

# KIC 005350598

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005350598-01	OBS	No	1.238637	132.421693	30.8	3.693	9.9	7.6	2.84	7709	1.83	36008.47
005350598-02	OBS	No	1.238633	131.688737	34.8	2.933	10.8	9.0	2.84	7709	2.01	36008.63
005350598-03	OBS	No	1.238649	131.934761	32.9	1.761	9.4	8.9	2.84	7709	1.89	36008.01

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005350598-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005350598-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
005350598-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD

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

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

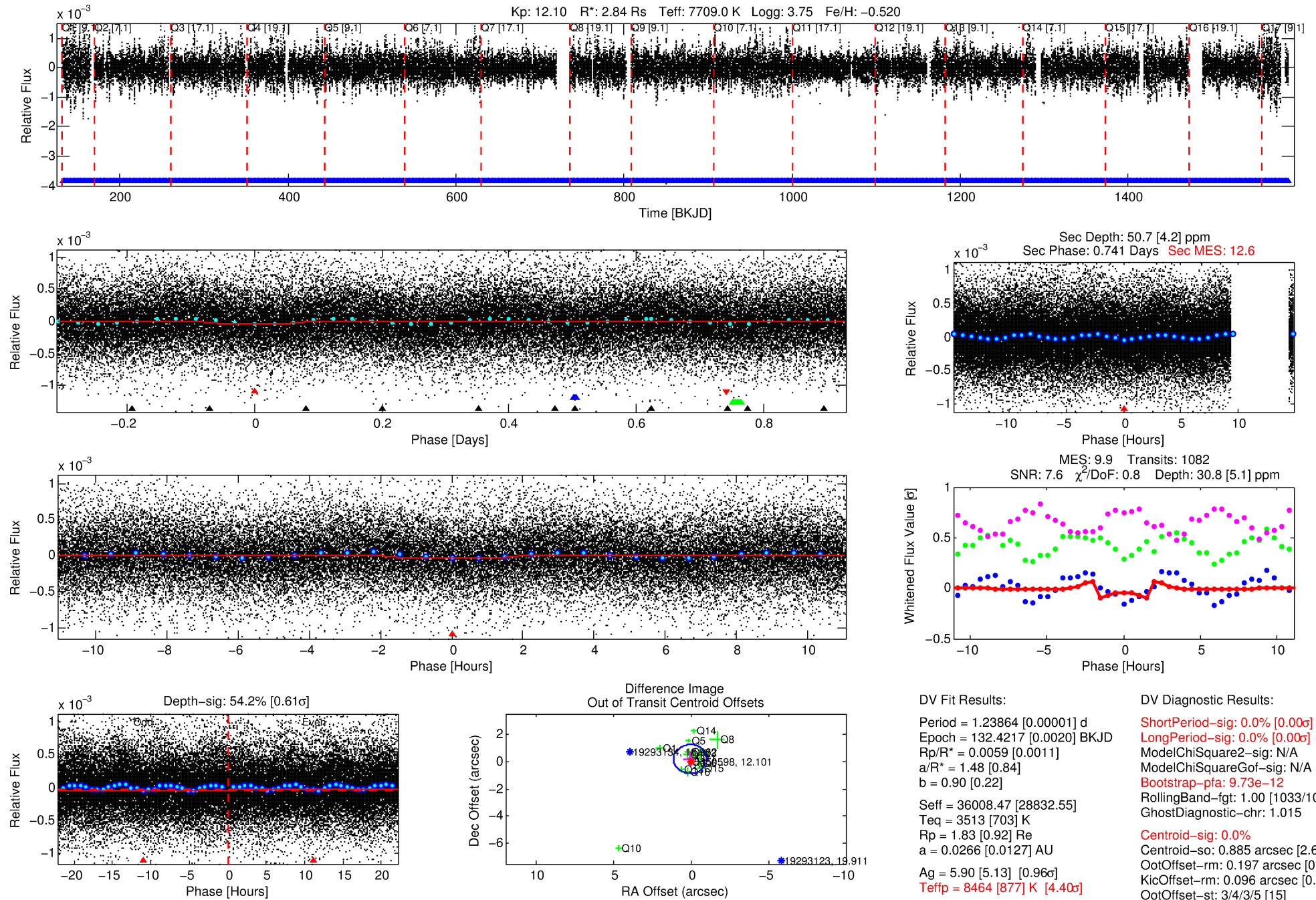
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005350598-01

No Significant Match Found

# DV One-Page Summary

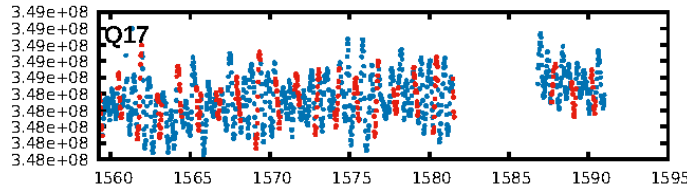
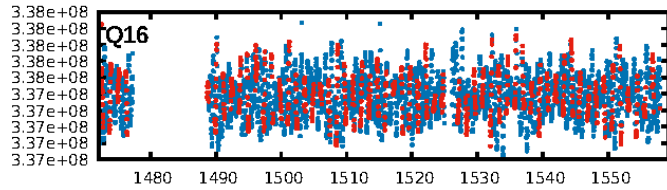
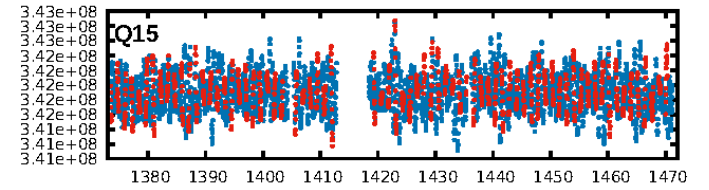
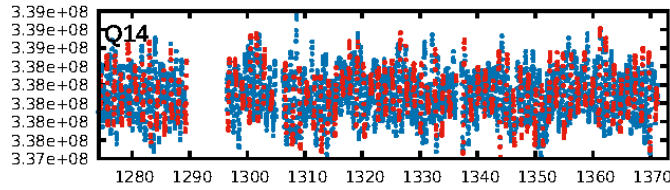
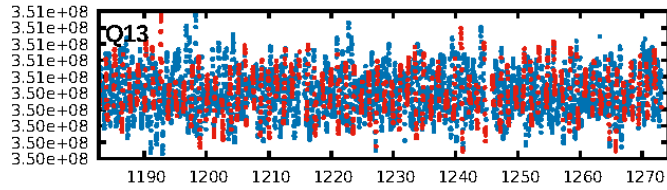
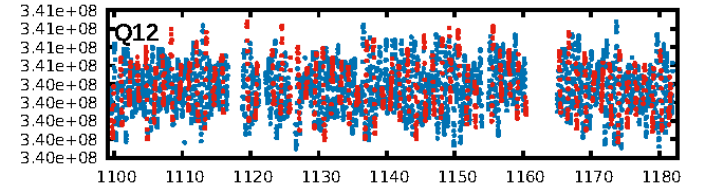
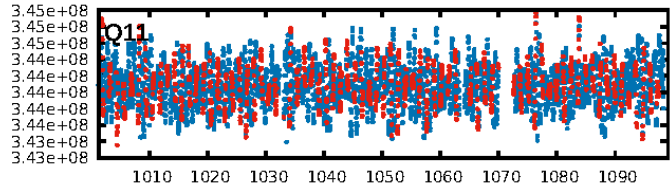
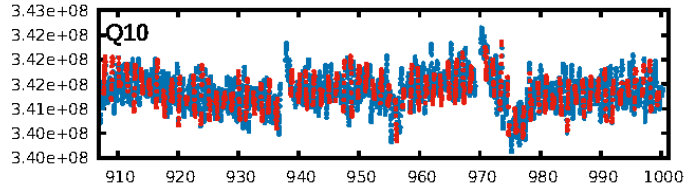
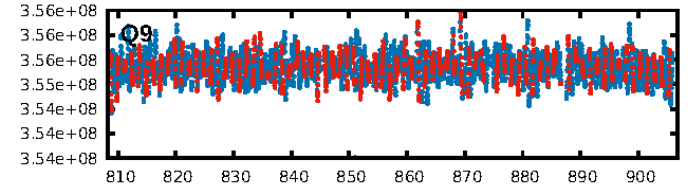
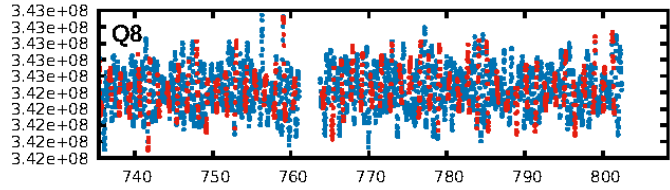
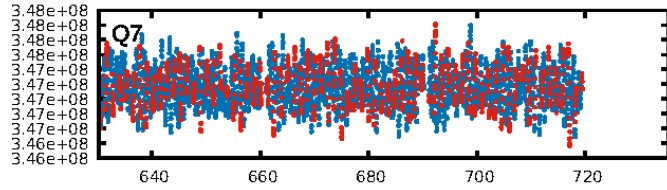
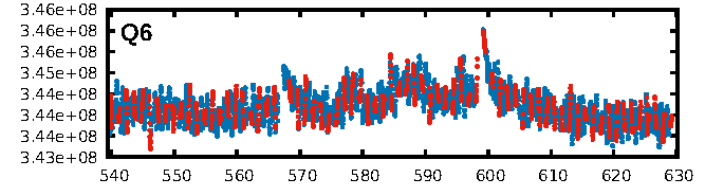
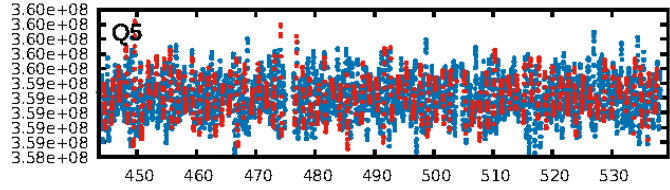
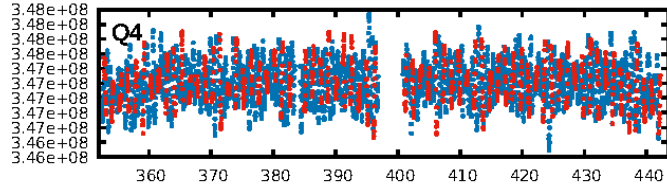
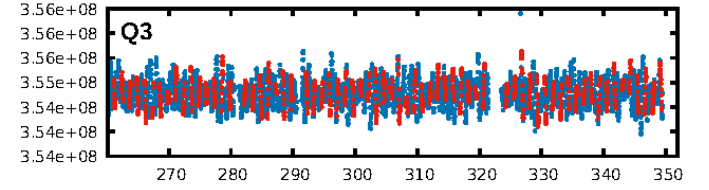
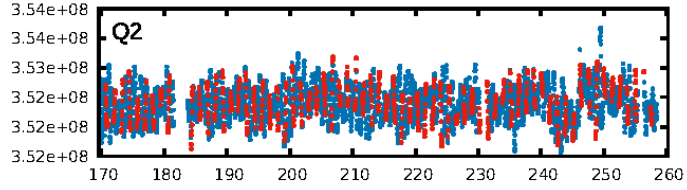
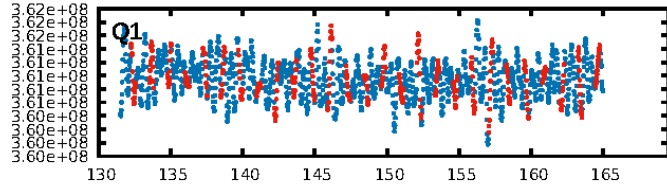
KIC: 5350598 Candidate: 1 of 4 Period: 1.239 d



Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 15:46:38 Z

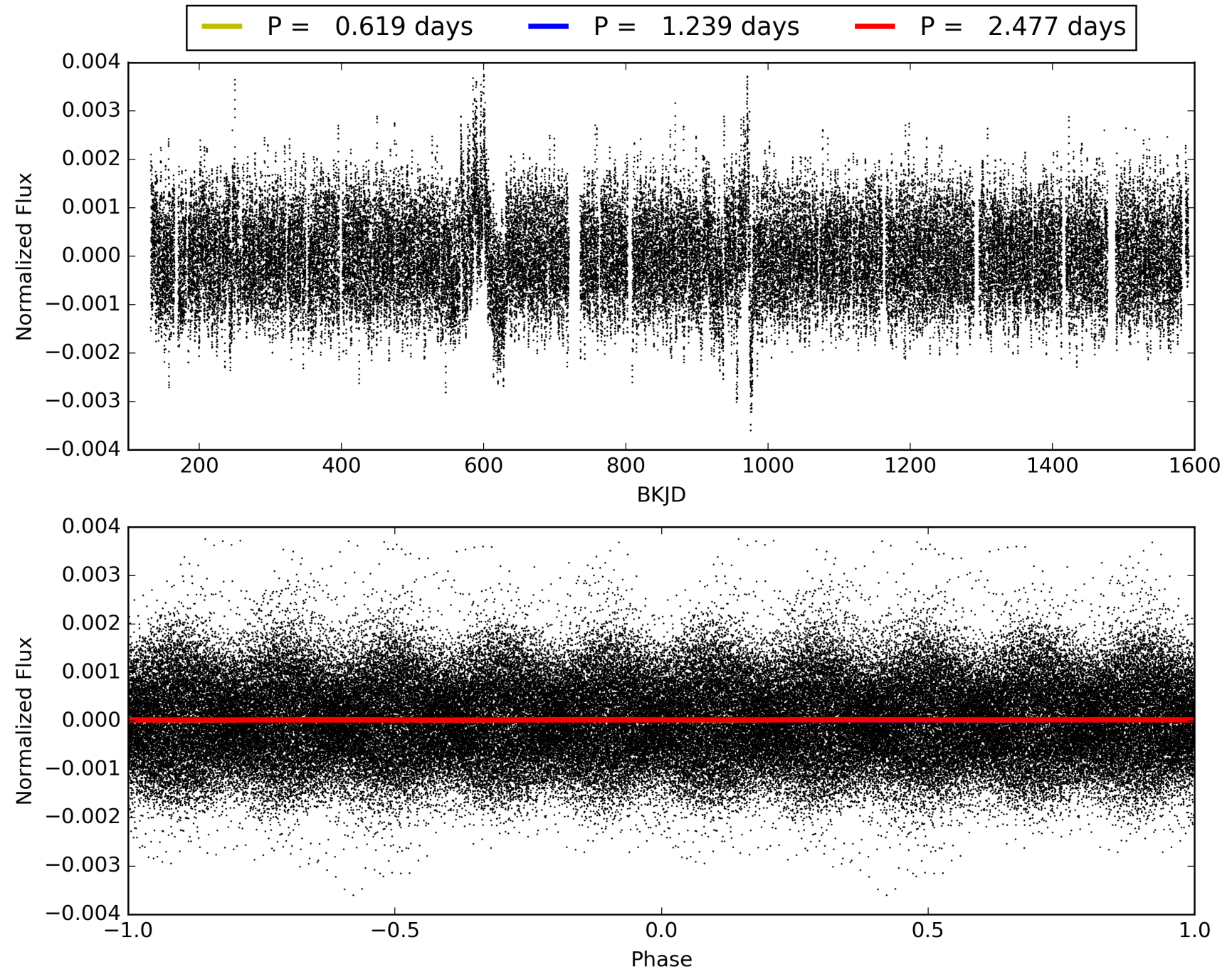
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

## TCE 005350598-01, PDC Light Curves





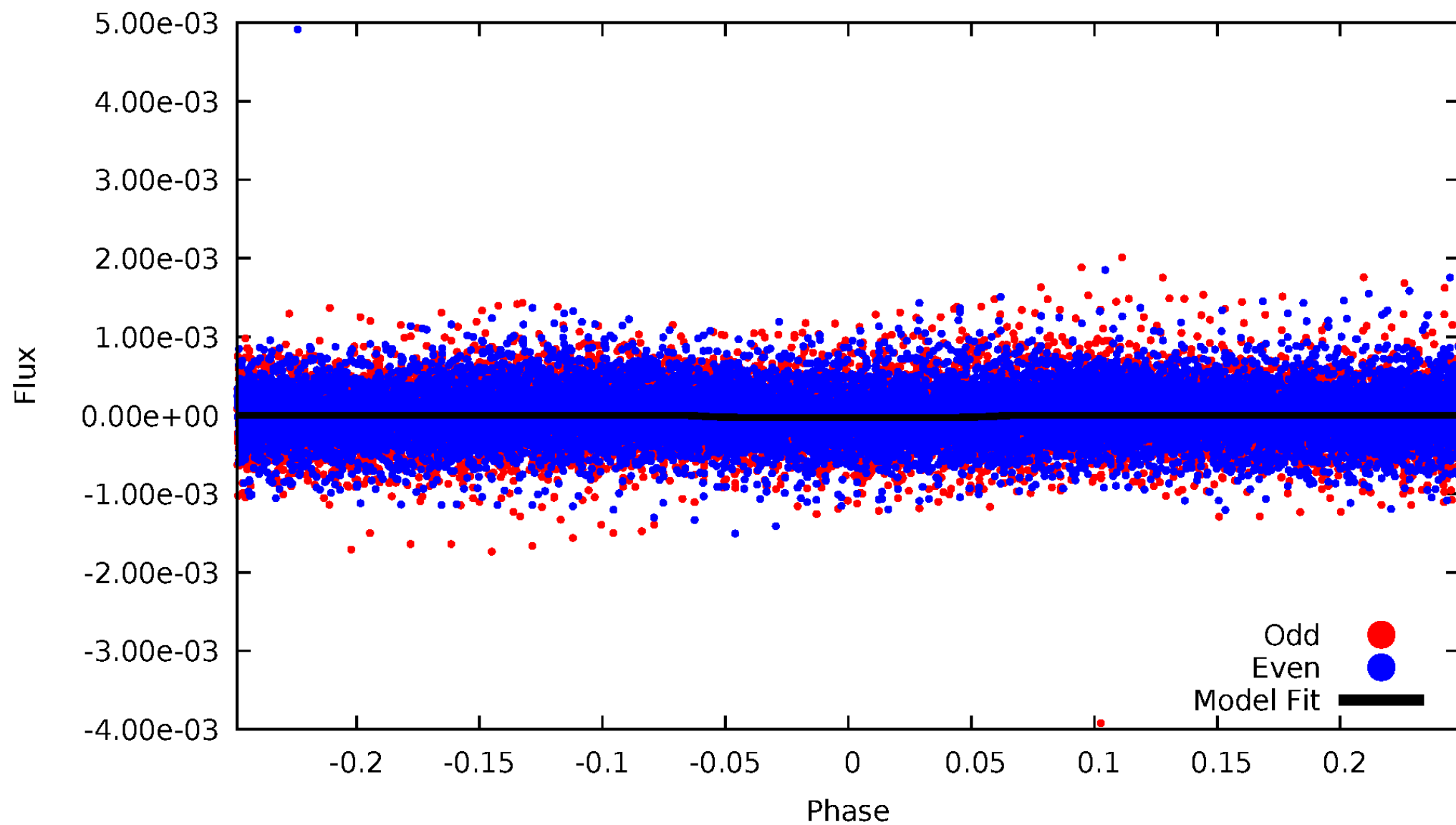
# TCE 005350598-01





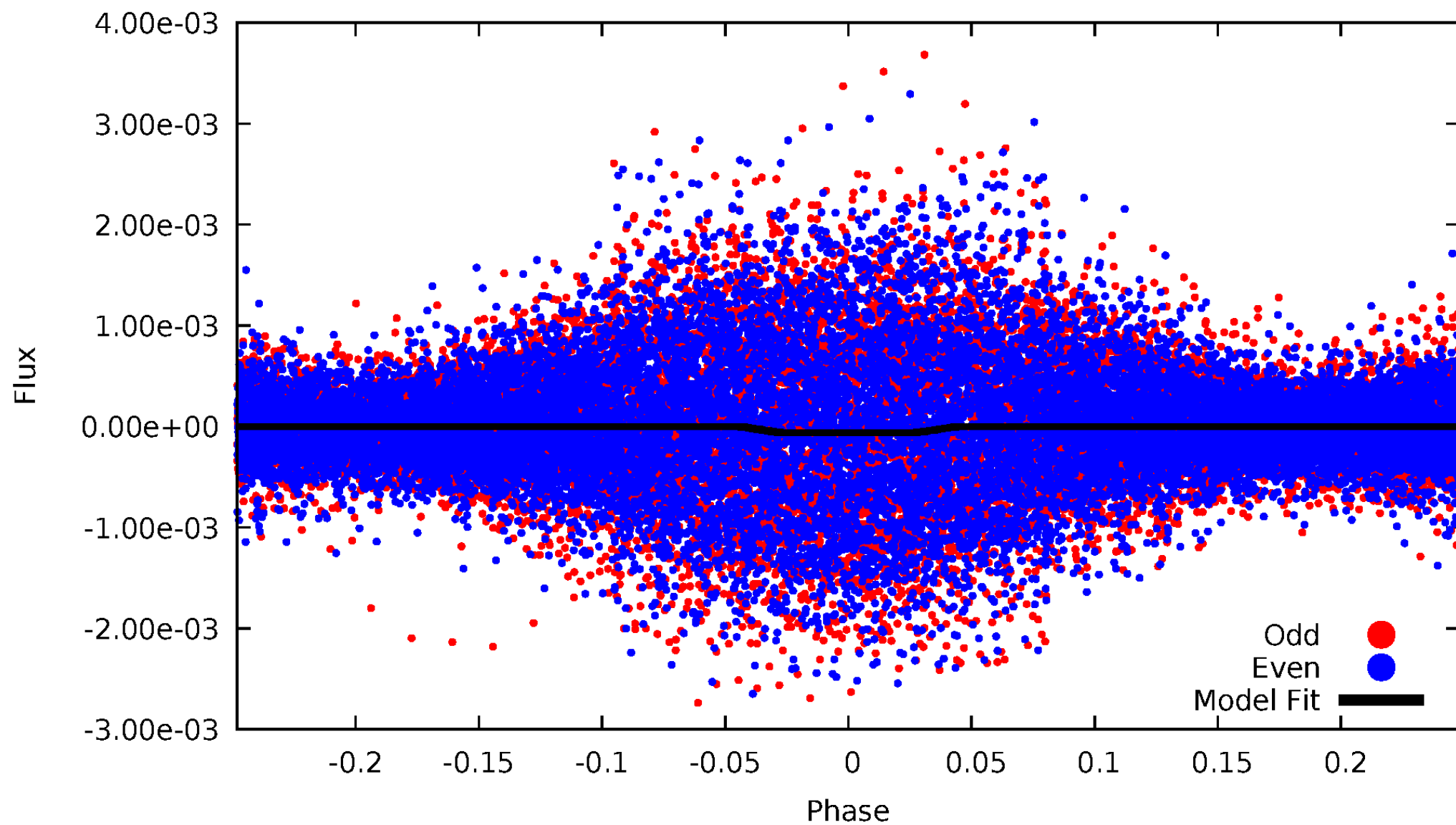
# DV Odd/Even

TCE 005350598-01

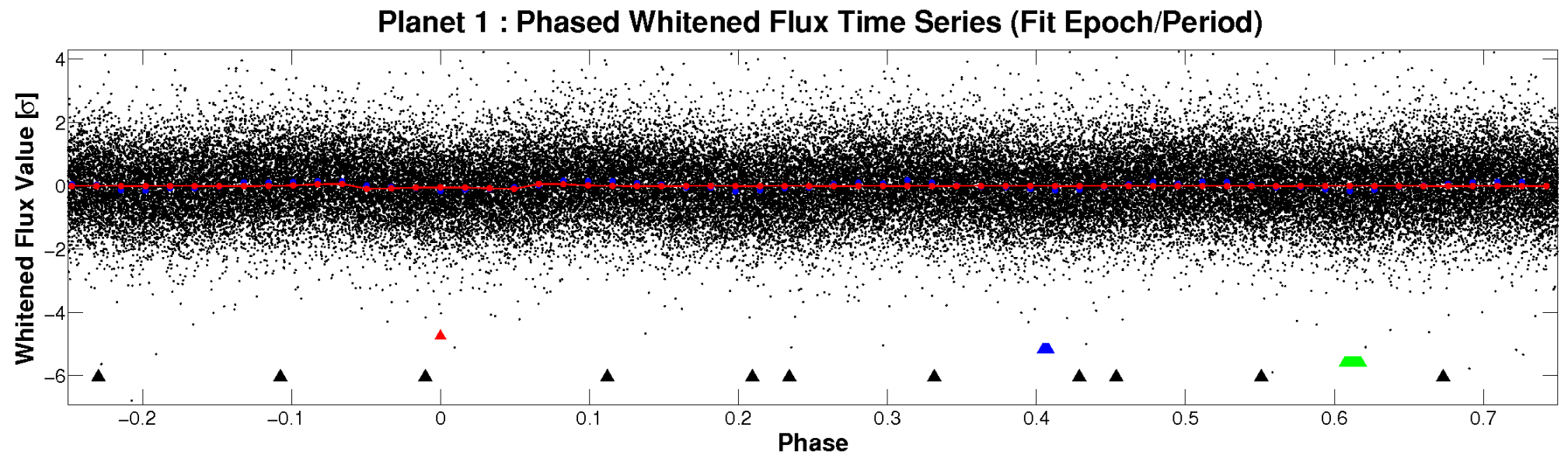
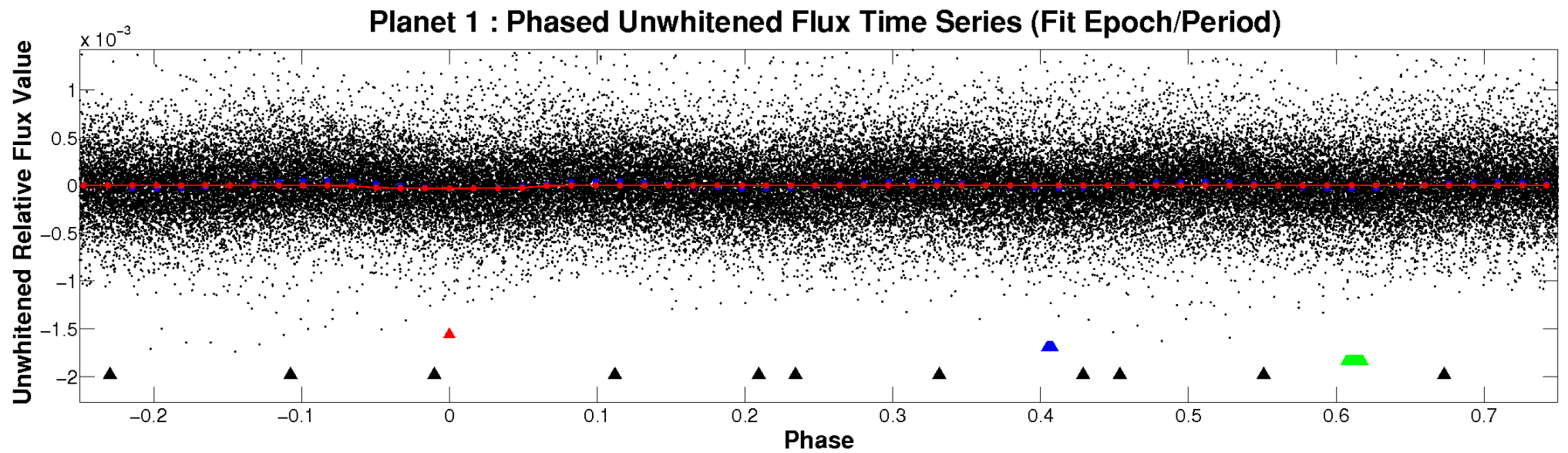


# ALT Odd/Even

TCE 005350598-01



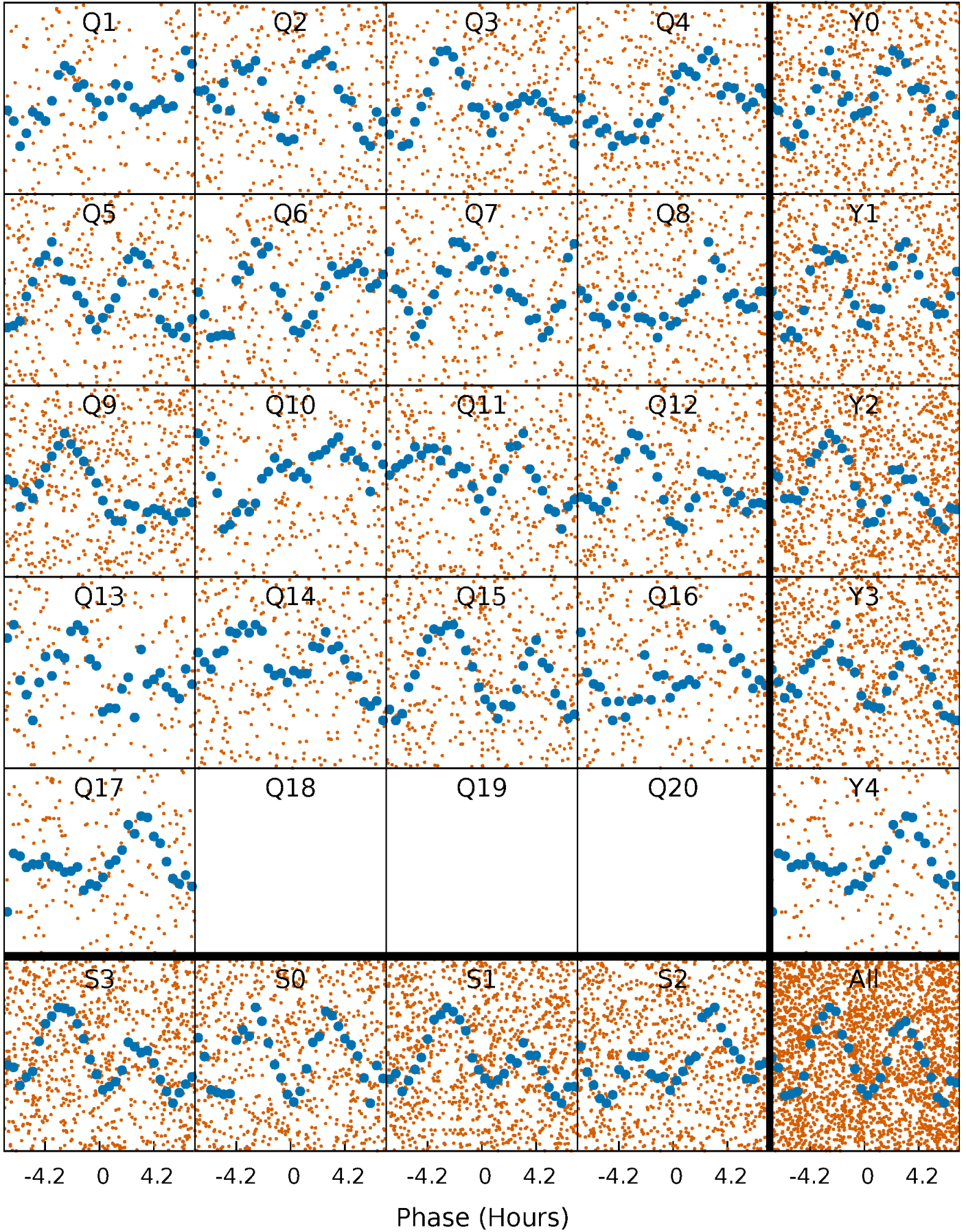
# Non-Whitened Vs. Whitened Light Curve





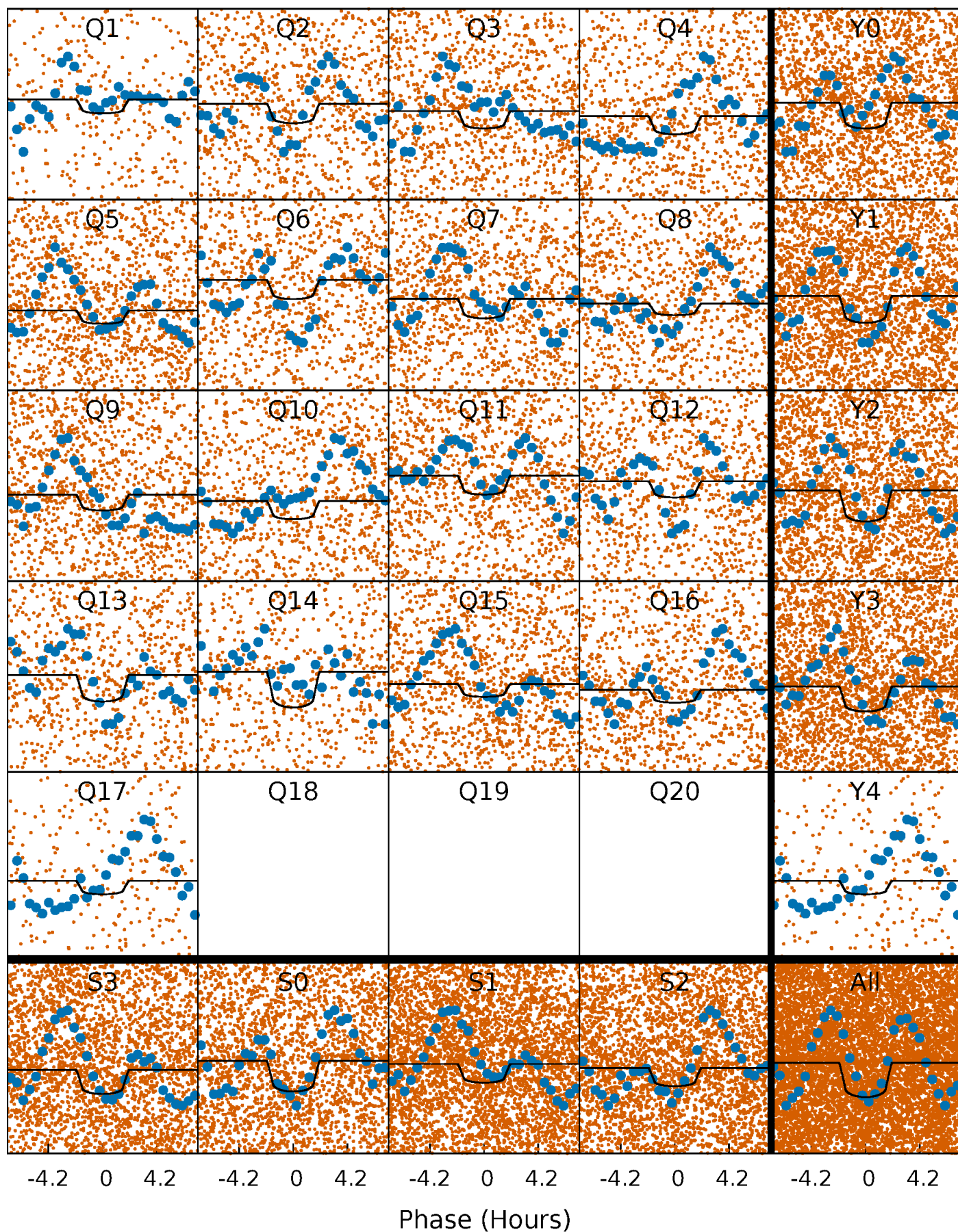
# PDC Quarter-Phased Transit Curves

TCE 005350598-01   P= 1.238637 Days    $T_0=132.421693$  (BKJD)



# DV Quarter-Phased Transit Curves

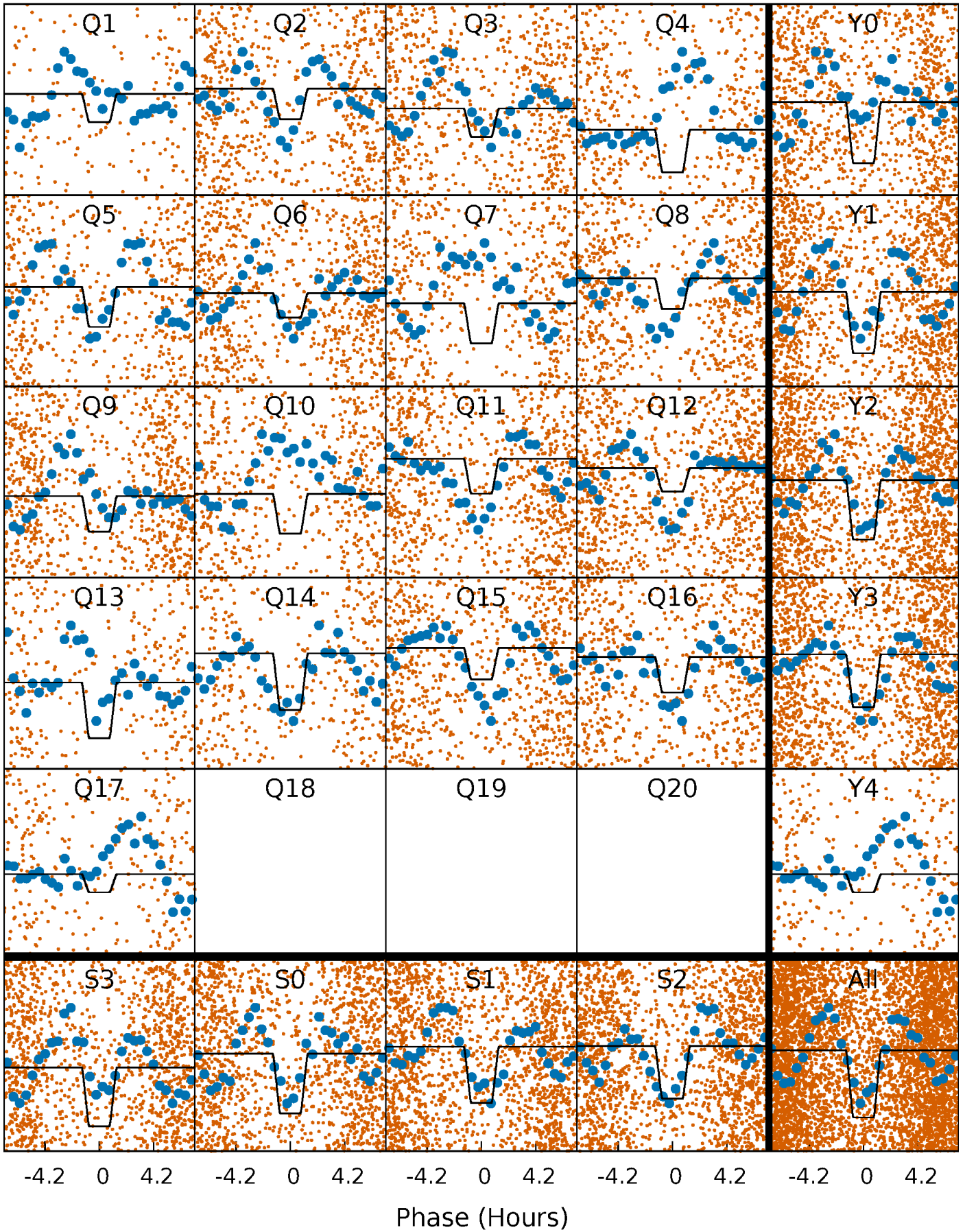
TCE 005350598-01 P= 1.238637 Days  $T_0=132.421693$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 005350598-01 P= 1.238658 Days  $T_0=132.420416$  (BKJD)

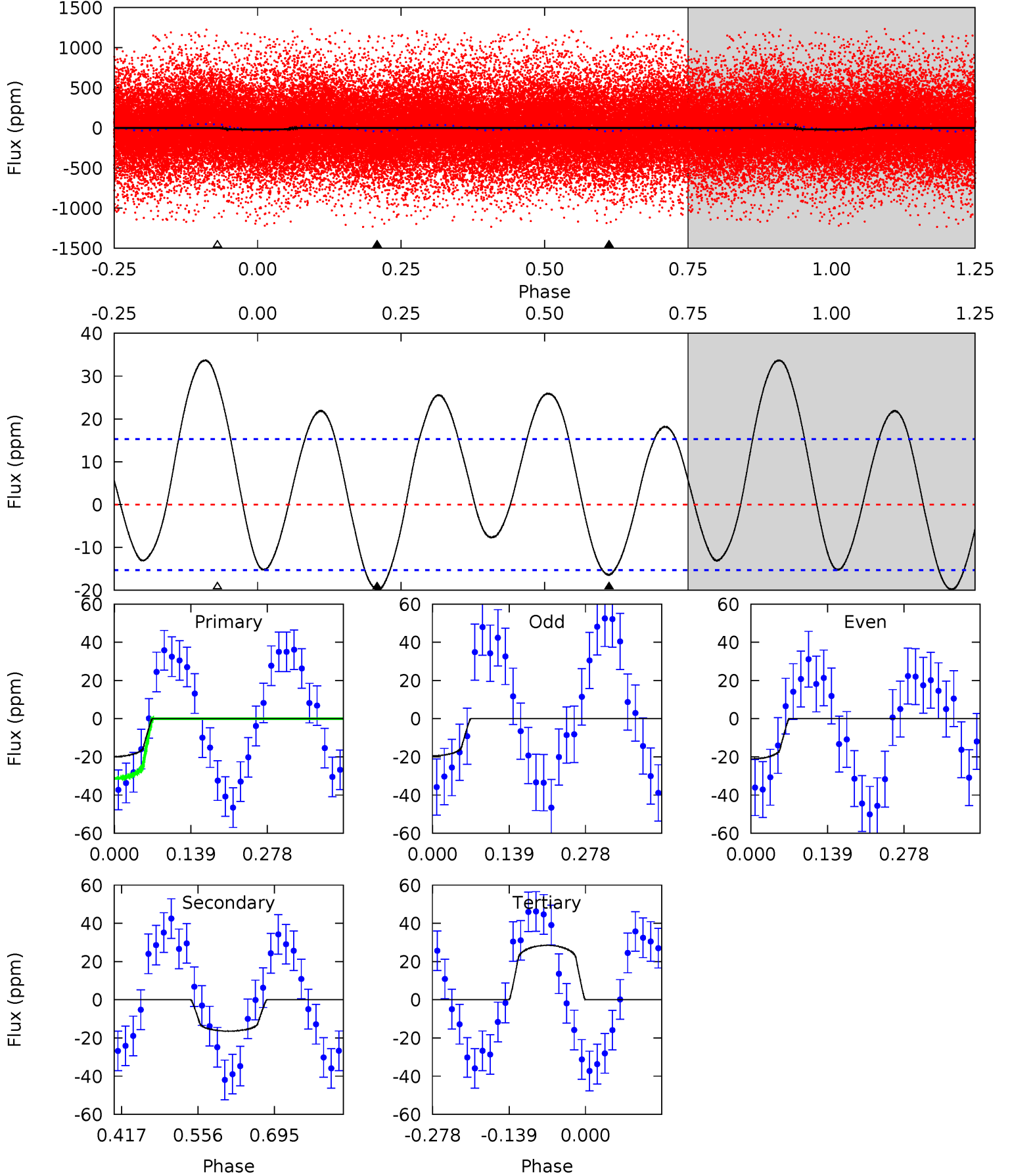




# DV Model-Shift Uniqueness Test

005350598-01, P = 1.238637 Days, E = 131.183056 Days

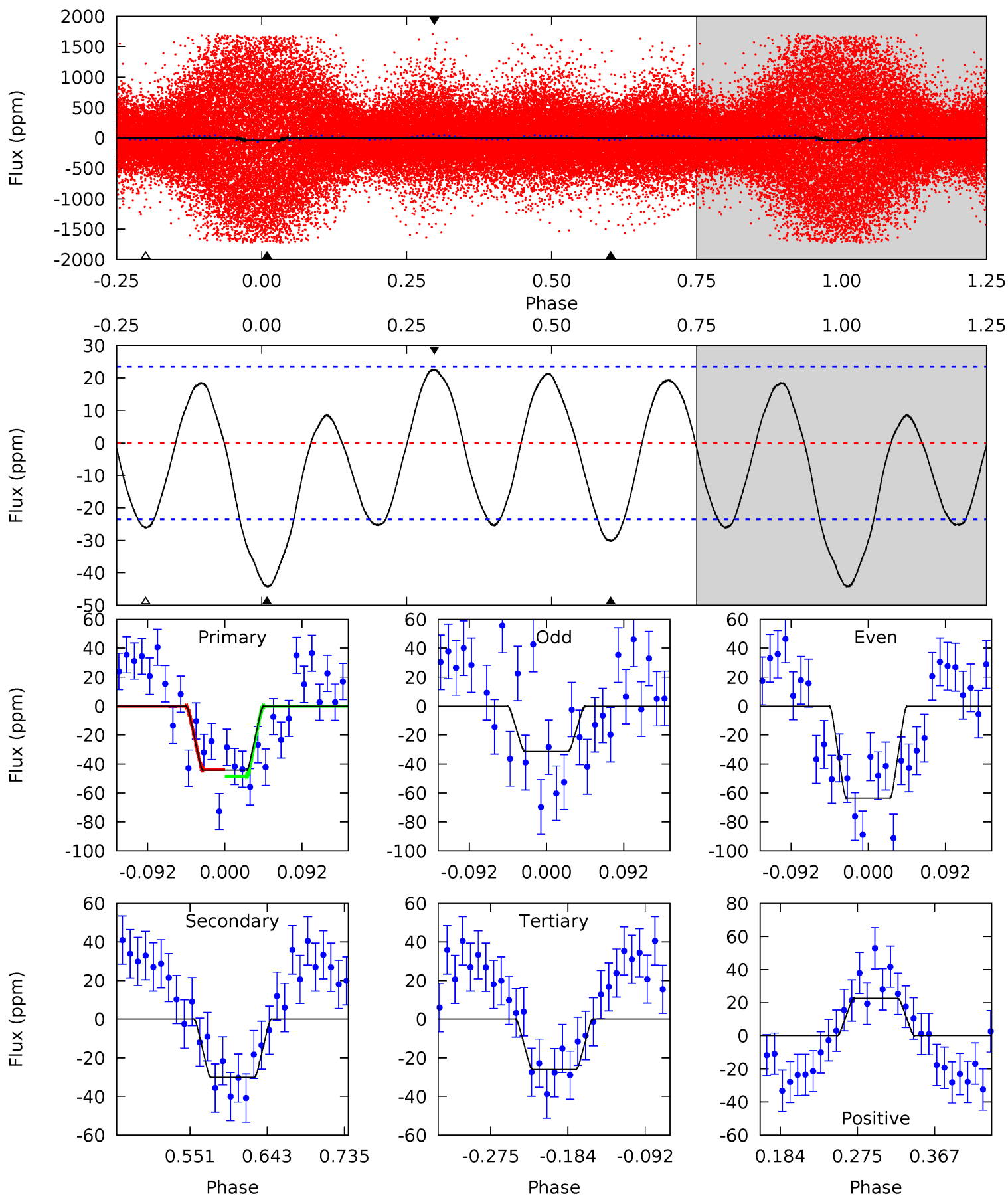
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.82	4.82	-8.38	0	4.50	1.48	4.22	14.2	5.82	13.2	4.82	0.24	0.87	0.63	3.26



# Alt Model-Shift Uniqueness Test

005350598-01, P = 1.238658 Days, E = 131.181758 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
8.64	5.88	5.08	4.42	4.58	1.69	3.17	3.56	4.22	0.81	1.47	3.14	1.19	0.34	0.46



### Stellar Parameters For KIC 005350598

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7709^{+218}_{-328}$	$3.746^{+0.467}_{-0.082}$	$-0.520^{+0.250}_{-0.300}$	$2.839^{+0.356}_{-1.335}$	$1.636^{+0.160}_{-0.374}$	$0.101^{+0.470}_{-0.026}$
	+3%/-4%	+12%/-2%	+48%/-58%	+13%/-47%	+10%/-23%	+467%/-26%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 005350598-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-16 \pm 3$	$1.67^{+0.42}_{-0.46}$	$4737^{+362}_{-618}$	$5997^{+847}_{-653}$	$2.254^{+2.049}_{-0.895}$
Alt.	$-30 \pm 5$	$2.21^{+0.53}_{-0.54}$	$4733^{+338}_{-612}$	$6029^{+659}_{-538}$	$2.337^{+1.681}_{-0.826}$

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



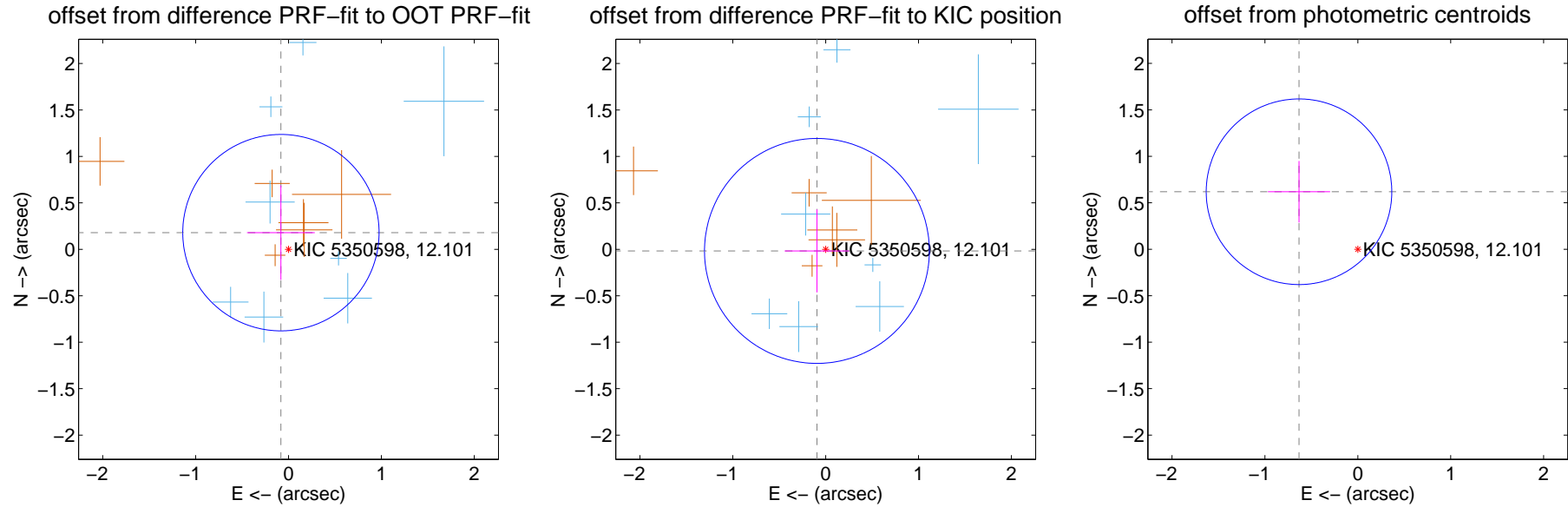
## DV Centroid Data

Supplemental centroid analysis for 005350598-01. Kepler magnitude: 12.10. Transit SNR 7.55

There are 8 quarters with good PRF difference image offsets

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

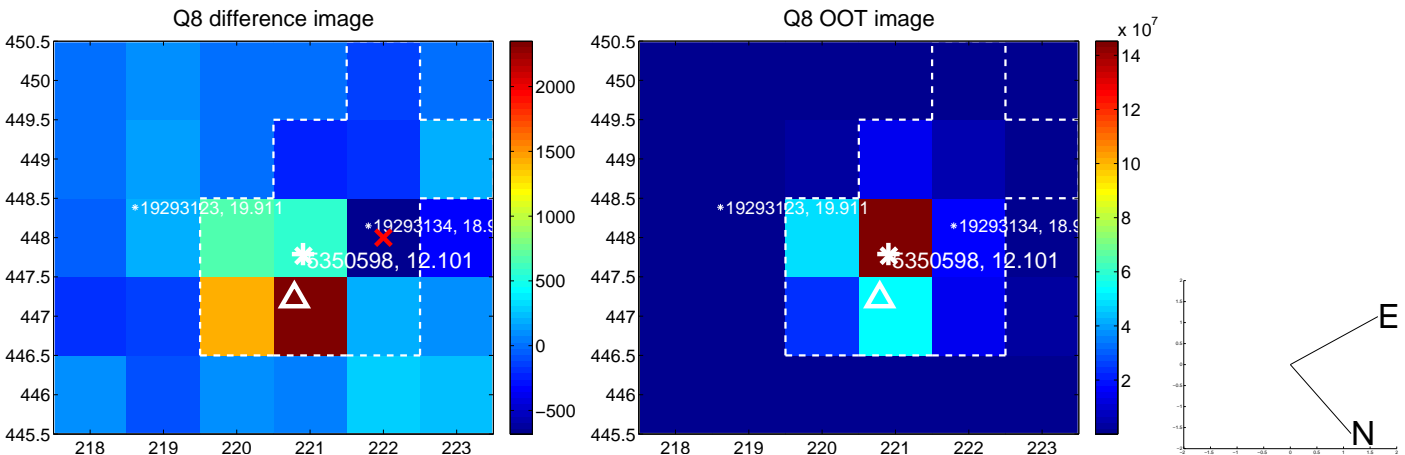
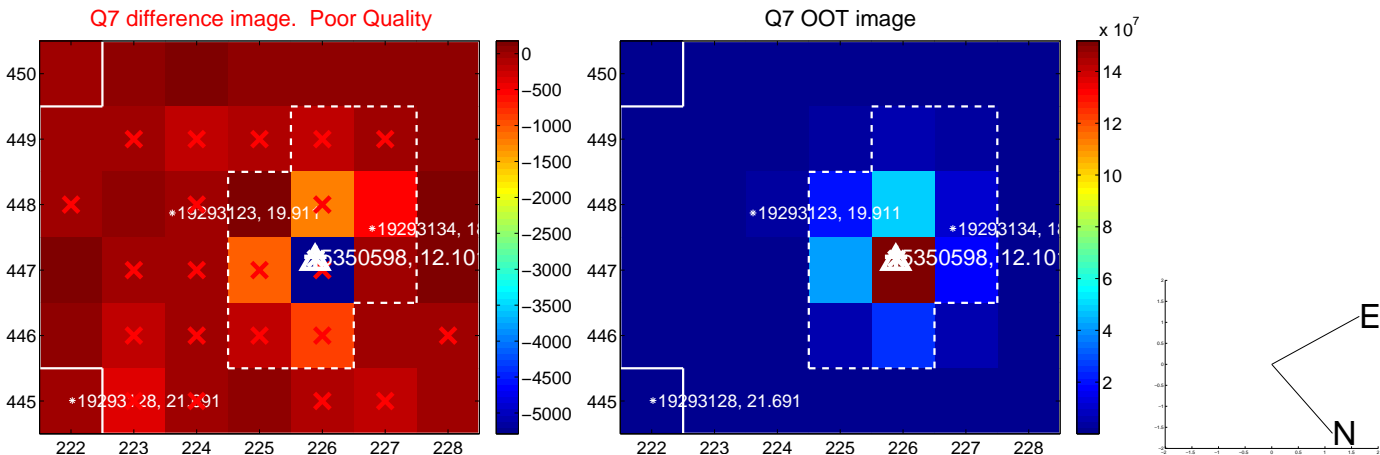
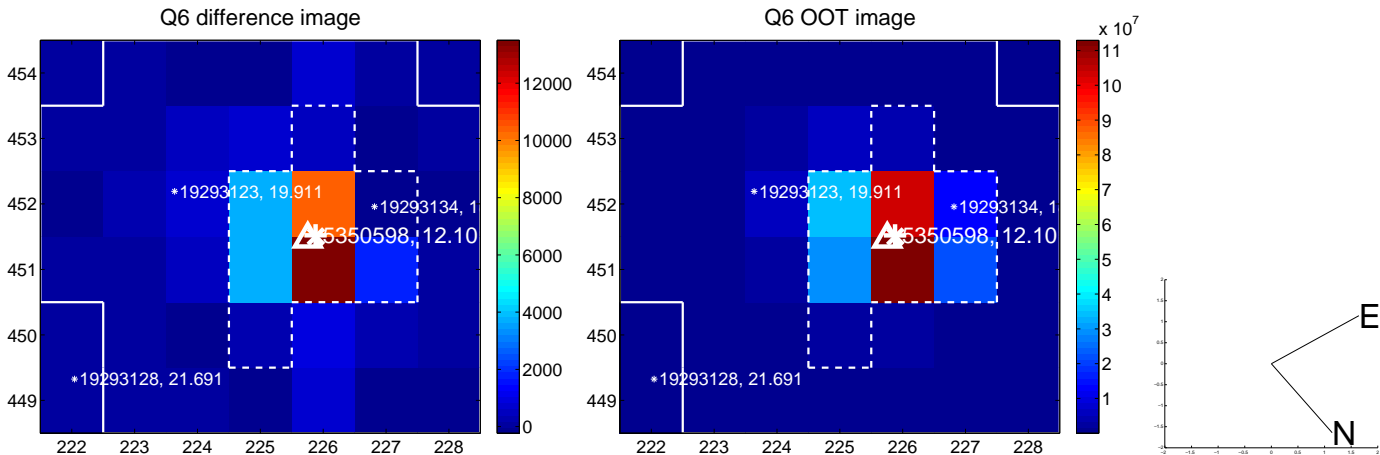
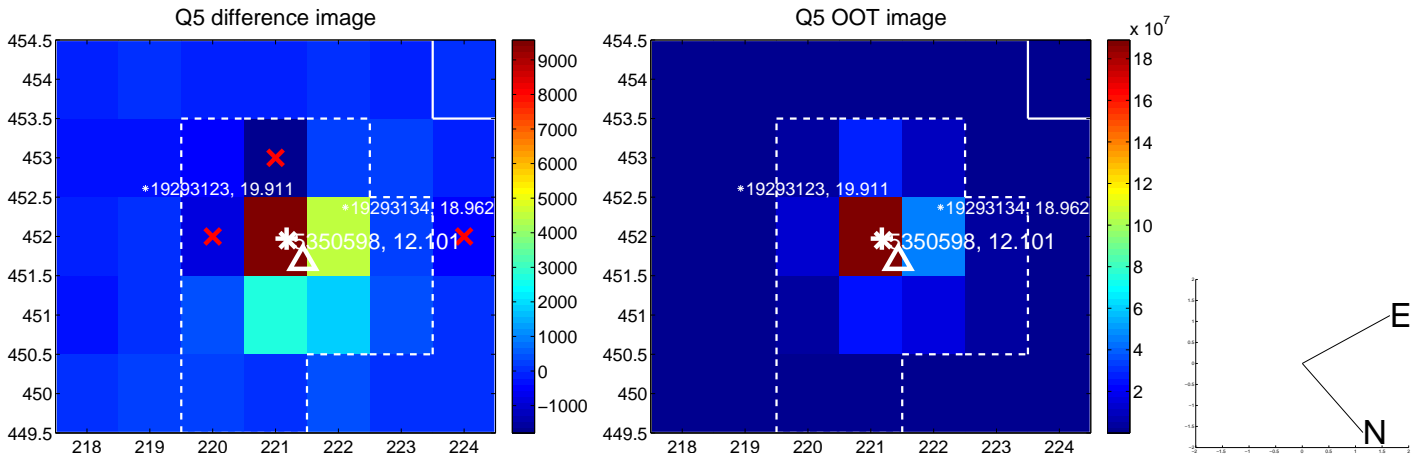
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.197 \pm 0.352$	0.56	$0.082 \pm 0.365$	$0.179 \pm 0.509$
PRF-fit source offset from KIC position	$0.096 \pm 0.404$	0.24	$0.094 \pm 0.347$	$-0.017 \pm 0.446$
photometric centroid source offset	$0.89 \pm 0.33$	2.66	$0.63 \pm 0.33$	$0.62 \pm 0.33$



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

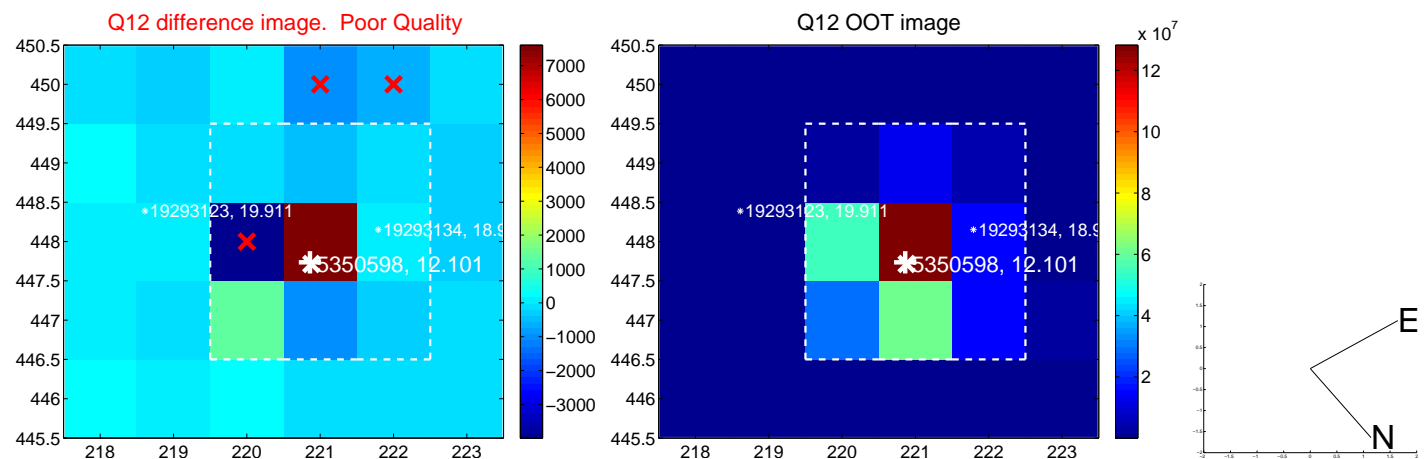
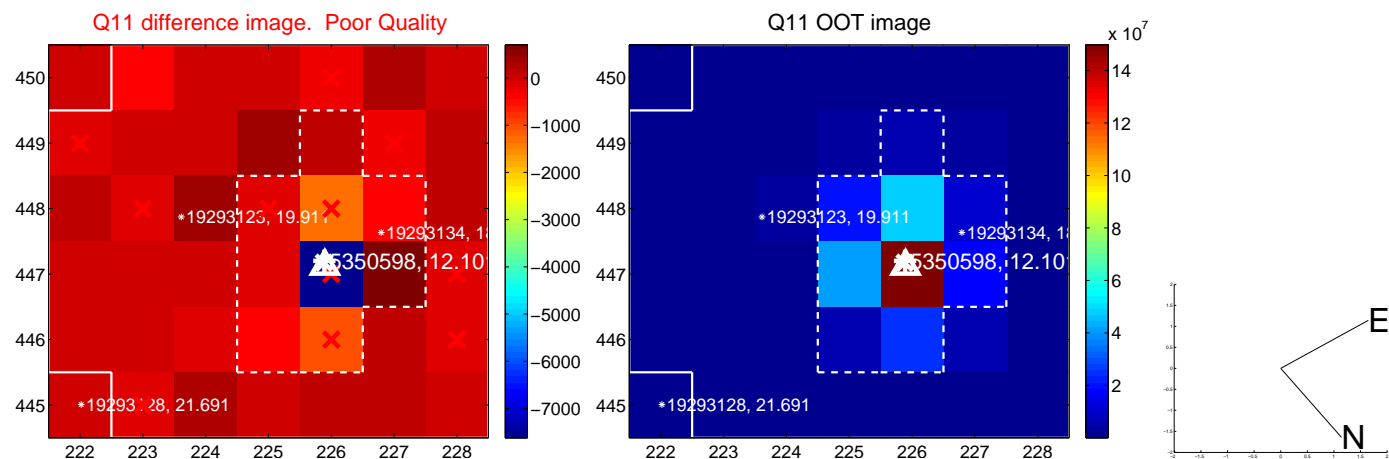
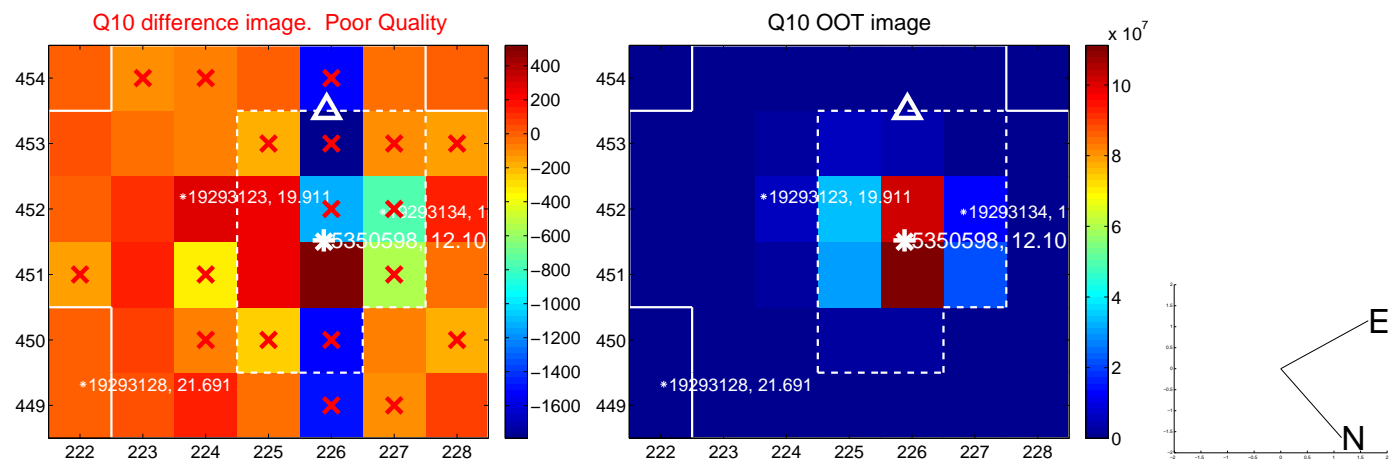
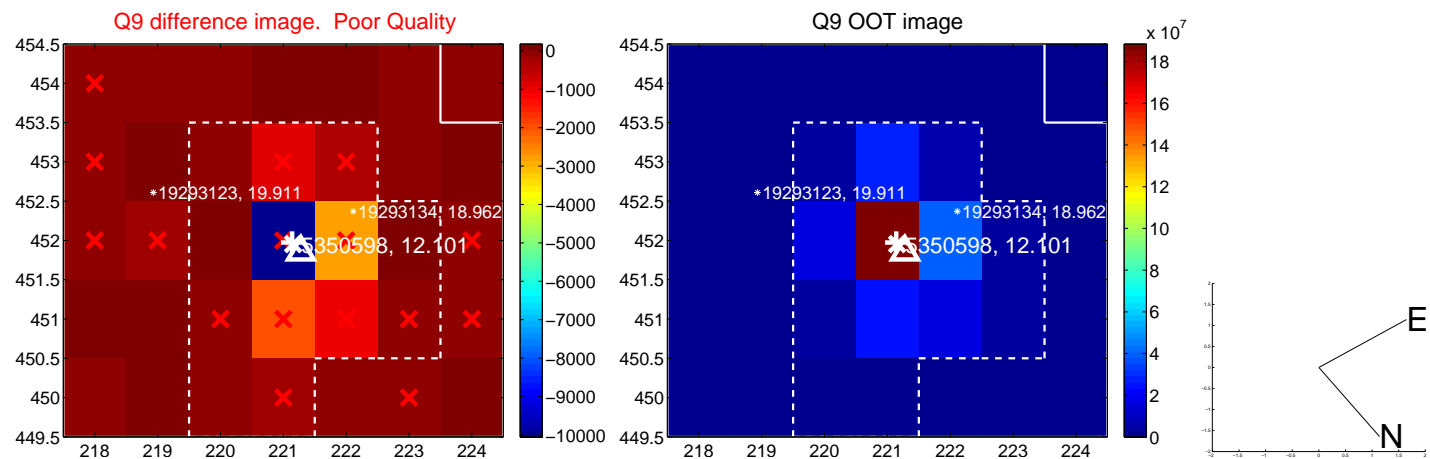


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

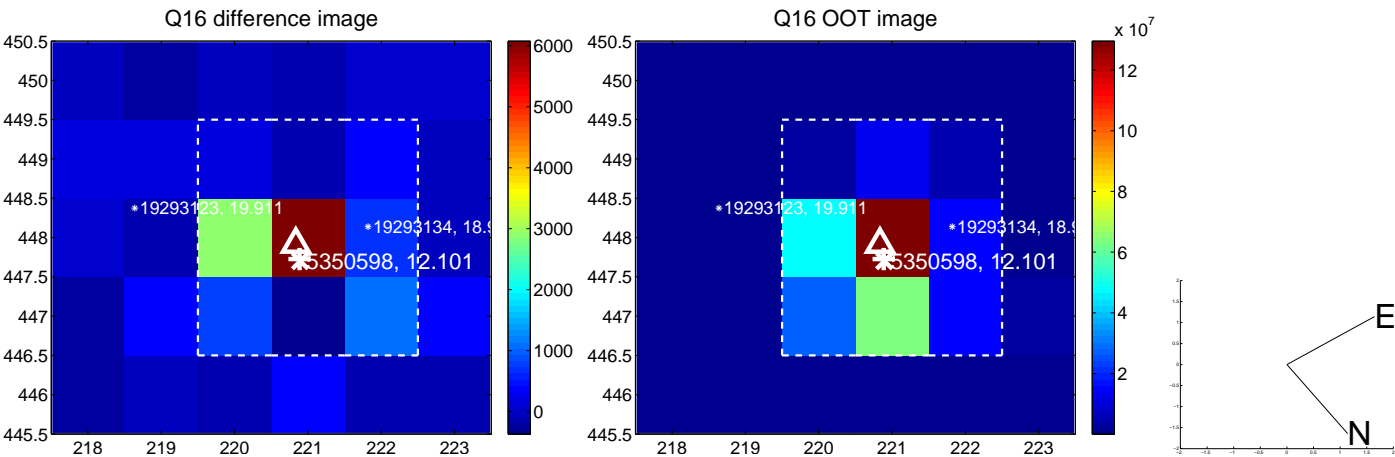
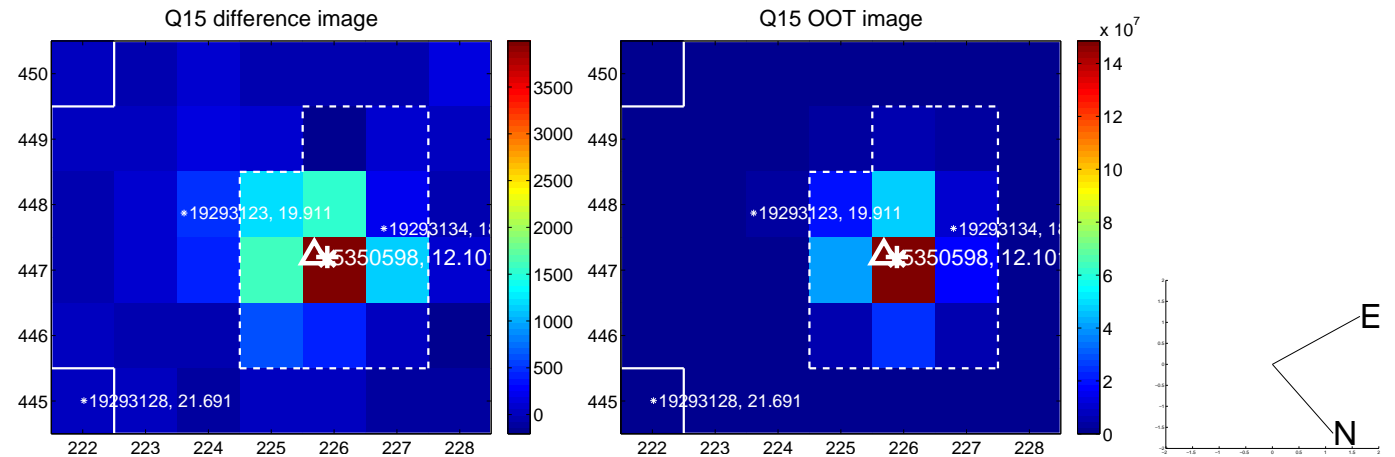
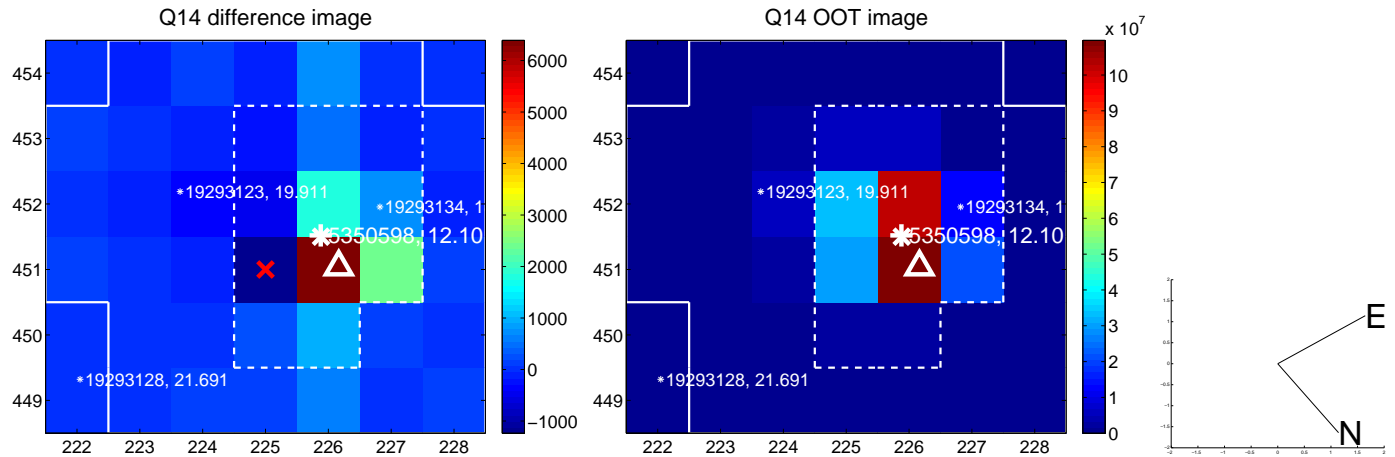
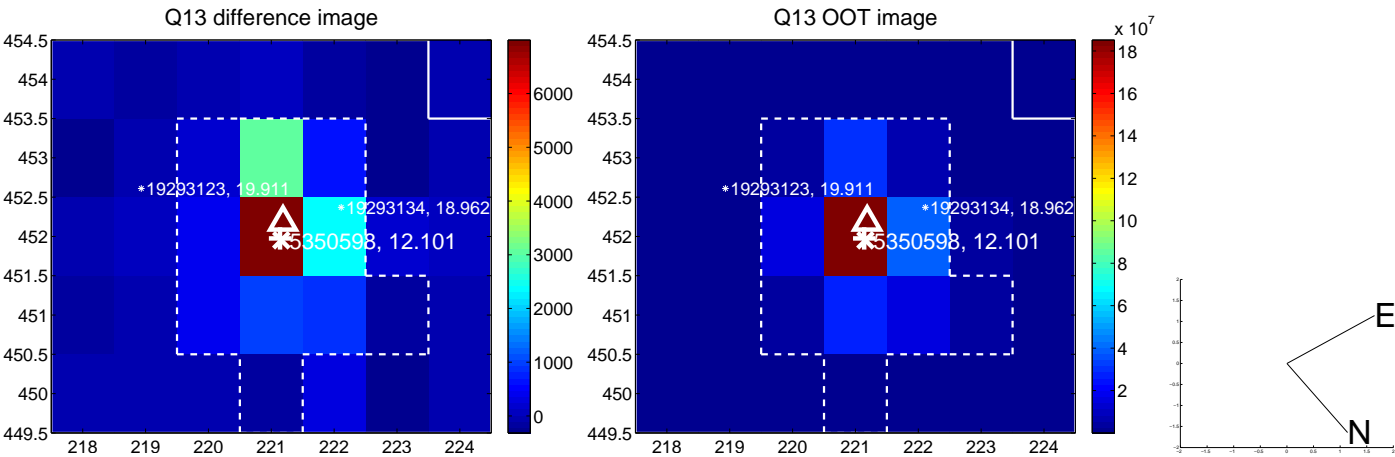




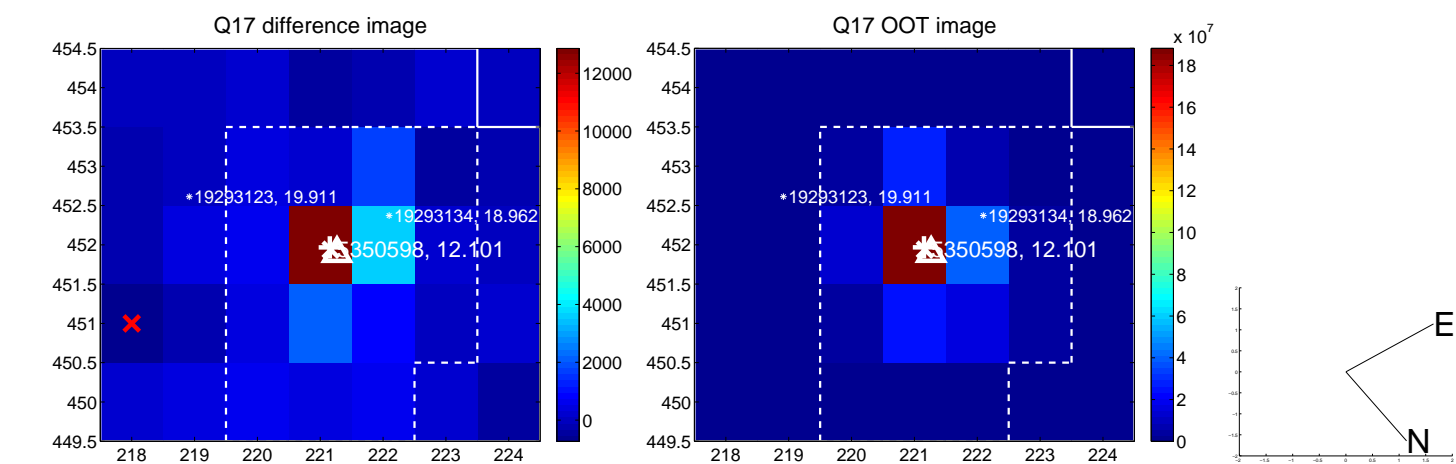
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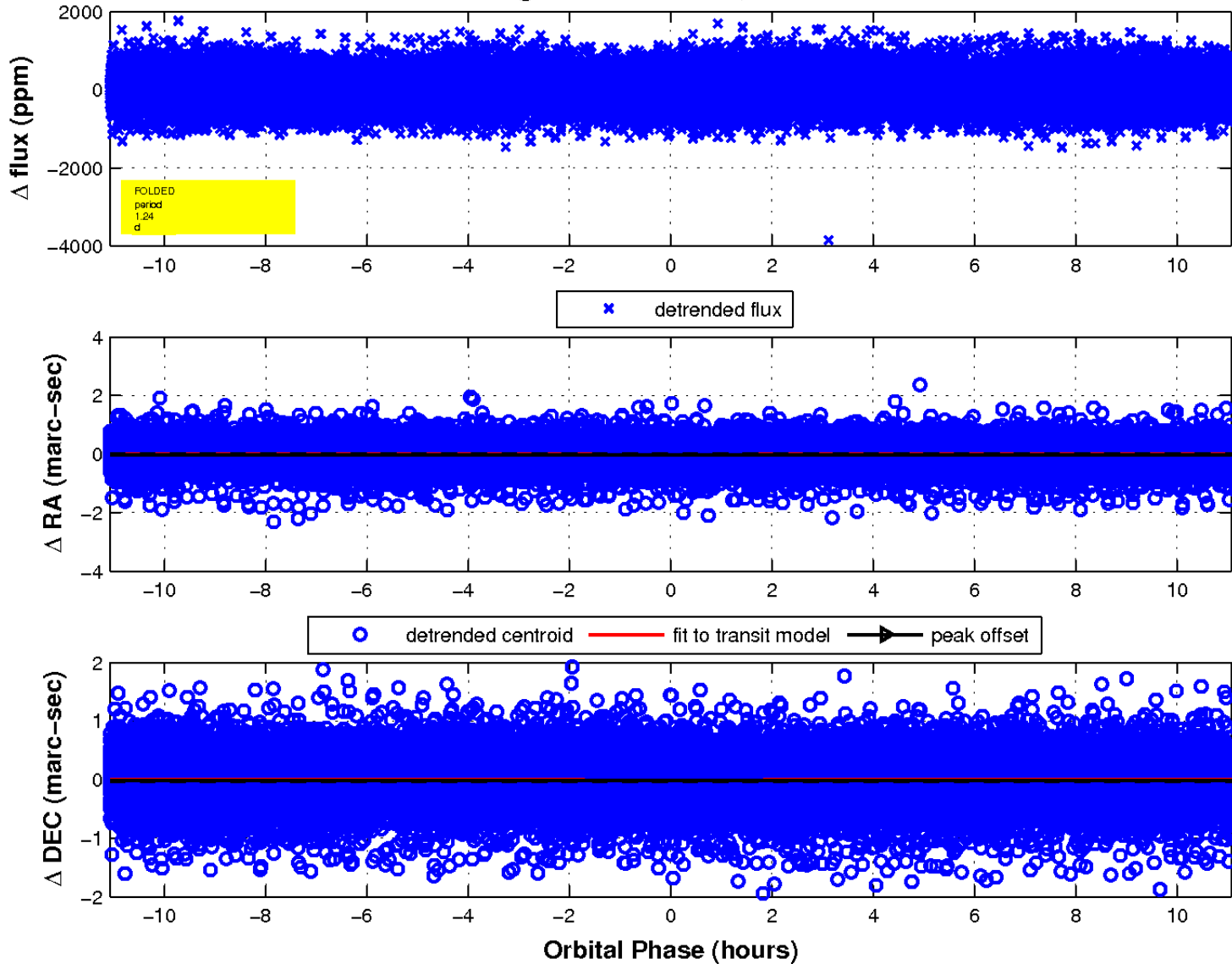
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



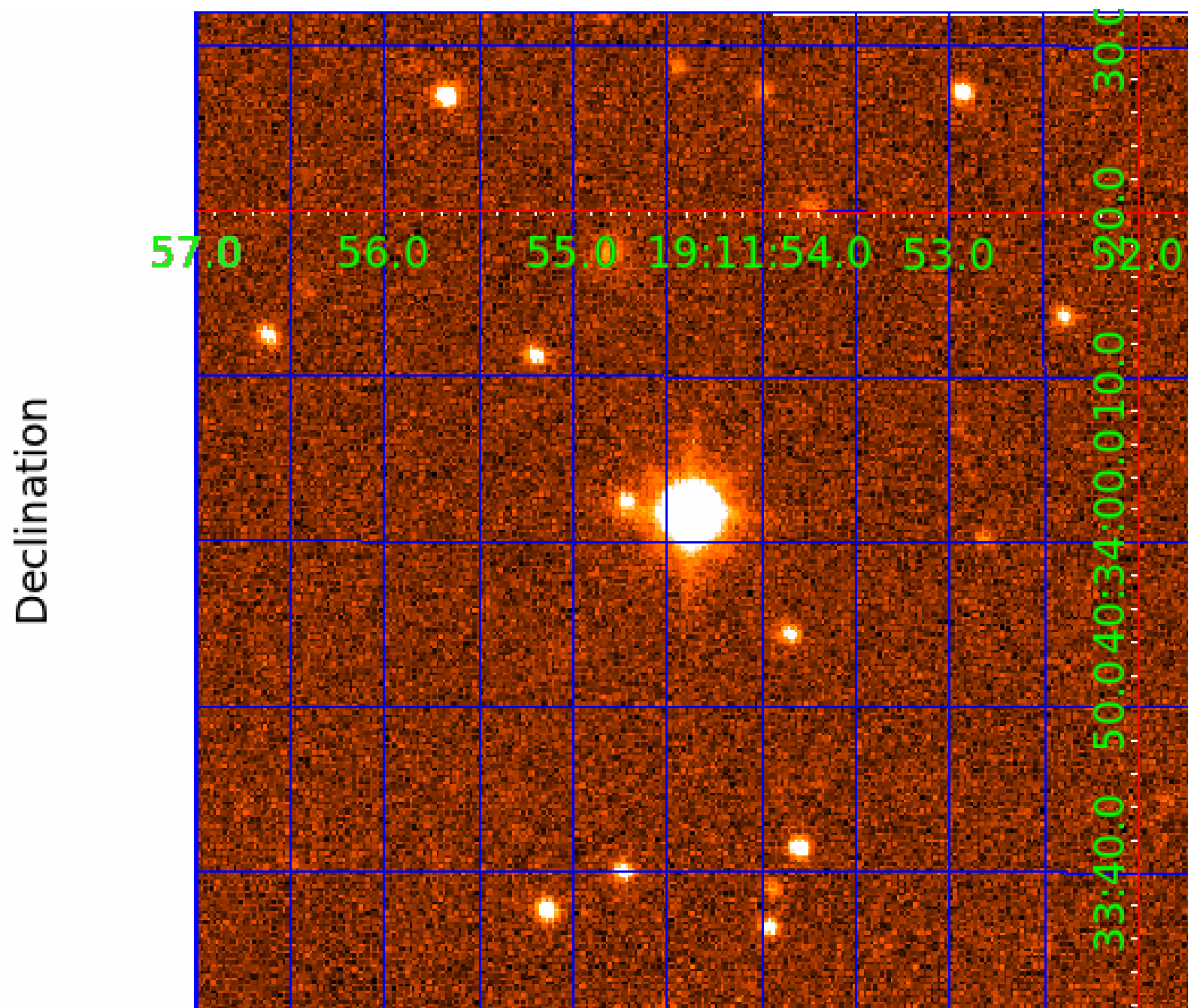
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 4



UKIRT Image



# KIC 005350598

## Q1-17 DR25 TCE Parameters

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005350598-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
005350598-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD

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

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

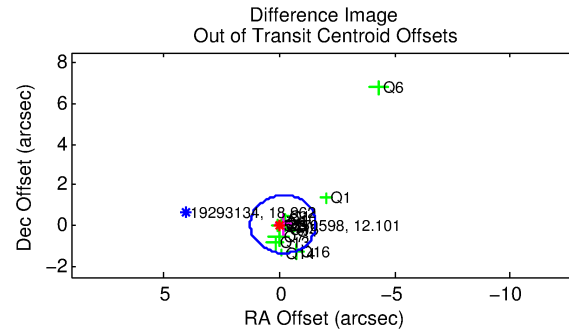
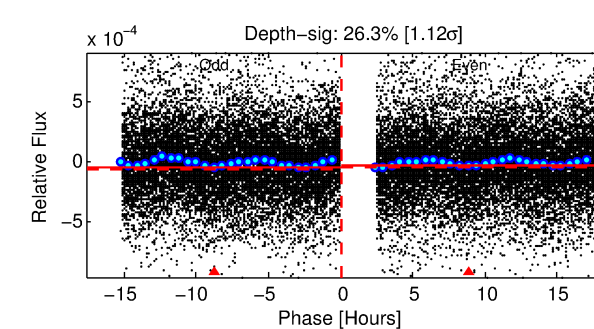
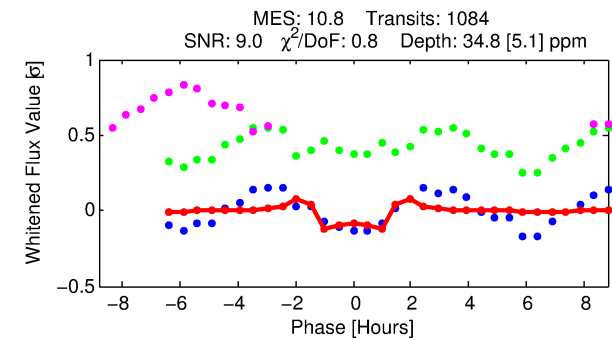
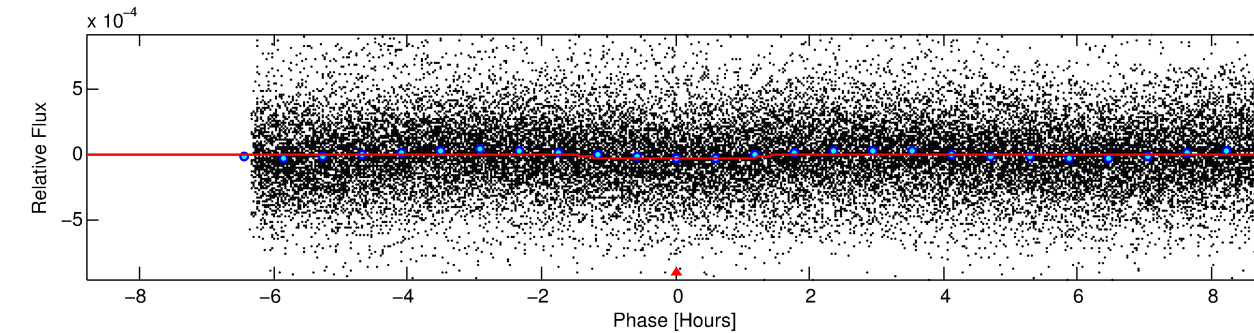
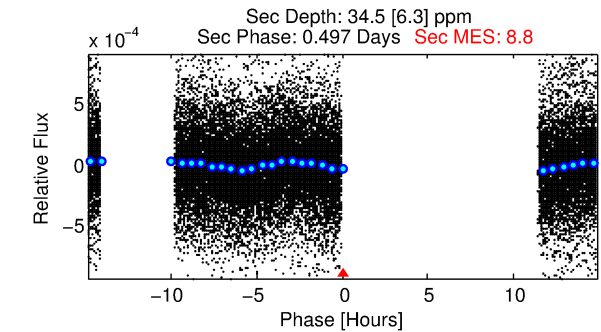
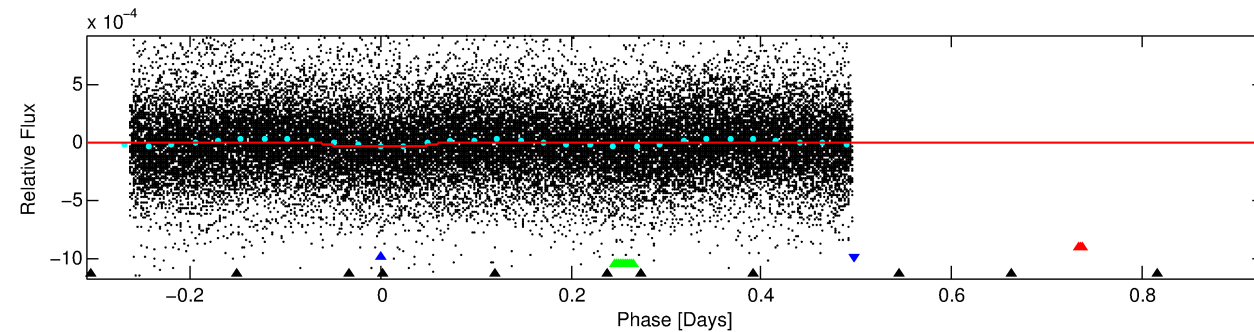
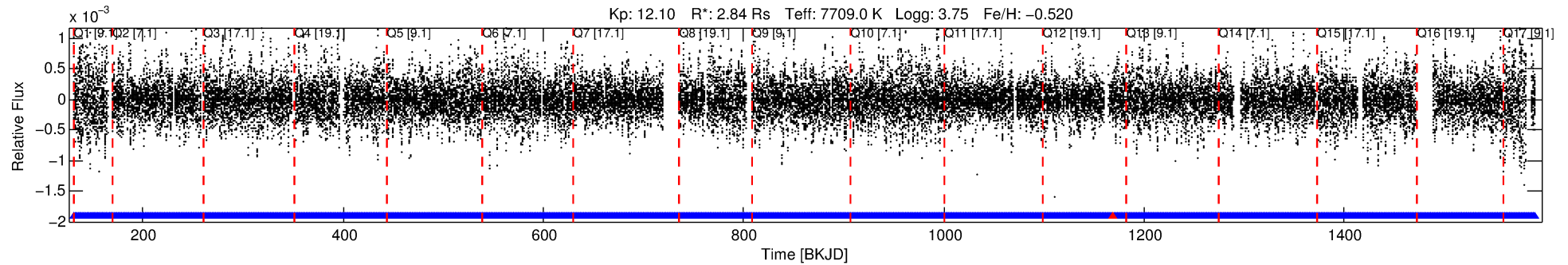
## Ephemeris Match Information For 005350598-02

No Significant Match Found



# DV One-Page Summary

KIC: 5350598 Candidate: 2 of 4 Period: 1.239 d



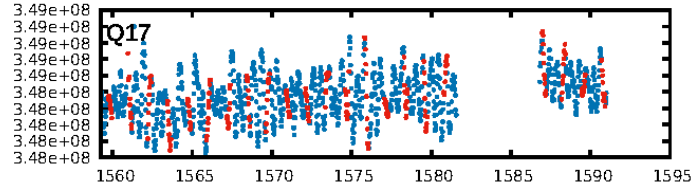
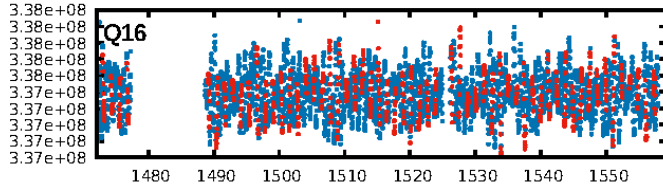
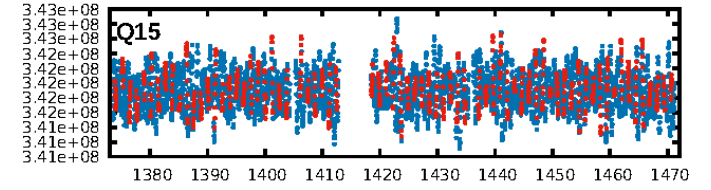
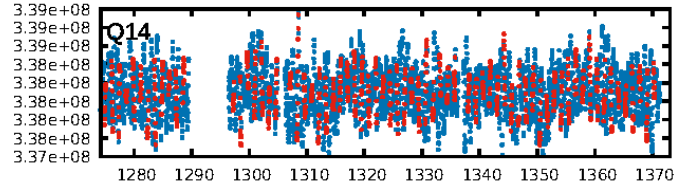
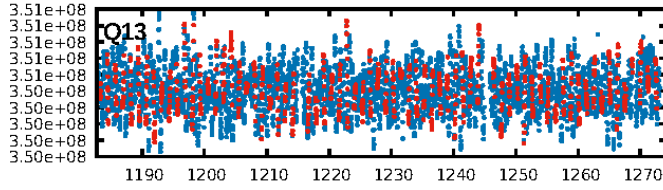
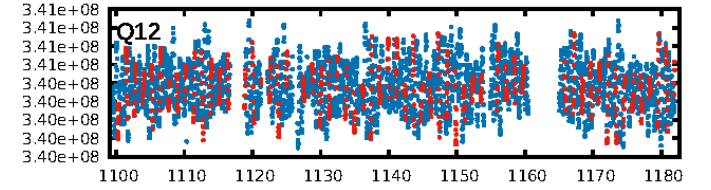
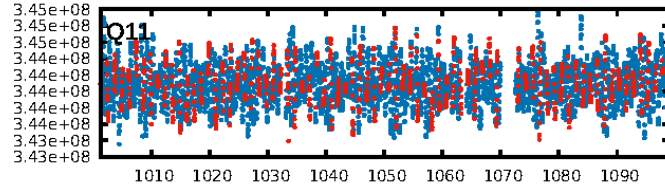
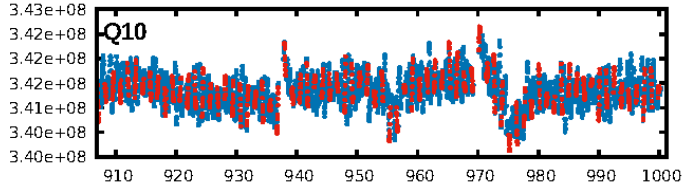
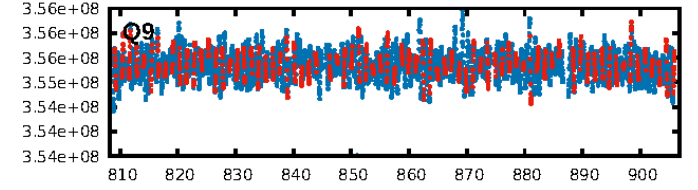
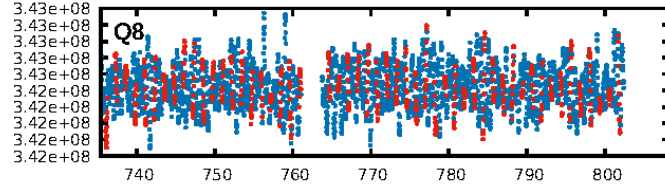
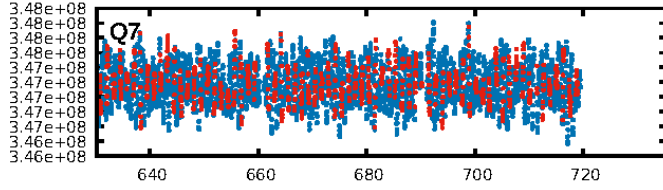
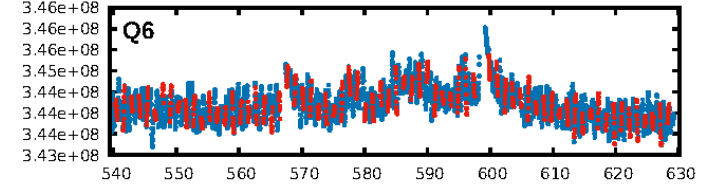
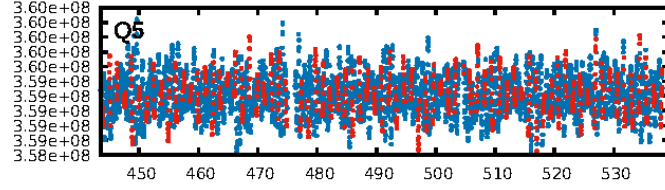
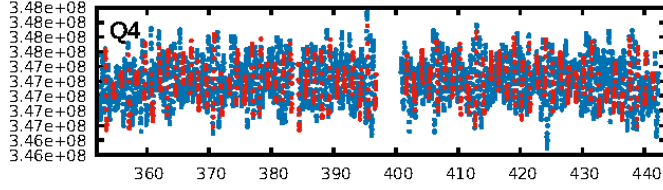
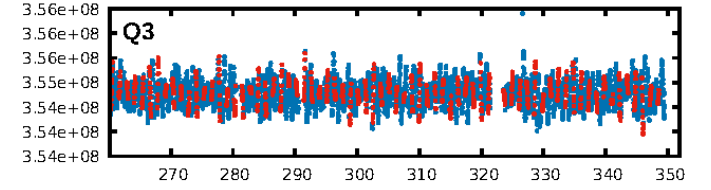
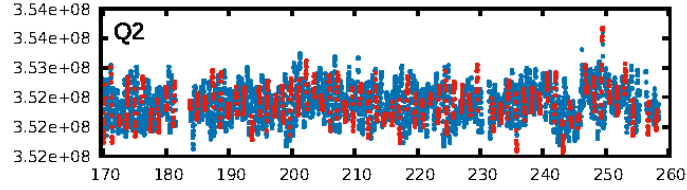
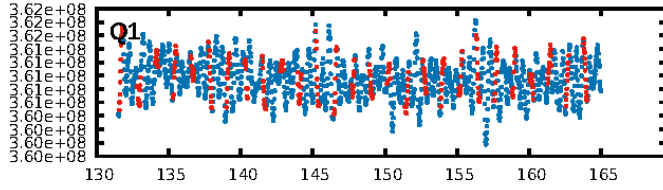
## DV Fit Results:

Period = 1.23863 [0.00001] d  
Epoch = 131.6887 [0.0018] BKJD  
Rp/R\* = 0.0065 [0.0013]  
a/R\* = 1.54 [1.04]  
b = 0.93 [0.16]  
Seff = 36008.63 [28832.68]  
Teff = 3513 [703] K  
Rp = 2.01 [1.02] Re  
a = 0.0266 [0.0127] AU  
Ag = 3.34 [2.99] [0.78σ]  
**Teffp = 7342 [861] K [3.45σ]**

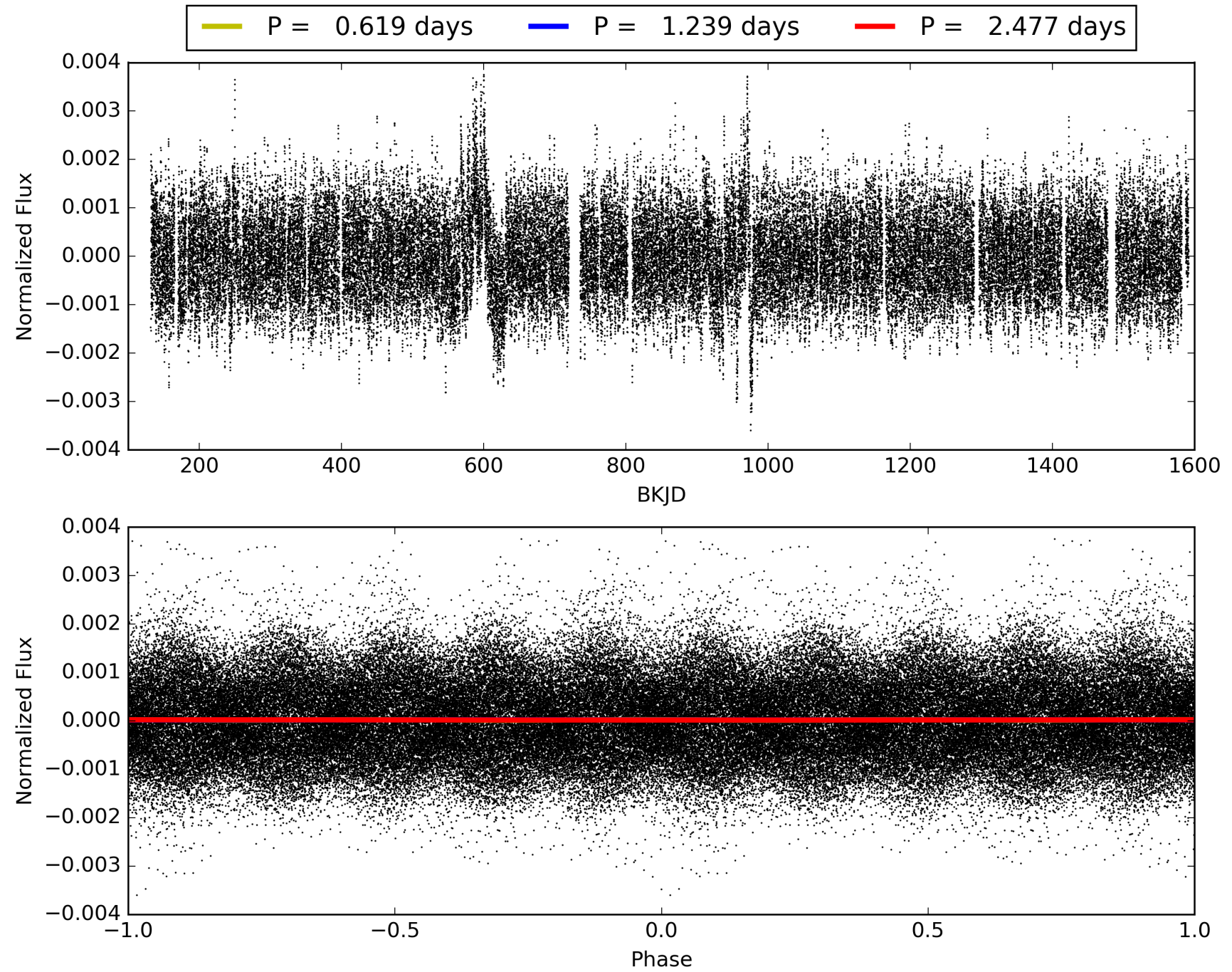
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
**LongPeriod-sig: 0.0% [0.00σ]**  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 8.33e-14  
RollingBand-fgt: 1.00 [1034/1035]  
GhostDiagnostic-chr: 1.462  
Centroid-sig: 64.3%  
Centroid-so: 0.258 arcsec [0.79σ]  
OotOffset-rm: 0.185 arcsec [0.39σ]  
KicOffset-rm: 0.119 arcsec [0.42σ]  
OotOffset-st: 3/4/3/4 [14]  
KicOffset-st: 3/4/3/4 [14]  
DiffImageQuality-fgm: 0.64 [9/14]  
DiffImageOverlap-fno: 0.00 [0/17]

# TCE 005350598-02, PDC Light Curves



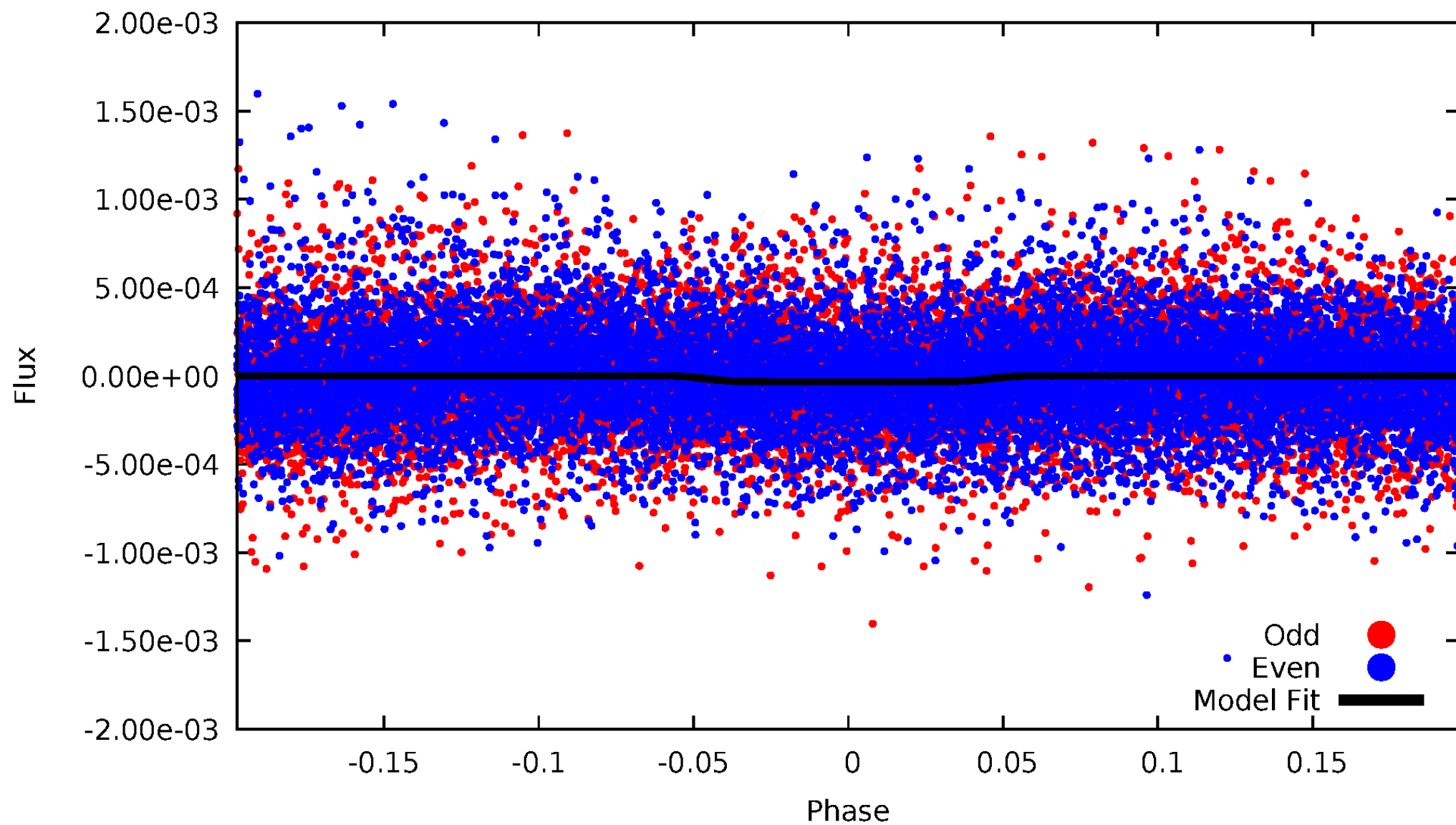
# TCE 005350598-02





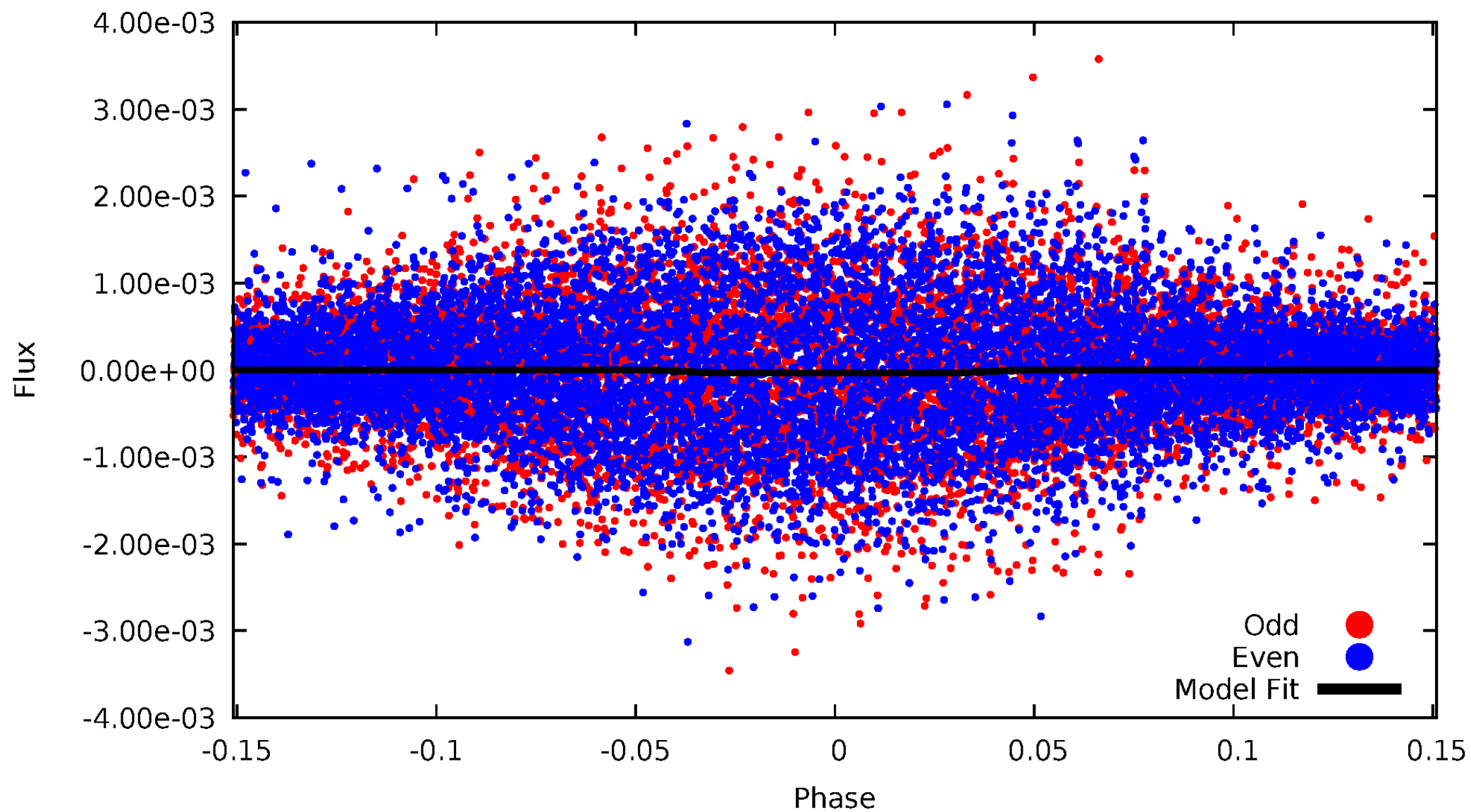
DV Odd/Even

TCE 005350598-02



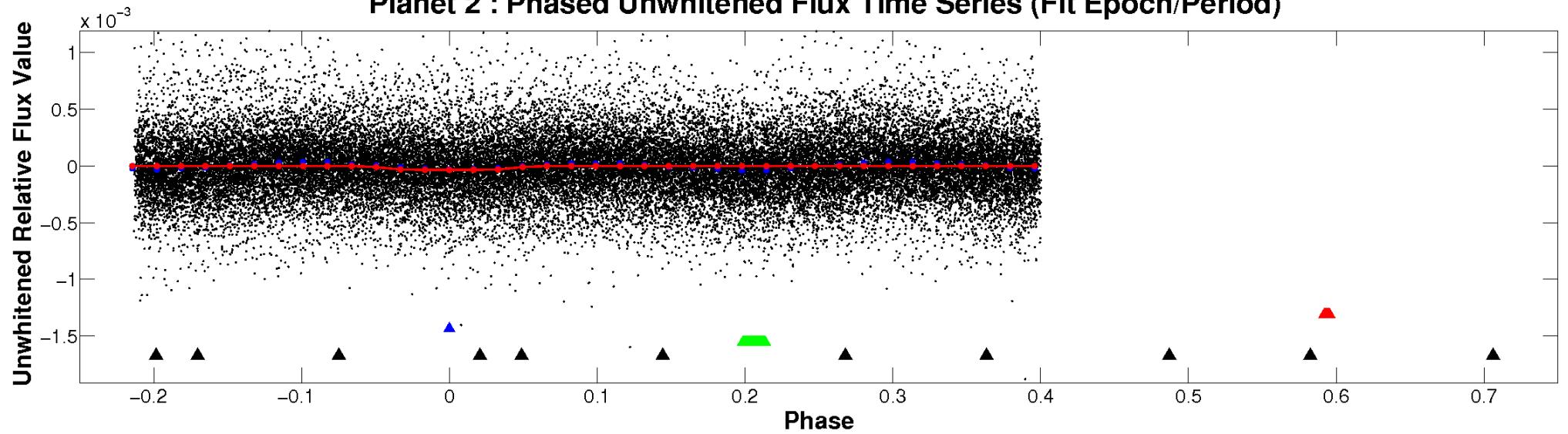
# ALT Odd/Even

TCE 005350598-02

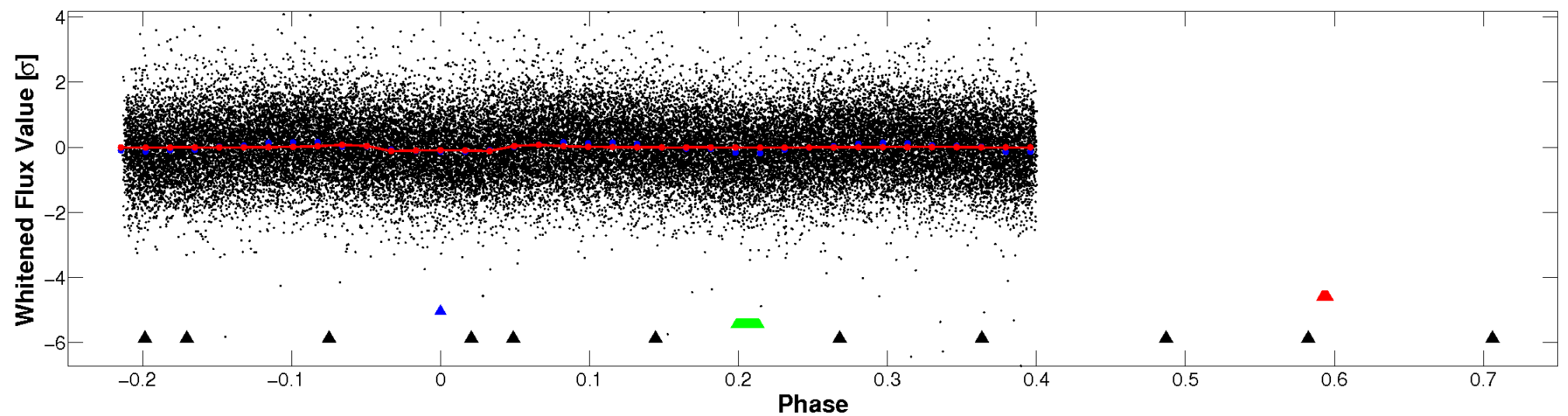


# Non-Whitened Vs. Whitened Light Curve

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



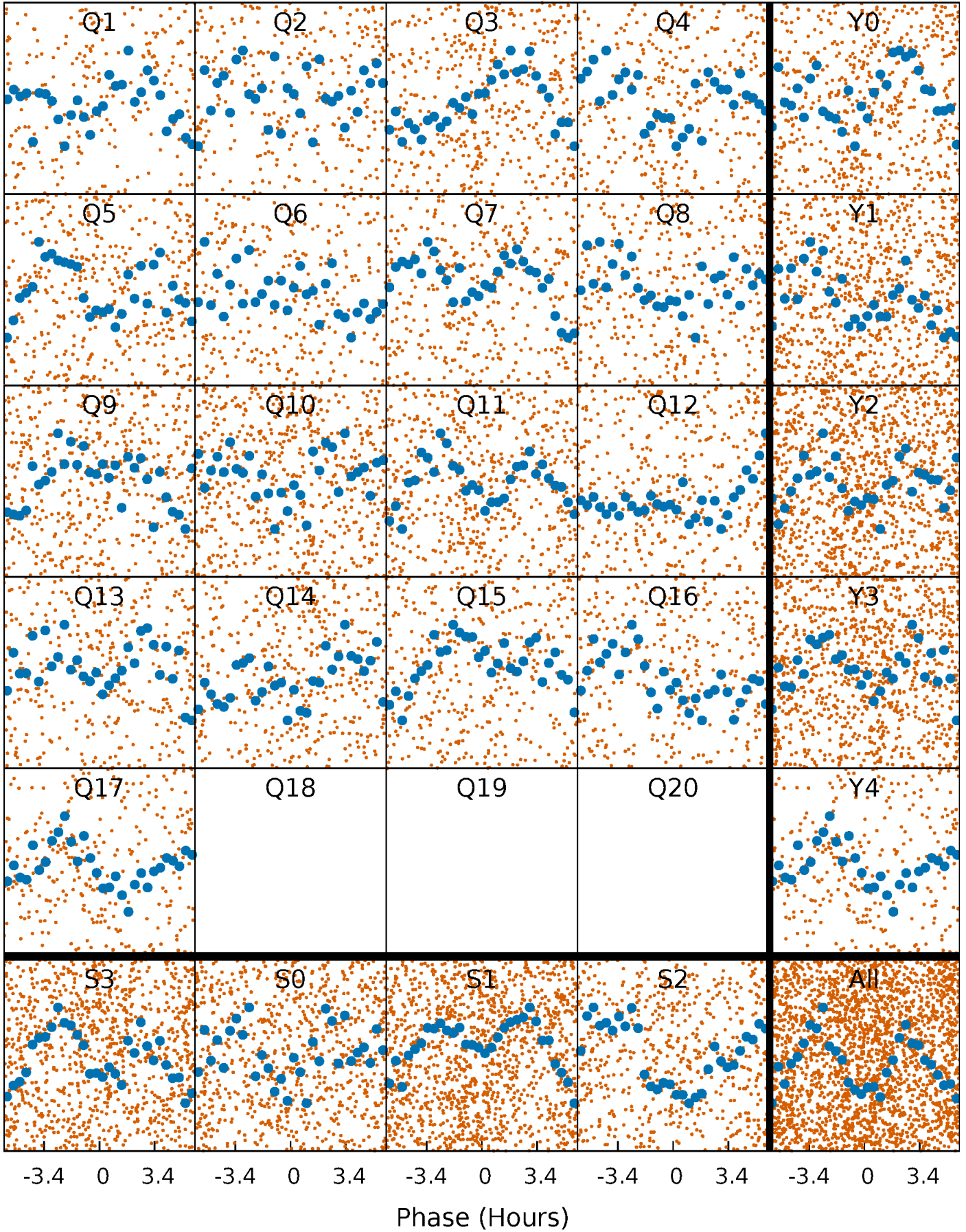
## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)





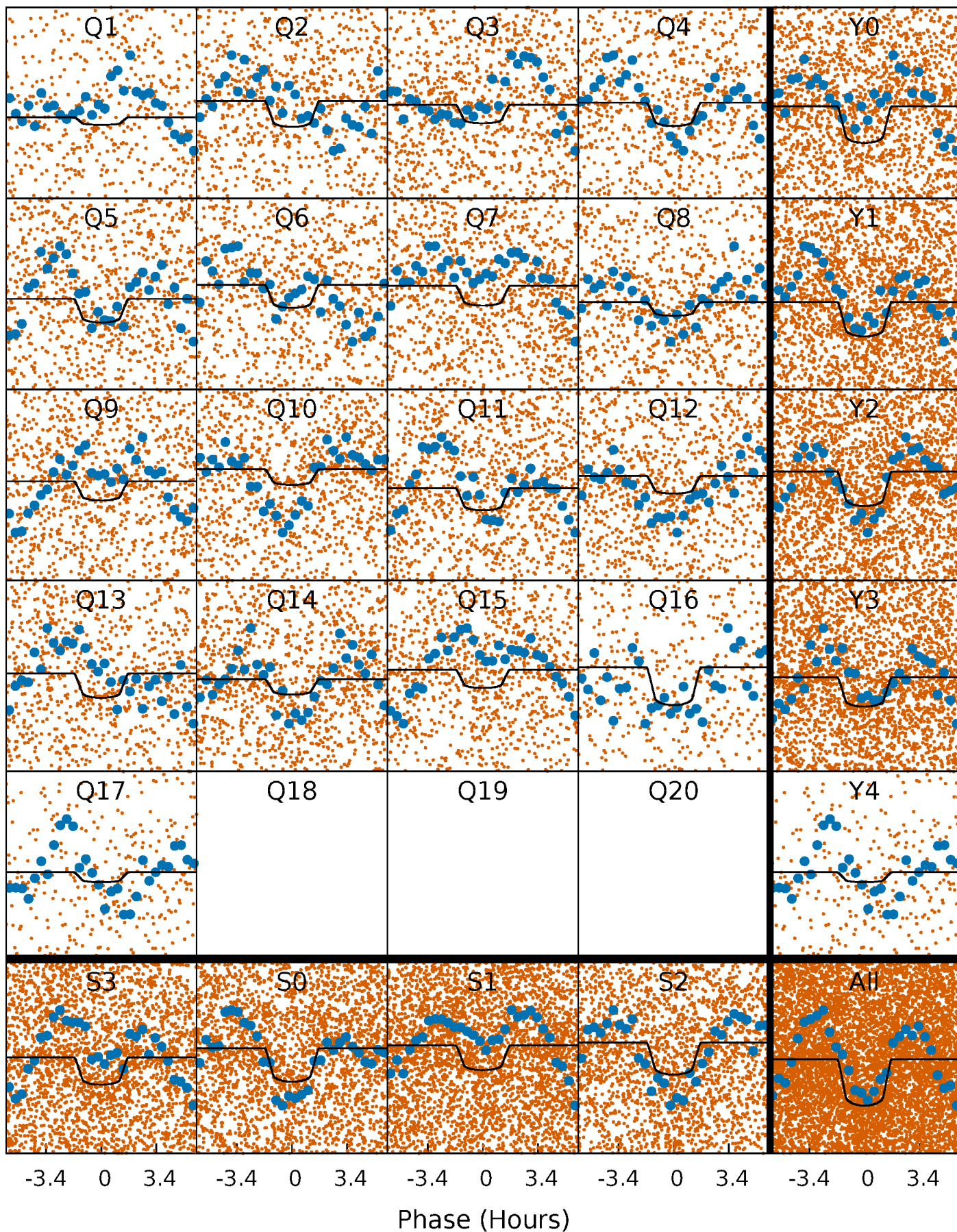
# PDC Quarter-Phased Transit Curves

TCE 005350598-02 P= 1.238633 Days  $T_0=131.688737$  (BKJD)



# DV Quarter-Phased Transit Curves

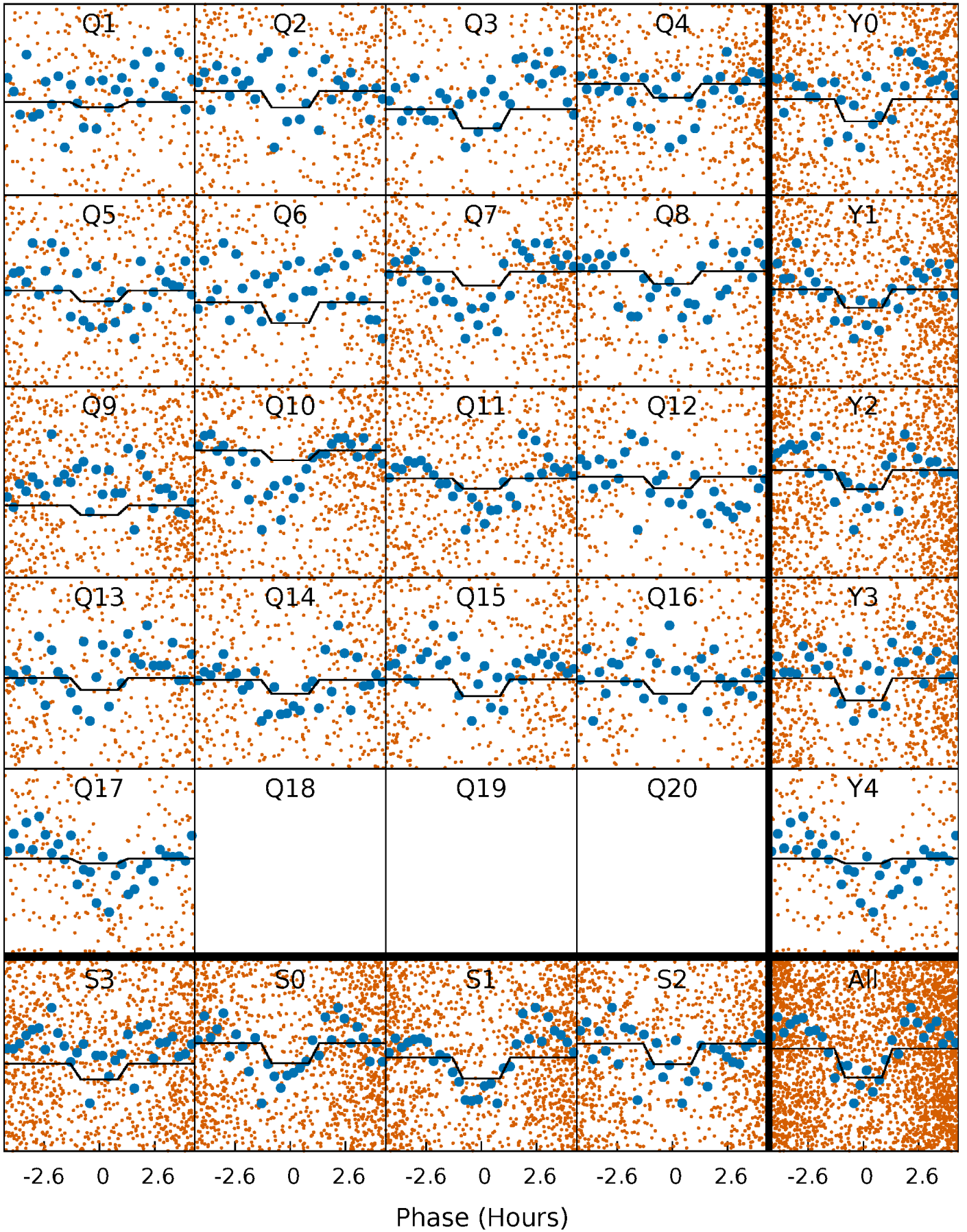
TCE 005350598-02 P= 1.238633 Days  $T_0=131.688737$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

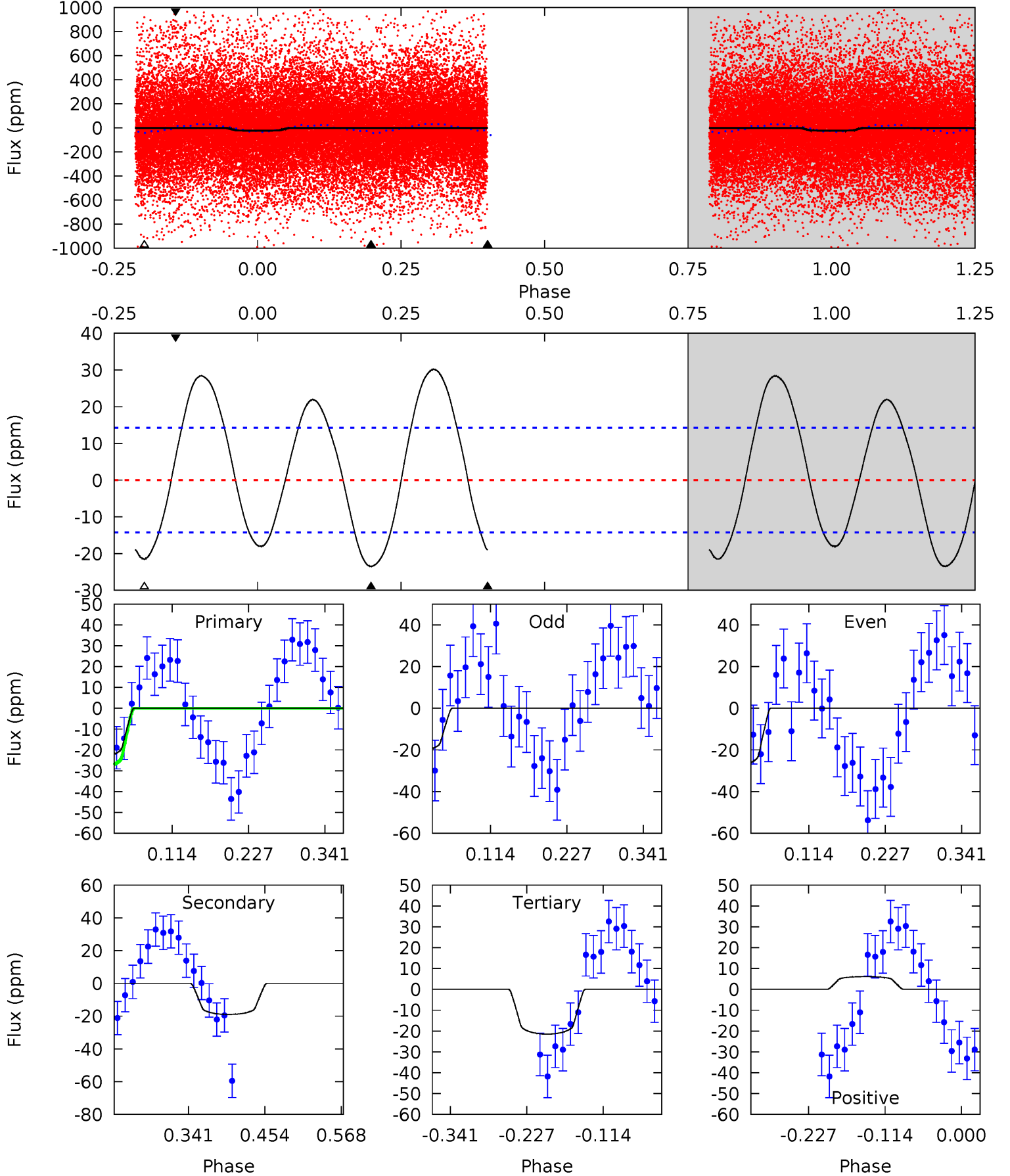
TCE 005350598-02 P= 1.238683 Days  $T_0=131.668306$  (BKJD)



# DV Model-Shift Uniqueness Test

005350598-02, P = 1.238633 Days, E = 130.450104 Days

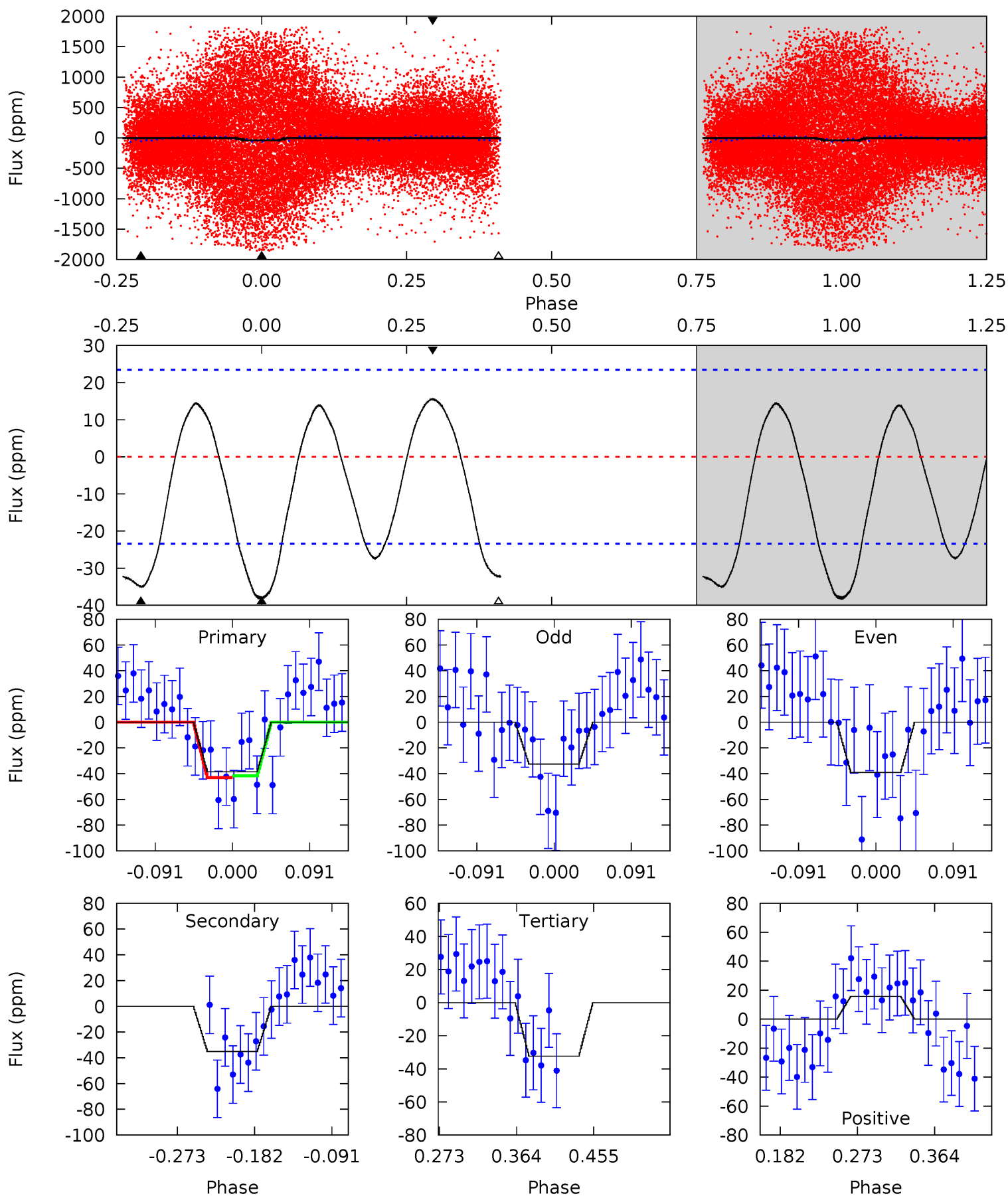
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.50	6.05	6.85	1.94	4.54	1.58	5.29	0.64	5.56	-0.80	4.11	1.18	0.82	0.56	1.47



# Alt Model-Shift Uniqueness Test

005350598-02, P = 1.238683 Days, E = 130.429623 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.54	6.89	6.33	3.09	4.58	1.69	2.98	1.21	4.45	0.56	3.80	0.60	0.72	0.29	0.12





### Stellar Parameters For KIC 005350598

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7709^{+218}_{-328}$	$3.746^{+0.467}_{-0.082}$	$-0.520^{+0.250}_{-0.300}$	$2.839^{+0.356}_{-1.335}$	$1.636^{+0.160}_{-0.374}$	$0.101^{+0.470}_{-0.026}$
	+3%/-4%	+12%/-2%	+48%/-58%	+13%/-47%	+10%/-23%	+467%/-26%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 005350598-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-19 \pm 3$	$1.82^{+0.51}_{-0.52}$	$4755^{+324}_{-597}$	$5951^{+932}_{-645}$	$2.214^{+2.006}_{-0.876}$
Alt.	$-35 \pm 5$	$1.68^{+0.54}_{-0.48}$	$4759^{+315}_{-576}$	$7469^{+1409}_{-1019}$	$4.838^{+4.418}_{-2.069}$

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

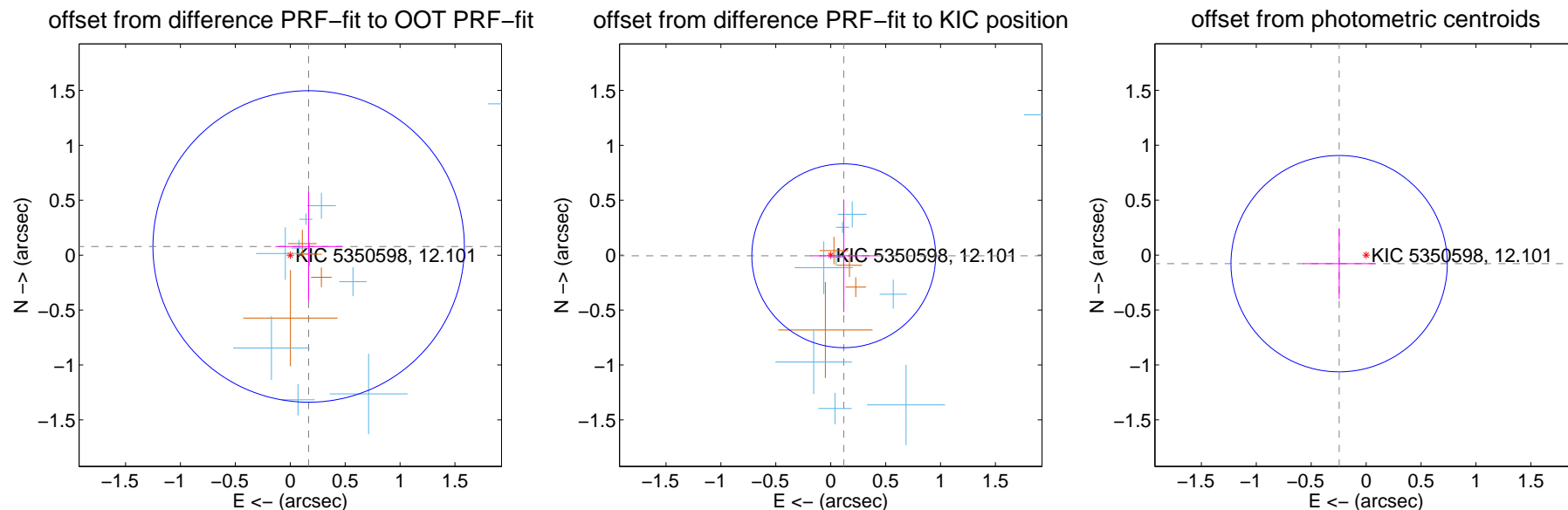
## DV Centroid Data

Supplemental centroid analysis for 005350598-02. Kepler magnitude: 12.10. Transit SNR 8.99

There are 9 quarters with good PRF difference image offsets

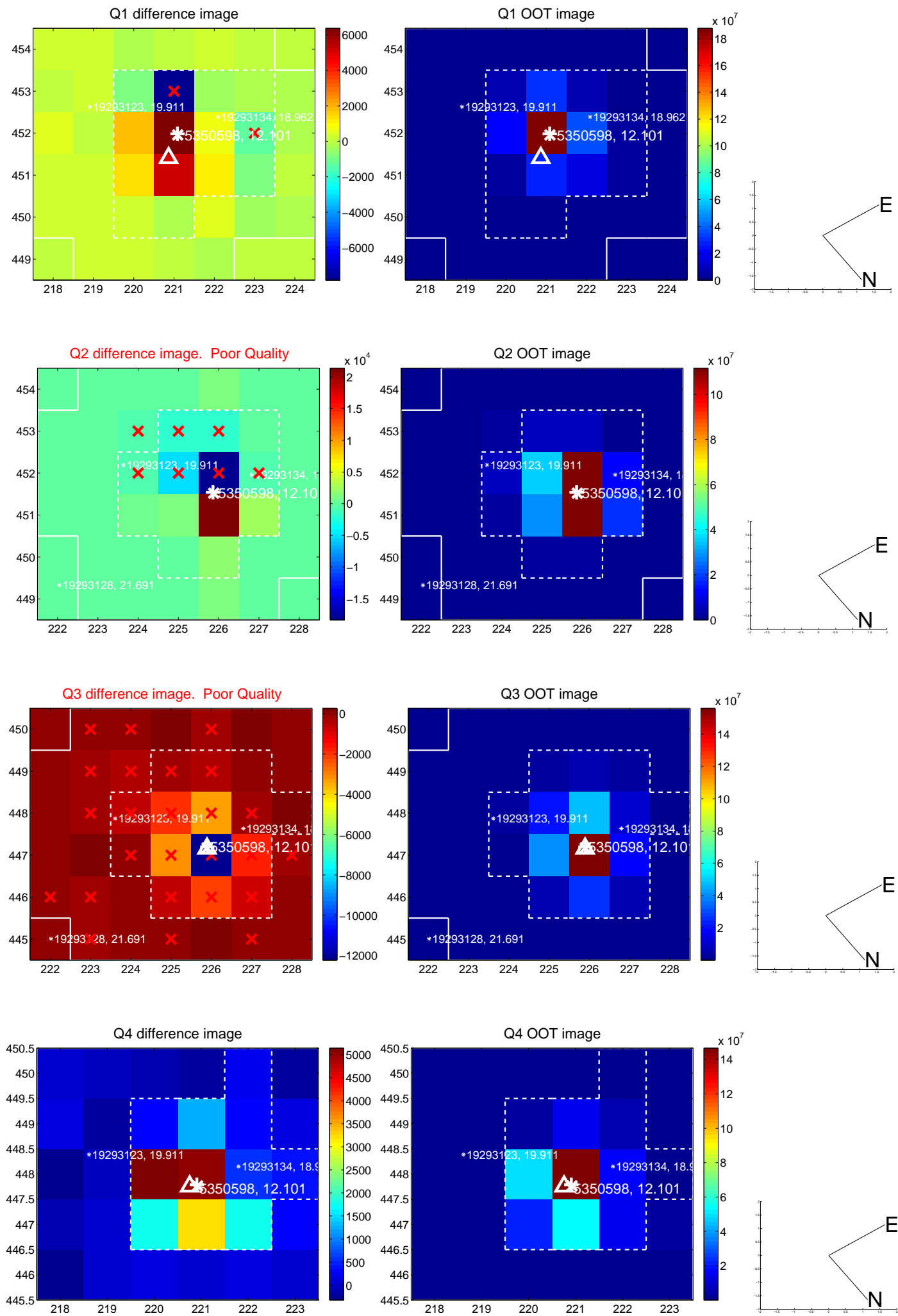
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.185 \pm 0.473$	0.39	$-0.167 \pm 0.303$	$0.079 \pm 0.497$
PRF-fit source offset from KIC position	$0.119 \pm 0.279$	0.42	$-0.118 \pm 0.301$	$-0.006 \pm 0.512$
photometric centroid source offset	$0.26 \pm 0.33$	0.79	$0.25 \pm 0.33$	$-0.08 \pm 0.32$

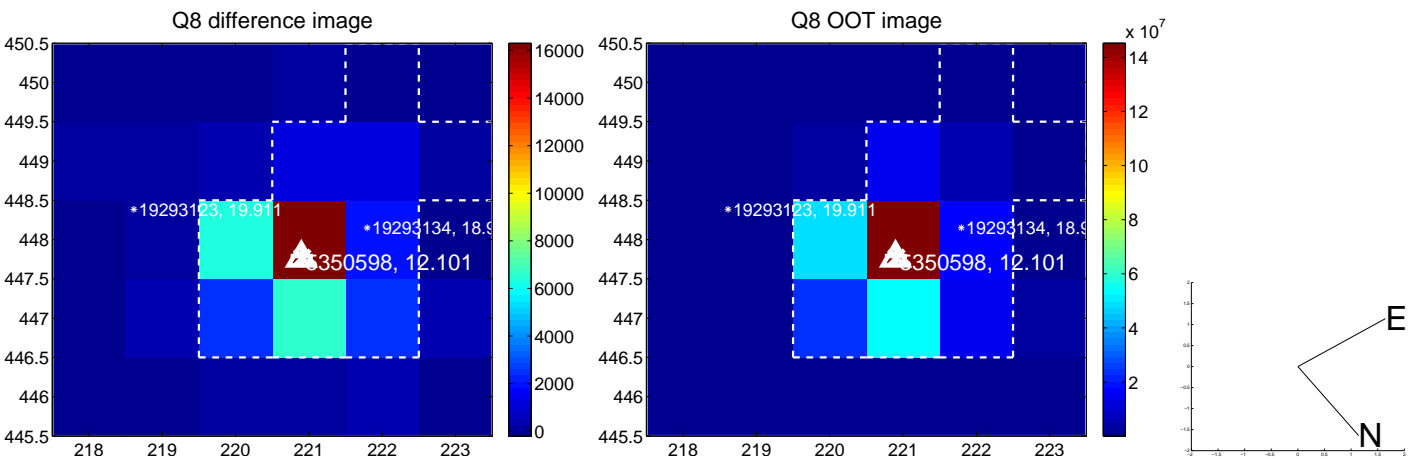
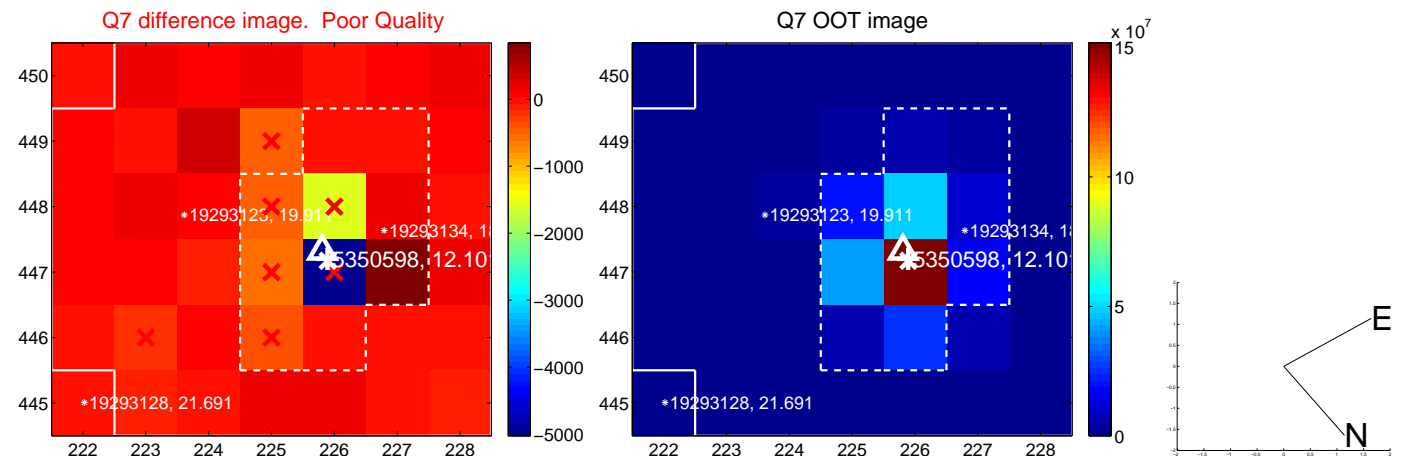
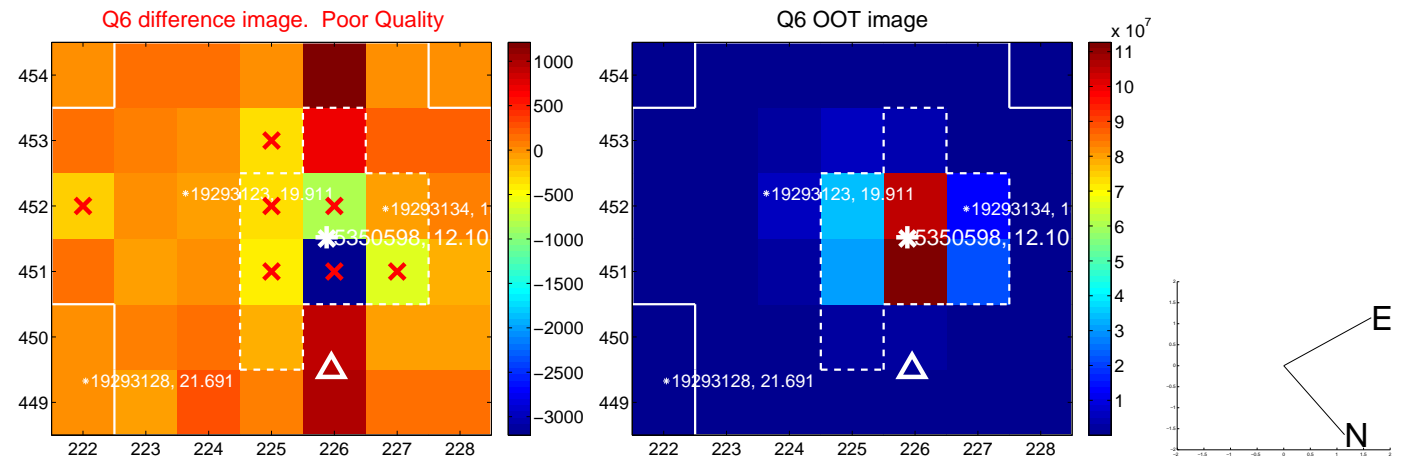
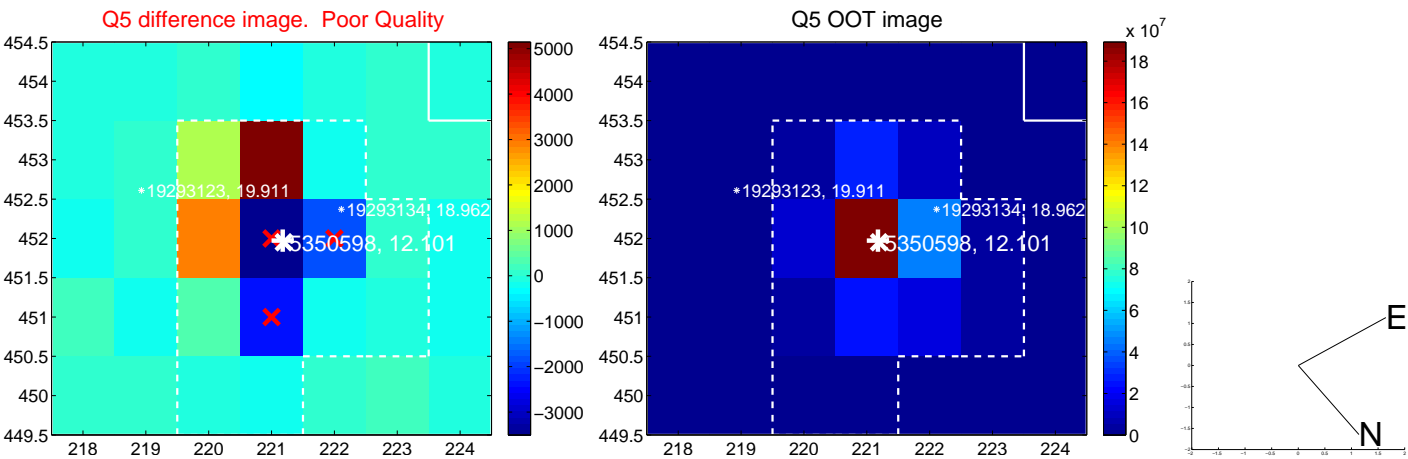


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

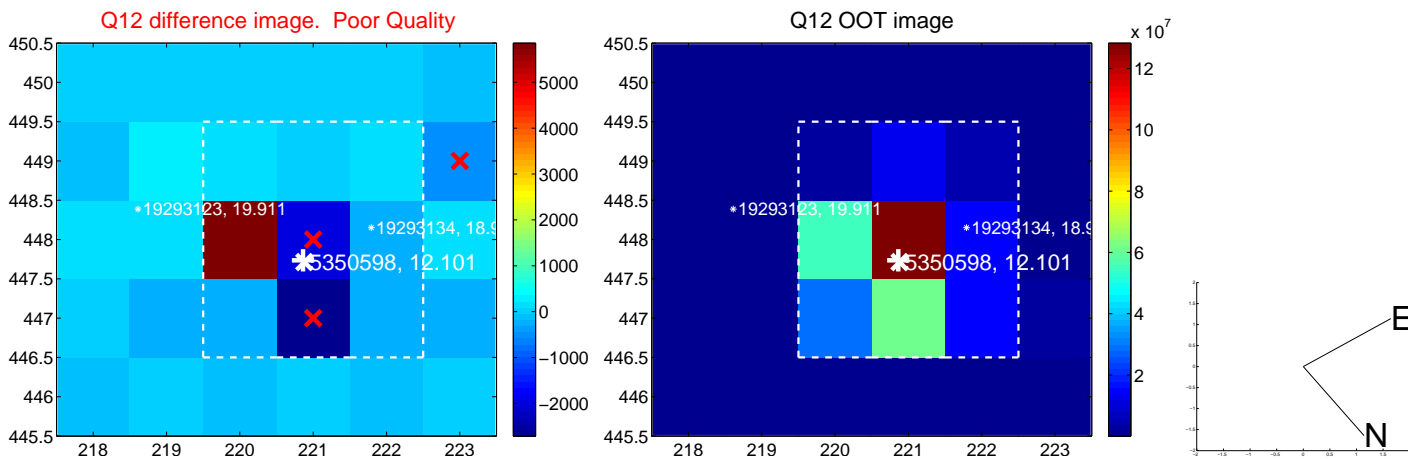
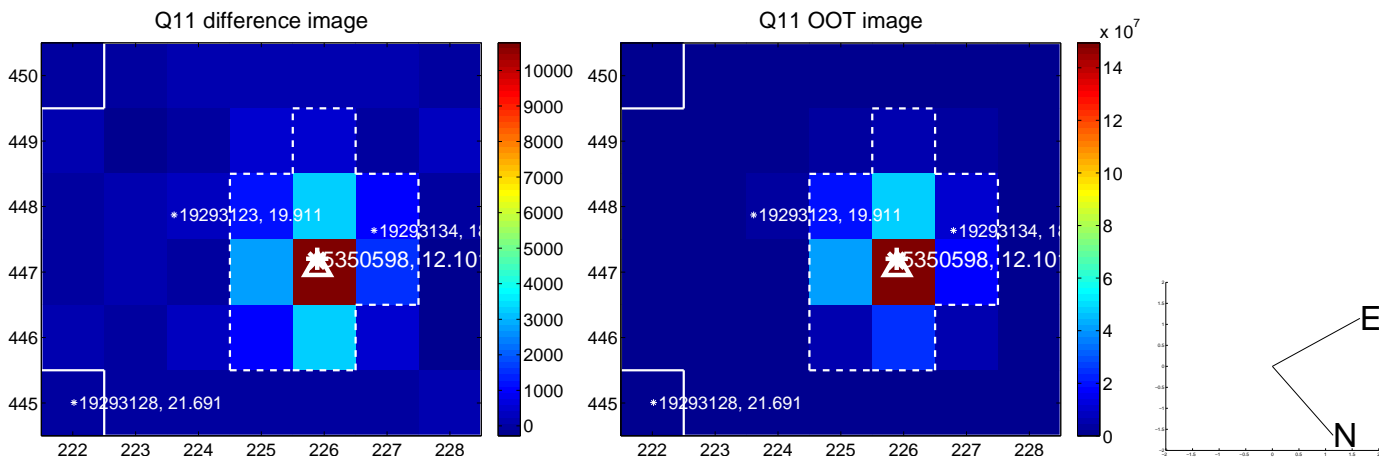
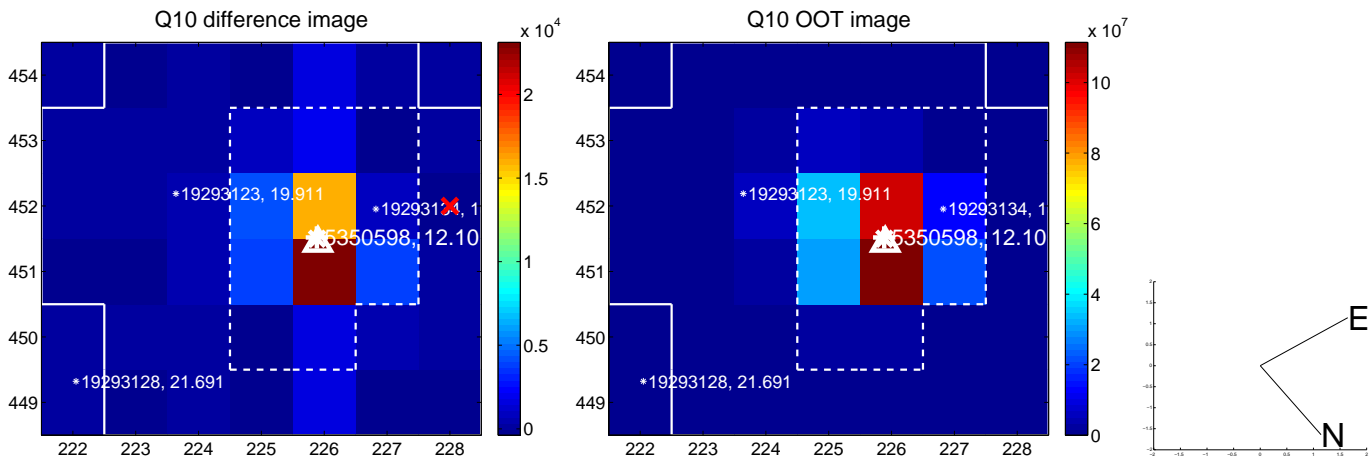
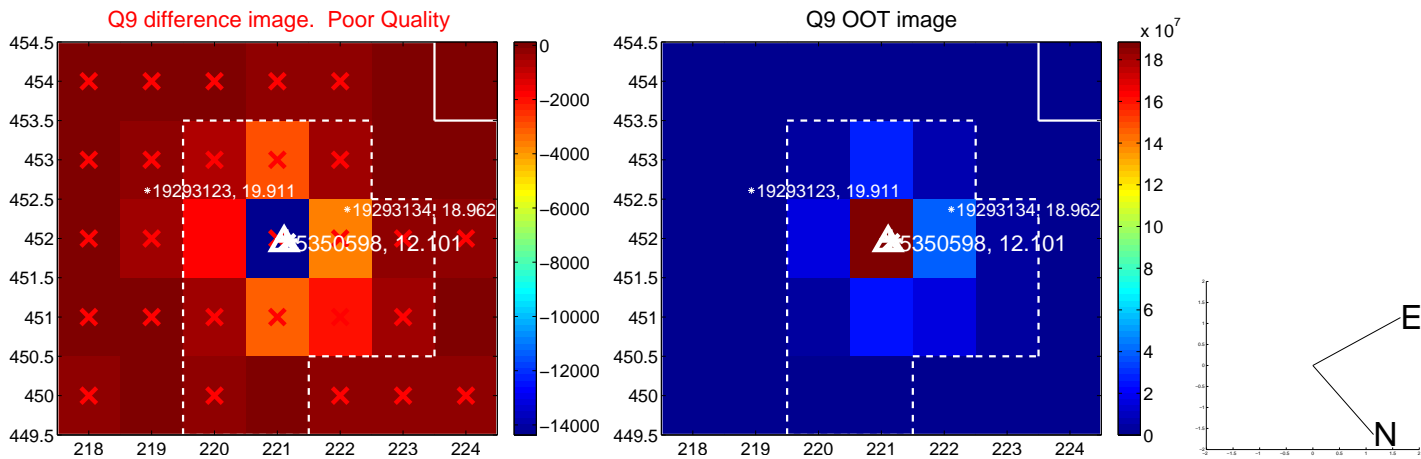
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

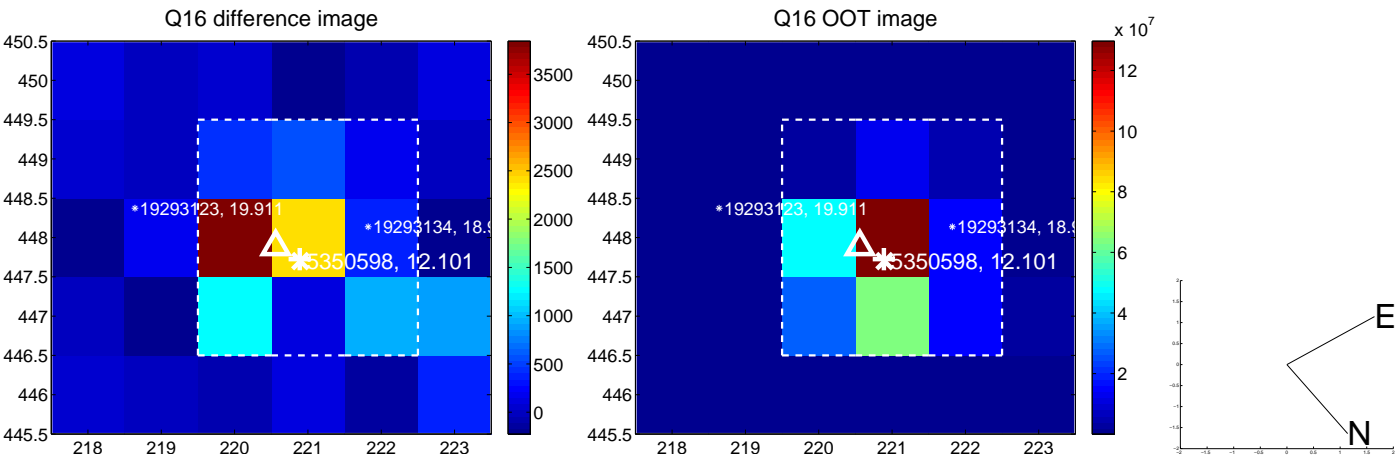
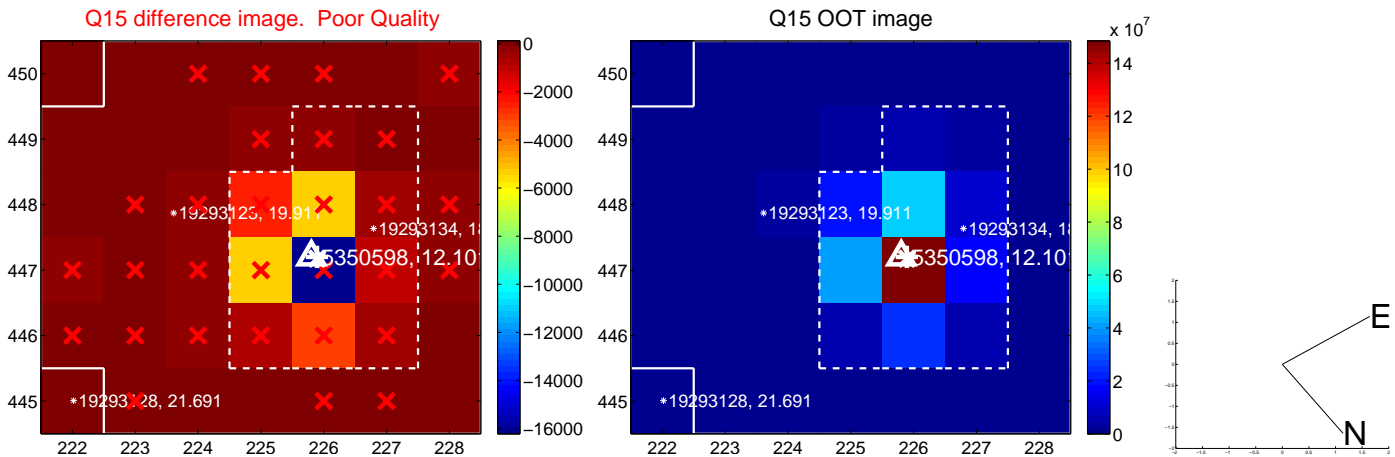
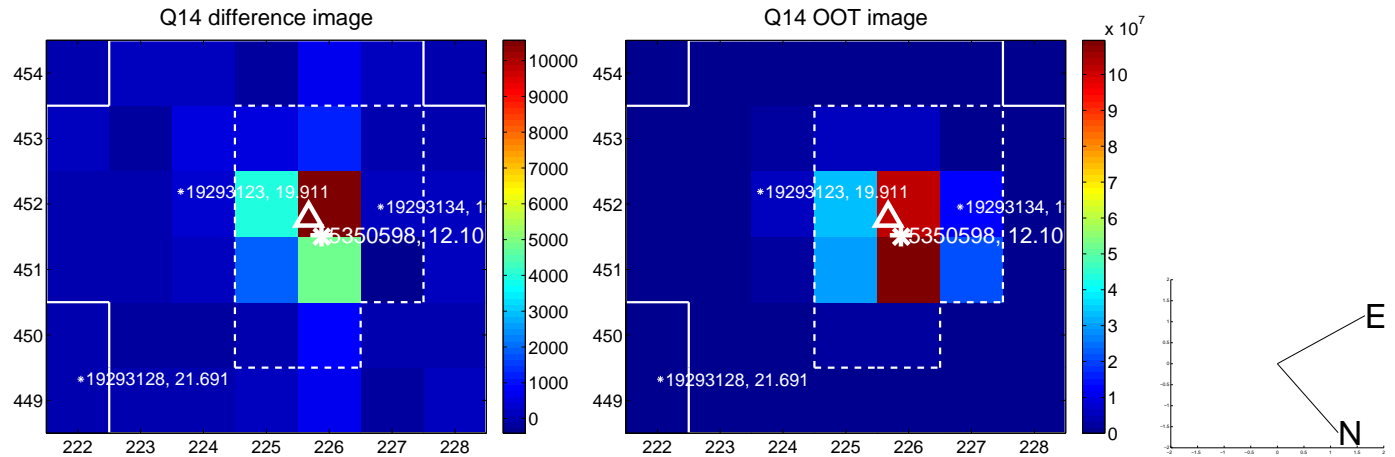
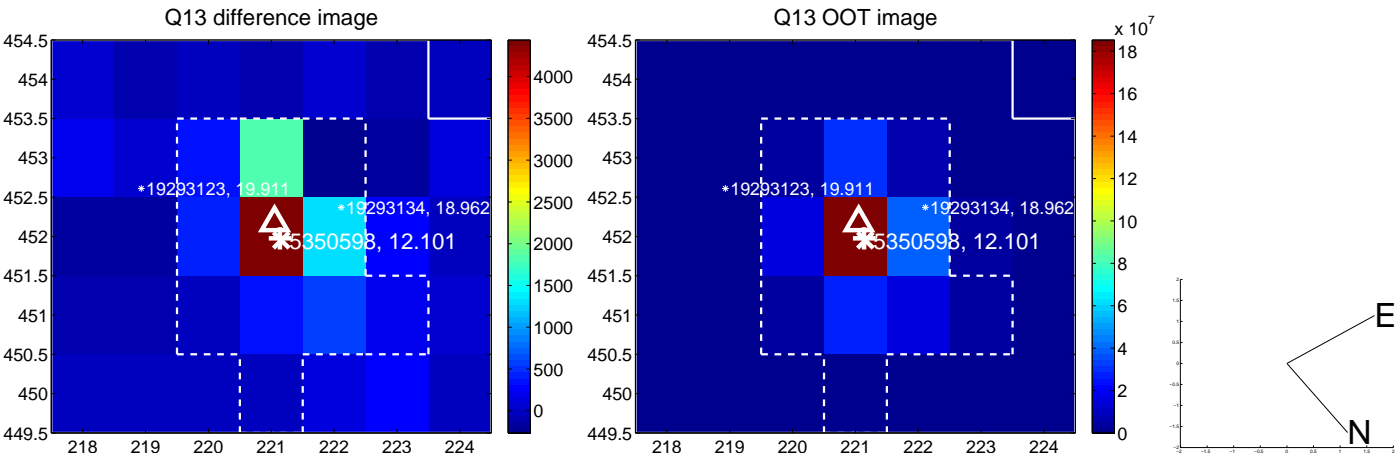


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

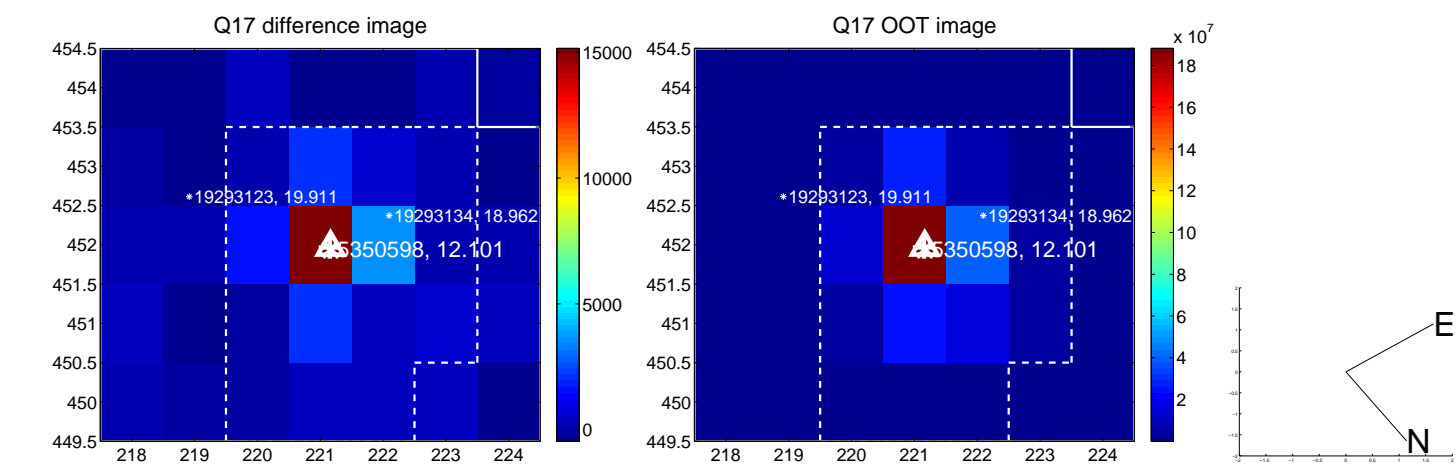




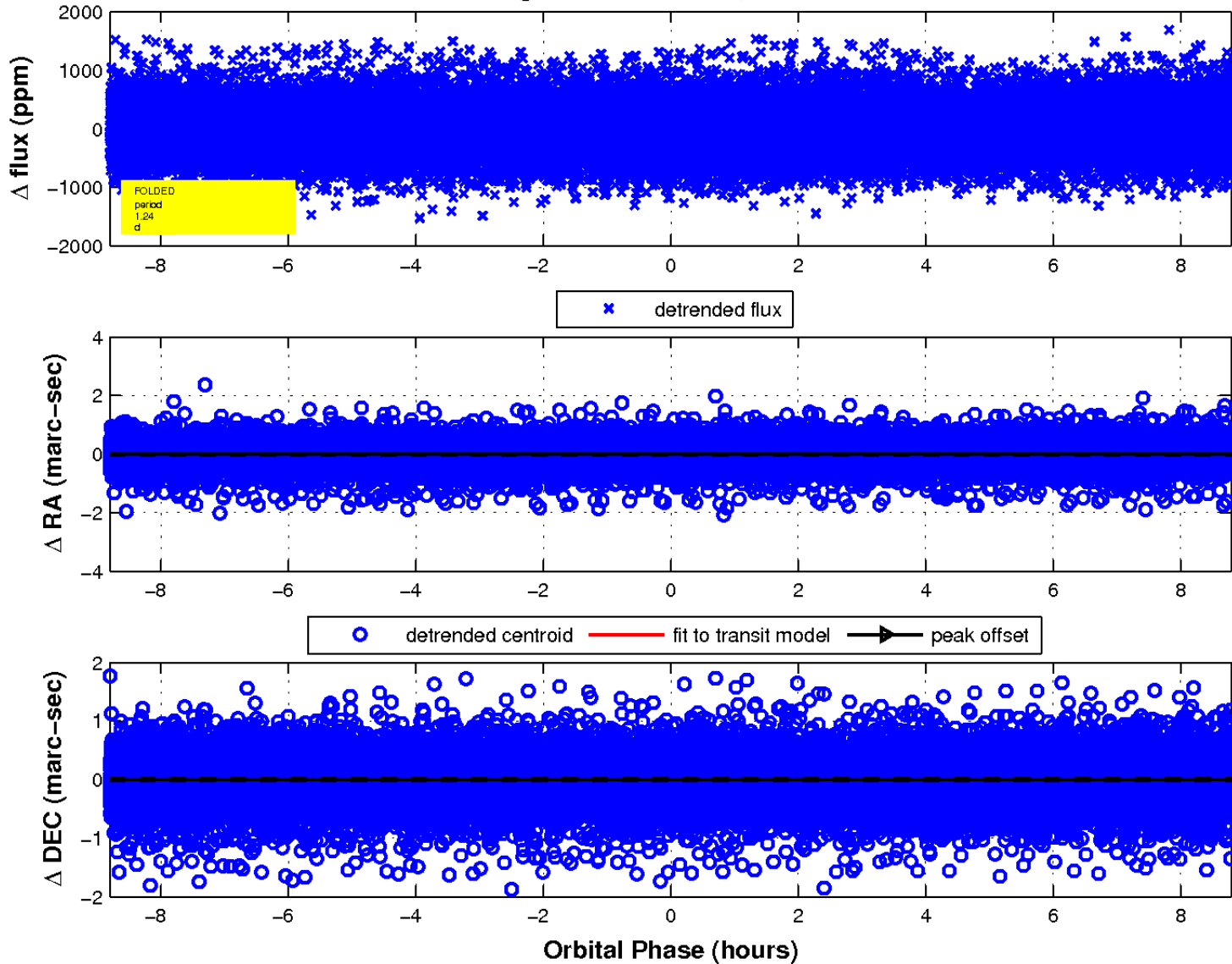
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



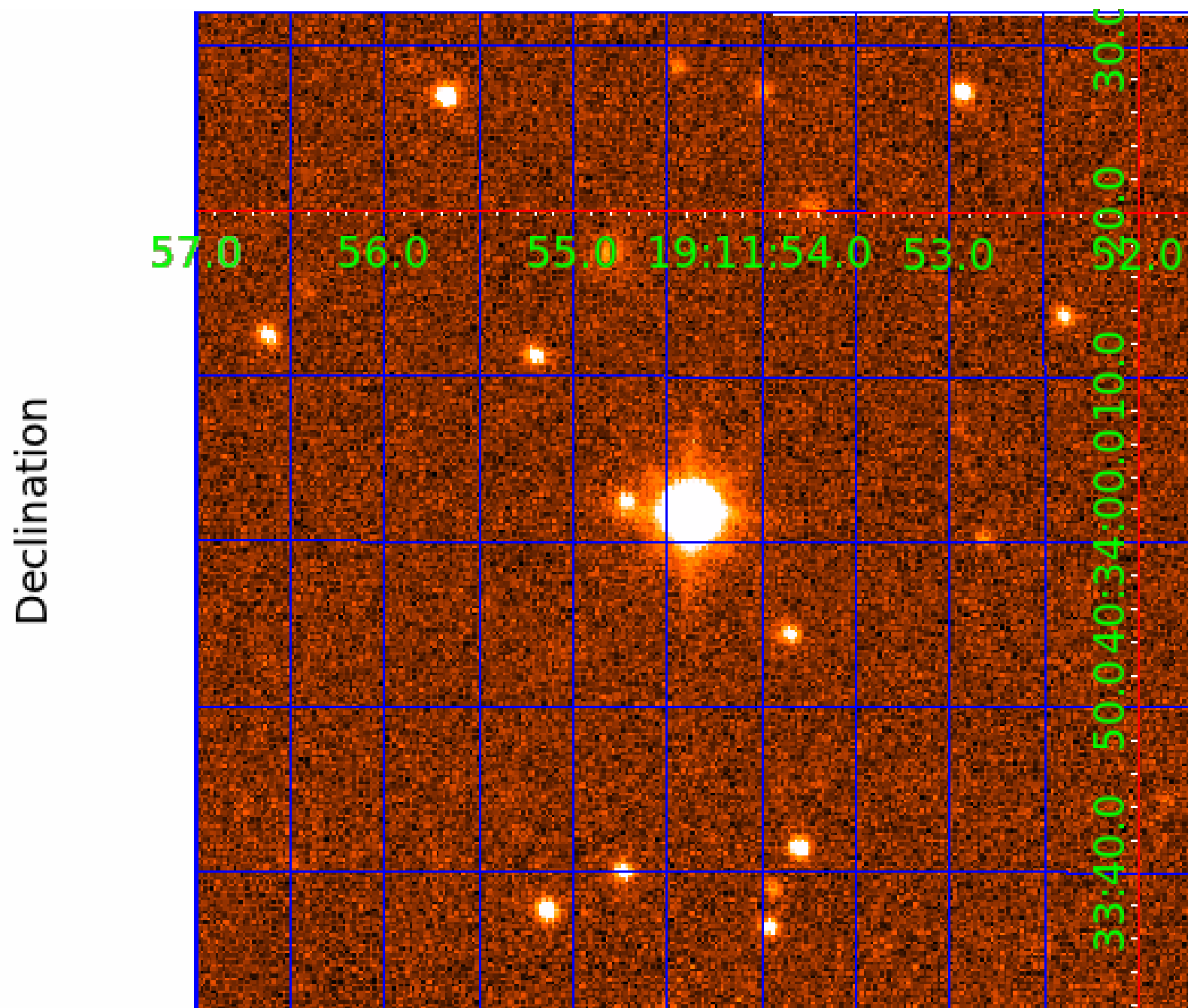
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 2 of 4



UKIRT Image



# KIC 005350598

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005350598-01	OBS	No	1.238637	132.421693	30.8	3.693	9.9	7.6	2.84	7709	1.83	36008.47
005350598-02	OBS	No	1.238633	131.688737	34.8	2.933	10.8	9.0	2.84	7709	2.01	36008.63
005350598-03	OBS	No	1.238649	131.934761	32.9	1.761	9.4	8.9	2.84	7709	1.89	36008.01

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005350598-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005350598-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
005350598-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD

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

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

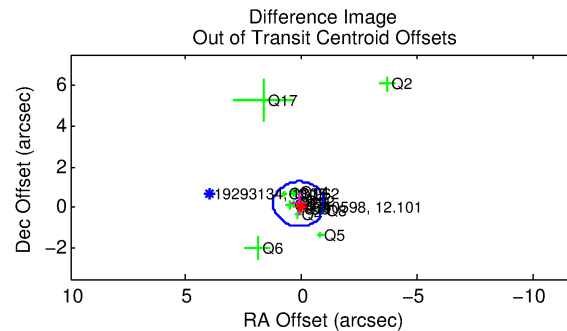
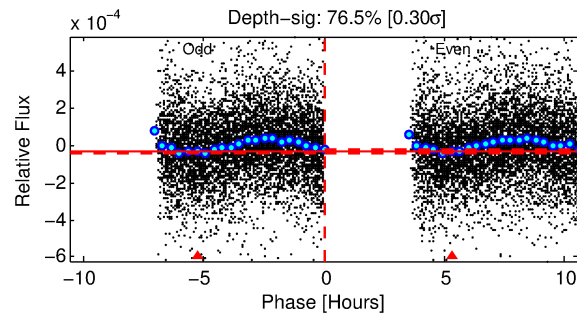
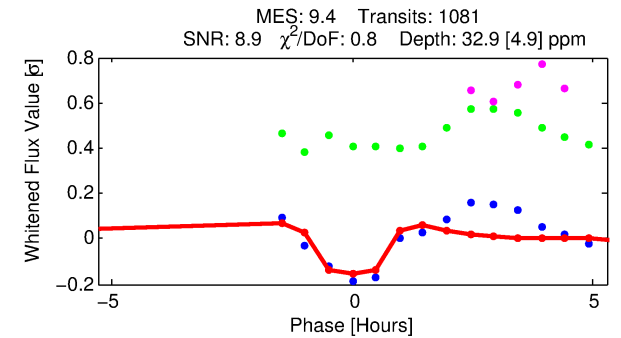
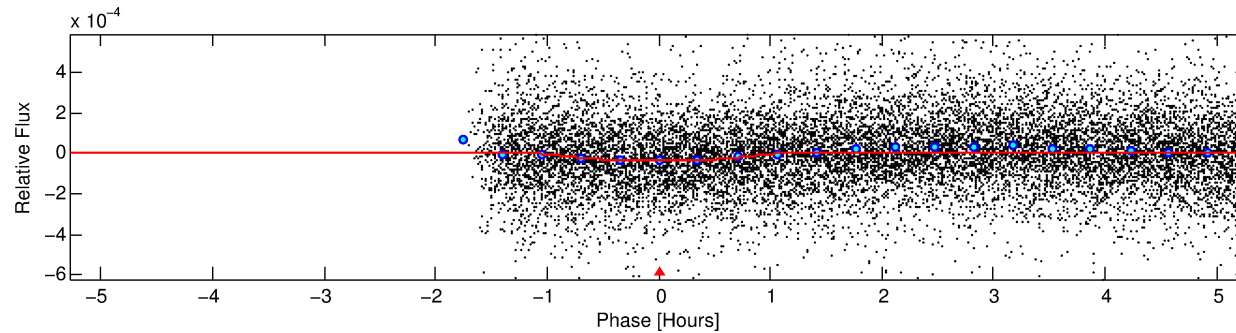
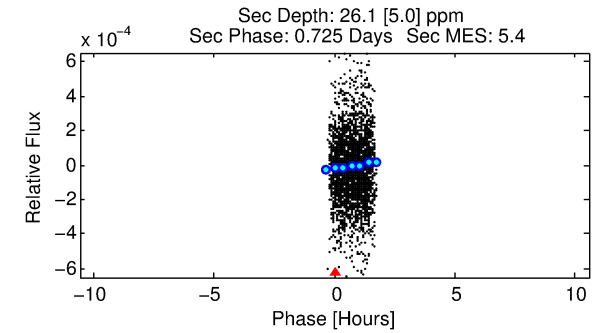
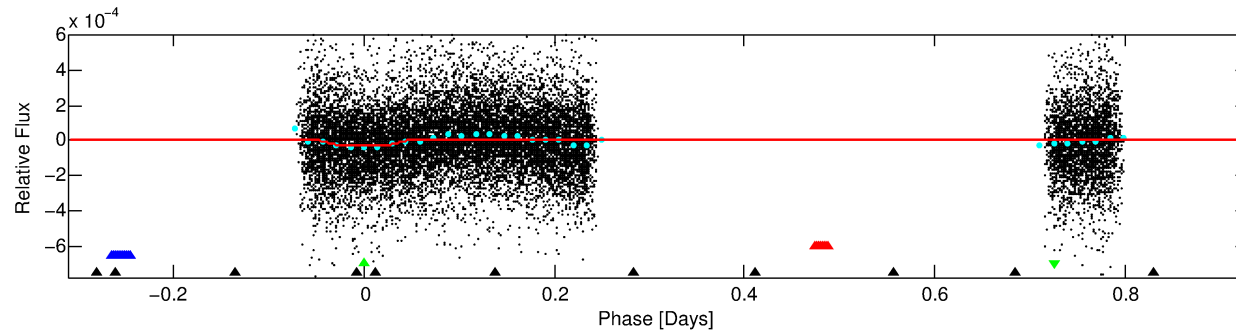
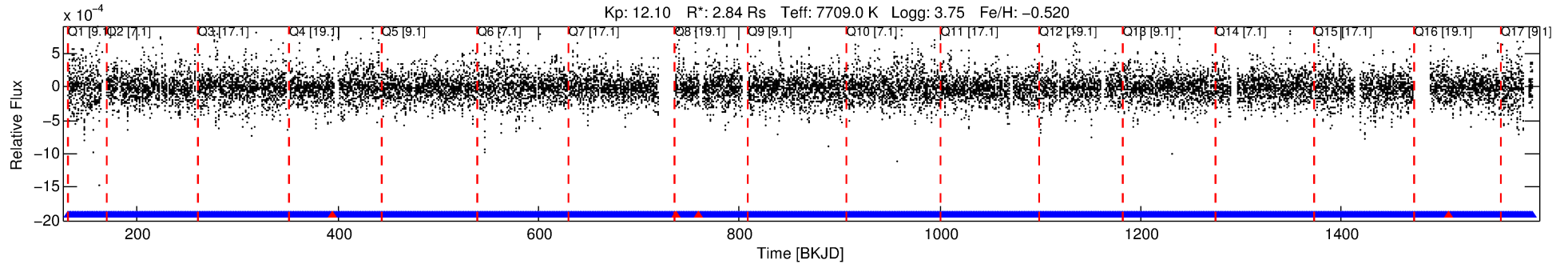
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005350598-03

No Significant Match Found

# DV One-Page Summary

KIC: 5350598 Candidate: 3 of 4 Period: 1.239 d



## DV Fit Results:

Period = 1.23865 [0.00001] d  
Epoch = 131.9348 [0.0018] BKJD  
Rp/R\* = 0.0061 [0.0016]  
a/R\* = 2.59 [3.48]  
b = 0.90 [0.34]  
Seff = 36008.02 [28832.19]  
Teq = 3513 [703] K  
Rp = 1.89 [1.02] Re  
a = 0.0266 [0.0127] AU  
Ag = 2.84 [2.72] [0.68σ]  
Teffp = 7052 [1020] K [2.86σ]

## DV Diagnostic Results:

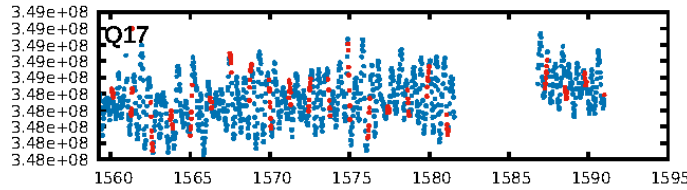
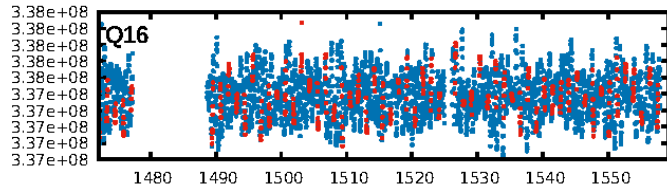
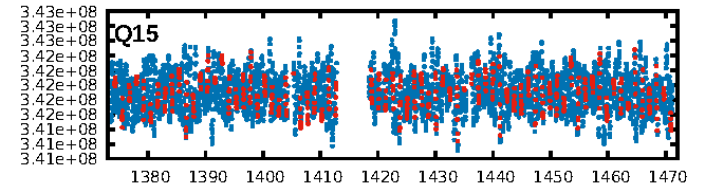
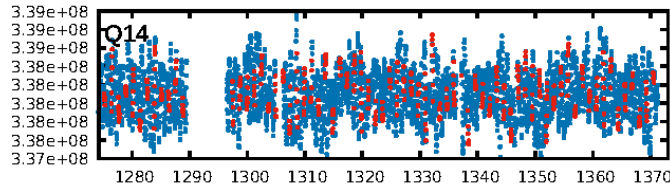
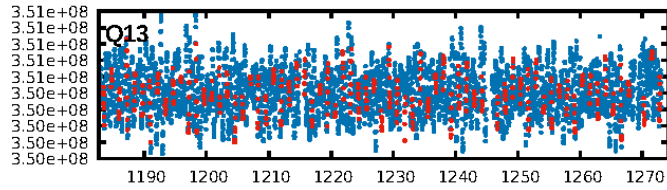
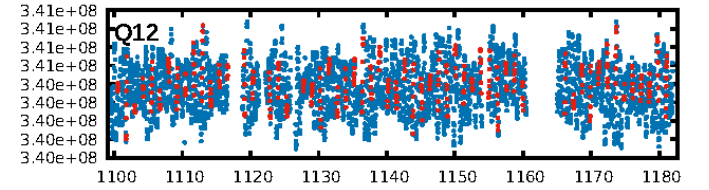
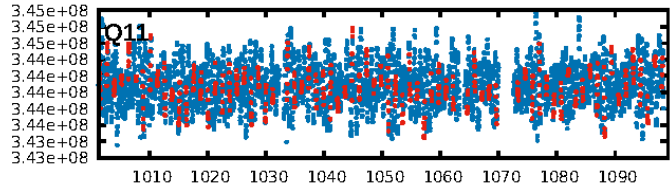
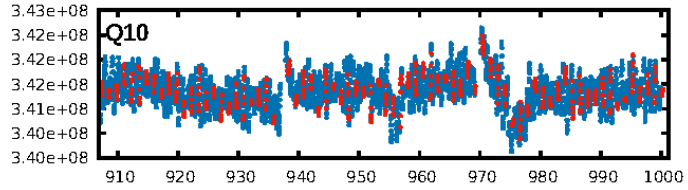
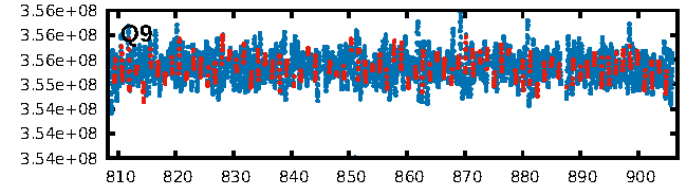
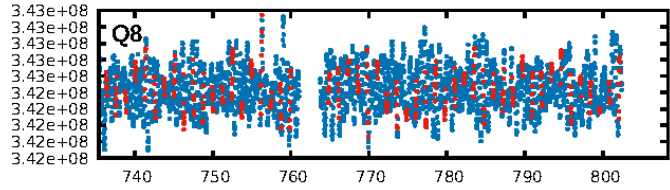
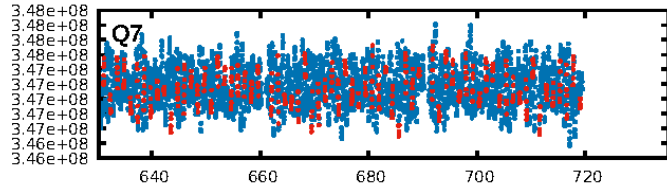
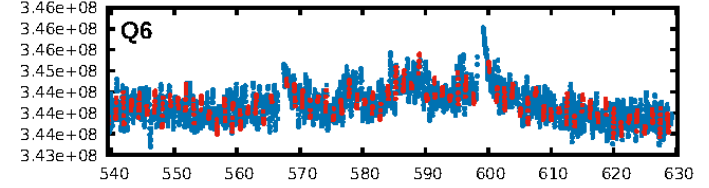
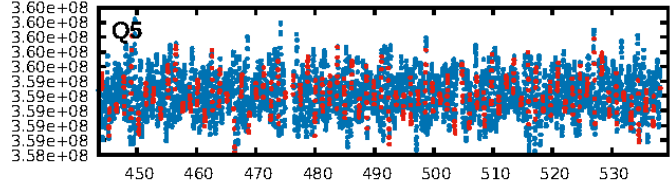
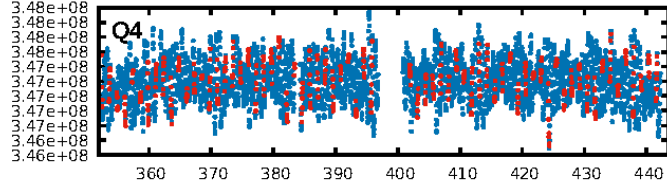
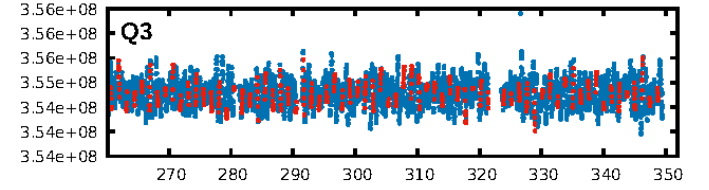
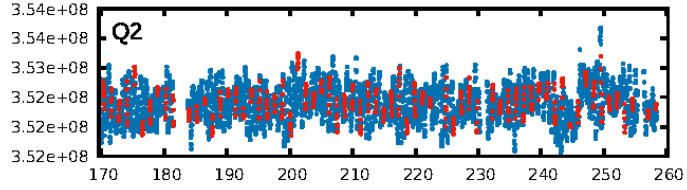
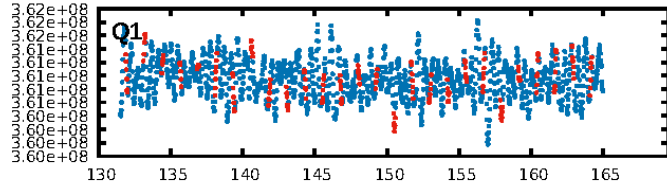
ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: 100.0% [615.64σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.90e-14  
RollingBand-fgt: 1.00 [1029/1033]  
GhostDiagnostic-chr: 1.101  
Centroid-sig: 10.3%  
Centroid-so: 0.411 arcsec [0.97σ]  
OotOffset-rm: 0.209 arcsec [0.57σ]  
OotOffset-st: 4/4/3/5 [16]  
KicOffset-rm: 0.174 arcsec [0.60σ]  
KicOffset-st: 4/4/3/5 [16]  
DiffImageQuality-fgm: 0.75 [12/16]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 15:46:57 Z

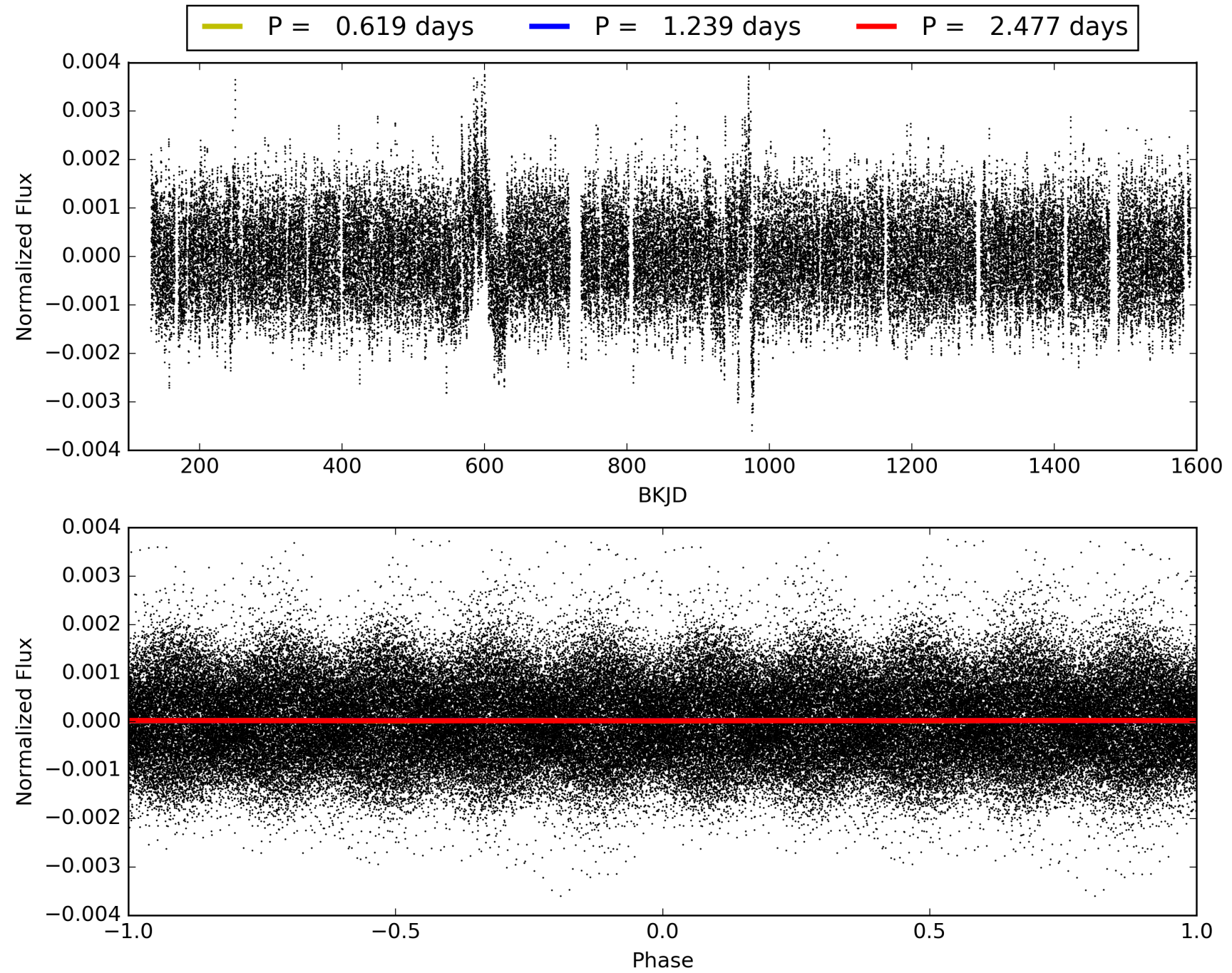
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



## TCE 005350598-03, PDC Light Curves

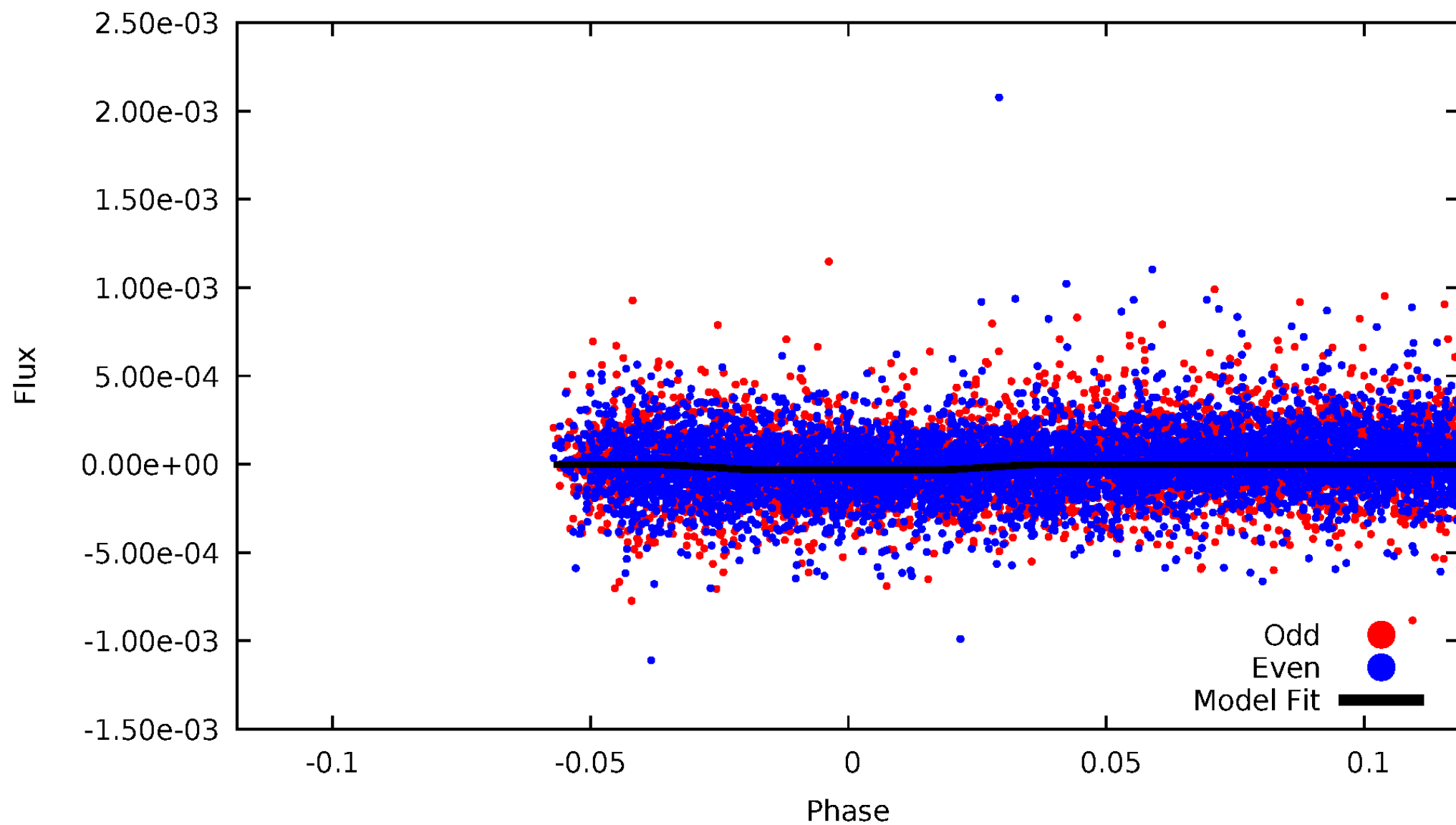


# TCE 005350598-03



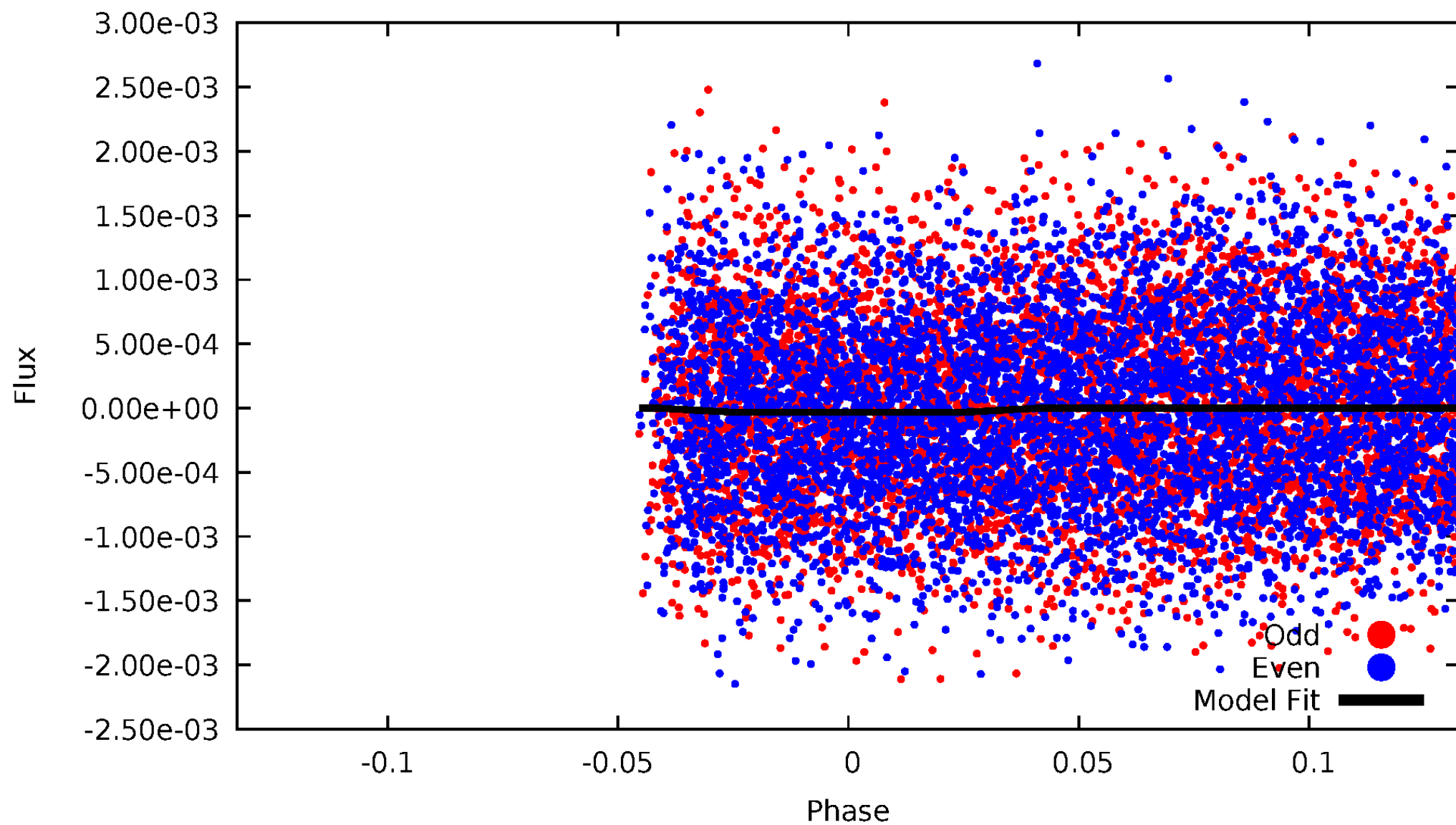
# DV Odd/Even

TCE 005350598-03



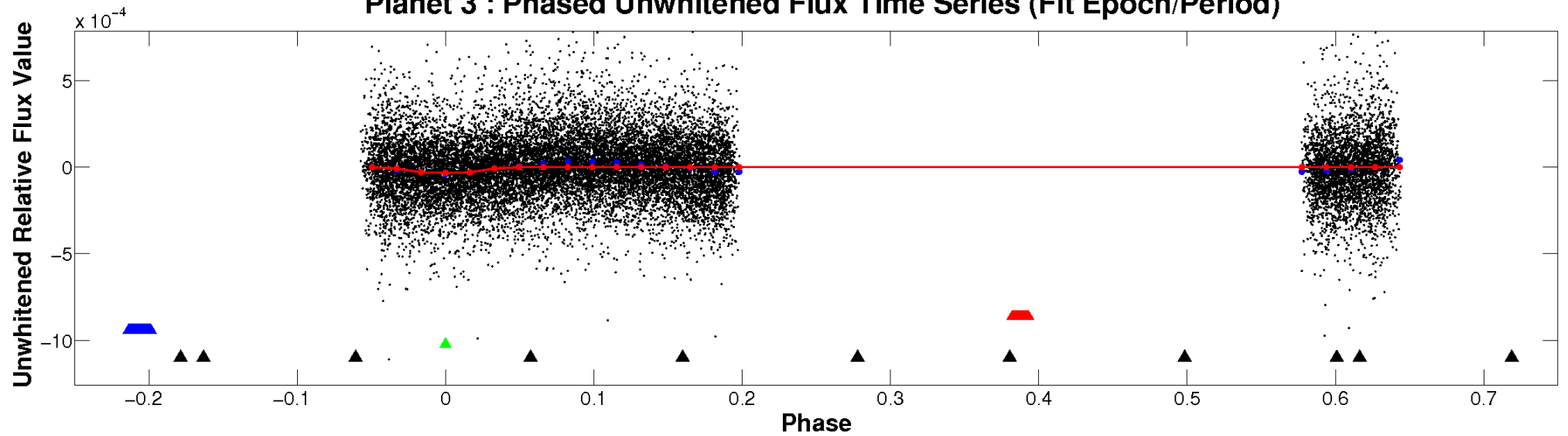
# ALT Odd/Even

TCE 005350598-03

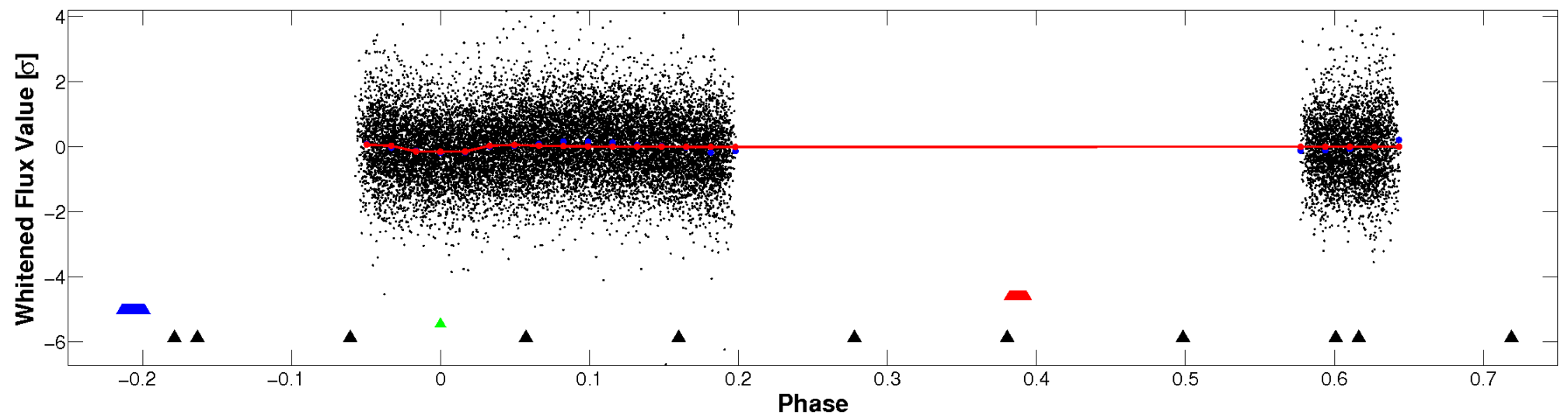


# Non-Whitened Vs. Whitened Light Curve

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



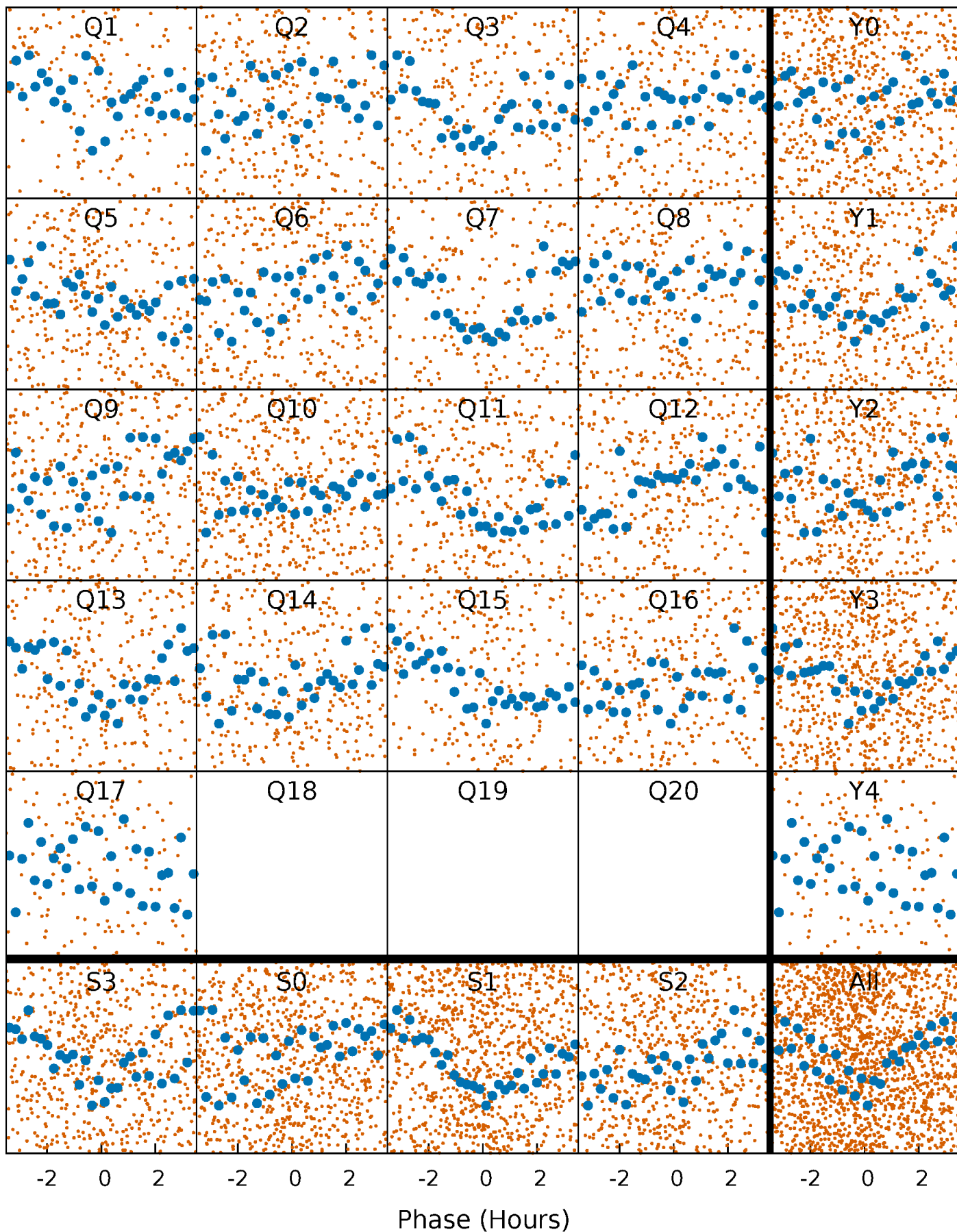
## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)





# PDC Quarter-Phased Transit Curves

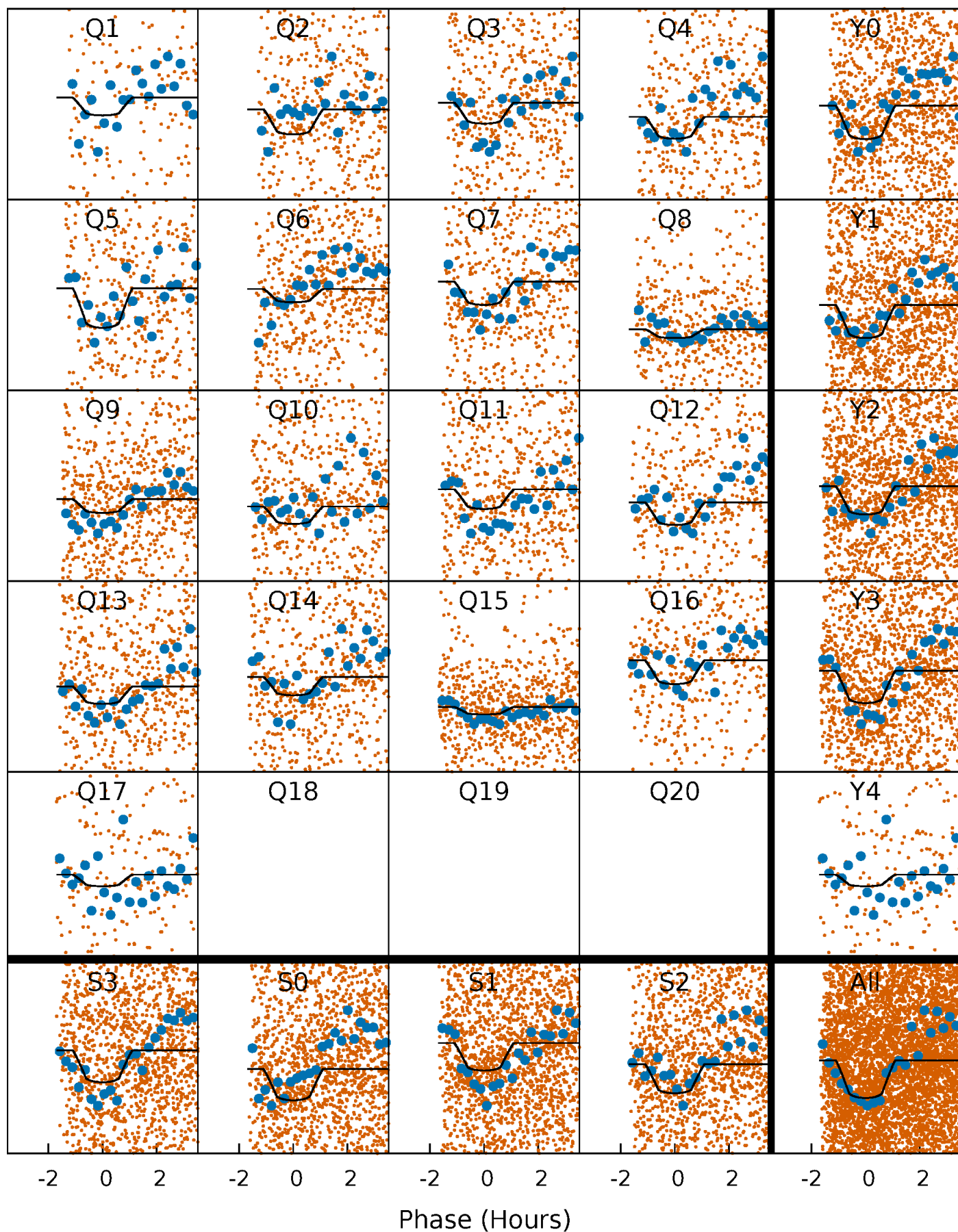
TCE 005350598-03 P= 1.238649 Days  $T_0=131.934761$  (BKJD)





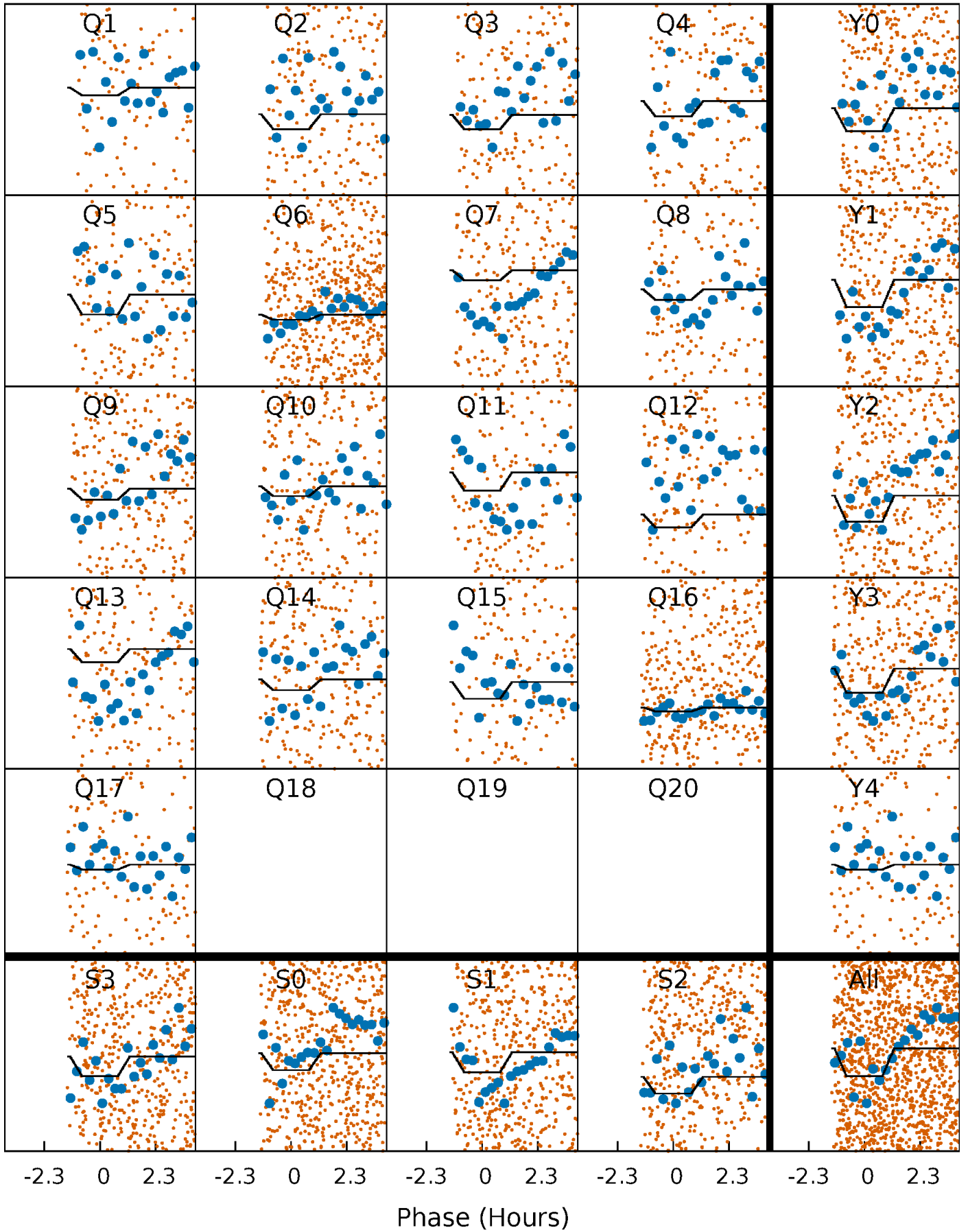
# DV Quarter-Phased Transit Curves

TCE 005350598-03   P= 1.238649 Days    $T_0=131.934761$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

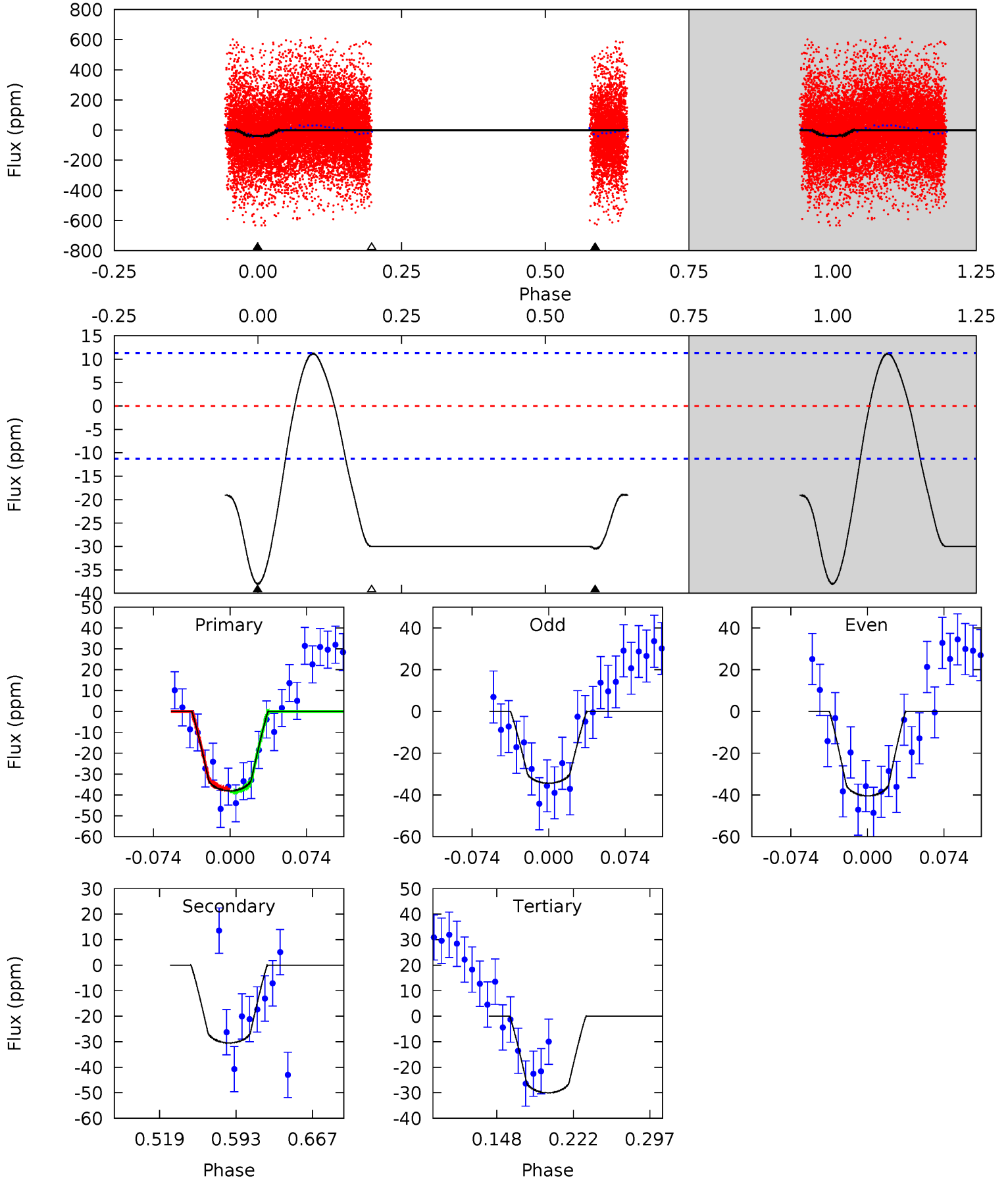
TCE 005350598-03     $P = 1.238646$  Days     $T_0 = 131.922912$  (BKJD)



# DV Model-Shift Uniqueness Test

005350598-03, P = 1.238649 Days, E = 130.696112 Days

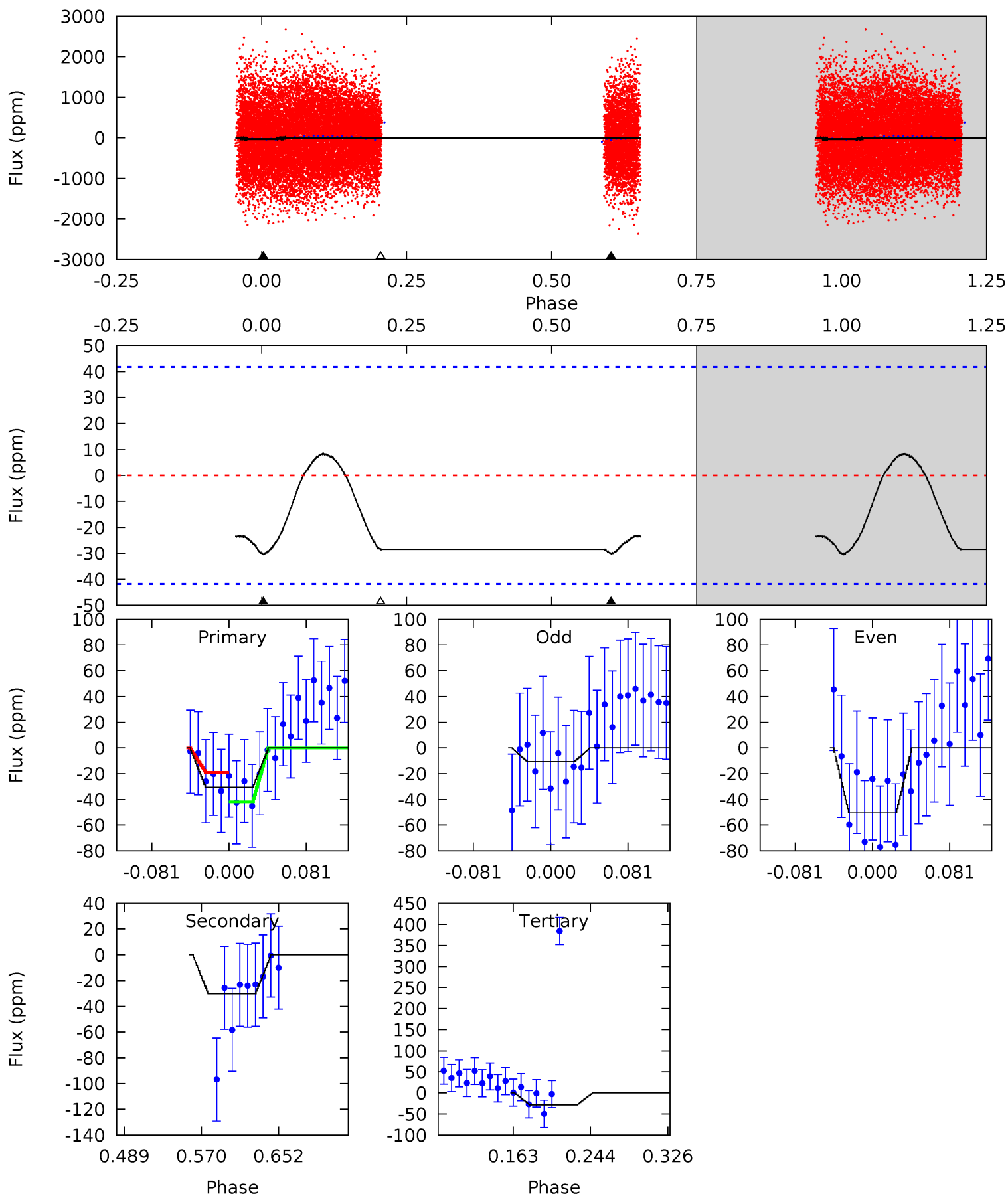
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.6	12.5	12.3	0	4.63	1.79	5.72	3.28	15.6	0.20	12.5	1.25	0.89	0.23	0.27



# Alt Model-Shift Uniqueness Test

005350598-03, P = 1.238646 Days, E = 130.684266 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.37	3.34	3.15	0	4.61	1.74	1.38	0.21	3.37	0.19	3.34	2.15	0.67	0.22	1.14



### Stellar Parameters For KIC 005350598

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7709^{+218}_{-328}$	$3.746^{+0.467}_{-0.082}$	$-0.520^{+0.250}_{-0.300}$	$2.839^{+0.356}_{-1.335}$	$1.636^{+0.160}_{-0.374}$	$0.101^{+0.470}_{-0.026}$
	+3%/-4%	+12%/-2%	+48%/-58%	+13%/-47%	+10%/-23%	+467%/-26%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 005350598-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-30 \pm 2$	$1.74^{+0.58}_{-0.58}$	$4774^{+317}_{-591}$	$7044^{+1467}_{-902}$	$3.943^{+4.566}_{-1.695}$
Alt.	$-30 \pm 9$	$1.63^{+0.60}_{-0.54}$	$4735^{+358}_{-548}$	$7171^{+1751}_{-1153}$	$4.193^{+5.692}_{-2.081}$

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



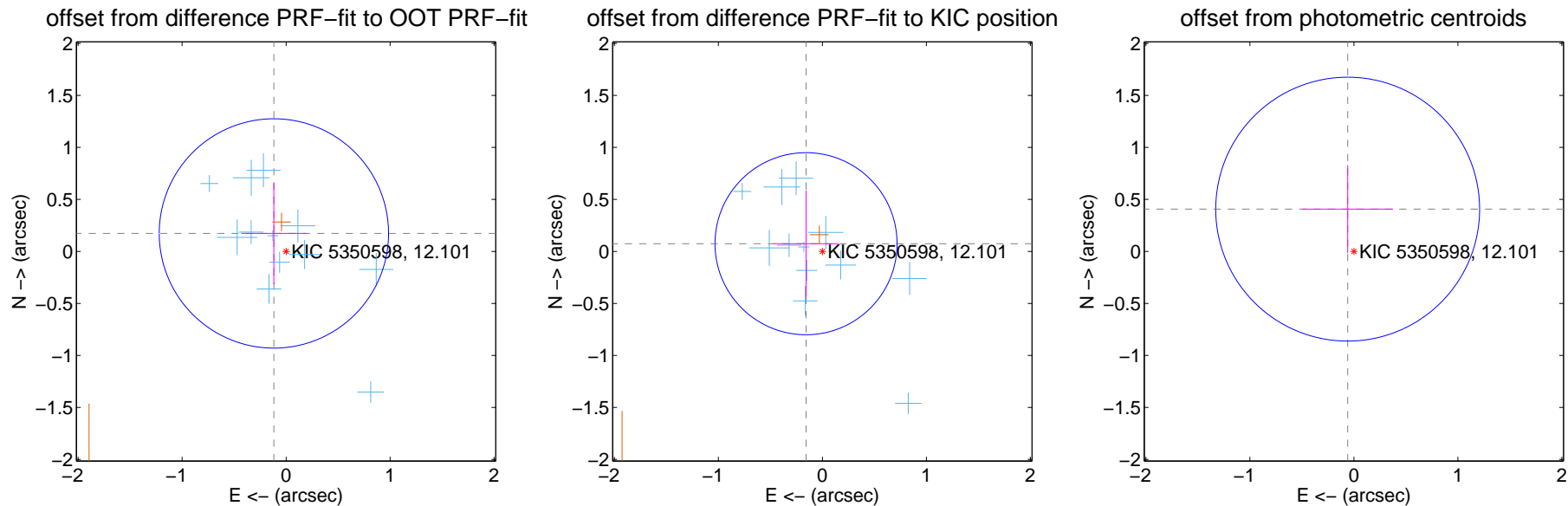
## DV Centroid Data

Supplemental centroid analysis for 005350598-03. Kepler magnitude: 12.10. Transit SNR 8.95

There are 12 quarters with good PRF difference image offsets

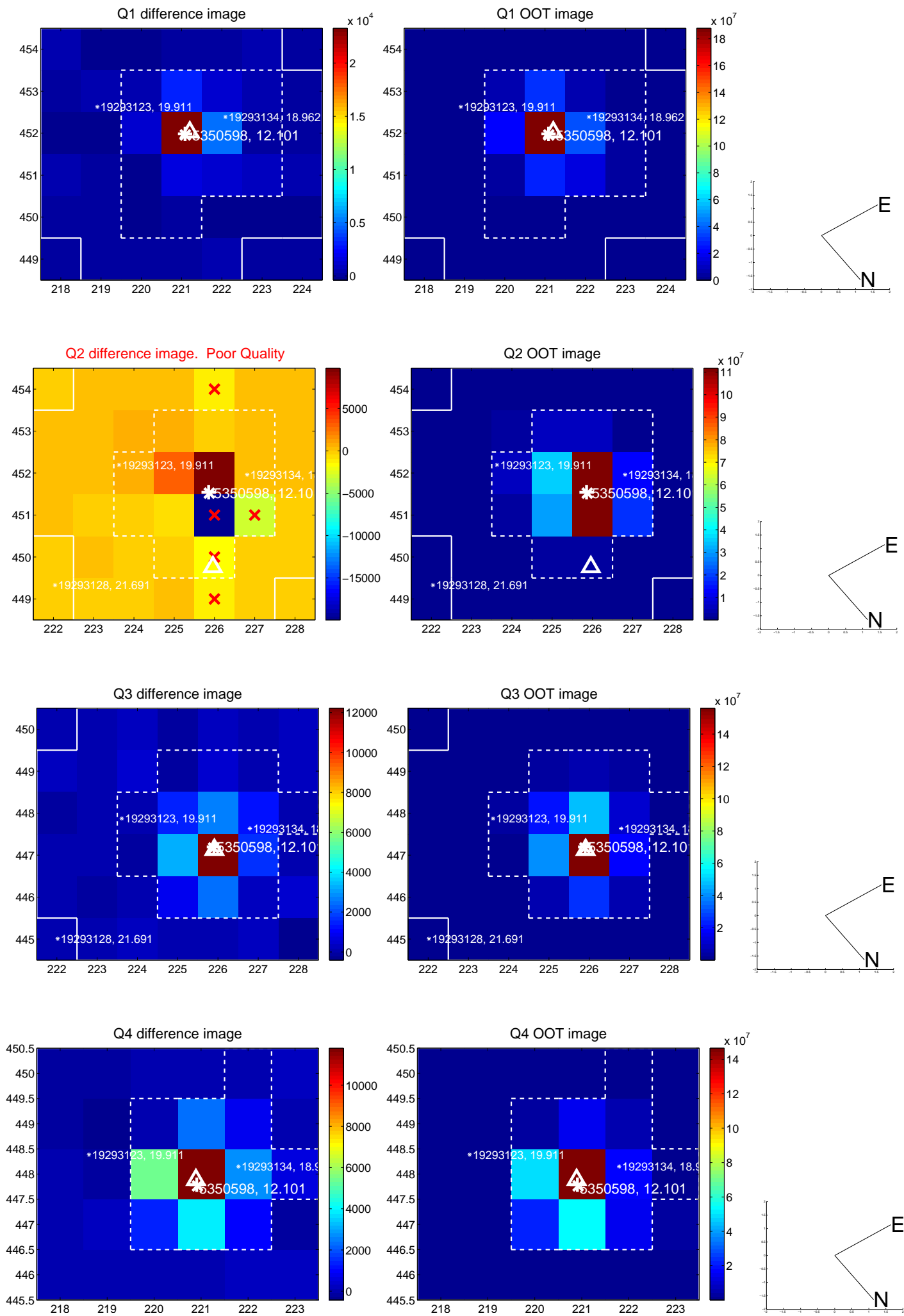
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.209 \pm 0.368$	0.57	$0.118 \pm 0.310$	$0.173 \pm 0.489$
PRF-fit source offset from KIC position	$0.174 \pm 0.292$	0.60	$0.157 \pm 0.314$	$0.074 \pm 0.512$
photometric centroid source offset	$0.41 \pm 0.42$	0.97	$0.06 \pm 0.44$	$0.41 \pm 0.42$

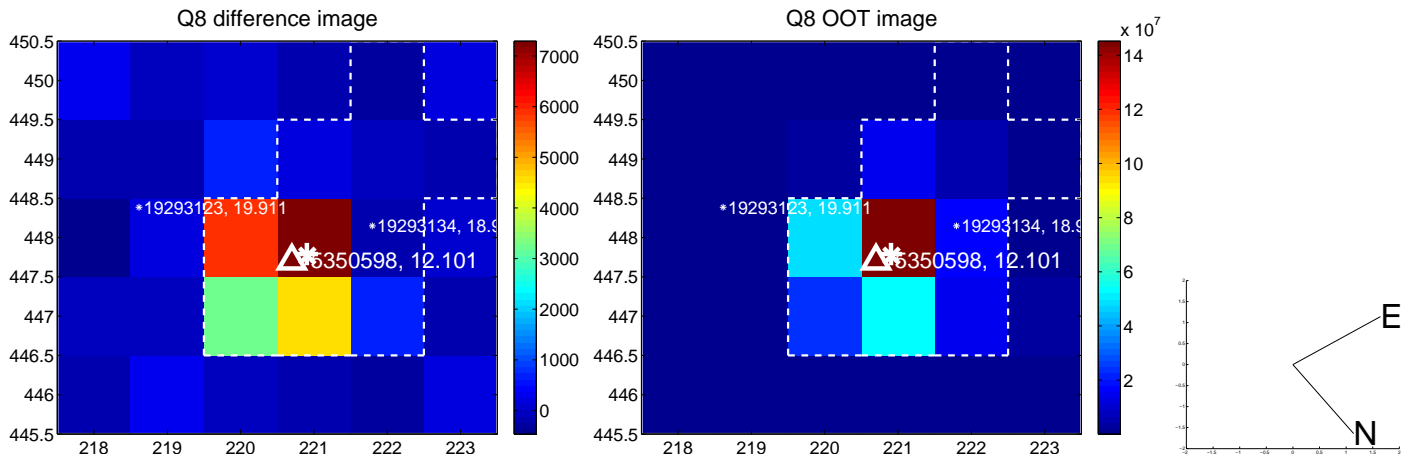
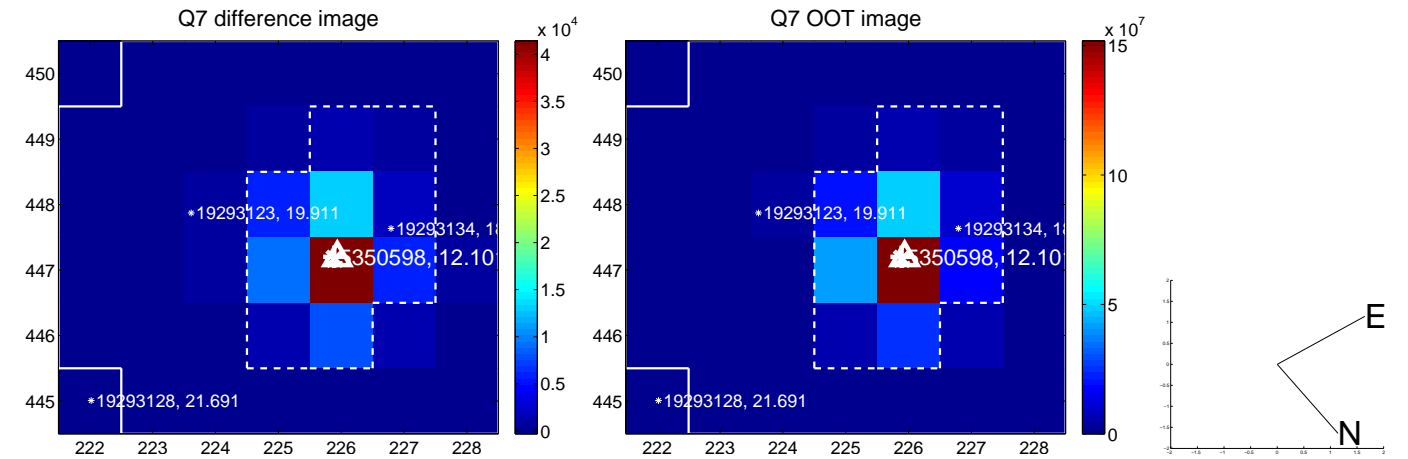
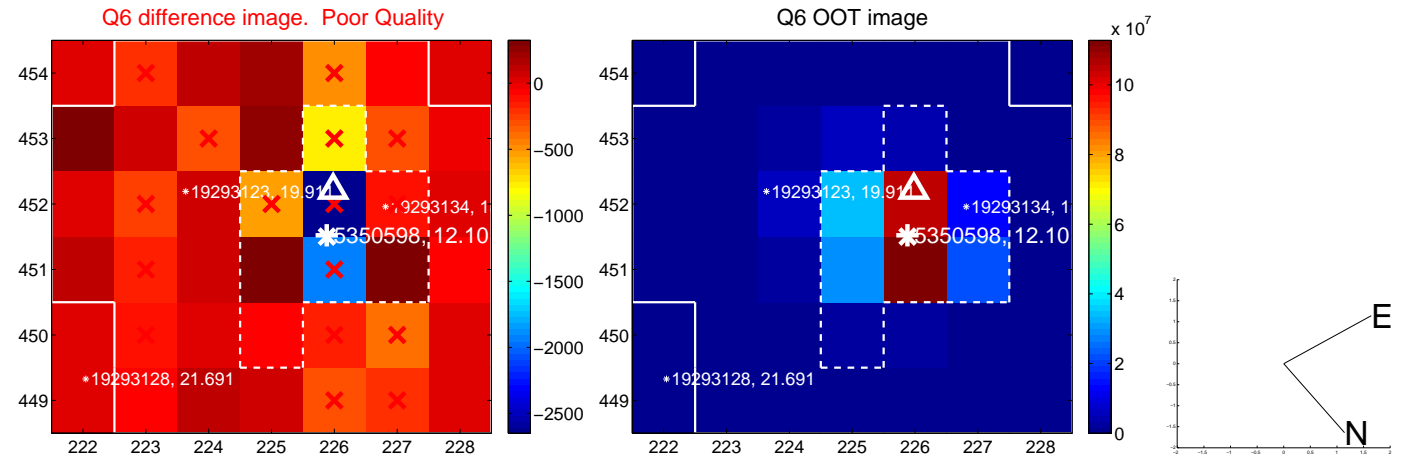
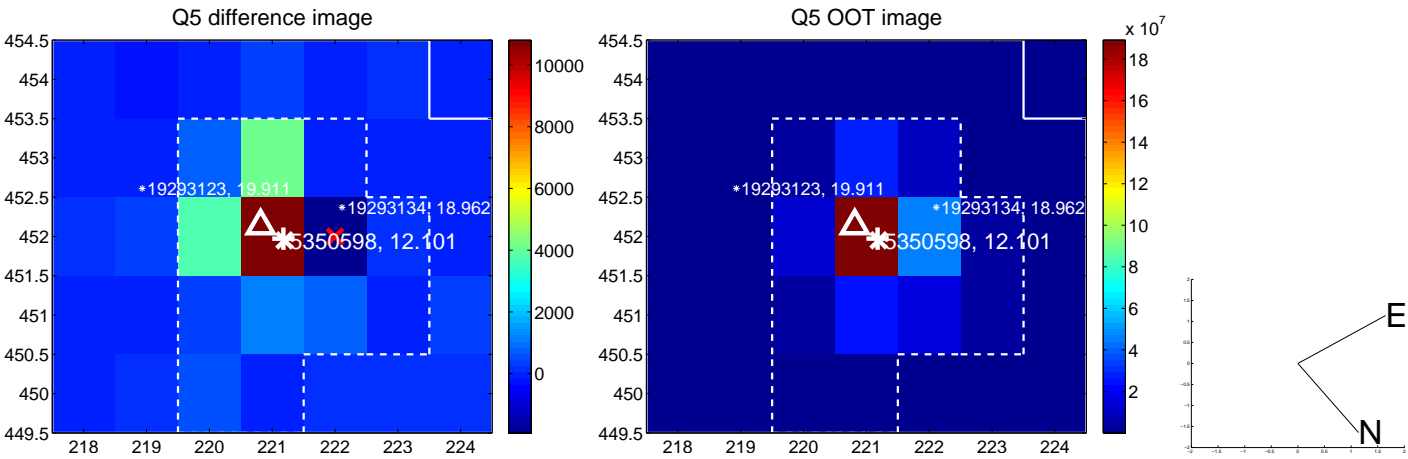


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

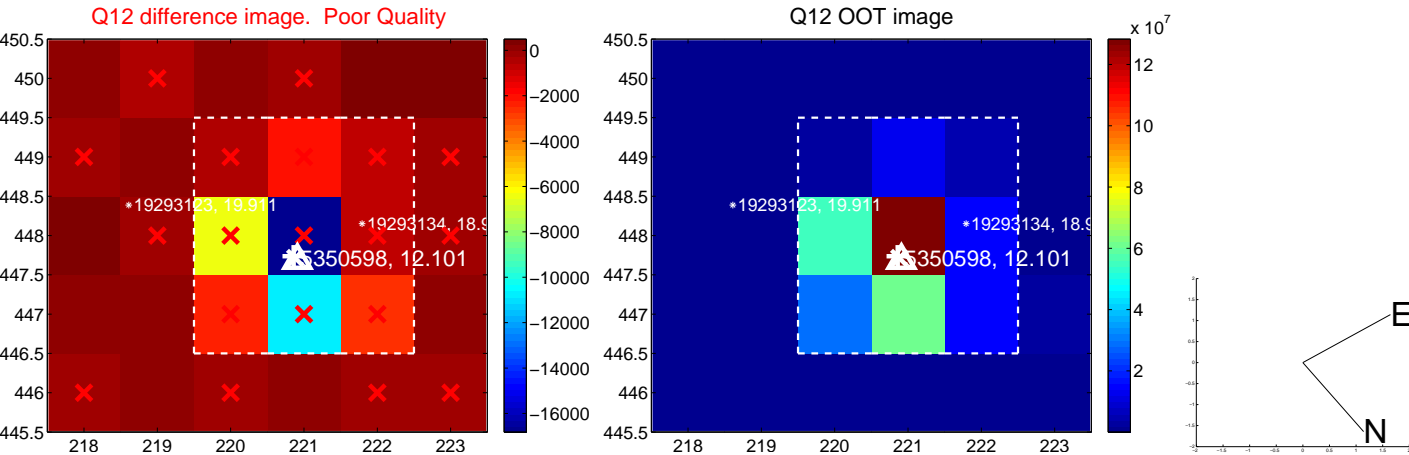
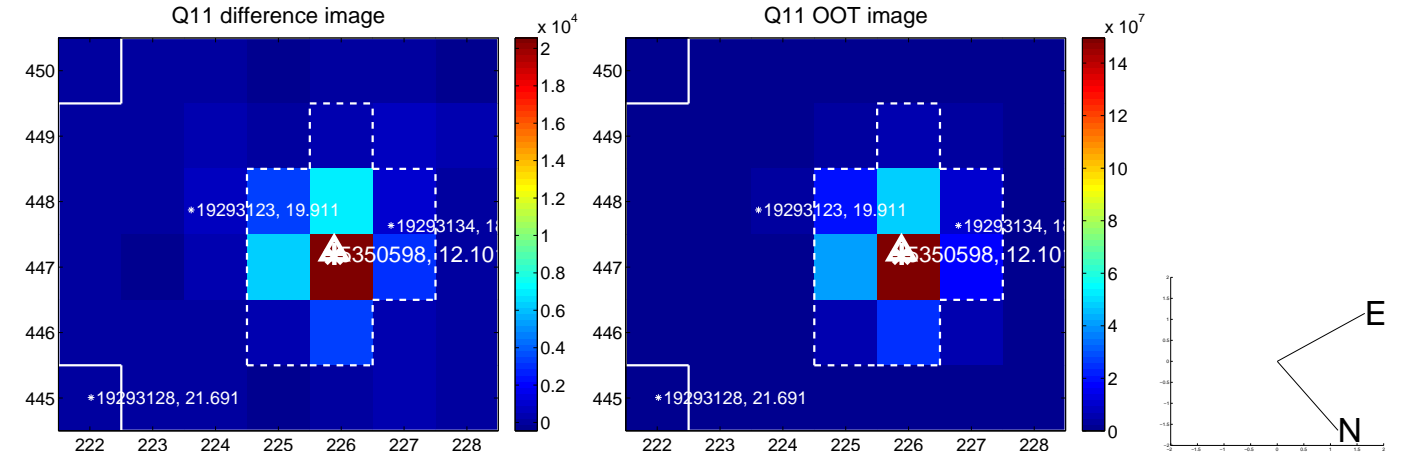
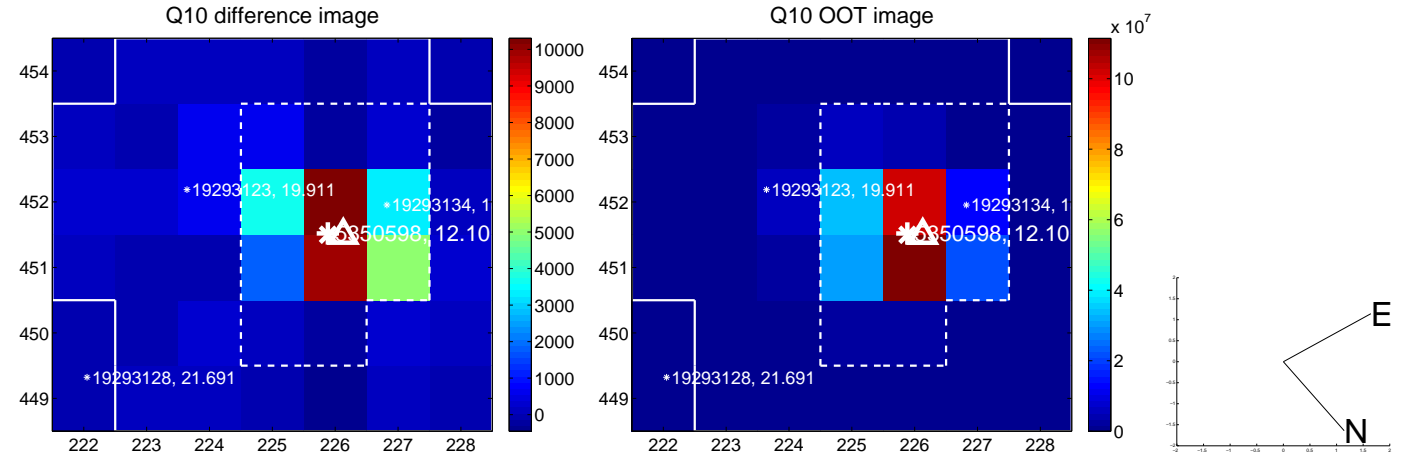
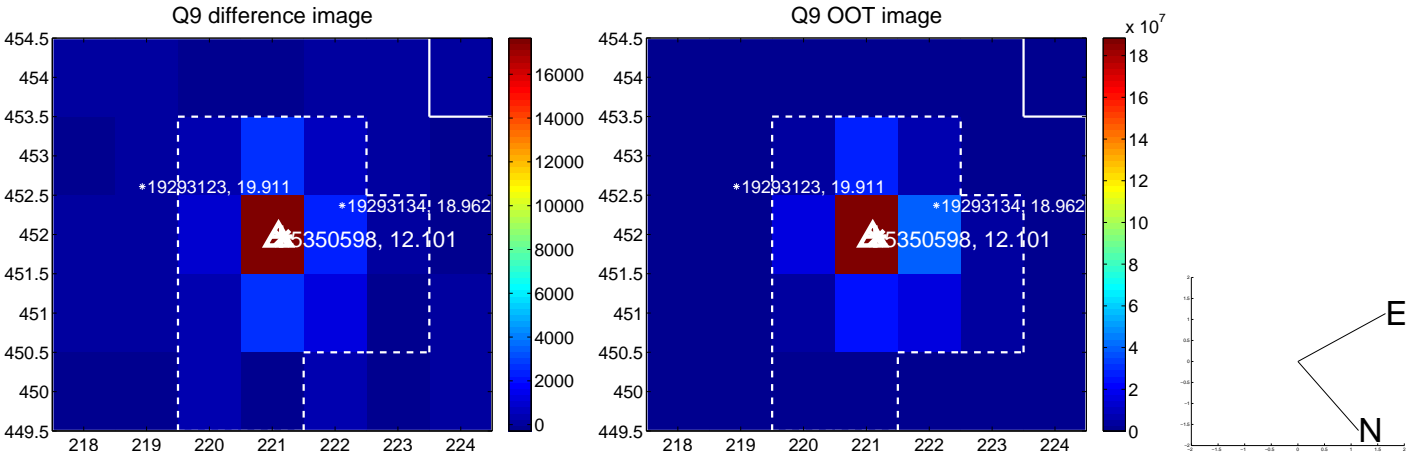
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



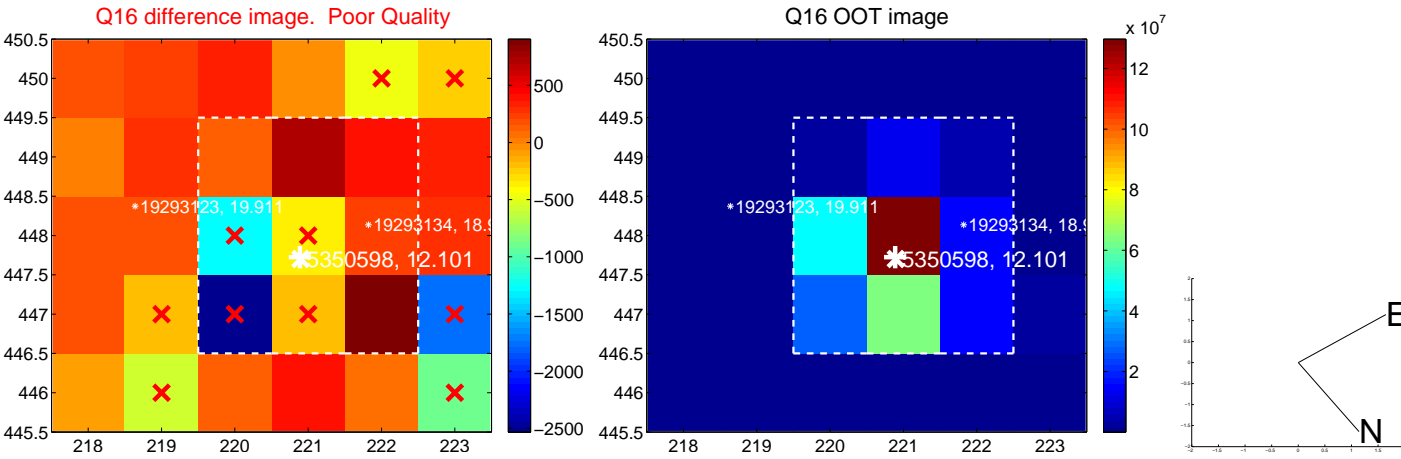
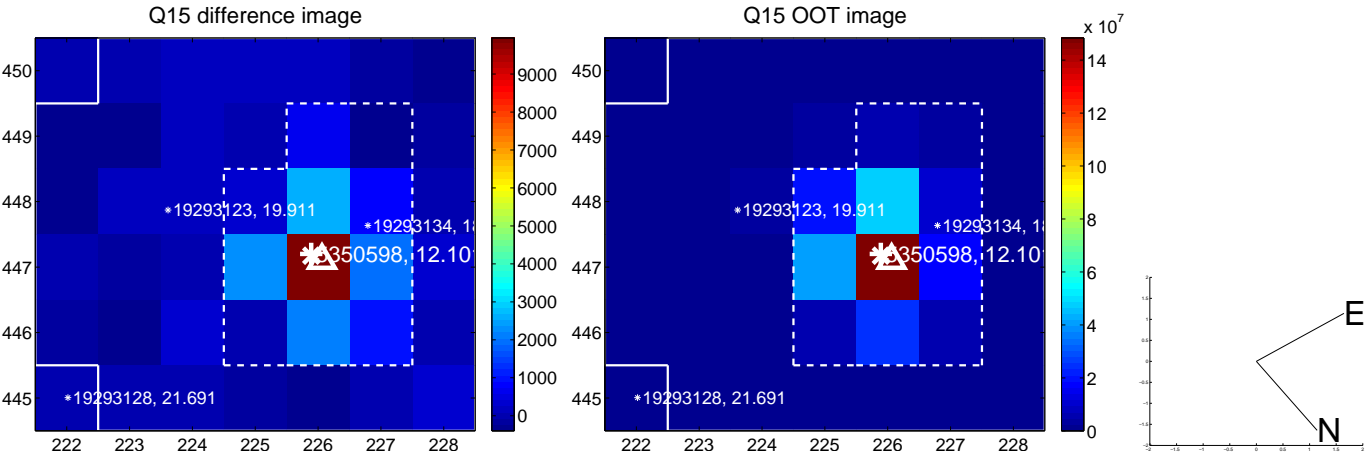
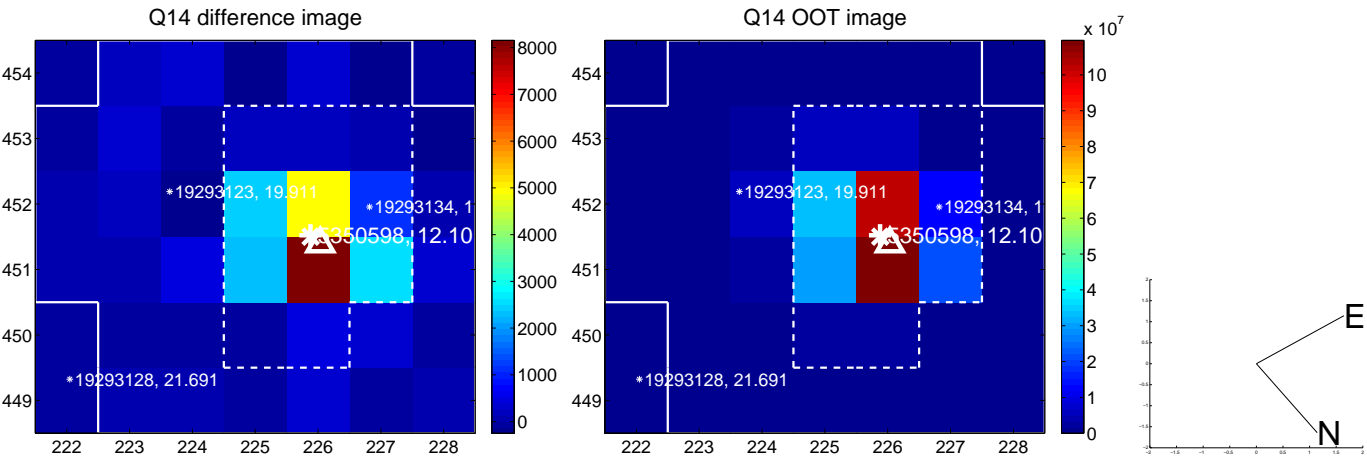
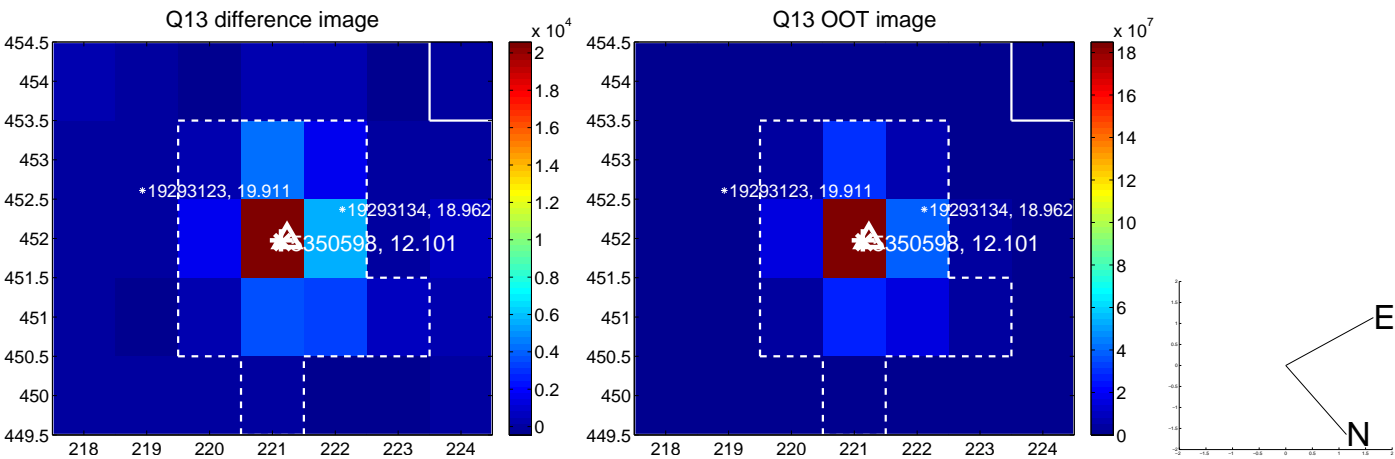
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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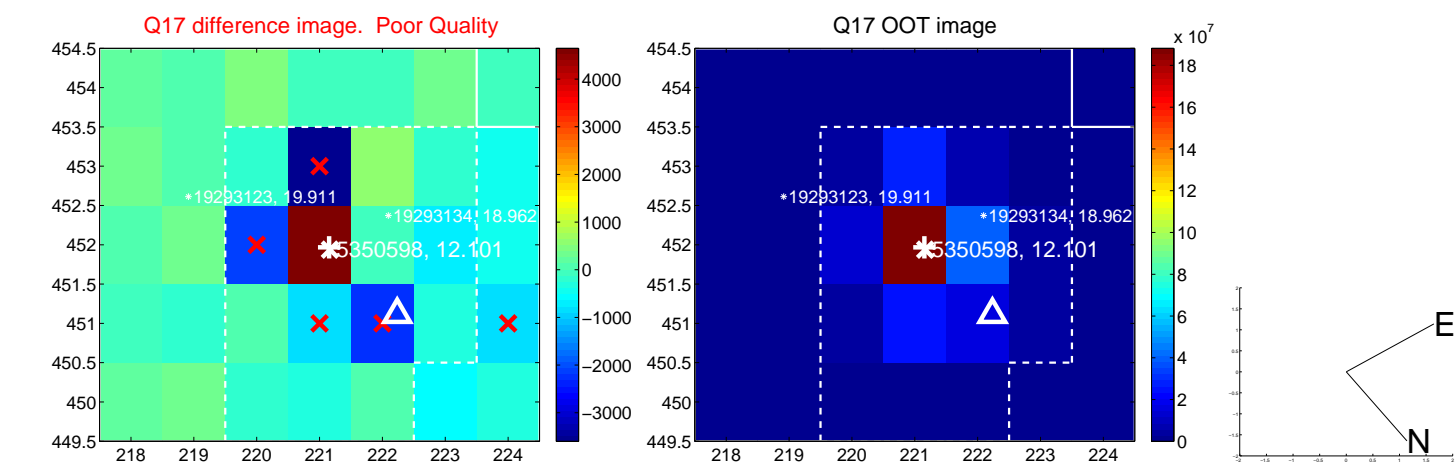


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

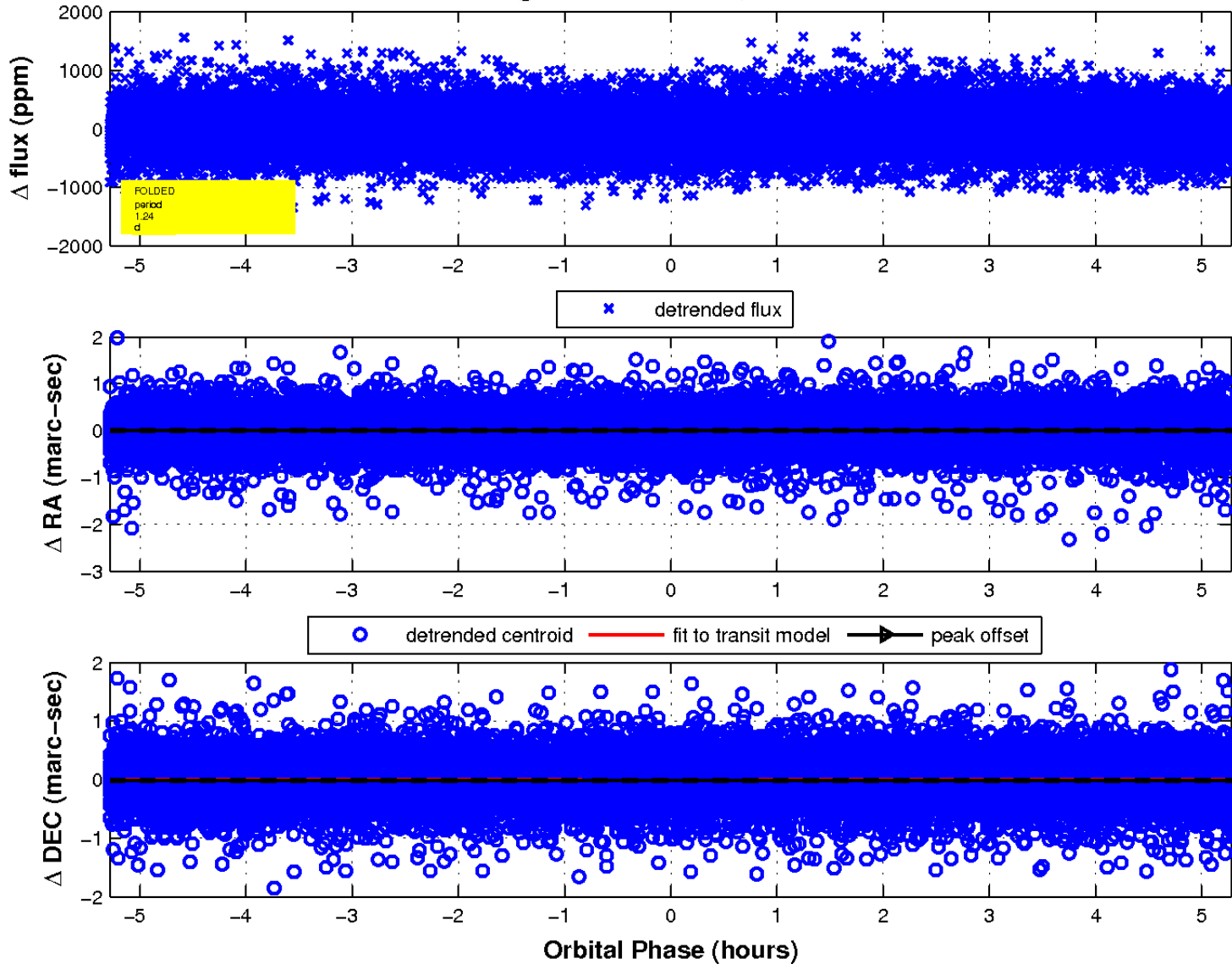




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 3 of 4



UKIRT Image

