

KIC 005565393

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})
005565393-01	OBS	No	0.524587	131.635414	25.4	3.007	9.8	6.2	1.00	5780	0.50	6168.53
005565393-02	OBS	No	53.739797	174.936072	487.7	2.029	7.5	7.6	1.00	5780	2.38	12.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005565393-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_KIC_POS
005565393-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_KIC_POS

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

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

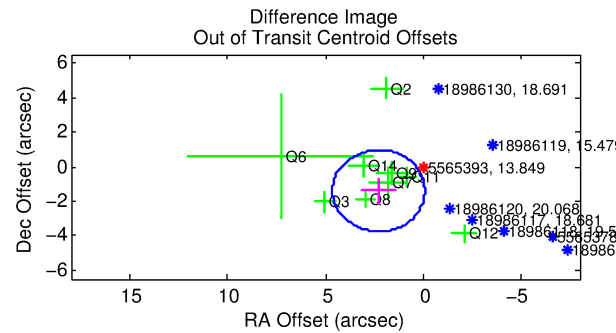
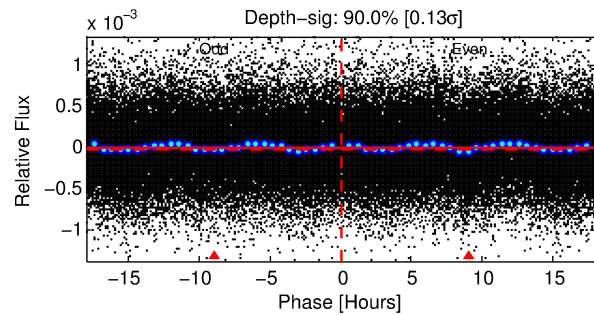
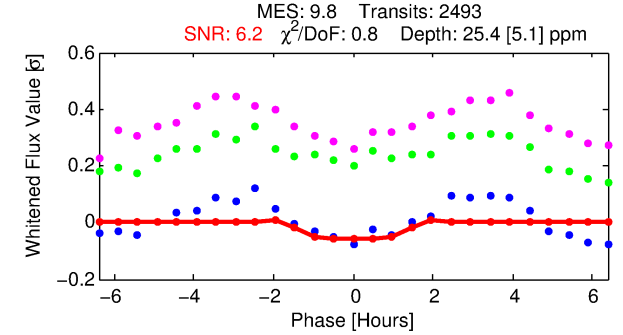
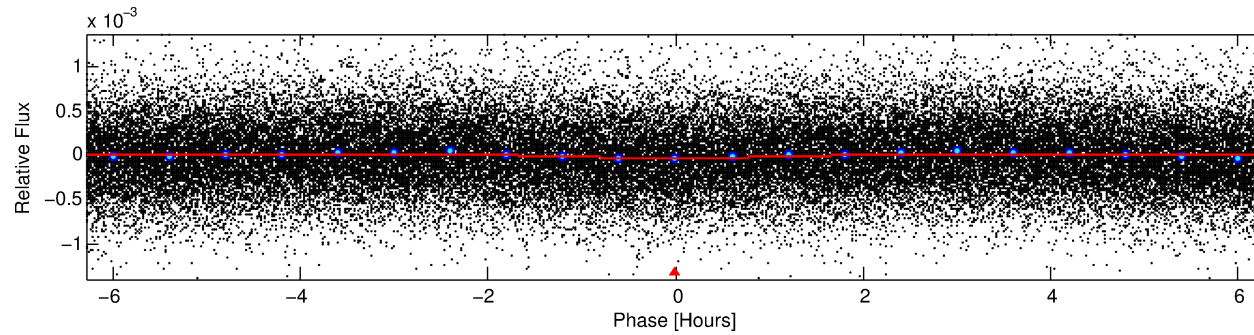
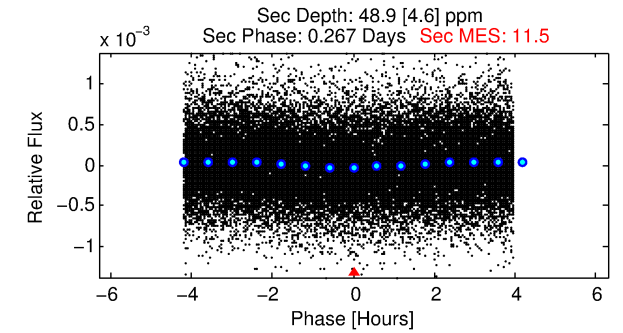
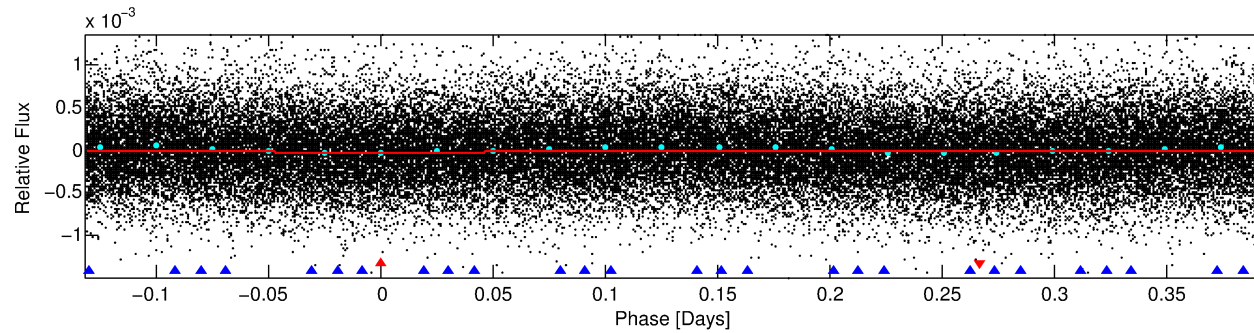
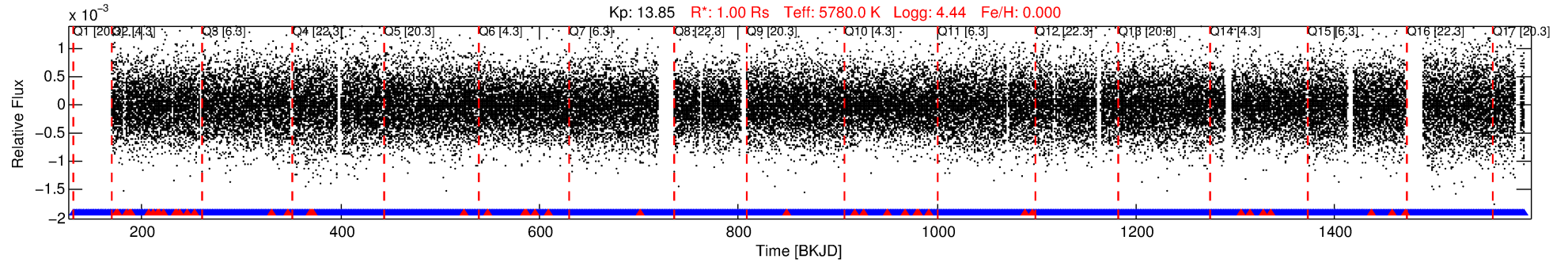
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005565393-01

No Significant Match Found

DV One-Page Summary

KIC: 5565393 Candidate: 1 of 2 Period: 0.525 d



DV Fit Results:

Period = 0.52459 [0.00002] d
Epoch = 131.6354 [0.0055] BKJD
Rp/R* = 0.0046 [0.0118]
a/R* = 1.47 [8.96]
b = 0.08 [146.90]
Seff = 6168.54 [0.25]
Teq = 2260 [0] K
Rp = 0.50 [1.28] Re
a = 0.0127 [0.0000] AU
Ag = 17.47 [89.87] [0.18σ]
Teffp = 7144 [9184] K [0.53σ]

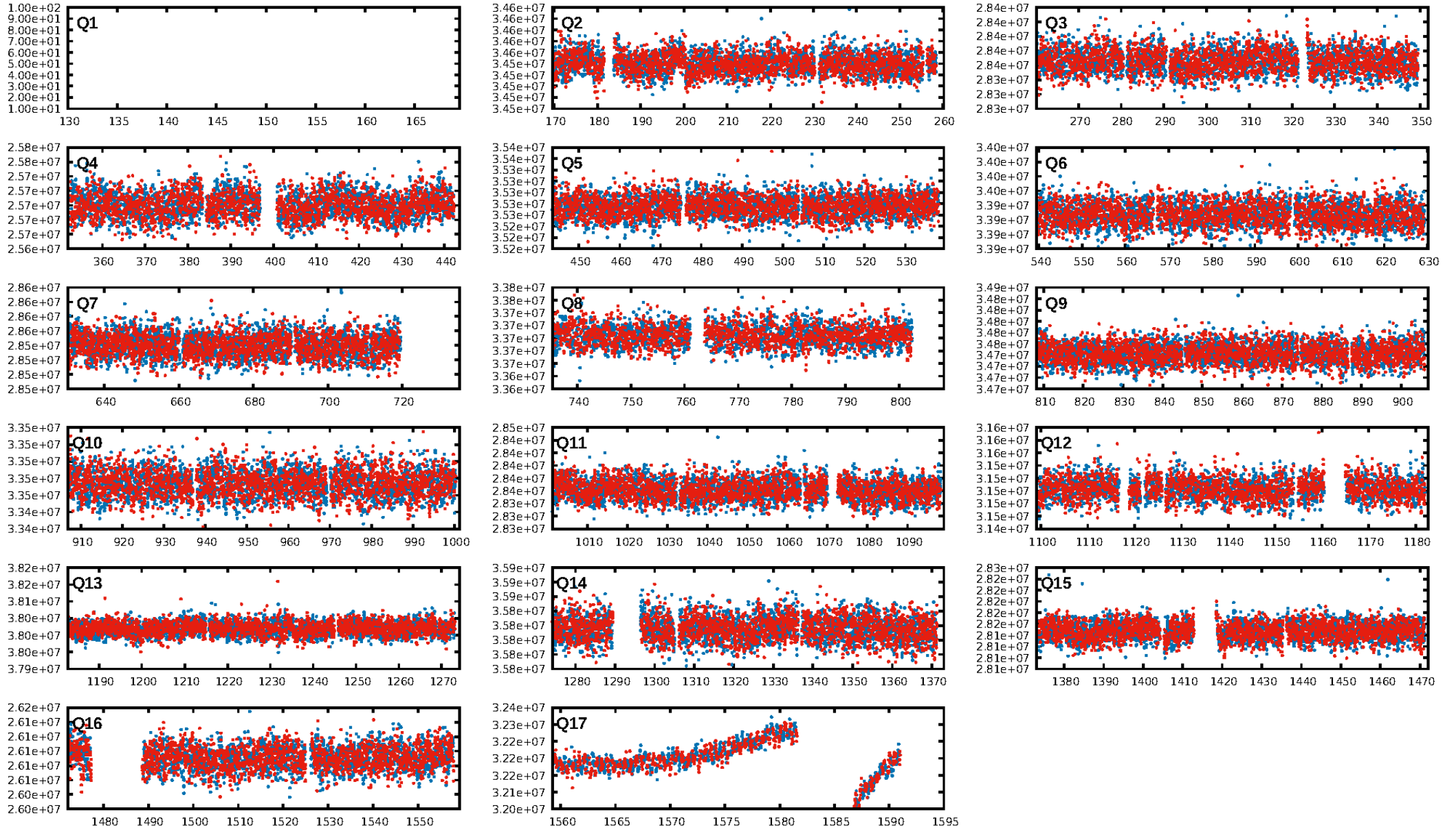
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [352.11σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.69e-14
RollingBand-fgt: 0.98 [2394/2441]
GhostDiagnostic-chr: -4.358
Centroid-sig: 93.6%
Centroid-so: 0.679 arcsec [0.40σ]
OotOffset-rm: 2.680 arcsec [3.41σ]
OotOffset-st: 3/3/2/1 [9]
KicOffset-rm: 1.368 arcsec [2.18σ]
KicOffset-st: 3/3/2/1 [9]
DiffImageQuality-fgm: 0.44 [4/9]
DiffImageOverlap-fno: 1.00 [16/16]

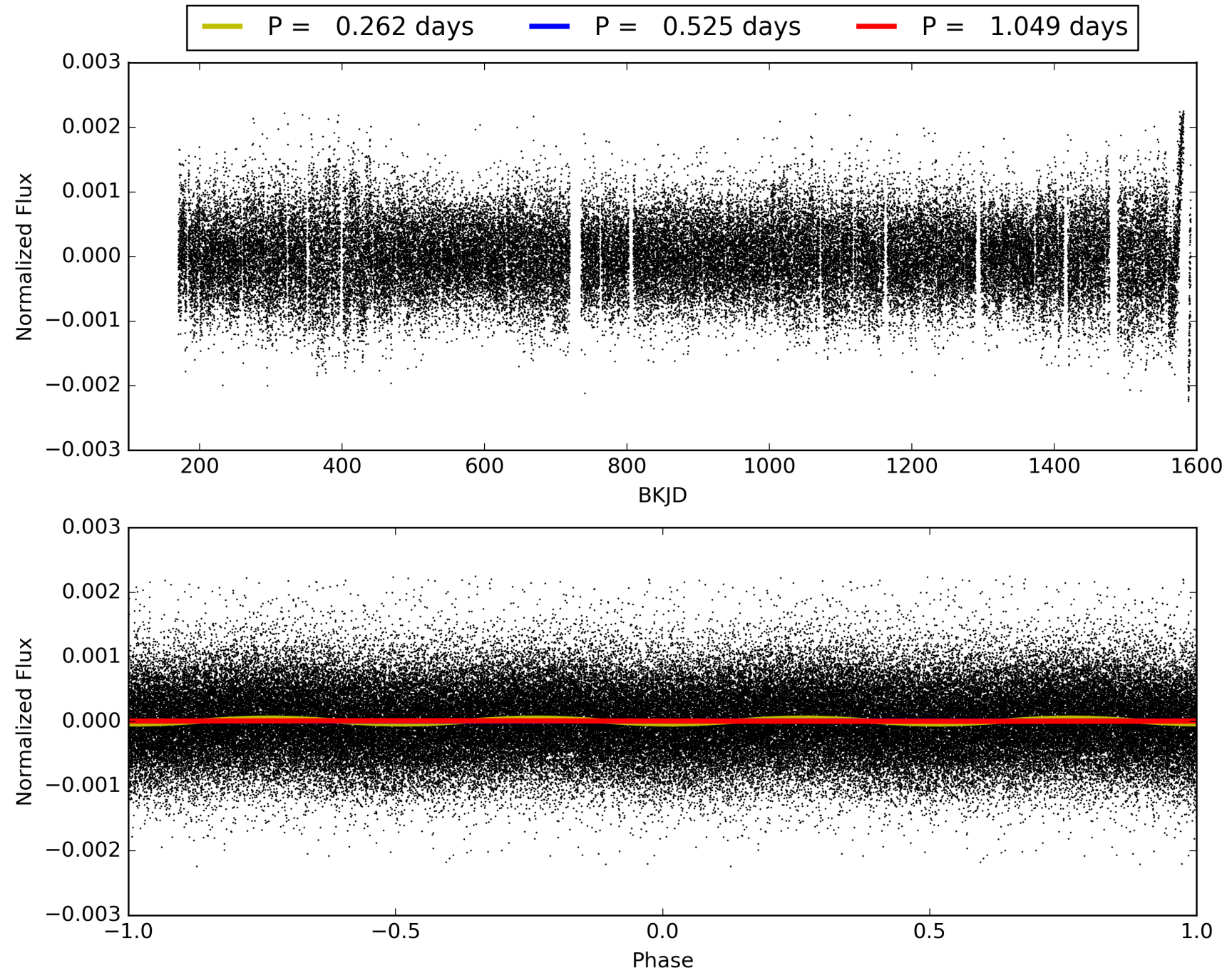
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:08:23 Z

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

TCE 005565393-01, PDC Light Curves

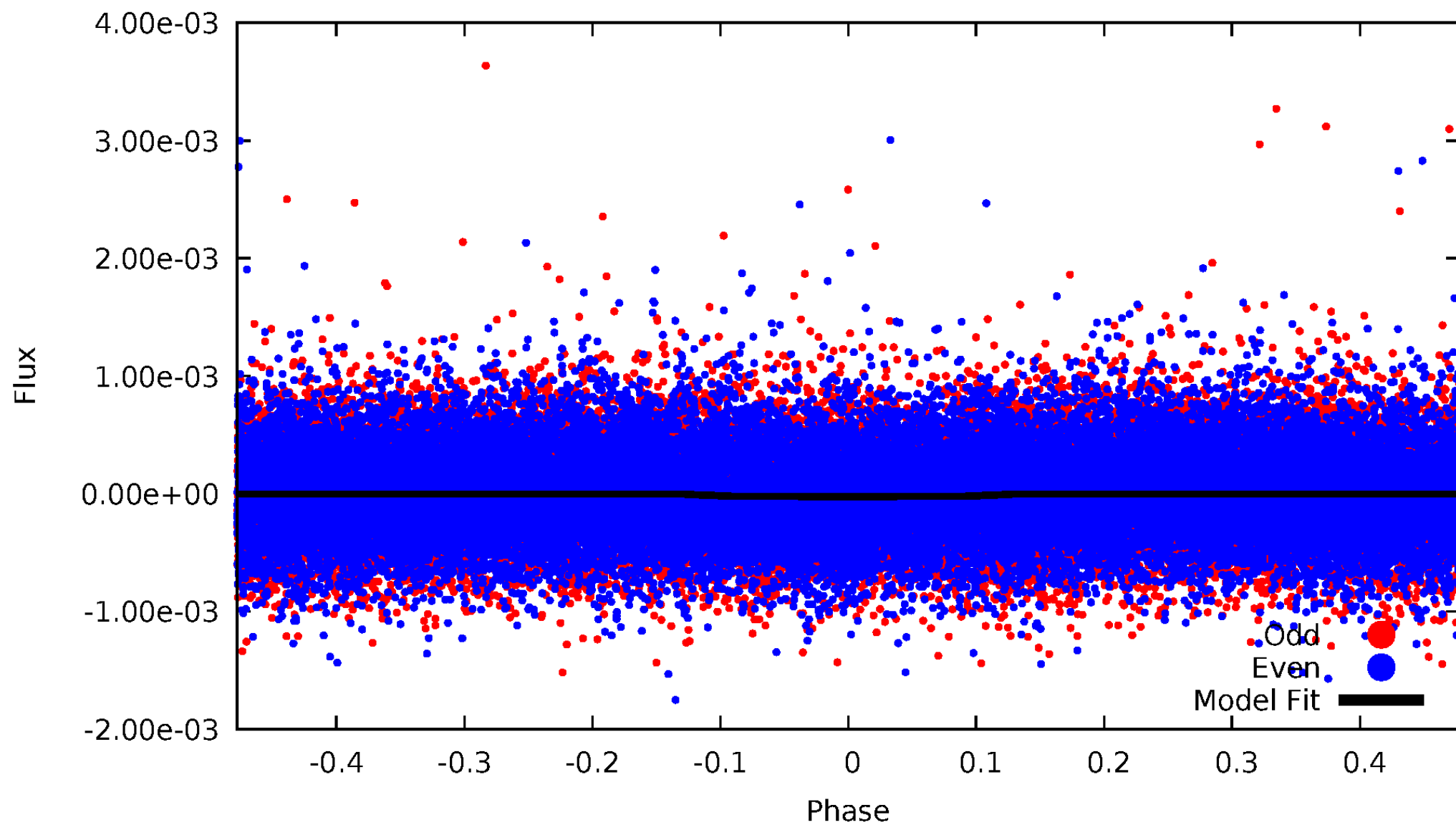


TCE 005565393-01



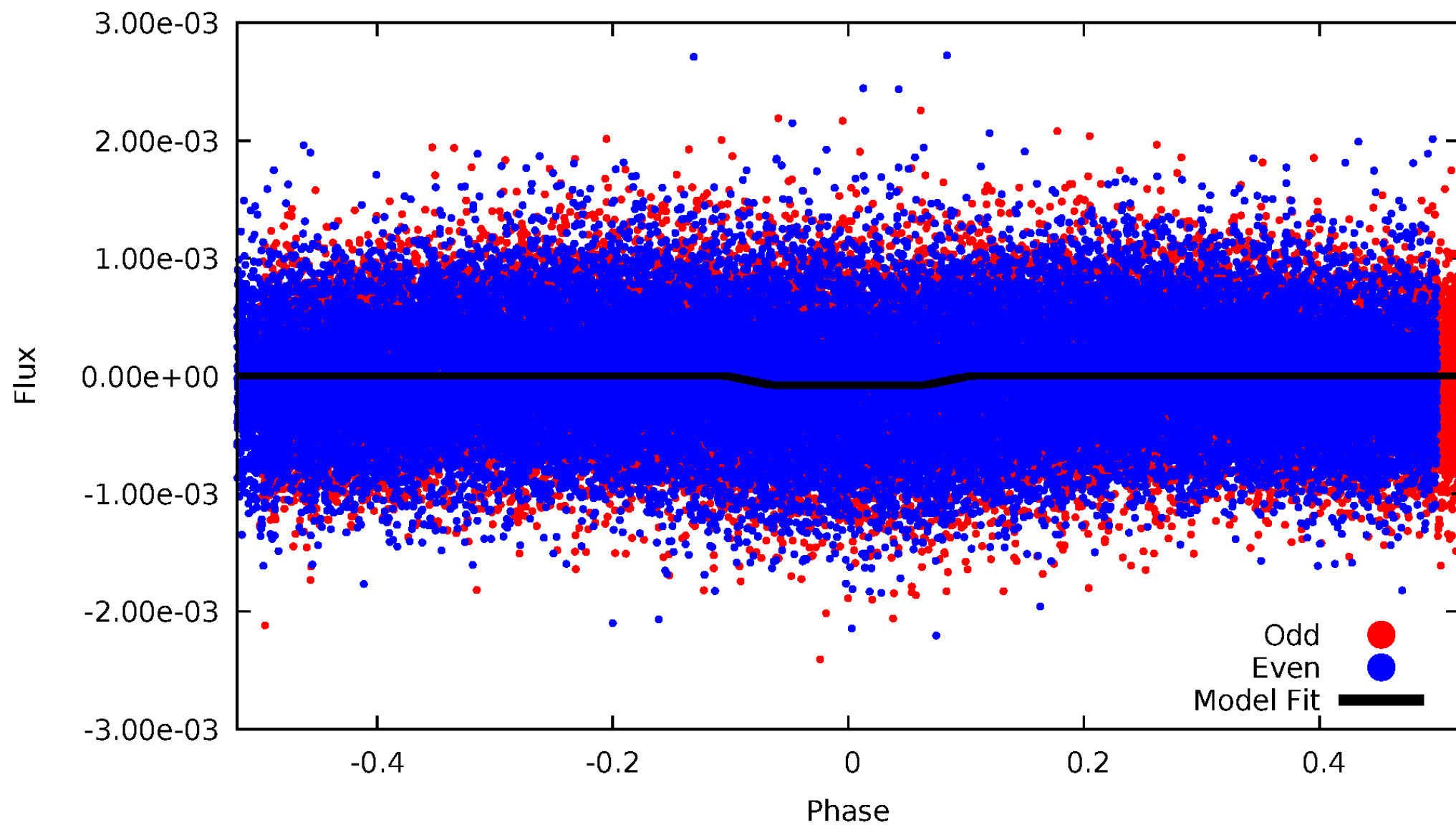
DV Odd/Even

TCE 005565393-01



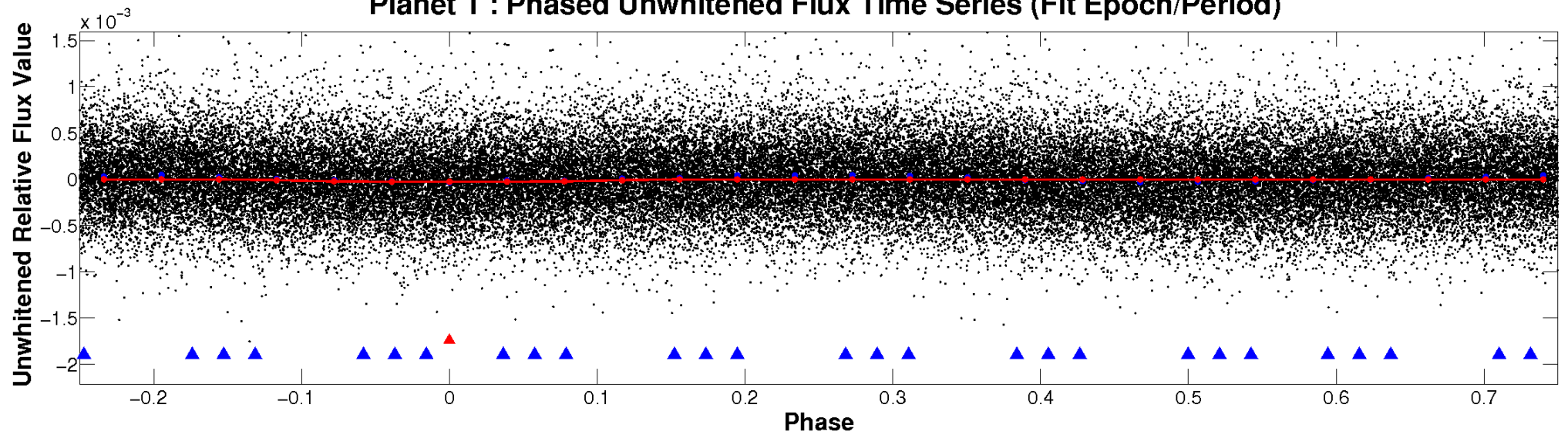
ALT Odd/Even

TCE 005565393-01

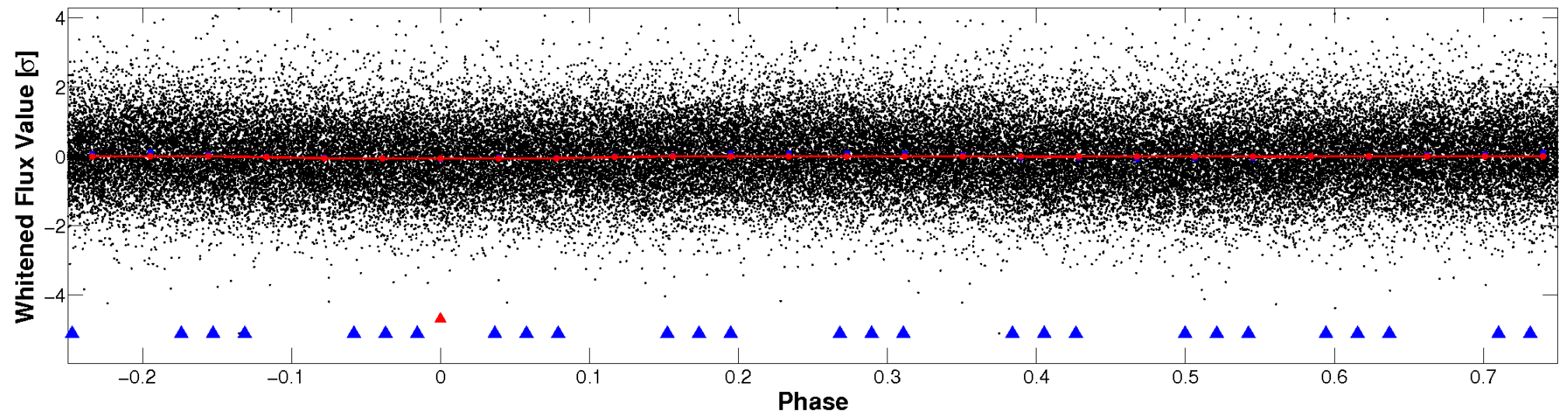


Non-Whitened Vs. Whitened Light Curve

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

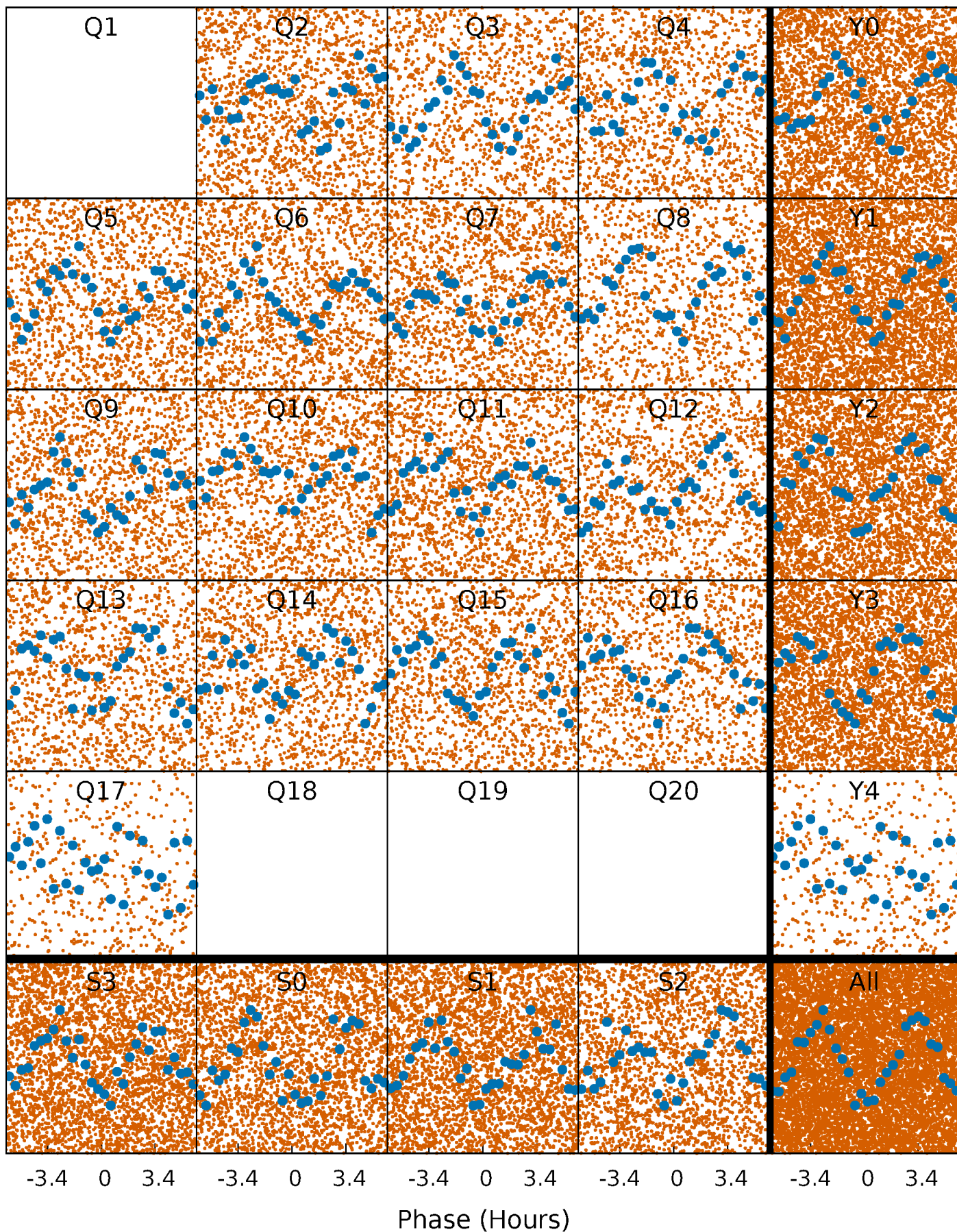


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



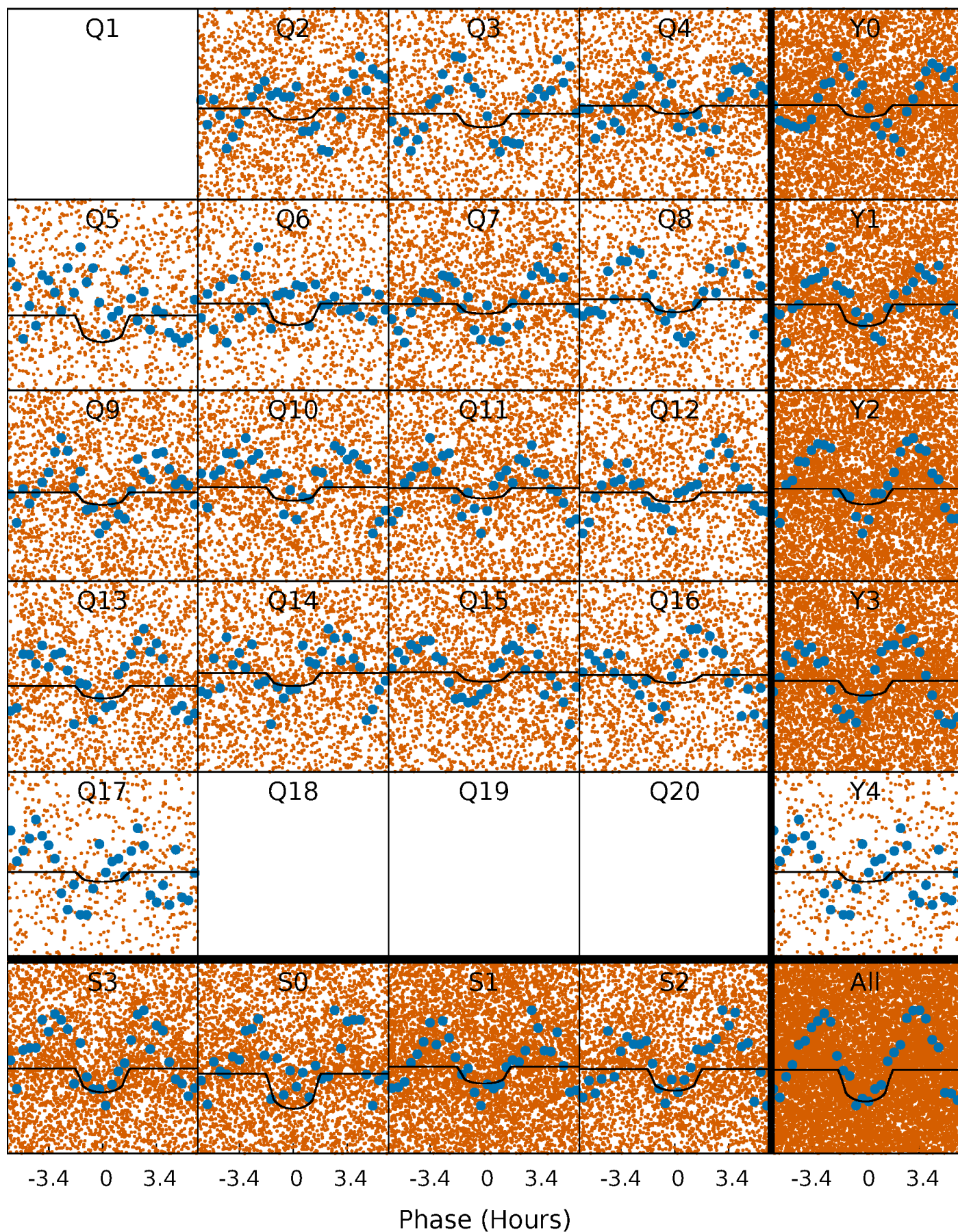
PDC Quarter-Phased Transit Curves

TCE 005565393-01 P= 0.524587 Days $T_0=131.635414$ (BKJD)



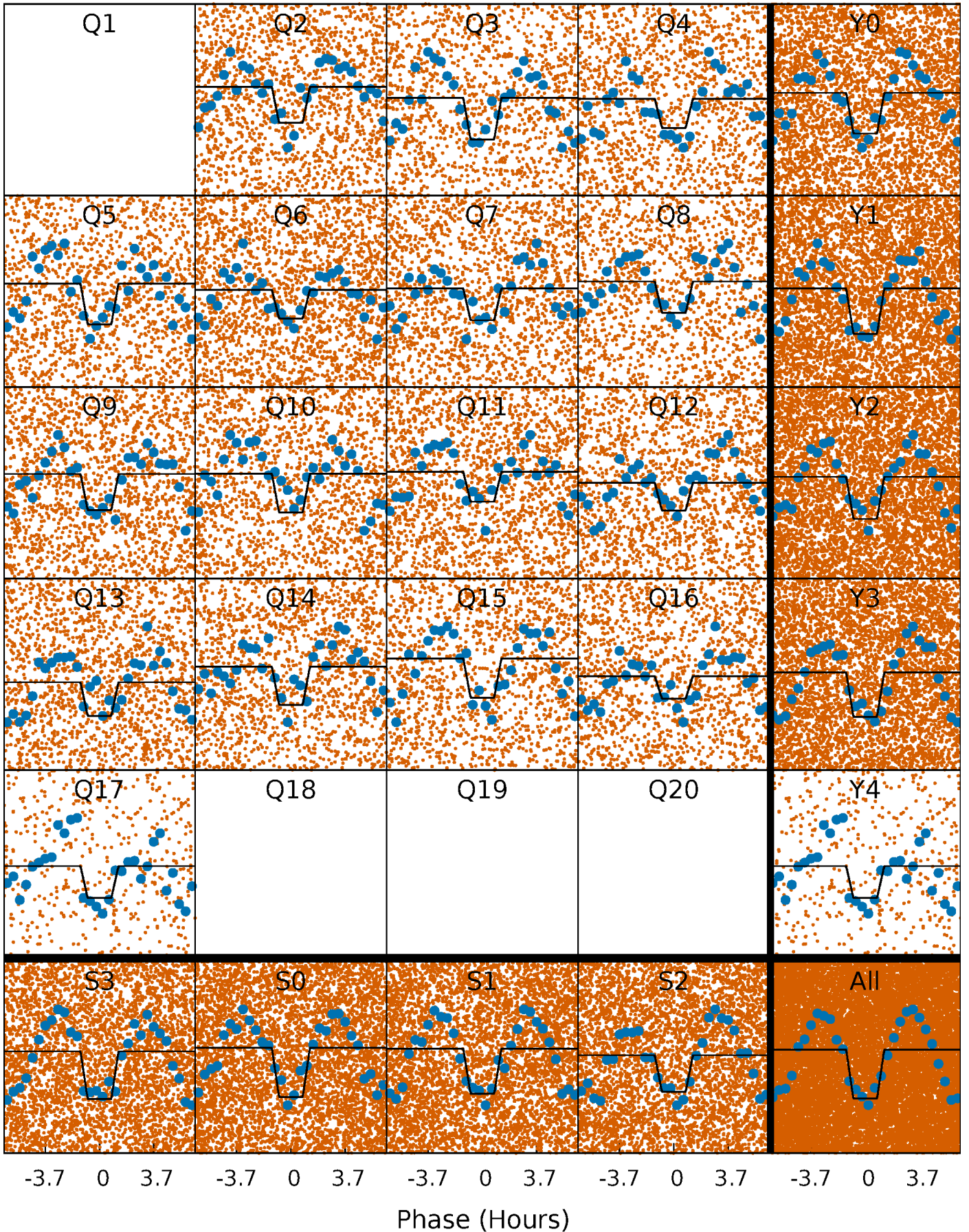
DV Quarter-Phased Transit Curves

TCE 005565393-01 P= 0.524587 Days $T_0=131.635414$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

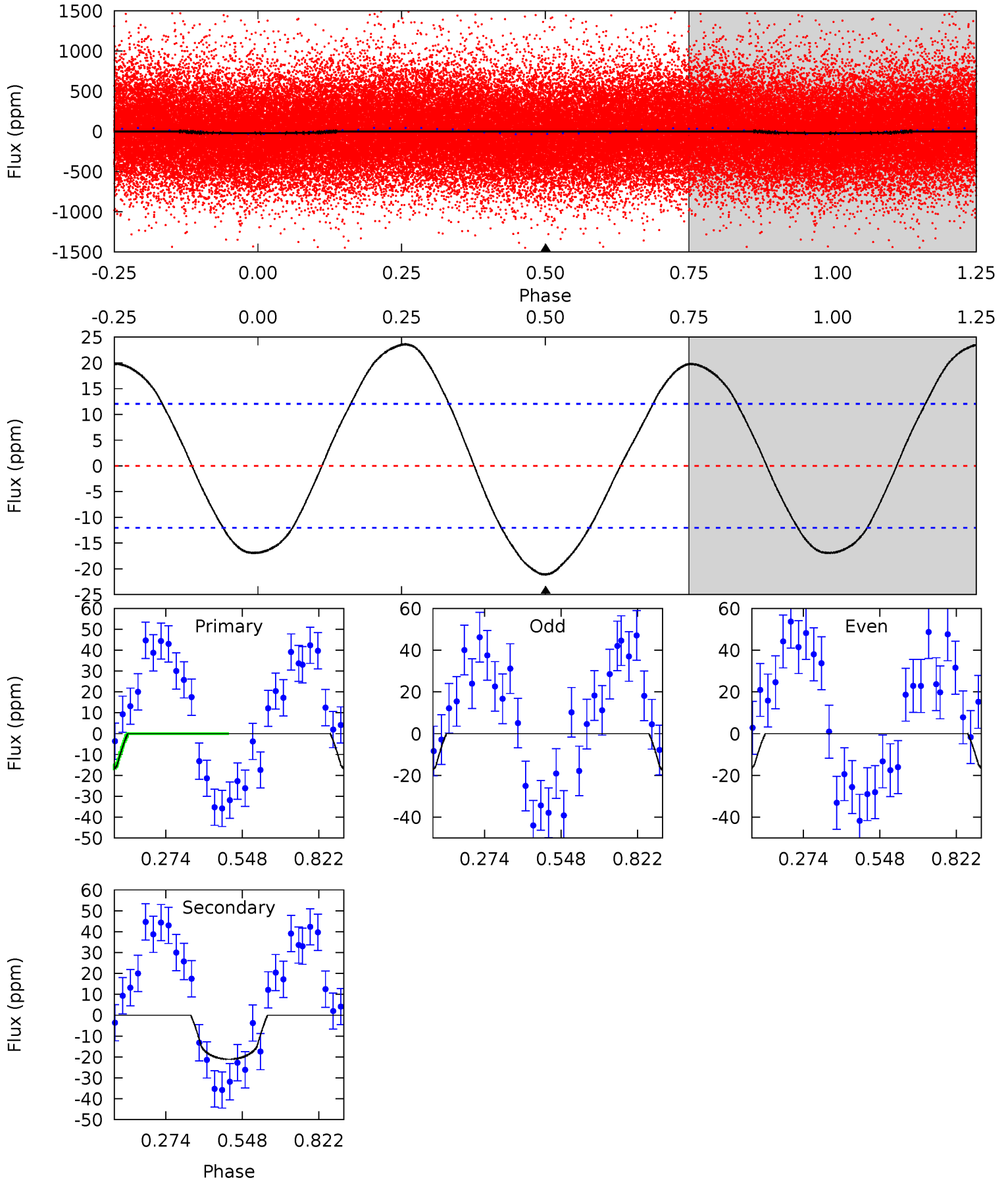
TCE 005565393-01 P= 0.524527 Days $T_0=131.726047$ (BKJD)



DV Model-Shift Uniqueness Test

005565393-01, P = 0.524587 Days, E = 131.635414 Days

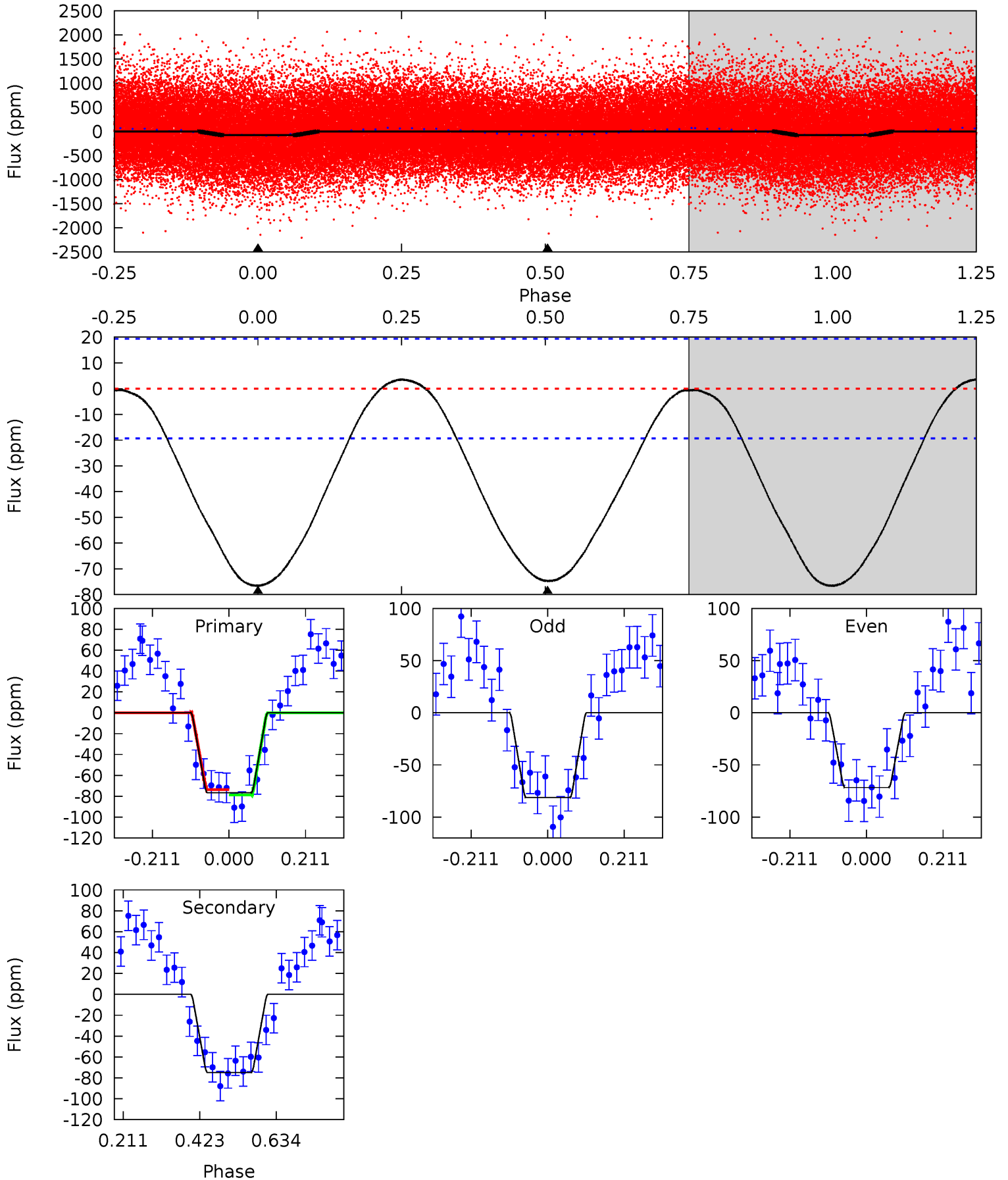
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.62	7.62	0	0	4.35	1.09	4.74	7.62	7.62	7.62	7.62	0.21	0.86	0.53	0.49



Alt Model-Shift Uniqueness Test

005565393-01, P = 0.524527 Days, E = 131.726047 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.5	17.1	0	0	4.41	1.25	0.48	17.5	17.5	17.1	17.1	1.11	1.33	0.04	0.56



Stellar Parameters For KIC 005565393

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5780^{+1}_{-1}	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

Secondary Eclipse Parameters for KIC 005565393-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-21 ± 3	$1.13^{+1.02}_{-0.78}$	3167^{+148}_{-148}	3971^{+3076}_{-1227}	$1.472^{+13.928}_{-1.064}$
Alt.	-75 ± 4	$1.33^{+1.19}_{-0.83}$	3164^{+148}_{-154}	4882^{+3169}_{-1212}	$3.839^{+22.934}_{-2.808}$

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

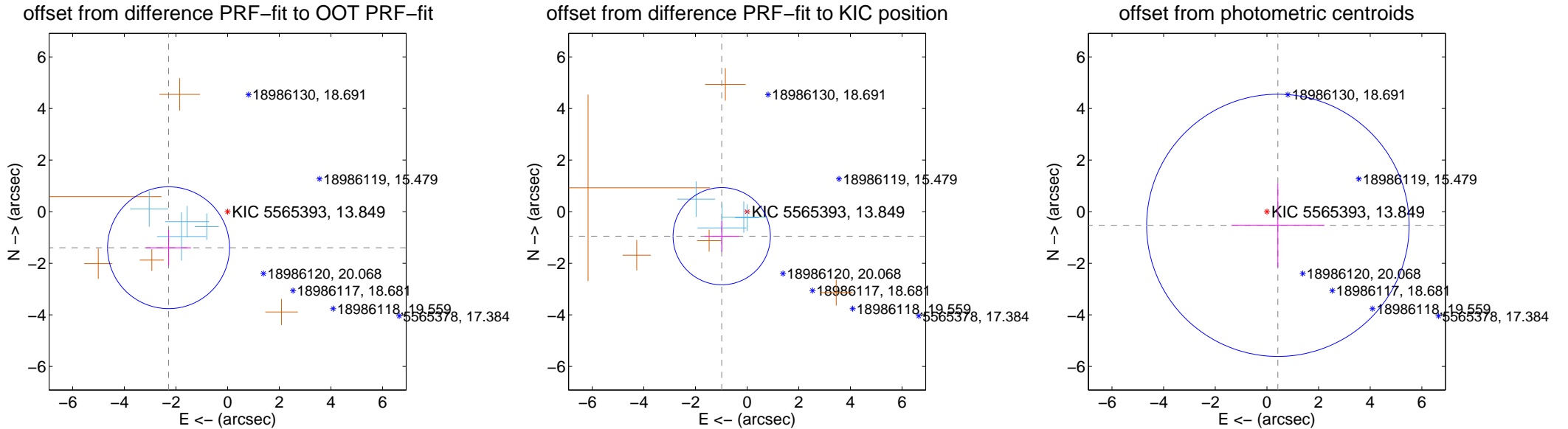
DV Centroid Data

Supplemental centroid analysis for 005565393-01. Kepler magnitude: 13.85. Transit SNR 6.22

There are 4 quarters with good PRF difference image offsets

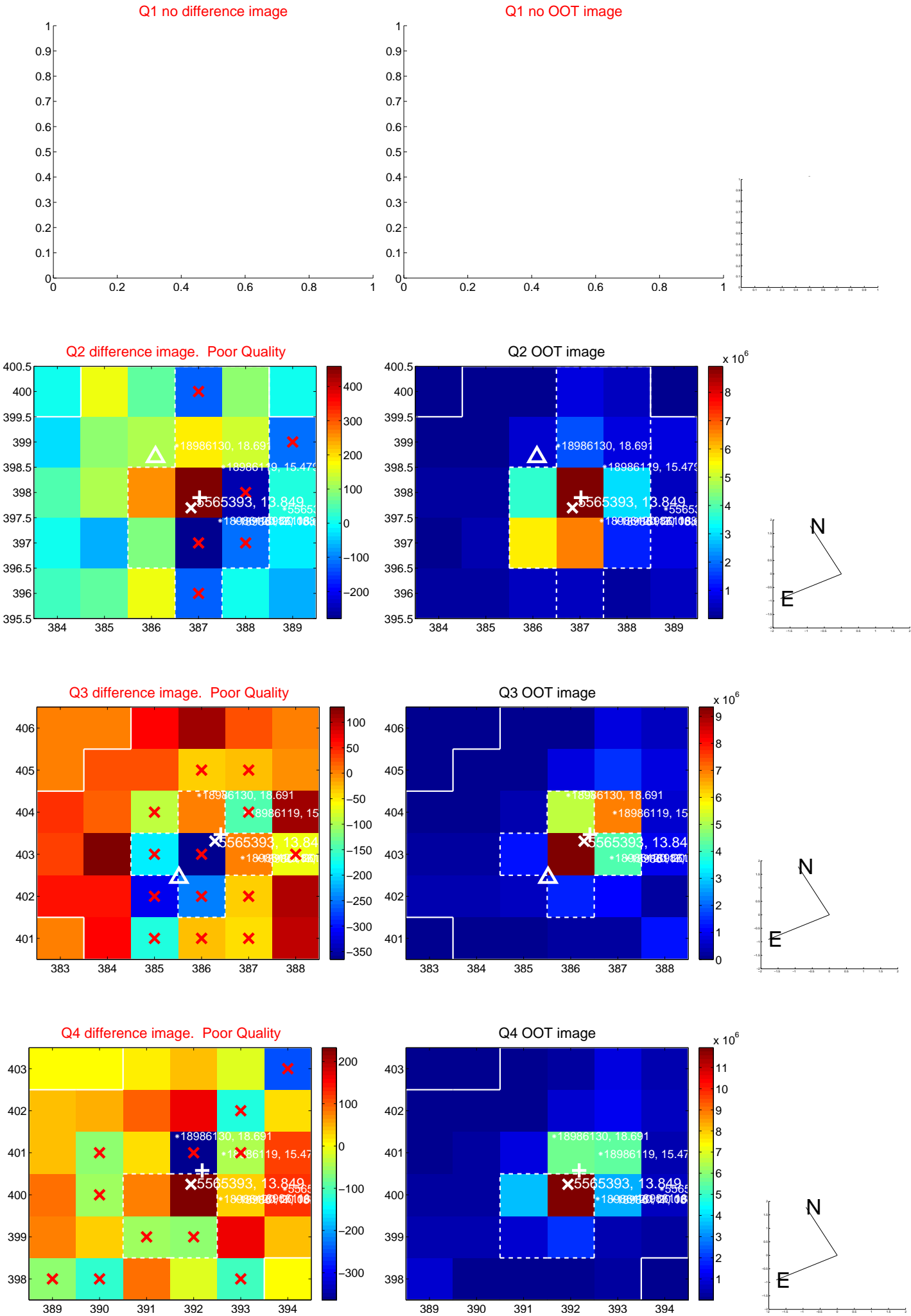
The direct PRF centroid is offset from the target star catalog position by about 1.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.680 ± 0.787	3.41	2.287 ± 0.870	-1.397 ± 0.687
PRF-fit source offset from KIC position	1.368 ± 0.628	2.18	0.984 ± 0.662	-0.950 ± 0.598
photometric centroid source offset	0.68 ± 1.69	0.40	-0.43 ± 1.80	-0.53 ± 1.62

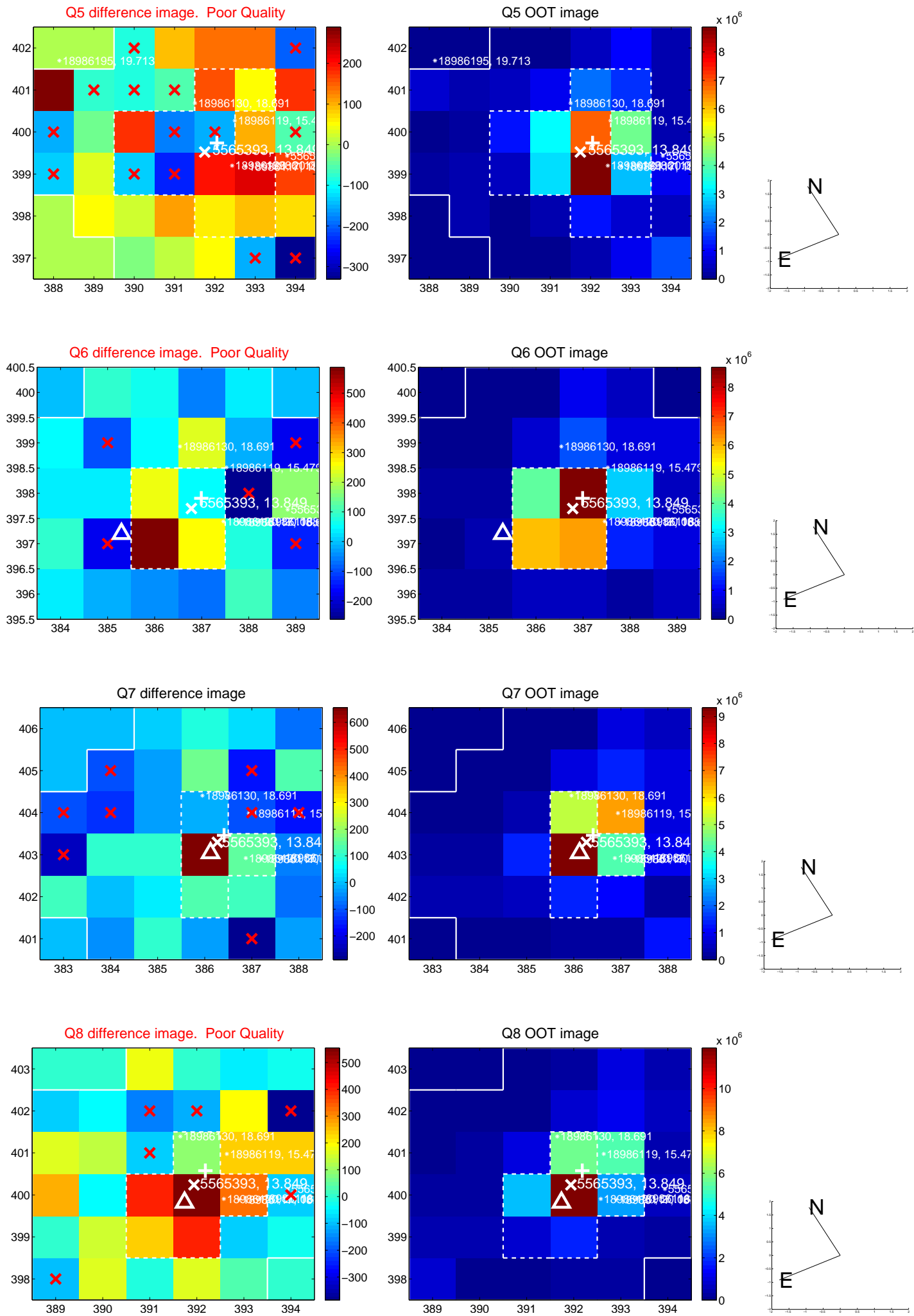


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

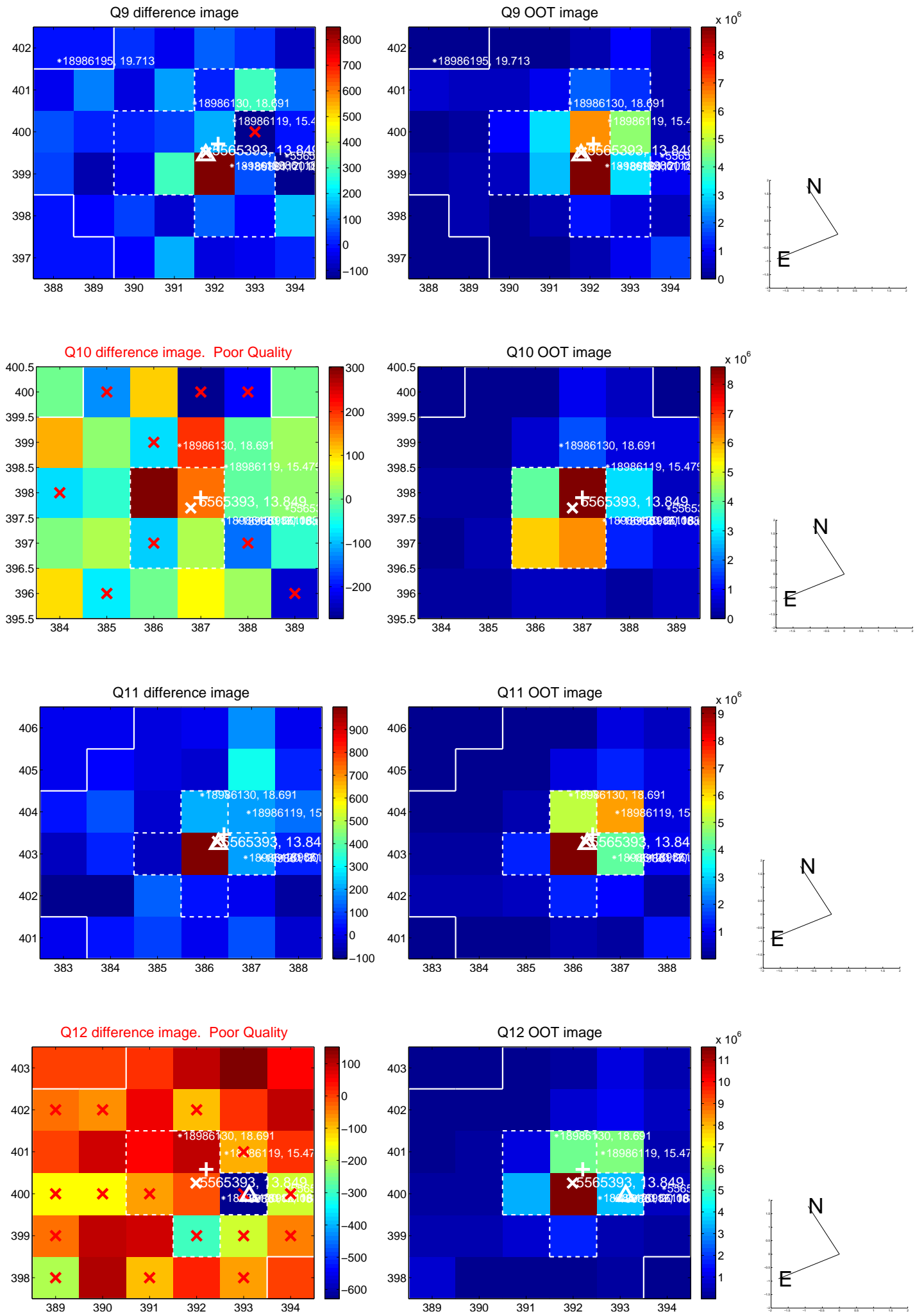
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



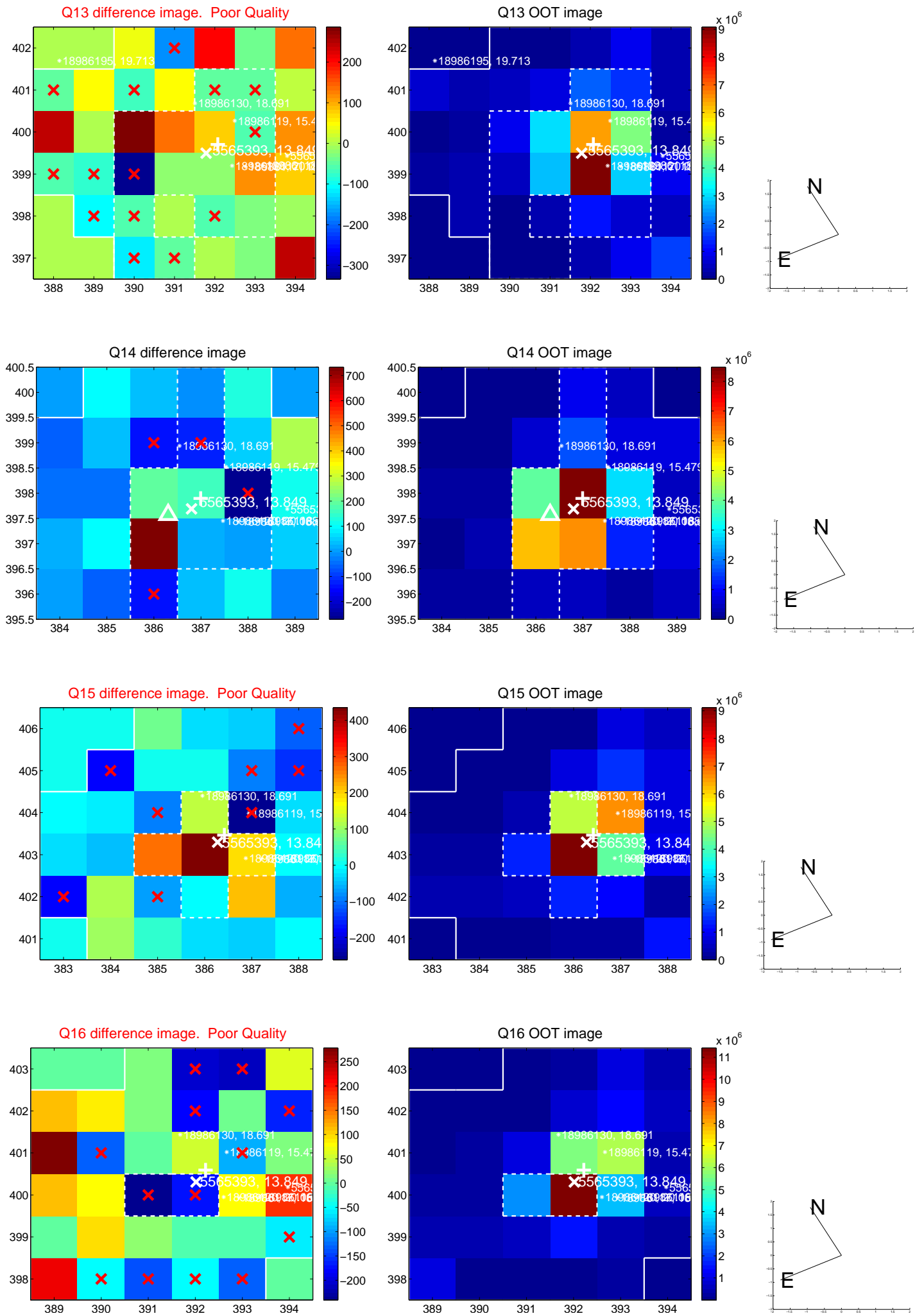
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



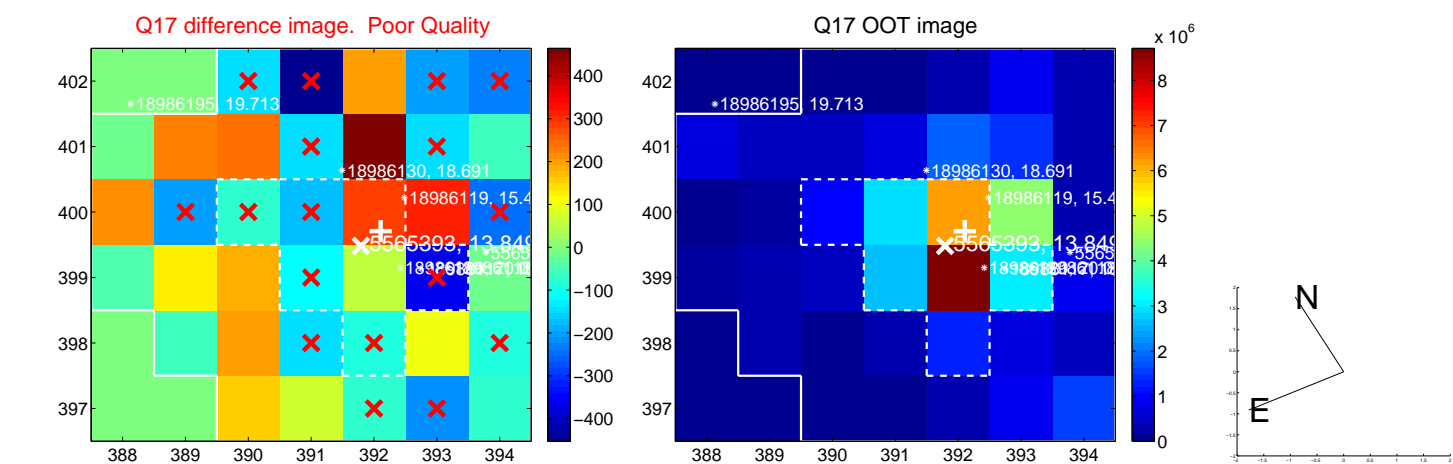
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



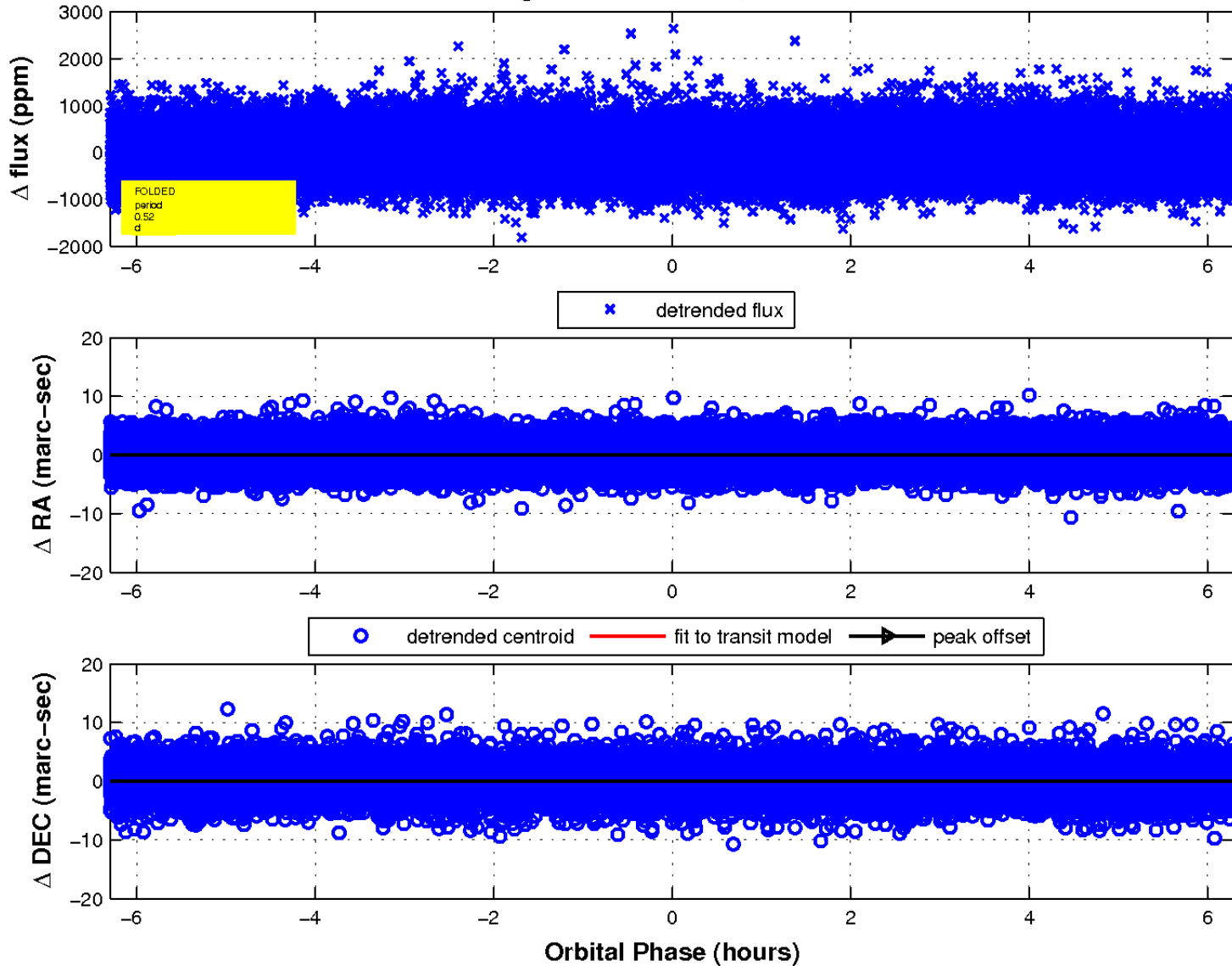
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

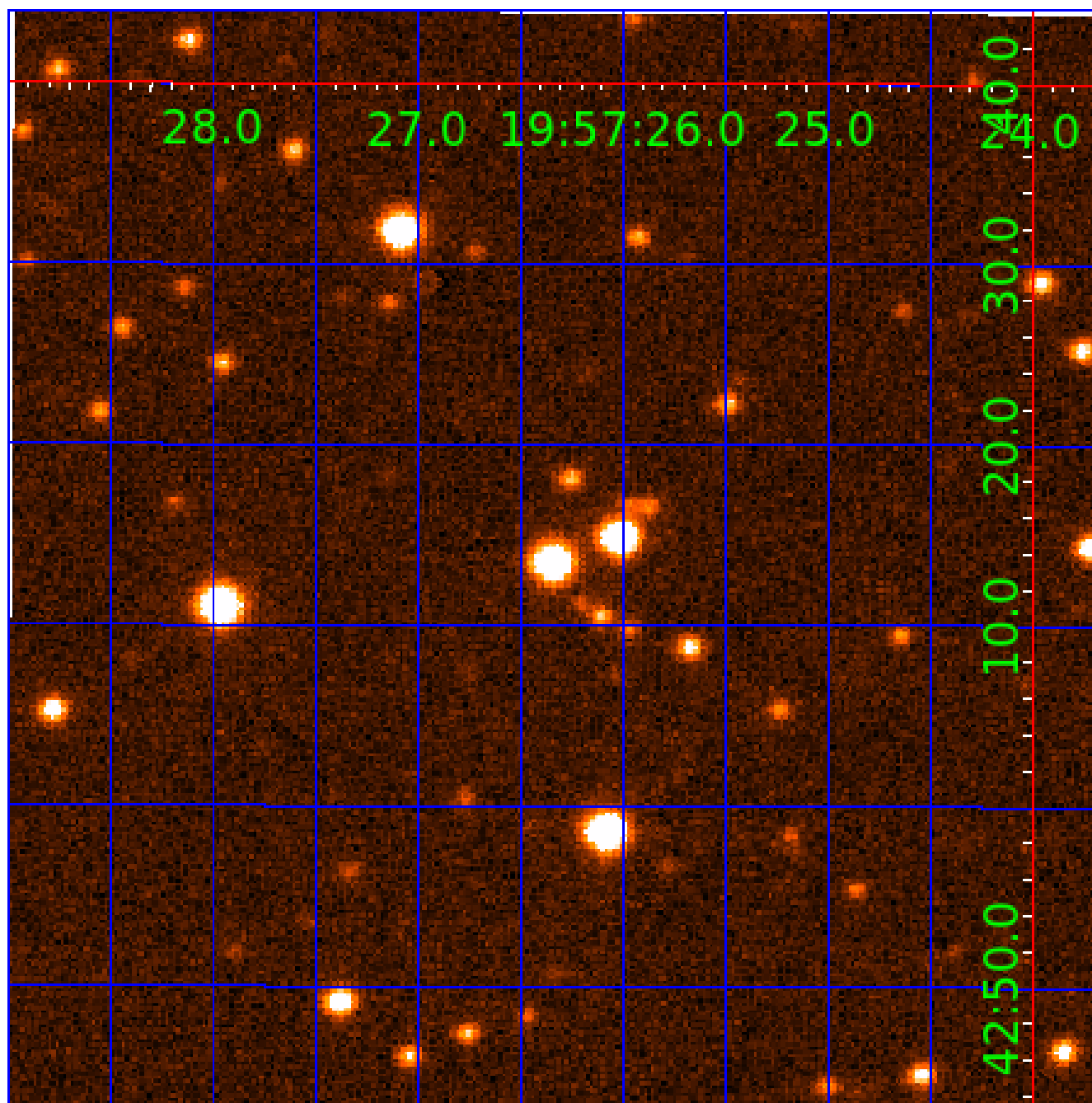


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005565393

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})
005565393-01	OBS	No	0.524587	131.635414	25.4	3.007	9.8	6.2	1.00	5780	0.50	6168.53
005565393-02	OBS	No	53.739797	174.936072	487.7	2.029	7.5	7.6	1.00	5780	2.38	12.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005565393-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_KIC_POS
005565393-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_KIC_POS

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

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

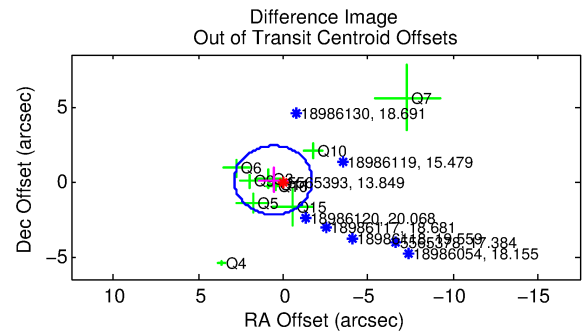
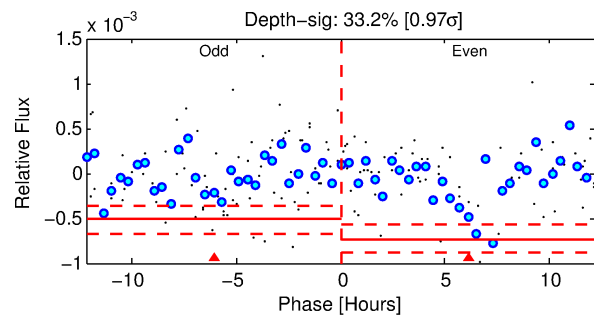
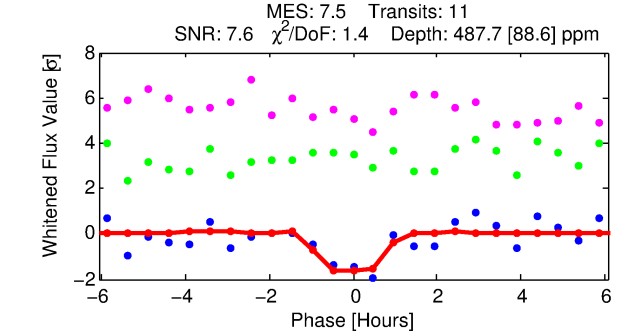
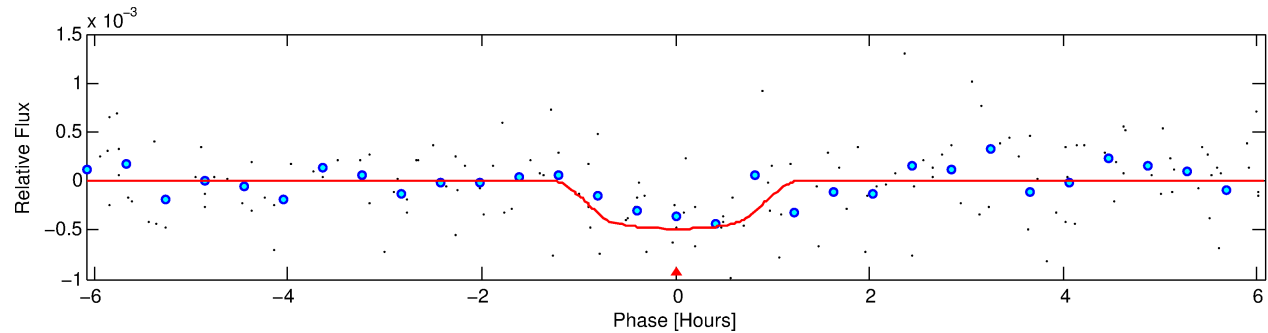
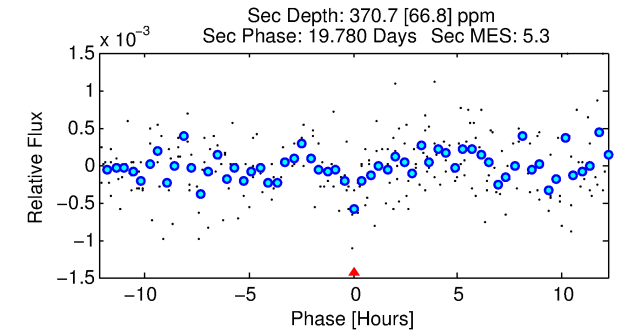
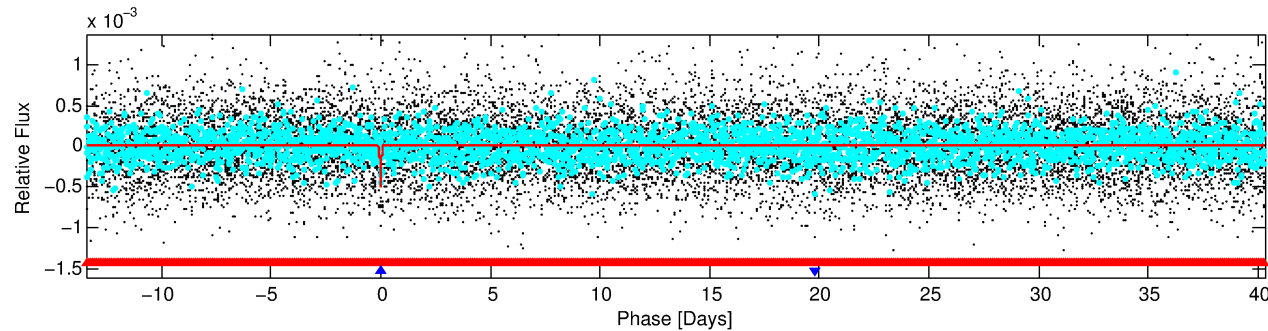
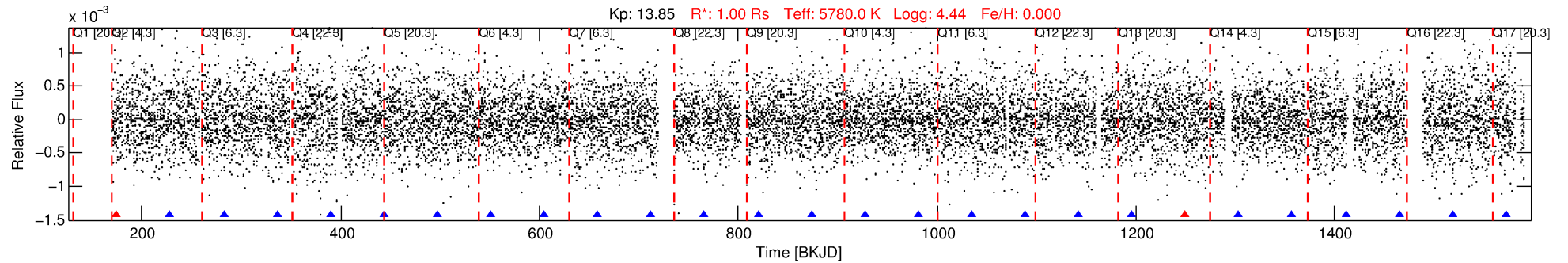
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005565393-02

No Significant Match Found

DV One-Page Summary

KIC: 5565393 Candidate: 2 of 2 Period: 53.740 d



DV Fit Results:

Period = 53.73980 [0.00059] d
Epoch = 174.9361 [0.0070] BKJD
Rp/R* = 0.0218 [0.0439]
a/R* = 147.18 [1287.38]
b = 0.72 [6.04]
Seff = 12.87 [0.00]
Teq = 483 [0] K
Rp = 2.38 [4.79] Re
a = 0.2788 [0.0000] AU
Ag = 2806.54 [11321.70] [0.25 σ]
Teff = 5435 [5481] K [0.90 σ]

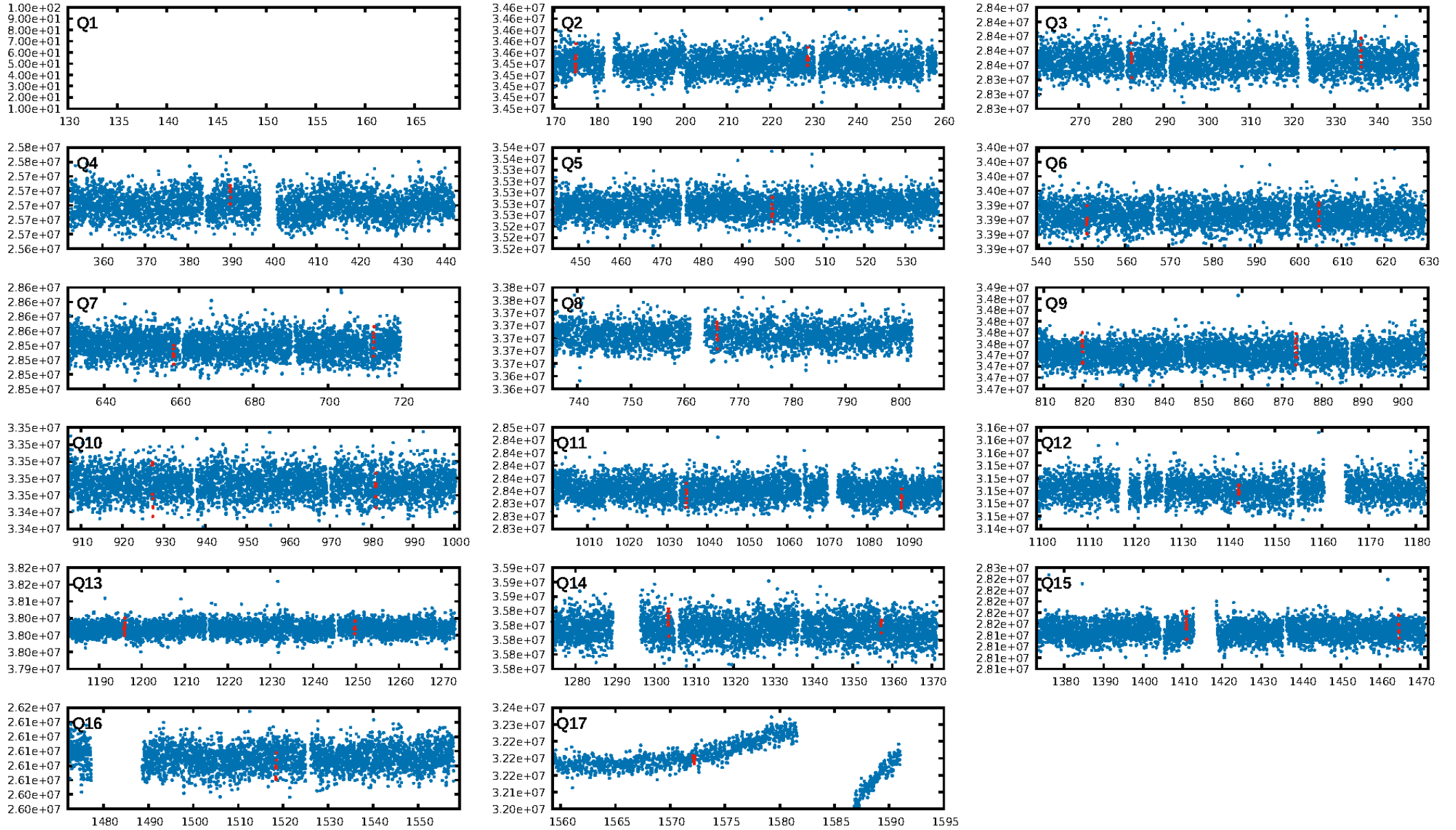
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [352.11 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 8.3%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 7.74e-09
RollingBand-fgt: 0.82 [9/11]
GhostDiagnostic-chr: 0.6894
Centroid-sig: 2.8%
Centroid-so: 1.967 arcsec [1.77 σ]
OotOffset-rm: 0.591 arcsec [0.77 σ]
OotOffset-st: 2/4/2/2 [10]
KicOffset-rm: 0.617 arcsec [0.58 σ]
KicOffset-st: 2/4/2/2 [10]
DiffImageQuality-fgm: 0.50 [5/10]
DiffImageOverlap-fno: 0.00 [0/16]

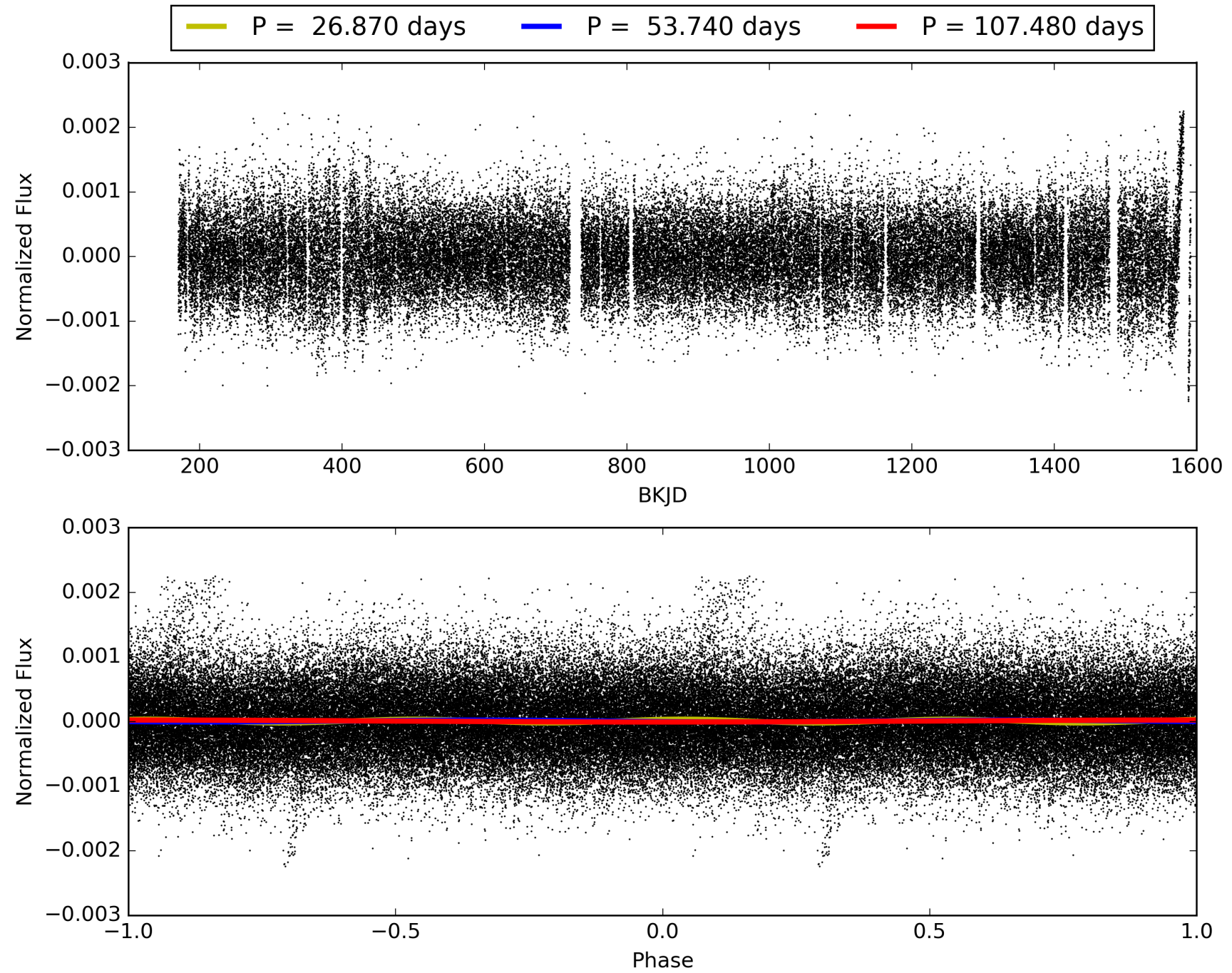
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:08:34 Z

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

TCE 005565393-02, PDC Light Curves

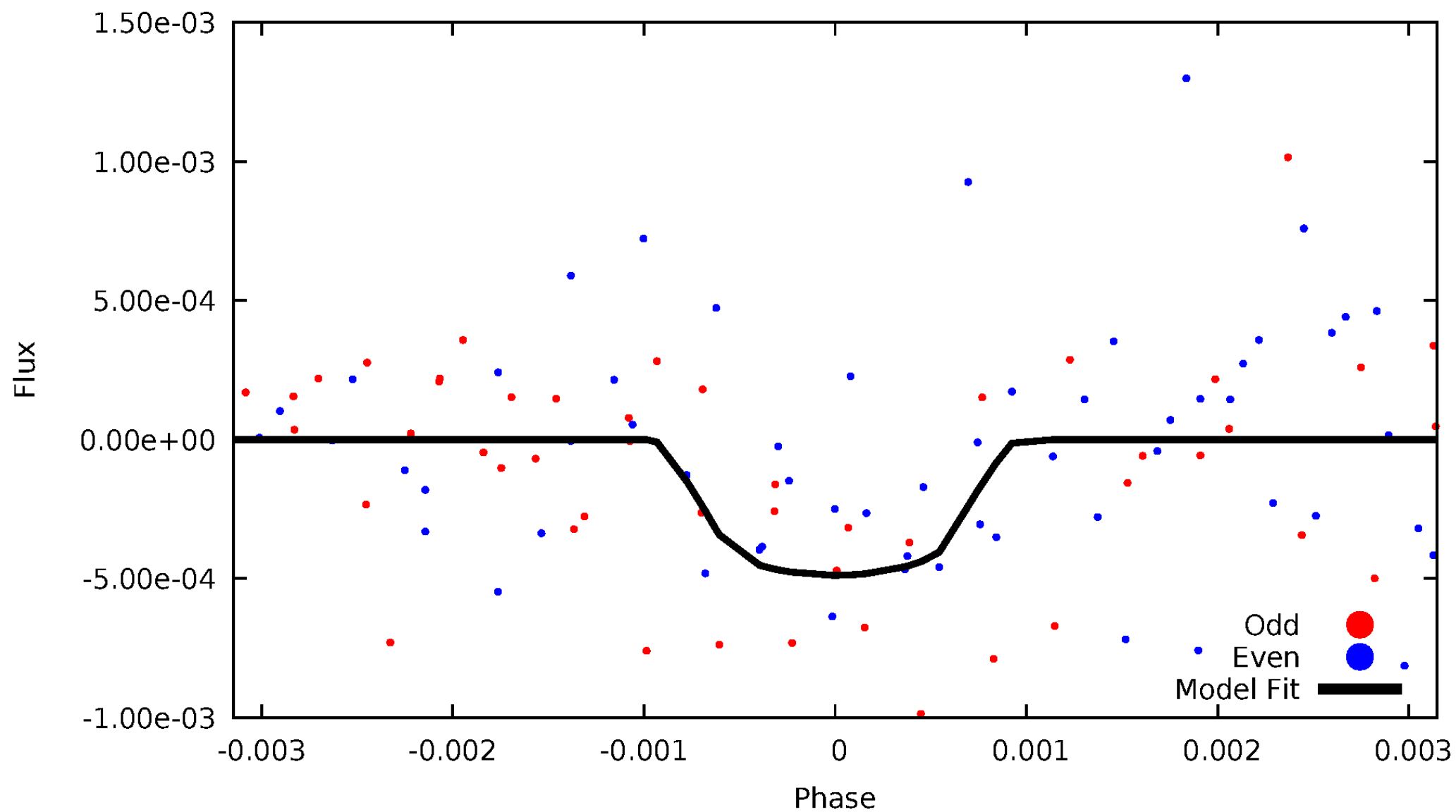


TCE 005565393-02



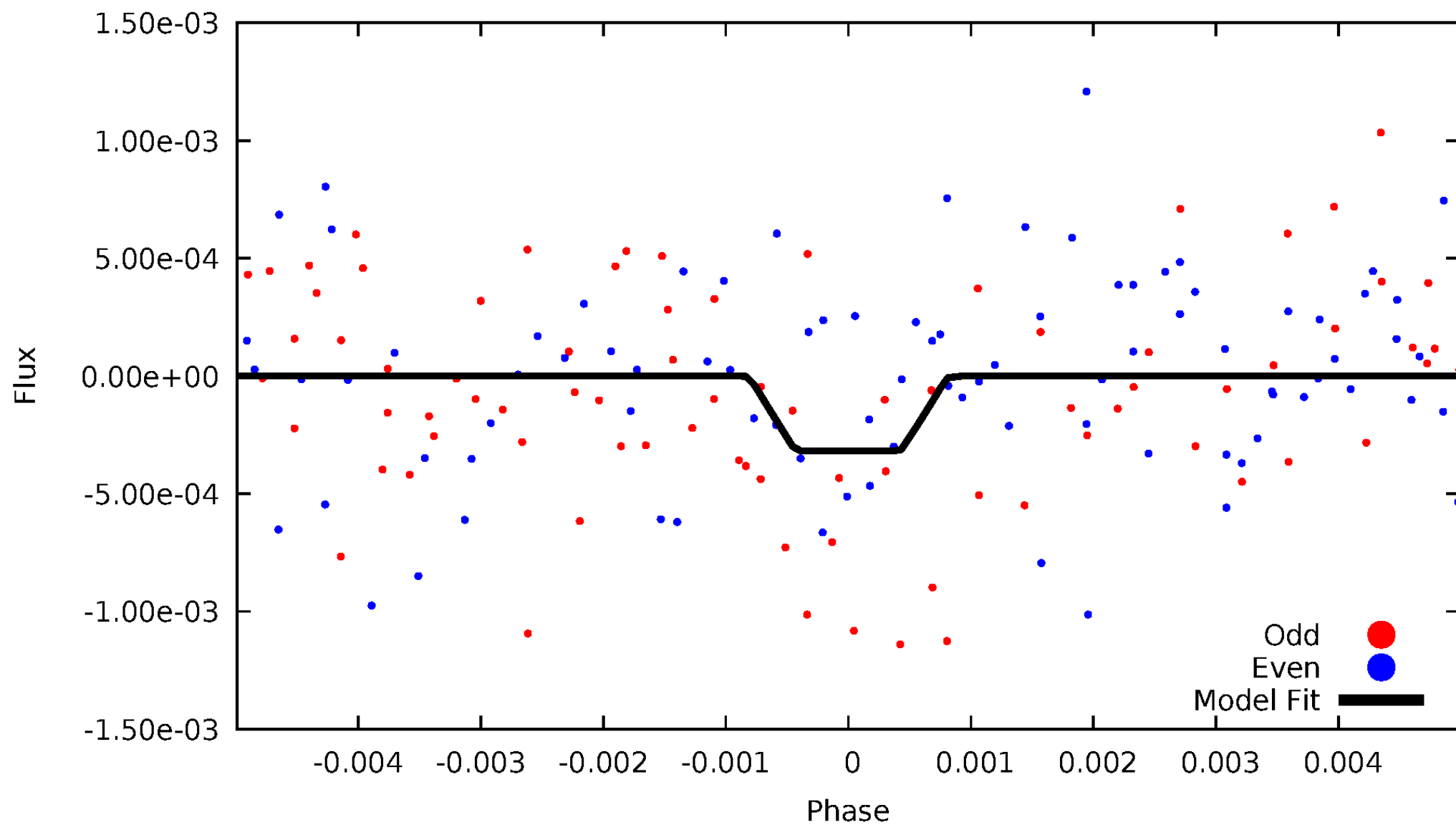
DV Odd/Even

TCE 005565393-02



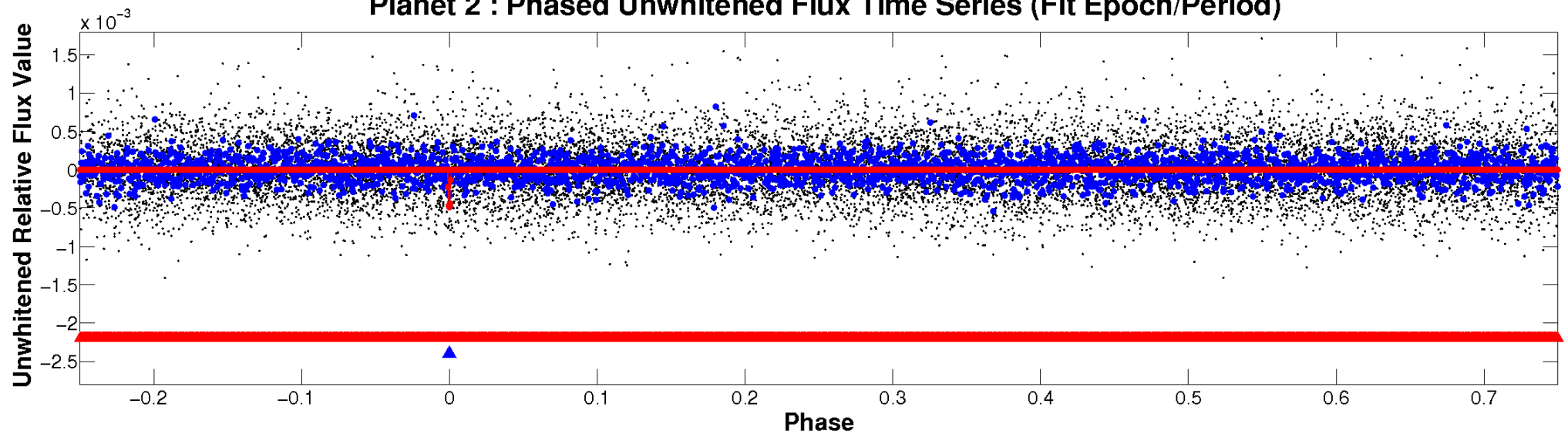
ALT Odd/Even

TCE 005565393-02

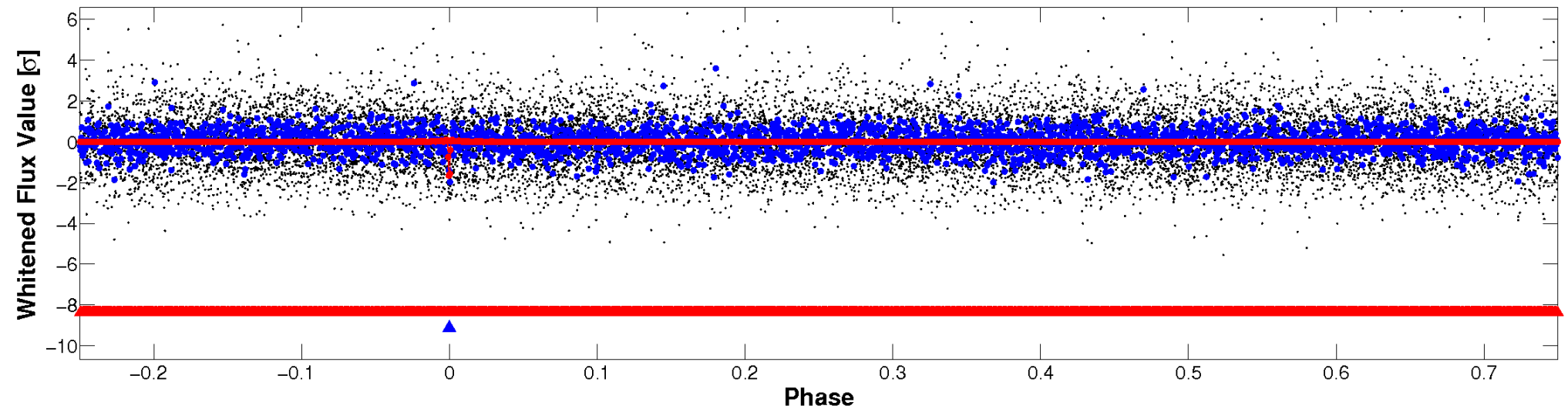


Non-Whitened Vs. Whitened Light Curve

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

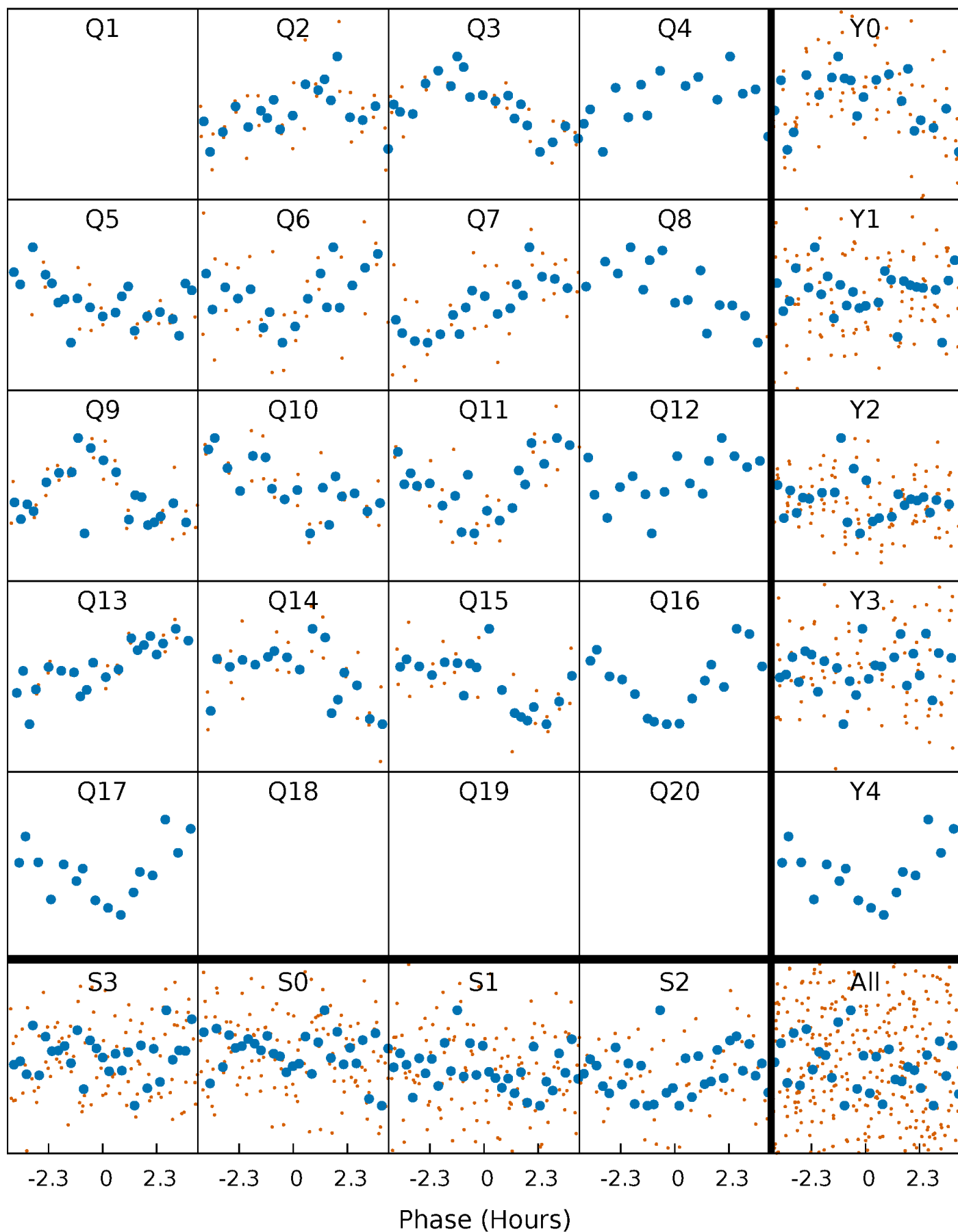


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



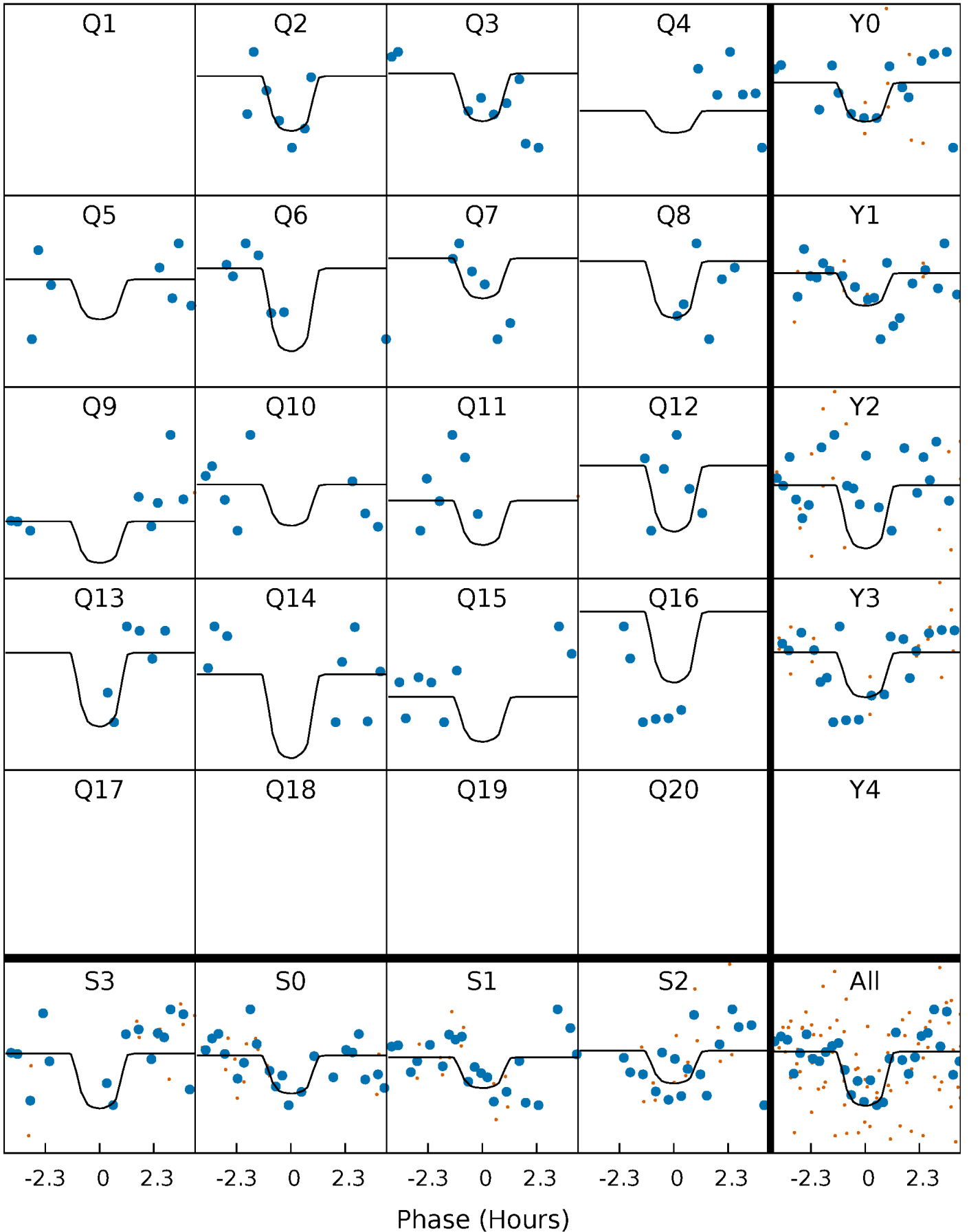
PDC Quarter-Phased Transit Curves

TCE 005565393-02 P= 53.739797 Days $T_0=174.936072$ (BKJD)



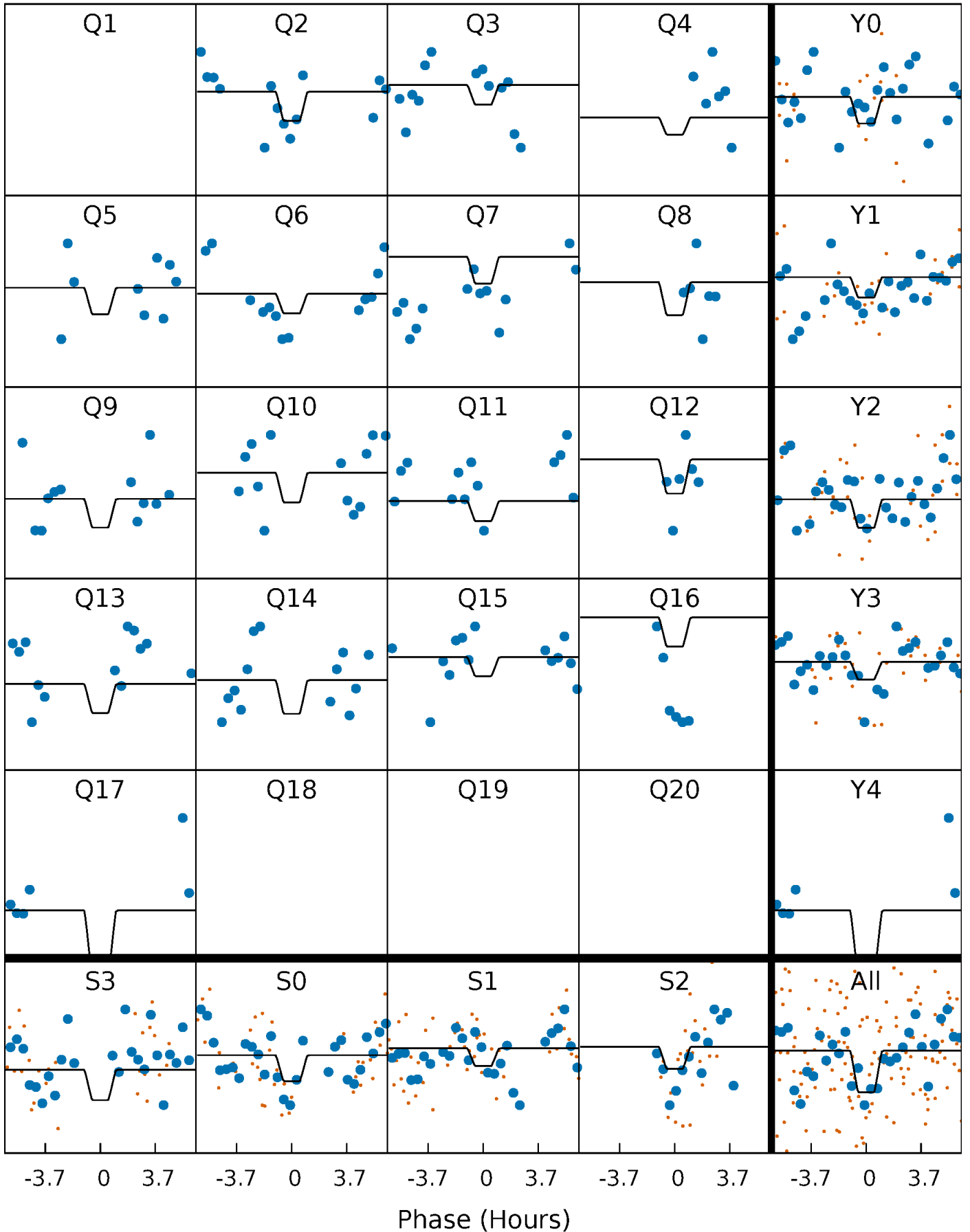
DV Quarter-Phased Transit Curves

TCE 005565393-02 P= 53.739797 Days $T_0=174.936072$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

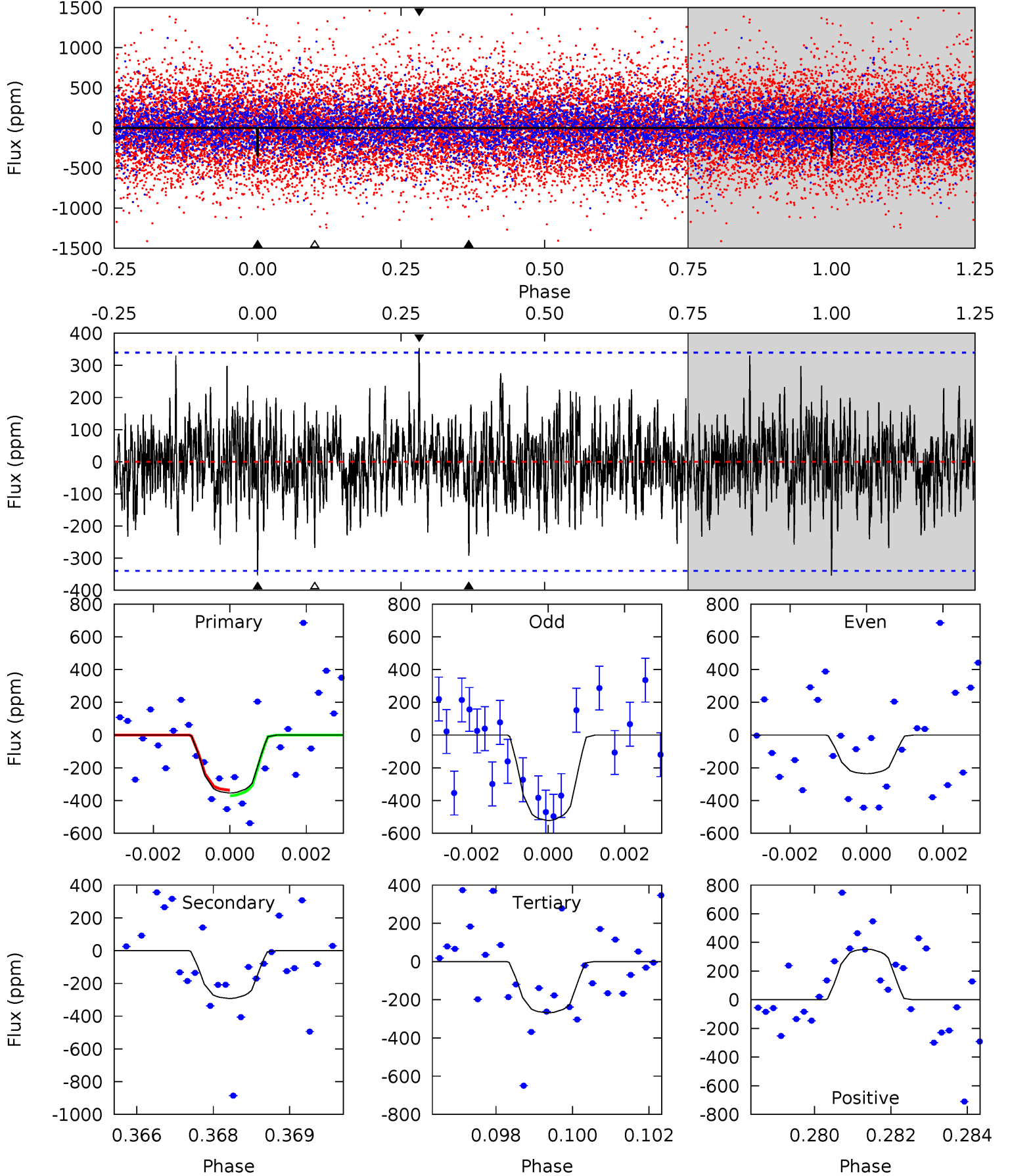
TCE 005565393-02 P= 53.738413 Days $T_0=174.935755$ (BKJD)



DV Model-Shift Uniqueness Test

005565393-02, P = 53.739797 Days, E = 121.196275 Days

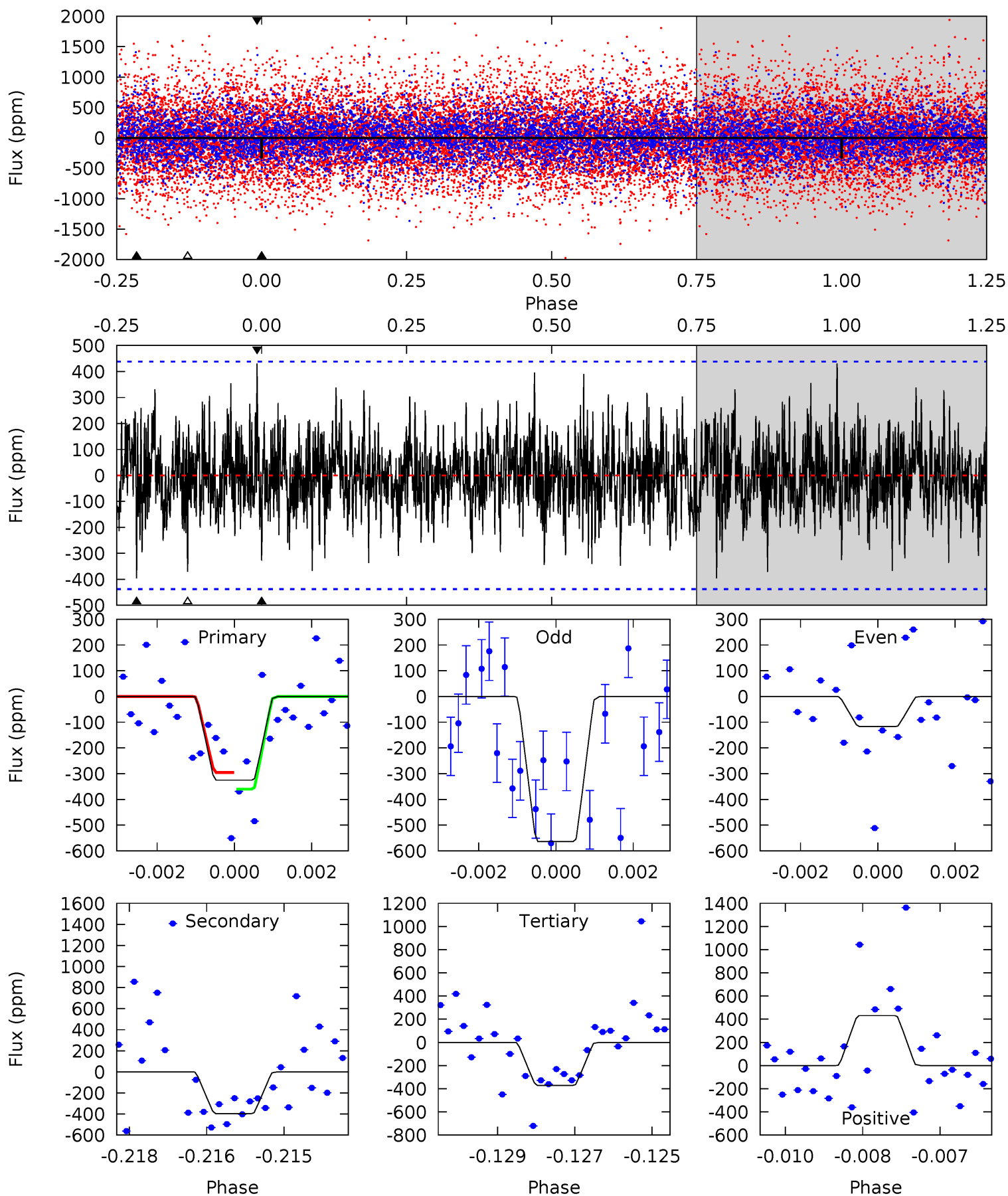
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.57	4.59	4.22	5.55	5.34	3.11	1.37	1.35	0.01	0.37	-0.97	2.23	0.92	0.50	0.27



Alt Model-Shift Uniqueness Test

005565393-02, P = 53.738413 Days, E = 121.197342 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.98	4.85	4.54	5.27	5.36	3.15	1.43	-0.56	-1.29	0.31	-0.42	2.74	0.94	0.52	0.40



Stellar Parameters For KIC 005565393

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5780^{+1}_{-1}	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

Secondary Eclipse Parameters for KIC 005565393-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-292 ± 64	$4.22^{+3.93}_{-2.85}$	673^{+31}_{-30}	4094^{+2622}_{-794}	684^{+5932}_{-497}
Alt.	-396 ± 82	$4.17^{+3.91}_{-2.79}$	675^{+34}_{-30}	4350^{+3046}_{-884}	919^{+7791}_{-668}

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

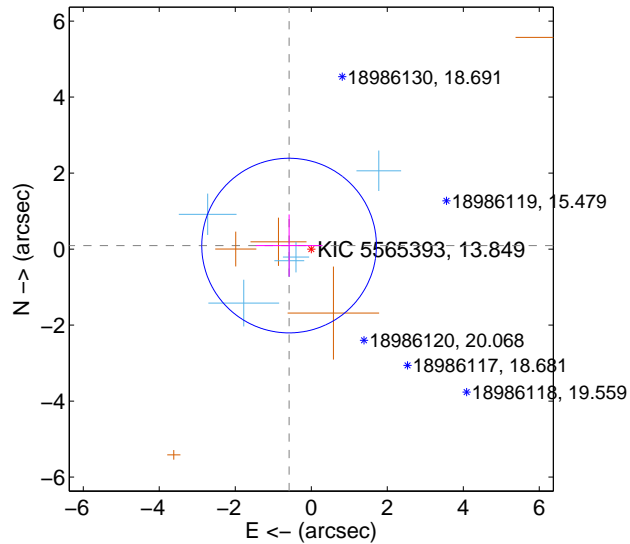
Supplemental centroid analysis for 005565393-02. Kepler magnitude: 13.85. Transit SNR 7.59

There are 5 quarters with good PRF difference image offsets

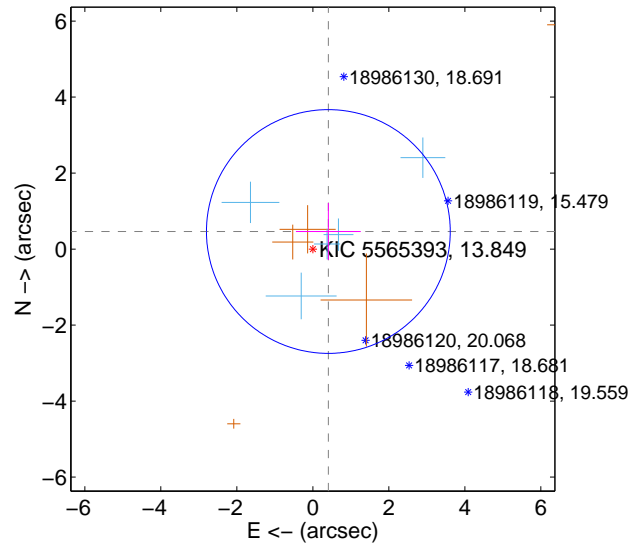
The direct PRF centroid is offset from the target star catalog position by about 1.43 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.591 ± 0.766	0.77	0.584 ± 0.875	0.093 ± 0.818
PRF-fit source offset from KIC position	0.617 ± 1.069	0.58	-0.408 ± 0.853	0.463 ± 0.750
photometric centroid source offset	1.97 ± 1.11	1.77	-1.69 ± 1.15	1.01 ± 1.01

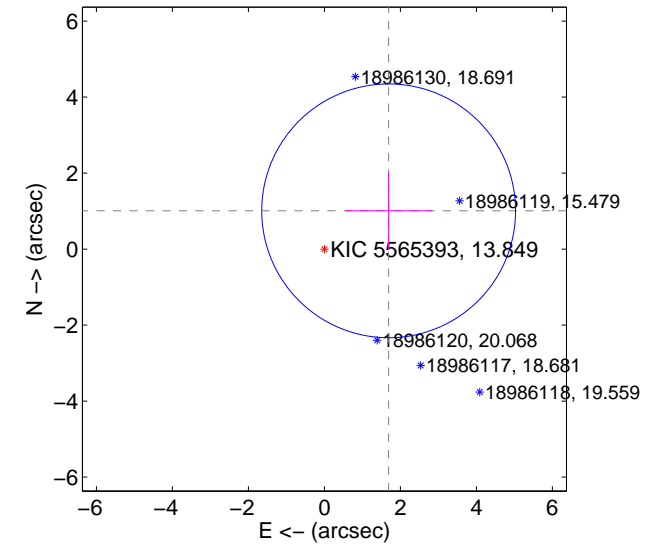
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

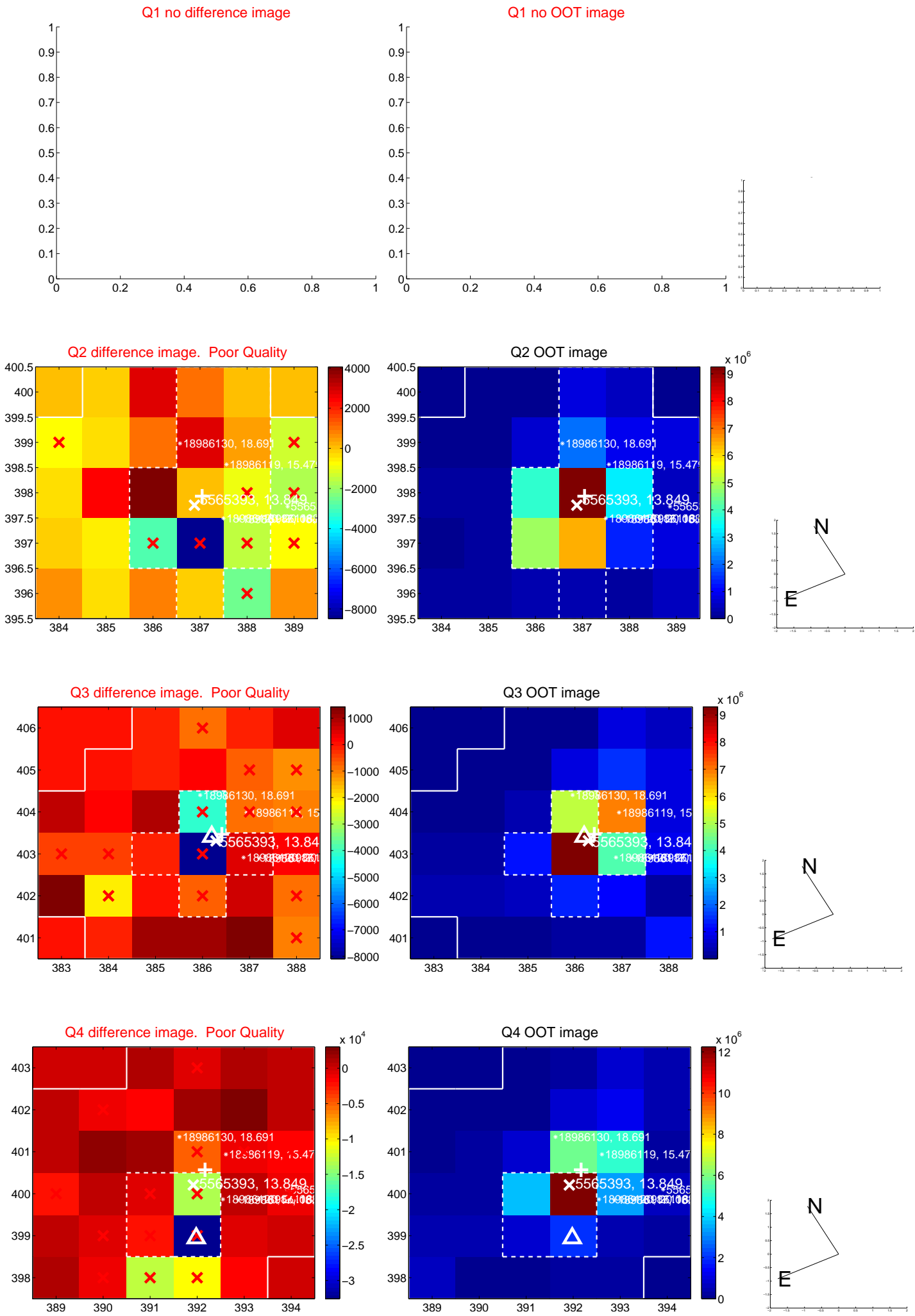


offset from photometric centroids

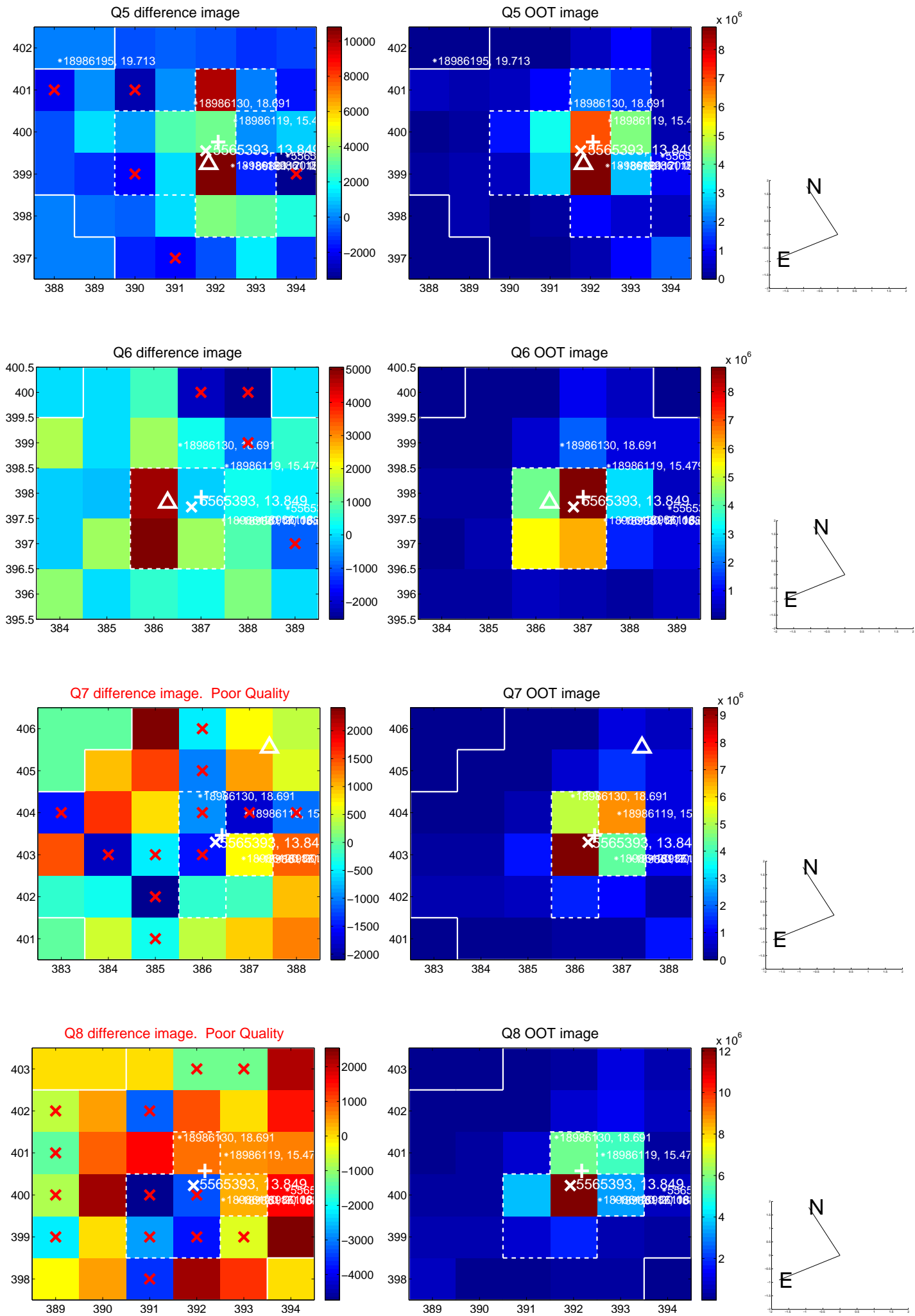


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

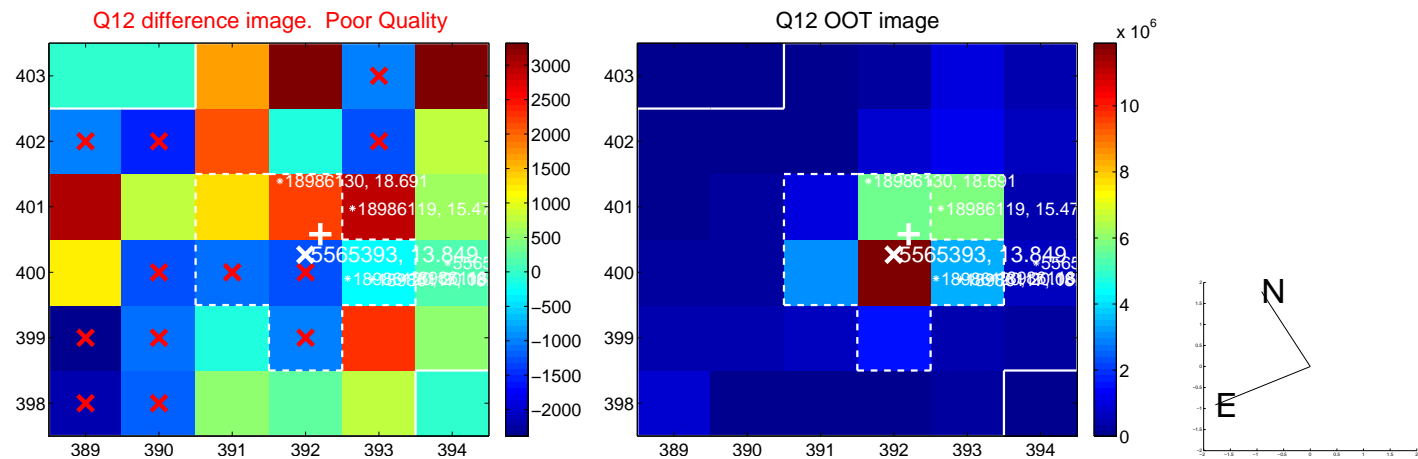
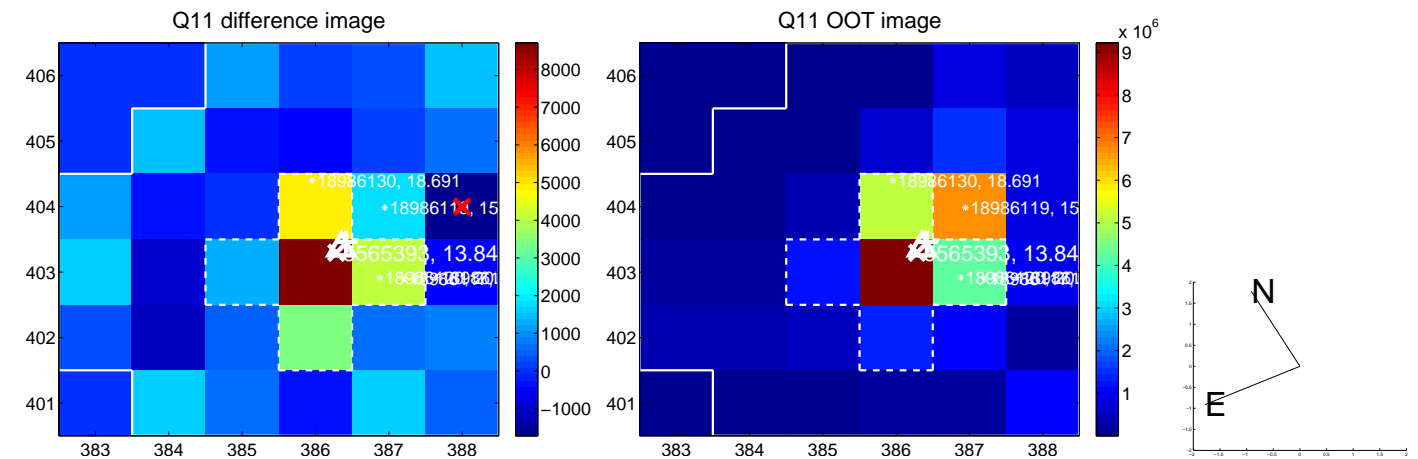
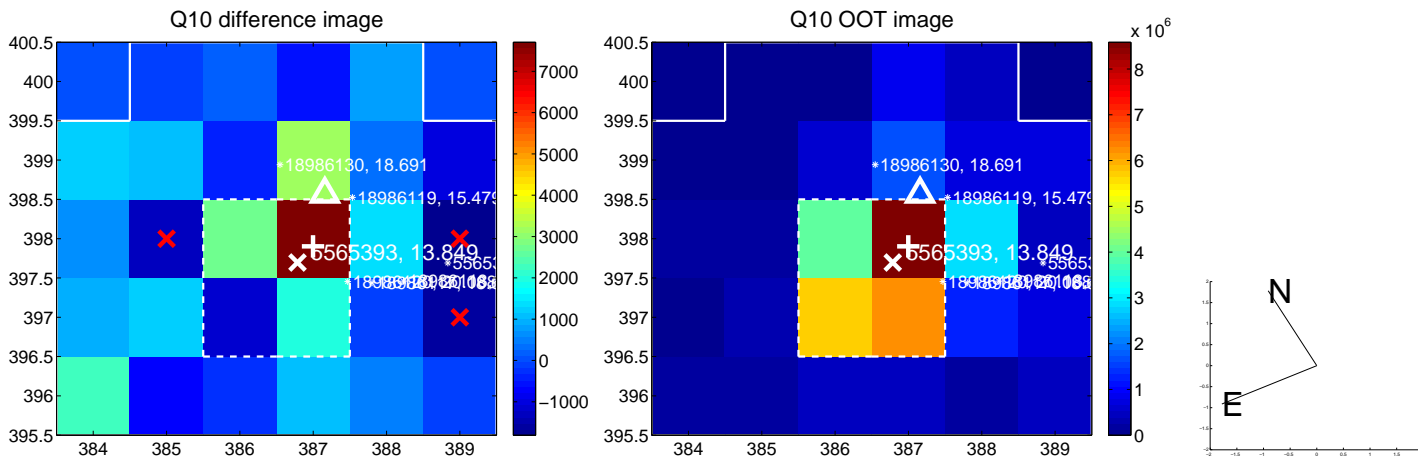
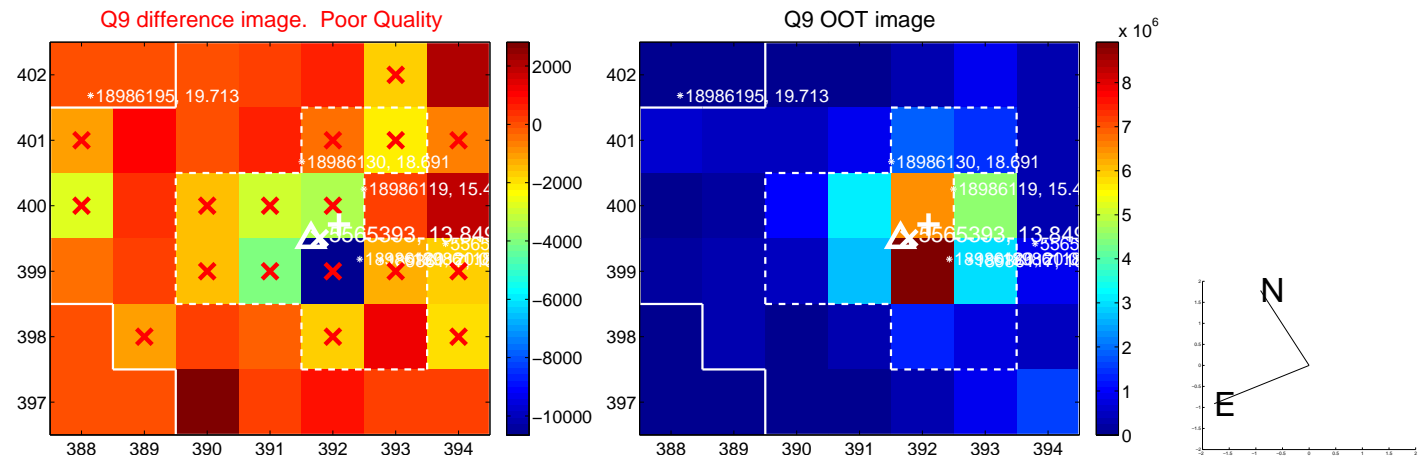
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



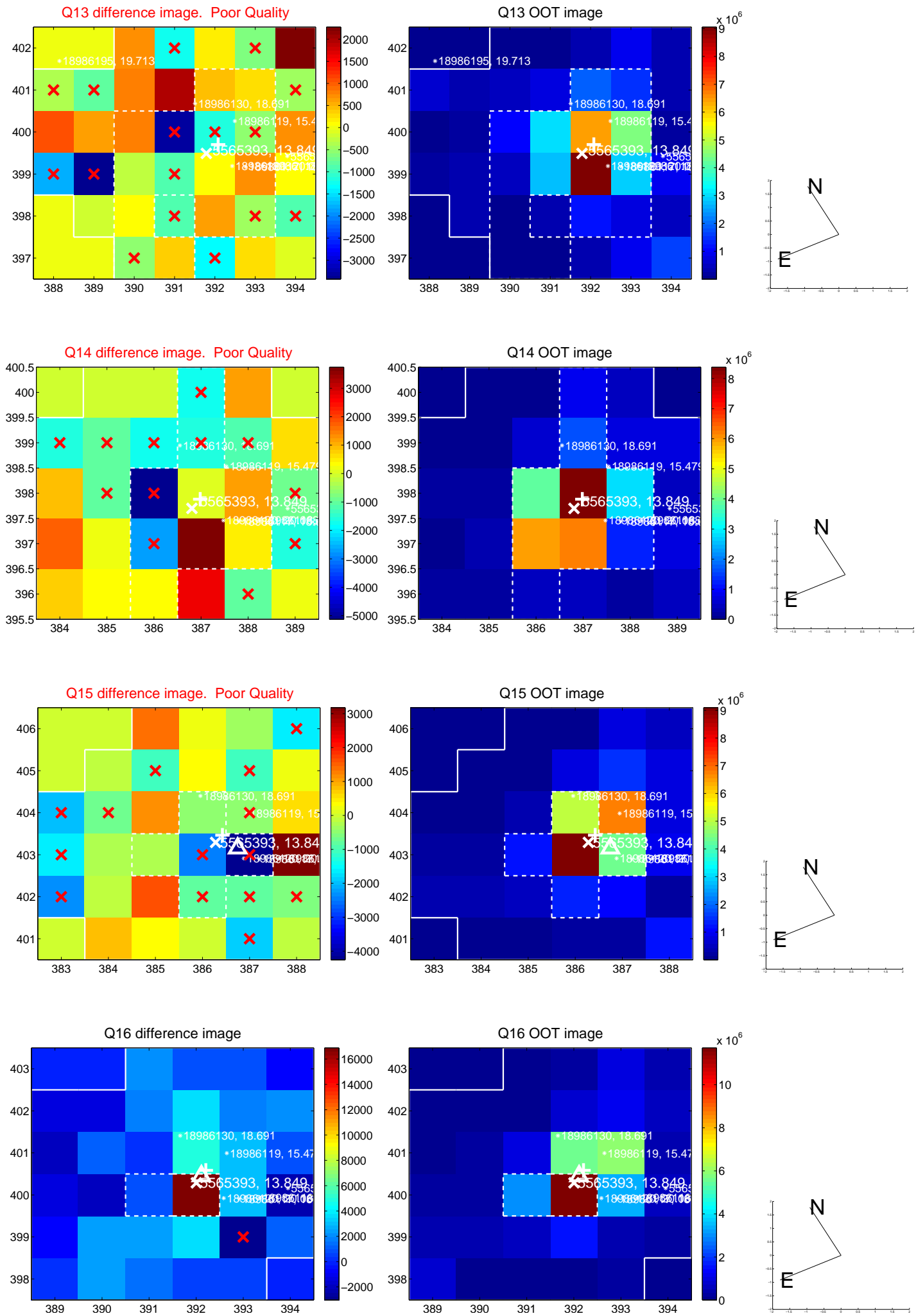
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



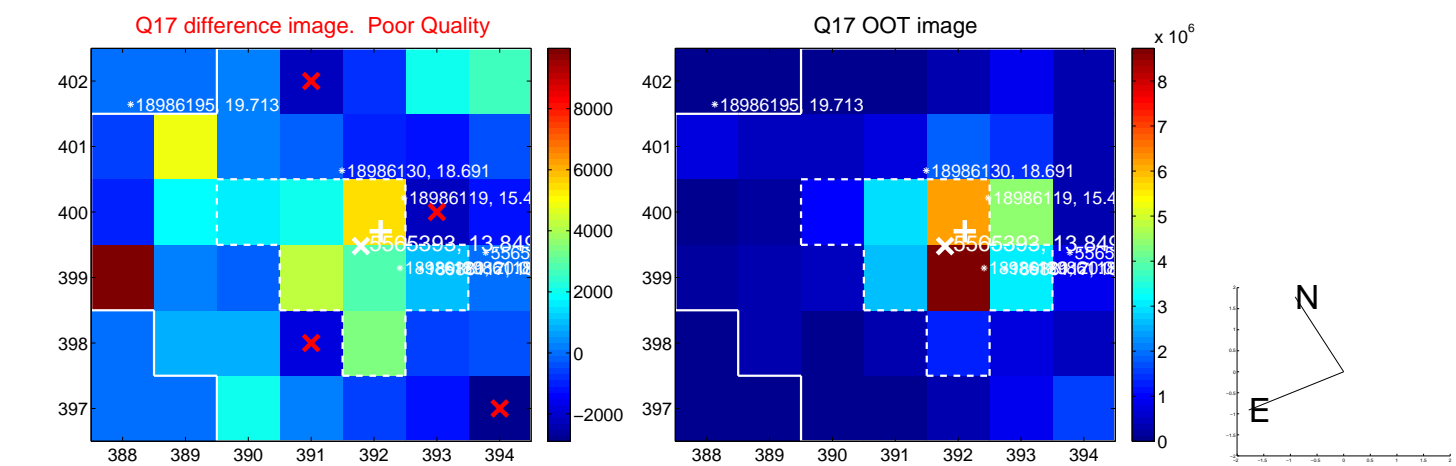
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



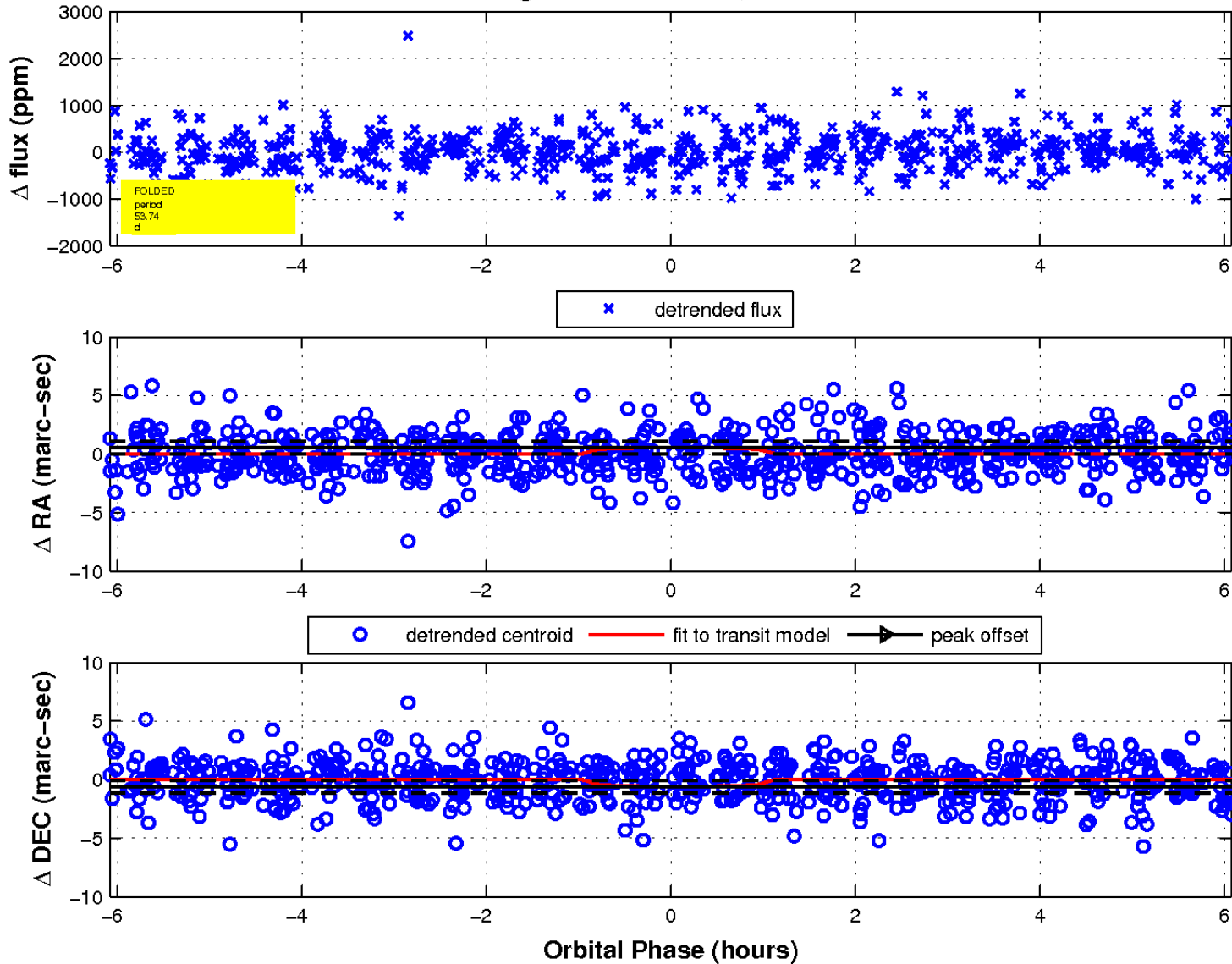
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

