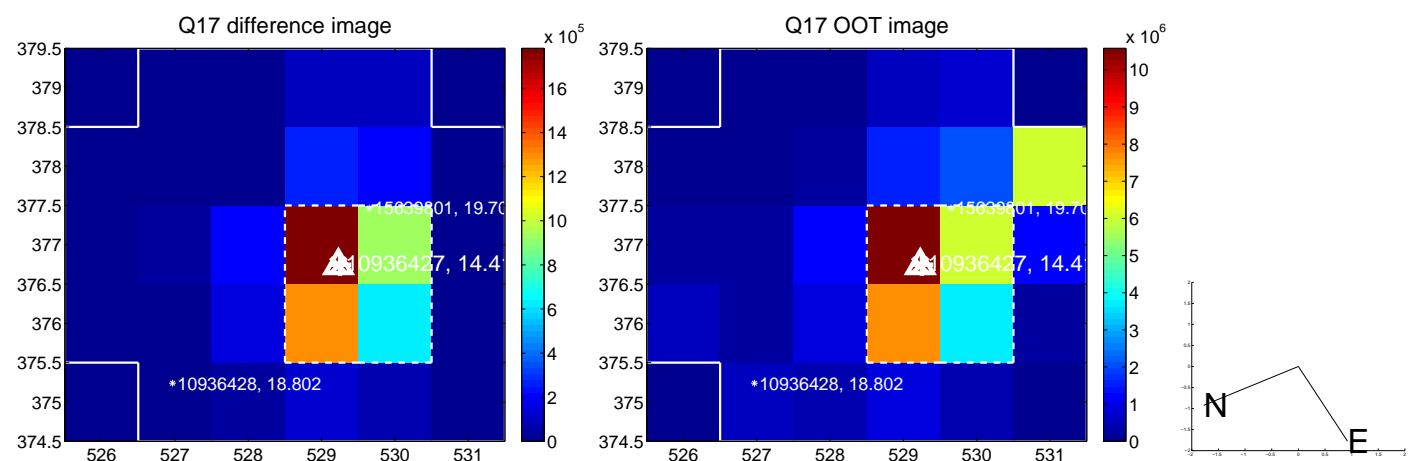
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

