

# KIC 006369539

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006369539-01	OBS	No	0.774048	131.578702	74.2	2.500	8.5	-1.0	1.82	7777	1.59	27153.96
006369539-02	OBS	No	306.074295	268.177454	57.1	15.000	10.6	-1.0	1.82	7777	1.40	9.36
006369539-03	OBS	No	283.174768	318.641061	25.2	6.674	8.6	3.6	1.82	7777	1.05	10.38

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006369539-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
006369539-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_SATURATED
006369539-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

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

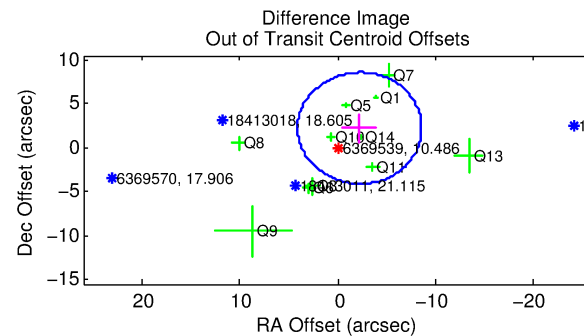
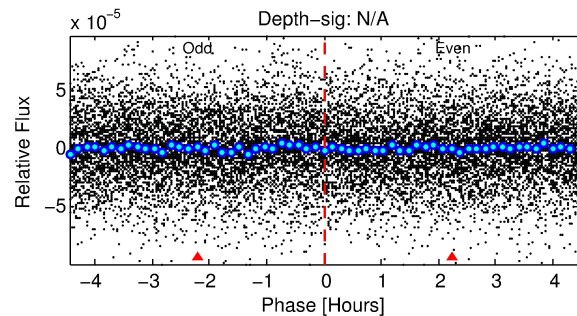
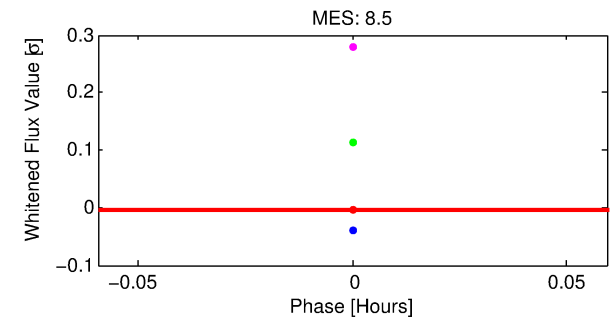
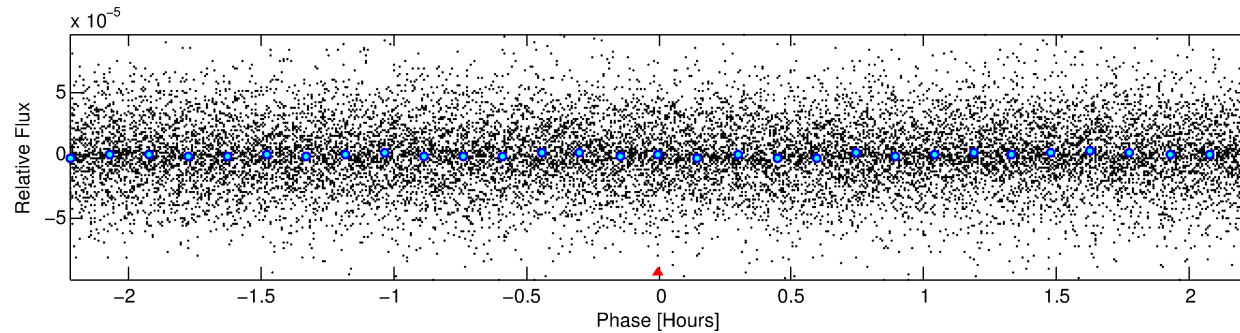
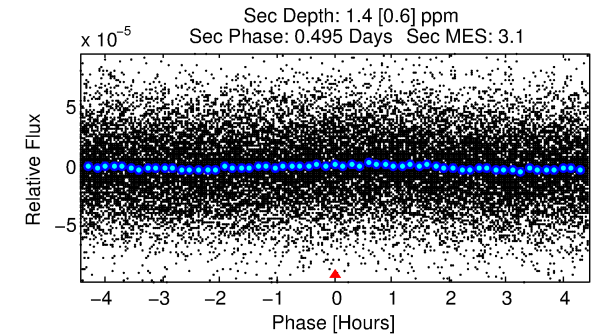
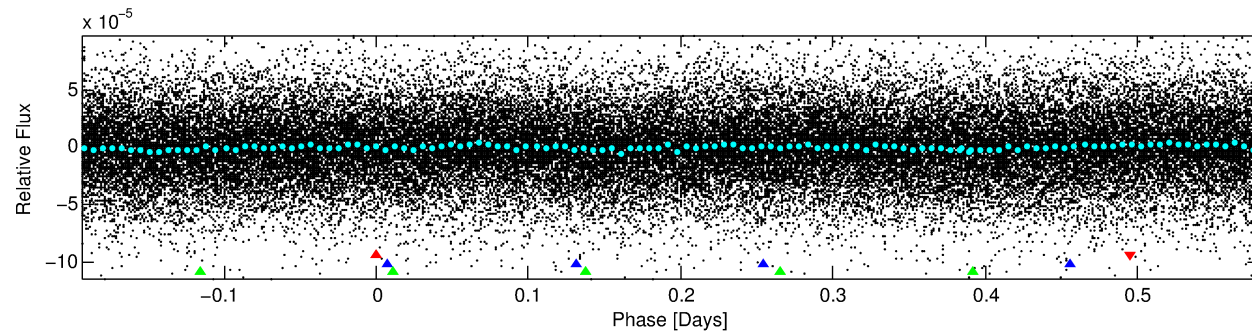
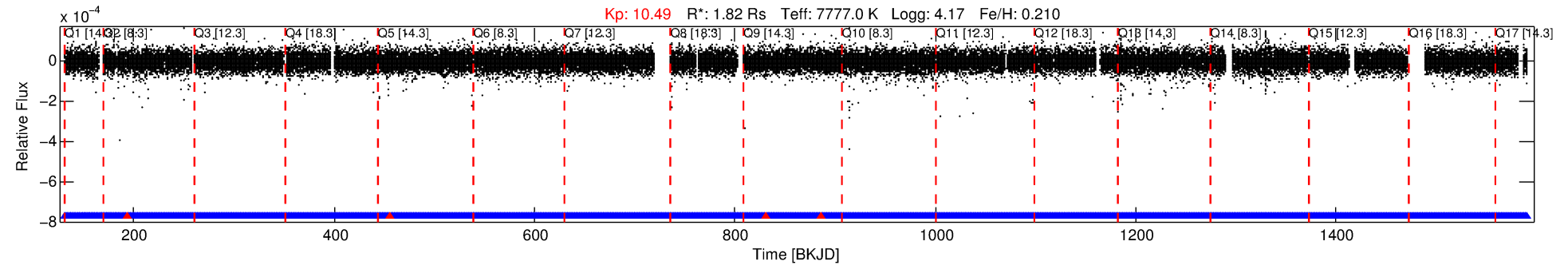
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006369539-01

No Significant Match Found

# DV One-Page Summary

KIC: 6369539 Candidate: 1 of 3 Period: 0.774 d



## TPS TCE Results:

Period = 0.77405 d  
Epoch = 131.5787 BKJD

DV fit results are unavailable

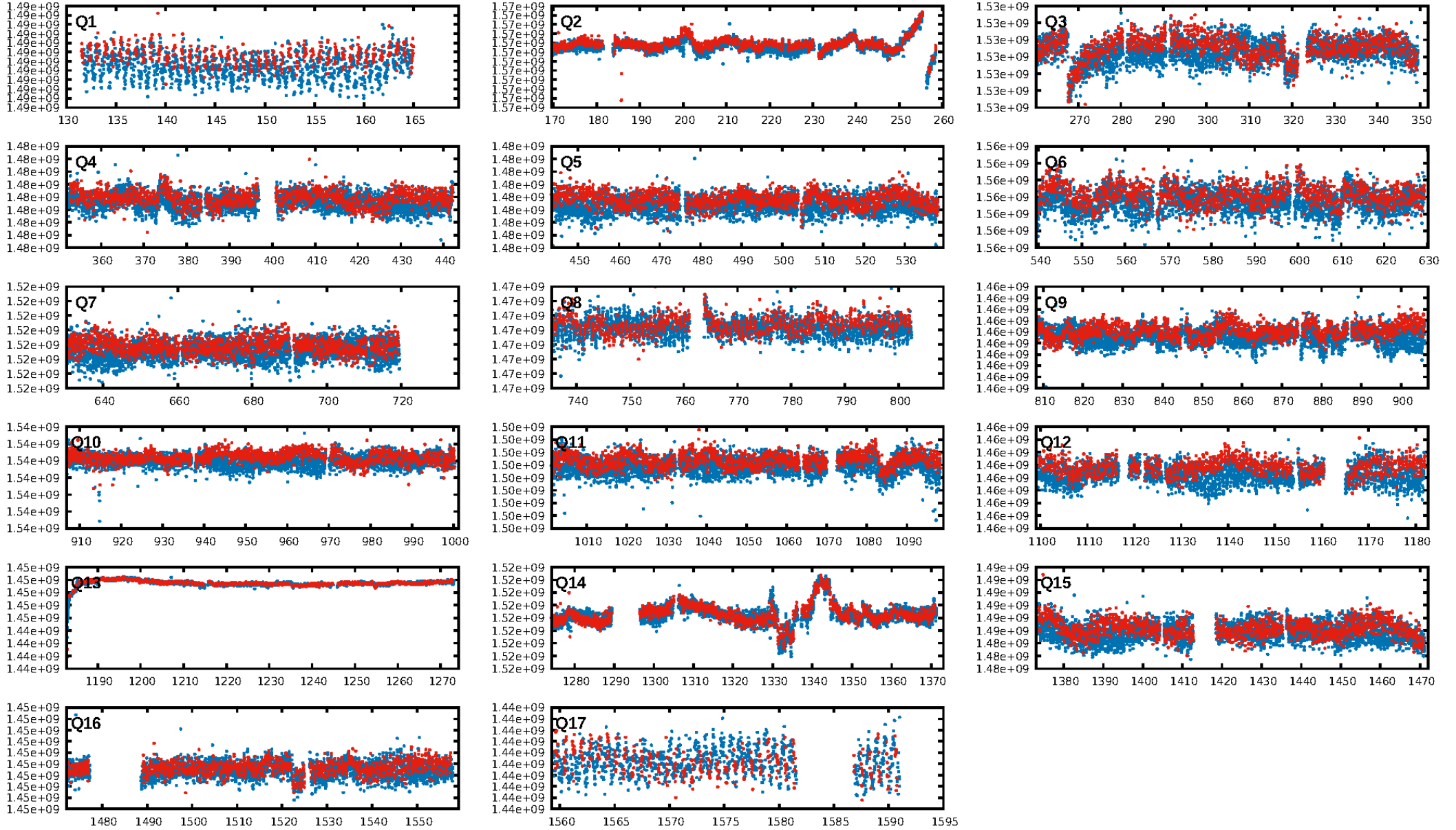
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [950.95σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.46e-13  
RollingBand-fgt: 1.00 [1647/1651]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 3.182 arcsec [1.50σ]  
KicOffset-rm: 3.228 arcsec [1.59σ]  
OotOffset-st: 3/3/1/4 [11]  
KicOffset-st: 3/3/1/4 [11]  
DiffImageQuality-fgm: 0.09 [1/11]  
DiffImageOverlap-fno: 1.00 [17/17]

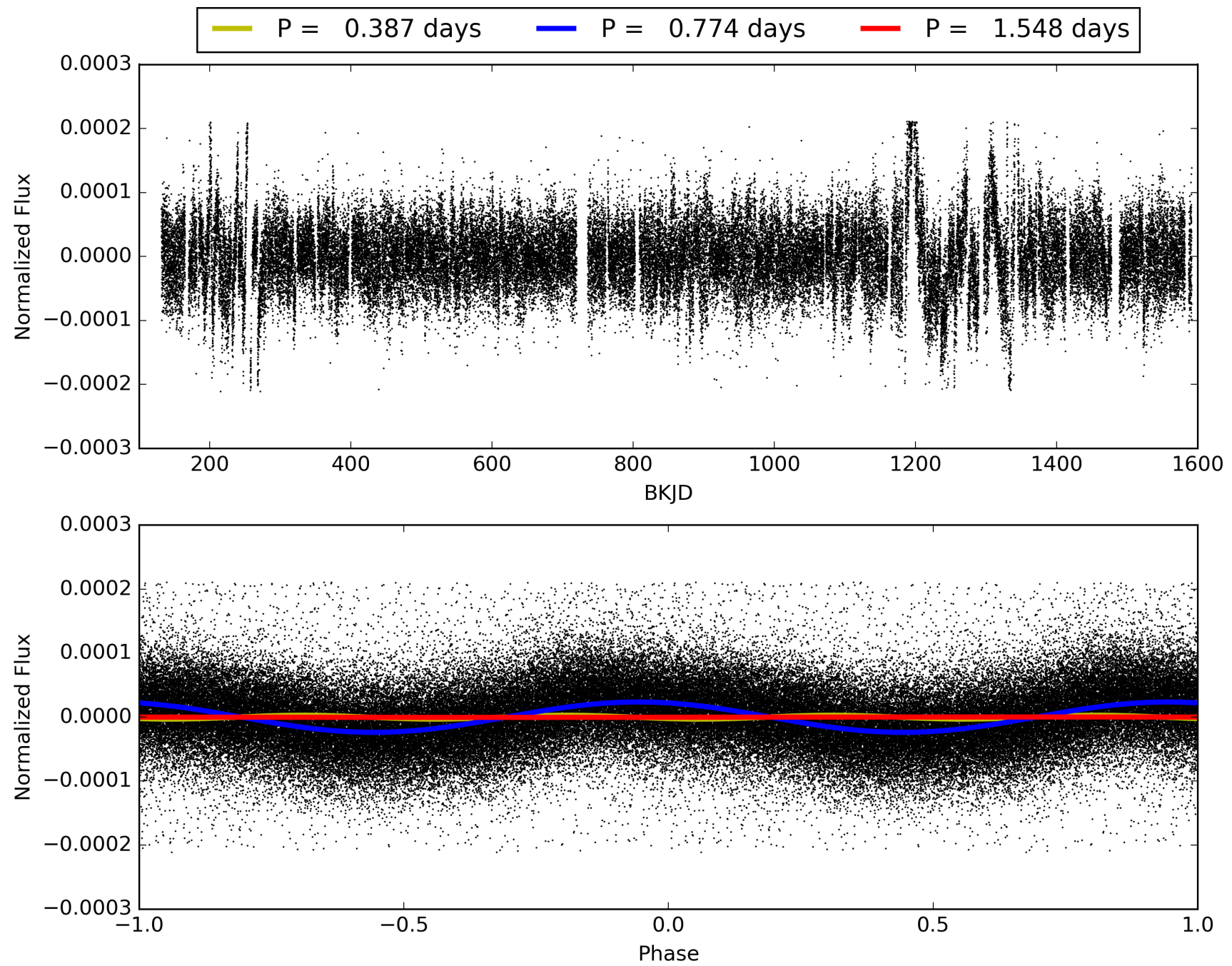
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:58:29 Z

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

# TCE 006369539-01, PDC Light Curves

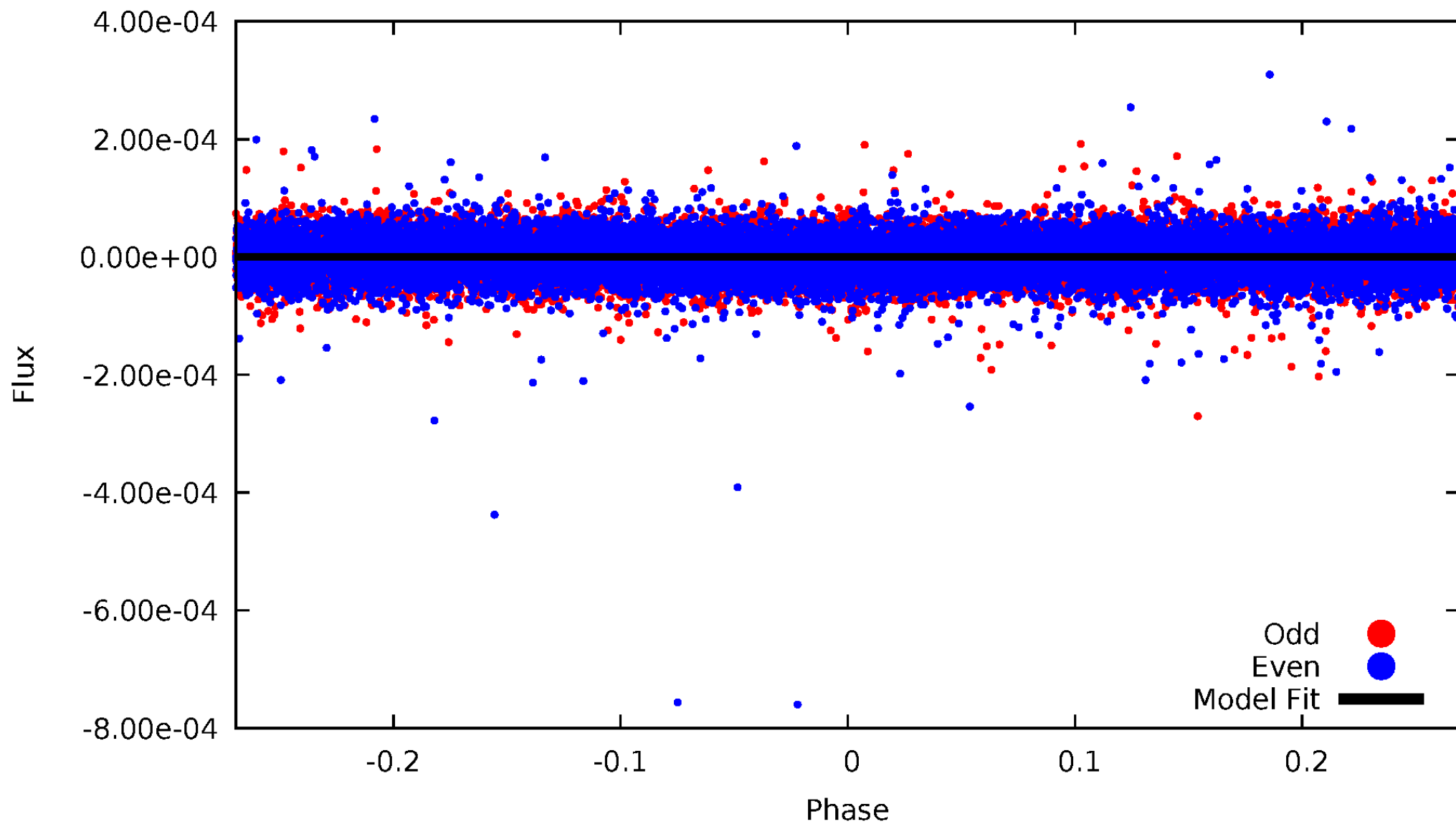


TCE 006369539-01



# DV Odd/Even

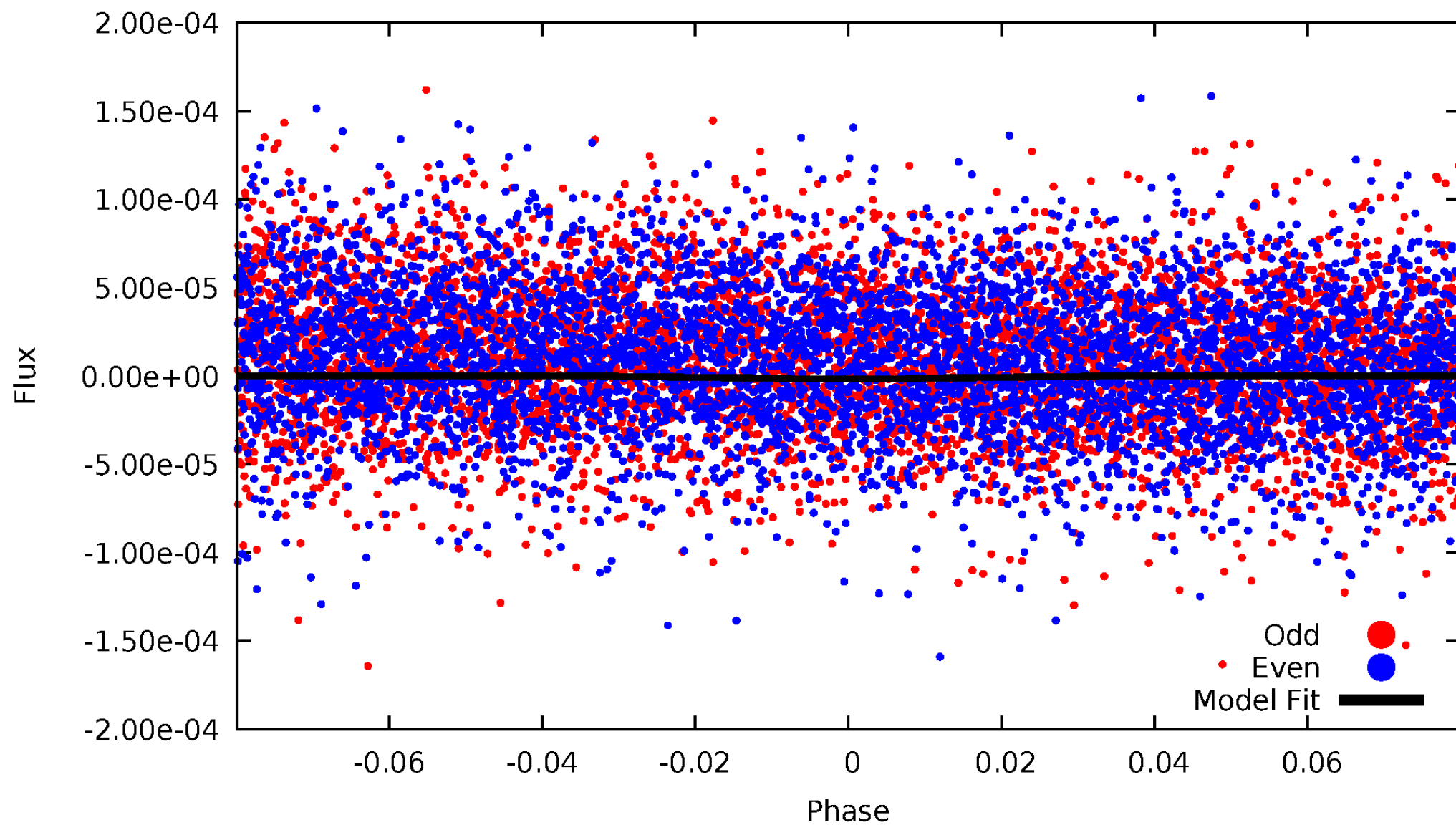
TCE 006369539-01



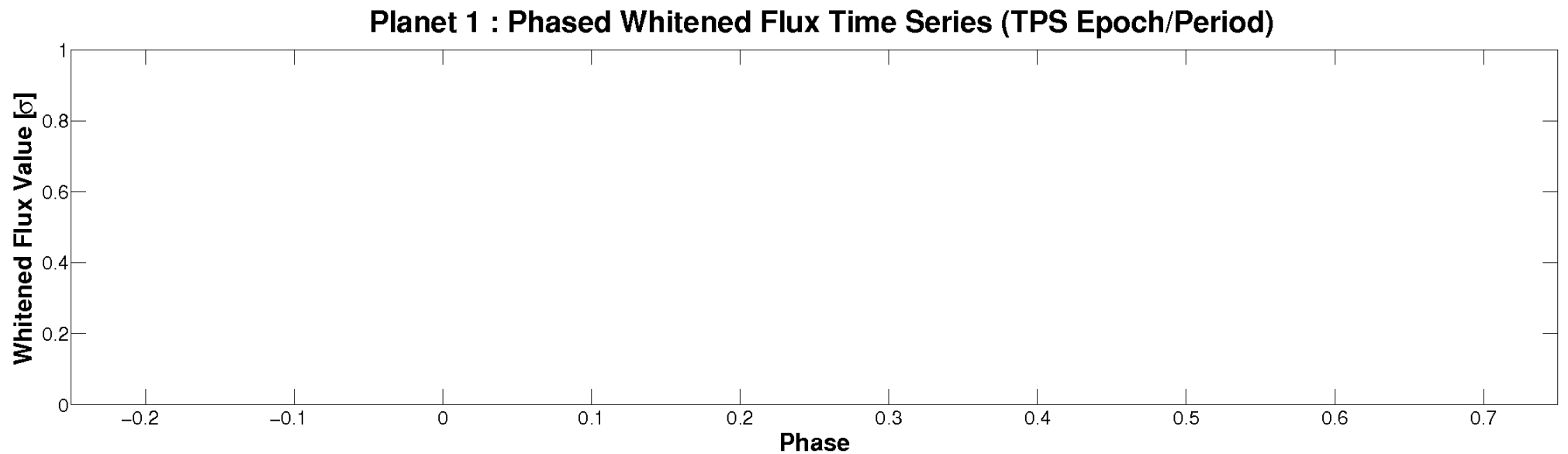
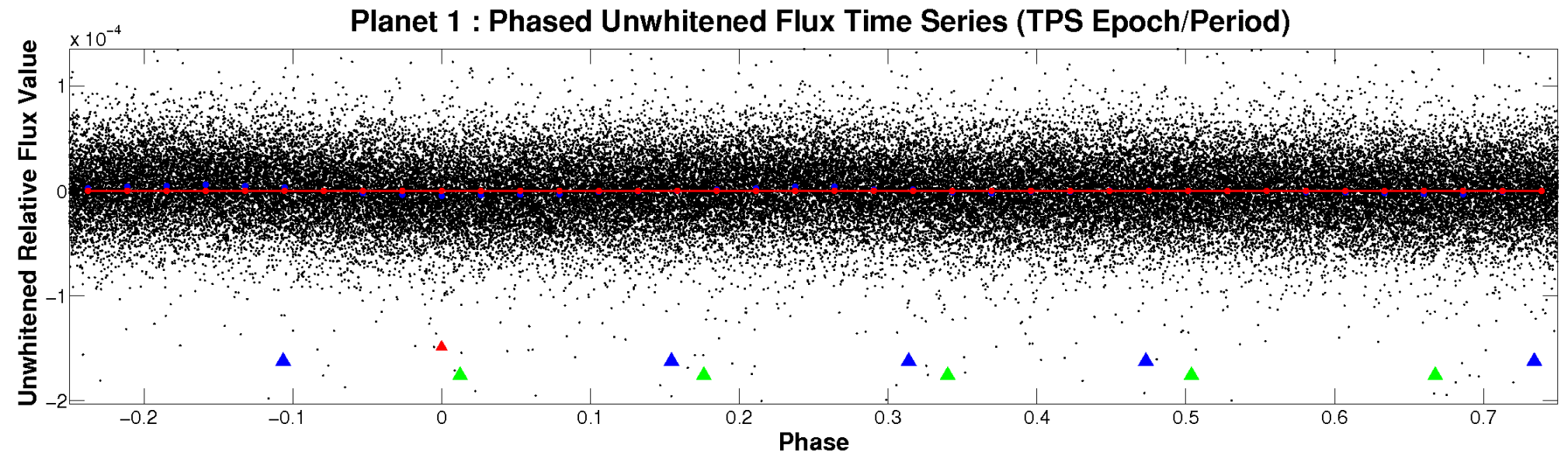


# ALT Odd/Even

TCE 006369539-01

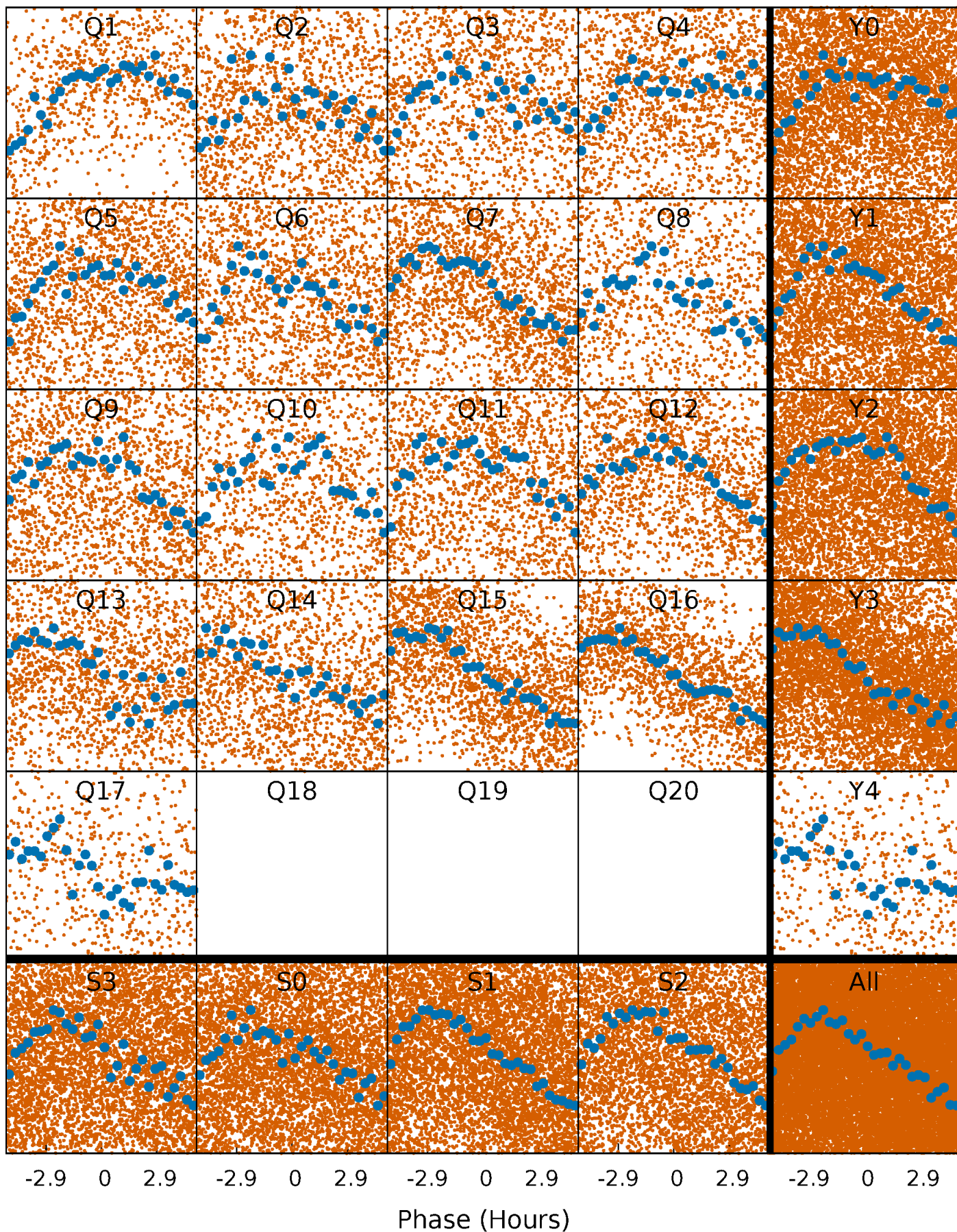


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

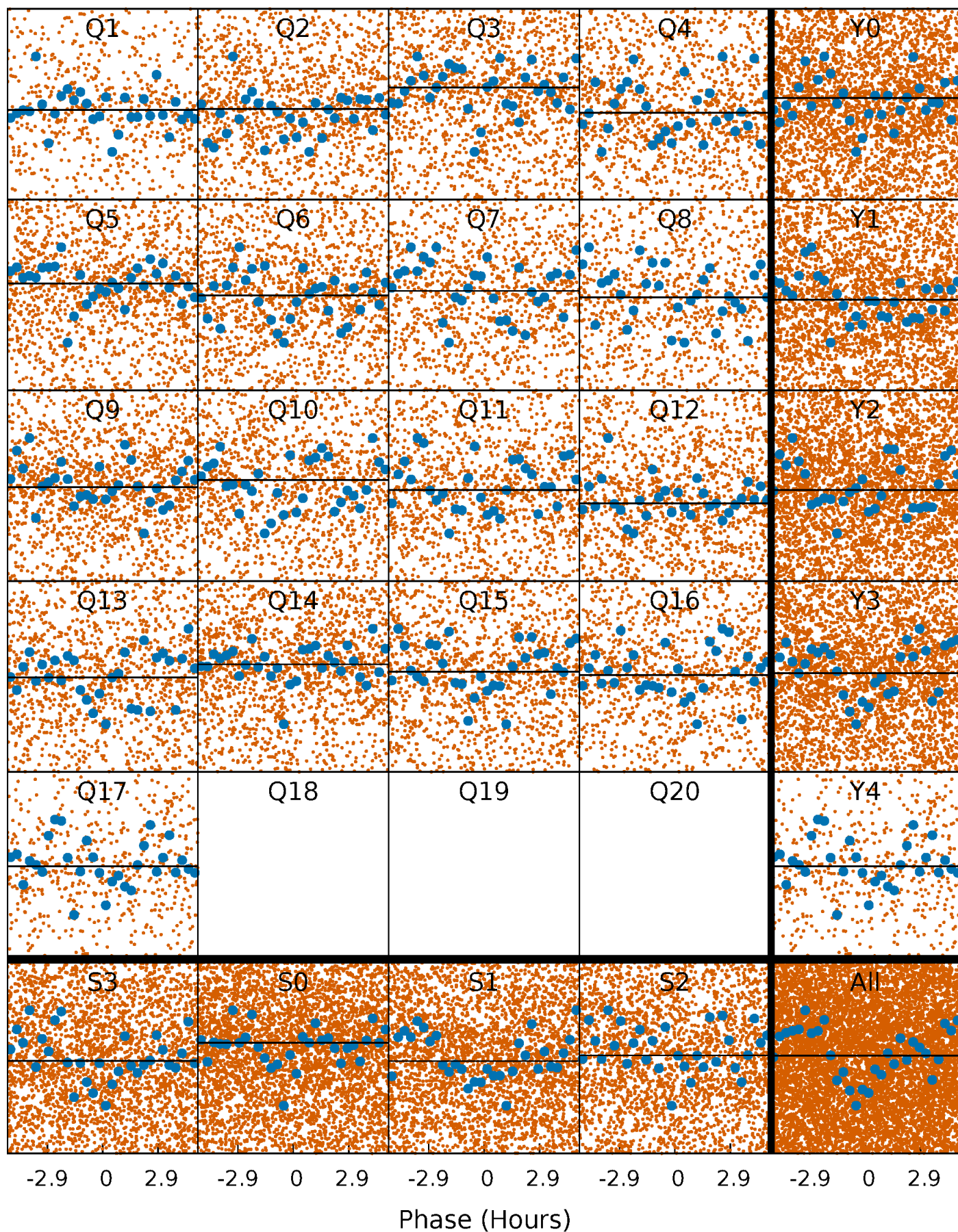
TCE 006369539-01 P= 0.774048 Days  $T_0=131.578702$  (BKJD)





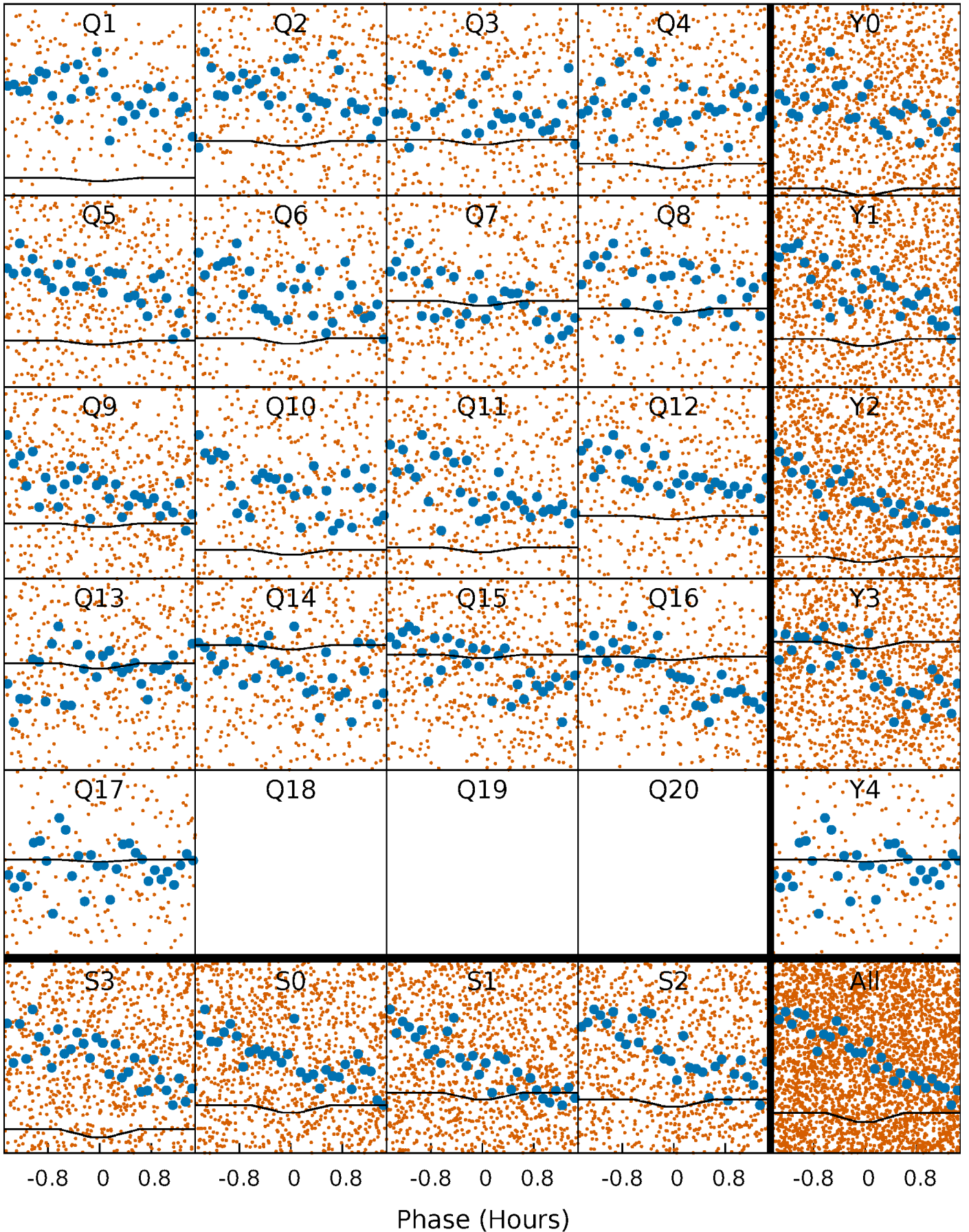
# DV Quarter-Phased Transit Curves

TCE 006369539-01 P= 0.774048 Days  $T_0=131.578702$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

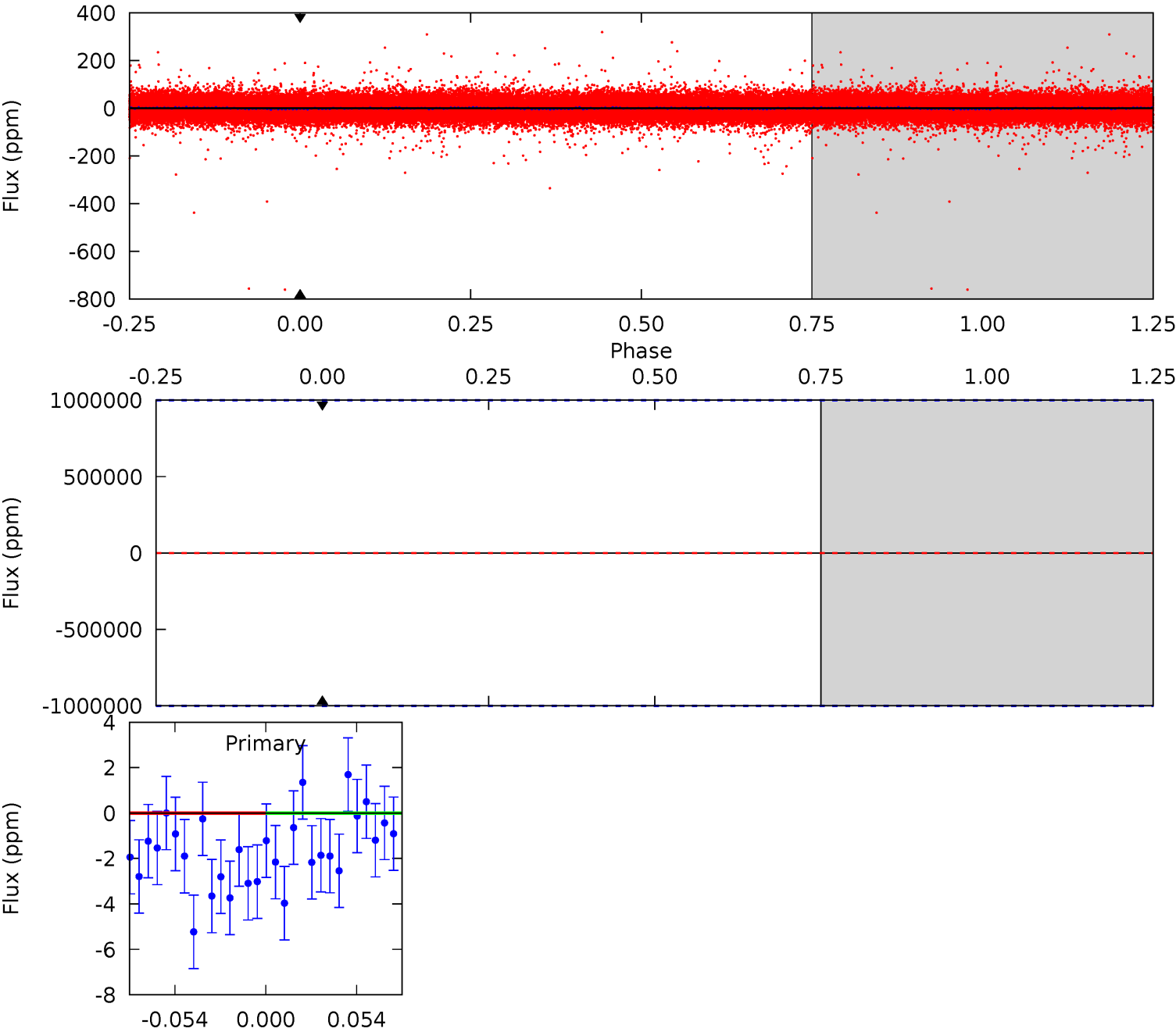
TCE 006369539-01 P= 0.774048 Days  $T_0=131.703693$  (BKJD)



# DV Model-Shift Uniqueness Test

006369539-01, P = 0.774048 Days, E = 130.804654 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

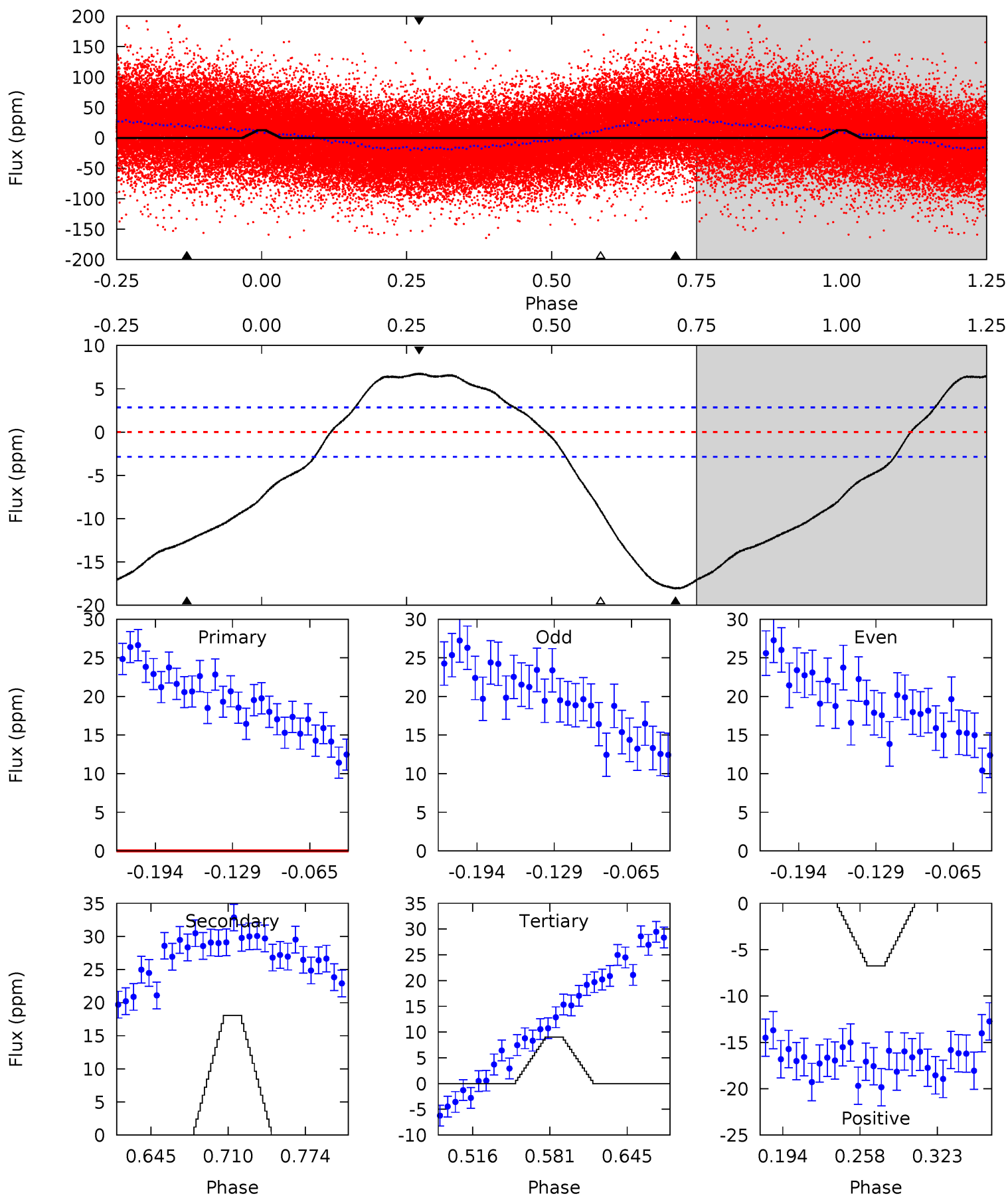




# Alt Model-Shift Uniqueness Test

006369539-01, P = 0.774048 Days, E = 130.929645 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
20.6	29.5	14.8	11.0	4.66	1.85	11.2	5.81	9.55	14.7	18.5	0.52	1.05	0.27	2.50





### Stellar Parameters For KIC 006369539

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7777^{+214}_{-349}$	$4.168^{+0.081}_{-0.189}$	$0.210^{+0.150}_{-0.450}$	$1.820^{+0.557}_{-0.279}$	$1.785^{+0.181}_{-0.271}$	$0.417^{+0.154}_{-0.218}$
	+3%/-4%	+2%/-5%	+71%/-214%	+31%/-15%	+10%/-15%	+37%/-52%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 006369539-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$0 \pm 1000000$	$15.04^{+16.57}_{-10.04}$	$4640^{+349}_{-289}$	$4582^{+36669}_{-42658}$	$1.106^{+156.778}_{-148.477}$
Alt.	$-18 \pm 1$	$13.47^{+15.94}_{-9.09}$	$4621^{+342}_{-265}$	$-3909^{+564}_{-230}$	$0.021^{+0.187}_{-0.016}$

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

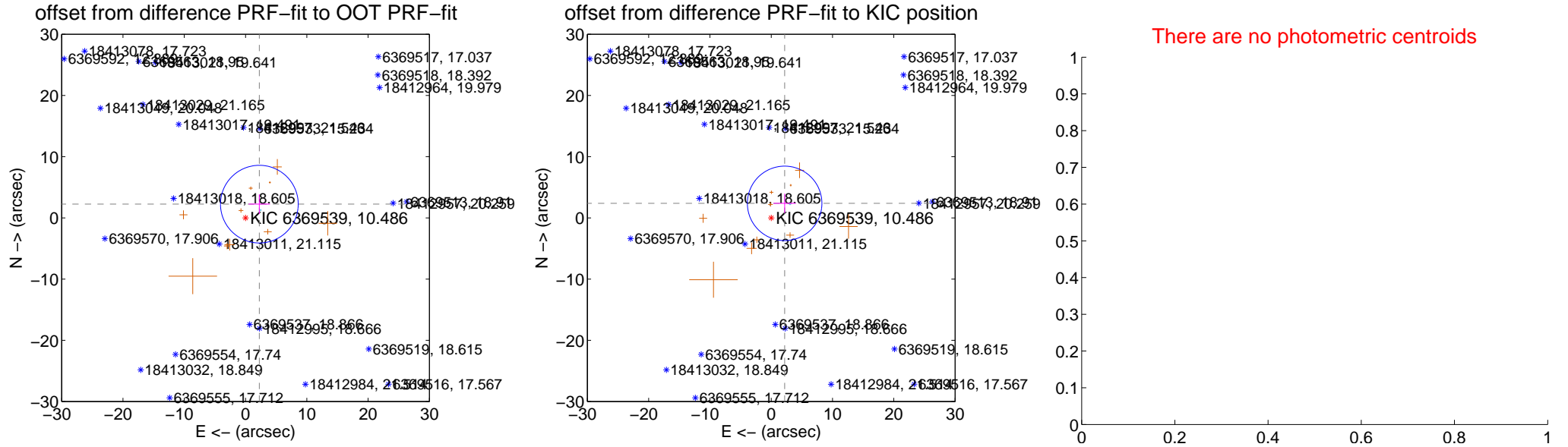
## DV Centroid Data

Supplemental centroid analysis for 006369539-01. **Kepler magnitude: 10.49.** Transit SNR -1.00

**There are 1 quarters with good PRF difference image offsets**

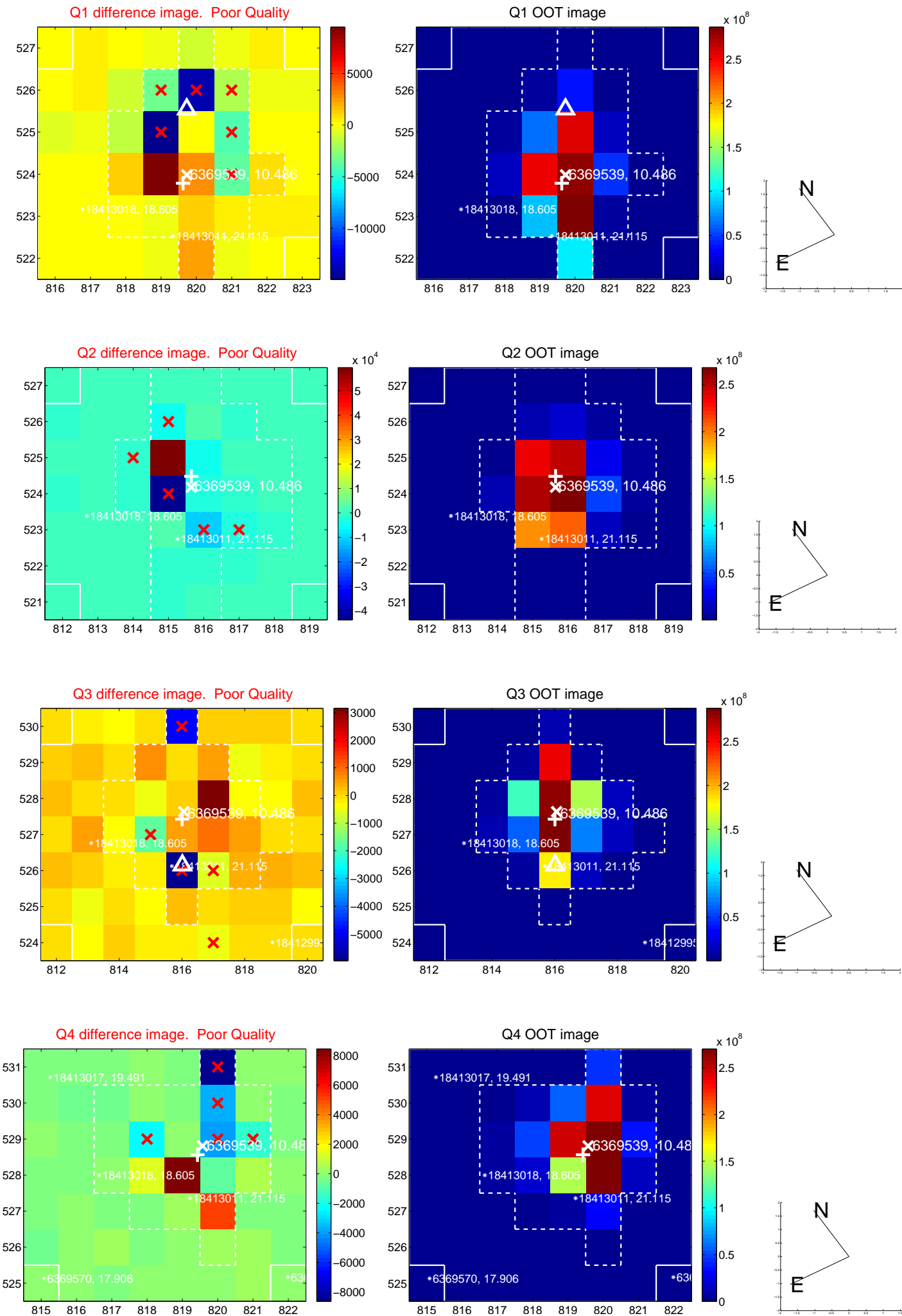
The direct PRF centroid is offset from the target star catalog position by about 1.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.182 \pm 2.114$	1.50	$-2.255 \pm 1.739$	$2.245 \pm 1.610$
PRF-fit source offset from KIC position	$3.228 \pm 2.027$	1.59	$-2.189 \pm 1.821$	$2.373 \pm 1.584$
photometric centroid source offset	—	—	—	—

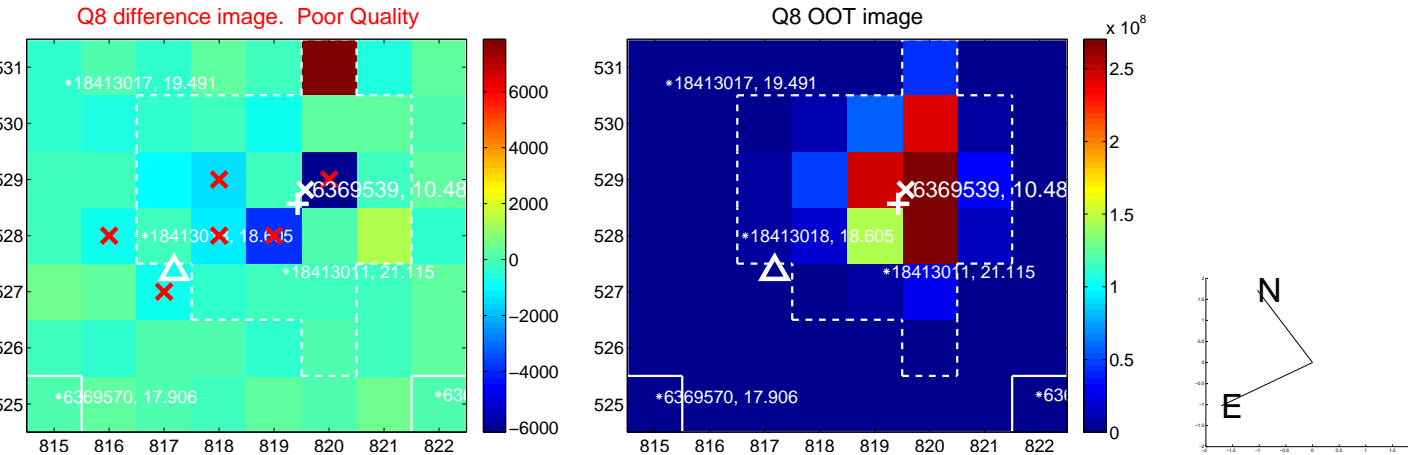
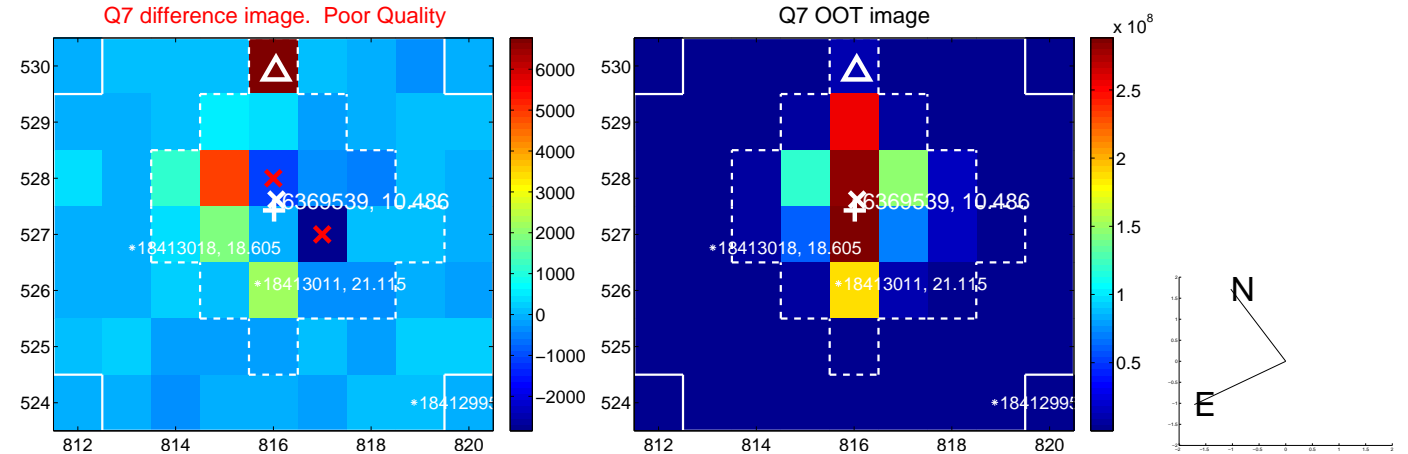
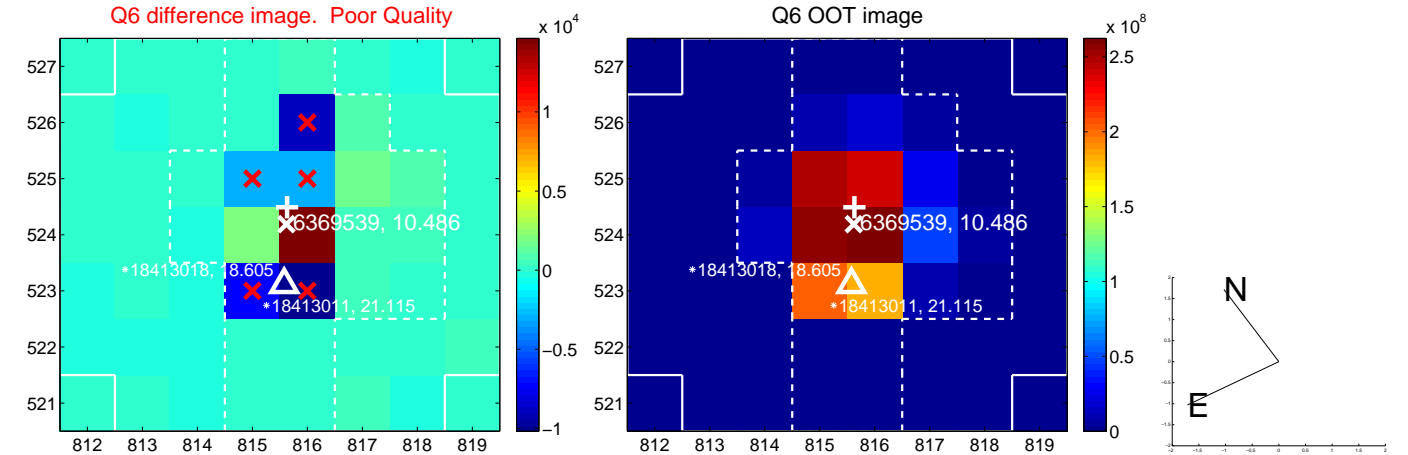
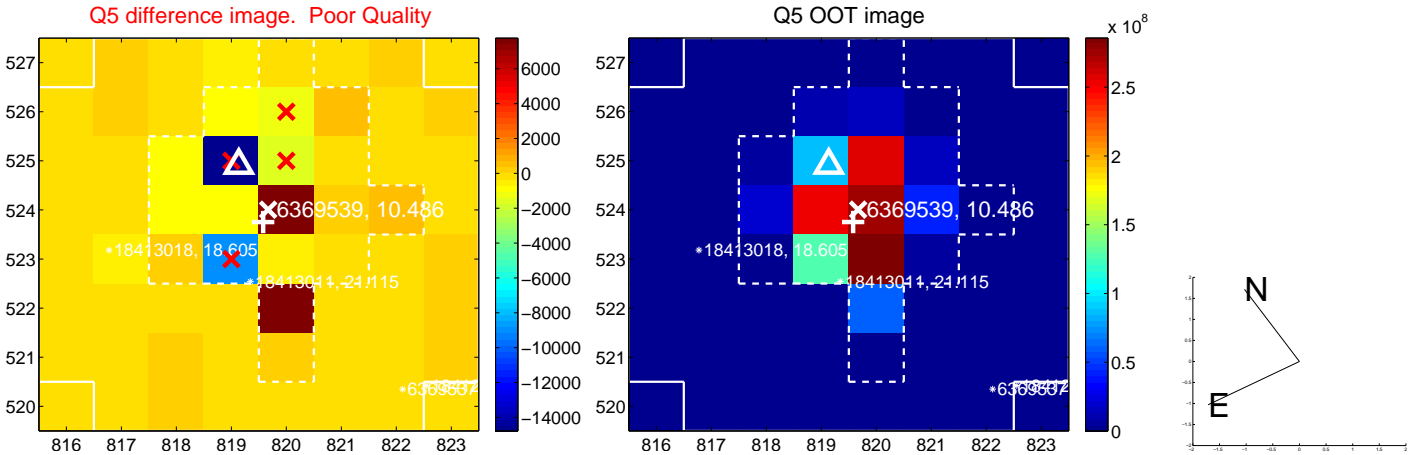


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

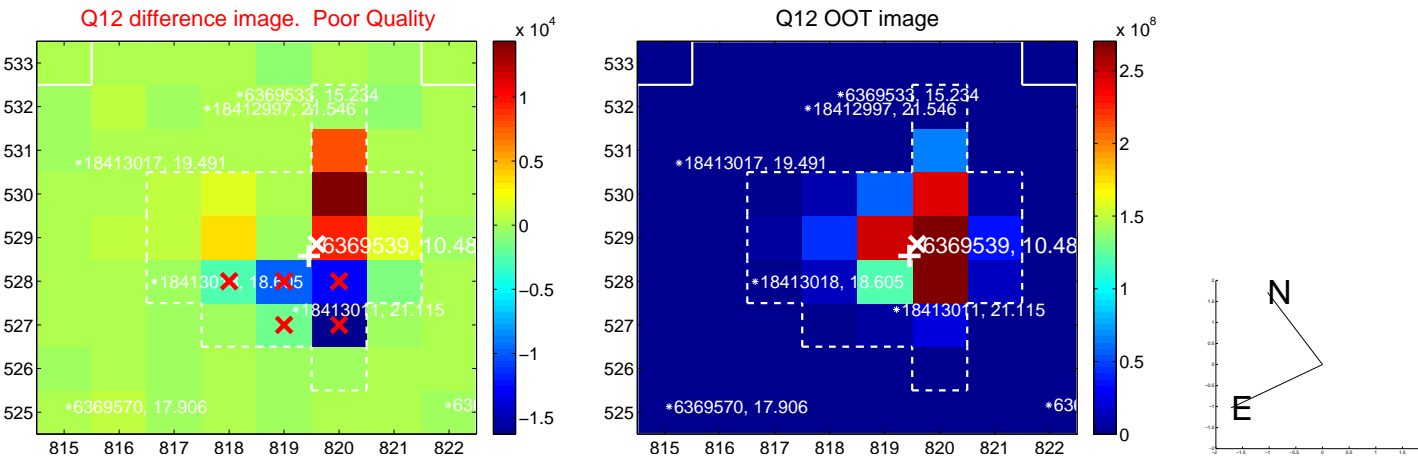
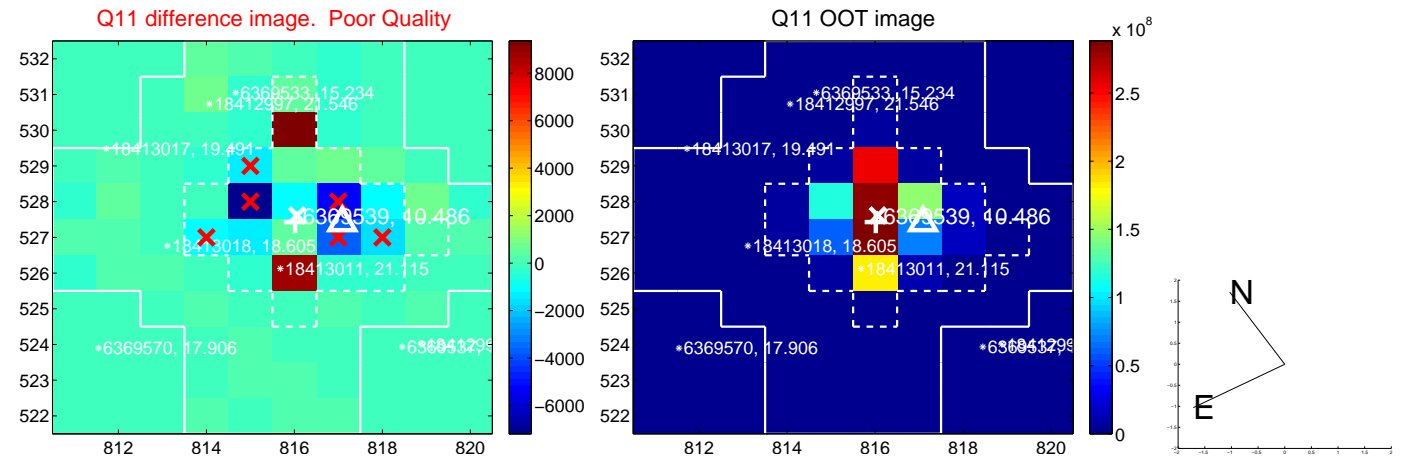
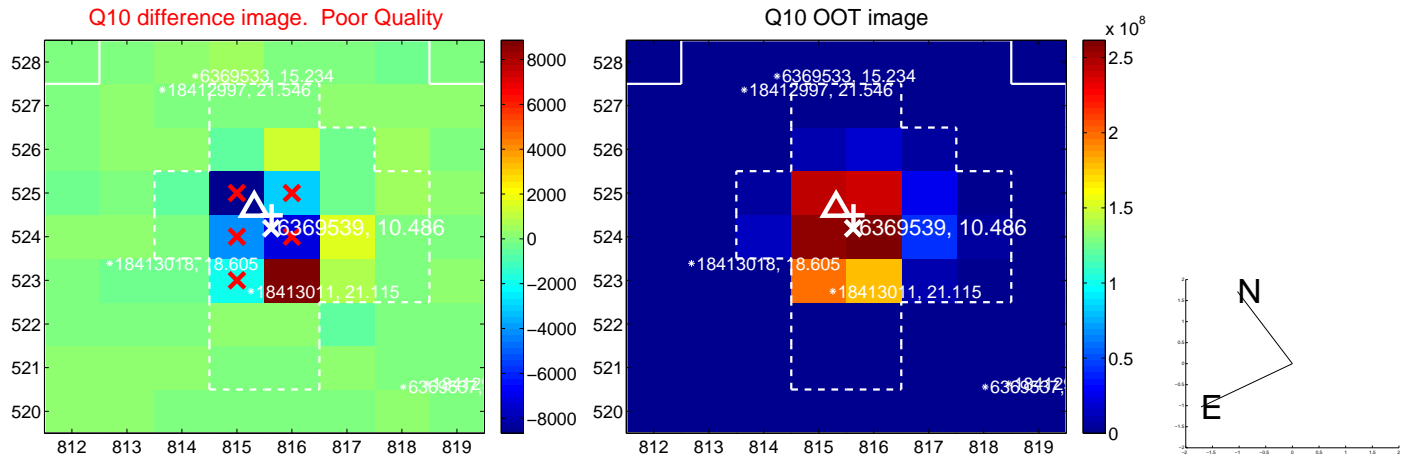
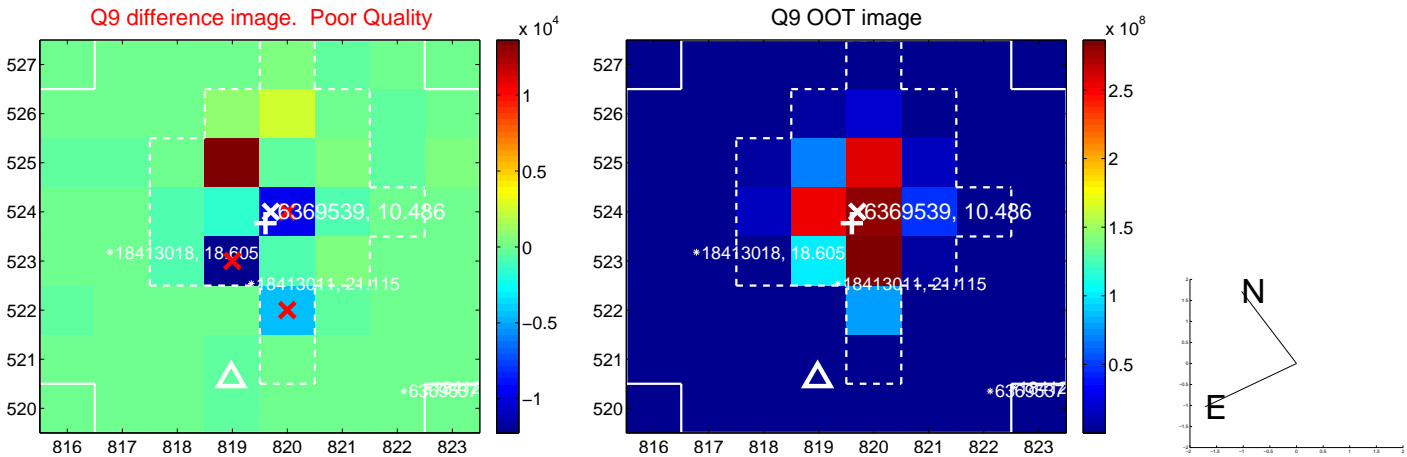


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

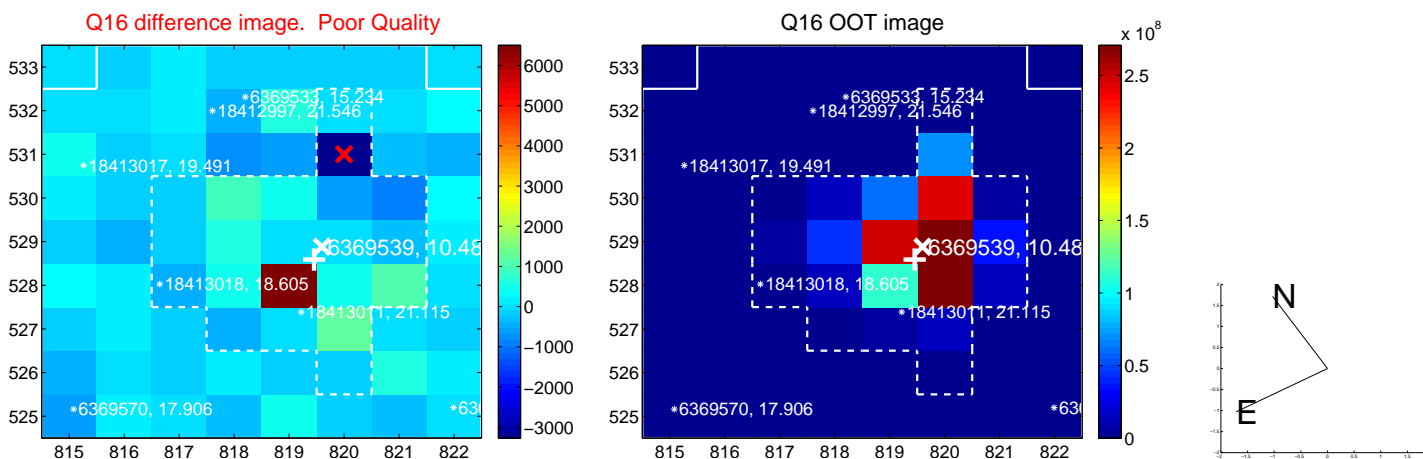
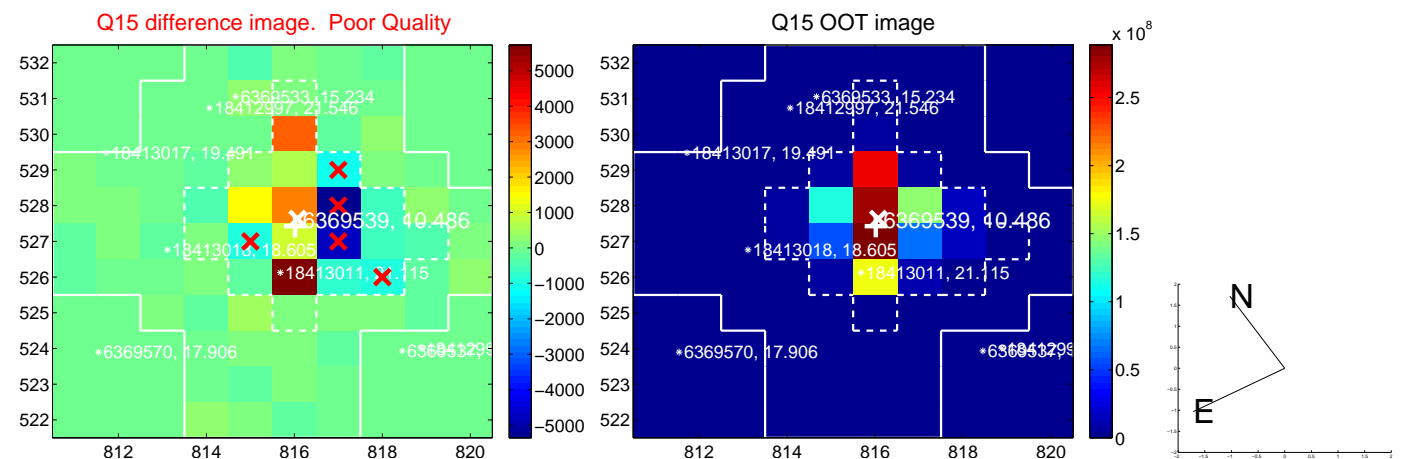
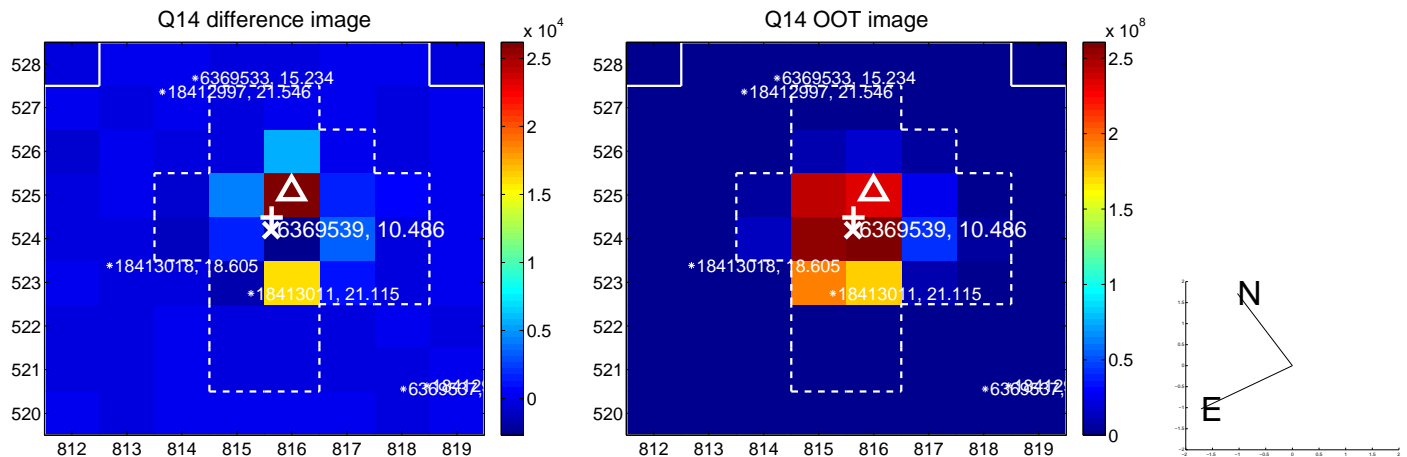
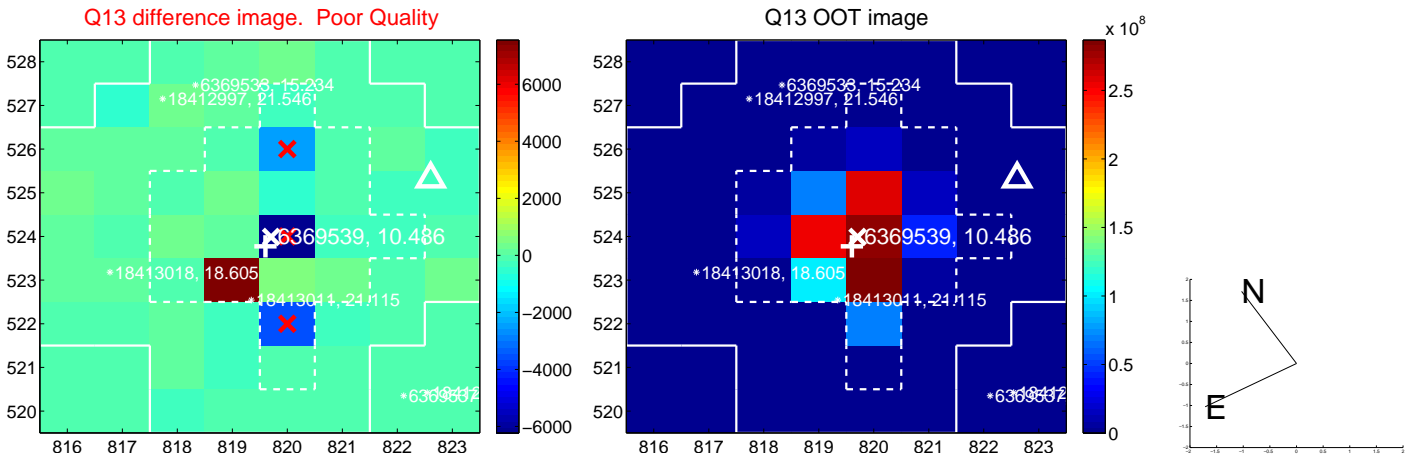




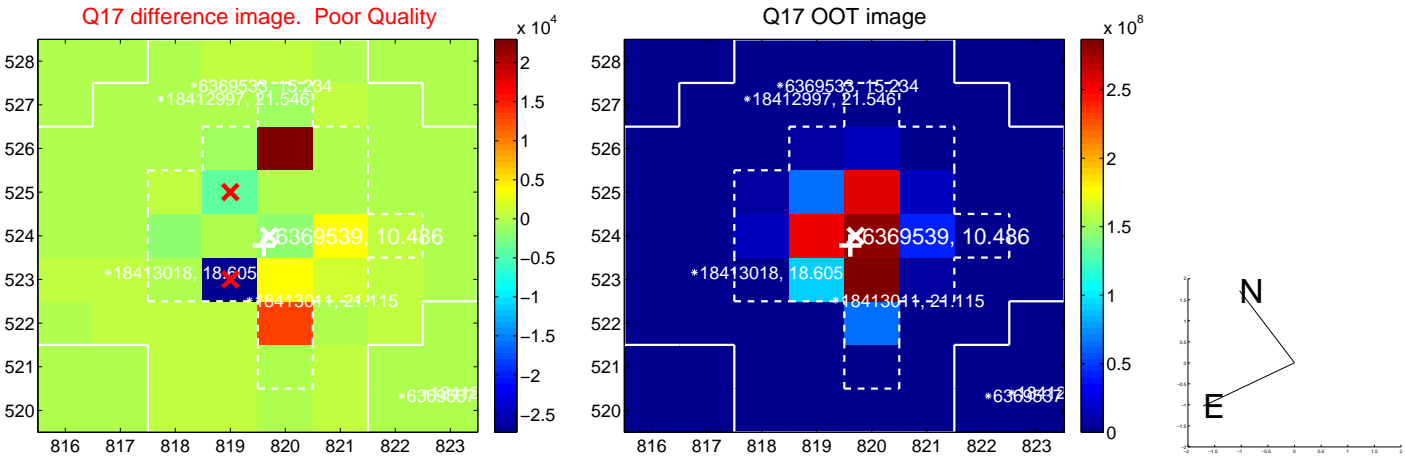
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

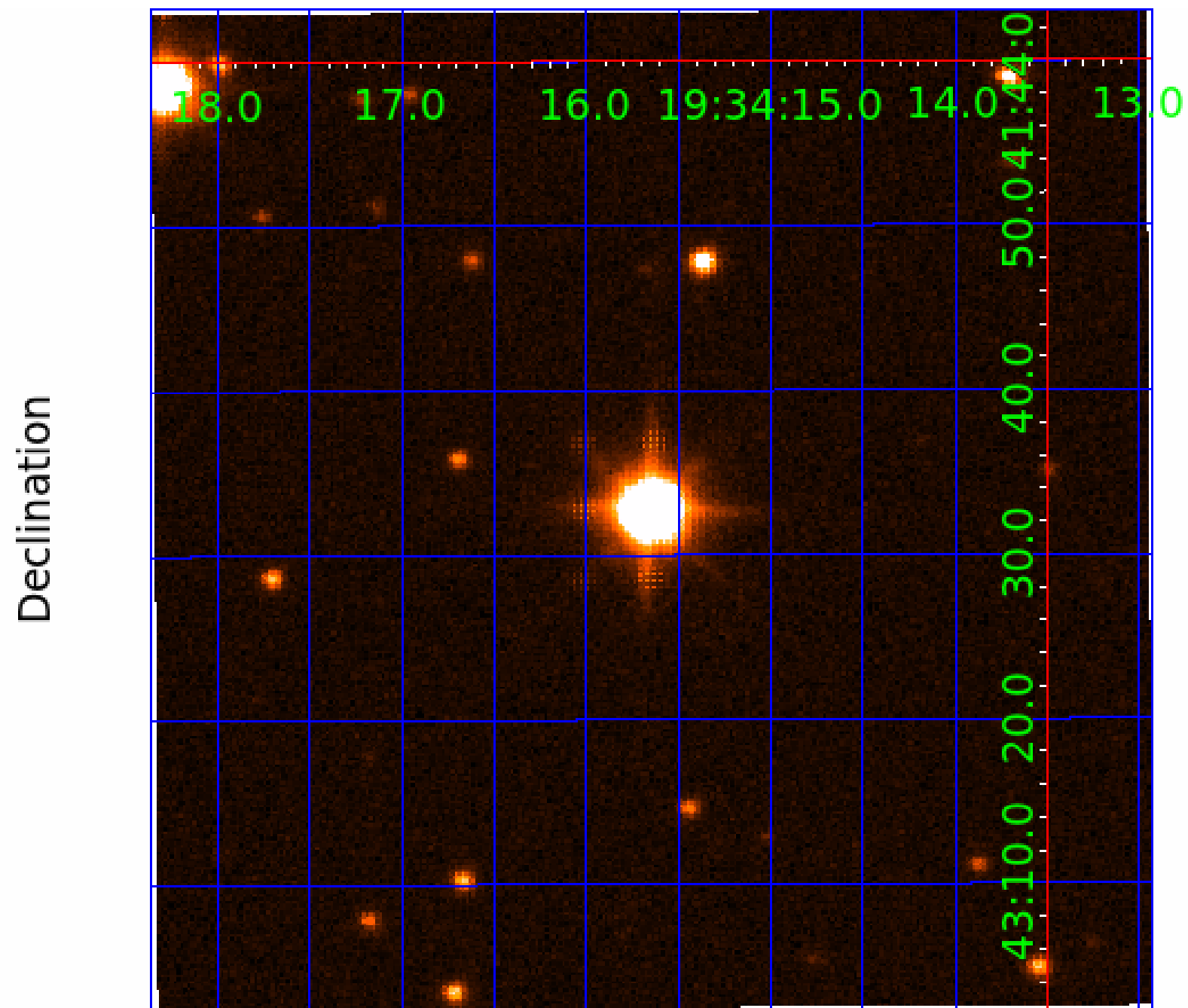


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image





# KIC 006369539

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006369539-01	OBS	No	0.774048	131.578702	74.2	2.500	8.5	-1.0	1.82	7777	1.59	27153.96
006369539-02	OBS	No	306.074295	268.177454	57.1	15.000	10.6	-1.0	1.82	7777	1.40	9.36
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## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006369539-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
006369539-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_SATURATED
006369539-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

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

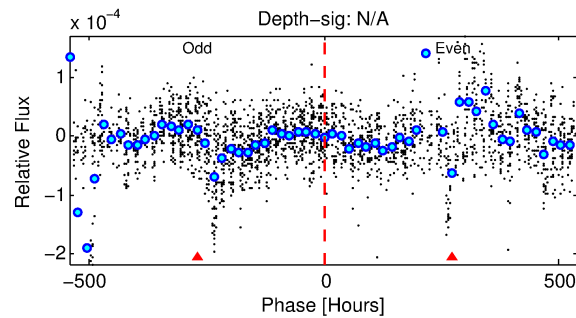
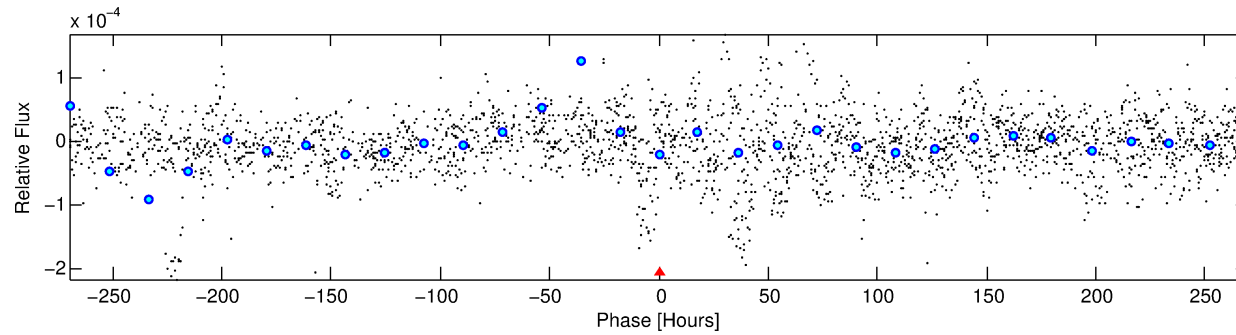
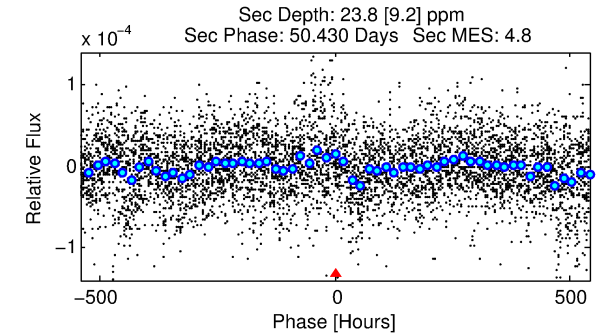
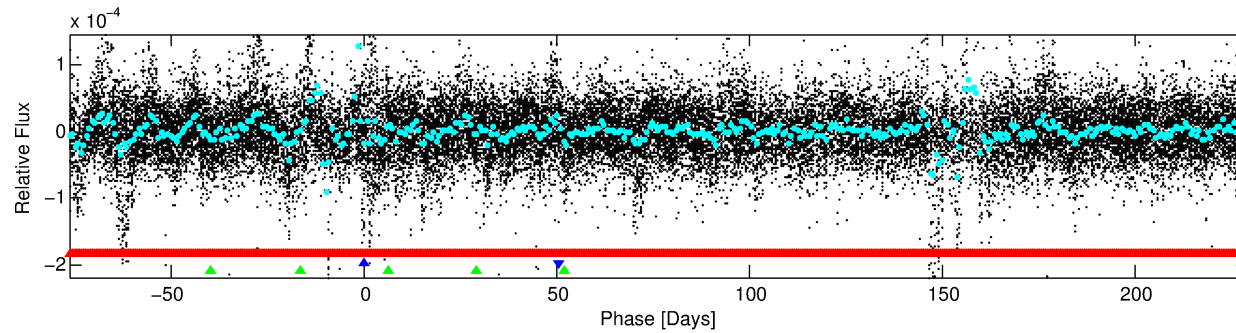
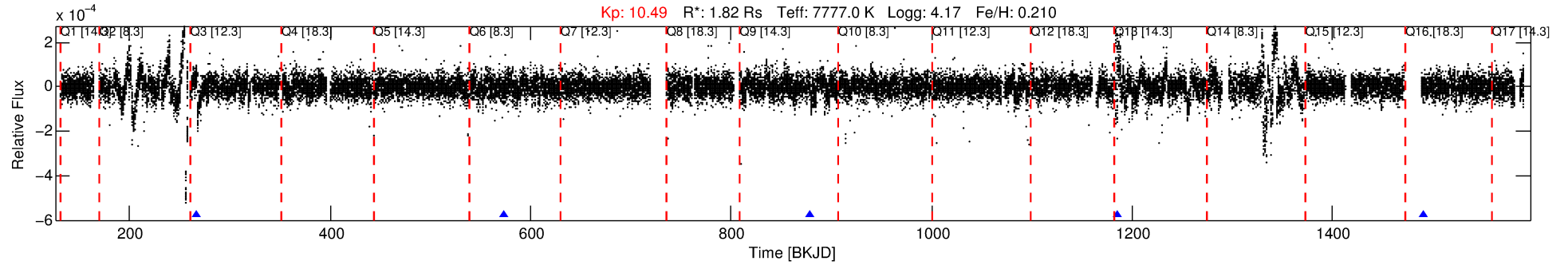
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006369539-02

No Significant Match Found

# DV One-Page Summary

KIC: 6369539 Candidate: 2 of 3 Period: 306.074 d



## TPS TCE Results:

Period = 306.07430 d  
Epoch = 268.1775 BKJD

DV fit results are unavailable

## DV Diagnostic Results:

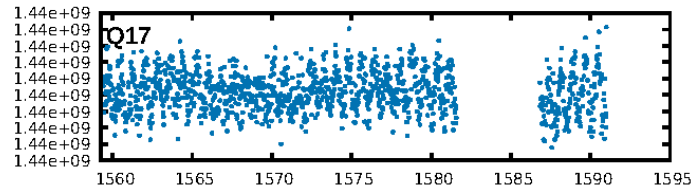
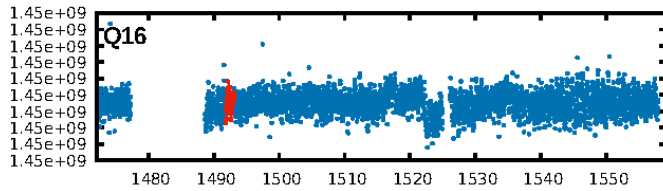
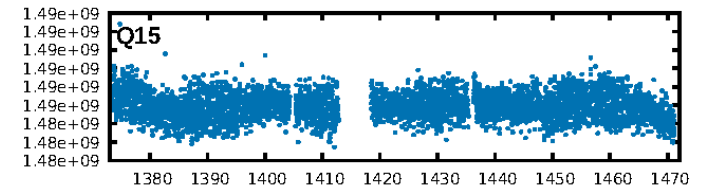
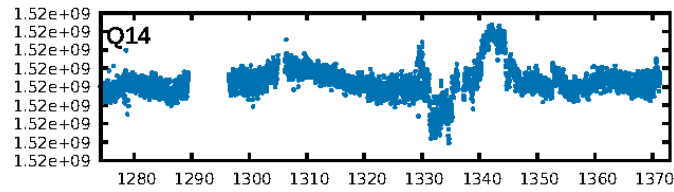
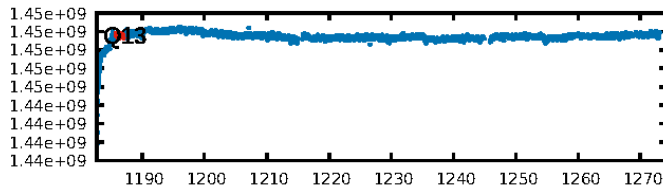
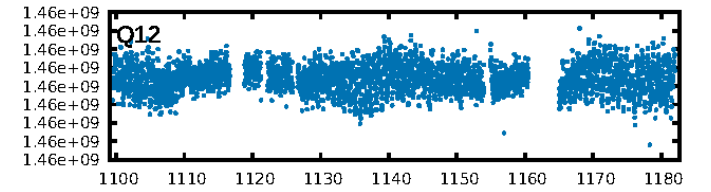
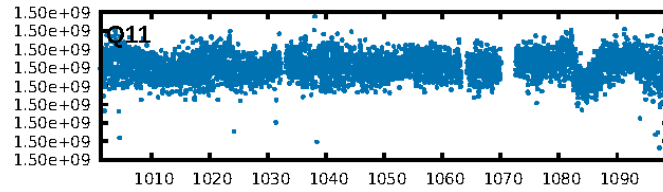
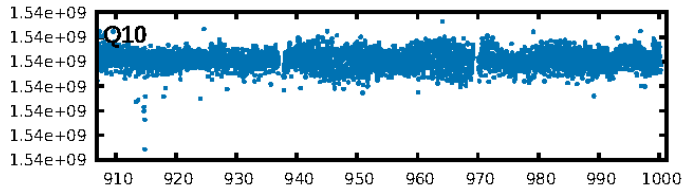
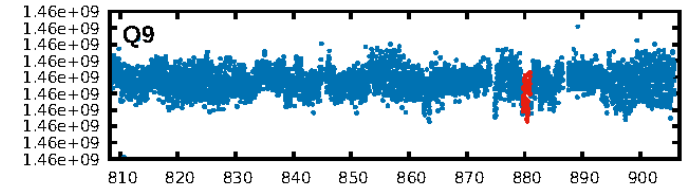
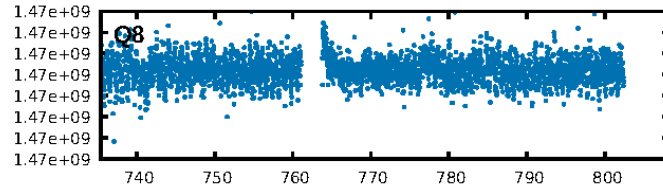
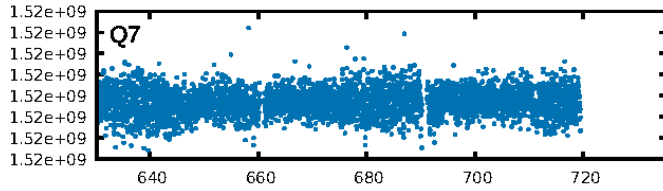
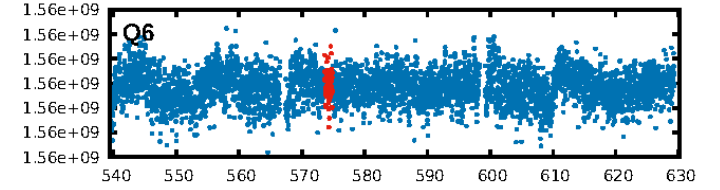
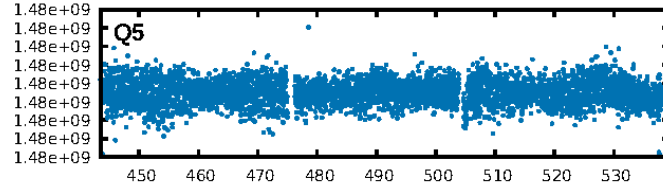
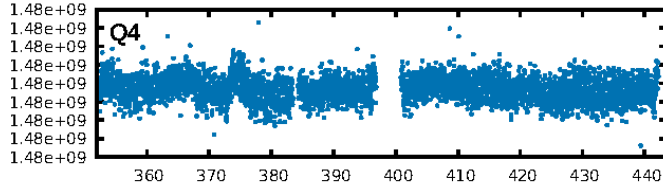
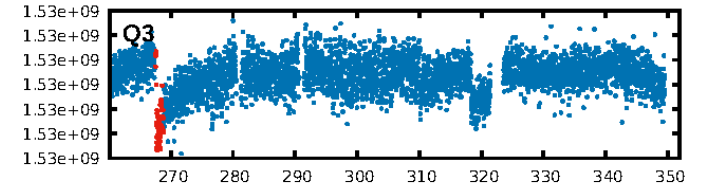
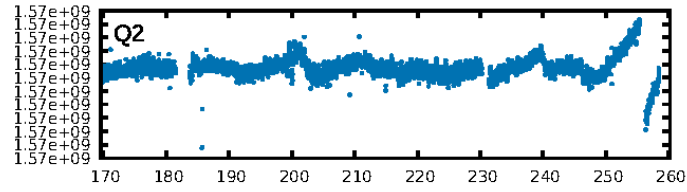
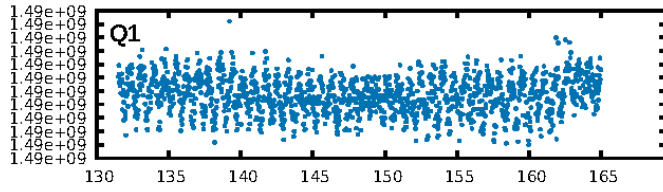
ShortPeriod-sig: 100.0% [33.48 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.50e-17  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: -12.99

Centroid-sig: 0.0%  
Centroid-so: 10.067 arcsec [3.20 $\sigma$ ]  
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

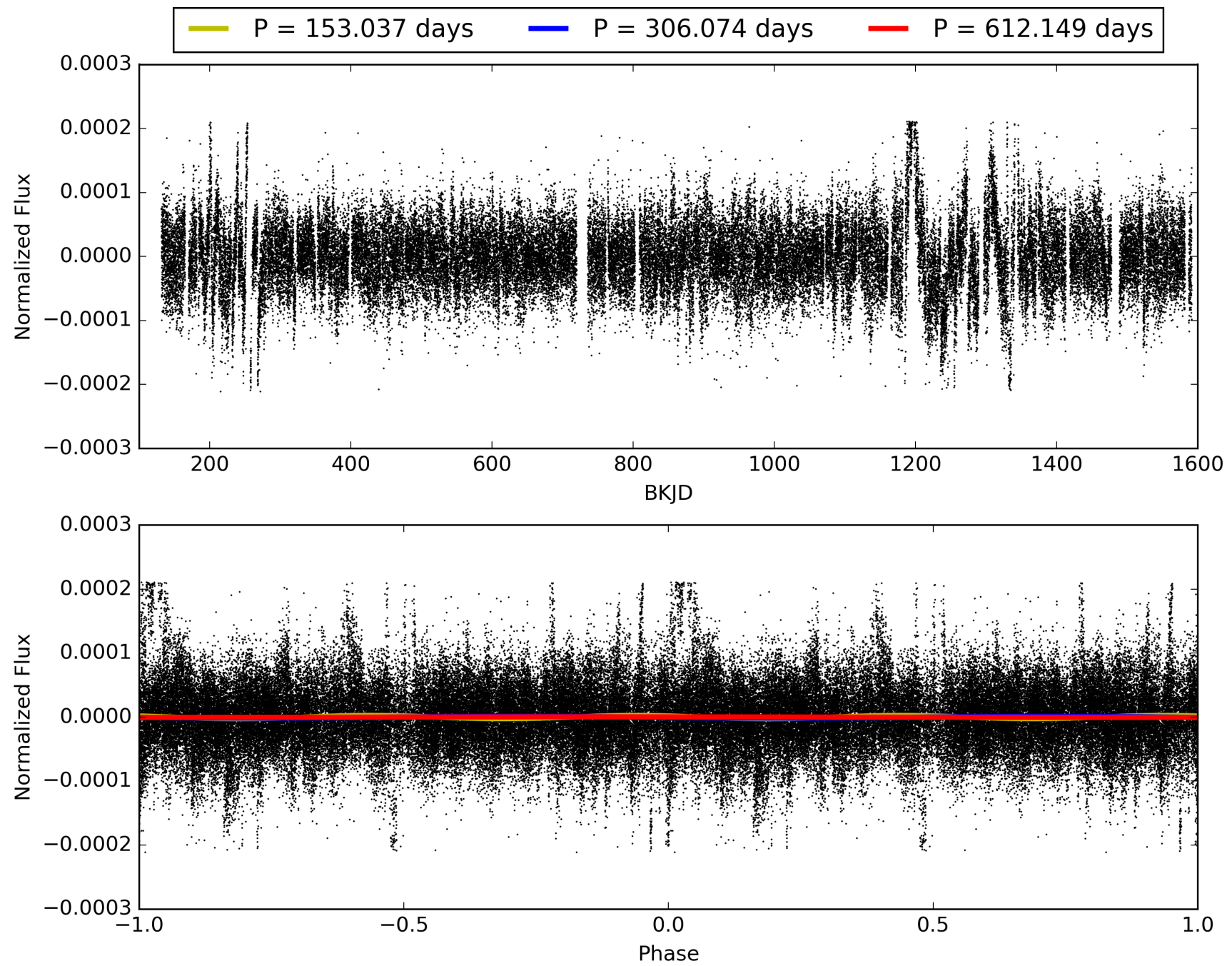
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:58:39 Z

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

# TCE 006369539-02, PDC Light Curves

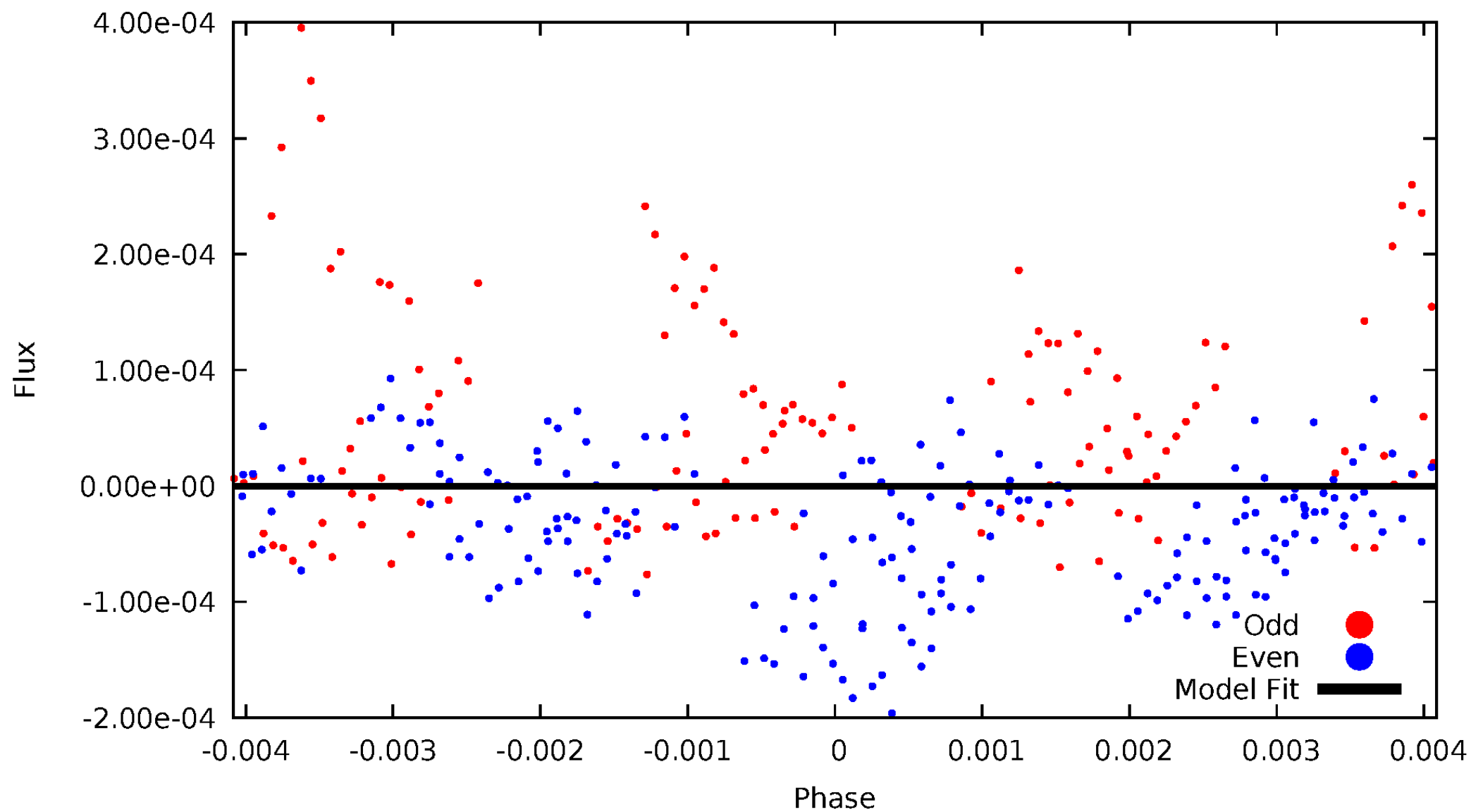


TCE 006369539-02



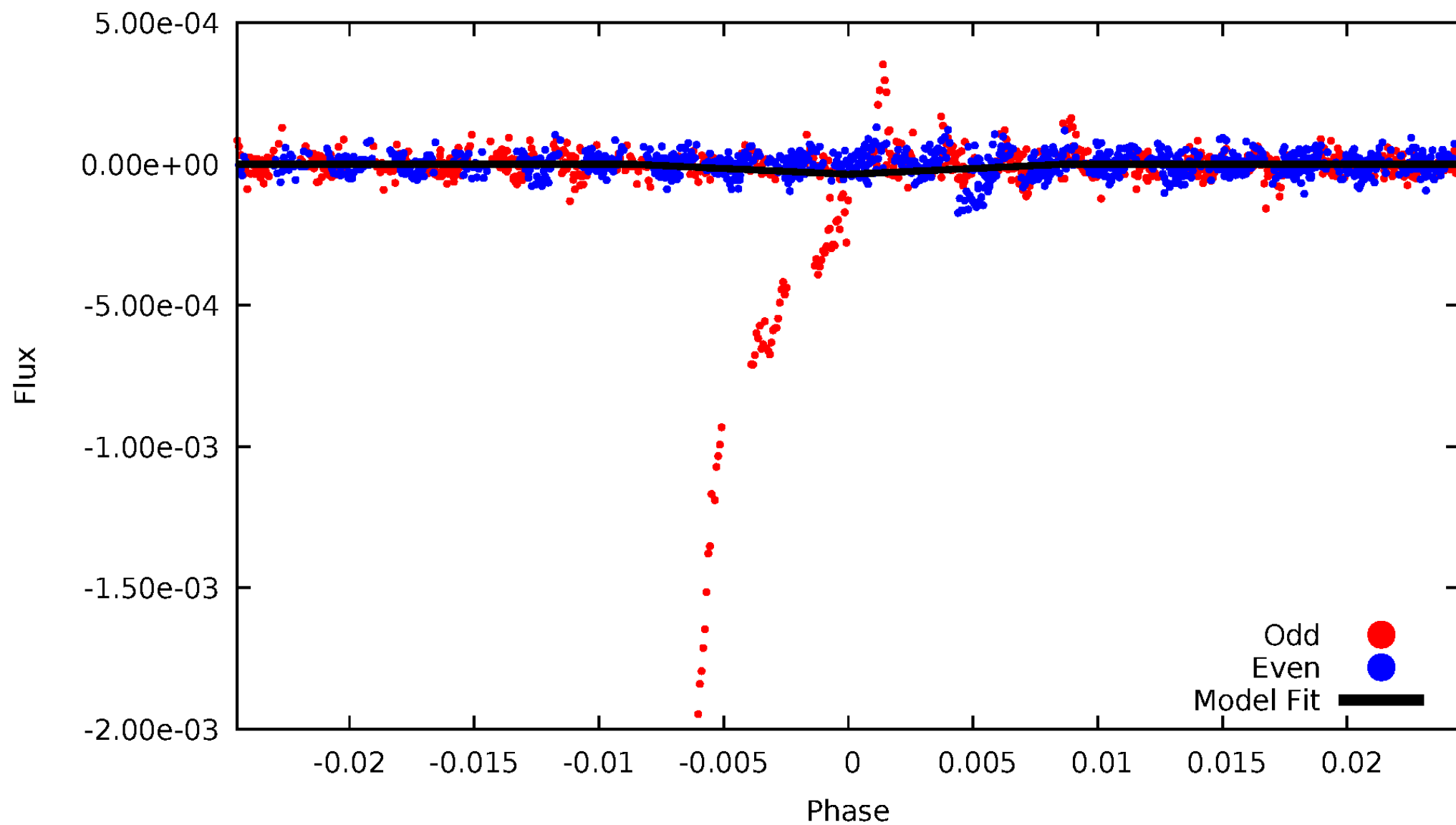
# DV Odd/Even

TCE 006369539-02



# ALT Odd/Even

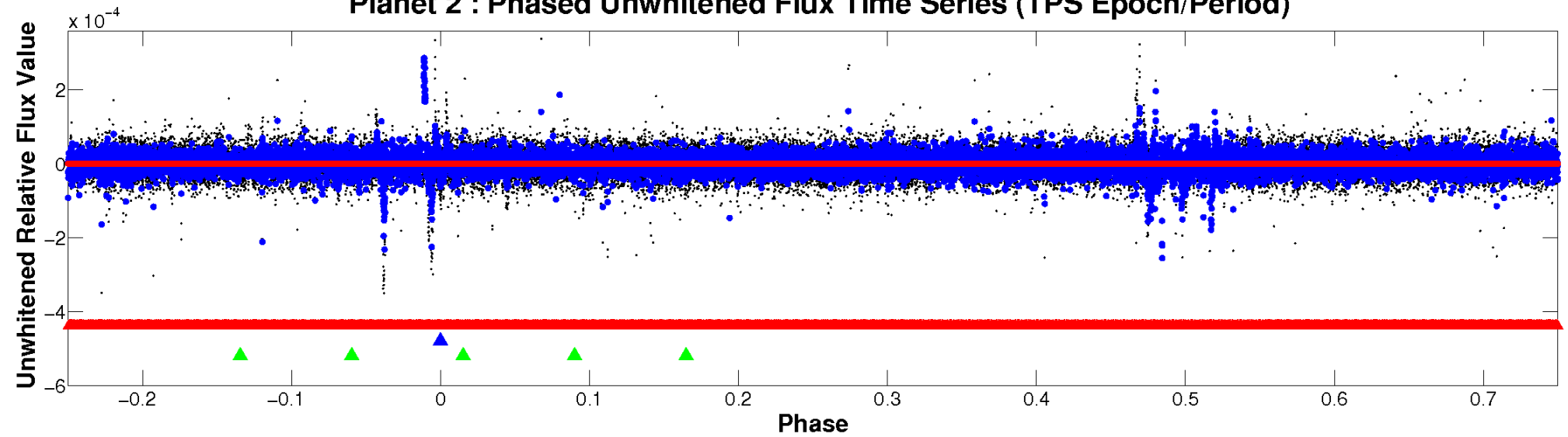
TCE 006369539-02





# Non-Whitened Vs. Whitened Light Curve

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

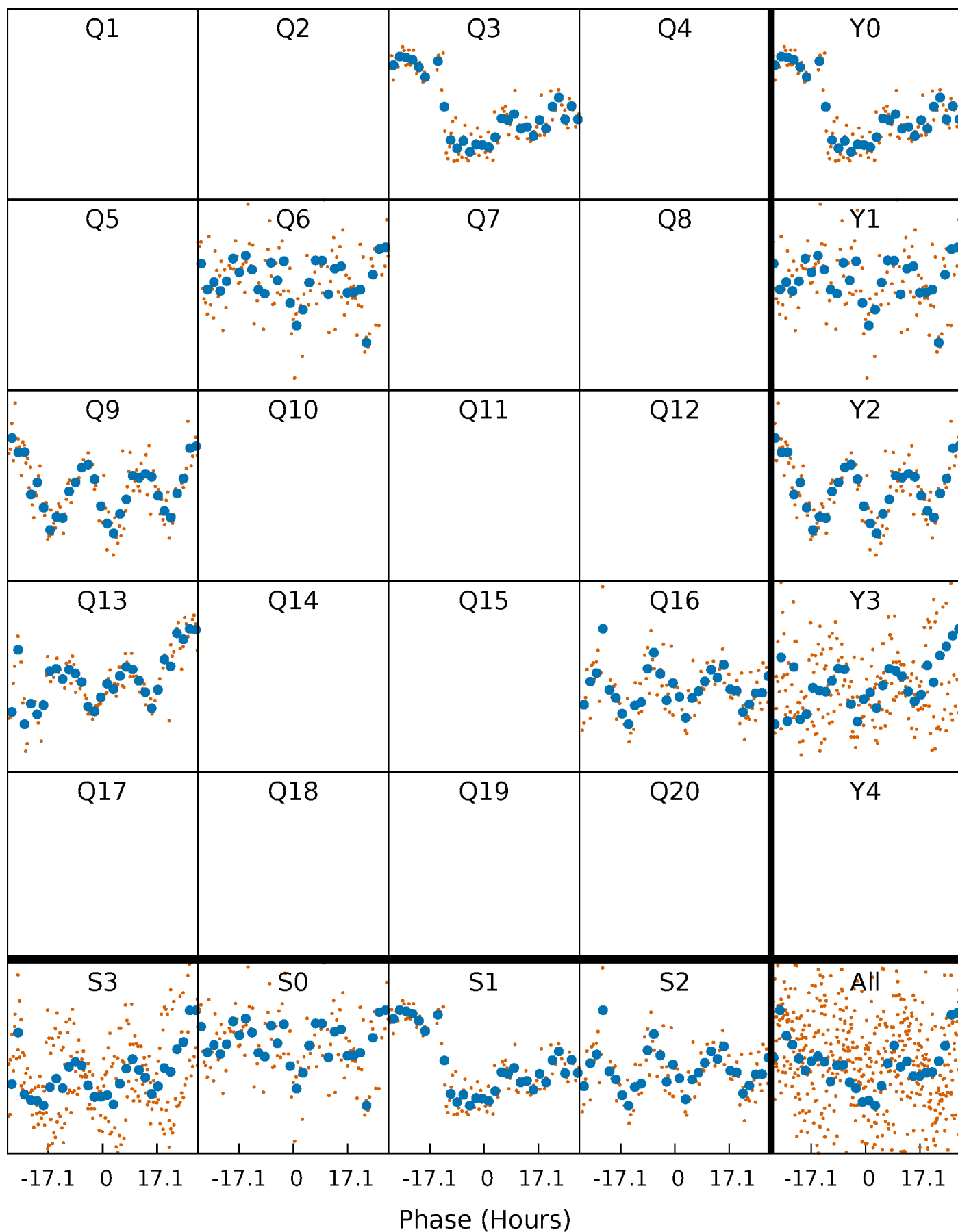


**Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



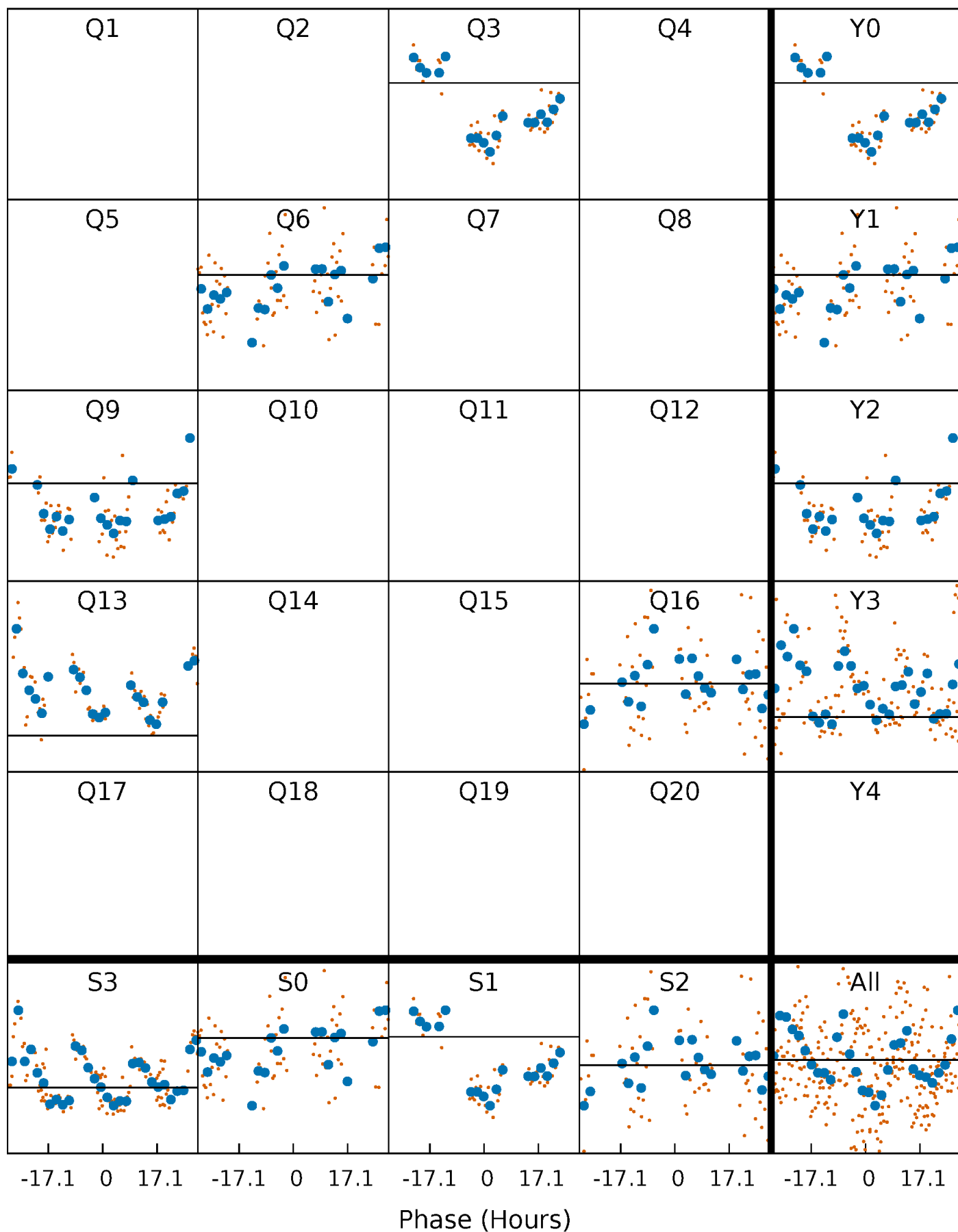
# PDC Quarter-Phased Transit Curves

TCE 006369539-02 P=306.074295 Days  $T_0=268.177454$  (BKJD)



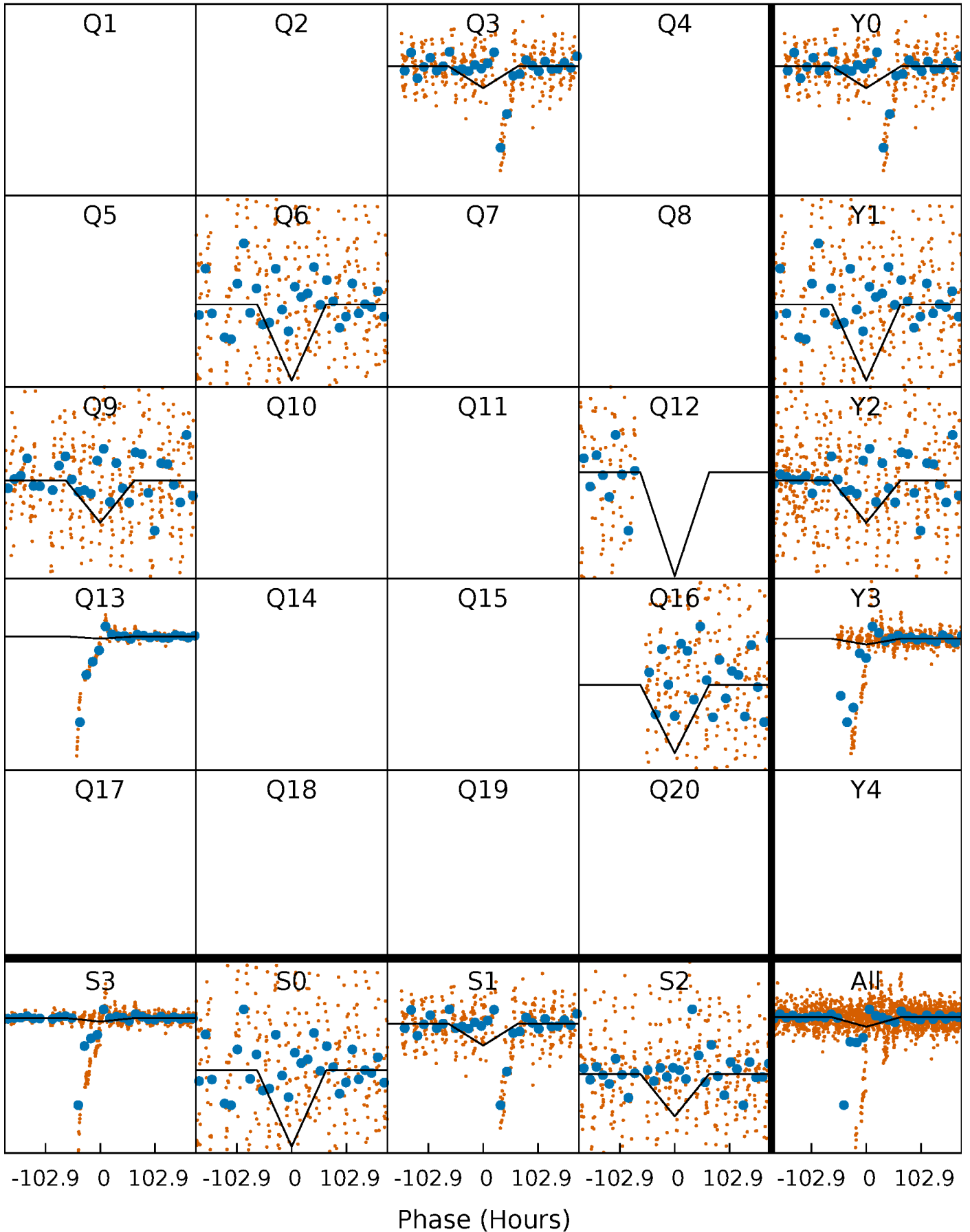
# DV Quarter-Phased Transit Curves

TCE 006369539-02 P=306.074295 Days  $T_0=268.177454$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

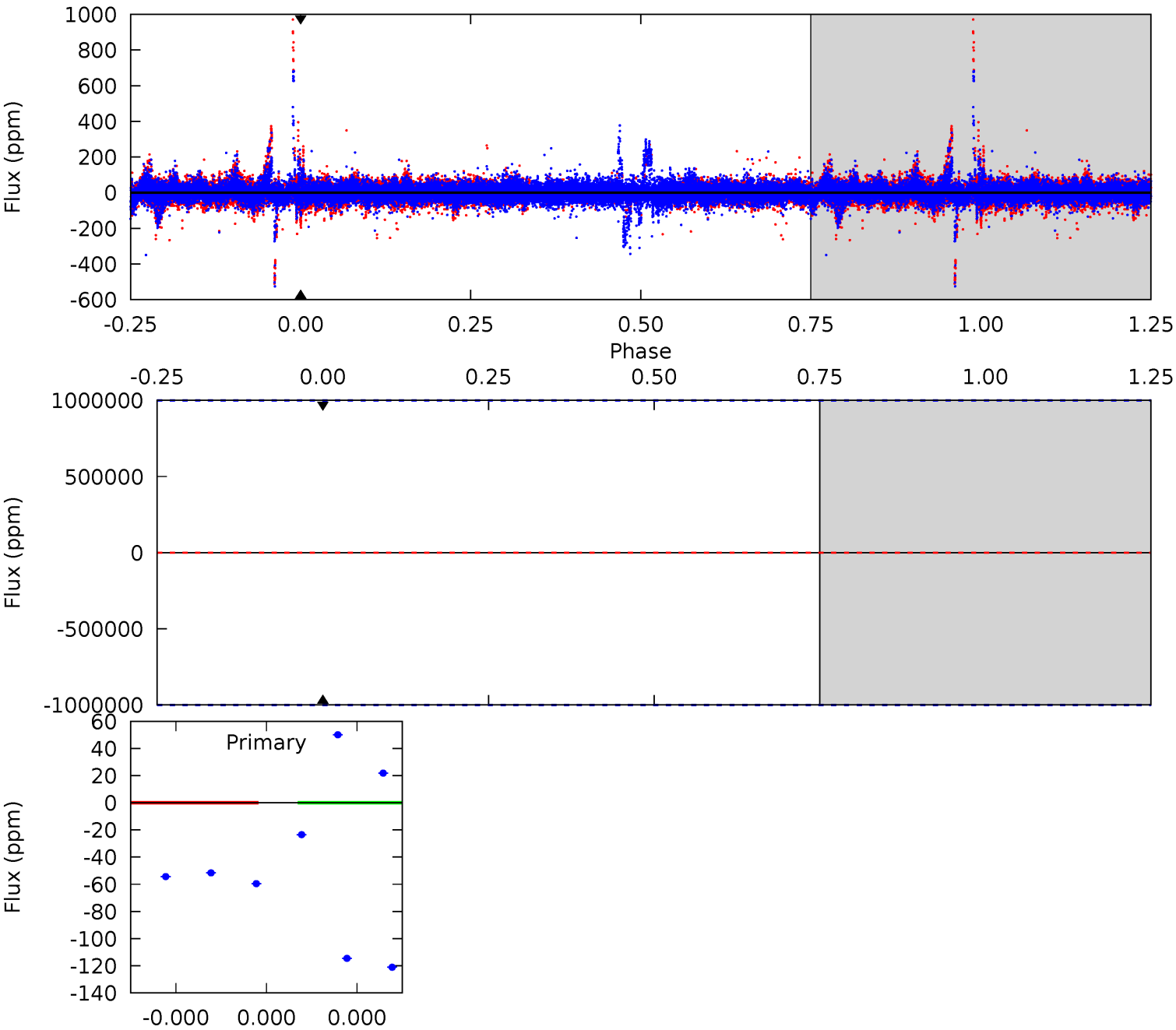
TCE 006369539-02 P=306.074295 Days  $T_0=266.642307$  (BKJD)



# DV Model-Shift Uniqueness Test

006369539-02, P = 306.074295 Days, E = 268.177454 Days

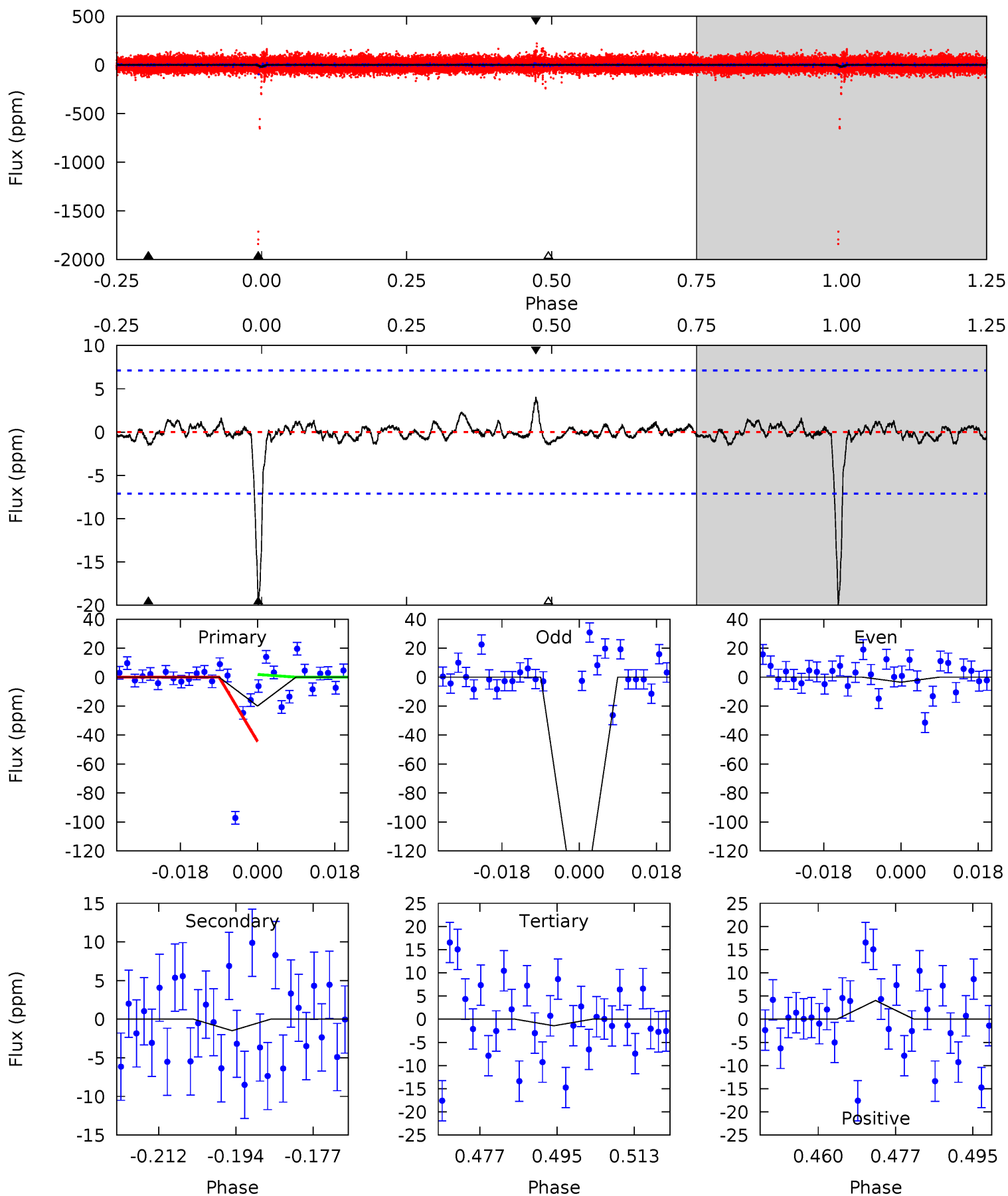
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

006369539-02, P = 306.074295 Days, E = 266.642307 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
13.8	1.03	0.98	2.79	4.92	2.37	0.47	12.8	11.0	0.05	-1.76	60.5	-43.7	0.17	14.8





### Stellar Parameters For KIC 006369539

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7777^{+214}_{-349}$	$4.168^{+0.081}_{-0.189}$	$0.210^{+0.150}_{-0.450}$	$1.820^{+0.557}_{-0.279}$	$1.785^{+0.181}_{-0.271}$	$0.417^{+0.154}_{-0.218}$
	+3%/-4%	+2%/-5%	+71%/-214%	+31%/-15%	+10%/-15%	+37%/-52%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 006369539-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$13.94^{+16.49}_{-9.45}$	$630^{+48}_{-36}$	$6877^{+52225}_{-44586}$	$9202^{+712904}_{-423410}$
Alt.	$-1 \pm 1$	$14.45^{+14.48}_{-10.04}$	$630^{+47}_{-36}$	$1934^{+602}_{-3393}$	$3.454^{+35.464}_{-3.259}$

$T_{max}$  = 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

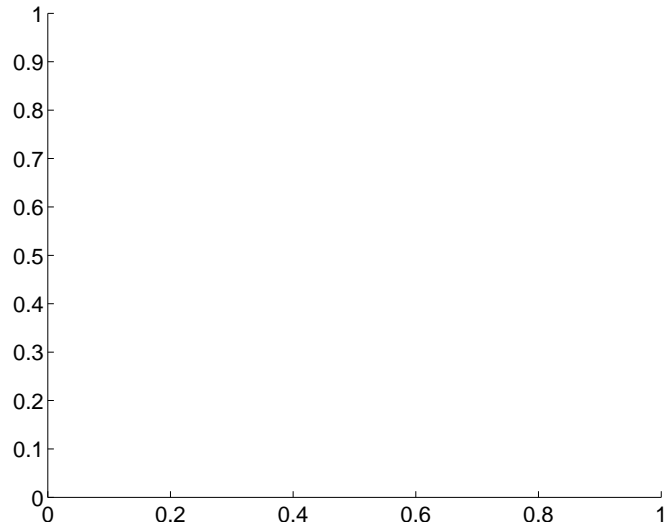
Supplemental centroid analysis for 006369539-02. **Kepler magnitude: 10.49.** Transit SNR -1.00

**There are 0 quarters with good PRF difference image offsets**

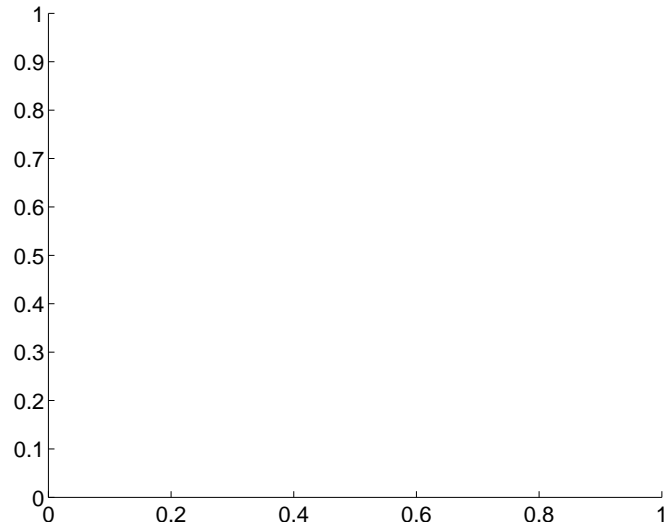
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	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	<b>10.07 <math>\pm</math> 3.15</b>	<b>3.20</b>	-10.07 $\pm$ 3.15	0.08 $\pm$ 3.50

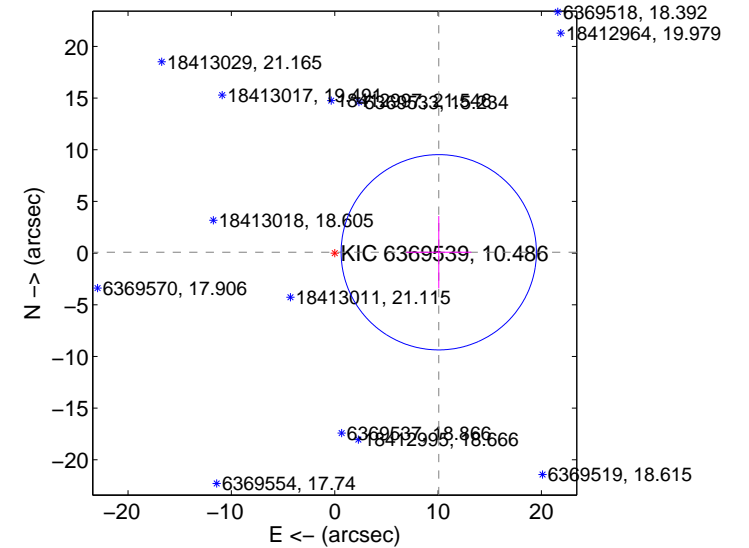
**There is no PRF-fit offset from OOT-fit**



**There is no PRF-fit offset from KIC**



offset from photometric centroids



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

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



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



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

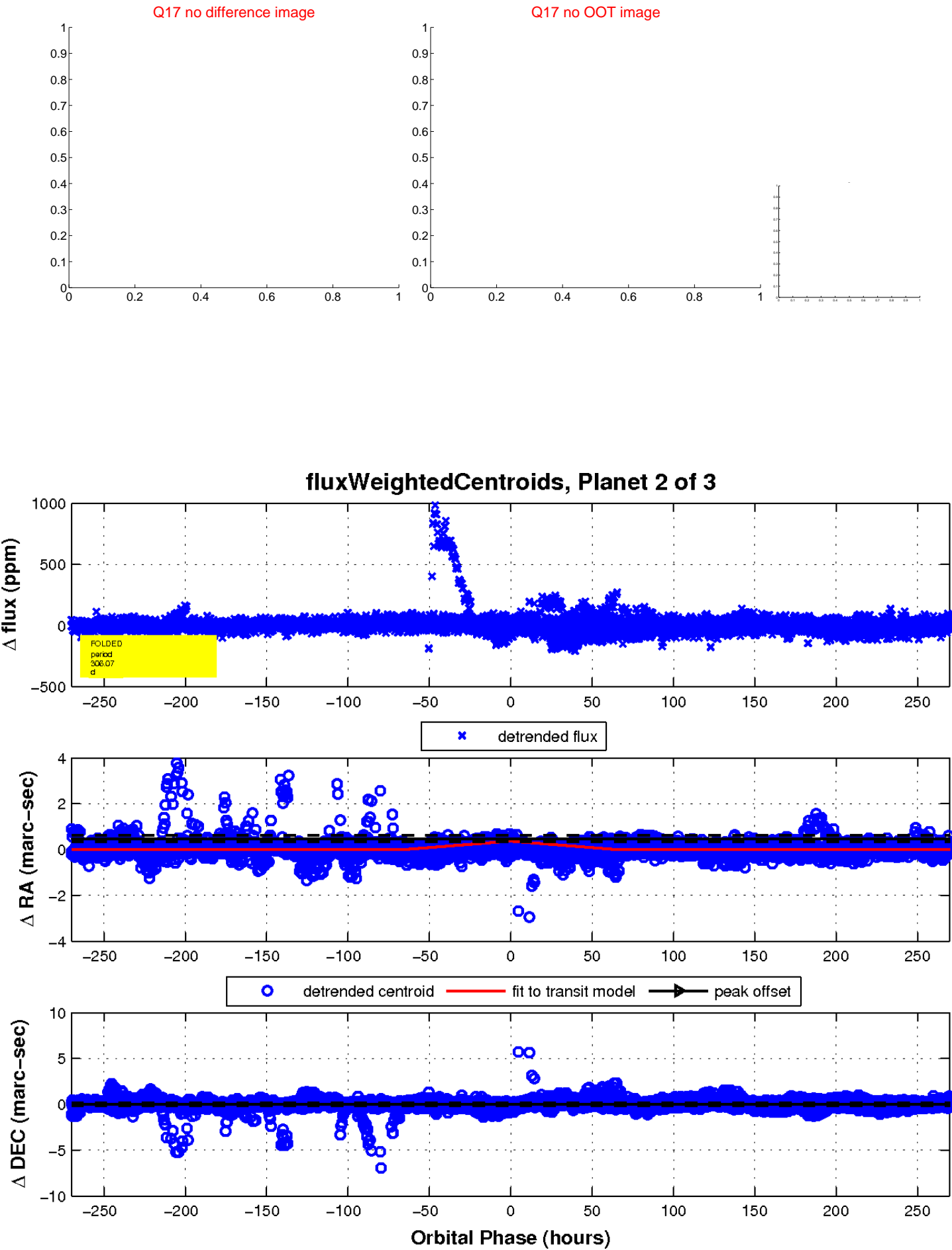


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

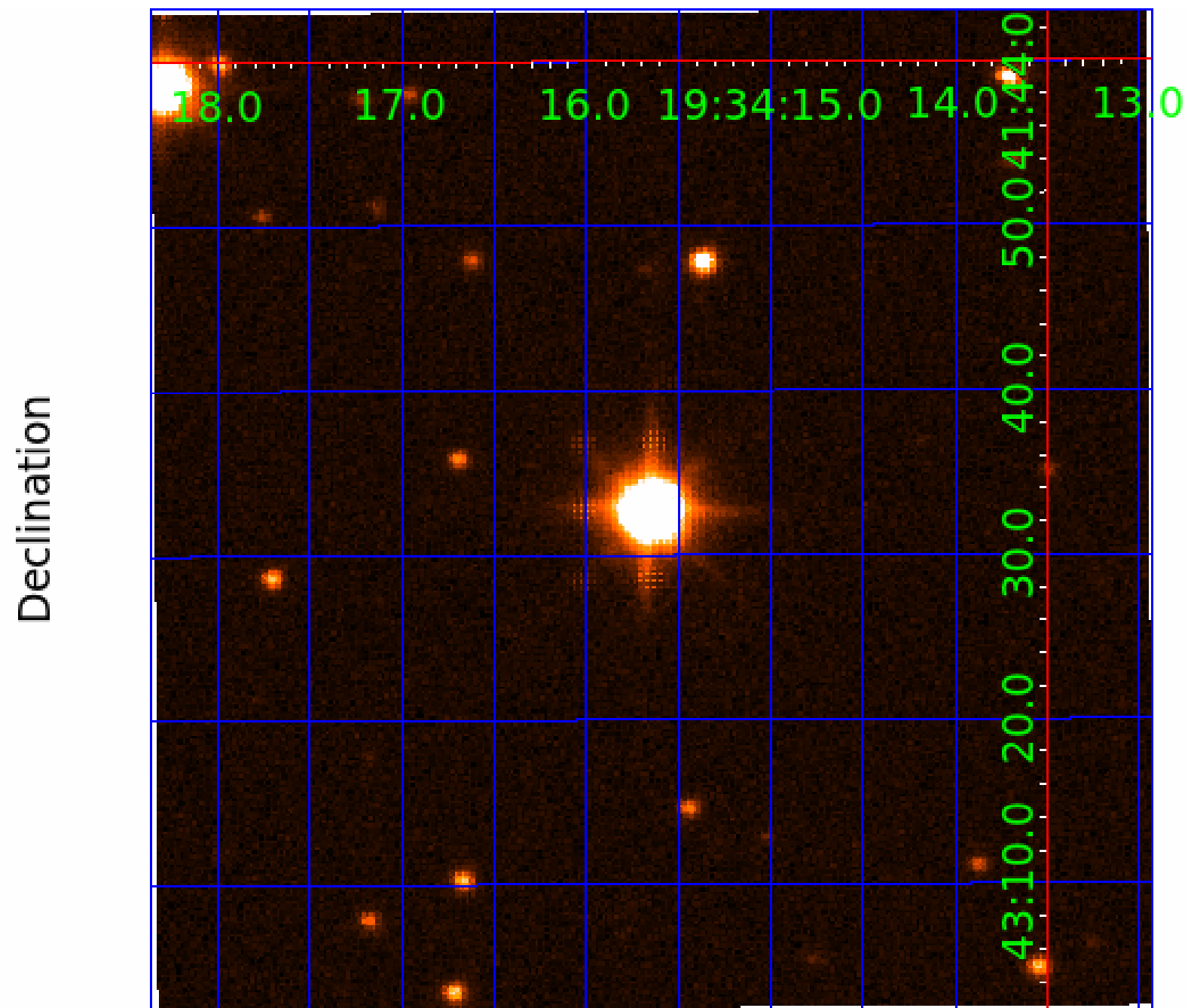




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image



# KIC 006369539

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006369539-01	OBS	No	0.774048	131.578702	74.2	2.500	8.5	-1.0	1.82	7777	1.59	27153.96
006369539-02	OBS	No	306.074295	268.177454	57.1	15.000	10.6	-1.0	1.82	7777	1.40	9.36
006369539-03	OBS	No	283.174768	318.641061	25.2	6.674	8.6	3.6	1.82	7777	1.05	10.38

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006369539-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
006369539-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_SATURATED
006369539-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

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

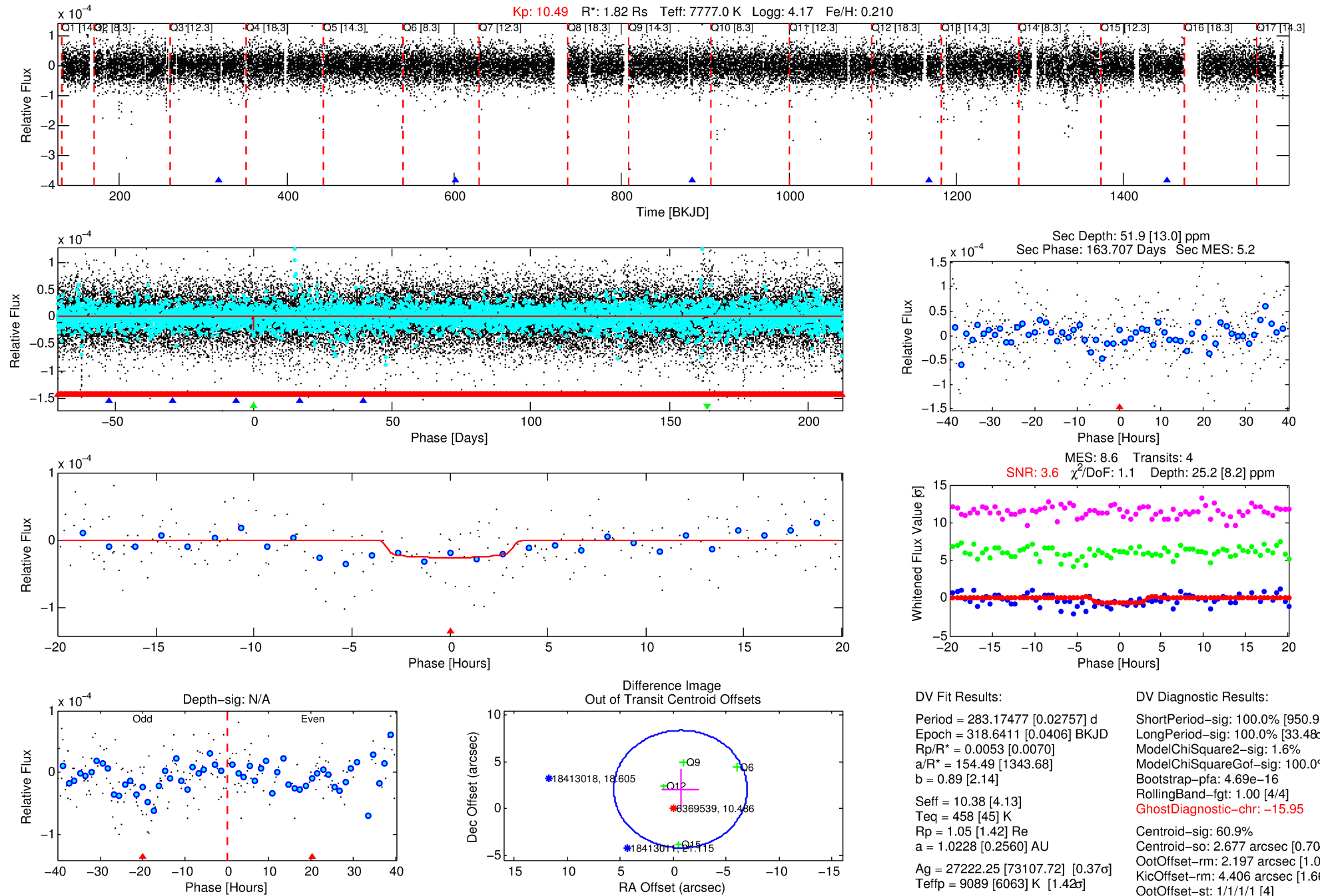
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006369539-03

No Significant Match Found

# DV One-Page Summary

KIC: 6369539 Candidate: 3 of 3 Period: 283.175 d



## DV Fit Results:

Period = 283.17477 [0.02757] d  
Epoch = 318.6411 [0.0406] BKJD  
Rp/R\* = 0.0053 [0.0070]  
a/R\* = 154.49 [1343.68]  
b = 0.89 [2.14]  
Seff = 10.38 [4.13]  
Teq = 458 [45] K  
Rp = 1.05 [1.42] Re  
a = 1.0228 [0.2560] AU  
Ag = 27222.25 [73107.72] [0.37] $\sigma$   
Teff = 9089 [6063] K [1.42] $\sigma$

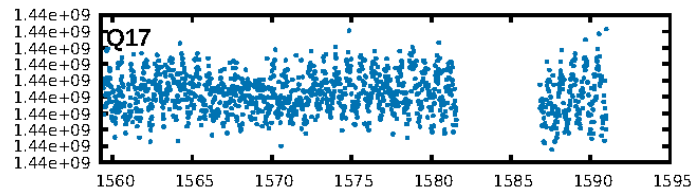
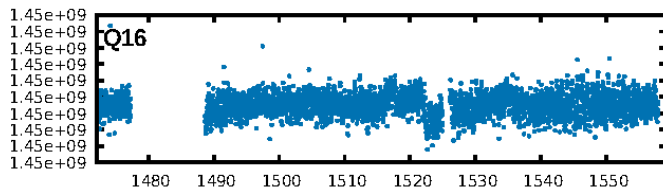
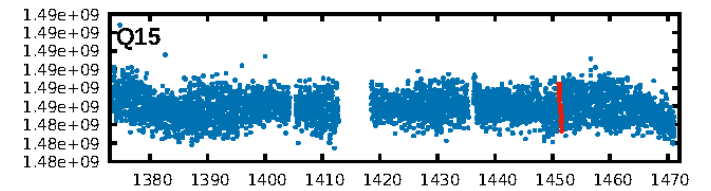
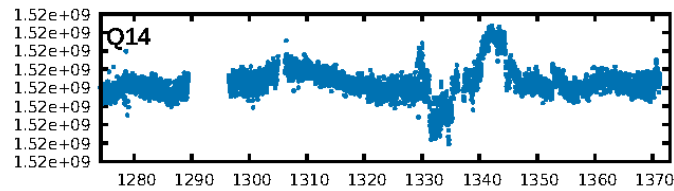
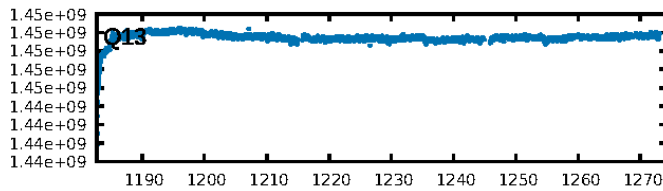
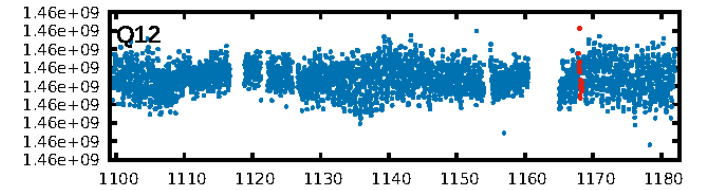
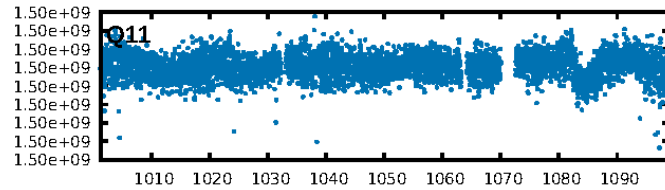
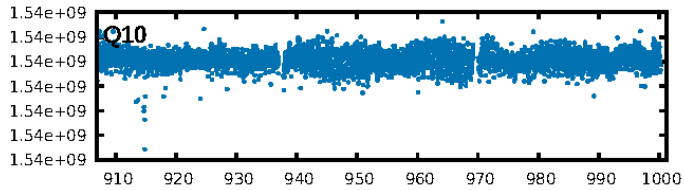
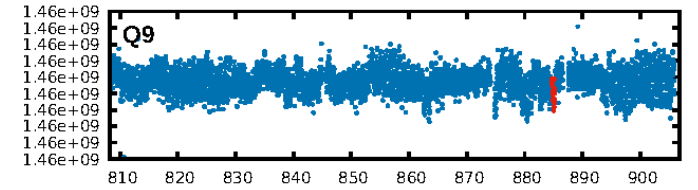
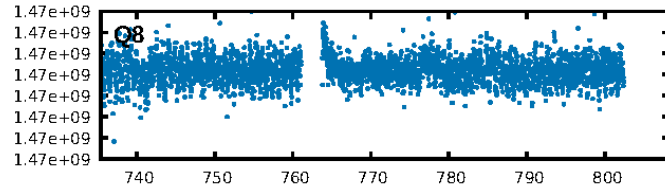
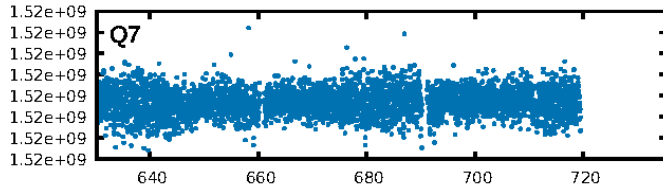
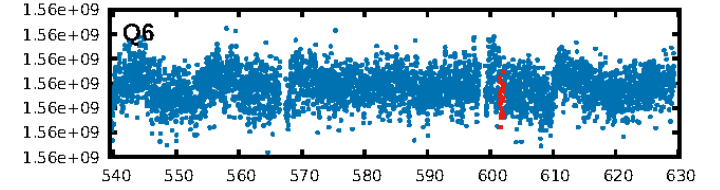
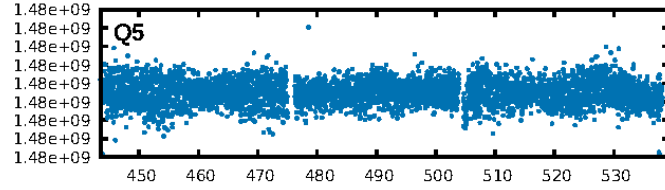
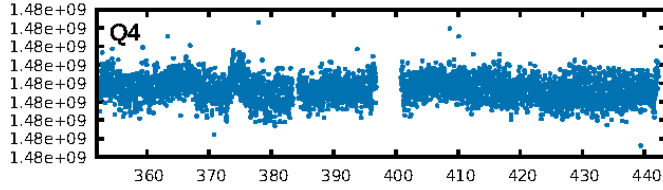
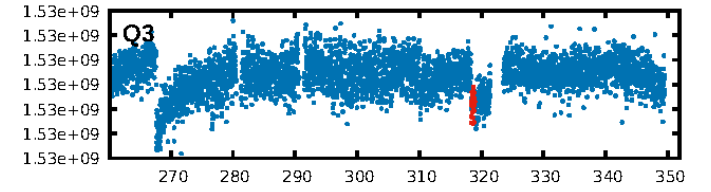
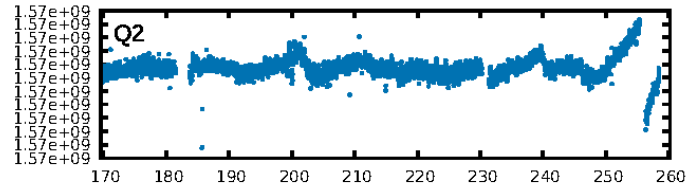
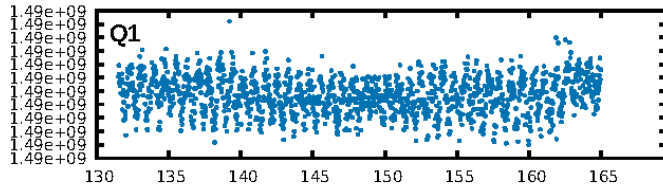
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [950.95] $\sigma$   
LongPeriod-sig: 100.0% [33.48] $\sigma$   
ModelChiSquare2-sig: 1.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 4.69e-16  
RollingBand-fgt: 1.00 [4/4]  
**GhostDiagnostic-chr: -15.95**  
Centroid-sig: 60.9%  
Centroid-so: 2.677 arcsec [0.70] $\sigma$   
OotOffset-rm: 2.197 arcsec [1.05] $\sigma$   
KicOffset-rm: 4.406 arcsec [1.66] $\sigma$   
OotOffset-st: 1/1/1/1 [4]  
KicOffset-st: 1/1/1/1 [4]  
DiffImageQuality-fgm: 0.25 [1/4]  
DiffImageOverlap-fno: 0.00 [0/5]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:58:47 Z

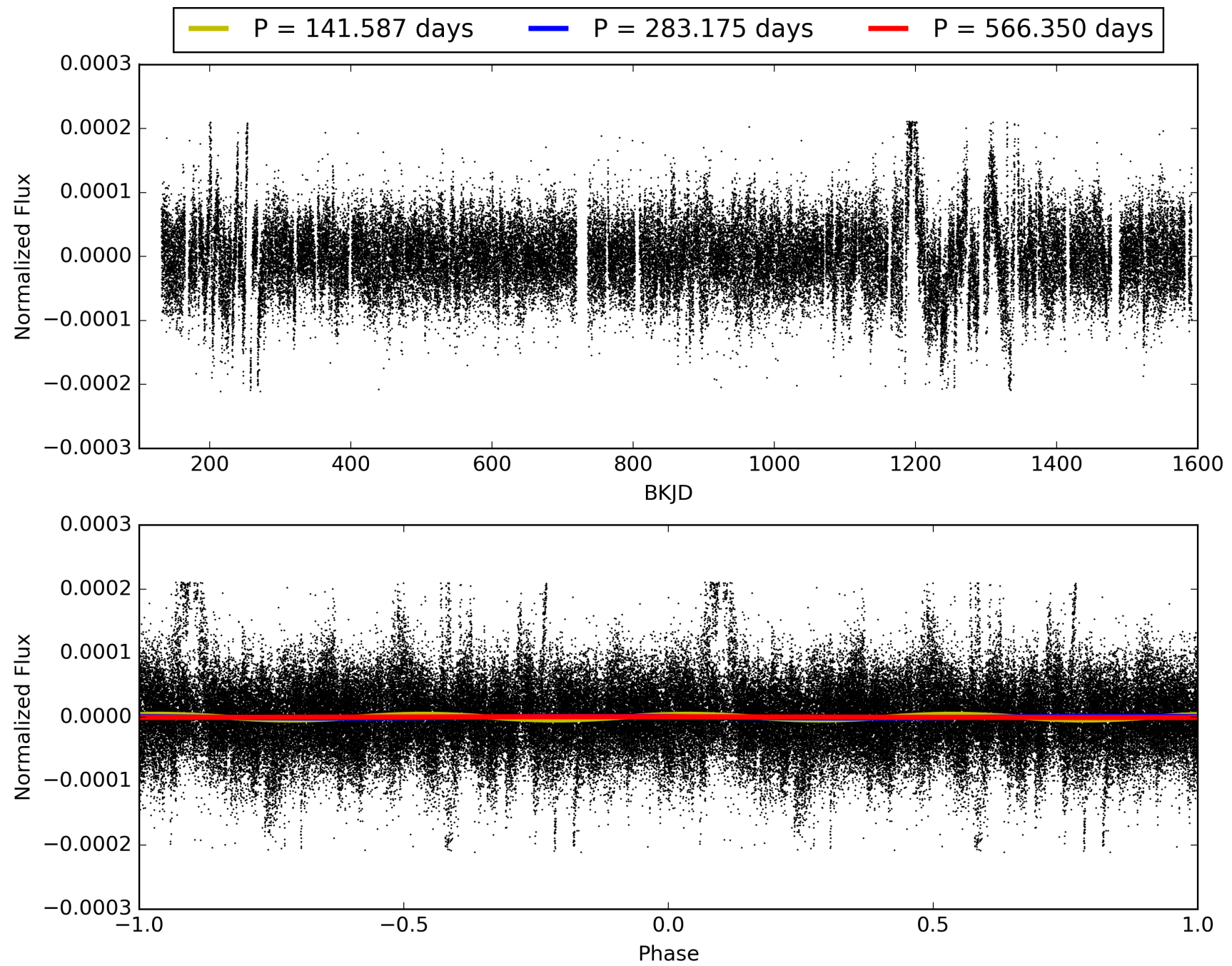
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 006369539-03, PDC Light Curves



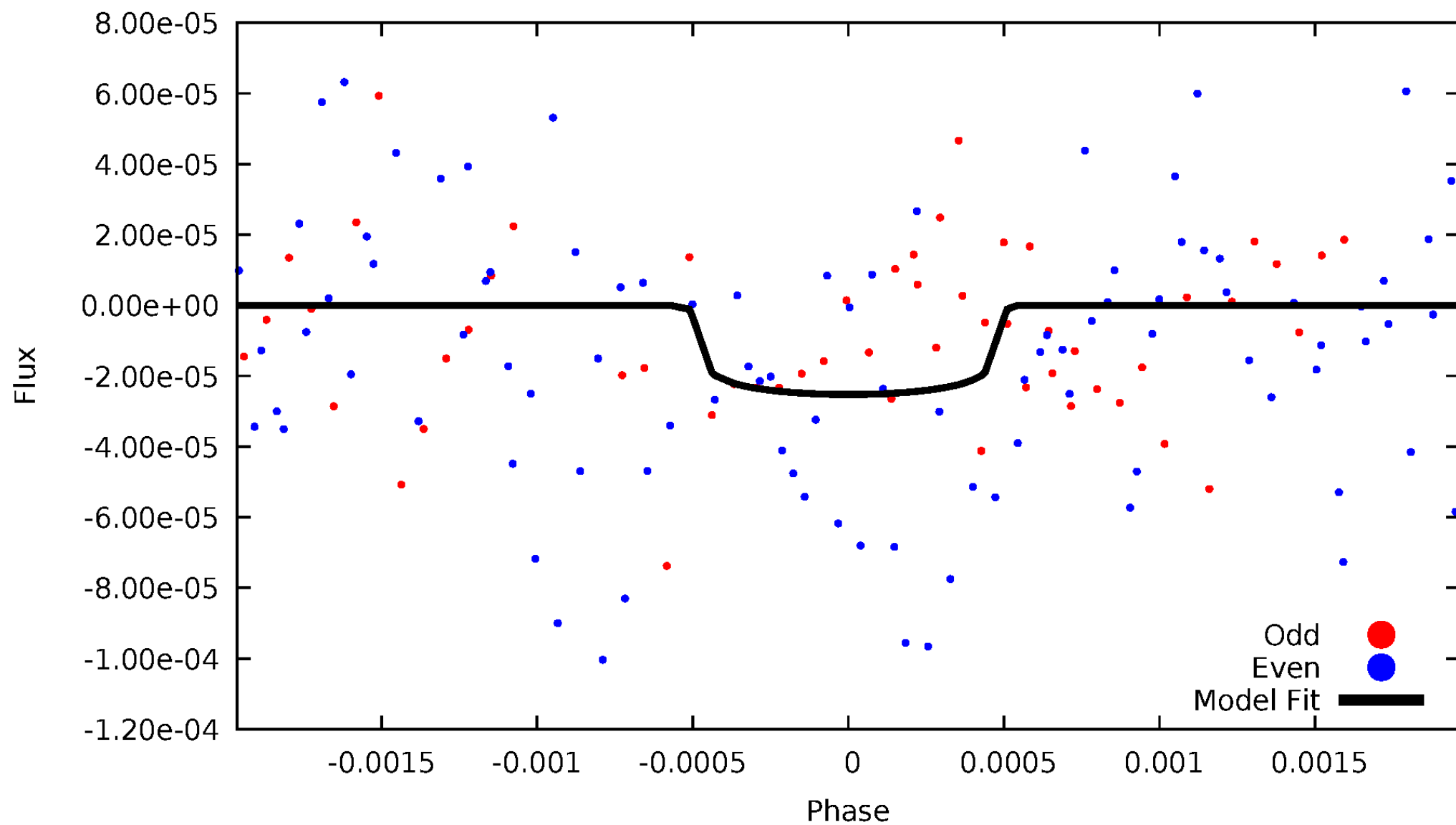


TCE 006369539-03



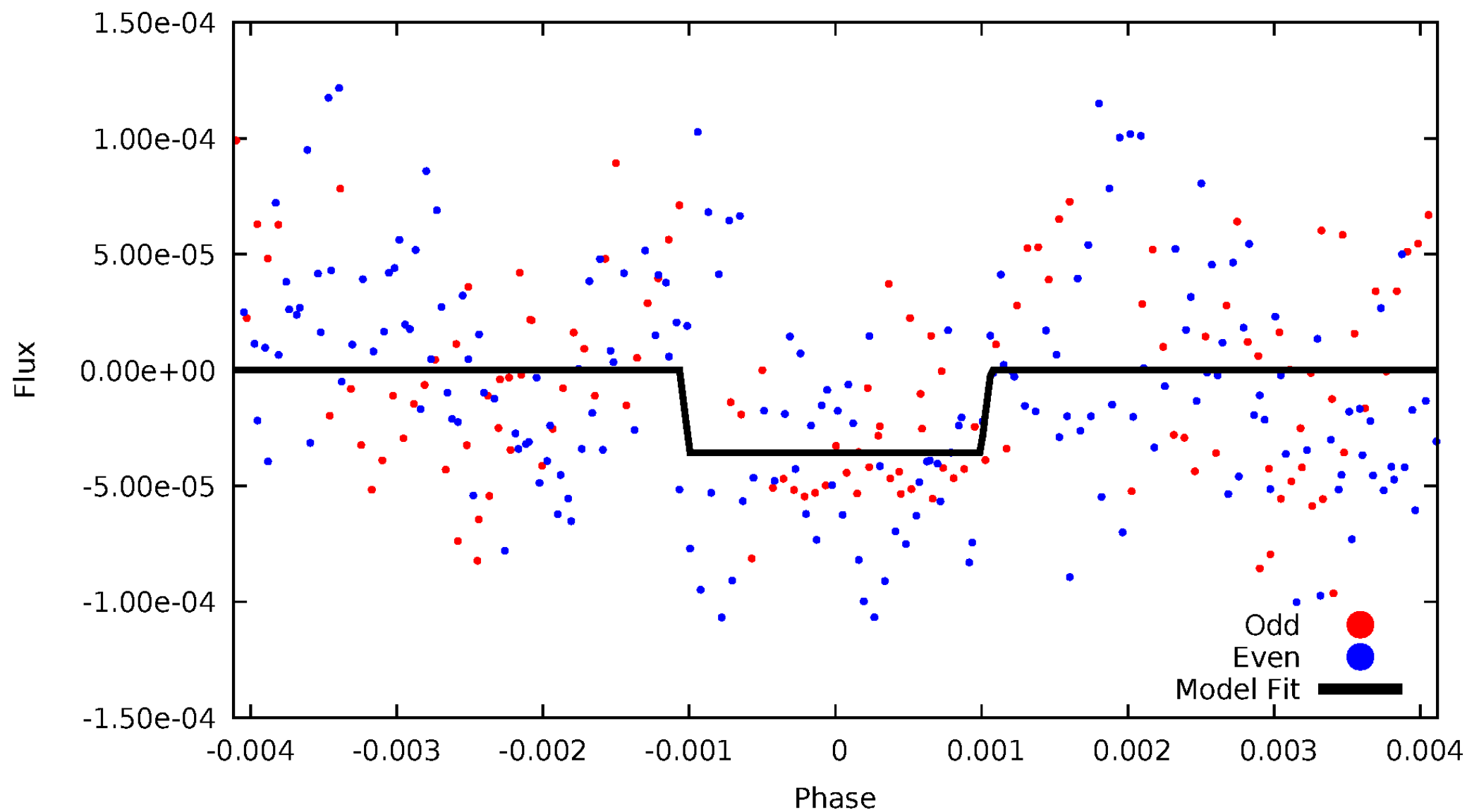
# DV Odd/Even

TCE 006369539-03



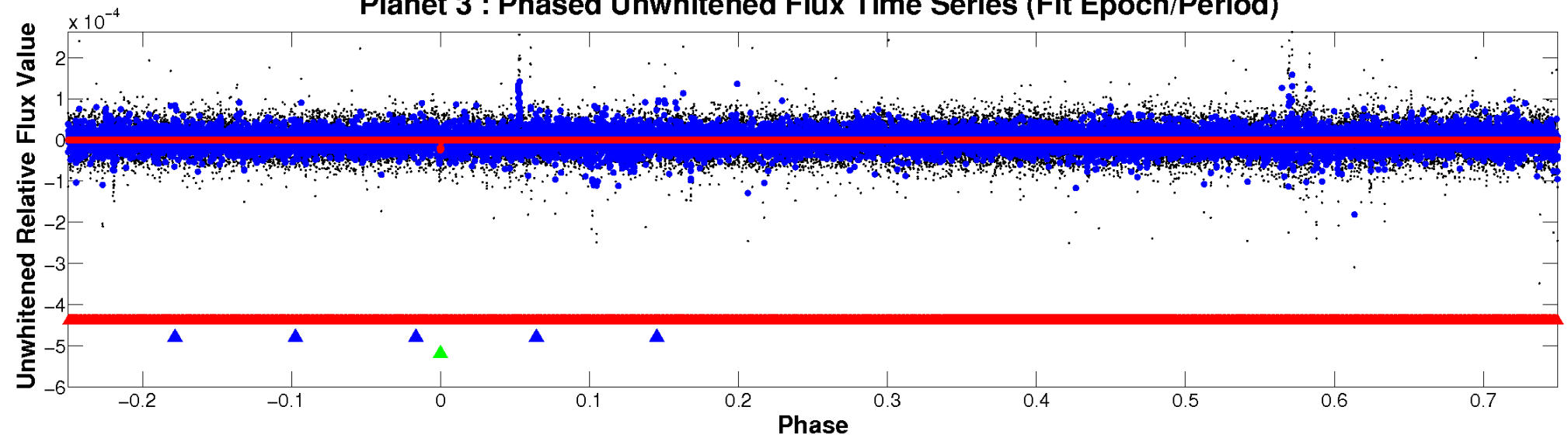
# ALT Odd/Even

TCE 006369539-03

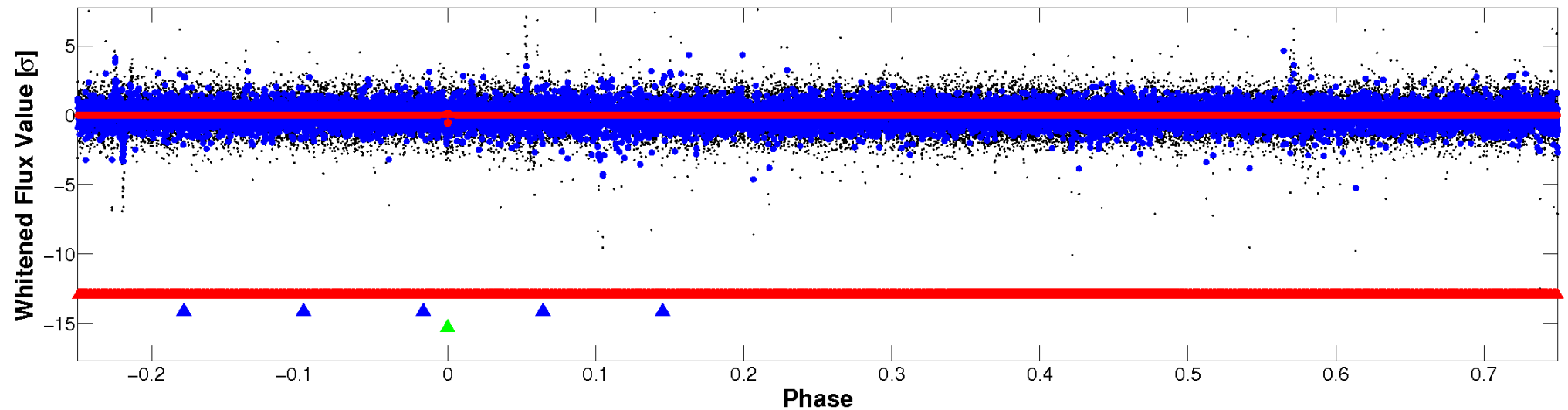


# Non-Whitened Vs. Whitened Light Curve

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

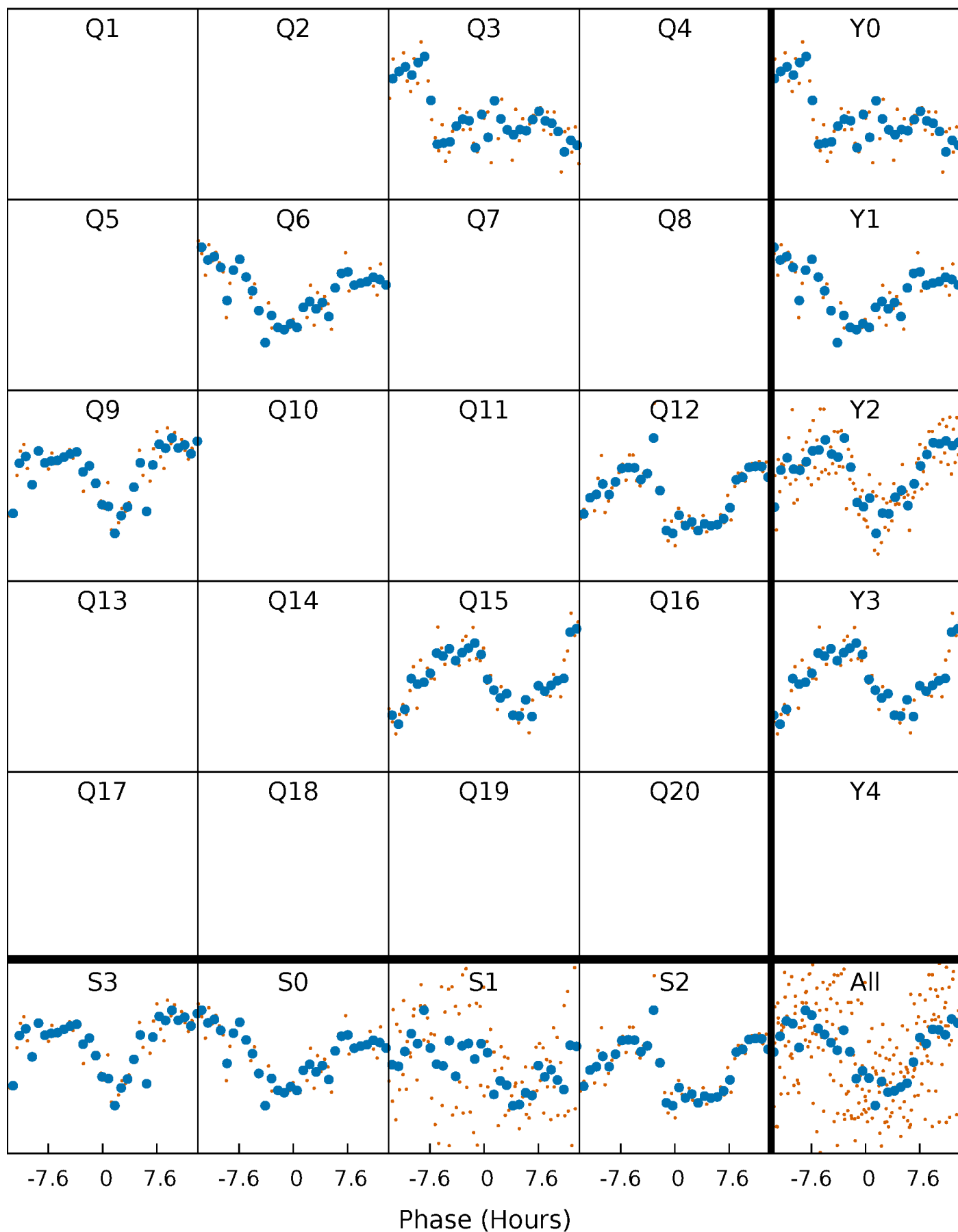


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



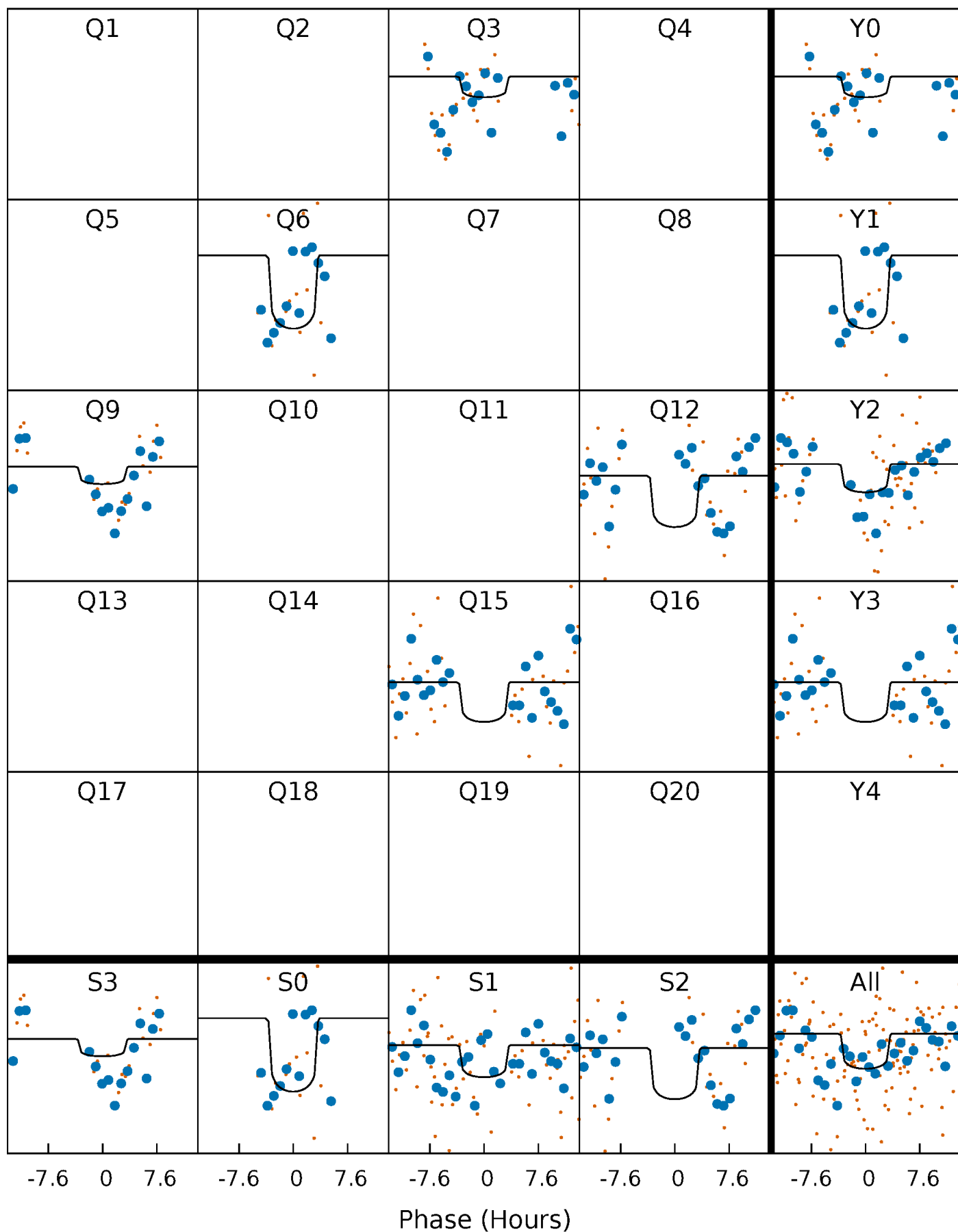
# PDC Quarter-Phased Transit Curves

TCE 006369539-03   P=283.174768 Days    $T_0=318.641061$  (BKJD)



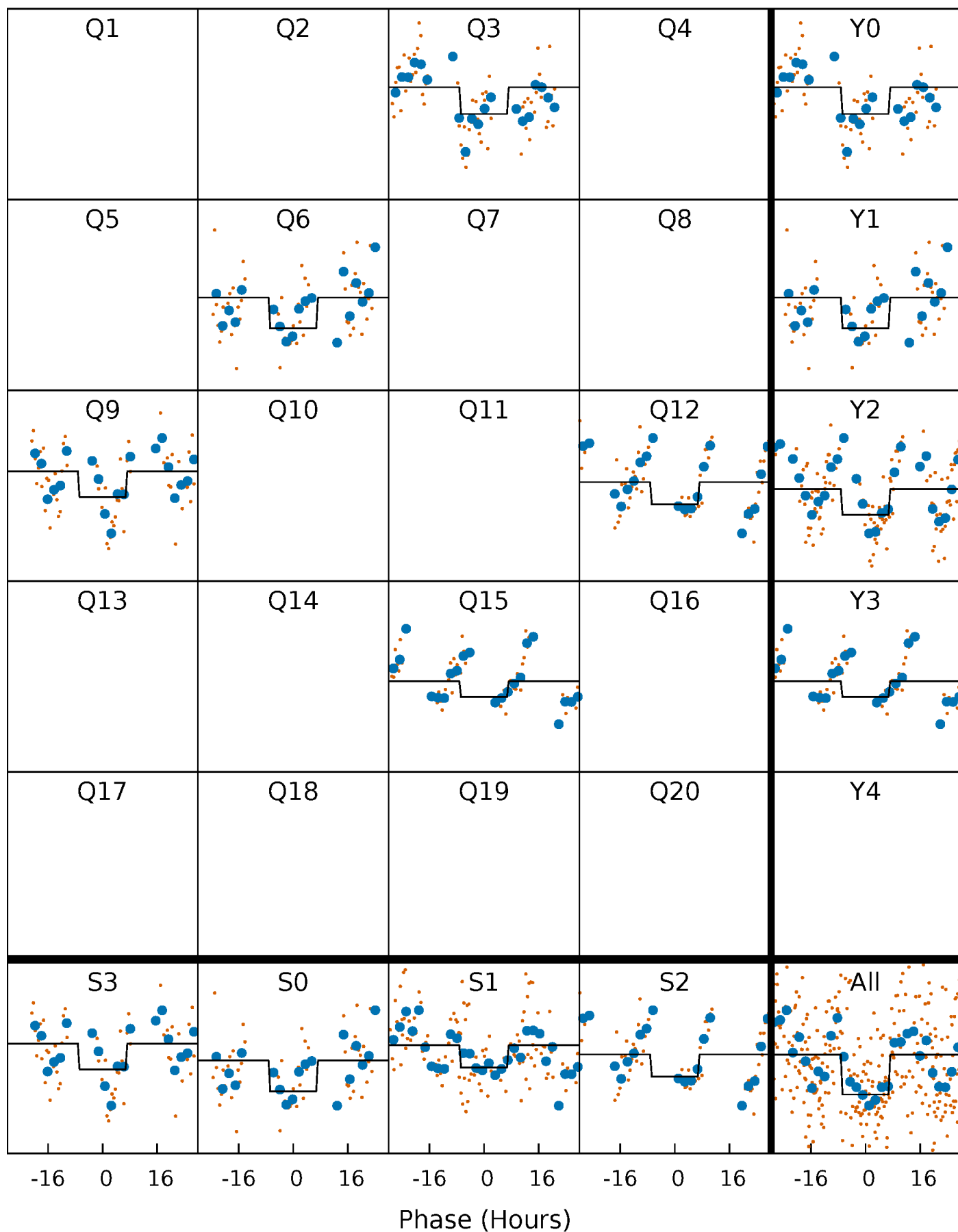
# DV Quarter-Phased Transit Curves

TCE 006369539-03 P=283.174768 Days  $T_0=318.641061$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 006369539-03 P=283.175086 Days  $T_0=318.637664$  (BKJD)

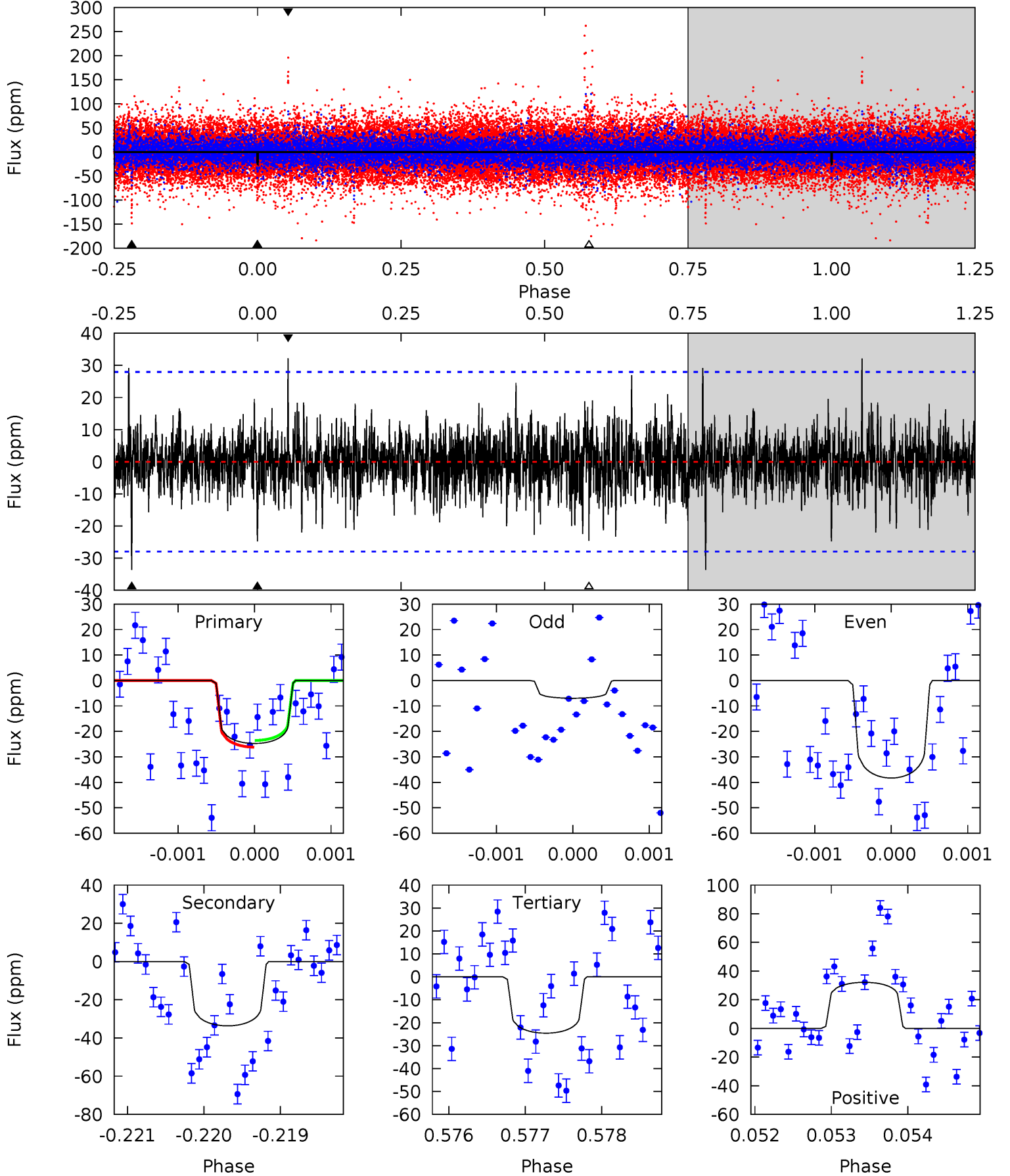




# DV Model-Shift Uniqueness Test

006369539-03, P = 283.174768 Days, E = 35.466293 Days

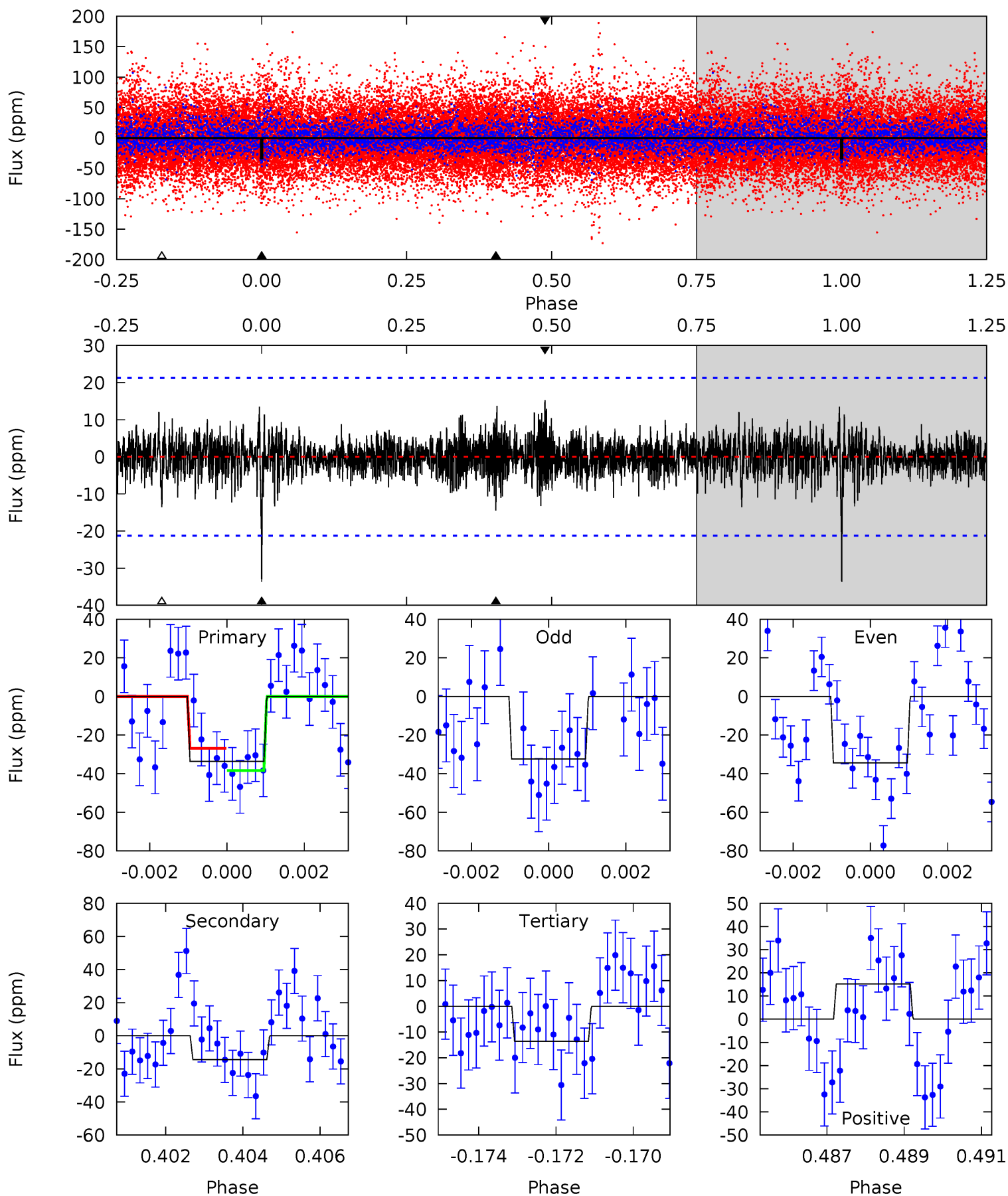
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.83	6.56	4.79	6.27	5.45	3.29	1.28	0.03	-1.45	1.77	0.29	2.97	1.27	0.49	0.26



# Alt Model-Shift Uniqueness Test

006369539-03, P = 283.175086 Days, E = 35.462578 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.41	3.62	3.40	3.82	5.32	3.08	0.92	5.02	4.60	0.22	-0.20	0.25	0.76	0.31	1.41



### Stellar Parameters For KIC 006369539

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7777^{+214}_{-349}$	$4.168^{+0.081}_{-0.189}$	$0.210^{+0.150}_{-0.450}$	$1.820^{+0.557}_{-0.279}$	$1.785^{+0.181}_{-0.271}$	$0.417^{+0.154}_{-0.218}$
	+3%/-4%	+2%/-5%	+71%/-214%	+31%/-15%	+10%/-15%	+37%/-52%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 006369539-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-34 \pm 5$	$1.51^{+1.34}_{-0.98}$	$648^{+48}_{-39}$	$6794^{+7041}_{-1790}$	$8452^{+59077}_{-6165}$
Alt.	$-14 \pm 4$	$1.64^{+1.34}_{-1.01}$	$647^{+50}_{-35}$	$5230^{+3872}_{-1108}$	$3060^{+17880}_{-2198}$

$T_{max}$  = 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

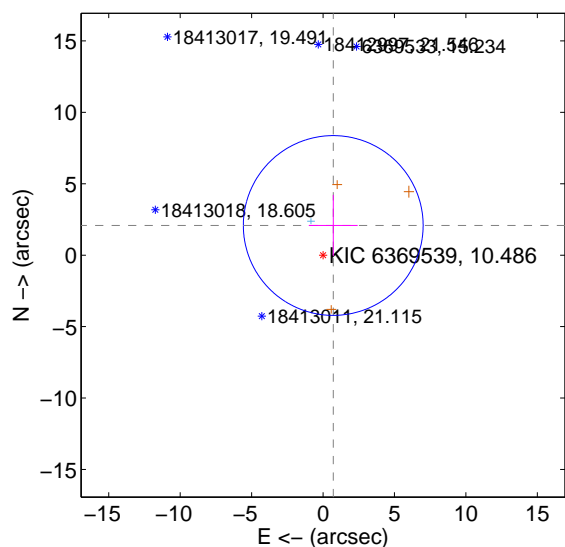
Supplemental centroid analysis for 006369539-03. **Kepler magnitude: 10.49.** Transit SNR 3.62

**There are 1 quarters with good PRF difference image offsets**

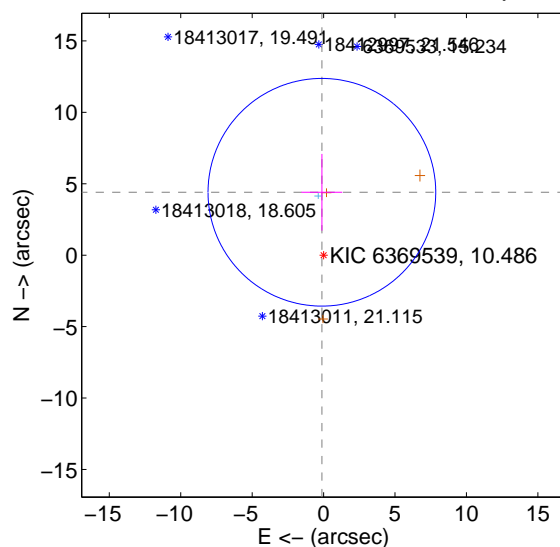
The direct PRF centroid is offset from the target star catalog position by about 0.92 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.197 \pm 2.098$	1.05	$-0.714 \pm 1.710$	$2.078 \pm 2.139$
PRF-fit source offset from KIC position	$4.406 \pm 2.656$	1.66	$0.119 \pm 1.432$	$4.404 \pm 2.684$
photometric centroid source offset	$2.68 \pm 3.81$	0.70	$-2.68 \pm 3.81$	$0.07 \pm 5.20$

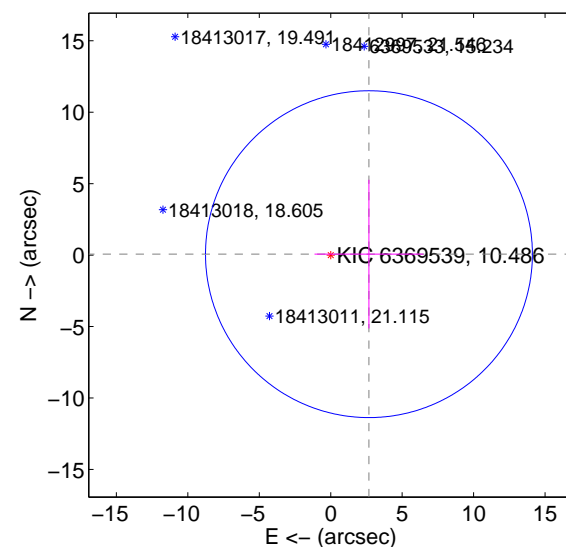
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

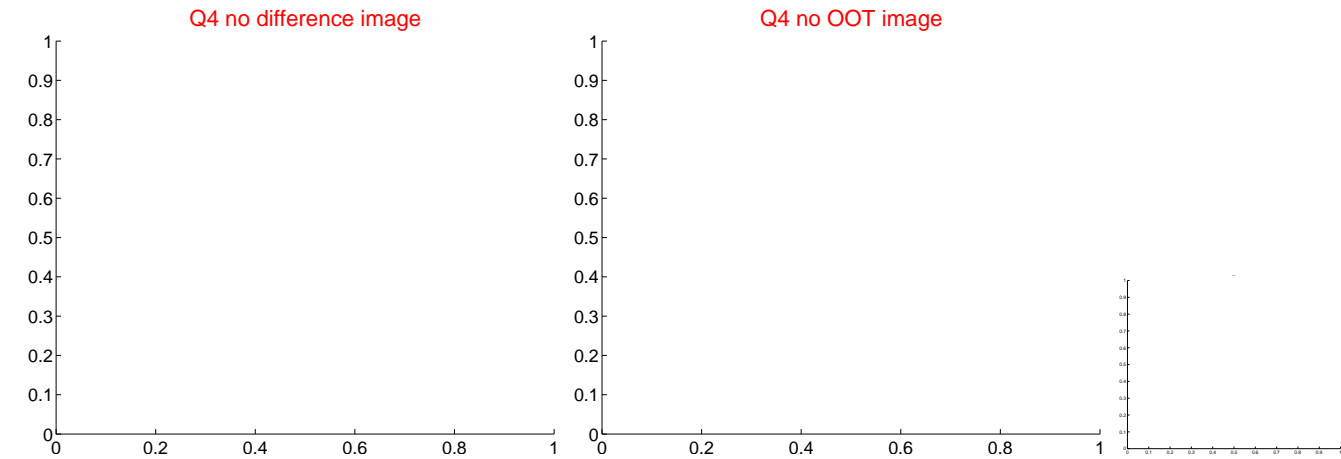
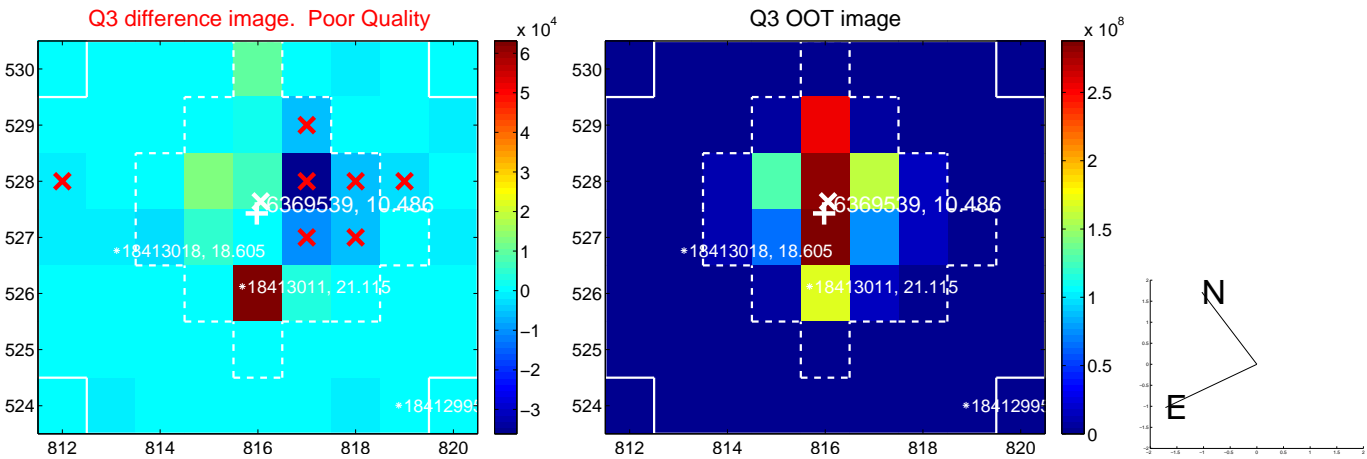
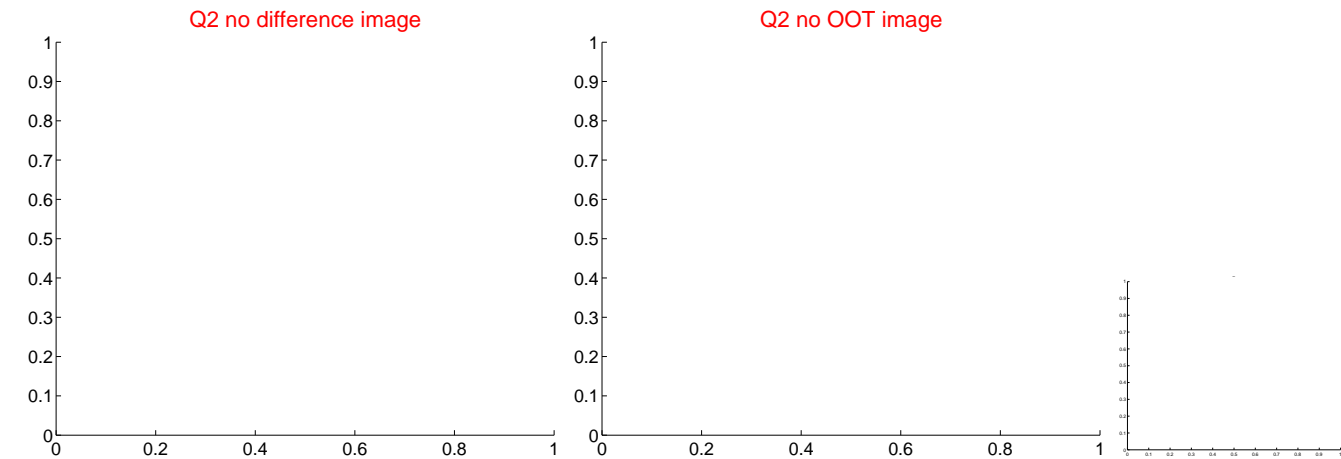
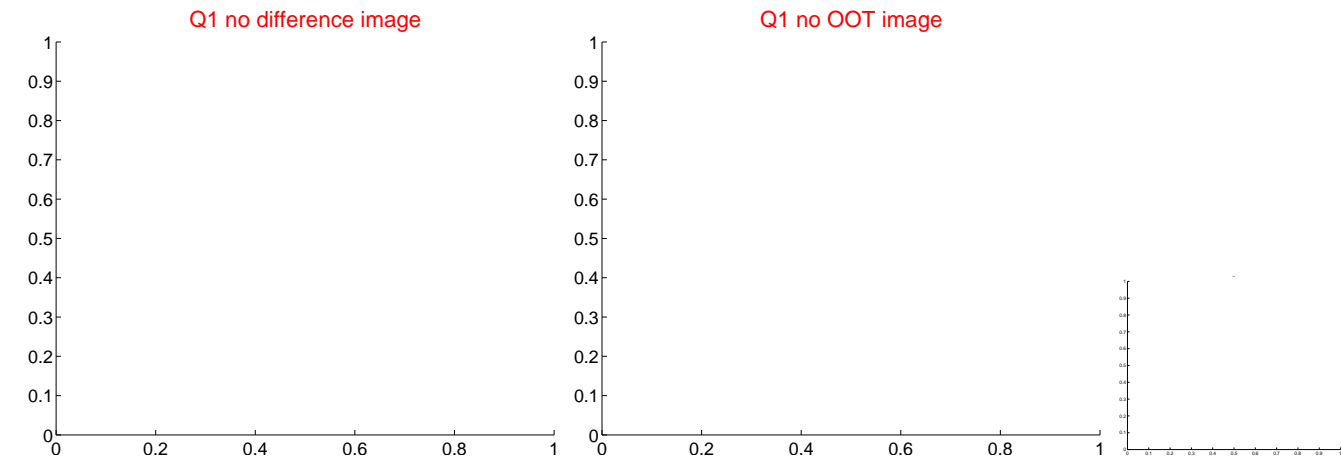


offset from photometric centroids



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.

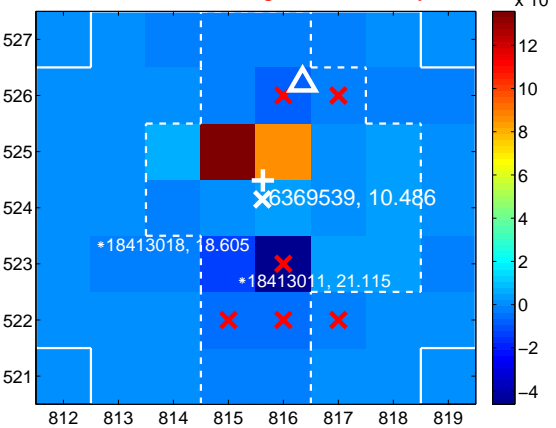
Q5 no difference image



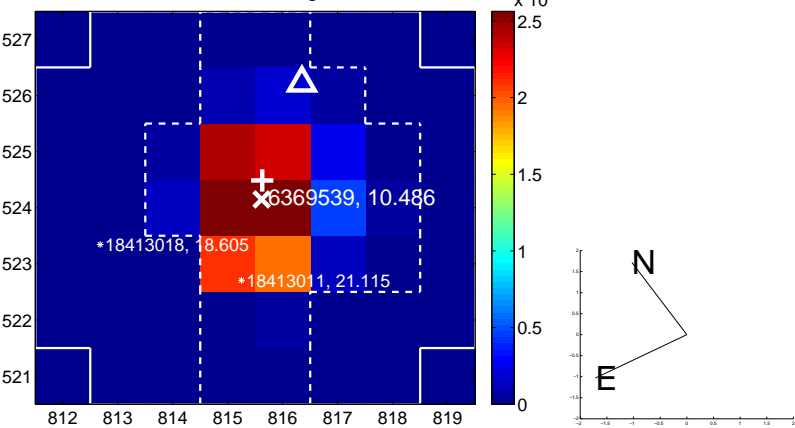
Q5 no OOT image



Q6 difference image. Poor Quality



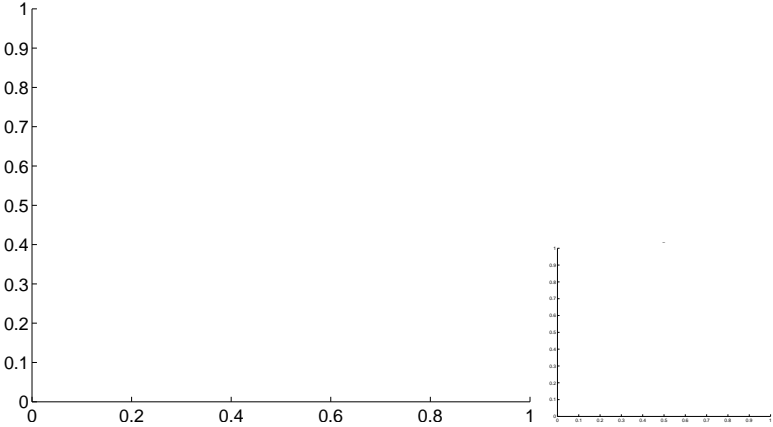
Q6 OOT image



Q7 no difference image



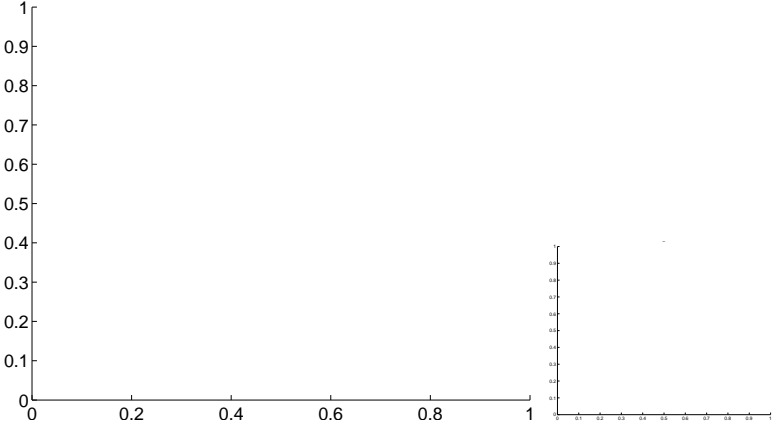
Q7 no OOT image



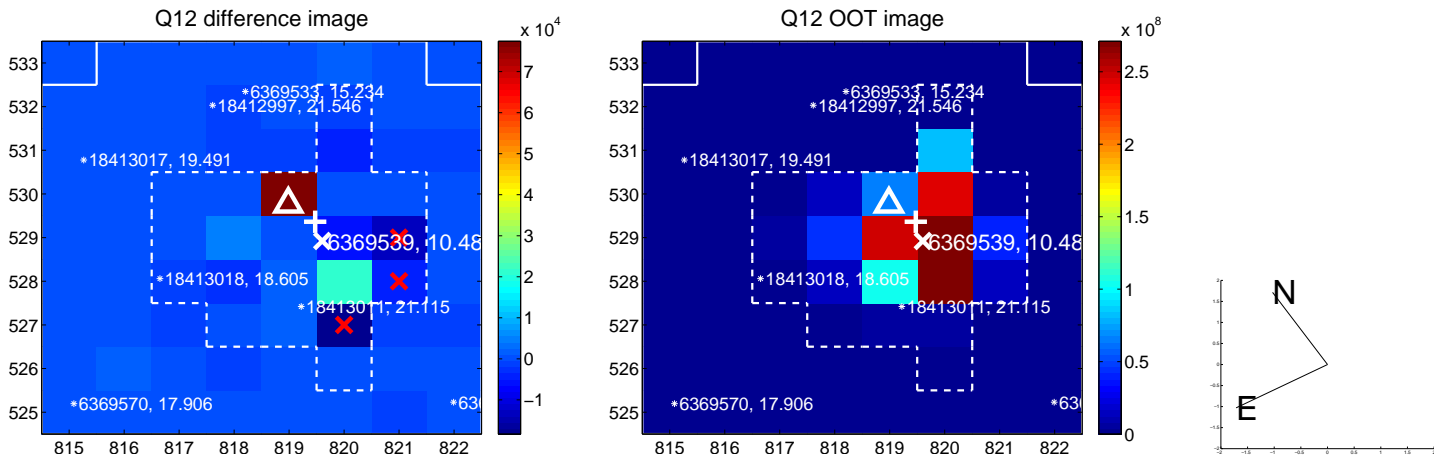
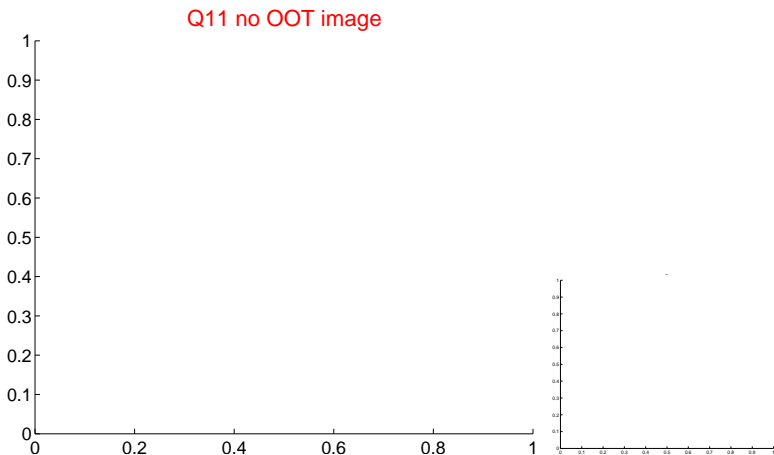
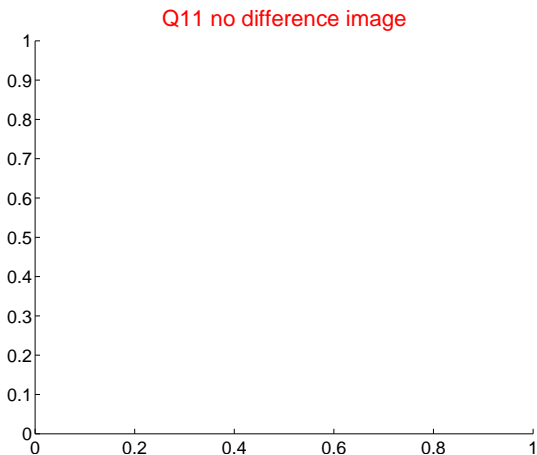
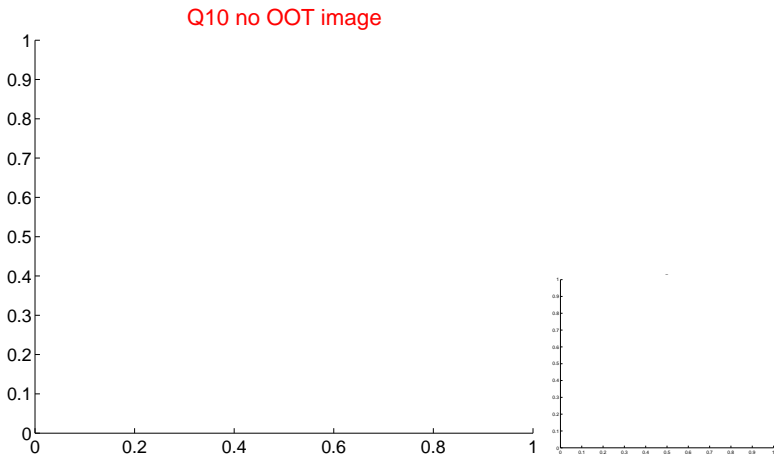
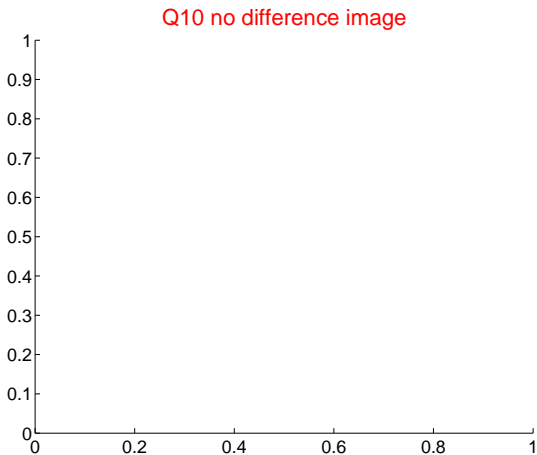
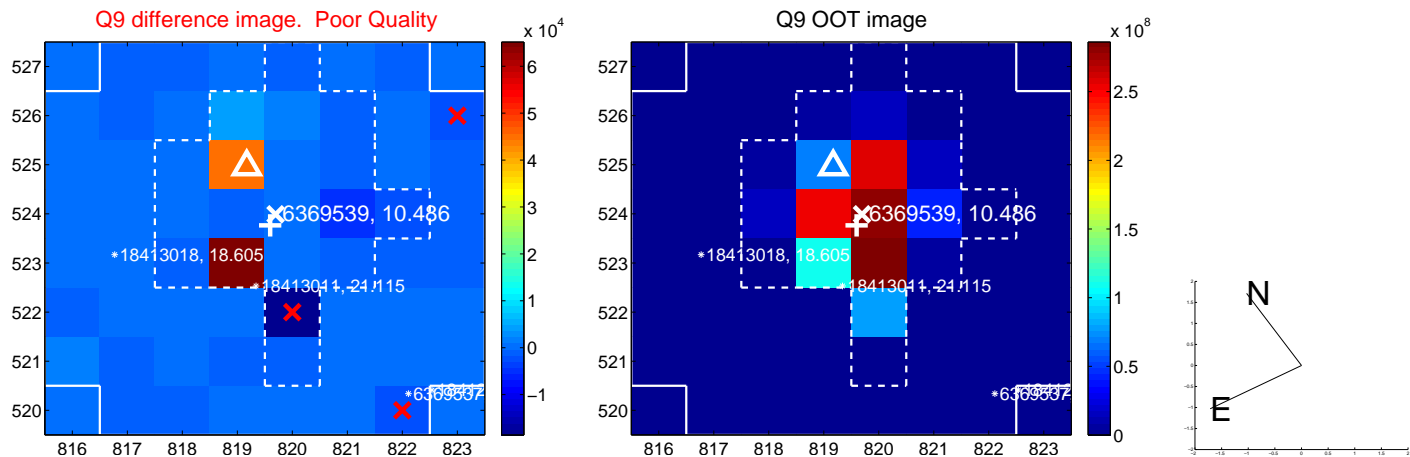
Q8 no difference image



Q8 no OOT image

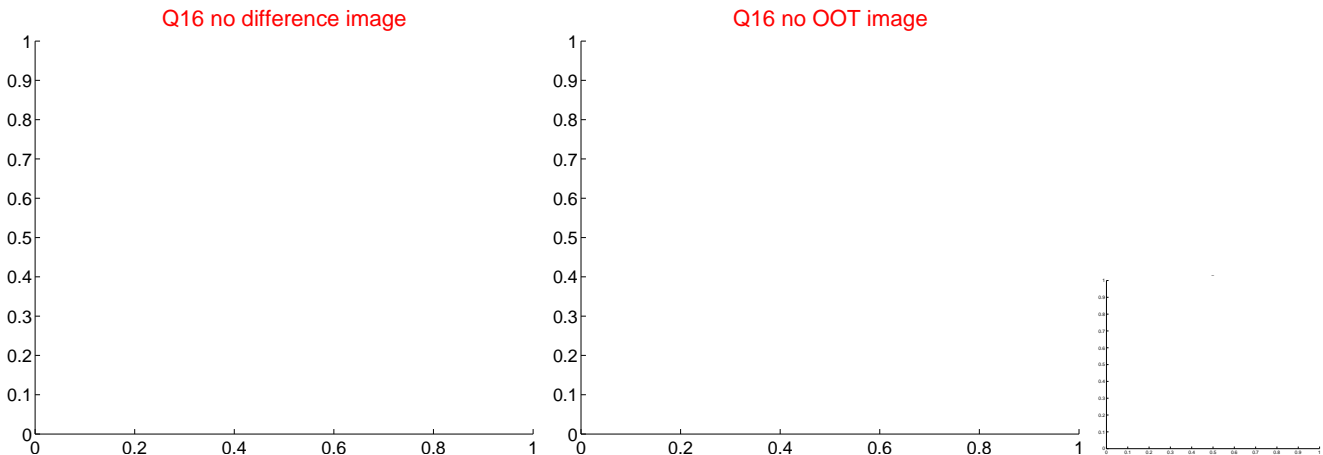
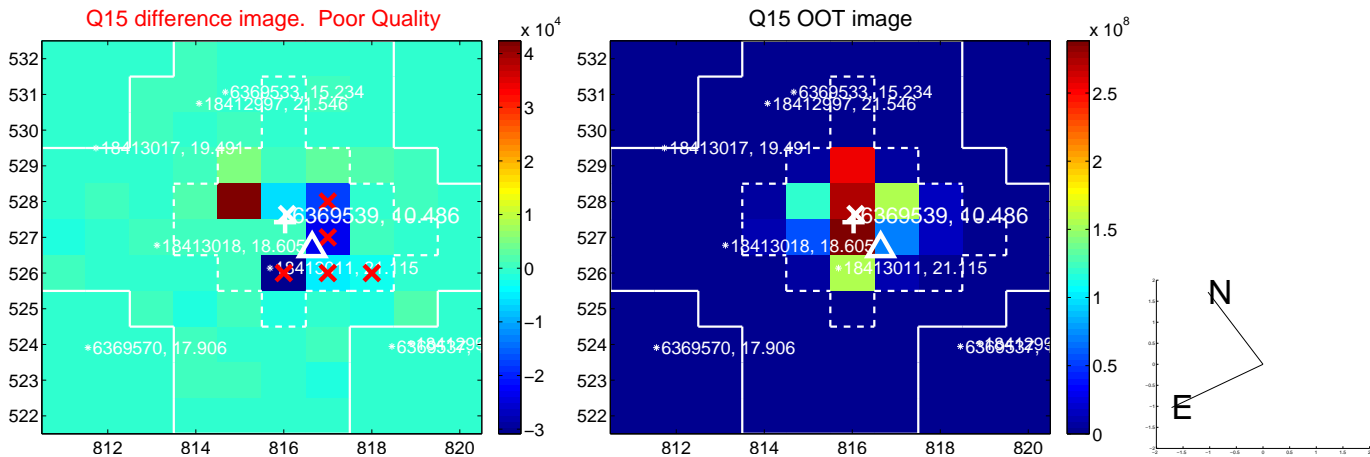
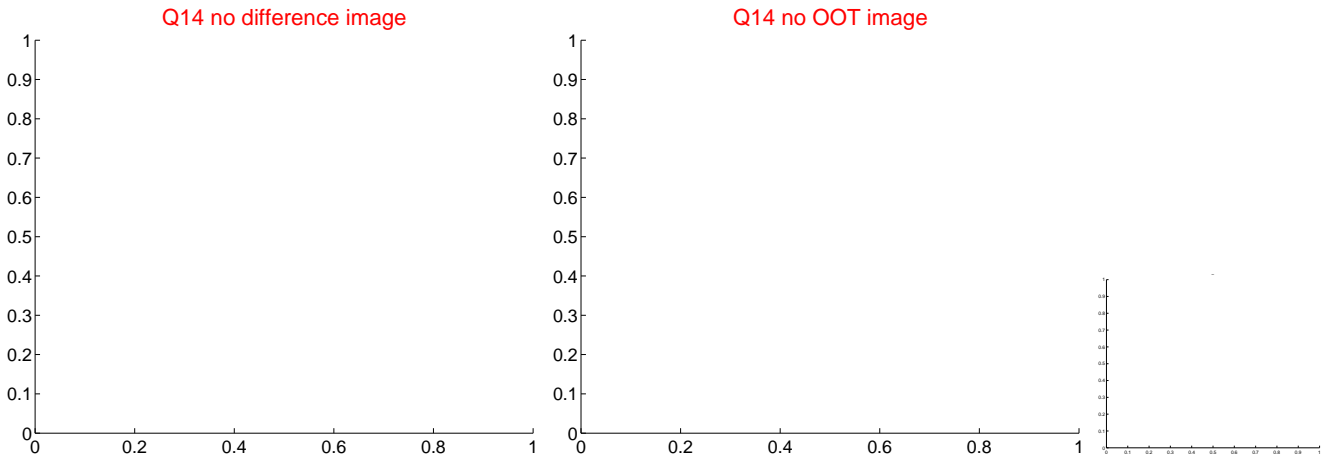
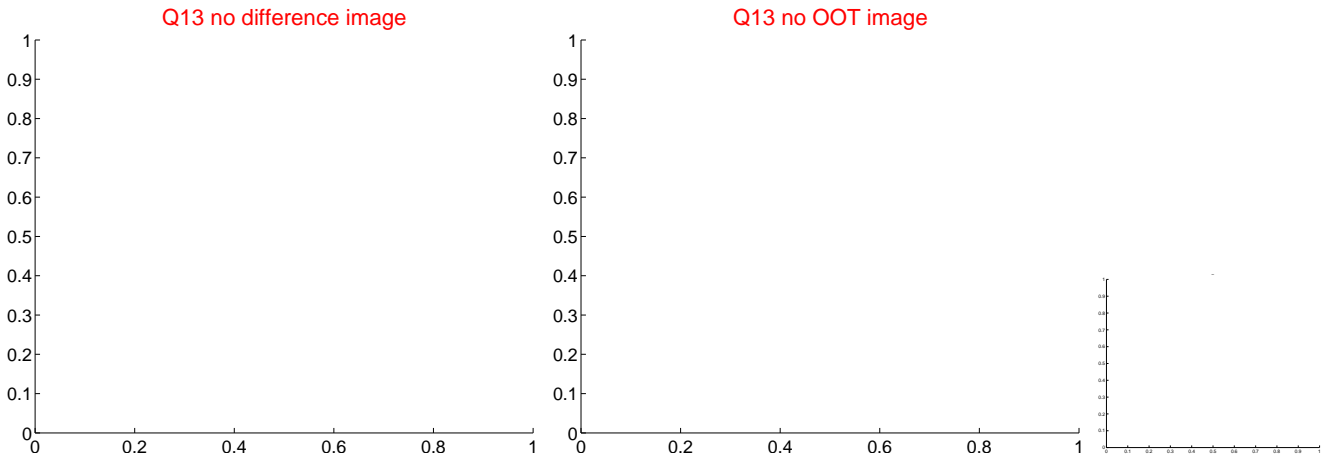


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value

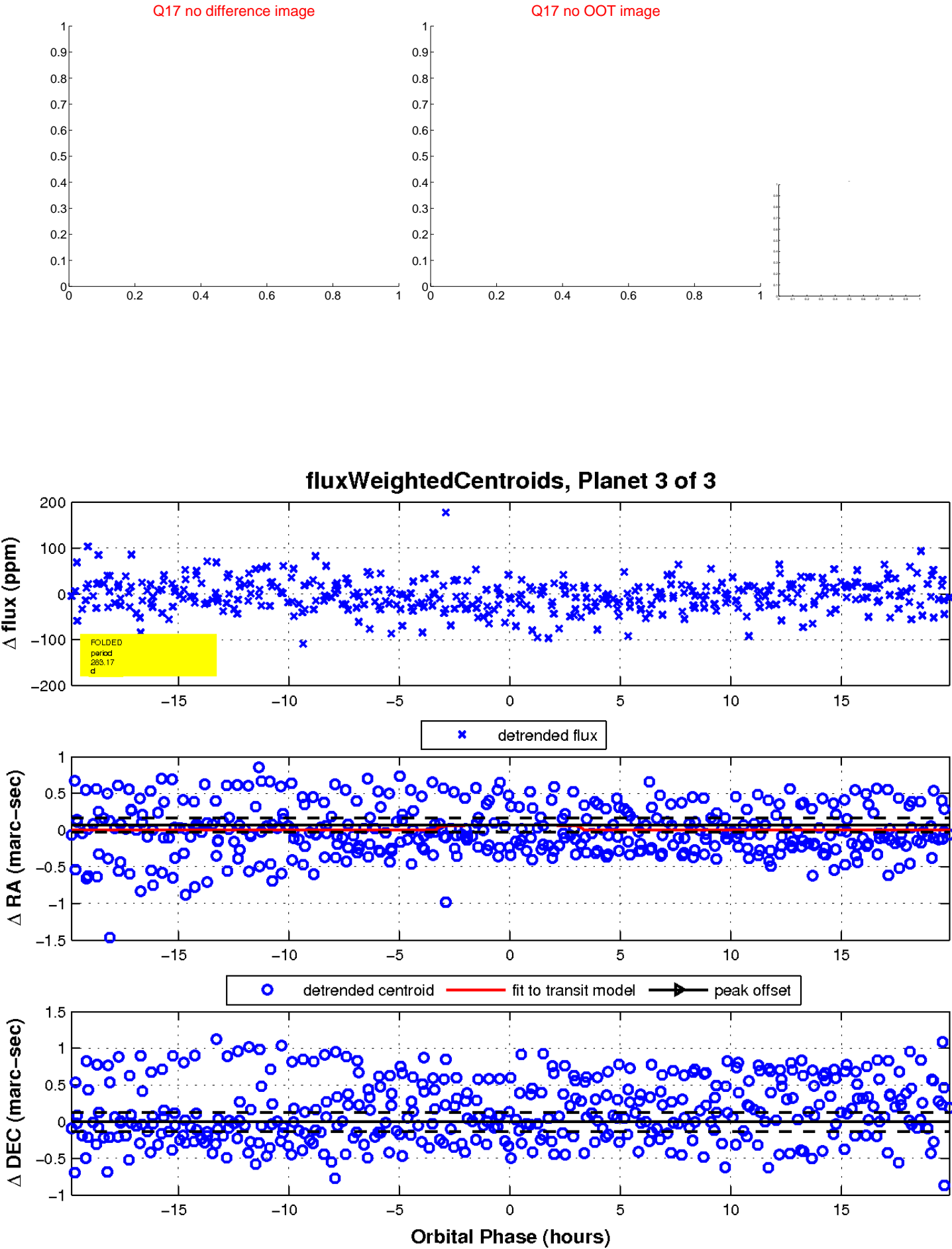




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



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



UKIRT Image

