

# KIC 011029877

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011029877-01	OBS	7403.01	2.069416	132.645182	14317.5	5.615	2859.2	1825.7	1.25	6640	19.89	2314.07
011029877-02	OBS	No	138.752414	210.913138	578.9	9.413	12.1	6.8	1.25	6640	3.65	8.49
011029877-03	OBS	No	300.032773	287.473546	426.3	7.500	10.5	-1.0	1.25	6640	2.60	3.04

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011029877-01	OBS	FP	0.00	0	1	1	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—CENT_UNRESOLVED_OFFSET
011029877-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_UNRESOLVED_OFFSET
011029877-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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

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

See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 011029877-01

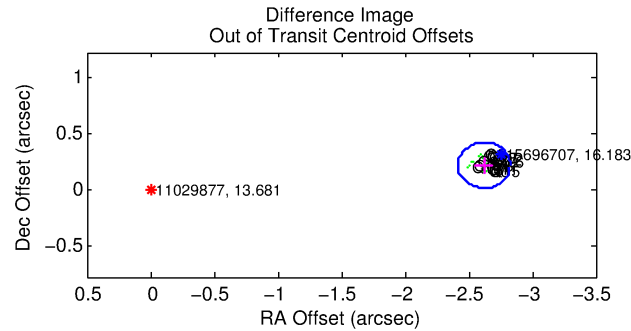
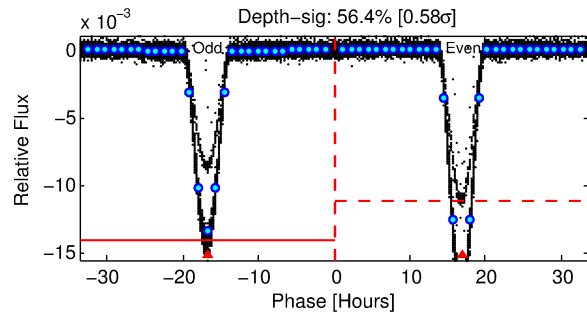
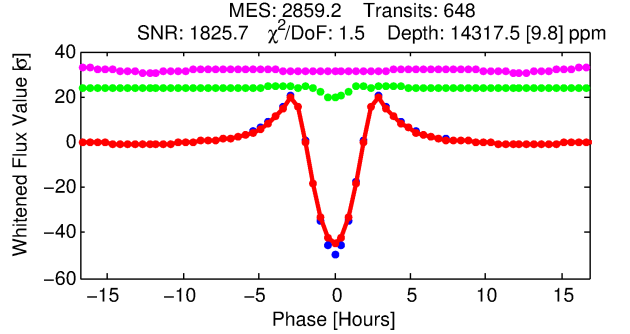
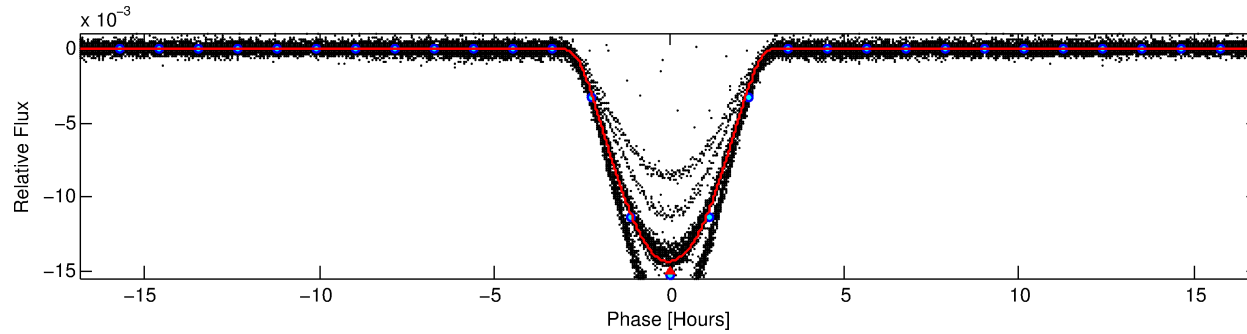
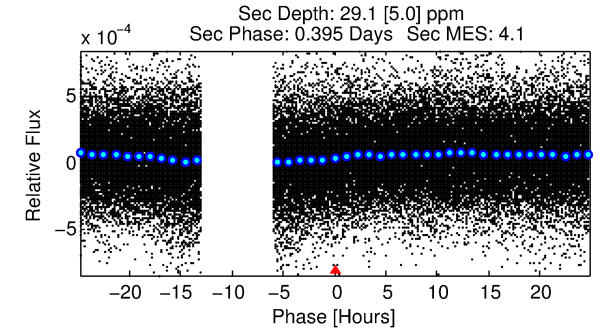
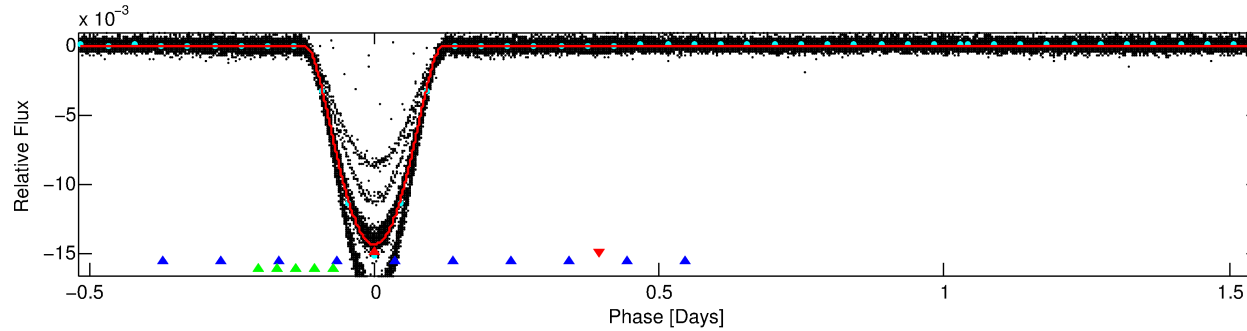
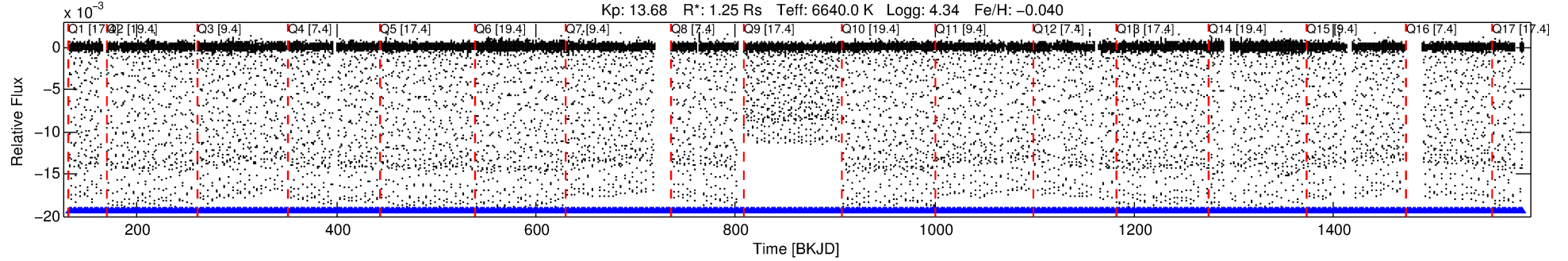
No Significant Match Found

# DV One-Page Summary

KIC: 11029877 Candidate: 1 of 3 Period: 2.069 d

KOI: K07403.01 Corr: 0.987

Kp: 13.68 R\*: 1.25 Rs Teff: 6640.0 K Logg: 4.34 Fe/H: -0.040



## DV Fit Results:

Period = 2.06942 [0.00000] d  
Epoch = 132.6452 [0.0000] BKJD  
Rp/R\* = 0.1458 [0.0006]  
a/R\* = 2.15 [0.00]  
b = 0.92 [0.00]  
Seff = 2314.07 [462.84]  
Teq = 1769 [88] K  
Rp = 19.89 [3.15] Re  
a = 0.0343 [0.0046] AU  
Ag = 0.05 [0.01] [-77.59σ]  
Teffp = 1277 [57] K [-4.66σ]

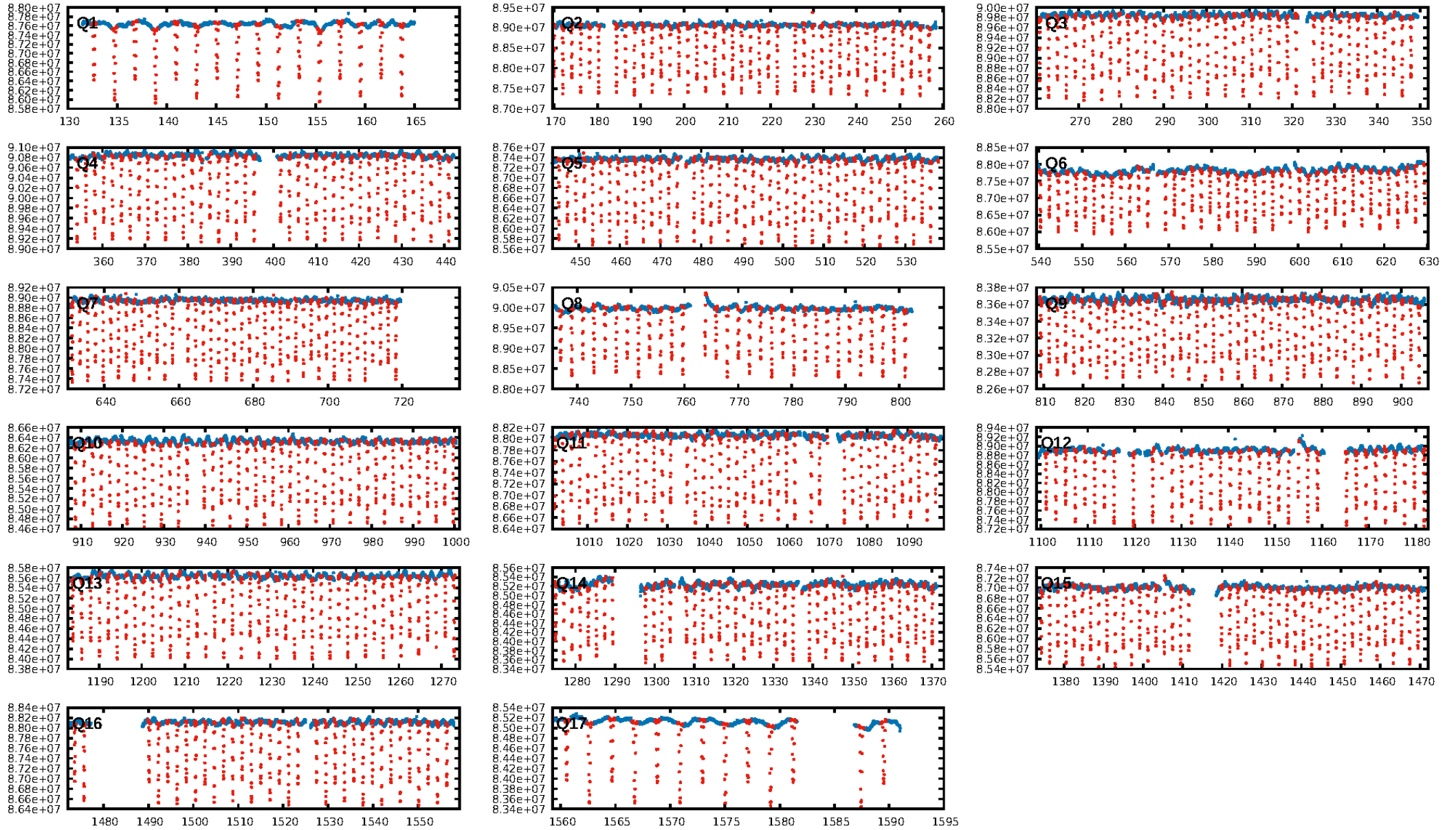
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [299.30σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [619/619]  
GhostDiagnostic-chr: 2.556  
Centroid-sig: N/A  
Centroid-so: 3.117 arcsec [892.78σ]  
OotOffset-rm: 2.630 arcsec [38.60σ]  
KicOffset-rm: 2.757 arcsec [38.67σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

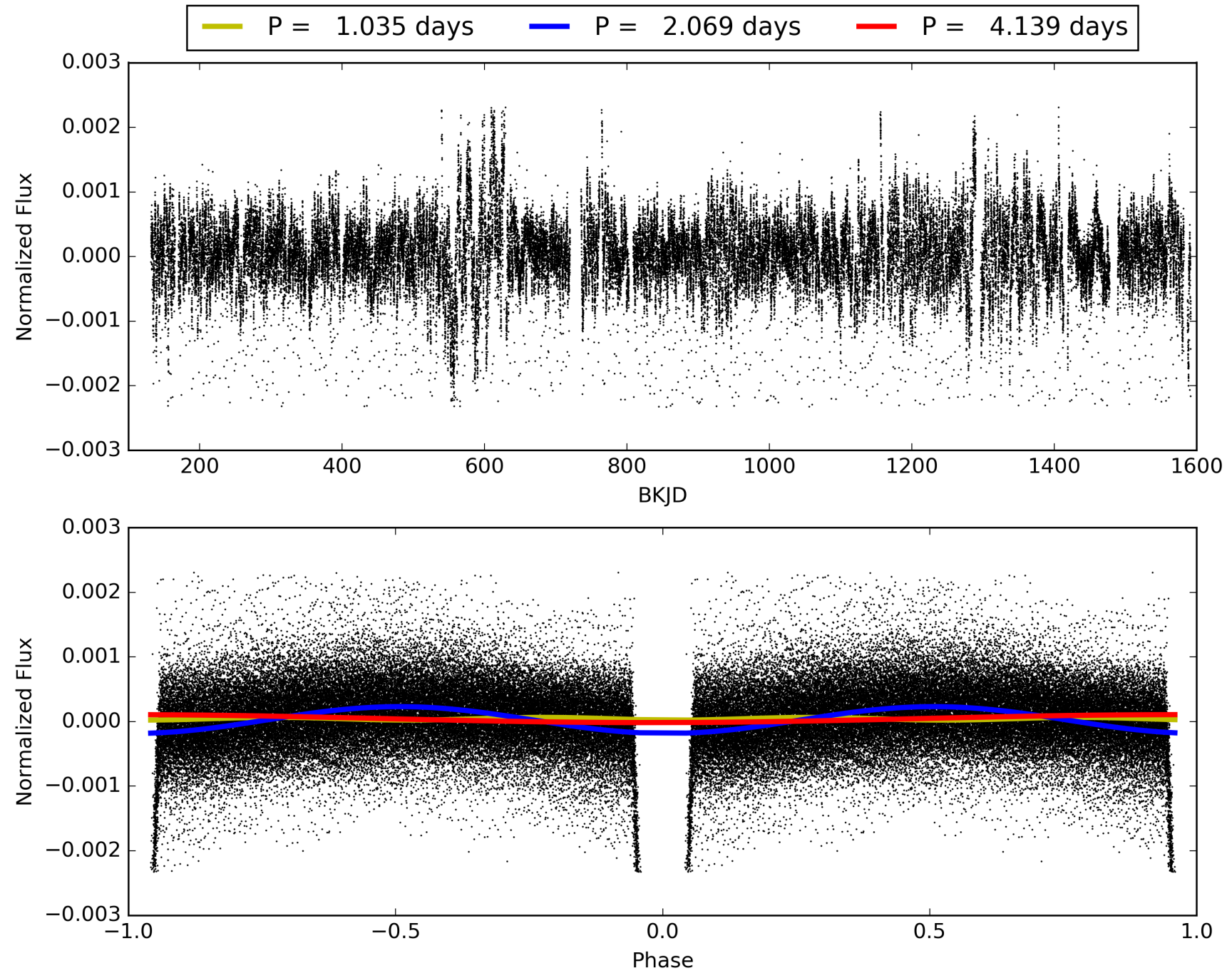
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:47:06 Z

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

# TCE 011029877-01, PDC Light Curves

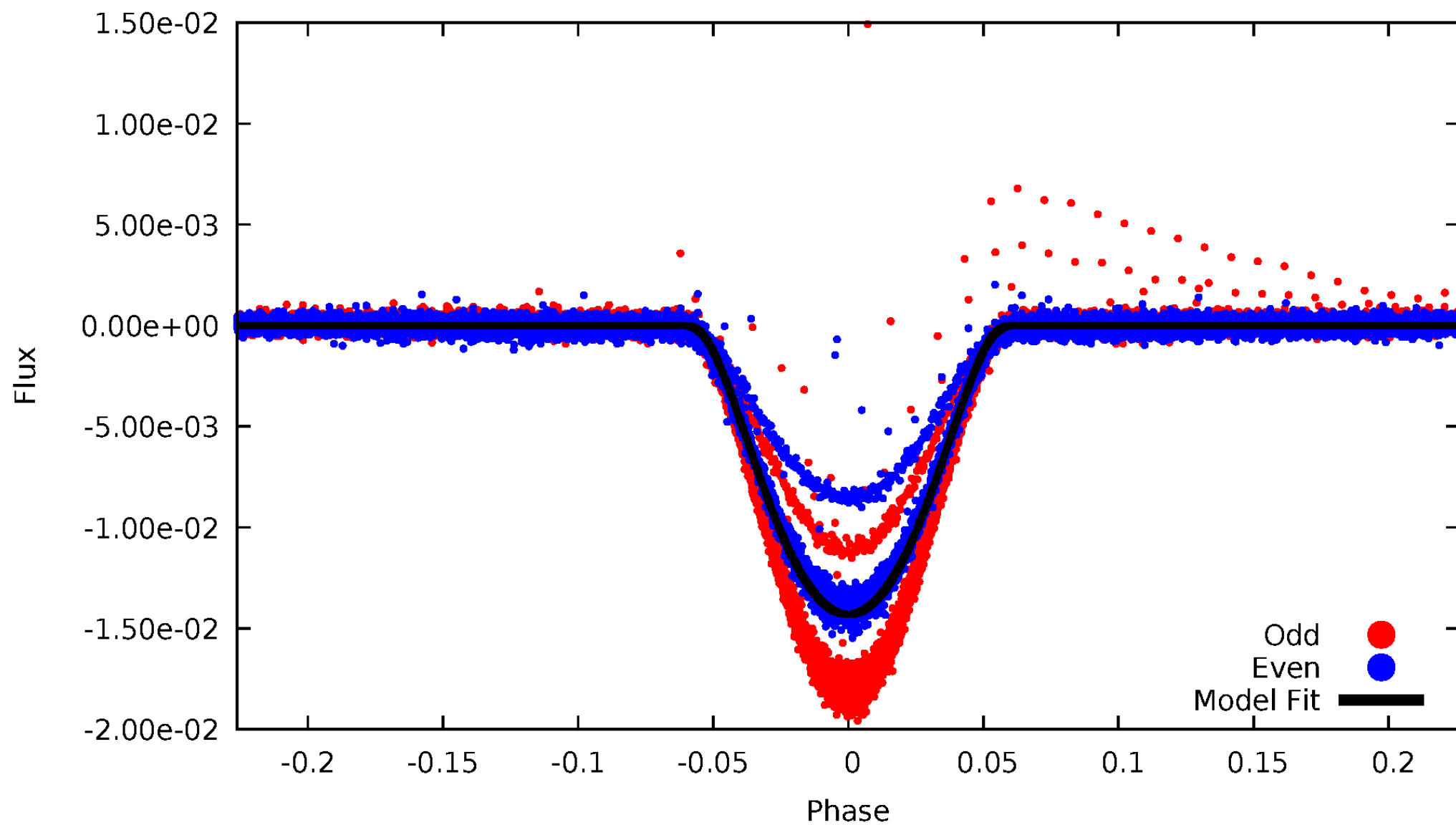


TCE 011029877-01



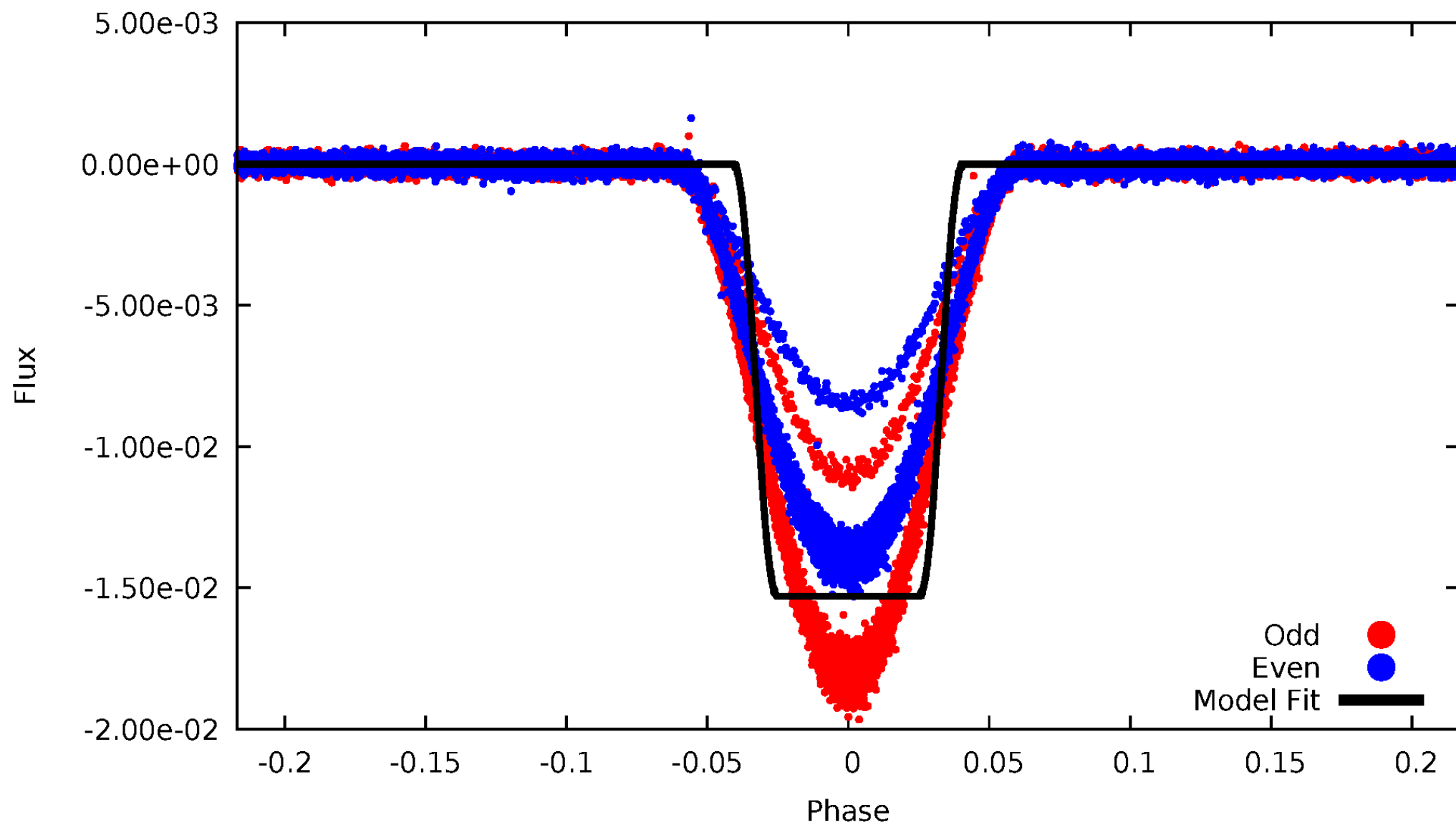
# DV Odd/Even

TCE 011029877-01



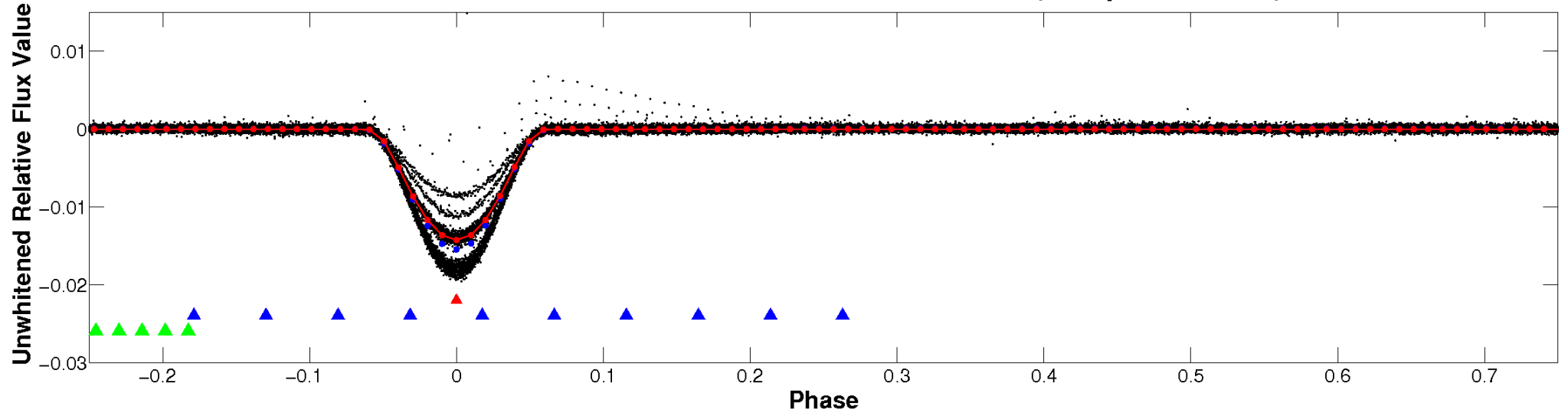
# ALT Odd/Even

TCE 011029877-01

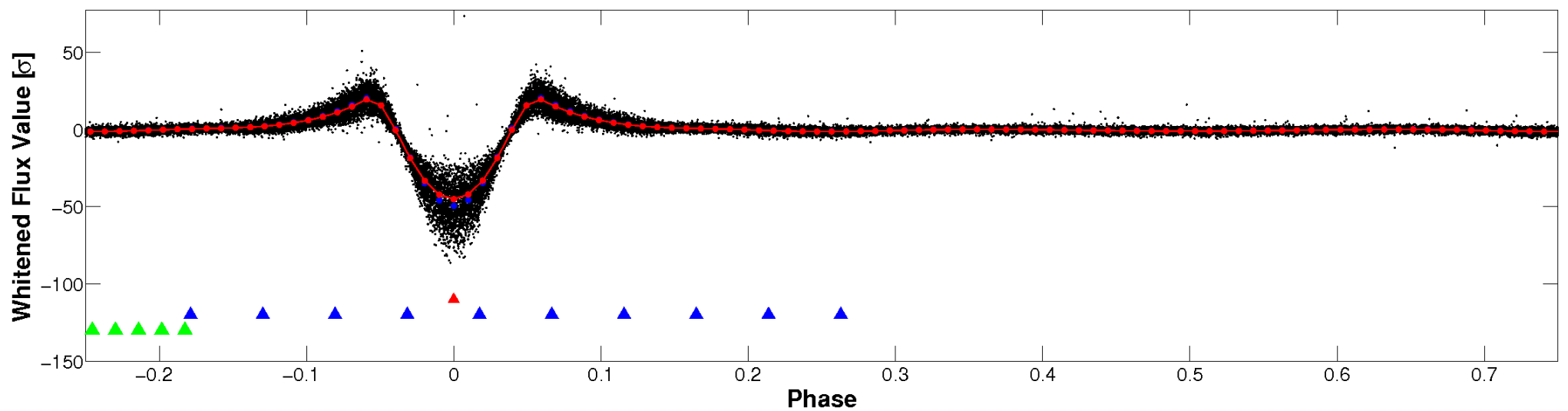


# Non-Whitened Vs. Whitened Light Curve

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



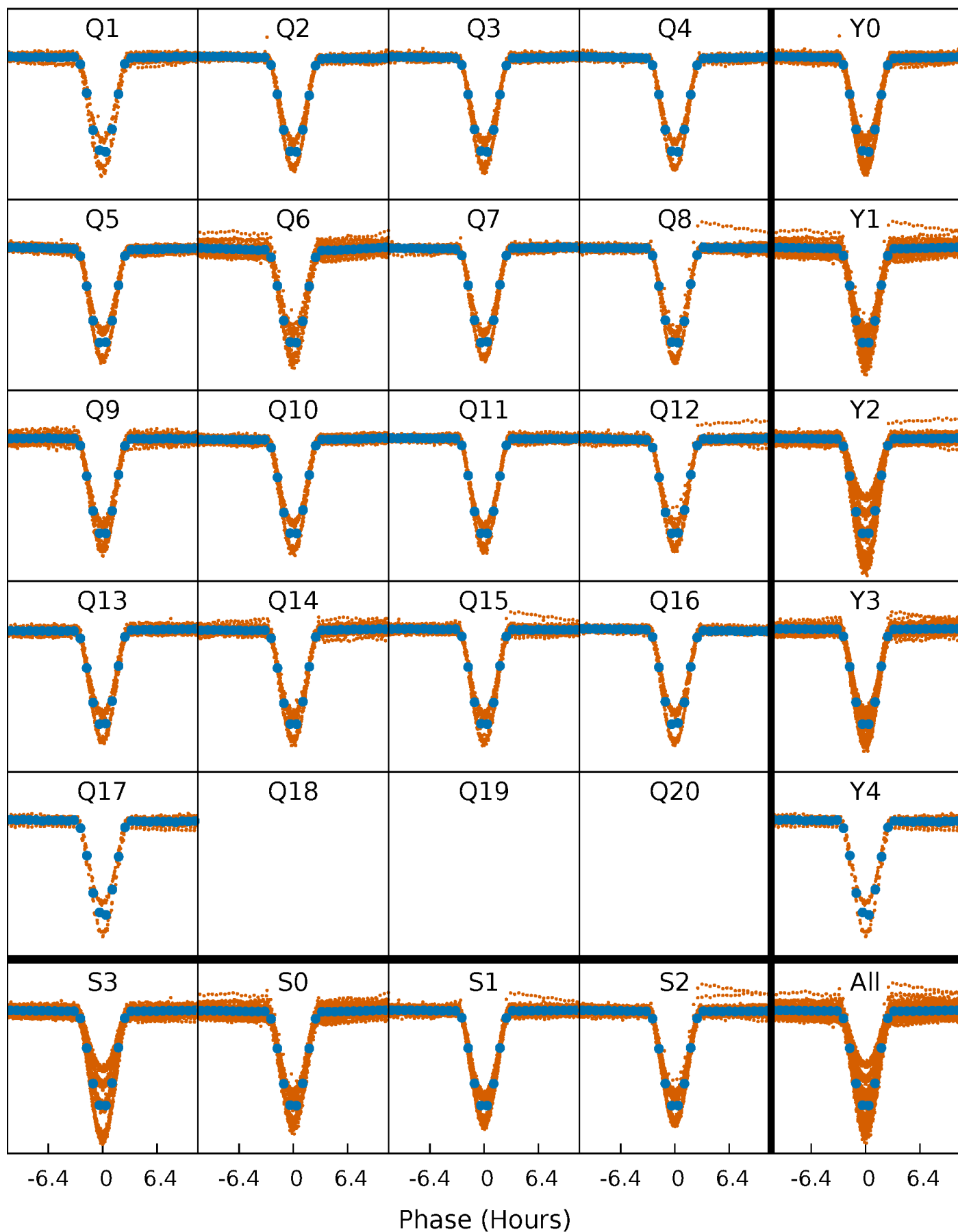
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

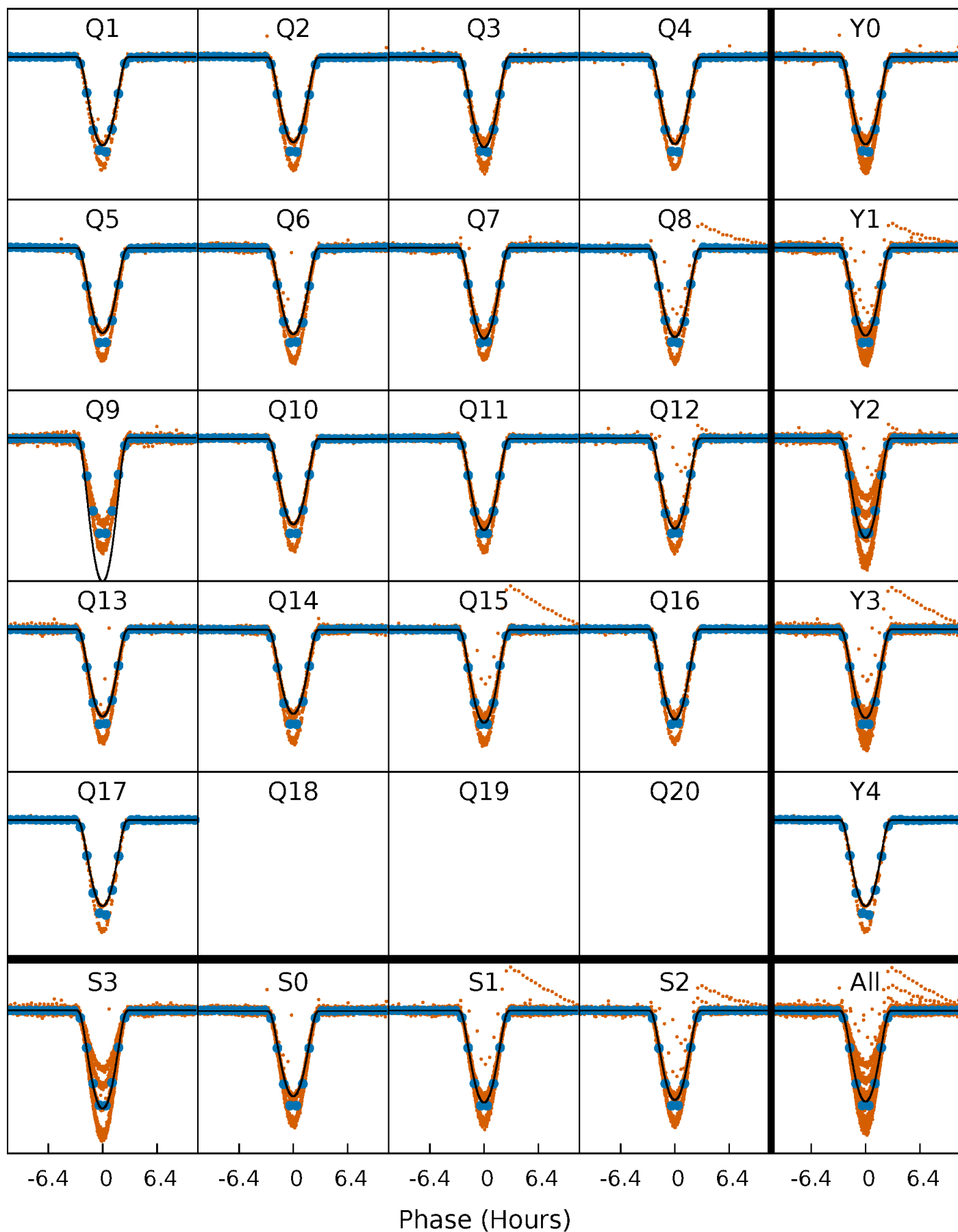
TCE 011029877-01 P= 2.069416 Days  $T_0=132.645182$  (BKJD)





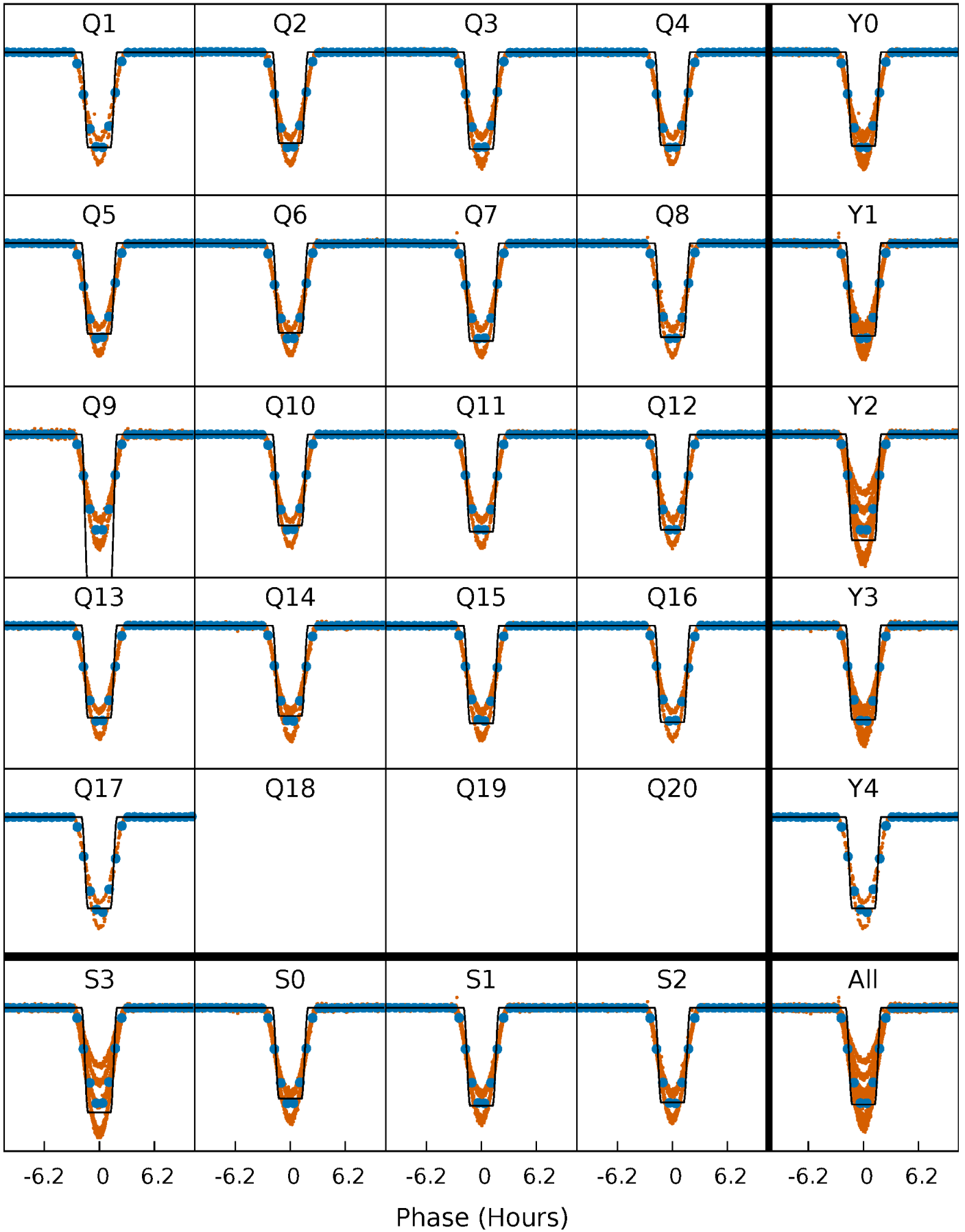
# DV Quarter-Phased Transit Curves

TCE 011029877-01 P= 2.069416 Days  $T_0=132.645182$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

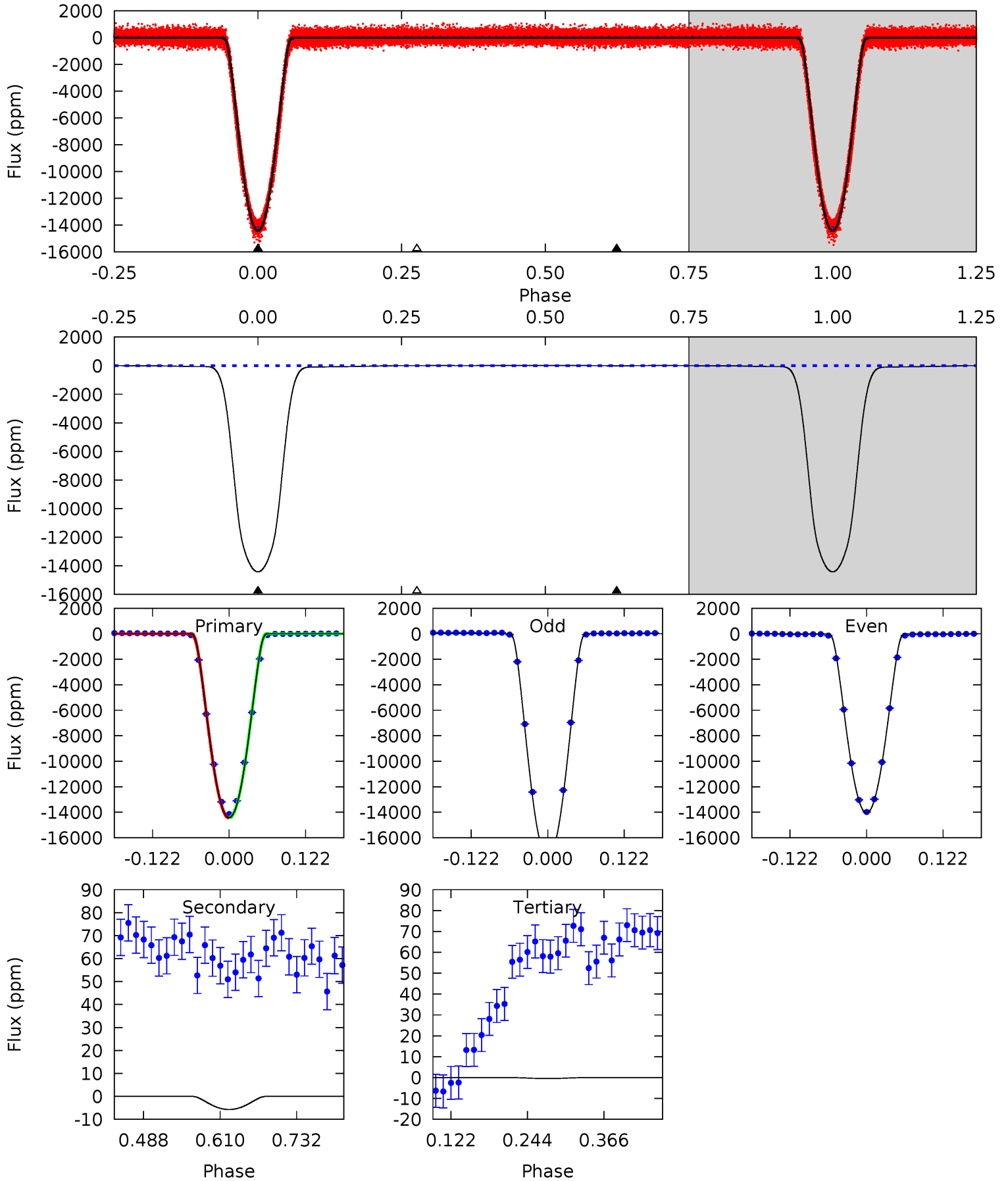
TCE 011029877-01 P= 2.069413 Days  $T_0=132.646142$  (BKJD)



# DV Model-Shift Uniqueness Test

011029877-01, P = 2.069416 Days, E = 130.575766 Days

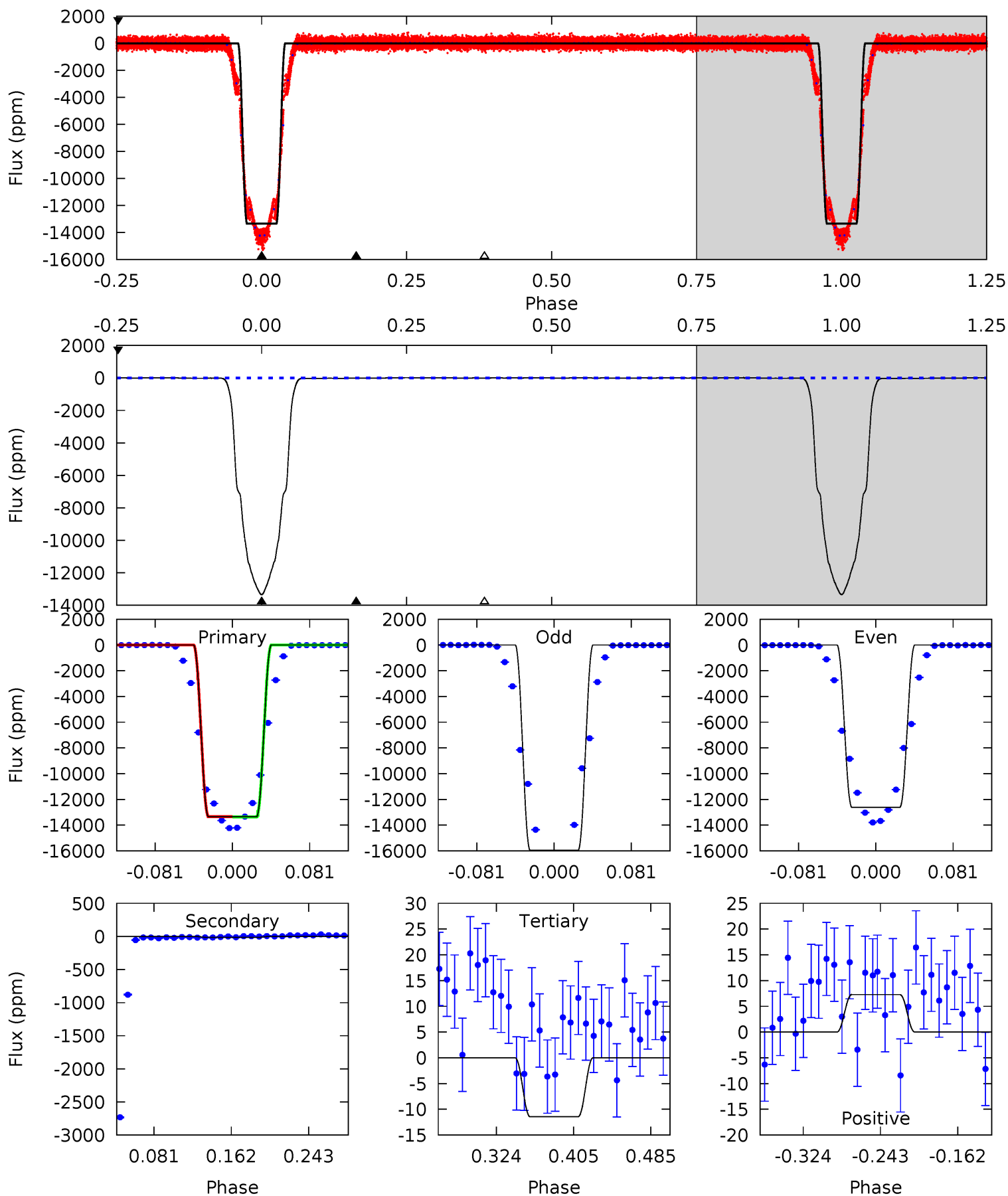
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4464	1.78	0.15	0	4.52	1.55	8.43	4463	4464	1.63	1.78	633.1	1.05	0.00	1.70



# Alt Model-Shift Uniqueness Test

011029877-01, P = 2.069413 Days, E = 130.576729 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3008	3.44	2.58	1.64	4.61	1.75	1.65	3005	3006	0.86	1.80	544.9	1.05	0.00	0



### Stellar Parameters For KIC 011029877

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$6640^{+69}_{-89}$	$4.343^{+0.028}_{-0.105}$	$-0.040^{+0.150}_{-0.200}$	$1.250^{+0.198}_{-0.066}$	$1.261^{+0.077}_{-0.077}$	$0.911^{+0.117}_{-0.291}$
	+1%/-1%	+1%/-2%	+375%/-500%	+16%/-5%	+6%/-6%	+13%/-32%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 011029877-01 / KOI 7403.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-6 \pm 3$	$20.15^{+1.61}_{-0.77}$	$2491^{+91}_{-56}$	$-2776^{+33}_{-53}$	$0.009^{+0.005}_{-0.005}$
Alt.	$-15 \pm 4$	$17.04^{+1.41}_{-0.60}$	$2492^{+87}_{-54}$	$-2746^{+38}_{-55}$	$0.033^{+0.010}_{-0.010}$

$T_{max}$  = 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  $A_{obs} \gg 1.0$

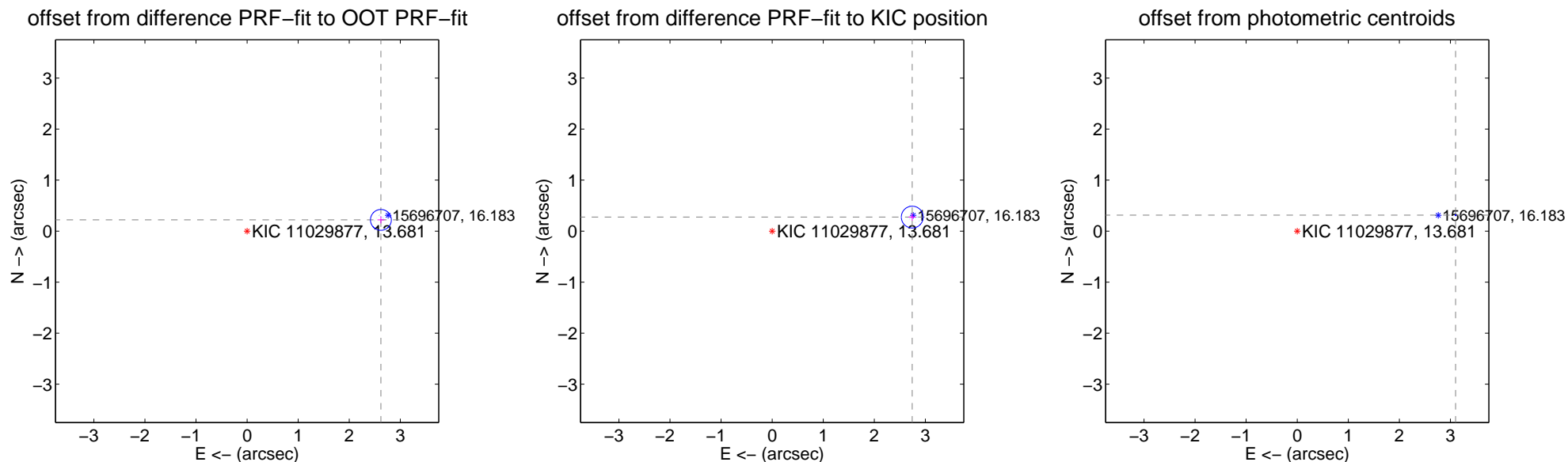
## DV Centroid Data

Supplemental centroid analysis for 011029877-01. Kepler magnitude: 13.68. Transit SNR 1825.67

There are 17 quarters with good PRF difference image offsets

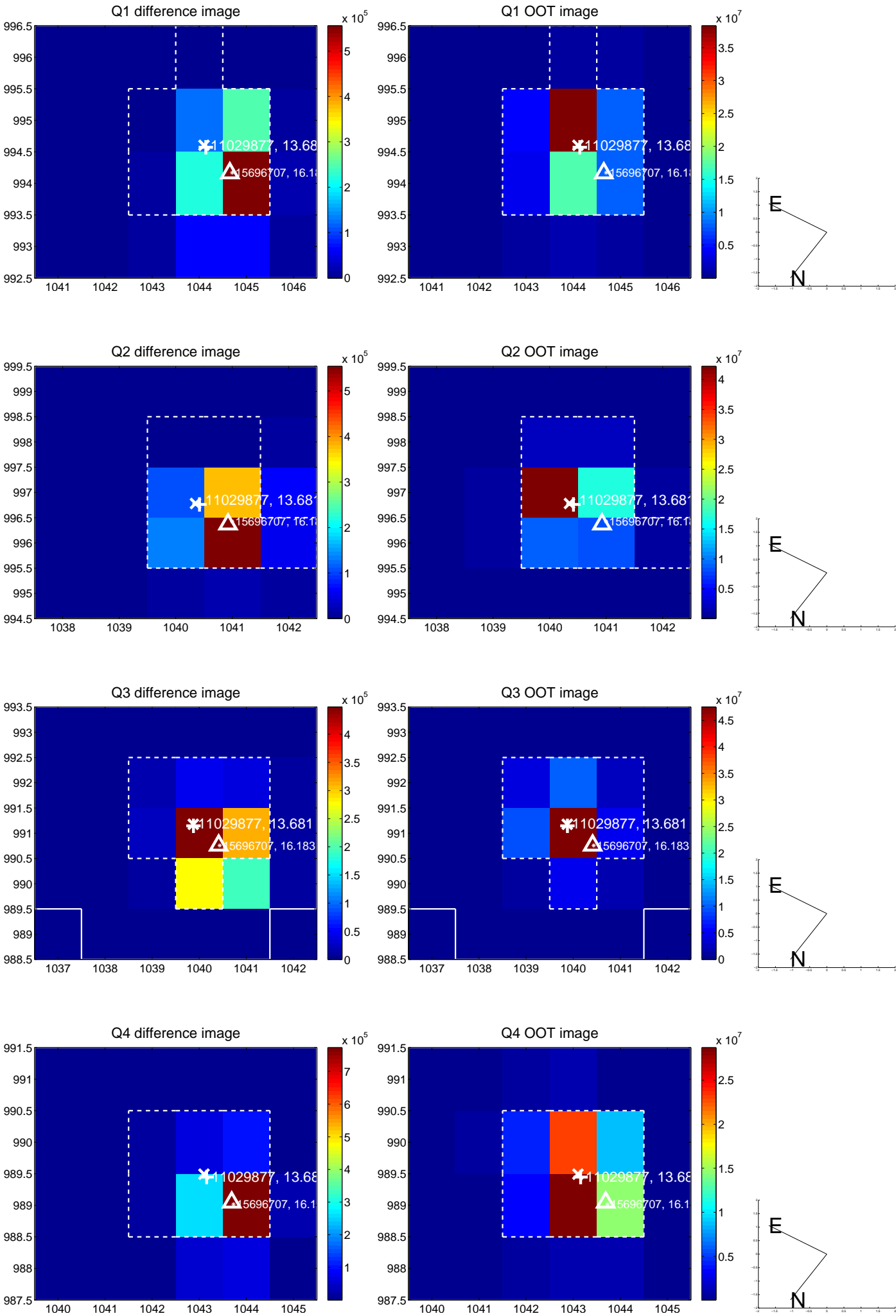
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.630 \pm 0.068$	38.60	$-2.621 \pm 0.068$	$0.220 \pm 0.068$
PRF-fit source offset from KIC position	$2.757 \pm 0.071$	38.67	$-2.744 \pm 0.071$	$0.275 \pm 0.069$
photometric centroid source offset	$3.12 \pm 0.00$	892.78	$-3.10 \pm 0.00$	$0.31 \pm 0.00$



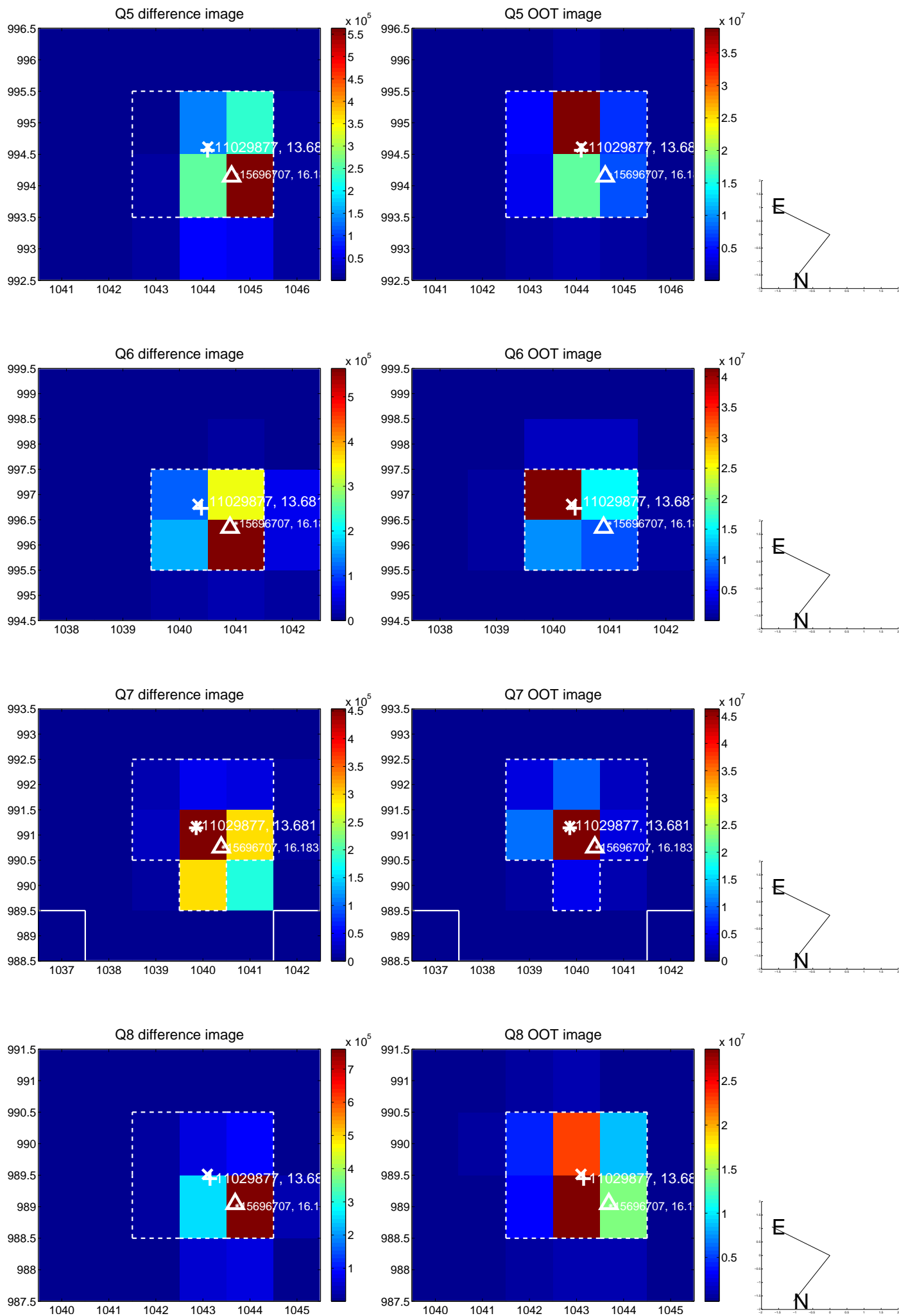
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

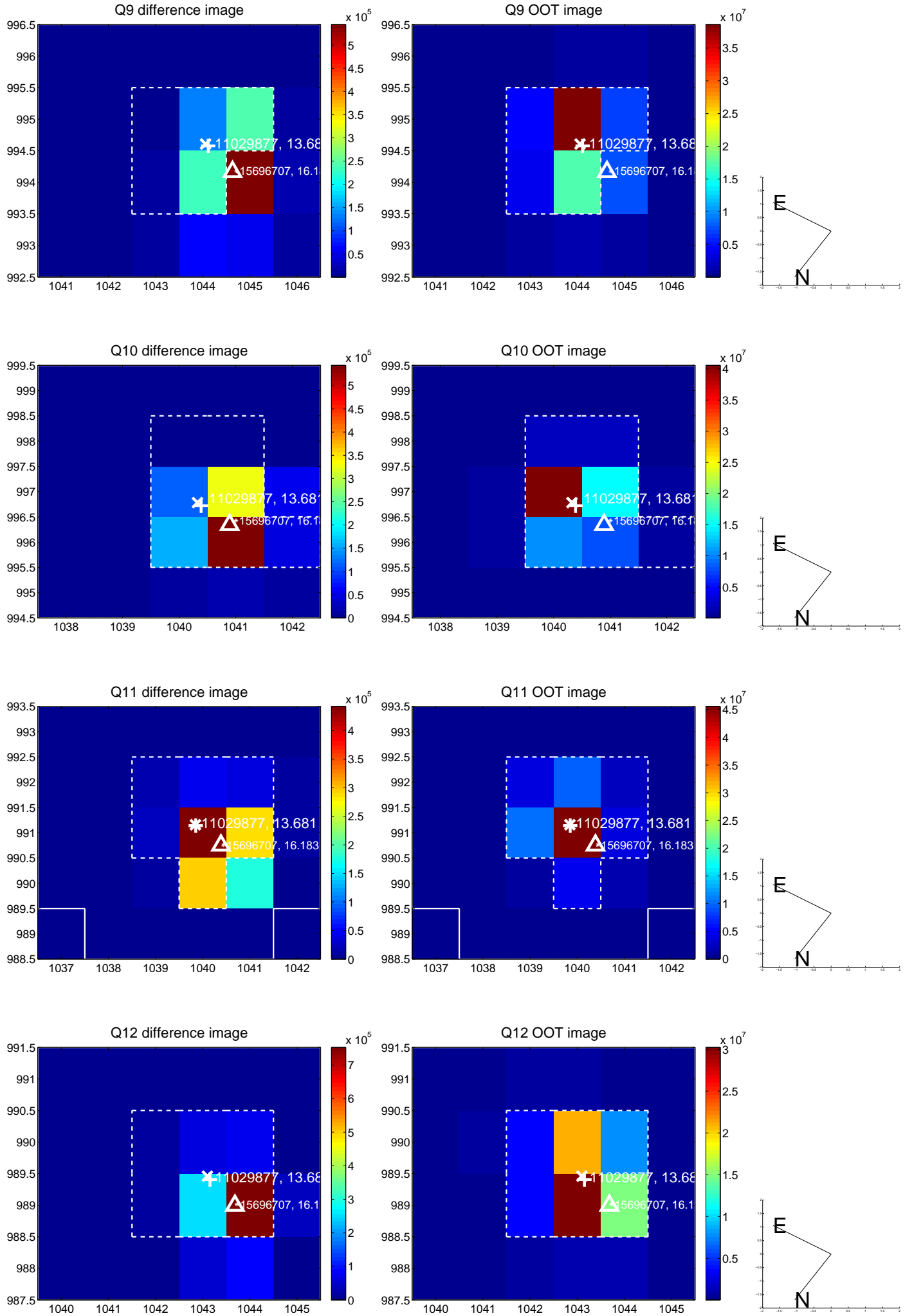




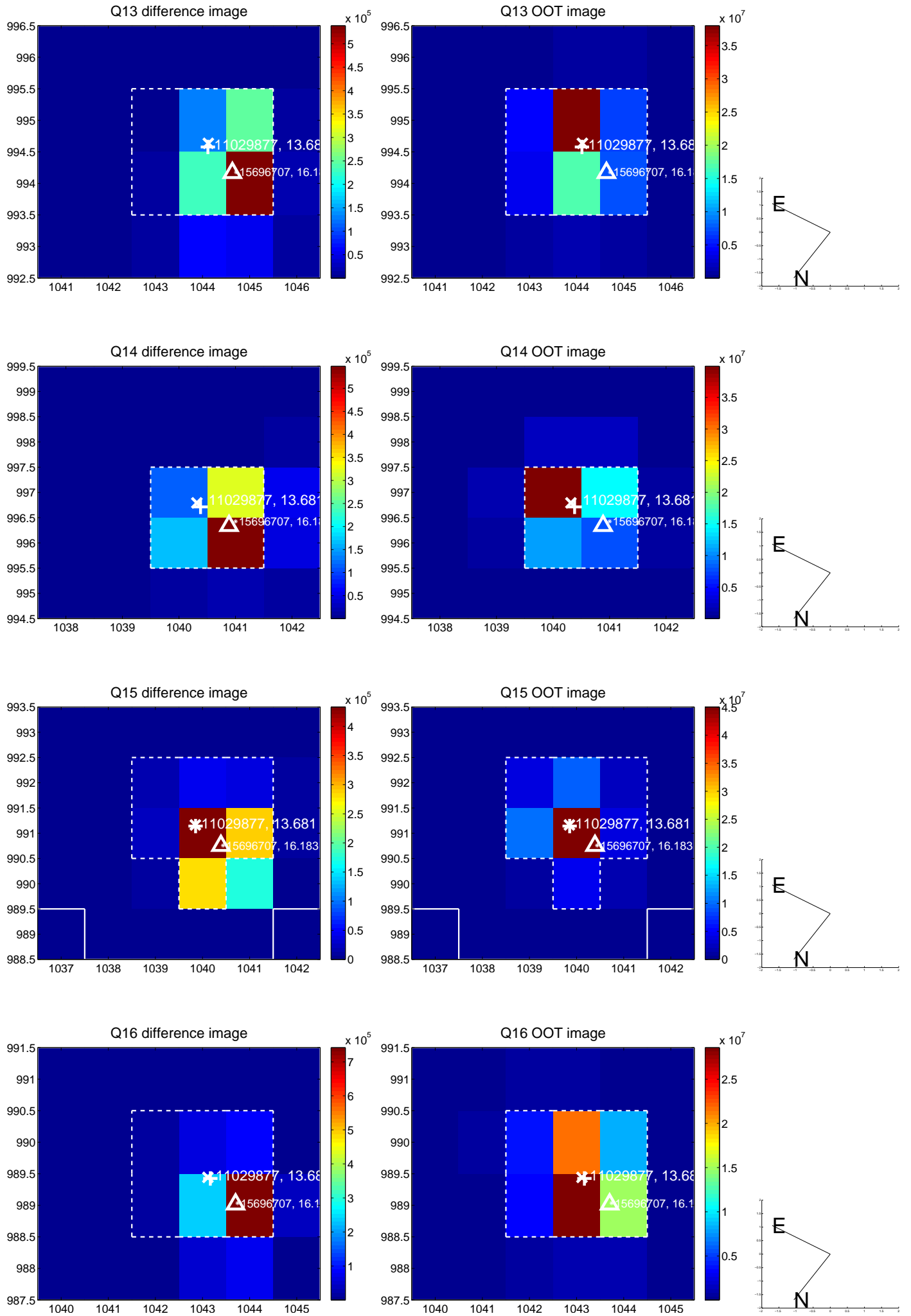
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



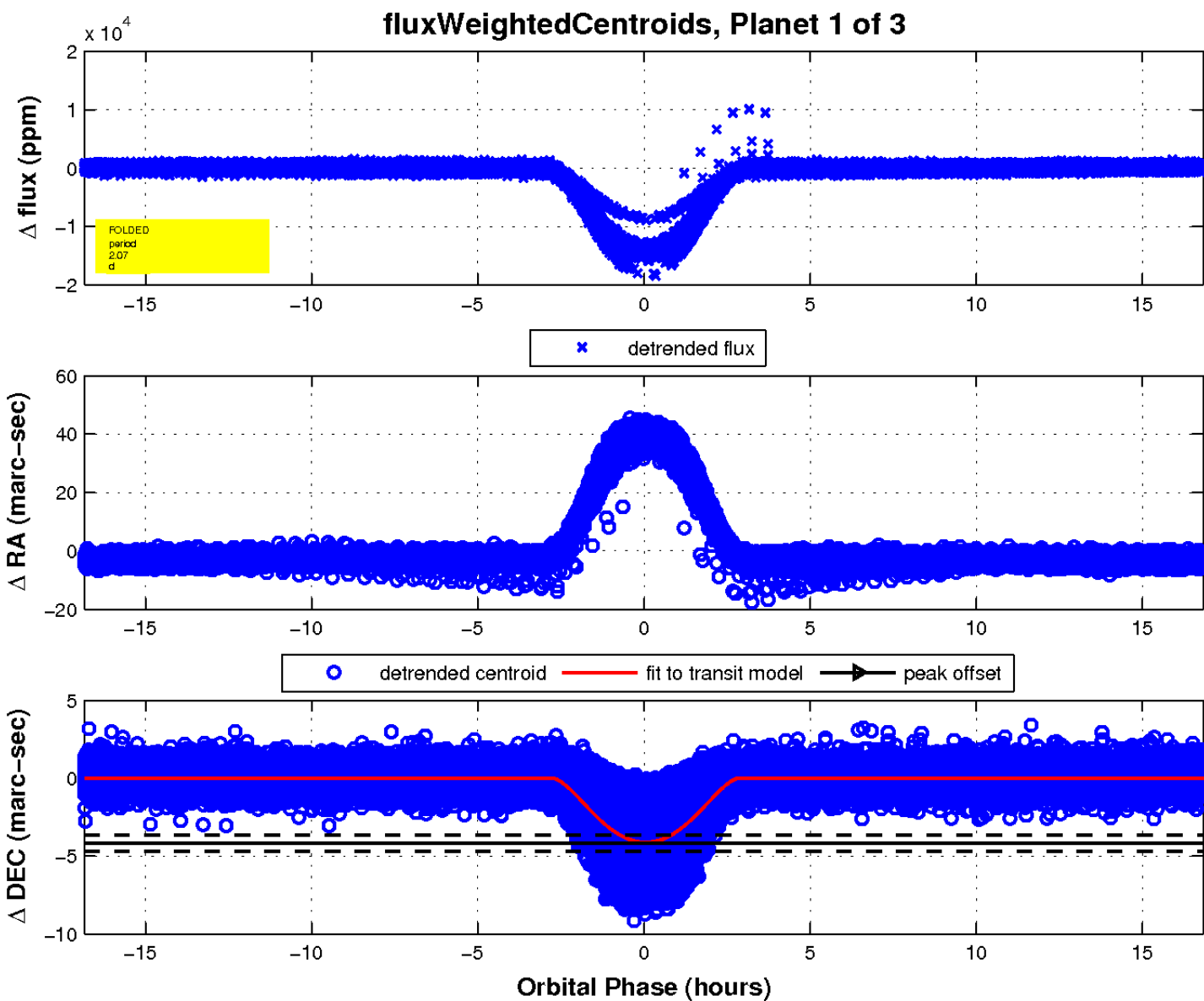
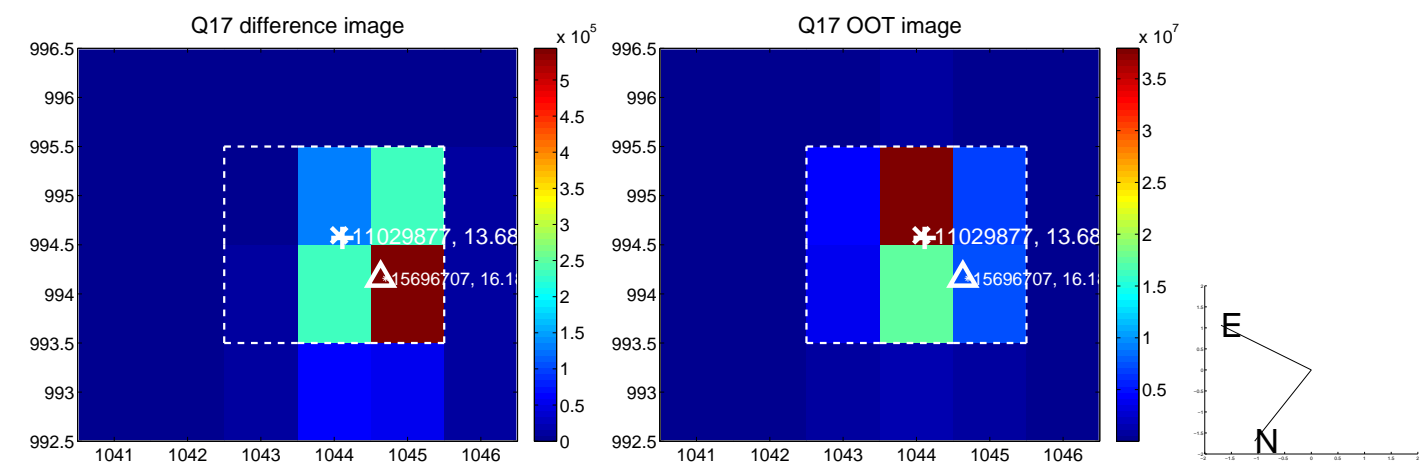
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

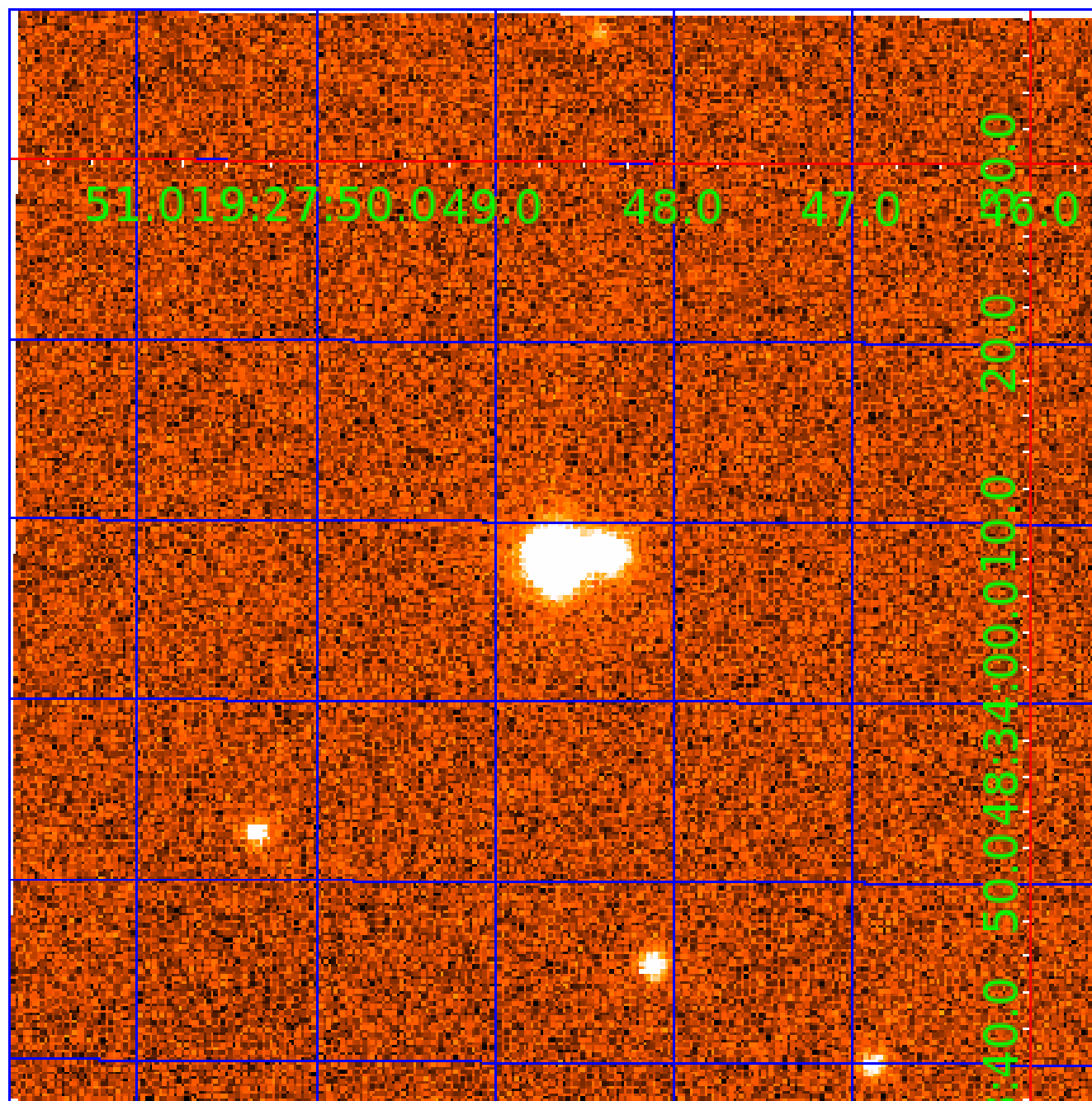


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 011029877

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011029877-01	OBS	7403.01	2.069416	132.645182	14317.5	5.615	2859.2	1825.7	1.25	6640	19.89	2314.07
011029877-02	OBS	No	138.752414	210.913138	578.9	9.413	12.1	6.8	1.25	6640	3.65	8.49
011029877-03	OBS	No	300.032773	287.473546	426.3	7.500	10.5	-1.0	1.25	6640	2.60	3.04

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011029877-01	OBS	FP	0.00	0	1	1	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—CENT_UNRESOLVED_OFFSET
011029877-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_UNRESOLVED_OFFSET
011029877-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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

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

See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

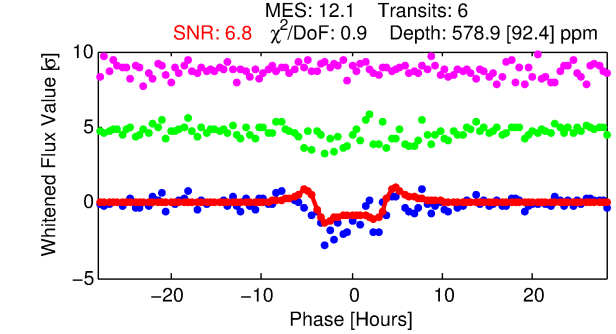
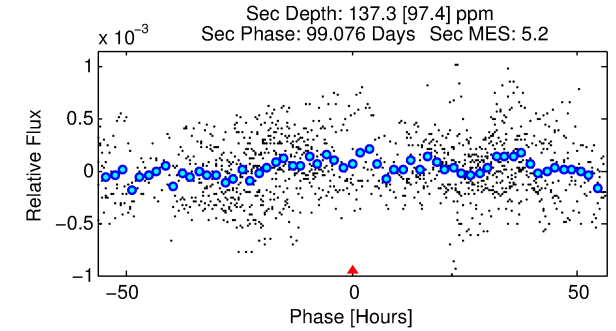
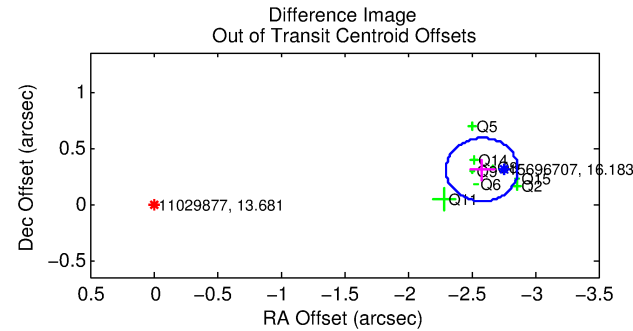
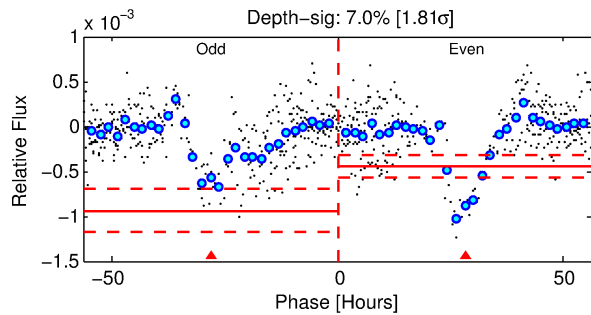
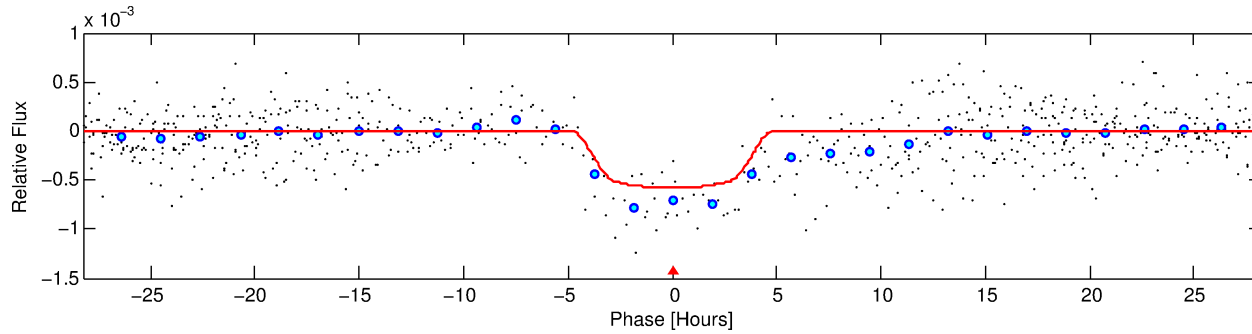
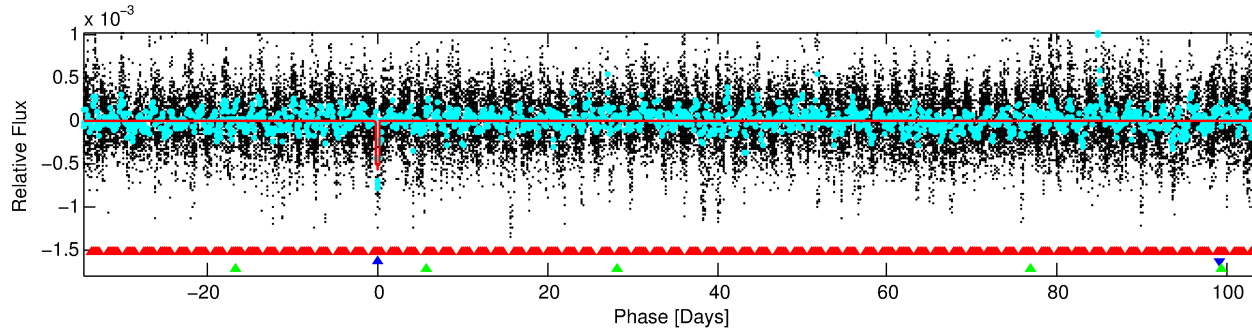
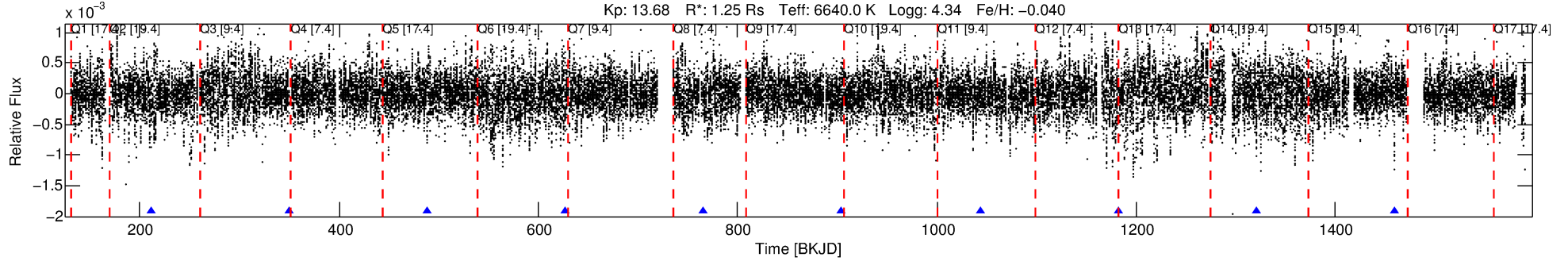
## Ephemeris Match Information For 011029877-02

No Significant Match Found

# DV One-Page Summary

KIC: 11029877 Candidate: 2 of 3 Period: 138.752 d  
KOI: K07403 Corr: No Ephemeris Match

Kp: 13.68 R\*: 1.25 Rs Teff: 6640.0 K Logg: 4.34 Fe/H: -0.040



## DV Fit Results:

Period = 138.75241 [0.00219] d  
Epoch = 210.9131 [0.0145] BKJD  
Rp/R\* = 0.0268 [0.0024]  
a/R\* = 46.77 [8.11]  
b = 0.94 [0.02]  
Seff = 8.50 [1.70]  
Teq = 435 [22] K  
Rp = 3.65 [0.67] Re  
a = 0.5660 [0.0752] AU  
Ag = 1811.86 [1371.72] [1.32σ]  
Teffp = 4391 [806] K [4.91σ]

## DV Diagnostic Results:

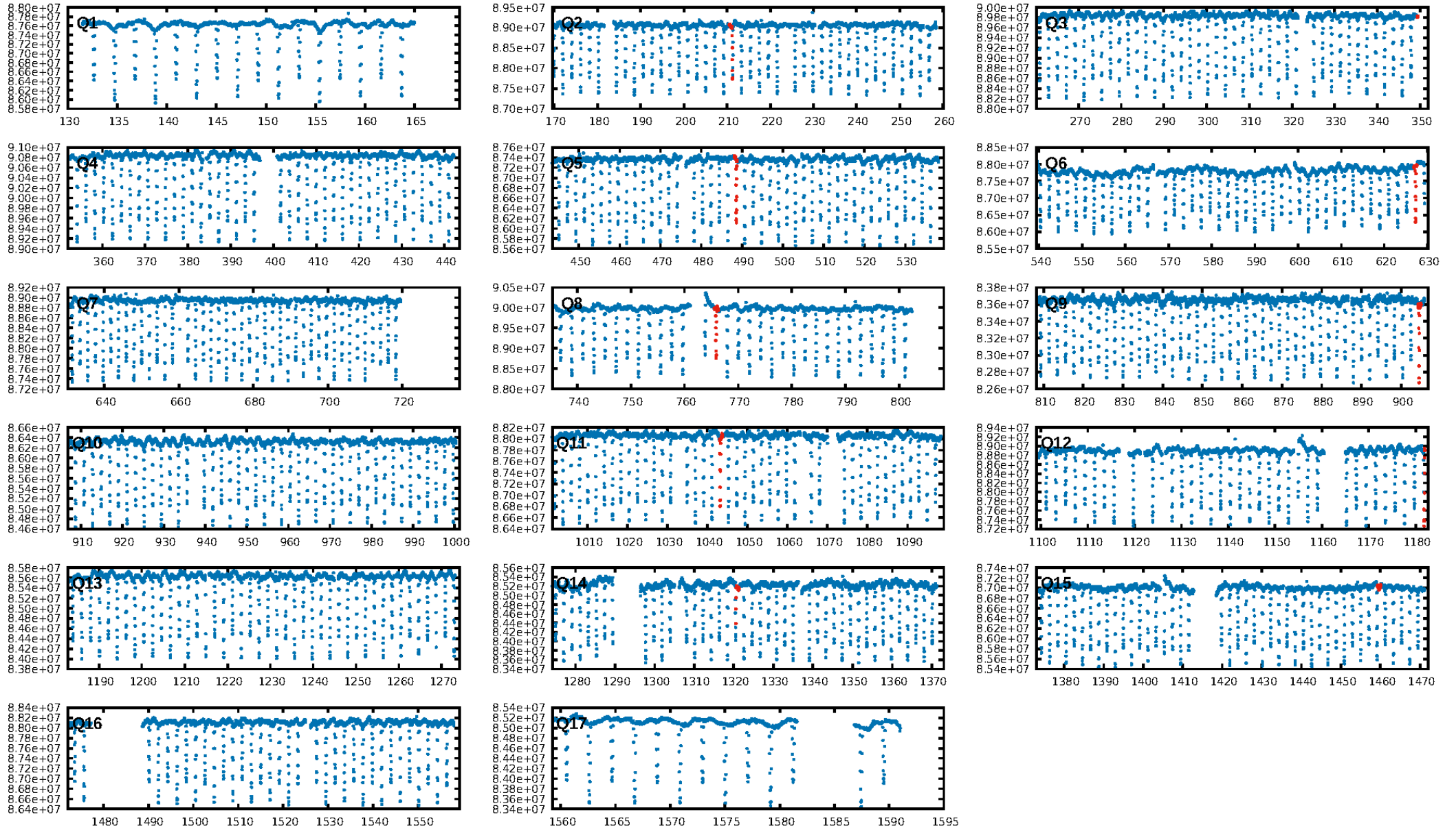
ShortPeriod-sig: 100.0% [299.30σ]  
LongPeriod-sig: 100.0% [321.62σ]  
ModelChiSquare2-sig: 30.3%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [6/6]  
GhostDiagnostic-chr: 1.808  
Centroid-sig: N/A  
Centroid-so: 0.230 arcsec [0.36σ]  
OotOffset-rm: 2.600 arcsec [27.60σ]  
KicOffset-rm: 2.934 arcsec [27.67σ]  
OotOffset-st: 3/2/1/2 [8]  
KicOffset-st: 3/2/1/2 [8]  
DiffImageQuality-fgm: 0.50 [4/8]  
DiffImageOverlap-fno: 0.00 [0/8]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:47:15 Z

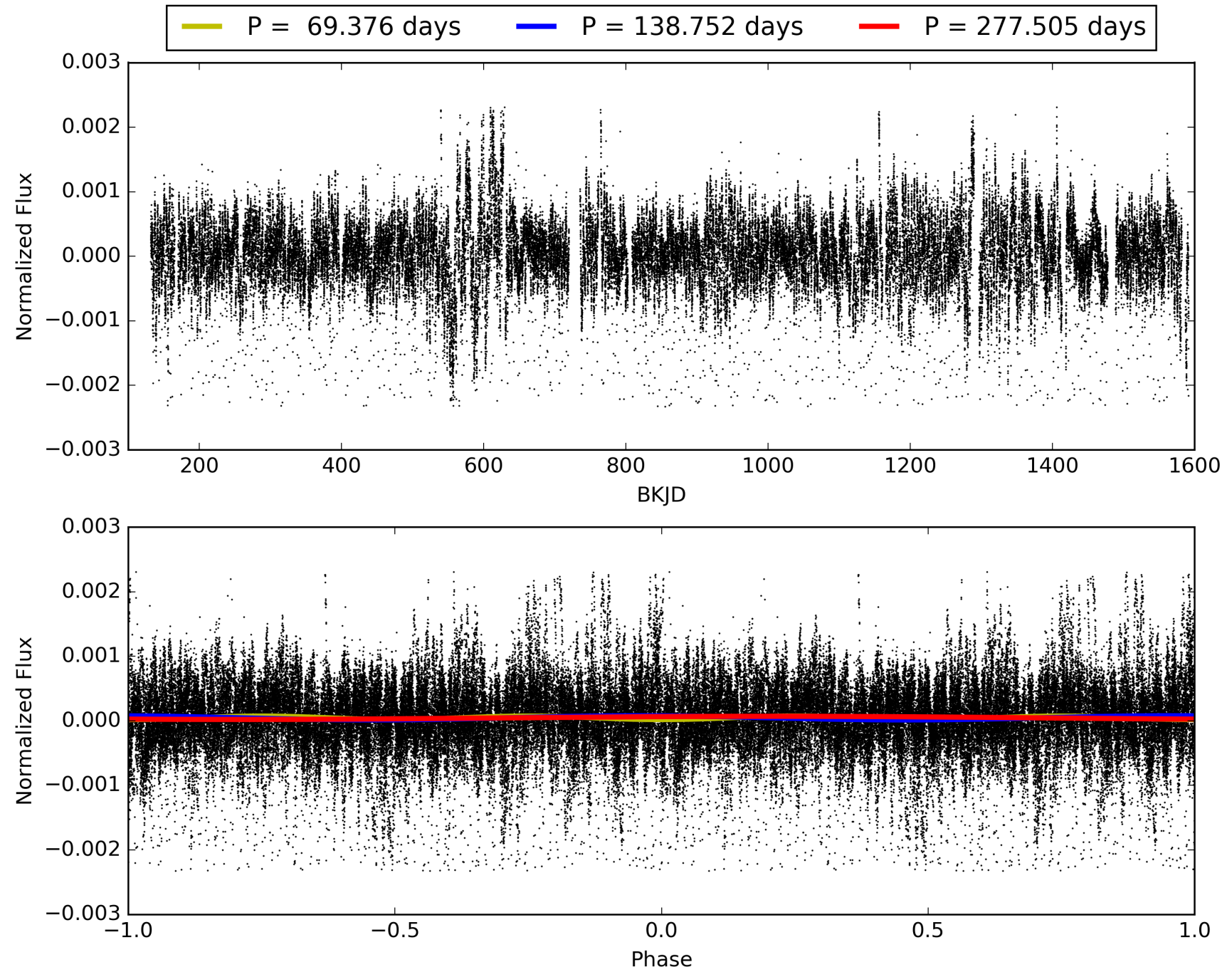
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 011029877-02, PDC Light Curves

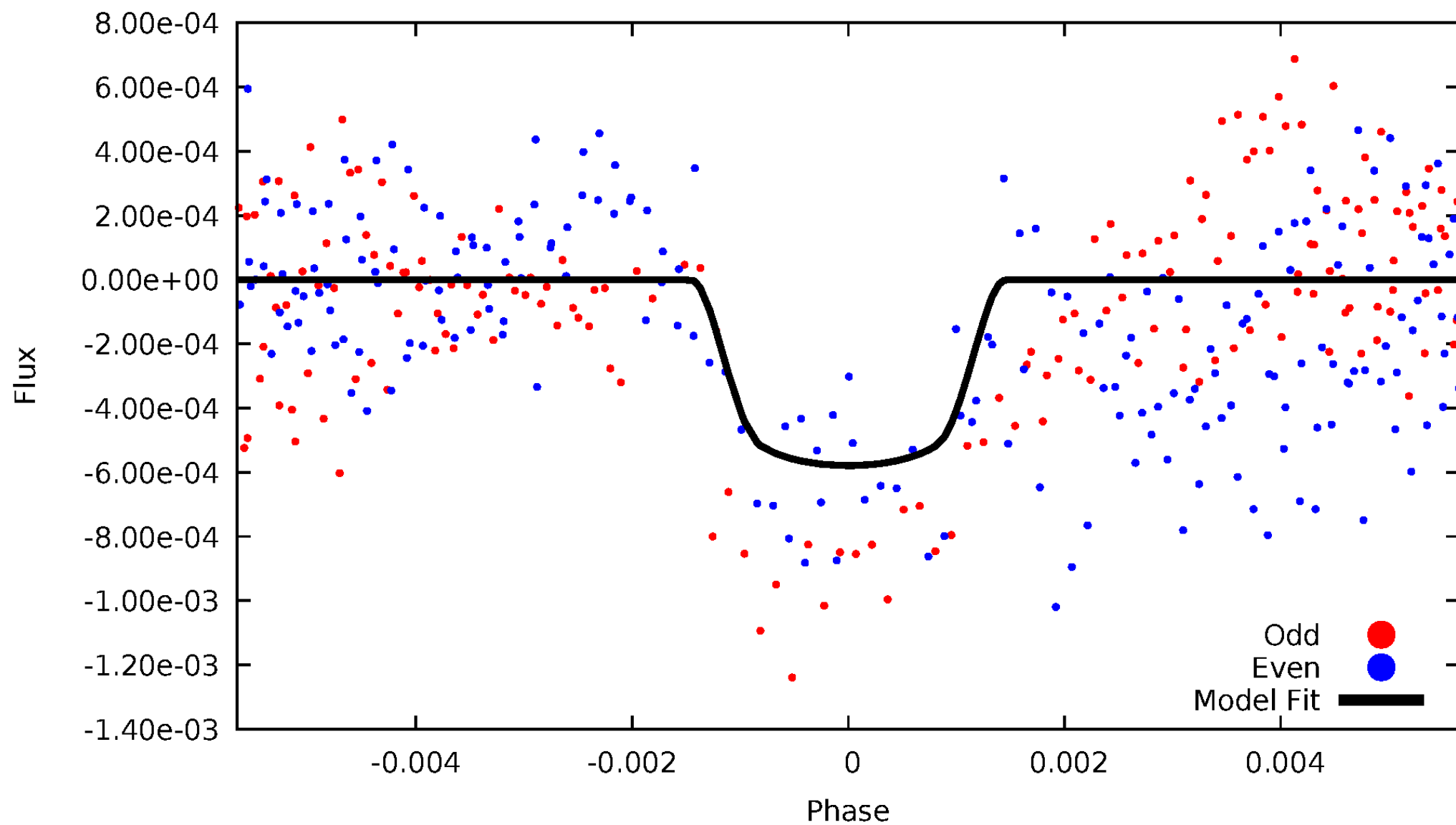


# TCE 011029877-02



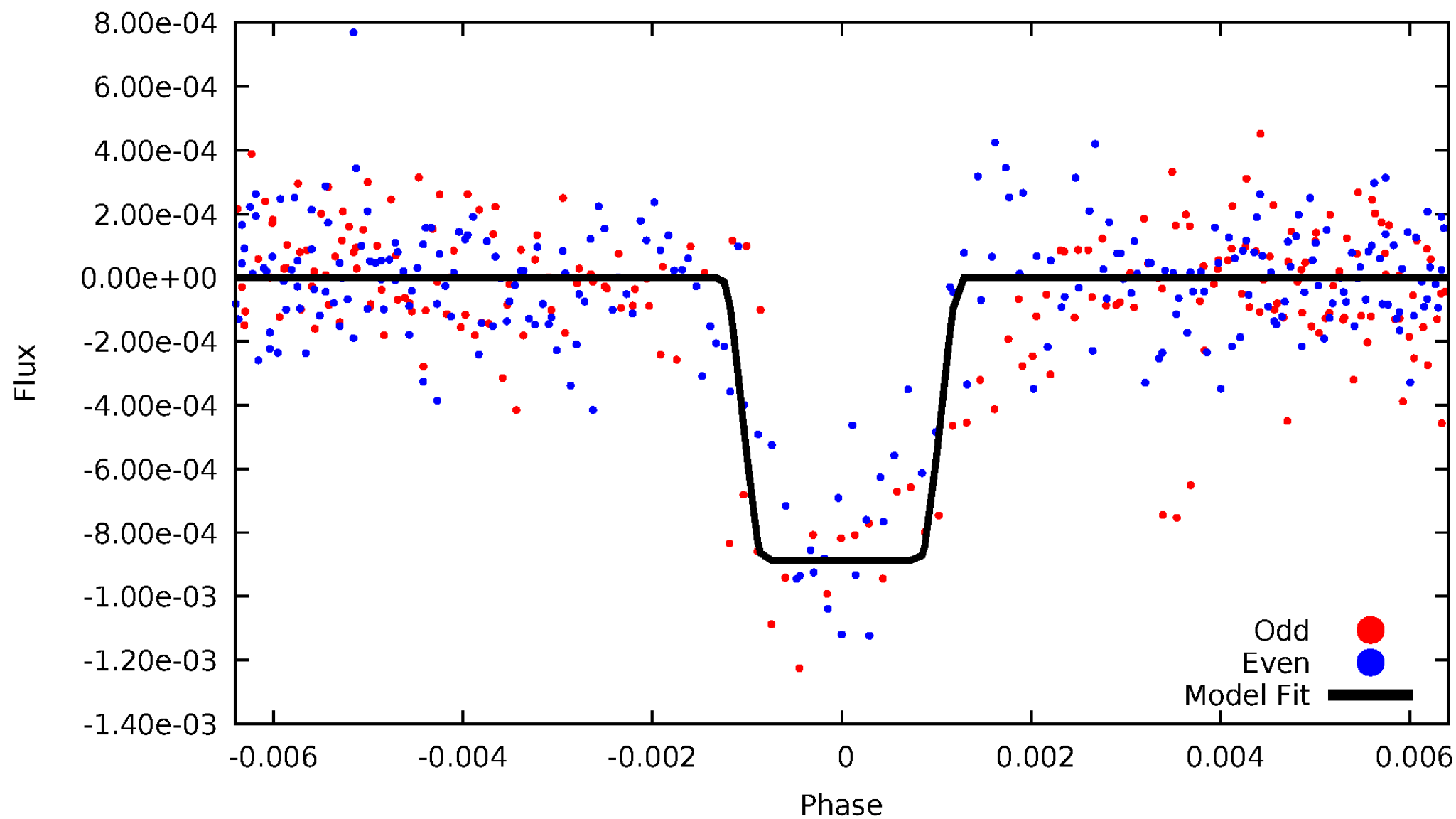
# DV Odd/Even

TCE 011029877-02



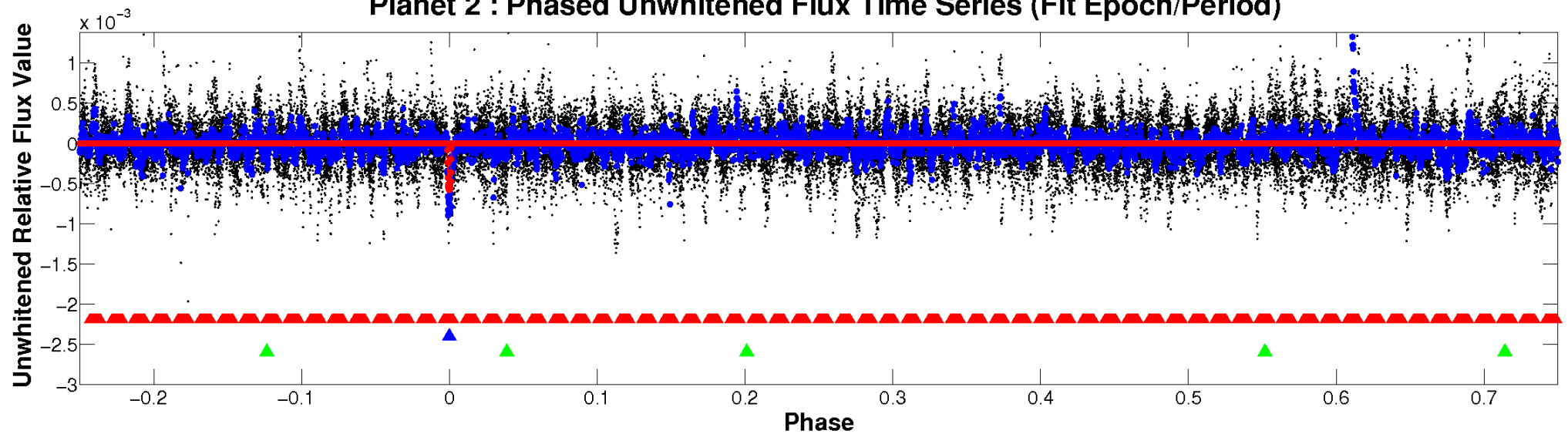
# ALT Odd/Even

TCE 011029877-02

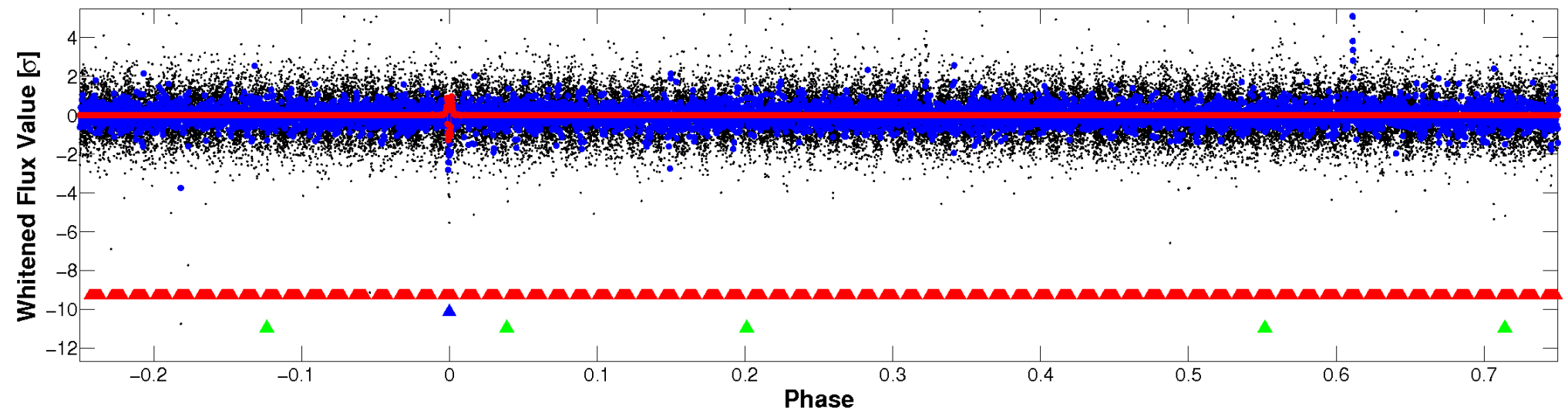


# Non-Whitened Vs. Whitened Light Curve

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

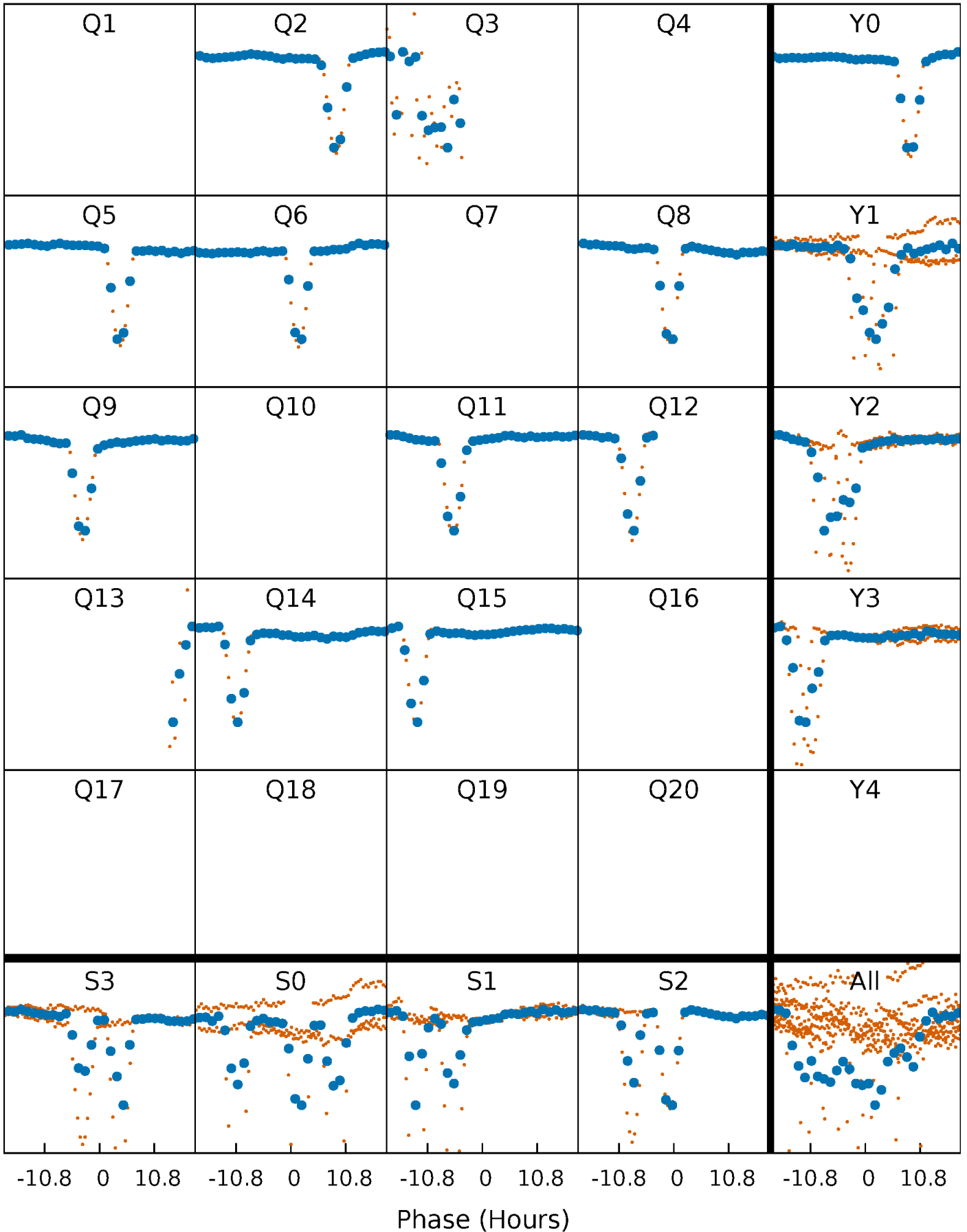


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



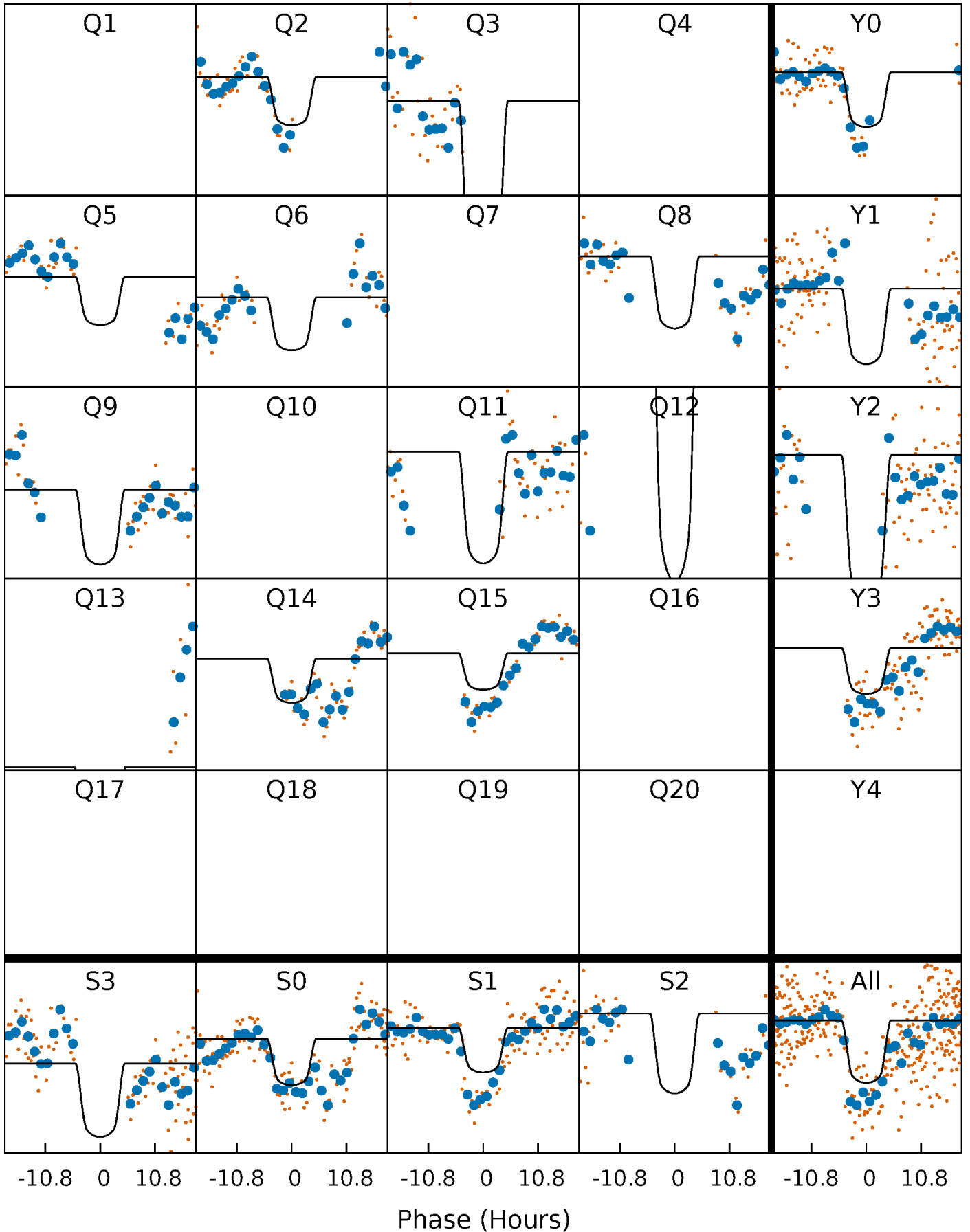
# PDC Quarter-Phased Transit Curves

TCE 011029877-02   P=138.752414 Days    $T_0=210.913138$  (BKJD)



# DV Quarter-Phased Transit Curves

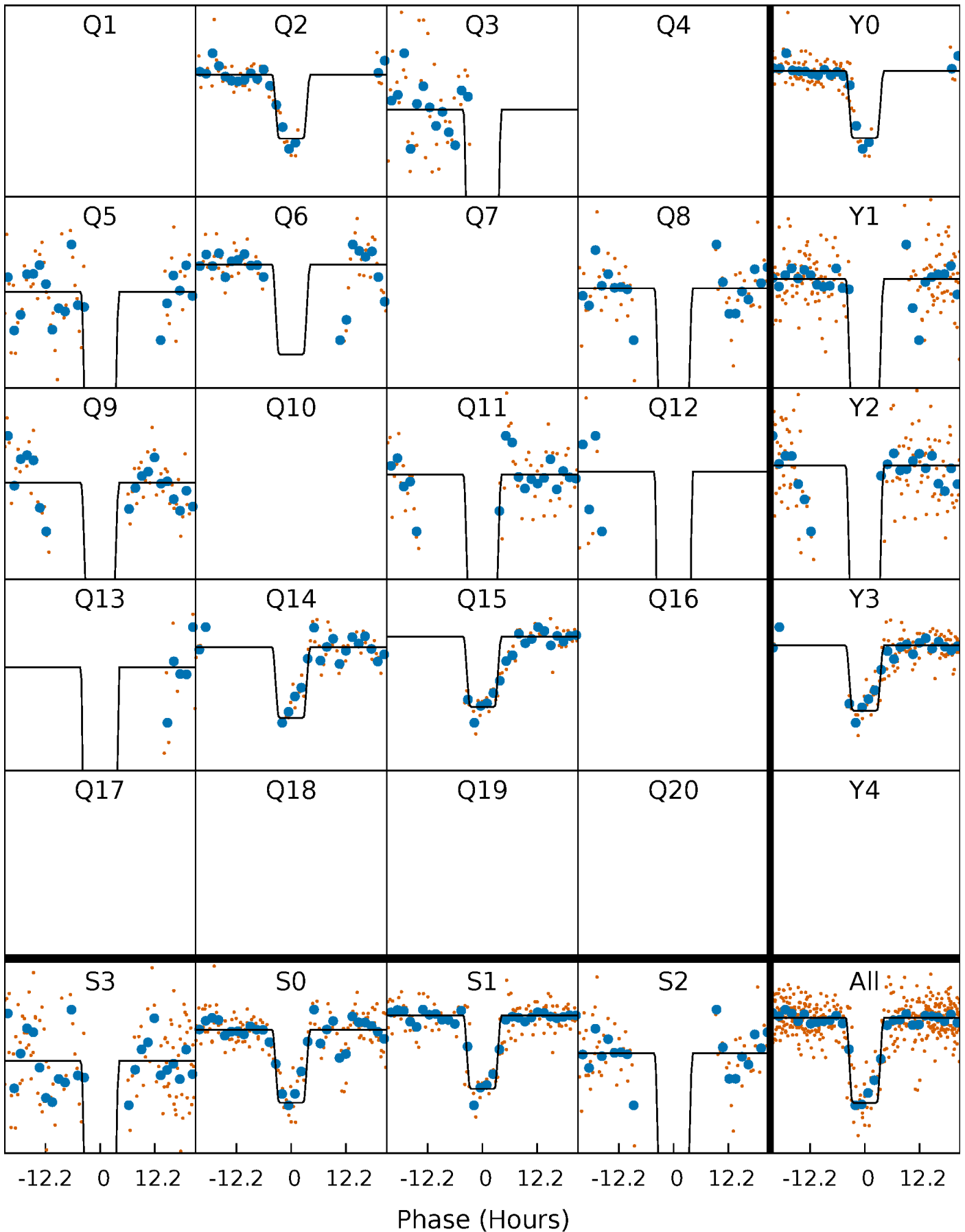
TCE 011029877-02 P=138.752414 Days  $T_0=210.913138$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

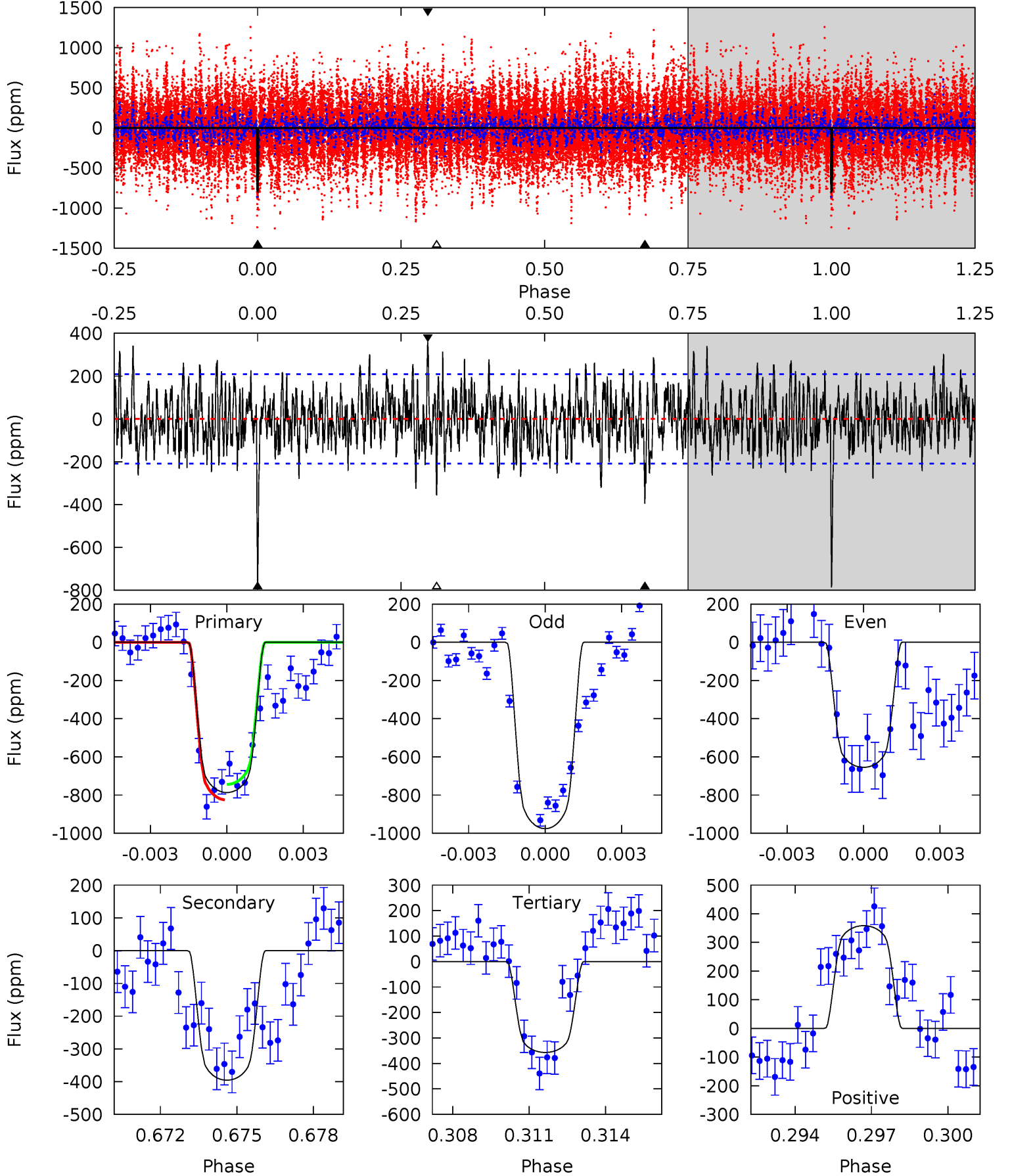
TCE 011029877-02   P=138.757495 Days    $T_0=210.857620$  (BKJD)



# DV Model-Shift Uniqueness Test

011029877-02,  $P = 138.752414$  Days,  $E = 72.160724$  Days

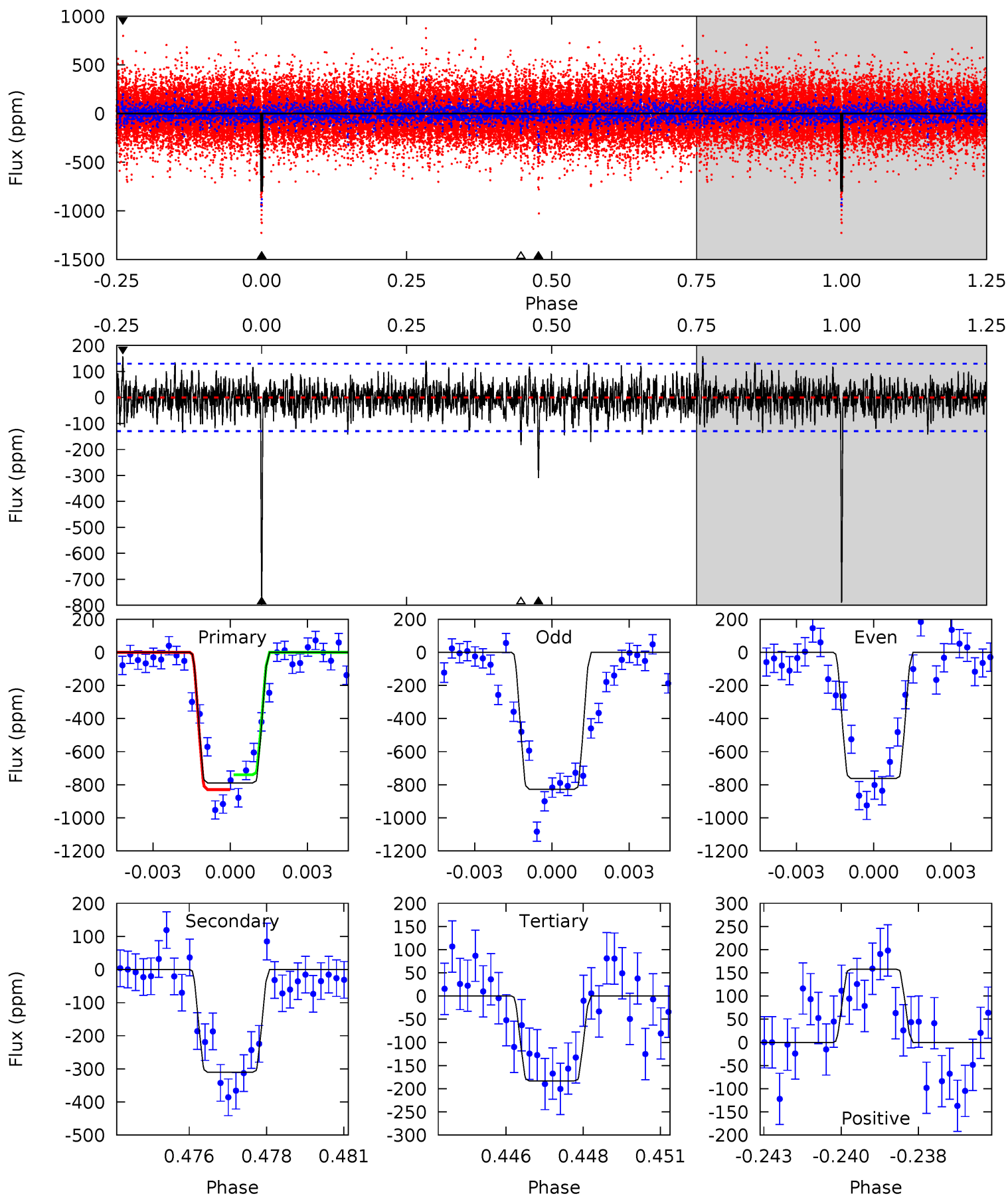
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.8	9.96	8.99	9.03	5.26	2.98	2.57	10.8	10.8	0.97	0.93	3.85	1.11	0.31	1.02



# Alt Model-Shift Uniqueness Test

011029877-02, P = 138.757495 Days, E = 72.100125 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.1	12.6	7.45	6.43	5.28	3.02	1.65	24.7	25.7	5.17	6.19	1.31	0.65	0.17	1.81



### Stellar Parameters For KIC 011029877

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6640^{+69}_{-89}$	$4.343^{+0.028}_{-0.105}$	$-0.040^{+0.150}_{-0.200}$	$1.250^{+0.198}_{-0.066}$	$1.261^{+0.077}_{-0.077}$	$0.911^{+0.117}_{-0.291}$
	+1%/-1%	+1%/-2%	+375%/-500%	+16%/-5%	+6%/-6%	+13%/-32%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 011029877-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-396 \pm 40$	$3.75^{+0.47}_{-0.39}$	$614^{+23}_{-14}$	$5703^{+327}_{-266}$	$4930^{+1332}_{-1081}$
Alt.	$-310 \pm 25$	$4.17^{+0.46}_{-0.40}$	$615^{+23}_{-14}$	$5169^{+217}_{-201}$	$3121^{+760}_{-611}$

$T_{max}$  = 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

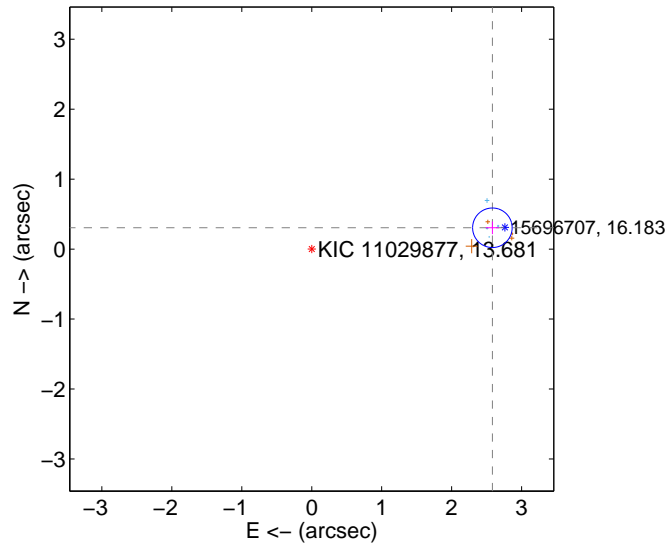
Supplemental centroid analysis for 011029877-02. Kepler magnitude: 13.68. Transit SNR 6.79

There are 4 quarters with good PRF difference image offsets

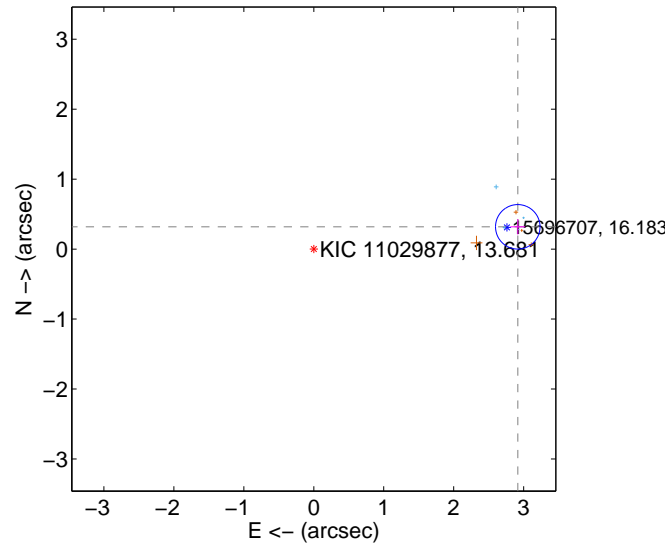
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>2.600 <math>\pm</math> 0.094</b>	<b>27.60</b>	-2.582 $\pm$ 0.095	0.305 $\pm$ 0.091
PRF-fit source offset from KIC position	<b>2.934 <math>\pm</math> 0.106</b>	<b>27.67</b>	-2.916 $\pm$ 0.106	0.318 $\pm$ 0.110
photometric centroid source offset	0.23 $\pm$ 0.63	0.36	-0.23 $\pm$ 0.63	-0.01 $\pm$ 0.47

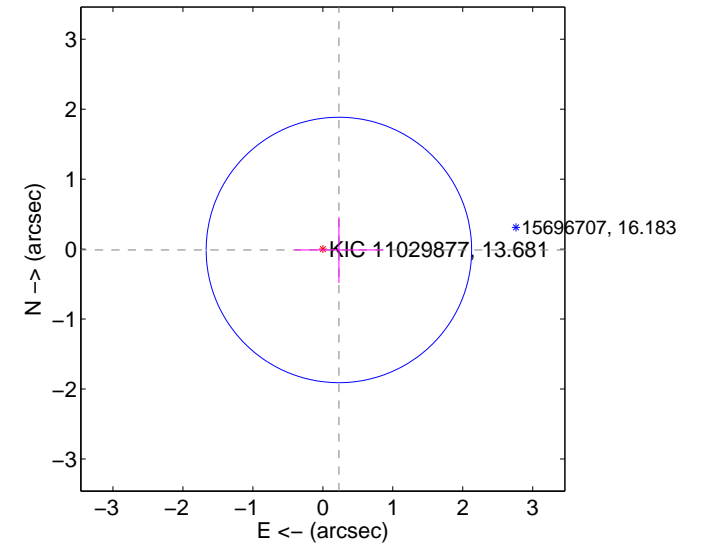
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

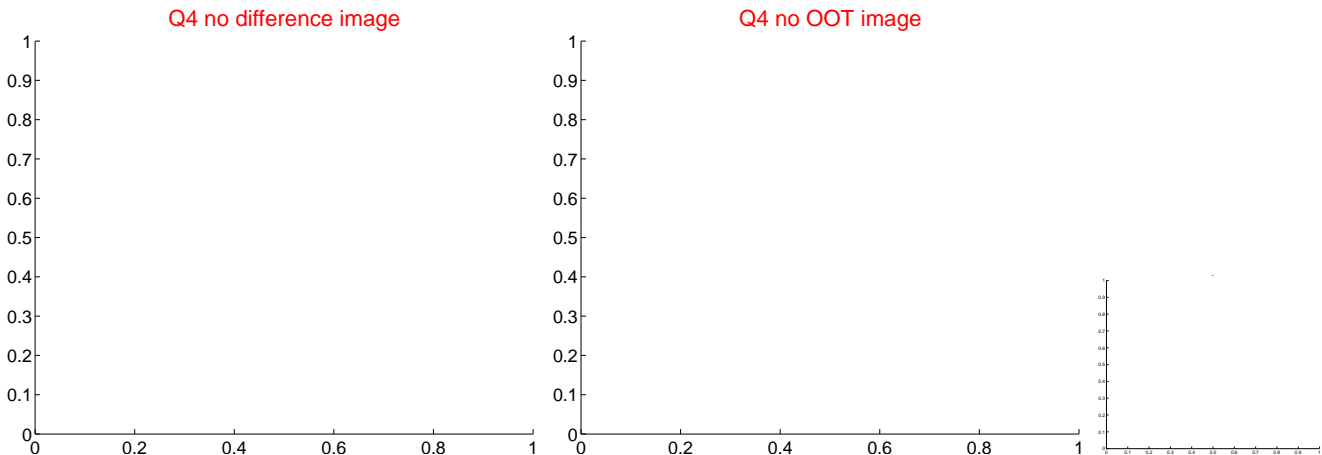
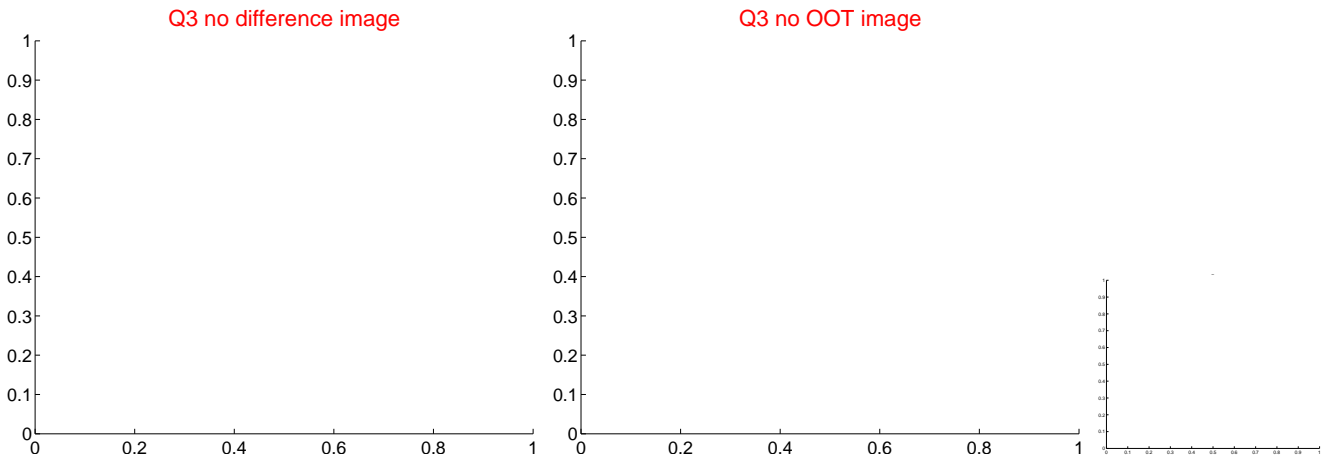
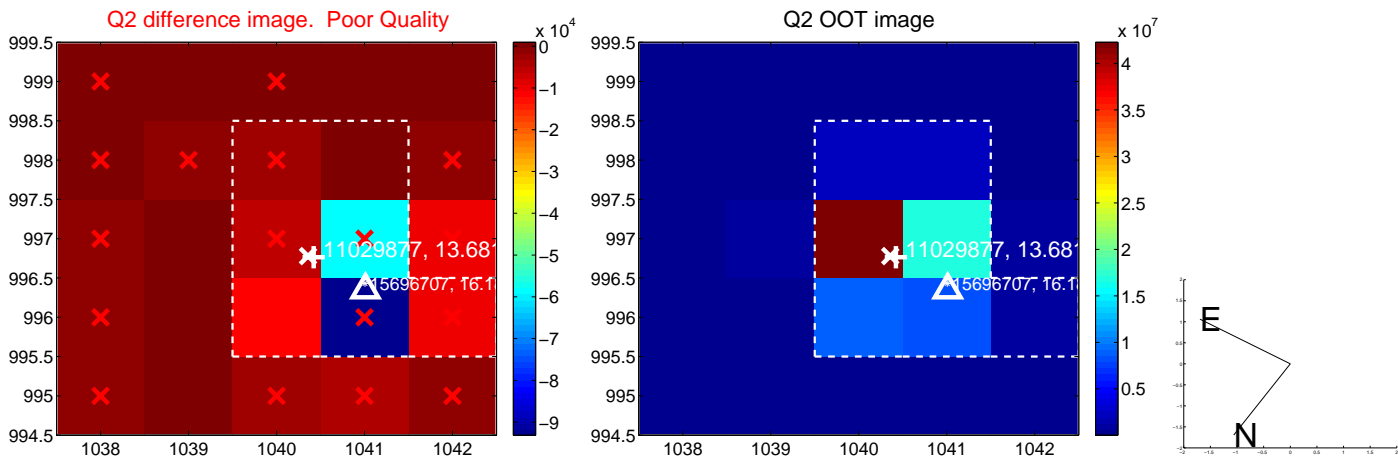
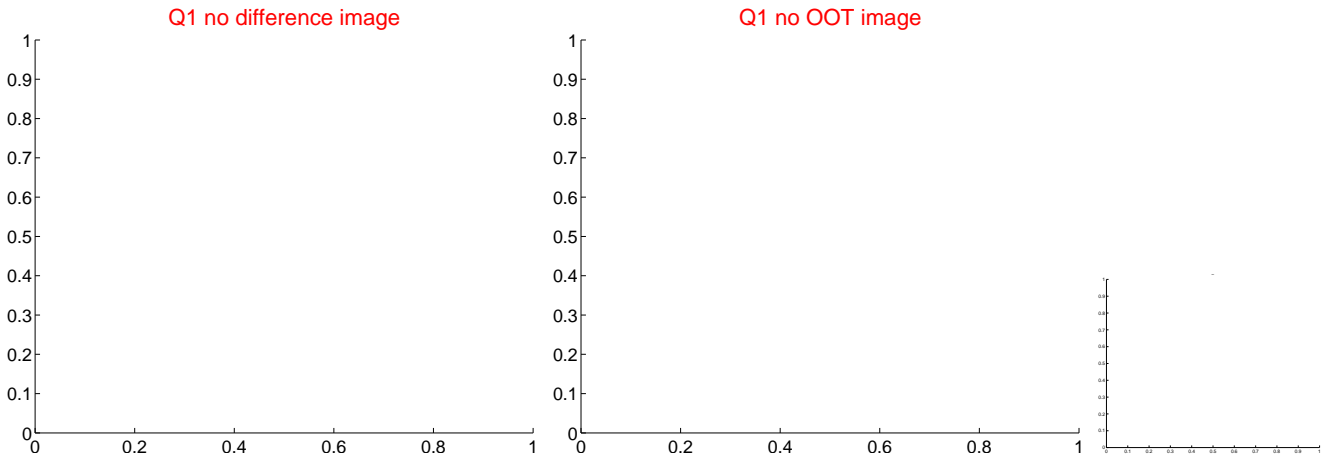


offset from photometric centroids

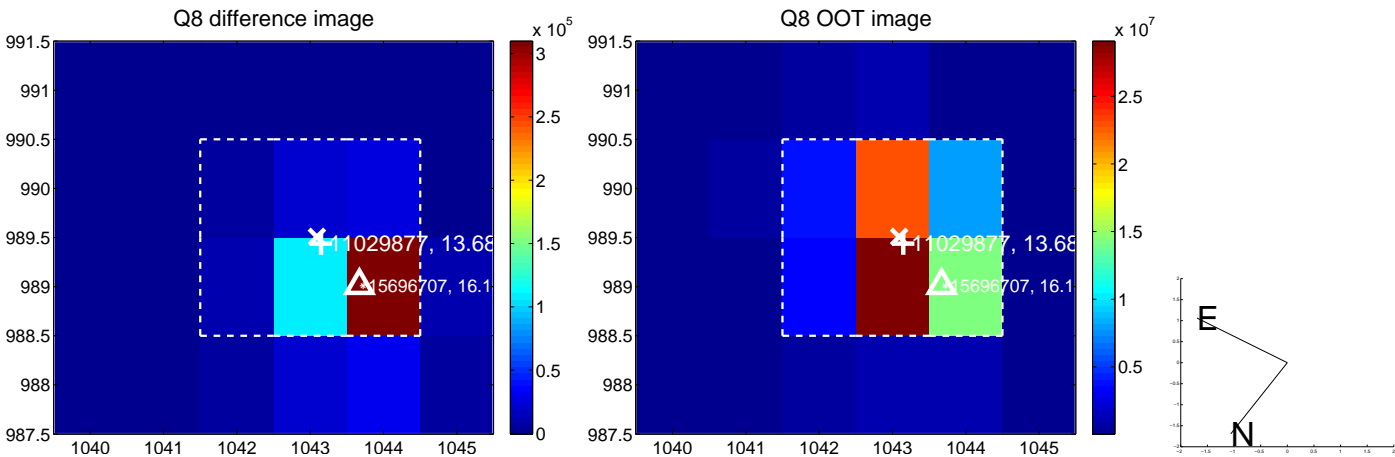
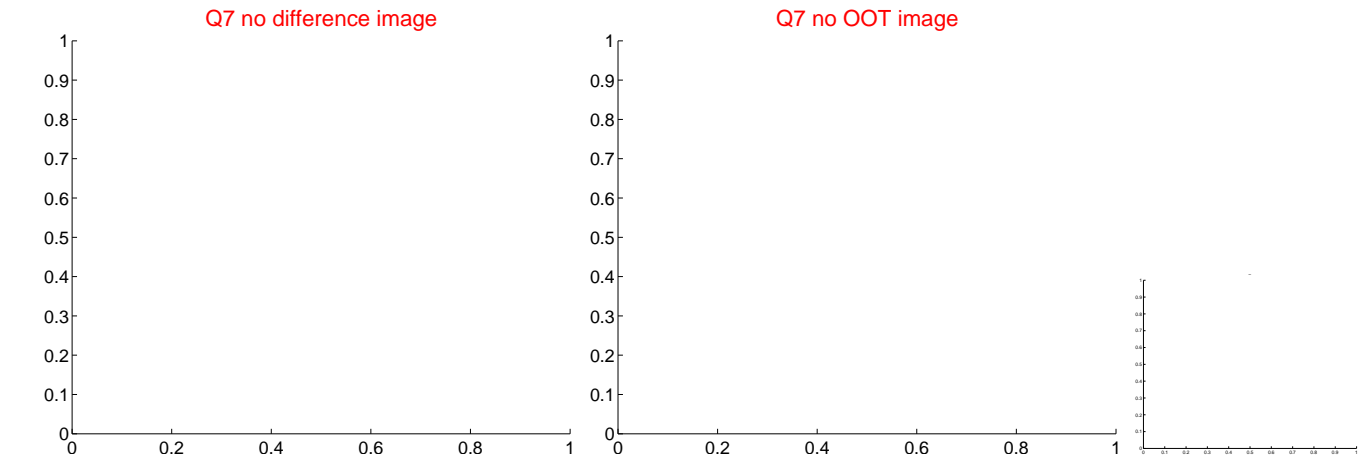
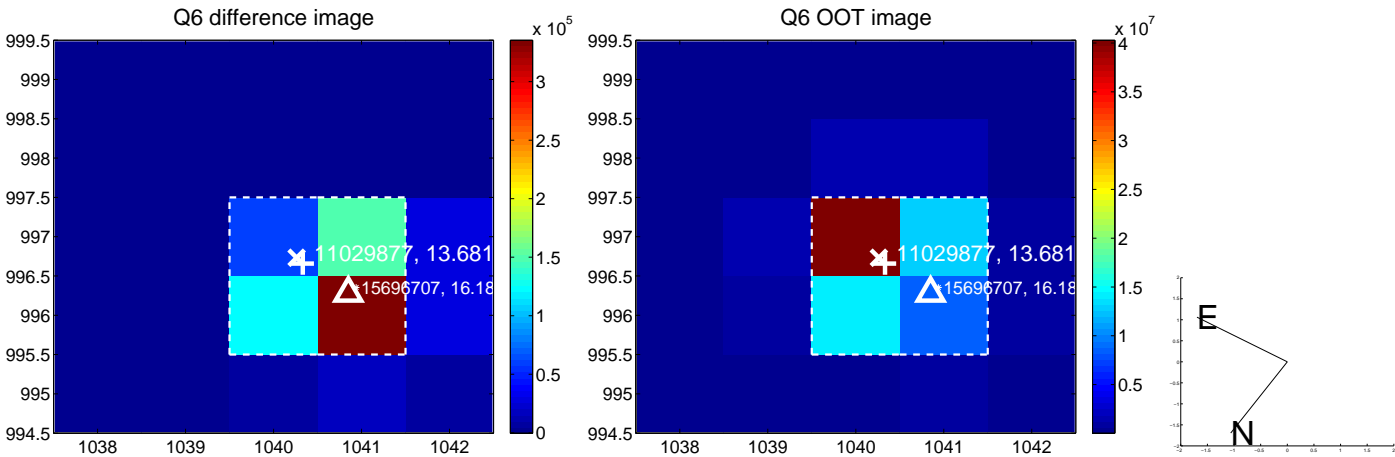
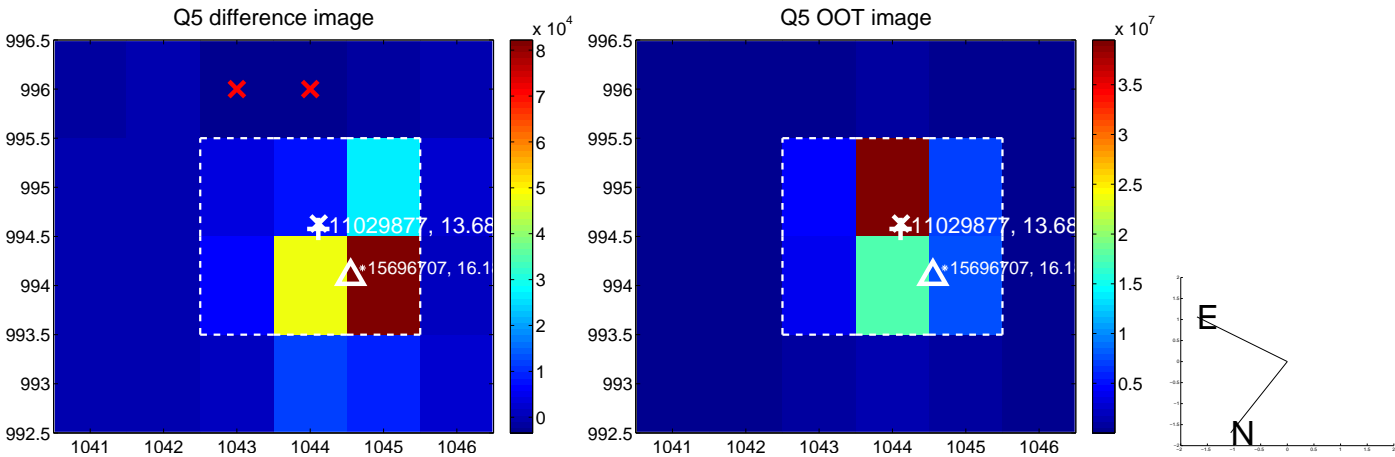


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

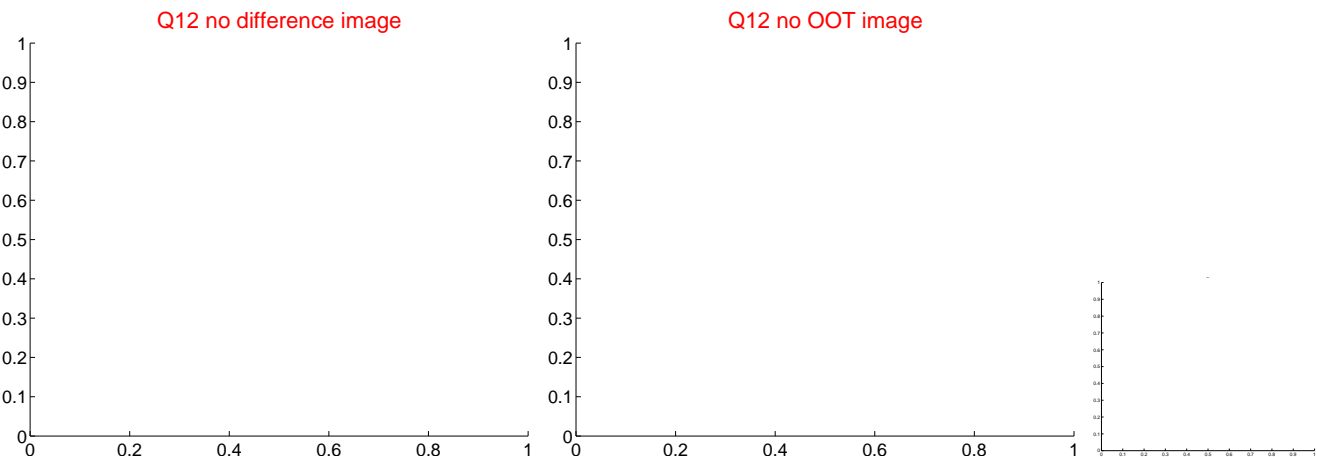
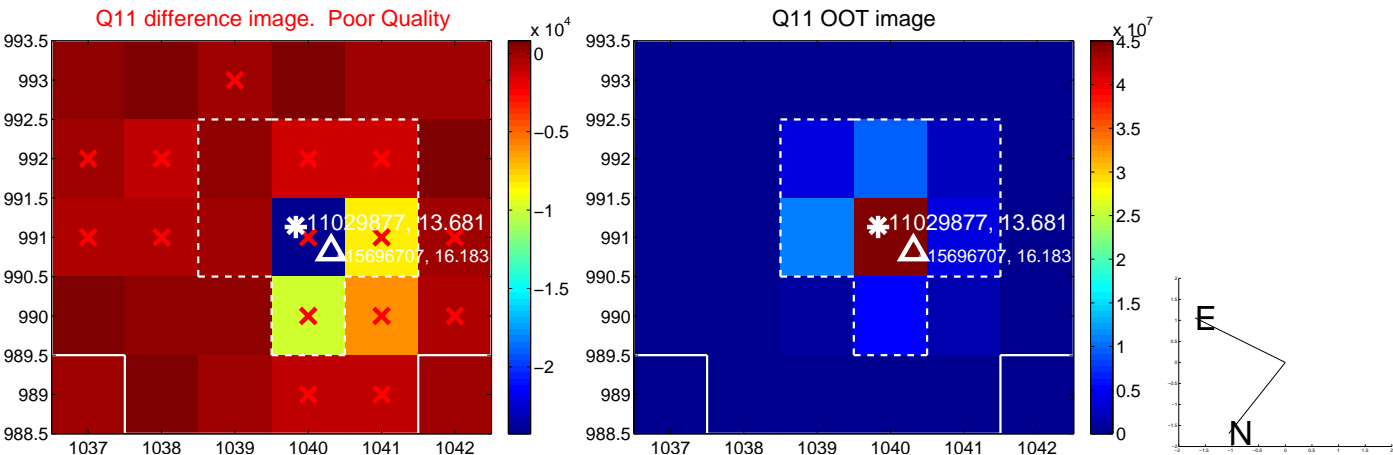
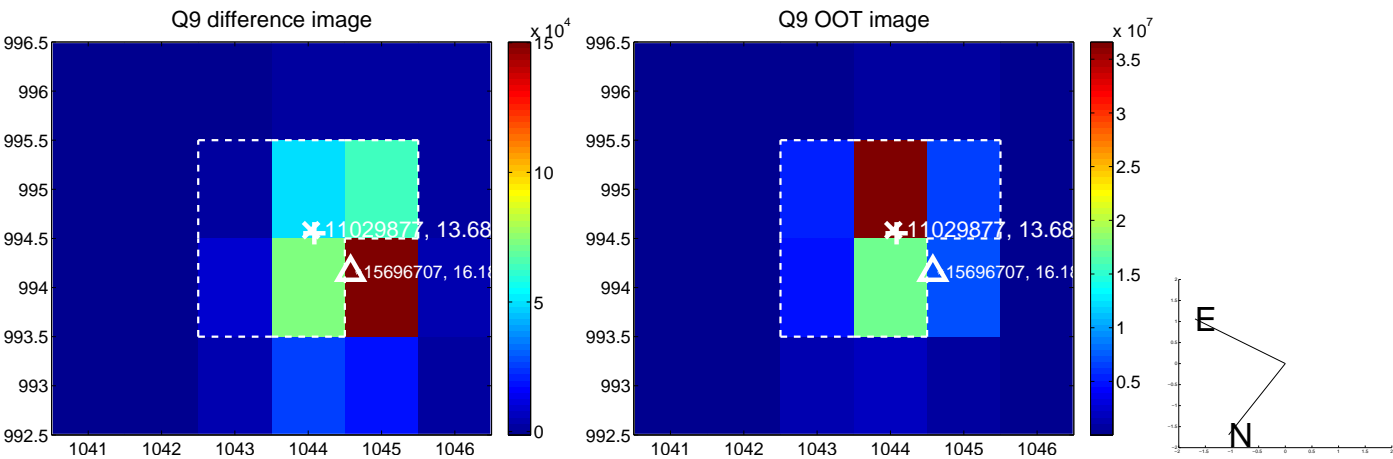


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

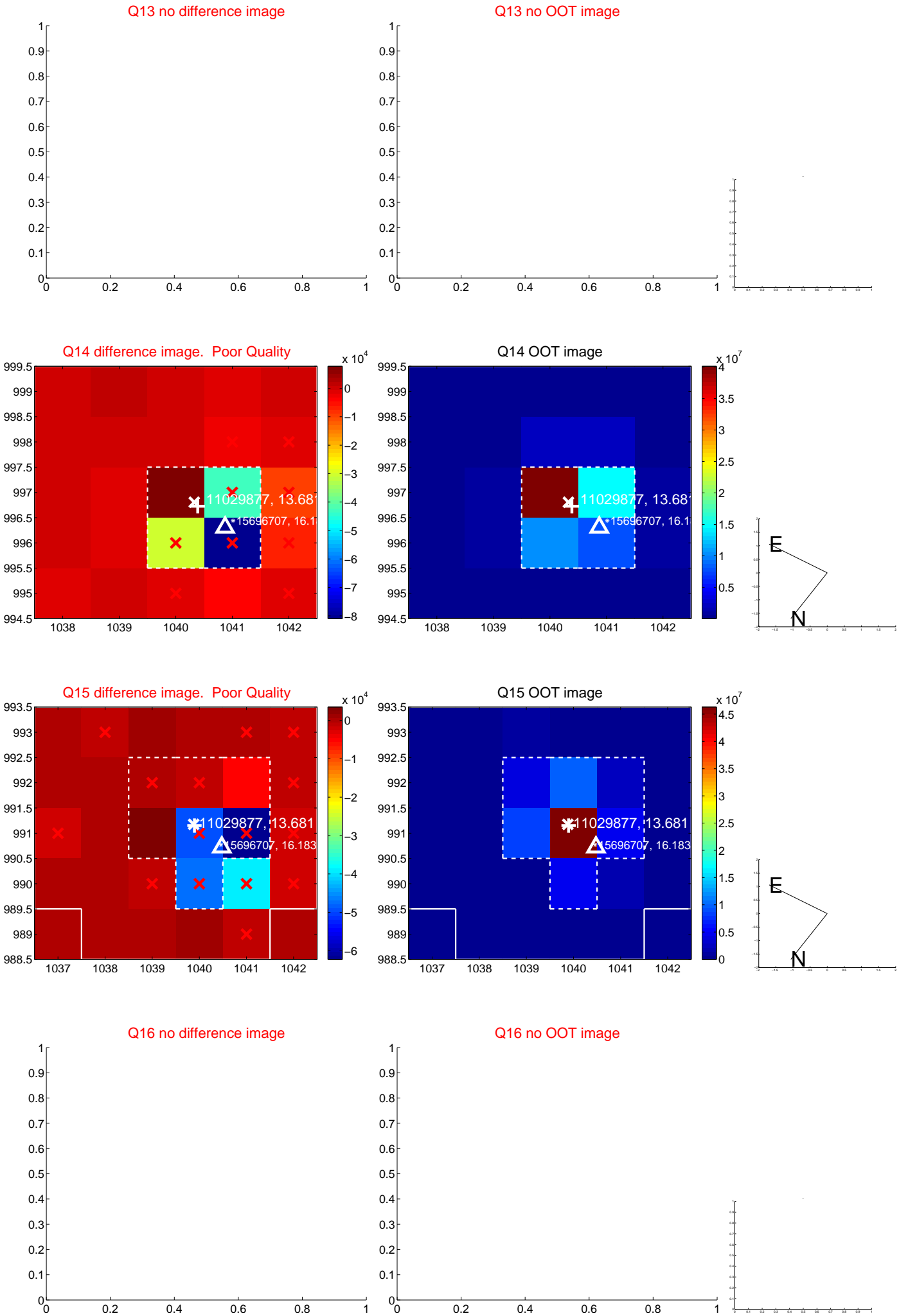




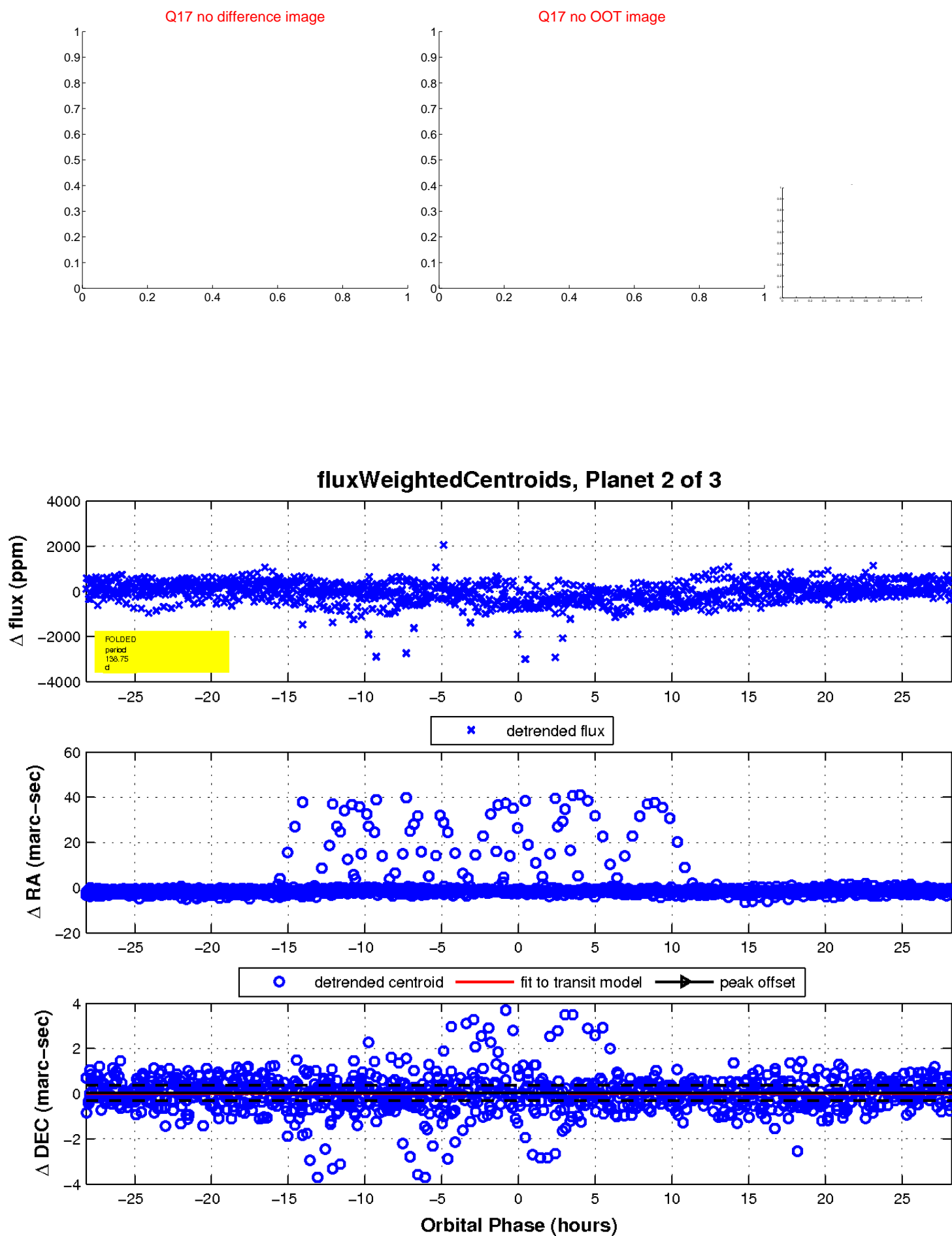
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

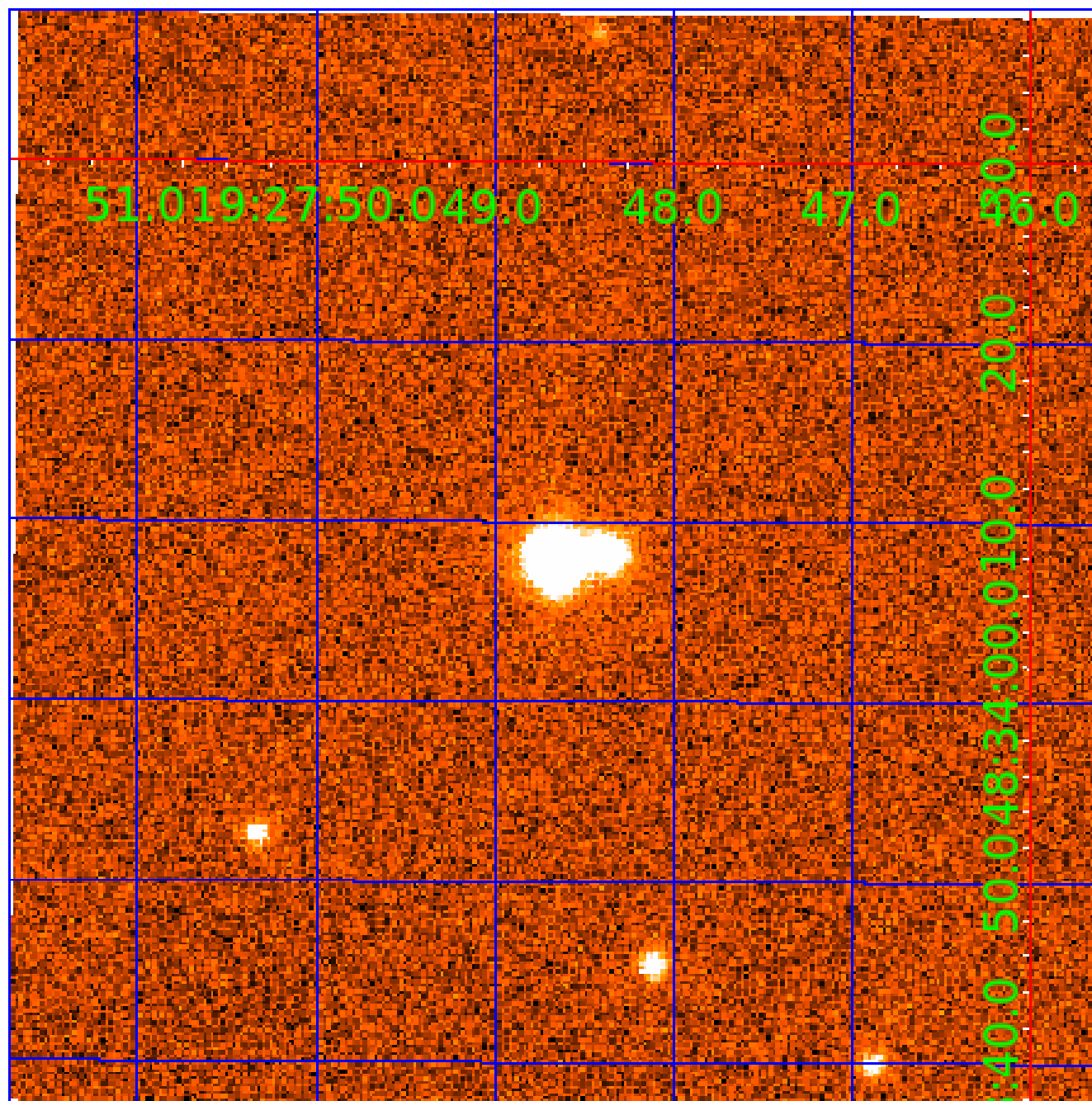


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 011029877

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011029877-01	OBS	7403.01	2.069416	132.645182	14317.5	5.615	2859.2	1825.7	1.25	6640	19.89	2314.07
011029877-02	OBS	No	138.752414	210.913138	578.9	9.413	12.1	6.8	1.25	6640	3.65	8.49
011029877-03	OBS	No	300.032773	287.473546	426.3	7.500	10.5	-1.0	1.25	6640	2.60	3.04

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011029877-01	OBS	FP	0.00	0	1	1	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—CENT_UNRESOLVED_OFFSET
011029877-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_UNRESOLVED_OFFSET
011029877-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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

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

See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011029877-03

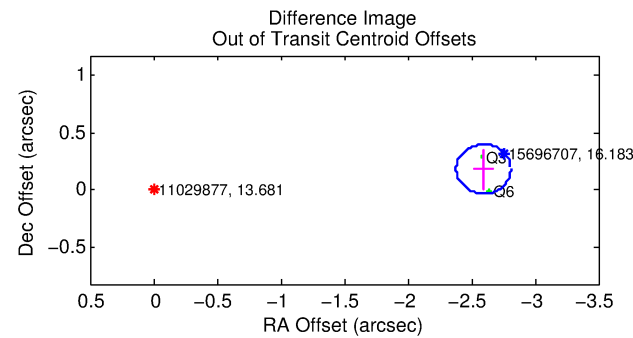
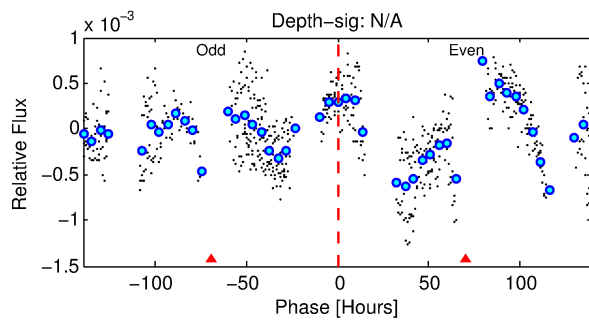
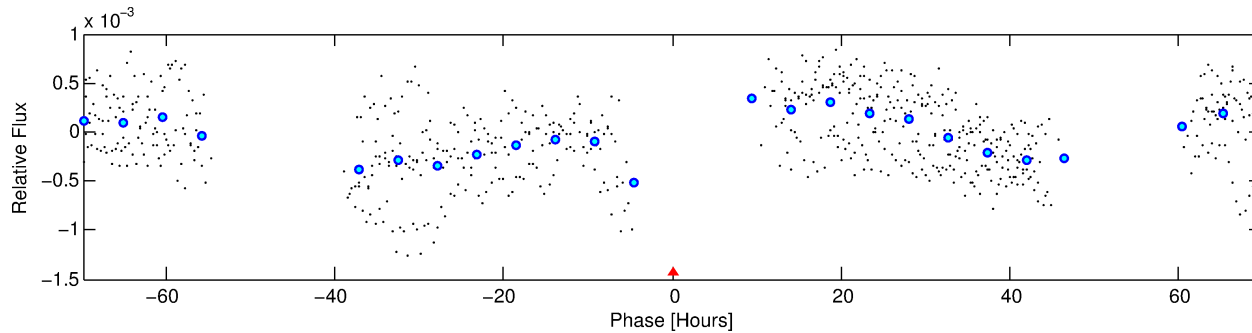
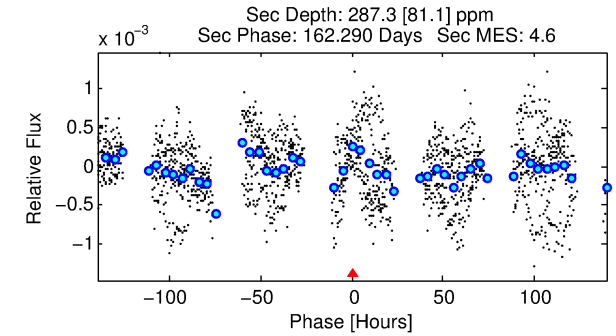
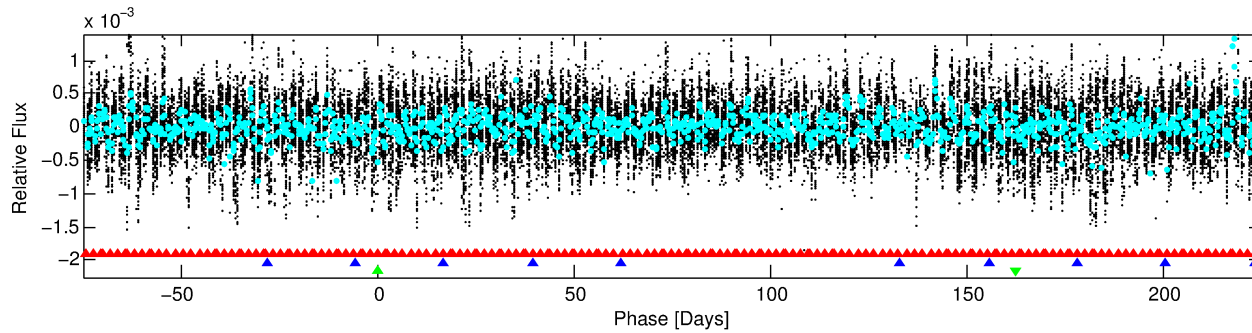
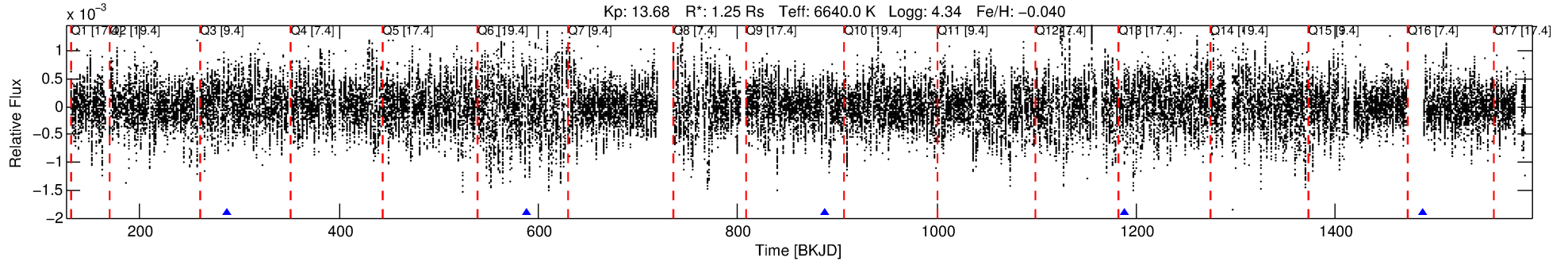
No Significant Match Found

# DV One-Page Summary

KIC: 11029877 Candidate: 3 of 3 Period: 300.033 d

KOI: K07403 Corr: No Ephemeris Match

Kp: 13.68 R\*: 1.25 Rs Teff: 6640.0 K Logg: 4.34 Fe/H: -0.040



## TPS TCE Results:

Period = 300.03277 d  
Epoch = 287.4735 BKJD

DV fit results are unavailable

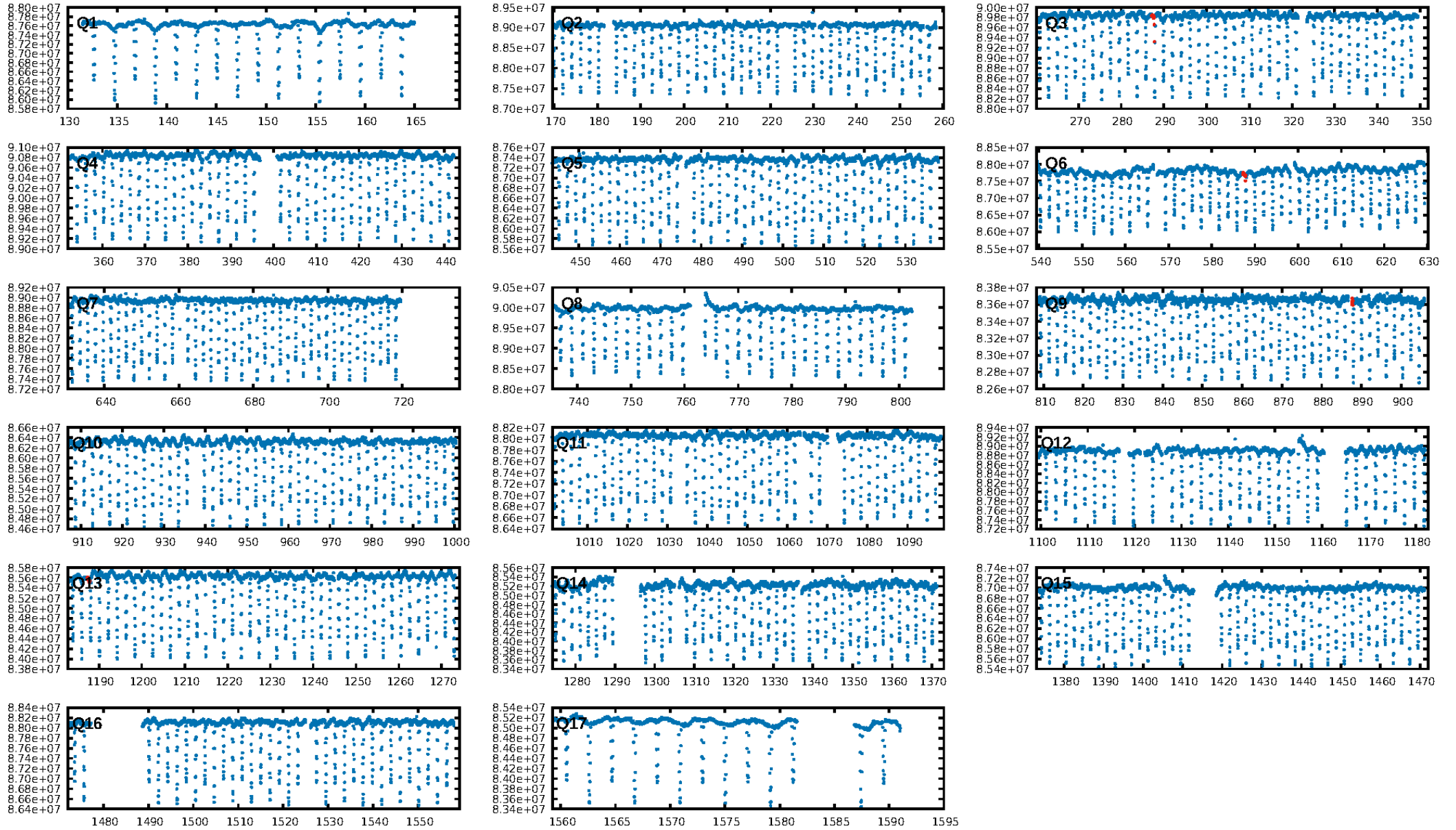
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [321.62σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 0.2072  
Centroid-sig: N/A  
Centroid-so: 0.445 arcsec [1.09σ]  
OotOffset-rm: 2.601 arcsec [36.30σ]  
KicOffset-rm: 2.704 arcsec [15.65σ]  
OotOffset-st: 1/1/0/0 [2]  
KicOffset-st: 1/1/0/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 0.00 [0/2]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:47:22 Z

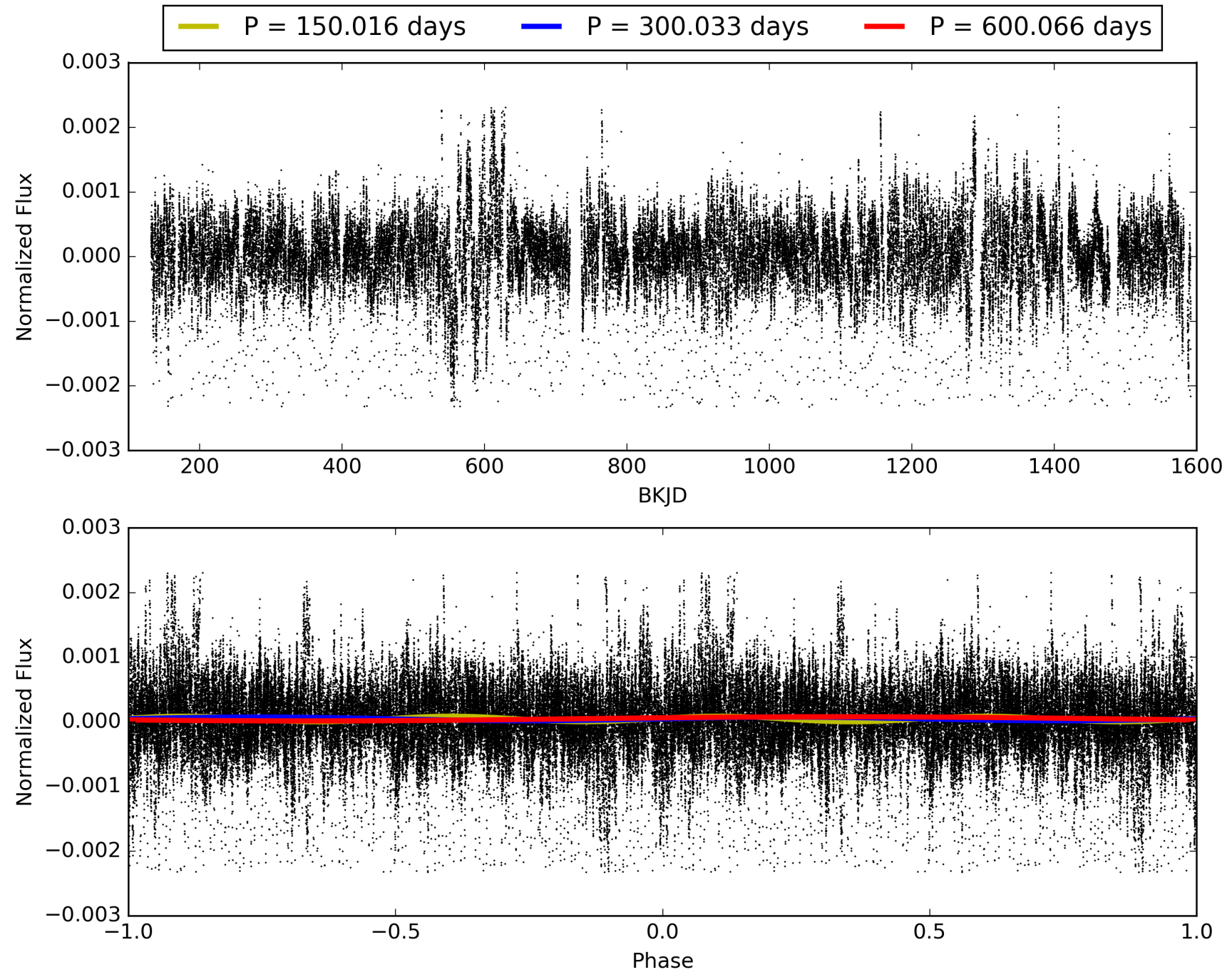
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 011029877-03, PDC Light Curves





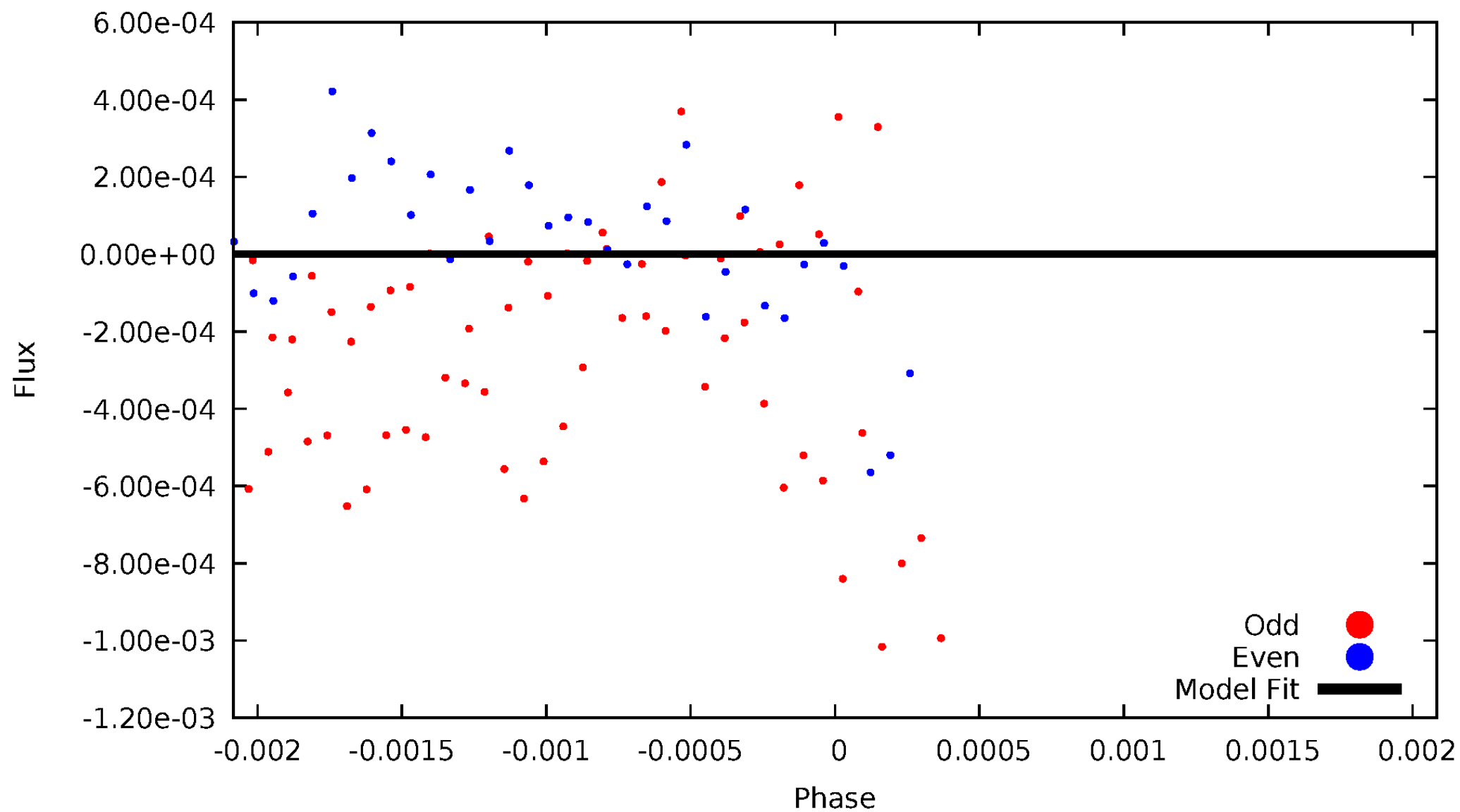
# TCE 011029877-03





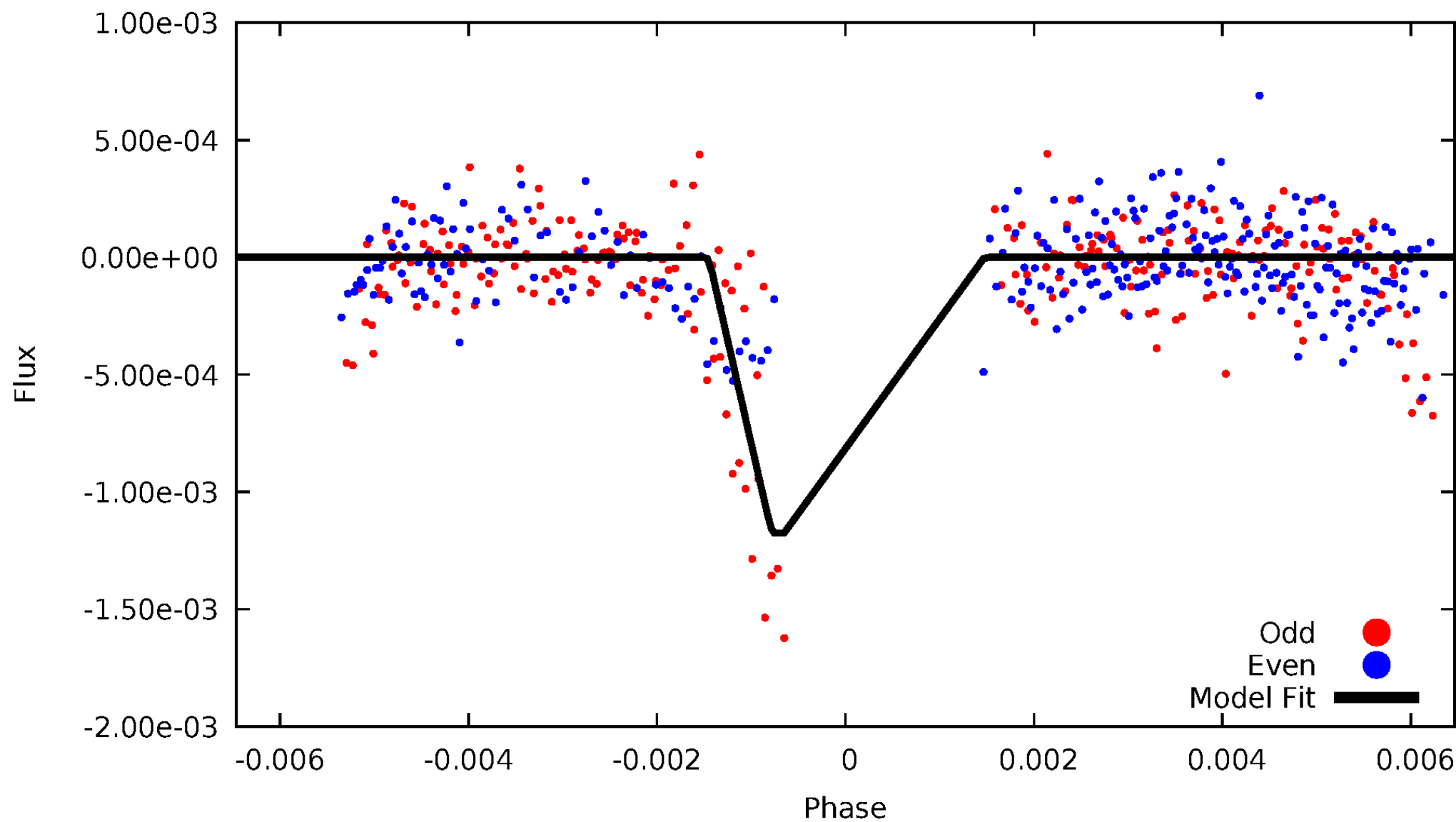
# DV Odd/Even

TCE 011029877-03



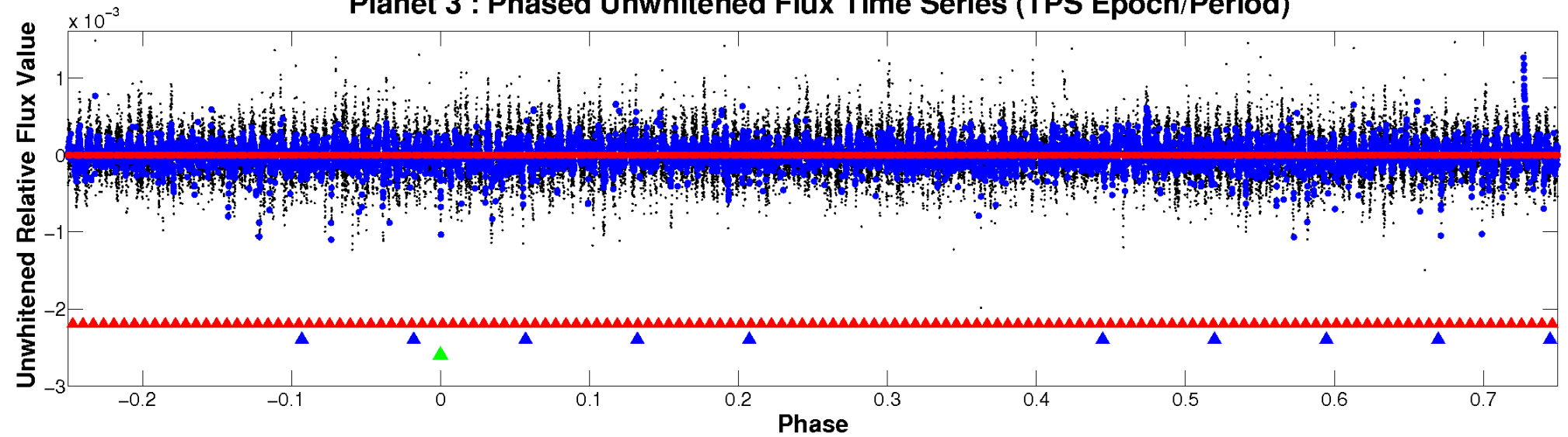
# ALT Odd/Even

TCE 011029877-03



# Non-Whitened Vs. Whitened Light Curve

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

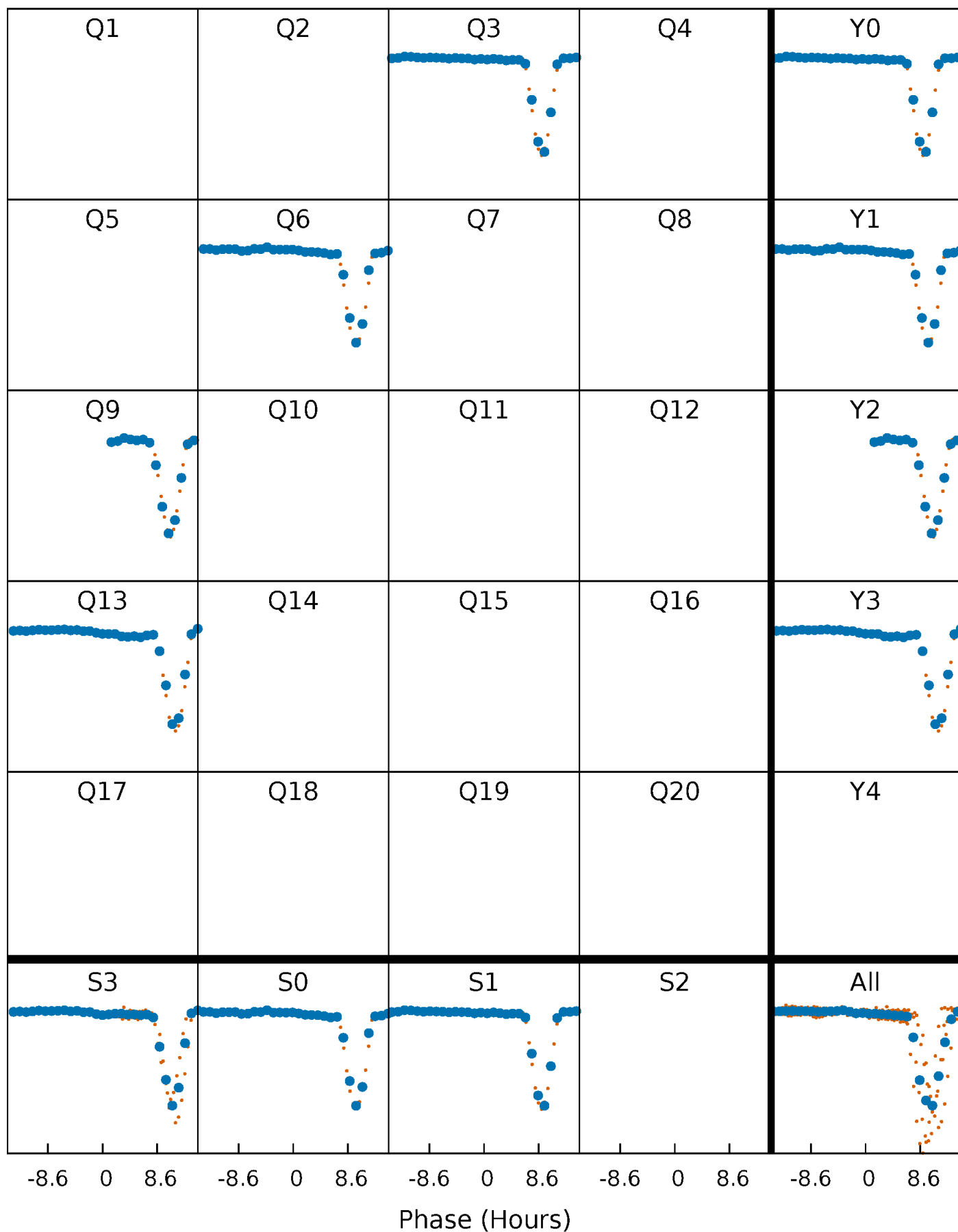


**Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



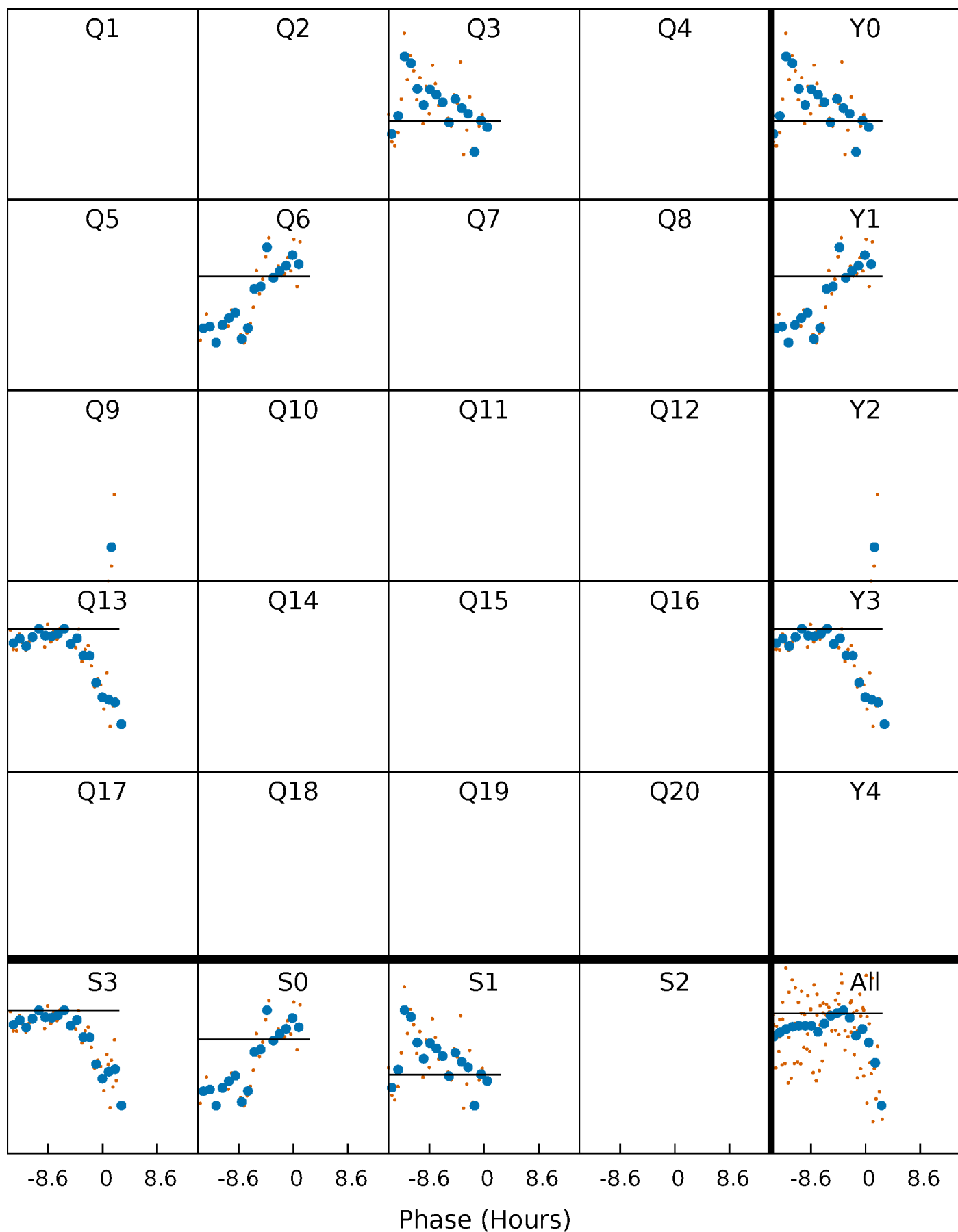
# PDC Quarter-Phased Transit Curves

TCE 011029877-03     $P=300.032773$  Days     $T_0=287.473546$  (BKJD)



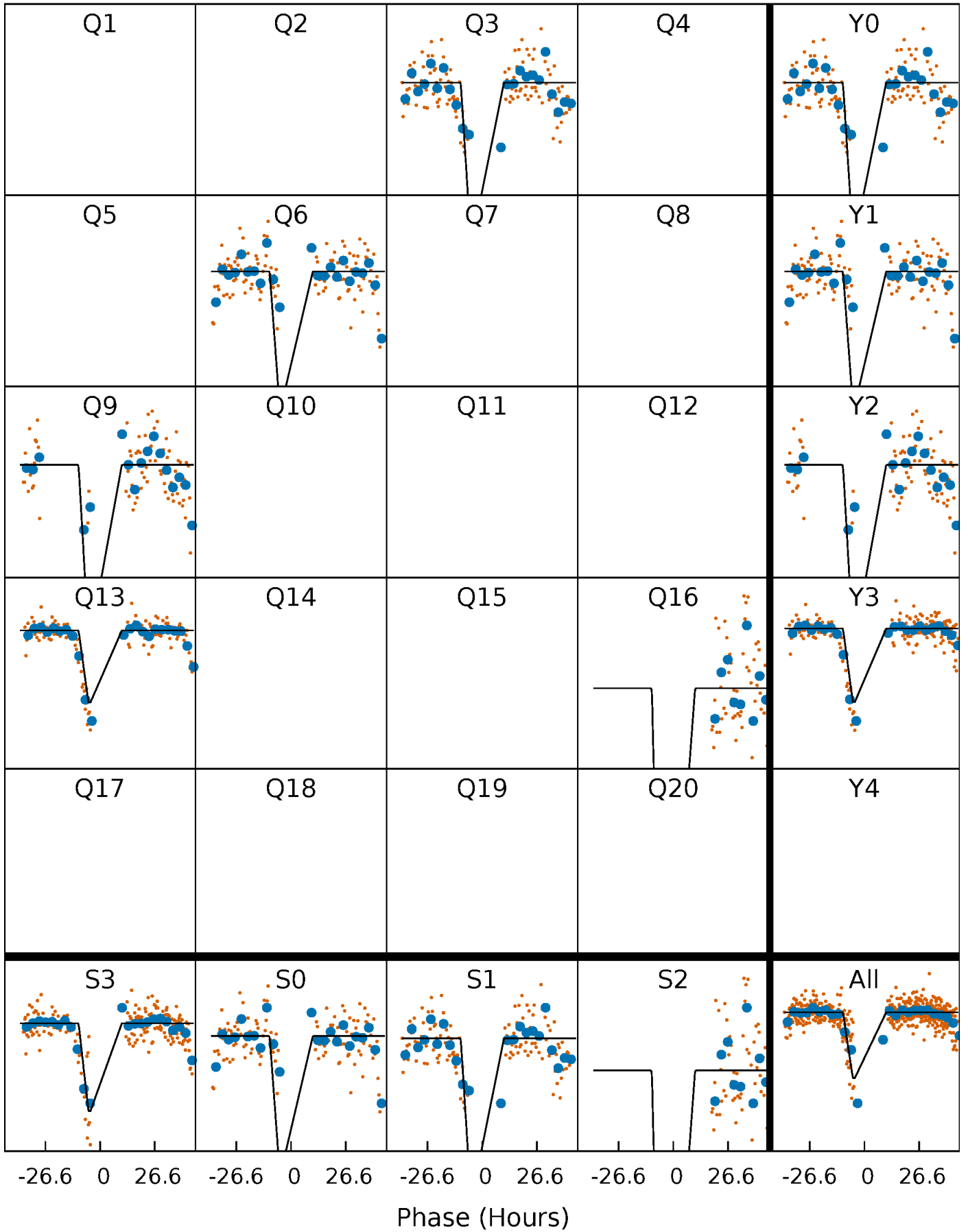
# DV Quarter-Phased Transit Curves

TCE 011029877-03     $P=300.032773$  Days     $T_0=287.473546$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

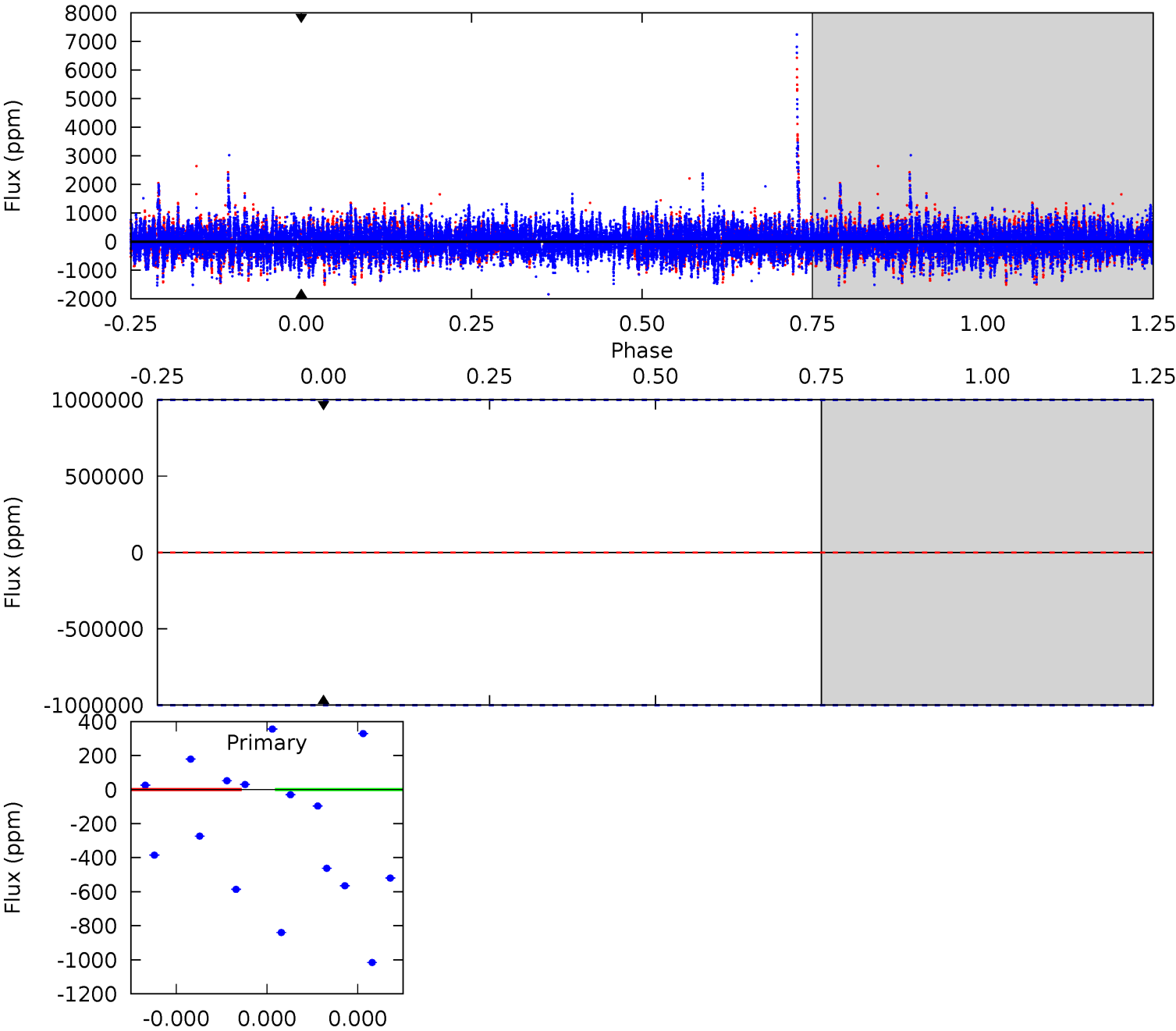
TCE 011029877-03     $P=300.032773$  Days     $T_0=287.778505$  (BKJD)



# DV Model-Shift Uniqueness Test

011029877-03, P = 300.032773 Days, E = 287.473546 Days

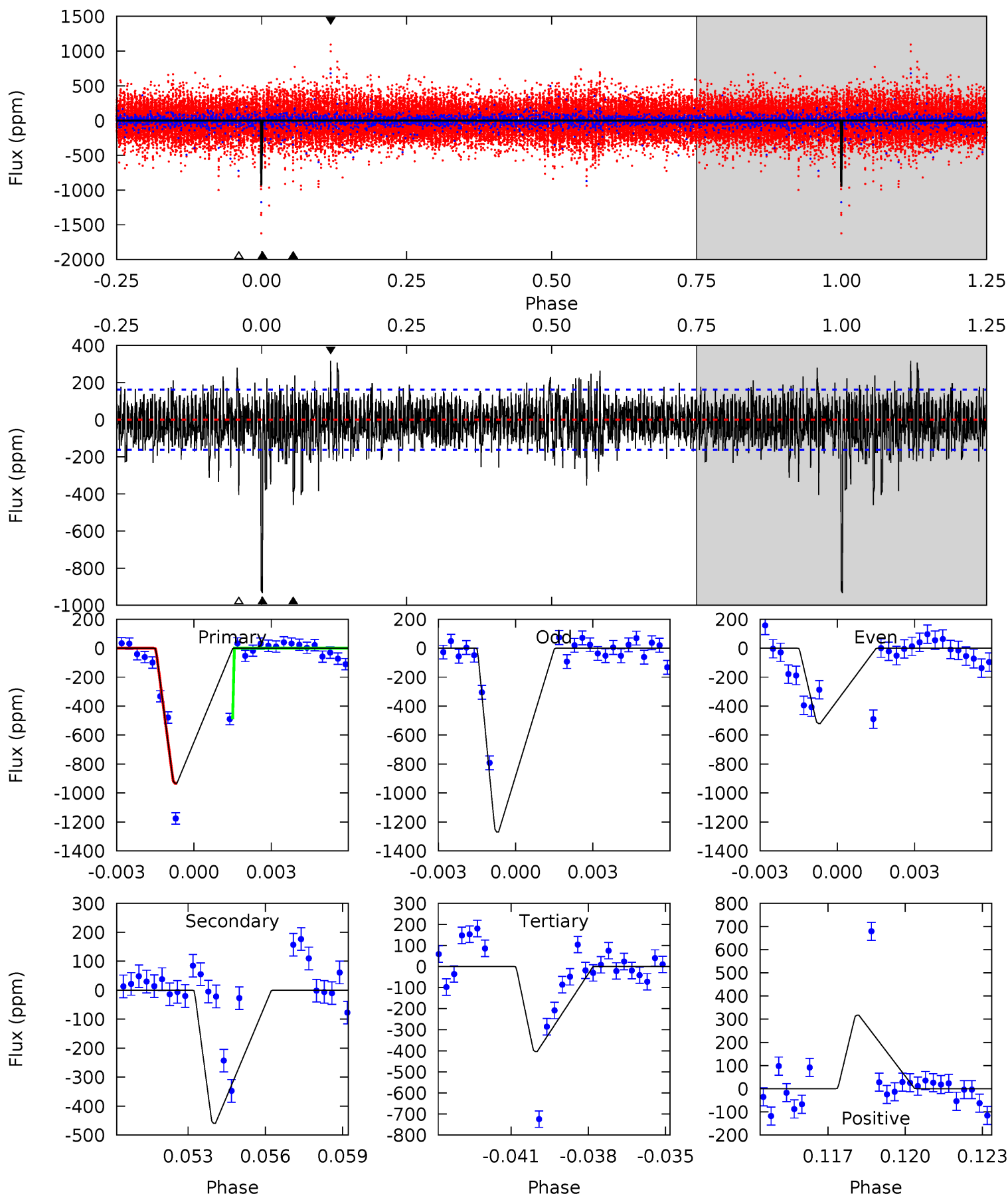
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

011029877-03, P = 300.032773 Days, E = 287.778505 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.4	15.0	13.1	10.3	5.26	2.97	2.32	17.2	20.0	1.81	4.63	12.4	0	0.25	10.3





### Stellar Parameters For KIC 011029877

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$6640^{+69}_{-89}$	$4.343^{+0.028}_{-0.105}$	$-0.040^{+0.150}_{-0.200}$	$1.250^{+0.198}_{-0.066}$	$1.261^{+0.077}_{-0.077}$	$0.911^{+0.117}_{-0.291}$
	+1%/-1%	+1%/-2%	+375%/-500%	+16%/-5%	+6%/-6%	+13%/-32%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 011029877-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$10.31^{+11.04}_{-7.09}$	$474^{+16}_{-11}$	$3464^{+25711}_{-34698}$	$861^{+815865}_{-825098}$
Alt.	$-460 \pm 31$	$11.08^{+12.24}_{-7.49}$	$474^{+17}_{-11}$	$3806^{+2214}_{-776}$	$1831^{+15598}_{-1423}$

$T_{max}$  = 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

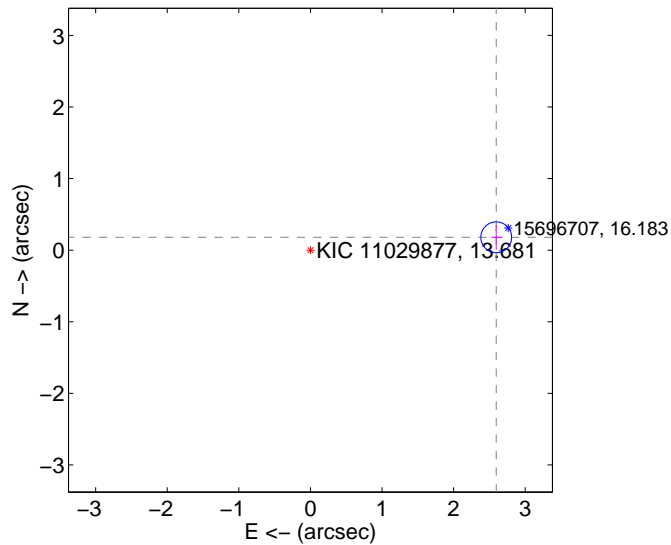
Supplemental centroid analysis for 011029877-03. Kepler magnitude: 13.68. Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

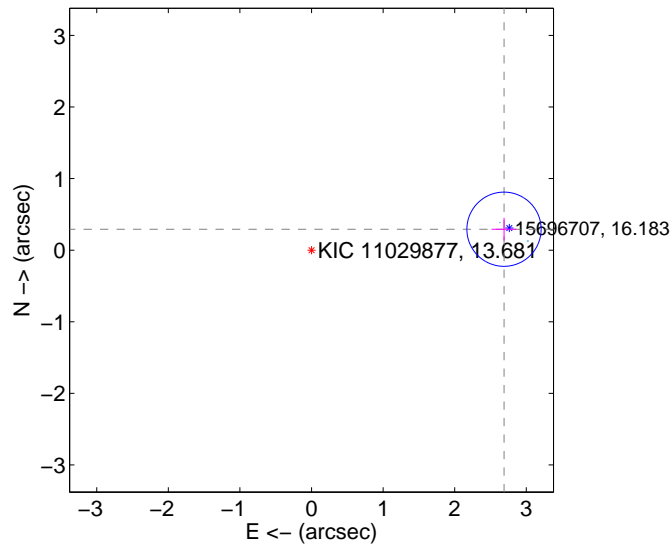
The direct PRF centroid is offset from the target star catalog position by about 0.40 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.601 \pm 0.072$	36.30	$-2.595 \pm 0.071$	$0.180 \pm 0.175$
PRF-fit source offset from KIC position	$2.704 \pm 0.173$	15.65	$-2.688 \pm 0.173$	$0.293 \pm 0.160$
photometric centroid source offset	$0.44 \pm 0.41$	1.09	$0.34 \pm 0.49$	$0.28 \pm 0.26$

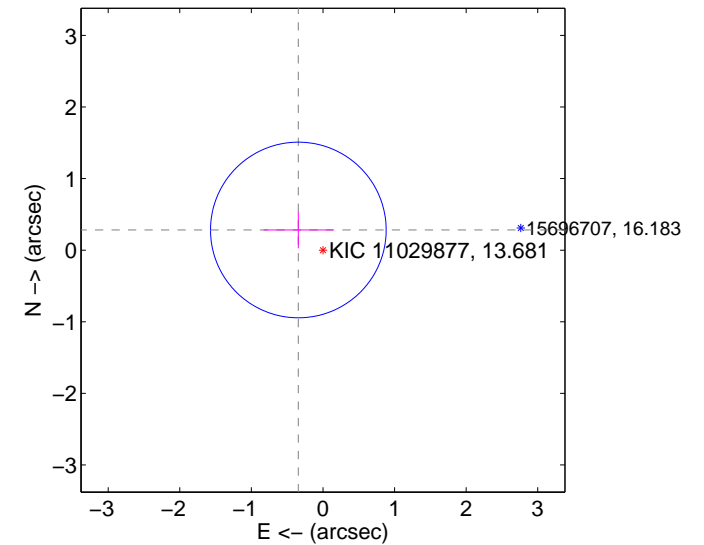
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

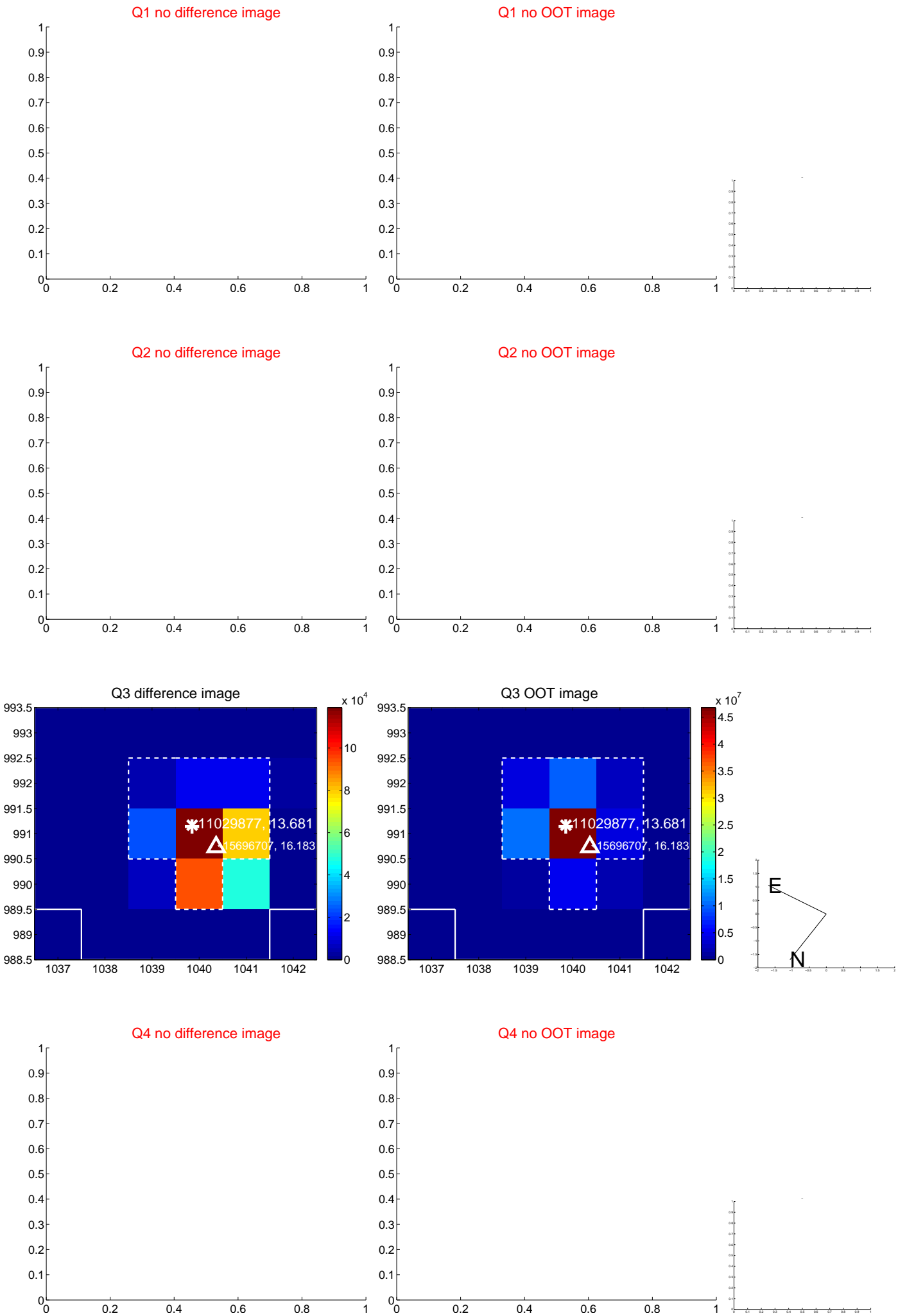


offset from photometric centroids

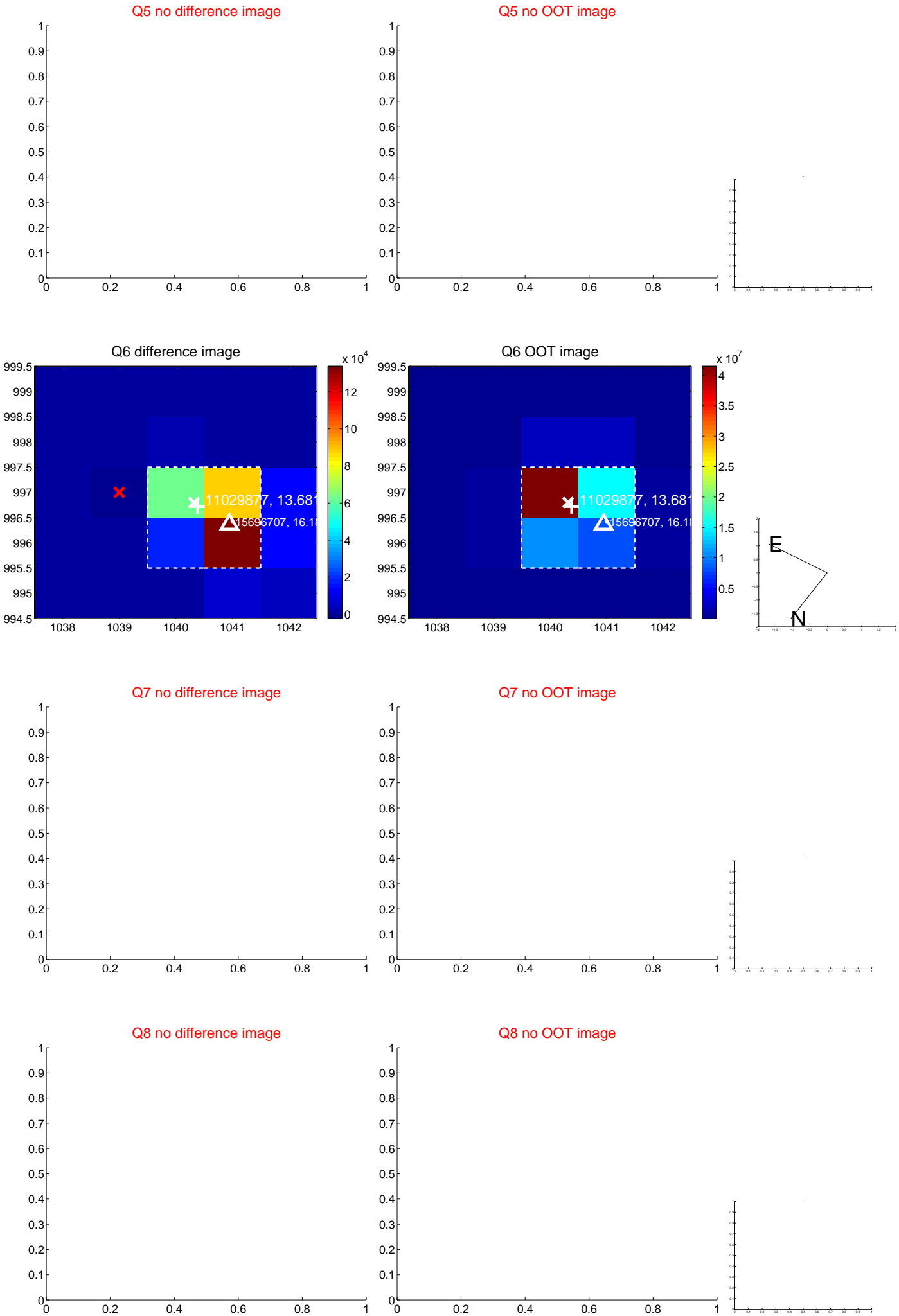


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



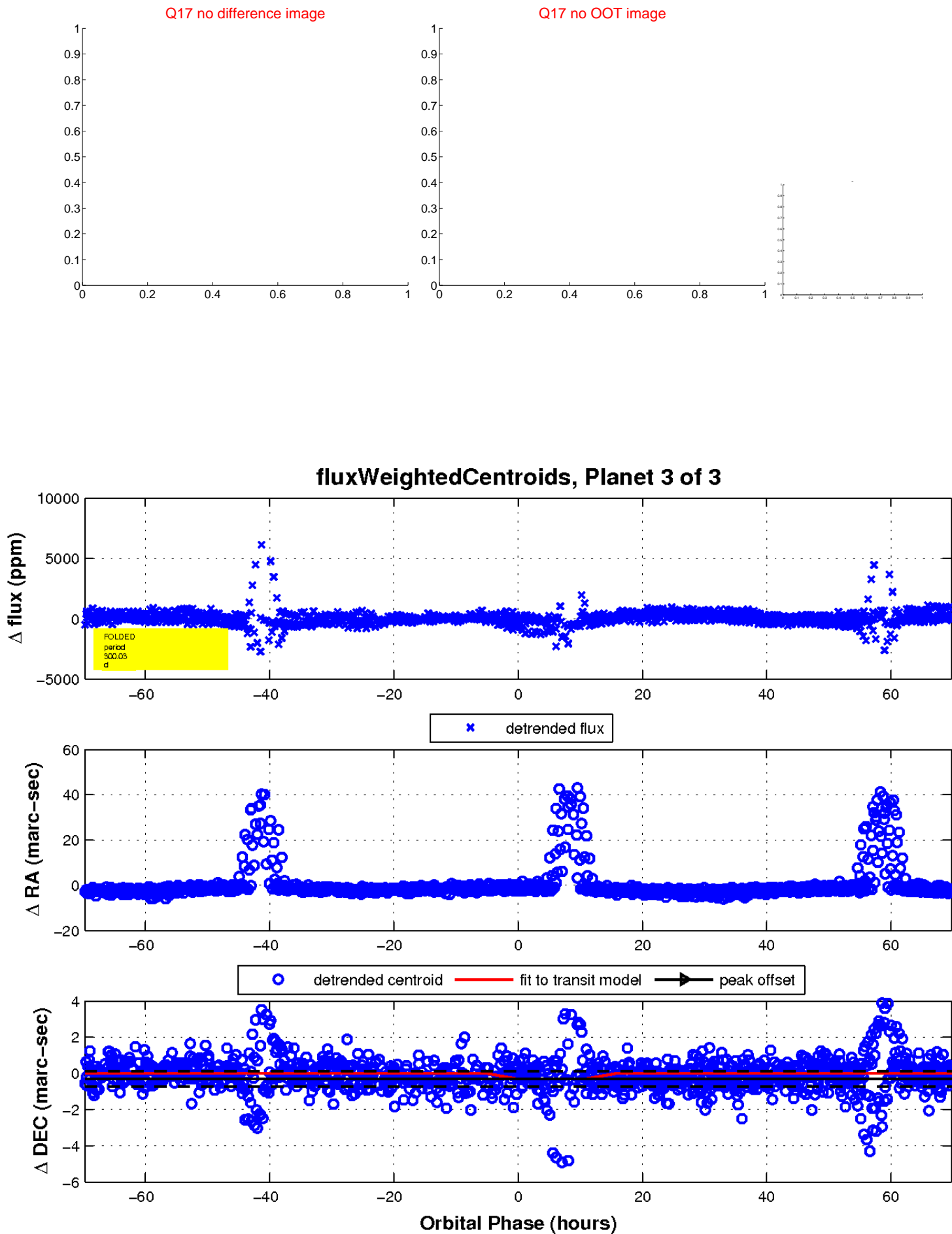
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

