

# KIC 005802479

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005802479-01	OBS	No	0.638341	131.702634	15.9	3.873	10.4	5.9	1.92	7196	0.86	31321.42
005802479-03	OBS	No	31.522608	153.696891	526.6	5.214	10.0	10.5	1.92	7196	8.30	172.88
005802479-04	OBS	No	88.375917	134.248450	595.7	2.316	9.9	9.7	1.92	7196	5.30	43.73
005802479-05	OBS	No	84.762616	162.094820	472.9	7.177	10.1	9.3	1.92	7196	4.51	46.23
005802479-06	OBS	No	26.284161	151.113282	58.4	3.000	9.1	-1.0	1.92	7196	1.49	220.29
005802479-07	OBS	No	231.017269	226.147869	628.3	13.781	9.6	10.1	1.92	7196	5.19	12.14
005802479-08	OBS	No	80.384356	174.881064	530.4	6.609	9.4	9.0	1.92	7196	8.35	49.62
005802479-09	OBS	No	42.786339	168.305531	242.5	3.706	8.0	5.8	1.92	7196	3.37	115.04
005802479-10	OBS	No	66.734307	159.531369	549.5	5.185	8.3	8.9	1.92	7196	5.51	63.60

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005802479-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—CENT_SATURATED
005802479-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005802479-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005802479-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
005802479-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

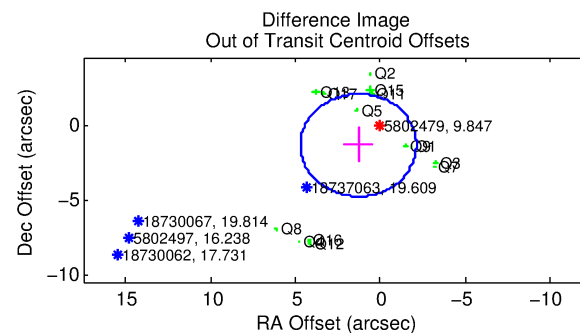
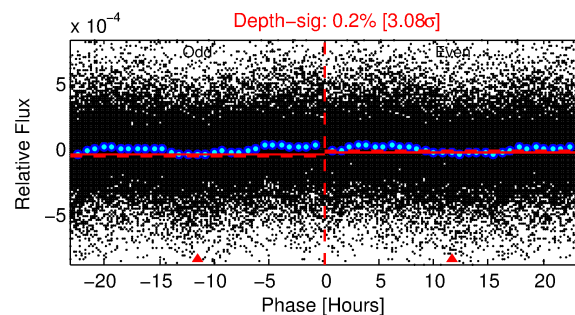
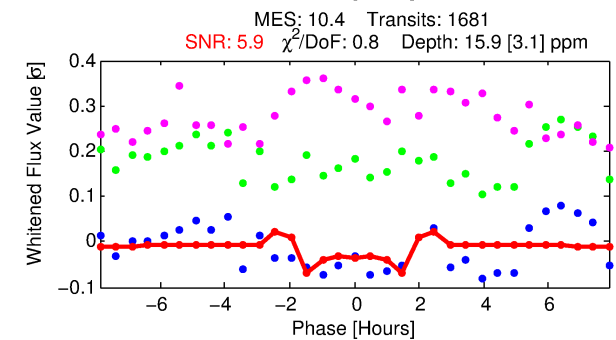
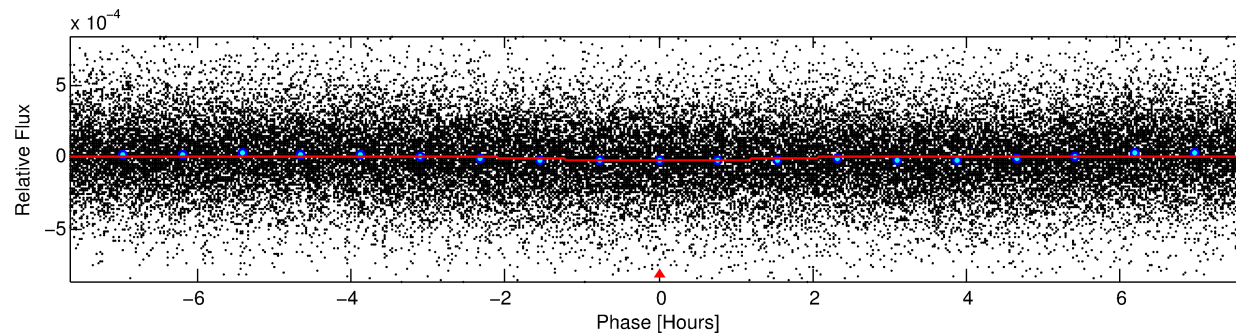
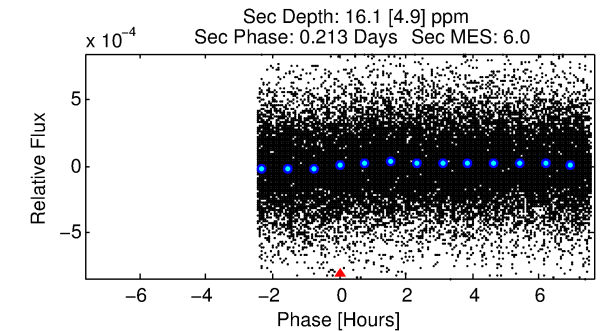
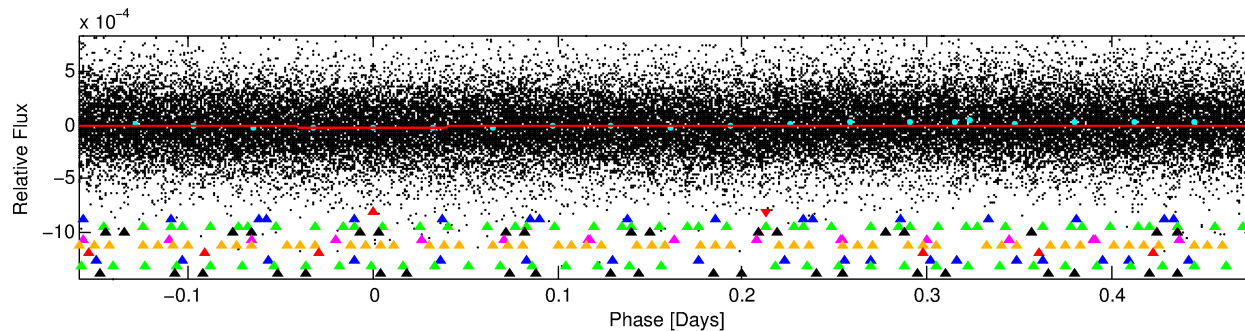
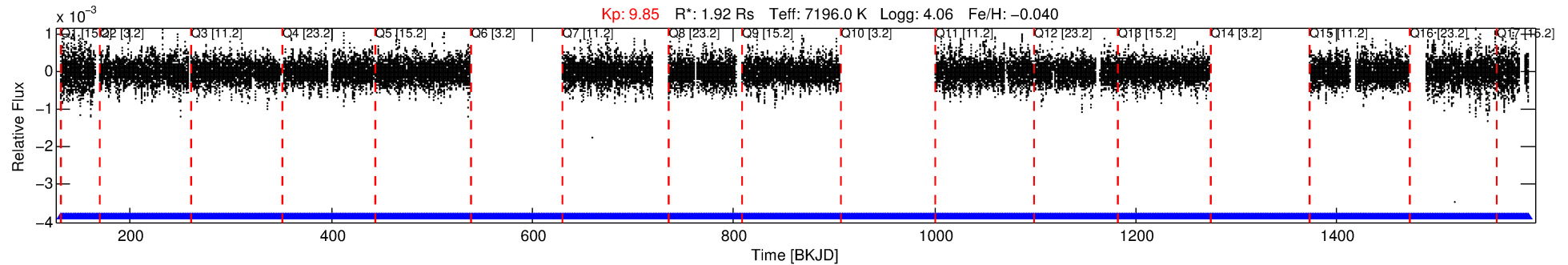
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005802479-01

No Significant Match Found

# DV One-Page Summary

KIC: 5802479 Candidate: 1 of 10 Period: 0.638 d



## DV Fit Results:

Period = 0.63834 [0.00002] d  
Epoch = 131.7026 [0.0023] BKJD  
Rp/R\* = 0.0041 [0.0011]  
a/R\* = 1.14 [0.44]  
b = 0.84 [0.60]  
Seff = 31321.42 [11412.65]  
Teq = 3392 [309] K  
Rp = 0.86 [0.35] Re  
a = 0.0168 [0.0041] AU  
Ag = 3.41 [2.43] [0.99σ]  
Teffp = 7125 [1151] K [3.13σ]

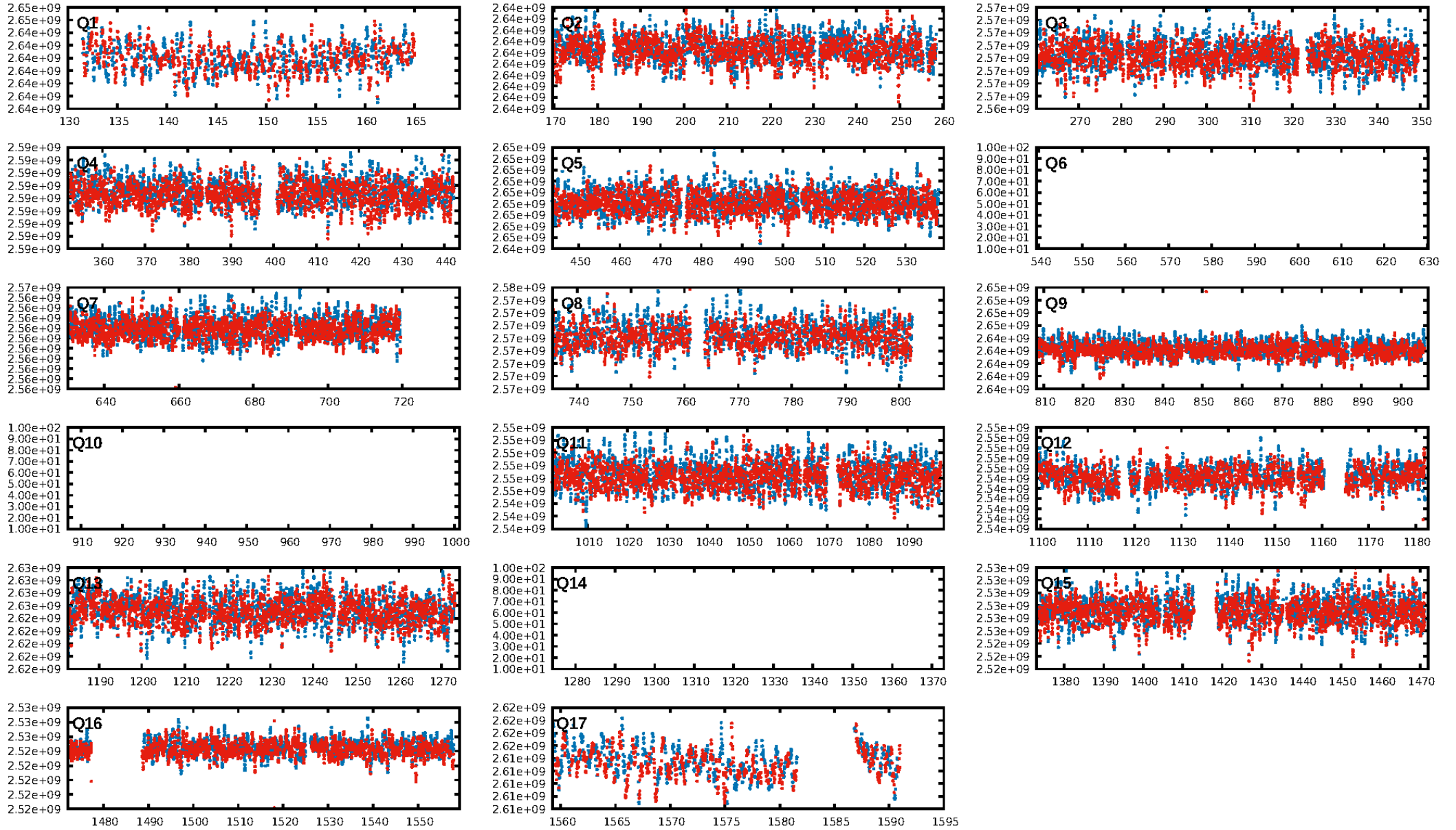
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [125.64σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1586/1586]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 4.4%  
Centroid-so: 0.792 arcsec [1.78σ]  
OotOffset-rm: 1.873 arcsec [1.64σ]  
KicOffset-rm: 2.217 arcsec [2.14σ]  
OotOffset-st: 1/4/4/5 [14]  
KicOffset-st: 1/4/4/5 [14]  
DiffImageQuality-fgm: 0.00 [0/14]  
DiffImageOverlap-fno: 1.00 [14/14]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:10:17 Z

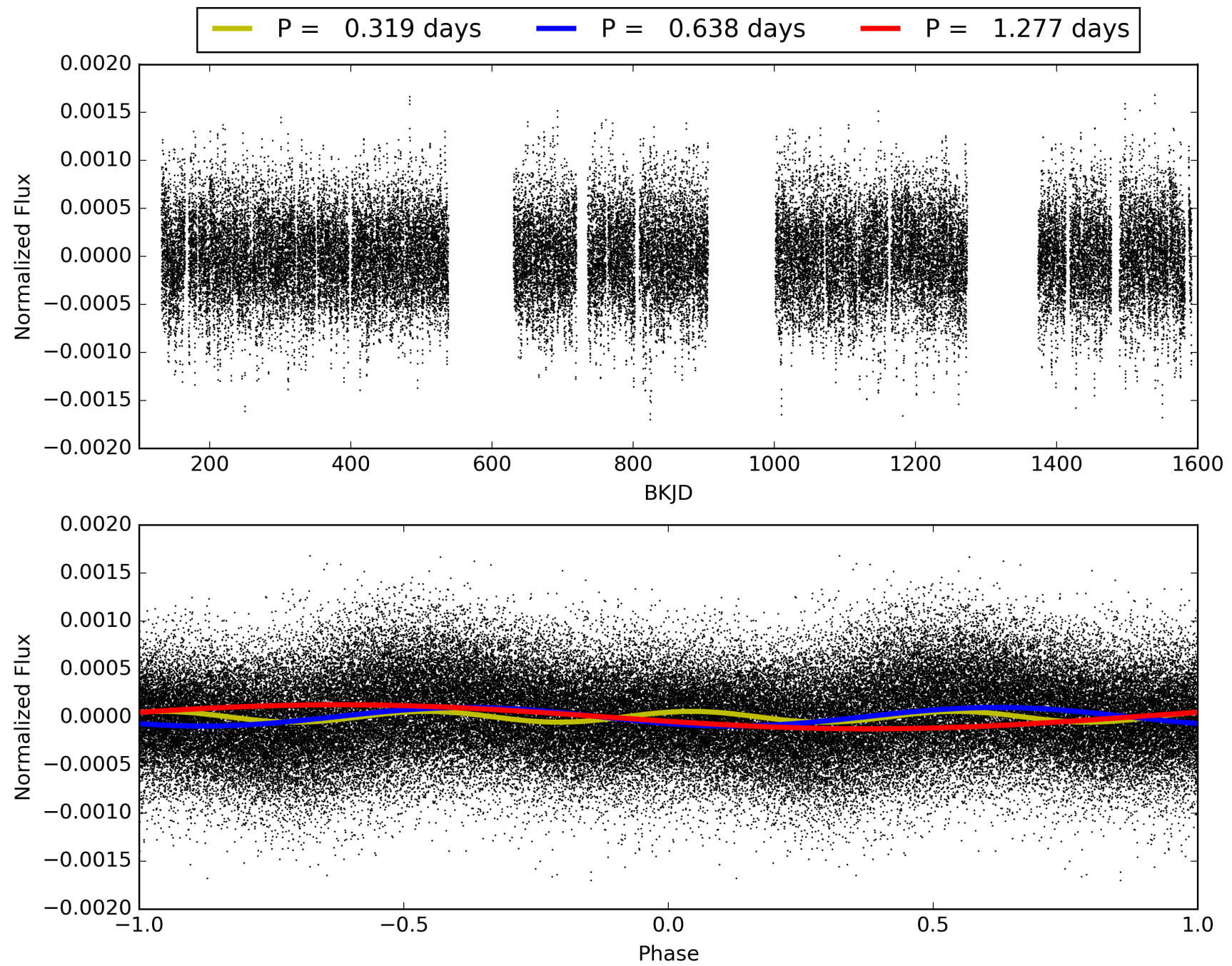
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005802479-01, PDC Light Curves





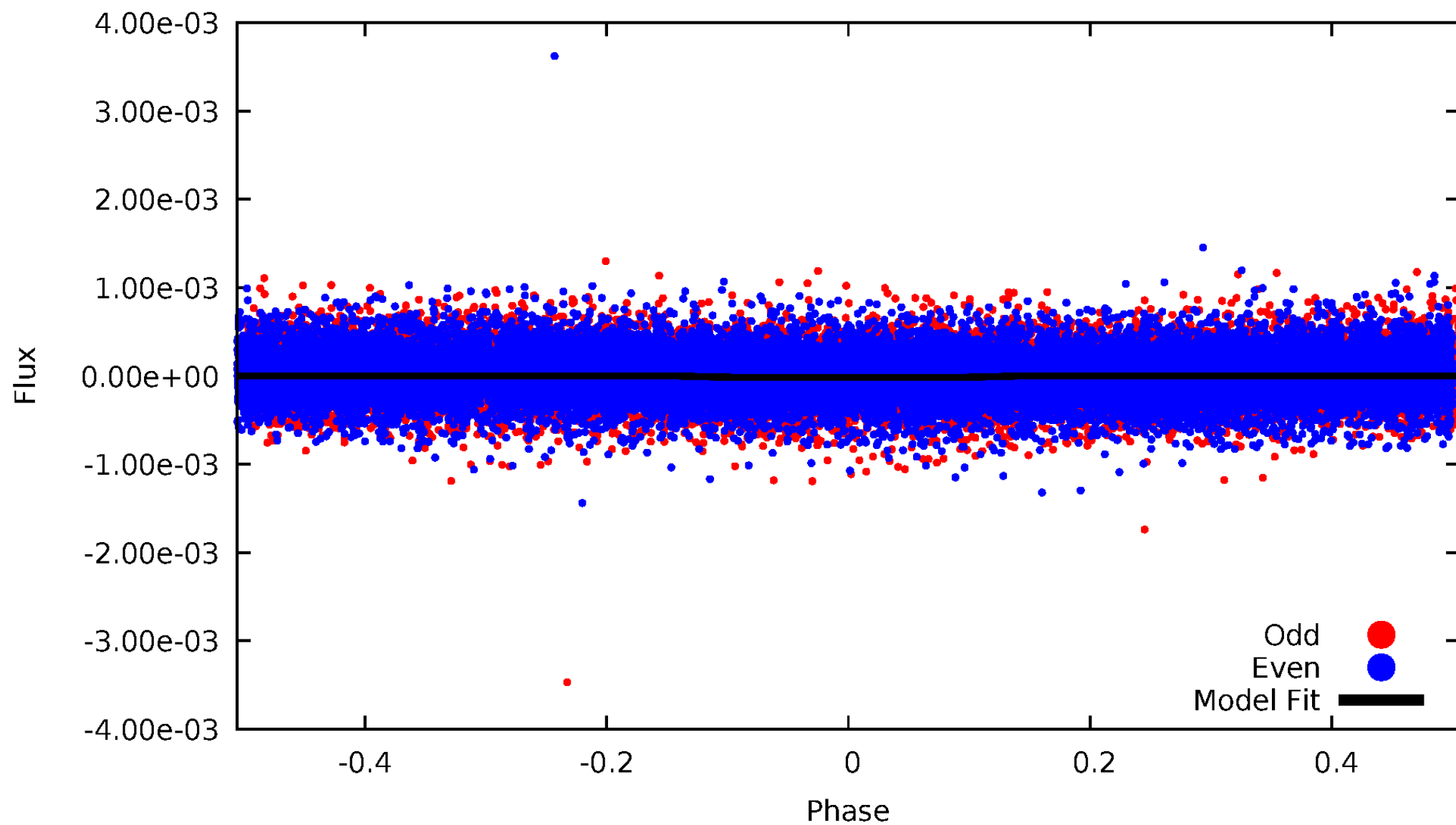
TCE 005802479-01





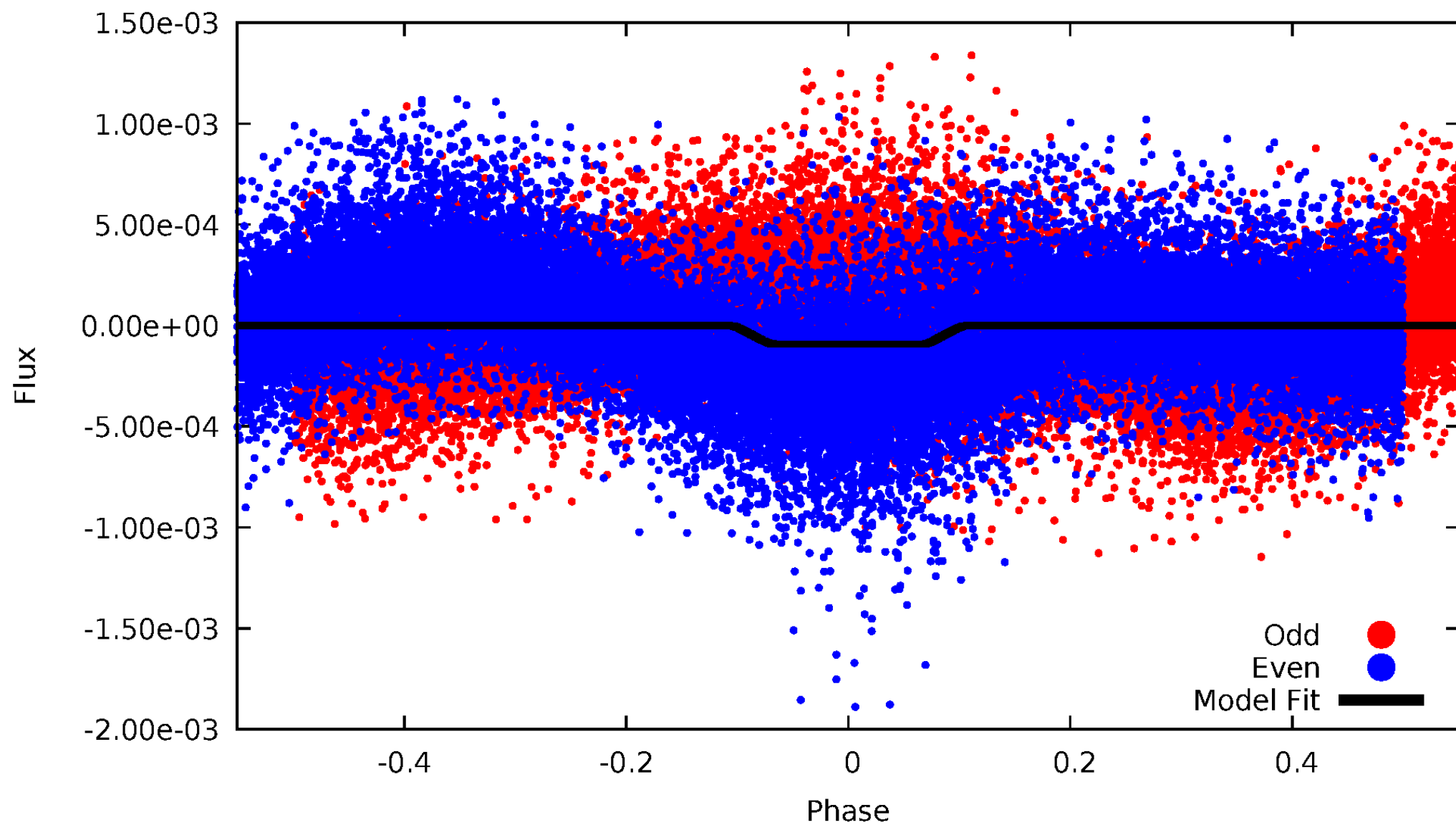
# DV Odd/Even

TCE 005802479-01



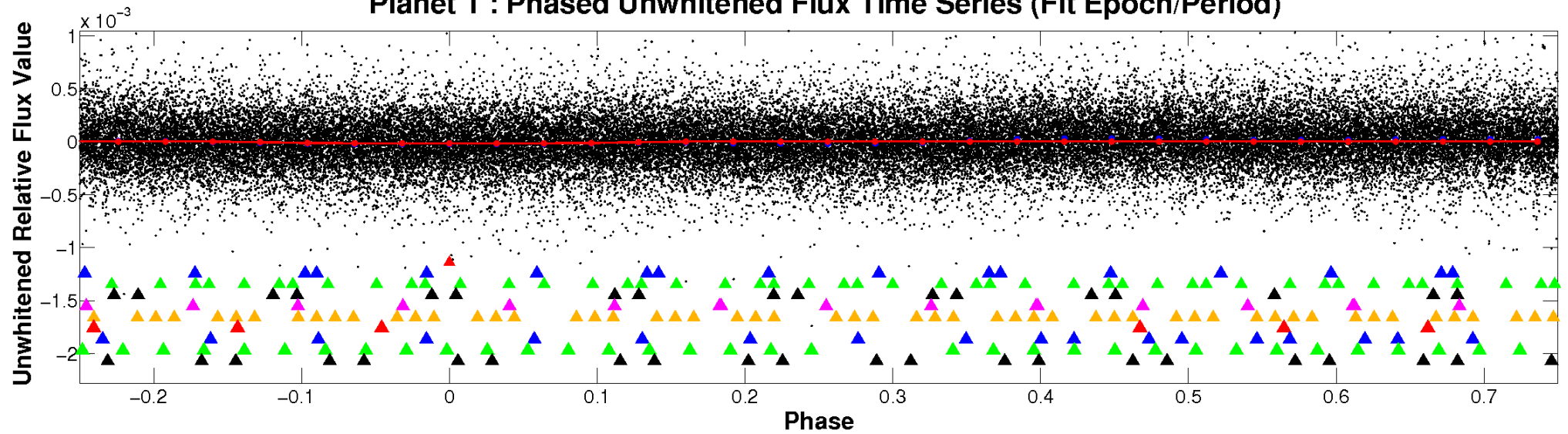
# ALT Odd/Even

TCE 005802479-01

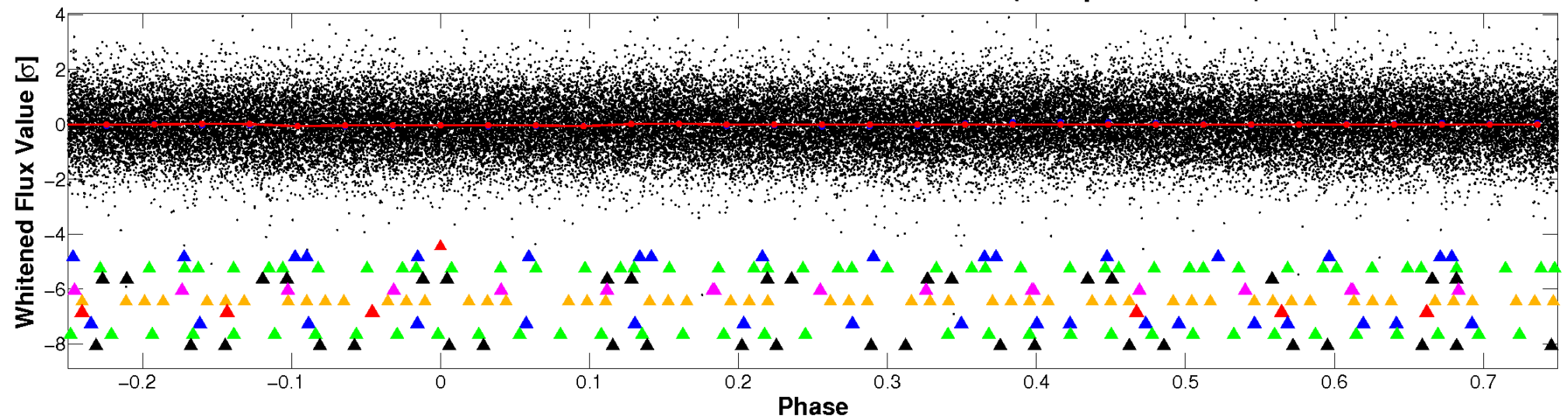


# Non-Whitened Vs. Whitened Light Curve

## Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)



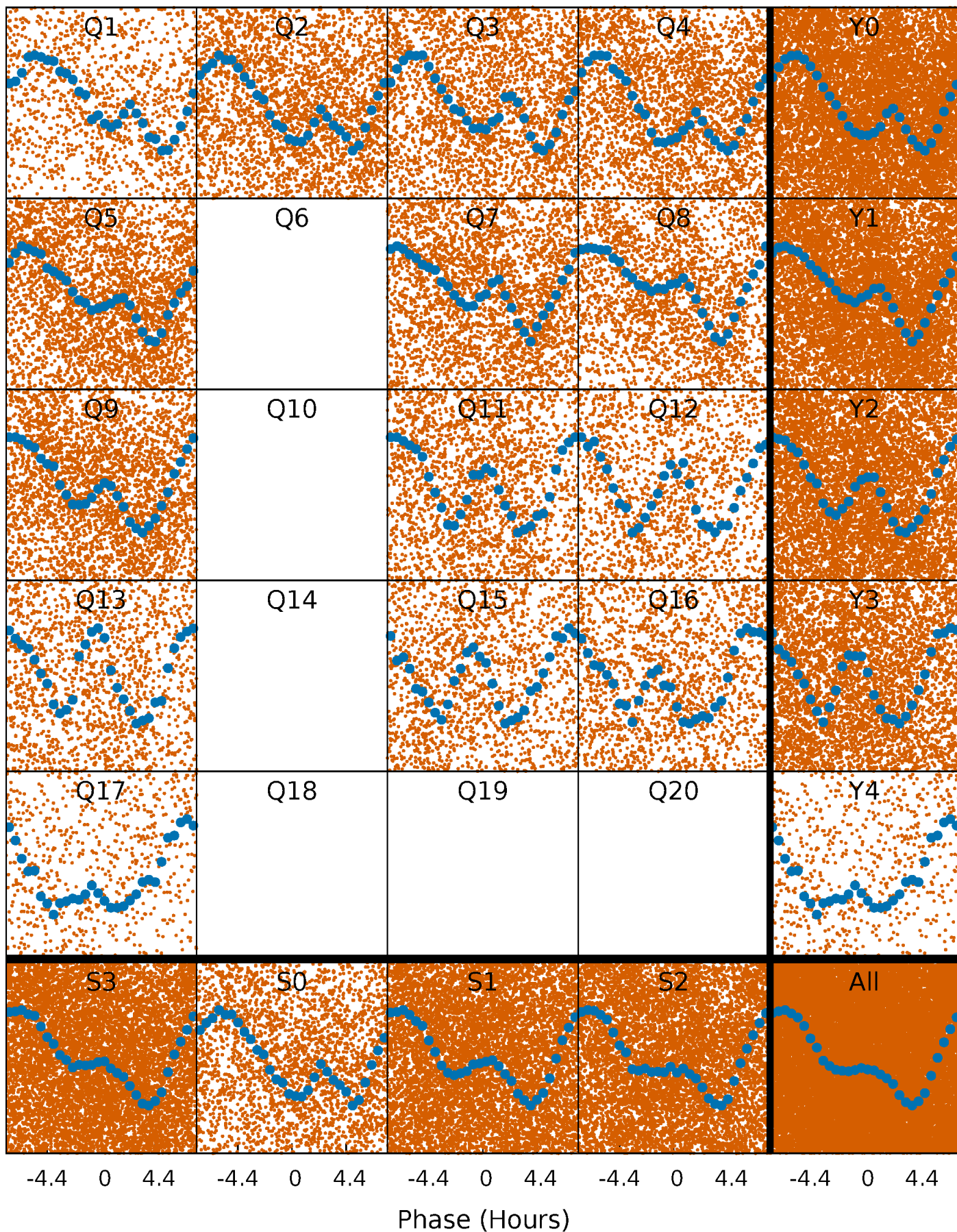
## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)





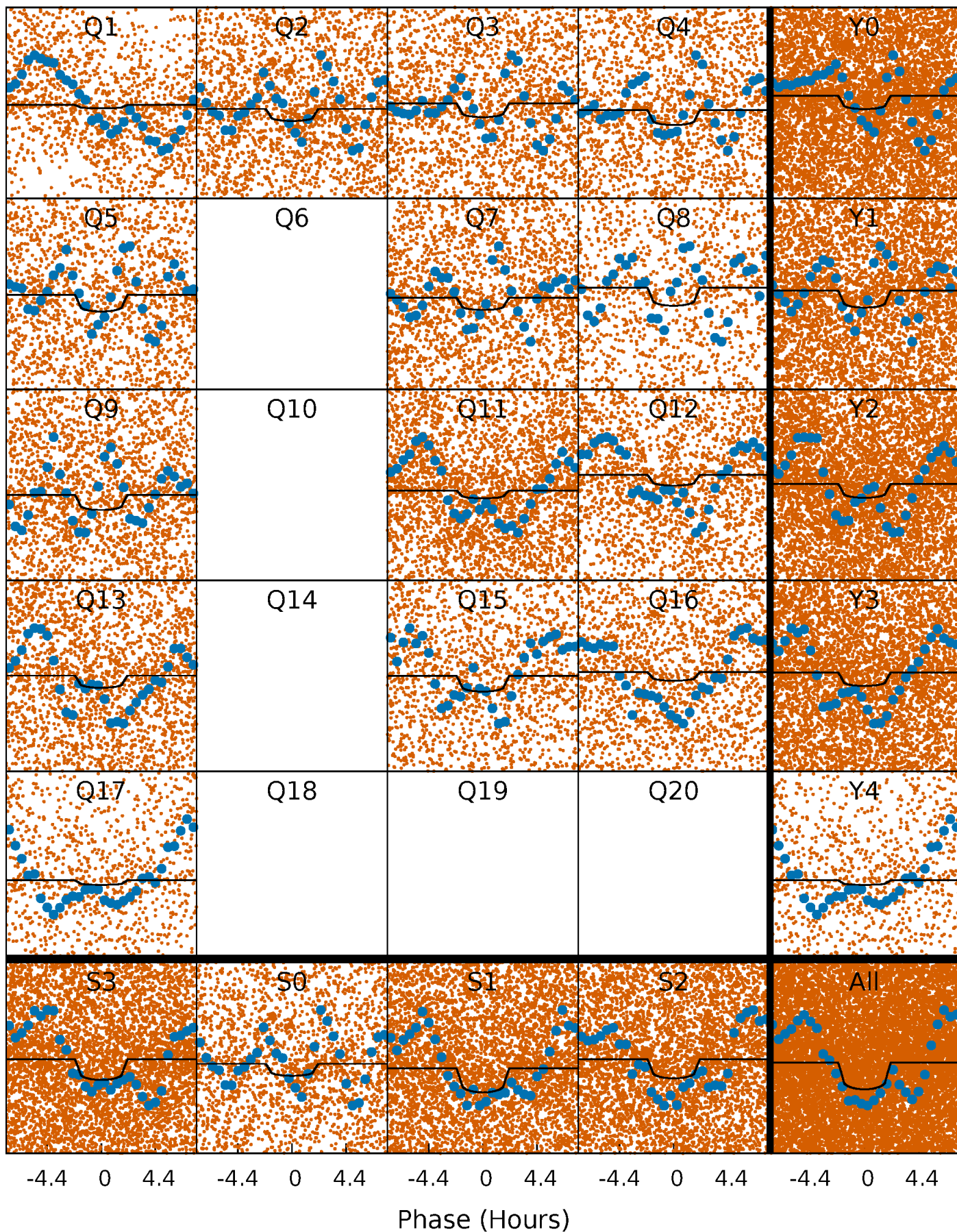
# PDC Quarter-Phased Transit Curves

TCE 005802479-01 P= 0.638341 Days  $T_0=131.702634$  (BKJD)



# DV Quarter-Phased Transit Curves

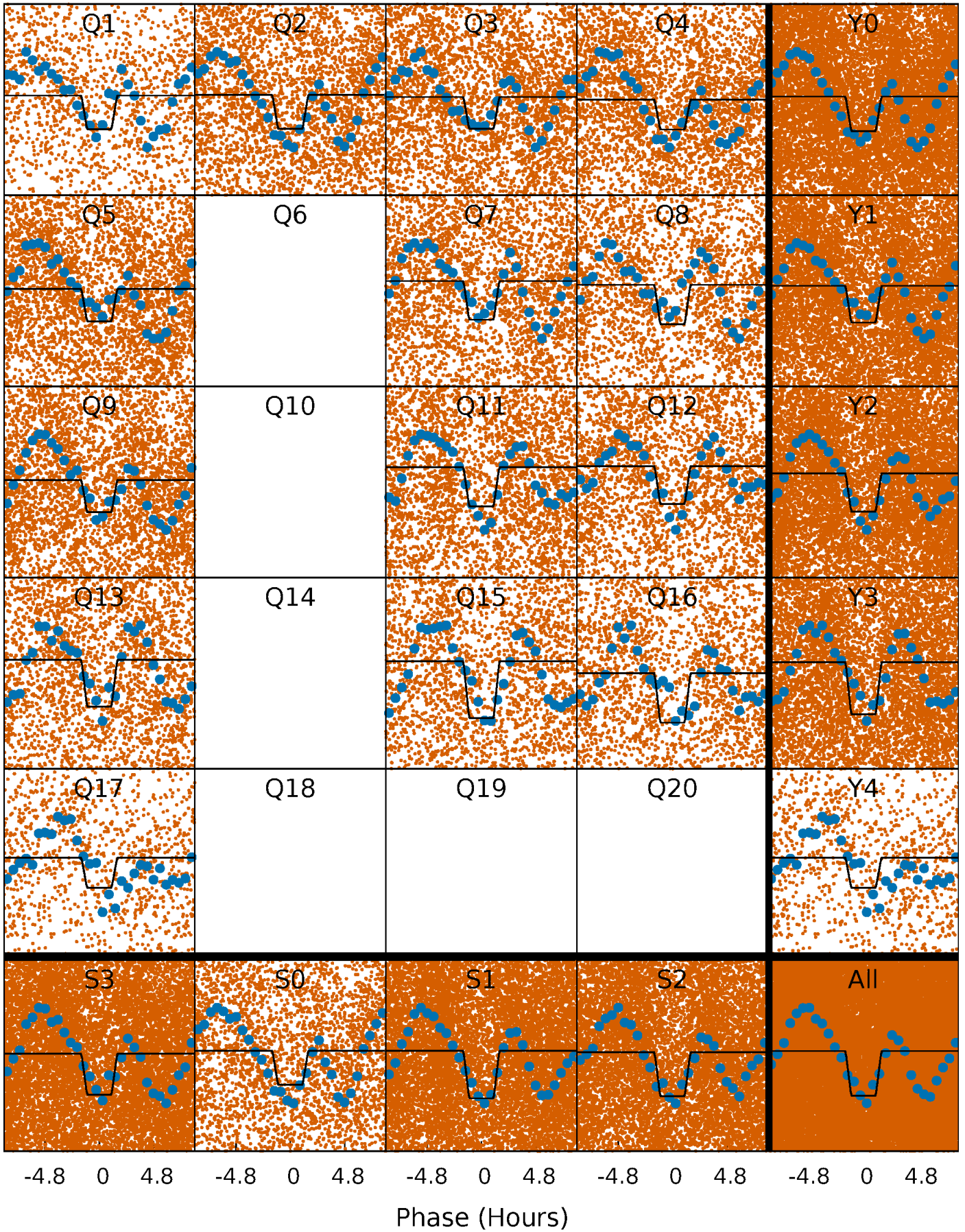
TCE 005802479-01   P= 0.638341 Days    $T_0=131.702634$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 005802479-01 P= 0.638238 Days  $T_0=131.728031$  (BKJD)

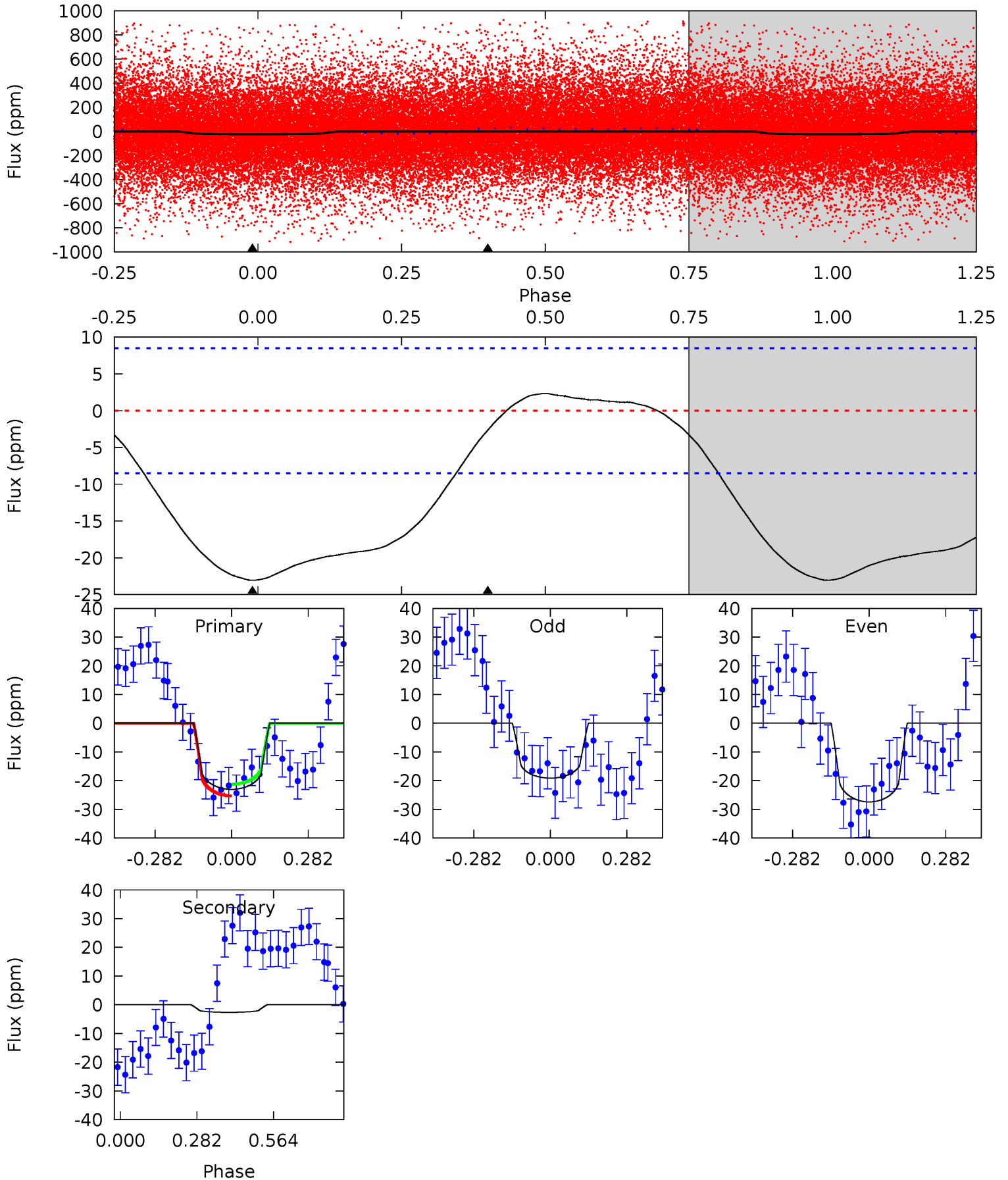




# DV Model-Shift Uniqueness Test

005802479-01, P = 0.638341 Days, E = 131.064293 Days

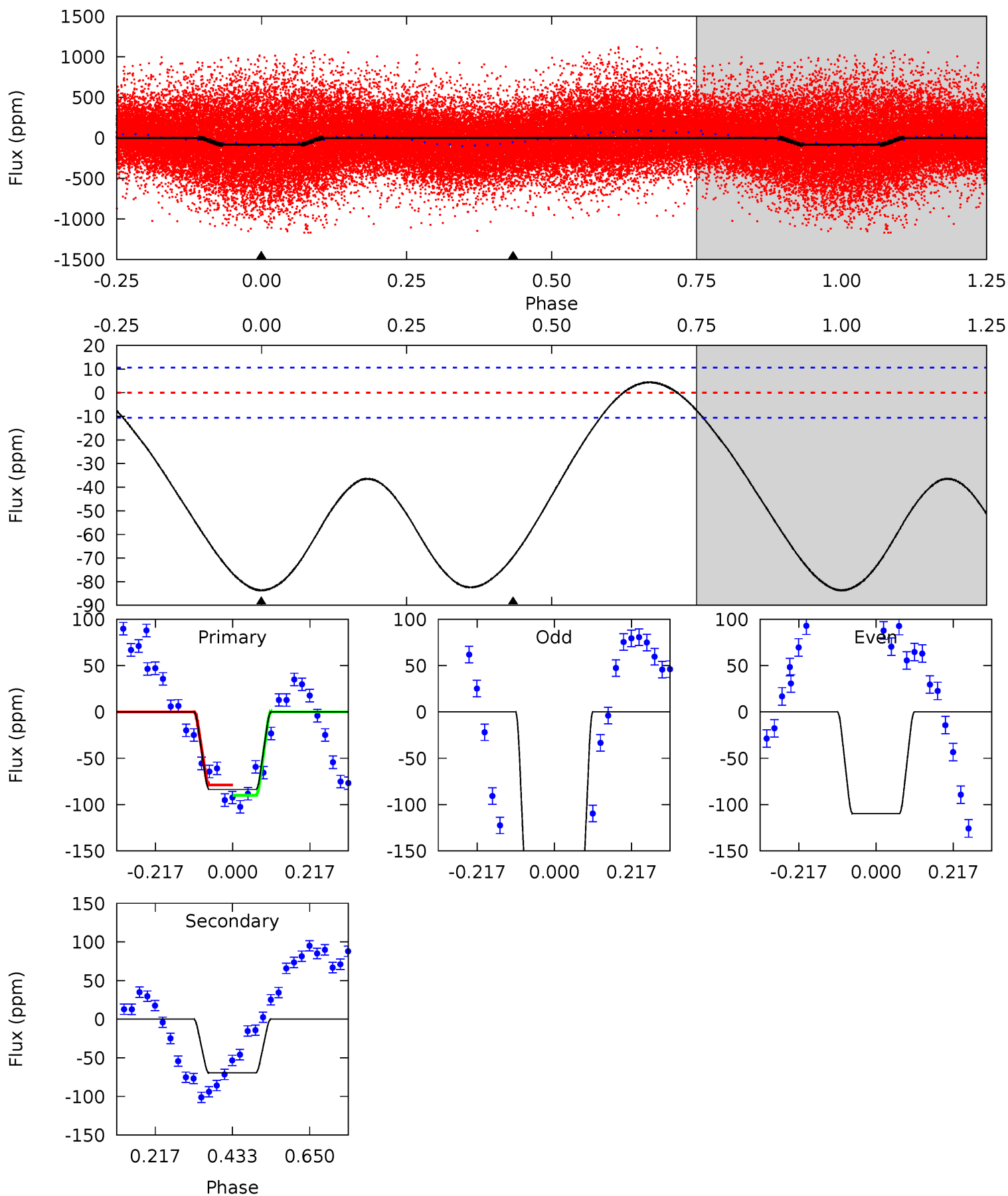
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	1.35	0	0	4.34	1.08	0.61	11.8	11.8	1.35	1.35	2.14	1.26	0.09	1.04



# Alt Model-Shift Uniqueness Test

005802479-01, P = 0.638238 Days, E = 131.089793 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
34.7	28.8	0	0	4.40	1.24	2.95	34.7	34.7	28.8	28.8	33.2	1.12	0.05	1.93



### Stellar Parameters For KIC 005802479

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7196^{+172}_{-259}$	$4.064^{+0.158}_{-0.175}$	$-0.040^{+0.250}_{-0.350}$	$1.923^{+0.576}_{-0.471}$	$1.562^{+0.212}_{-0.236}$	$0.309^{+0.296}_{-0.153}$
	+2%/-4%	+4%/-4%	+625%/-875%	+30%/-24%	+14%/-15%	+96%/-50%
Source	PHO1	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 005802479-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-3\pm 2$	$0.88^{+0.29}_{-0.27}$	$4743^{+379}_{-320}$	$3863^{+1343}_{-7688}$	$0.511^{+0.804}_{-0.376}$
Alt.	$-69\pm 2$	$2.02^{+0.43}_{-0.36}$	$4733^{+347}_{-323}$	$6388^{+566}_{-434}$	$2.637^{+1.151}_{-0.809}$

$T_{max}$  = 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

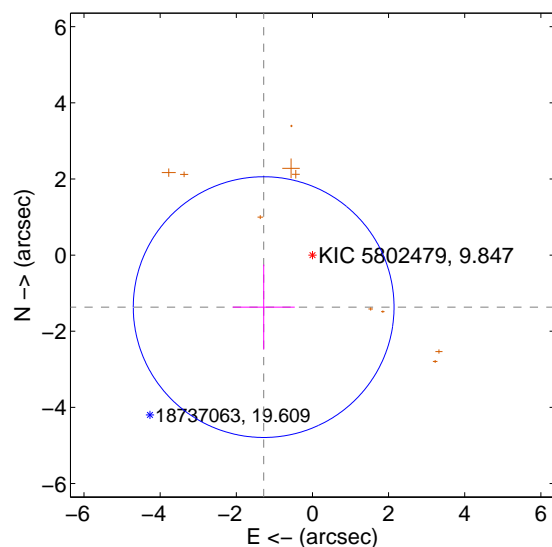
Supplemental centroid analysis for 005802479-01. **Kepler magnitude: 9.85.** Transit SNR 5.88

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

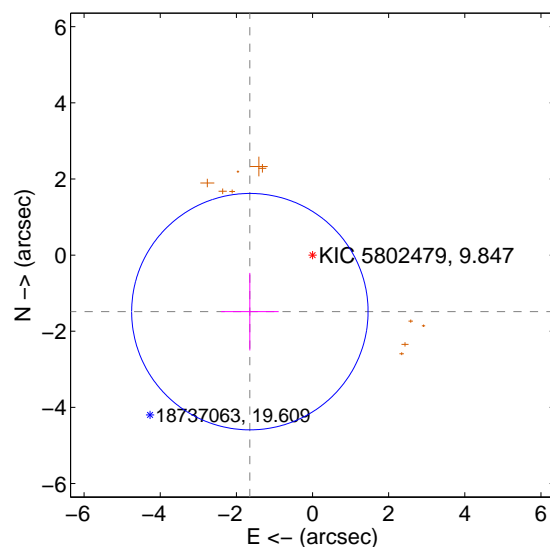
The direct PRF centroid is offset from the target star catalog position by about 1.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.873 \pm 1.141$	1.64	$1.281 \pm 0.817$	$-1.366 \pm 1.117$
PRF-fit source offset from KIC position	$2.217 \pm 1.035$	2.14	$1.645 \pm 0.756$	$-1.485 \pm 1.018$
photometric centroid source offset	$0.79 \pm 0.44$	1.78	$-0.76 \pm 0.43$	$0.21 \pm 0.60$

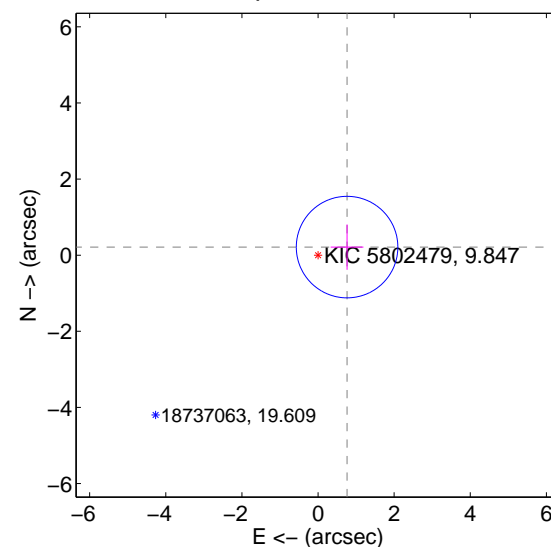
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

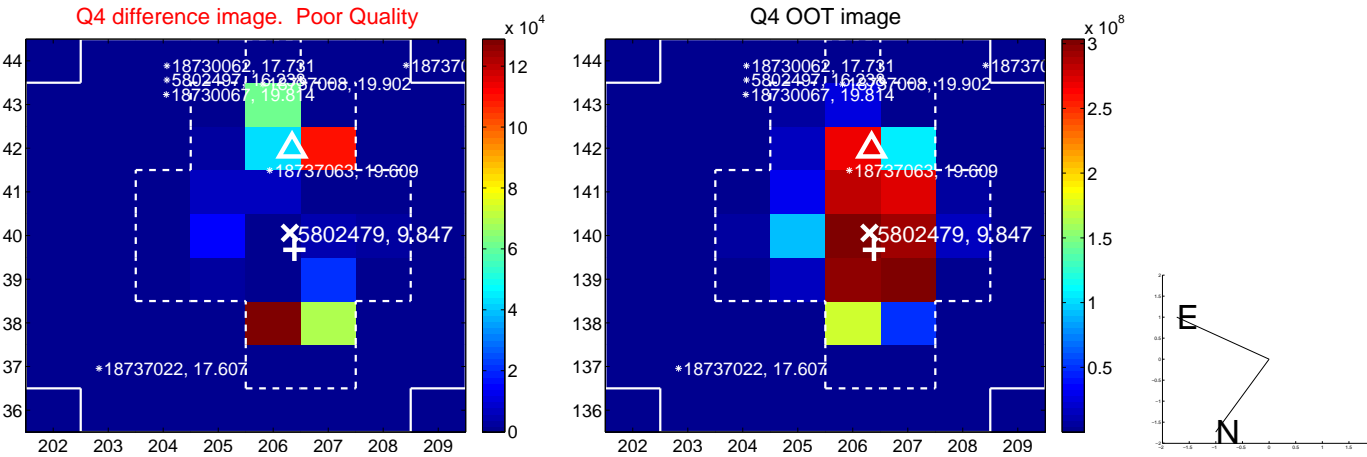
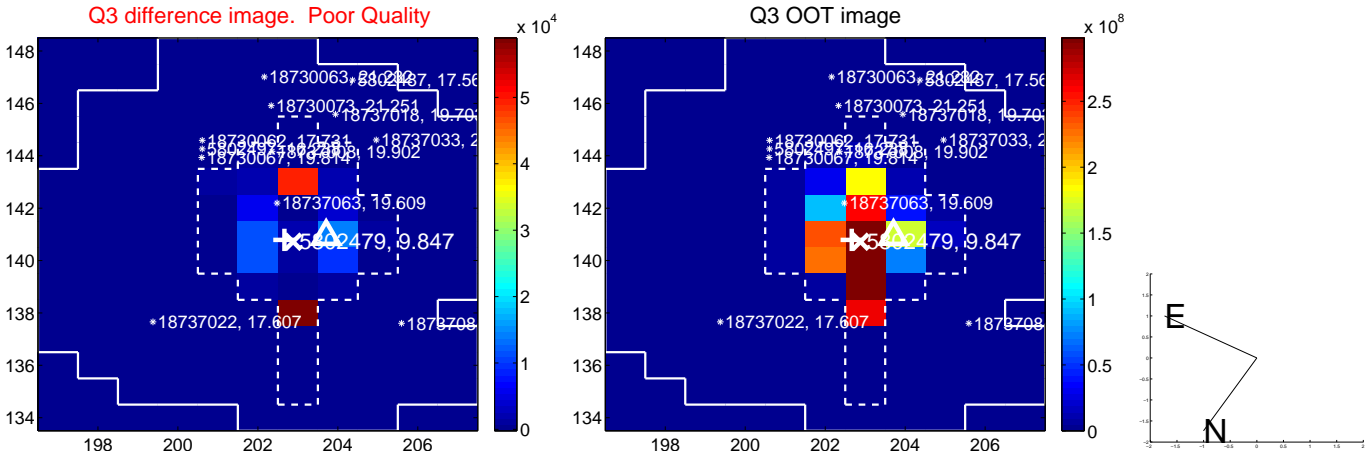
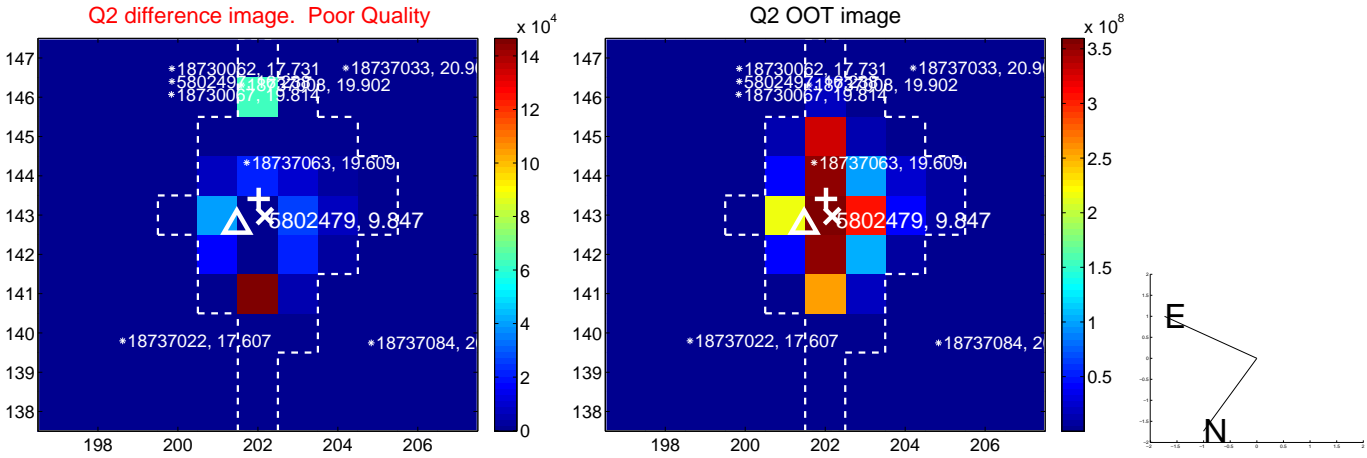
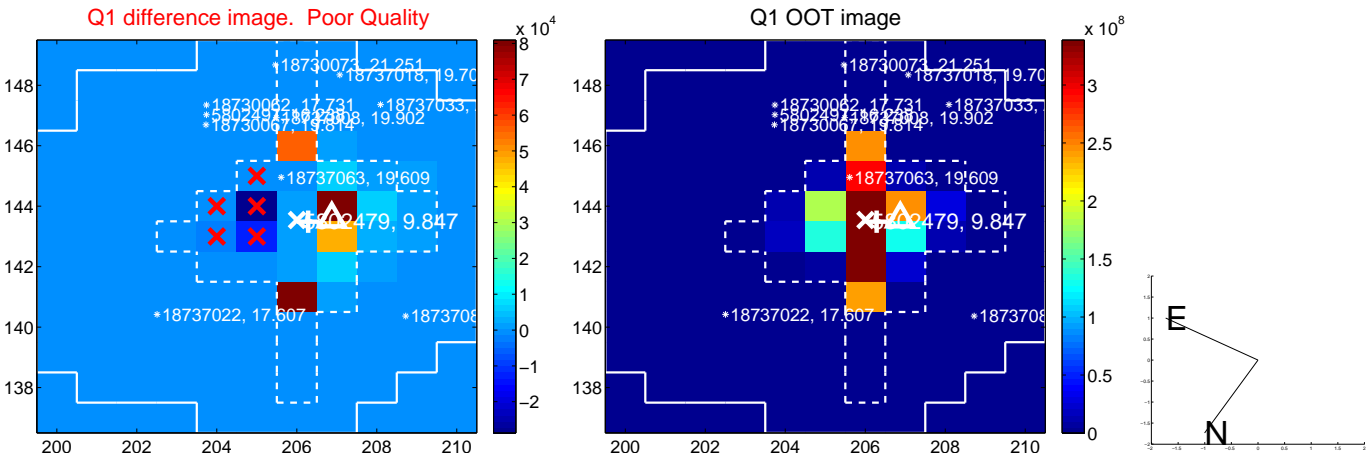


offset from photometric centroids

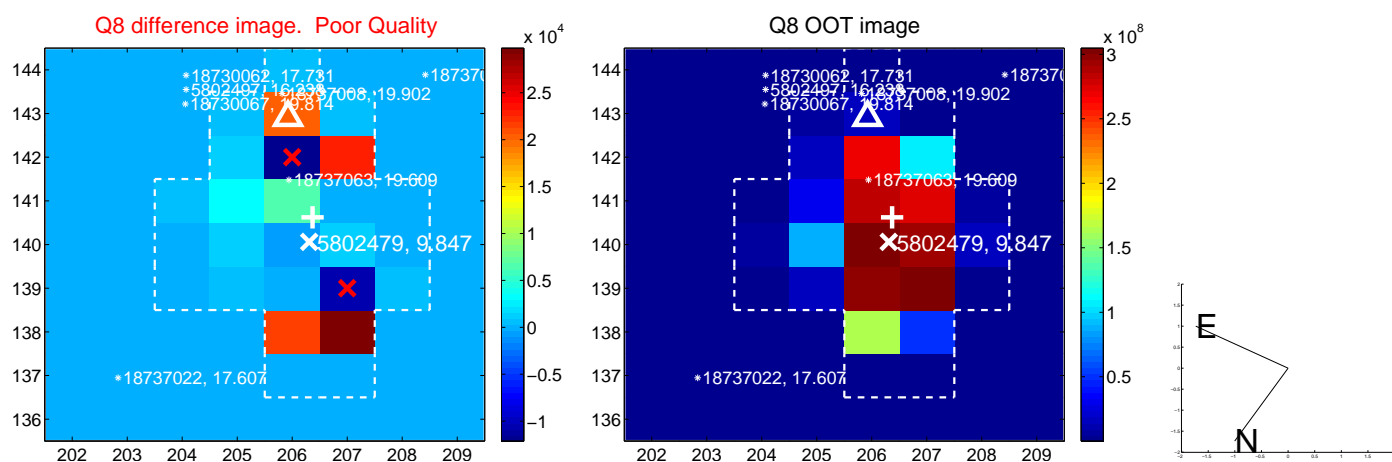
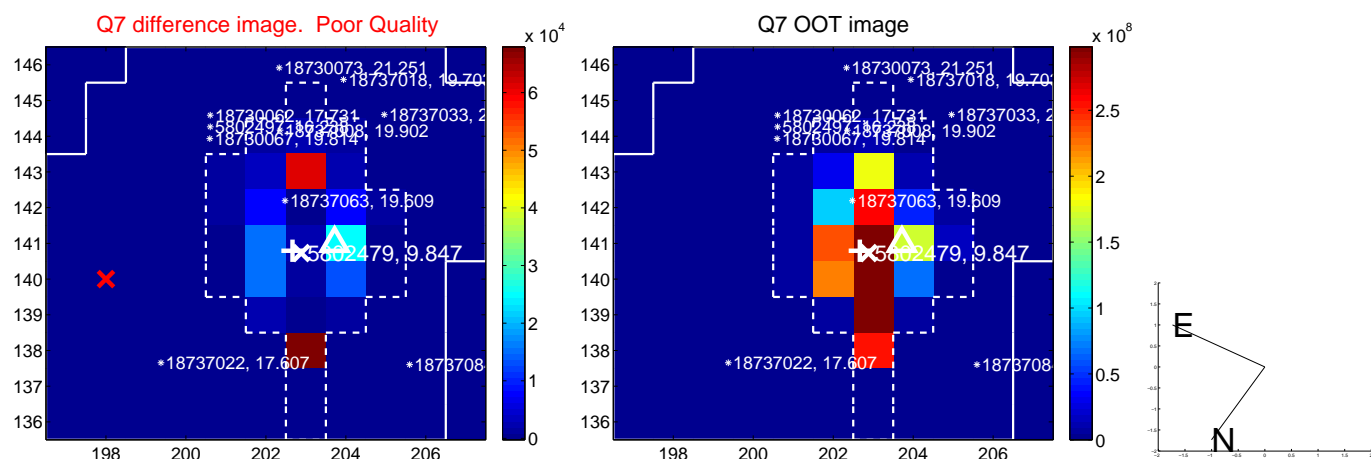
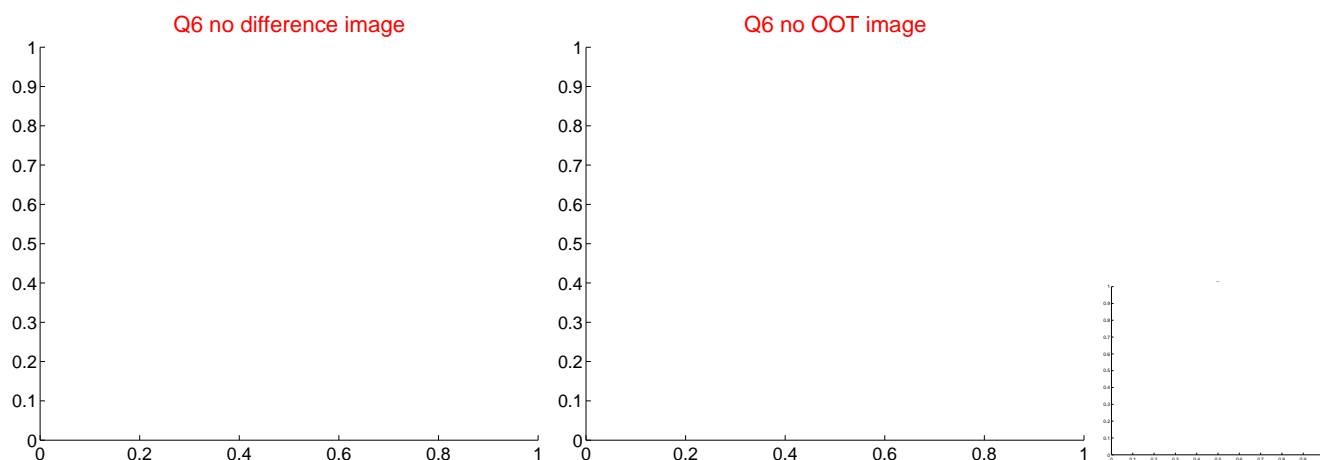
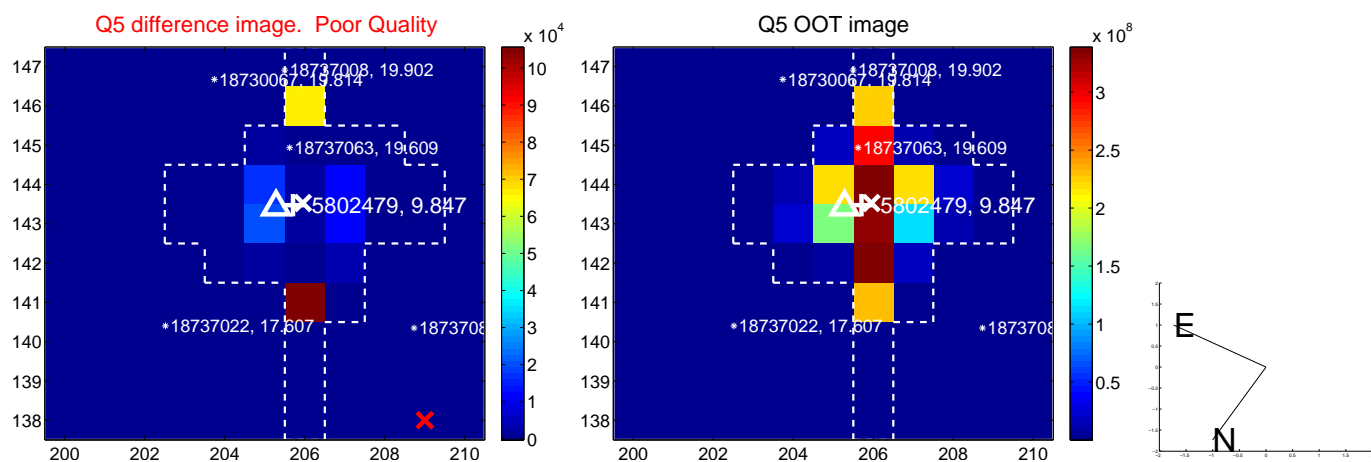


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

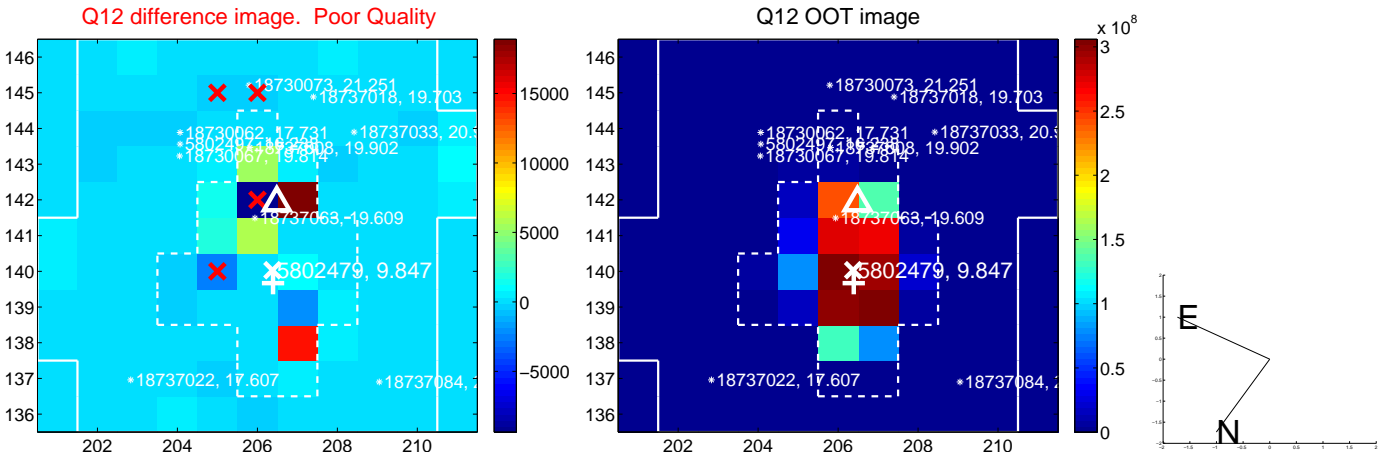
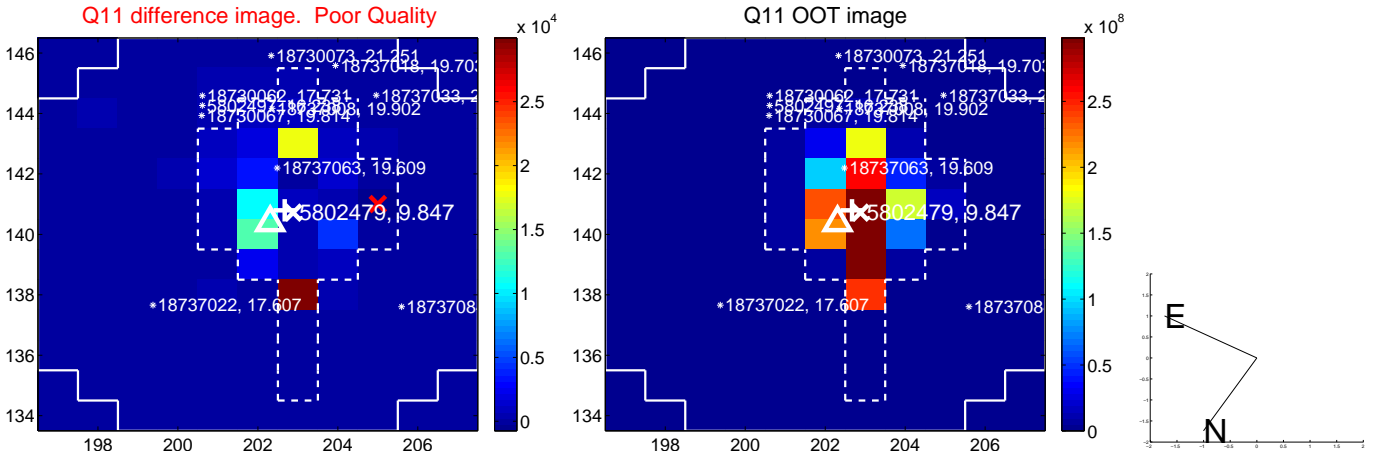
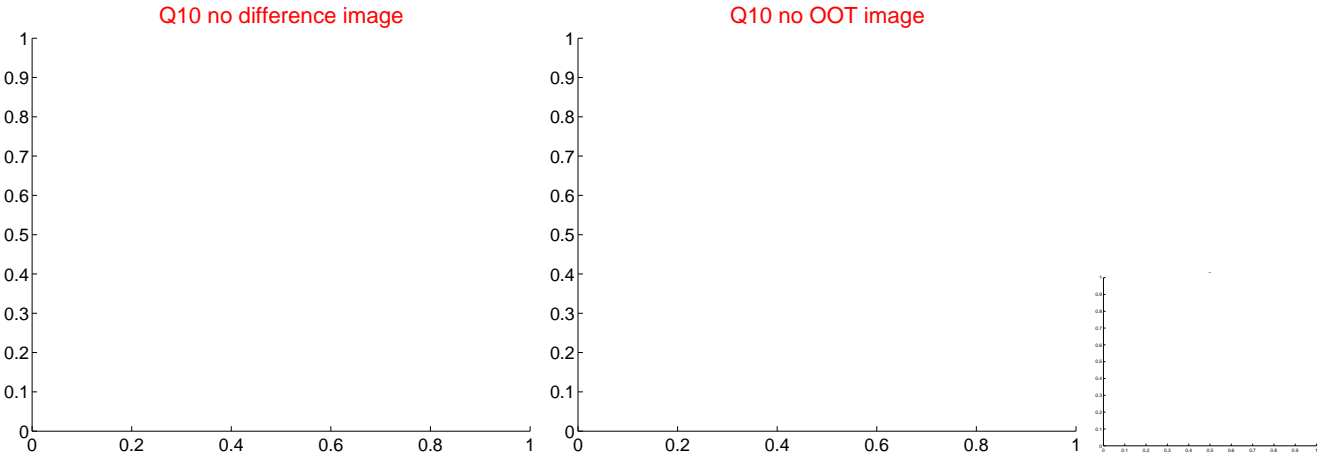
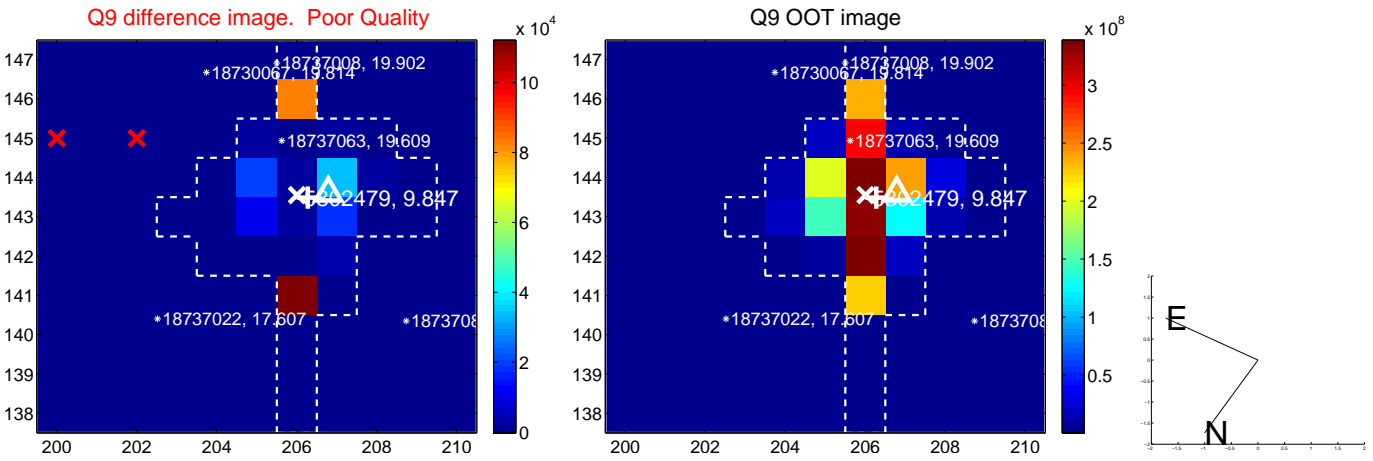


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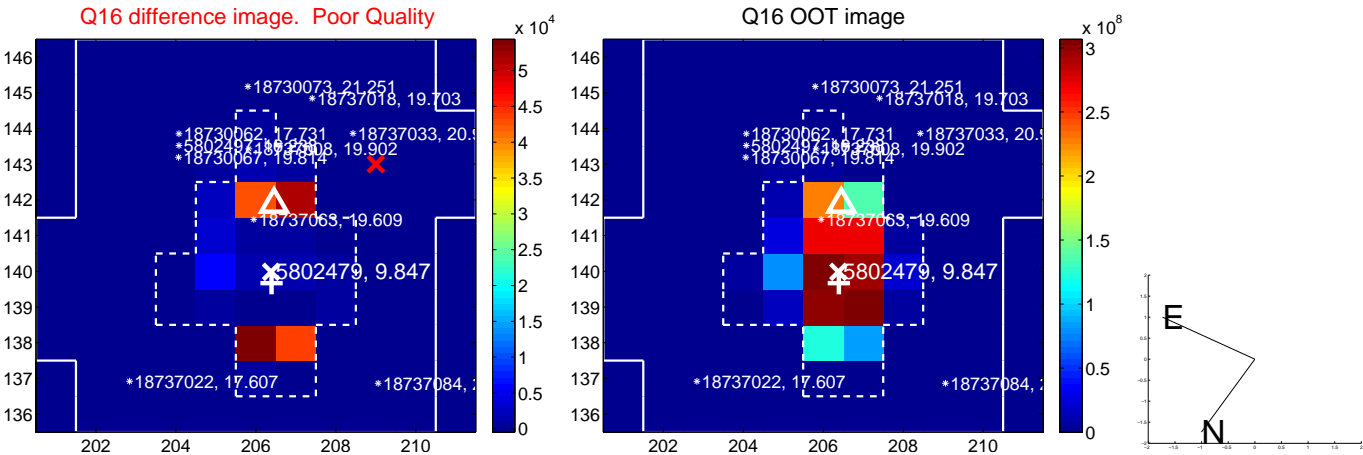
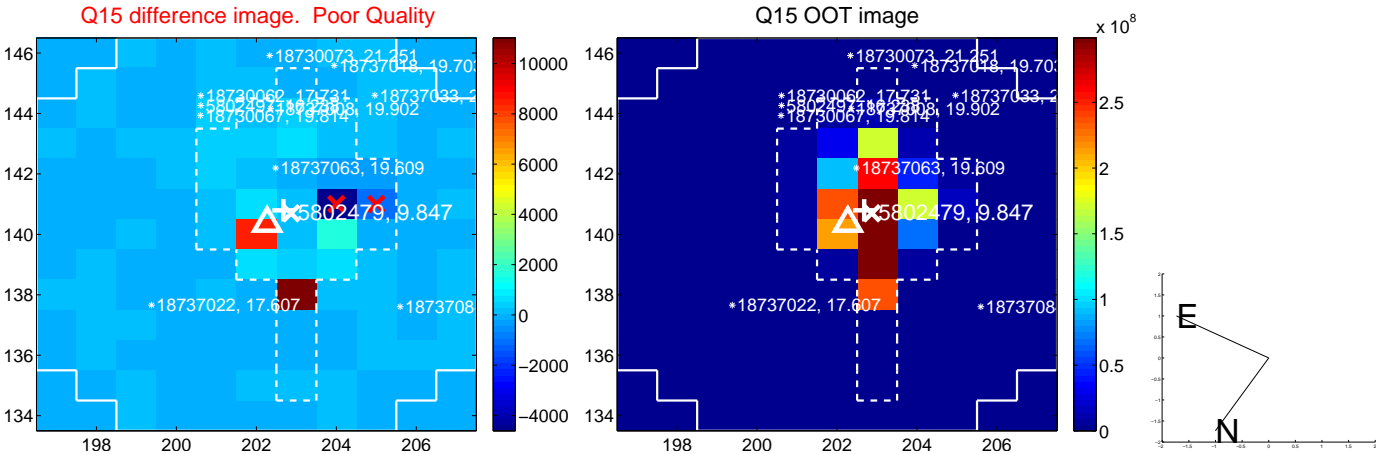
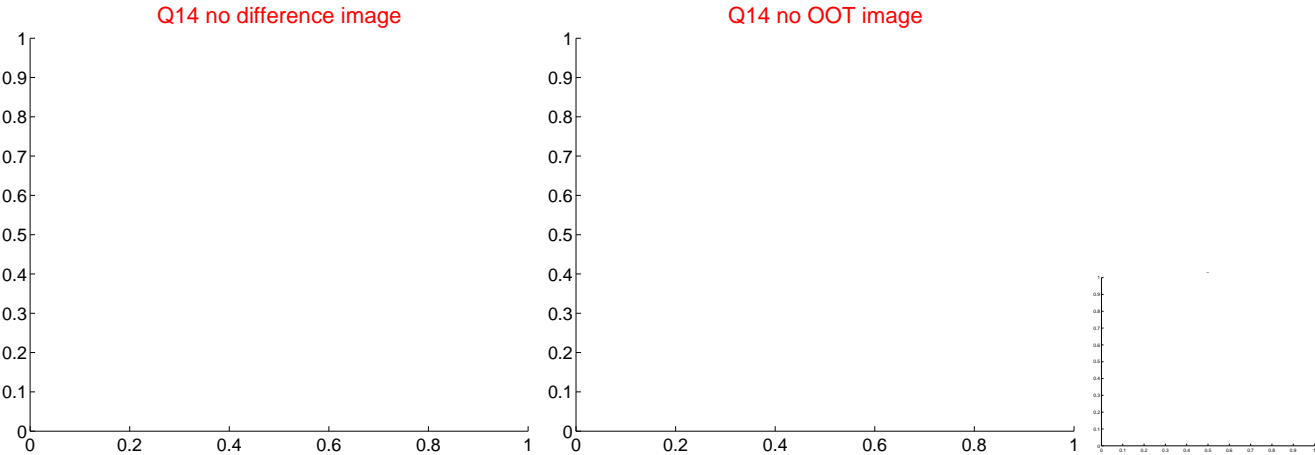
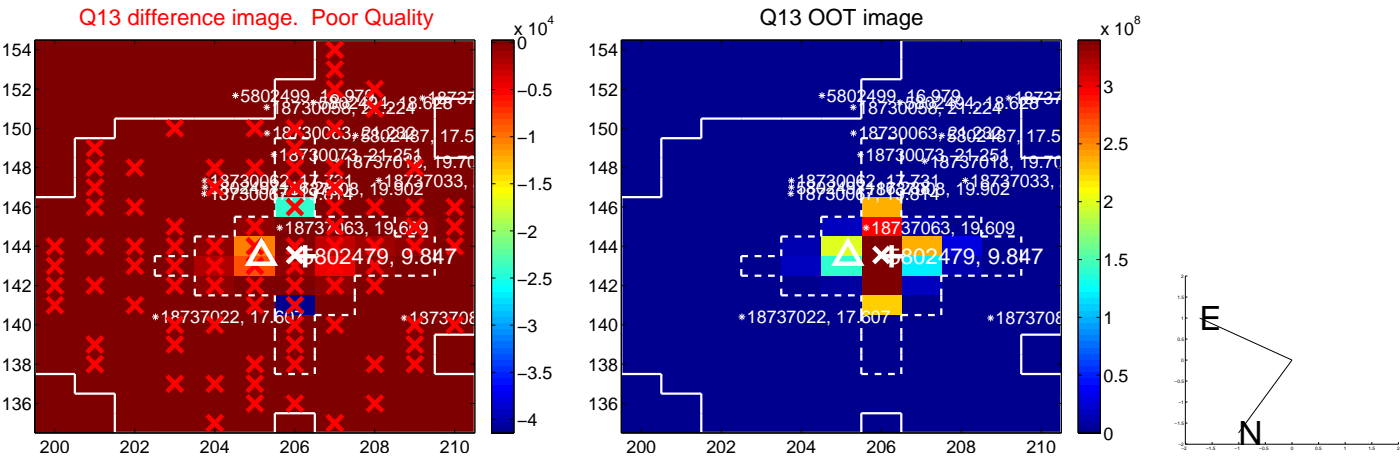




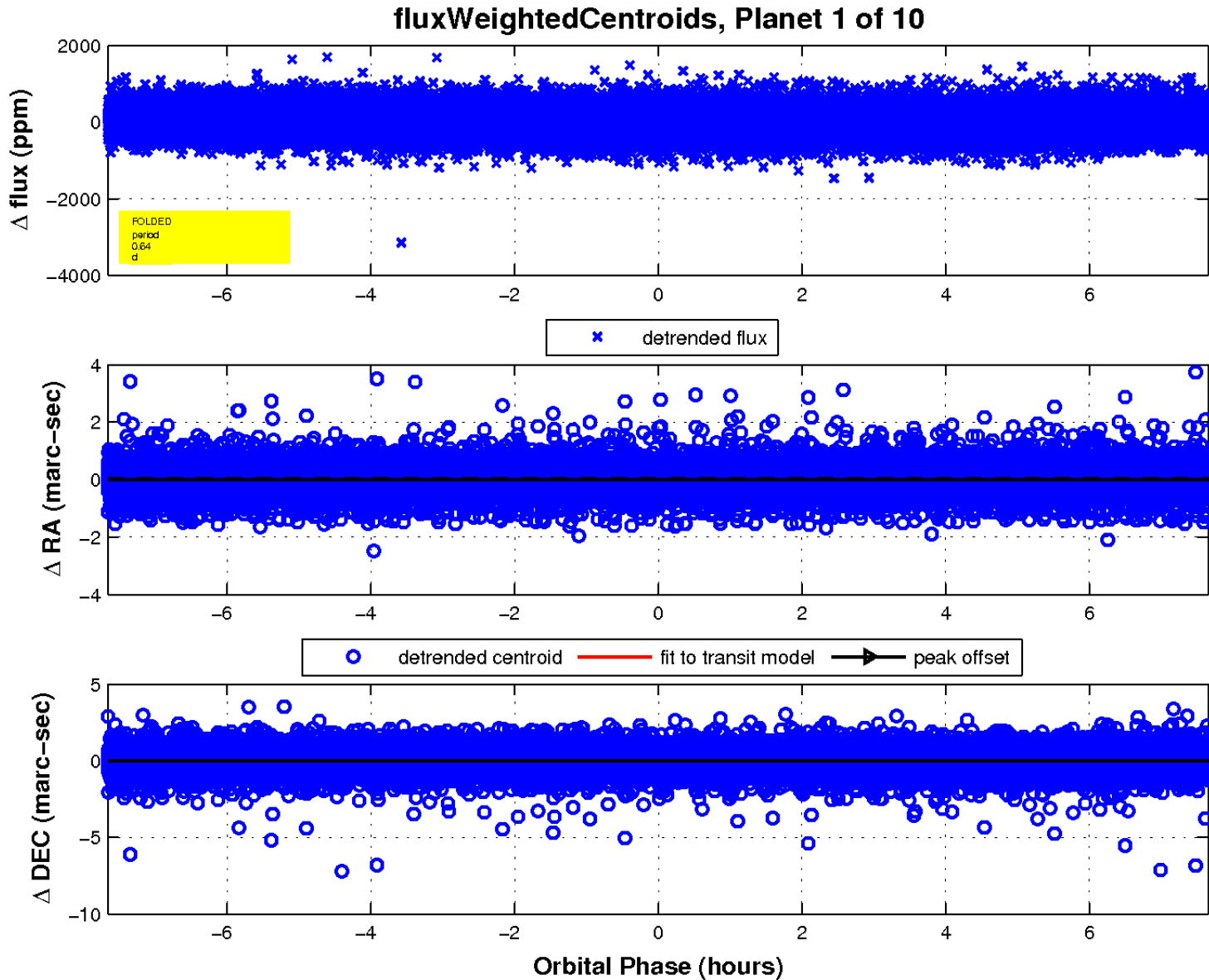
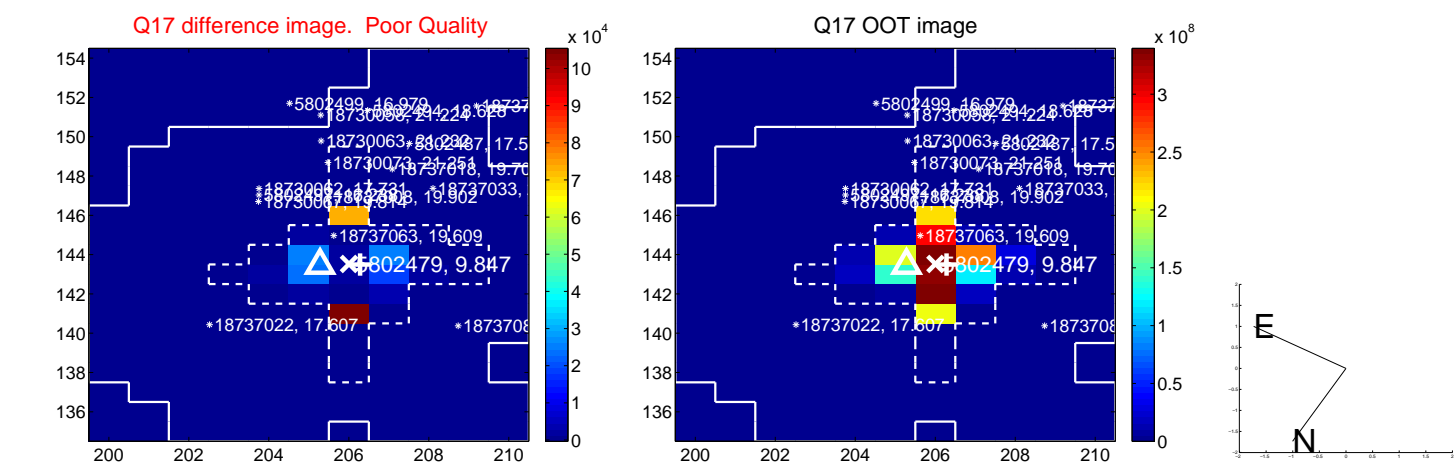
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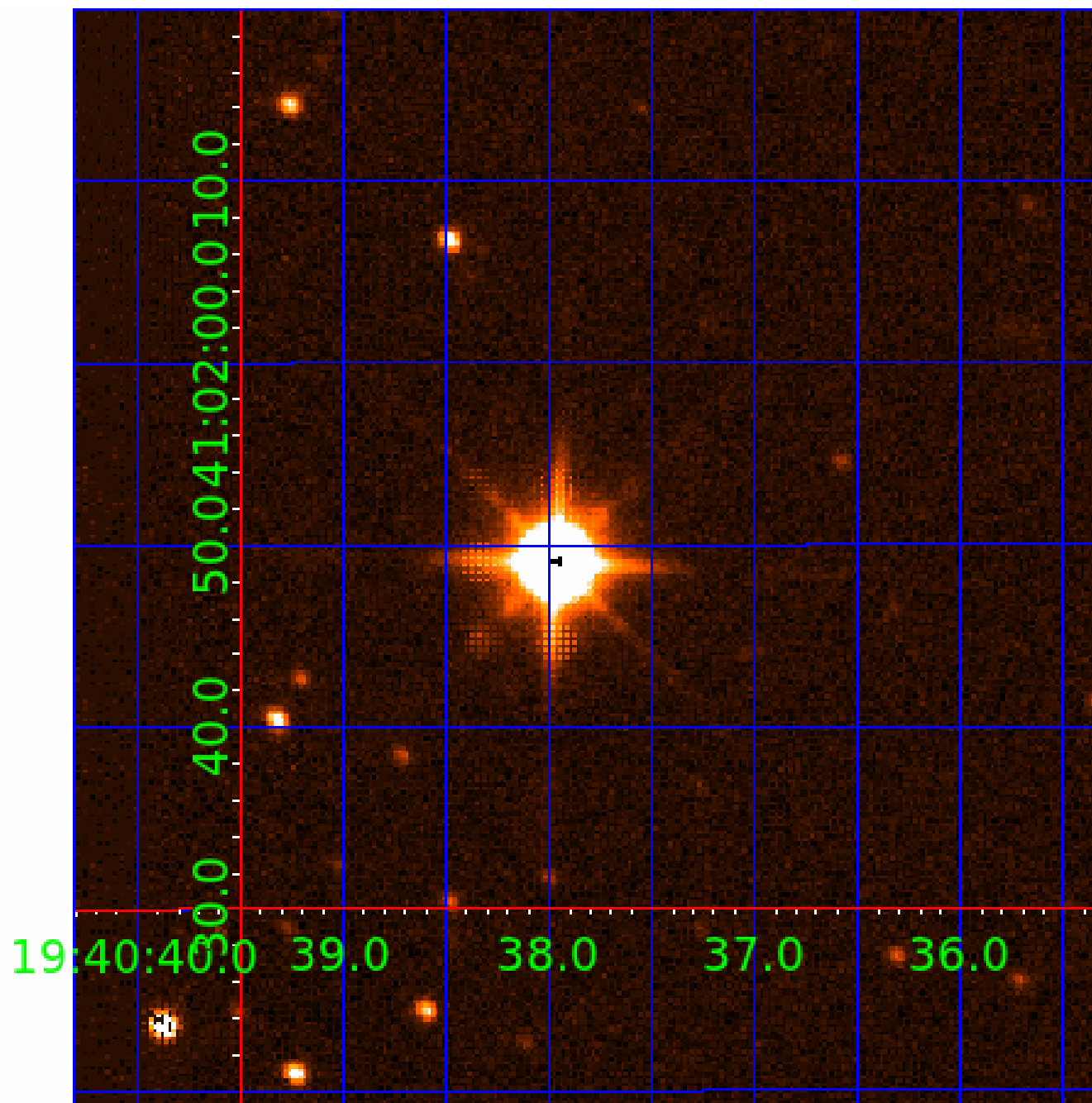


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UKIRT Image

Declination





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005802479-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
005802479-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

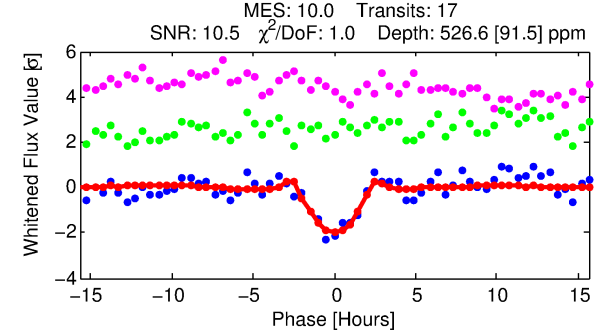
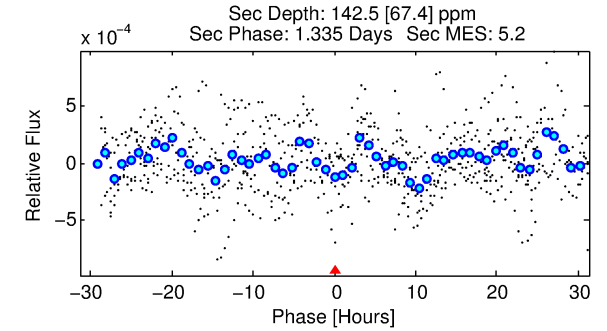
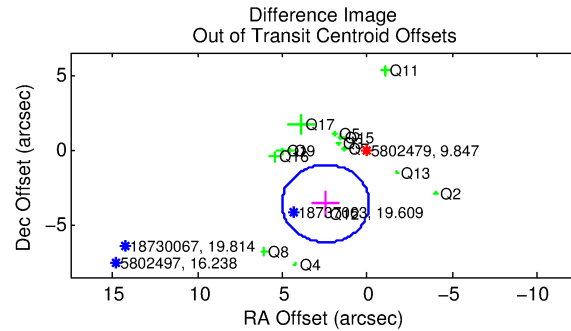
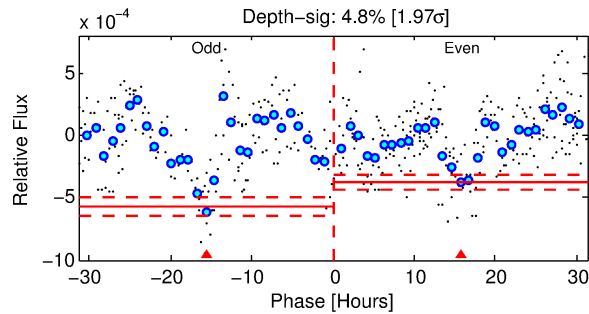
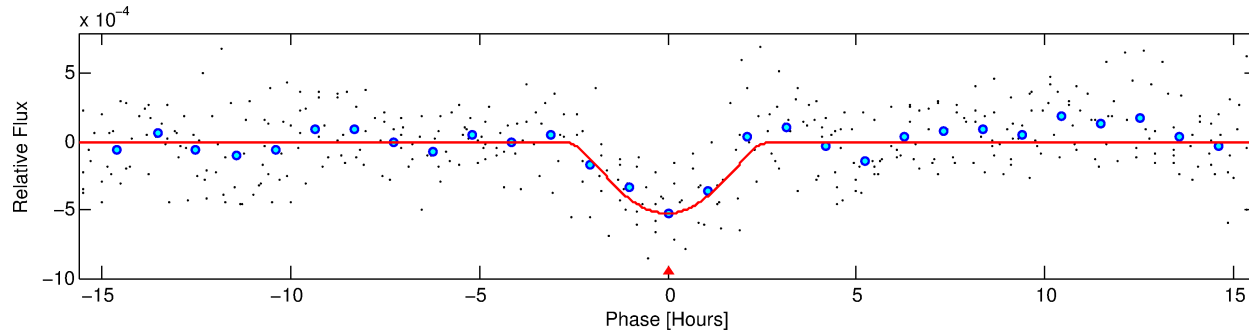
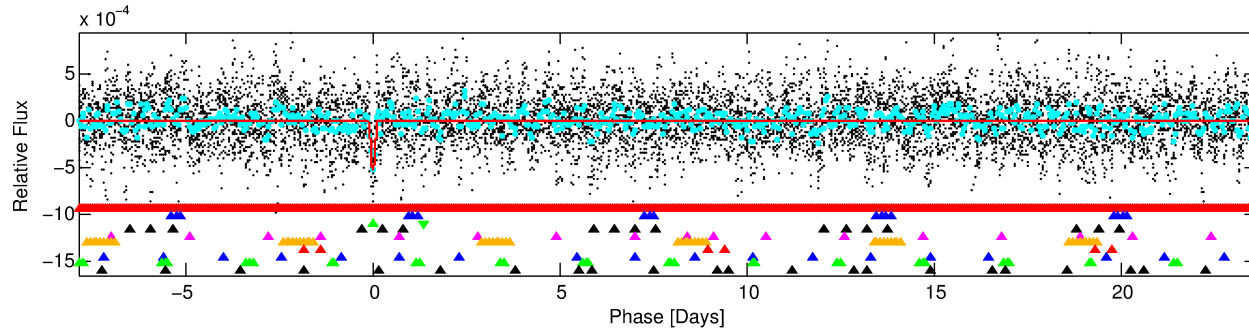
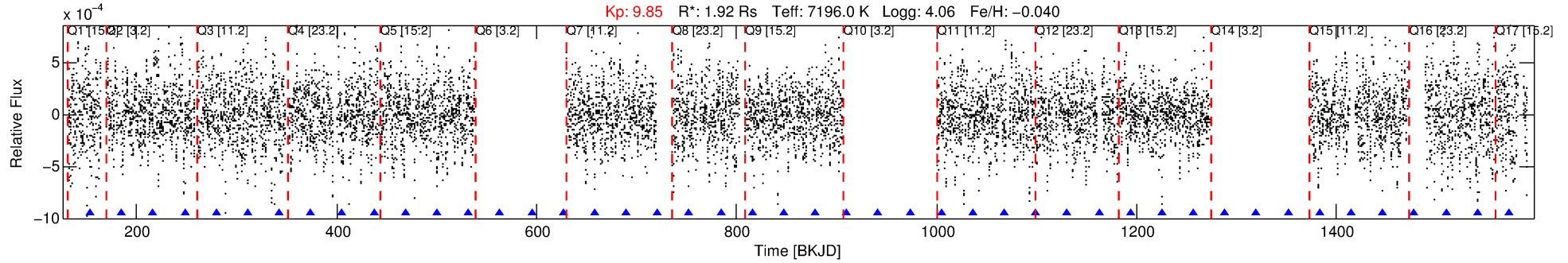
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005802479-03

No Significant Match Found

# DV One-Page Summary

KIC: 5802479 Candidate: 3 of 10 Period: 31.523 d



## DV Fit Results:

Period = 31.52261 [0.00037] d  
Epoch = 153.6969 [0.0086] BKJD  
Rp/R\* = 0.0395 [0.0718]  
a/R\* = 13.23 [6.14]  
b = 1.00 [0.11]  
Seff = 172.88 [62.99]  
Teq = 925 [84] K  
Rp = 8.30 [15.27] Re  
a = 0.2267 [0.0546] AU  
Ag = 58.49 [215.06] [0.27 $\sigma$ ]  
Teffp = 3953 [3622] K [0.84 $\sigma$ ]

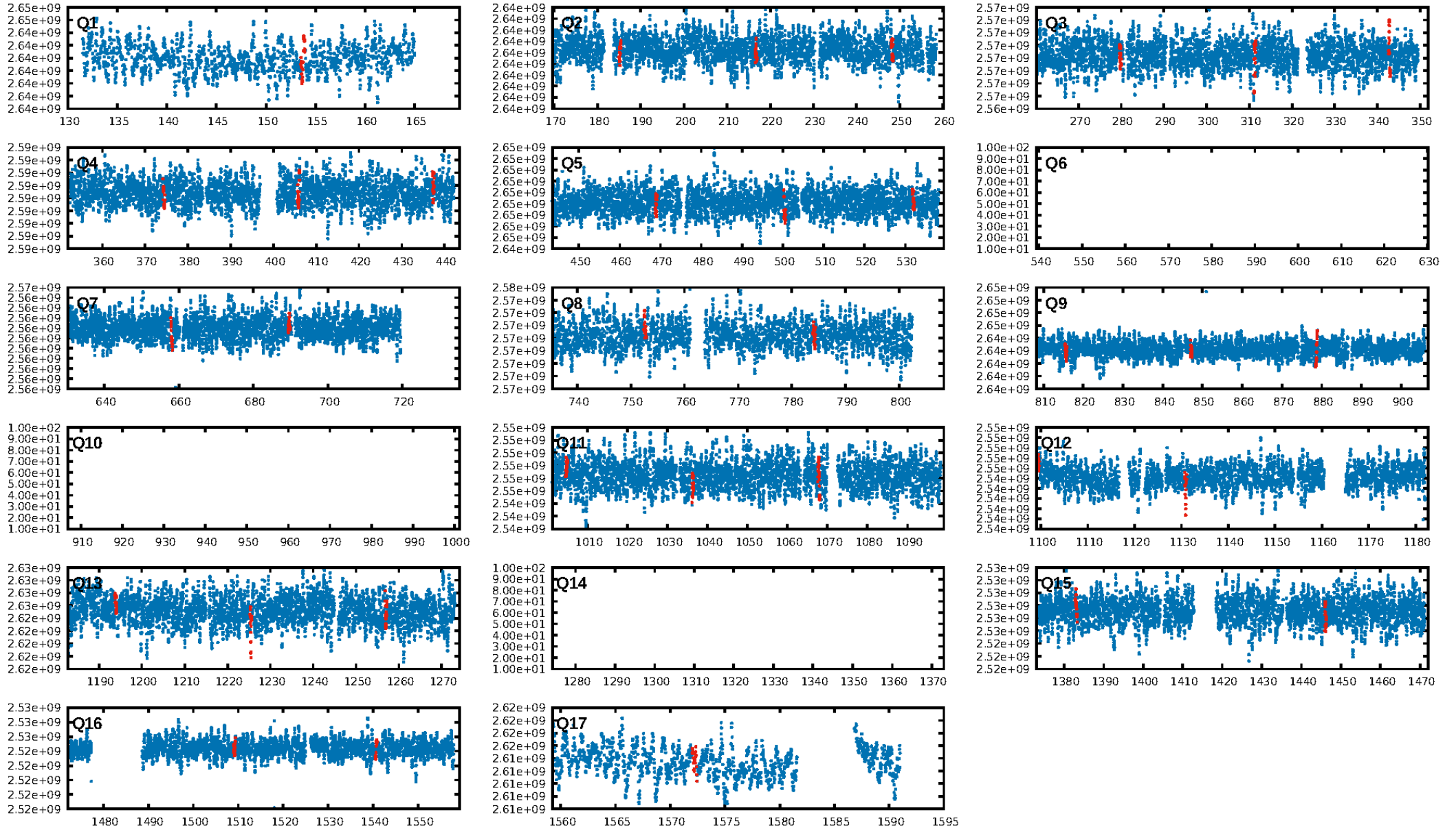
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [20.90 $\sigma$ ]  
LongPeriod-sig: 100.0% [42.26 $\sigma$ ]  
ModelChiSquare2-sig: 45.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [15/15]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 3.1%  
Centroid-so: 0.157 arcsec [1.05 $\sigma$ ]  
OotOffset-rm: 4.353 arcsec [5.06 $\sigma$ ]  
KicOffset-rm: 5.610 arcsec [5.74 $\sigma$ ]  
OotOffset-st: 1/4/4/5 [14]  
KicOffset-st: 1/4/4/5 [14]  
DiffImageQuality-fgm: 0.00 [0/14]  
DiffImageOverlap-fno: 0.00 [0/14]

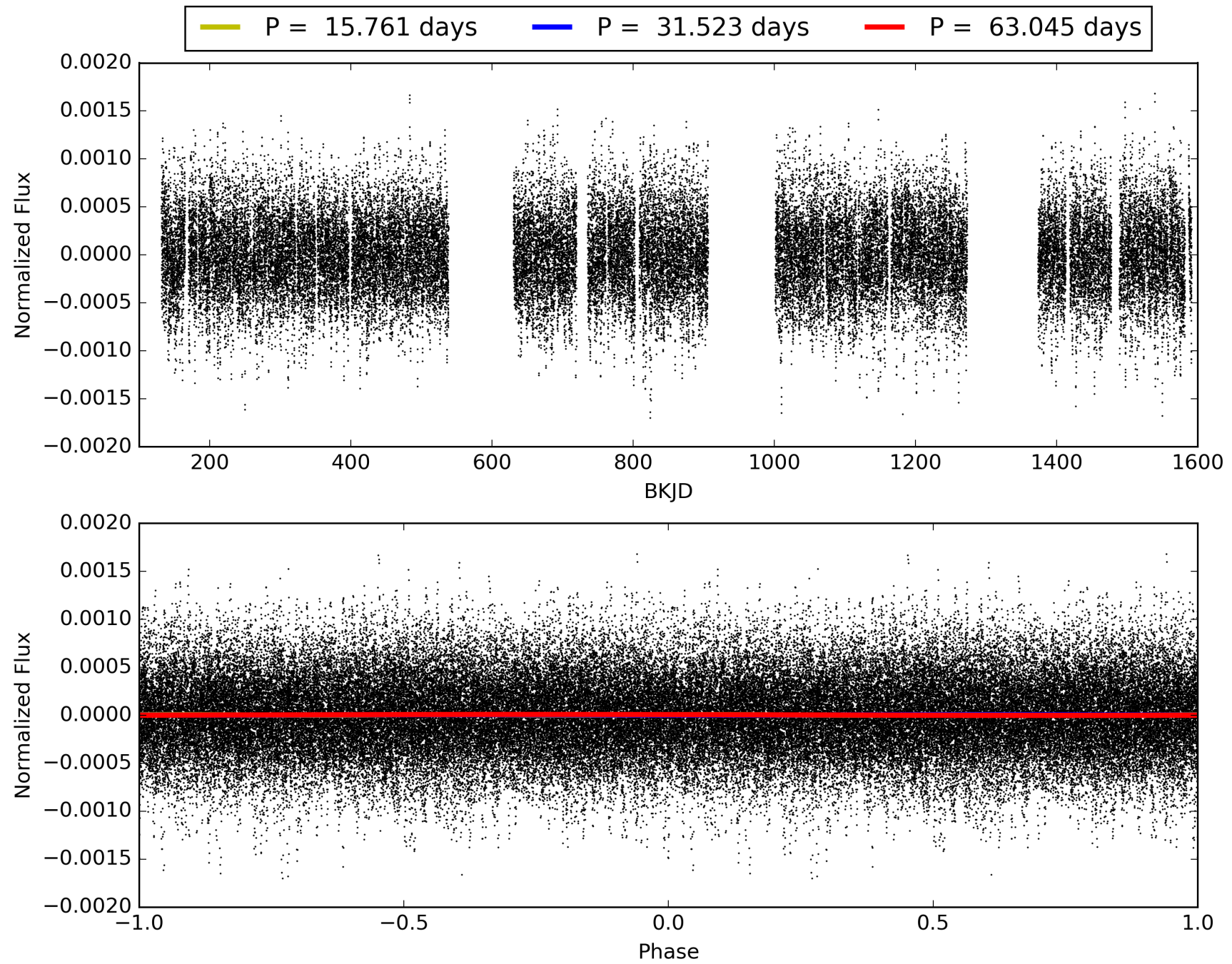
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:10:31 Z

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

# TCE 005802479-03, PDC Light Curves



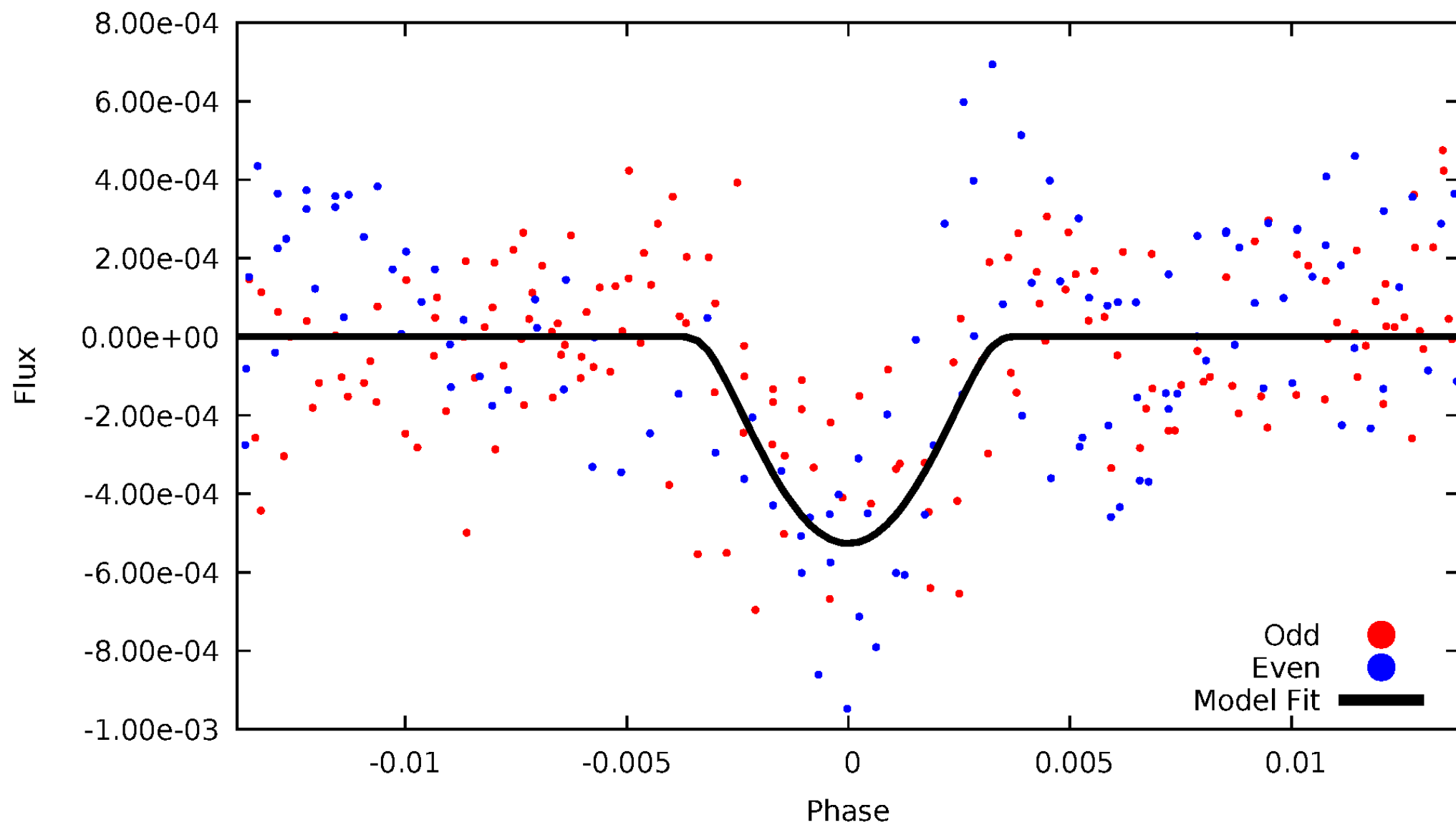
TCE 005802479-03





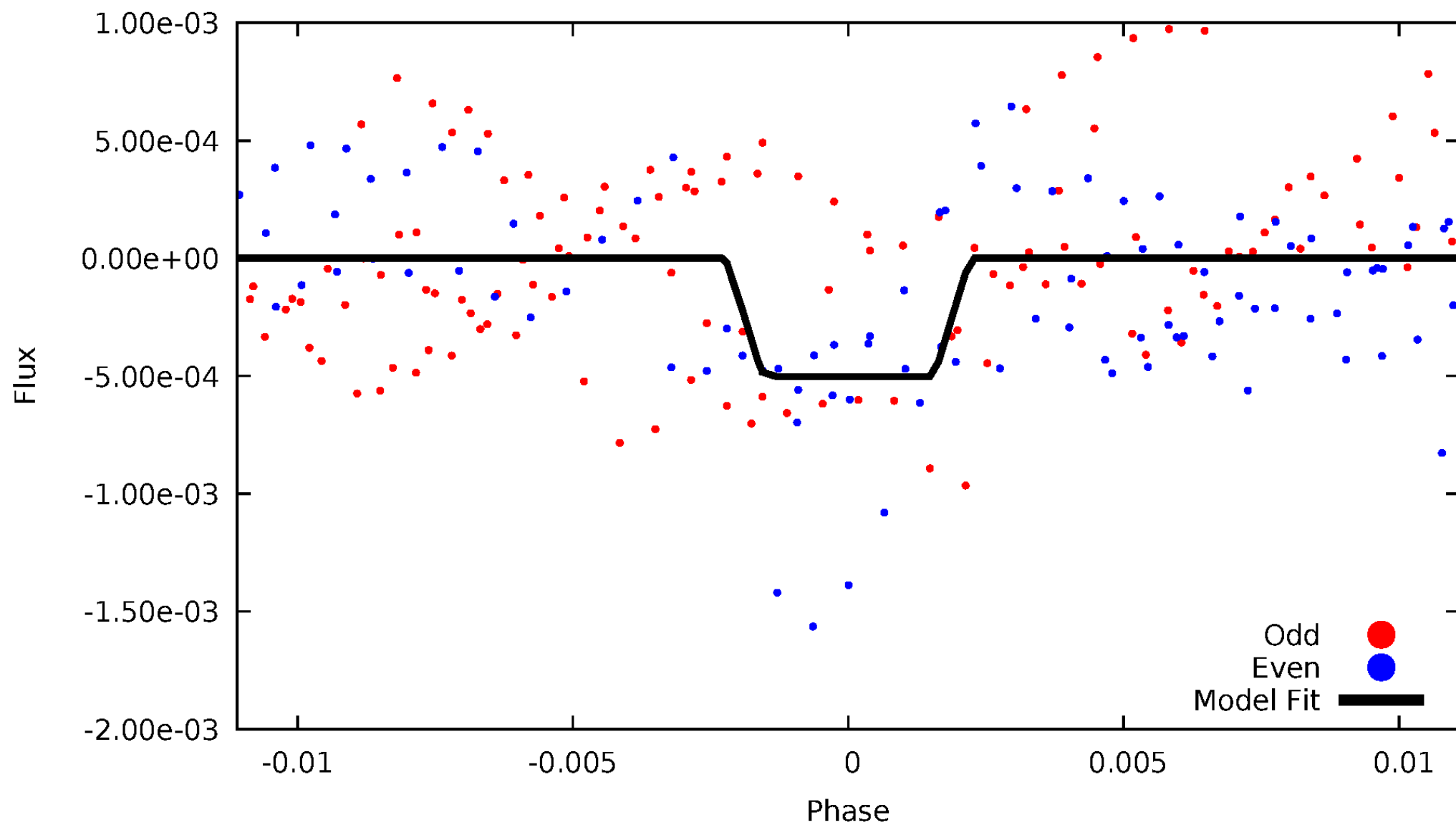
# DV Odd/Even

TCE 005802479-03



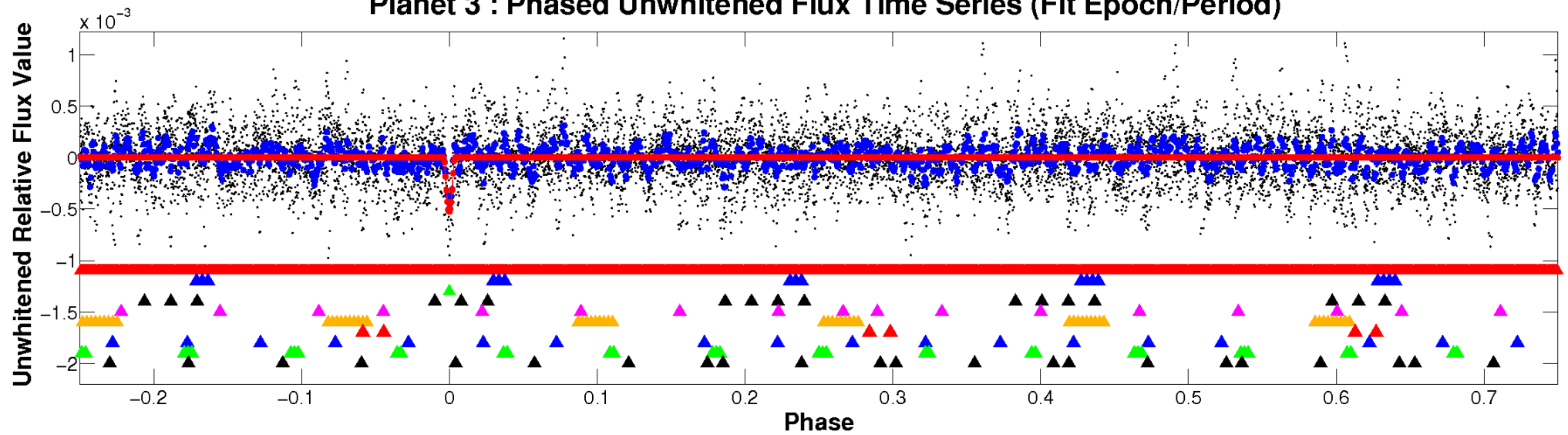
# ALT Odd/Even

TCE 005802479-03

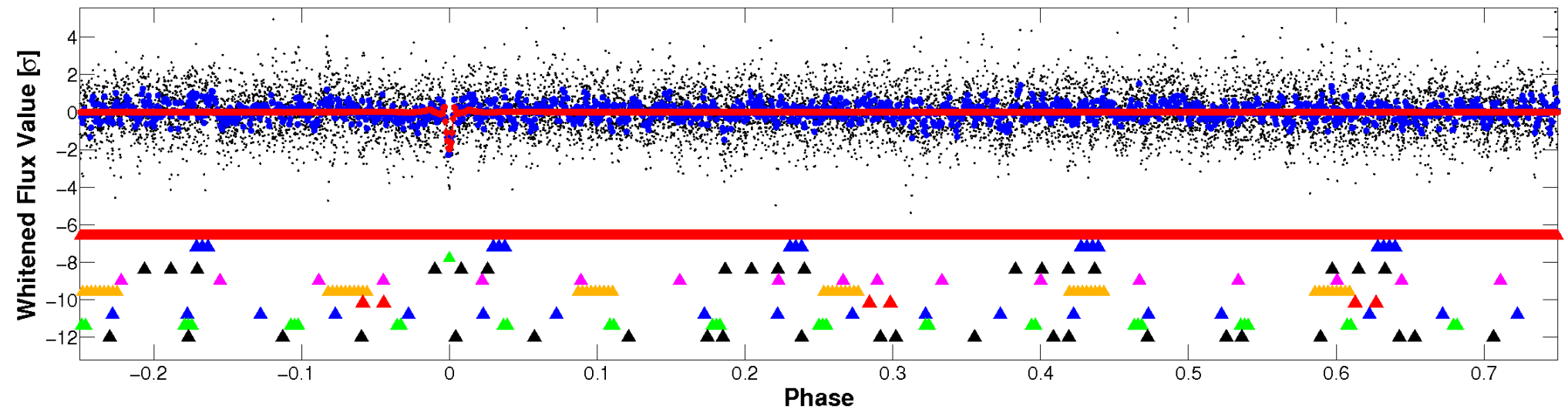


# Non-Whitened Vs. Whitened Light Curve

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

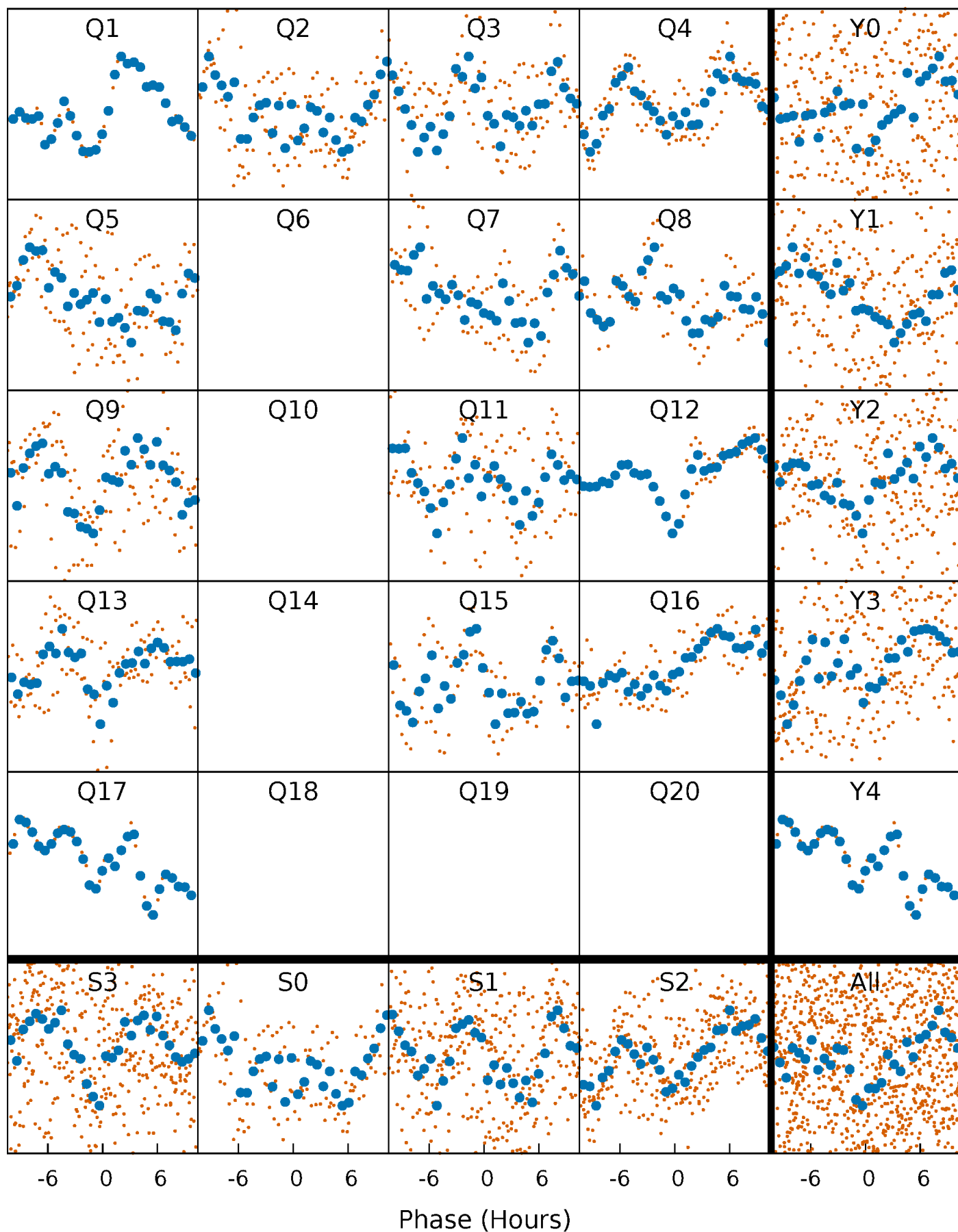


## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

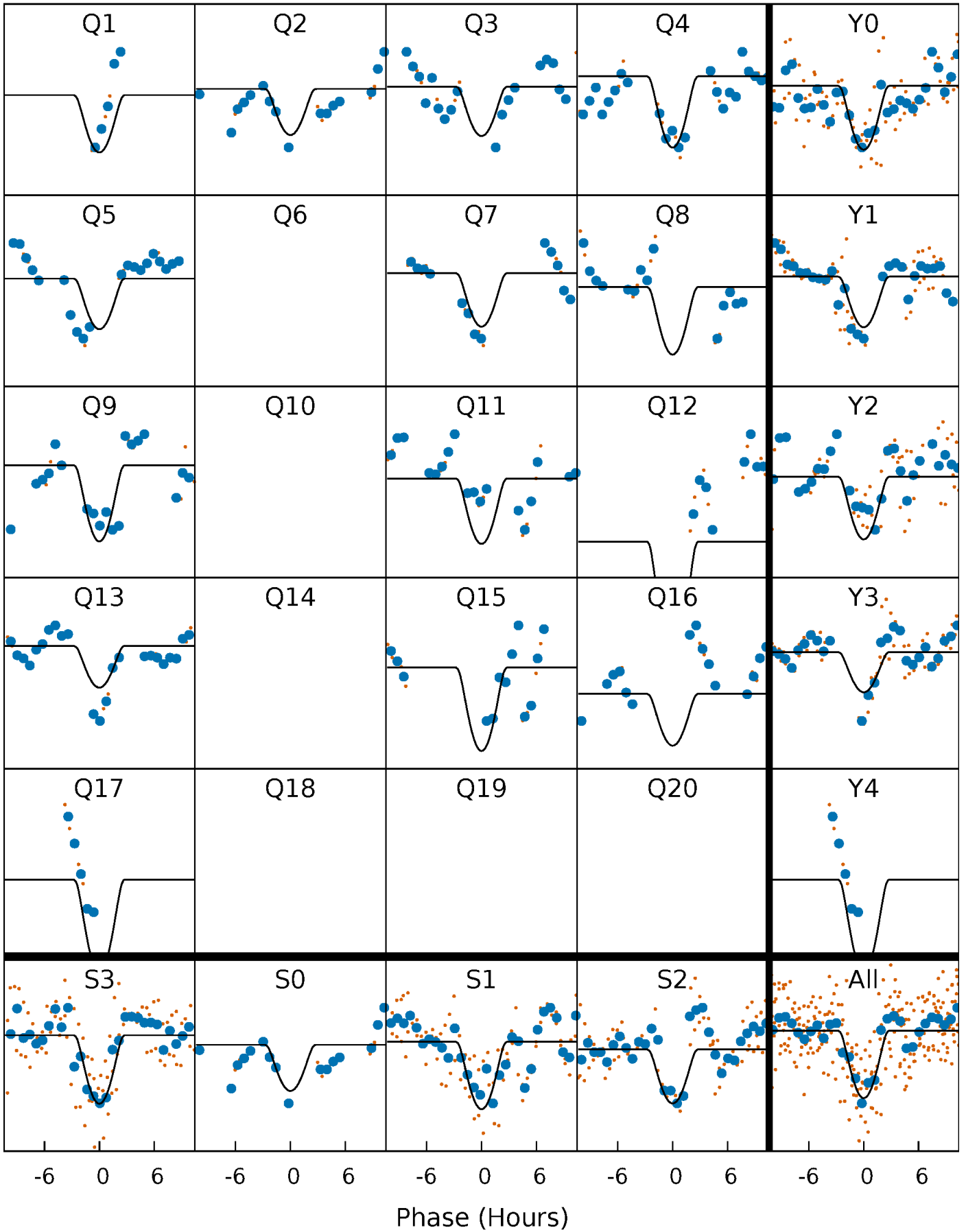
TCE 005802479-03   P= 31.522608 Days    $T_0=153.696891$  (BKJD)





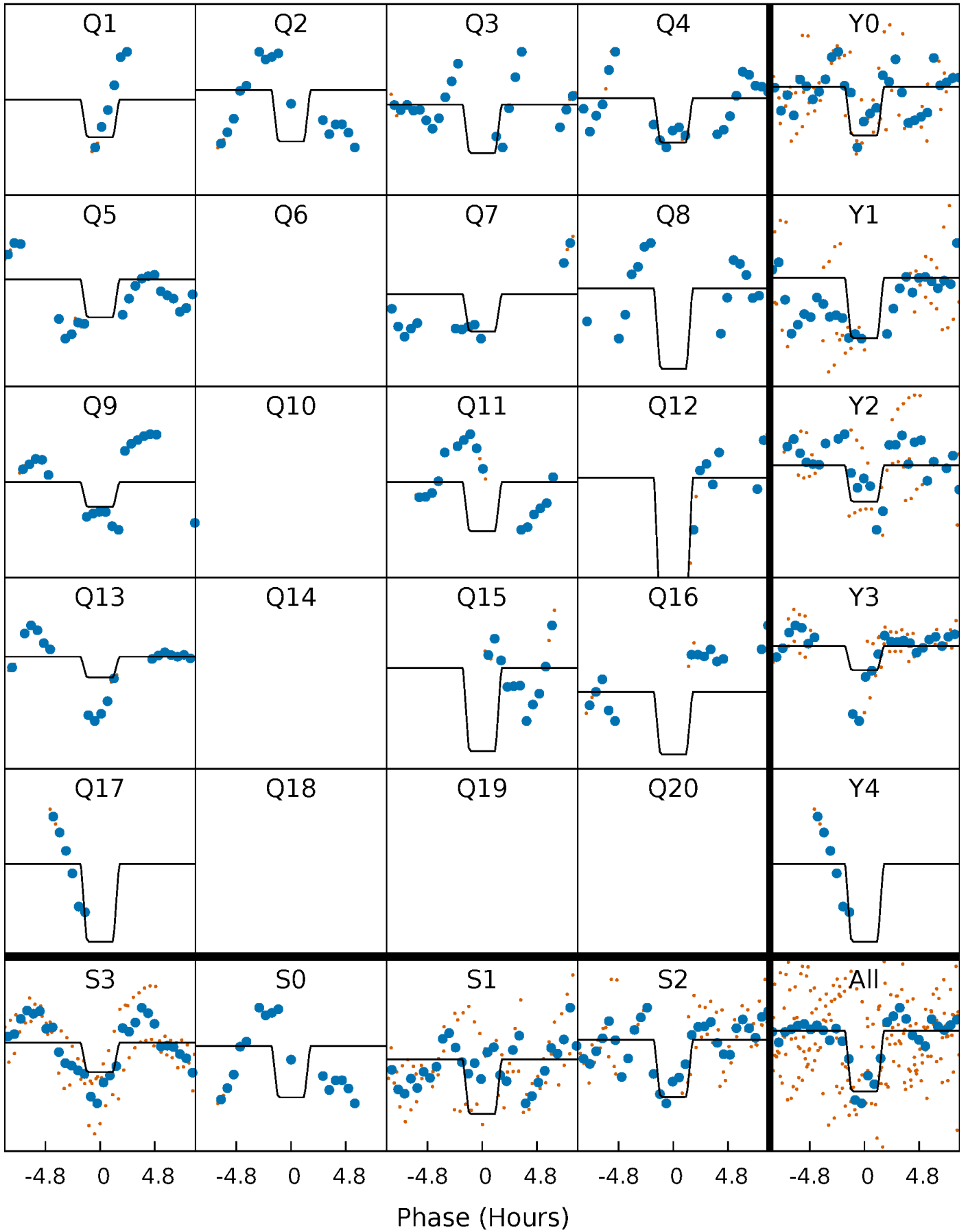
# DV Quarter-Phased Transit Curves

TCE 005802479-03   P= 31.522608 Days    $T_0=153.696891$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

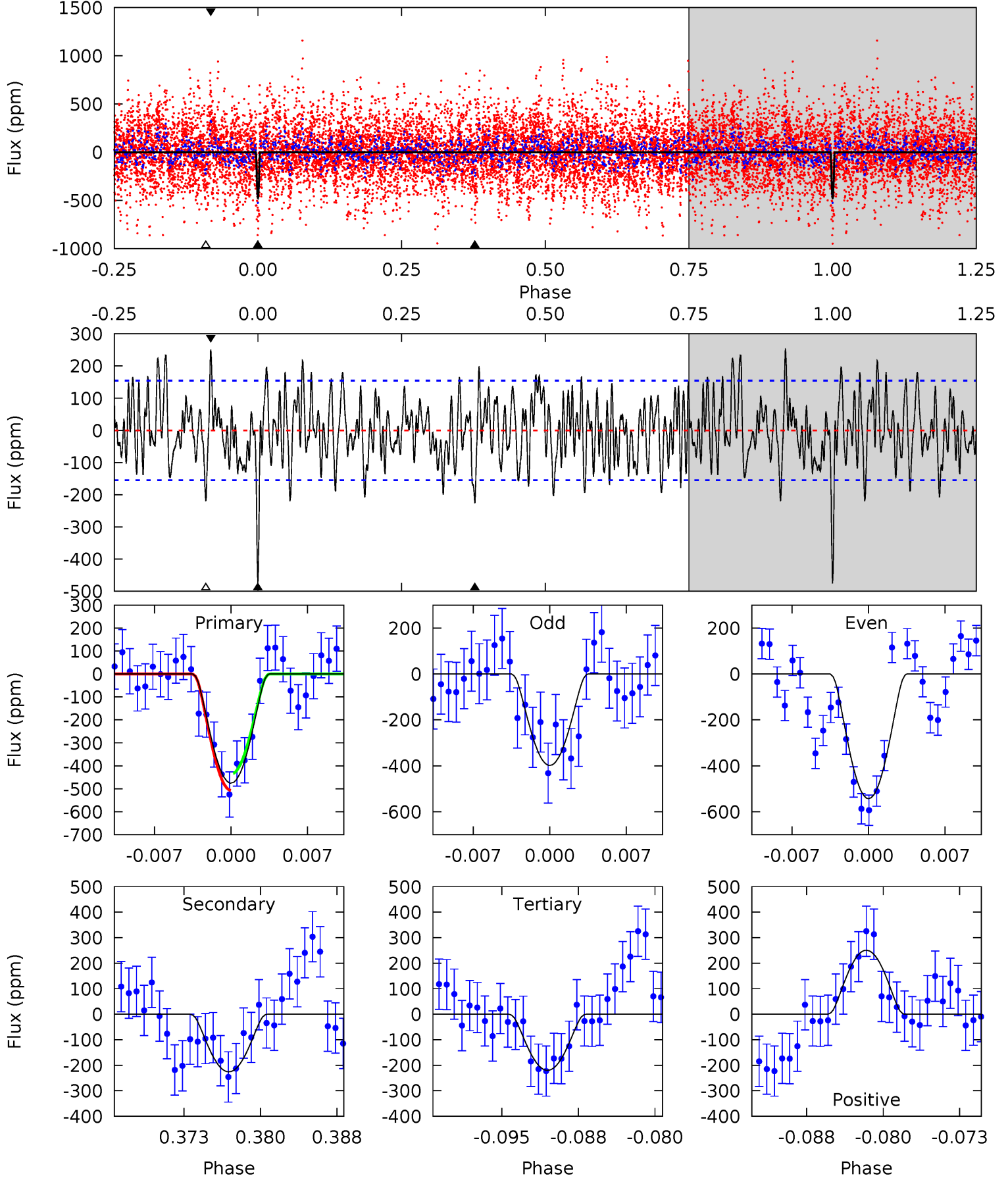
TCE 005802479-03 P= 31.523308 Days  $T_0=153.692619$  (BKJD)



# DV Model-Shift Uniqueness Test

005802479-03, P = 31.522608 Days, E = 122.174283 Days

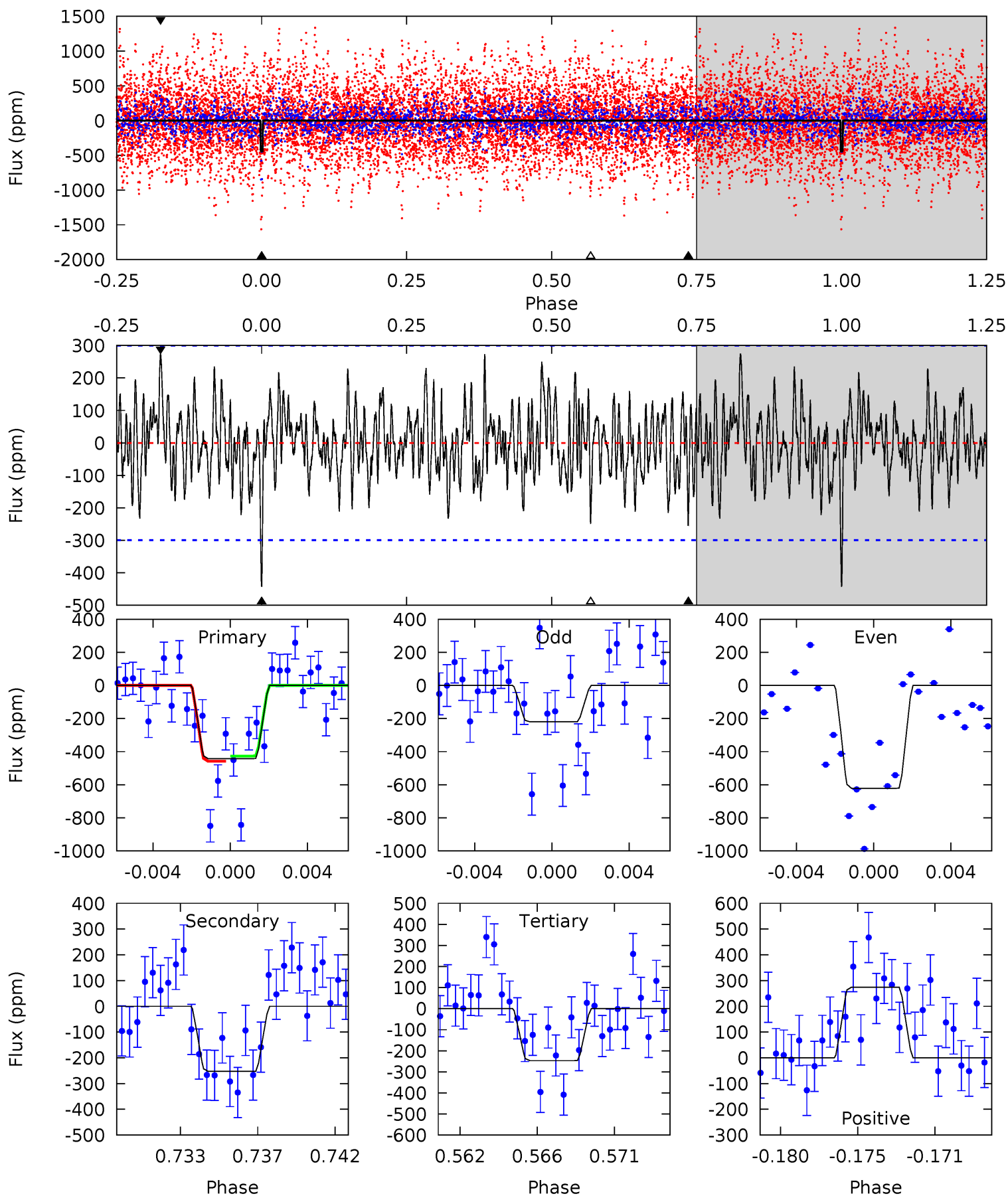
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.6	7.42	7.23	8.24	5.09	2.68	2.79	8.40	7.39	0.19	-0.82	2.39	0.39	0.35	1.21



# Alt Model-Shift Uniqueness Test

005802479-03, P = 31.523308 Days, E = 122.169311 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
7.65	4.37	4.27	4.75	5.18	2.84	1.59	3.39	2.90	0.10	-0.38	3.49	0.84	0.38	0.27





### Stellar Parameters For KIC 005802479

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7196^{+172}_{-259}$	$4.064^{+0.158}_{-0.175}$	$-0.040^{+0.250}_{-0.350}$	$1.923^{+0.576}_{-0.471}$	$1.562^{+0.212}_{-0.236}$	$0.309^{+0.296}_{-0.153}$
	+2%/-4%	+4%/-4%	+625%/-875%	+30%/-24%	+14%/-15%	+96%/-50%
Source	PHO1	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 005802479-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-226 \pm 30$	$13.76^{+12.39}_{-9.40}$	$1296^{+95}_{-88}$	$3803^{+2162}_{-713}$	$34^{+293}_{-25}$
Alt.	$-253 \pm 58$	$11.96^{+13.15}_{-8.14}$	$1293^{+95}_{-89}$	$4042^{+2551}_{-859}$	$48^{+425}_{-37}$

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

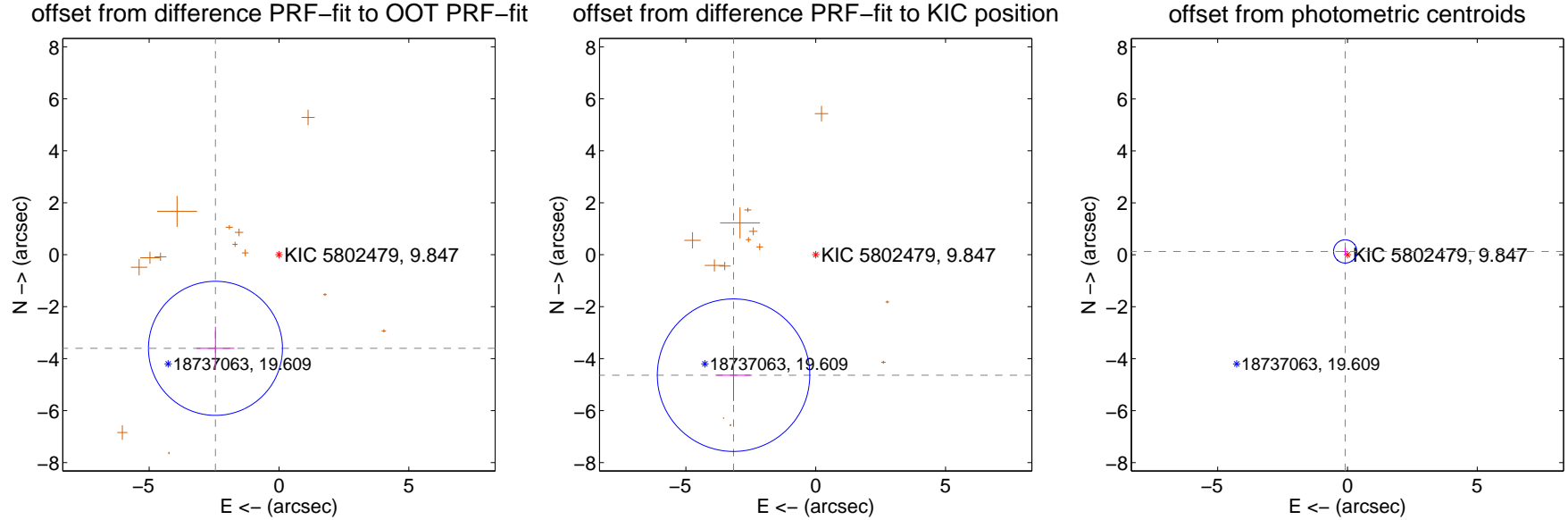
## DV Centroid Data

Supplemental centroid analysis for 005802479-03. **Kepler magnitude: 9.85.** Transit SNR 10.49

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

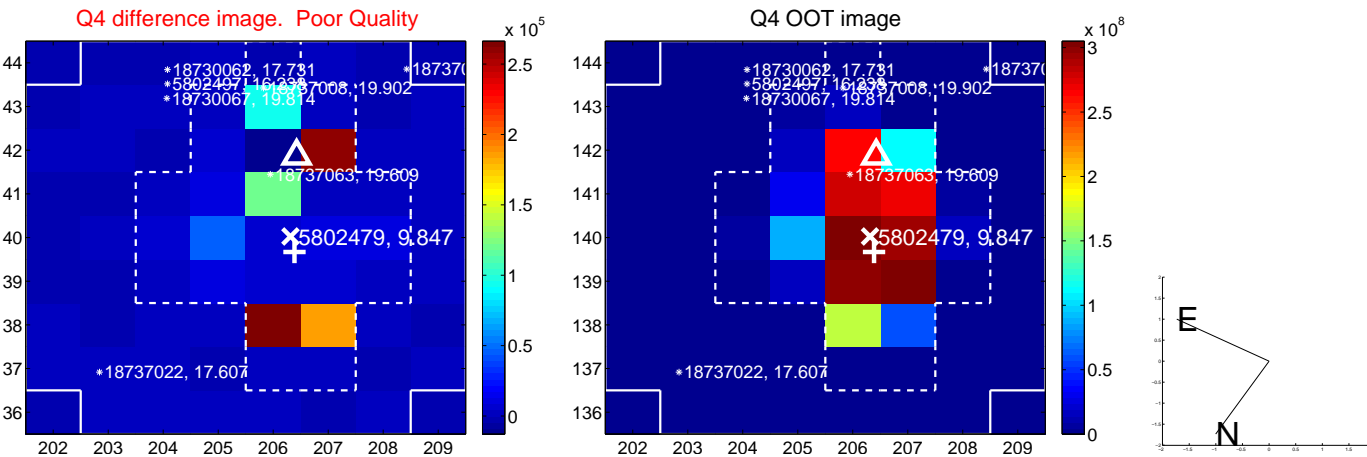
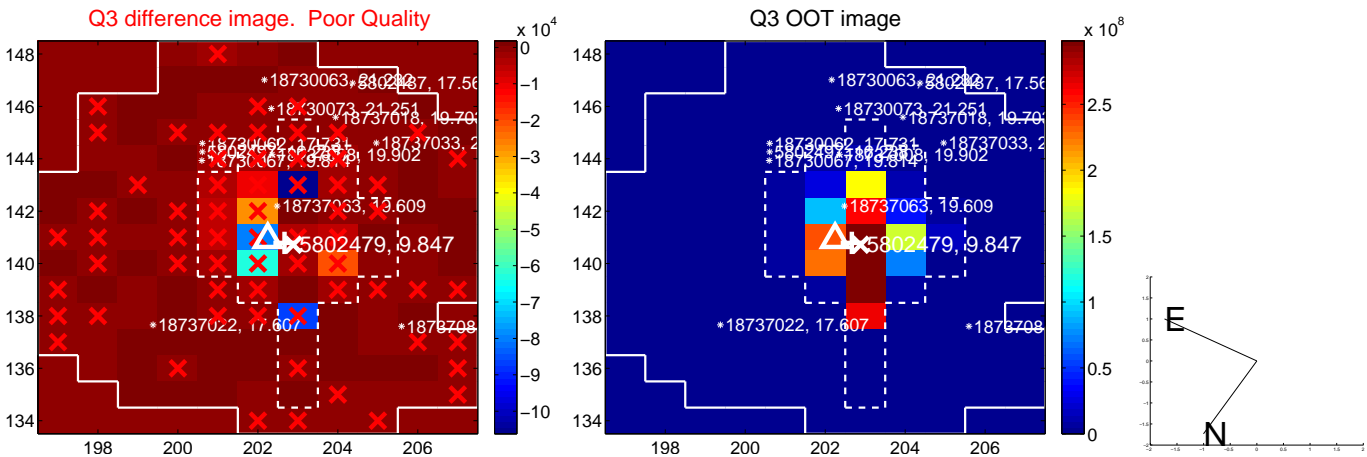
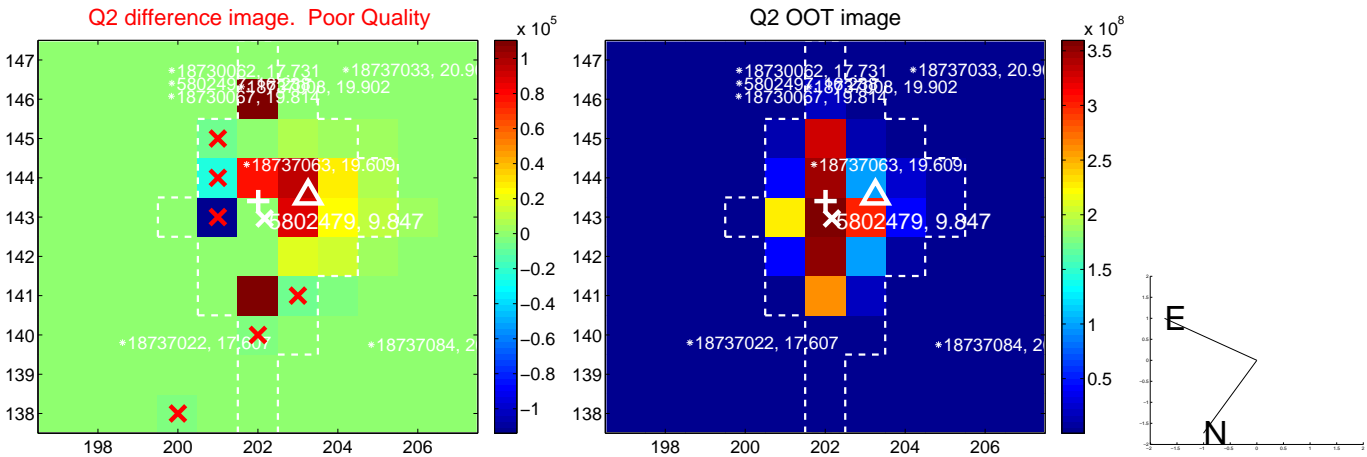
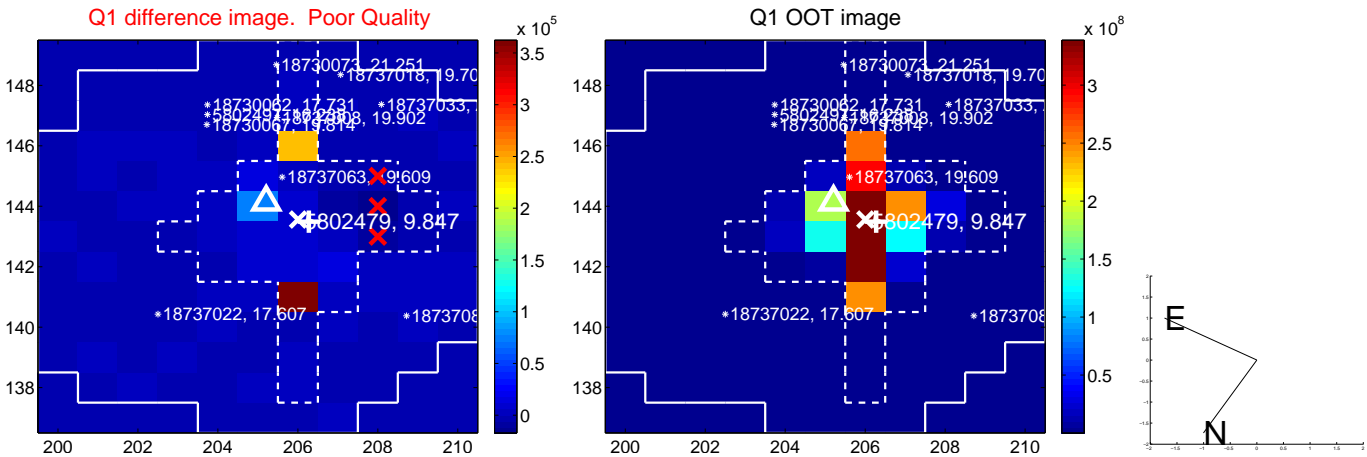
The direct PRF centroid is offset from the target star catalog position by about 1.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>4.353 \pm 0.860</math></b>	<b>5.06</b>	$2.446 \pm 0.727$	$-3.601 \pm 0.831$
PRF-fit source offset from KIC position	<b><math>5.610 \pm 0.978</math></b>	<b>5.74</b>	$3.163 \pm 0.652$	$-4.634 \pm 0.993$
photometric centroid source offset	$0.16 \pm 0.15$	1.05	$0.09 \pm 0.12$	$0.13 \pm 0.16$

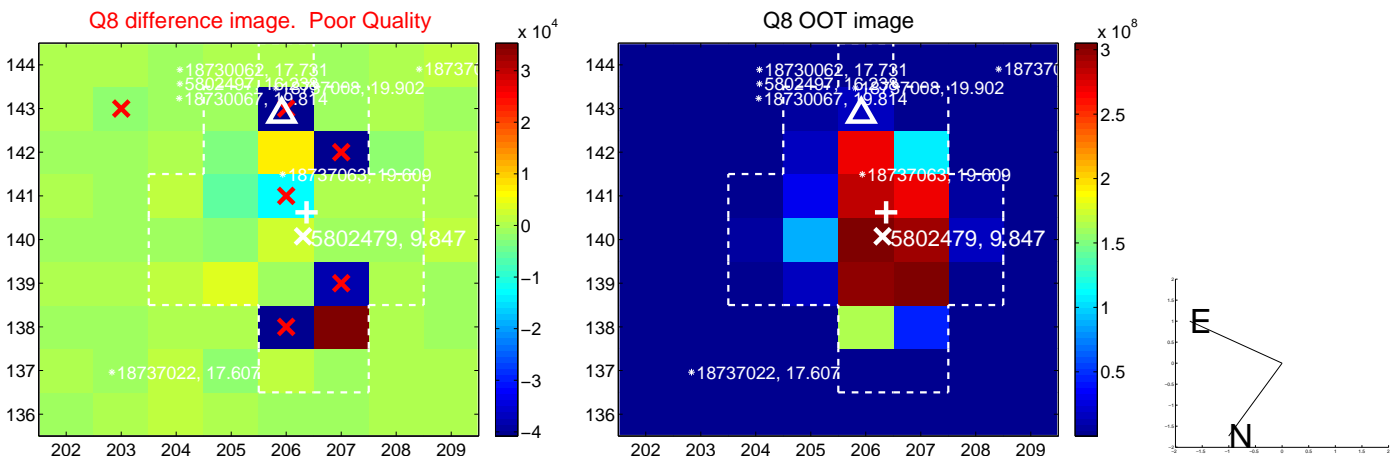
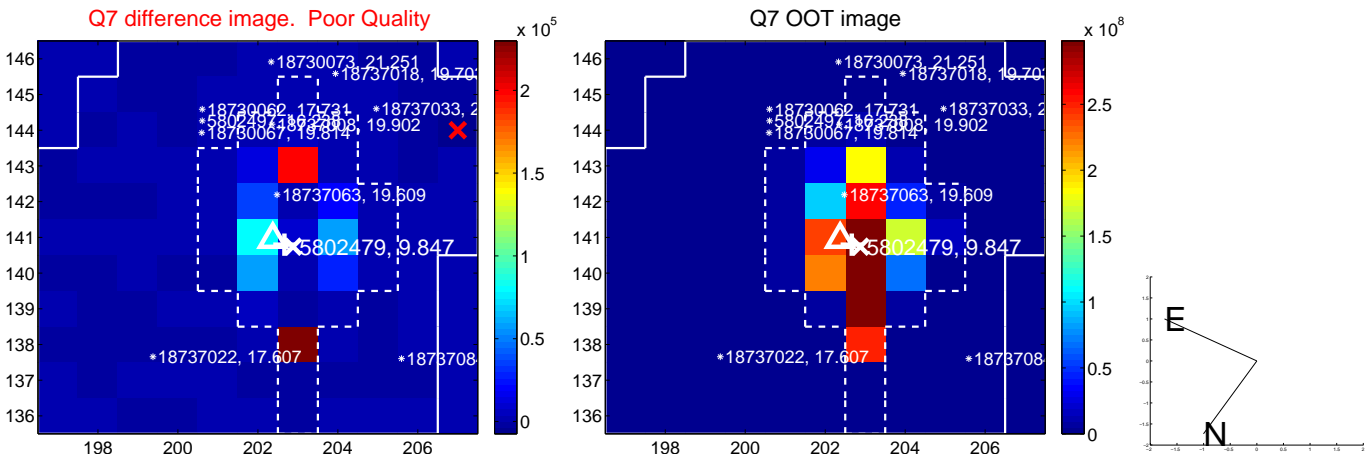
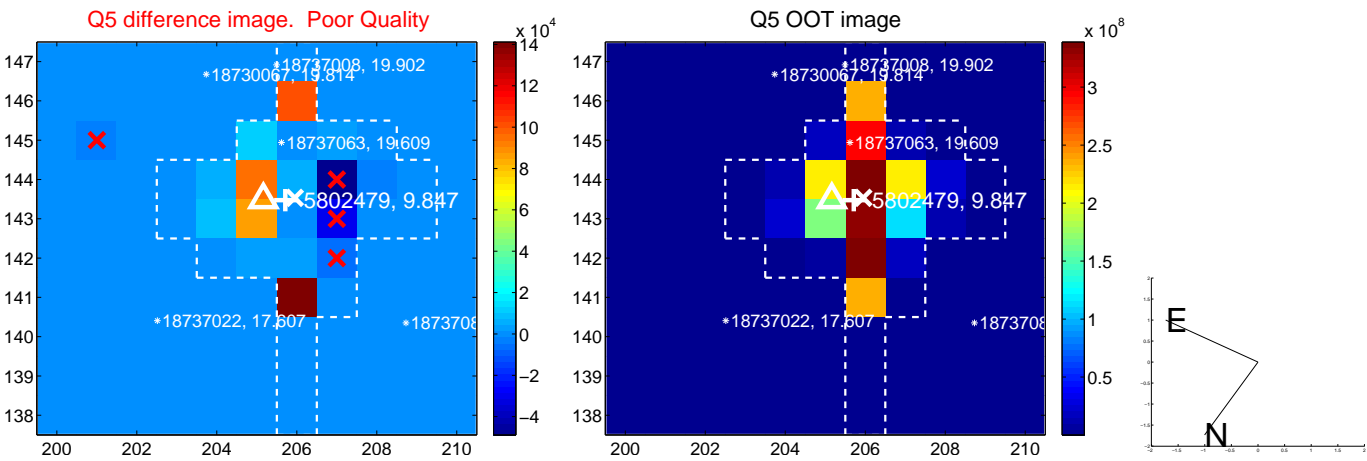


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

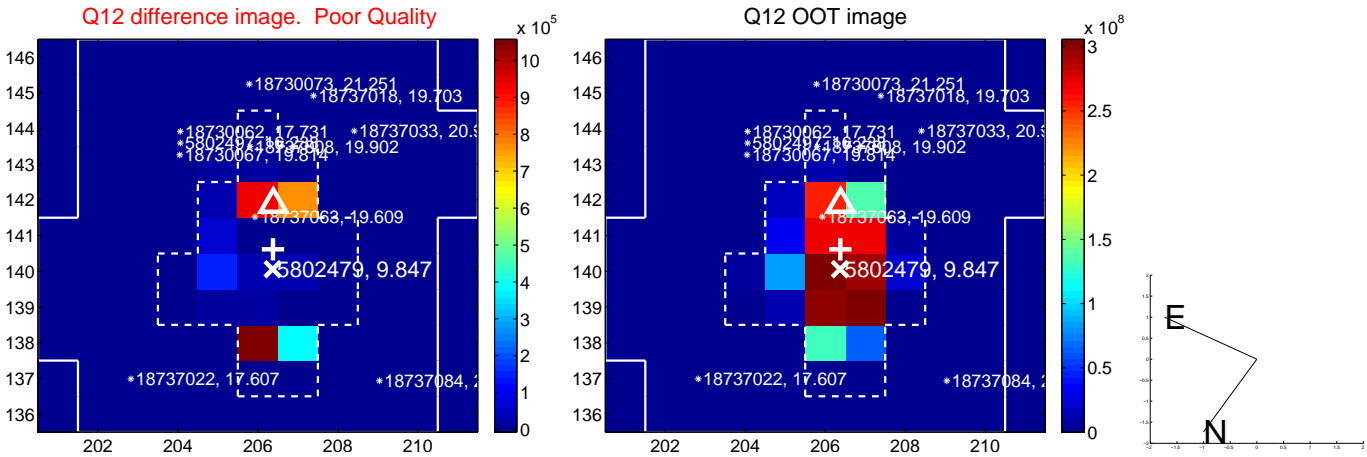
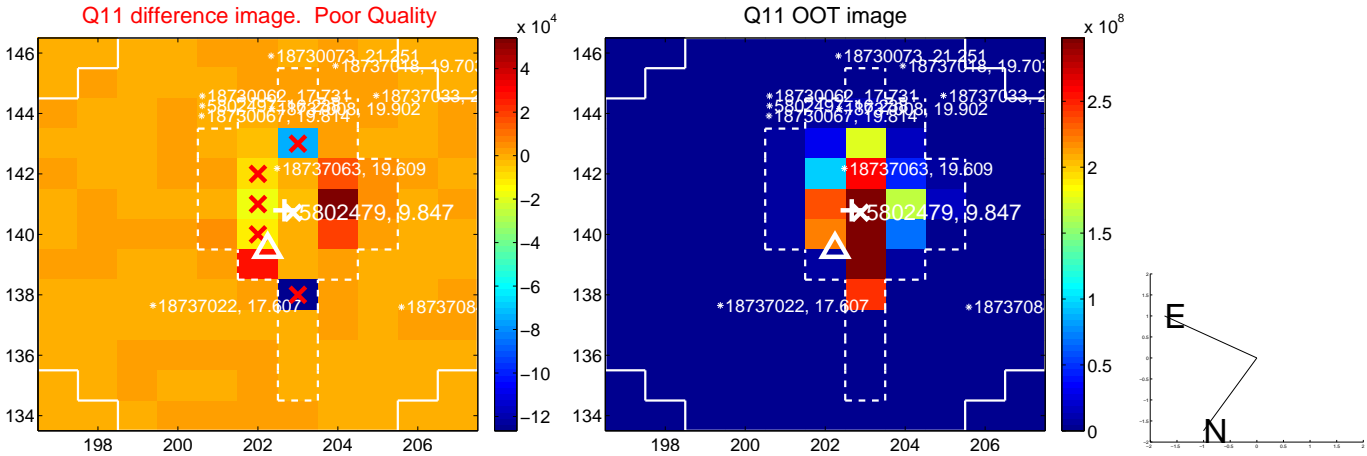
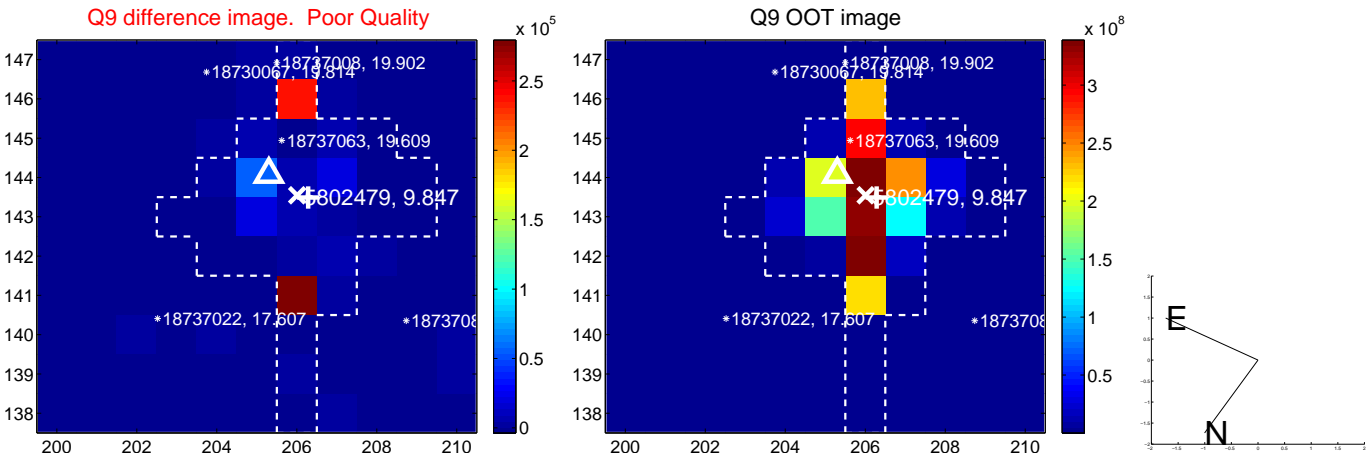
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

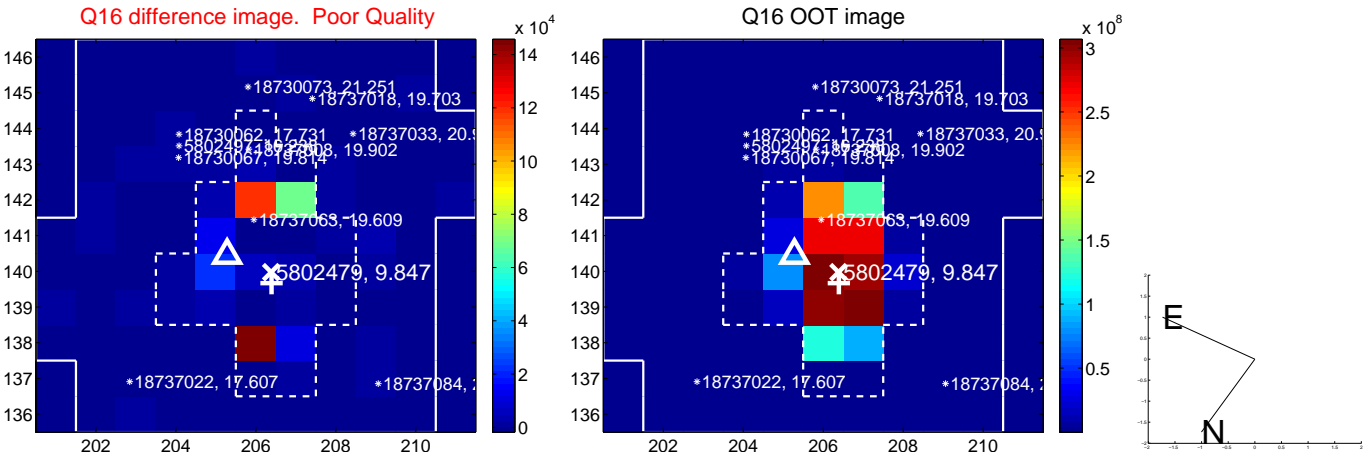
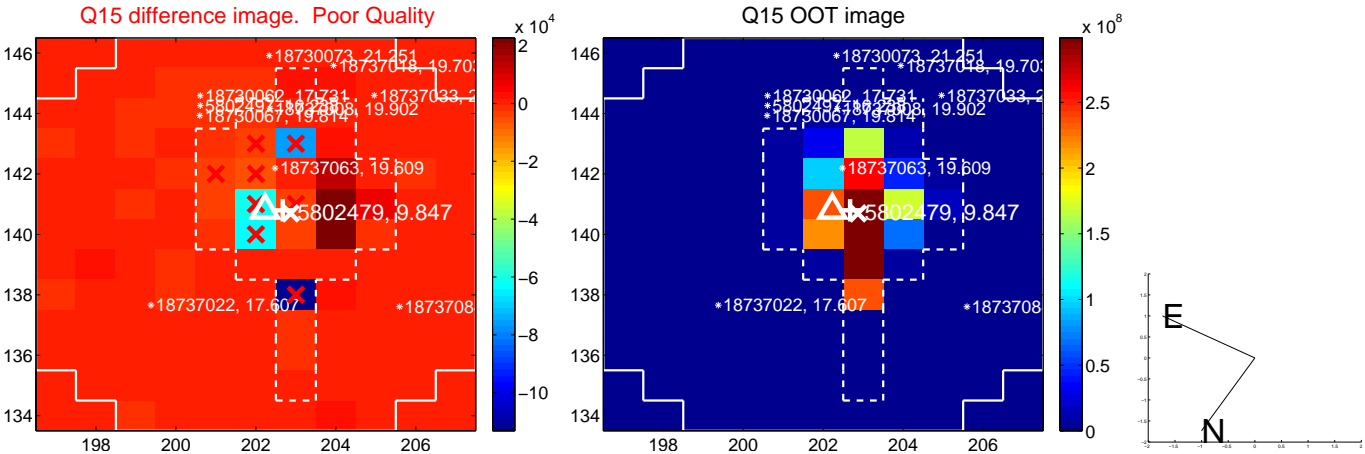
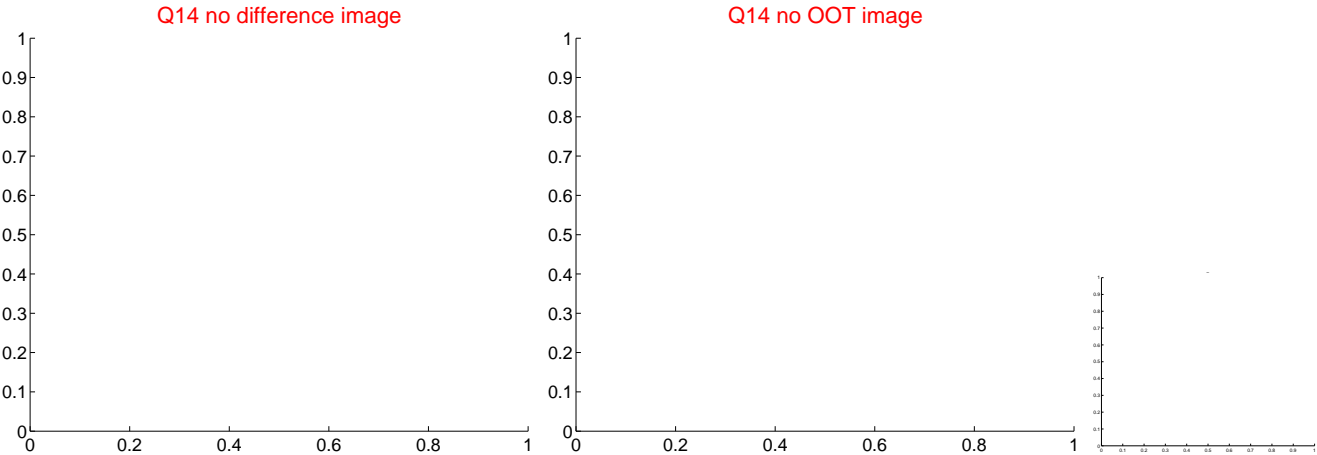
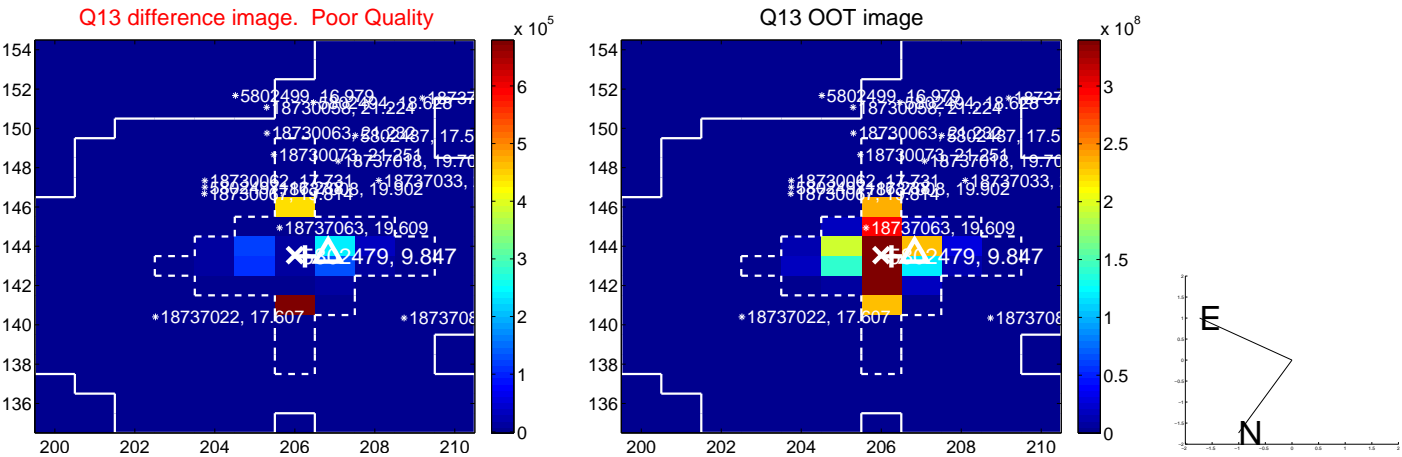


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

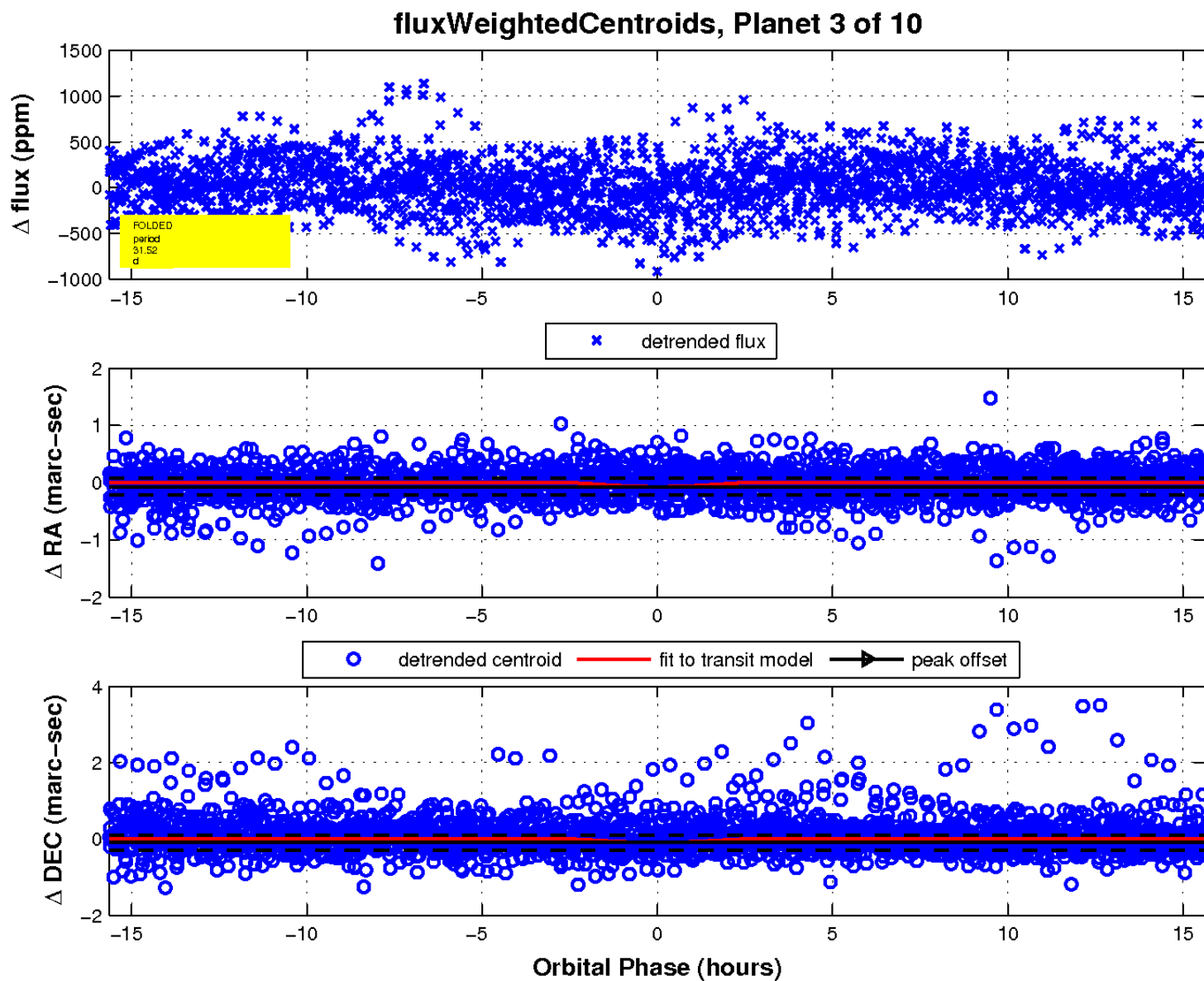
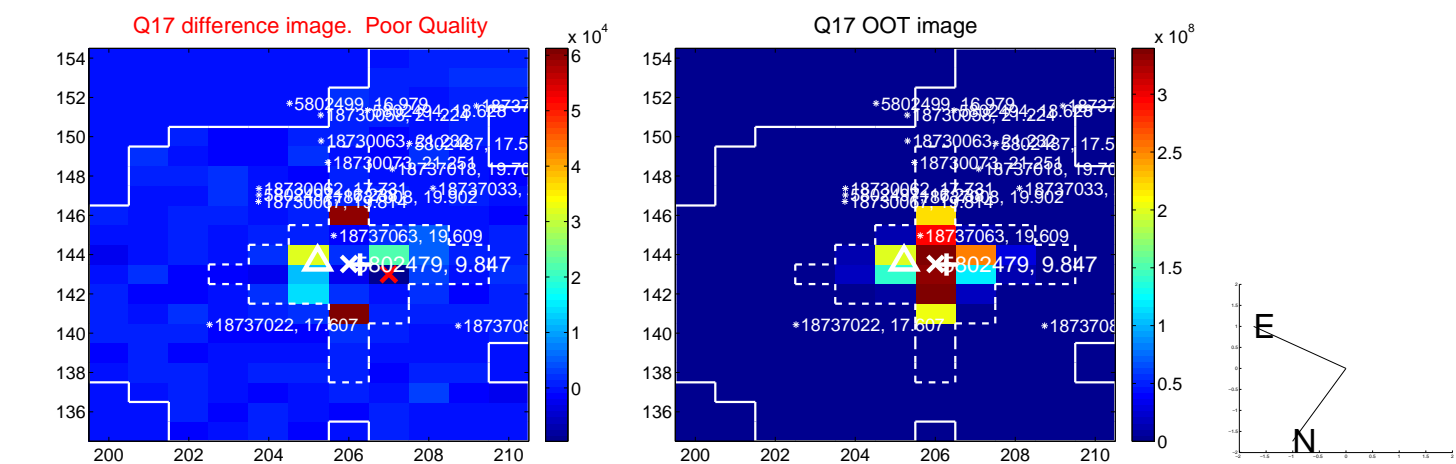




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

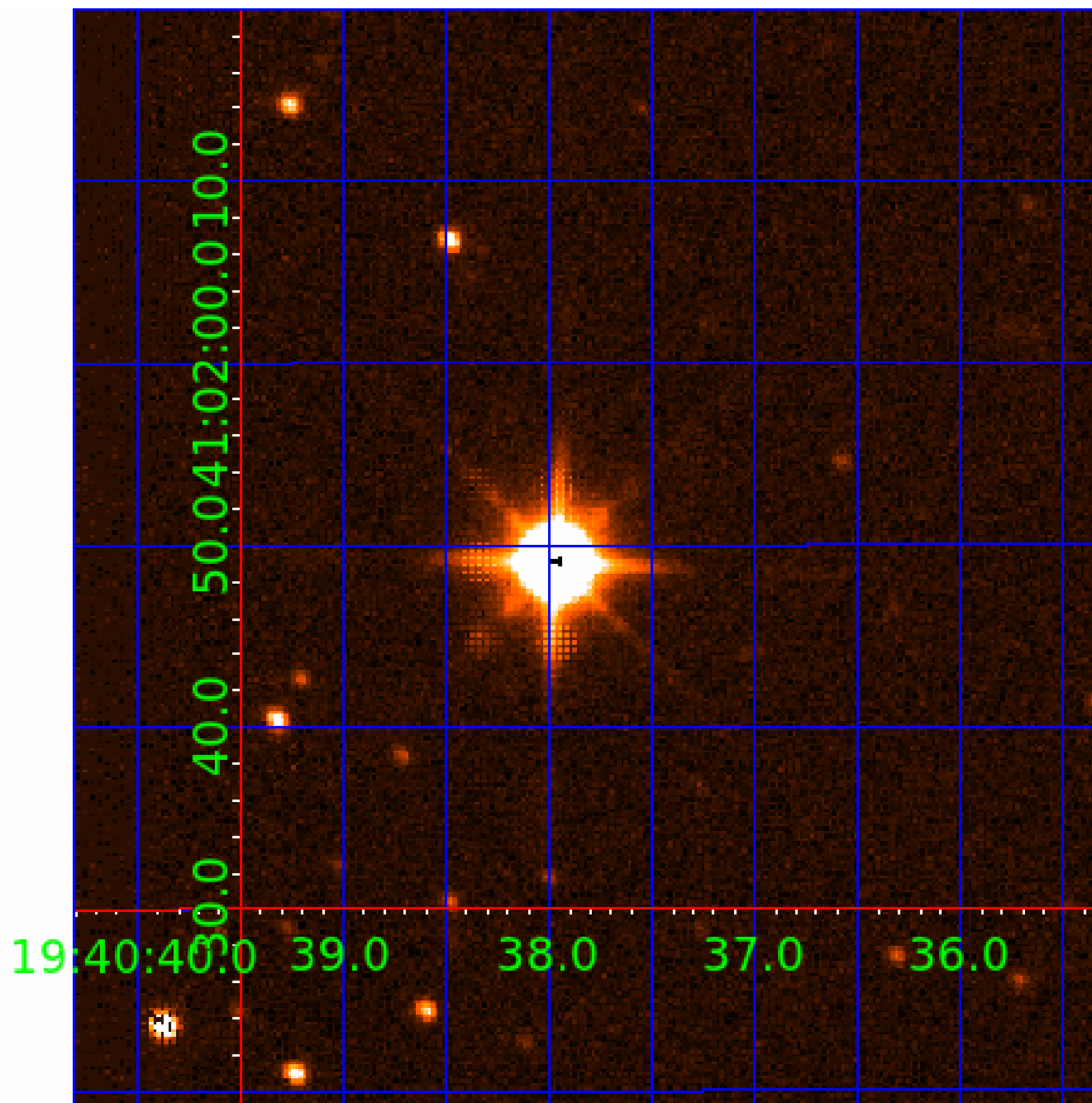


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\Delta$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 005802479

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005802479-01	OBS	No	0.638341	131.702634	15.9	3.873	10.4	5.9	1.92	7196	0.86	31321.42
005802479-03	OBS	No	31.522608	153.696891	526.6	5.214	10.0	10.5	1.92	7196	8.30	172.88
005802479-04	OBS	No	88.375917	134.248450	595.7	2.316	9.9	9.7	1.92	7196	5.30	43.73
005802479-05	OBS	No	84.762616	162.094820	472.9	7.177	10.1	9.3	1.92	7196	4.51	46.23
005802479-06	OBS	No	26.284161	151.113282	58.4	3.000	9.1	-1.0	1.92	7196	1.49	220.29
005802479-07	OBS	No	231.017269	226.147869	628.3	13.781	9.6	10.1	1.92	7196	5.19	12.14
005802479-08	OBS	No	80.384356	174.881064	530.4	6.609	9.4	9.0	1.92	7196	8.35	49.62
005802479-09	OBS	No	42.786339	168.305531	242.5	3.706	8.0	5.8	1.92	7196	3.37	115.04
005802479-10	OBS	No	66.734307	159.531369	549.5	5.185	8.3	8.9	1.92	7196	5.51	63.60

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005802479-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—CENT_SATURATED
005802479-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005802479-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005802479-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
005802479-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

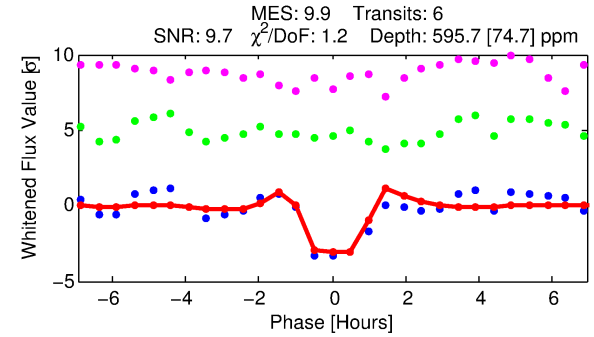
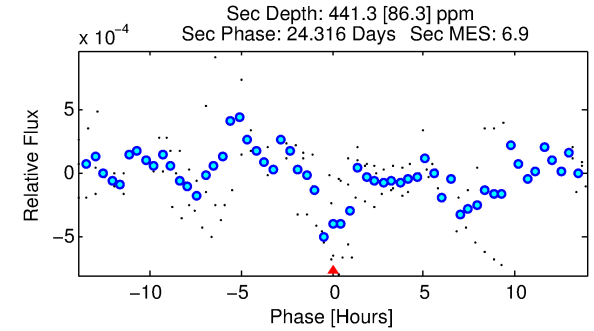
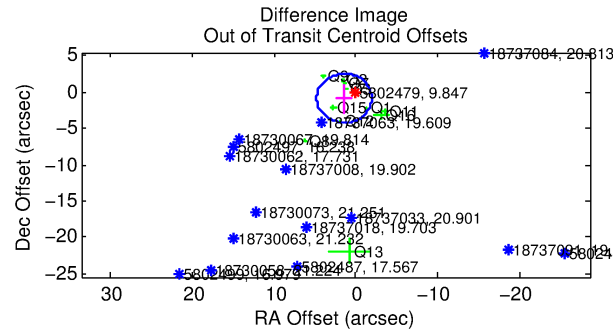
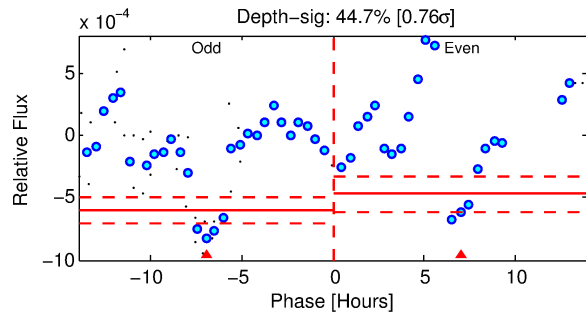
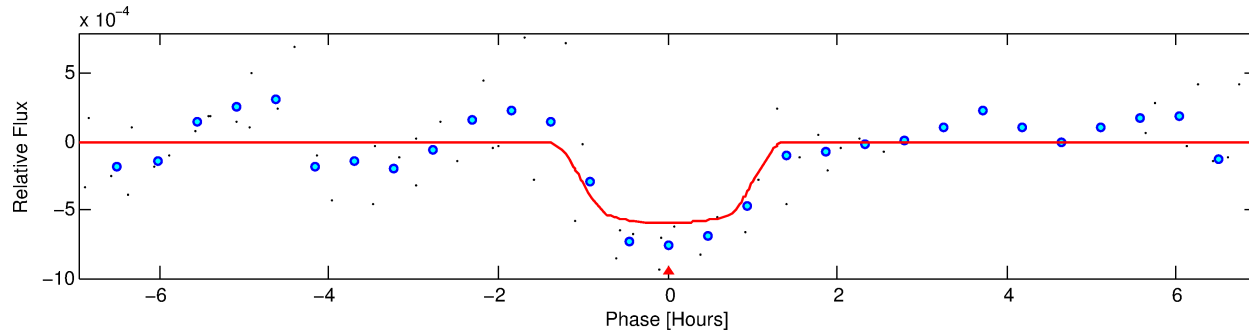
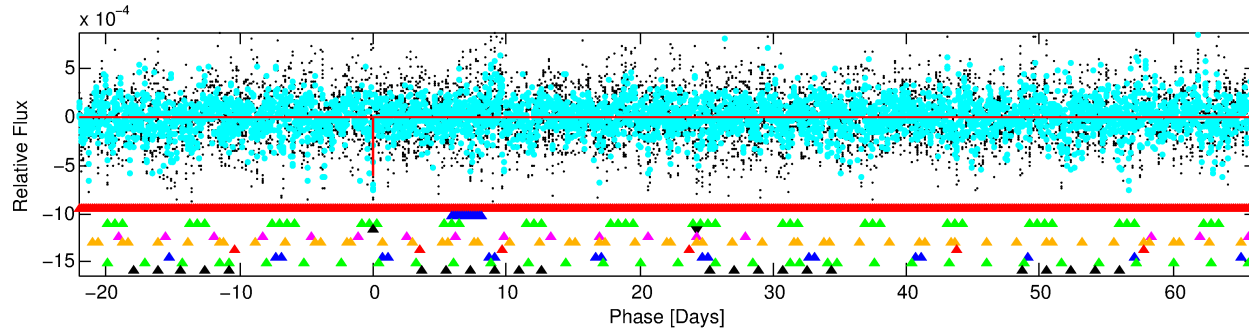
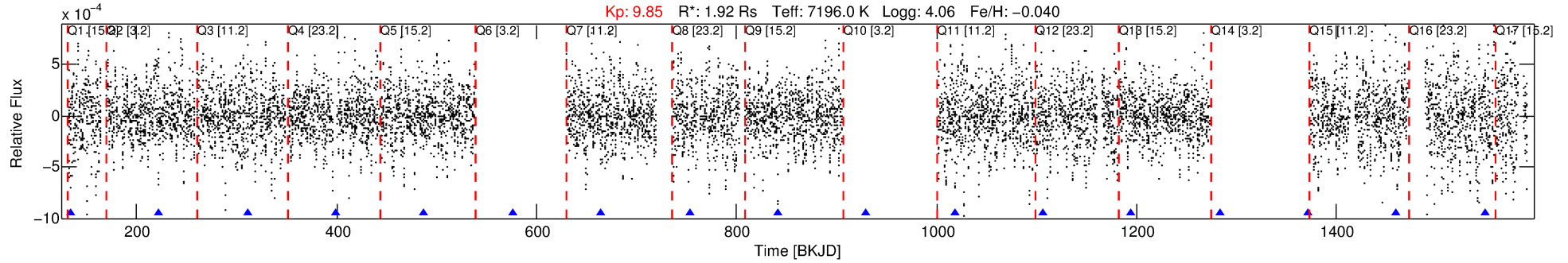
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005802479-04

No Significant Match Found

# DV One-Page Summary

KIC: 5802479 Candidate: 4 of 10 Period: 88.376 d



## DV Fit Results:

Period = 88.37592 [0.00053] d  
Epoch = 134.2485 [0.0045] BKJD  
Rp/R\* = 0.0253 [0.0140]  
a/R\* = 164.84 [560.75]  
b = 0.86 [1.09]  
Seff = 43.73 [15.93]  
Teq = 656 [60] K  
Rp = 5.30 [3.33] Re  
a = 0.4507 [0.1085] AU  
Ag = 1753.98 [2055.31] [0.85 $\sigma$ ]  
Teff = 6561 [1857] K [3.18 $\sigma$ ]

## DV Diagnostic Results:

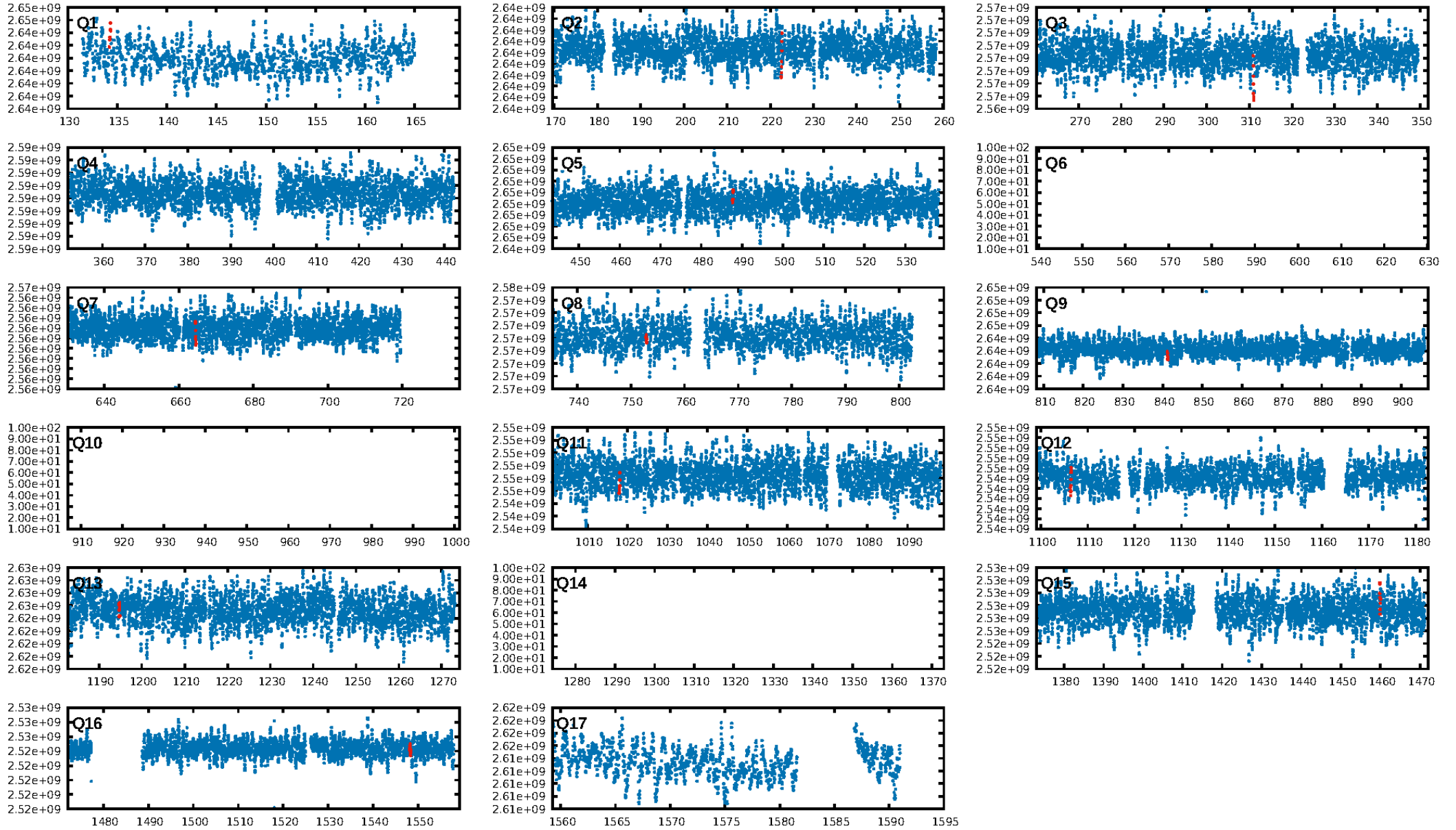
ShortPeriod-sig: 74.1% [1.13 $\sigma$ ]  
LongPeriod-sig: 100.0% [244.98 $\sigma$ ]  
ModelChiSquare2-sig: 71.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [6/6]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 10.8%  
Centroid-so: 0.316 arcsec [1.61 $\sigma$ ]  
OotOffset-rm: 1.690 arcsec [1.51 $\sigma$ ]  
OotOffset-st: 1/4/3/3 [11]  
KicOffset-rm: 2.519 arcsec [2.97 $\sigma$ ]  
KicOffset-st: 1/4/3/3 [11]  
DiffImageQuality-fgm: 0.00 [0/11]  
DiffImageOverlap-fno: 0.00 [0/12]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:10:35 Z

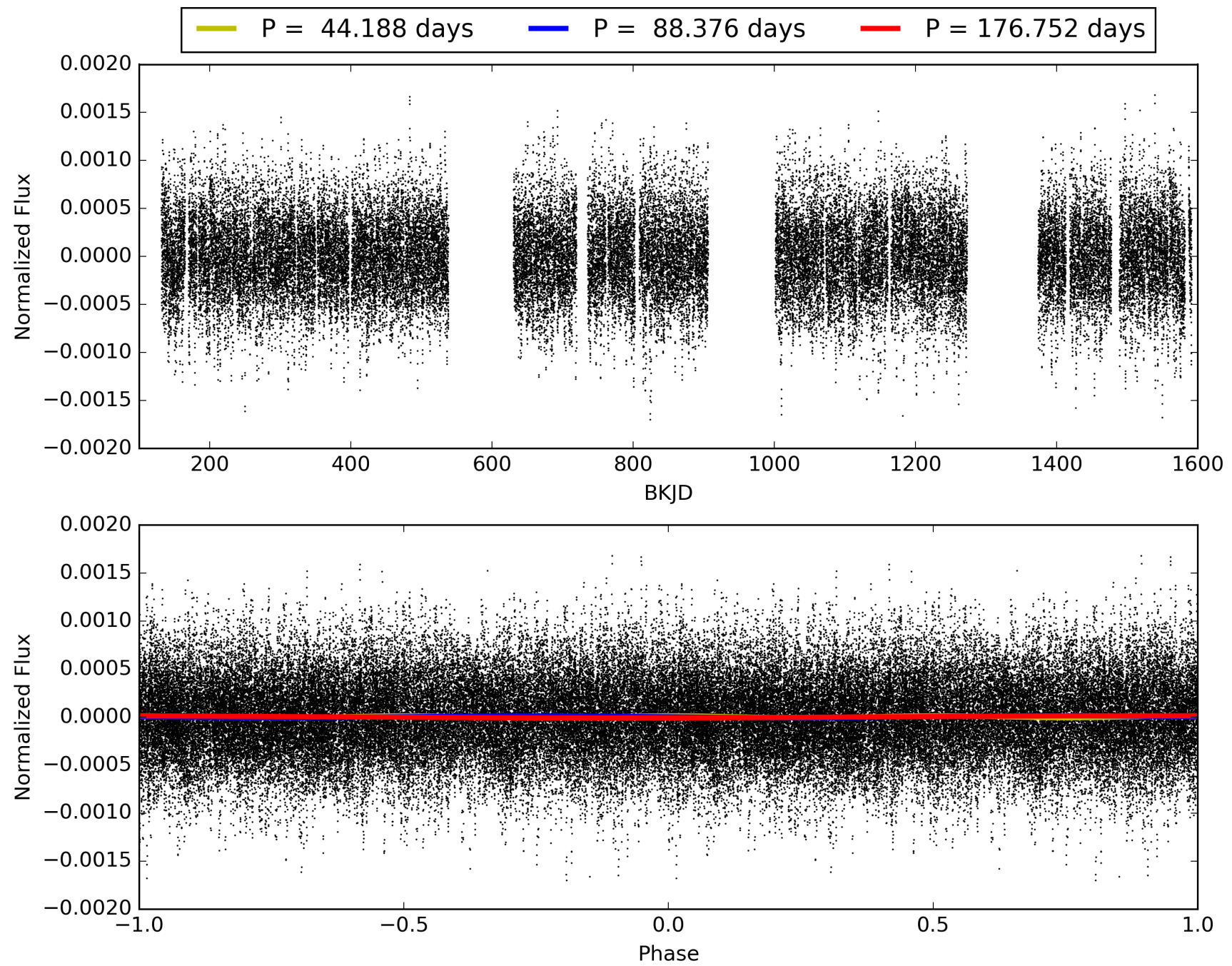
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 005802479-04, PDC Light Curves

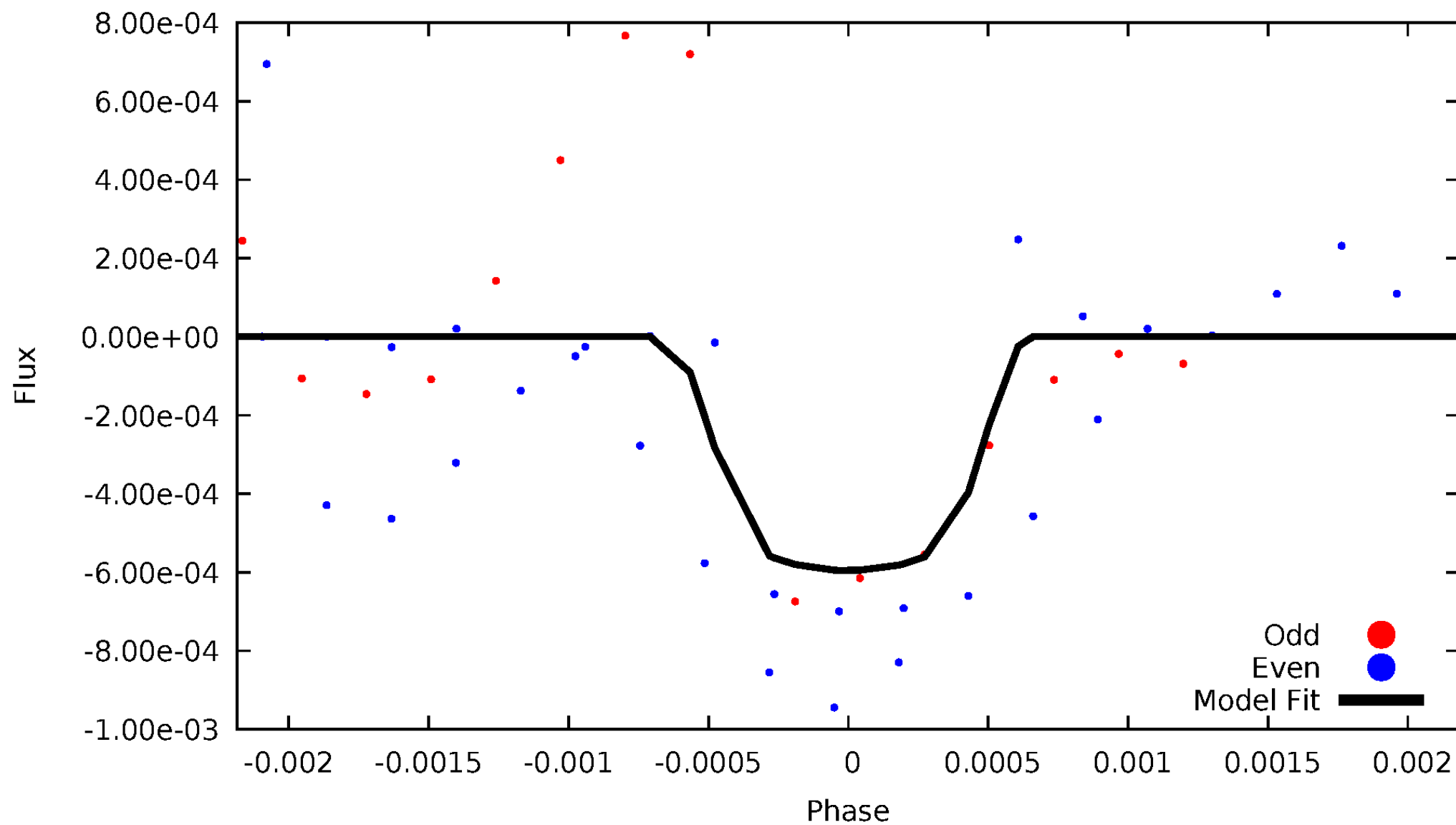


TCE 005802479-04



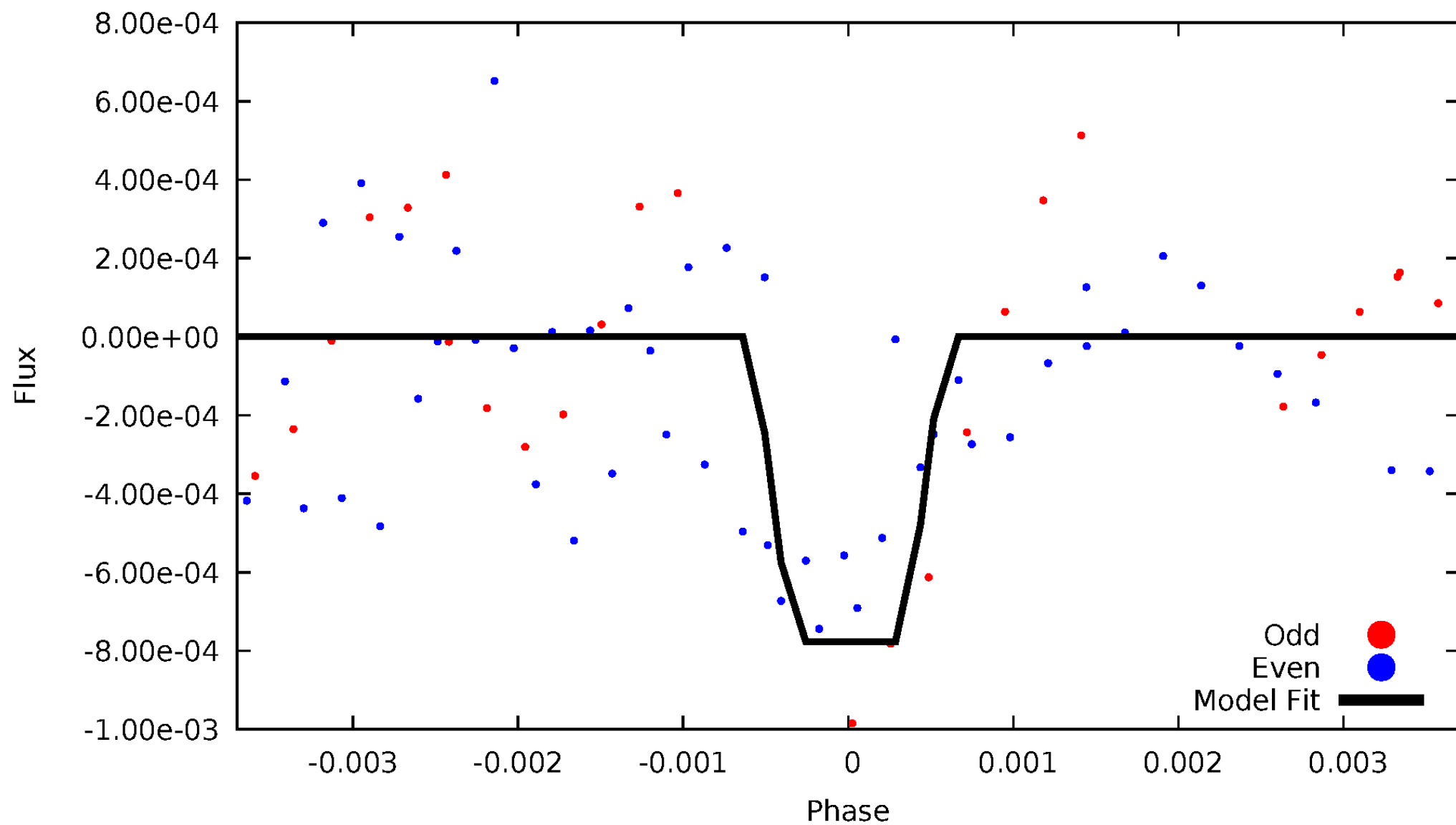
# DV Odd/Even

TCE 005802479-04



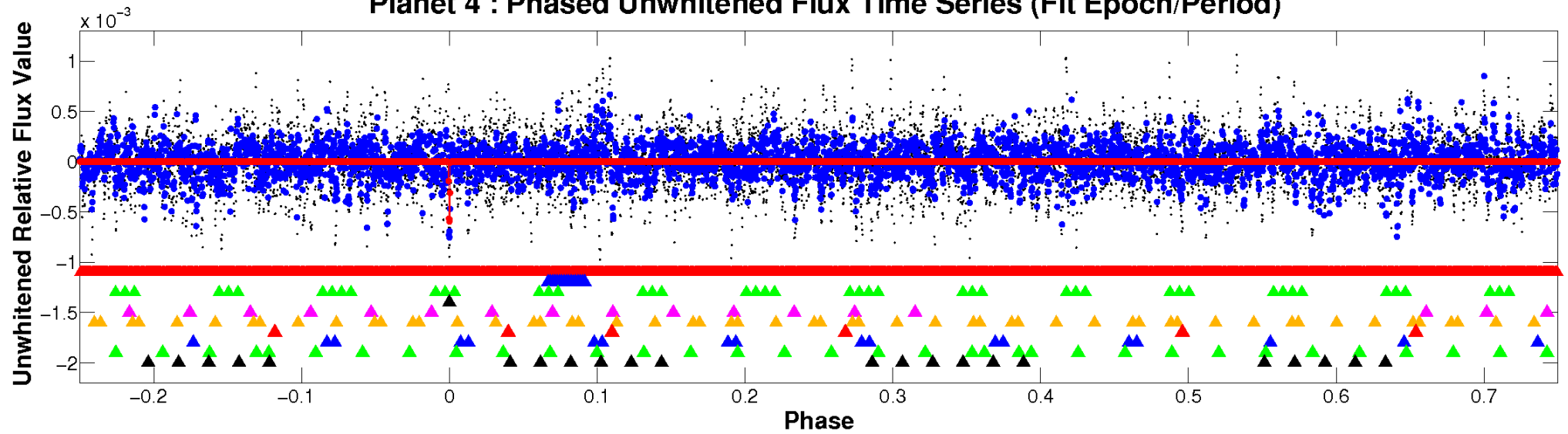
# ALT Odd/Even

TCE 005802479-04

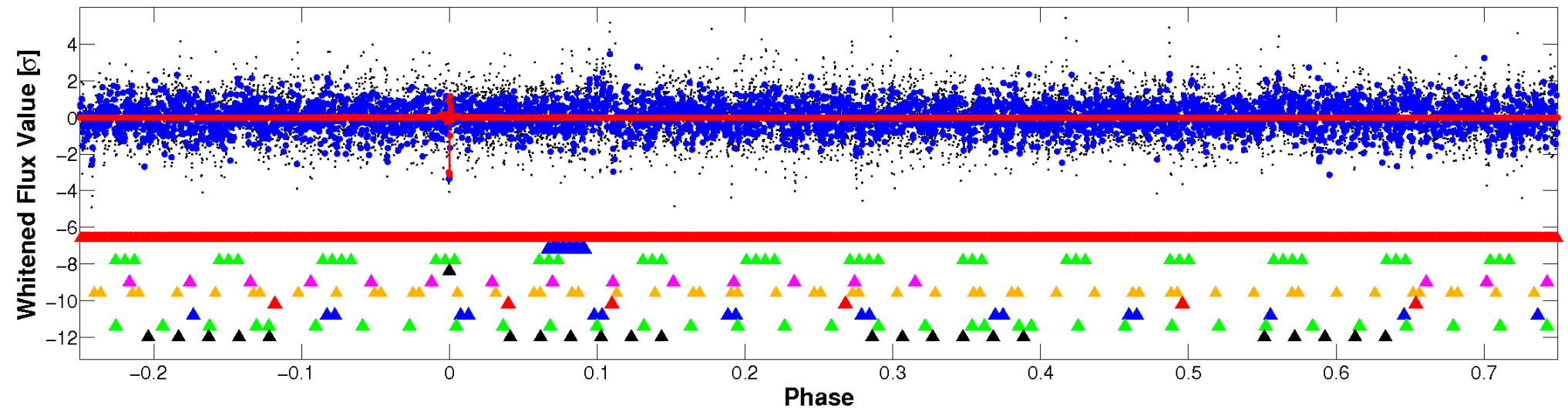


# Non-Whitened Vs. Whitened Light Curve

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



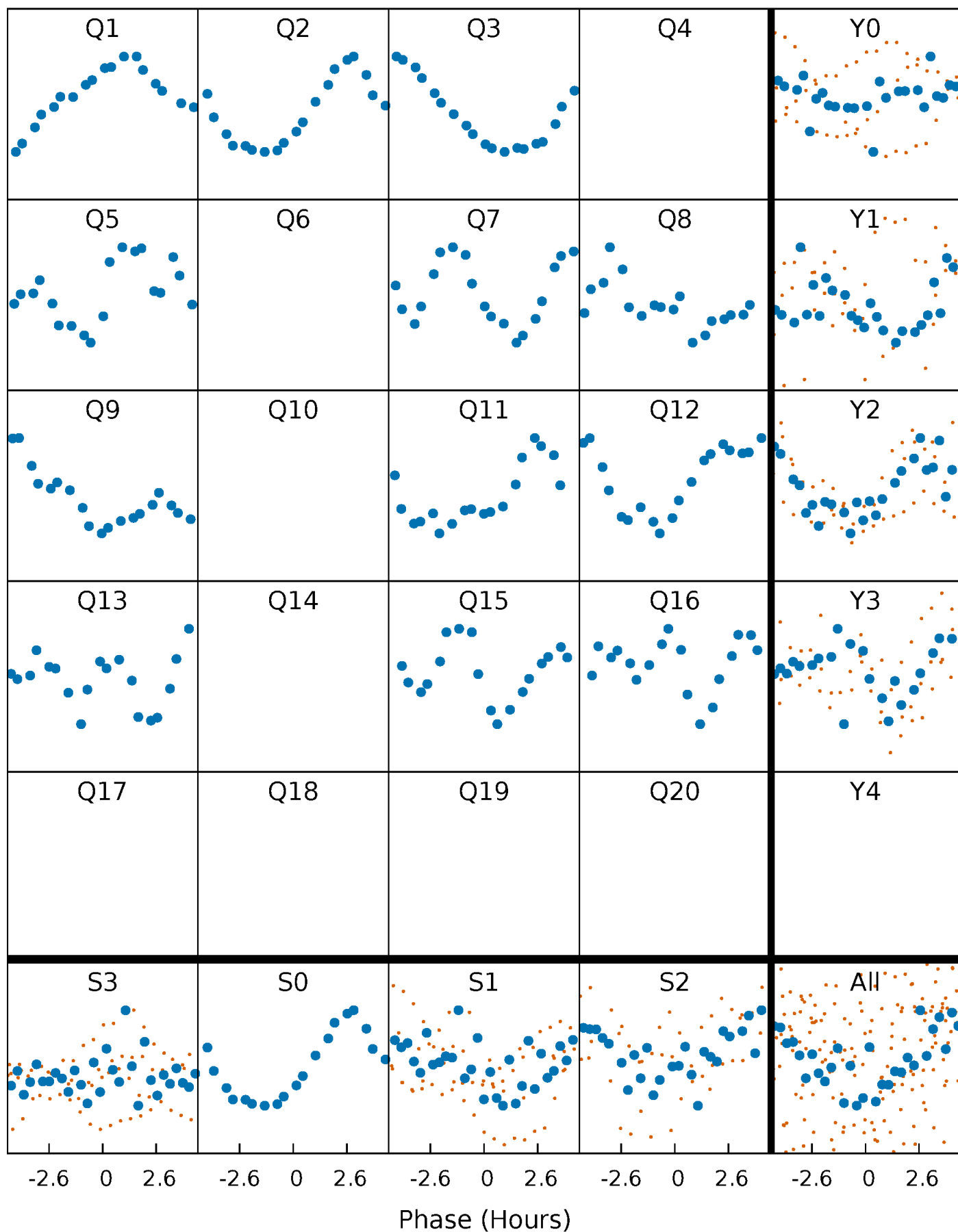
## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)





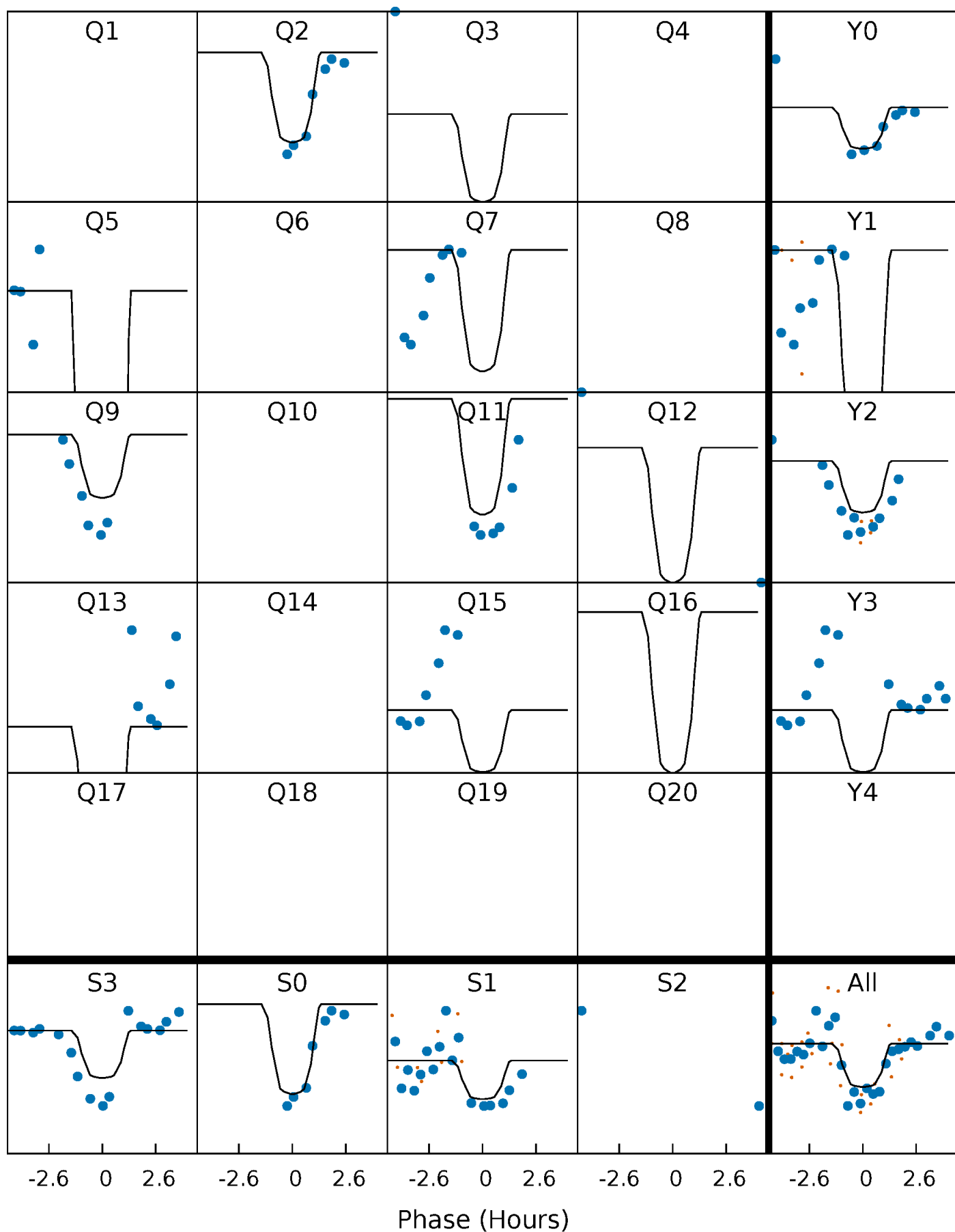
# PDC Quarter-Phased Transit Curves

TCE 005802479-04   P= 88.375917 Days    $T_0=134.248450$  (BKJD)



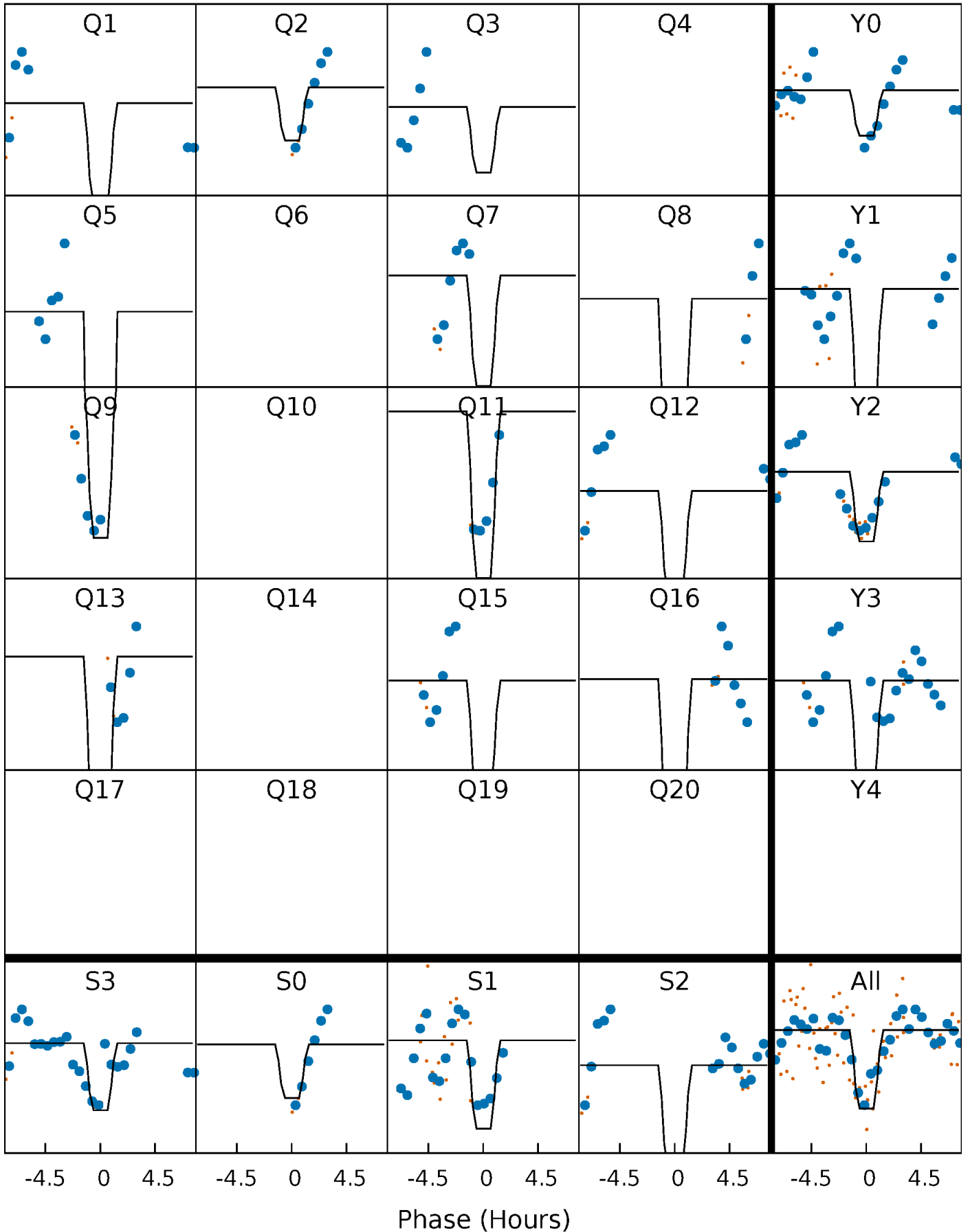
# DV Quarter-Phased Transit Curves

TCE 005802479-04 P= 88.375917 Days  $T_0=134.248450$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

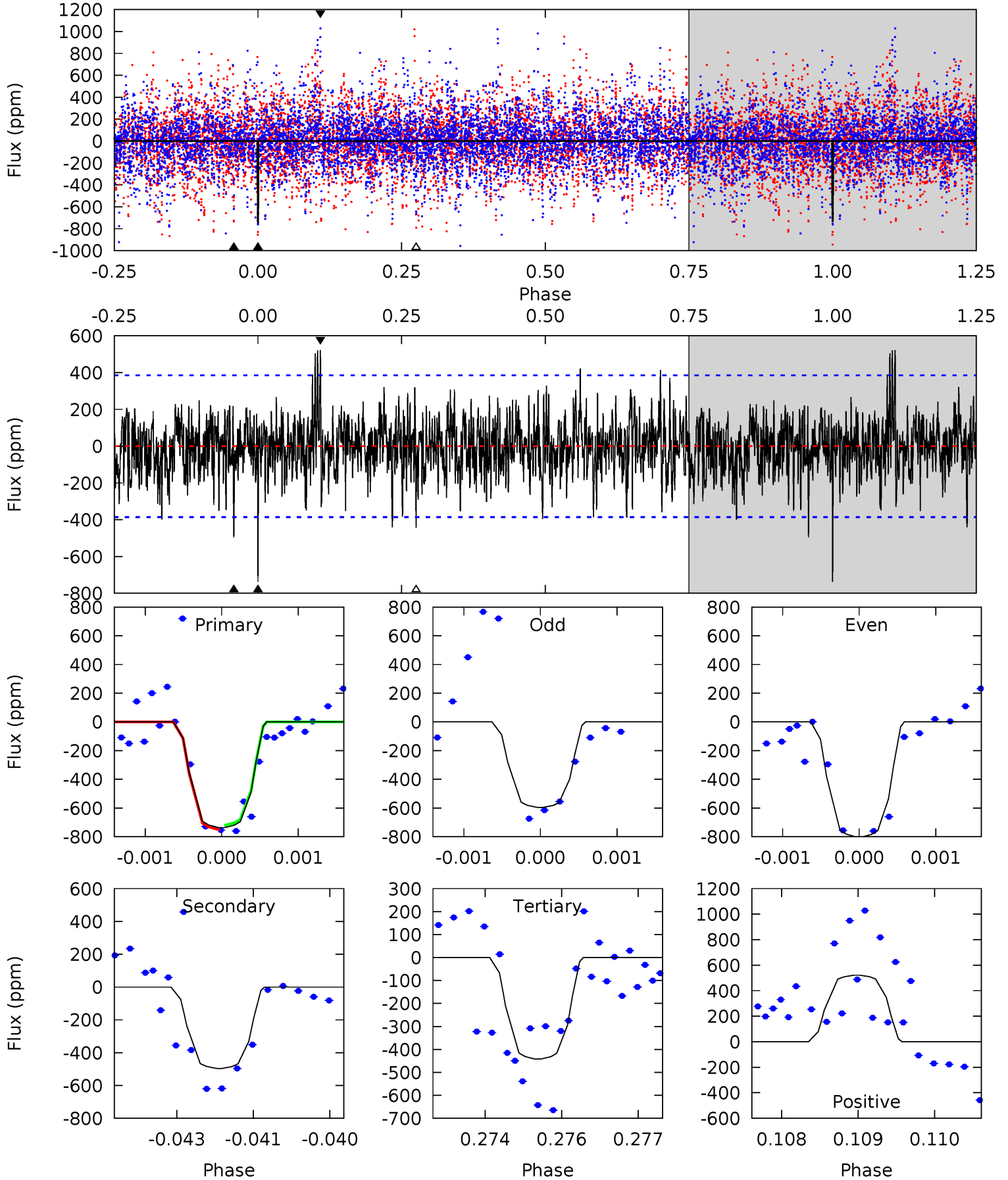
TCE 005802479-04     $P = 88.380220$  Days     $T_0 = 134.225199$  (BKJD)



# DV Model-Shift Uniqueness Test

005802479-04, P = 88.375917 Days, E = 45.872533 Days

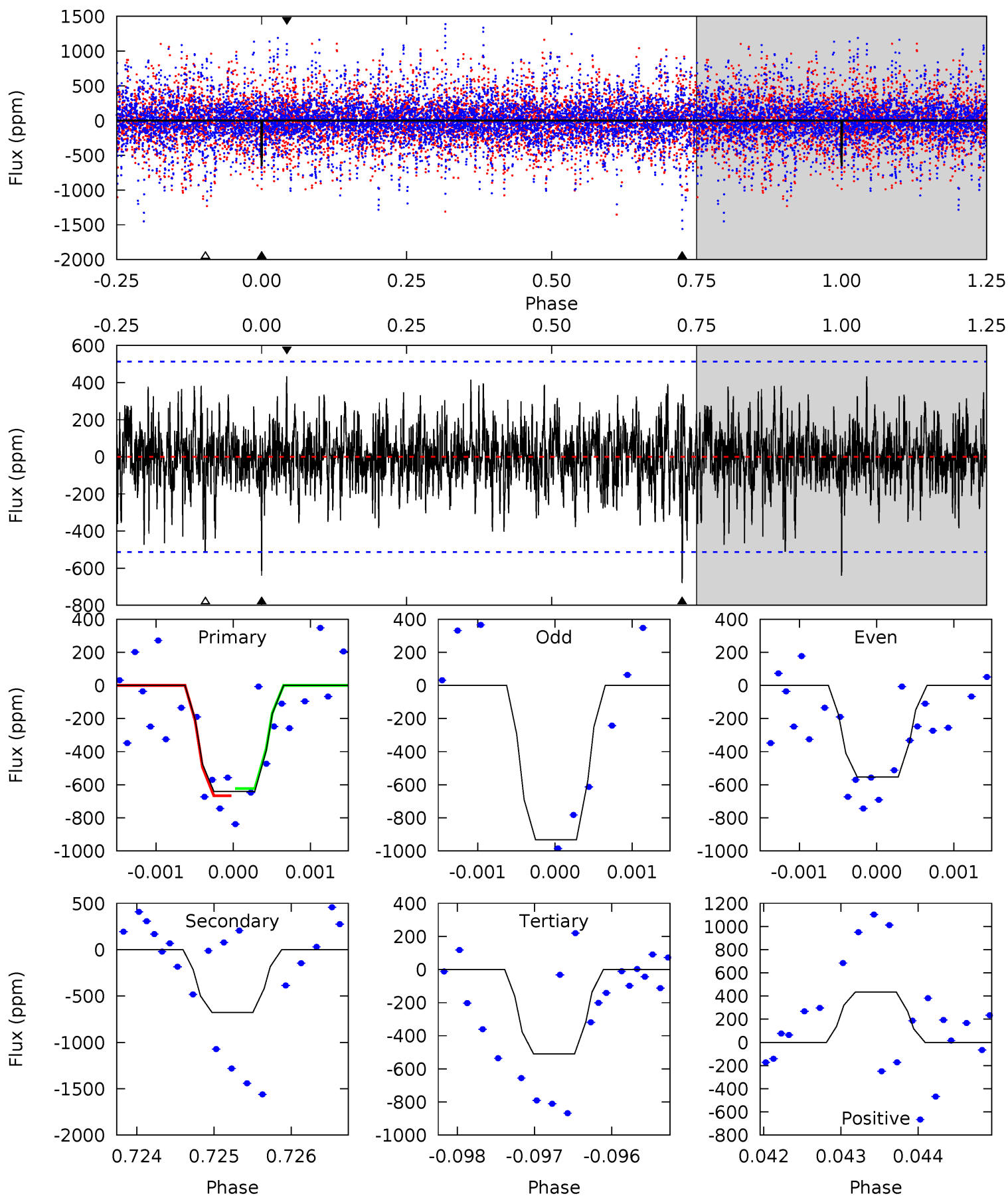
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	6.99	6.23	7.35	5.43	3.26	1.78	4.15	3.03	0.76	-0.36	1.36	1.04	0.41	0.21



# Alt Model-Shift Uniqueness Test

005802479-04, P = 88.380220 Days, E = 45.844979 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
6.80	7.18	5.42	4.60	5.45	3.28	1.40	1.38	2.19	1.76	2.57	1.80	0.87	0.39	0.23





### Stellar Parameters For KIC 005802479

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7196^{+172}_{-259}$	$4.064^{+0.158}_{-0.175}$	$-0.040^{+0.250}_{-0.350}$	$1.923^{+0.576}_{-0.471}$	$1.562^{+0.212}_{-0.236}$	$0.309^{+0.296}_{-0.153}$
	+2%/-4%	+4%/-4%	+625%/-875%	+30%/-24%	+14%/-15%	+96%/-50%
Source	PHO1	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 005802479-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-496 \pm 71$	$5.46^{+2.82}_{-2.68}$	$919^{+66}_{-64}$	$6631^{+3659}_{-1296}$	$1858^{+5521}_{-1066}$
Alt.	$-676 \pm 94$	$5.90^{+2.91}_{-2.97}$	$917^{+64}_{-64}$	$6874^{+3494}_{-1245}$	$2119^{+6615}_{-1176}$

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

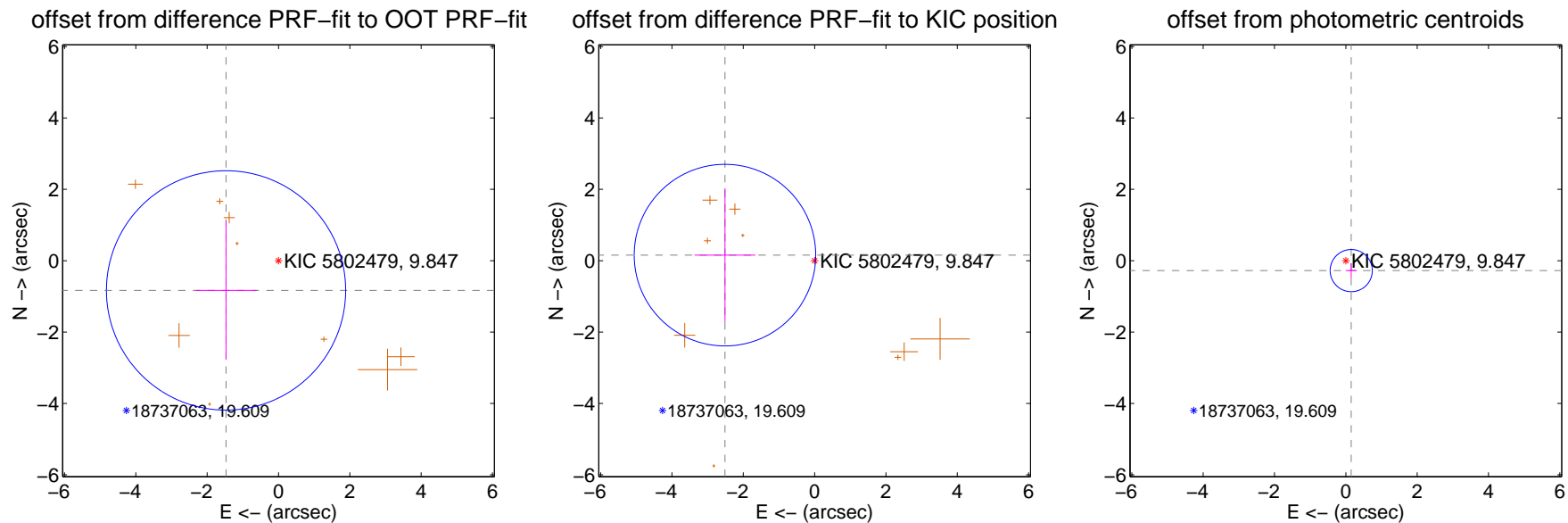
## DV Centroid Data

Supplemental centroid analysis for 005802479-04. **Kepler magnitude: 9.85.** Transit SNR 9.70

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

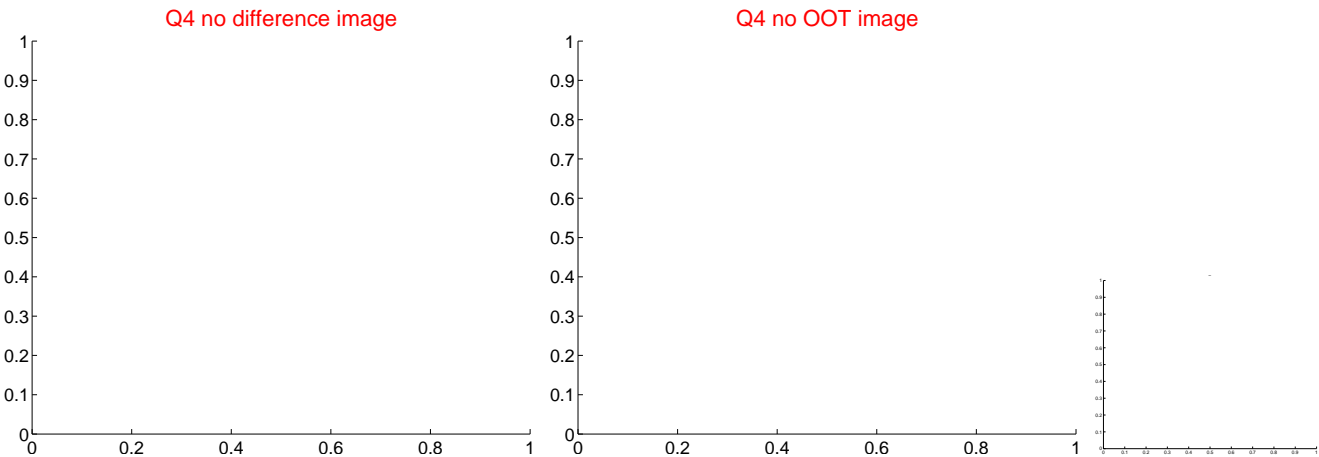
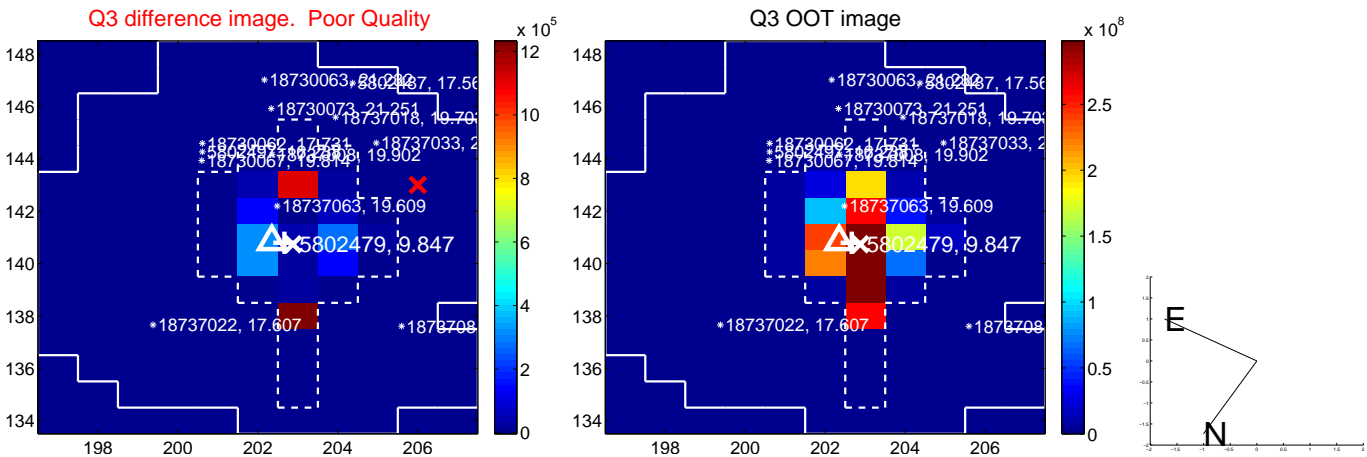
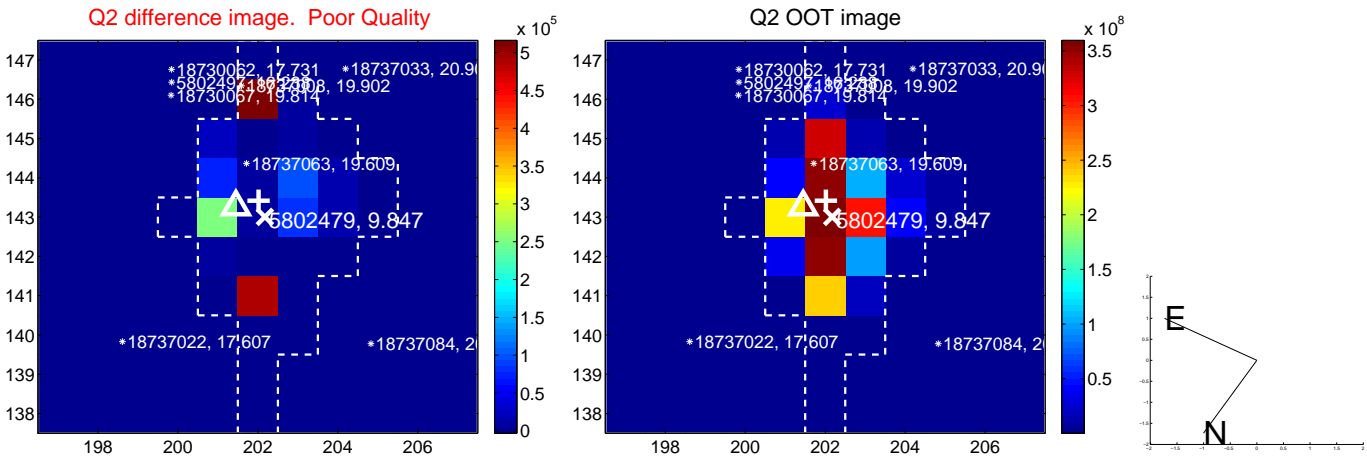
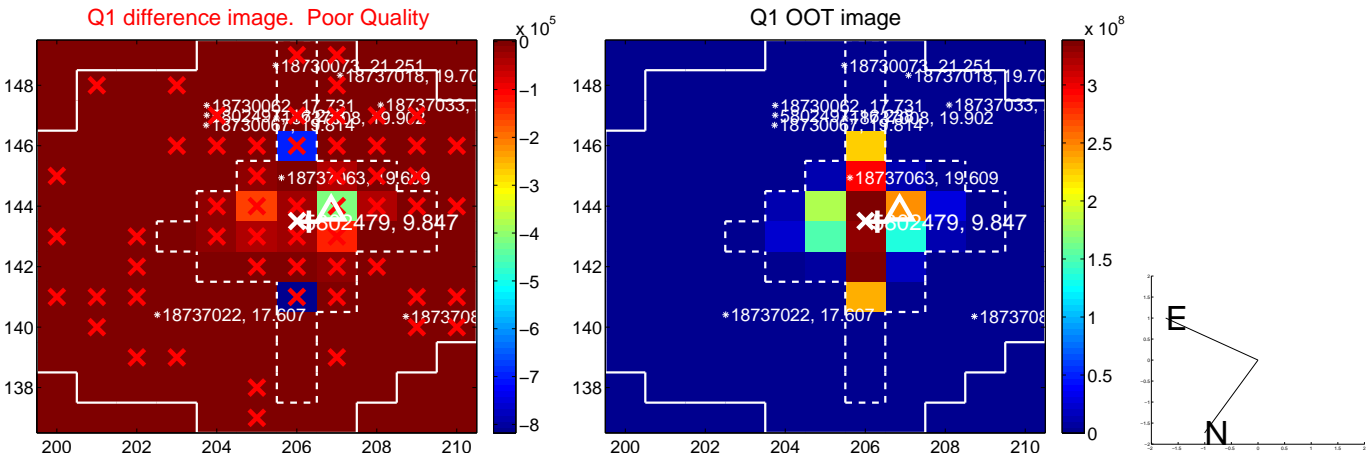
The direct PRF centroid is offset from the target star catalog position by about 0.98 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.690 \pm 1.118$	1.51	$1.471 \pm 0.855$	$-0.833 \pm 1.940$
PRF-fit source offset from KIC position	$2.519 \pm 0.848$	2.97	$2.515 \pm 0.853$	$0.156 \pm 1.874$
photometric centroid source offset	$0.32 \pm 0.20$	1.61	$-0.15 \pm 0.16$	$-0.28 \pm 0.21$

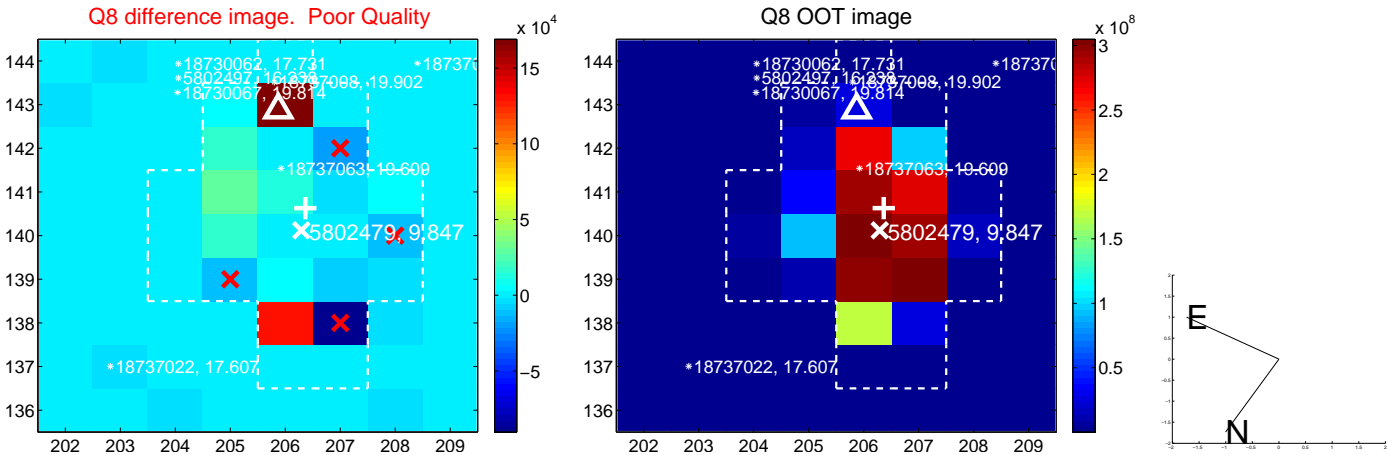
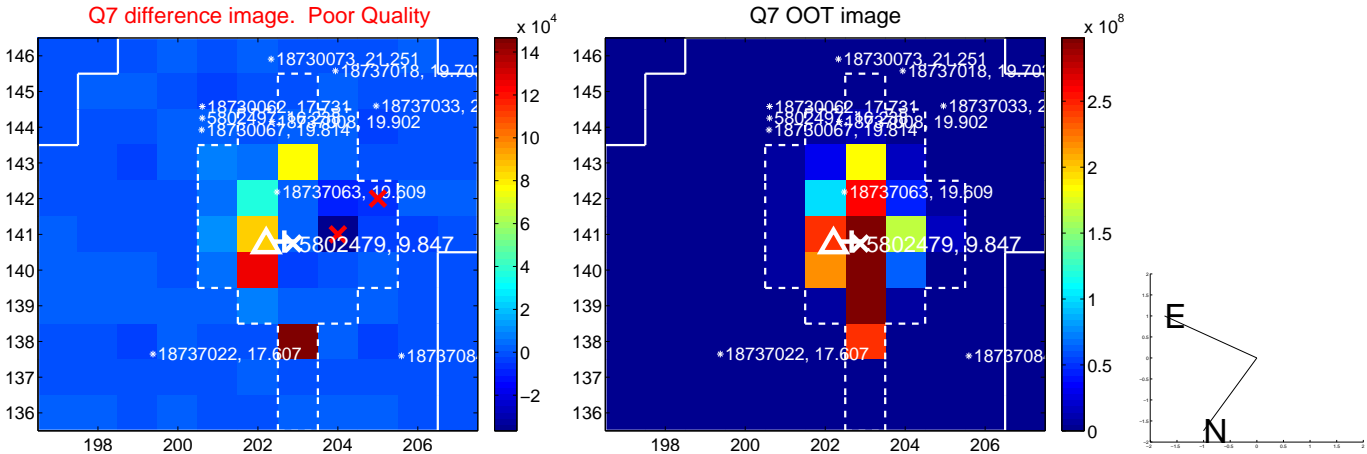
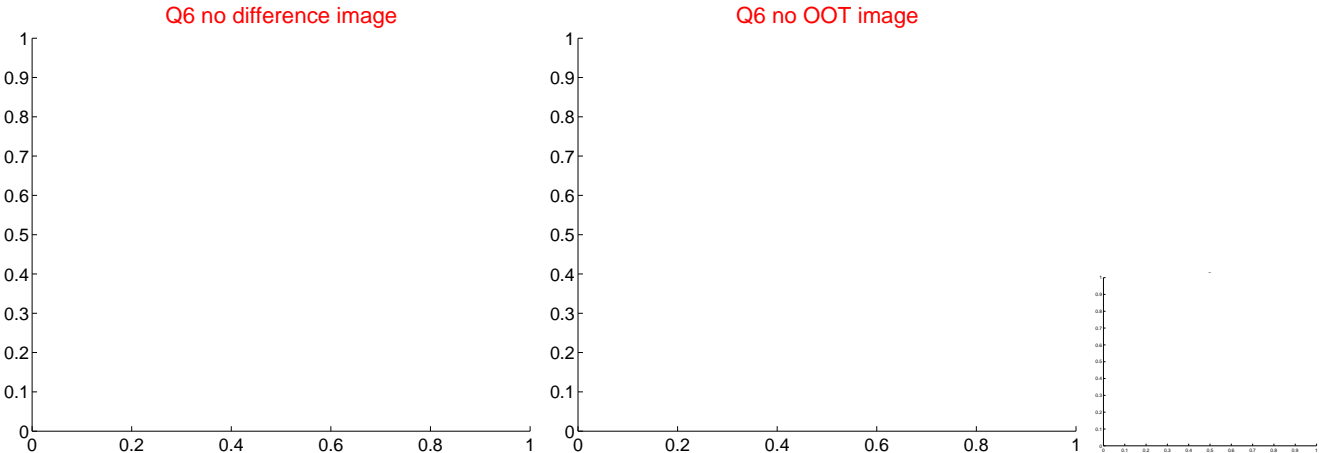
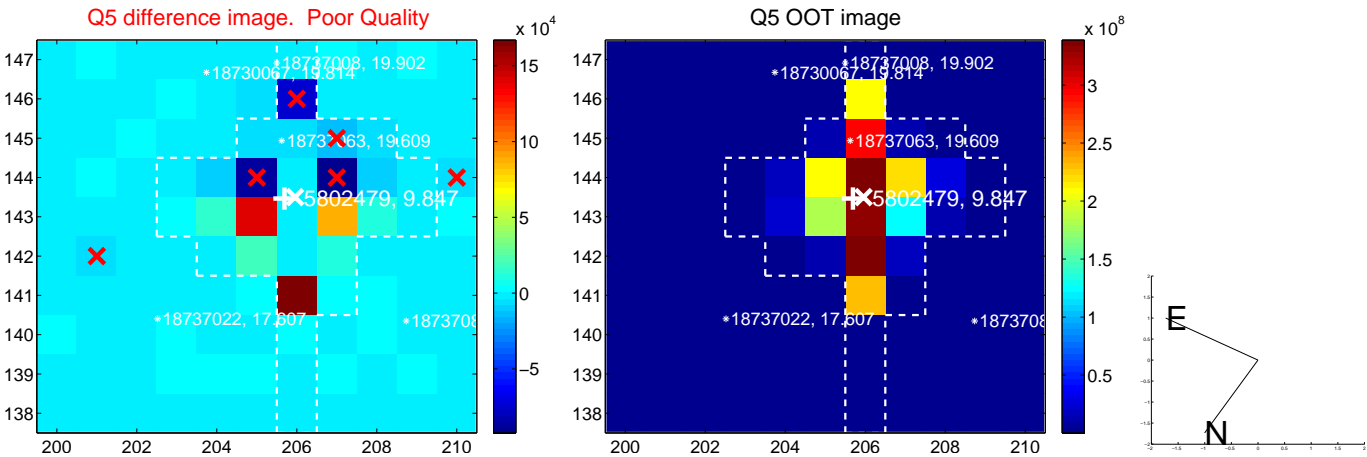


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

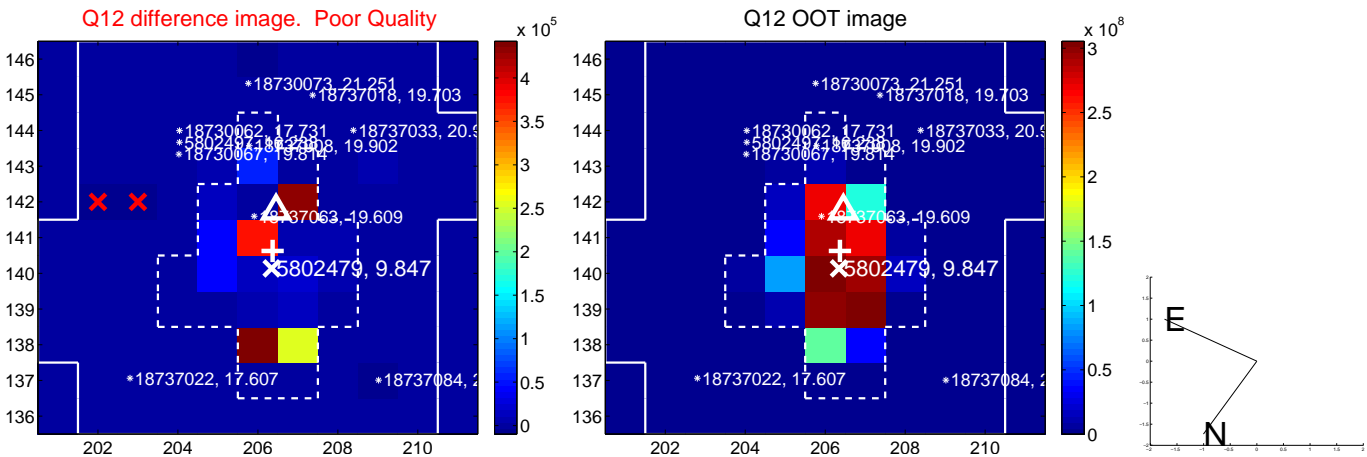
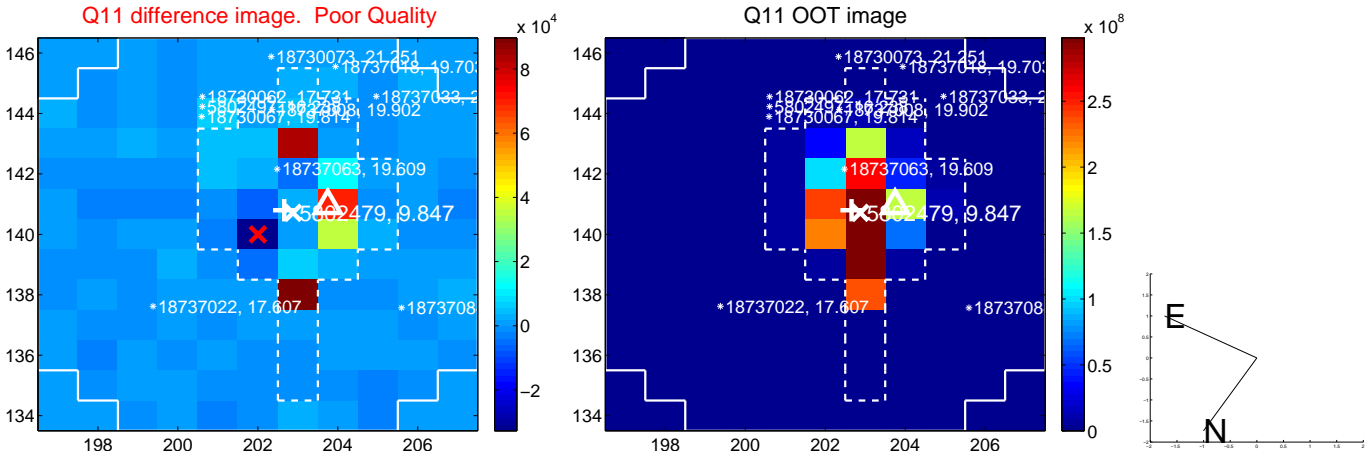
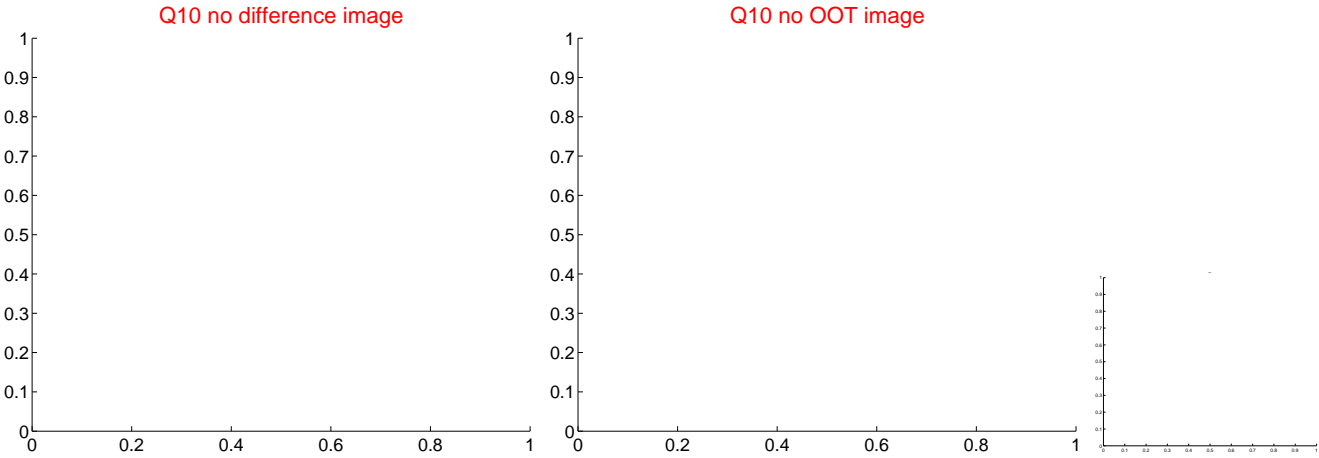
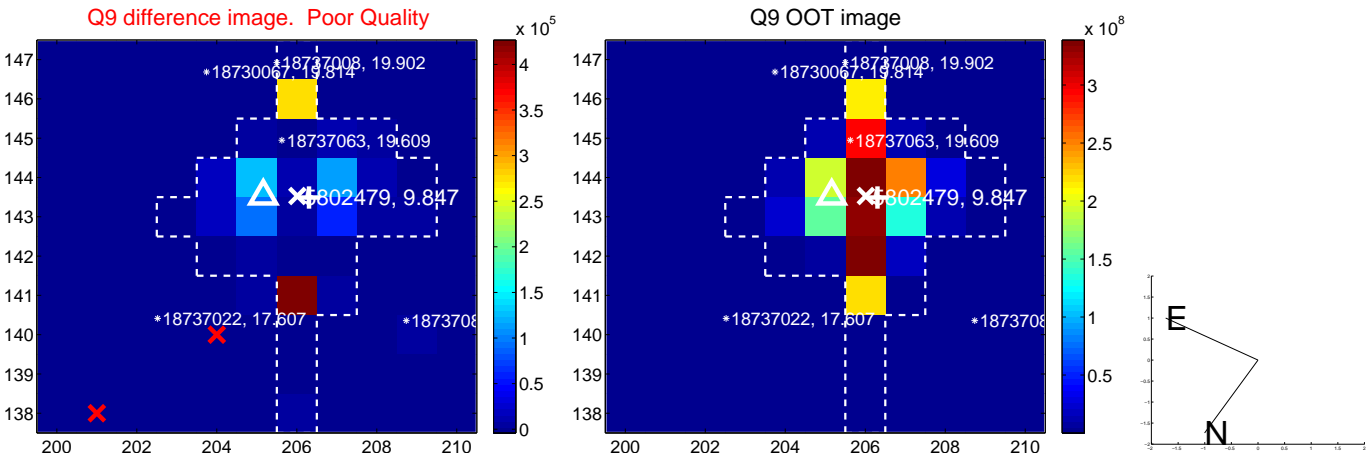
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



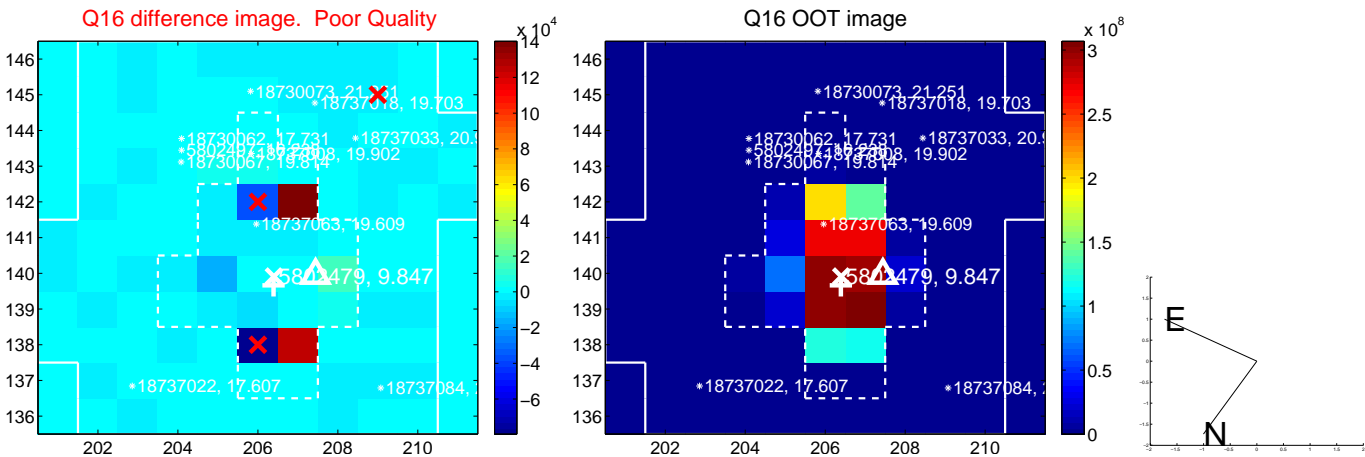
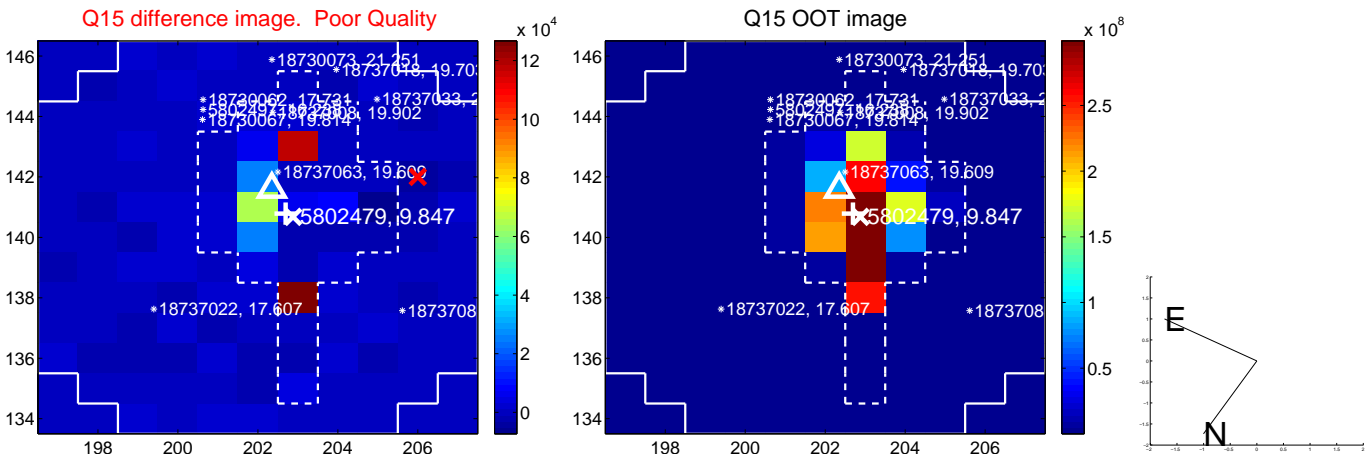
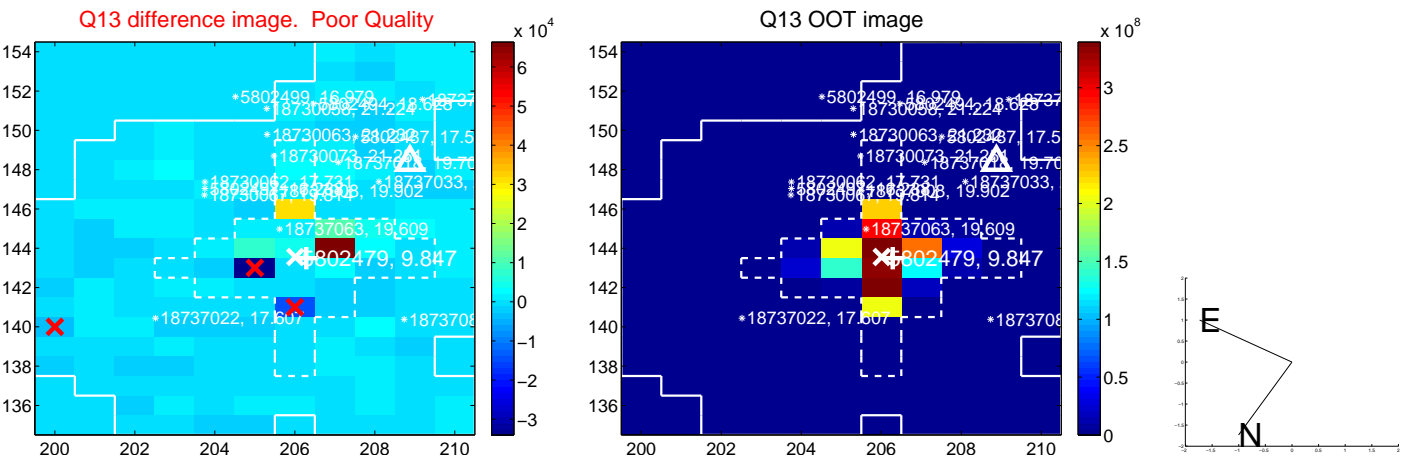
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

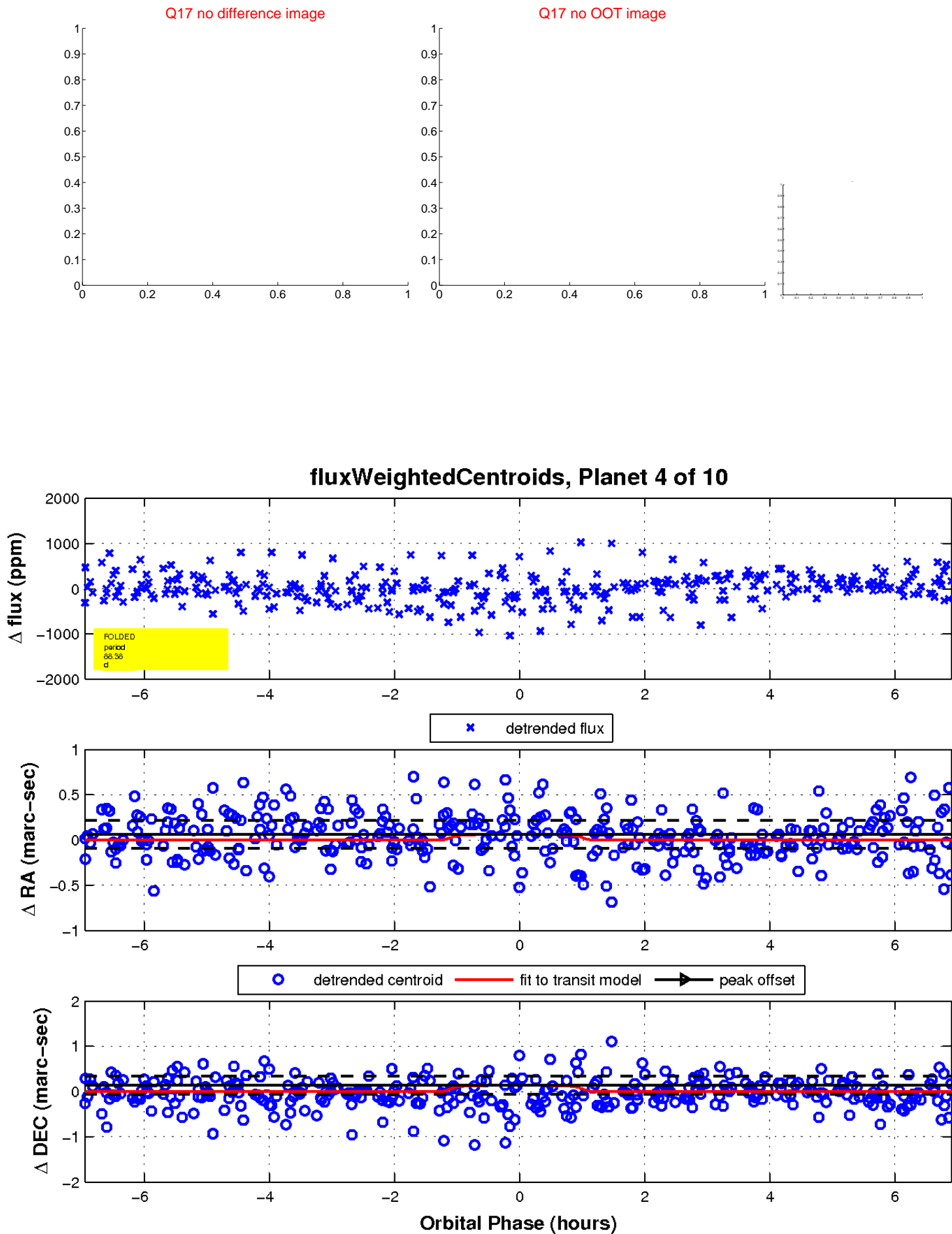


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



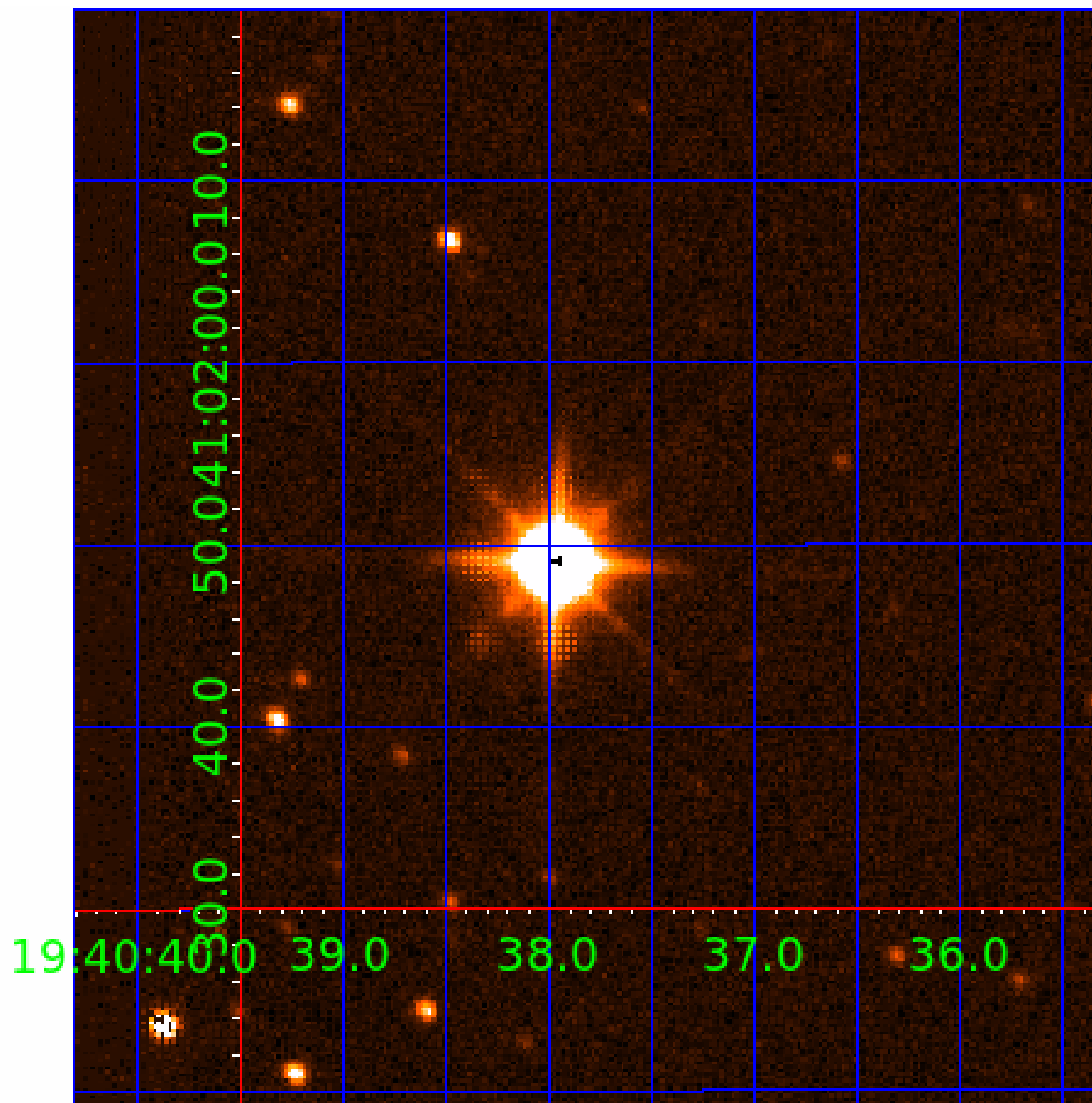


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 005802479

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005802479-01	OBS	No	0.638341	131.702634	15.9	3.873	10.4	5.9	1.92	7196	0.86	31321.42
005802479-03	OBS	No	31.522608	153.696891	526.6	5.214	10.0	10.5	1.92	7196	8.30	172.88
005802479-04	OBS	No	88.375917	134.248450	595.7	2.316	9.9	9.7	1.92	7196	5.30	43.73
005802479-05	OBS	No	84.762616	162.094820	472.9	7.177	10.1	9.3	1.92	7196	4.51	46.23
005802479-06	OBS	No	26.284161	151.113282	58.4	3.000	9.1	-1.0	1.92	7196	1.49	220.29
005802479-07	OBS	No	231.017269	226.147869	628.3	13.781	9.6	10.1	1.92	7196	5.19	12.14
005802479-08	OBS	No	80.384356	174.881064	530.4	6.609	9.4	9.0	1.92	7196	8.35	49.62
005802479-09	OBS	No	42.786339	168.305531	242.5	3.706	8.0	5.8	1.92	7196	3.37	115.04
005802479-10	OBS	No	66.734307	159.531369	549.5	5.185	8.3	8.9	1.92	7196	5.51	63.60

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005802479-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—CENT_SATURATED
005802479-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005802479-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005802479-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
005802479-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

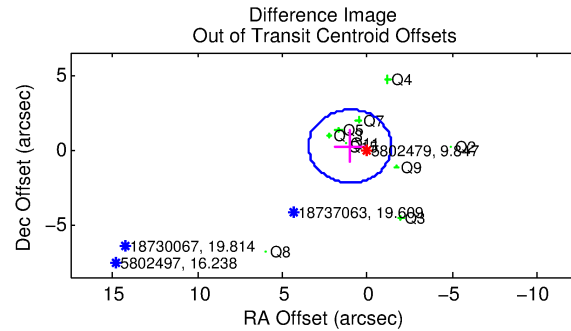
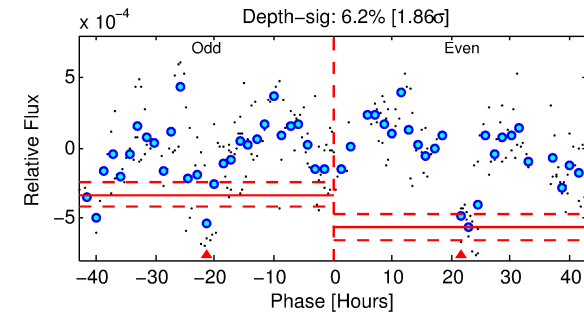
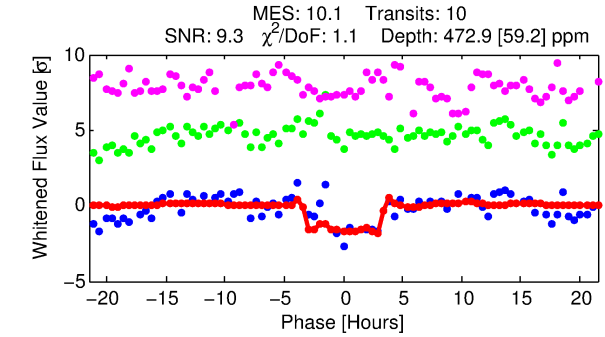
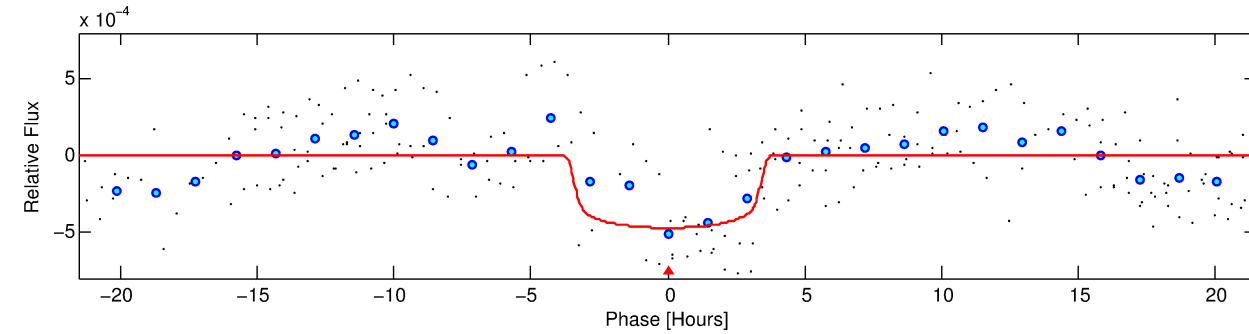
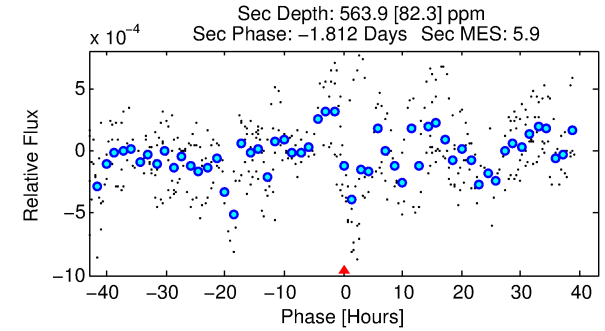
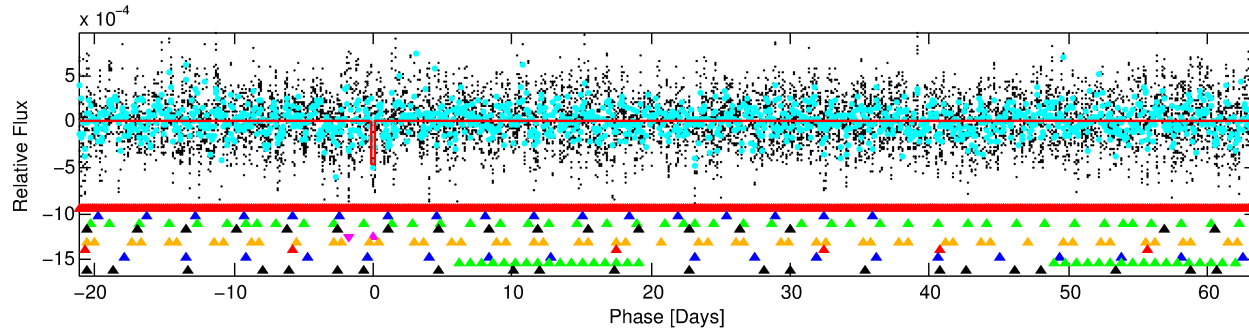
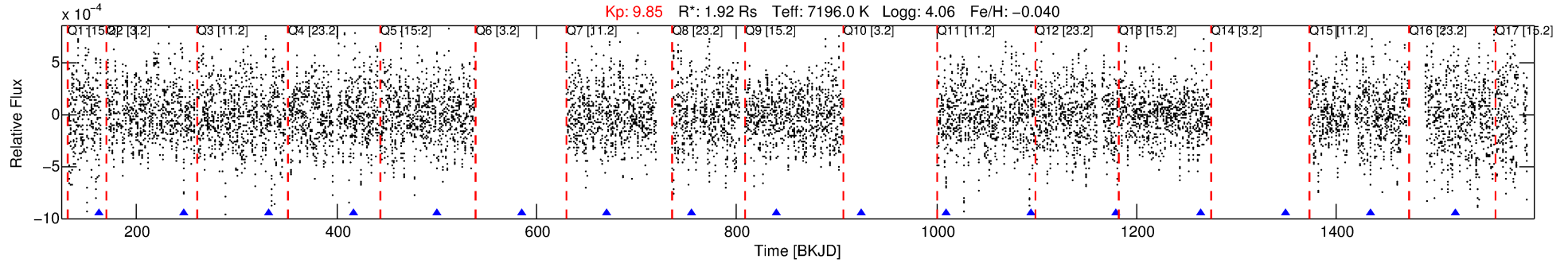
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005802479-05

No Significant Match Found

# DV One-Page Summary

KIC: 5802479 Candidate: 5 of 10 Period: 84.763 d



## DV Fit Results:

Period = 84.76262 [0.00074] d  
Epoch = 162.0948 [0.0071] BKJD  
Rp/R\* = 0.0215 [0.0059]  
a/R\* = 64.52 [100.14]  
b = 0.73 [1.00]  
Seff = 46.24 [16.85]  
Teq = 665 [61] K  
Rp = 4.51 [1.83] Re  
a = 0.4383 [0.1055] AU  
Ag = 2927.44 [1927.15] [1.52σ]  
Teffp = 7562 [1106] K [6.23σ]

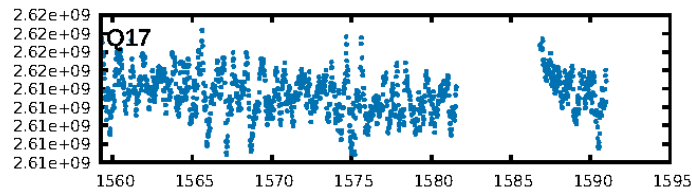
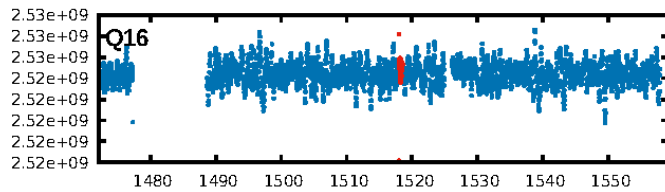
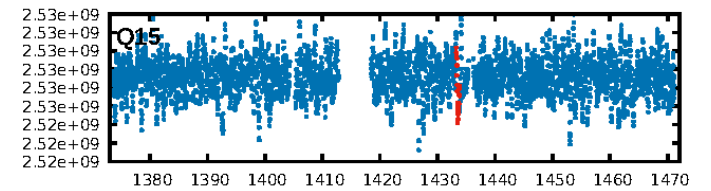
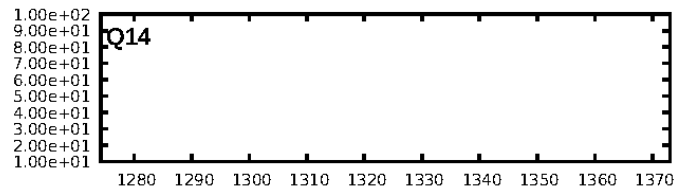
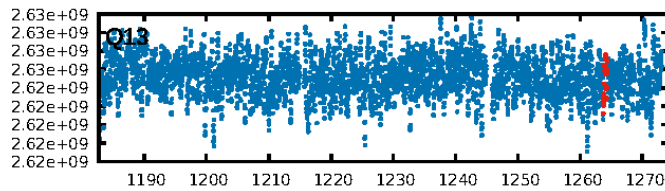
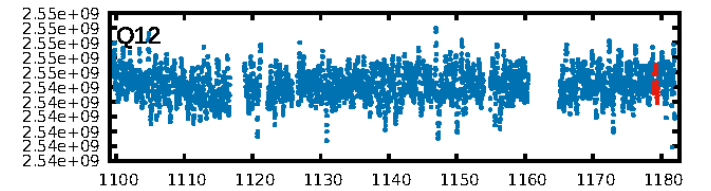
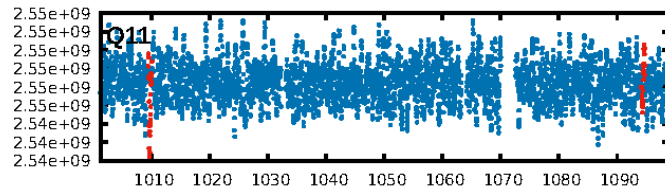
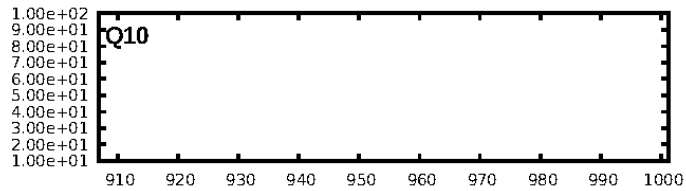
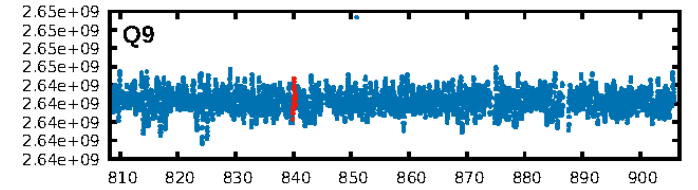
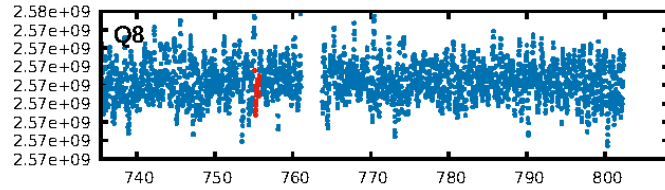
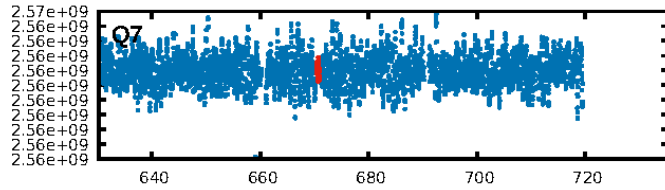
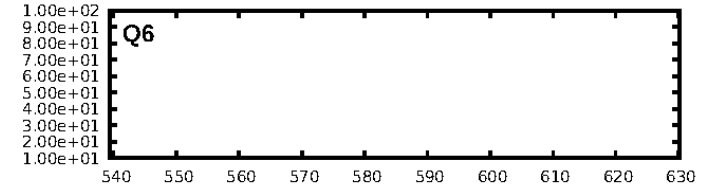
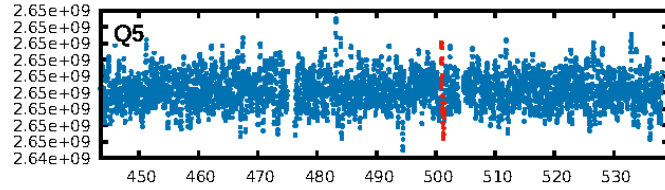
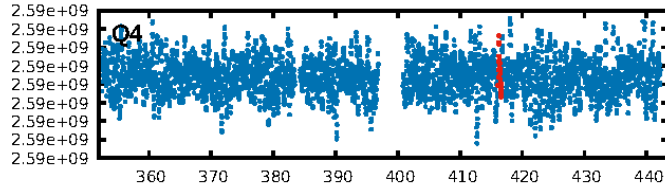
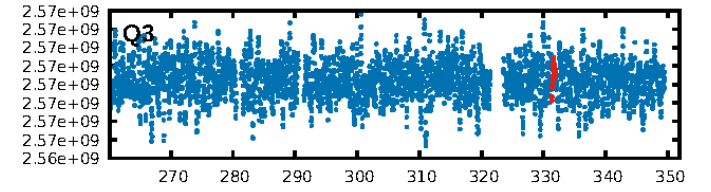
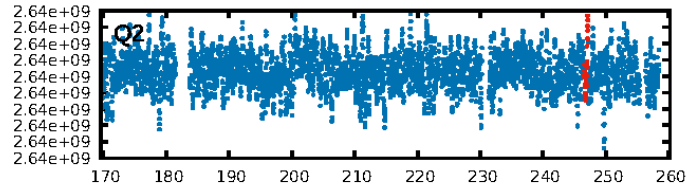
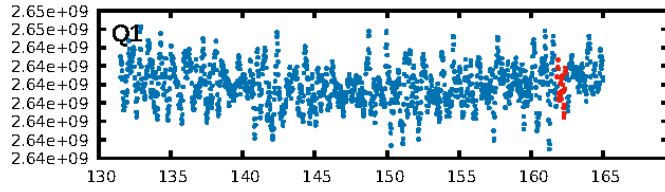
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [10.77σ]  
LongPeriod-sig: 100.0% [11.28σ]  
ModelChiSquare2-sig: 0.3%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [9/9]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 6.7%  
Centroid-so: 0.338 arcsec [1.57σ]  
OotOffset-rm: 1.038 arcsec [1.27σ]  
KicOffset-rm: 1.891 arcsec [1.96σ]  
OotOffset-st: 1/4/2/3 [10]  
KicOffset-st: 1/4/2/3 [10]  
DiffImageQuality-fgm: 0.00 [0/10]  
DiffImageOverlap-fno: 0.00 [0/12]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:10:39 Z

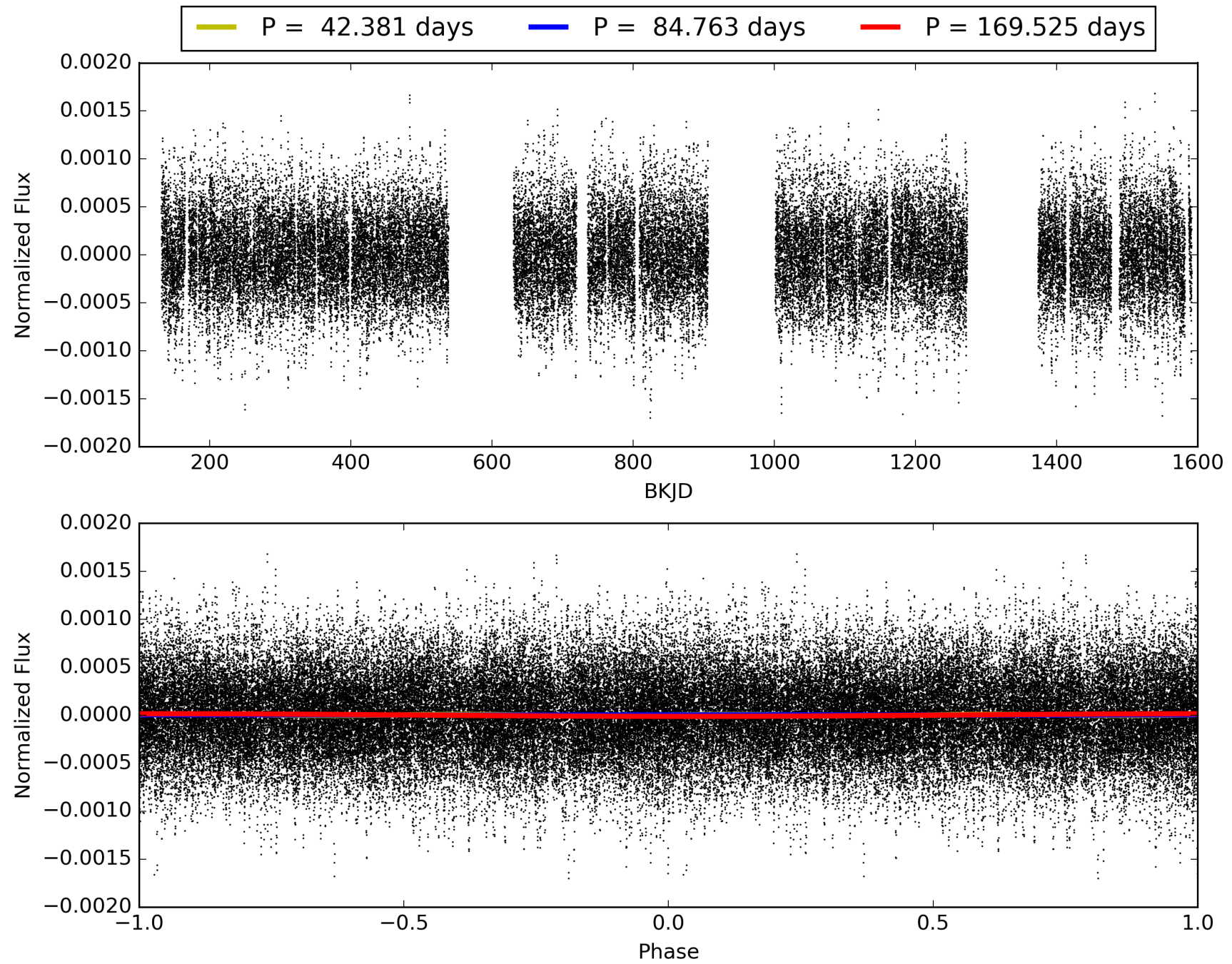
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005802479-05, PDC Light Curves





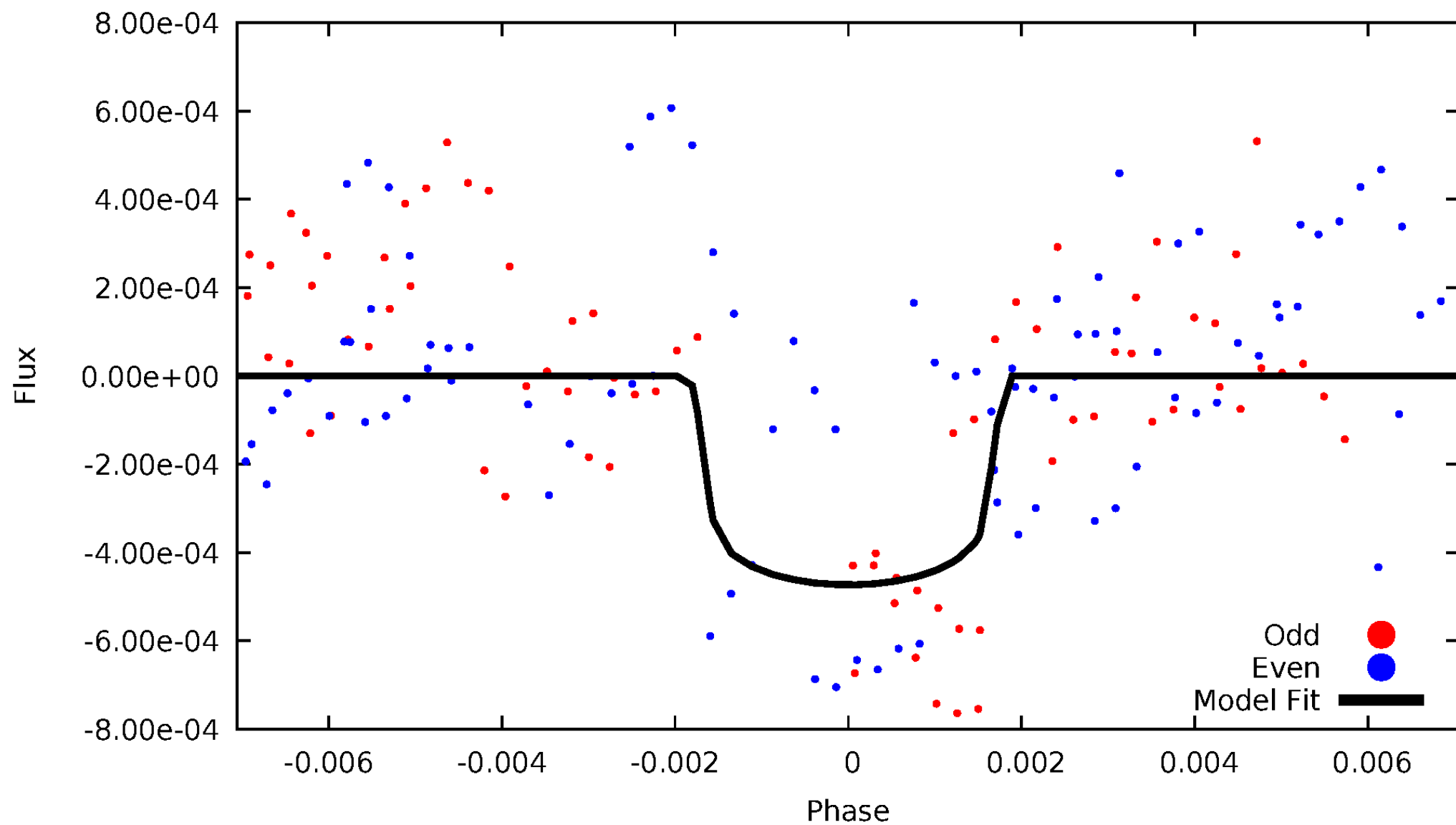
TCE 005802479-05





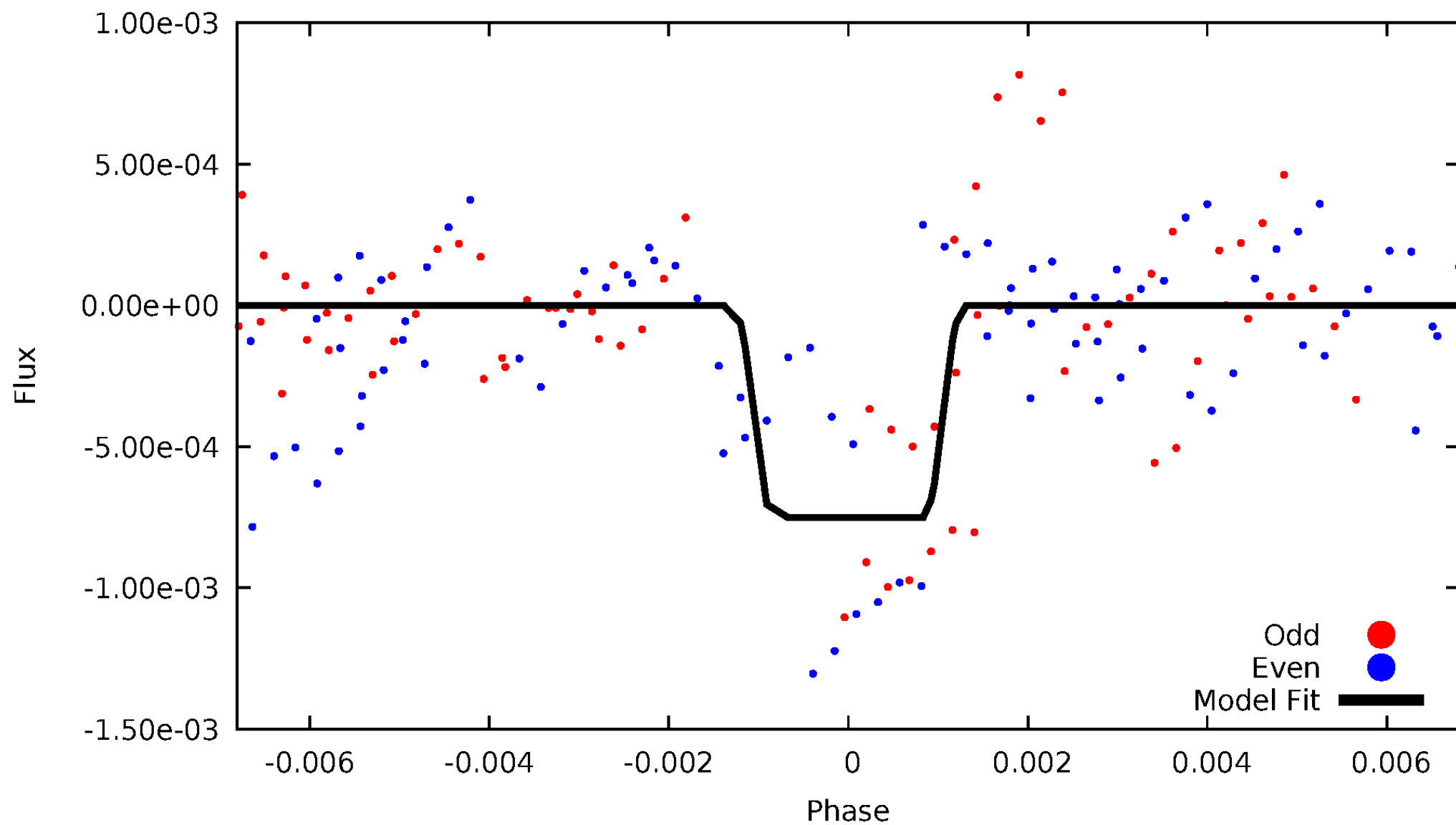
# DV Odd/Even

TCE 005802479-05



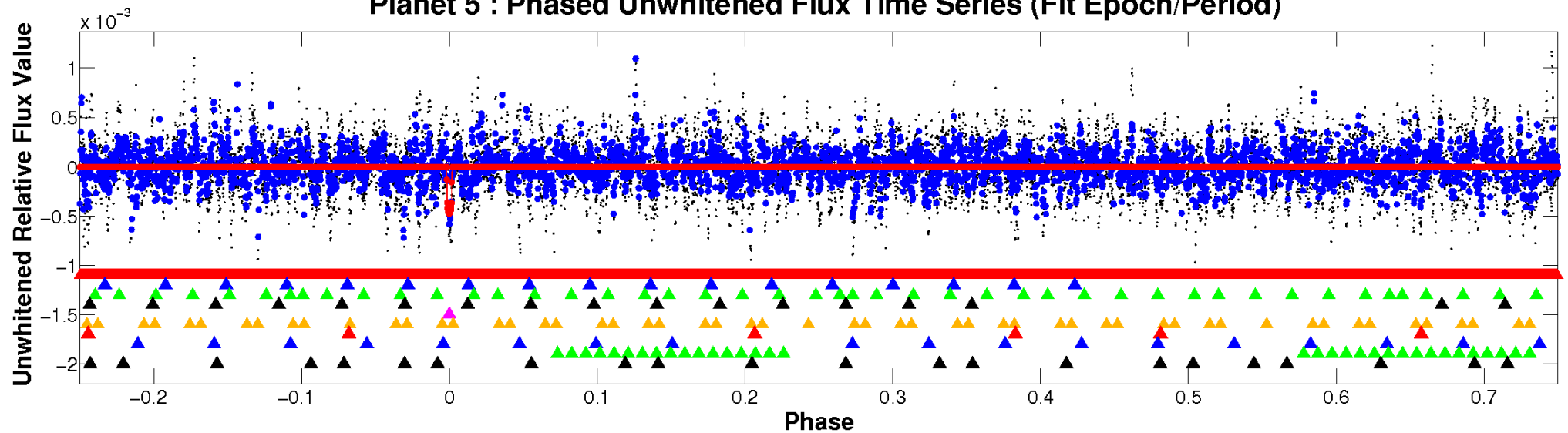
# ALT Odd/Even

TCE 005802479-05

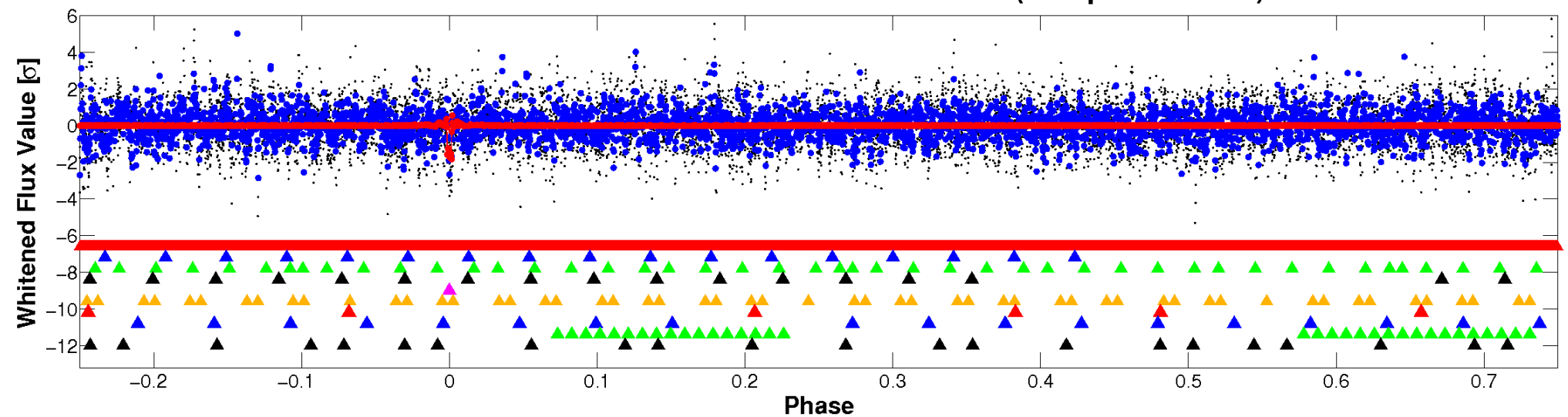


# Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

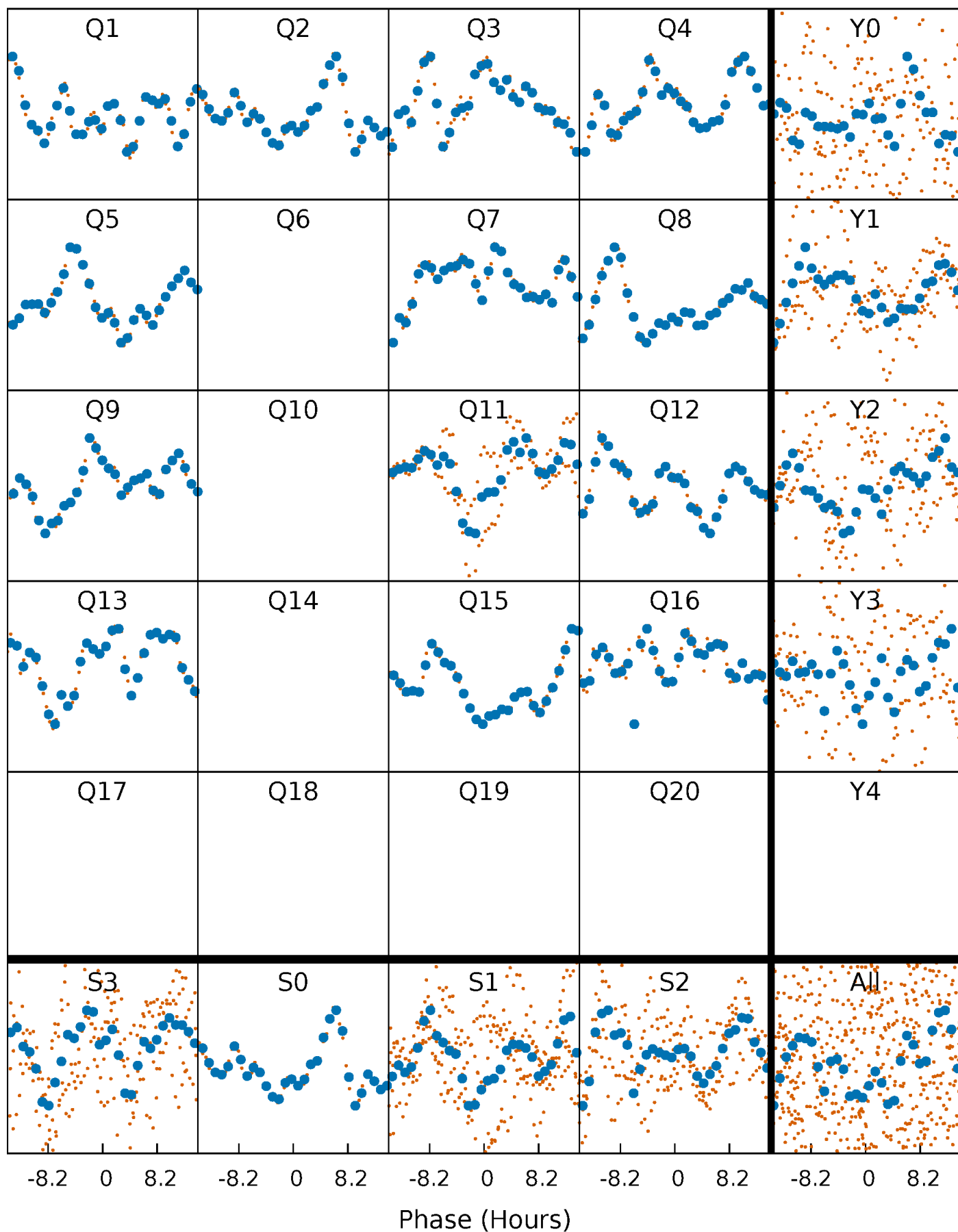


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



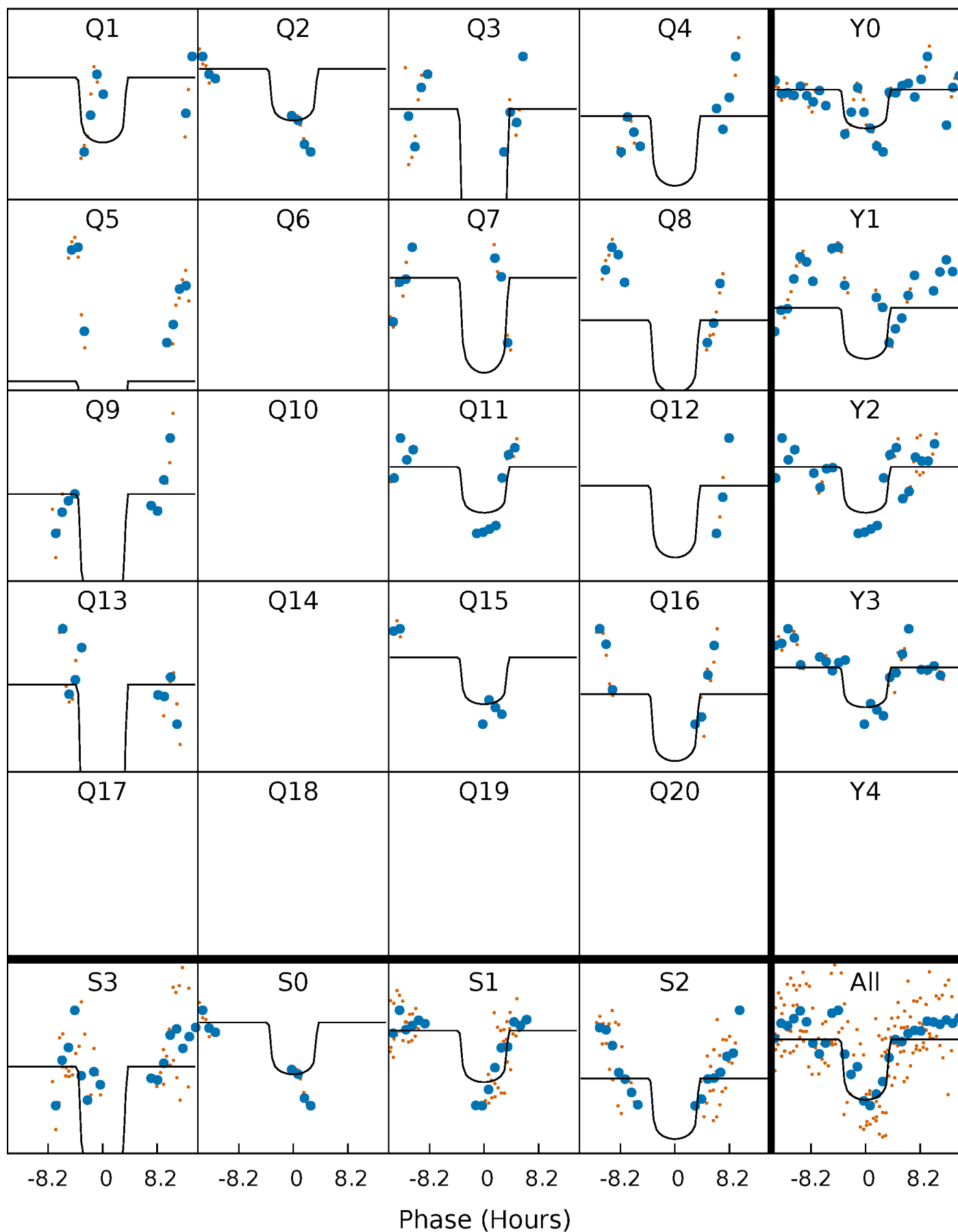
# PDC Quarter-Phased Transit Curves

TCE 005802479-05     $P = 84.762616$  Days     $T_0 = 162.094820$  (BKJD)



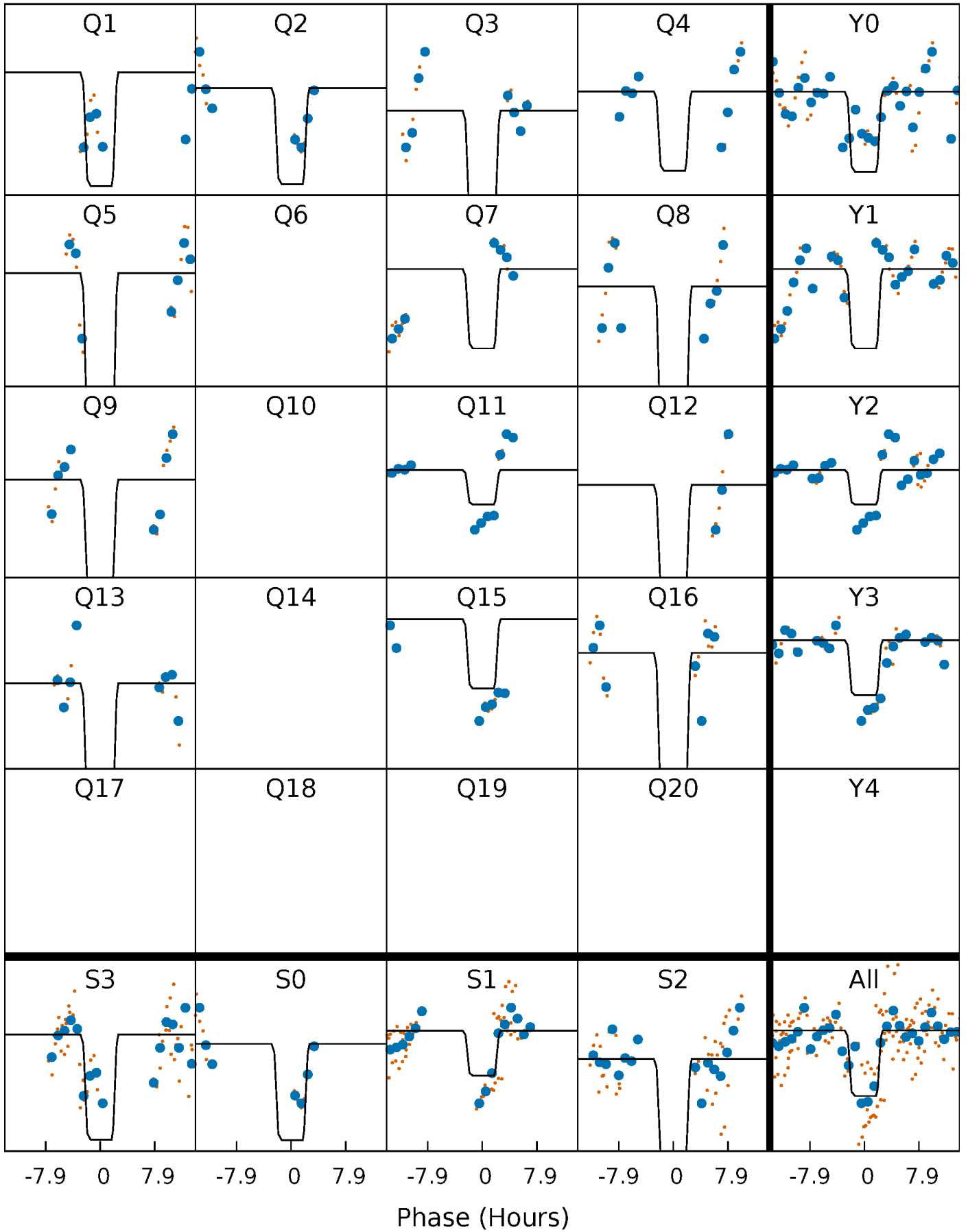
# DV Quarter-Phased Transit Curves

TCE 005802479-05   P= 84.762616 Days    $T_0=162.094820$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005802479-05   P= 84.764427 Days    $T_0=162.077535$  (BKJD)

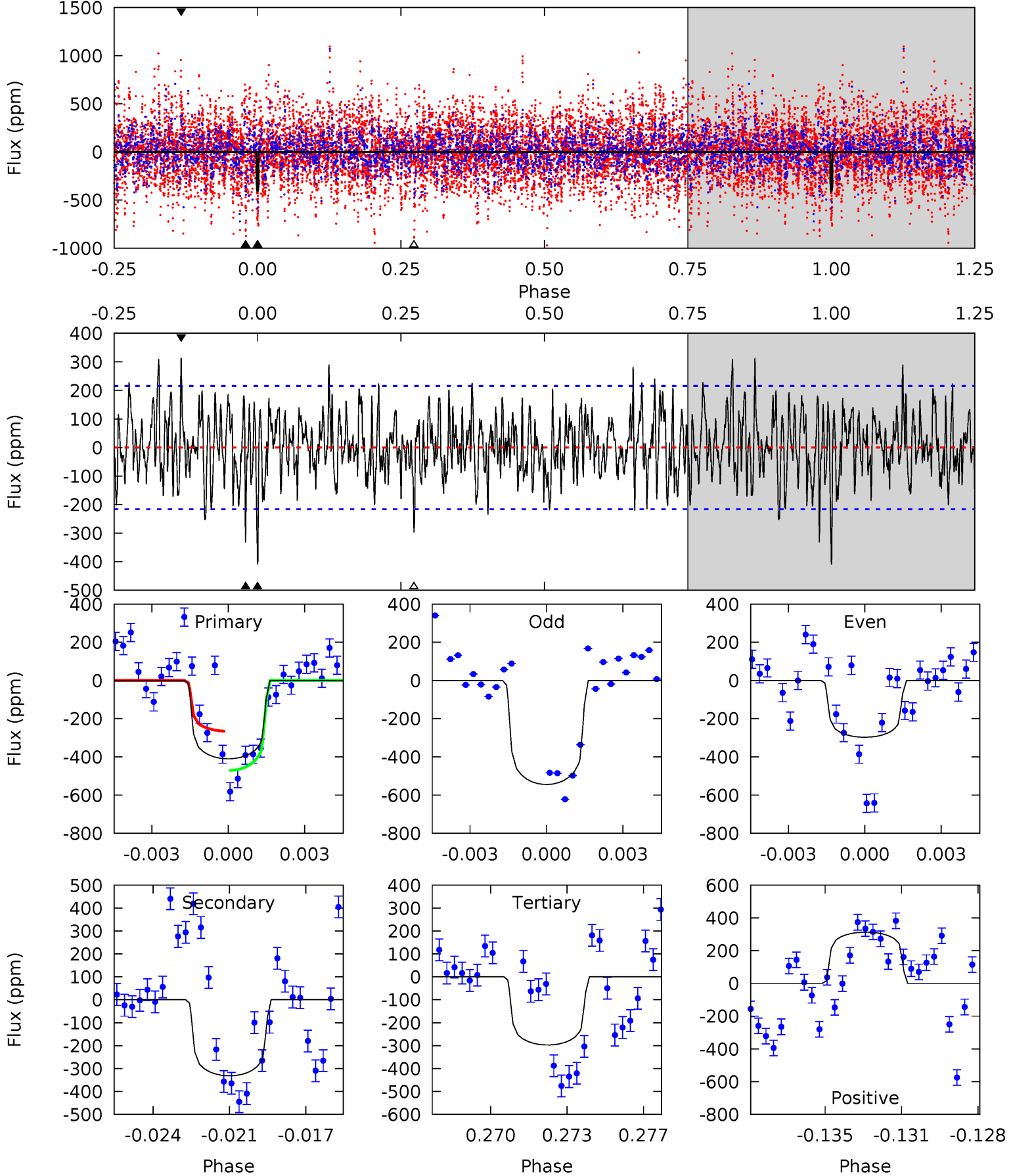




# DV Model-Shift Uniqueness Test

005802479-05, P = 84.762616 Days, E = 77.332204 Days

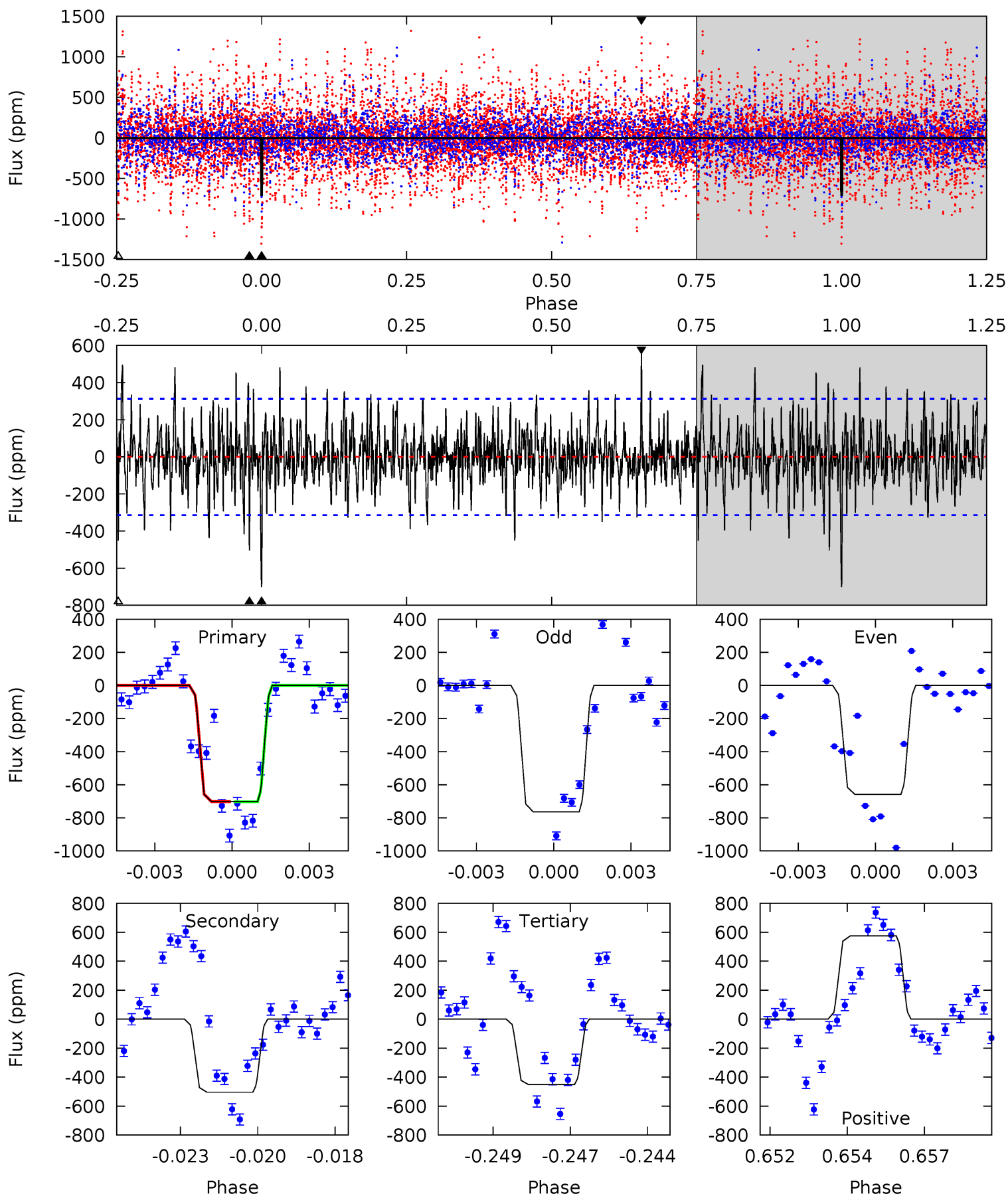
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.94	8.04	7.21	7.59	5.23	2.92	2.32	2.73	2.35	0.83	0.45	2.96	1.15	0.43	2.24



# Alt Model-Shift Uniqueness Test

005802479-05, P = 84.764427 Days, E = 77.313108 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	8.50	7.61	9.69	5.28	3.02	2.09	4.23	2.15	0.89	-1.20	0.89	1.14	0.45	0.00



### Stellar Parameters For KIC 005802479

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7196^{+172}_{-259}$	$4.064^{+0.158}_{-0.175}$	$-0.040^{+0.250}_{-0.350}$	$1.923^{+0.576}_{-0.471}$	$1.562^{+0.212}_{-0.236}$	$0.309^{+0.296}_{-0.153}$
	+2%/-4%	+4%/-4%	+625%/-875%	+30%/-24%	+14%/-15%	+96%/-50%
Source	PHO1	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 005802479-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-332 \pm 41$	$4.55^{+1.54}_{-1.35}$	$929^{+71}_{-59}$	$6538^{+1374}_{-834}$	$1661^{+1742}_{-713}$
Alt.	$-504 \pm 59$	$5.74^{+1.76}_{-1.39}$	$934^{+72}_{-66}$	$6444^{+892}_{-699}$	$1579^{+1260}_{-672}$

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

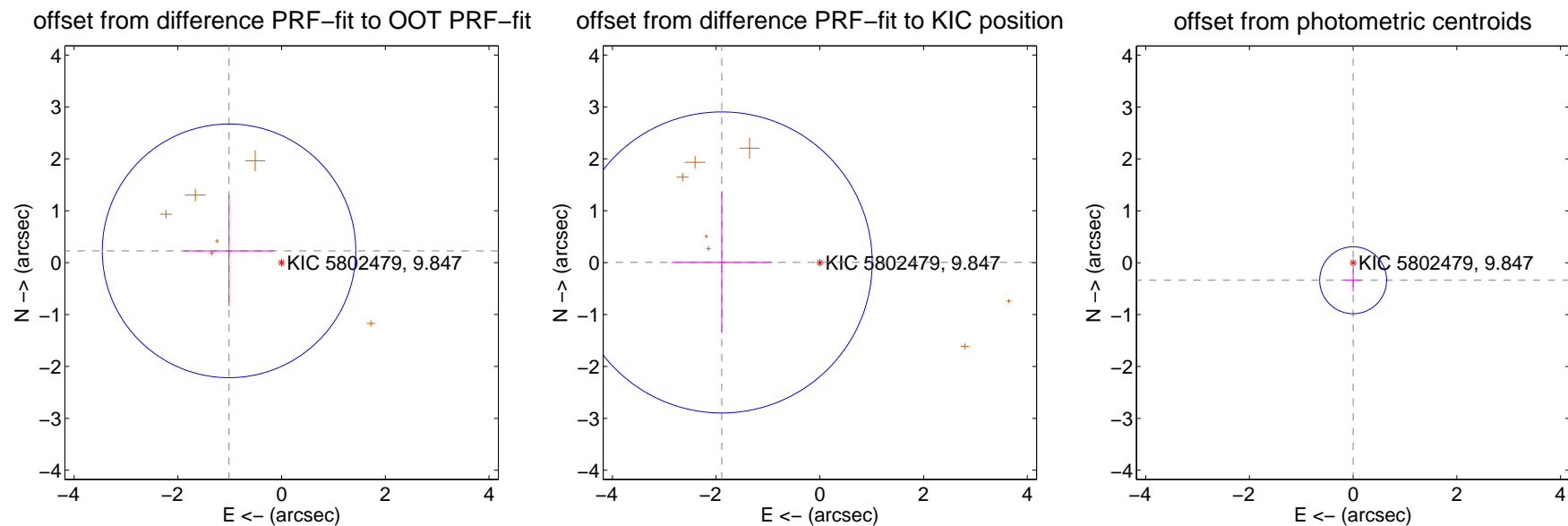
## DV Centroid Data

Supplemental centroid analysis for 005802479-05. **Kepler magnitude: 9.85.** Transit SNR 9.34

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

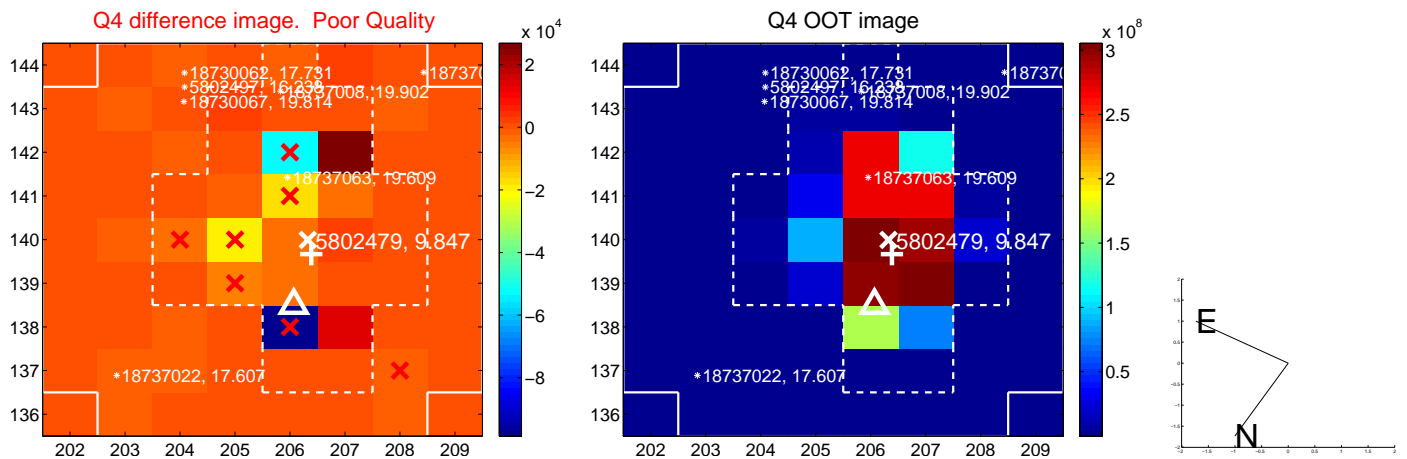
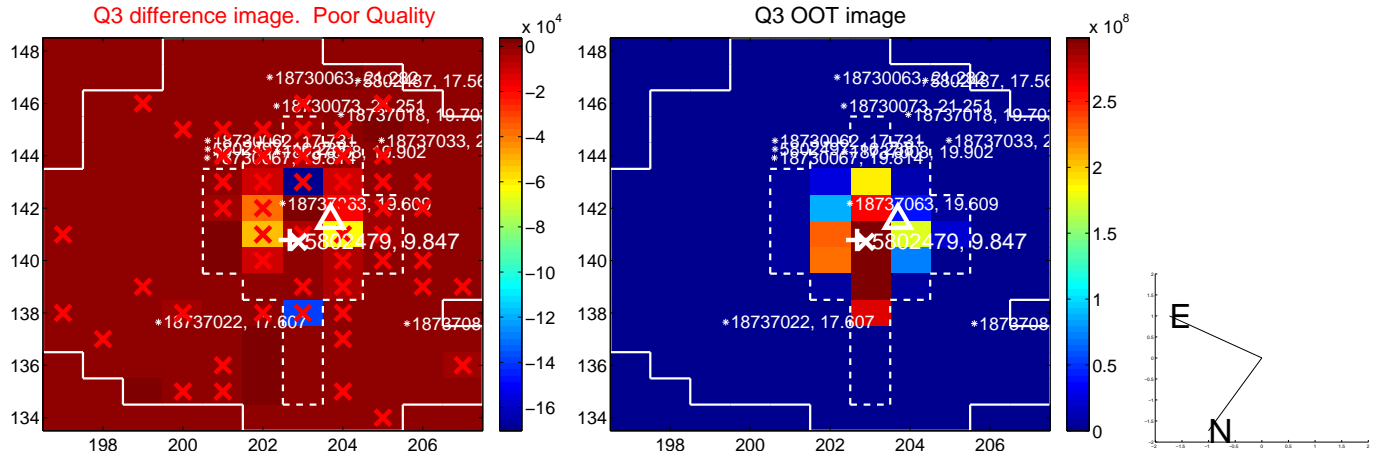
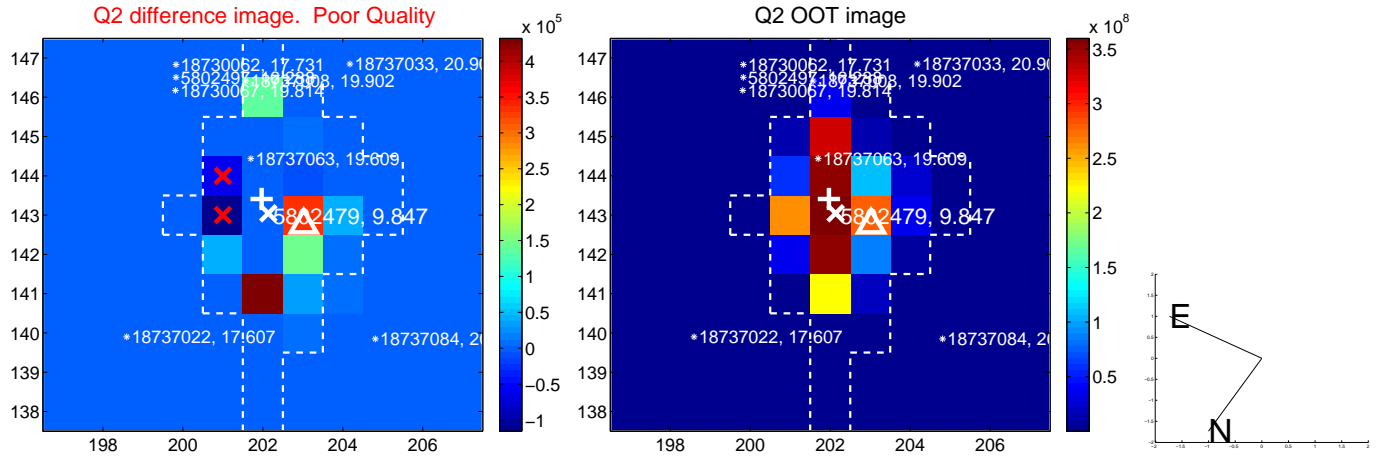
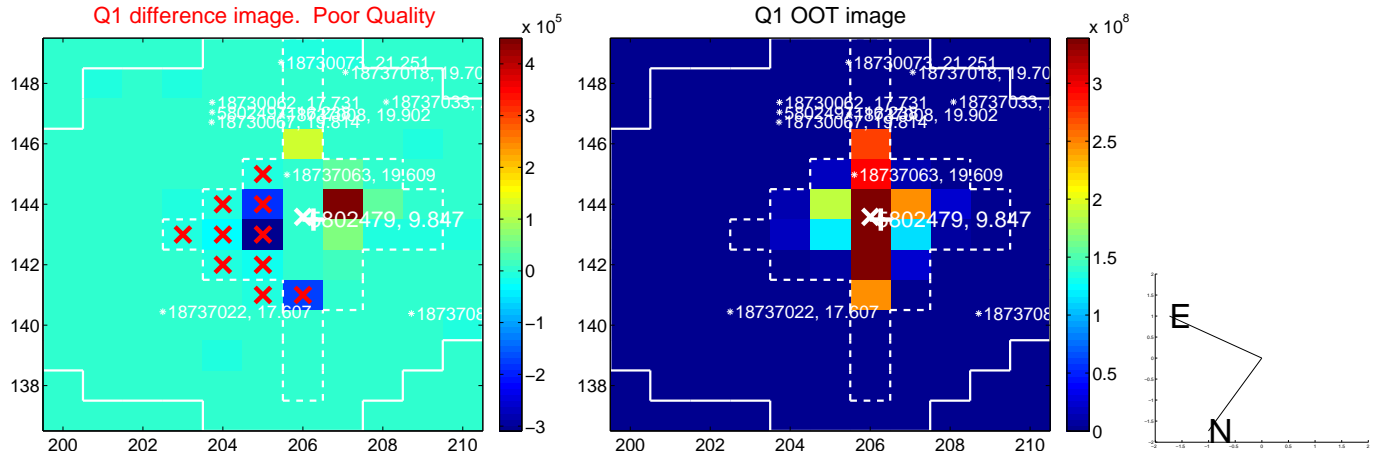
The direct PRF centroid is offset from the target star catalog position by about 0.81 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.038 \pm 0.815$	1.27	$1.013 \pm 0.866$	$0.227 \pm 1.067$
PRF-fit source offset from KIC position	$1.891 \pm 0.967$	1.96	$1.891 \pm 0.968$	$0.004 \pm 1.365$
photometric centroid source offset	$0.34 \pm 0.22$	1.57	$-0.00 \pm 0.16$	$-0.34 \pm 0.22$

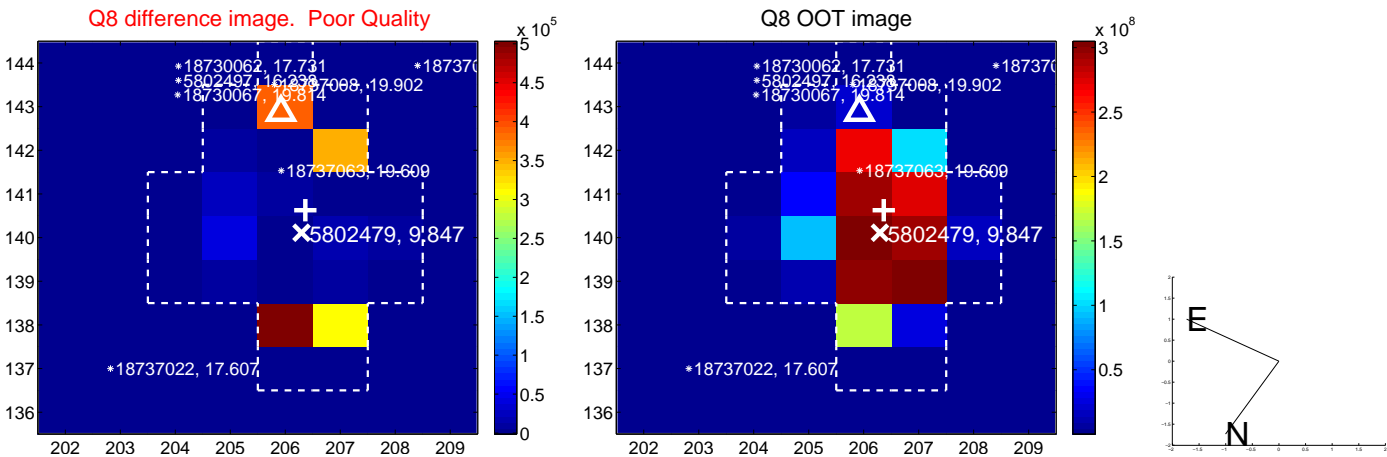
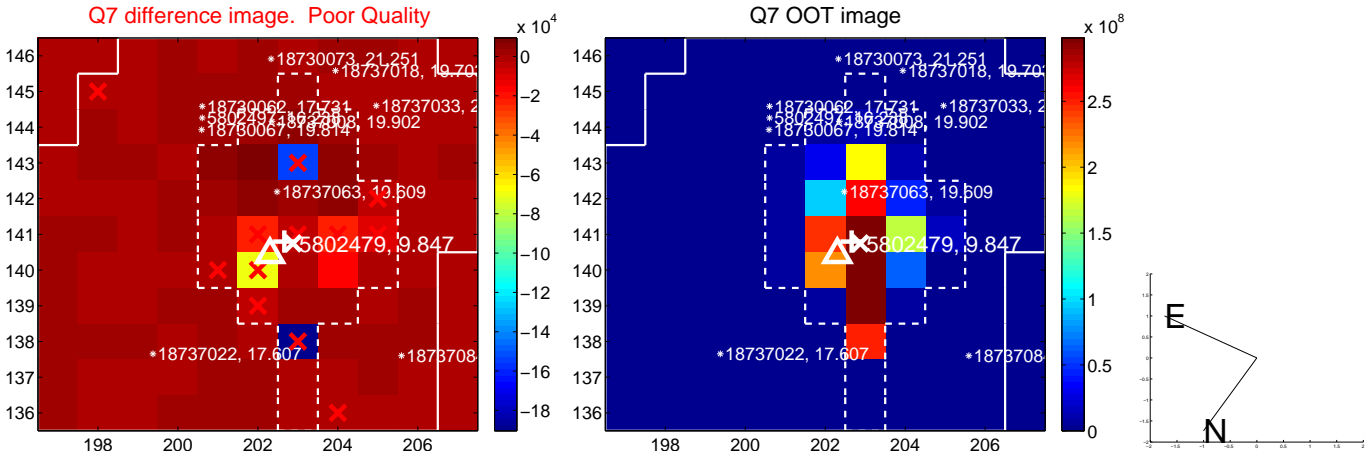
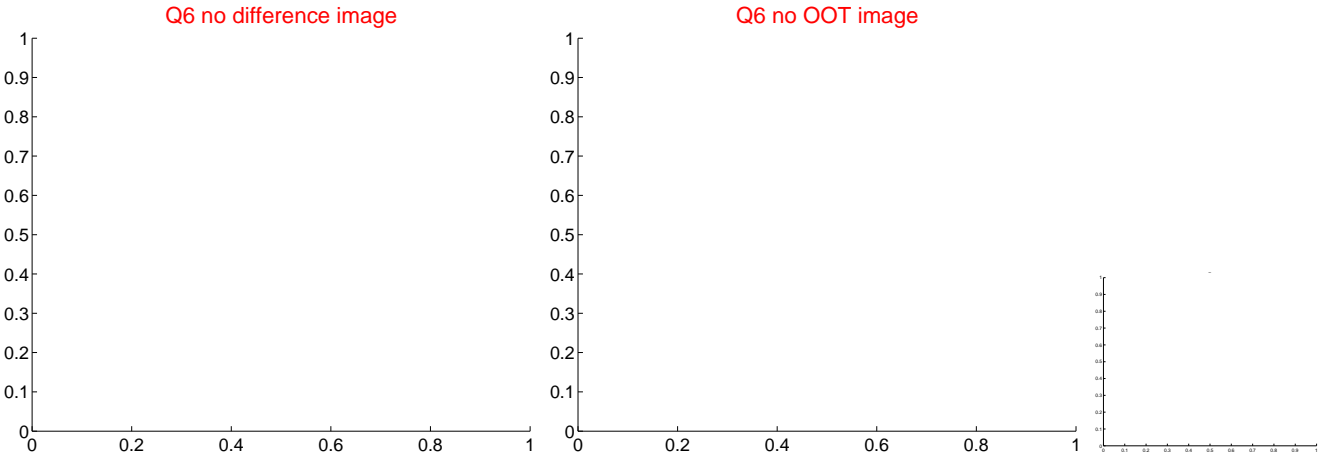
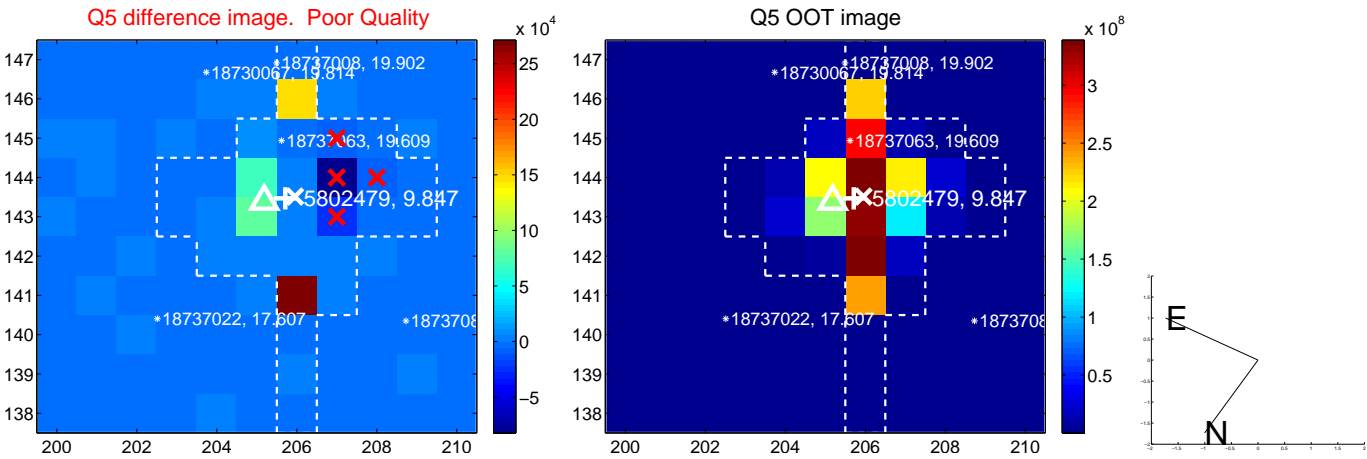


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

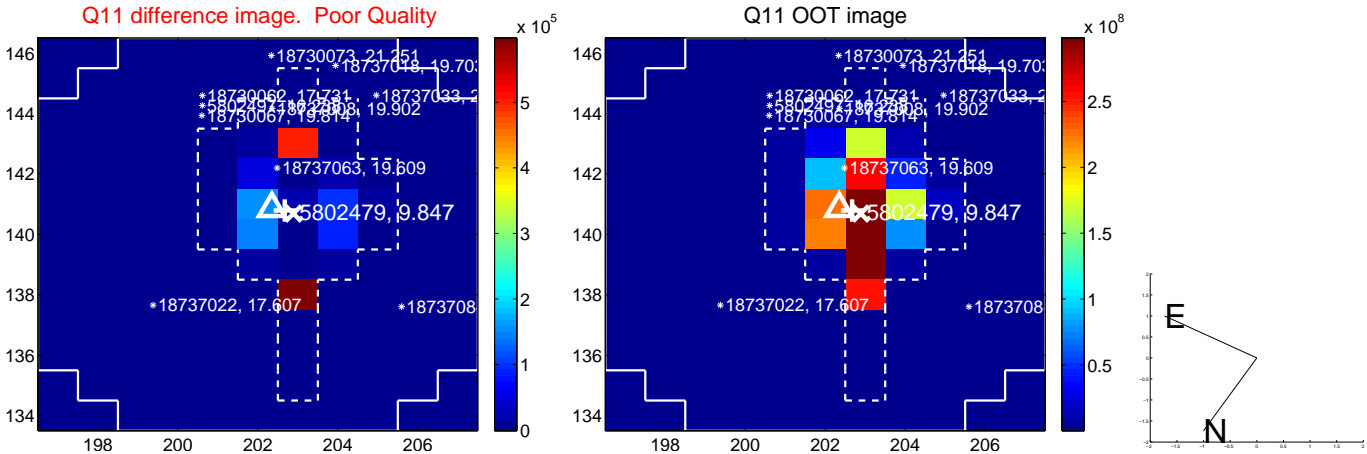
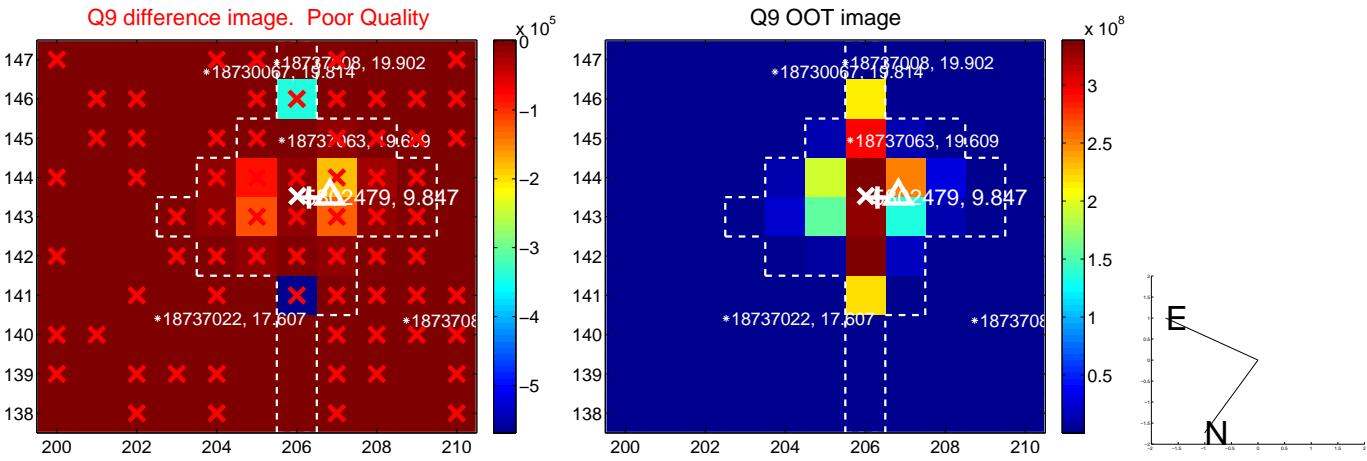


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

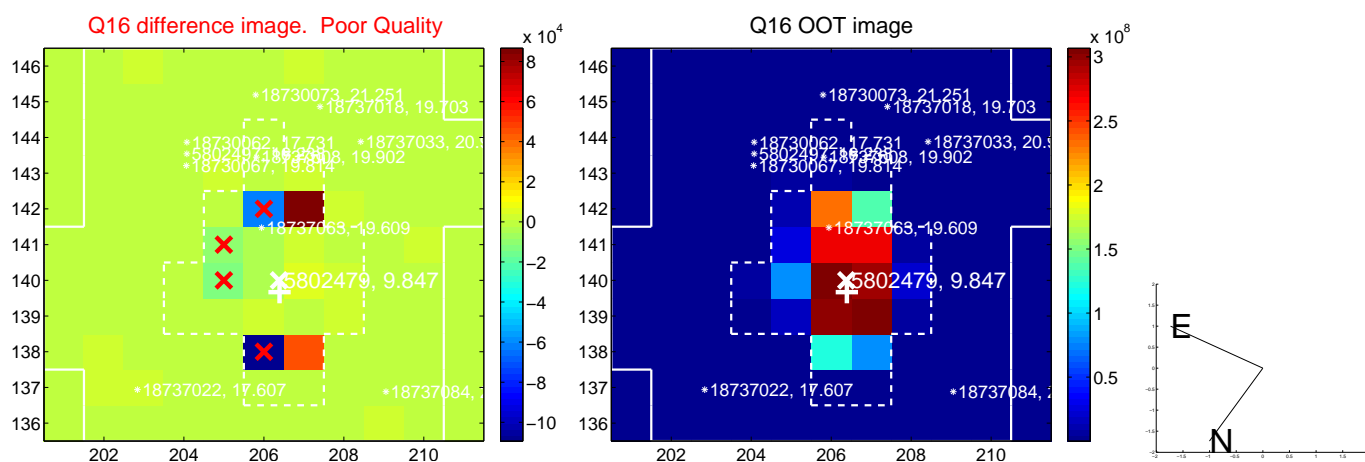
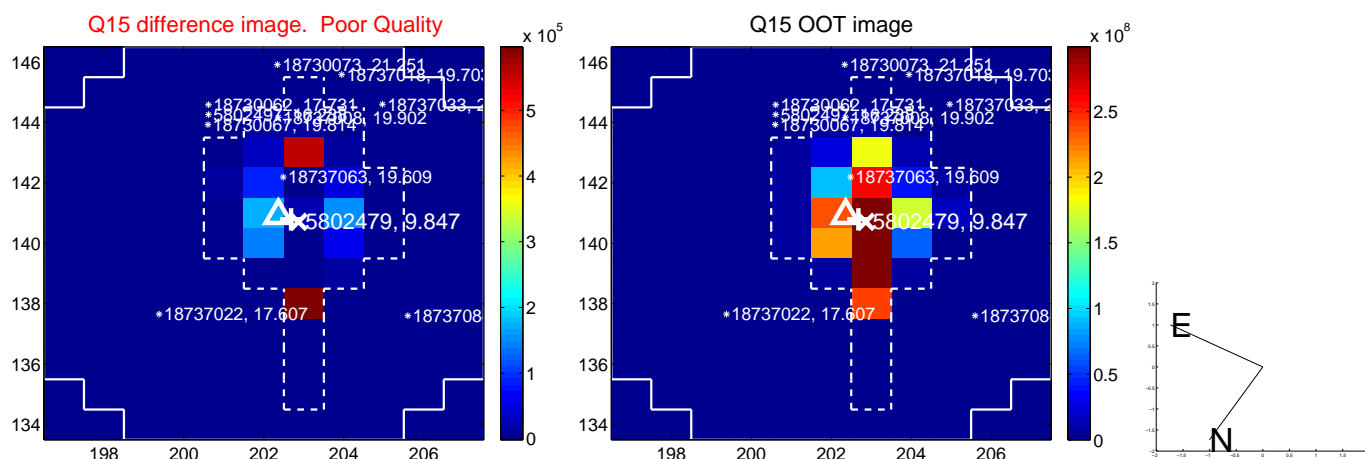
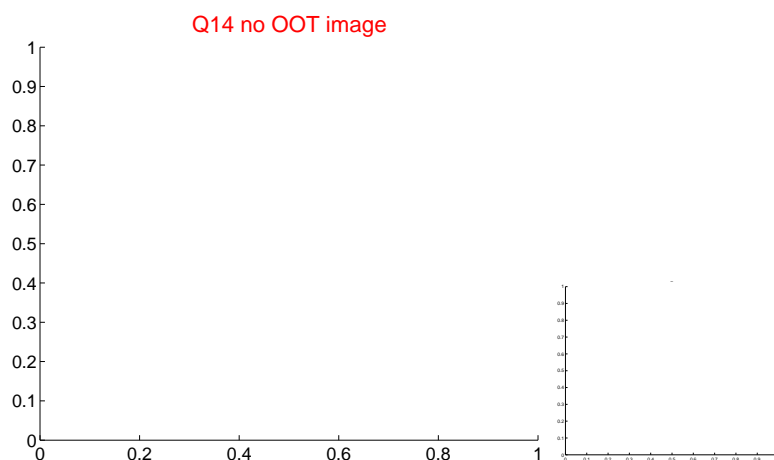
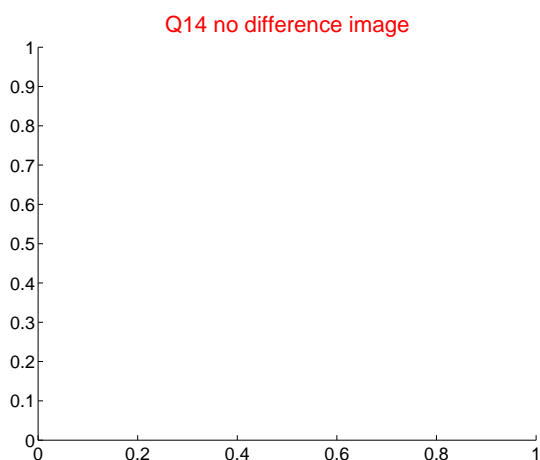
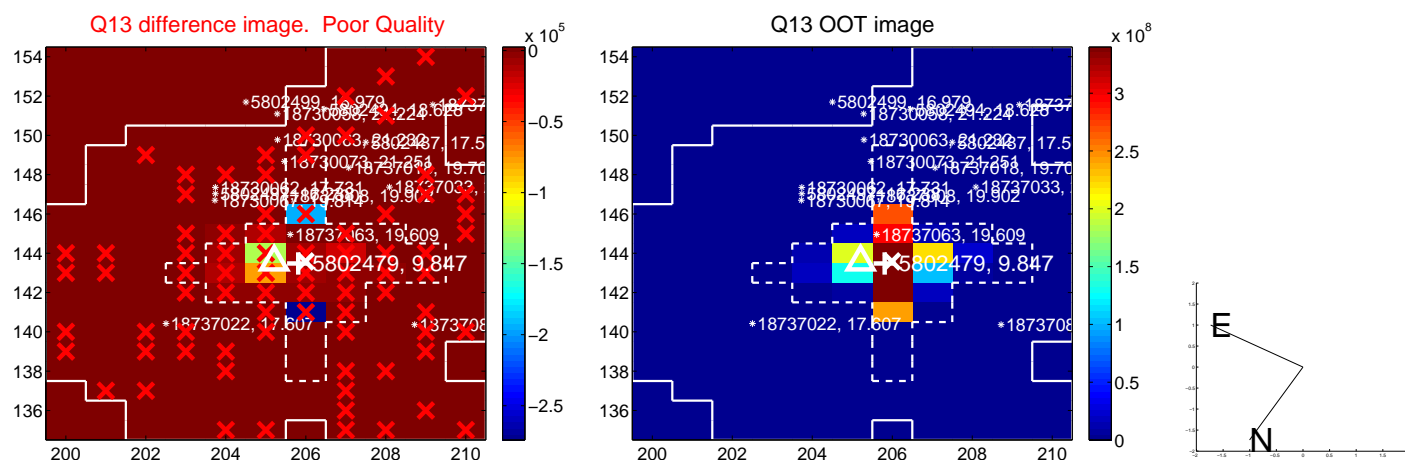




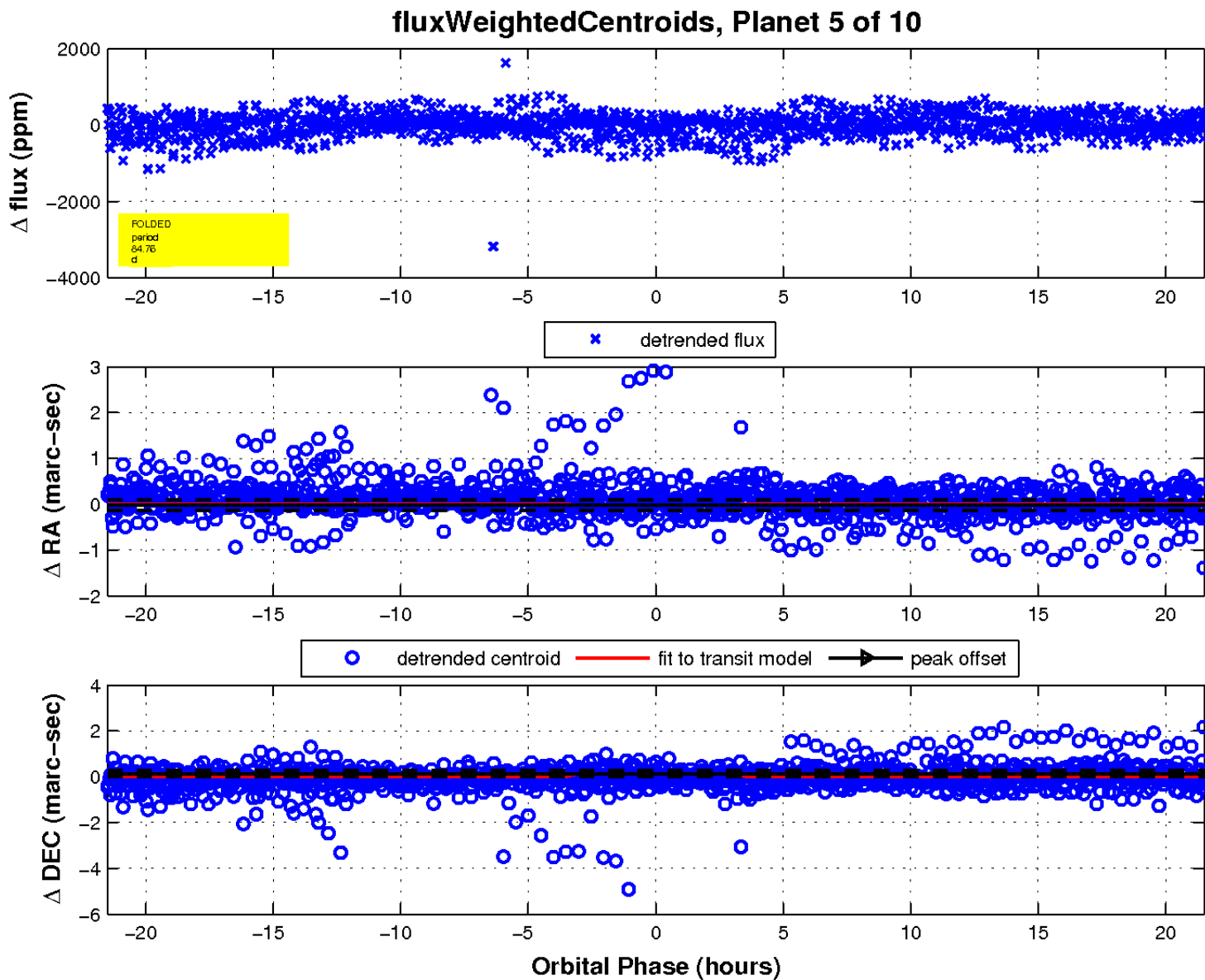
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

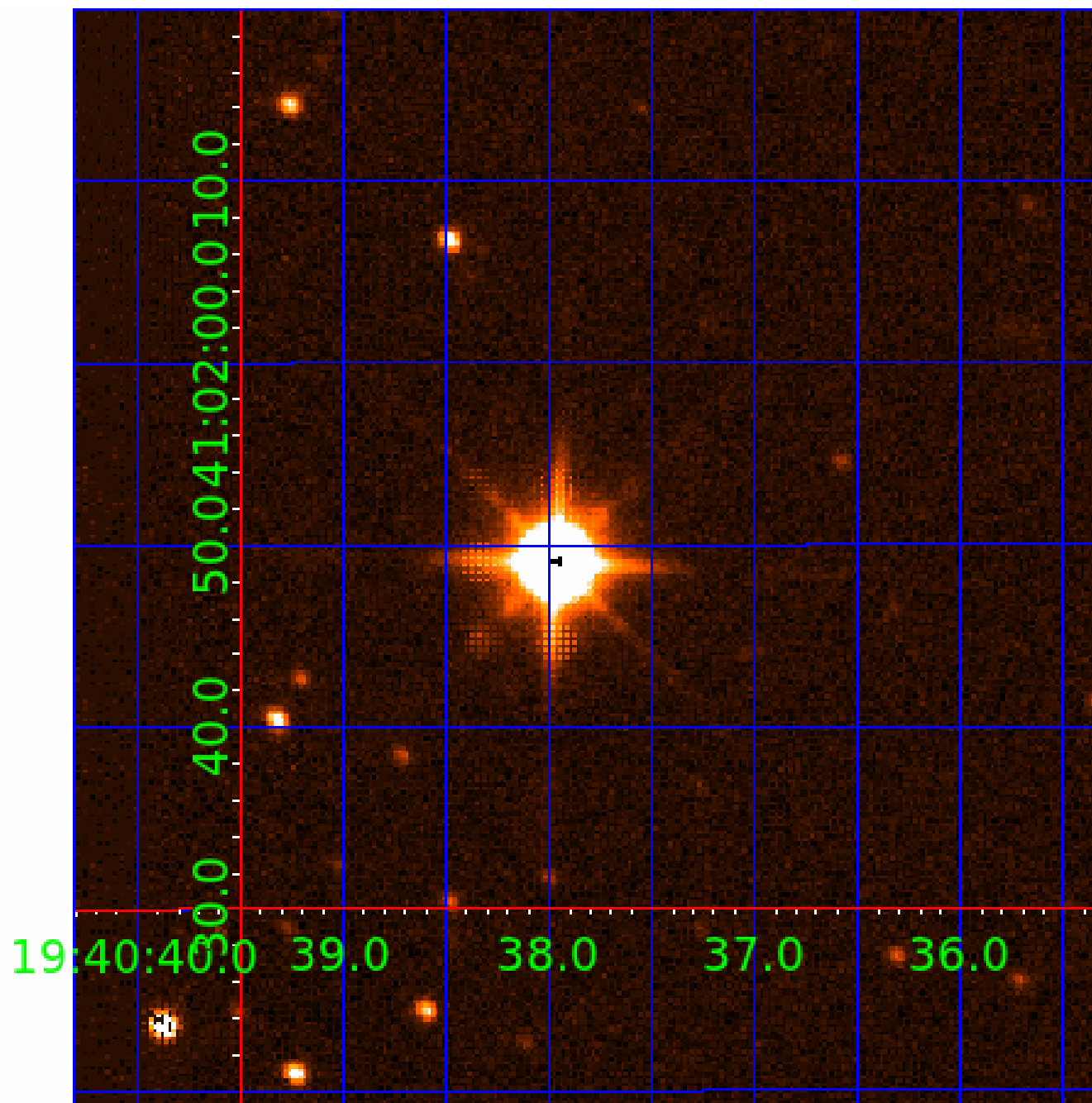


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 005802479

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005802479-01	OBS	No	0.638341	131.702634	15.9	3.873	10.4	5.9	1.92	7196	0.86	31321.42
005802479-03	OBS	No	31.522608	153.696891	526.6	5.214	10.0	10.5	1.92	7196	8.30	172.88
005802479-04	OBS	No	88.375917	134.248450	595.7	2.316	9.9	9.7	1.92	7196	5.30	43.73
005802479-05	OBS	No	84.762616	162.094820	472.9	7.177	10.1	9.3	1.92	7196	4.51	46.23
005802479-06	OBS	No	26.284161	151.113282	58.4	3.000	9.1	-1.0	1.92	7196	1.49	220.29
005802479-07	OBS	No	231.017269	226.147869	628.3	13.781	9.6	10.1	1.92	7196	5.19	12.14
005802479-08	OBS	No	80.384356	174.881064	530.4	6.609	9.4	9.0	1.92	7196	8.35	49.62
005802479-09	OBS	No	42.786339	168.305531	242.5	3.706	8.0	5.8	1.92	7196	3.37	115.04
005802479-10	OBS	No	66.734307	159.531369	549.5	5.185	8.3	8.9	1.92	7196	5.51	63.60

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005802479-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—CENT_SATURATED
005802479-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005802479-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005802479-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
005802479-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

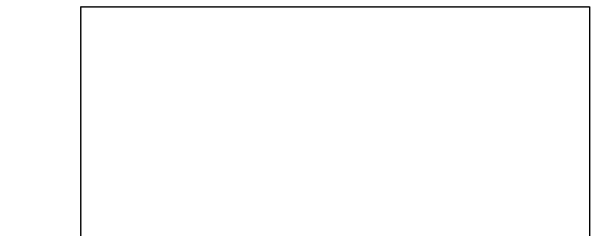
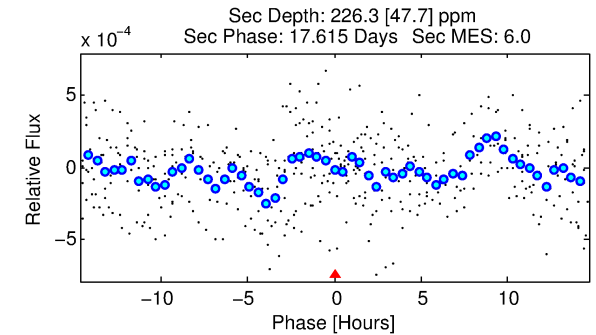
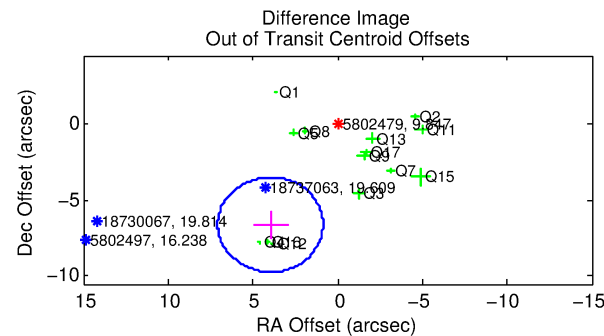
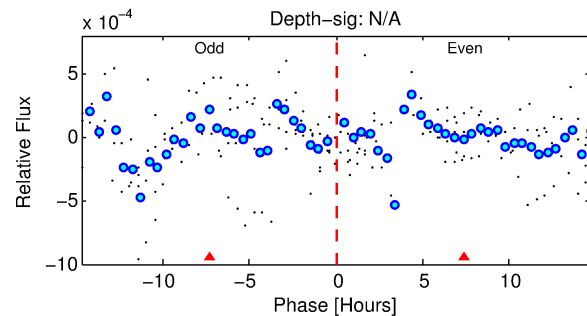
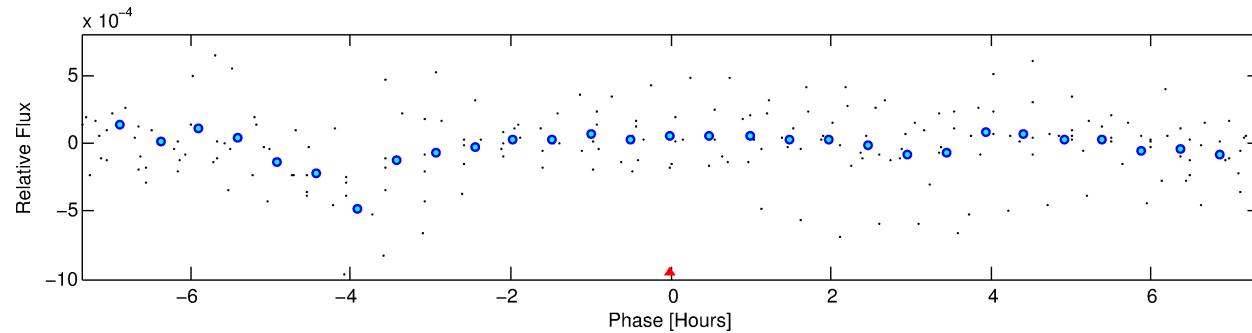
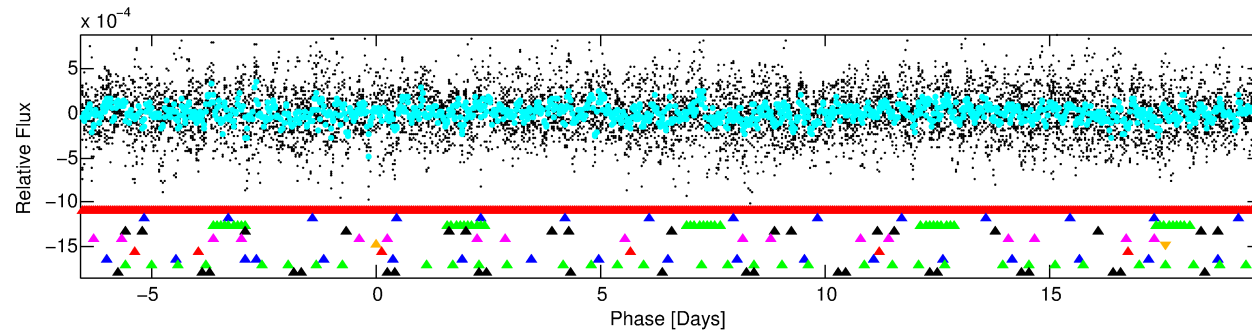
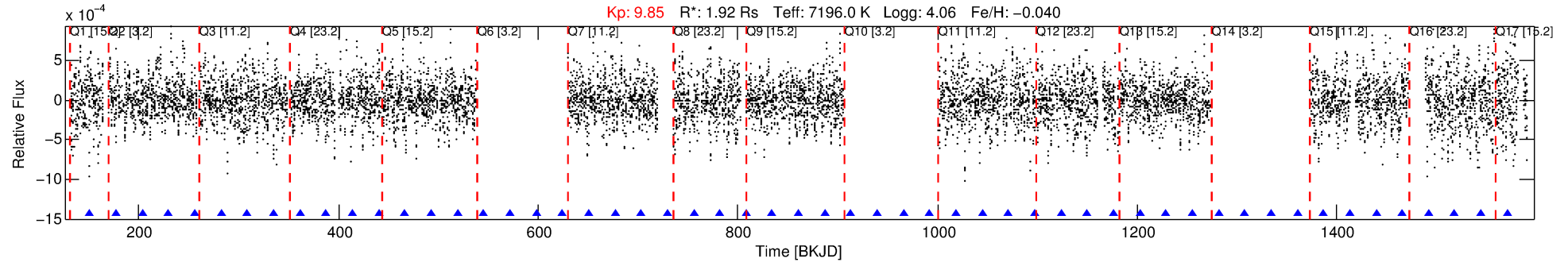
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005802479-06

No Significant Match Found

# DV One-Page Summary

KIC: 5802479 Candidate: 6 of 10 Period: 26.284 d



## TPS TCE Results:

Period = 26.28416 d  
Epoch = 151.1133 BKJD

DV fit results are unavailable

## DV Diagnostic Results:

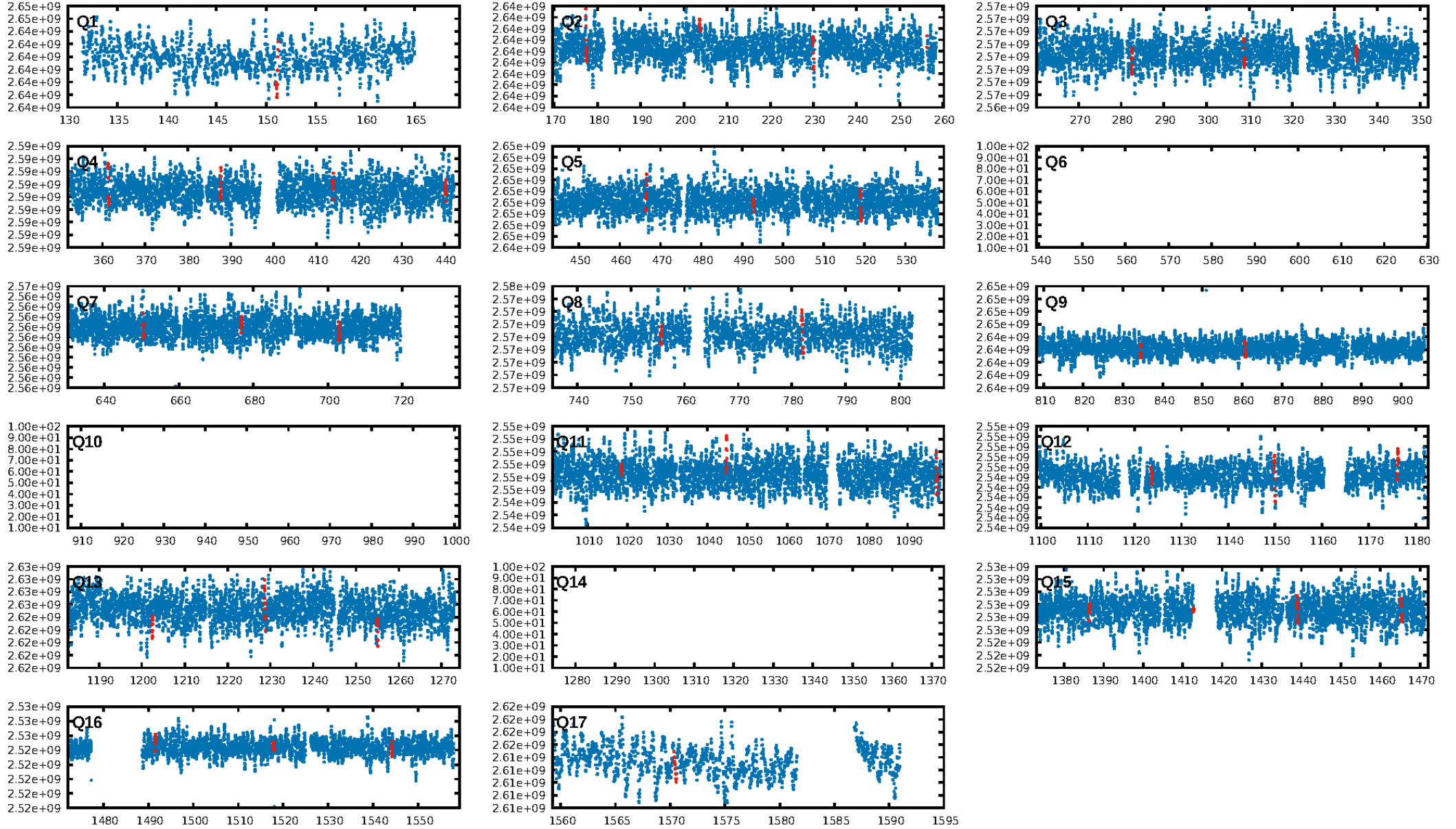
ShortPeriod-sig: 100.0% [125.64 $\sigma$ ]  
LongPeriod-sig: 100.0% [20.90 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [12/12]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 22.2%  
Centroid-so: 0.311 arcsec [1.06 $\sigma$ ]  
OotOffset-rm: 7.708 arcsec [7.45 $\sigma$ ]  
KicOffset-rm: 6.621 arcsec [8.42 $\sigma$ ]  
OotOffset-st: 1/4/4/5 [14]  
KicOffset-st: 1/4/4/5 [14]  
DiffImageQuality-fgm: 0.07 [1/14]  
DiffImageOverlap-fno: 0.00 [0/14]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:10:42 Z

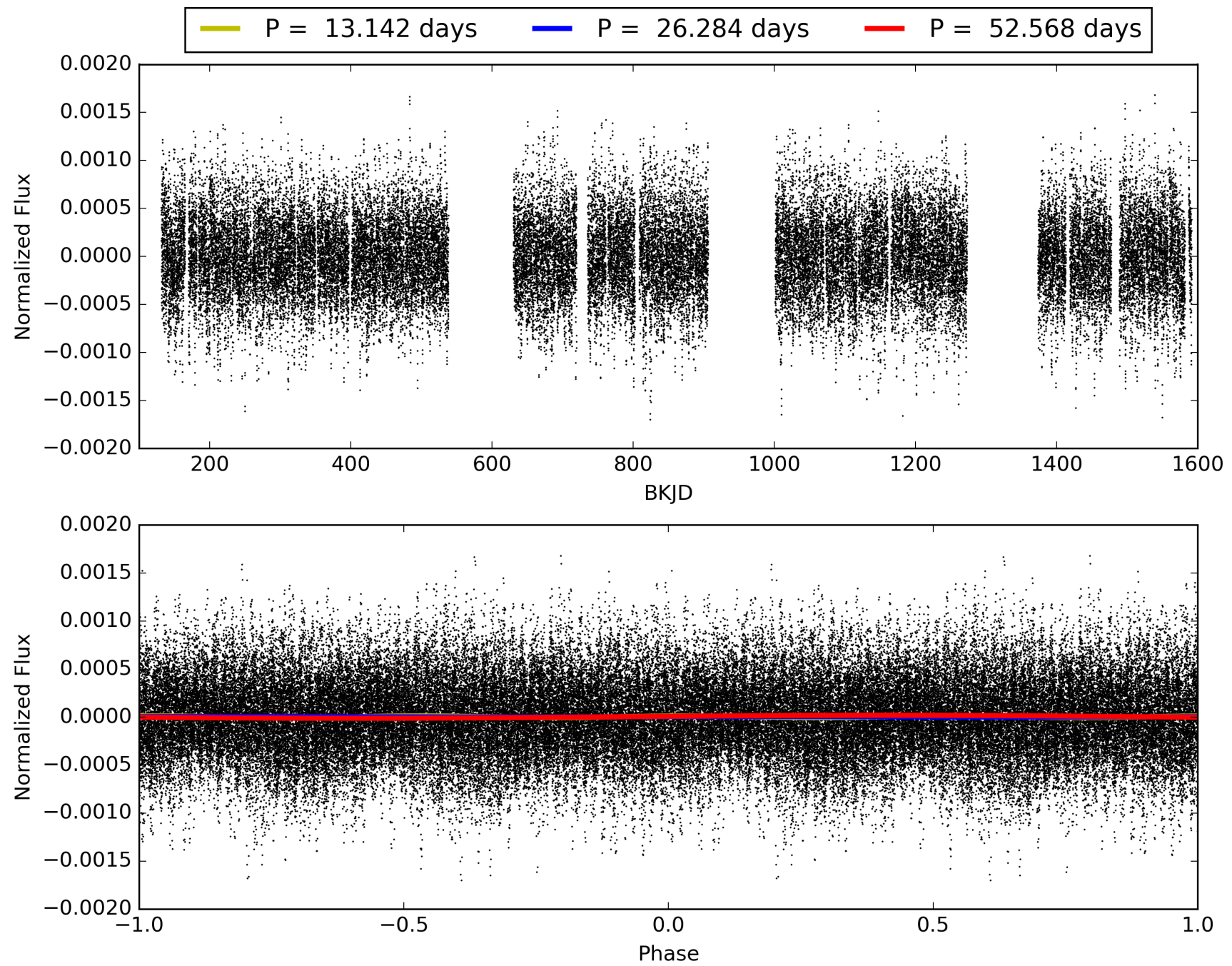
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 005802479-06, PDC Light Curves

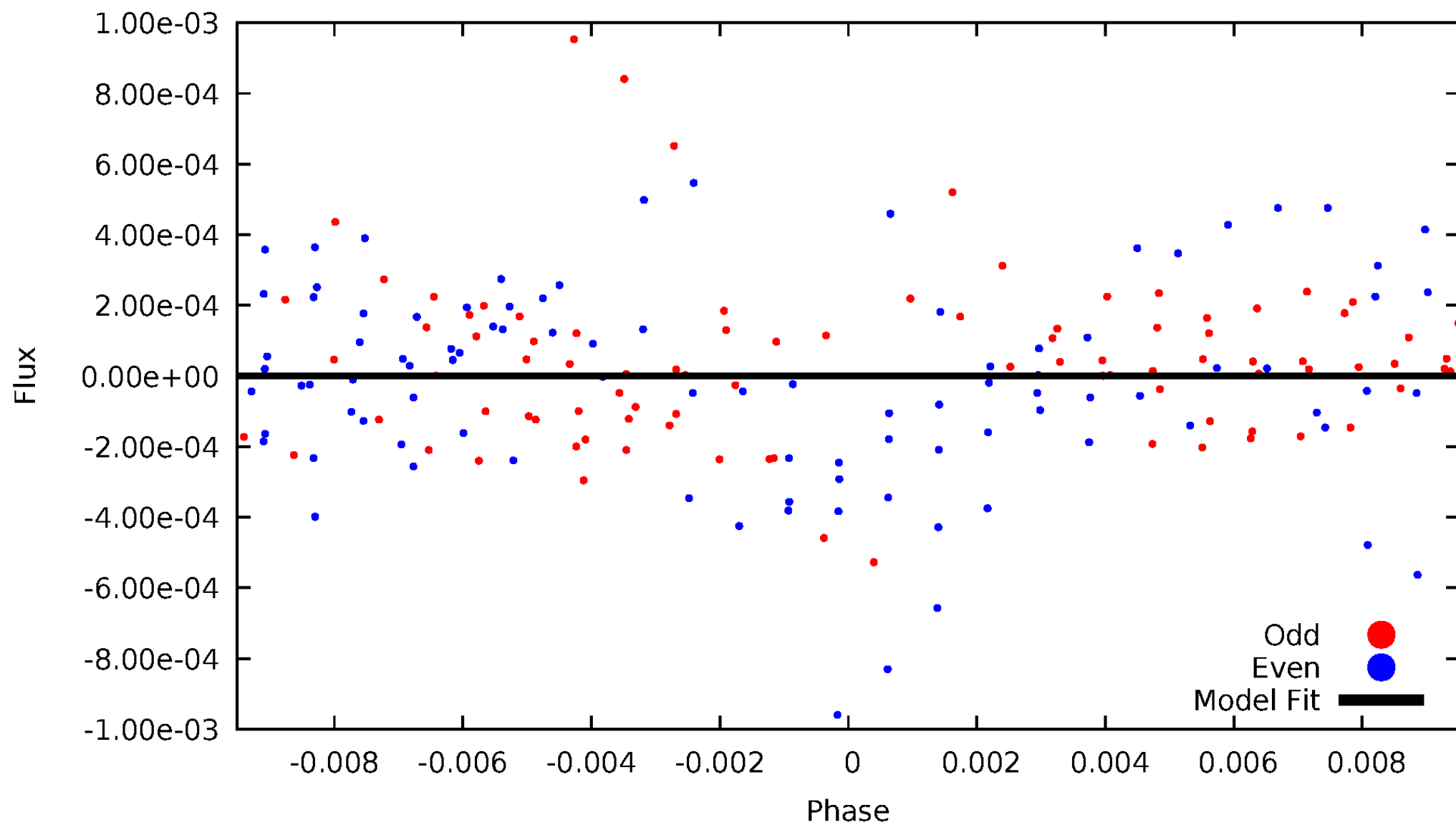


TCE 005802479-06



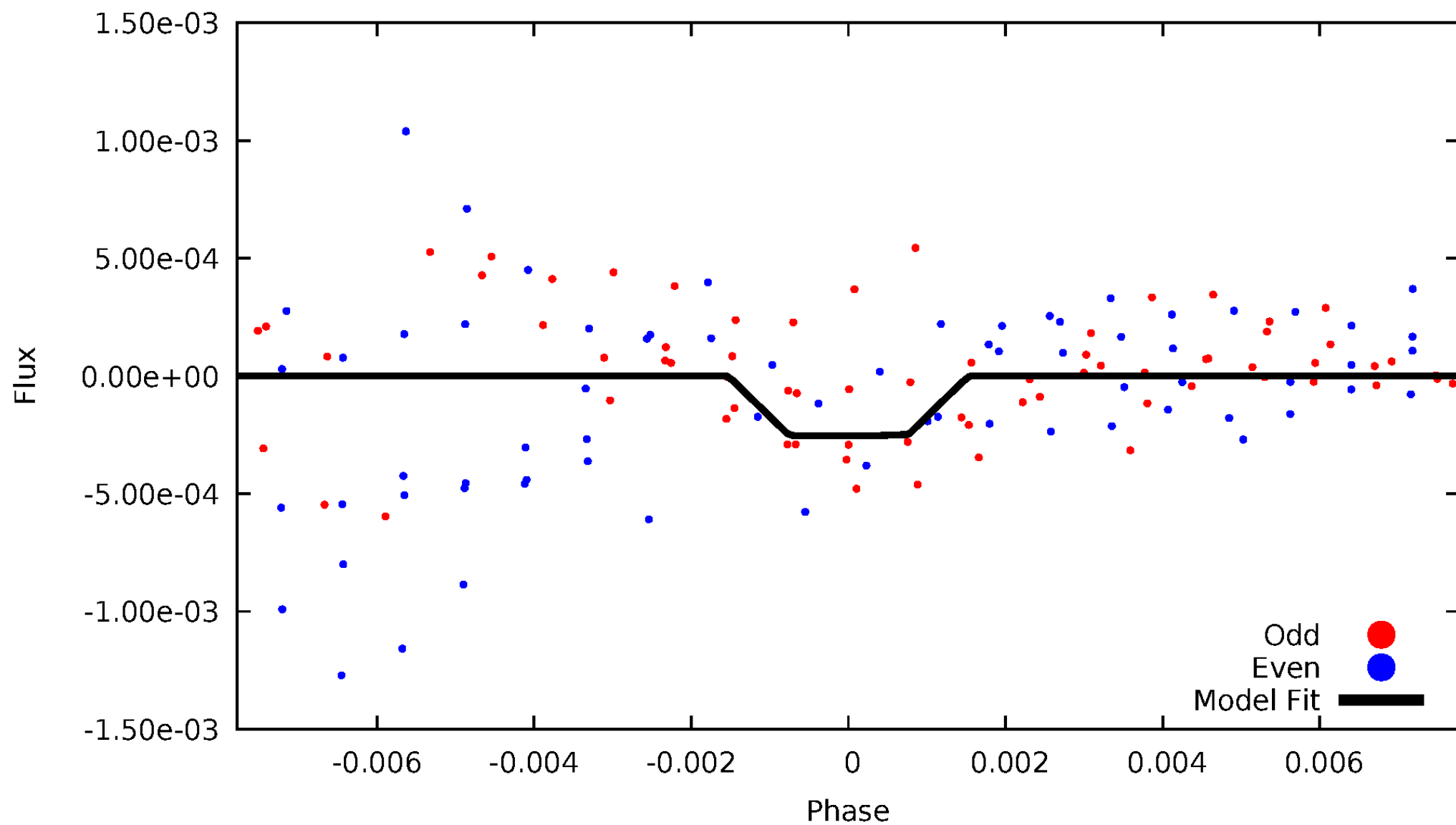
# DV Odd/Even

TCE 005802479-06



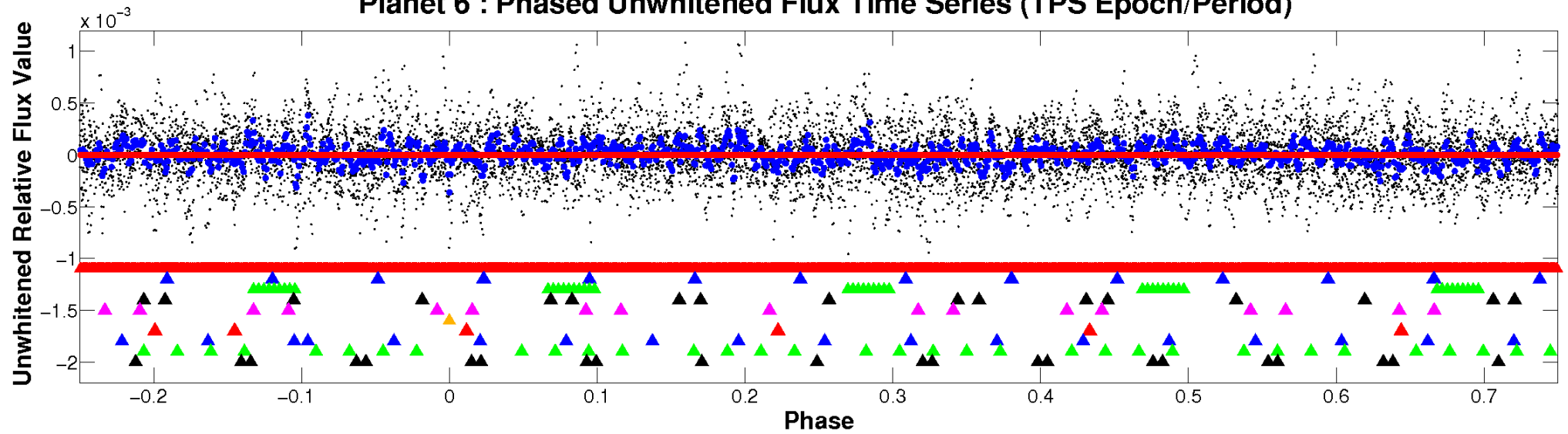
# ALT Odd/Even

TCE 005802479-06

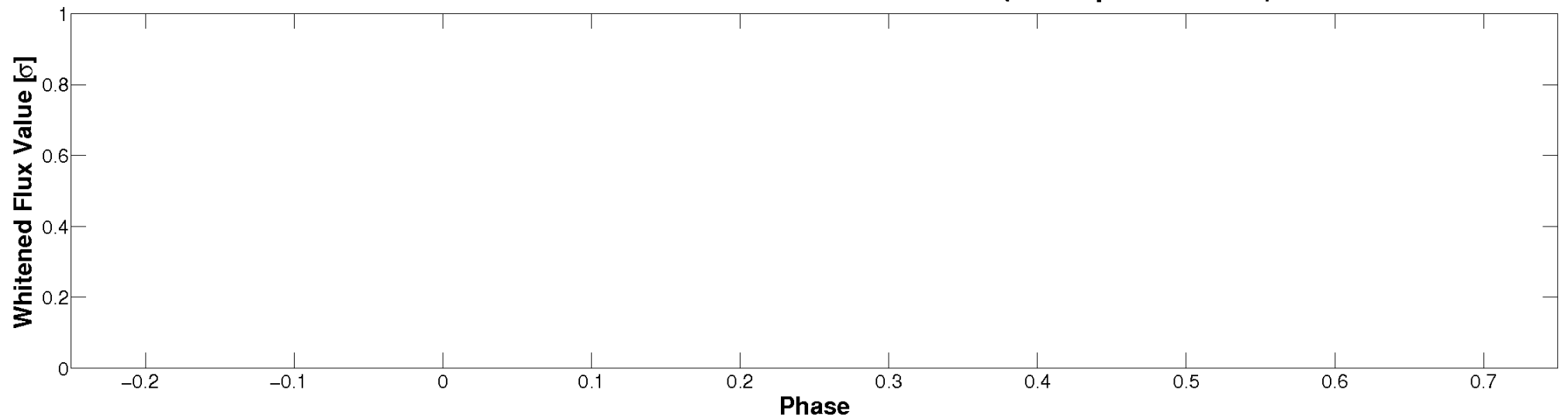


# Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

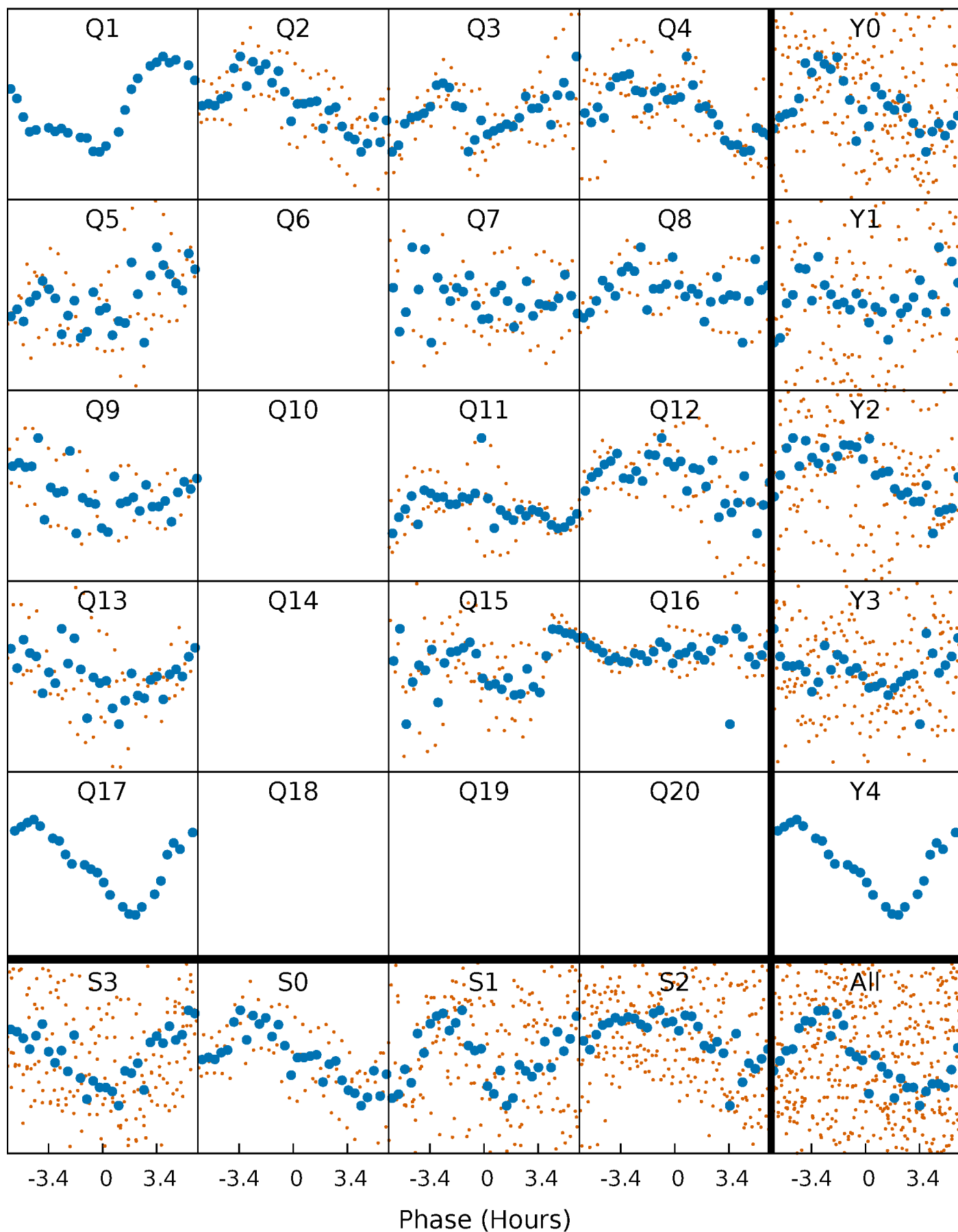


Planet 6 : Phased Whitened Flux Time Series (TPS Epoch/Period)



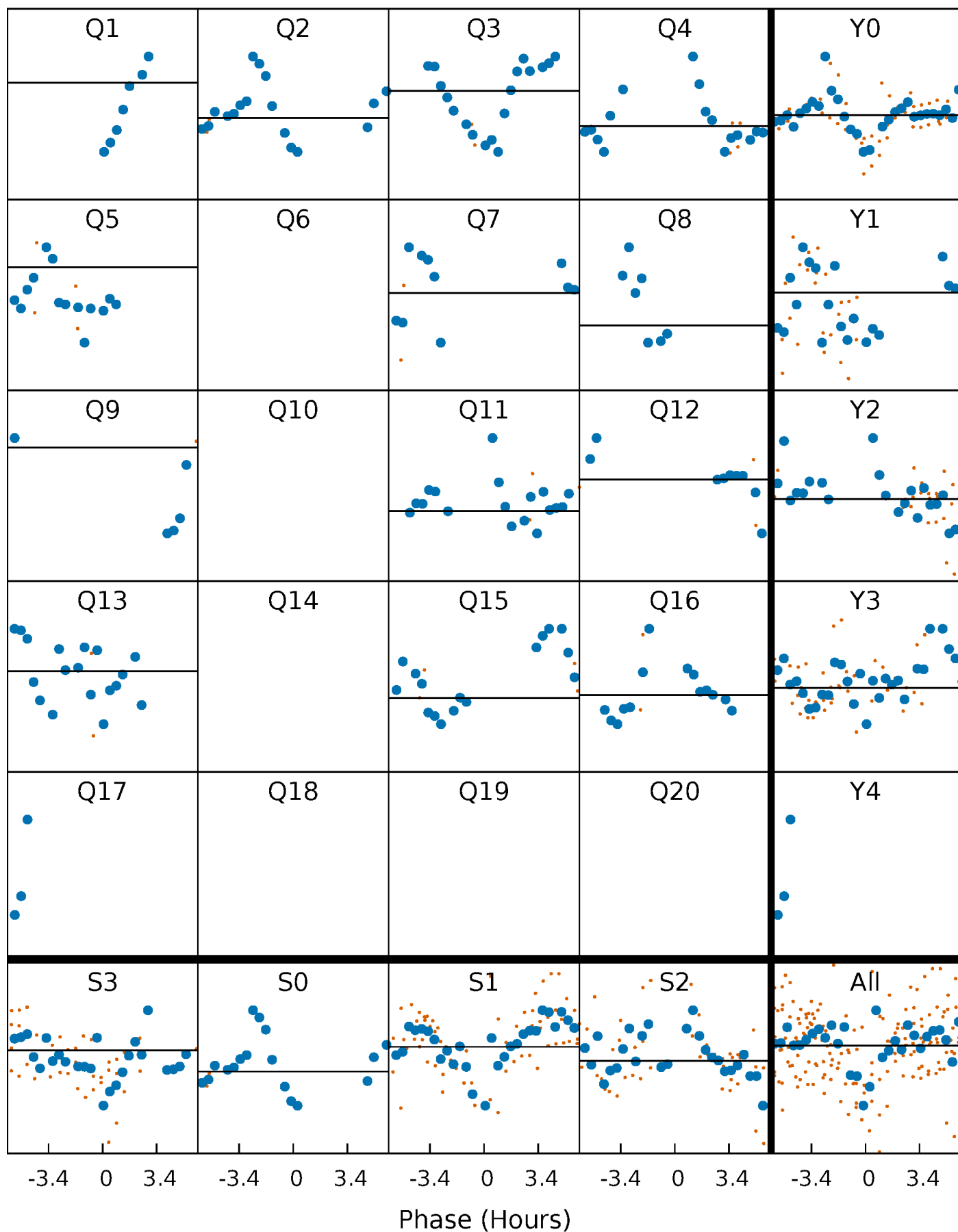
# PDC Quarter-Phased Transit Curves

TCE 005802479-06 P= 26.284161 Days  $T_0=151.113282$  (BKJD)



# DV Quarter-Phased Transit Curves

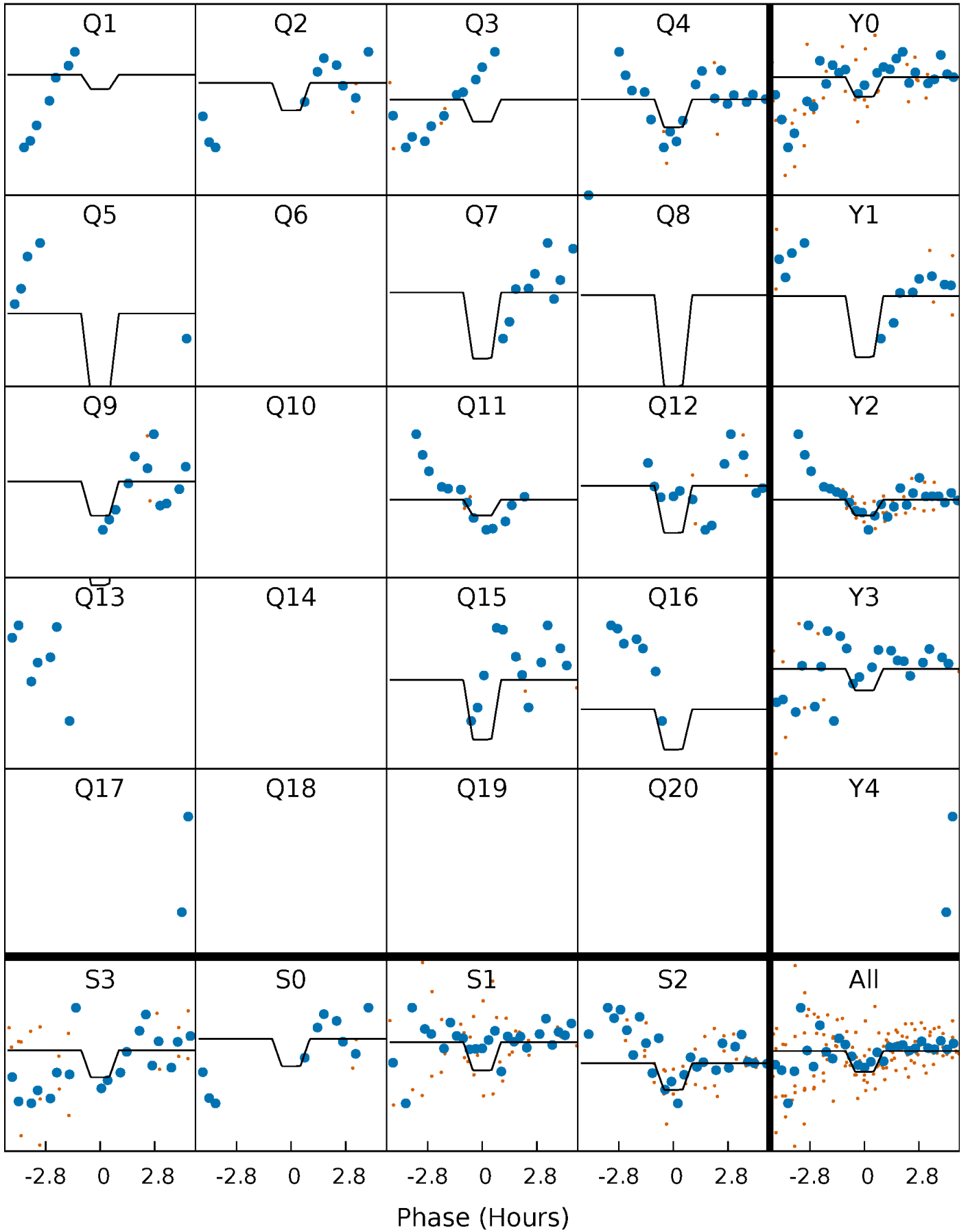
TCE 005802479-06 P= 26.284161 Days  $T_0=151.113282$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

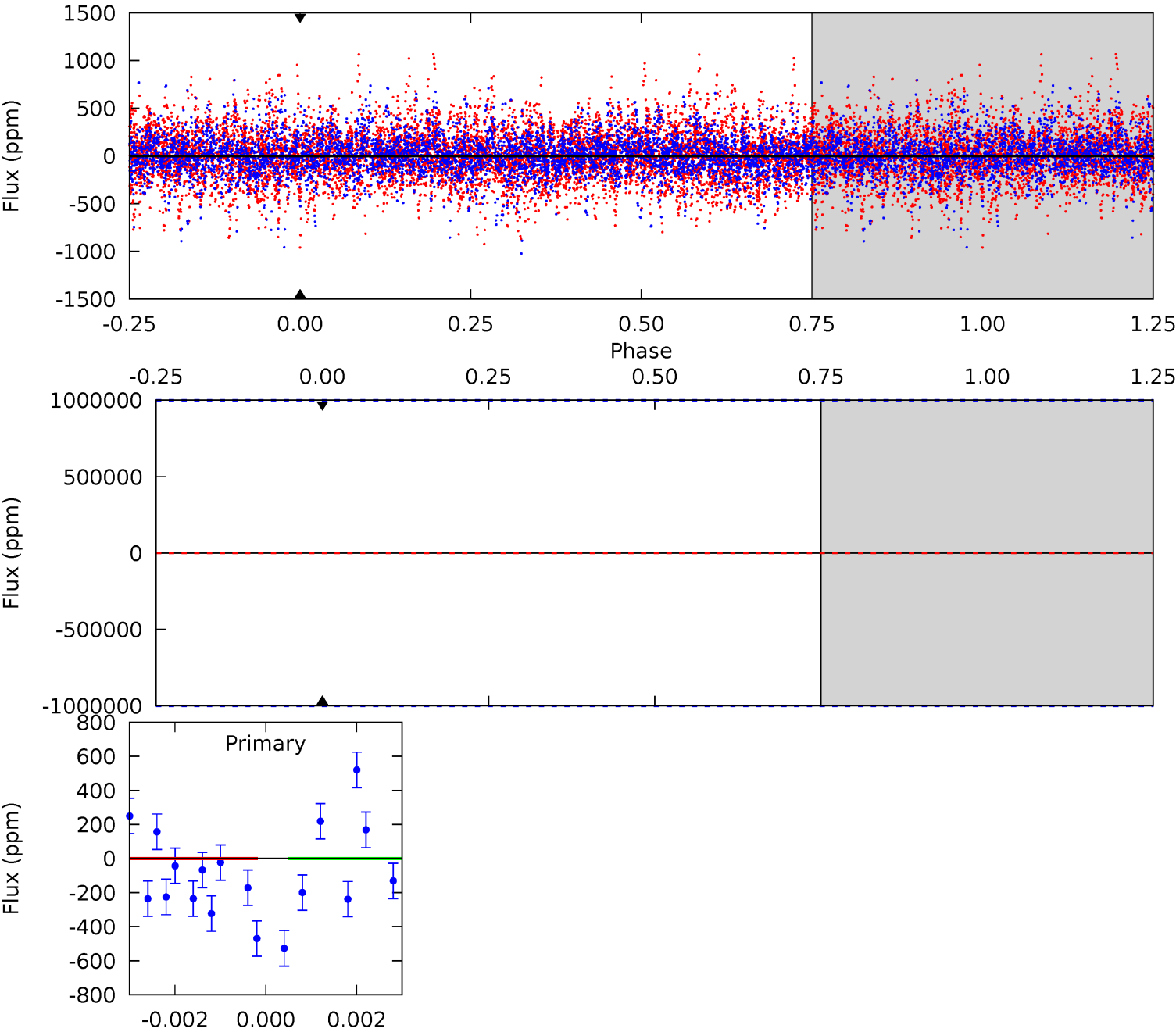
TCE 005802479-06 P= 26.284161 Days  $T_0=151.278477$  (BKJD)



# DV Model-Shift Uniqueness Test

005802479-06, P = 26.284161 Days, E = 124.829121 Days

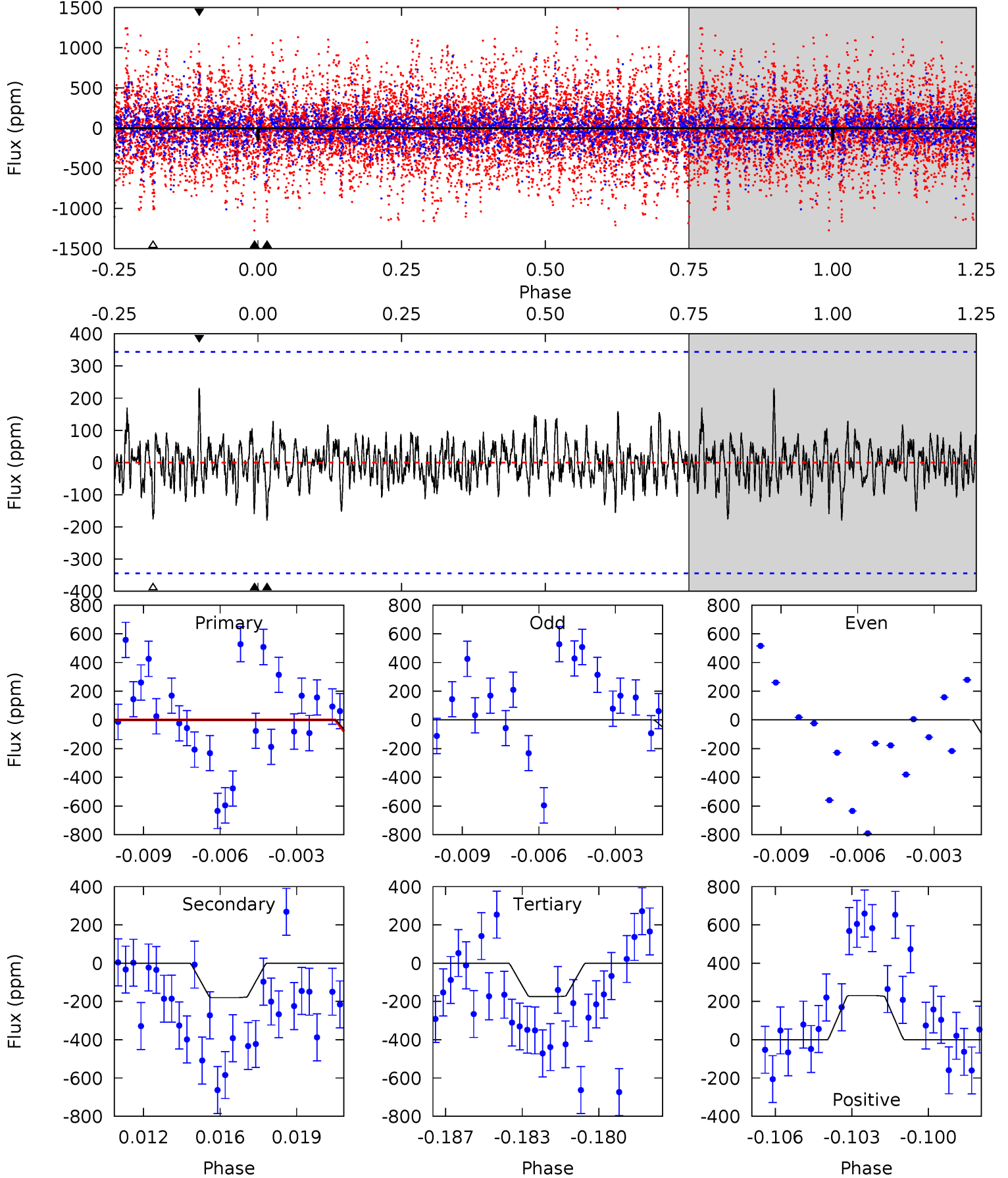
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

005802479-06, P = 26.284161 Days, E = 124.994316 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
2.20	2.74	2.67	3.52	5.25	2.96	0.80	-0.47	-1.33	0.08	-0.78	0.73	0.89	0.56	0.50



### Stellar Parameters For KIC 005802479

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7196^{+172}_{-259}$	$4.064^{+0.158}_{-0.175}$	$-0.040^{+0.250}_{-0.350}$	$1.923^{+0.576}_{-0.471}$	$1.562^{+0.212}_{-0.236}$	$0.309^{+0.296}_{-0.153}$
	+2%/-4%	+4%/-4%	+625%/-875%	+30%/-24%	+14%/-15%	+96%/-50%
Source	PHO1	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 005802479-06 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$0 \pm 1000000$	$15.23^{+16.93}_{-10.96}$	$1375^{+100}_{-101}$	$5714^{+35612}_{-38418}$	$199^{+20513}_{-15486}$
Alt.	$-180 \pm 66$	$15.48^{+16.27}_{-10.93}$	$1372^{+103}_{-83}$	$3471^{+2224}_{-684}$	$15^{+184}_{-12}$

$T_{max}$  = 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

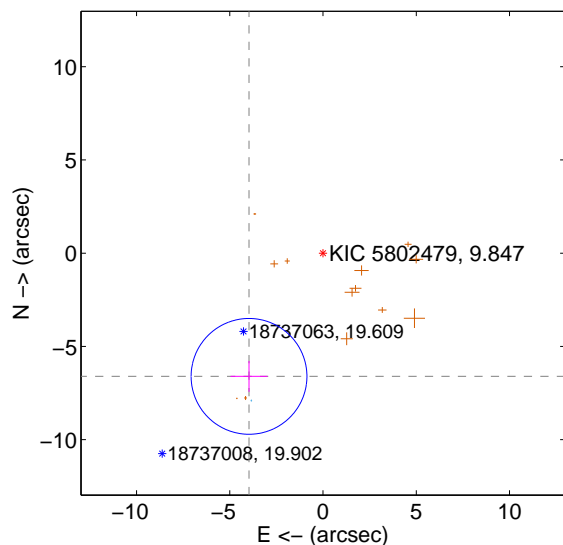
Supplemental centroid analysis for 005802479-06. **Kepler magnitude: 9.85.** Transit SNR -1.00

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

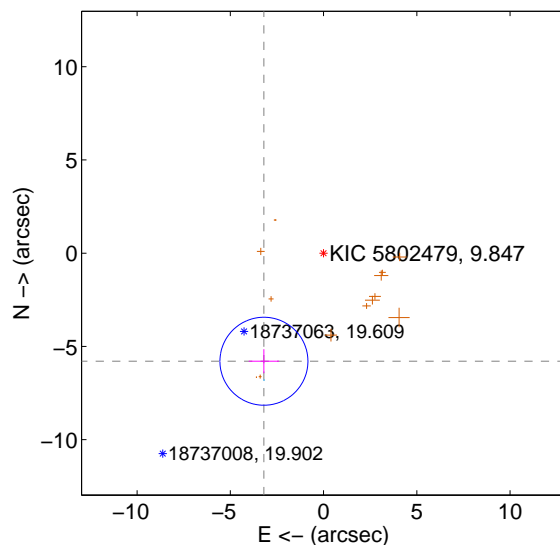
The direct PRF centroid is offset from the target star catalog position by about 1.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>7.708 \pm 1.035</math></b>	<b>7.45</b>	$3.970 \pm 0.992$	$-6.608 \pm 0.826$
PRF-fit source offset from KIC position	<b><math>6.621 \pm 0.786</math></b>	<b>8.42</b>	$3.200 \pm 0.812$	$-5.796 \pm 0.644$
photometric centroid source offset	$0.31 \pm 0.29$	1.06	$0.07 \pm 0.22$	$-0.30 \pm 0.30$

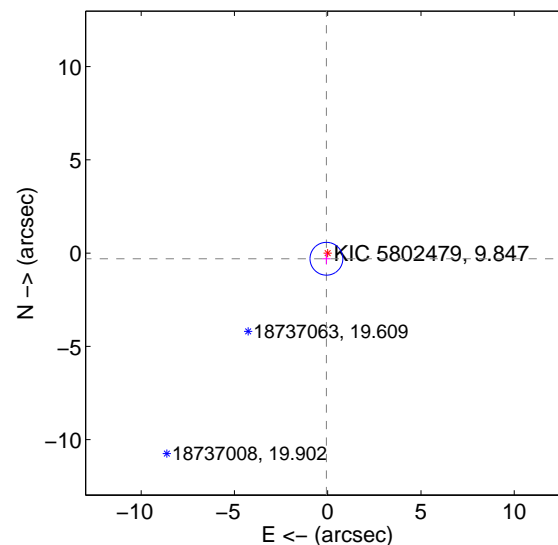
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

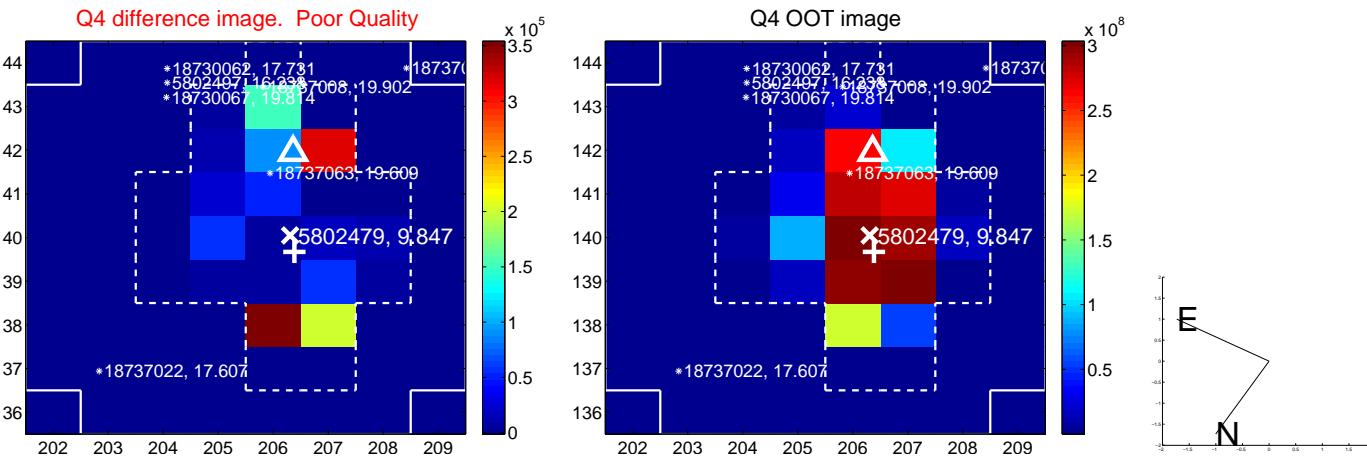
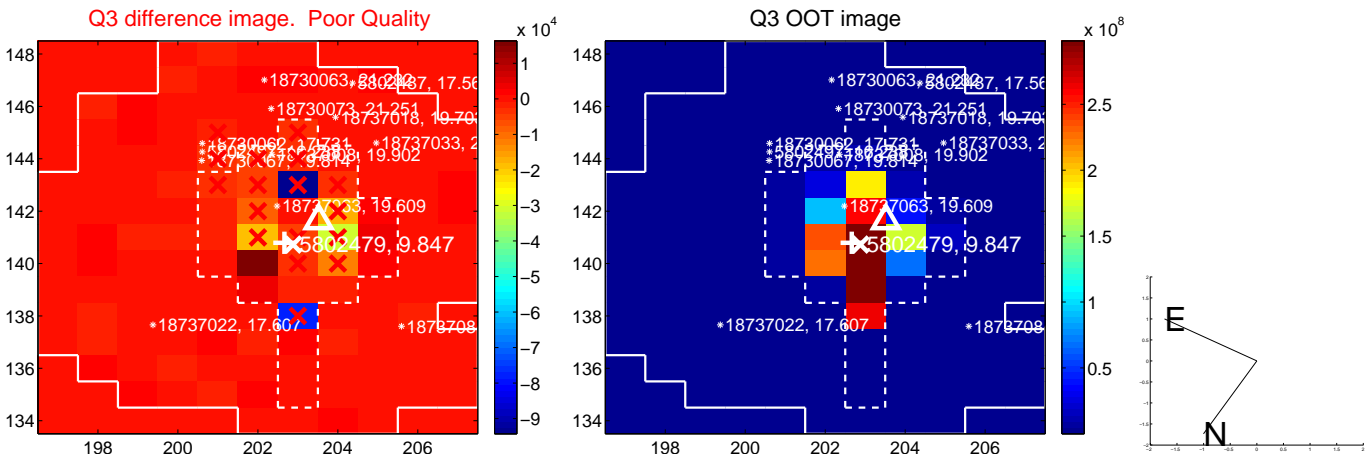
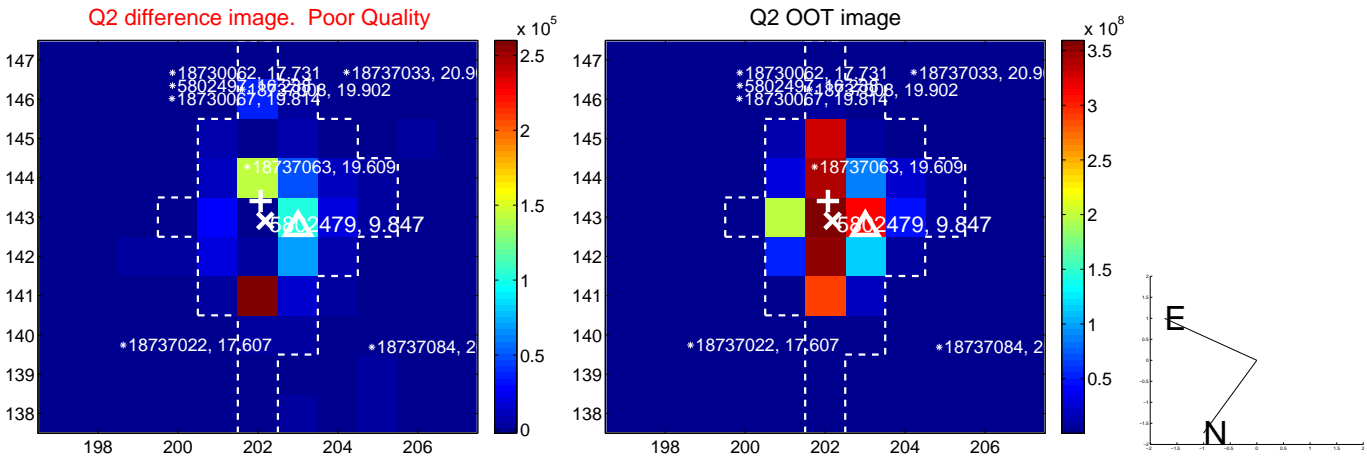
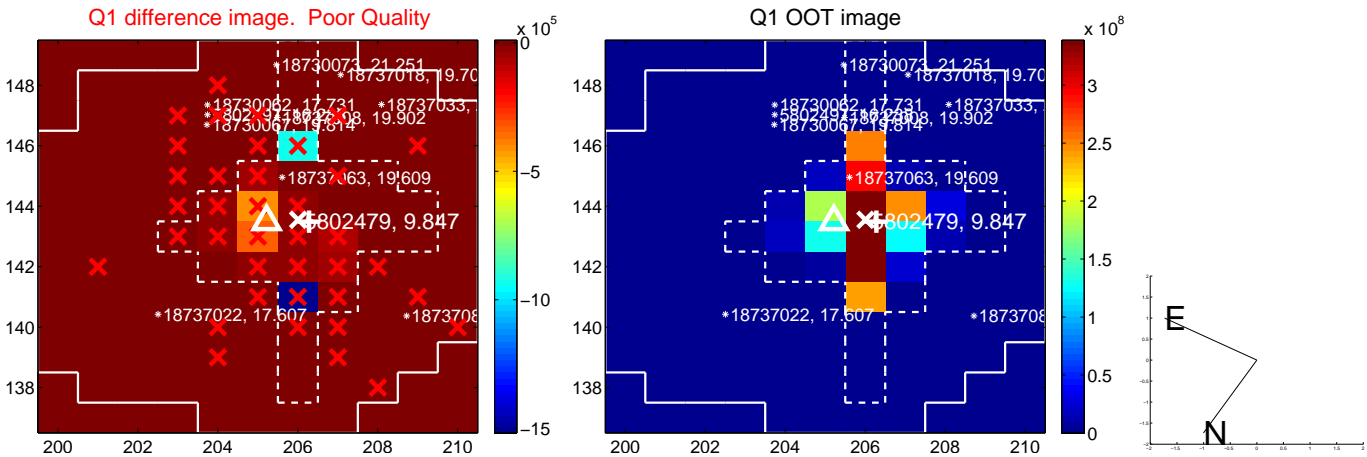


offset from photometric centroids

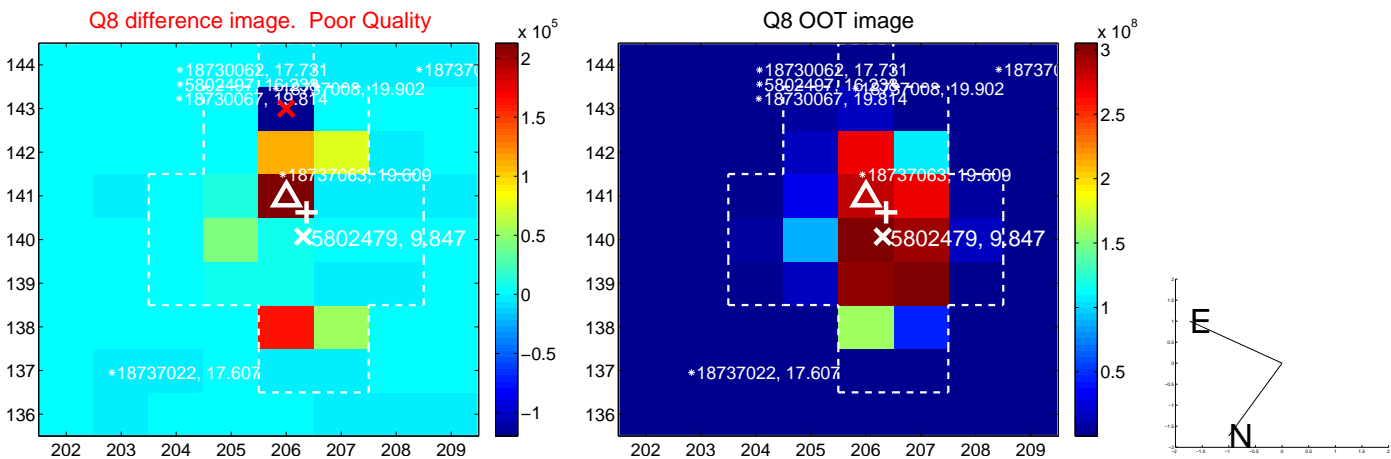
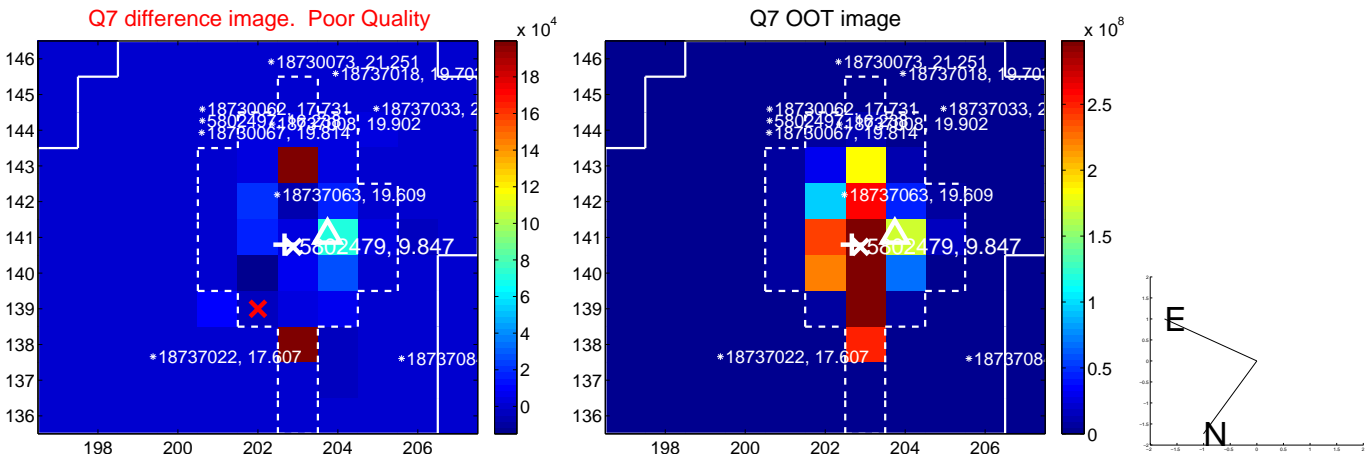
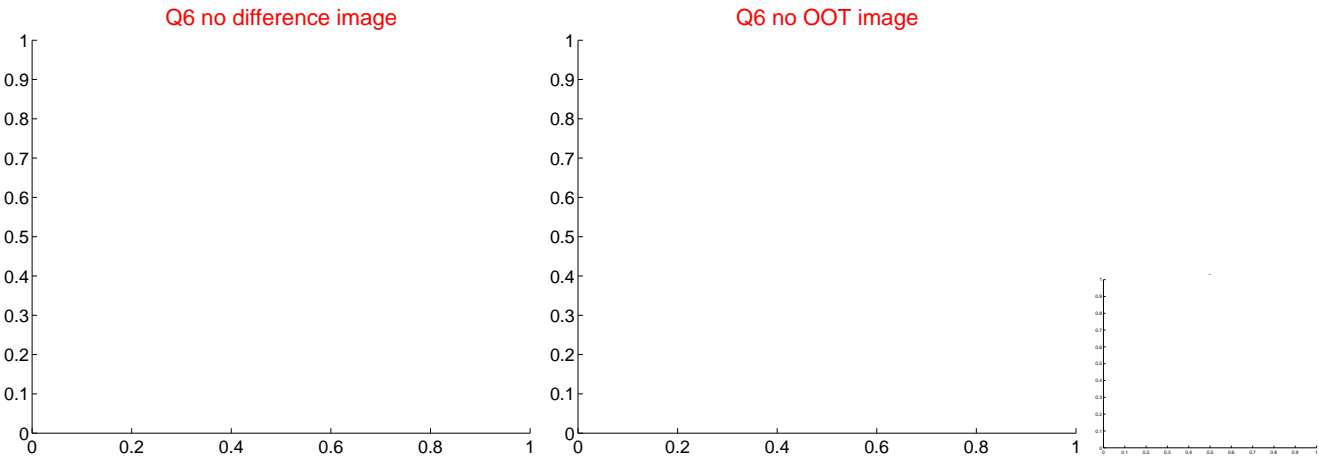
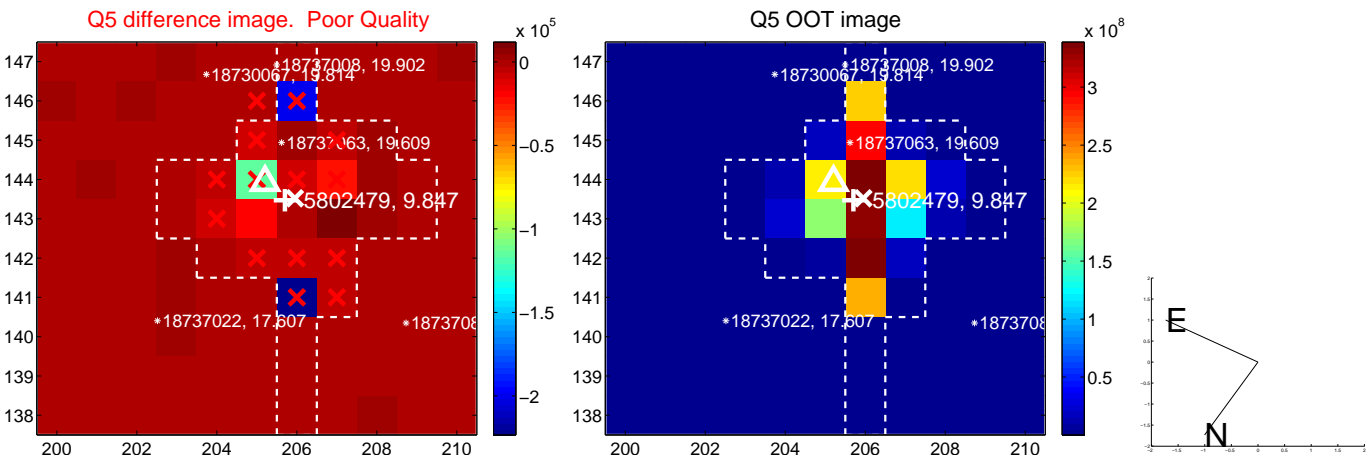


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

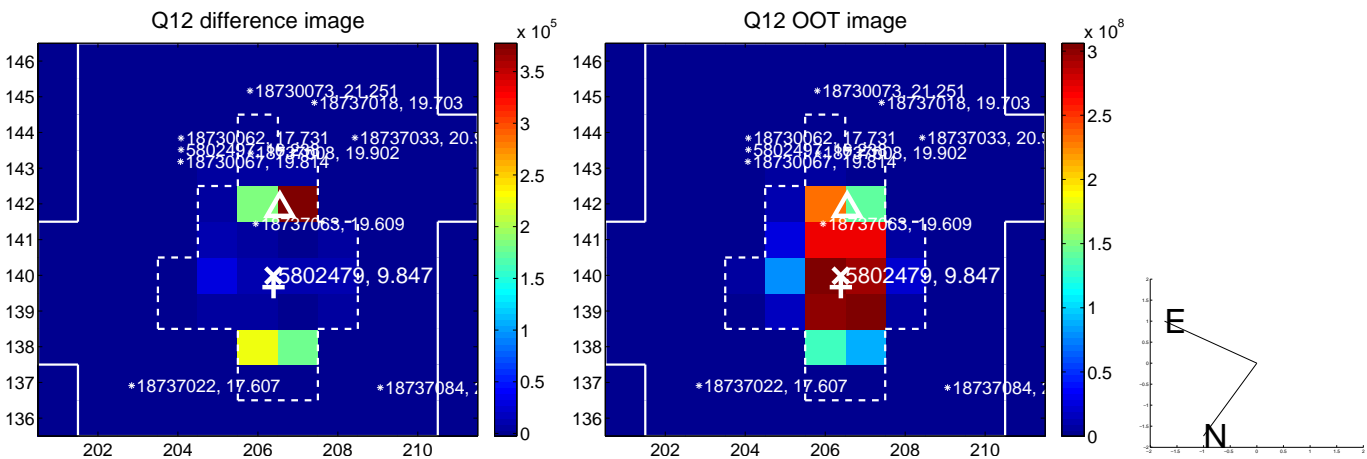
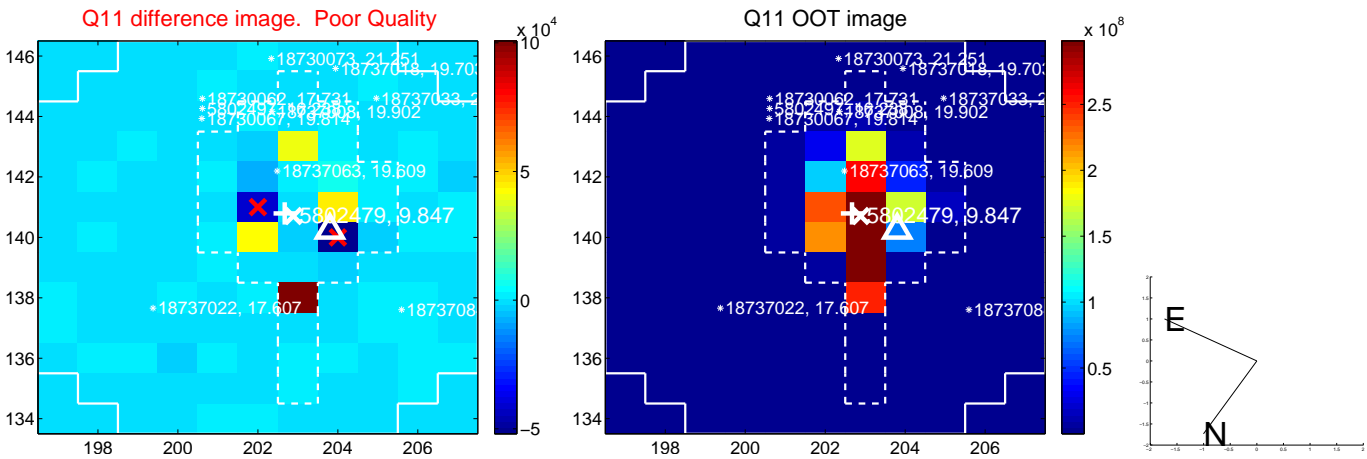
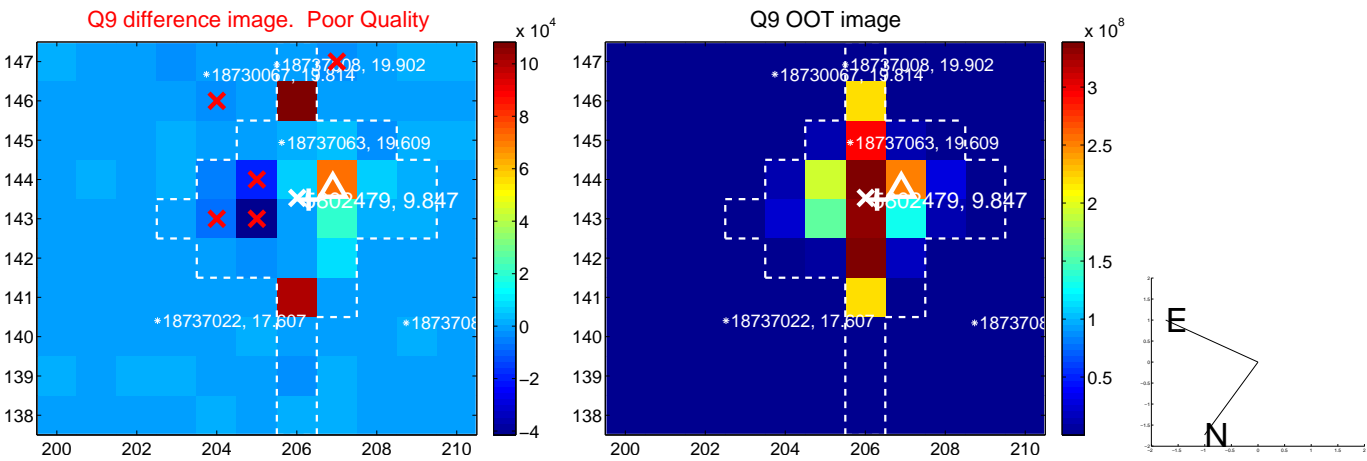


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

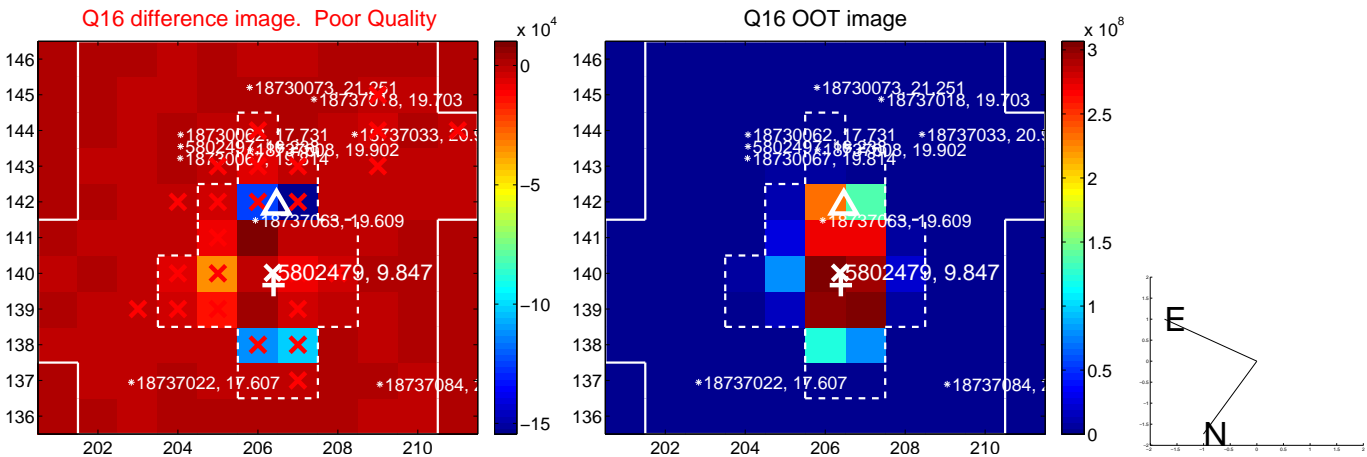
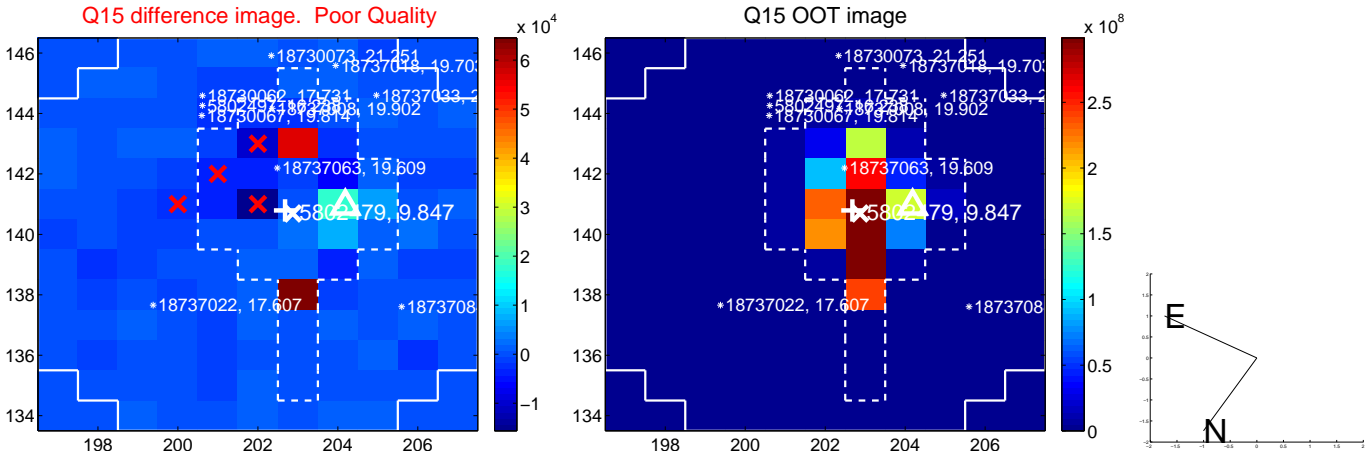
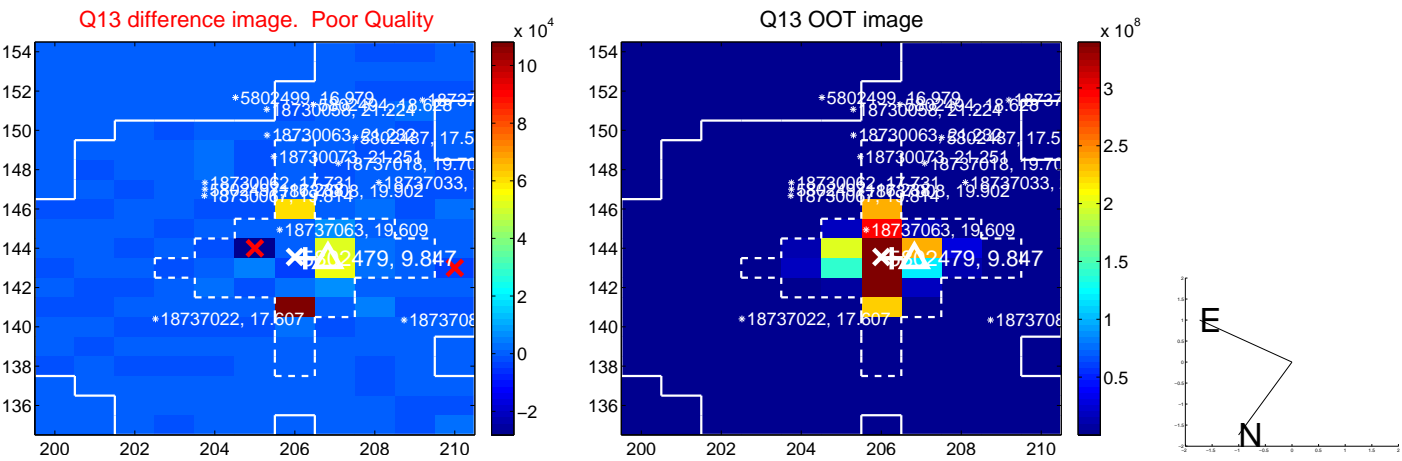




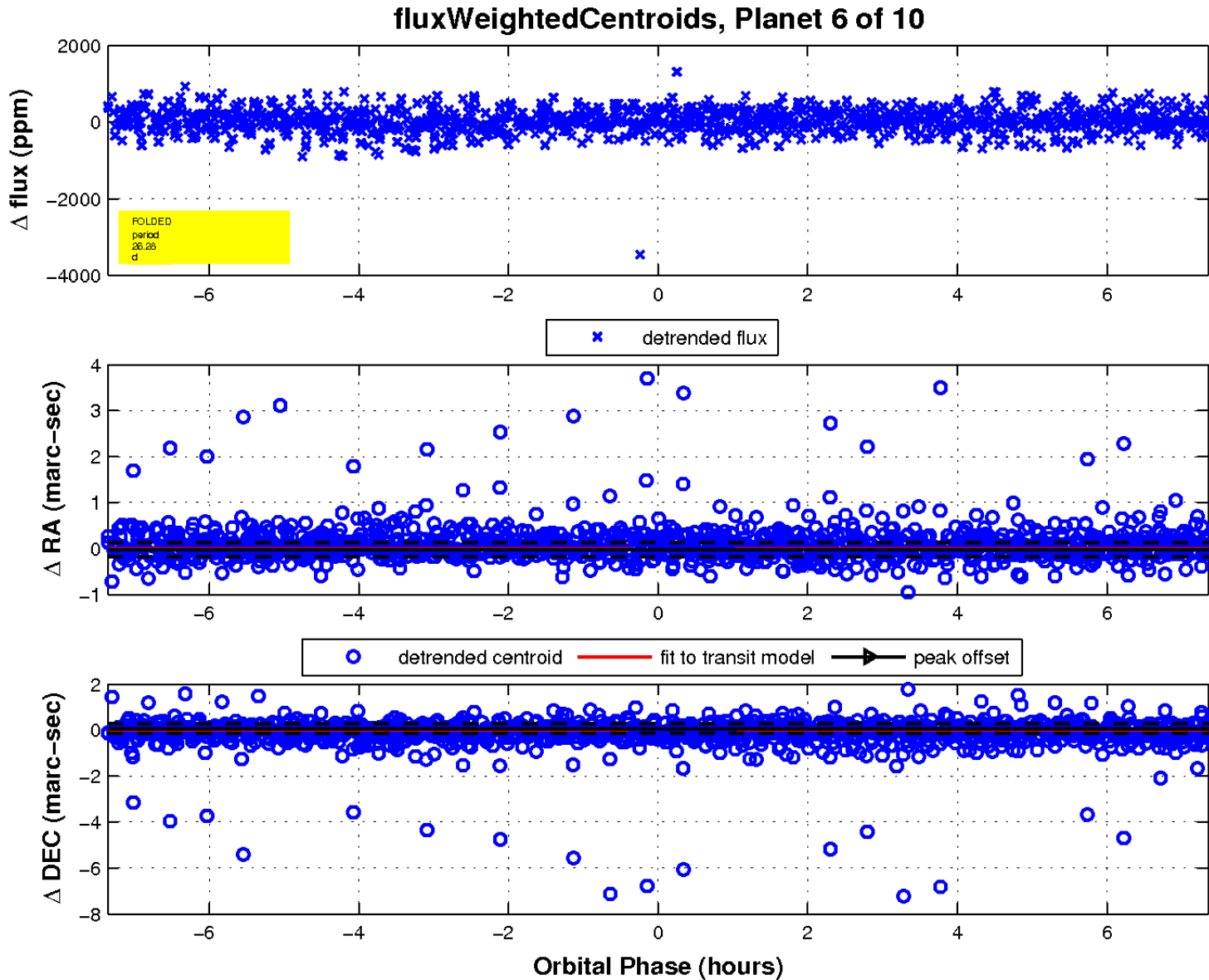
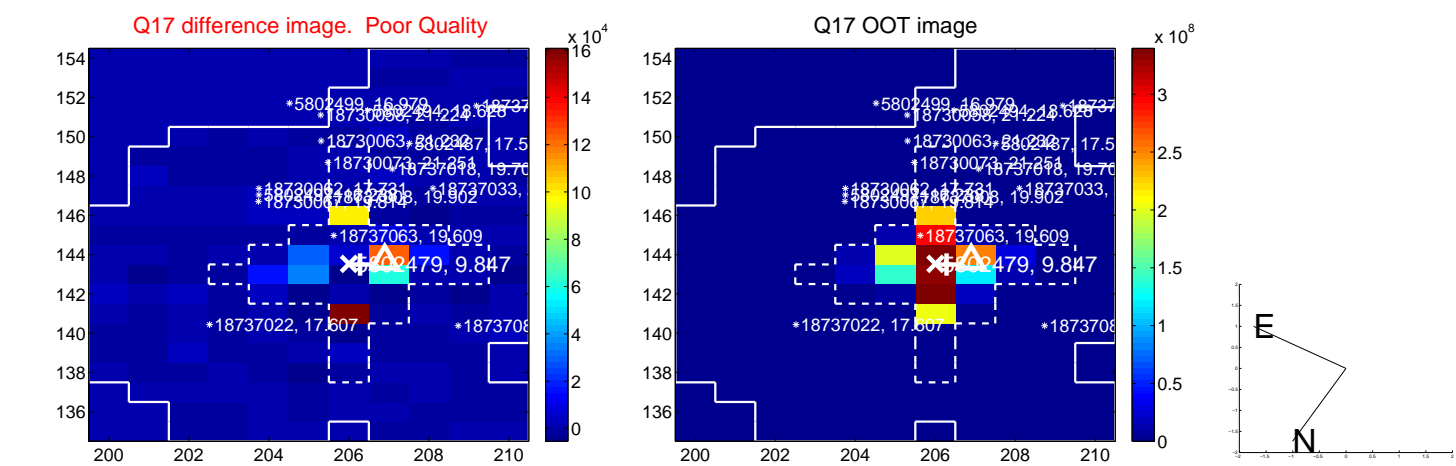
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

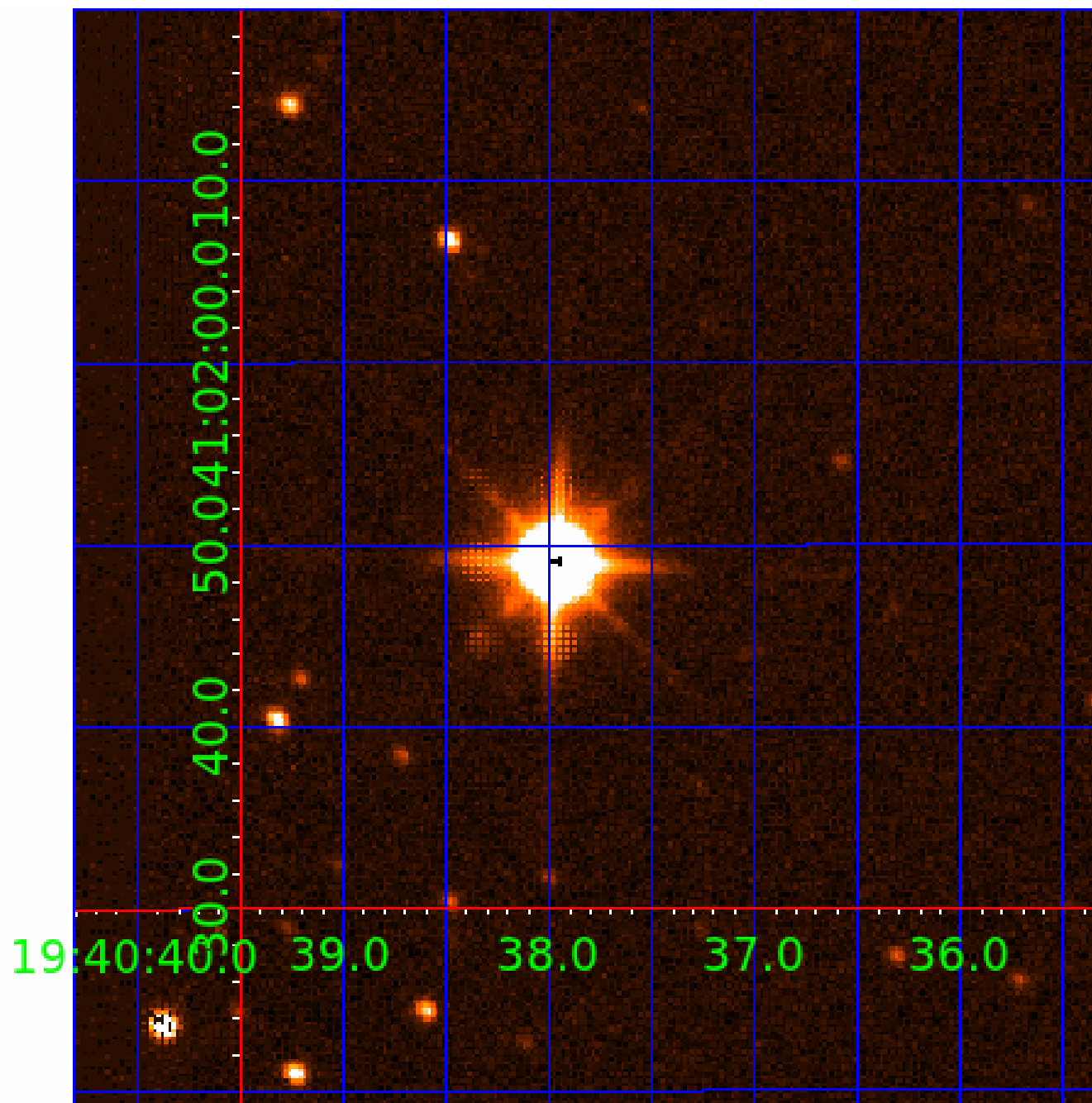


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 005802479

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005802479-01	OBS	No	0.638341	131.702634	15.9	3.873	10.4	5.9	1.92	7196	0.86	31321.42
005802479-03	OBS	No	31.522608	153.696891	526.6	5.214	10.0	10.5	1.92	7196	8.30	172.88
005802479-04	OBS	No	88.375917	134.248450	595.7	2.316	9.9	9.7	1.92	7196	5.30	43.73
005802479-05	OBS	No	84.762616	162.094820	472.9	7.177	10.1	9.3	1.92	7196	4.51	46.23
005802479-06	OBS	No	26.284161	151.113282	58.4	3.000	9.1	-1.0	1.92	7196	1.49	220.29
005802479-07	OBS	No	231.017269	226.147869	628.3	13.781	9.6	10.1	1.92	7196	5.19	12.14
005802479-08	OBS	No	80.384356	174.881064	530.4	6.609	9.4	9.0	1.92	7196	8.35	49.62
005802479-09	OBS	No	42.786339	168.305531	242.5	3.706	8.0	5.8	1.92	7196	3.37	115.04
005802479-10	OBS	No	66.734307	159.531369	549.5	5.185	8.3	8.9	1.92	7196	5.51	63.60

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005802479-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—CENT_SATURATED
005802479-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005802479-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005802479-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
005802479-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

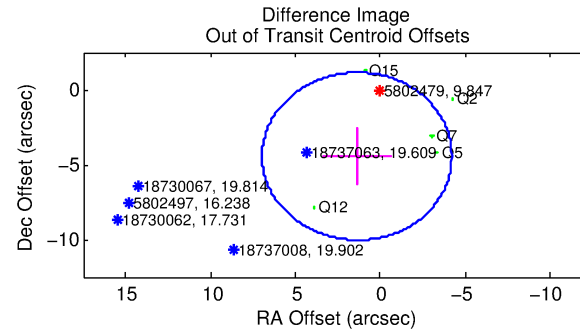
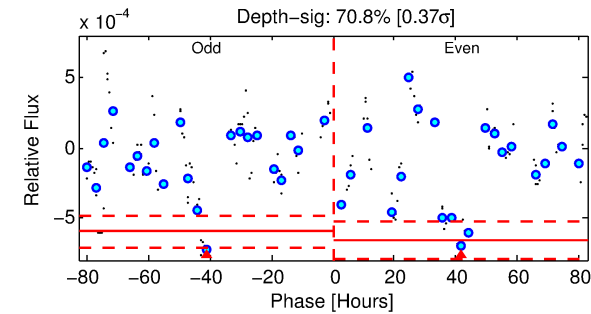
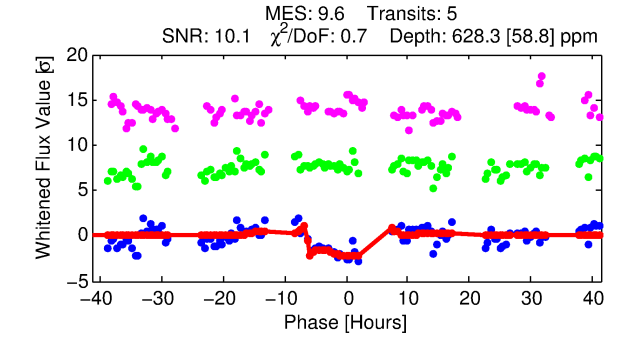
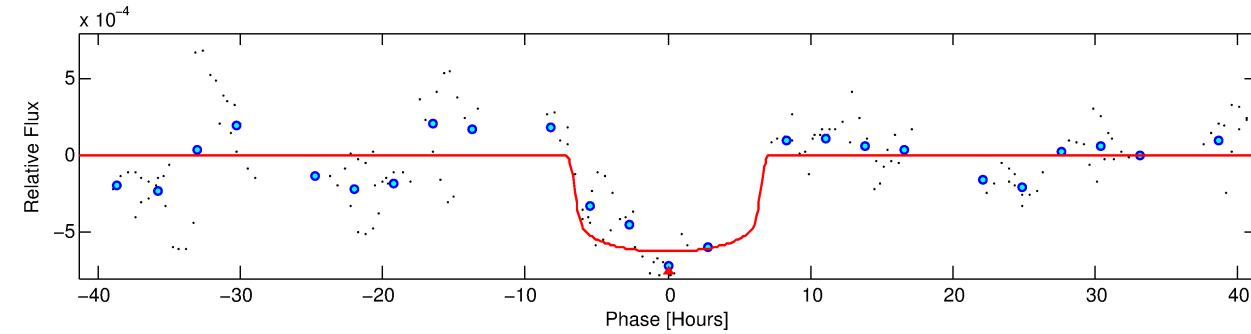
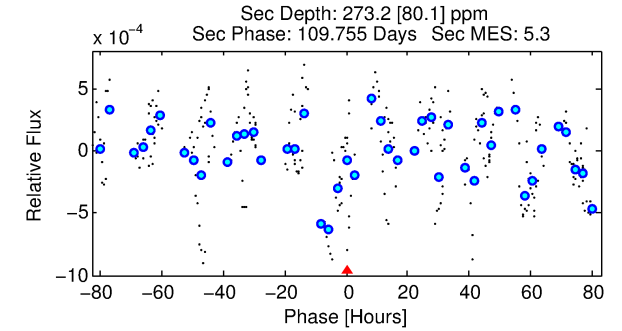
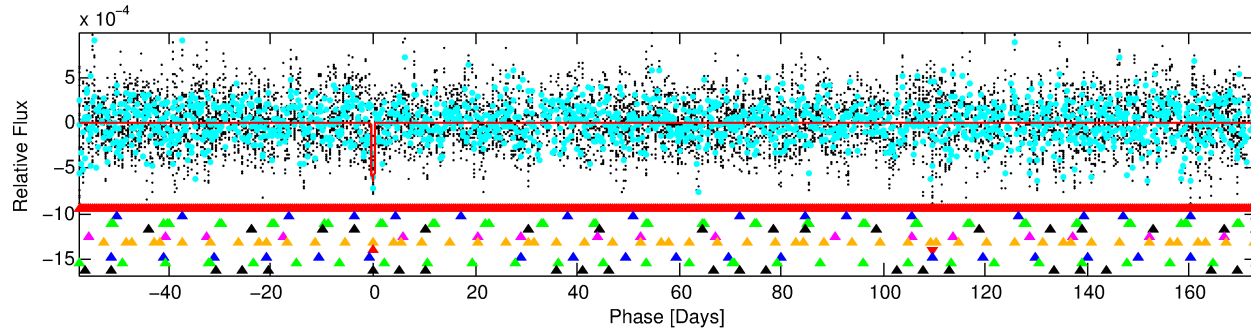
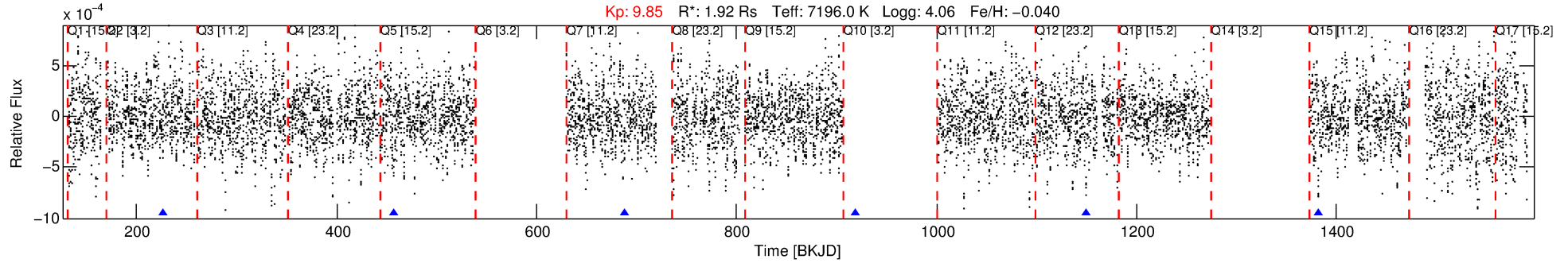
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005802479-07

No Significant Match Found

# DV One-Page Summary

KIC: 5802479 Candidate: 7 of 10 Period: 231.017 d



## DV Fit Results:

Period = 231.01727 [0.01950] d  
Epoch = 226.1479 [0.0165] BKJD  
Rp/R\* = 0.0247 [0.0039]  
a/R\* = 93.42 [80.25]  
b = 0.72 [0.59]  
Seff = 12.14 [4.43]  
Teq = 476 [43] K  
Rp = 5.19 [1.76] Re  
a = 0.8553 [0.2058] AU  
Ag = 4085.33 [2226.83] [1.83σ]  
Teffp = 5884 [667] K [8.09σ]

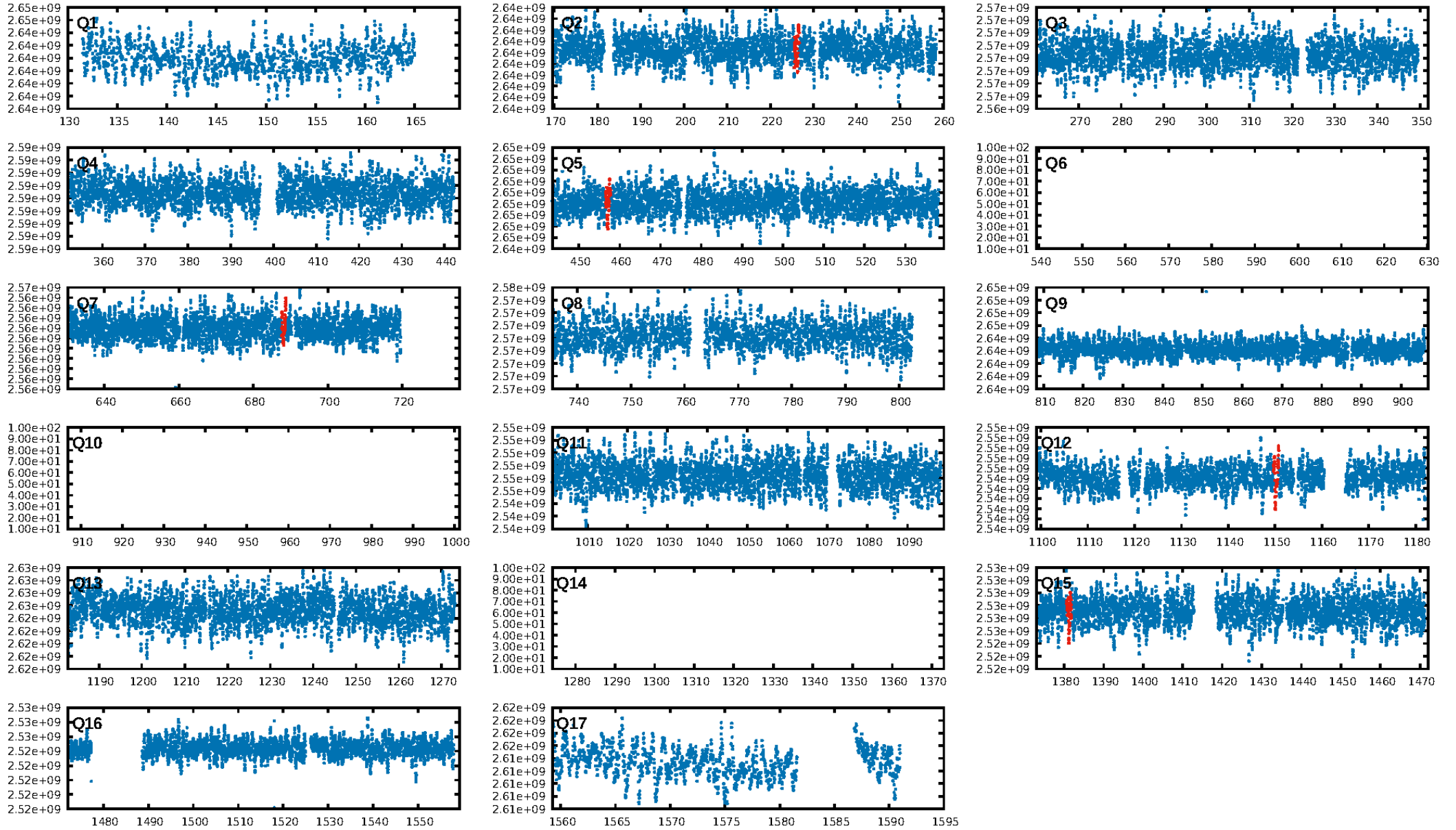
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [244.98σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 65.2%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 9.6%  
Centroid-so: 0.375 arcsec [1.54σ]  
OotOffset-rm: 4.643 arcsec [2.49σ]  
KicOffset-rm: 4.338 arcsec [3.15σ]  
OotOffset-st: 1/2/1/1 [5]  
KicOffset-st: 1/2/1/1 [5]  
DiffImageQuality-fgm: 0.20 [1/5]  
DiffImageOverlap-fno: 0.00 [0/5]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:10:46 Z

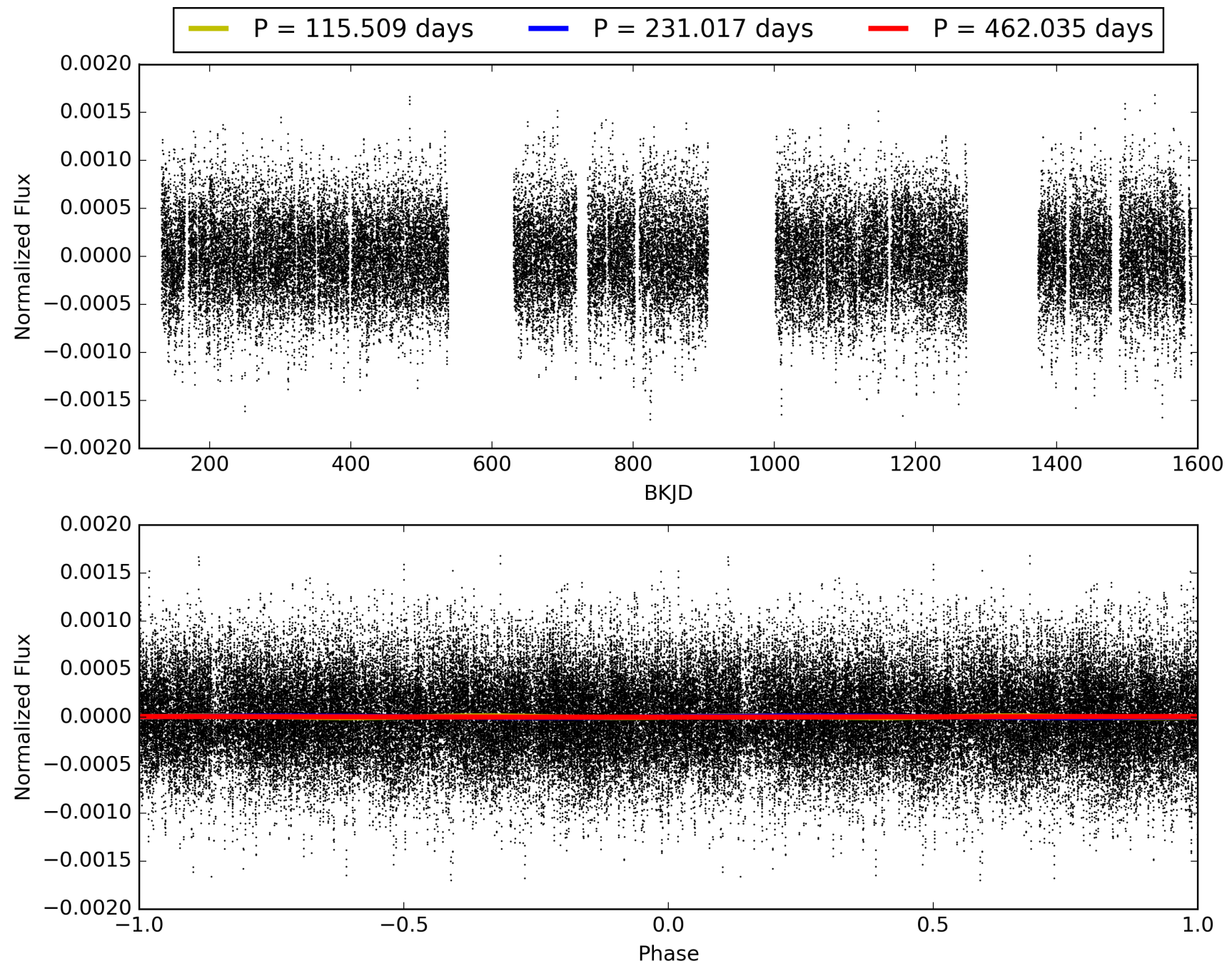
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005802479-07, PDC Light Curves



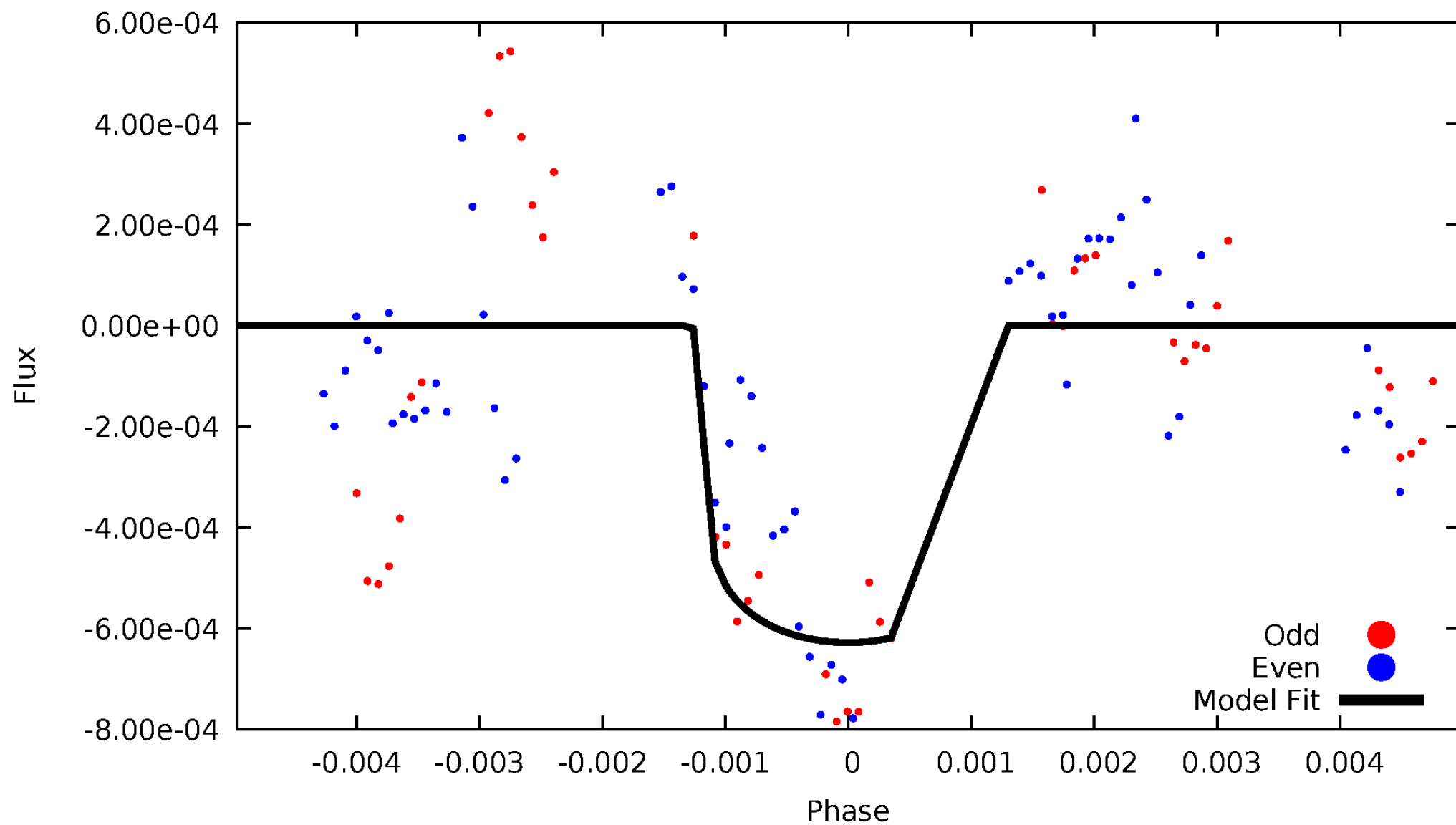


TCE 005802479-07



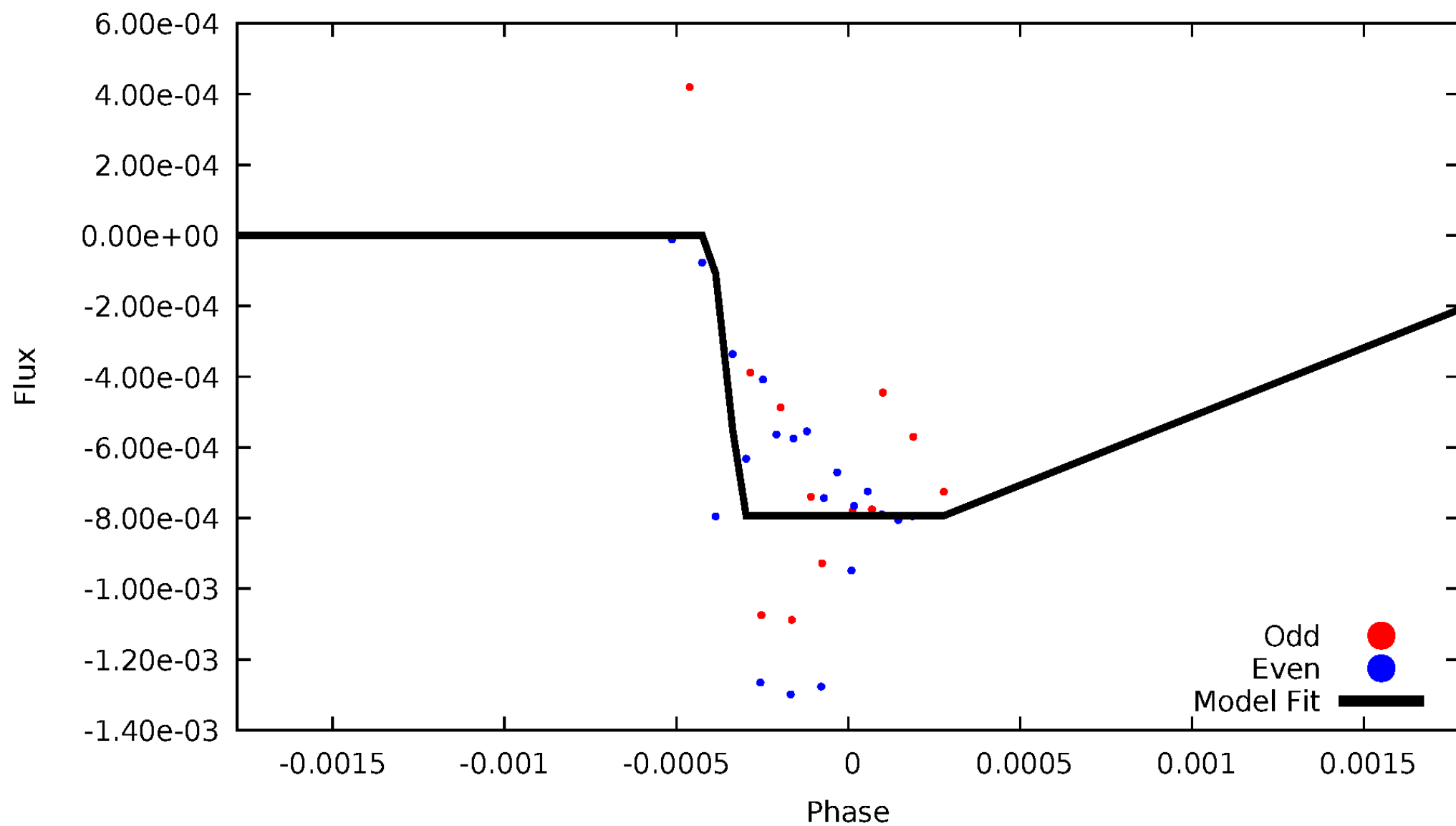
# DV Odd/Even

TCE 005802479-07



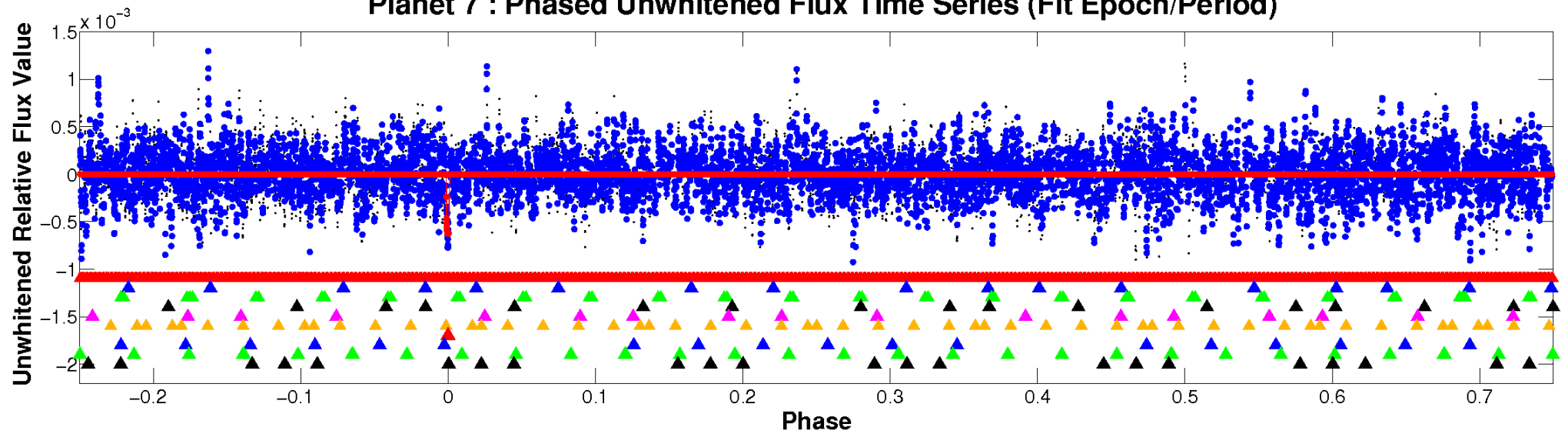
# ALT Odd/Even

TCE 005802479-07

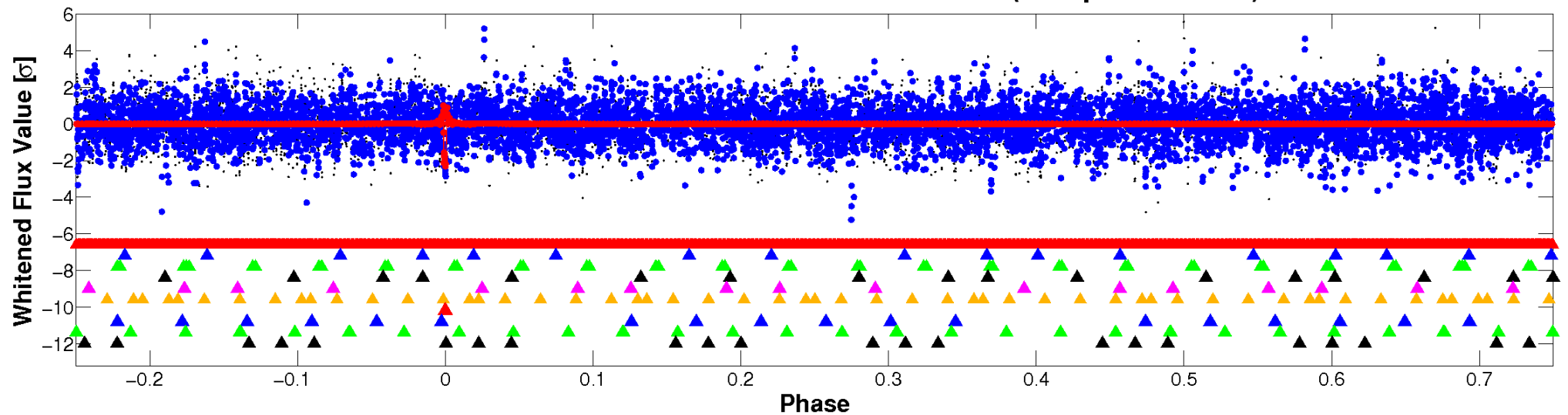


# Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

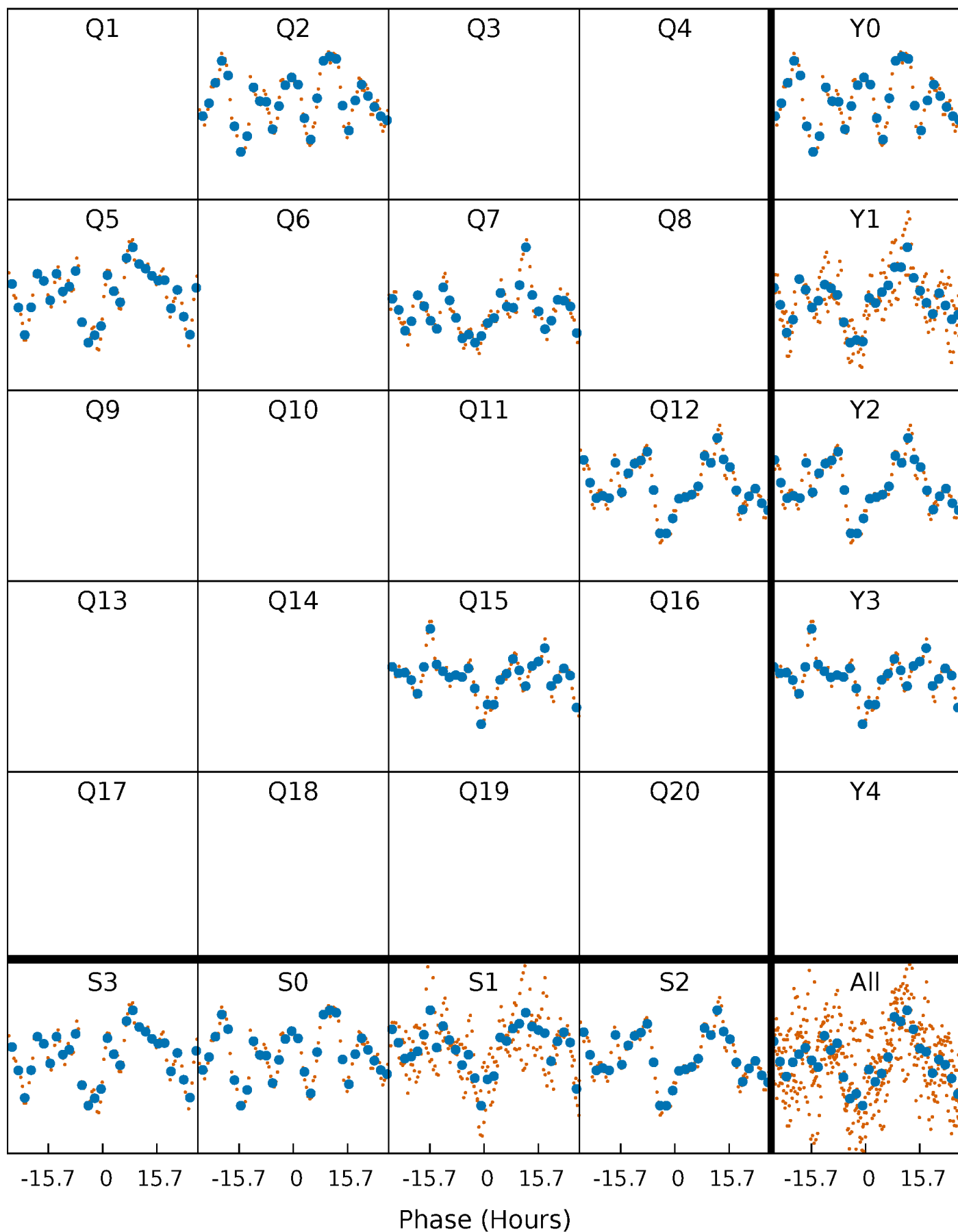


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



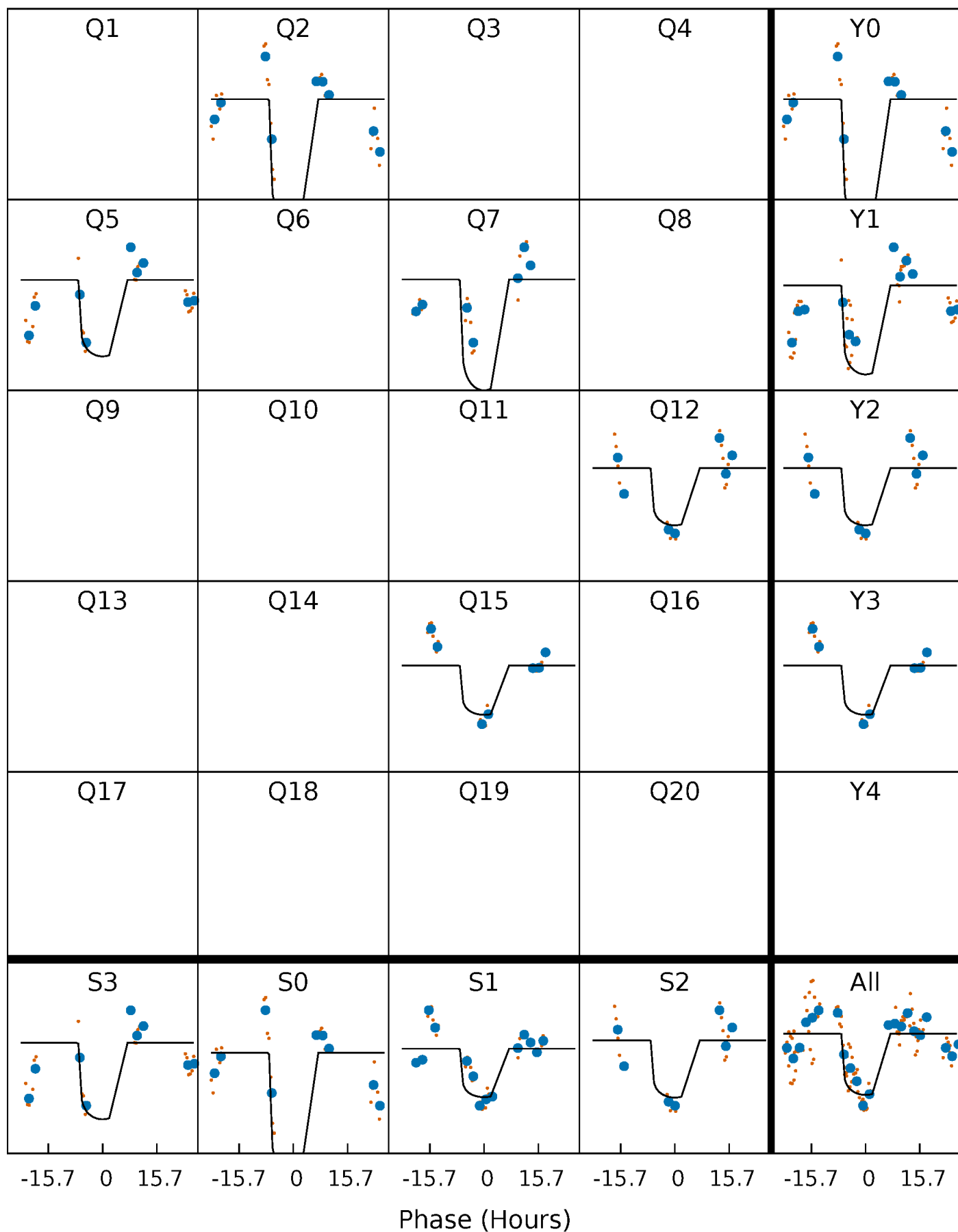
# PDC Quarter-Phased Transit Curves

TCE 005802479-07     $P=231.017269$  Days     $T_0=226.147869$  (BKJD)



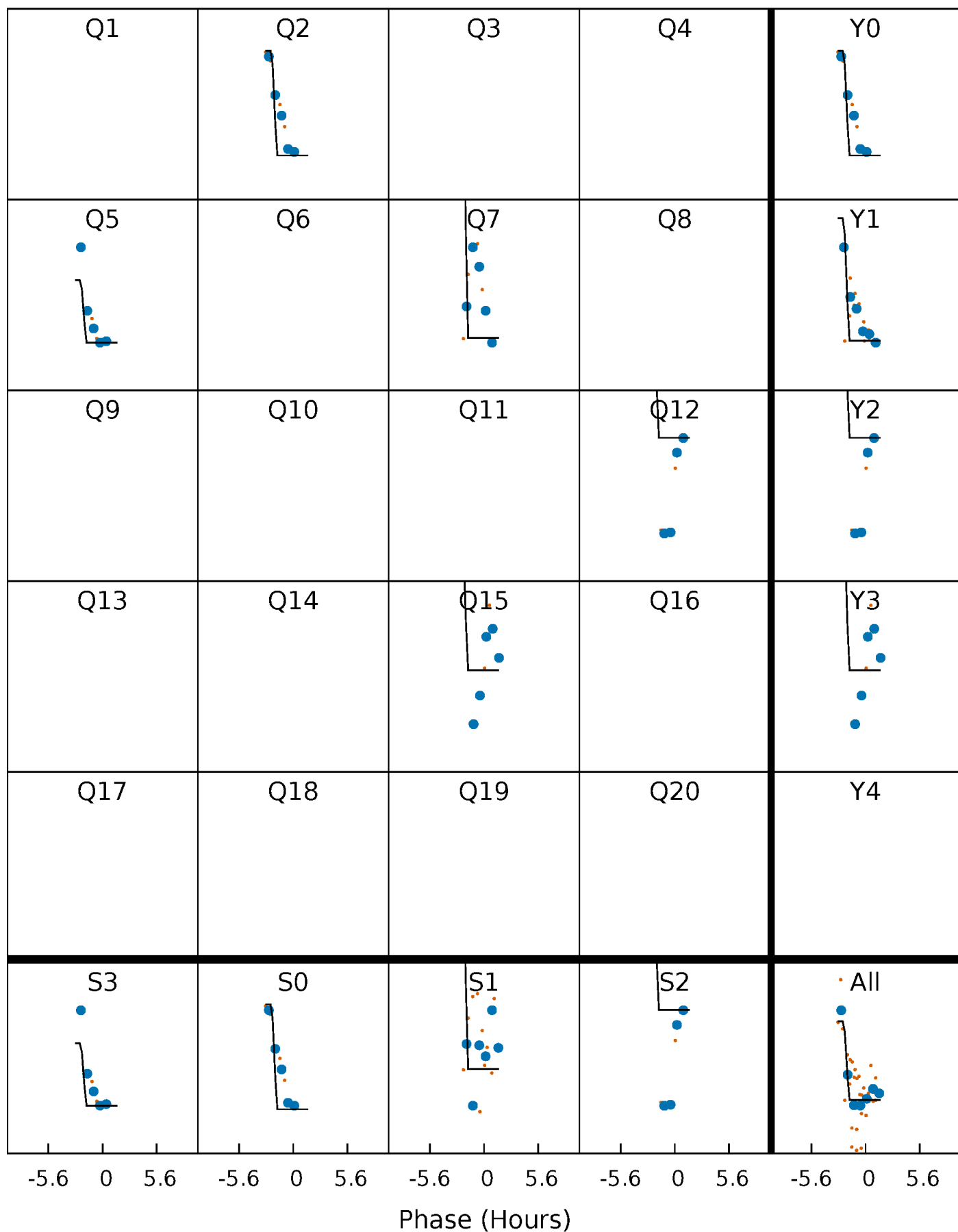
# DV Quarter-Phased Transit Curves

TCE 005802479-07     $P=231.017269$  Days     $T_0=226.147869$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005802479-07 P=231.067291 Days  $T_0=225.913839$  (BKJD)

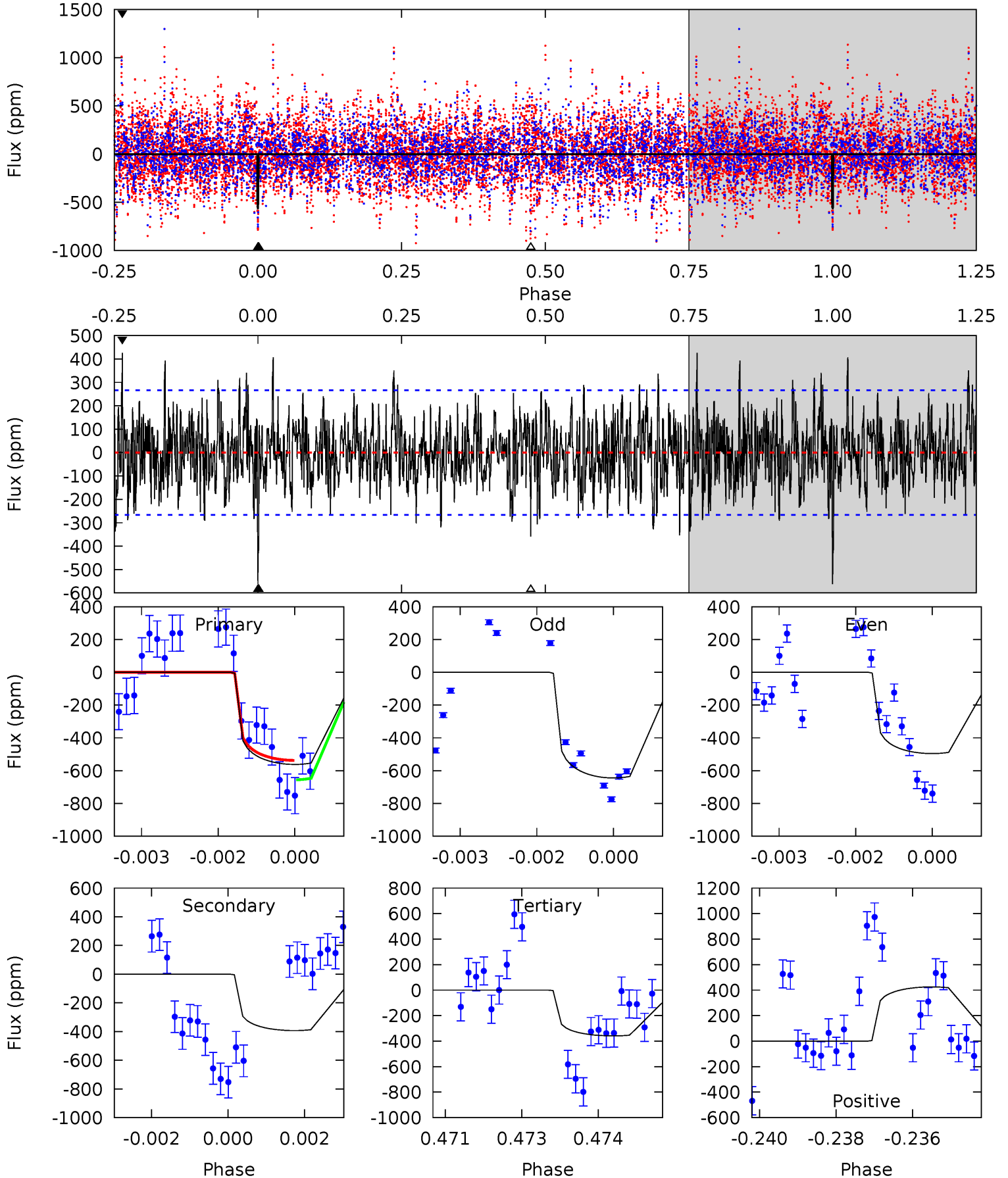




# DV Model-Shift Uniqueness Test

005802479-07, P = 231.017269 Days, E = 226.147869 Days

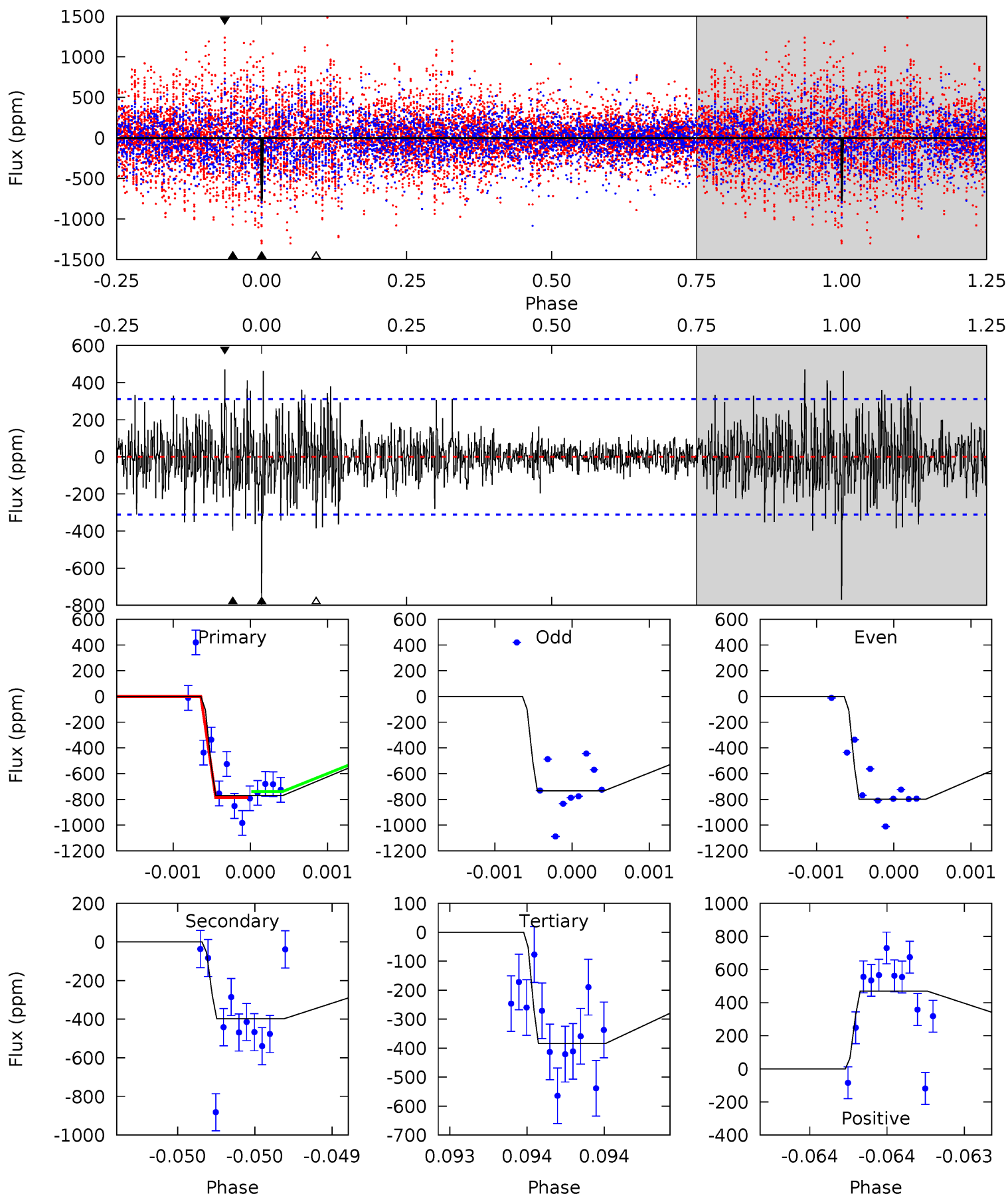
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	7.92	7.23	8.57	5.37	3.15	2.28	4.09	2.75	0.69	-0.65	1.51	0.94	0.43	0.86



# Alt Model-Shift Uniqueness Test

005802479-07, P = 231.067291 Days, E = 225.913839 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	7.06	6.81	8.33	5.52	3.40	1.93	6.84	5.32	0.25	-1.27	0.55	1.12	0.38	0.39



### Stellar Parameters For KIC 005802479

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7196^{+172}_{-259}$	$4.064^{+0.158}_{-0.175}$	$-0.040^{+0.250}_{-0.350}$	$1.923^{+0.576}_{-0.471}$	$1.562^{+0.212}_{-0.236}$	$0.309^{+0.296}_{-0.153}$
	+2%/-4%	+4%/-4%	+625%/-875%	+30%/-24%	+14%/-15%	+96%/-50%
Source	PHO1	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 005802479-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-393 \pm 50$	$5.21^{+1.16}_{-1.07}$	$665^{+49}_{-46}$	$6320^{+738}_{-488}$	$5727^{+3284}_{-1977}$
Alt.	$-398 \pm 56$	$5.89^{+1.32}_{-1.11}$	$665^{+51}_{-43}$	$5998^{+504}_{-482}$	$4518^{+2405}_{-1536}$

$T_{max}$  = 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

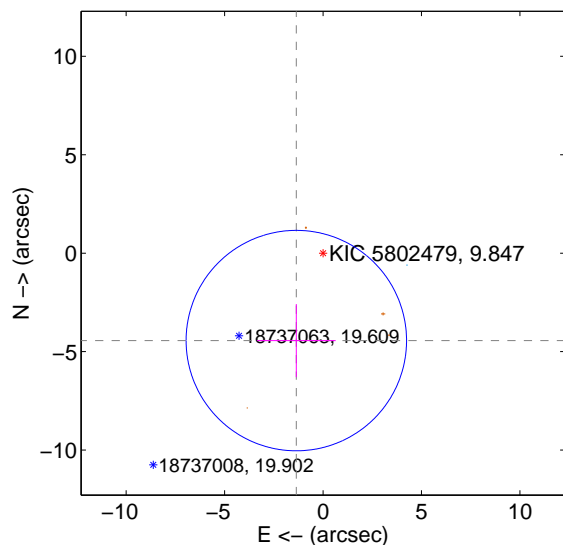
Supplemental centroid analysis for 005802479-07. **Kepler magnitude: 9.85.** Transit SNR 10.15

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

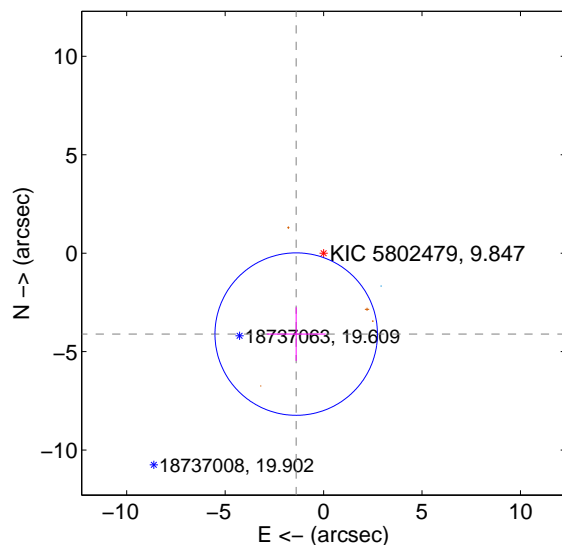
The direct PRF centroid is offset from the target star catalog position by about 0.92 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.643 \pm 1.866$	2.49	$1.357 \pm 1.998$	$-4.440 \pm 1.853$
PRF-fit source offset from KIC position	<b><math>4.338 \pm 1.375</math></b>	<b>3.15</b>	$1.390 \pm 1.490$	$-4.110 \pm 1.361$
photometric centroid source offset	$0.37 \pm 0.24$	1.54	$-0.22 \pm 0.21$	$-0.30 \pm 0.26$

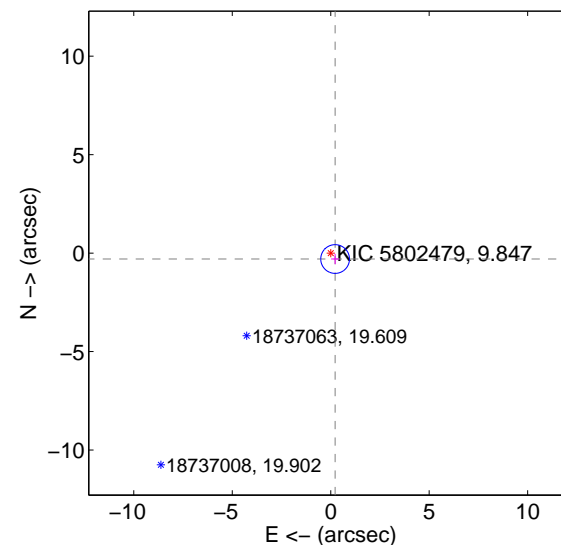
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

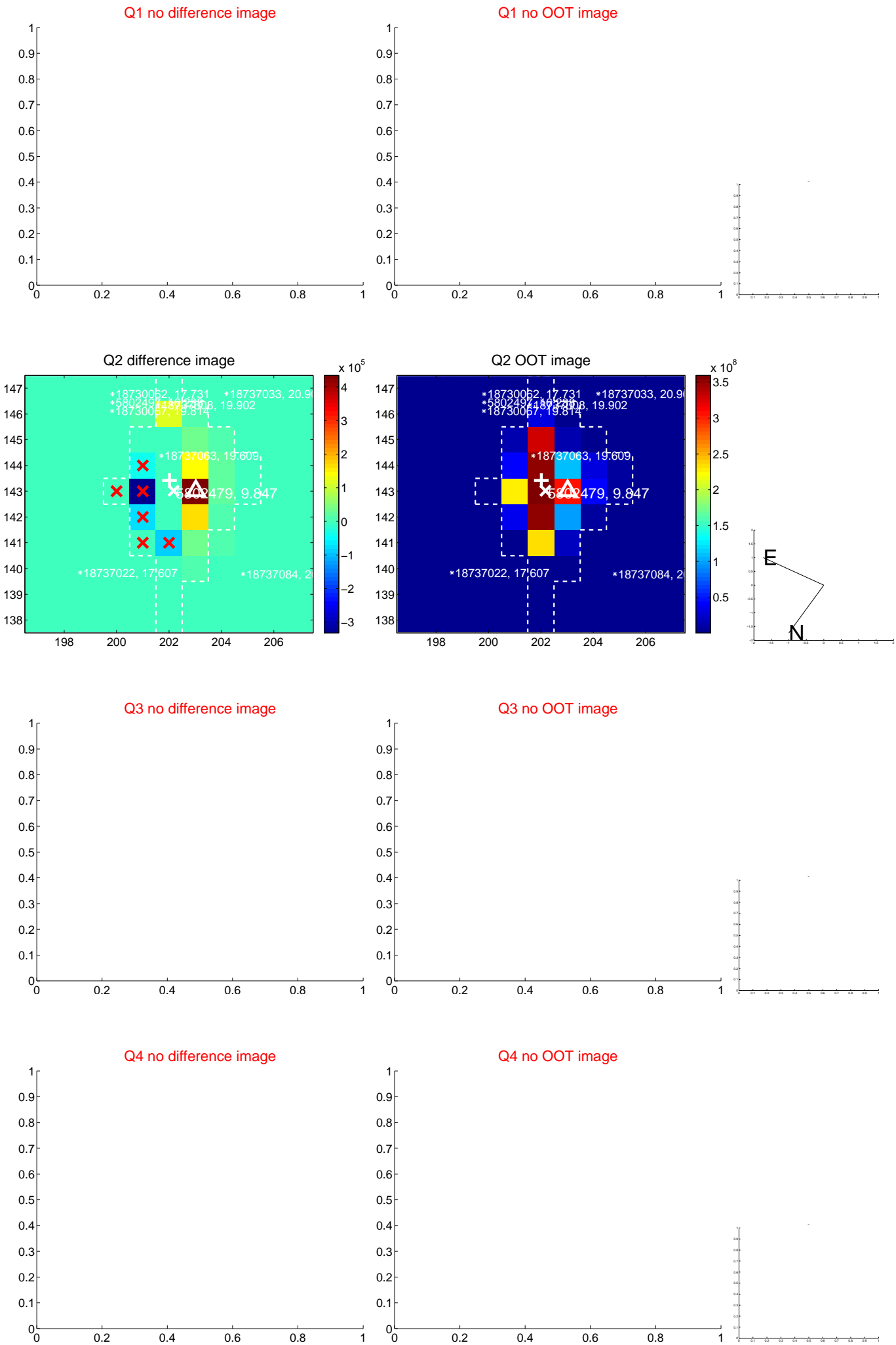


offset from photometric centroids

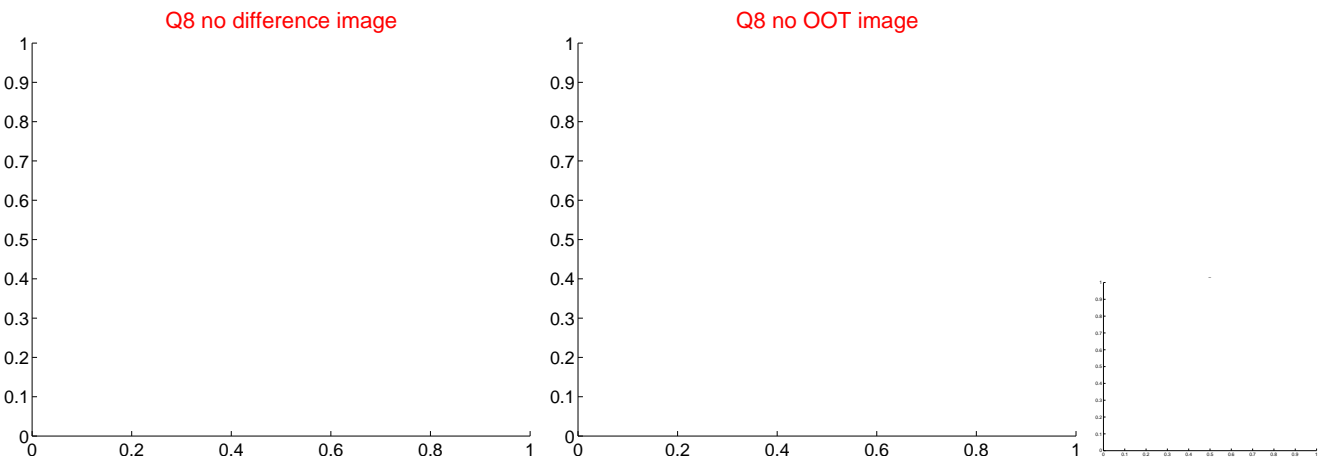
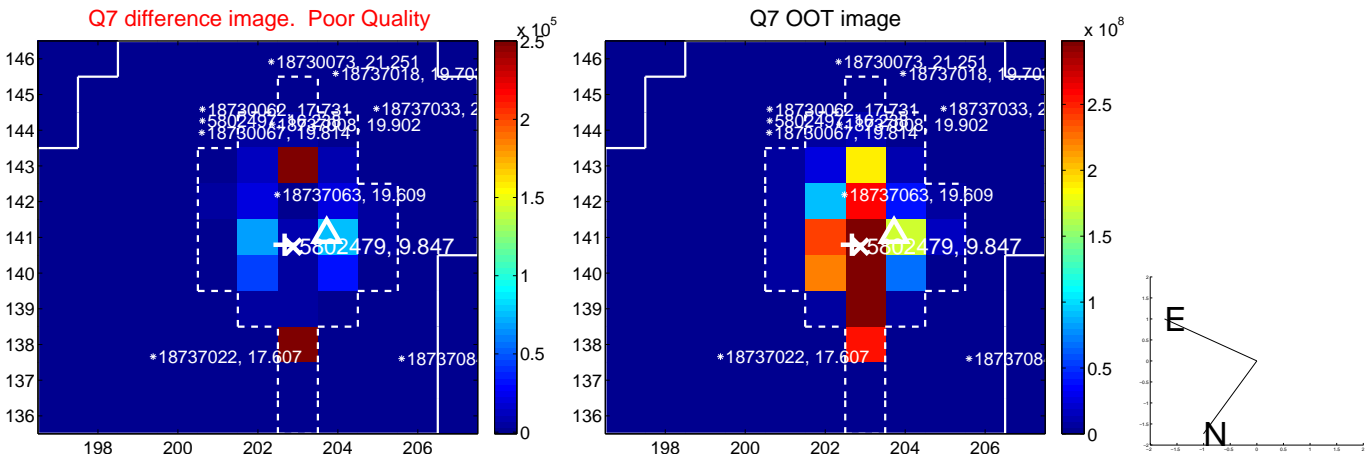
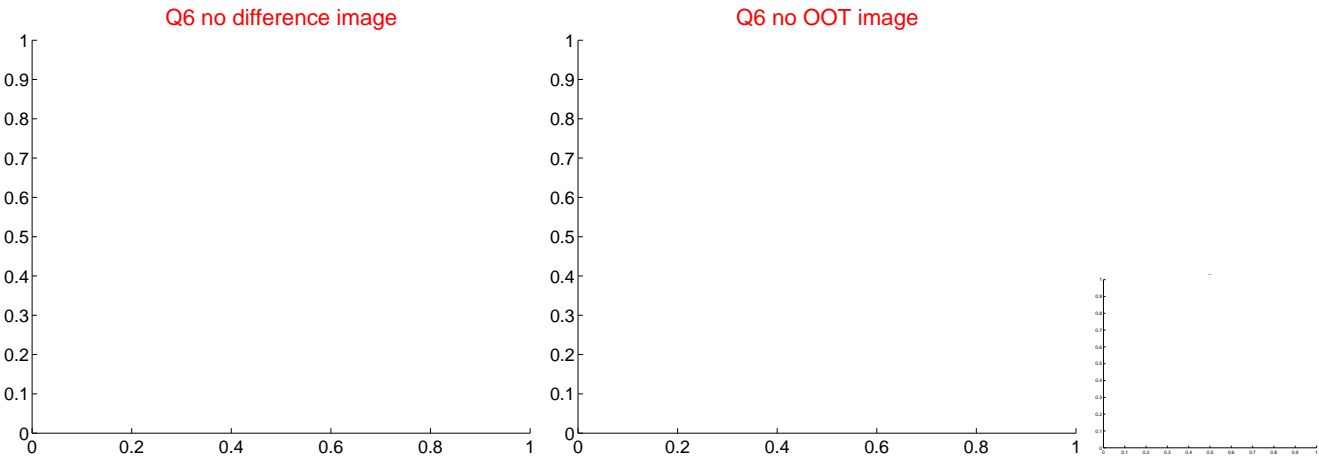
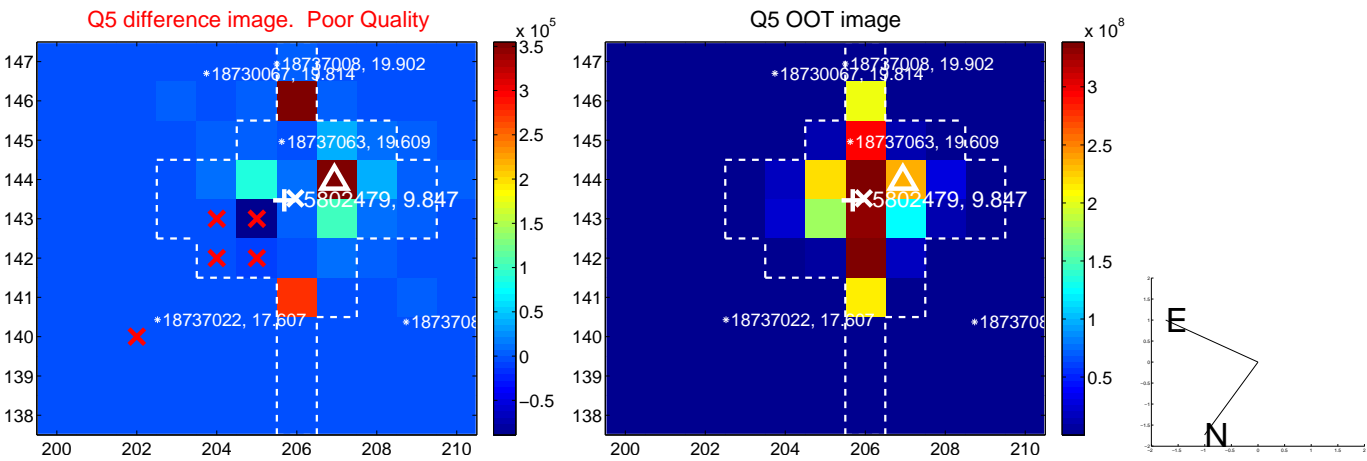


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

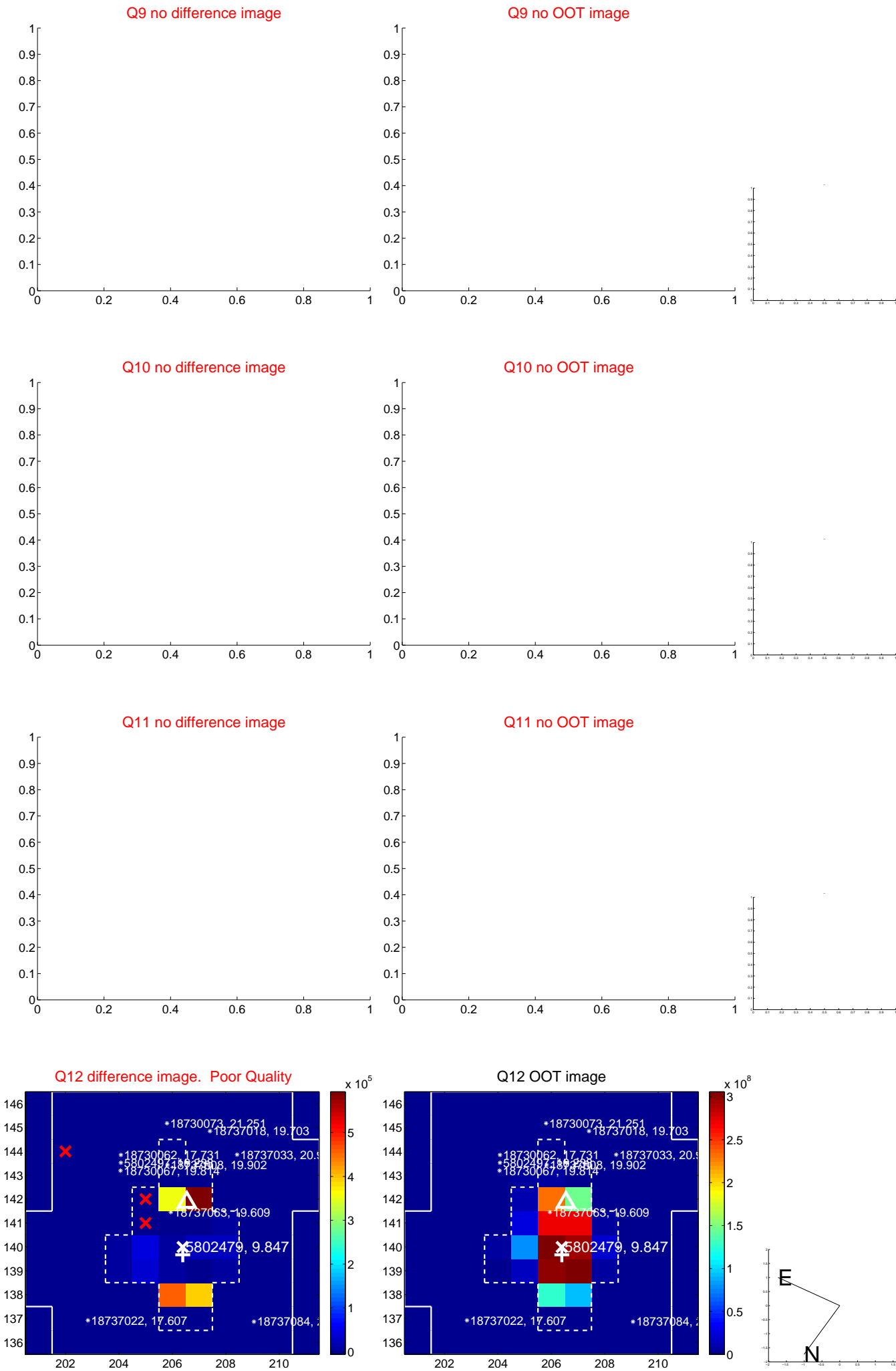
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

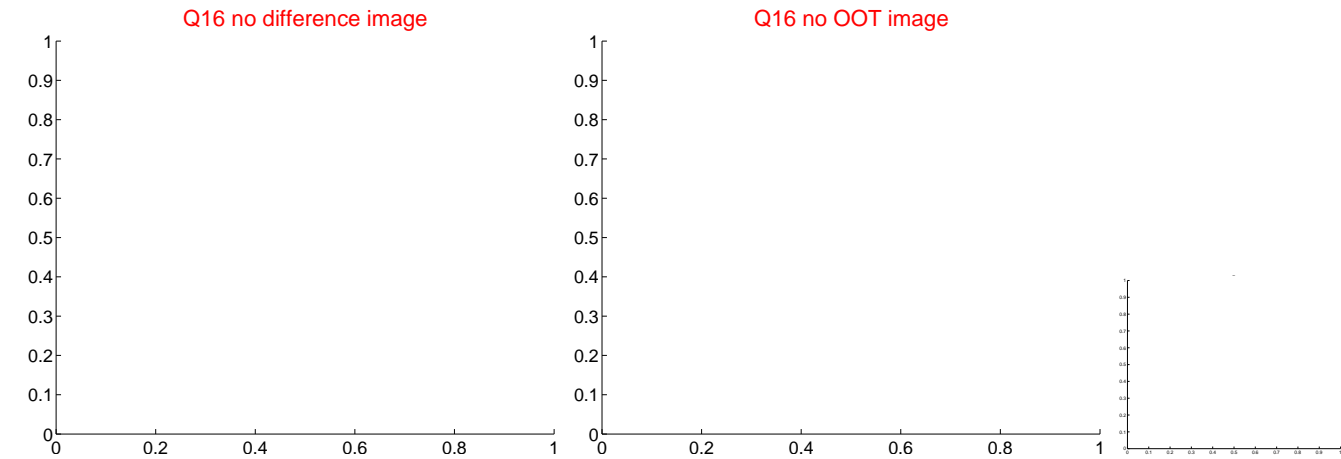
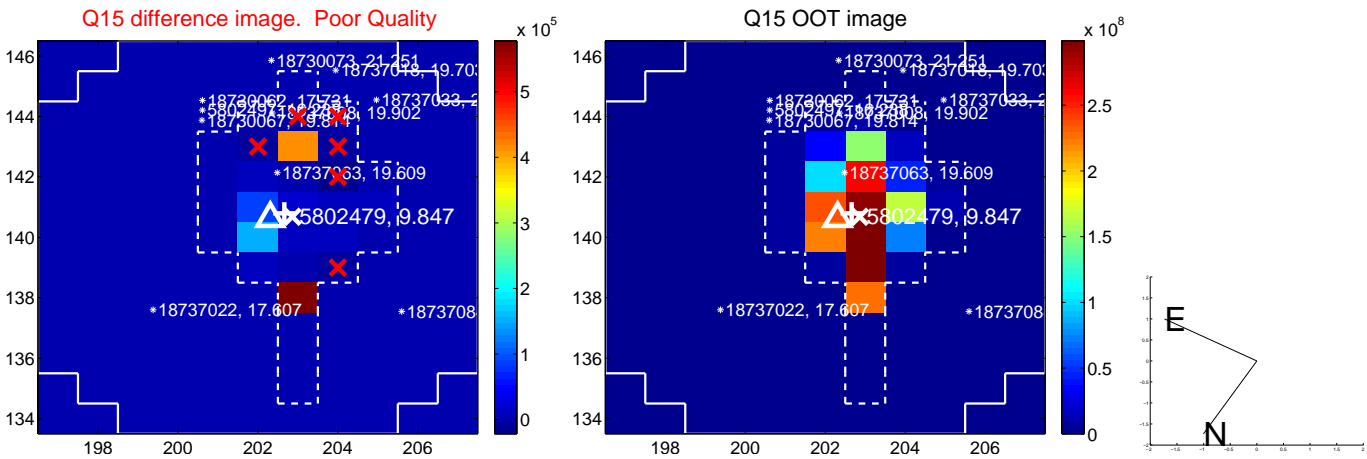
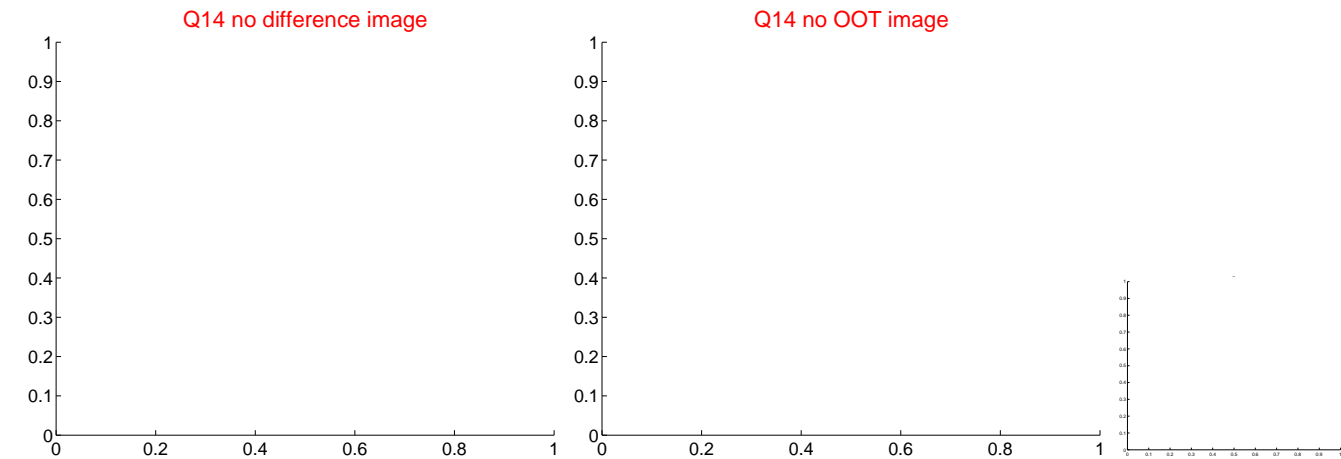
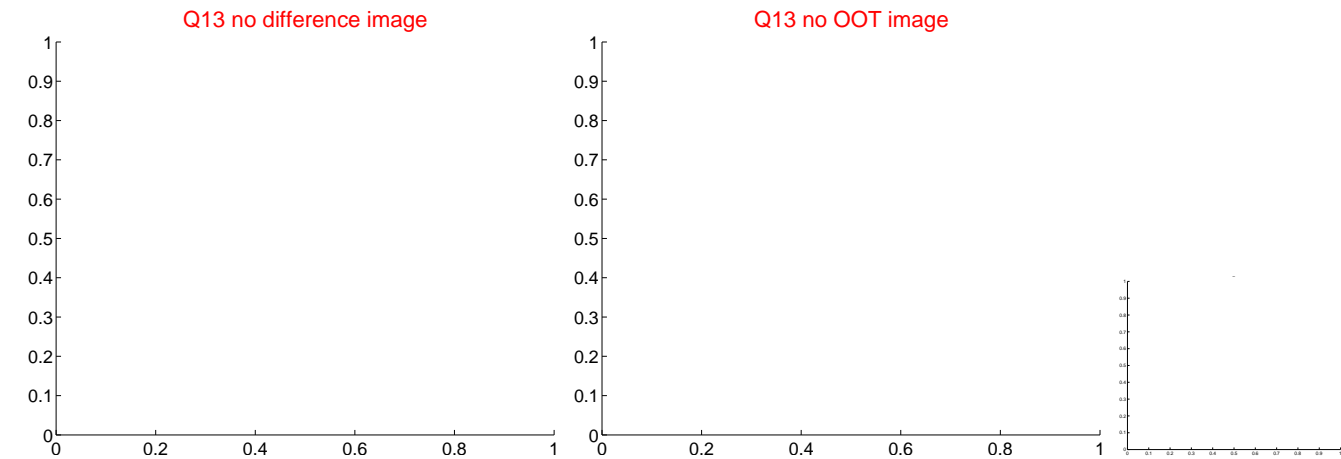


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

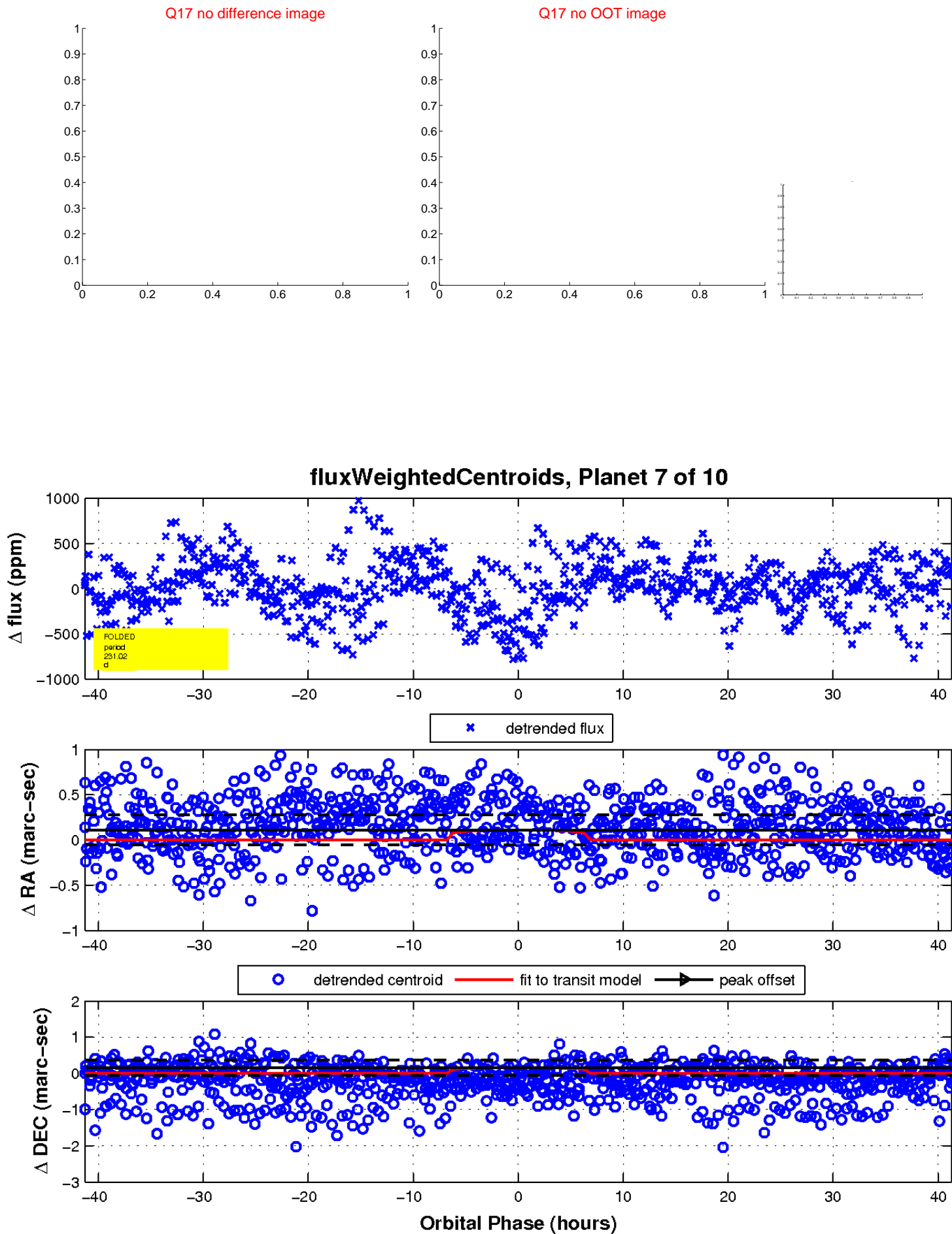




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

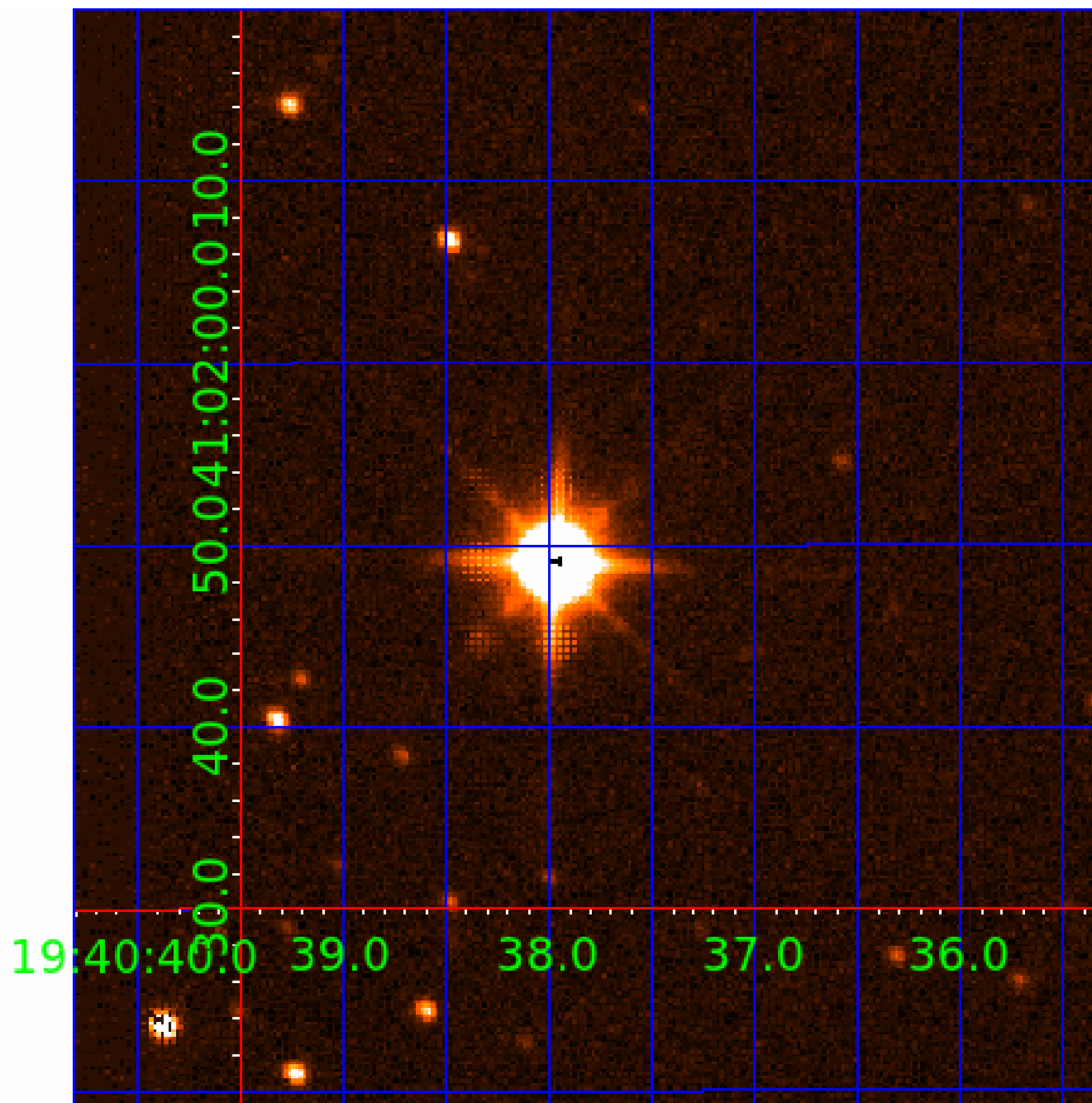


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 005802479

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005802479-01	OBS	No	0.638341	131.702634	15.9	3.873	10.4	5.9	1.92	7196	0.86	31321.42
005802479-03	OBS	No	31.522608	153.696891	526.6	5.214	10.0	10.5	1.92	7196	8.30	172.88
005802479-04	OBS	No	88.375917	134.248450	595.7	2.316	9.9	9.7	1.92	7196	5.30	43.73
005802479-05	OBS	No	84.762616	162.094820	472.9	7.177	10.1	9.3	1.92	7196	4.51	46.23
005802479-06	OBS	No	26.284161	151.113282	58.4	3.000	9.1	-1.0	1.92	7196	1.49	220.29
005802479-07	OBS	No	231.017269	226.147869	628.3	13.781	9.6	10.1	1.92	7196	5.19	12.14
005802479-08	OBS	No	80.384356	174.881064	530.4	6.609	9.4	9.0	1.92	7196	8.35	49.62
005802479-09	OBS	No	42.786339	168.305531	242.5	3.706	8.0	5.8	1.92	7196	3.37	115.04
005802479-10	OBS	No	66.734307	159.531369	549.5	5.185	8.3	8.9	1.92	7196	5.51	63.60

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005802479-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—CENT_SATURATED
005802479-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005802479-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005802479-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
005802479-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

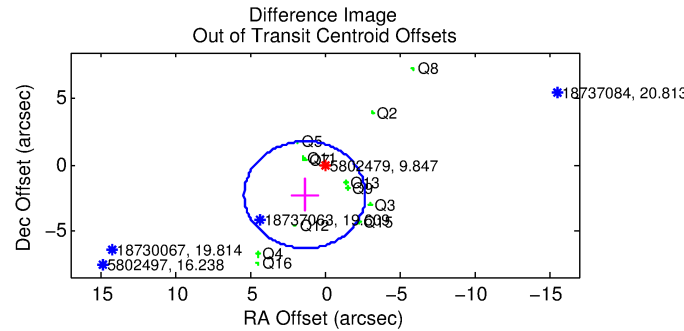
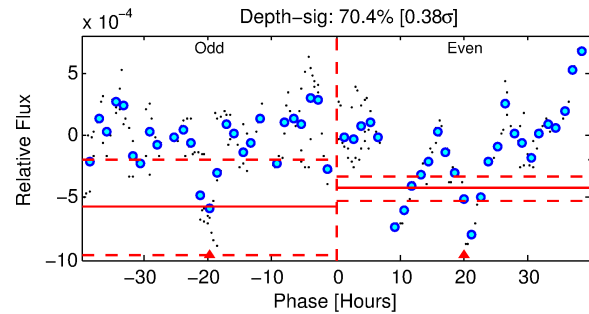
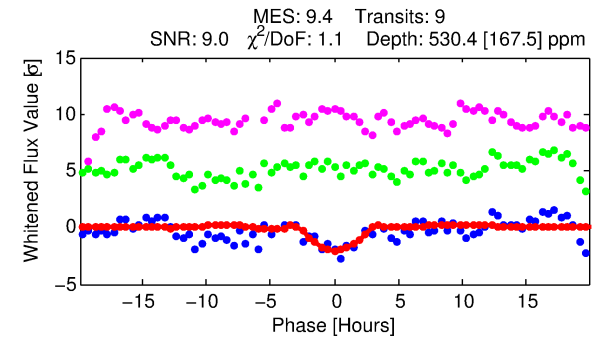
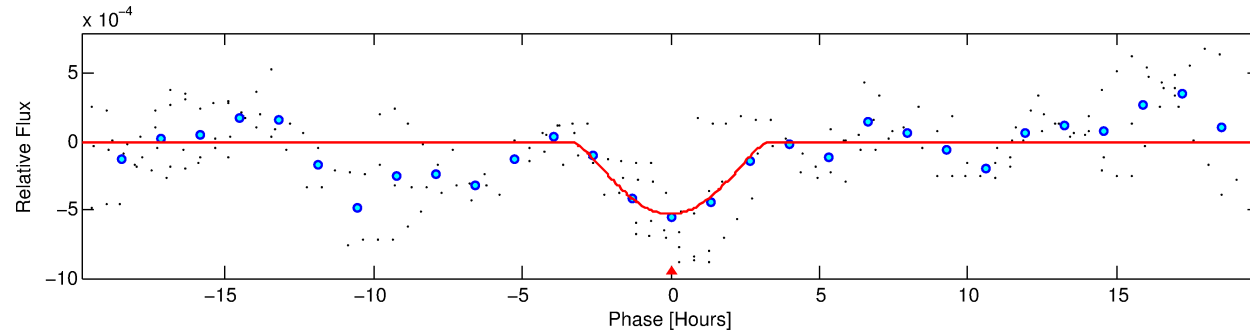
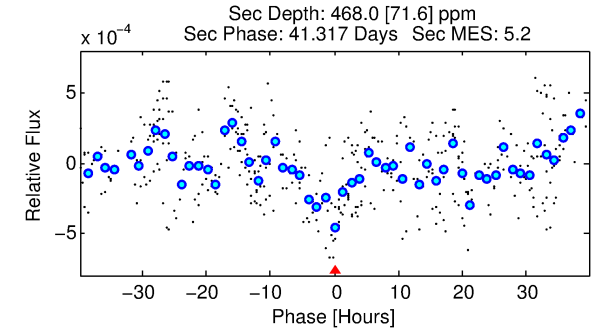
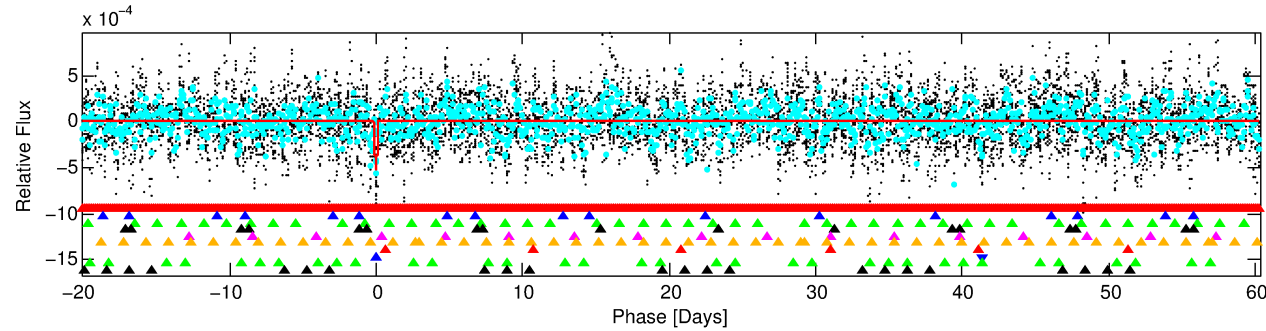
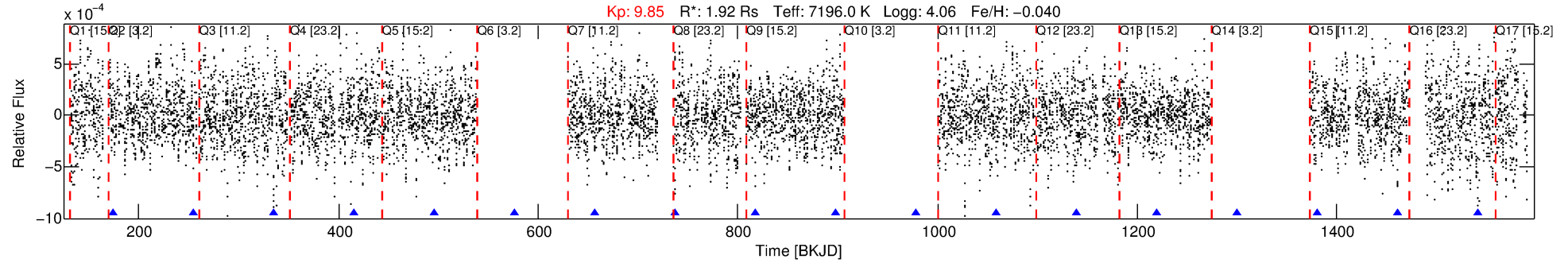
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005802479-08

No Significant Match Found

# DV One-Page Summary

KIC: 5802479 Candidate: 8 of 10 Period: 80.384 d



## DV Fit Results:

Period = 80.38436 [0.00172] d  
Epoch = 174.8811 [0.0151] BKJD  
 $R_p/R^* = 0.0398$  [0.1024]  
 $a/R^* = 26.56$  [17.29]  
 $b = 1.00$  [0.16]  
 $S_{\text{eff}} = 49.62$  [18.08]  
 $T_{\text{eq}} = 677$  [62] K  
 $R_p = 8.35$  [21.63]  $R_e$   
 $a = 0.4231$  [0.1018] AU  
 $A_g = 660.76$  [3407.76] [0.19σ]  
 $T_{\text{eff}} = 5305$  [6828] K [0.68σ]

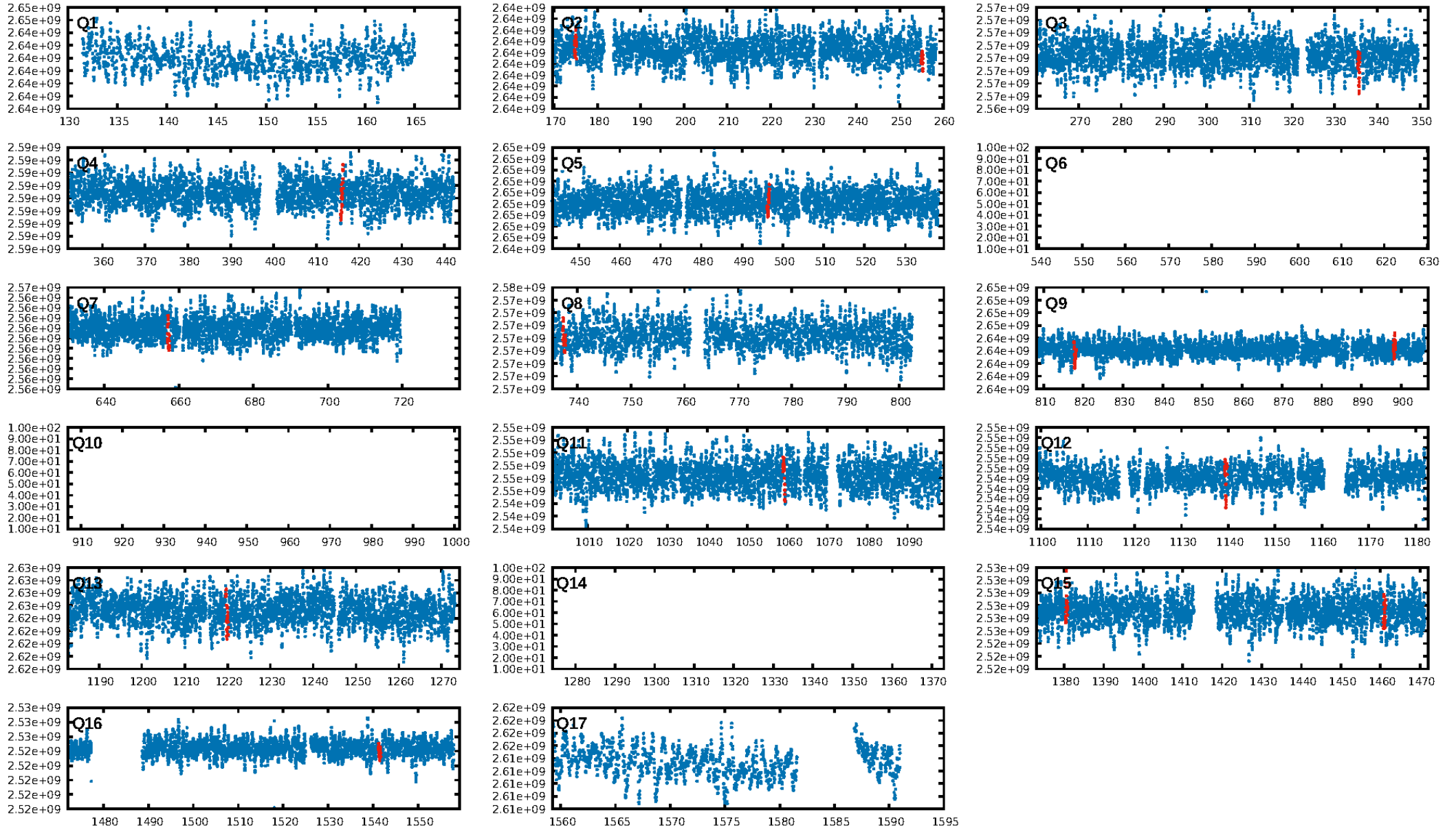
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [39.00σ]  
LongPeriod-sig: 100.0% [10.77σ]  
**ModelChiSquare2-sig: 0.2%**  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [9/9]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 51.4%  
Centroid-so: 0.214 arcsec [1.04σ]  
OotOffset-rm: 2.640 arcsec [1.96σ]  
OotOffset-st: 1/4/4/3 [12]  
KicOffset-rm: 1.888 arcsec [1.70σ]  
KicOffset-st: 1/4/4/3 [12]  
DiffImageQuality-fgm: 0.08 [1/12]  
DiffImageOverlap-fno: 0.00 [0/12]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:10:50 Z

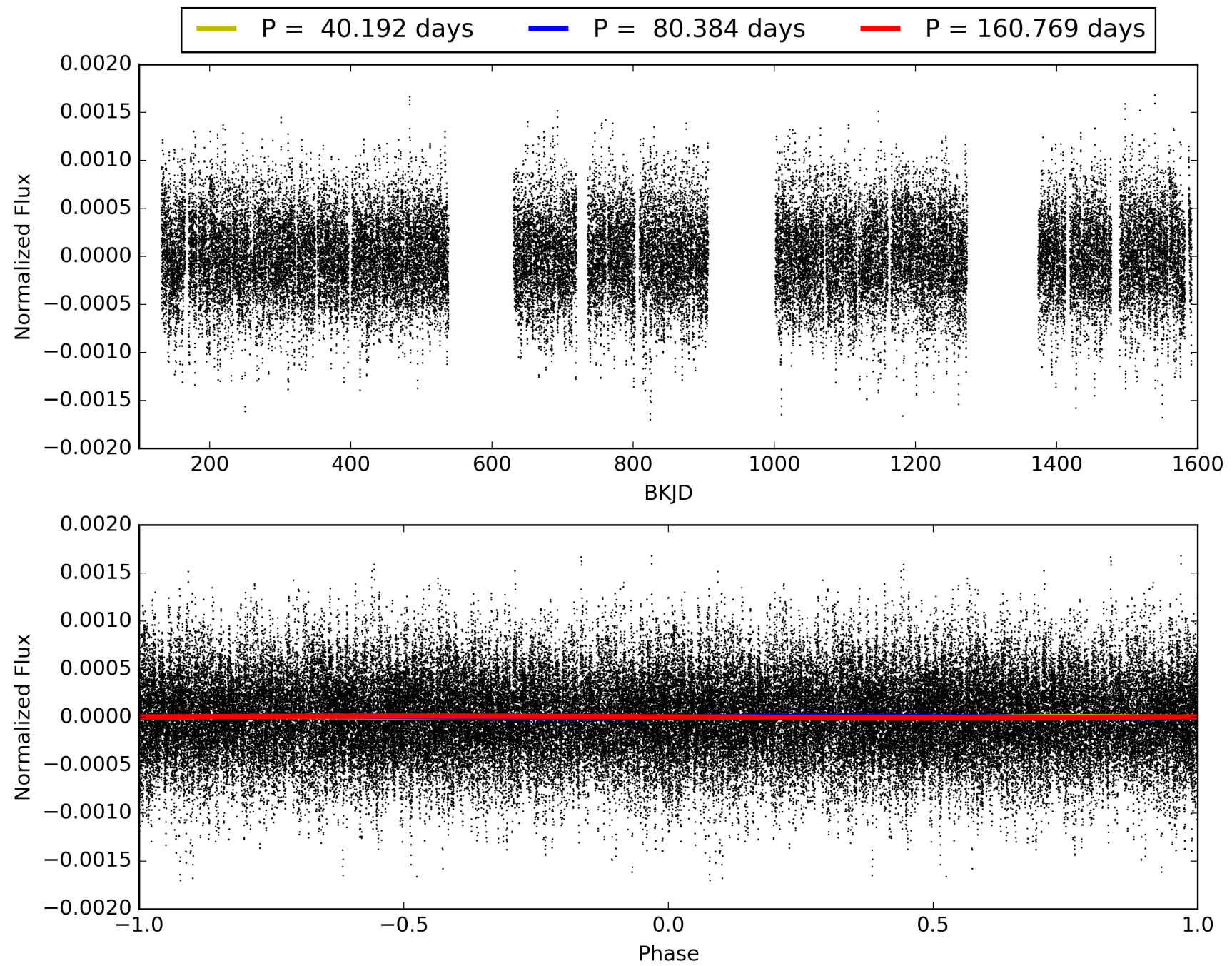
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005802479-08, PDC Light Curves





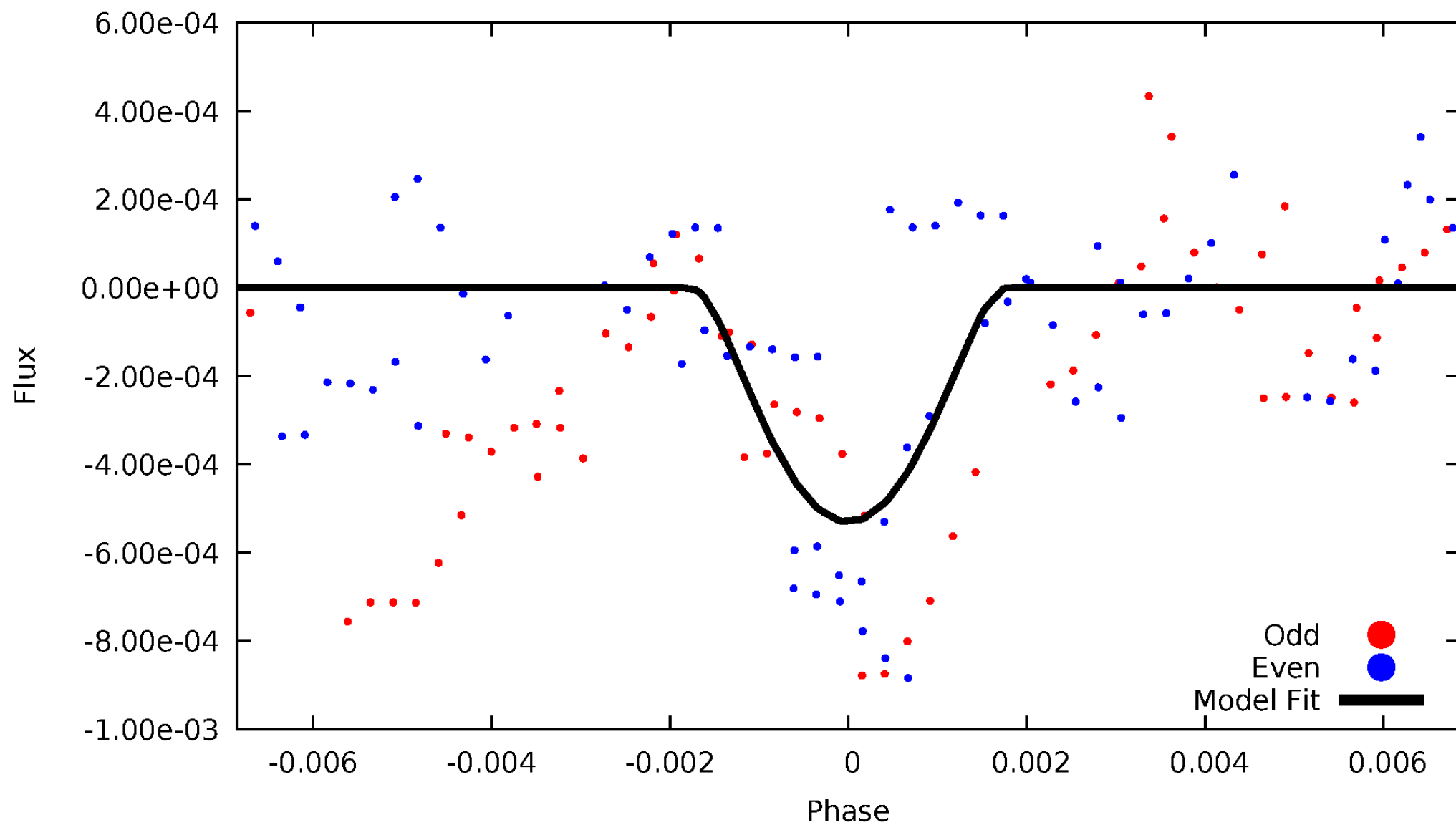
TCE 005802479-08





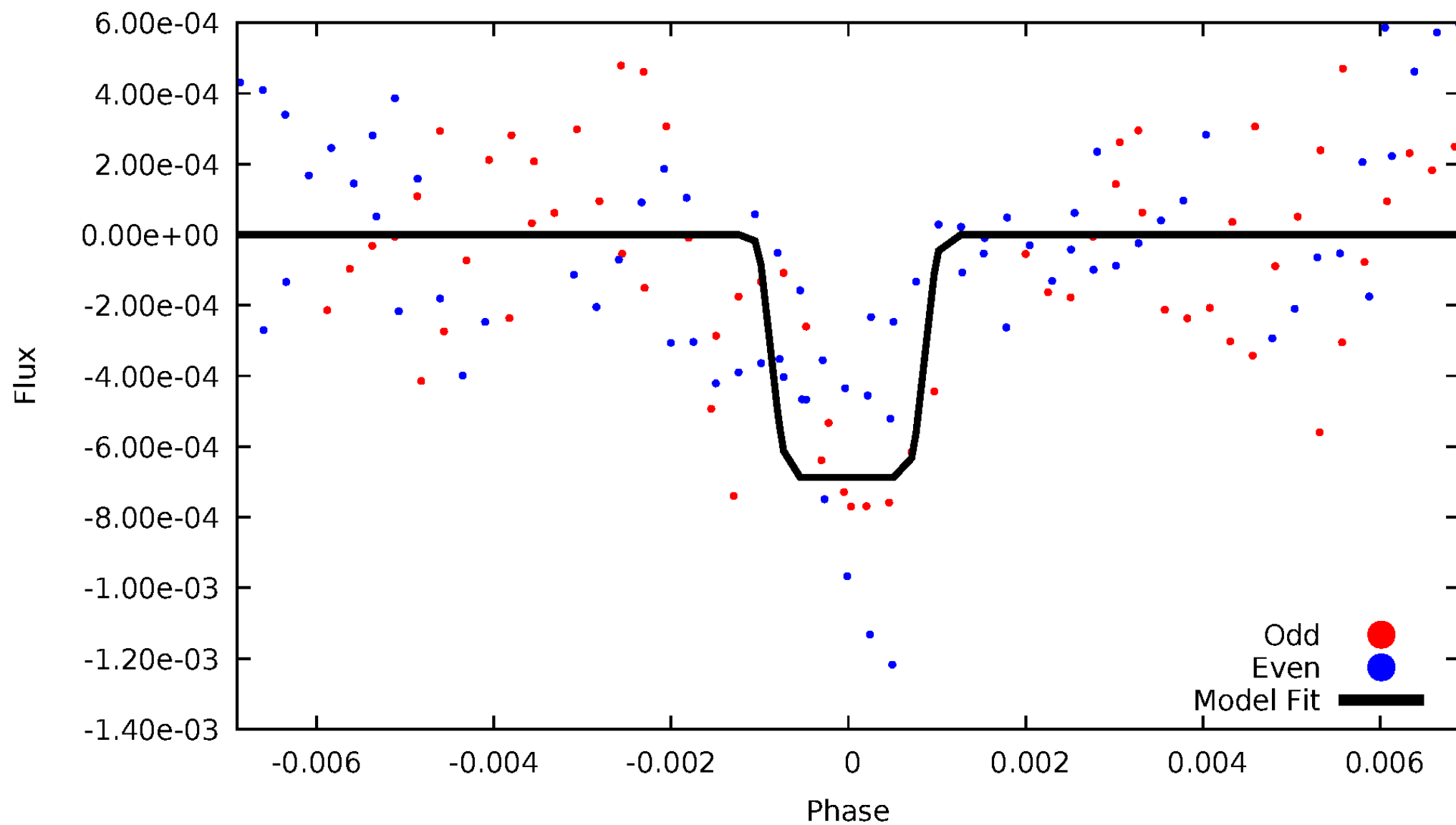
# DV Odd/Even

TCE 005802479-08



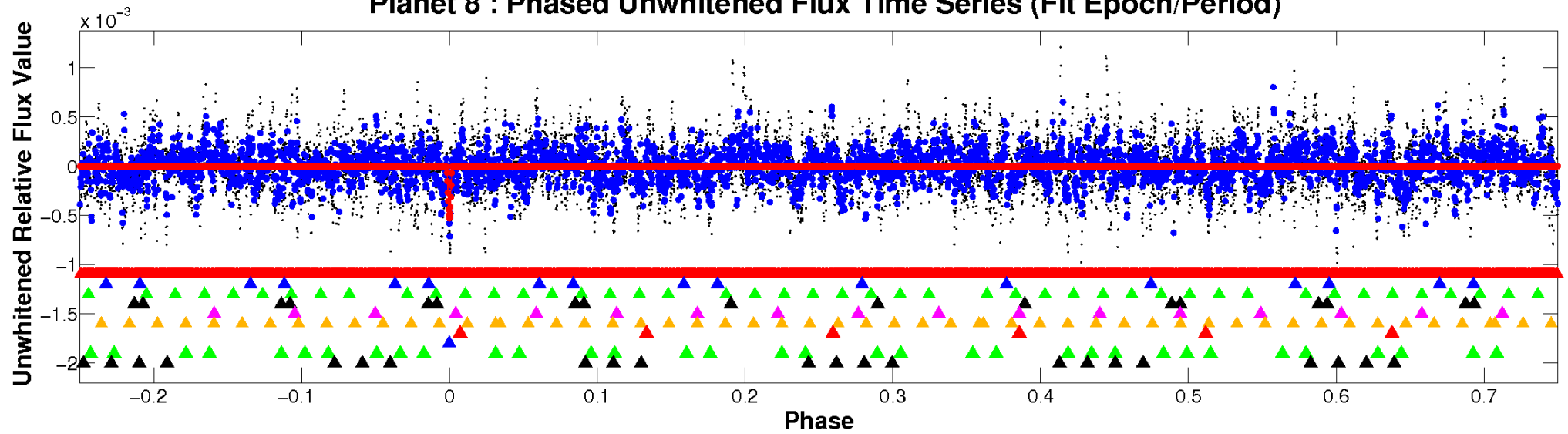
# ALT Odd/Even

TCE 005802479-08

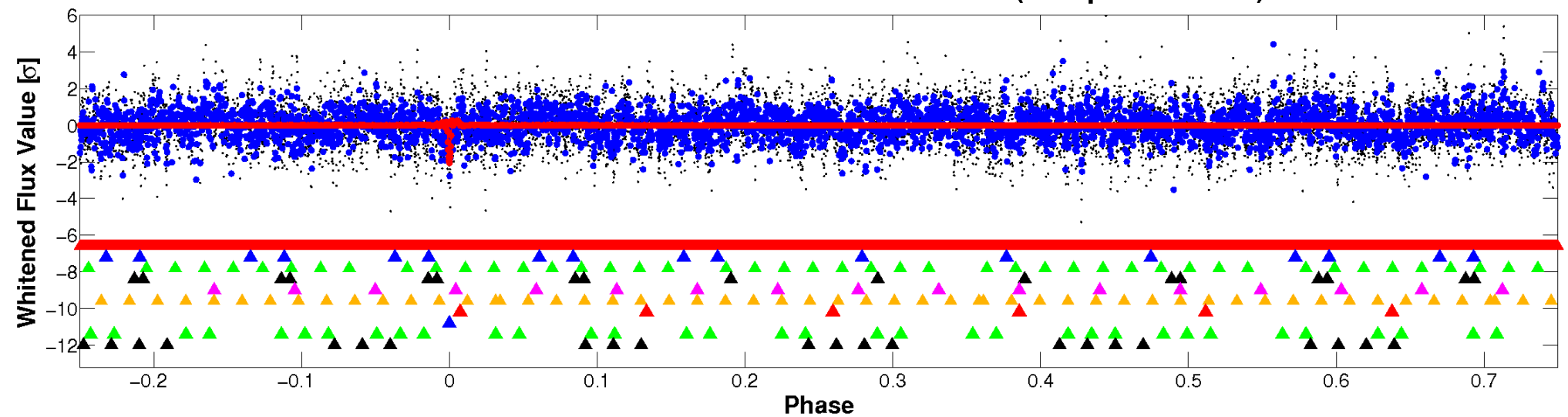


# Non-Whitened Vs. Whitened Light Curve

## Planet 8 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

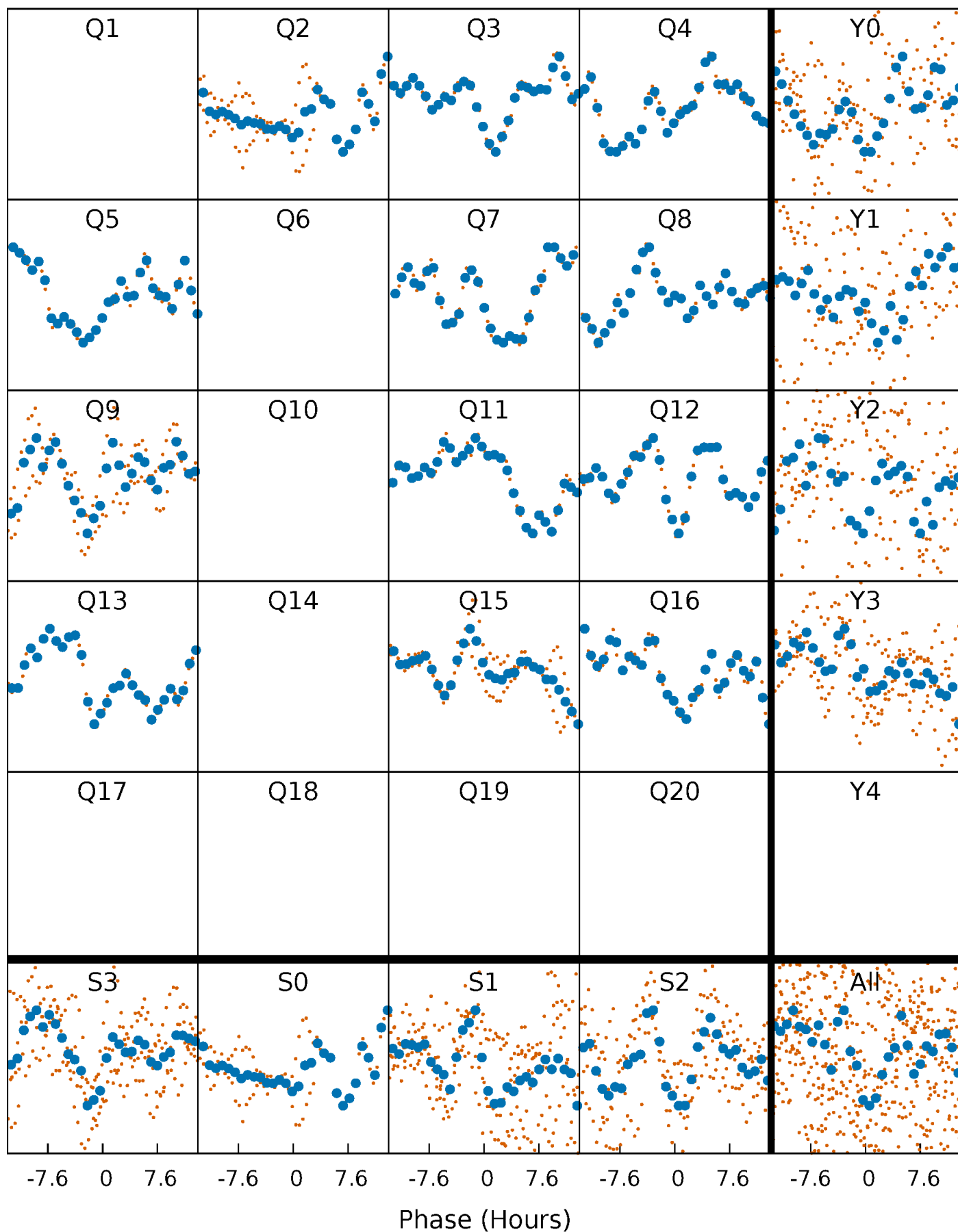


## Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



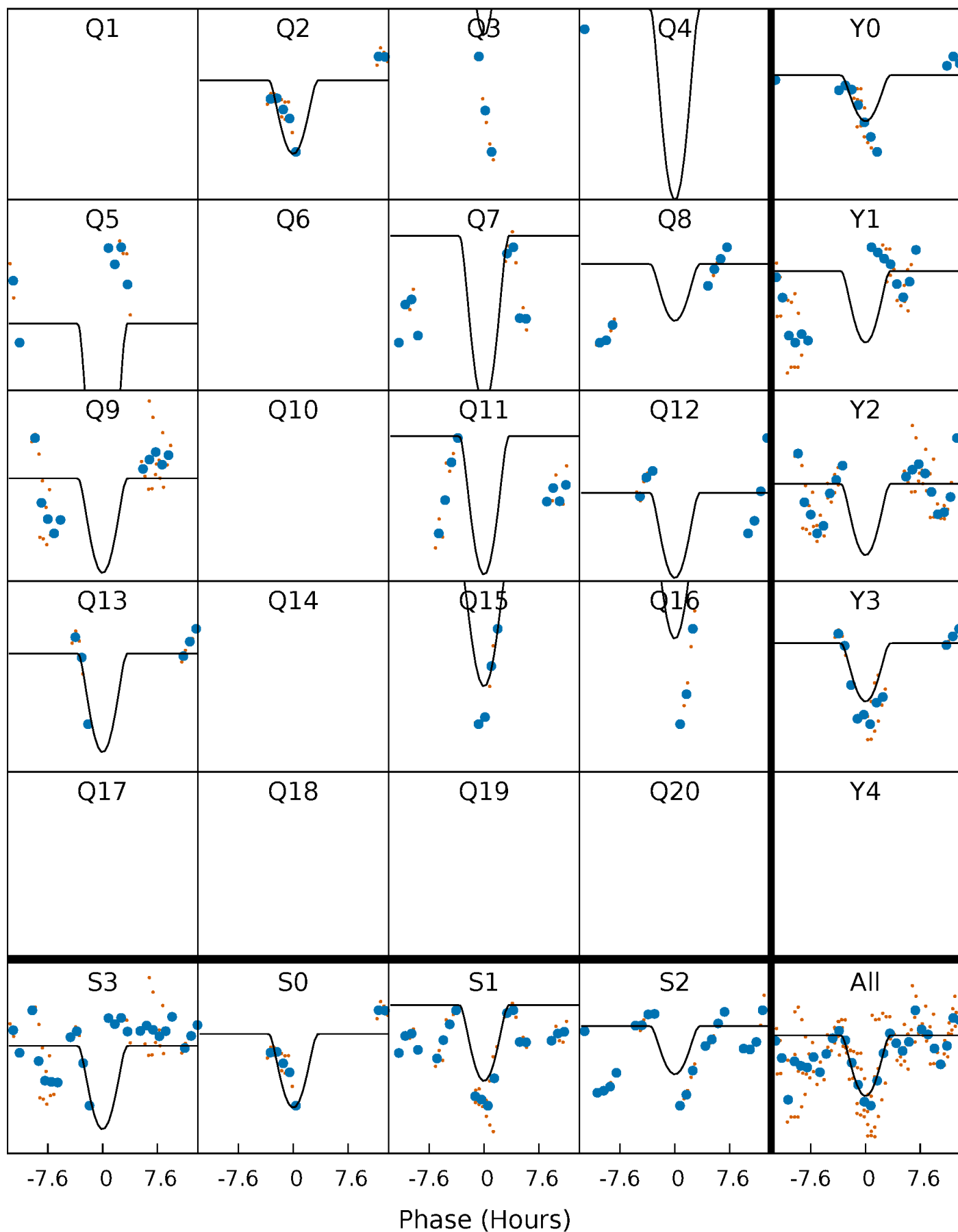
# PDC Quarter-Phased Transit Curves

TCE 005802479-08   P= 80.384356 Days    $T_0=174.881064$  (BKJD)



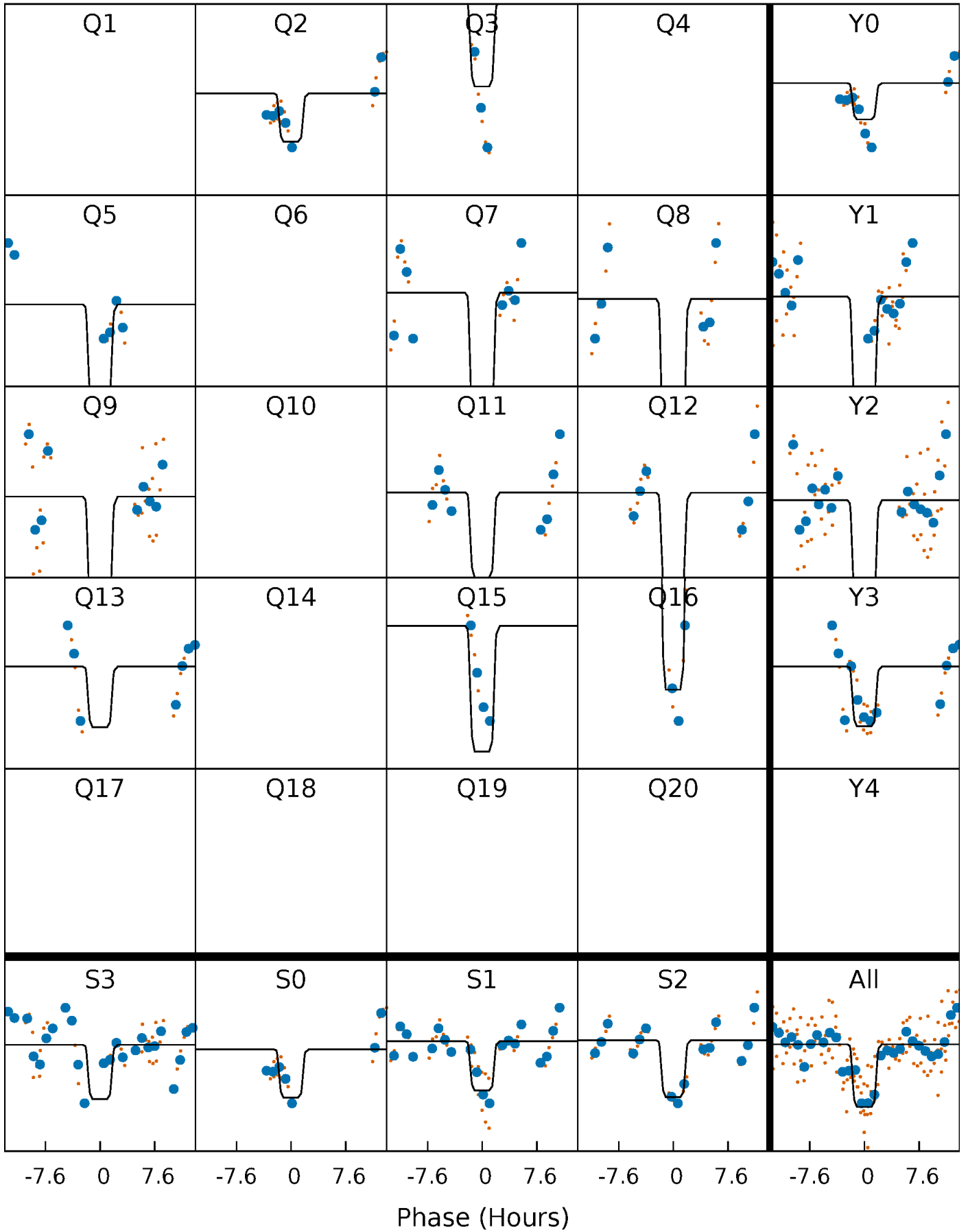
# DV Quarter-Phased Transit Curves

TCE 005802479-08   P= 80.384356 Days    $T_0=174.881064$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

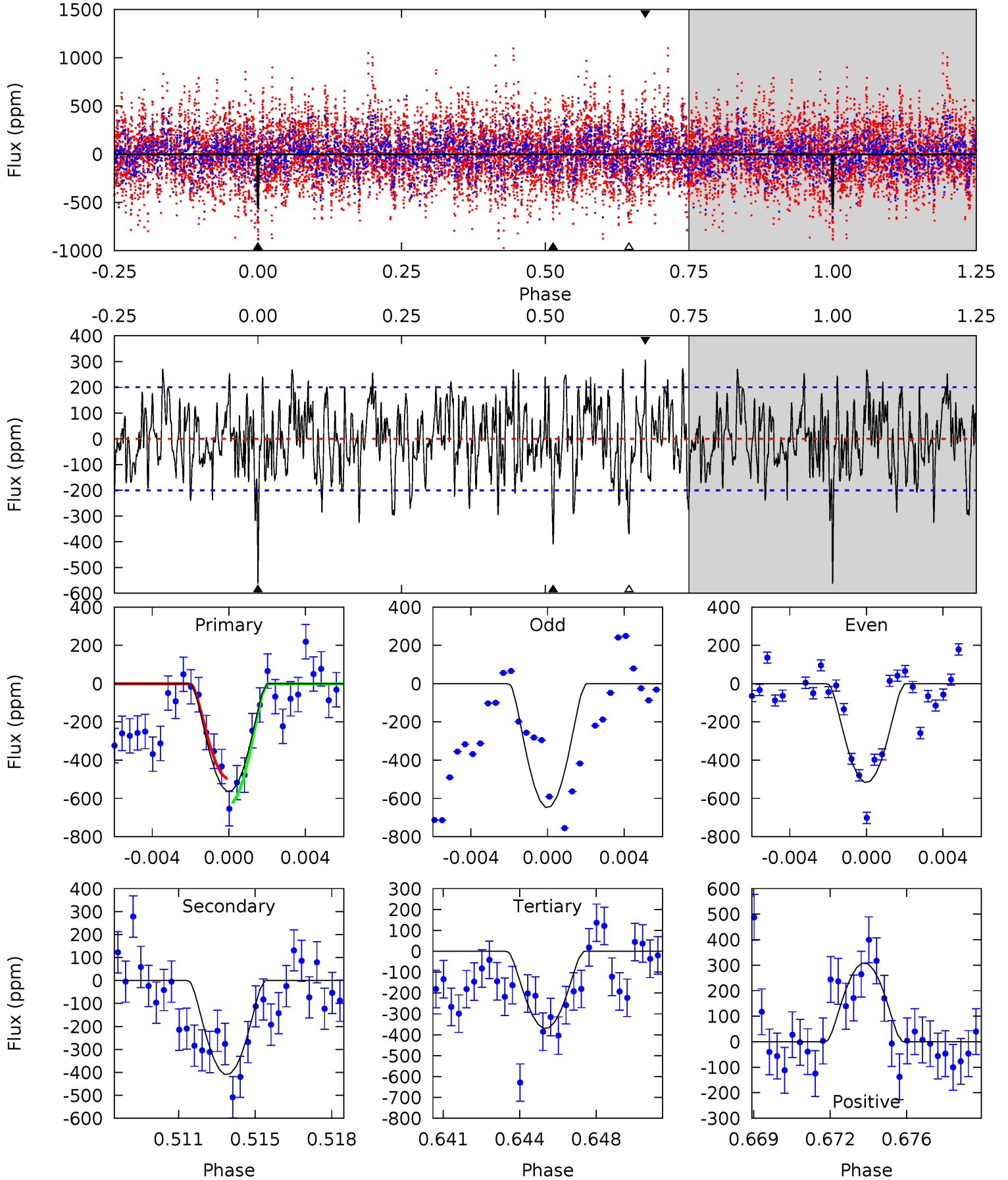
TCE 005802479-08   P= 80.385880 Days    $T_0=174.891930$  (BKJD)



# DV Model-Shift Uniqueness Test

005802479-08, P = 80.384356 Days, E = 94.496708 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.7	10.7	9.62	8.03	5.22	2.92	2.97	5.04	6.64	1.05	2.65	1.66	0.59	0.35	1.65

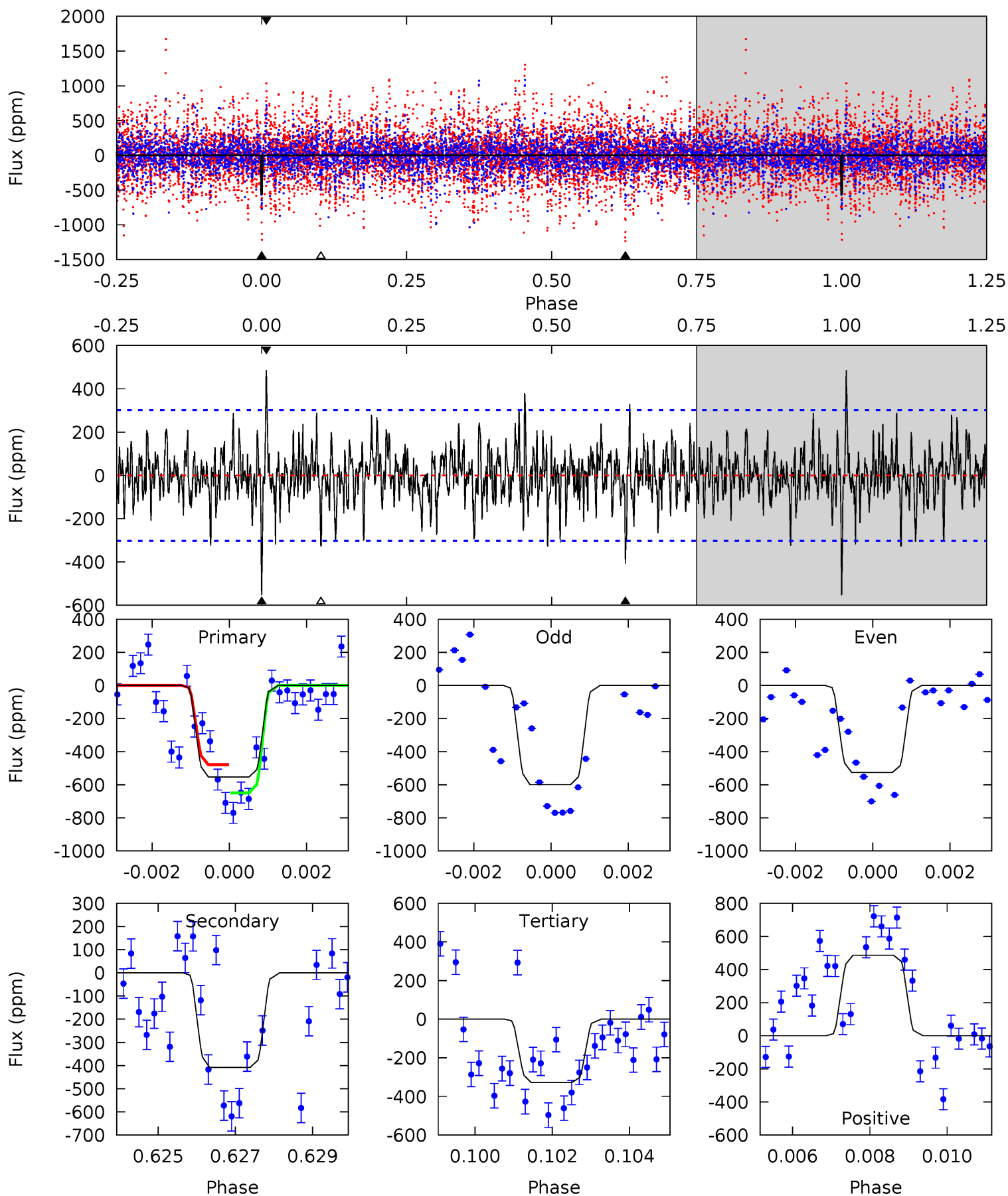




# Alt Model-Shift Uniqueness Test

005802479-08, P = 80.385880 Days, E = 94.506050 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
9.76	7.21	5.79	8.59	5.33	3.09	1.81	3.97	1.17	1.41	-1.38	0.64	1.11	0.47	1.50



### Stellar Parameters For KIC 005802479

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7196^{+172}_{-259}$	$4.064^{+0.158}_{-0.175}$	$-0.040^{+0.250}_{-0.350}$	$1.923^{+0.576}_{-0.471}$	$1.562^{+0.212}_{-0.236}$	$0.309^{+0.296}_{-0.153}$
	+2%/-4%	+4%/-4%	+625%/-875%	+30%/-24%	+14%/-15%	+96%/-50%
Source	PHO1	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 005802479-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-410 \pm 38$	$18.39^{+19.00}_{-12.12}$	$944^{+72}_{-62}$	$3778^{+2056}_{-716}$	$120^{+894}_{-91}$
Alt.	$-408 \pm 57$	$16.15^{+17.94}_{-11.38}$	$947^{+67}_{-63}$	$3982^{+2506}_{-874}$	$147^{+1567}_{-115}$

$T_{\text{max}}$  = 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

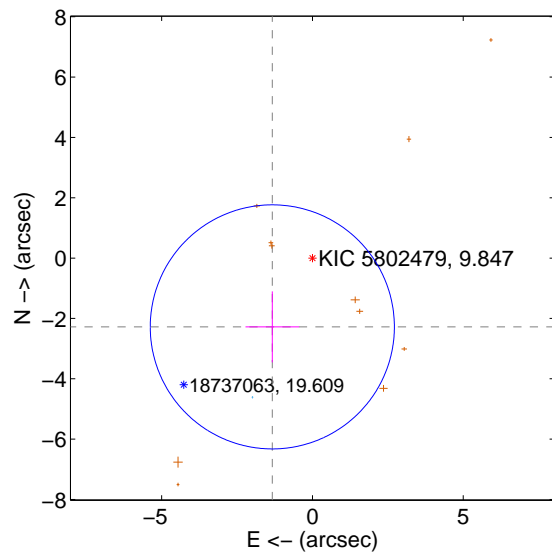
Supplemental centroid analysis for 005802479-08. **Kepler magnitude: 9.85.** Transit SNR 9.01

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

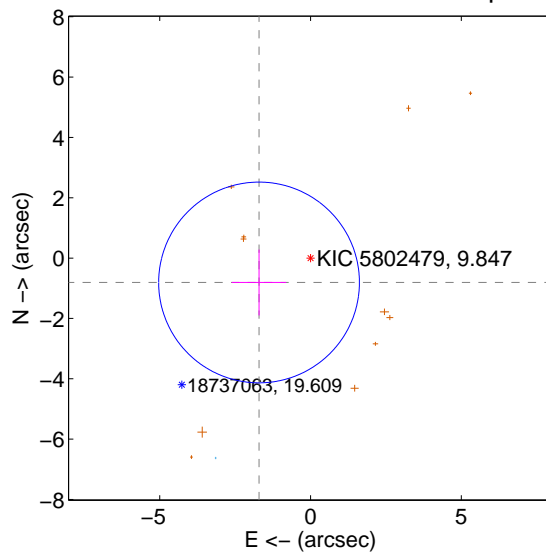
The direct PRF centroid is offset from the target star catalog position by about 1.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.640 \pm 1.349$	1.96	$1.330 \pm 0.890$	$-2.280 \pm 1.178$
PRF-fit source offset from KIC position	$1.888 \pm 1.109$	1.70	$1.707 \pm 0.902$	$-0.808 \pm 1.091$
photometric centroid source offset	$0.21 \pm 0.21$	1.04	$-0.16 \pm 0.17$	$-0.15 \pm 0.24$

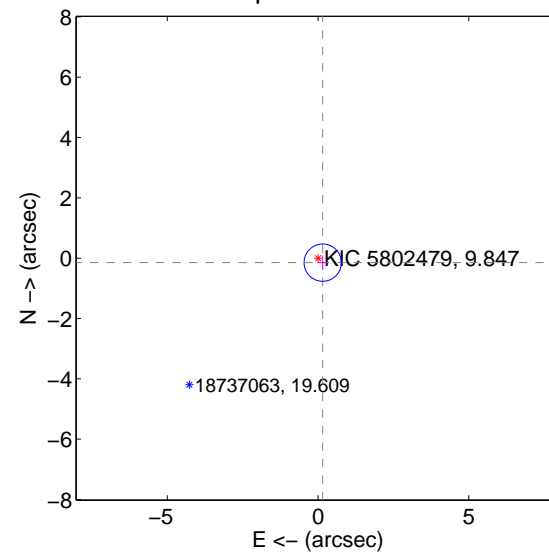
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

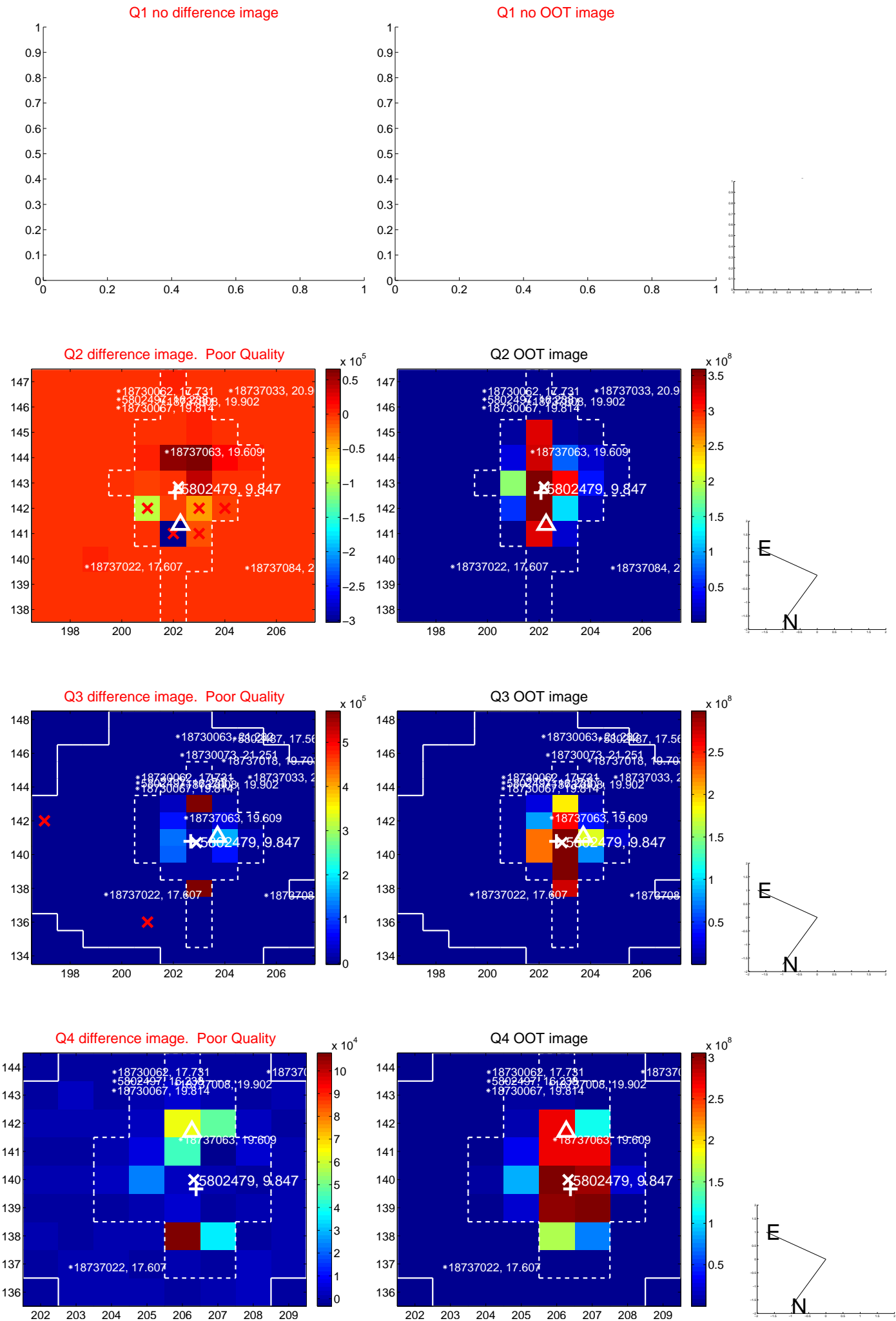


offset from photometric centroids

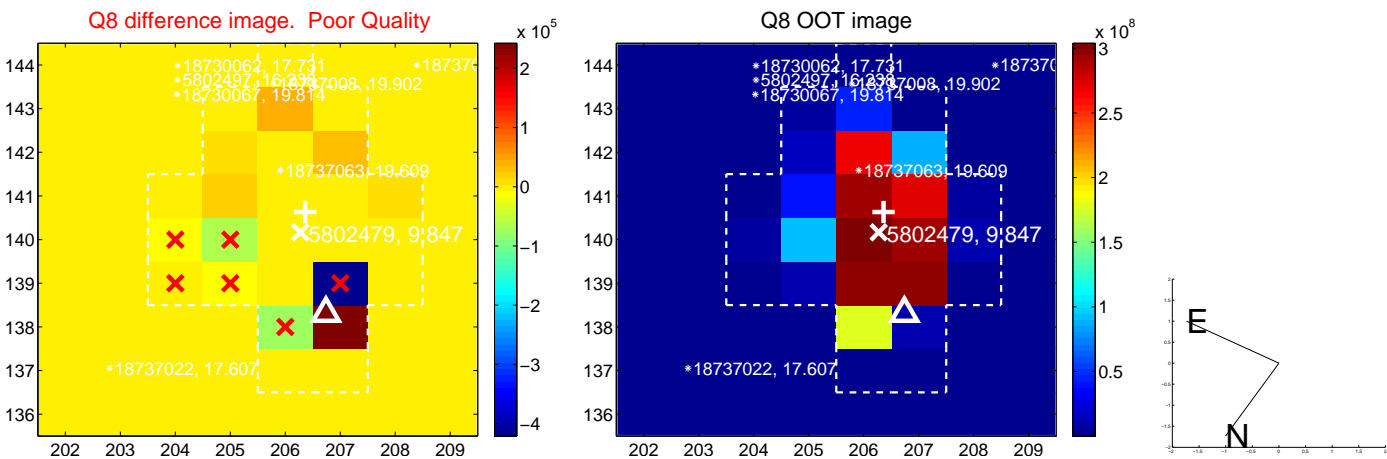
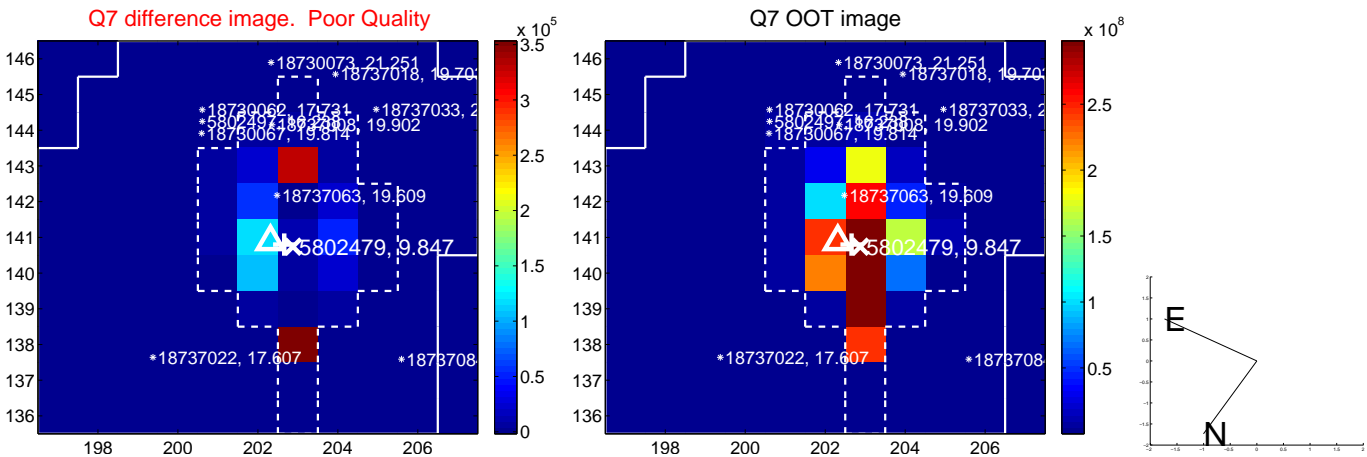
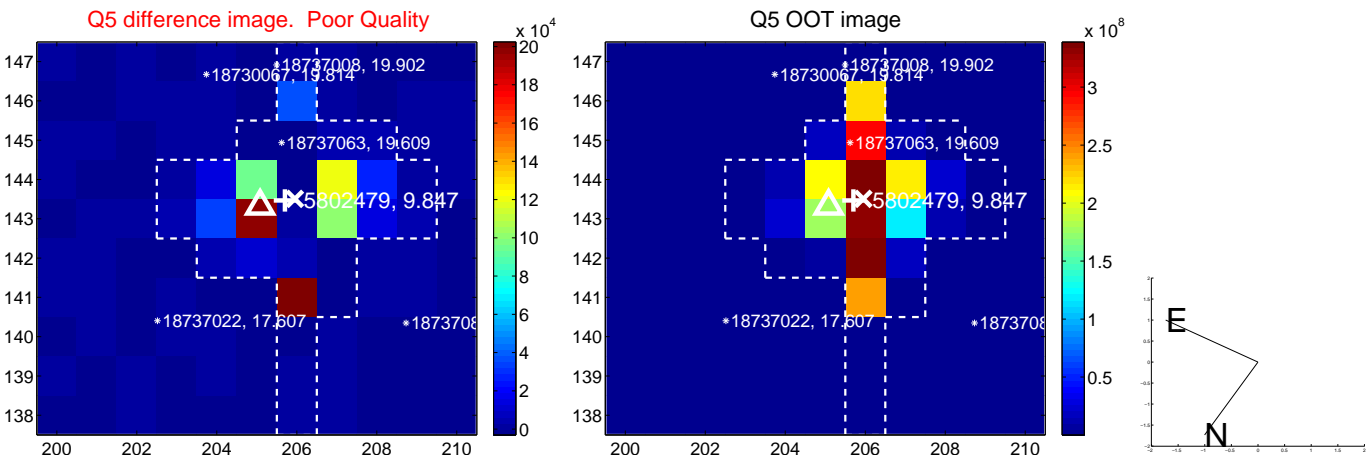


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

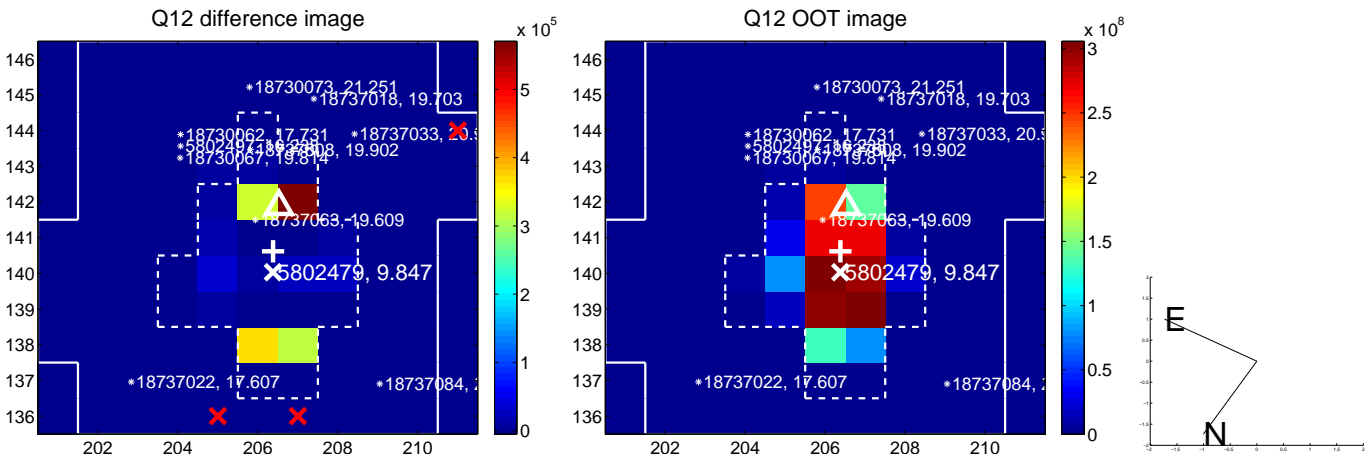
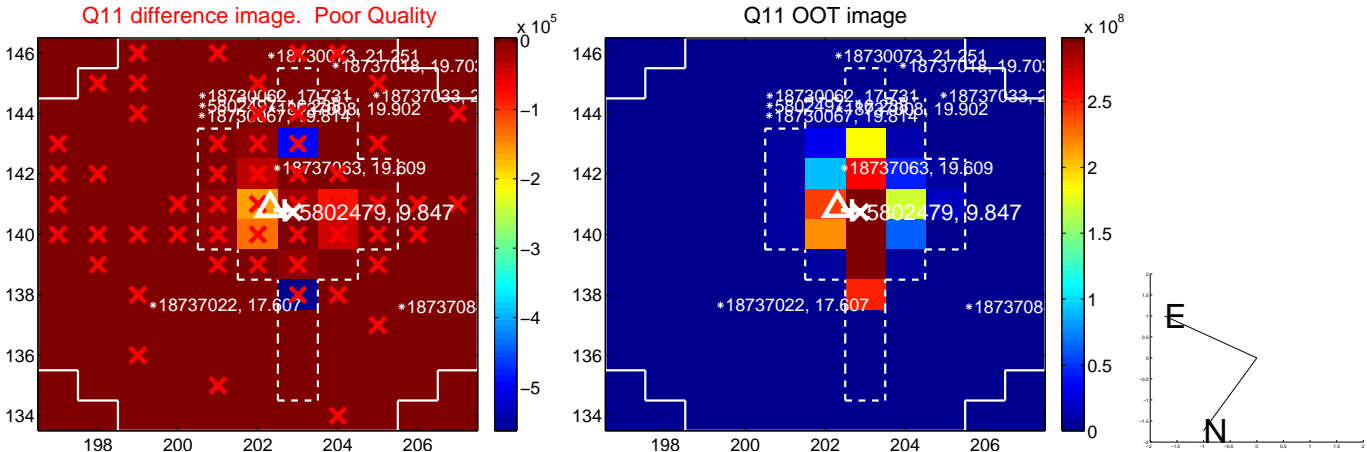
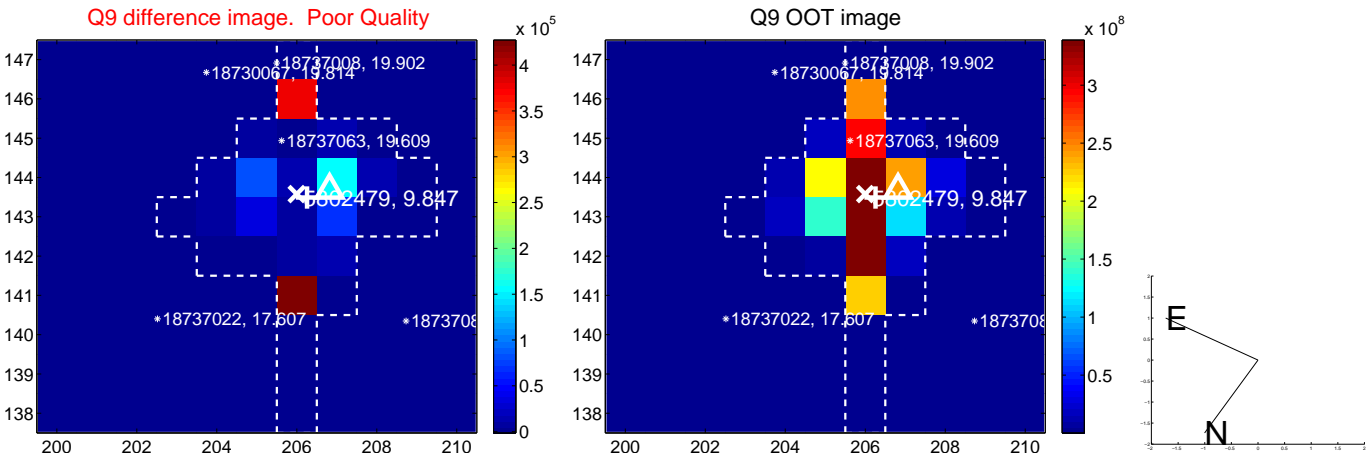
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



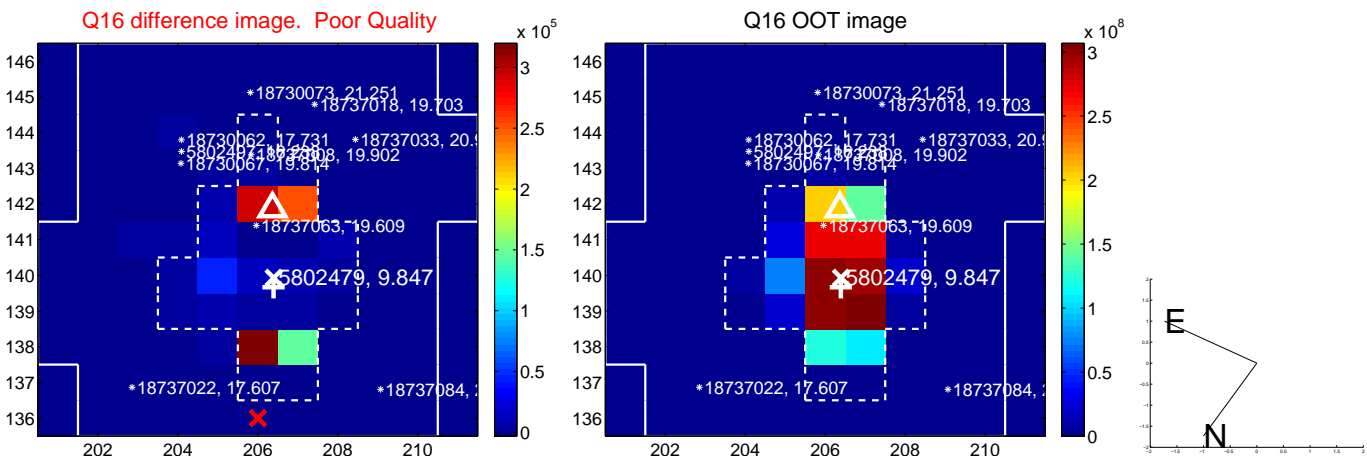
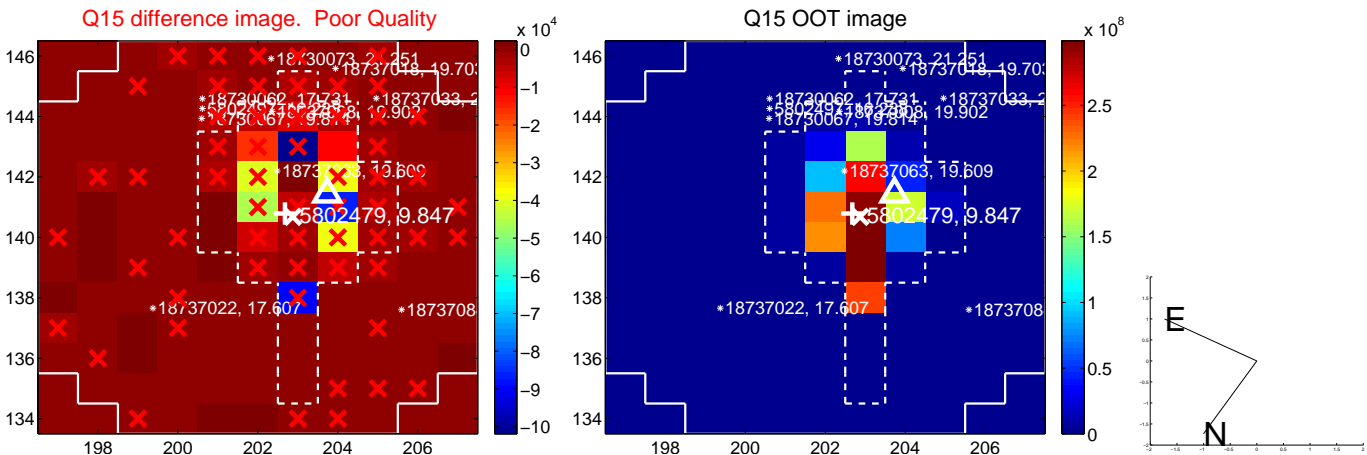
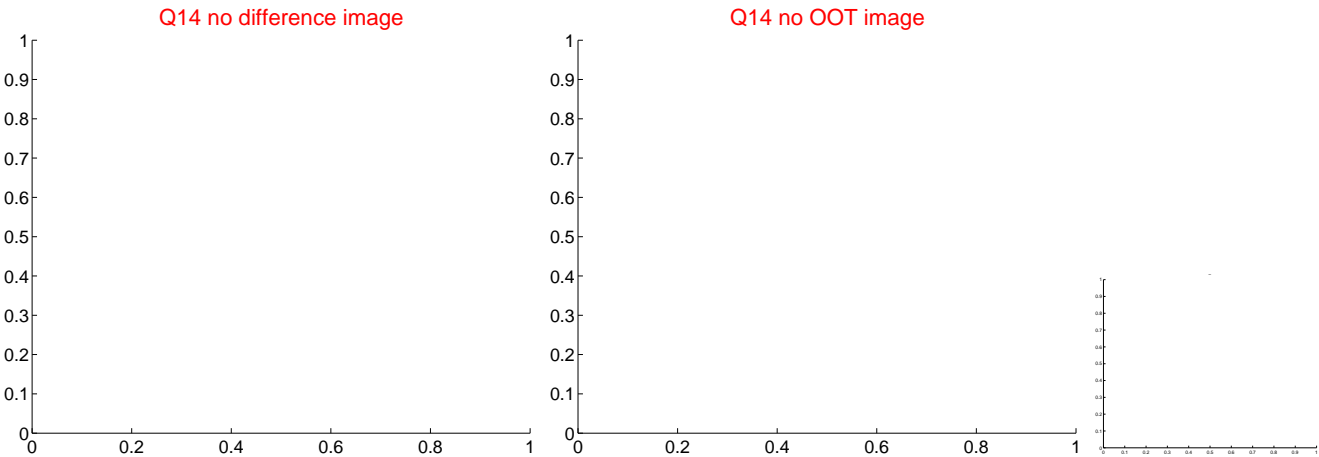
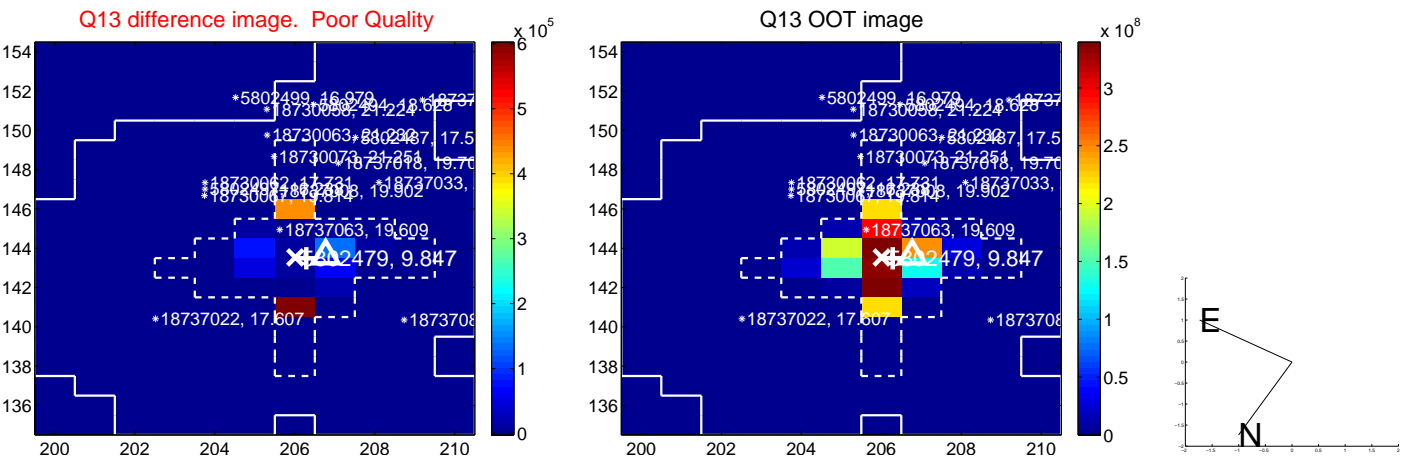
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

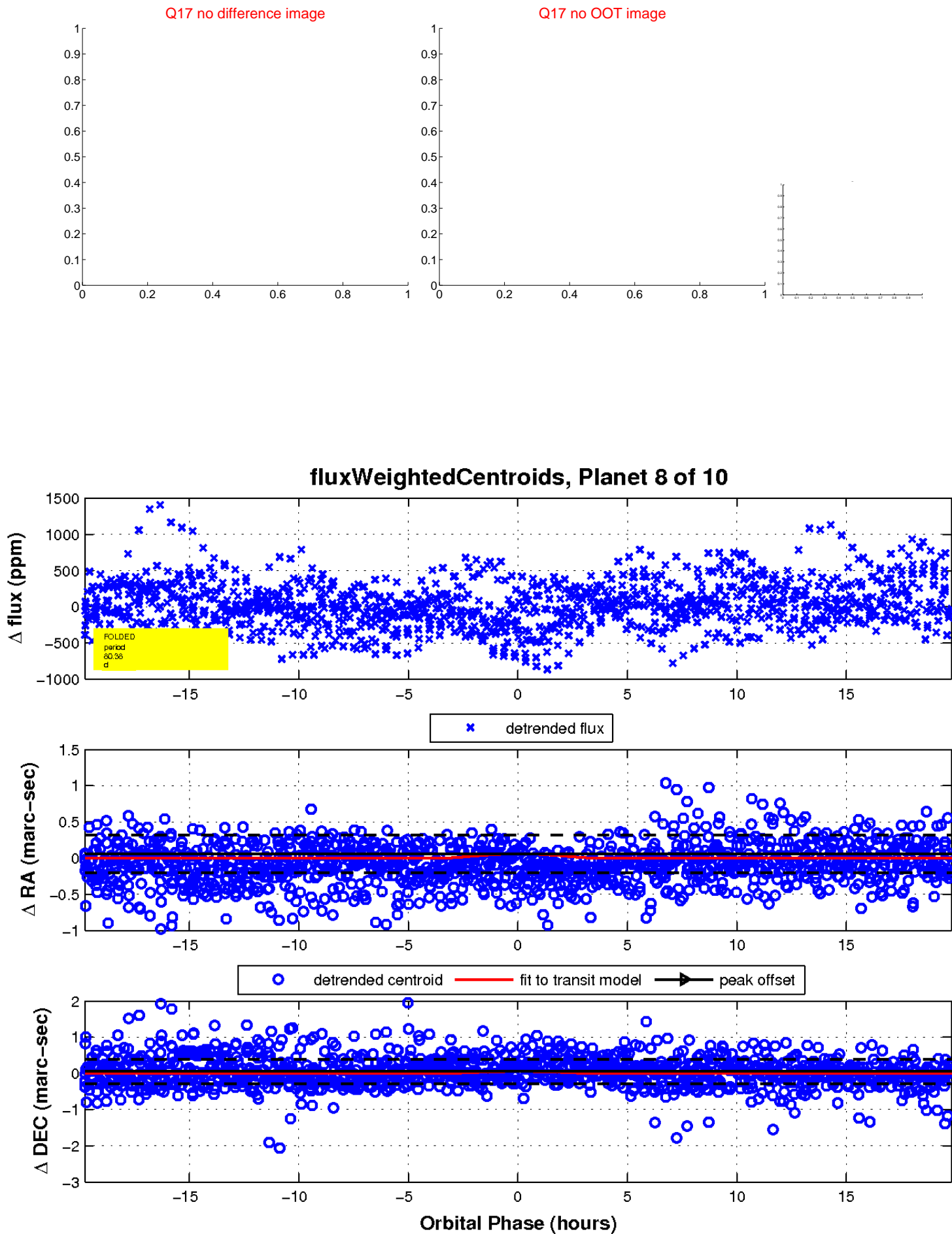


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



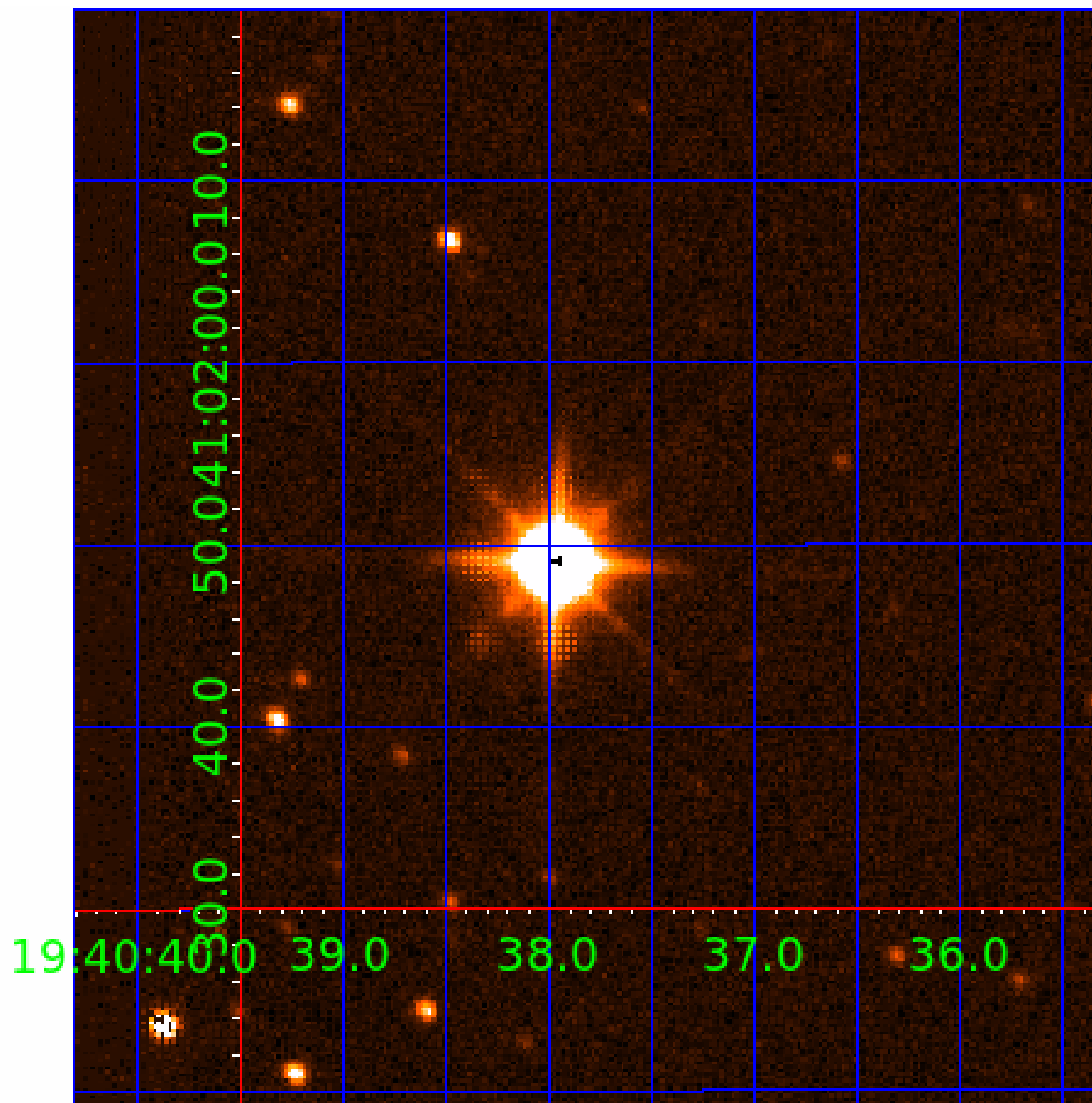


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 005802479

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005802479-01	OBS	No	0.638341	131.702634	15.9	3.873	10.4	5.9	1.92	7196	0.86	31321.42
005802479-03	OBS	No	31.522608	153.696891	526.6	5.214	10.0	10.5	1.92	7196	8.30	172.88
005802479-04	OBS	No	88.375917	134.248450	595.7	2.316	9.9	9.7	1.92	7196	5.30	43.73
005802479-05	OBS	No	84.762616	162.094820	472.9	7.177	10.1	9.3	1.92	7196	4.51	46.23
005802479-06	OBS	No	26.284161	151.113282	58.4	3.000	9.1	-1.0	1.92	7196	1.49	220.29
005802479-07	OBS	No	231.017269	226.147869	628.3	13.781	9.6	10.1	1.92	7196	5.19	12.14
005802479-08	OBS	No	80.384356	174.881064	530.4	6.609	9.4	9.0	1.92	7196	8.35	49.62
005802479-09	OBS	No	42.786339	168.305531	242.5	3.706	8.0	5.8	1.92	7196	3.37	115.04
005802479-10	OBS	No	66.734307	159.531369	549.5	5.185	8.3	8.9	1.92	7196	5.51	63.60

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005802479-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—CENT_SATURATED
005802479-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005802479-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005802479-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
005802479-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

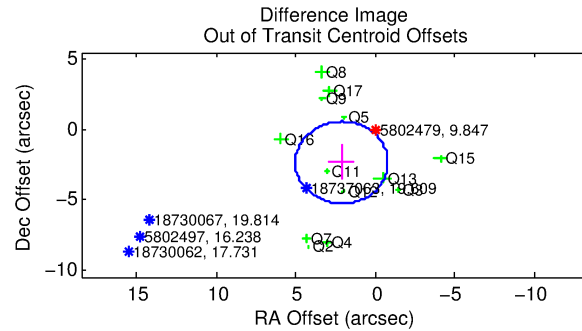
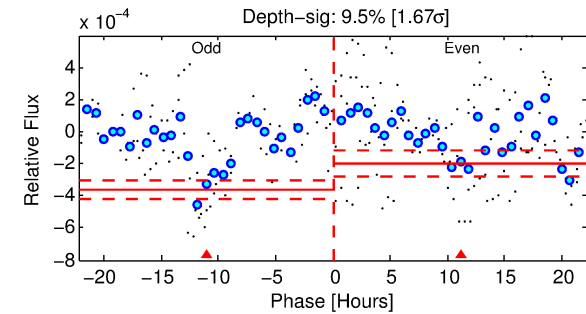
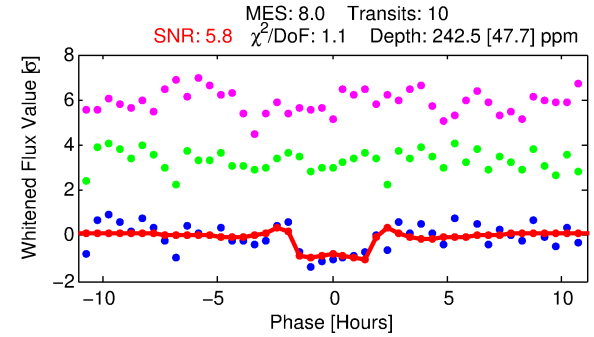
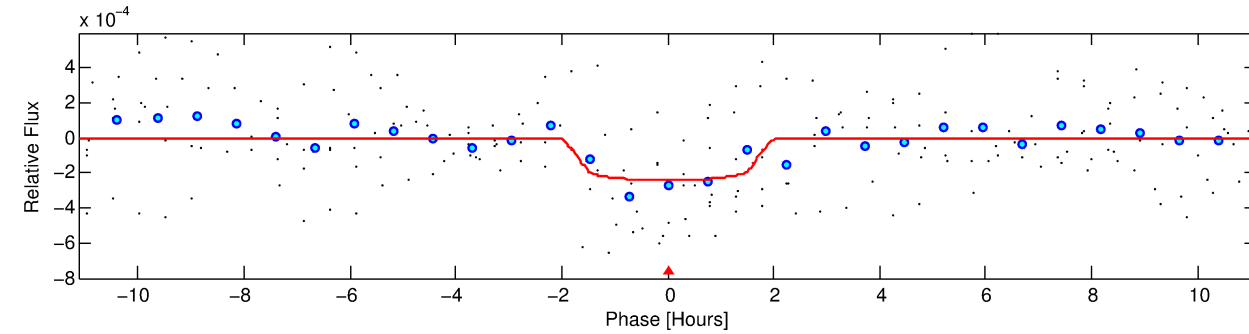
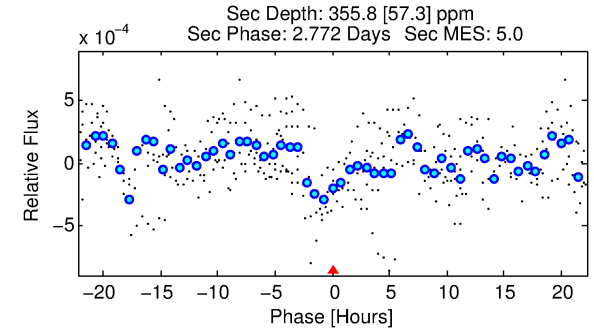
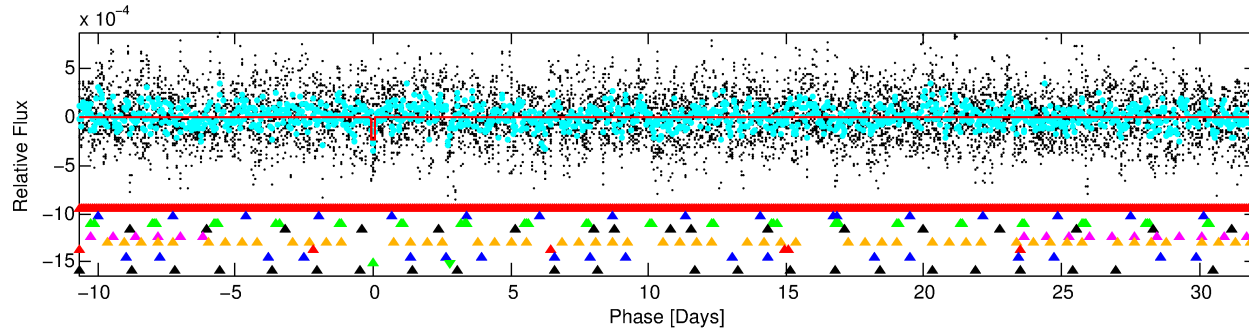
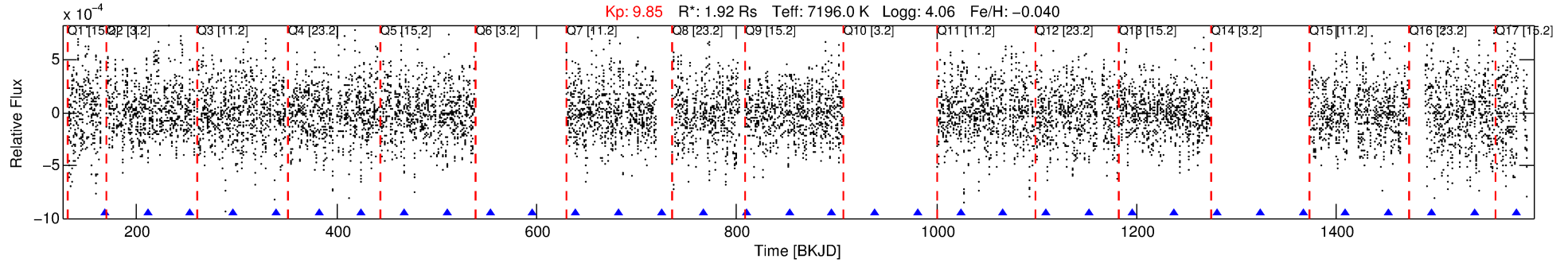
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005802479-09

No Significant Match Found

# DV One-Page Summary

KIC: 5802479 Candidate: 9 of 10 Period: 42.786 d



## DV Fit Results:

Period = 42.78634 [0.00155] d  
Epoch = 168.3055 [0.0103] BKJD  
Rp/R\* = 0.0160 [0.0134]  
a/R\* = 49.49 [255.73]  
b = 0.85 [1.73]  
Seff = 115.04 [41.92]  
Teq = 835 [76] K  
Rp = 3.37 [2.98] Re  
a = 0.2779 [0.0669] AU  
Ag = 1333.71 [2278.40] [0.58σ]  
Teffp = 7803 [3280] K [2.12σ]

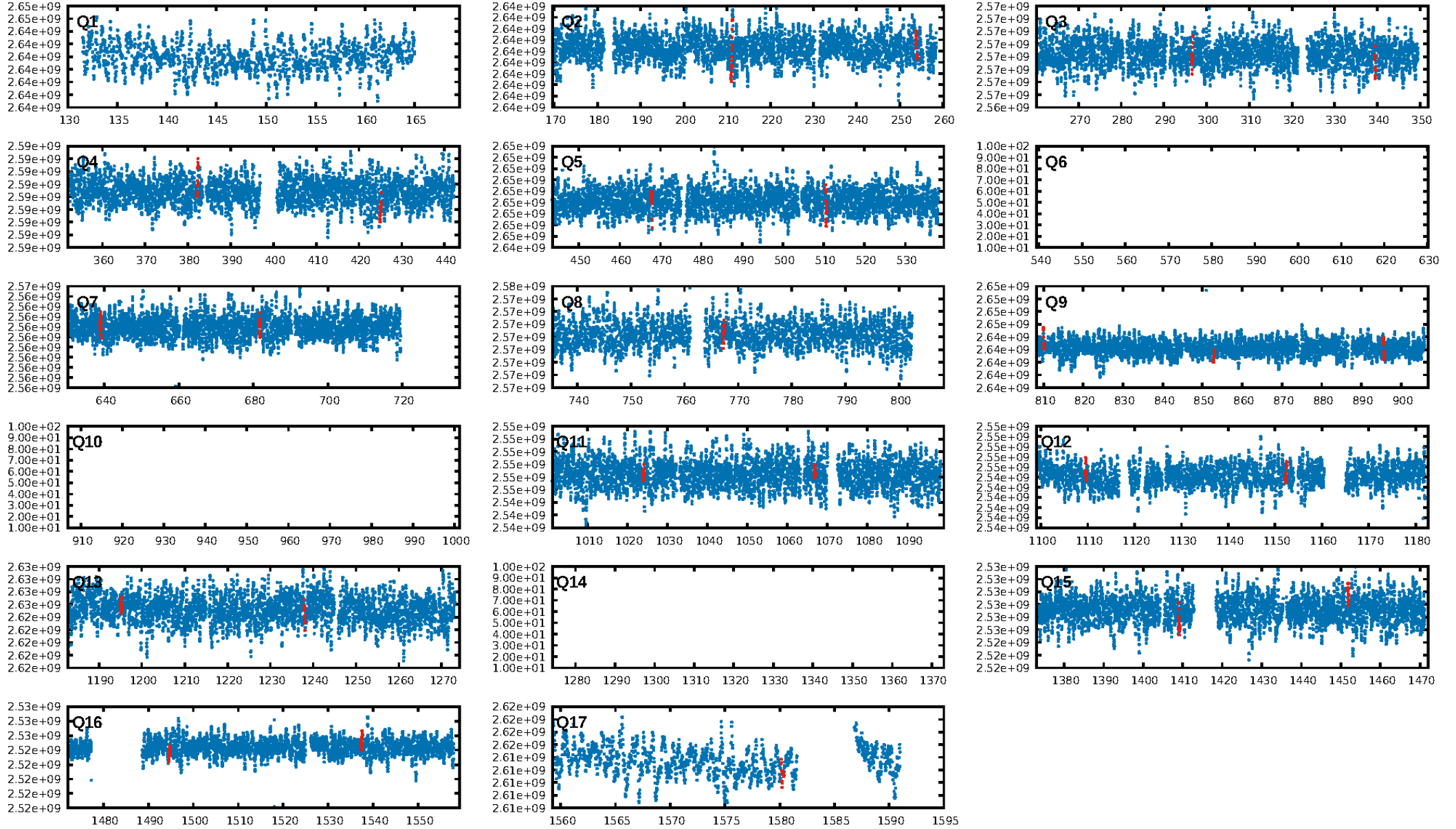
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [42.26σ]  
LongPeriod-sig: 100.0% [90.18σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [10/10]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 46.9%  
Centroid-so: 0.249 arcsec [0.76σ]  
OotOffset-rm: 3.171 arcsec [3.26σ]  
KicOffset-rm: 5.249 arcsec [5.23σ]  
OotOffset-st: 1/4/4/4 [13]  
KicOffset-st: 1/4/4/4 [13]  
DiffImageQuality-fgm: 0.00 [0/13]  
DiffImageOverlap-fno: 0.00 [0/13]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:10:53 Z

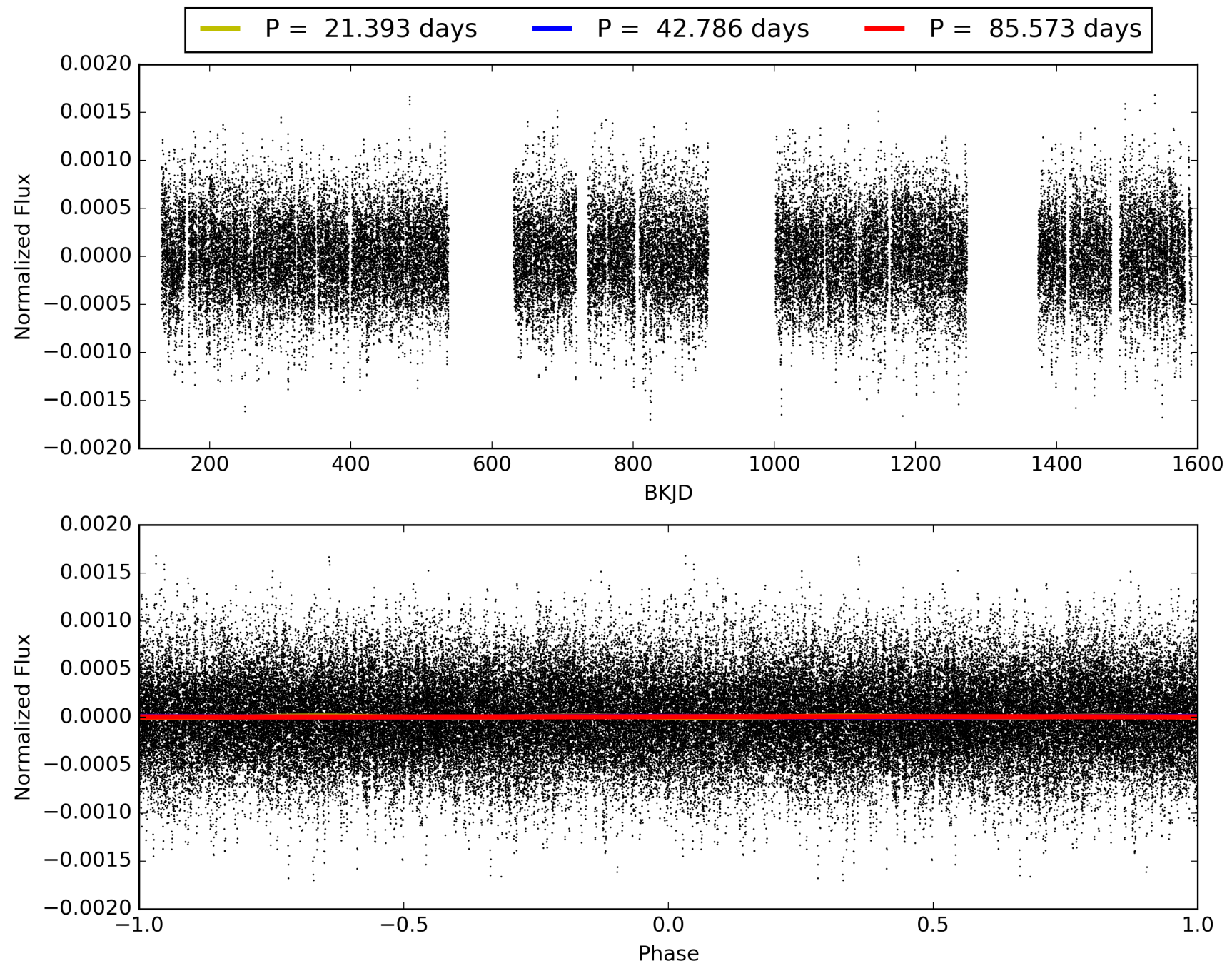
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005802479-09, PDC Light Curves



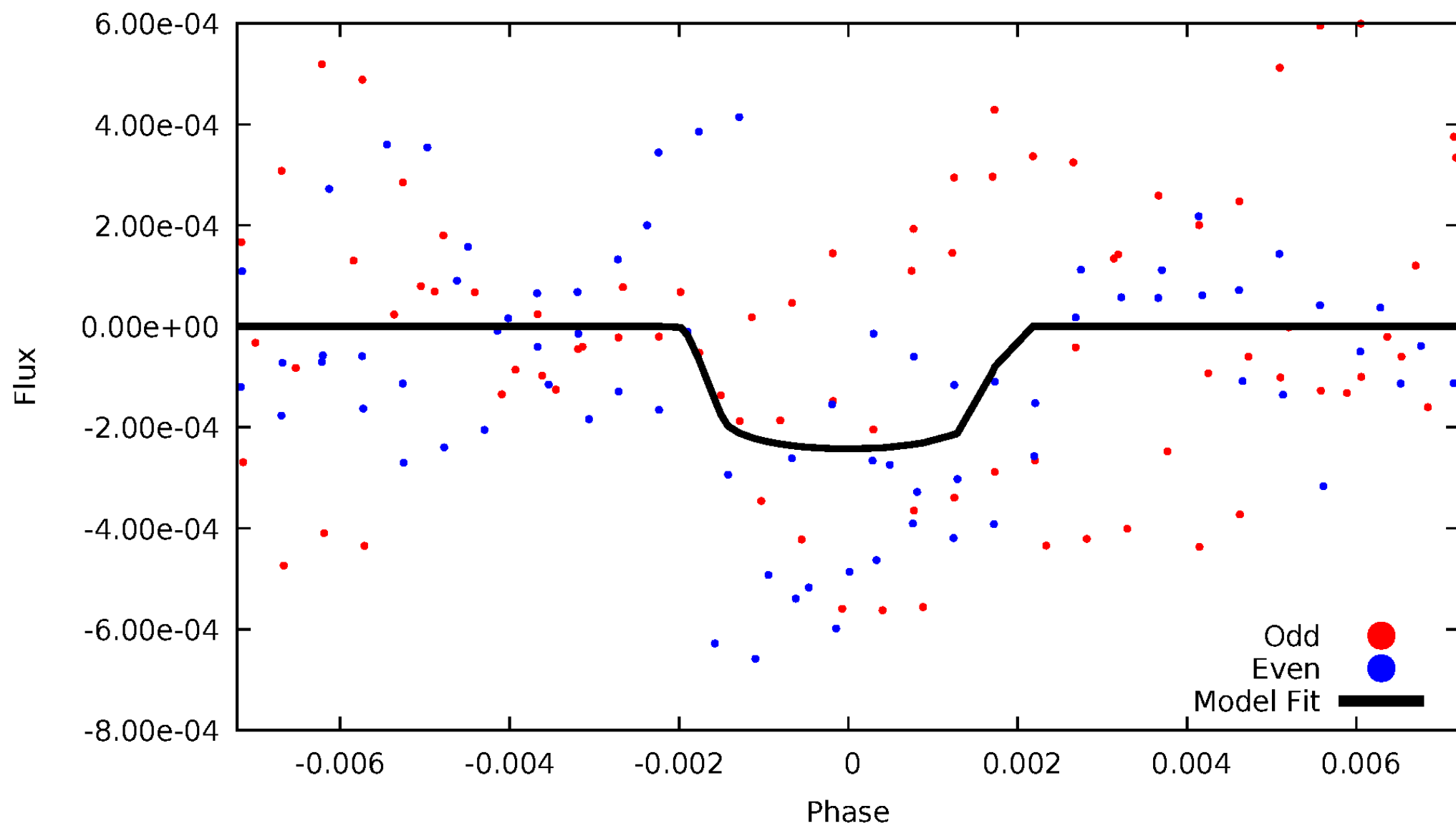


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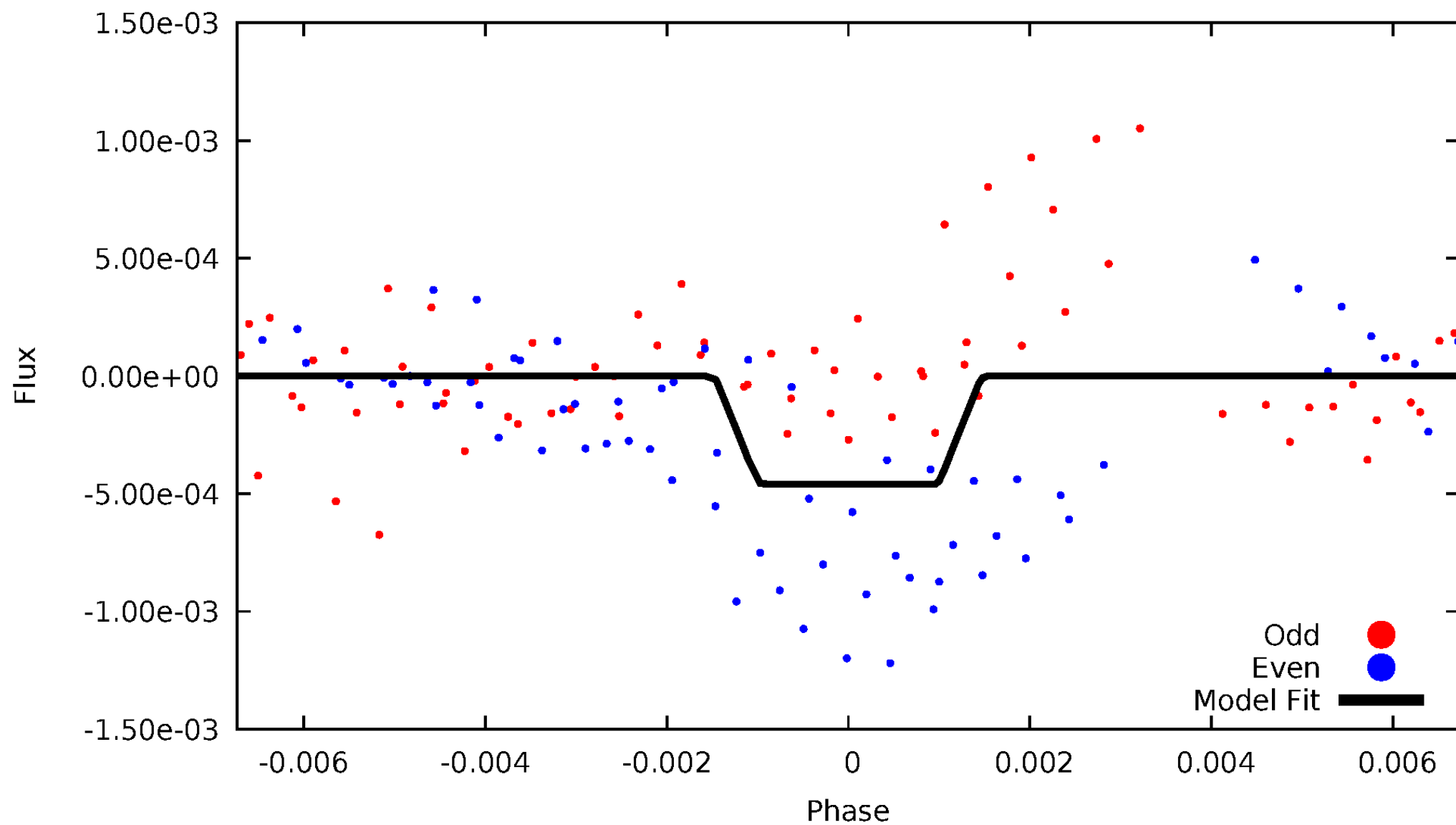
# DV Odd/Even

TCE 005802479-09



# ALT Odd/Even

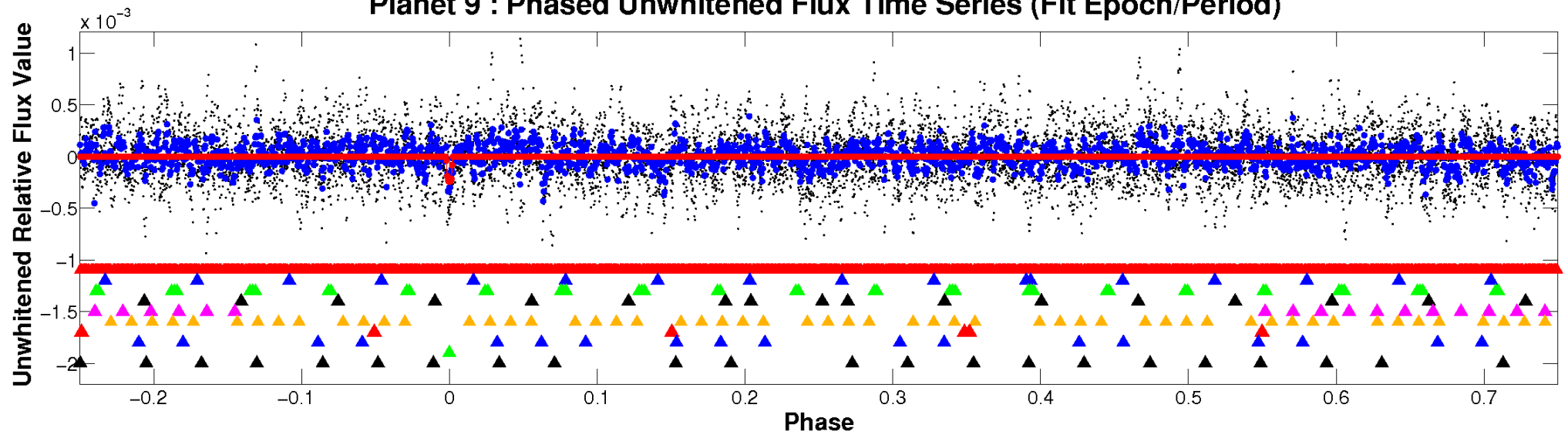
TCE 005802479-09



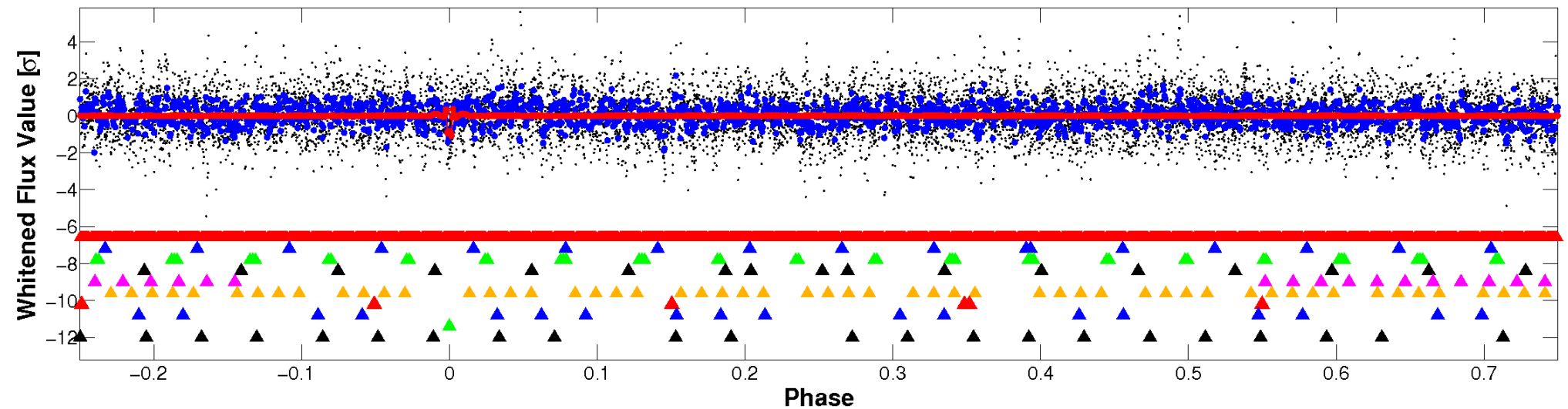


# Non-Whitened Vs. Whitened Light Curve

Planet 9 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

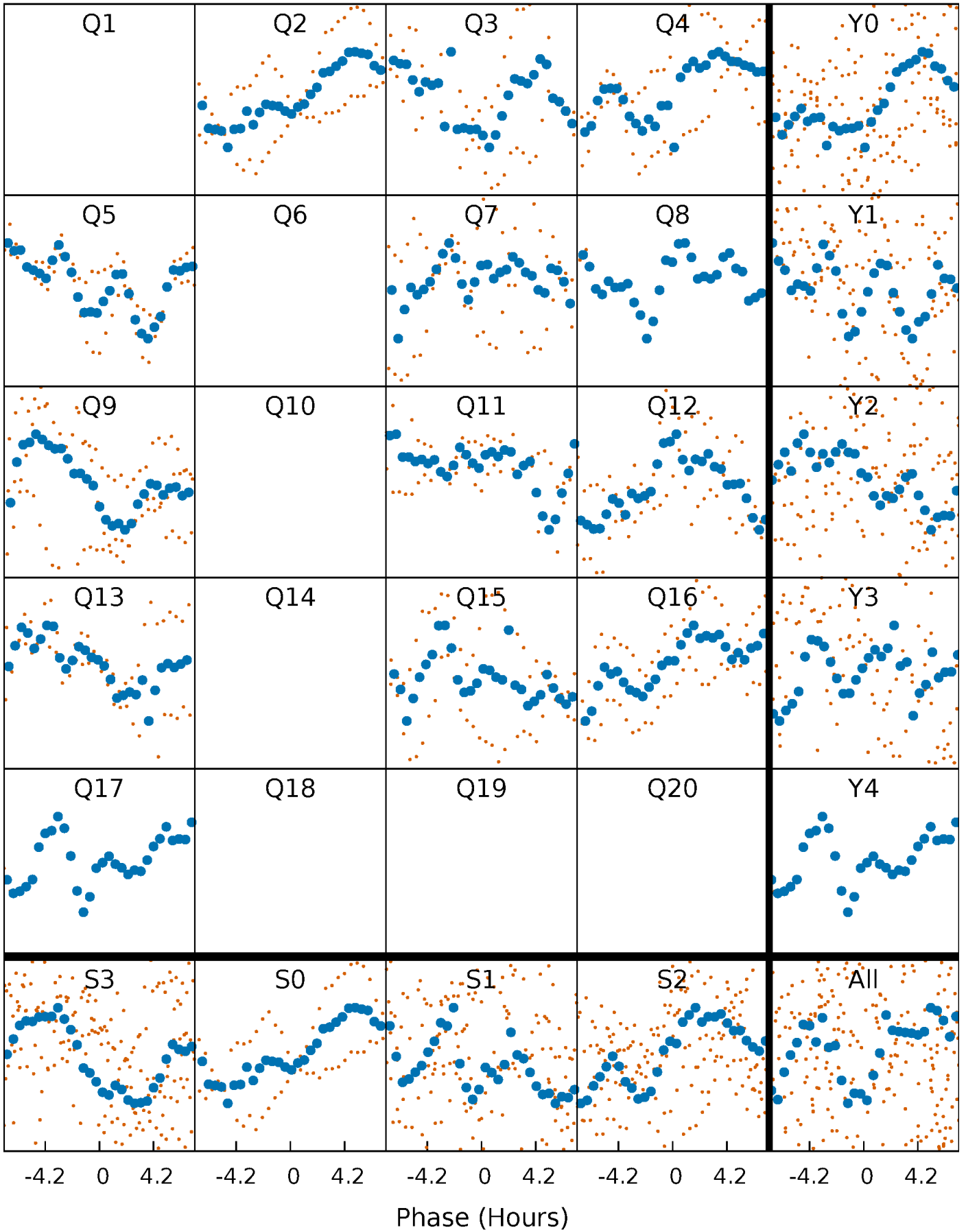


Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)



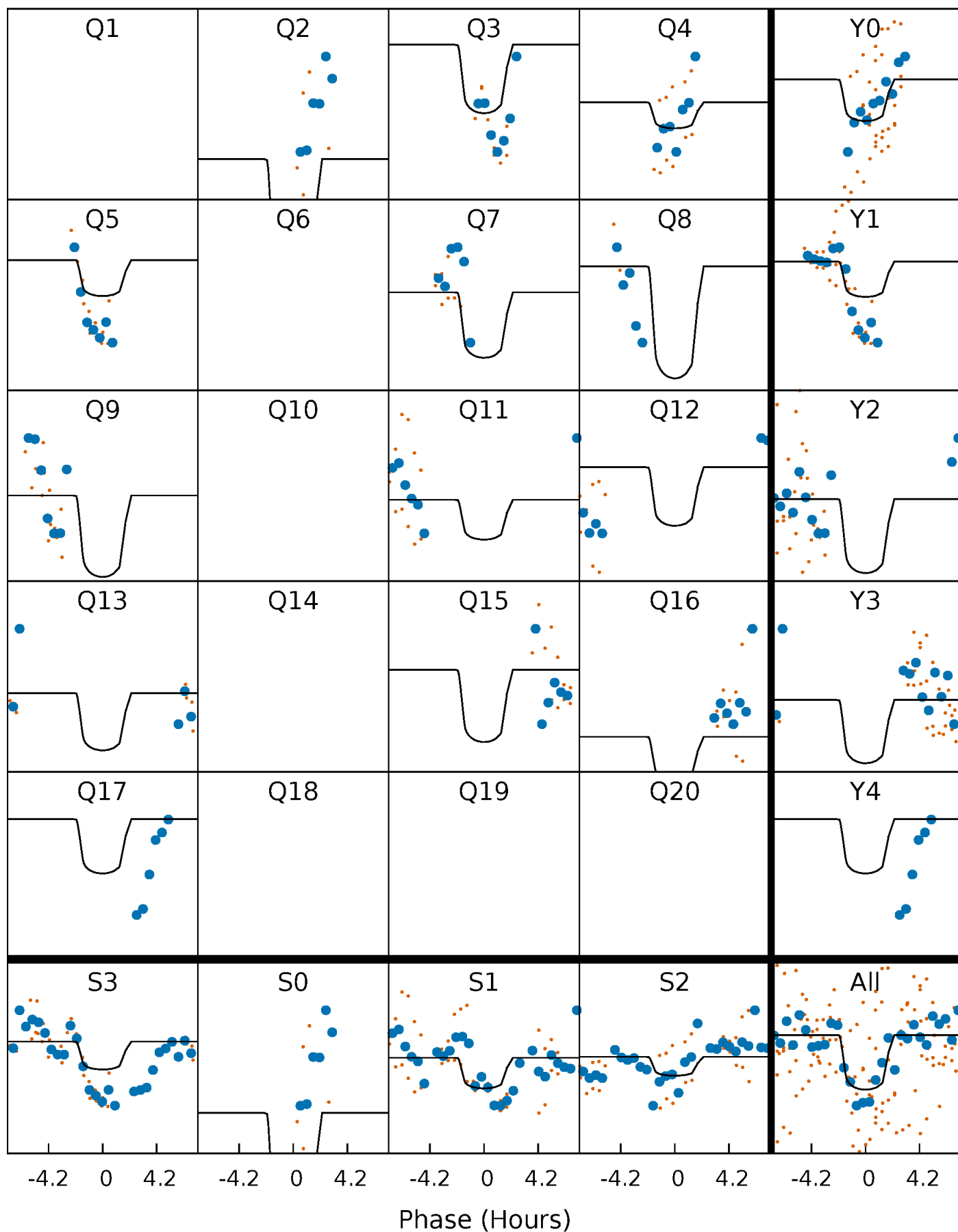
# PDC Quarter-Phased Transit Curves

TCE 005802479-09     $P = 42.786339$  Days     $T_0 = 168.305531$  (BKJD)



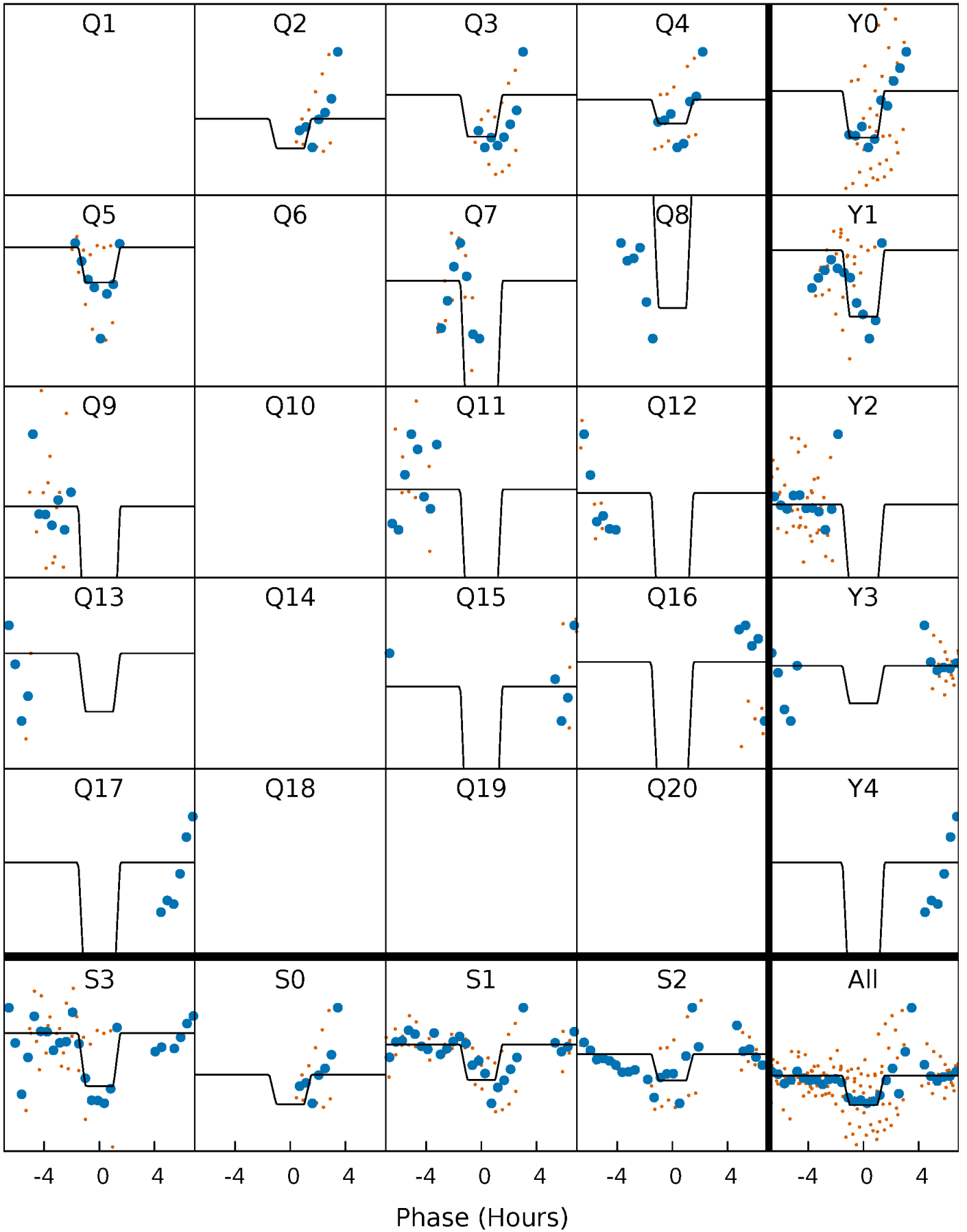
# DV Quarter-Phased Transit Curves

TCE 005802479-09   P= 42.786339 Days    $T_0=168.305531$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

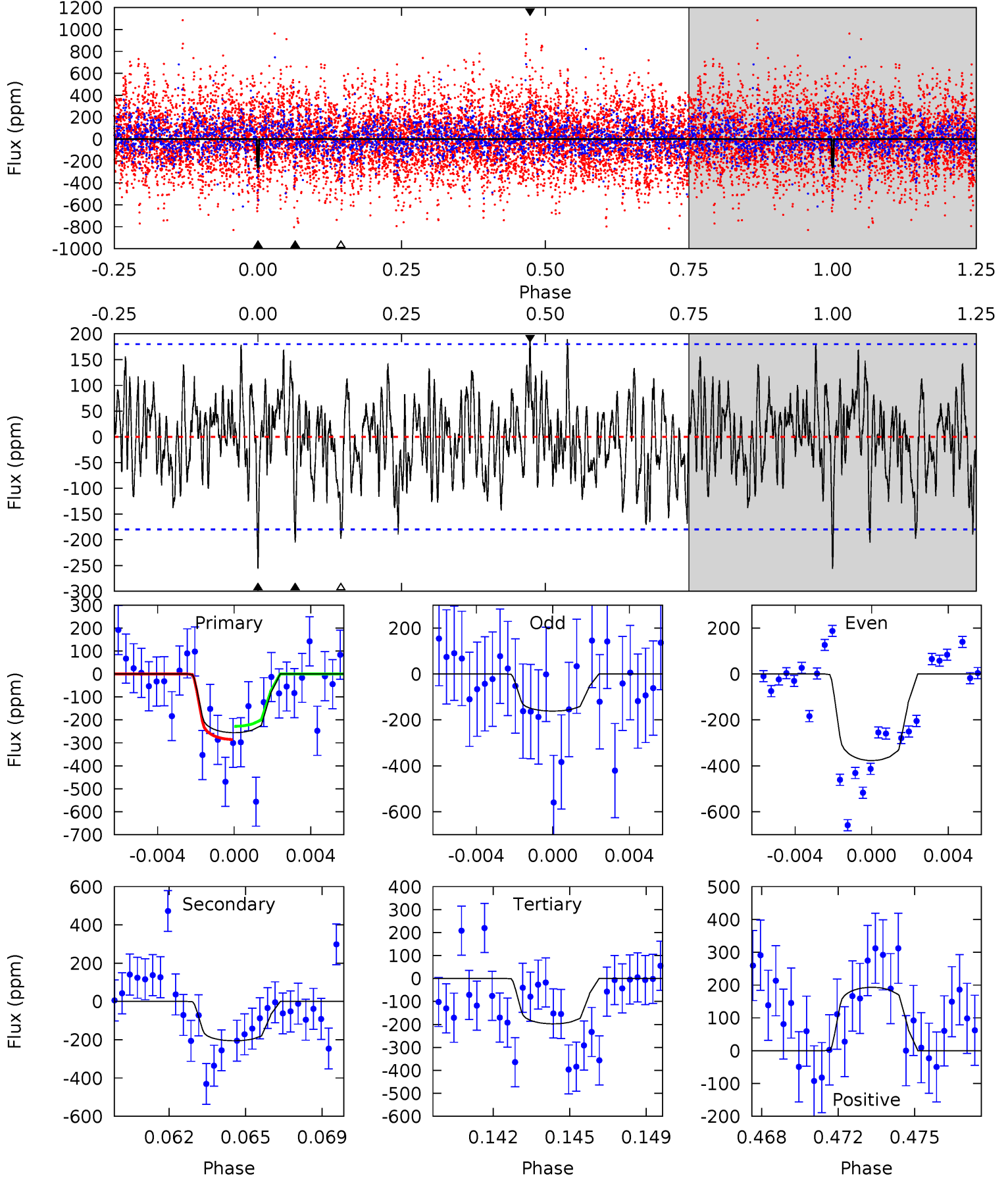
TCE 005802479-09   P= 42.784053 Days    $T_0=168.304557$  (BKJD)



# DV Model-Shift Uniqueness Test

005802479-09, P = 42.786339 Days, E = 125.519192 Days

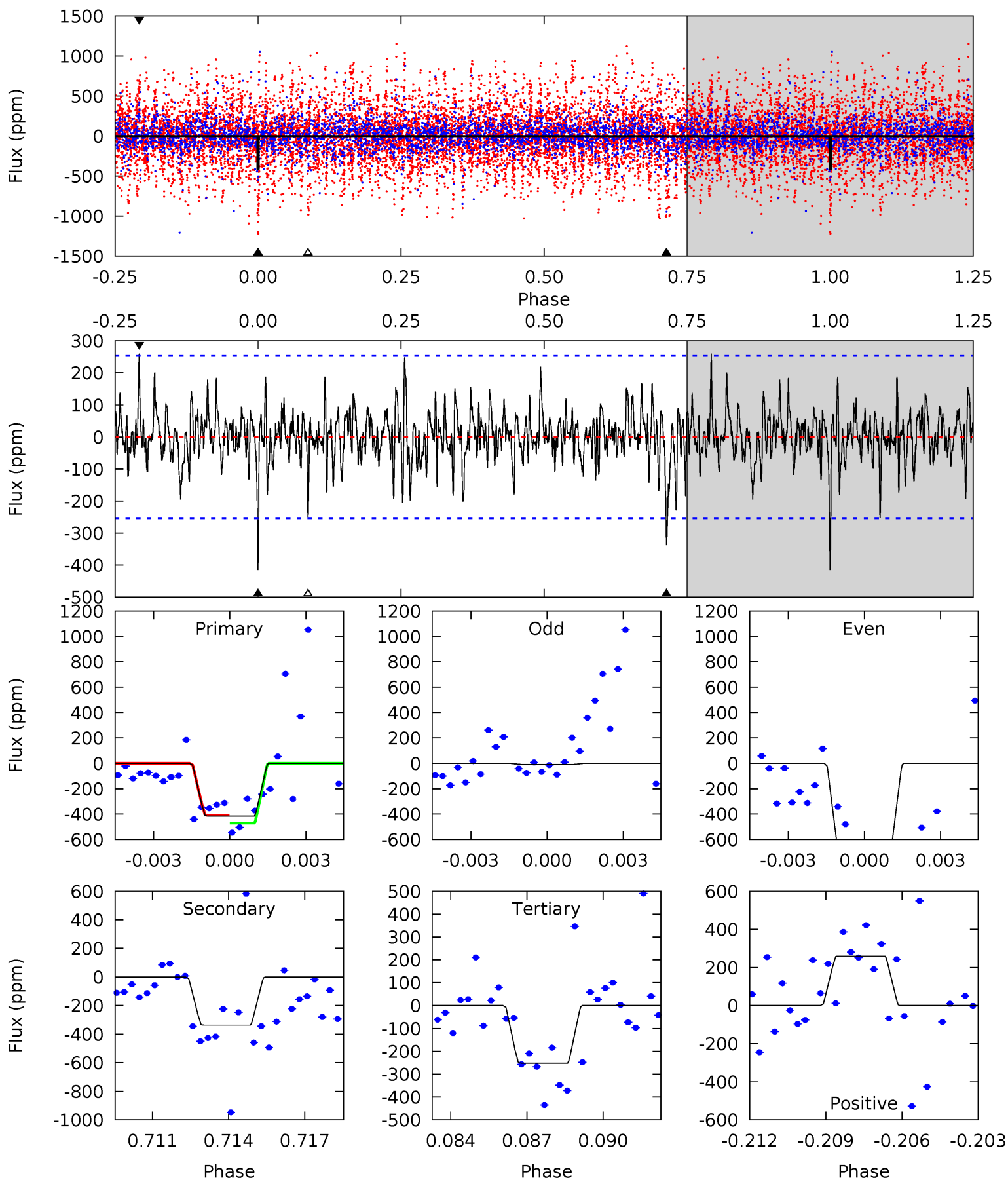
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.42	5.96	5.73	5.60	5.22	2.91	1.89	1.69	1.82	0.23	0.36	3.08	0.58	0.43	0.84



# Alt Model-Shift Uniqueness Test

005802479-09, P = 42.784053 Days, E = 125.520504 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
8.61	6.99	5.23	5.39	5.25	2.97	1.44	3.38	3.23	1.77	1.61	7.69	1.57	0.38	0.63



### Stellar Parameters For KIC 005802479

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7196^{+172}_{-259}$	$4.064^{+0.158}_{-0.175}$	$-0.040^{+0.250}_{-0.350}$	$1.923^{+0.576}_{-0.471}$	$1.562^{+0.212}_{-0.236}$	$0.309^{+0.296}_{-0.153}$
	+2%/-4%	+4%/-4%	+625%/-875%	+30%/-24%	+14%/-15%	+96%/-50%
Source	PHO1	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 005802479-09 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-206 \pm 34$	$3.72^{+2.85}_{-2.21}$	$1165^{+90}_{-72}$	$6334^{+4782}_{-1418}$	$632^{+2983}_{-433}$
Alt.	$-337 \pm 48$	$4.67^{+2.97}_{-2.54}$	$1172^{+82}_{-80}$	$6490^{+4112}_{-1365}$	$654^{+2582}_{-420}$

$T_{max}$  = 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

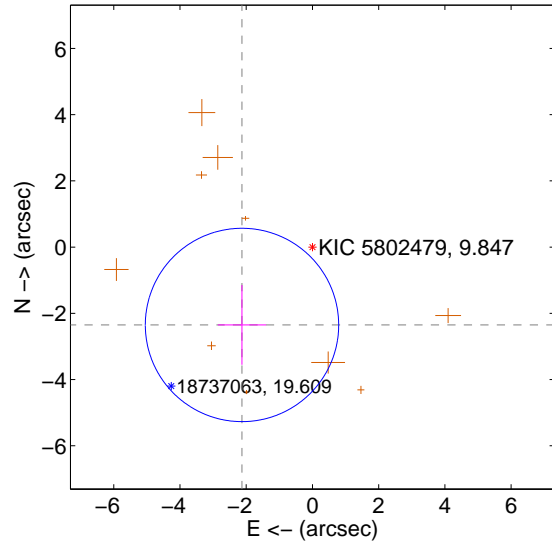
Supplemental centroid analysis for 005802479-09. **Kepler magnitude: 9.85.** Transit SNR 5.81

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

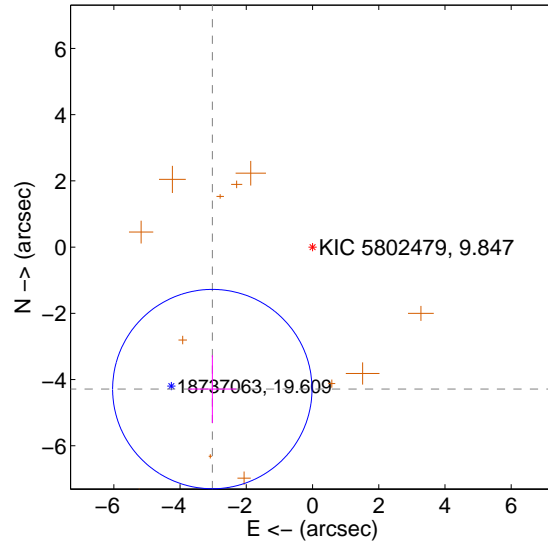
The direct PRF centroid is offset from the target star catalog position by about 1.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>3.171 \pm 0.973</math></b>	<b>3.26</b>	$2.128 \pm 0.727$	$-2.352 \pm 1.204$
PRF-fit source offset from KIC position	<b><math>5.249 \pm 1.004</math></b>	<b>5.23</b>	$3.027 \pm 0.725$	$-4.288 \pm 1.022$
photometric centroid source offset	$0.25 \pm 0.33$	0.76	$0.01 \pm 0.24$	$-0.25 \pm 0.33$

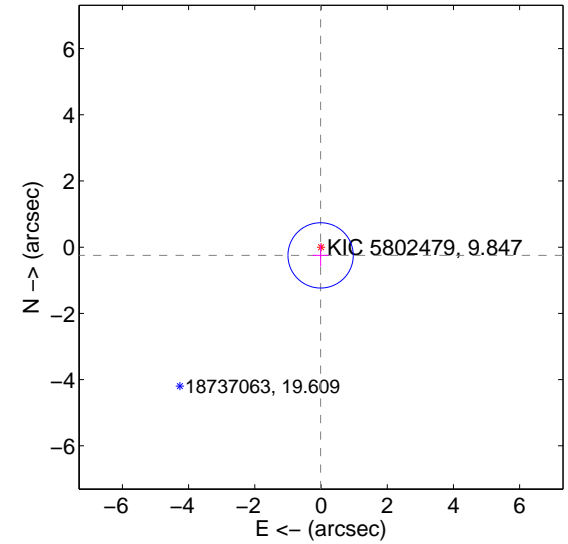
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

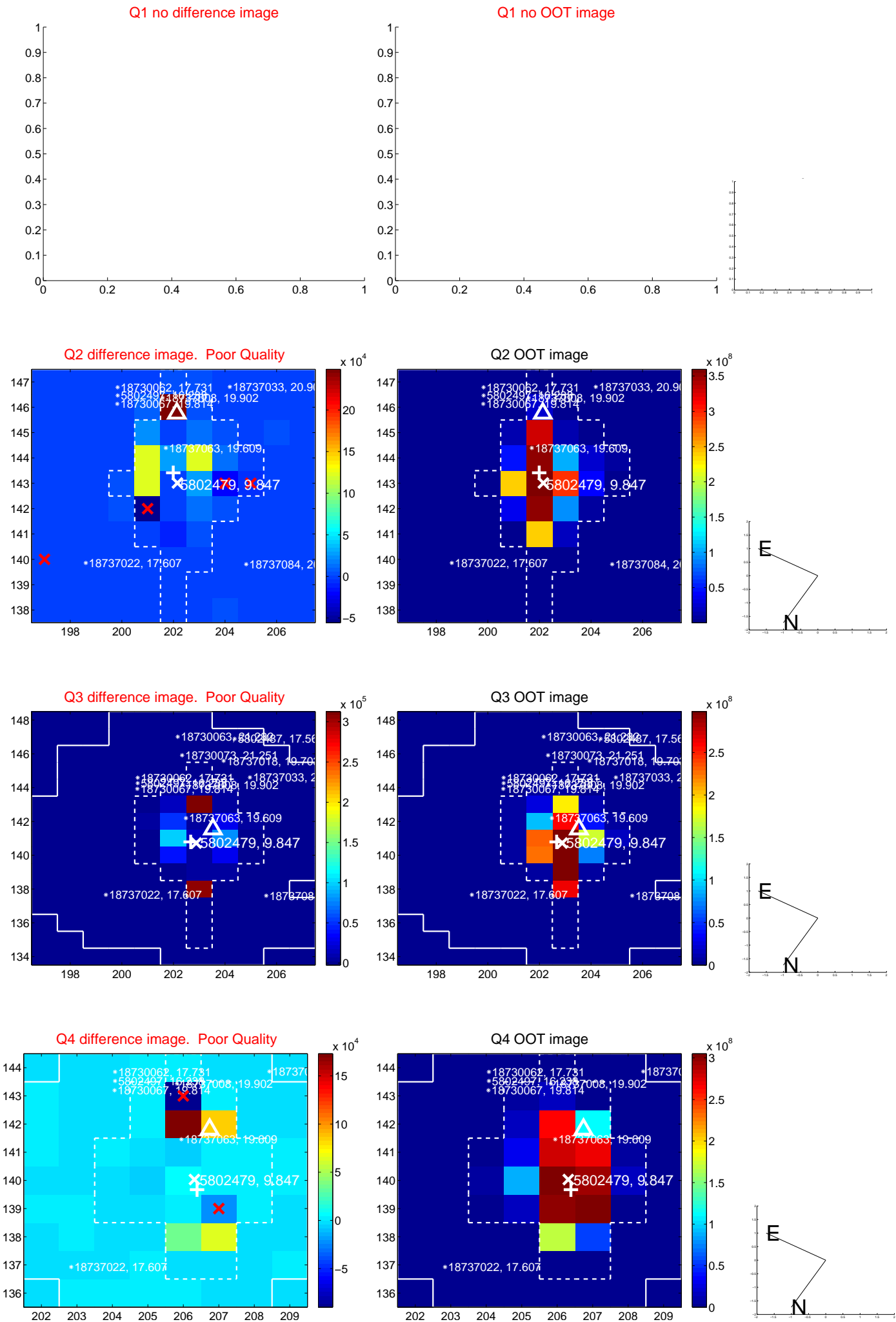


offset from photometric centroids

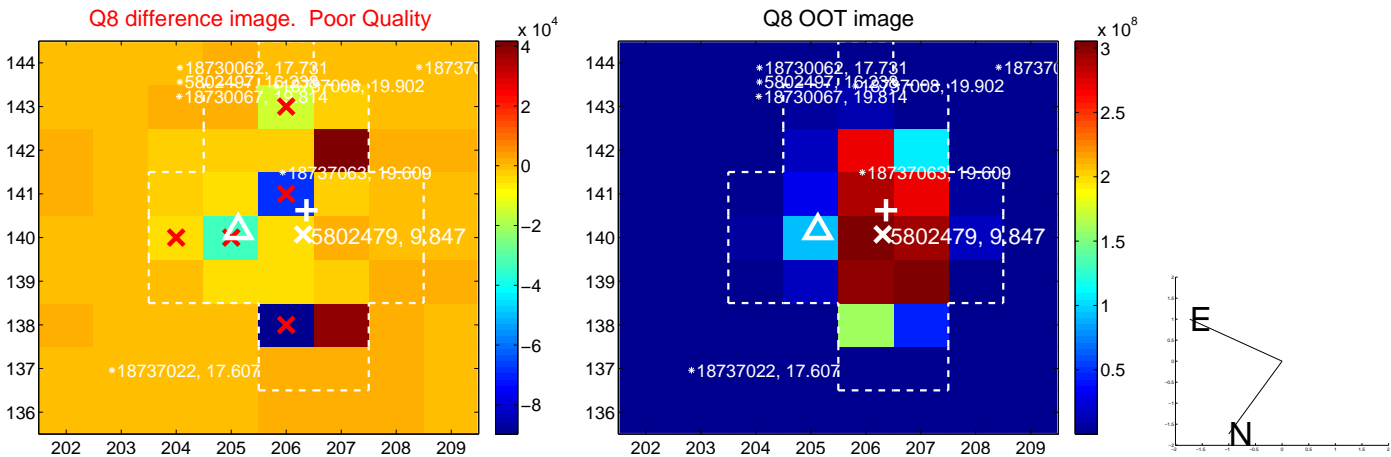
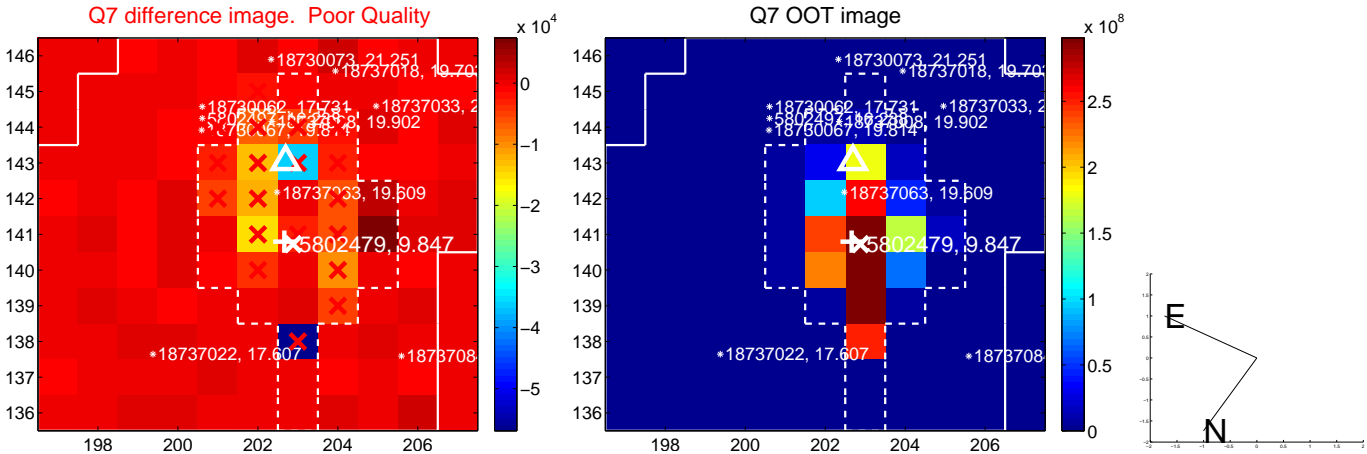
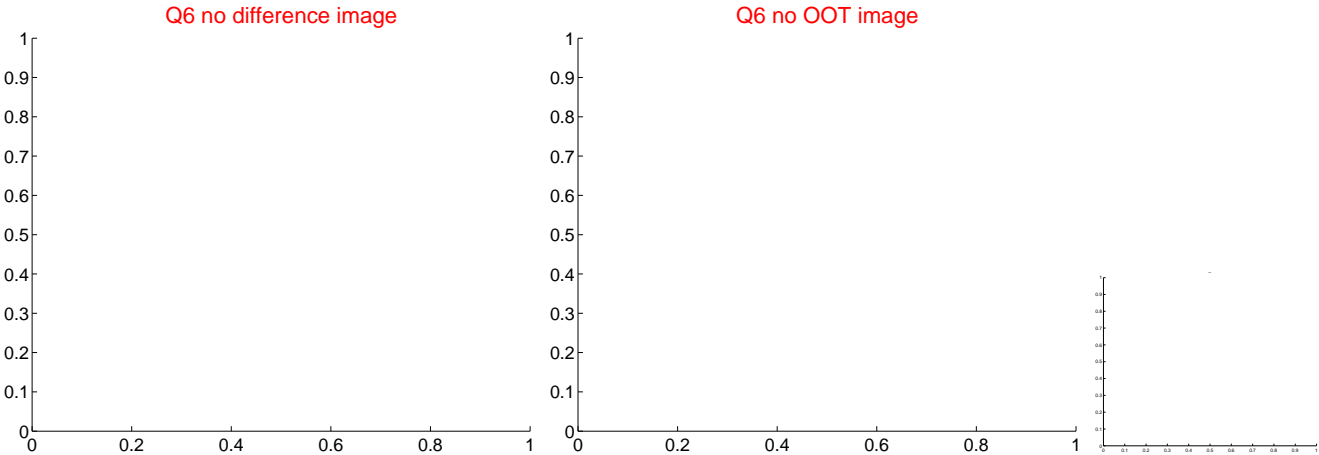
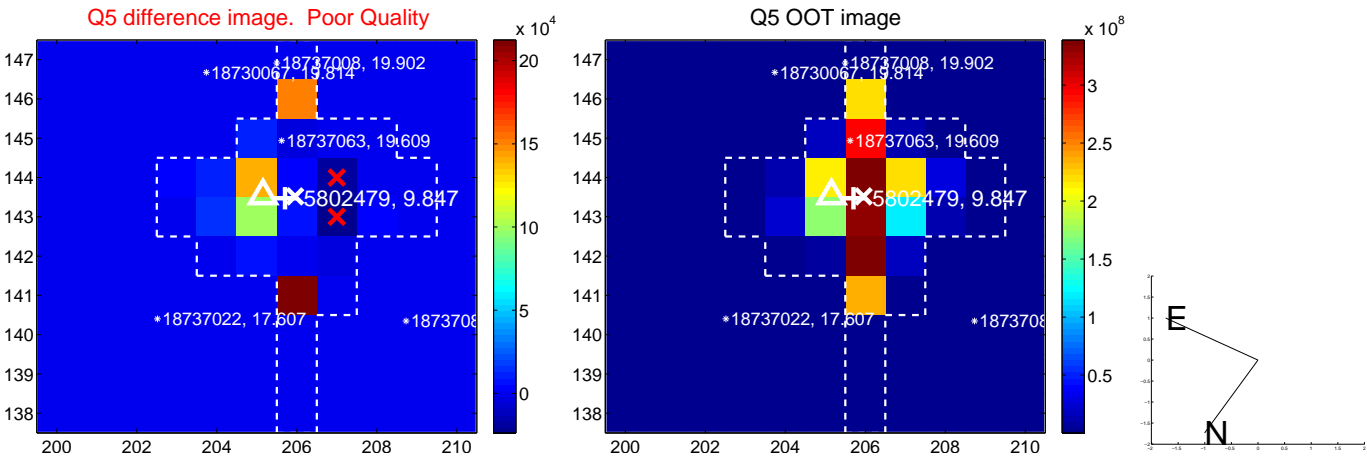


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

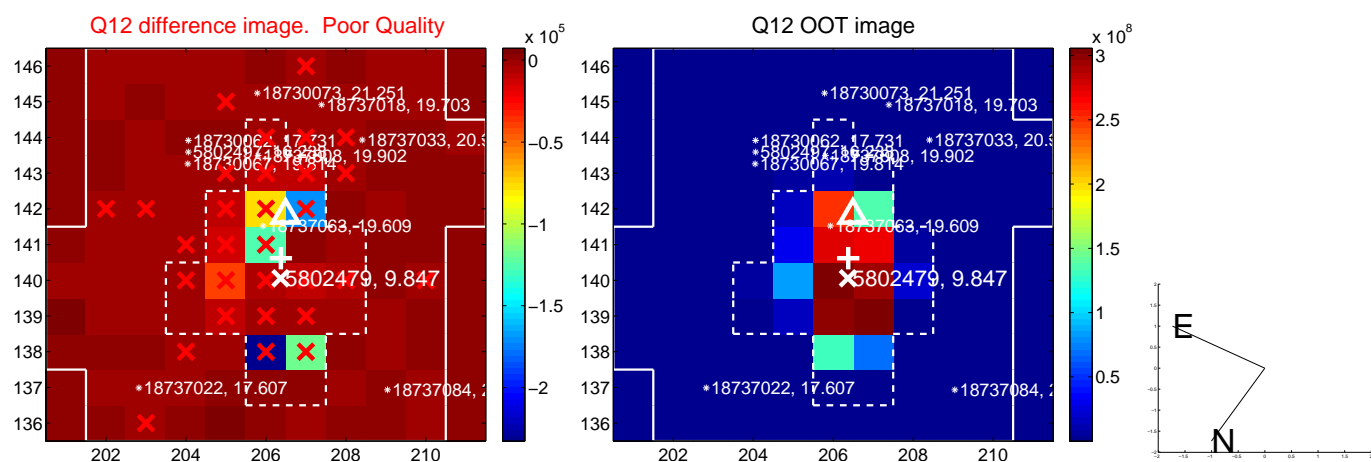
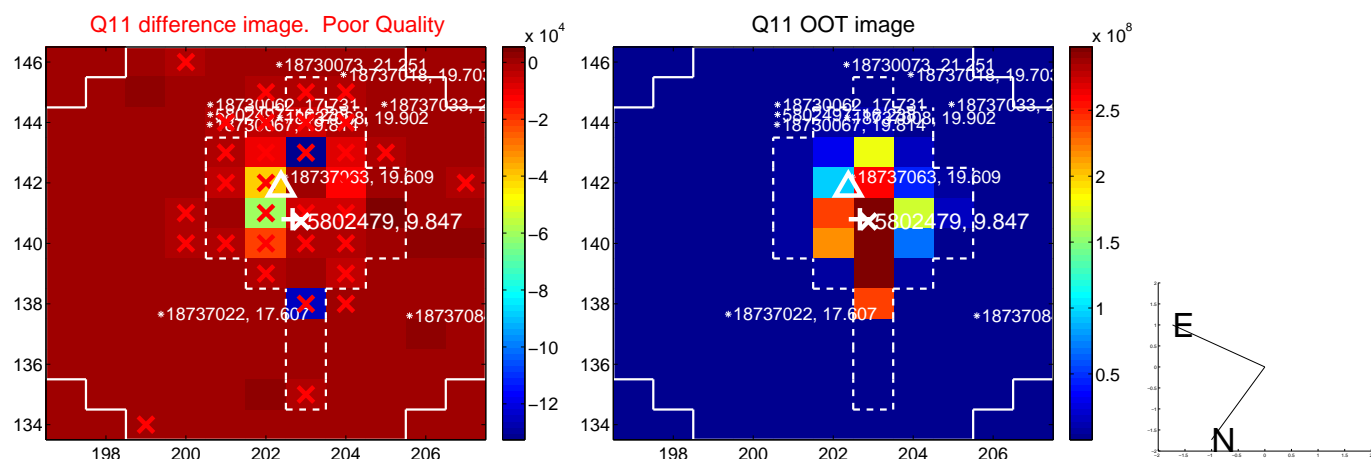
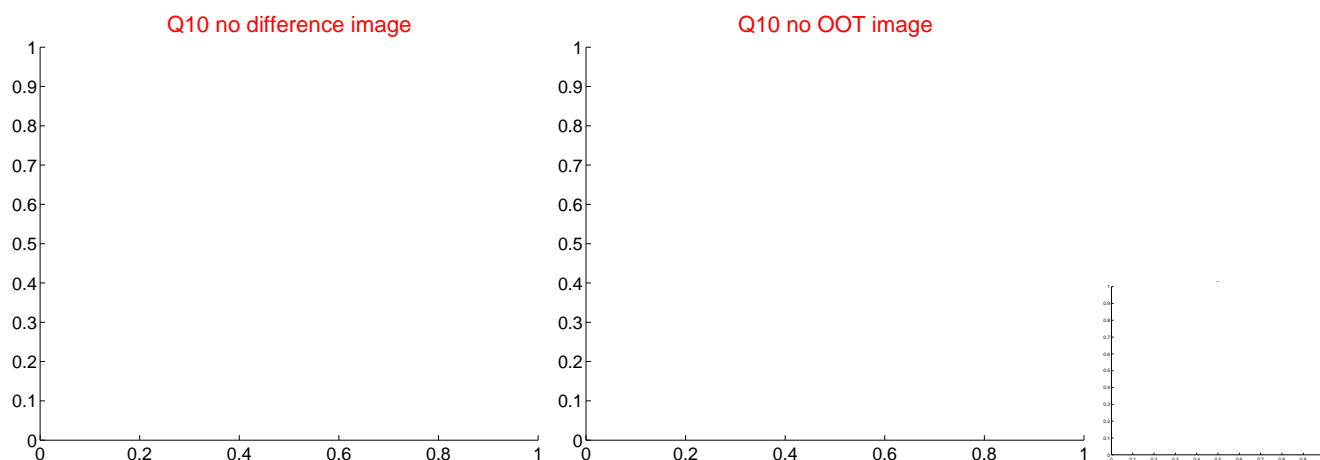
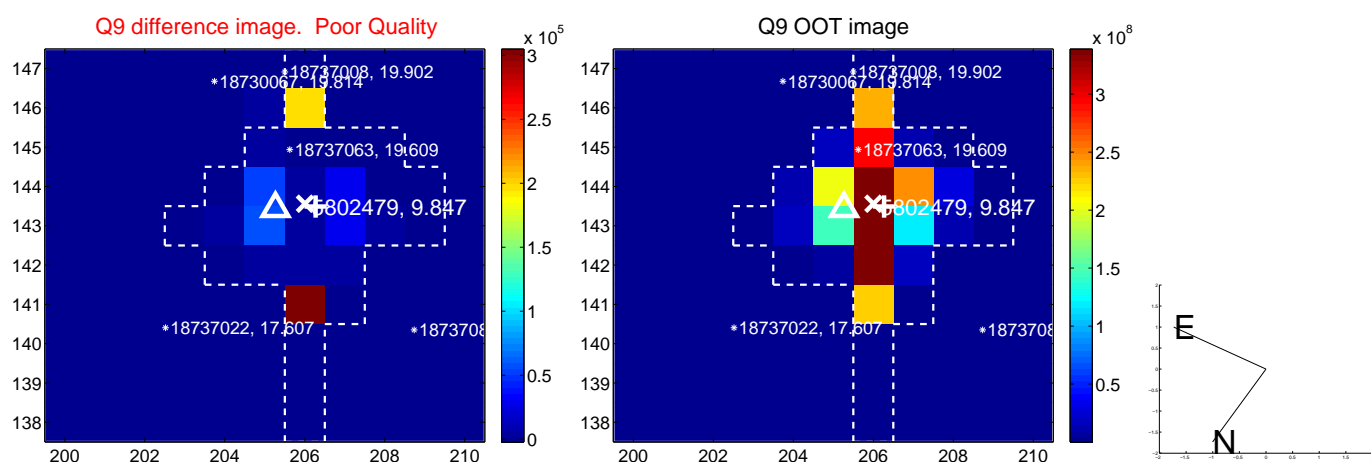
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



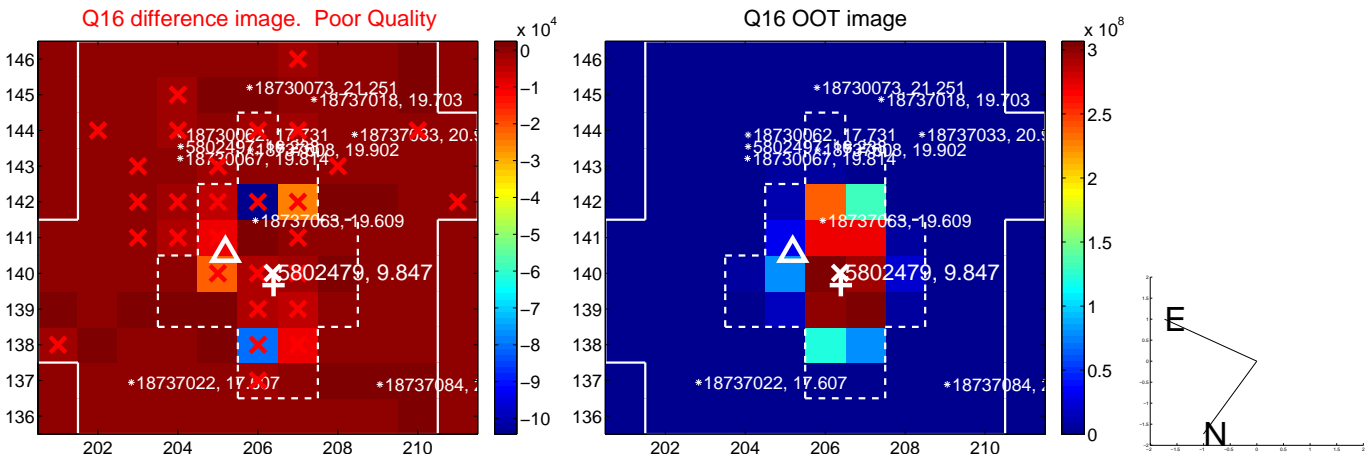
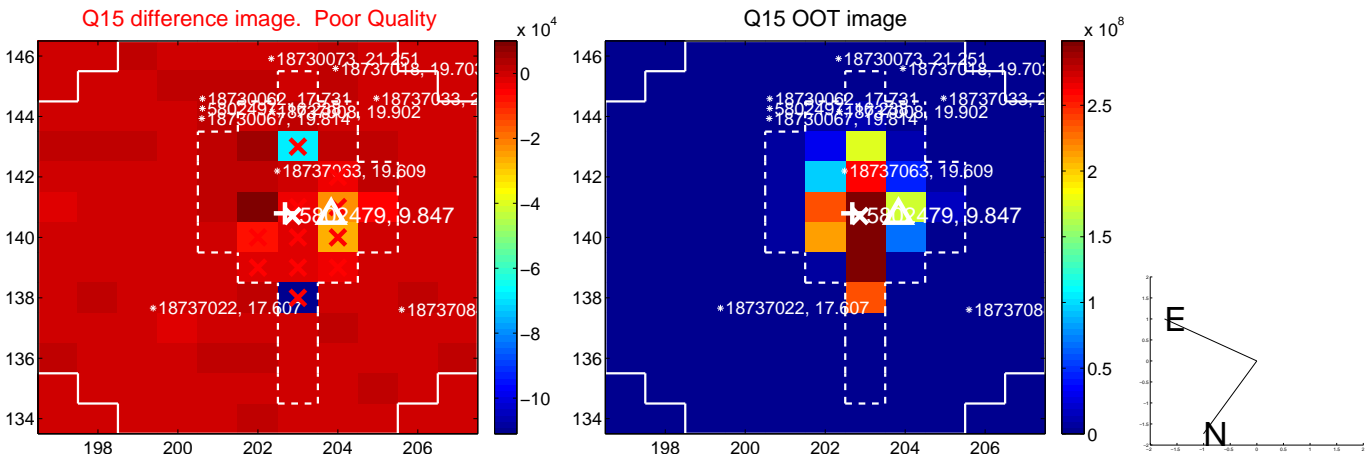
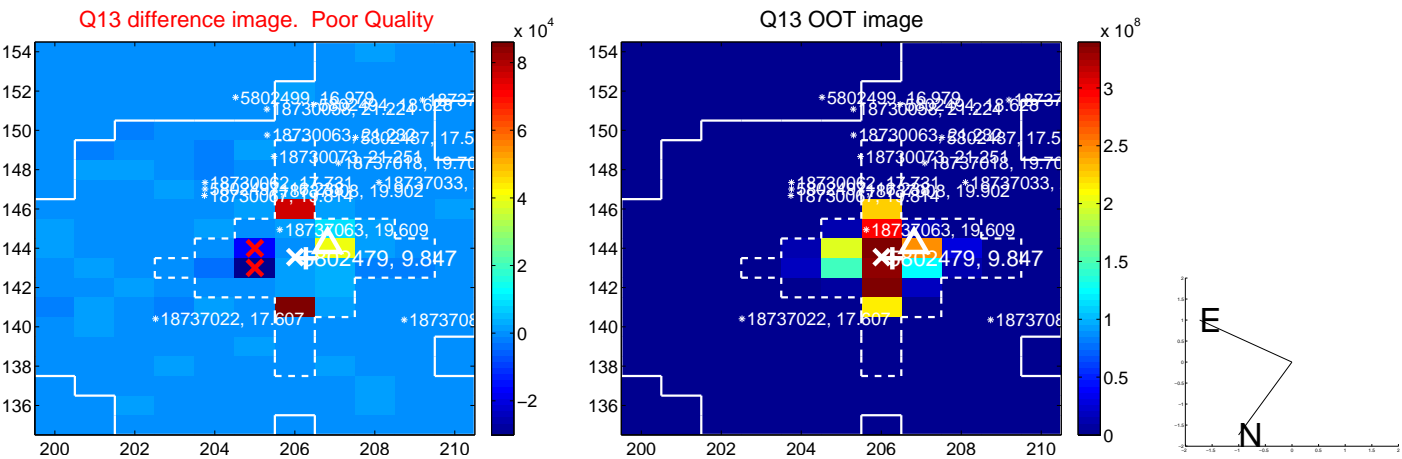
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



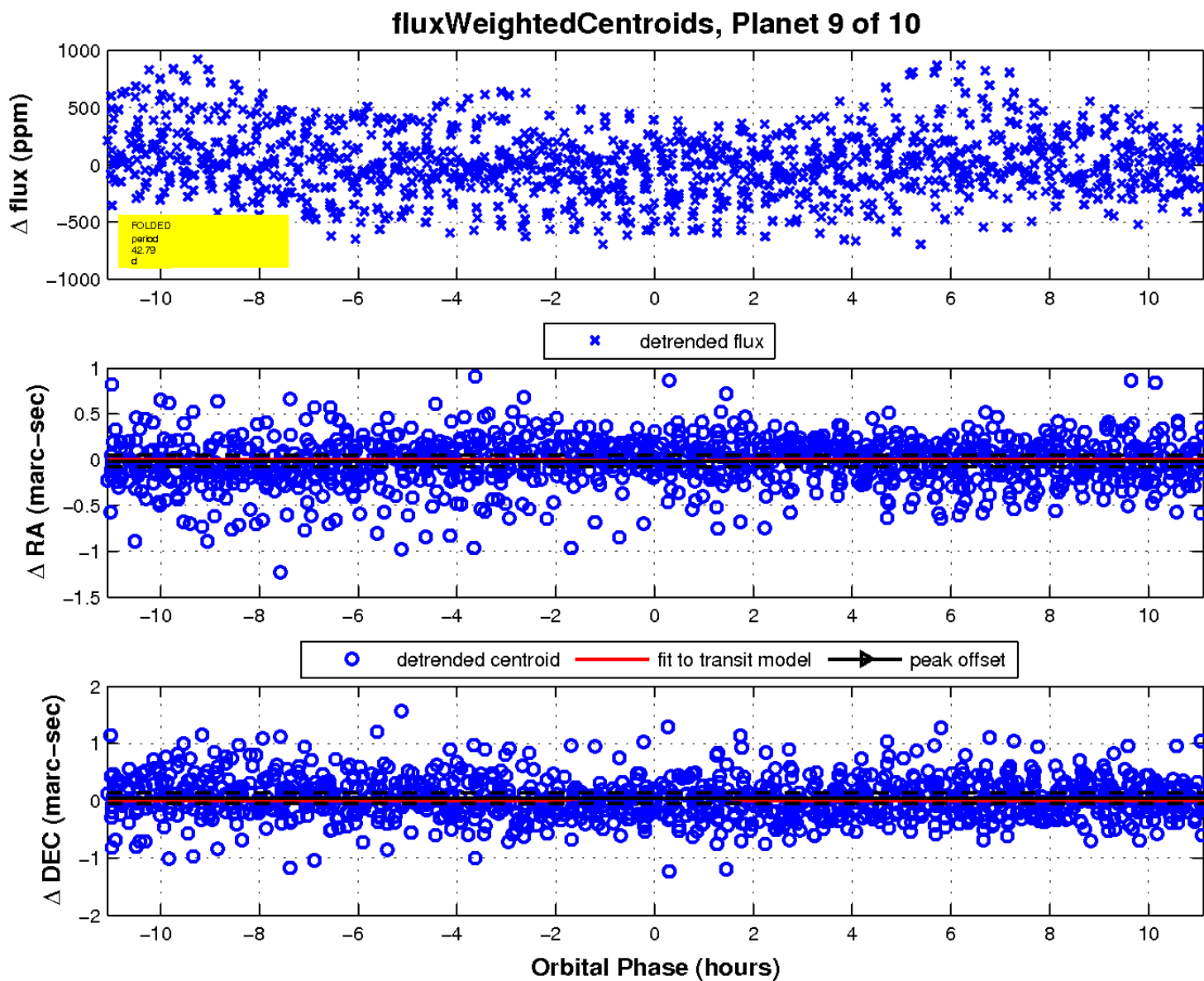
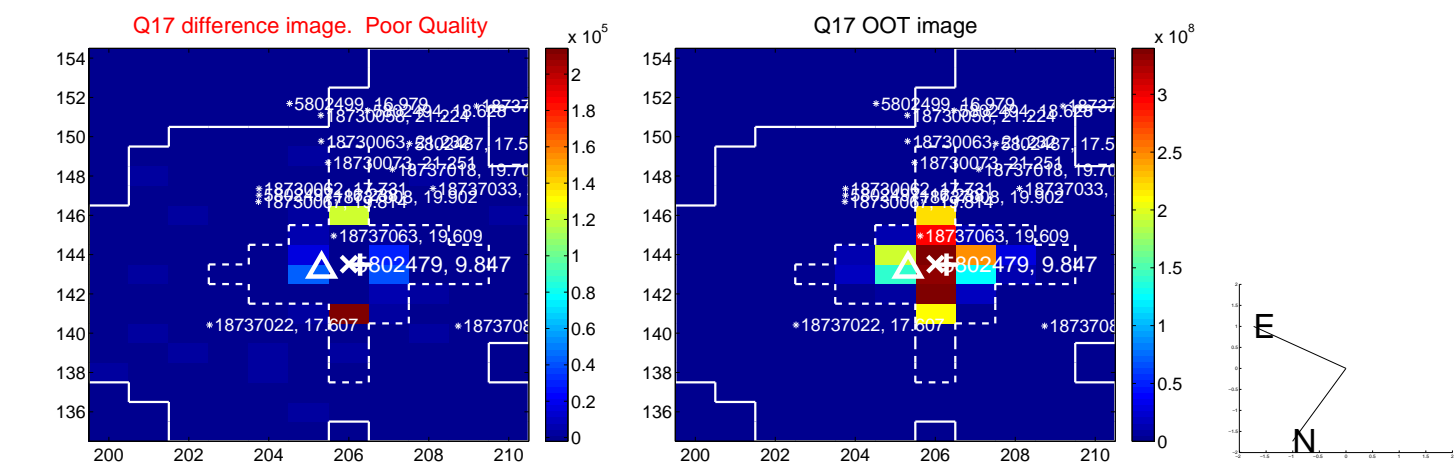
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

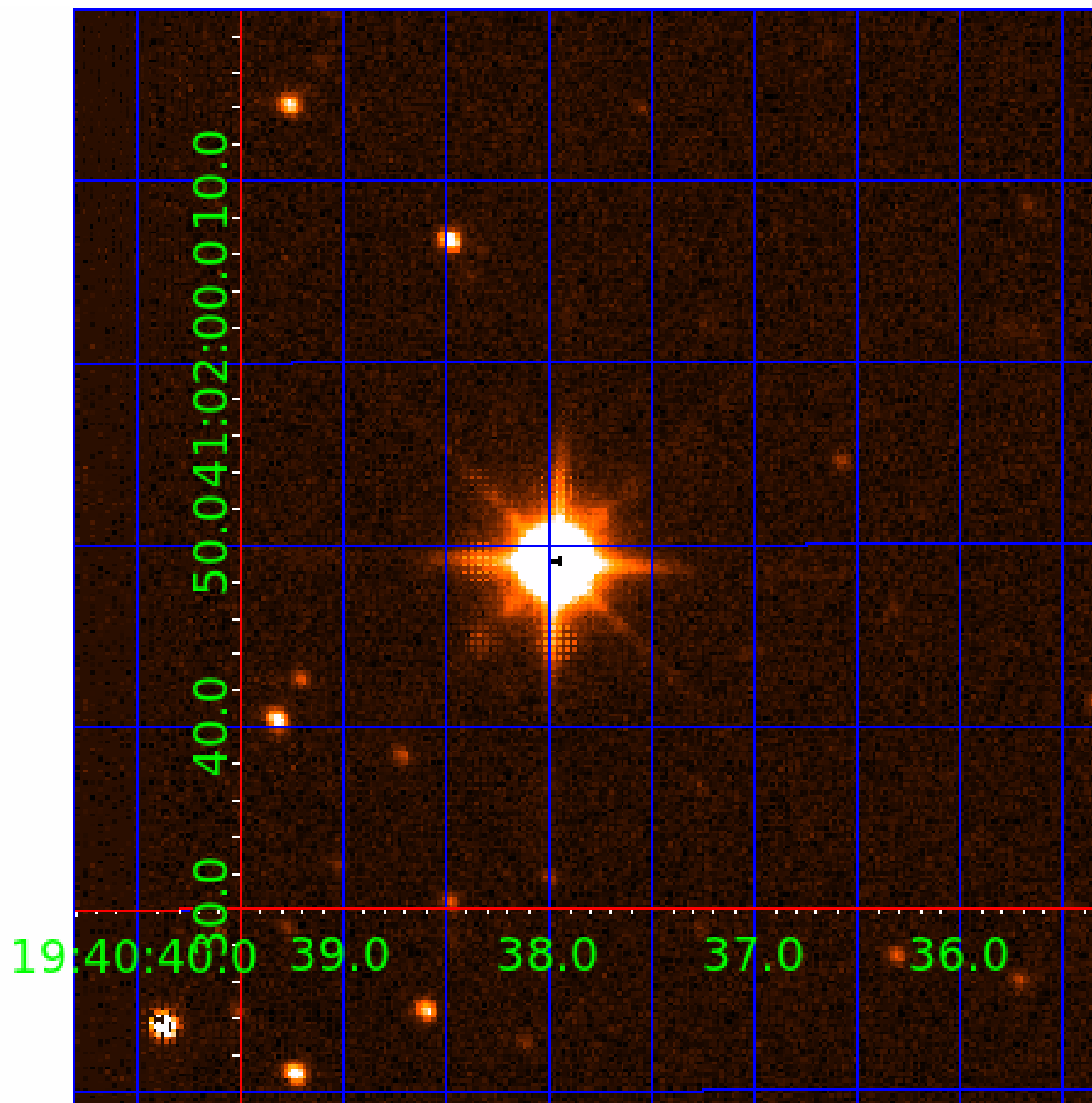


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 005802479

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005802479-01	OBS	No	0.638341	131.702634	15.9	3.873	10.4	5.9	1.92	7196	0.86	31321.42
005802479-03	OBS	No	31.522608	153.696891	526.6	5.214	10.0	10.5	1.92	7196	8.30	172.88
005802479-04	OBS	No	88.375917	134.248450	595.7	2.316	9.9	9.7	1.92	7196	5.30	43.73
005802479-05	OBS	No	84.762616	162.094820	472.9	7.177	10.1	9.3	1.92	7196	4.51	46.23
005802479-06	OBS	No	26.284161	151.113282	58.4	3.000	9.1	-1.0	1.92	7196	1.49	220.29
005802479-07	OBS	No	231.017269	226.147869	628.3	13.781	9.6	10.1	1.92	7196	5.19	12.14
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005802479-09	OBS	No	42.786339	168.305531	242.5	3.706	8.0	5.8	1.92	7196	3.37	115.04
005802479-10	OBS	No	66.734307	159.531369	549.5	5.185	8.3	8.9	1.92	7196	5.51	63.60

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005802479-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—CENT_SATURATED
005802479-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005802479-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005802479-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
005802479-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005802479-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

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

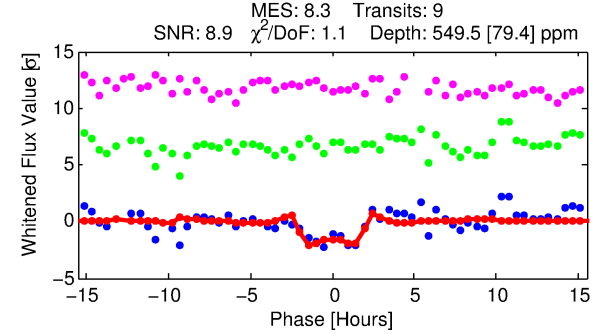
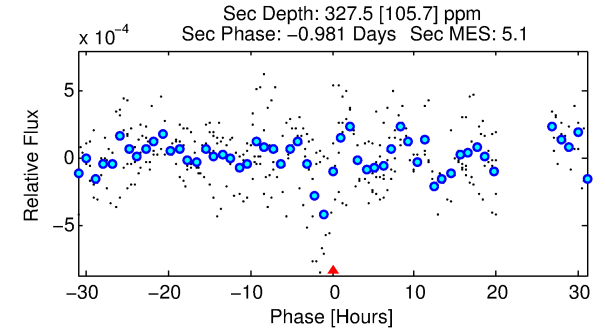
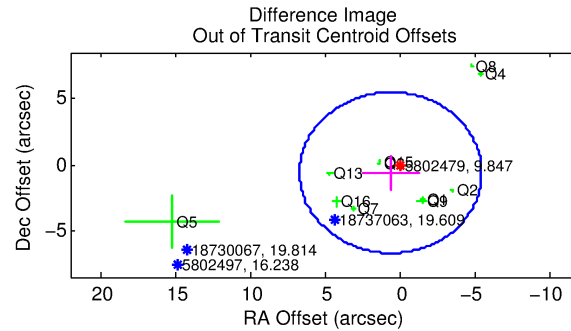
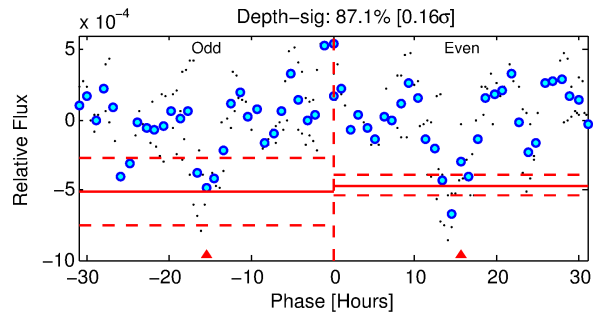
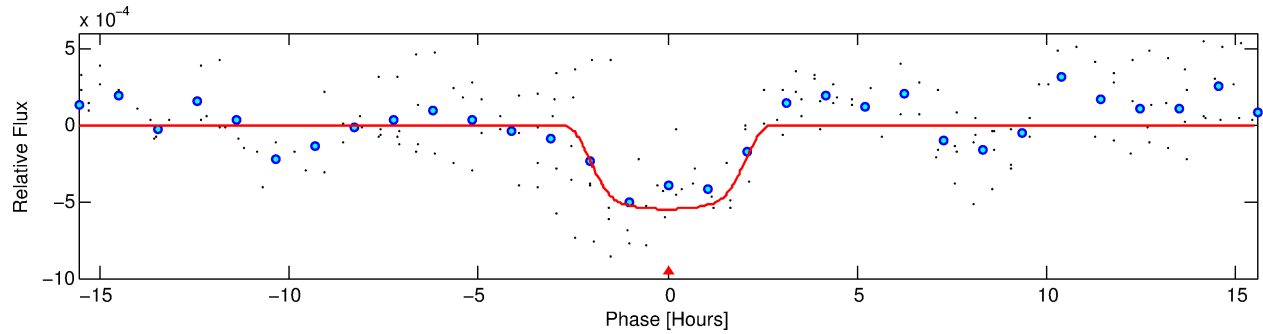
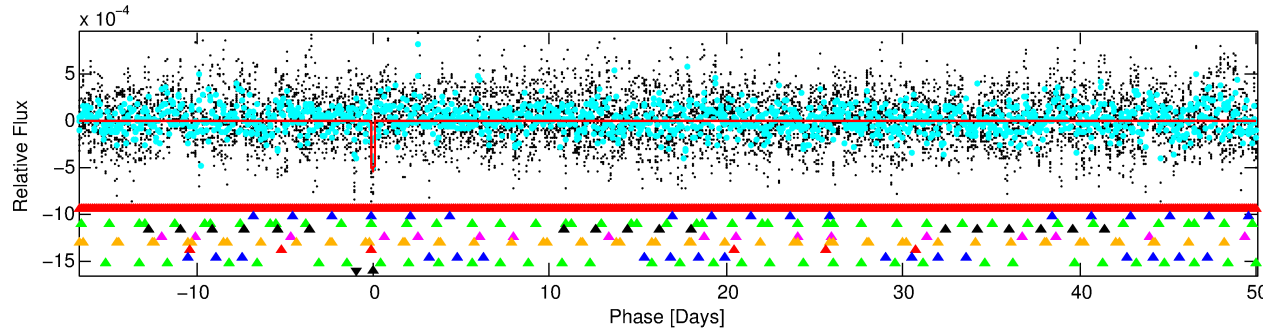
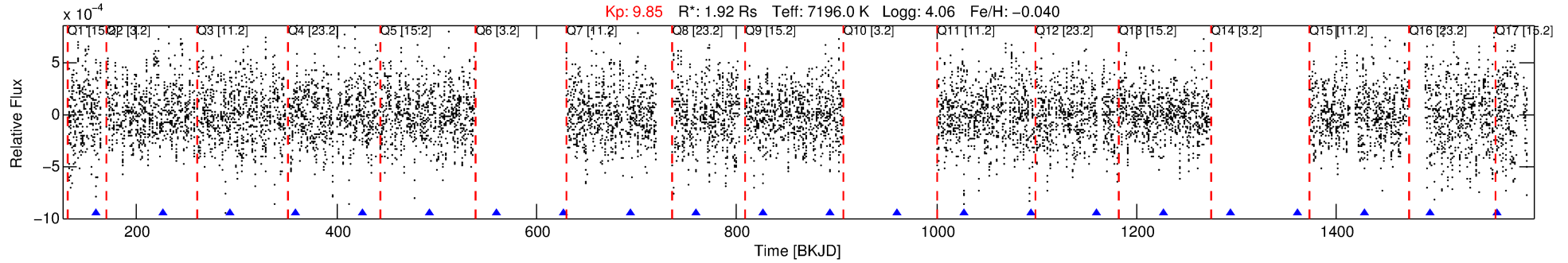
Ephemeris Match Information For 005802479-10

No Significant Match Found



# DV One-Page Summary

KIC: 5802479 Candidate: 10 of 10 Period: 66.734 d



## DV Fit Results:

Period = 66.73431 [0.00073] d  
Epoch = 159.5314 [0.0082] BKJD  
Rp/R\* = 0.0263 [0.0023]  
a/R\* = 38.03 [6.72]  
b = 0.95 [0.02]  
Seff = 63.60 [23.17]  
Teq = 720 [66] K  
Rp = 5.51 [1.72] Re  
a = 0.3738 [0.0899] AU  
Ag = 828.10 [410.43] [2.02 $\sigma$ ]  
Teffp = 5972 [587] K [8.90 $\sigma$ ]

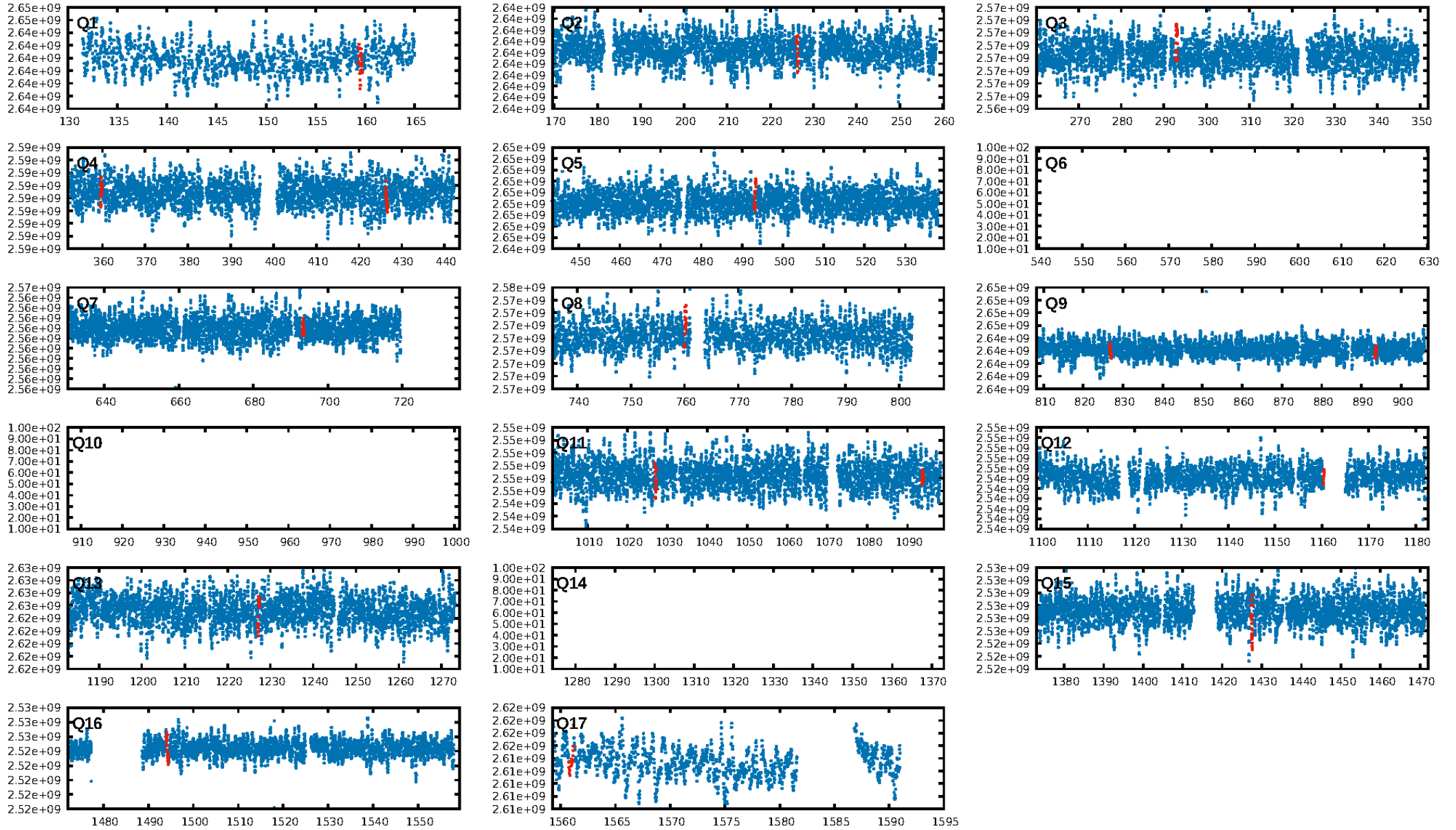
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [90.18 $\sigma$ ]  
LongPeriod-sig: 100.0% [39.00 $\sigma$ ]  
ModelChiSquare2-sig: 61.4%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [8/8]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 2.0%  
Centroid-so: 0.309 arcsec [1.88 $\sigma$ ]  
OotOffset-rm: 0.848 arcsec [0.42 $\sigma$ ]  
KicOffset-rm: 1.425 arcsec [0.82 $\sigma$ ]  
OotOffset-st: 1/3/3/4 [11]  
KicOffset-st: 1/3/3/4 [11]  
DiffImageQuality-fgm: 0.09 [1/11]  
DiffImageOverlap-fno: 0.00 [0/11]

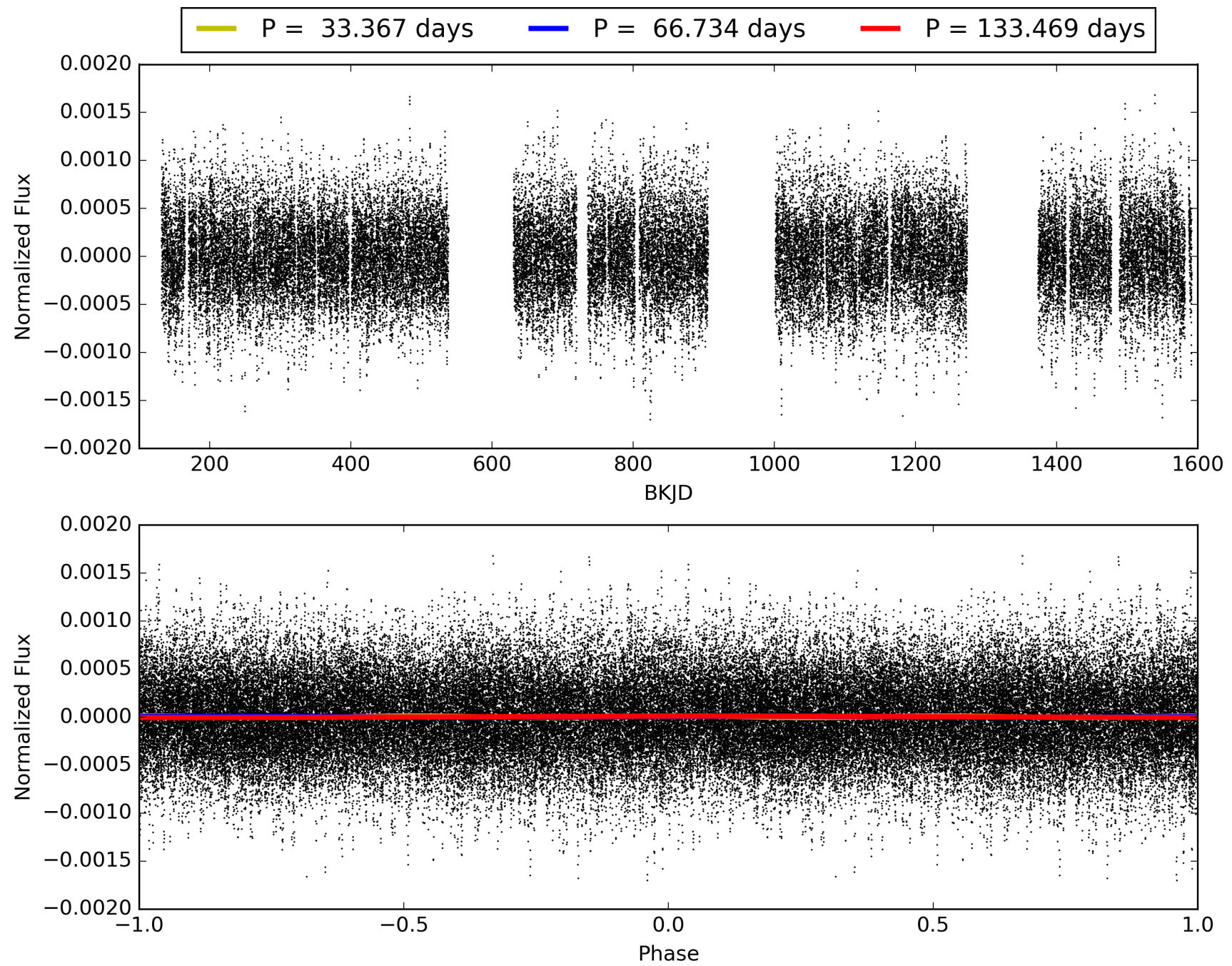
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:10:57 Z

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

# TCE 005802479-10, PDC Light Curves

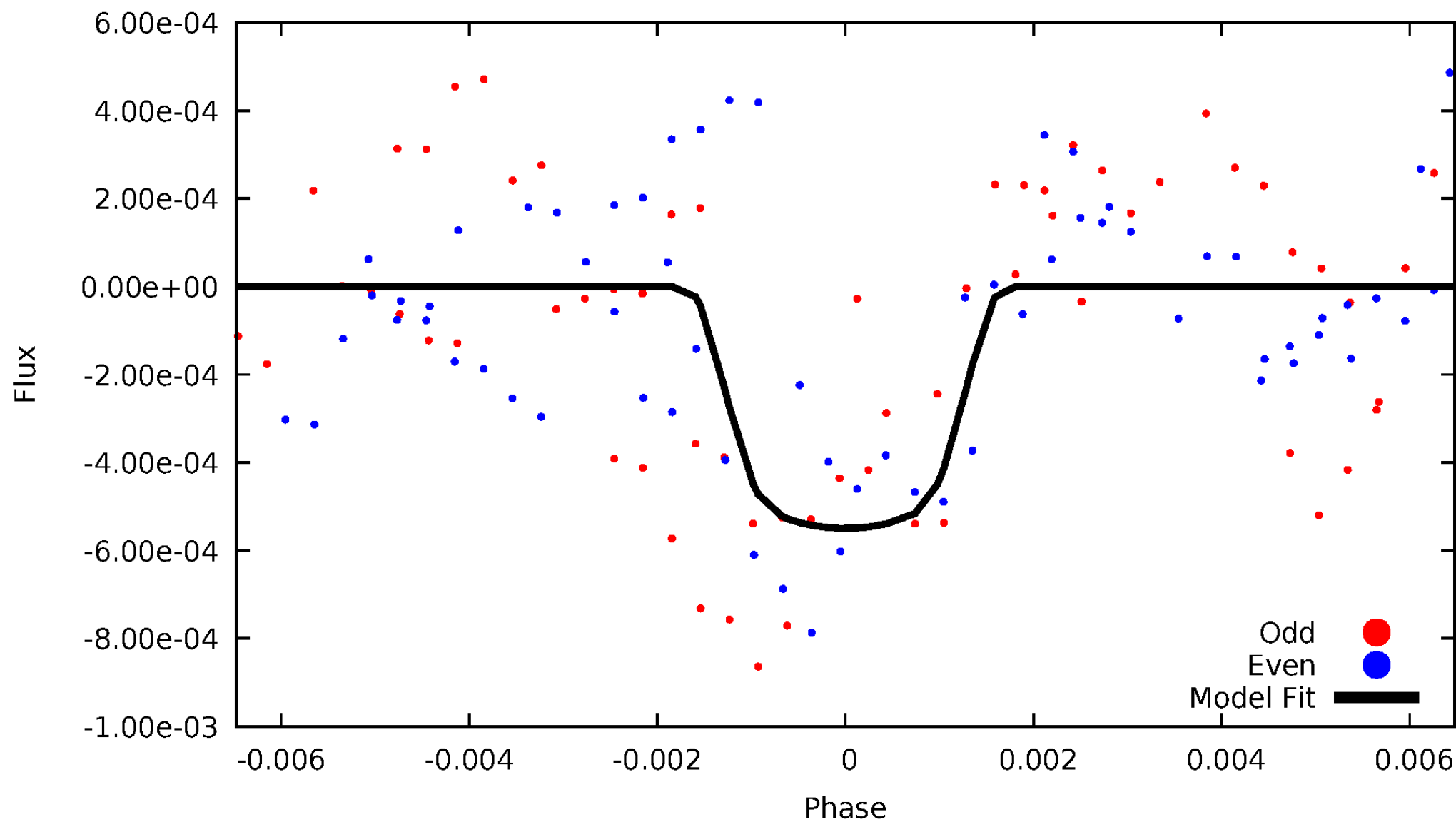


TCE 005802479-10



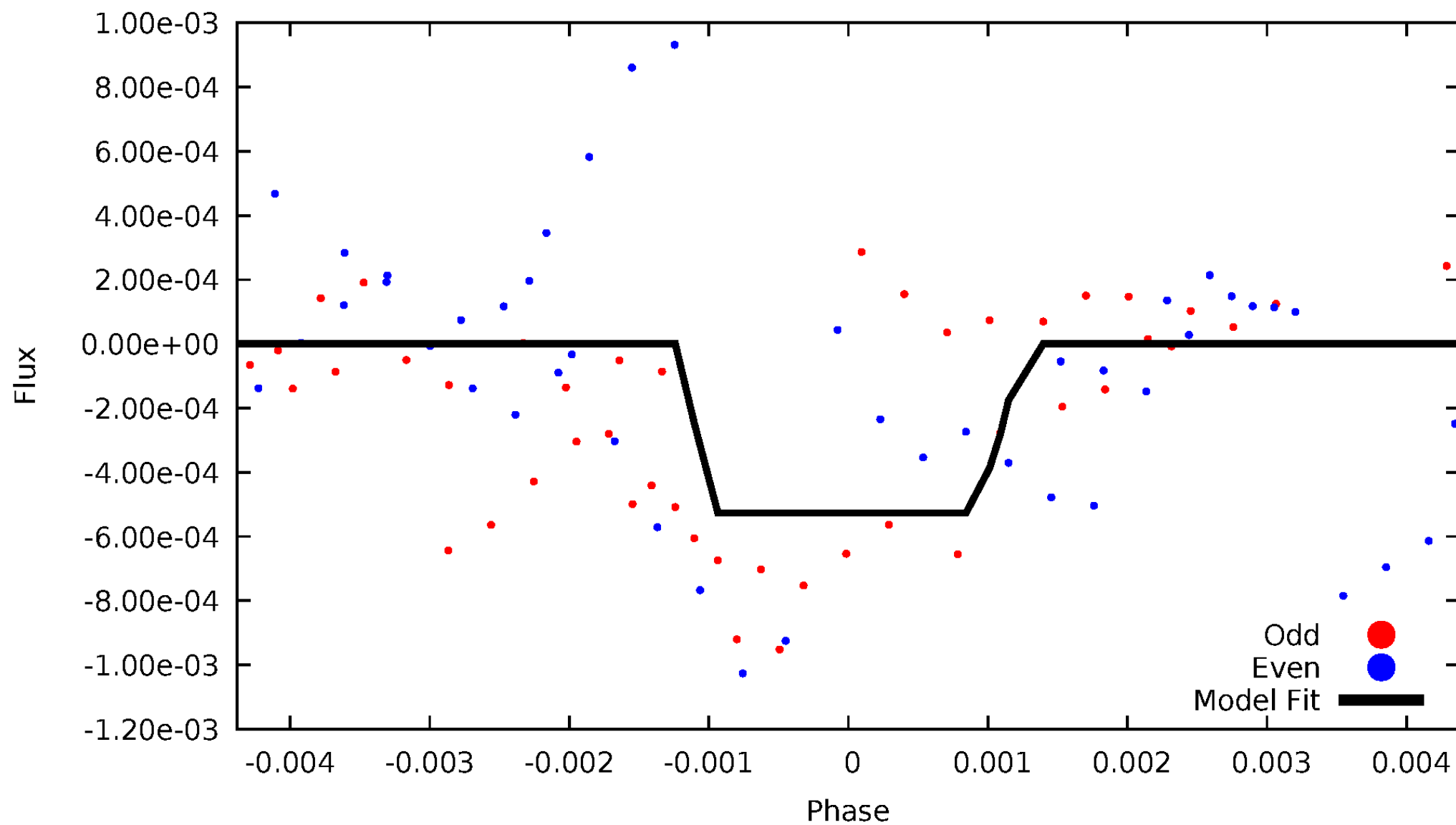
# DV Odd/Even

TCE 005802479-10



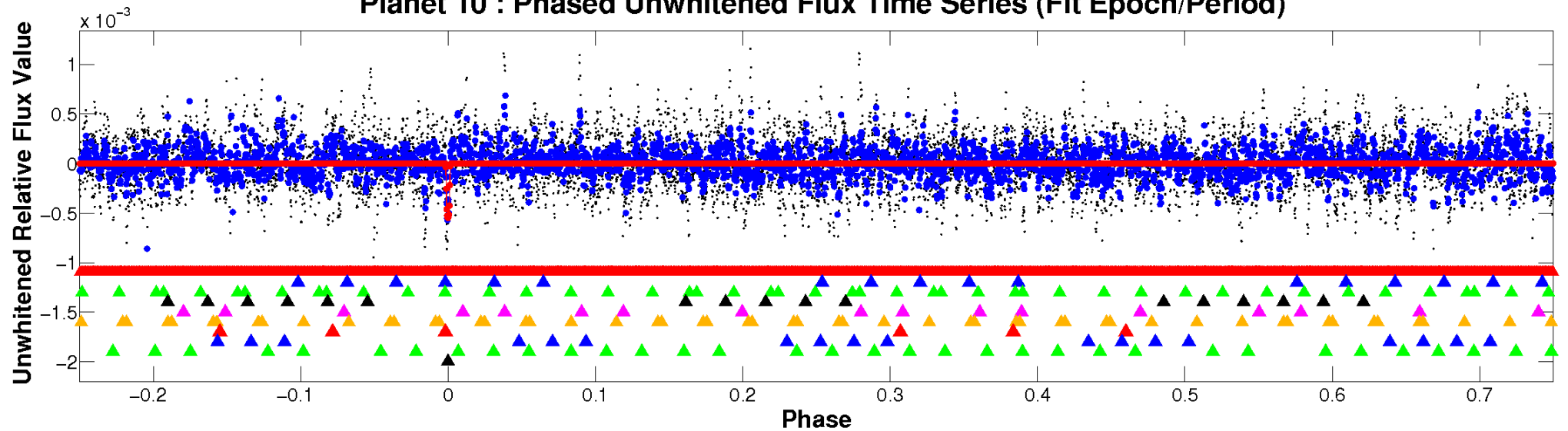
# ALT Odd/Even

TCE 005802479-10

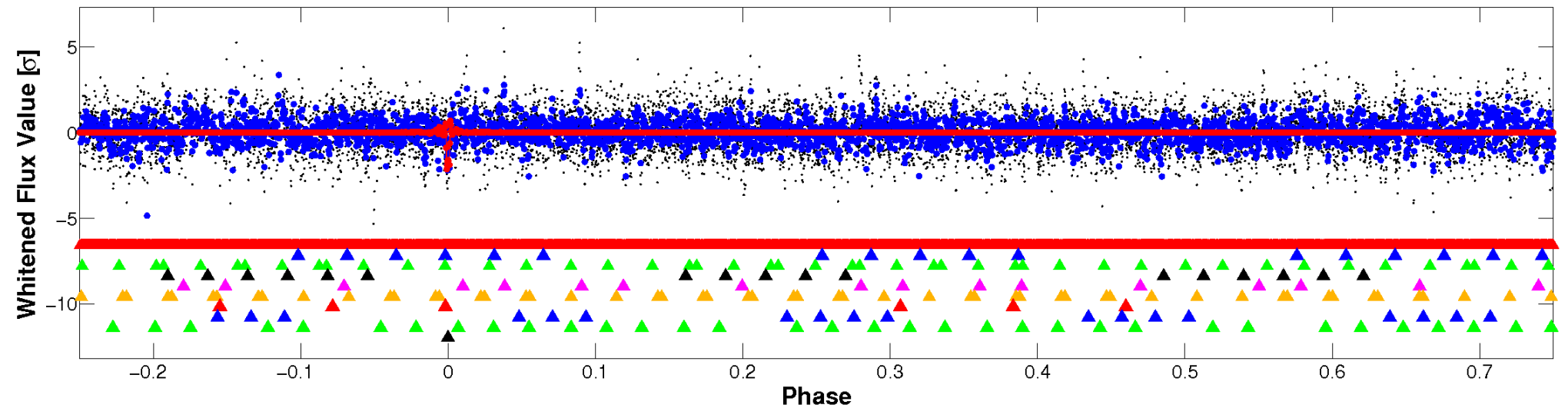


# Non-Whitened Vs. Whitened Light Curve

Planet 10 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)



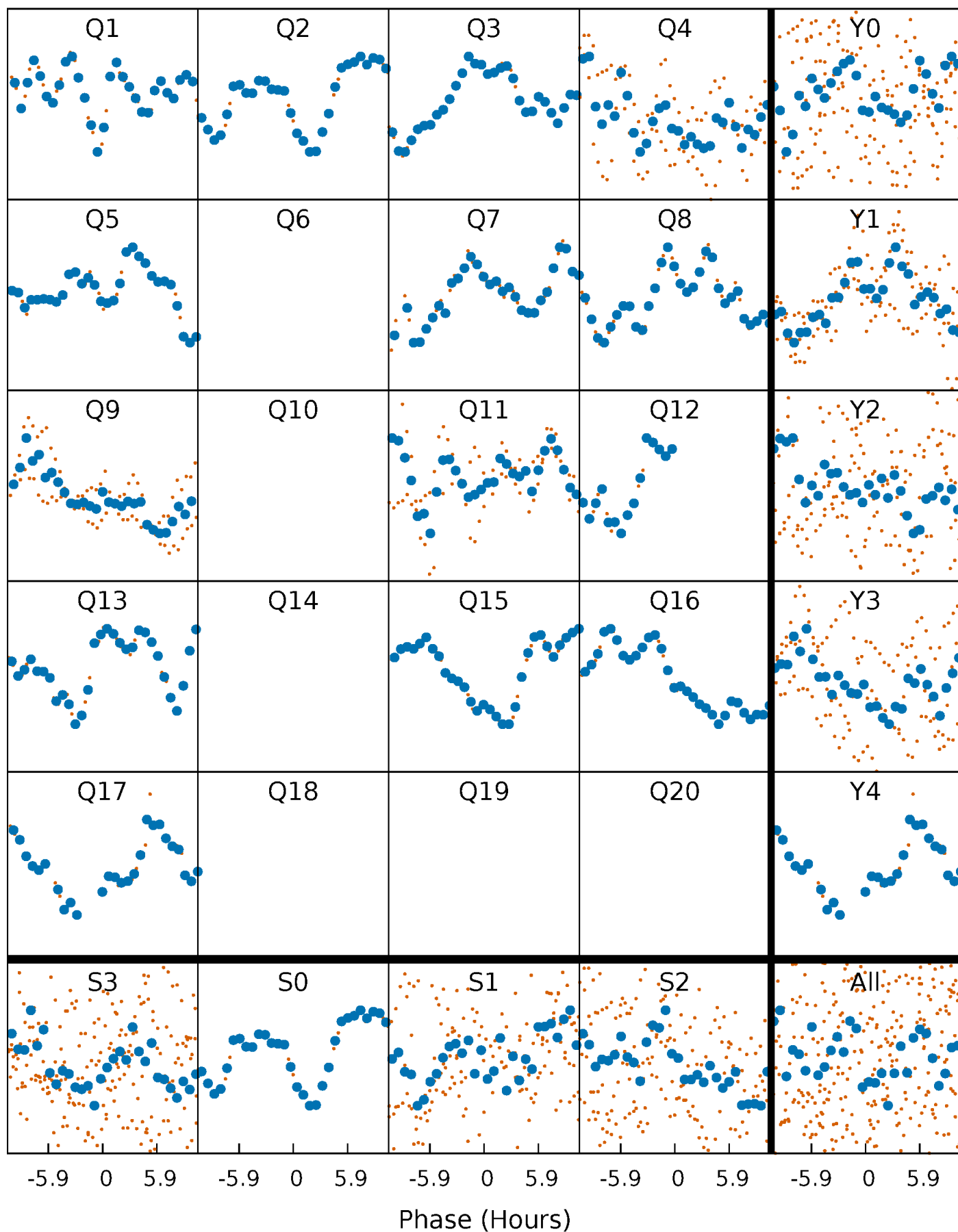
Planet 10 : Phased Whitened Flux Time Series (Fit Epoch/Period)





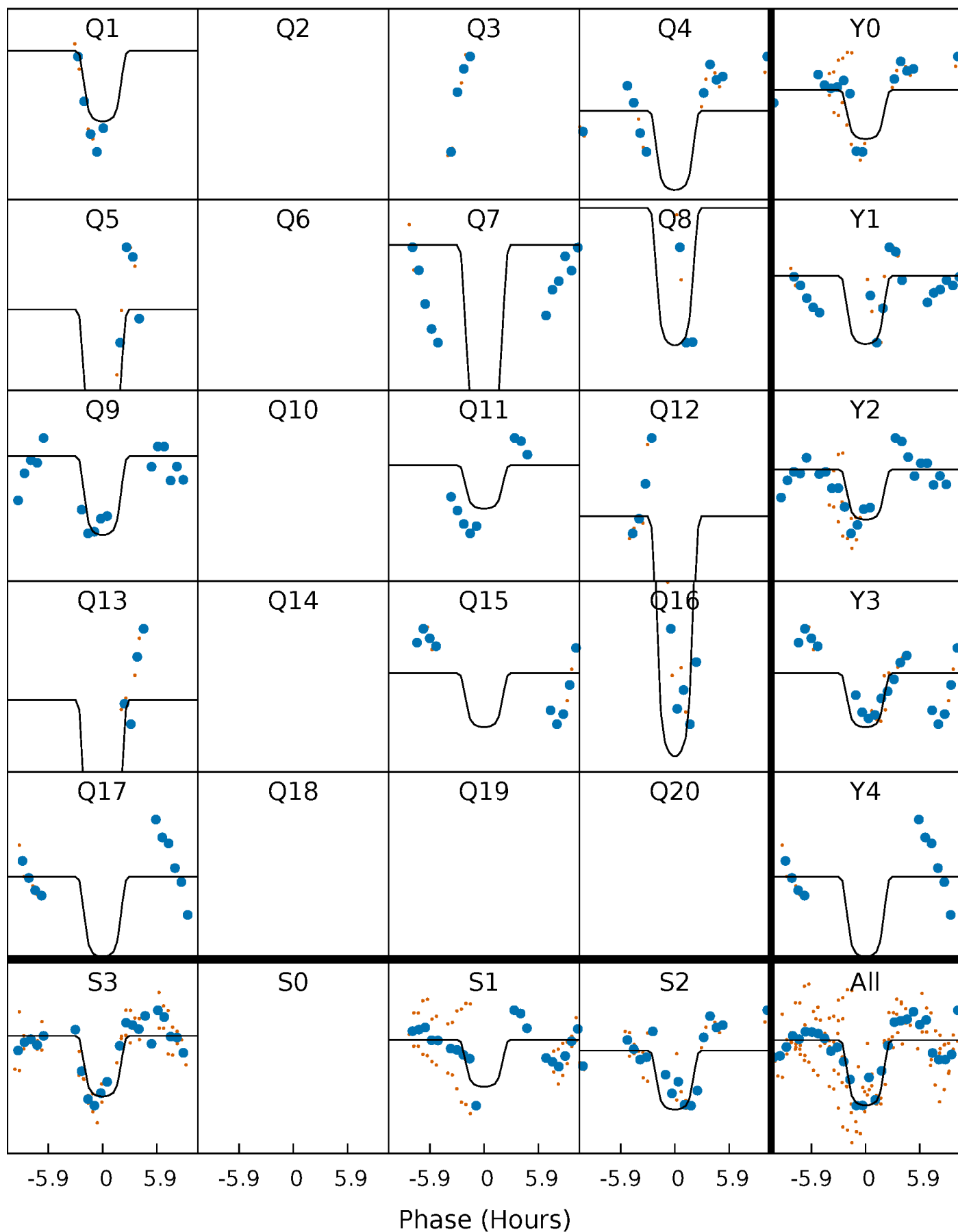
# PDC Quarter-Phased Transit Curves

TCE 005802479-10 P= 66.734307 Days  $T_0=159.531369$  (BKJD)



# DV Quarter-Phased Transit Curves

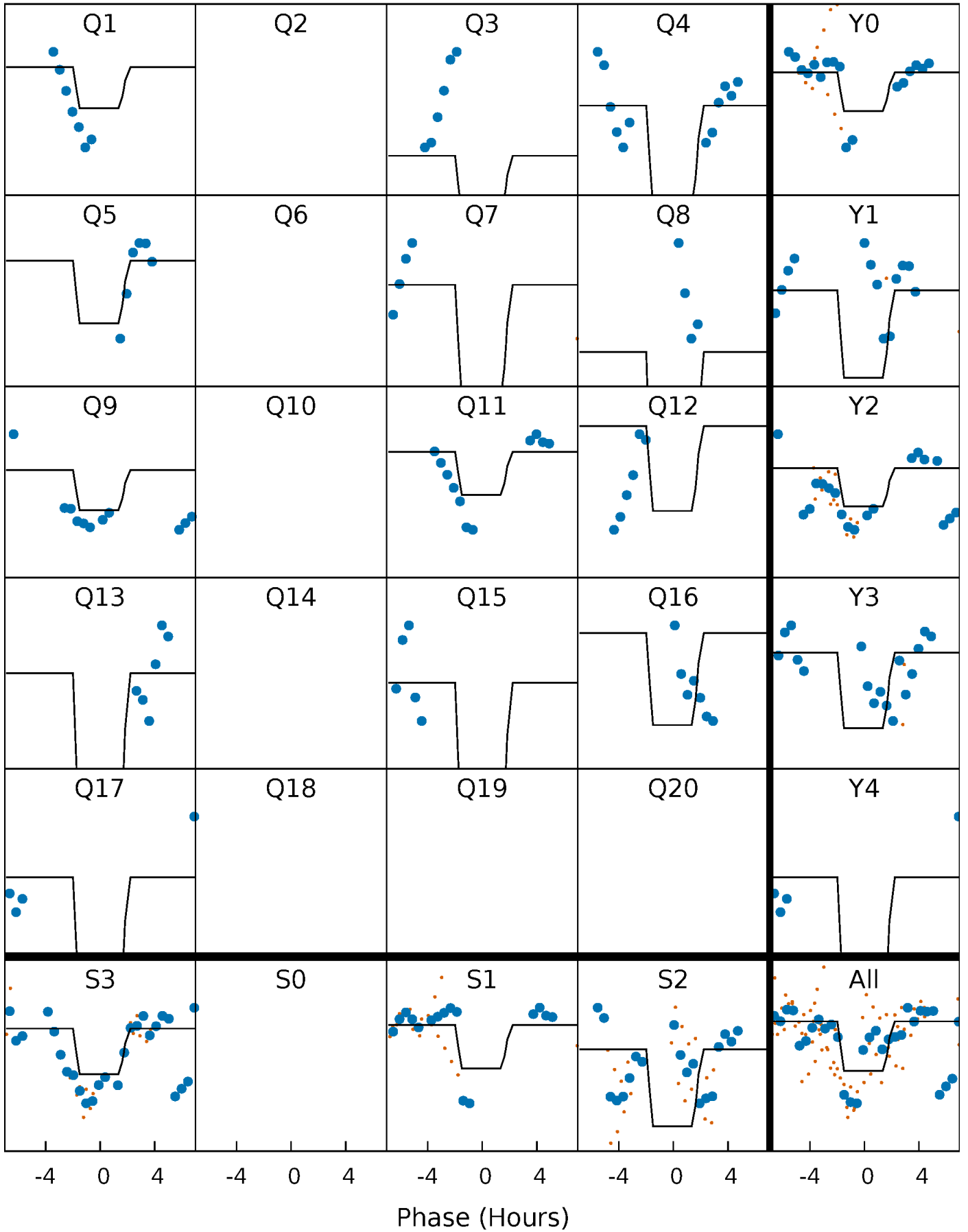
TCE 005802479-10   P= 66.734307 Days    $T_0=159.531369$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

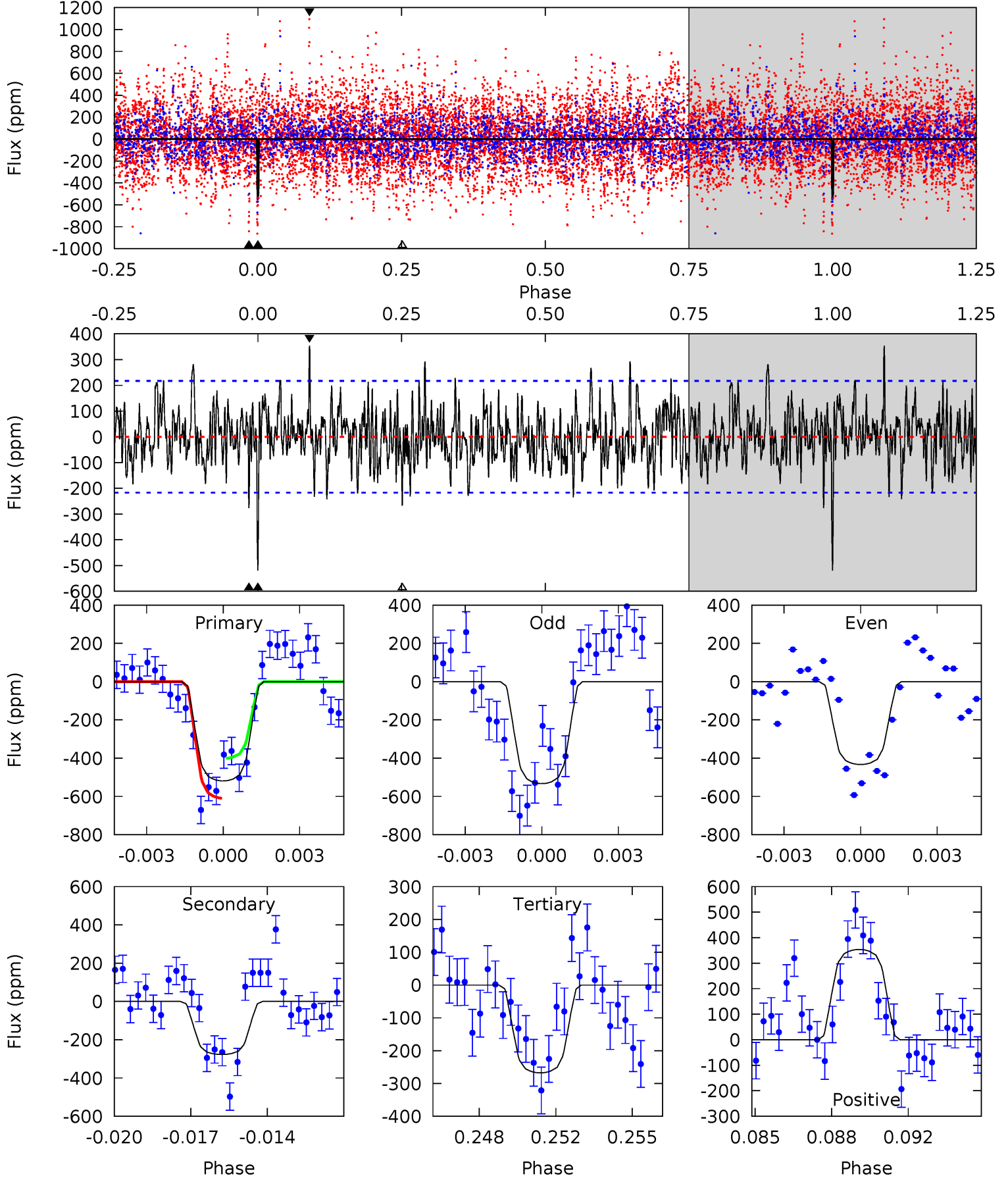
TCE 005802479-10   P= 66.731610 Days    $T_0=159.557890$  (BKJD)



# DV Model-Shift Uniqueness Test

005802479-10, P = 66.734307 Days, E = 92.797062 Days

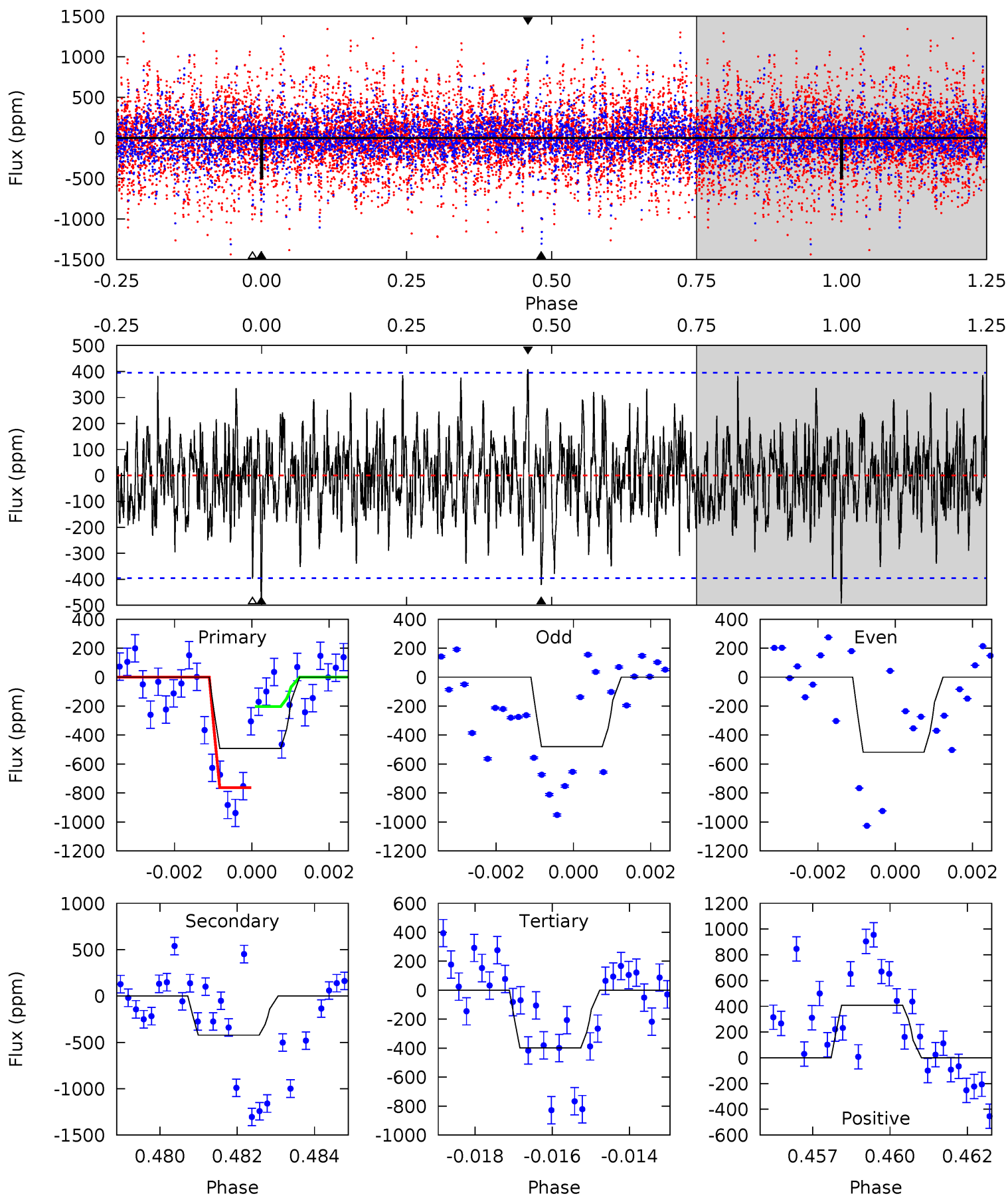
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	6.68	6.45	8.53	5.23	2.93	2.15	6.06	3.98	0.23	-1.85	1.21	0.86	0.41	2.49



# Alt Model-Shift Uniqueness Test

005802479-10, P = 66.731610 Days, E = 92.826280 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
6.62	5.66	5.34	5.49	5.31	3.05	1.60	1.28	1.13	0.32	0.17	0.24	0.87	0.45	3.76



### Stellar Parameters For KIC 005802479

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7196^{+172}_{-259}$	$4.064^{+0.158}_{-0.175}$	$-0.040^{+0.250}_{-0.350}$	$1.923^{+0.576}_{-0.471}$	$1.562^{+0.212}_{-0.236}$	$0.309^{+0.296}_{-0.153}$
	+2%/-4%	+4%/-4%	+625%/-875%	+30%/-24%	+14%/-15%	+96%/-50%
Source	PHO1	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 005802479-10 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-277 \pm 41$	$5.65^{+0.93}_{-0.93}$	$1005^{+74}_{-65}$	$5657^{+335}_{-324}$	$675^{+284}_{-187}$
Alt.	$-422 \pm 74$	$4.82^{+0.85}_{-0.76}$	$1009^{+65}_{-68}$	$6768^{+560}_{-554}$	$1386^{+591}_{-432}$

$T_{max}$  = 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

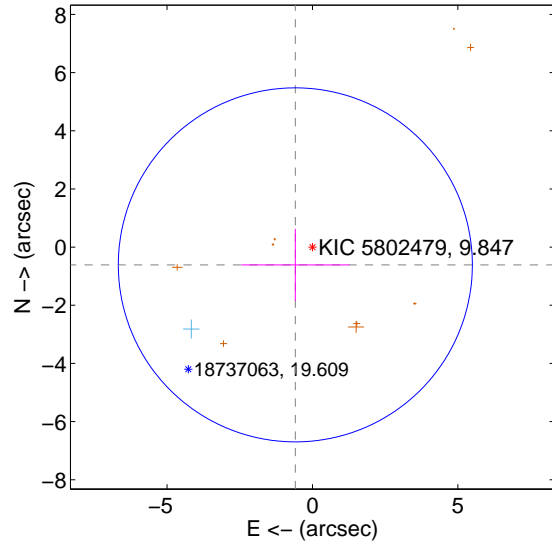
Supplemental centroid analysis for 005802479-10. **Kepler magnitude: 9.85.** Transit SNR 8.88

There are 1 quarters with good PRF difference image offsets

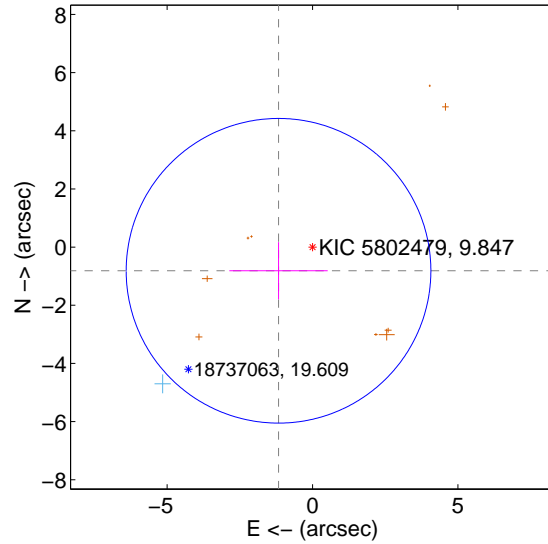
The OOT PRF centroid is offset from the target star catalog position by about 2.13 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.848 \pm 2.028$	0.42	$0.588 \pm 1.856$	$-0.611 \pm 1.239$
PRF-fit source offset from KIC position	$1.425 \pm 1.746$	0.82	$1.169 \pm 1.690$	$-0.814 \pm 0.985$
photometric centroid source offset	$0.31 \pm 0.16$	1.88	$-0.23 \pm 0.14$	$0.21 \pm 0.19$

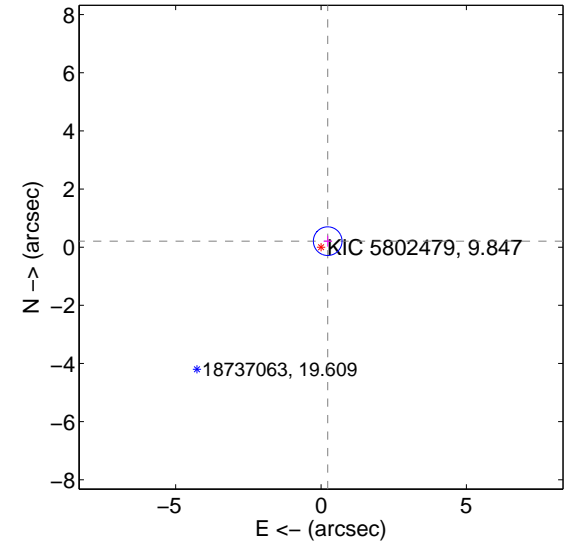
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

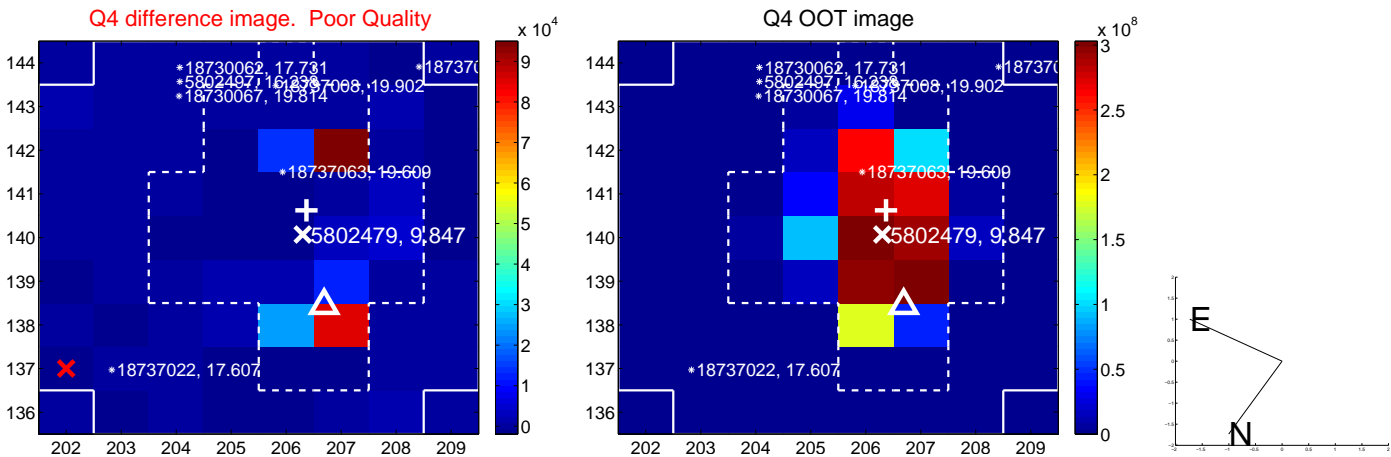
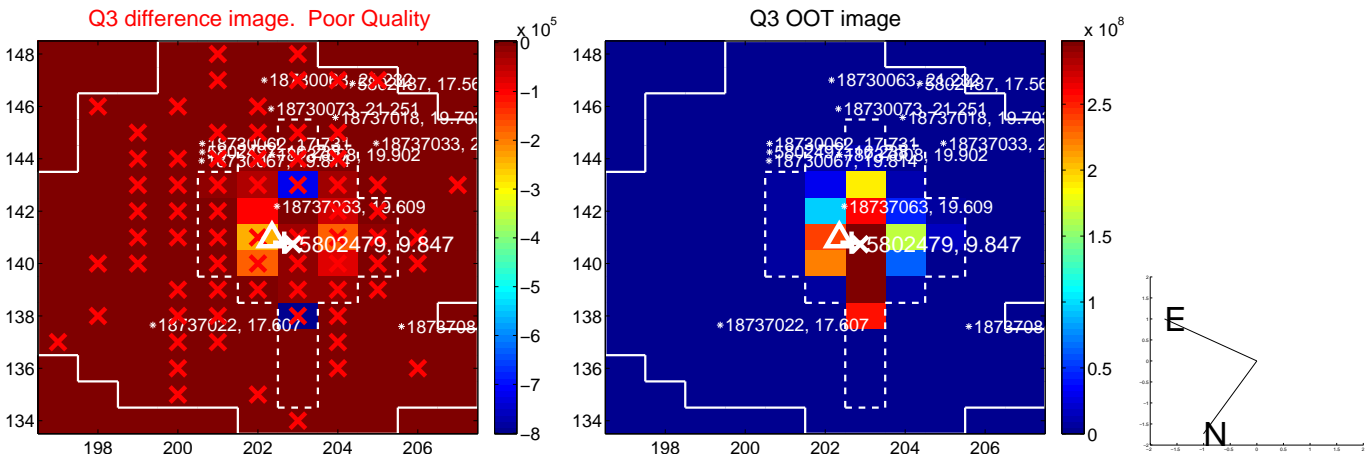
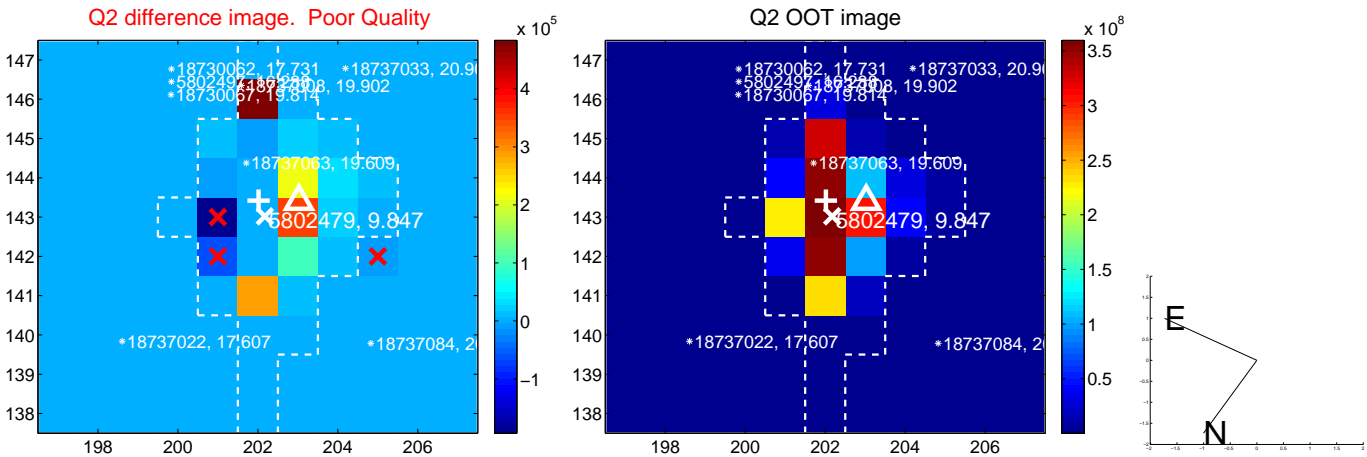
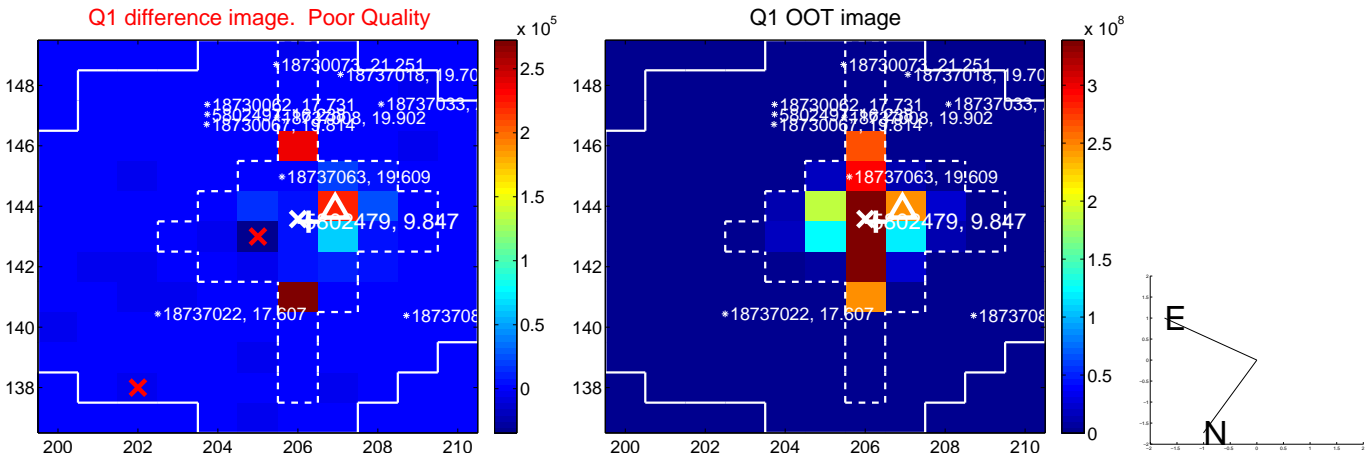


offset from photometric centroids

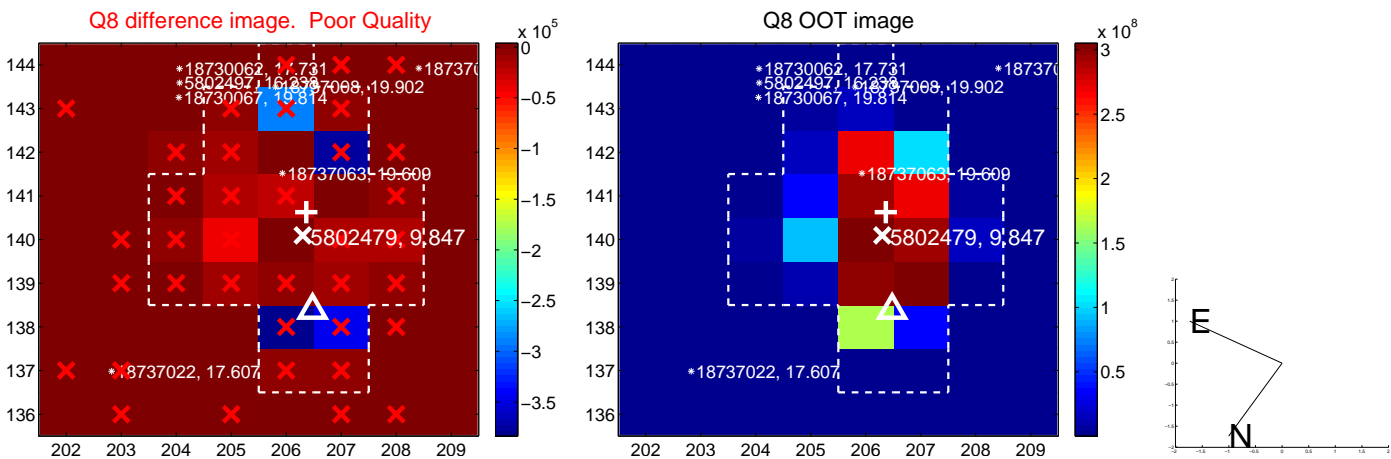
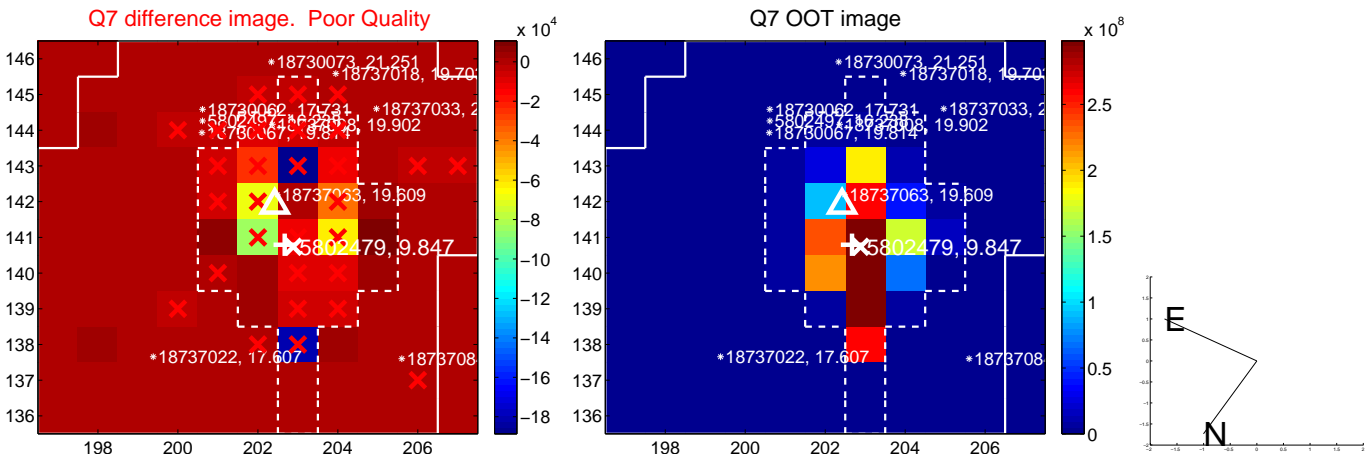
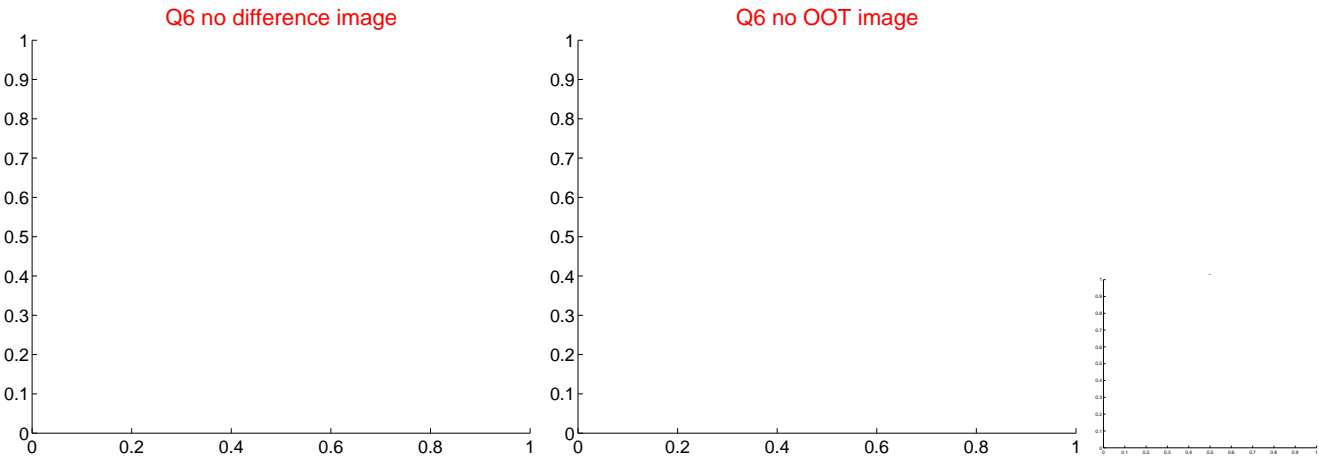
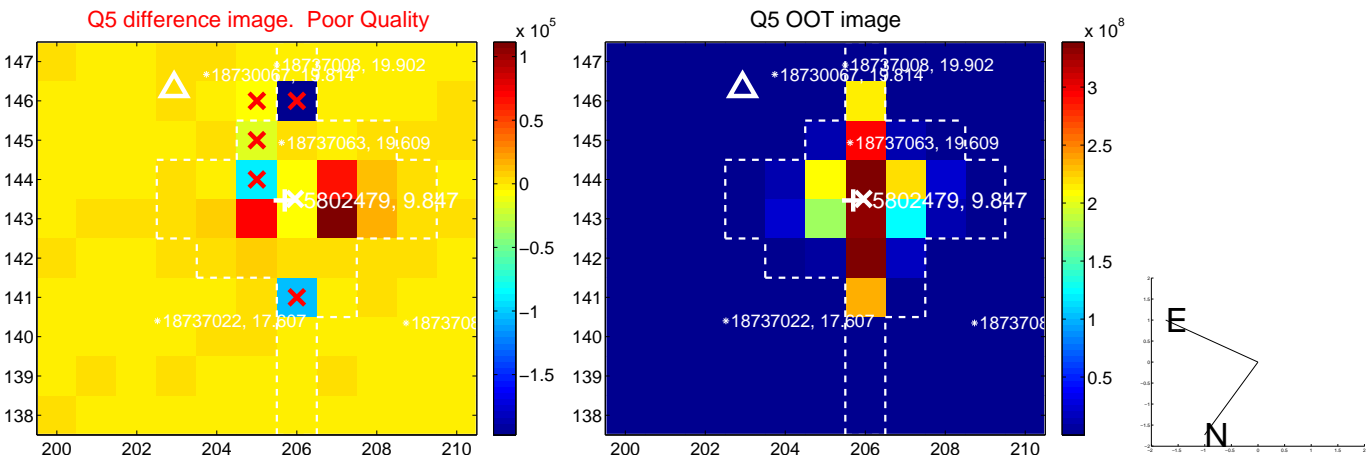


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

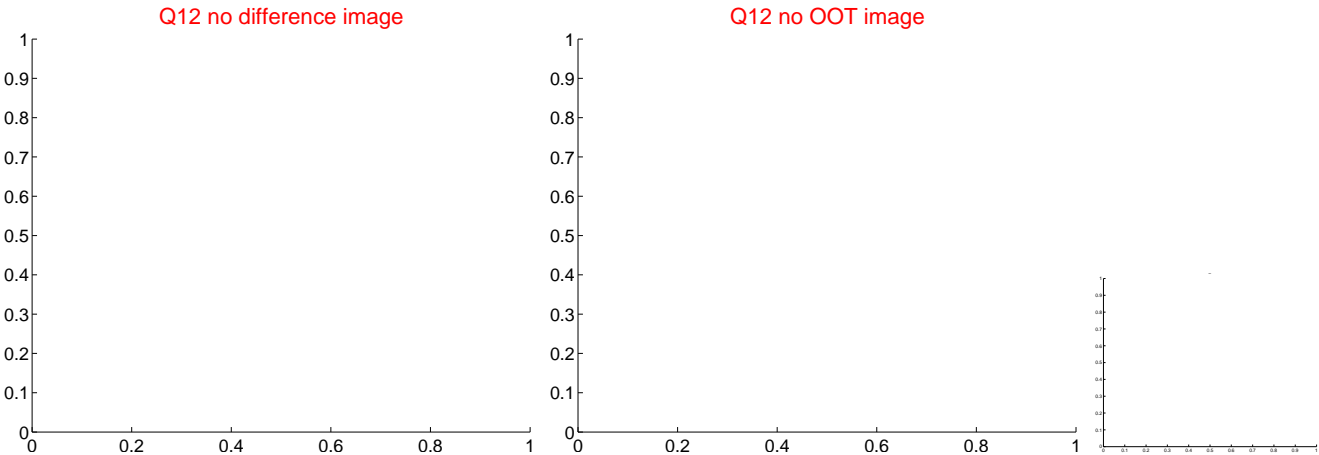
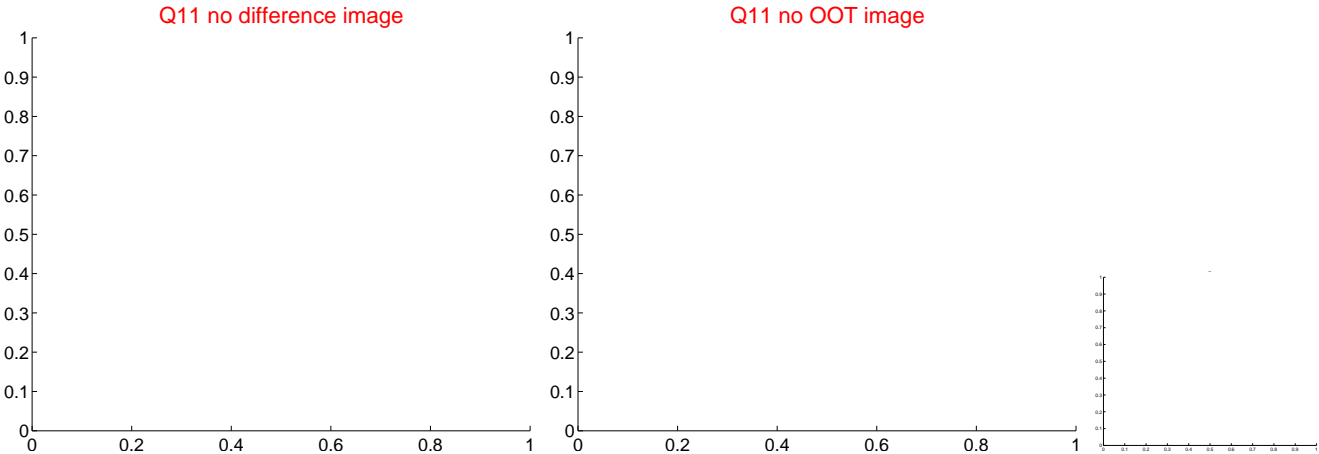
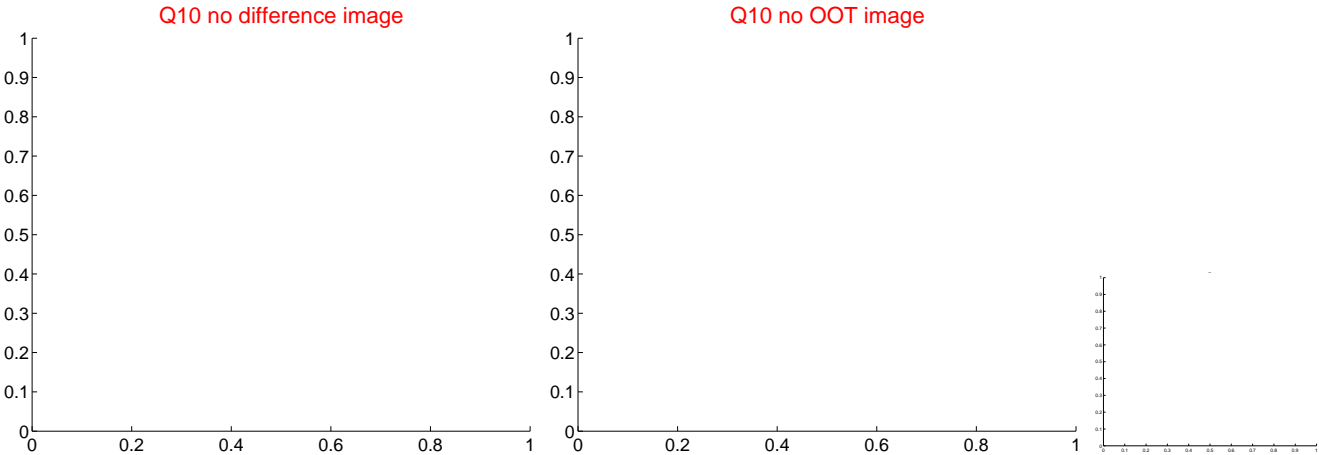
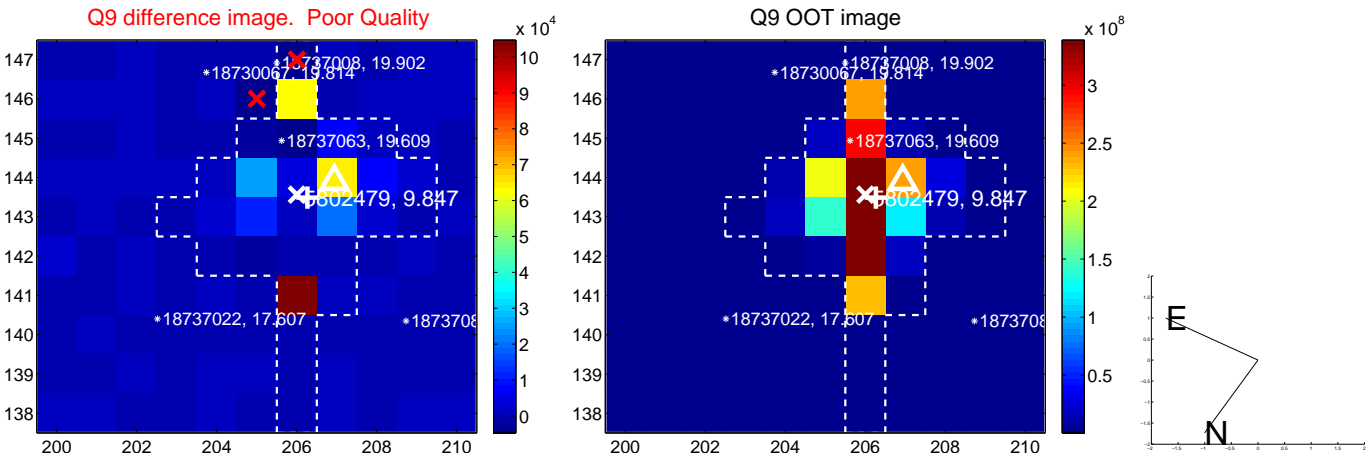
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

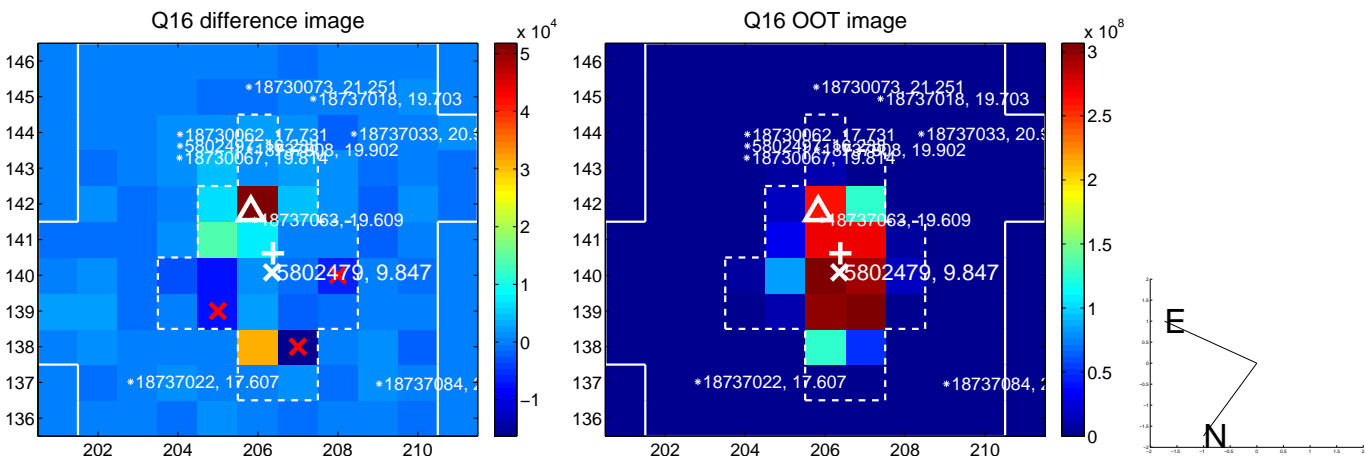
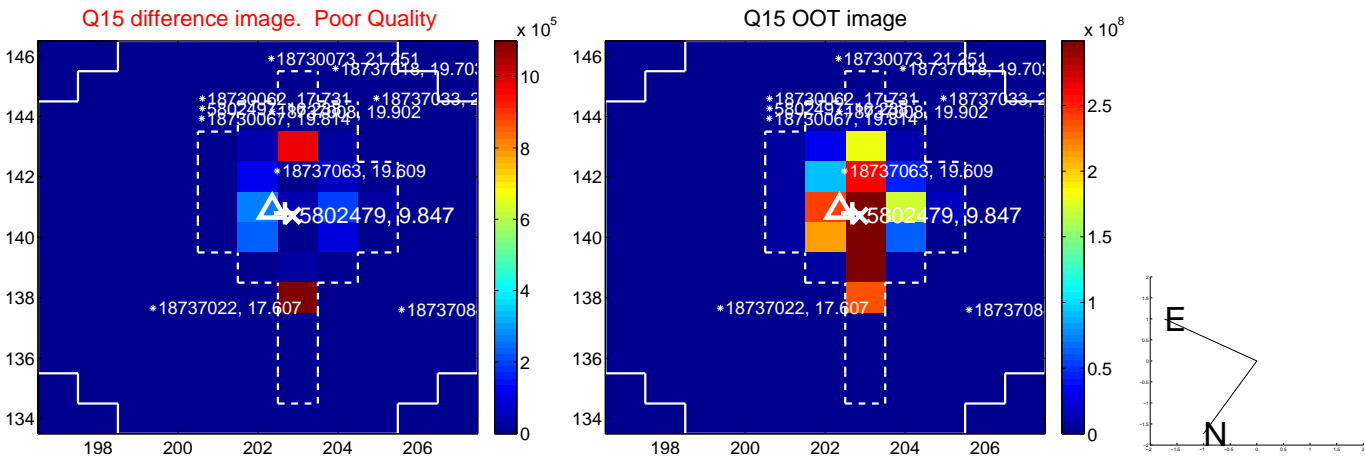
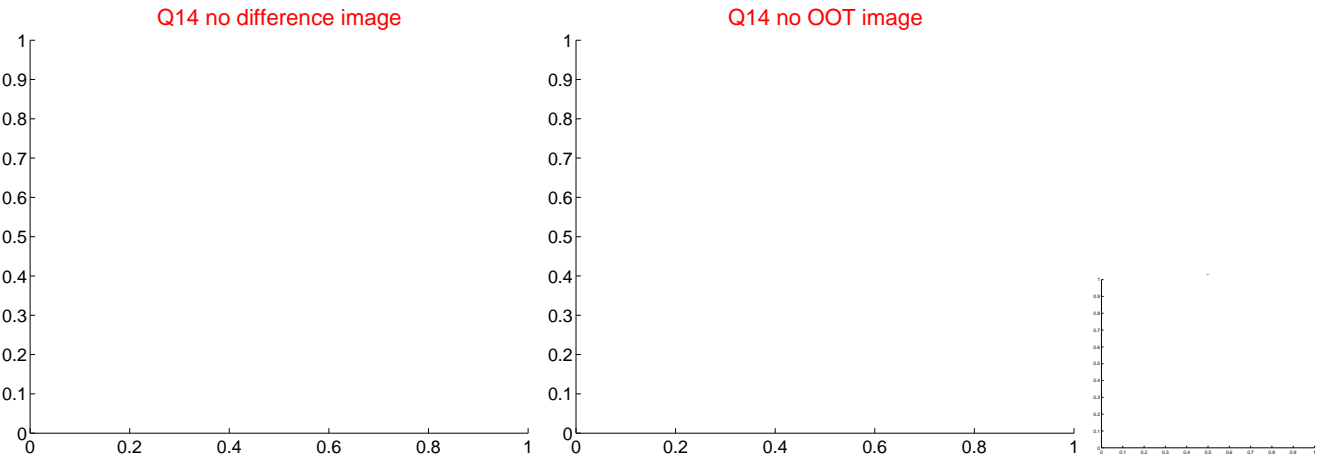
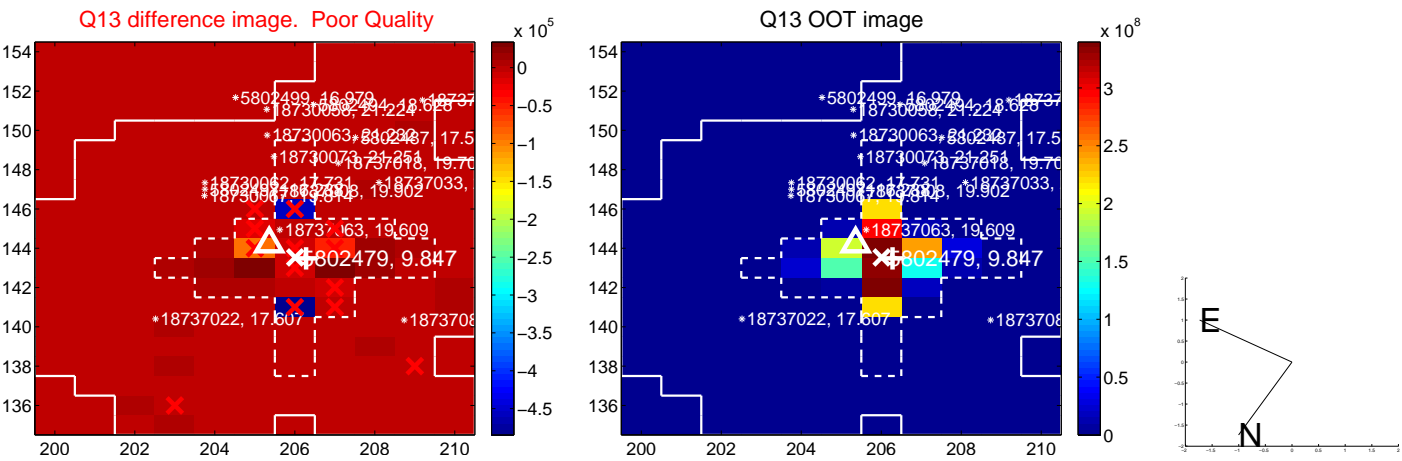


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

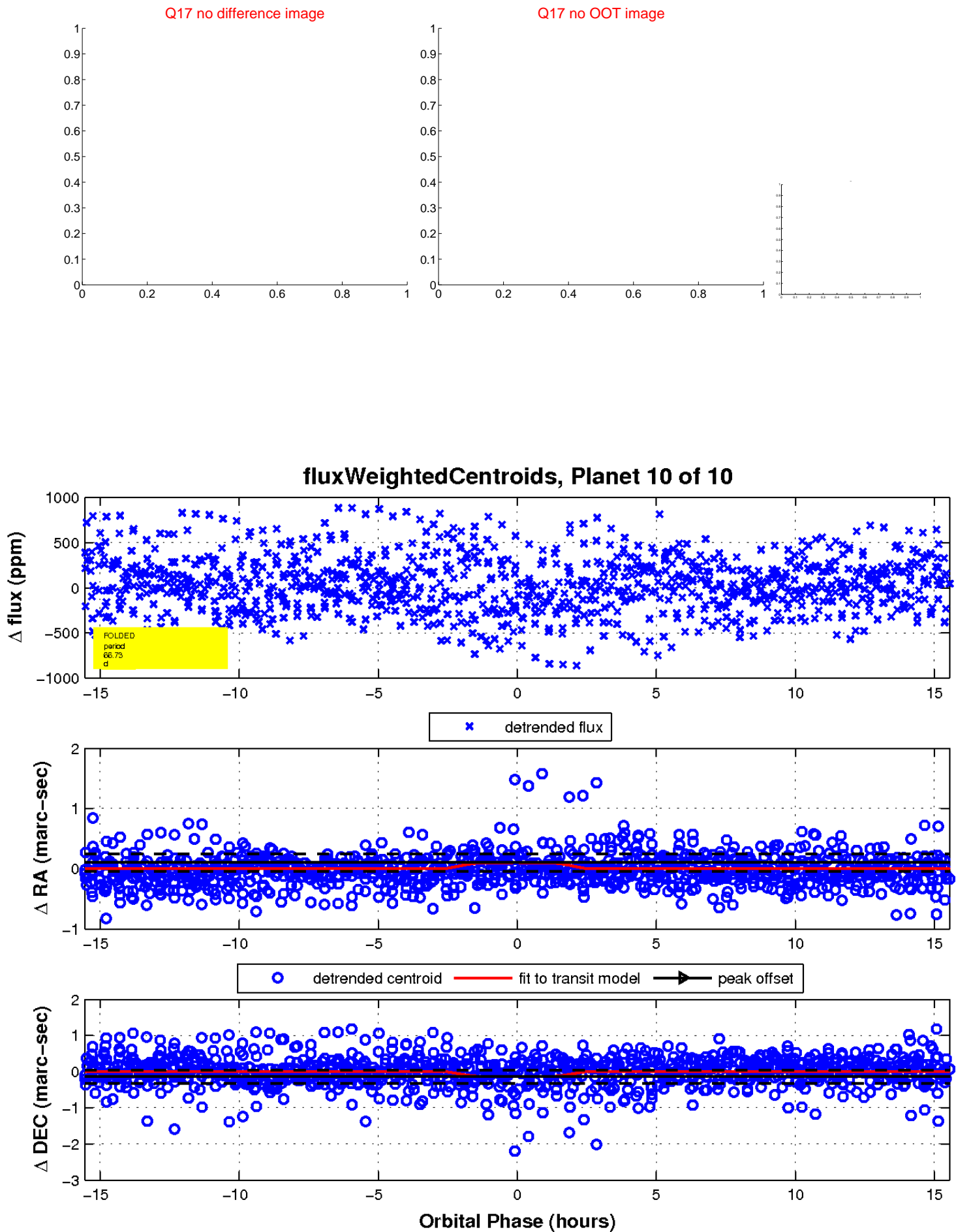




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

