

# KIC 007115249

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007115249-01	OBS	No	0.566745	131.877898	16.5	4.290	11.1	5.9	0.89	5855	0.37	4735.62
007115249-02	OBS	No	10.686810	140.081100	185.8	4.267	17.9	11.0	0.89	5855	1.30	94.36
007115249-04	OBS	No	2.874820	133.025867	219.1	1.765	14.0	14.4	0.89	5855	1.33	543.35
007115249-05	OBS	No	3.169632	134.290542	503.2	0.534	11.5	18.7	0.89	5855	2.15	477.03
007115249-06	OBS	No	9.844726	139.364274	557.3	1.938	13.7	19.2	0.89	5855	2.26	105.27
007115249-07	OBS	No	18.315402	141.401621	1561.9	1.500	12.9	-1.0	0.89	5855	3.52	46.01
007115249-08	OBS	No	1.458535	131.679944	875.3	2.000	10.9	-1.0	0.89	5855	2.63	1342.78

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007115249-01	OBS	FP	0.00	1	0	0	1	LPP_DV—CENT_FEW_DIFFS—EPHEM_MATCH
007115249-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
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007115249-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007115249-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007115249-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
007115249-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS

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

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

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

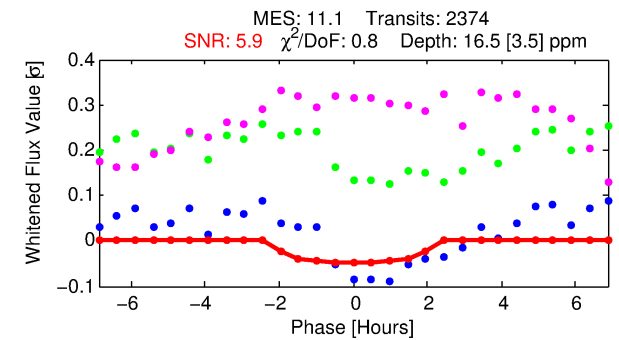
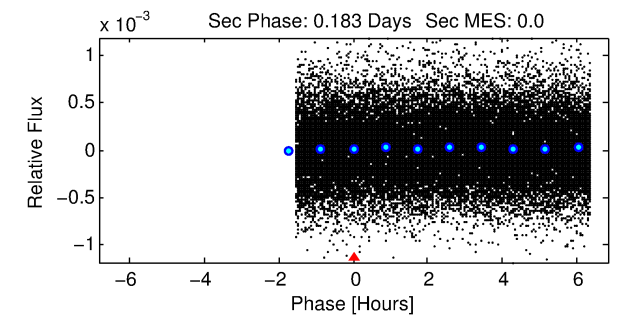
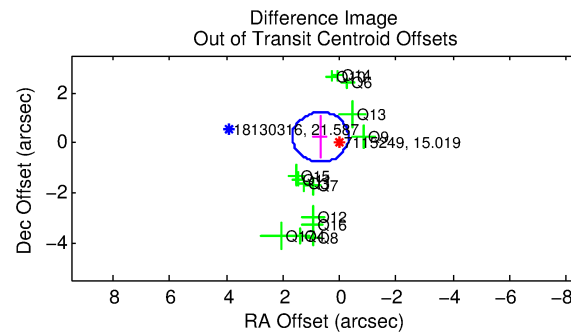
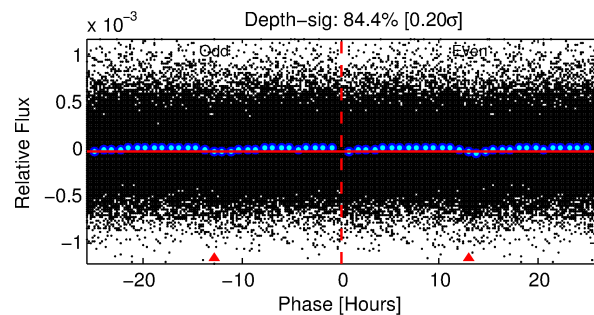
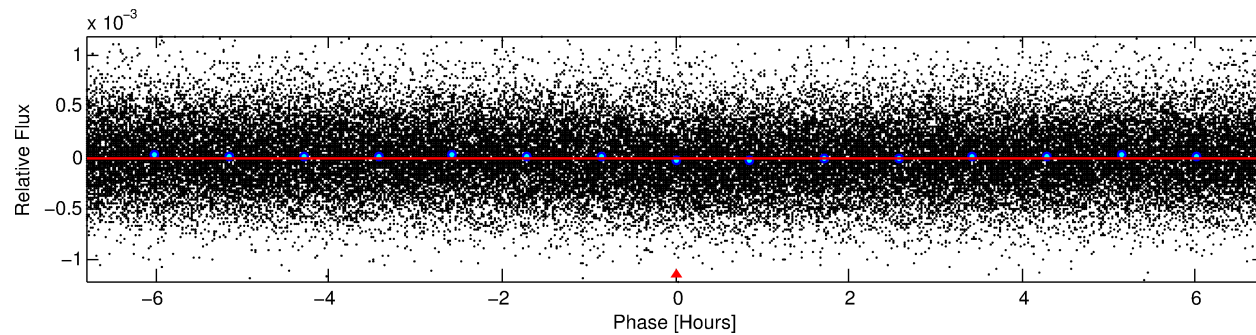
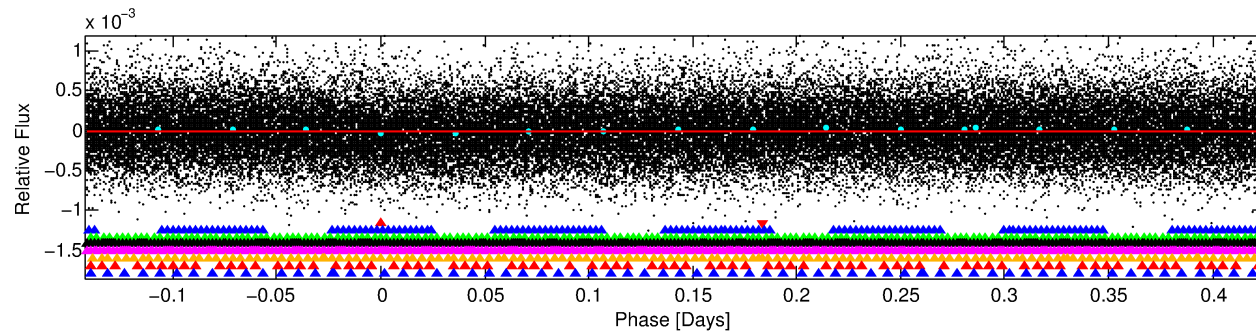
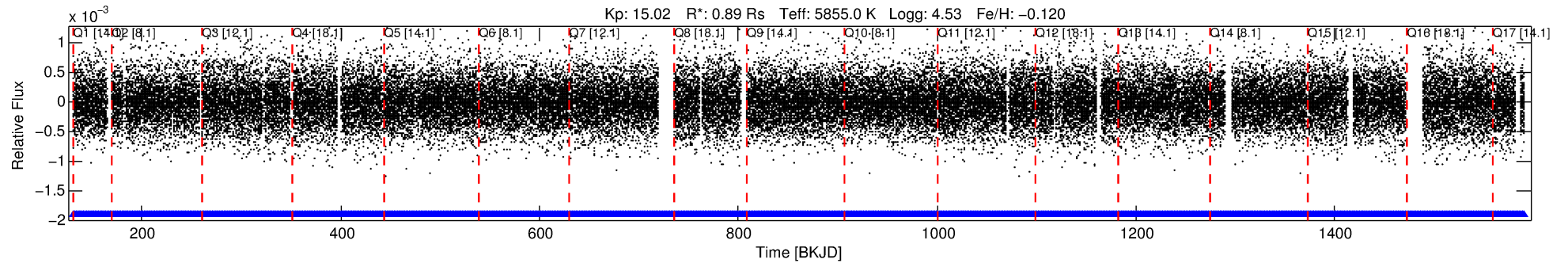
## Ephemeris Match Information For 007115249-01

TCE (1)	KIC	Parent (2)	Parent KIC	P <sub>1</sub> :P <sub>2</sub>	Dist (″)	$\Delta$ Row	$\Delta$ Col	m <sub>2</sub>	m <sub>1</sub>	D <sub>2</sub> /D <sub>1</sub>	Mechanism	Flag	$\sigma_P$	$\sigma_T$
007115249-01	7115249	RR-Lyr-pri	7198959	1:1	1165.0	-9	-293	7.86	15.02	36664.00	Direct-PRF	0	0.55	20.74

**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column. m<sub>2</sub> and m<sub>1</sub> are the magnitudes of the parent and child. D<sub>2</sub>/D<sub>1</sub> is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 7115249 Candidate: 1 of 8 Period: 0.567 d



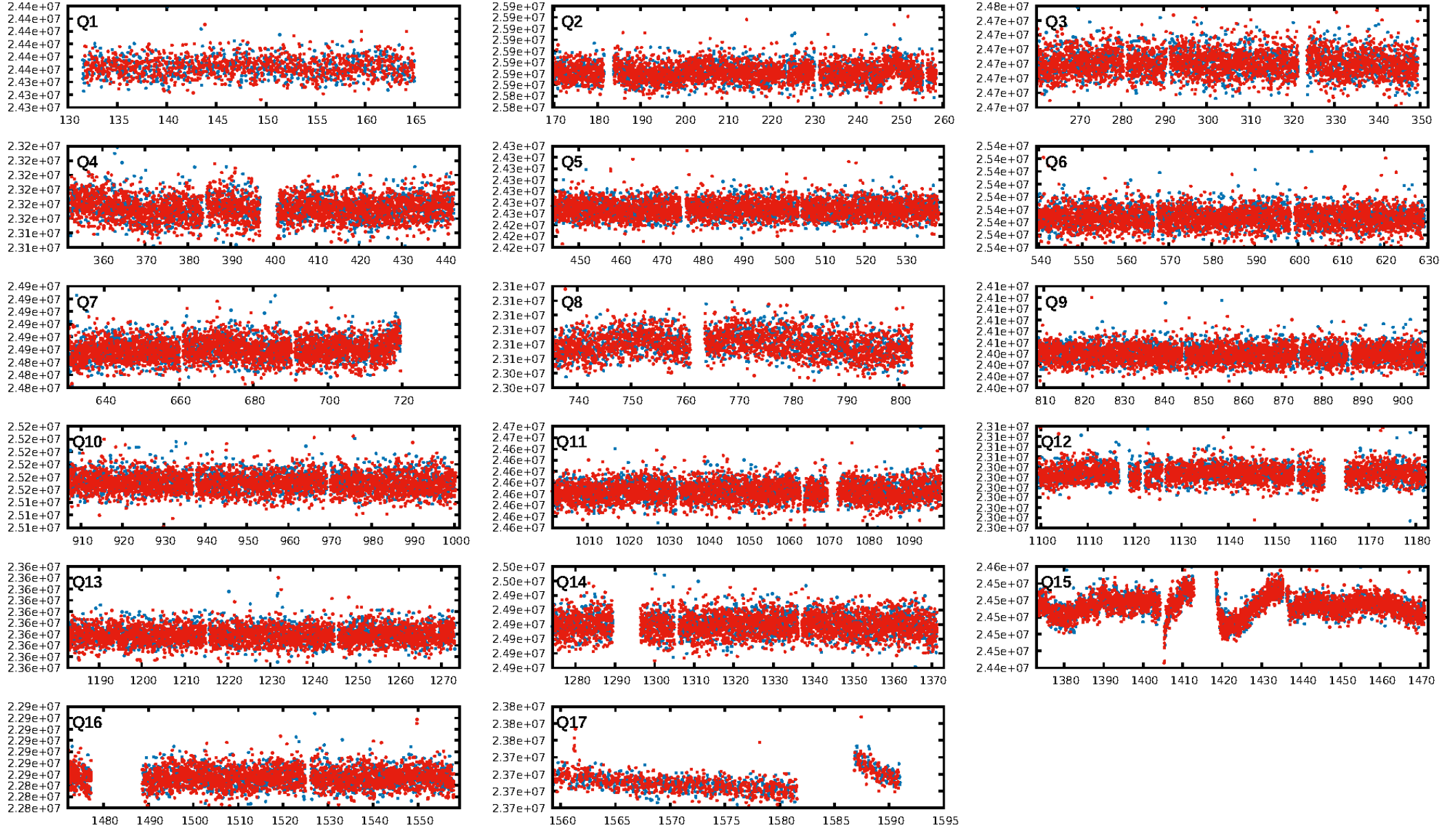
## DV Fit Results:

Period = 0.56675 [0.00002] d  
Epoch = 131.8779 [0.0082] BKJD  
Rp/R\* = 0.0038 [0.0069]  
a/R\* = 1.17 [2.56]  
b = 0.43 [16.08]  
Seff = 4735.62 [1813.16]  
Teff = 2115 [202] K  
Rp = 0.37 [0.68] Re  
a = 0.0133 [0.0033] AU  
Ag = N/A  
Teffp = N/A

## DV Diagnostic Results:

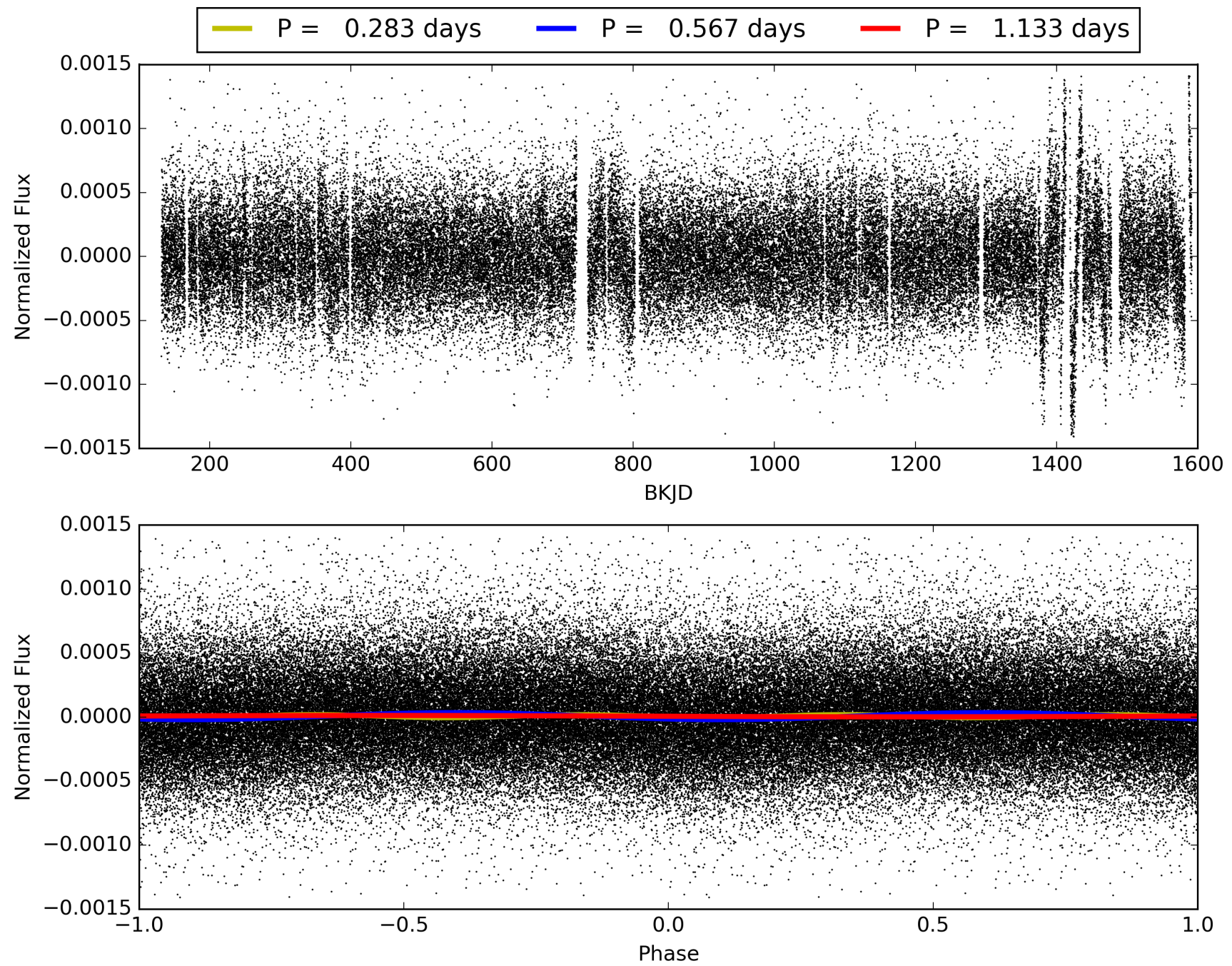
ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [4.52 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 7.06e-08  
RollingBand-fgt: 1.00 [2268/2268]  
GhostDiagnostic-chr: 0.5466  
Centroid-sig: 60.7%  
Centroid-so: 1.108 arcsec [0.49 $\sigma$ ]  
OotOffset-rm: 0.718 arcsec [2.17 $\sigma$ ]  
KicOffset-rm: 0.696 arcsec [1.41 $\sigma$ ]  
OotOffset-st: 3/4/4/3 [14]  
KicOffset-st: 3/4/4/3 [14]  
DiffImageQuality-fgm: 0.93 [13/14]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 007115249-01, PDC Light Curves





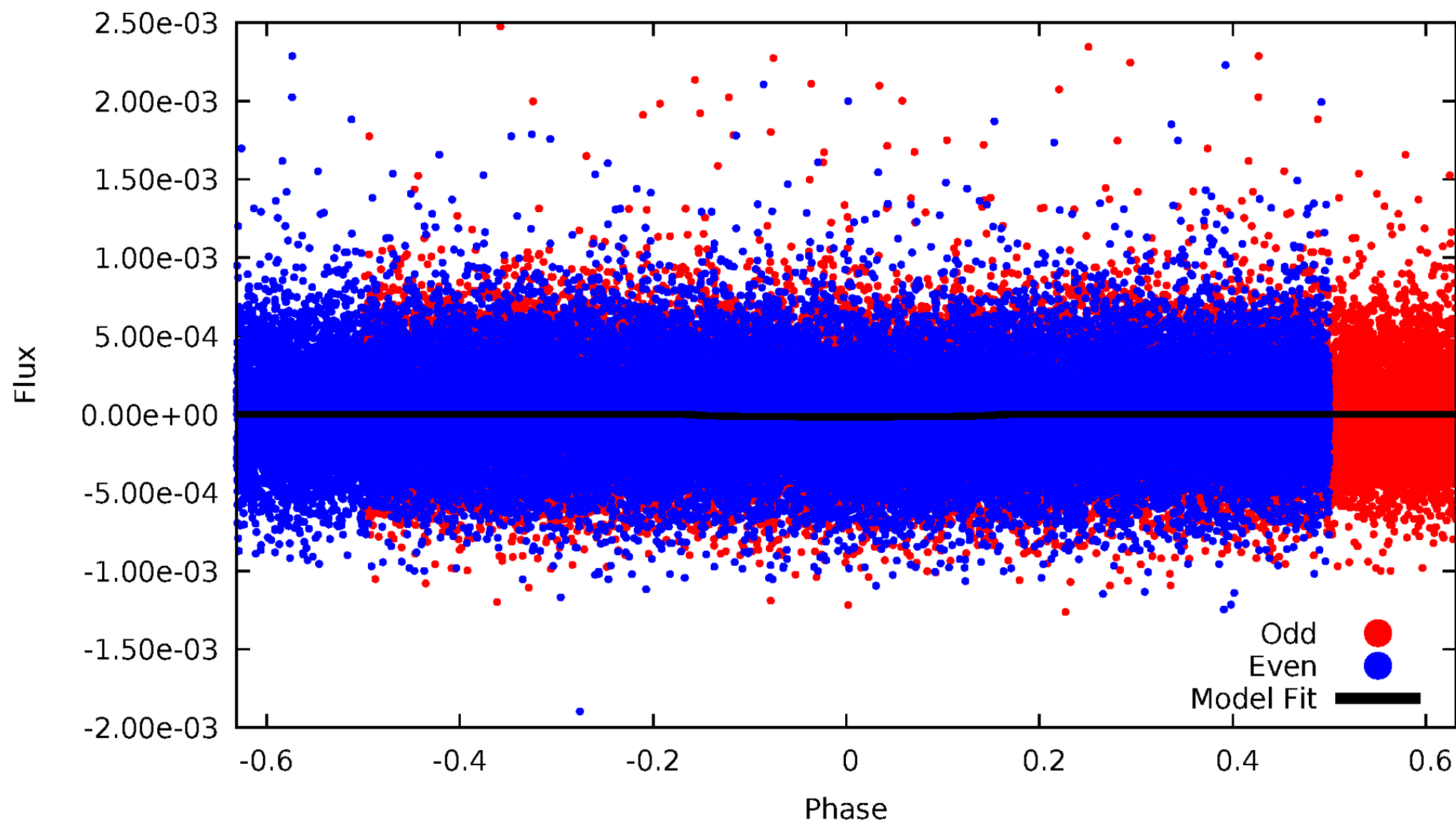
TCE 007115249-01





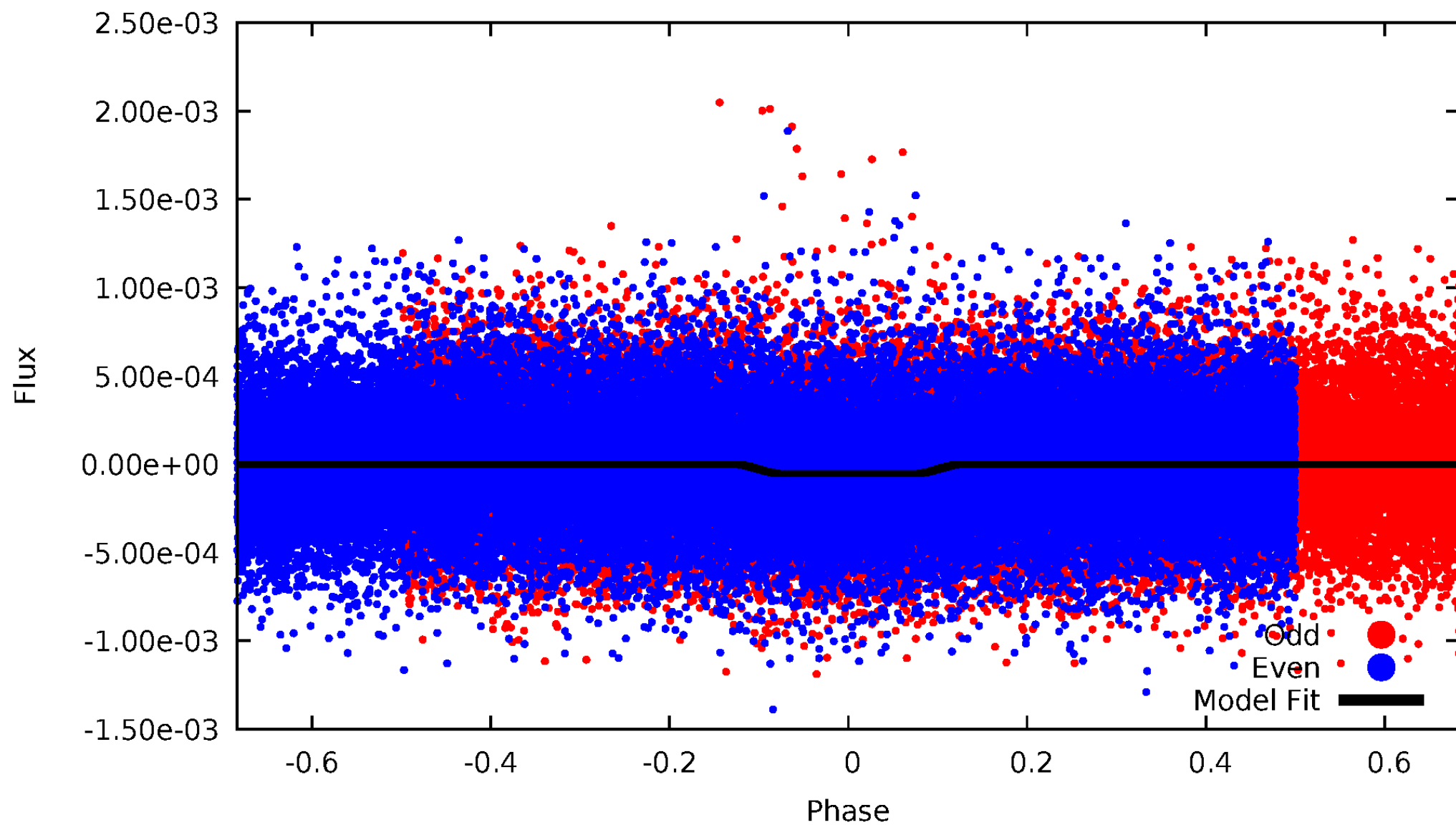
# DV Odd/Even

TCE 007115249-01

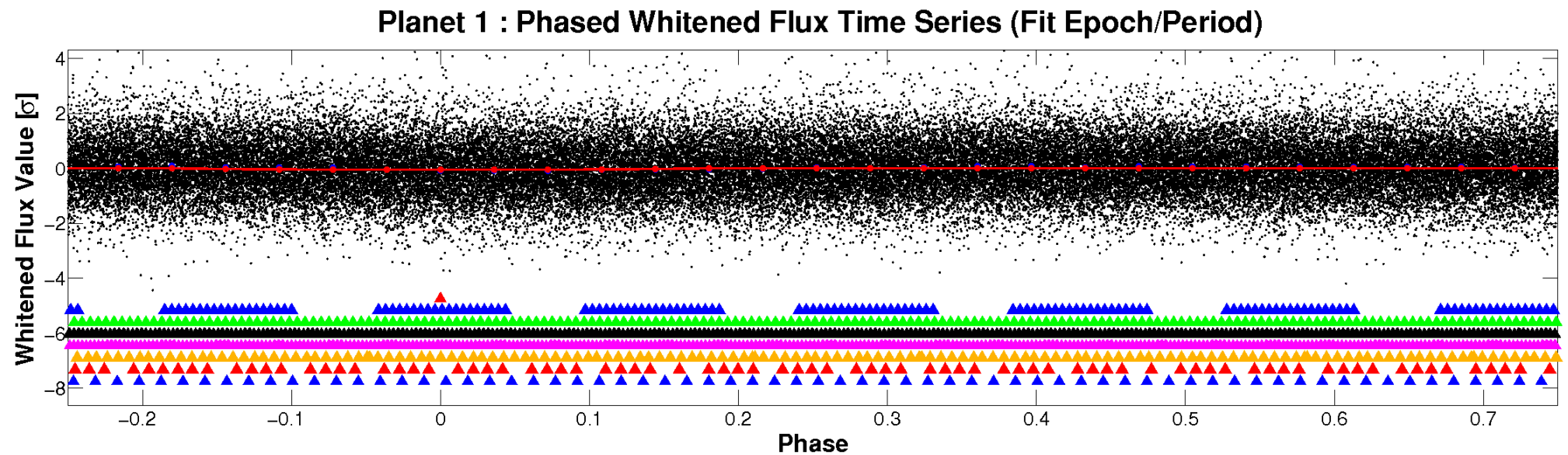
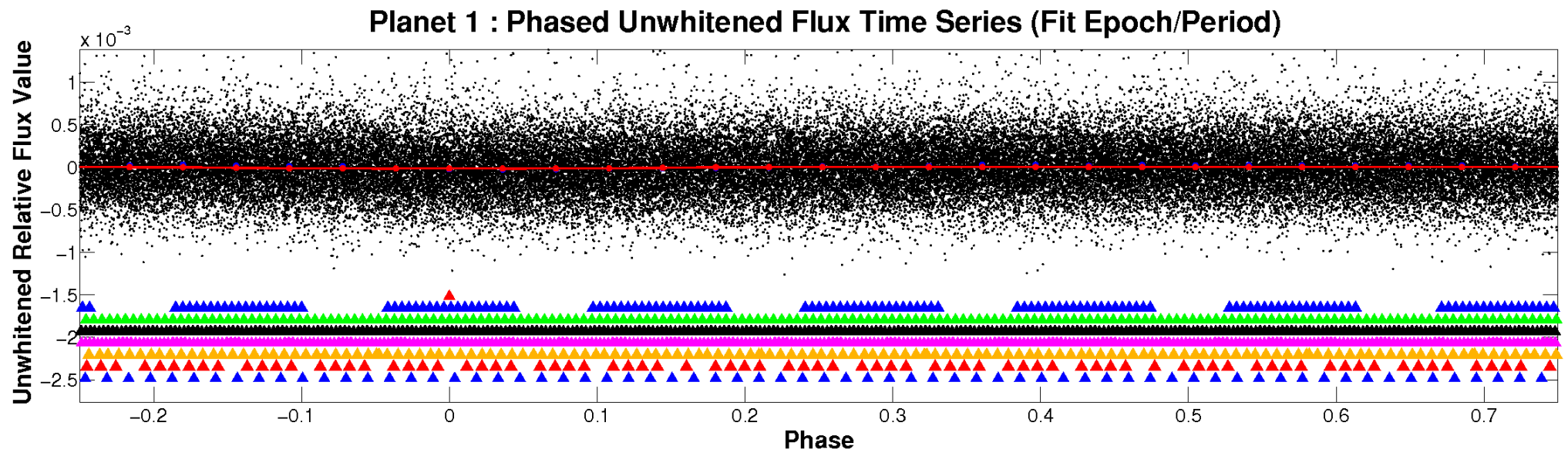


# ALT Odd/Even

TCE 007115249-01



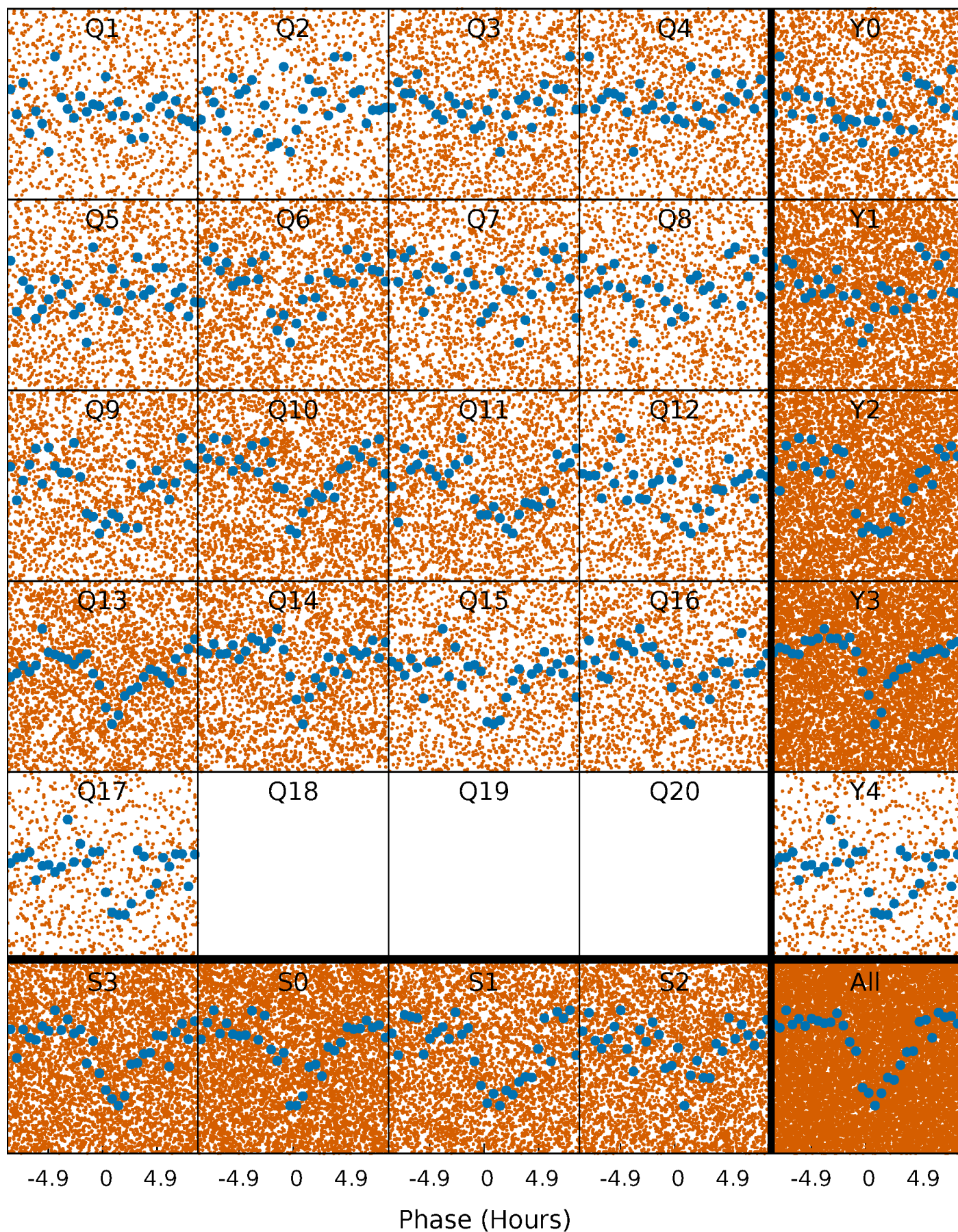
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

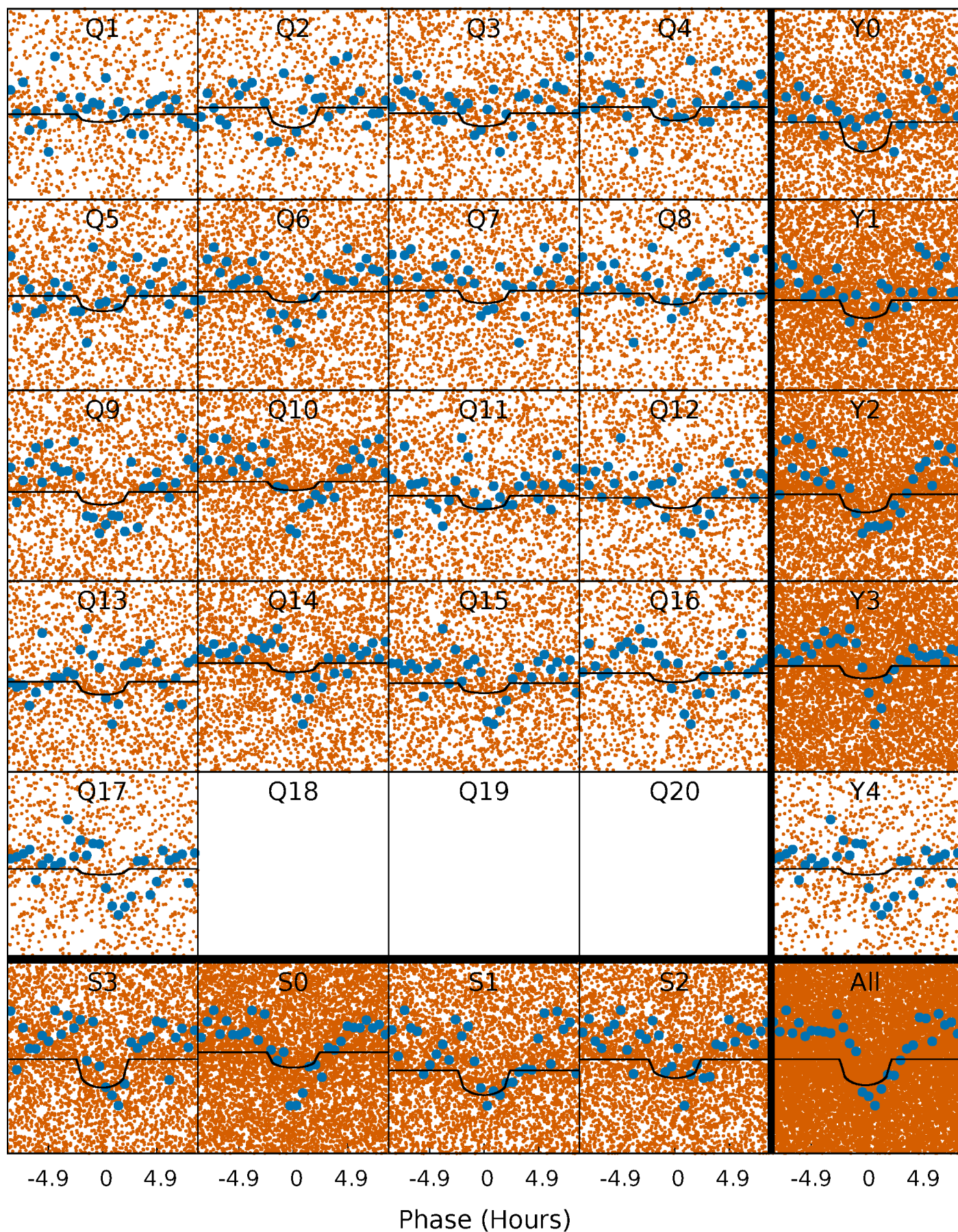
TCE 007115249-01 P= 0.566745 Days  $T_0=131.877898$  (BKJD)





# DV Quarter-Phased Transit Curves

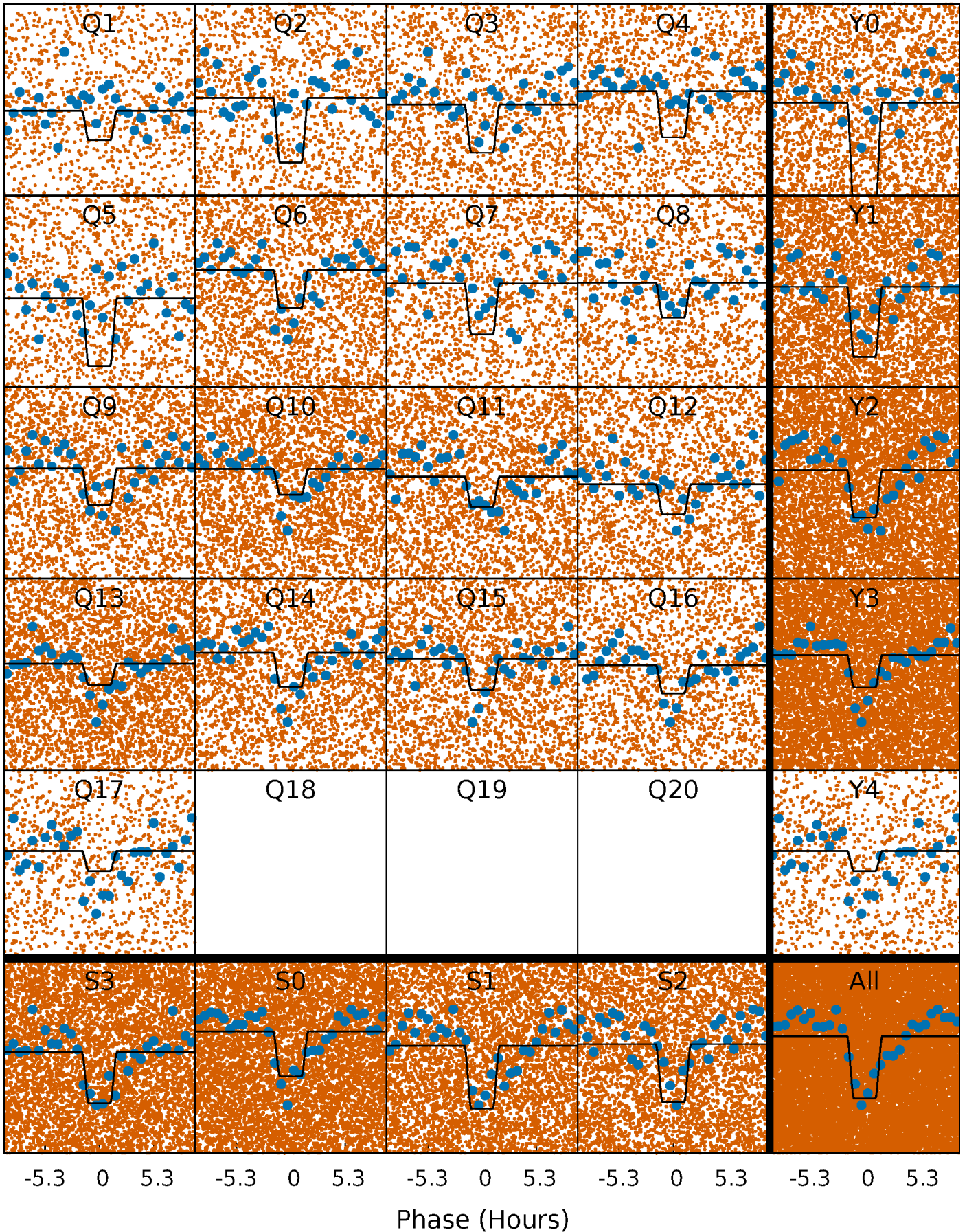
TCE 007115249-01 P= 0.566745 Days  $T_0=131.877898$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 007115249-01 P= 0.566788 Days  $T_0=131.838122$  (BKJD)

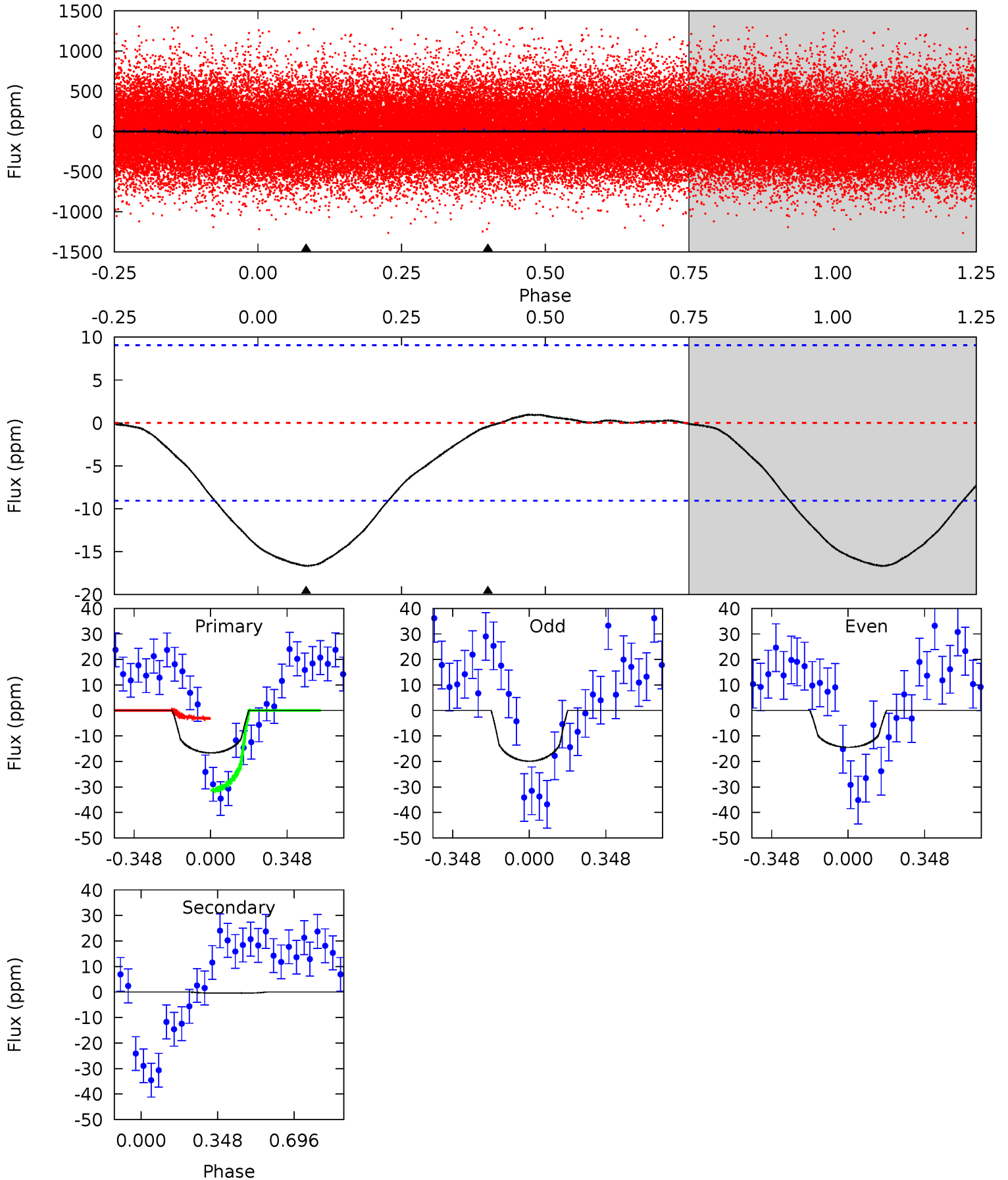




# DV Model-Shift Uniqueness Test

007115249-01, P = 0.566745 Days, E = 131.311153 Days

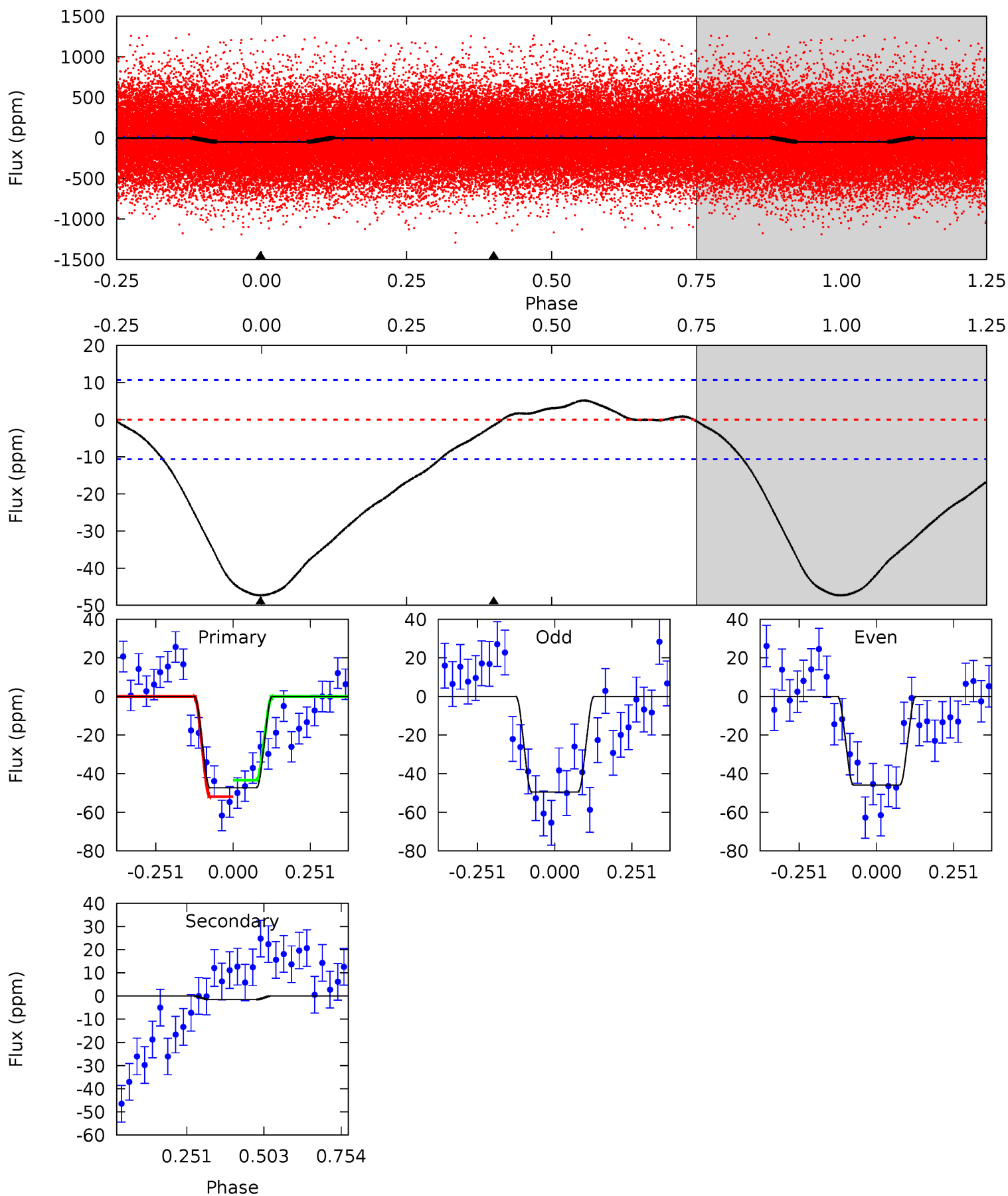
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.90	0.21	0	0	4.30	0.94	0.13	7.90	7.90	0.21	0.21	1.29	0.82	0.05	6.69



# Alt Model-Shift Uniqueness Test

007115249-01, P = 0.566788 Days, E = 131.271334 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.4	0.63	0	0	4.37	1.15	0.15	19.4	19.4	0.63	0.63	0.74	0.95	0.10	1.74



### Stellar Parameters For KIC 007115249

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5855^{+140}_{-176}$	$4.528^{+0.037}_{-0.200}$	$-0.120^{+0.300}_{-0.300}$	$0.894^{+0.261}_{-0.087}$	$0.982^{+0.108}_{-0.121}$	$1.938^{+0.380}_{-0.989}$
	+2%/-3%	+1%/-4%	+250%/-250%	+29%/-10%	+11%/-12%	+20%/-51%
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 007115249-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-0 \pm 2$	$0.63^{+0.63}_{-0.43}$	$3031^{+196}_{-132}$	$-3026^{+6710}_{-608}$	$0.058^{+1.110}_{-0.540}$
Alt.	$-2 \pm 2$	$0.85^{+0.71}_{-0.51}$	$3030^{+183}_{-127}$	$-2878^{+6606}_{-432}$	$0.130^{+1.192}_{-0.248}$

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



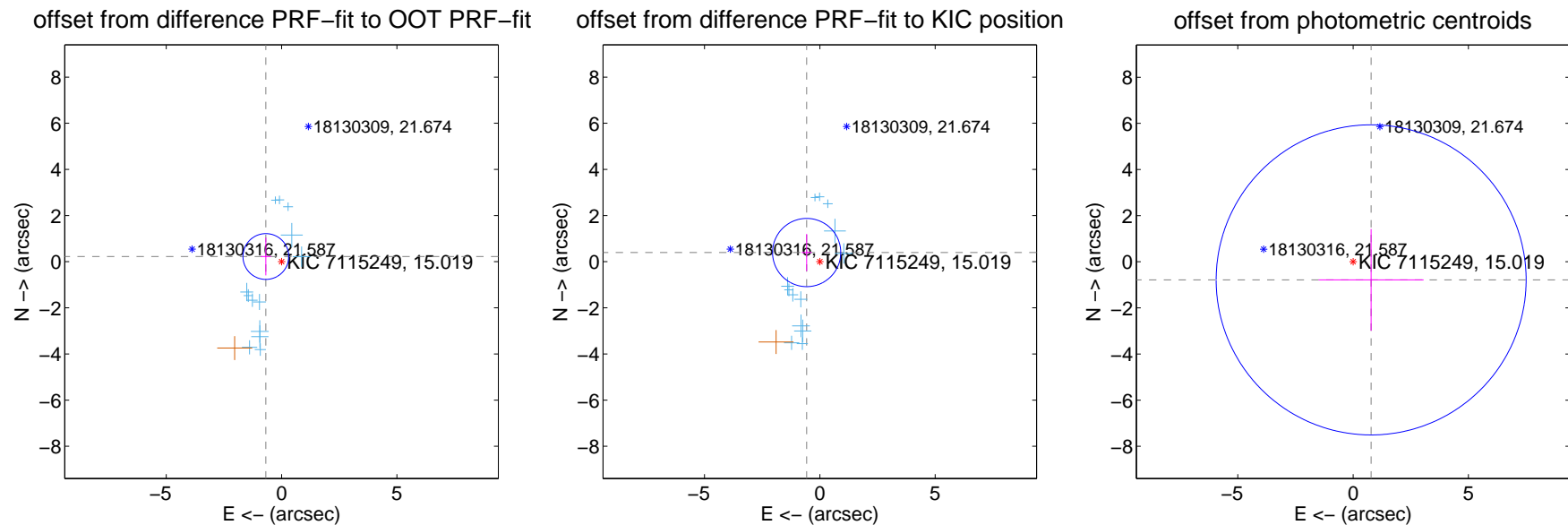
## DV Centroid Data

Supplemental centroid analysis for 007115249-01. Kepler magnitude: 15.02. Transit SNR 5.91

There are 13 quarters with good PRF difference image offsets

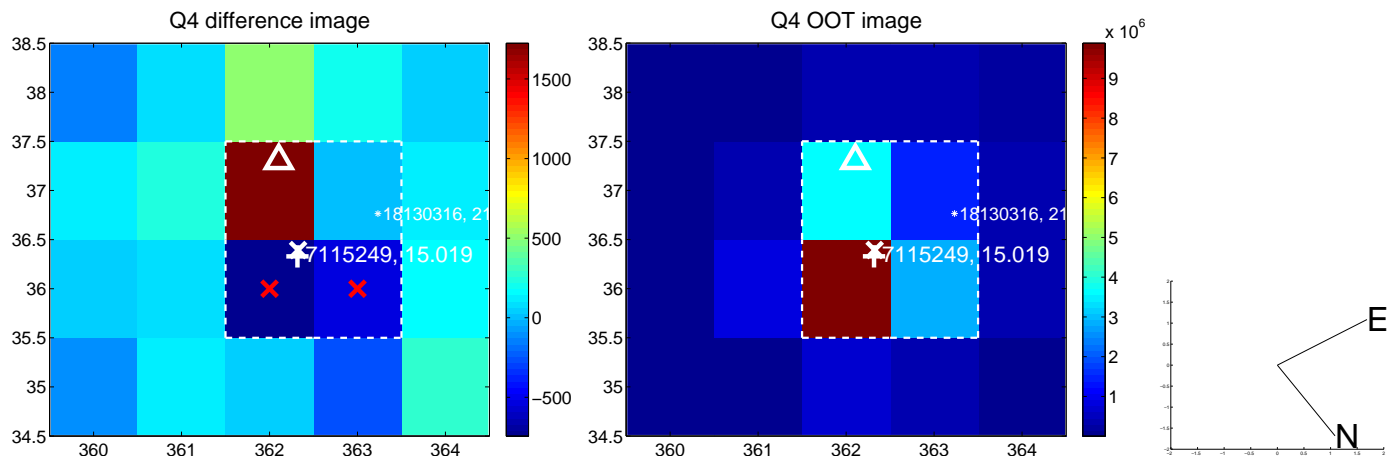
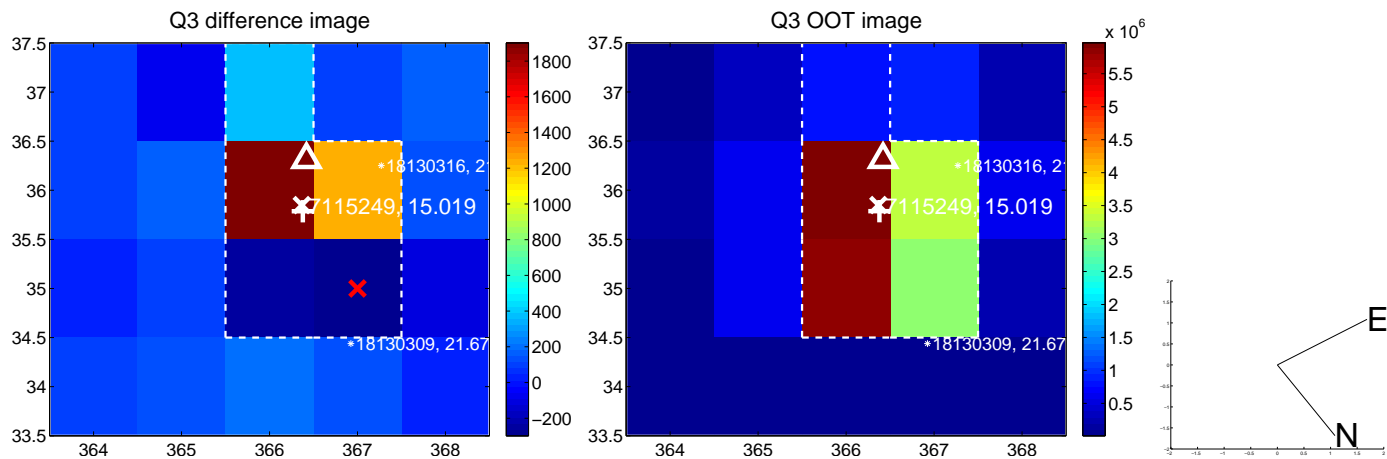
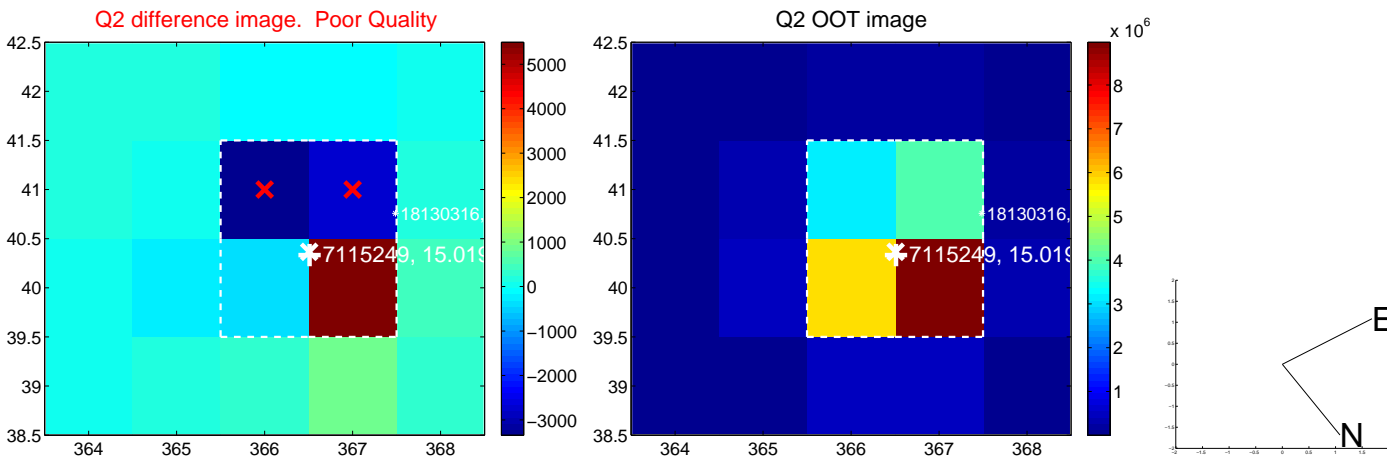
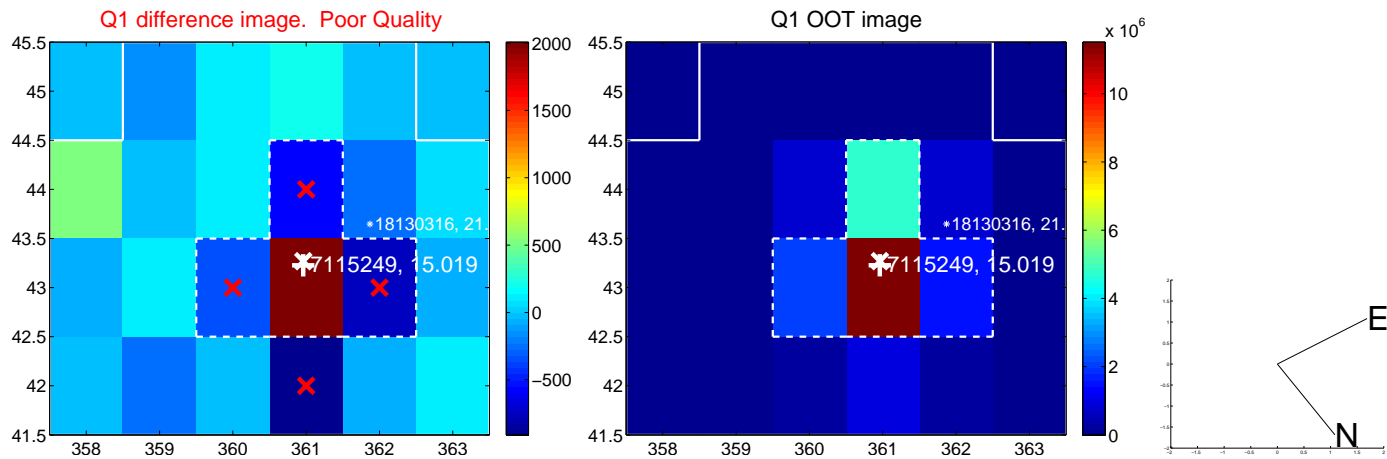
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.718 \pm 0.331$	2.17	$0.682 \pm 0.220$	$0.225 \pm 0.820$
PRF-fit source offset from KIC position	$0.696 \pm 0.493$	1.41	$0.571 \pm 0.217$	$0.397 \pm 0.805$
photometric centroid source offset	$1.11 \pm 2.24$	0.49	$-0.78 \pm 2.28$	$-0.79 \pm 2.20$

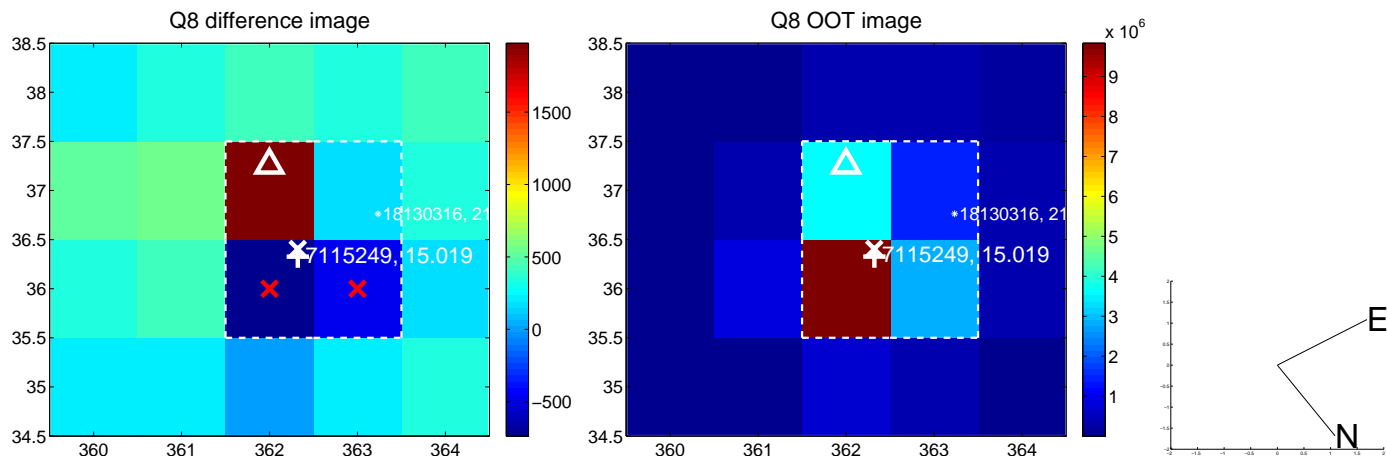
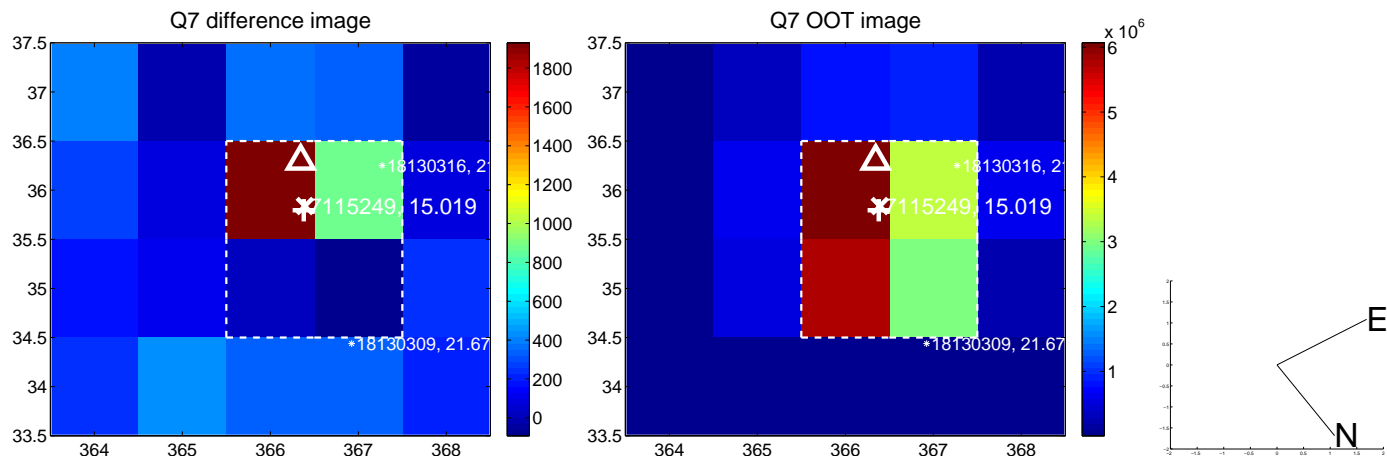
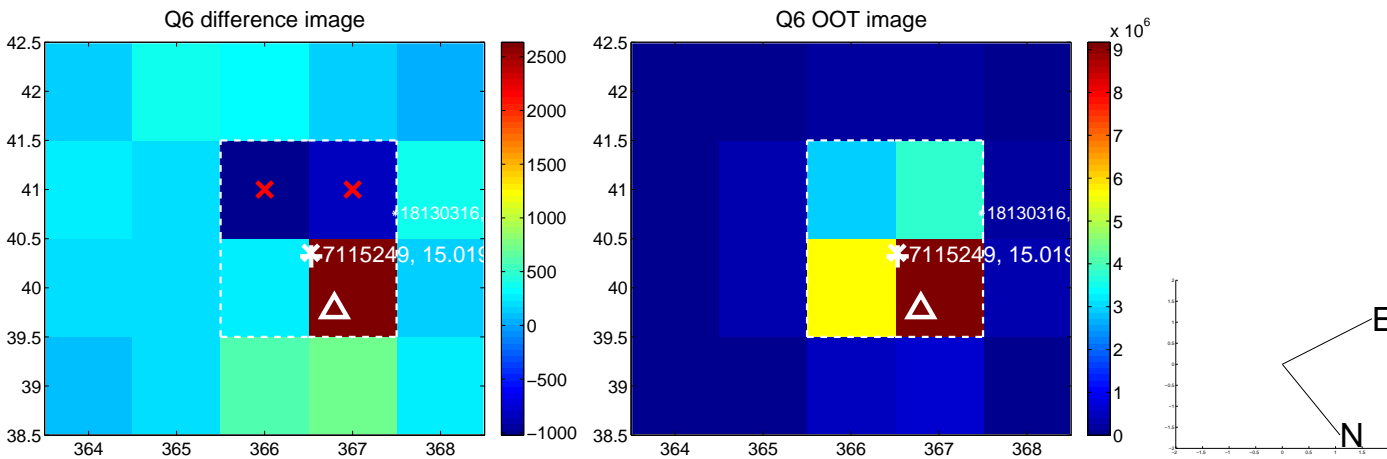
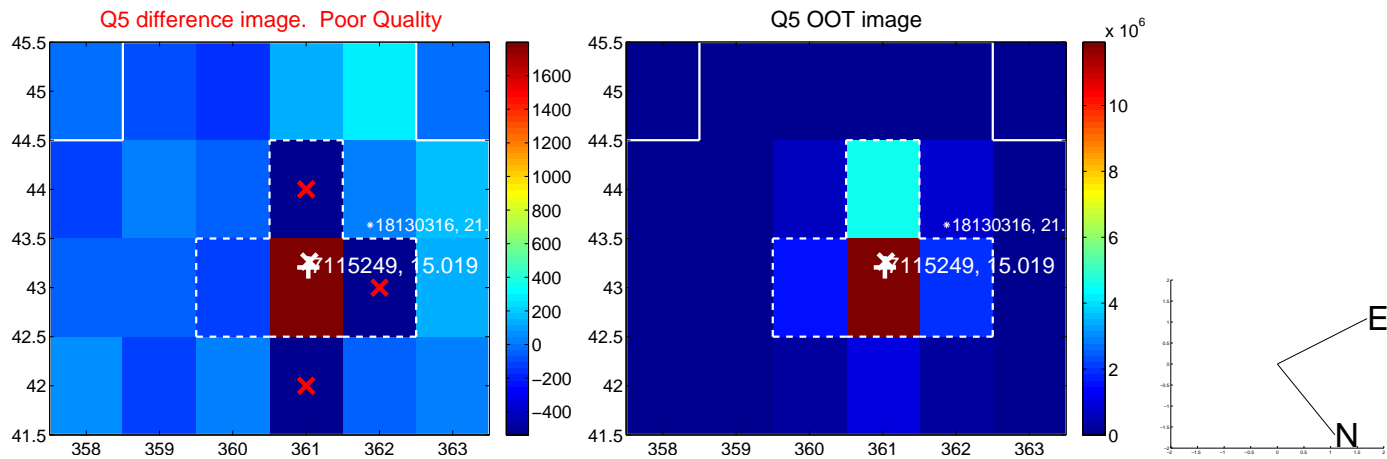


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

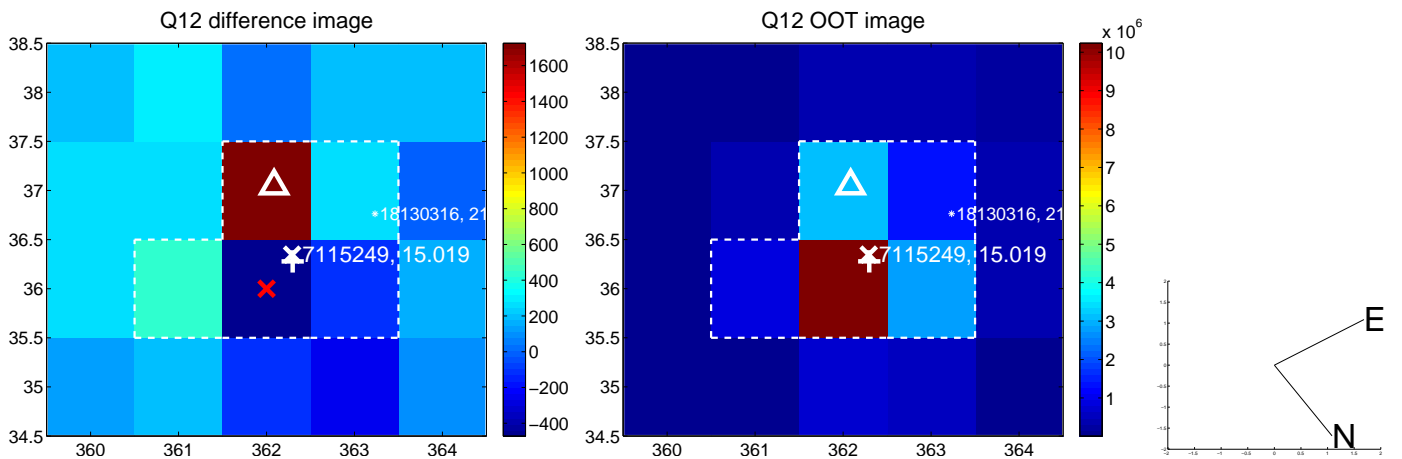
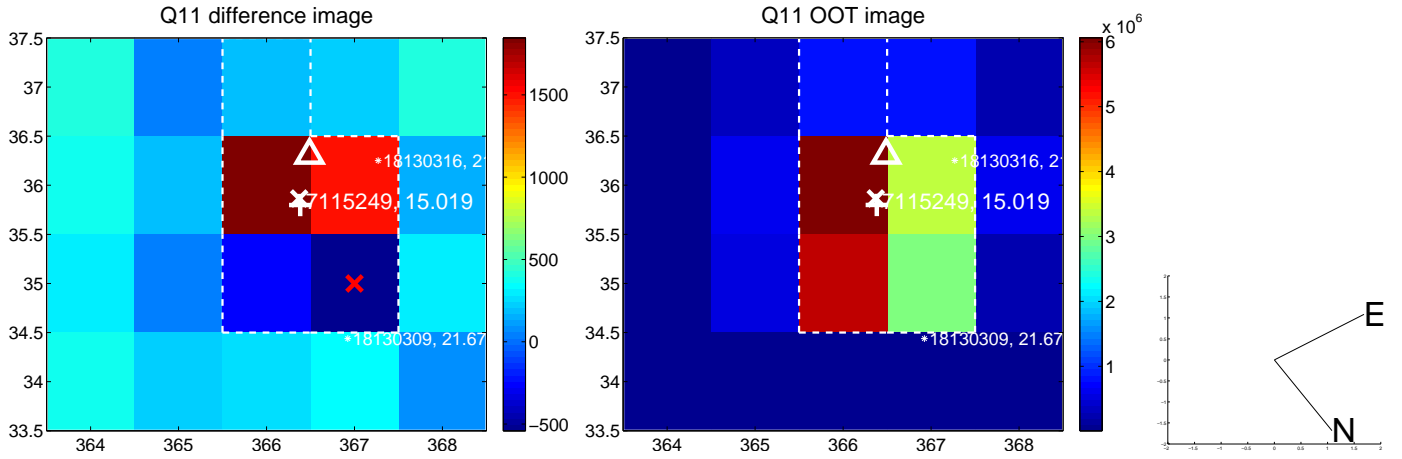
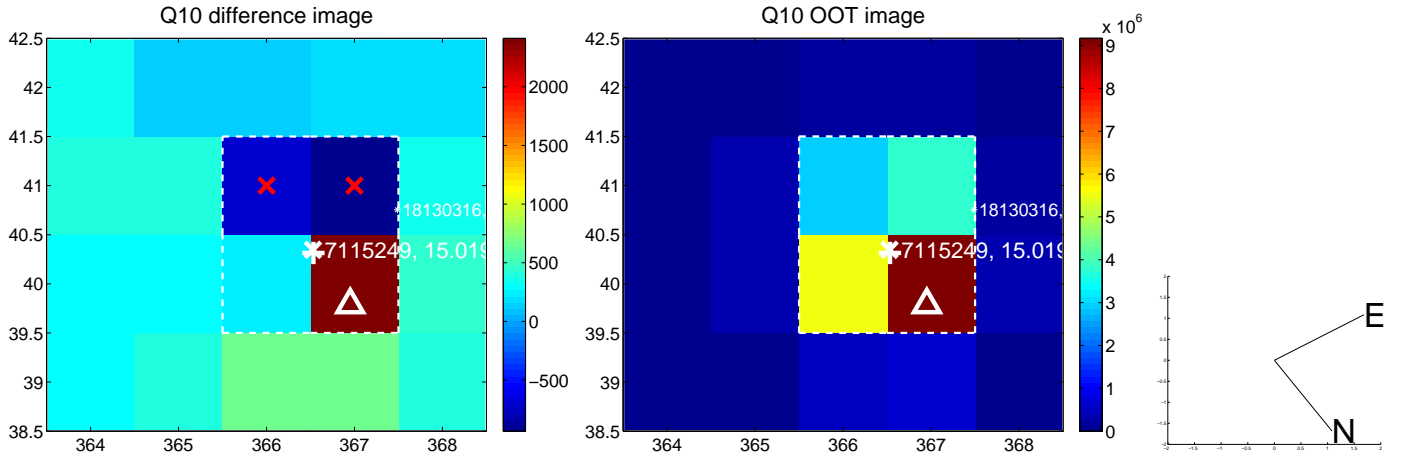
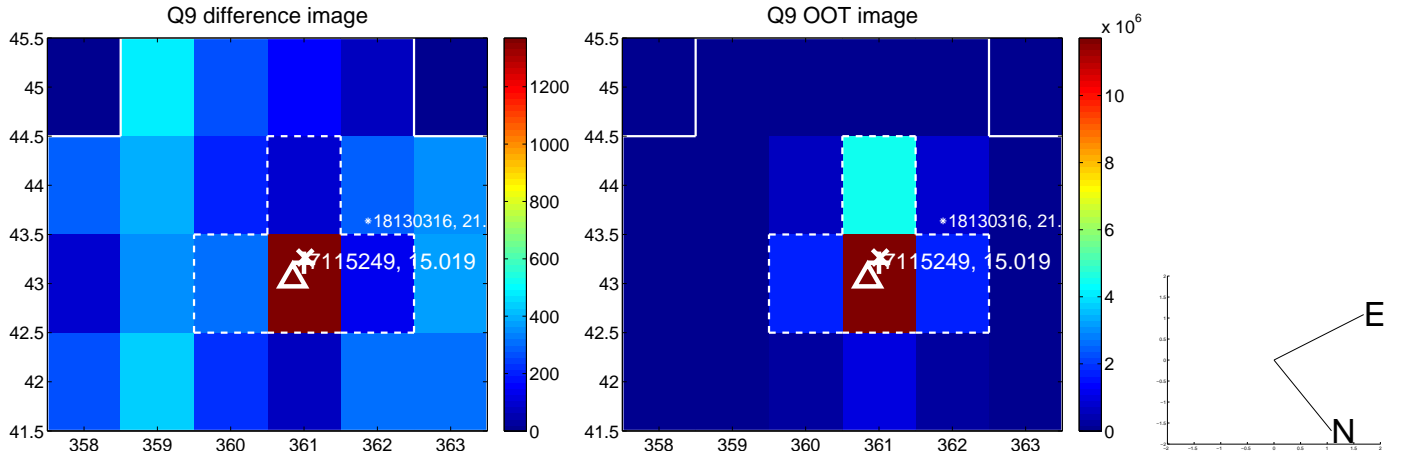


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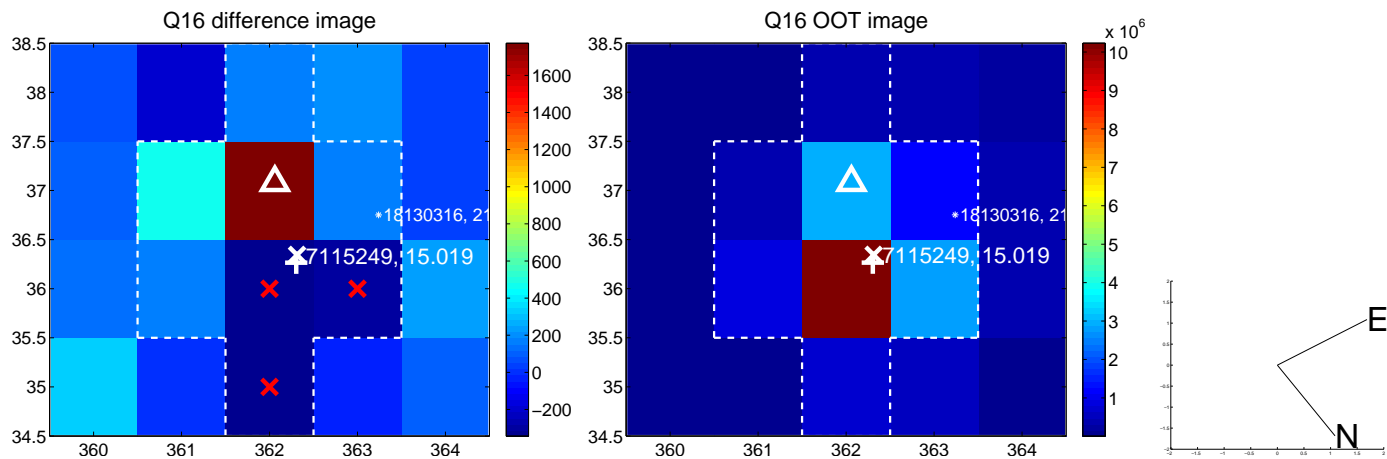
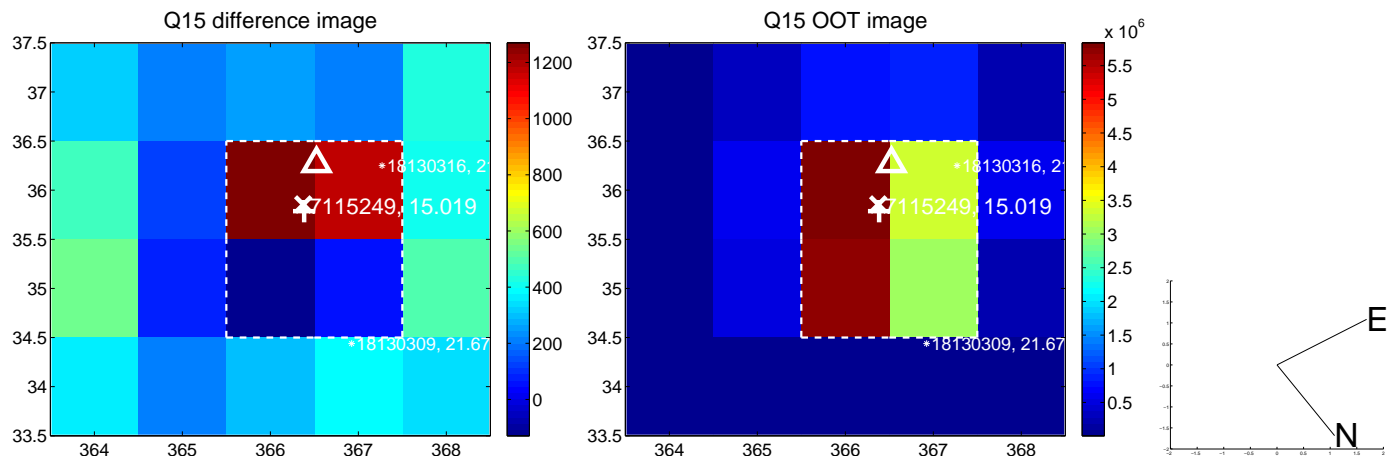
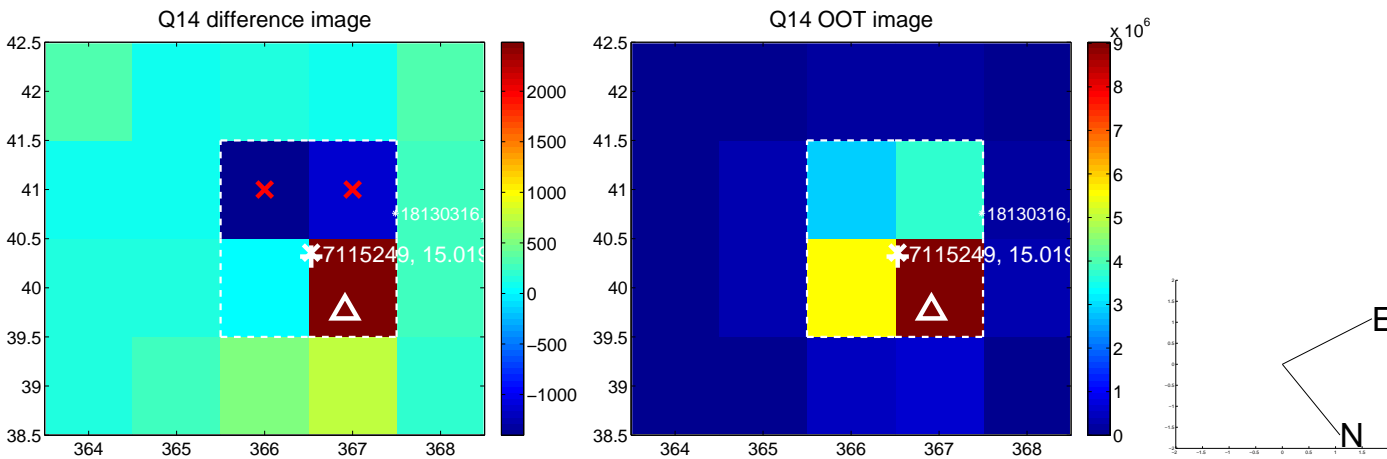
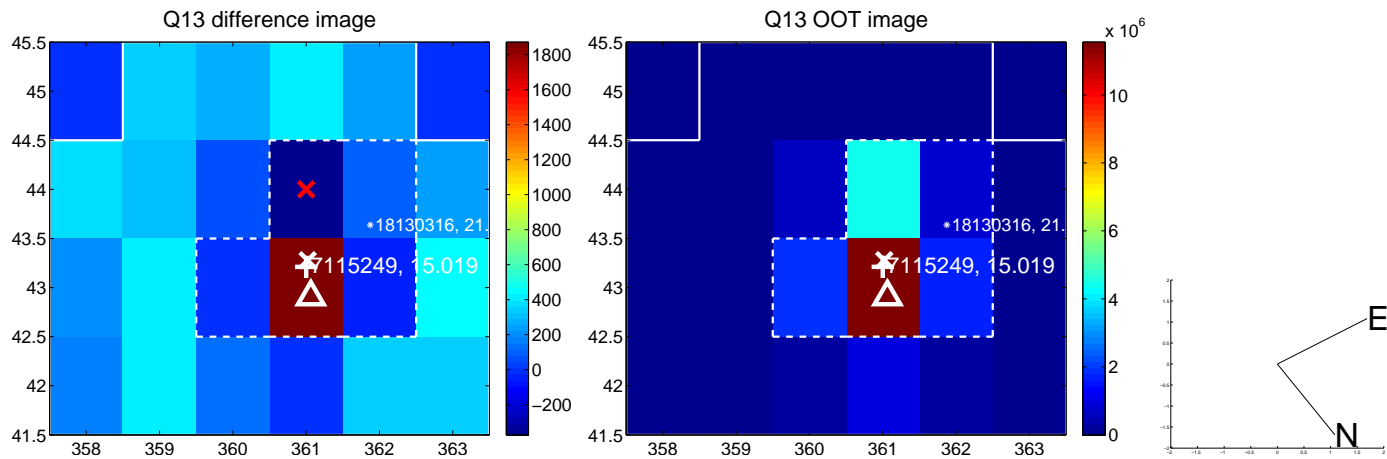




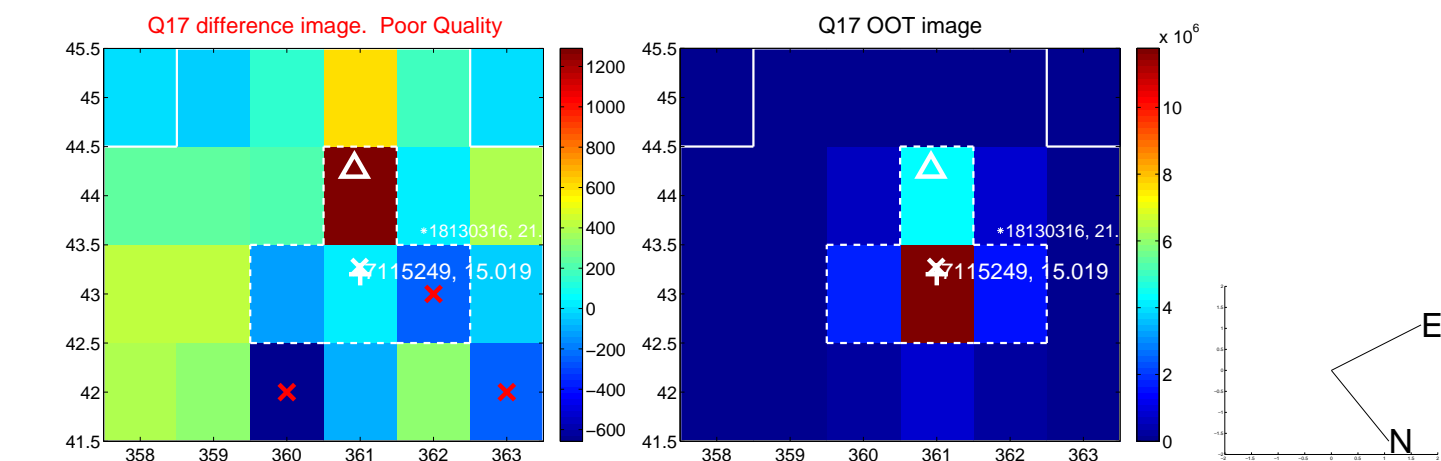
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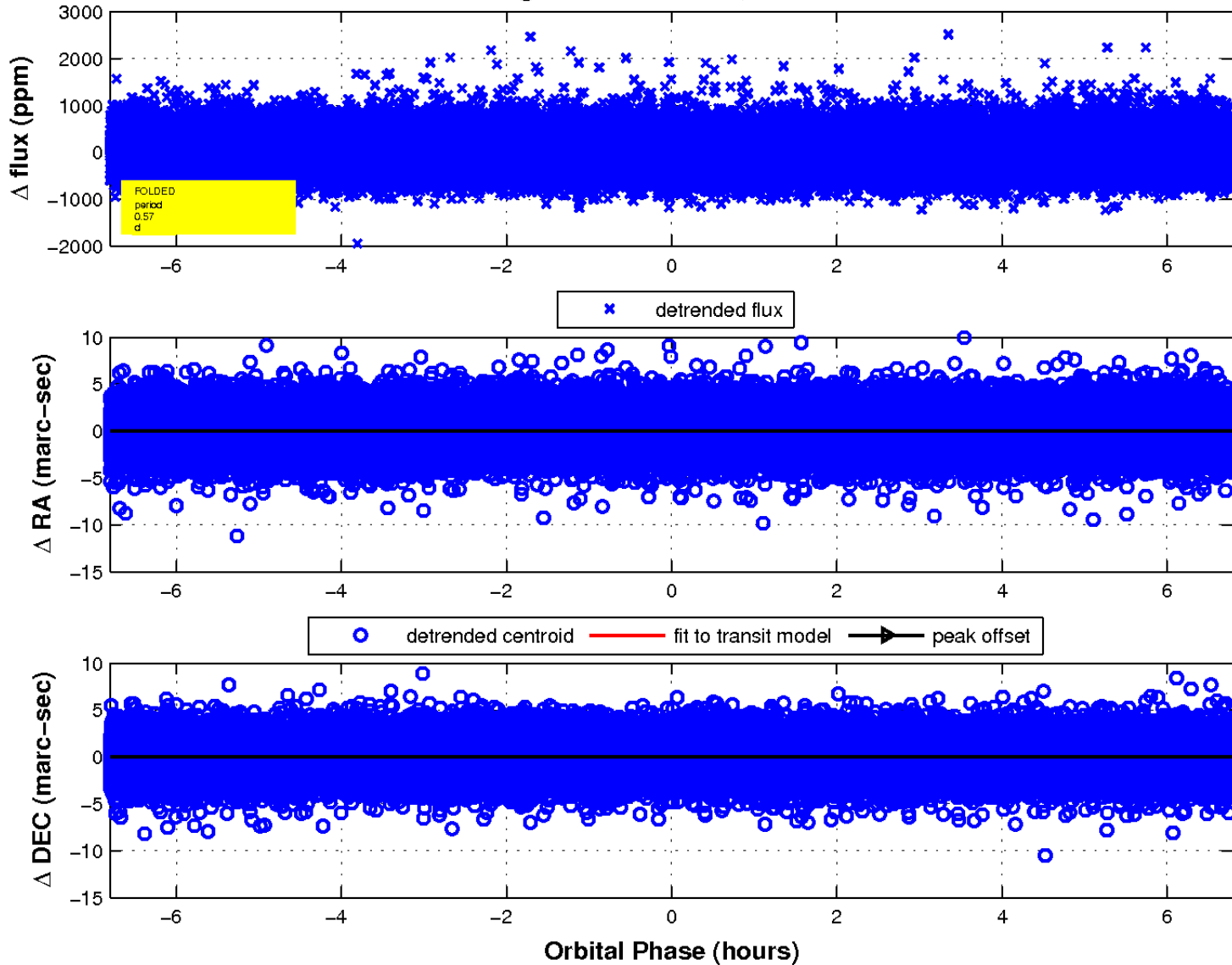
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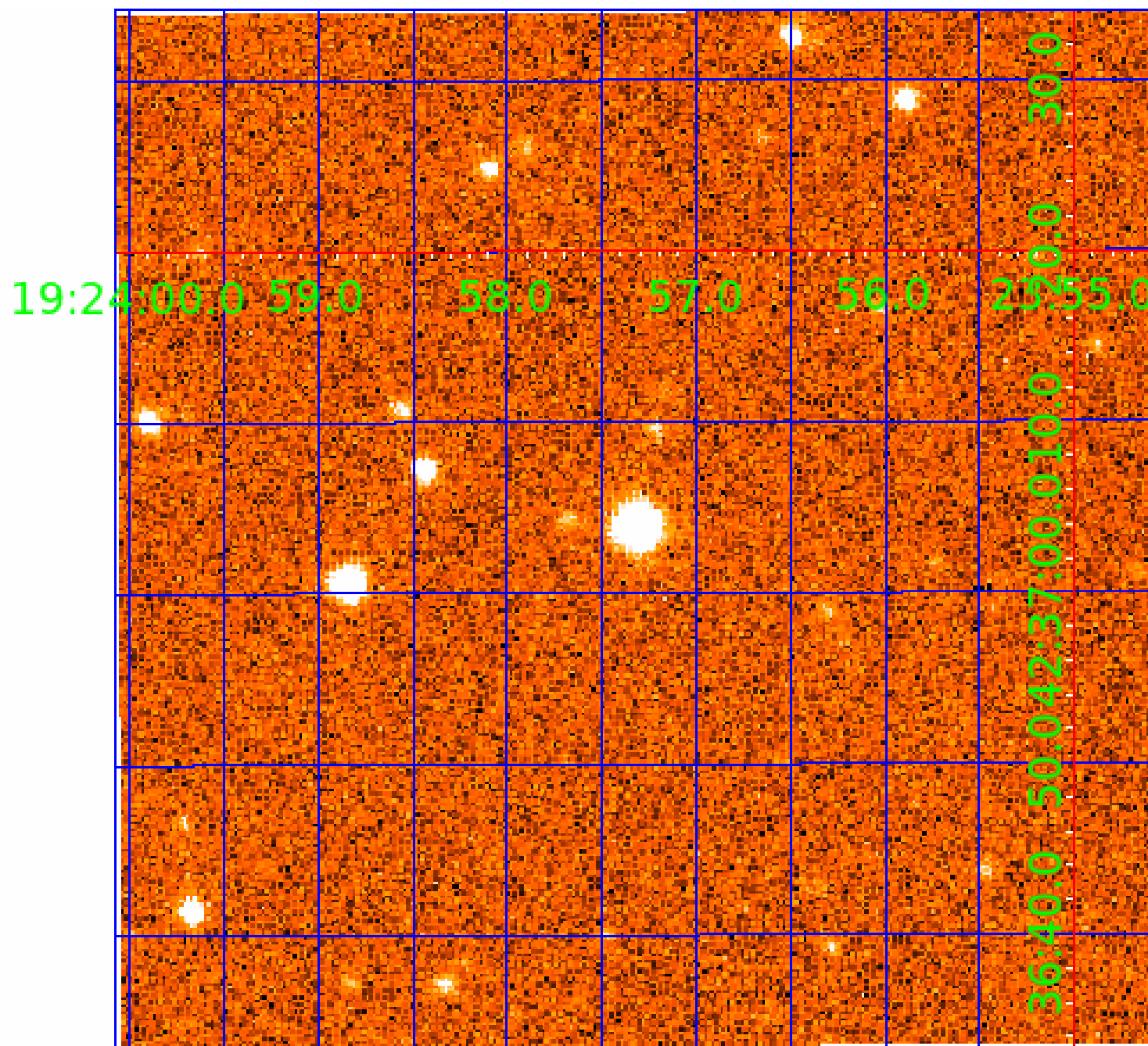


fluxWeightedCentroids, Planet 1 of 8



# UKIRT Image

Declination



# KIC 007115249

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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.

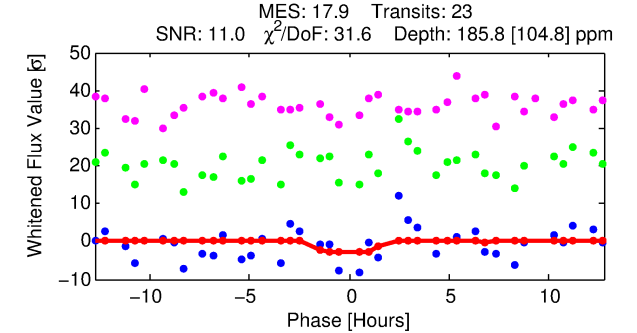
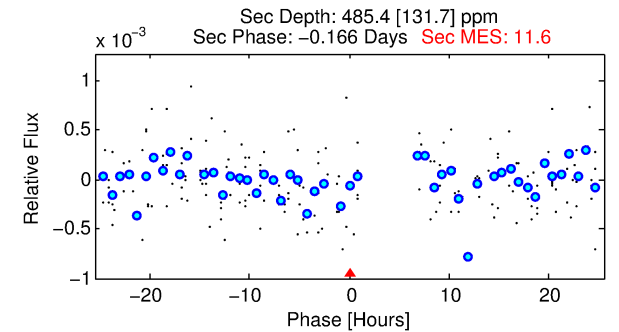
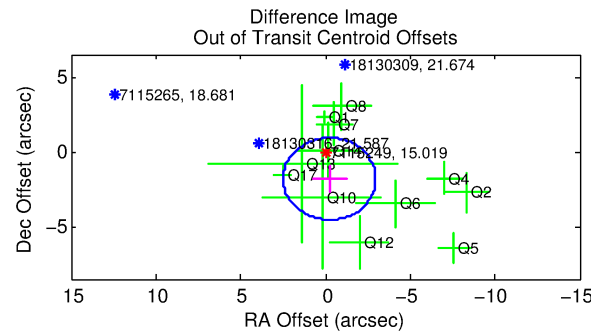
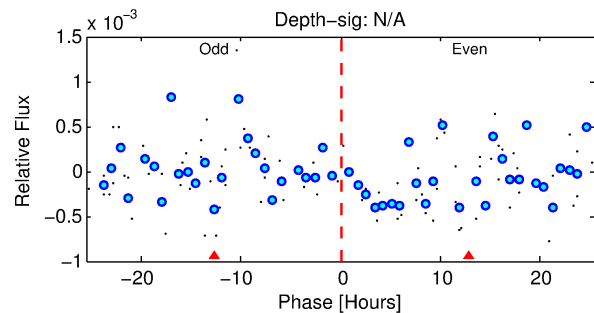
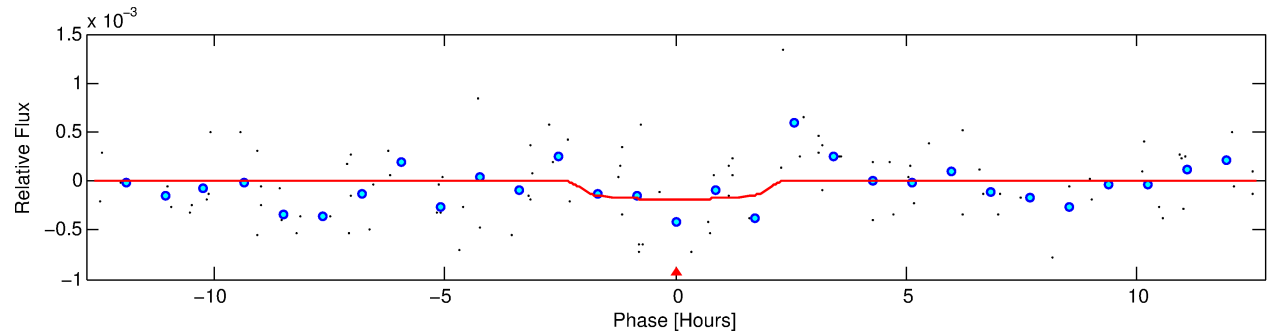
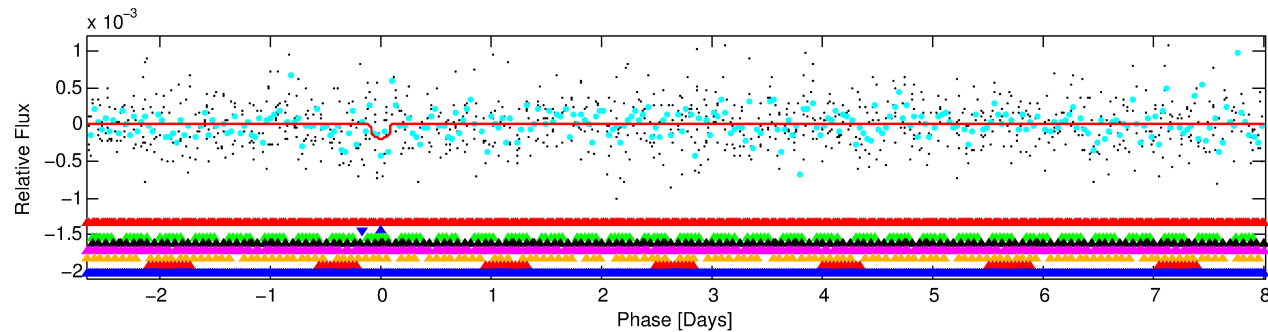
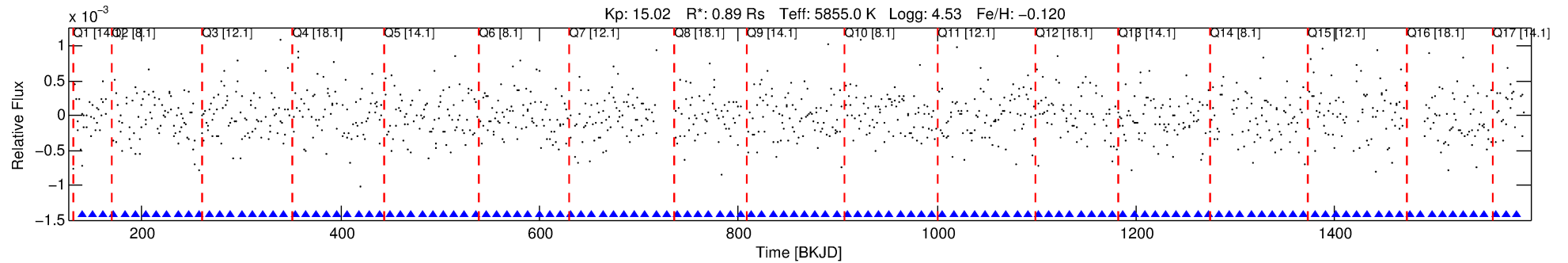
Ephemeris Match Information For 007115249-02

No Significant Match Found



# DV One-Page Summary

KIC: 7115249 Candidate: 2 of 8 Period: 10.687 d



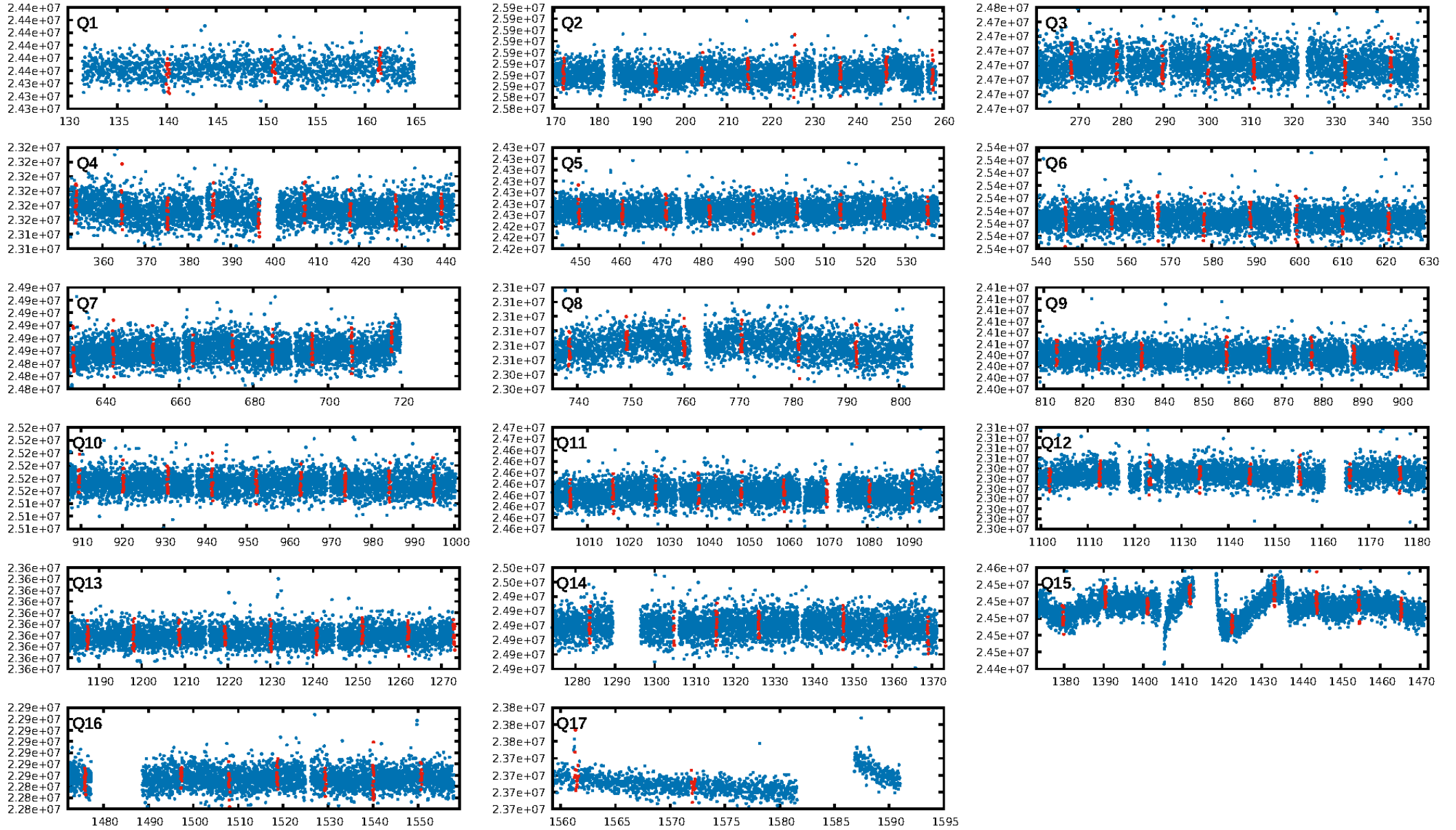
## DV Fit Results:

Period = 10.68681 [0.00186] d  
Epoch = 140.0811 [0.0771] BKJD  
Rp/R\* = 0.0133 [0.2664]  
a/R\* = 14.17 [1270.79]  
b = 0.69 [69.78]  
Seff = 94.35 [36.13]  
Teff = 795 [76] K  
Rp = 1.30 [25.99] Re  
a = 0.0944 [0.0234] AU  
Ag = 1410.24 [56409.34] [0.02σ]  
Teffp = 7530 [75294] K [0.09σ]

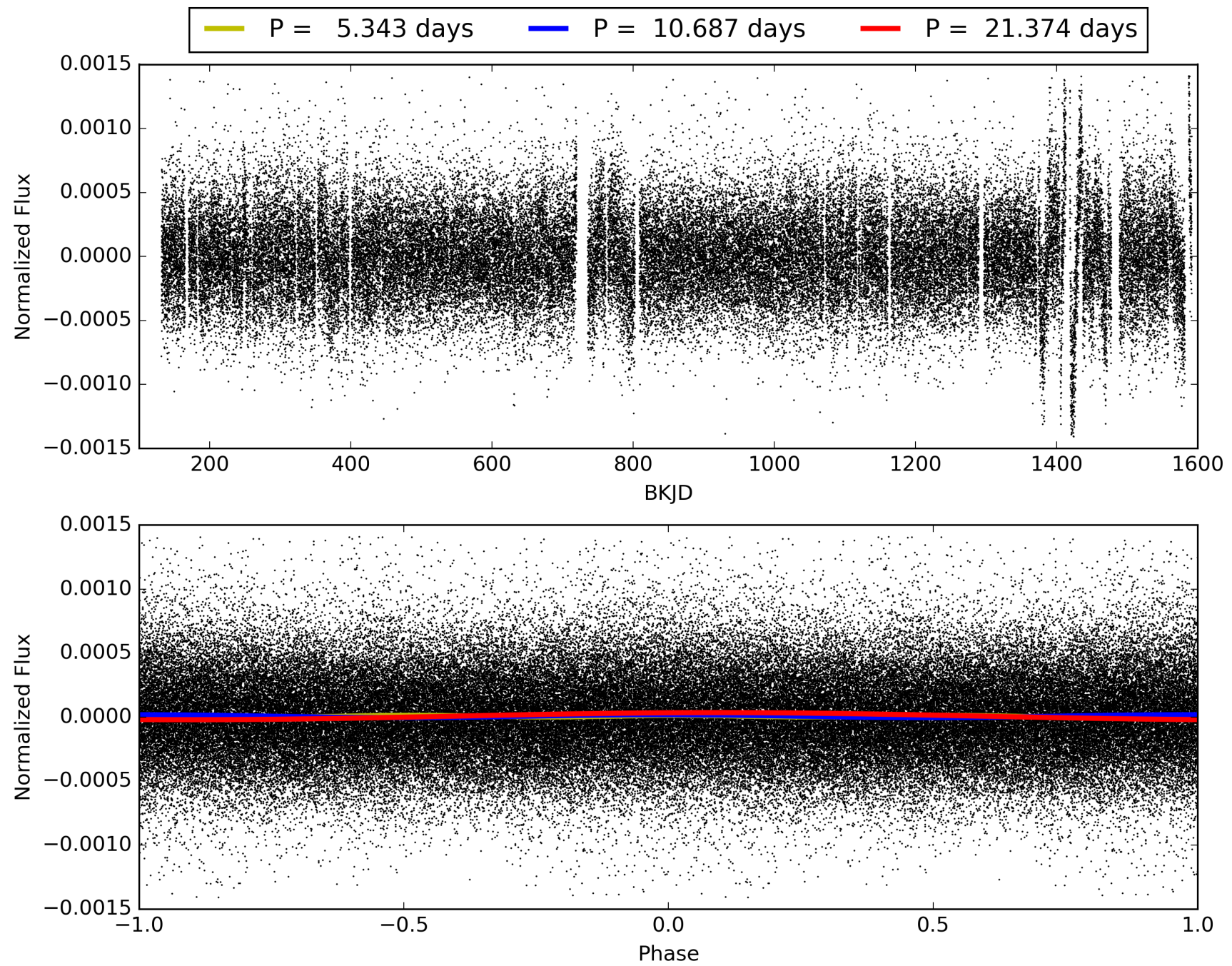
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.31σ]  
LongPeriod-sig: 100.0% [40.48σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.0%  
Bootstrap-pfa: 2.94e-09  
RollingBand-fgt: 1.00 [20/20]  
GhostDiagnostic-chr: 1.293  
Centroid-sig: 1.9%  
Centroid-so: 1.045 arcsec [1.26σ]  
OotOffset-rm: 1.832 arcsec [2.01σ]  
KicOffset-rm: 1.641 arcsec [1.68σ]  
OotOffset-st: 4/1/3/4 [12]  
KicOffset-st: 4/1/3/4 [12]  
DiffImageQuality-fgm: 0.08 [1/12]  
DiffImageOverlap-fno: 0.00 [0/17]

# TCE 007115249-02, PDC Light Curves

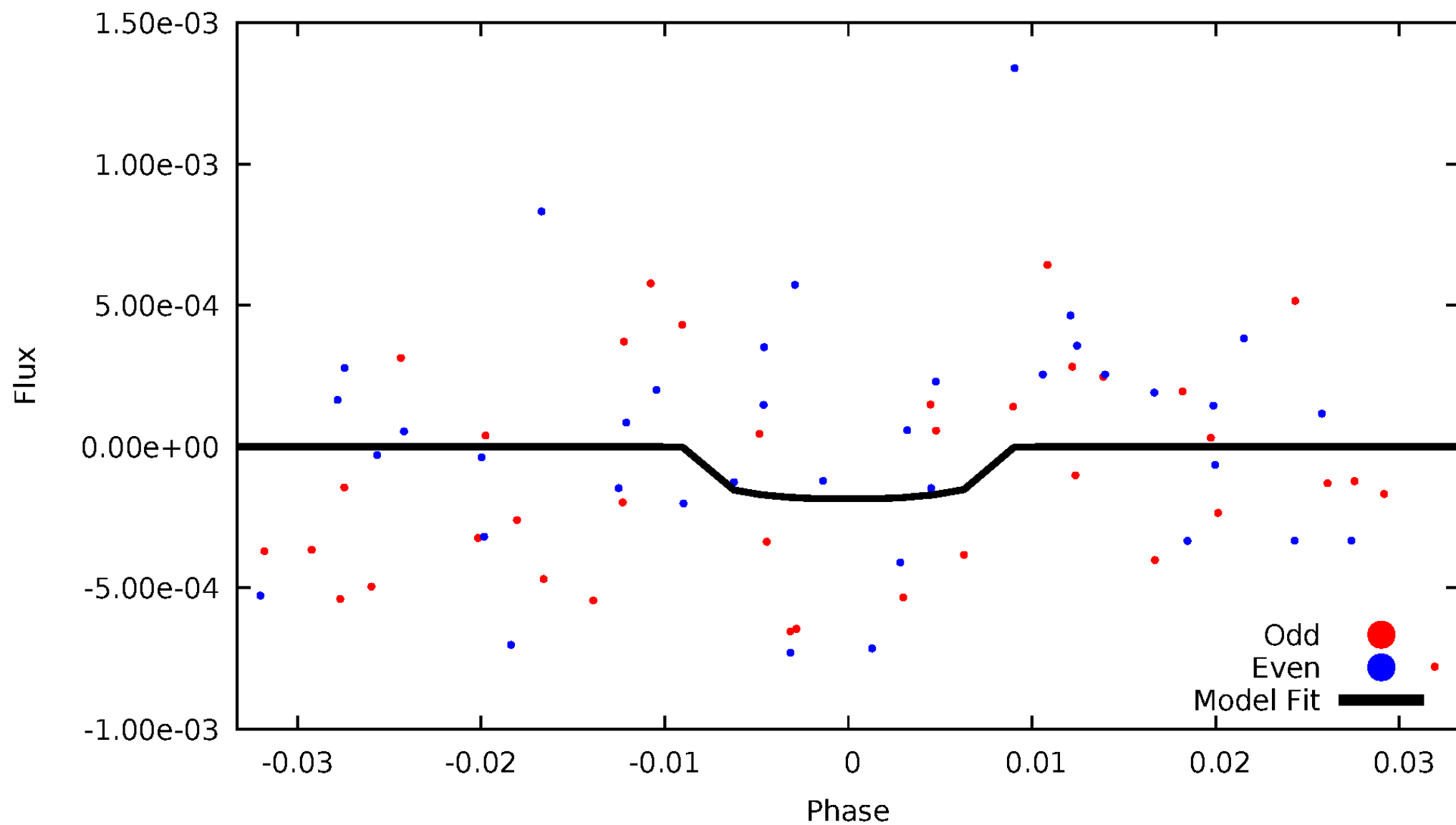


TCE 007115249-02



# DV Odd/Even

TCE 007115249-02





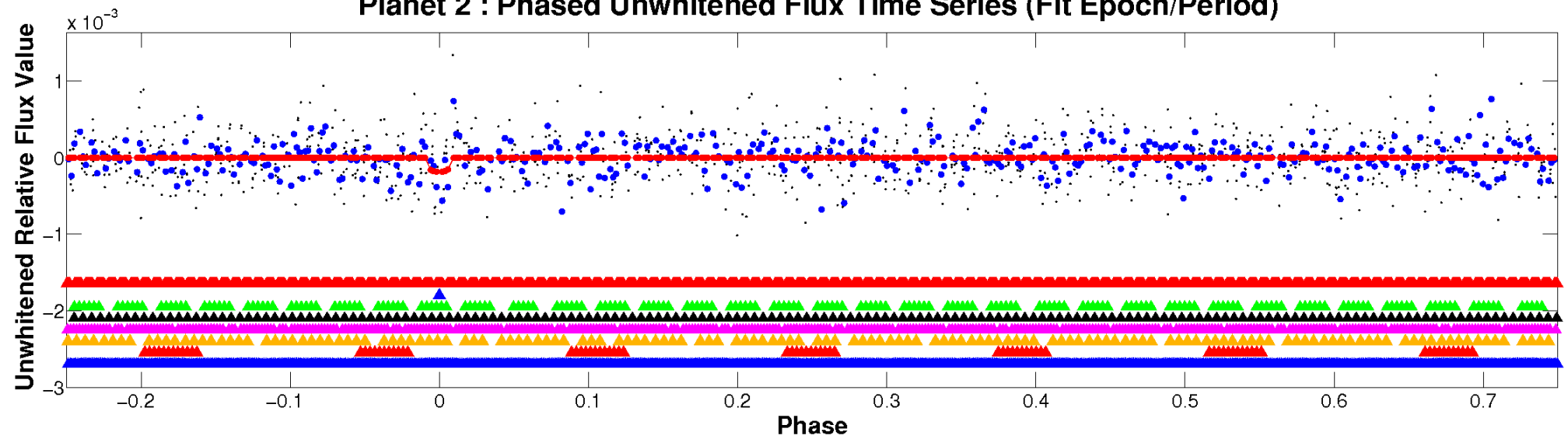
ALT Odd/Even

This plot does not exist for this TCE.

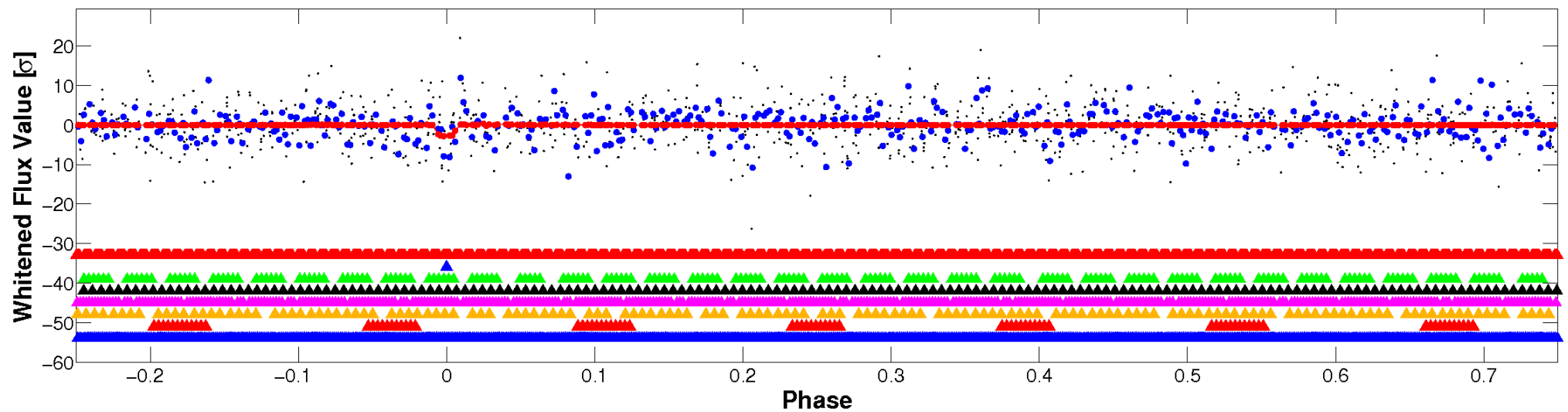


# Non-Whitened Vs. Whitened Light Curve

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

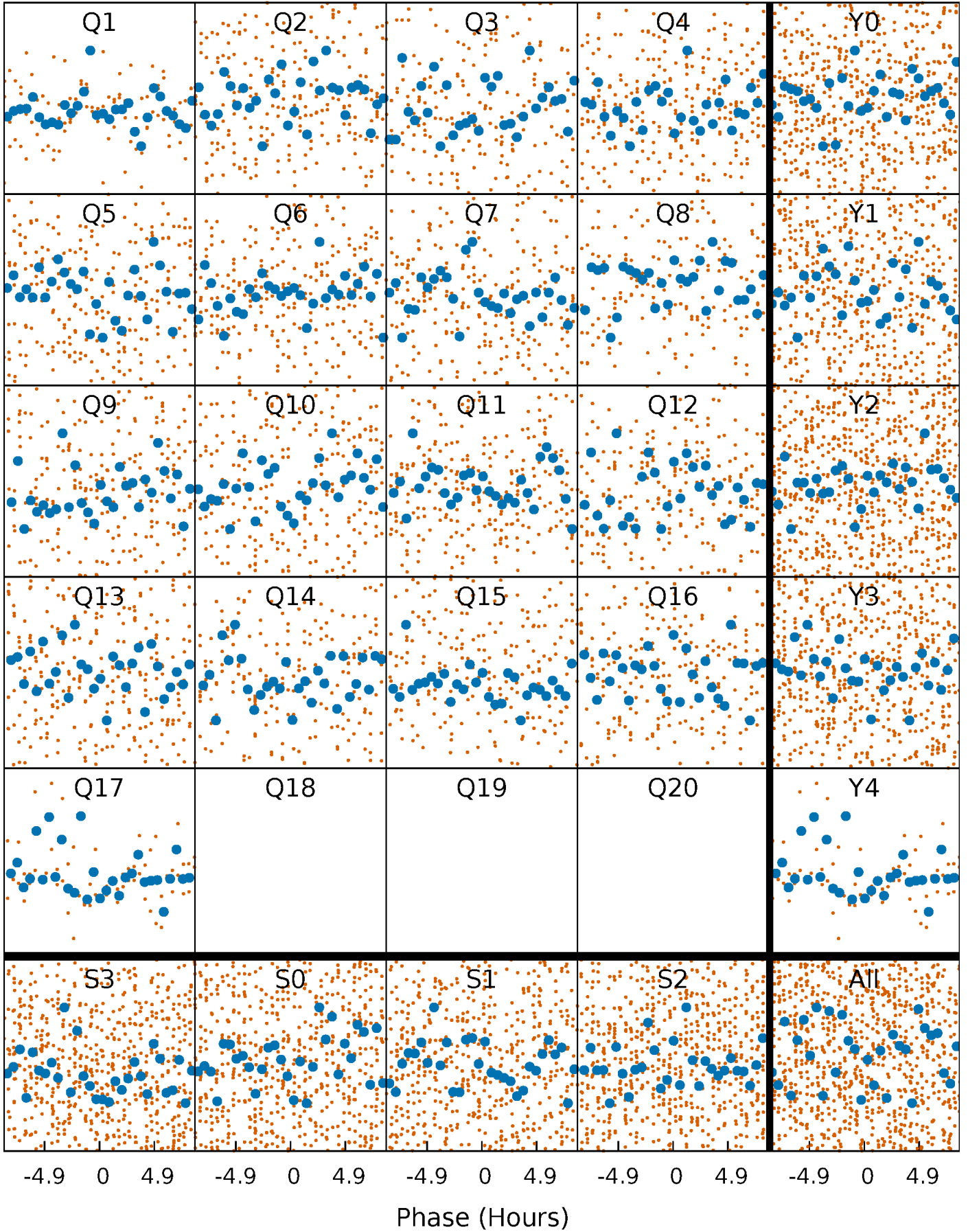


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



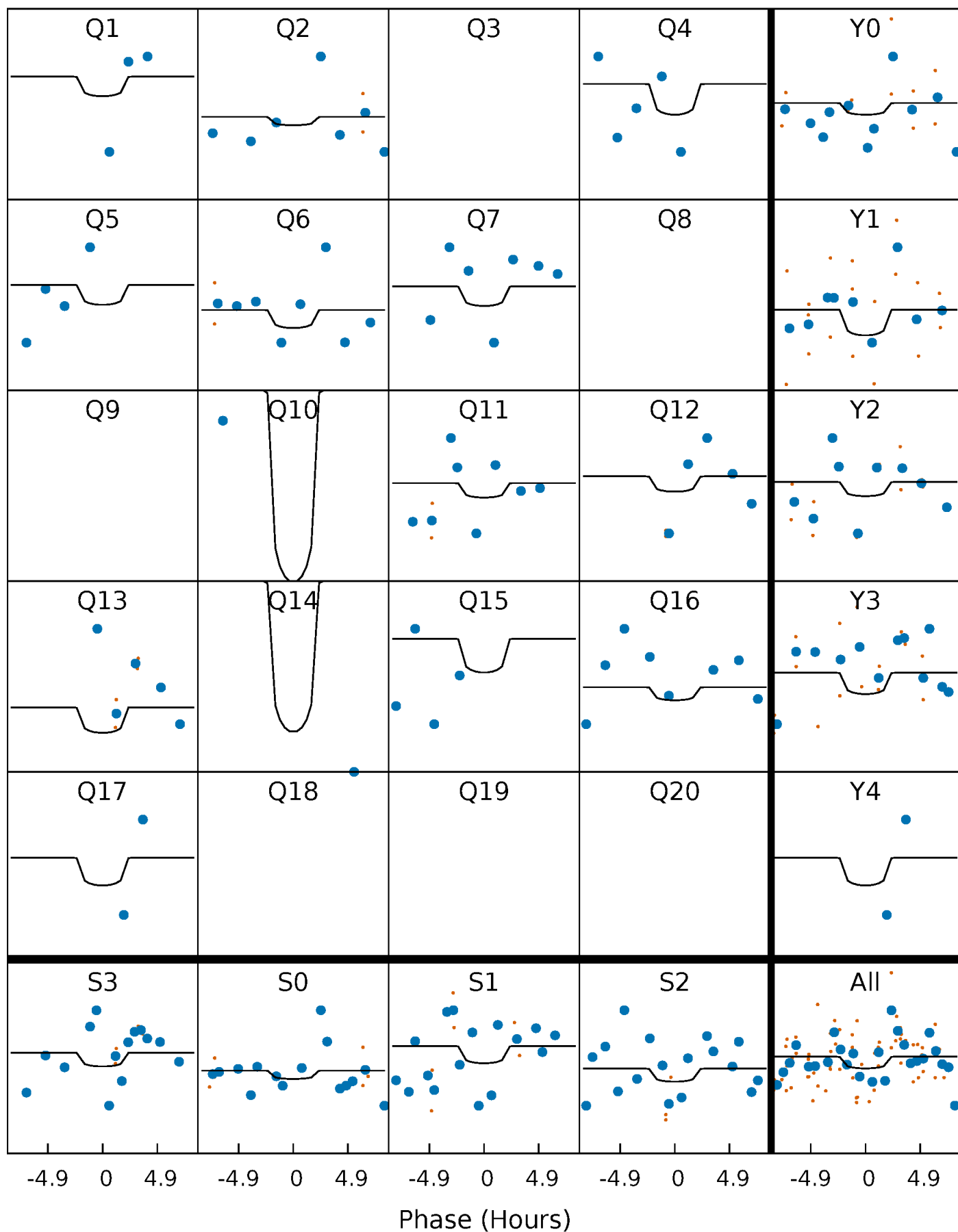
# PDC Quarter-Phased Transit Curves

TCE 007115249-02 P= 10.686810 Days  $T_0=140.081100$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 007115249-02 P= 10.686810 Days  $T_0=140.081100$  (BKJD)

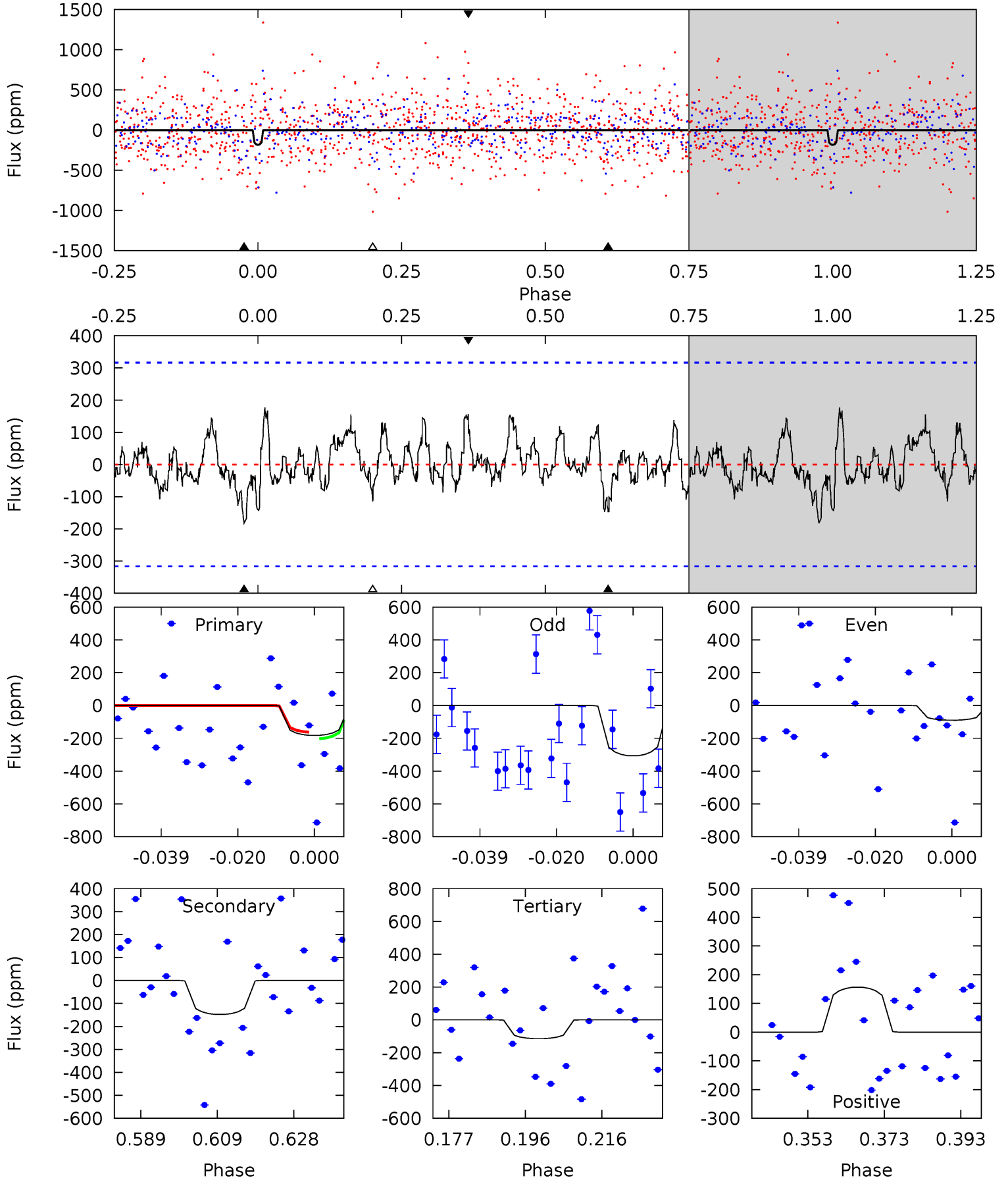


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

007115249-02, P = 10.686810 Days, E = 129.394290 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
2.81	2.28	1.77	2.42	4.90	2.33	0.88	1.05	0.39	0.51	-0.14	1.70	0	0.49	0.32



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.



### Stellar Parameters For KIC 007115249

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5855^{+140}_{-176}$	$4.528^{+0.037}_{-0.200}$	$-0.120^{+0.300}_{-0.300}$	$0.894^{+0.261}_{-0.087}$	$0.982^{+0.108}_{-0.121}$	$1.938^{+0.380}_{-0.989}$
	+2%/-3%	+1%/-4%	+250%/-250%	+29%/-10%	+11%/-12%	+20%/-51%
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 007115249-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-148 \pm 65$	$19.83^{+21.18}_{-14.50}$	$1138^{+79}_{-51}$	$2276^{+1076}_{-666}$	$1.532^{+21.695}_{-1.195}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

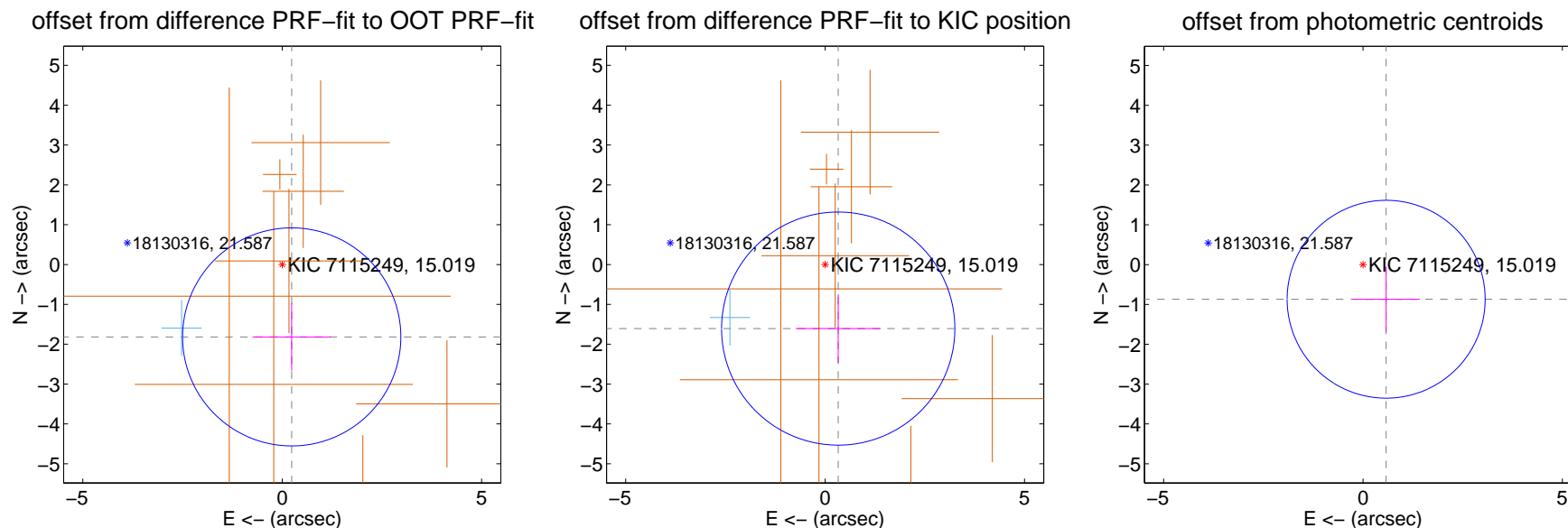
## DV Centroid Data

Supplemental centroid analysis for 007115249-02. Kepler magnitude: 15.02. Transit SNR 10.98

There are 1 quarters with good PRF difference image offsets

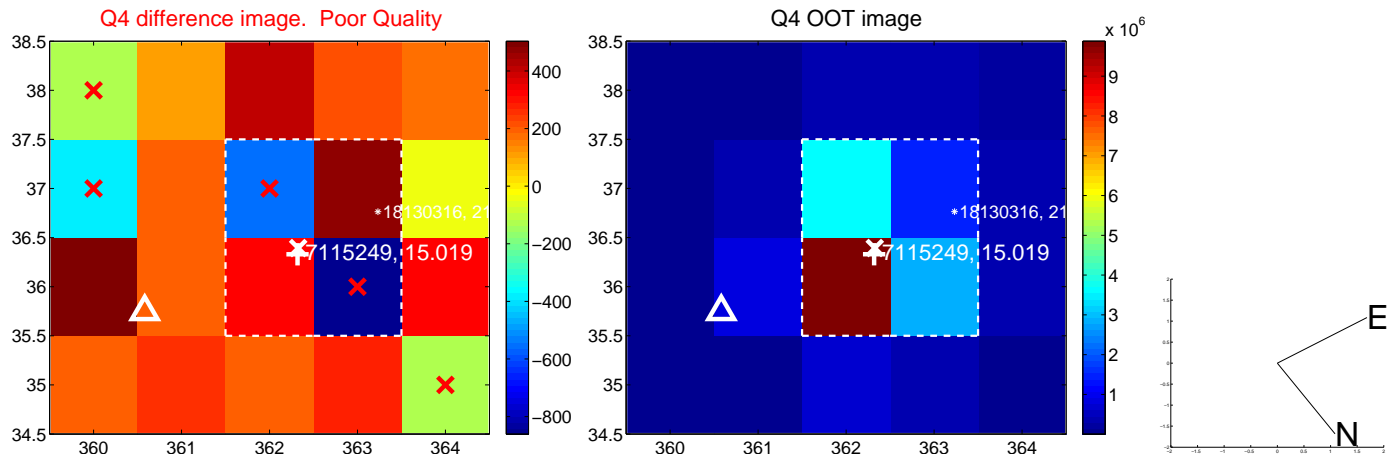
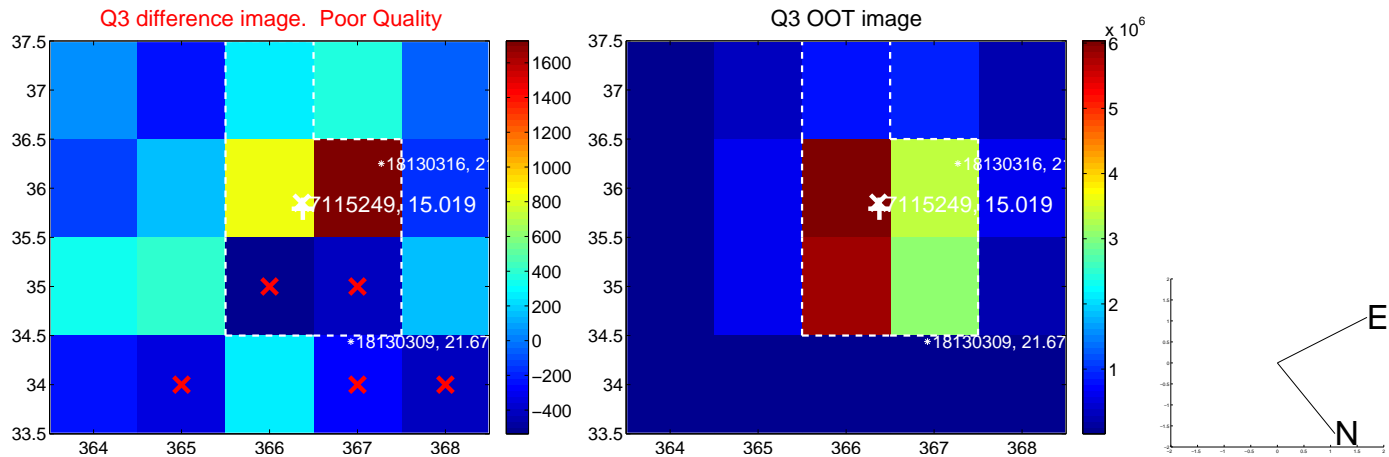
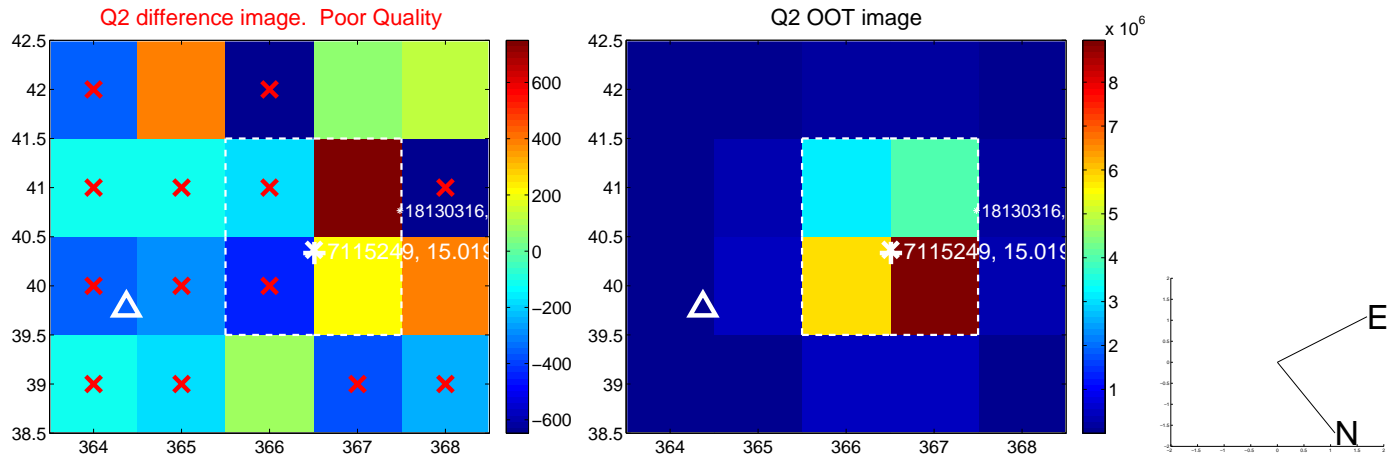
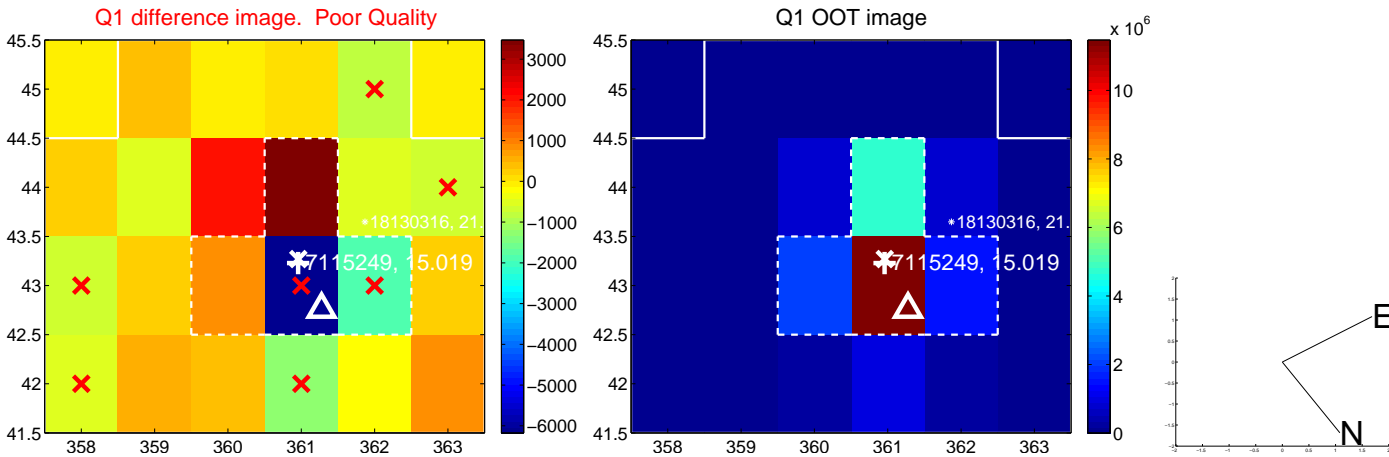
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.832 \pm 0.912$	2.01	$-0.238 \pm 0.985$	$-1.816 \pm 0.850$
PRF-fit source offset from KIC position	$1.641 \pm 0.975$	1.68	$-0.328 \pm 1.067$	$-1.608 \pm 0.863$
photometric centroid source offset	$1.05 \pm 0.83$	1.26	$-0.58 \pm 0.85$	$-0.87 \pm 0.82$

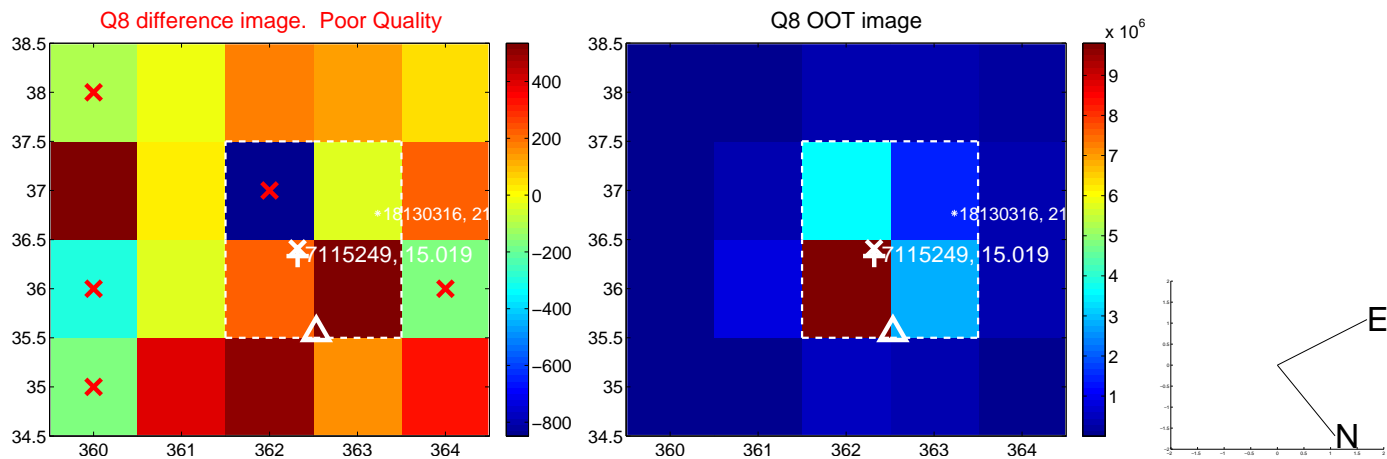
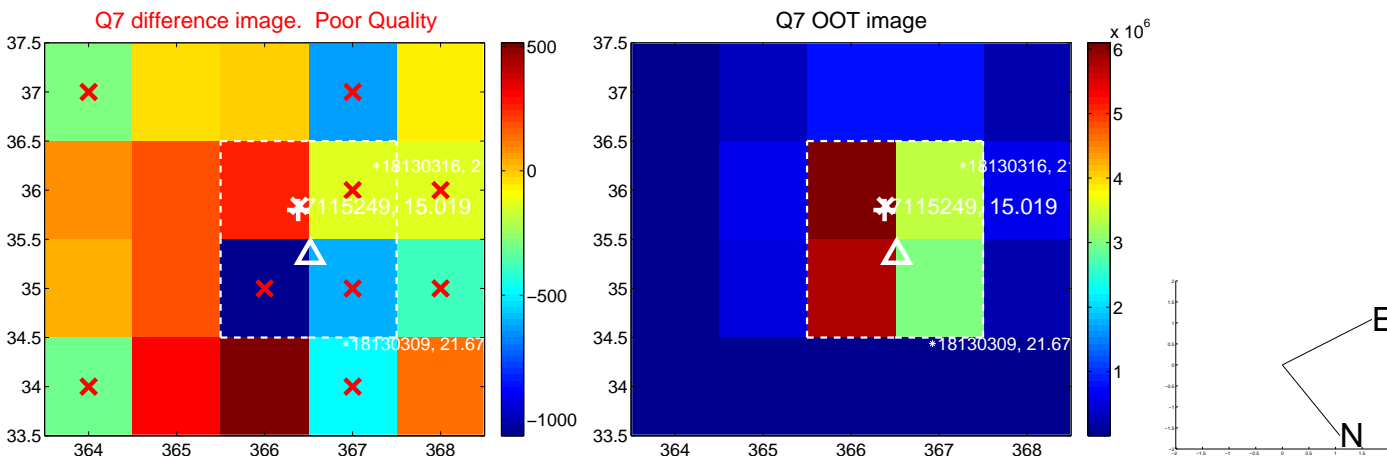
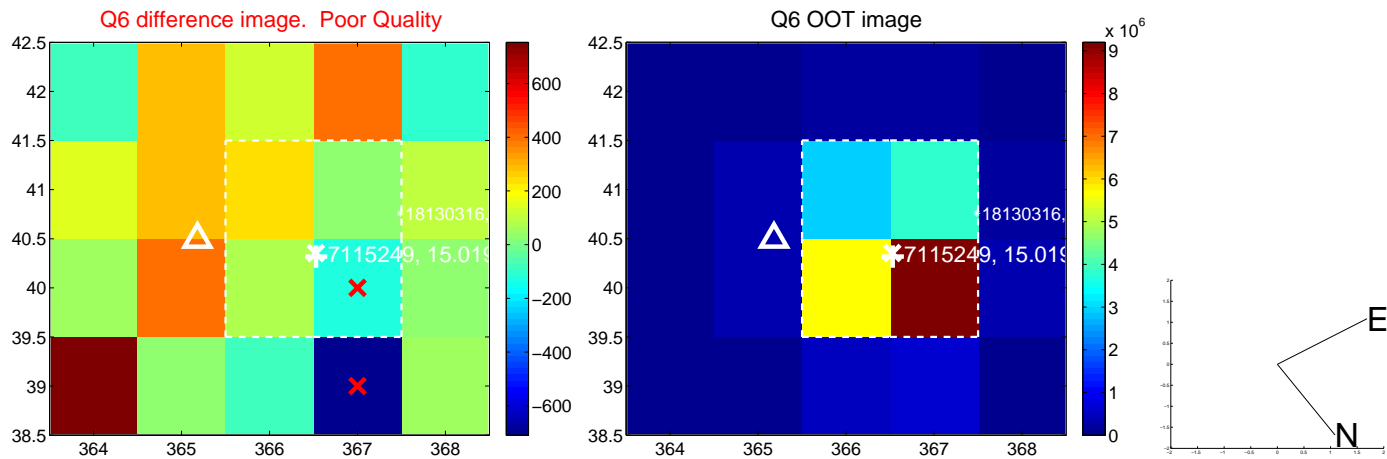
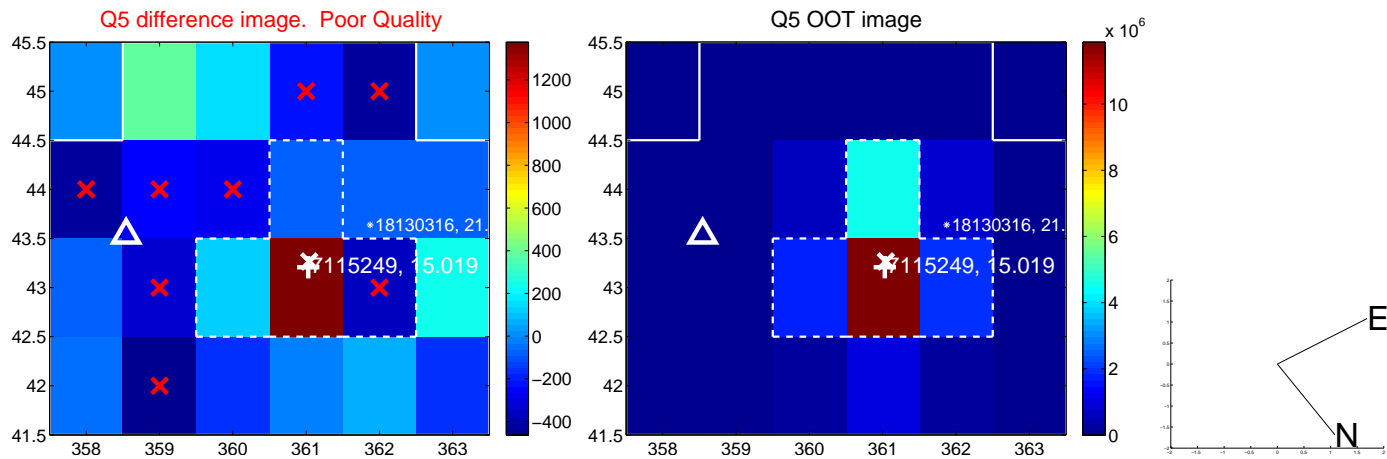


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

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

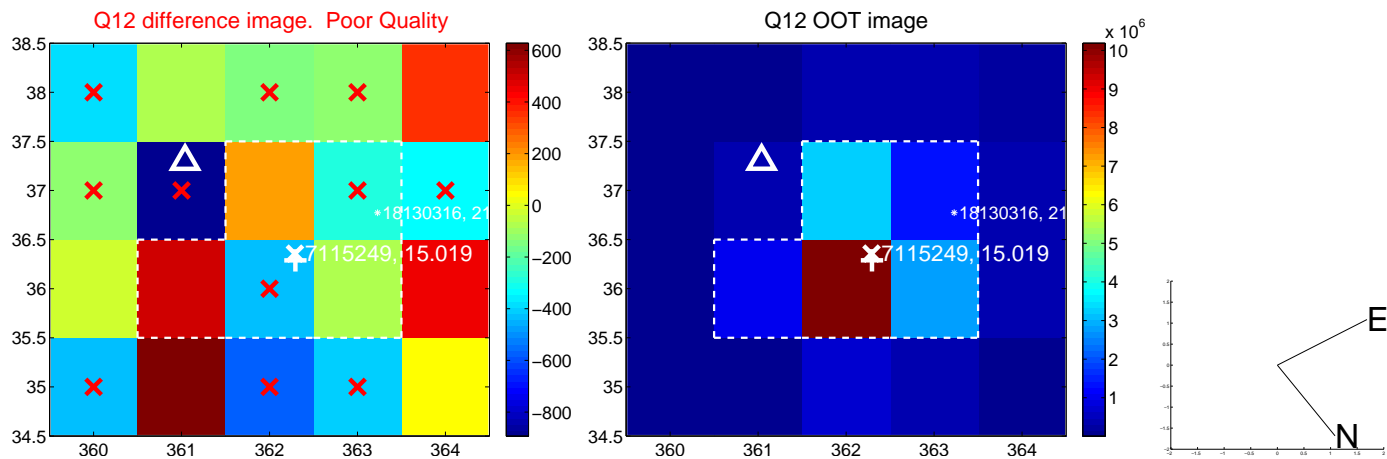
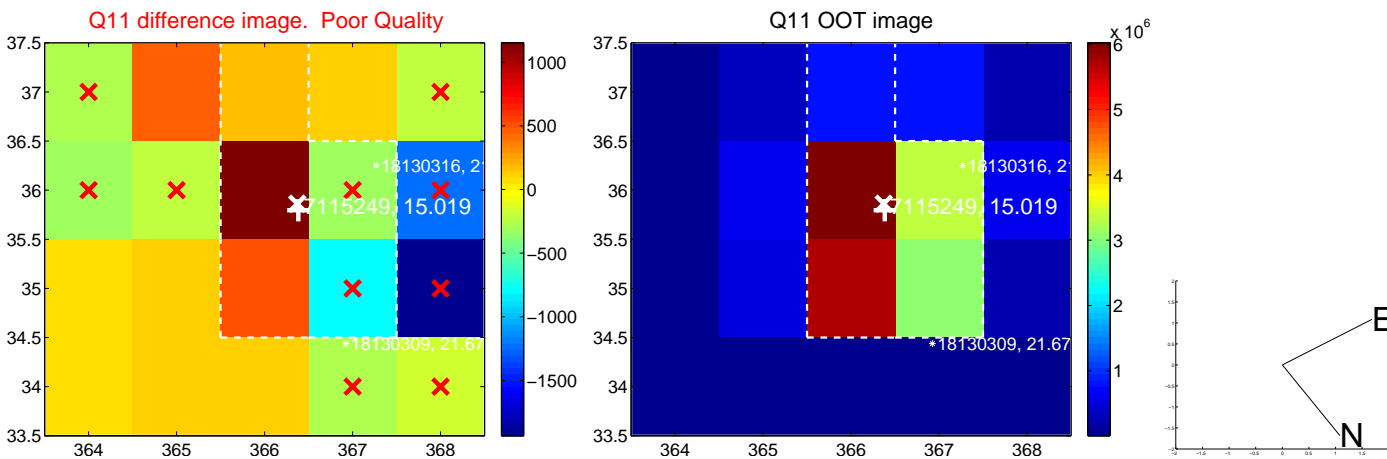
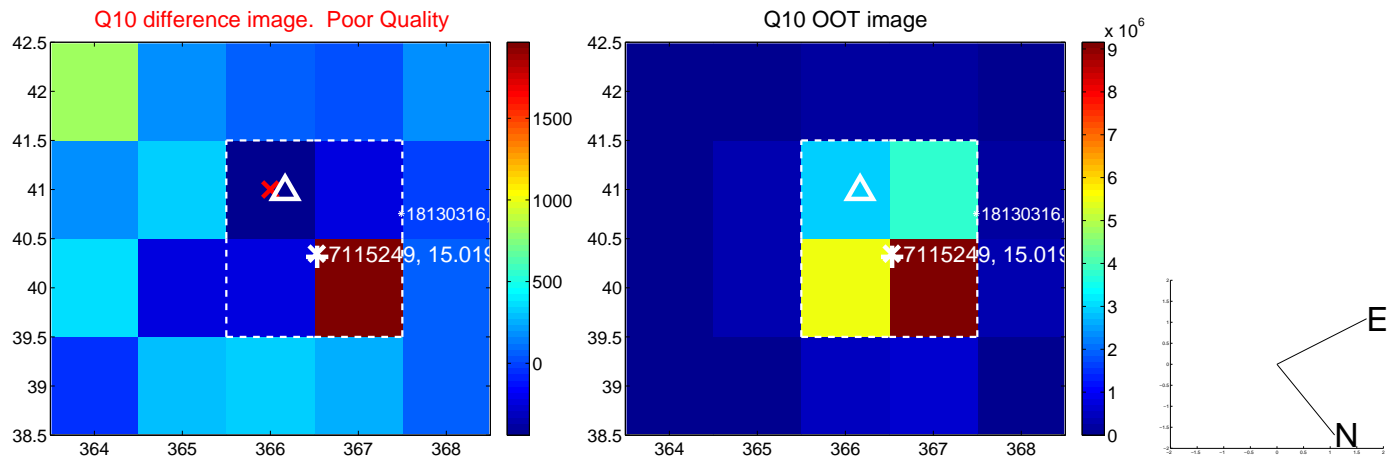
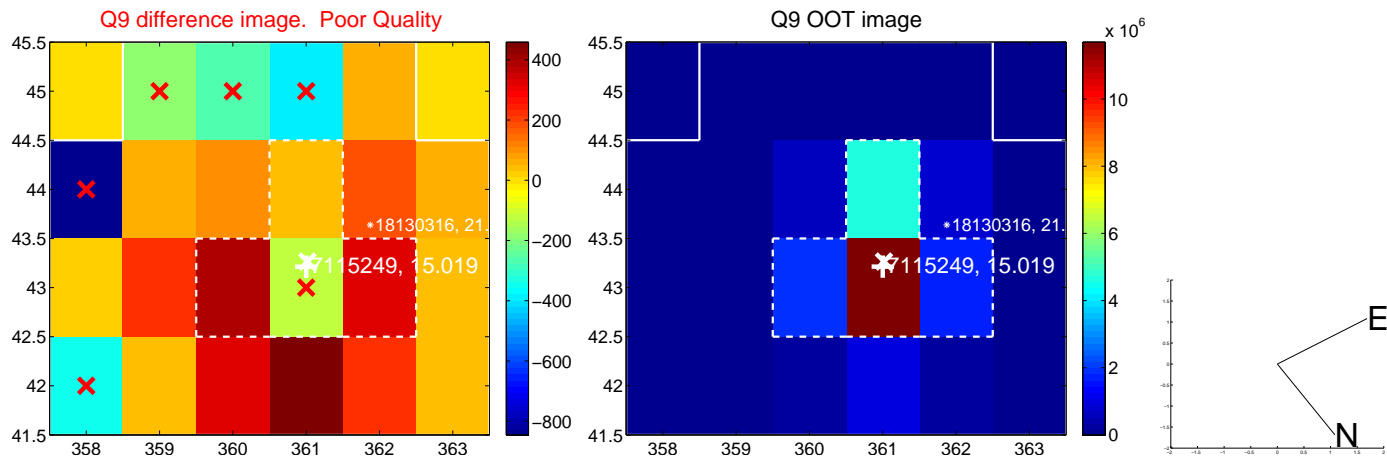


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

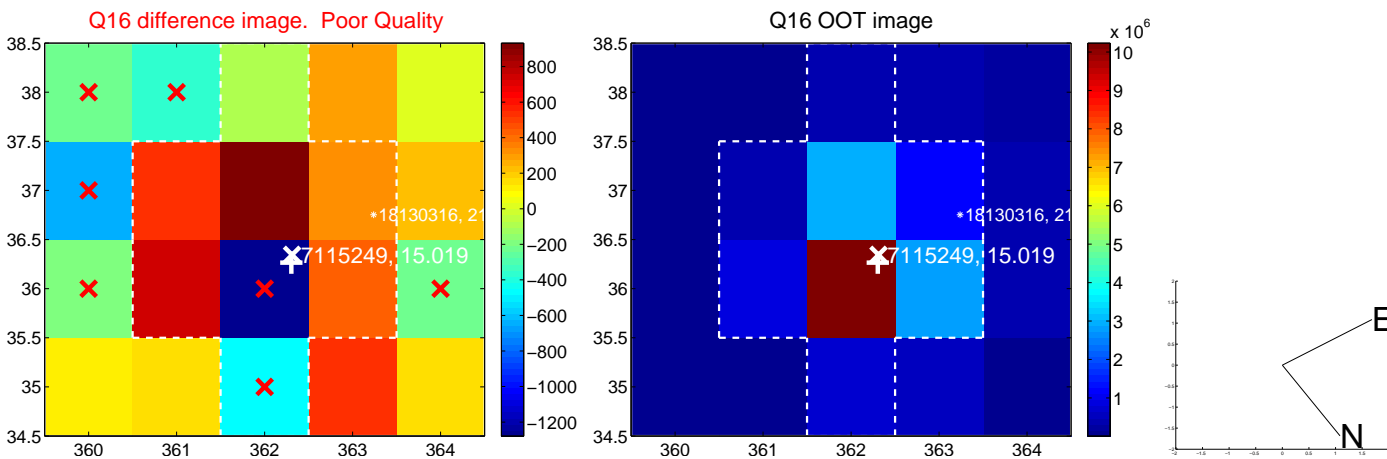
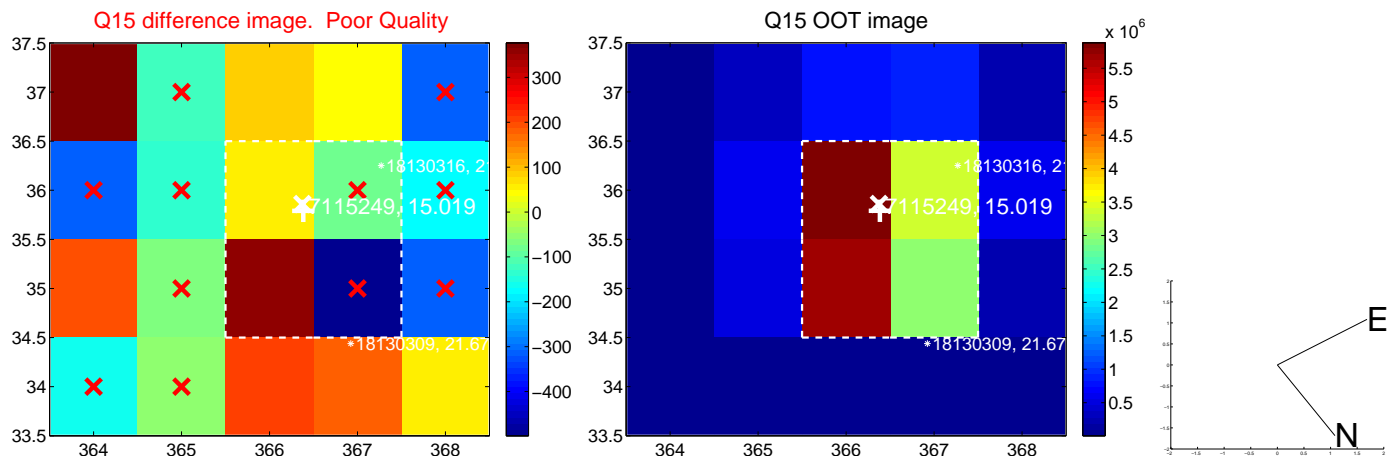
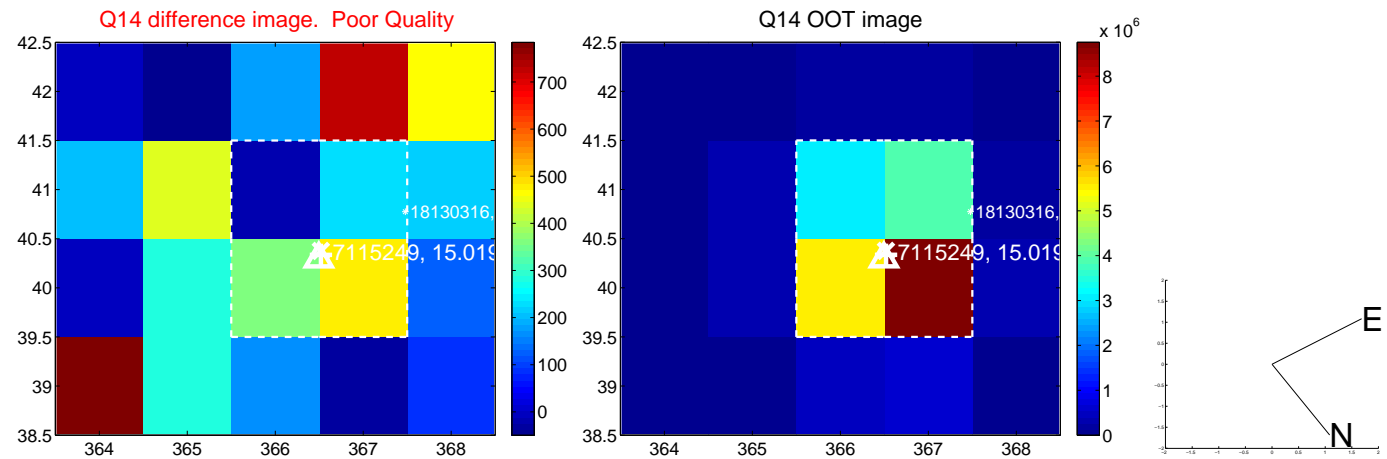
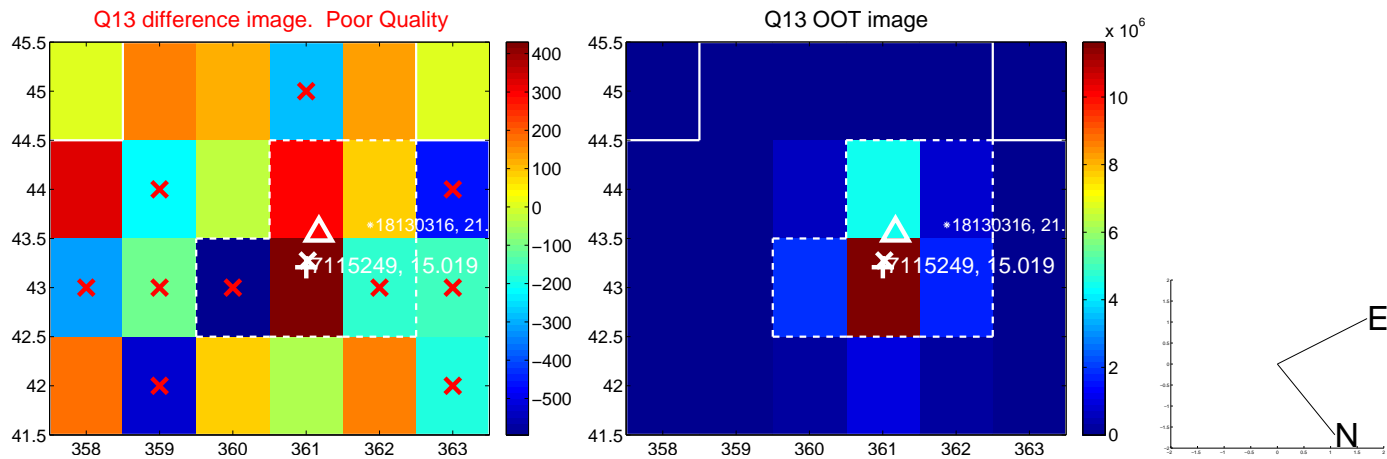




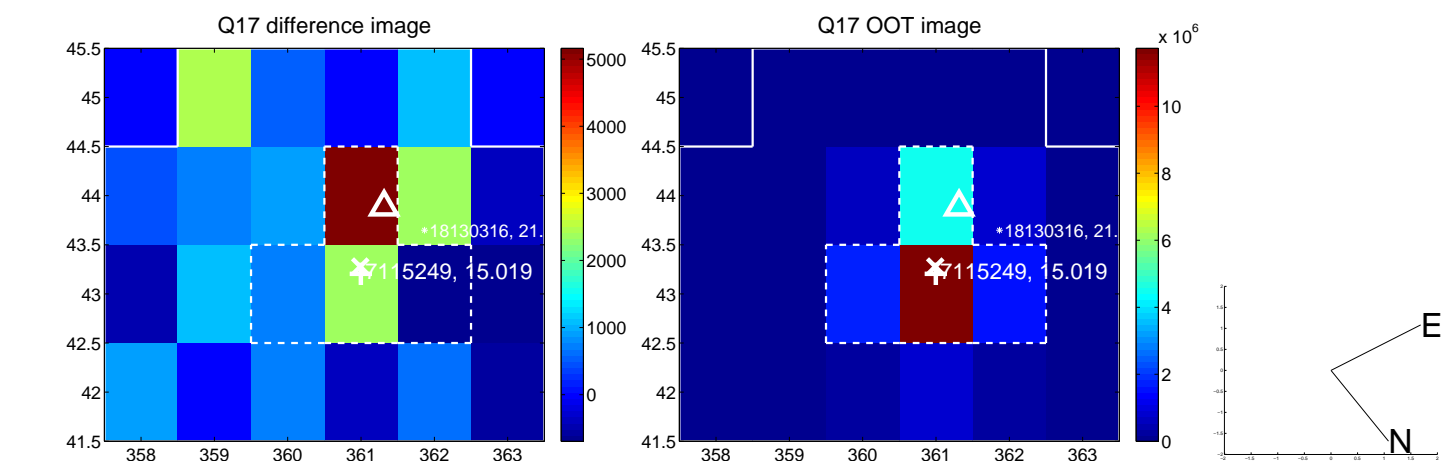
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



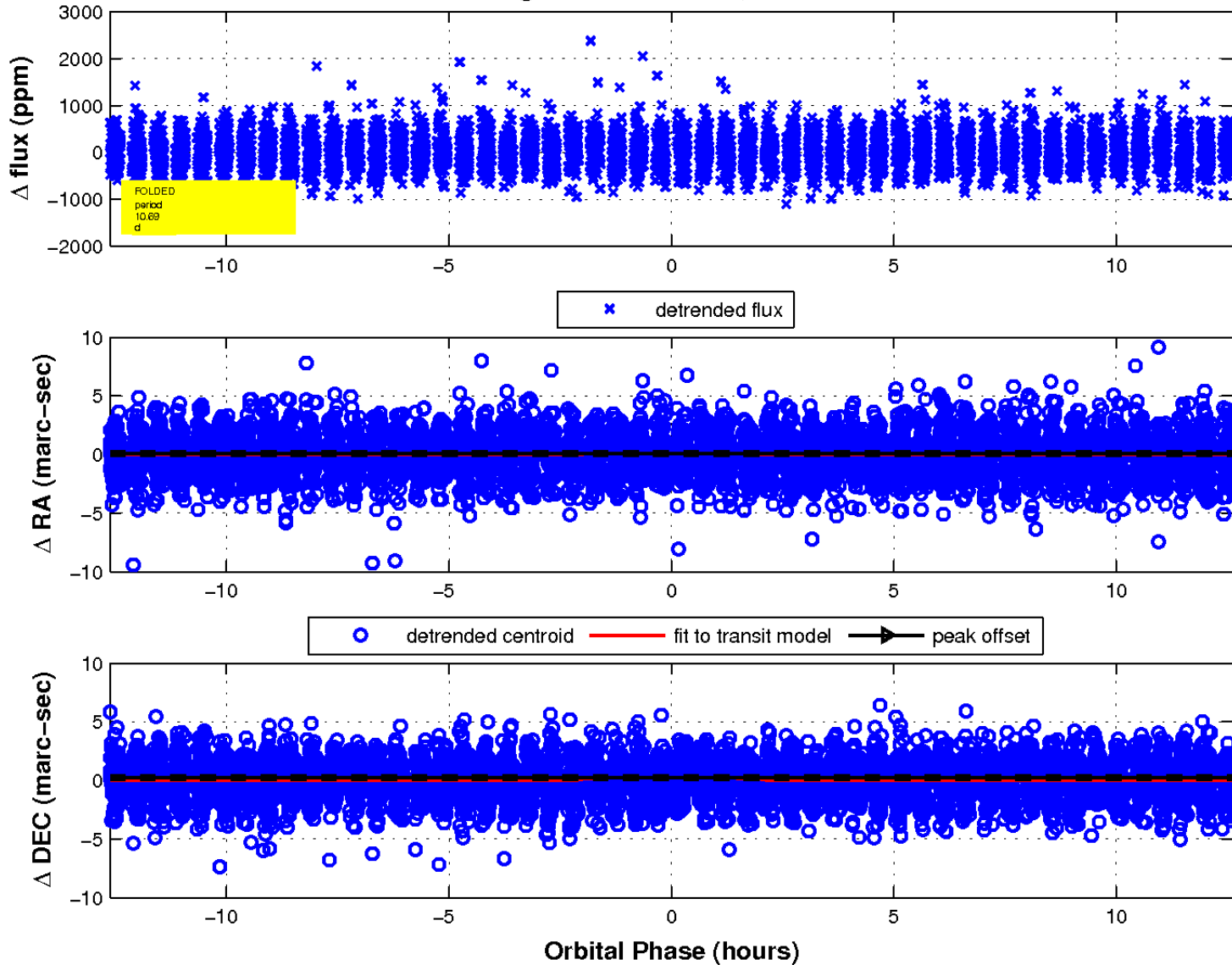
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

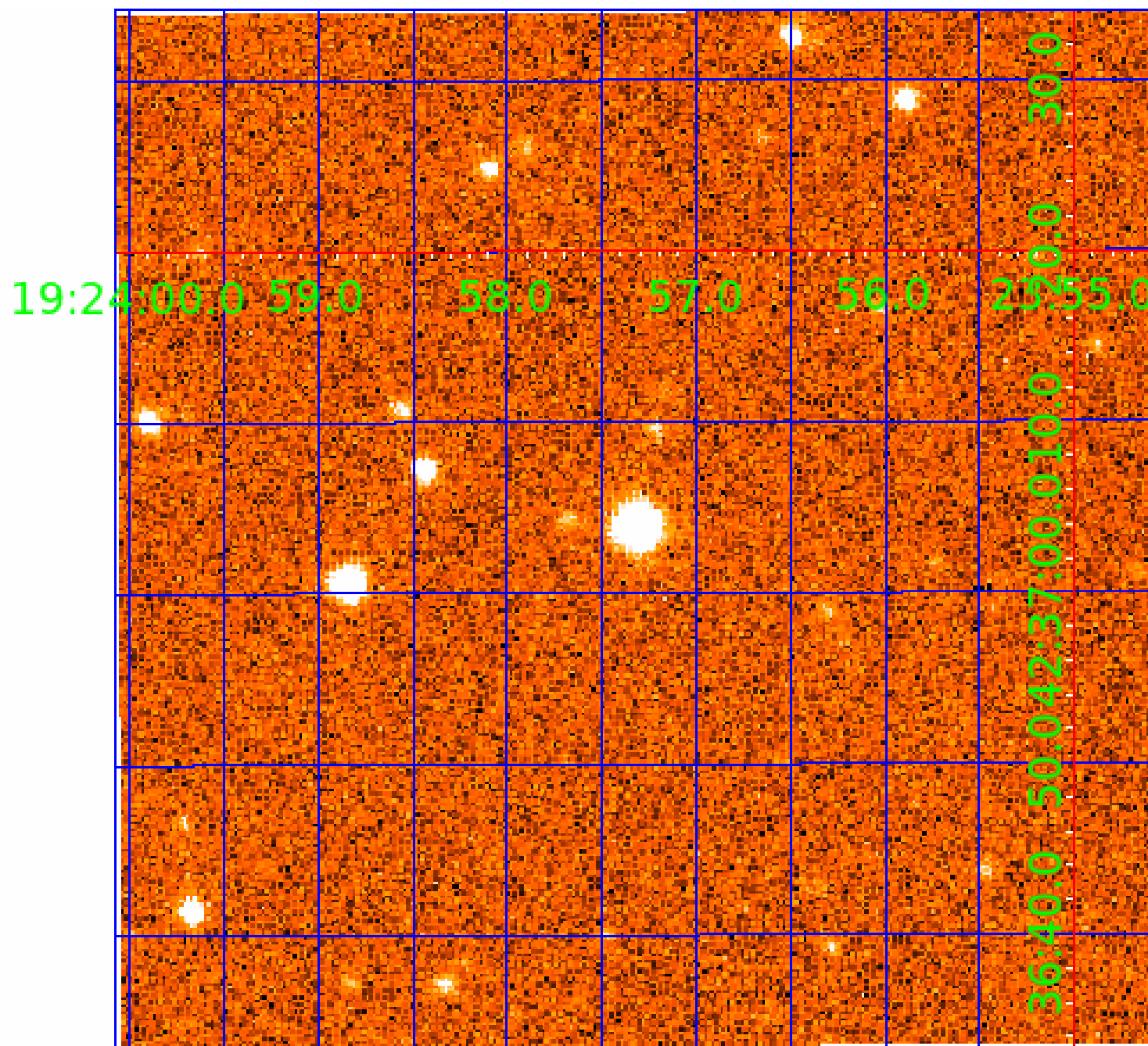


fluxWeightedCentroids, Planet 2 of 8



# UKIRT Image

Declination



# KIC 007115249

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007115249-01	OBS	No	0.566745	131.877898	16.5	4.290	11.1	5.9	0.89	5855	0.37	4735.62
007115249-02	OBS	No	10.686810	140.081100	185.8	4.267	17.9	11.0	0.89	5855	1.30	94.36
007115249-04	OBS	No	2.874820	133.025867	219.1	1.765	14.0	14.4	0.89	5855	1.33	543.35
007115249-05	OBS	No	3.169632	134.290542	503.2	0.534	11.5	18.7	0.89	5855	2.15	477.03
007115249-06	OBS	No	9.844726	139.364274	557.3	1.938	13.7	19.2	0.89	5855	2.26	105.27
007115249-07	OBS	No	18.315402	141.401621	1561.9	1.500	12.9	-1.0	0.89	5855	3.52	46.01
007115249-08	OBS	No	1.458535	131.679944	875.3	2.000	10.9	-1.0	0.89	5855	2.63	1342.78

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007115249-01	OBS	FP	0.00	1	0	0	1	LPP_DV—CENT_FEW_DIFFS—EPHEM_MATCH
007115249-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007115249-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007115249-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007115249-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007115249-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
007115249-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS

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

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

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

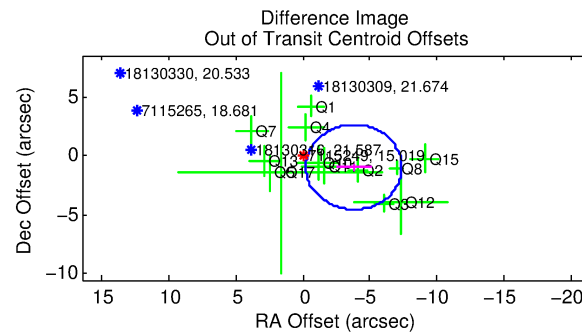
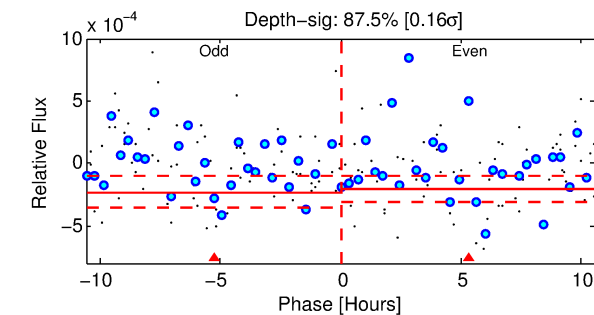
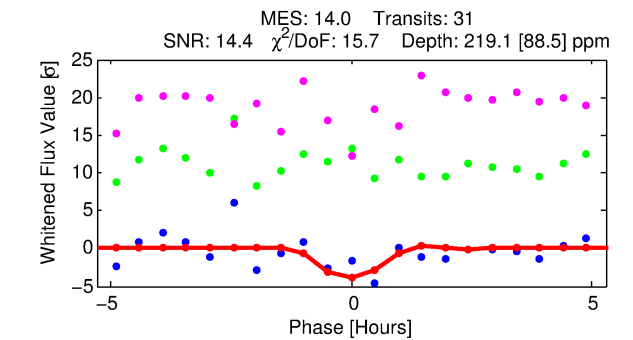
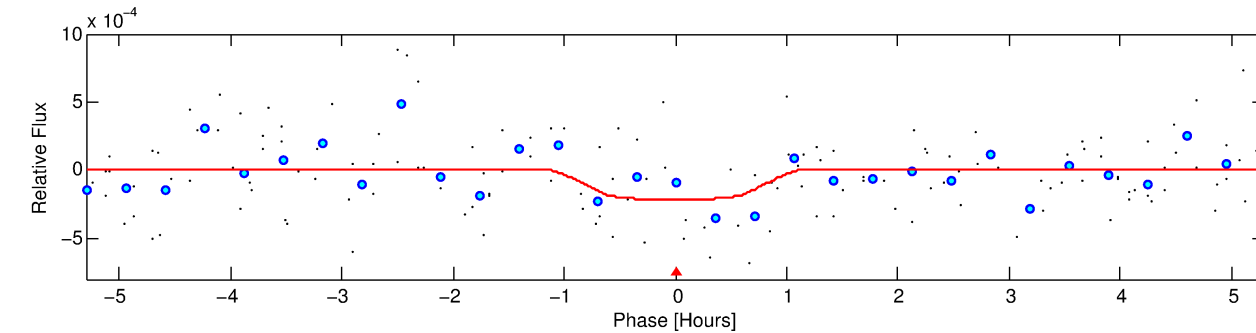
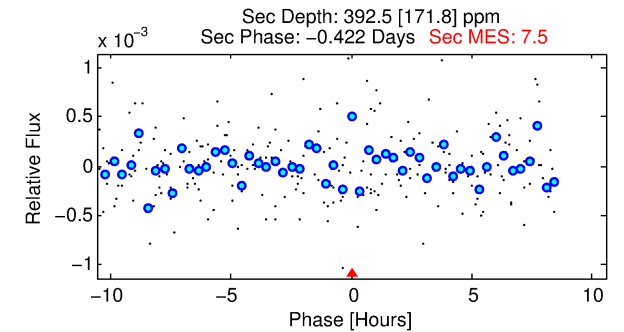
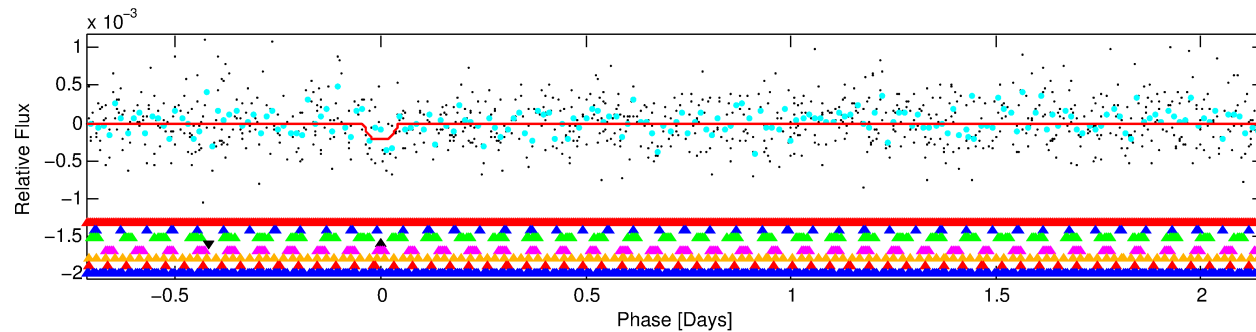
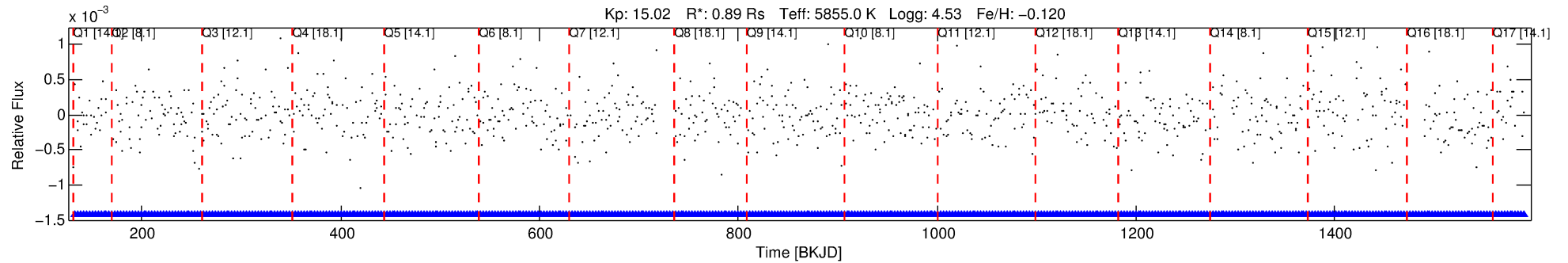
Ephemeris Match Information For 007115249-04

No Significant Match Found



# DV One-Page Summary

KIC: 7115249 Candidate: 4 of 8 Period: 2.875 d



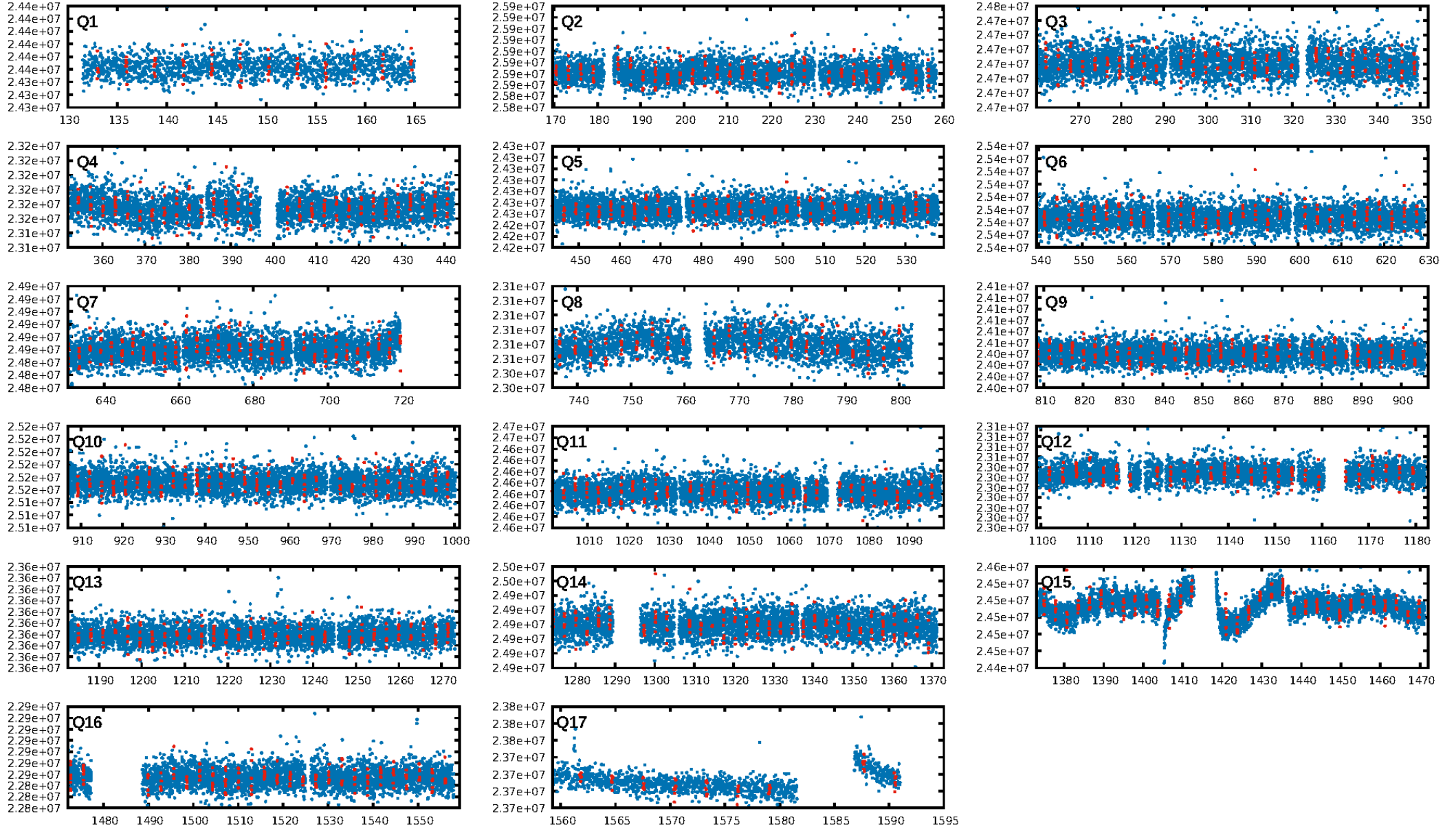
## DV Fit Results:

Period = 2.87482 [0.00006] d  
Epoch = 133.0259 [0.0114] BKJD  
Rp/R\* = 0.0136 [0.0594]  
a/R\* = 12.16 [242.28]  
b = 0.27 [67.70]  
Seff = 543.35 [208.04]  
Teff = 1231 [118] K  
Rp = 1.33 [5.81] Re  
a = 0.0394 [0.0098] AU  
Ag = 189.58 [1657.96] [0.11σ]  
Teffp = 7063 [15430] K [0.38σ]

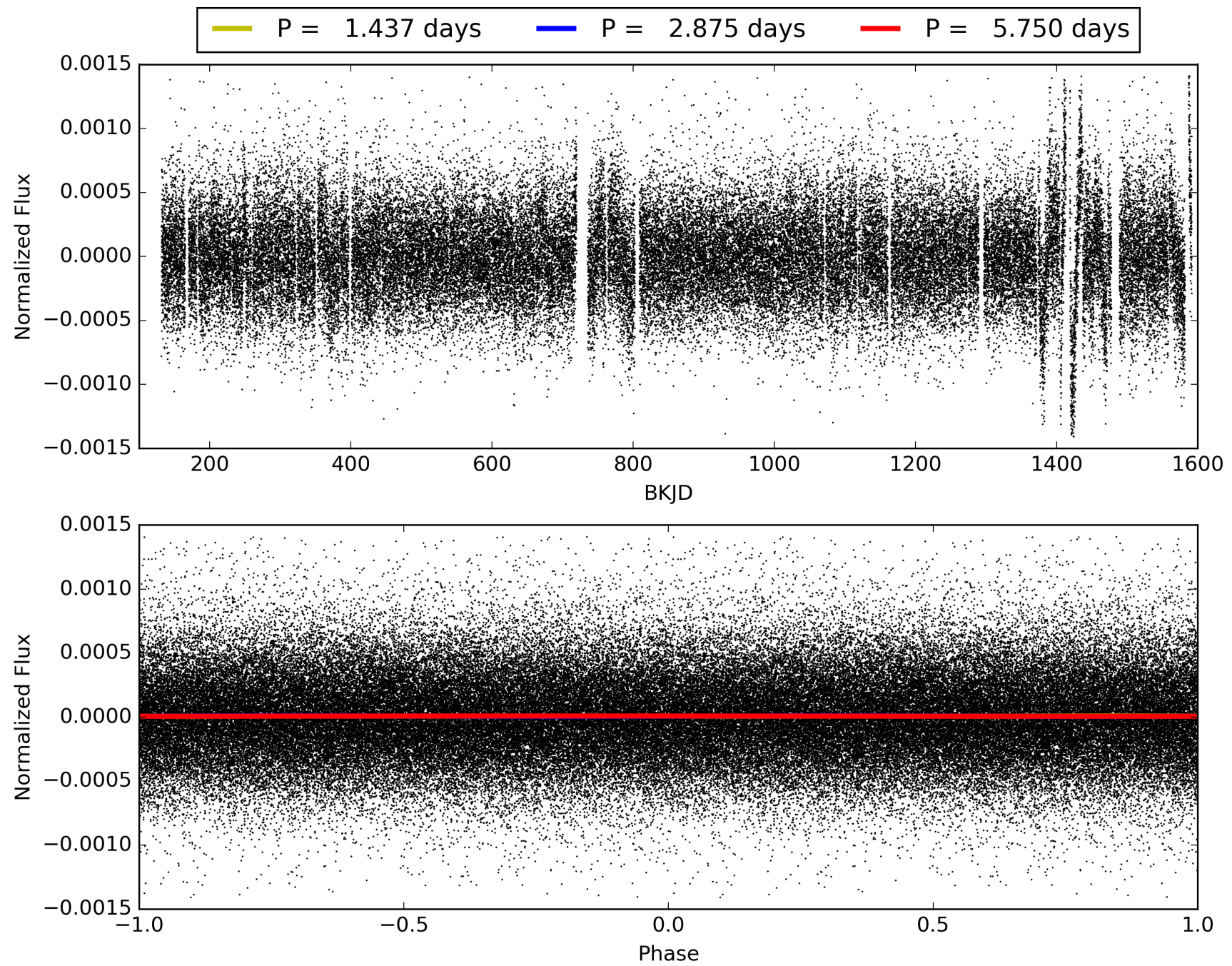
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [12.74σ]  
LongPeriod-sig: 100.0% [3.84σ]  
**ModelChiSquare2-sig: 0.0%**  
**ModelChiSquareGof-sig: 0.0%**  
**Bootstrap-pfa: 2.84e-07**  
RollingBand-fgt: 1.00 [29/29]  
GhostDiagnostic-chr: -4.9  
Centroid-sig: 0.3%  
Centroid-so: 0.840 arcsec [1.45σ]  
**OotOffset-rm: 3.920 arcsec [3.28σ]**  
**KicOffset-rm: 3.988 arcsec [3.31σ]**  
OotOffset-st: 2/4/3/4 [13]  
KicOffset-st: 2/4/3/4 [13]  
DiffImageQuality-fgm: 0.08 [1/13]  
DiffImageOverlap-fno: 0.00 [0/17]

# TCE 007115249-04, PDC Light Curves

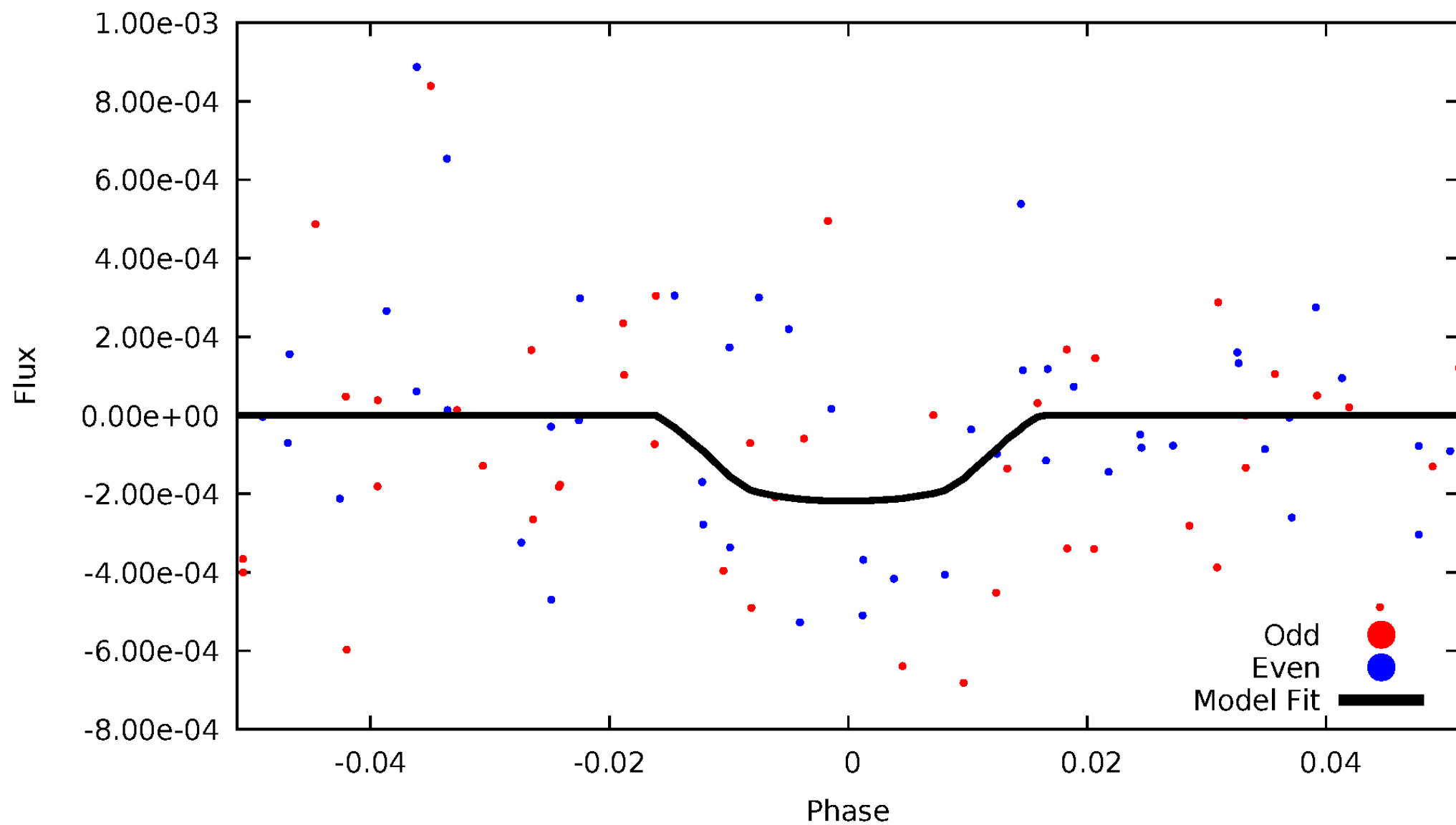


TCE 007115249-04



# DV Odd/Even

TCE 007115249-04





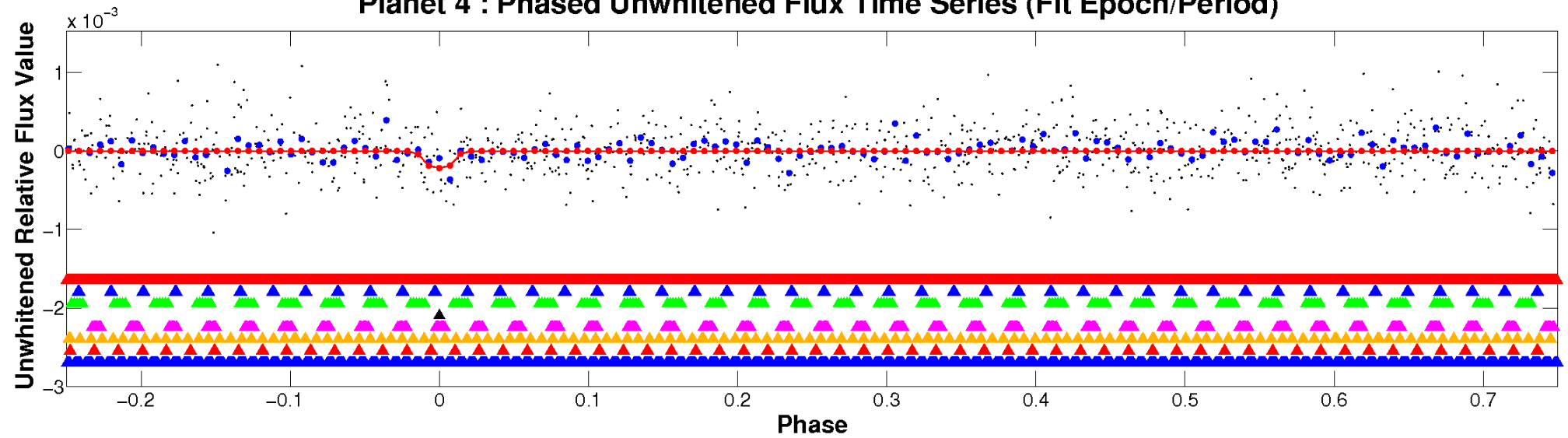
ALT Odd/Even

This plot does not exist for this TCE.

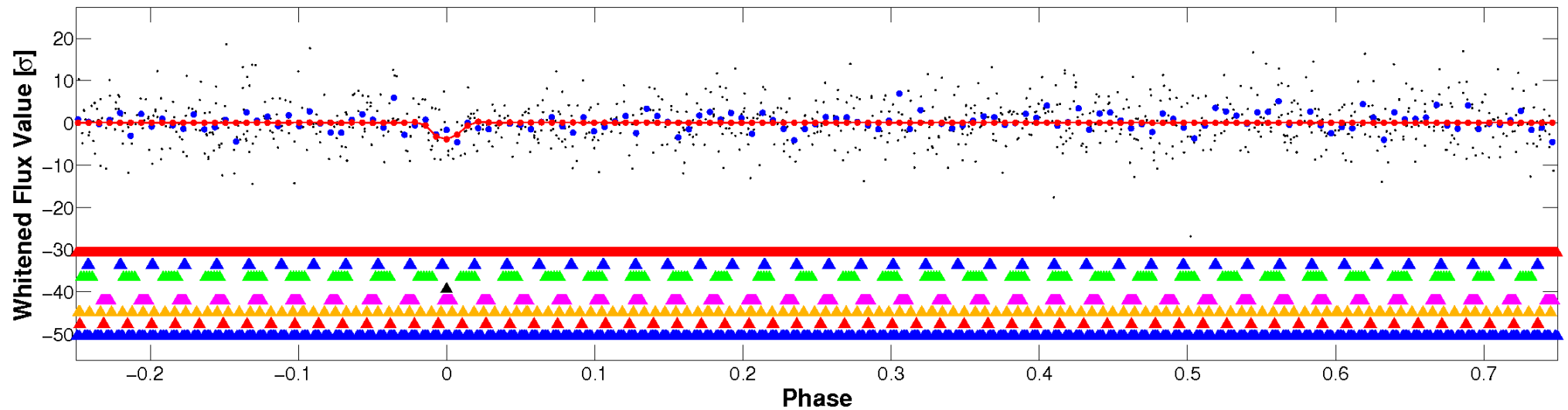


# Non-Whitened Vs. Whitened Light Curve

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

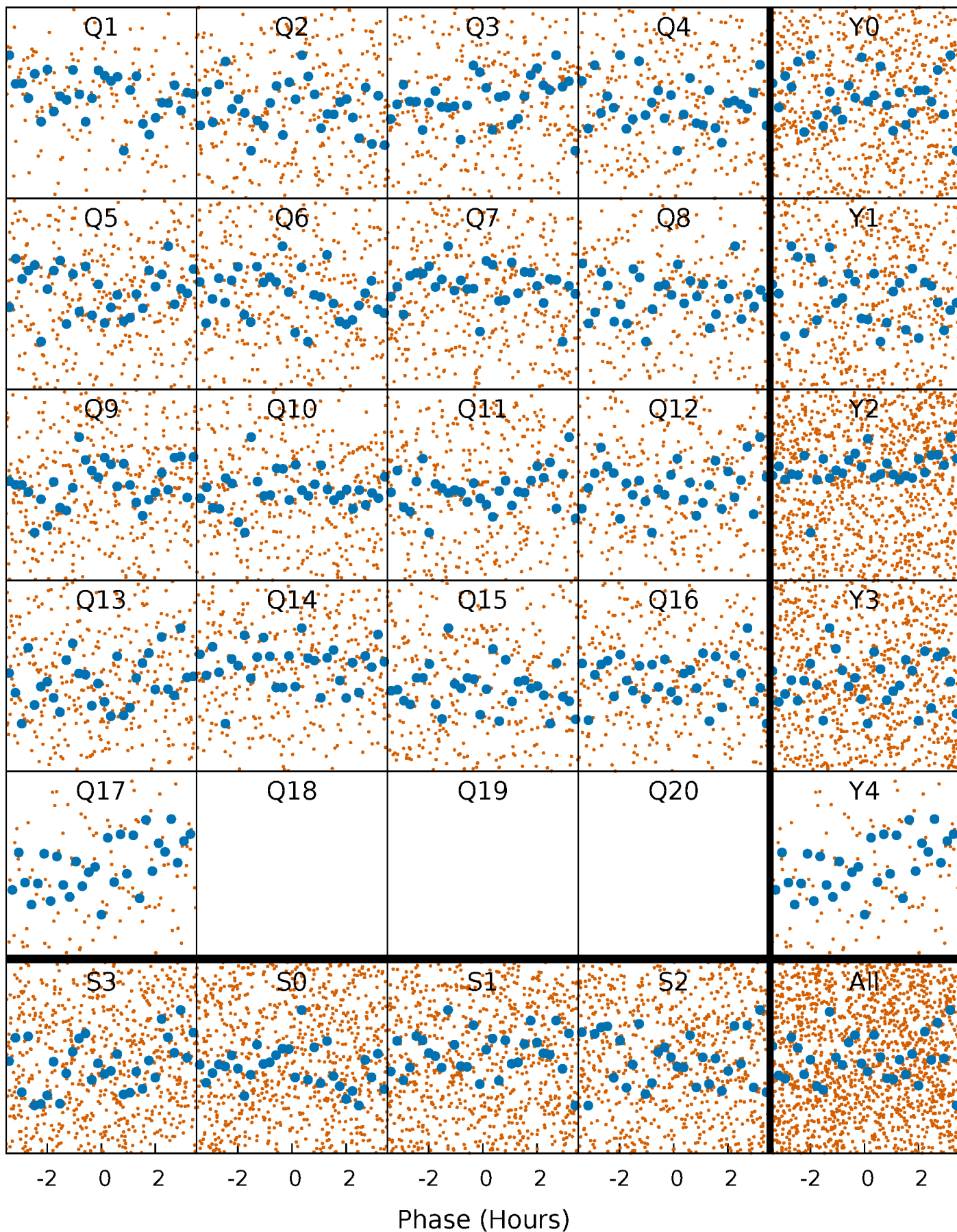


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



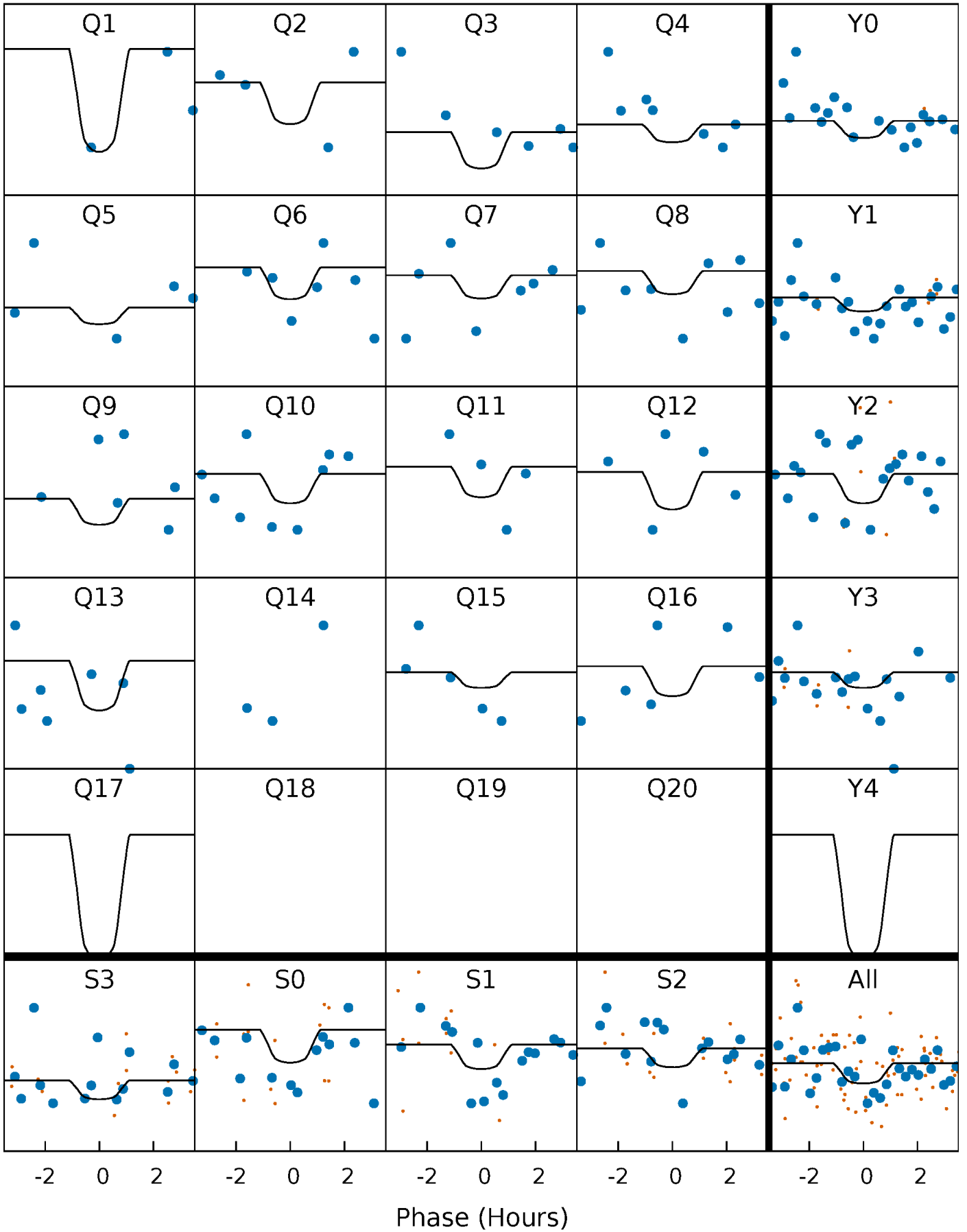
# PDC Quarter-Phased Transit Curves

TCE 007115249-04 P= 2.874820 Days  $T_0=133.025867$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 007115249-04 P= 2.874820 Days  $T_0=133.025867$  (BKJD)

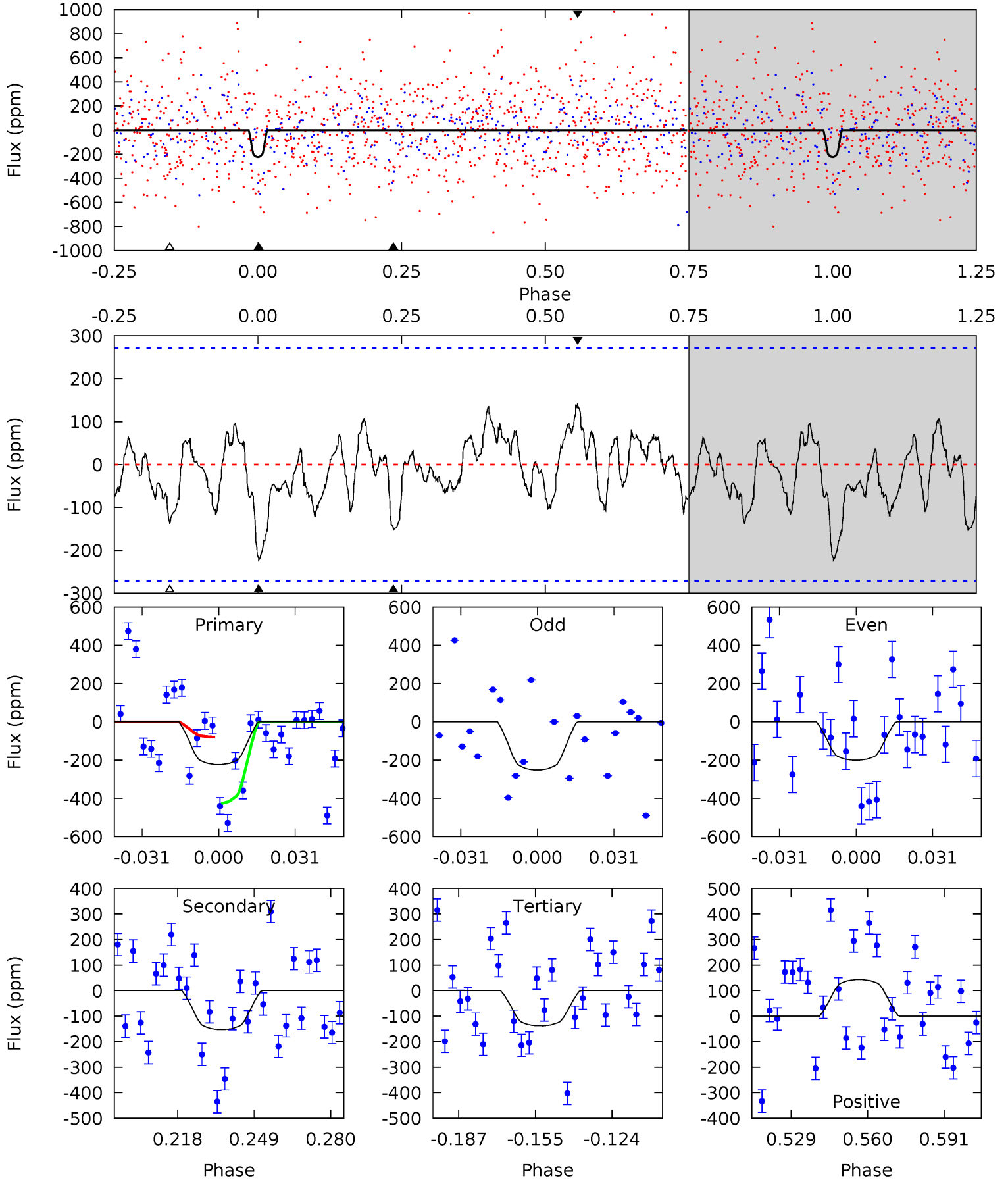


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

007115249-04, P = 2.874820 Days, E = 130.151047 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
3.95	2.70	2.44	2.54	4.80	2.16	1.07	1.51	1.41	0.26	0.16	0.46	0	0.39	3.17



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.



### Stellar Parameters For KIC 007115249

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5855^{+140}_{-176}$	$4.528^{+0.037}_{-0.200}$	$-0.120^{+0.300}_{-0.300}$	$0.894^{+0.261}_{-0.087}$	$0.982^{+0.108}_{-0.121}$	$1.938^{+0.380}_{-0.989}$
	+2%/-3%	+1%/-4%	+250%/-250%	+29%/-10%	+11%/-12%	+20%/-51%
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 007115249-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-152 \pm 56$	$4.75^{+5.22}_{-3.43}$	$1762^{+115}_{-77}$	$3448^{+2284}_{-772}$	$5.426^{+64.985}_{-4.294}$
Alt.	N/A	N/A	N/A	N/A	N/A

$T_{\text{max}}$  = 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

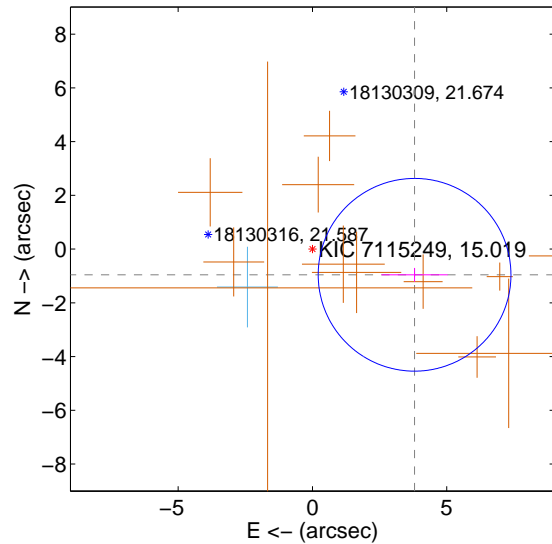
Supplemental centroid analysis for 007115249-04. Kepler magnitude: 15.02. Transit SNR 14.37

There are 1 quarters with good PRF difference image offsets

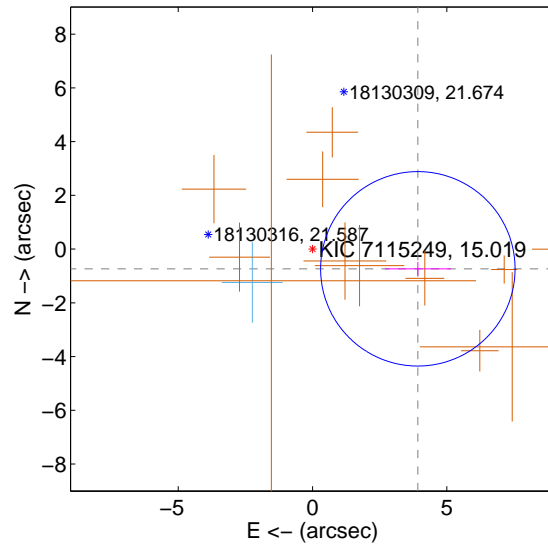
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.920 \pm 1.196$	3.28	$-3.801 \pm 1.231$	$-0.956 \pm 0.255$
PRF-fit source offset from KIC position	$3.988 \pm 1.206$	3.31	$-3.920 \pm 1.226$	$-0.734 \pm 0.255$
photometric centroid source offset	$0.84 \pm 0.58$	1.45	$-0.43 \pm 0.59$	$-0.72 \pm 0.57$

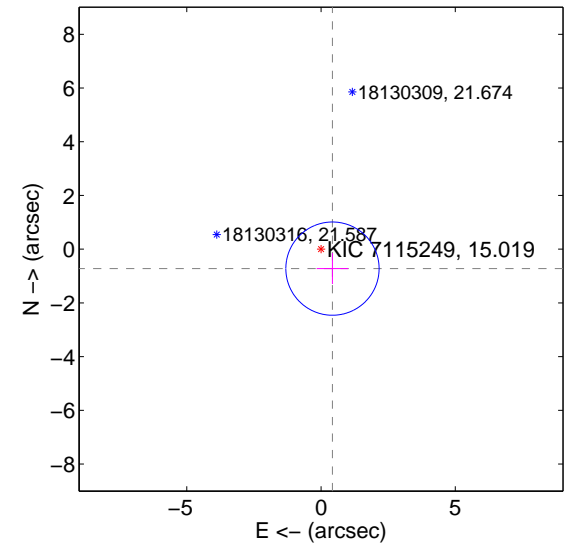
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

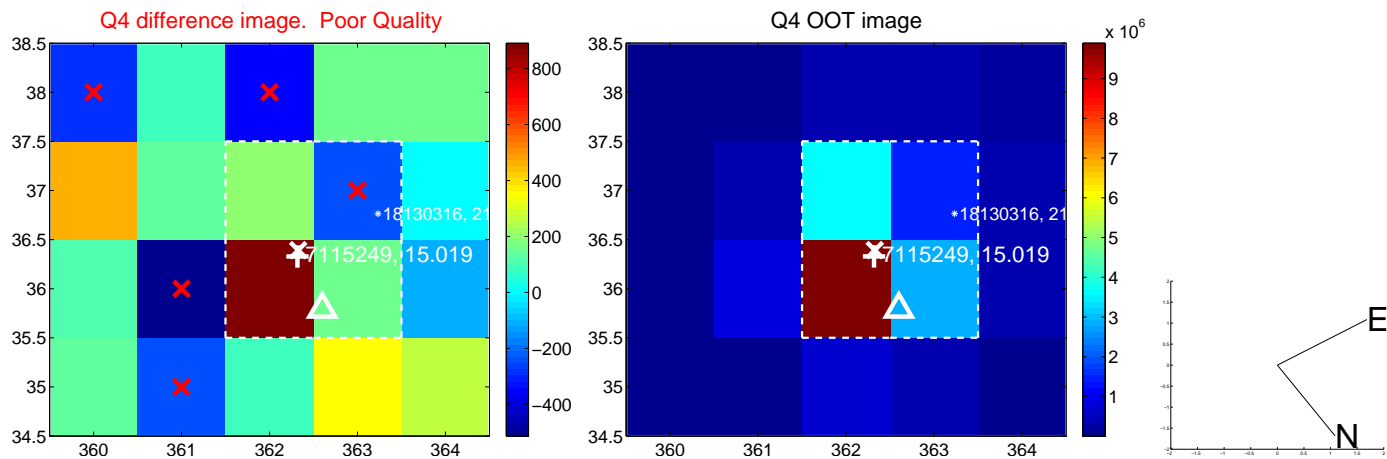
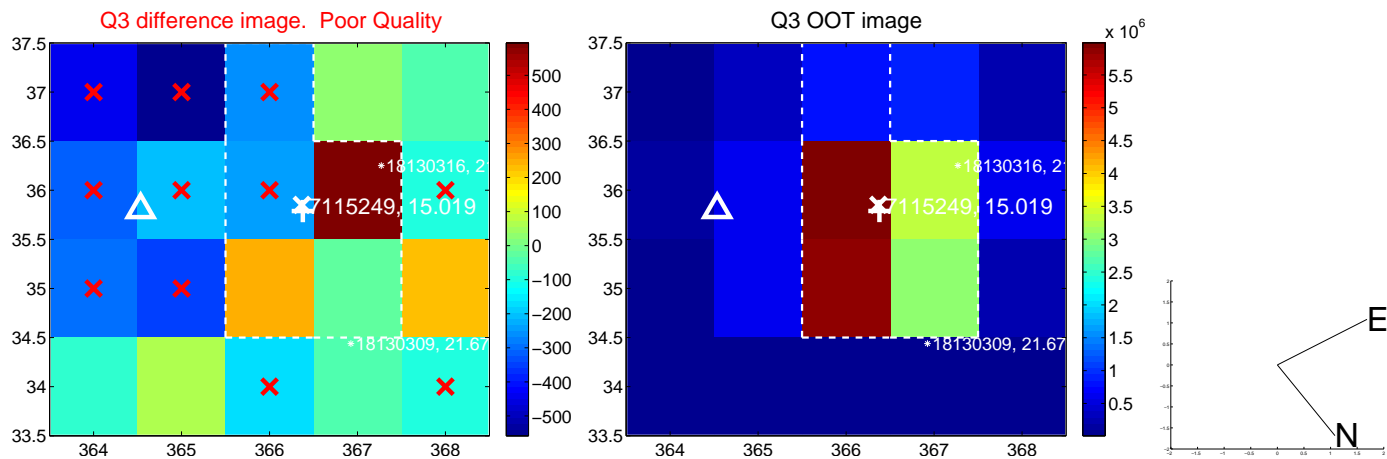
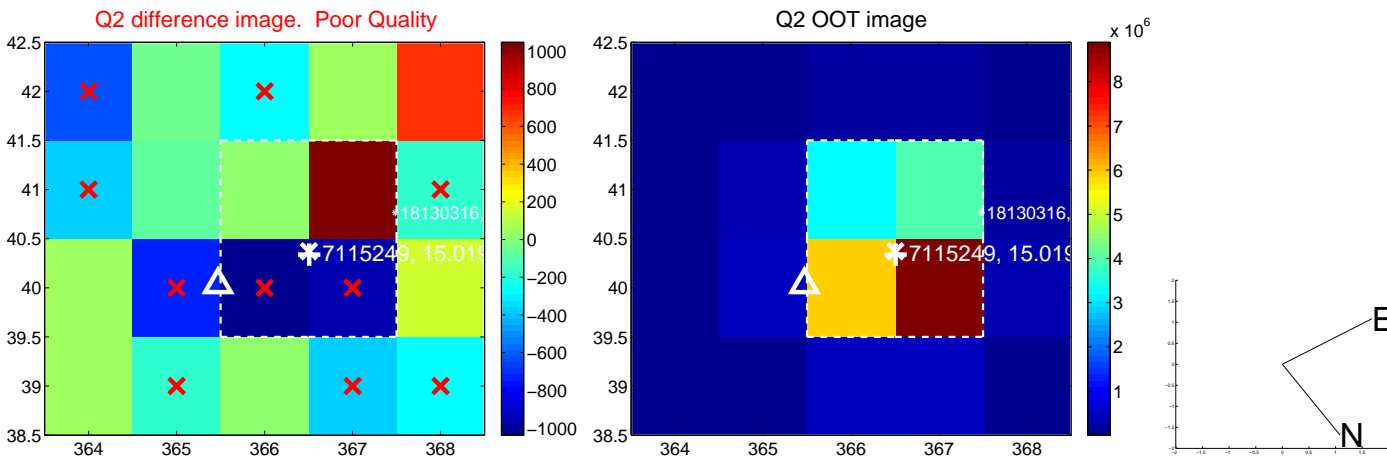
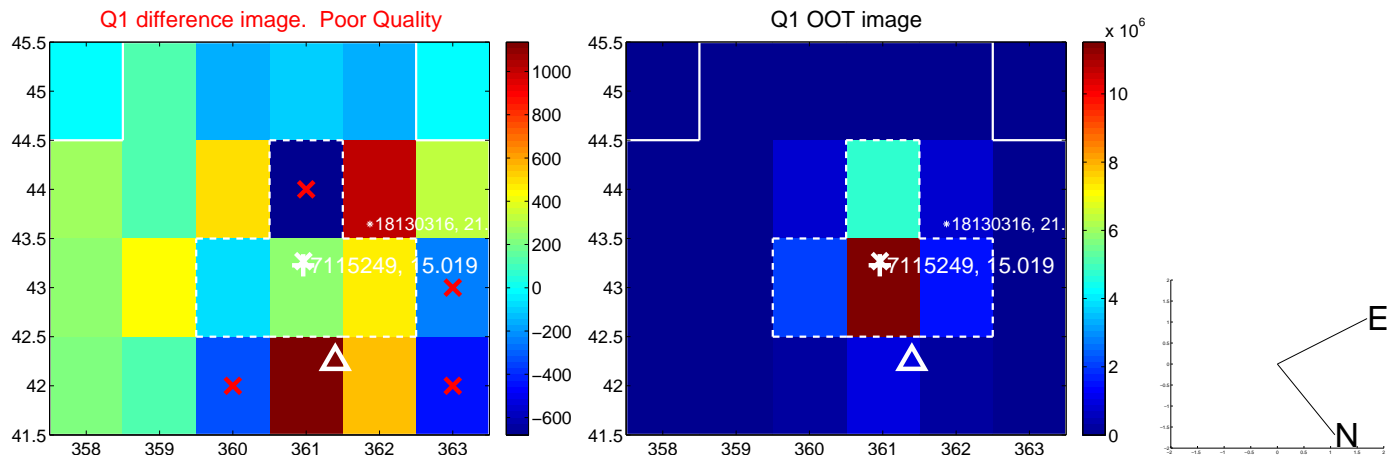


offset from photometric centroids

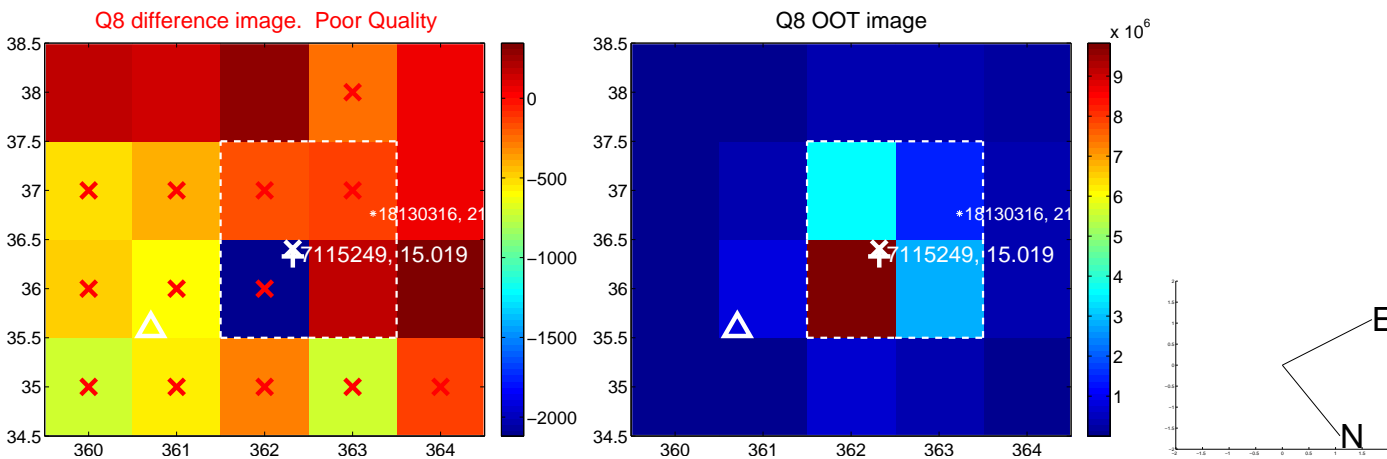
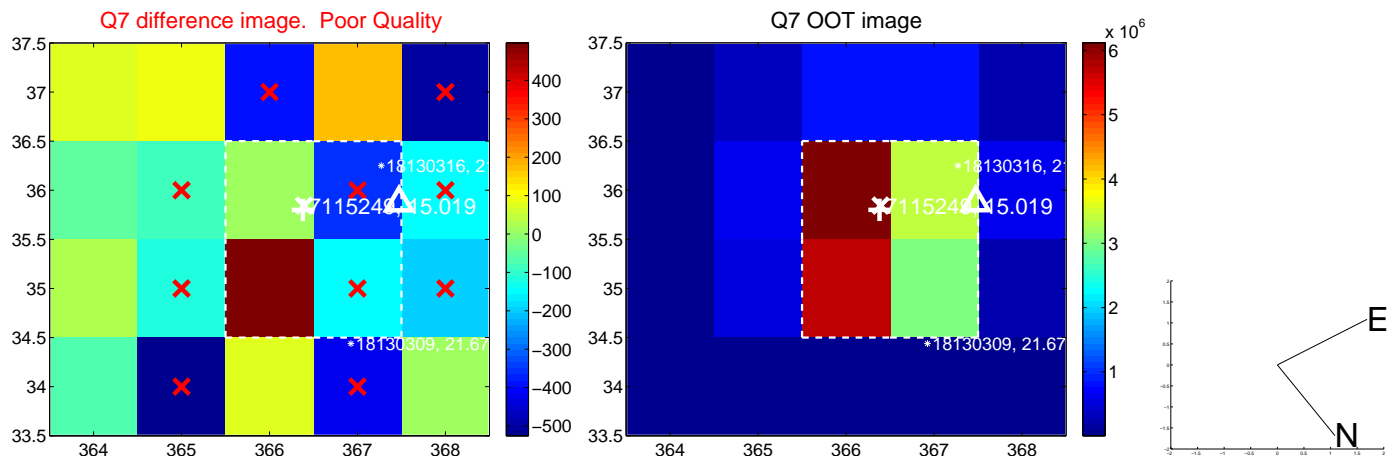
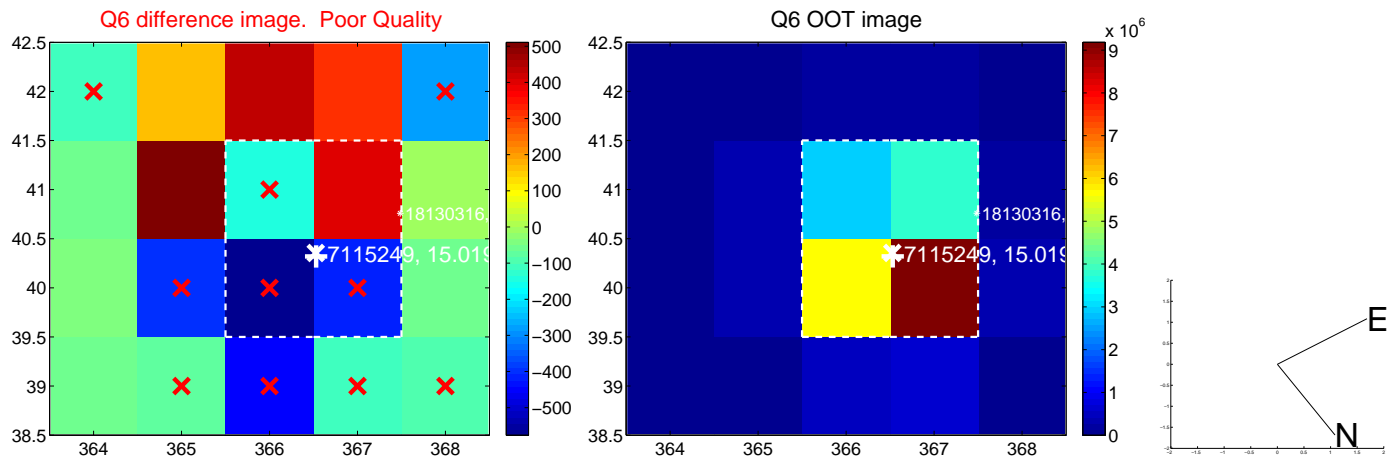
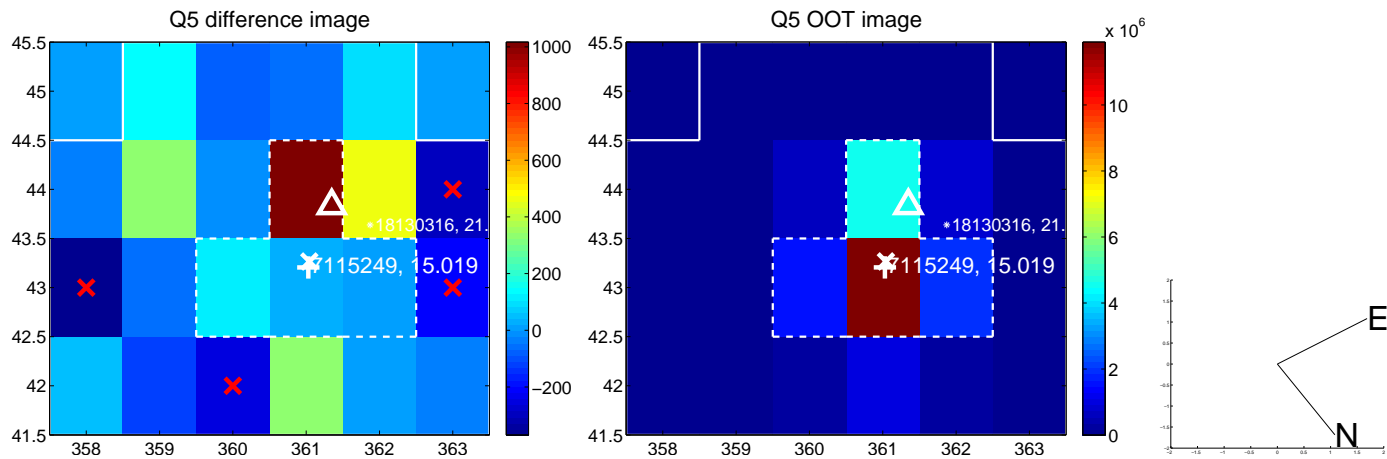


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

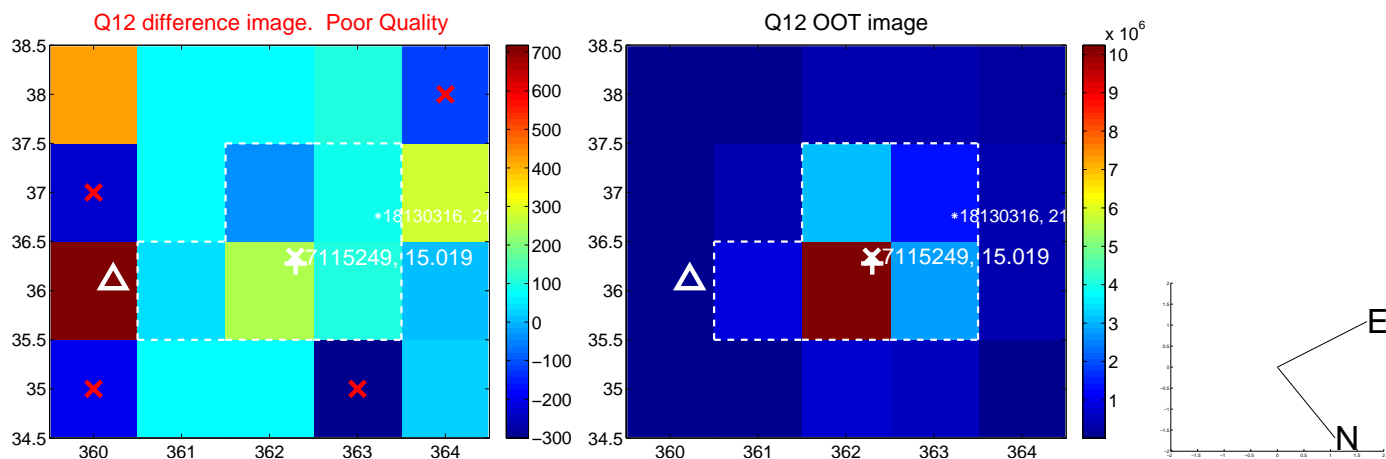
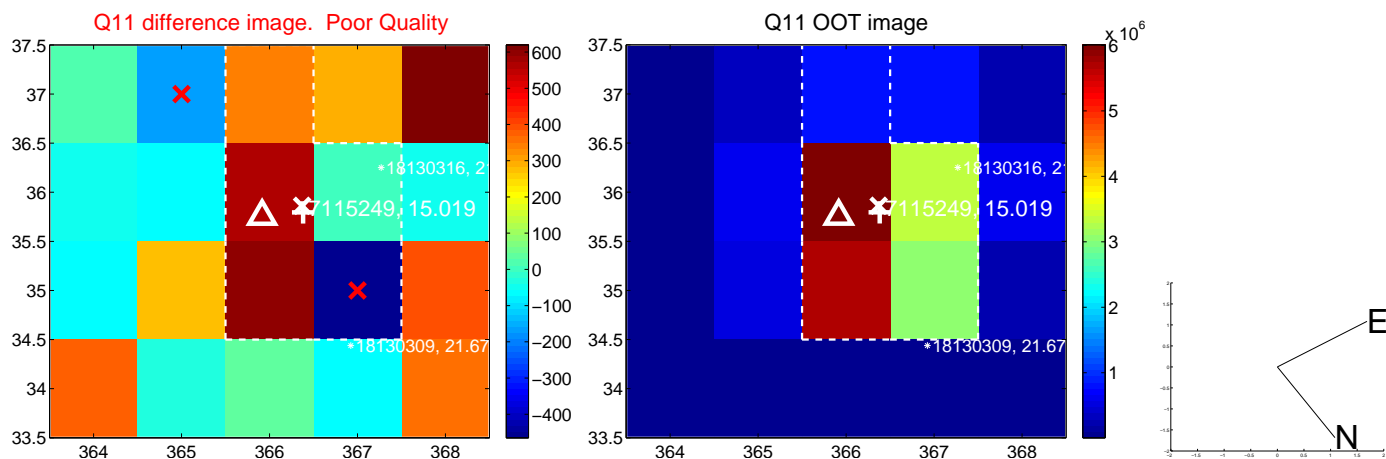
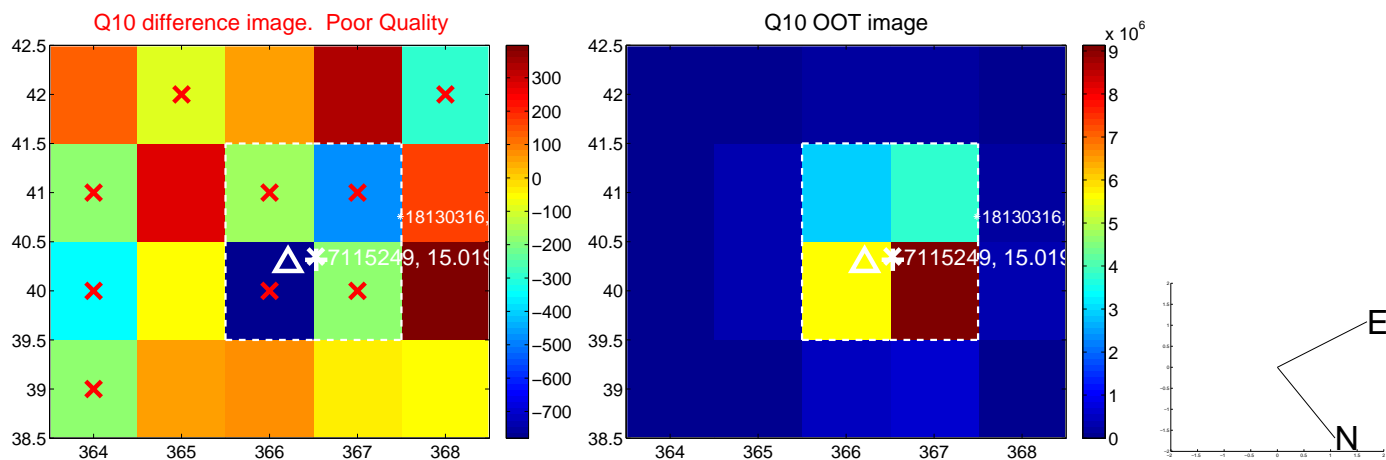
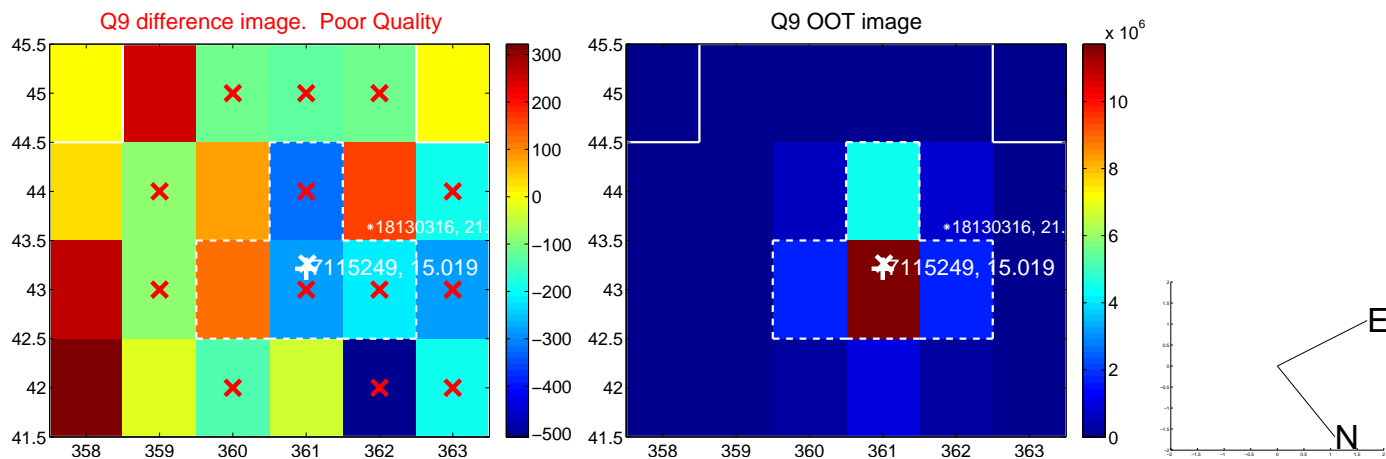
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



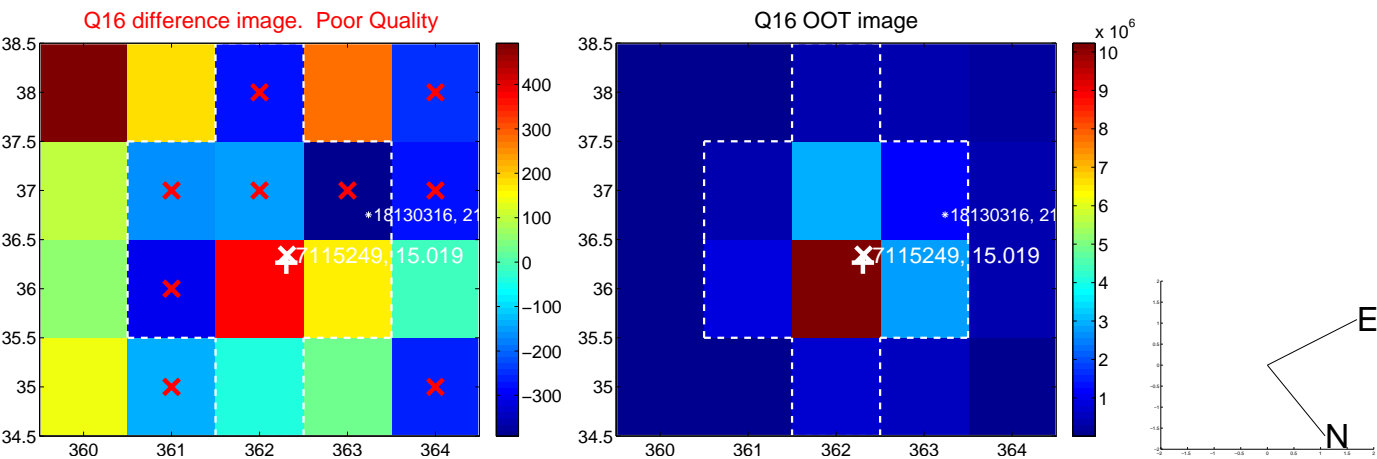
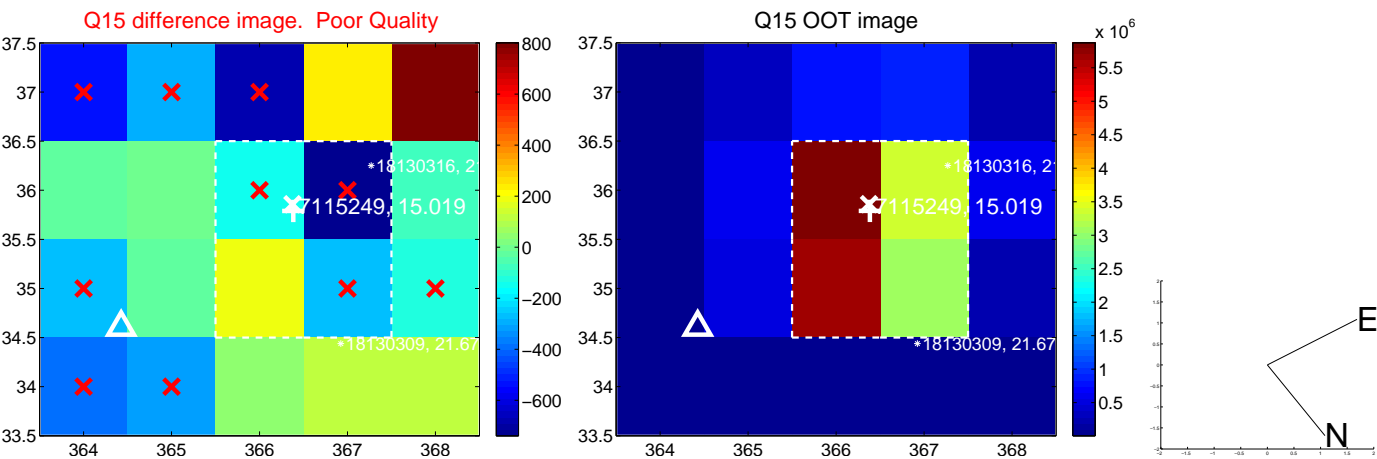
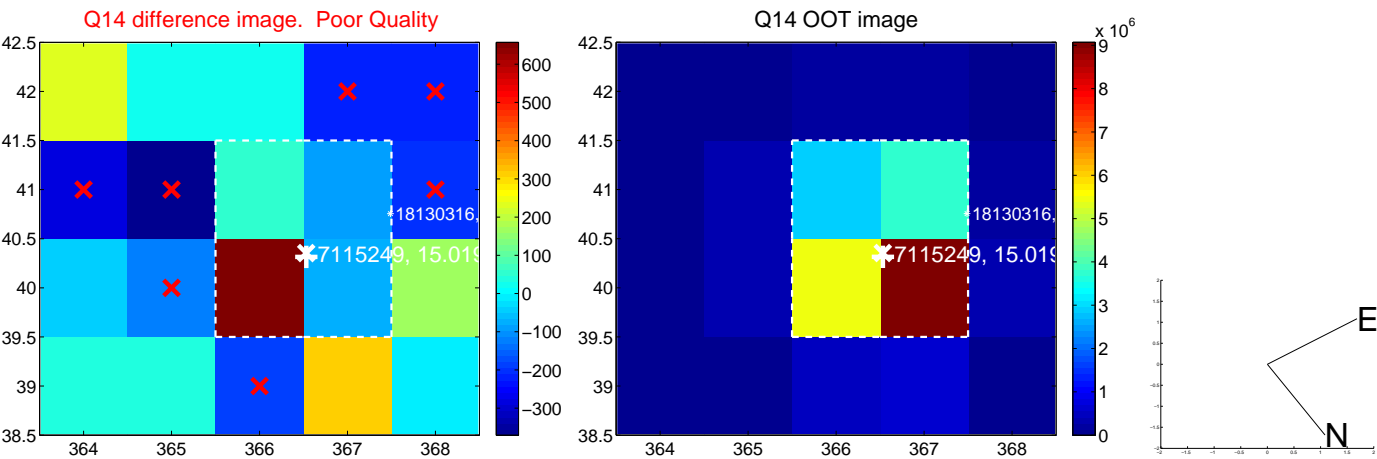
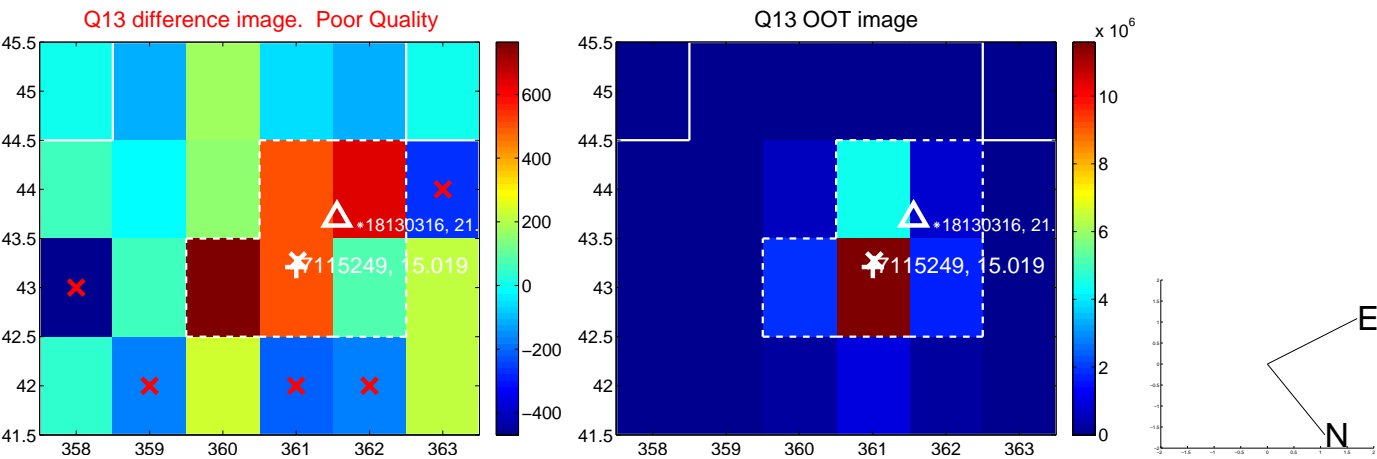
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

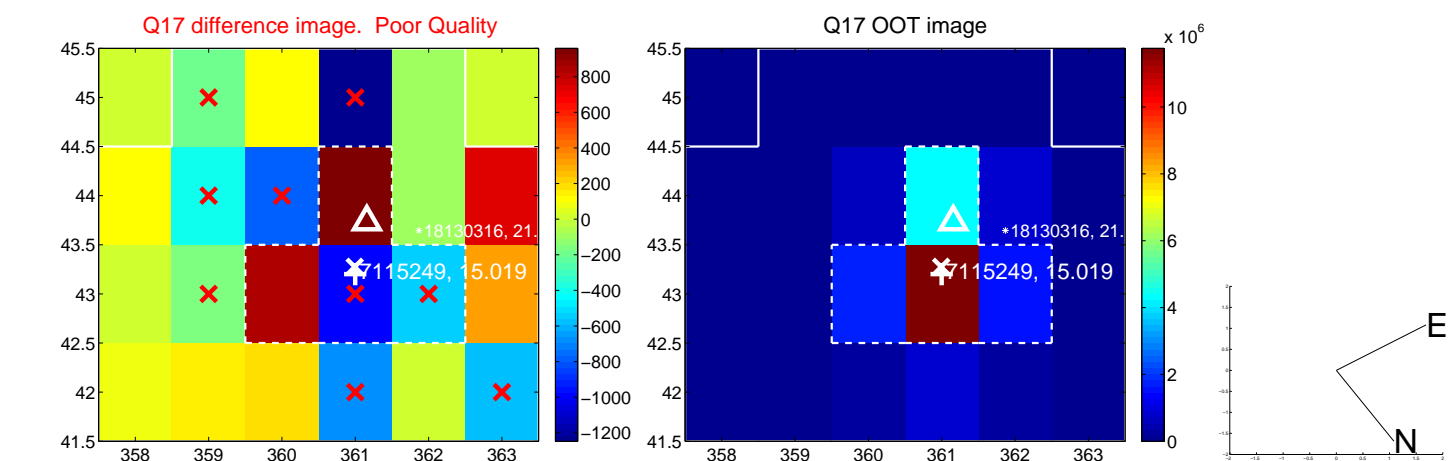


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

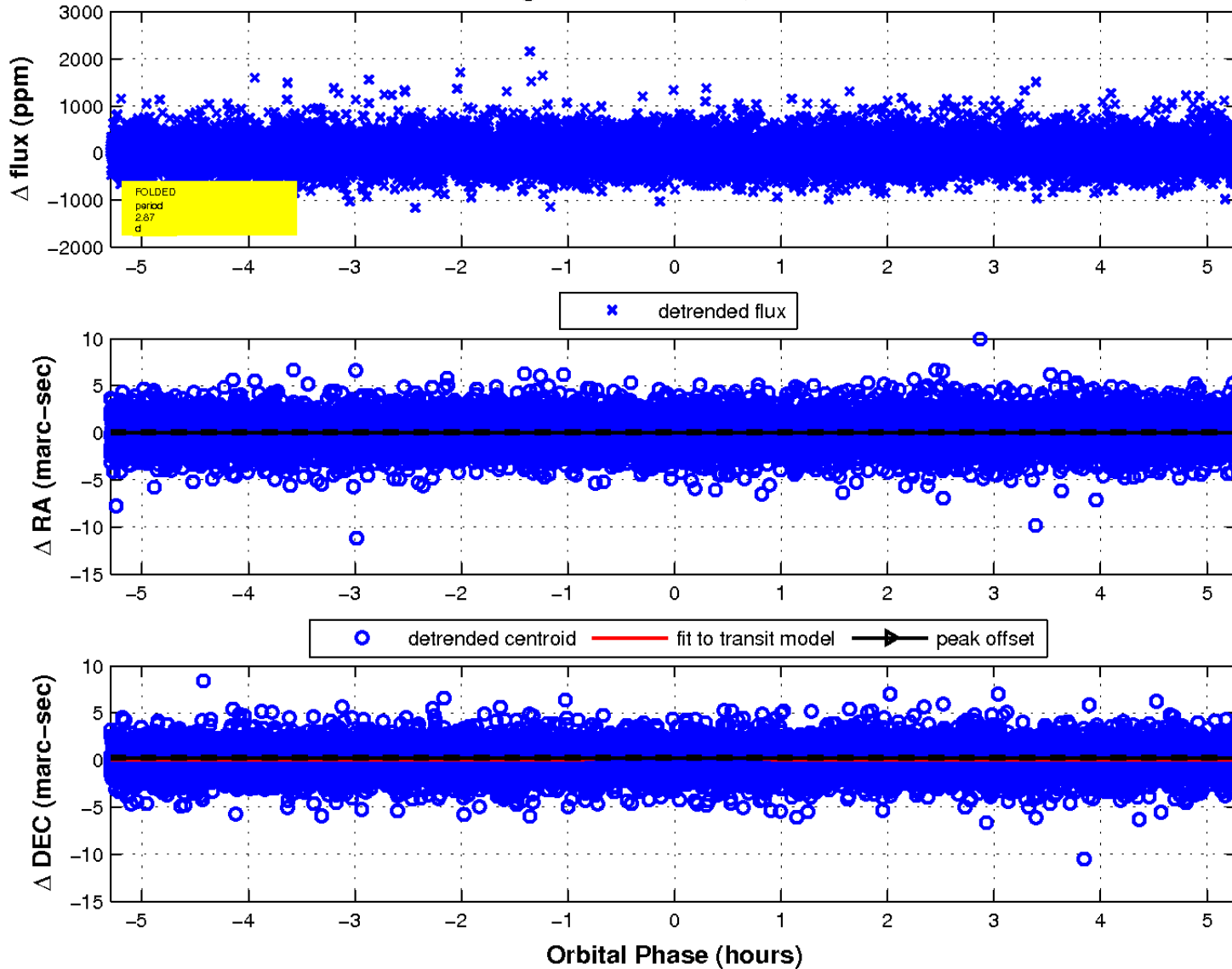




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

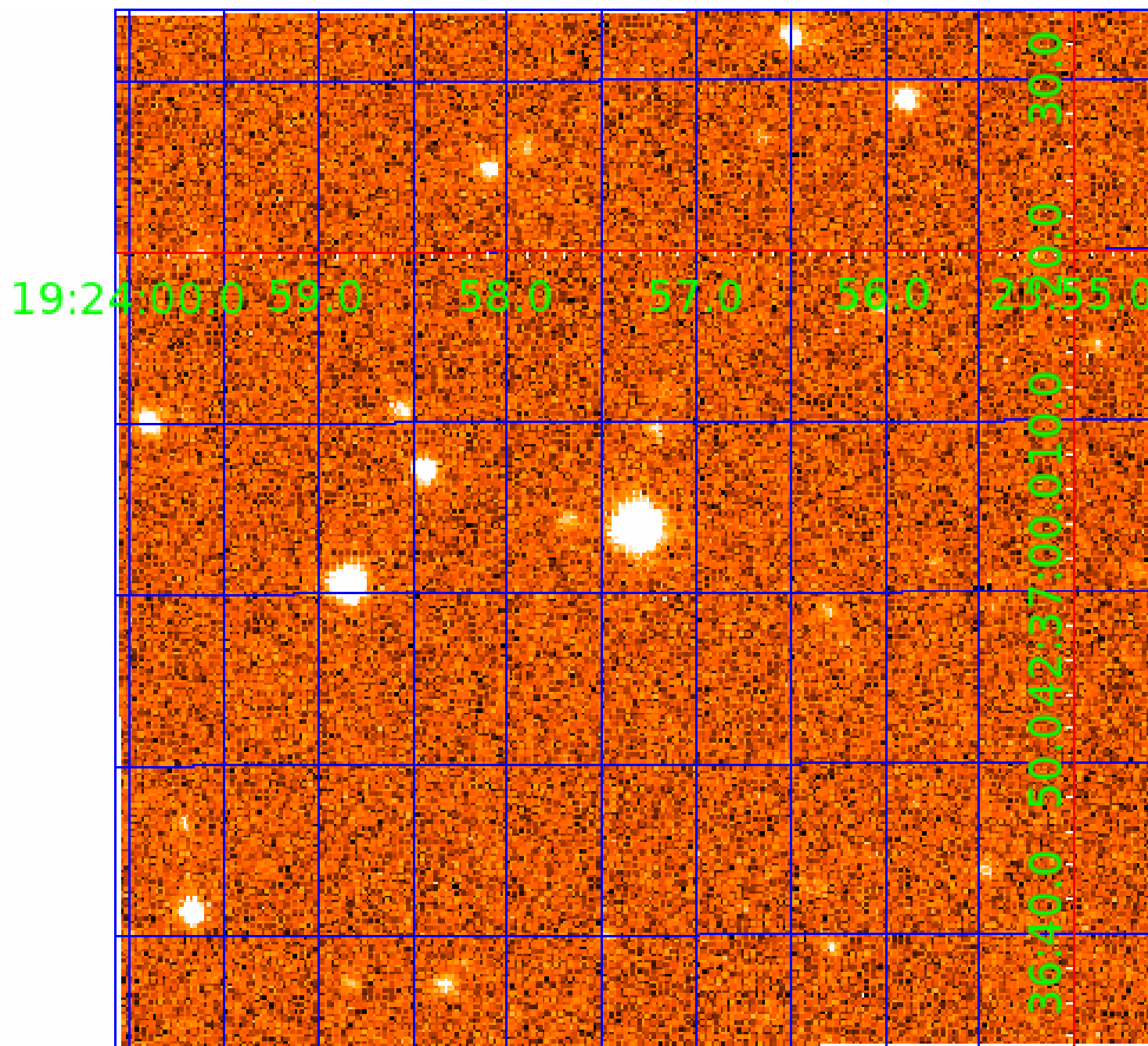


fluxWeightedCentroids, Planet 4 of 8



# UKIRT Image

Declination



# KIC 007115249

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007115249-01	OBS	No	0.566745	131.877898	16.5	4.290	11.1	5.9	0.89	5855	0.37	4735.62
007115249-02	OBS	No	10.686810	140.081100	185.8	4.267	17.9	11.0	0.89	5855	1.30	94.36
007115249-04	OBS	No	2.874820	133.025867	219.1	1.765	14.0	14.4	0.89	5855	1.33	543.35
007115249-05	OBS	No	3.169632	134.290542	503.2	0.534	11.5	18.7	0.89	5855	2.15	477.03
007115249-06	OBS	No	9.844726	139.364274	557.3	1.938	13.7	19.2	0.89	5855	2.26	105.27
007115249-07	OBS	No	18.315402	141.401621	1561.9	1.500	12.9	-1.0	0.89	5855	3.52	46.01
007115249-08	OBS	No	1.458535	131.679944	875.3	2.000	10.9	-1.0	0.89	5855	2.63	1342.78

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007115249-01	OBS	FP	0.00	1	0	0	1	LPP_DV—CENT_FEW_DIFFS—EPHEM_MATCH
007115249-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007115249-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007115249-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007115249-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007115249-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
007115249-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS

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

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

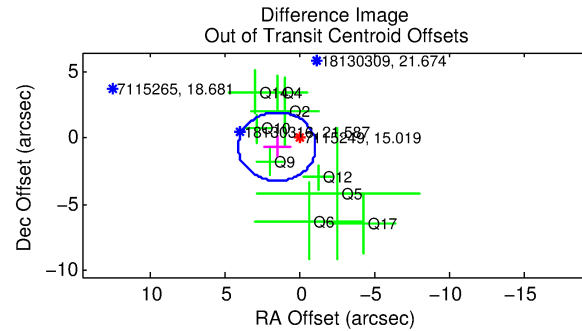
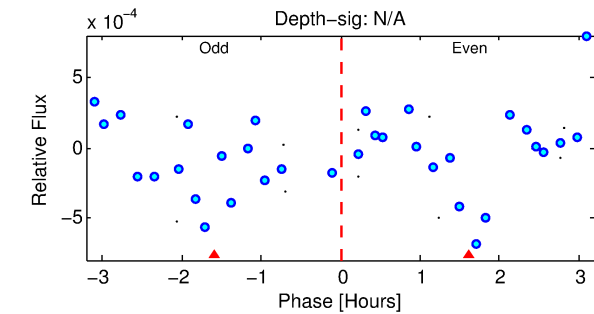
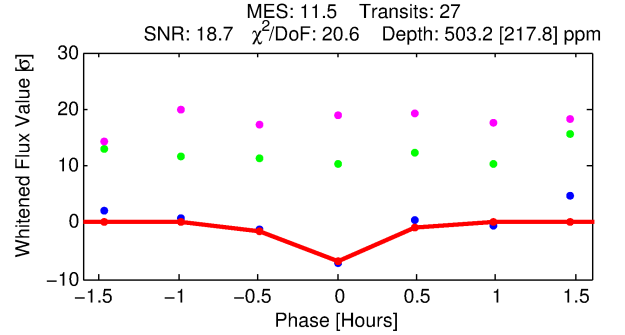
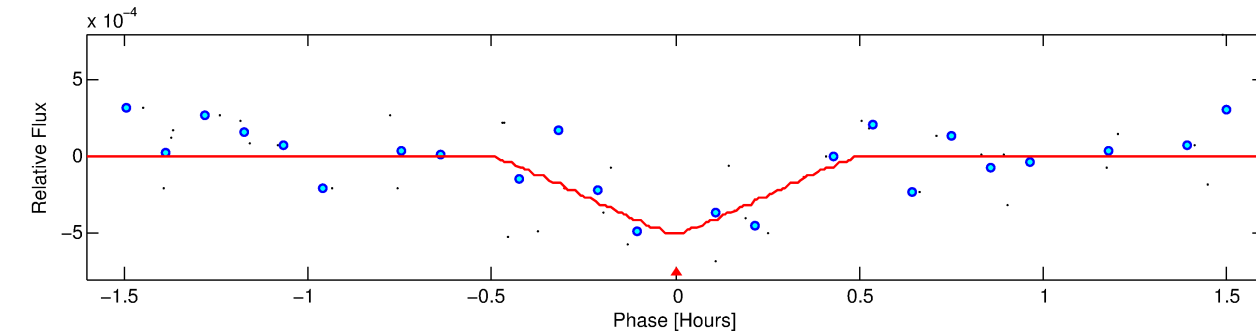
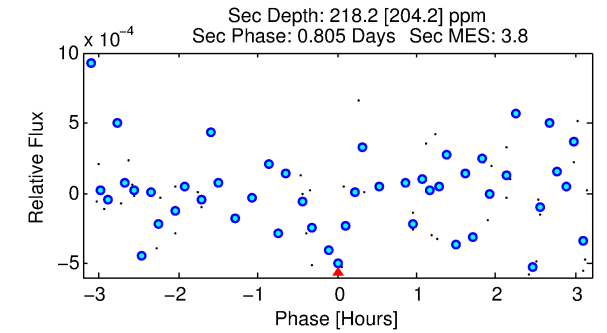
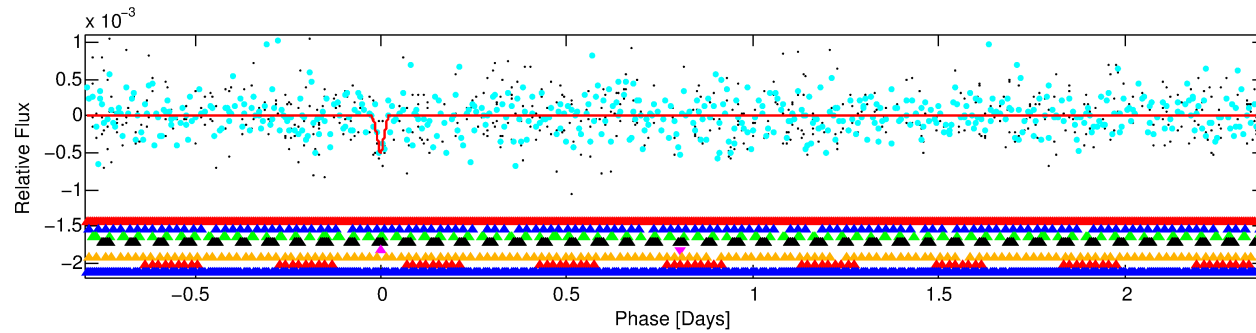
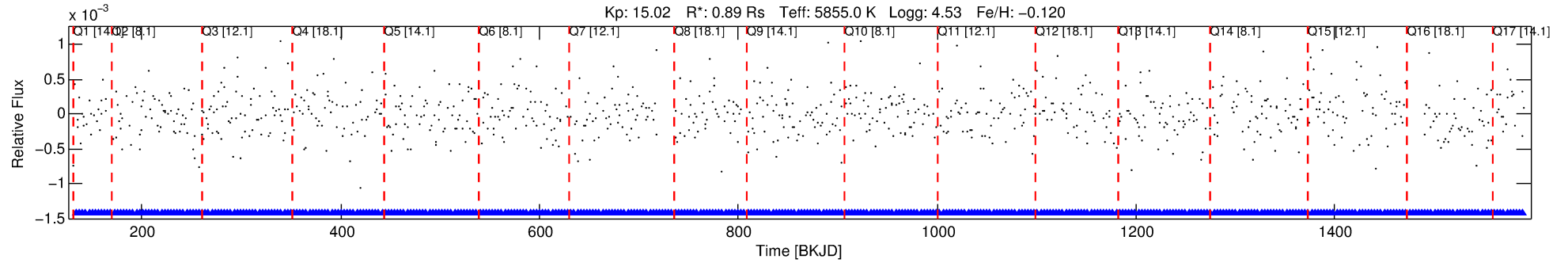
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007115249-05

No Significant Match Found

# DV One-Page Summary

KIC: 7115249 Candidate: 5 of 8 Period: 3.170 d



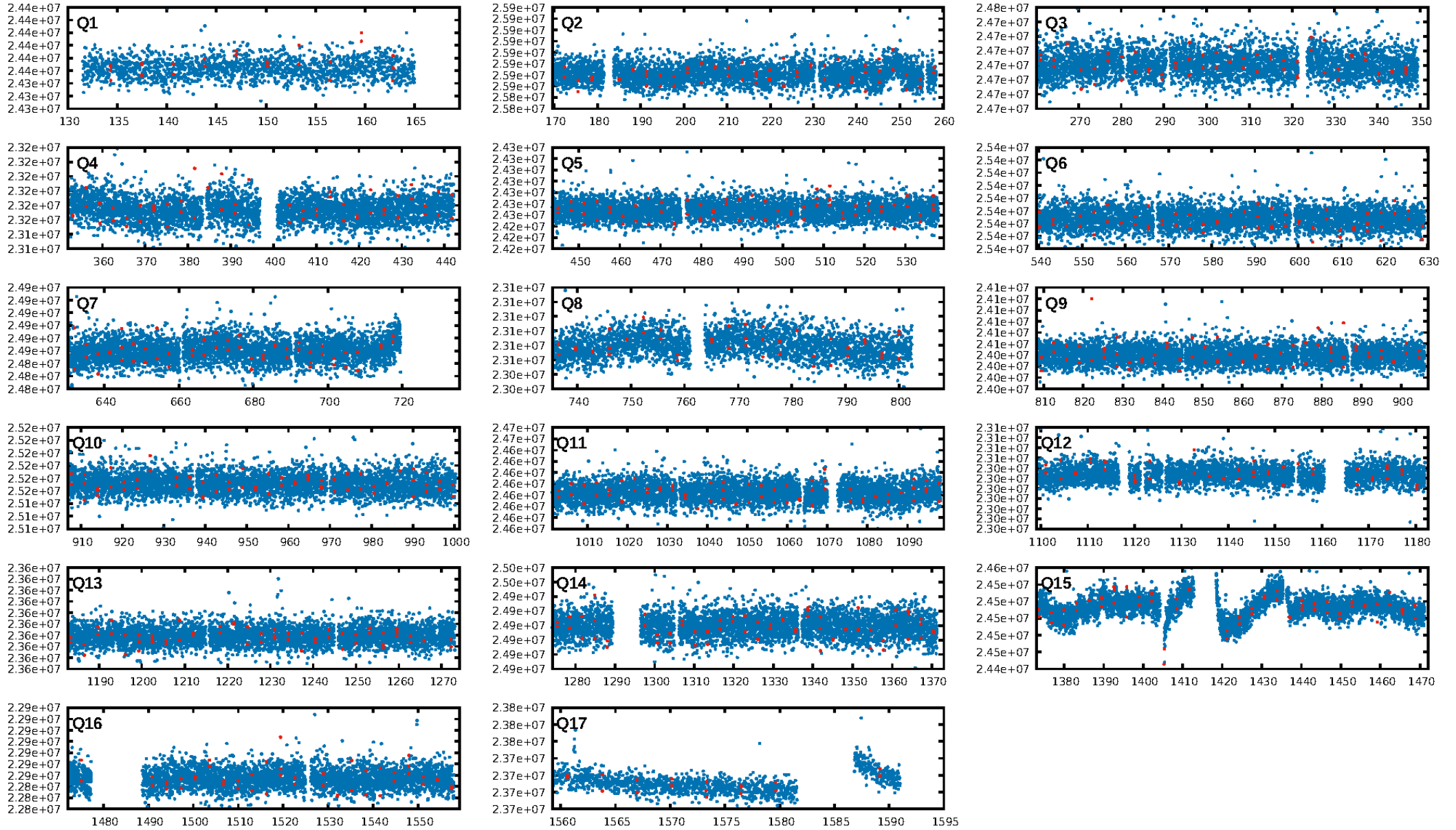
## DV Fit Results:

Period = 3.16963 [0.00003] d  
Epoch = 134.2905 [0.0041] BKJD  
Rp/R\* = 0.0220 [0.1376]  
a/R\* = 40.48 [1100.93]  
b = 0.50 [43.04]  
Seff = 477.03 [182.64]  
Teff = 1192 [114] K  
Rp = 2.15 [13.44] Re  
a = 0.0420 [0.0104] AU  
Ag = 45.94 [576.49] [0.08 $\sigma$ ]  
Teffp = 4797 [15042] K [0.24 $\sigma$ ]

## DV Diagnostic Results:

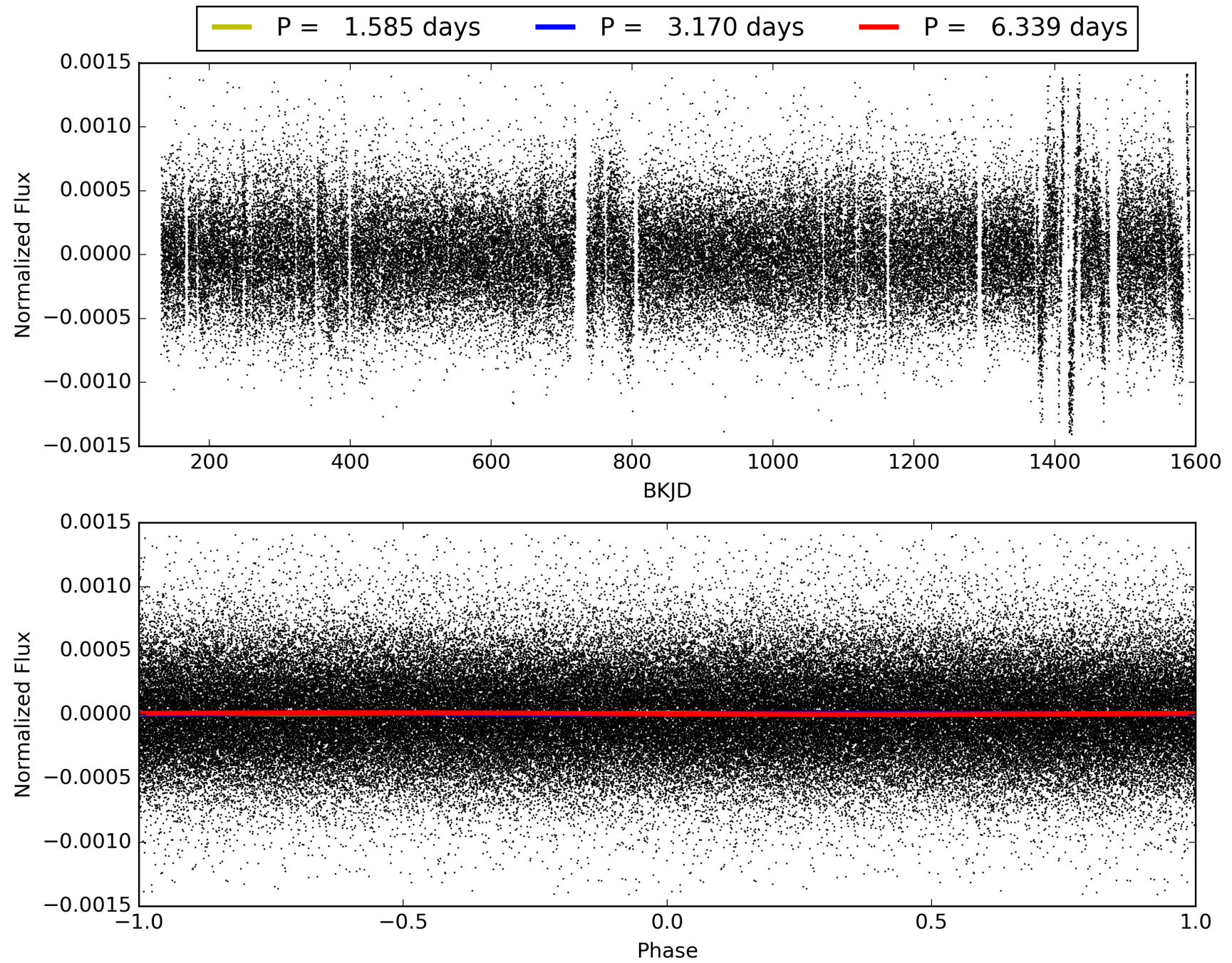
ShortPeriod-sig: 100.0% [3.84 $\sigma$ ]  
LongPeriod-sig: 100.0% [24.30 $\sigma$ ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.0%  
Bootstrap-pfa: 2.80e-07  
RollingBand-fgt: 1.00 [25/25]  
GhostDiagnostic-chr: 0.5595  
Centroid-sig: 5.9%  
Centroid-so: 0.725 arcsec [1.42 $\sigma$ ]  
OotOffset-rm: 1.607 arcsec [1.86 $\sigma$ ]  
KicOffset-rm: 1.421 arcsec [1.64 $\sigma$ ]  
OotOffset-st: 4/0/2/3 [9]  
KicOffset-st: 4/0/2/3 [9]  
DiffImageQuality-fgm: 0.00 [0/9]  
DiffImageOverlap-fno: 0.00 [0/17]

# TCE 007115249-05, PDC Light Curves





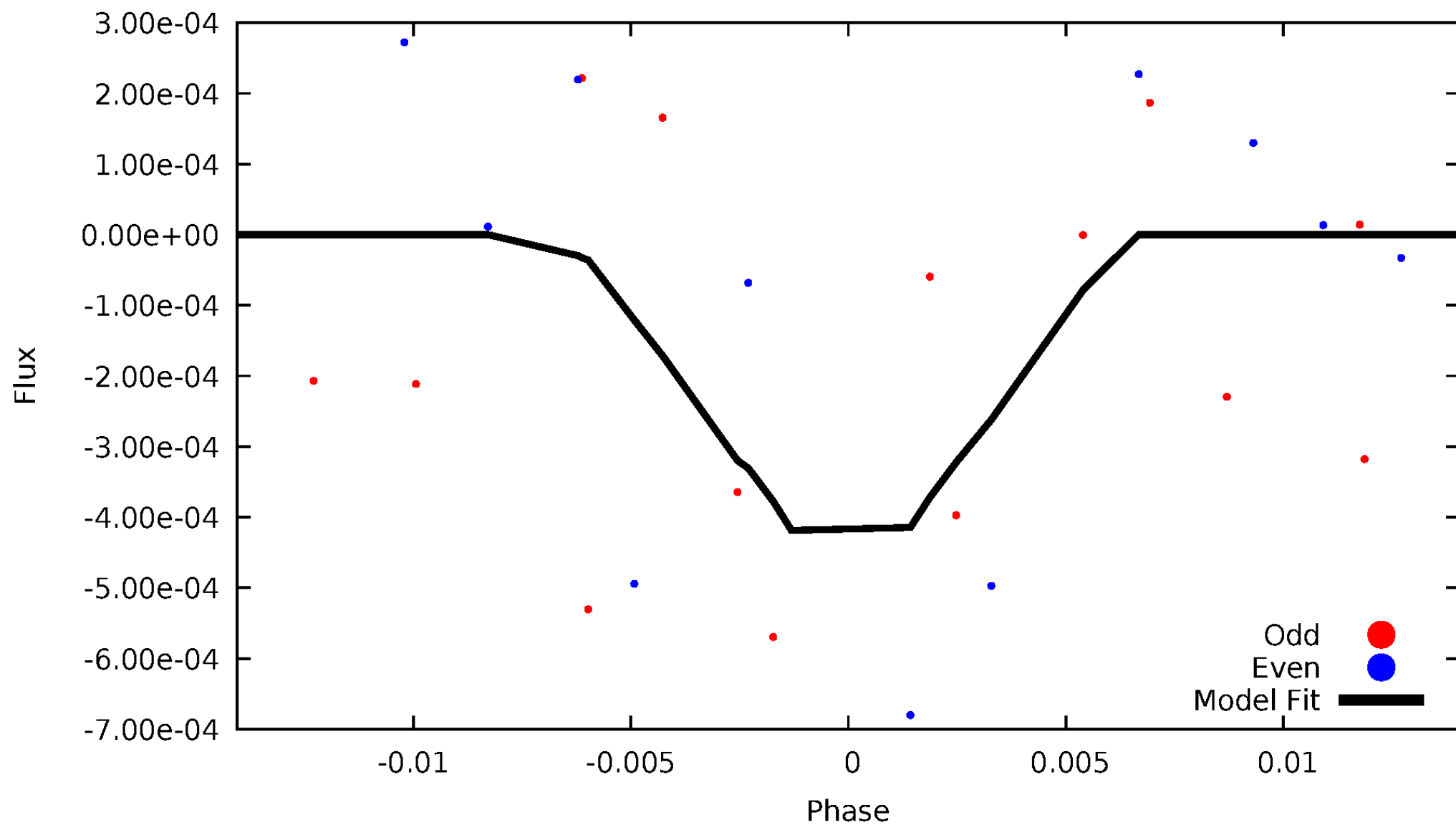
TCE 007115249-05





# DV Odd/Even

TCE 007115249-05



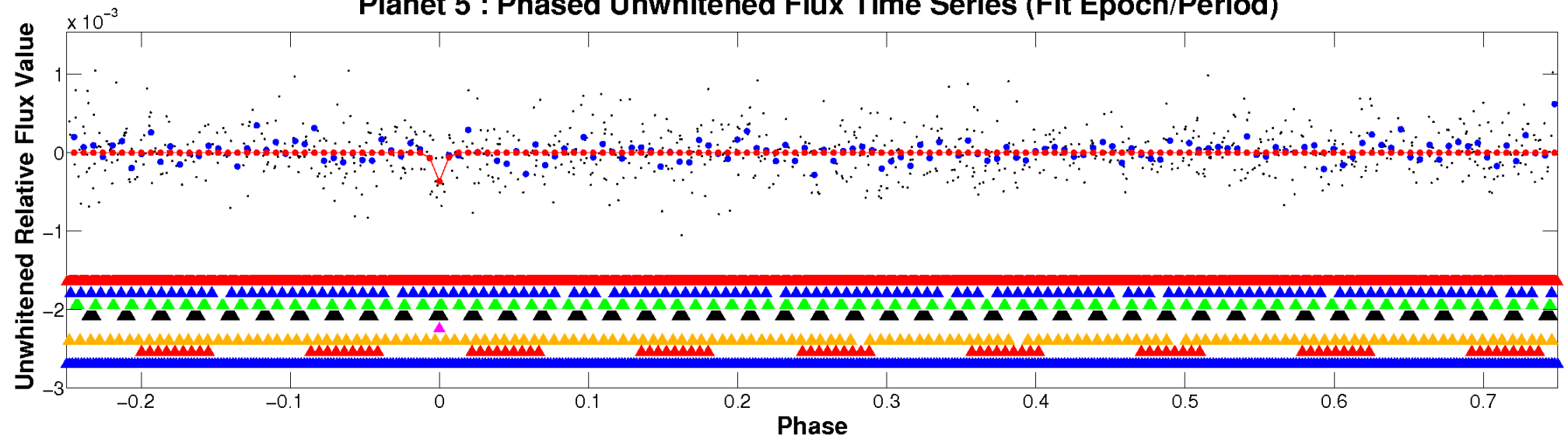


ALT Odd/Even

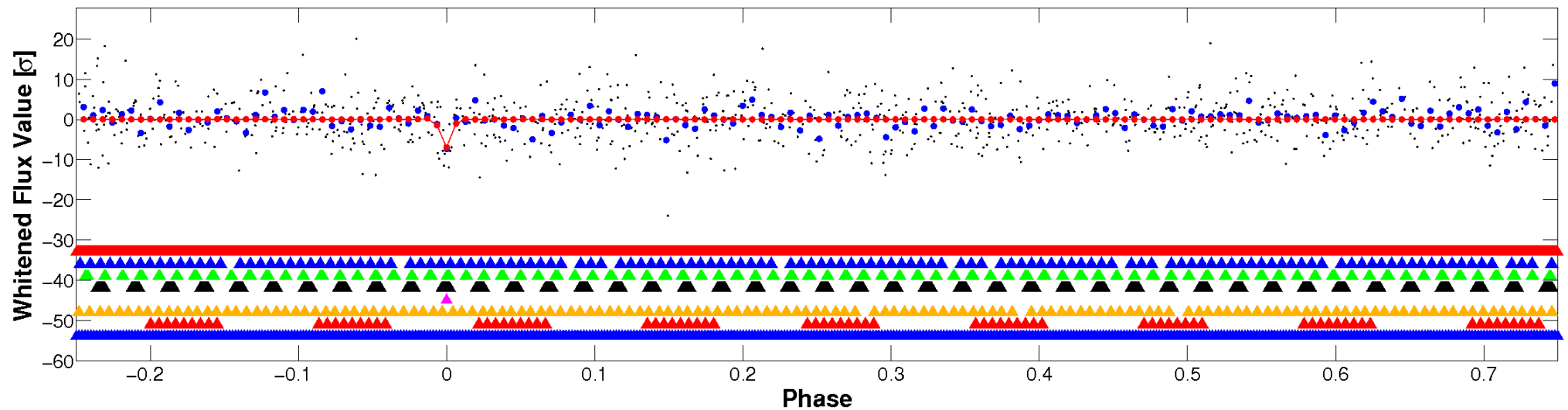
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

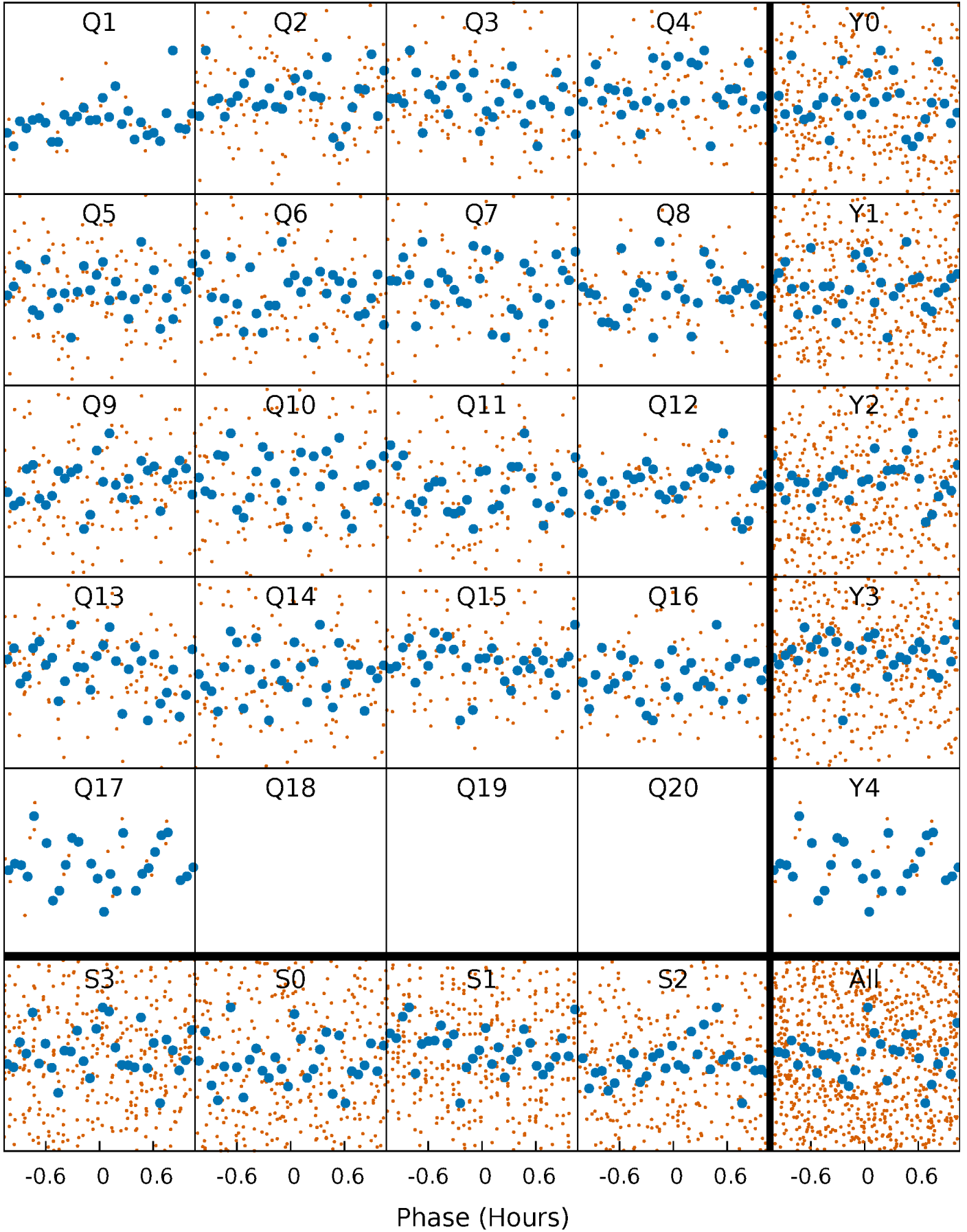


## Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



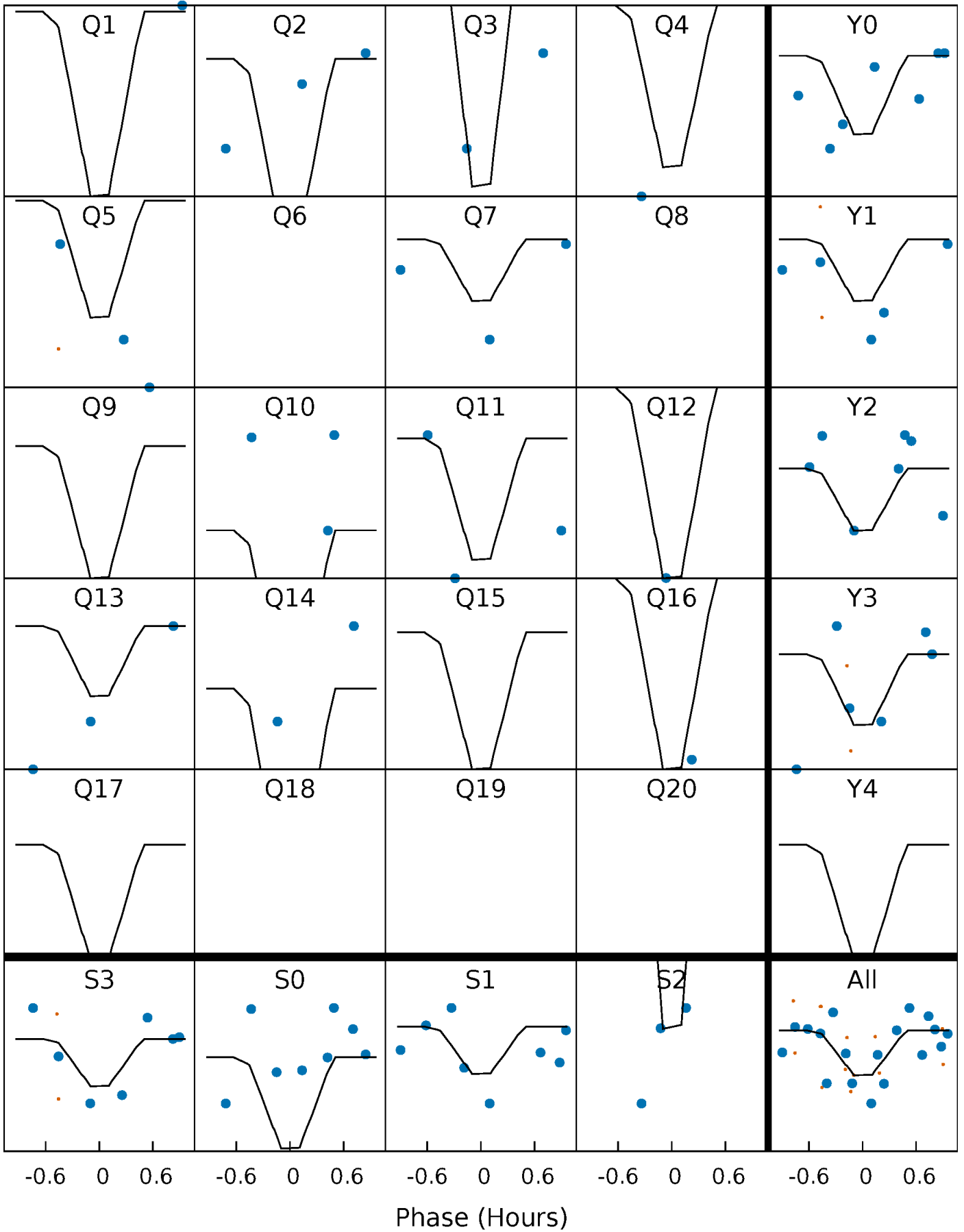
# PDC Quarter-Phased Transit Curves

TCE 007115249-05   P= 3.169632 Days    $T_0=134.290542$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 007115249-05     $P = 3.169632$  Days     $T_0 = 134.290542$  (BKJD)



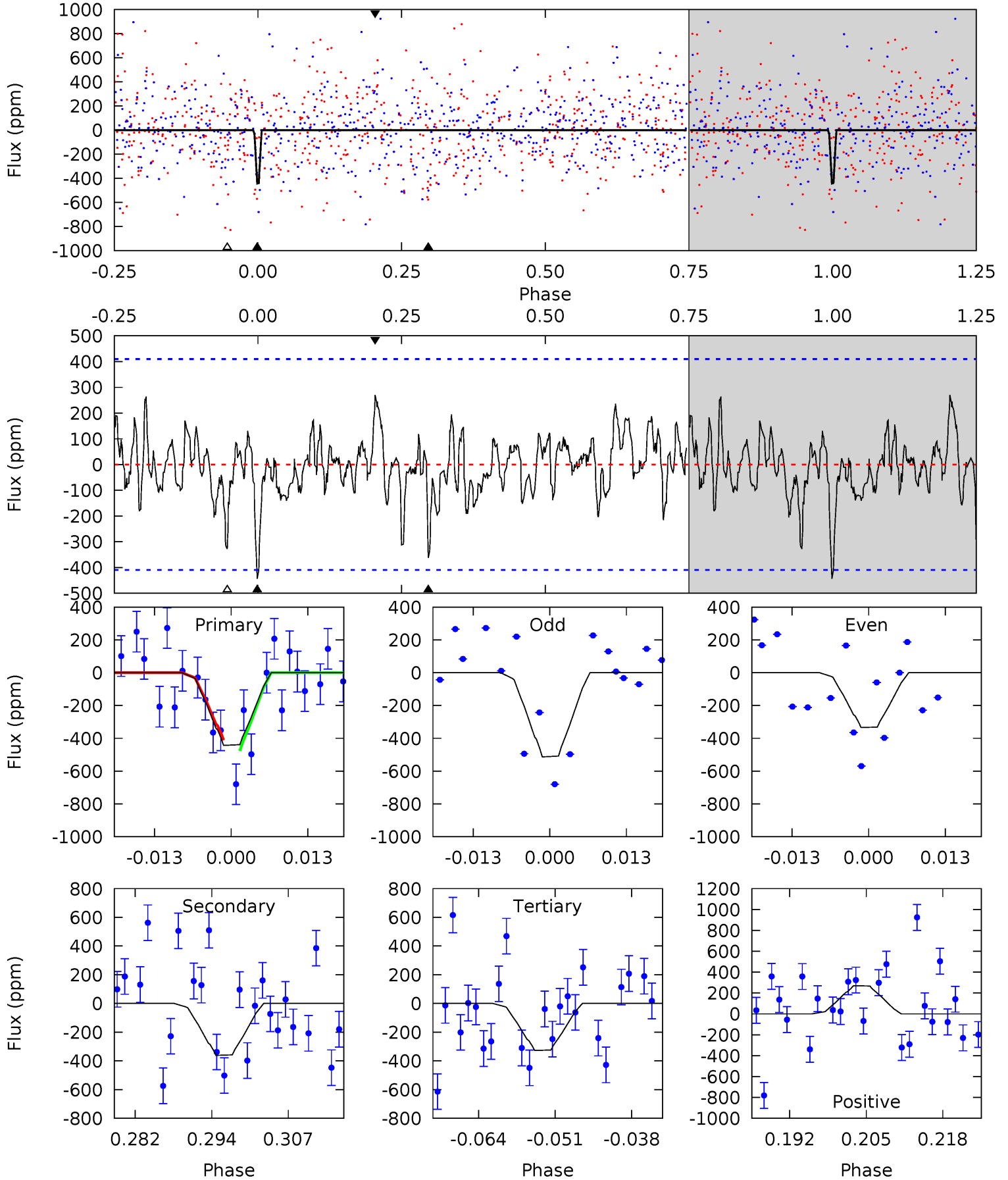
This plot does not exist for this TCE.



# DV Model-Shift Uniqueness Test

007115249-05, P = 3.169632 Days, E = 131.120910 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
5.39	4.40	3.98	3.28	4.98	2.49	1.18	1.41	2.11	0.42	1.12	1.08	0	0.38	0.39



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 007115249

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5855^{+140}_{-176}$	$4.528^{+0.037}_{-0.200}$	$-0.120^{+0.300}_{-0.300}$	$0.894^{+0.261}_{-0.087}$	$0.982^{+0.108}_{-0.121}$	$1.938^{+0.380}_{-0.989}$
	+2%/-3%	+1%/-4%	+250%/-250%	+29%/-10%	+11%/-12%	+20%/-51%
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 007115249-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-362 \pm 82$	$10.59^{+11.46}_{-7.31}$	$1708^{+121}_{-78}$	$3068^{+1565}_{-672}$	$2.872^{+28.570}_{-2.179}$
Alt.	N/A	N/A	N/A	N/A	N/A

$T_{\text{max}}$  = 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

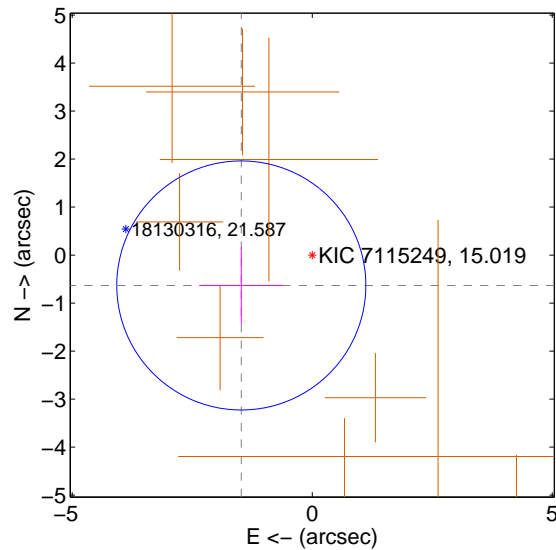
Supplemental centroid analysis for 007115249-05. Kepler magnitude: 15.02. Transit SNR 18.67

There are 0 quarters with good PRF difference image offsets

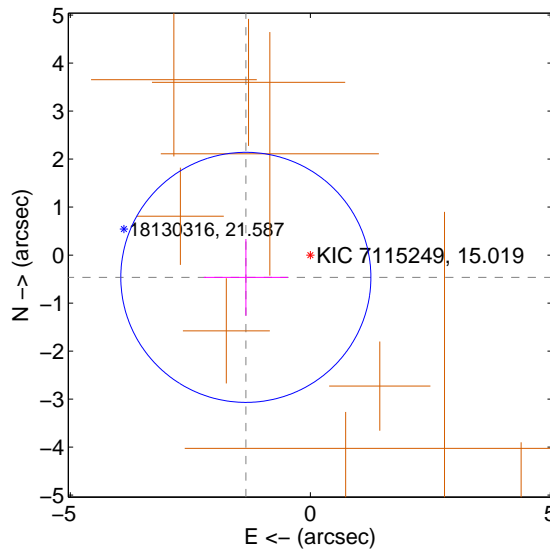
The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.607 \pm 0.865$	1.86	$1.477 \pm 0.876$	$-0.632 \pm 0.799$
PRF-fit source offset from KIC position	$1.421 \pm 0.868$	1.64	$1.343 \pm 0.876$	$-0.464 \pm 0.799$
photometric centroid source offset	$0.72 \pm 0.51$	1.42	$-0.69 \pm 0.51$	$-0.22 \pm 0.50$

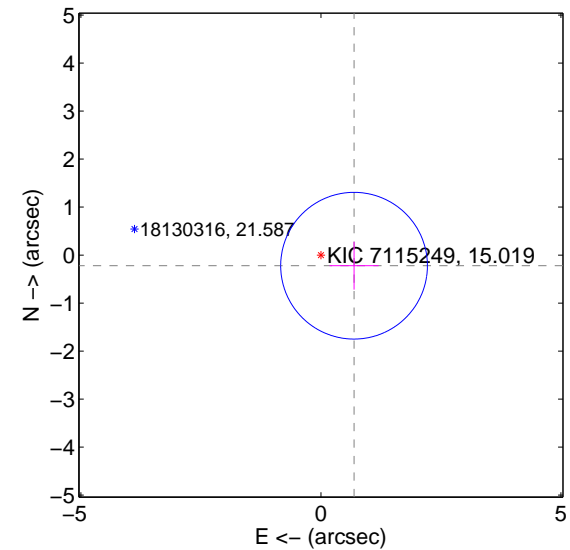
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



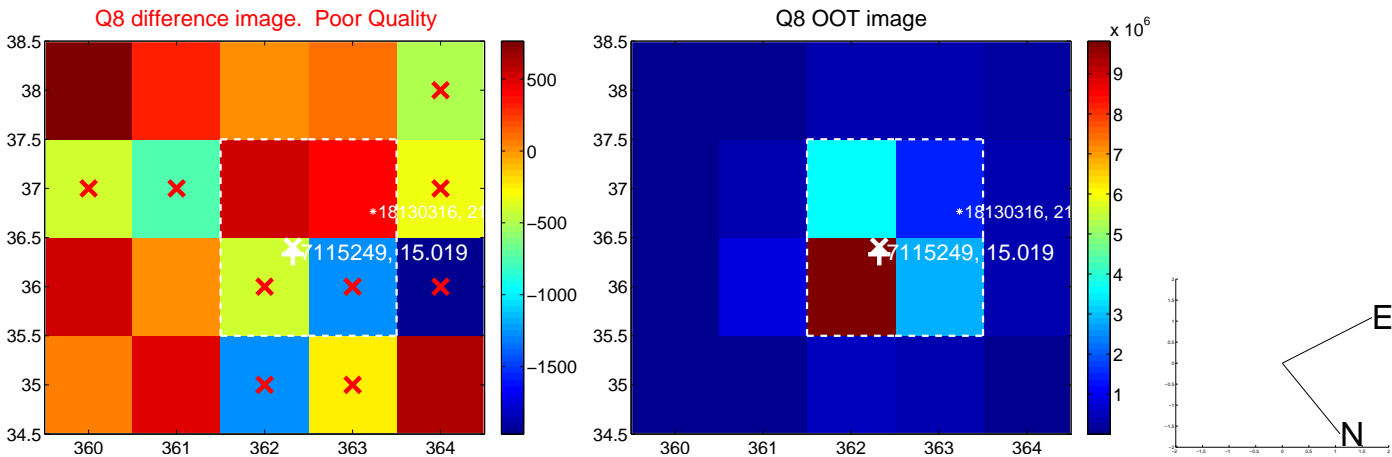
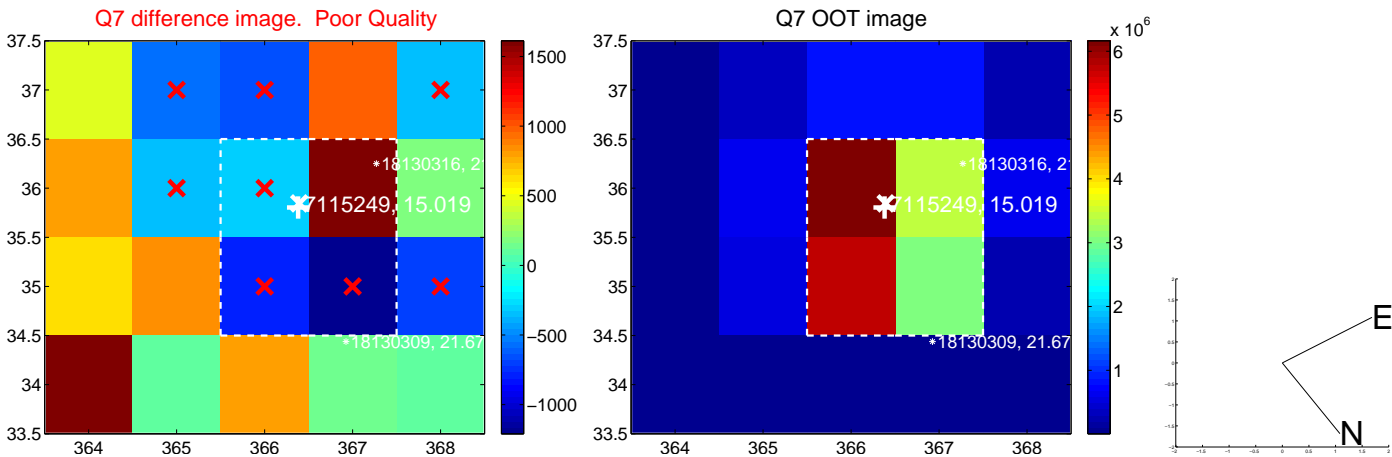
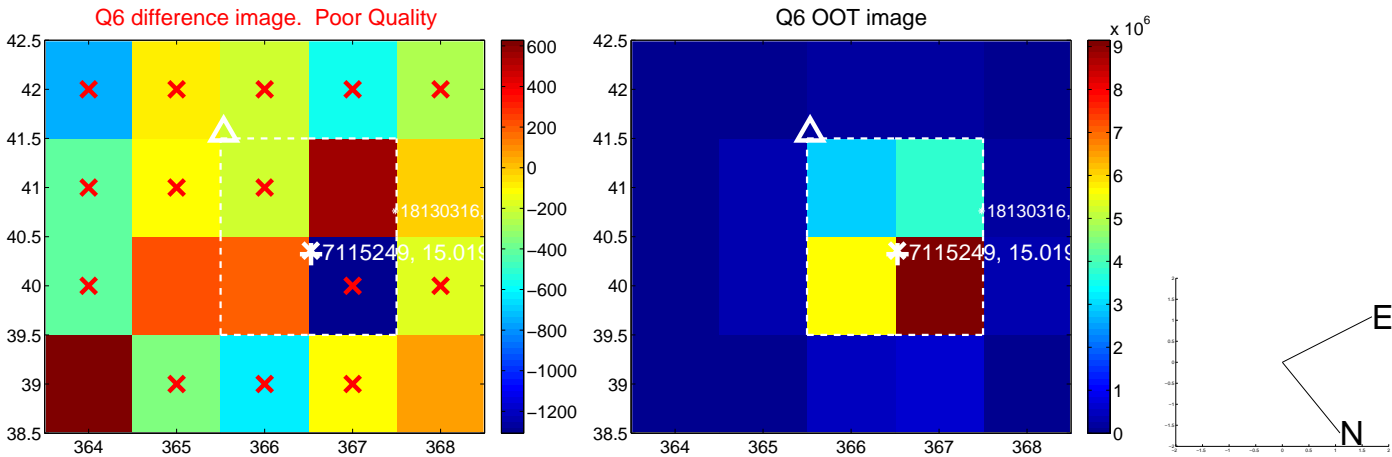
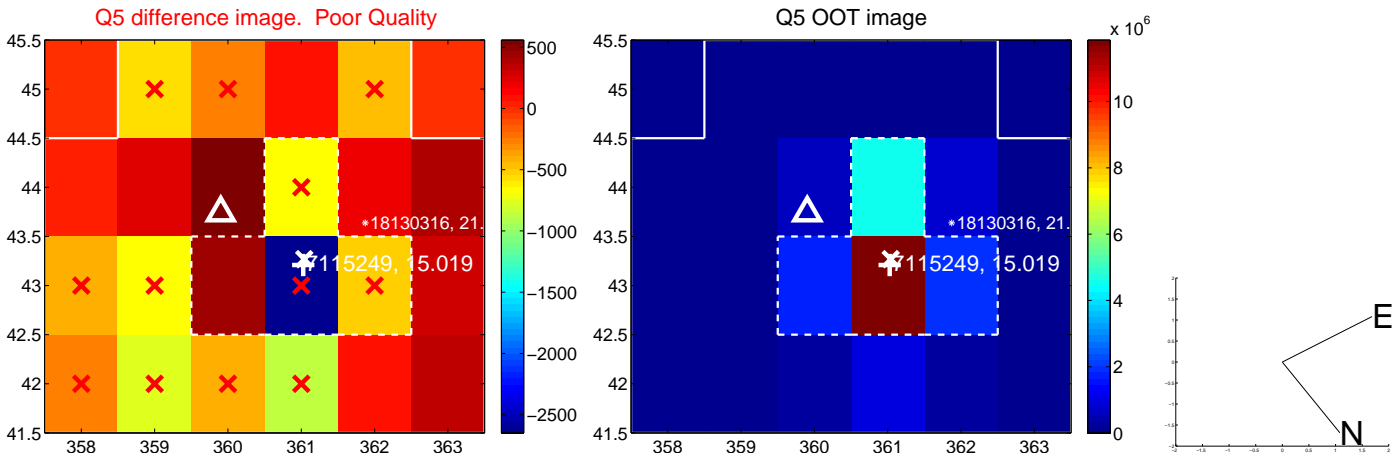
offset from photometric centroids



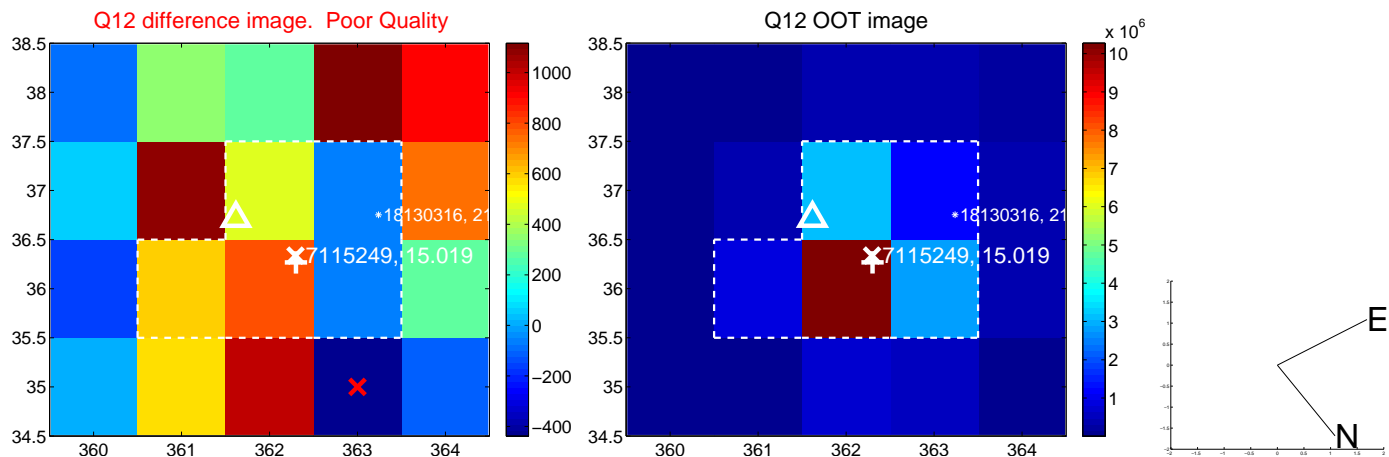
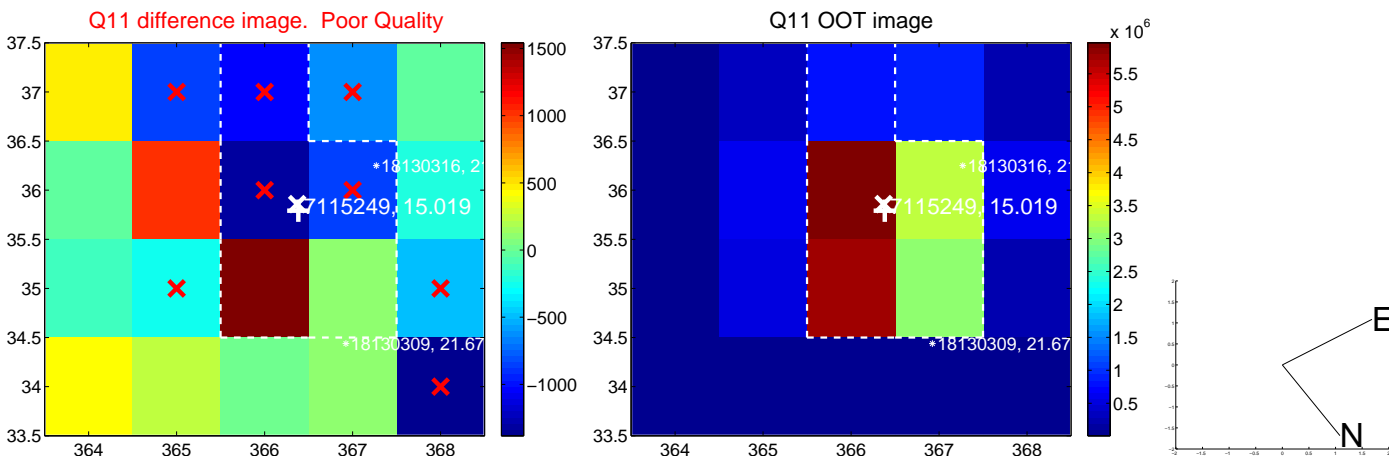
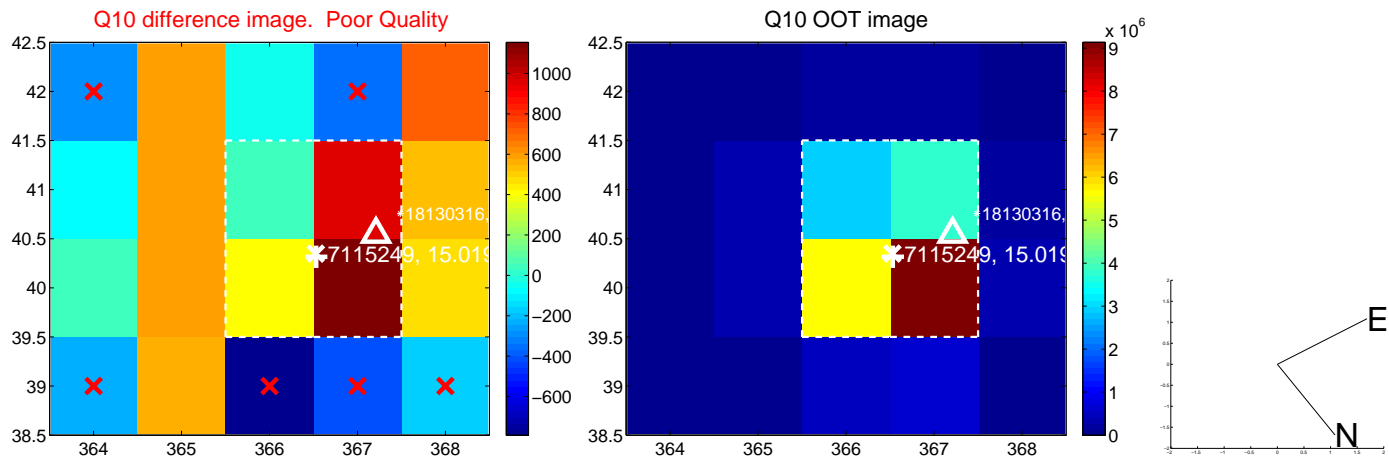
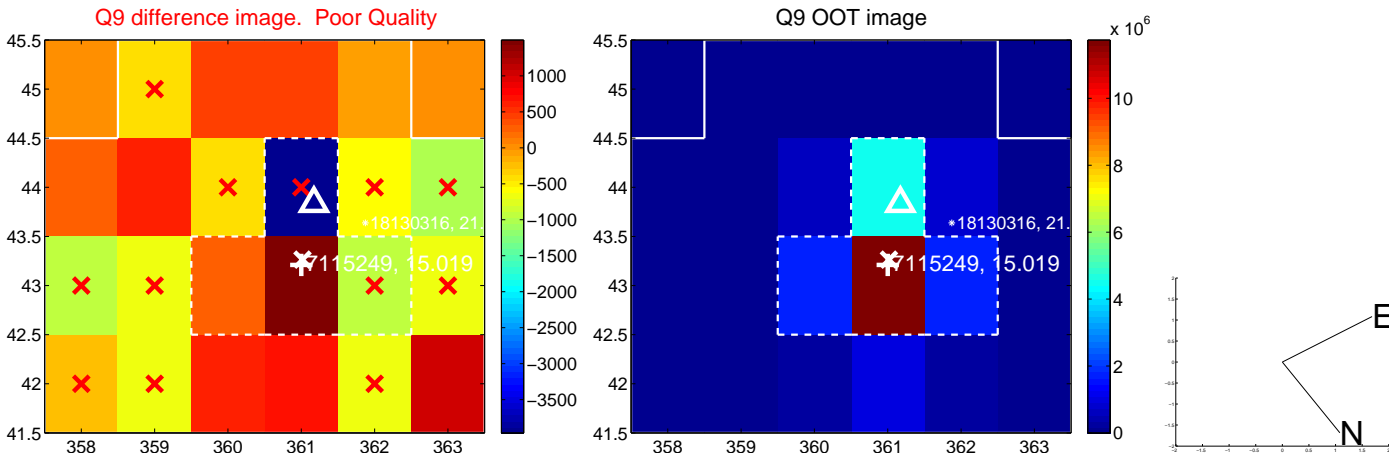
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



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

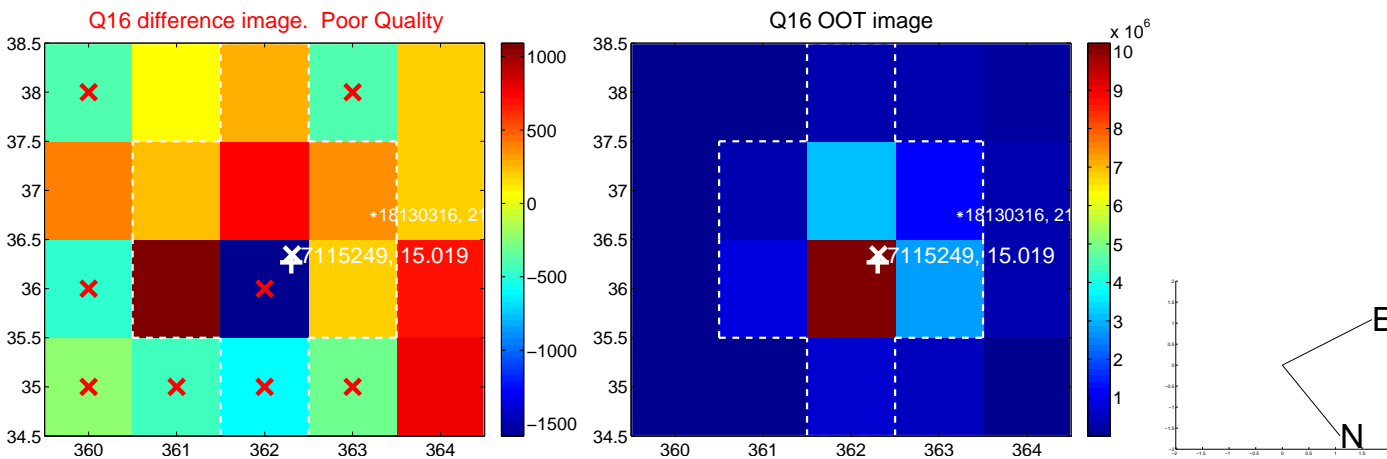
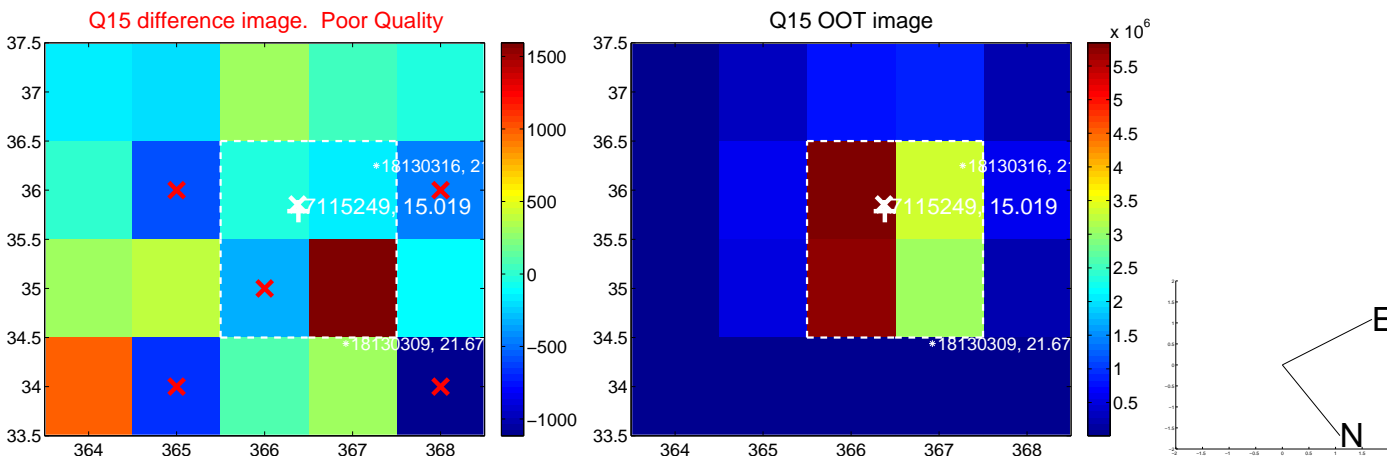
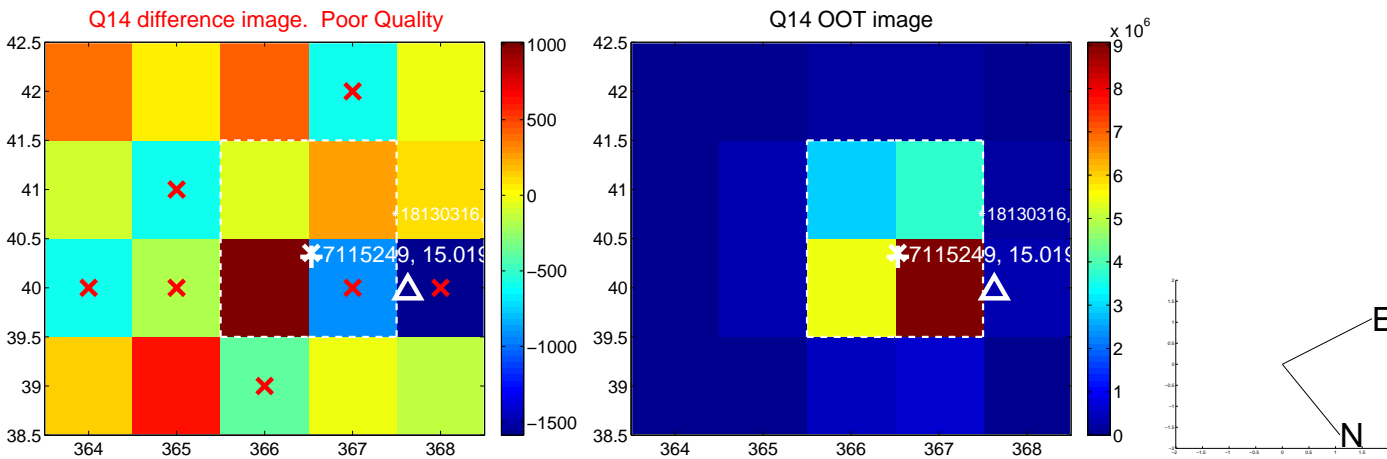
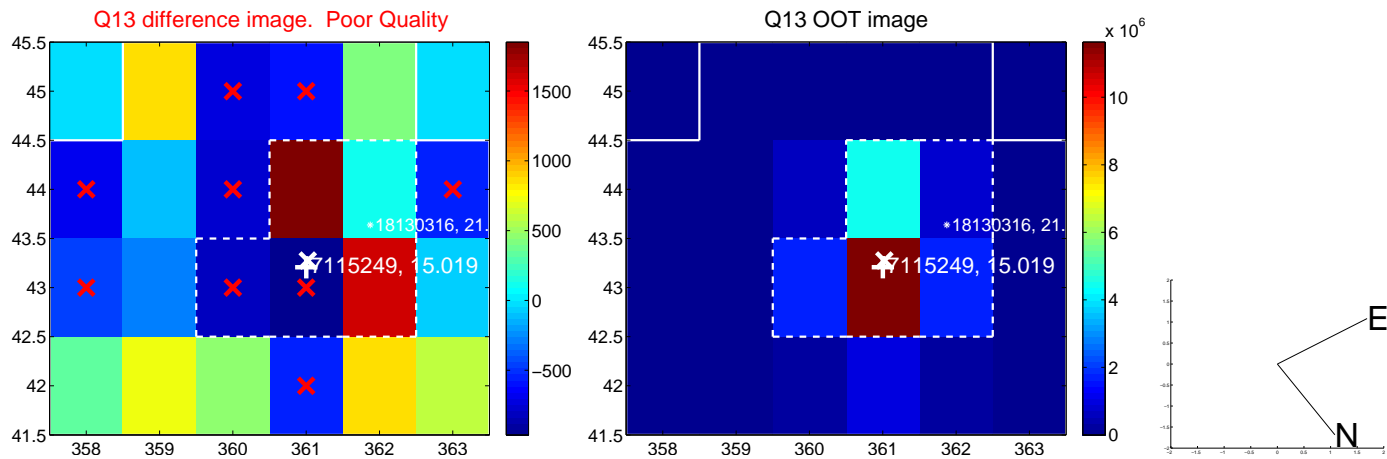


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

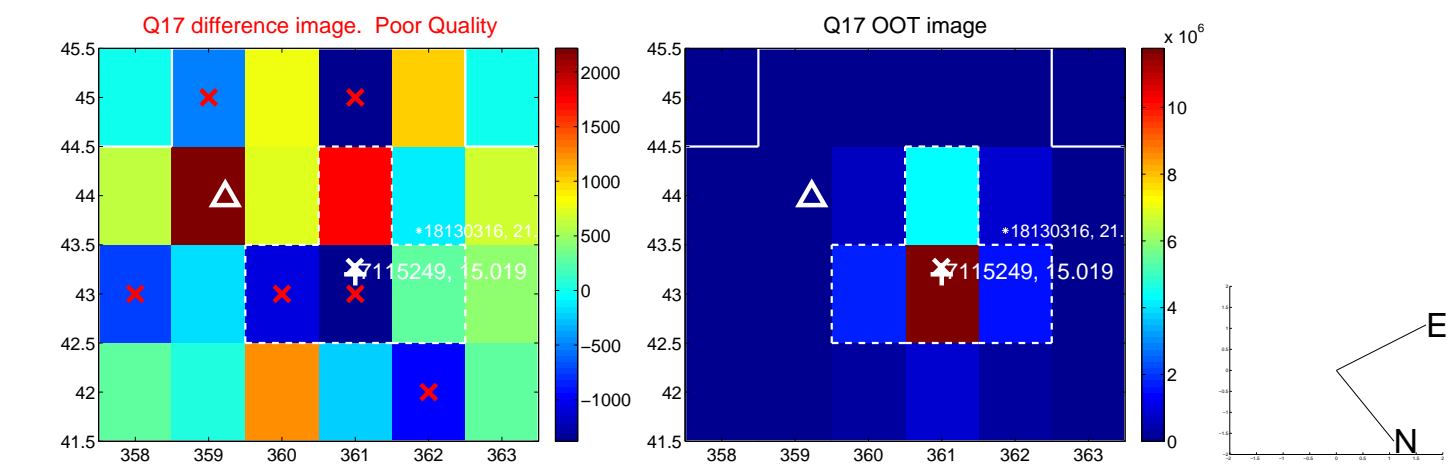




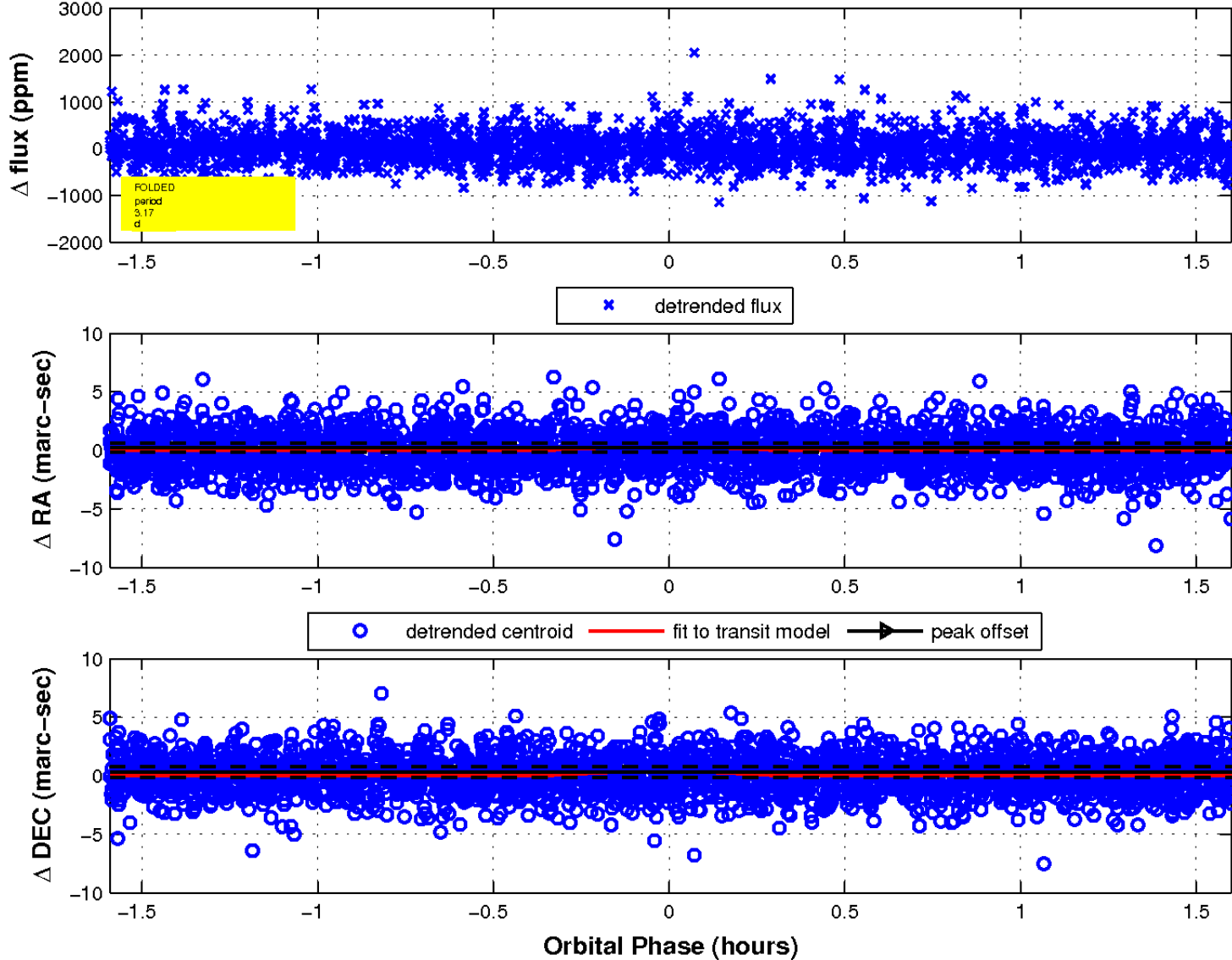
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

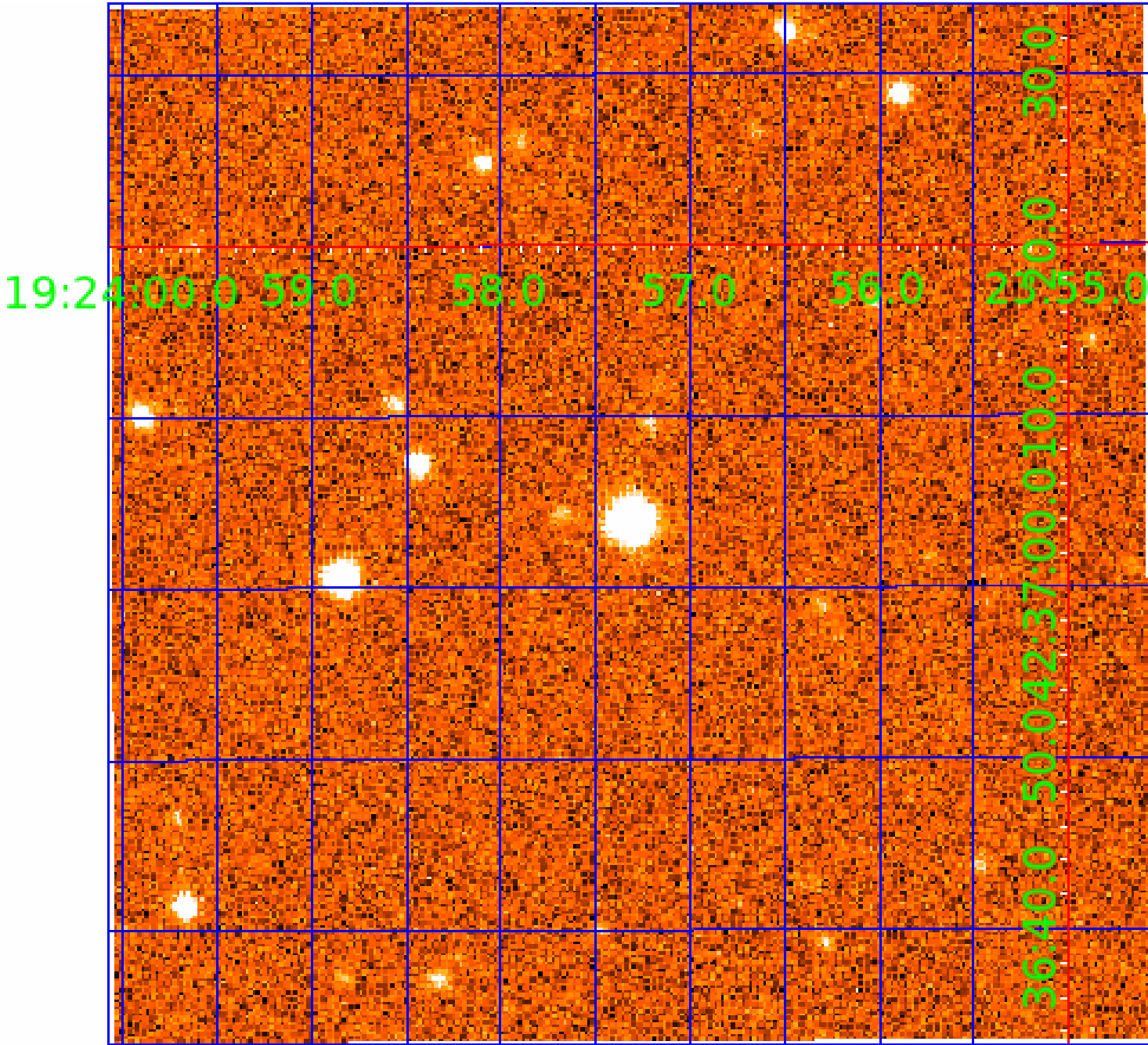


fluxWeightedCentroids, Planet 5 of 8



UKIRT Image

Declination



# KIC 007115249

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007115249-01	OBS	No	0.566745	131.877898	16.5	4.290	11.1	5.9	0.89	5855	0.37	4735.62
007115249-02	OBS	No	10.686810	140.081100	185.8	4.267	17.9	11.0	0.89	5855	1.30	94.36
007115249-04	OBS	No	2.874820	133.025867	219.1	1.765	14.0	14.4	0.89	5855	1.33	543.35
007115249-05	OBS	No	3.169632	134.290542	503.2	0.534	11.5	18.7	0.89	5855	2.15	477.03
007115249-06	OBS	No	9.844726	139.364274	557.3	1.938	13.7	19.2	0.89	5855	2.26	105.27
007115249-07	OBS	No	18.315402	141.401621	1561.9	1.500	12.9	-1.0	0.89	5855	3.52	46.01
007115249-08	OBS	No	1.458535	131.679944	875.3	2.000	10.9	-1.0	0.89	5855	2.63	1342.78

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007115249-01	OBS	FP	0.00	1	0	0	1	LPP_DV—CENT_FEW_DIFFS—EPHEM_MATCH
007115249-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007115249-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007115249-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007115249-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007115249-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
007115249-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS

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

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

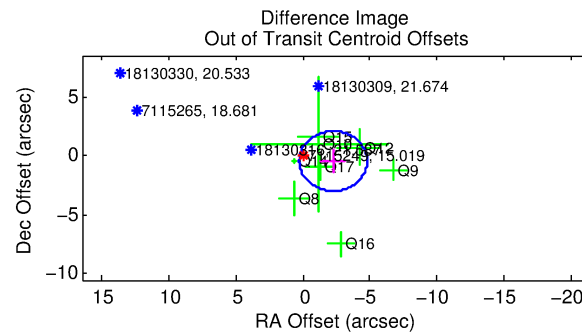
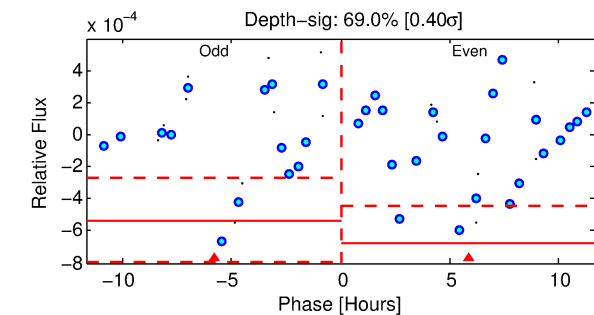
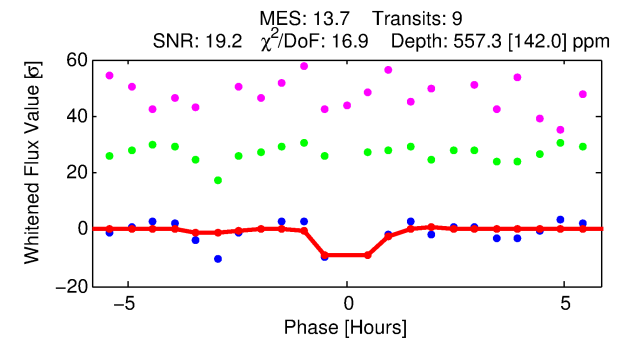
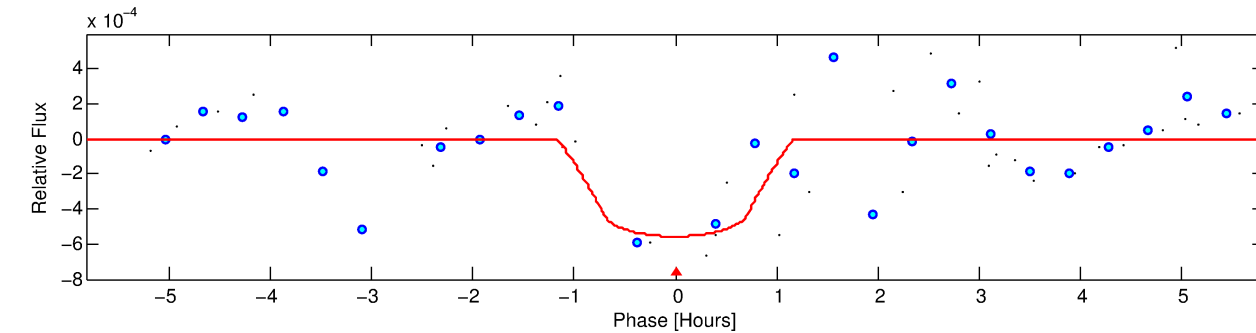
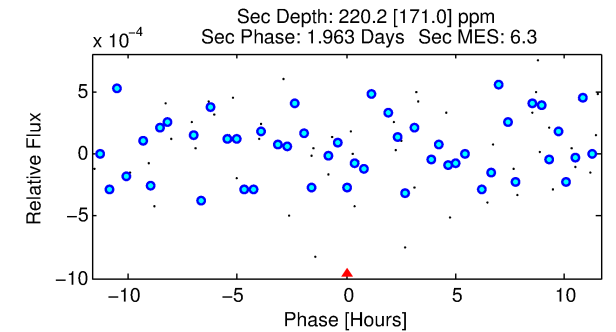
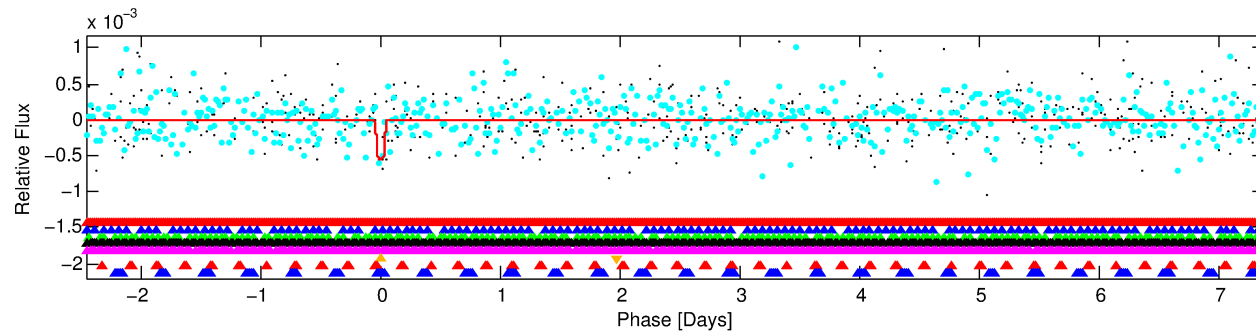
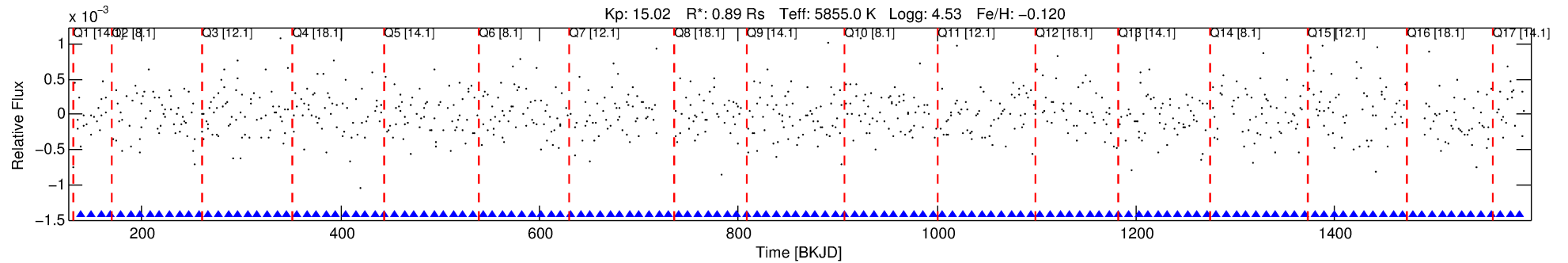
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007115249-06

No Significant Match Found

# DV One-Page Summary

KIC: 7115249 Candidate: 6 of 8 Period: 9.845 d



## DV Fit Results:

Period = 9.84473 [0.00043] d  
Epoch = 139.3643 [0.0083] BKJD  
Rp/R\* = 0.0232 [0.1017]  
a/R\* = 28.94 [584.65]  
b = 0.70 [14.77]  
Seff = 105.27 [40.30]  
Teff = 817 [78] K  
Rp = 2.26 [9.94] Re  
a = 0.0894 [0.0222] AU  
Ag = 189.65 [1672.99] [0.11 $\sigma$ ]  
Teffp = 4686 [10327] K [0.37 $\sigma$ ]

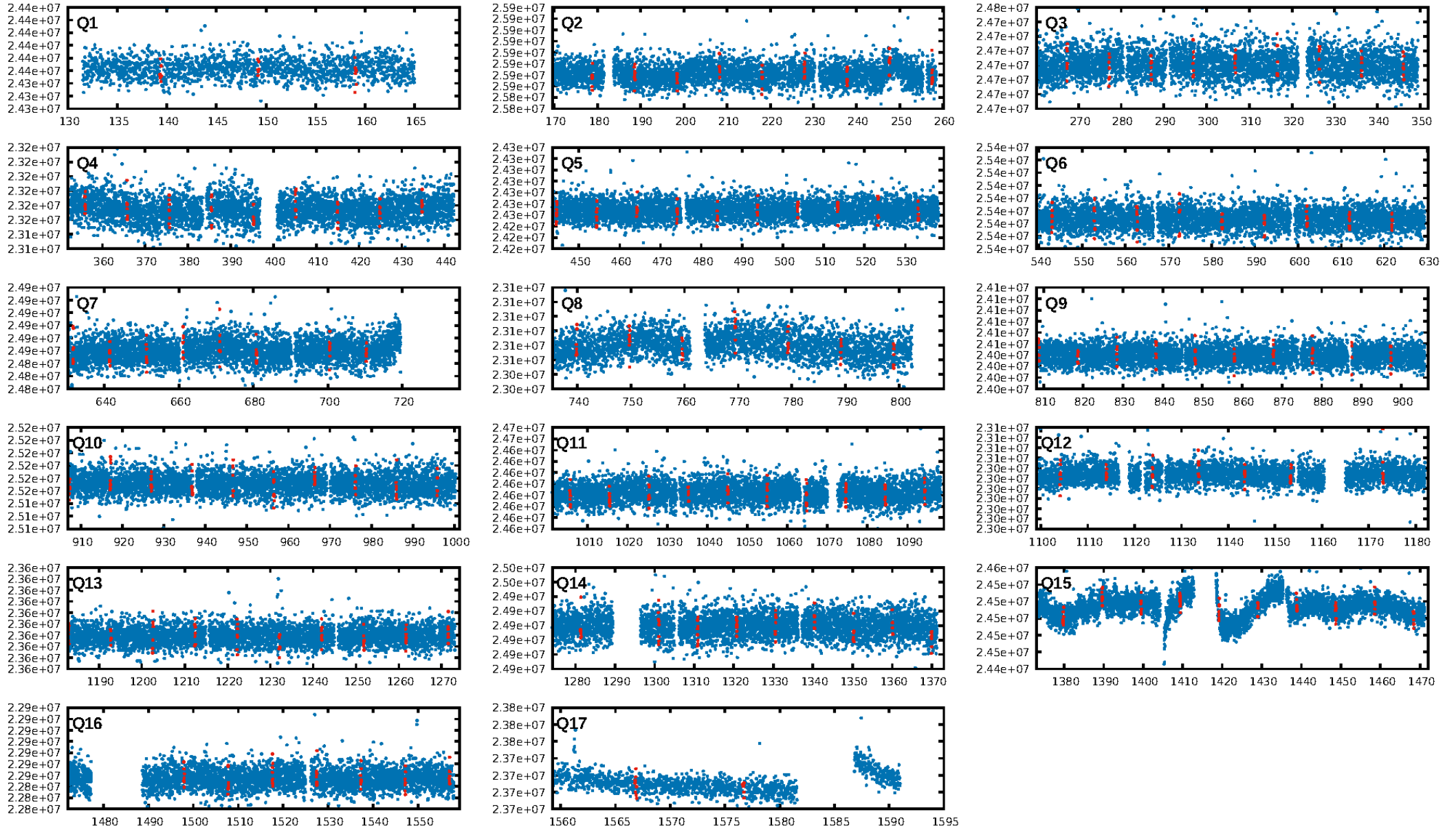
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [14.21 $\sigma$ ]  
LongPeriod-sig: 100.0% [4.31 $\sigma$ ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.1%  
Bootstrap-pfa: 2.93e-06  
RollingBand-fgt: 1.00 [8/8]  
GhostDiagnostic-chr: 2.381  
Centroid-sig: 57.1%  
Centroid-so: 0.643 arcsec [1.61 $\sigma$ ]  
OotOffset-rm: 2.285 arcsec [2.71 $\sigma$ ]  
KicOffset-rm: 2.409 arcsec [2.76 $\sigma$ ]  
OotOffset-st: 2/1/3/2 [8]  
KicOffset-st: 2/1/3/2 [8]  
DiffImageQuality-fgm: 0.12 [1/8]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:42:27 Z

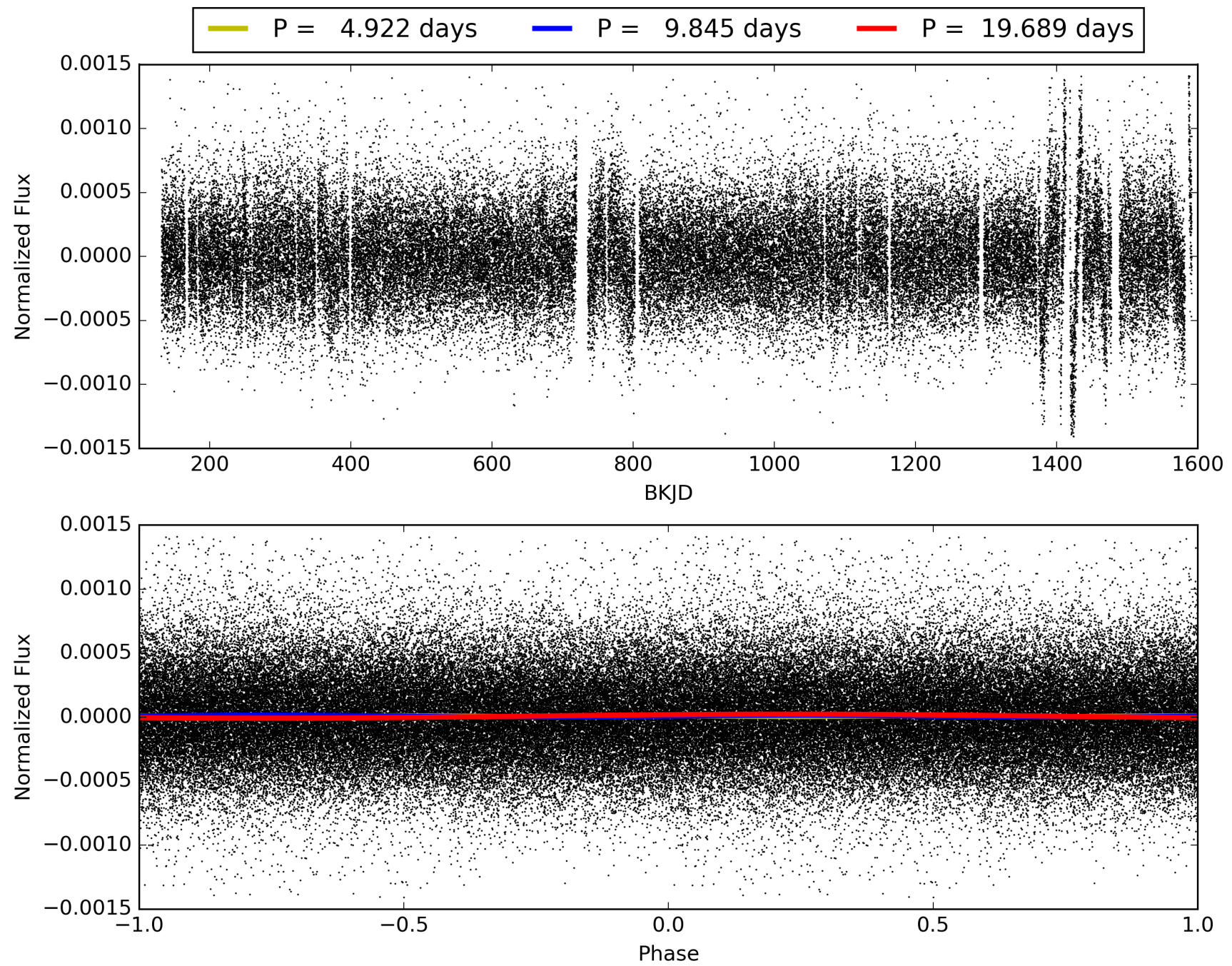
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 007115249-06, PDC Light Curves





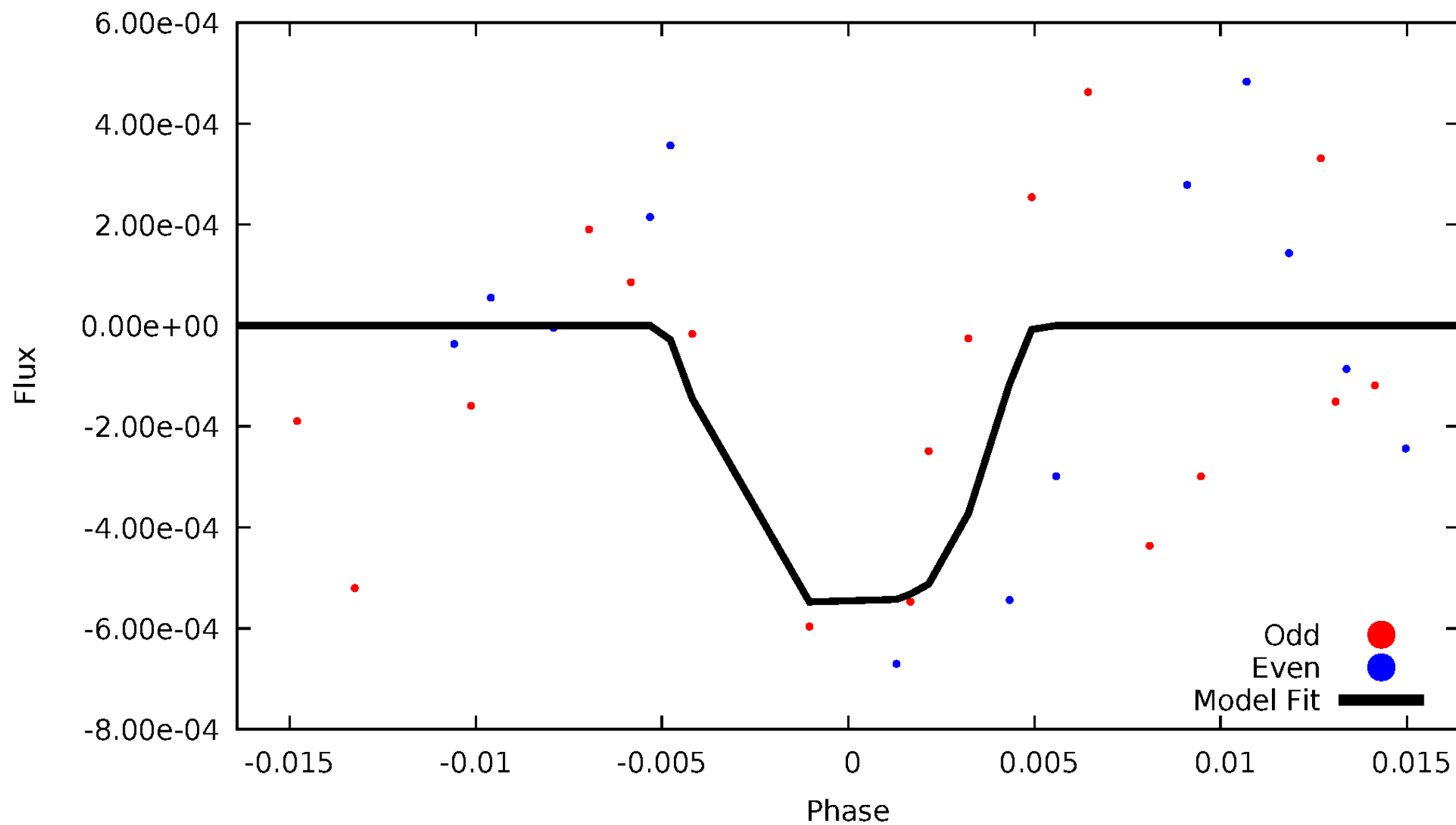
TCE 007115249-06





# DV Odd/Even

TCE 007115249-06



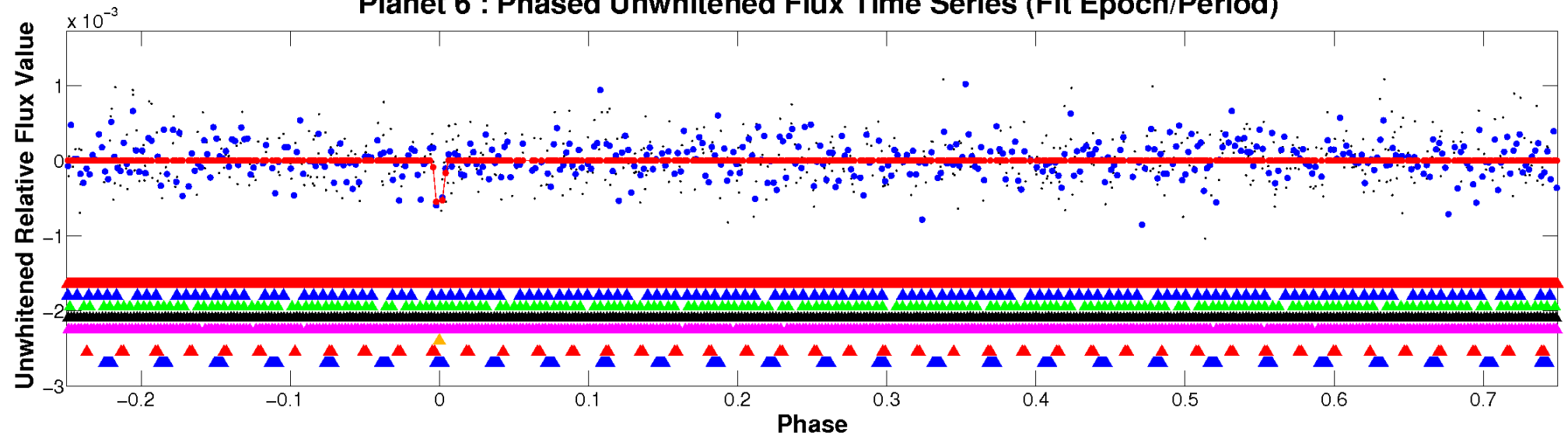


ALT Odd/Even

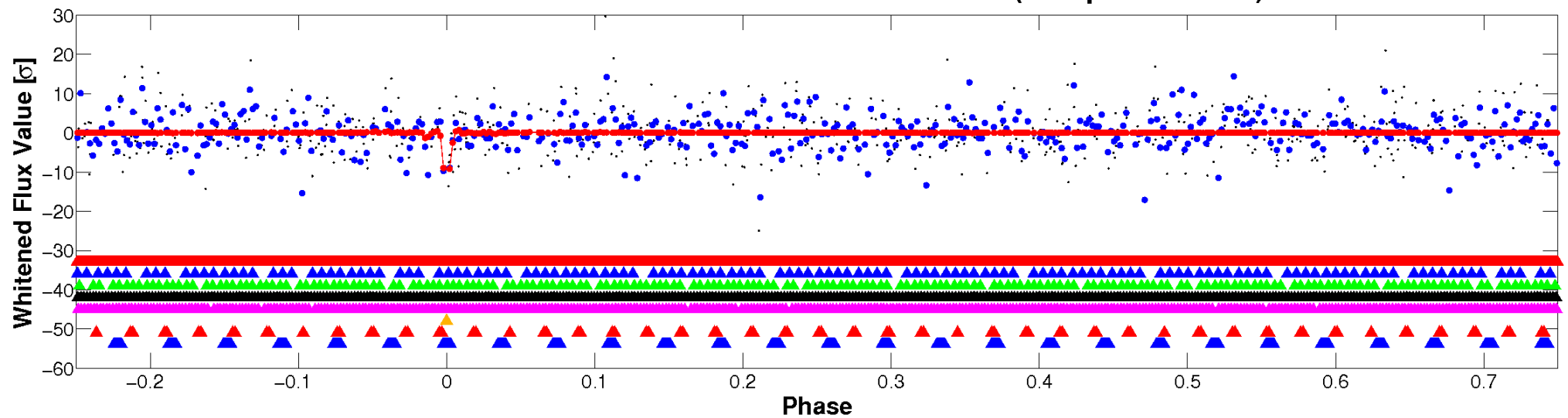
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

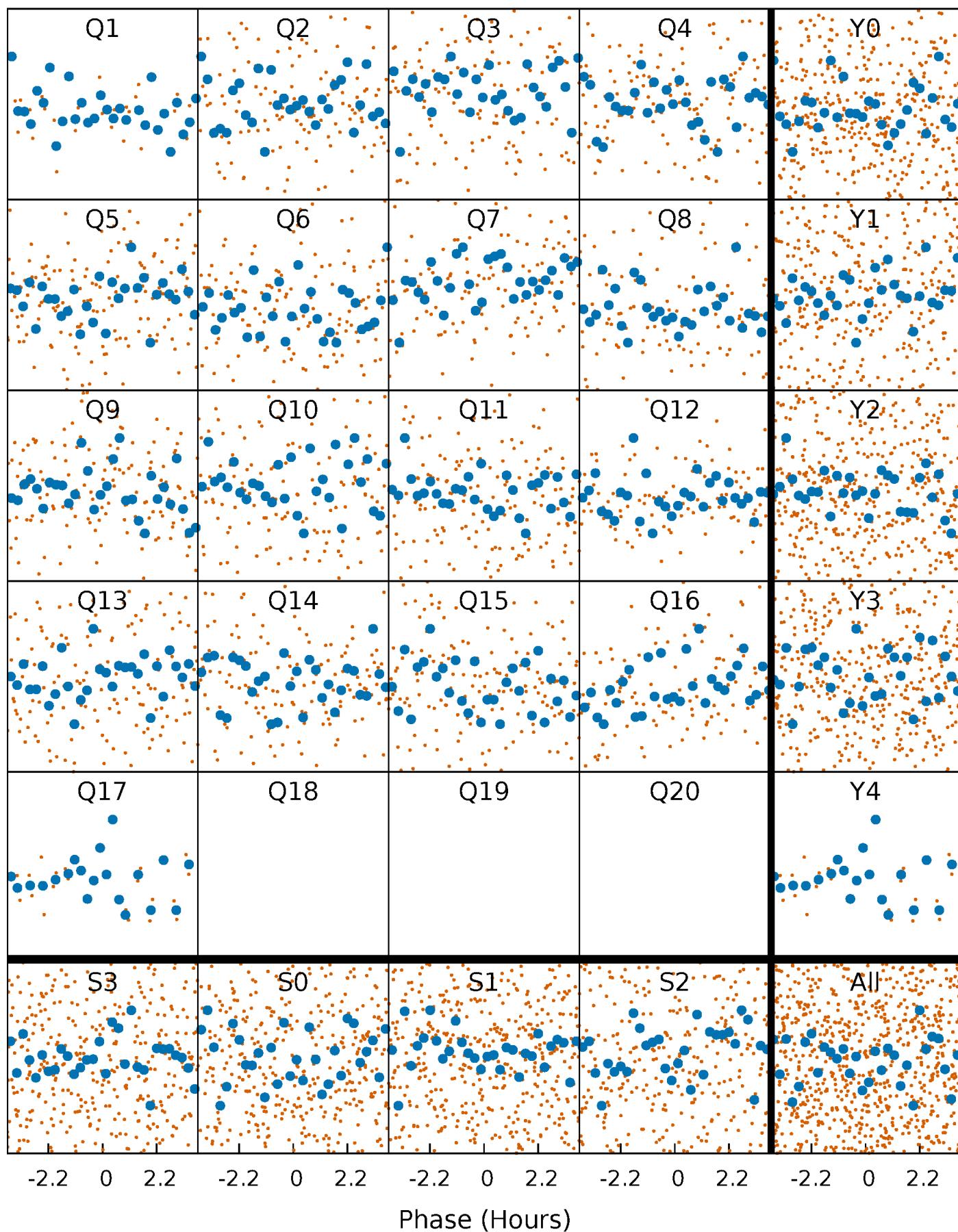


## Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



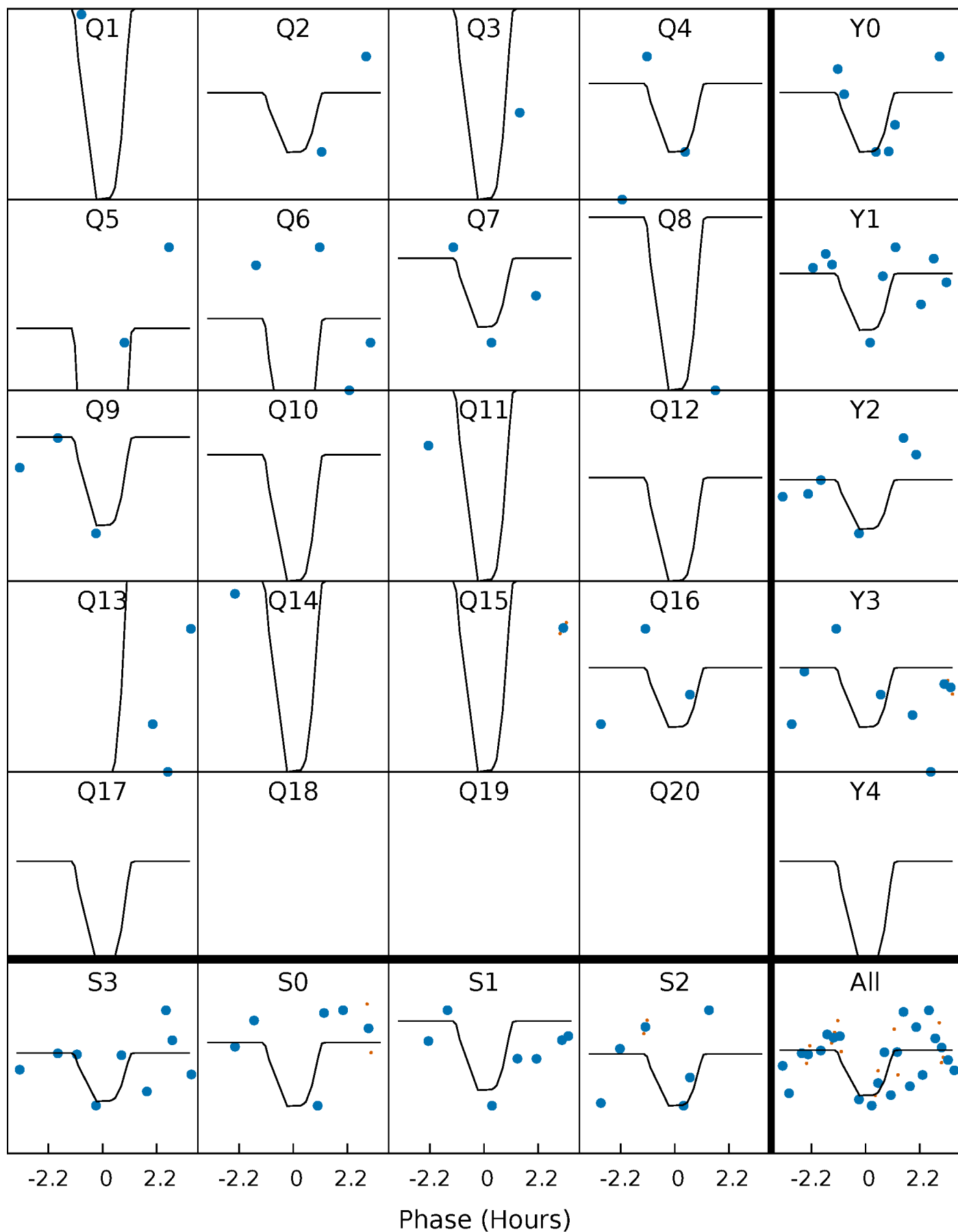
# PDC Quarter-Phased Transit Curves

TCE 007115249-06 P= 9.844726 Days  $T_0=139.364273$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 007115249-06 P= 9.844726 Days  $T_0=139.364273$  (BKJD)

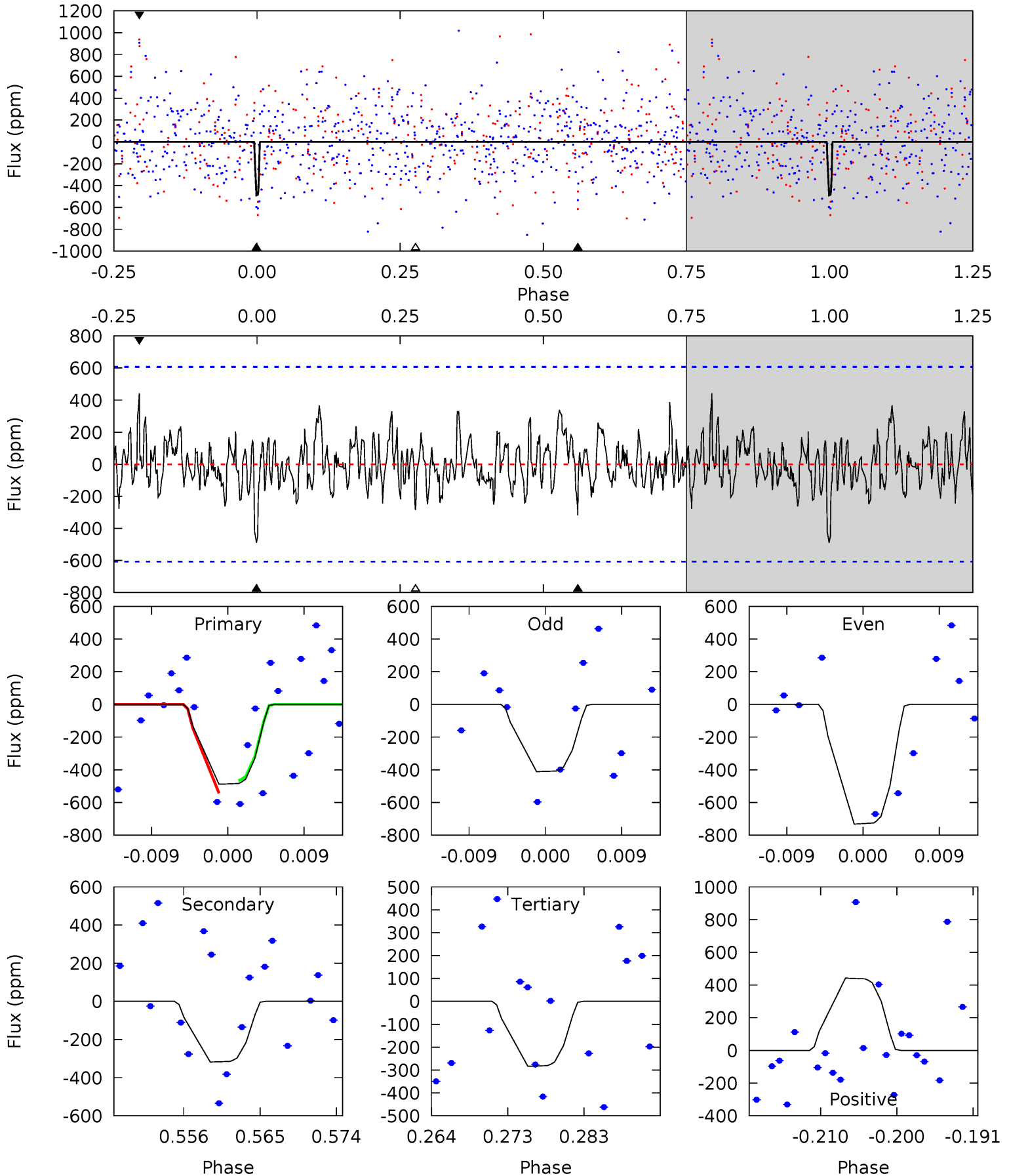


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

007115249-06, P = 9.844726 Days, E = 129.519547 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
4.06	2.64	2.36	3.67	5.04	2.61	1.06	1.70	0.39	0.29	-1.03	1.24	0	0.47	0.24





## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 007115249

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5855^{+140}_{-176}$	$4.528^{+0.037}_{-0.200}$	$-0.120^{+0.300}_{-0.300}$	$0.894^{+0.261}_{-0.087}$	$0.982^{+0.108}_{-0.121}$	$1.938^{+0.380}_{-0.989}$
	+2%/-3%	+1%/-4%	+250%/-250%	+29%/-10%	+11%/-12%	+20%/-51%
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 007115249-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-318 \pm 120$	$7.70^{+8.67}_{-5.31}$	$1170^{+77}_{-49}$	$3343^{+1760}_{-697}$	$21^{+206}_{-17}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

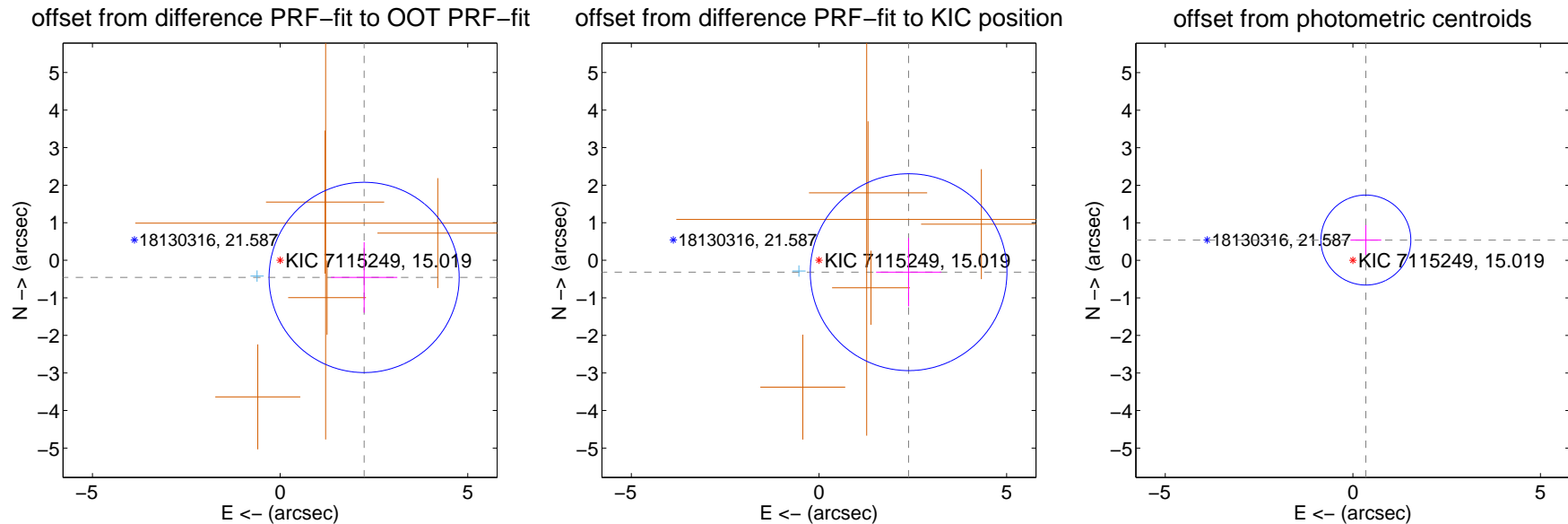
## DV Centroid Data

Supplemental centroid analysis for 007115249-06. Kepler magnitude: 15.02. Transit SNR 19.20

There are 1 quarters with good PRF difference image offsets

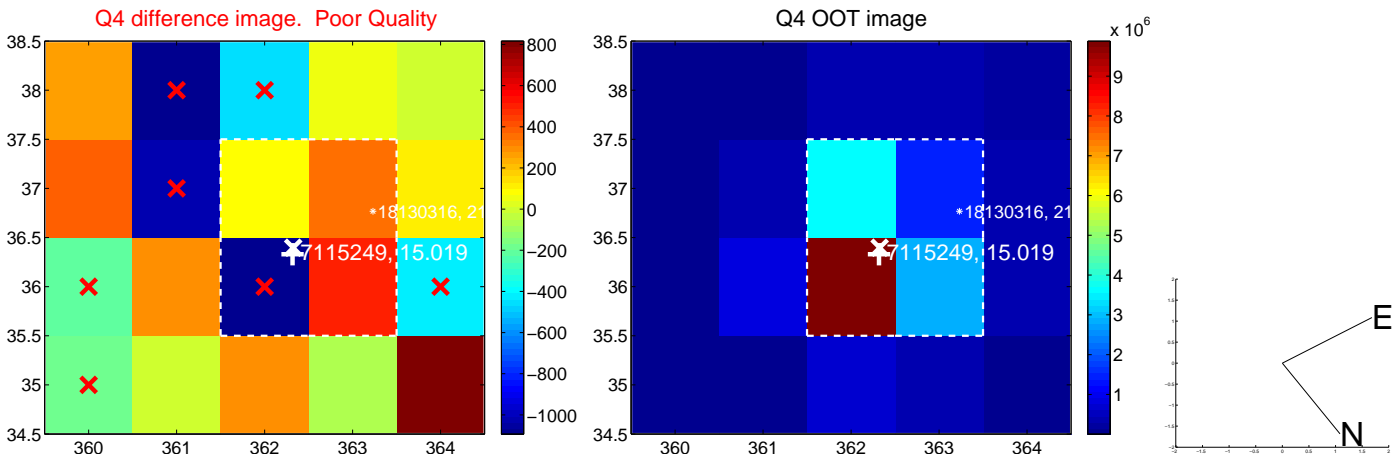
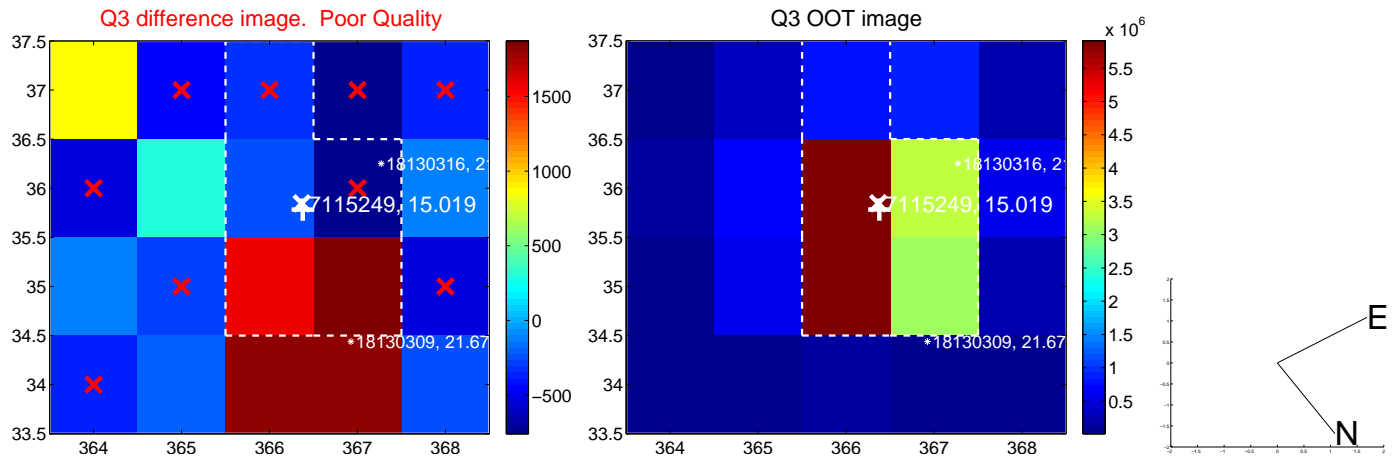
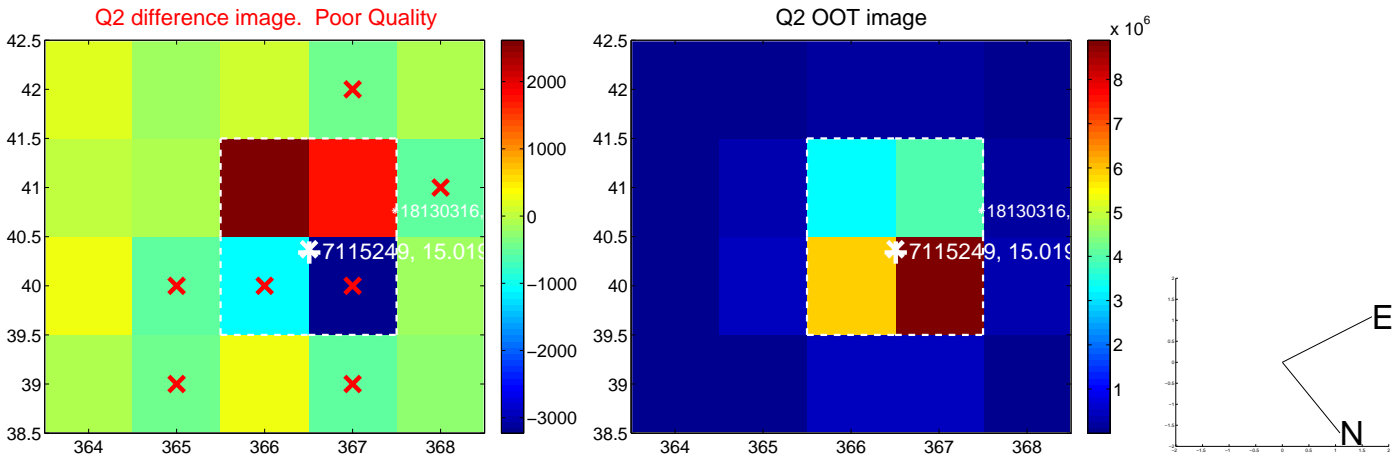
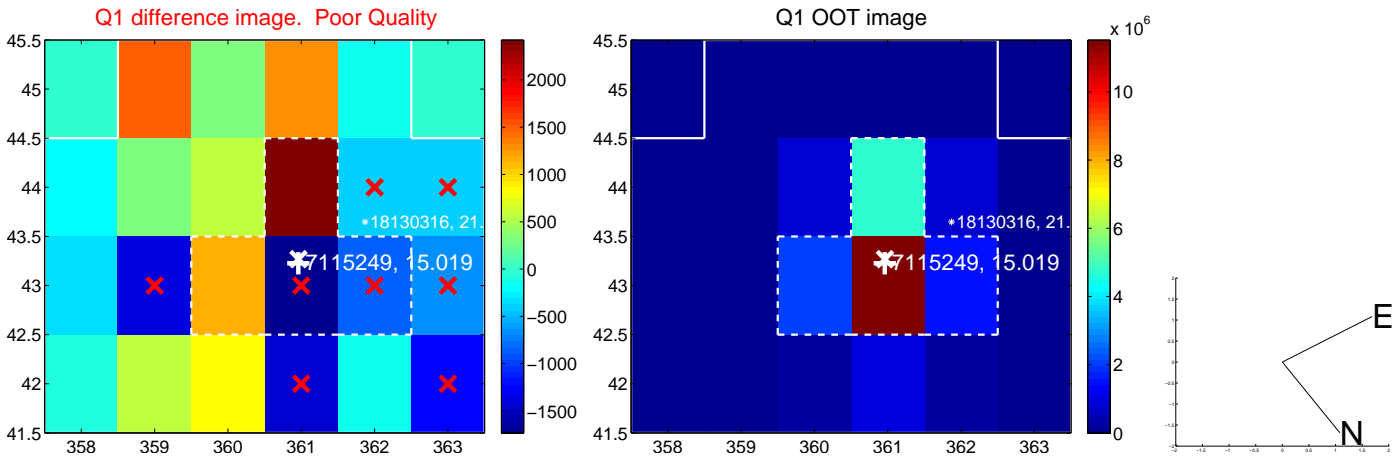
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.285 \pm 0.844$	2.71	$-2.239 \pm 0.884$	$-0.456 \pm 0.940$
PRF-fit source offset from KIC position	$2.409 \pm 0.874$	2.76	$-2.388 \pm 0.867$	$-0.316 \pm 0.910$
photometric centroid source offset	$0.64 \pm 0.40$	1.61	$-0.35 \pm 0.41$	$0.54 \pm 0.40$

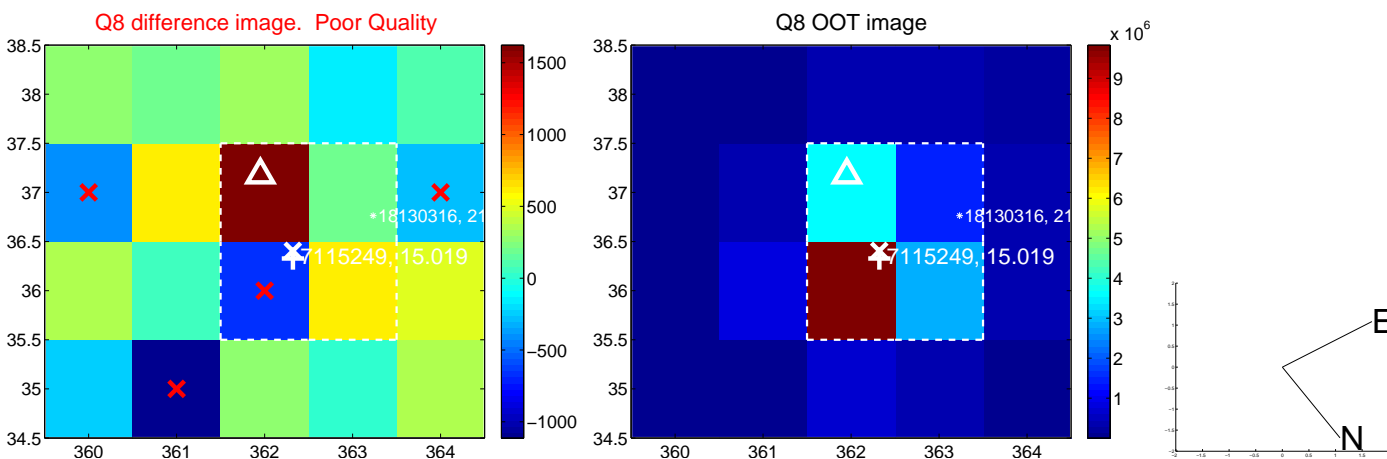
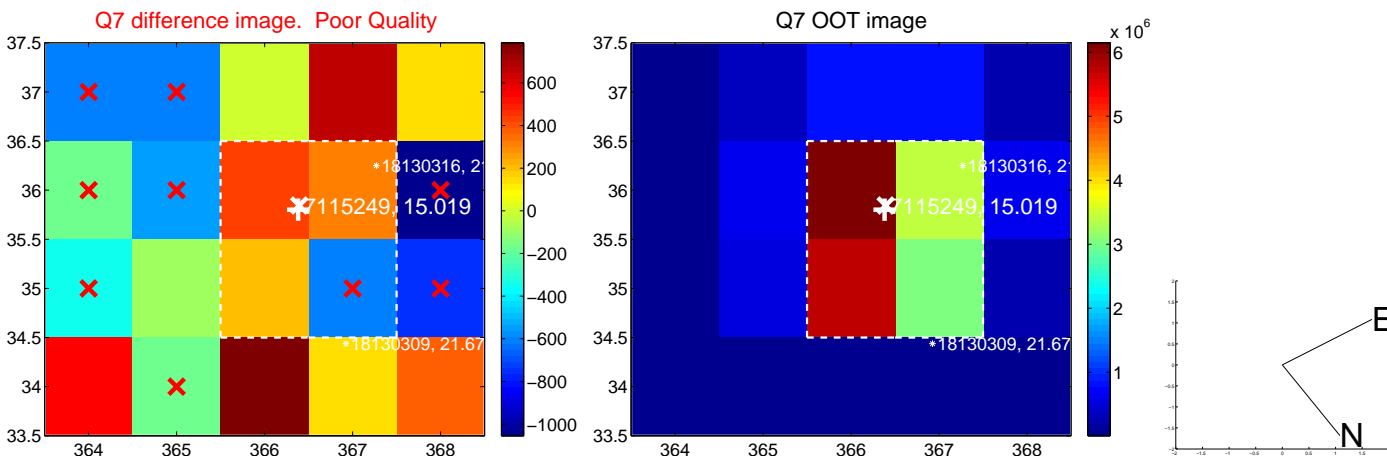
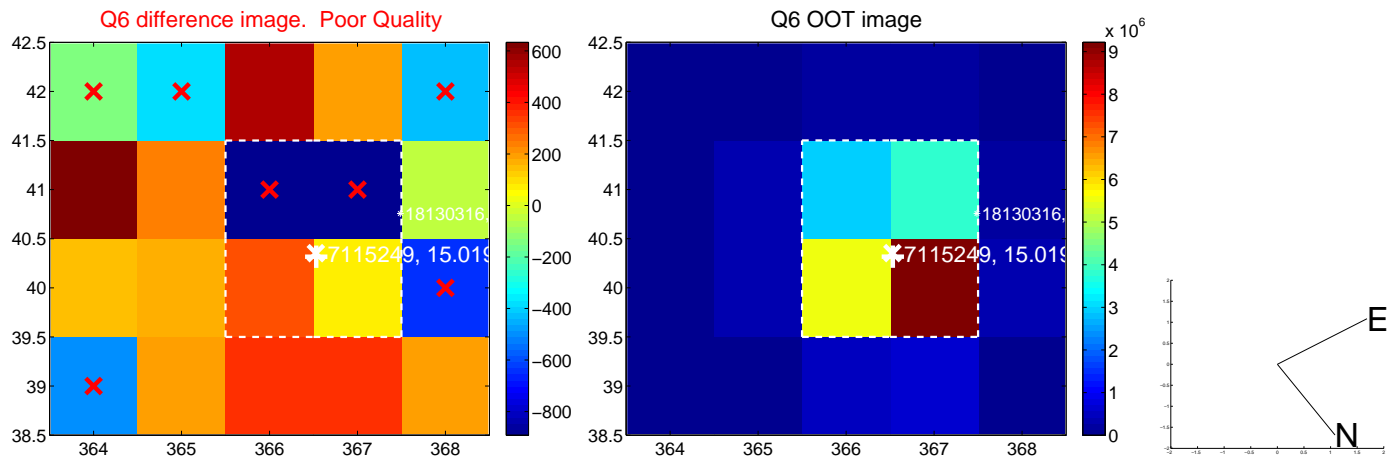
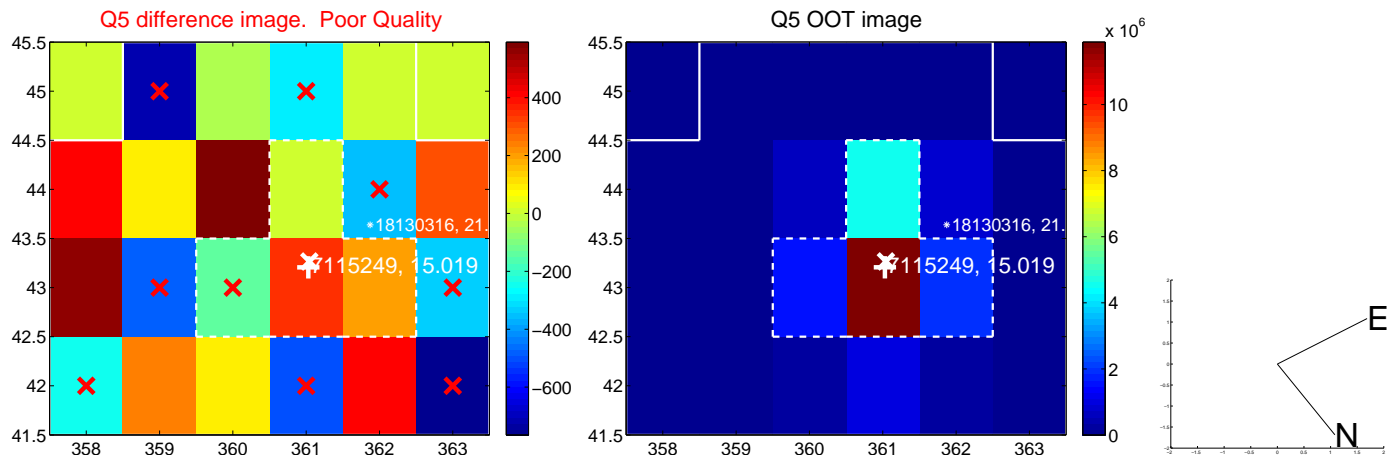


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

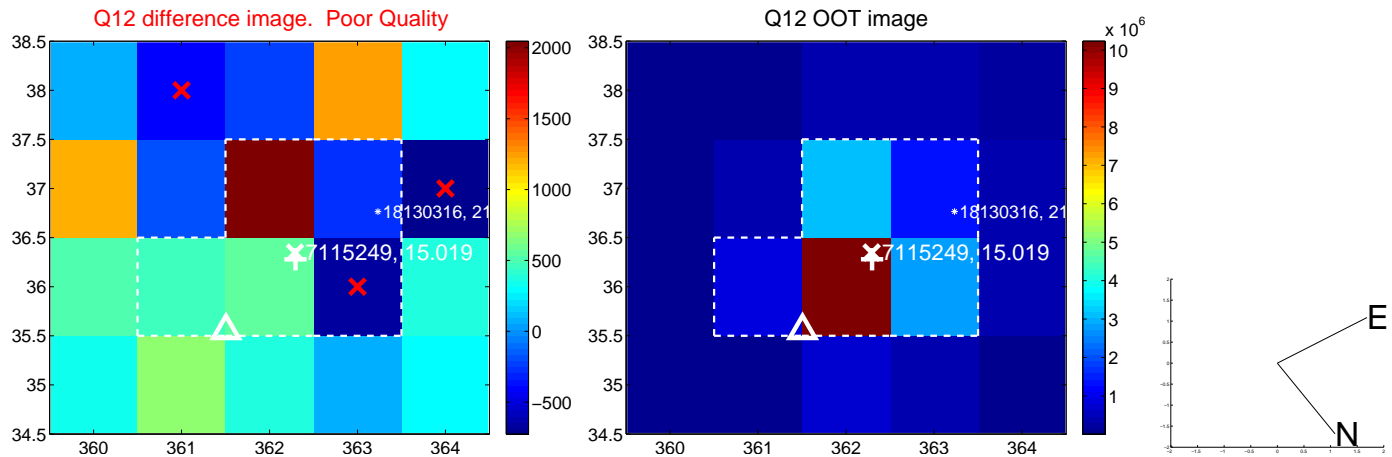
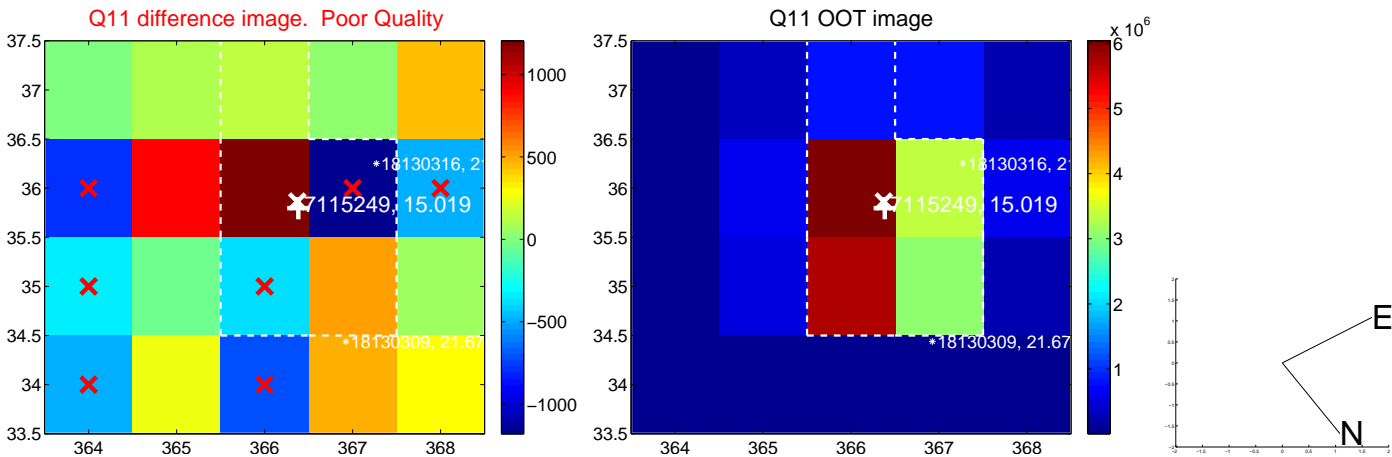
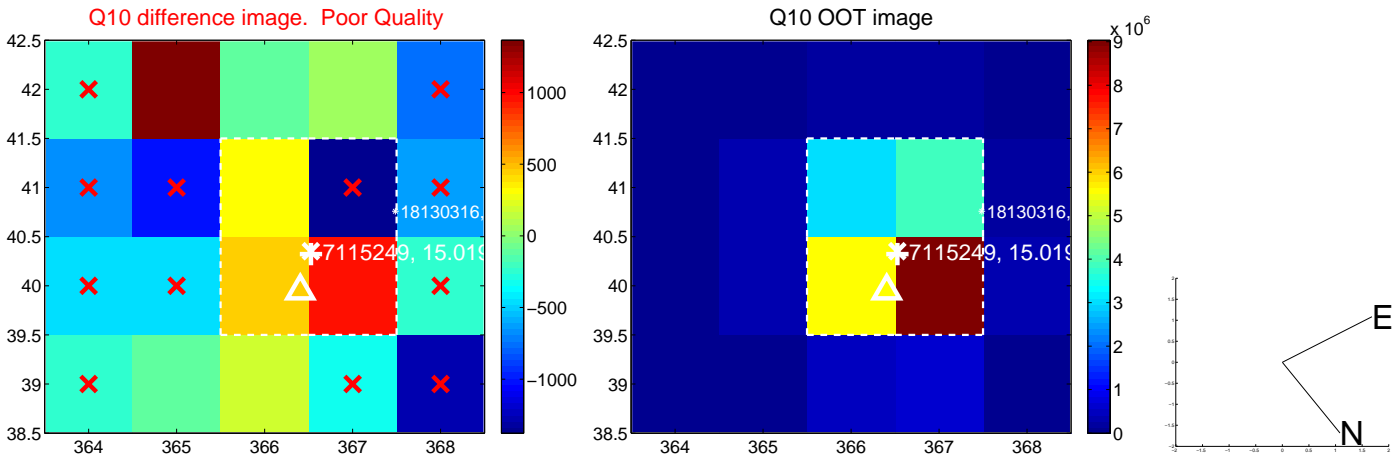
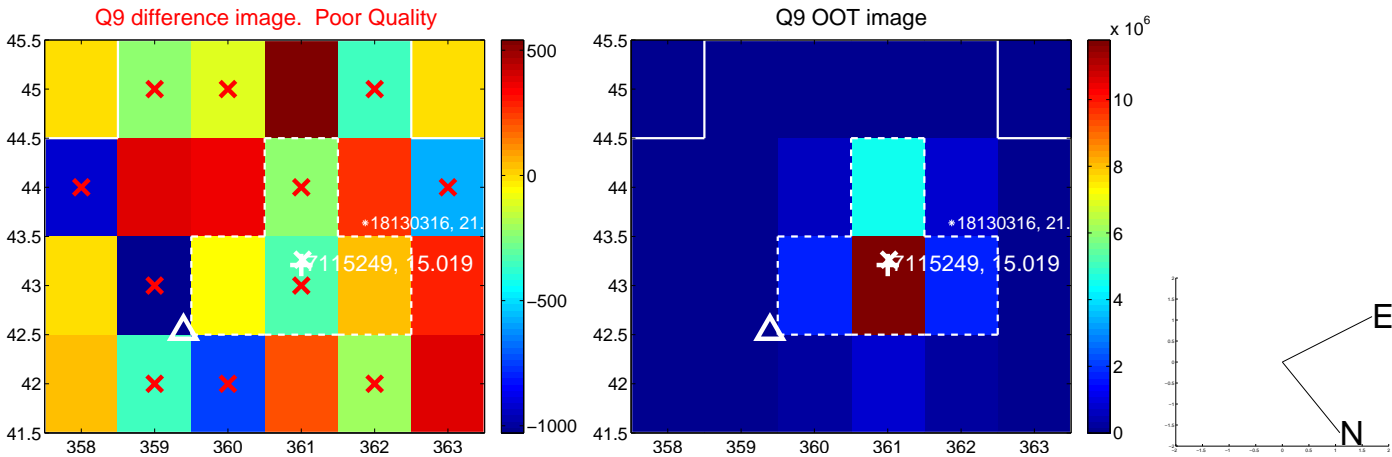
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



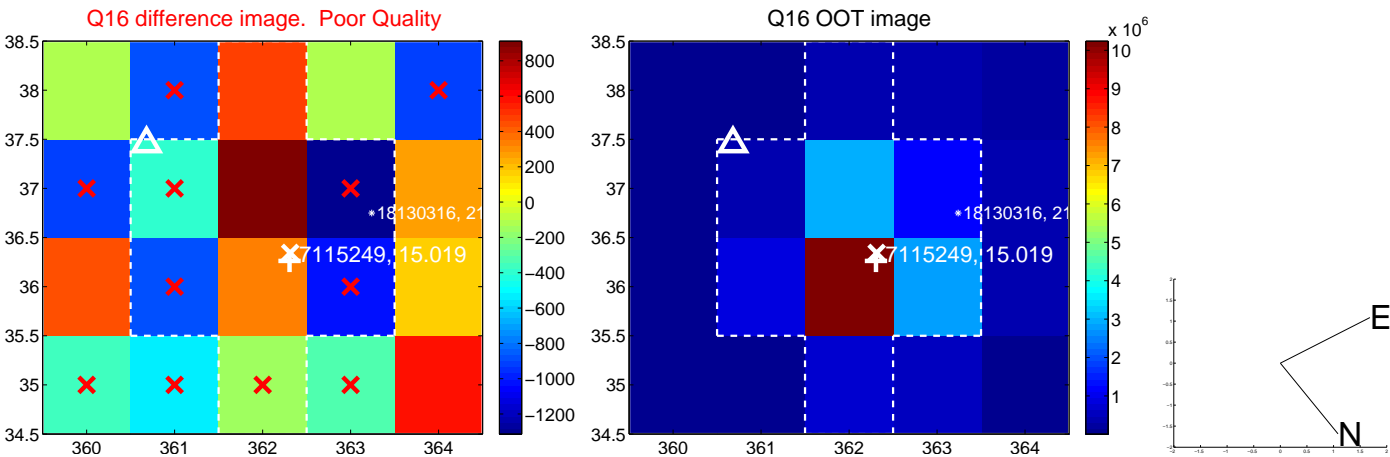
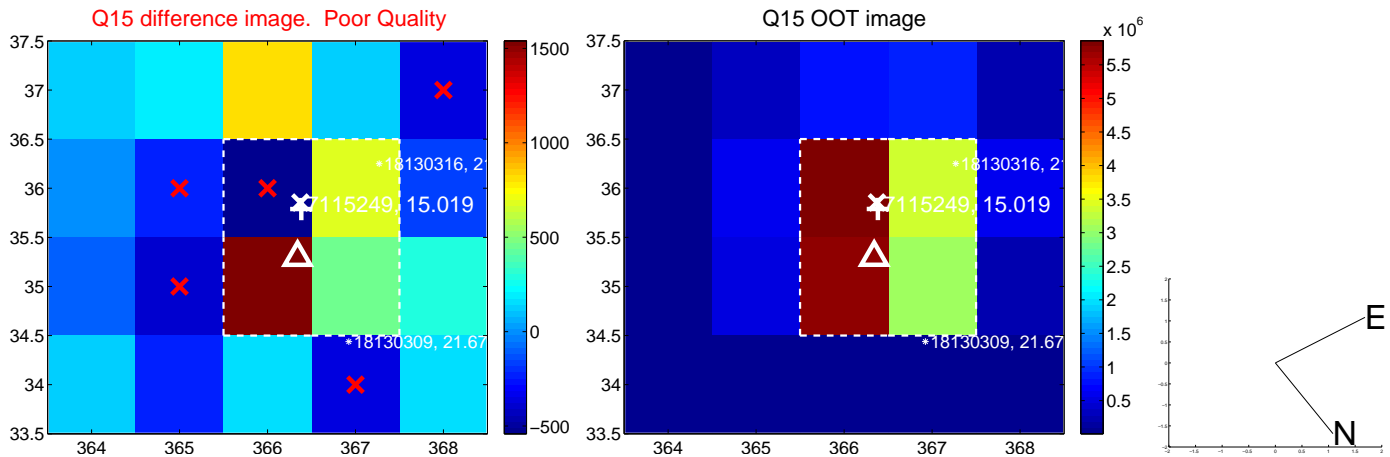
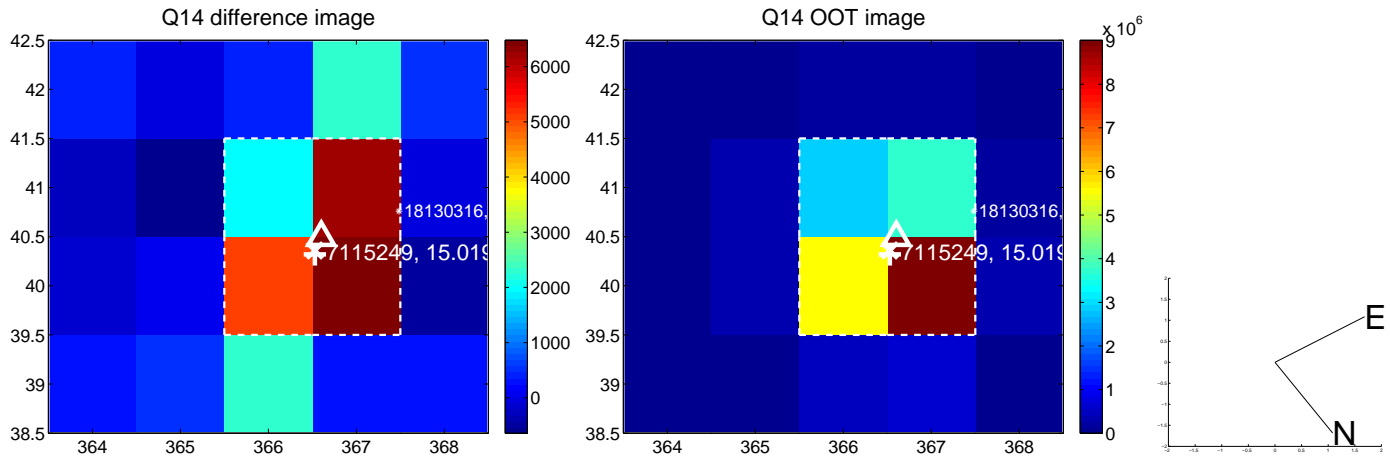
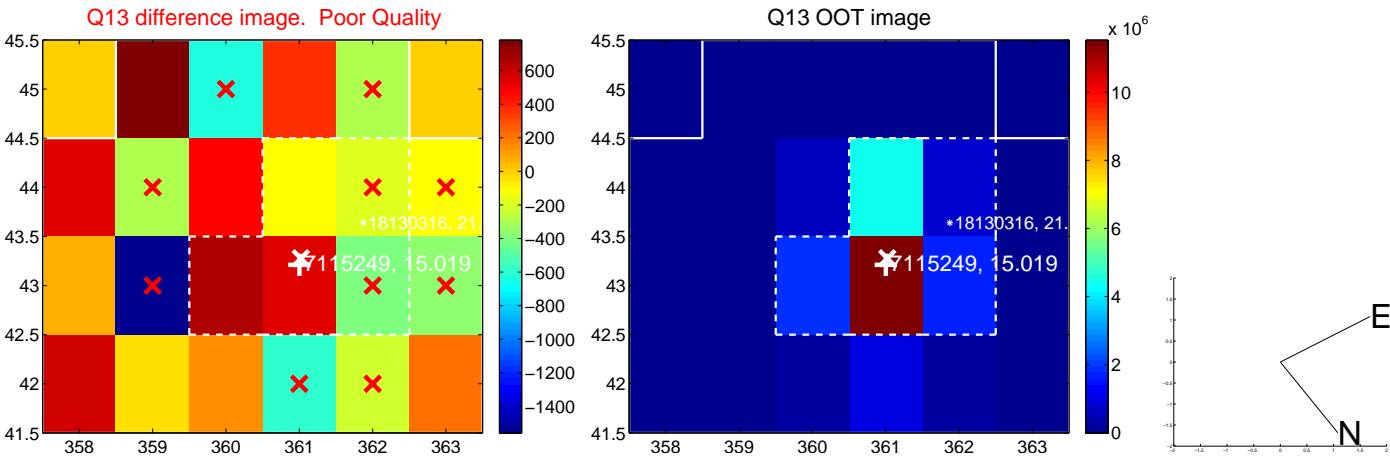
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



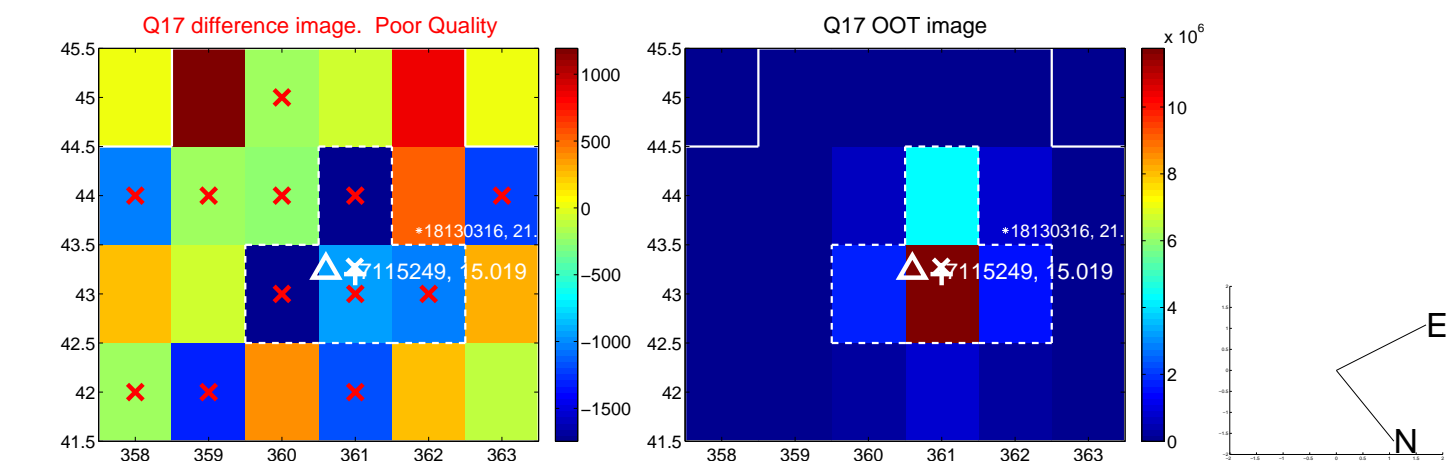
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



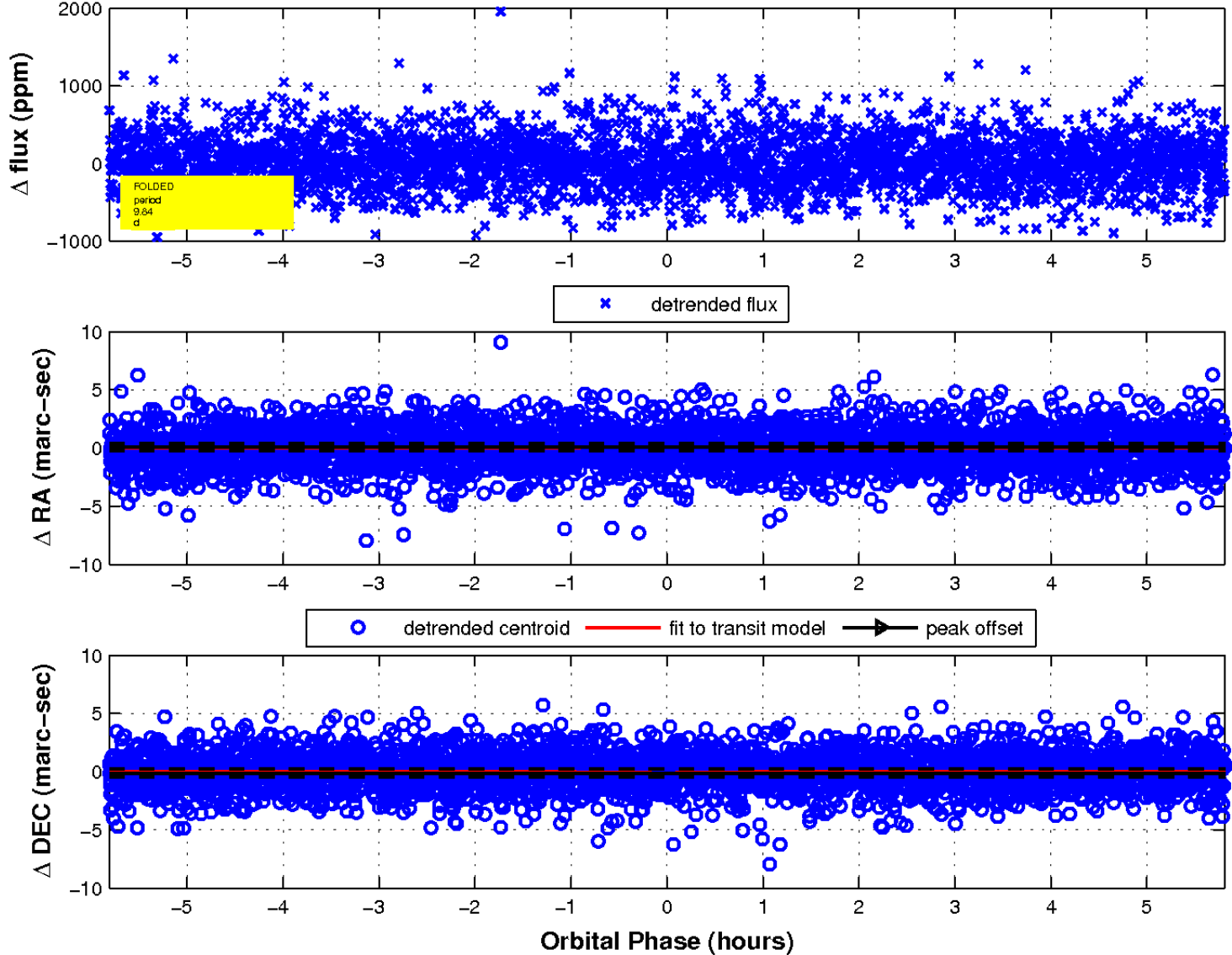
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



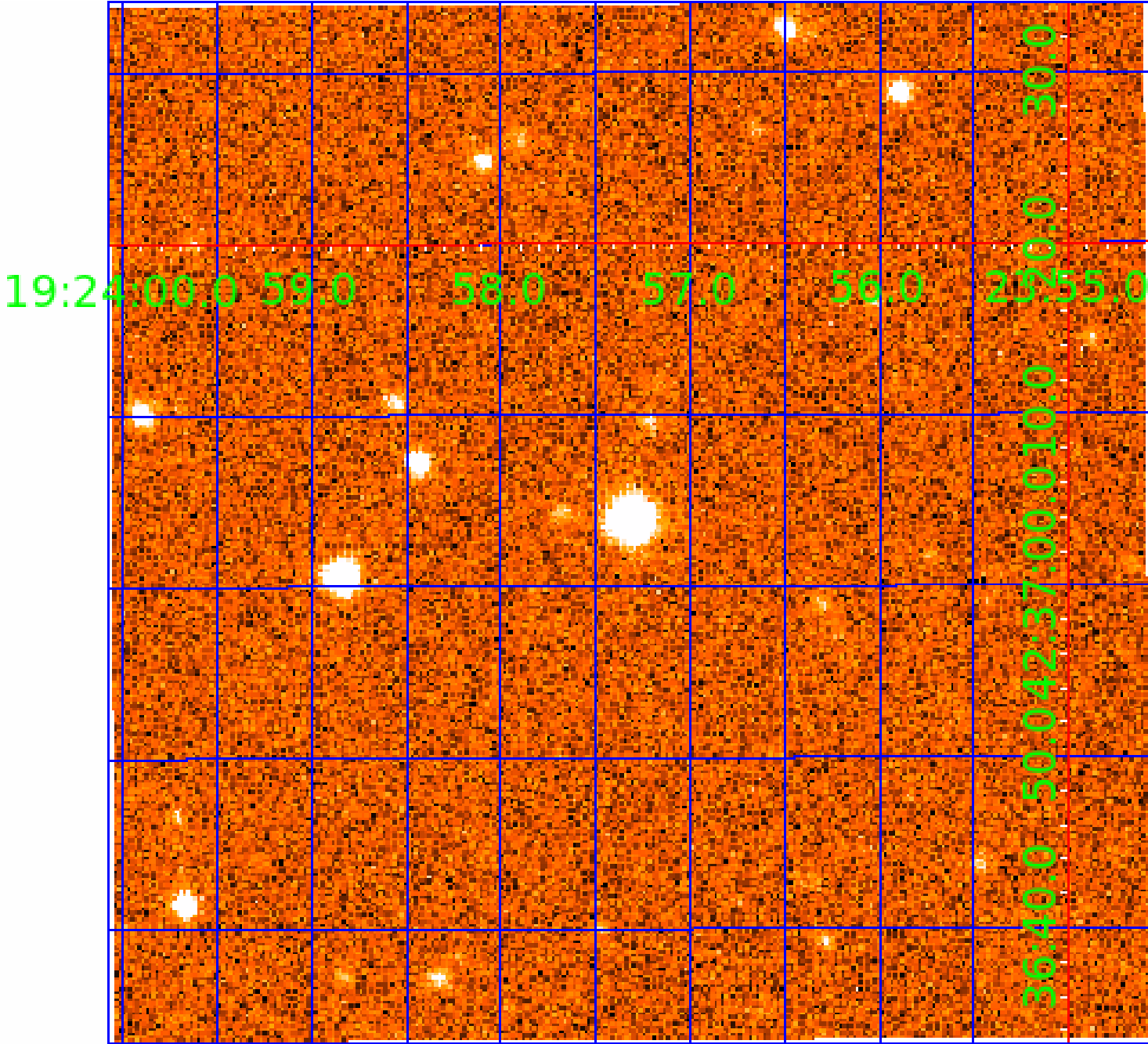
fluxWeightedCentroids, Planet 6 of 8





UKIRT Image

Declination



# KIC 007115249

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007115249-01	OBS	No	0.566745	131.877898	16.5	4.290	11.1	5.9	0.89	5855	0.37	4735.62
007115249-02	OBS	No	10.686810	140.081100	185.8	4.267	17.9	11.0	0.89	5855	1.30	94.36
007115249-04	OBS	No	2.874820	133.025867	219.1	1.765	14.0	14.4	0.89	5855	1.33	543.35
007115249-05	OBS	No	3.169632	134.290542	503.2	0.534	11.5	18.7	0.89	5855	2.15	477.03
007115249-06	OBS	No	9.844726	139.364274	557.3	1.938	13.7	19.2	0.89	5855	2.26	105.27
007115249-07	OBS	No	18.315402	141.401621	1561.9	1.500	12.9	-1.0	0.89	5855	3.52	46.01
007115249-08	OBS	No	1.458535	131.679944	875.3	2.000	10.9	-1.0	0.89	5855	2.63	1342.78

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007115249-01	OBS	FP	0.00	1	0	0	1	LPP_DV—CENT_FEW_DIFFS—EPHEM_MATCH
007115249-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007115249-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007115249-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007115249-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007115249-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
007115249-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS

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

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

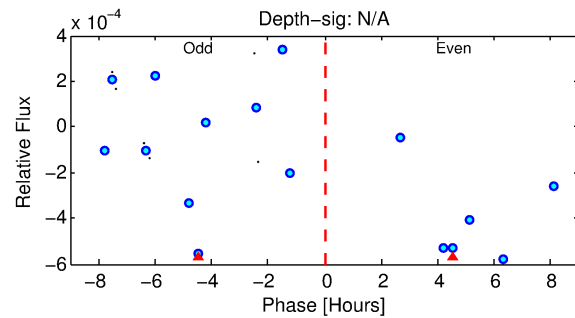
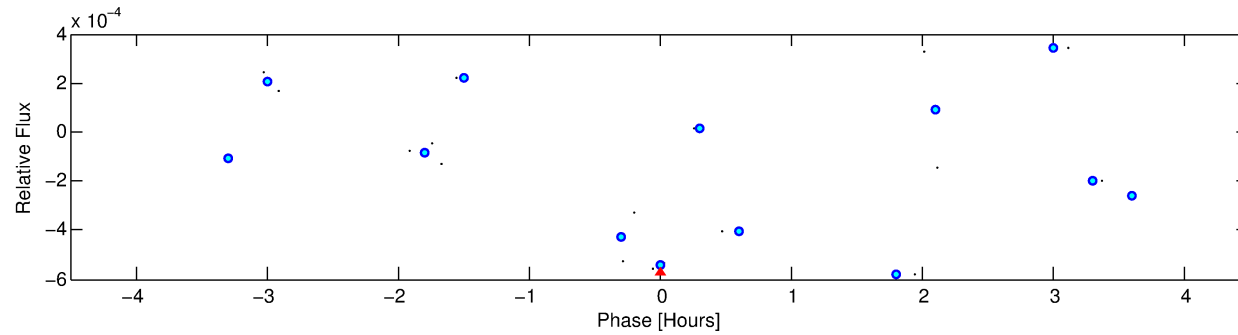
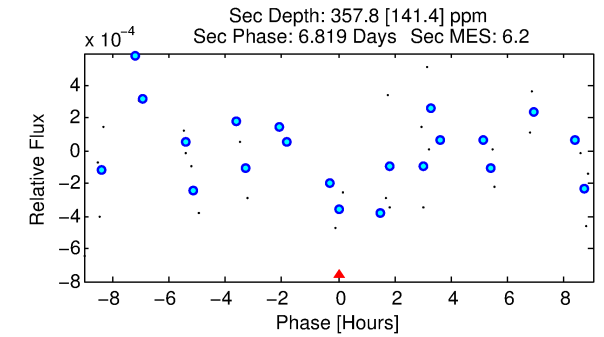
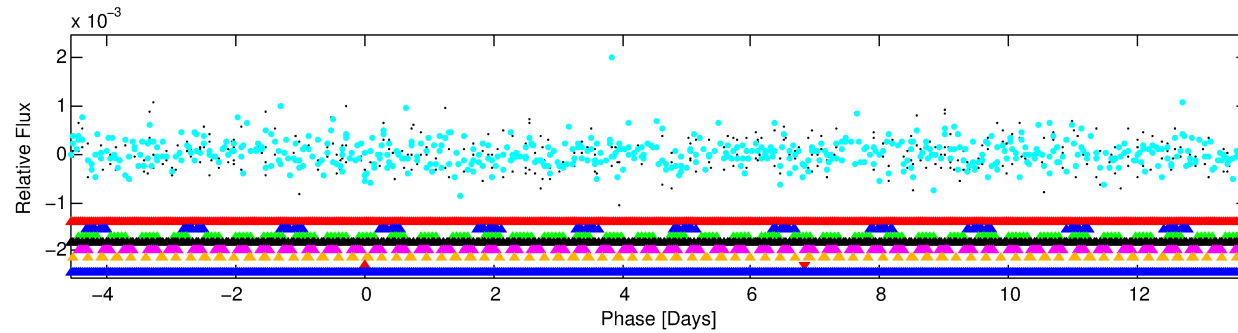
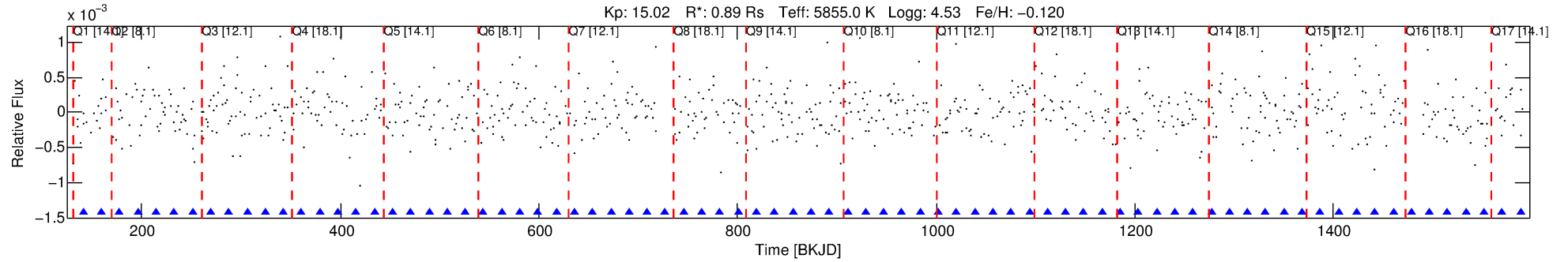
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007115249-07

No Significant Match Found

# DV One-Page Summary

KIC: 7115249 Candidate: 7 of 8 Period: 18.315 d



## TPS TCE Results:

Period = 18.31540 d  
Epoch = 141.4016 BKJD

DV fit results are unavailable

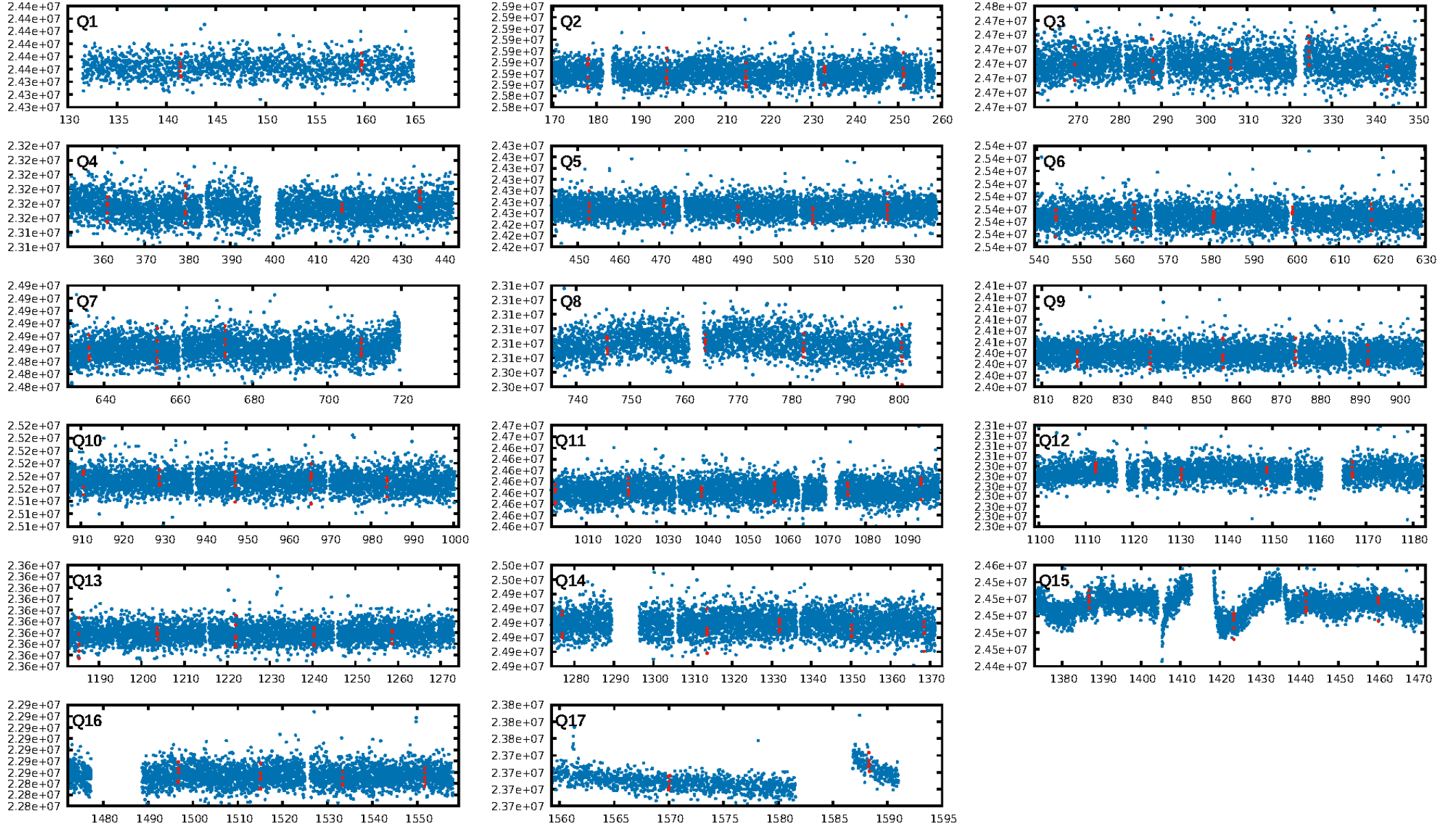
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [40.48σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.23e-05  
RollingBand-fgt: N/A  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0/0 [0]  
KicOffset-st: 0/0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: N/A

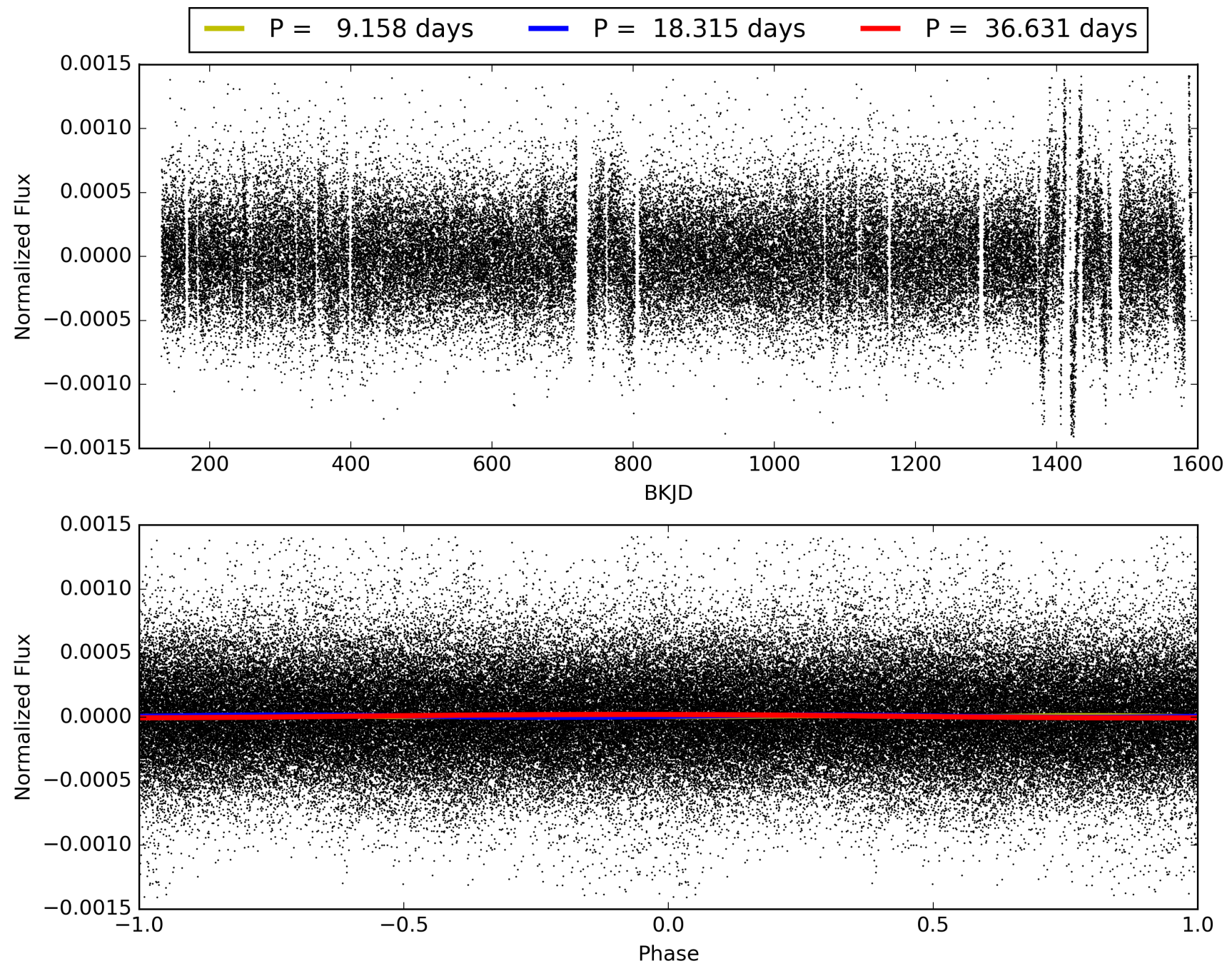
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:42:29 Z

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

# TCE 007115249-07, PDC Light Curves

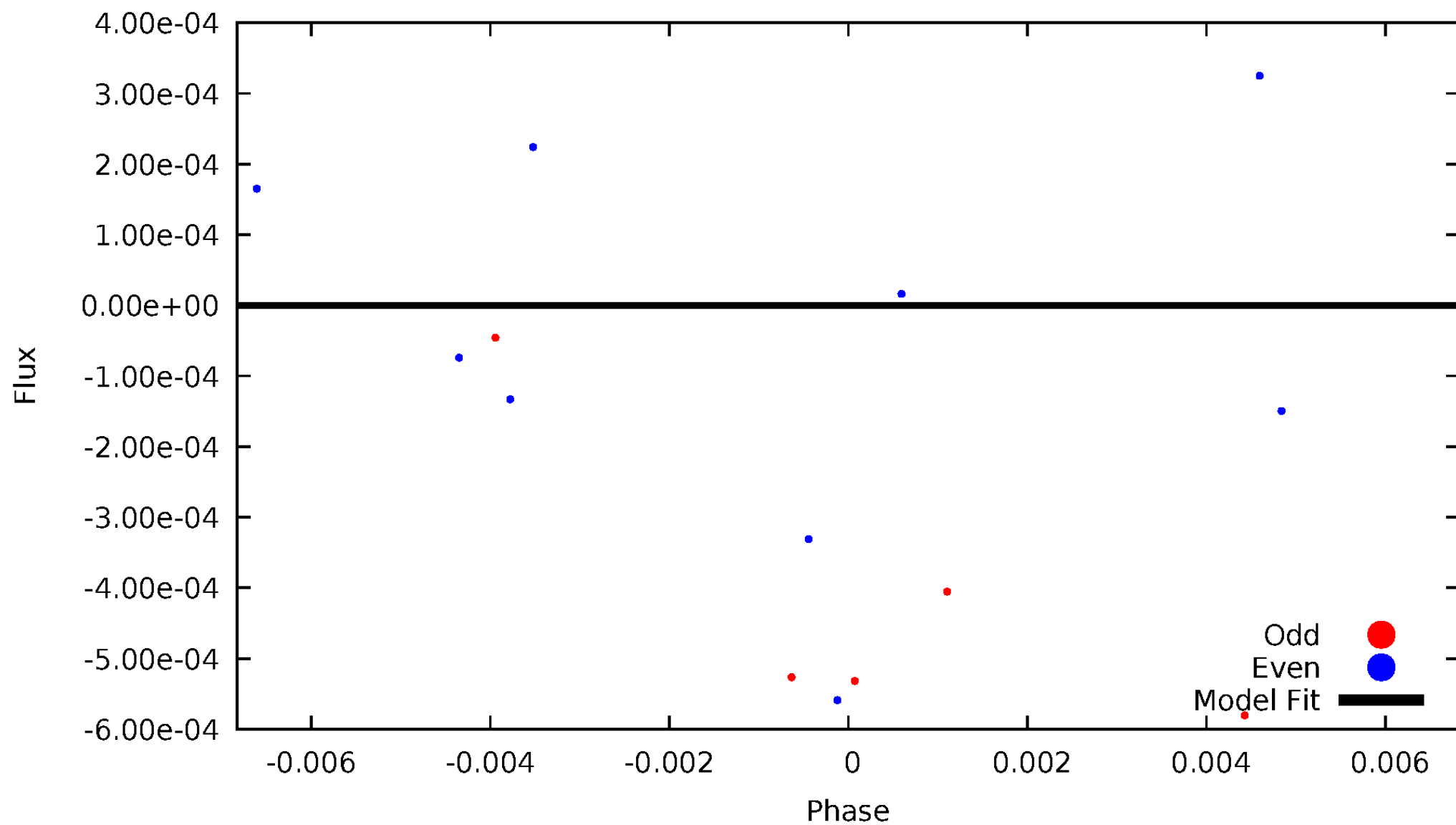


TCE 007115249-07



# DV Odd/Even

TCE 007115249-07





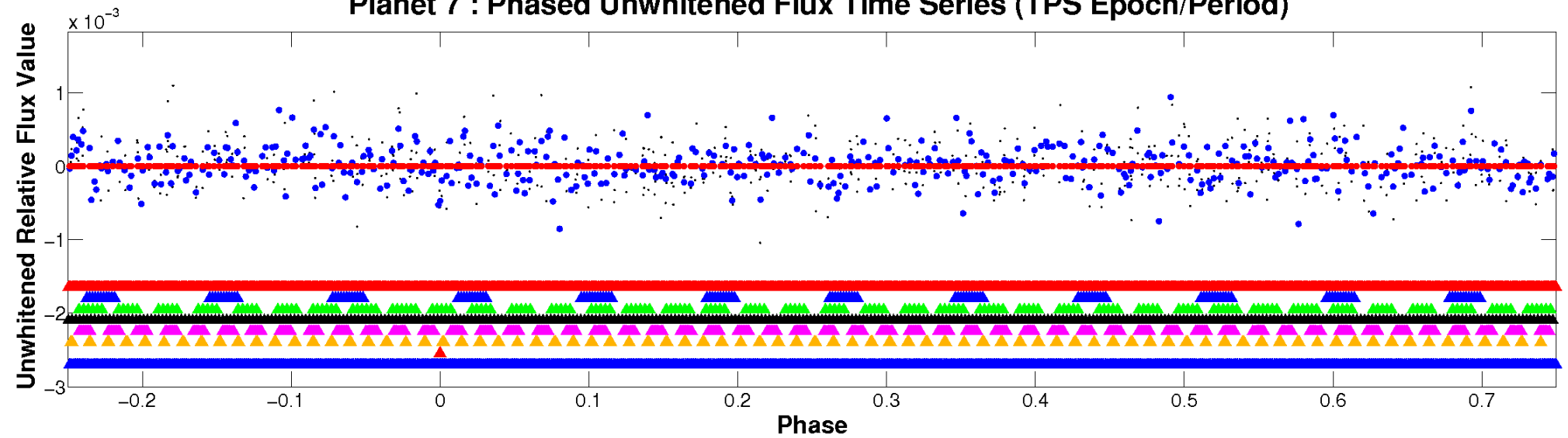
ALT Odd/Even

This plot does not exist for this TCE.

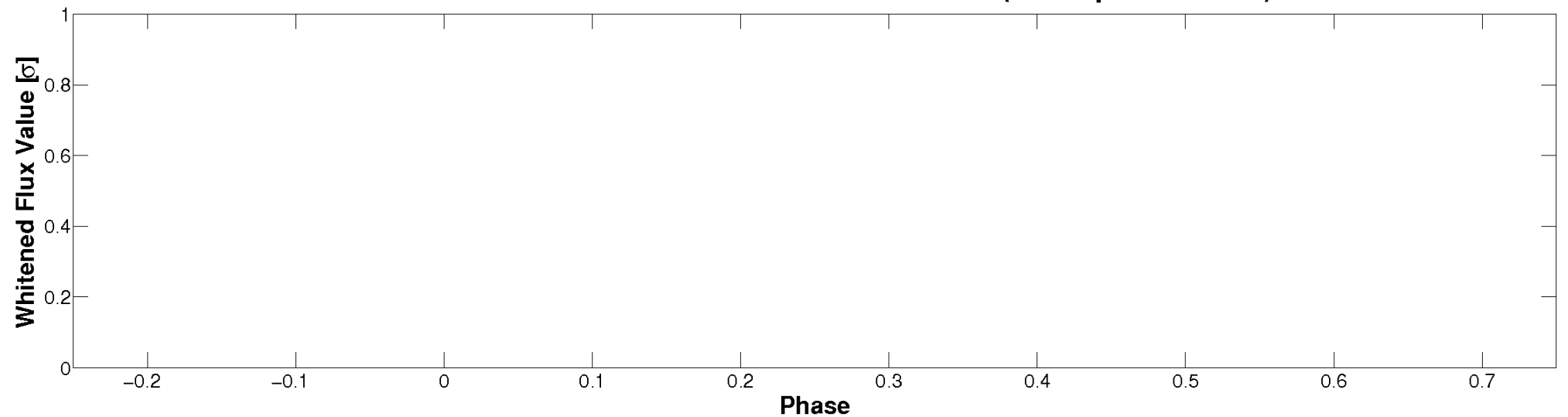


# Non-Whitened Vs. Whitened Light Curve

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

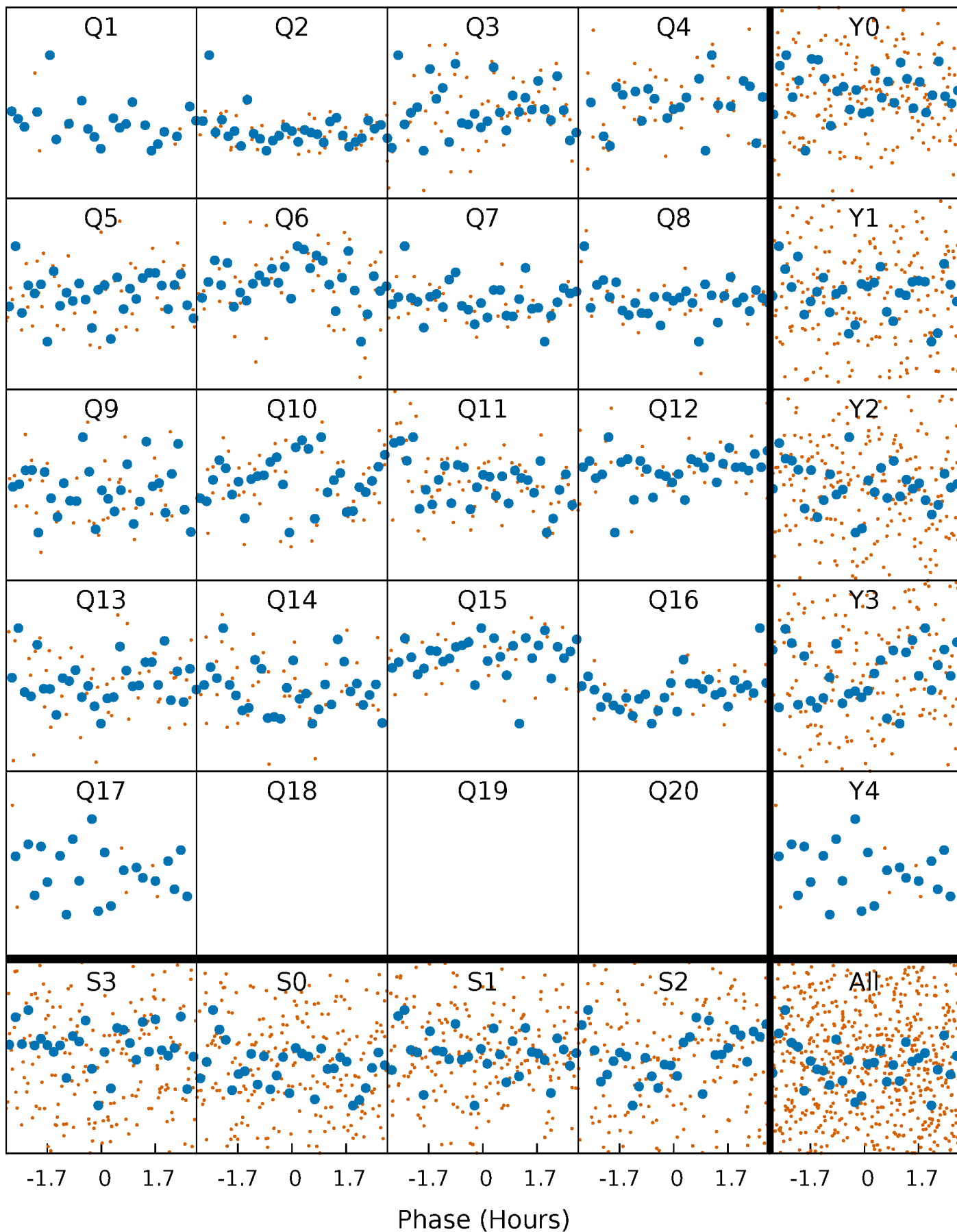


**Planet 7 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



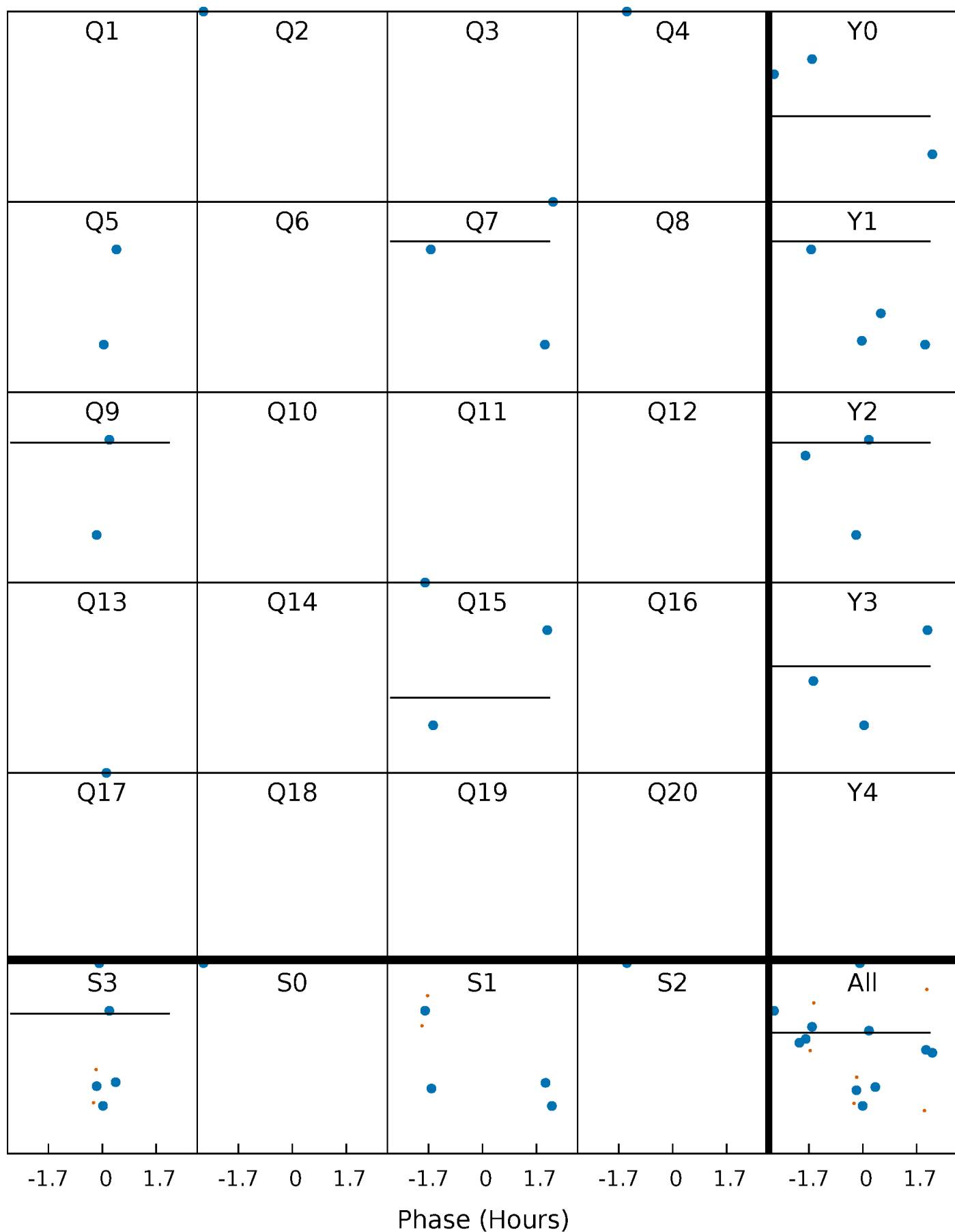
# PDC Quarter-Phased Transit Curves

TCE 007115249-07 P= 18.315402 Days  $T_0=141.401621$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 007115249-07 P= 18.315402 Days  $T_0=141.401621$  (BKJD)

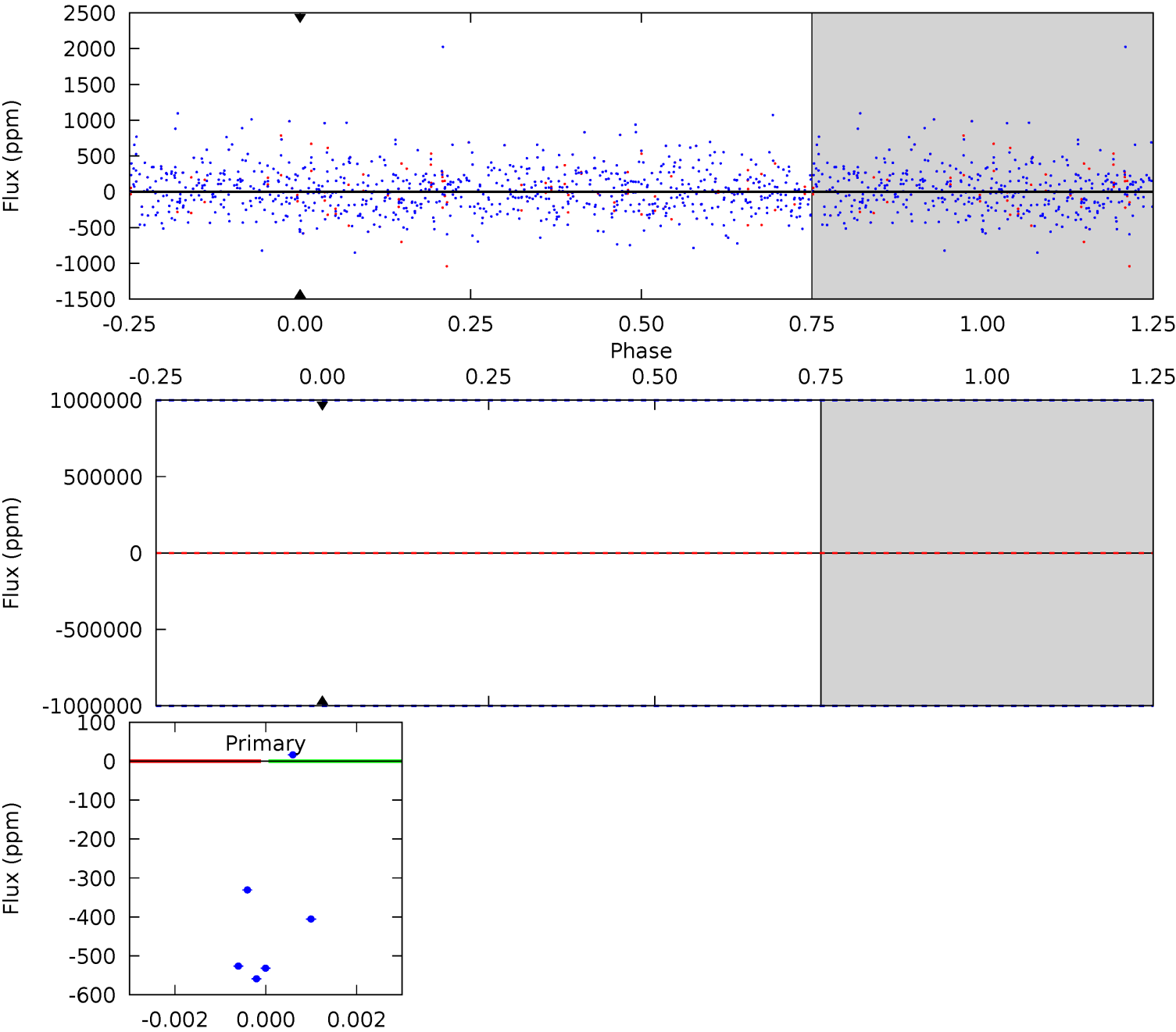


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

007115249-07, P = 18.315402 Days, E = 123.086219 Days

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



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 007115249

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5855^{+140}_{-176}$	$4.528^{+0.037}_{-0.200}$	$-0.120^{+0.300}_{-0.300}$	$0.894^{+0.261}_{-0.087}$	$0.982^{+0.108}_{-0.121}$	$1.938^{+0.380}_{-0.989}$
	+2%/-3%	+1%/-4%	+250%/-250%	+29%/-10%	+11%/-12%	+20%/-51%
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 007115249-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$8.06^{+8.98}_{-5.22}$	$948^{+69}_{-40}$	$4405^{+14935}_{-23343}$	$255^{+25208}_{-23062}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

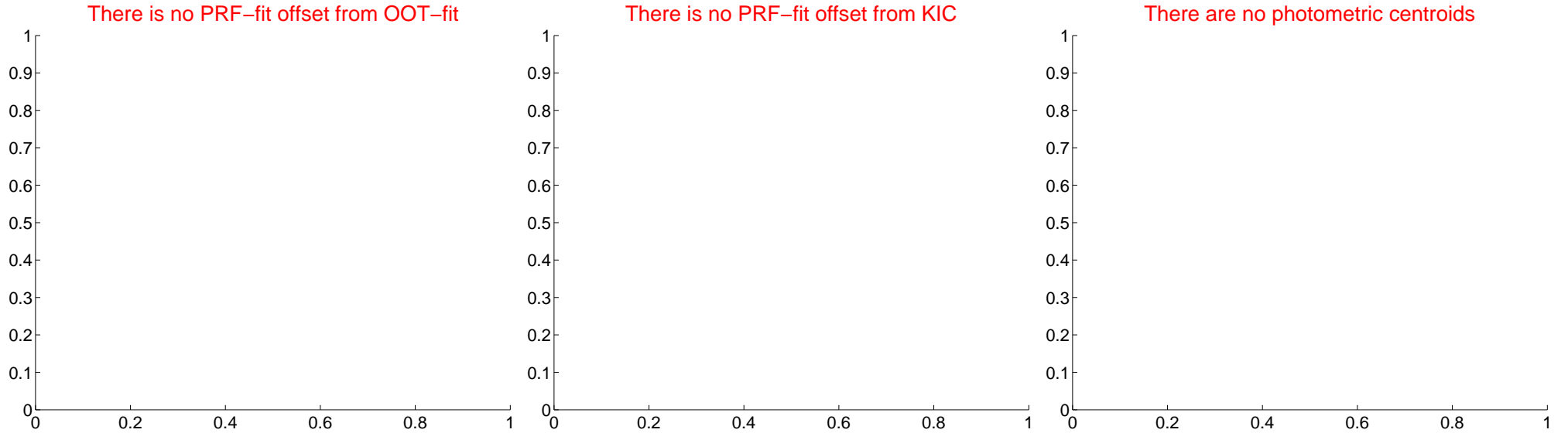
## DV Centroid Data

Supplemental centroid analysis for 007115249-07. Kepler magnitude: 15.02. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	—	—	—	—



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



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



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



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



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



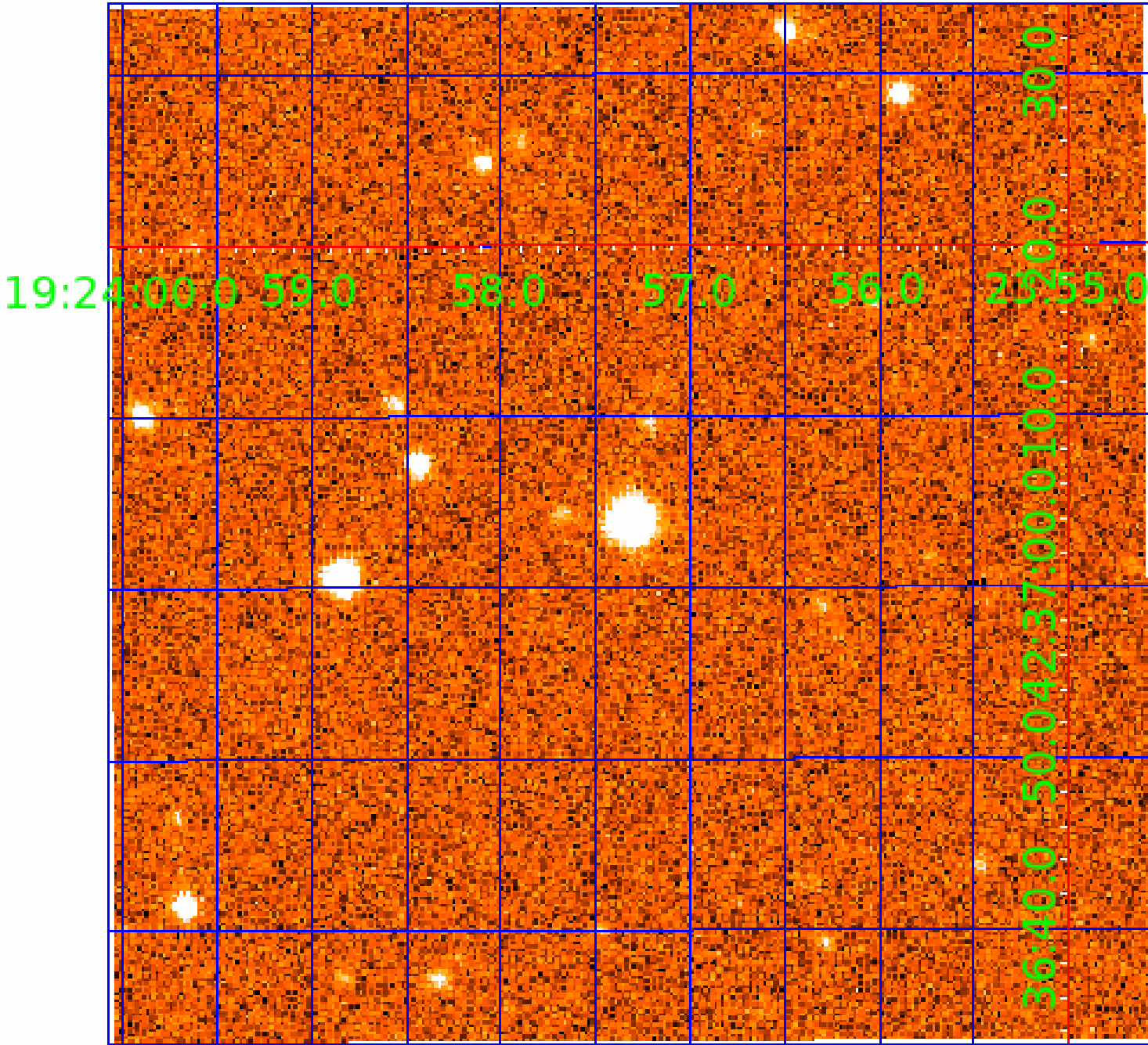
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



# KIC 007115249

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007115249-01	OBS	No	0.566745	131.877898	16.5	4.290	11.1	5.9	0.89	5855	0.37	4735.62
007115249-02	OBS	No	10.686810	140.081100	185.8	4.267	17.9	11.0	0.89	5855	1.30	94.36
007115249-04	OBS	No	2.874820	133.025867	219.1	1.765	14.0	14.4	0.89	5855	1.33	543.35
007115249-05	OBS	No	3.169632	134.290542	503.2	0.534	11.5	18.7	0.89	5855	2.15	477.03
007115249-06	OBS	No	9.844726	139.364274	557.3	1.938	13.7	19.2	0.89	5855	2.26	105.27
007115249-07	OBS	No	18.315402	141.401621	1561.9	1.500	12.9	-1.0	0.89	5855	3.52	46.01
007115249-08	OBS	No	1.458535	131.679944	875.3	2.000	10.9	-1.0	0.89	5855	2.63	1342.78

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007115249-01	OBS	FP	0.00	1	0	0	1	LPP_DV—CENT_FEW_DIFFS—EPHEM_MATCH
007115249-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007115249-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007115249-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007115249-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007115249-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
007115249-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS

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

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

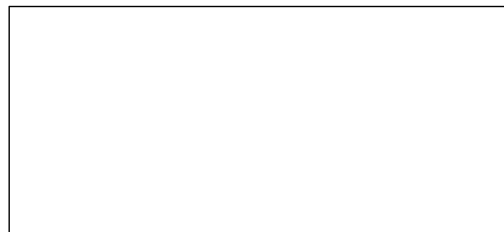
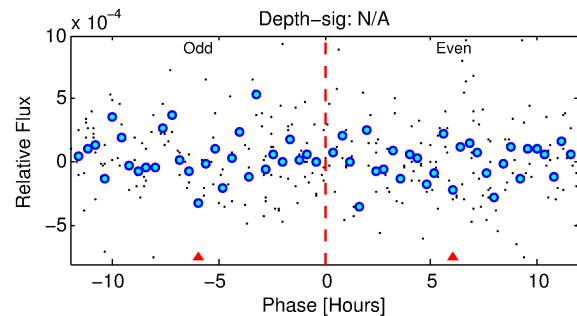
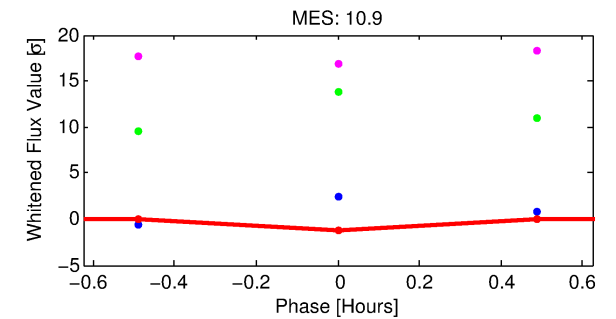
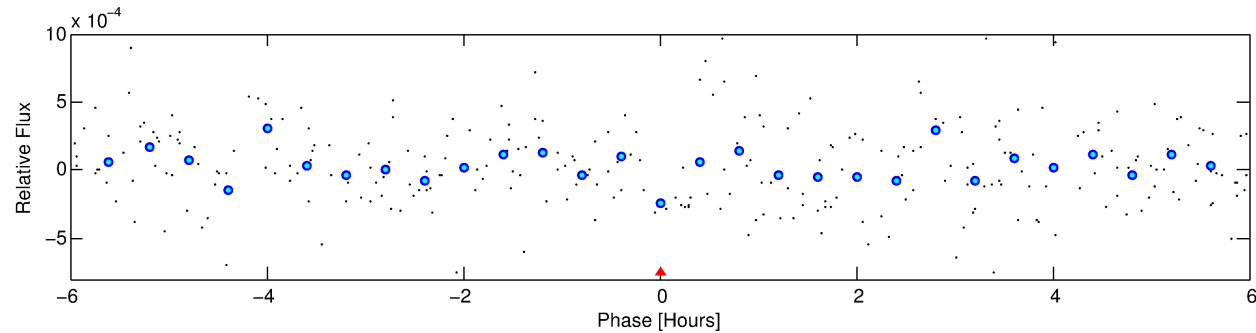
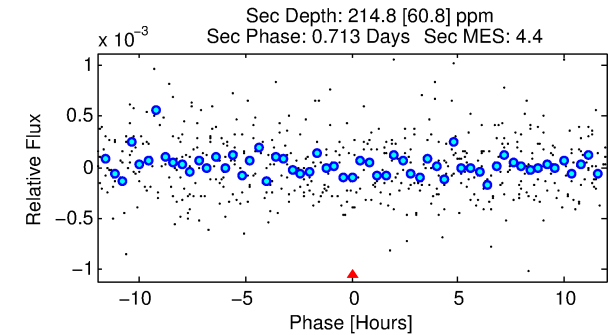
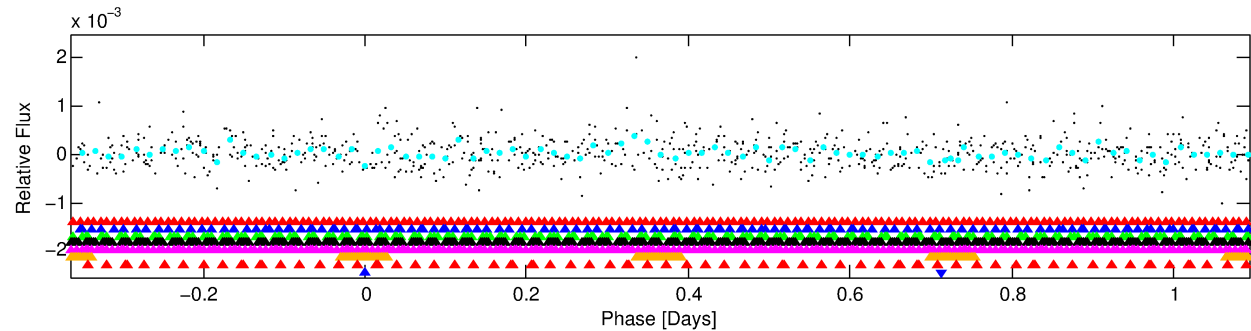
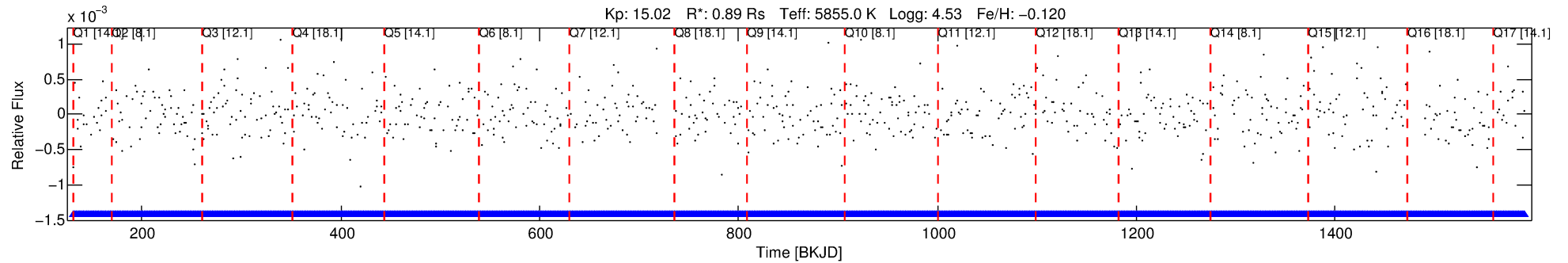
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007115249-08

No Significant Match Found

# DV One-Page Summary

KIC: 7115249 Candidate: 8 of 8 Period: 1.459 d



## TPS TCE Results:

Period = 1.45854 d  
Epoch = 131.6799 BKJD

DV fit results are unavailable

## DV Diagnostic Results:

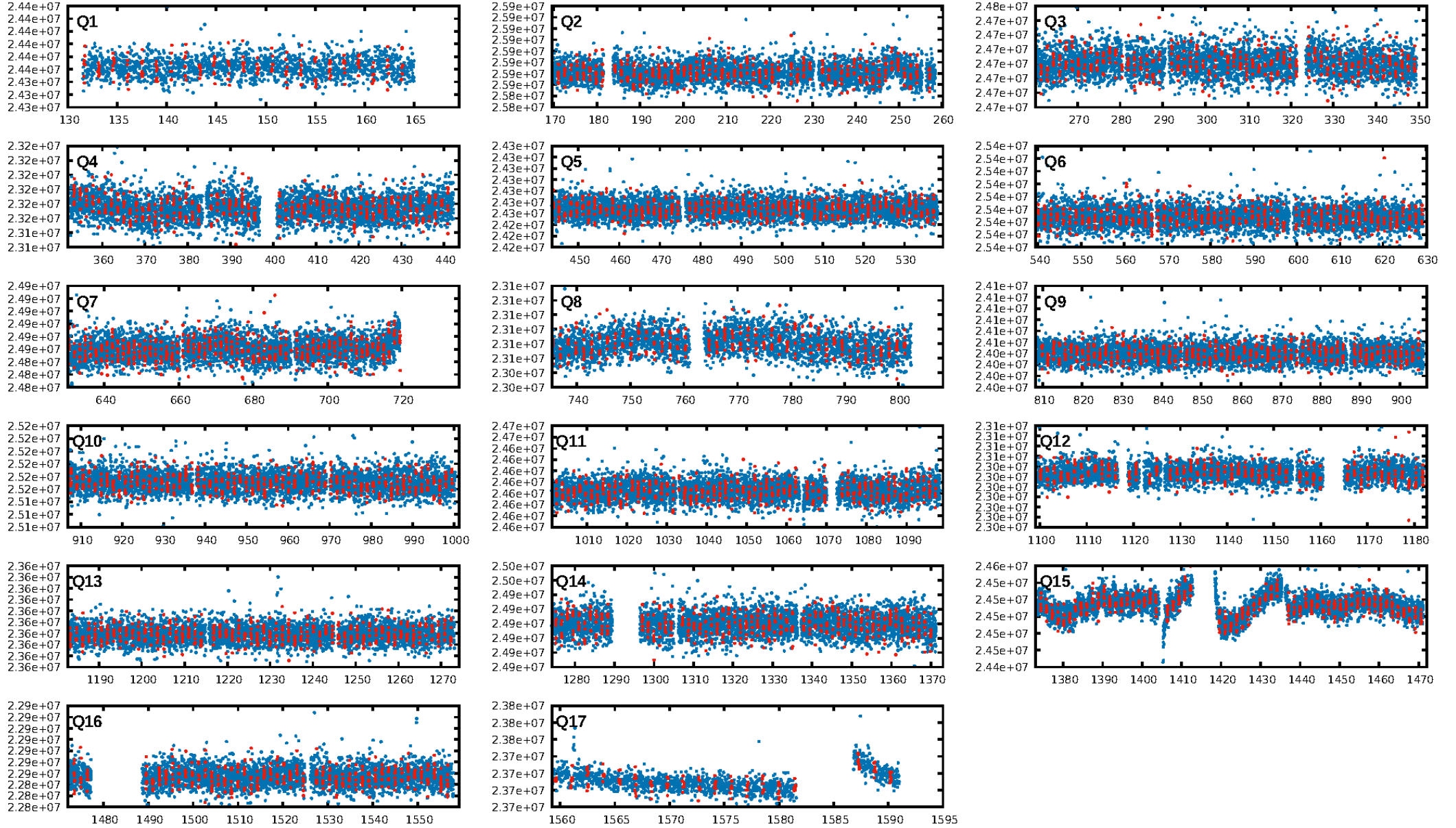
ShortPeriod-sig: 100.0% [4.52σ]  
LongPeriod-sig: 100.0% [12.74σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.21e-06  
RollingBand-fgt: N/A  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0 [0]  
KicOffset-st: 0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: N/A

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:42:31 Z

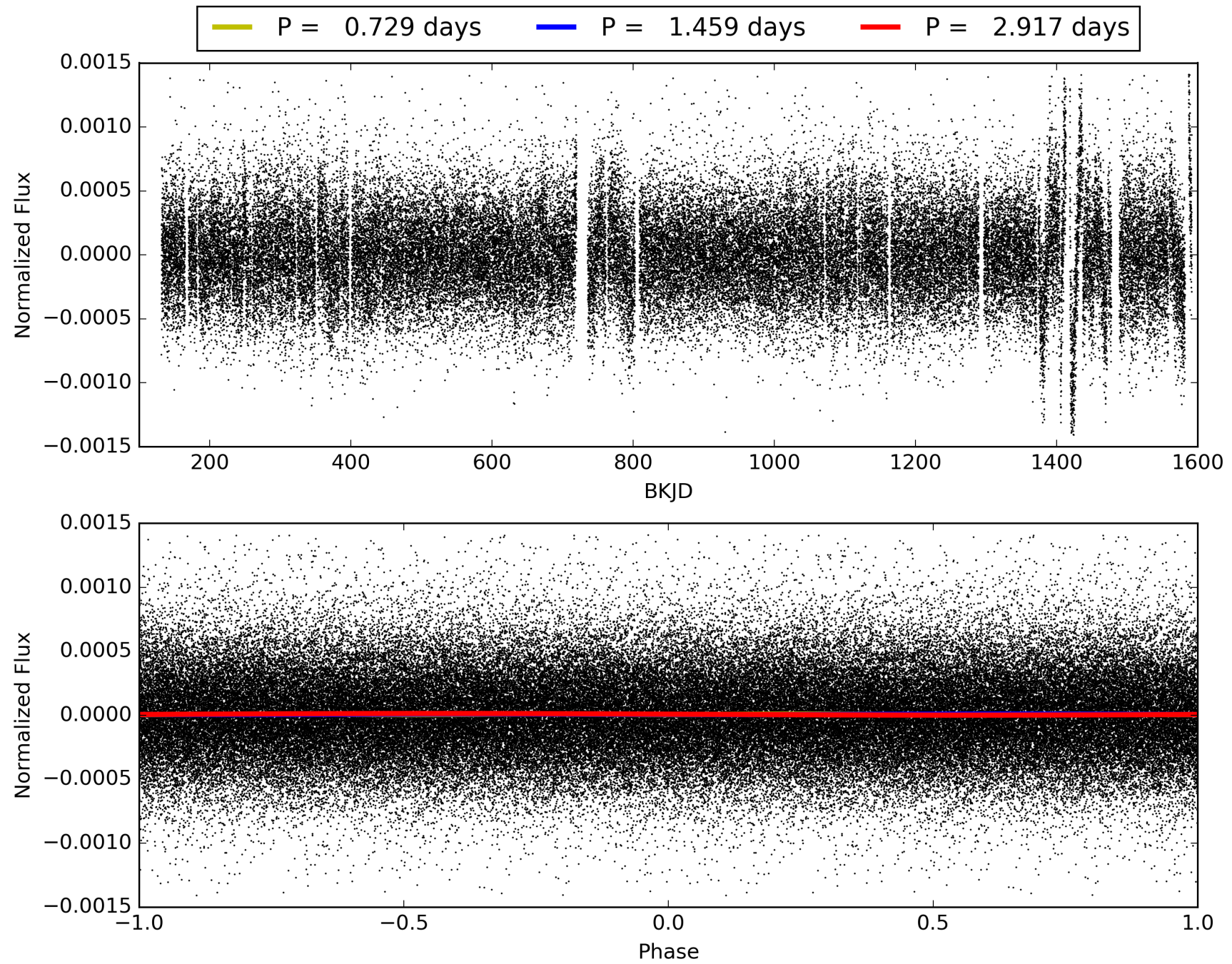
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 007115249-08, PDC Light Curves

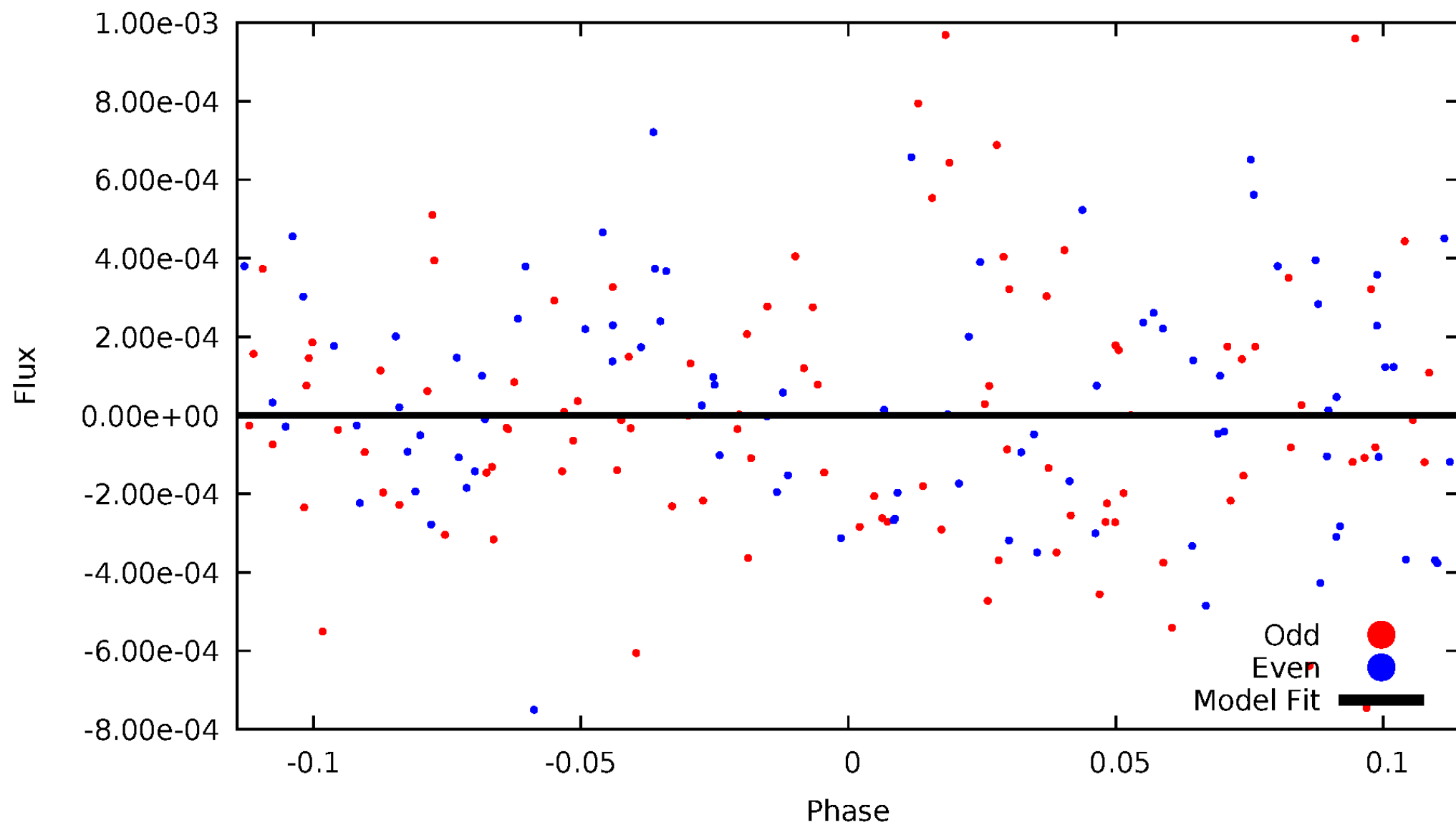


TCE 007115249-08



# DV Odd/Even

TCE 007115249-08



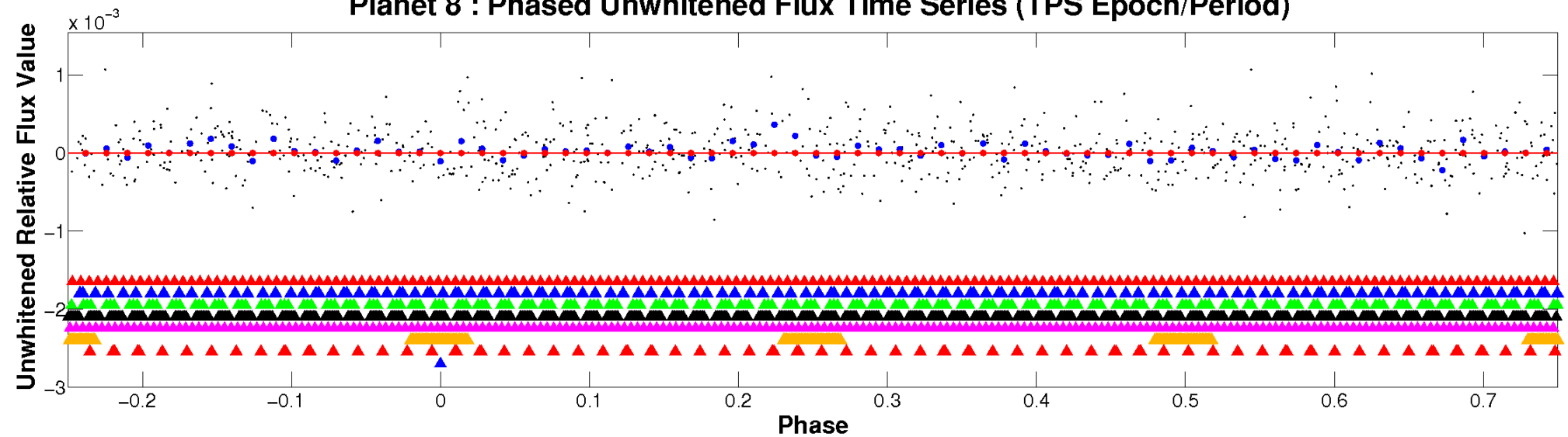


ALT Odd/Even

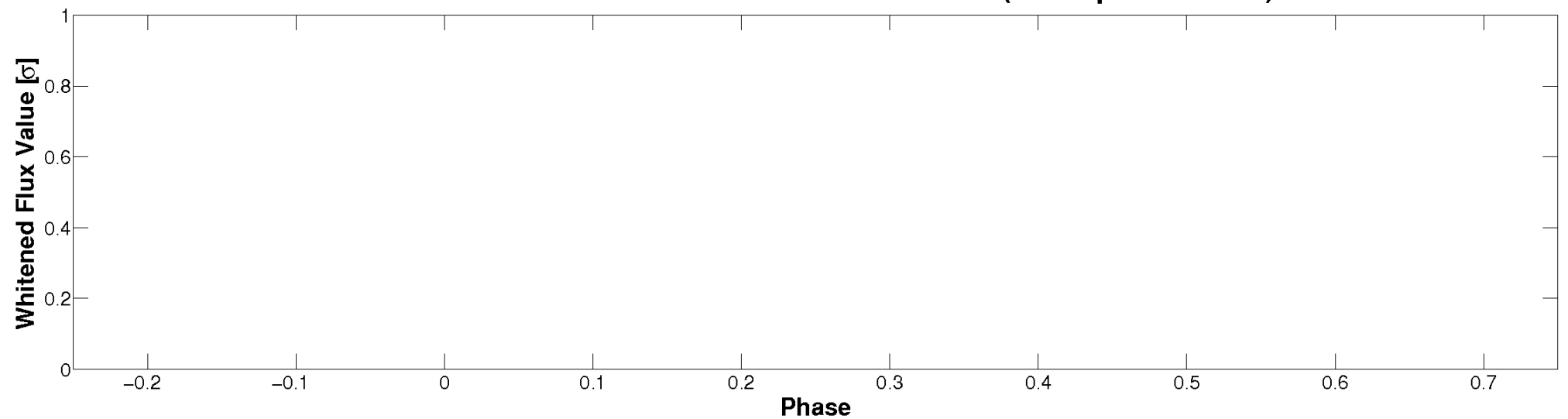
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

**Planet 8 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**



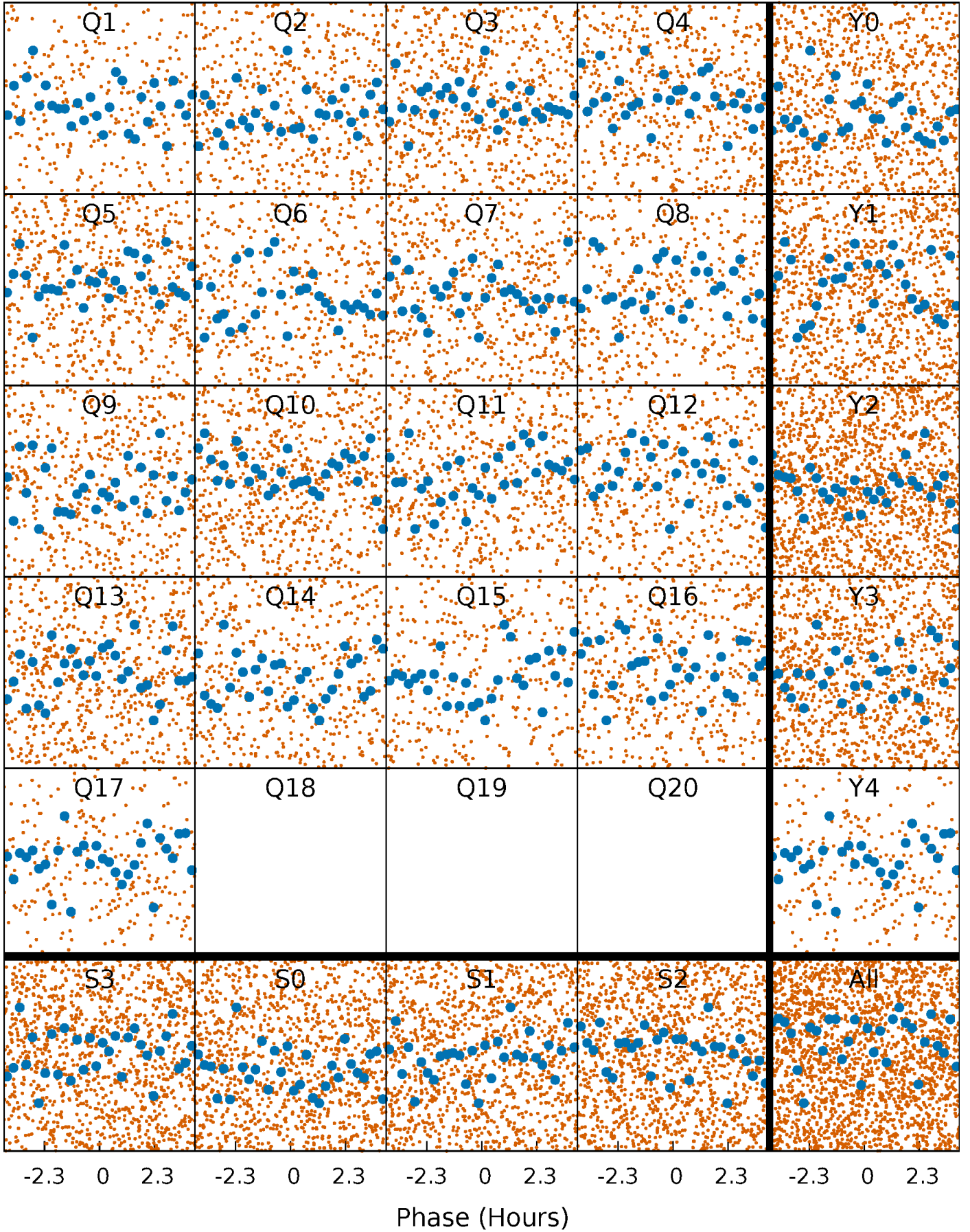
**Planet 8 : Phased Whitened Flux Time Series (TPS Epoch/Period)**





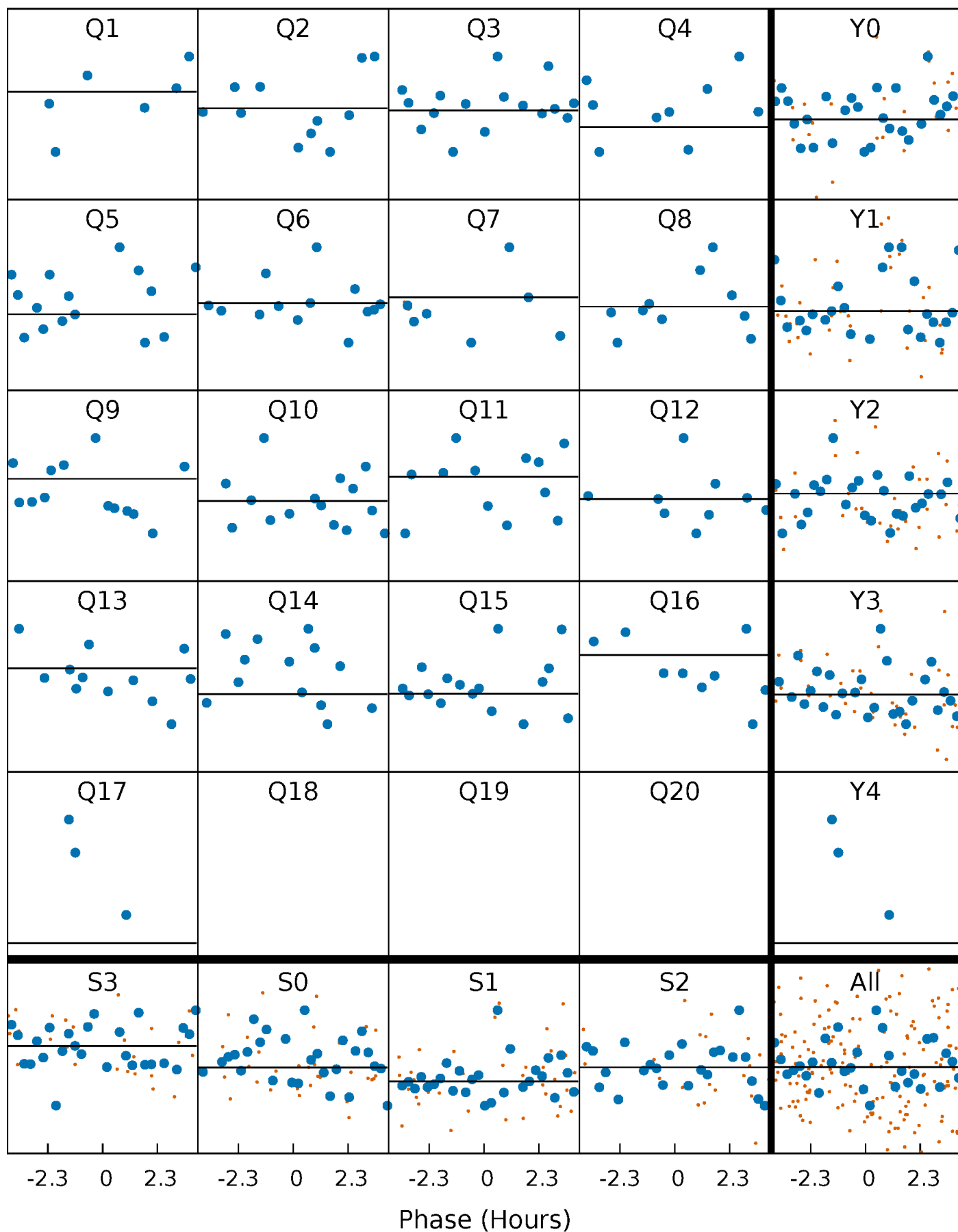
# PDC Quarter-Phased Transit Curves

TCE 007115249-08 P= 1.458535 Days  $T_0=131.679944$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 007115249-08 P= 1.458535 Days  $T_0=131.679944$  (BKJD)



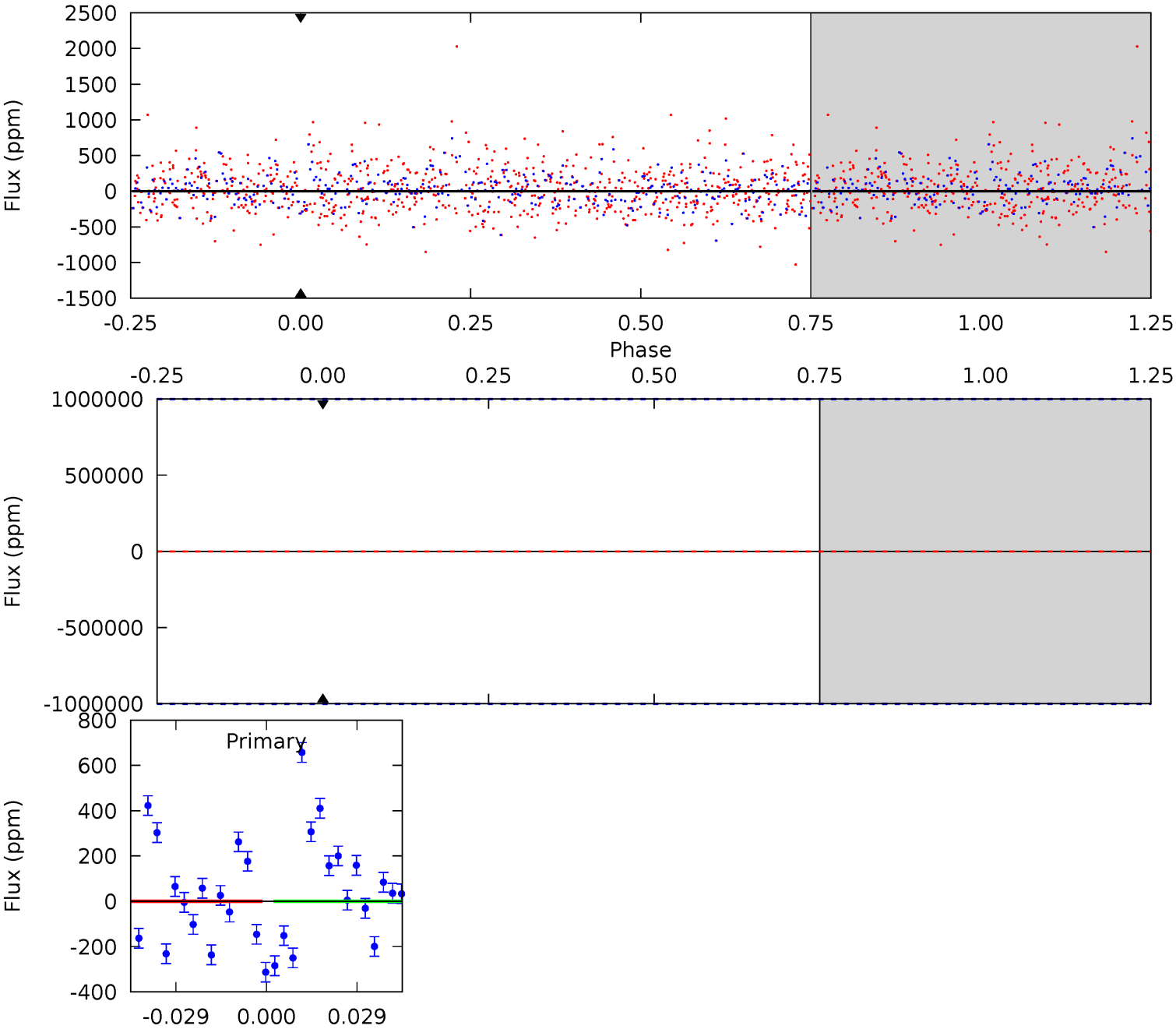


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

007115249-08, P = 1.458535 Days, E = 130.221409 Days

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



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 007115249

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5855^{+140}_{-176}$	$4.528^{+0.037}_{-0.200}$	$-0.120^{+0.300}_{-0.300}$	$0.894^{+0.261}_{-0.087}$	$0.982^{+0.108}_{-0.121}$	$1.938^{+0.380}_{-0.989}$
	+2%/-3%	+1%/-4%	+250%/-250%	+29%/-10%	+11%/-12%	+20%/-51%
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 007115249-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$8.04^{+8.45}_{-5.75}$	$2205^{+153}_{-94}$	$-3319^{+25120}_{-16686}$	$-1.380^{+1083.242}_{-904.680}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

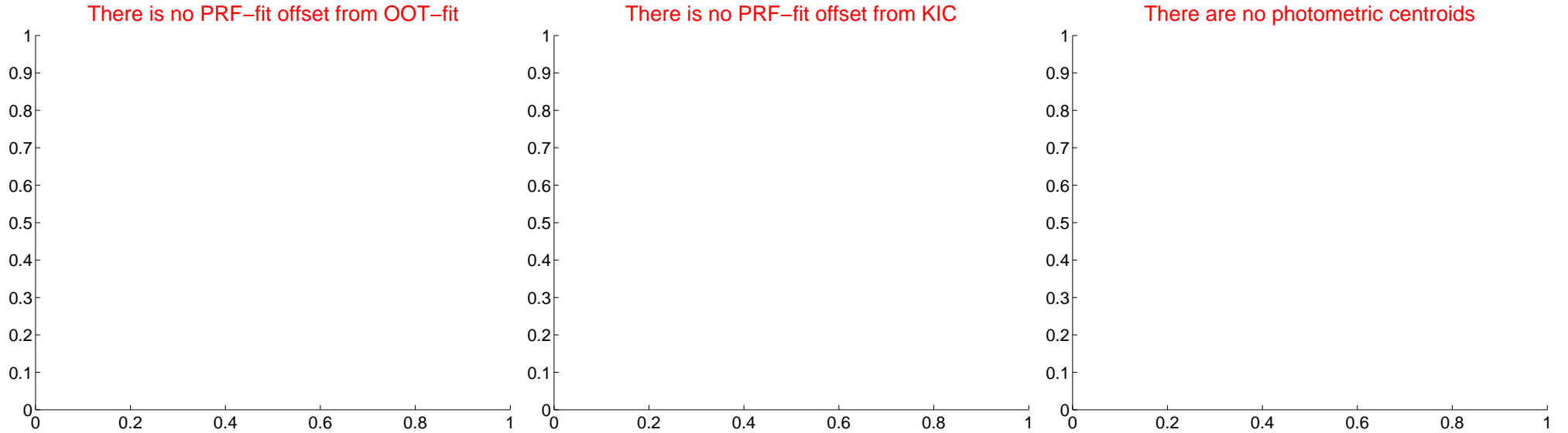
## DV Centroid Data

Supplemental centroid analysis for 007115249-08. Kepler magnitude: 15.02. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	—	—	—	—



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

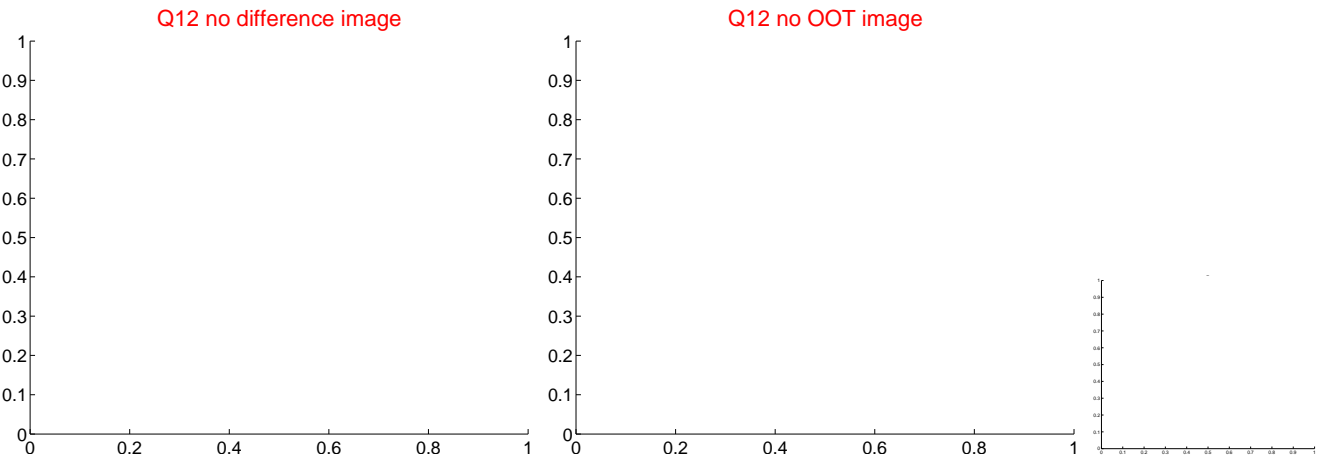
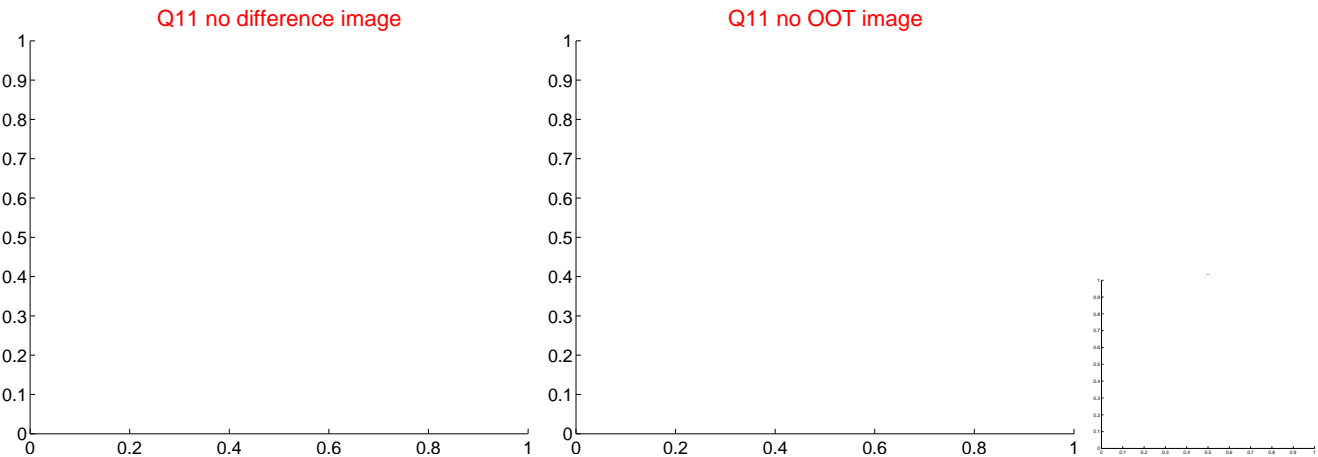
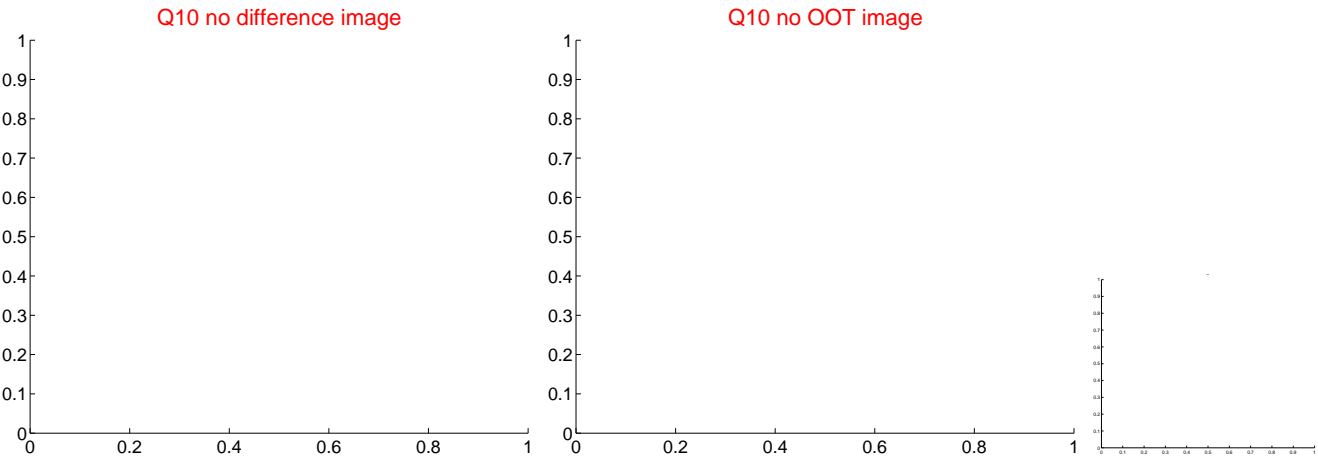
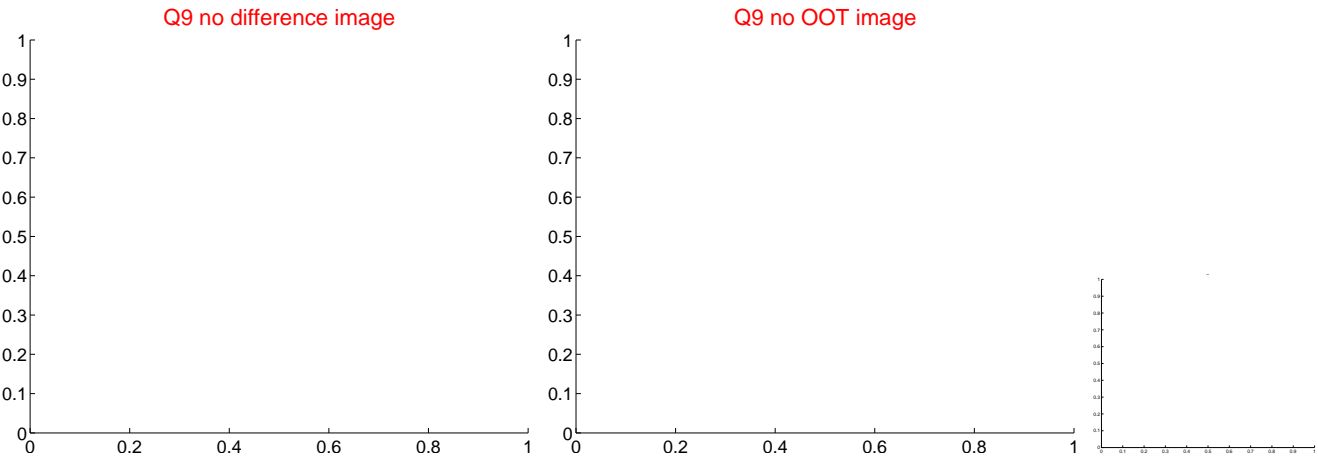
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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

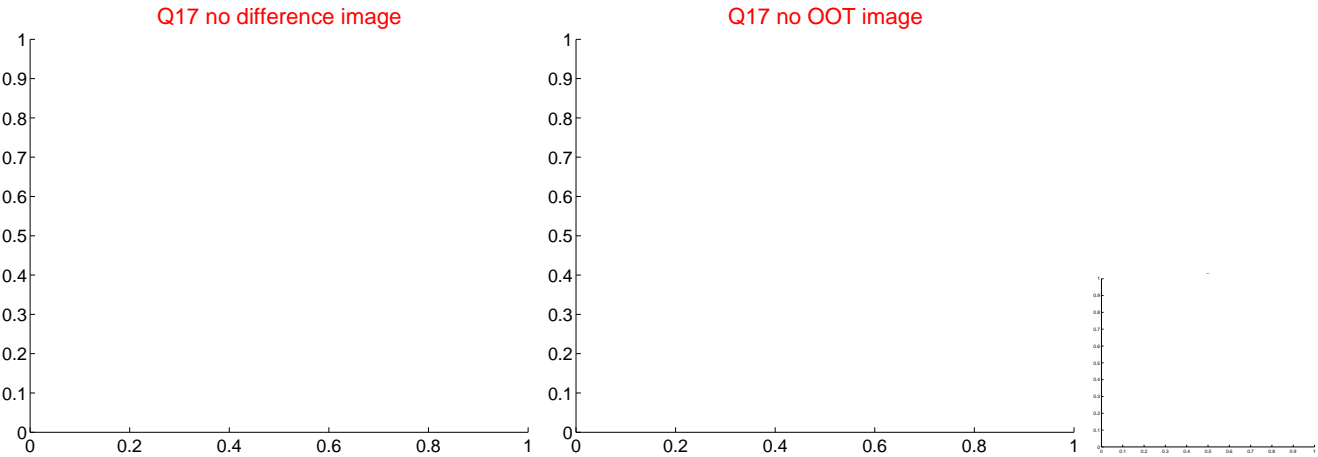




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



folded centroid time series figure for this object.

UKIRT Image

Declination

