

# KIC 011622535

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011622535-01	OBS	No	0.570534	132.058958	38.2	4.273	26.4	25.9	1.74	7112	1.15	28698.06
011622535-02	OBS	No	7.186967	138.517994	413.5	1.288	13.7	15.4	1.74	7112	3.87	979.12
011622535-03	OBS	No	29.160879	156.561000	170.7	1.500	14.8	-1.0	1.74	7112	2.31	151.30
011622535-04	OBS	No	11.948408	132.246883	684.3	0.534	11.1	12.4	1.74	7112	5.00	497.14

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011622535-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_SATURATED
011622535-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
011622535-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_SATURATED
011622535-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED

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

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

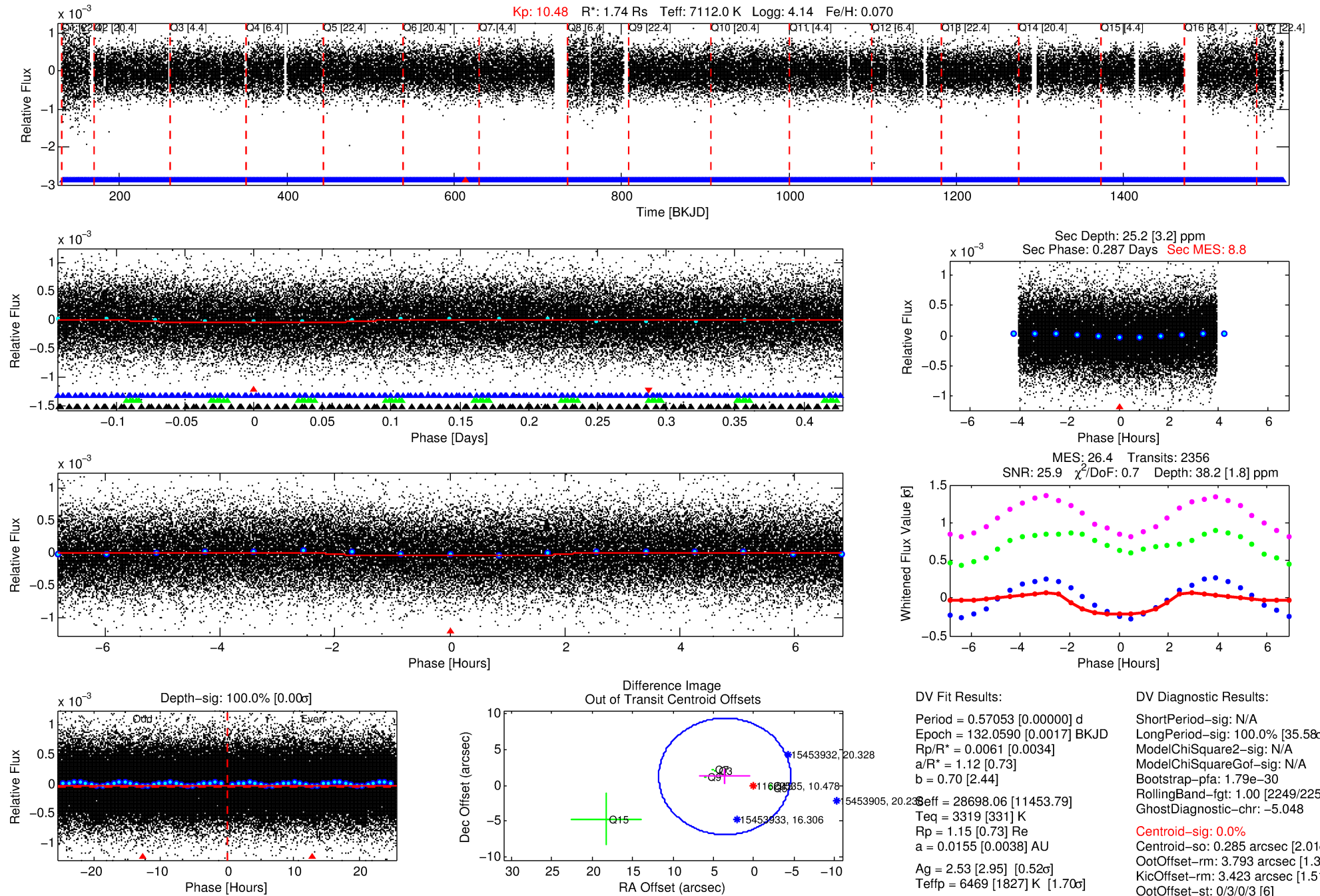
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 011622535-01

No Significant Match Found

# DV One-Page Summary

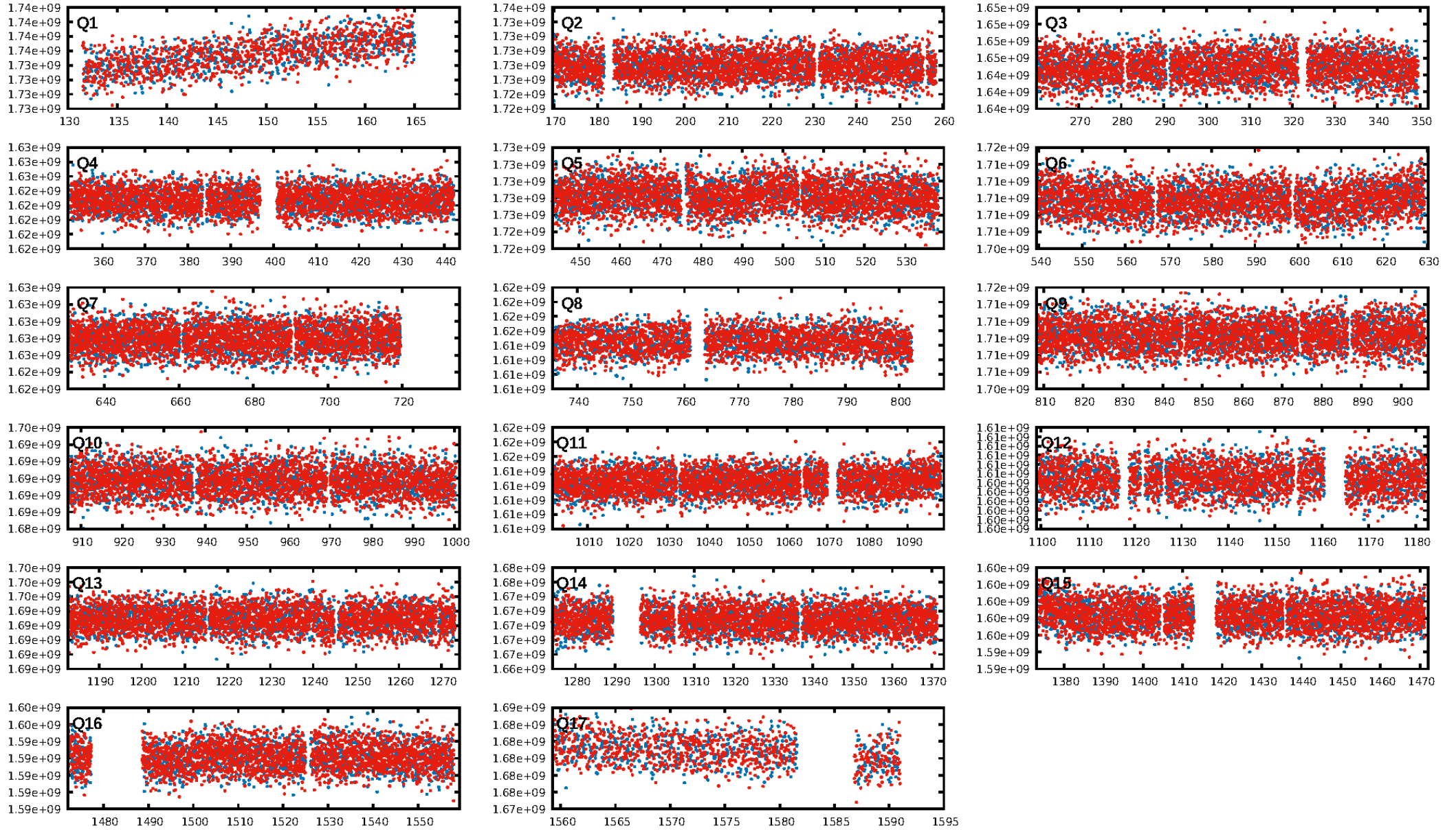
KIC: 11622535 Candidate: 1 of 4 Period: 0.571 d



Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 18:07:59 Z

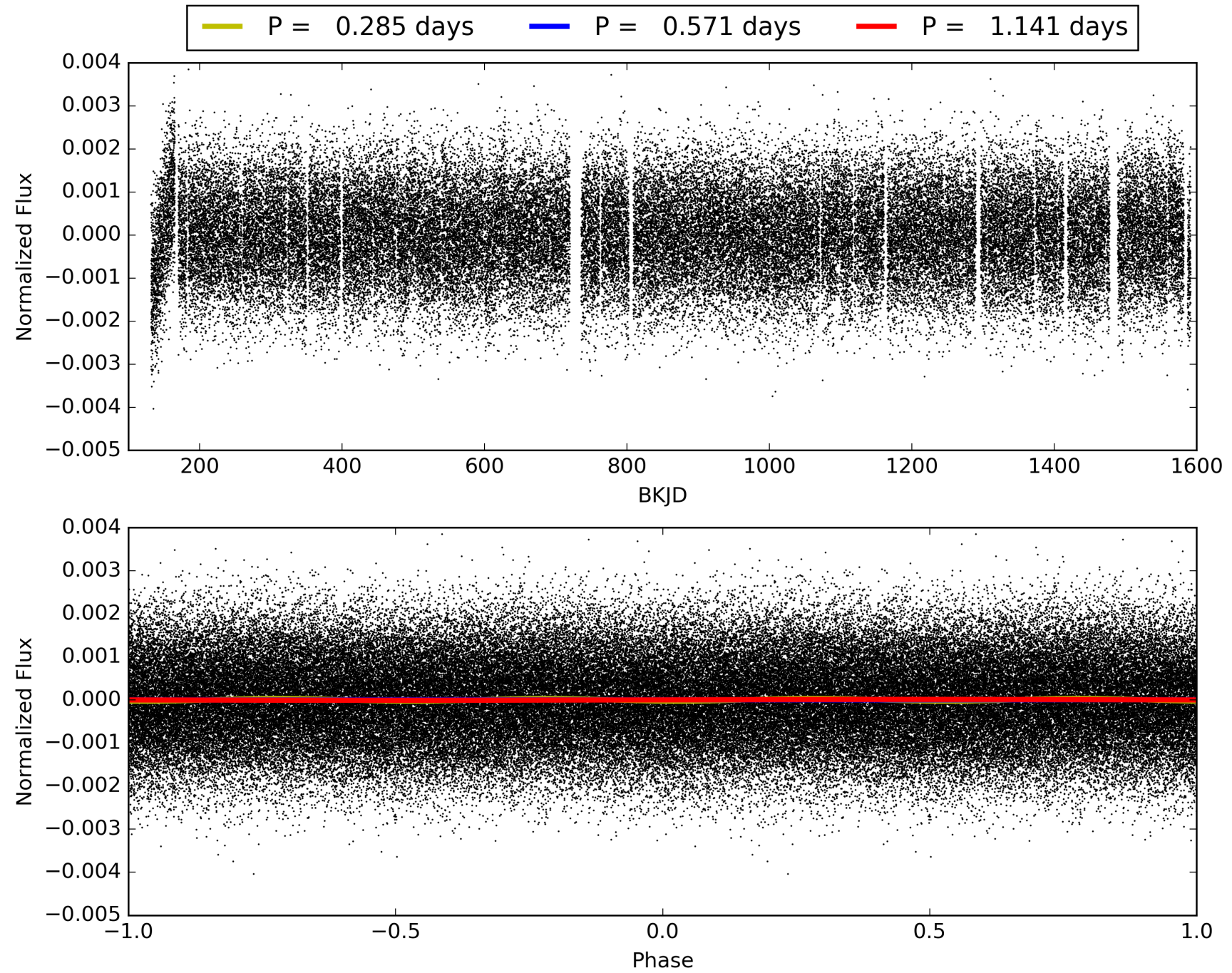
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 011622535-01, PDC Light Curves





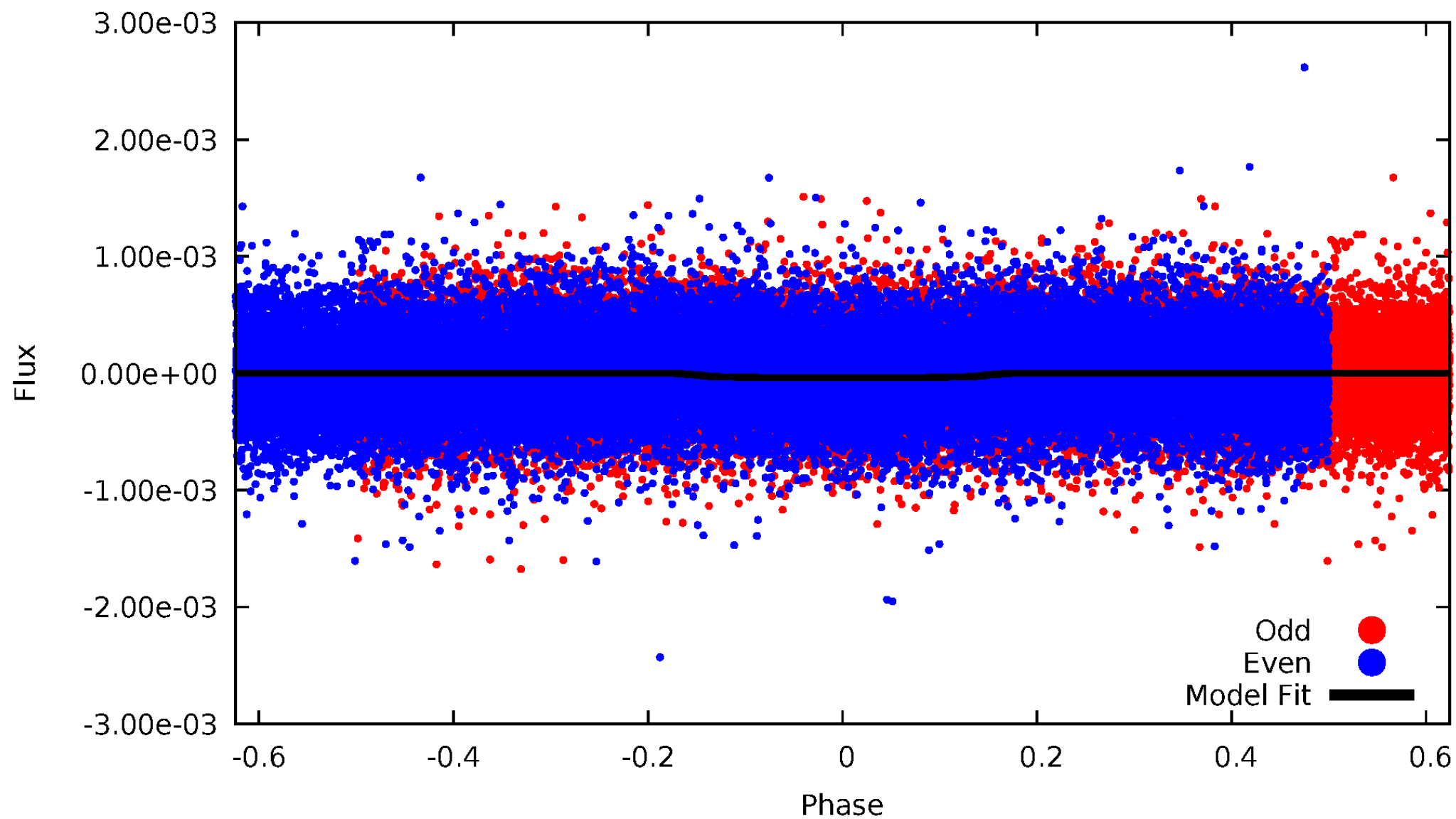
# TCE 011622535-01





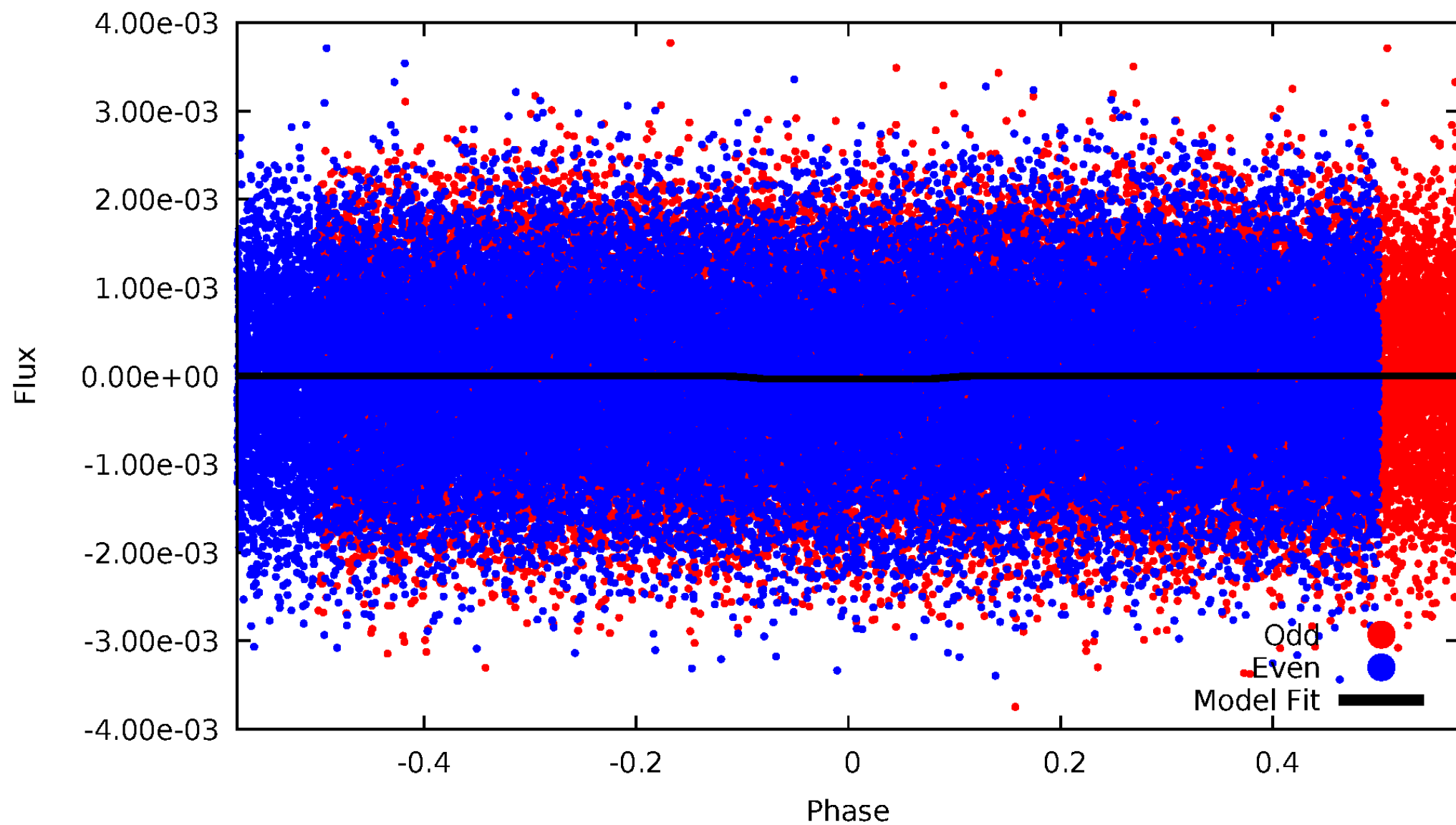
DV Odd/Even

TCE 011622535-01

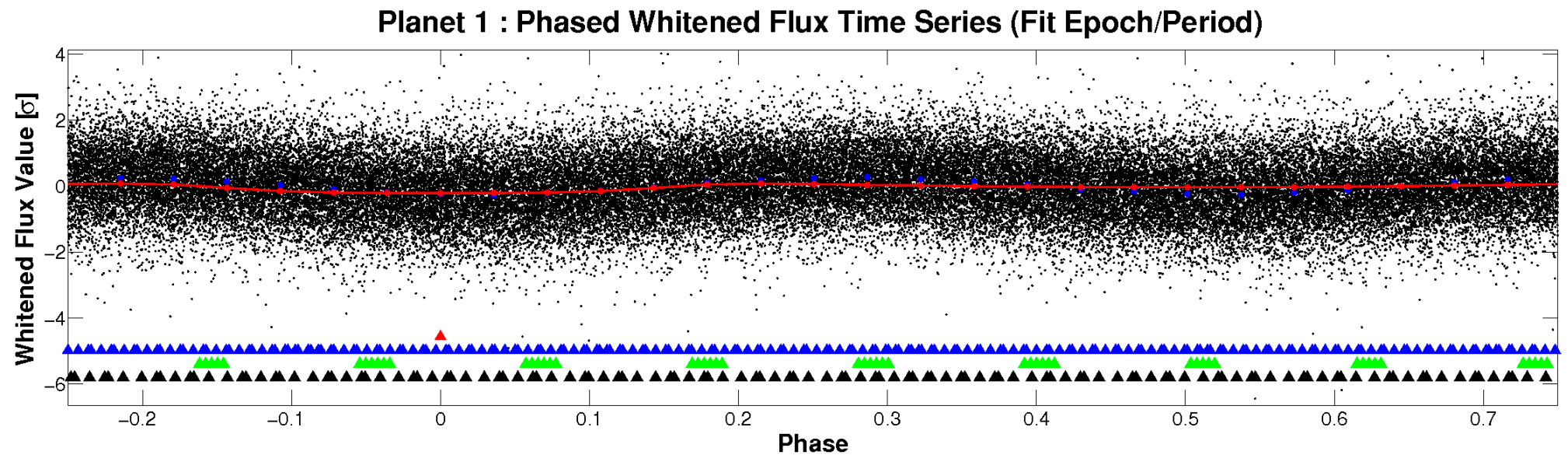
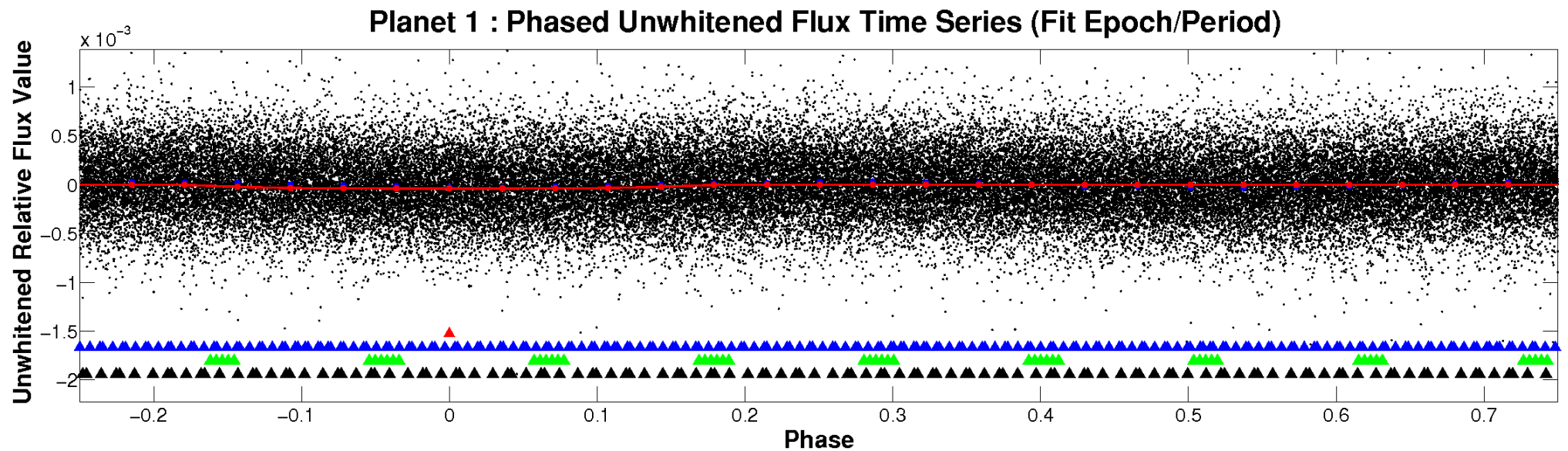


# ALT Odd/Even

TCE 011622535-01



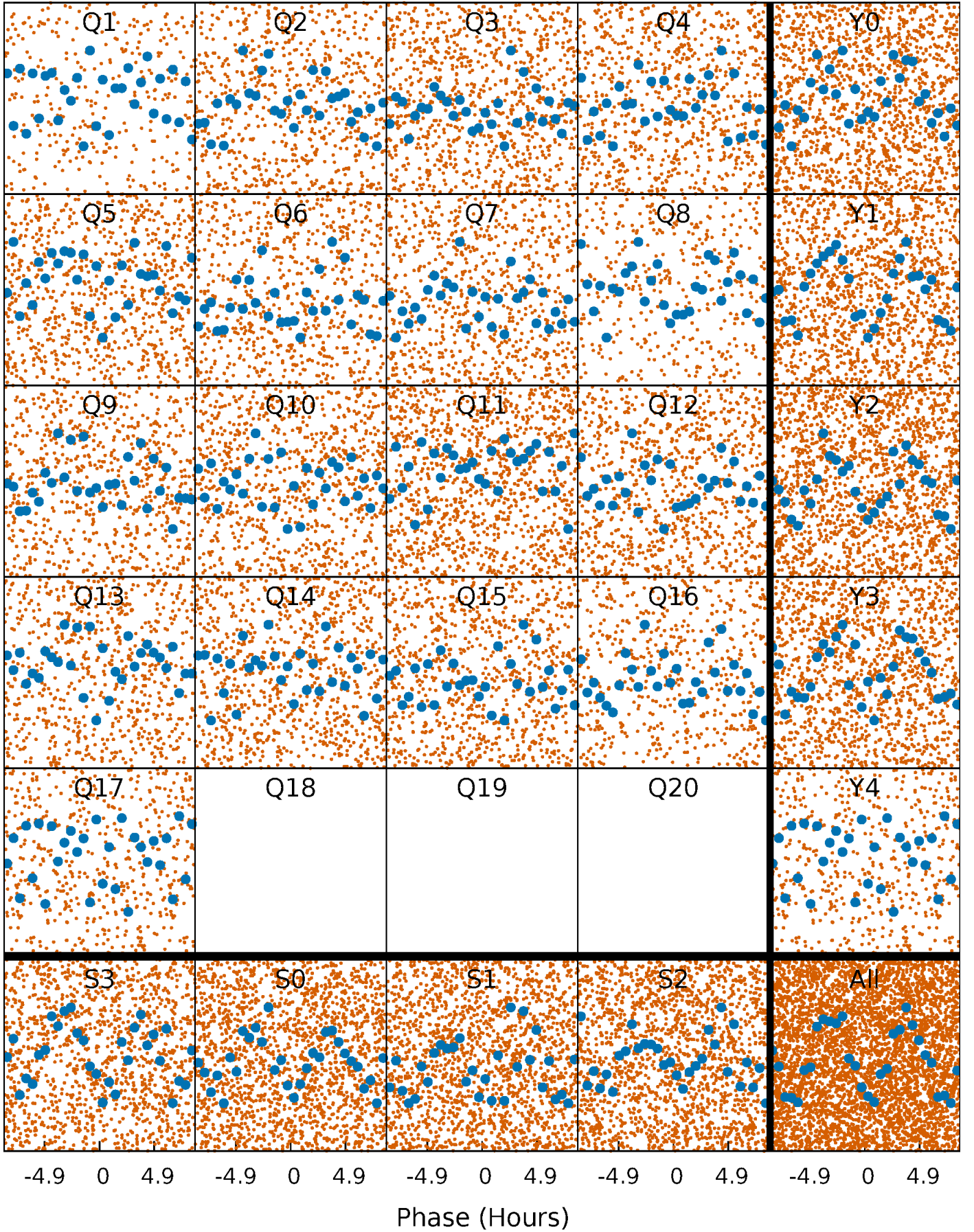
# Non-Whitened Vs. Whitened Light Curve





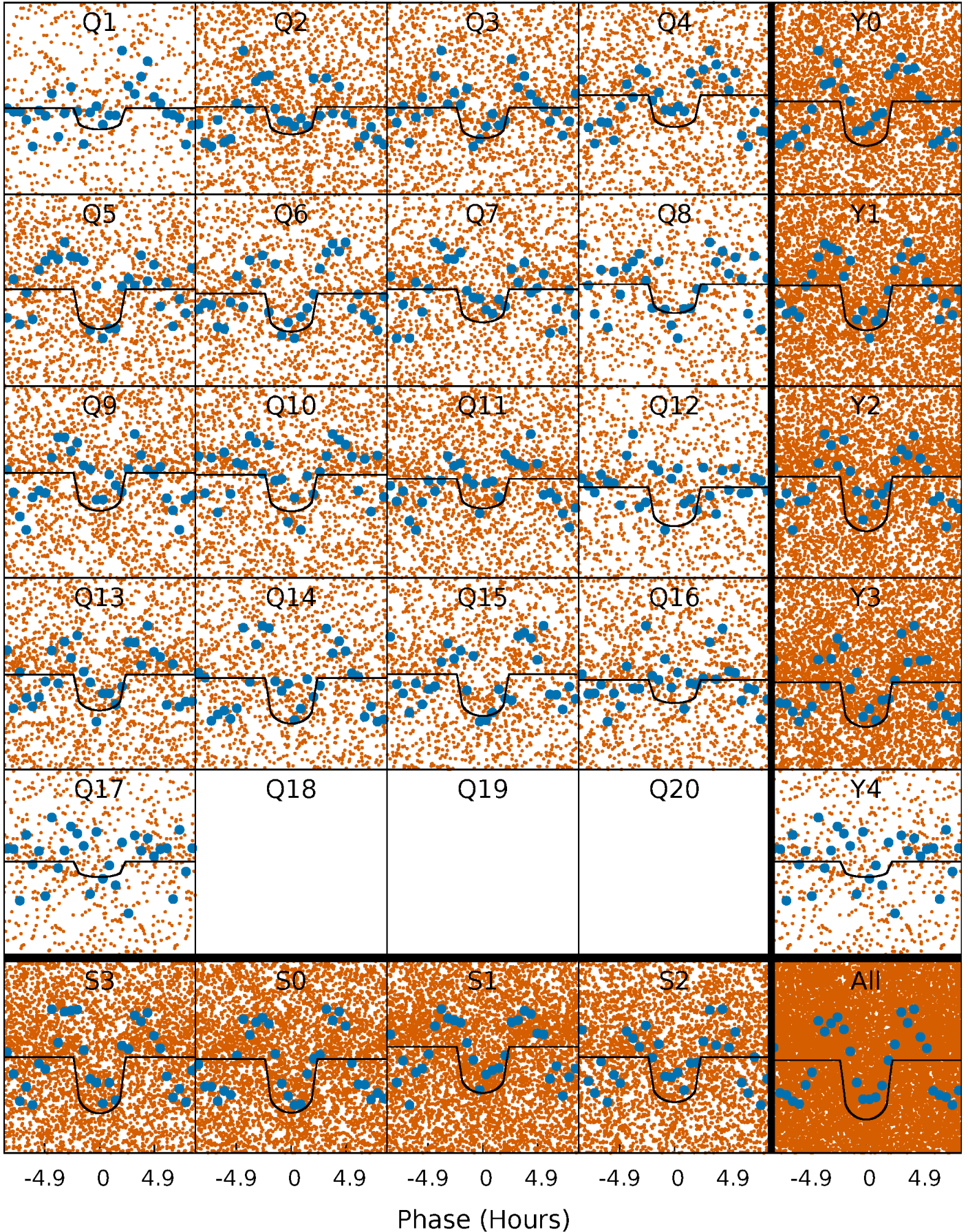
# PDC Quarter-Phased Transit Curves

TCE 011622535-01 P= 0.570534 Days  $T_0=132.058957$  (BKJD)



# DV Quarter-Phased Transit Curves

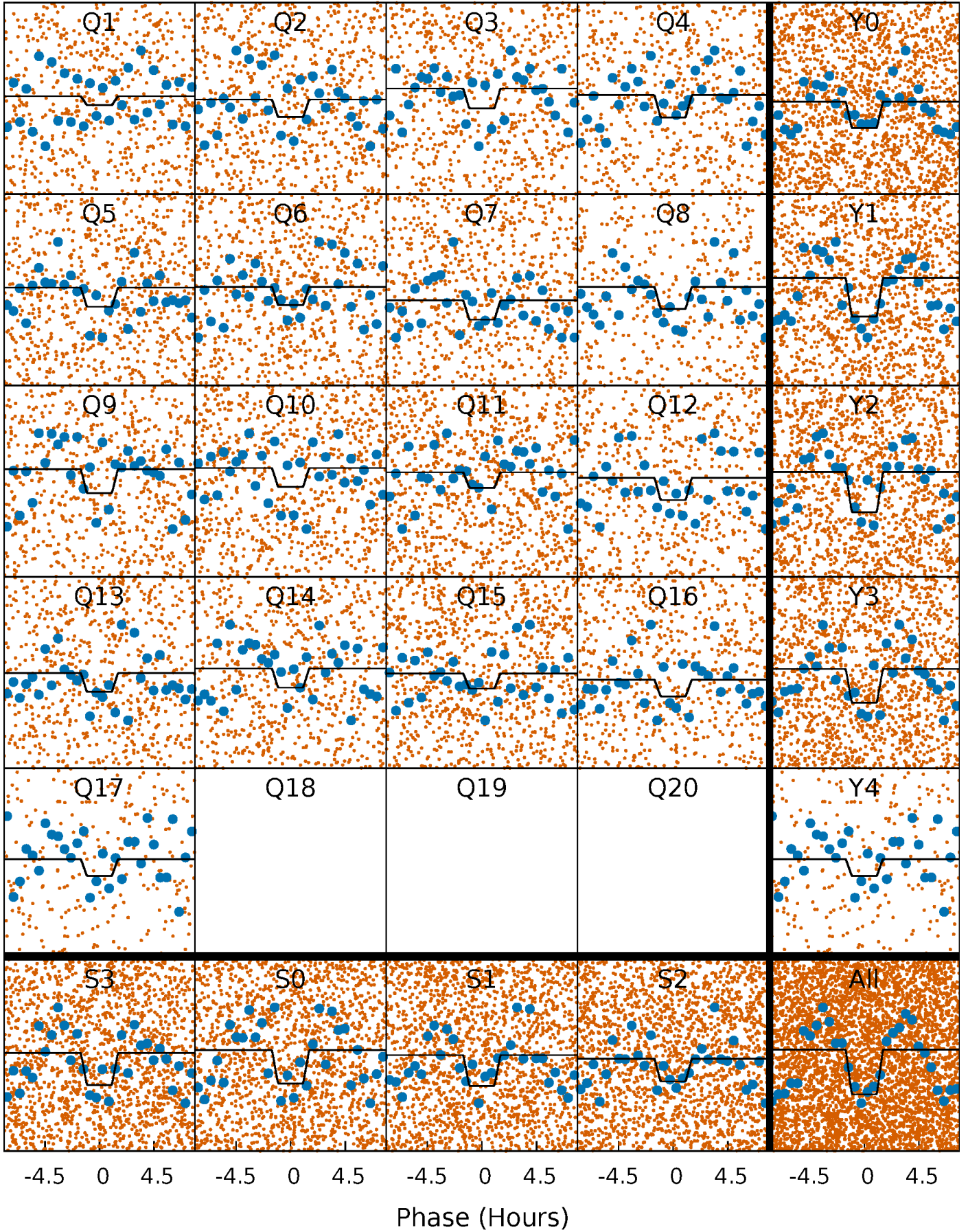
TCE 011622535-01 P= 0.570534 Days  $T_0=132.058957$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 011622535-01 P= 0.570547 Days  $T_0=132.060294$  (BKJD)

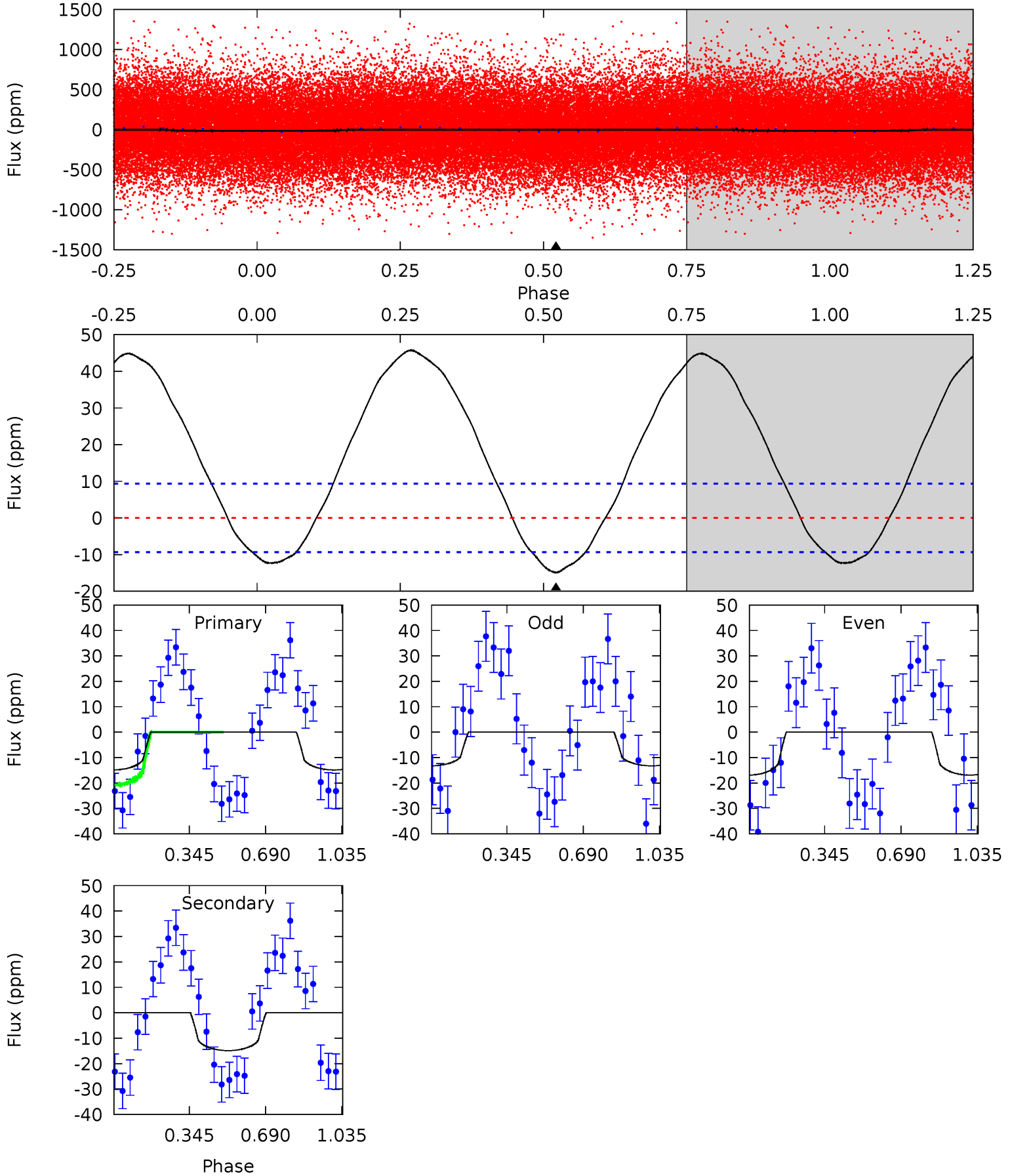




# DV Model-Shift Uniqueness Test

011622535-01, P = 0.570534 Days, E = 131.488423 Days

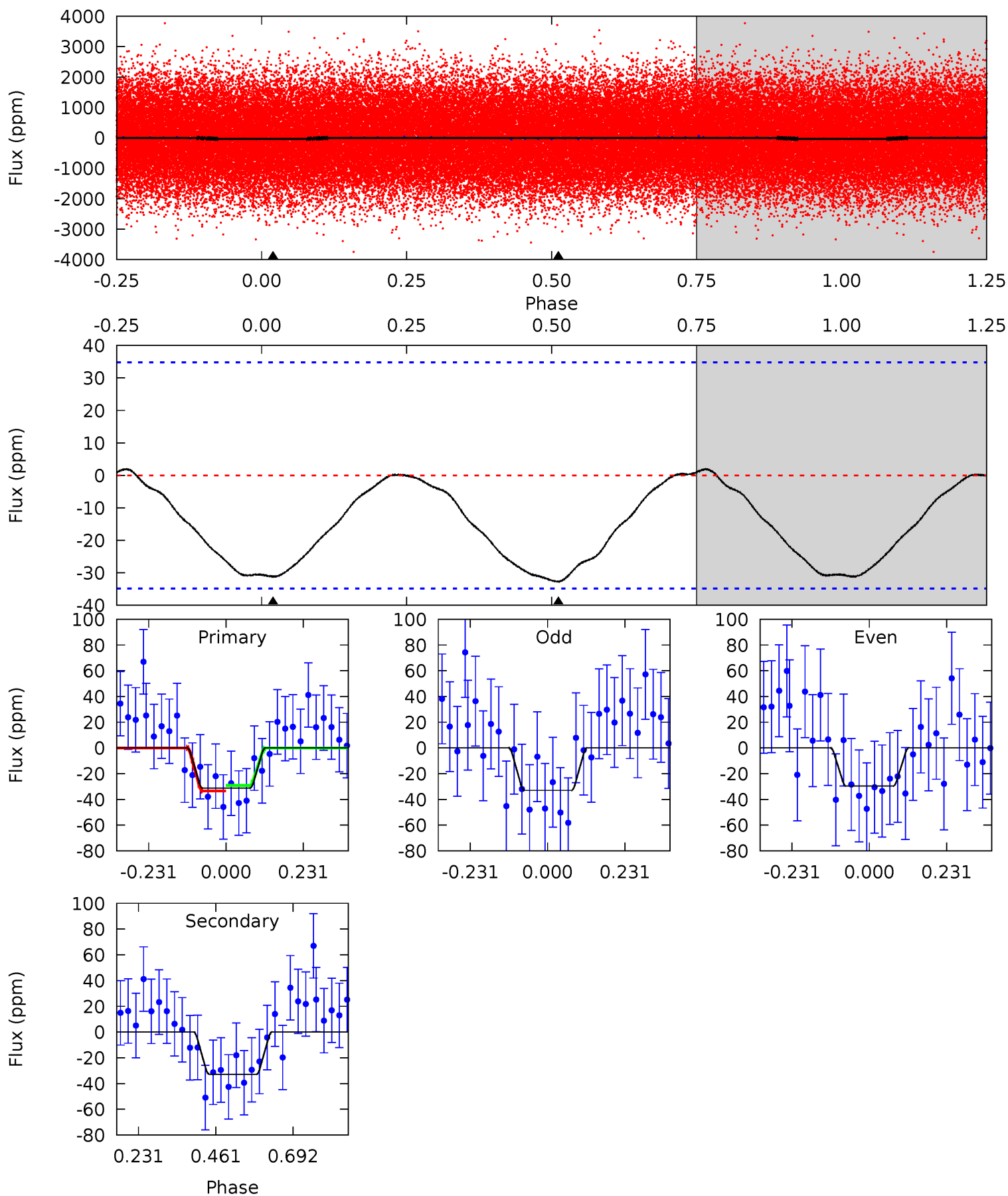
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.83	6.83	0	0	4.30	0.94	5.63	6.83	6.83	6.83	6.83	0.84	1.16	0.75	2.73



# Alt Model-Shift Uniqueness Test

011622535-01, P = 0.570547 Days, E = 131.489747 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
3.94	4.13	0	0	4.39	1.20	0.16	3.94	3.94	4.13	4.13	0.21	1.15	0.06	0.27



### Stellar Parameters For KIC 011622535

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7112^{+200}_{-343}$	$4.144^{+0.124}_{-0.186}$	$0.070^{+0.200}_{-0.350}$	$1.738^{+0.525}_{-0.350}$	$1.536^{+0.204}_{-0.226}$	$0.412^{+0.247}_{-0.206}$
	+3%/-5%	+3%/-4%	+286%/-500%	+30%/-20%	+13%/-15%	+60%/-50%
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 011622535-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-15 \pm 2$	$1.18^{+0.68}_{-0.59}$	$4648^{+340}_{-282}$	$5213^{+2896}_{-1195}$	$1.391^{+4.041}_{-0.823}$
Alt.	$-33 \pm 8$	$1.18^{+0.73}_{-0.60}$	$4665^{+373}_{-313}$	$6640^{+4232}_{-1557}$	$3.198^{+10.050}_{-2.030}$

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



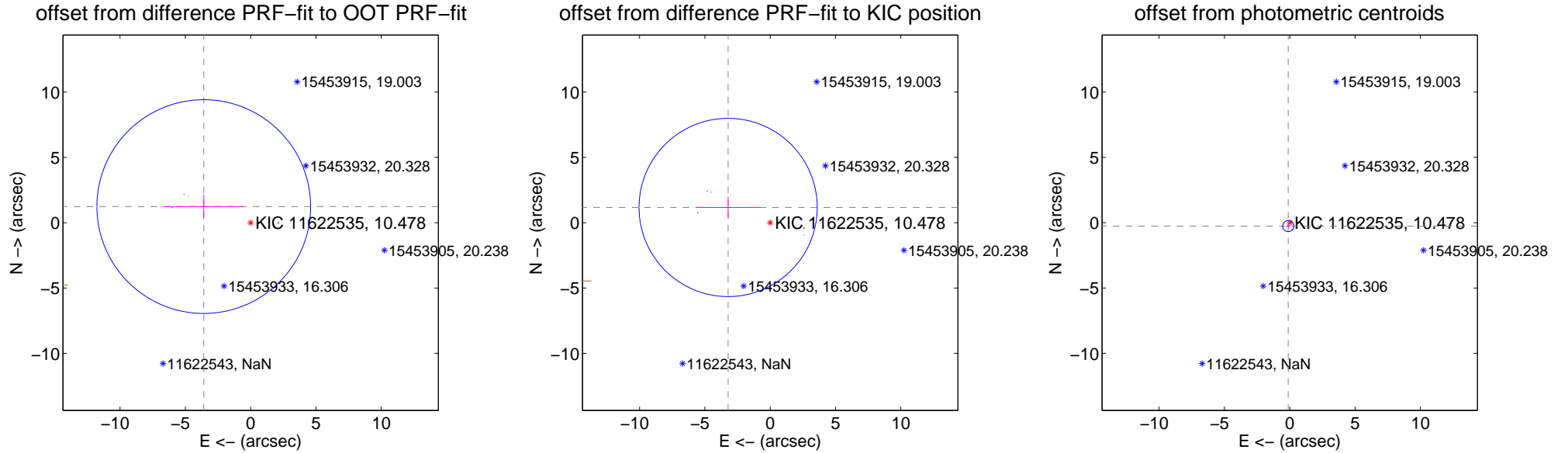
## DV Centroid Data

Supplemental centroid analysis for 011622535-01. **Kepler magnitude: 10.48.** Transit SNR 25.92

**There are 2 quarters with good PRF difference image offsets**

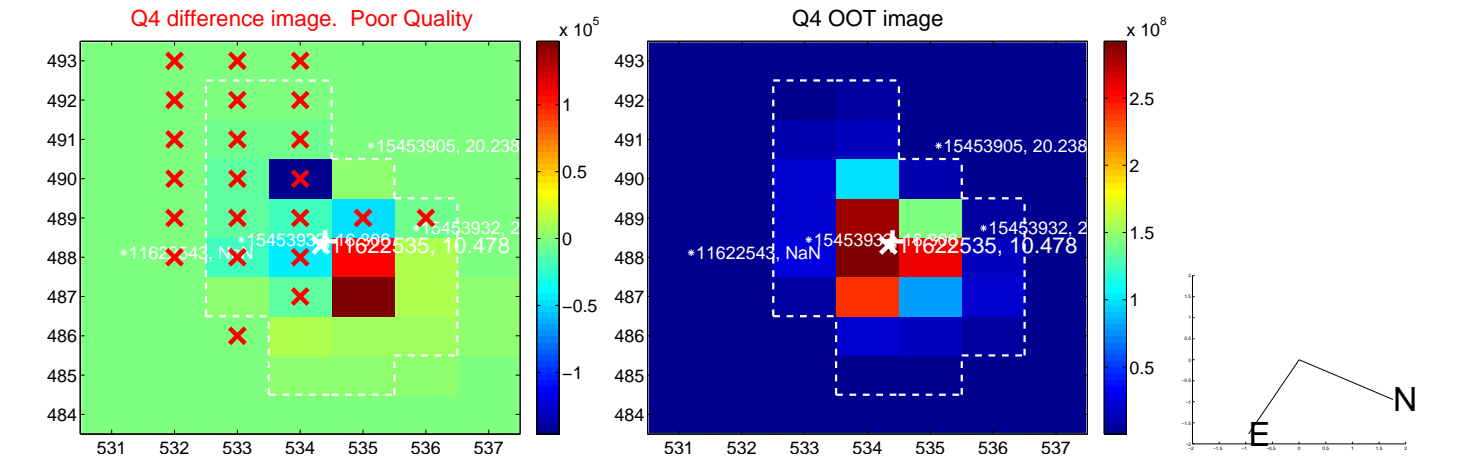
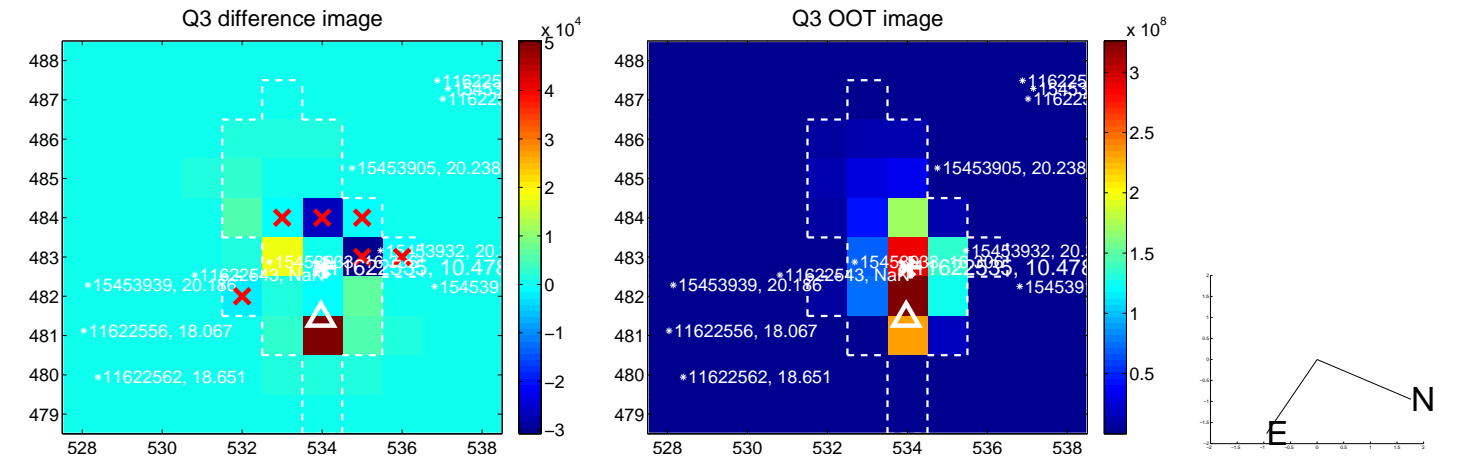
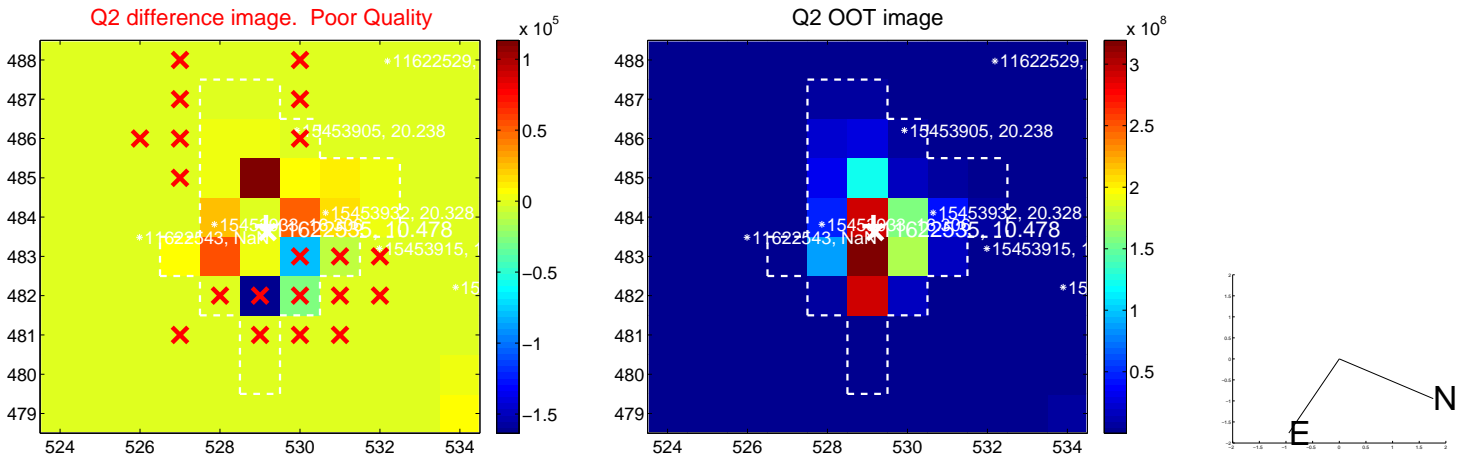
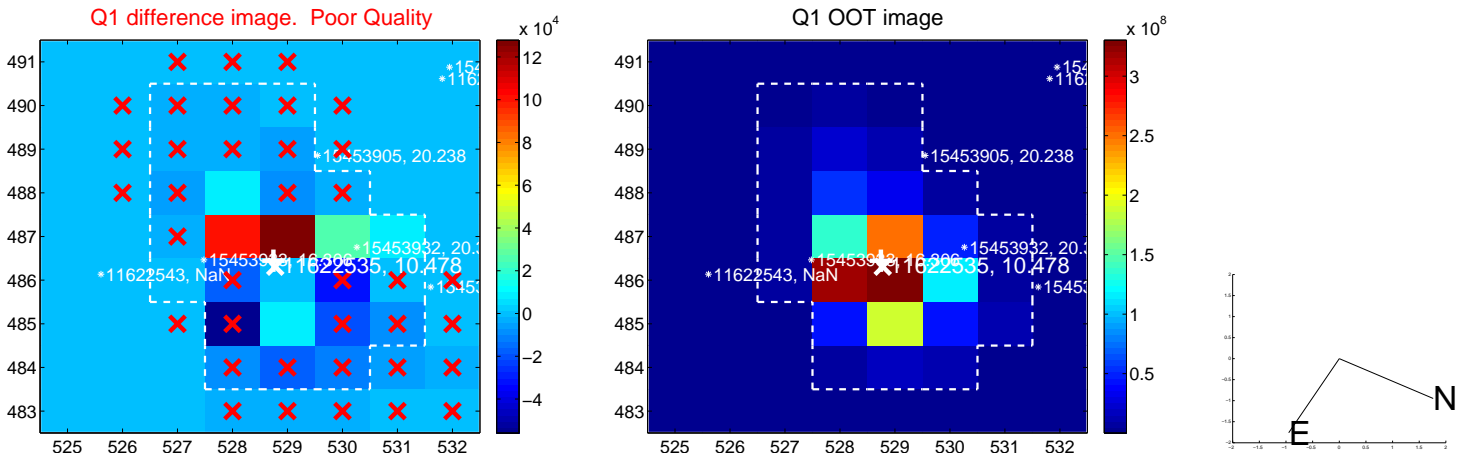
The direct PRF centroid is offset from the target star catalog position by about 0.42 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.793 \pm 2.726$	1.39	$3.587 \pm 3.053$	$1.232 \pm 0.927$
PRF-fit source offset from KIC position	$3.423 \pm 2.273$	1.51	$3.219 \pm 2.478$	$1.167 \pm 0.821$
photometric centroid source offset	$0.28 \pm 0.14$	2.01	$0.12 \pm 0.15$	$-0.26 \pm 0.14$

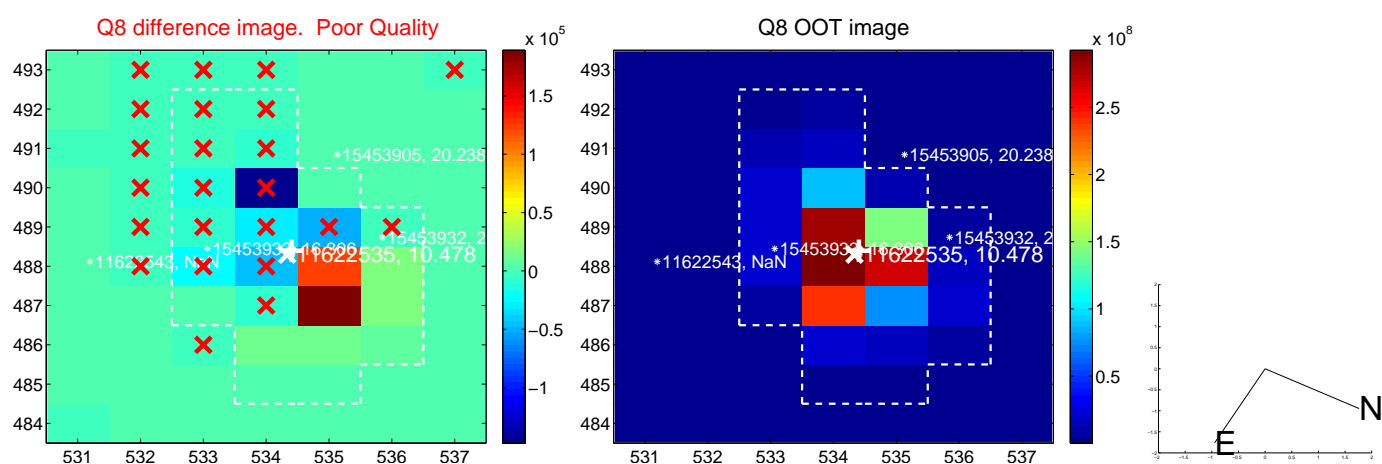
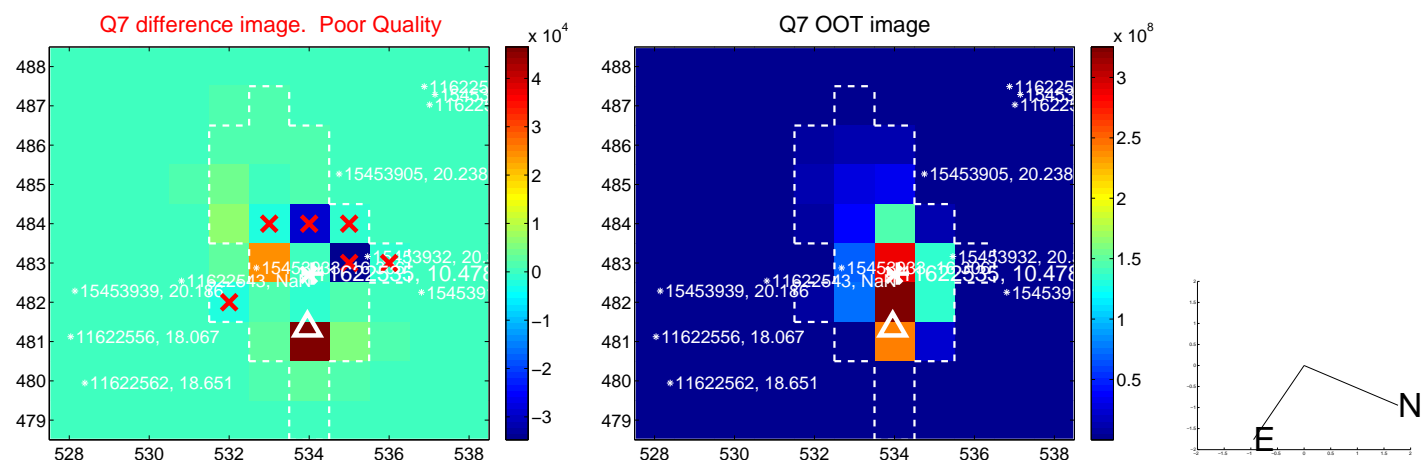
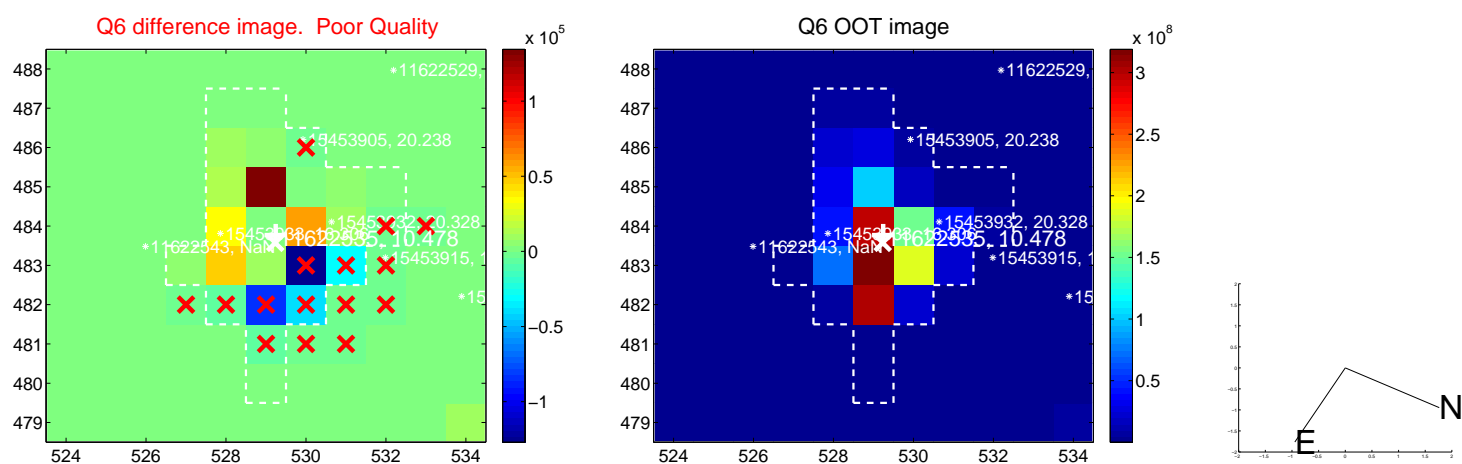
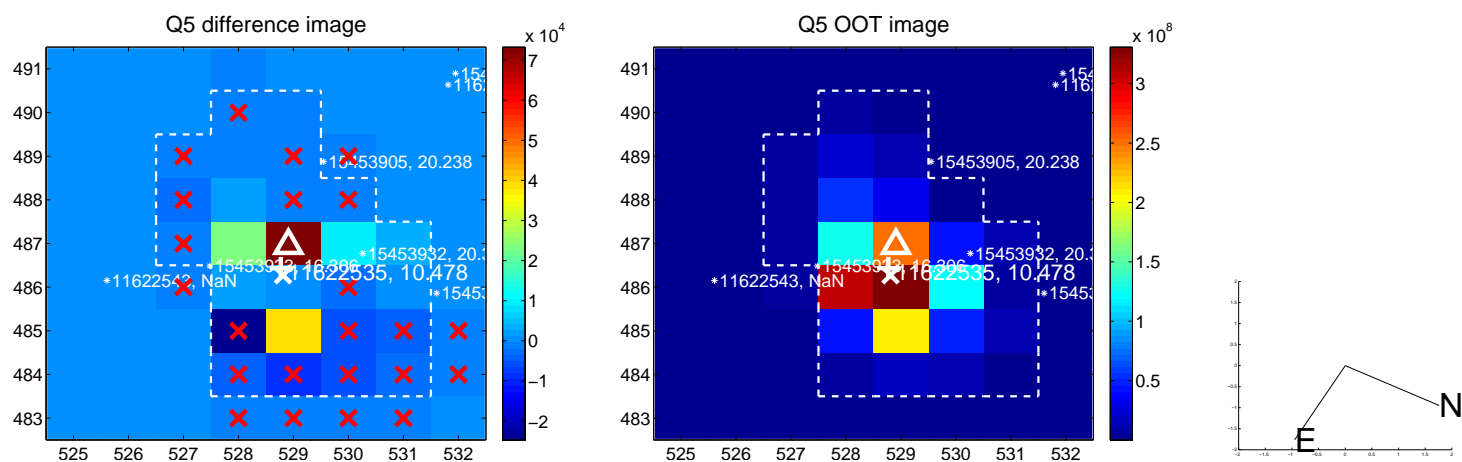


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

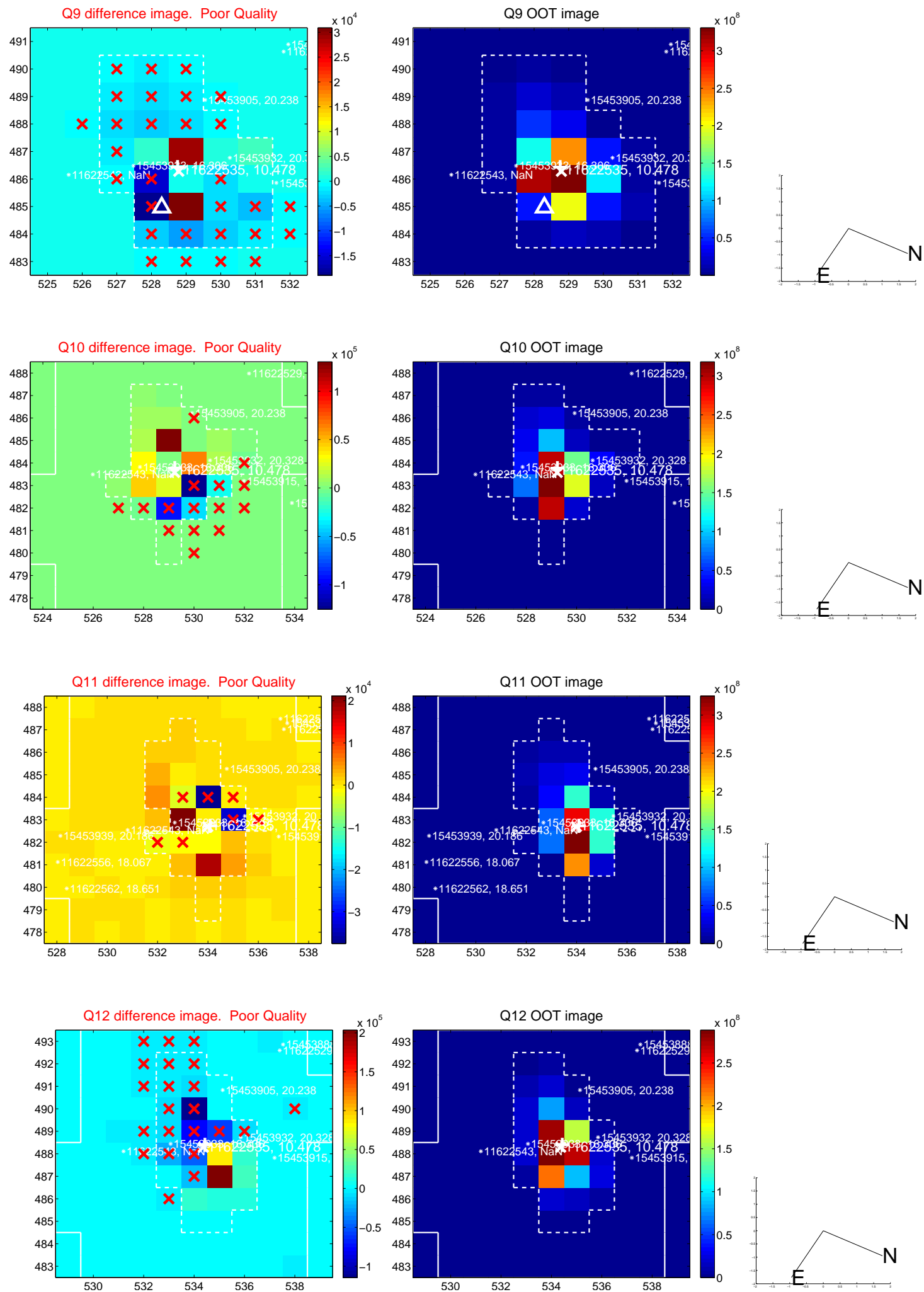
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



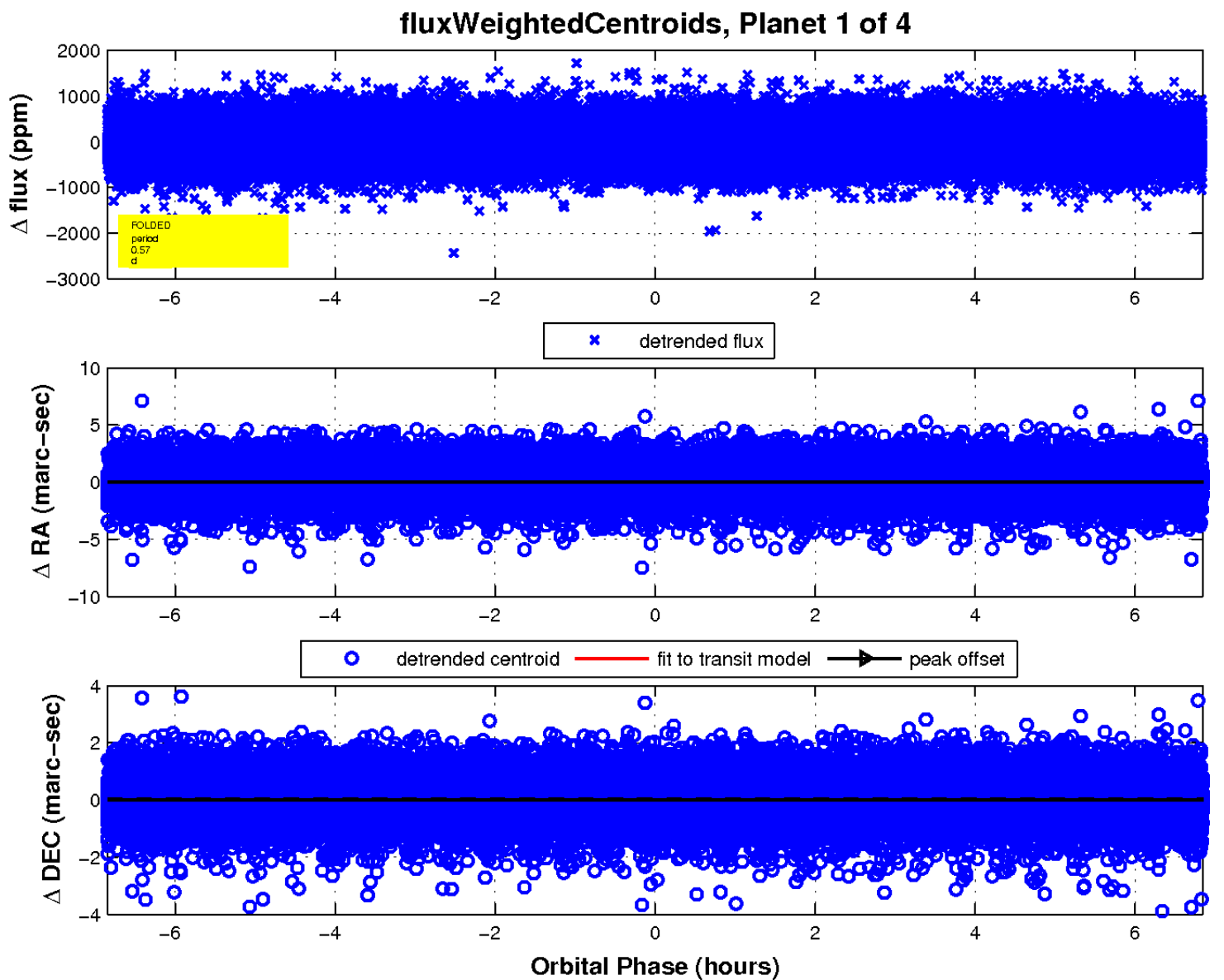
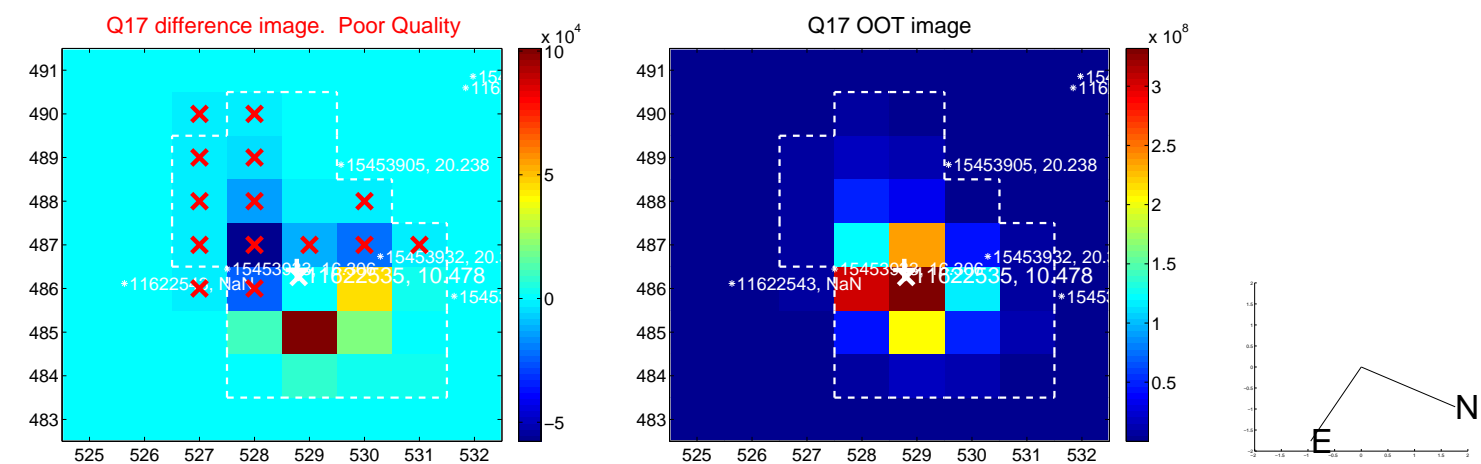
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





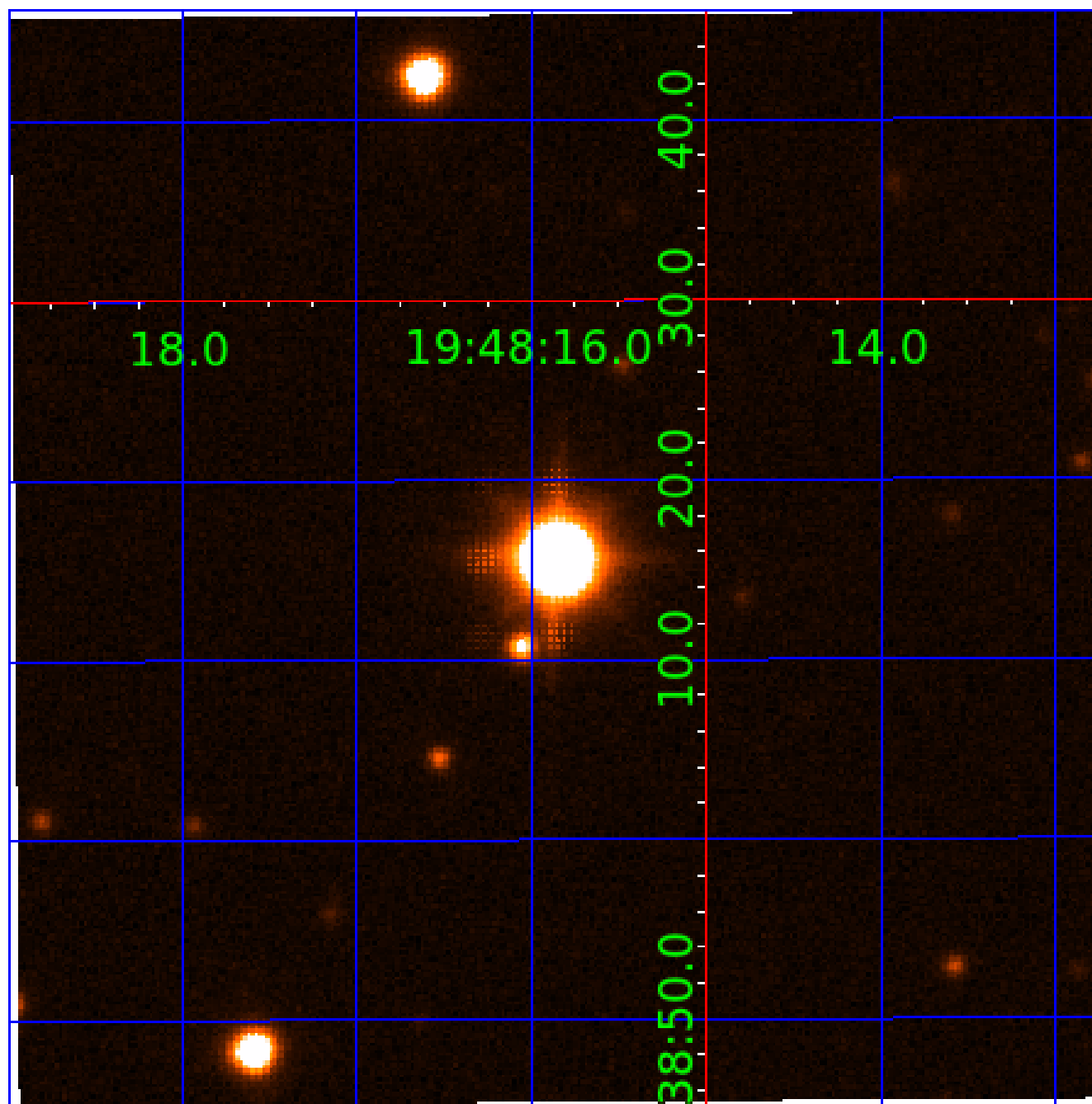


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 011622535

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011622535-01	OBS	No	0.570534	132.058958	38.2	4.273	26.4	25.9	1.74	7112	1.15	28698.06
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011622535-04	OBS	No	11.948408	132.246883	684.3	0.534	11.1	12.4	1.74	7112	5.00	497.14

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011622535-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_SATURATED
011622535-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
011622535-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_SATURATED
011622535-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—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.

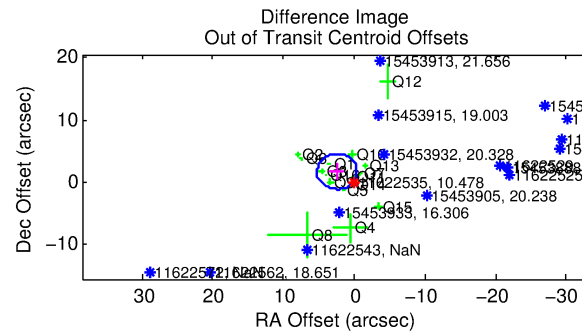
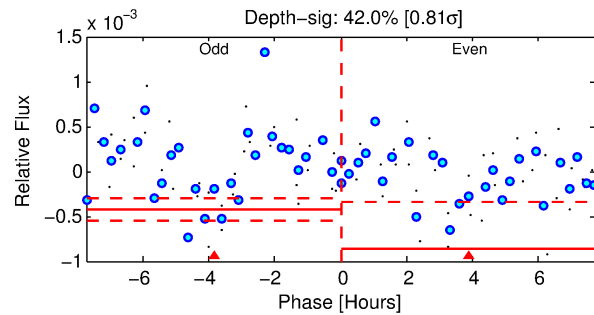
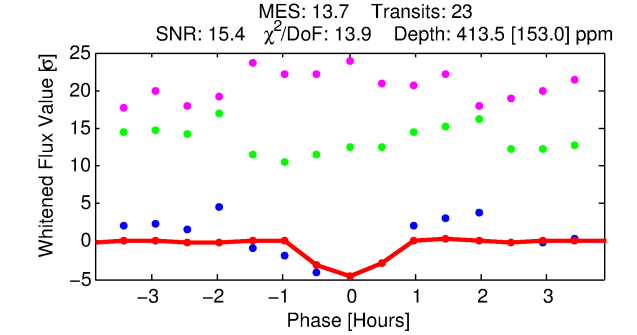
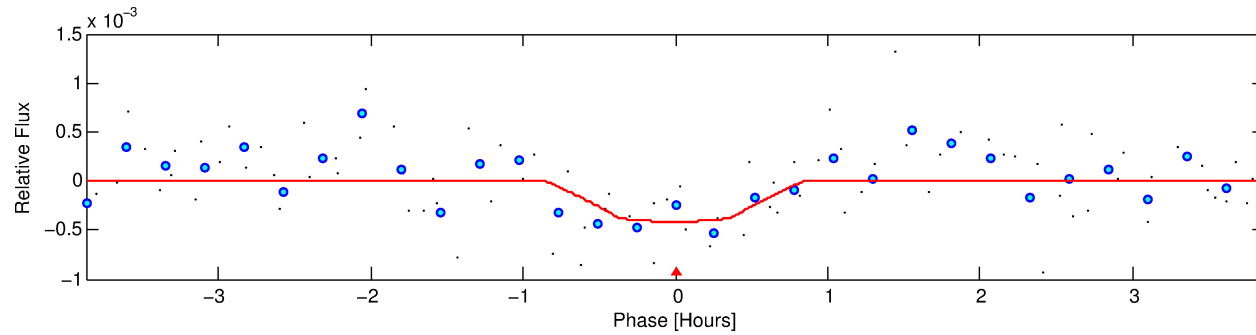
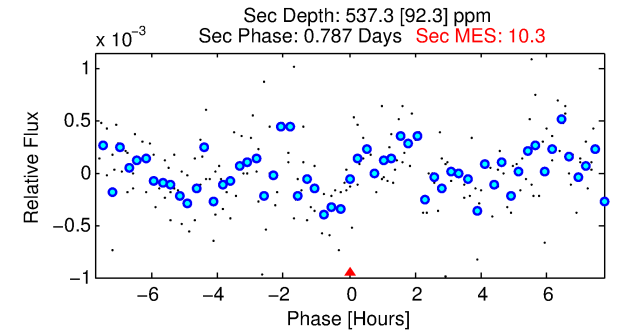
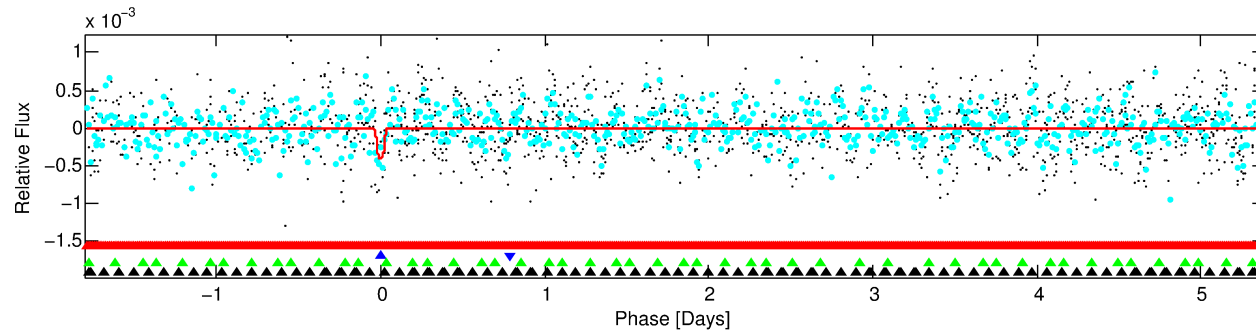
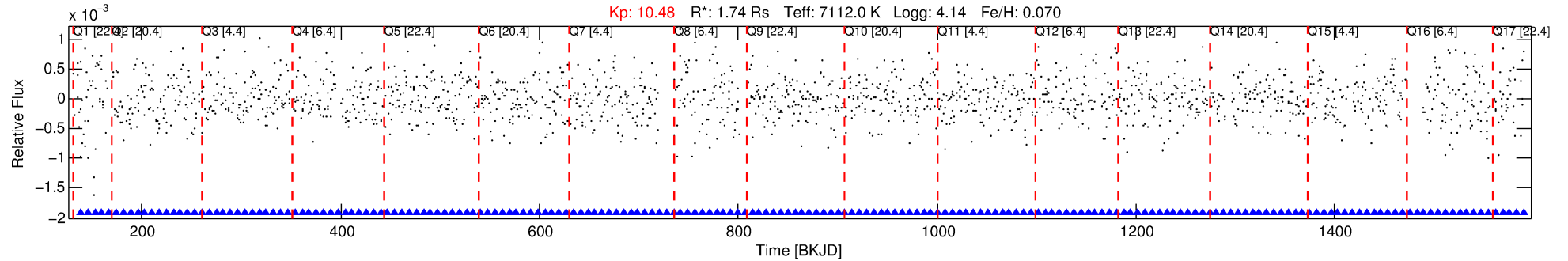
Ephemeris Match Information For 011622535-02

No Significant Match Found



# DV One-Page Summary

KIC: 11622535 Candidate: 2 of 4 Period: 7.187 d



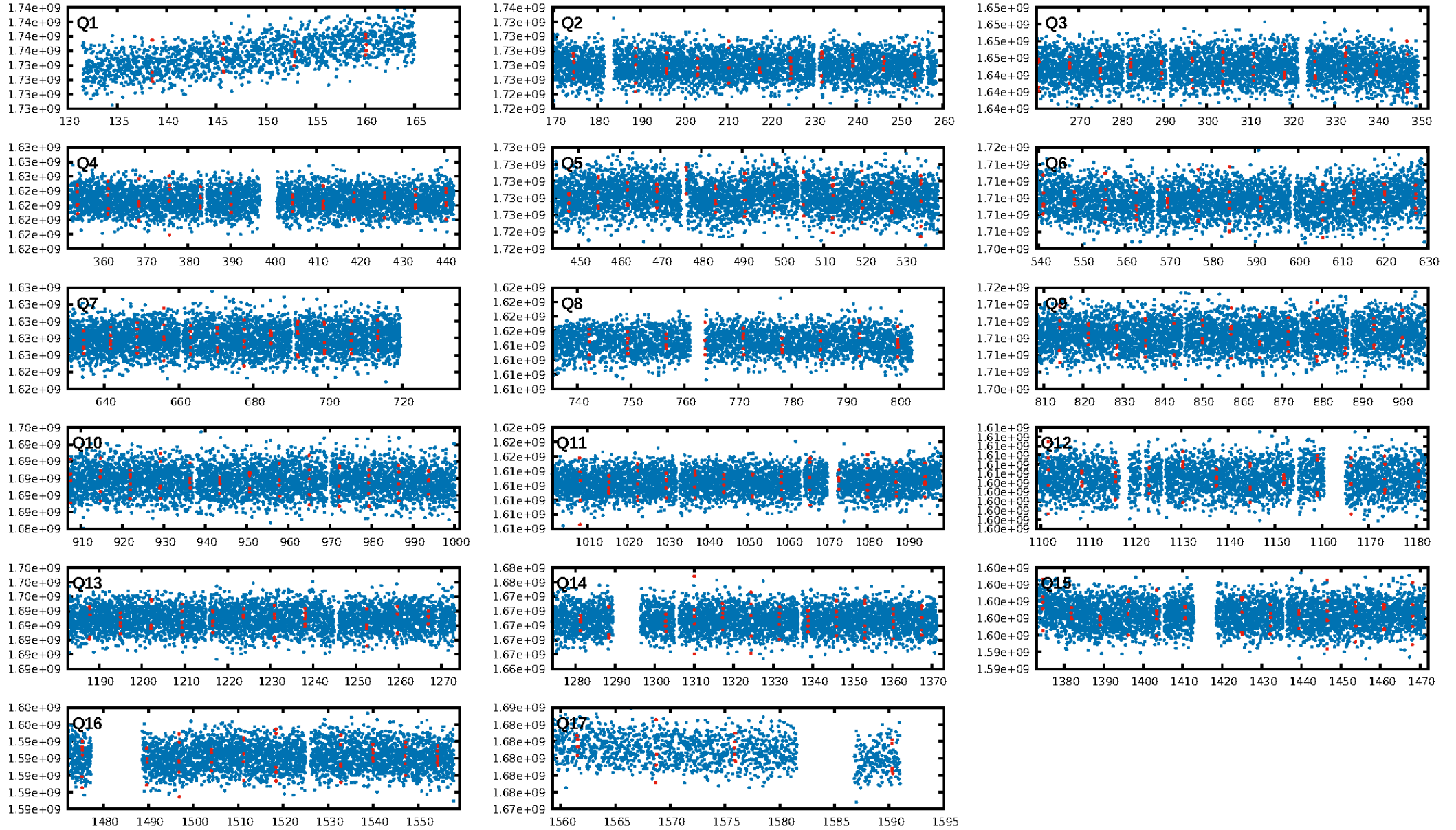
## DV Fit Results:

Period = 7.18697 [0.00013] d  
Epoch = 138.5180 [0.0128] BKJD  
 $R_p/R^* = 0.0204$  [0.0843]  
 $a/R^* = 28.62$  [702.04]  
 $b = 0.77$  [13.35]  
 $\text{Seff} = 979.11$  [390.78]  
 $\text{Teq} = 1426$  [142] K  
 $R_p = 3.87$  [16.04]  $R_e$   
 $a = 0.0841$  [0.0208] AU  
 $\text{Ag} = 139.40$  [1152.87] [0.12σ]  
 $\text{Teff} = 7578$  [15658] K [0.39σ]

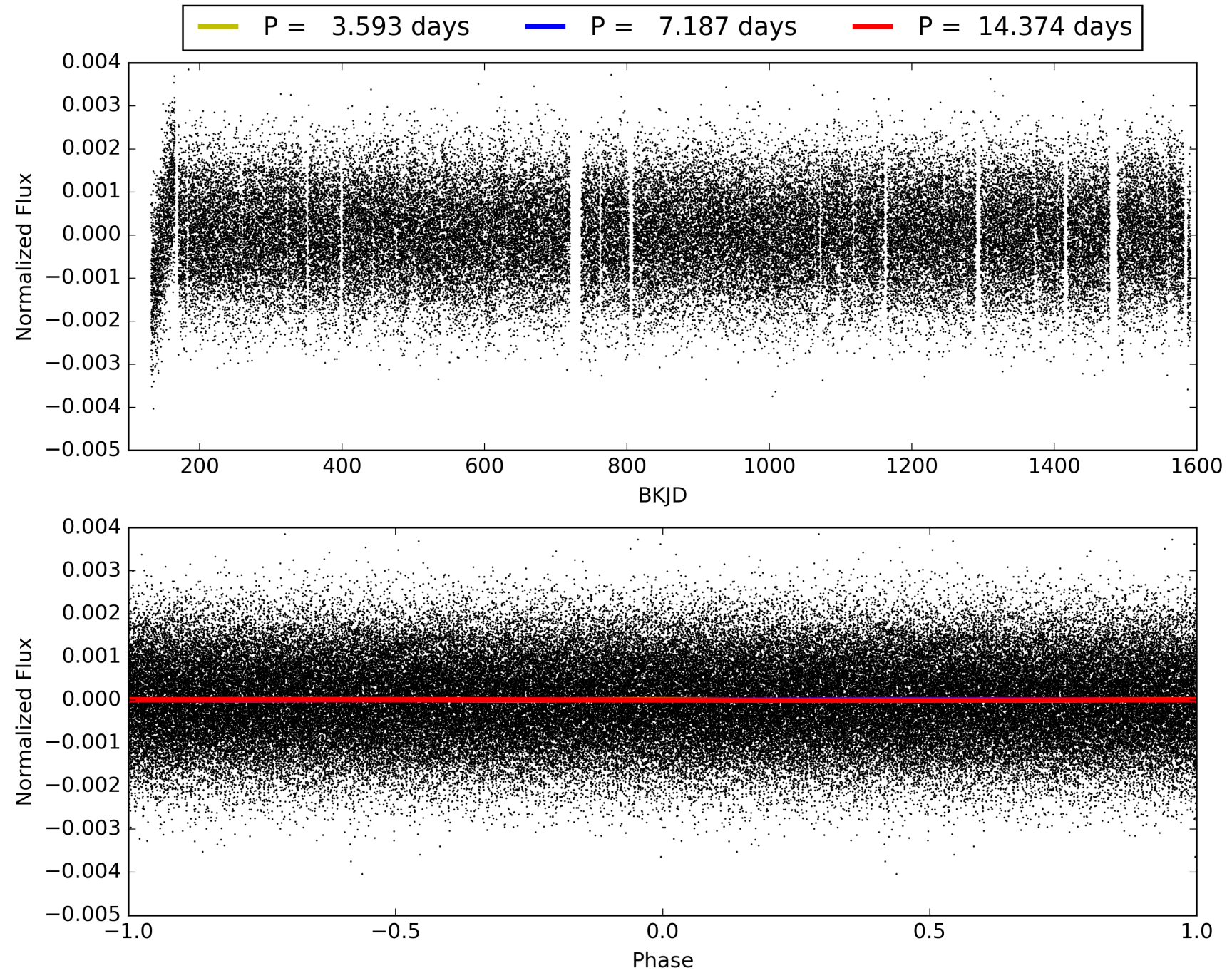
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [35.58σ]  
LongPeriod-sig: 100.0% [81.94σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.0%  
Bootstrap-pfa: 5.46e-08  
RollingBand-fgt: 1.00 [21/21]  
GhostDiagnostic-chr: 4.892  
Centroid-sig: 30.5%  
Centroid-so: 0.108 arcsec [1.32σ]  
OotOffset-rm: 2.967 arcsec [3.15σ]  
OotOffset-st: 4/4/4/4 [16]  
KicOffset-rm: 2.582 arcsec [2.65σ]  
KicOffset-st: 4/4/4/4 [16]  
DiffImageQuality-fgm: 0.19 [3/16]  
DiffImageOverlap-fno: 0.00 [0/17]

# TCE 011622535-02, PDC Light Curves

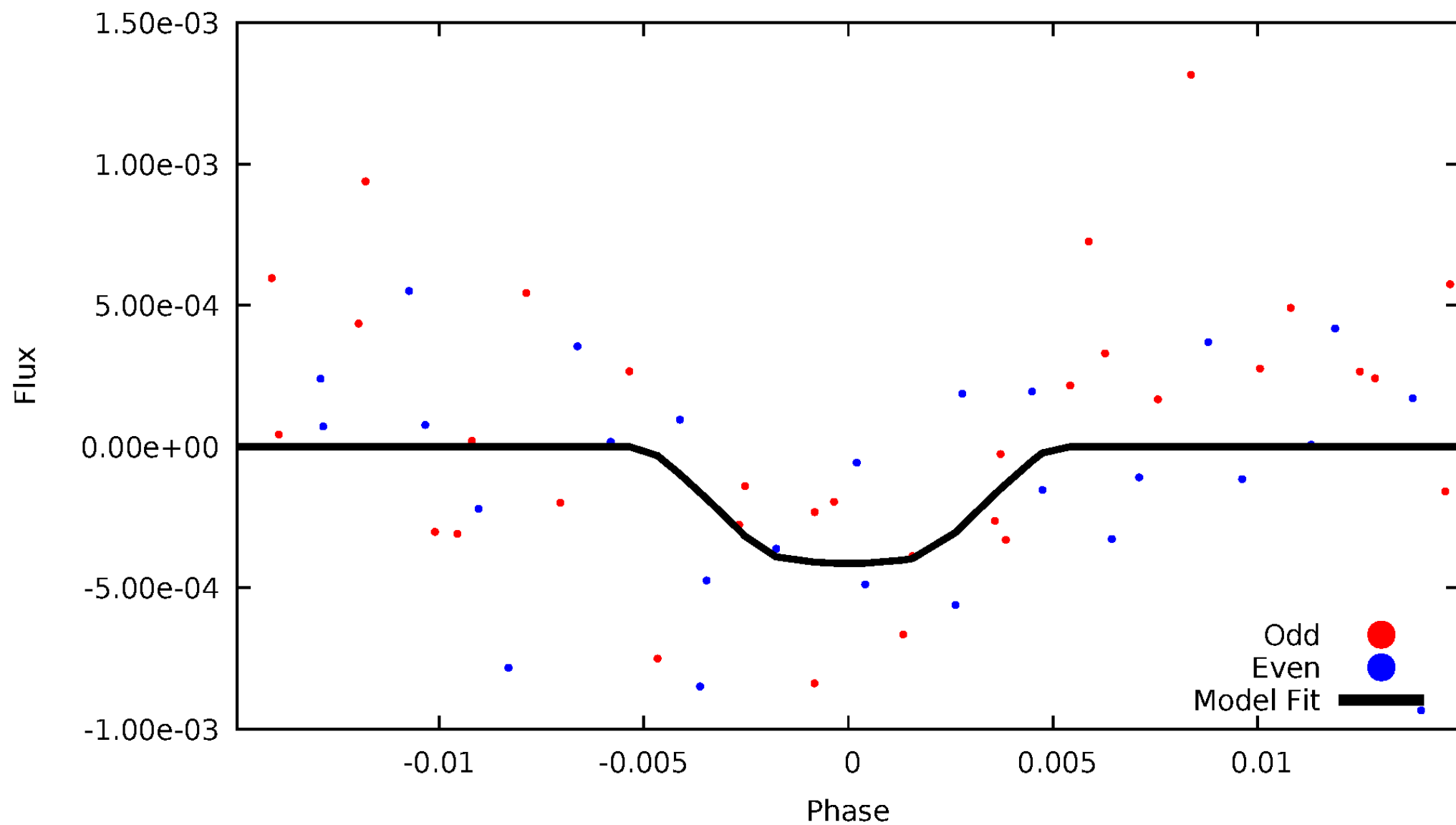


# TCE 011622535-02



# DV Odd/Even

TCE 011622535-02





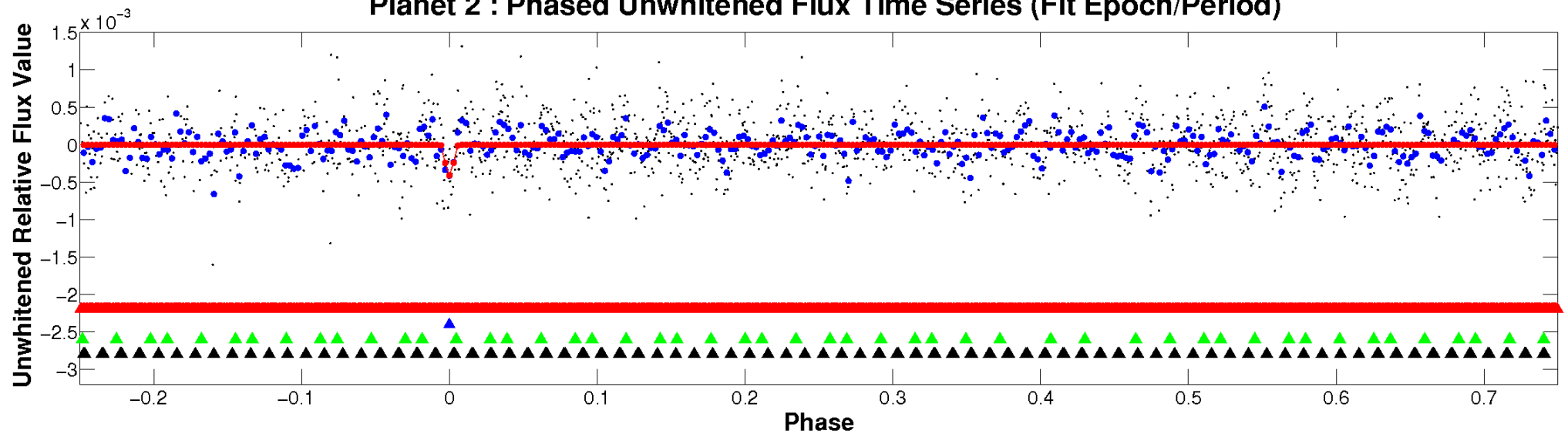


ALT Odd/Even

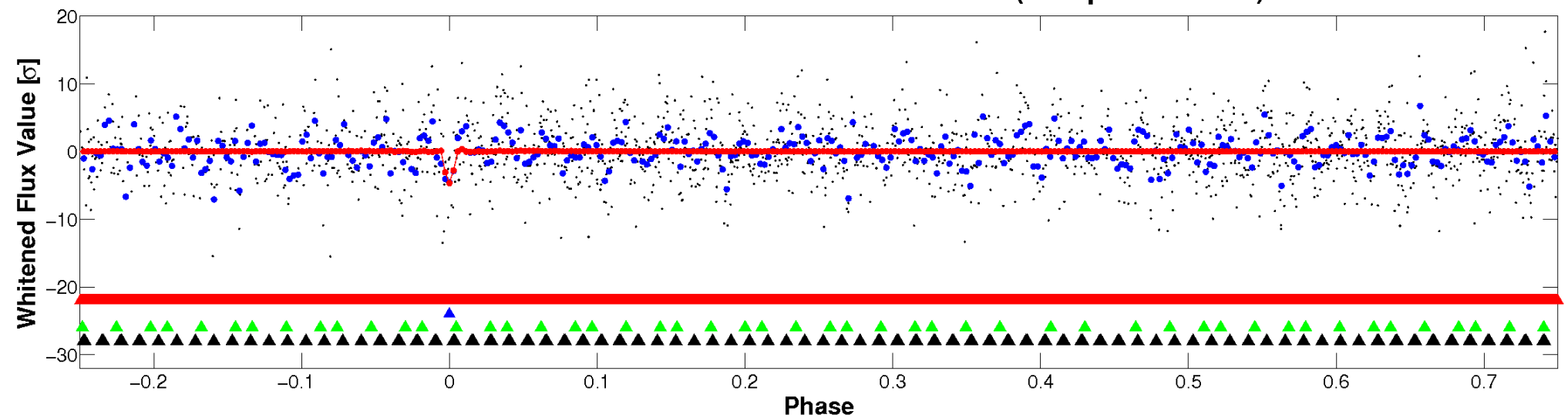
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

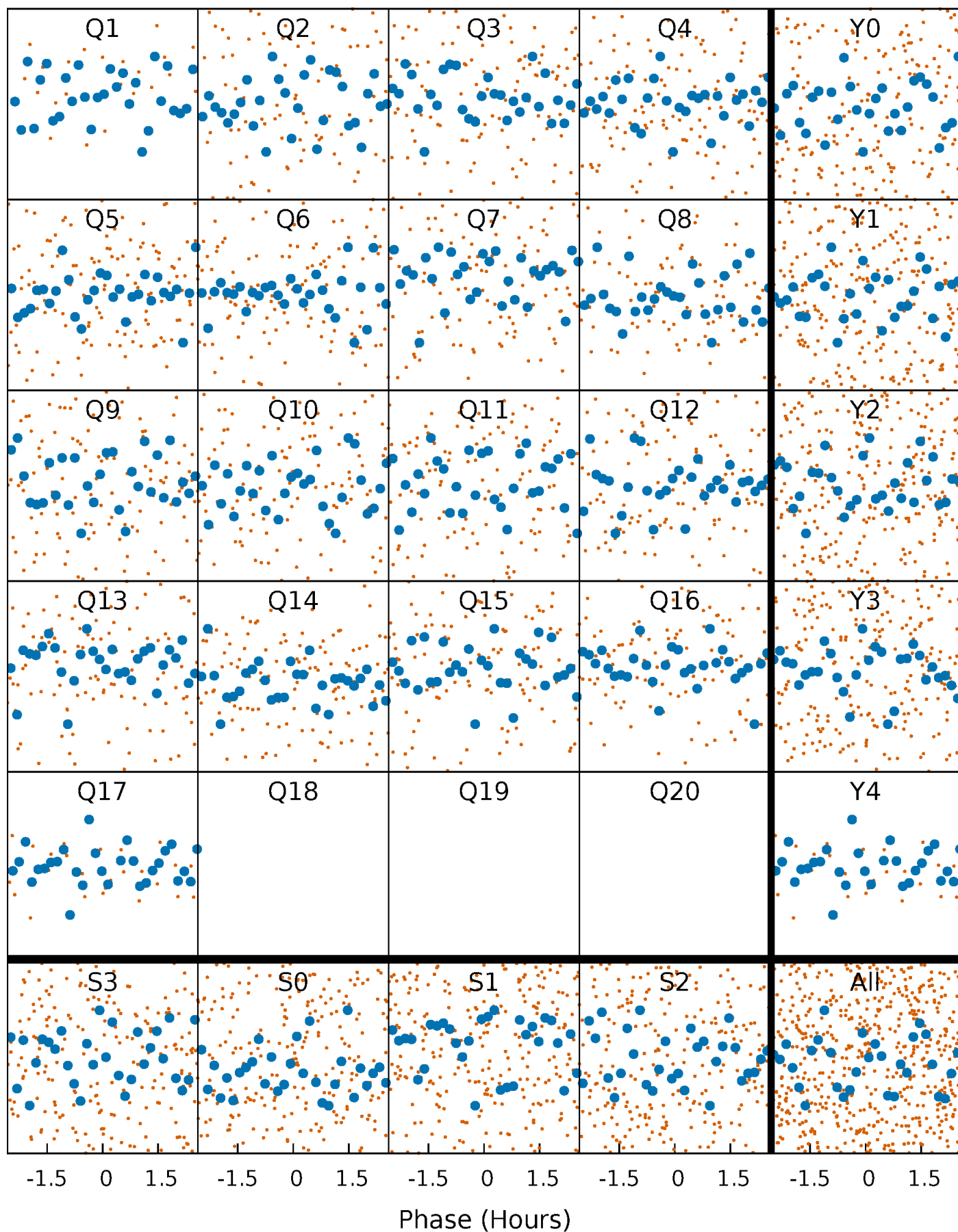


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

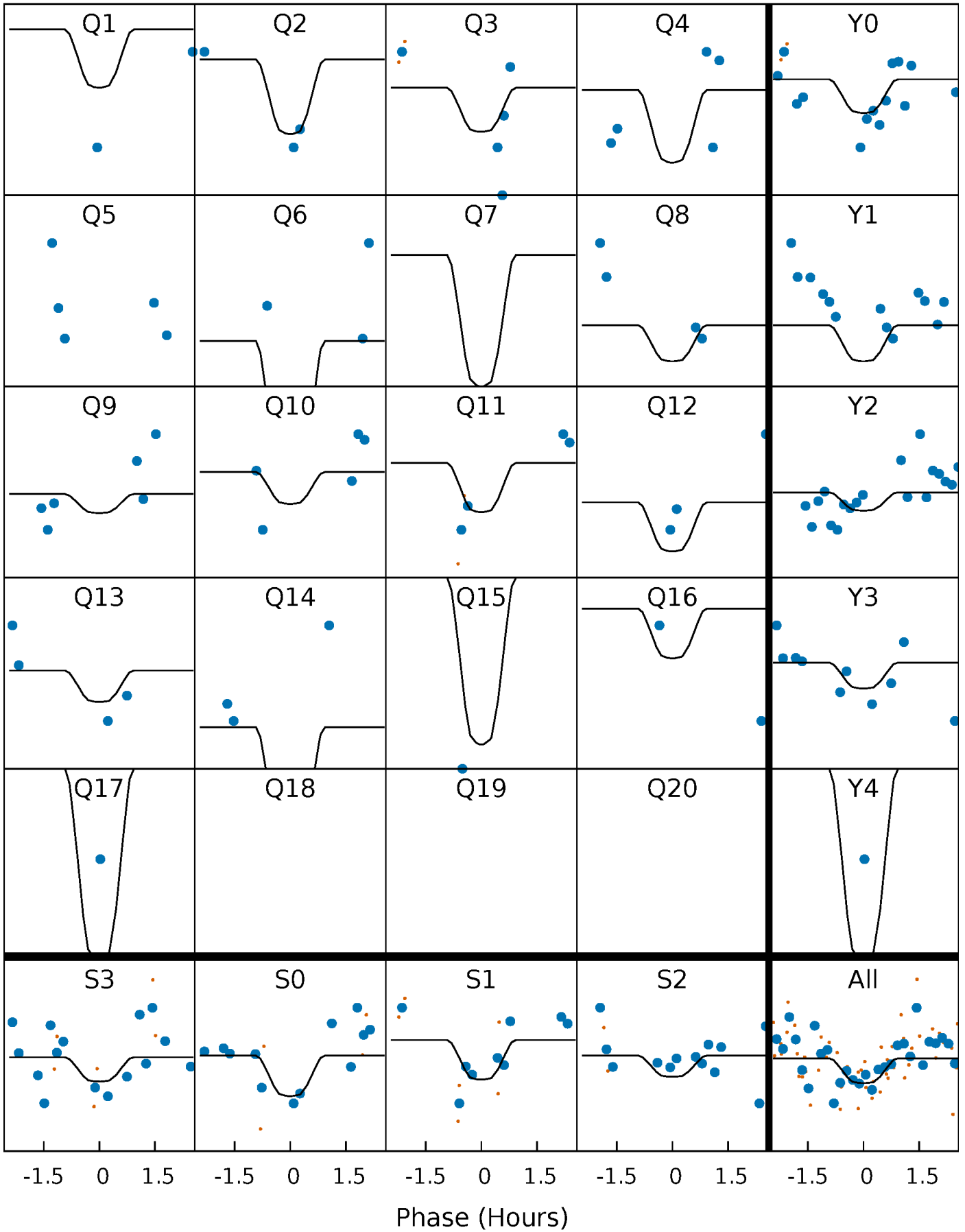
TCE 011622535-02 P= 7.186967 Days  $T_0=138.517994$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 011622535-02   P= 7.186967 Days    $T_0=138.517994$  (BKJD)

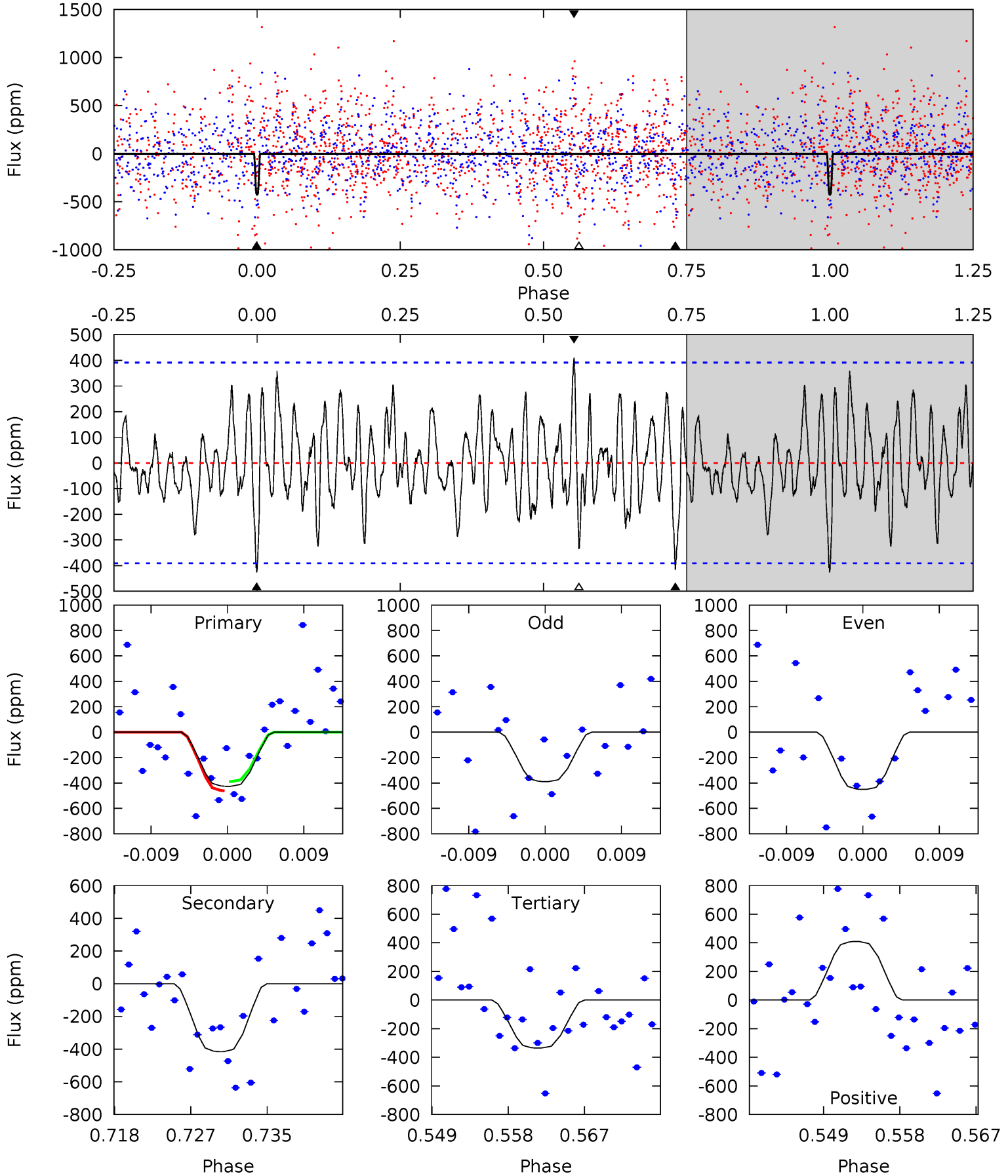


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

011622535-02, P = 7.186967 Days, E = 131.331027 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
5.50	5.37	4.33	5.29	5.05	2.62	1.75	1.17	0.22	1.04	0.09	0.40	0	0.49	0.47



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 011622535

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7112^{+200}_{-343}$	$4.144^{+0.124}_{-0.186}$	$0.070^{+0.200}_{-0.350}$	$1.738^{+0.525}_{-0.350}$	$1.536^{+0.204}_{-0.226}$	$0.412^{+0.247}_{-0.206}$
	+3%/-5%	+3%/-4%	+286%/-500%	+30%/-20%	+13%/-15%	+60%/-50%
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 011622535-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-416 \pm 77$	$13.16^{+12.11}_{-8.91}$	$2001^{+158}_{-136}$	$4113^{+2726}_{-886}$	$9.504^{+80.589}_{-7.120}$
Alt.	N/A	N/A	N/A	N/A	N/A

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

$T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{\text{obs}}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{\text{obs}} \gg T_{\text{max}}$  AND  $A_{\text{obs}} \gg 1.0$



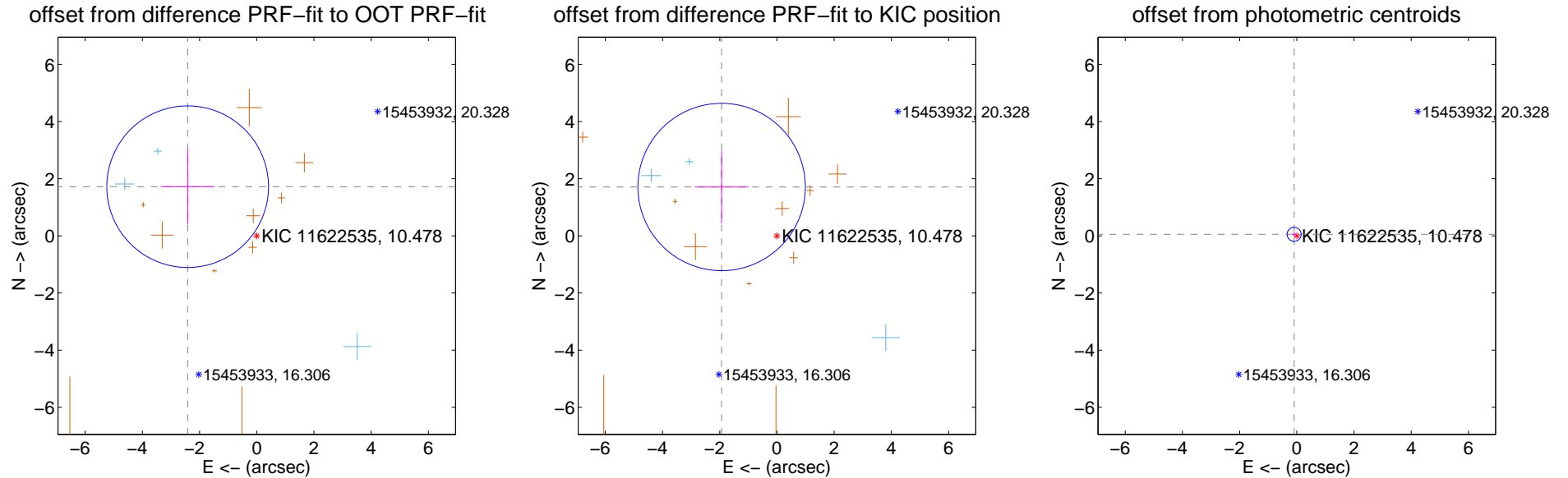
## DV Centroid Data

Supplemental centroid analysis for 011622535-02. **Kepler magnitude: 10.48.** Transit SNR 15.35

**There are 3 quarters with good PRF difference image offsets**

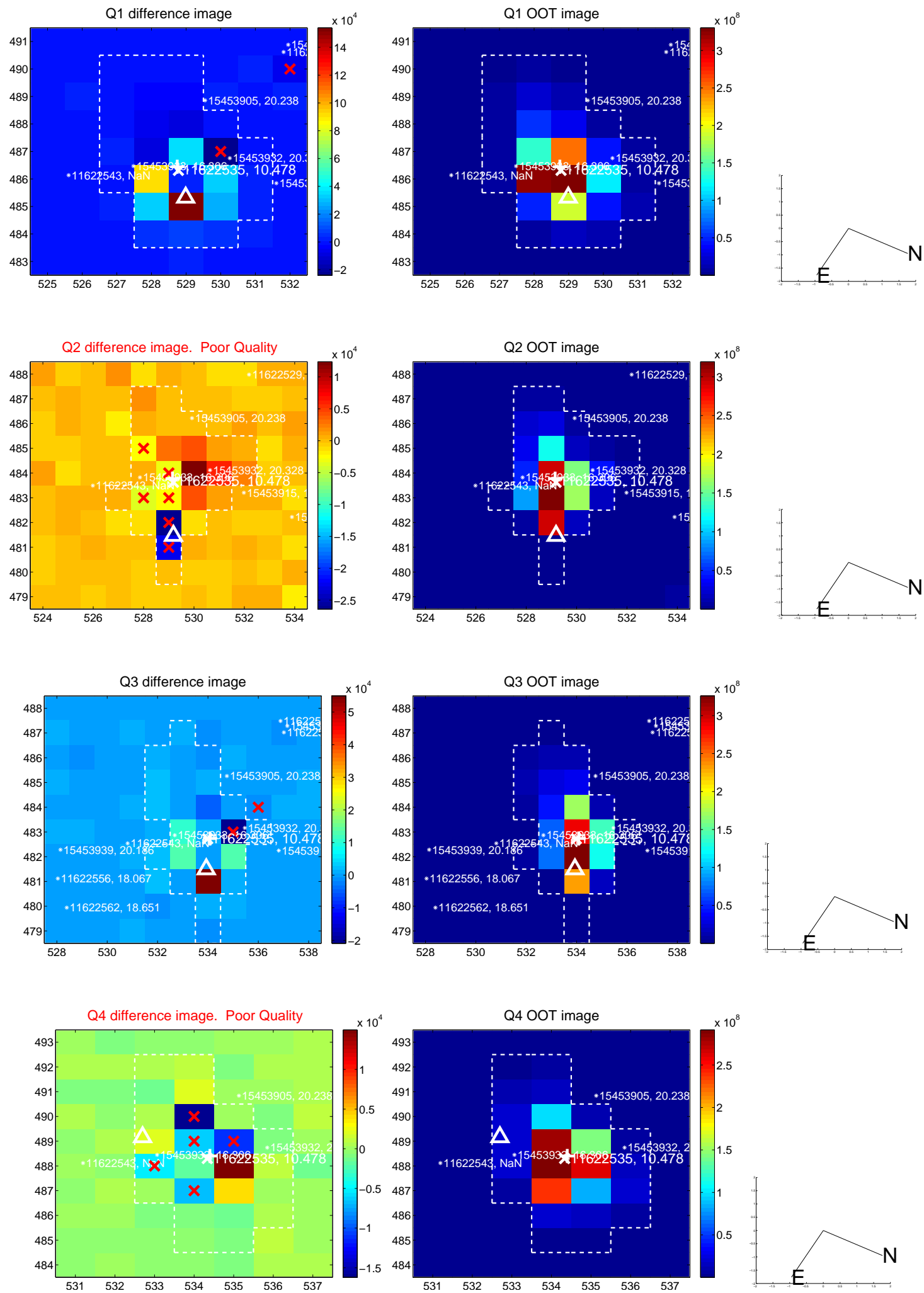
The direct PRF centroid is offset from the target star catalog position by about 0.43 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>2.967 \pm 0.942</math></b>	<b>3.15</b>	$2.417 \pm 0.939$	$1.720 \pm 1.316$
PRF-fit source offset from KIC position	$2.582 \pm 0.976$	2.65	$1.935 \pm 0.940$	$1.710 \pm 1.271$
photometric centroid source offset	$0.11 \pm 0.08$	1.32	$0.09 \pm 0.08$	$0.05 \pm 0.08$

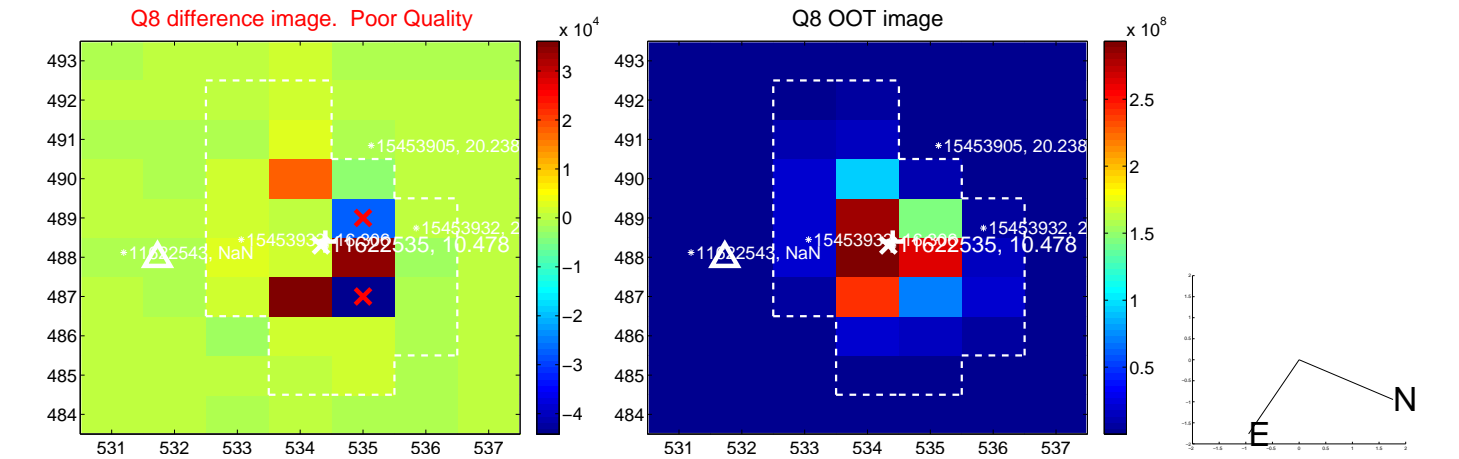
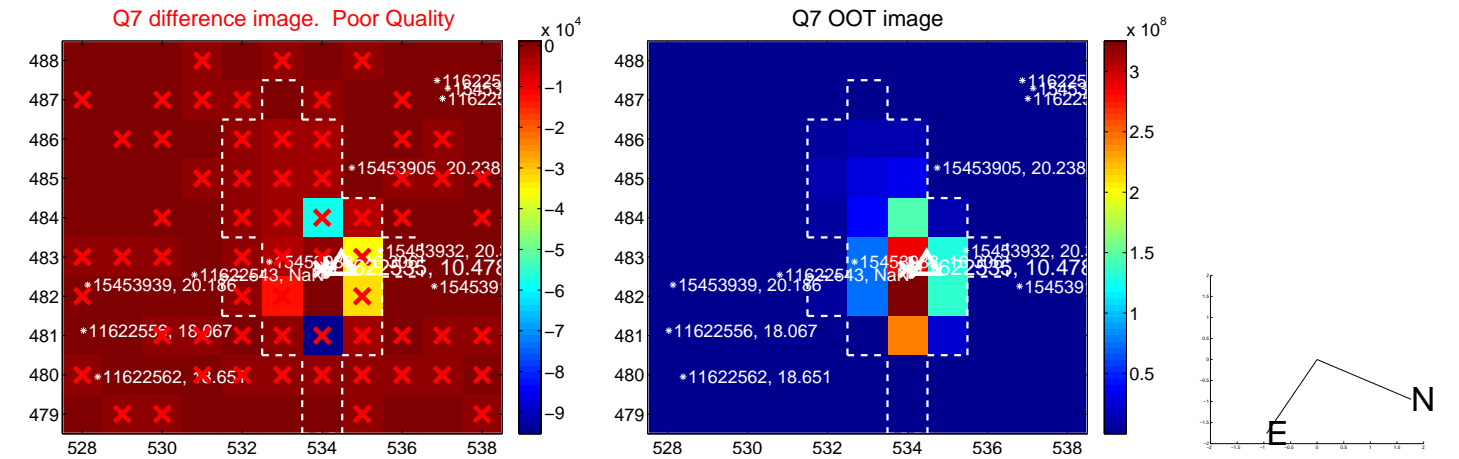
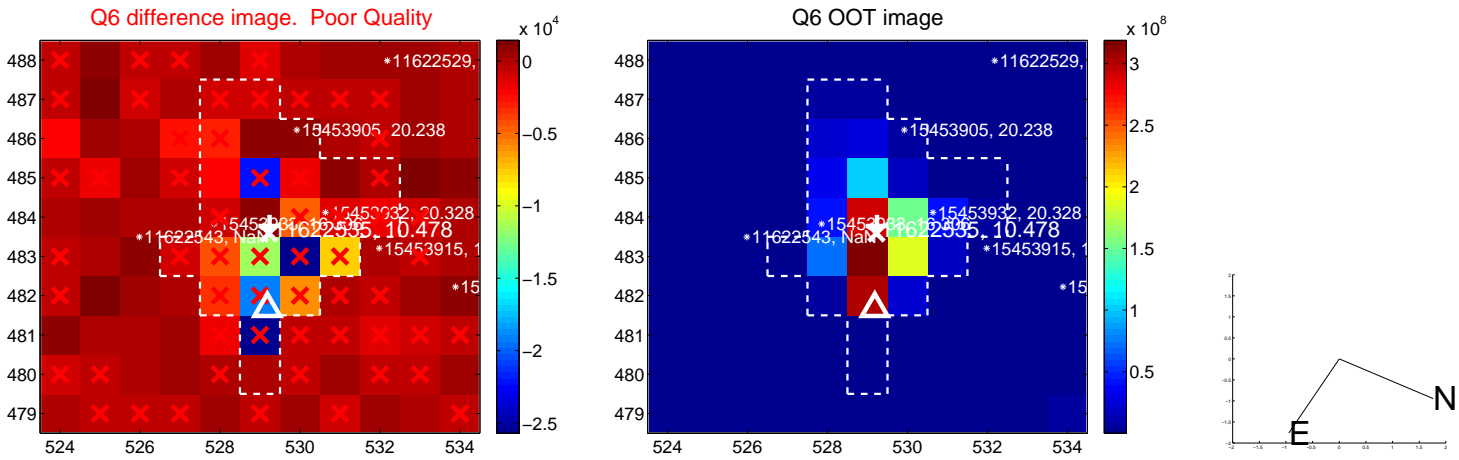
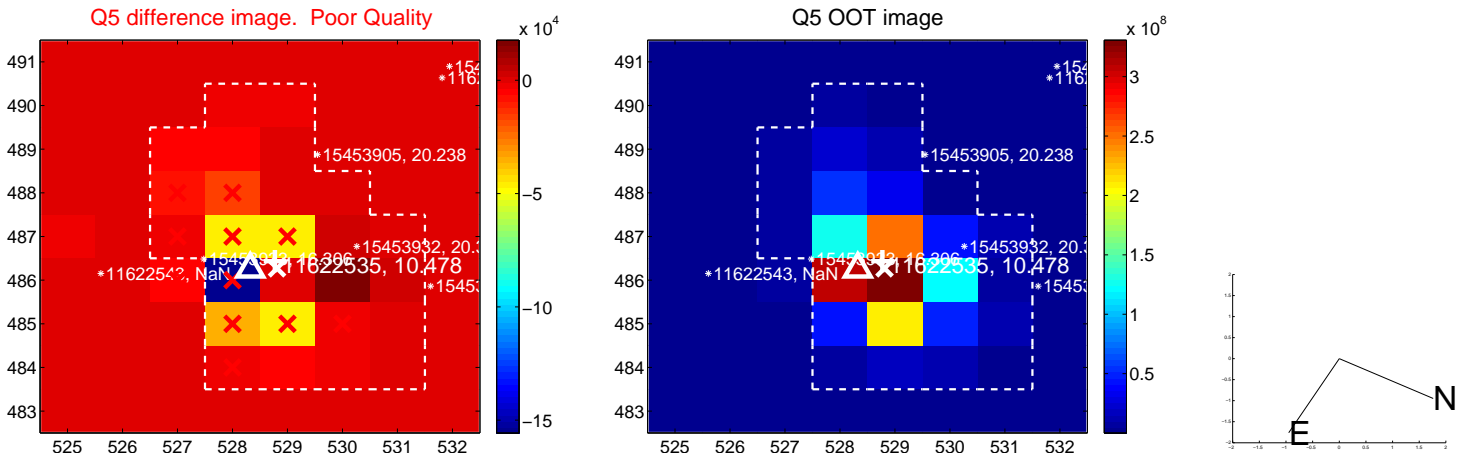


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

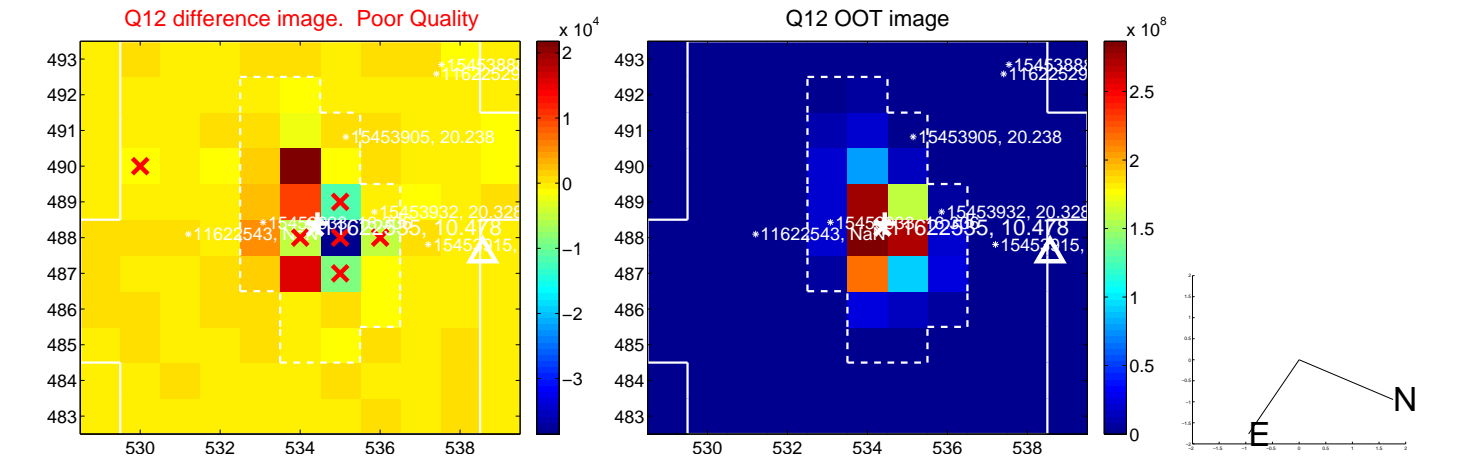
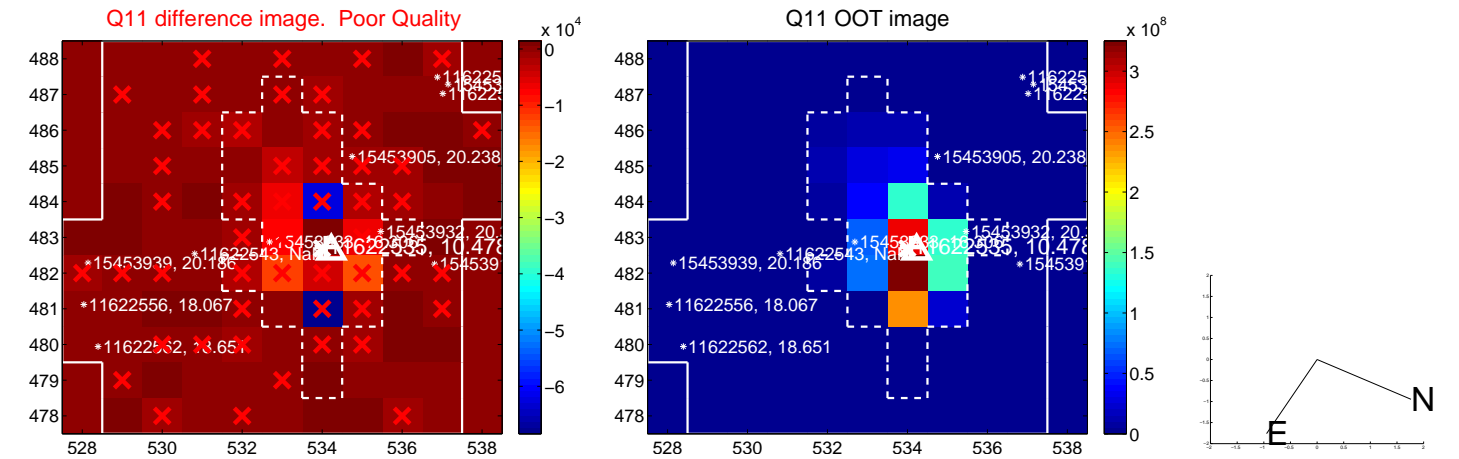
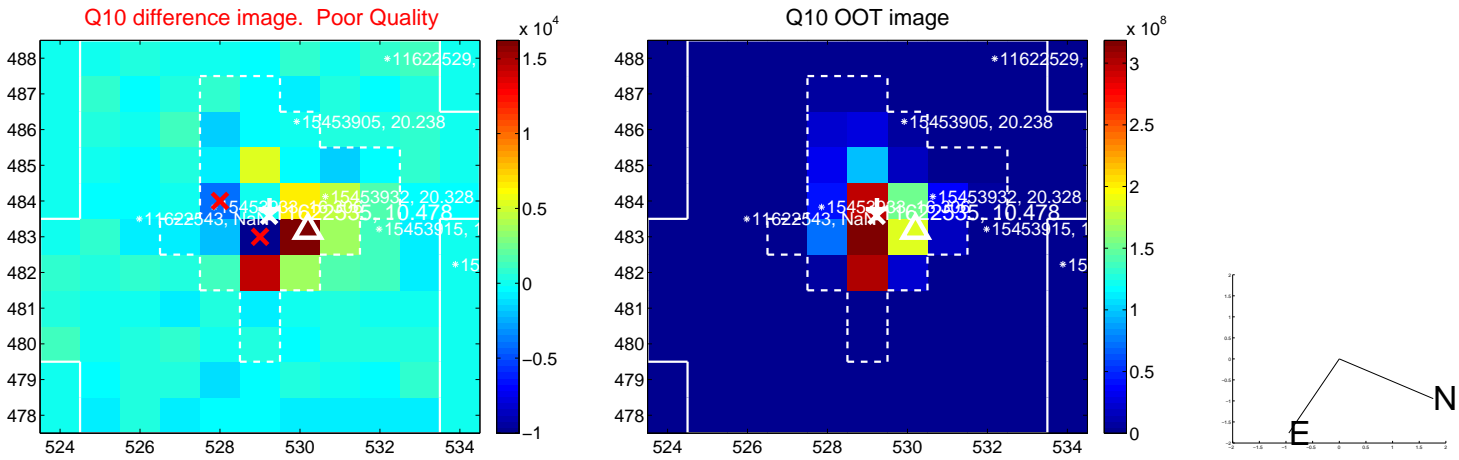
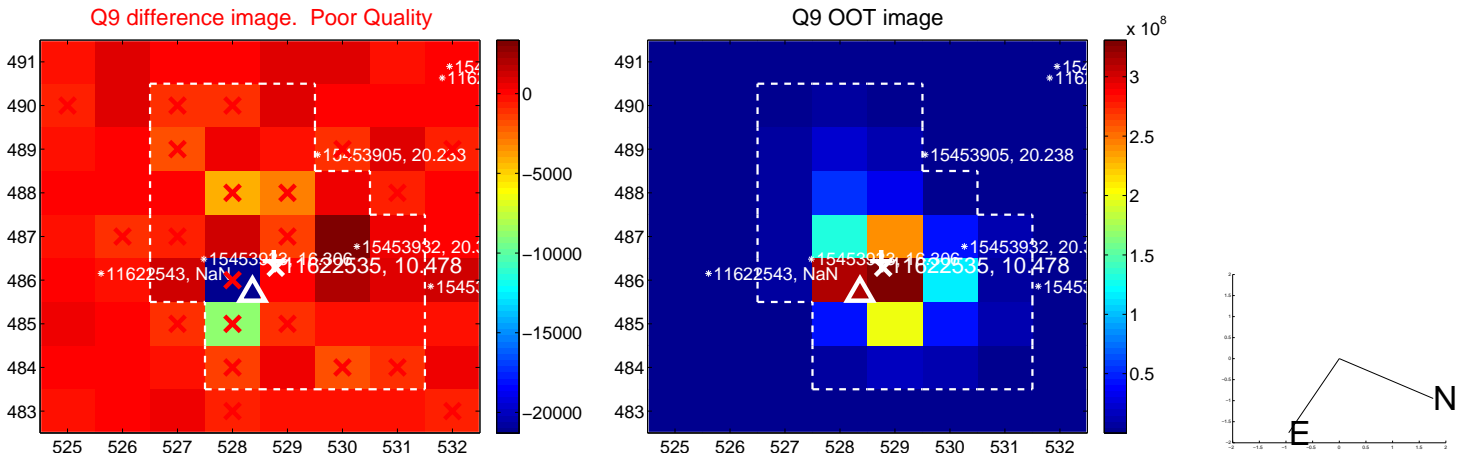
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



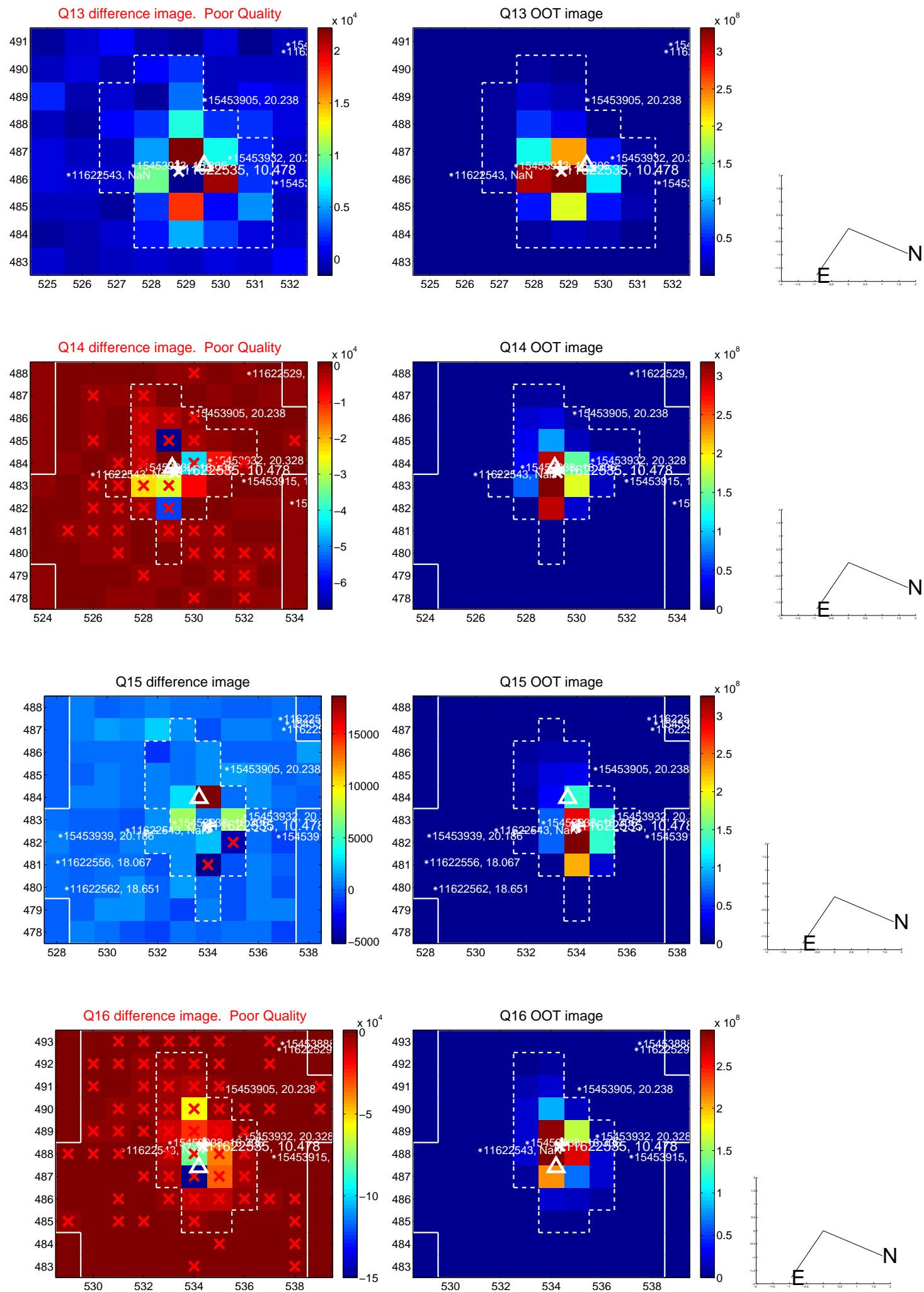
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.

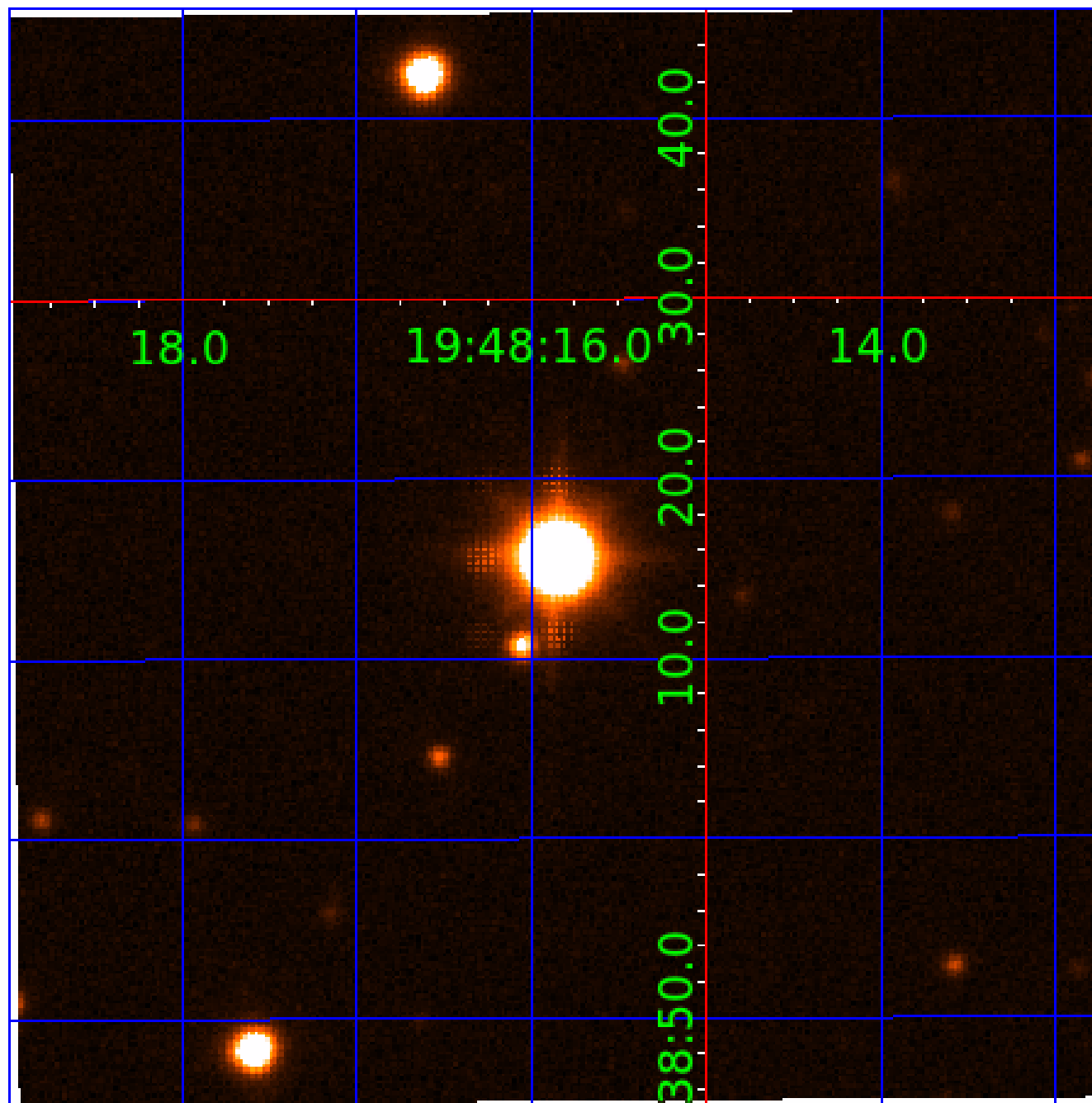






UKIRT Image

Declination



# KIC 011622535

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011622535-01	OBS	No	0.570534	132.058958	38.2	4.273	26.4	25.9	1.74	7112	1.15	28698.06
011622535-02	OBS	No	7.186967	138.517994	413.5	1.288	13.7	15.4	1.74	7112	3.87	979.12
011622535-03	OBS	No	29.160879	156.561000	170.7	1.500	14.8	-1.0	1.74	7112	2.31	151.30
011622535-04	OBS	No	11.948408	132.246883	684.3	0.534	11.1	12.4	1.74	7112	5.00	497.14

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011622535-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_SATURATED
011622535-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
011622535-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_SATURATED
011622535-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED

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

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

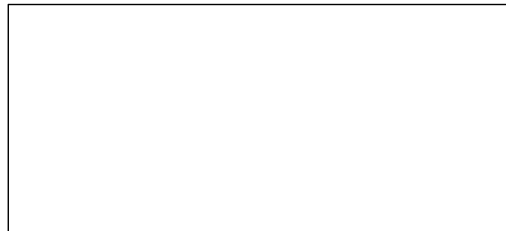
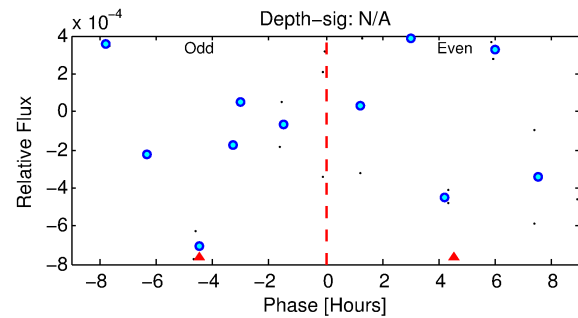
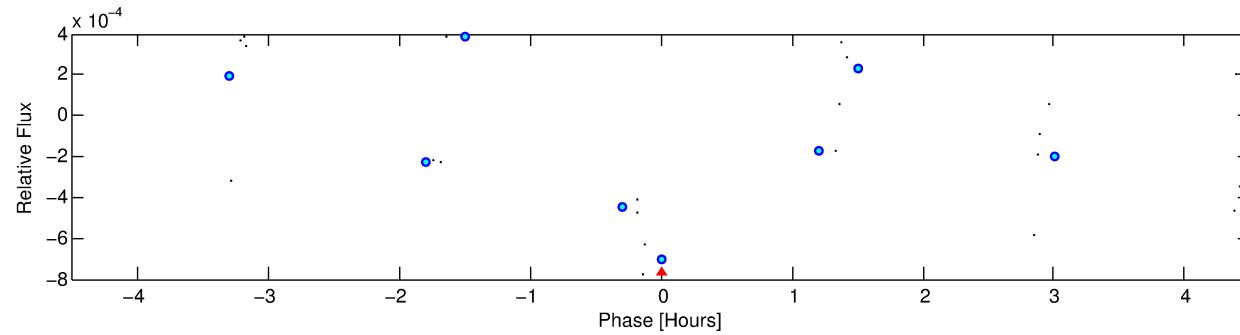
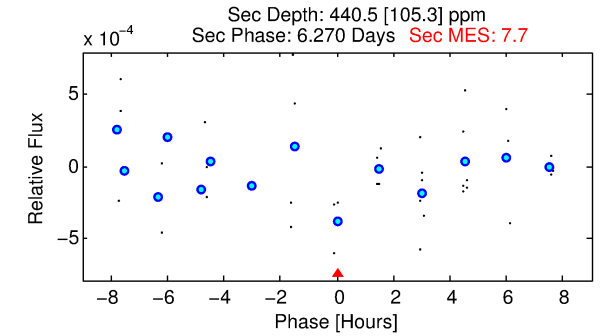
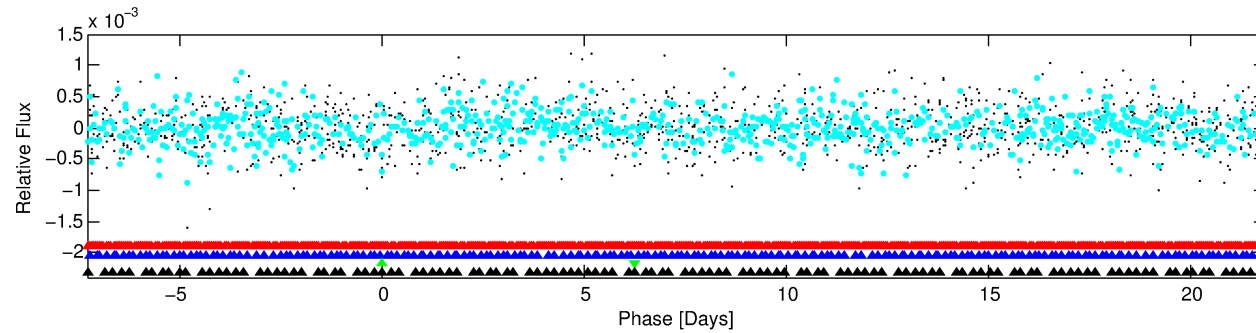
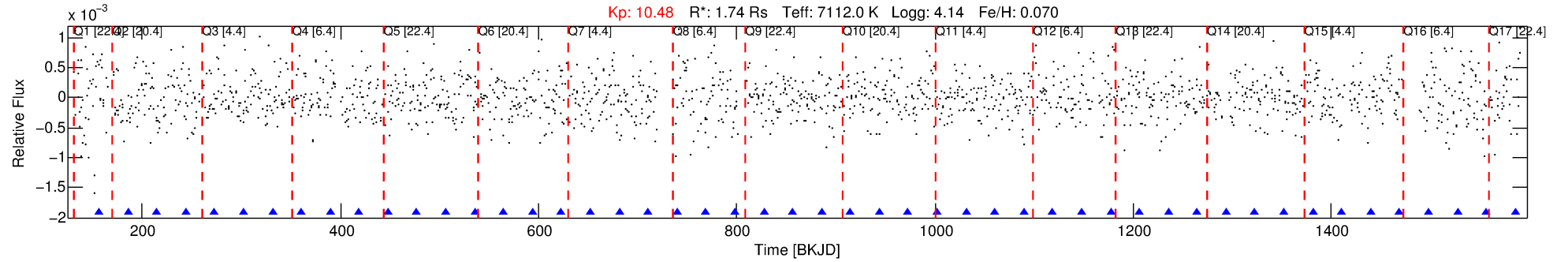
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 011622535-03

No Significant Match Found

# DV One-Page Summary

KIC: 11622535 Candidate: 3 of 4 Period: 29.161 d



## TPS TCE Results:

Period = 29.16088 d  
Epoch = 156.5610 BKJD

DV fit results are unavailable

## DV Diagnostic Results:

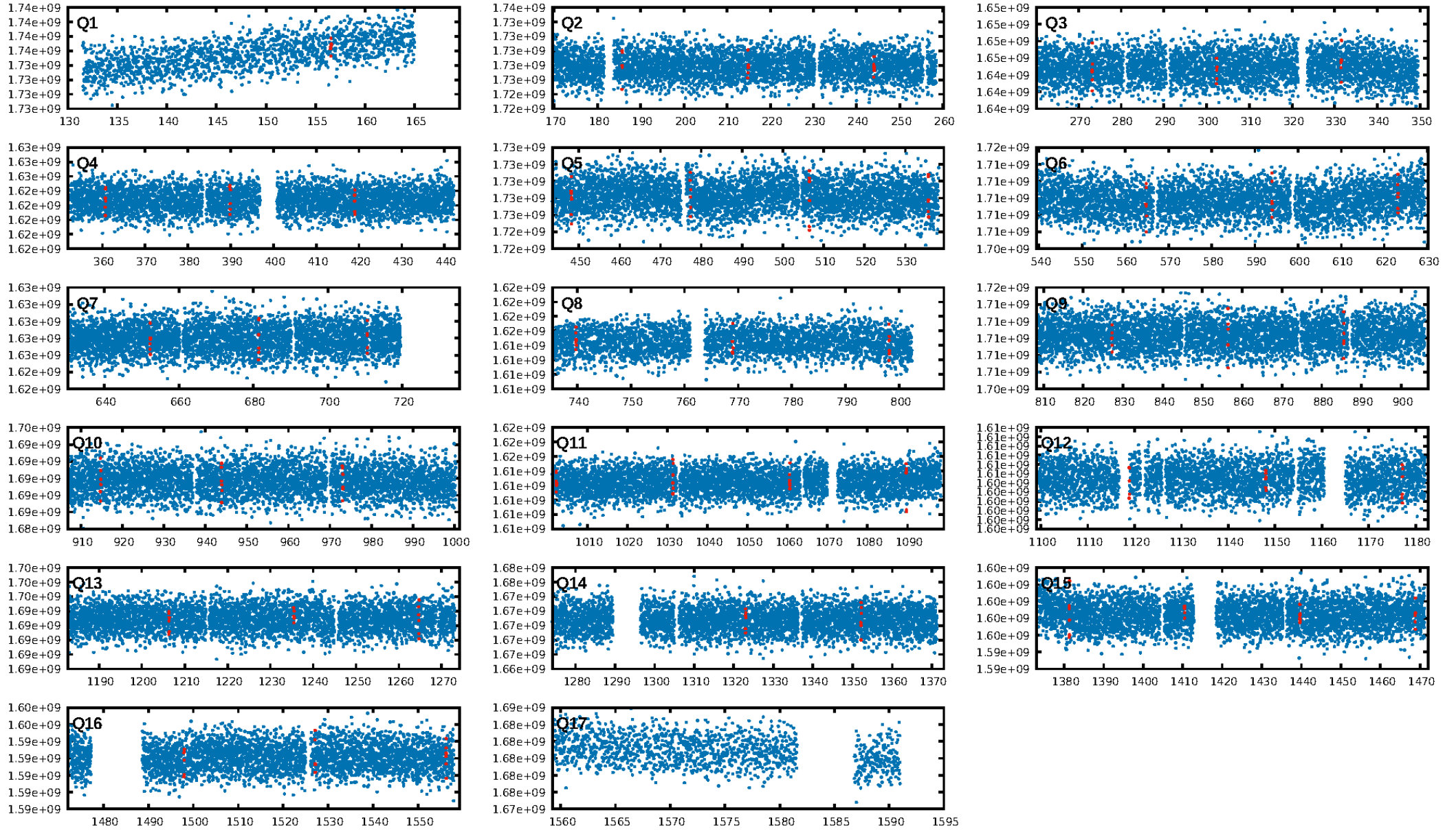
ShortPeriod-sig: 100.0% [259.45s]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.80e-08  
RollingBand-fgt: N/A  
GhostDiagnostic-chr: N/A

Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0/0 [0]  
KicOffset-st: 0/0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: N/A

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 18:08:13 Z

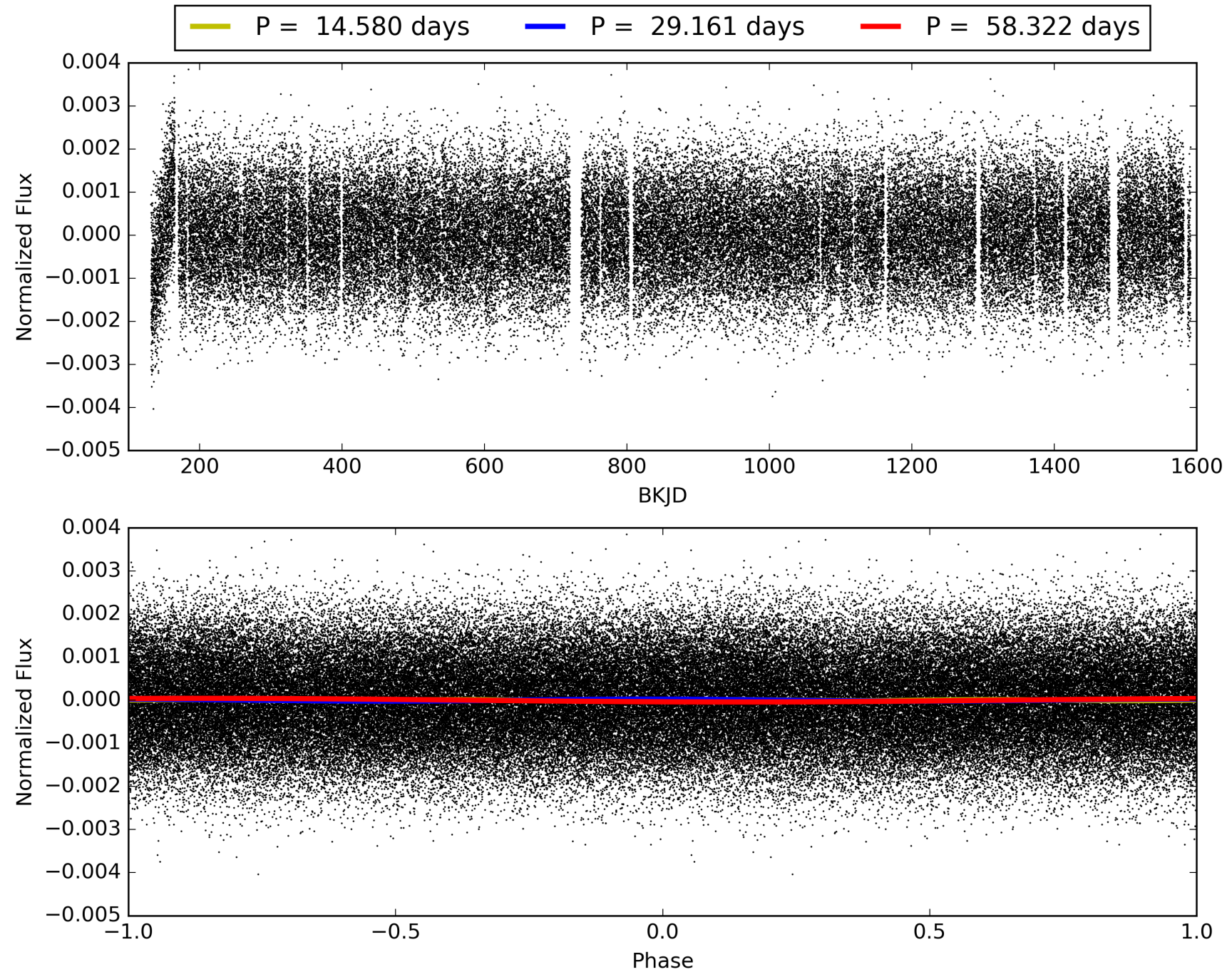
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 011622535-03, PDC Light Curves



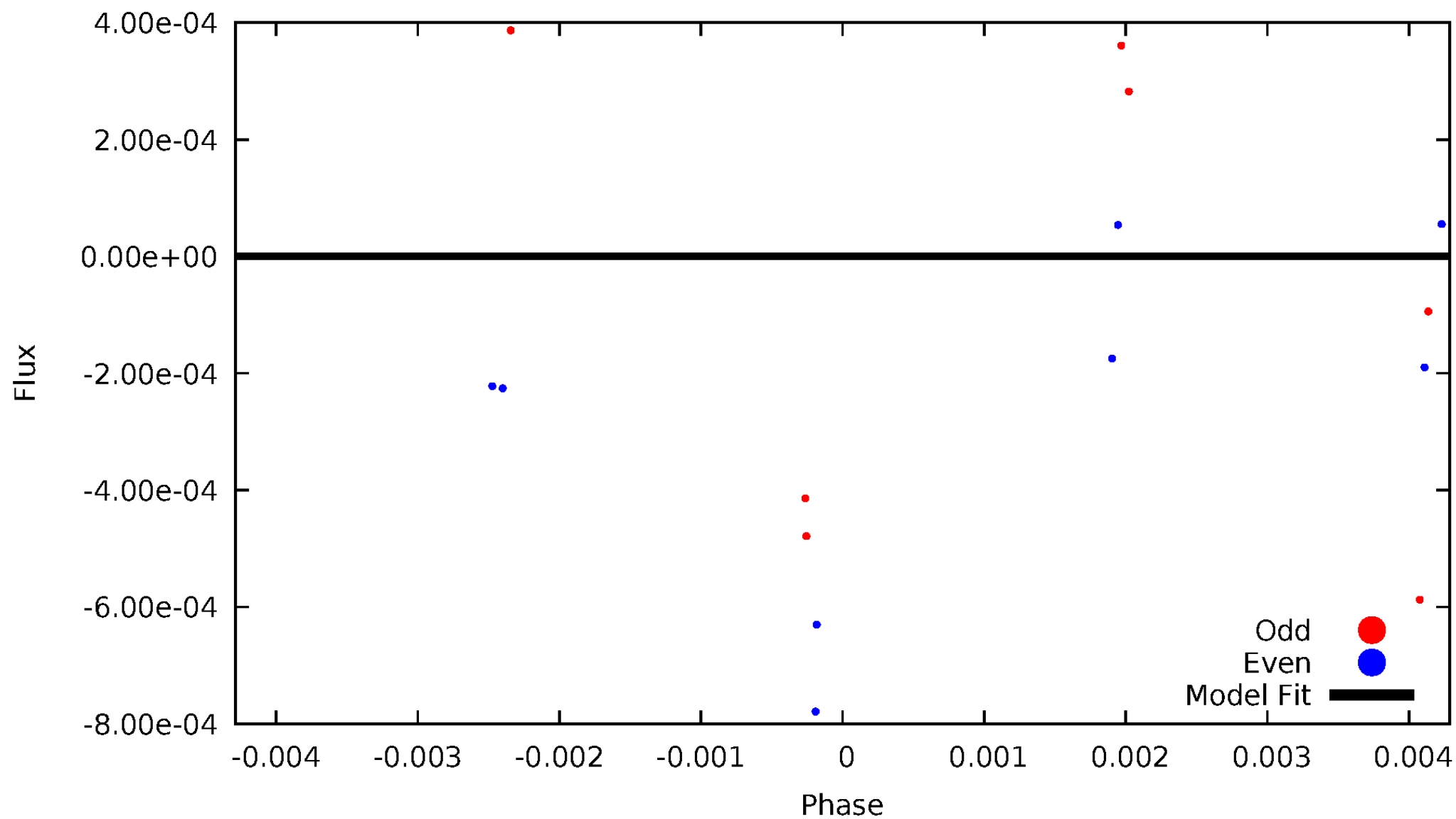


# TCE 011622535-03



# DV Odd/Even

TCE 011622535-03



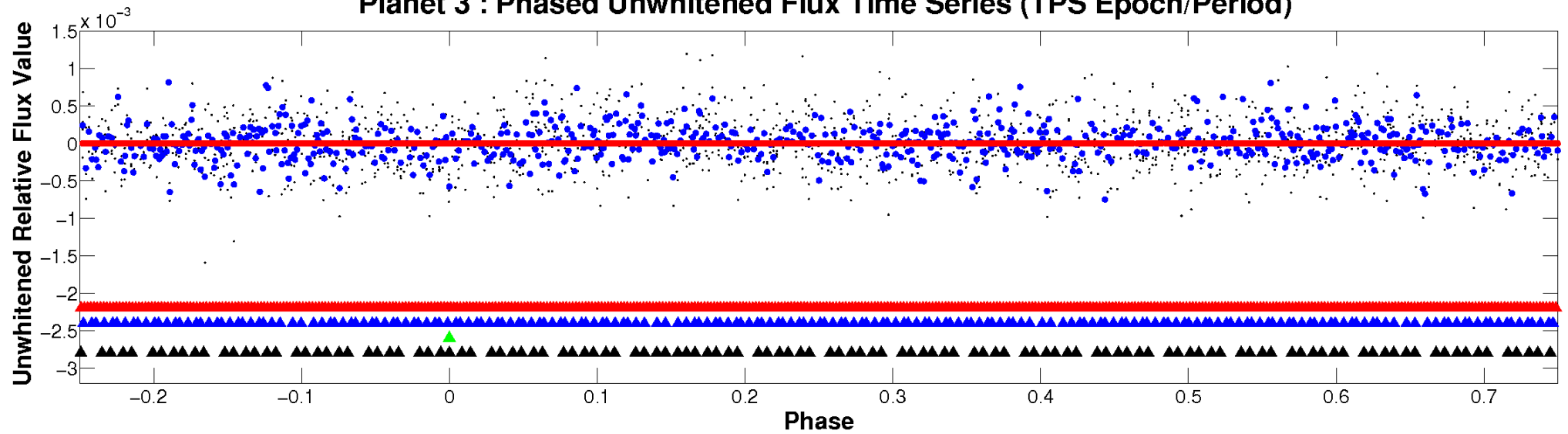


ALT Odd/Even

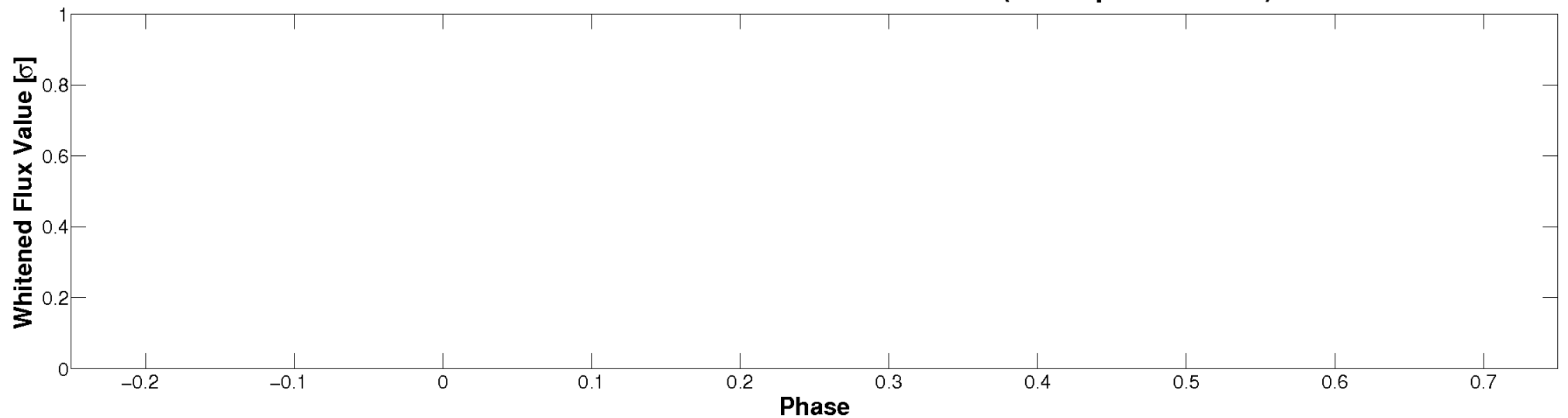
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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



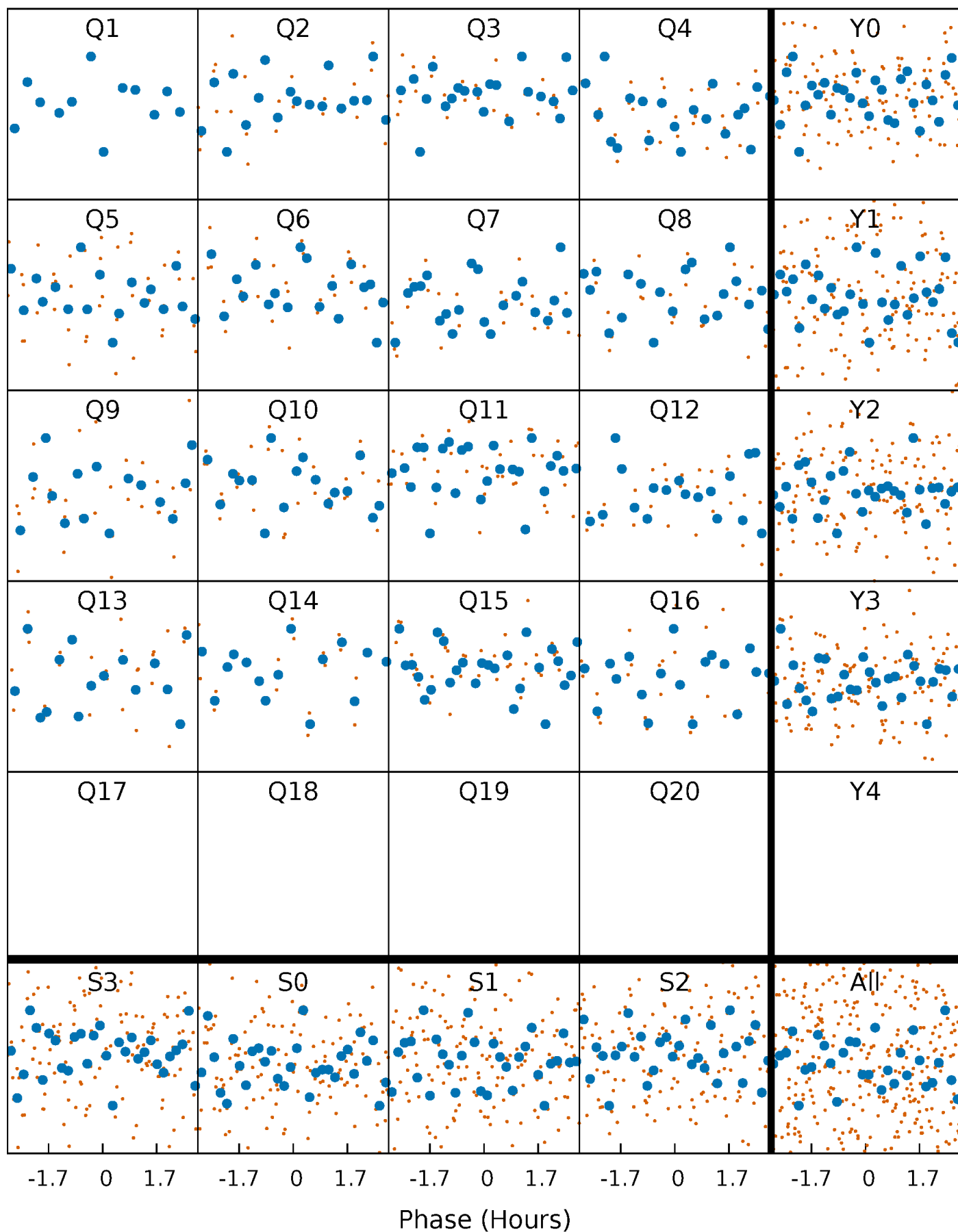
Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)





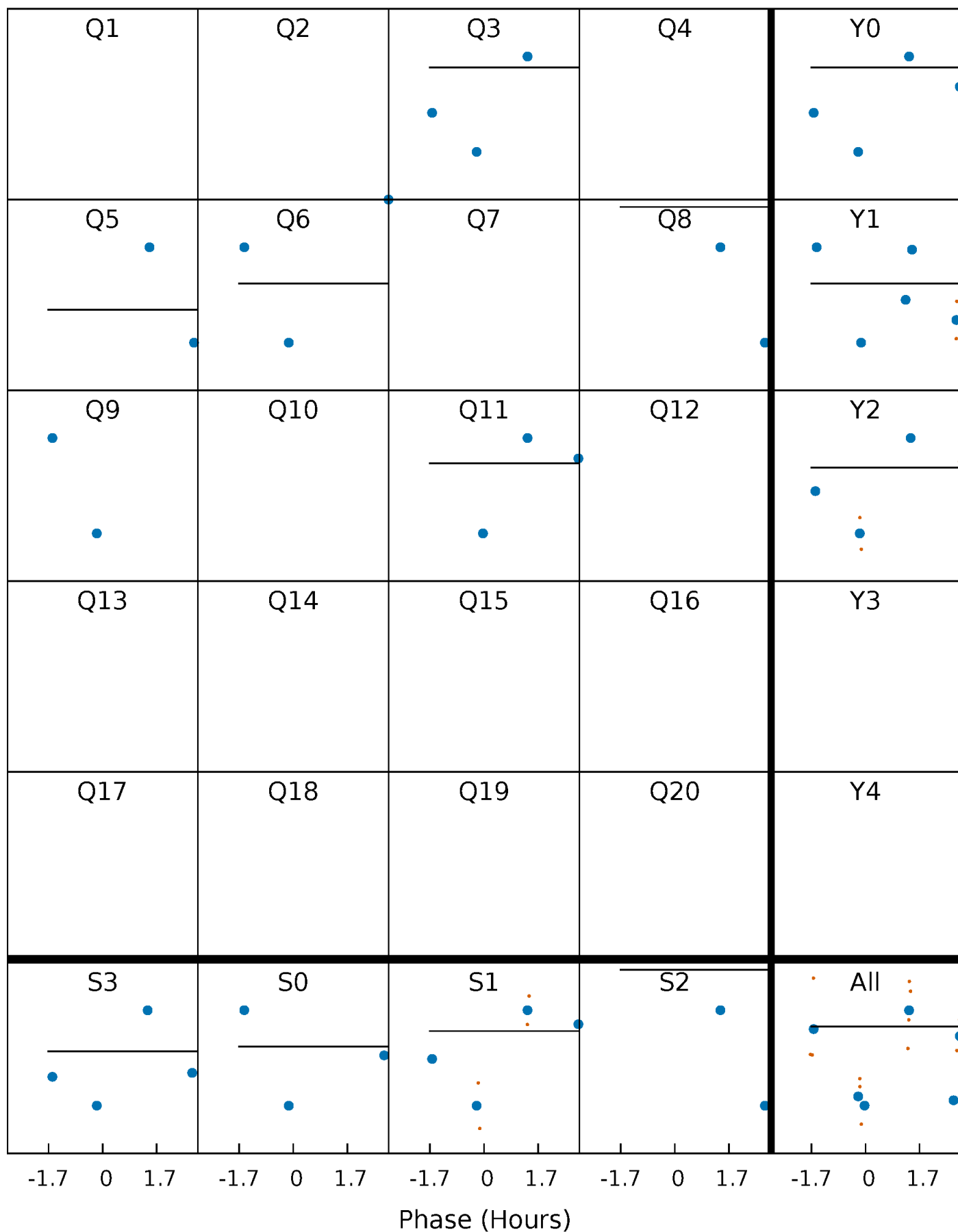
# PDC Quarter-Phased Transit Curves

TCE 011622535-03 P= 29.160879 Days  $T_0=156.561000$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 011622535-03 P= 29.160879 Days  $T_0=156.561000$  (BKJD)

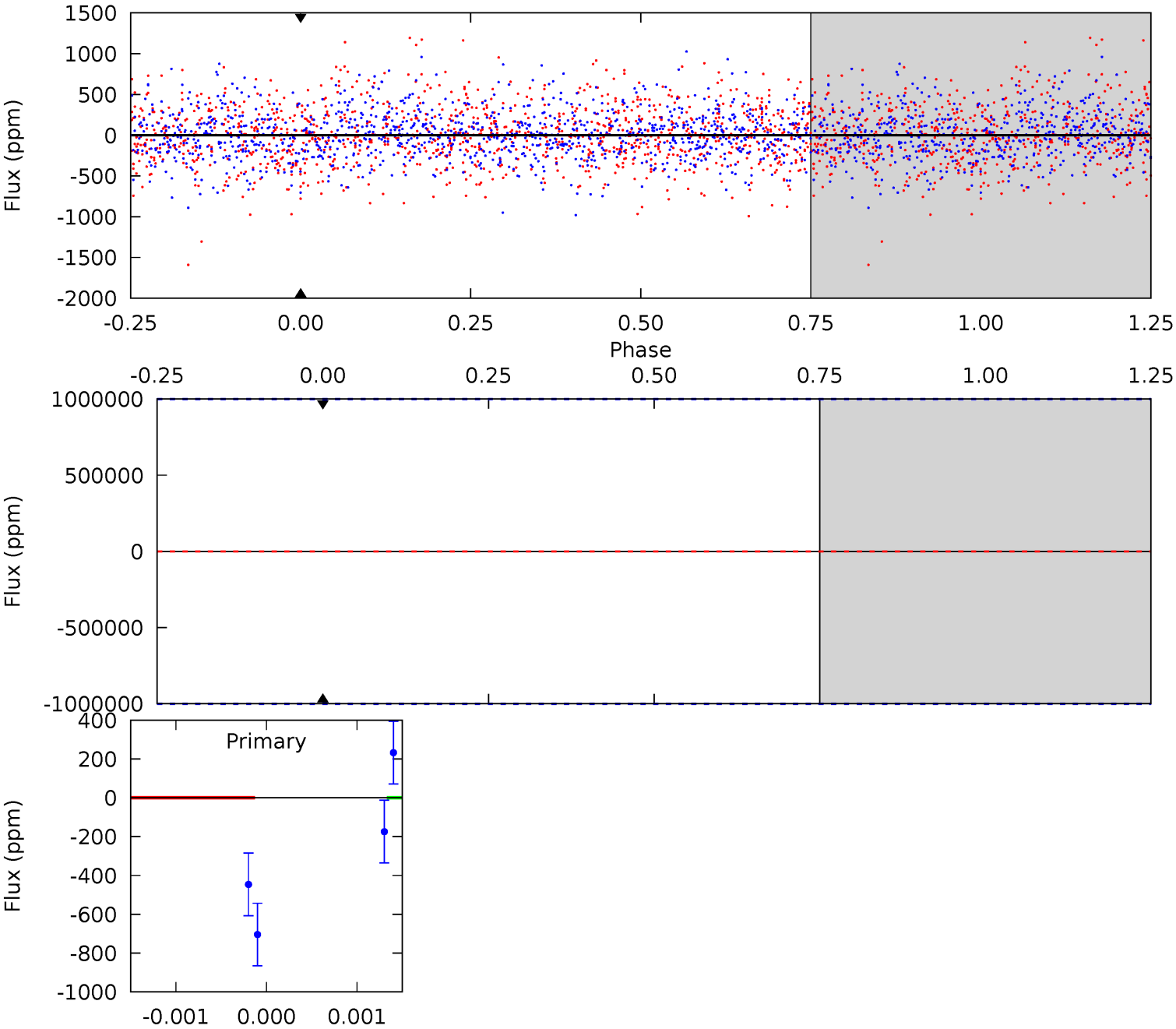


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

011622535-03, P = 29.160879 Days, E = 127.400121 Days

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



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 011622535

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7112^{+200}_{-343}$	$4.144^{+0.124}_{-0.186}$	$0.070^{+0.200}_{-0.350}$	$1.738^{+0.525}_{-0.350}$	$1.536^{+0.204}_{-0.226}$	$0.412^{+0.247}_{-0.206}$
	+3%/-5%	+3%/-4%	+286%/-500%	+30%/-20%	+13%/-15%	+60%/-50%
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 011622535-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$15.01^{+14.82}_{-10.00}$	$1252^{+98}_{-85}$	$-5287^{+40486}_{-25384}$	$-217.841^{+20281.389}_{-18888.843}$
Alt.	N/A	N/A	N/A	N/A	N/A

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature  
 $T_{\text{obs}}$  = Observed Planetary Temperature (Assuming A=0.3)  
 $A_{\text{obs}}$  = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if  $T_{\text{obs}} \gg T_{\text{max}}$  AND  $A_{\text{obs}} \gg 1.0$



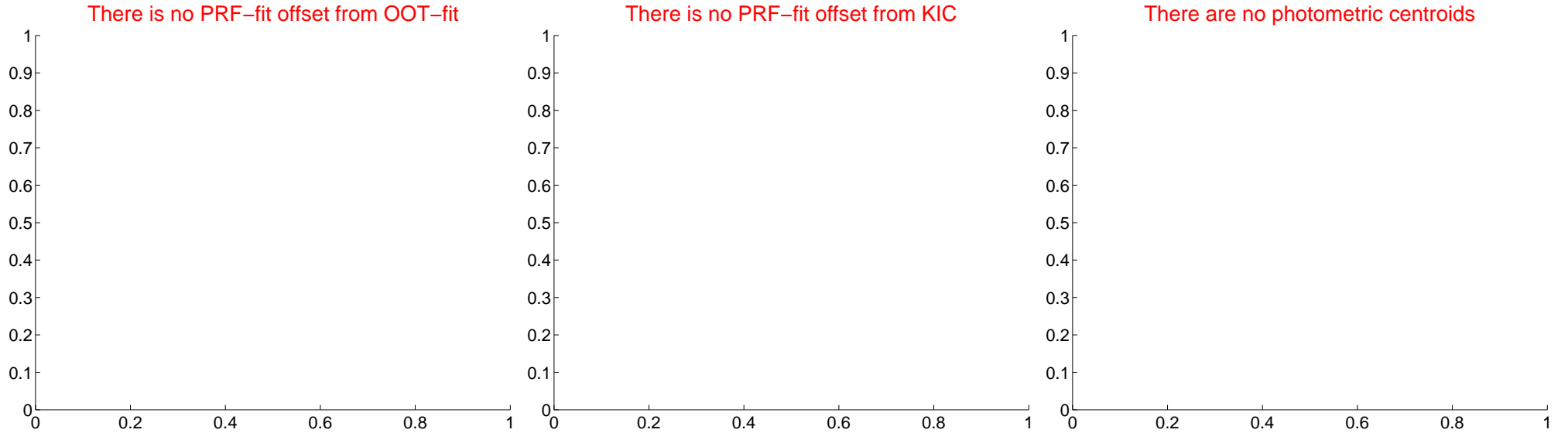
## DV Centroid Data

Supplemental centroid analysis for 011622535-03. **Kepler magnitude: 10.48.** Transit SNR -1.00

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

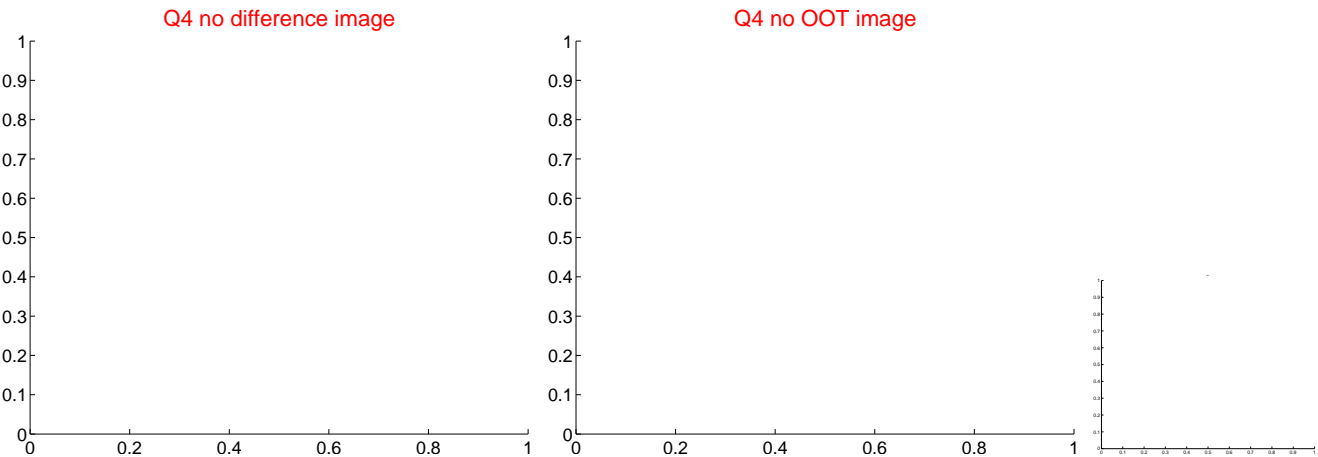
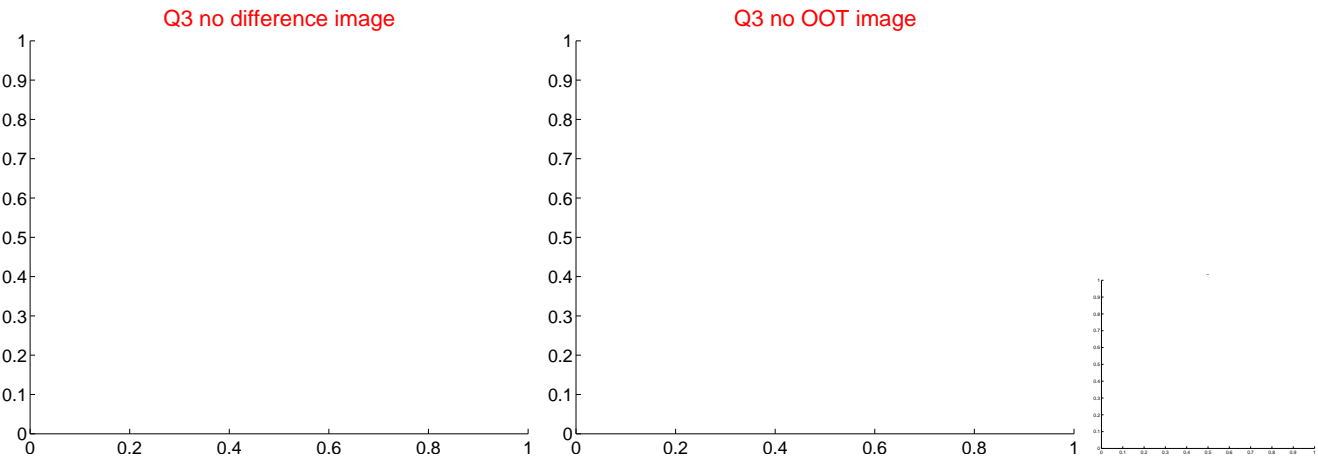
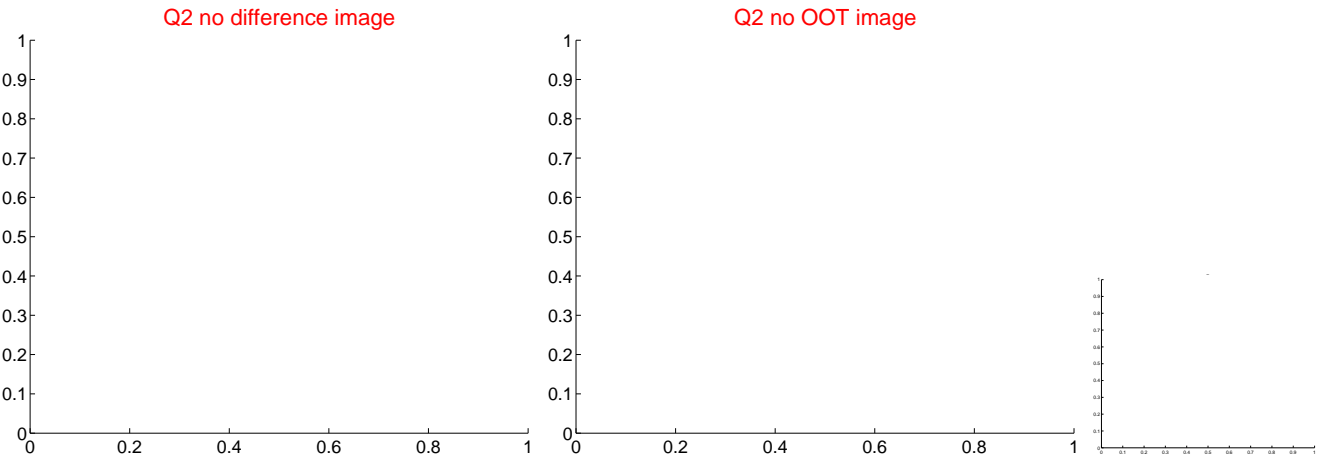
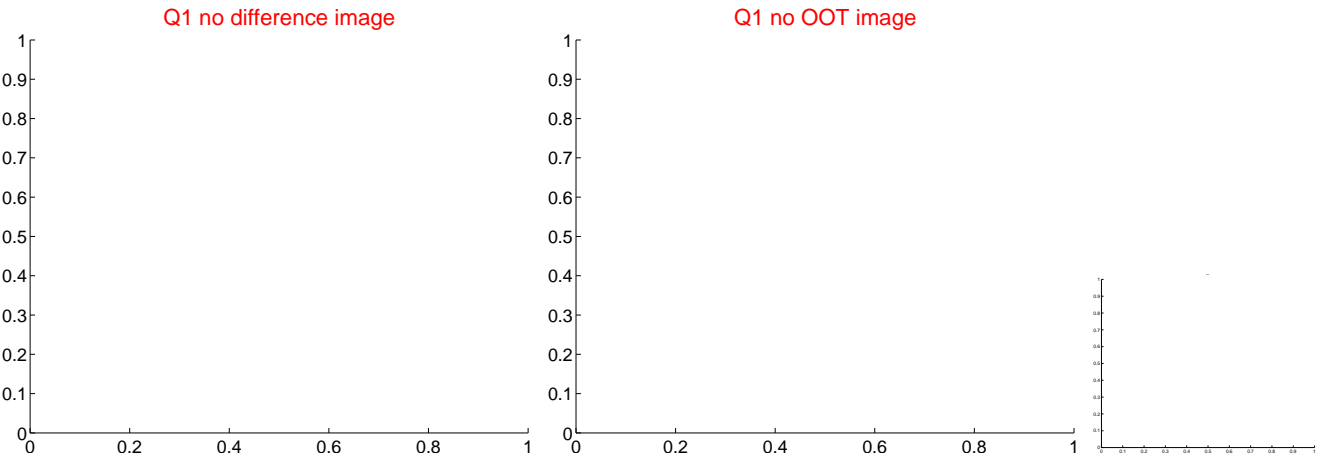
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

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

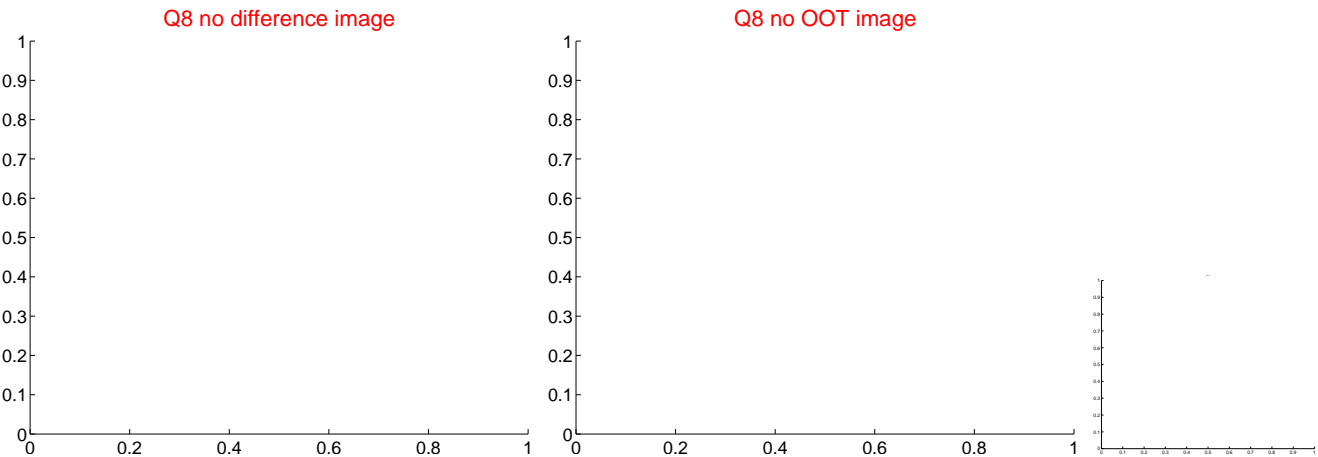
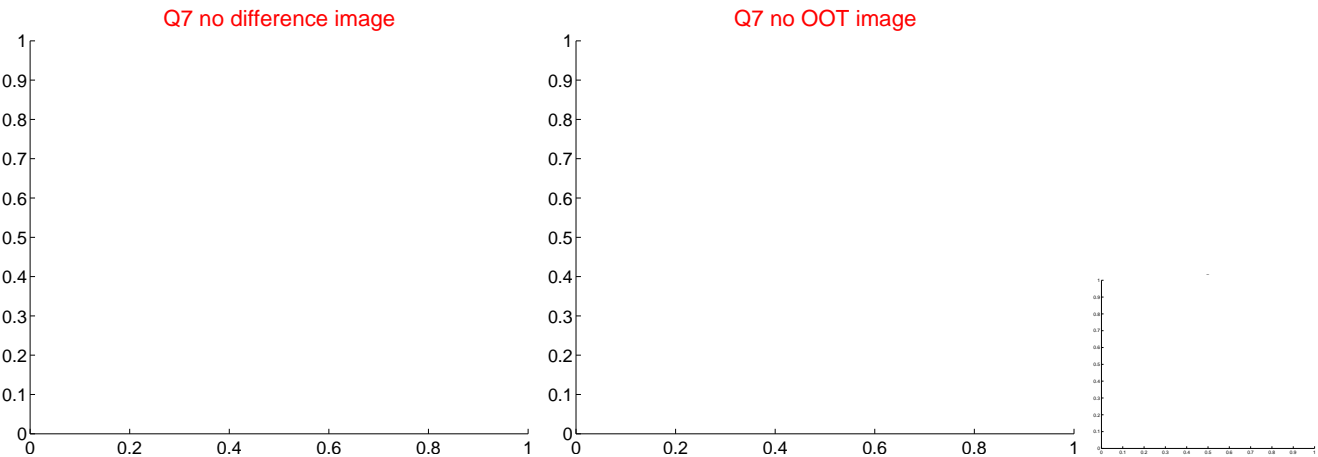
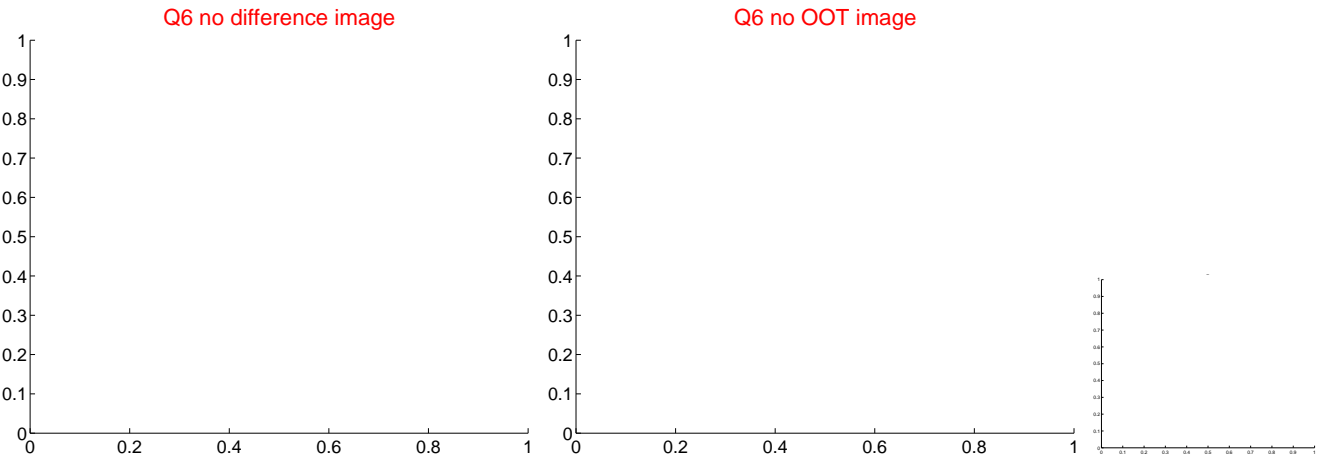
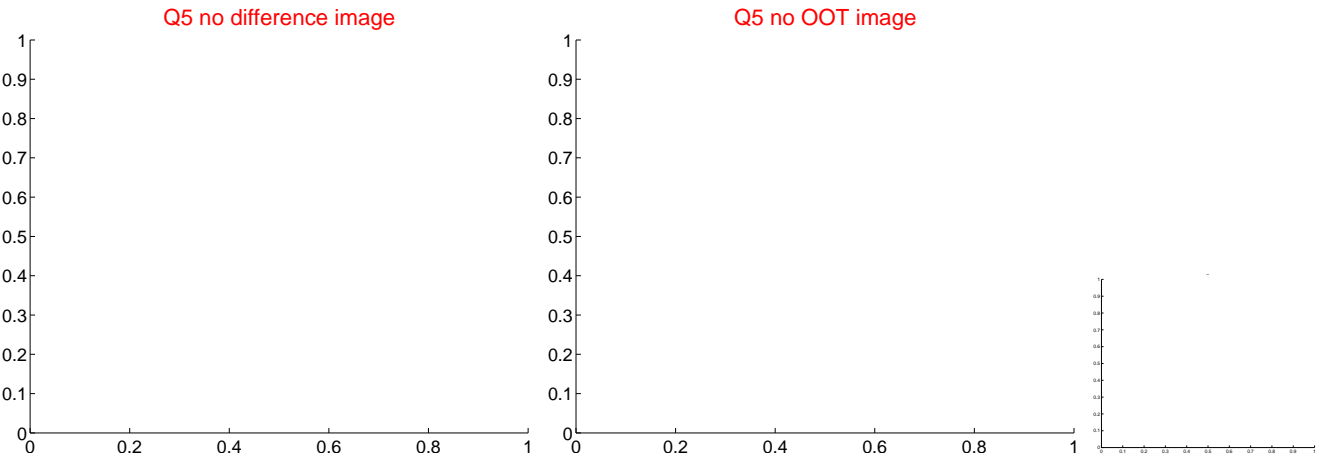


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

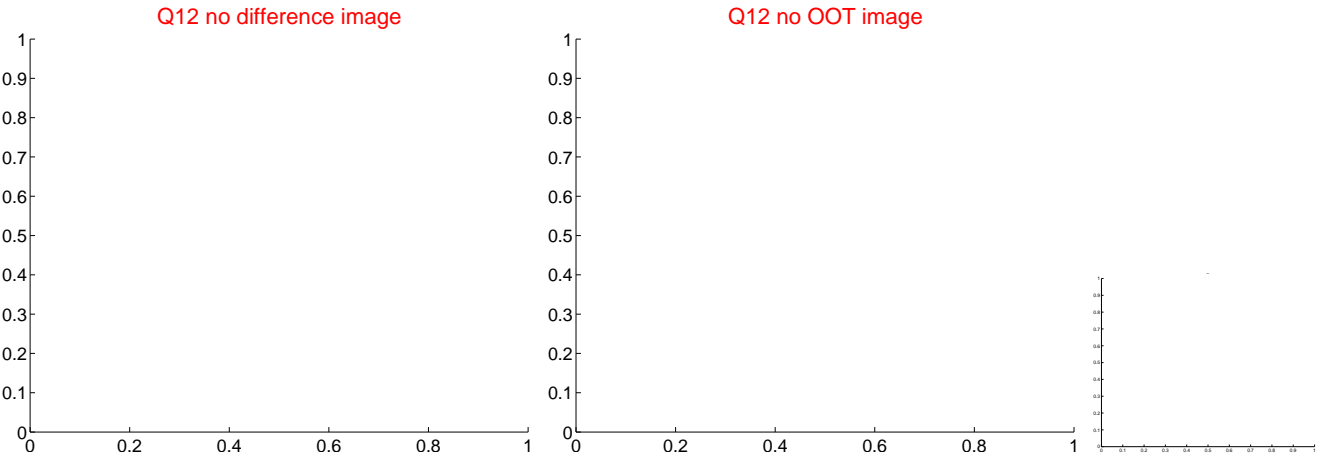
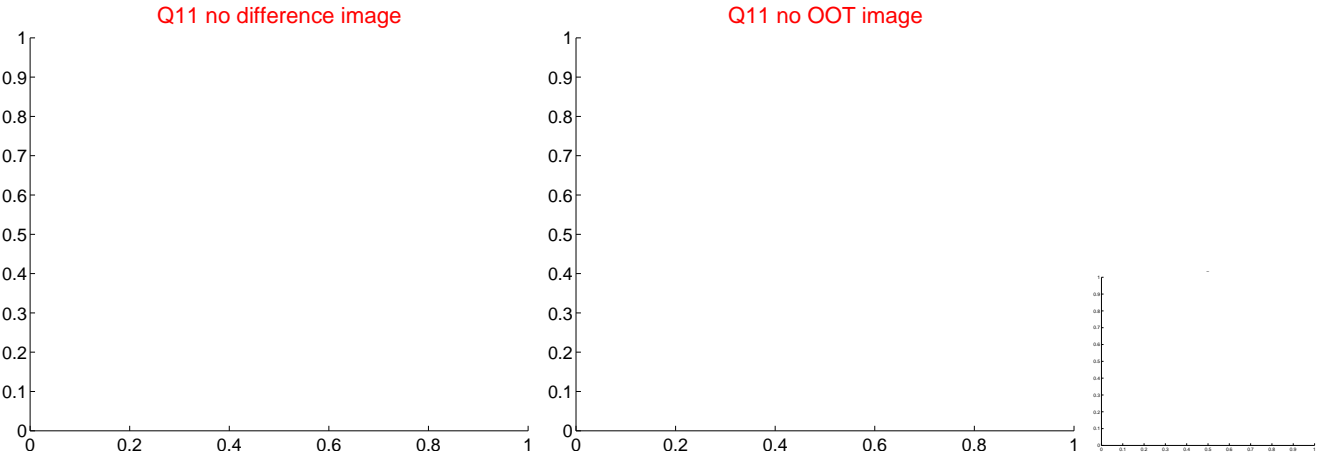
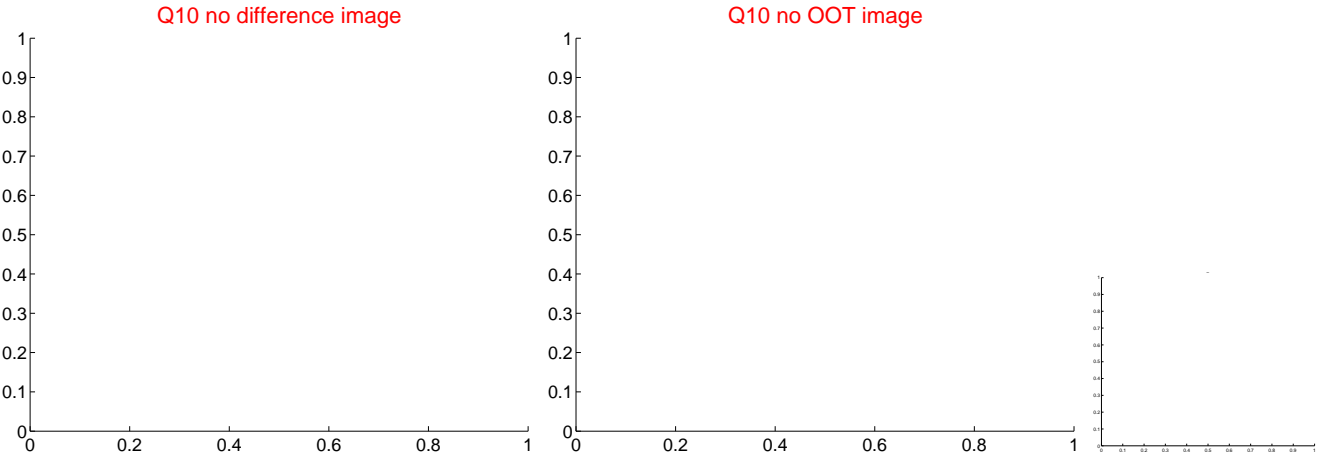
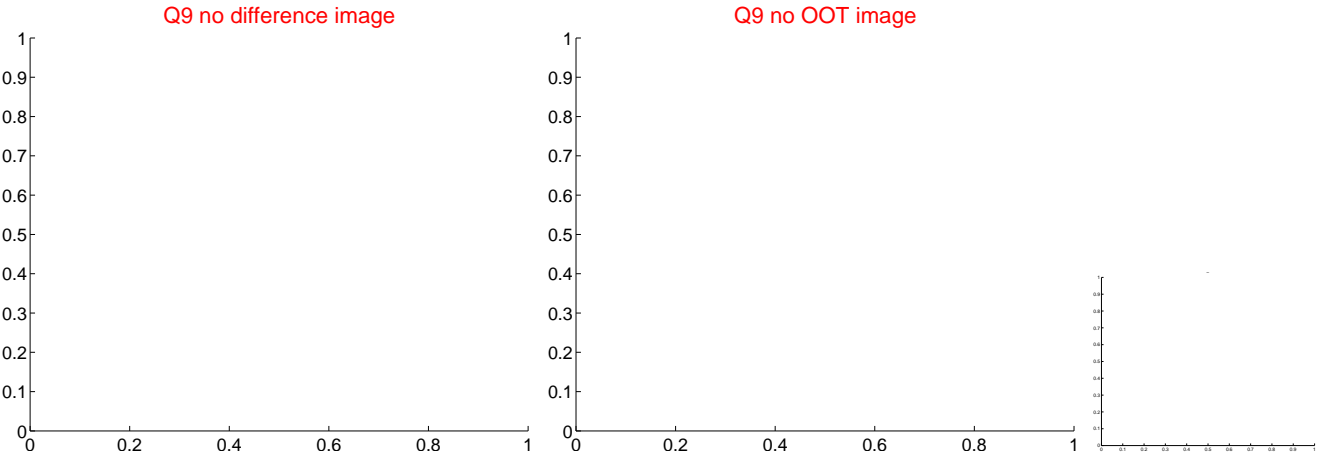
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



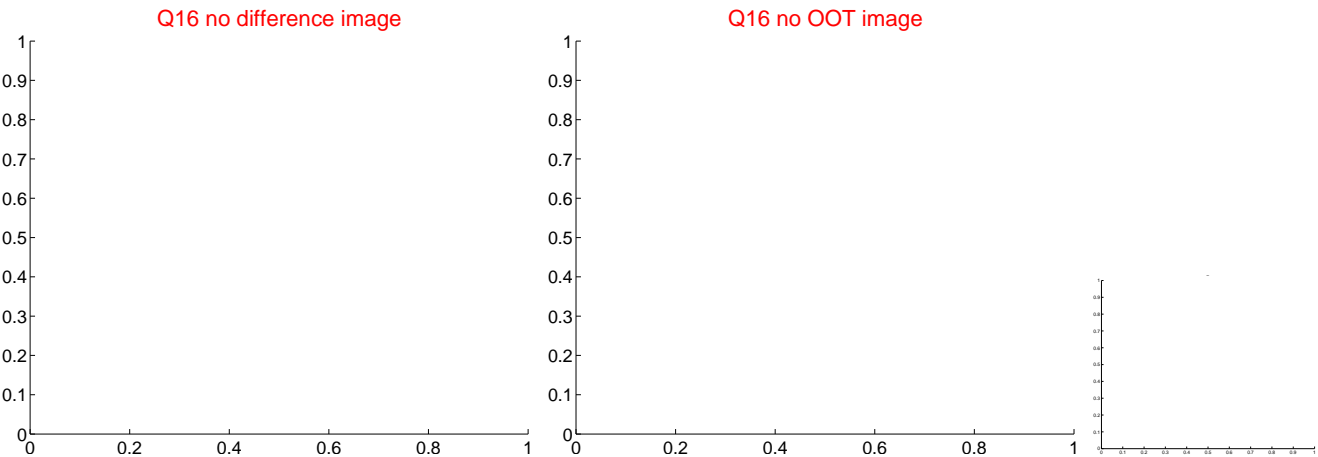
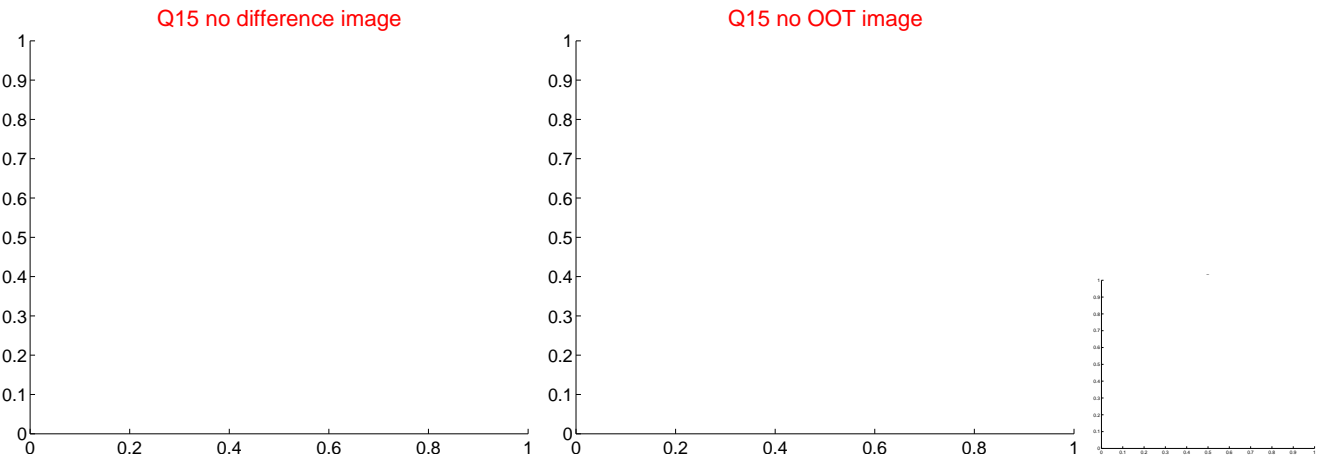
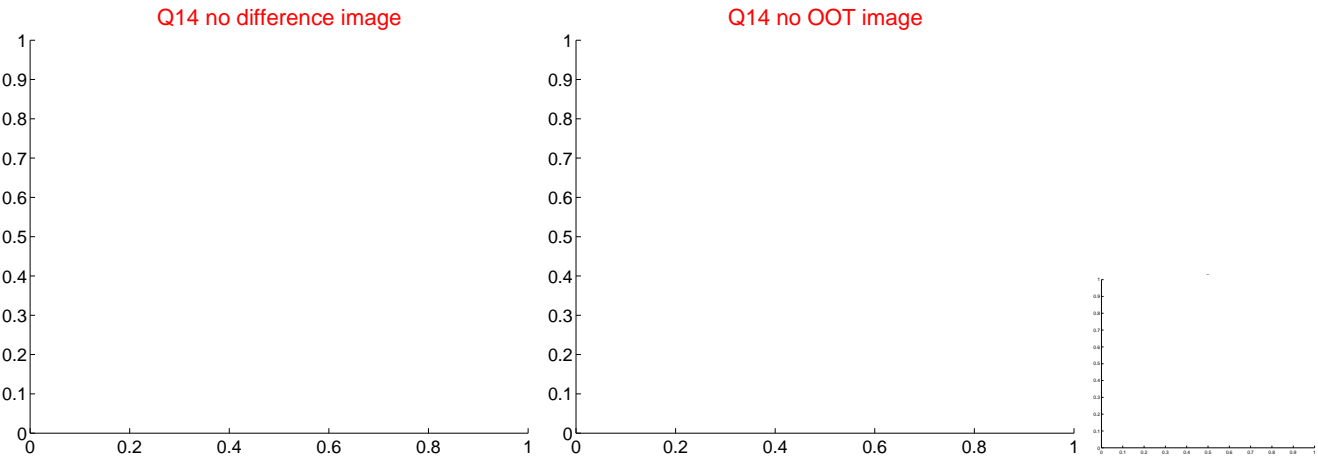
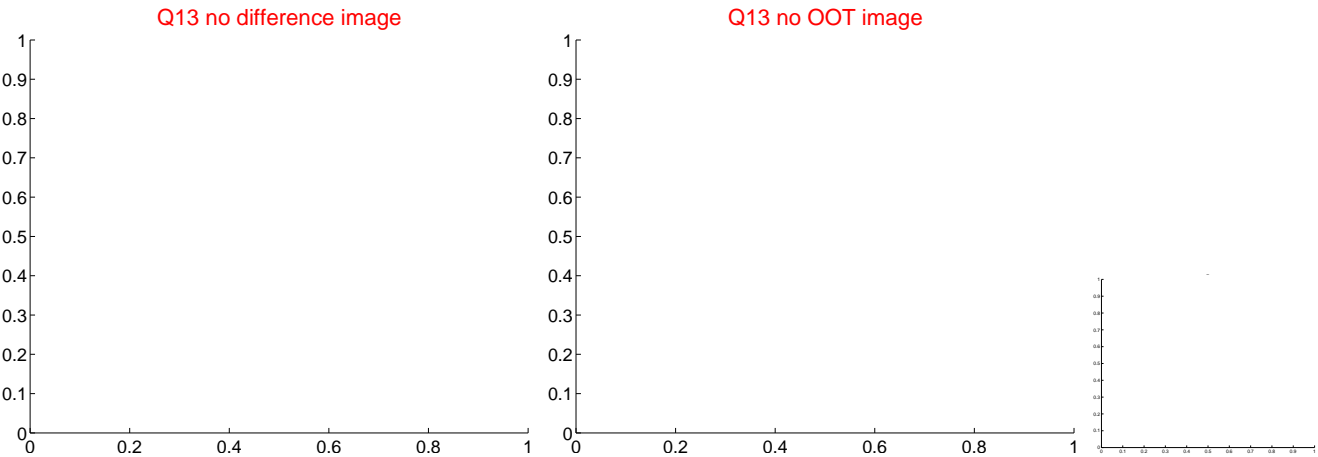
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



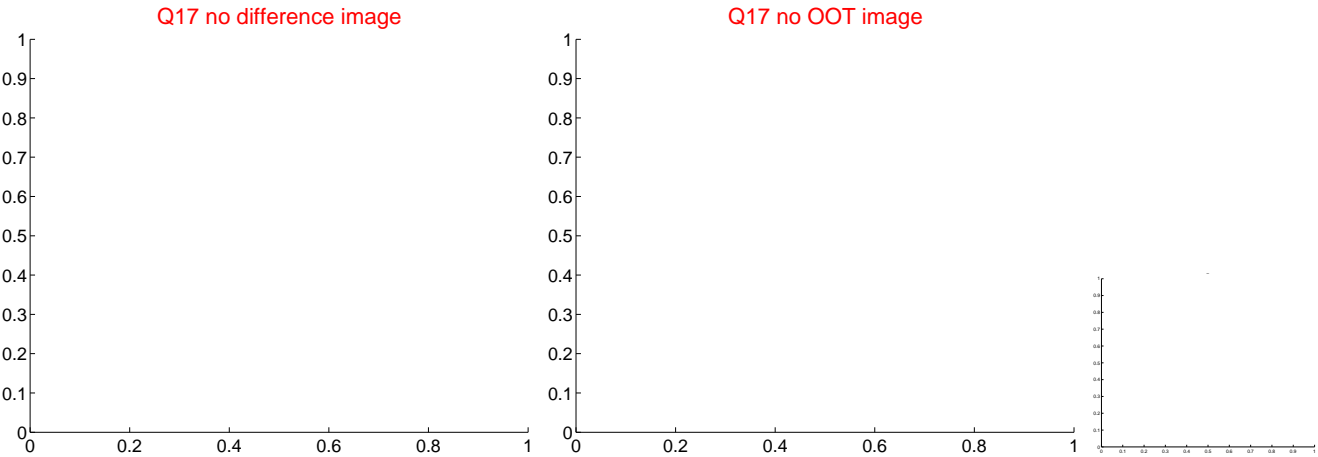
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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

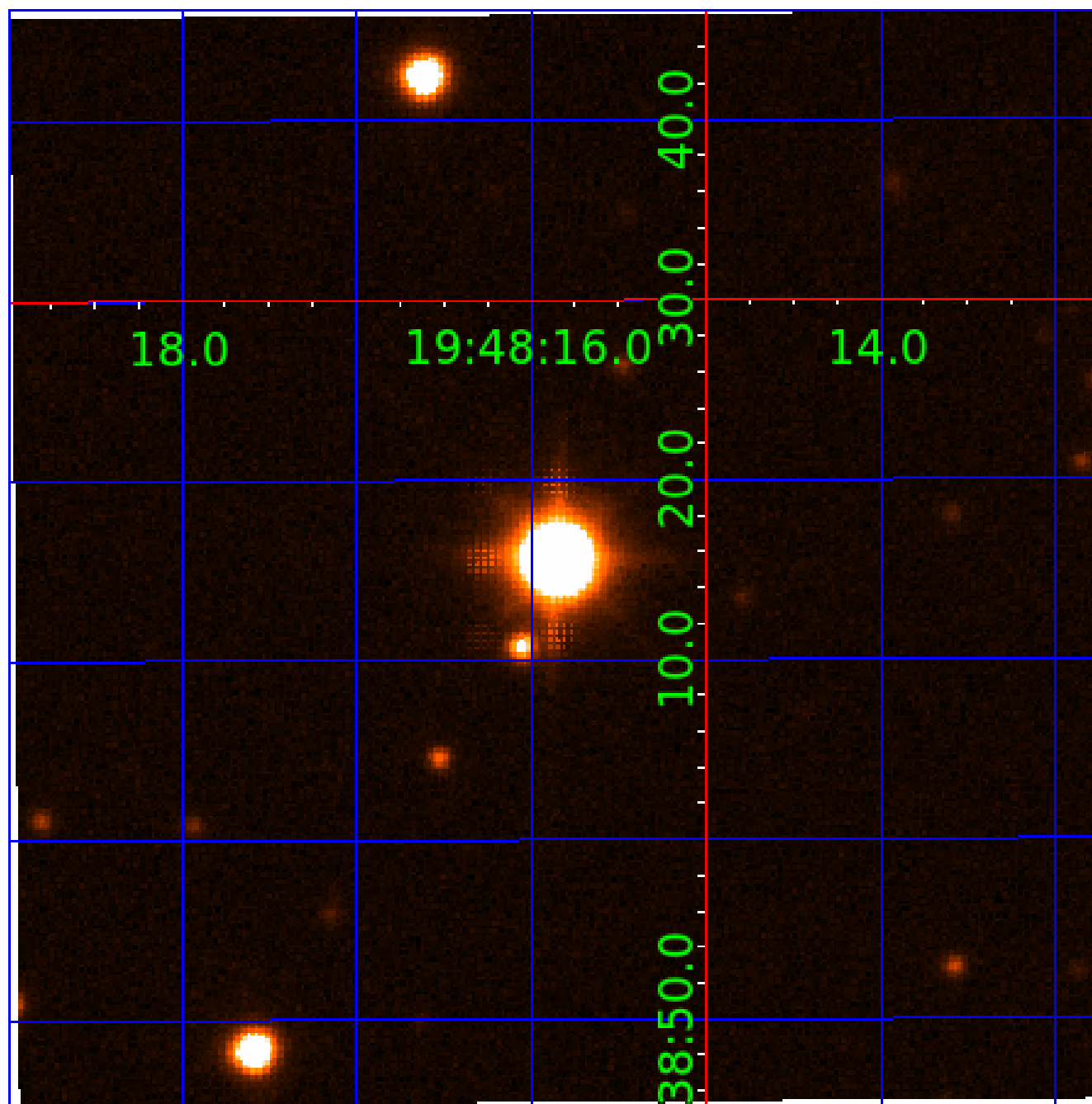


folded centroid time series figure for this object.



UKIRT Image

Declination



# KIC 011622535

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011622535-01	OBS	No	0.570534	132.058958	38.2	4.273	26.4	25.9	1.74	7112	1.15	28698.06
011622535-02	OBS	No	7.186967	138.517994	413.5	1.288	13.7	15.4	1.74	7112	3.87	979.12
011622535-03	OBS	No	29.160879	156.561000	170.7	1.500	14.8	-1.0	1.74	7112	2.31	151.30
011622535-04	OBS	No	11.948408	132.246883	684.3	0.534	11.1	12.4	1.74	7112	5.00	497.14

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011622535-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_SATURATED
011622535-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
011622535-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_SATURATED
011622535-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED

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

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

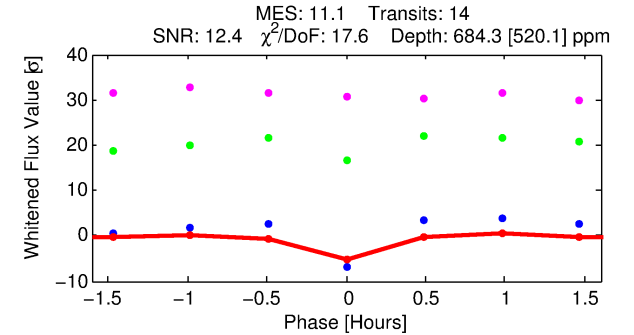
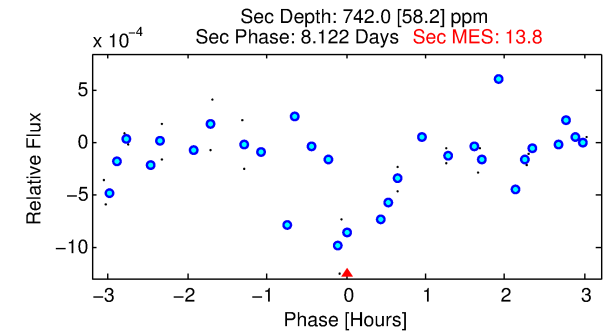
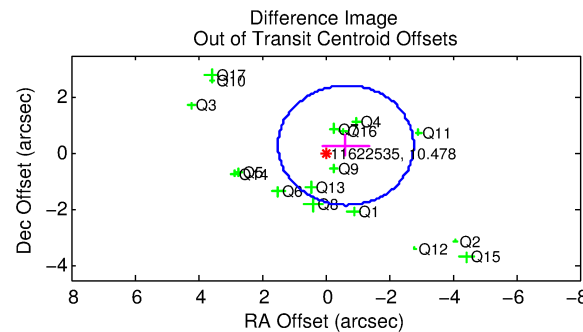
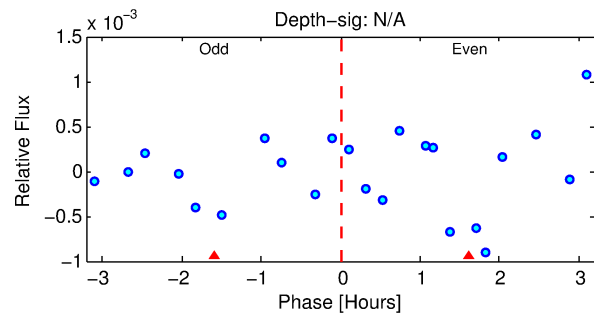
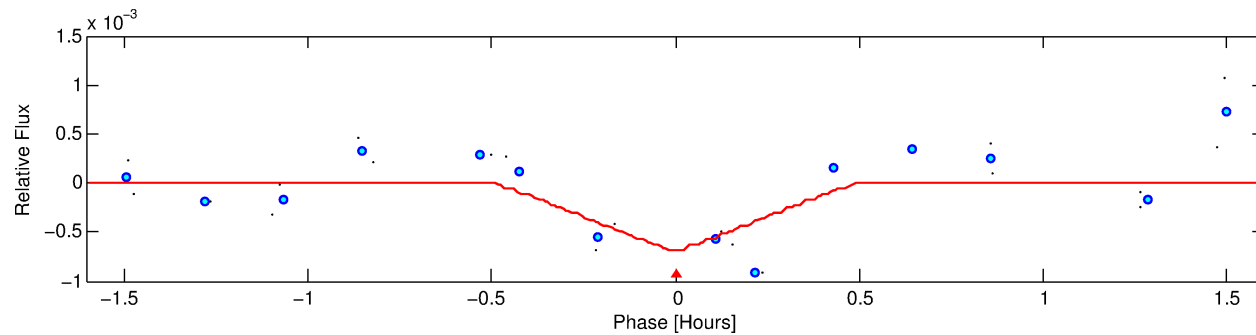
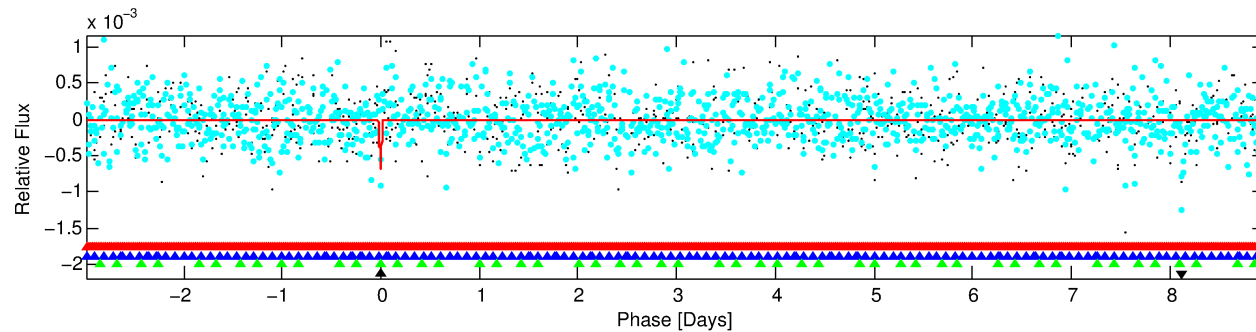
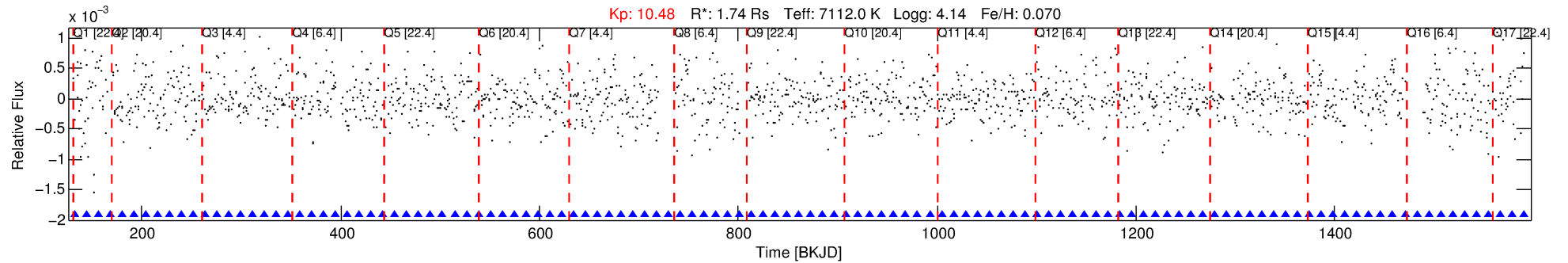
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 011622535-04

No Significant Match Found

# DV One-Page Summary

KIC: 11622535 Candidate: 4 of 4 Period: 11.948 d



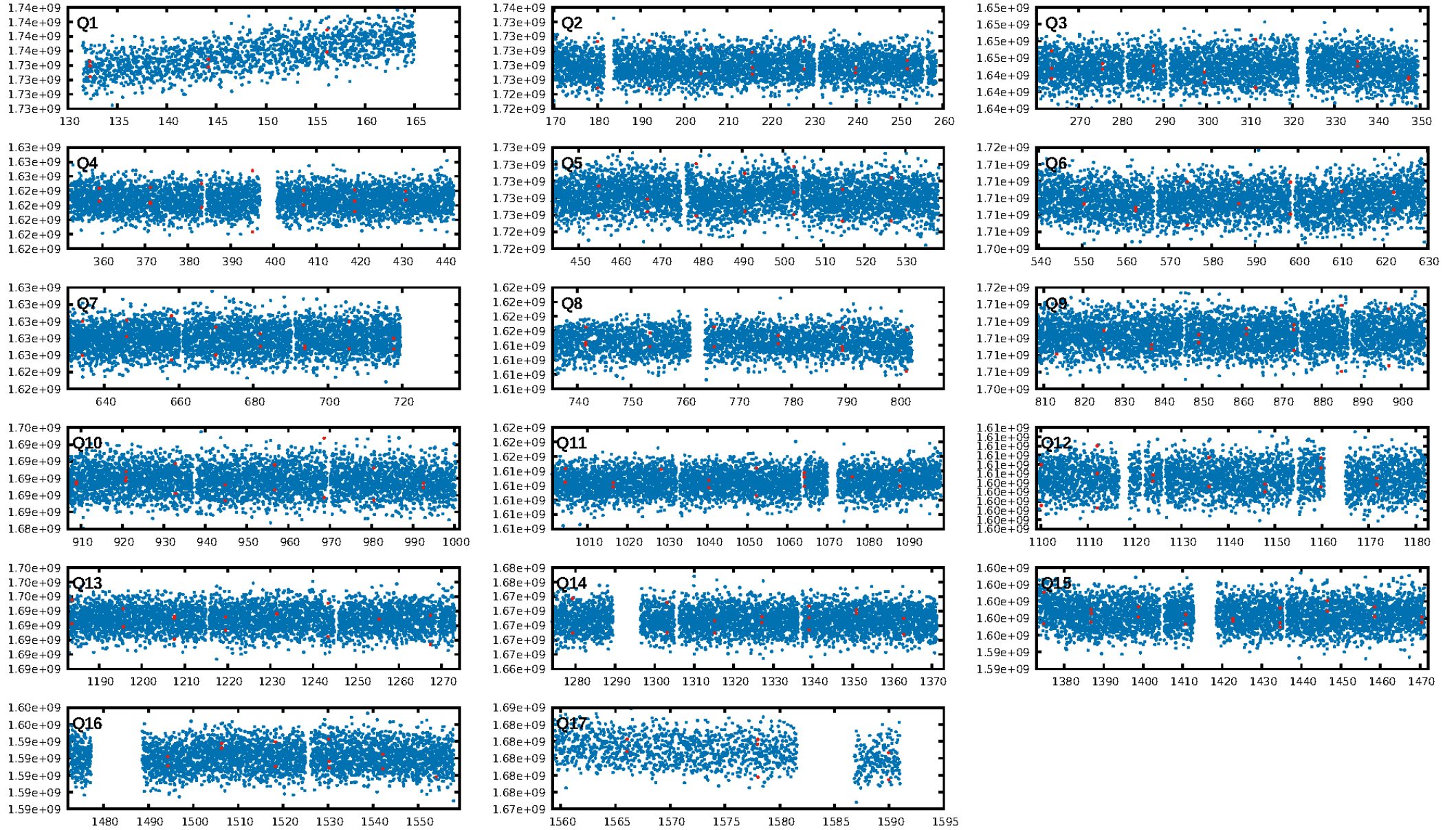
## DV Fit Results:

Period = 11.94841 [0.00025] d  
Epoch = 132.2469 [0.0097] BKJD  
 $R_p/R^* = 0.0263$  [0.0370]  
 $a/R^* = 136.38$  [1197.36]  
 $b = 0.65$  [7.89]  
 $\text{Seff} = 497.14$  [198.42]  
 $\text{Teq} = 1204$  [120] K  
 $R_p = 5.00$  [7.18]  $R_e$   
 $a = 0.1180$  [0.0291] AU  
 $\text{Ag} = 227.80$  [645.07] [0.35σ]  
 $\text{Teffp} = 7232$  [5093] K [1.18σ]

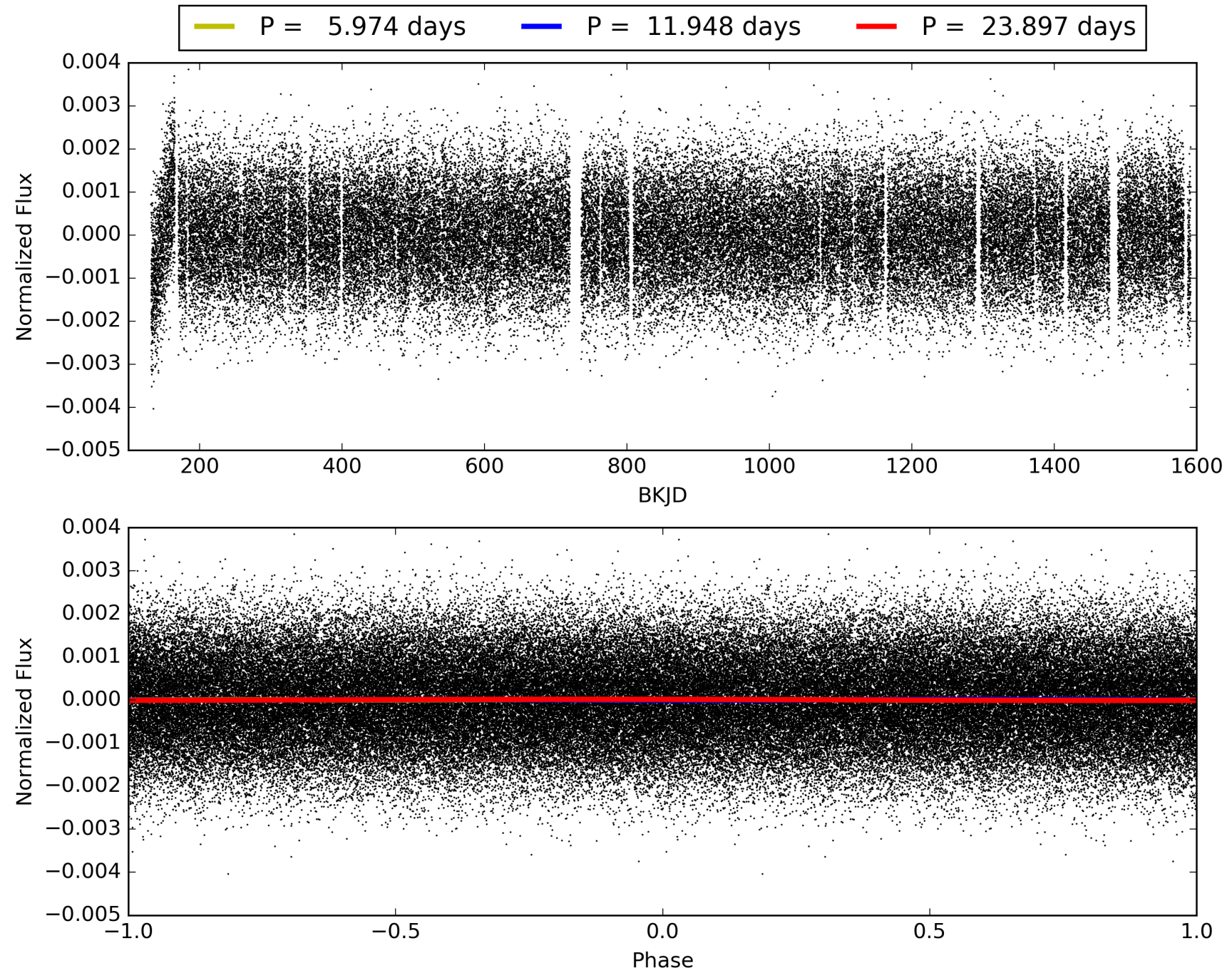
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [81.94σ]  
LongPeriod-sig: 100.0% [259.45σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.0%  
Bootstrap-pfa: 9.68e-06  
RollingBand-fgt: 1.00 [13/13]  
GhostDiagnostic-chr: 0.4577  
Centroid-sig: 90.2%  
Centroid-so: 0.192 arcsec [1.85σ]  
OotOffset-rm: 0.710 arcsec [1.00σ]  
KicOffset-rm: 1.065 arcsec [1.43σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.29 [5/17]  
DiffImageOverlap-fno: 0.00 [0/17]

# TCE 011622535-04, PDC Light Curves

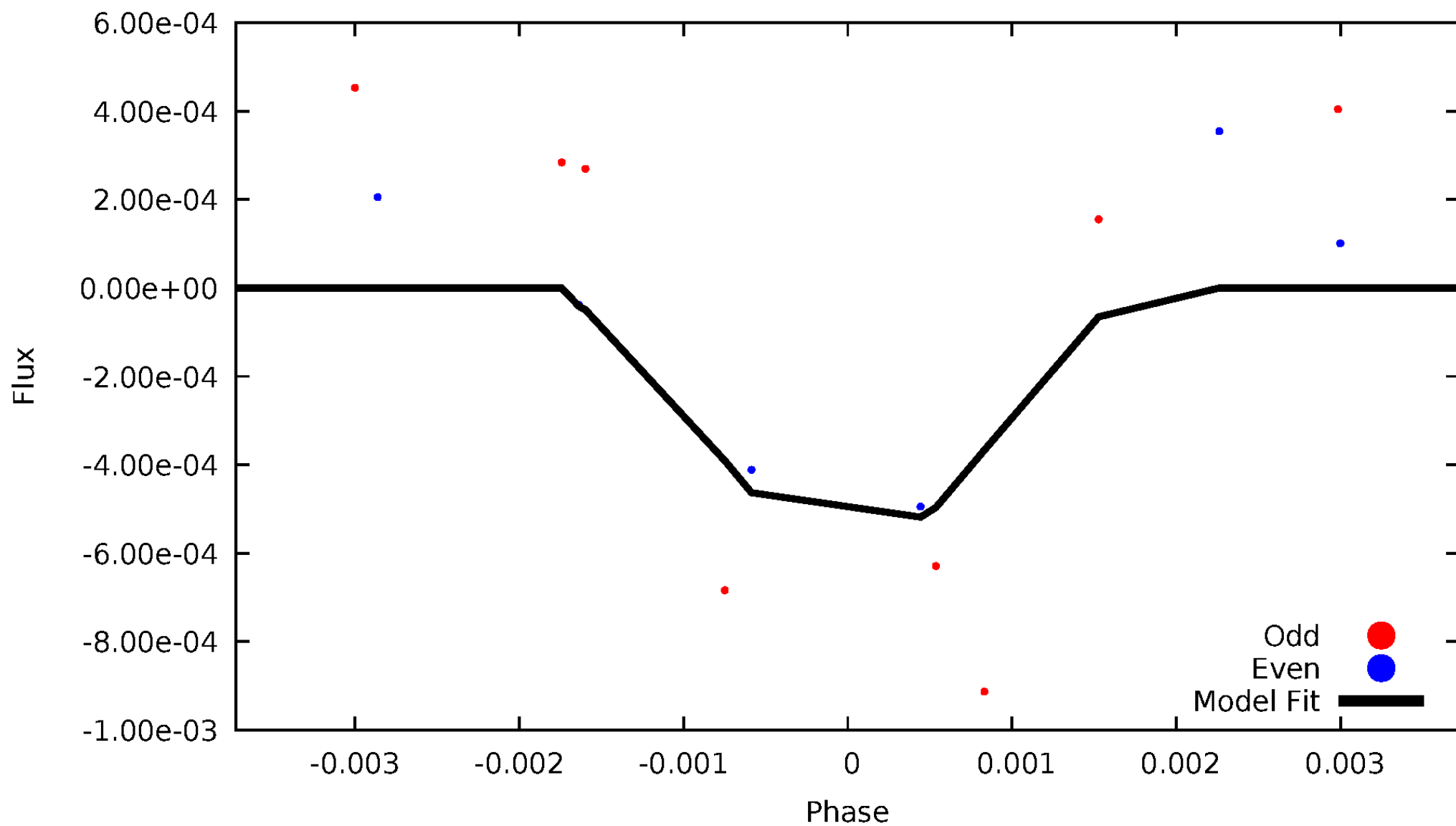


TCE 011622535-04



# DV Odd/Even

TCE 011622535-04





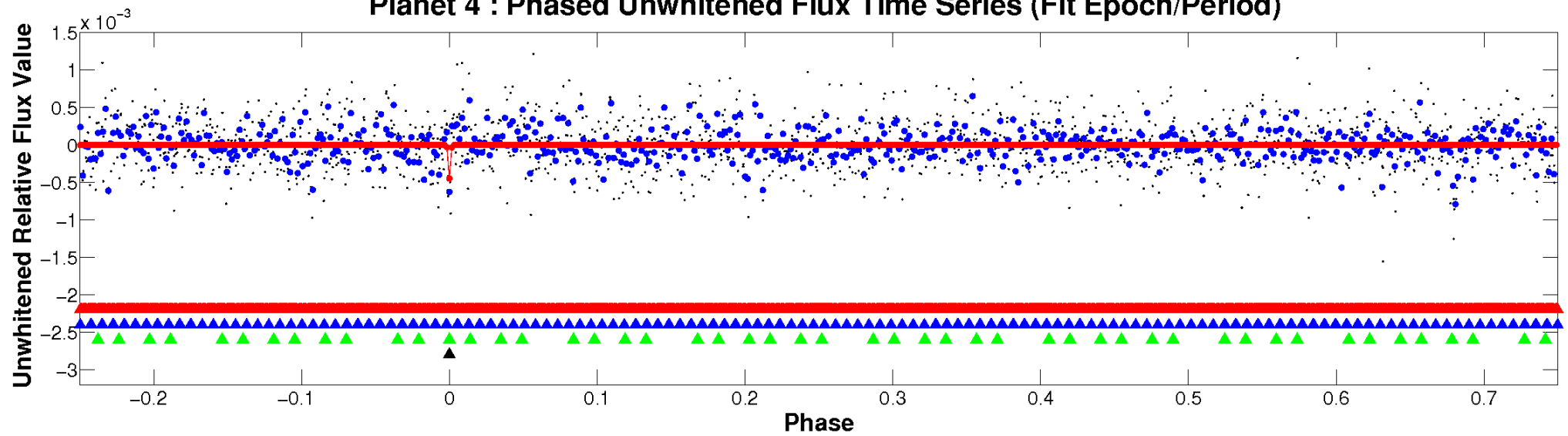


ALT Odd/Even

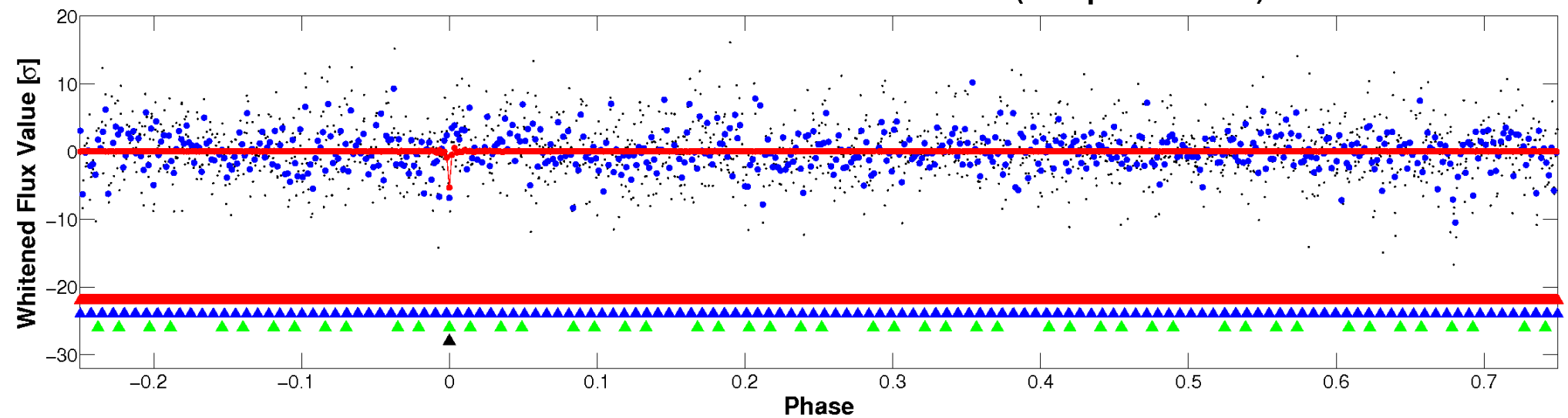
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

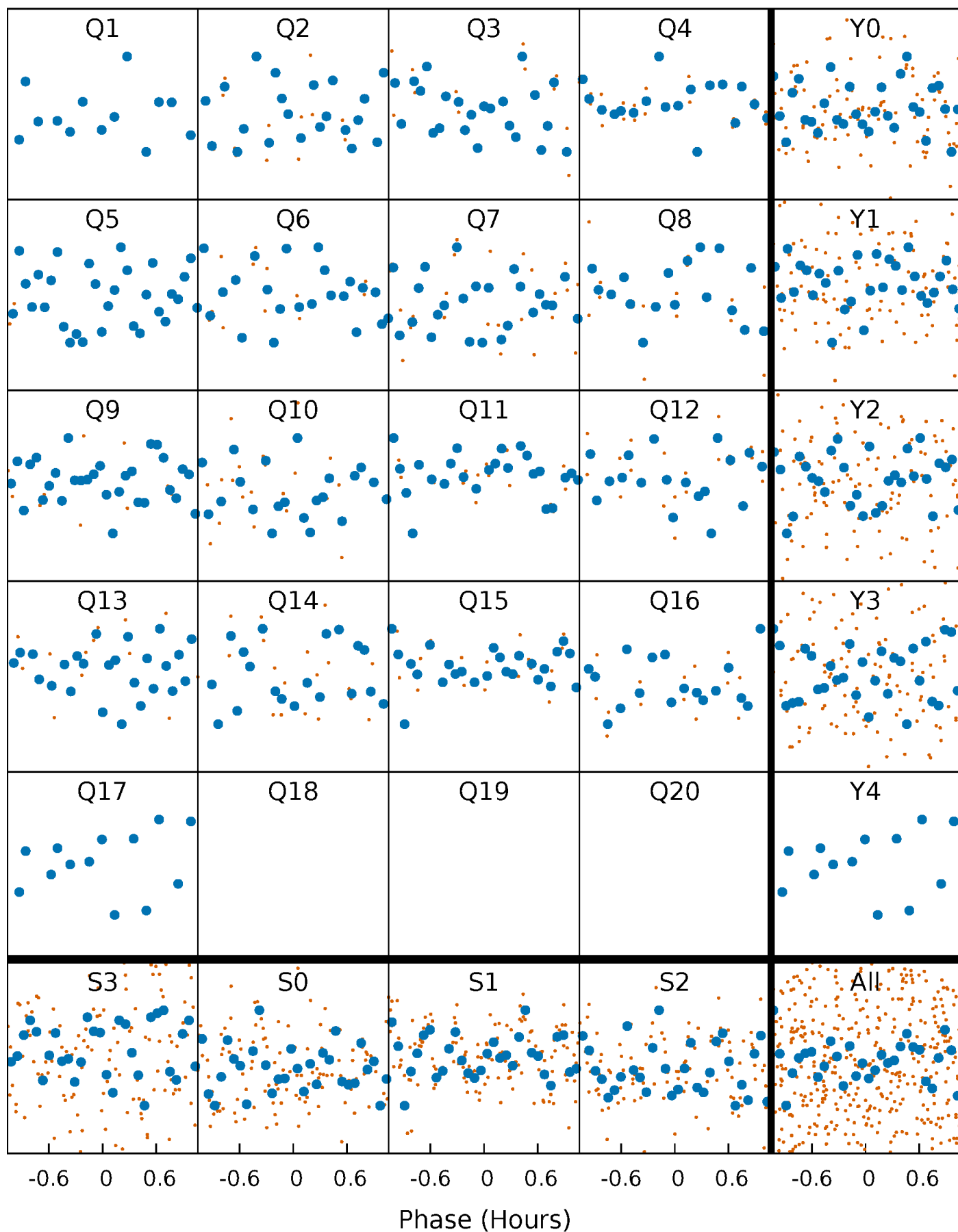


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



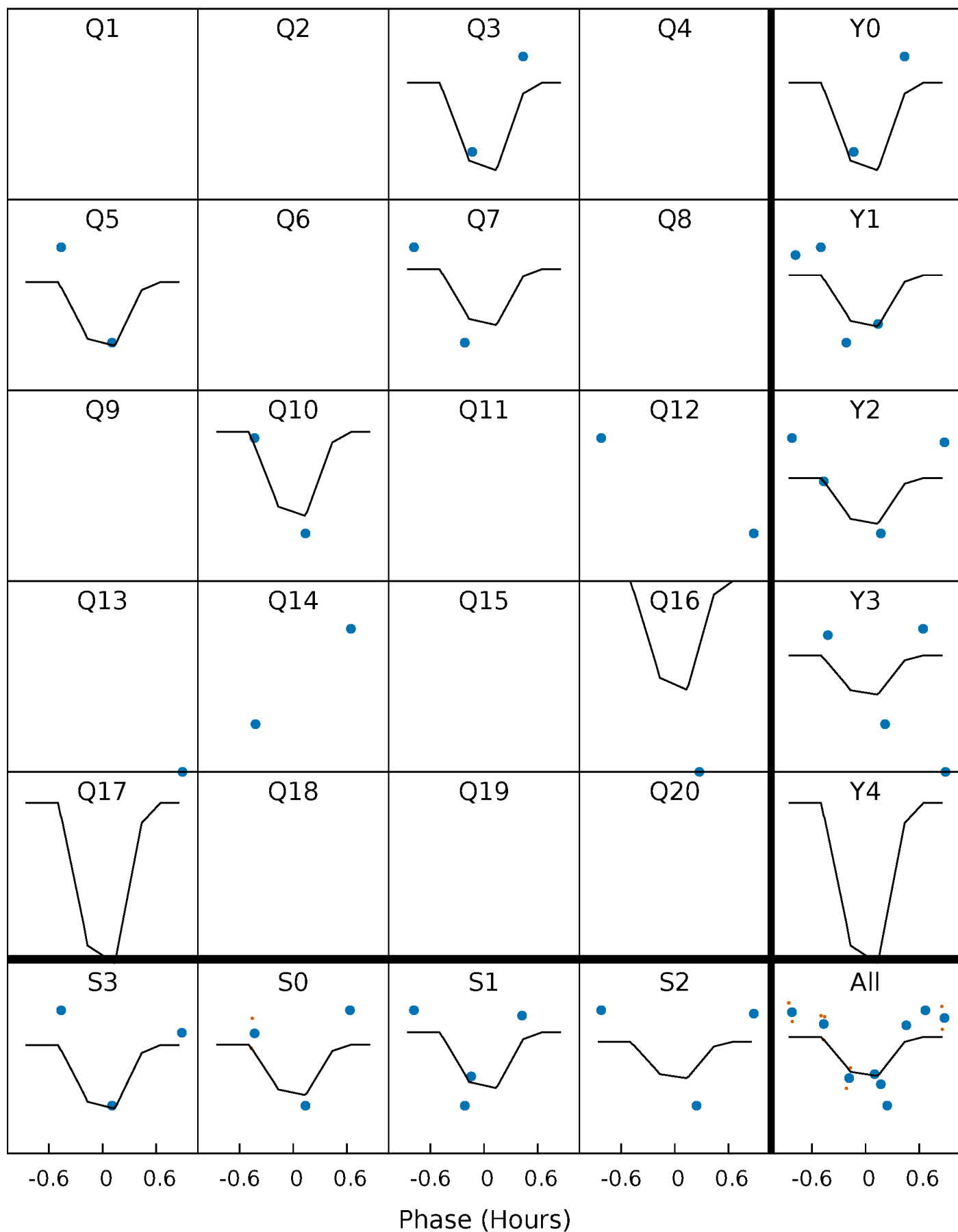
# PDC Quarter-Phased Transit Curves

TCE 011622535-04 P= 11.948408 Days  $T_0=132.246883$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 011622535-04 P= 11.948408 Days  $T_0=132.246883$  (BKJD)

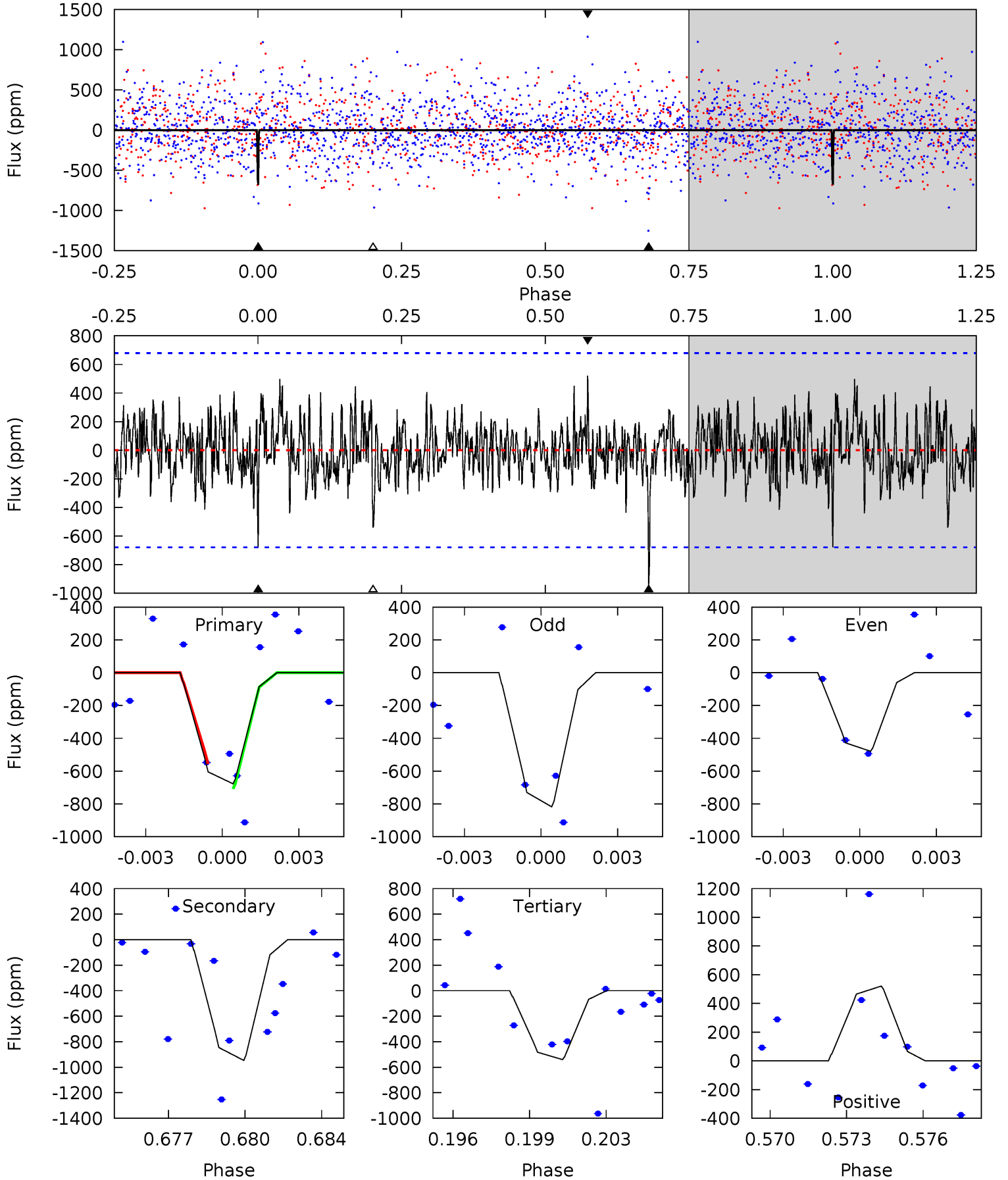


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

011622535-04, P = 11.948408 Days, E = 120.298475 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
5.23	7.31	4.17	4.02	5.24	2.95	1.22	1.06	1.20	3.14	3.29	1.39	0	0.36	0.59





## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 011622535

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7112^{+200}_{-343}$	$4.144^{+0.124}_{-0.186}$	$0.070^{+0.200}_{-0.350}$	$1.738^{+0.525}_{-0.350}$	$1.536^{+0.204}_{-0.226}$	$0.412^{+0.247}_{-0.206}$
	+3%/-5%	+3%/-4%	+286%/-500%	+30%/-20%	+13%/-15%	+60%/-50%
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 011622535-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-947 \pm 130$	$6.75^{+7.24}_{-4.08}$	$1688^{+125}_{-118}$	$6483^{+5366}_{-1751}$	$150^{+833}_{-113}$
Alt.	N/A	N/A	N/A	N/A	N/A

$T_{max}$  = Theoretical Maximum Planetary Temperature

$T_{obs}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{obs}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{obs} \gg T_{max}$  AND  $A_{obs} \gg 1.0$

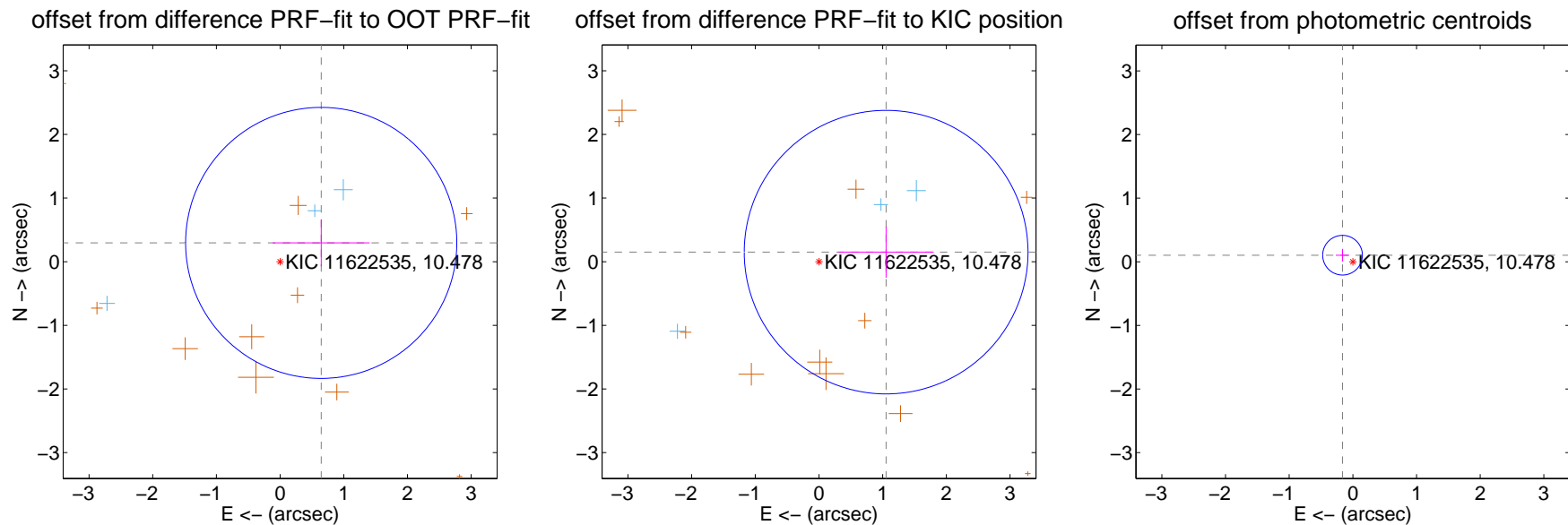
## DV Centroid Data

Supplemental centroid analysis for 011622535-04. **Kepler magnitude: 10.48.** Transit SNR 12.44

There are 5 quarters with good PRF difference image offsets

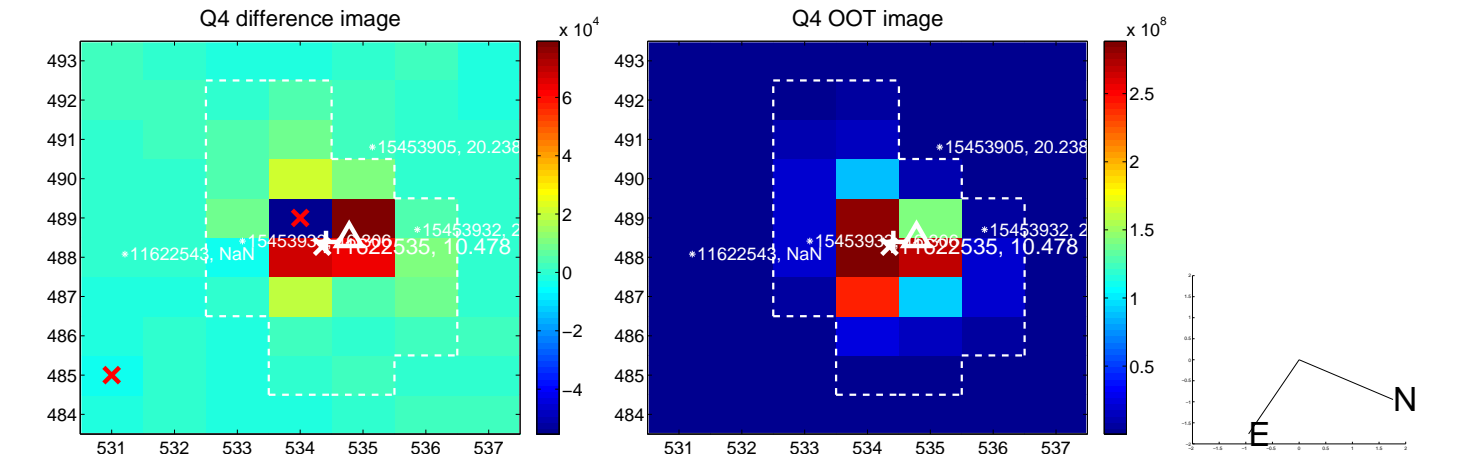
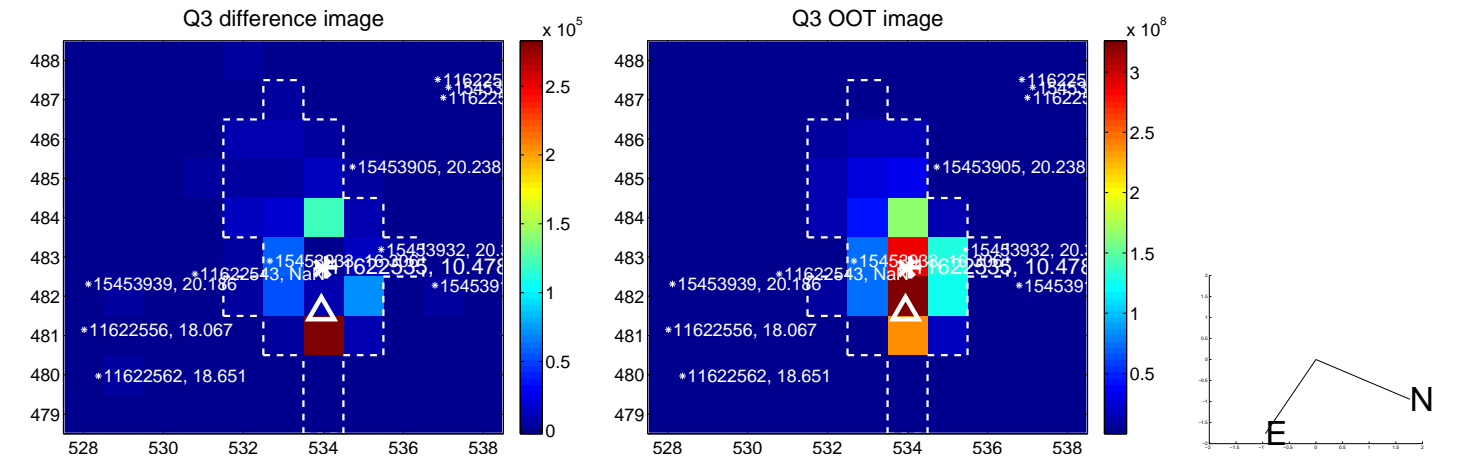
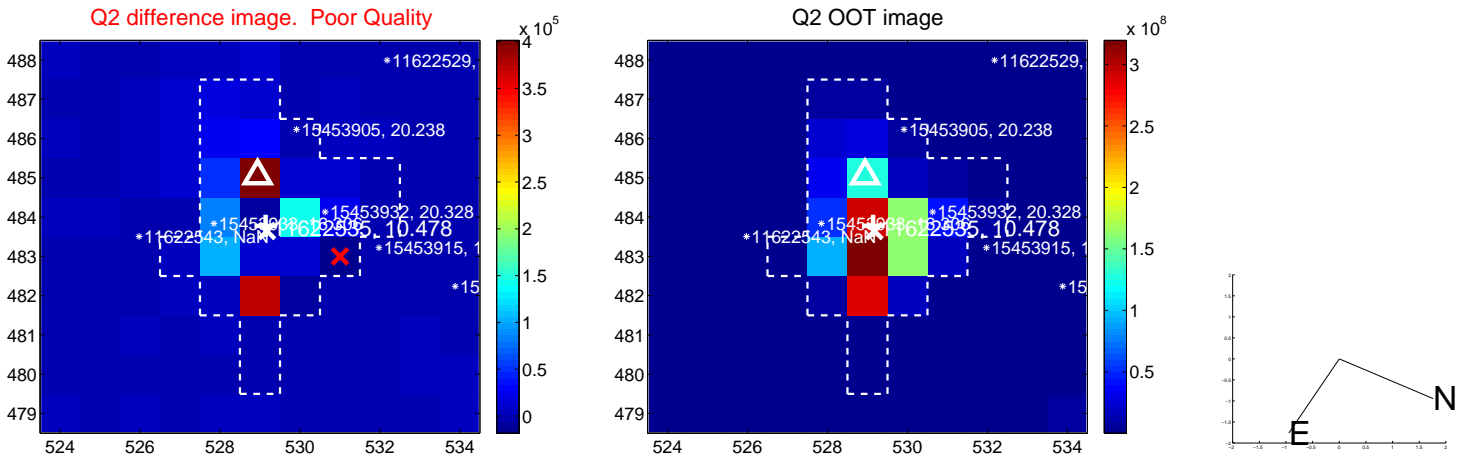
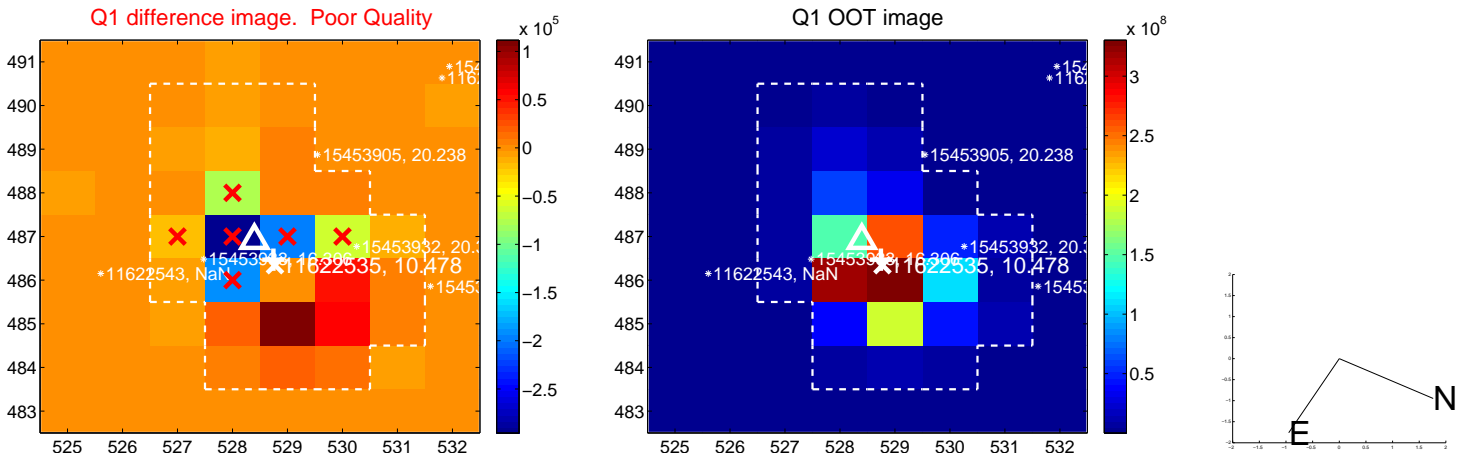
The direct PRF centroid is offset from the target star catalog position by about 0.65 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.710 \pm 0.710$	1.00	$-0.646 \pm 0.762$	$0.295 \pm 0.371$
PRF-fit source offset from KIC position	$1.065 \pm 0.743$	1.43	$-1.054 \pm 0.748$	$0.150 \pm 0.402$
photometric centroid source offset	$0.19 \pm 0.10$	1.85	$0.16 \pm 0.11$	$0.10 \pm 0.10$

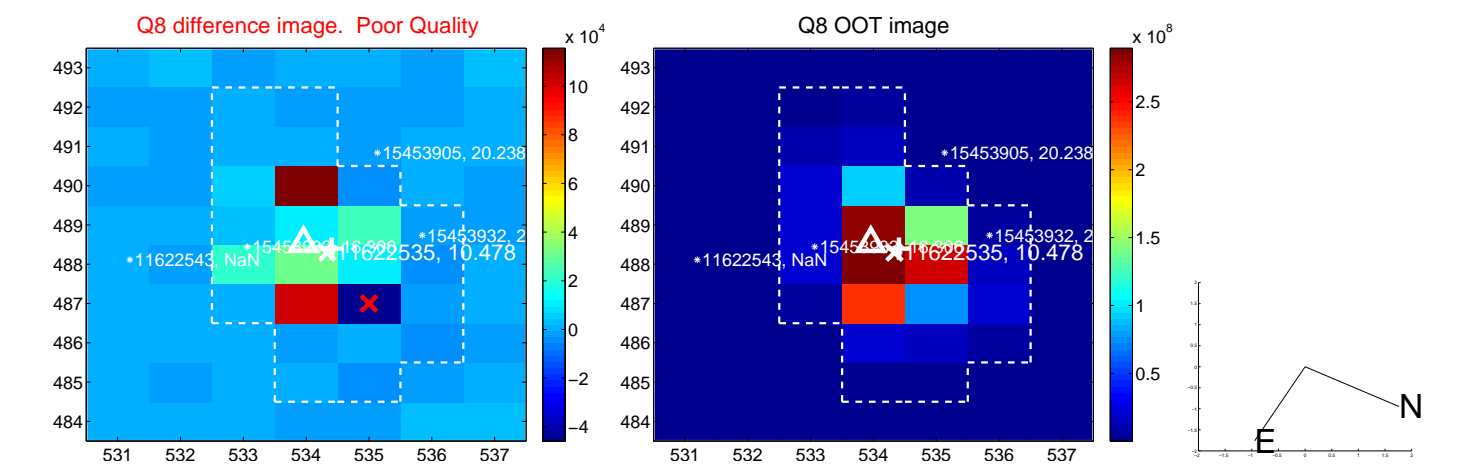
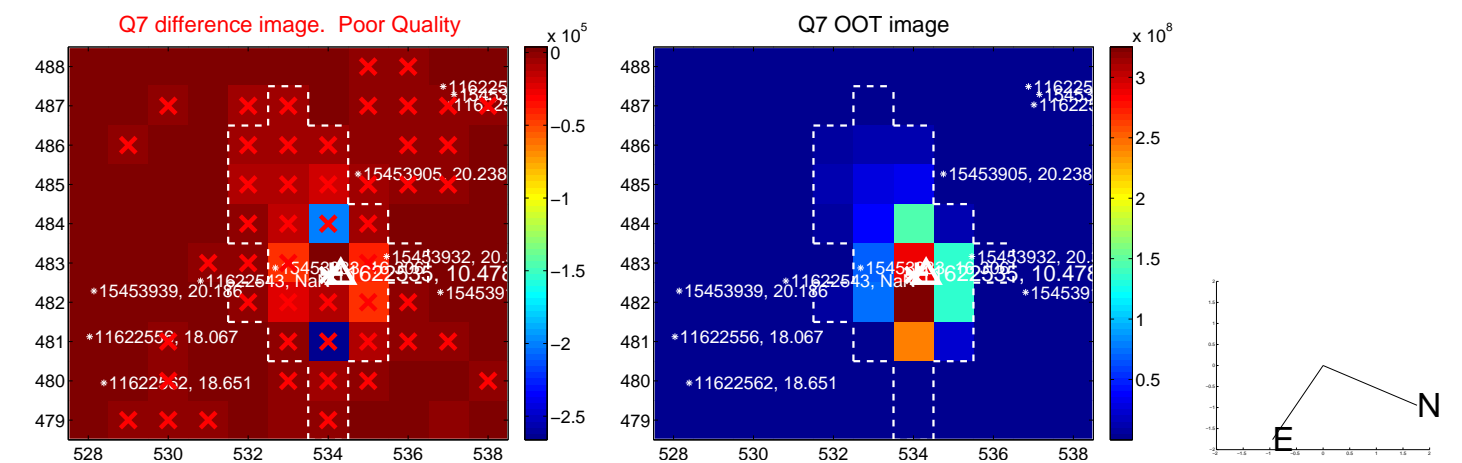
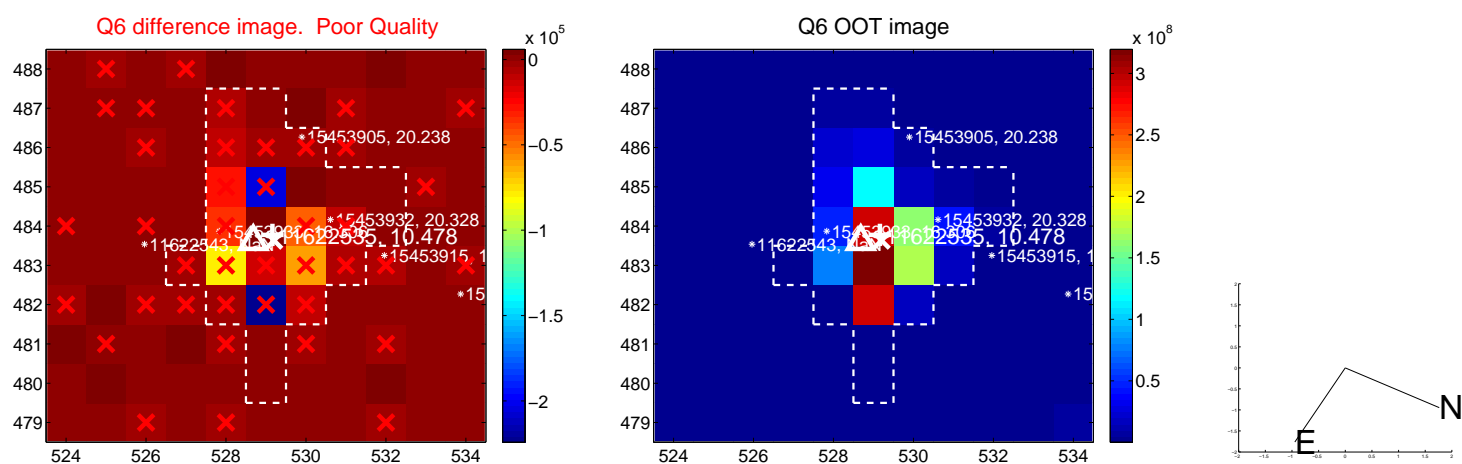
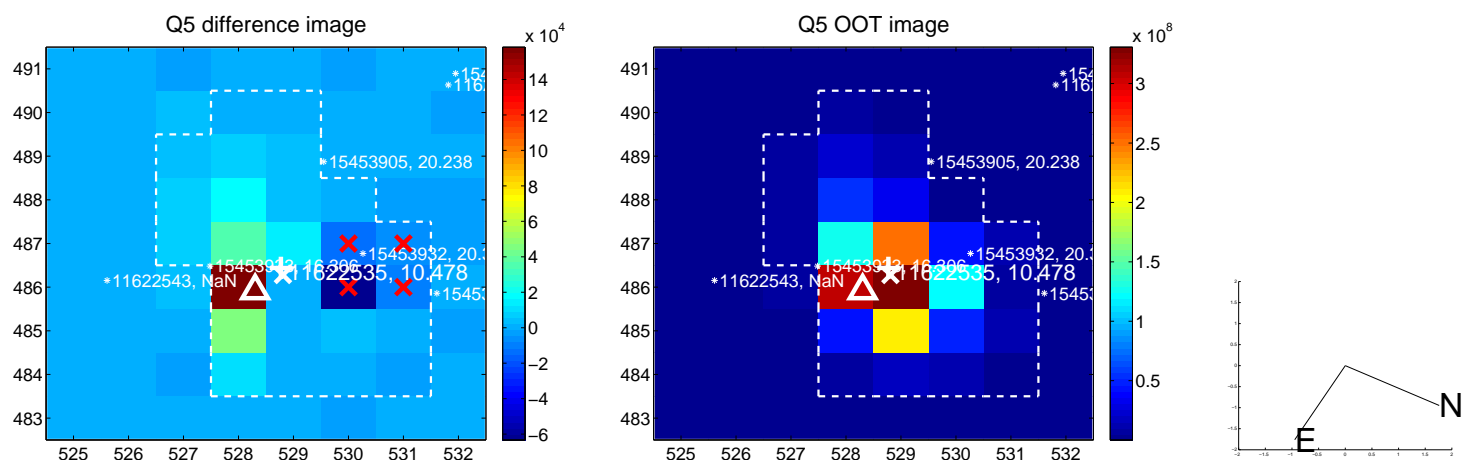


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

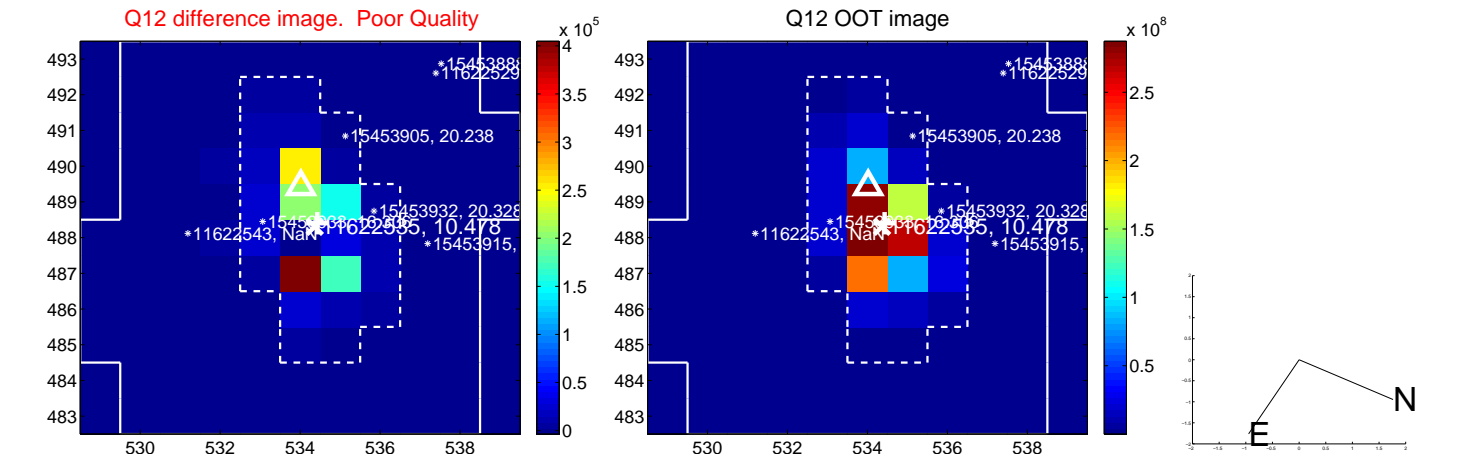
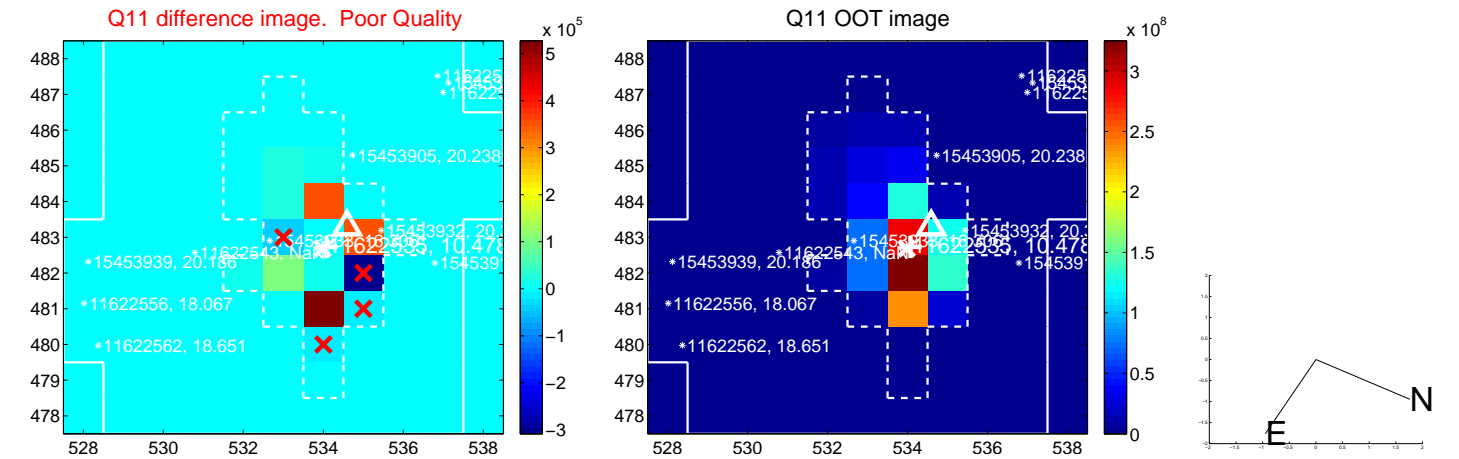
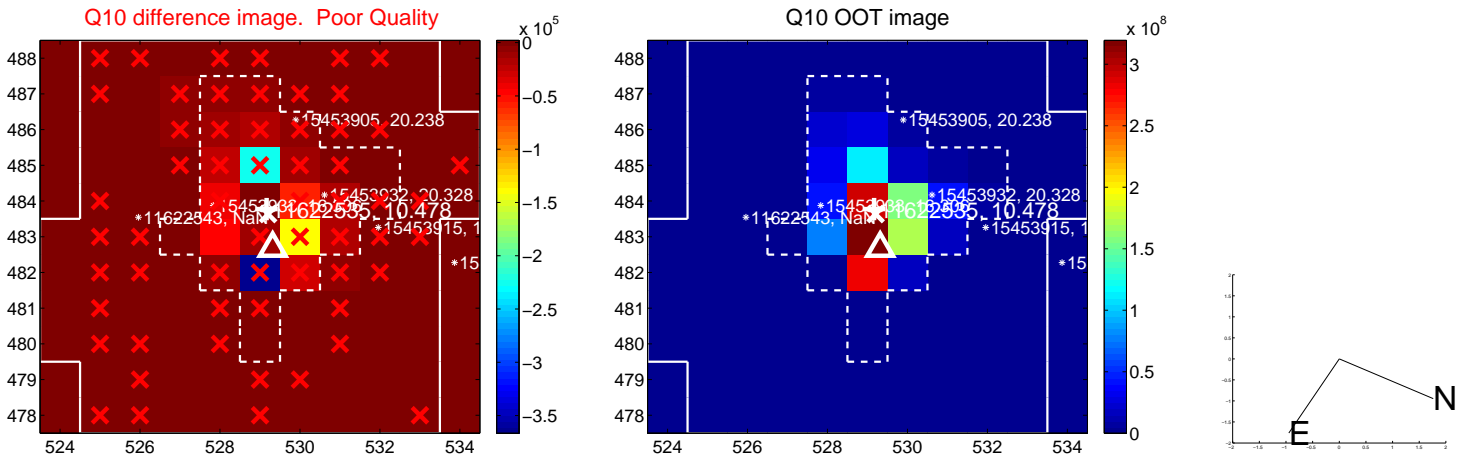
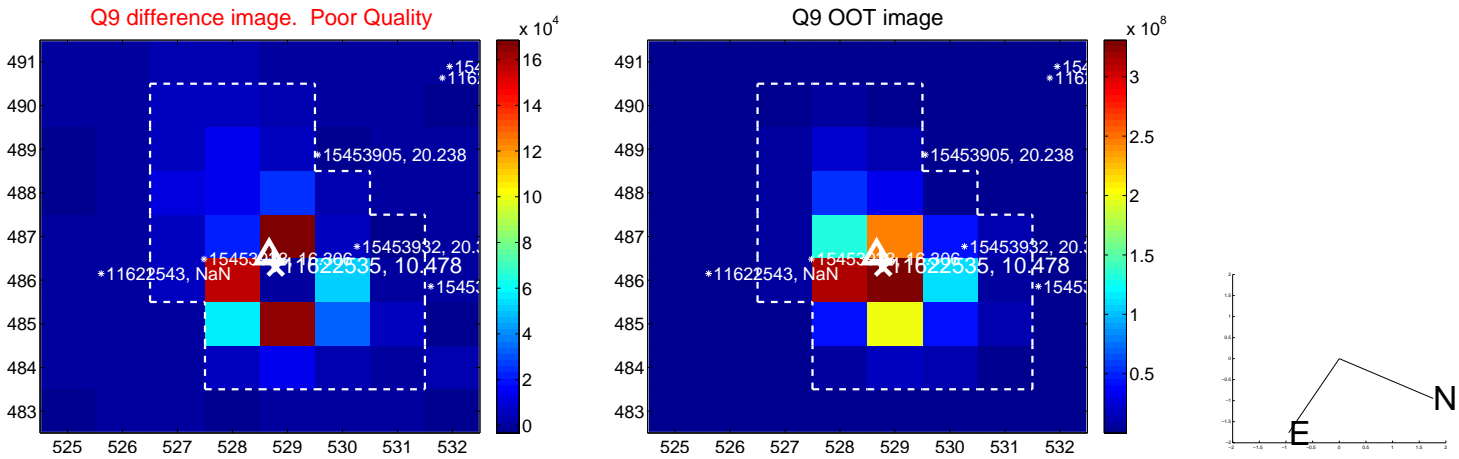
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



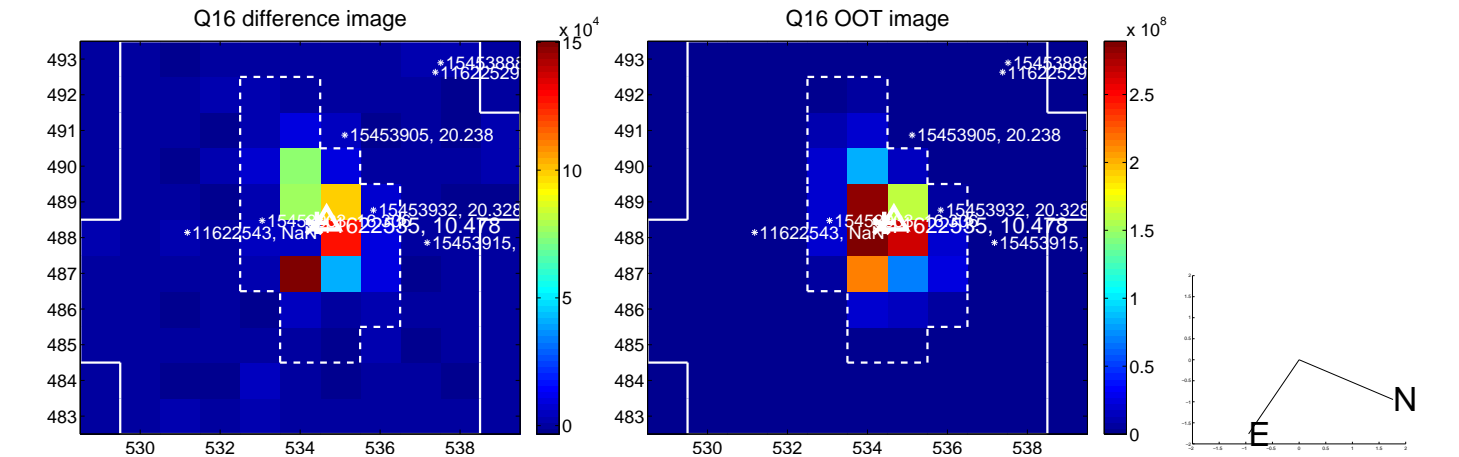
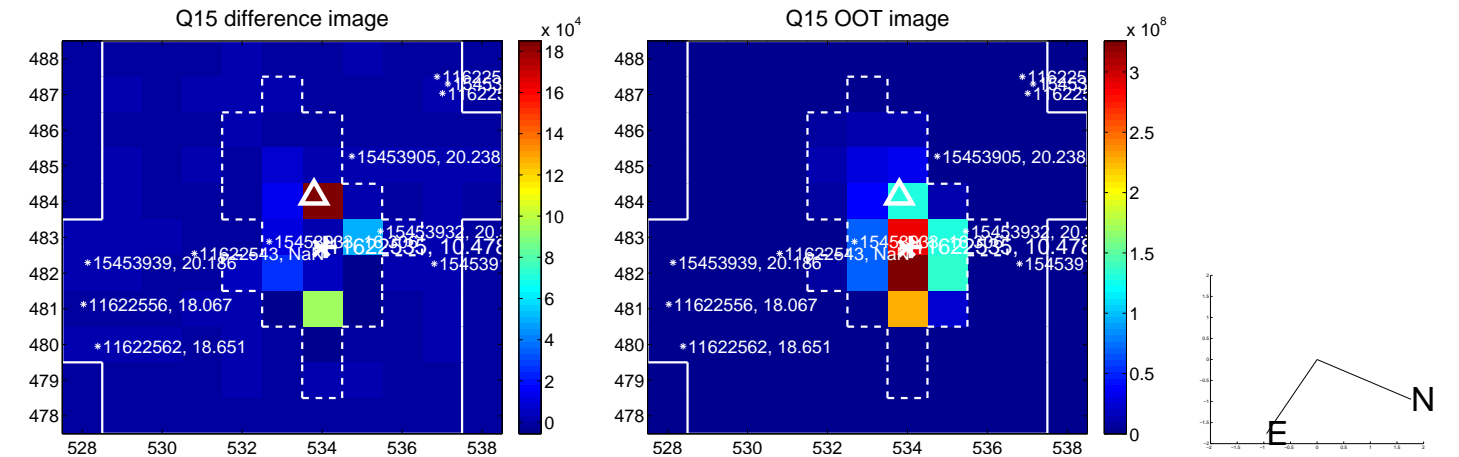
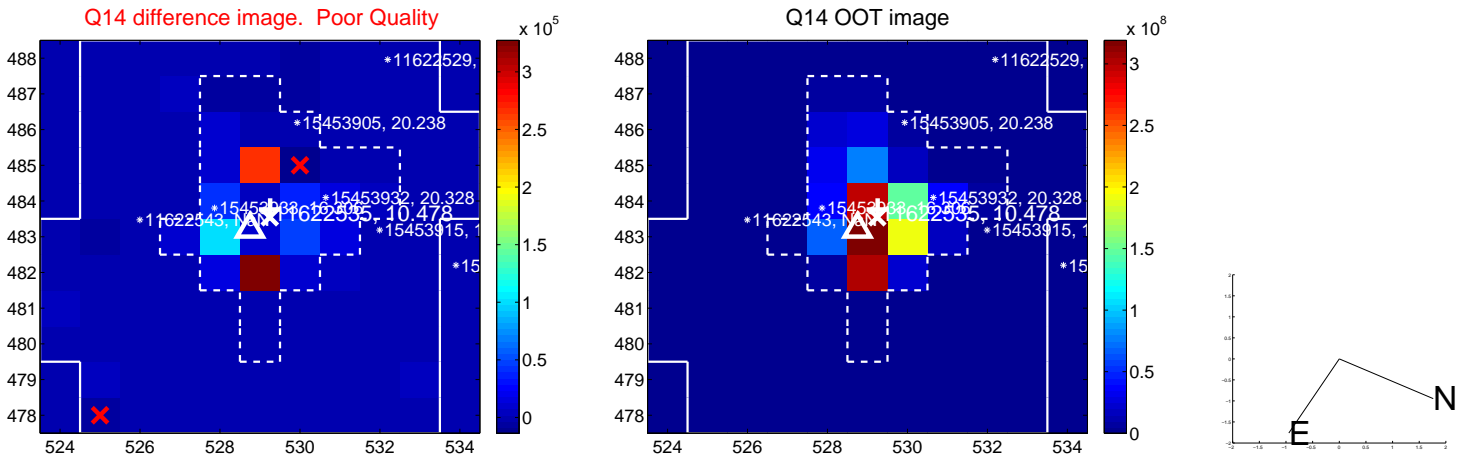
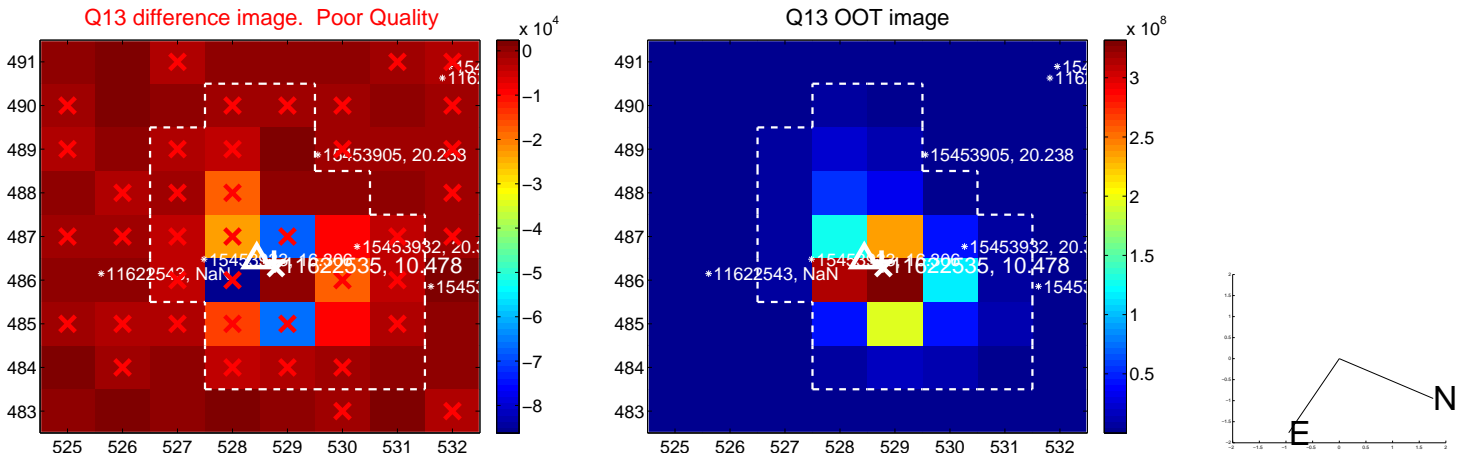
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



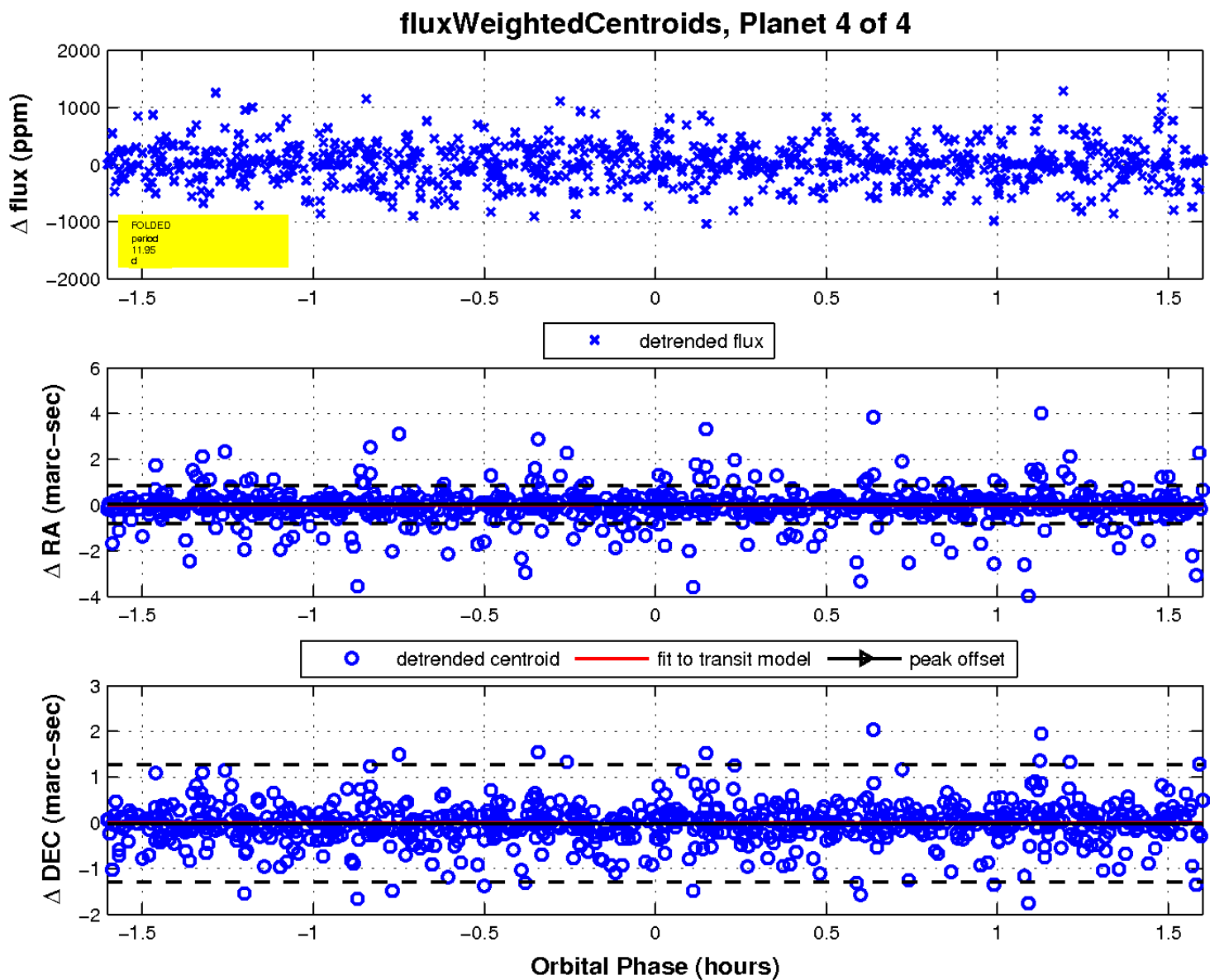
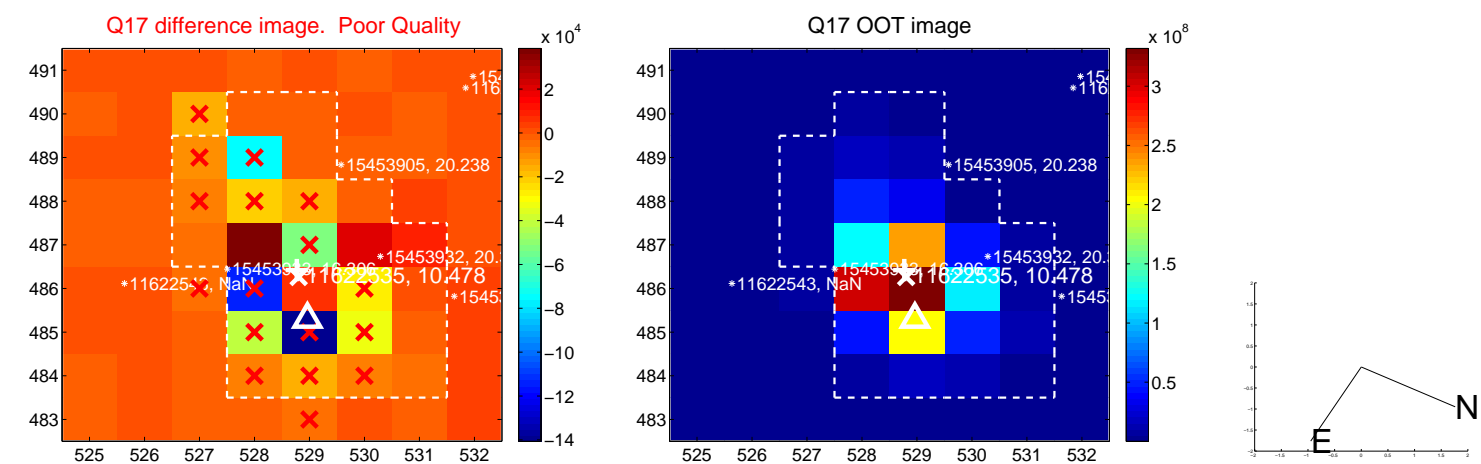
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

Declination

