

## KIC 005771149

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005771149-01	OBS	No	299.193035	214.235905	3568.4	15.104	26.5	8.4	0.68	4679	3.89	0.34
005771149-02	OBS	No	564.073757	387.860137	28.2	4.504	31.7	0.1	0.68	4679	0.37	0.14
005771149-03	OBS	No	370.809831	297.482499	1189.6	15.866	17.7	2.5	0.68	4679	2.34	0.25
005771149-04	OBS	No	553.386661	194.319752	5505.5	18.440	18.2	11.2	0.68	4679	4.83	0.15
005771149-05	OBS	No	336.106105	282.190743	4191.4	11.273	17.8	9.4	0.68	4679	5.26	0.29
005771149-06	OBS	No	332.299915	281.970338	4035.6	3.921	18.1	10.4	0.68	4679	4.52	0.29
005771149-07	OBS	No	359.196560	234.159625	3784.1	22.363	21.8	7.3	0.68	4679	4.60	0.27
005771149-08	OBS	No	513.938585	272.058180	3252.8	8.331	13.5	8.9	0.68	4679	3.96	0.17

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005771149-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005771149-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005771149-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005771149-04	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
005771149-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005771149-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005771149-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
005771149-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

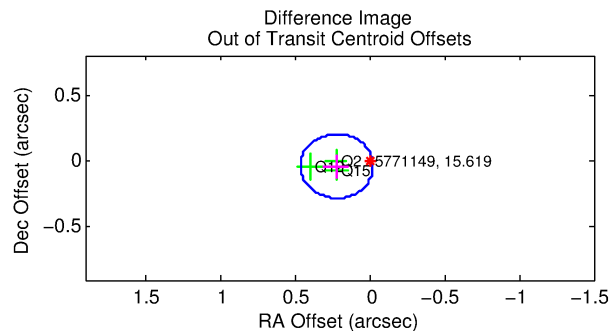
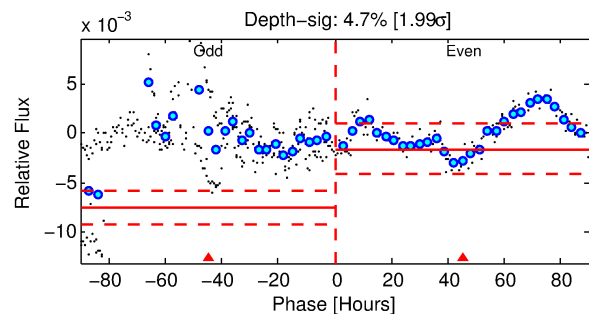
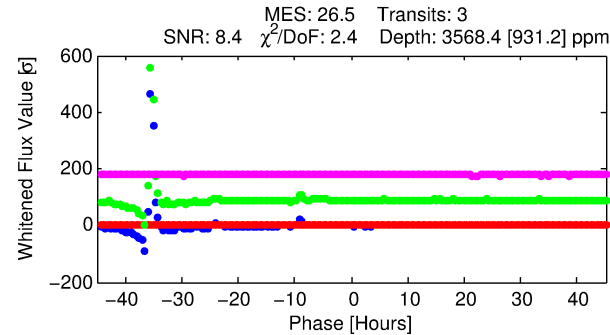
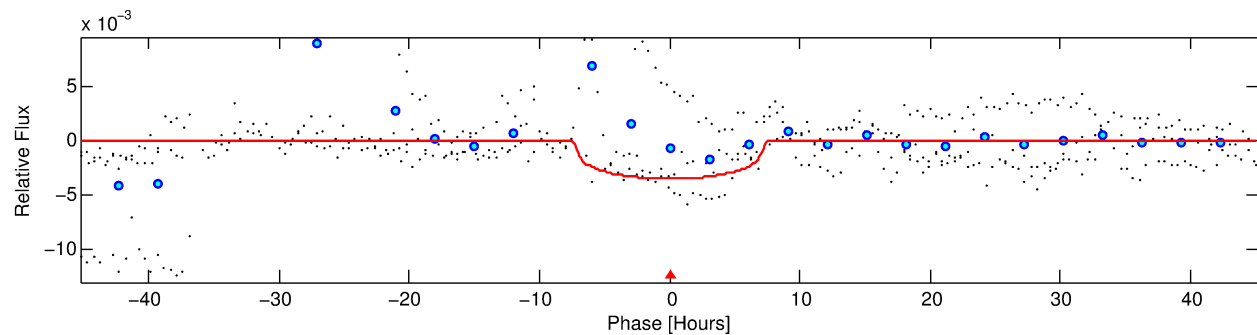
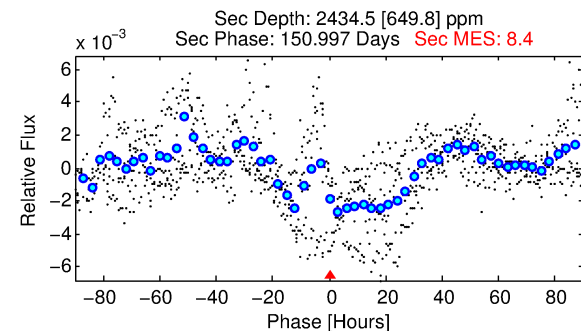
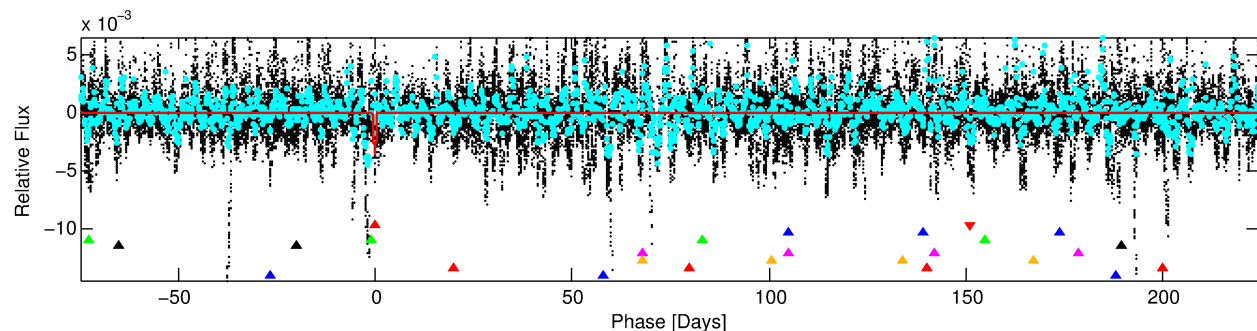
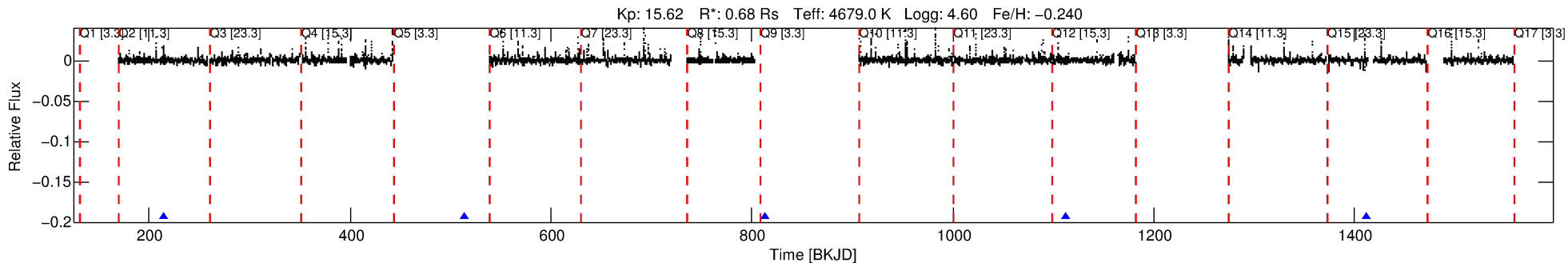
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005771149-01

No Significant Match Found

# DV One-Page Summary

KIC: 5771149 Candidate: 1 of 8 Period: 299.193 d



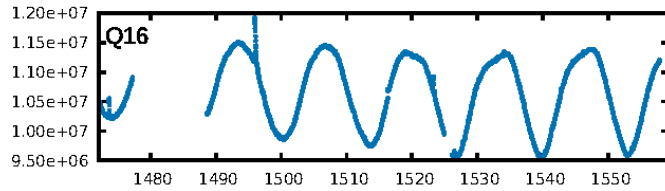
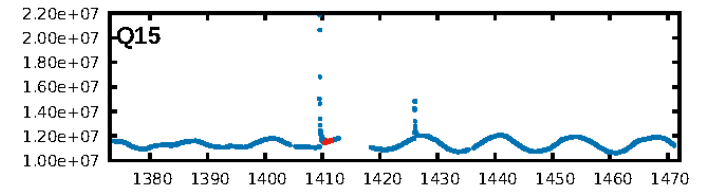
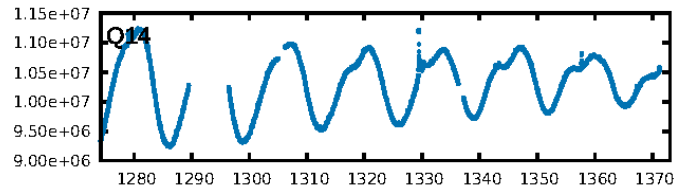
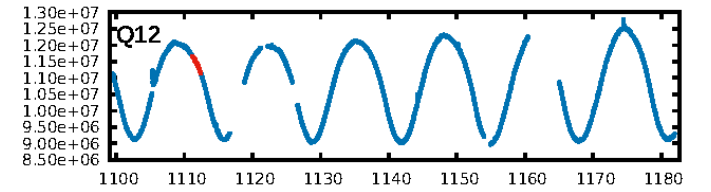
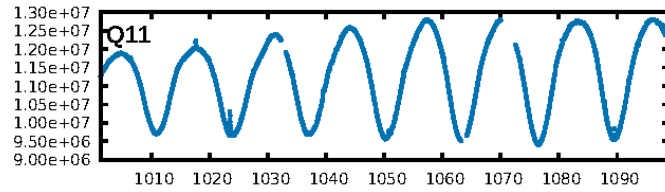
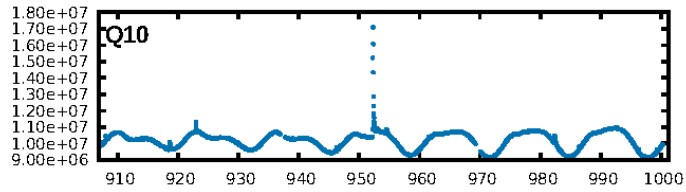
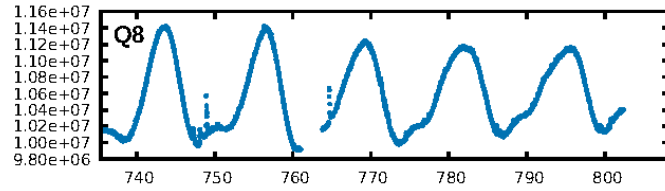
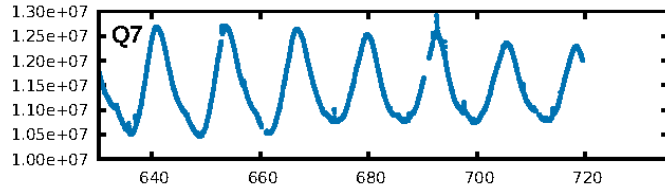
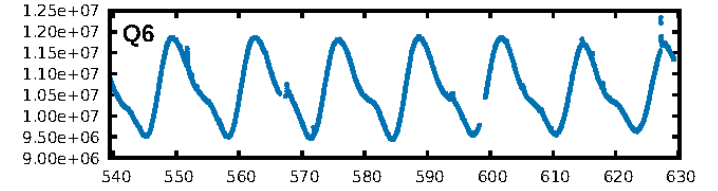
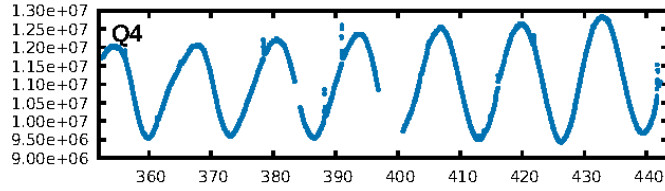
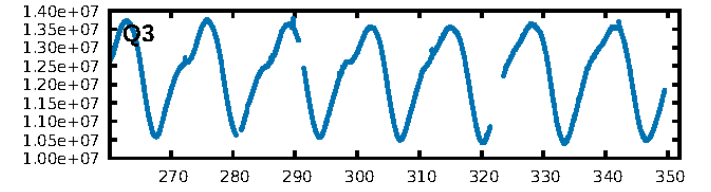
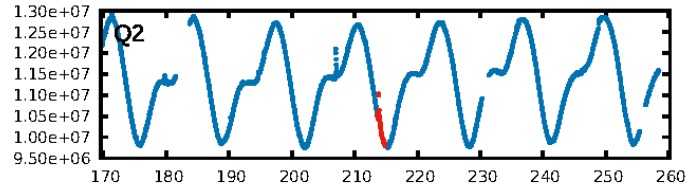
## DV Fit Results:

Period = 299.19304 [0.00695] d  
Epoch = 214.2359 [0.0208] BKJD  
Rp/R\* = 0.0525 [0.0242]  
a/R\* = 159.28 [211.51]  
b = 0.01 [189.63]  
Seff = 0.34 [0.05]  
Teq = 195 [8] K  
Rp = 3.89 [1.82] Re  
a = 0.7635 [0.0557] AU  
Ag = 51663.69 [49777.18] [1.04 $\sigma$ ]  
Teffp = 4534 [1094] K [3.97 $\sigma$ ]

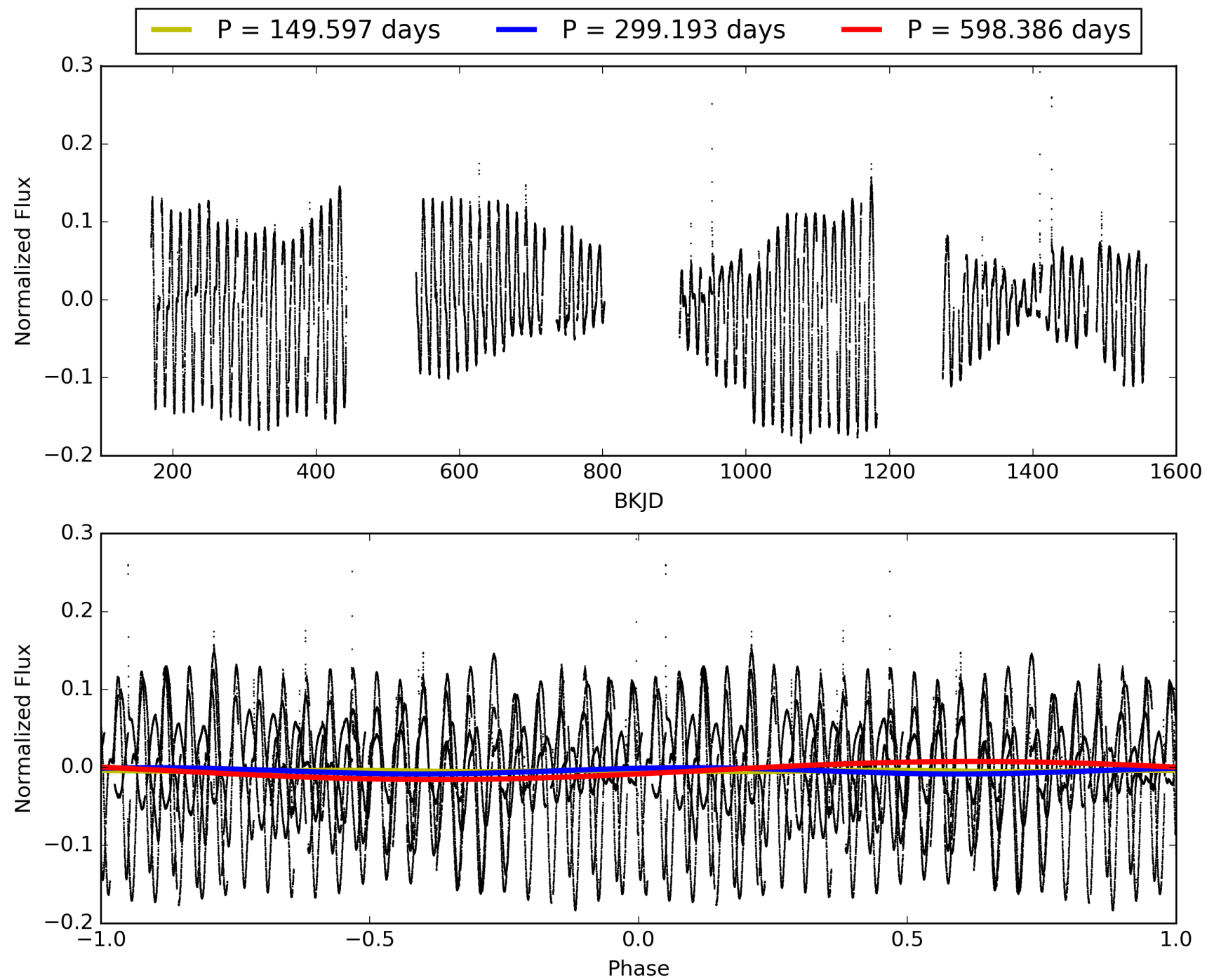
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [50.92 $\sigma$ ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.1%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -0.08341  
Centroid-sig: 88.9%  
Centroid-so: 0.132 arcsec [0.18 $\sigma$ ]  
OotOffset-rm: 0.223 arcsec [2.75 $\sigma$ ]  
OotOffset-st: 1/1/1/0 [3]  
KicOffset-rm: 0.162 arcsec [1.84 $\sigma$ ]  
KicOffset-st: 1/1/1/0 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 0.67 [2/3]

# TCE 005771149-01, PDC Light Curves



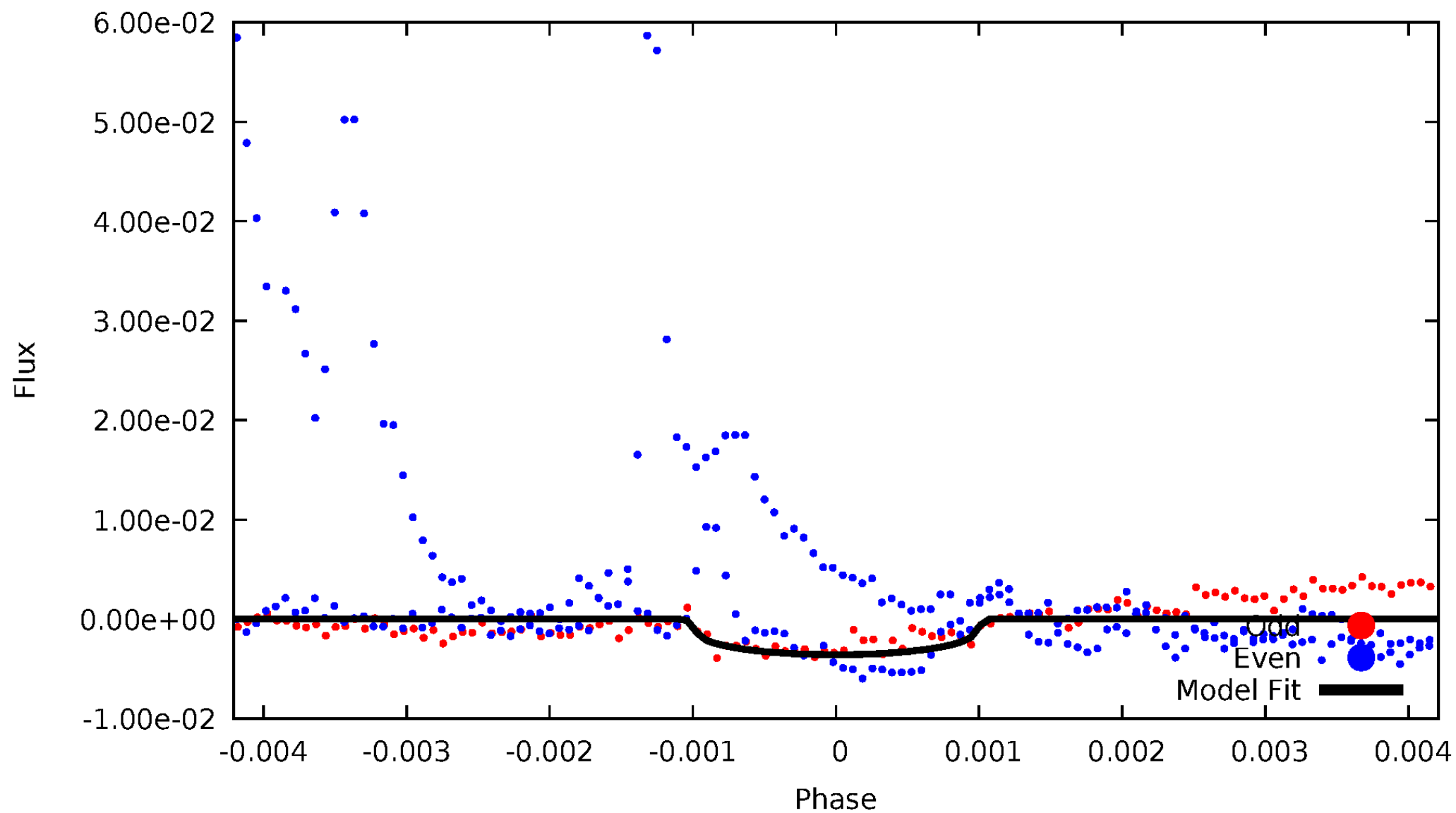
TCE 005771149-01





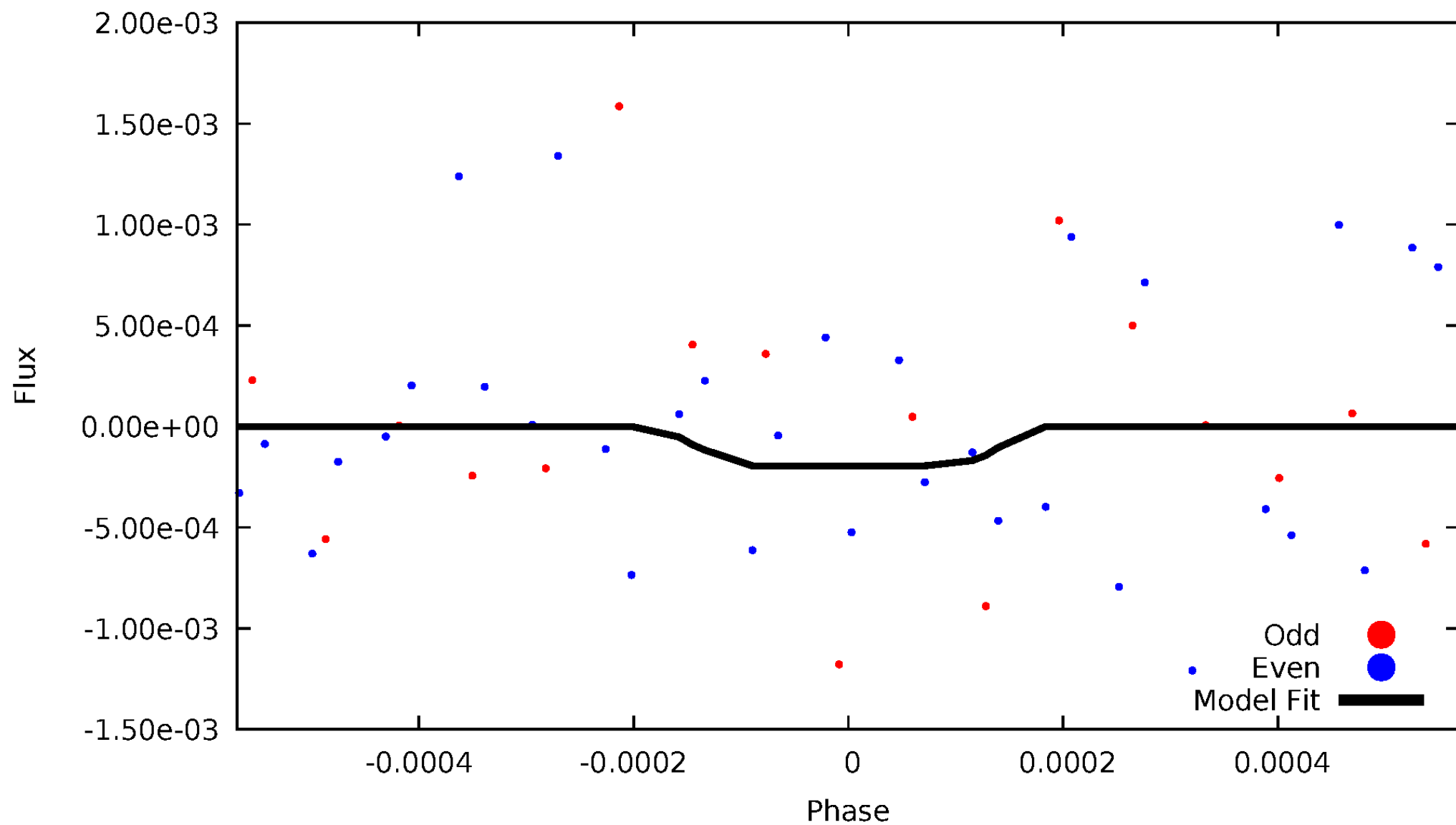
# DV Odd/Even

TCE 005771149-01



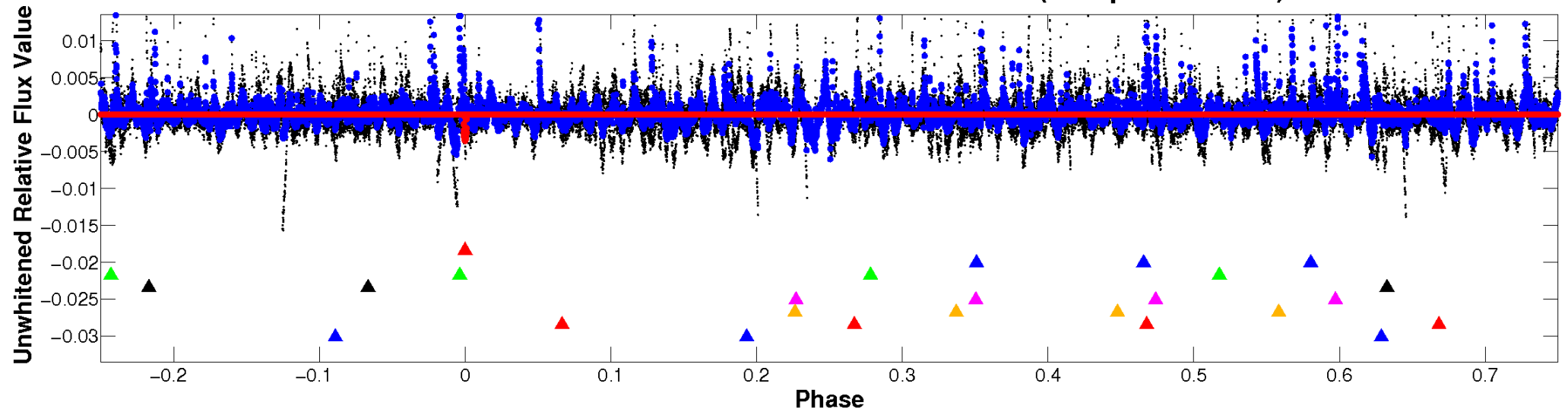
# ALT Odd/Even

TCE 005771149-01

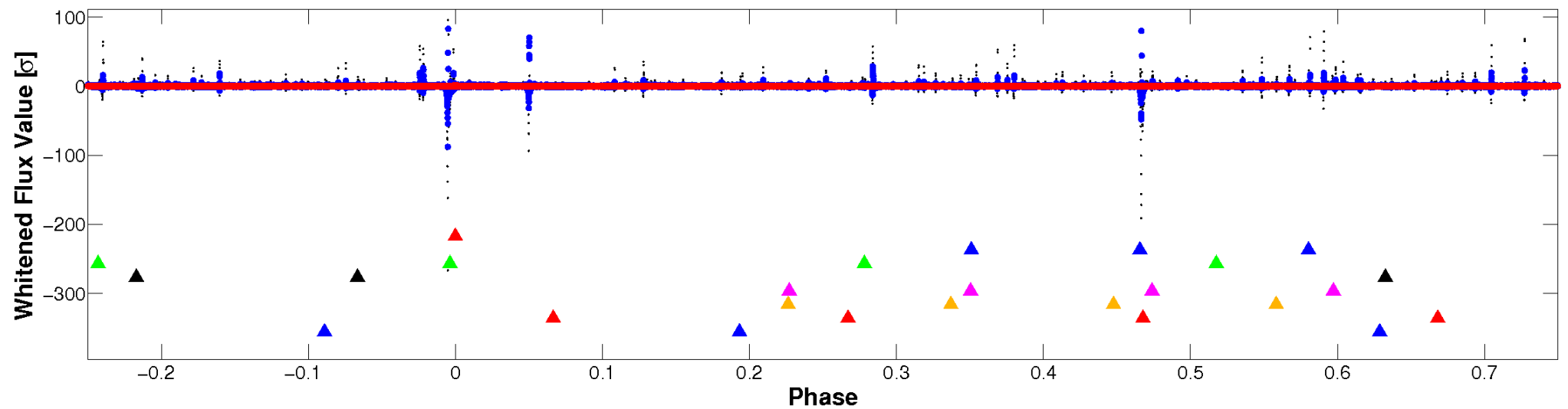


# Non-Whitened Vs. Whitened Light Curve

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

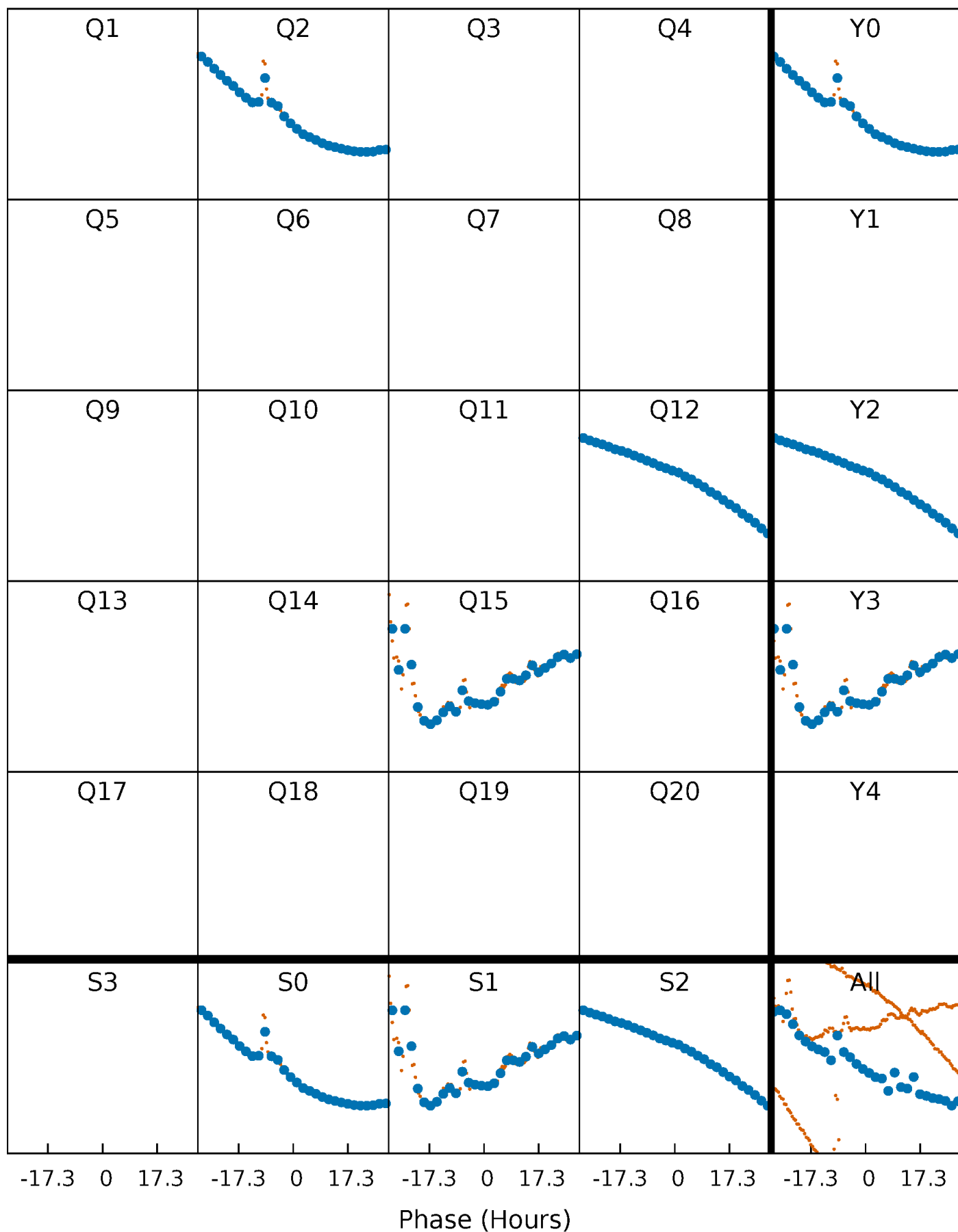


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



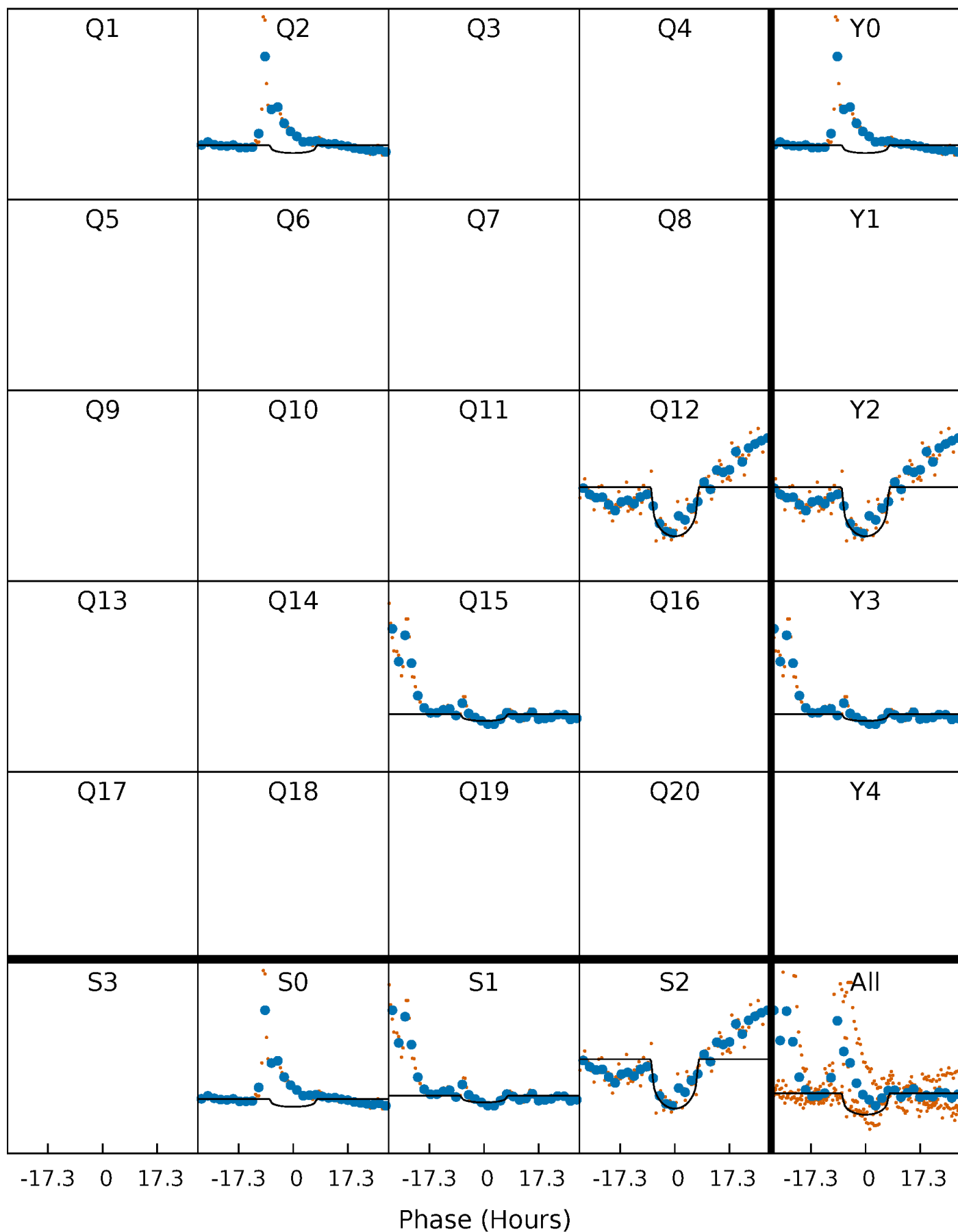
# PDC Quarter-Phased Transit Curves

TCE 005771149-01 P=299.193035 Days  $T_0=214.235905$  (BKJD)



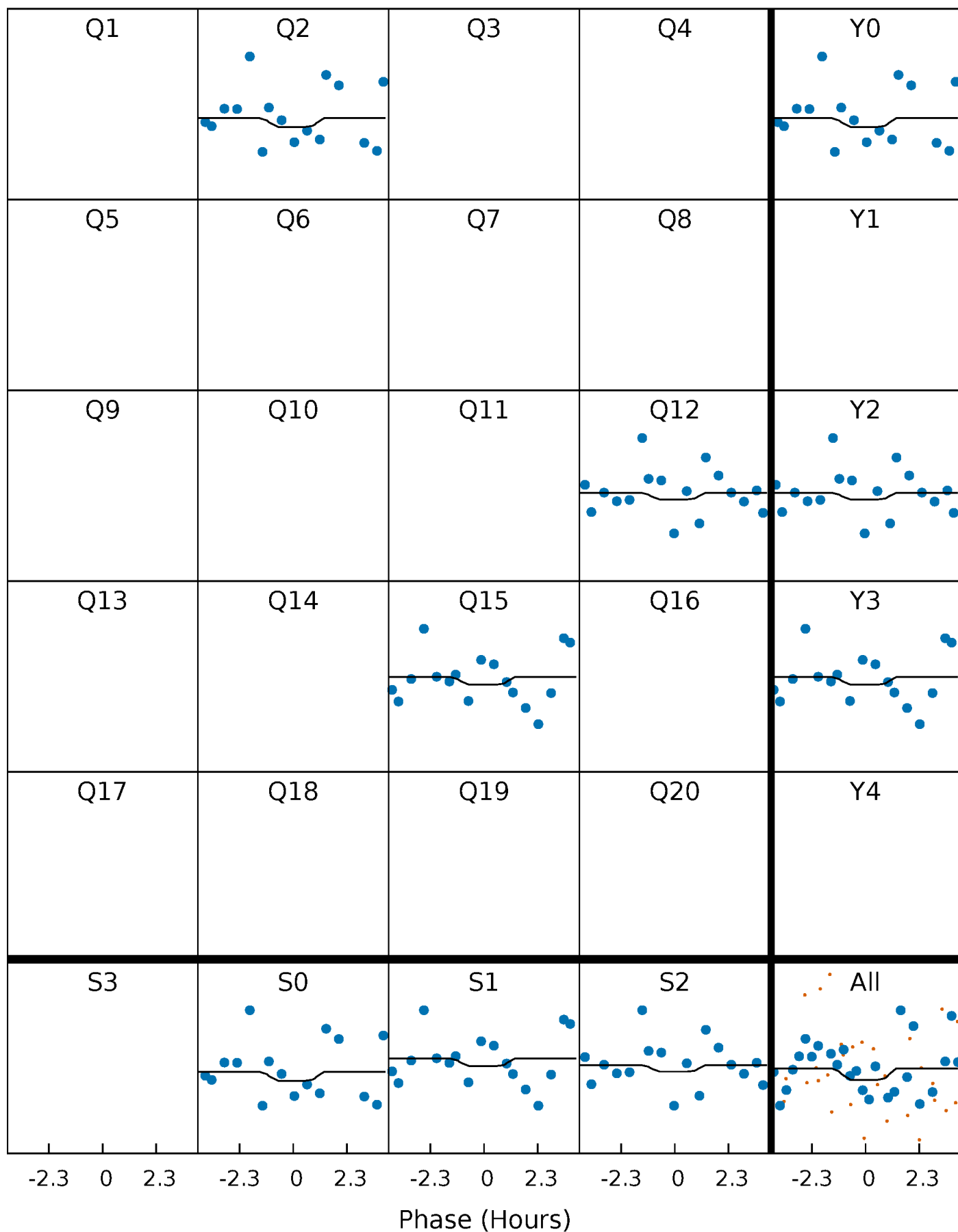
# DV Quarter-Phased Transit Curves

TCE 005771149-01 P=299.193035 Days  $T_0=214.235905$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005771149-01 P=299.174563 Days  $T_0=214.392171$  (BKJD)

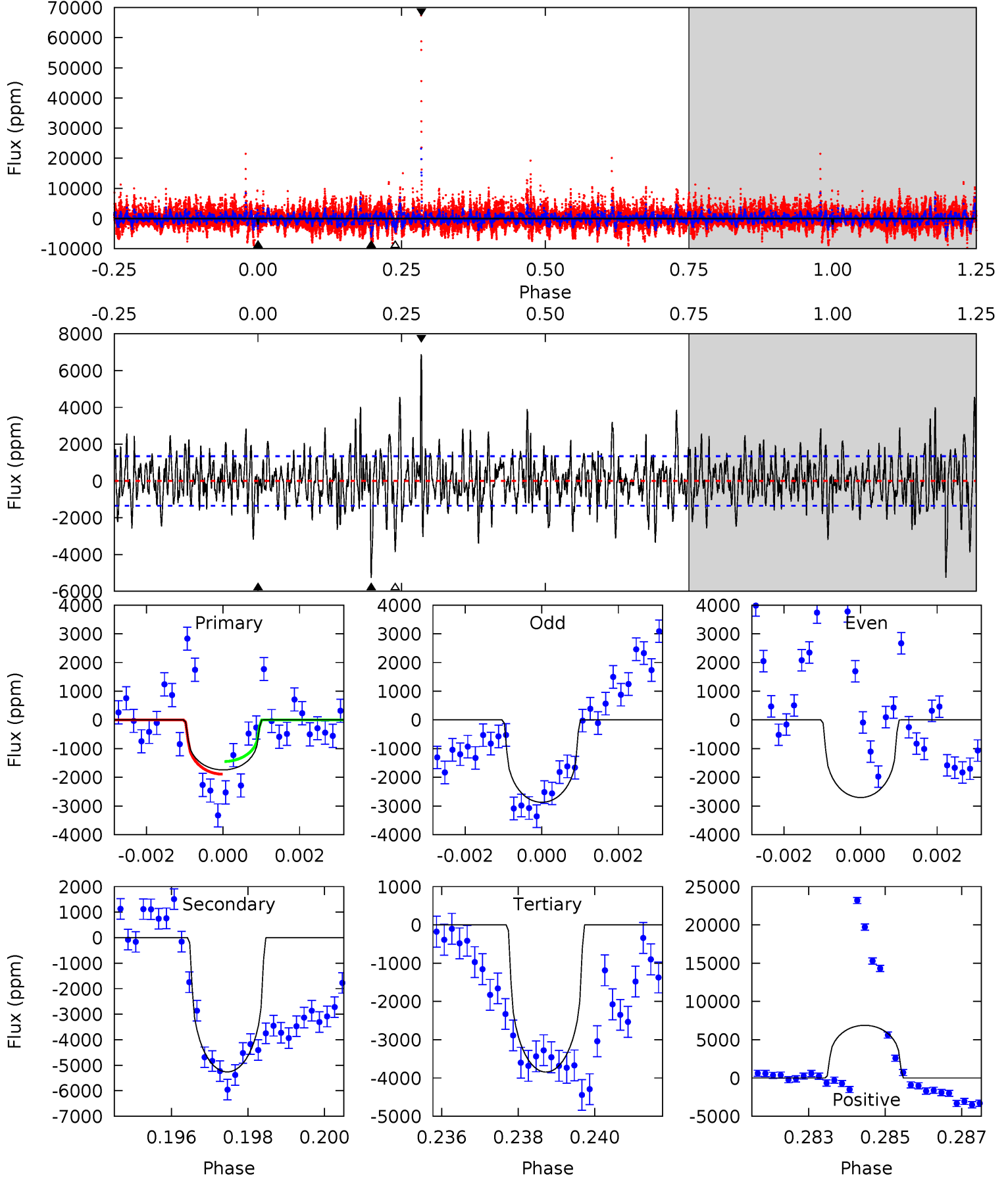




# DV Model-Shift Uniqueness Test

005771149-01, P = 299.193035 Days, E = 214.235905 Days

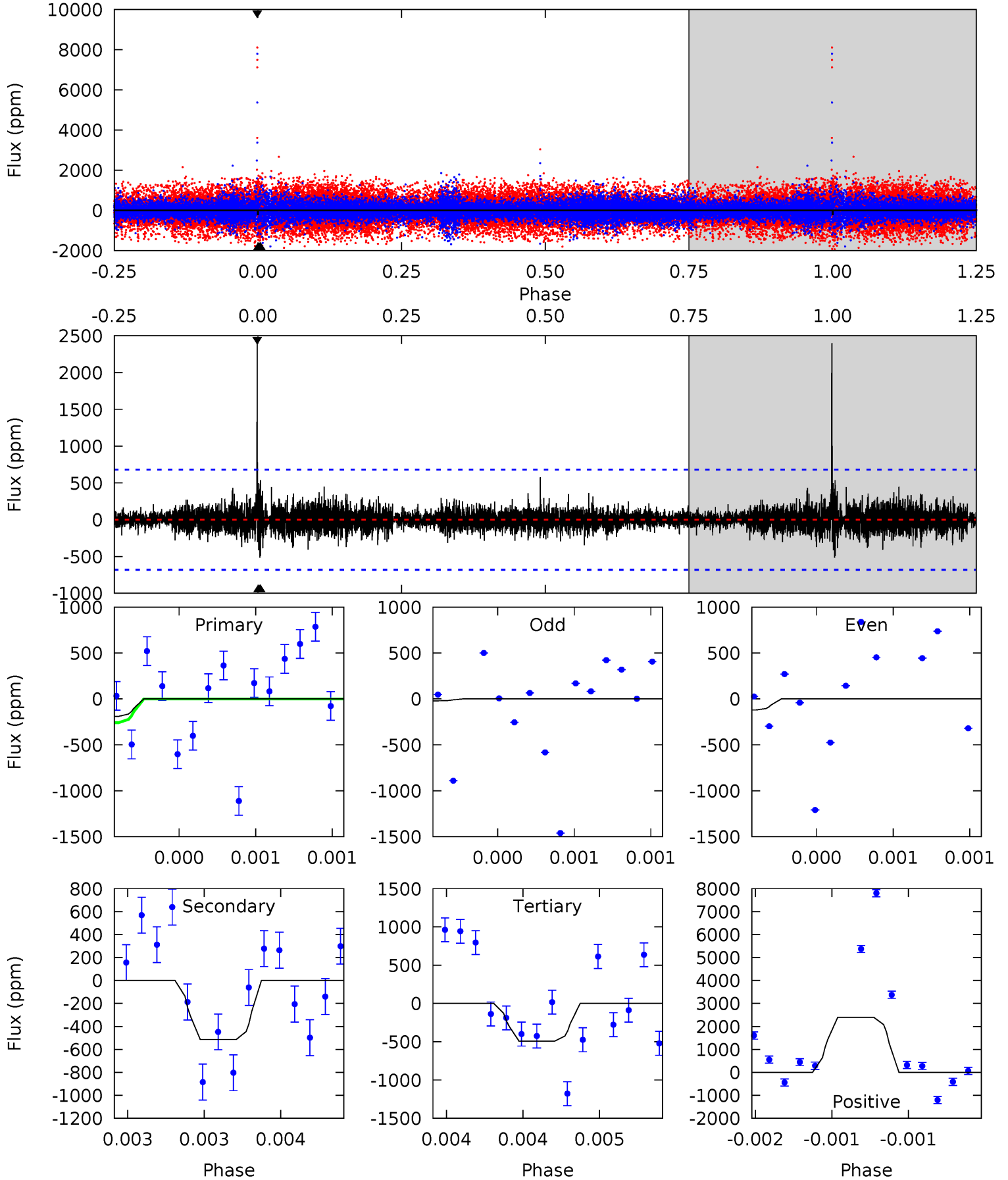
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.88	20.8	15.2	27.2	5.32	3.07	4.32	-8.29	-20.3	5.60	-6.40	0.26	-0.33	0.57	0.88



# Alt Model-Shift Uniqueness Test

005771149-01, P = 299.174563 Days, E = 214.392171 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
1.57	4.25	4.06	19.9	5.64	3.58	0.78	-2.49	-18.3	0.19	-15.6	0.35	0.73	0.82	0



### Stellar Parameters For KIC 005771149

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$4679^{+140}_{-140}$	$4.597^{+0.056}_{-0.028}$	$-0.240^{+0.300}_{-0.300}$	$0.678^{+0.054}_{-0.060}$	$0.663^{+0.082}_{-0.048}$	$2.997^{+0.749}_{-0.384}$
	+3%/-3%	+1%/-1%	+125%/-125%	+8%/-9%	+12%/-7%	+25%/-13%
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 005771149-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-5262 \pm 253$	$3.91^{+1.73}_{-1.82}$	$270^{+9}_{-10}$	$5313^{+2053}_{-735}$	$111844^{+265299}_{-58061}$
Alt.	$-514 \pm 121$	$1.66^{+1.46}_{-1.17}$	$270^{+10}_{-9}$	$4676^{+3817}_{-1042}$	$61261^{+582656}_{-45717}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

$T_{\text{obs}}$  = Observed Planetary Temperature (Assuming A=0.3)

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

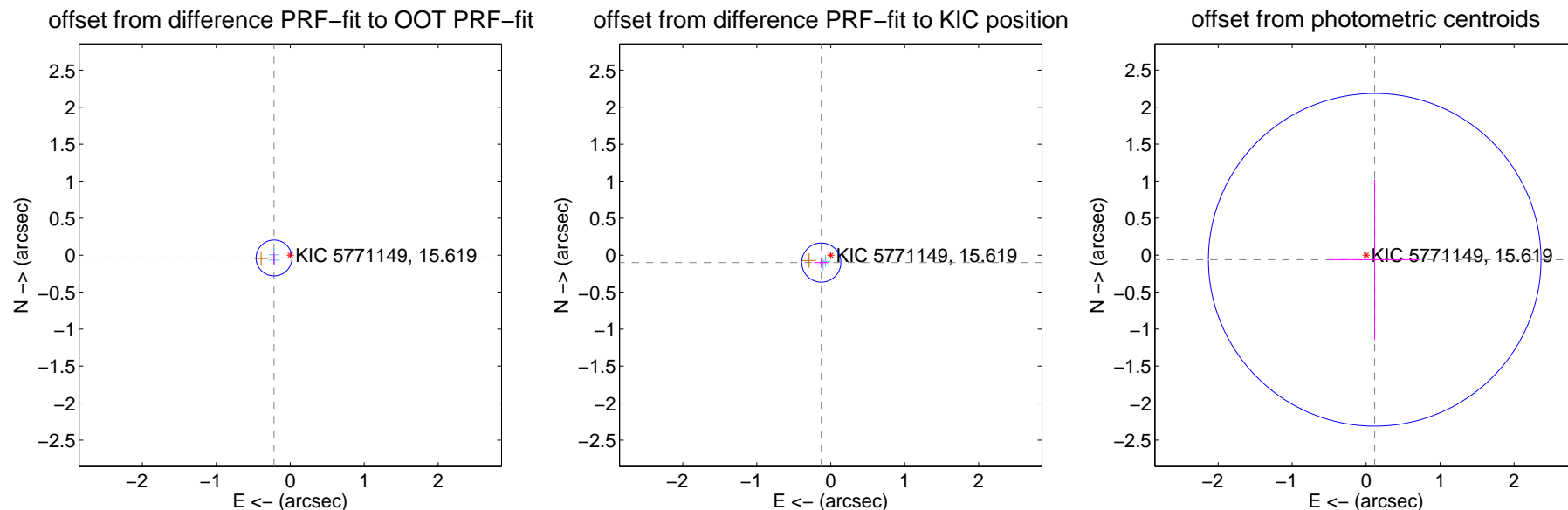
## DV Centroid Data

Supplemental centroid analysis for 005771149-01. Kepler magnitude: 15.62. Transit SNR 8.37

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.223 \pm 0.081$	2.75	$0.219 \pm 0.081$	$-0.038 \pm 0.083$
PRF-fit source offset from KIC position	$0.162 \pm 0.088$	1.84	$0.127 \pm 0.098$	$-0.100 \pm 0.070$
photometric centroid source offset	$0.13 \pm 0.75$	0.18	$-0.12 \pm 0.61$	$-0.06 \pm 1.08$



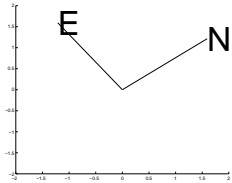
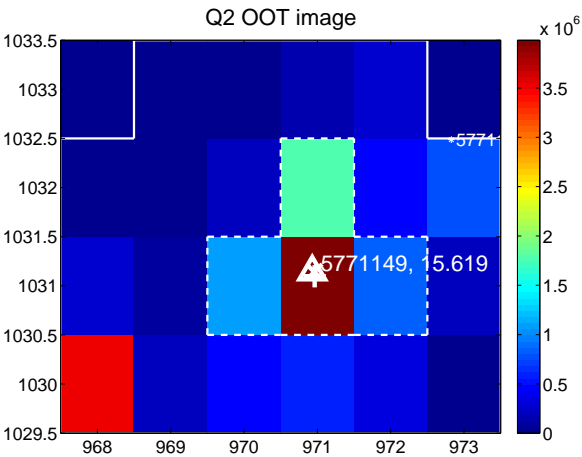
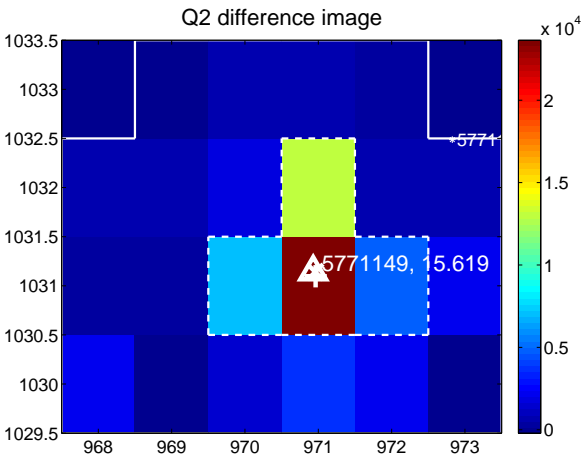
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

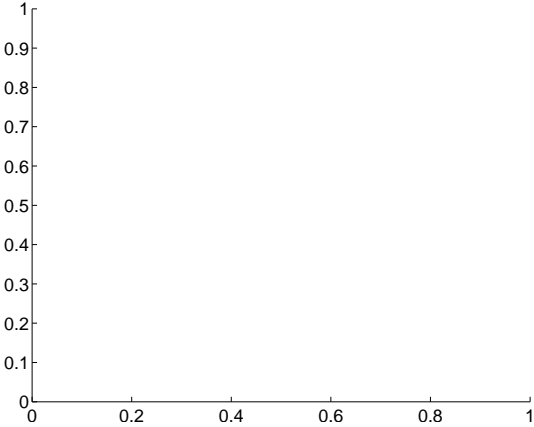
Q1 no difference image



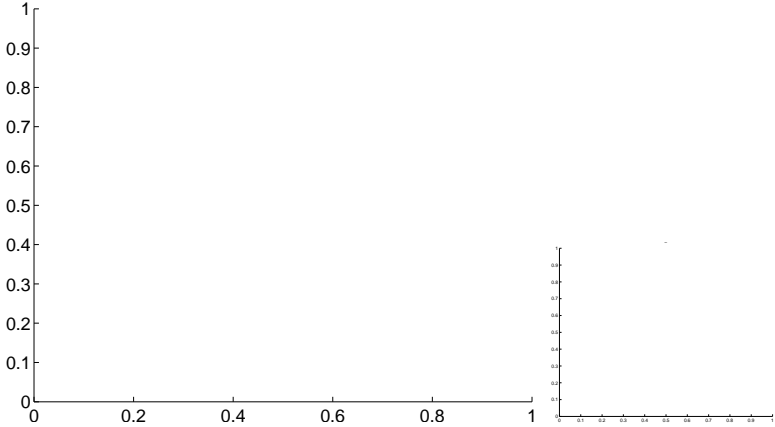
Q1 no OOT image



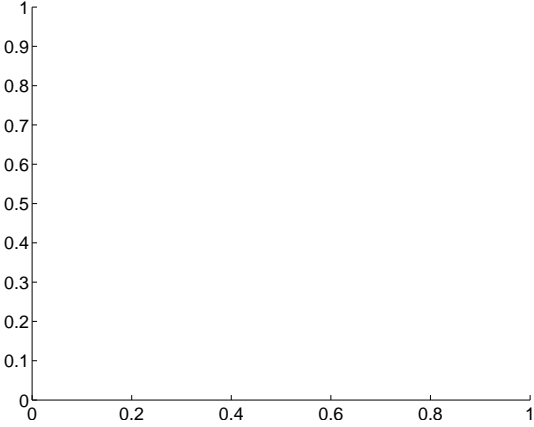
Q3 no difference image



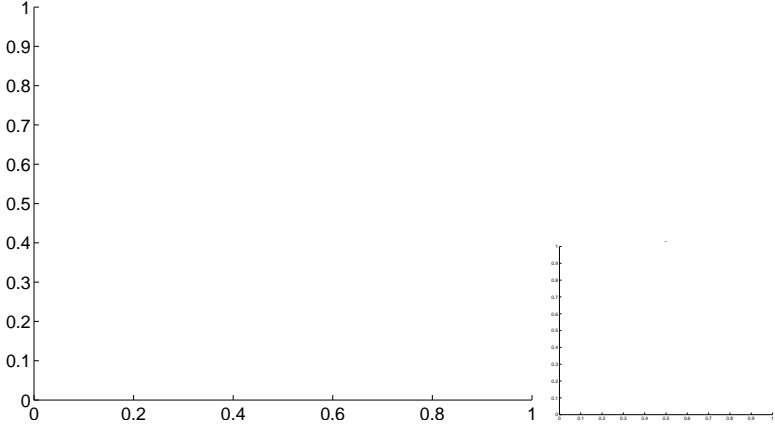
Q3 no OOT image



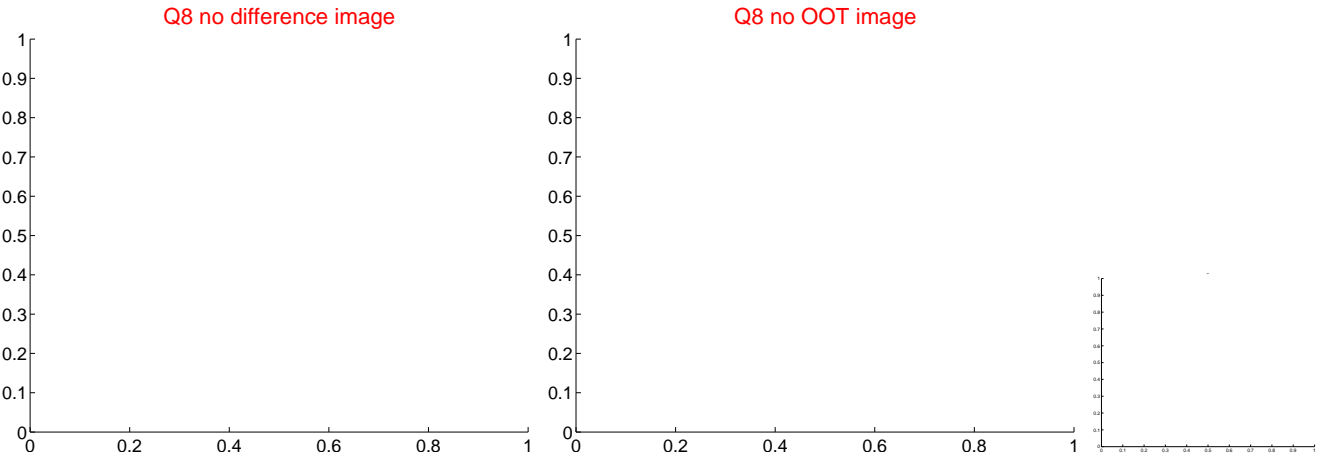
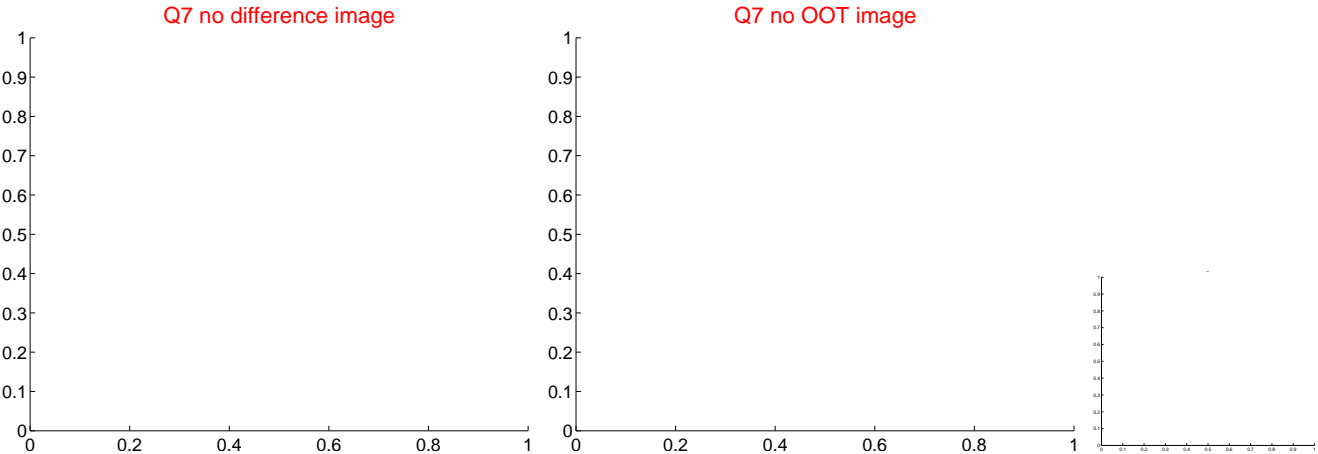
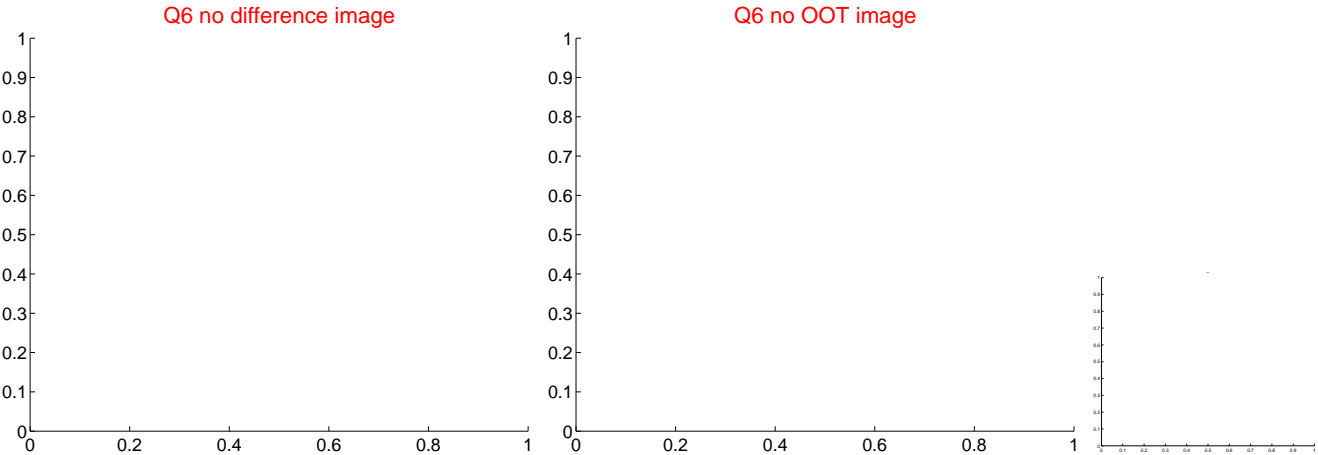
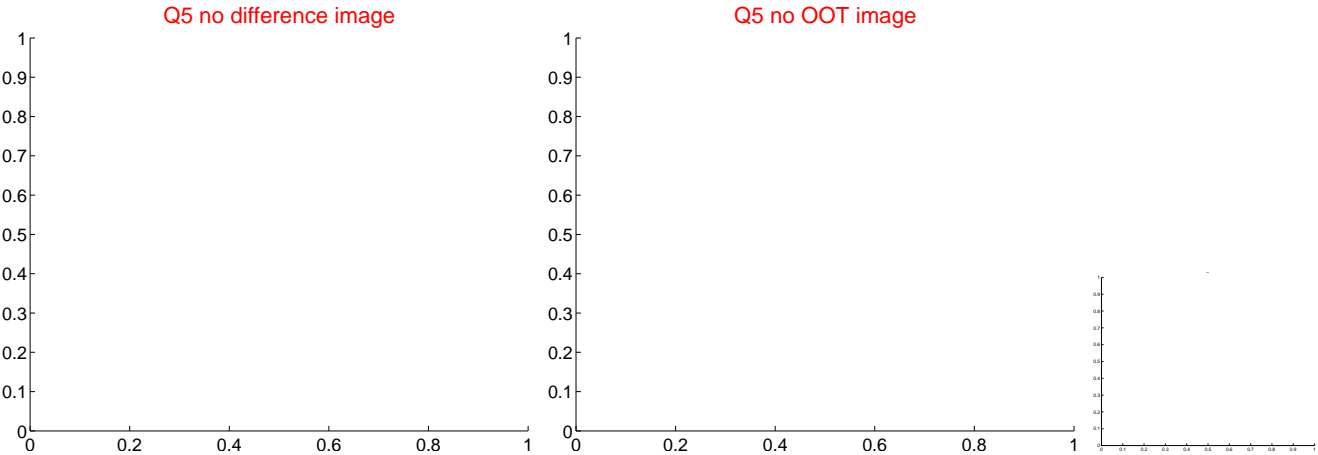
Q4 no difference image



Q4 no OOT image

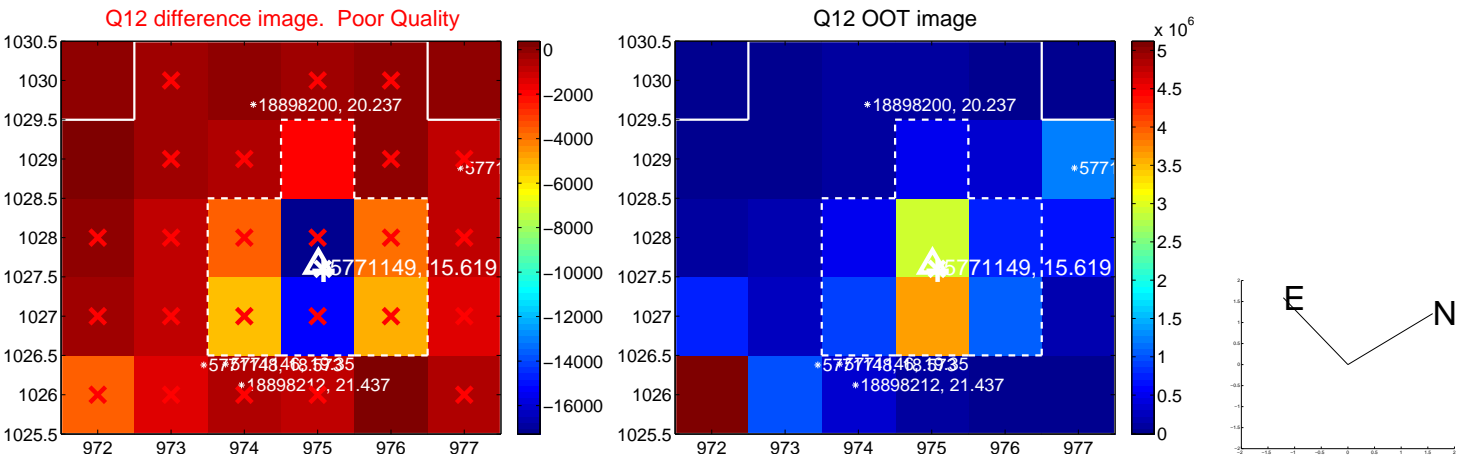


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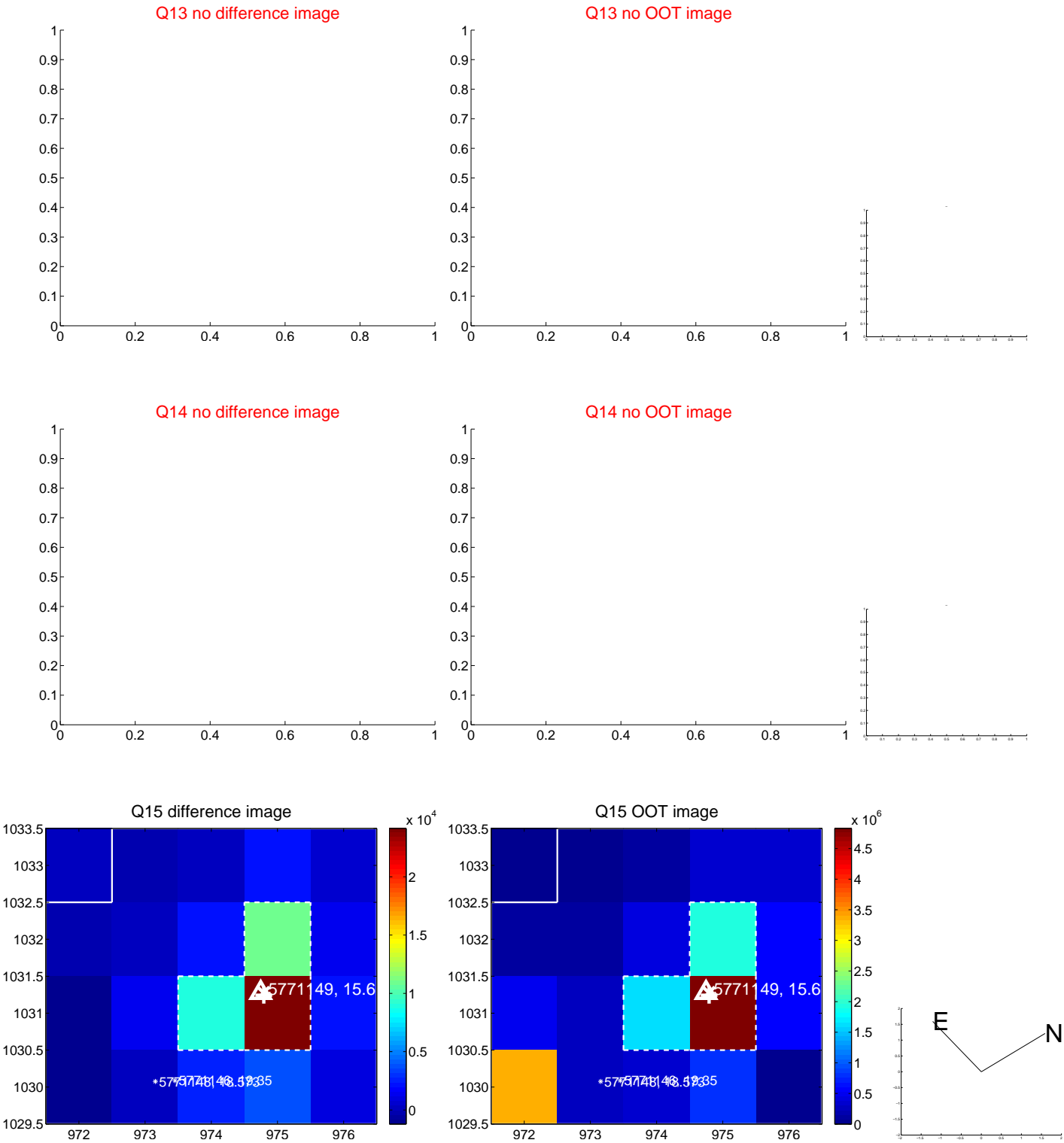




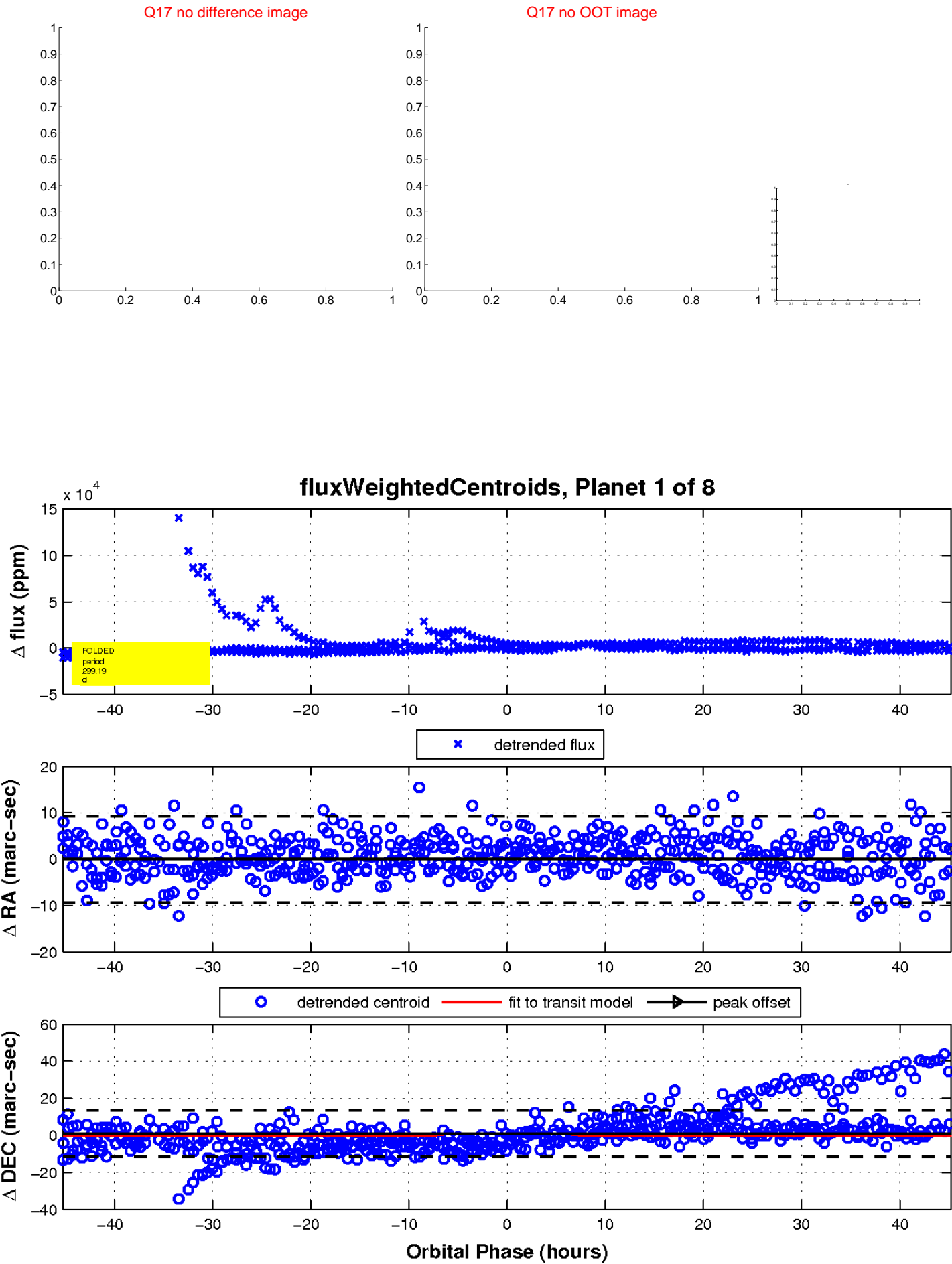
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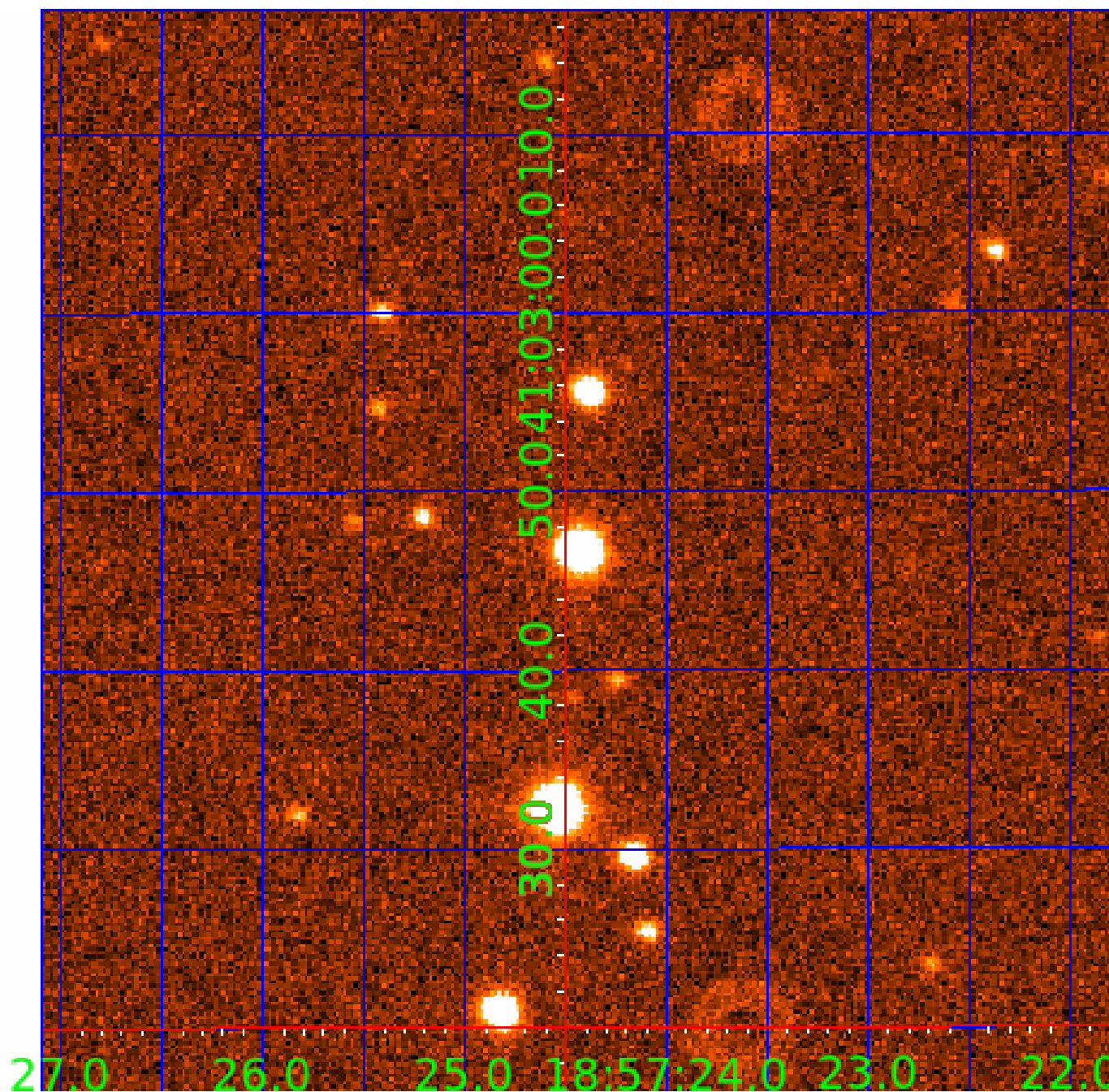


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UKIRT Image

Declination



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## Q1-17 DR25 TCE Parameters

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005771149-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005771149-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005771149-04	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
005771149-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005771149-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005771149-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
005771149-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

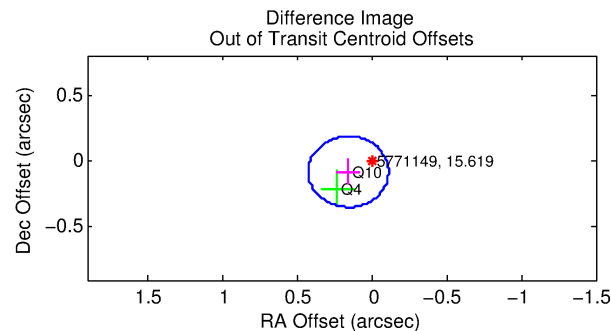
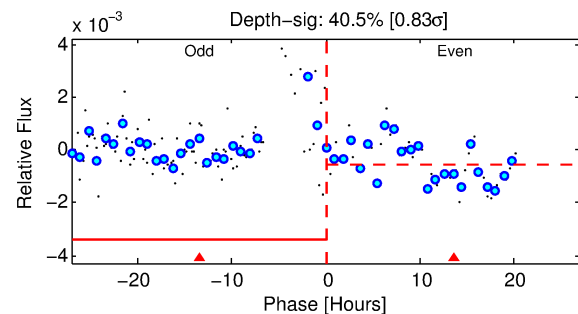
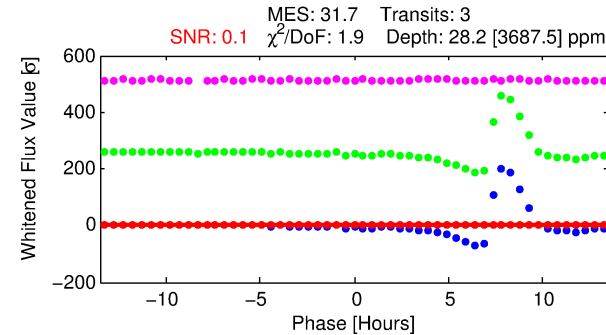
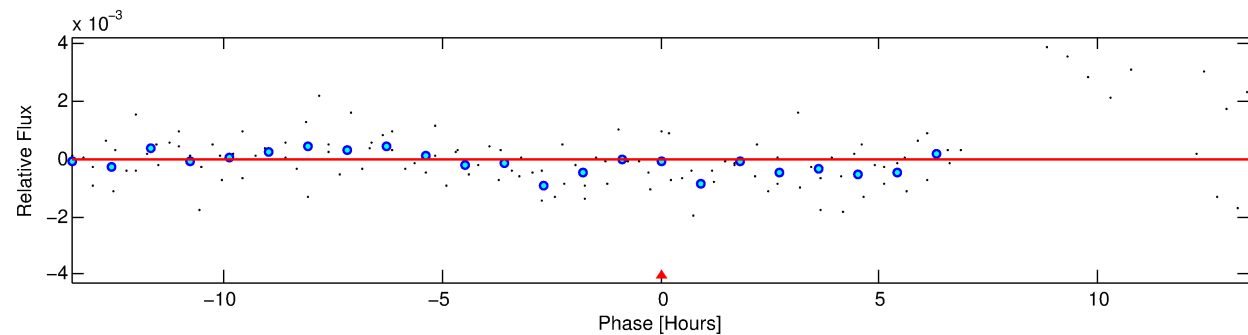
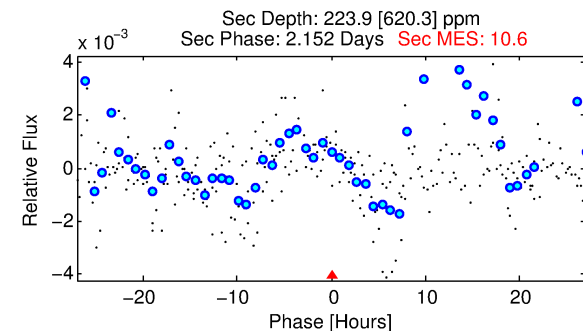
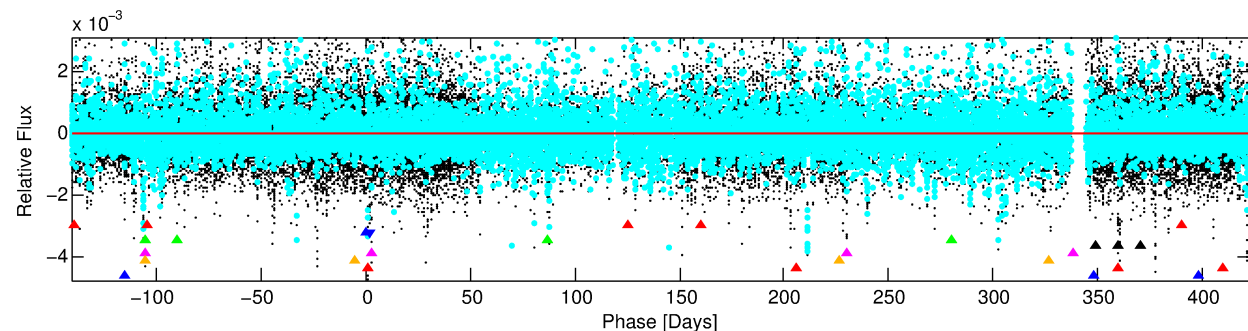
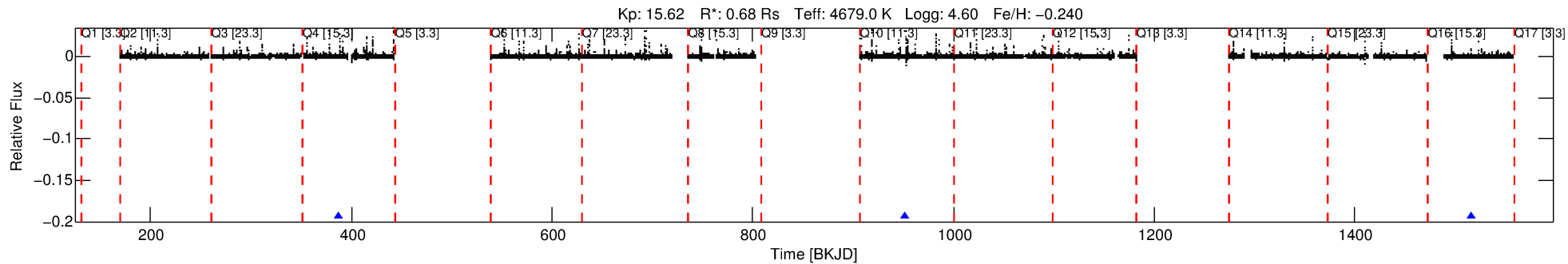
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005771149-02

No Significant Match Found

# DV One-Page Summary

KIC: 5771149 Candidate: 2 of 8 Period: 564.074 d



## DV Fit Results:

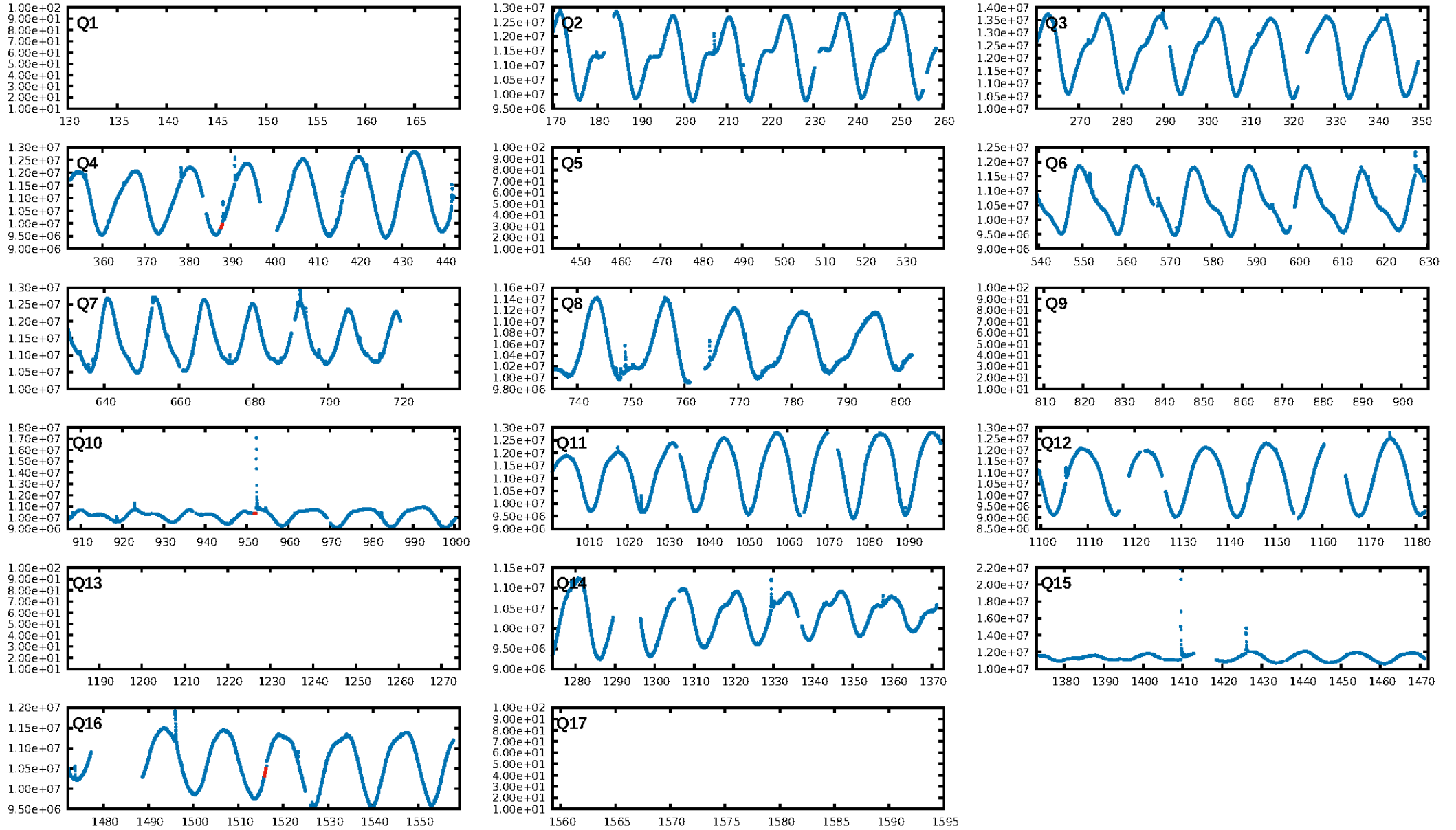
Period = 564.07376 [6.38283] d  
Epoch = 387.8601 [6.4274] BKJD  
Rp/R\* = 0.0050 [2.1022]  
a/R\* = 761.11 [1055493.46]  
b = 0.61 [1423.93]  
Seff = 0.15 [0.02]  
Teq = 157 [6] K  
Rp = 0.37 [155.53] Re  
a = 1.1652 [0.0855] AU  
Ag = 1204714.75 [1005890279.63] [0.004]  
Teffp = 8065 [1683546] K [0.00 $\sigma$ ]

## DV Diagnostic Results:

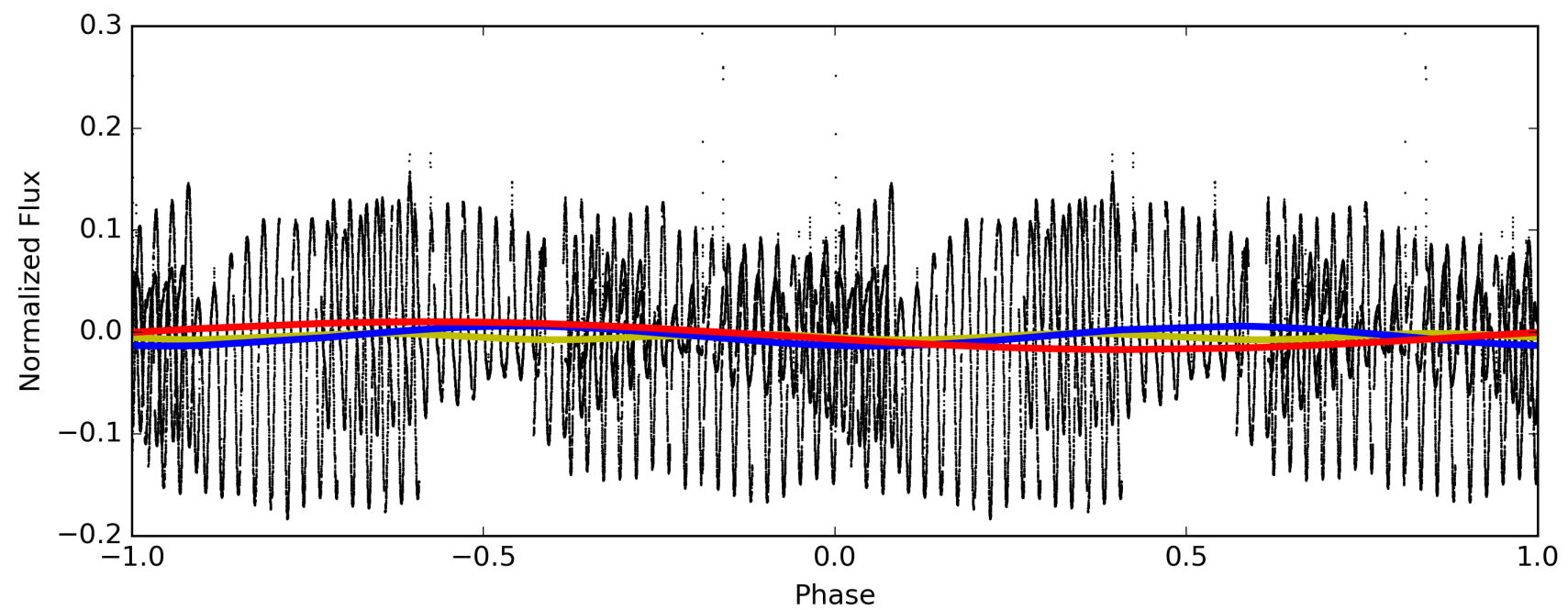
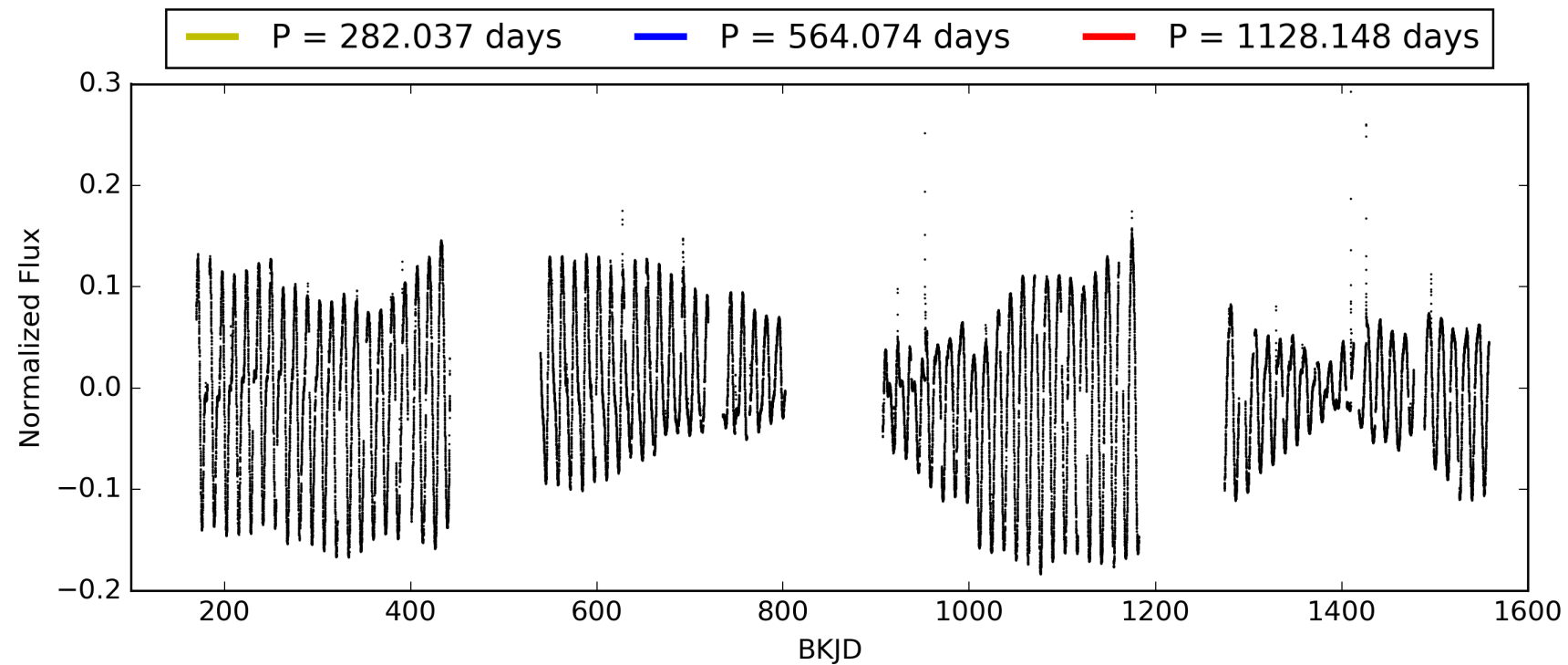
ShortPeriod-sig: 100.0% [13.51 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.7%  
ModelChiSquareGof-sig: 51.8%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 0.4909  
Centroid-sig: 38.1%  
Centroid-so: 84.218 arcsec [0.82 $\sigma$ ]  
OotOffset-rm: 0.175 arcsec [1.95 $\sigma$ ]  
OotOffset-st: 1/0/1/0 [2]  
KicOffset-rm: 0.167 arcsec [1.90 $\sigma$ ]  
KicOffset-st: 1/0/1/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 0.50 [1/2]



# TCE 005771149-02, PDC Light Curves

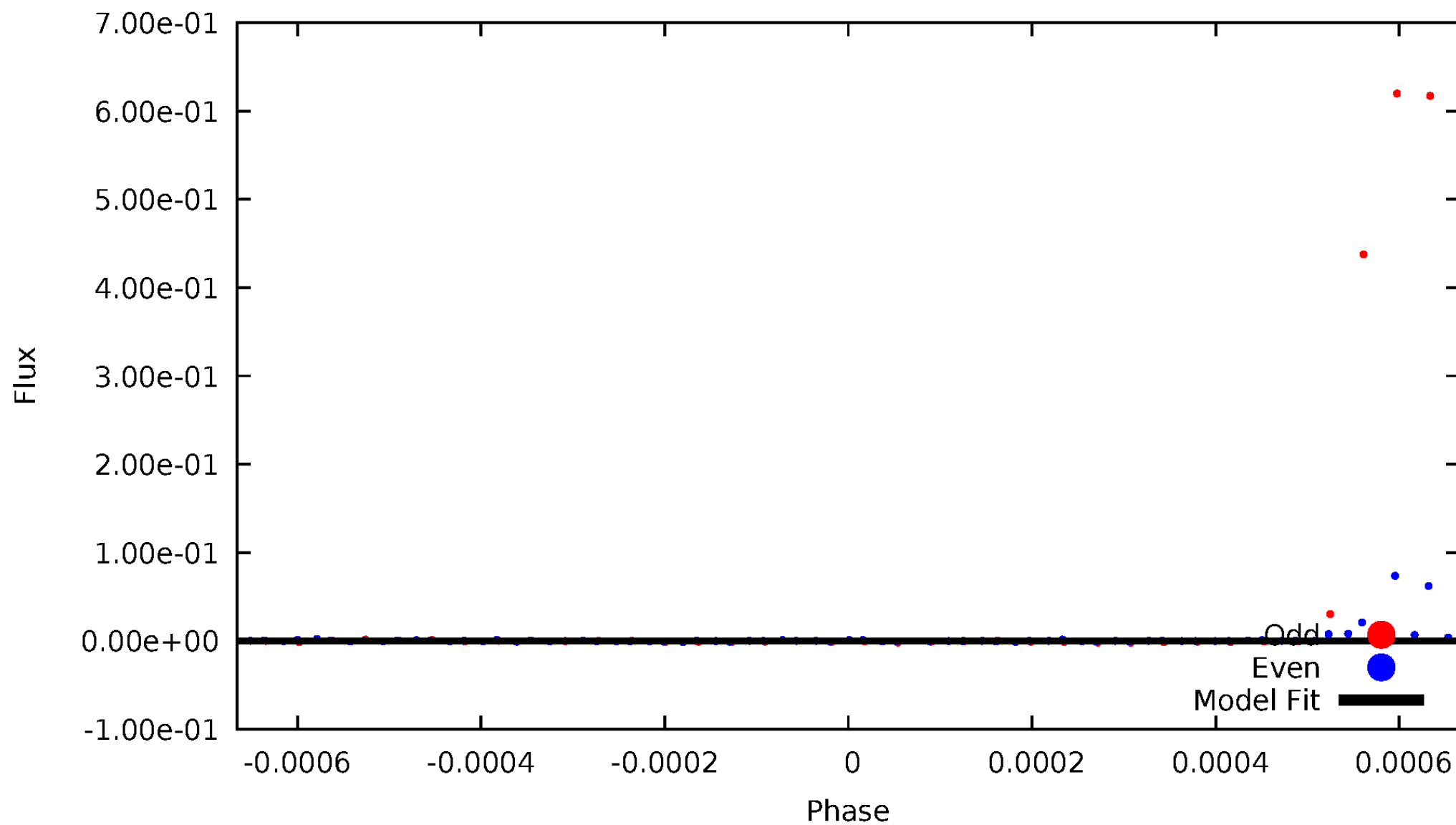


TCE 005771149-02



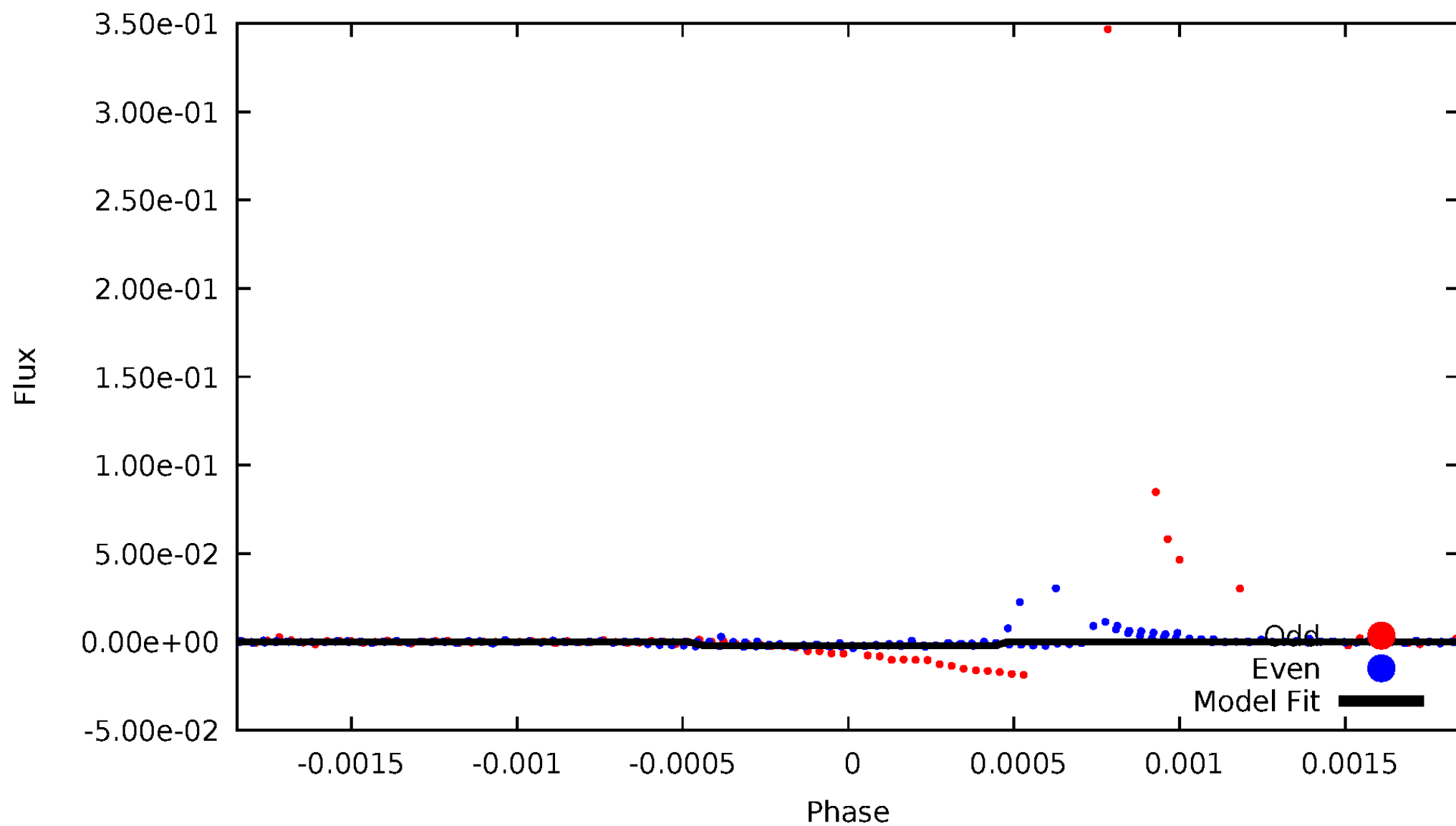
# DV Odd/Even

TCE 005771149-02



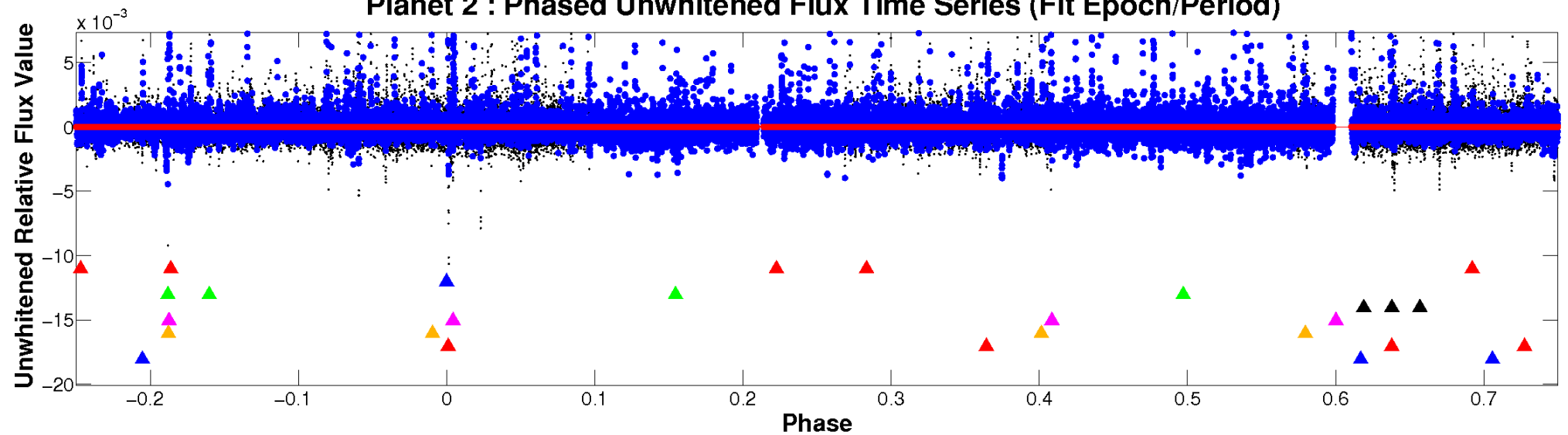
# ALT Odd/Even

TCE 005771149-02

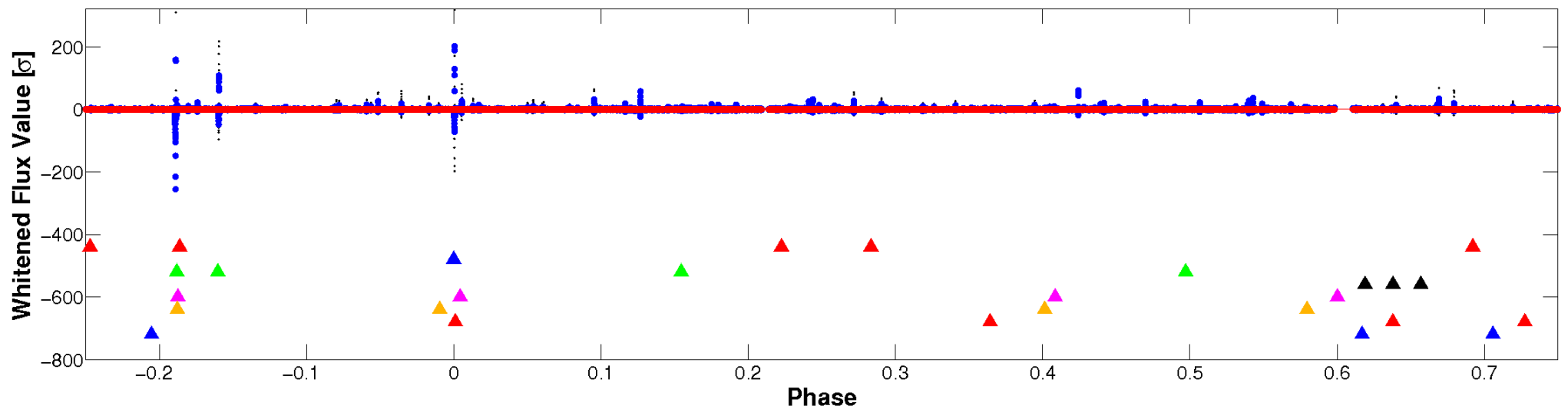


# Non-Whitened Vs. Whitened Light Curve

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

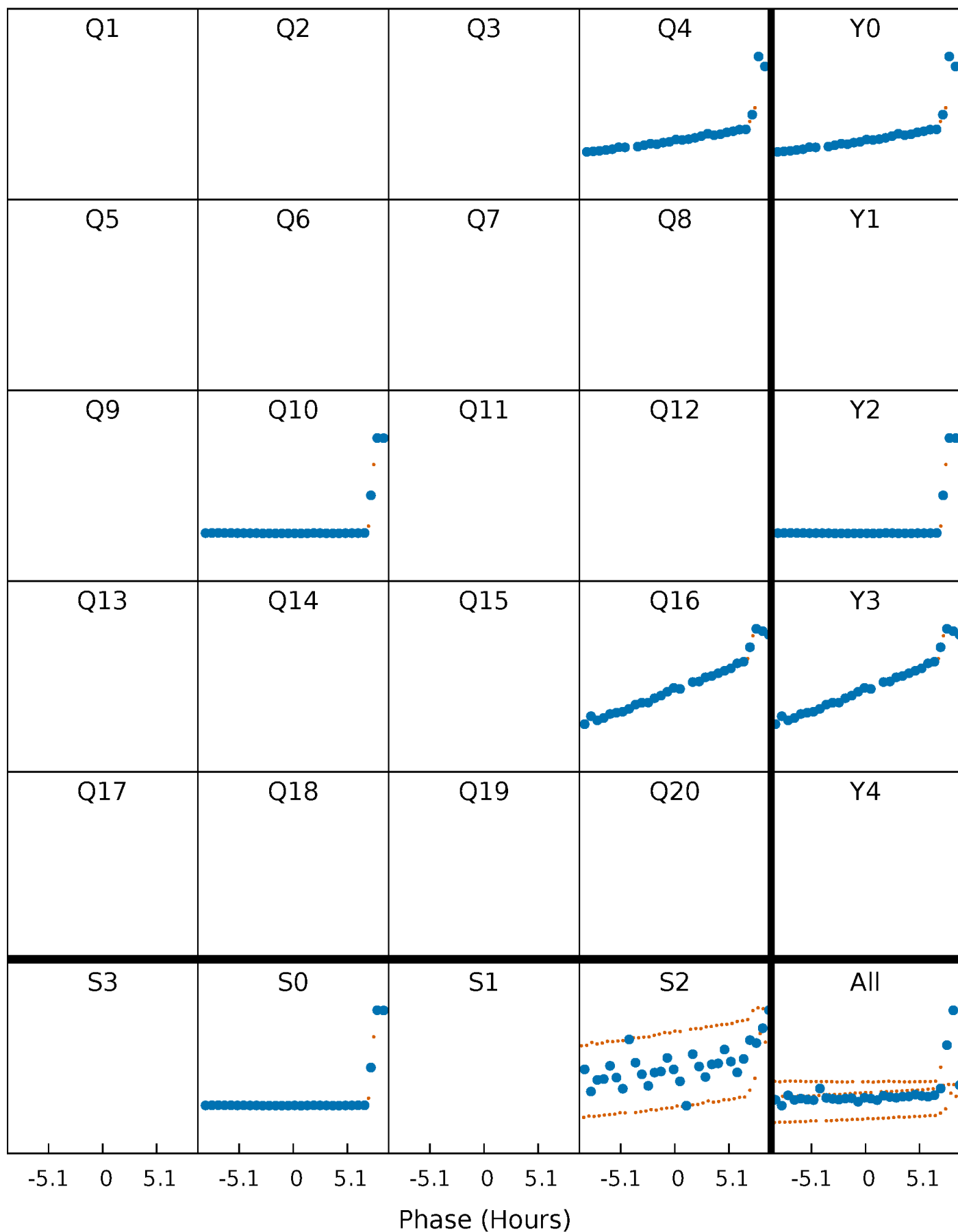


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

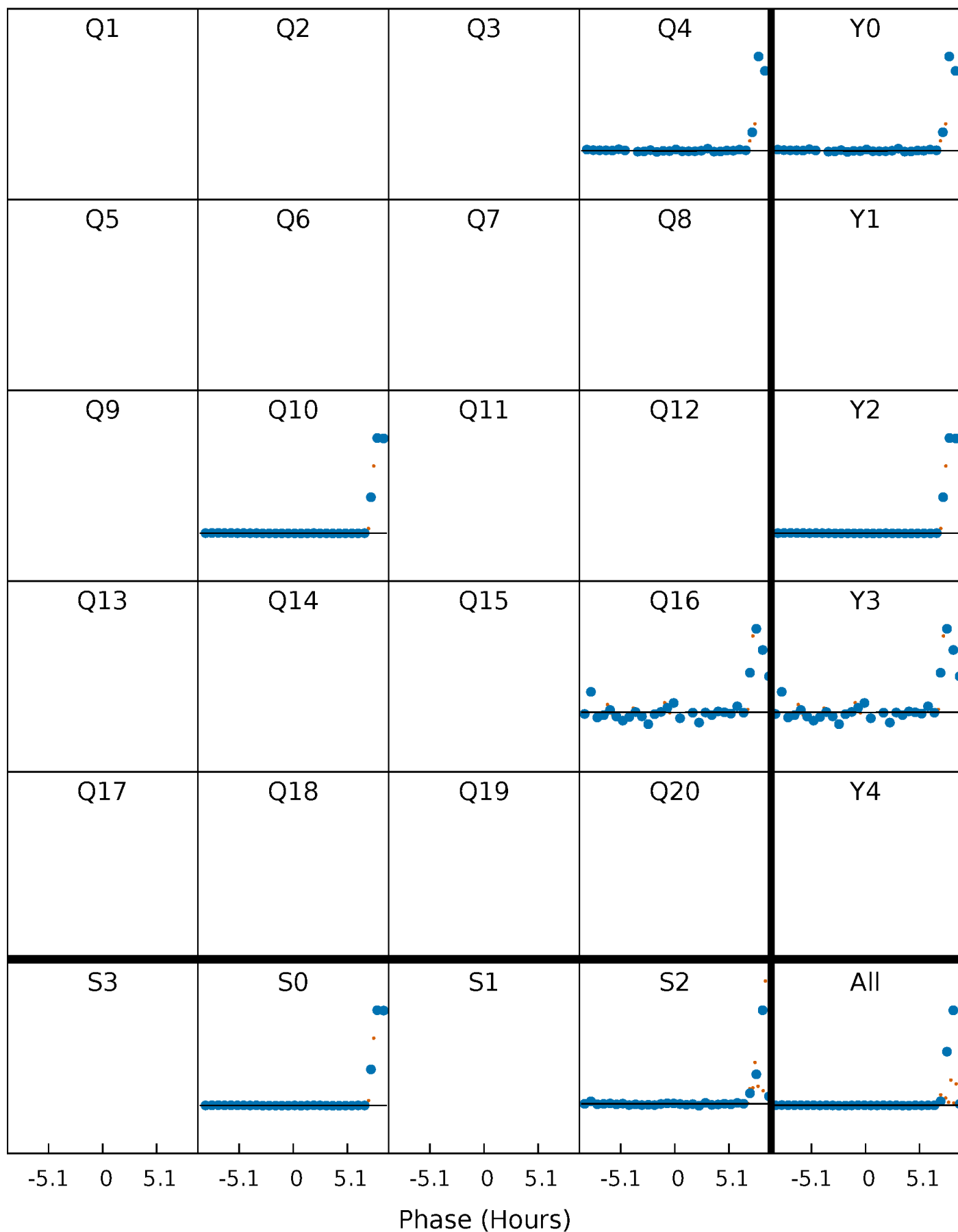
TCE 005771149-02 P=564.073757 Days  $T_0=387.860137$  (BKJD)





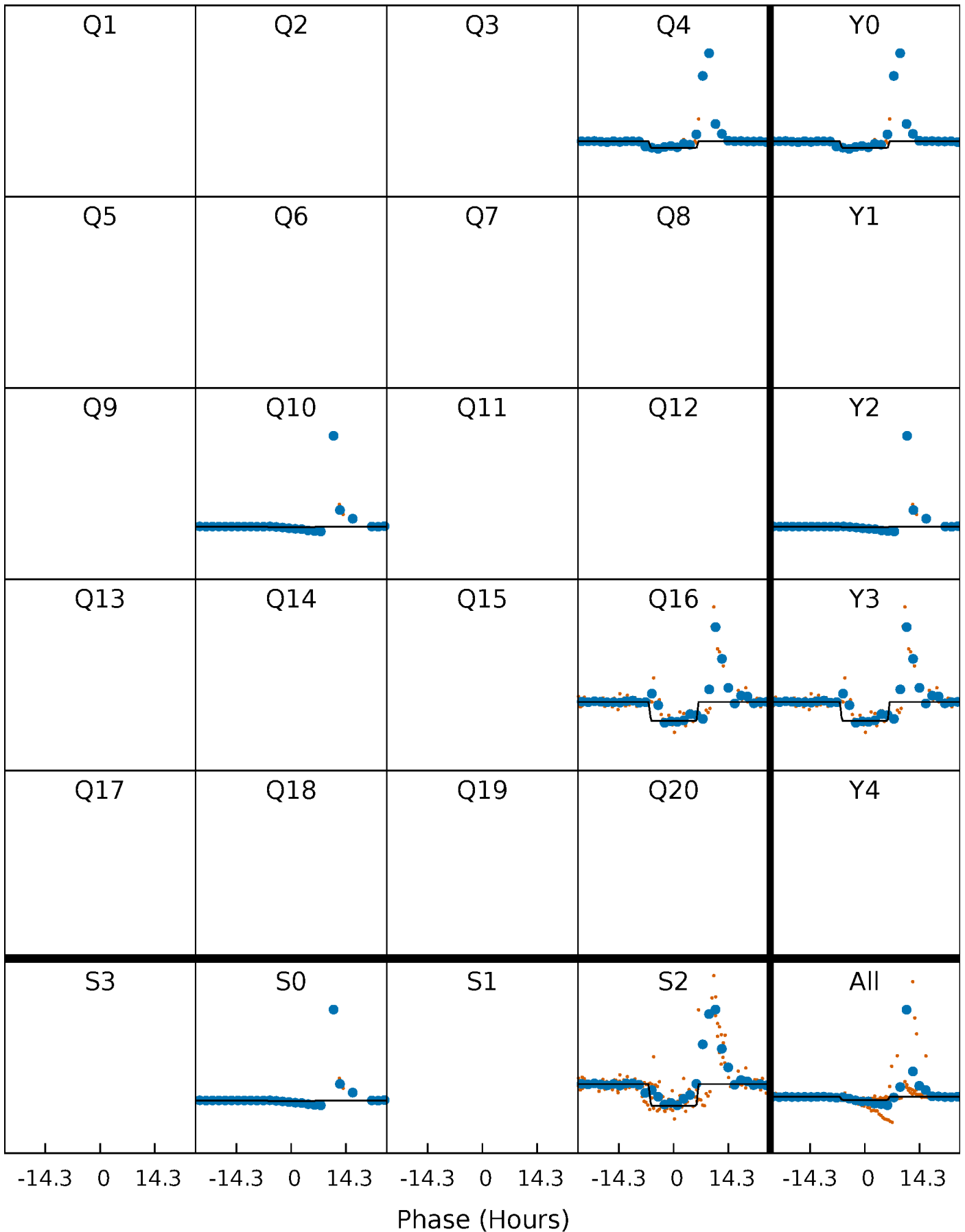
# DV Quarter-Phased Transit Curves

TCE 005771149-02 P=564.073757 Days  $T_0=387.860137$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

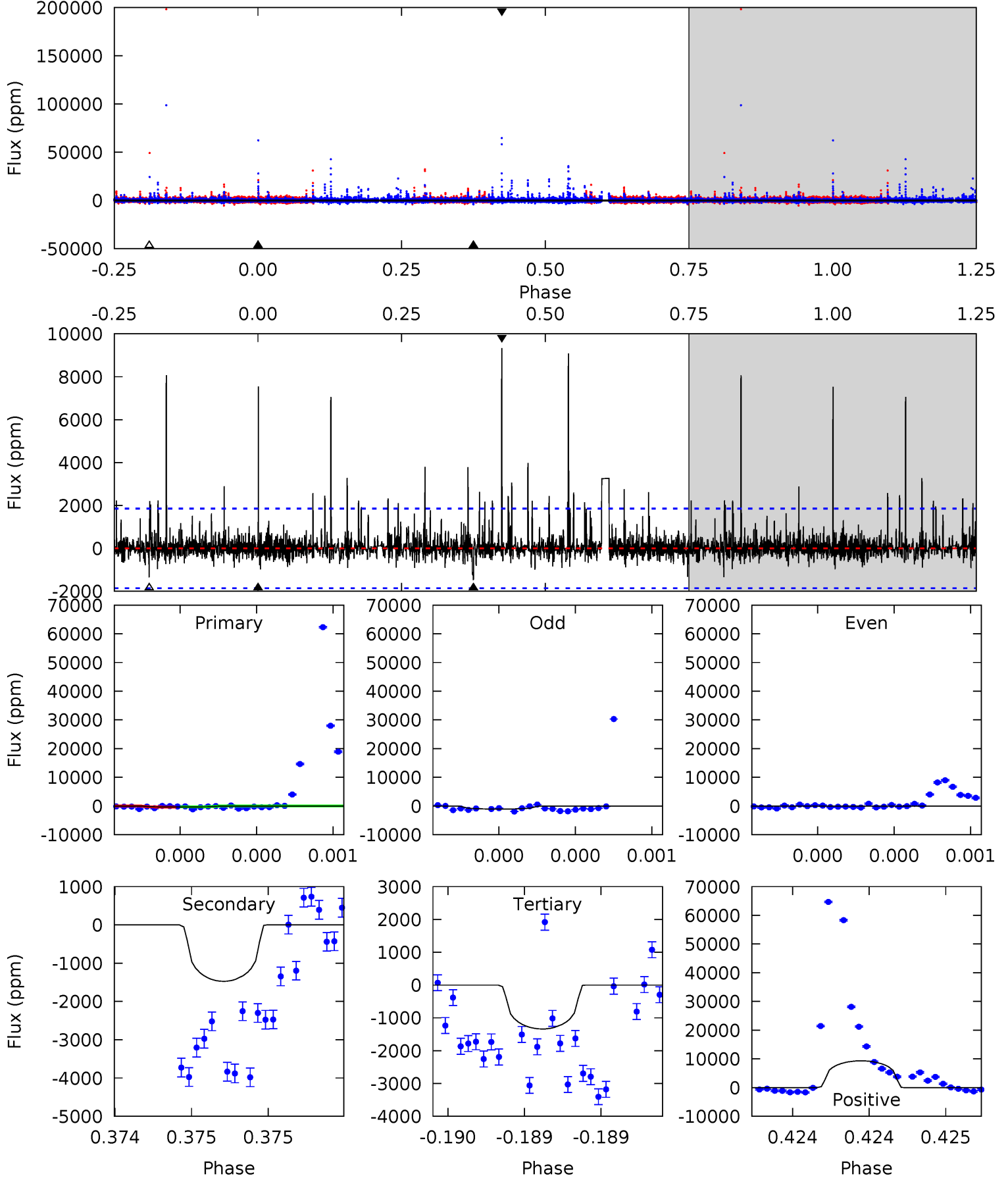
TCE 005771149-02 P=564.007123 Days  $T_0=387.883518$  (BKJD)



# DV Model-Shift Uniqueness Test

005771149-02, P = 564.073757 Days, E = 387.860137 Days

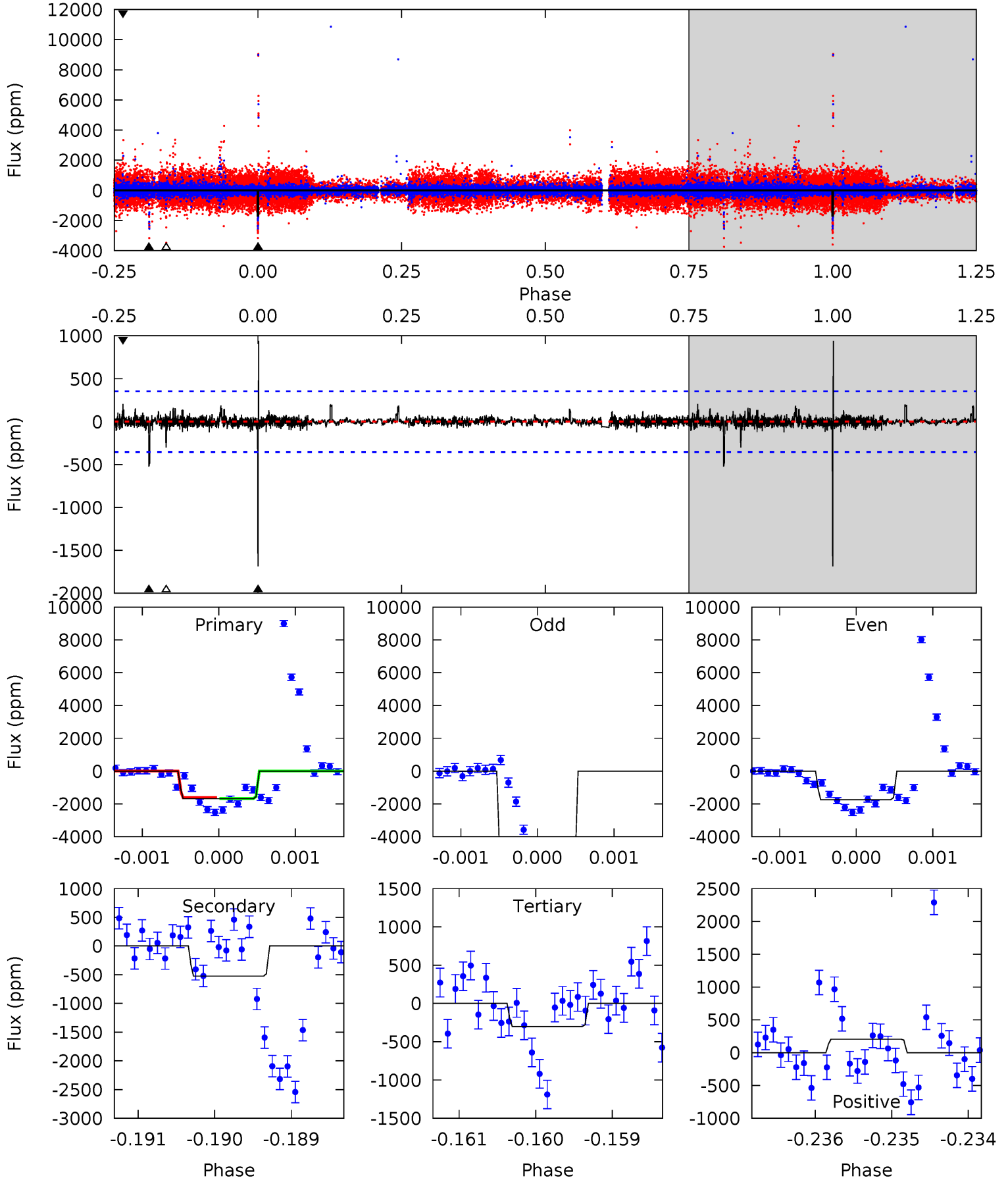
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.09	4.47	4.06	28.3	5.64	3.58	1.61	-2.98	-27.2	0.41	-23.8	0.93	1.93	0.86	0.11



# Alt Model-Shift Uniqueness Test

005771149-02, P = 564.007123 Days, E = 387.883518 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
26.1	8.10	4.65	3.19	5.47	3.32	0.59	21.5	22.9	3.46	4.92	40.7	2.13	0.36	0



### Stellar Parameters For KIC 005771149

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$4679^{+140}_{-140}$	$4.597^{+0.056}_{-0.028}$	$-0.240^{+0.300}_{-0.300}$	$0.678^{+0.054}_{-0.060}$	$0.663^{+0.082}_{-0.048}$	$2.997^{+0.749}_{-0.384}$
	+3%/-3%	+1%/-1%	+125%/-125%	+8%/-9%	+12%/-7%	+25%/-13%
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 005771149-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-1474 \pm 330$	$103.62^{+116.53}_{-75.26}$	$218^{+7}_{-7}$	$1789^{+533}_{-233}$	$100^{+1212}_{-79}$
Alt.	$-523 \pm 65$	$105.79^{+114.81}_{-72.58}$	$219^{+7}_{-7}$	$1627^{+397}_{-191}$	$36^{+331}_{-28}$

$T_{max}$  = 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

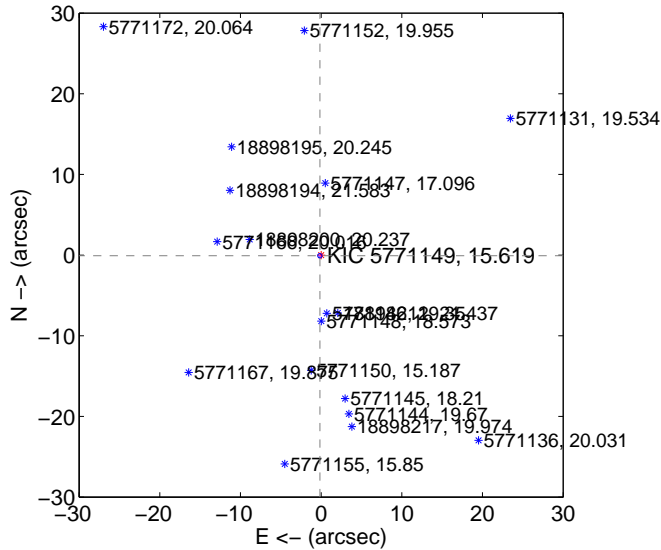
Supplemental centroid analysis for 005771149-02. Kepler magnitude: 15.62. Transit SNR 0.07

There are 2 quarters with good PRF difference image offsets

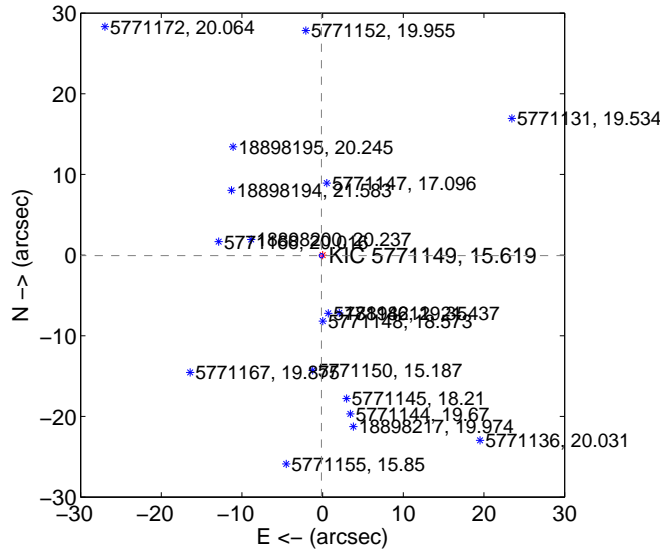
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.175 \pm 0.090$	1.95	$0.155 \pm 0.075$	$-0.081 \pm 0.091$
PRF-fit source offset from KIC position	$0.167 \pm 0.088$	1.90	$0.151 \pm 0.087$	$-0.070 \pm 0.094$
photometric centroid source offset	$84.23 \pm 102.28$	0.82	$72.60 \pm 96.64$	$-42.70 \pm 117.06$

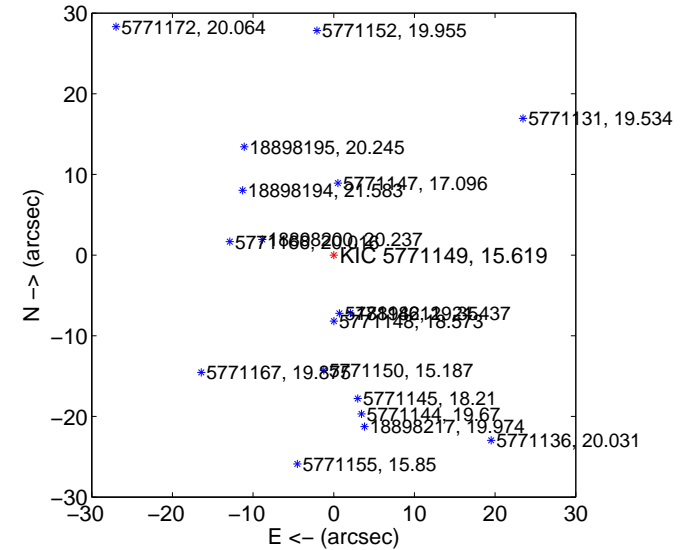
offset from difference PRF-fit to OOT PRF-fit



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.

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



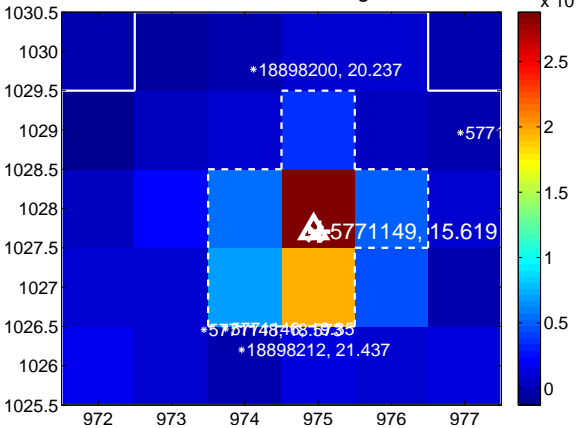
Q3 no difference image



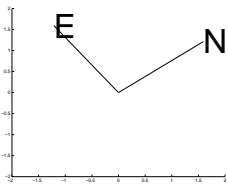
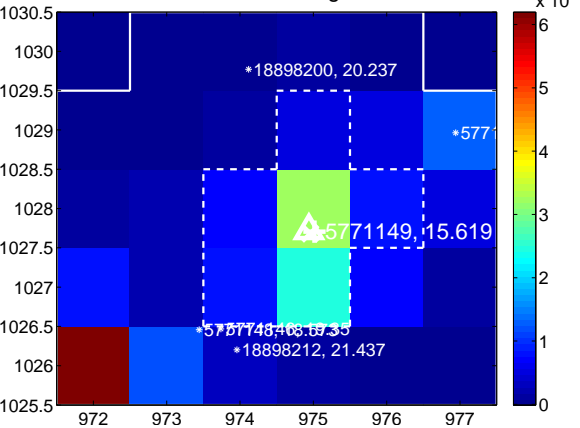
Q3 no OOT image



Q4 difference image



Q4 OOT image



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



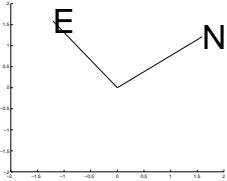
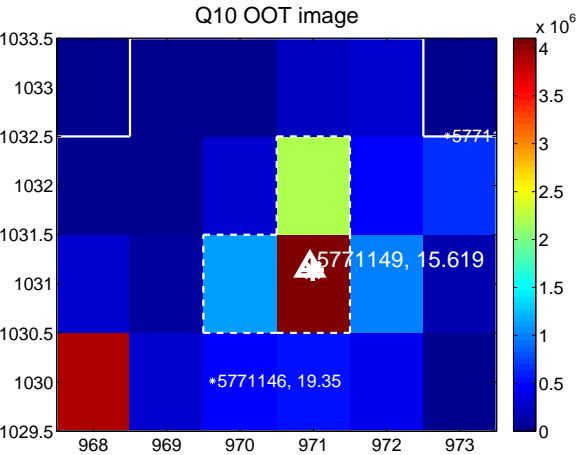
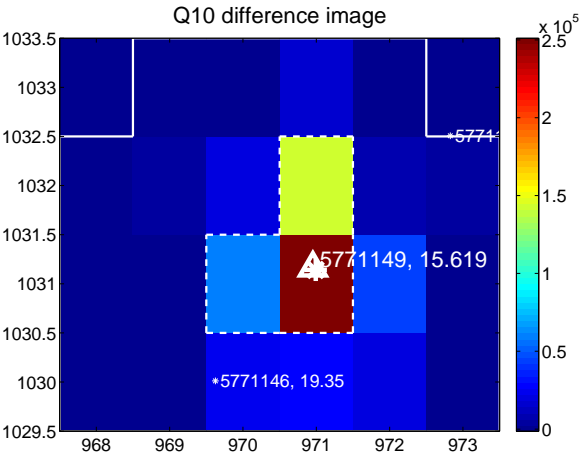


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

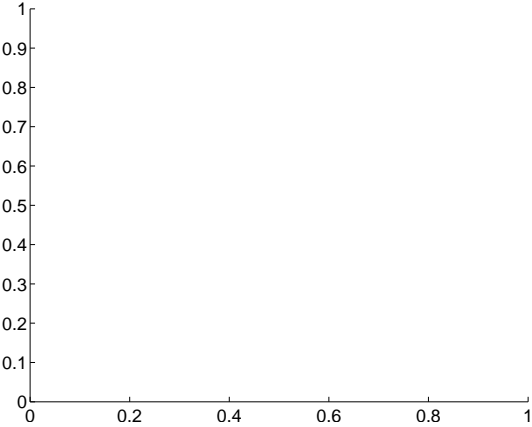
Q9 no difference image



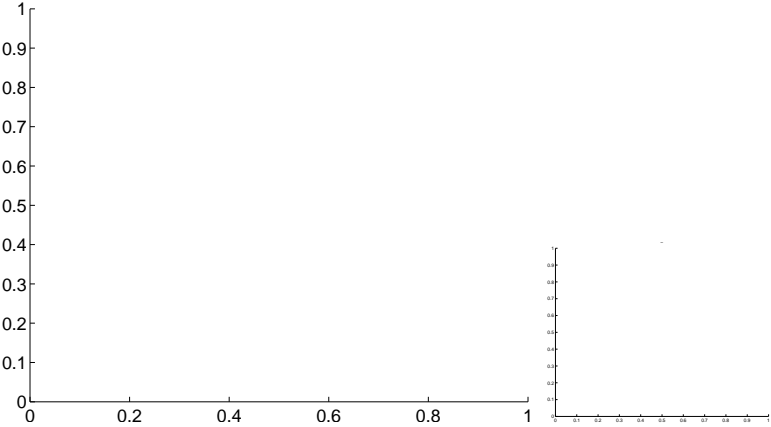
Q9 no OOT image



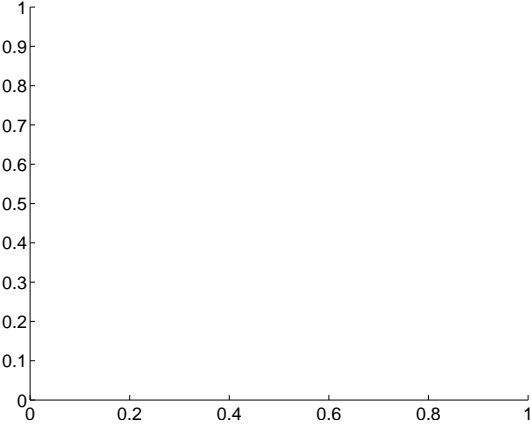
Q11 no difference image



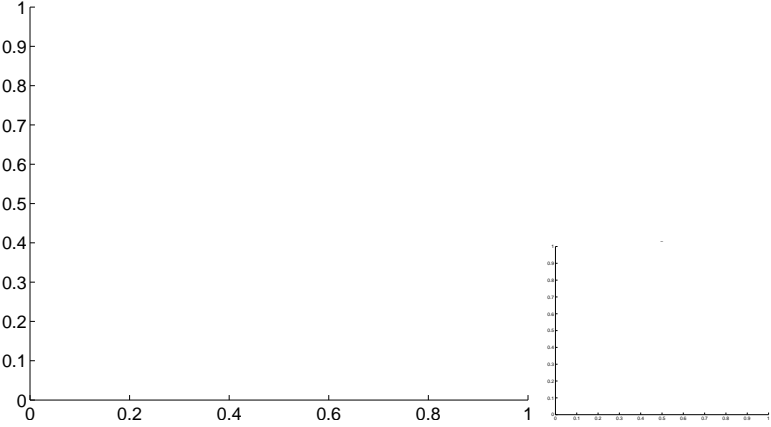
Q11 no OOT image



Q12 no difference image



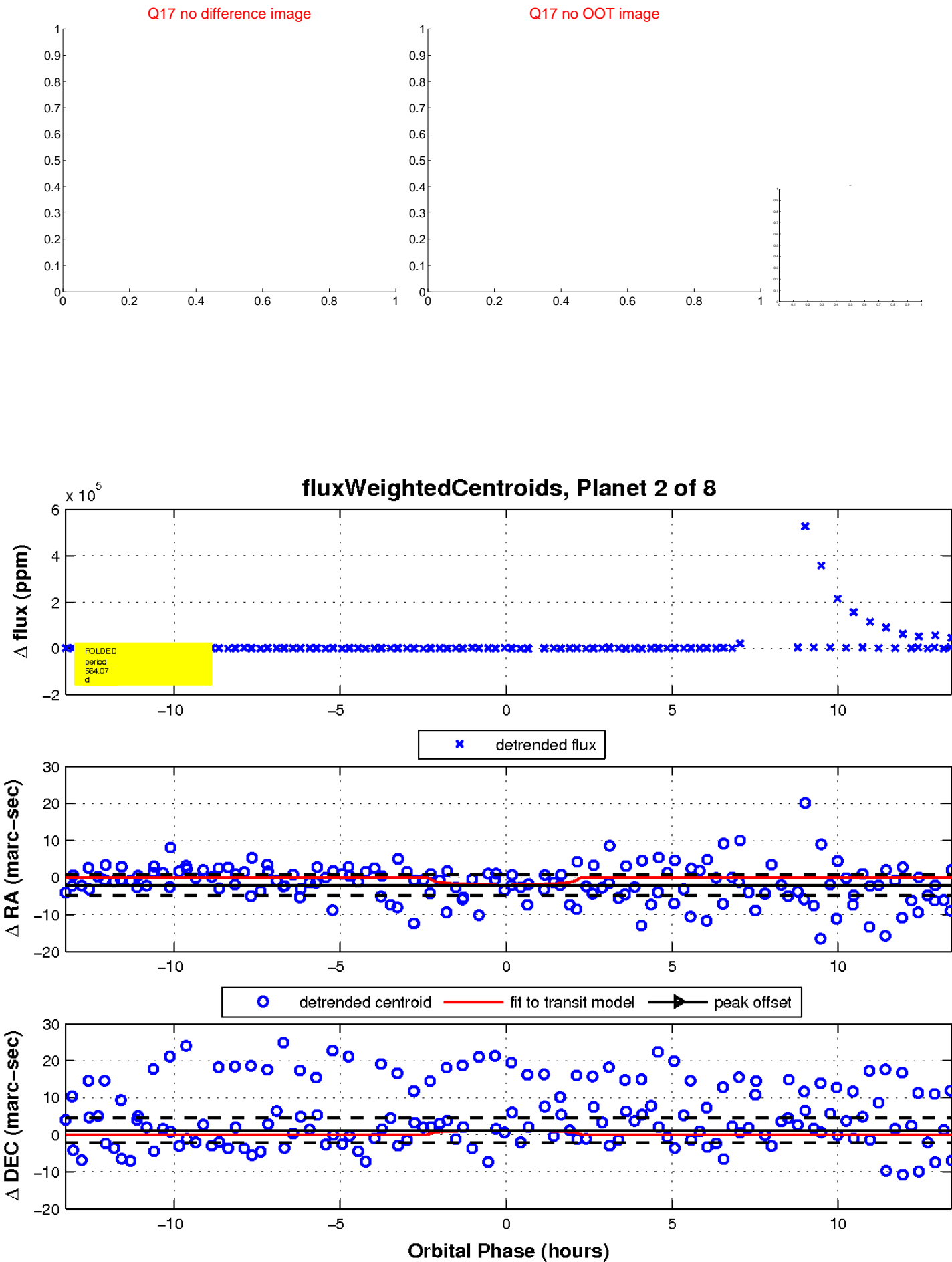
Q12 no OOT image



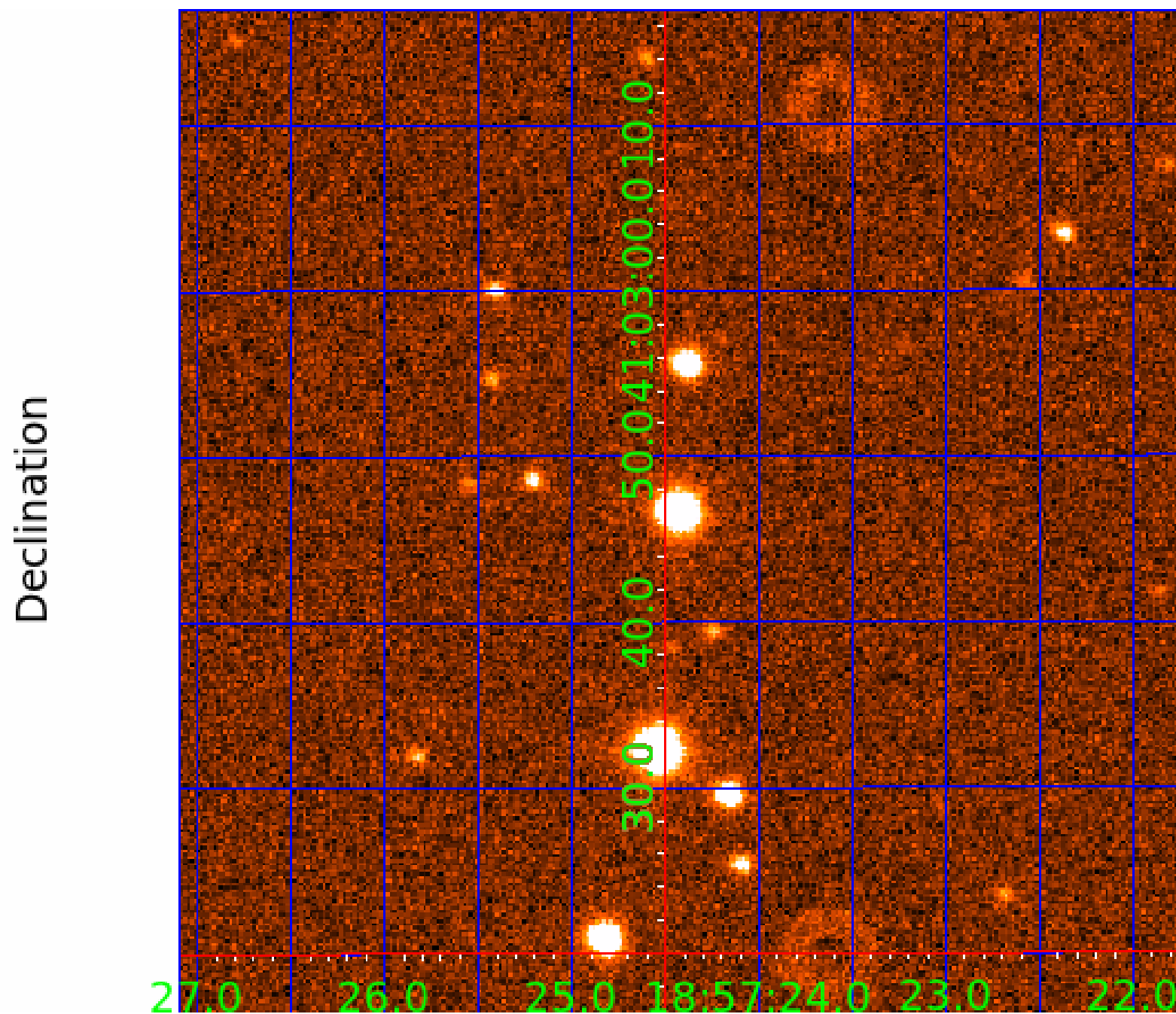
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image



## KIC 005771149

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005771149-01	OBS	No	299.193035	214.235905	3568.4	15.104	26.5	8.4	0.68	4679	3.89	0.34
005771149-02	OBS	No	564.073757	387.860137	28.2	4.504	31.7	0.1	0.68	4679	0.37	0.14
005771149-03	OBS	No	370.809831	297.482499	1189.6	15.866	17.7	2.5	0.68	4679	2.34	0.25
005771149-04	OBS	No	553.386661	194.319752	5505.5	18.440	18.2	11.2	0.68	4679	4.83	0.15
005771149-05	OBS	No	336.106105	282.190743	4191.4	11.273	17.8	9.4	0.68	4679	5.26	0.29
005771149-06	OBS	No	332.299915	281.970338	4035.6	3.921	18.1	10.4	0.68	4679	4.52	0.29
005771149-07	OBS	No	359.196560	234.159625	3784.1	22.363	21.8	7.3	0.68	4679	4.60	0.27
005771149-08	OBS	No	513.938585	272.058180	3252.8	8.331	13.5	8.9	0.68	4679	3.96	0.17

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005771149-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005771149-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005771149-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005771149-04	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
005771149-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005771149-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005771149-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
005771149-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

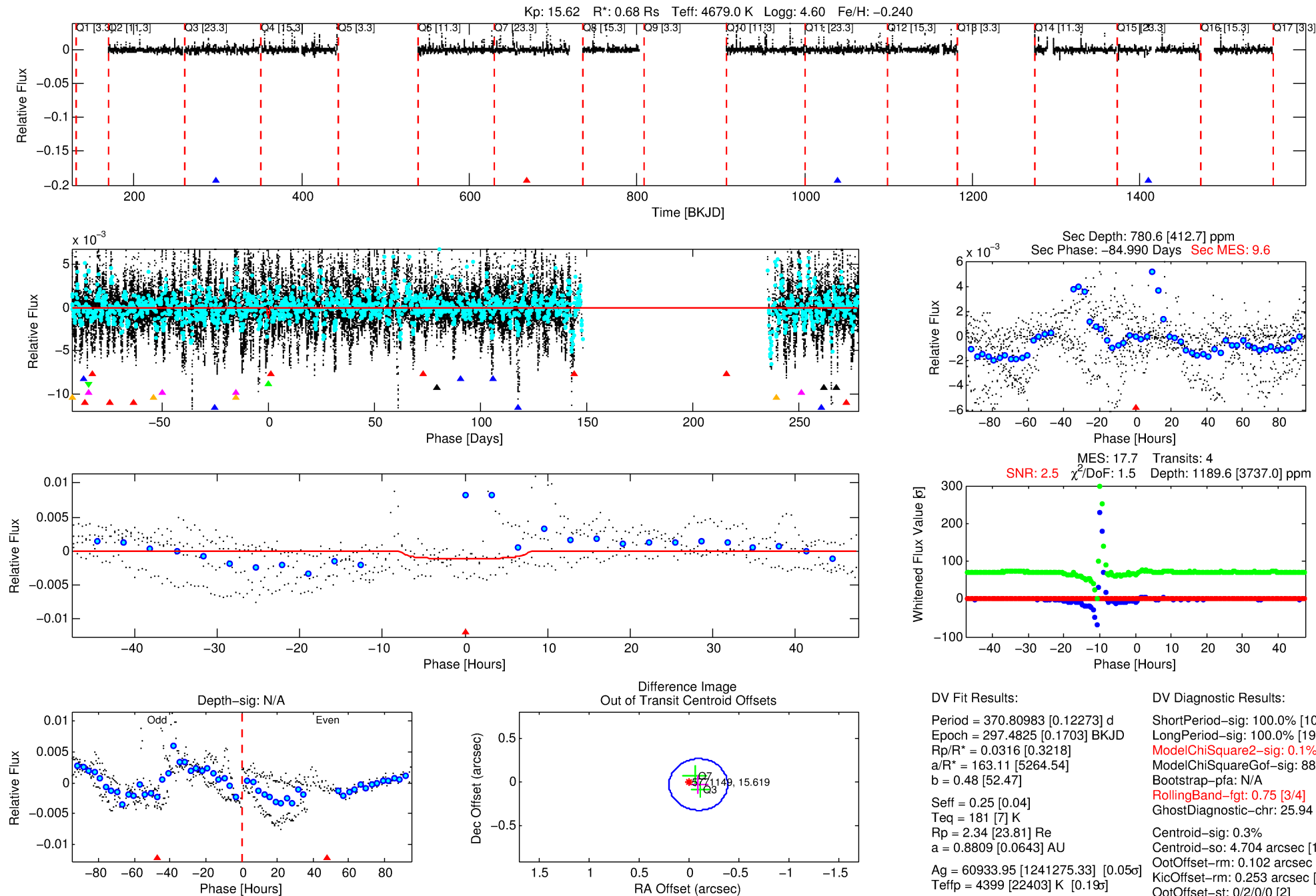
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005771149-03

No Significant Match Found

# DV One-Page Summary

KIC: 5771149 Candidate: 3 of 8 Period: 370.810 d



## DV Fit Results:

Period = 370.80983 [0.12273] d  
Epoch = 297.4825 [0.1703] BKJD  
Rp/R\* = 0.0316 [0.3218]  
a/R\* = 163.11 [5264.54]  
b = 0.48 [52.47]  
Seff = 0.25 [0.04]  
Teq = 181 [7] K  
Rp = 2.34 [23.81] Re  
a = 0.8809 [0.0643] AU  
Ag = 60933.95 [1241275.33] [0.05]  
Teff = 4399 [22403] K [0.19]

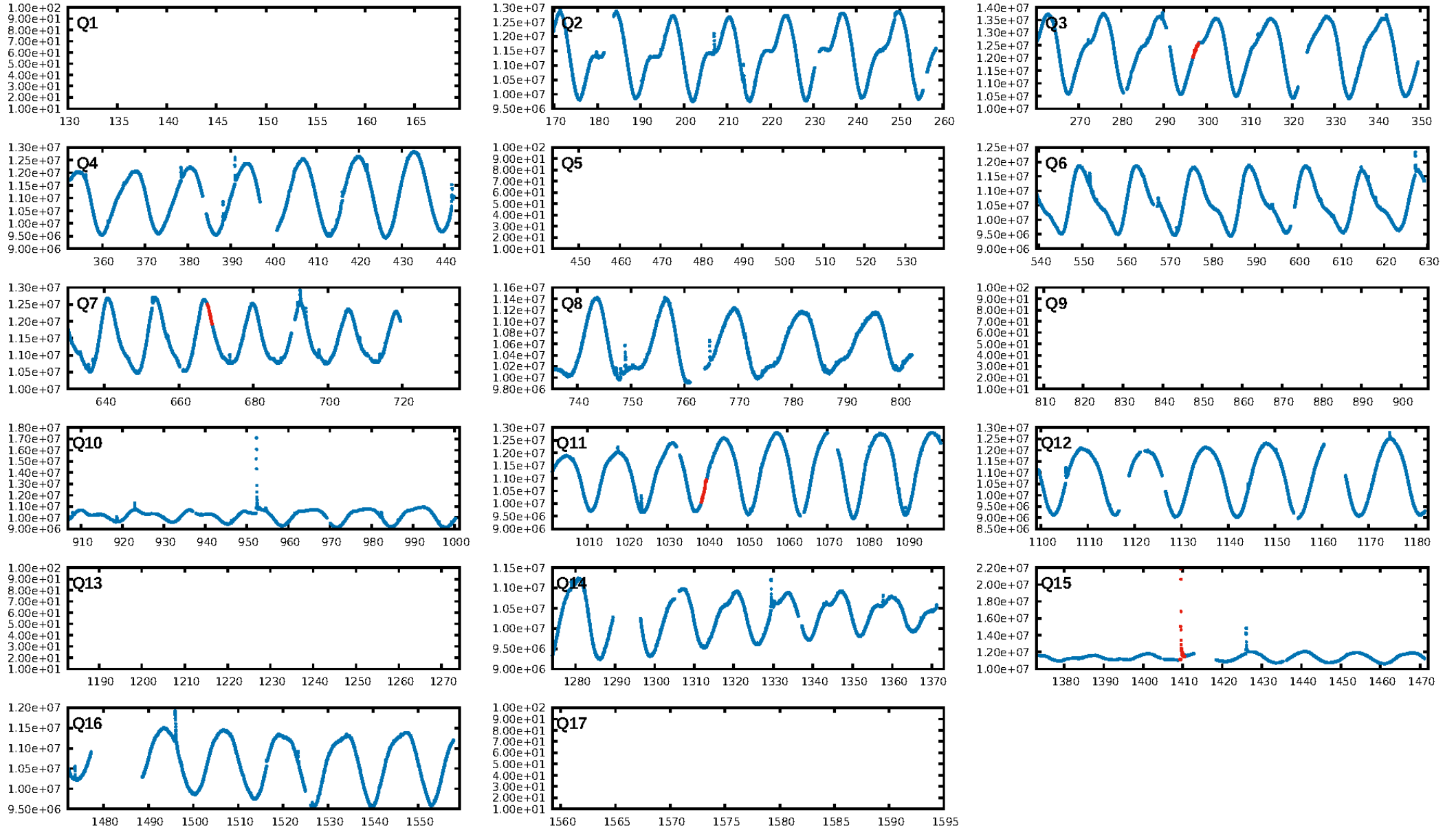
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [10.16]  
LongPeriod-sig: 100.0% [191.69]  
ModelChiSquare2-sig: 0.1%  
ModelChiSquareGof-sig: 88.6%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.75 [3/4]  
GhostDiagnostic-chr: 25.94  
Centroid-sig: 0.3%  
Centroid-so: 4.704 arcsec [1.67]  
OotOffset-rm: 0.102 arcsec [1.05]  
KicOffset-rm: 0.253 arcsec [2.05]  
OotOffset-st: 0/2/0/0 [2]  
KicOffset-st: 0/2/0/0 [2]  
DiffImageQuality-fgm: 0.00 [0/2]  
DiffImageOverlap-fno: 1.00 [2/2]

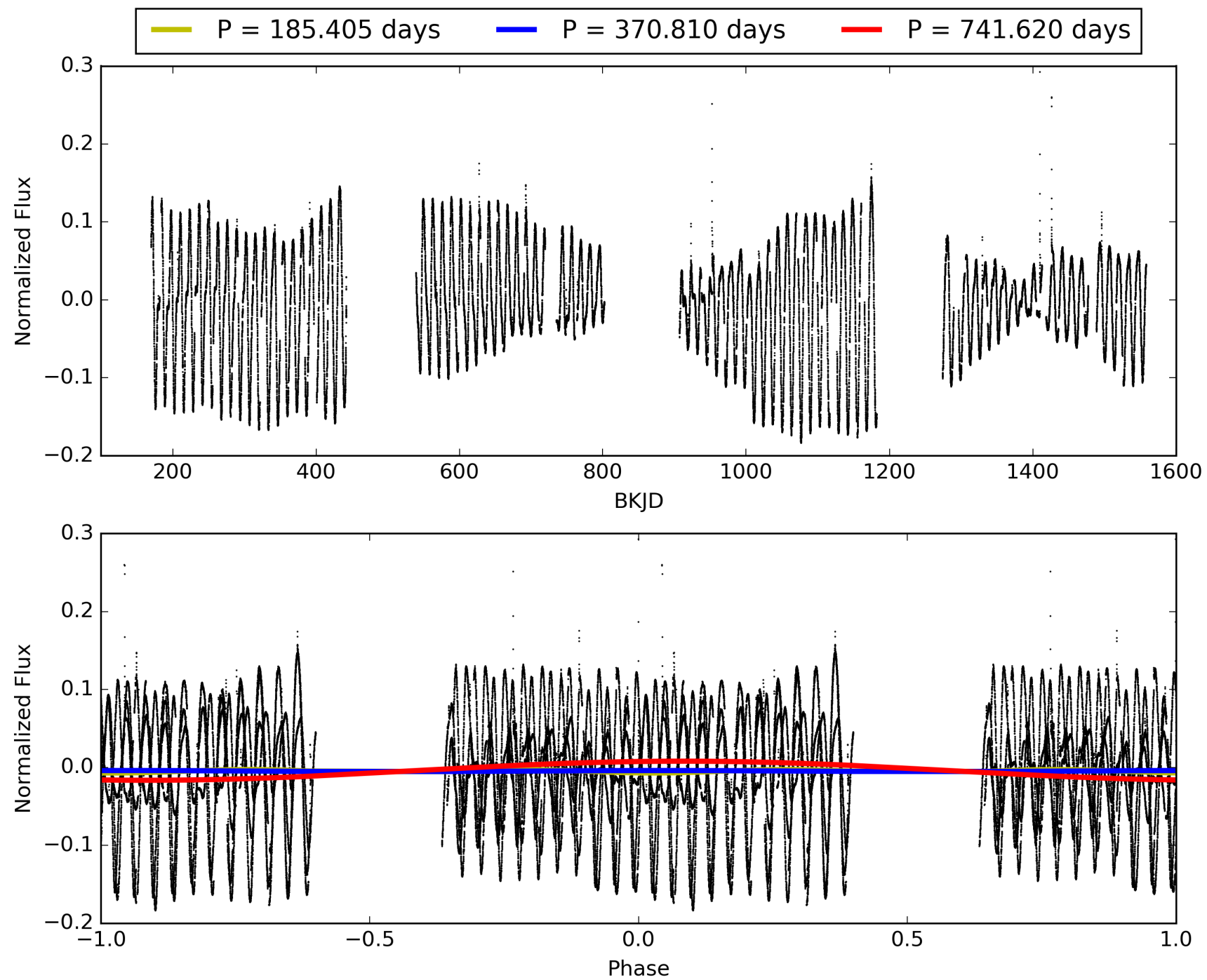
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:36:55 Z

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

# TCE 005771149-03, PDC Light Curves



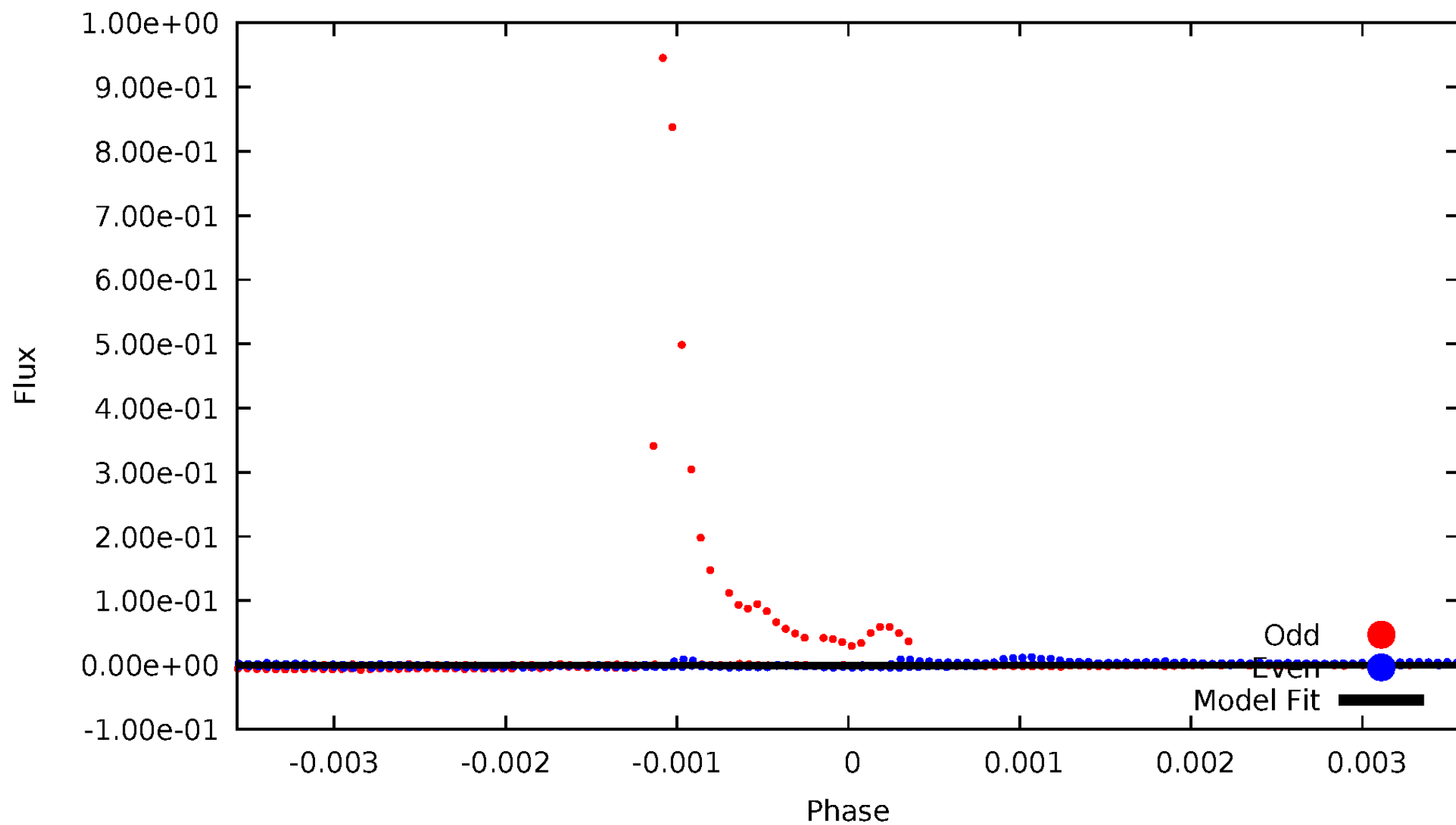
TCE 005771149-03





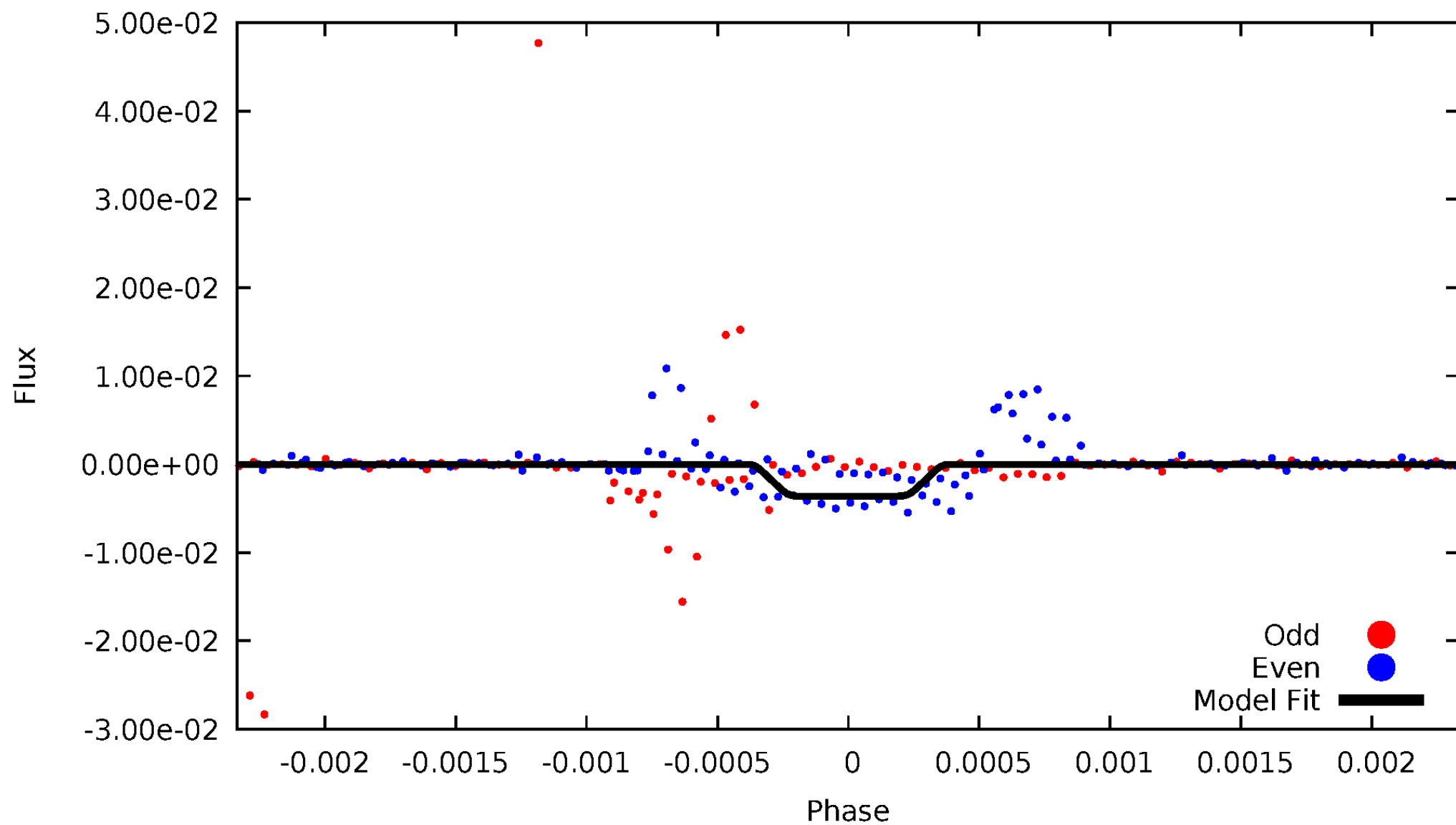
# DV Odd/Even

TCE 005771149-03



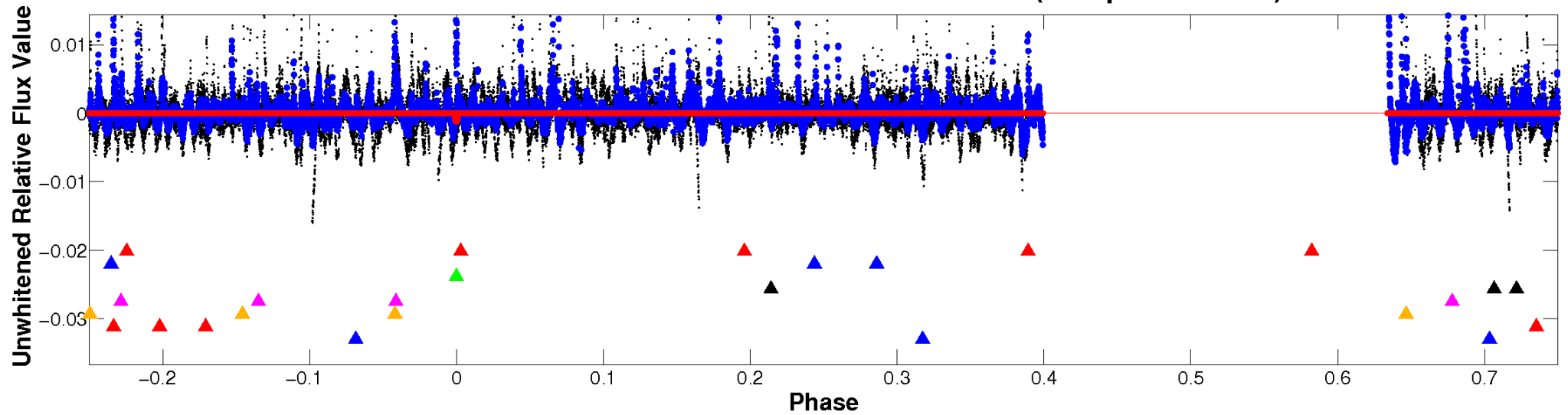
# ALT Odd/Even

TCE 005771149-03

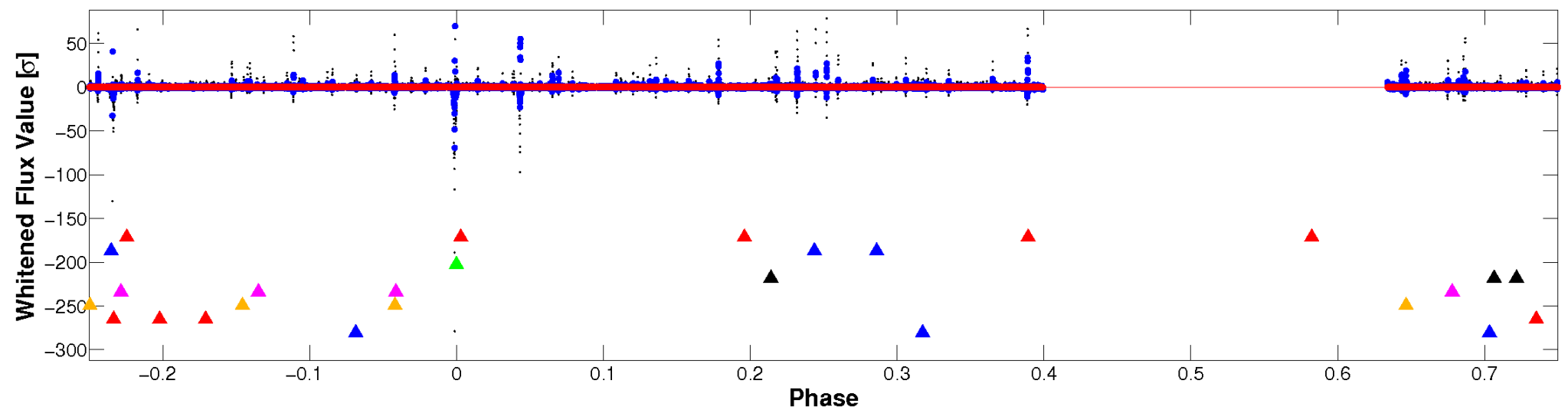


# Non-Whitened Vs. Whitened Light Curve

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

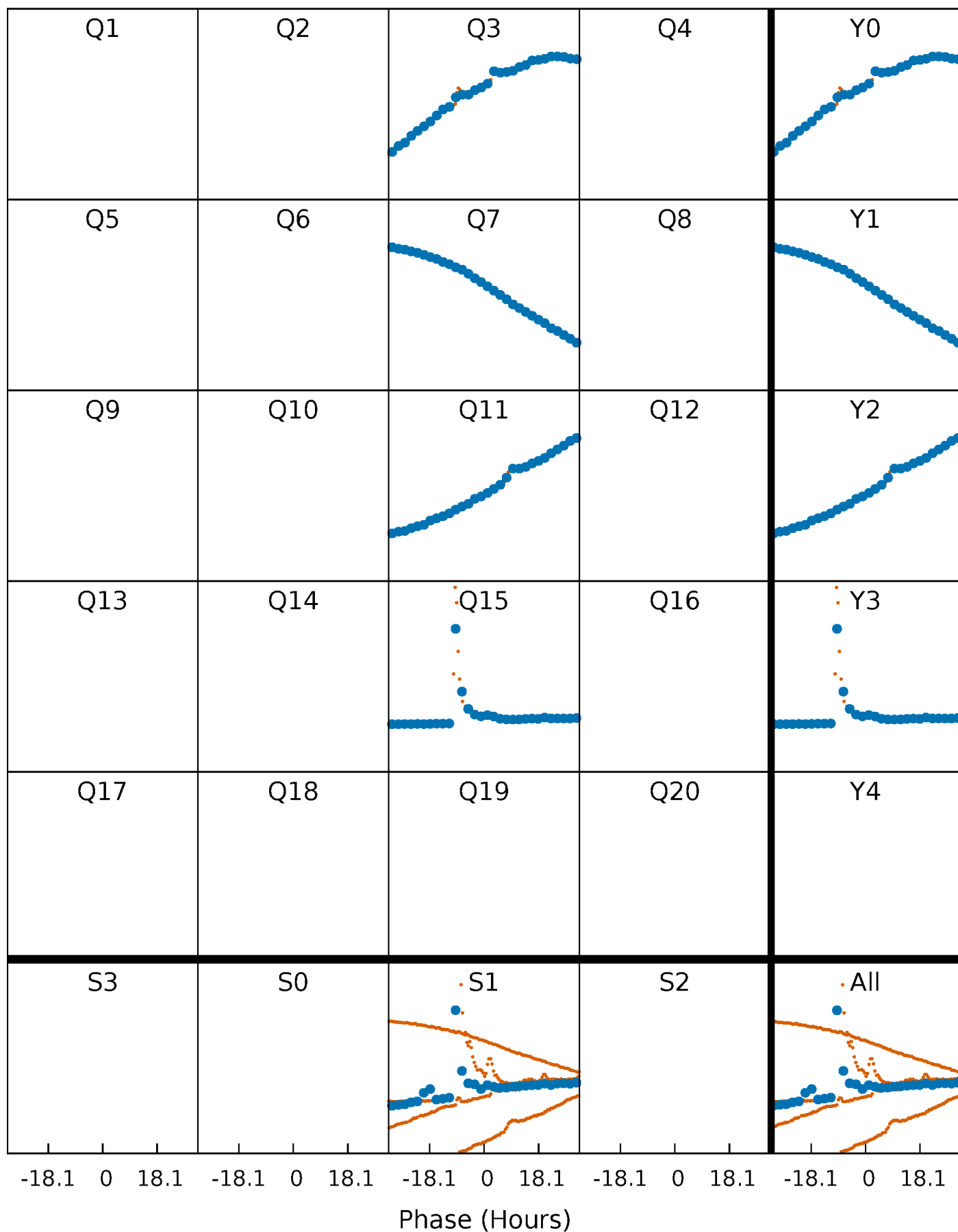


## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



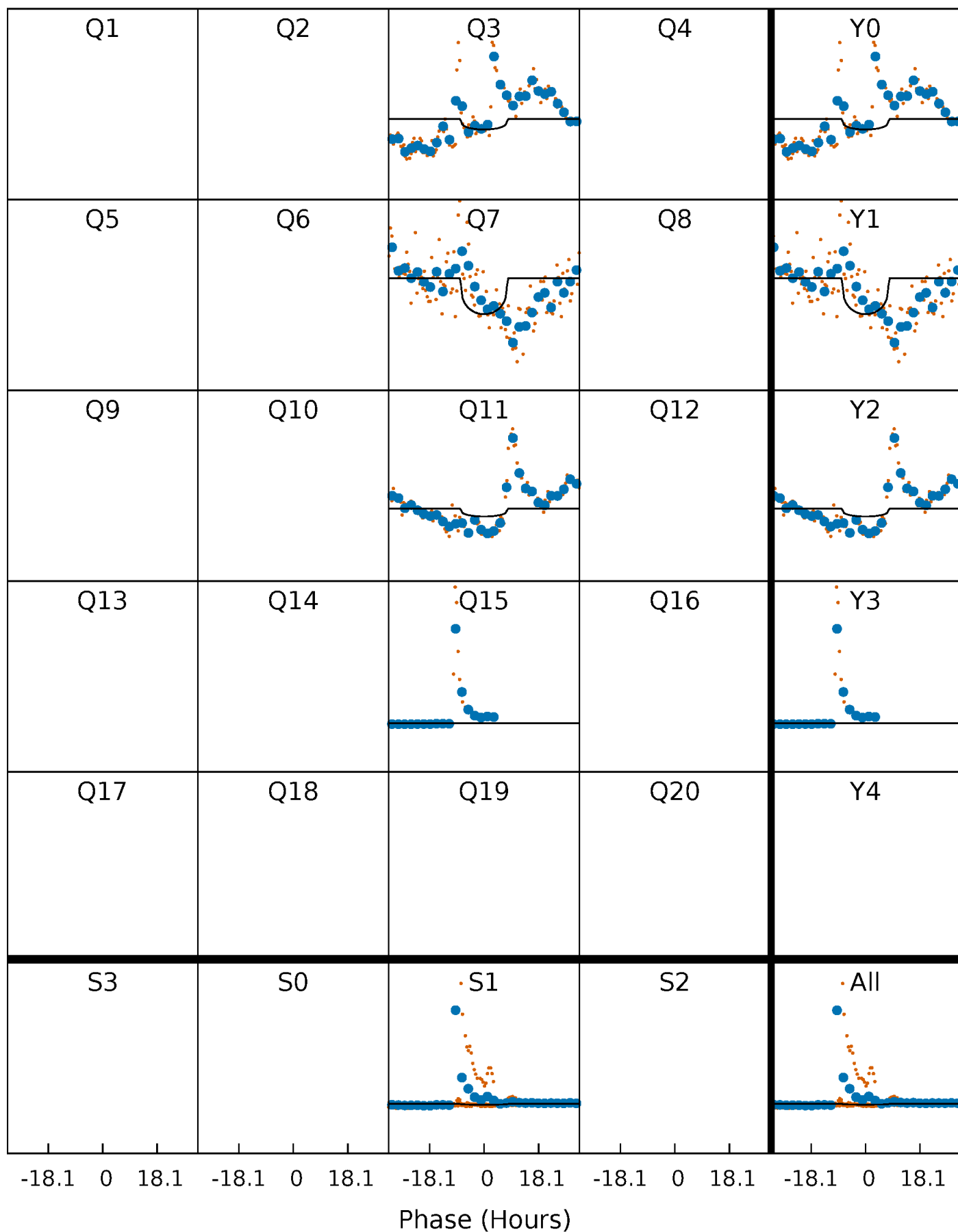
# PDC Quarter-Phased Transit Curves

TCE 005771149-03 P=370.809831 Days  $T_0=297.482499$  (BKJD)



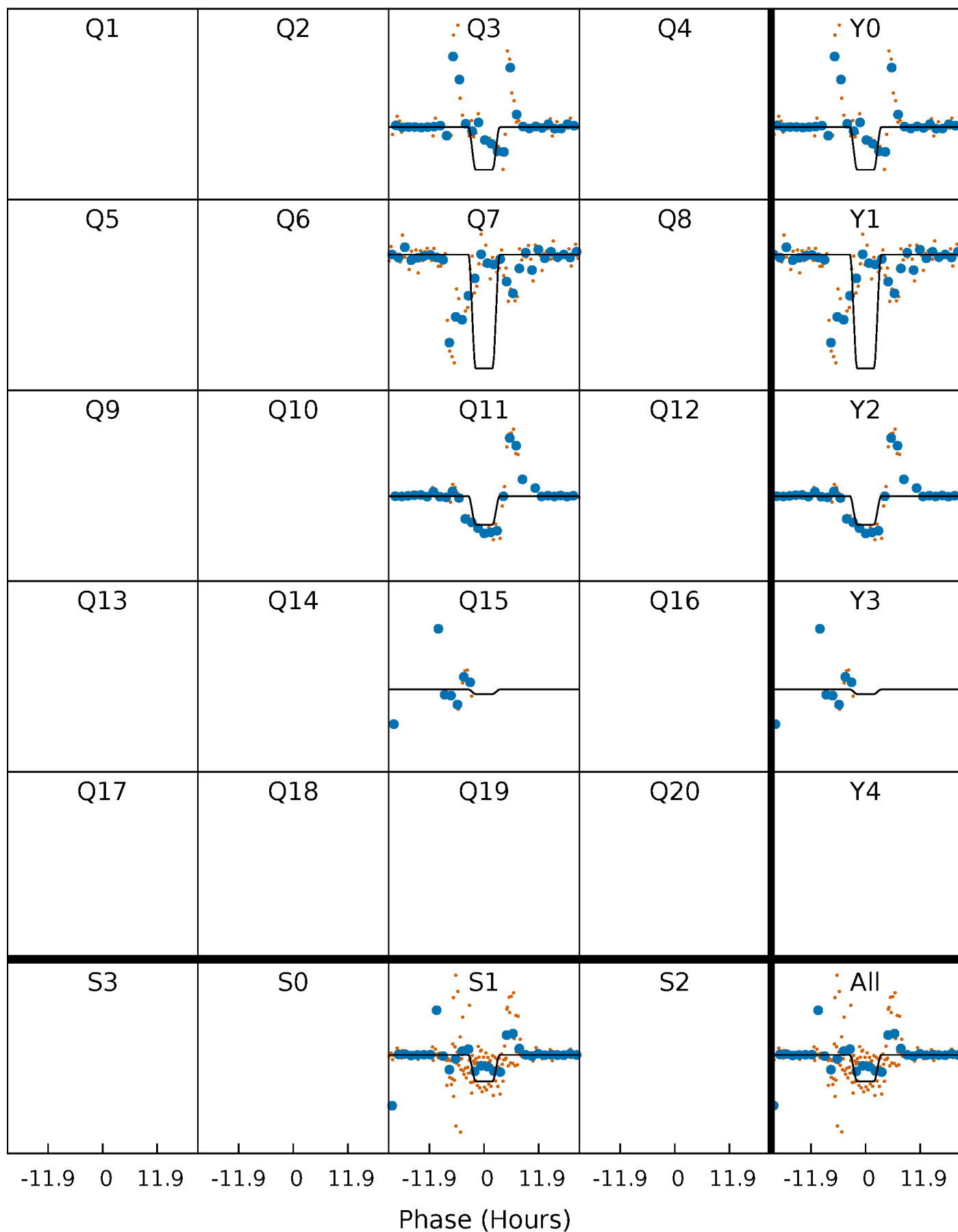
# DV Quarter-Phased Transit Curves

TCE 005771149-03 P=370.809831 Days  $T_0=297.482499$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

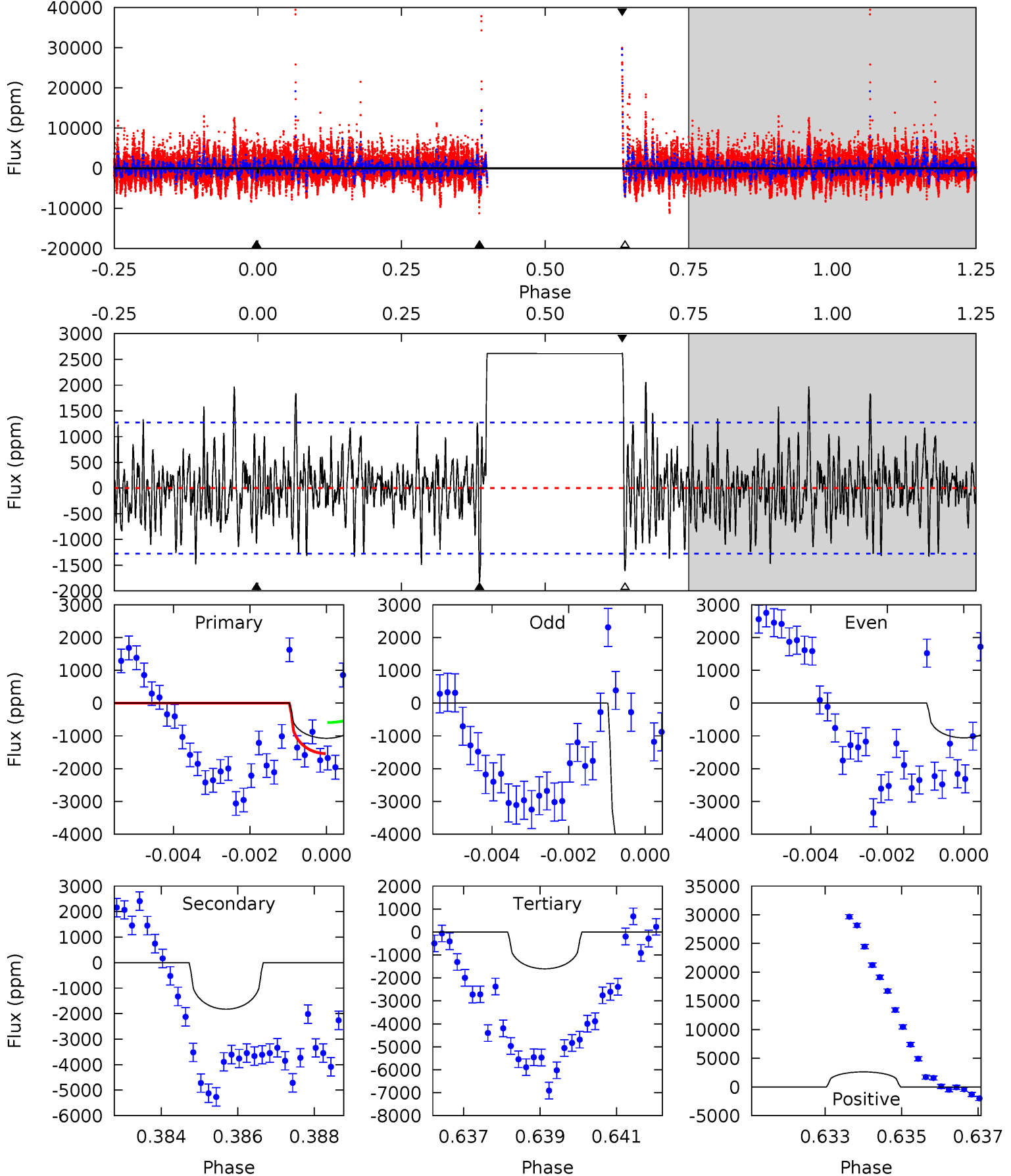
TCE 005771149-03 P=370.923604 Days  $T_0=297.383647$  (BKJD)



# DV Model-Shift Uniqueness Test

005771149-03, P = 370.809831 Days, E = 297.482499 Days

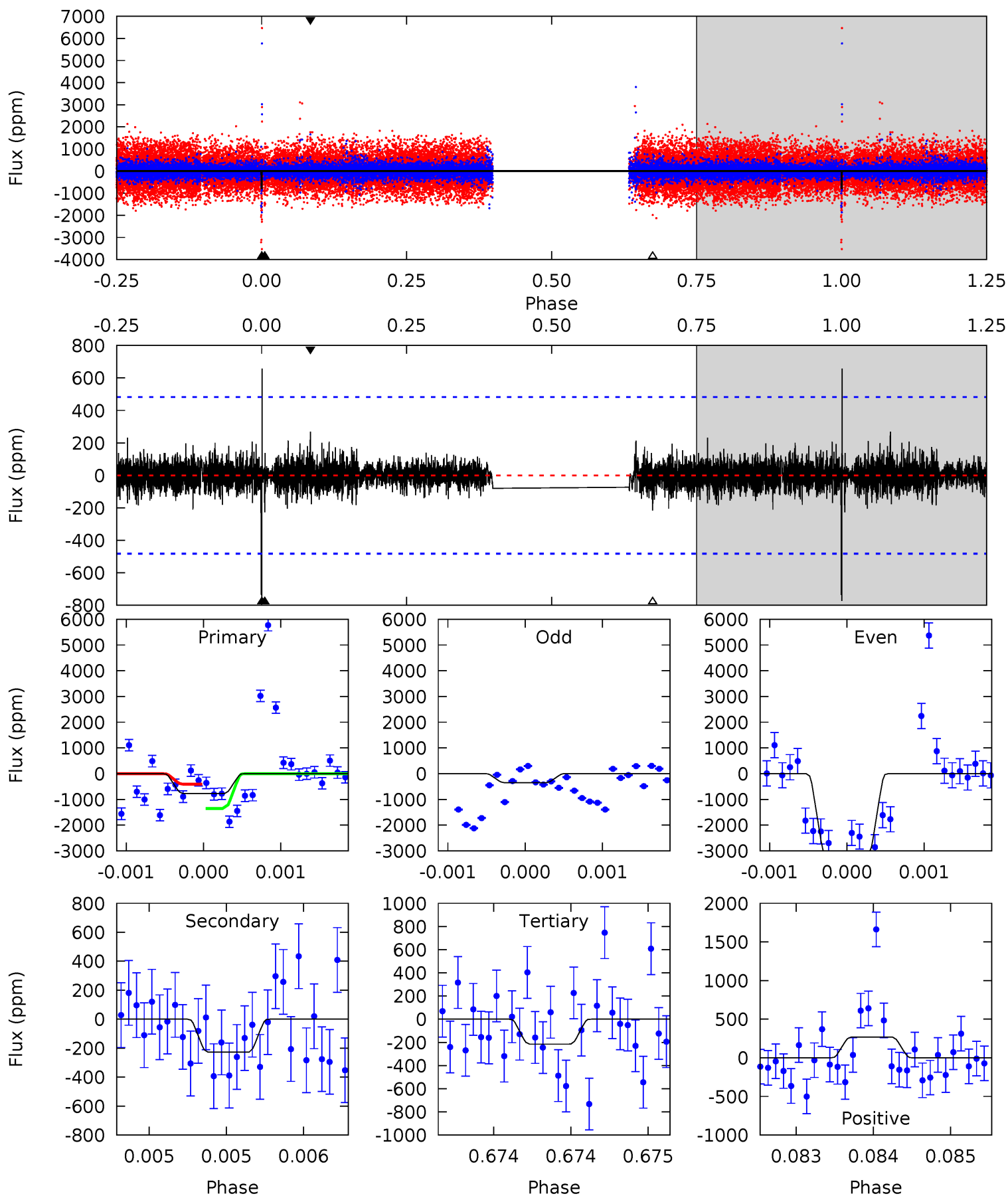
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.50	7.65	6.72	11.0	5.34	3.11	2.15	-2.22	-6.48	0.93	-3.33	7.63	77.5	0.59	1.99



# Alt Model-Shift Uniqueness Test

005771149-03, P = 370.923604 Days, E = 297.383647 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
8.80	2.59	2.45	3.06	5.50	3.37	0.59	6.34	5.74	0.14	-0.47	17.4	1.47	0.46	5.33





### Stellar Parameters For KIC 005771149

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$4679^{+140}_{-140}$	$4.597^{+0.056}_{-0.028}$	$-0.240^{+0.300}_{-0.300}$	$0.678^{+0.054}_{-0.060}$	$0.663^{+0.082}_{-0.048}$	$2.997^{+0.749}_{-0.384}$
	+3%/-3%	+1%/-1%	+125%/-125%	+8%/-9%	+12%/-7%	+25%/-13%
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 005771149-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-1826 \pm 239$	$17.12^{+17.95}_{-12.20}$	$251^{+8}_{-9}$	$2725^{+1254}_{-456}$	$2759^{+30001}_{-2122}$
Alt.	$-227 \pm 88$	$17.75^{+19.22}_{-12.30}$	$252^{+8}_{-9}$	$2103^{+678}_{-317}$	$304^{+3051}_{-244}$

$T_{max}$  = 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

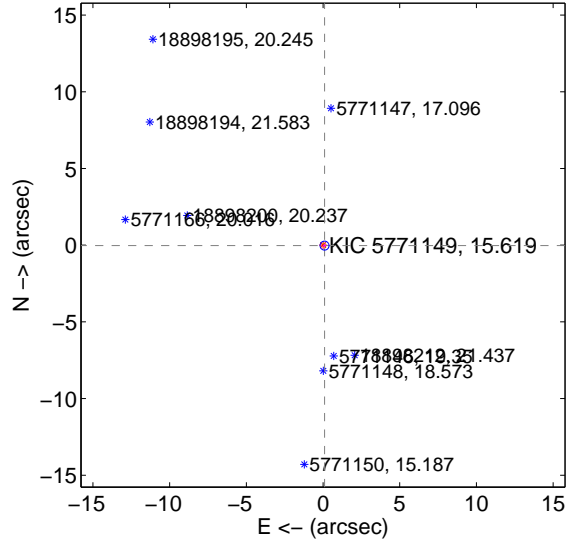
Supplemental centroid analysis for 005771149-03. Kepler magnitude: 15.62. Transit SNR 2.53

There are 0 quarters with good PRF difference image offsets

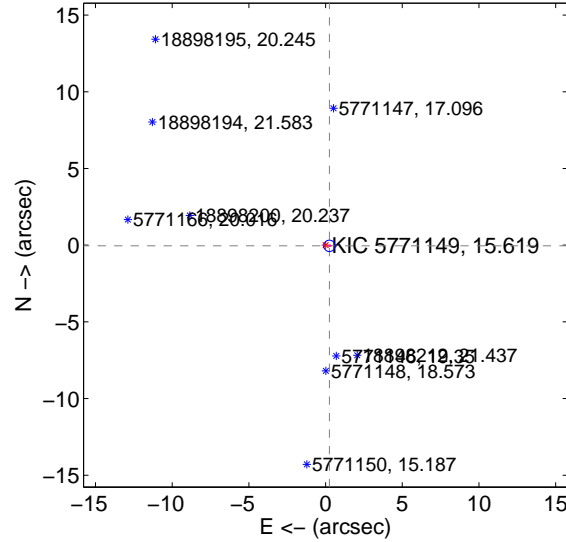
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.102 \pm 0.098$	1.05	$-0.098 \pm 0.098$	$-0.029 \pm 0.097$
PRF-fit source offset from KIC position	$0.253 \pm 0.124$	2.05	$-0.250 \pm 0.125$	$-0.044 \pm 0.068$
photometric centroid source offset	$4.70 \pm 2.81$	1.67	$0.42 \pm 1.44$	$-4.69 \pm 2.82$

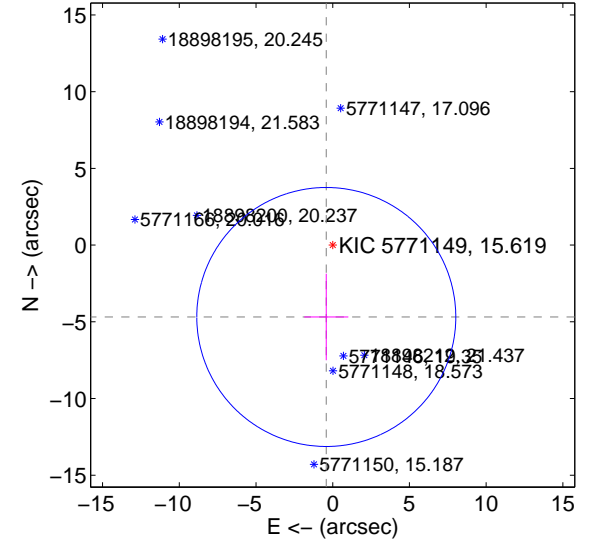
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

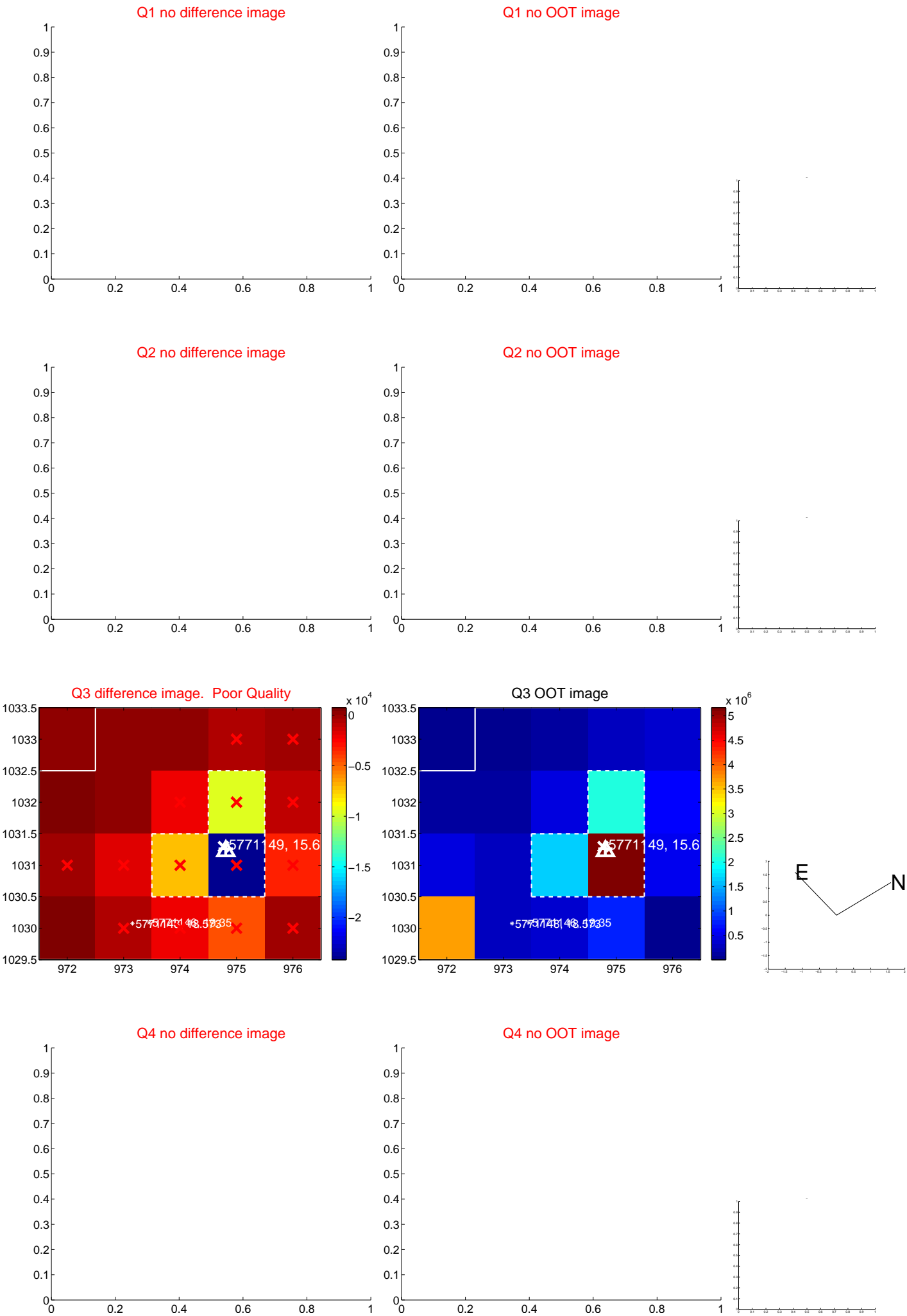


offset from photometric centroids



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.

Q5 no difference image



Q5 no OOT image



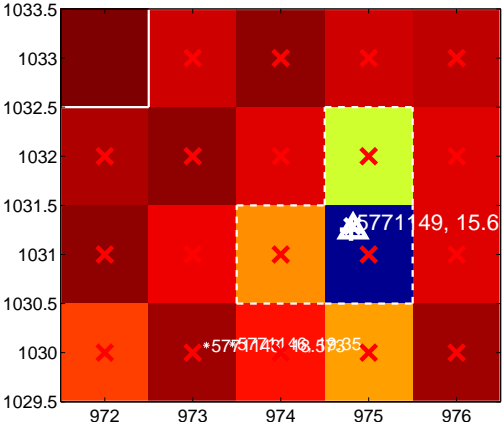
Q6 no difference image



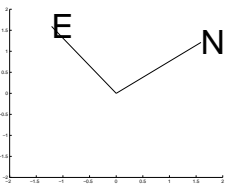
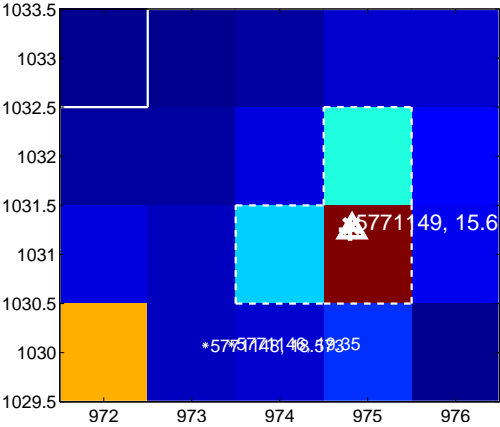
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 OOT image



Q8 no difference image



Q8 no OOT image



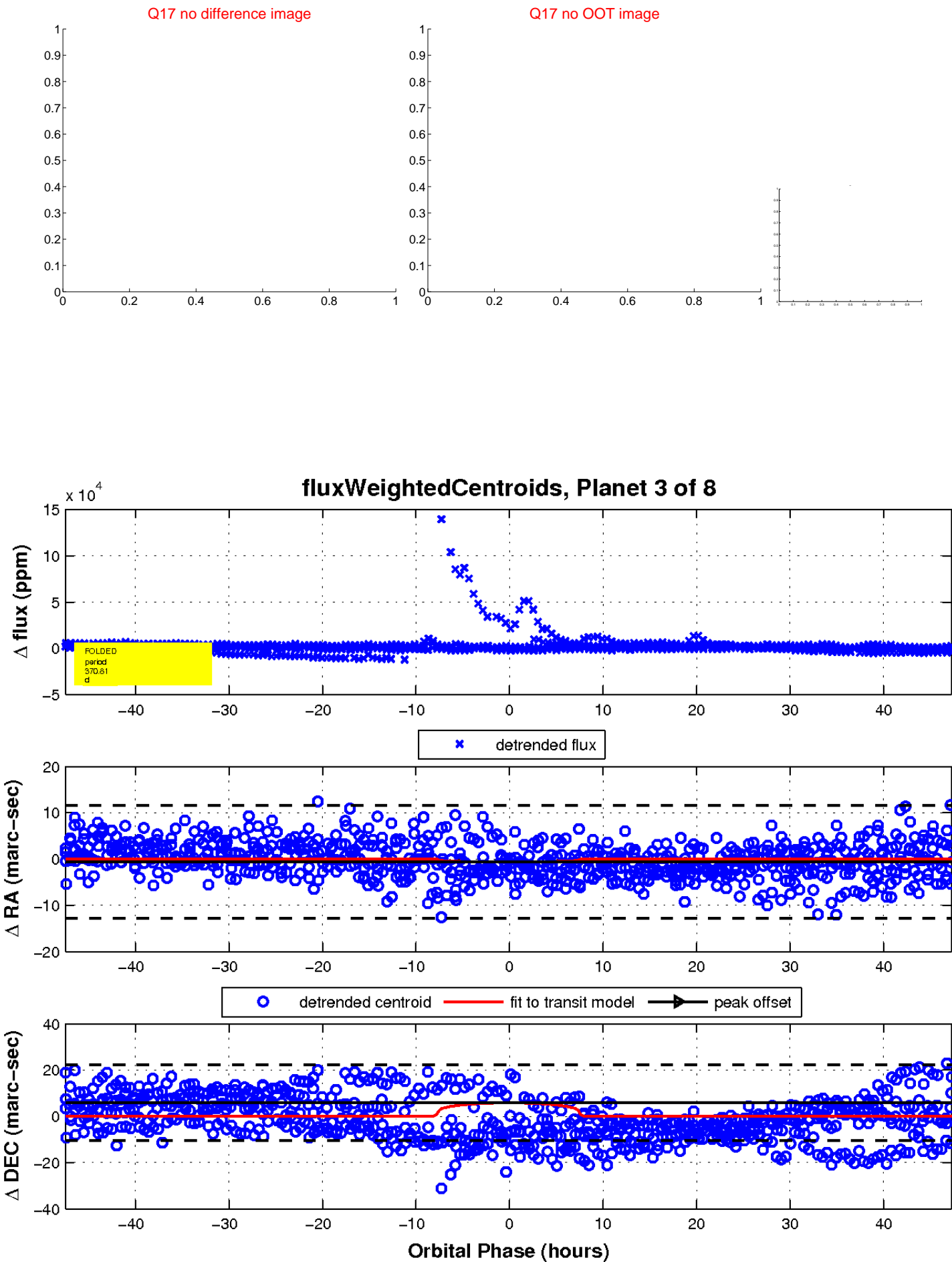
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



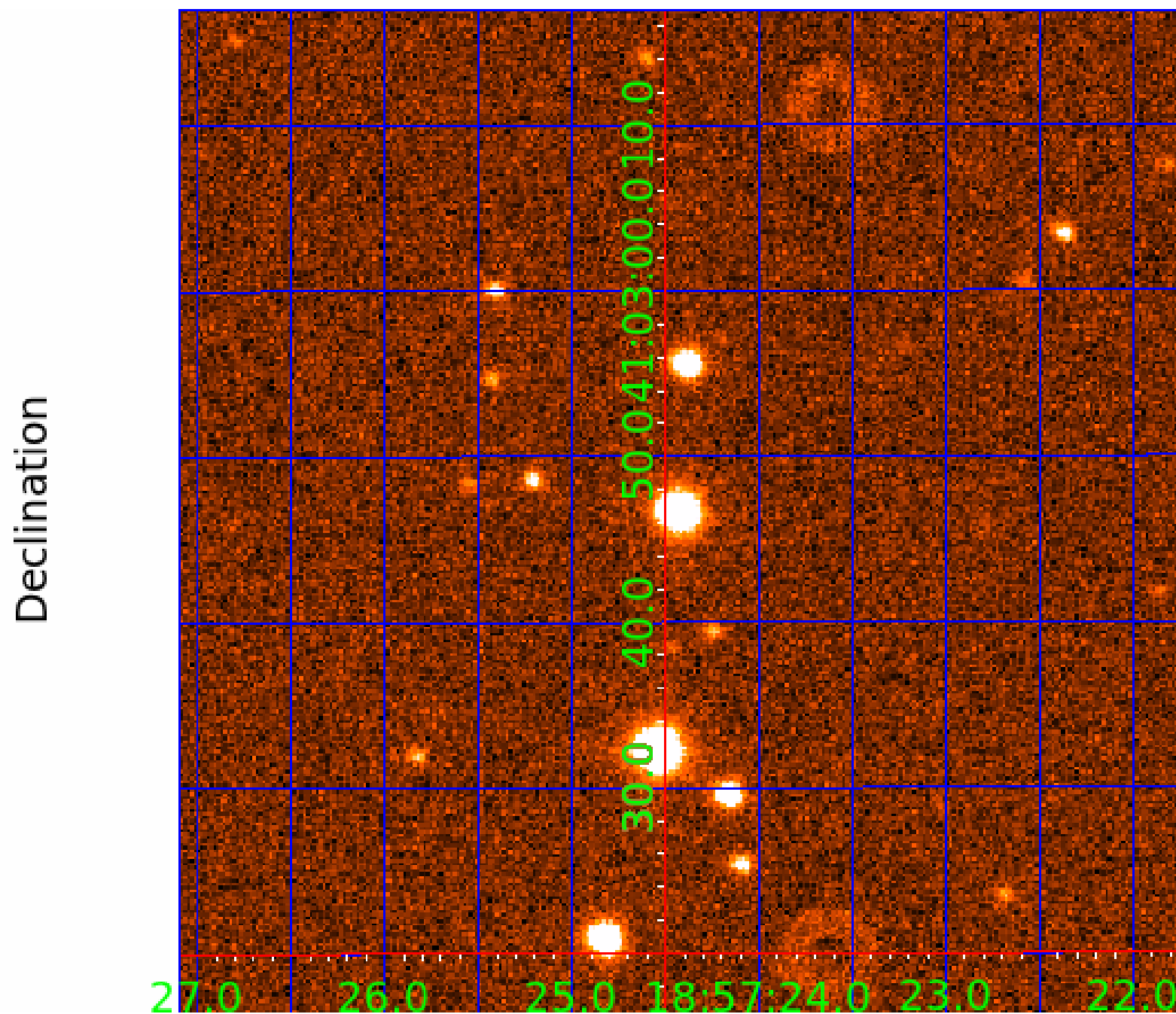
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image





# KIC 005771149

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005771149-01	OBS	No	299.193035	214.235905	3568.4	15.104	26.5	8.4	0.68	4679	3.89	0.34
005771149-02	OBS	No	564.073757	387.860137	28.2	4.504	31.7	0.1	0.68	4679	0.37	0.14
005771149-03	OBS	No	370.809831	297.482499	1189.6	15.866	17.7	2.5	0.68	4679	2.34	0.25
005771149-04	OBS	No	553.386661	194.319752	5505.5	18.440	18.2	11.2	0.68	4679	4.83	0.15
005771149-05	OBS	No	336.106105	282.190743	4191.4	11.273	17.8	9.4	0.68	4679	5.26	0.29
005771149-06	OBS	No	332.299915	281.970338	4035.6	3.921	18.1	10.4	0.68	4679	4.52	0.29
005771149-07	OBS	No	359.196560	234.159625	3784.1	22.363	21.8	7.3	0.68	4679	4.60	0.27
005771149-08	OBS	No	513.938585	272.058180	3252.8	8.331	13.5	8.9	0.68	4679	3.96	0.17

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005771149-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005771149-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005771149-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005771149-04	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
005771149-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005771149-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005771149-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
005771149-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

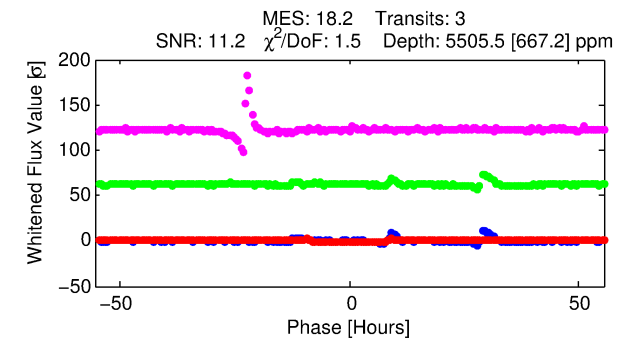
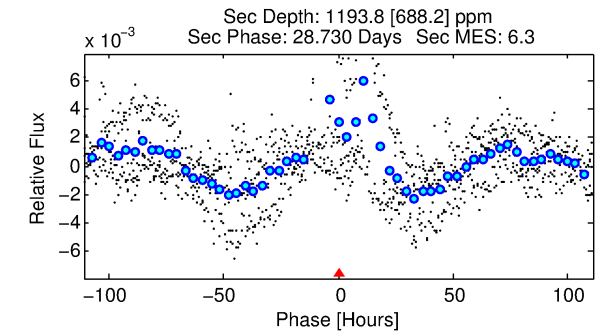
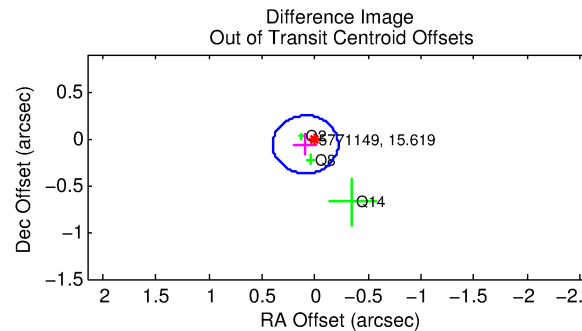
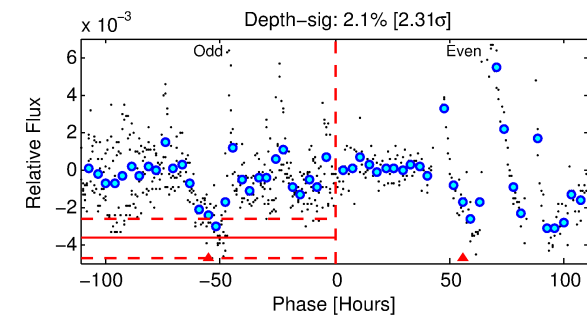
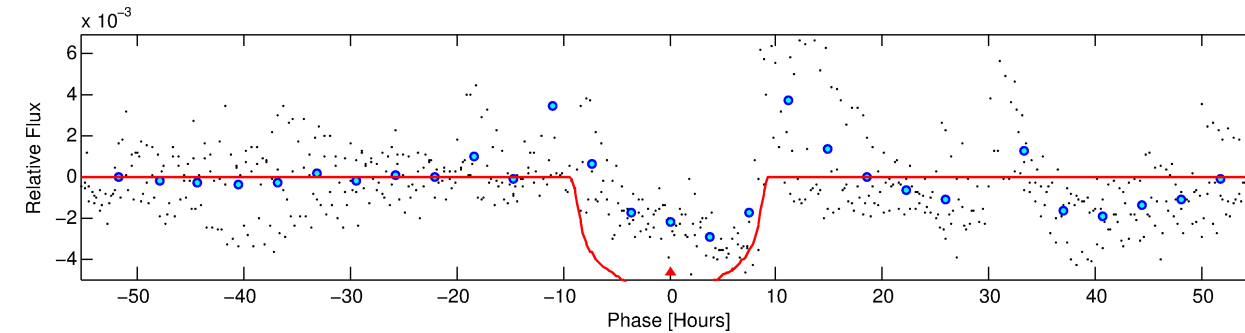
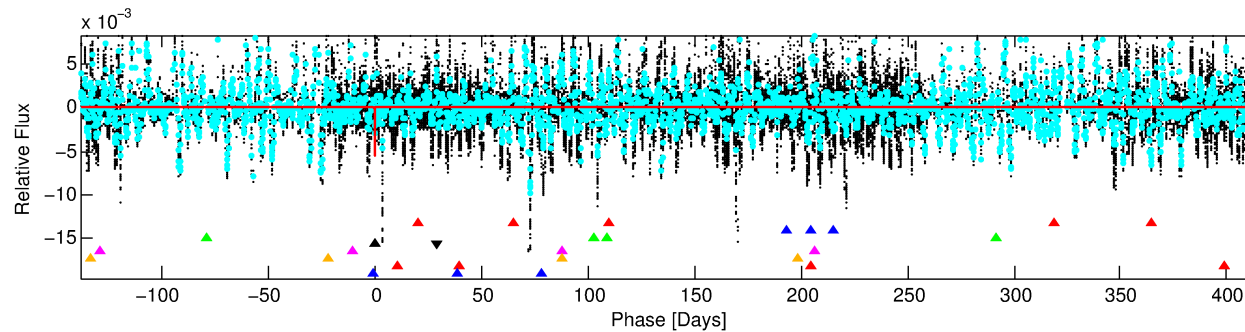
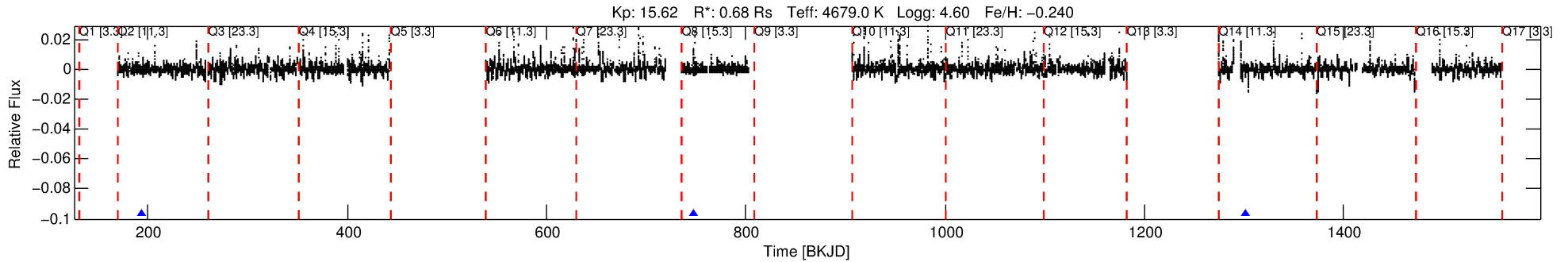
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005771149-04

No Significant Match Found

# DV One-Page Summary

KIC: 5771149 Candidate: 4 of 8 Period: 553.387 d



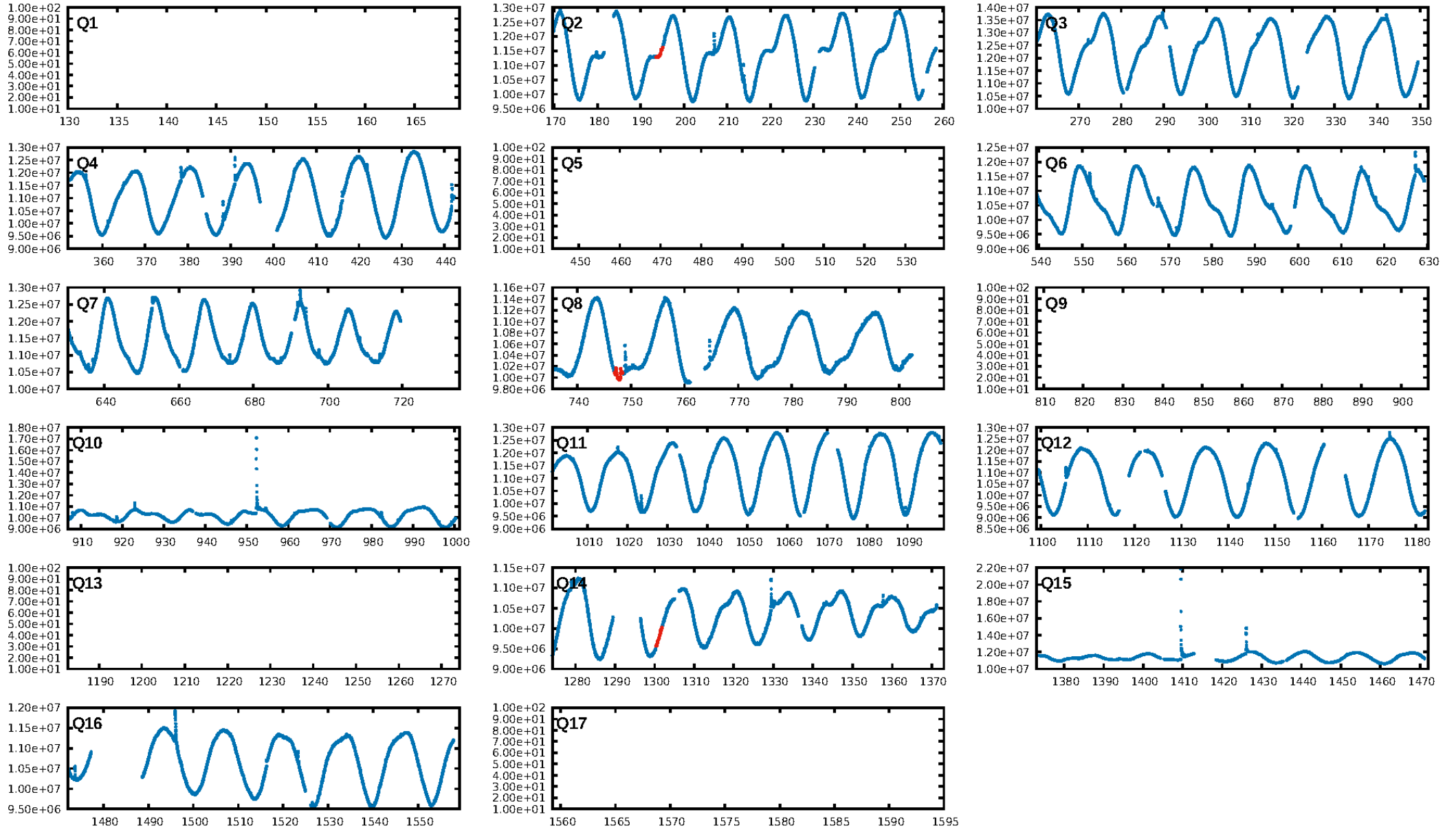
## DV Fit Results:

Period = 553.38666 [0.00721] d  
Epoch = 194.3198 [0.0088] BKJD  
Rp/R\* = 0.0653 [0.0080]  
a/R\* = 244.19 [75.48]  
b = 0.02 [16.88]  
Seff = 0.15 [0.02]  
Teq = 158 [6] K  
Rp = 4.83 [0.73] Re  
a = 1.1505 [0.0840] AU  
Ag = 37270.20 [23680.67] [1.57σ]  
Teffp = 3404 [543] K [5.98σ]

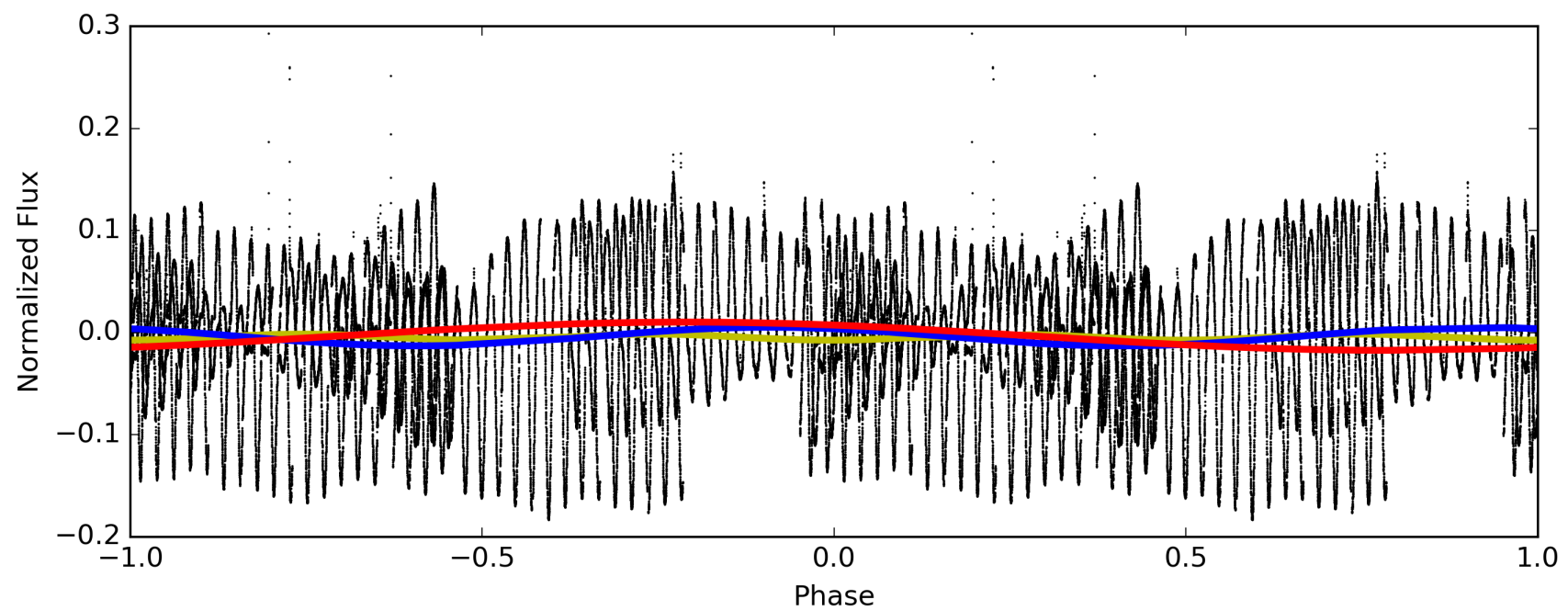
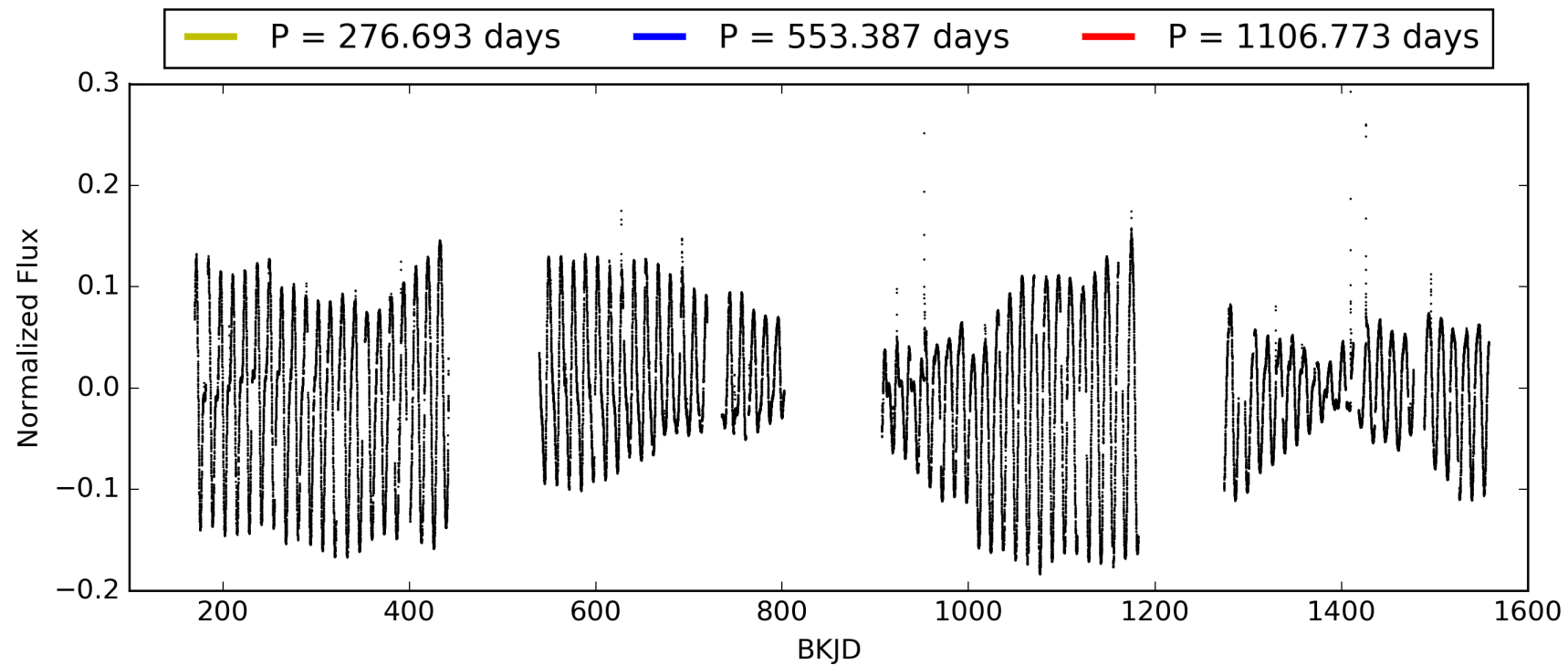
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [46.79σ]  
LongPeriod-sig: 100.0% [13.51σ]  
ModelChiSquare2-sig: 3.0%  
ModelChiSquareGof-sig: 43.8%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
**GhostDiagnostic-chr: -2.368**  
Centroid-sig: 19.4%  
Centroid-so: 0.709 arcsec [1.37σ]  
OotOffset-rm: 0.111 arcsec [1.08σ]  
KicOffset-rm: 0.093 arcsec [0.75σ]  
OotOffset-st: 2/0/1/0 [3]  
KicOffset-st: 2/0/1/0 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 0.67 [2/3]

# TCE 005771149-04, PDC Light Curves

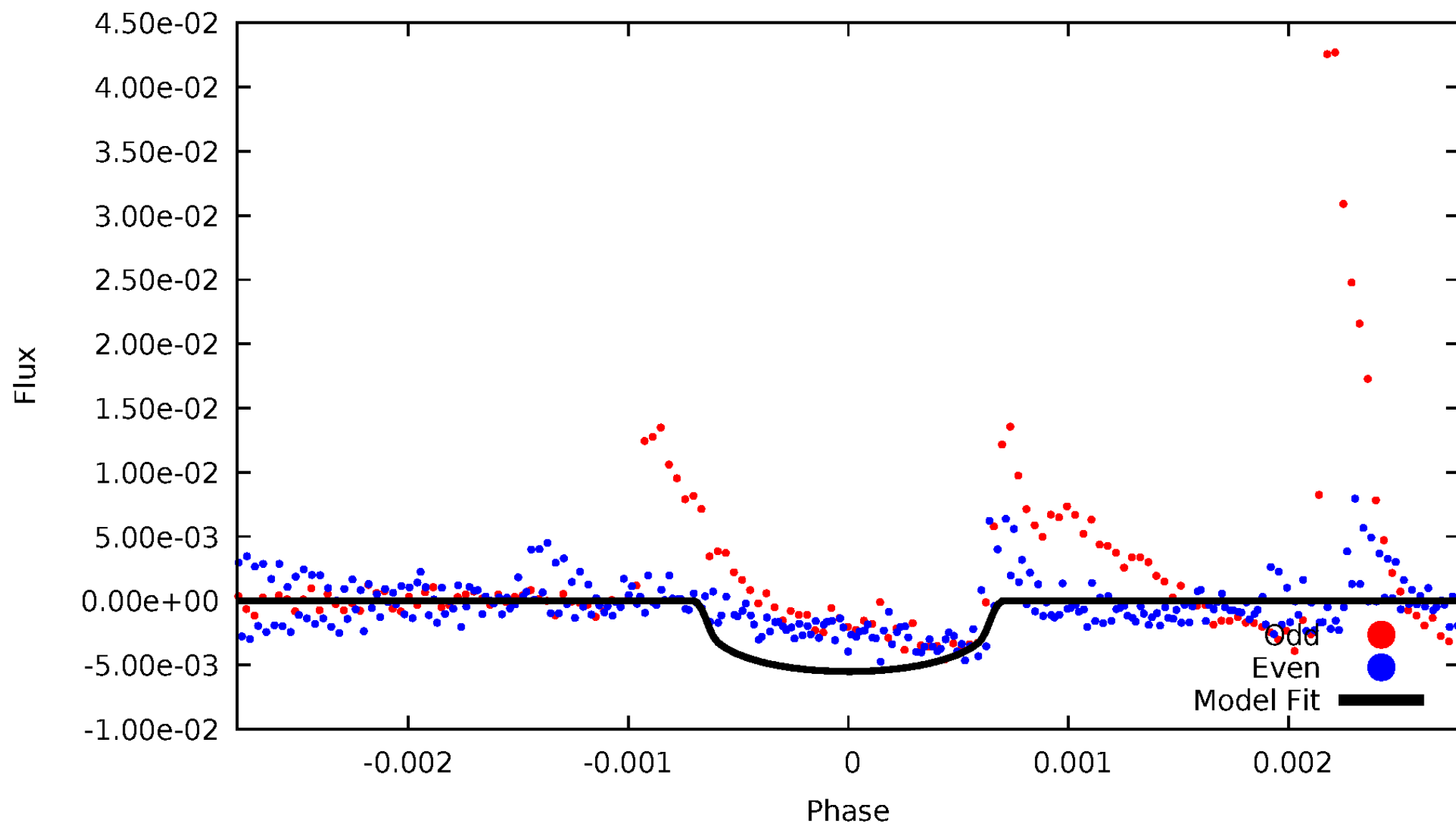


TCE 005771149-04



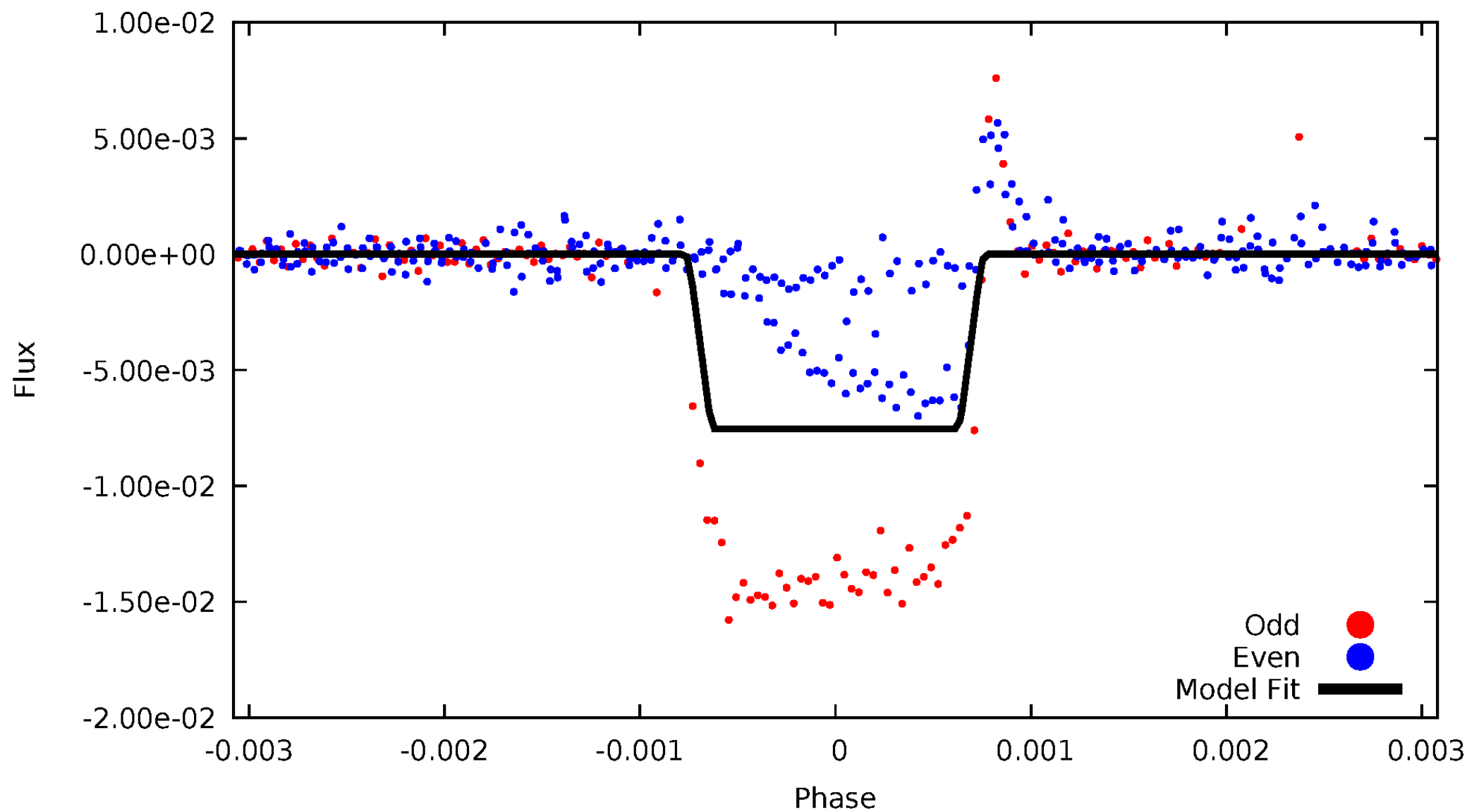
# DV Odd/Even

TCE 005771149-04



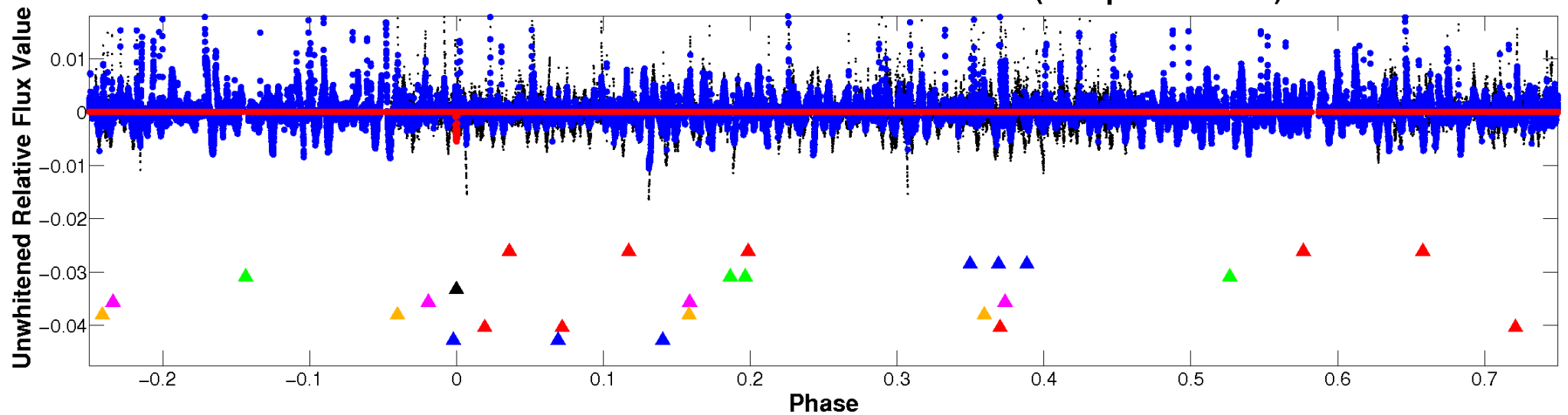
# ALT Odd/Even

TCE 005771149-04

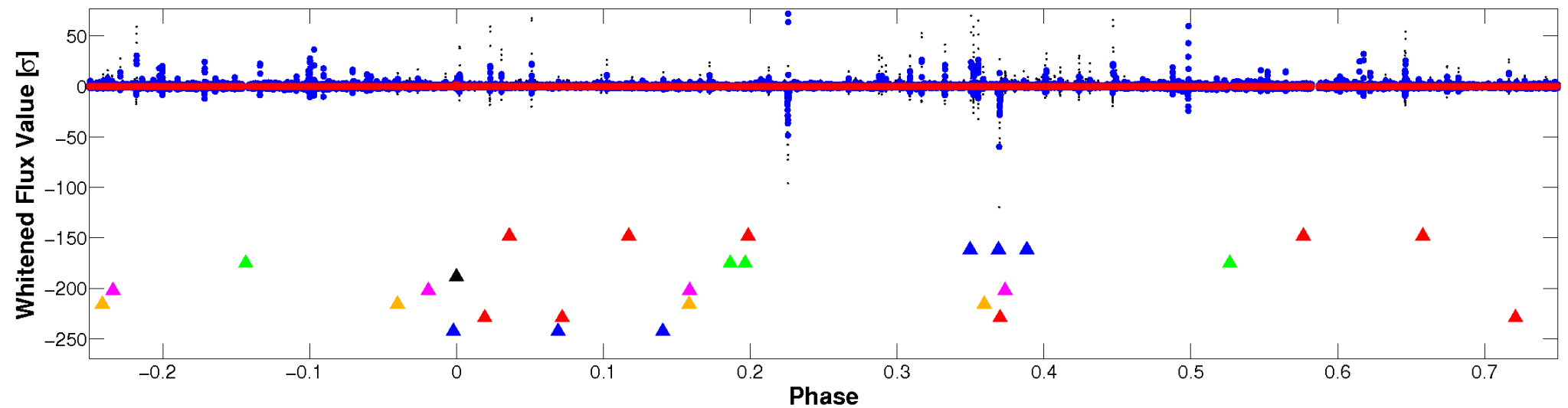


# Non-Whitened Vs. Whitened Light Curve

## Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

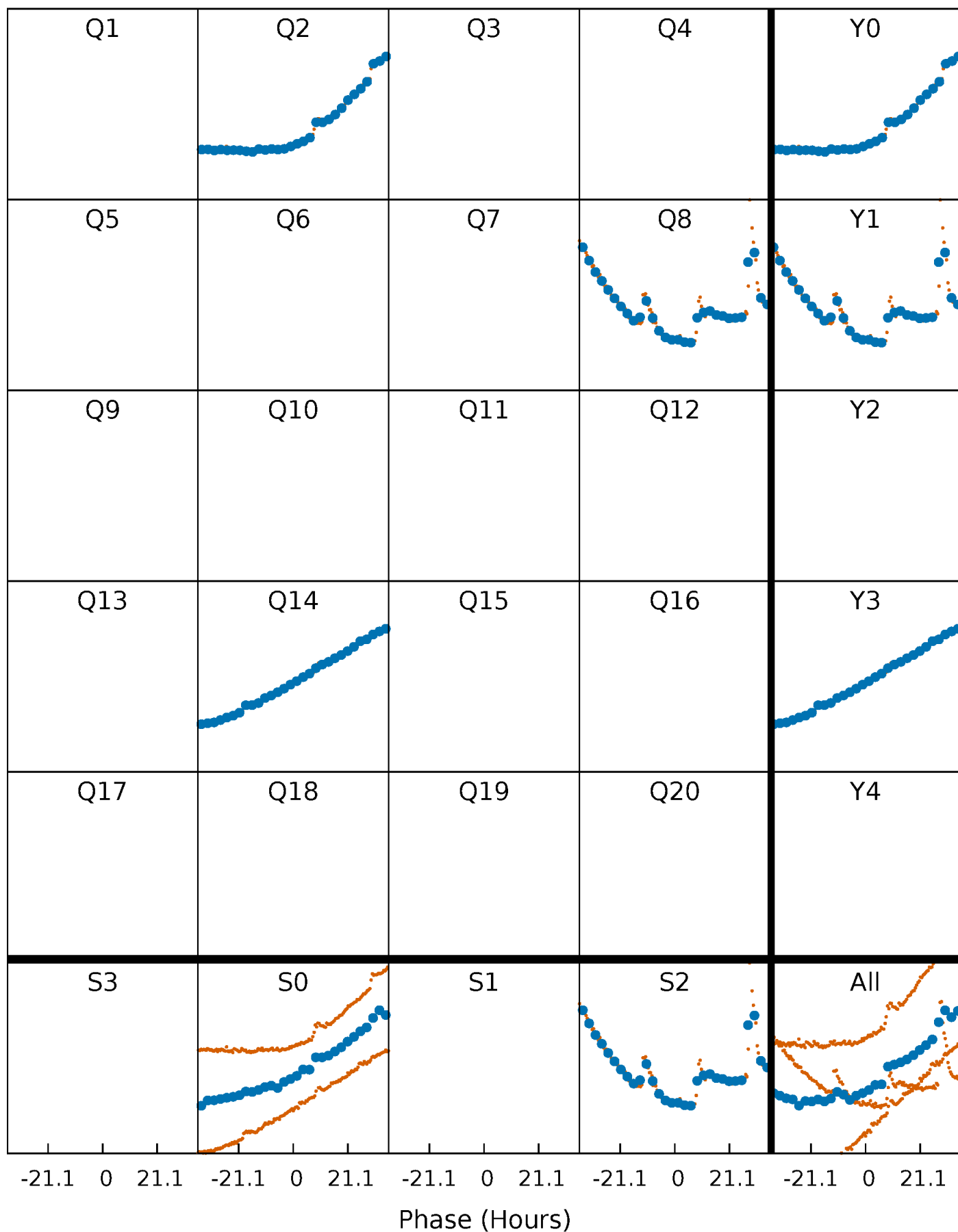


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

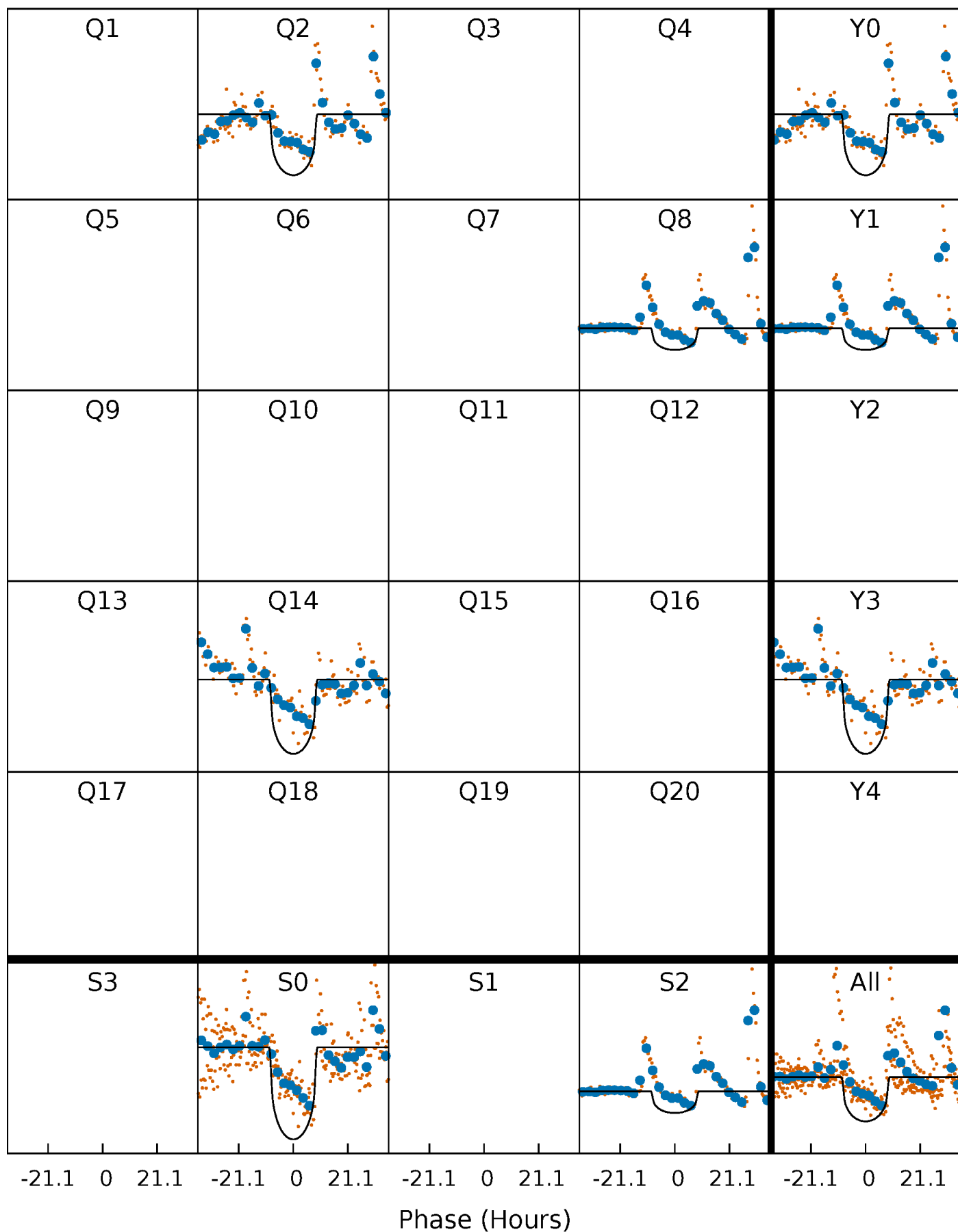
TCE 005771149-04 P=553.386661 Days  $T_0=194.319752$  (BKJD)





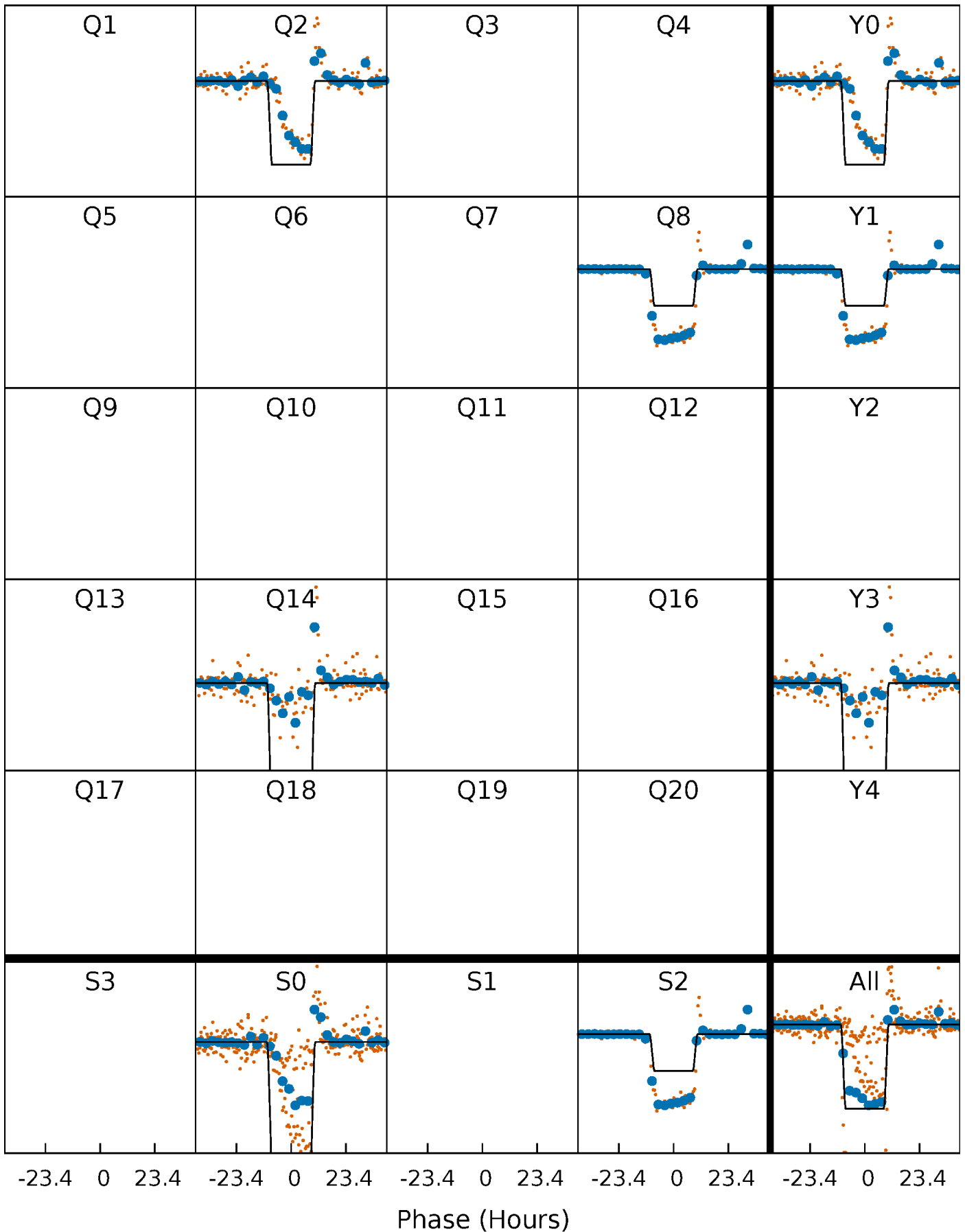
# DV Quarter-Phased Transit Curves

TCE 005771149-04 P=553.386661 Days  $T_0=194.319752$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

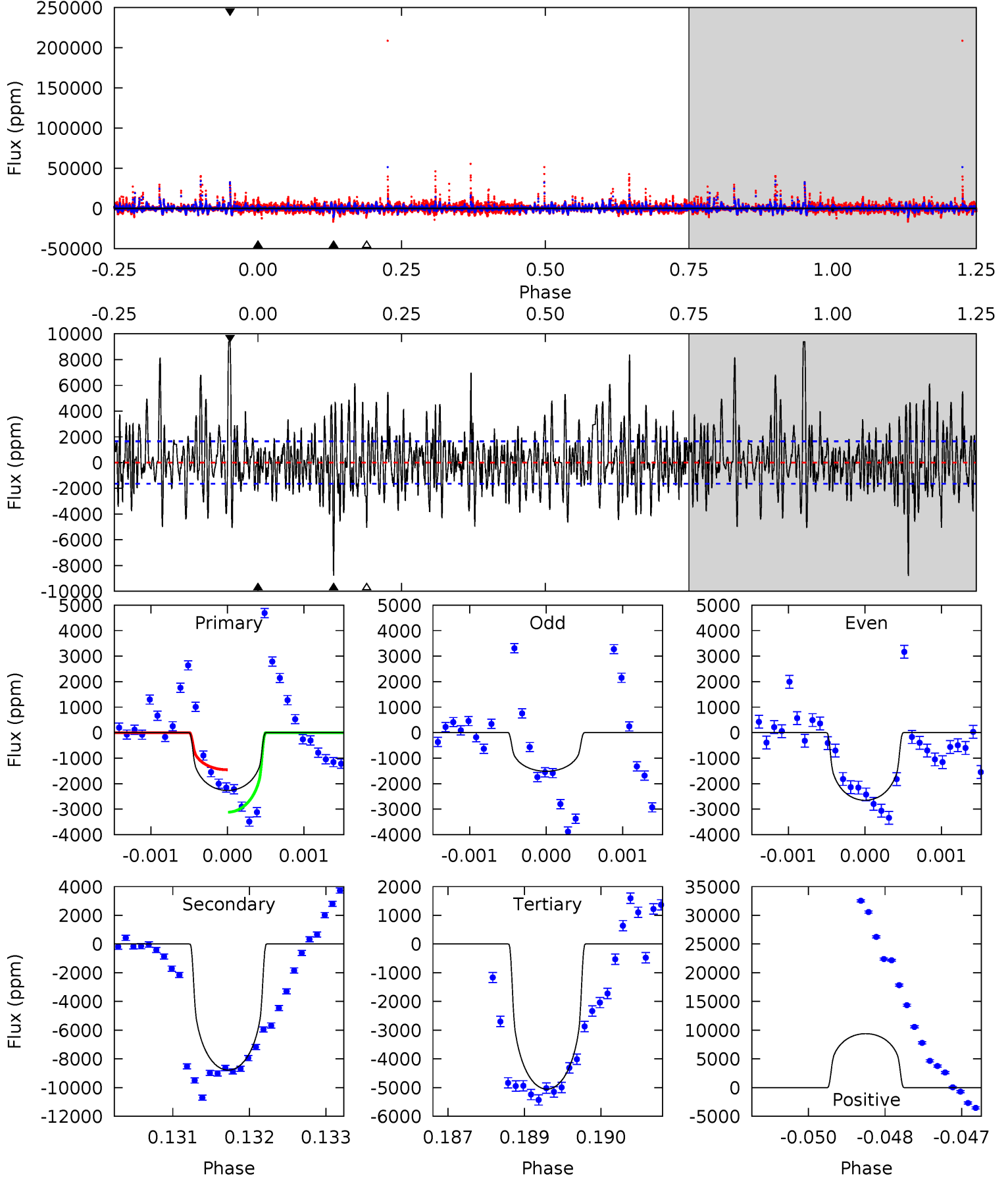
TCE 005771149-04 P=553.402105 Days  $T_0=194.256899$  (BKJD)



# DV Model-Shift Uniqueness Test

005771149-04, P = 553.386661 Days, E = 194.319752 Days

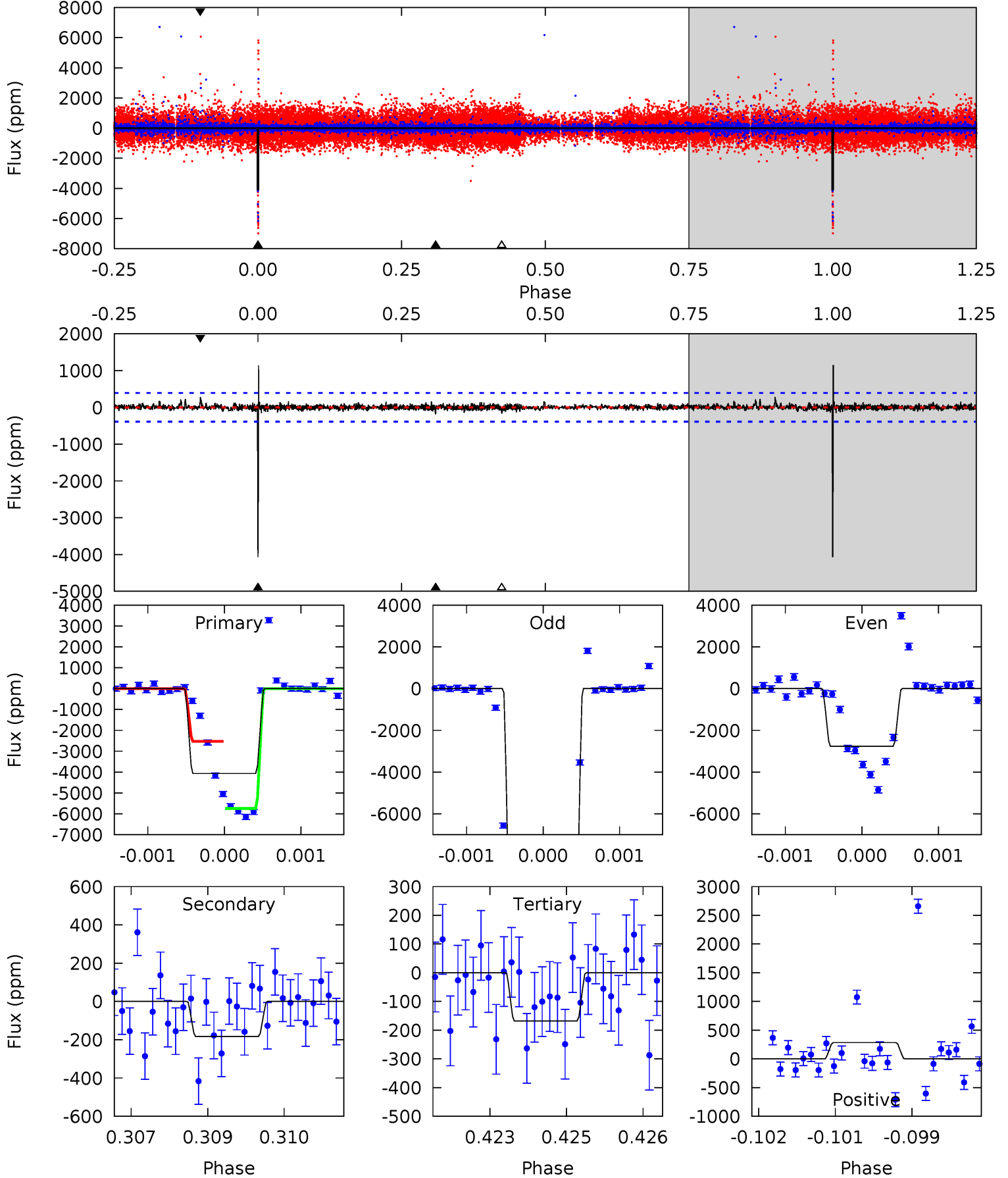
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.40	28.7	16.5	30.7	5.39	3.19	6.07	-9.11	-23.3	12.2	-1.99	0.67	0.86	0.52	2.71



# Alt Model-Shift Uniqueness Test

005771149-04, P = 553.402105 Days, E = 194.256899 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
56.1	2.52	2.31	3.91	5.38	3.18	0.51	53.7	52.1	0.21	-1.39	108.0	1.50	0.22	0



### Stellar Parameters For KIC 005771149

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$4679^{+140}_{-140}$	$4.597^{+0.056}_{-0.028}$	$-0.240^{+0.300}_{-0.300}$	$0.678^{+0.054}_{-0.060}$	$0.663^{+0.082}_{-0.048}$	$2.997^{+0.749}_{-0.384}$
	+3%/-3%	+1%/-1%	+125%/-125%	+8%/-9%	+12%/-7%	+25%/-13%
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 005771149-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-8784 \pm 306$	$4.80^{+0.63}_{-0.65}$	$220^{+8}_{-8}$	$5483^{+361}_{-343}$	$285433^{+79873}_{-61047}$
Alt.	$-183 \pm 73$	$6.39^{+0.72}_{-0.70}$	$219^{+9}_{-7}$	$2593^{+147}_{-167}$	$3213^{+1615}_{-1314}$

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

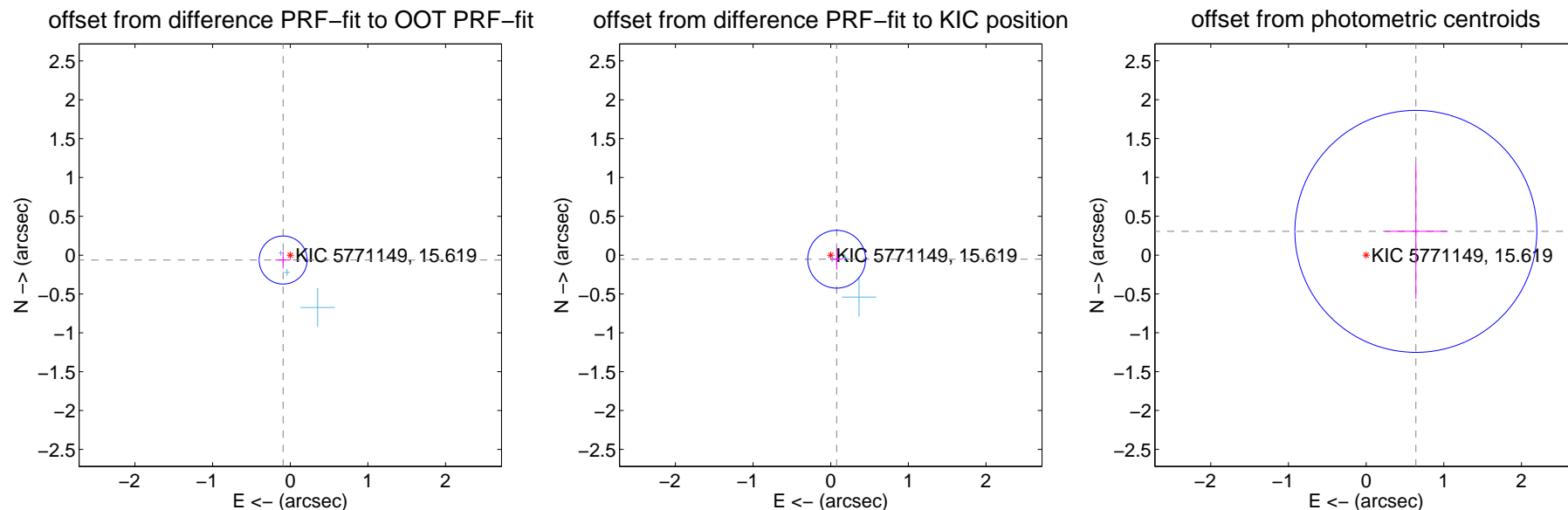
## DV Centroid Data

Supplemental centroid analysis for 005771149-04. Kepler magnitude: 15.62. Transit SNR 11.23

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.111 \pm 0.103$	1.08	$0.092 \pm 0.100$	$-0.063 \pm 0.108$
PRF-fit source offset from KIC position	$0.093 \pm 0.124$	0.75	$-0.077 \pm 0.084$	$-0.053 \pm 0.136$
photometric centroid source offset	$0.71 \pm 0.52$	1.37	$-0.64 \pm 0.40$	$0.31 \pm 0.87$



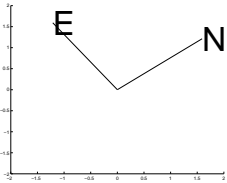
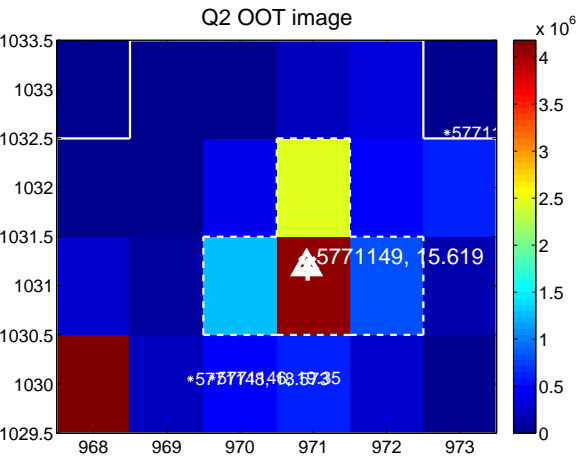
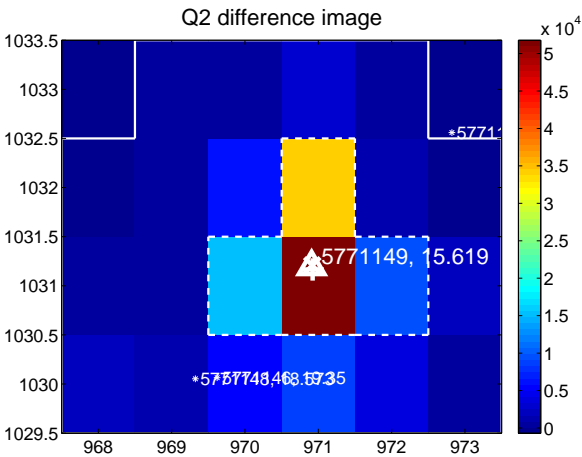
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

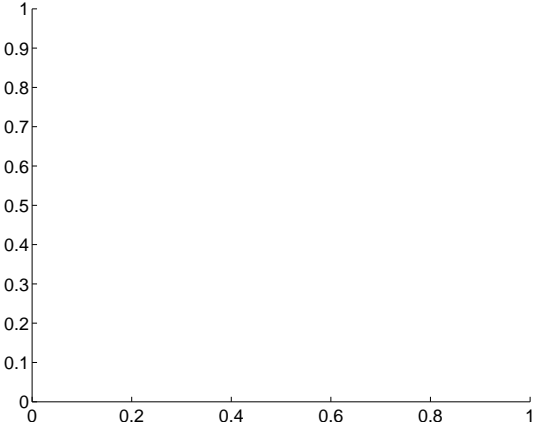
Q1 no difference image



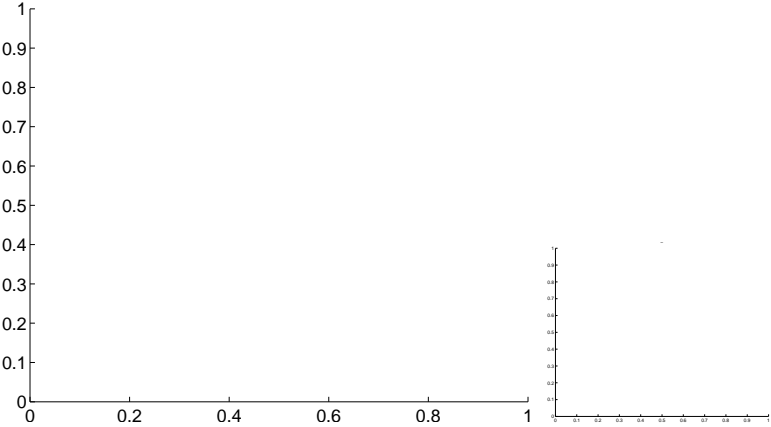
Q1 no OOT image



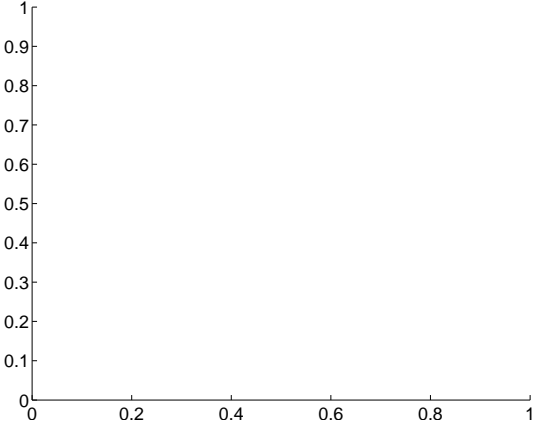
Q3 no difference image



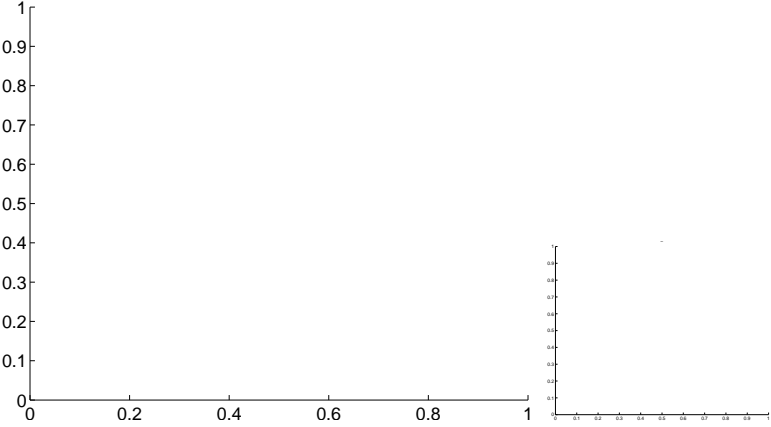
Q3 no OOT image



Q4 no difference image



Q4 no OOT image



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

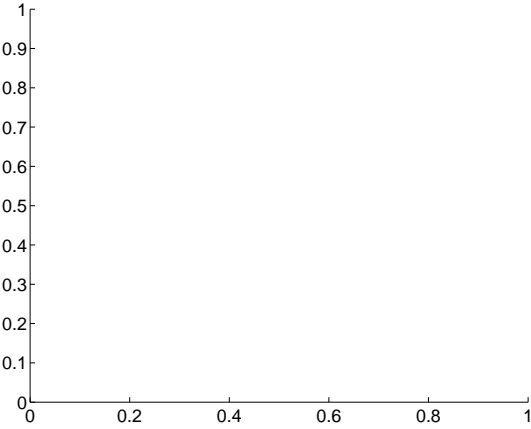
Q5 no difference image



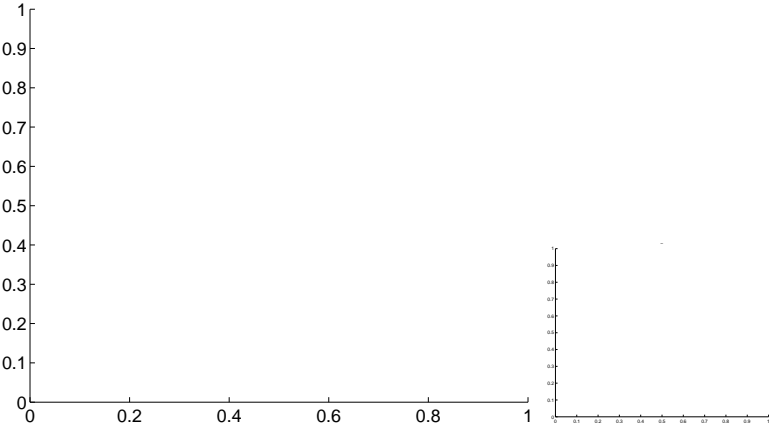
Q5 no OOT image



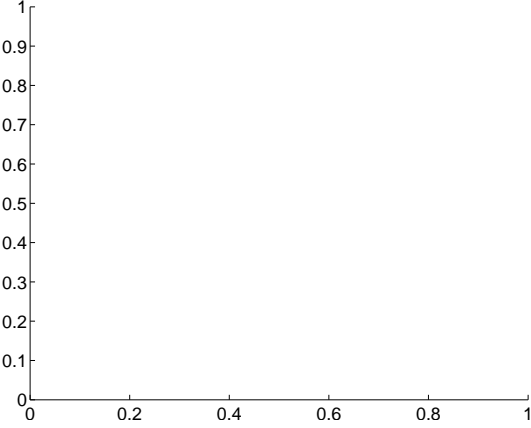
Q6 no difference image



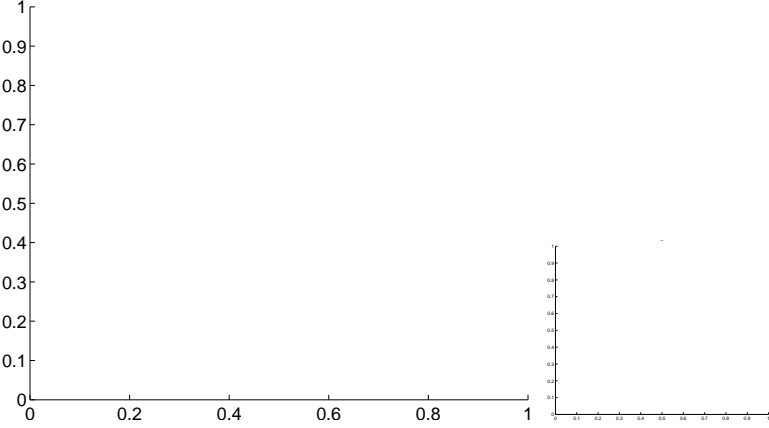
Q6 no OOT image



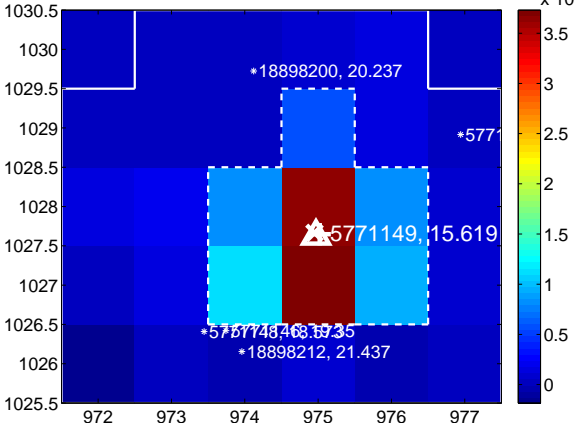
Q7 no difference image



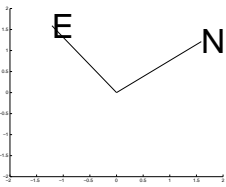
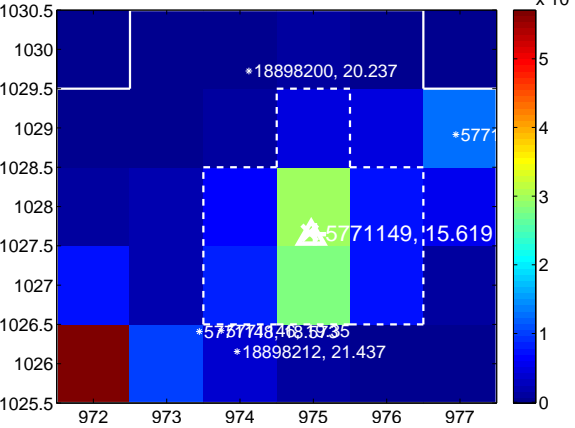
Q7 no OOT image



Q8 difference image



Q8 OOT image

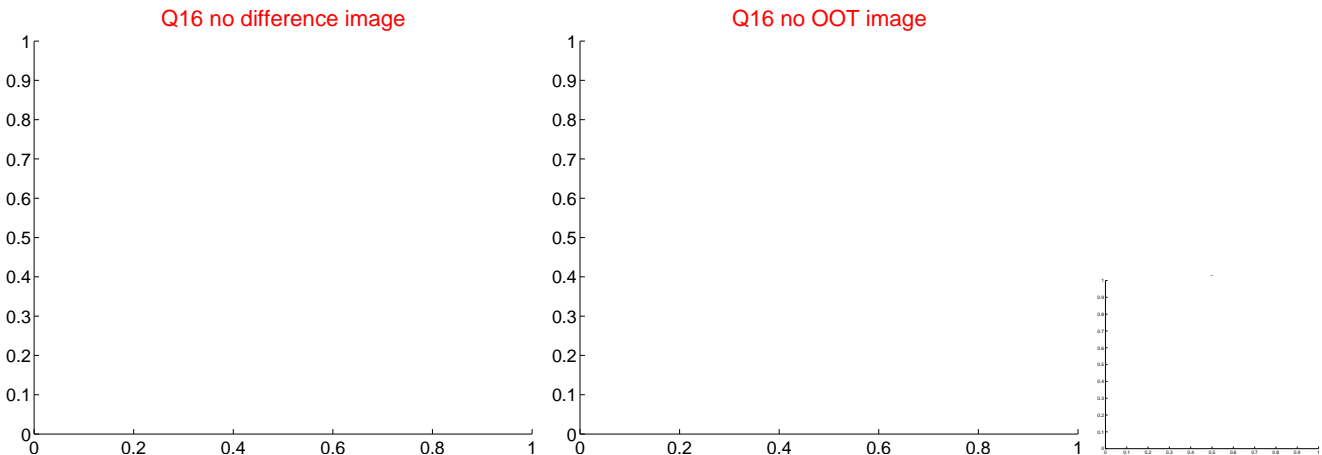
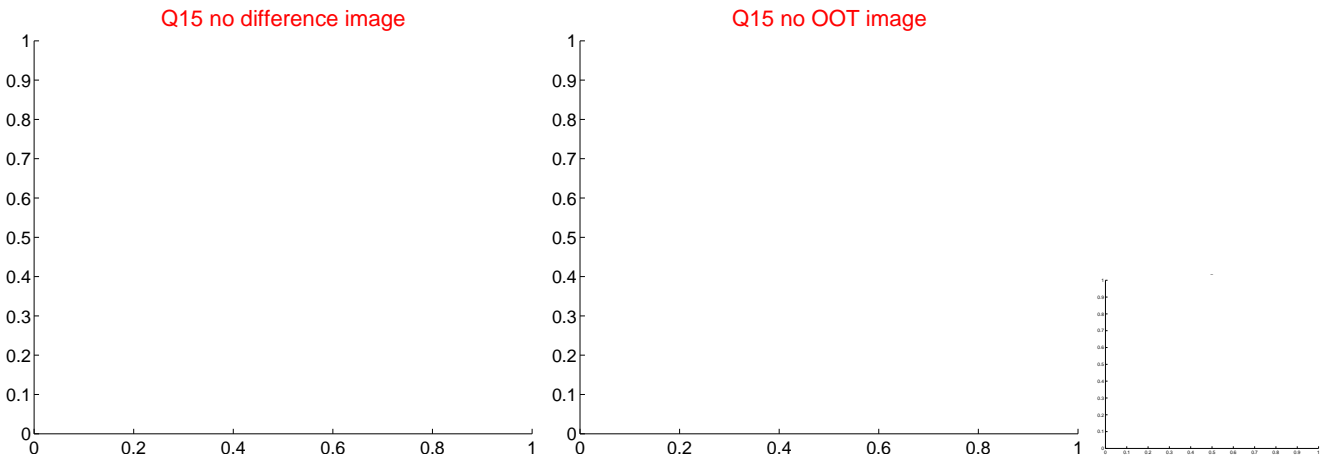
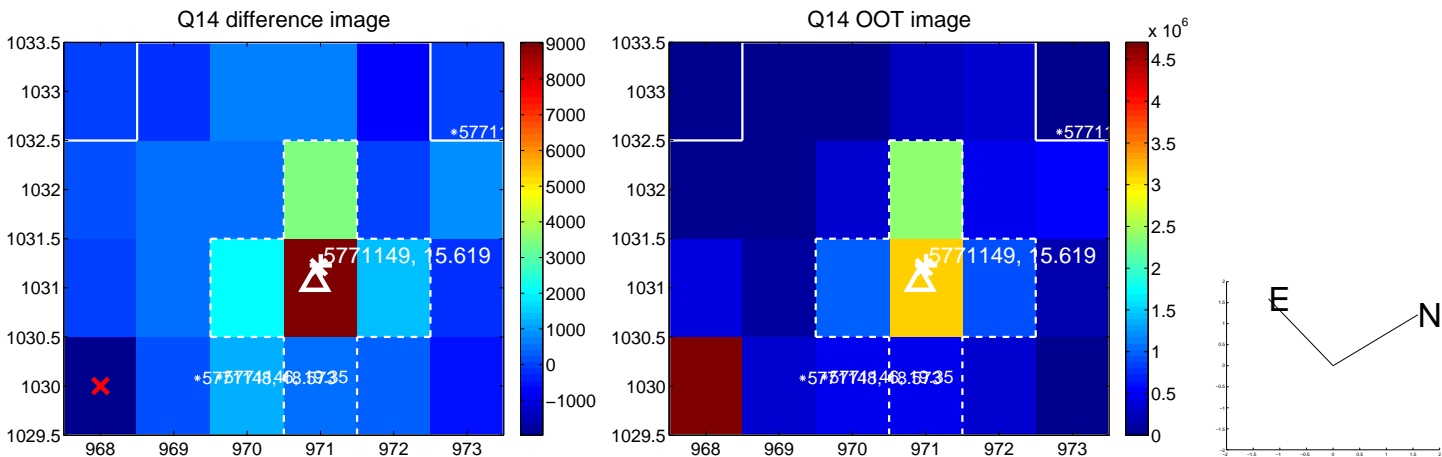
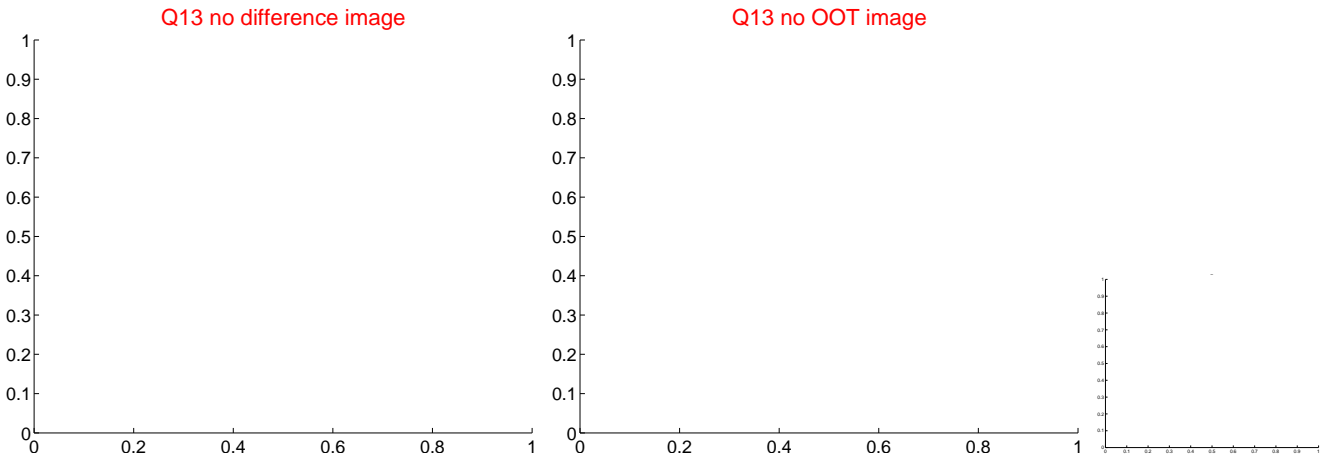




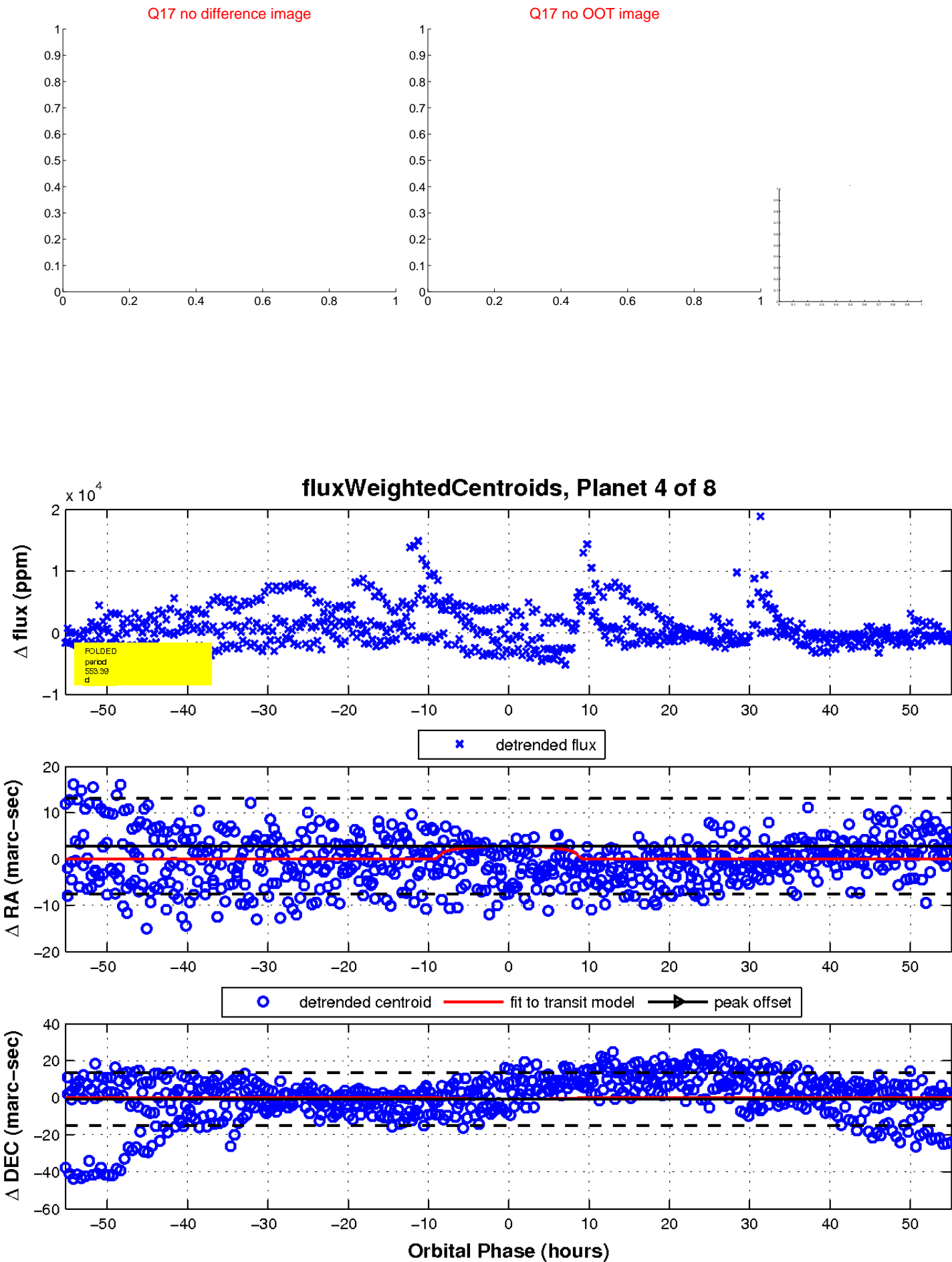
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

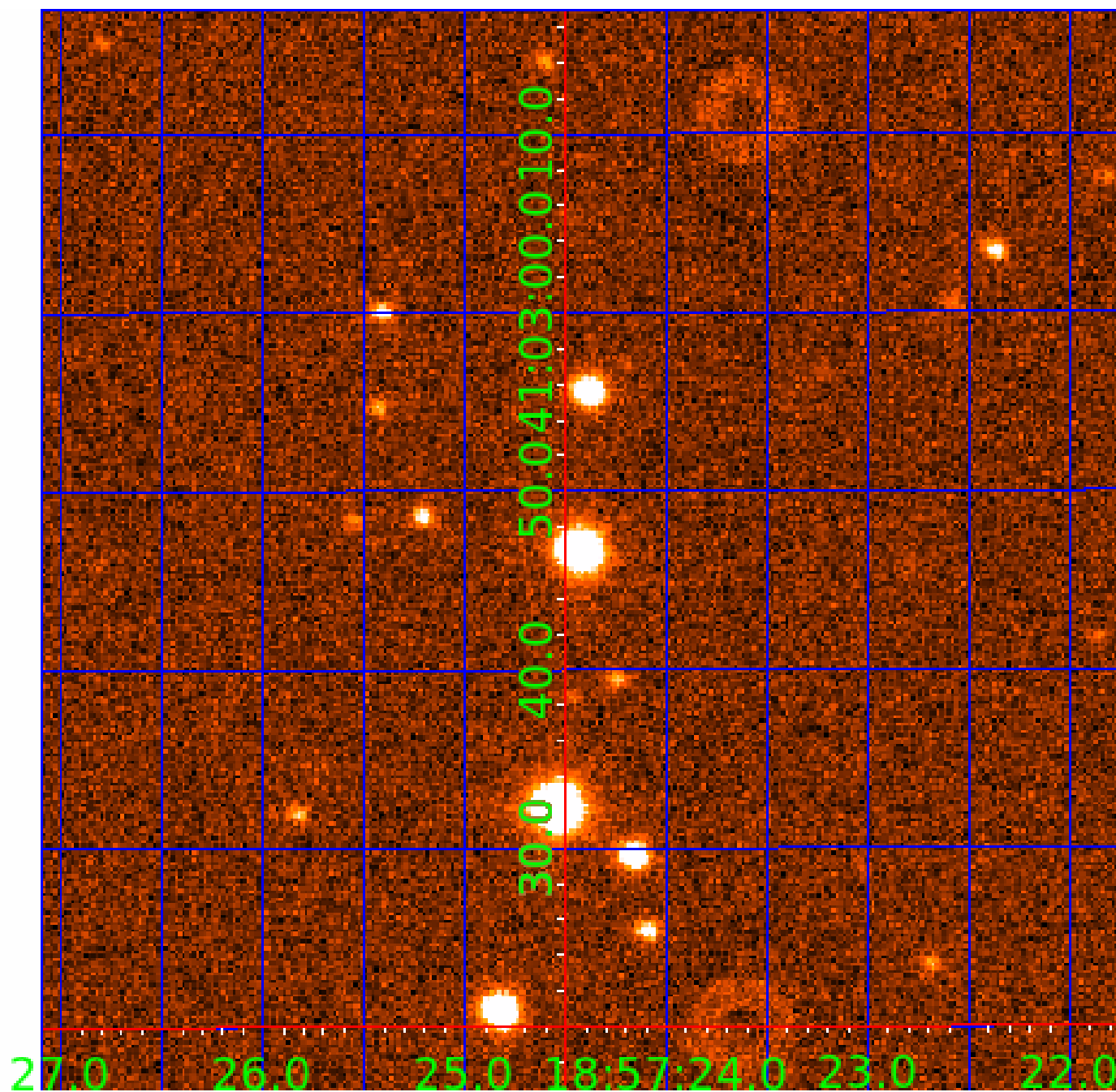


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



## KIC 005771149

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005771149-01	OBS	No	299.193035	214.235905	3568.4	15.104	26.5	8.4	0.68	4679	3.89	0.34
005771149-02	OBS	No	564.073757	387.860137	28.2	4.504	31.7	0.1	0.68	4679	0.37	0.14
005771149-03	OBS	No	370.809831	297.482499	1189.6	15.866	17.7	2.5	0.68	4679	2.34	0.25
005771149-04	OBS	No	553.386661	194.319752	5505.5	18.440	18.2	11.2	0.68	4679	4.83	0.15
005771149-05	OBS	No	336.106105	282.190743	4191.4	11.273	17.8	9.4	0.68	4679	5.26	0.29
005771149-06	OBS	No	332.299915	281.970338	4035.6	3.921	18.1	10.4	0.68	4679	4.52	0.29
005771149-07	OBS	No	359.196560	234.159625	3784.1	22.363	21.8	7.3	0.68	4679	4.60	0.27
005771149-08	OBS	No	513.938585	272.058180	3252.8	8.331	13.5	8.9	0.68	4679	3.96	0.17

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005771149-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005771149-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005771149-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005771149-04	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
005771149-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005771149-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005771149-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
005771149-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

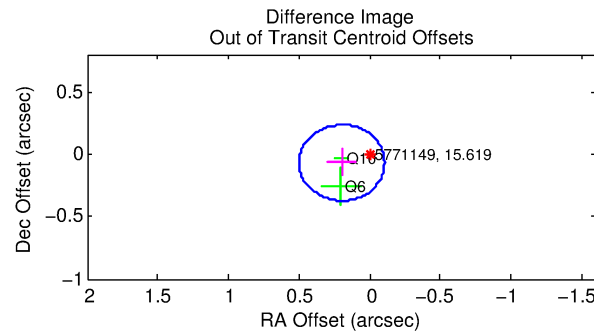
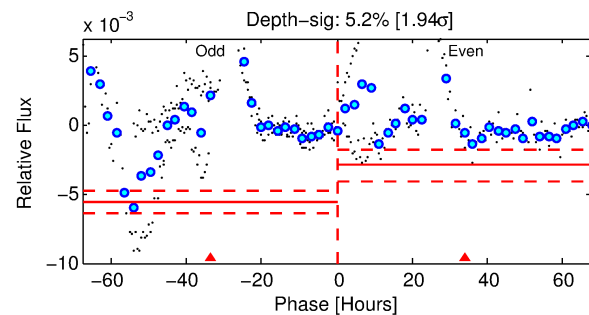
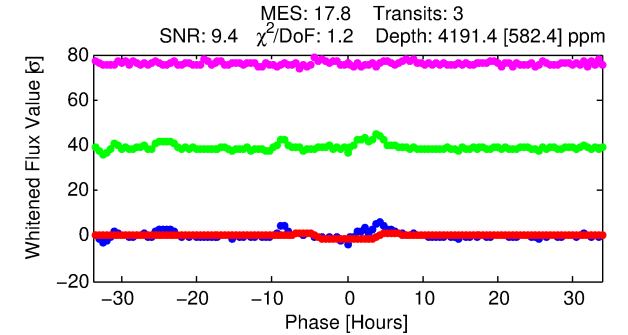
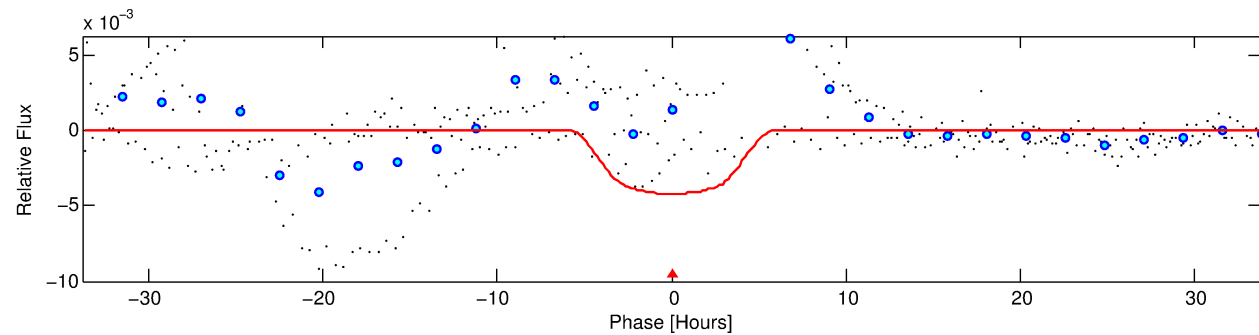
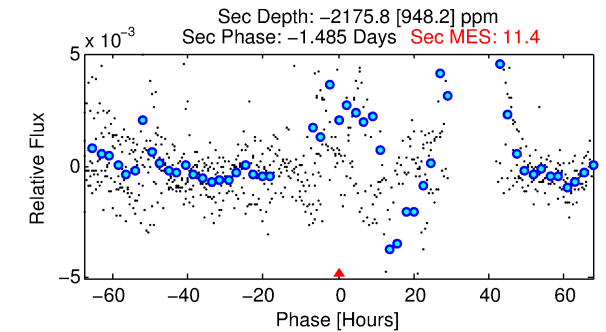
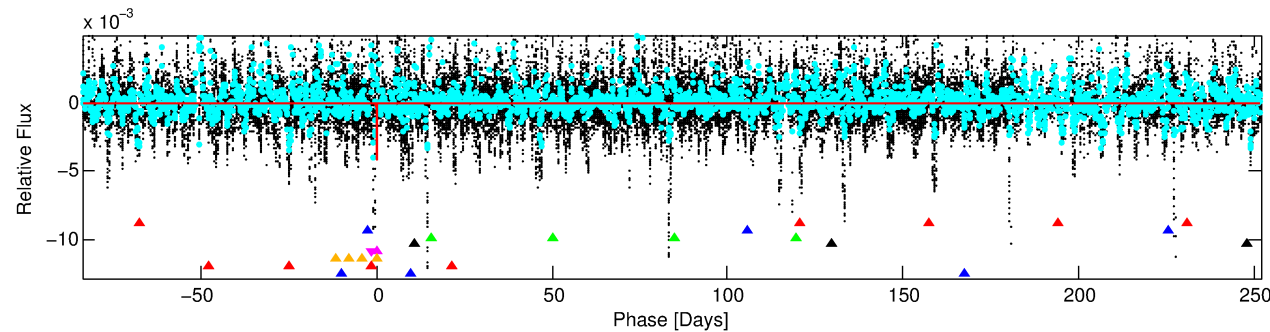
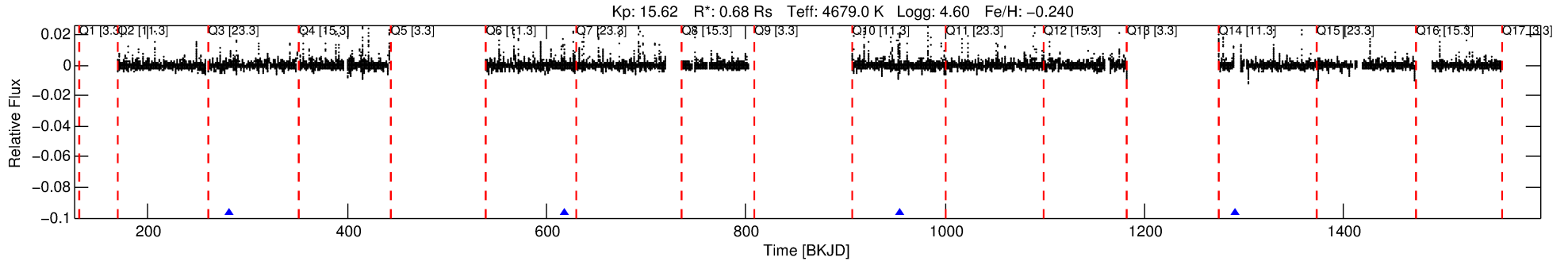
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005771149-05

No Significant Match Found

# DV One-Page Summary

KIC: 5771149 Candidate: 5 of 8 Period: 336.106 d



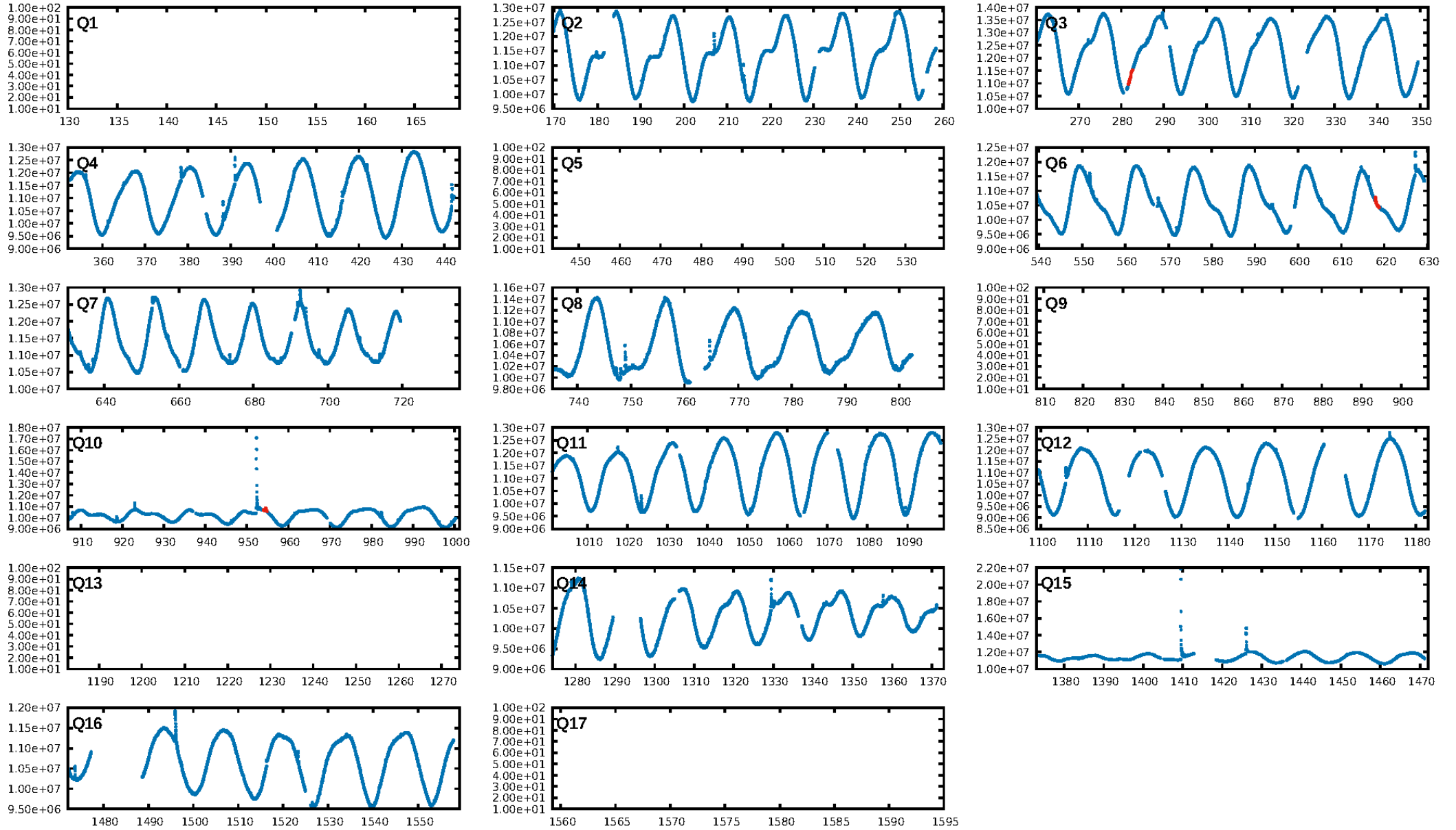
## DV Fit Results:

Period = 336.10610 [0.01050] d  
Epoch = 282.1907 [0.0126] BKJD  
Rp/R\* = 0.0711 [0.0063]  
a/R\* = 140.60 [19.59]  
b = 0.88 [0.04]  
Seff = 0.29 [0.05]  
Teq = 187 [7] K  
Rp = 5.26 [0.66] Re  
a = 0.8251 [0.0602] AU  
Ag = N/A  
Teffp = N/A

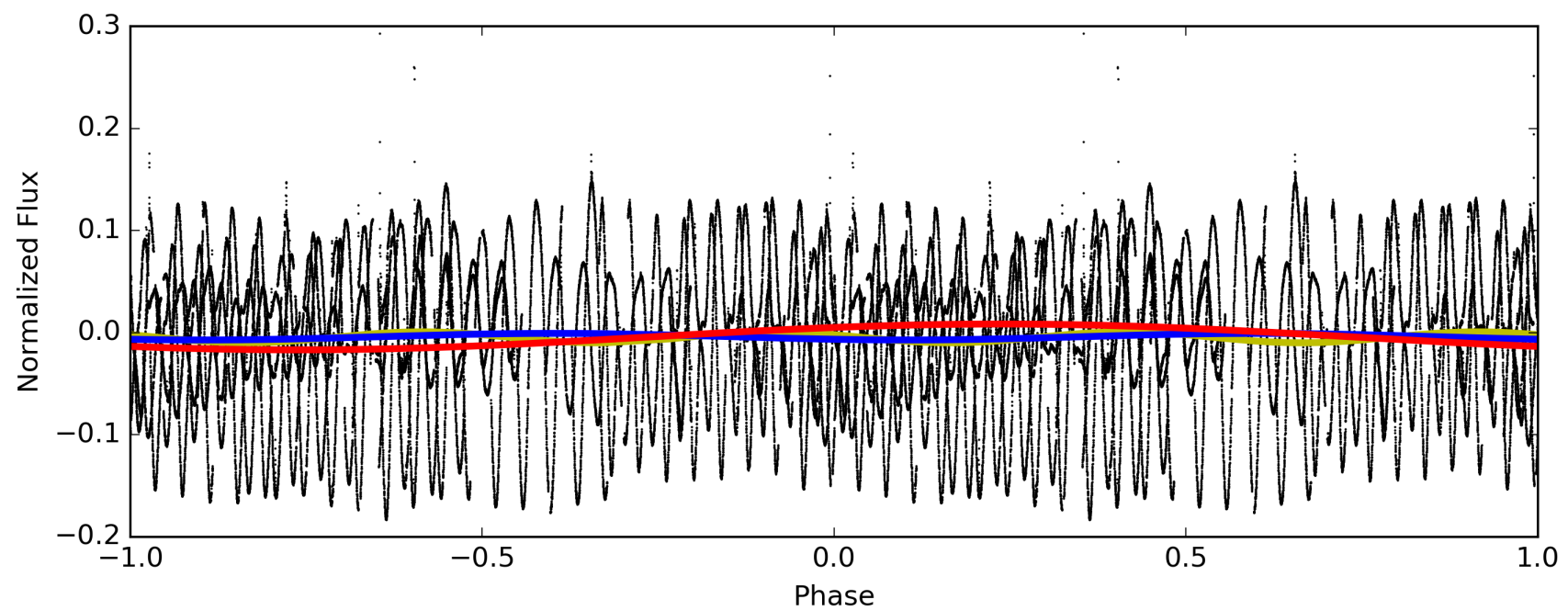
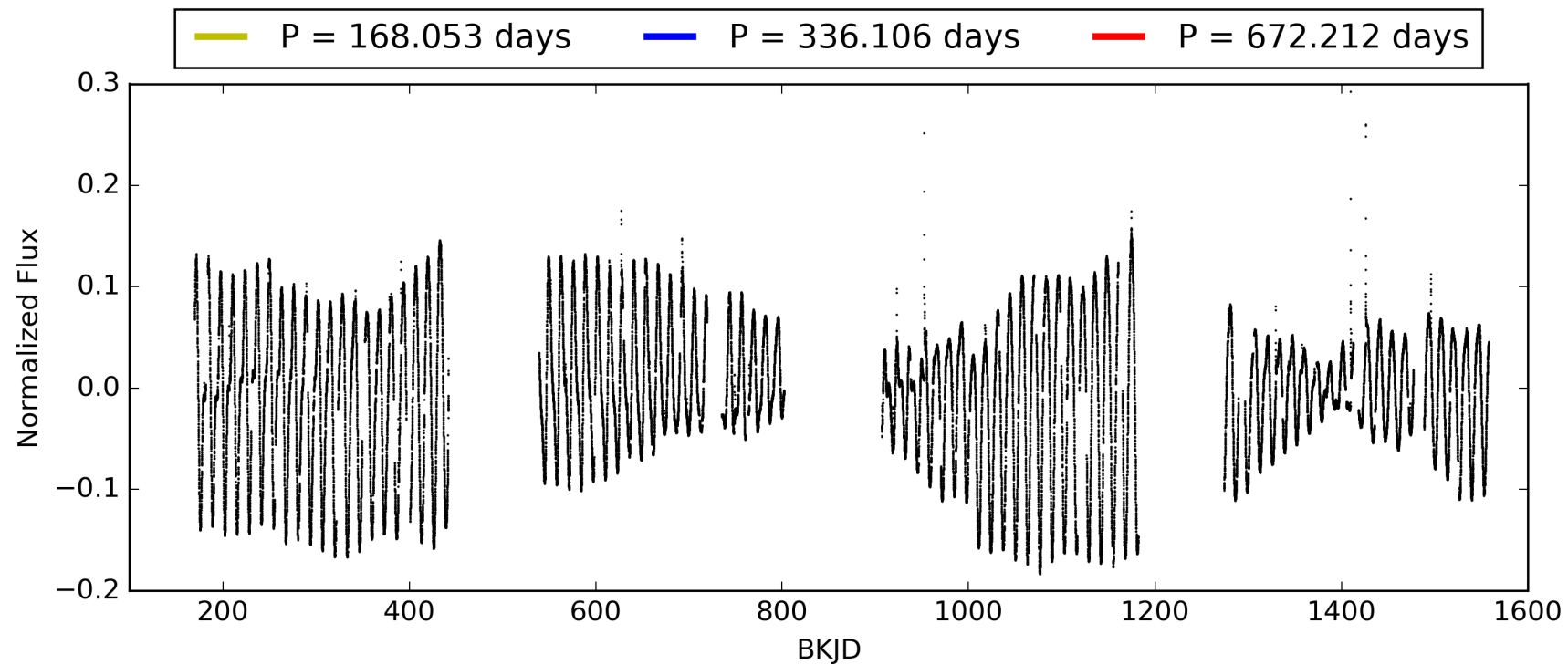
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [7.65σ]  
LongPeriod-sig: 100.0% [22.13σ]  
ModelChiSquare2-sig: 2.3%  
ModelChiSquareGof-sig: 84.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.299  
Centroid-sig: 10.1%  
Centroid-so: 1.064 arcsec [1.47σ]  
OotOffset-rm: 0.211 arcsec [2.08σ]  
KicOffset-rm: 0.200 arcsec [1.98σ]  
OotOffset-st: 2/0/0/0 [2]  
KicOffset-st: 2/0/0/0 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 0.67 [2/3]

# TCE 005771149-05, PDC Light Curves



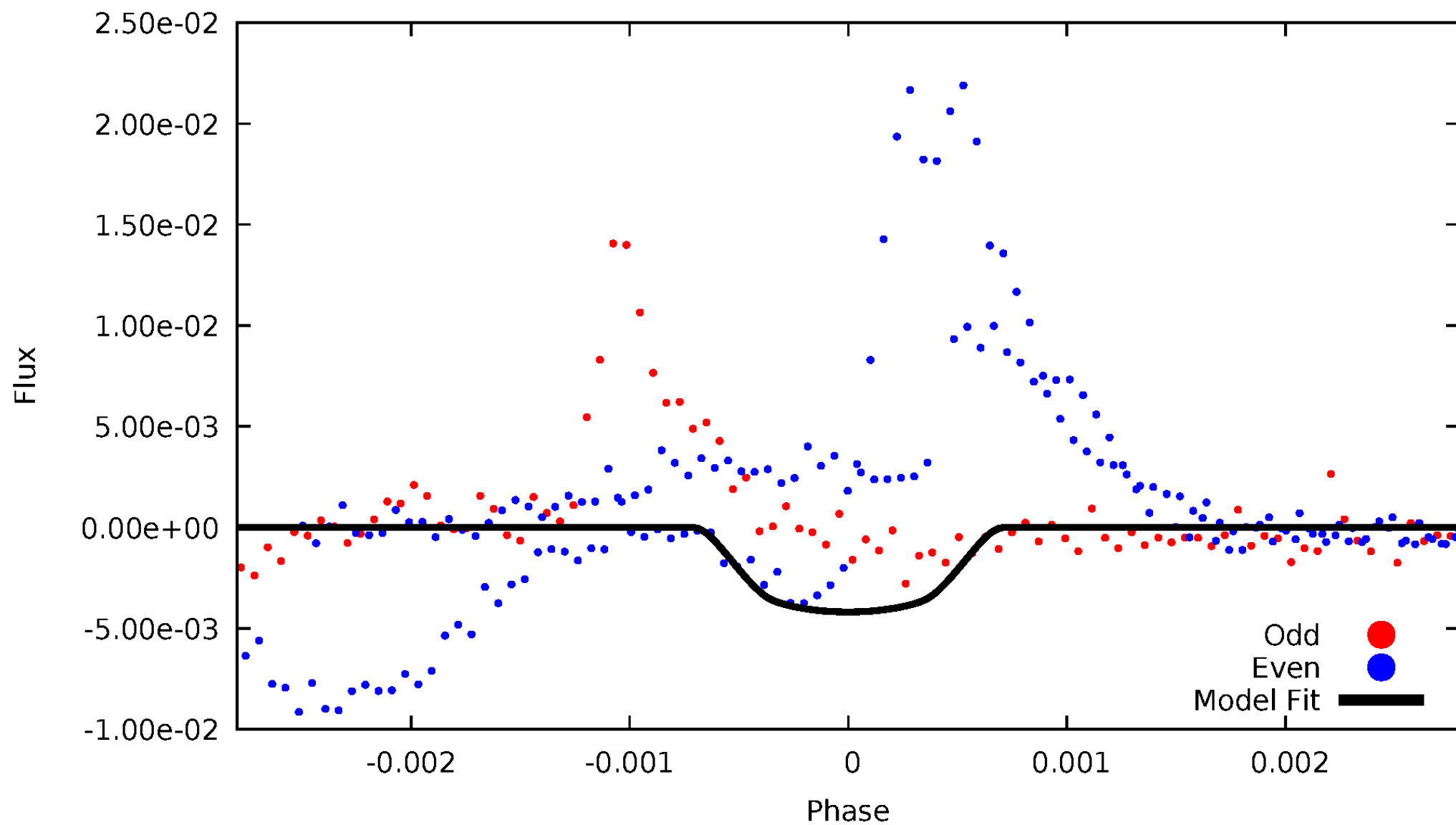
TCE 005771149-05





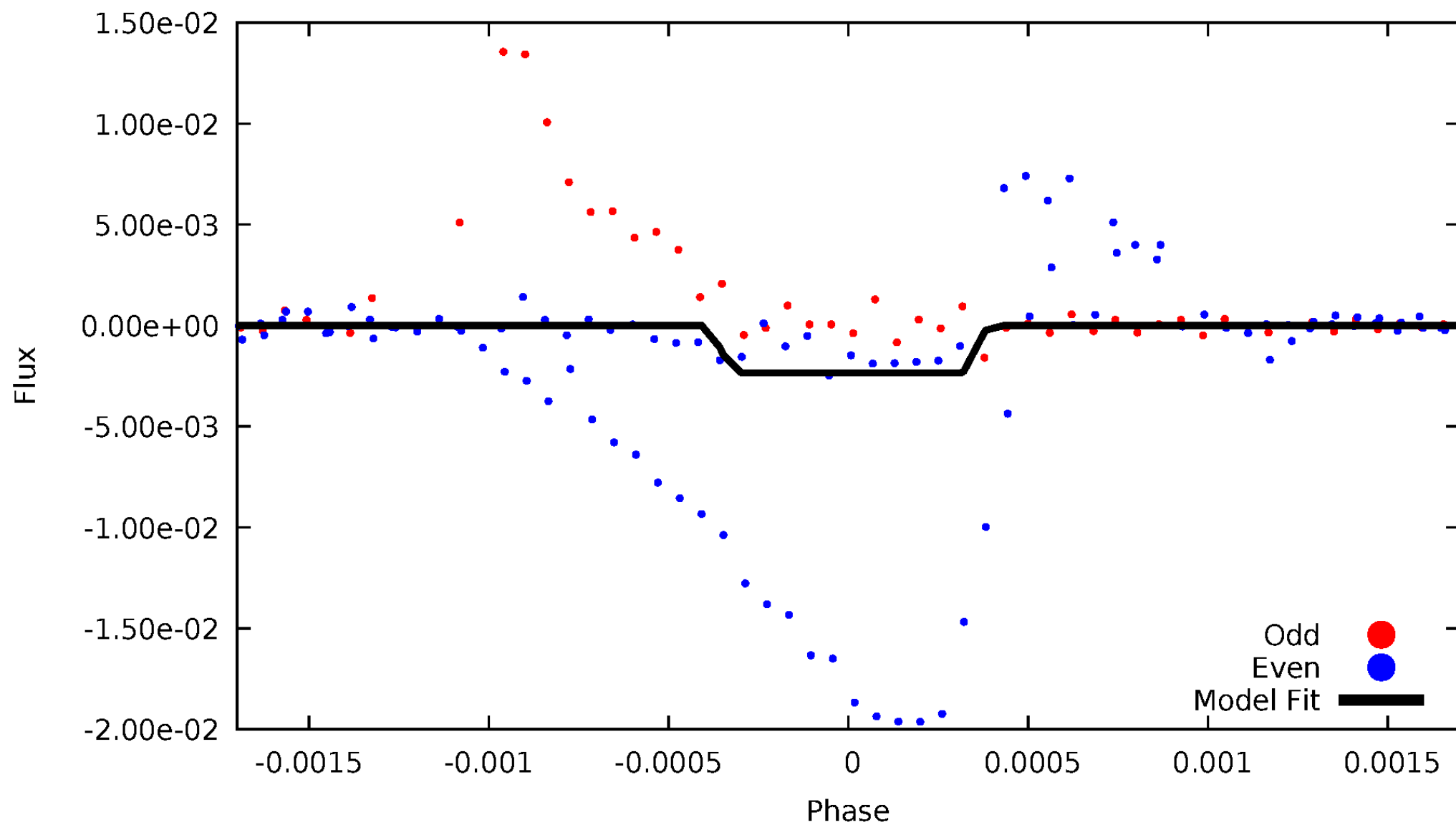
# DV Odd/Even

TCE 005771149-05



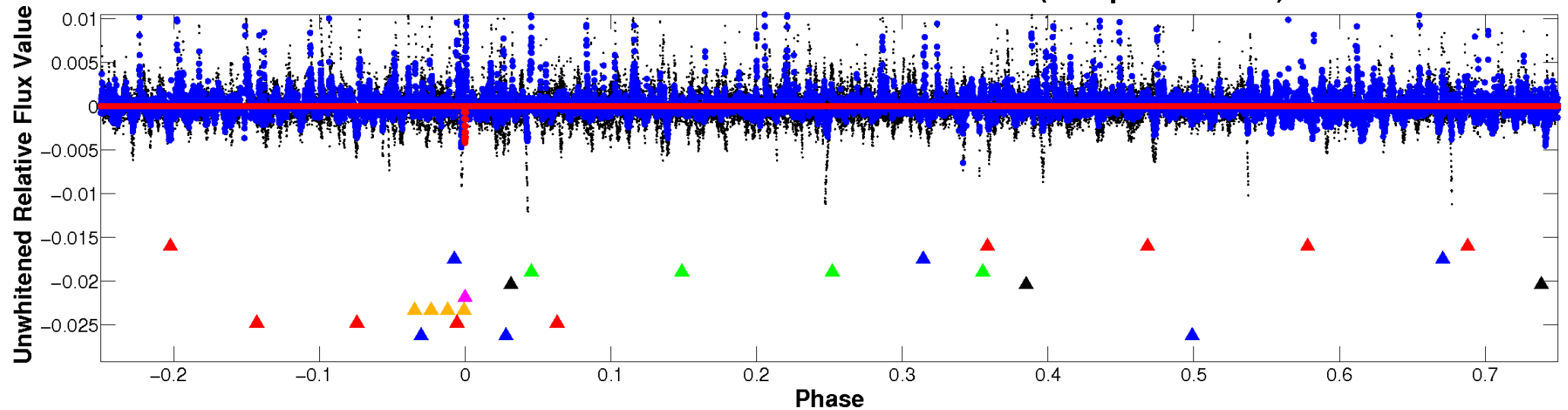
# ALT Odd/Even

TCE 005771149-05

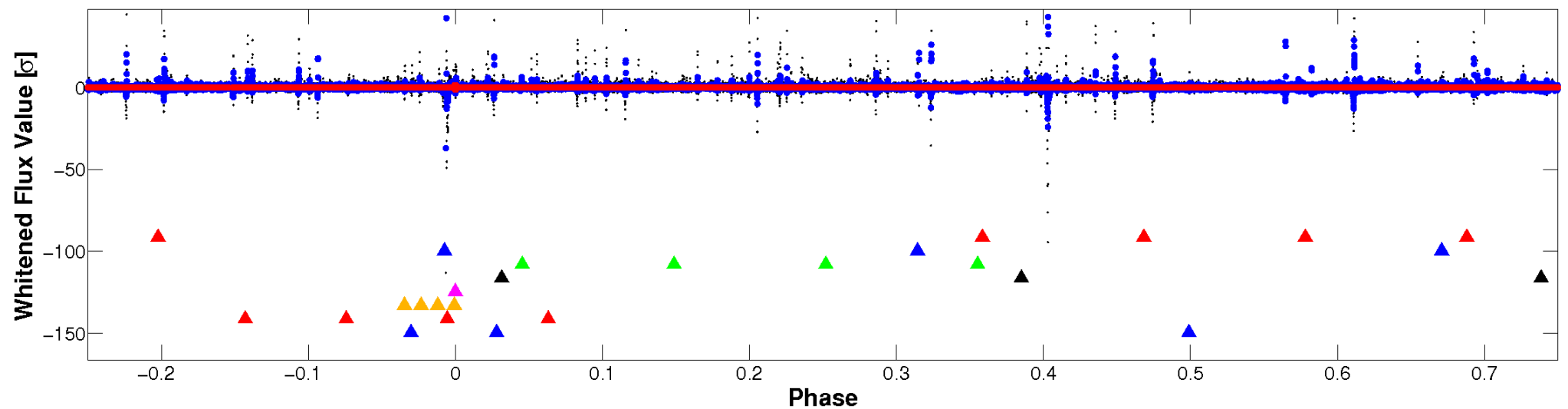


# Non-Whitened Vs. Whitened Light Curve

## Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

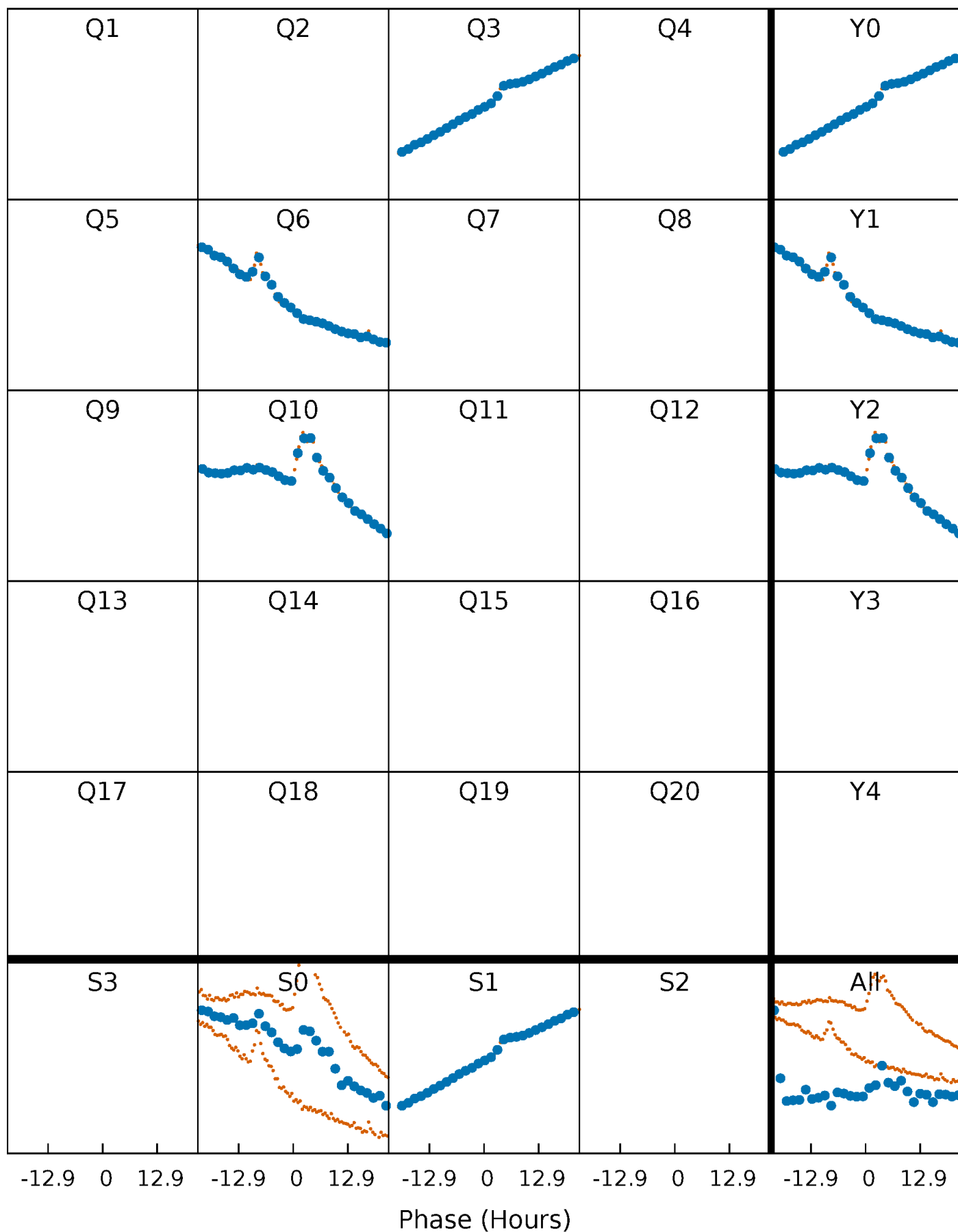


## Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



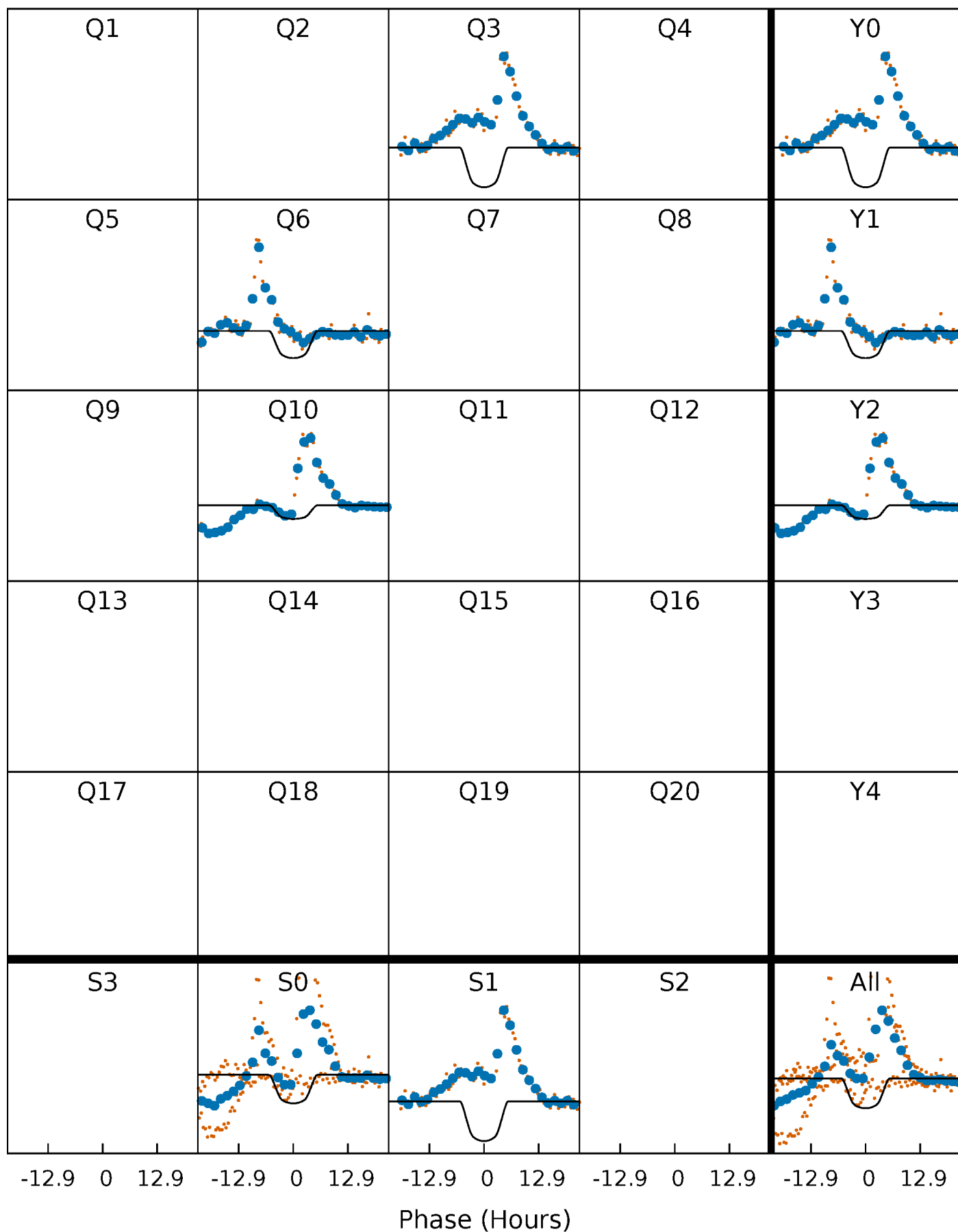
# PDC Quarter-Phased Transit Curves

TCE 005771149-05 P=336.106105 Days  $T_0=282.190743$  (BKJD)



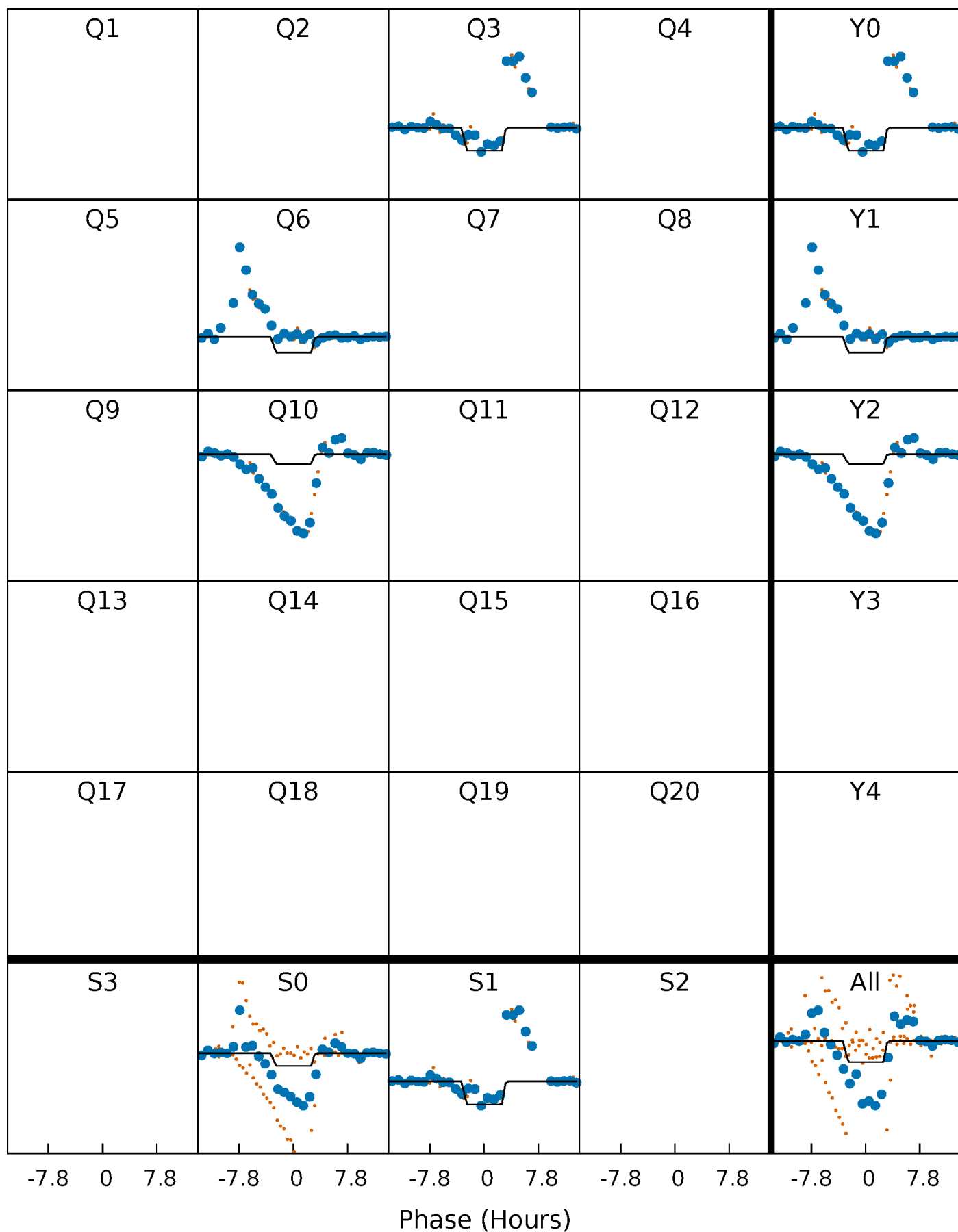
# DV Quarter-Phased Transit Curves

TCE 005771149-05 P=336.106105 Days  $T_0=282.190743$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

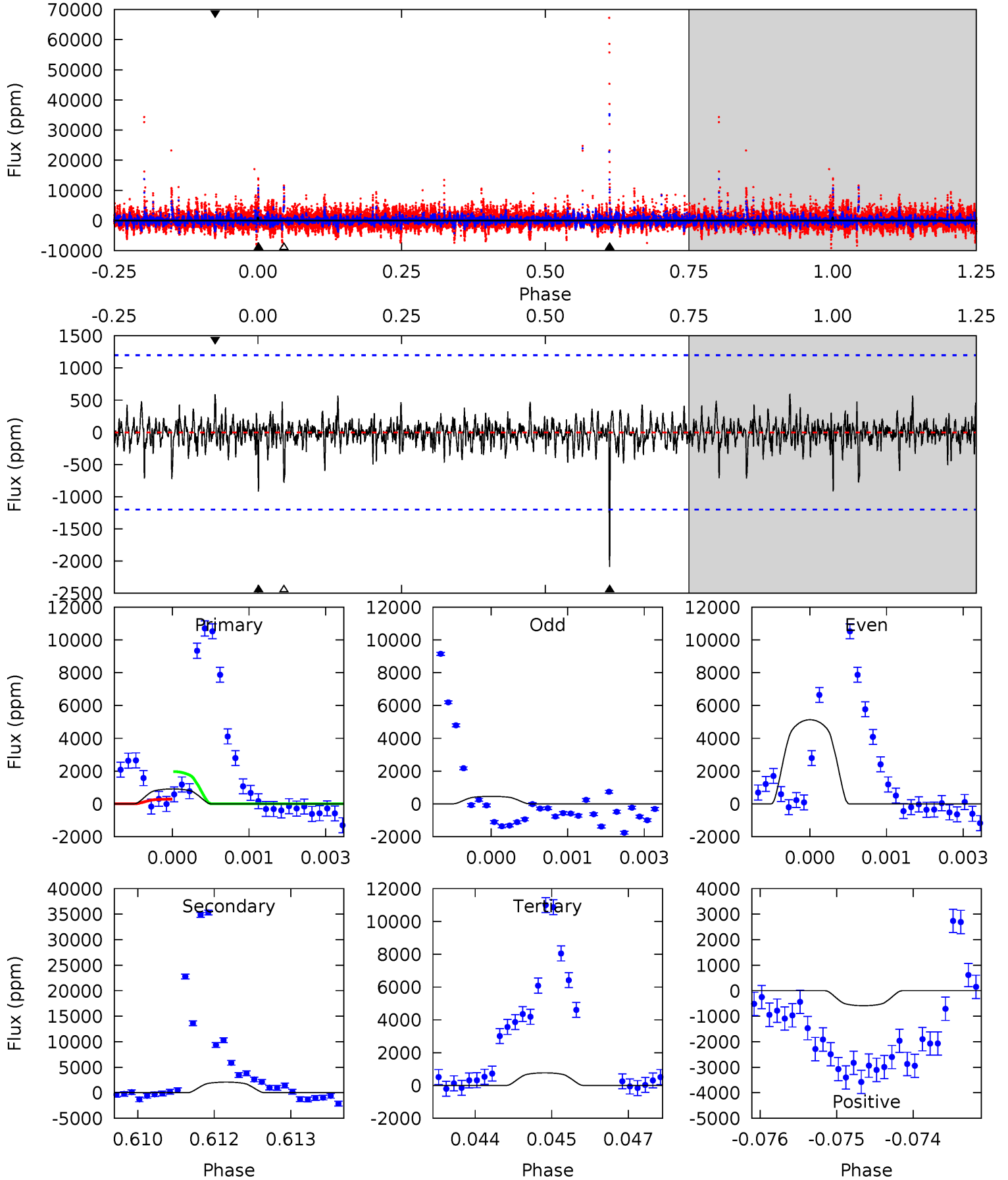
TCE 005771149-05     $P=336.050328$  Days     $T_0=282.207653$  (BKJD)



# DV Model-Shift Uniqueness Test

005771149-05, P = 336.106105 Days, E = 282.190743 Days

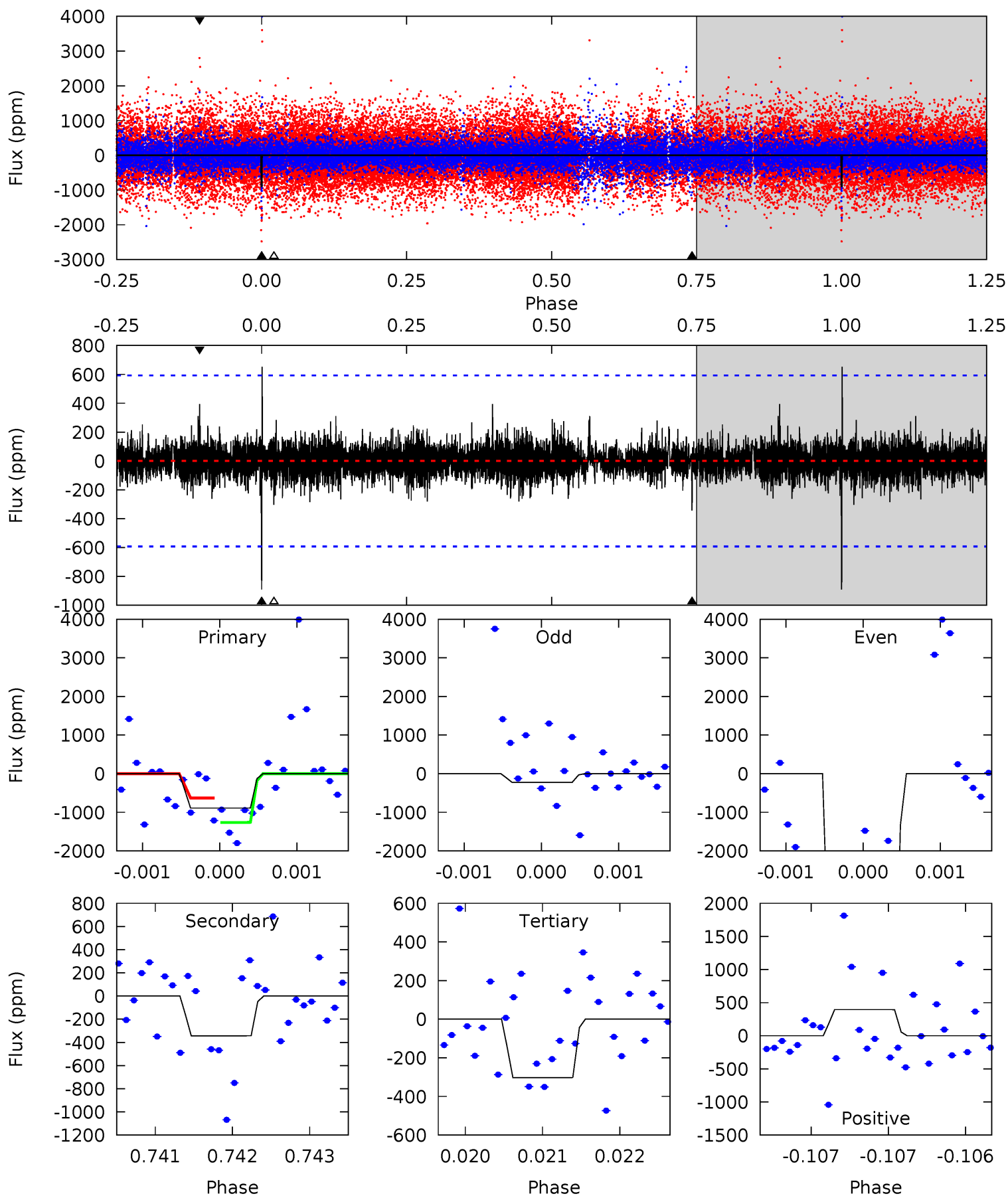
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.10	9.40	3.47	2.65	5.39	3.19	0.66	0.63	1.45	5.94	6.75	7.57	0.93	0.22	3.69



# Alt Model-Shift Uniqueness Test

005771149-05, P = 336.050328 Days, E = 282.207653 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
8.25	3.18	2.81	3.65	5.49	3.36	0.63	5.45	4.60	0.38	-0.47	48.1	4.23	0.42	0





### Stellar Parameters For KIC 005771149

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$4679^{+140}_{-140}$	$4.597^{+0.056}_{-0.028}$	$-0.240^{+0.300}_{-0.300}$	$0.678^{+0.054}_{-0.060}$	$0.663^{+0.082}_{-0.048}$	$2.997^{+0.749}_{-0.384}$
	+3%/-3%	+1%/-1%	+125%/-125%	+8%/-9%	+12%/-7%	+25%/-13%
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 005771149-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-2092 \pm 223$	$5.23^{+0.54}_{-0.52}$	$260^{+9}_{-9}$	$3967^{+172}_{-177}$	$29045^{+7352}_{-5579}$
Alt.	$-344 \pm 108$	$3.55^{+0.53}_{-0.47}$	$260^{+8}_{-9}$	$3337^{+239}_{-224}$	$10278^{+4922}_{-3611}$

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

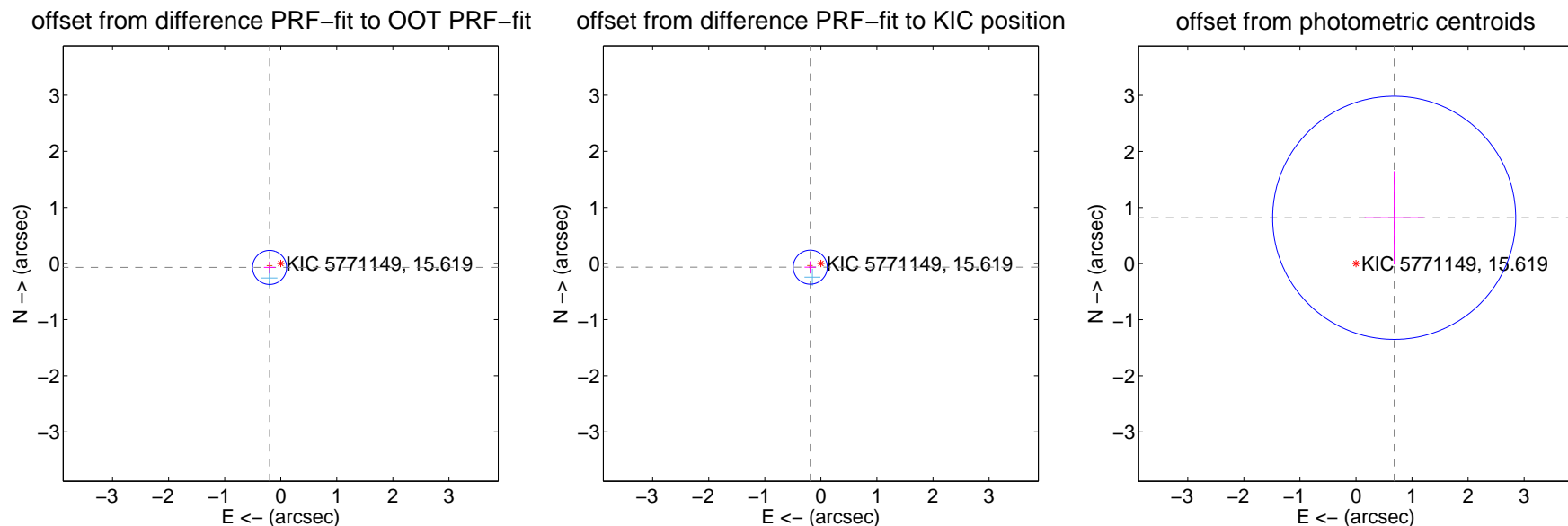
## DV Centroid Data

Supplemental centroid analysis for 005771149-05. Kepler magnitude: 15.62. Transit SNR 9.40

There are 1 quarters with good PRF difference image offsets

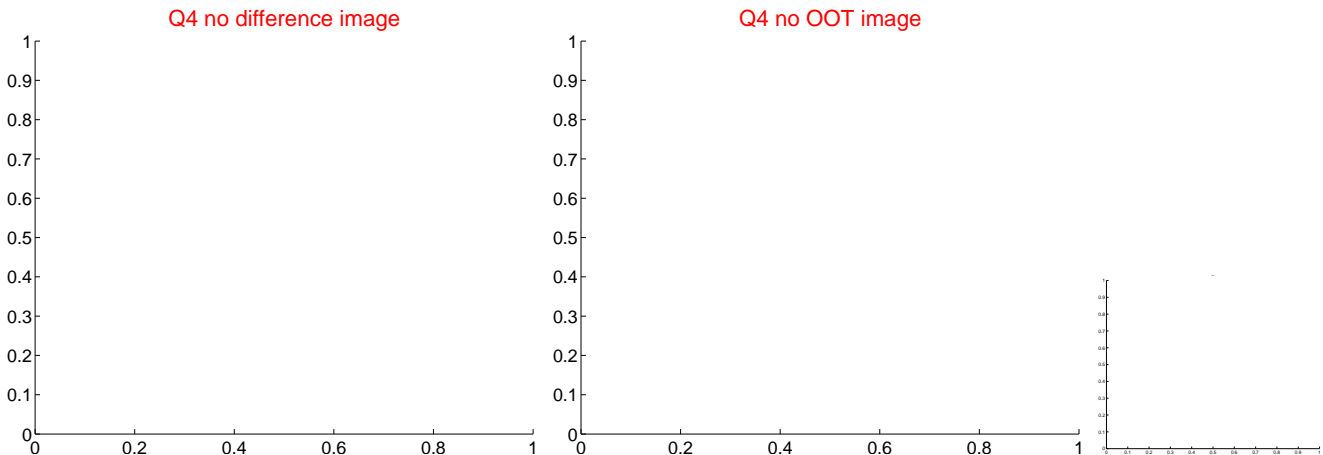
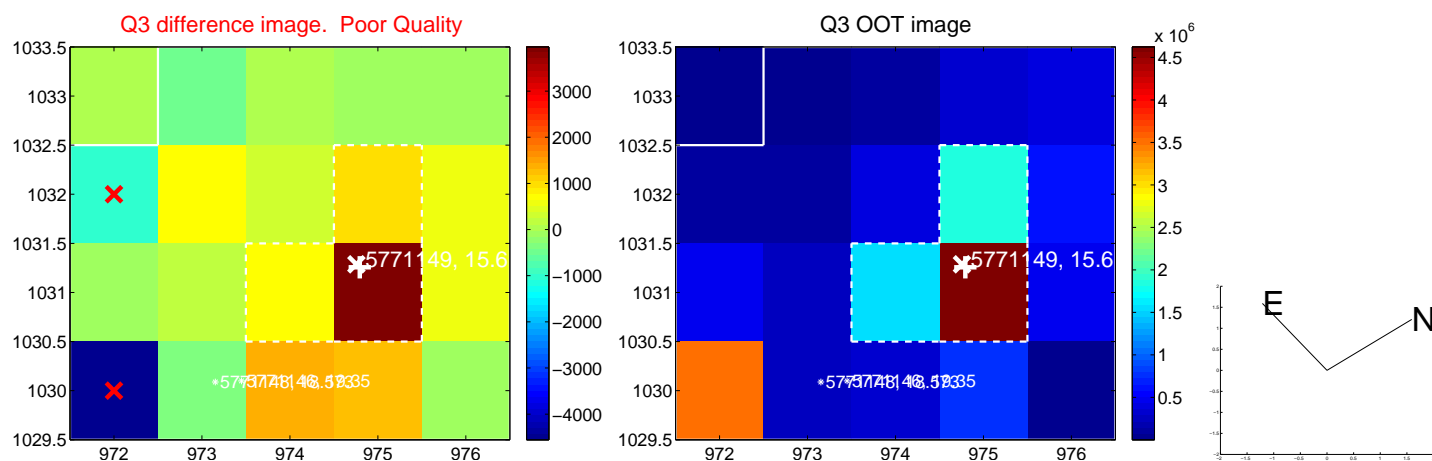
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.211 \pm 0.101$	2.08	$0.199 \pm 0.101$	$-0.069 \pm 0.106$
PRF-fit source offset from KIC position	$0.200 \pm 0.101$	1.98	$0.189 \pm 0.101$	$-0.065 \pm 0.106$
photometric centroid source offset	$1.06 \pm 0.72$	1.47	$-0.68 \pm 0.53$	$0.82 \pm 0.83$



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

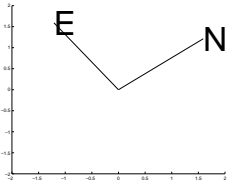
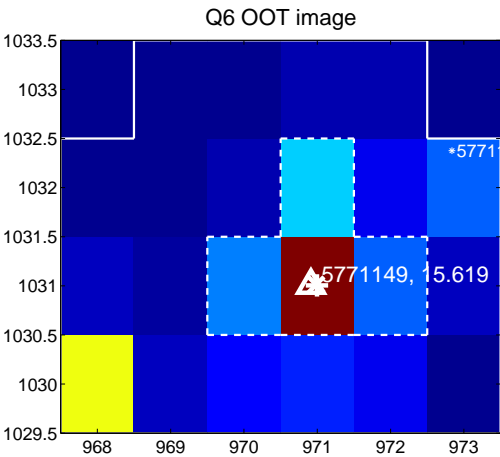
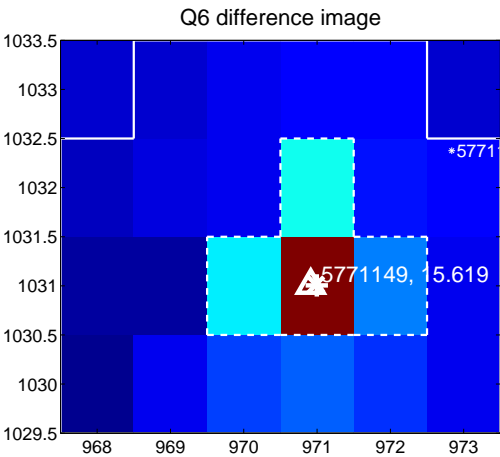


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

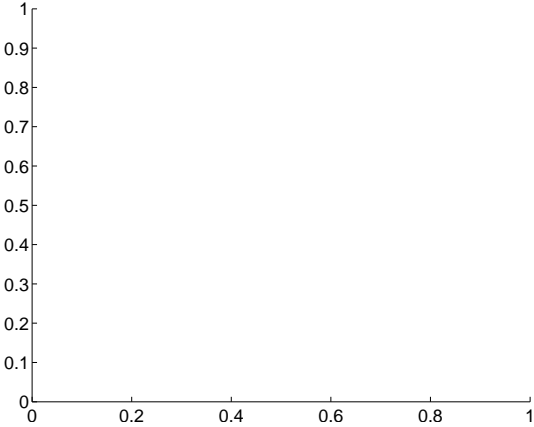
Q5 no difference image



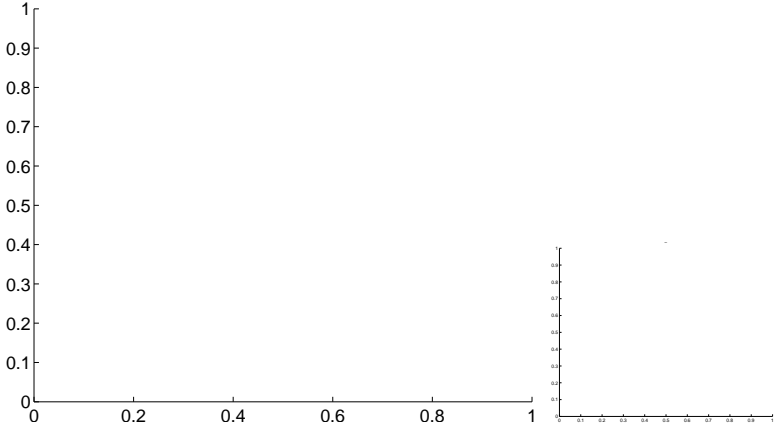
Q5 no OOT image



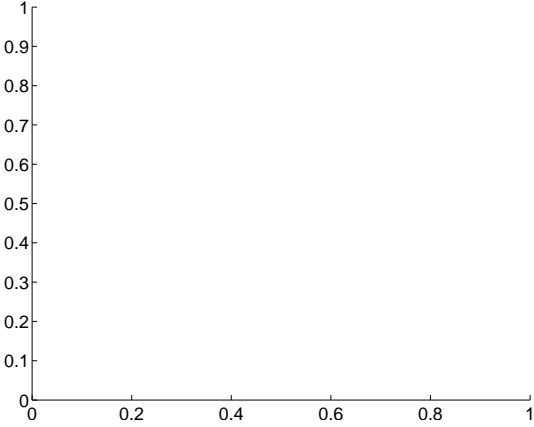
Q7 no difference image



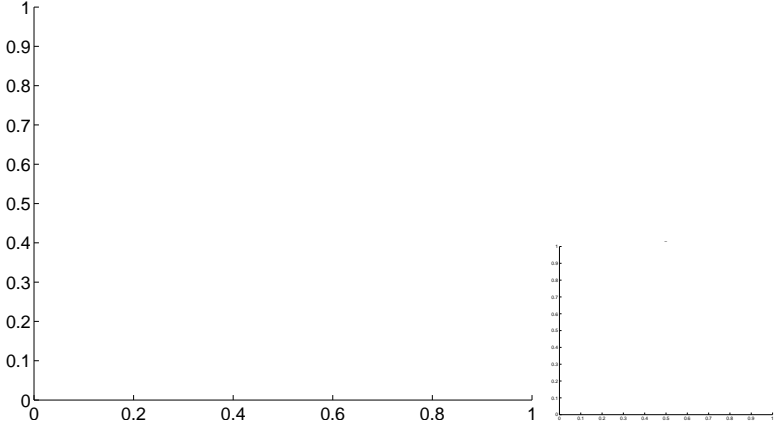
Q7 no OOT image



Q8 no difference image



Q8 no OOT image



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

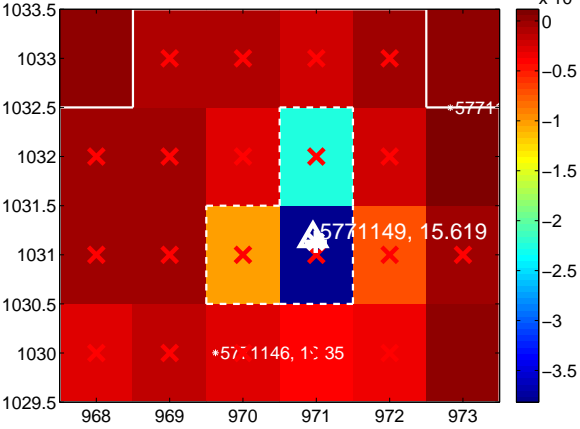
Q9 no difference image



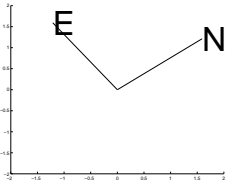
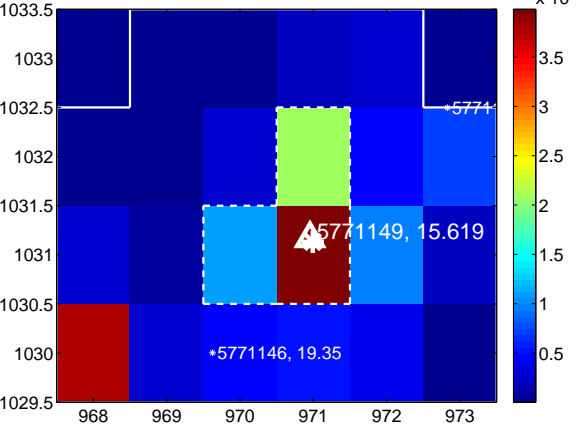
Q9 no OOT image



Q10 difference image. Poor Quality



Q10 OOT image



Q11 no difference image



Q11 no OOT image



Q12 no difference image



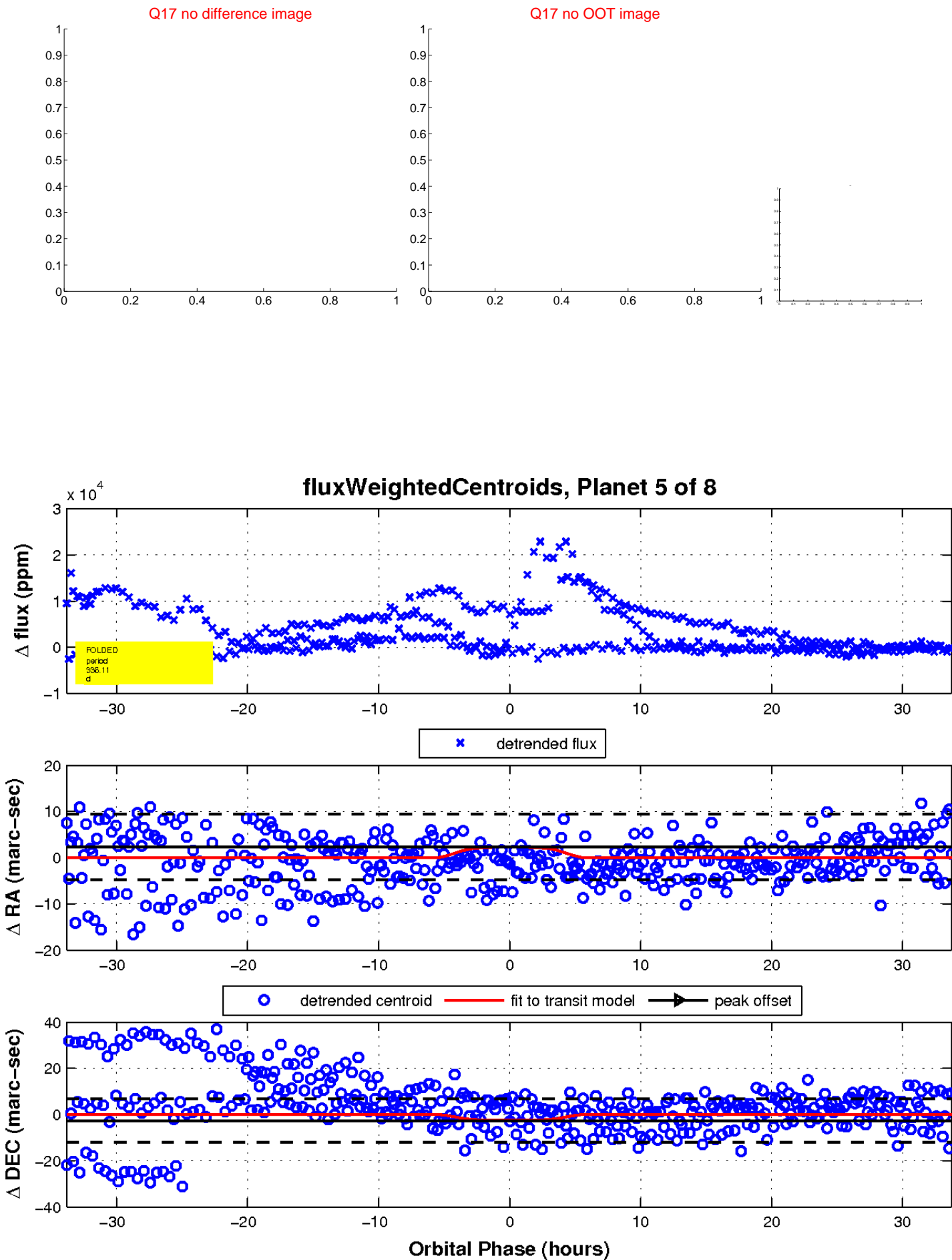
Q12 no OOT image



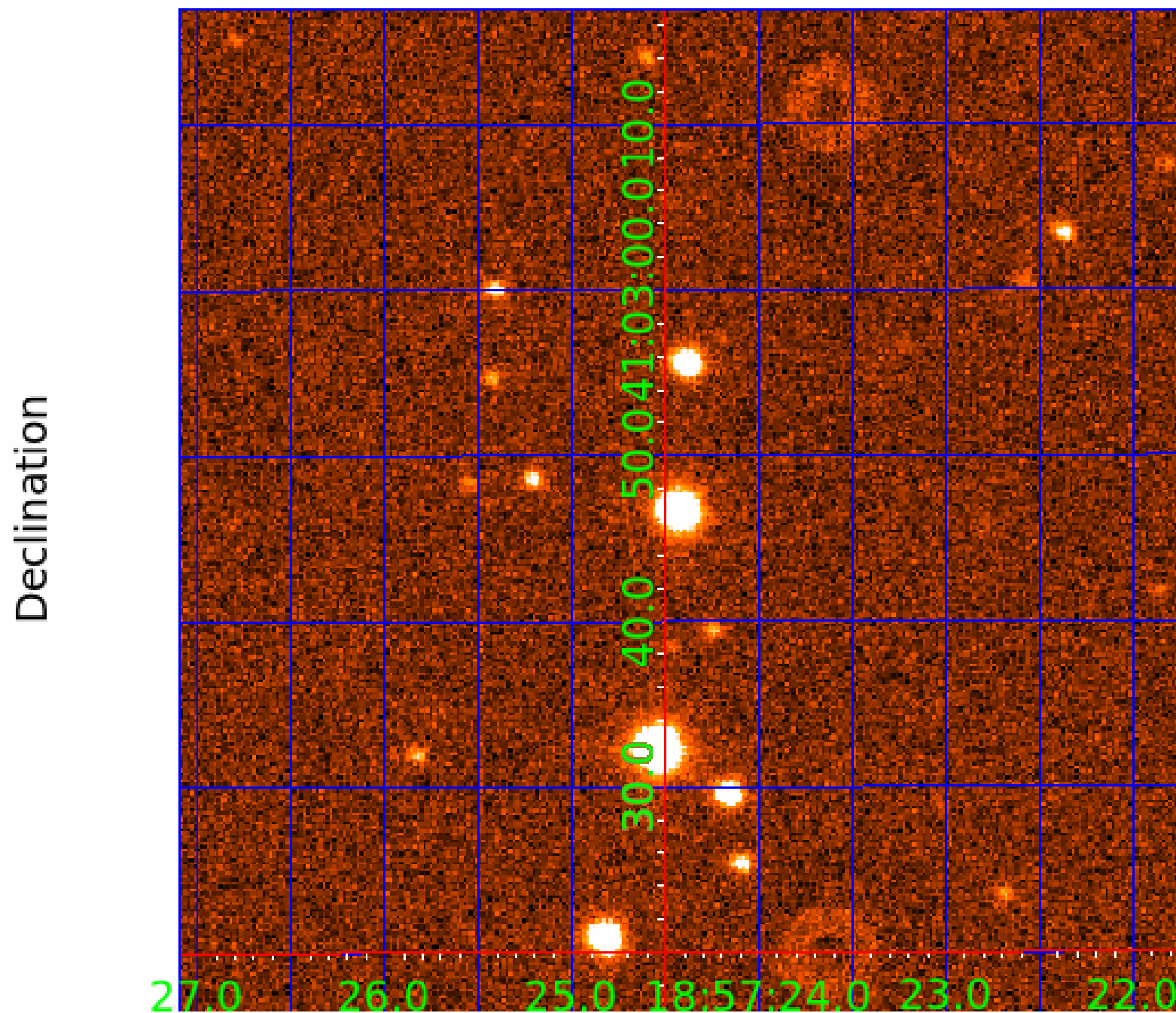
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image





## KIC 005771149

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005771149-01	OBS	No	299.193035	214.235905	3568.4	15.104	26.5	8.4	0.68	4679	3.89	0.34
005771149-02	OBS	No	564.073757	387.860137	28.2	4.504	31.7	0.1	0.68	4679	0.37	0.14
005771149-03	OBS	No	370.809831	297.482499	1189.6	15.866	17.7	2.5	0.68	4679	2.34	0.25
005771149-04	OBS	No	553.386661	194.319752	5505.5	18.440	18.2	11.2	0.68	4679	4.83	0.15
005771149-05	OBS	No	336.106105	282.190743	4191.4	11.273	17.8	9.4	0.68	4679	5.26	0.29
005771149-06	OBS	No	332.299915	281.970338	4035.6	3.921	18.1	10.4	0.68	4679	4.52	0.29
005771149-07	OBS	No	359.196560	234.159625	3784.1	22.363	21.8	7.3	0.68	4679	4.60	0.27
005771149-08	OBS	No	513.938585	272.058180	3252.8	8.331	13.5	8.9	0.68	4679	3.96	0.17

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005771149-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005771149-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005771149-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005771149-04	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
005771149-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005771149-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005771149-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
005771149-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

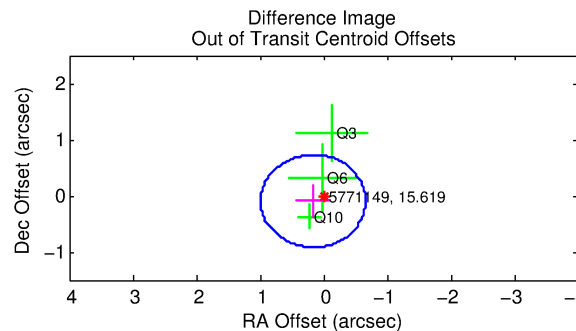
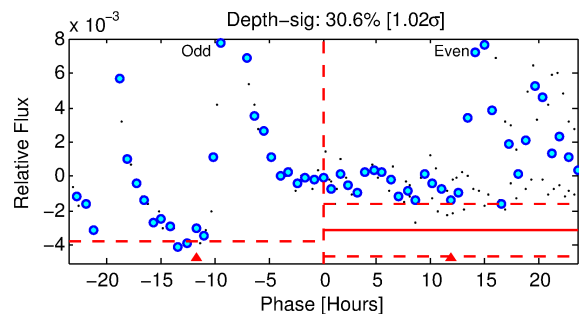
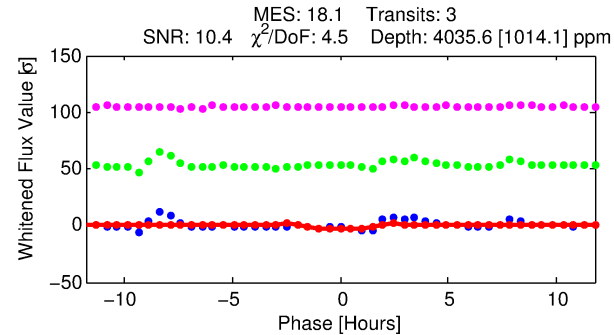
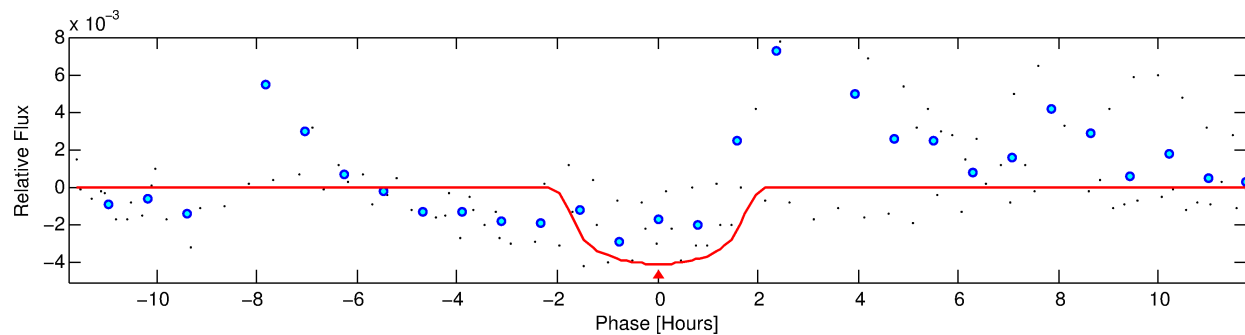
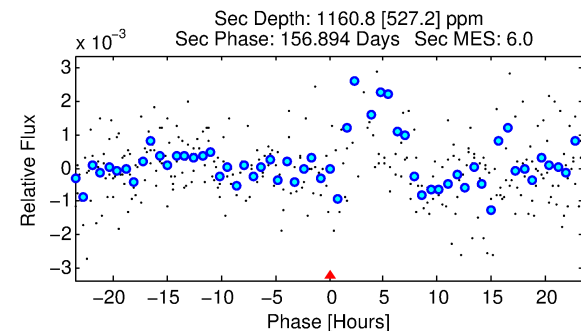
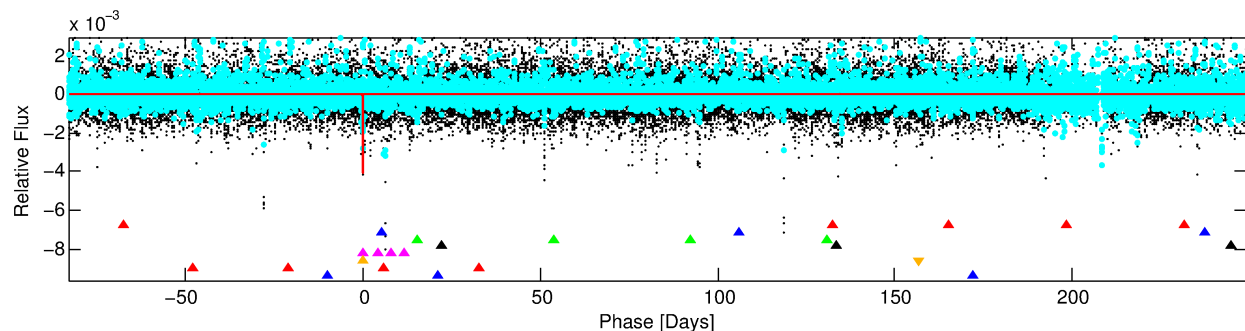
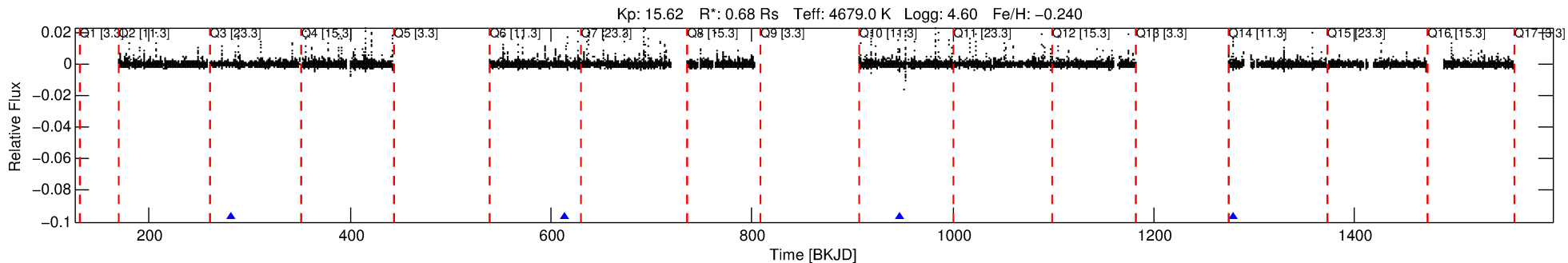
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005771149-06

No Significant Match Found

# DV One-Page Summary

KIC: 5771149 Candidate: 6 of 8 Period: 332.300 d



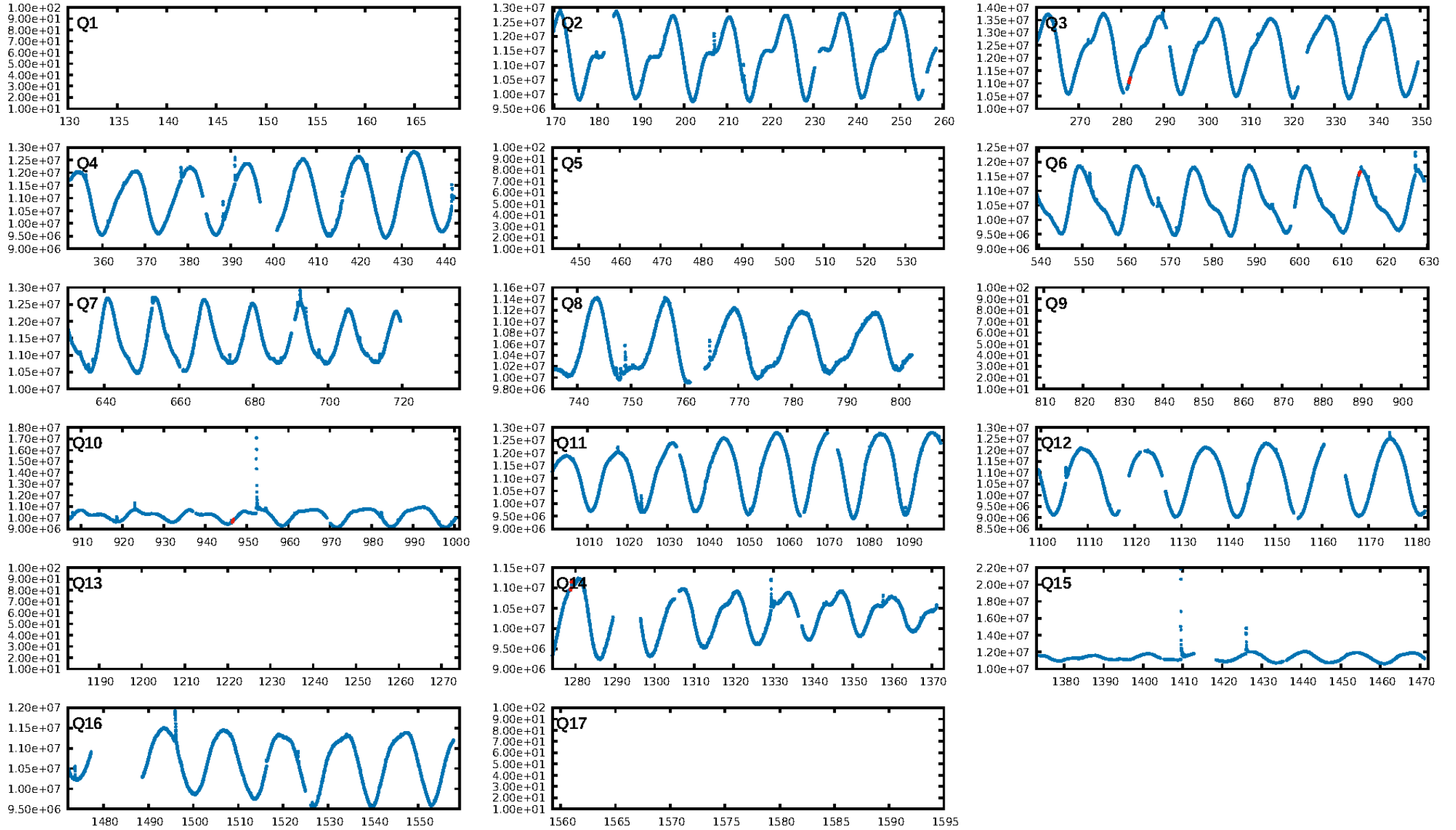
## DV Fit Results:

Period = 332.29991 [0.00806] d  
Epoch = 281.9703 [0.0190] BKJD  
Rp/R\* = 0.0611 [0.0571]  
a/R\* = 540.44 [1536.03]  
b = 0.66 [2.55]  
Seff = 0.29 [0.05]  
Teq = 188 [7] K  
Rp = 4.52 [4.24] Re  
a = 0.8188 [0.0598] AU  
Ag = 20960.05 [40378.22] [0.52σ]  
Teffp = 3494 [1684] K [1.96σ]

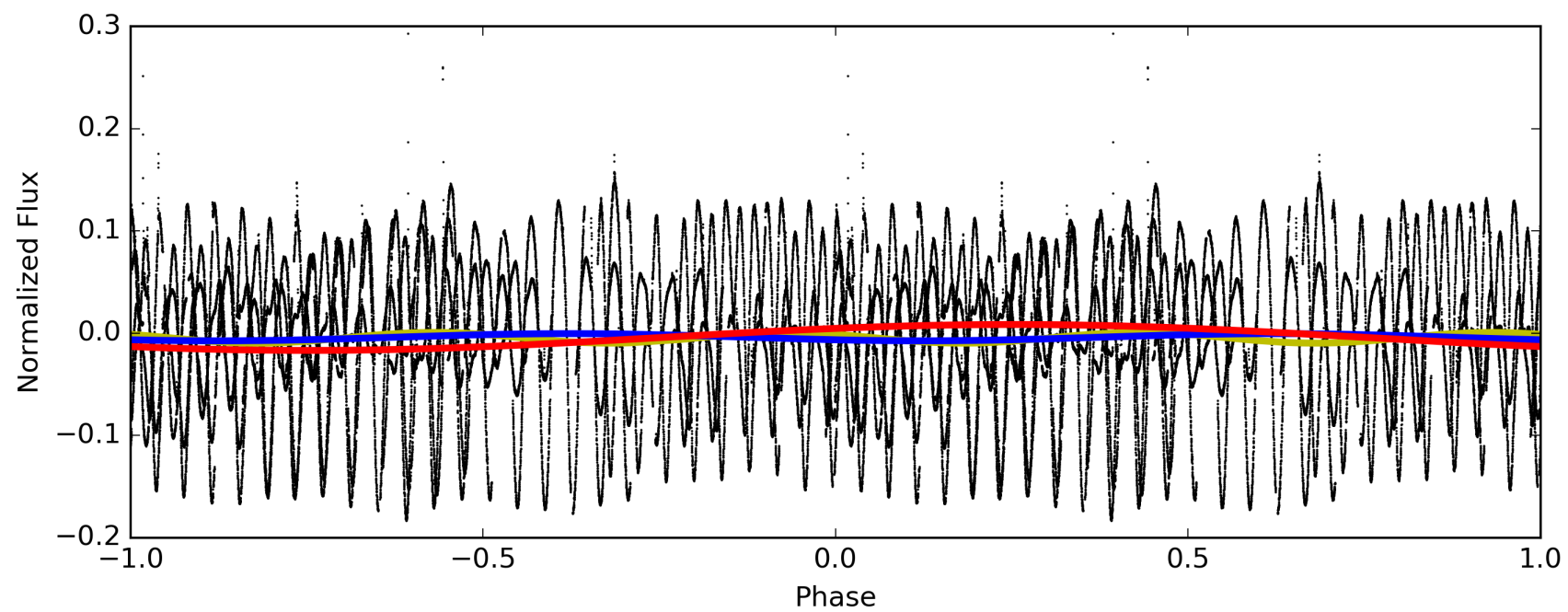
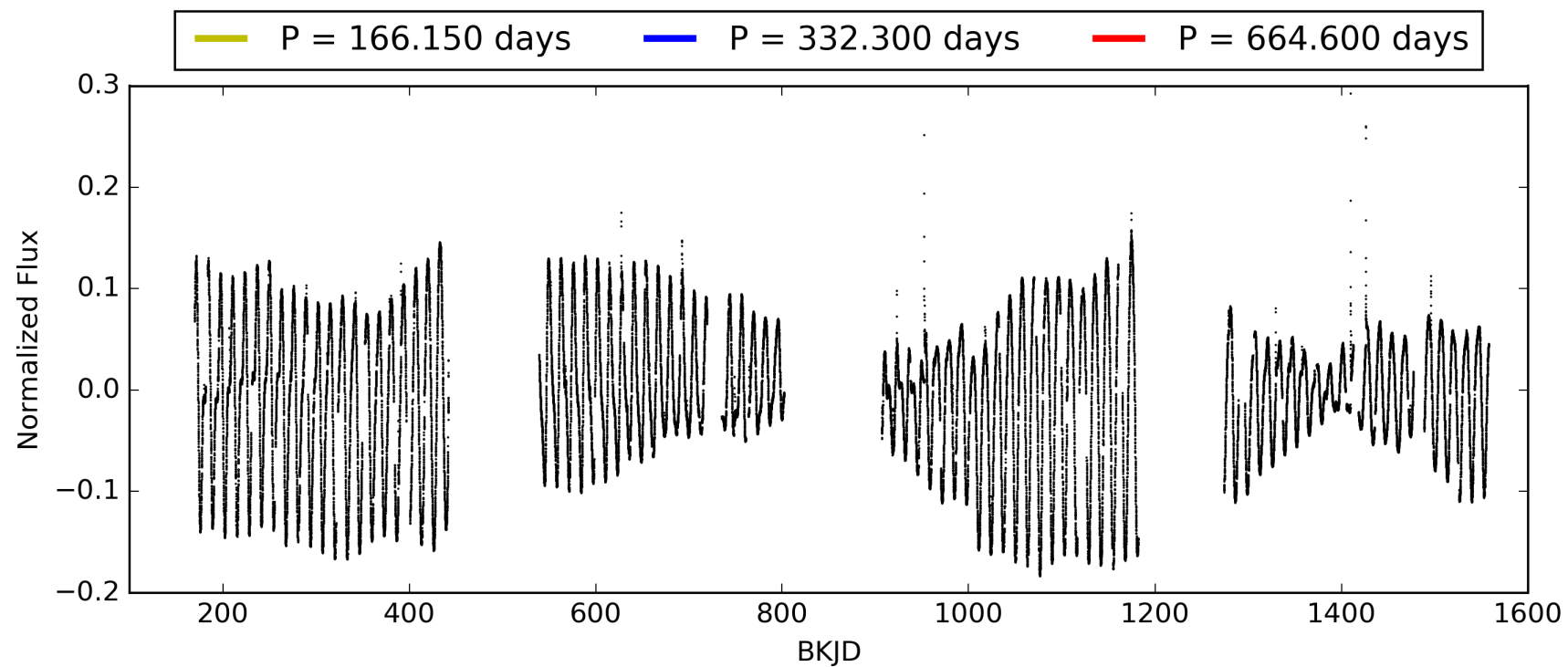
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [50.92σ]  
LongPeriod-sig: 100.0% [7.65σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -0.04731  
Centroid-sig: 18.8%  
Centroid-so: 0.596 arcsec [0.92σ]  
OotOffset-rm: 0.190 arcsec [0.69σ]  
KicOffset-rm: 0.135 arcsec [0.49σ]  
OotOffset-st: 2/1/0/0 [3]  
KicOffset-st: 2/1/0/0 [3]  
DiffImageQuality-fgm: 0.33 [1/3]  
DiffImageOverlap-fno: 0.67 [2/3]

# TCE 005771149-06, PDC Light Curves

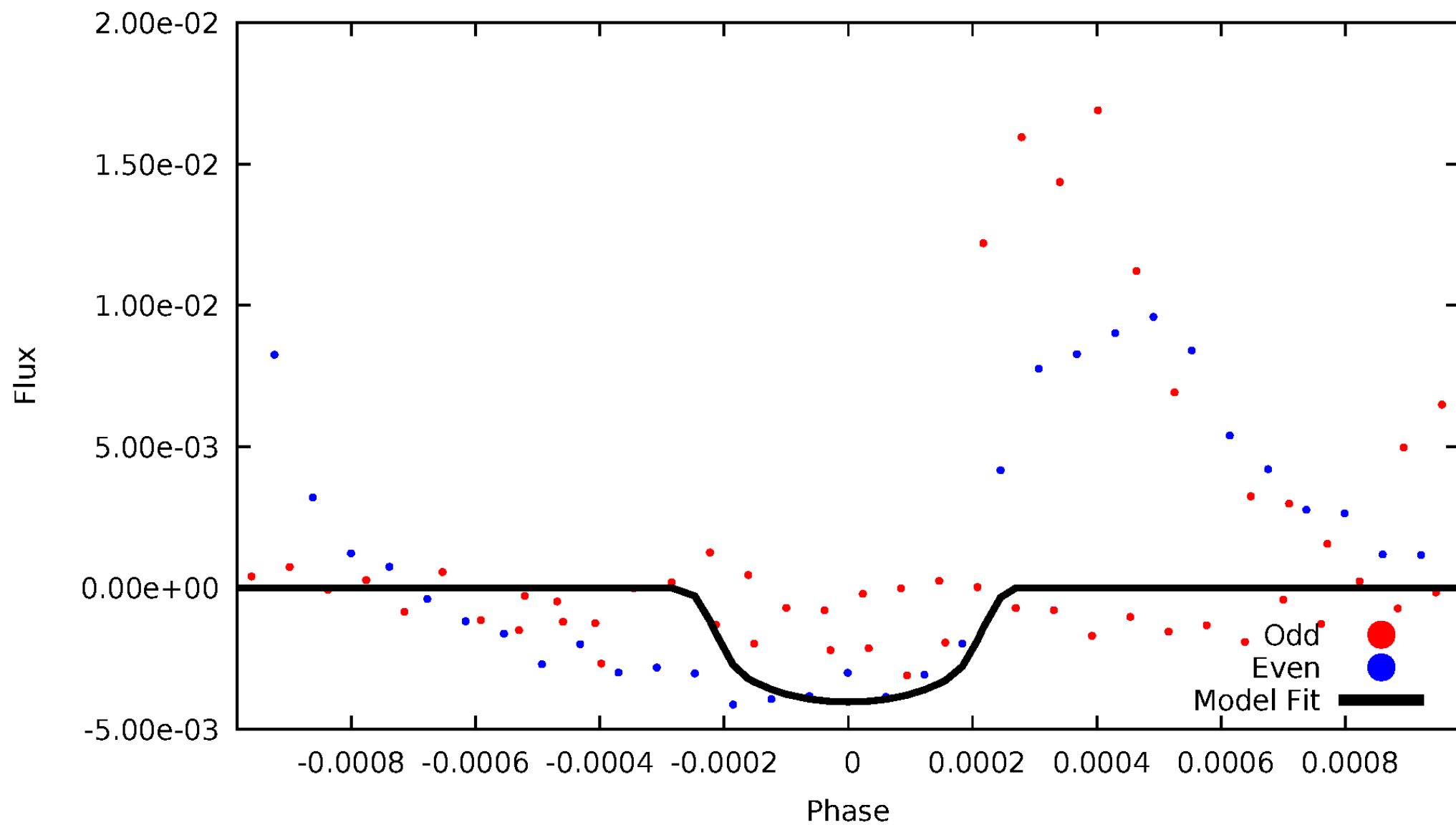


TCE 005771149-06



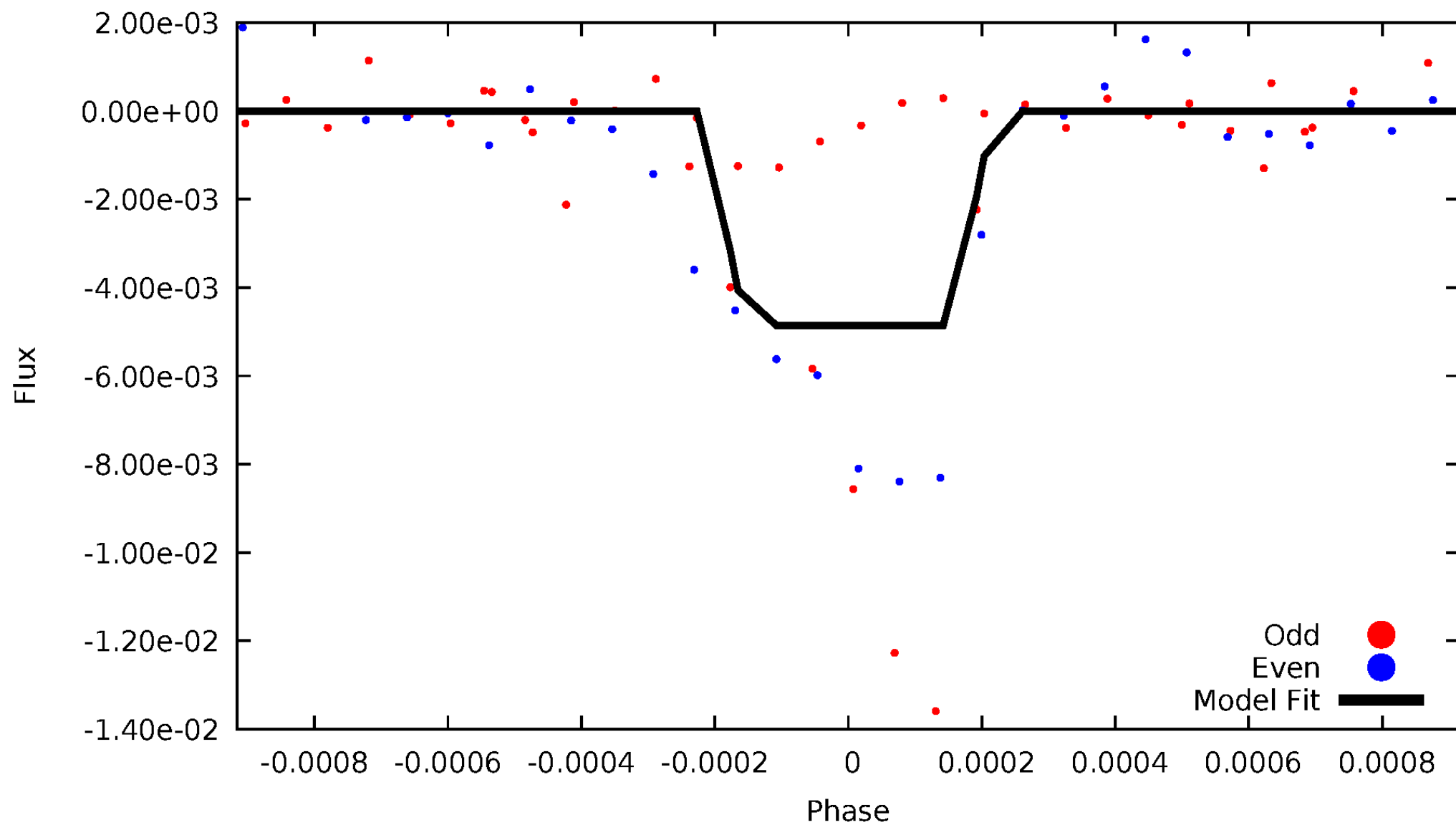
# DV Odd/Even

TCE 005771149-06



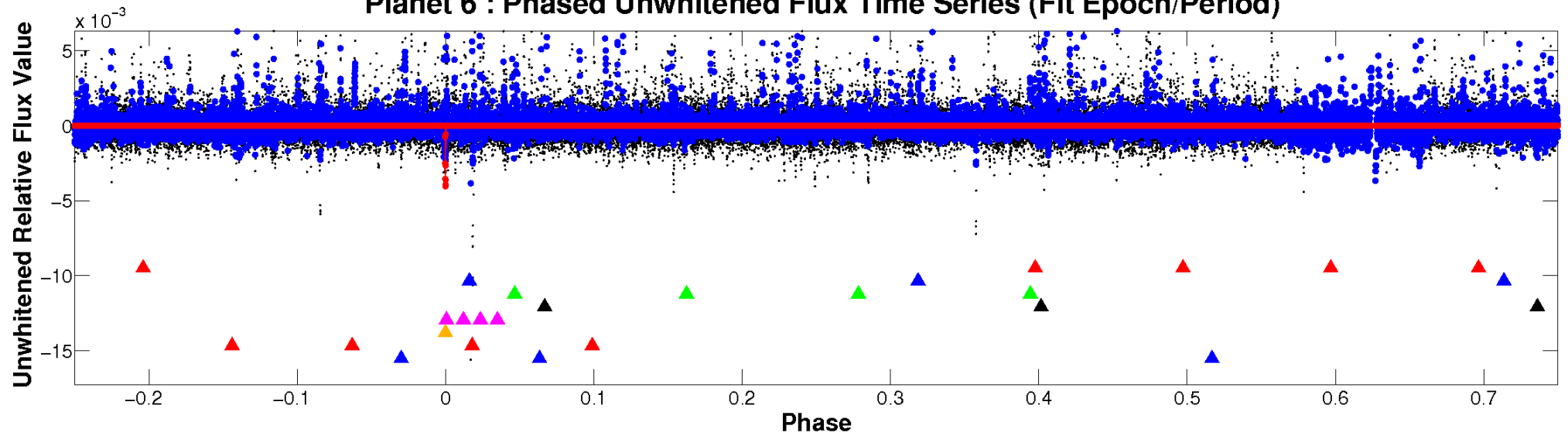
# ALT Odd/Even

TCE 005771149-06

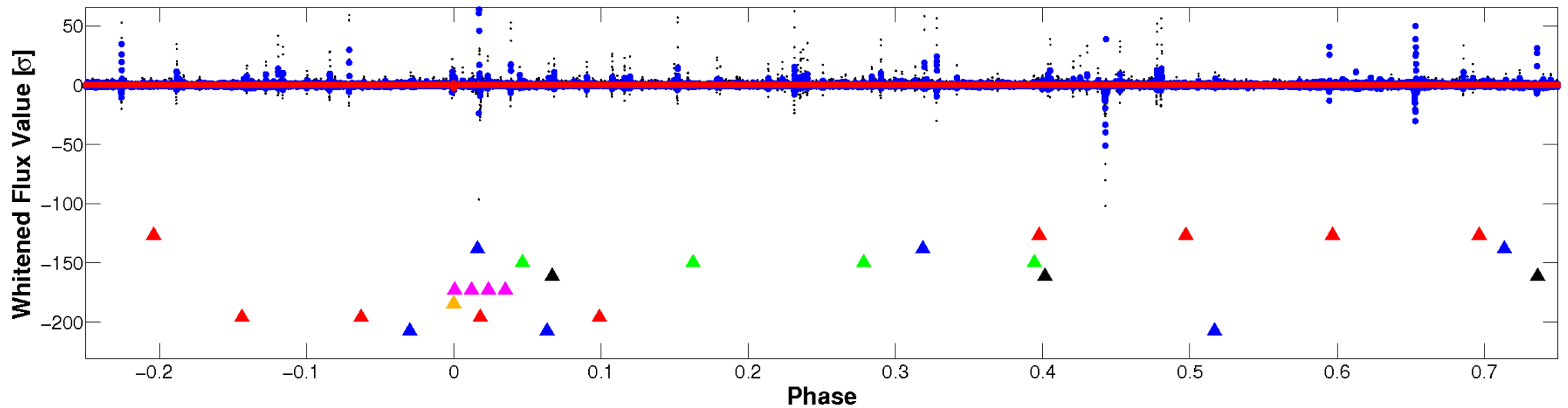


# Non-Whitened Vs. Whitened Light Curve

## Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

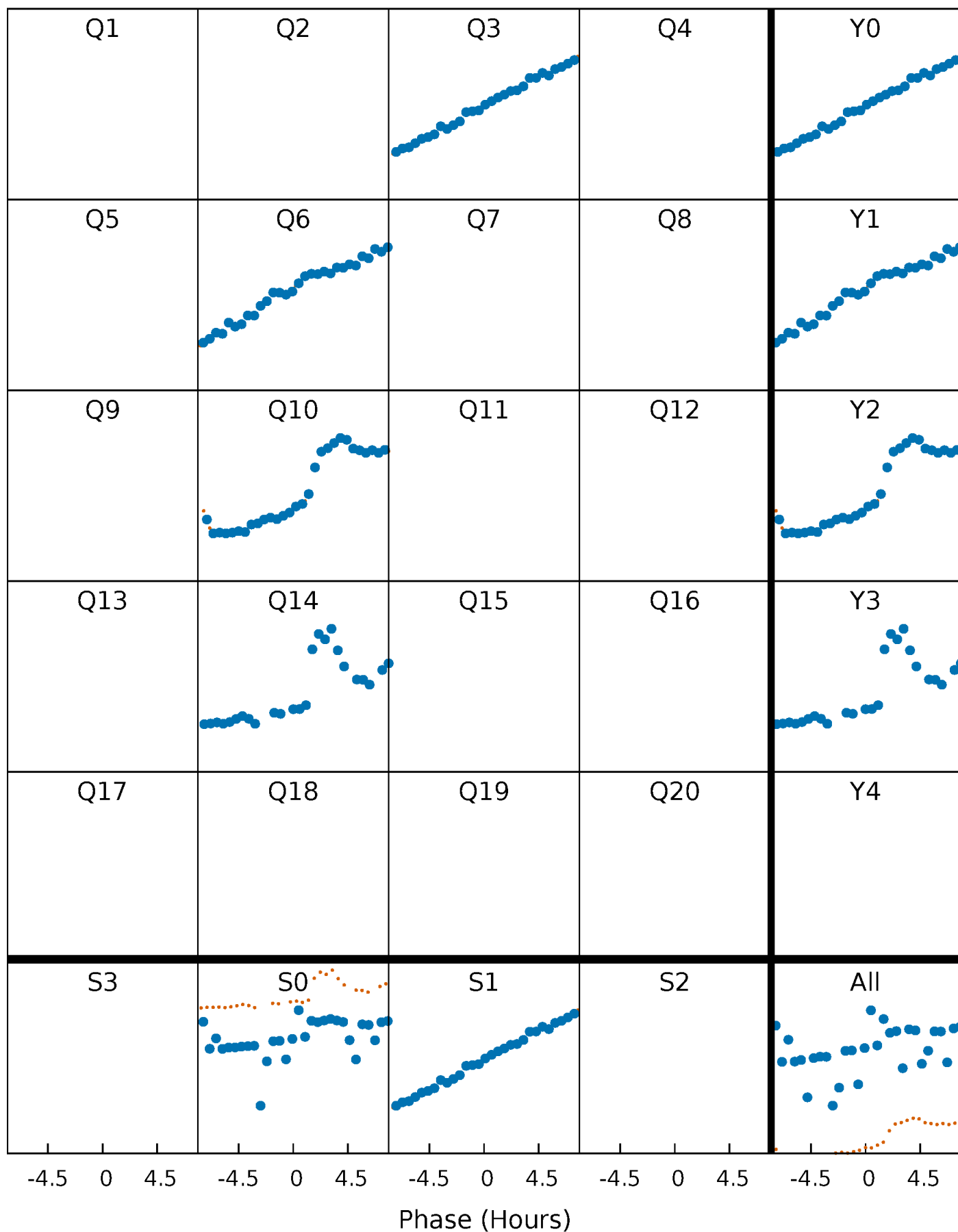


## Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

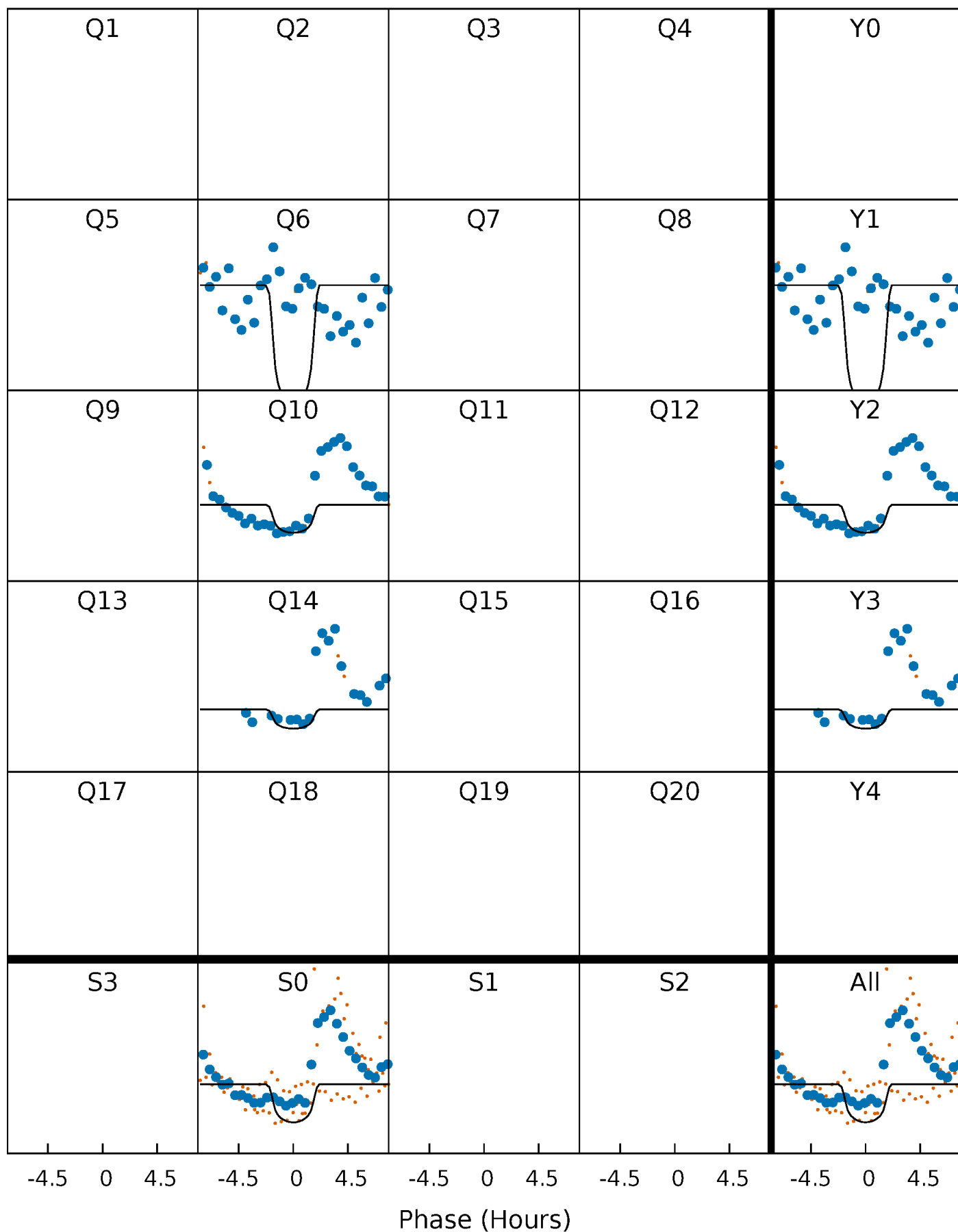
TCE 005771149-06 P=332.299915 Days  $T_0=281.970338$  (BKJD)





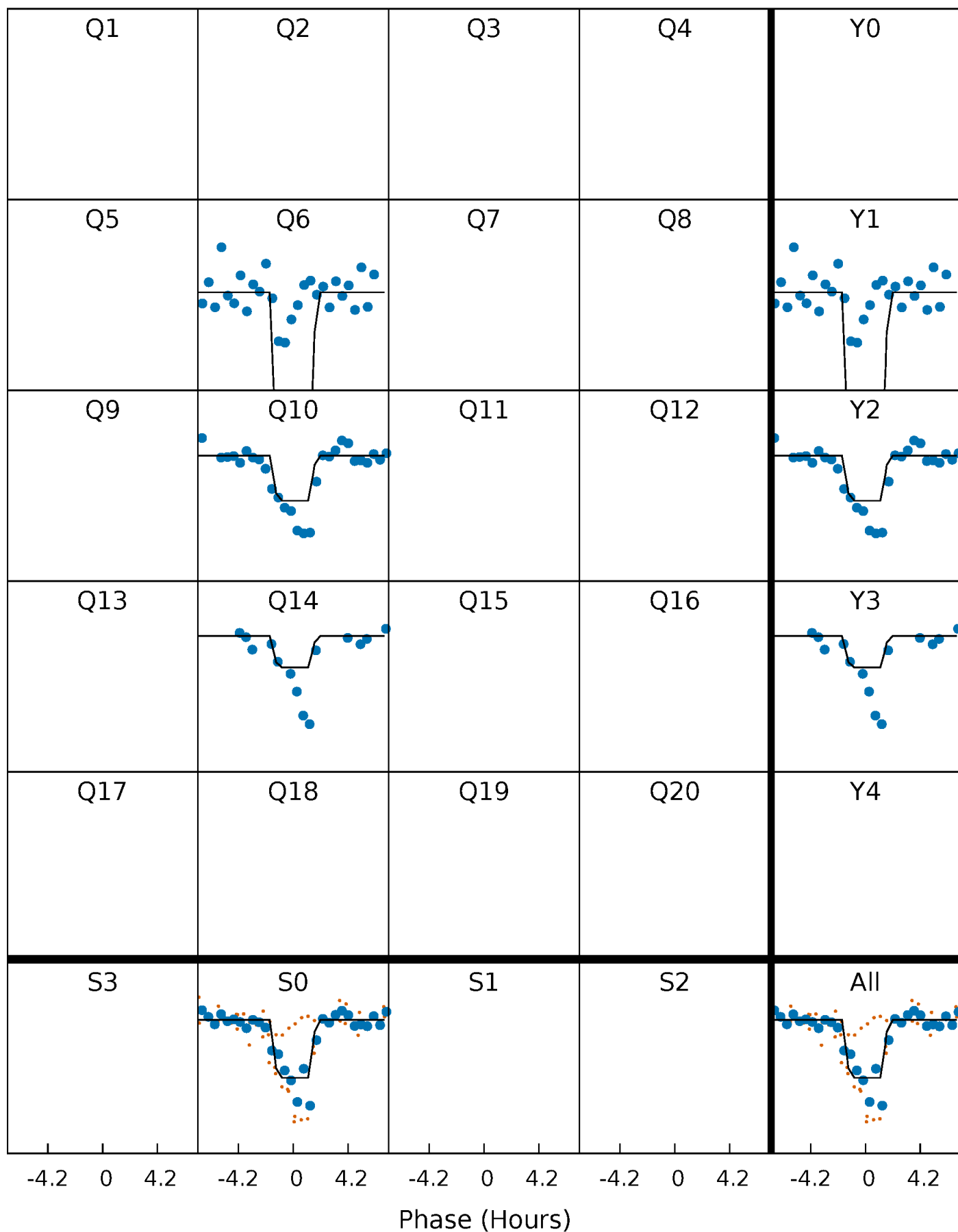
# DV Quarter-Phased Transit Curves

TCE 005771149-06 P=332.299915 Days  $T_0=281.970338$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

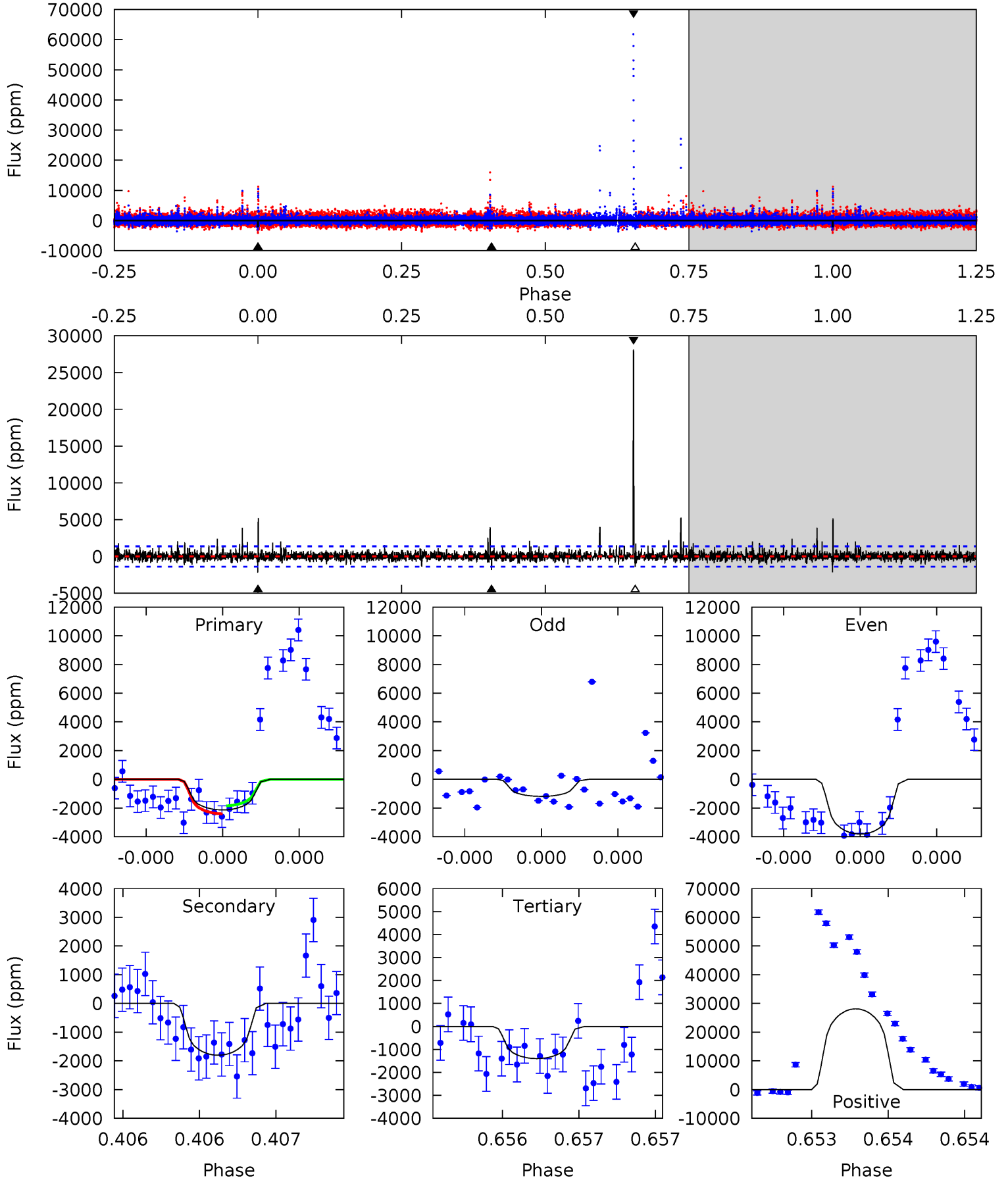
TCE 005771149-06 P=332.293179 Days  $T_0=281.998906$  (BKJD)



# DV Model-Shift Uniqueness Test

005771149-06, P = 332.299915 Days, E = 281.970338 Days

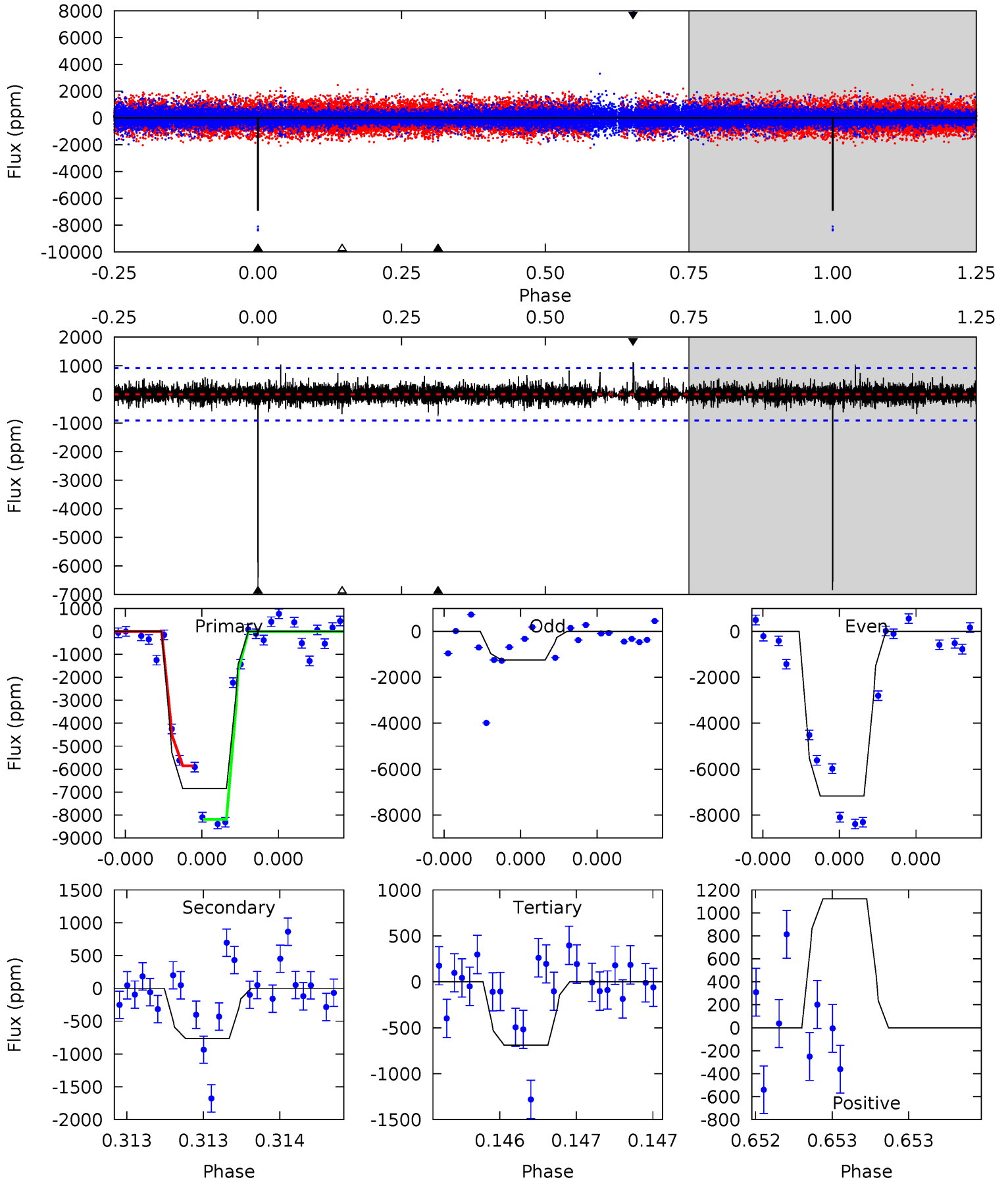
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.55	7.22	5.61	112.7	5.58	3.49	2.50	2.94	-104.1	1.61	-105.4	2.42	1.21	0.93	1.05



# Alt Model-Shift Uniqueness Test

005771149-06, P = 332.293179 Days, E = 281.998906 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
41.9	4.67	4.22	6.86	5.60	3.52	0.86	37.6	35.0	0.45	-2.19	21.3	0.80	0.14	0



### Stellar Parameters For KIC 005771149

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$4679^{+140}_{-140}$	$4.597^{+0.056}_{-0.028}$	$-0.240^{+0.300}_{-0.300}$	$0.678^{+0.054}_{-0.060}$	$0.663^{+0.082}_{-0.048}$	$2.997^{+0.749}_{-0.384}$
	+3%/-3%	+1%/-1%	+125%/-125%	+8%/-9%	+12%/-7%	+25%/-13%
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 005771149-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-1804 \pm 250$	$4.89^{+3.97}_{-2.80}$	$261^{+9}_{-9}$	$3921^{+1594}_{-682}$	$27234^{+118864}_{-19101}$
Alt.	$-764 \pm 164$	$5.59^{+3.94}_{-3.16}$	$261^{+10}_{-9}$	$3302^{+1133}_{-493}$	$9370^{+44040}_{-6291}$

$T_{max}$  = 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

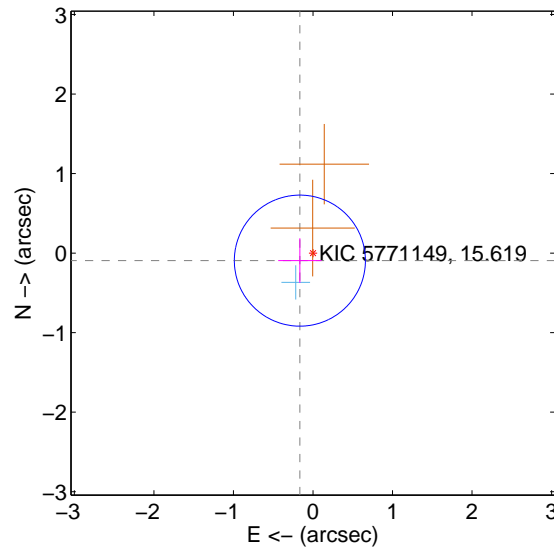
Supplemental centroid analysis for 005771149-06. Kepler magnitude: 15.62. Transit SNR 10.44

There are 1 quarters with good PRF difference image offsets

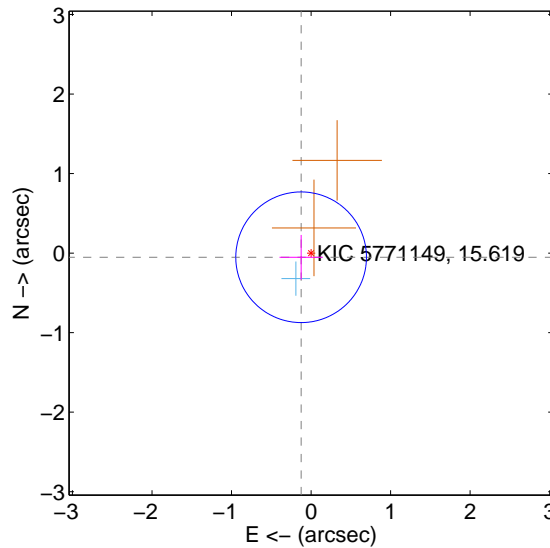
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.190 \pm 0.275$	0.69	$0.165 \pm 0.273$	$-0.095 \pm 0.281$
PRF-fit source offset from KIC position	$0.135 \pm 0.274$	0.49	$0.125 \pm 0.273$	$-0.052 \pm 0.281$
photometric centroid source offset	$0.60 \pm 0.65$	0.92	$0.55 \pm 0.60$	$-0.24 \pm 0.86$

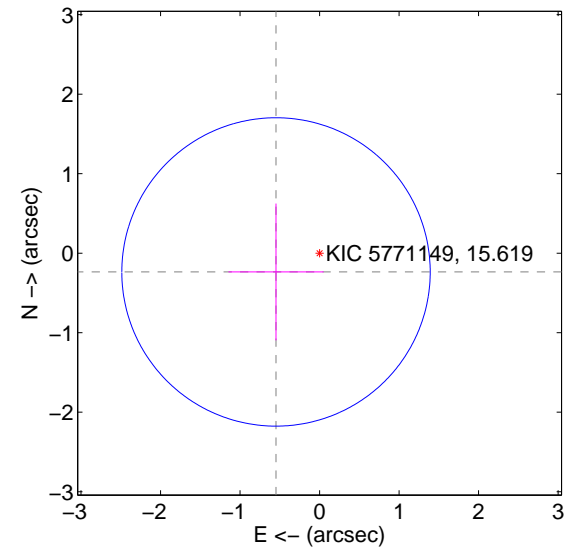
offset from difference PRF-fit to OOT PRF-fit



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.

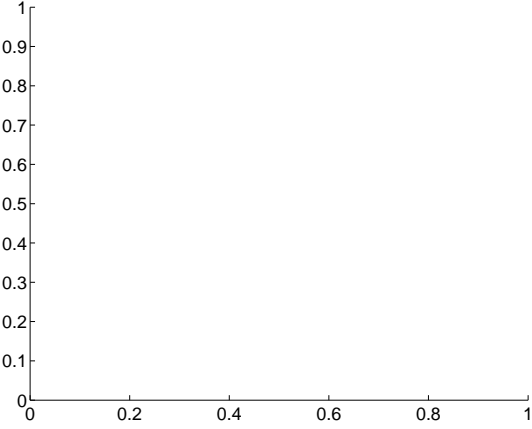
Q1 no difference image



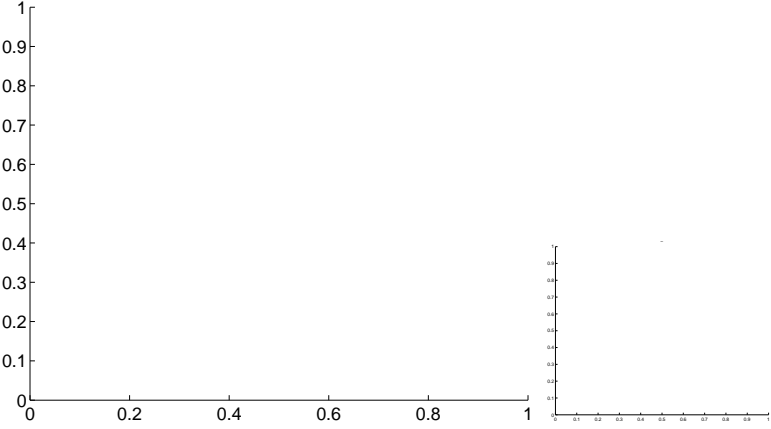
Q1 no OOT image



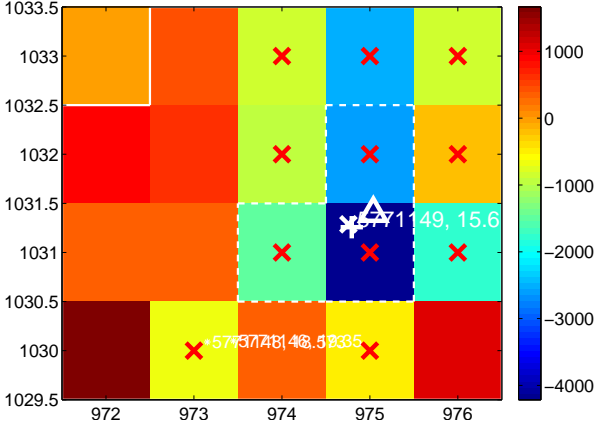
Q2 no difference image



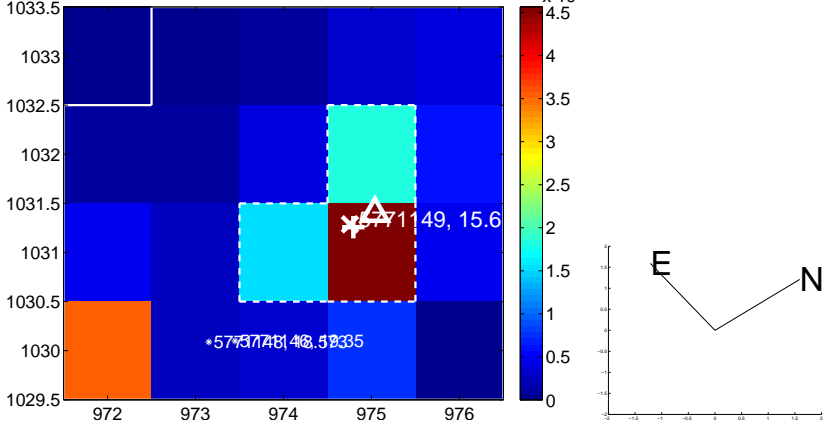
Q2 no OOT image



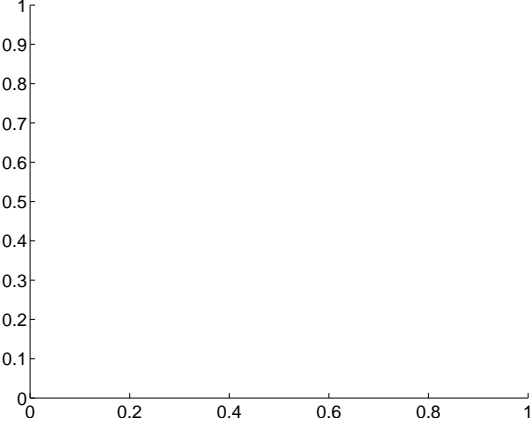
Q3 difference image. Poor Quality



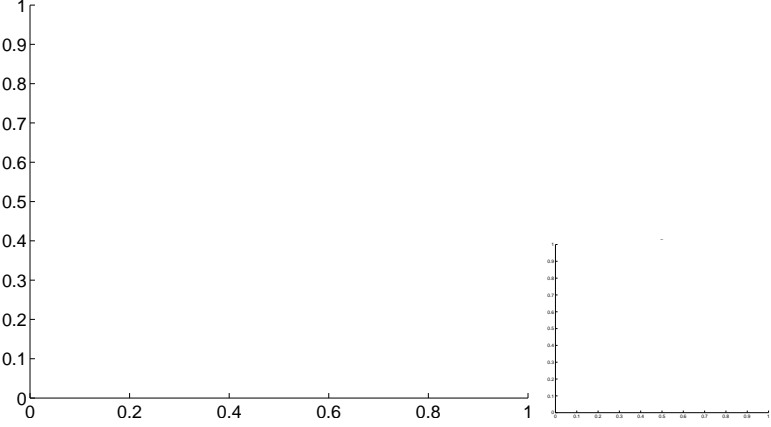
Q3 OOT image



Q4 no difference image



Q4 no OOT image



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

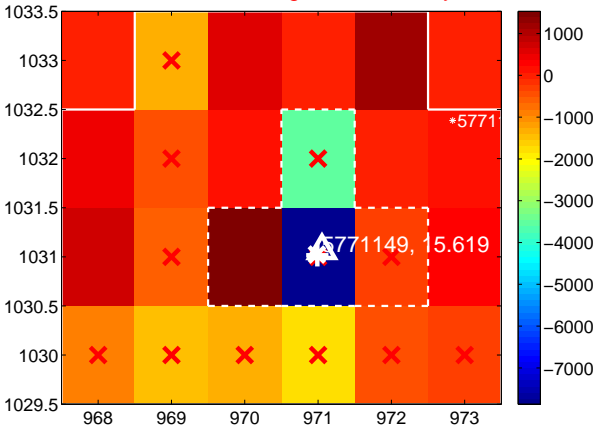
Q5 no difference image



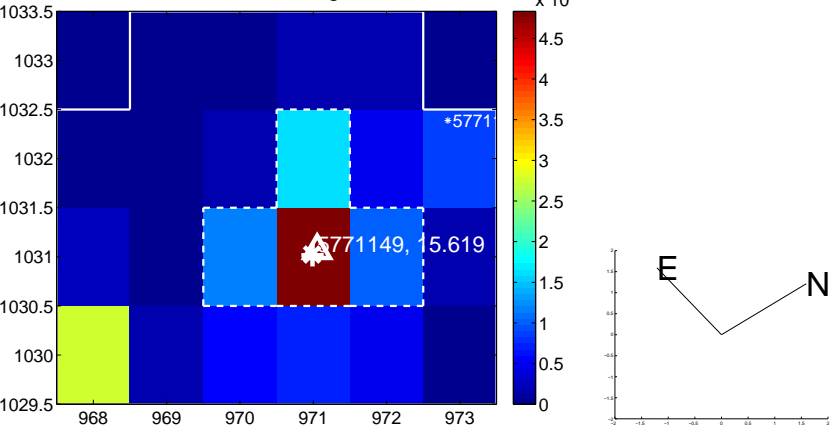
Q5 no OOT image



Q6 difference image. Poor Quality



Q6 OOT image



Q7 no difference image



Q7 no OOT image



Q8 no difference image



Q8 no OOT image





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

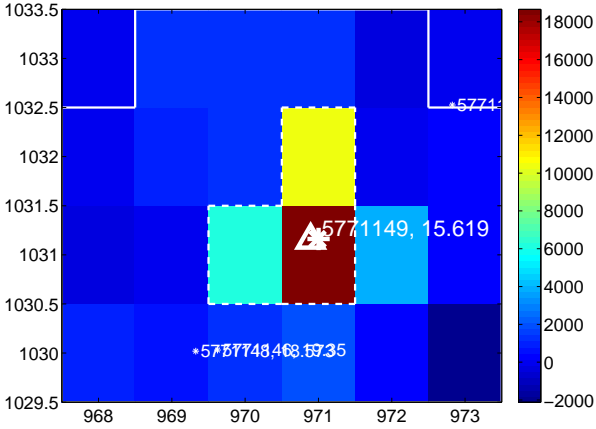
Q9 no difference image



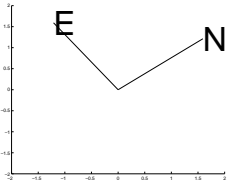
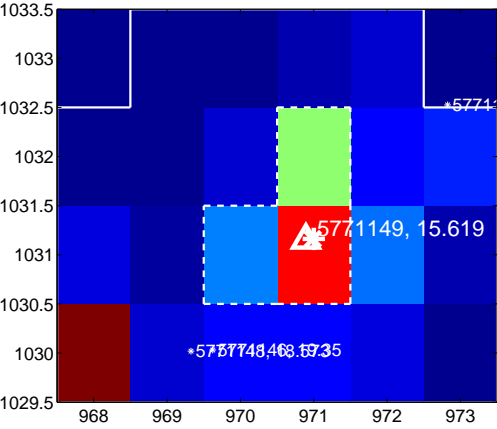
Q9 no OOT image



Q10 difference image



Q10 OOT image



Q11 no difference image



Q11 no OOT image



Q12 no difference image



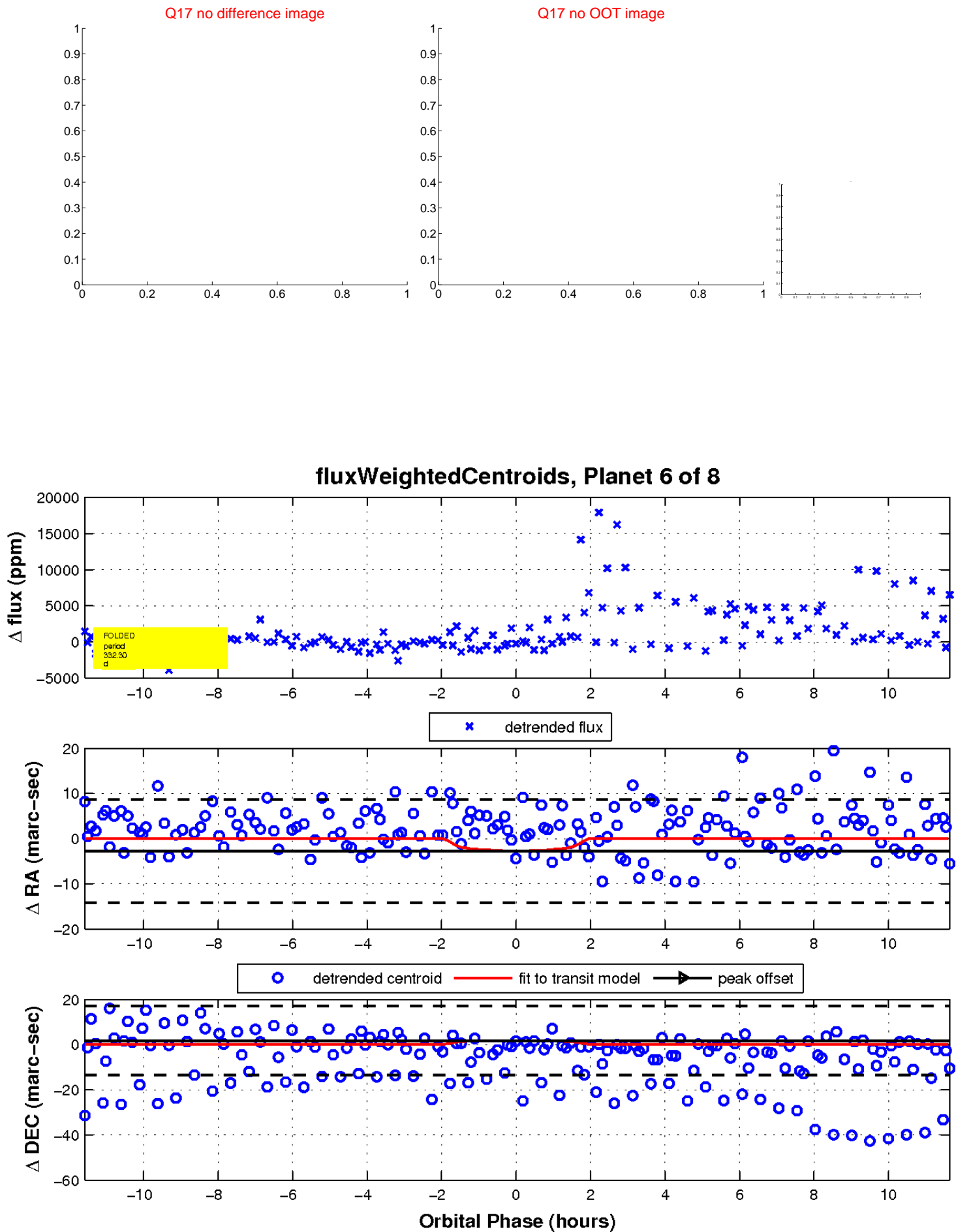
Q12 no OOT image



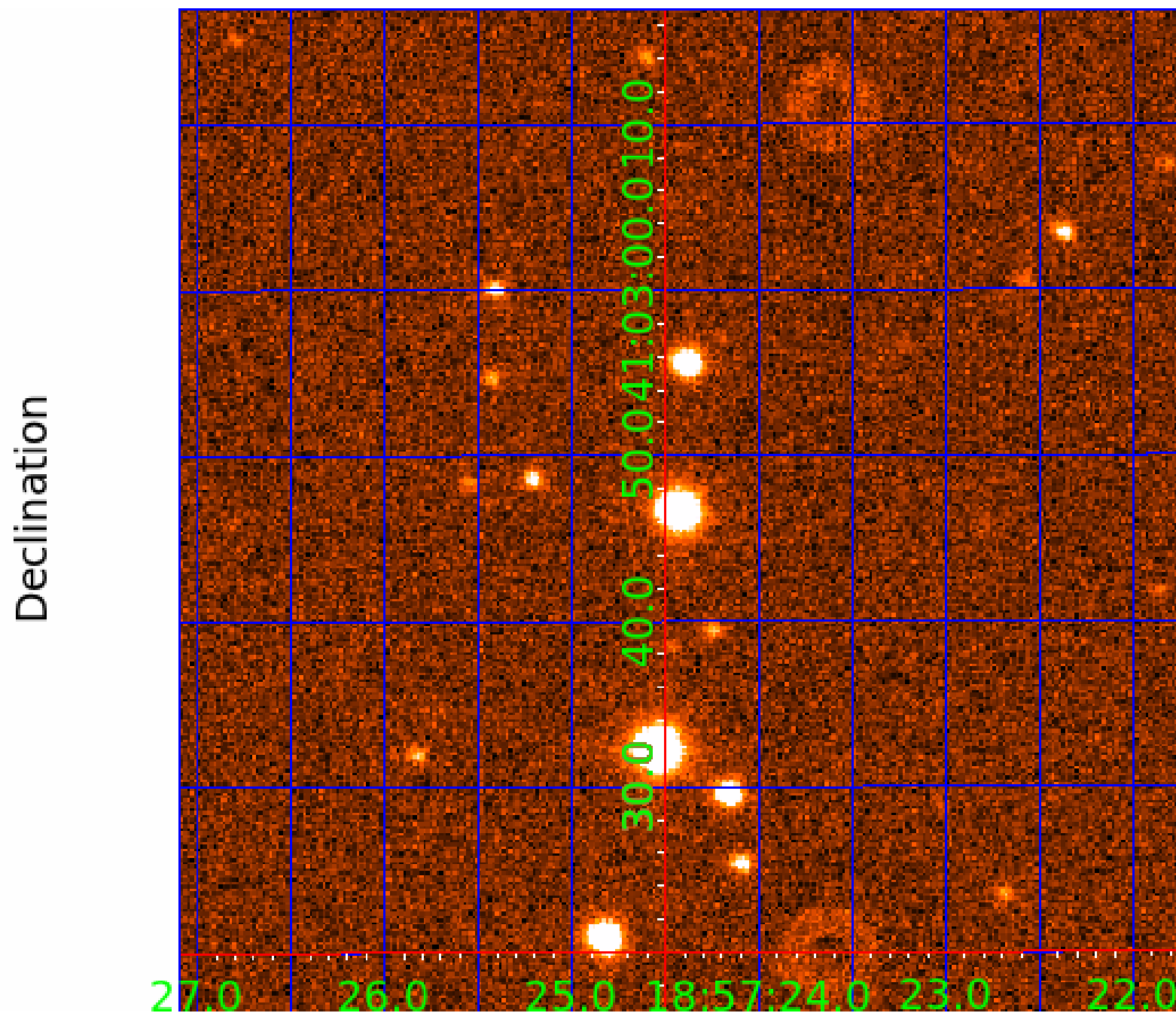
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image



## KIC 005771149

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005771149-01	OBS	No	299.193035	214.235905	3568.4	15.104	26.5	8.4	0.68	4679	3.89	0.34
005771149-02	OBS	No	564.073757	387.860137	28.2	4.504	31.7	0.1	0.68	4679	0.37	0.14
005771149-03	OBS	No	370.809831	297.482499	1189.6	15.866	17.7	2.5	0.68	4679	2.34	0.25
005771149-04	OBS	No	553.386661	194.319752	5505.5	18.440	18.2	11.2	0.68	4679	4.83	0.15
005771149-05	OBS	No	336.106105	282.190743	4191.4	11.273	17.8	9.4	0.68	4679	5.26	0.29
005771149-06	OBS	No	332.299915	281.970338	4035.6	3.921	18.1	10.4	0.68	4679	4.52	0.29
005771149-07	OBS	No	359.196560	234.159625	3784.1	22.363	21.8	7.3	0.68	4679	4.60	0.27
005771149-08	OBS	No	513.938585	272.058180	3252.8	8.331	13.5	8.9	0.68	4679	3.96	0.17

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005771149-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005771149-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005771149-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005771149-04	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
005771149-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005771149-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005771149-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
005771149-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

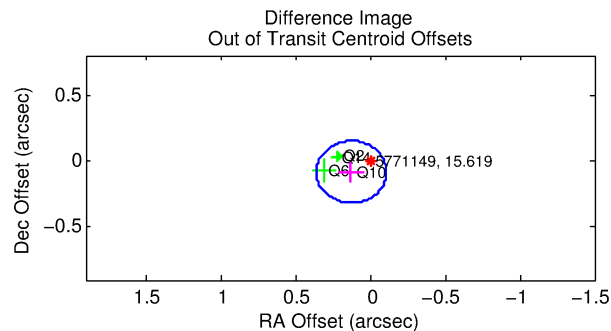
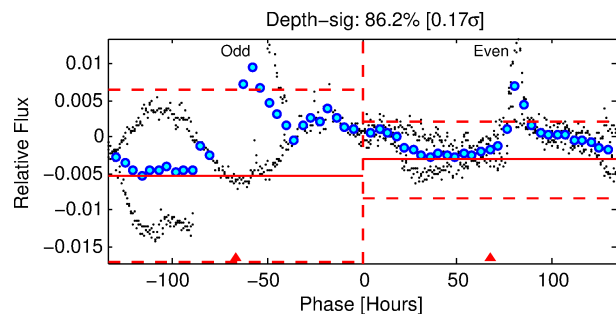
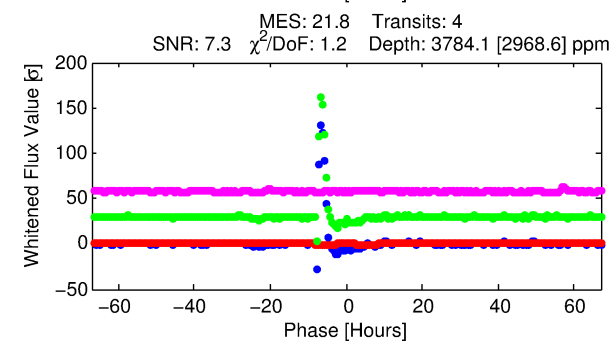
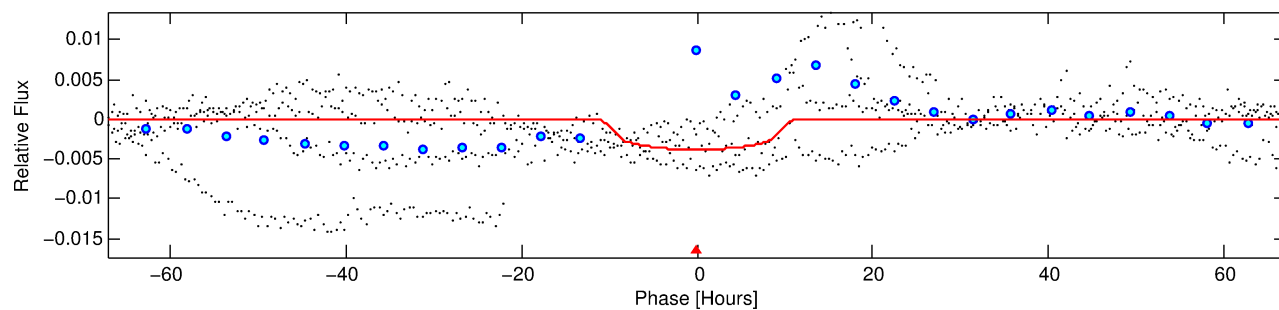
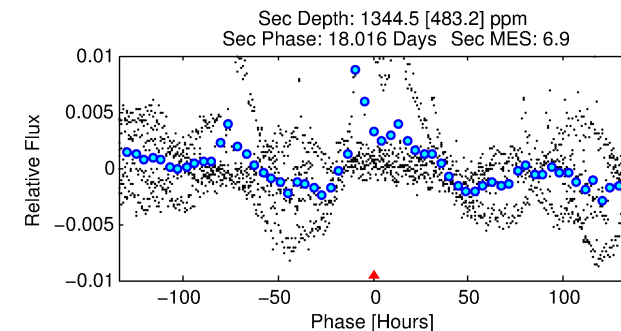
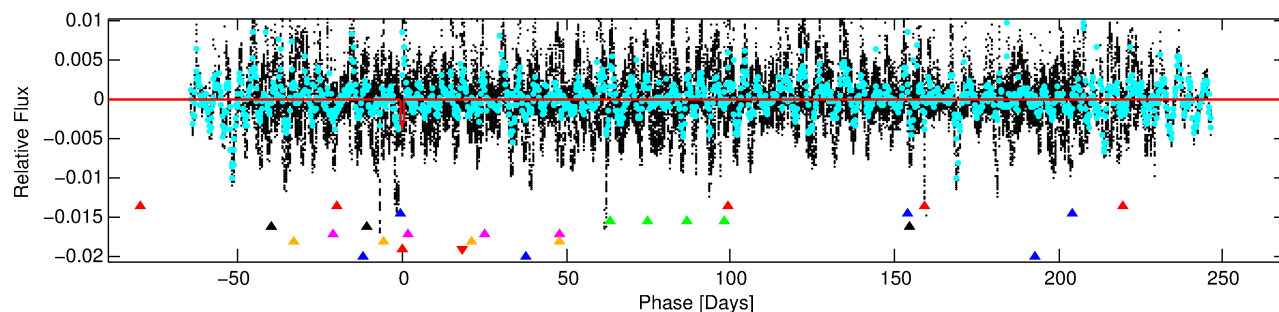
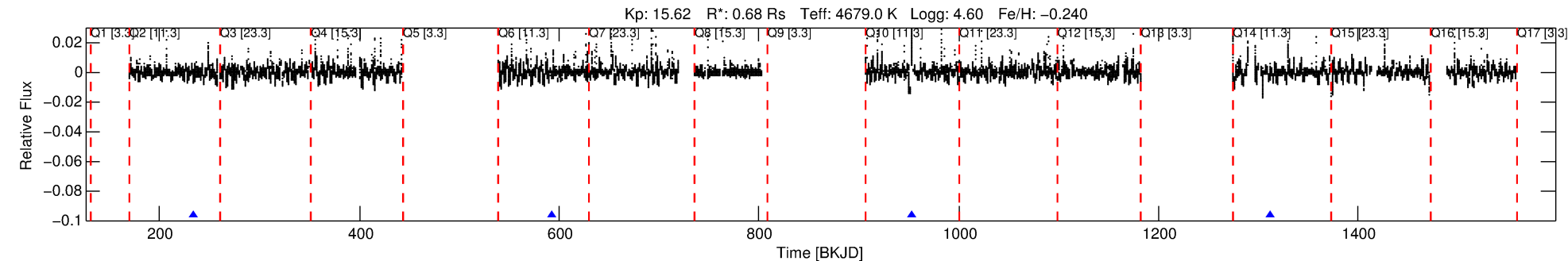
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005771149-07

No Significant Match Found

# DV One-Page Summary

KIC: 5771149 Candidate: 7 of 8 Period: 359.197 d



## DV Fit Results:

Period = 359.19656 [0.04675] d  
Epoch = 234.1596 [0.0830] BKJD  
Rp/R\* = 0.0621 [0.0303]  
a/R\* = 90.13 [69.20]  
b = 0.77 [0.42]  
Seff = 0.27 [0.04]  
Teq = 183 [7] K  
Rp = 4.60 [2.28] Re  
a = 0.8625 [0.0630] AU  
Ag = 26030.02 [27169.94] [0.96σ]  
Teffp = 3594 [939] K [3.63σ]

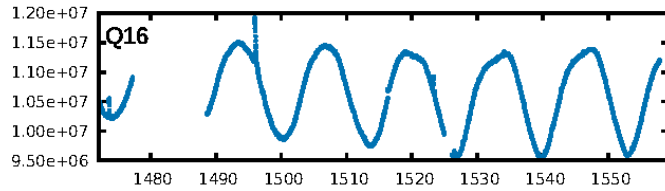
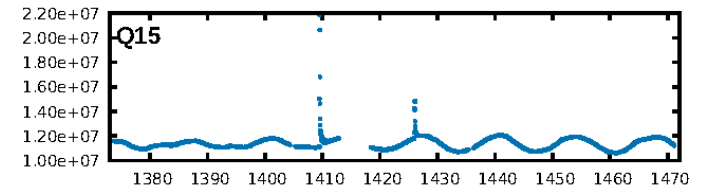
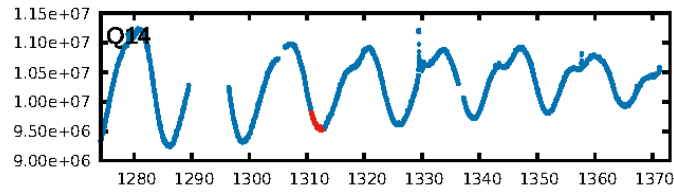
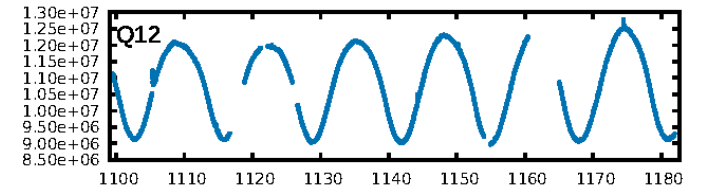
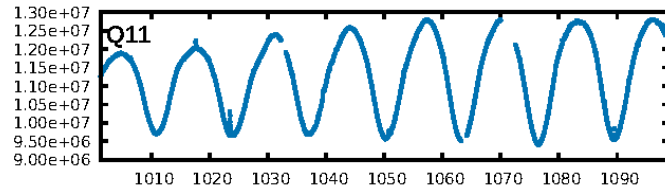
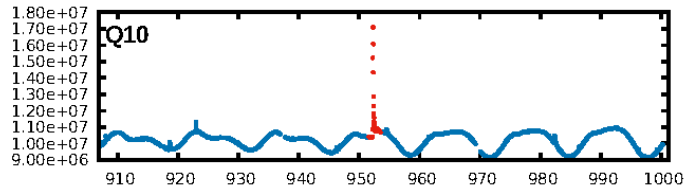
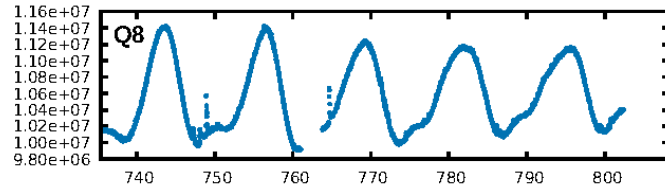
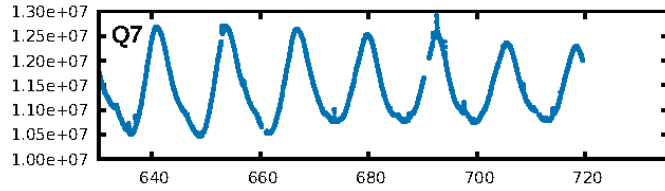
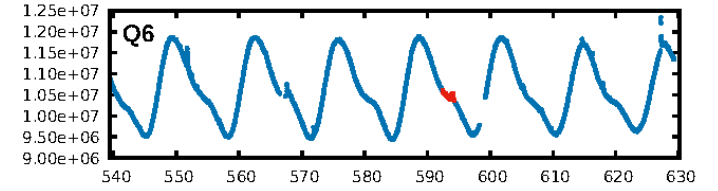
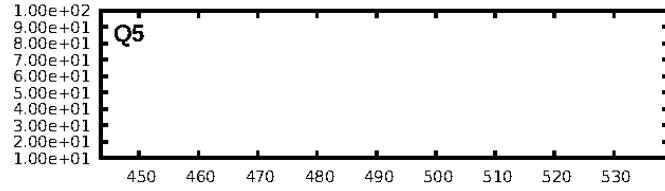
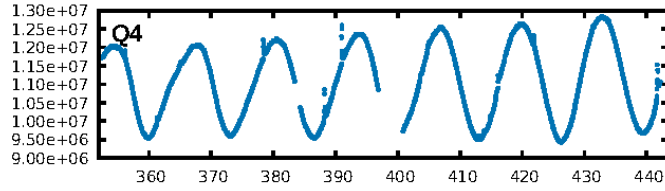
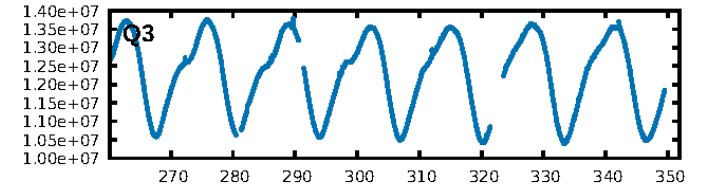
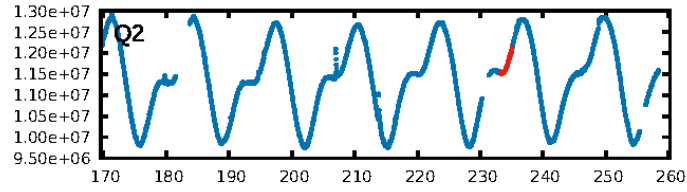
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [22.13σ]  
LongPeriod-sig: 100.0% [10.16σ]  
ModelChiSquare2-sig: 4.3%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [4/4]  
**GhostDiagnostic-chr: -0.743**  
Centroid-sig: 0.3%  
Centroid-so: 1.458 arcsec [1.72σ]  
OotOffset-rm: 0.151 arcsec [1.93σ]  
KicOffset-rm: 0.139 arcsec [1.94σ]  
OotOffset-st: 4/0/0/0 [4]  
KicOffset-st: 4/0/0/0 [4]  
DiffImageQuality-fgm: 0.75 [3/4]  
DiffImageOverlap-fno: 0.75 [3/4]

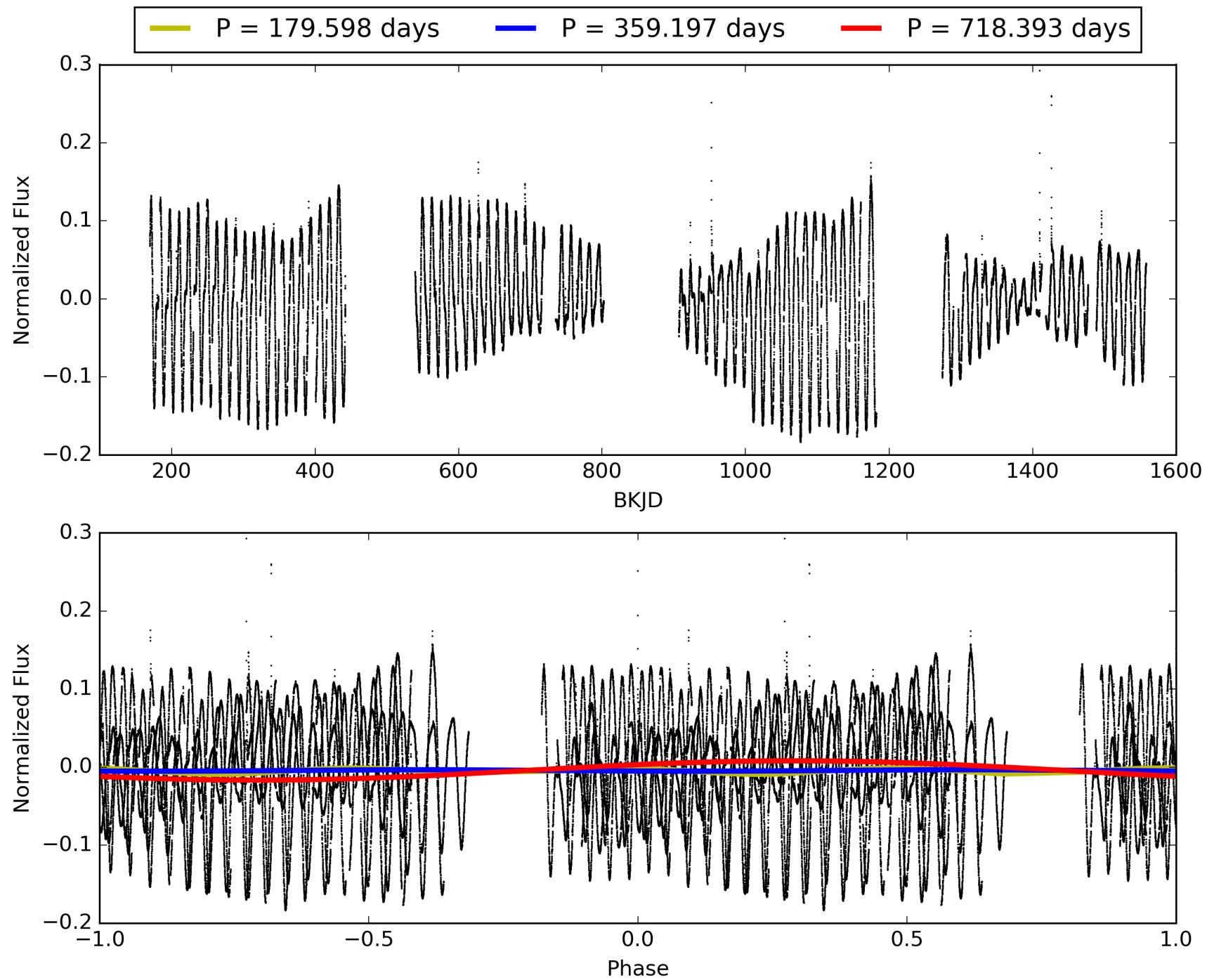
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:37:27 Z

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

# TCE 005771149-07, PDC Light Curves



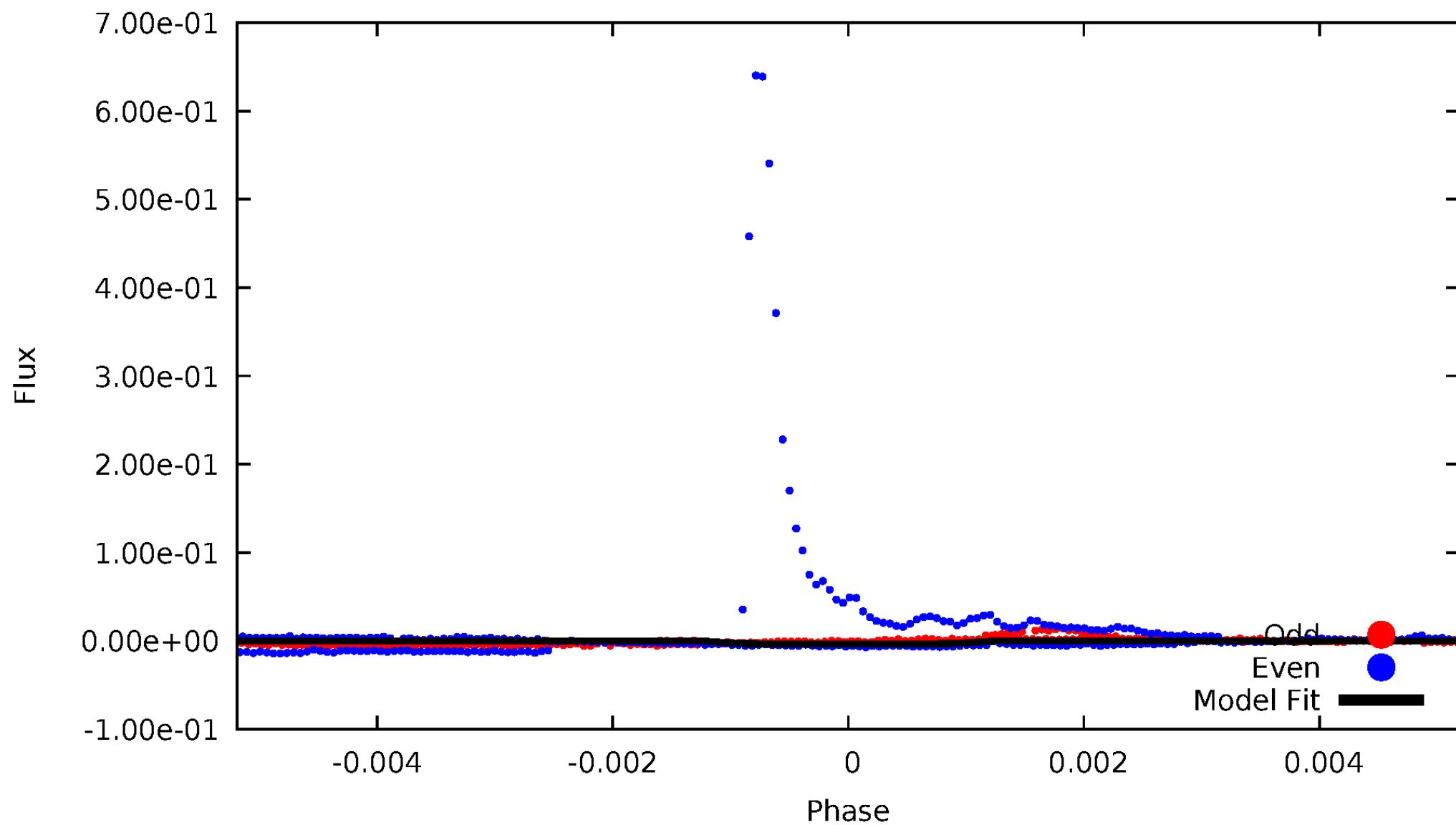
TCE 005771149-07





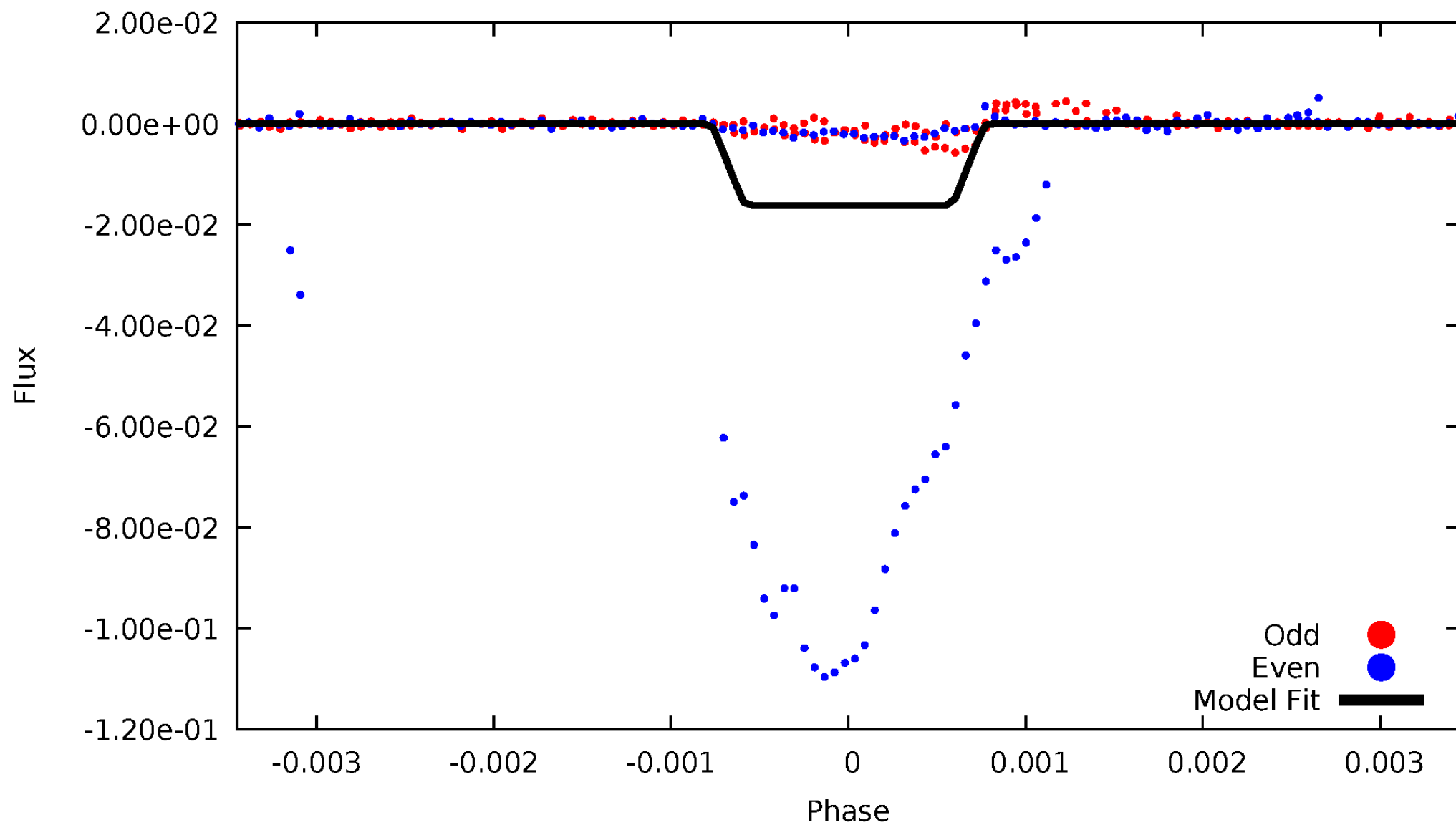
# DV Odd/Even

TCE 005771149-07



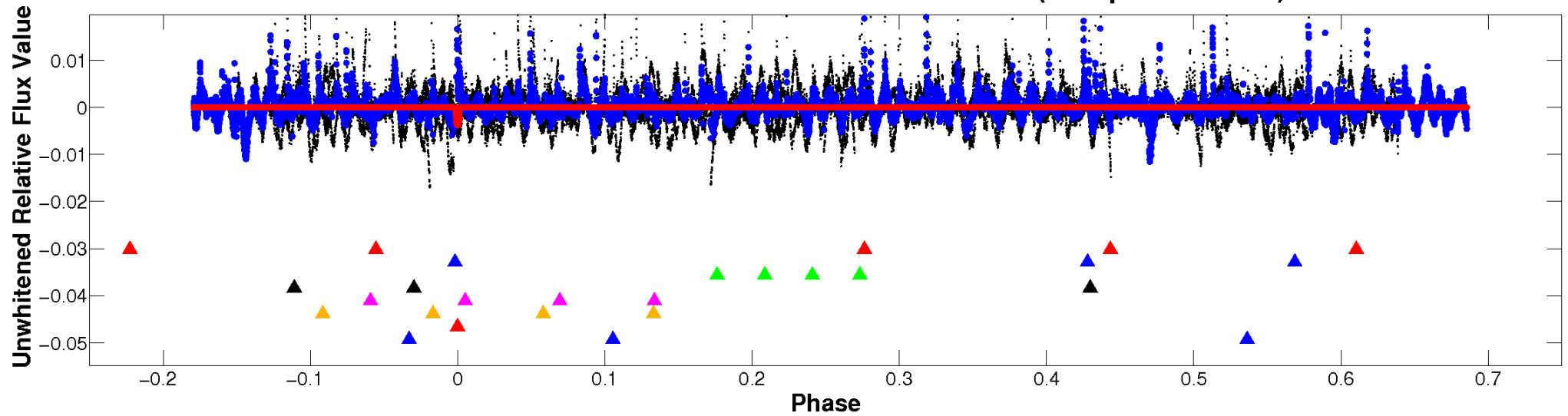
# ALT Odd/Even

TCE 005771149-07

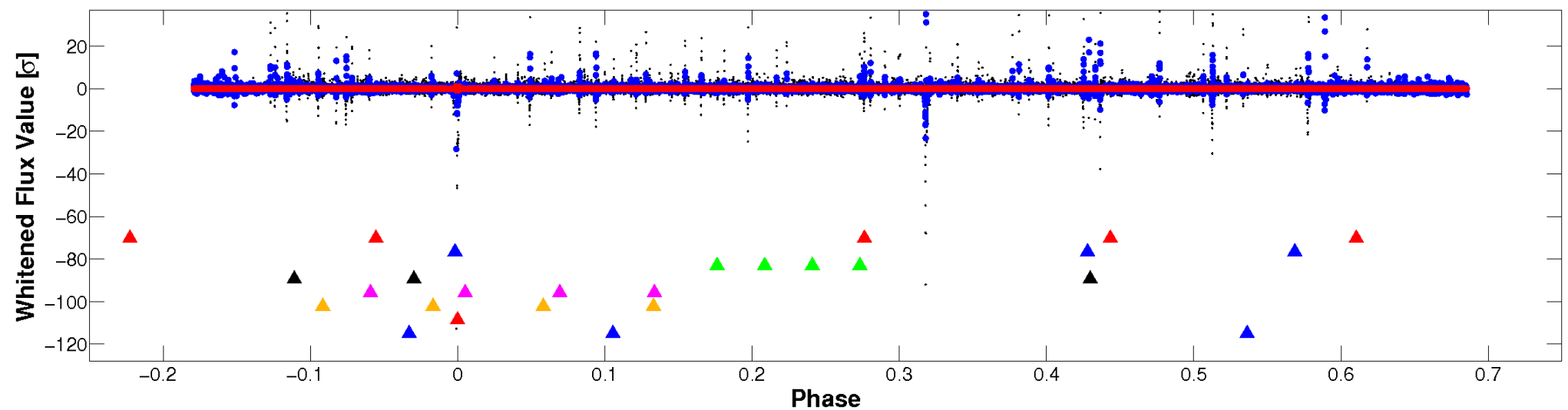


# Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

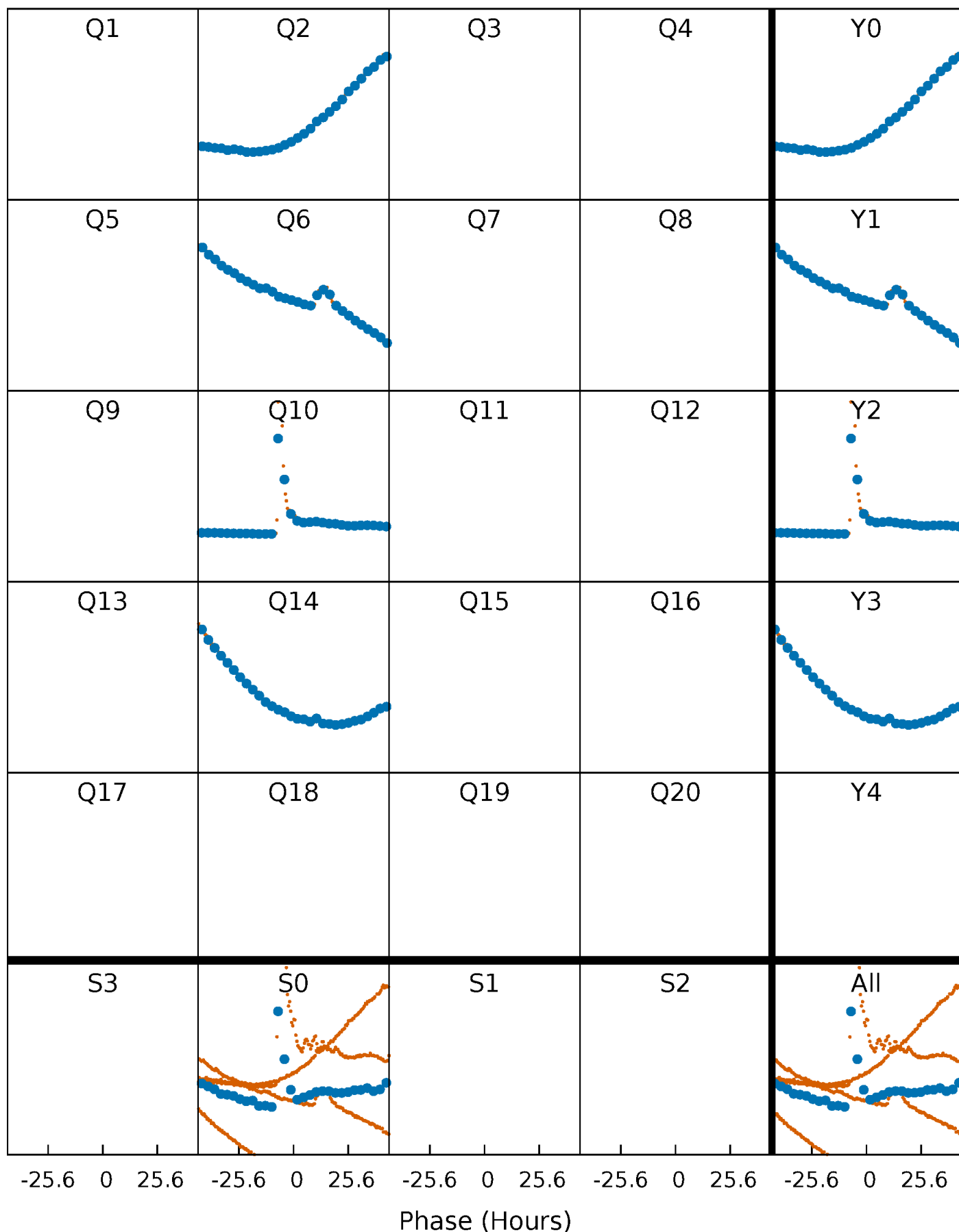


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



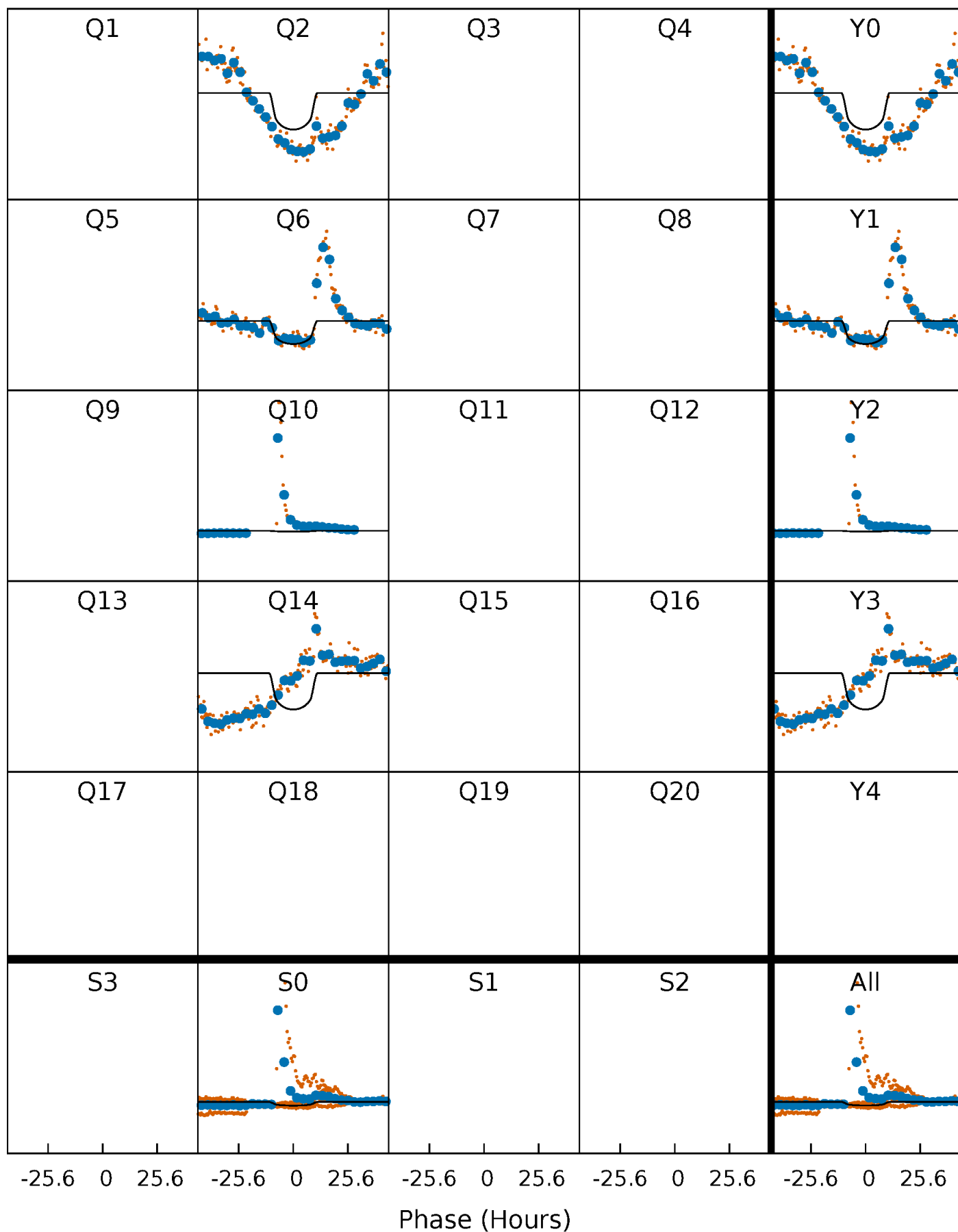
# PDC Quarter-Phased Transit Curves

TCE 005771149-07 P=359.196560 Days  $T_0=234.159625$  (BKJD)



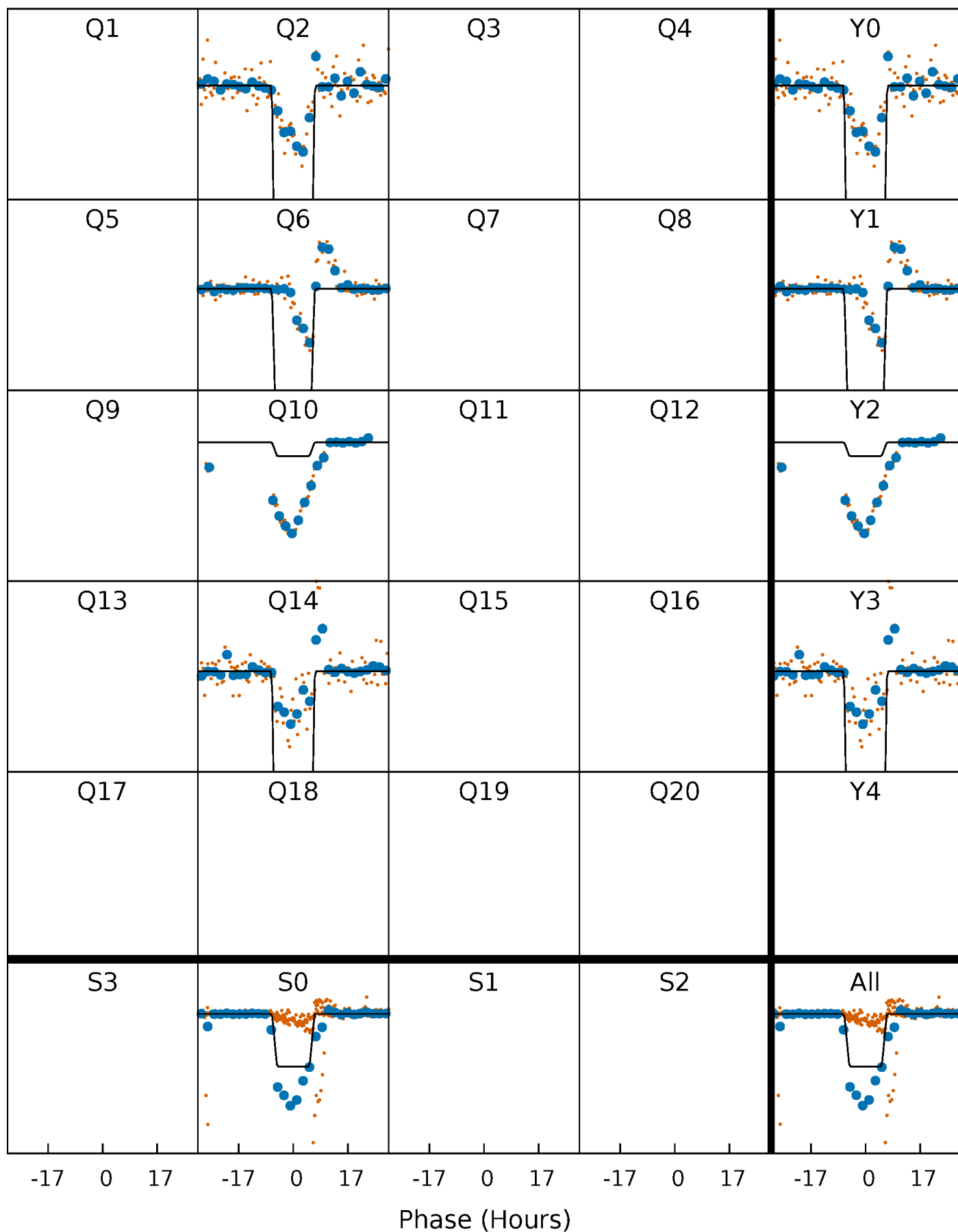
# DV Quarter-Phased Transit Curves

TCE 005771149-07 P=359.196560 Days  $T_0=234.159625$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

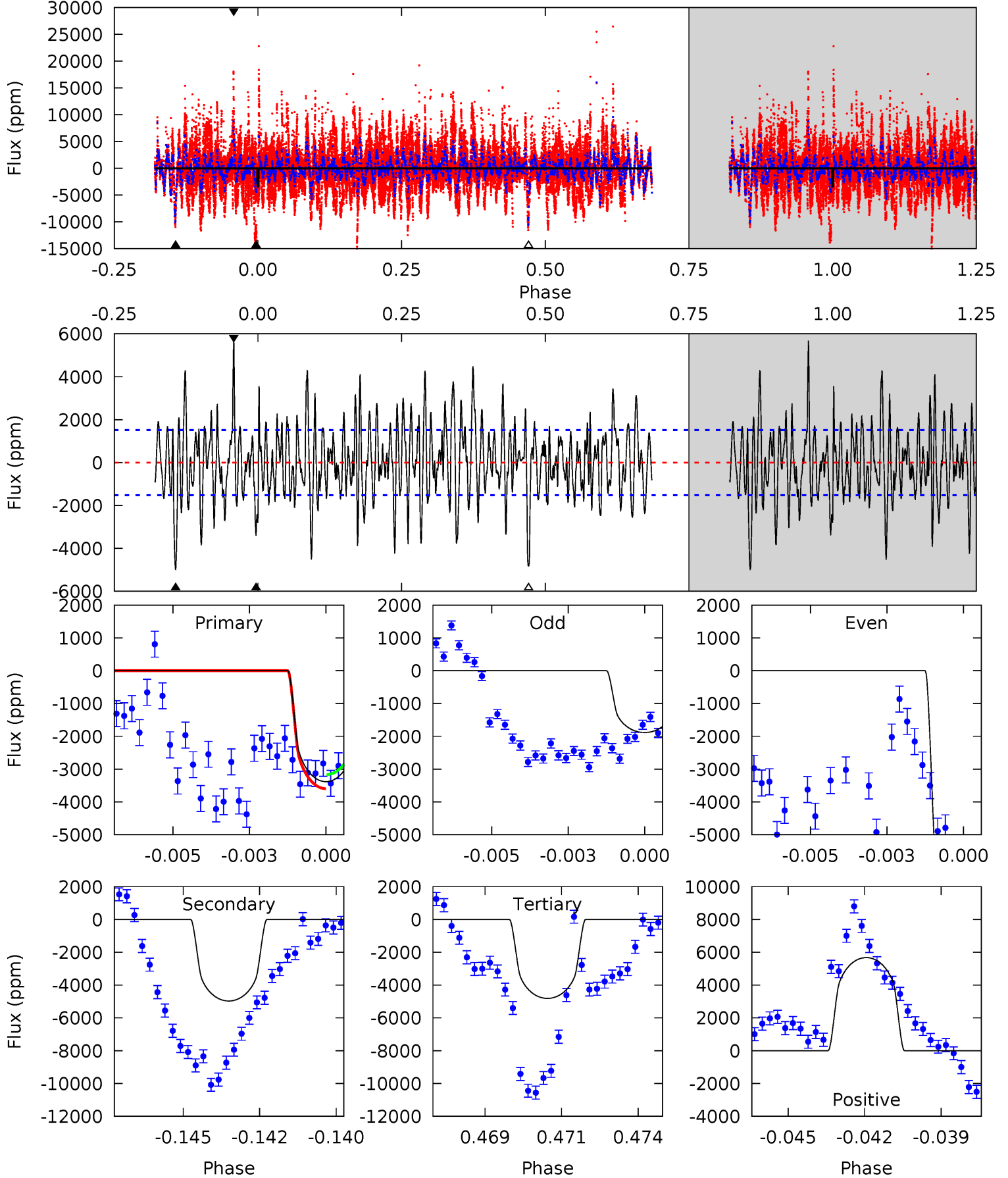
TCE 005771149-07 P=359.181118 Days  $T_0=234.324646$  (BKJD)



# DV Model-Shift Uniqueness Test

005771149-07, P = 359.196560 Days, E = 234.159625 Days

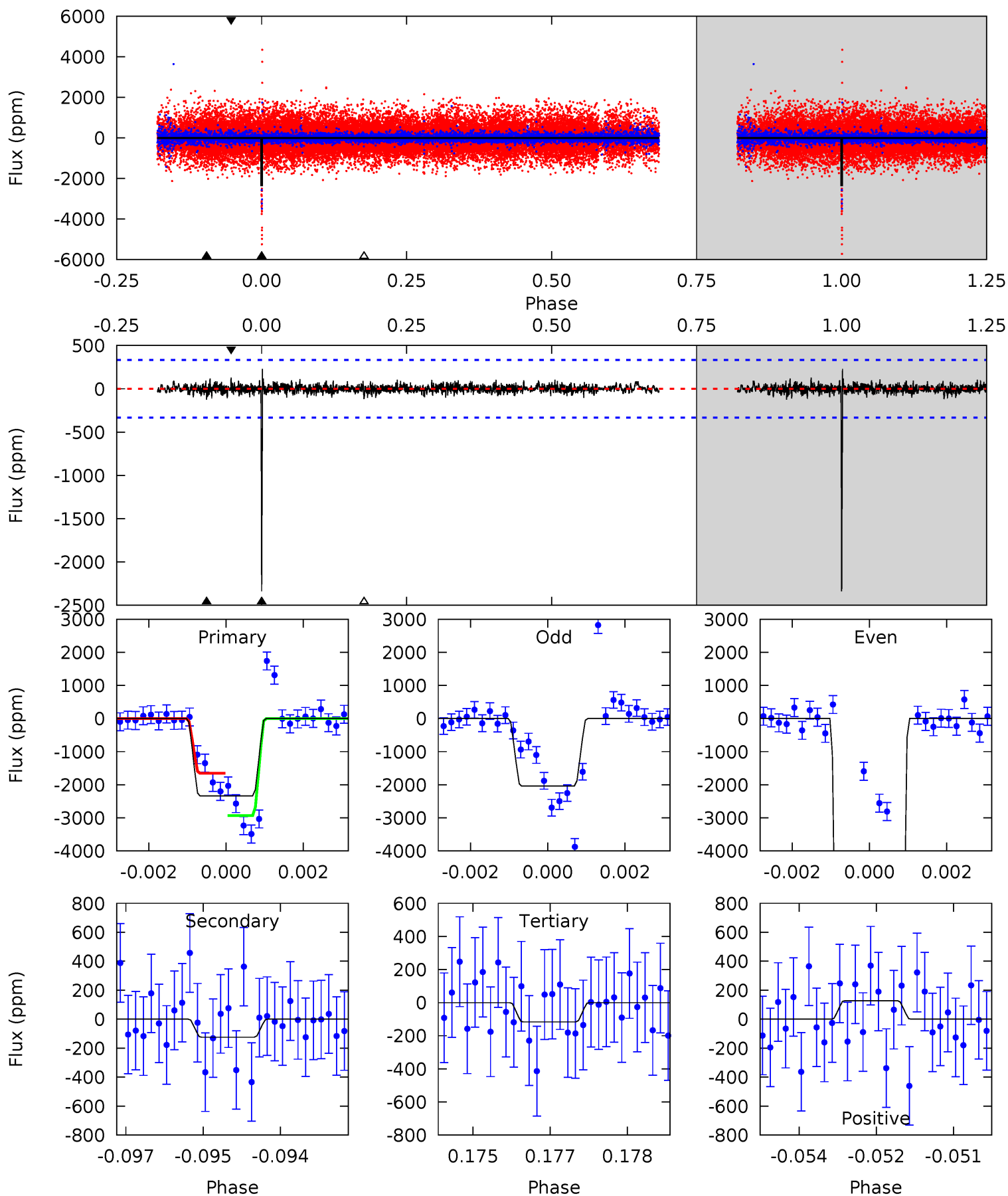
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	17.3	16.7	19.7	5.28	3.01	5.24	-4.98	-7.96	0.54	-2.44	10.9	-15.2	0.53	0.75



# Alt Model-Shift Uniqueness Test

005771149-07, P = 359.181118 Days, E = 234.324646 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
37.6	2.01	1.88	2.06	5.37	3.16	0.48	35.7	35.5	0.13	-0.05	165.3	11.6	0.09	10.0





### Stellar Parameters For KIC 005771149

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$4679^{+140}_{-140}$	$4.597^{+0.056}_{-0.028}$	$-0.240^{+0.300}_{-0.300}$	$0.678^{+0.054}_{-0.060}$	$0.663^{+0.082}_{-0.048}$	$2.997^{+0.749}_{-0.384}$
	+3%/-3%	+1%/-1%	+125%/-125%	+8%/-9%	+12%/-7%	+25%/-13%
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 005771149-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-4971 \pm 288$	$4.63^{+2.21}_{-2.06}$	$254^{+9}_{-8}$	$4905^{+1553}_{-713}$	$95808^{+223313}_{-51764}$
Alt.	$-125 \pm 62$	$9.24^{+2.32}_{-1.97}$	$254^{+9}_{-9}$	$2273^{+173}_{-185}$	$607^{+515}_{-329}$

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

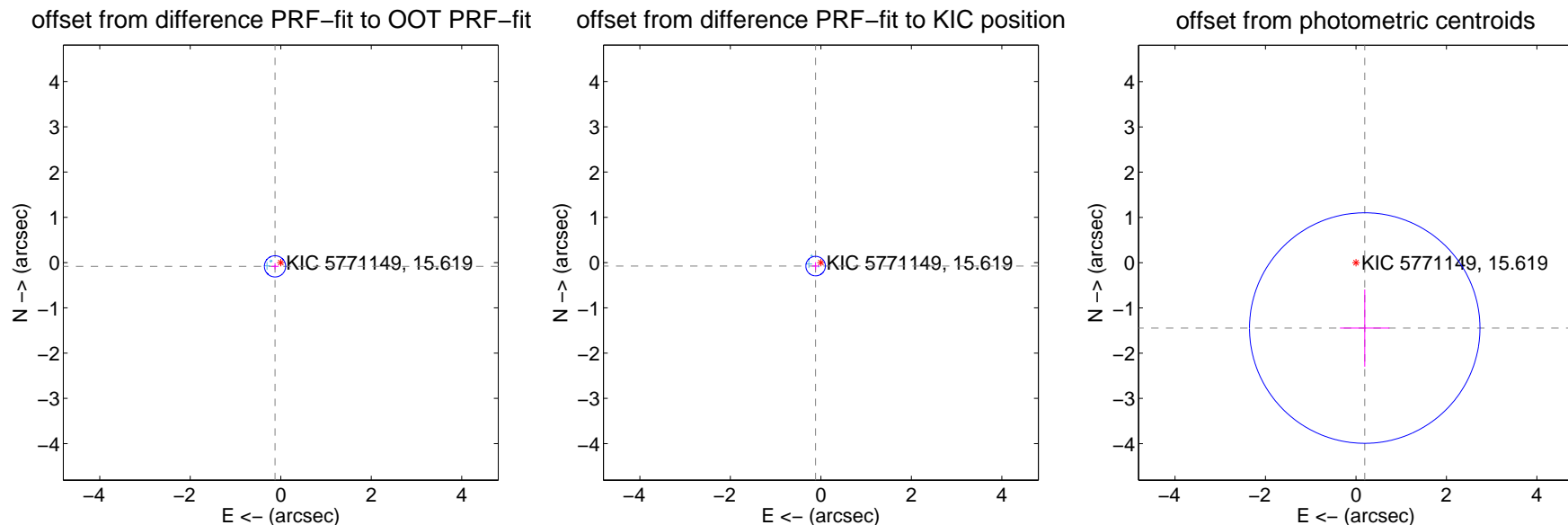
## DV Centroid Data

Supplemental centroid analysis for 005771149-07. Kepler magnitude: 15.62. Transit SNR 7.32

There are 3 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	$0.151 \pm 0.078$	1.93	$0.126 \pm 0.079$	$-0.083 \pm 0.071$
PRF-fit source offset from KIC position	$0.139 \pm 0.072$	1.94	$0.116 \pm 0.080$	$-0.077 \pm 0.085$
photometric centroid source offset	$1.46 \pm 0.85$	1.72	$-0.19 \pm 0.55$	$-1.45 \pm 0.85$



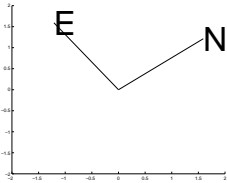
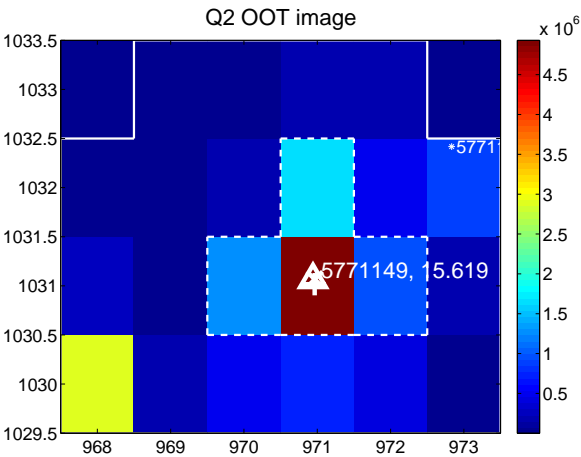
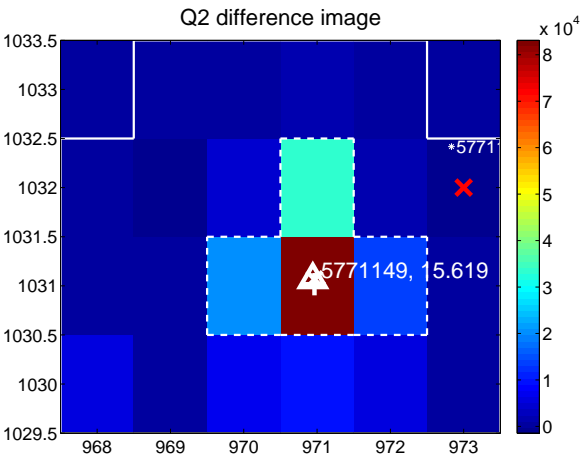
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

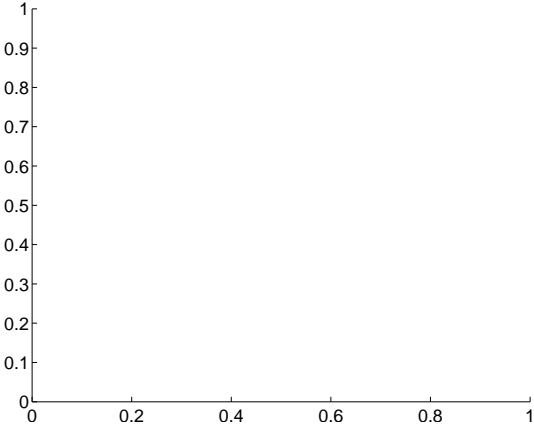
Q1 no difference image



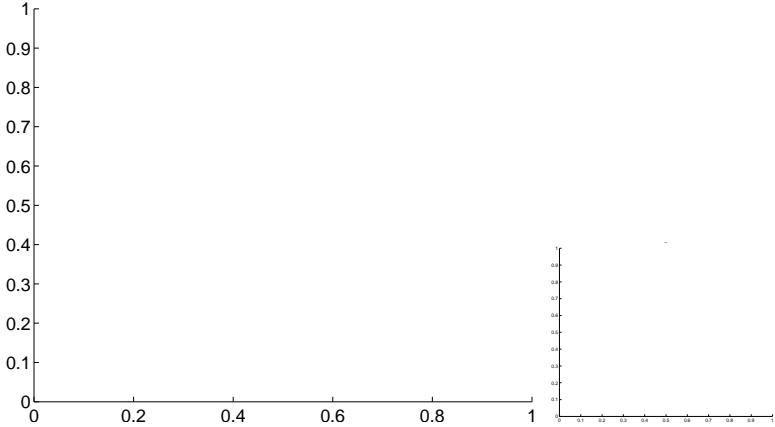
Q1 no OOT image



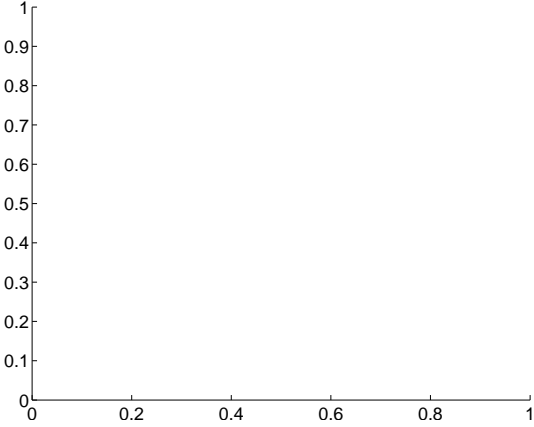
Q3 no difference image



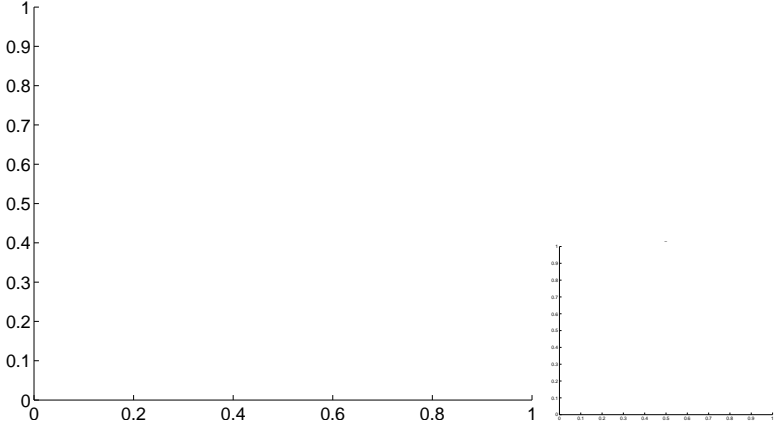
Q3 no OOT image



Q4 no difference image



Q4 no OOT image



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

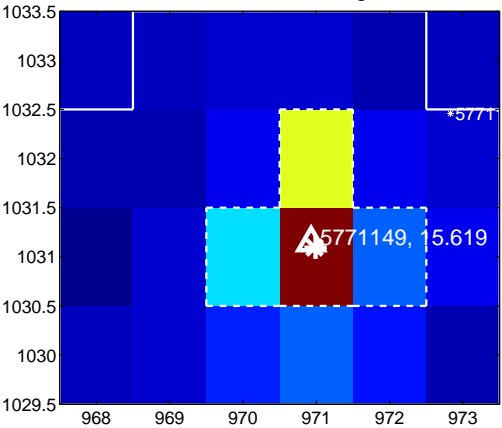
Q5 no difference image



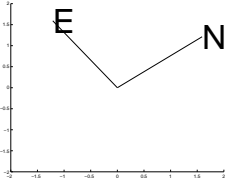
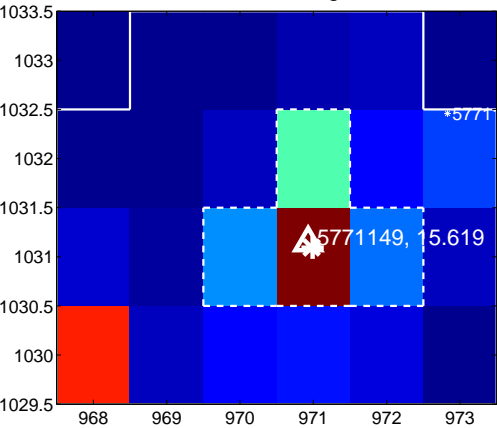
Q5 no OOT image



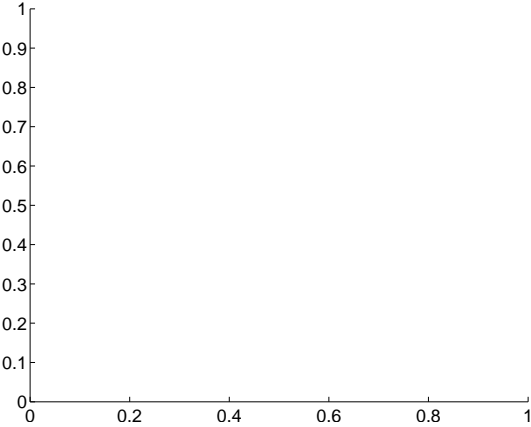
Q6 difference image



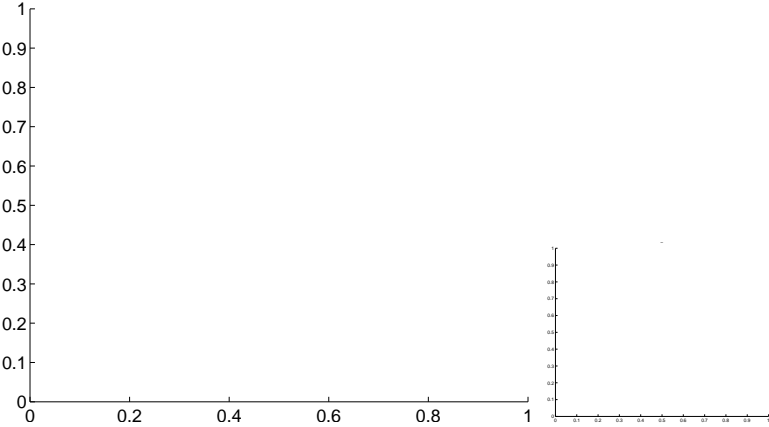
Q6 OOT image



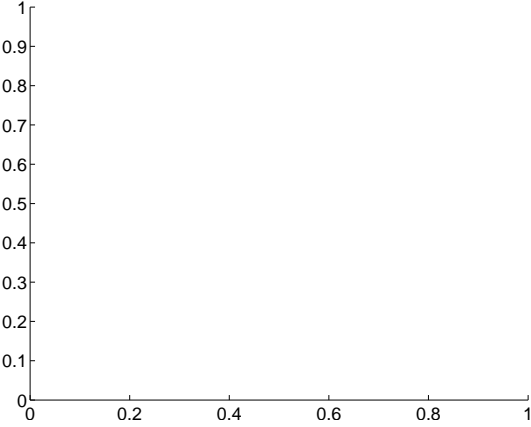
Q7 no difference image



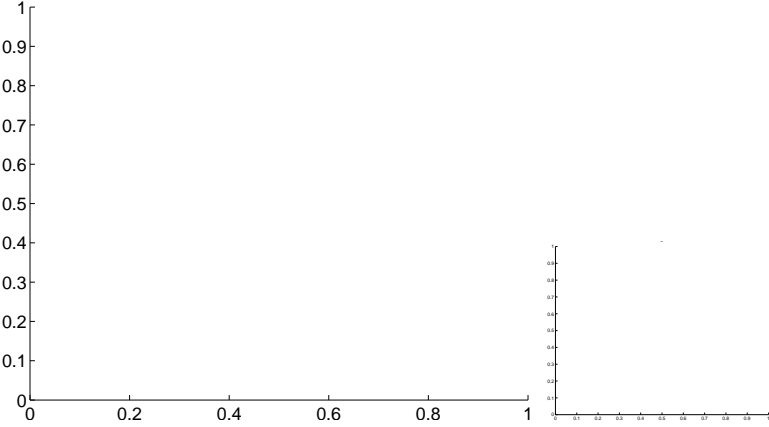
Q7 no OOT image



Q8 no difference image



Q8 no OOT image



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

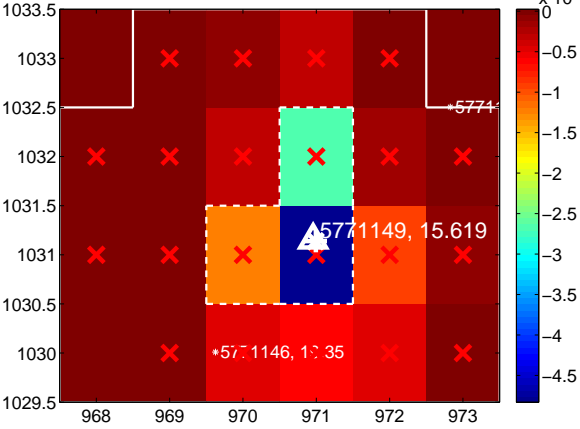
Q9 no difference image



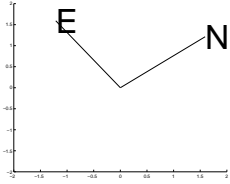
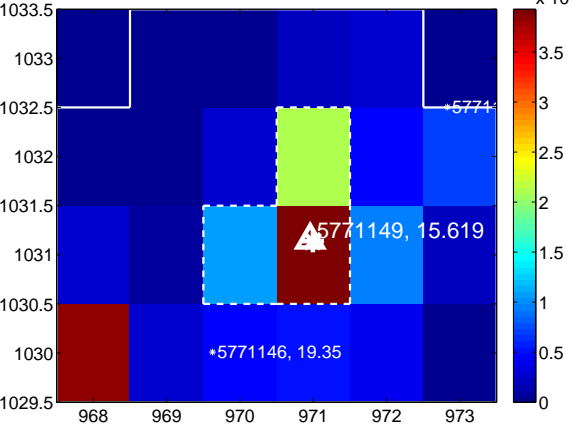
Q9 no OOT image



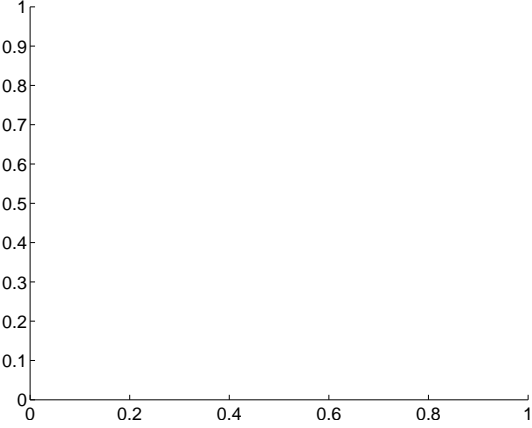
Q10 difference image. Poor Quality



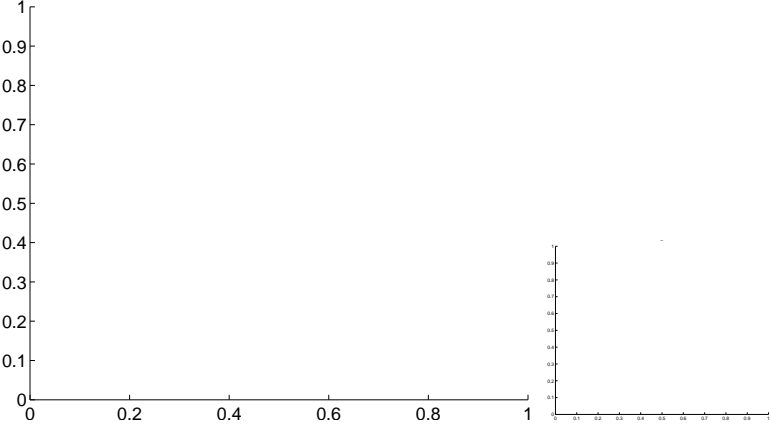
Q10 OOT image



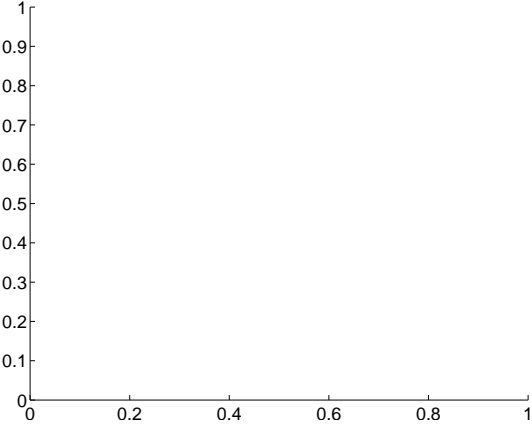
Q11 no difference image



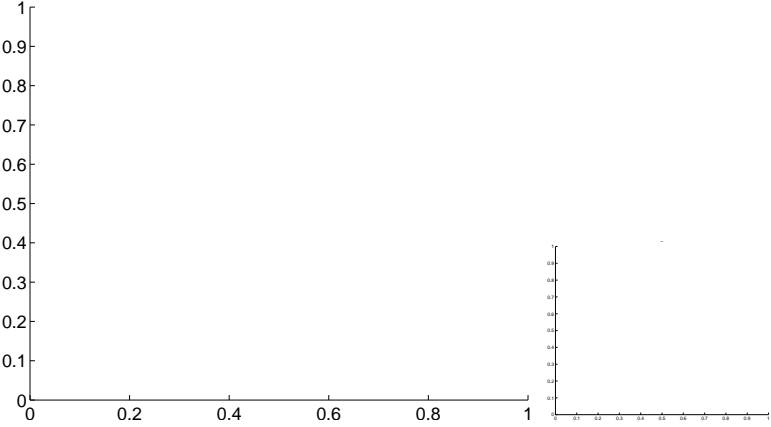
Q11 no OOT image



Q12 no difference image



Q12 no OOT image

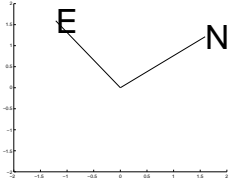
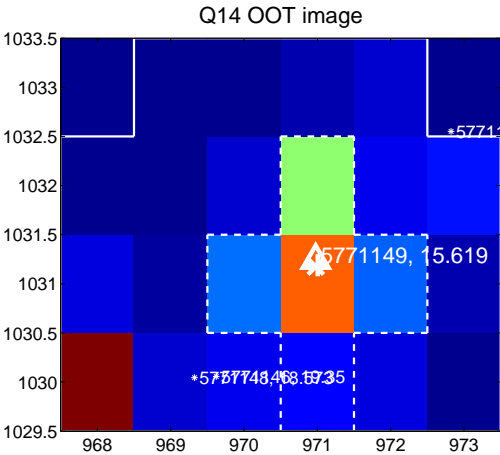
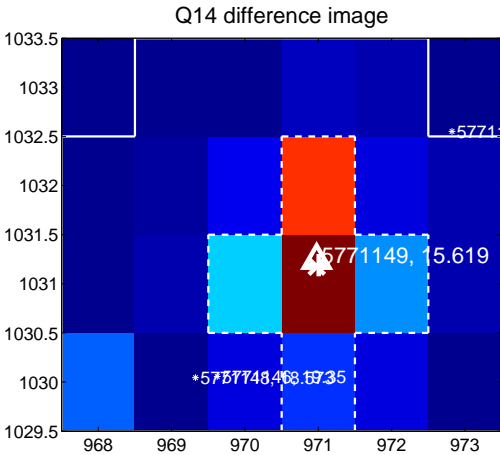


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

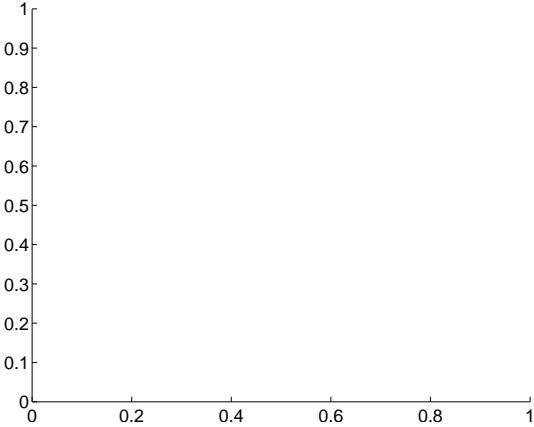
Q13 no difference image



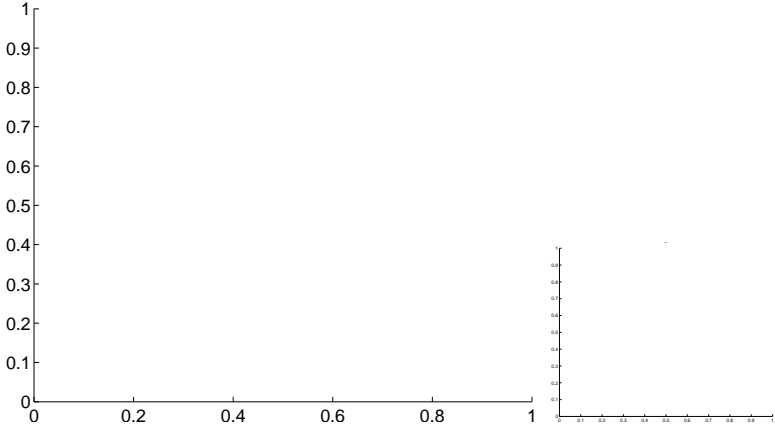
Q13 no OOT image



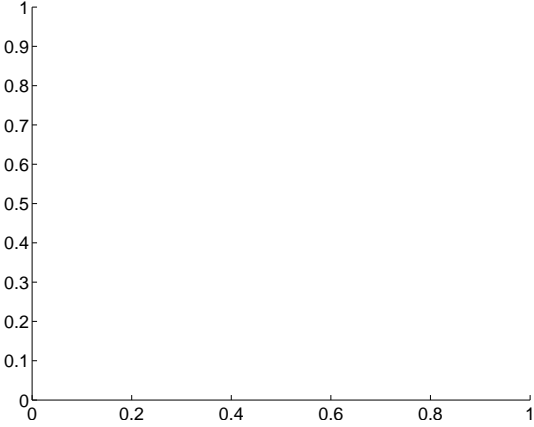
Q15 no difference image



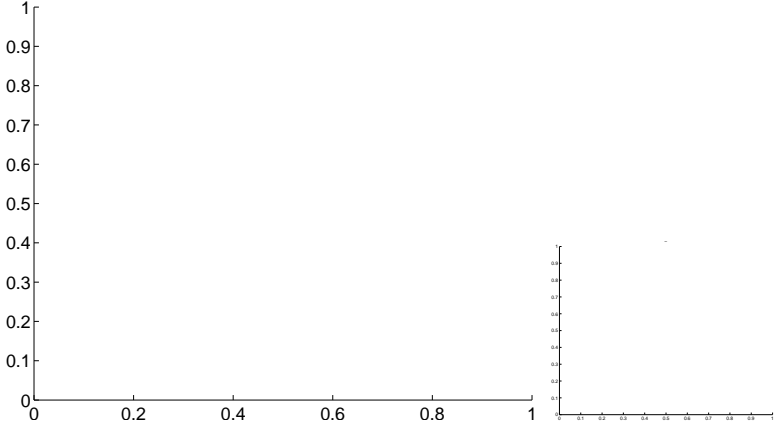
Q15 no OOT image



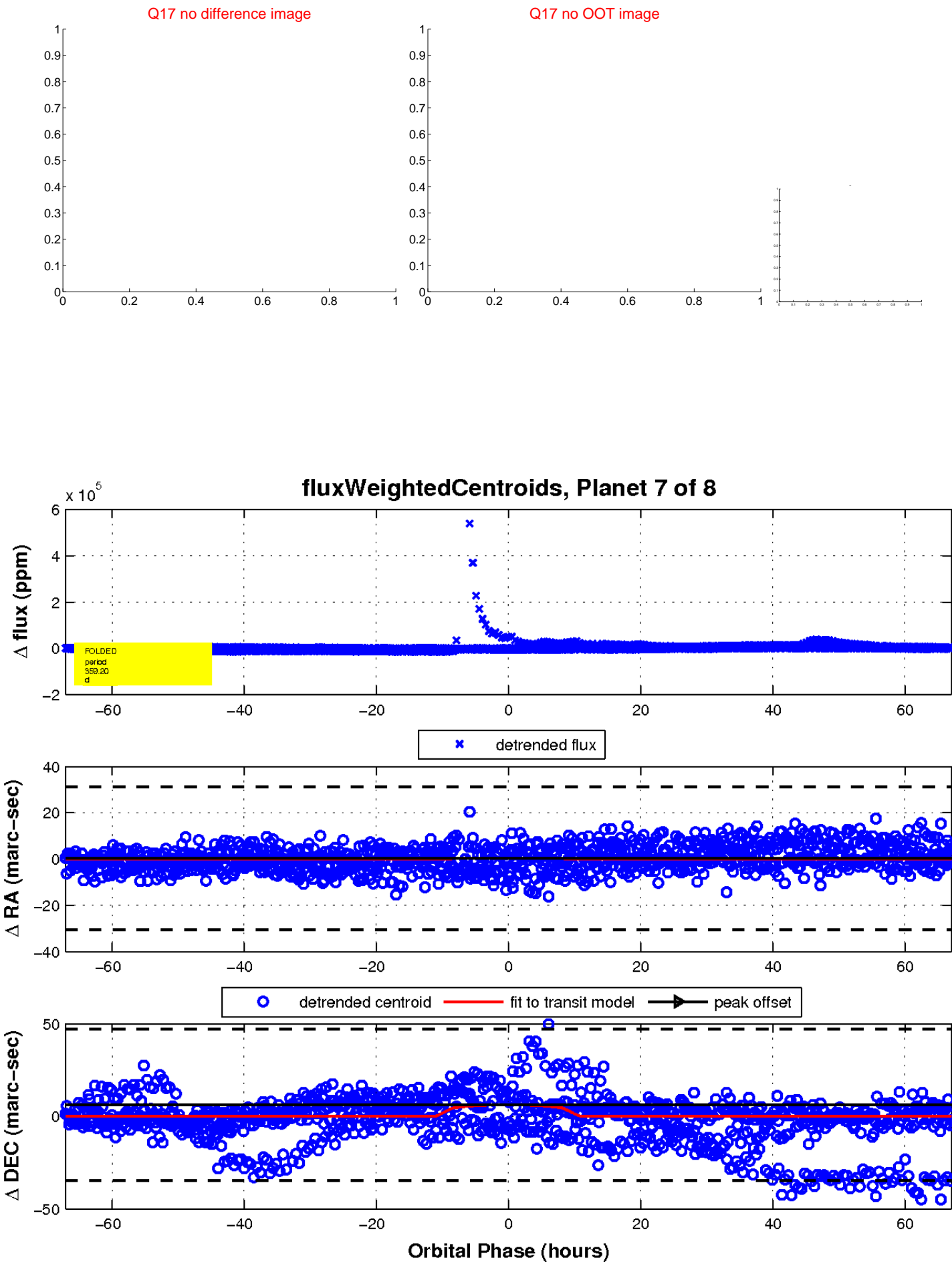
Q16 no difference image



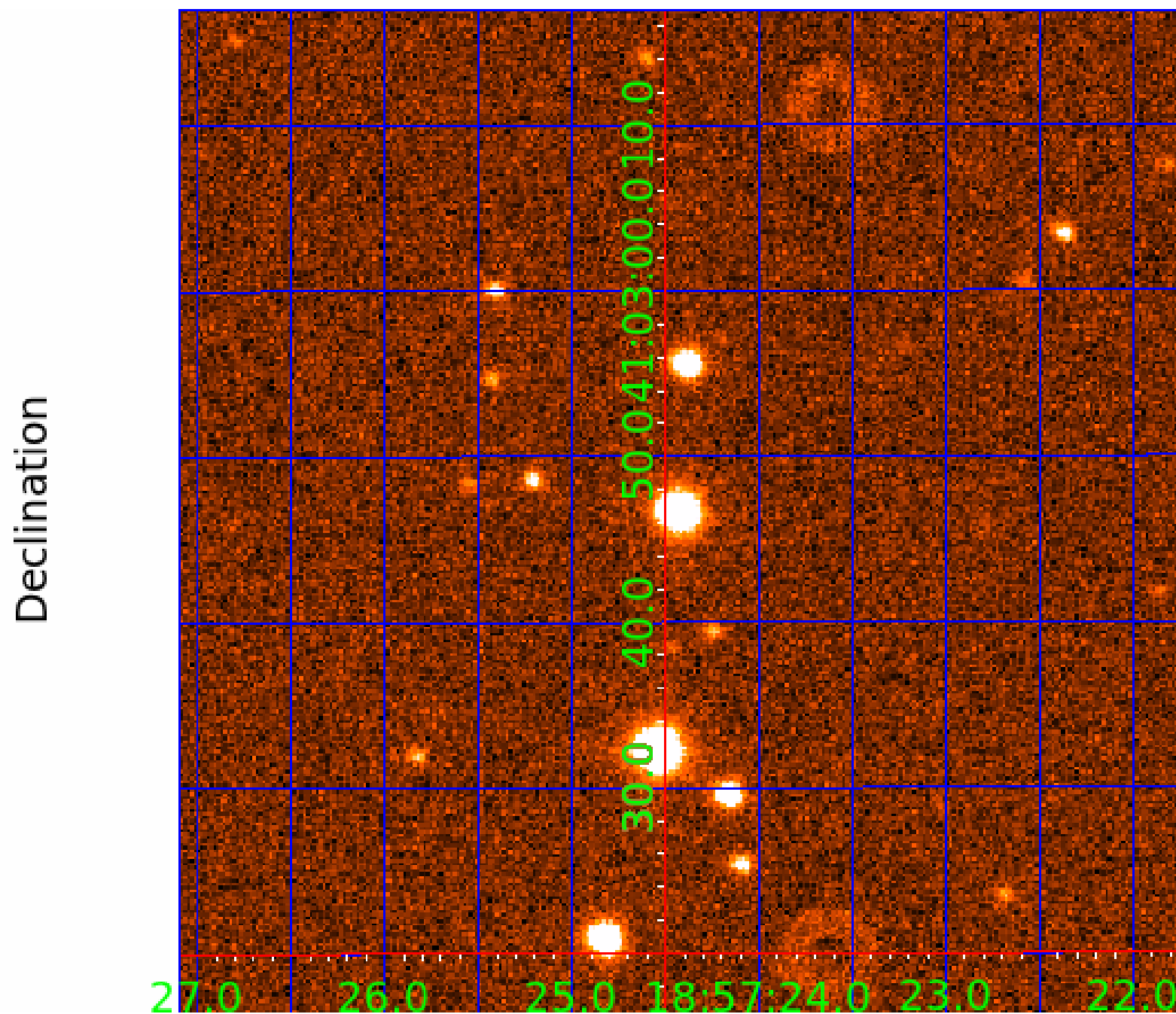
Q16 no OOT image



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



UKIRT Image





## KIC 005771149

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005771149-01	OBS	No	299.193035	214.235905	3568.4	15.104	26.5	8.4	0.68	4679	3.89	0.34
005771149-02	OBS	No	564.073757	387.860137	28.2	4.504	31.7	0.1	0.68	4679	0.37	0.14
005771149-03	OBS	No	370.809831	297.482499	1189.6	15.866	17.7	2.5	0.68	4679	2.34	0.25
005771149-04	OBS	No	553.386661	194.319752	5505.5	18.440	18.2	11.2	0.68	4679	4.83	0.15
005771149-05	OBS	No	336.106105	282.190743	4191.4	11.273	17.8	9.4	0.68	4679	5.26	0.29
005771149-06	OBS	No	332.299915	281.970338	4035.6	3.921	18.1	10.4	0.68	4679	4.52	0.29
005771149-07	OBS	No	359.196560	234.159625	3784.1	22.363	21.8	7.3	0.68	4679	4.60	0.27
005771149-08	OBS	No	513.938585	272.058180	3252.8	8.331	13.5	8.9	0.68	4679	3.96	0.17

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005771149-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005771149-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005771149-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005771149-04	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
005771149-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005771149-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005771149-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
005771149-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

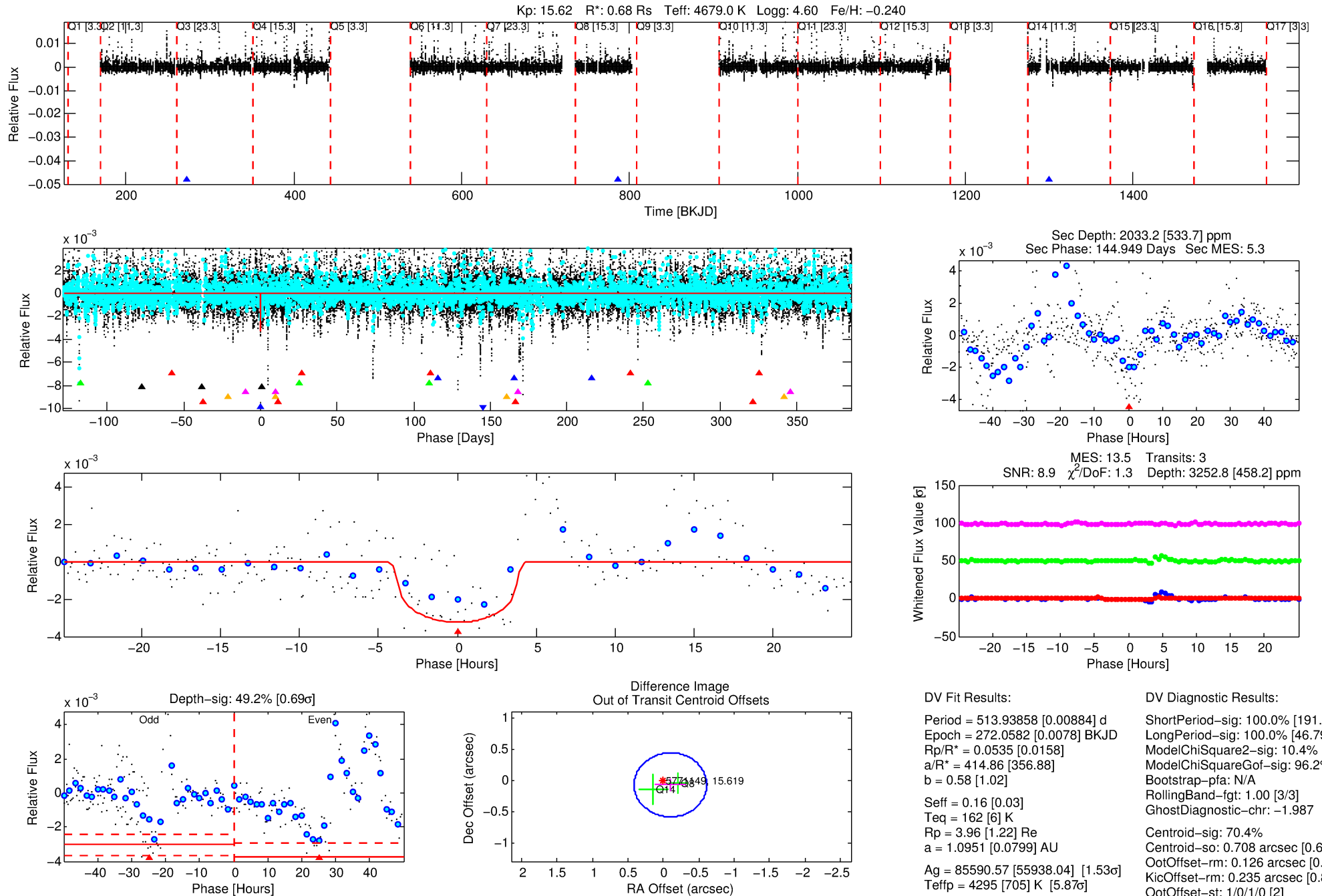
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005771149-08

No Significant Match Found

# DV One-Page Summary

KIC: 5771149 Candidate: 8 of 8 Period: 513.939 d



## DV Fit Results:

Period = 513.93858 [0.00884] d  
Epoch = 272.0582 [0.0078] BKJD  
Rp/R\* = 0.0535 [0.0158]  
a/R\* = 414.86 [356.88]  
b = 0.58 [1.02]  
Seff = 0.16 [0.03]  
Teff = 162 [6] K  
Rp = 3.96 [1.22] Re  
a = 1.0951 [0.0799] AU  
Ag = 85590.57 [55938.04] [1.53σ]  
Teffp = 4295 [705] K [5.87σ]

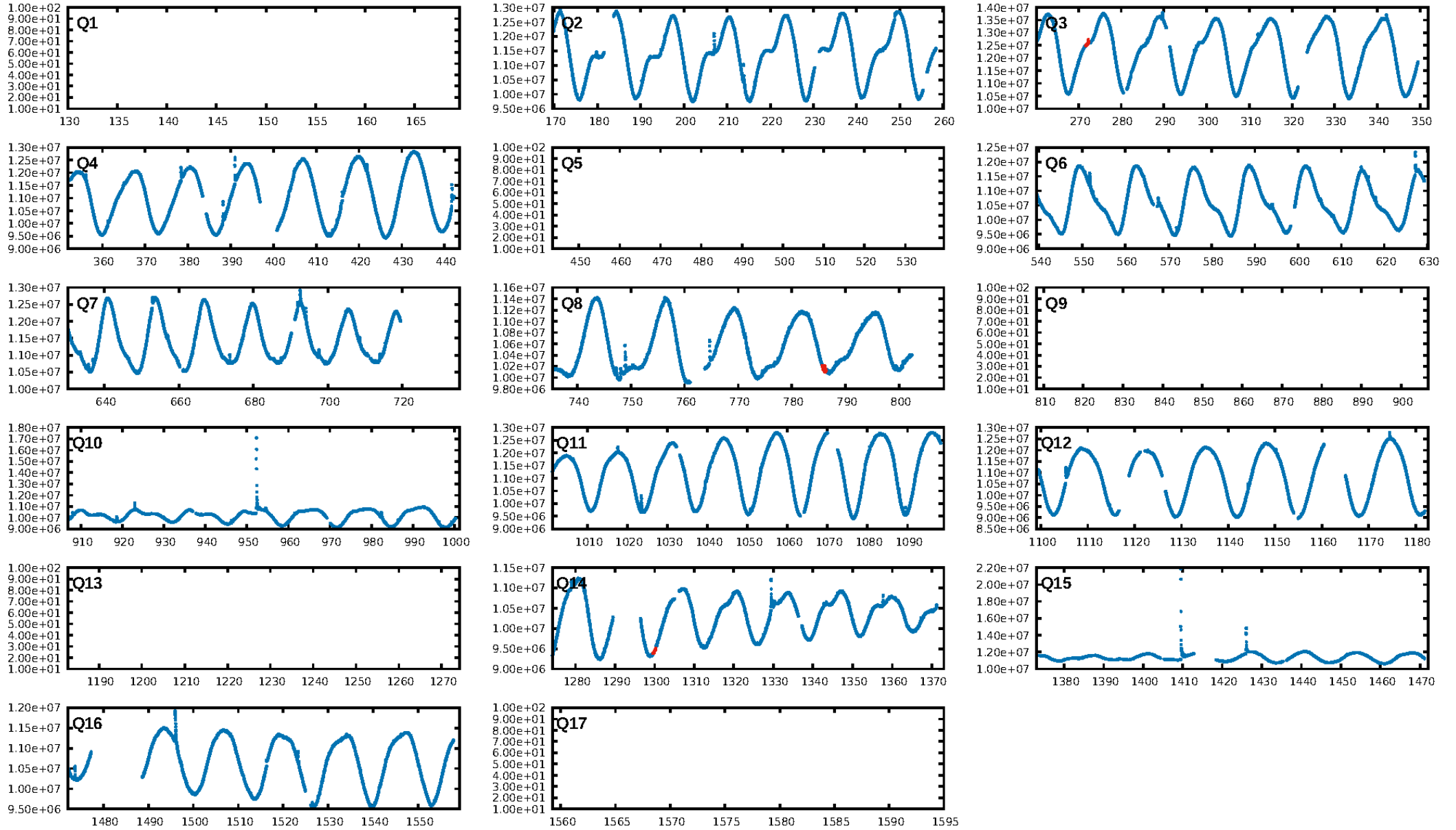
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [191.69σ]  
LongPeriod-sig: 100.0% [46.79σ]  
ModelChiSquare2-sig: 10.4%  
ModelChiSquareGof-sig: 96.2%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -1.987  
Centroid-sig: 70.4%  
Centroid-so: 0.708 arcsec [0.62σ]  
OotOffset-rm: 0.126 arcsec [0.74σ]  
KicOffset-rm: 0.235 arcsec [0.80σ]  
OotOffset-st: 1/0/1/0 [2]  
KicOffset-st: 1/0/1/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [2/2]

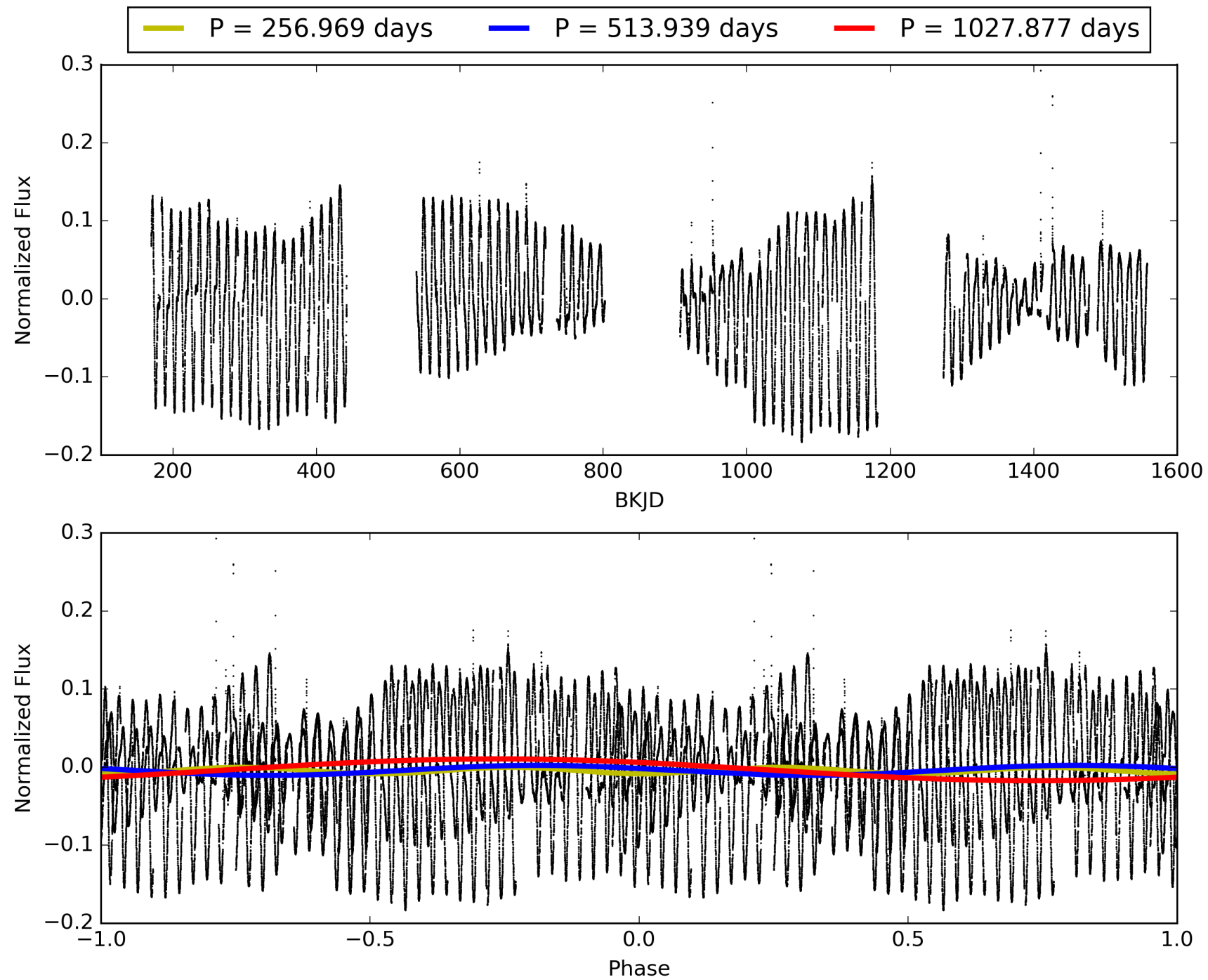
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:37:36 Z

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

# TCE 005771149-08, PDC Light Curves

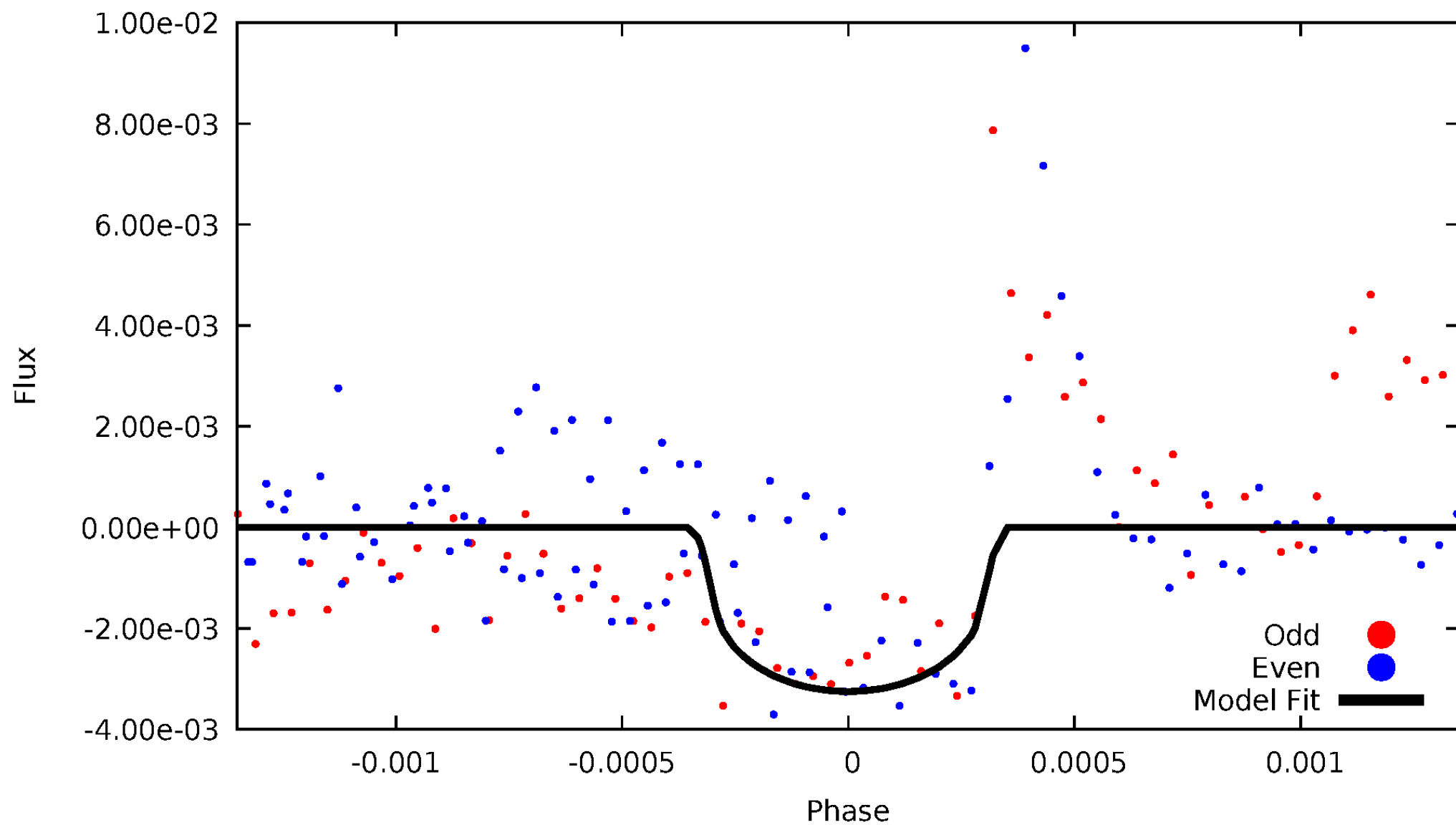


TCE 005771149-08



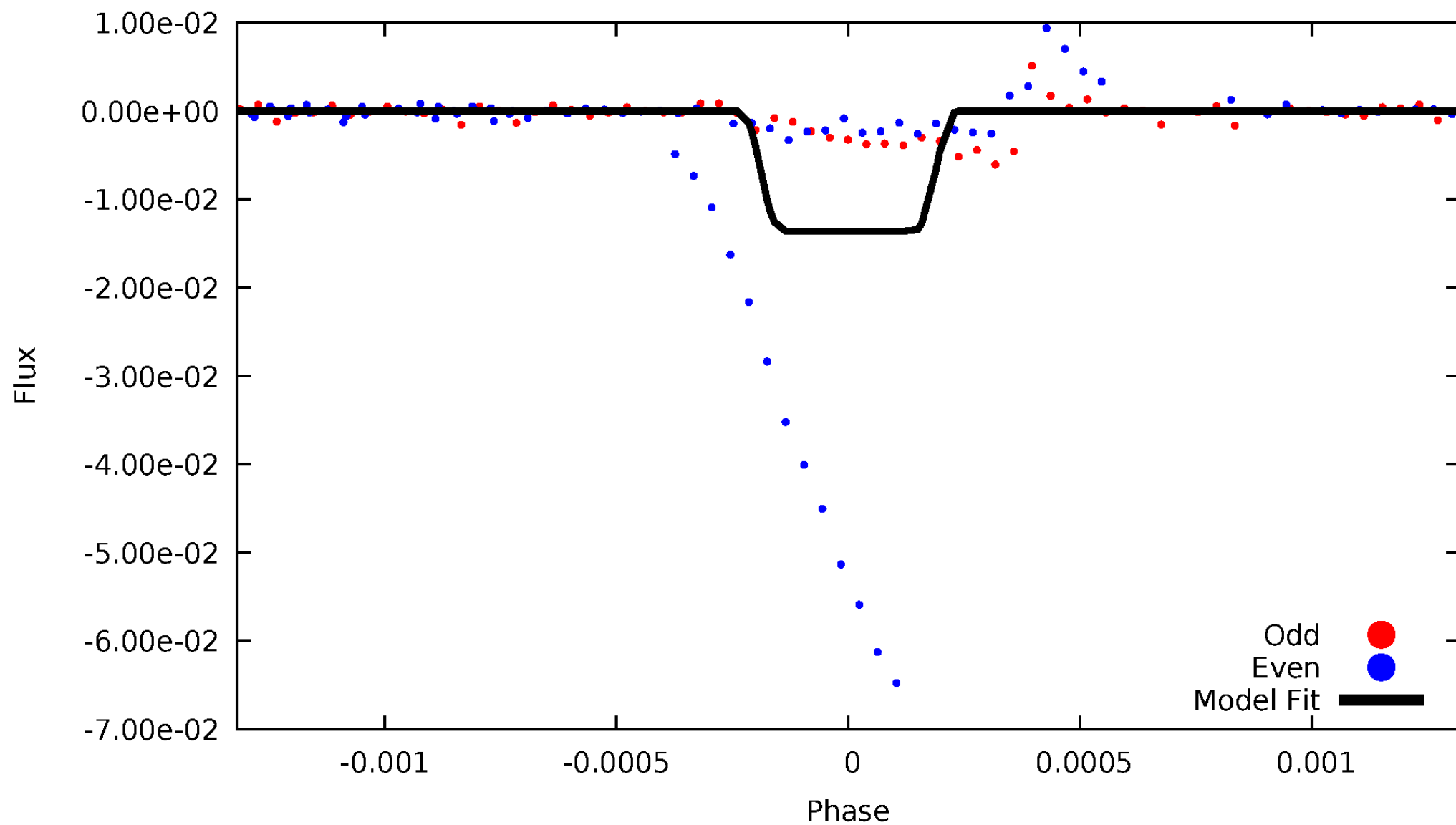
# DV Odd/Even

TCE 005771149-08



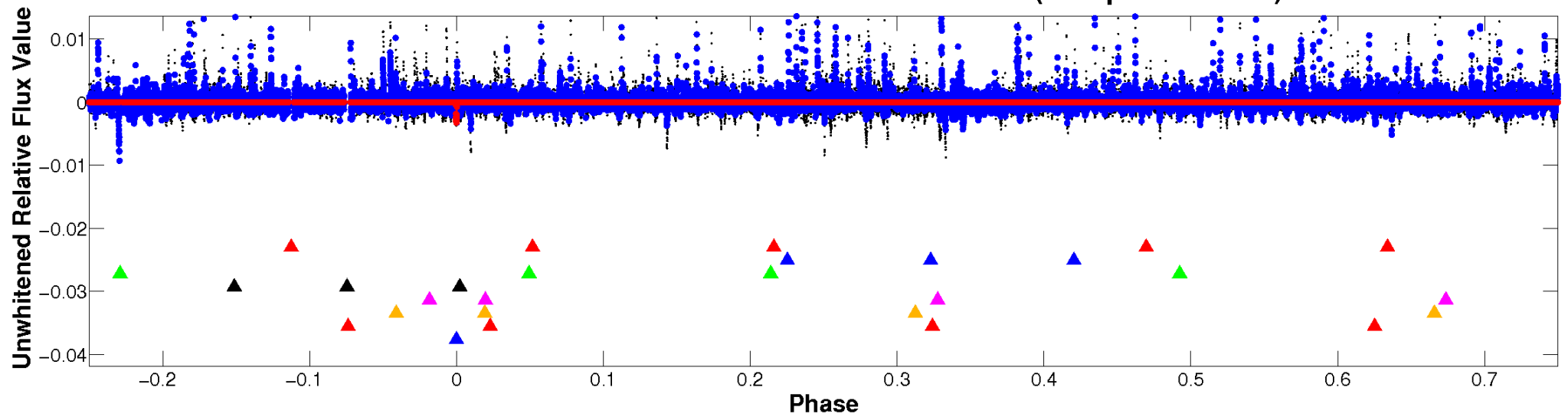
# ALT Odd/Even

TCE 005771149-08

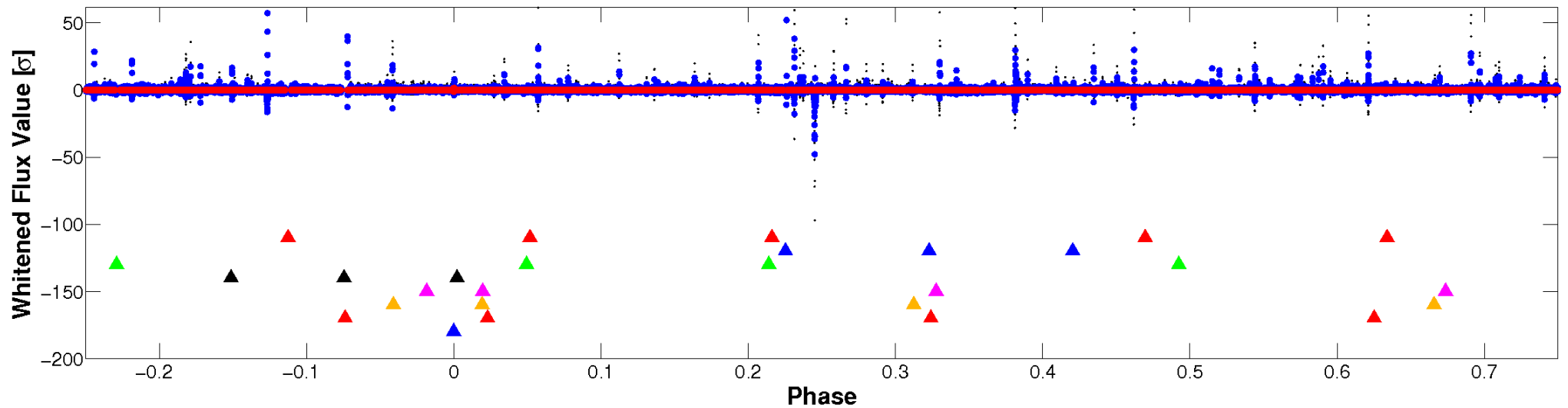


# Non-Whitened Vs. Whitened Light Curve

## Planet 8 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

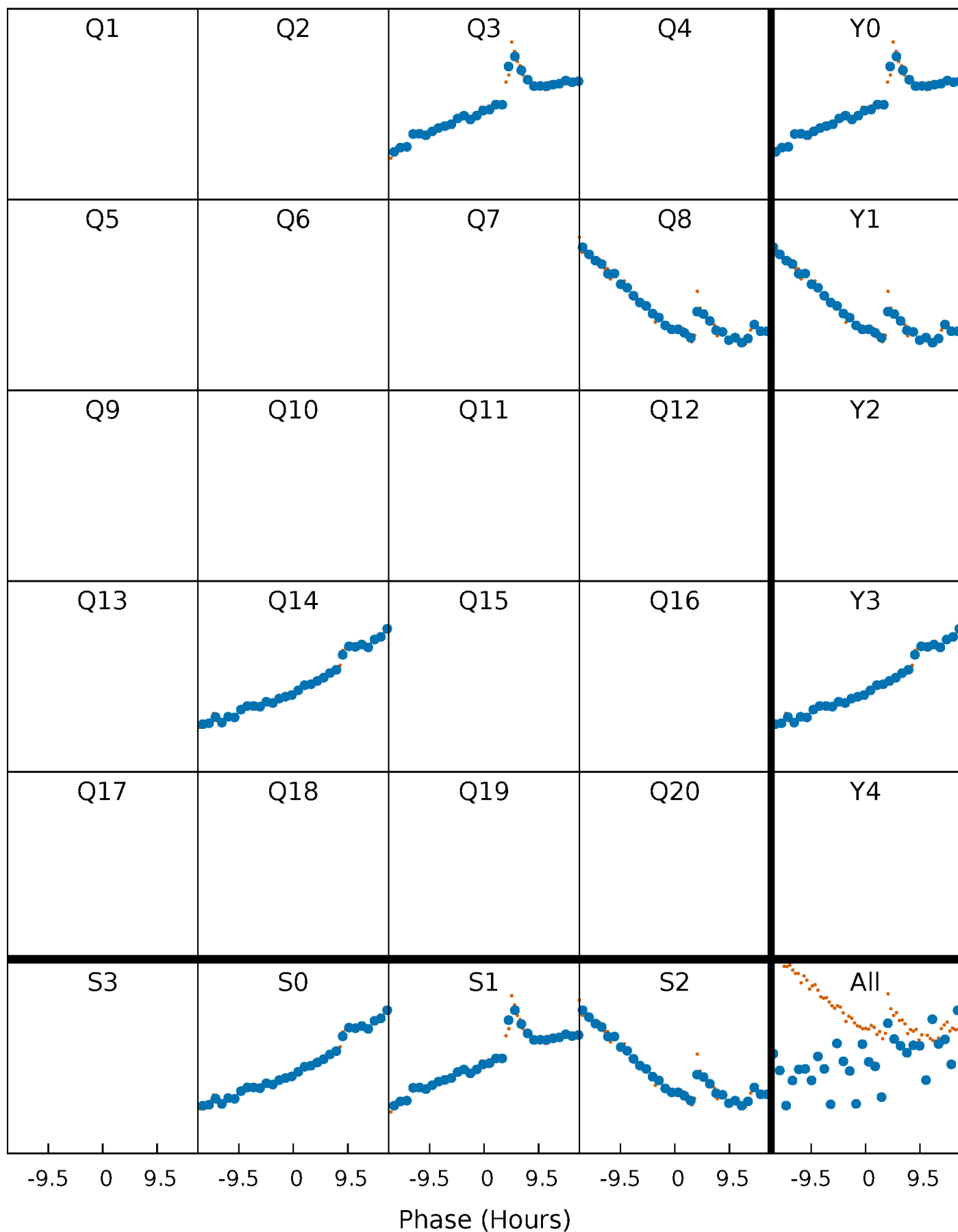


## Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

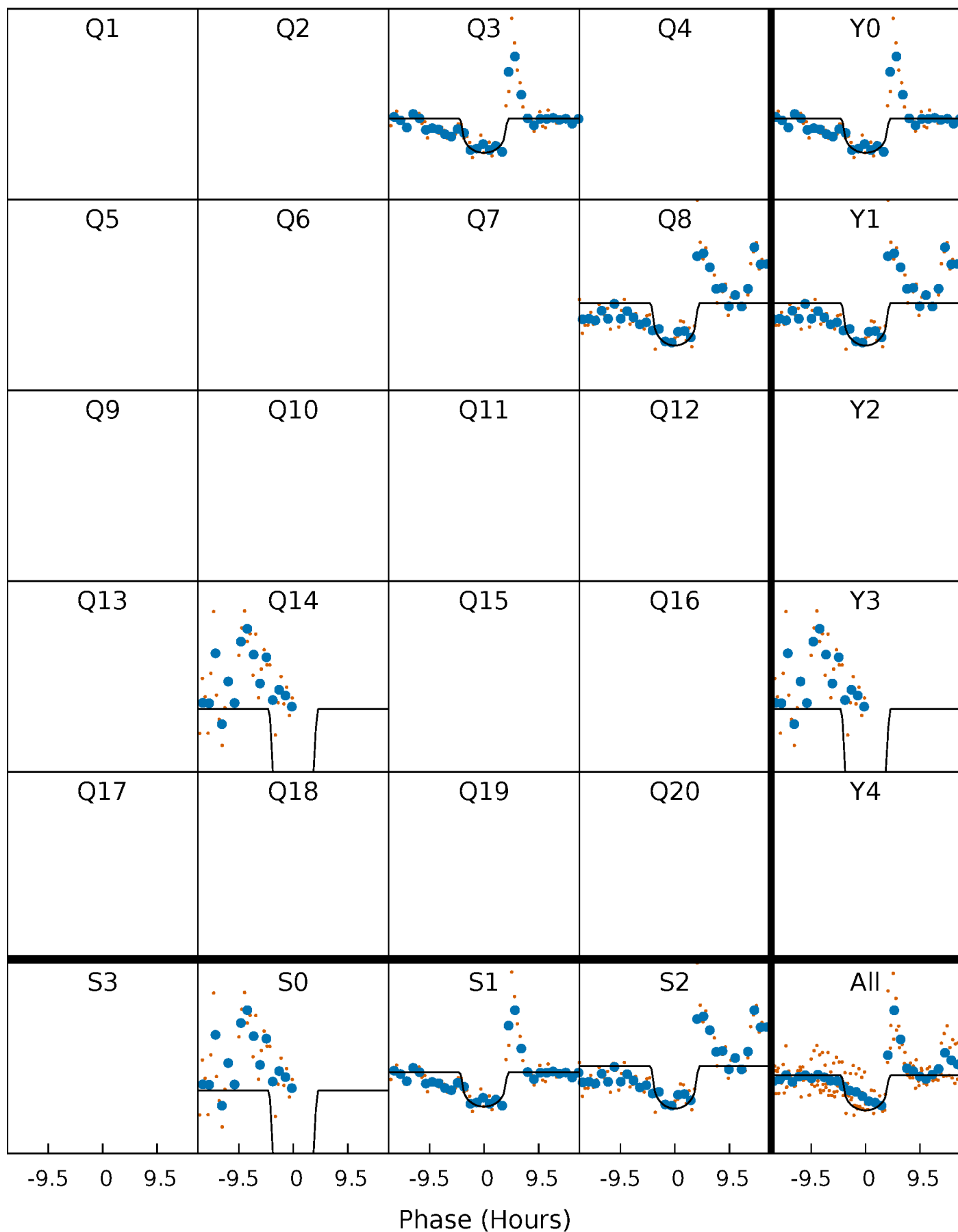
TCE 005771149-08 P=513.938585 Days  $T_0=272.058180$  (BKJD)





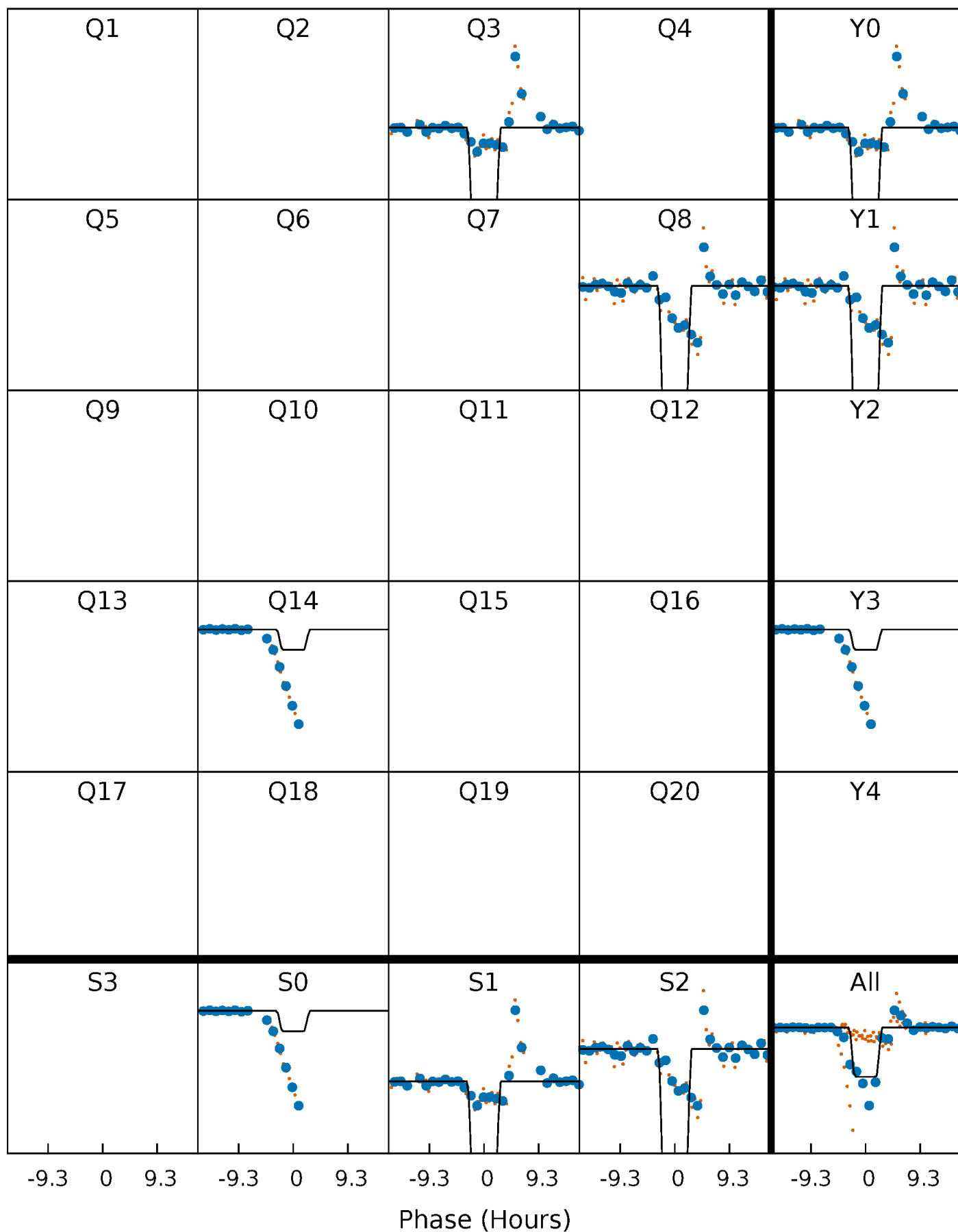
# DV Quarter-Phased Transit Curves

TCE 005771149-08     $P=513.938585$  Days     $T_0=272.058180$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

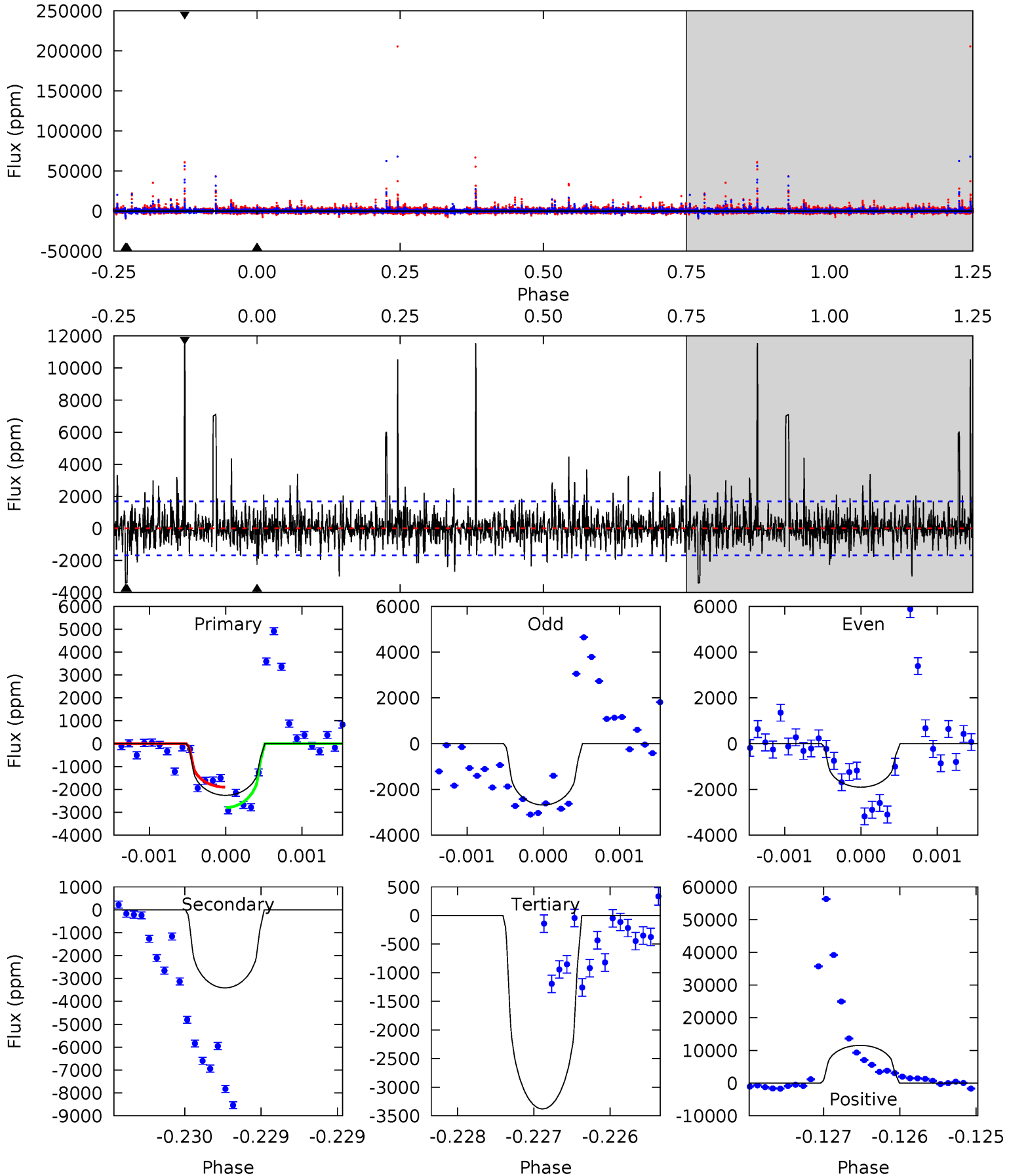
TCE 005771149-08 P=513.917656 Days  $T_0=272.039572$  (BKJD)



# DV Model-Shift Uniqueness Test

005771149-08, P = 513.938585 Days, E = 272.058180 Days

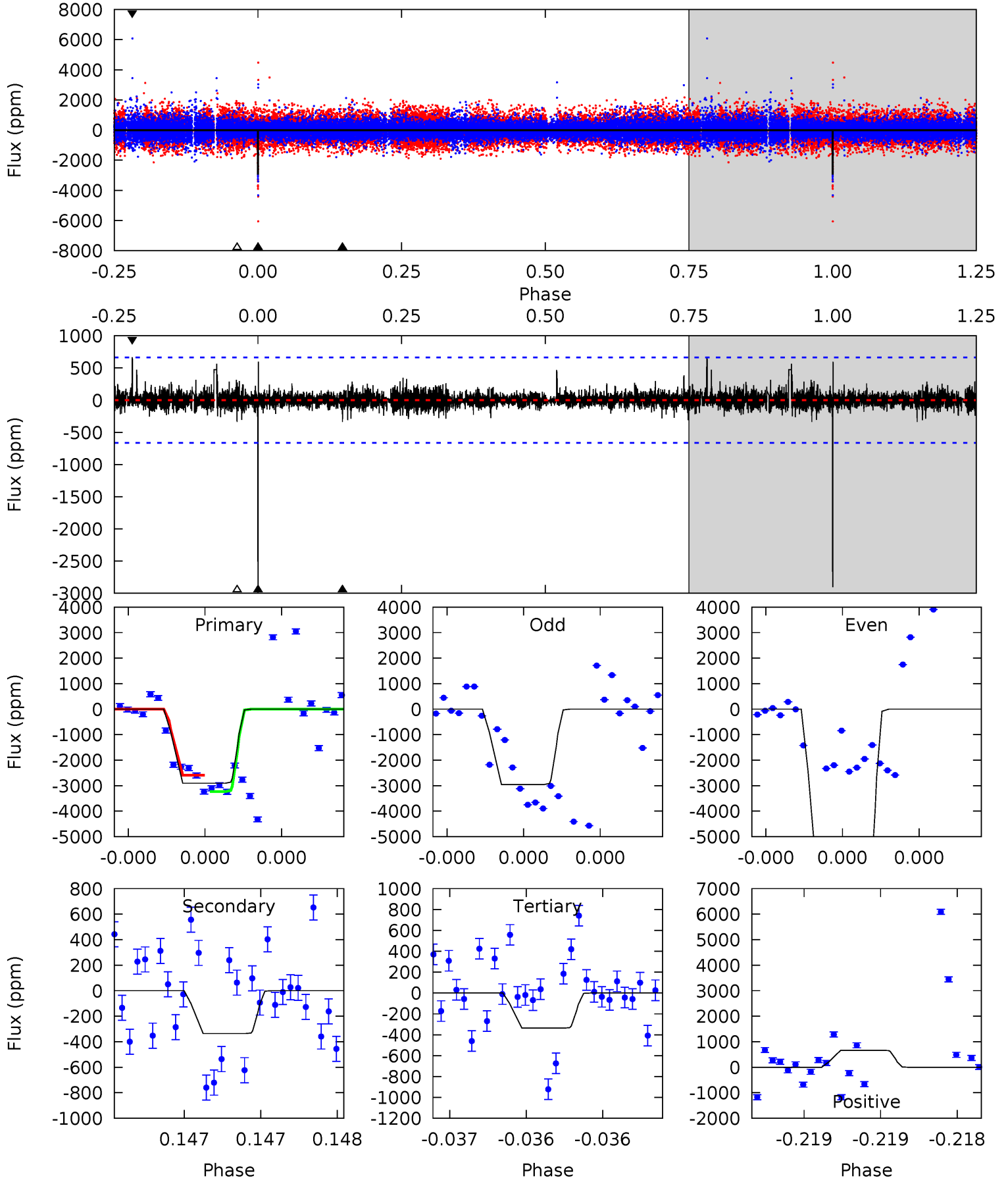
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.41	11.2	11.1	37.9	5.52	3.40	2.99	-3.67	-30.5	0.10	-26.7	0.84	0.68	0.77	1.42



# Alt Model-Shift Uniqueness Test

005771149-08, P = 513.917656 Days, E = 272.039572 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
24.5	2.83	2.83	5.59	5.59	3.51	0.57	21.6	18.9	0.00	-2.76	20.3	6.21	0.19	2.79



### Stellar Parameters For KIC 005771149

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$4679^{+140}_{-140}$	$4.597^{+0.056}_{-0.028}$	$-0.240^{+0.300}_{-0.300}$	$0.678^{+0.054}_{-0.060}$	$0.663^{+0.082}_{-0.048}$	$2.997^{+0.749}_{-0.384}$
	+3%/-3%	+1%/-1%	+125%/-125%	+8%/-9%	+12%/-7%	+25%/-13%
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 005771149-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-3412 \pm 305$	$4.02^{+1.14}_{-1.23}$	$226^{+8}_{-8}$	$4841^{+790}_{-490}$	$145268^{+149288}_{-59372}$
Alt.	$-336 \pm 119$	$8.64^{+1.26}_{-1.29}$	$226^{+8}_{-8}$	$2595^{+164}_{-164}$	$2857^{+1821}_{-1060}$

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

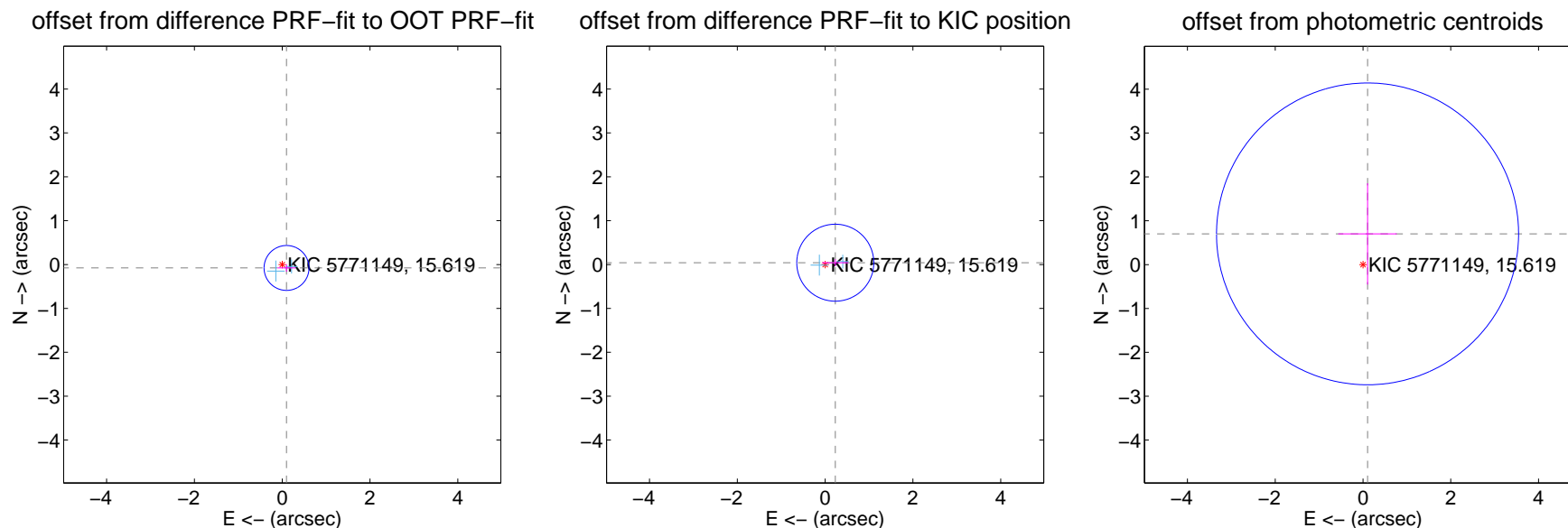
## DV Centroid Data

Supplemental centroid analysis for 005771149-08. Kepler magnitude: 15.62. Transit SNR 8.90

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.126 \pm 0.171$	0.74	$-0.099 \pm 0.206$	$-0.078 \pm 0.087$
PRF-fit source offset from KIC position	$0.235 \pm 0.292$	0.80	$-0.231 \pm 0.297$	$0.042 \pm 0.079$
photometric centroid source offset	$0.71 \pm 1.15$	0.62	$-0.10 \pm 0.66$	$0.70 \pm 1.15$



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

Q5 no difference image



Q5 no OOT image



Q6 no difference image



Q6 no OOT image



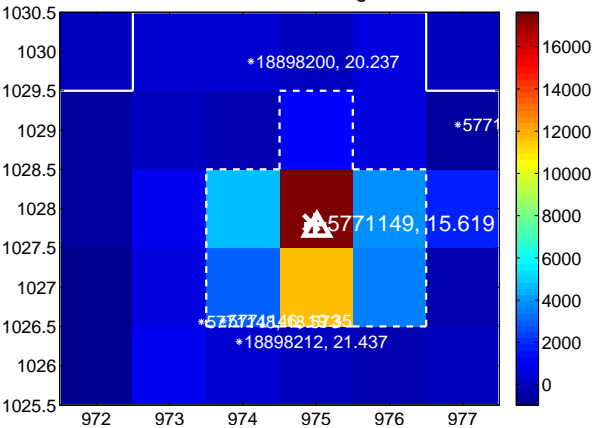
Q7 no difference image



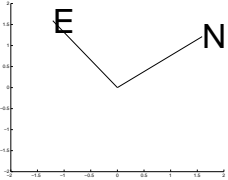
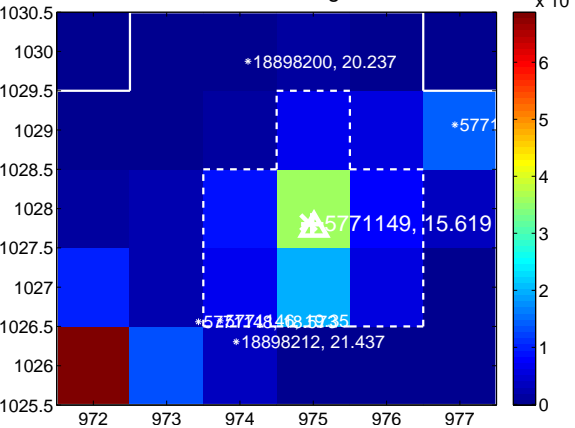
Q7 no OOT image



Q8 difference image



Q8 OOT image





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



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

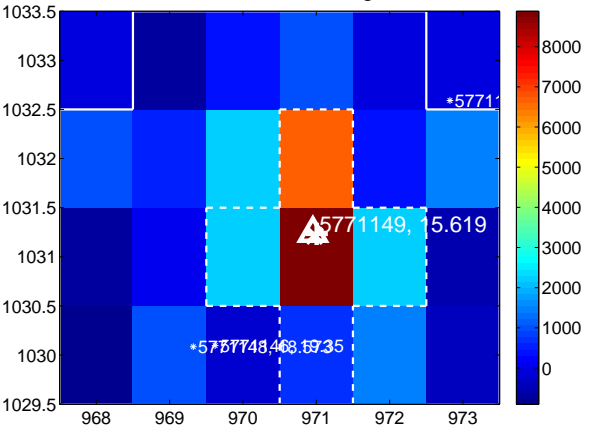
Q13 no difference image



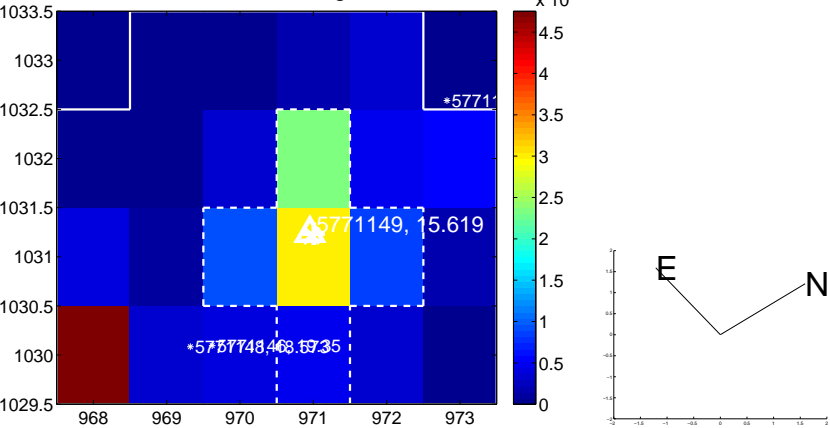
Q13 no OOT image



Q14 difference image



Q14 OOT image



Q15 no difference image



Q15 no OOT image



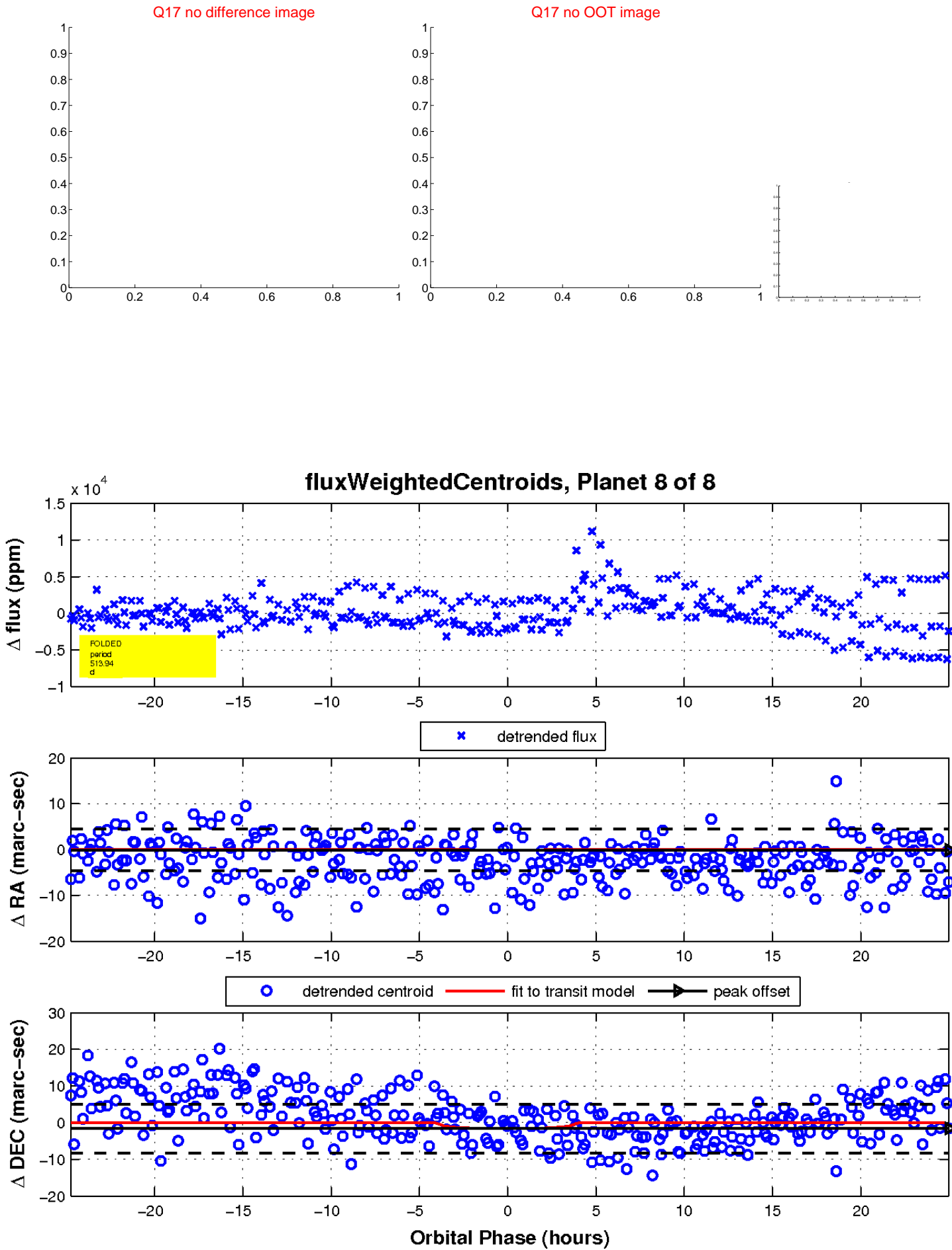
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

