

# KIC 001571152

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
001571152-01	OBS	No	0.608133	131.565320	18.8	1.488	10.0	5.1	1.58	7015	0.73	21450.89
001571152-02	OBS	No	0.608161	131.990886	96.6	1.994	10.5	16.8	1.58	7015	1.81	21449.54
001571152-03	OBS	No	0.657841	131.614148	127.3	2.979	11.5	10.9	1.58	7015	2.07	19317.39

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001571152-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
001571152-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
001571152-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

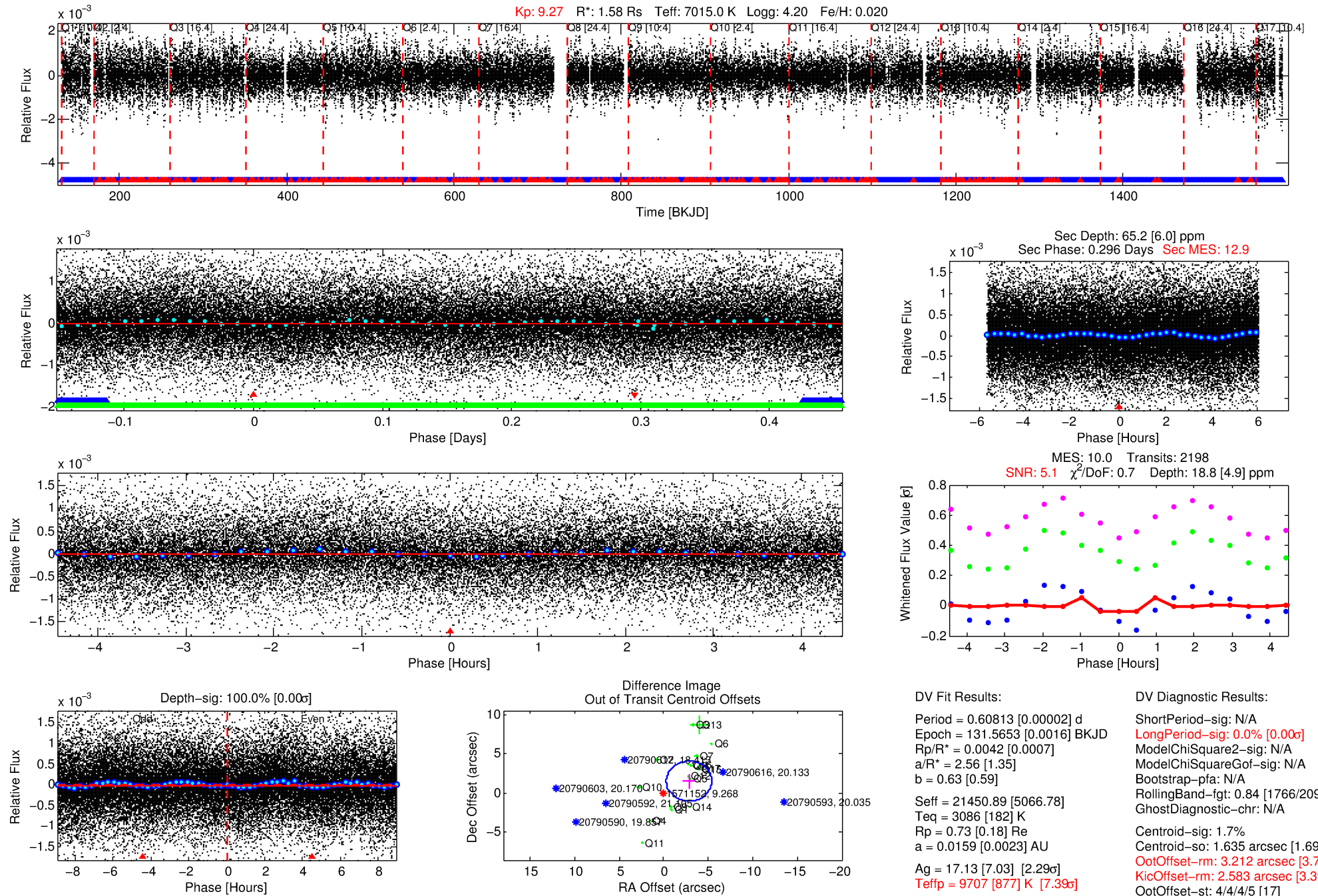
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 001571152-01

No Significant Match Found

# DV One-Page Summary

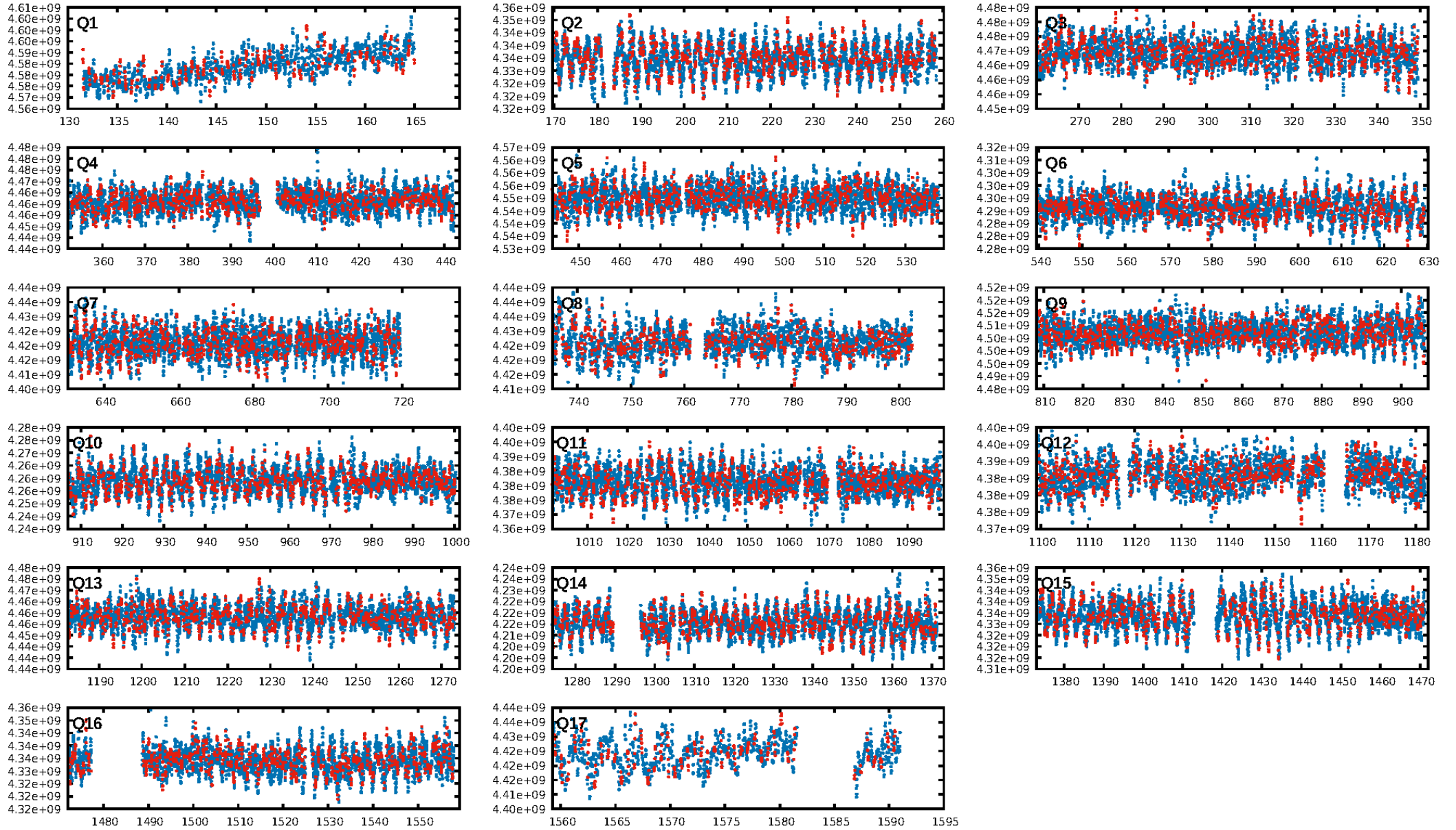
KIC: 1571152 Candidate: 1 of 3 Period: 0.608 d



Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:00:55 Z

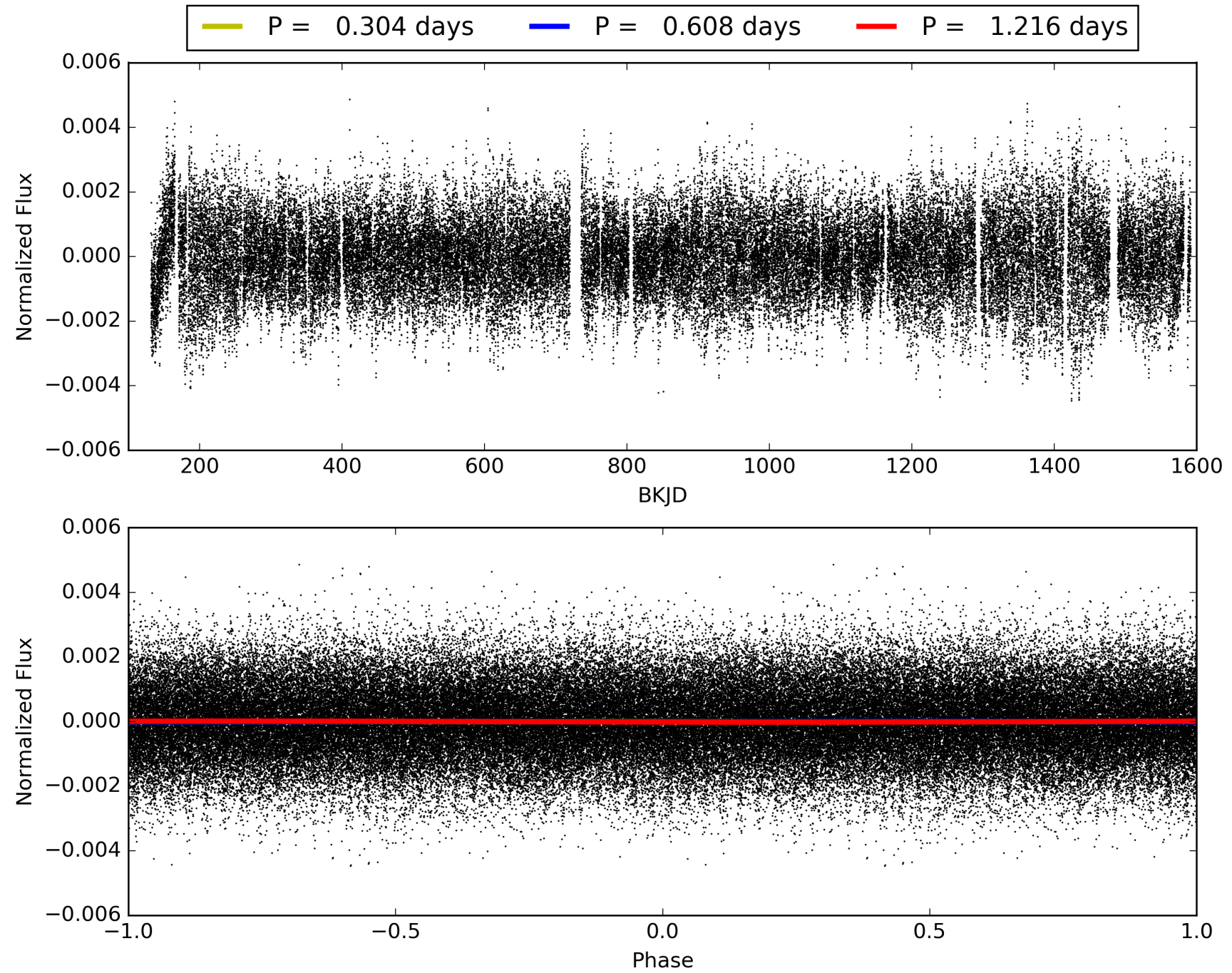
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 001571152-01, PDC Light Curves





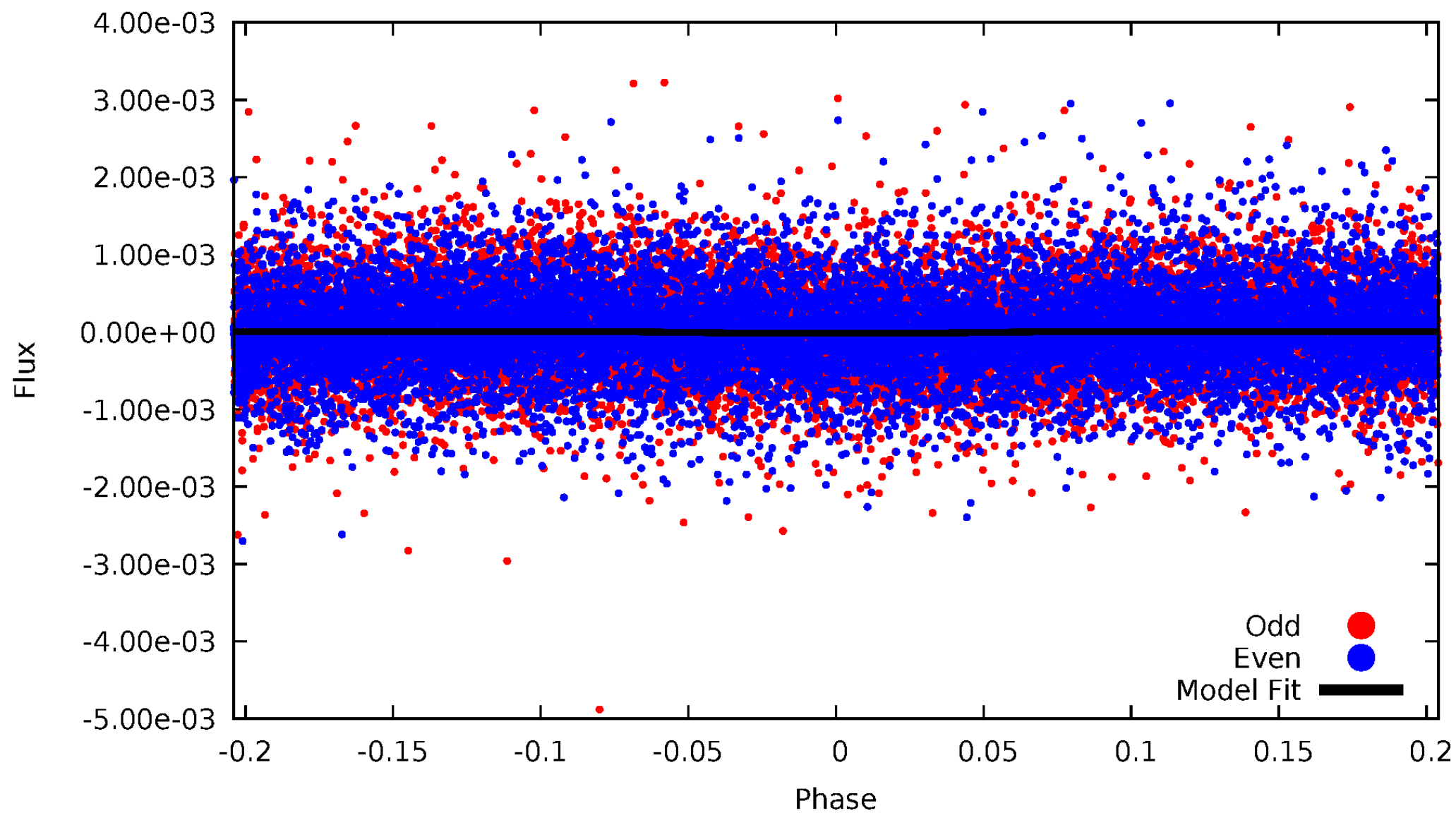
TCE 001571152-01





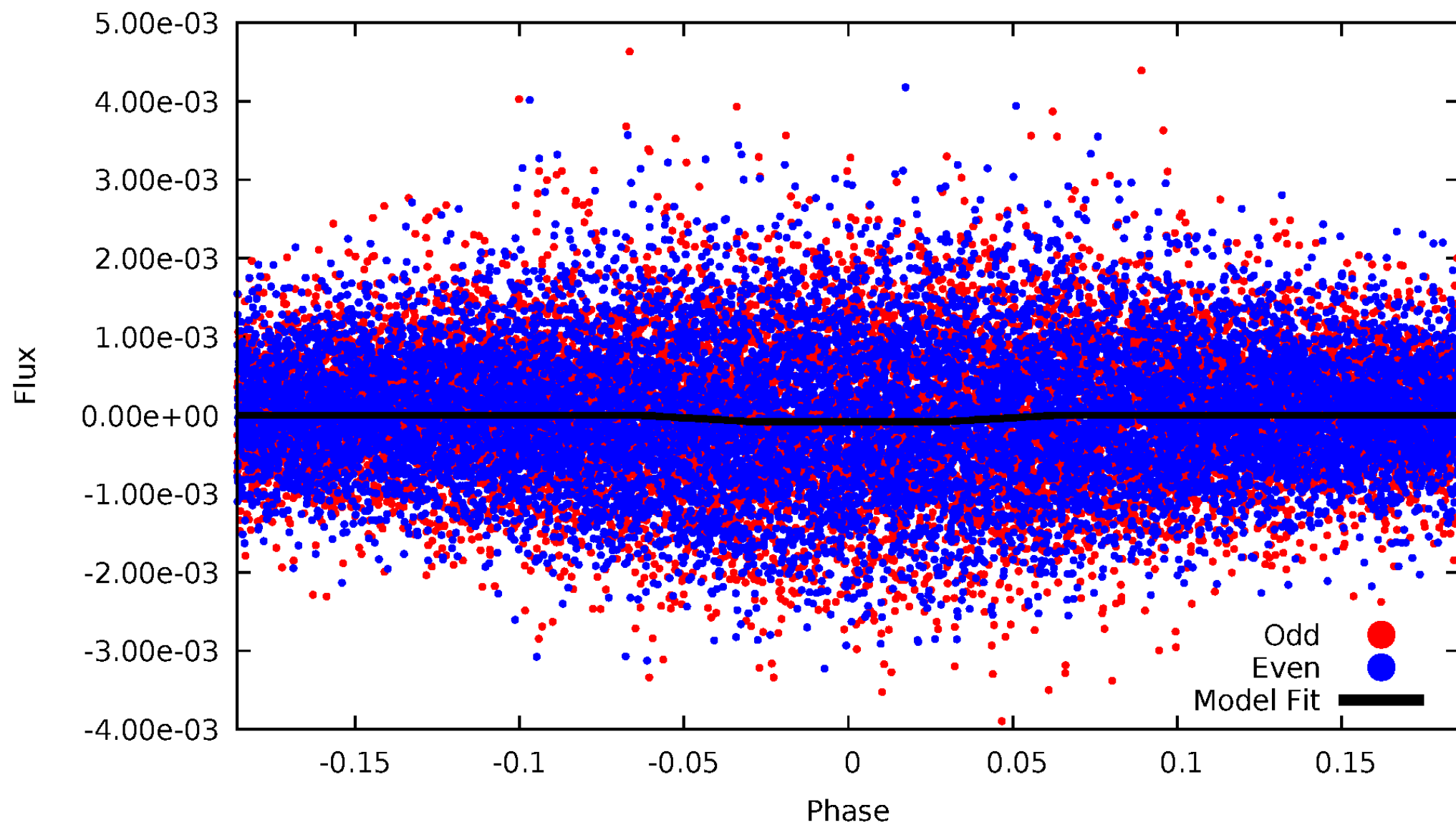
# DV Odd/Even

TCE 001571152-01

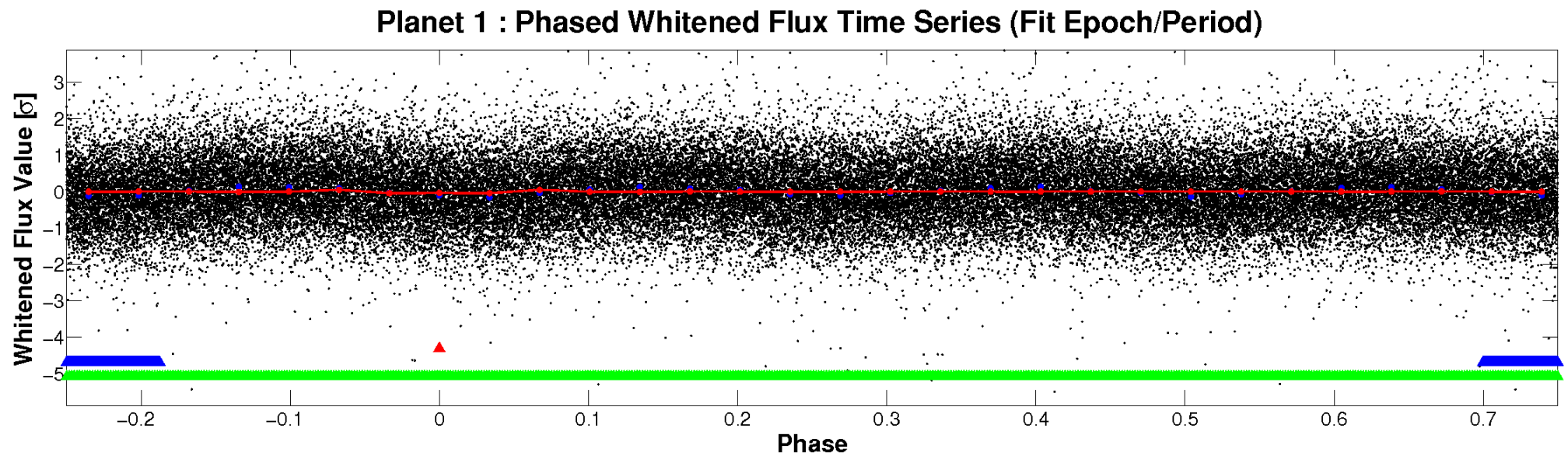
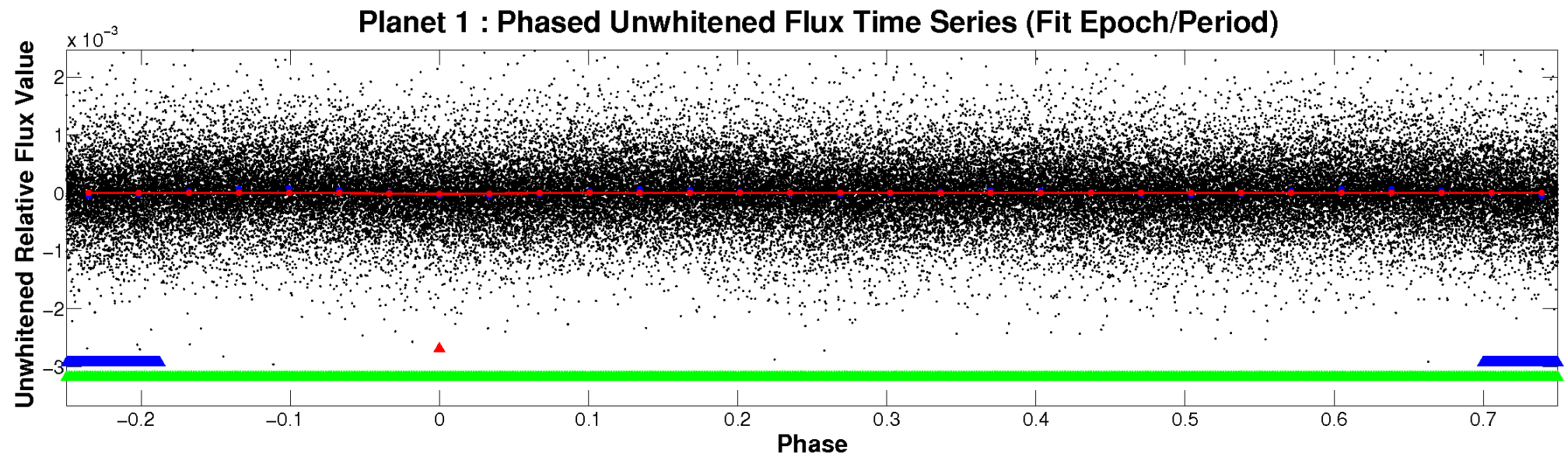


# ALT Odd/Even

TCE 001571152-01



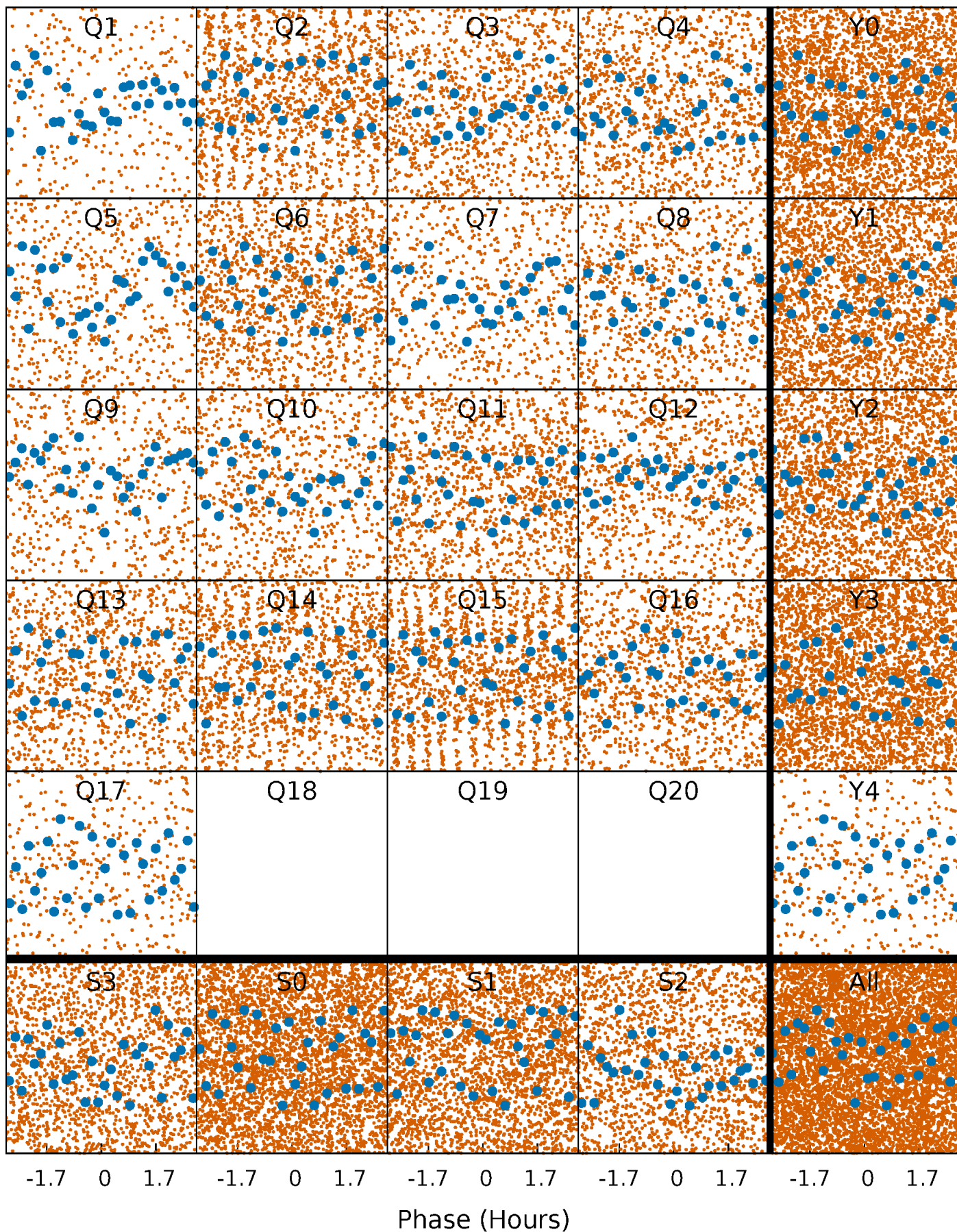
# Non-Whitened Vs. Whitened Light Curve





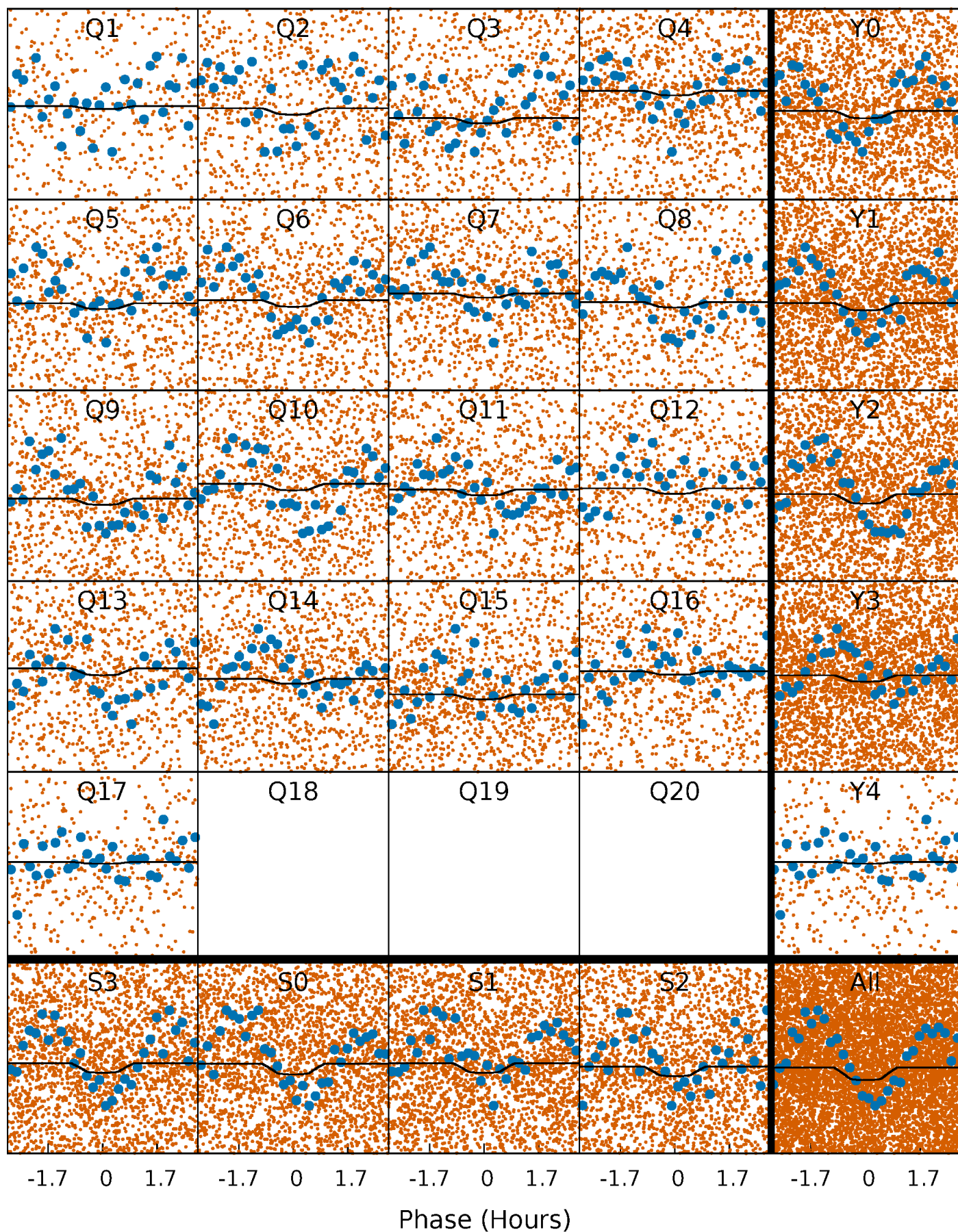
# PDC Quarter-Phased Transit Curves

TCE 001571152-01 P= 0.608133 Days  $T_0=131.565320$  (BKJD)



# DV Quarter-Phased Transit Curves

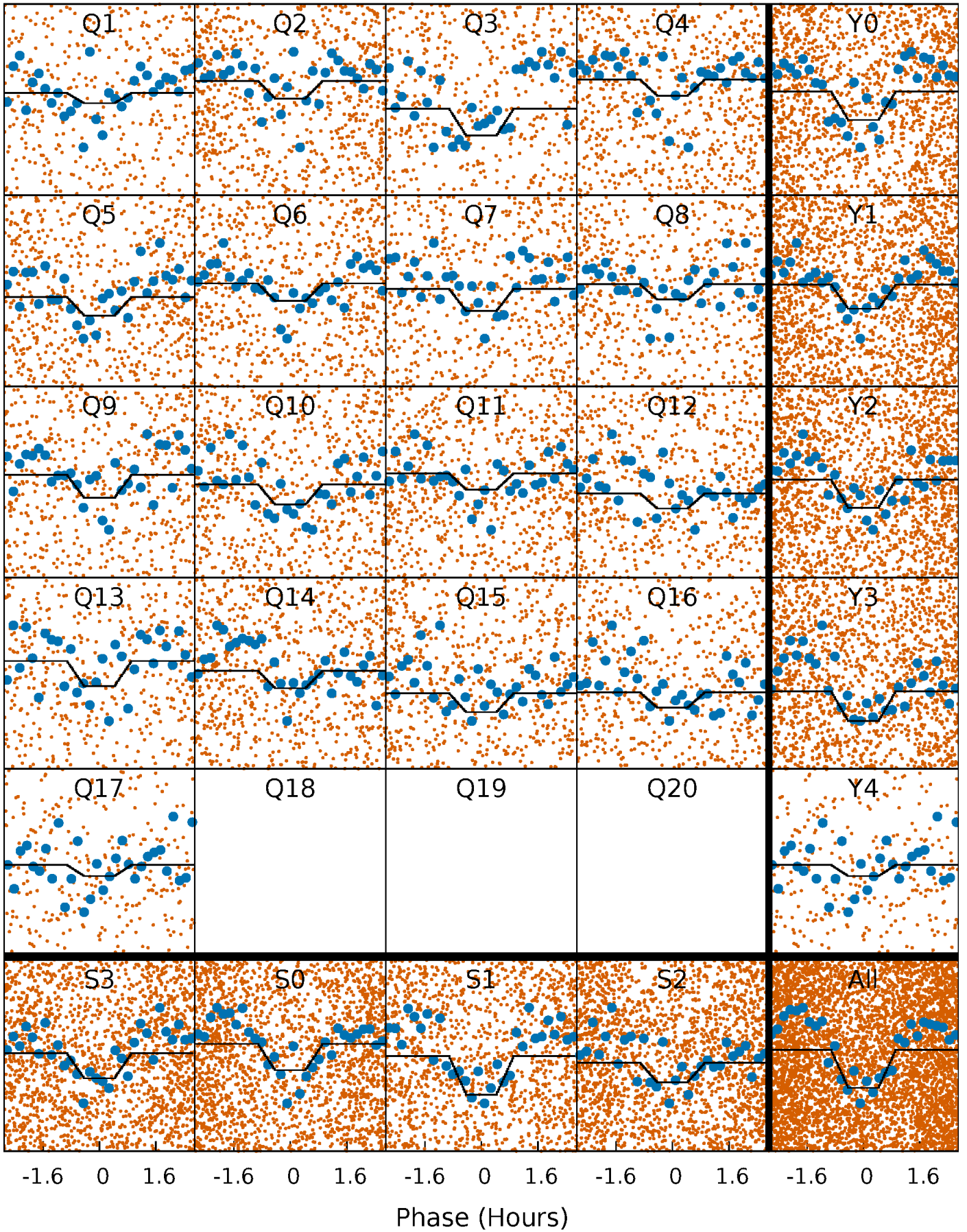
TCE 001571152-01 P= 0.608133 Days  $T_0=131.565320$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 001571152-01 P= 0.608154 Days  $T_0=131.552498$  (BKJD)

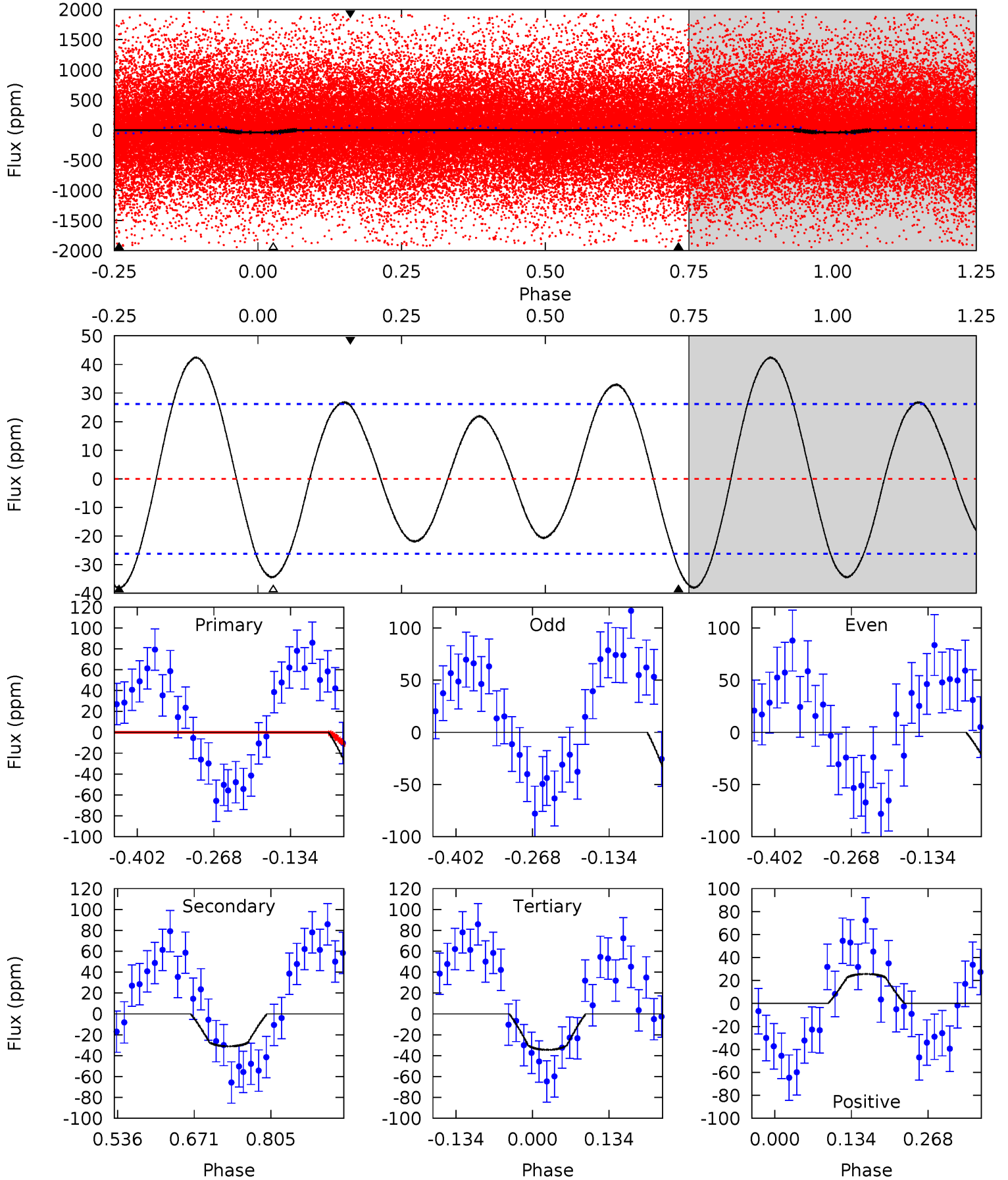




# DV Model-Shift Uniqueness Test

001571152-01, P = 0.608133 Days, E = 130.957187 Days

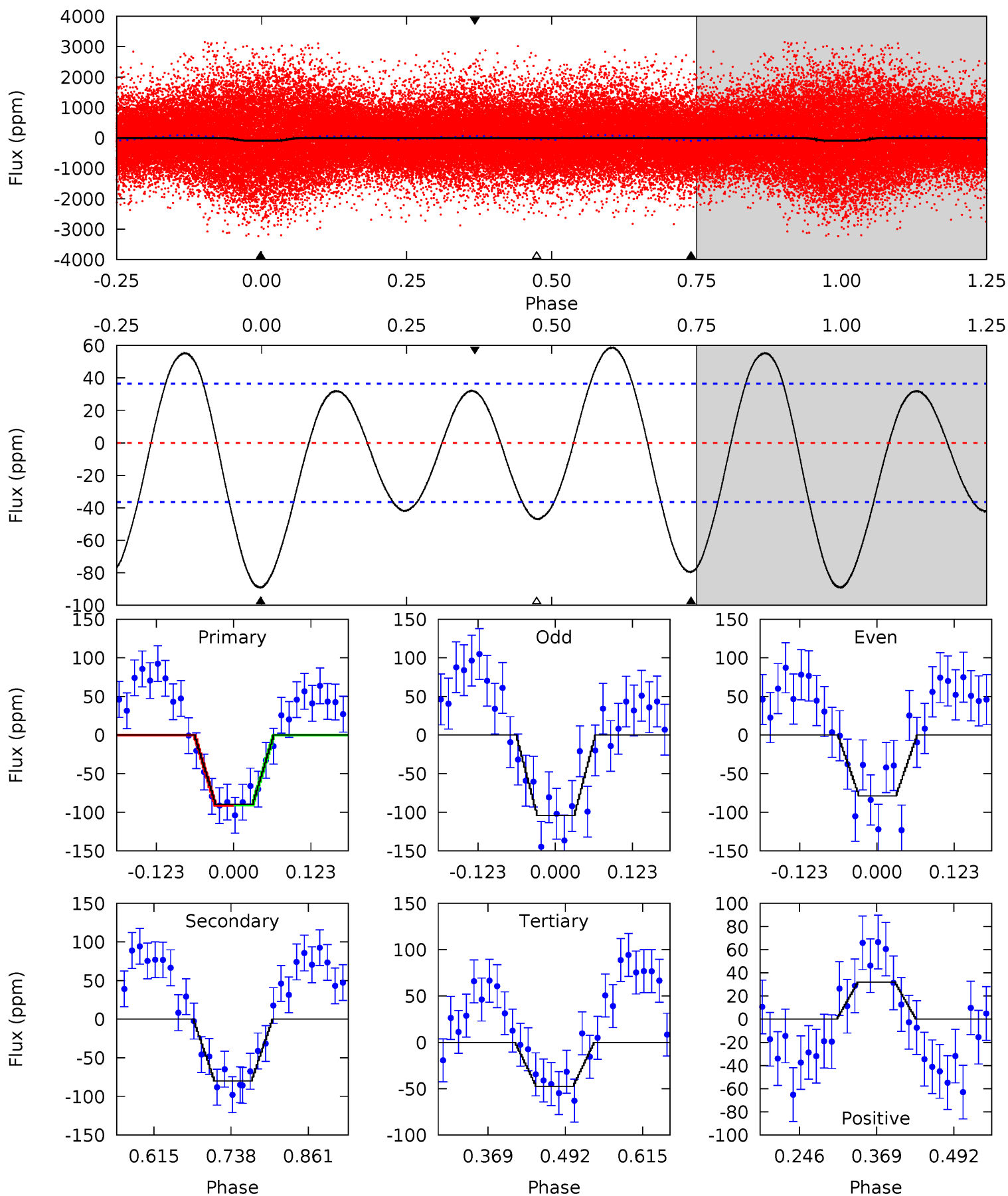
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.58	5.35	5.92	4.42	4.50	1.50	3.37	0.65	2.16	-0.57	0.93	1.45	0.91	0.53	4.18



# Alt Model-Shift Uniqueness Test

001571152-01, P = 0.608154 Days, E = 130.944344 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
11.1	9.92	5.87	3.97	4.52	1.54	4.01	5.25	7.16	4.05	5.96	1.58	0.73	0.40	0.03



### Stellar Parameters For KIC 001571152

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$7015^{+124}_{-166}$	$4.201^{+0.059}_{-0.119}$	$0.020^{+0.150}_{-0.150}$	$1.580^{+0.275}_{-0.148}$	$1.449^{+0.111}_{-0.091}$	$0.518^{+0.136}_{-0.182}$
	+2%/-2%	+1%/-3%	+750%/-750%	+17%/-9%	+8%/-6%	+26%/-35%
Source	SPE4	SPE4	SPE4	DSEP		

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

### Secondary Eclipse Parameters for KIC 001571152-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-31 \pm 6$	$0.74^{+0.14}_{-0.14}$	$4333^{+198}_{-148}$	$8190^{+1137}_{-916}$	$7.810^{+4.178}_{-2.471}$
Alt.	$-80 \pm 8$	$1.58^{+0.18}_{-0.17}$	$4336^{+191}_{-148}$	$6829^{+425}_{-379}$	$4.393^{+1.186}_{-0.931}$

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



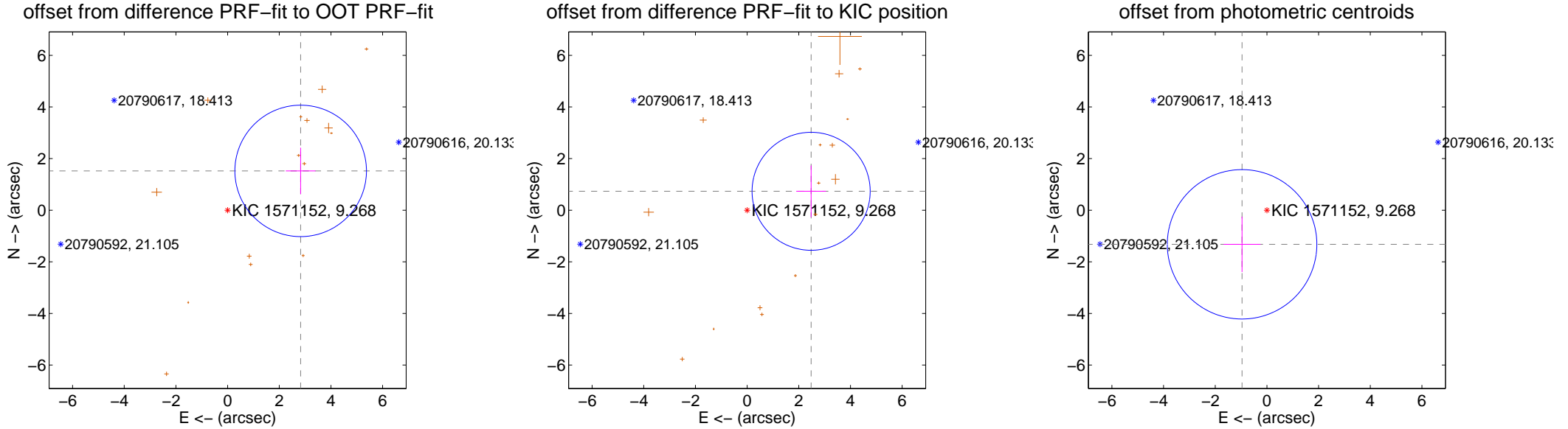
## DV Centroid Data

Supplemental centroid analysis for 001571152-01. **Kepler magnitude: 9.27.** Transit SNR 5.13

There are 0 quarters with good PRF difference image offsets

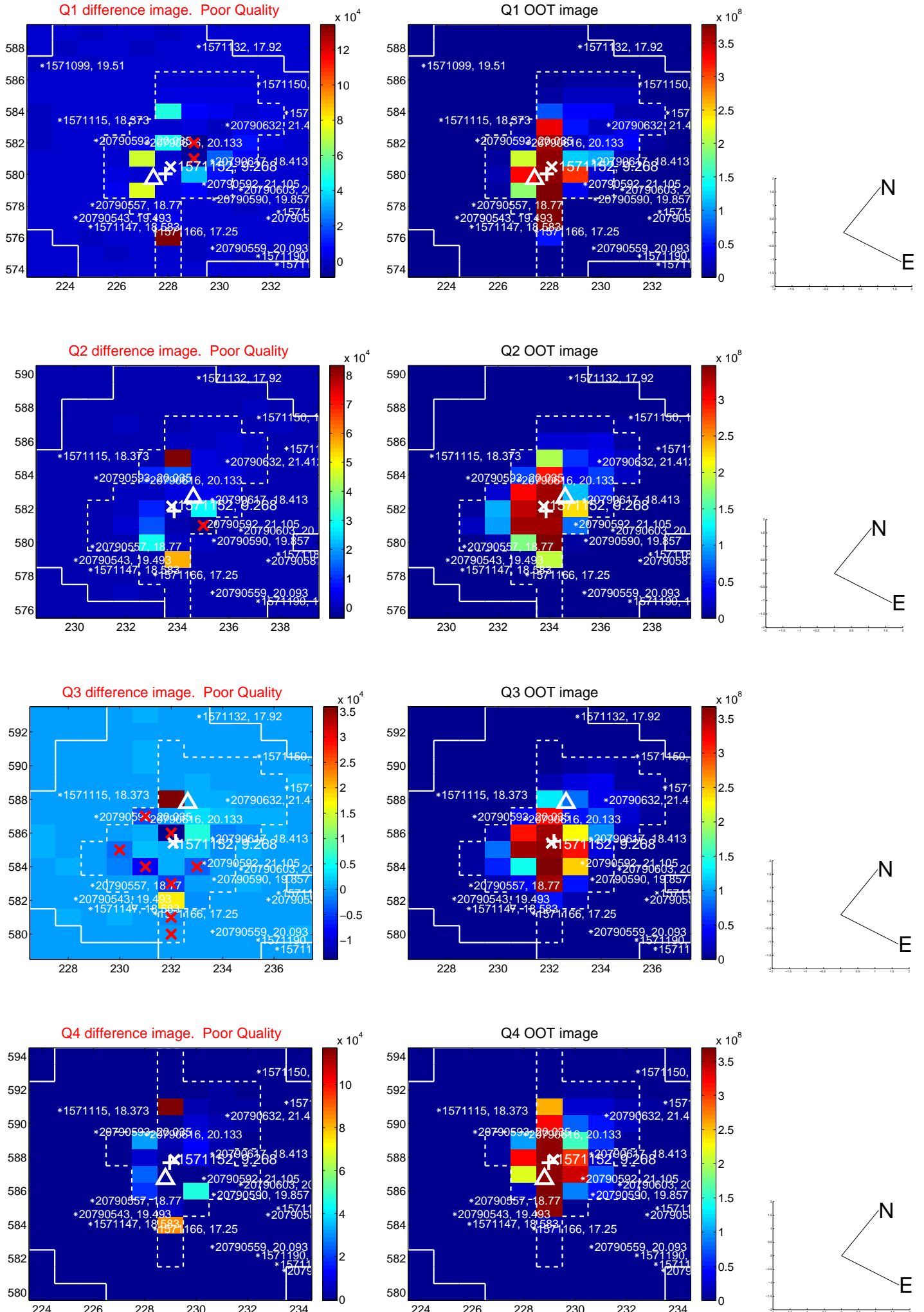
The OOT PRF centroid is offset from the target star catalog position by about 2.05 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>3.212 \pm 0.849</math></b>	<b>3.78</b>	$-2.828 \pm 0.576$	$1.523 \pm 0.899$
PRF-fit source offset from KIC position	<b><math>2.583 \pm 0.762</math></b>	<b>3.39</b>	$-2.477 \pm 0.577$	$0.733 \pm 0.998$
photometric centroid source offset	$1.63 \pm 0.96$	1.69	$0.96 \pm 0.71$	$-1.32 \pm 1.07$

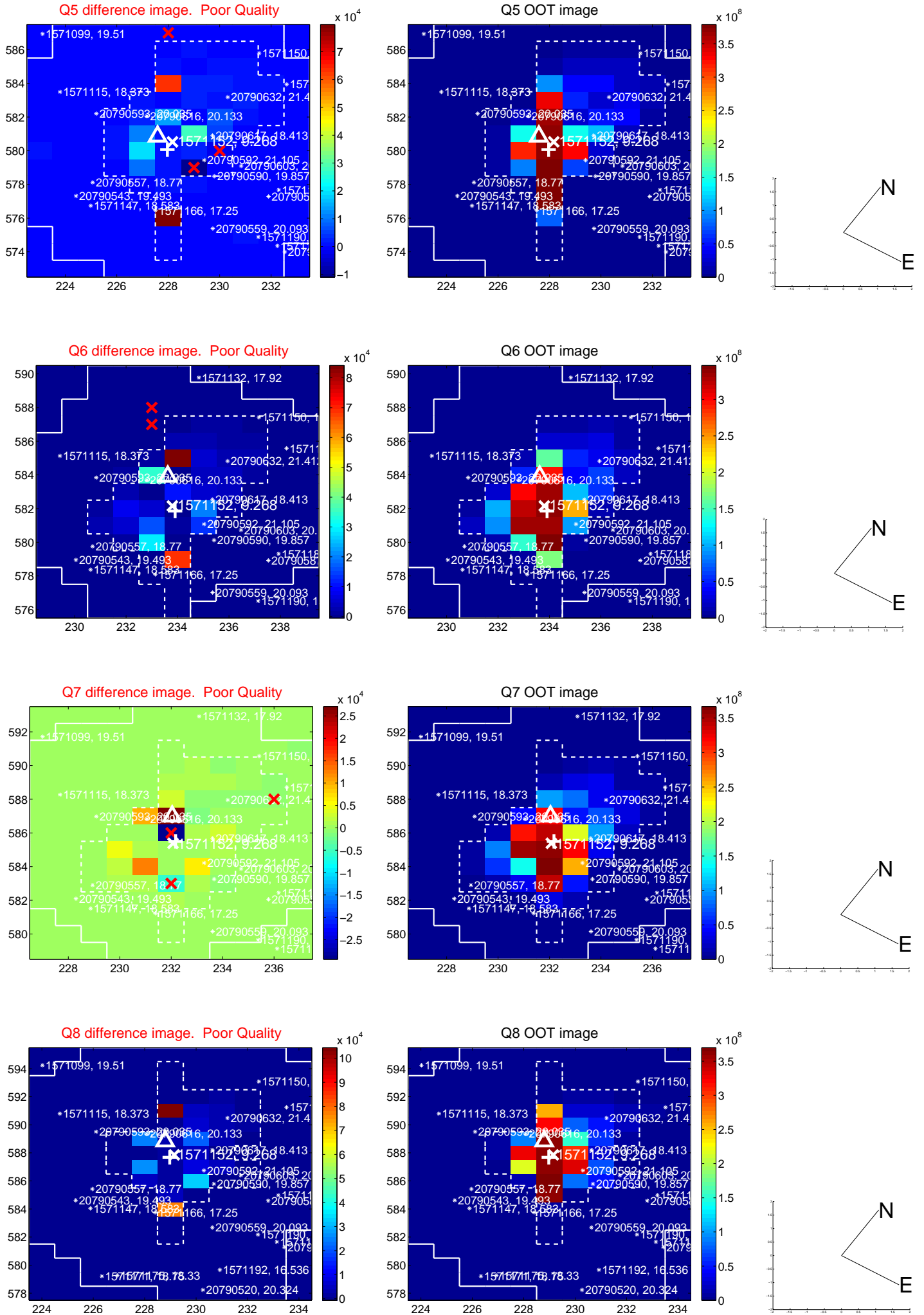


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

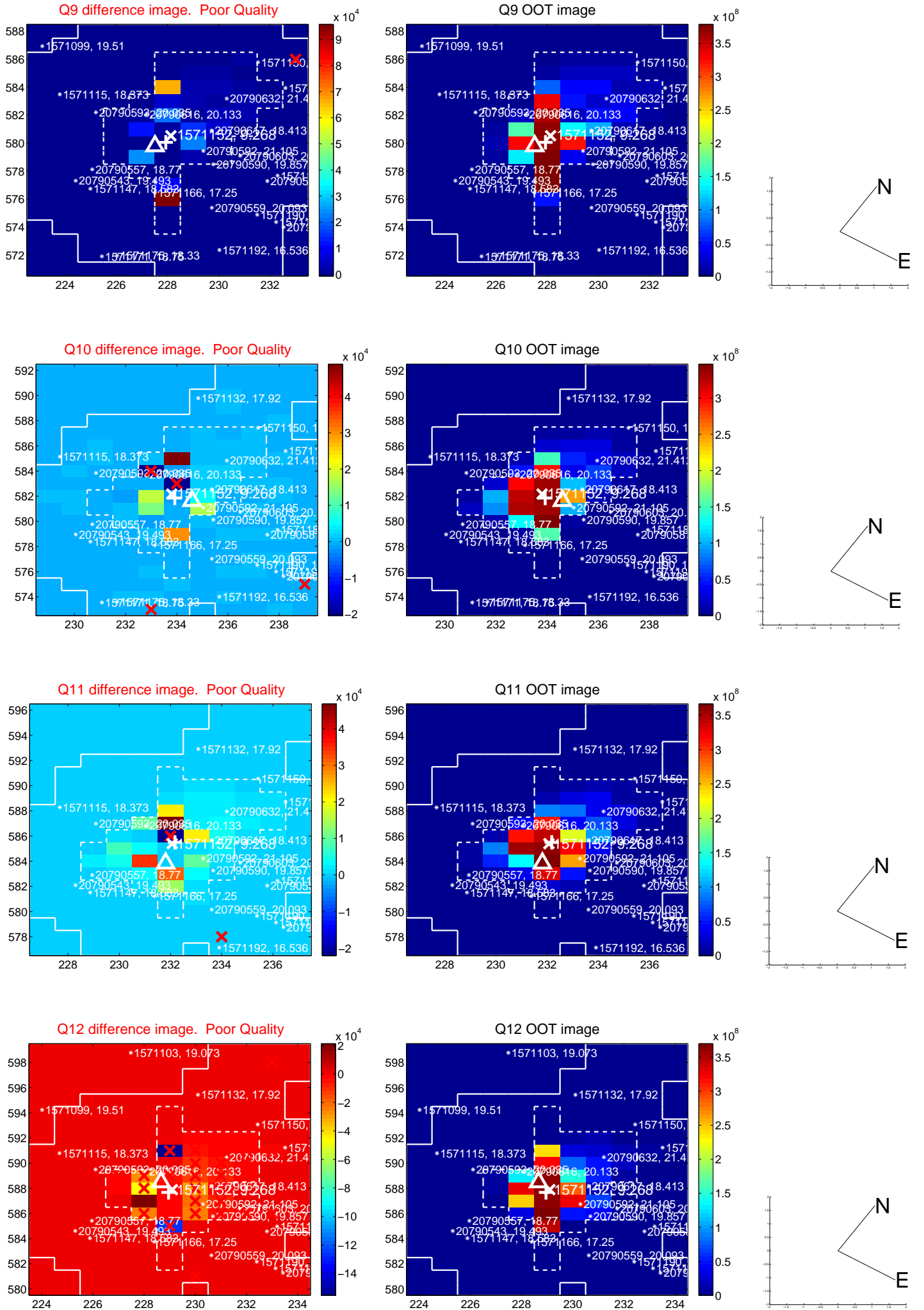


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

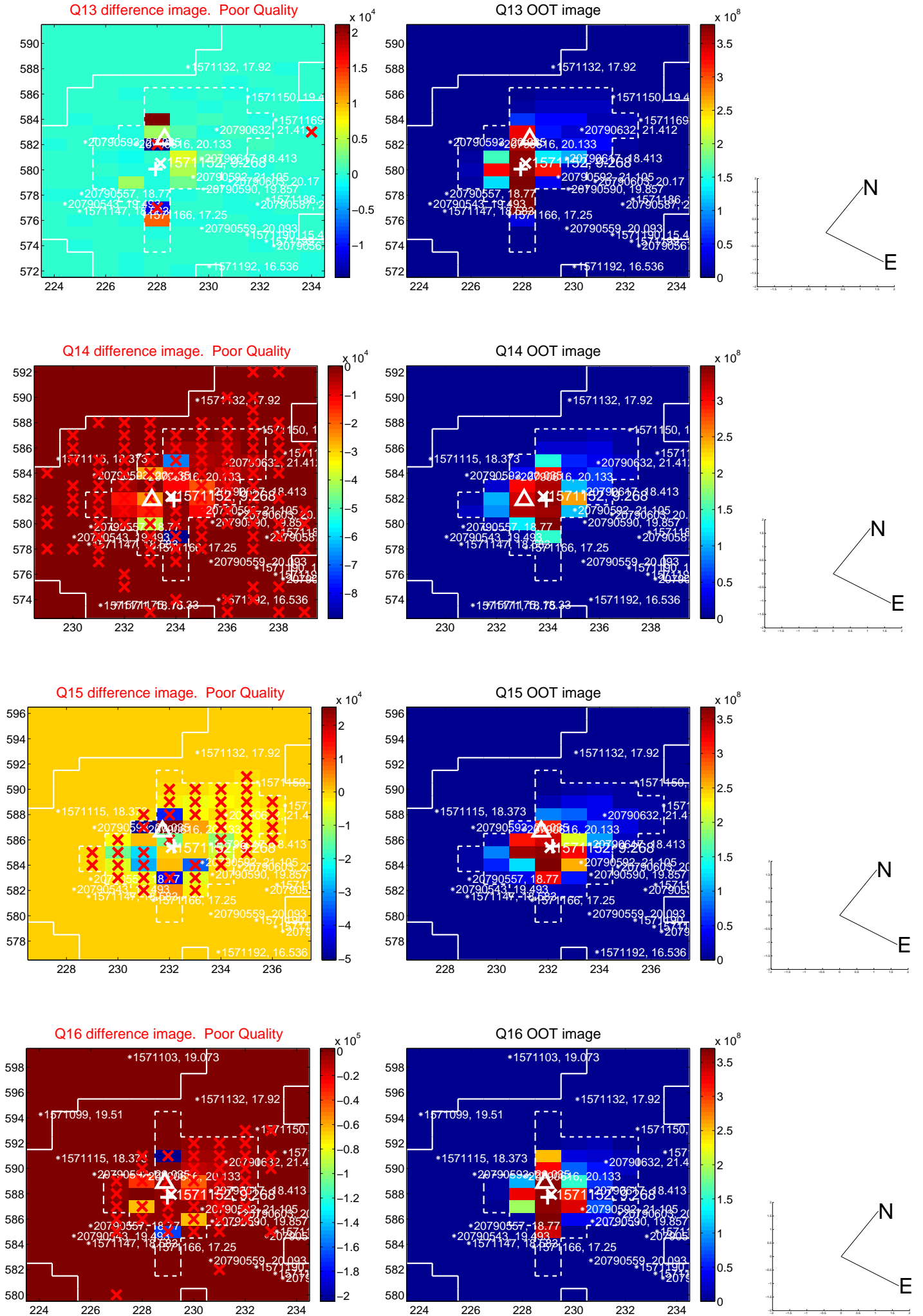




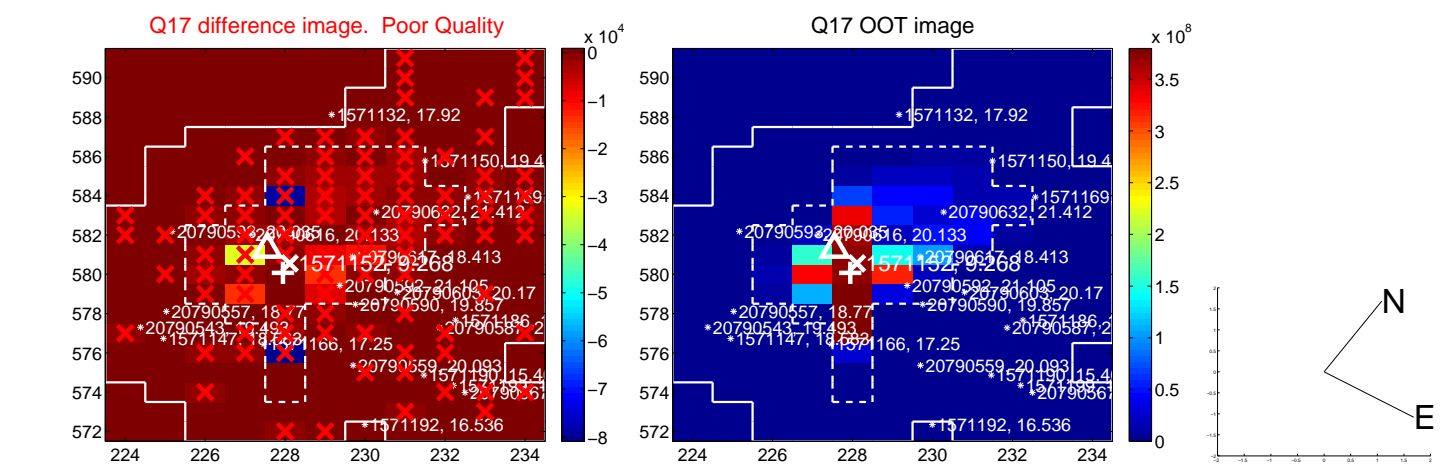
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



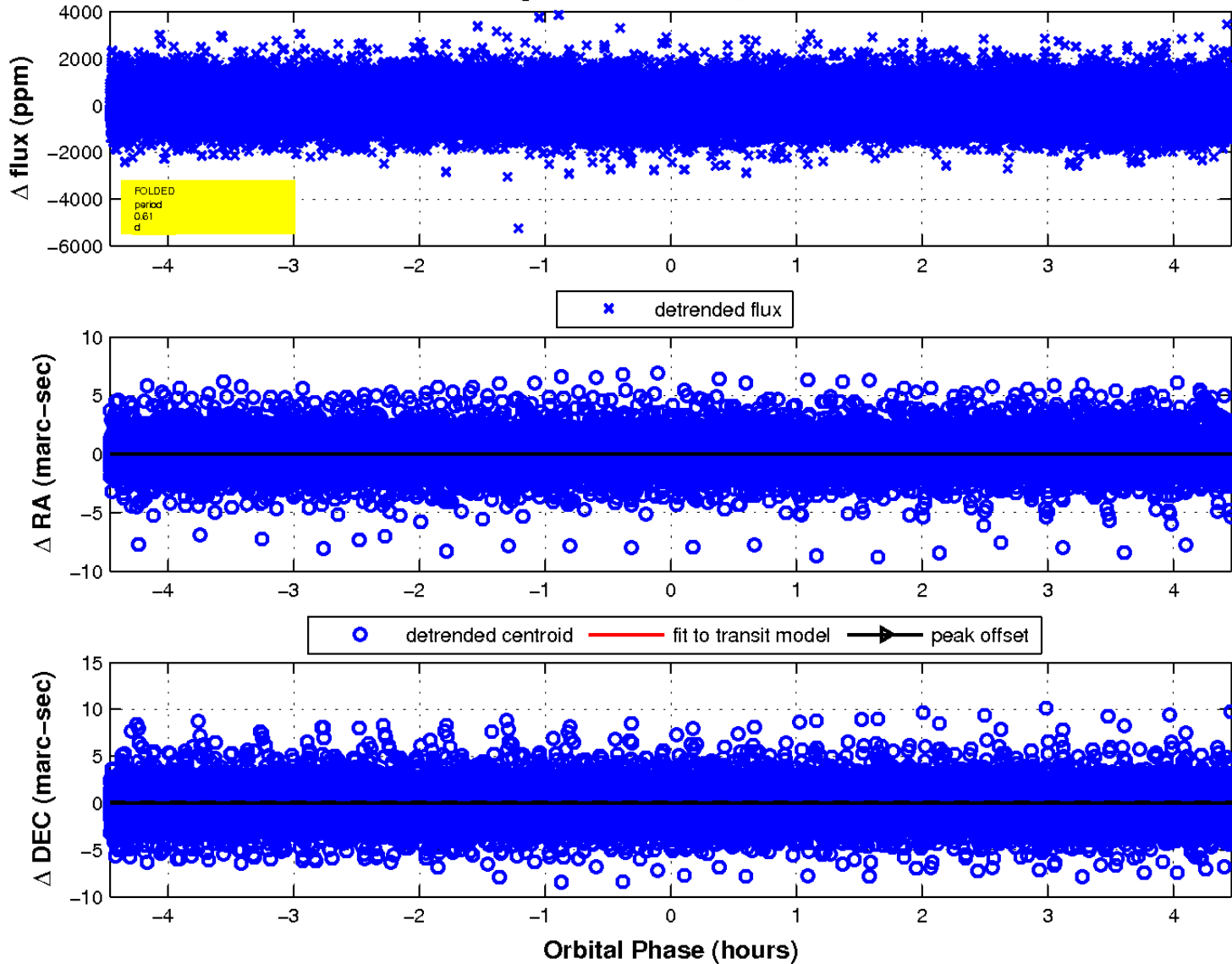
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

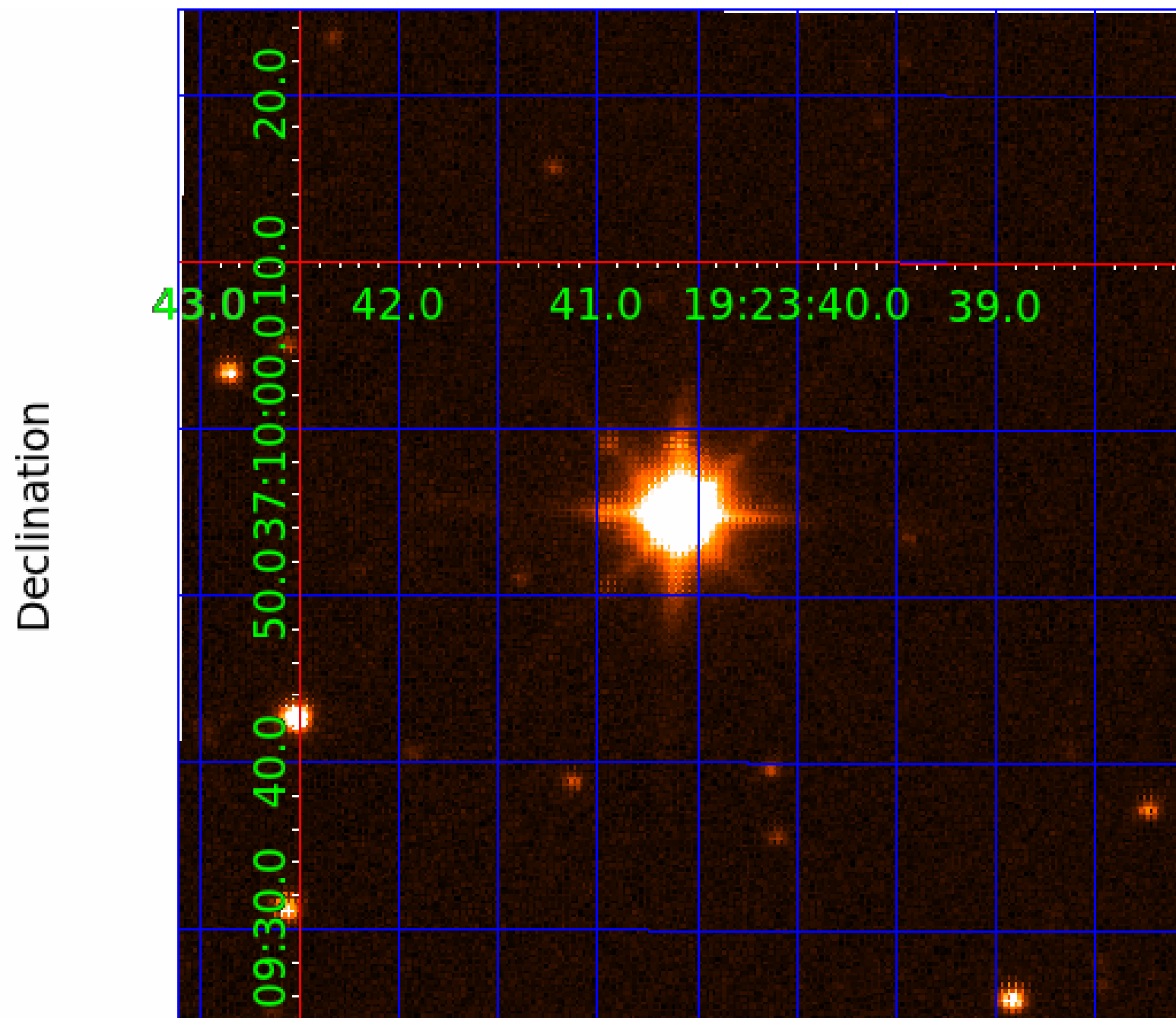


fluxWeightedCentroids, Planet 1 of 3





UKIRT Image



# KIC 001571152

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
001571152-01	OBS	No	0.608133	131.565320	18.8	1.488	10.0	5.1	1.58	7015	0.73	21450.89
001571152-02	OBS	No	0.608161	131.990886	96.6	1.994	10.5	16.8	1.58	7015	1.81	21449.54
001571152-03	OBS	No	0.657841	131.614148	127.3	2.979	11.5	10.9	1.58	7015	2.07	19317.39

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001571152-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
001571152-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
001571152-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

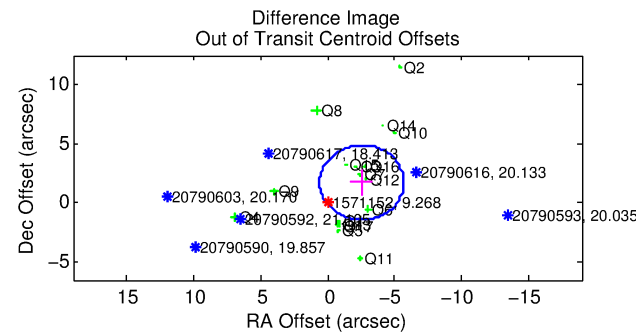
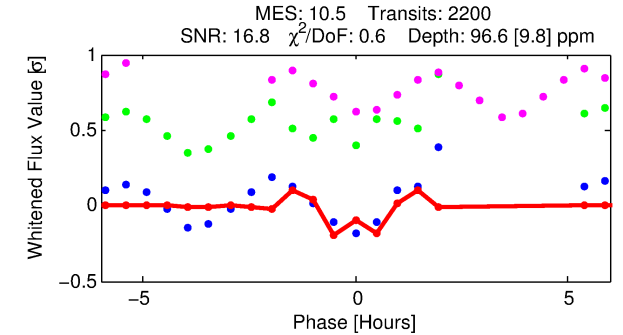
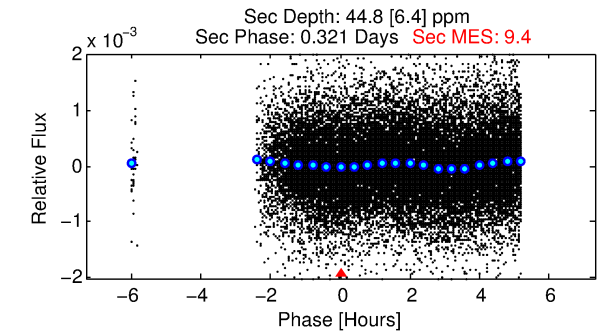
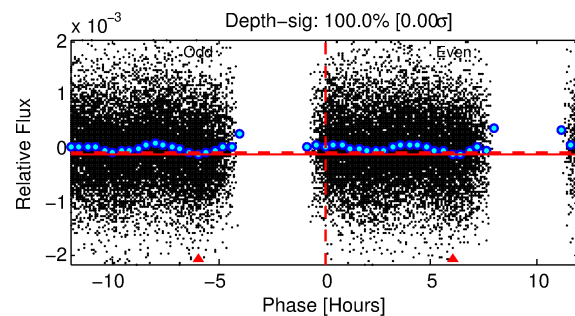
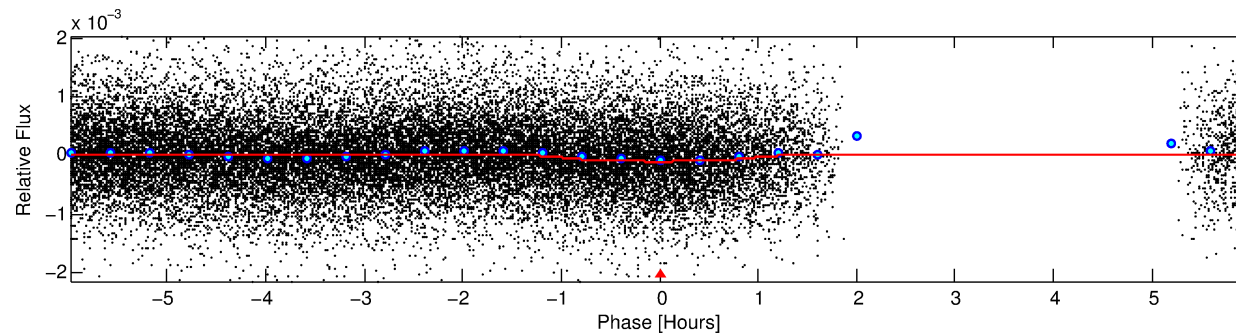
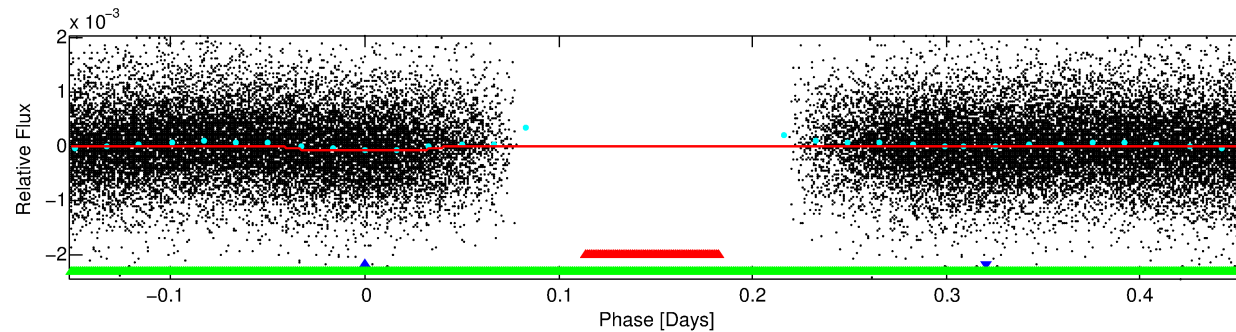
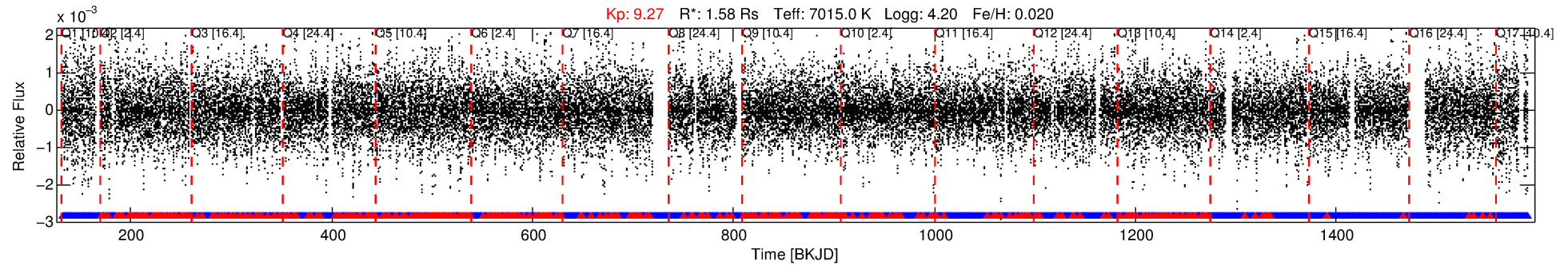
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 001571152-02

No Significant Match Found

# DV One-Page Summary

KIC: 1571152 Candidate: 2 of 3 Period: 0.608 d



## DV Fit Results:

Period = 0.60816 [0.00001] d  
Epoch = 131.9909 [0.0006] BKJD  
Rp/R\* = 0.0105 [0.0012]  
a/R\* = 1.42 [0.45]  
b = 0.90 [0.13]  
Seff = 21449.54 [5066.46]  
Teq = 3086 [182] K  
Rp = 1.81 [0.38] Re  
a = 0.0159 [0.0023] AU  
Ag = 1.90 [0.66] [1.37 $\sigma$ ]  
Teffp = 5605 [403] K [5.70 $\sigma$ ]

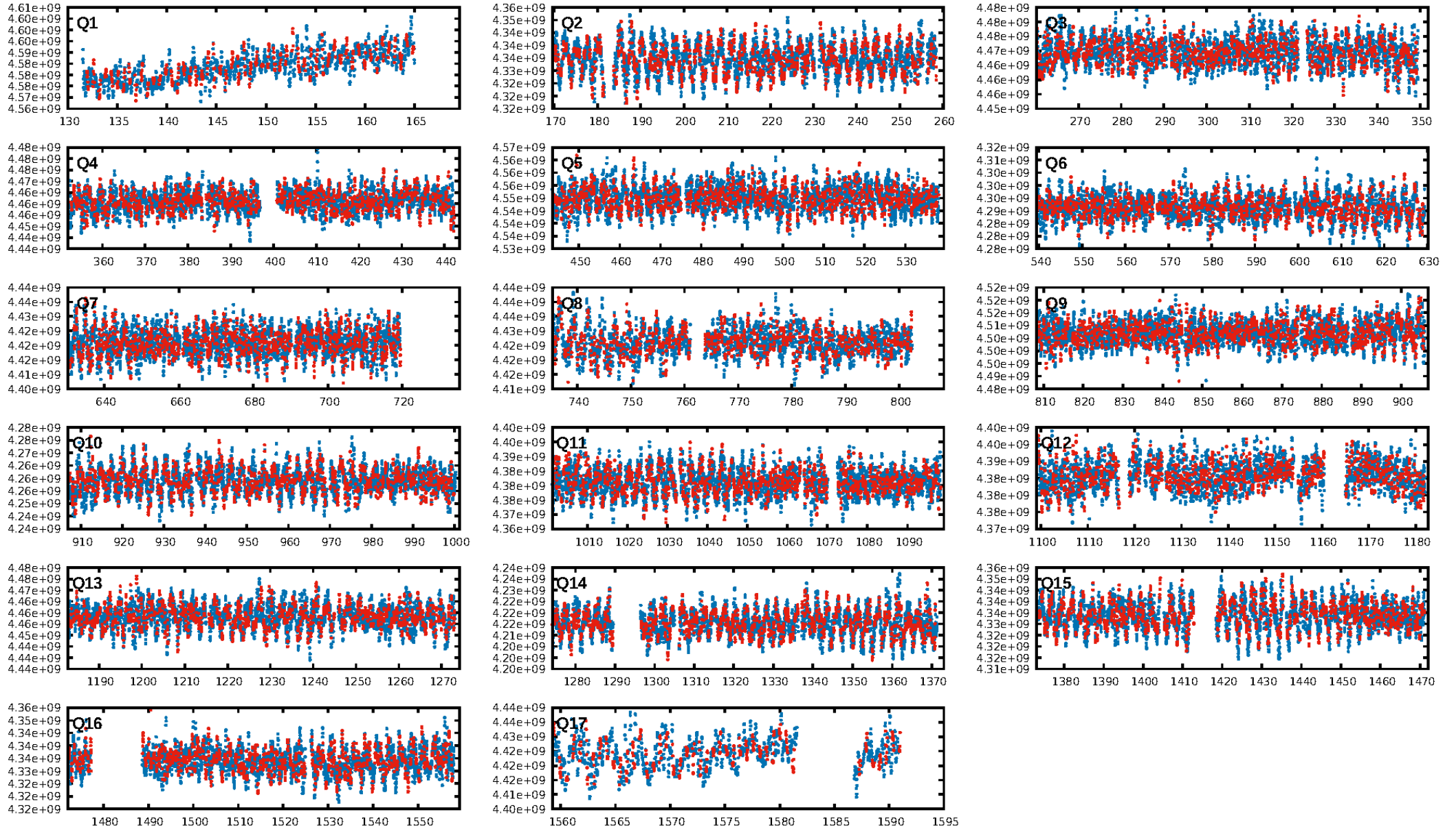
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 $\sigma$ ]  
LongPeriod-sig: 26.1% [0.33 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.83 [1739/2101]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 0.8%  
Centroid-so: 0.694 arcsec [5.09 $\sigma$ ]  
OotOffset-rm: 3.088 arcsec [2.94 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-rm: 3.502 arcsec [3.12 $\sigma$ ]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.00 [0/17]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:01:07 Z

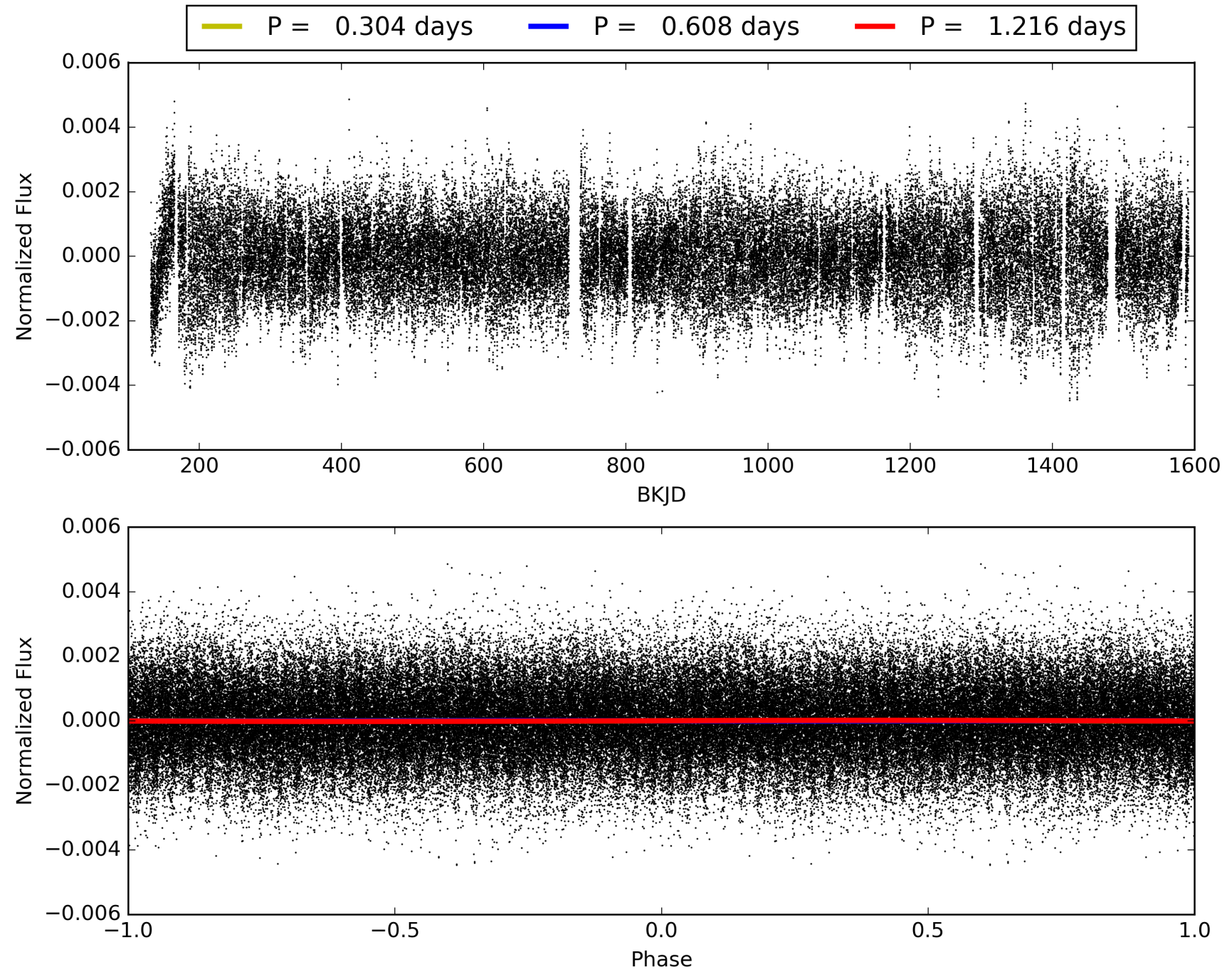
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 001571152-02, PDC Light Curves



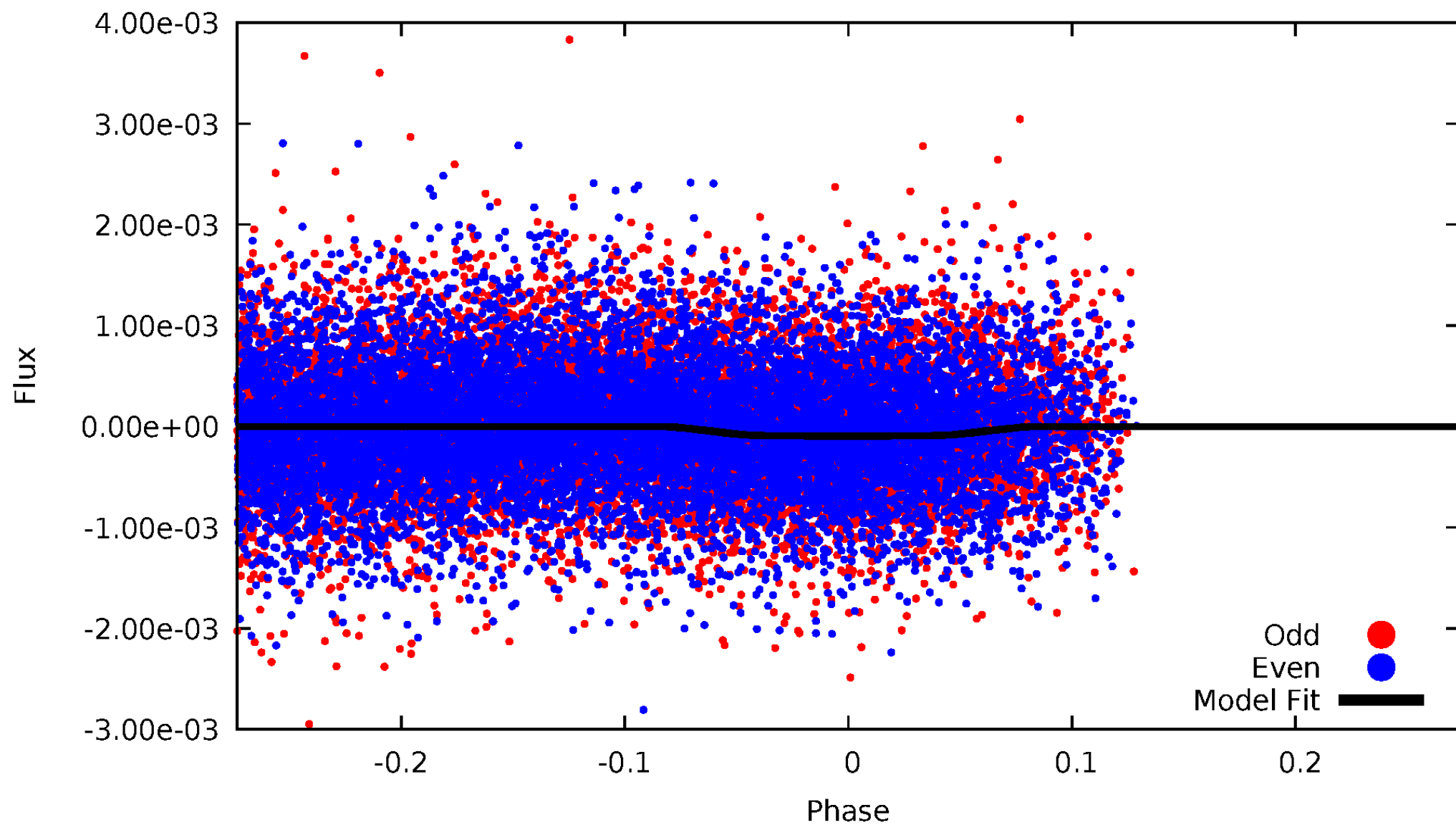


# TCE 001571152-02



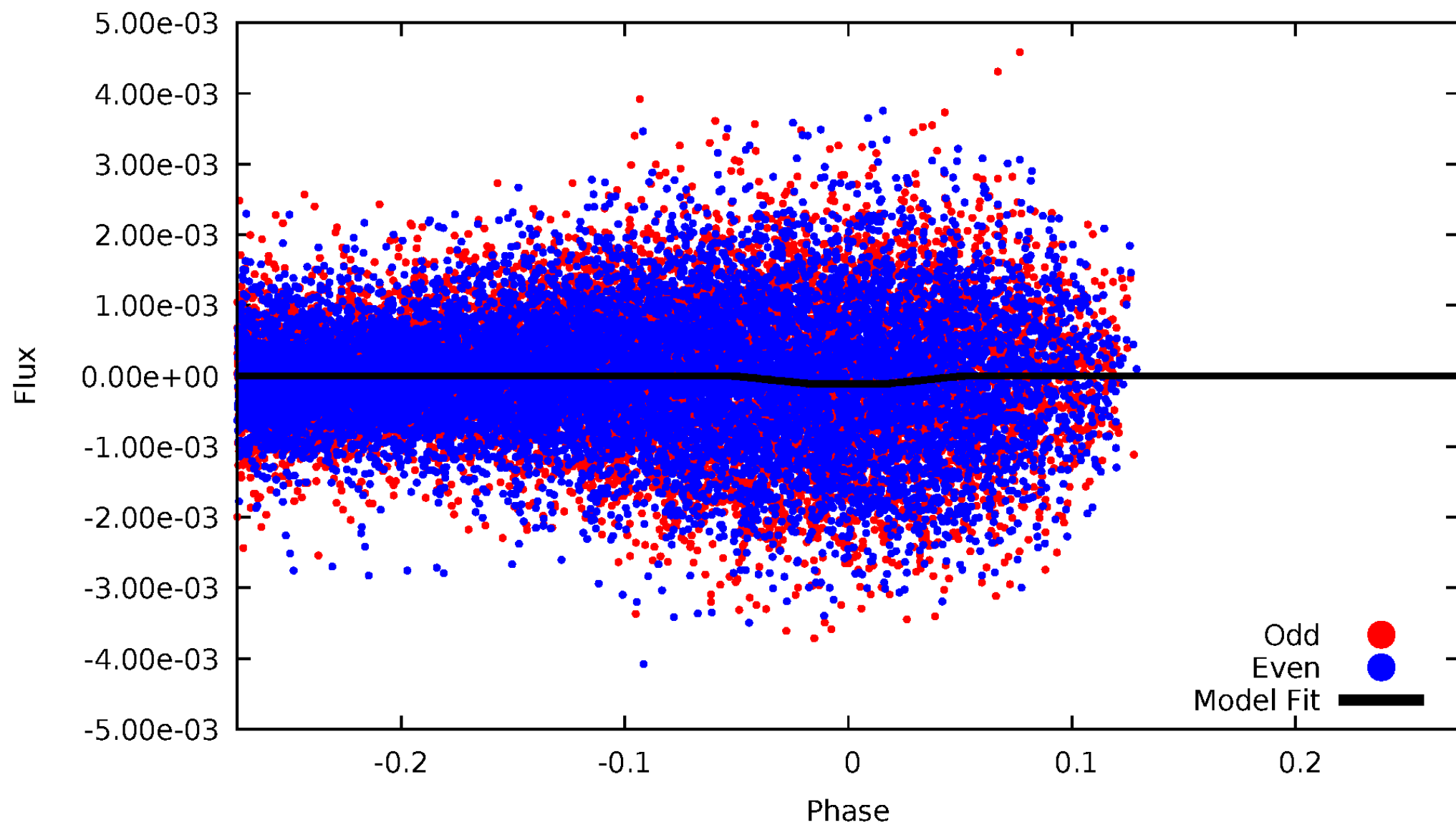
# DV Odd/Even

TCE 001571152-02



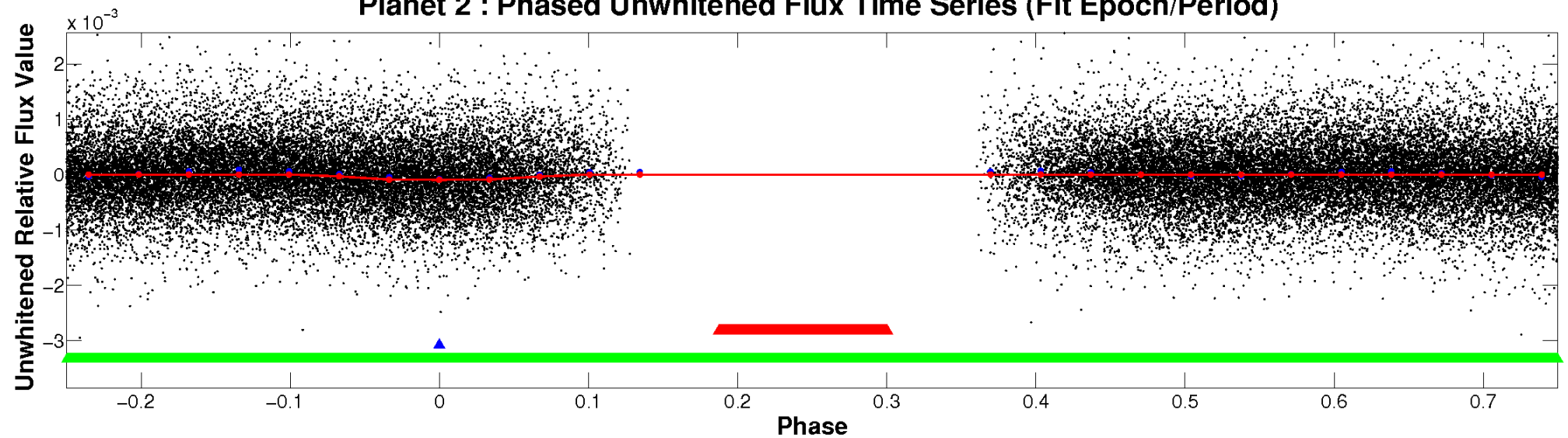
ALT Odd/Even

TCE 001571152-02

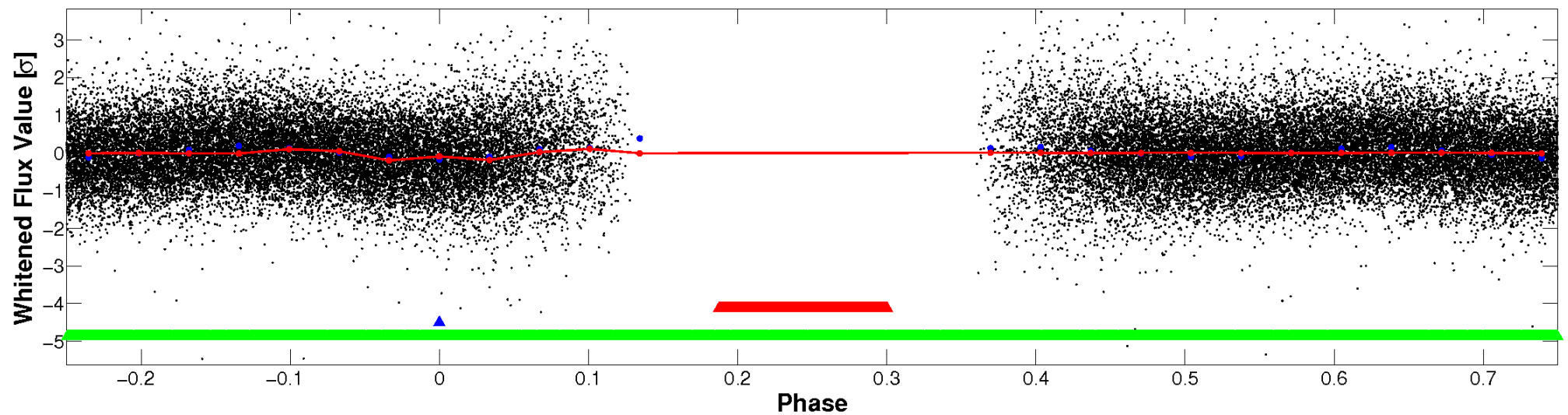


# Non-Whitened Vs. Whitened Light Curve

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



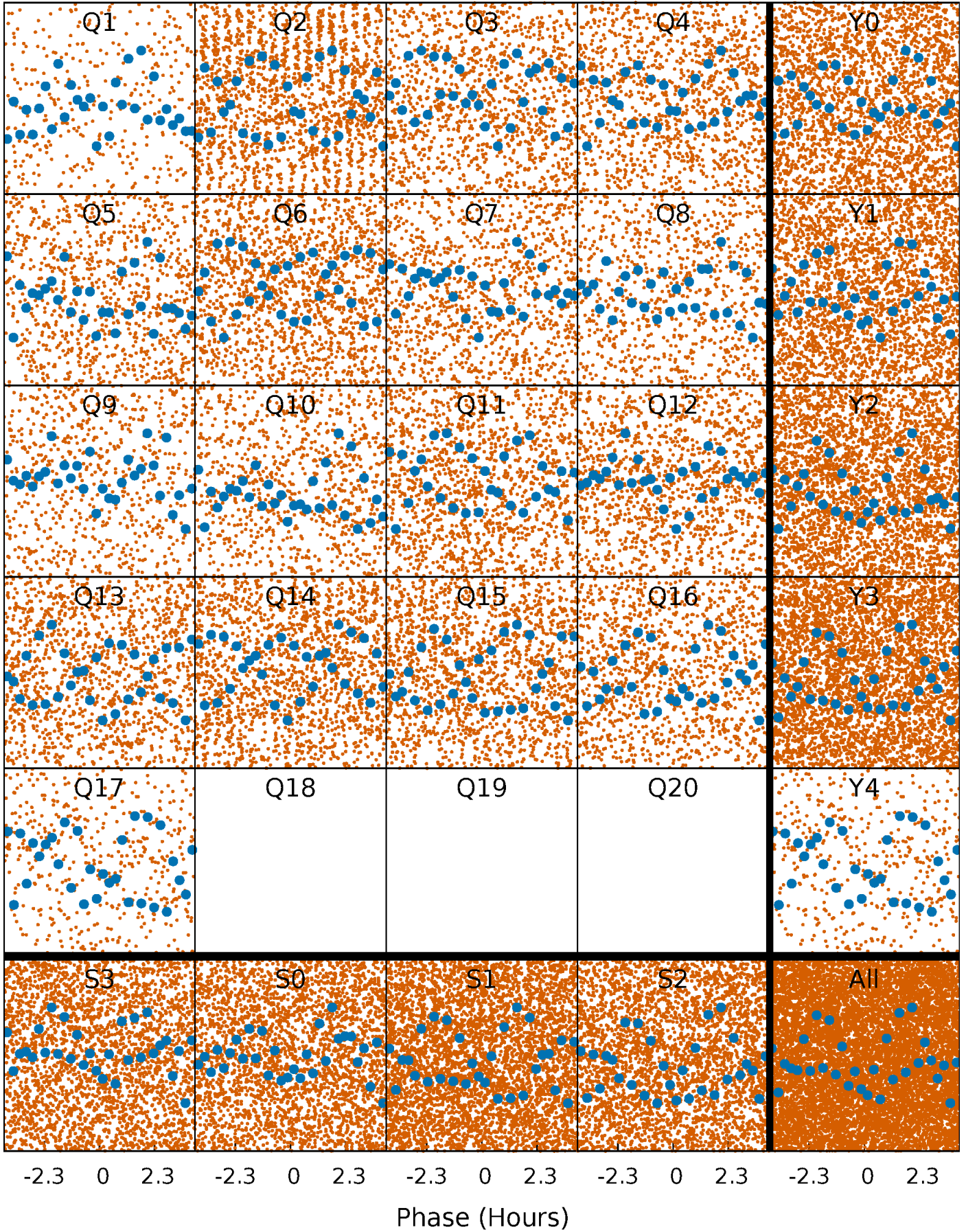
## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)





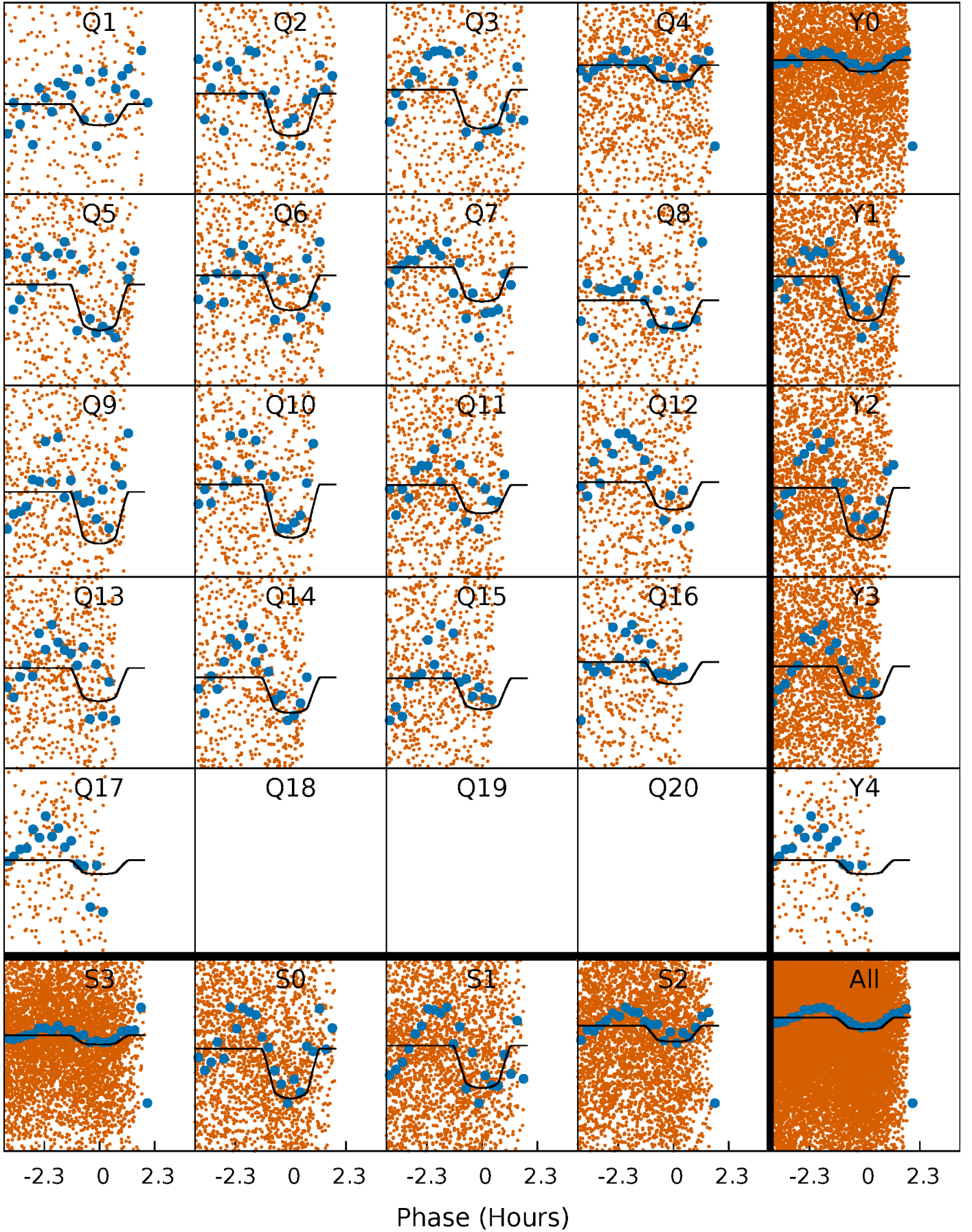
# PDC Quarter-Phased Transit Curves

TCE 001571152-02 P= 0.608161 Days  $T_0=131.990886$  (BKJD)



# DV Quarter-Phased Transit Curves

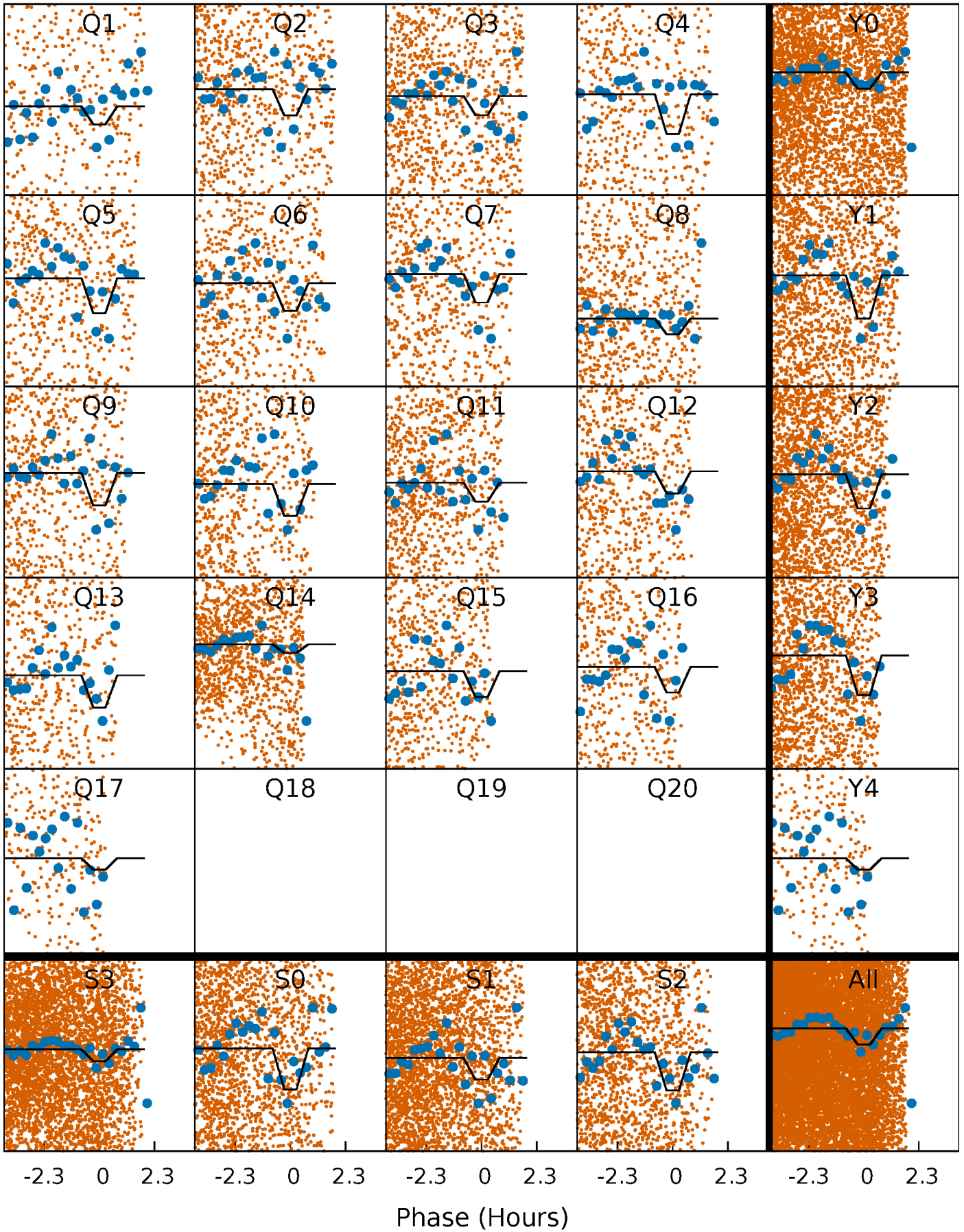
TCE 001571152-02 P= 0.608161 Days  $T_0=131.990886$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

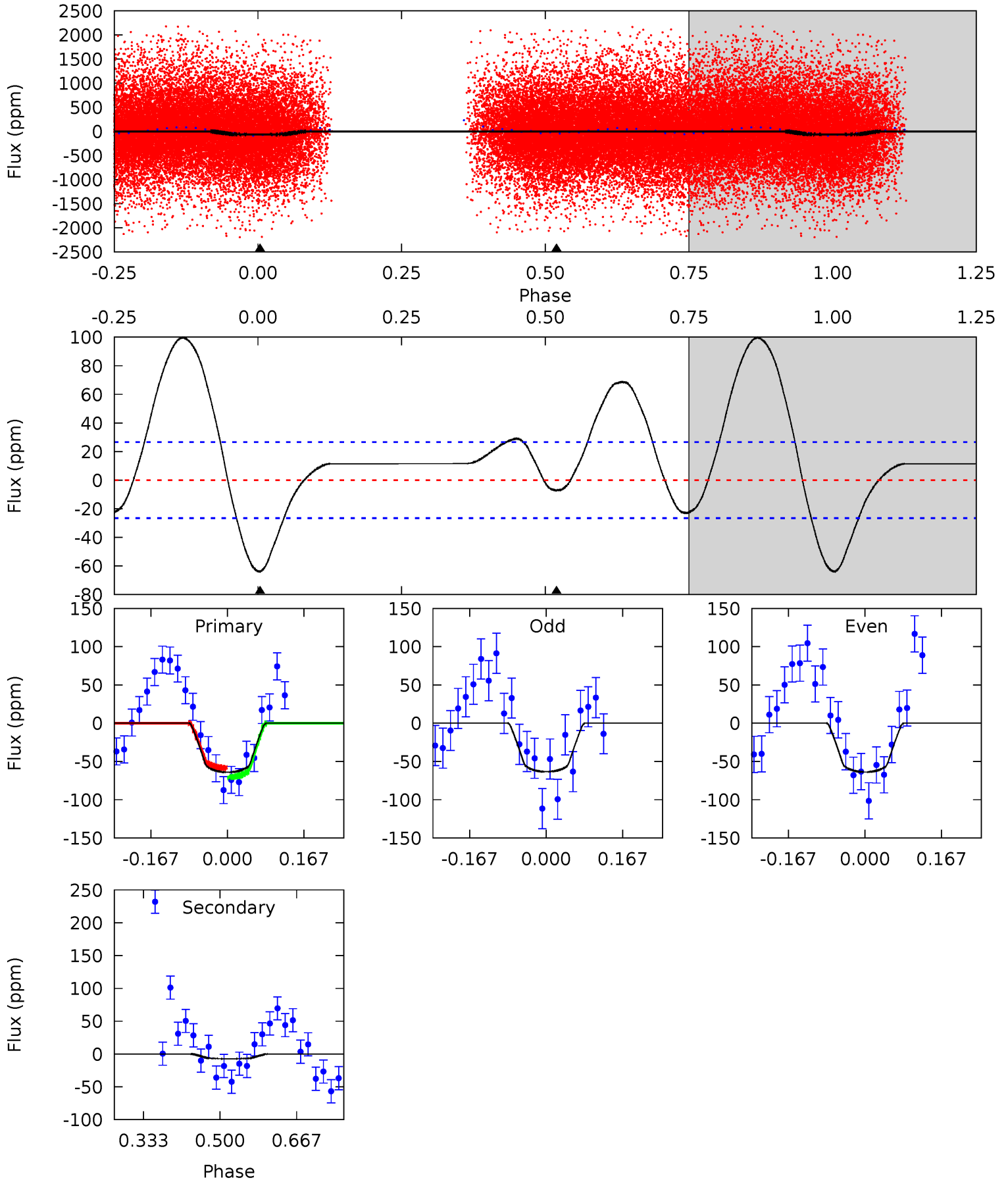
TCE 001571152-02 P= 0.608161 Days  $T_0=131.990886$  (BKJD)



# DV Model-Shift Uniqueness Test

001571152-02, P = 0.608161 Days, E = 131.382725 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
10.7	1.22	0	0	4.46	1.38	4.91	10.7	10.7	1.22	1.22	0.04	0.99	0.61	0.95

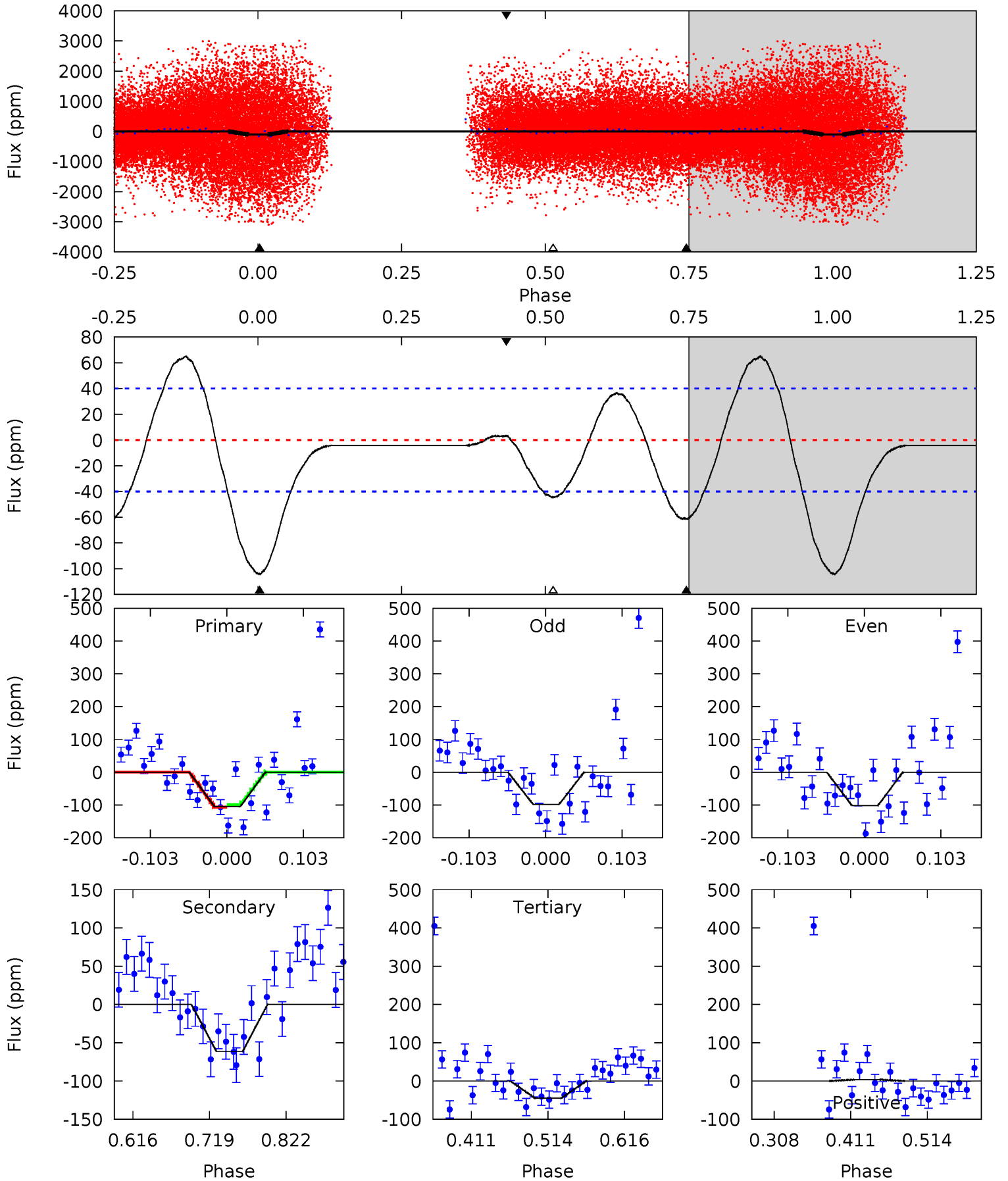




# Alt Model-Shift Uniqueness Test

001571152-02, P = 0.608161 Days, E = 131.382725 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
11.9	7.00	5.10	0.41	4.56	1.63	4.06	6.81	11.5	1.90	6.58	0.20	0.91	0.38	0.38



### Stellar Parameters For KIC 001571152

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$7015^{+124}_{-166}$	$4.201^{+0.059}_{-0.119}$	$0.020^{+0.150}_{-0.150}$	$1.580^{+0.275}_{-0.148}$	$1.449^{+0.111}_{-0.091}$	$0.518^{+0.136}_{-0.182}$
	+2%/-2%	+1%/-3%	+750%/-750%	+17%/-9%	+8%/-6%	+26%/-35%
Source	SPE4	SPE4	SPE4	DSEP		

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

### Secondary Eclipse Parameters for KIC 001571152-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-7 \pm 6$	$1.84^{+0.28}_{-0.22}$	$4333^{+199}_{-154}$	$-1757^{+5533}_{-2003}$	$0.299^{+0.254}_{-0.233}$
Alt.	$-61 \pm 9$	$1.85^{+0.27}_{-0.23}$	$4335^{+204}_{-159}$	$5807^{+465}_{-395}$	$2.480^{+0.827}_{-0.618}$

$T_{max}$  = 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

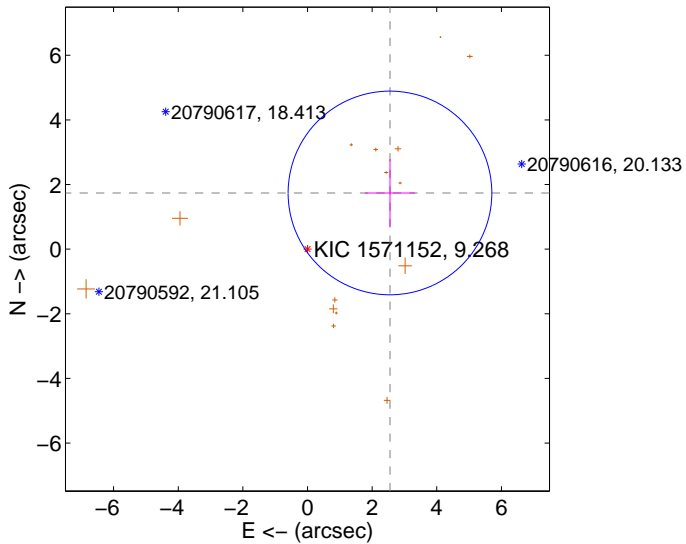
Supplemental centroid analysis for 001571152-02. **Kepler magnitude: 9.27.** Transit SNR 16.82

There are 0 quarters with good PRF difference image offsets

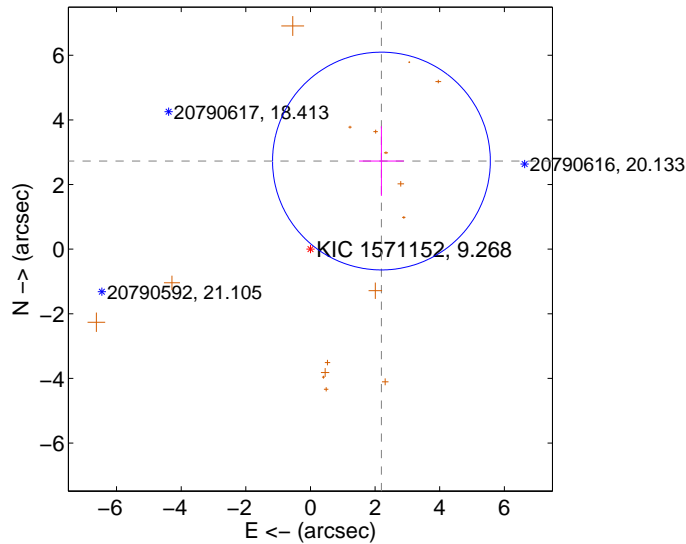
The OOT PRF centroid is offset from the target star catalog position by about 2.05 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.088 \pm 1.051$	2.94	$-2.552 \pm 0.775$	$1.739 \pm 1.046$
PRF-fit source offset from KIC position	<b><math>3.502 \pm 1.123</math></b>	<b>3.12</b>	$-2.197 \pm 0.692$	$2.727 \pm 1.078$
photometric centroid source offset	<b><math>0.69 \pm 0.14</math></b>	<b>5.09</b>	$0.69 \pm 0.14$	$0.05 \pm 0.20$

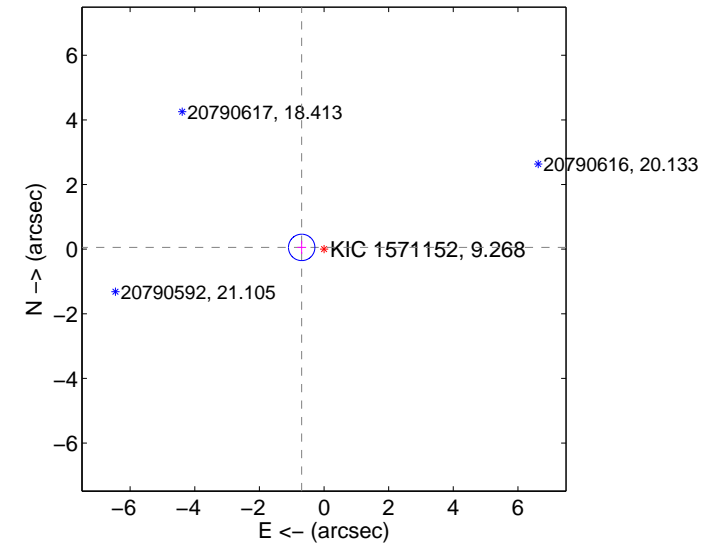
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

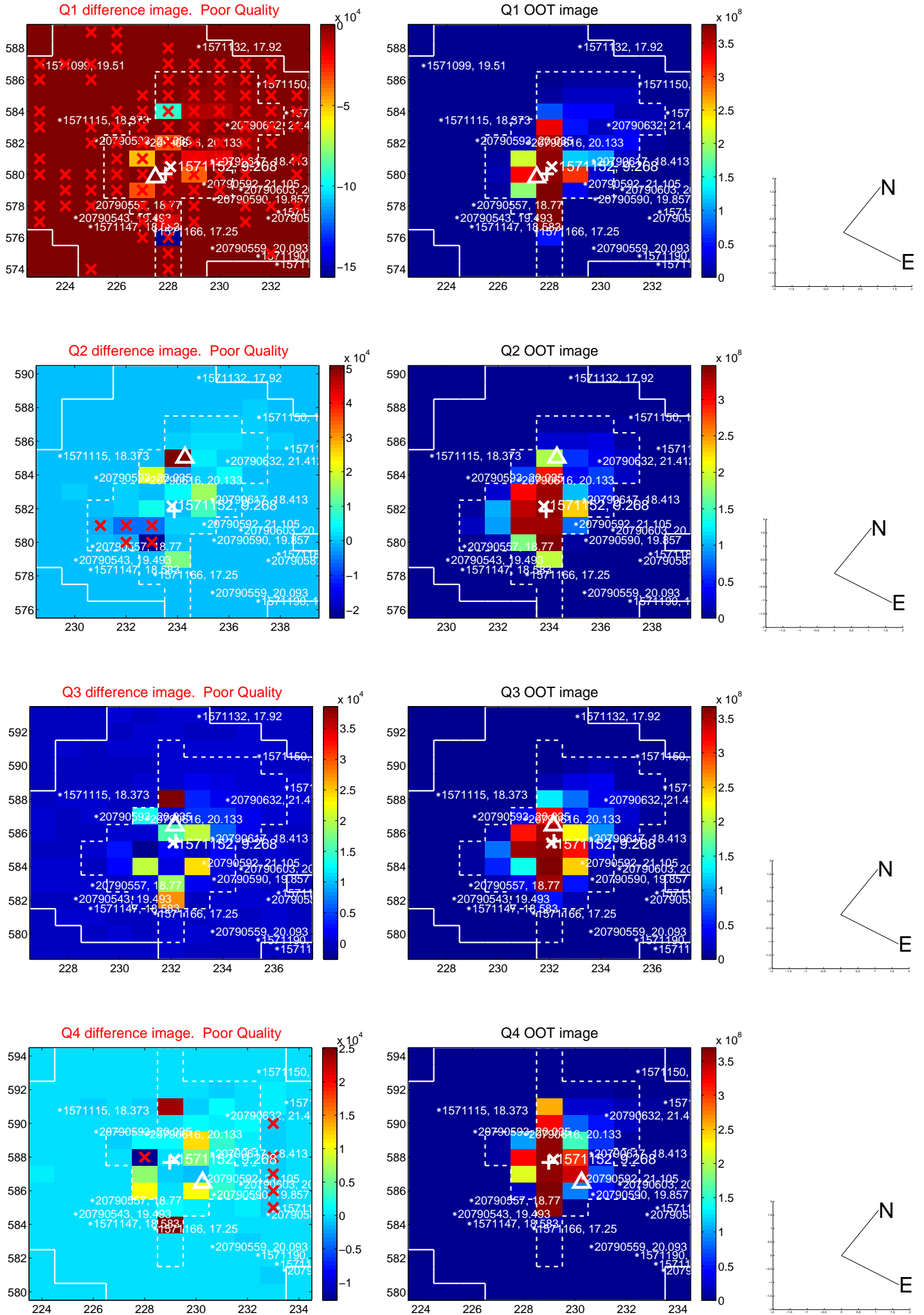


offset from photometric centroids



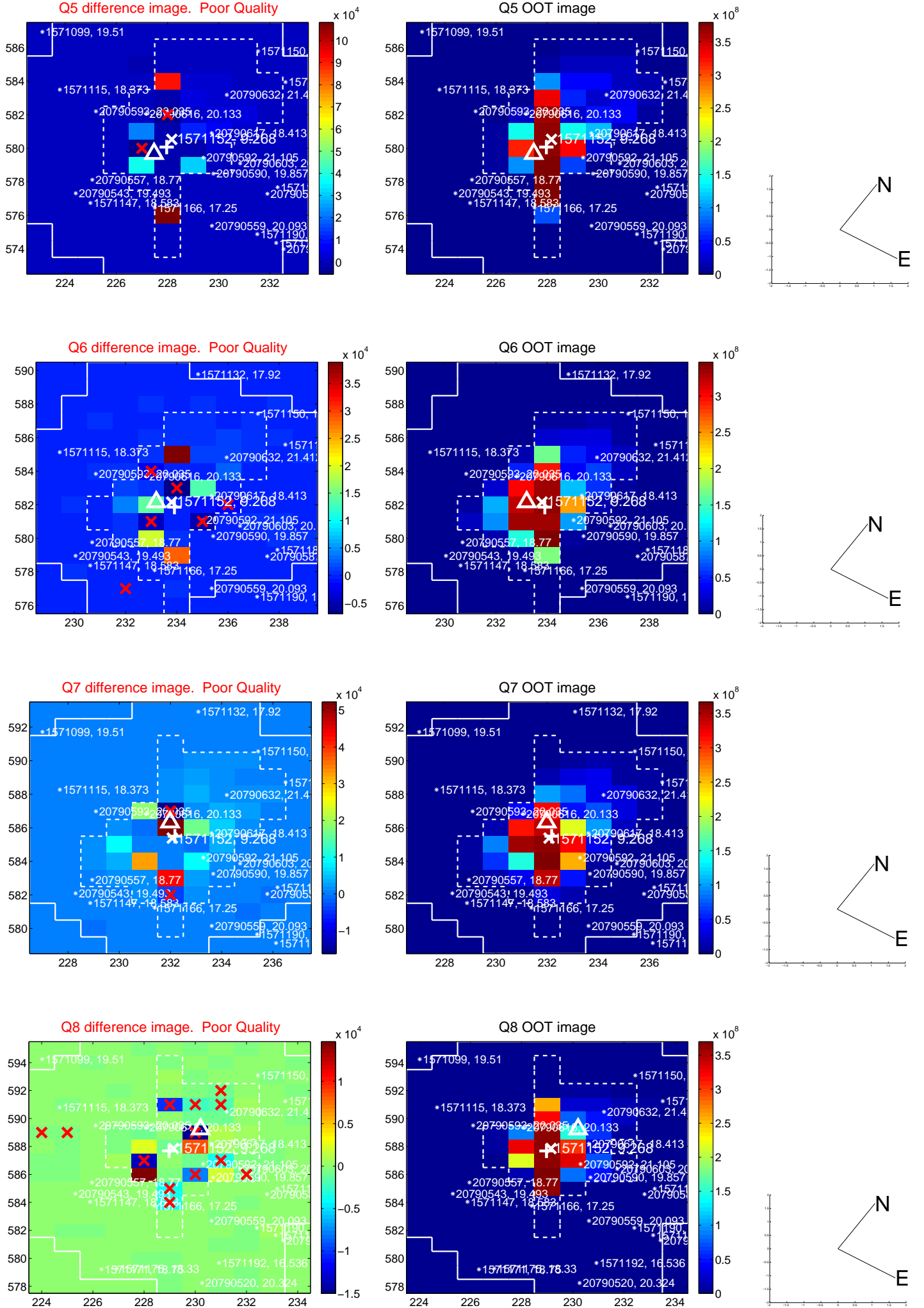
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

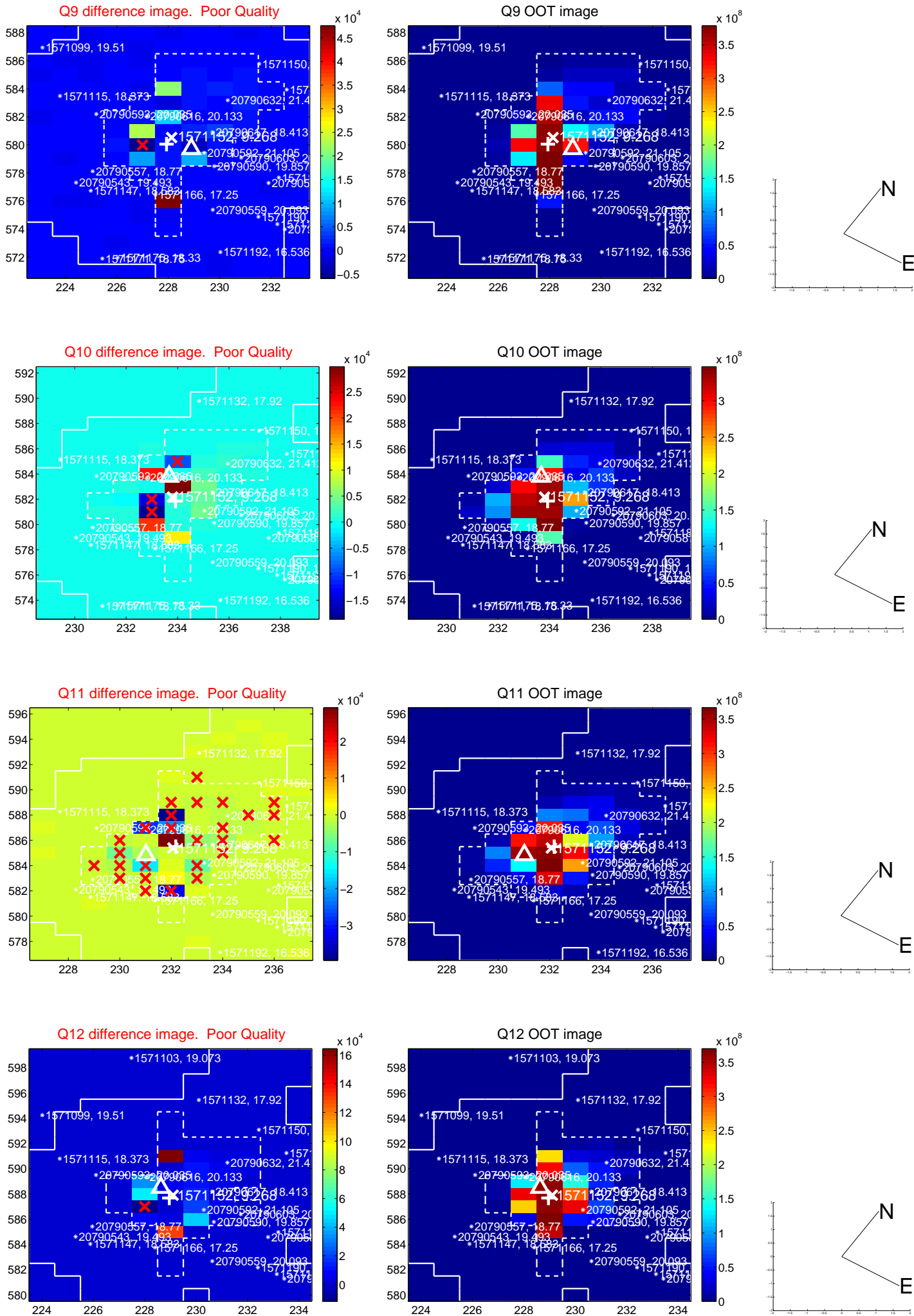




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

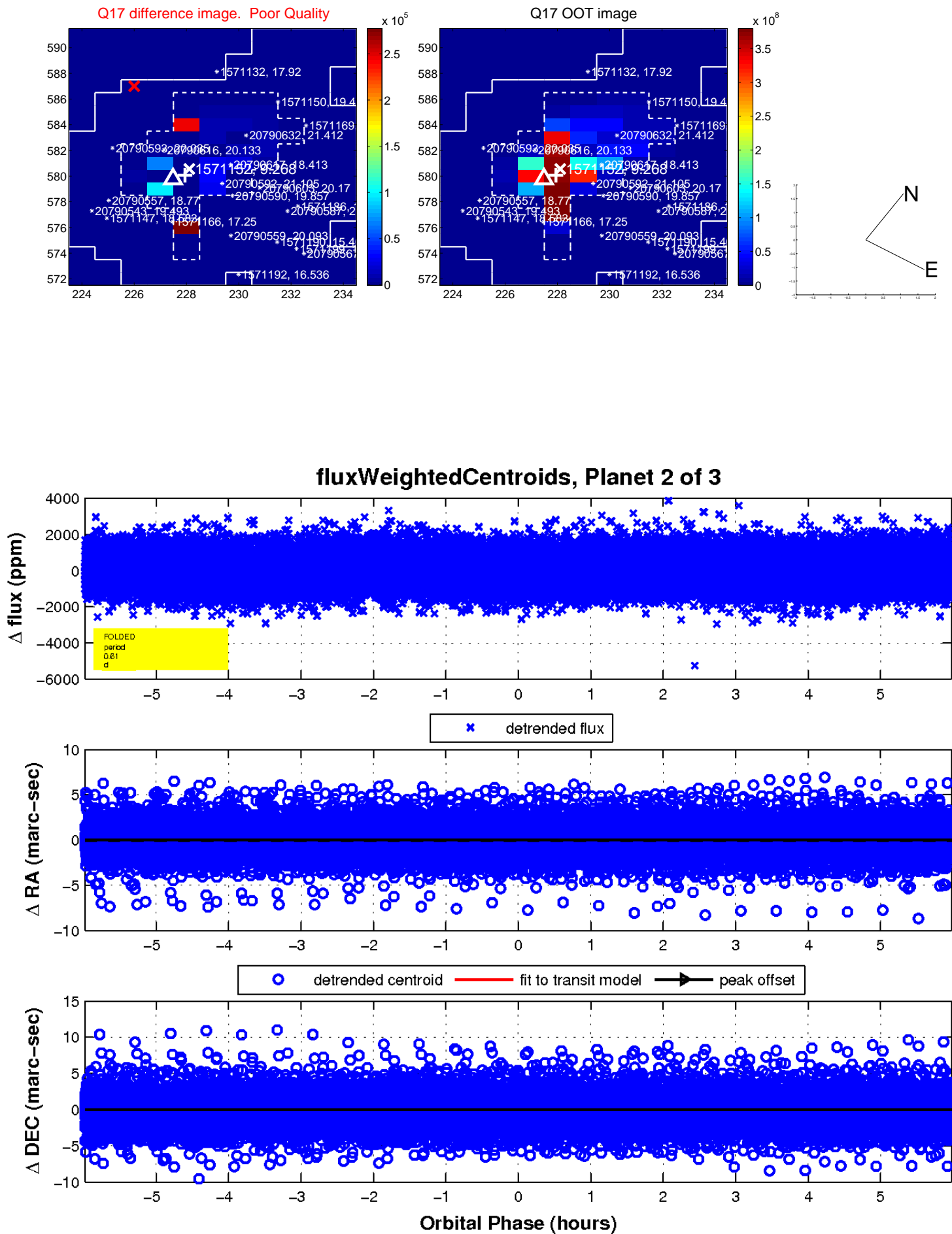


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



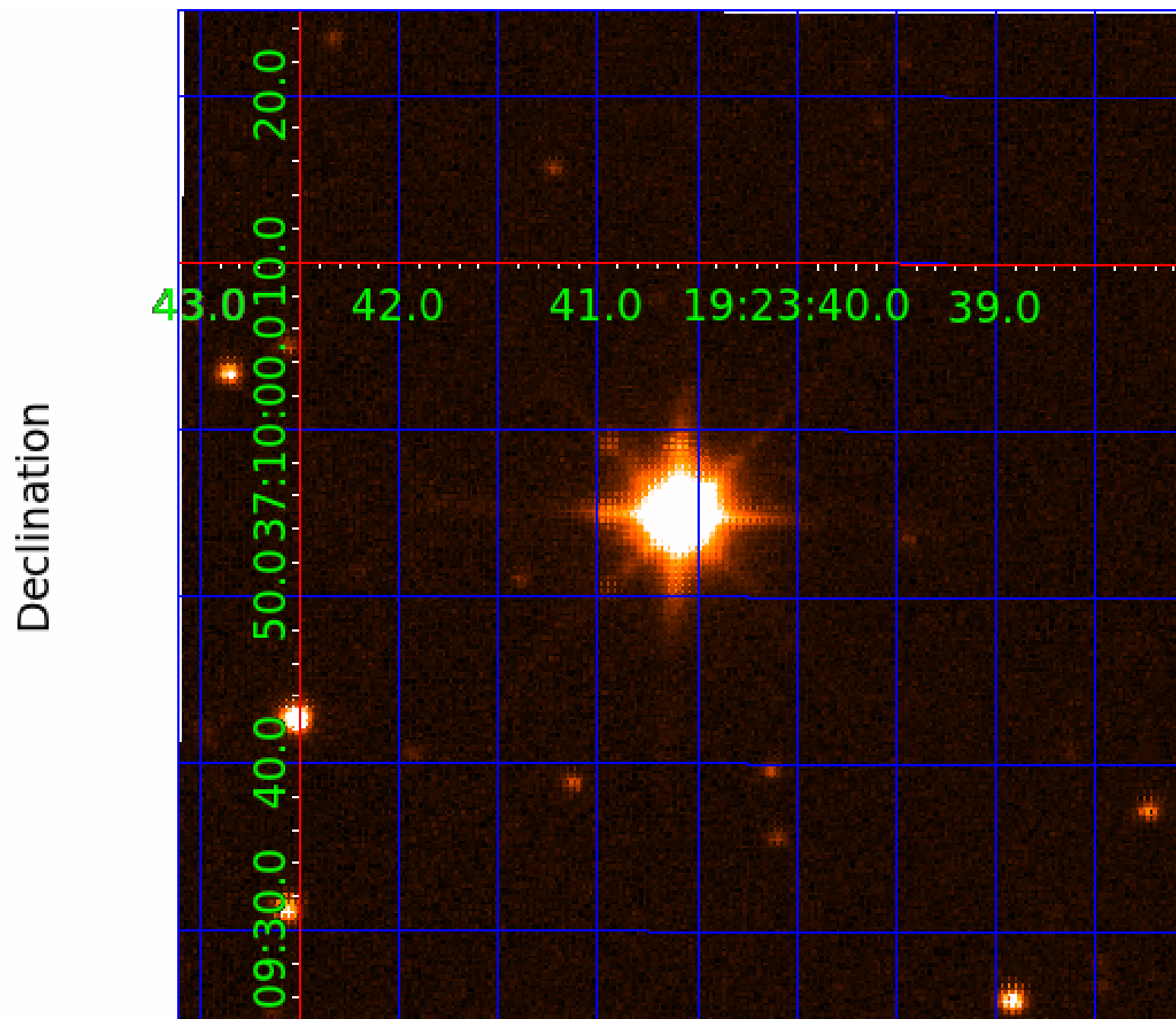


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\Delta$ : difference centroid. red  $\times$ : large negative pixel value.





UKIRT Image



# KIC 001571152

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
001571152-01	OBS	No	0.608133	131.565320	18.8	1.488	10.0	5.1	1.58	7015	0.73	21450.89
001571152-02	OBS	No	0.608161	131.990886	96.6	1.994	10.5	16.8	1.58	7015	1.81	21449.54
001571152-03	OBS	No	0.657841	131.614148	127.3	2.979	11.5	10.9	1.58	7015	2.07	19317.39

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001571152-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
001571152-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
001571152-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

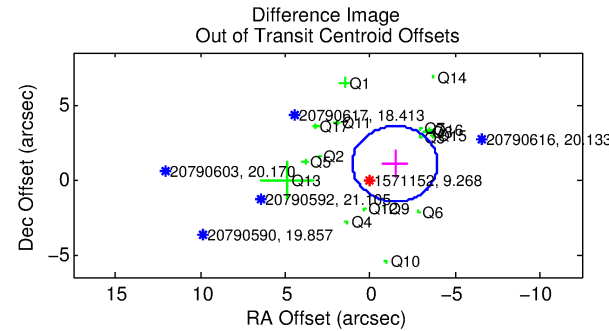
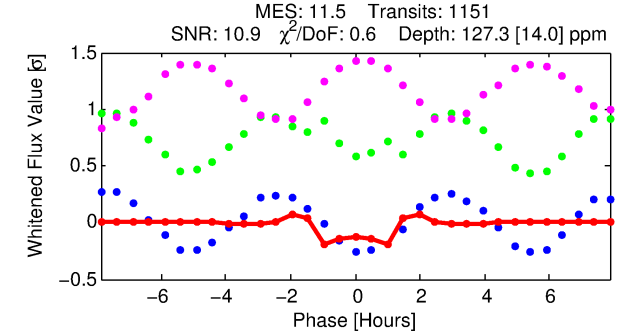
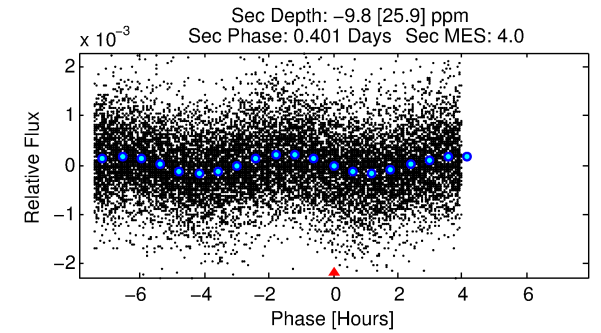
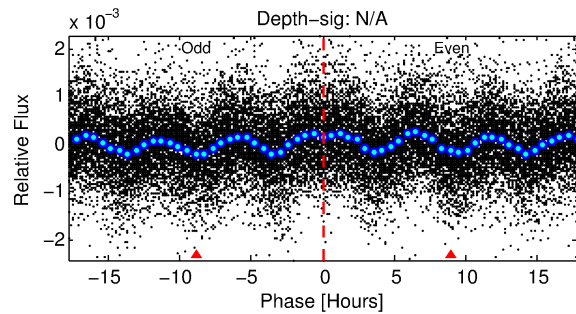
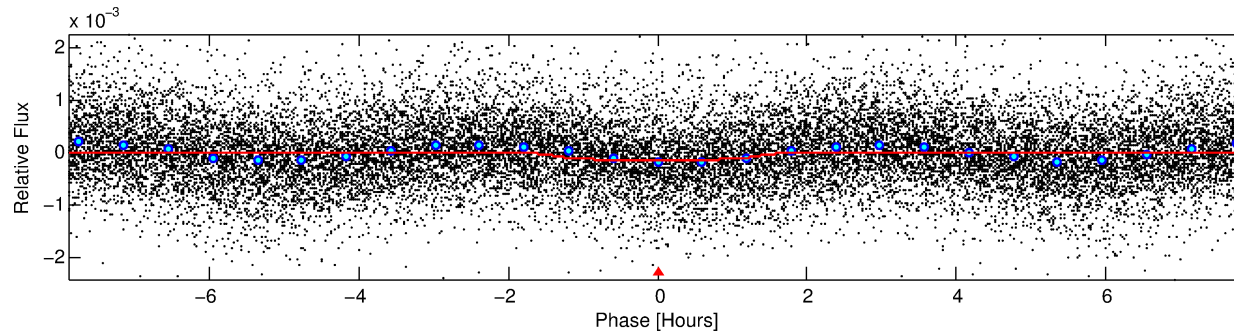
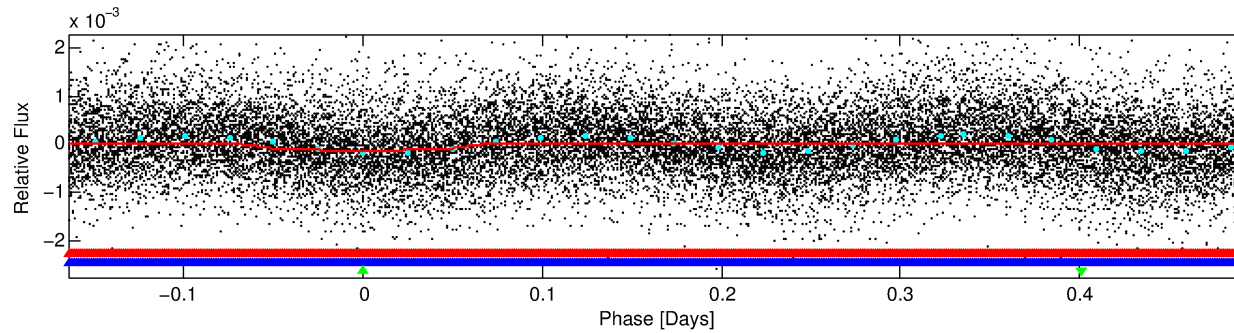
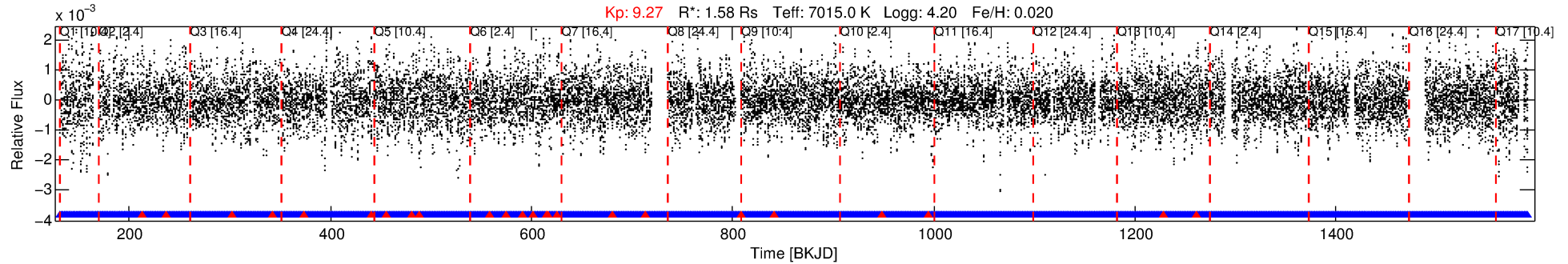
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 001571152-03

No Significant Match Found

# DV One-Page Summary

KIC: 1571152 Candidate: 3 of 3 Period: 0.658 d



## DV Fit Results:

Period = 0.65784 [0.00001] d  
Epoch = 131.6141 [0.0012] BKJD  
Rp/R\* = 0.0120 [0.0019]  
a/R\* = 1.22 [0.34]  
b = 0.90 [0.18]  
Seff = 19317.39 [4562.84]  
Teq = 3006 [178] K  
Rp = 2.07 [0.48] Re  
a = 0.0167 [0.0025] AU  
Ag = N/A  
Teffp = N/A

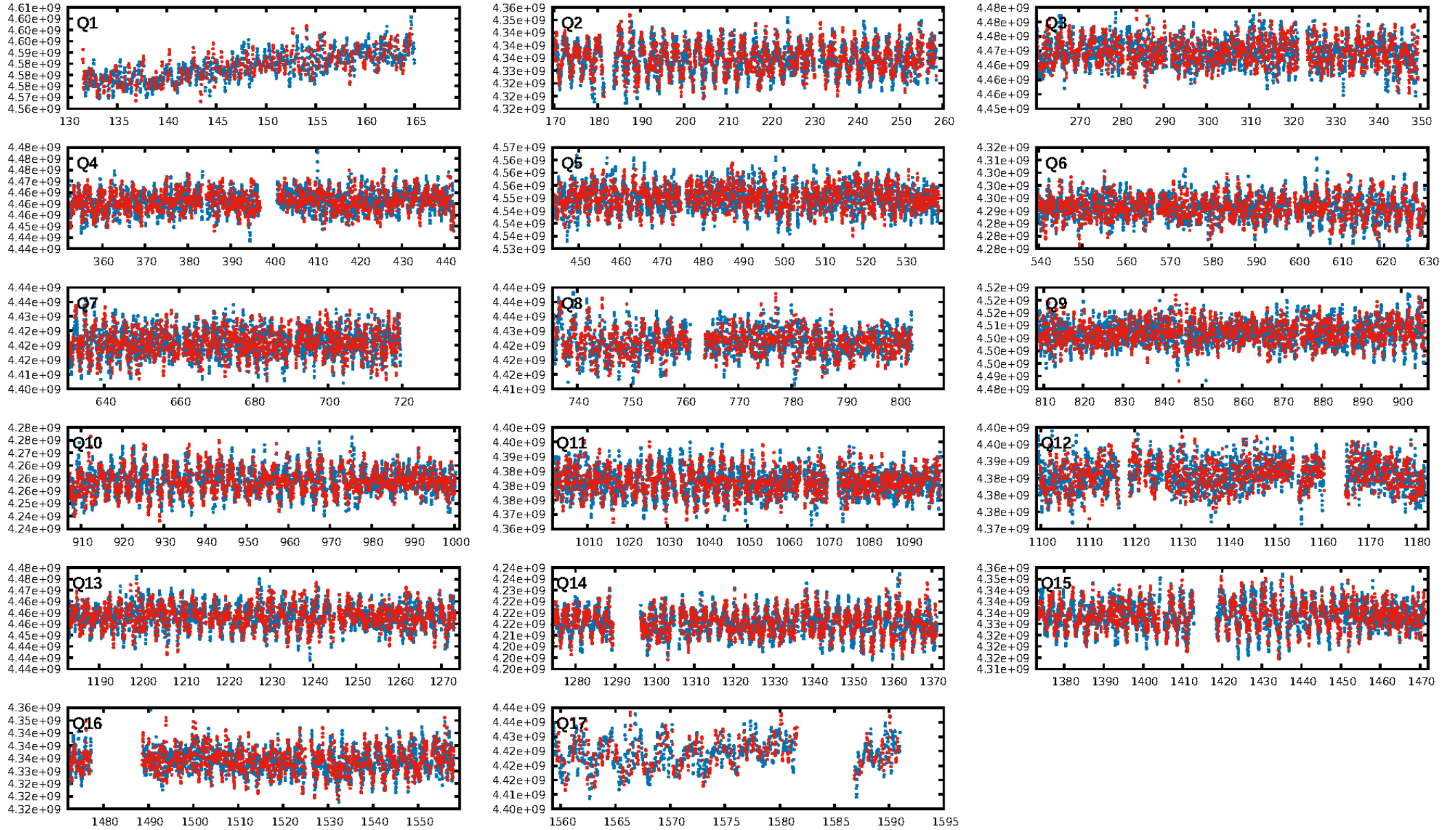
## DV Diagnostic Results:

ShortPeriod-sig: 26.1% [0.33σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.98 [1075/1100]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 0.0%  
Centroid-so: 0.191 arcsec [1.78σ]  
OotOffset-rm: 1.811 arcsec [2.16σ]  
KicOffset-rm: 1.324 arcsec [1.66σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.00 [0/17]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:01:17 Z

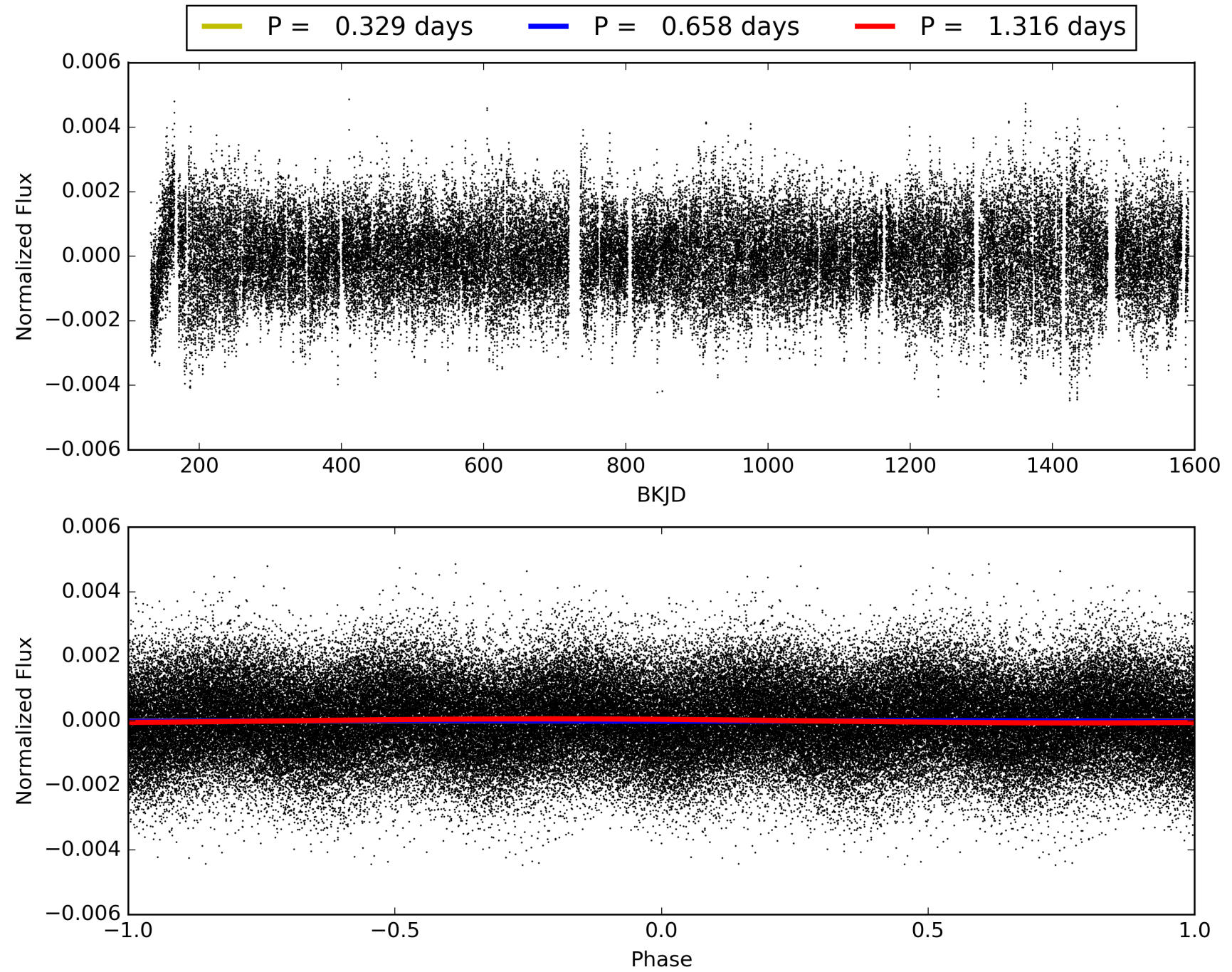
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 001571152-03, PDC Light Curves



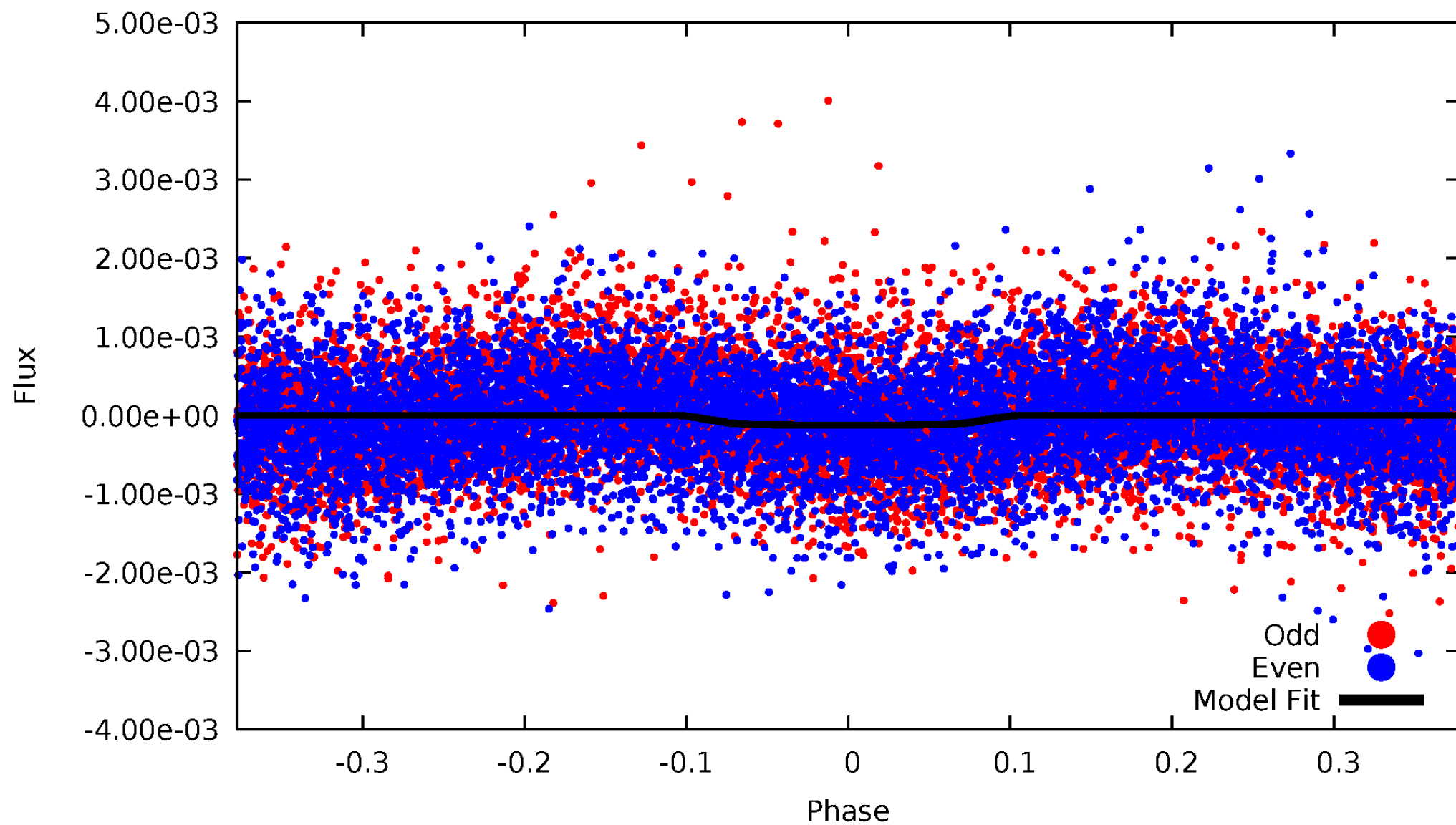


# TCE 001571152-03



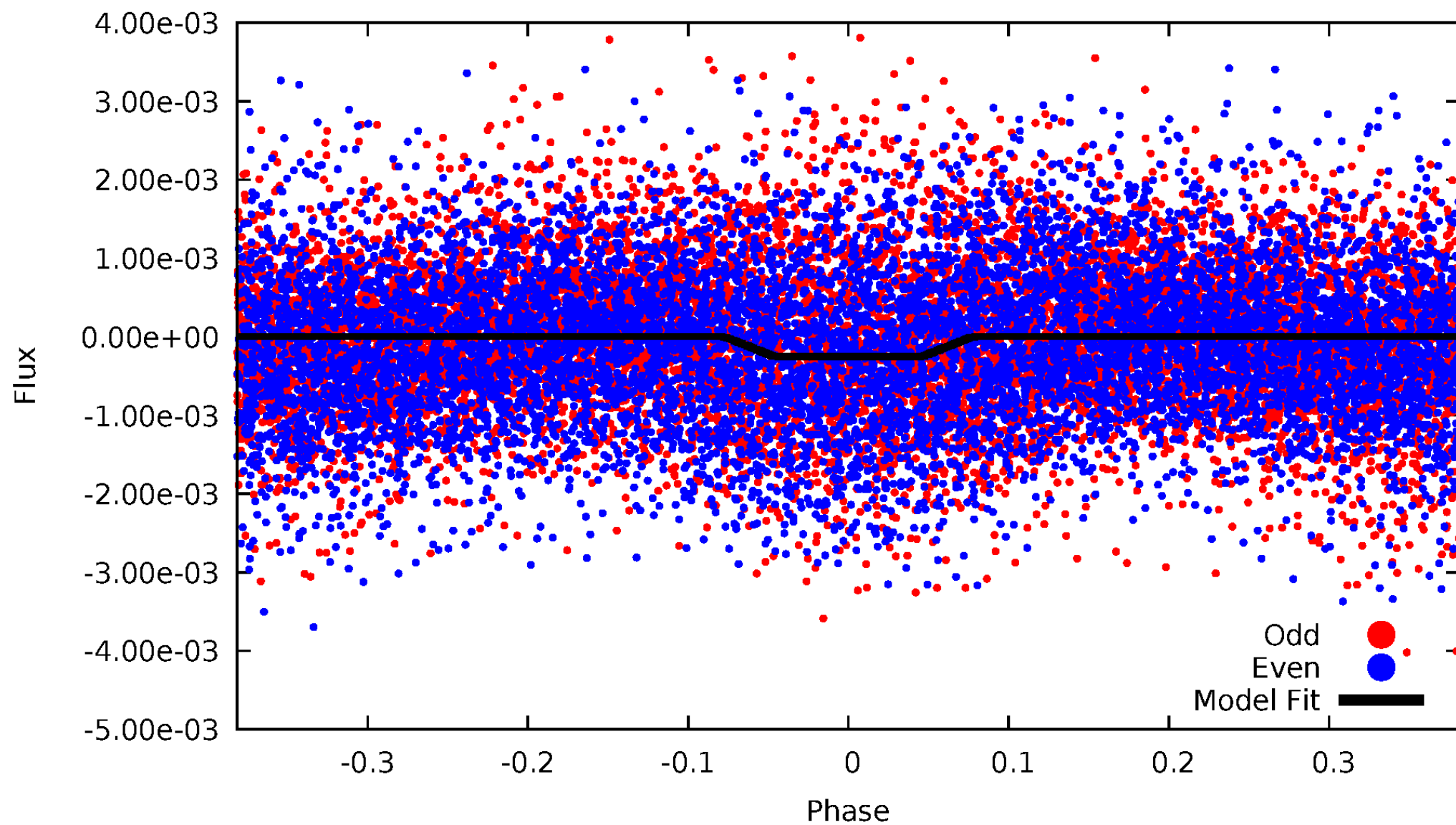
# DV Odd/Even

TCE 001571152-03



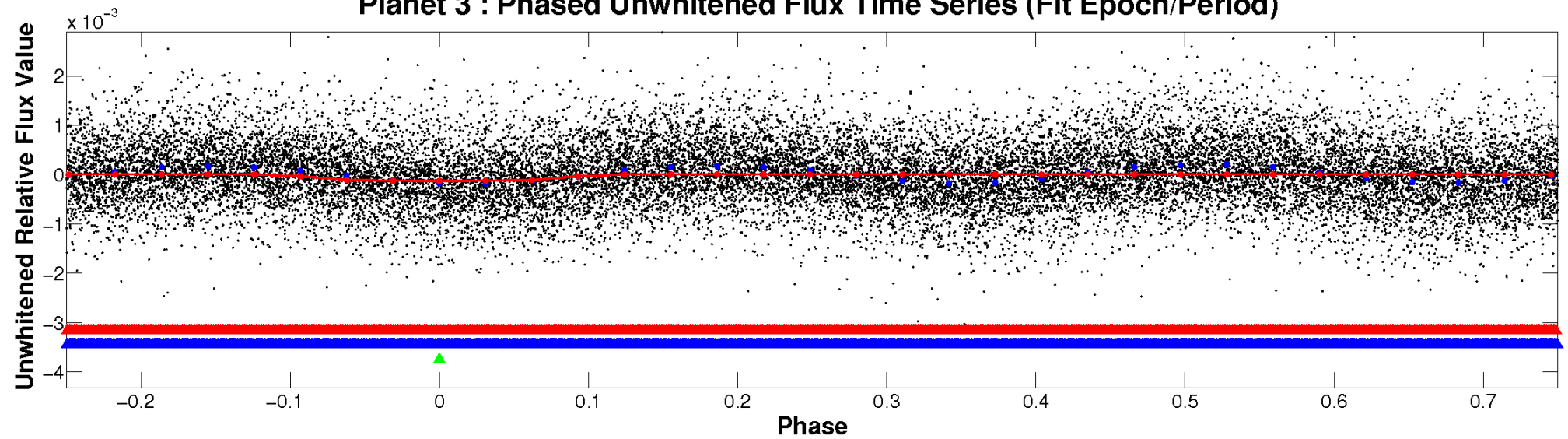
# ALT Odd/Even

TCE 001571152-03

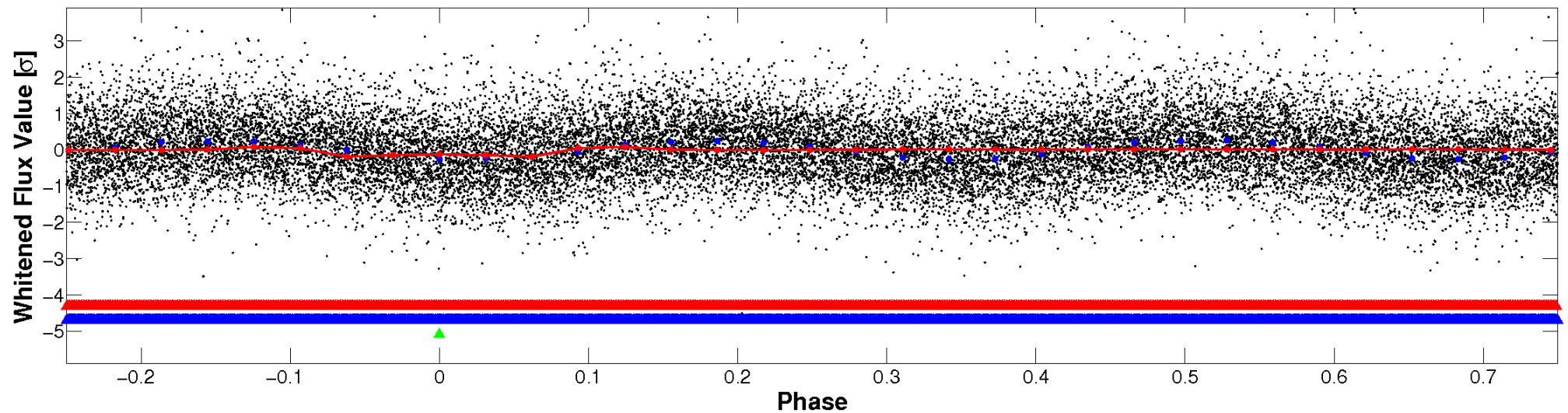


# Non-Whitened Vs. Whitened Light Curve

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



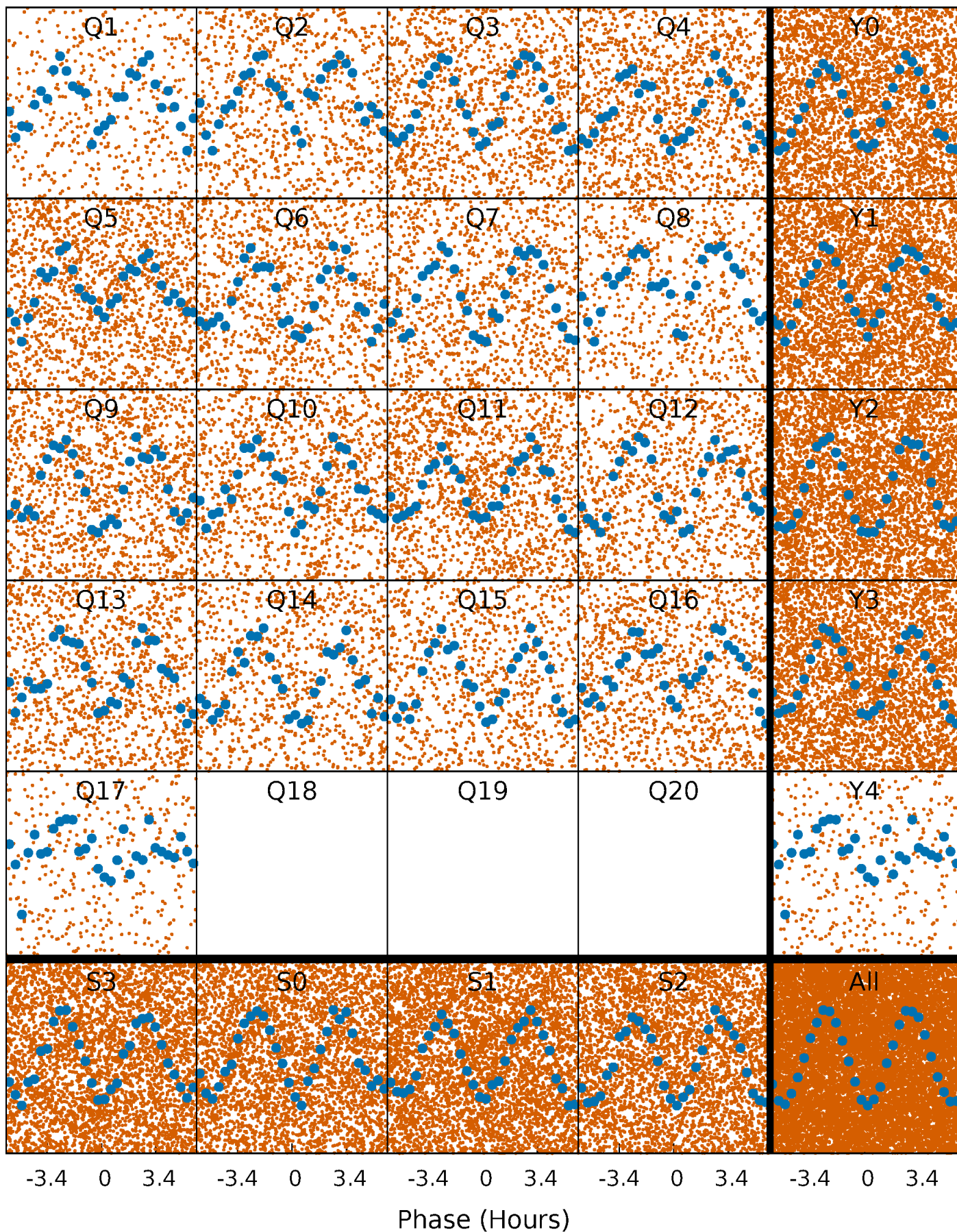
## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)





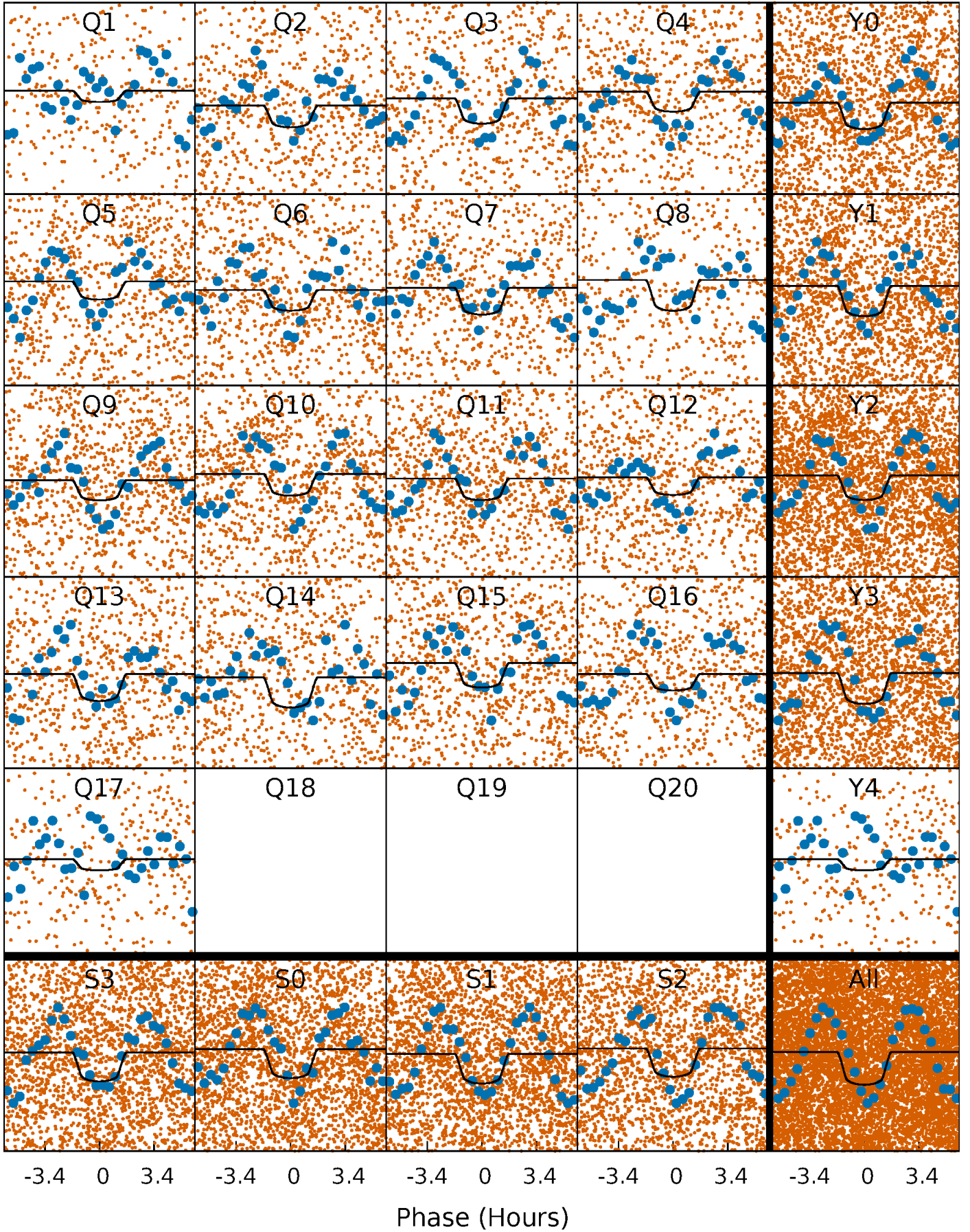
# PDC Quarter-Phased Transit Curves

TCE 001571152-03 P= 0.657841 Days  $T_0=131.614148$  (BKJD)



# DV Quarter-Phased Transit Curves

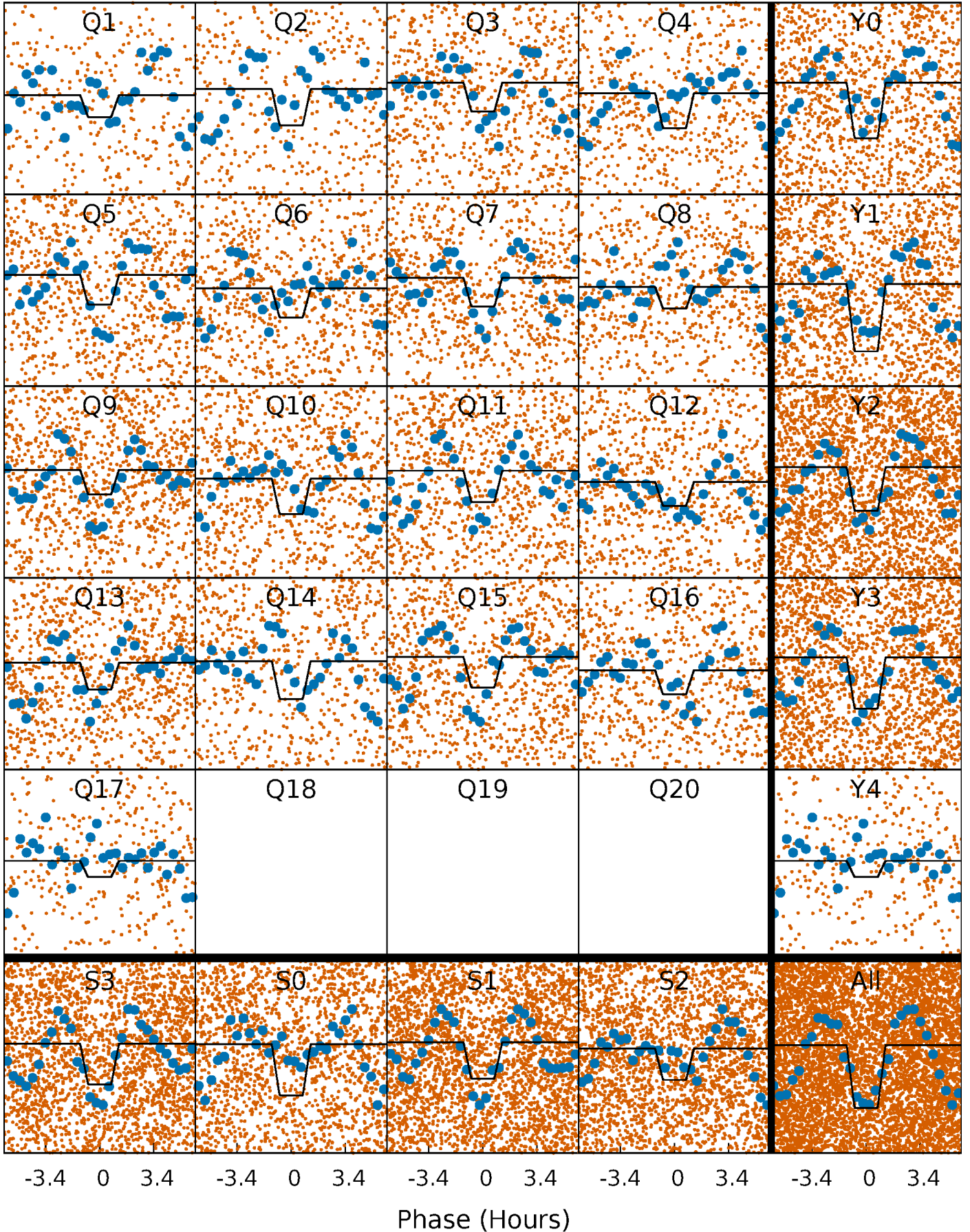
TCE 001571152-03 P= 0.657841 Days  $T_0=131.614148$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

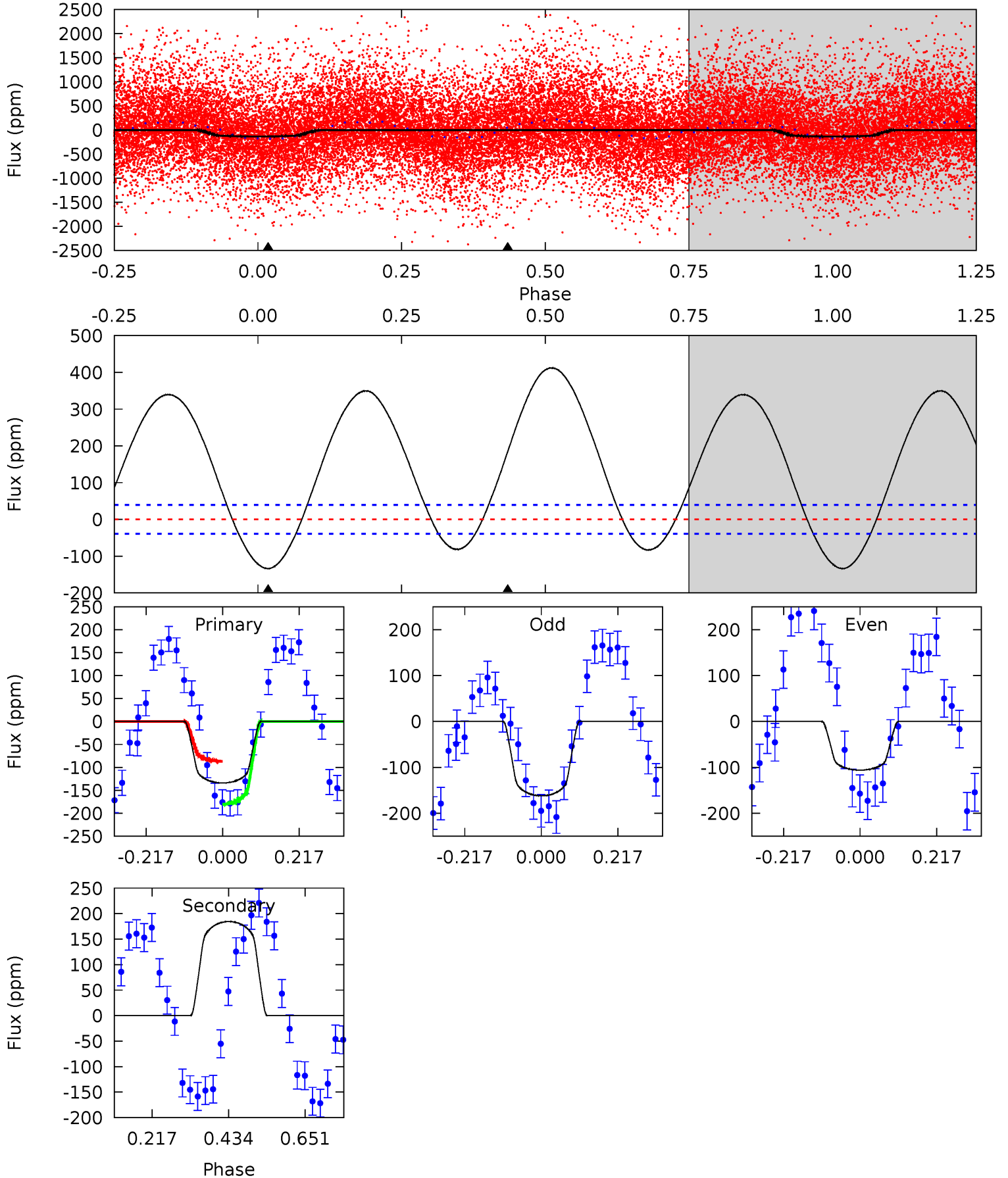
TCE 001571152-03 P= 0.657850 Days  $T_0=131.609386$  (BKJD)



# DV Model-Shift Uniqueness Test

001571152-03, P = 0.657841 Days, E = 131.614148 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
15.1	-20.7	0	0	4.40	1.23	13.3	15.1	15.1	-20.7	-20.7	3.13	0.83	0.75	5.50

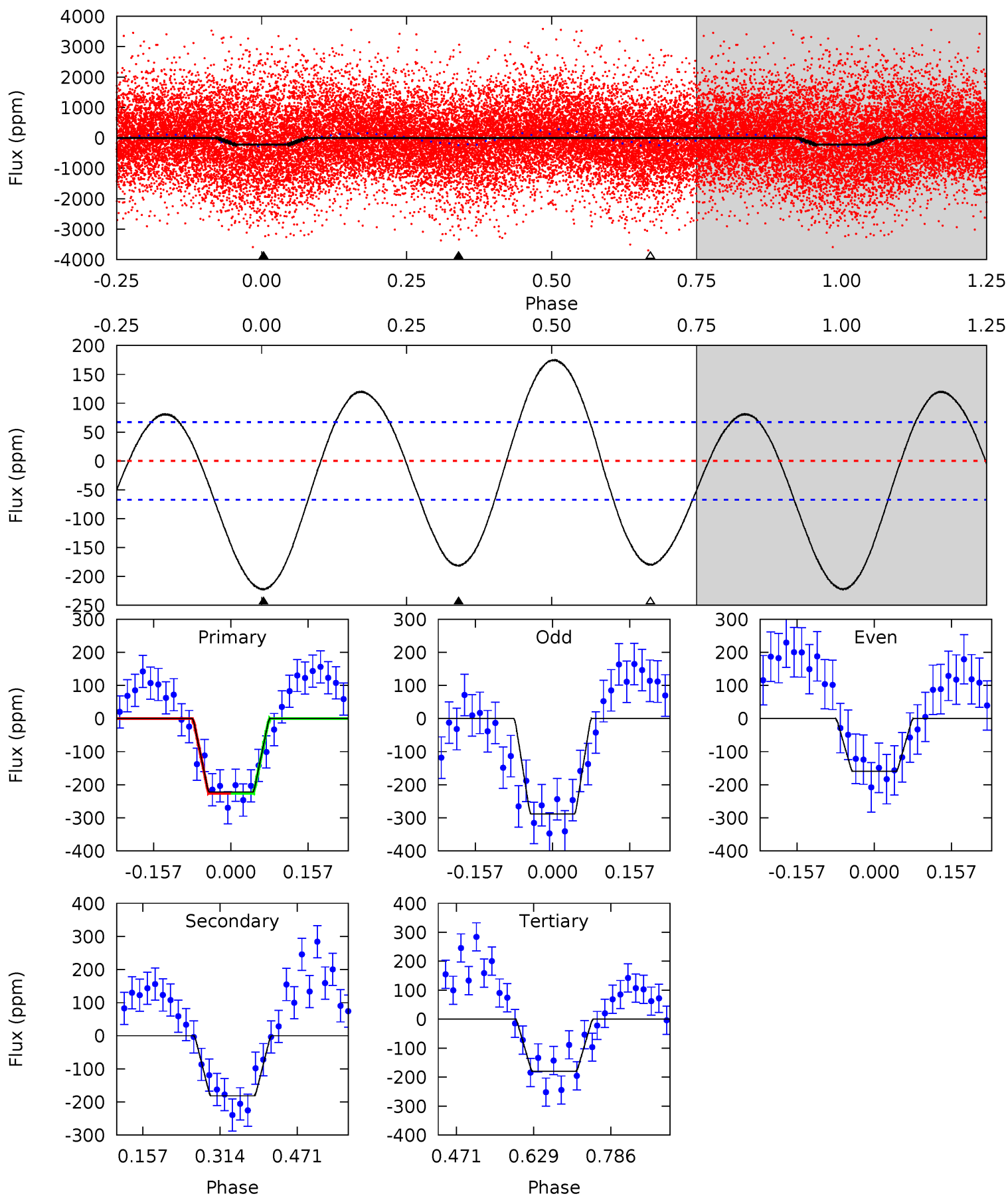




# Alt Model-Shift Uniqueness Test

001571152-03, P = 0.657850 Days, E = 131.609386 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
14.7	12.0	11.9	0	4.47	1.41	7.65	2.81	14.7	0.09	12.0	4.14	0.79	0.44	0.01



### Stellar Parameters For KIC 001571152

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$7015^{+124}_{-166}$	$4.201^{+0.059}_{-0.119}$	$0.020^{+0.150}_{-0.150}$	$1.580^{+0.275}_{-0.148}$	$1.449^{+0.111}_{-0.091}$	$0.518^{+0.136}_{-0.182}$
	+2%/-2%	+1%/-3%	+750%/-750%	+17%/-9%	+8%/-6%	+26%/-35%
Source	SPE4	SPE4	SPE4	DSEP		

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

### Secondary Eclipse Parameters for KIC 001571152-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$184 \pm 9$	$2.11^{+0.36}_{-0.34}$	$4233^{+172}_{-159}$	$-7630^{+603}_{-761}$	$-6.348^{+1.733}_{-2.750}$
Alt.	$-181 \pm 15$	$2.80^{+0.41}_{-0.38}$	$4231^{+173}_{-156}$	$6265^{+478}_{-416}$	$3.578^{+1.264}_{-0.869}$

$T_{max}$  = 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

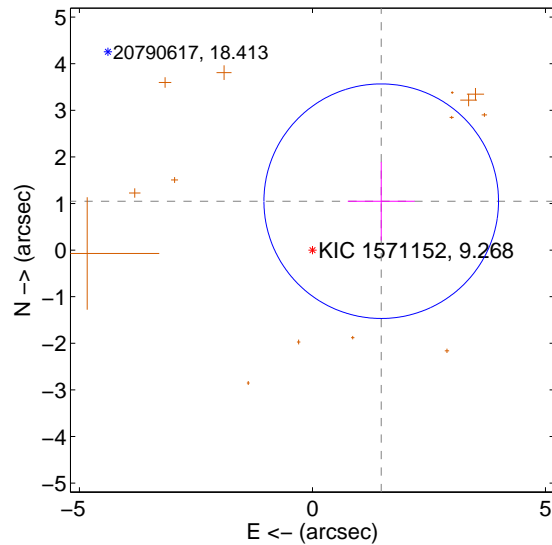
Supplemental centroid analysis for 001571152-03. **Kepler magnitude: 9.27.** Transit SNR 10.89

There are 0 quarters with good PRF difference image offsets

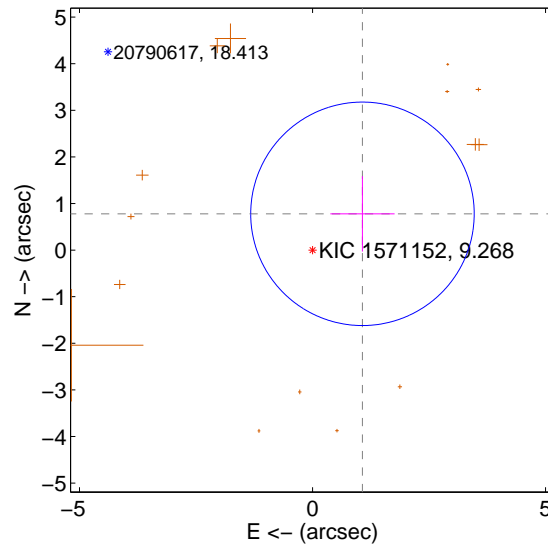
The OOT PRF centroid is offset from the target star catalog position by about 2.05 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.811 \pm 0.839$	2.16	$-1.476 \pm 0.718$	$1.049 \pm 0.843$
PRF-fit source offset from KIC position	$1.324 \pm 0.799$	1.66	$-1.072 \pm 0.690$	$0.779 \pm 0.809$
photometric centroid source offset	$0.19 \pm 0.11$	1.78	$0.19 \pm 0.11$	$-0.02 \pm 0.16$

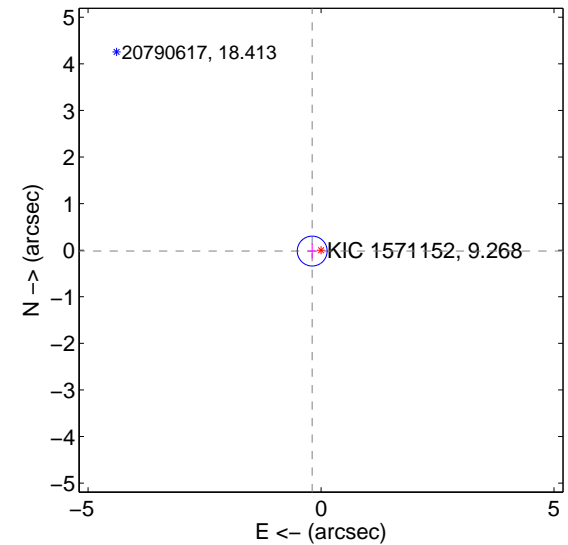
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

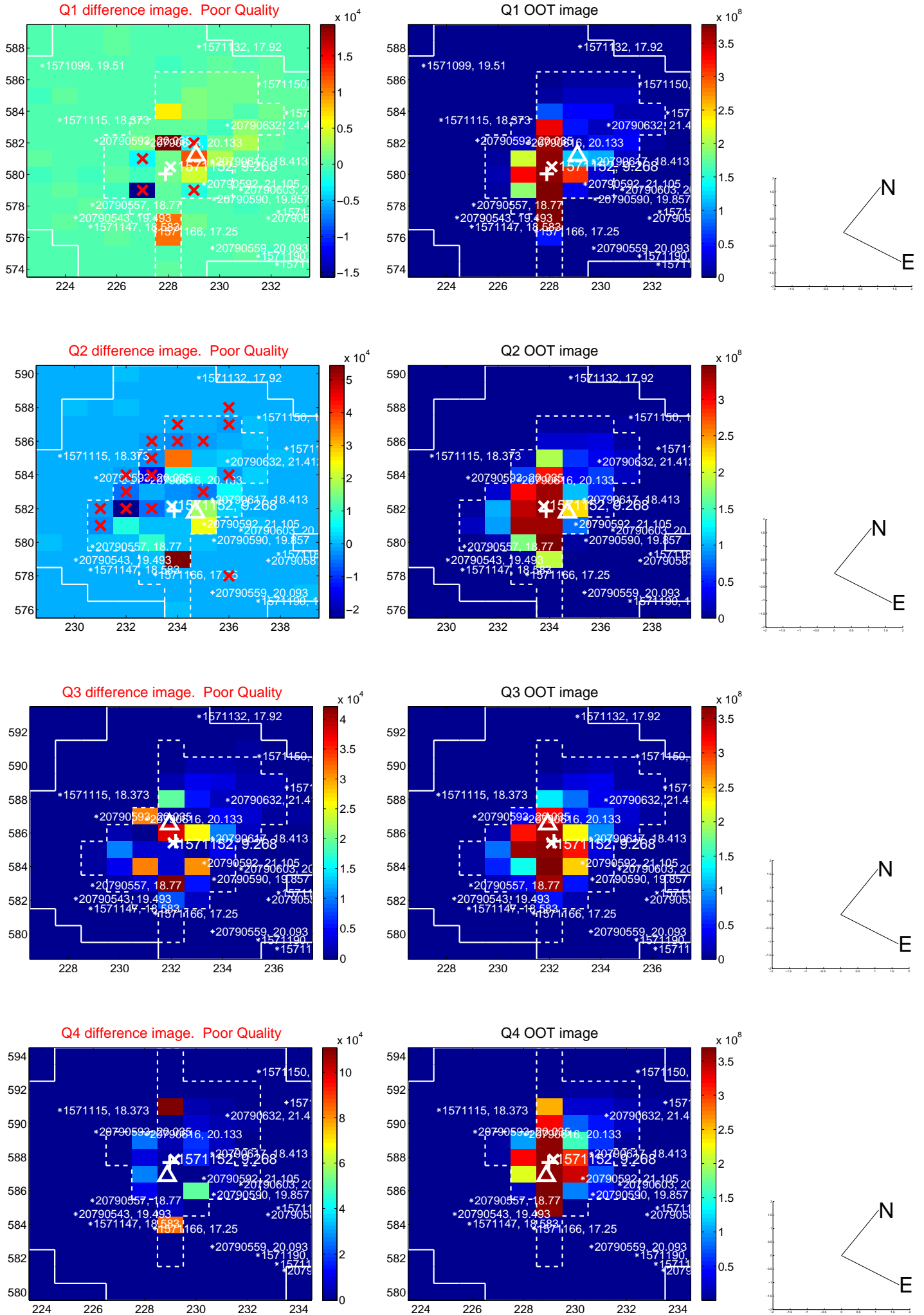


offset from photometric centroids



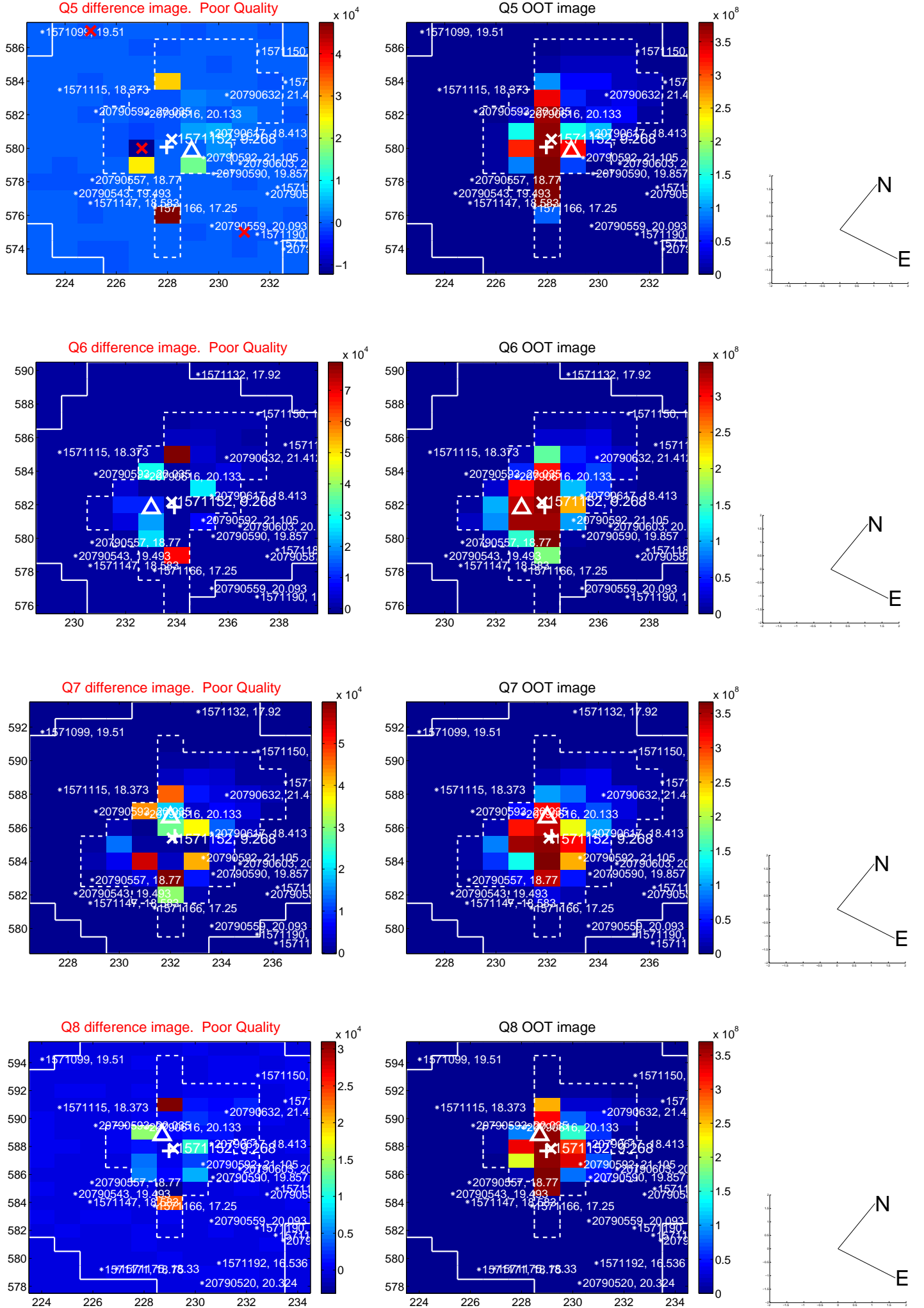
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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



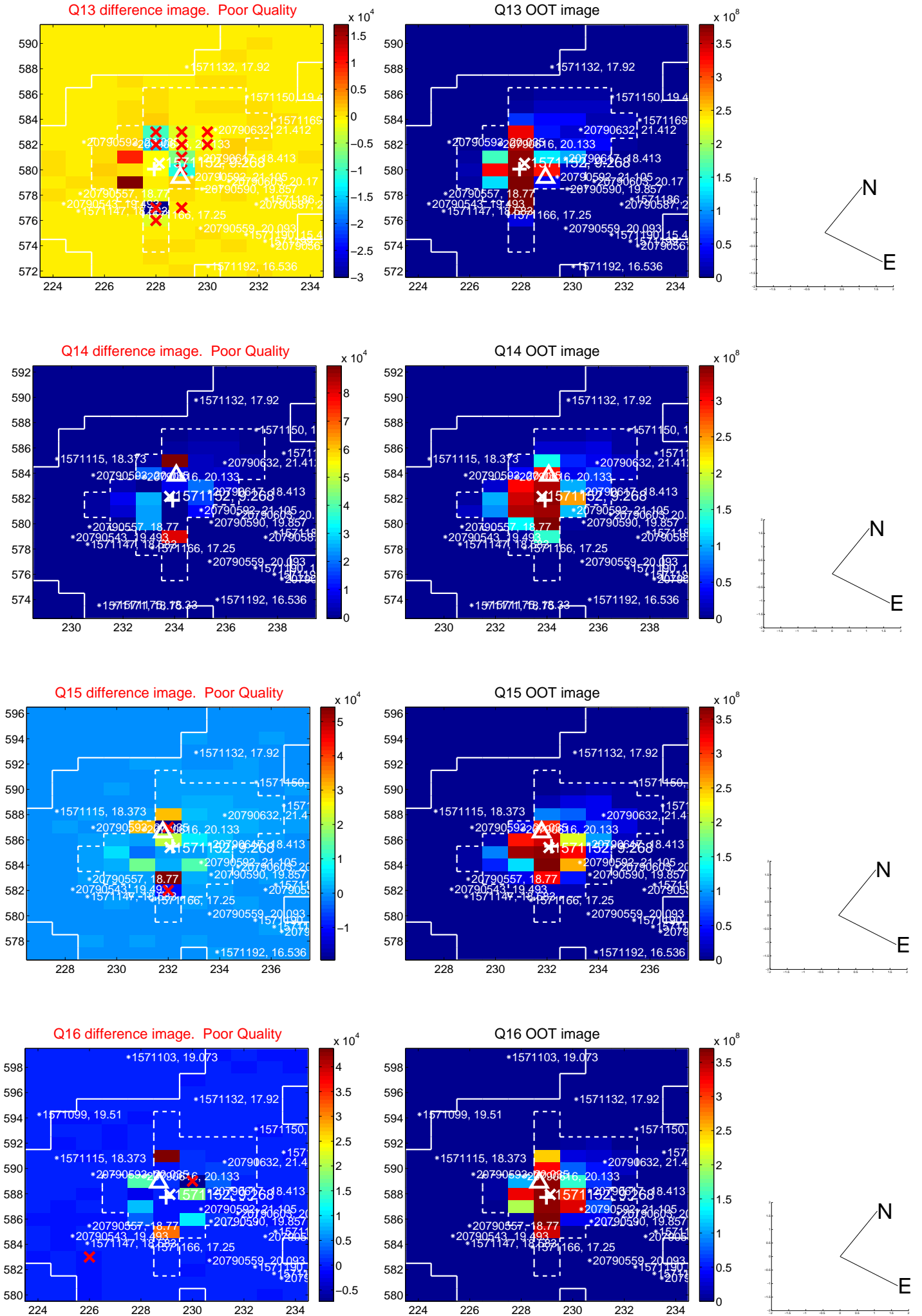


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

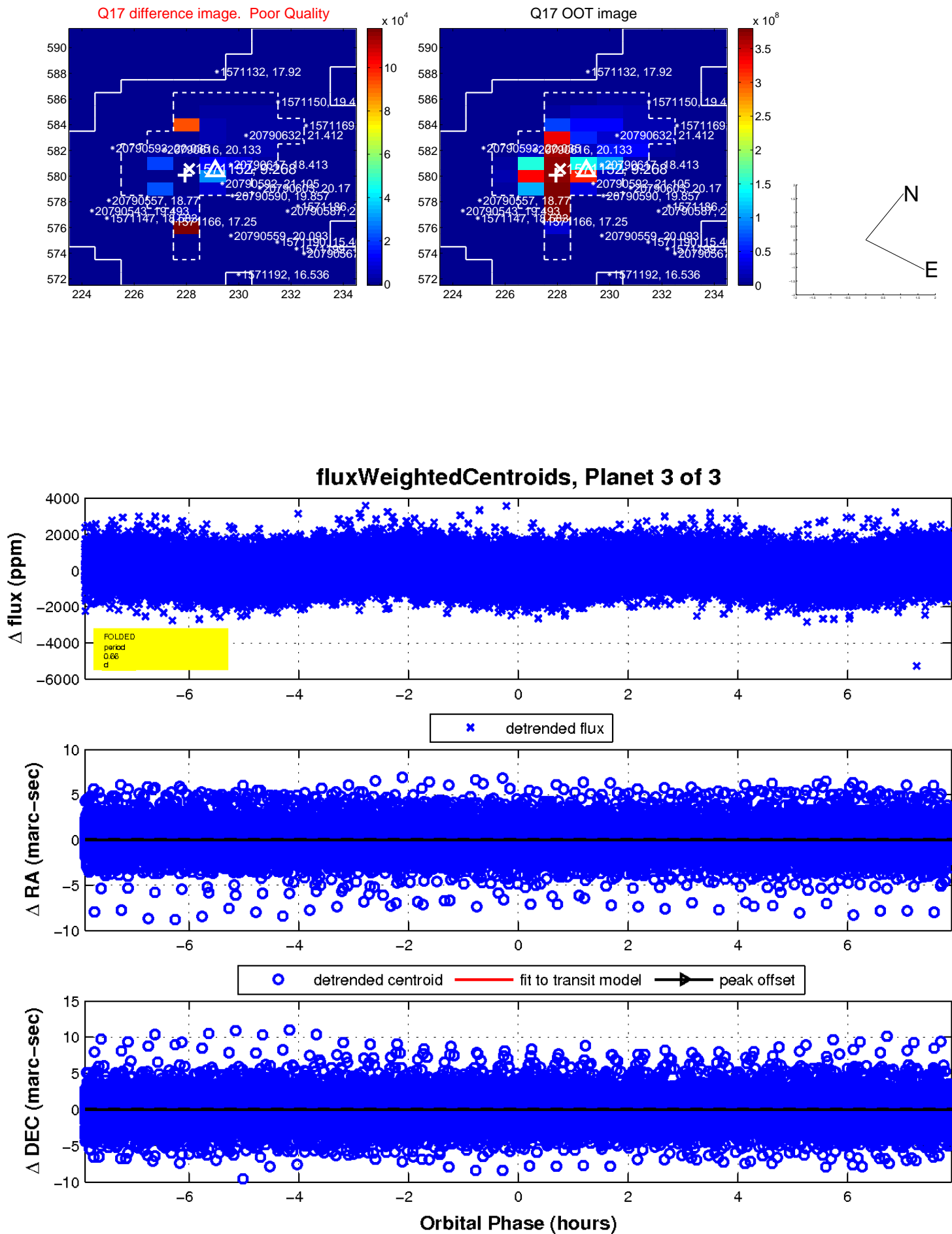




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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





UKIRT Image

