

# KIC 005563289

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005563289-01	OBS	No	1.575824	131.534833	141.6	6.000	9.3	-1.0	4.61	6300	5.51	28507.86
005563289-02	OBS	No	232.851497	140.825454	323.2	8.372	7.4	7.5	4.61	6300	9.12	36.49
005563289-03	OBS	No	181.647233	157.750850	227.0	10.209	7.3	6.7	4.61	6300	7.31	50.82

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005563289-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—CENT_NOFITS
005563289-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_UNCERTAIN
005563289-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—MOD_NONUNIQ_ALT—HALO_GHOST

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

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

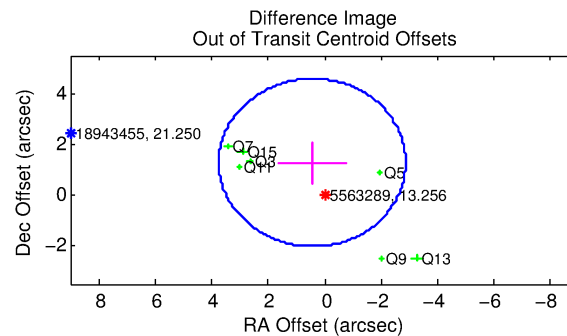
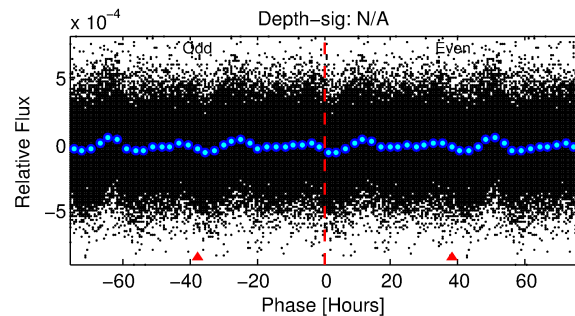
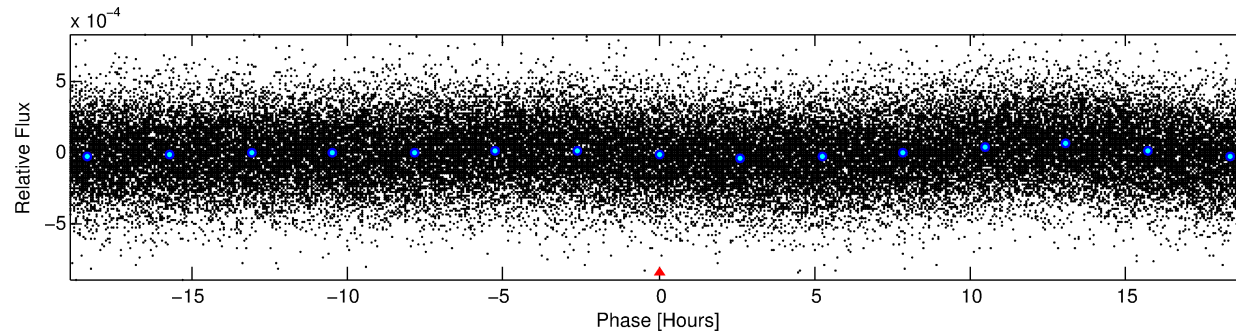
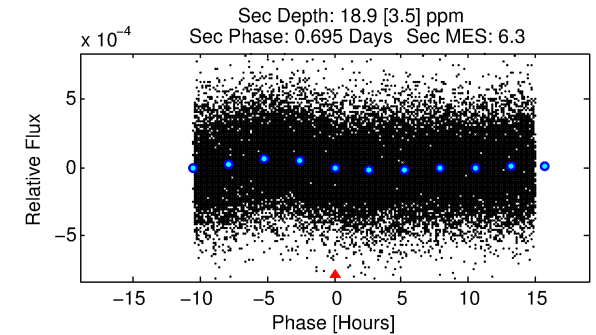
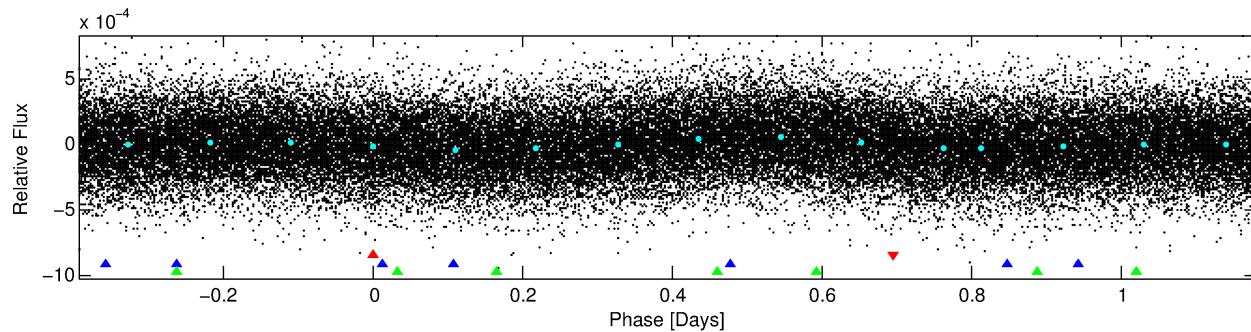
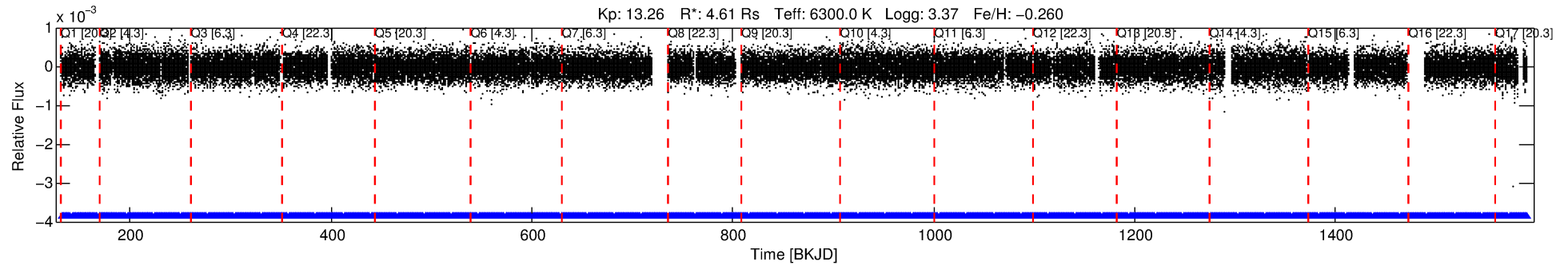
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005563289-01

No Significant Match Found

# DV One-Page Summary

KIC: 5563289 Candidate: 1 of 3 Period: 1.576 d



## TPS TCE Results:

Period = 1.57582 d  
Epoch = 131.5348 BKJD

DV fit results are unavailable

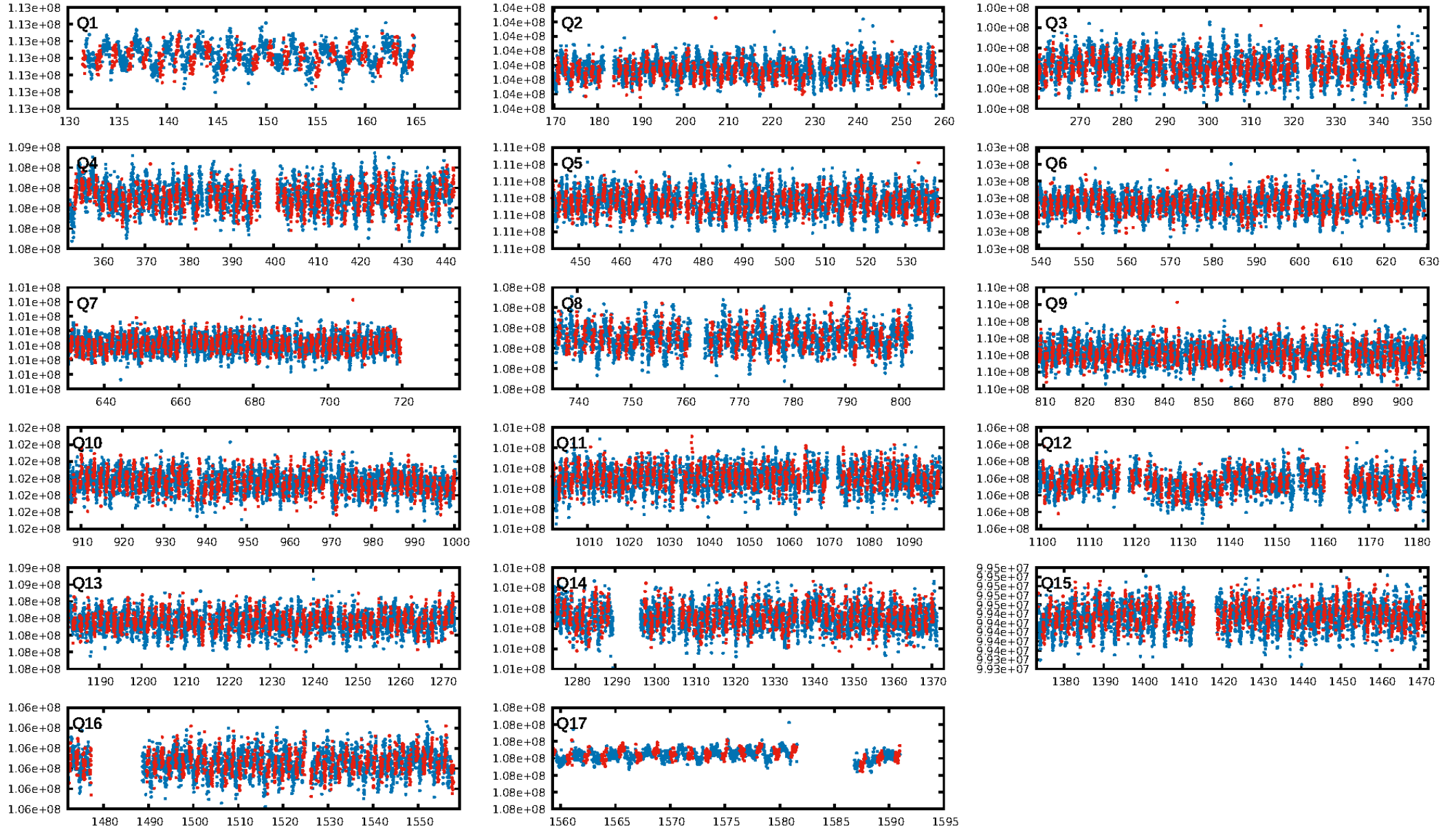
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [364.95σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.42e-14  
RollingBand-fgt: 1.00 [820/820]  
GhostDiagnostic-chr: 0.8138  
Centroid-sig: 0.5%  
Centroid-so: 0.535 arcsec [1.55σ]  
OotOffset-rm: 1.355 arcsec [1.23σ]  
KicOffset-rm: 1.340 arcsec [1.47σ]  
OotOffset-st: 0/4/0/3 [7]  
KicOffset-st: 0/4/0/3 [7]  
DiffImageQuality-fgm: 0.43 [3/7]  
DiffImageOverlap-fno: 1.00 [17/17]

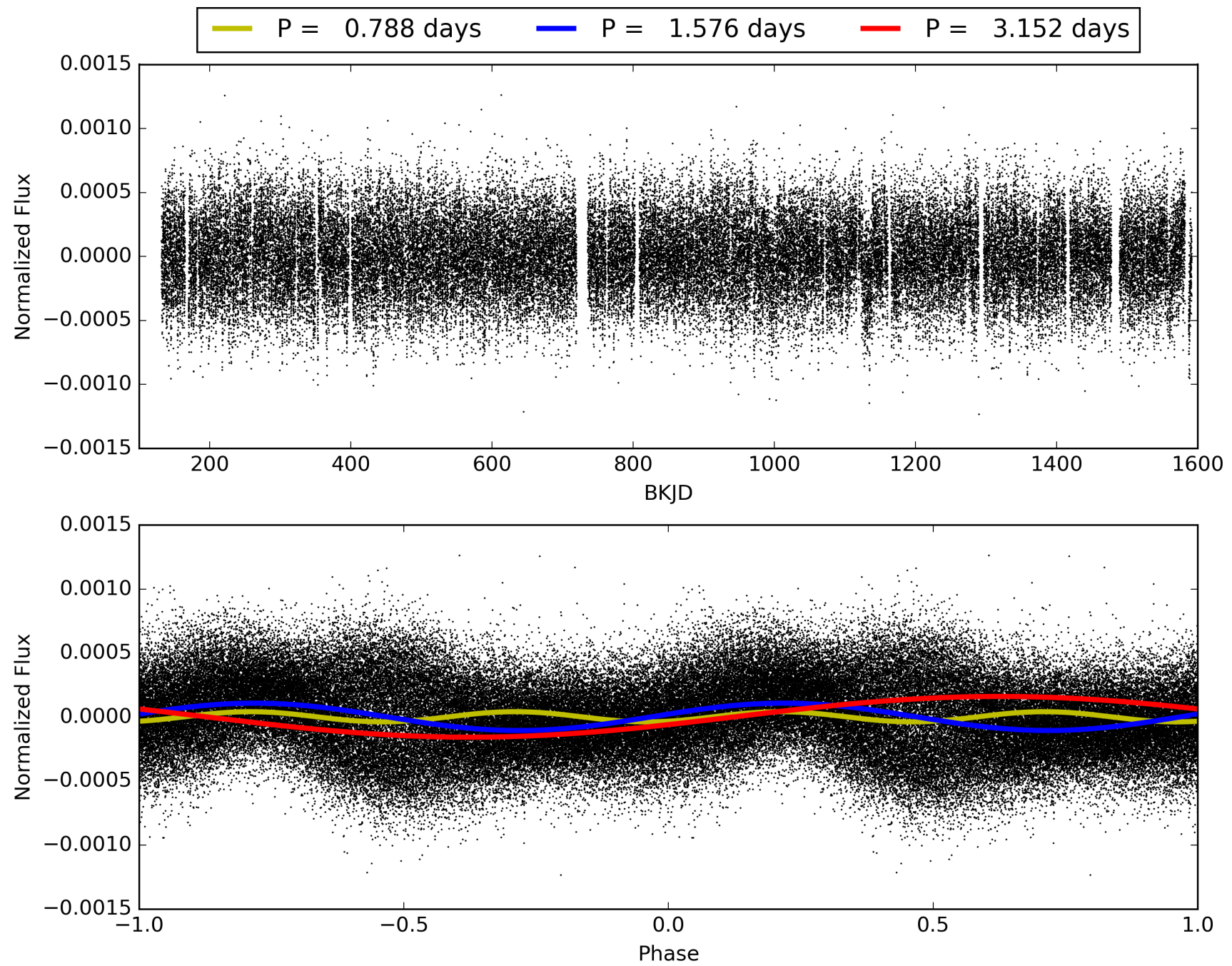
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 01:38:15 Z

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

# TCE 005563289-01, PDC Light Curves



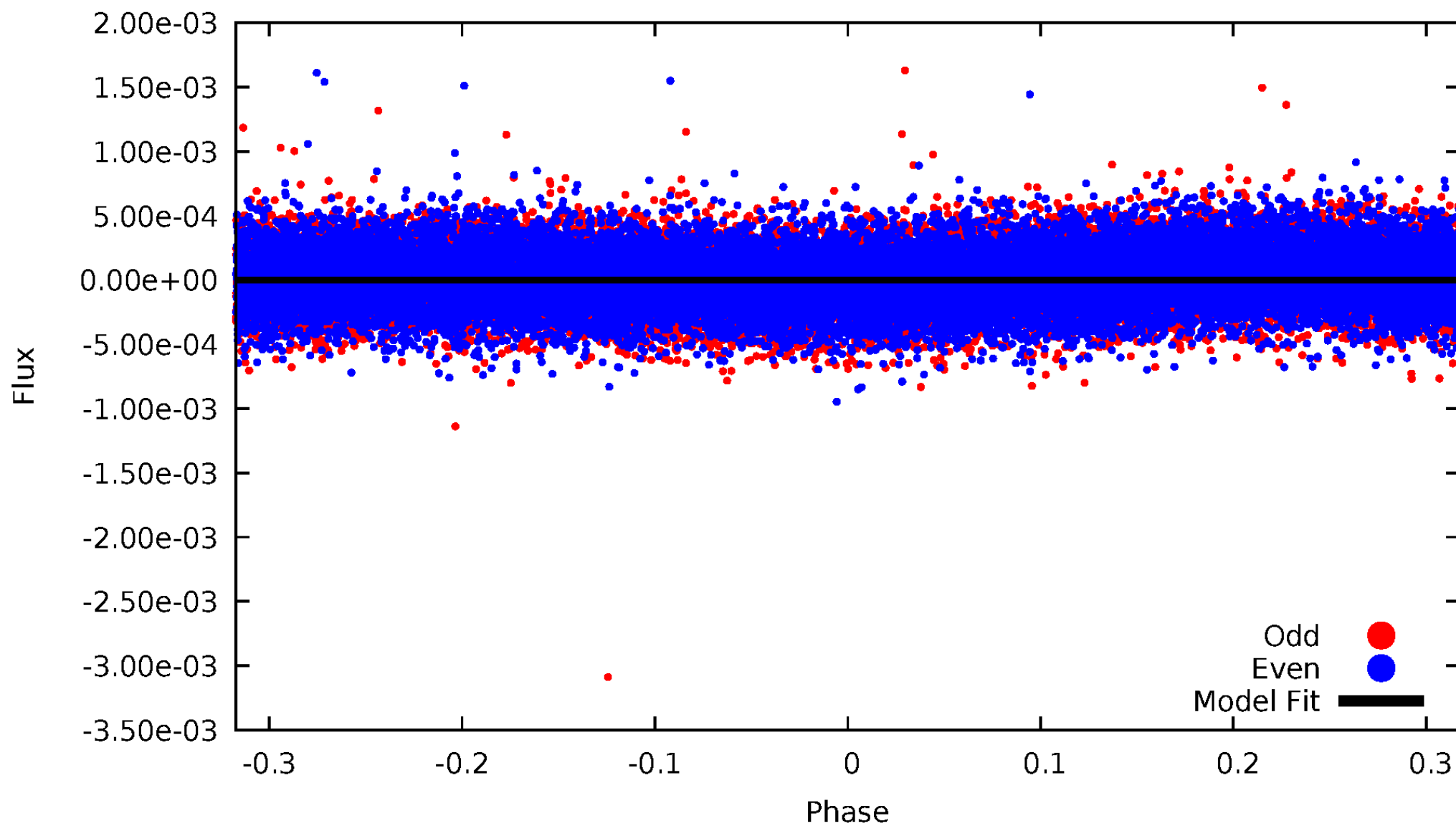
TCE 005563289-01





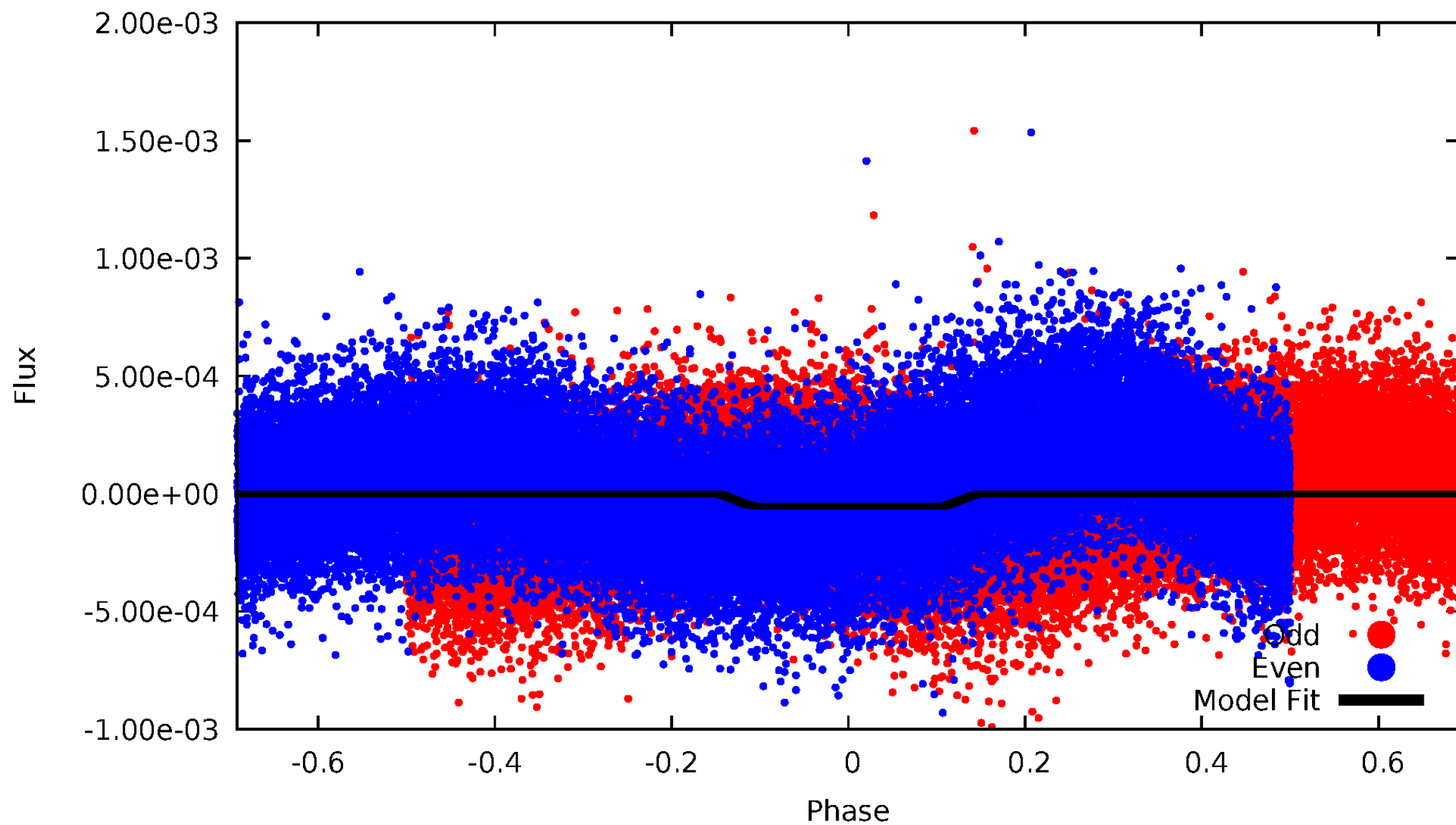
# DV Odd/Even

TCE 005563289-01

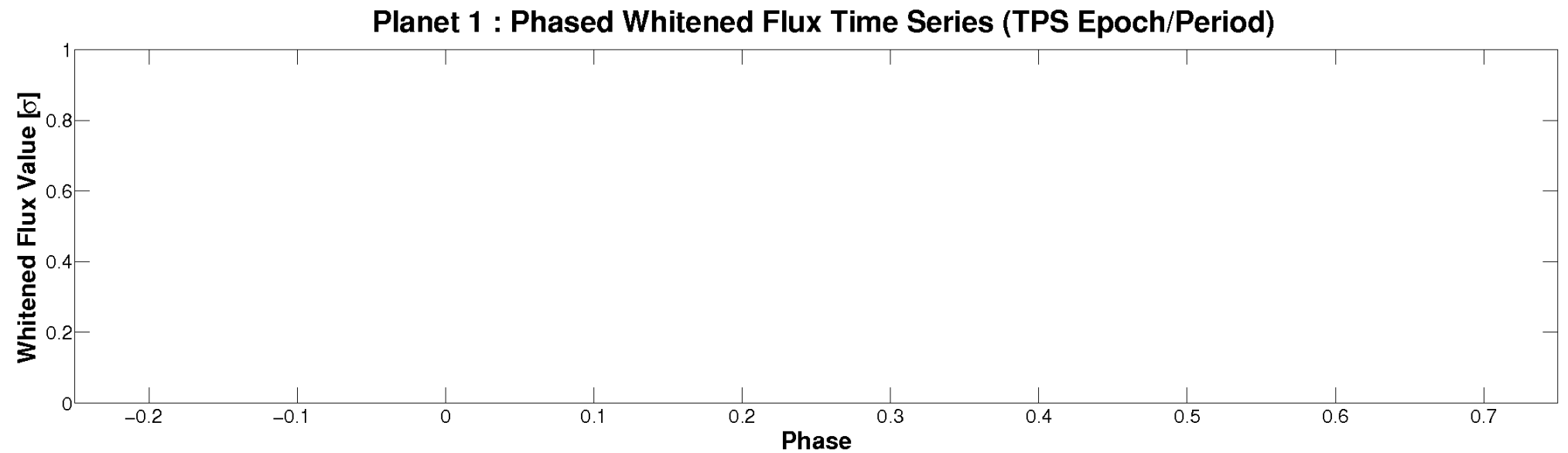
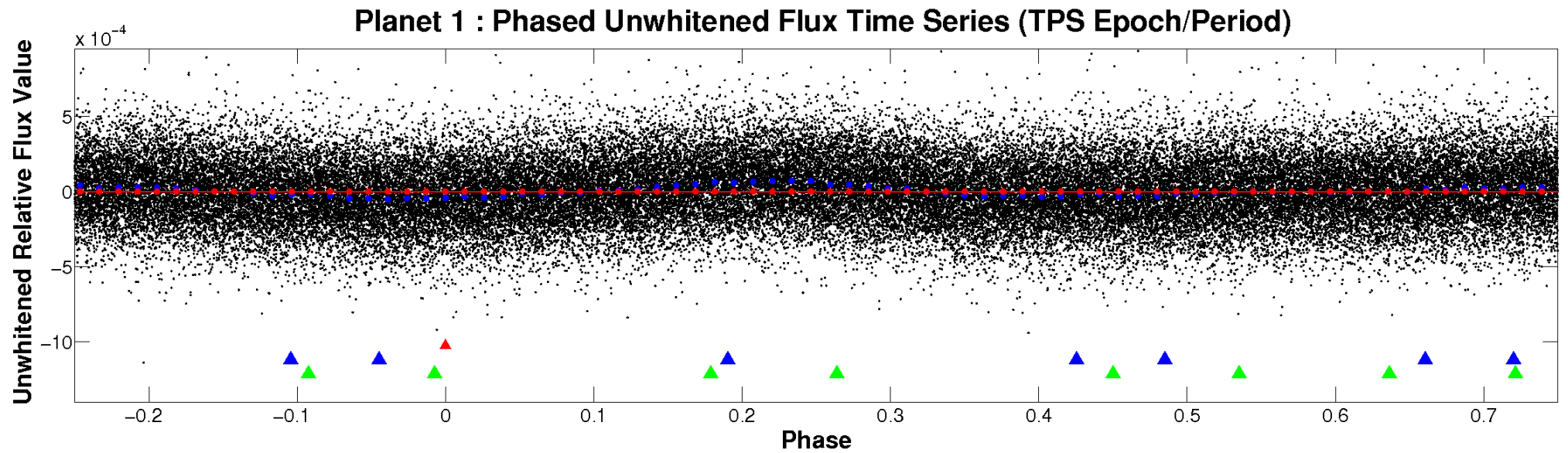


# ALT Odd/Even

TCE 005563289-01

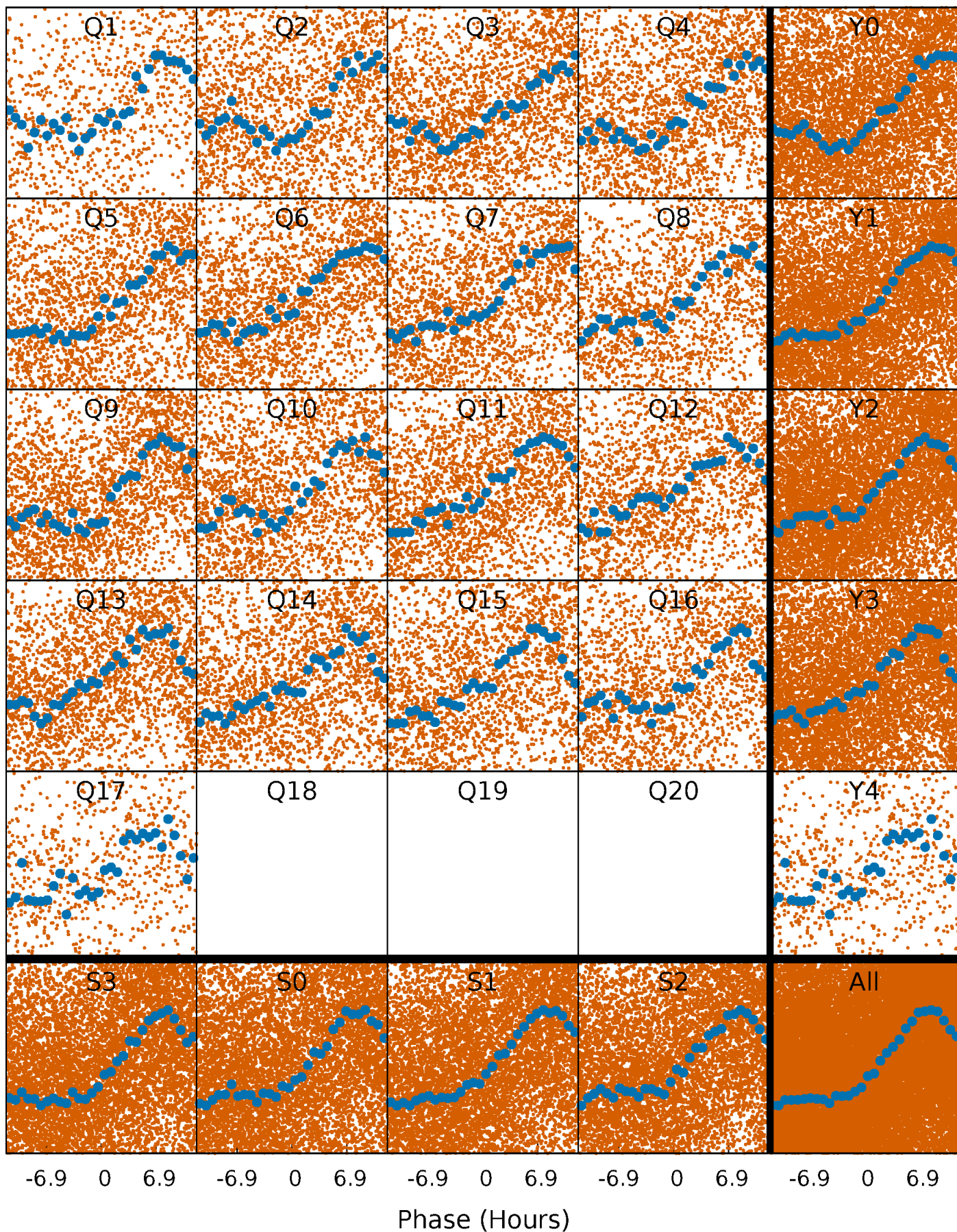


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

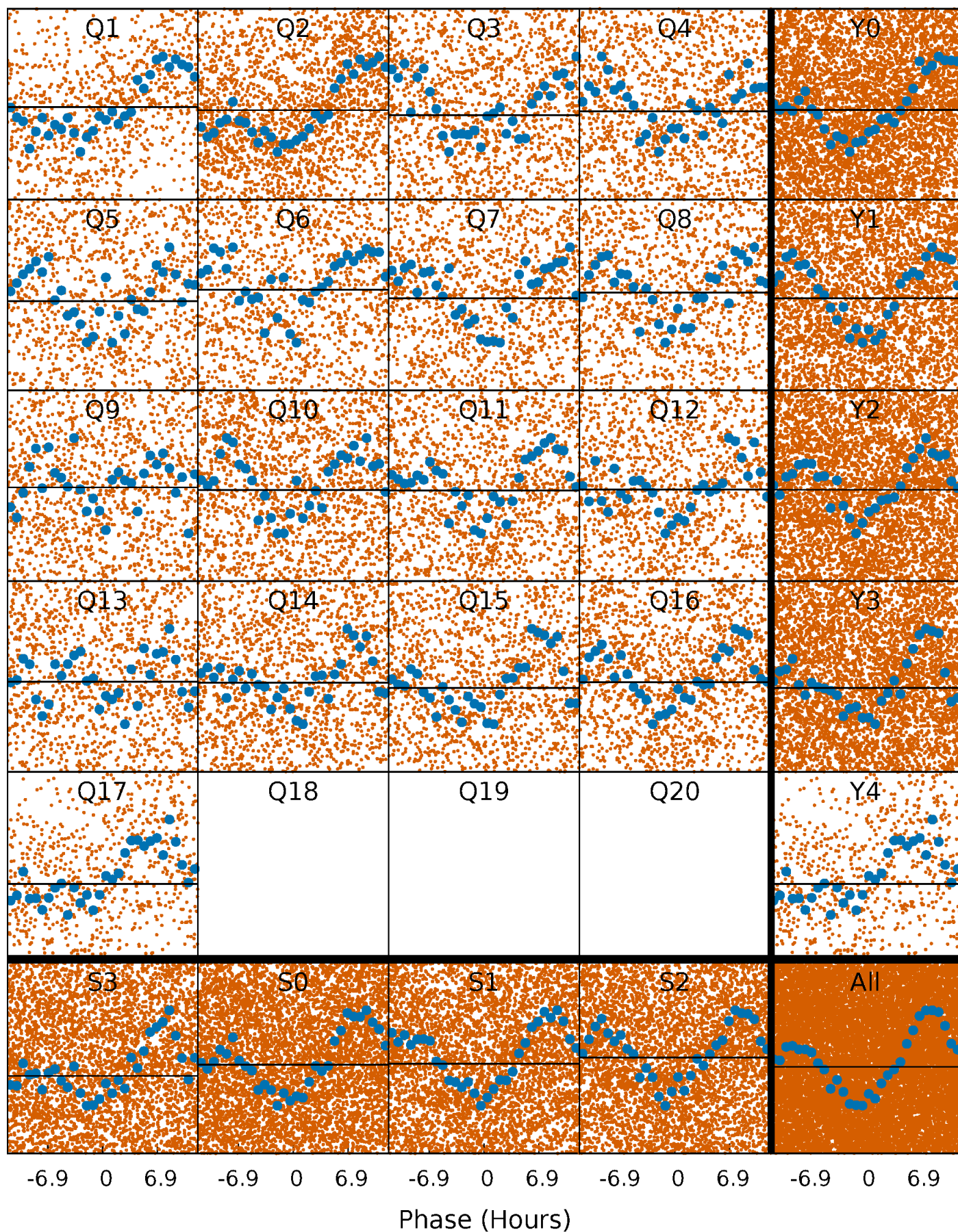
TCE 005563289-01 P= 1.575824 Days  $T_0=131.534833$  (BKJD)





# DV Quarter-Phased Transit Curves

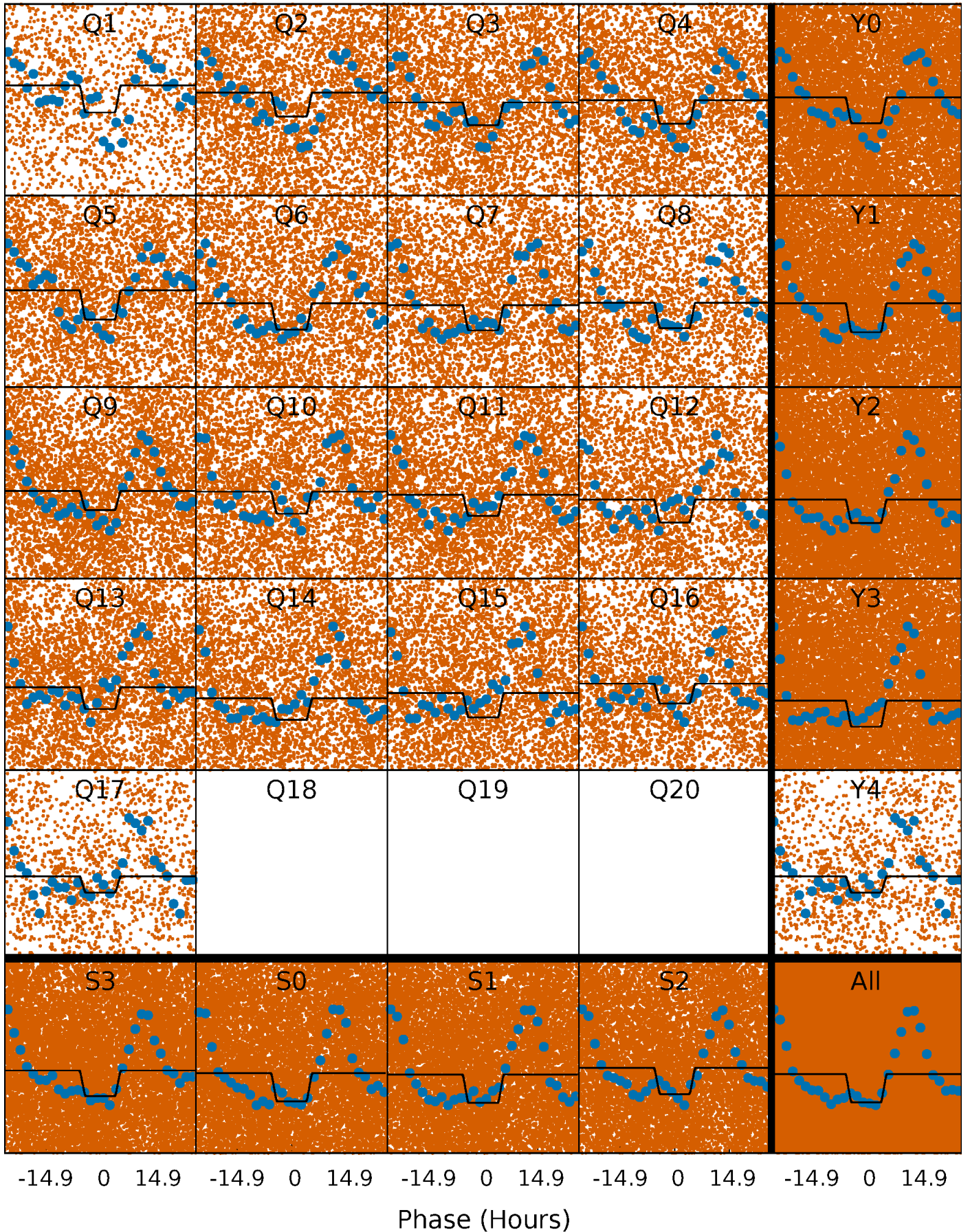
TCE 005563289-01 P= 1.575824 Days  $T_0=131.534833$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

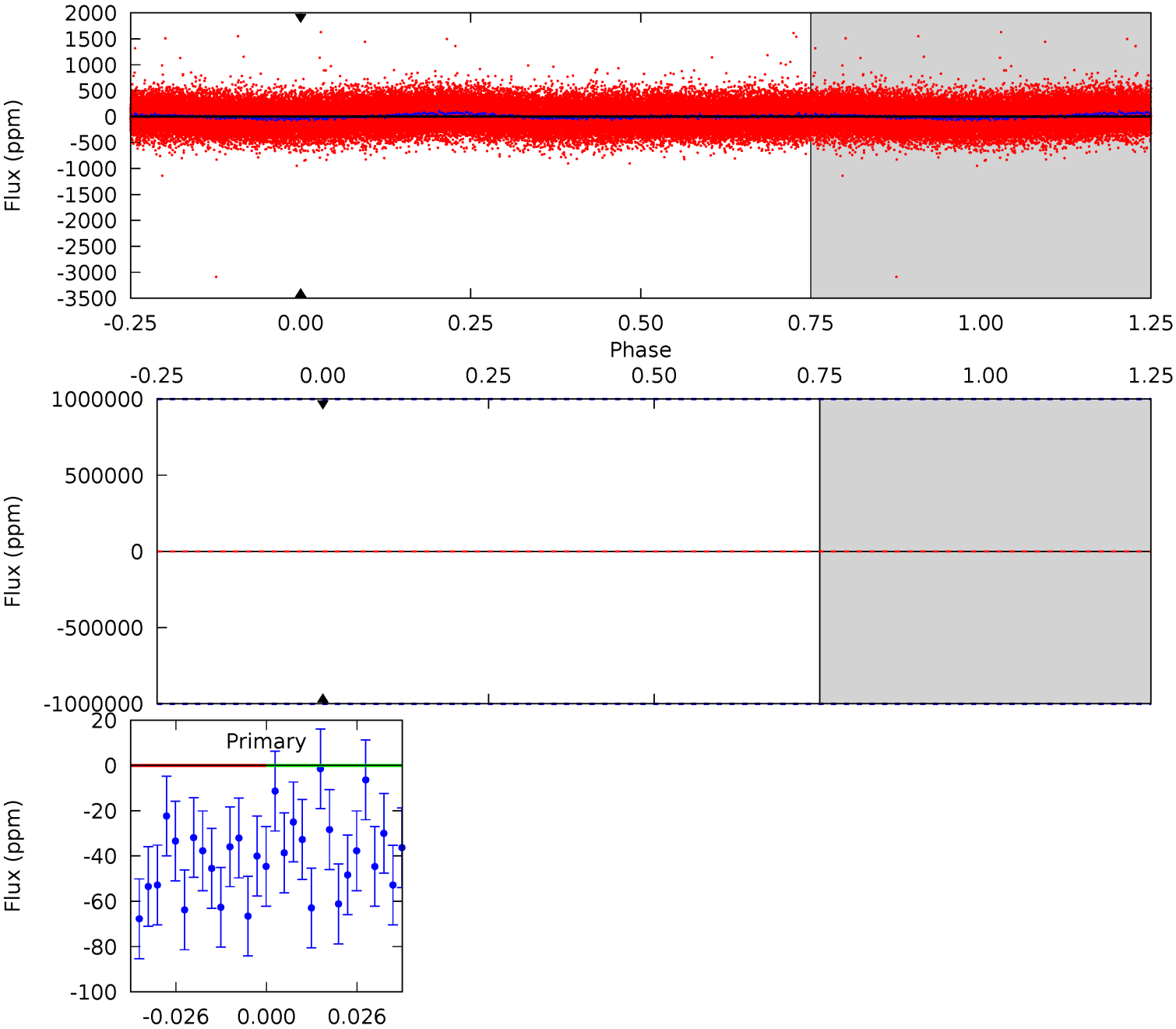
TCE 005563289-01 P= 1.575824 Days  $T_0=132.933190$  (BKJD)



DV Model-Shift Uniqueness Test

005563289-01, P = 1.575824 Days, E = 129.959009 Days

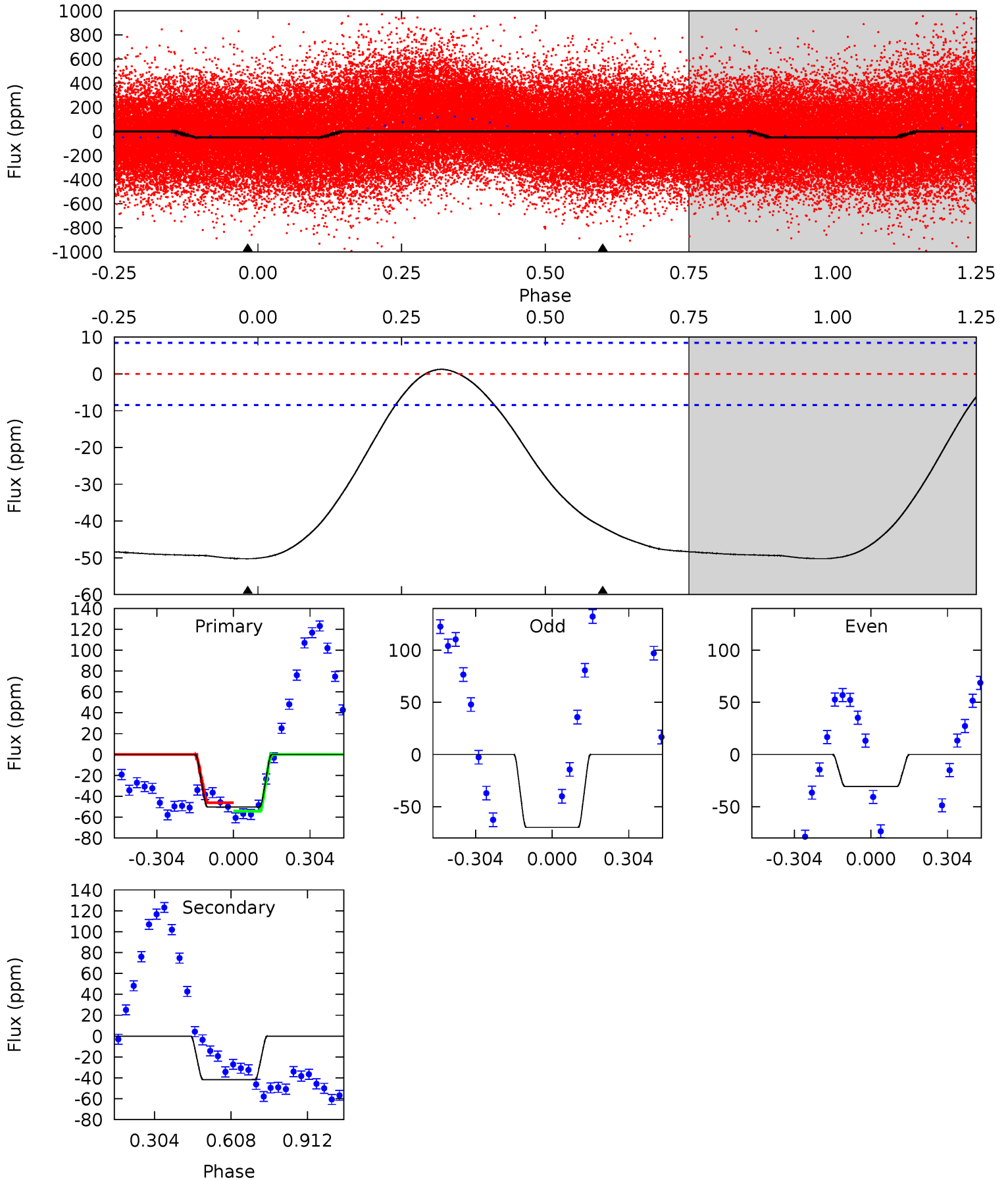
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

005563289-01, P = 1.575824 Days, E = 131.357366 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
25.6	21.3	0	0	4.33	1.03	1.42	25.6	25.6	21.3	21.3	10.1	1.03	0.02	2.43





### Stellar Parameters For KIC 005563289

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6300^{+215}_{-215}$	$3.374^{+0.384}_{-0.072}$	$-0.260^{+0.350}_{-0.300}$	$4.614^{+0.666}_{-1.999}$	$1.839^{+0.133}_{-0.498}$	$0.026^{+0.089}_{-0.008}$
	+3%/-3%	+11%/-2%	+135%/-115%	+14%/-43%	+7%/-27%	+339%/-31%
Source	PHO1	FLK73	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 005563289-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$32.31^{+35.94}_{-22.96}$	$4485^{+313}_{-475}$	$-5743^{+29775}_{-22855}$	$-1.663^{+83.477}_{-110.532}$
Alt.	$-42 \pm 2$	$31.08^{+32.44}_{-21.81}$	$4498^{+297}_{-479}$	$-3836^{+1052}_{-271}$	$0.025^{+0.224}_{-0.019}$

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

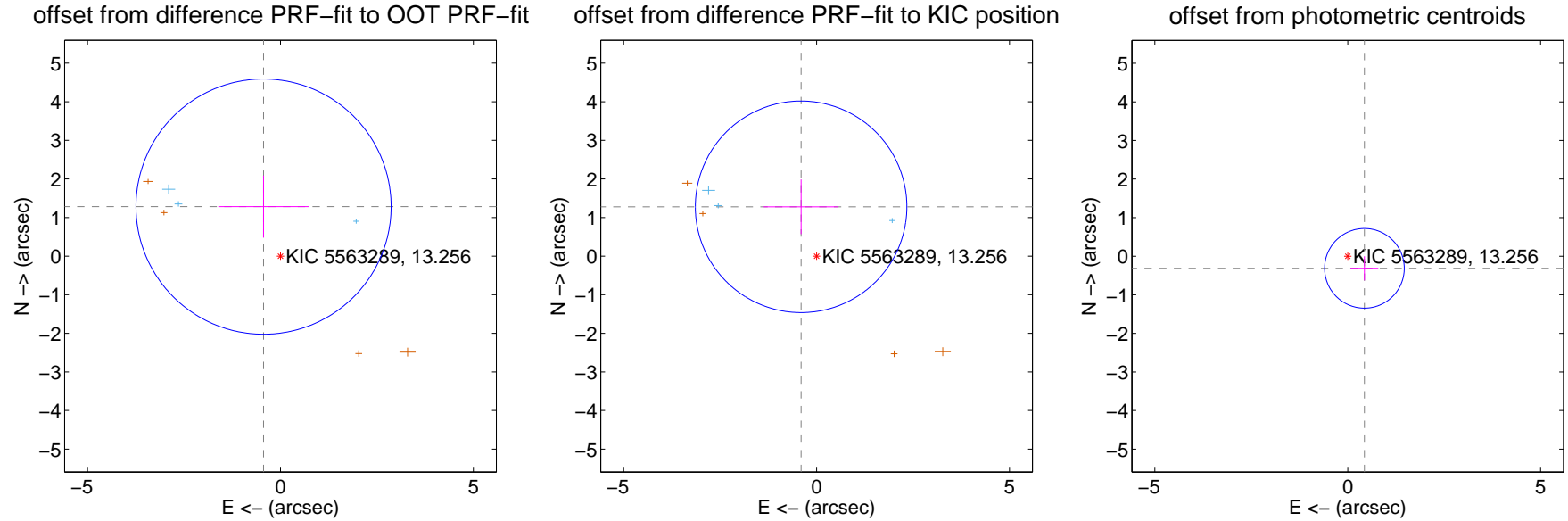
## DV Centroid Data

Supplemental centroid analysis for 005563289-01. Kepler magnitude: 13.26. Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

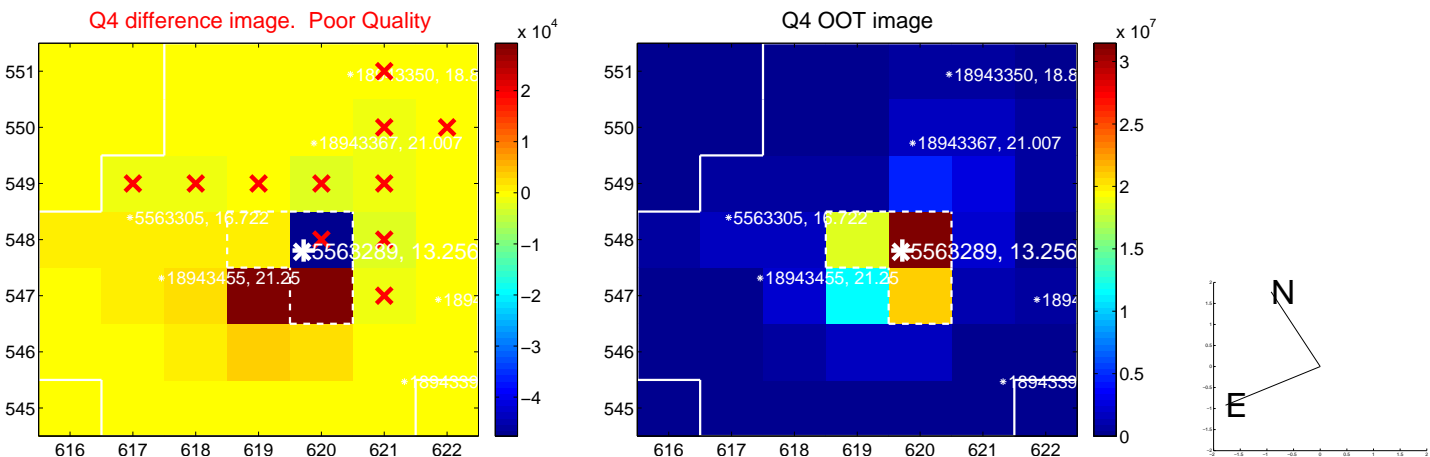
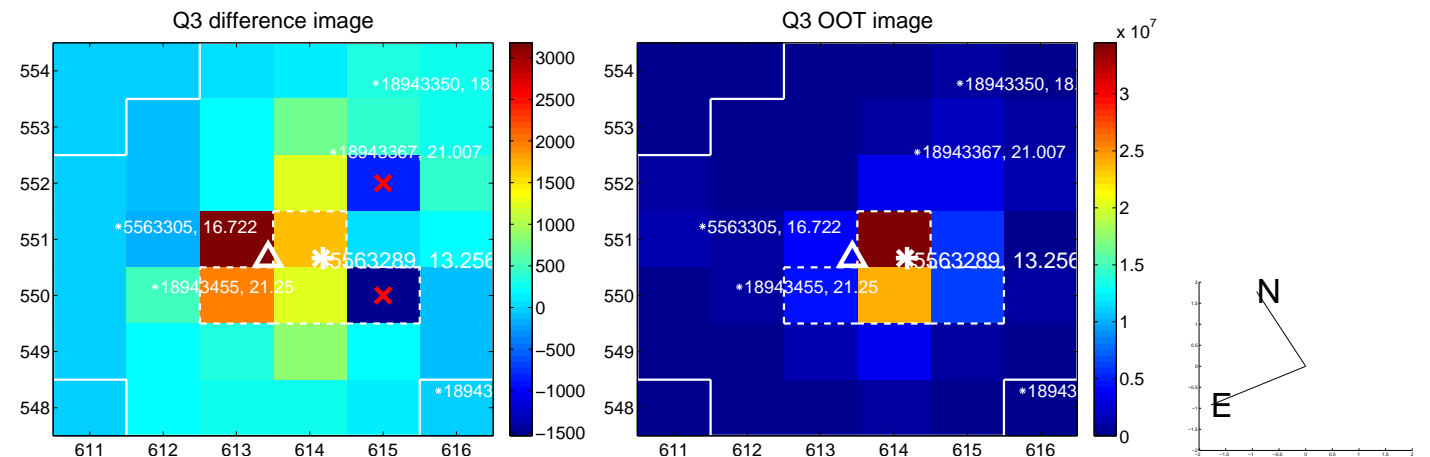
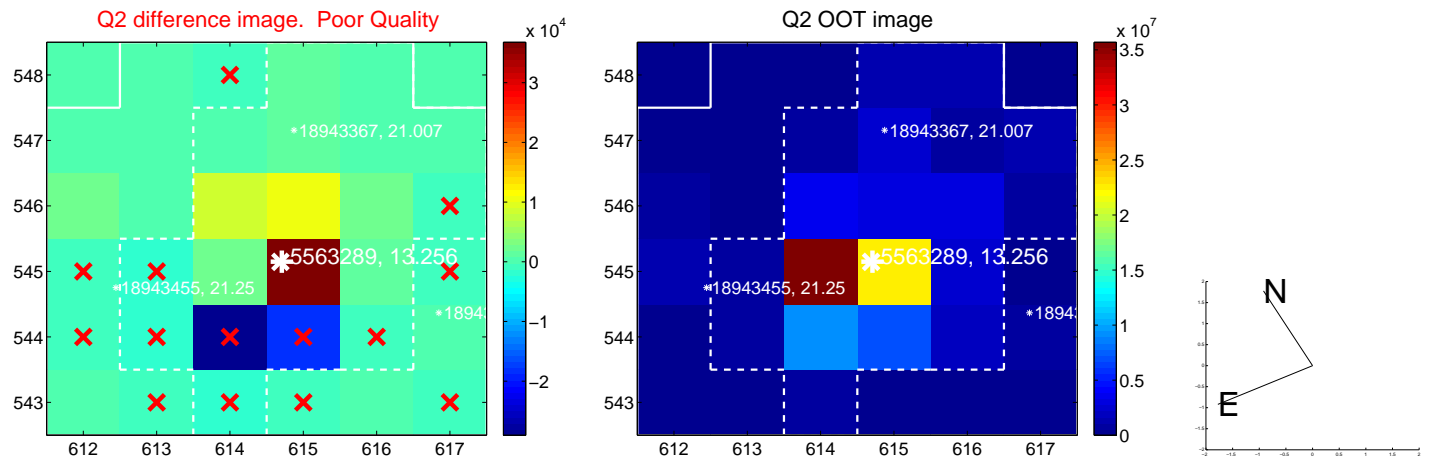
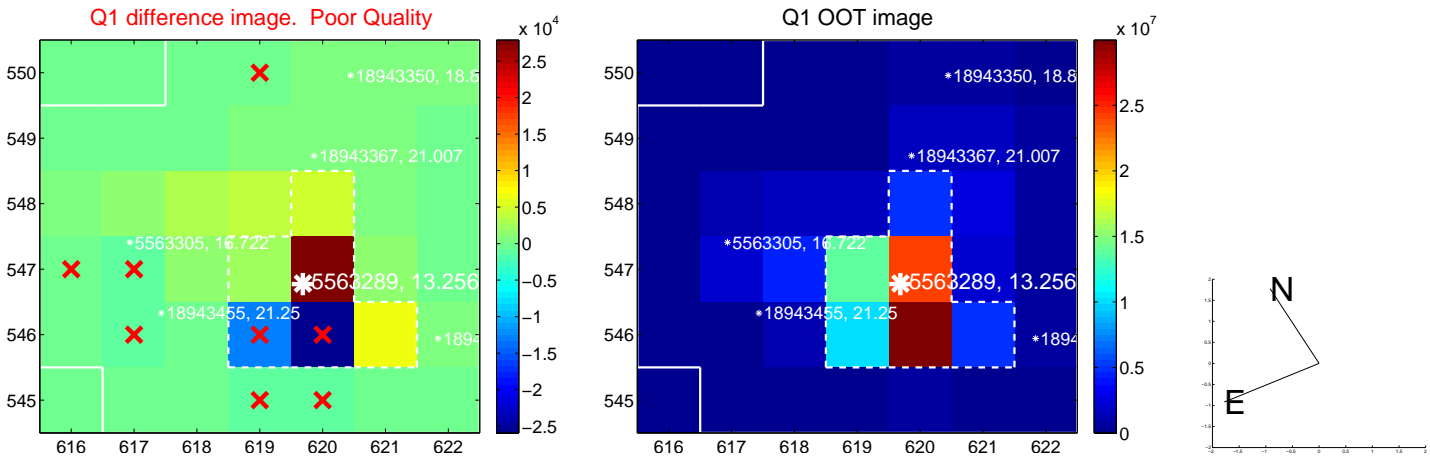
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.355 \pm 1.102$	1.23	$0.438 \pm 1.173$	$1.283 \pm 0.805$
PRF-fit source offset from KIC position	$1.340 \pm 0.914$	1.47	$0.401 \pm 0.969$	$1.278 \pm 0.708$
photometric centroid source offset	$0.53 \pm 0.34$	1.55	$-0.43 \pm 0.36$	$-0.31 \pm 0.31$

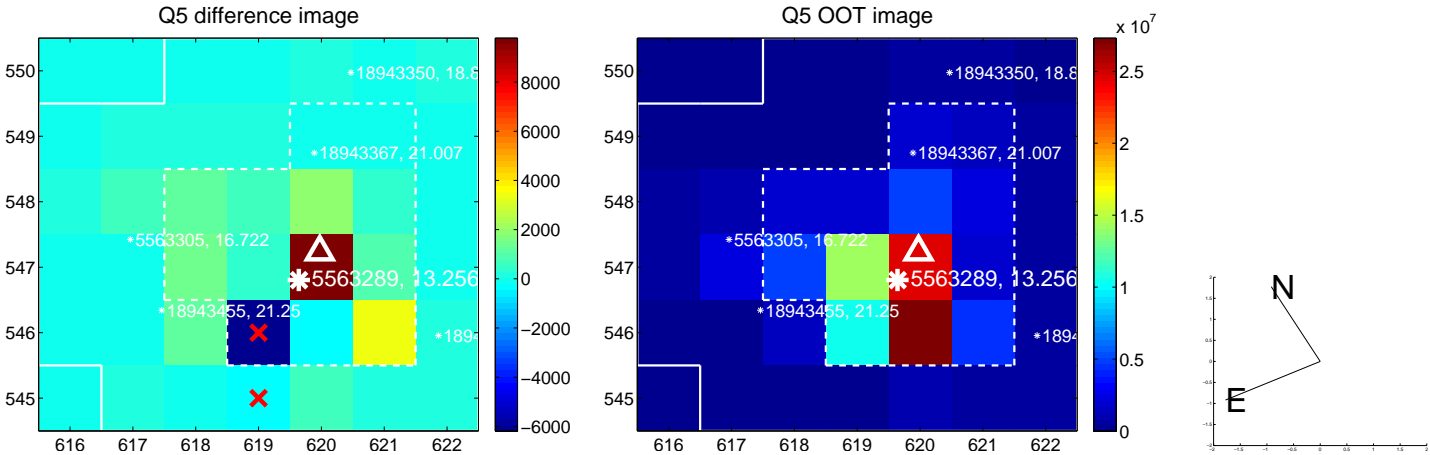


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

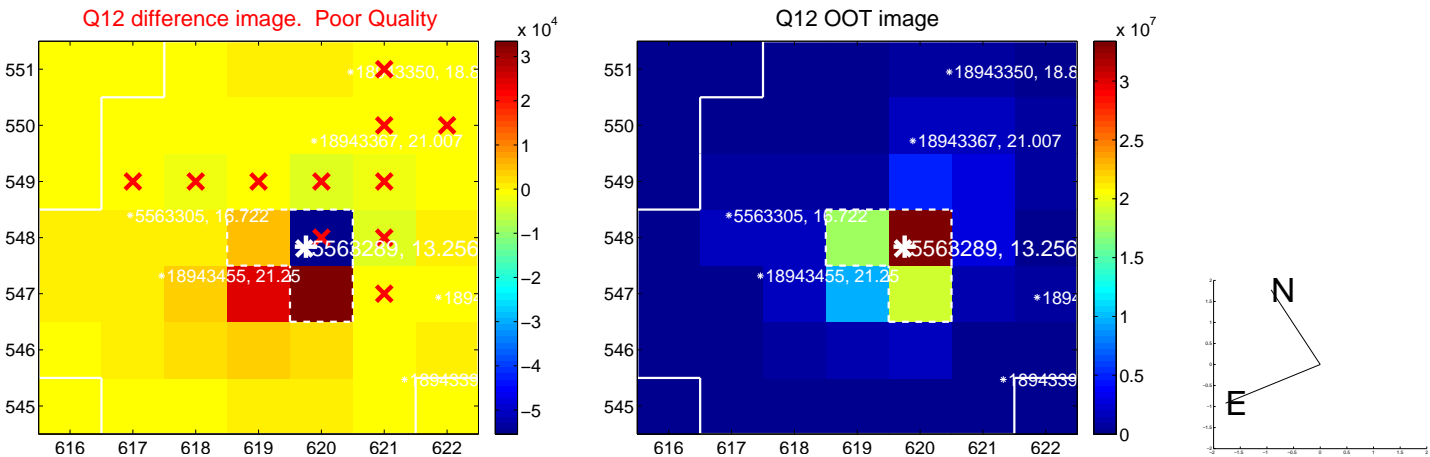
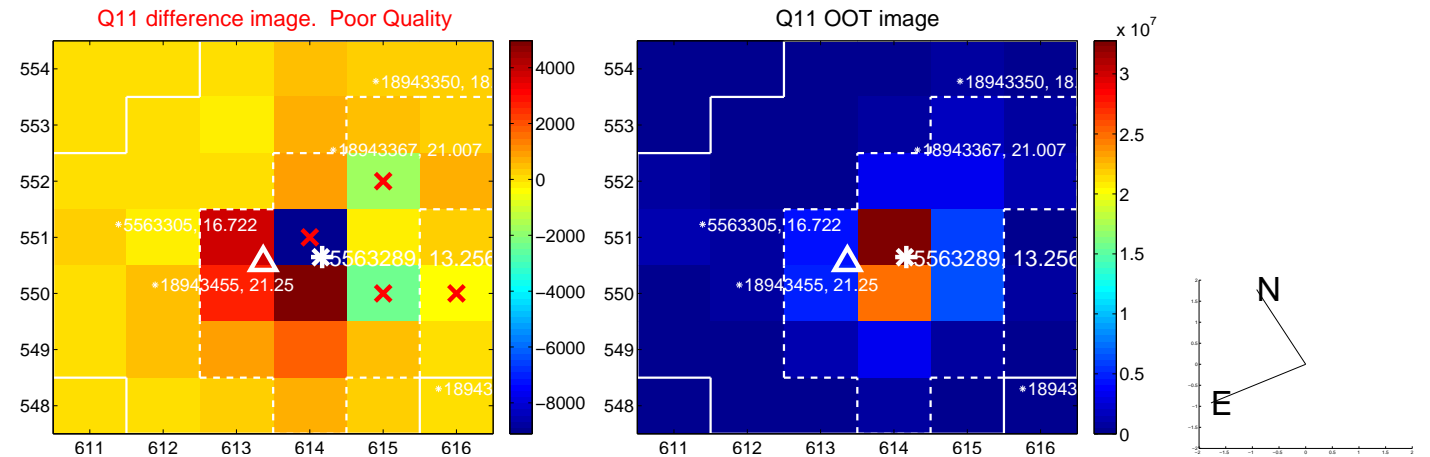
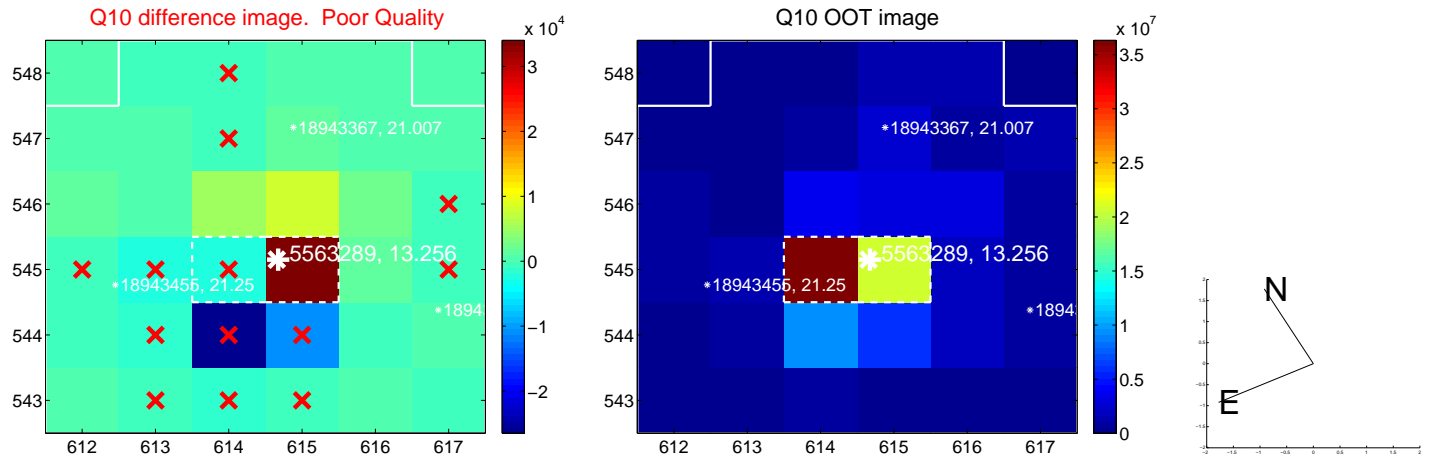
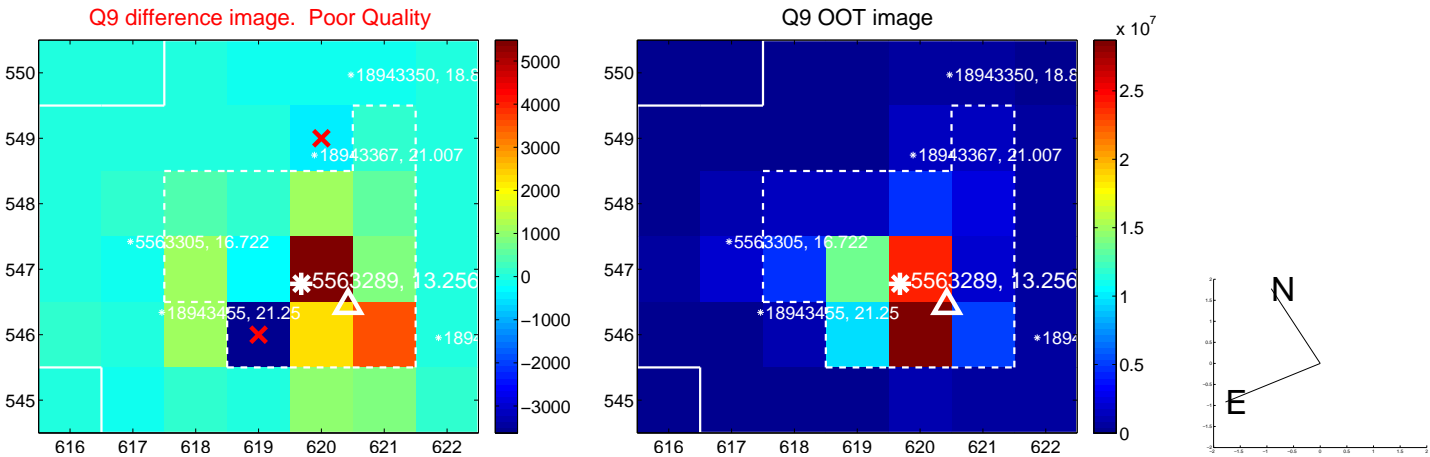


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

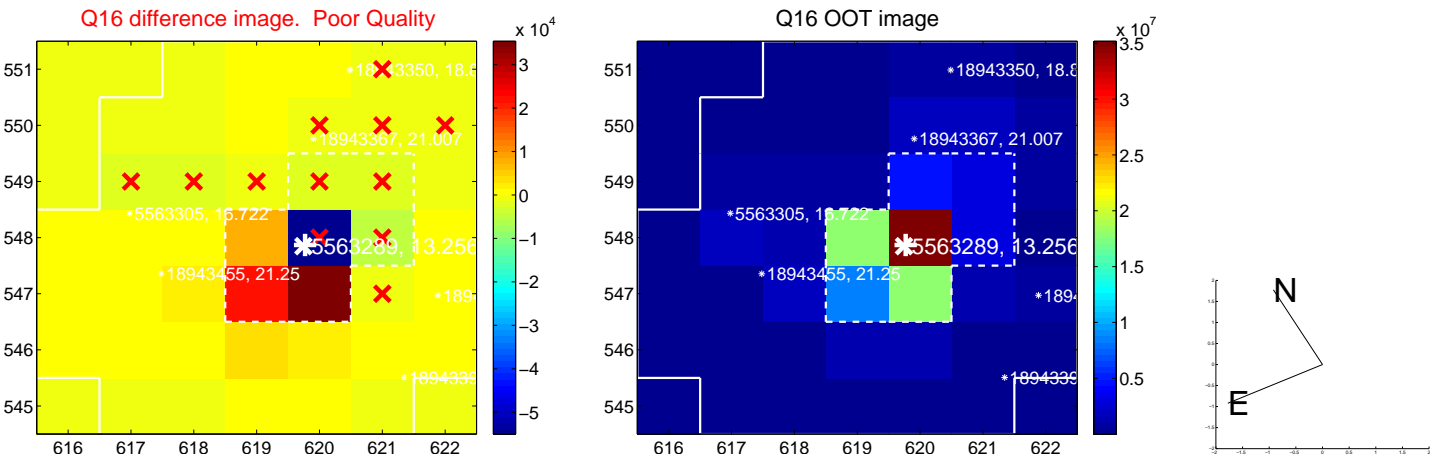
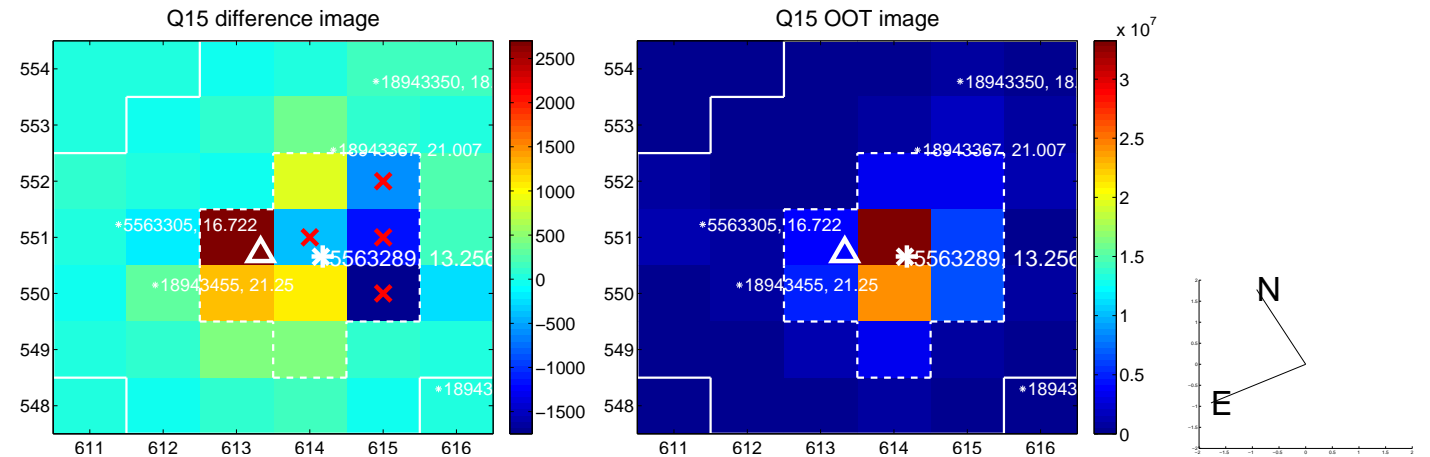
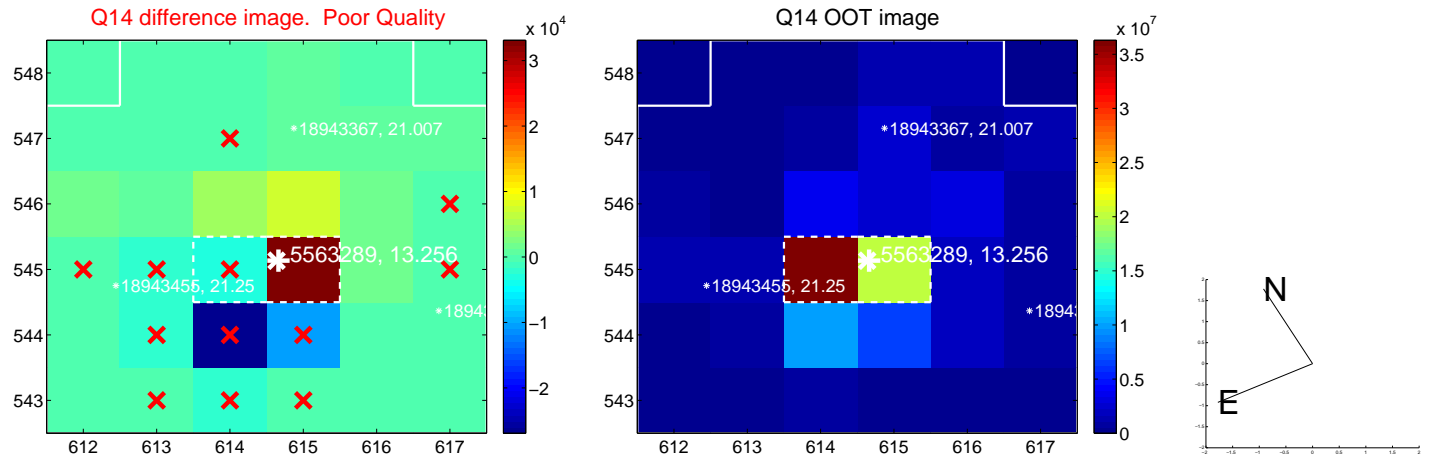
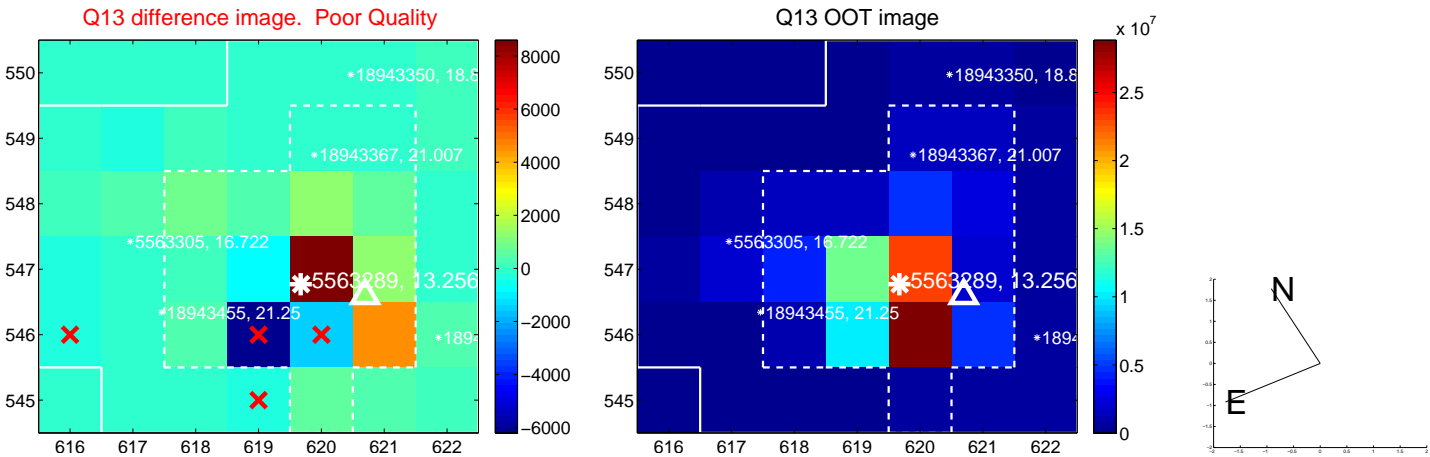




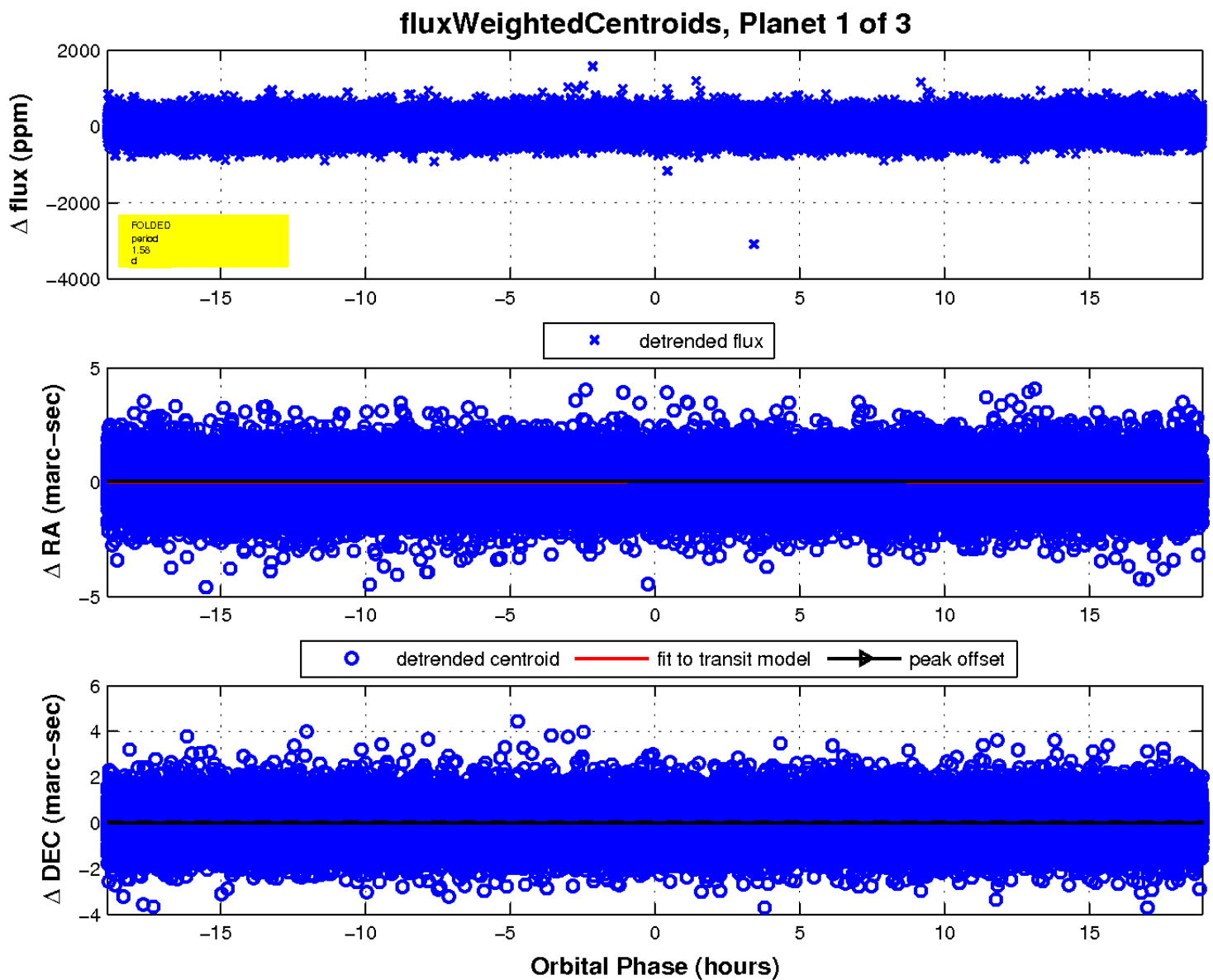
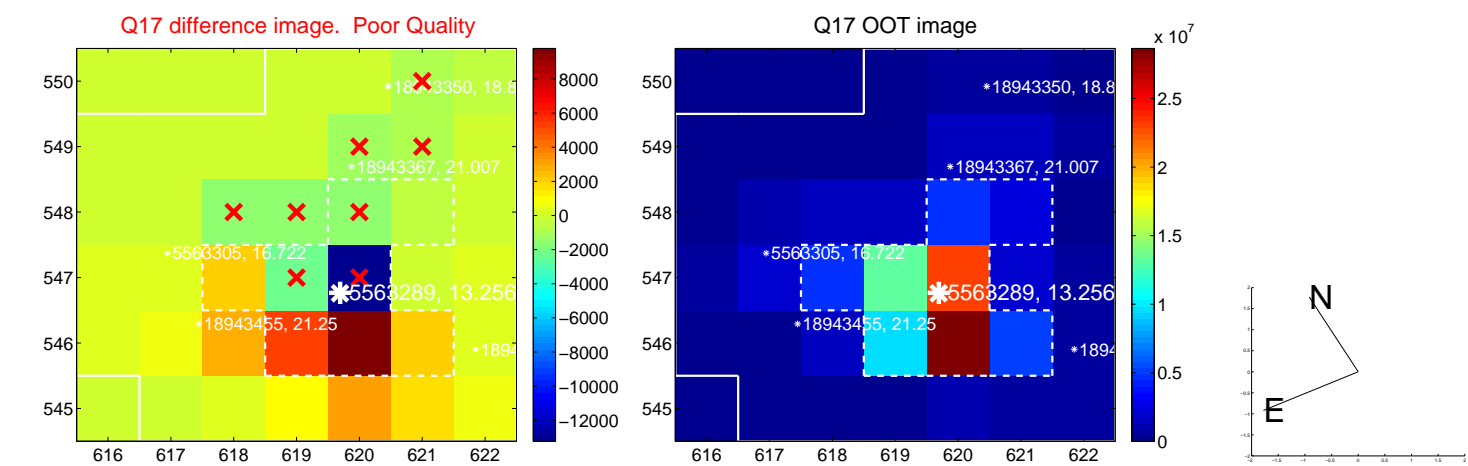
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

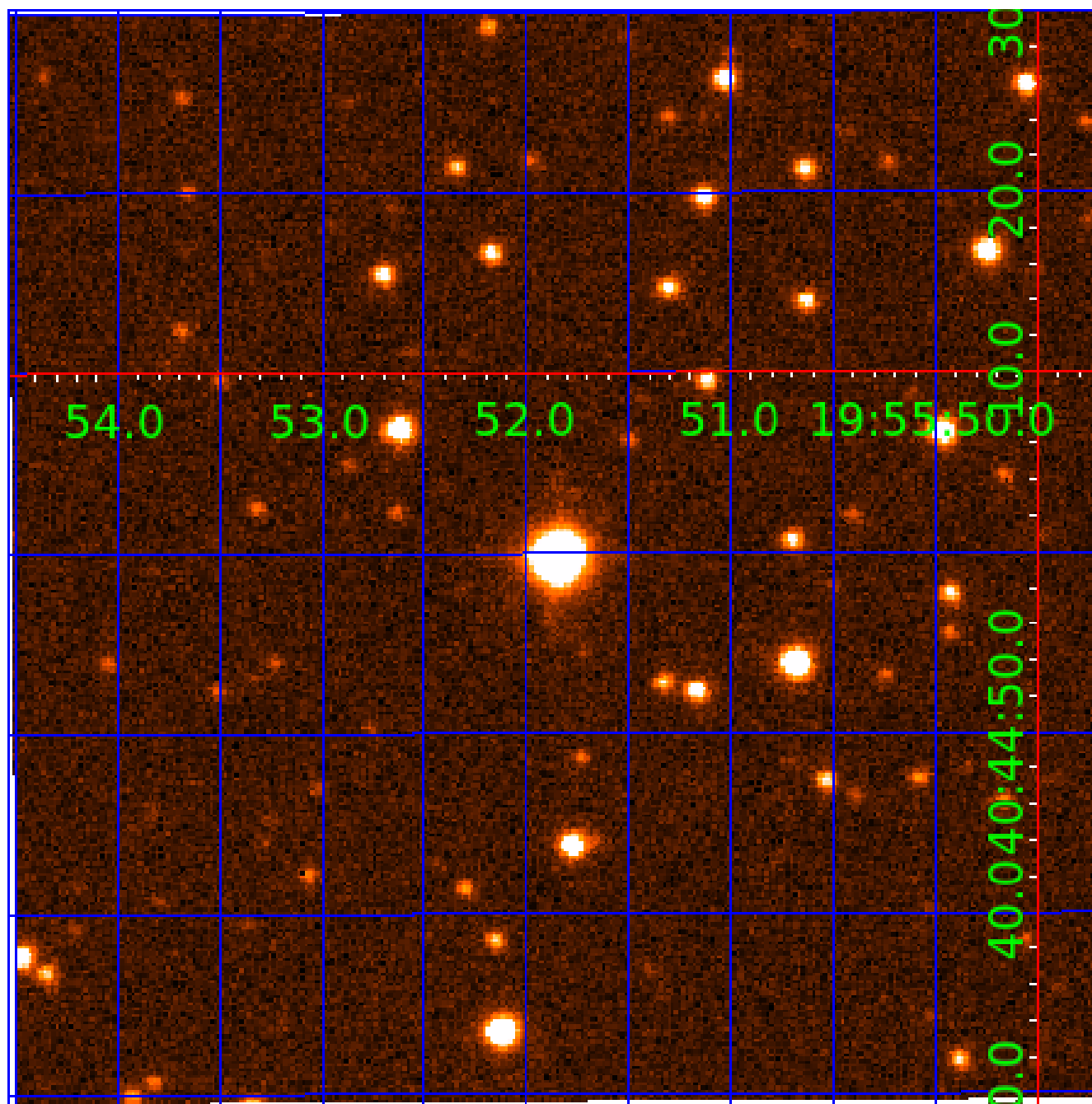


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



UKIRT Image

Declination





# KIC 005563289

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005563289-01	OBS	No	1.575824	131.534833	141.6	6.000	9.3	-1.0	4.61	6300	5.51	28507.86
005563289-02	OBS	No	232.851497	140.825454	323.2	8.372	7.4	7.5	4.61	6300	9.12	36.49
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## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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005563289-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_UNCERTAIN
005563289-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—MOD_NONUNIQ_ALT—HALO_GHOST

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

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

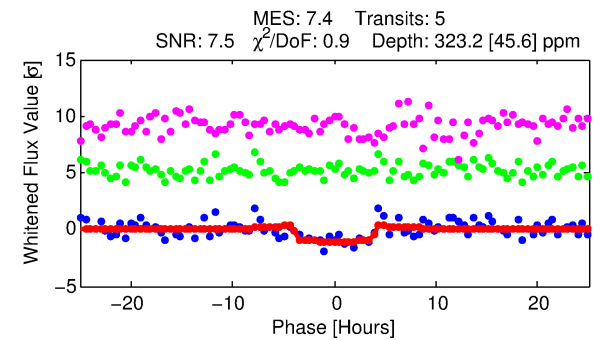
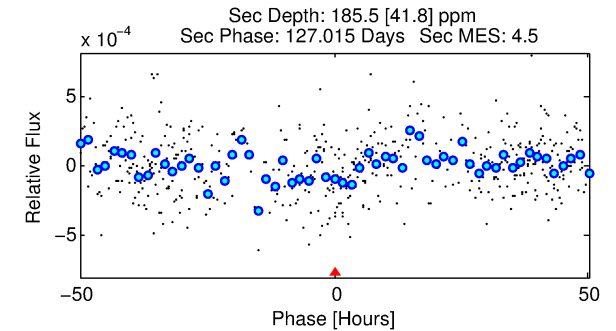
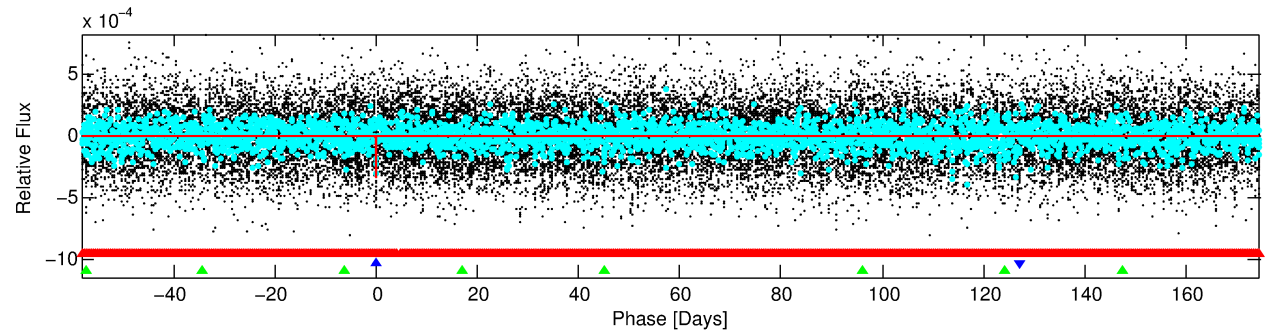
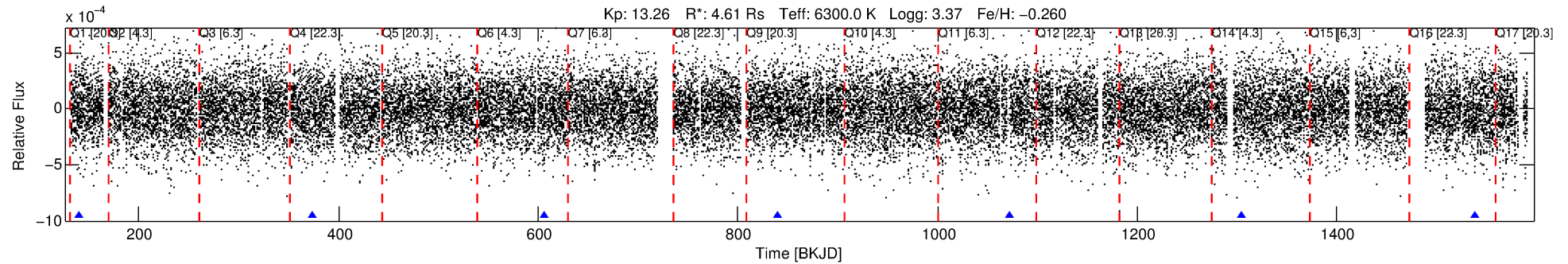
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005563289-02

No Significant Match Found

# DV One-Page Summary

KIC: 5563289 Candidate: 2 of 3 Period: 232.851 d

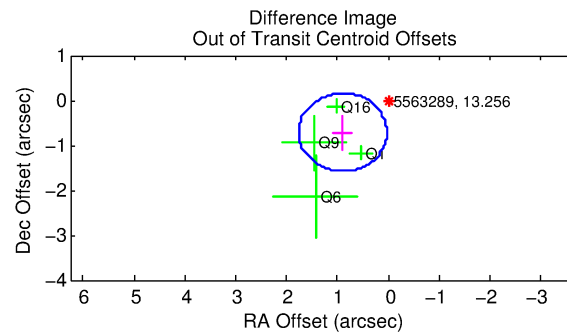
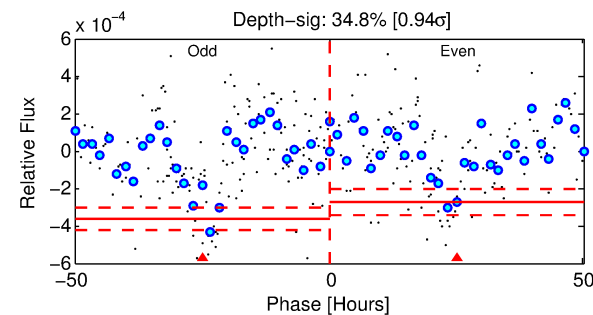
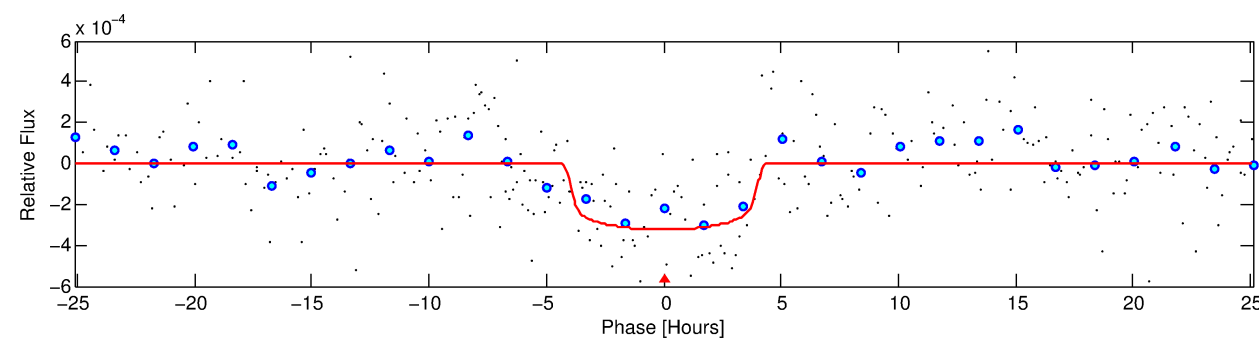


## DV Fit Results:

Period = 232.85150 [0.00355] d  
Epoch = 140.8255 [0.0156] BKJD  
Rp/R\* = 0.0181 [0.0072]  
a/R\* = 137.40 [289.24]  
b = 0.79 [1.03]  
Seff = 36.49 [24.47]  
Teq = 627 [105] K  
Rp = 9.12 [5.36] Re  
a = 0.9074 [0.3745] AU  
Ag = 1010.81 [1066.72] [0.95σ]  
Teffp = 5464 [1144] K [4.21σ]

## DV Diagnostic Results:

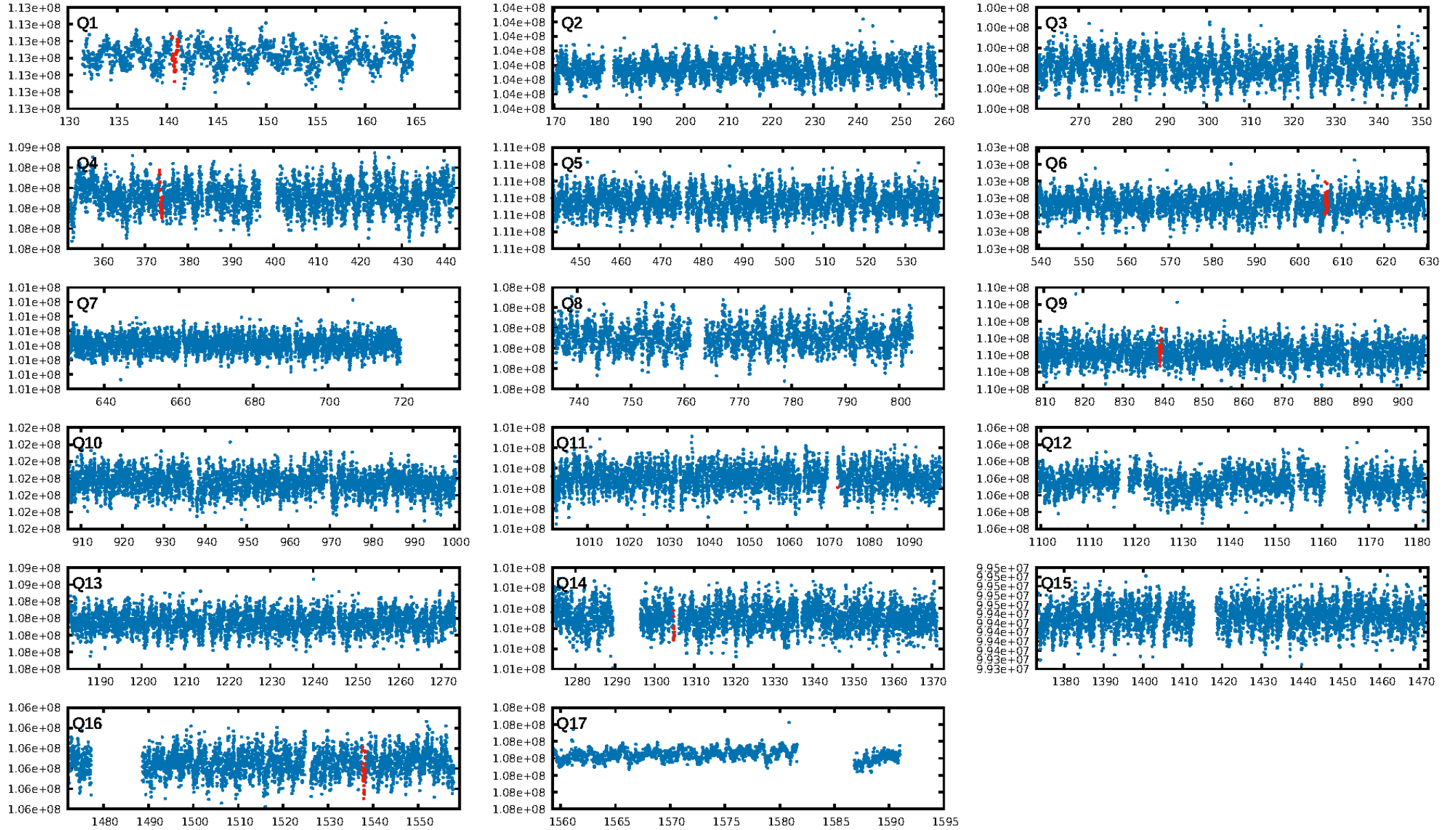
ShortPeriod-sig: 100.0% [93.08σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 47.9%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 3.56e-09**  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: -387.7  
Centroid-sig: 90.6%  
Centroid-so: 0.387 arcsec [0.49σ]  
**OotOffset-rm: 1.144 arcsec [3.95σ]**  
**KicOffset-rm: 1.068 arcsec [3.81σ]**  
OotOffset-st: 1/0/1/2 [4]  
KicOffset-st: 1/0/1/2 [4]  
DiffImageQuality-fgm: 1.00 [4/4]  
DiffImageOverlap-fno: 0.00 [0/4]



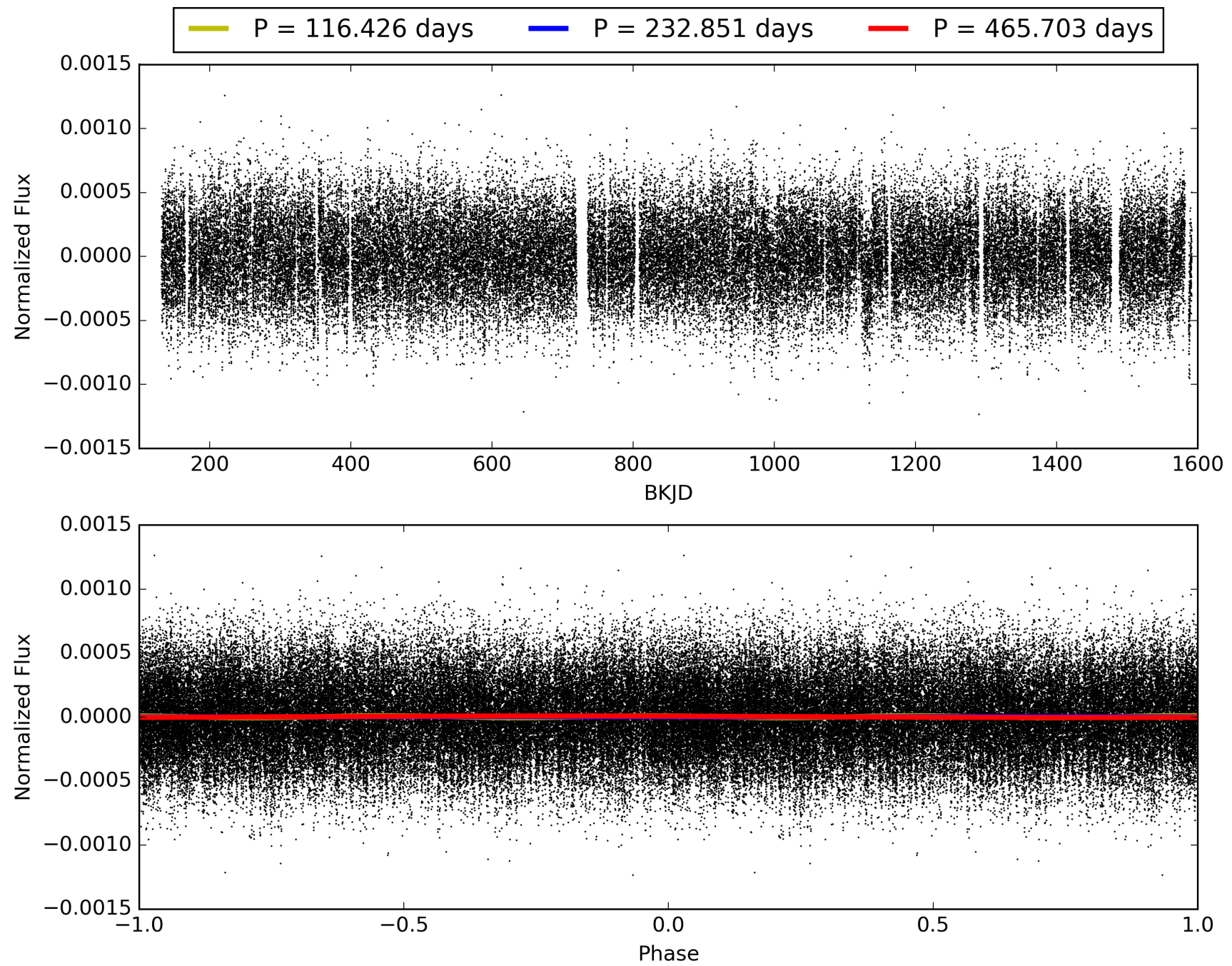
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 01:38:27 Z

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

# TCE 005563289-02, PDC Light Curves

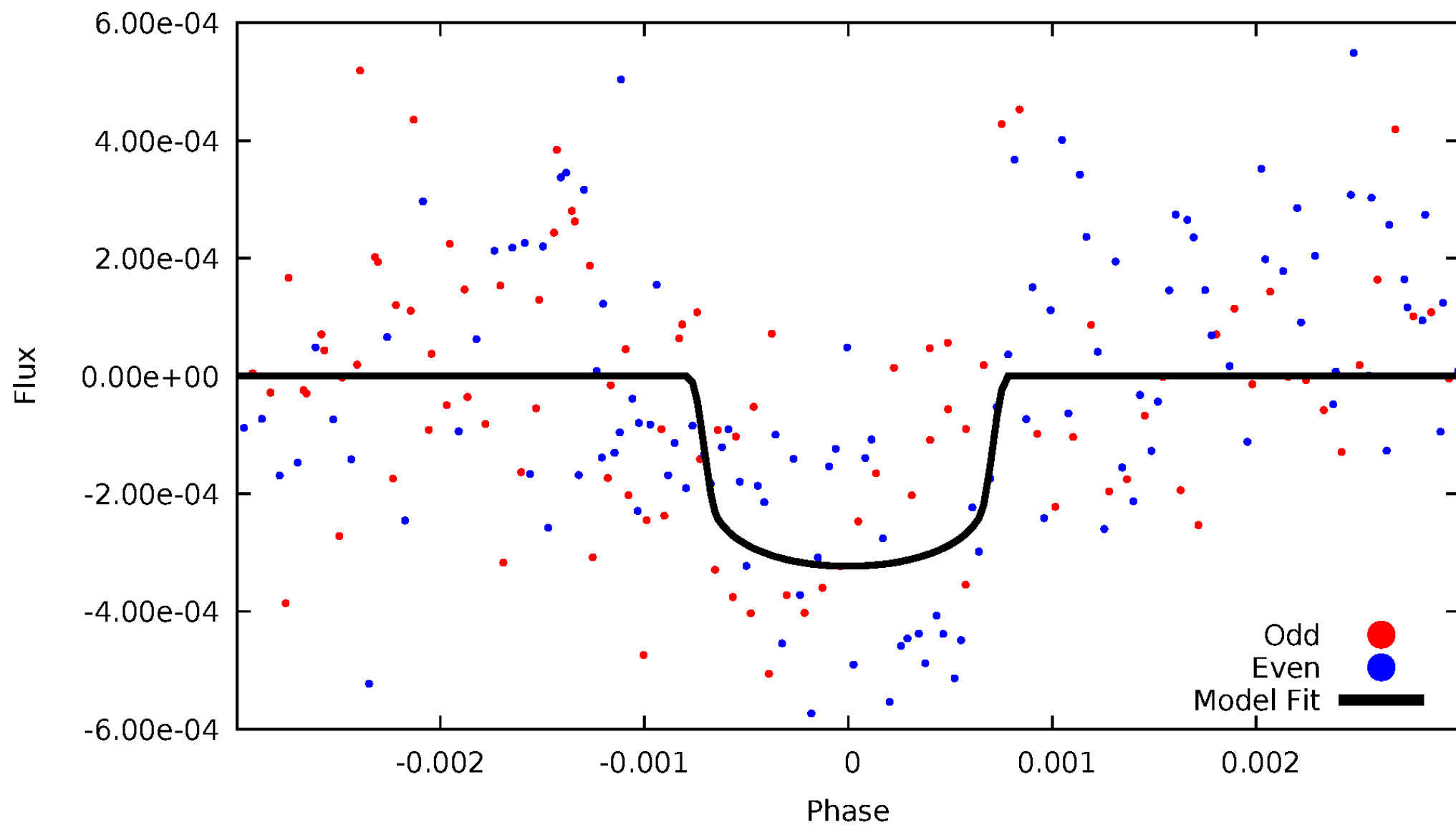


TCE 005563289-02



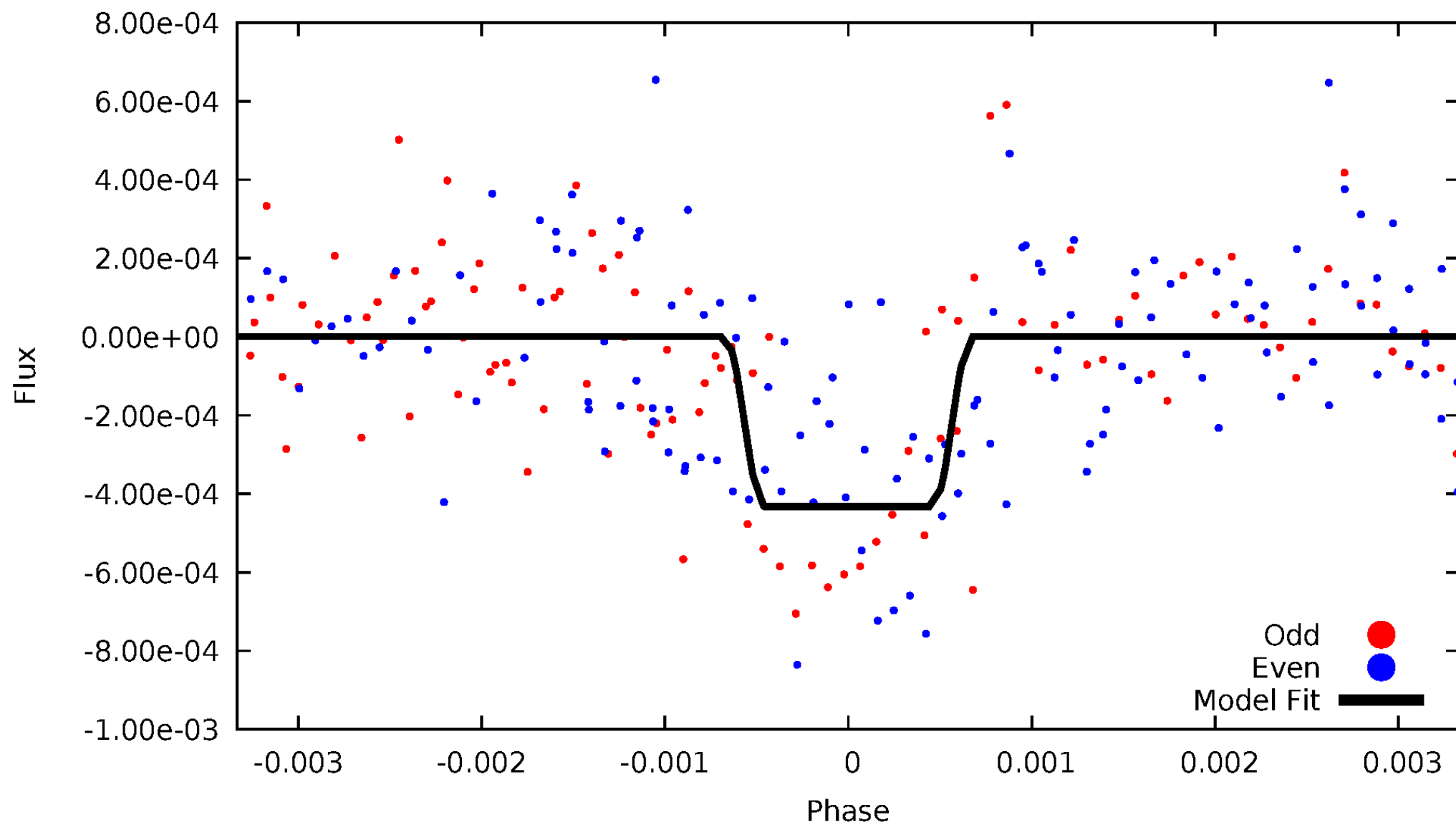
# DV Odd/Even

TCE 005563289-02



# ALT Odd/Even

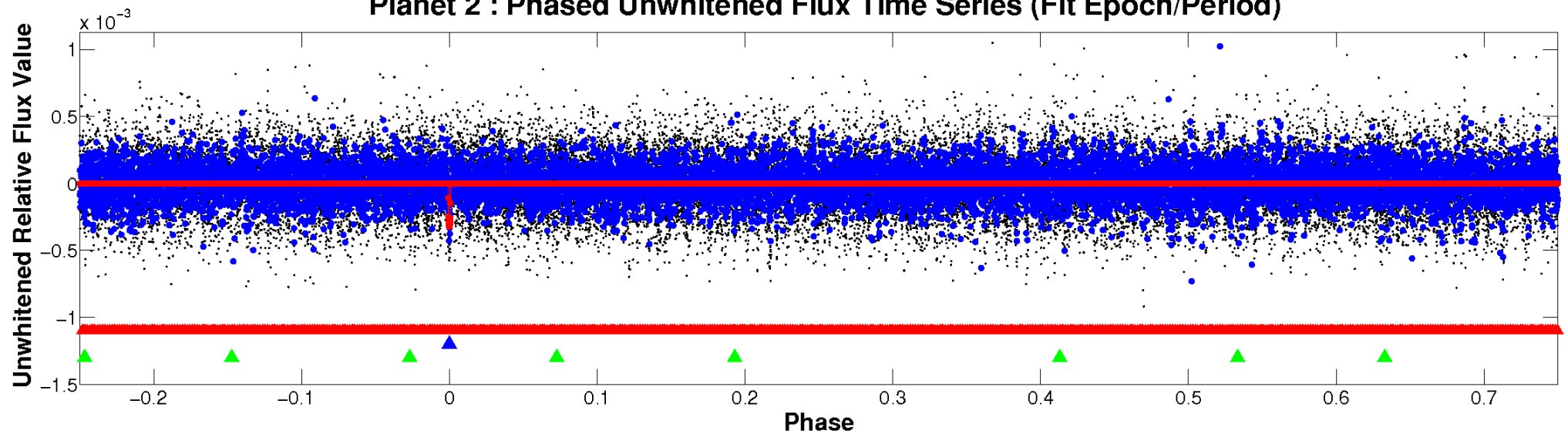
TCE 005563289-02



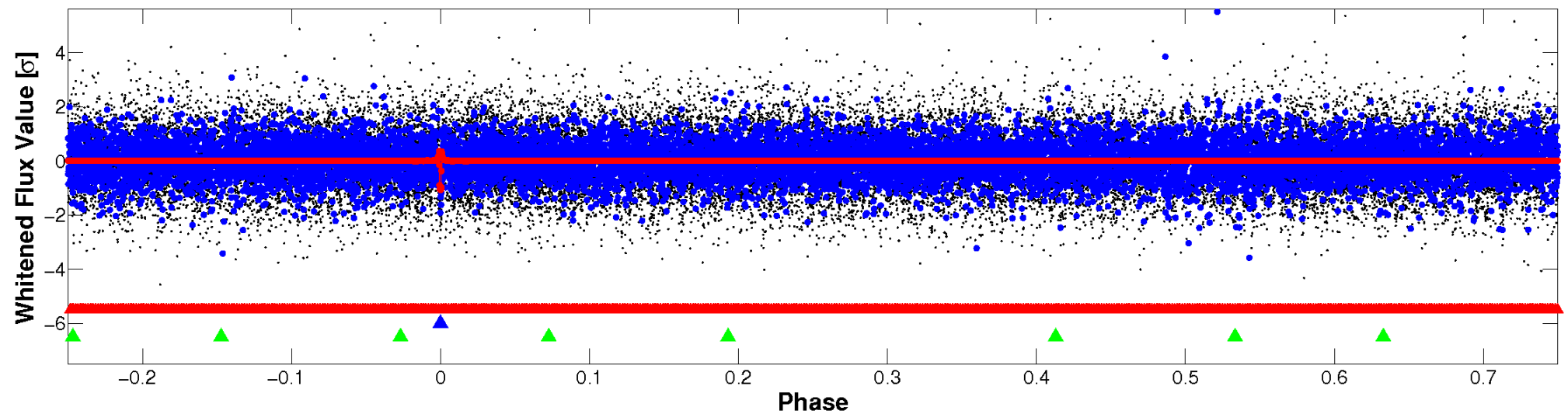


# Non-Whitened Vs. Whitened Light Curve

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

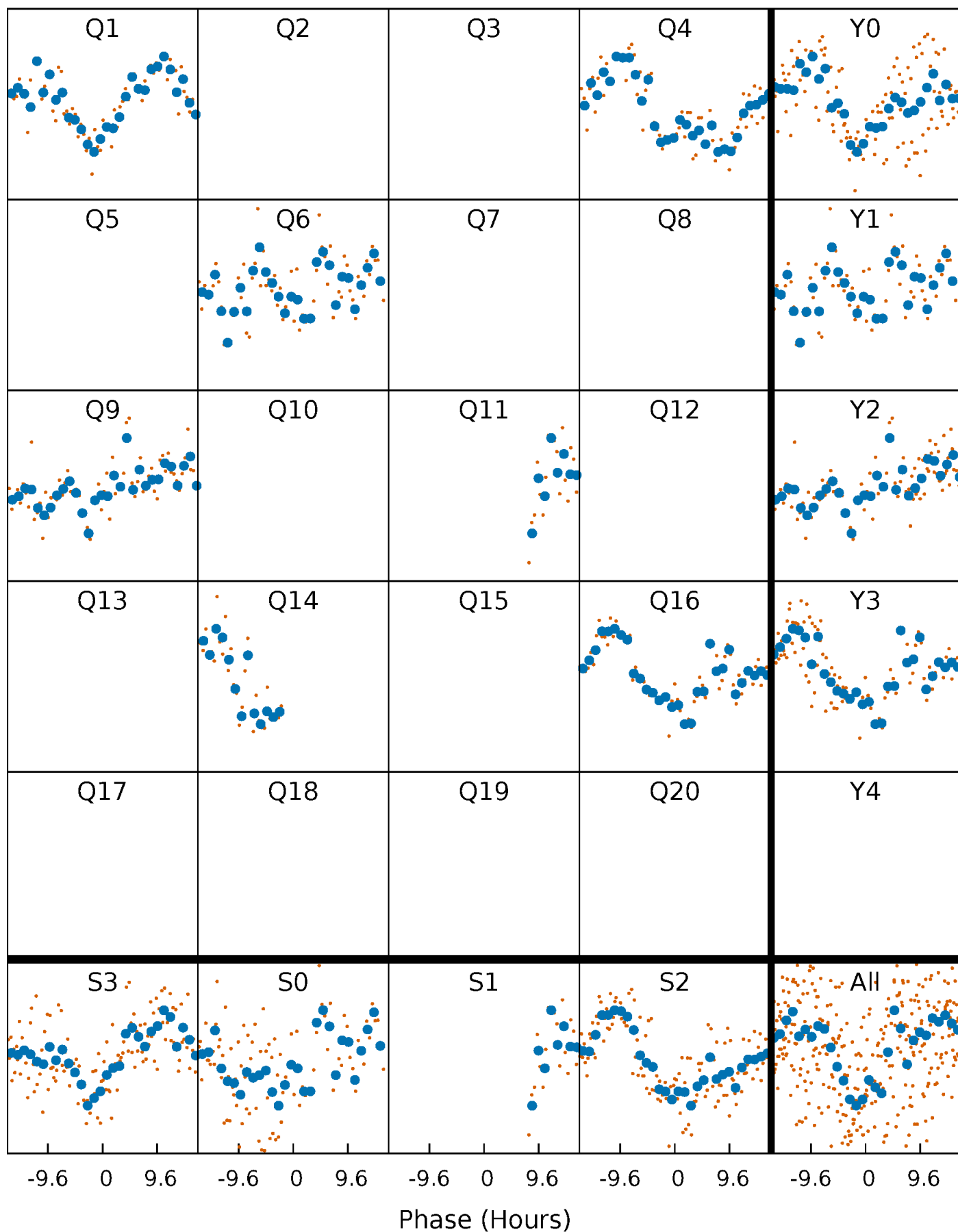


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



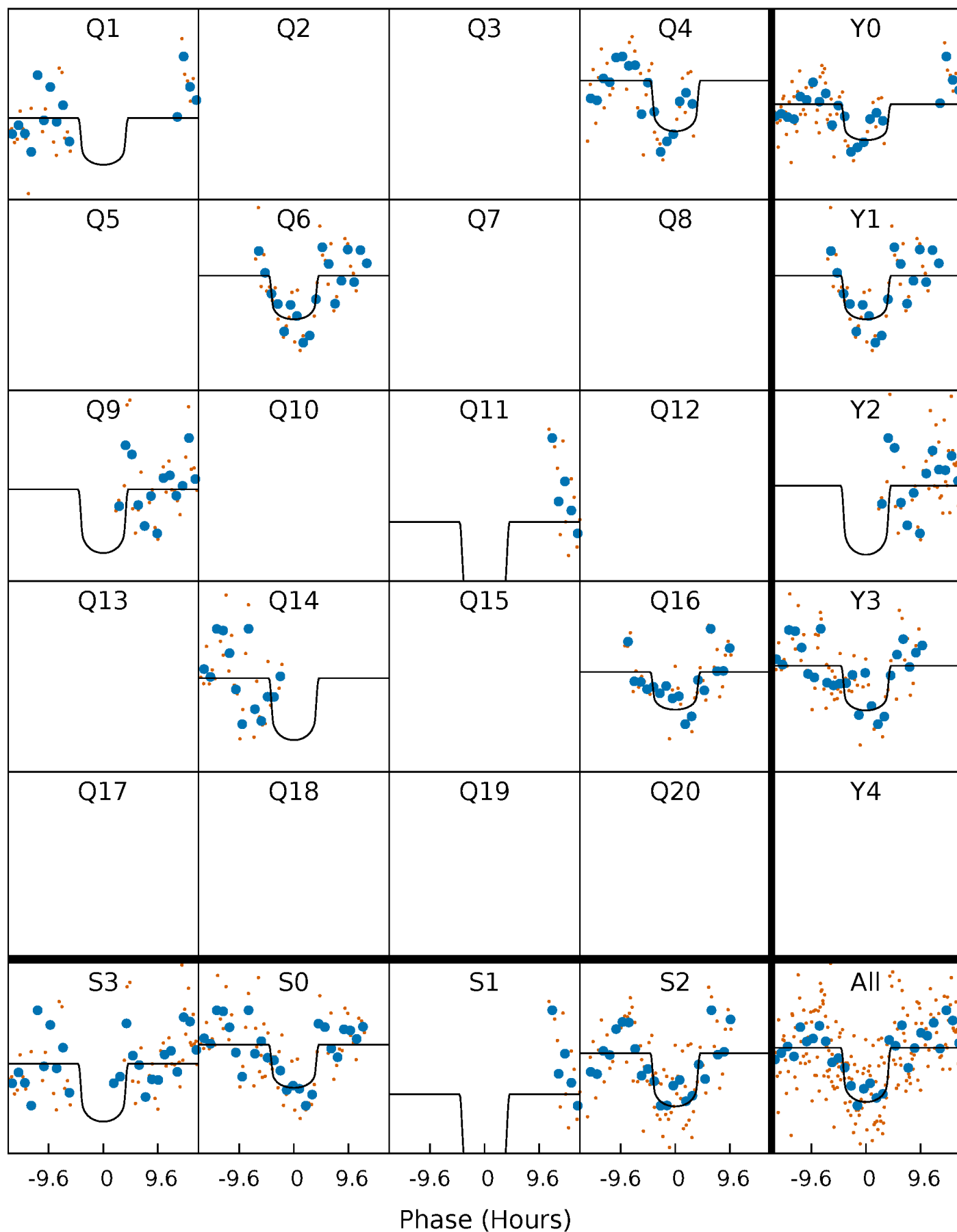
# PDC Quarter-Phased Transit Curves

TCE 005563289-02     $P=232.851497$  Days     $T_0=140.825454$  (BKJD)



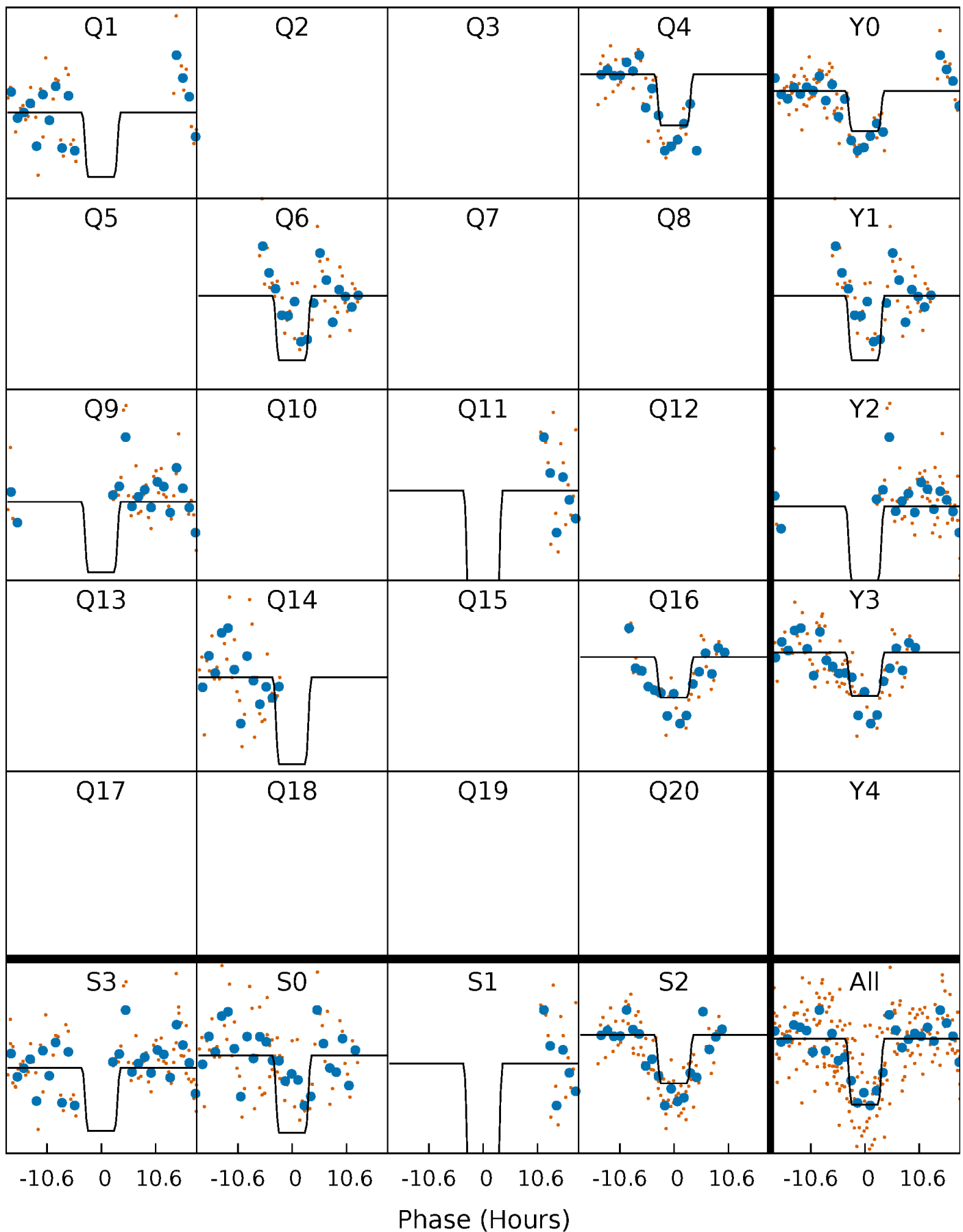
## DV Quarter-Phased Transit Curves

TCE 005563289-02    P=232.851497 Days     $T_0=140.825454$  (BKJD)



### Alt. Detrend Quarter-Phased Transit Curves

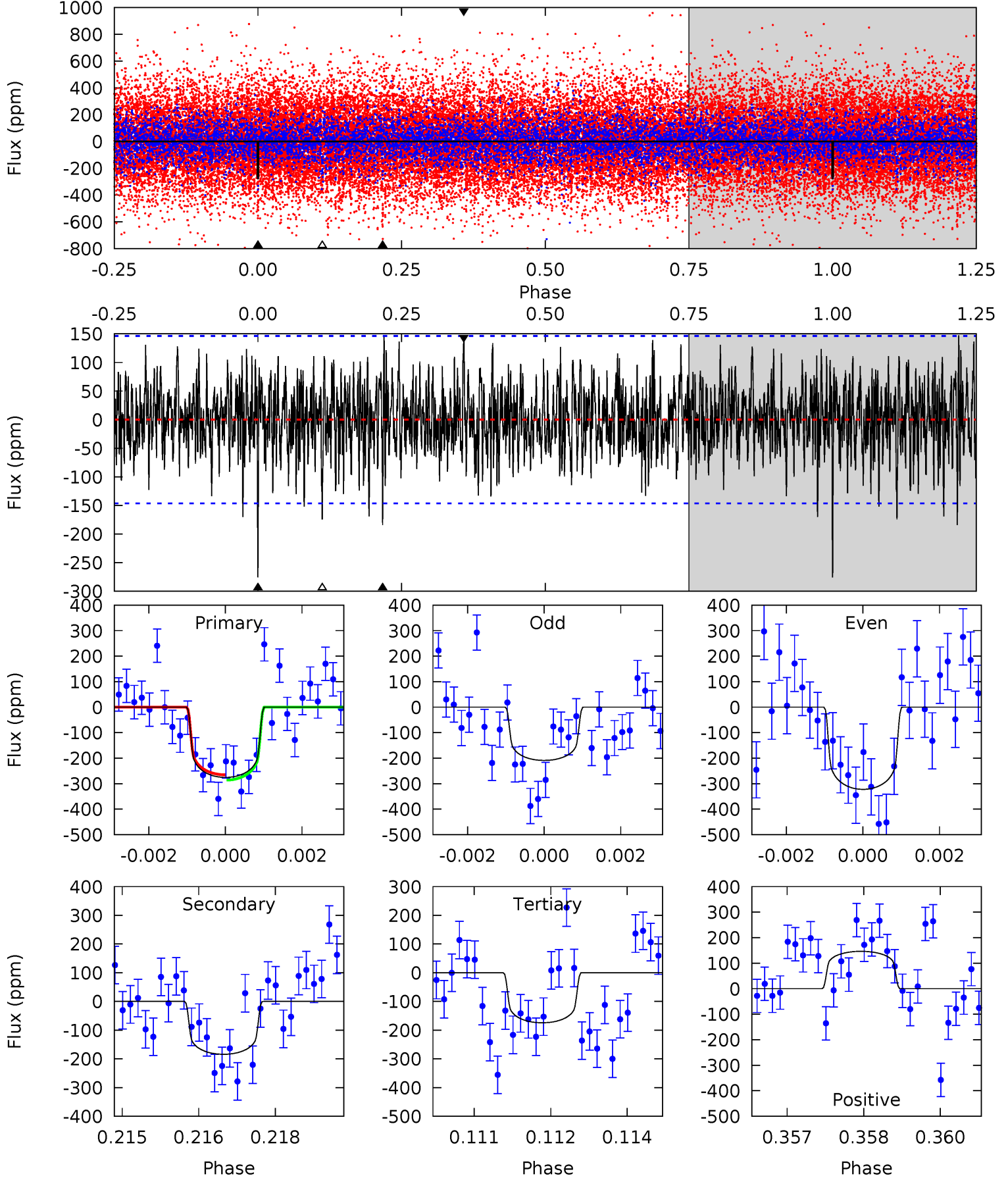
TCE 005563289-02 P=232.860850 Days  $T_0=140.791988$  (BKJD)



# DV Model-Shift Uniqueness Test

005563289-02,  $P = 232.851497$  Days,  $E = 140.825454$  Days

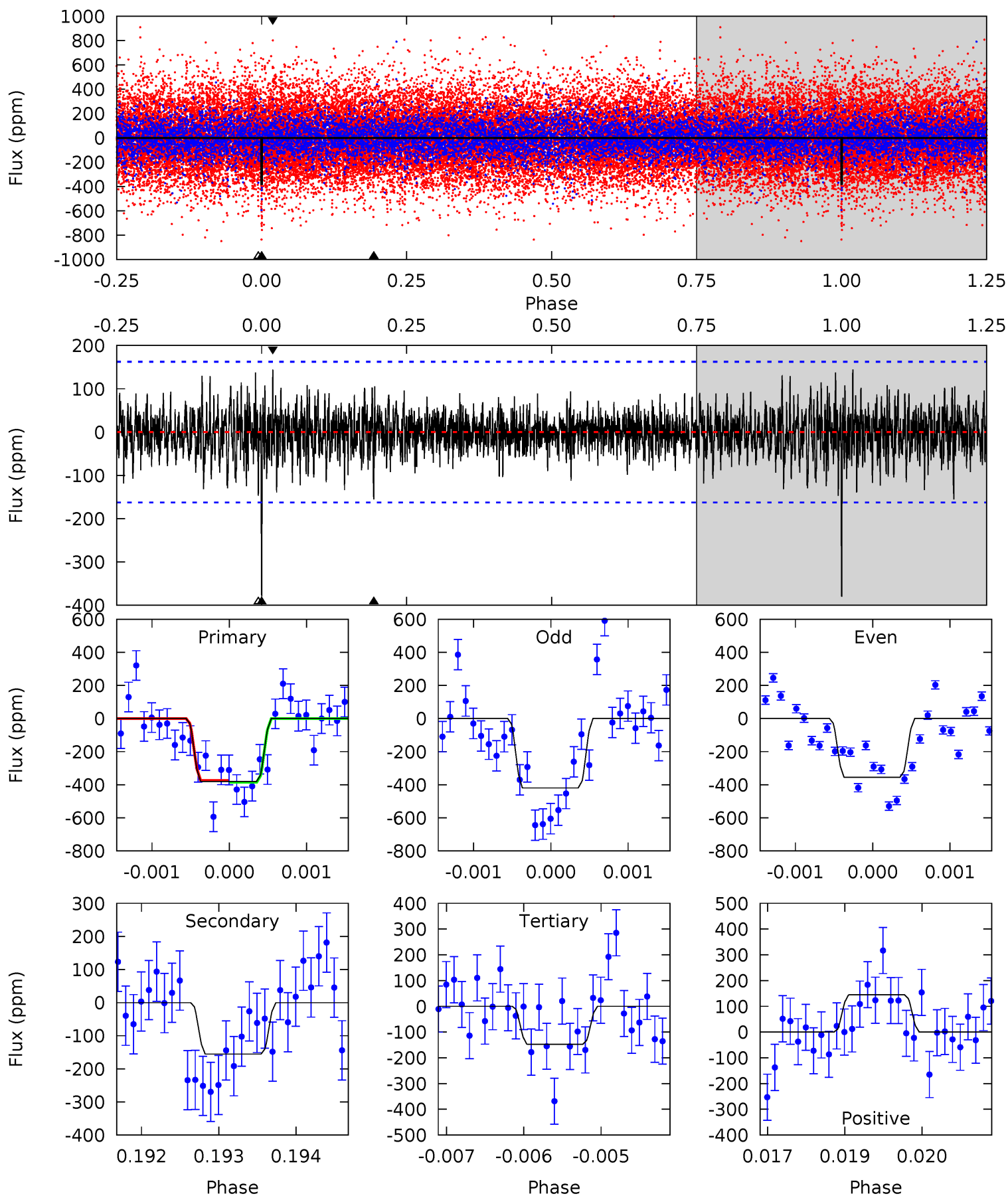
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	6.76	6.40	5.37	5.37	3.16	1.79	3.72	4.74	0.36	1.38	2.06	0.75	0.35	0.38



# Alt Model-Shift Uniqueness Test

005563289-02, P = 232.860850 Days, E = 140.791988 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
12.7	5.17	4.90	4.81	5.41	3.23	1.25	7.76	7.85	0.27	0.36	1.06	1.64	0.28	0.18





### Stellar Parameters For KIC 005563289

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6300^{+215}_{-215}$	$3.374^{+0.384}_{-0.072}$	$-0.260^{+0.350}_{-0.300}$	$4.614^{+0.666}_{-1.999}$	$1.839^{+0.133}_{-0.498}$	$0.026^{+0.089}_{-0.008}$
	+3%/-3%	+11%/-2%	+135%/-115%	+14%/-43%	+7%/-27%	+339%/-31%
Source	PHO1	FLK73	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 005563289-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-184 \pm 27$	$8.27^{+3.66}_{-3.23}$	$846^{+61}_{-96}$	$5422^{+1351}_{-753}$	$1203^{+2084}_{-639}$
Alt.	$-155 \pm 30$	$9.11^{+3.91}_{-3.45}$	$851^{+57}_{-96}$	$4992^{+1173}_{-630}$	$803^{+1257}_{-422}$

$T_{\text{max}}$  = 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

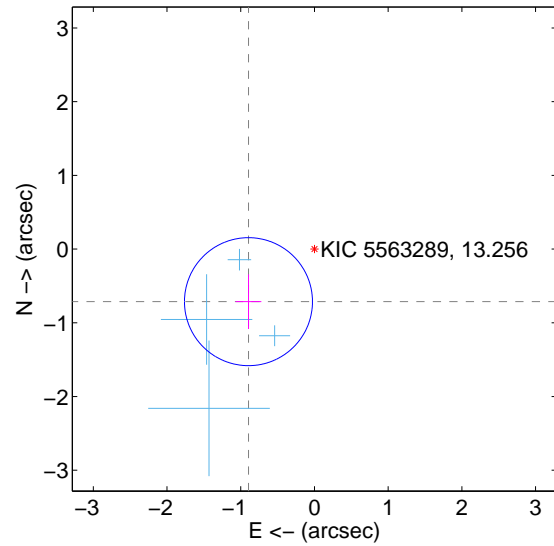
Supplemental centroid analysis for 005563289-02. Kepler magnitude: 13.26. Transit SNR 7.53

There are 4 quarters with good PRF difference image offsets

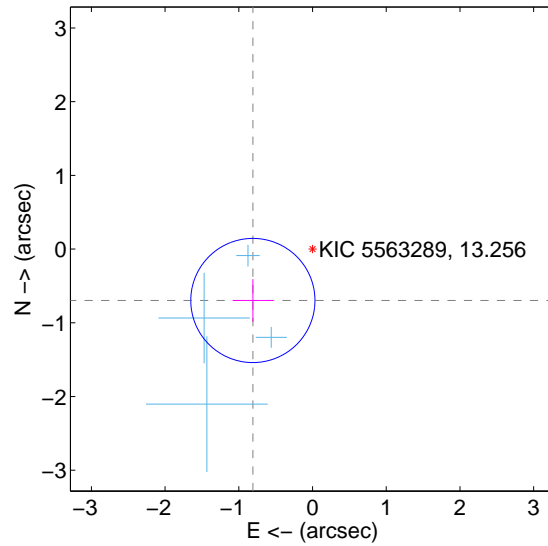
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.144 \pm 0.289$	<b>3.95</b>	$0.895 \pm 0.175$	$-0.713 \pm 0.371$
PRF-fit source offset from KIC position	$1.068 \pm 0.281$	<b>3.81</b>	$0.809 \pm 0.275$	$-0.697 \pm 0.289$
photometric centroid source offset	$0.39 \pm 0.78$	0.49	$0.21 \pm 0.84$	$-0.33 \pm 0.76$

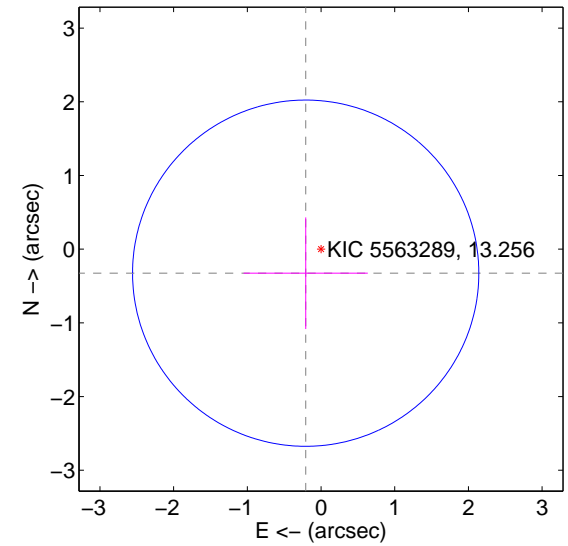
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

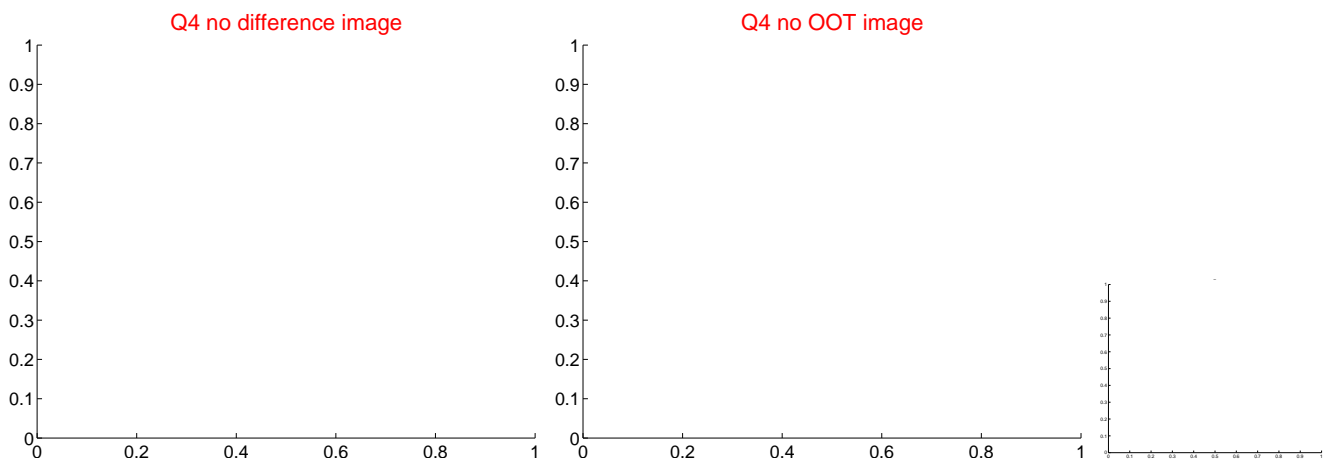
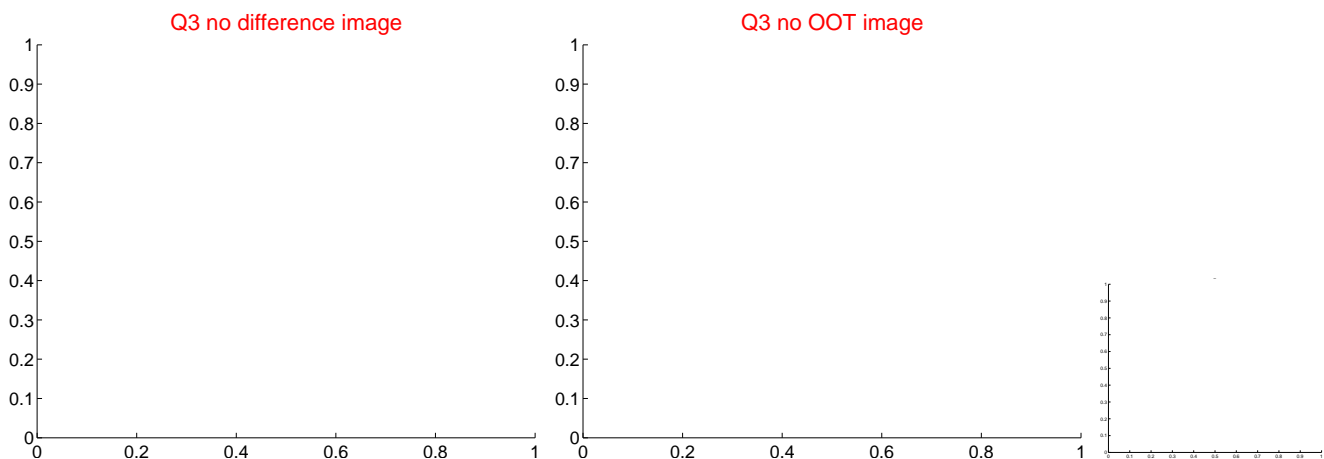
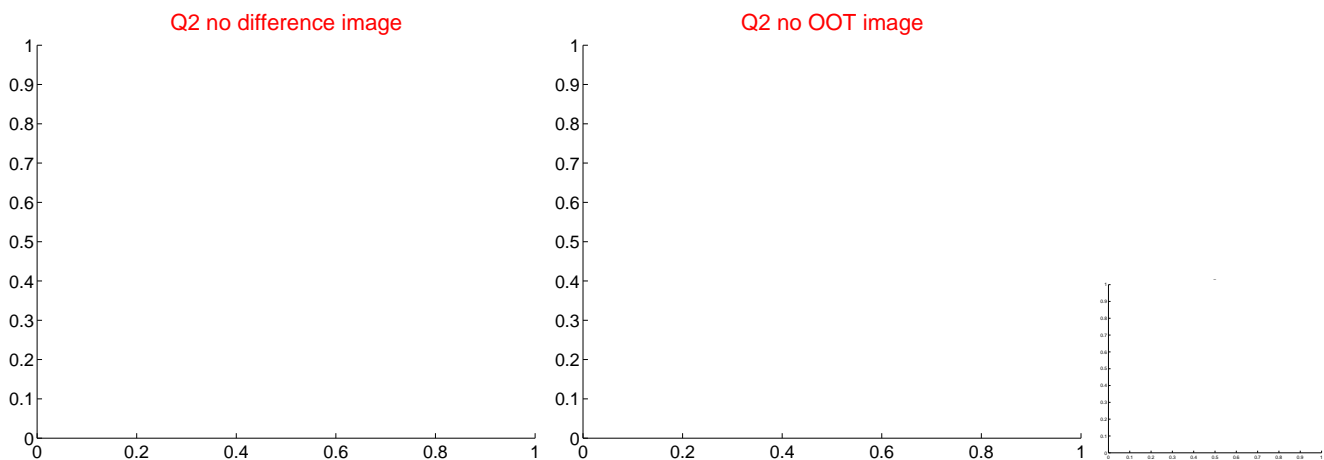
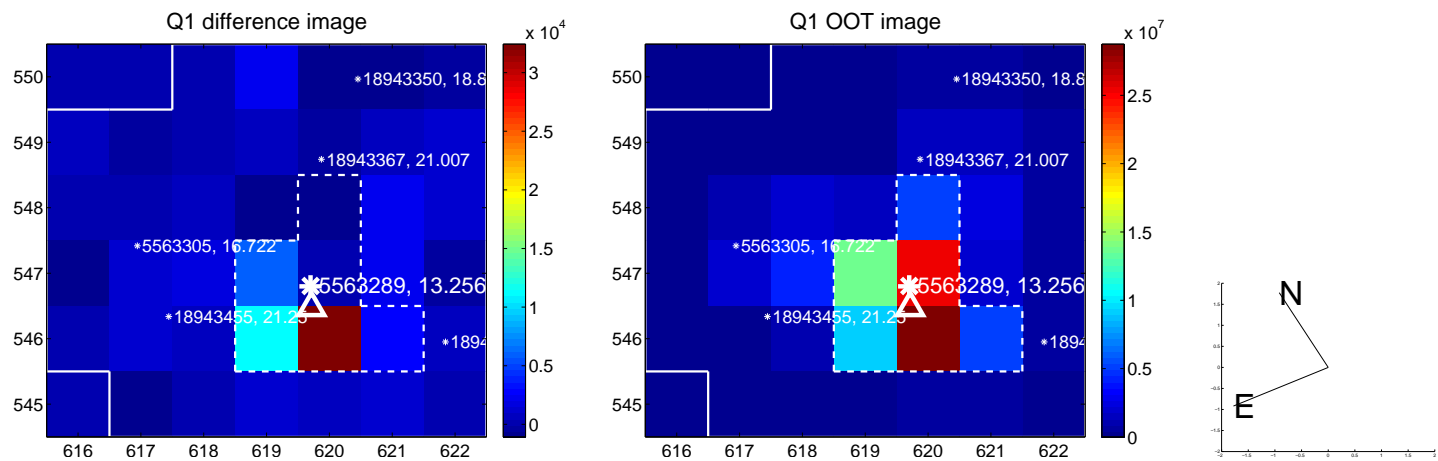


offset from photometric centroids

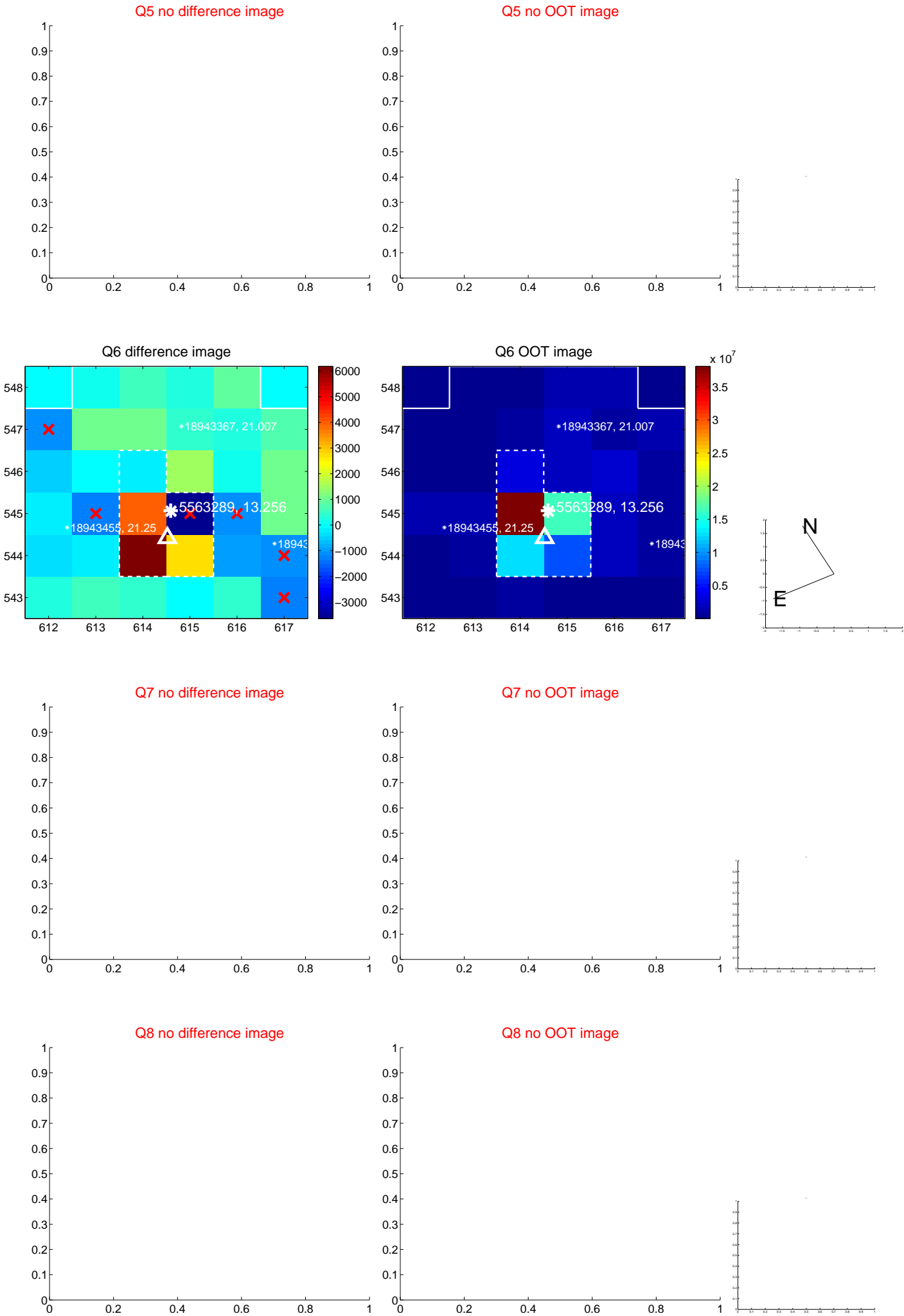


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

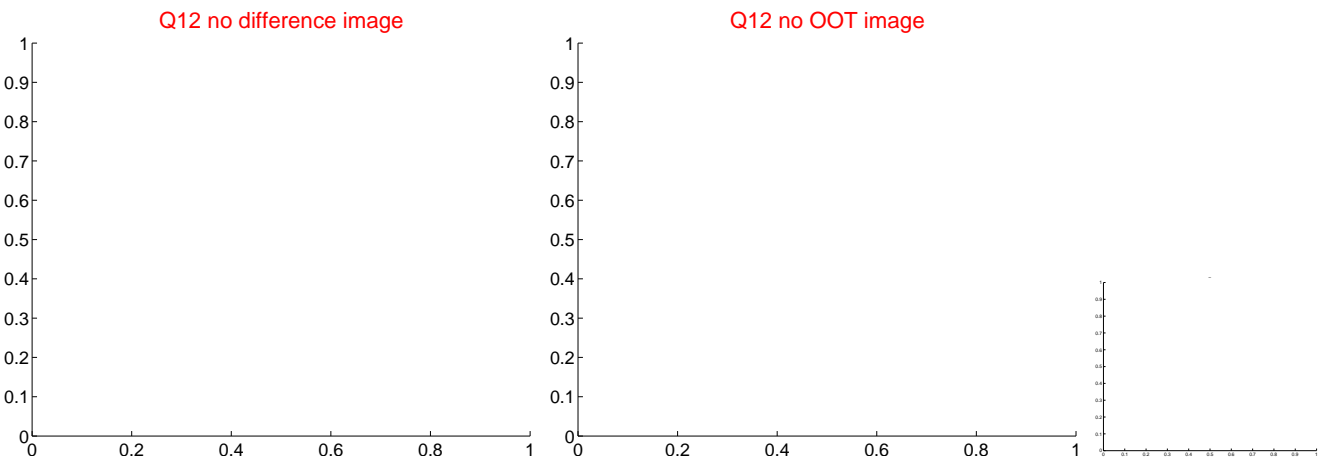
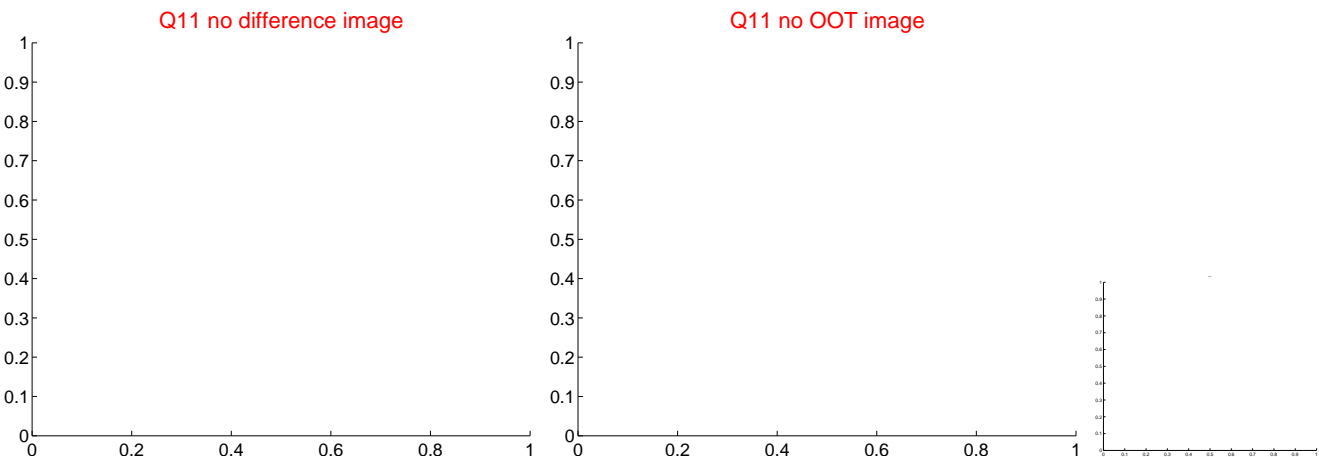
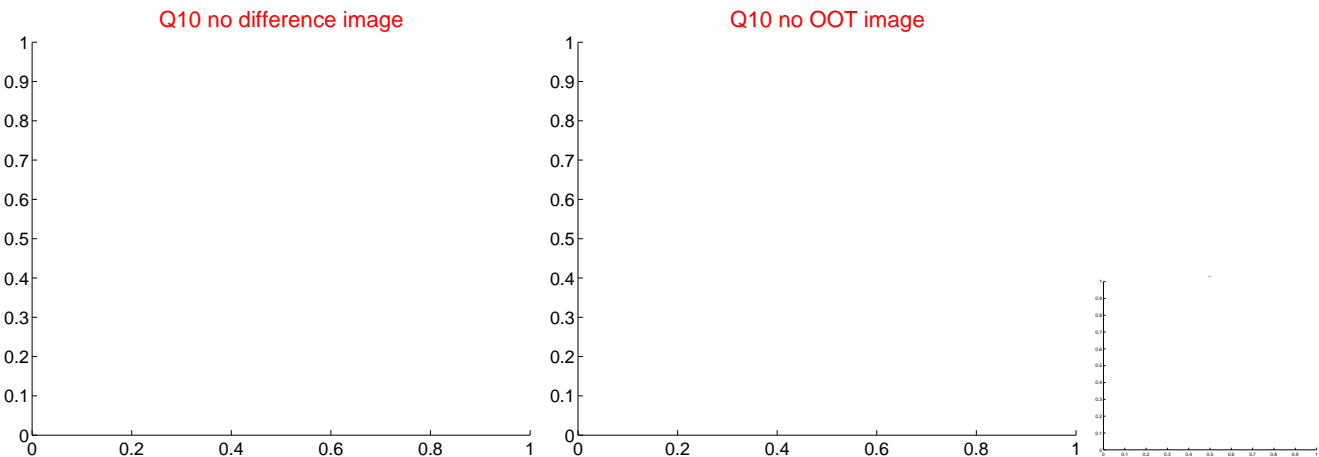
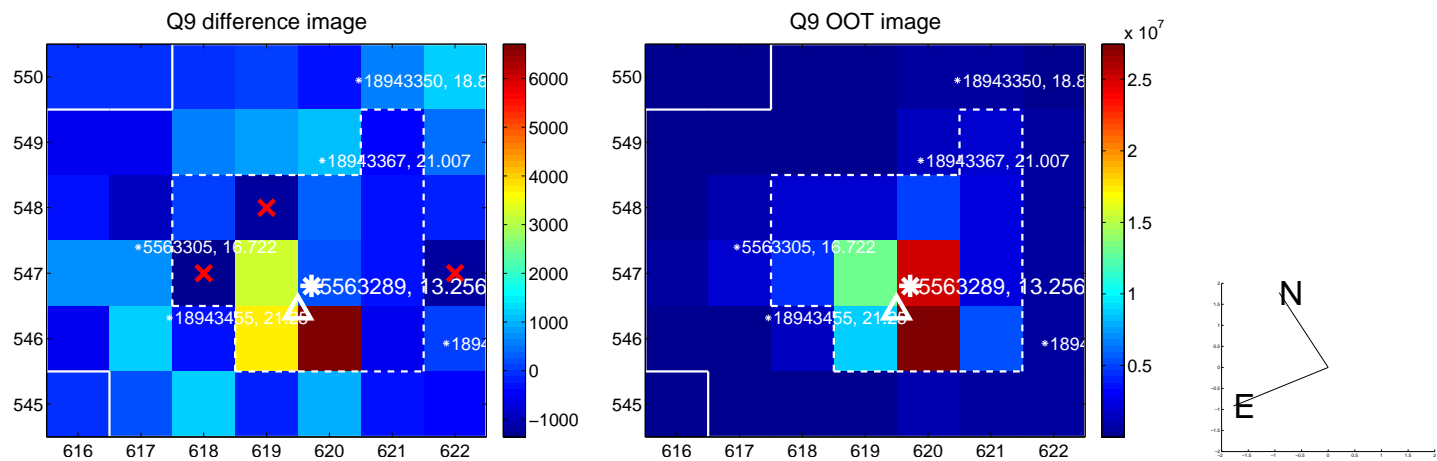
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



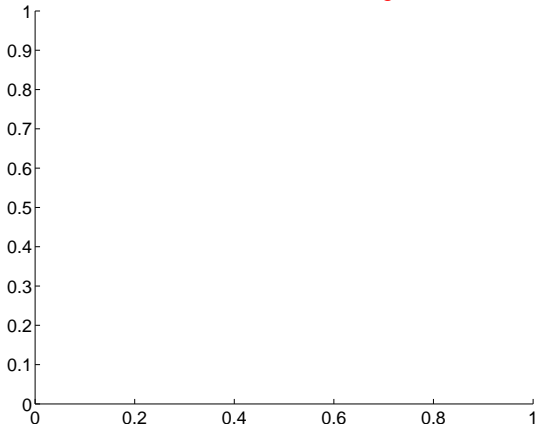
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



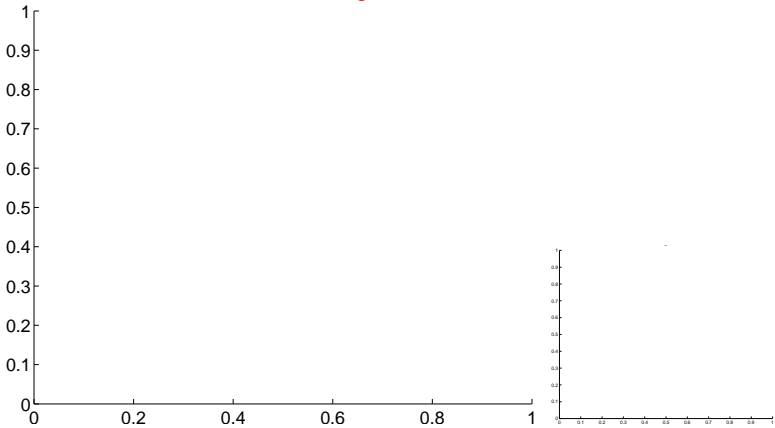


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

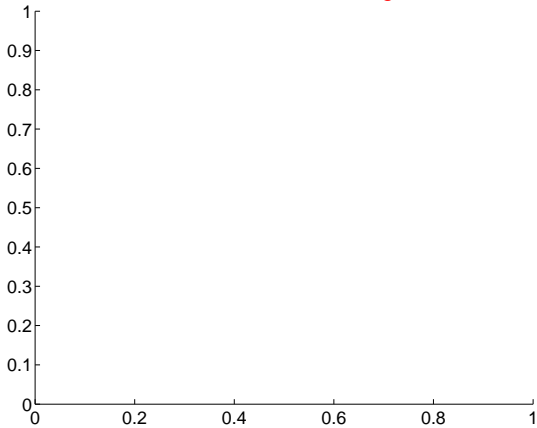
Q13 no difference image



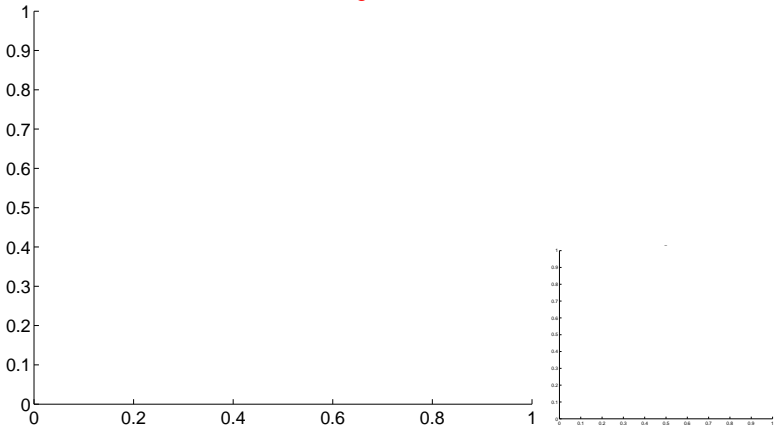
Q13 no OOT image



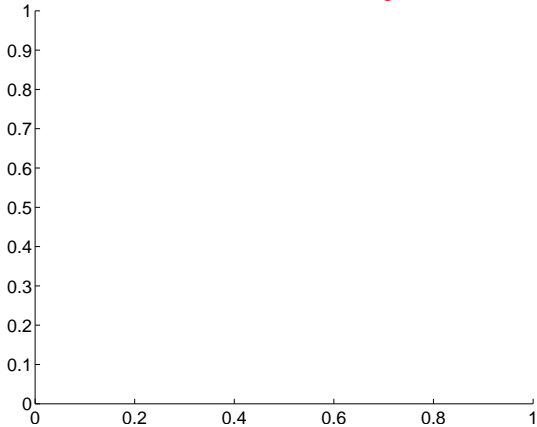
Q14 no difference image



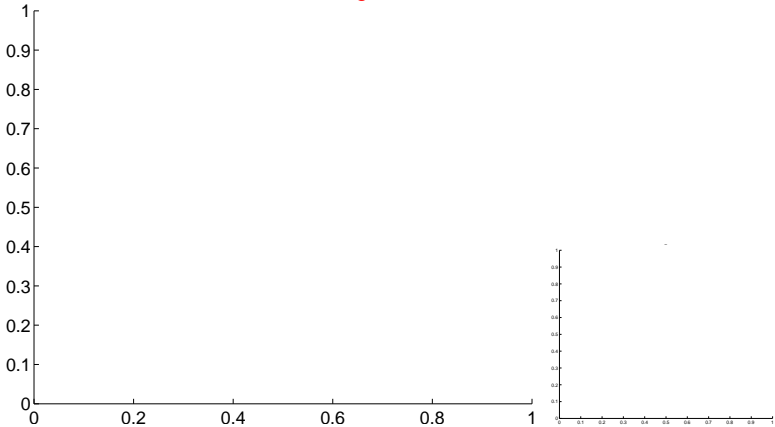
Q14 no OOT image



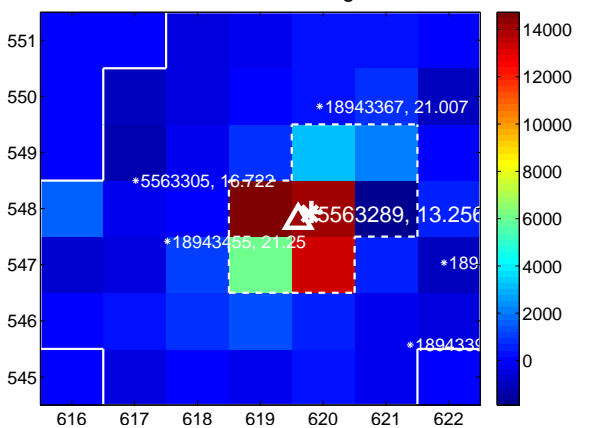
Q15 no difference image



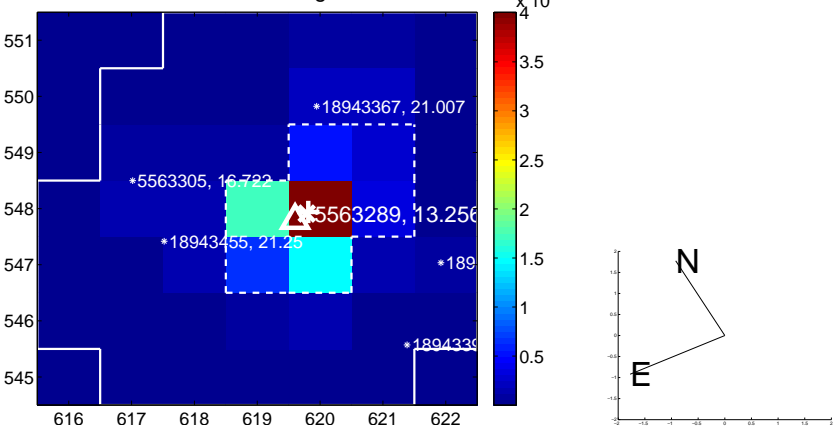
Q15 no OOT image



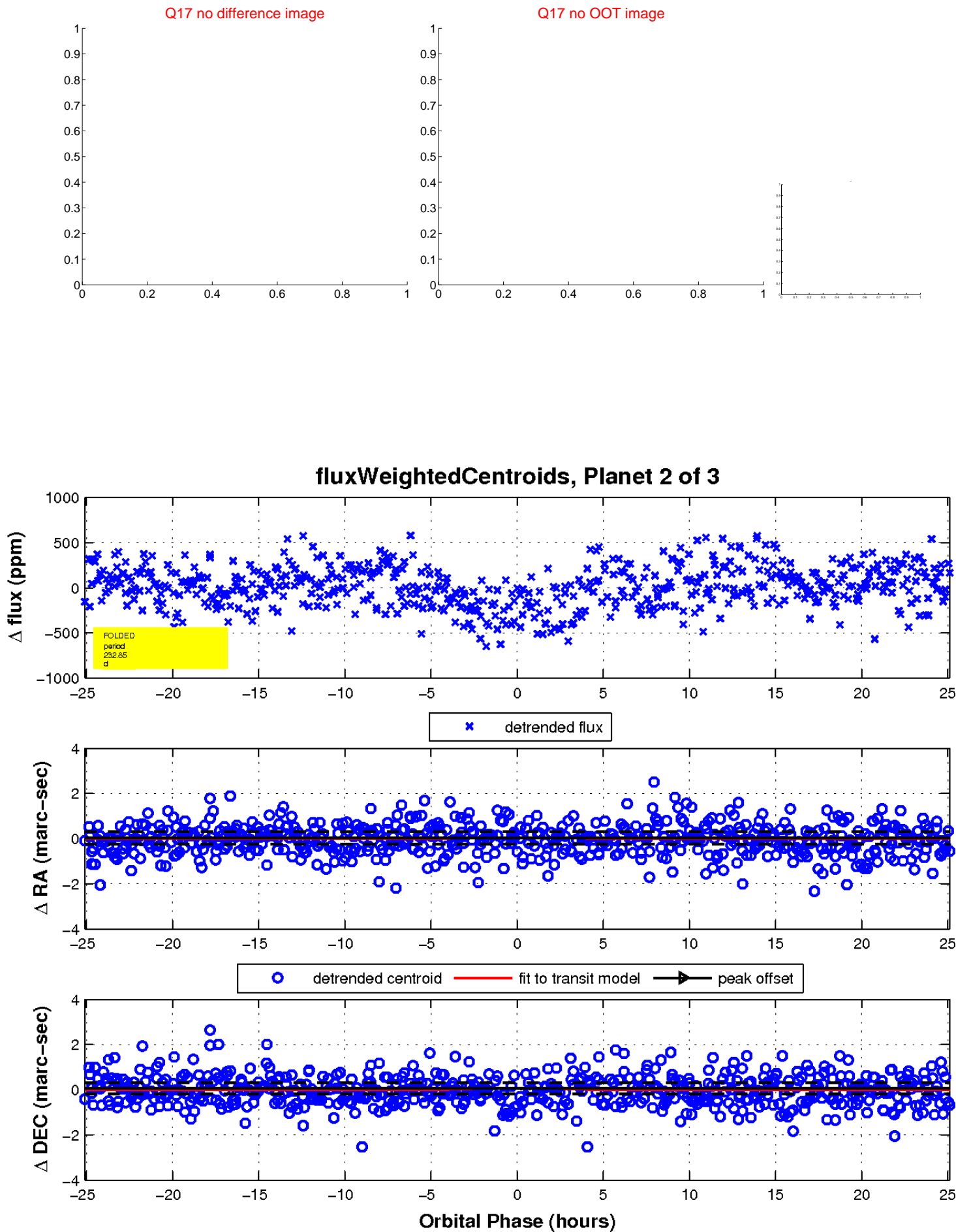
Q16 difference image



Q16 OOT image

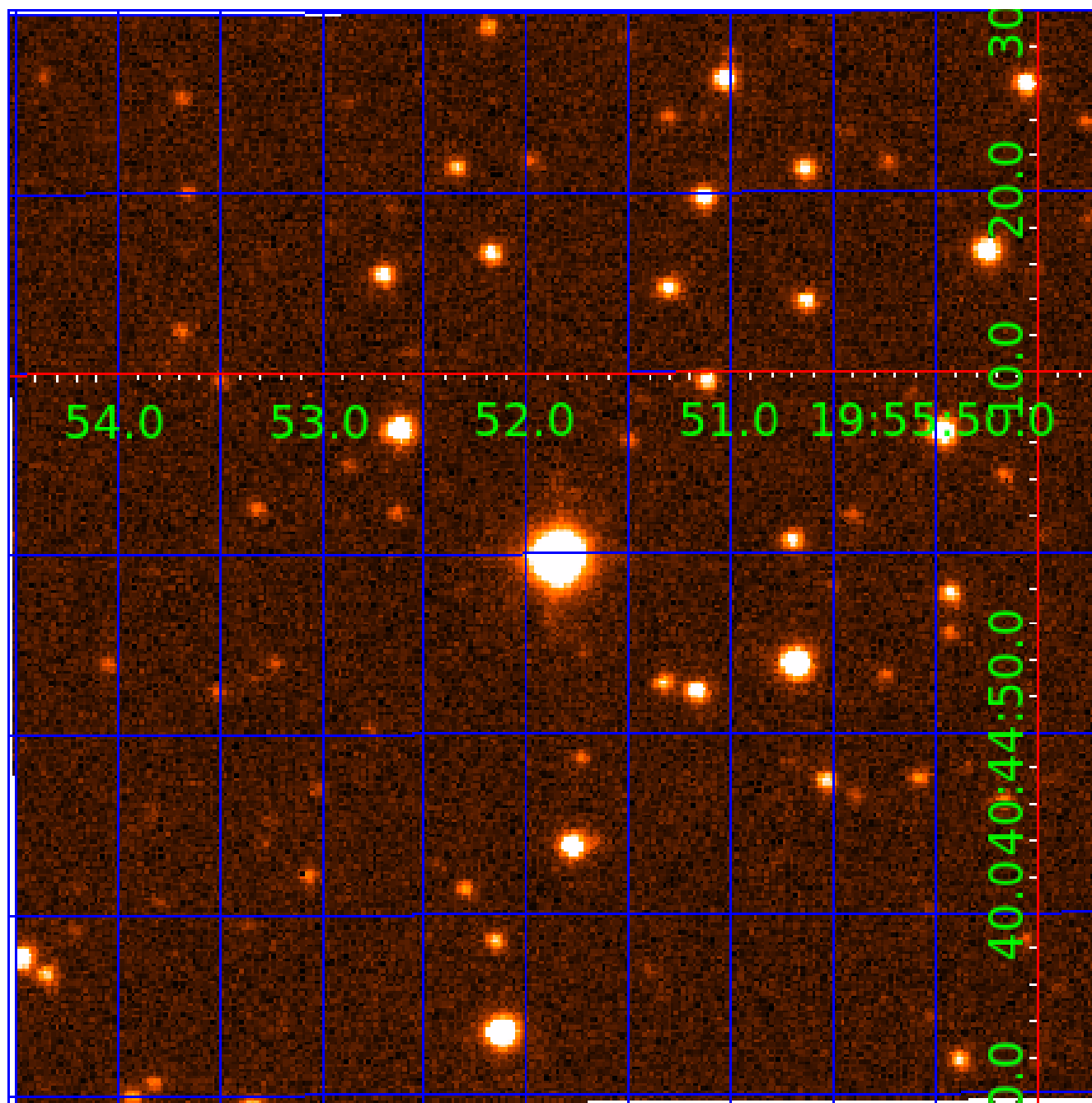


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 005563289

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005563289-01	OBS	No	1.575824	131.534833	141.6	6.000	9.3	-1.0	4.61	6300	5.51	28507.86
005563289-02	OBS	No	232.851497	140.825454	323.2	8.372	7.4	7.5	4.61	6300	9.12	36.49
005563289-03	OBS	No	181.647233	157.750850	227.0	10.209	7.3	6.7	4.61	6300	7.31	50.82

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005563289-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—CENT_NOFITS
005563289-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_UNCERTAIN
005563289-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—MOD_NONUNIQ_ALT—HALO_GHOST

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

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

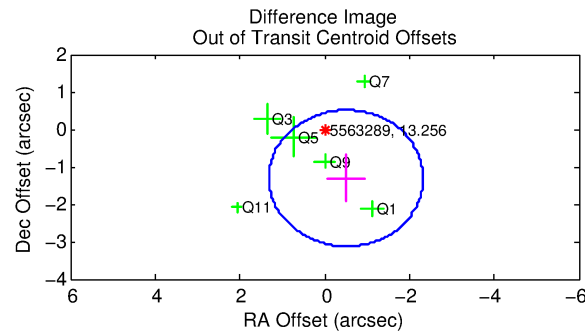
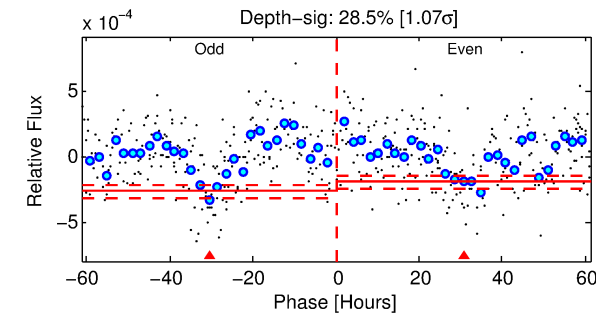
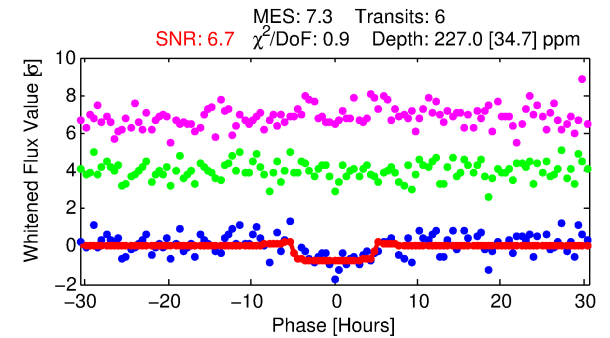
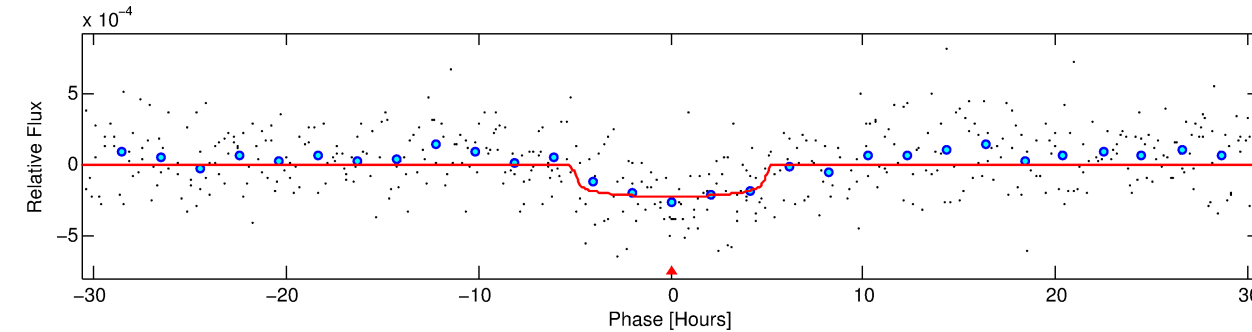
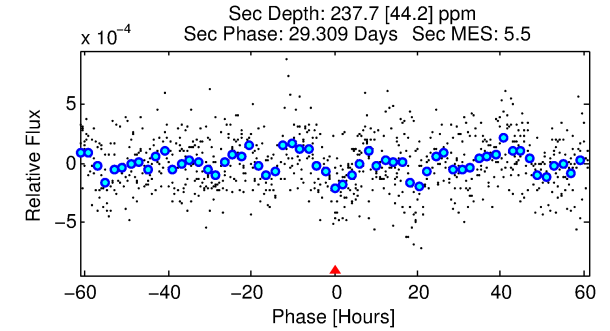
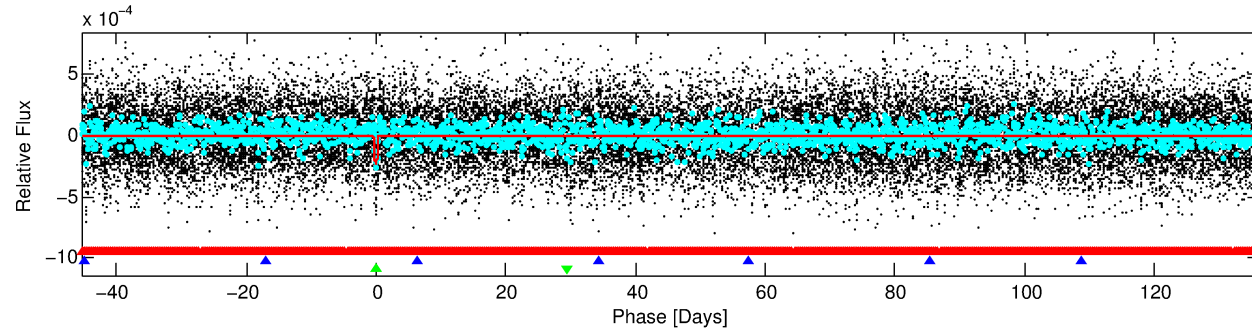
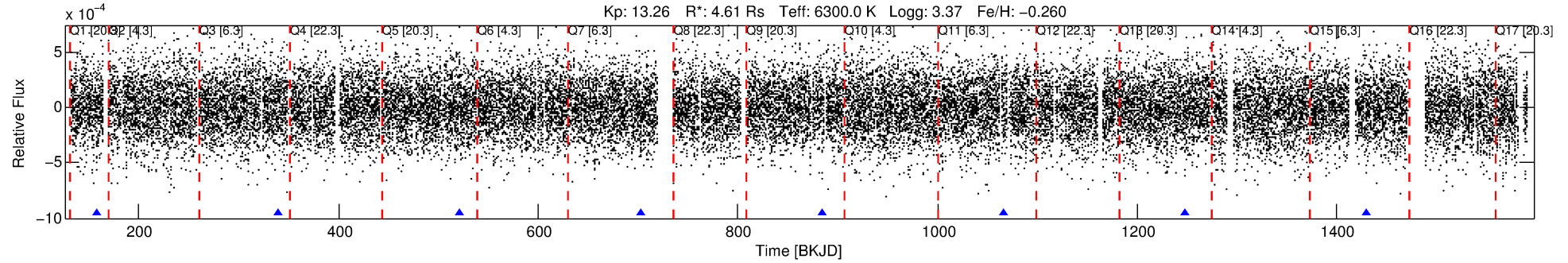
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005563289-03

No Significant Match Found

# DV One-Page Summary

KIC: 5563289 Candidate: 3 of 3 Period: 181.647 d



## DV Fit Results:

Period = 181.64723 [0.00492] d  
Epoch = 157.7508 [0.0221] BKJD  
Rp/R\* = 0.0145 [0.0114]  
a/R\* = 109.10 [451.63]  
b = 0.62 [4.13]  
Seff = 50.82 [34.07]  
Teq = 681 [114] K  
Rp = 7.31 [6.56] Re  
a = 0.7690 [0.3173] AU  
Ag = 1447.83 [2481.11] [0.58σ]  
Teffp = 6493 [2579] K [2.25σ]

## DV Diagnostic Results:

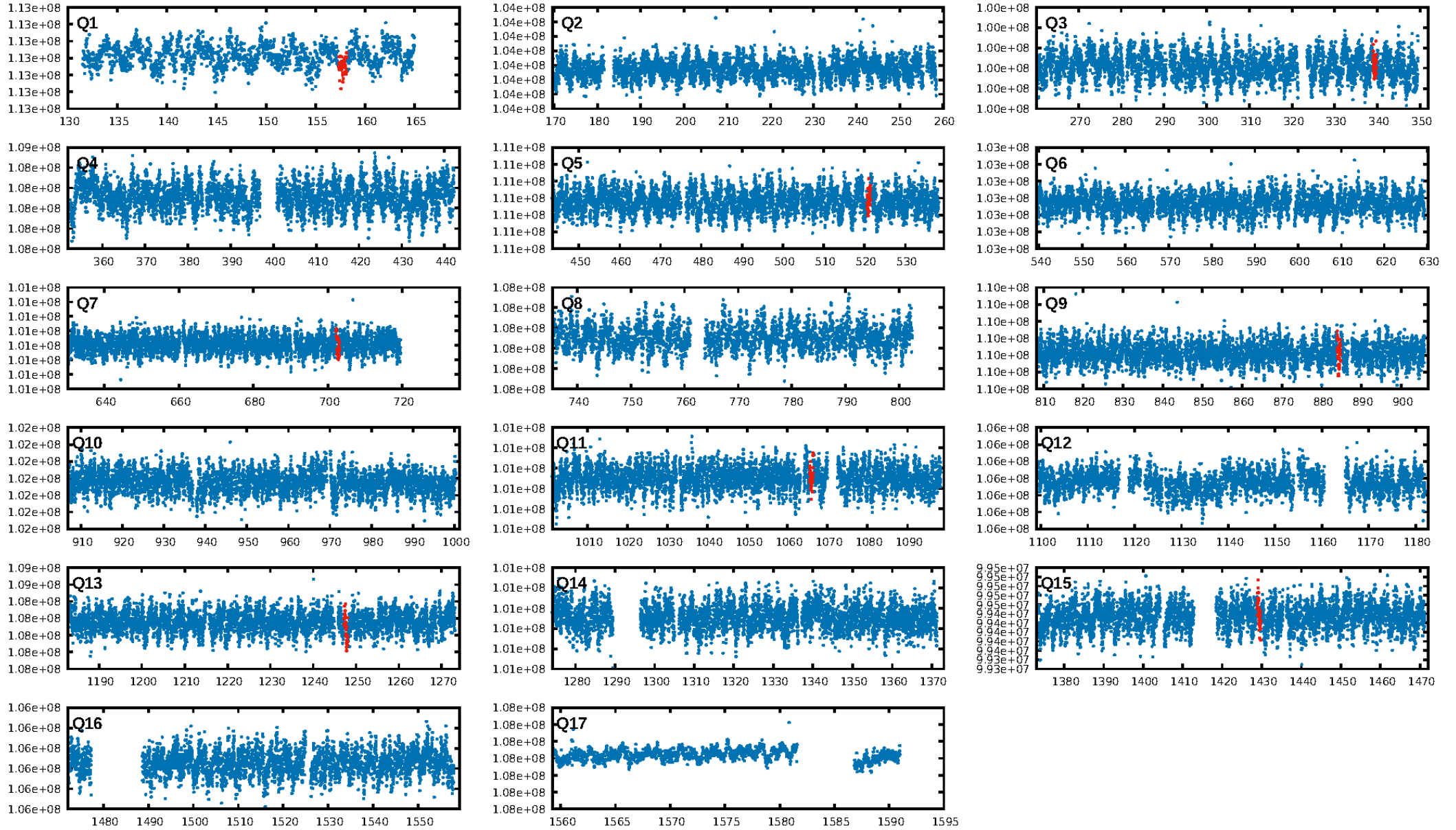
ShortPeriod-sig: 100.0% [364.95σ]  
LongPeriod-sig: 100.0% [93.08σ]  
ModelChiSquare2-sig: 13.4%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 2.01e-09**  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: -0.006442  
Centroid-sig: 8.6%  
Centroid-so: 1.785 arcsec [1.77σ]  
OotOffset-rm: 1.403 arcsec [2.31σ]  
KicOffset-rm: 1.442 arcsec [2.38σ]  
OotOffset-st: 0/3/0/3 [6]  
KicOffset-st: 0/3/0/3 [6]  
DiffImageQuality-fgm: 0.83 [5/6]  
DiffImageOverlap-fno: 0.00 [0/8]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 01:38:33 Z

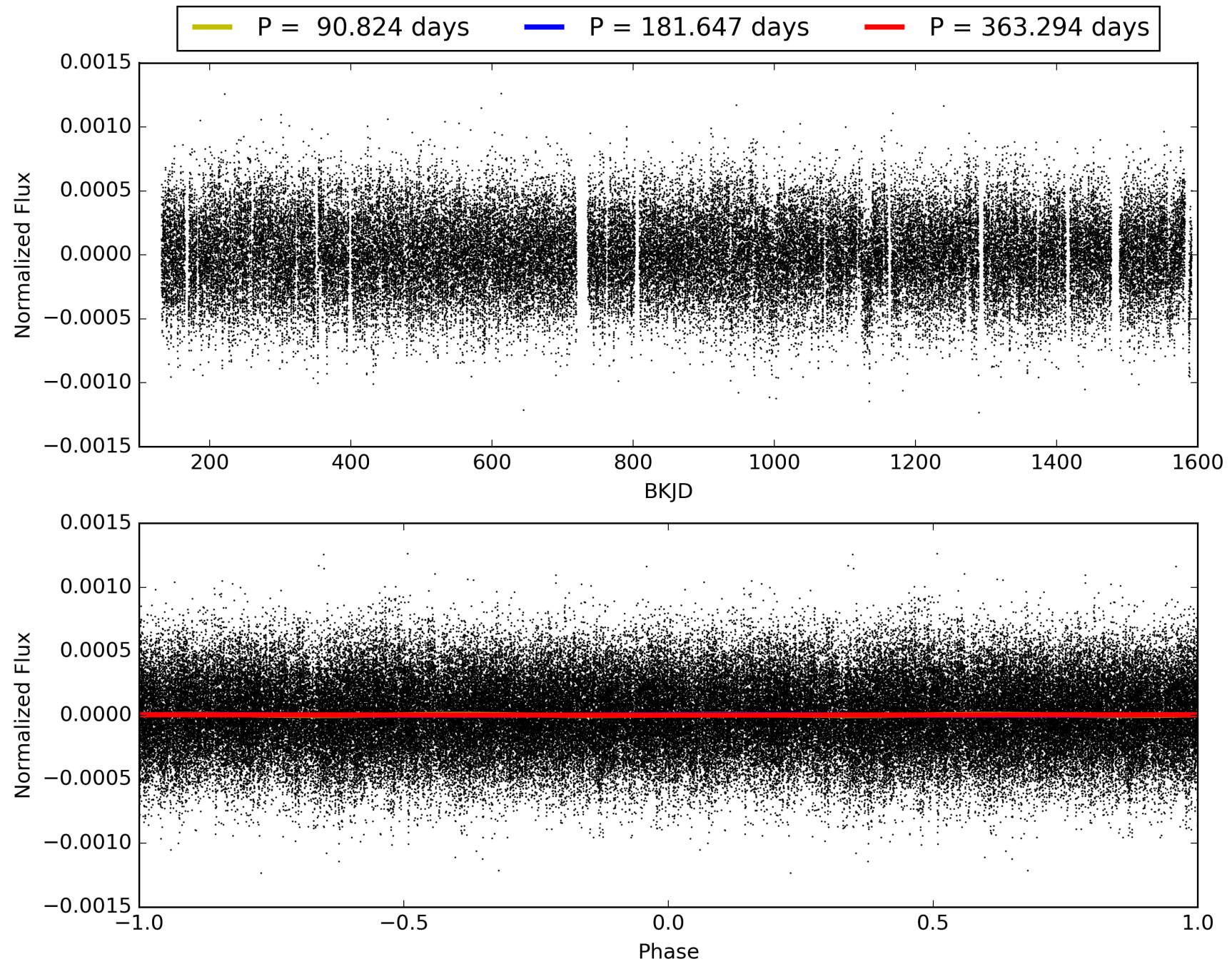
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 005563289-03, PDC Light Curves

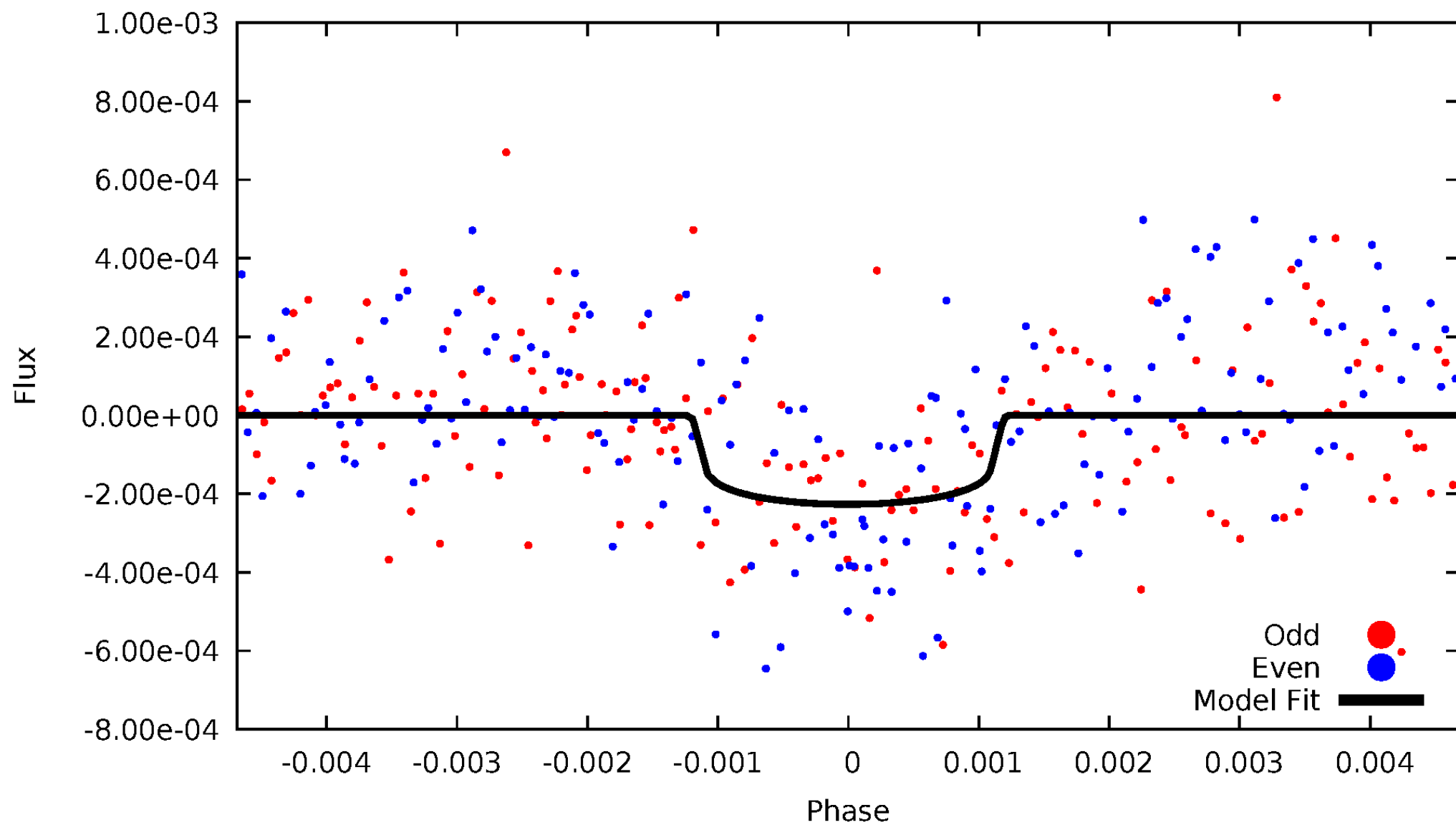


TCE 005563289-03



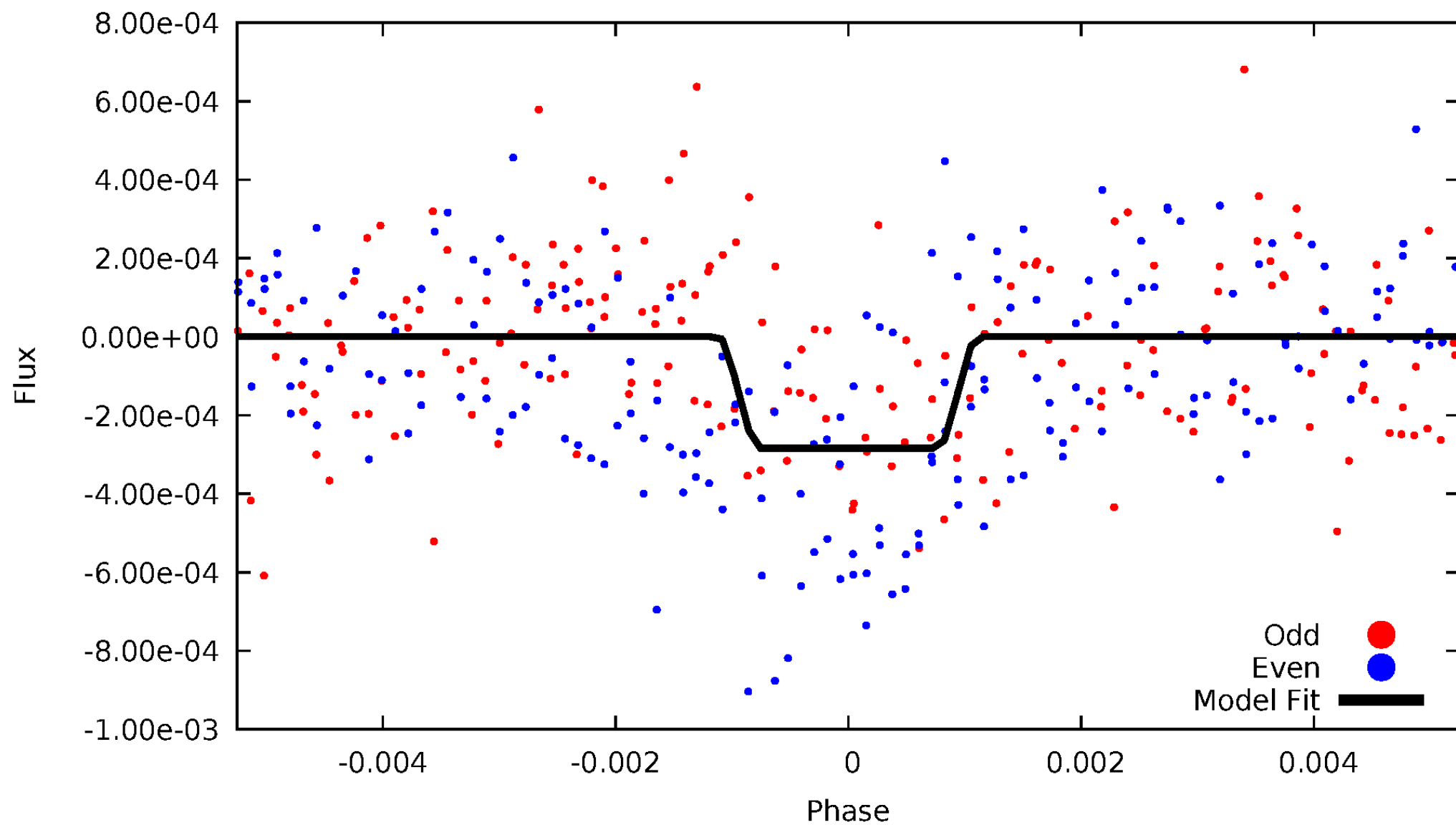
# DV Odd/Even

TCE 005563289-03



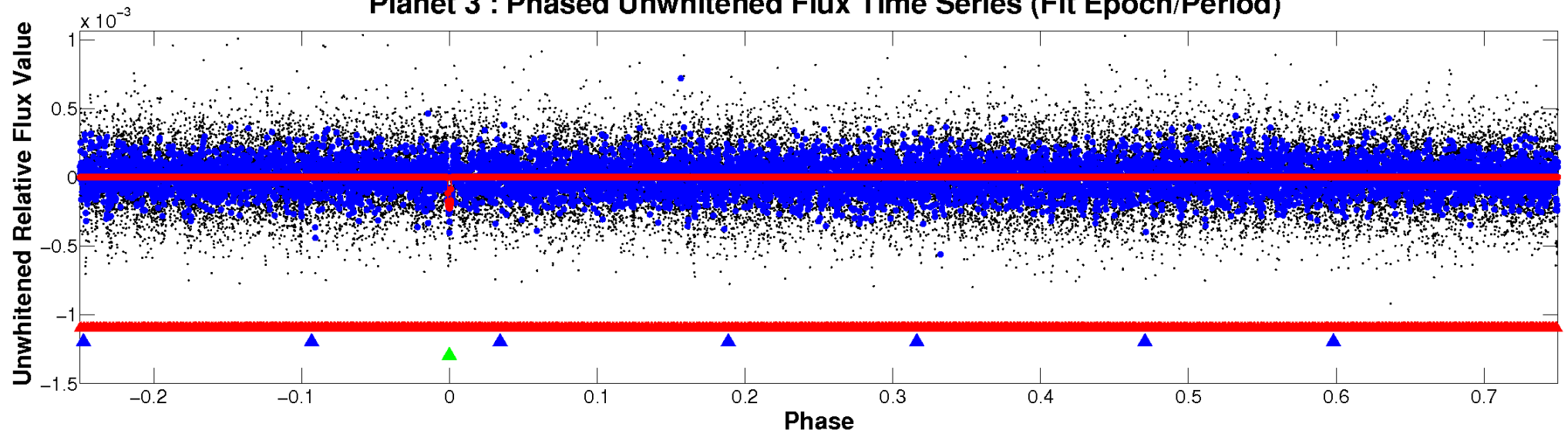
# ALT Odd/Even

TCE 005563289-03

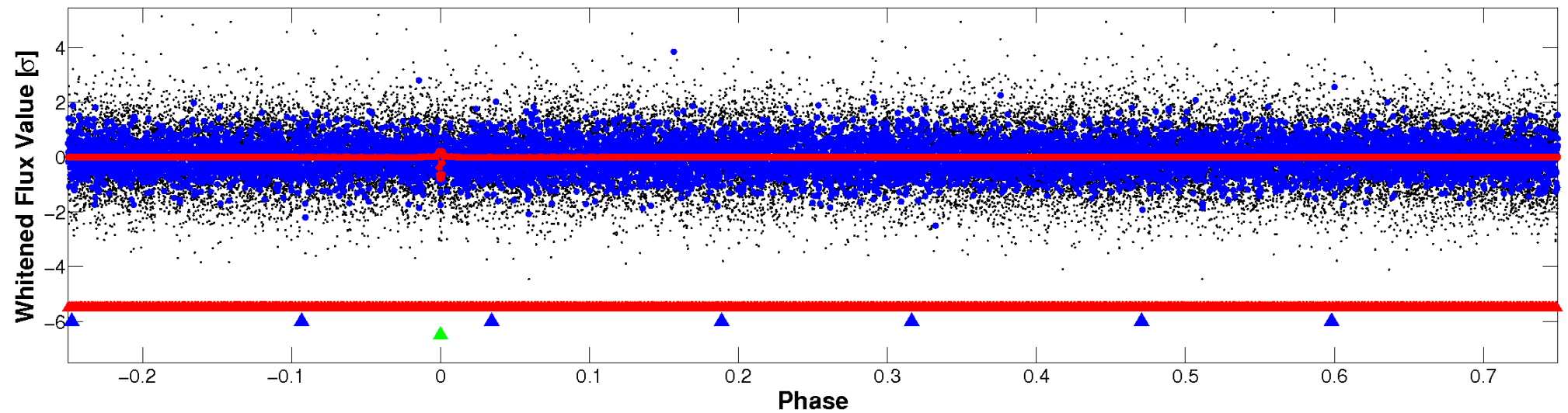


# Non-Whitened Vs. Whitened Light Curve

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

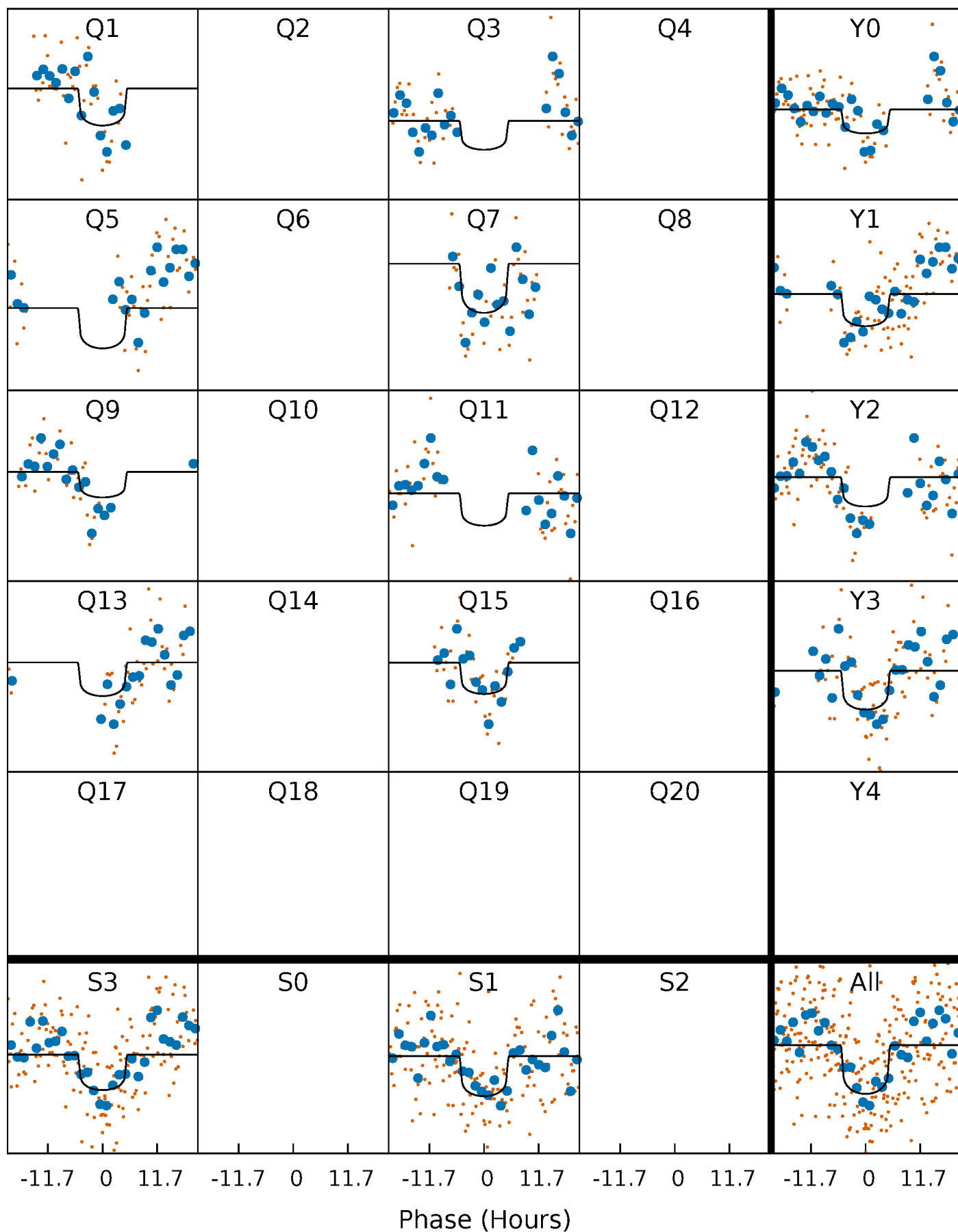
TCE 005563289-03   P=181.647233 Days    $T_0=157.750850$  (BKJD)





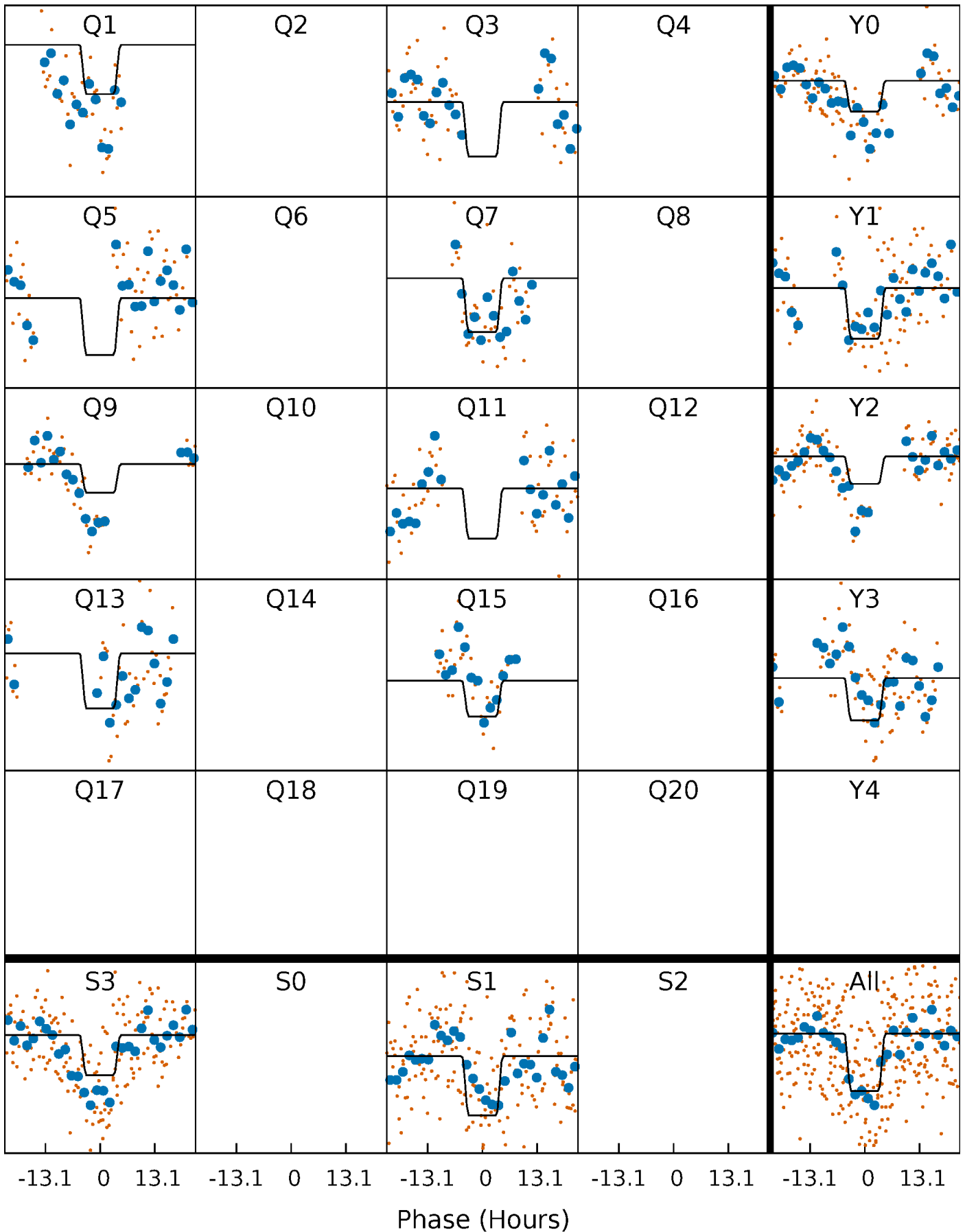
# DV Quarter-Phased Transit Curves

TCE 005563289-03     $P=181.647233$  Days     $T_0=157.750850$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

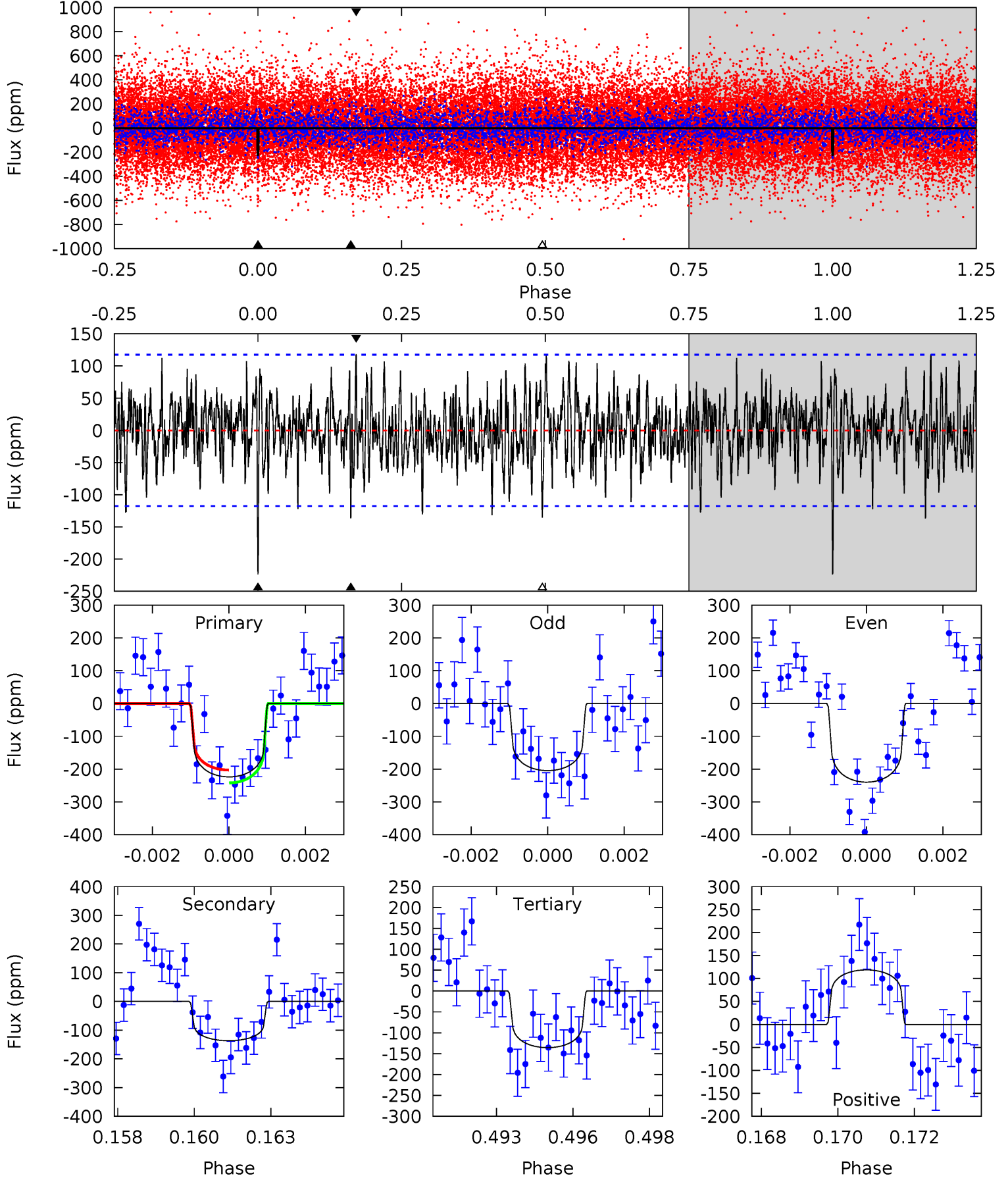
TCE 005563289-03 P=181.654348 Days  $T_0=157.722157$  (BKJD)



# DV Model-Shift Uniqueness Test

005563289-03, P = 181.647233 Days, E = 157.750850 Days

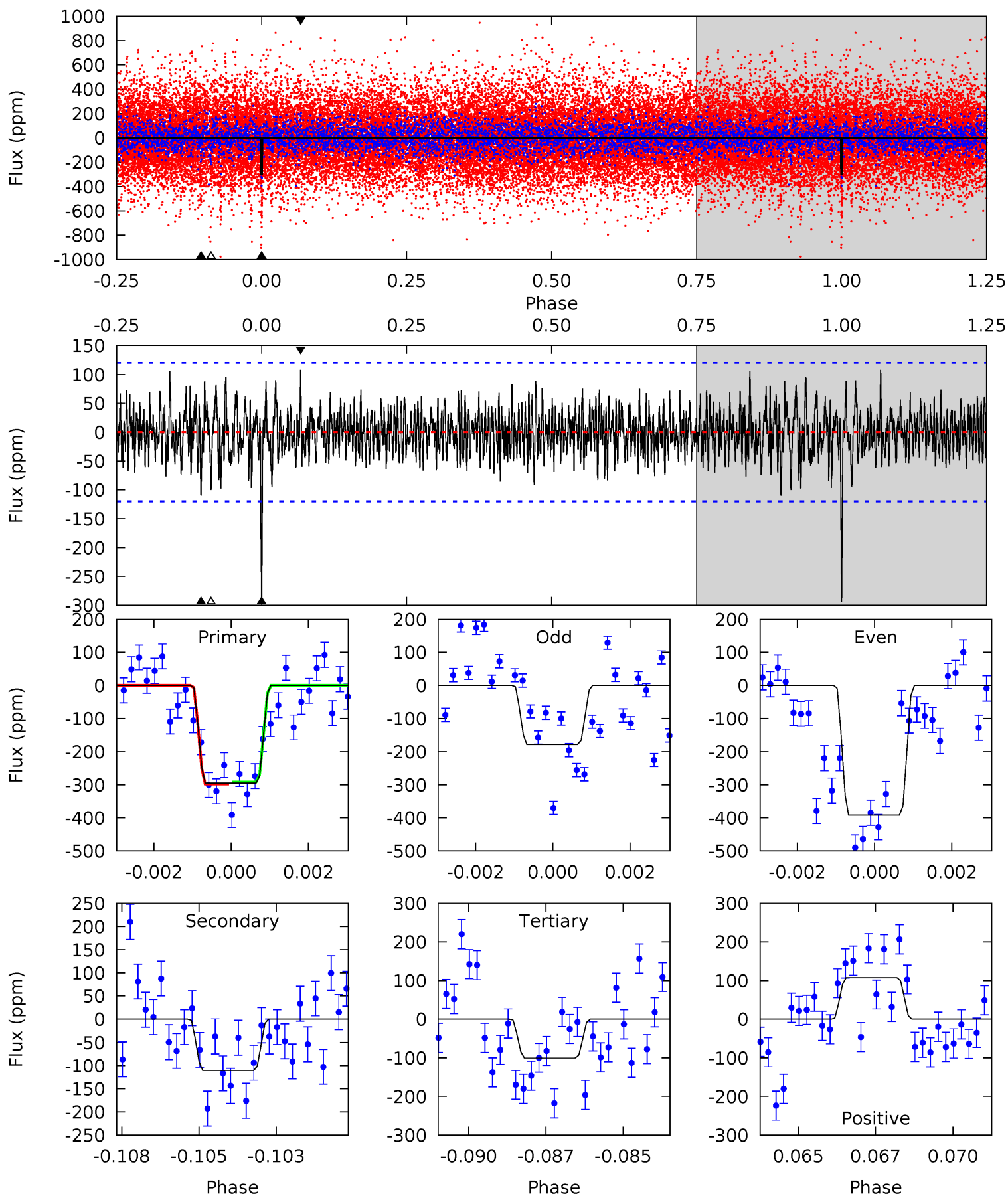
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	6.16	6.10	5.34	5.29	3.04	1.82	3.97	4.73	0.05	0.81	0.79	0.97	0.35	0.88



# Alt Model-Shift Uniqueness Test

005563289-03, P = 181.654348 Days, E = 157.722157 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
13.0	4.89	4.44	4.77	5.31	3.06	1.43	8.59	8.26	0.44	0.11	4.73	0.89	0.27	0.13



### Stellar Parameters For KIC 005563289

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6300^{+215}_{-215}$	$3.374^{+0.384}_{-0.072}$	$-0.260^{+0.350}_{-0.300}$	$4.614^{+0.666}_{-1.999}$	$1.839^{+0.133}_{-0.498}$	$0.026^{+0.089}_{-0.008}$
	+3%/-3%	+11%/-2%	+135%/-115%	+14%/-43%	+7%/-27%	+339%/-31%
Source	PHO1	FLK73	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 005563289-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-137 \pm 22$	$7.08^{+4.84}_{-3.97}$	$919^{+68}_{-89}$	$5468^{+2944}_{-1070}$	$873^{+3491}_{-571}$
Alt.	$-110 \pm 23$	$8.03^{+5.35}_{-4.53}$	$921^{+63}_{-96}$	$4924^{+2346}_{-857}$	$537^{+2136}_{-343}$

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

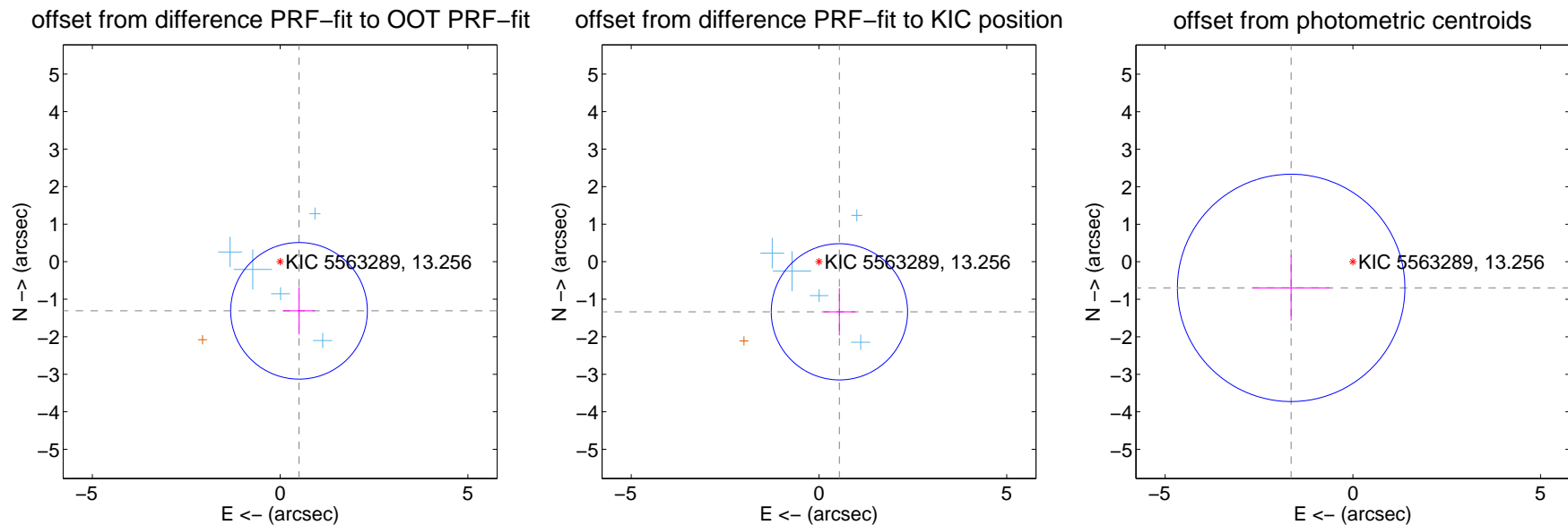
## DV Centroid Data

Supplemental centroid analysis for 005563289-03. Kepler magnitude: 13.26. Transit SNR 6.67

There are 5 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

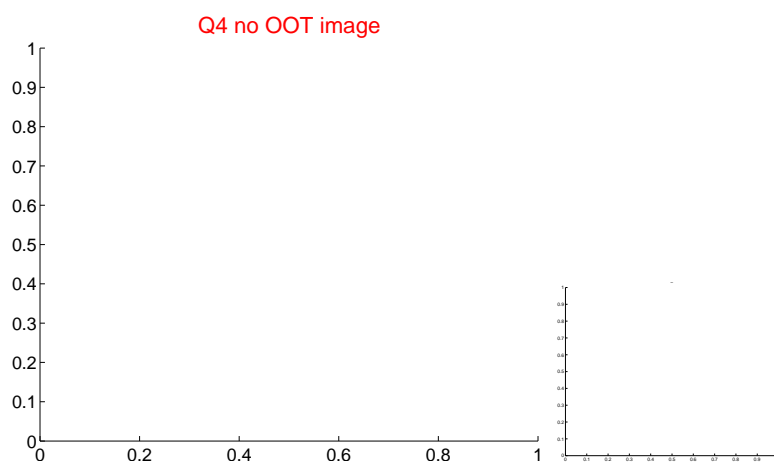
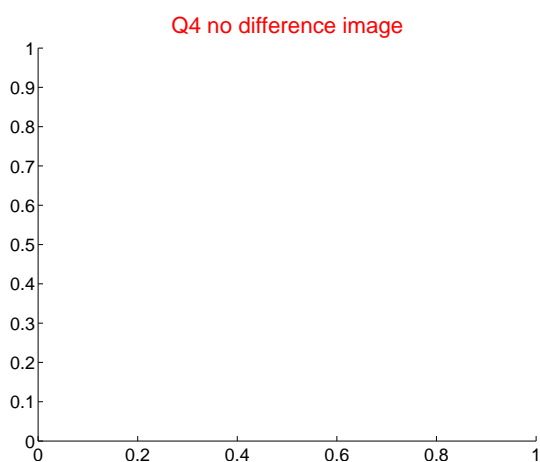
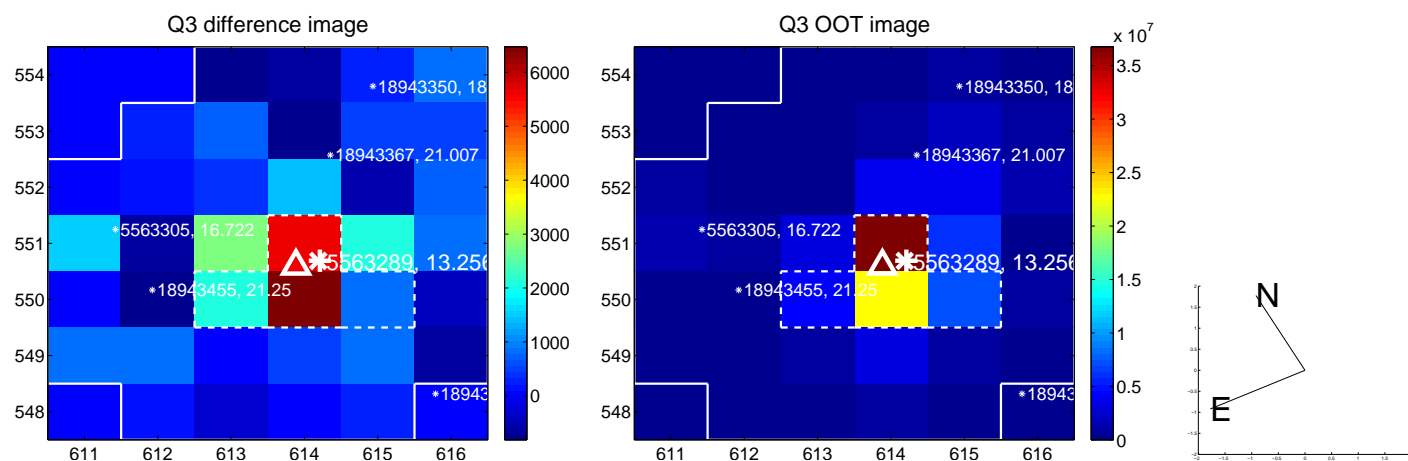
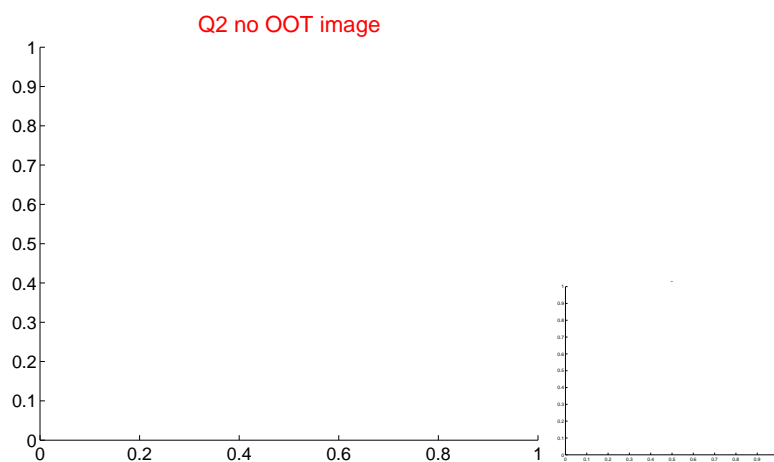
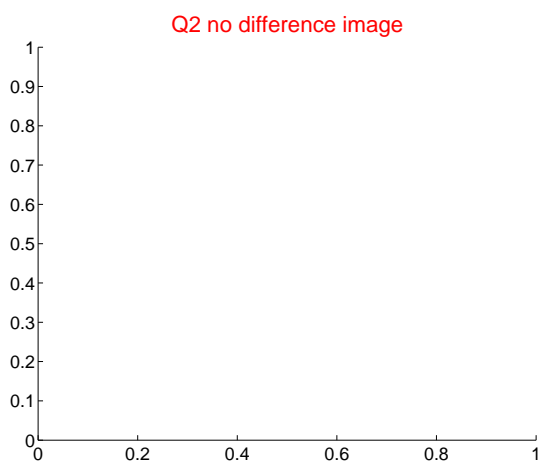
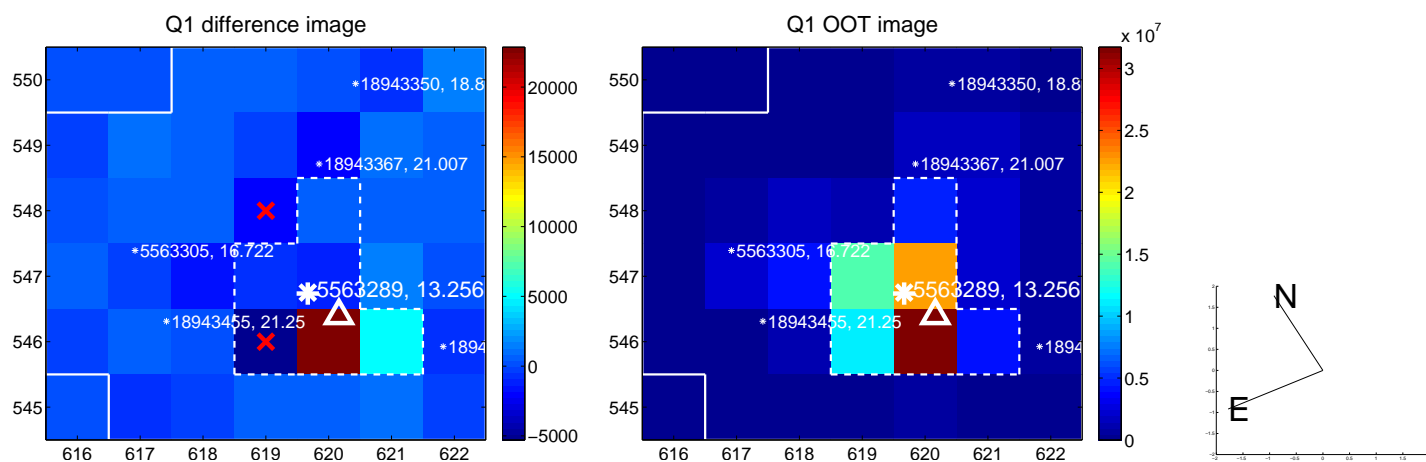
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.403 \pm 0.607$	2.31	$-0.504 \pm 0.424$	$-1.309 \pm 0.629$
PRF-fit source offset from KIC position	$1.442 \pm 0.605$	2.38	$-0.544 \pm 0.422$	$-1.336 \pm 0.630$
photometric centroid source offset	$1.79 \pm 1.01$	1.77	$1.64 \pm 1.03$	$-0.70 \pm 0.87$



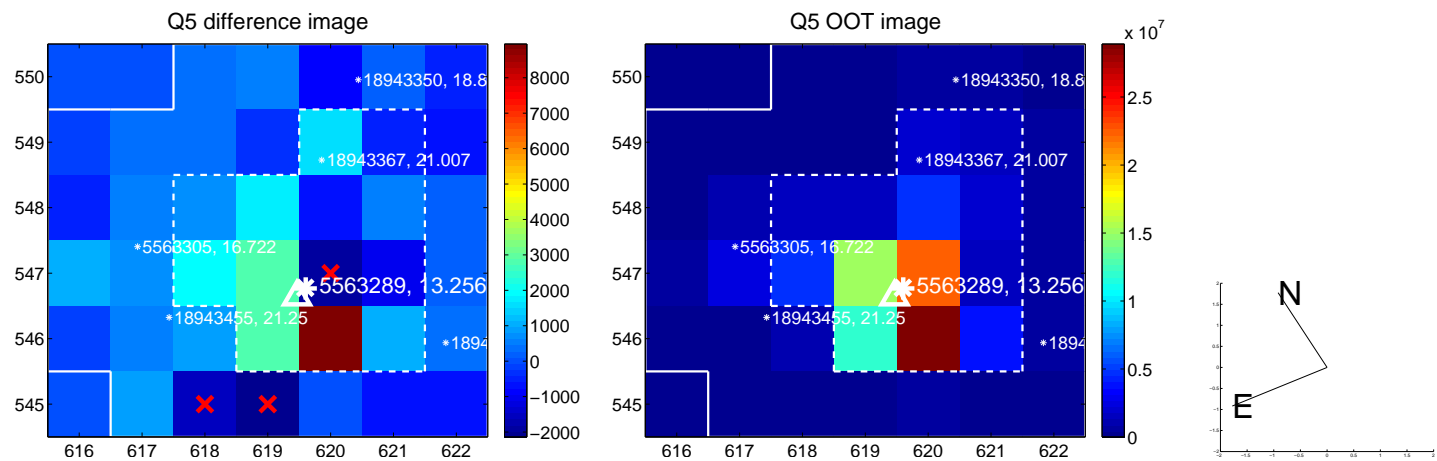
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



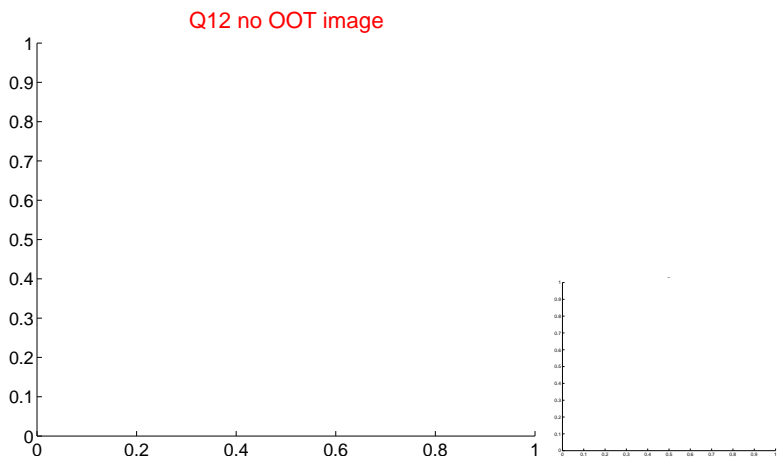
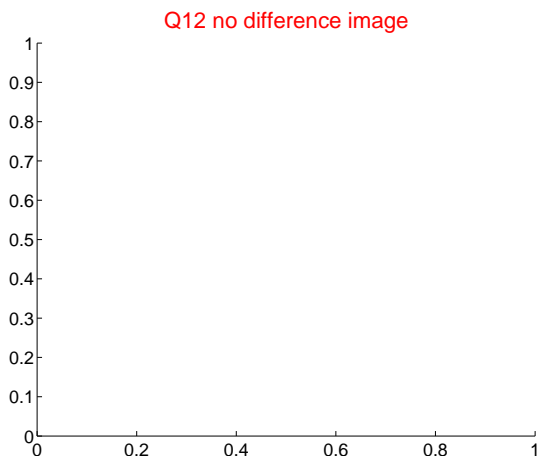
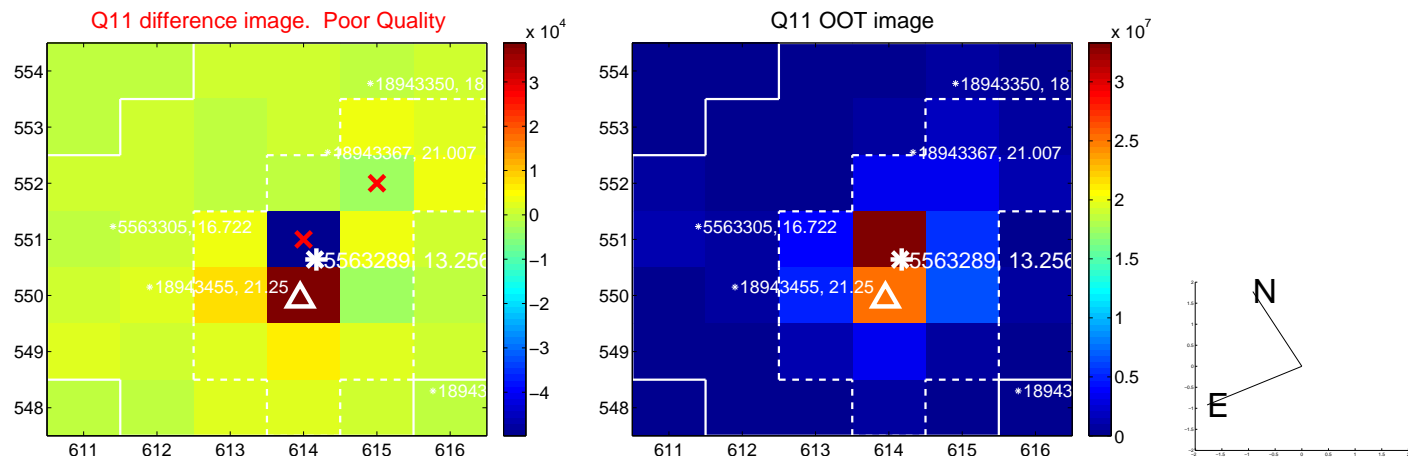
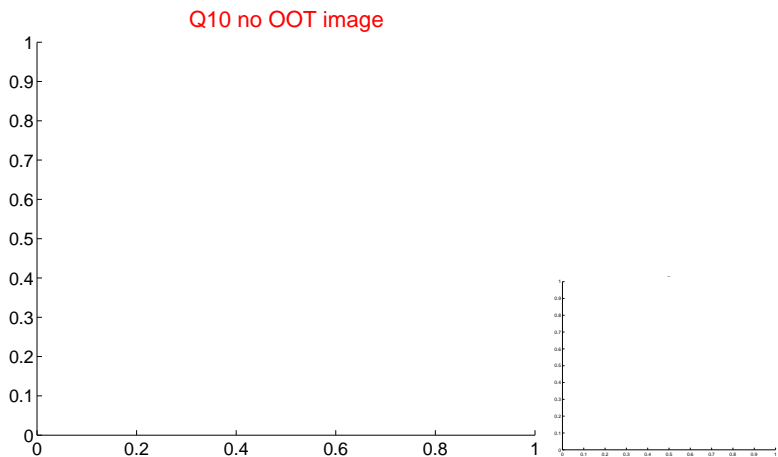
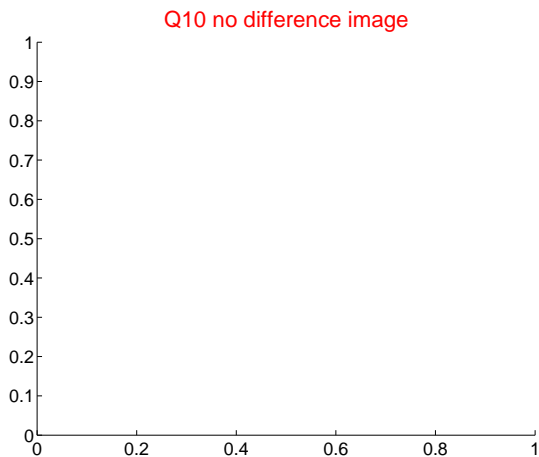
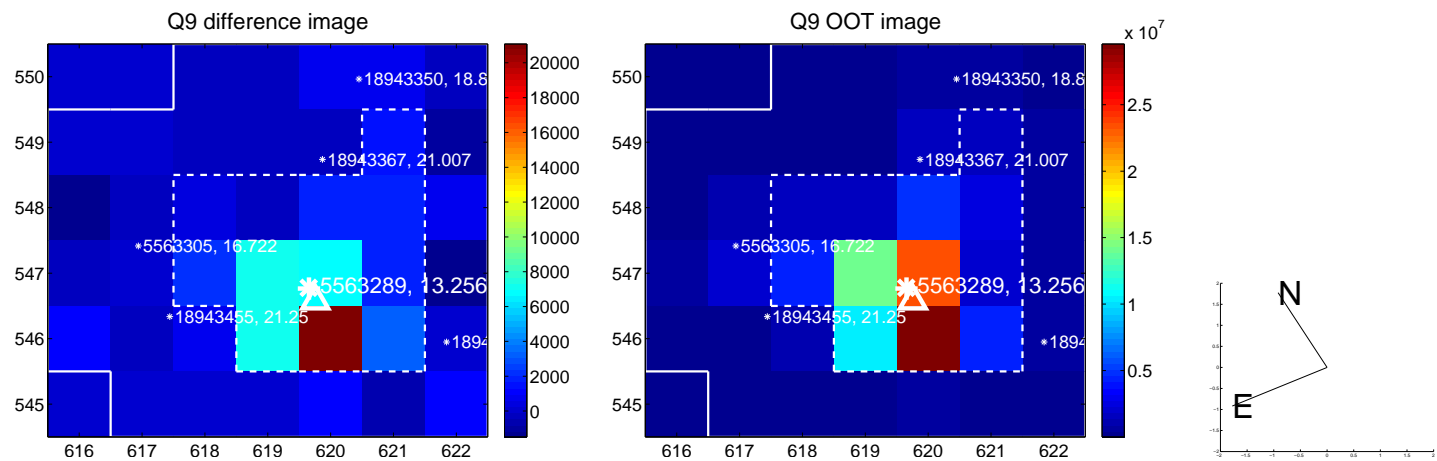
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



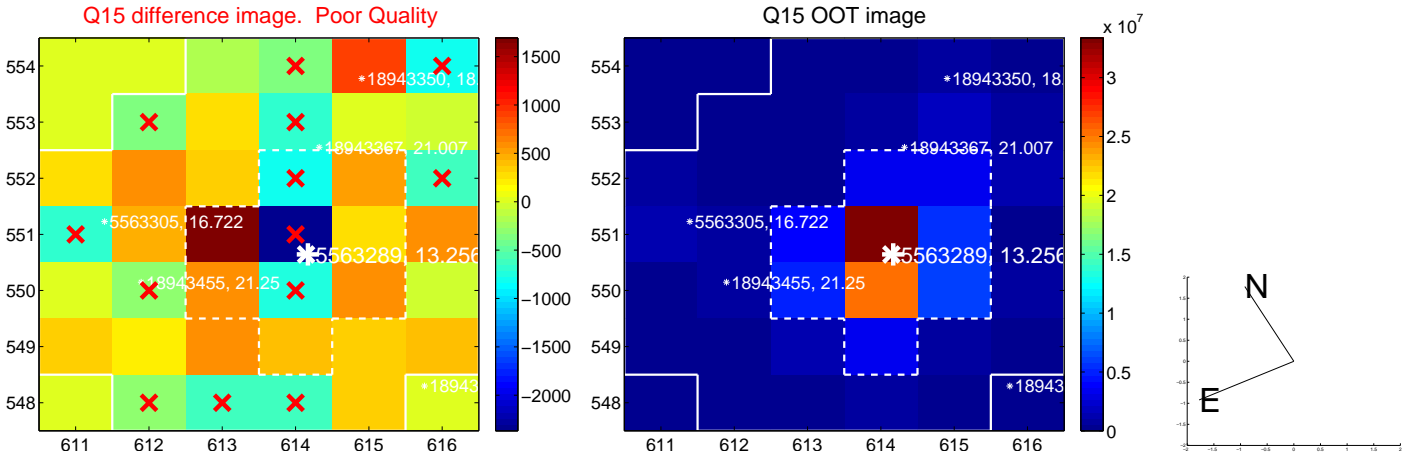
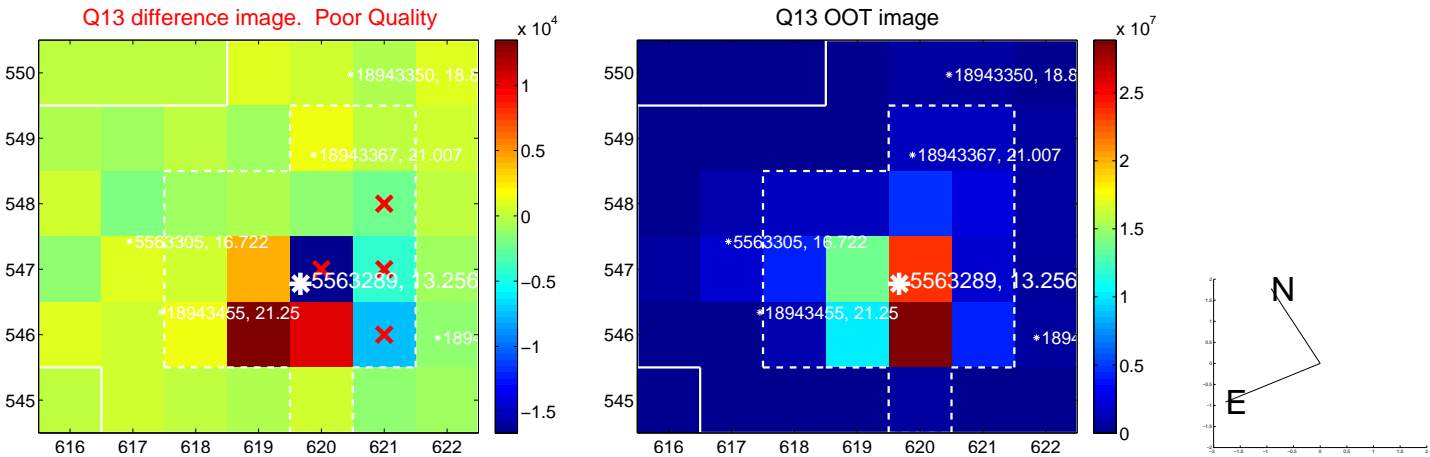
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



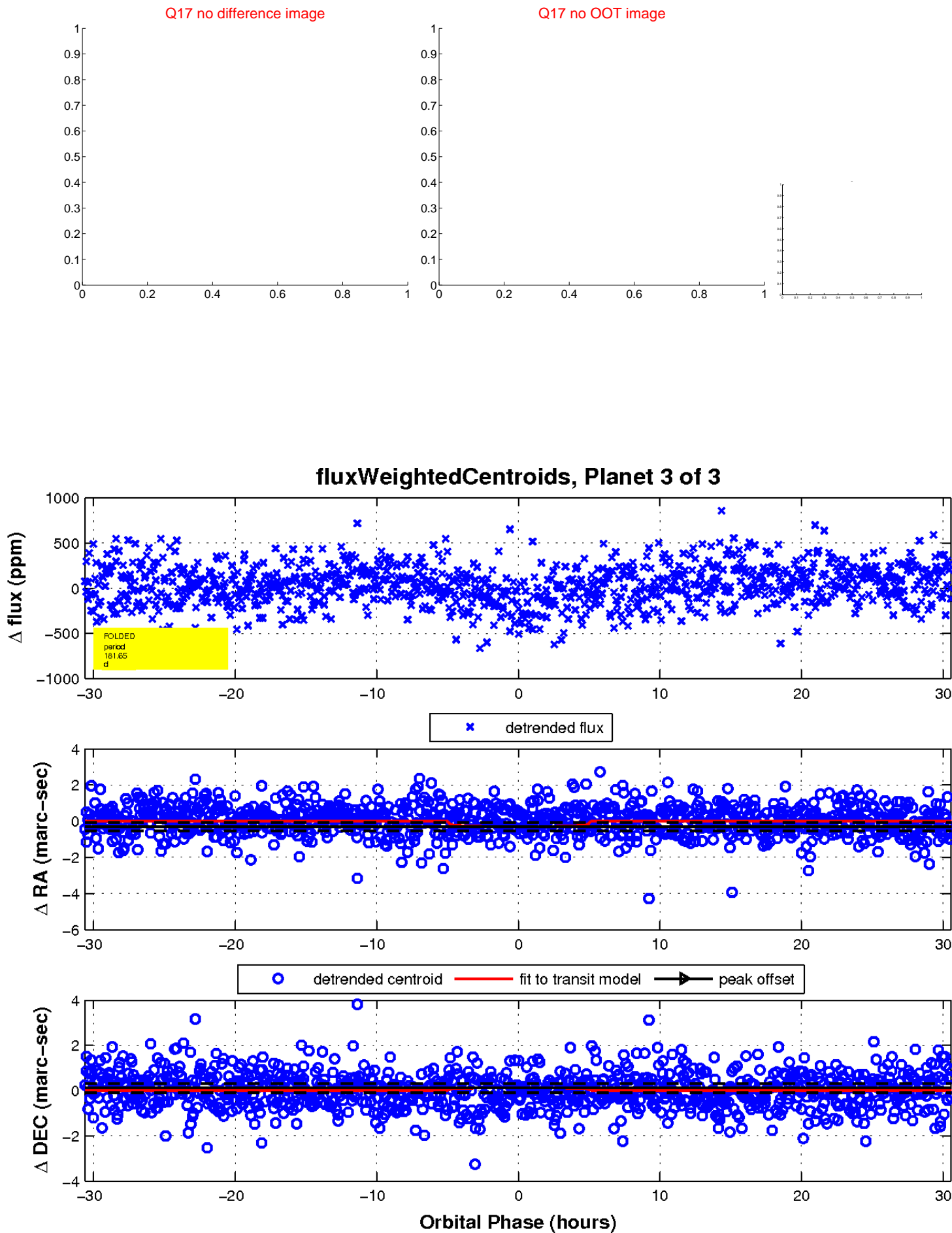
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



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



UKIRT Image

Declination

