

KIC 006060355

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})
006060355-01	OBS	No	0.589764	131.910032	5.9	1.869	9.2	2.4	1.19	6760	0.32	13344.25
006060355-02	OBS	No	0.589909	131.681130	29.0	3.855	8.4	9.9	1.19	6760	0.75	13339.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006060355-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
006060355-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD

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

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

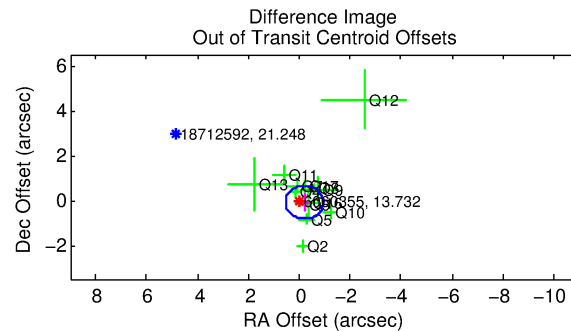
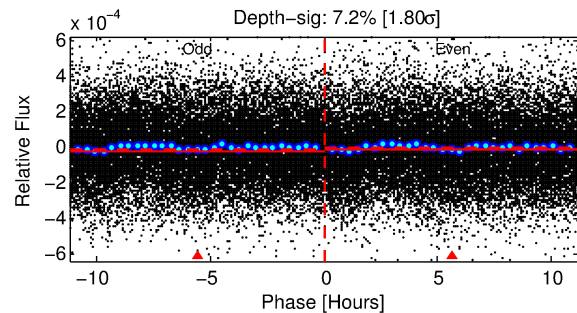
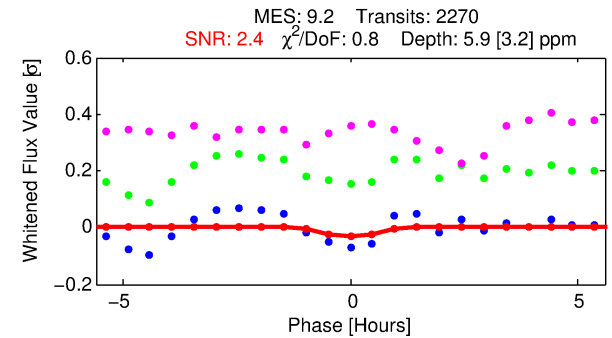
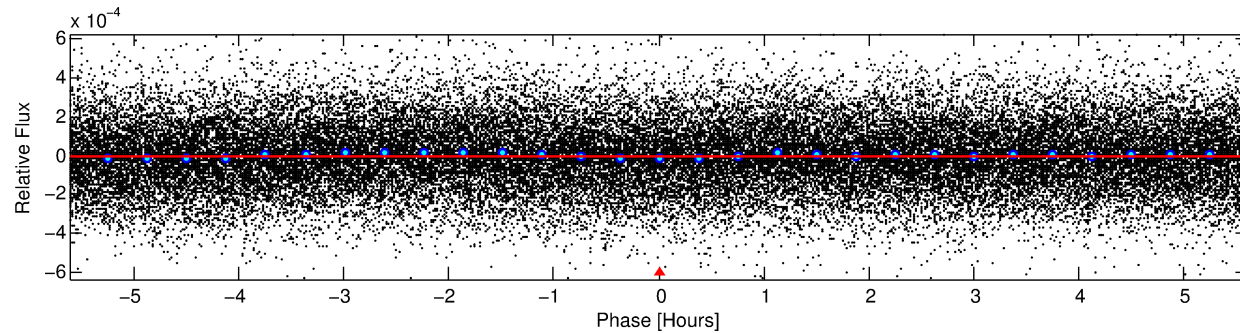
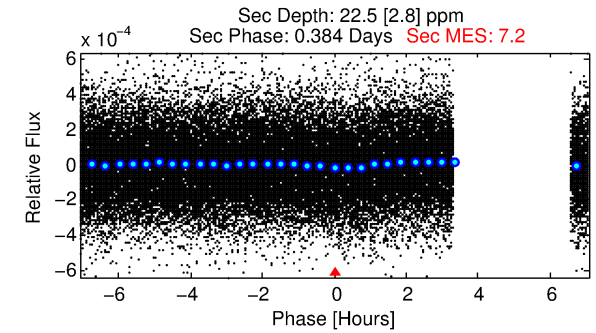
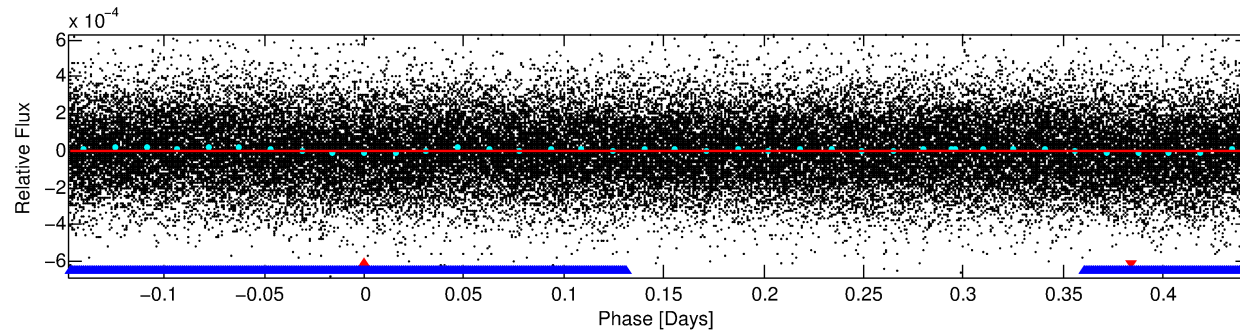
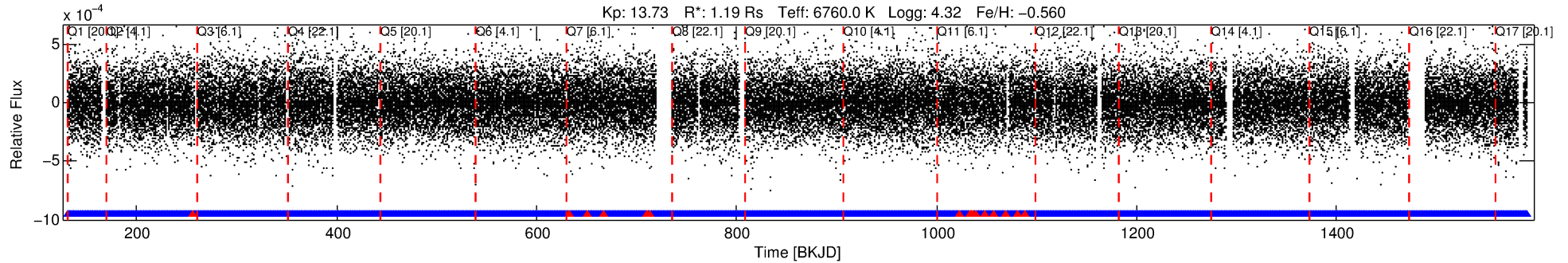
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006060355-01

No Significant Match Found

DV One-Page Summary

KIC: 6060355 Candidate: 1 of 2 Period: 0.590 d



DV Fit Results:

Period = 0.58976 [0.00004] d
Epoch = 131.9100 [0.0098] BKJD
Rp/R* = 0.0025 [0.0011]
a/R* = 1.62 [2.12]
b = 0.83 [0.79]
Seff = 13344.25 [4740.54]
Teq = 2741 [243] K
Rp = 0.32 [0.17] Re
a = 0.0141 [0.0033] AU
Ag = 23.55 [22.76] [0.99σ]
Teffp = 9334 [2147] K [3.05σ]

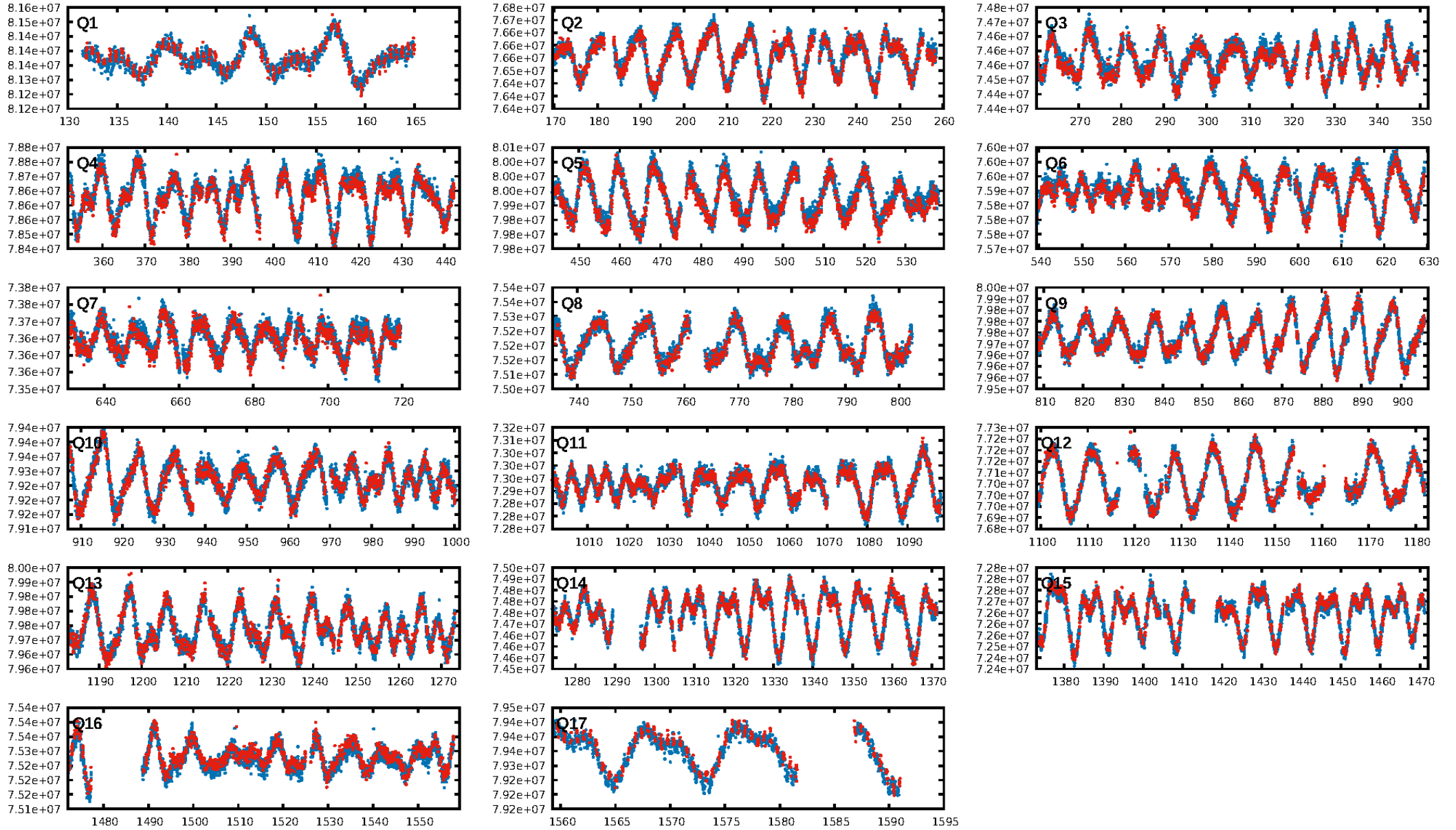
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.51e-21
RollingBand-fgt: 0.99 [2152/2168]
GhostDiagnostic-chr: 25.08
Centroid-sig: 21.7%
Centroid-so: 4.810 arcsec [1.00σ]
OotOffset-rm: 0.215 arcsec [0.87σ]
KicOffset-rm: 0.173 arcsec [0.62σ]
OotOffset-st: 3/3/3/4 [13]
KicOffset-st: 3/3/3/4 [13]
DiffImageQuality-fgm: 0.54 [7/13]
DiffImageOverlap-fno: 0.00 [0/17]

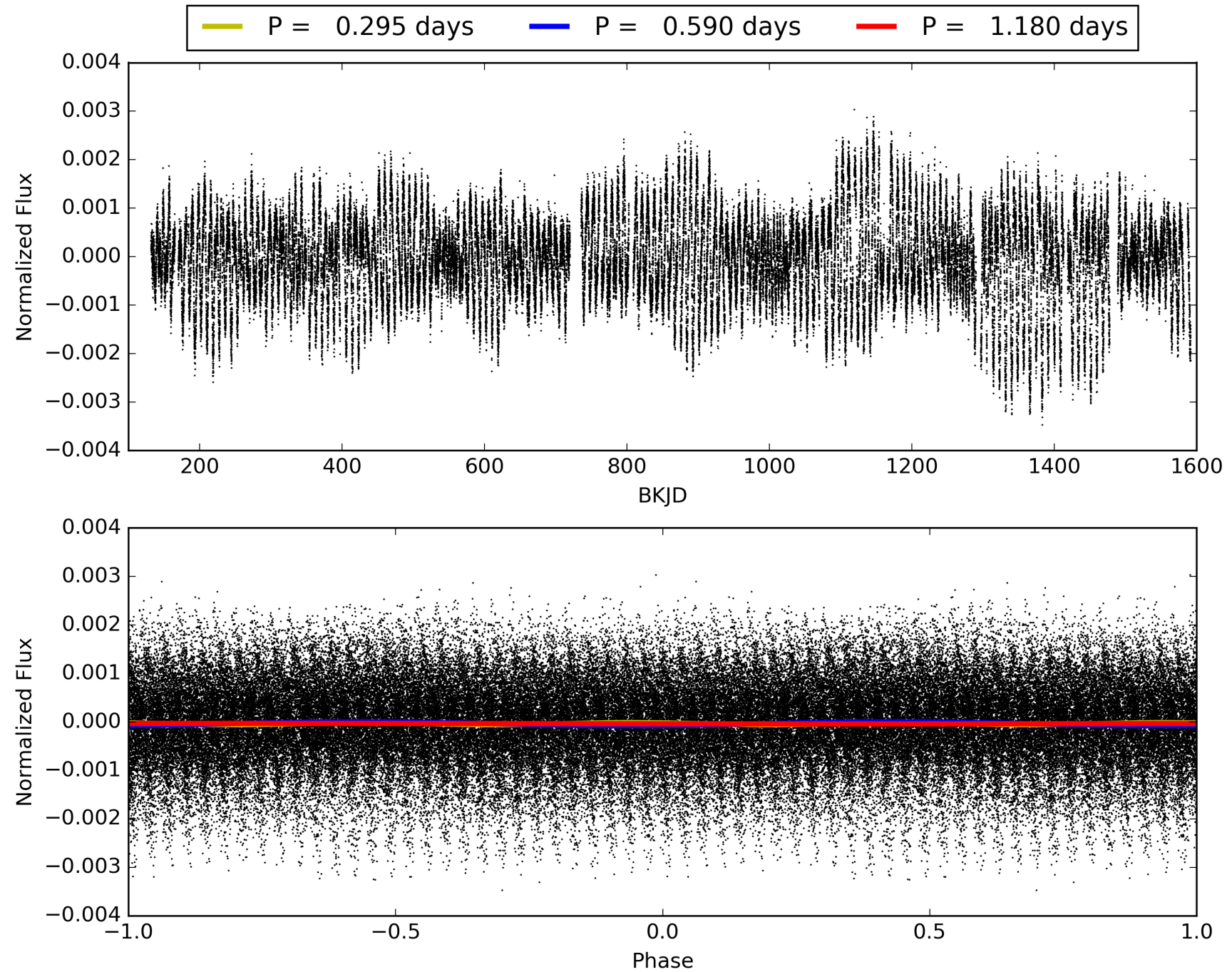
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 12:48:55 Z

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

TCE 006060355-01, PDC Light Curves

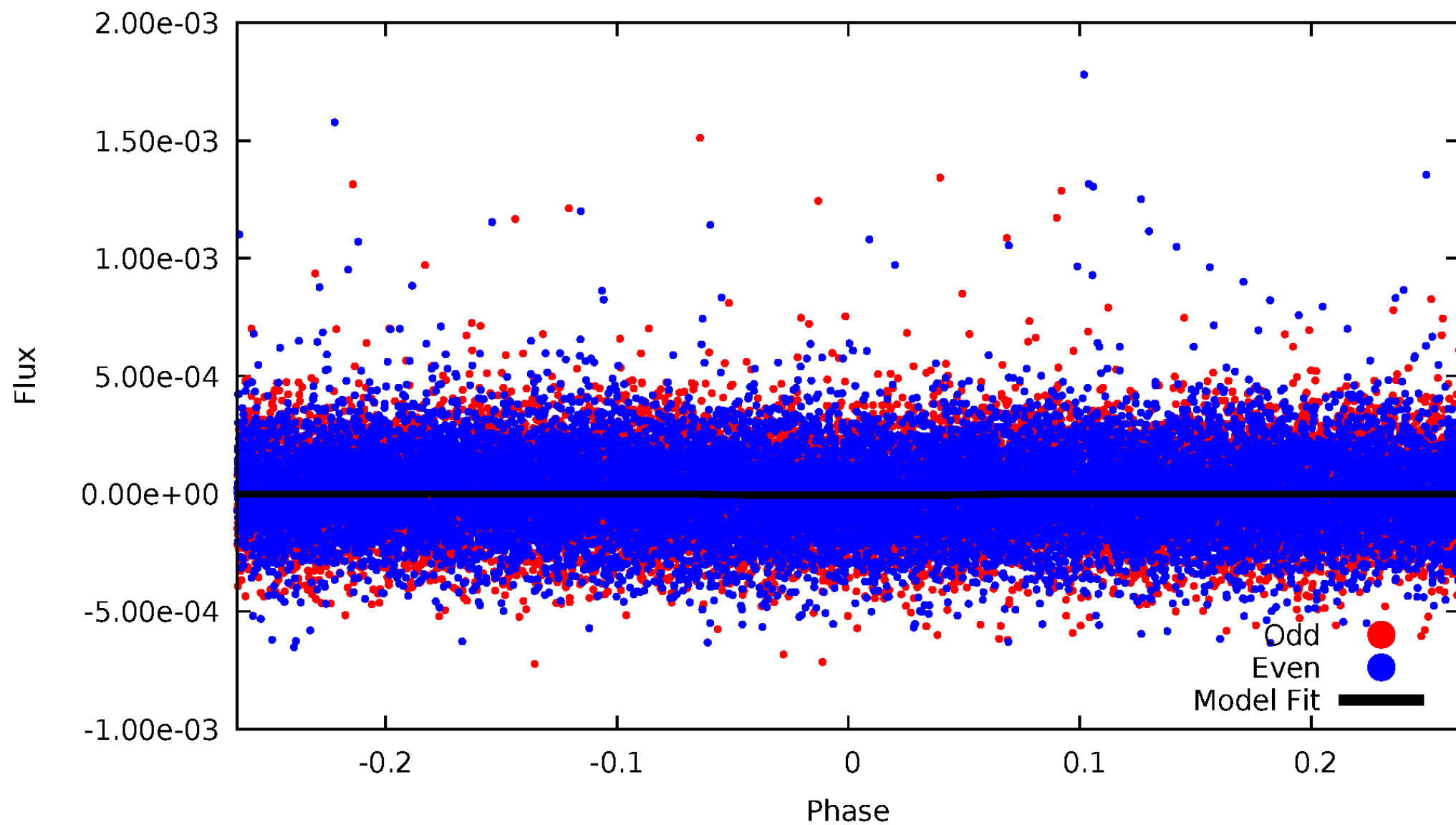


TCE 006060355-01



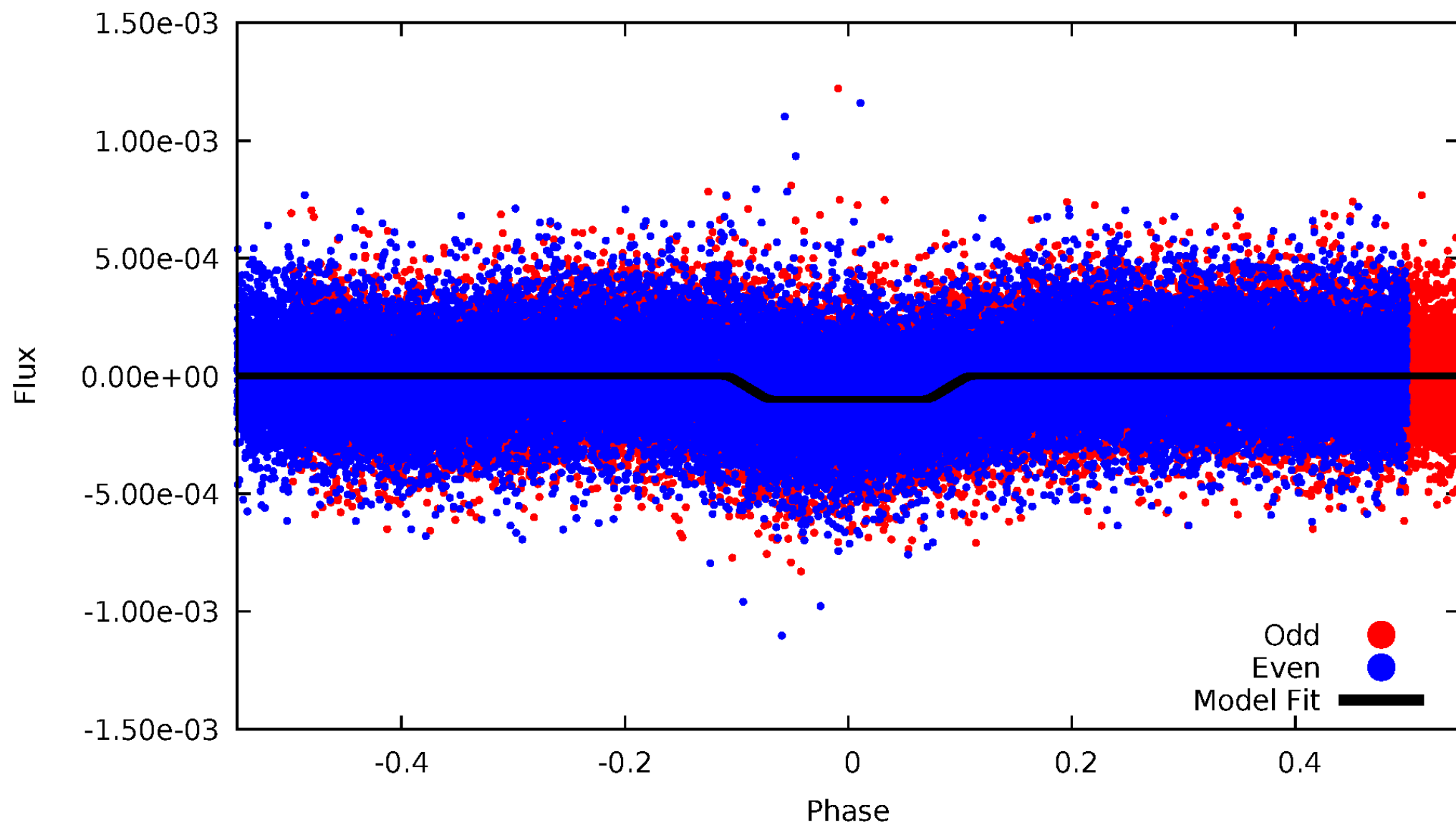
DV Odd/Even

TCE 006060355-01



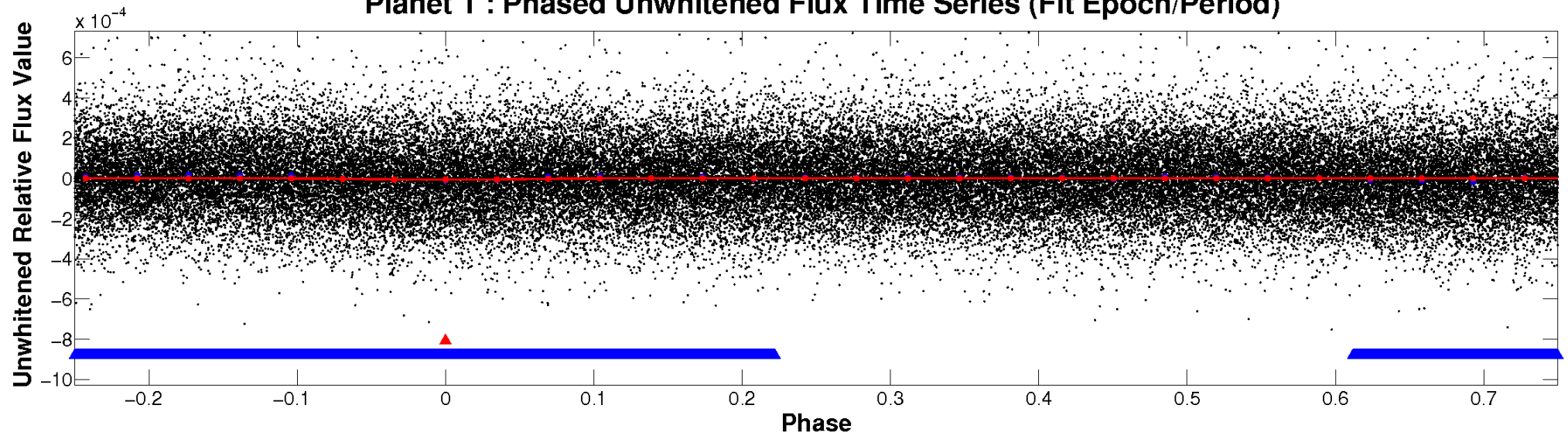
ALT Odd/Even

TCE 006060355-01

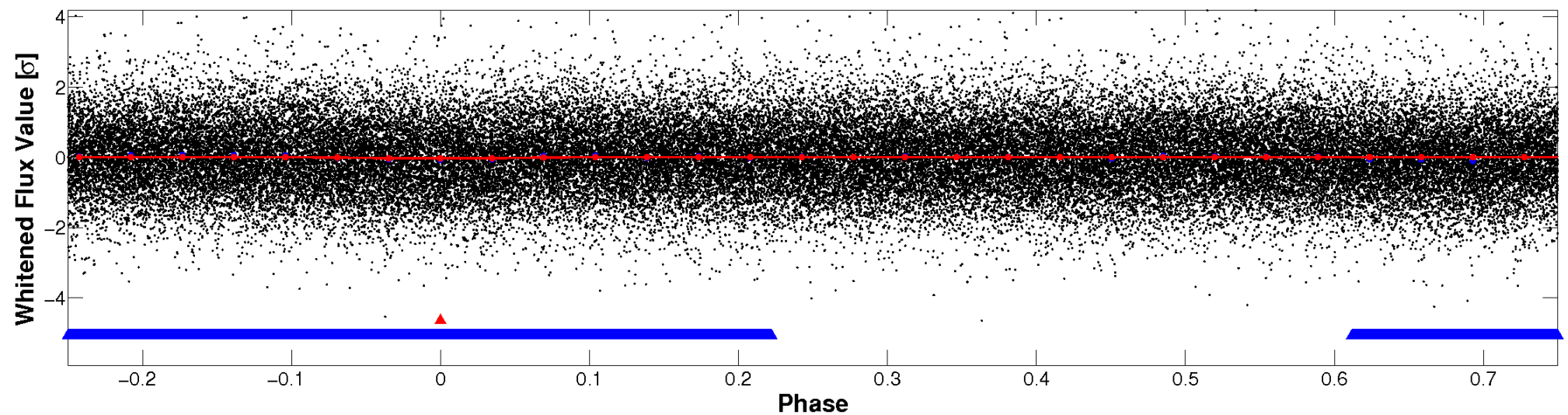


Non-Whitened Vs. Whitened Light Curve

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

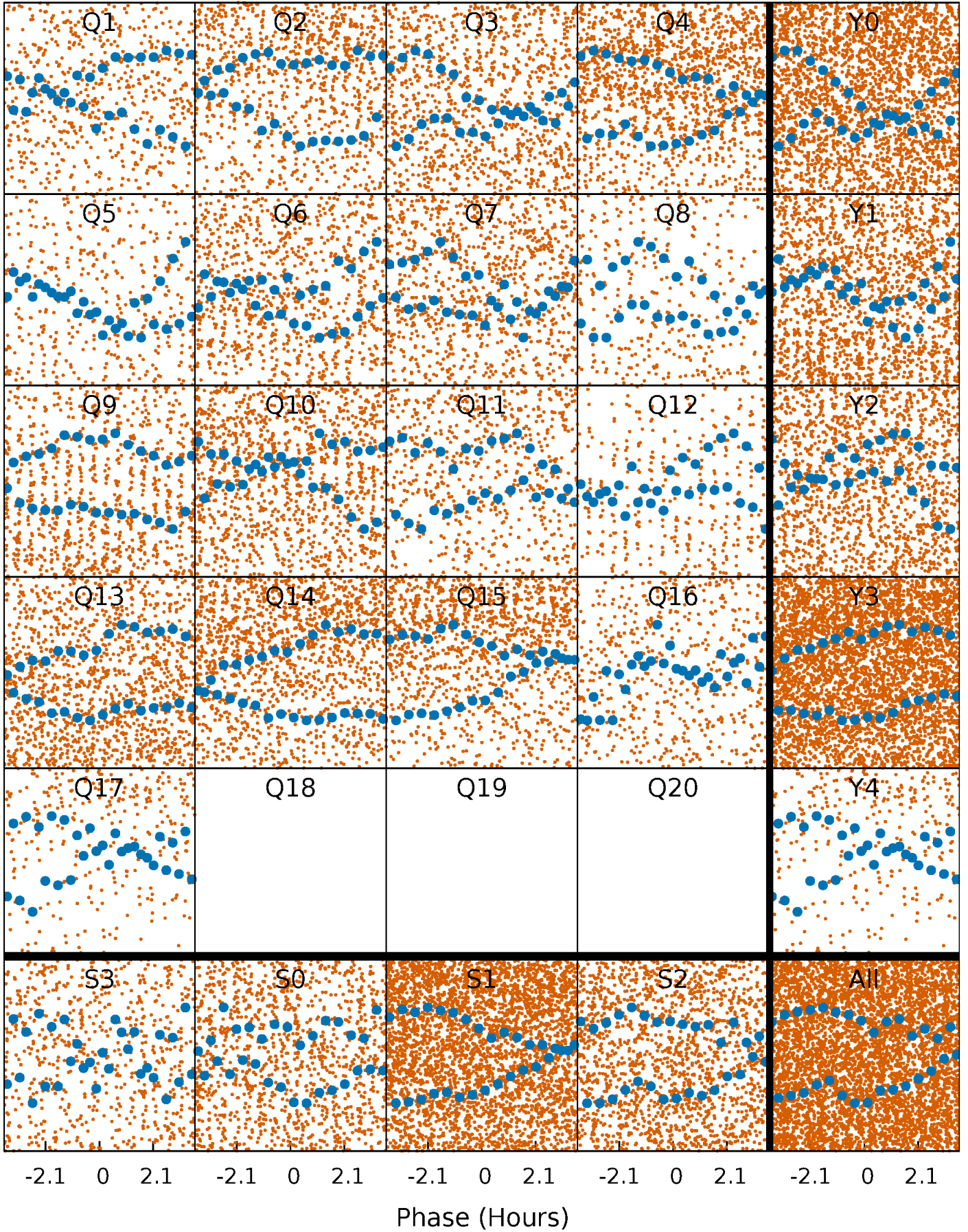


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



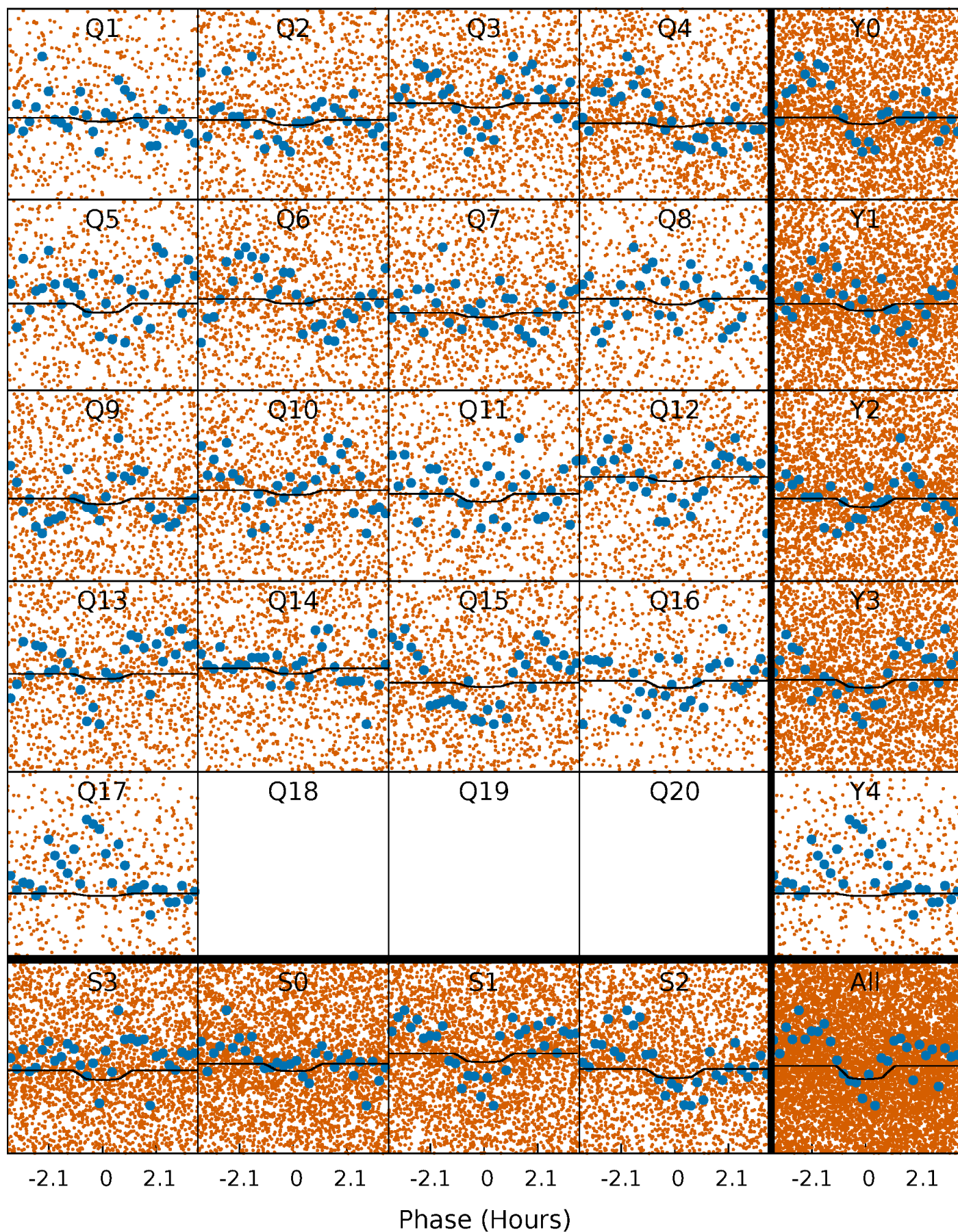
PDC Quarter-Phased Transit Curves

TCE 006060355-01 P= 0.589764 Days $T_0=131.910032$ (BKJD)



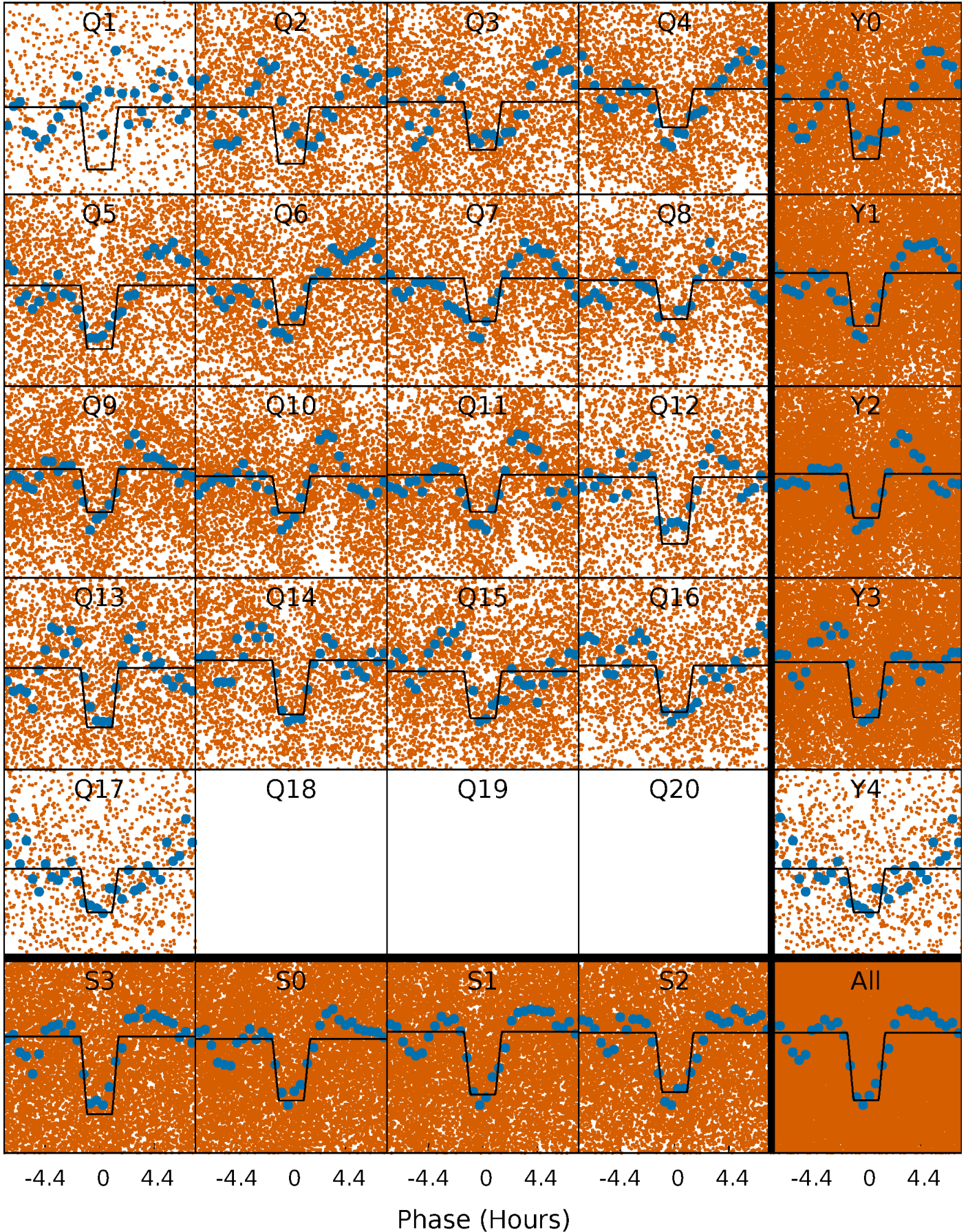
DV Quarter-Phased Transit Curves

TCE 006060355-01 P= 0.589764 Days $T_0=131.910032$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

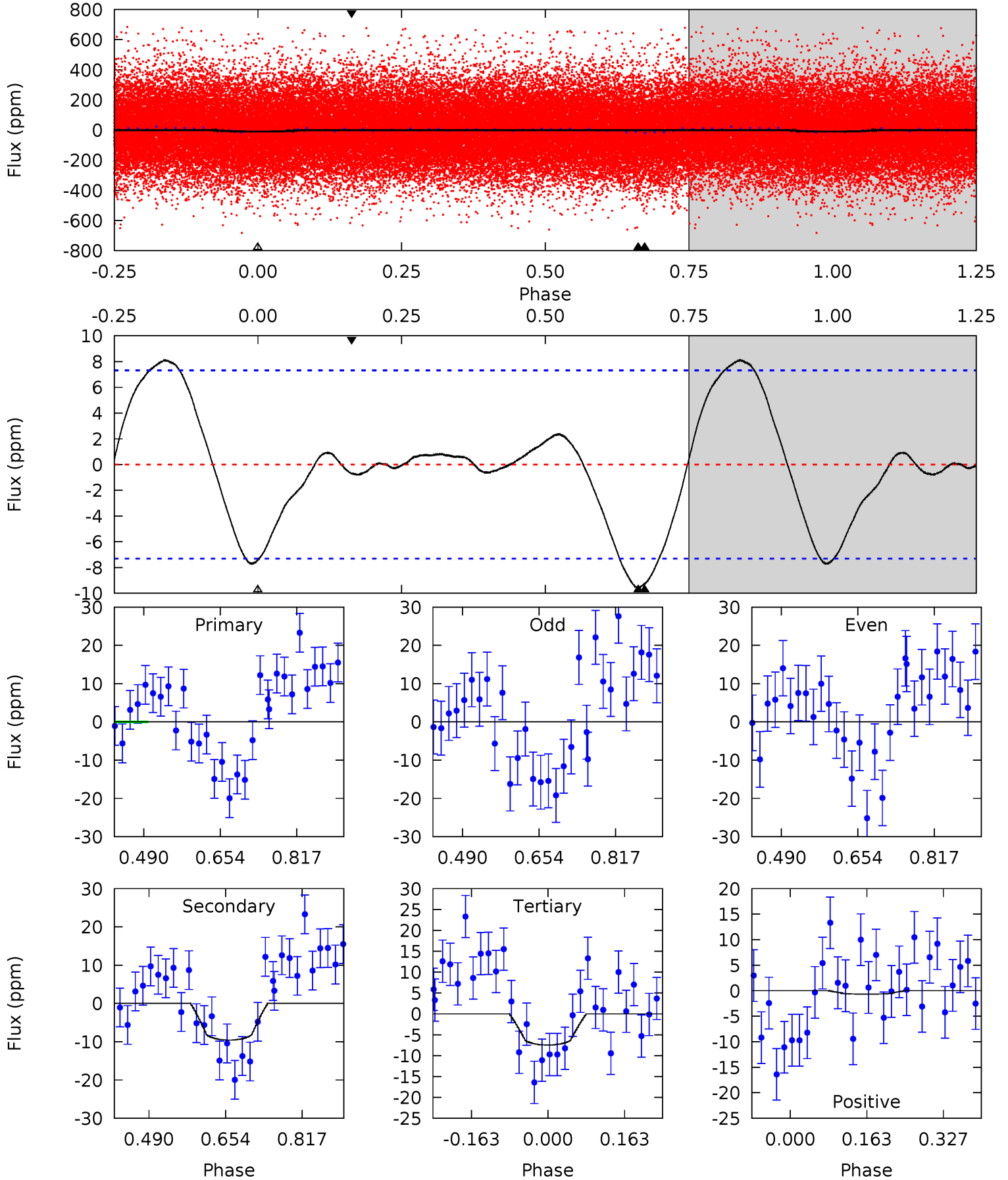
TCE 006060355-01 P= 0.589888 Days $T_0=131.886806$ (BKJD)



DV Model-Shift Uniqueness Test

006060355-01, P = 0.589764 Days, E = 131.320268 Days

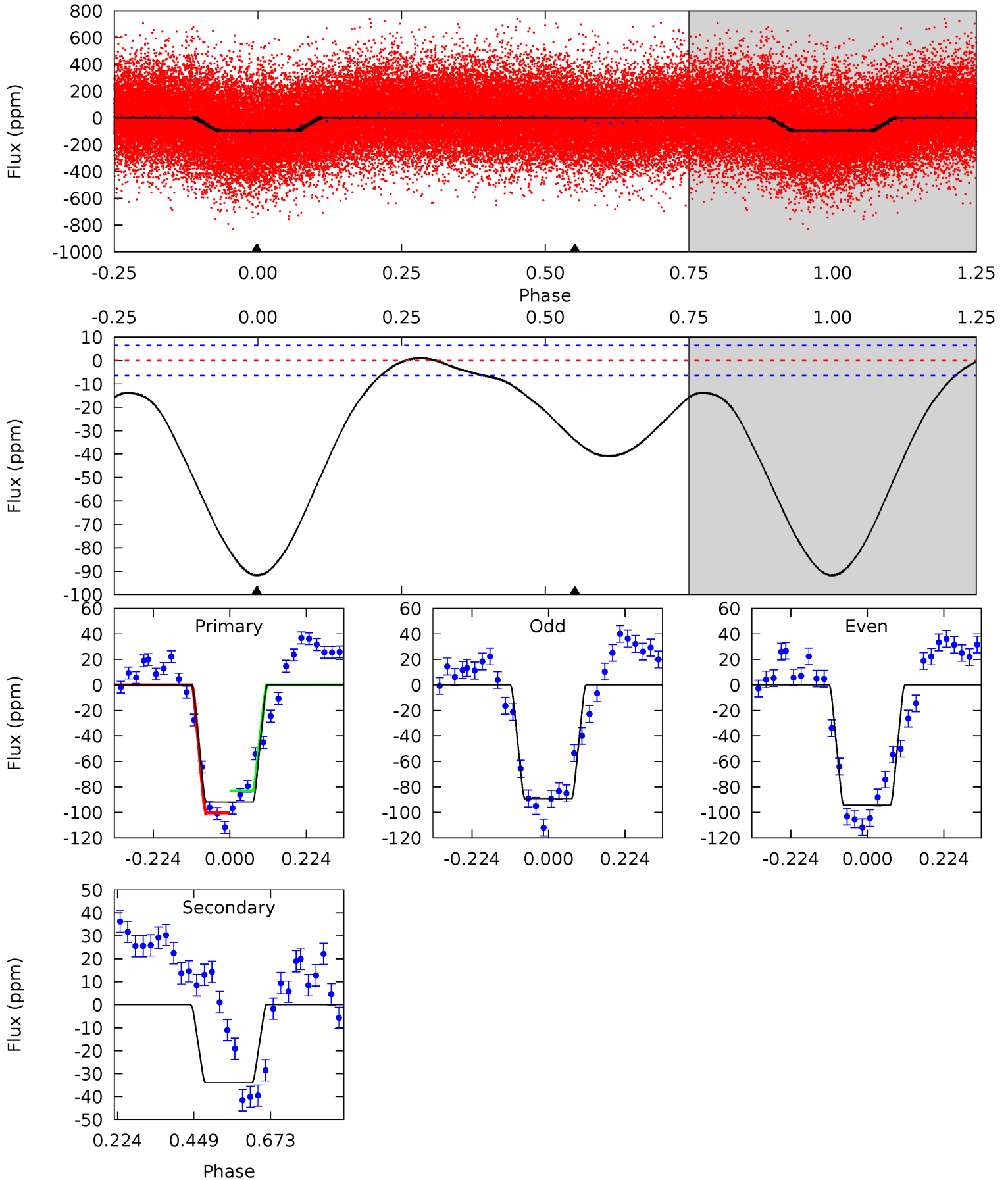
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.66	5.84	4.54	-0.41	4.46	1.39	1.99	1.11	6.06	1.30	6.24	1.01	0.77	0.46	1.38



Alt Model-Shift Uniqueness Test

006060355-01, P = 0.589888 Days, E = 131.296918 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
62.3	23.0	0	0	4.39	1.22	1.00	62.3	62.3	23.0	23.0	1.63	1.01	0.01	5.98



Stellar Parameters For KIC 006060355

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6760^{+188}_{-235}	$4.318^{+0.116}_{-0.174}$	$-0.560^{+0.300}_{-0.300}$	$1.192^{+0.337}_{-0.182}$	$1.076^{+0.157}_{-0.128}$	$0.894^{+0.484}_{-0.431}$
	+3%/-3%	+3%/-4%	+54%/-54%	+28%/-15%	+15%/-12%	+54%/-48%
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 006060355-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-10 ± 2	$0.34^{+0.16}_{-0.14}$	3851^{+248}_{-216}	7439^{+3571}_{-1386}	$9.121^{+19.804}_{-4.787}$
Alt.	-34 ± 1	$1.31^{+0.24}_{-0.19}$	3852^{+260}_{-222}	5038^{+342}_{-314}	$2.143^{+0.795}_{-0.589}$

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 $A_{\text{obs}} \gg 1.0$

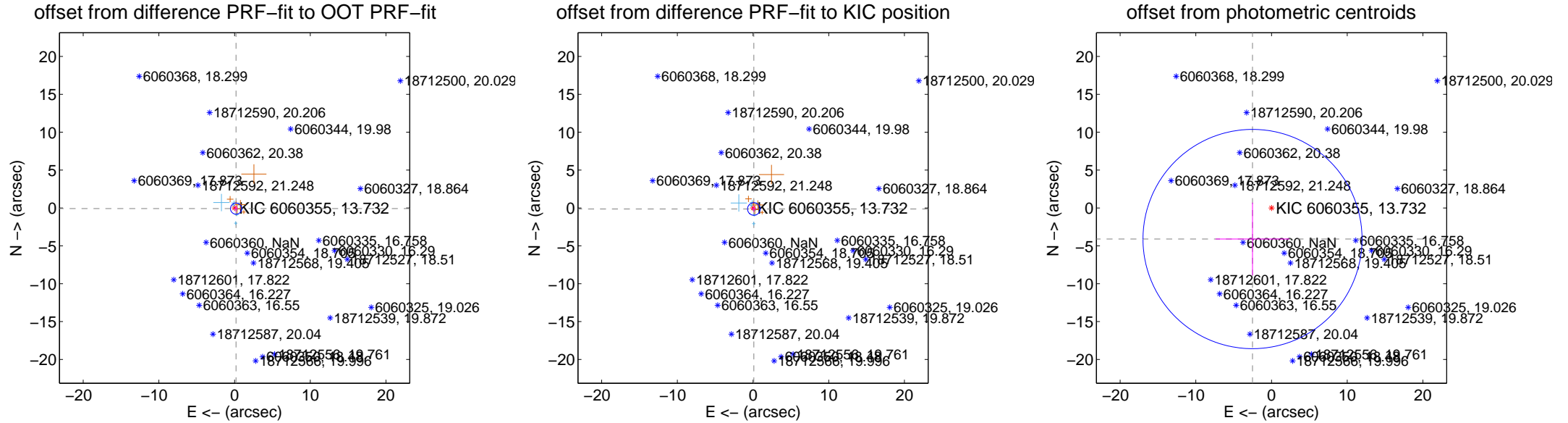
DV Centroid Data

Supplemental centroid analysis for 006060355-01. Kepler magnitude: 13.73. Transit SNR 2.39

There are 7 quarters with good PRF difference image offsets

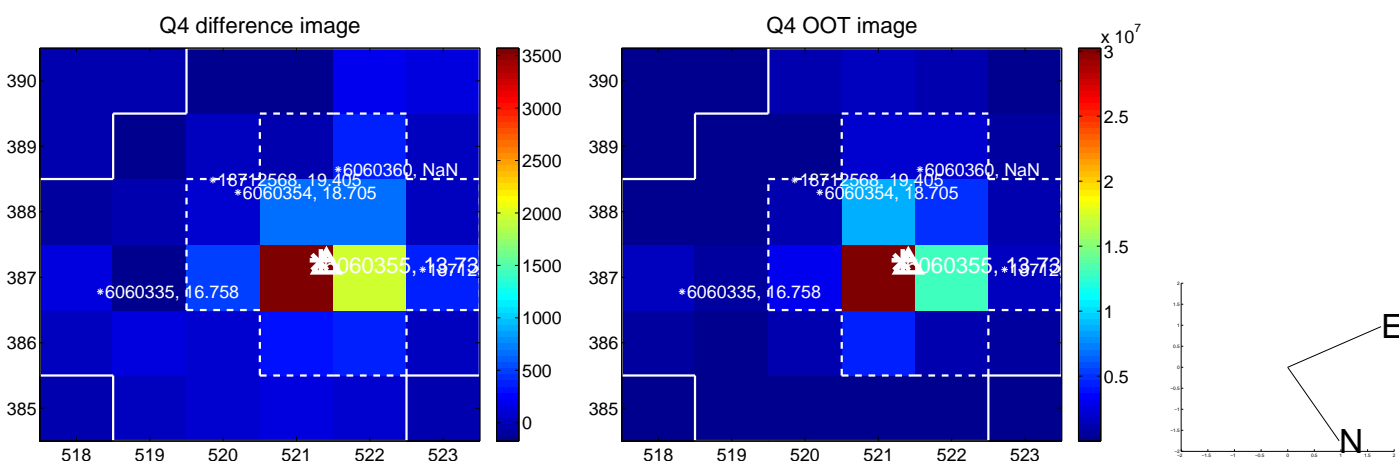
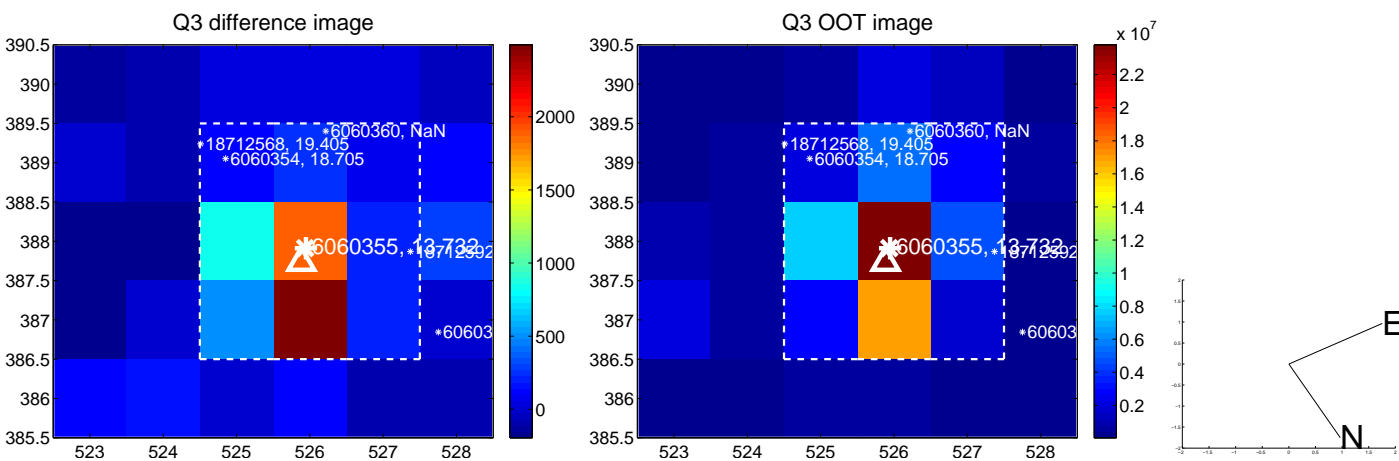
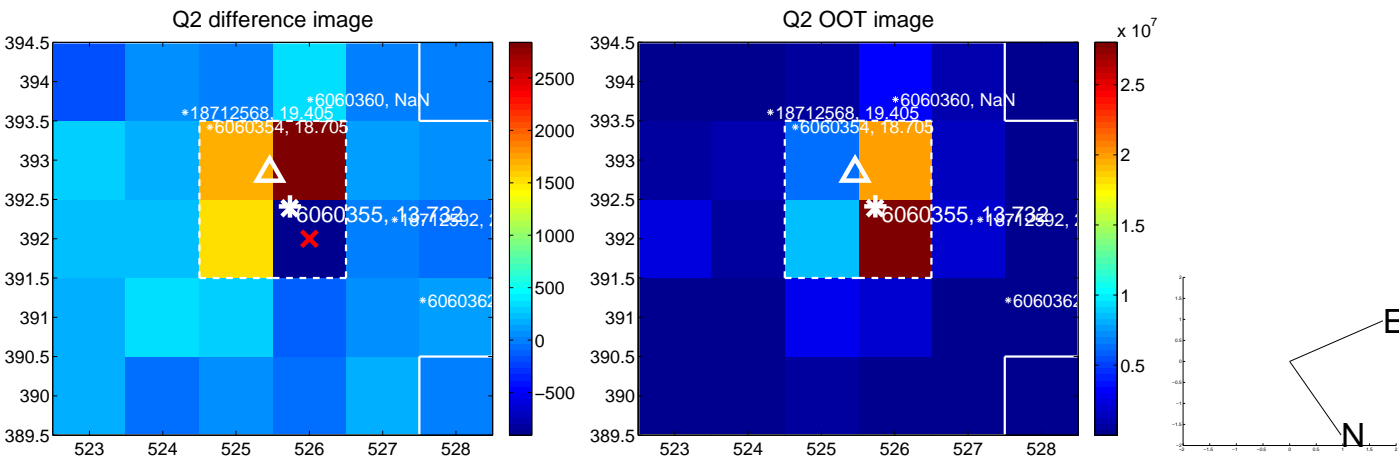
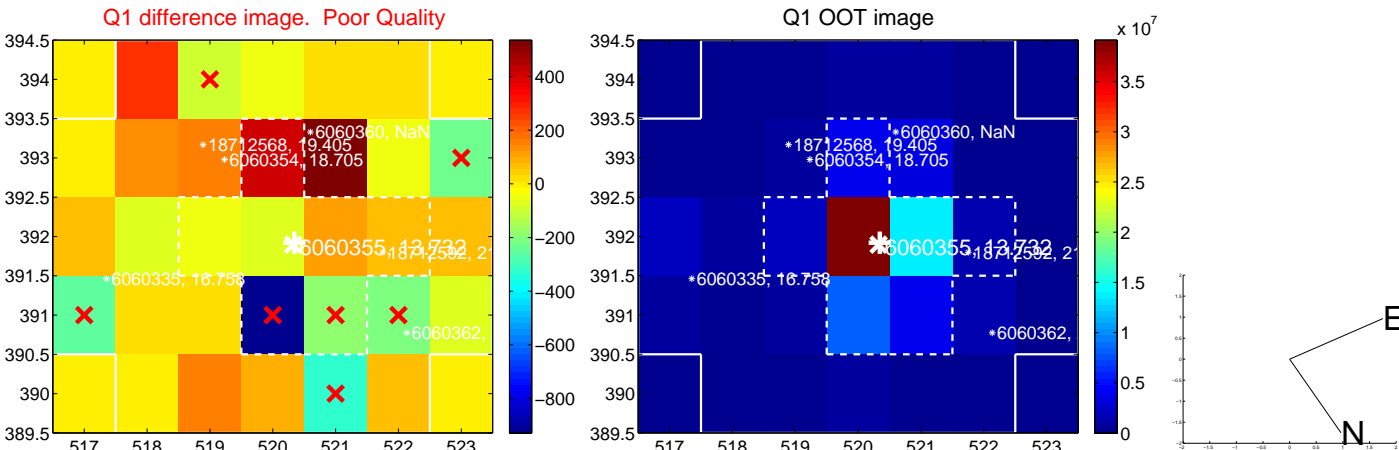
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.215 ± 0.246	0.87	-0.197 ± 0.258	-0.087 ± 0.397
PRF-fit source offset from KIC position	0.173 ± 0.277	0.62	-0.107 ± 0.284	-0.136 ± 0.383
photometric centroid source offset	4.81 ± 4.82	1.00	2.51 ± 4.87	-4.10 ± 4.81

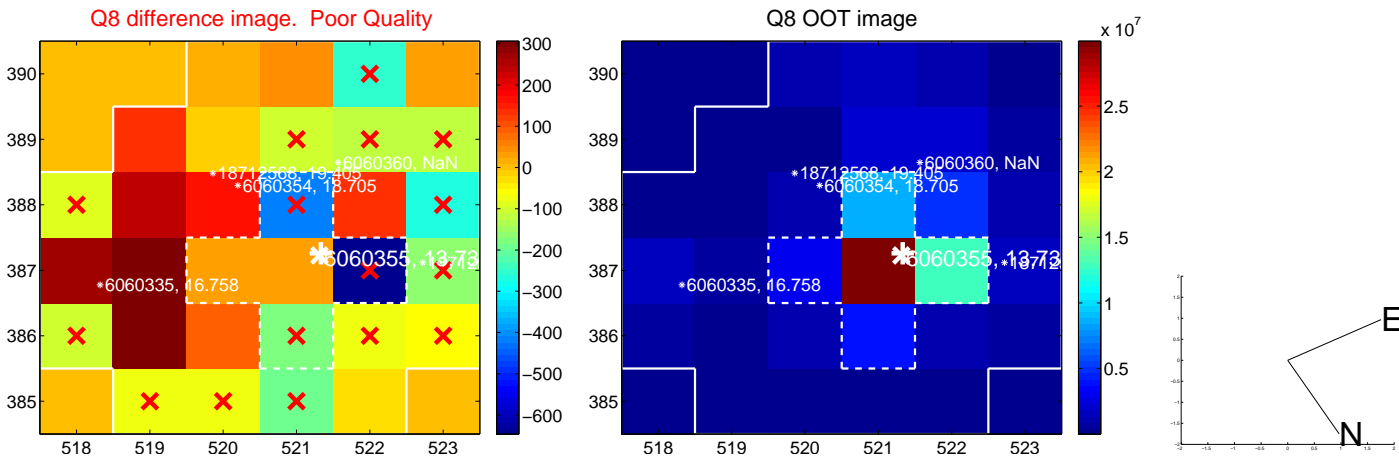
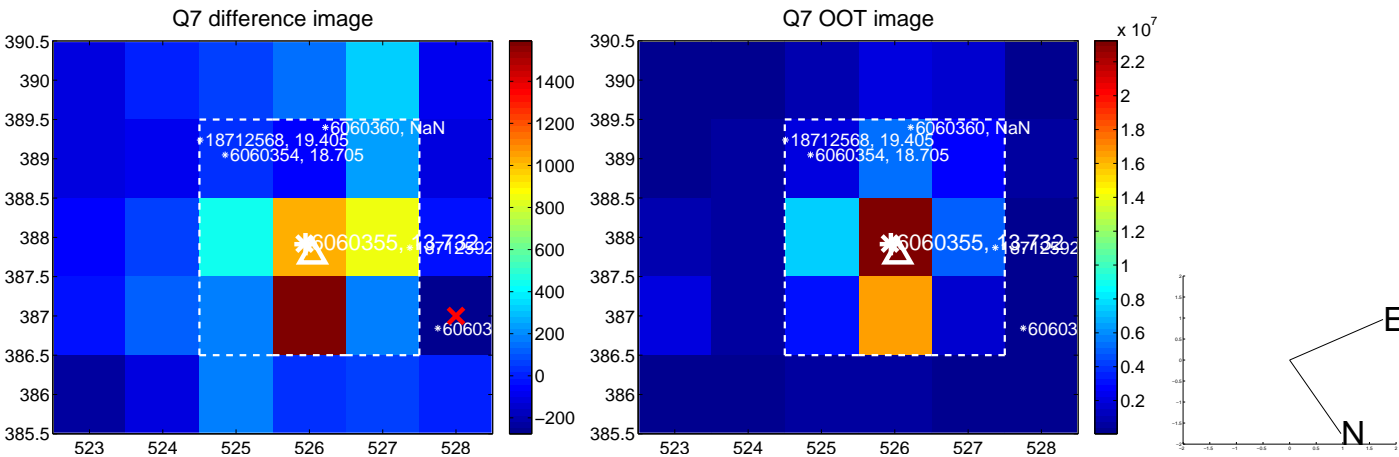
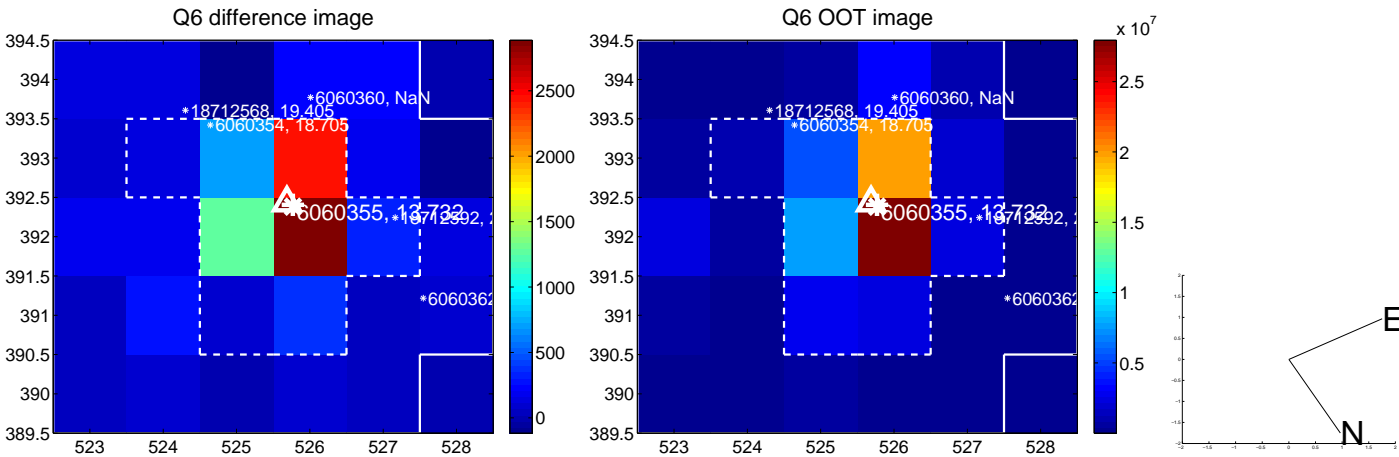
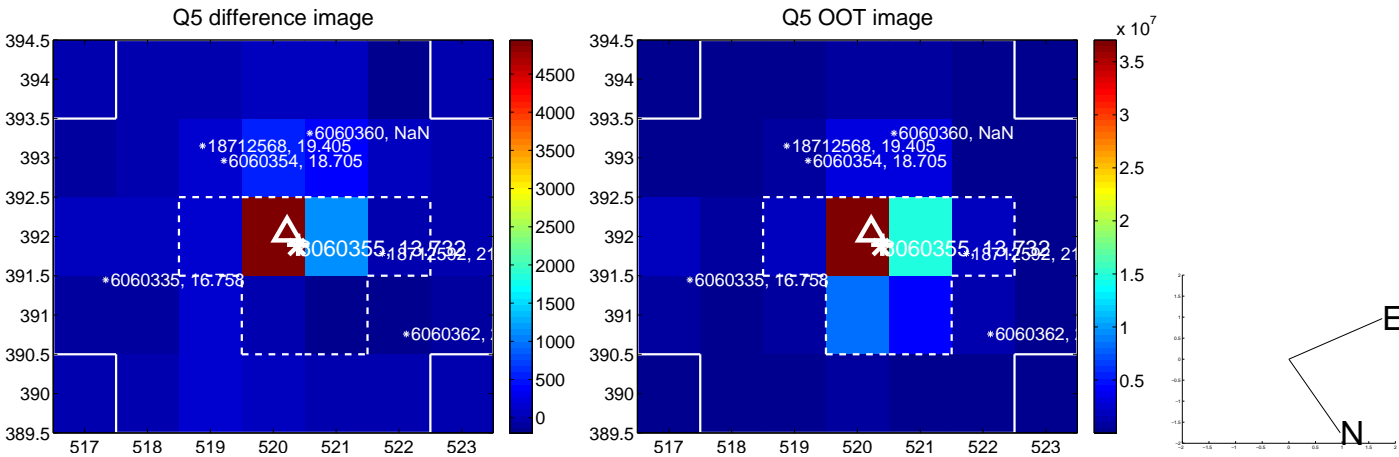


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

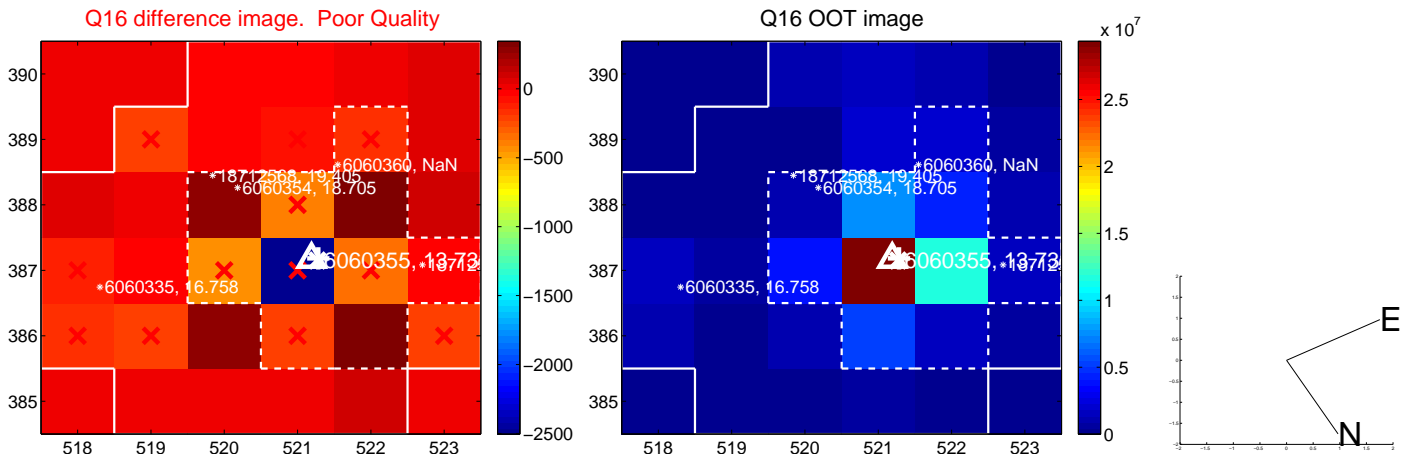
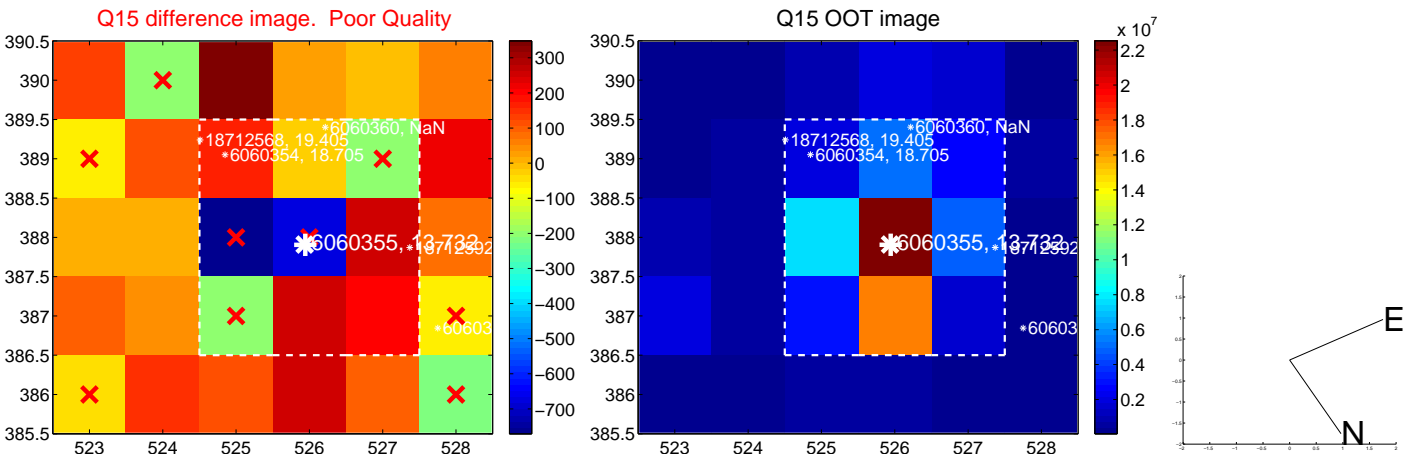
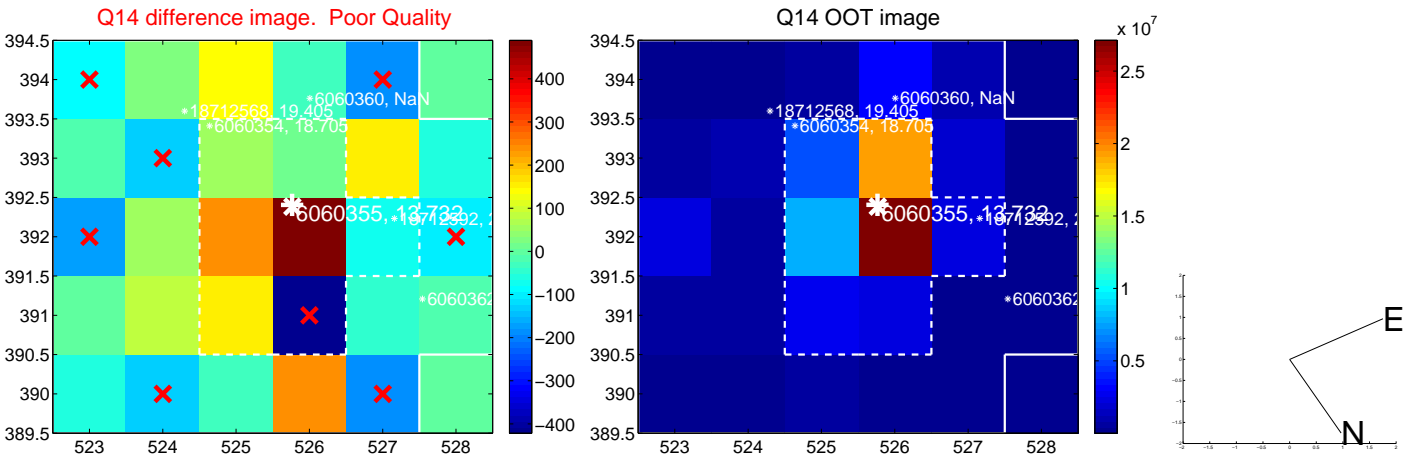
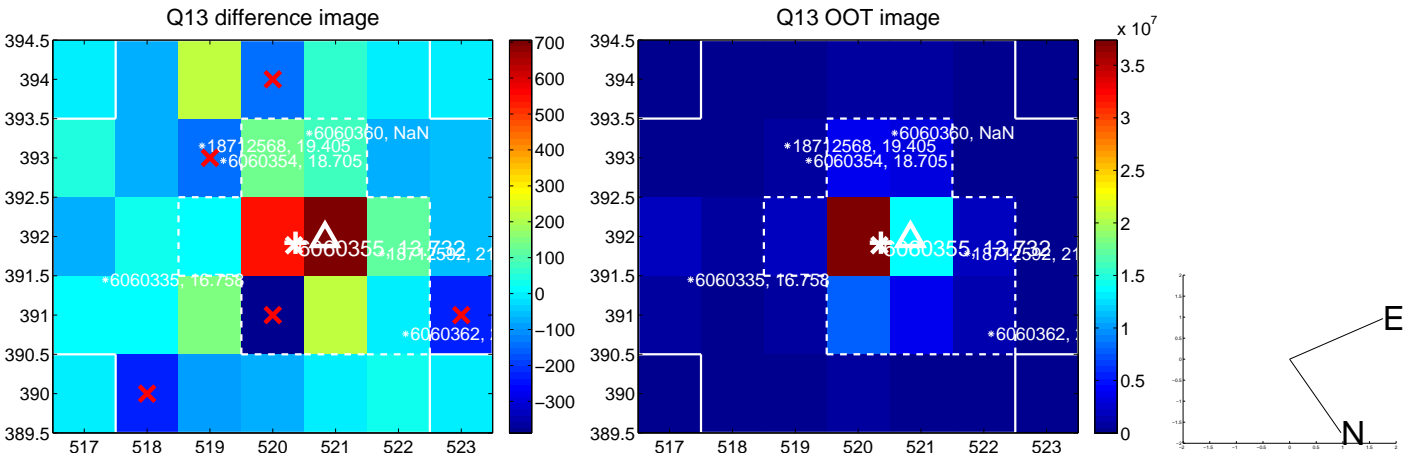
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



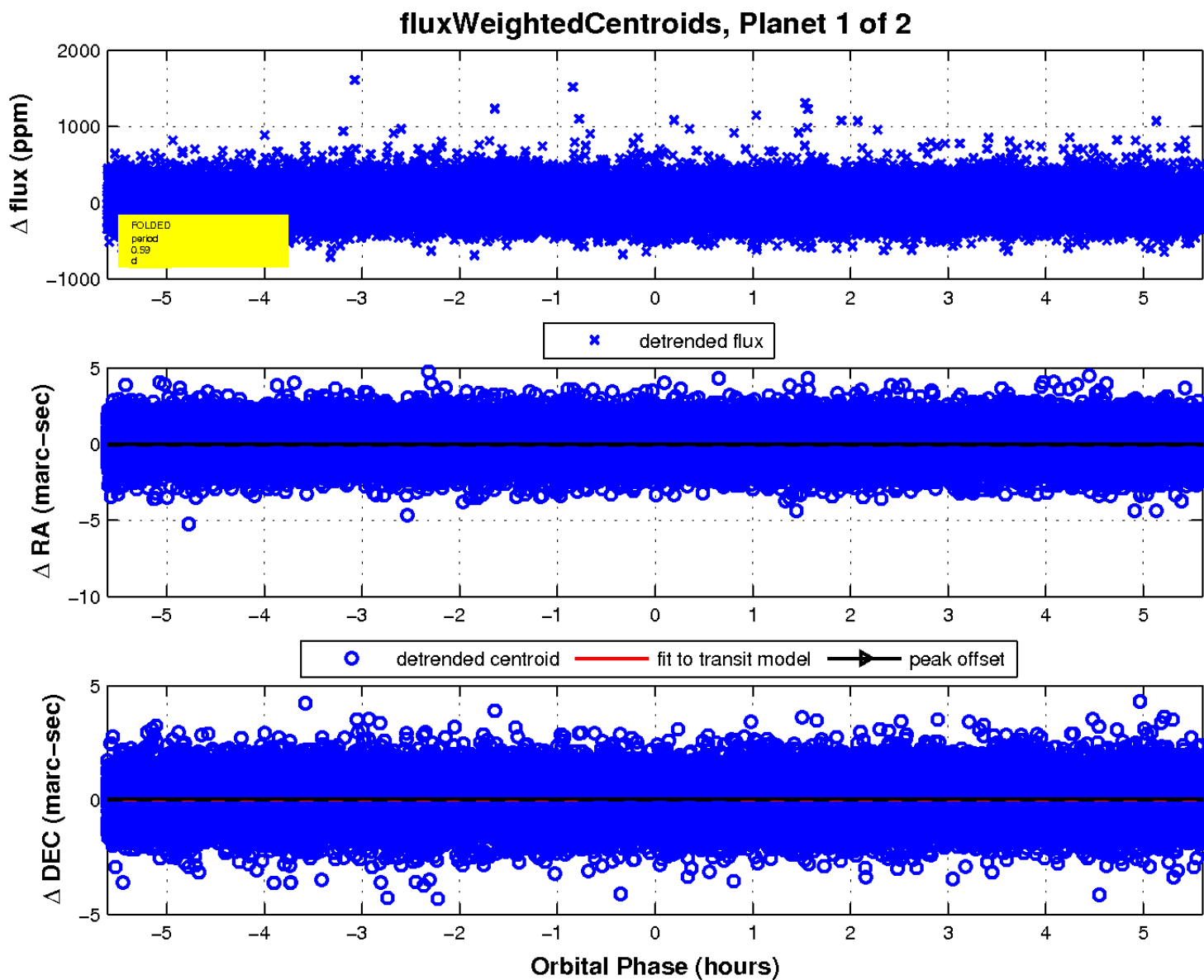
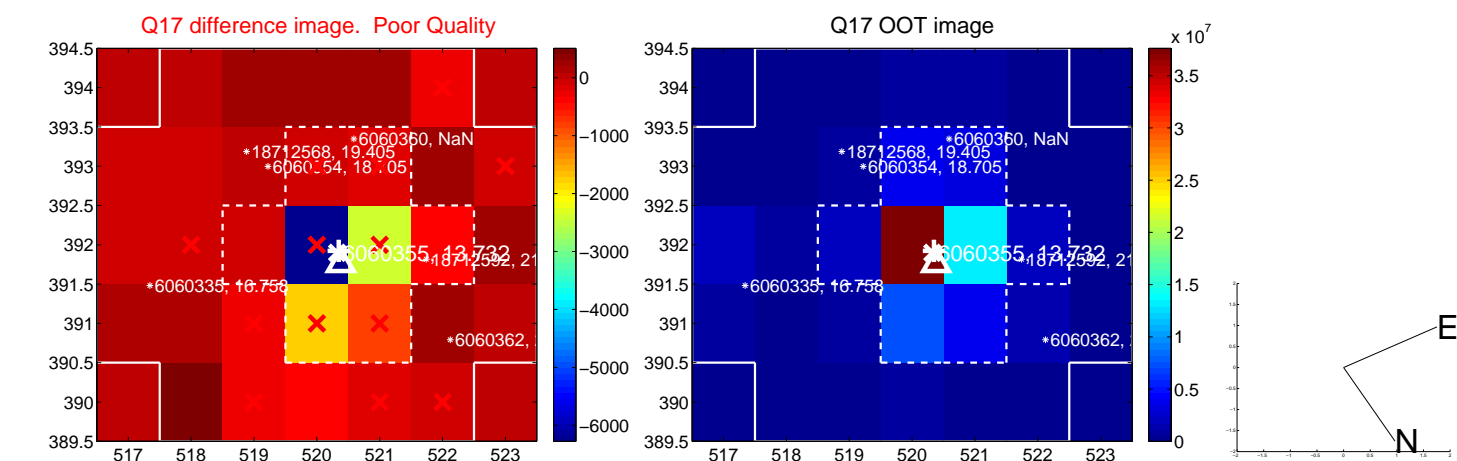
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

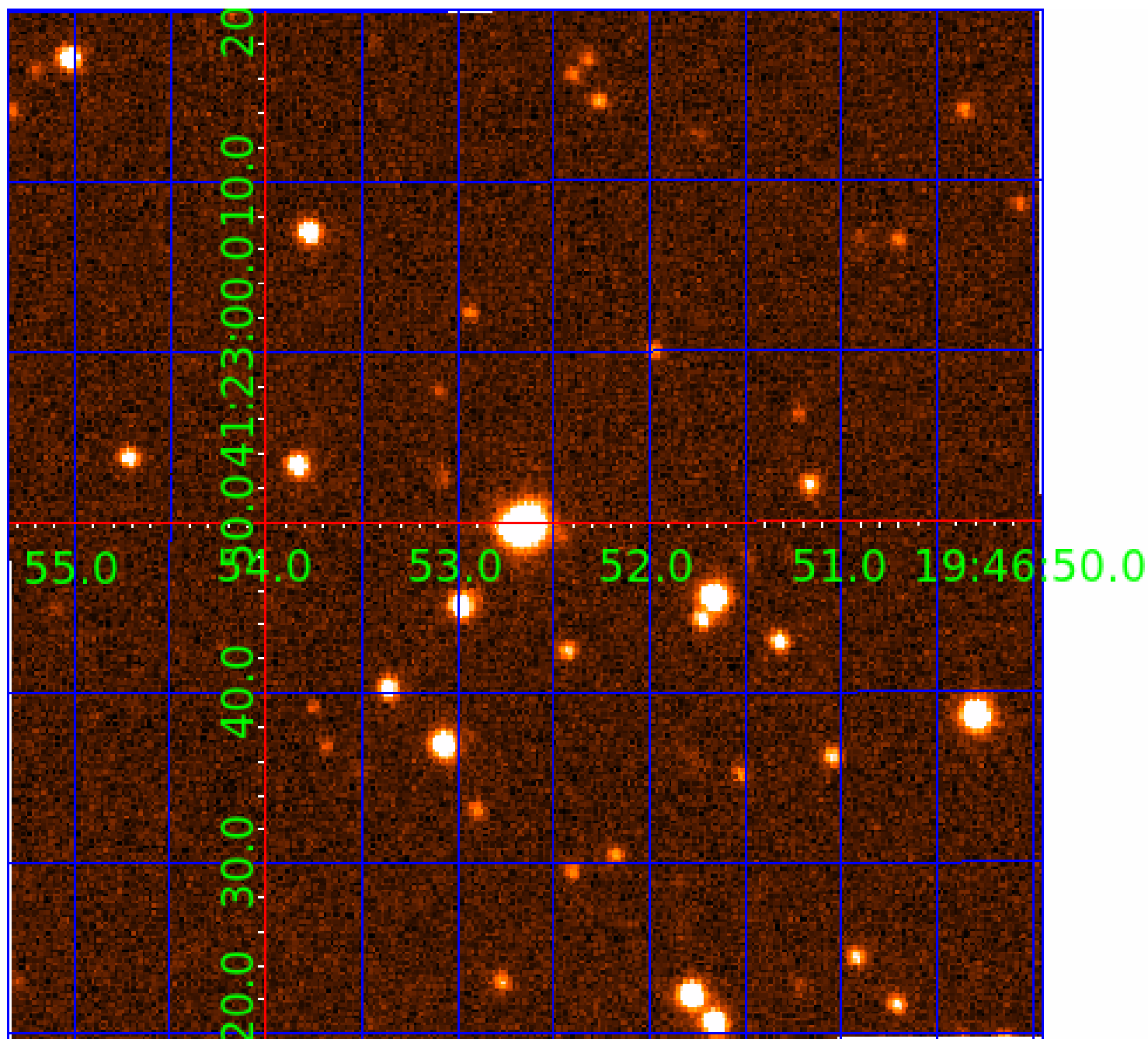


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006060355

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})
006060355-01	OBS	No	0.589764	131.910032	5.9	1.869	9.2	2.4	1.19	6760	0.32	13344.25
006060355-02	OBS	No	0.589909	131.681130	29.0	3.855	8.4	9.9	1.19	6760	0.75	13339.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006060355-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
006060355-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD

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

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

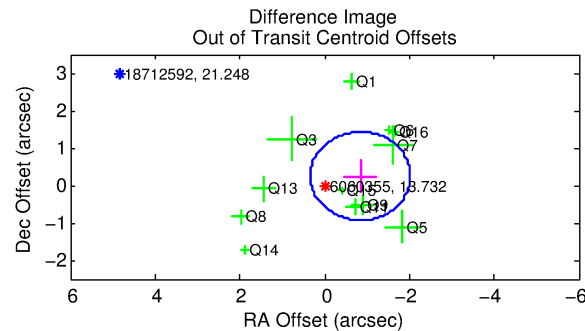
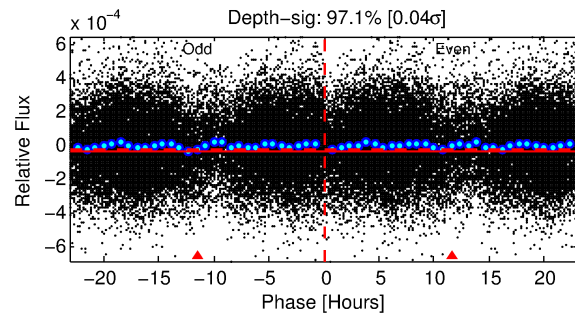
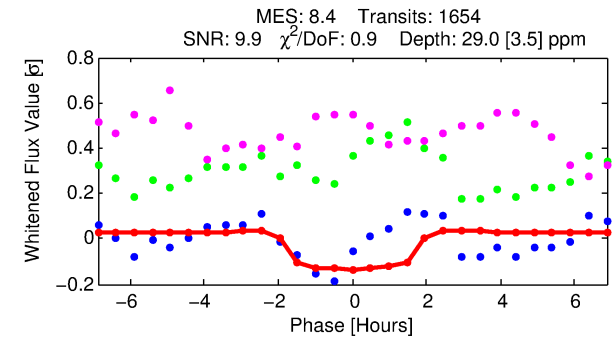
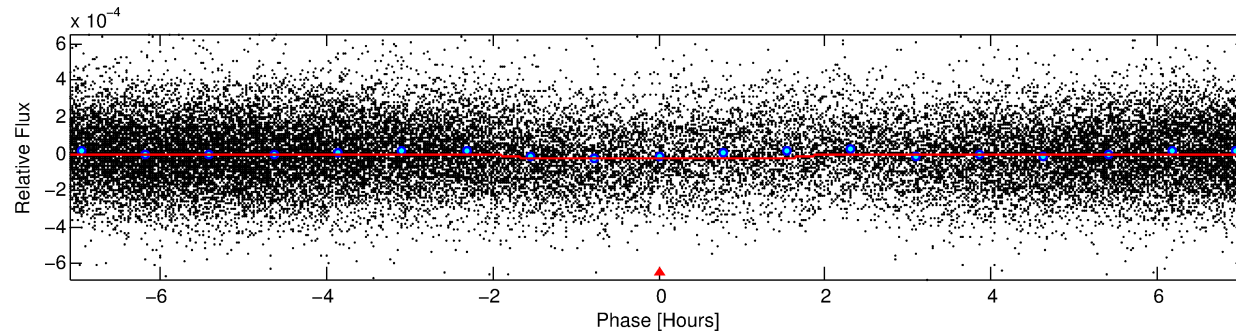
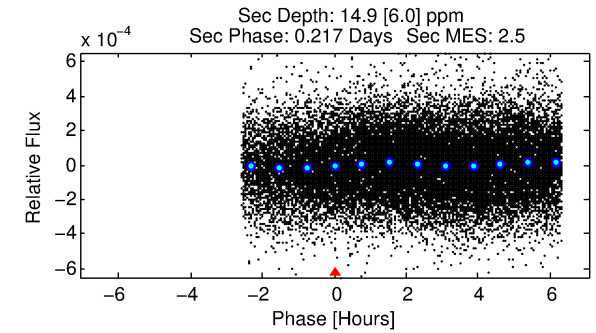
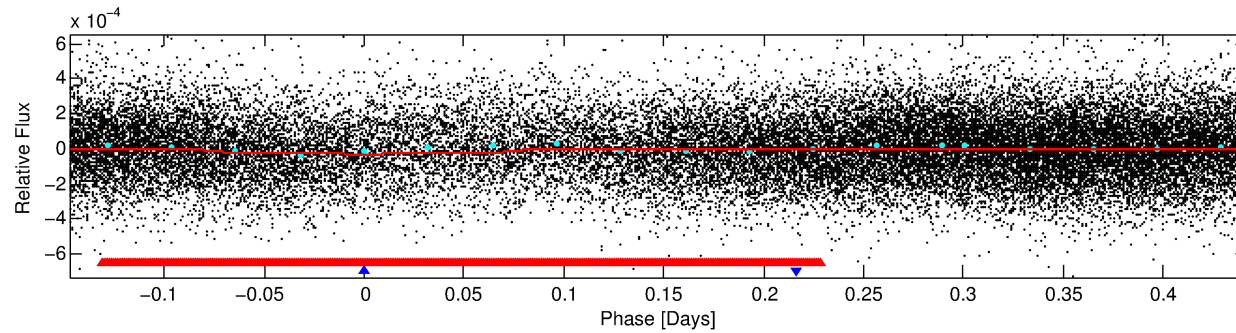
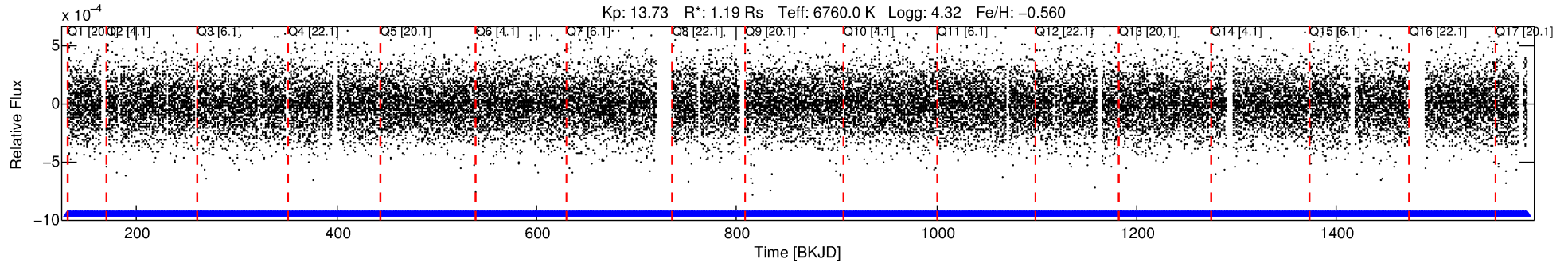
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006060355-02

No Significant Match Found

DV One-Page Summary

KIC: 6060355 Candidate: 2 of 2 Period: 0.590 d



DV Fit Results:

Period = 0.58991 [0.00001] d
Epoch = 131.6811 [0.0038] BKJD
Rp/R* = 0.0058 [0.0036]
a/R* = 1.08 [0.58]
b = 0.90 [0.81]
Seff = 13339.87 [4738.98]
Teq = 2740 [243] K
Rp = 0.75 [0.52] Re
a = 0.0141 [0.0033] AU
Ag = 2.91 [3.99] [0.48σ]
Teffp = 5534 [1851] K [1.50σ]

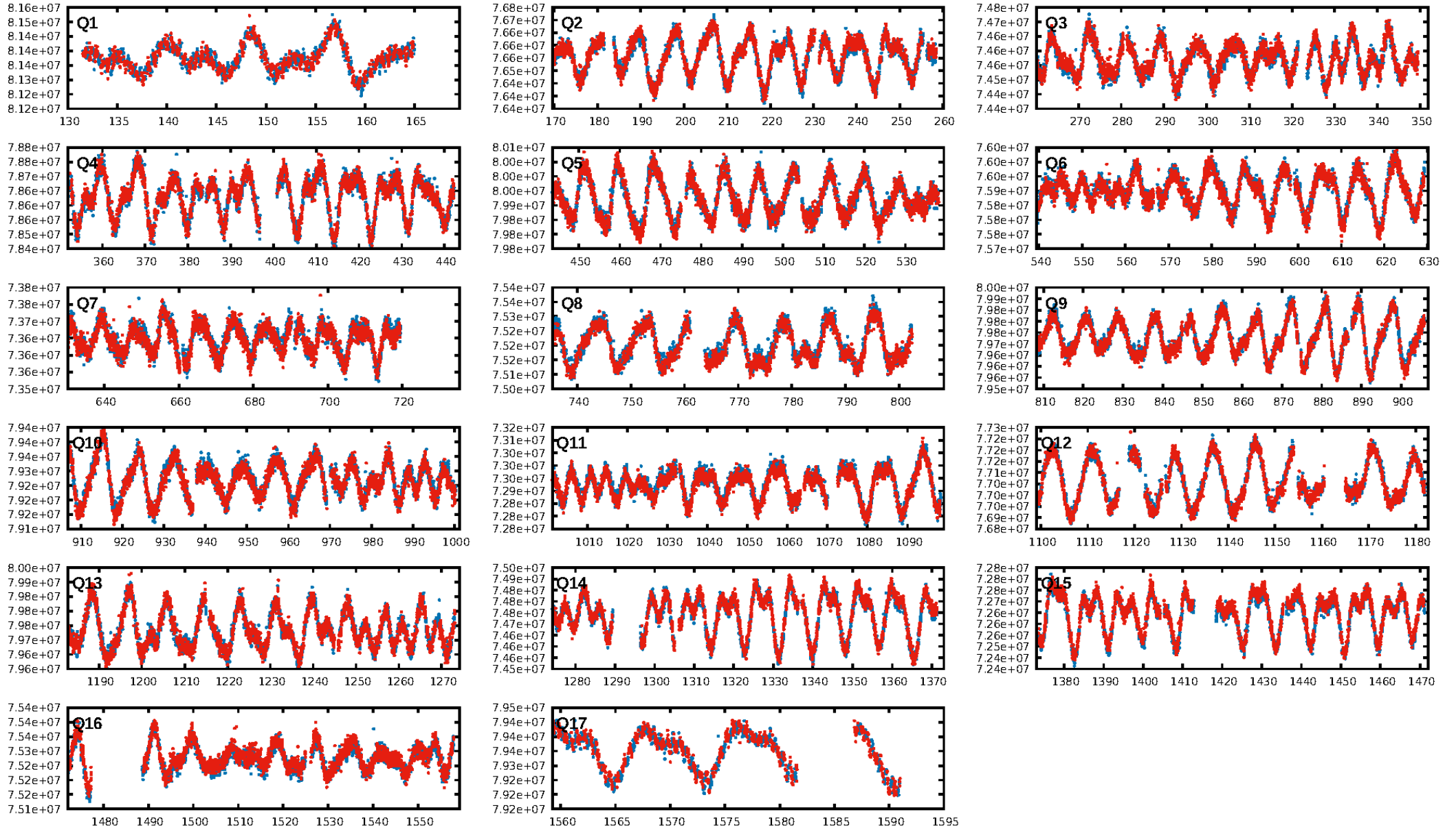
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.33e-19
RollingBand-fgt: 1.00 [1552/1552]
GhostDiagnostic-chr: 0.9327
Centroid-sig: 23.9%
Centroid-so: 0.881 arcsec [1.25σ]
OotOffset-rm: 0.877 arcsec [2.23σ]
OotOffset-st: 2/4/2/4 [12]
KicOffset-rm: 0.831 arcsec [2.12σ]
KicOffset-st: 2/4/2/4 [12]
DiffImageQuality-fgm: 0.67 [8/12]
DiffImageOverlap-fno: 0.00 [0/17]

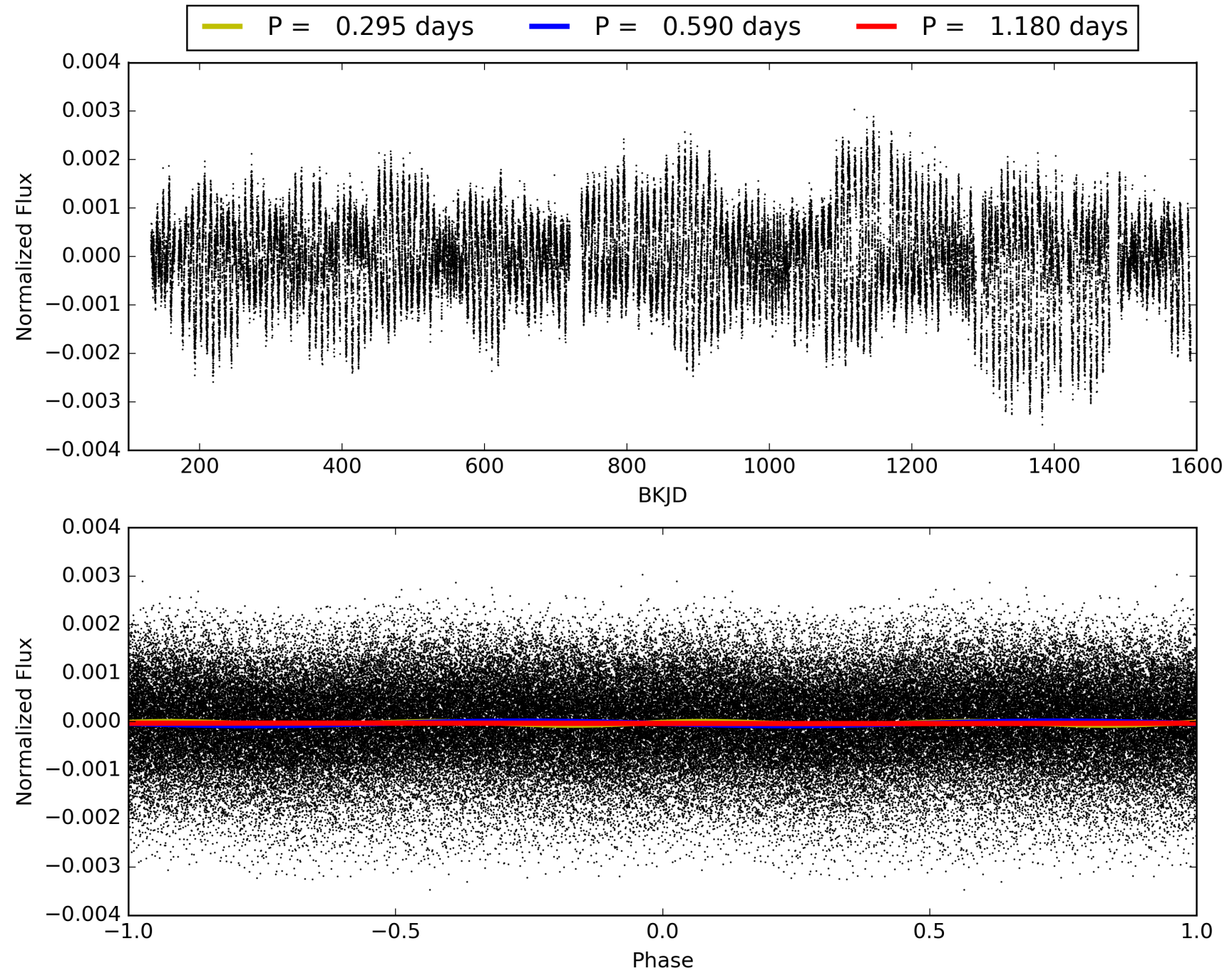
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 12:49:08 Z

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

TCE 006060355-02, PDC Light Curves

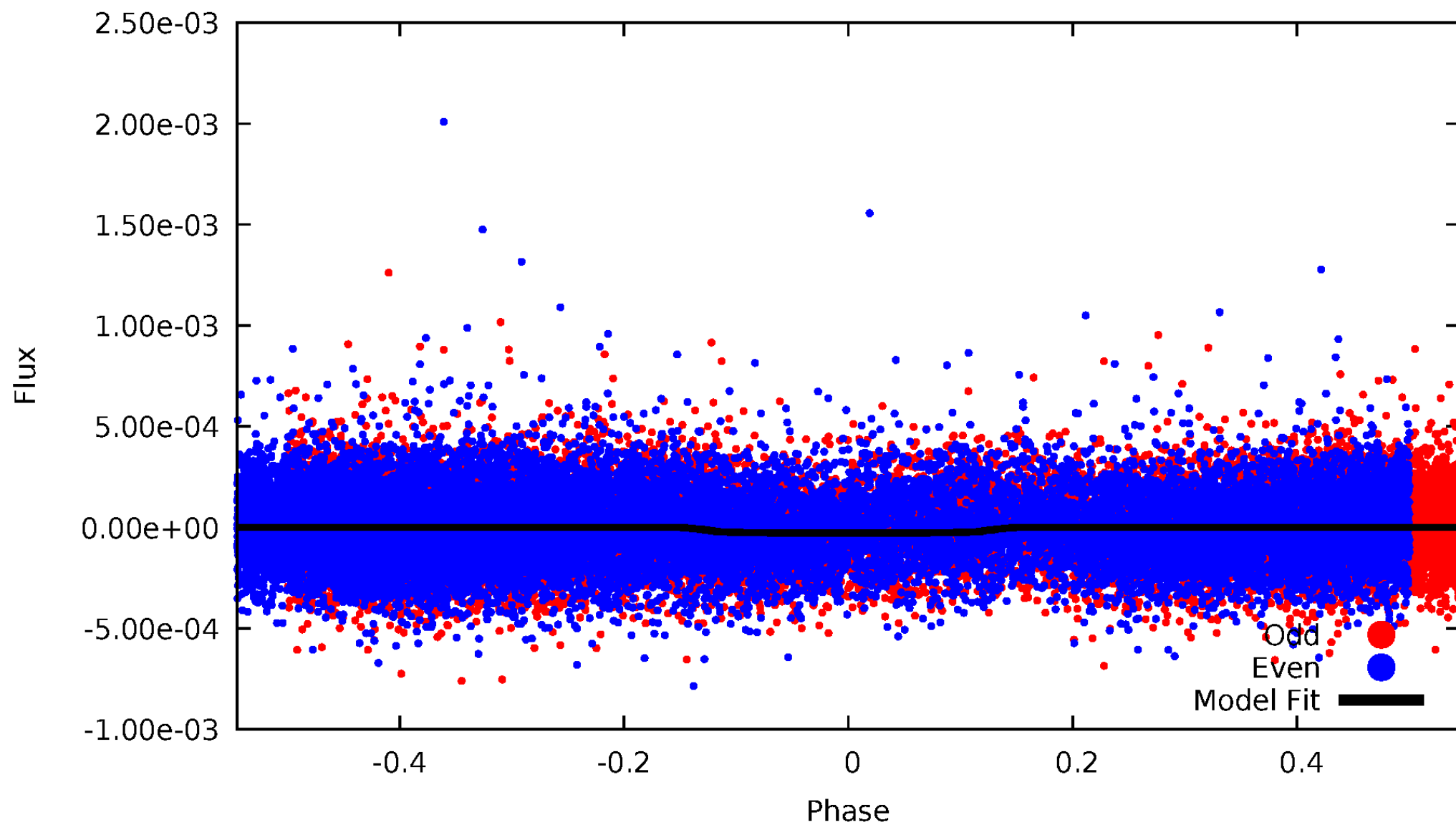


TCE 006060355-02



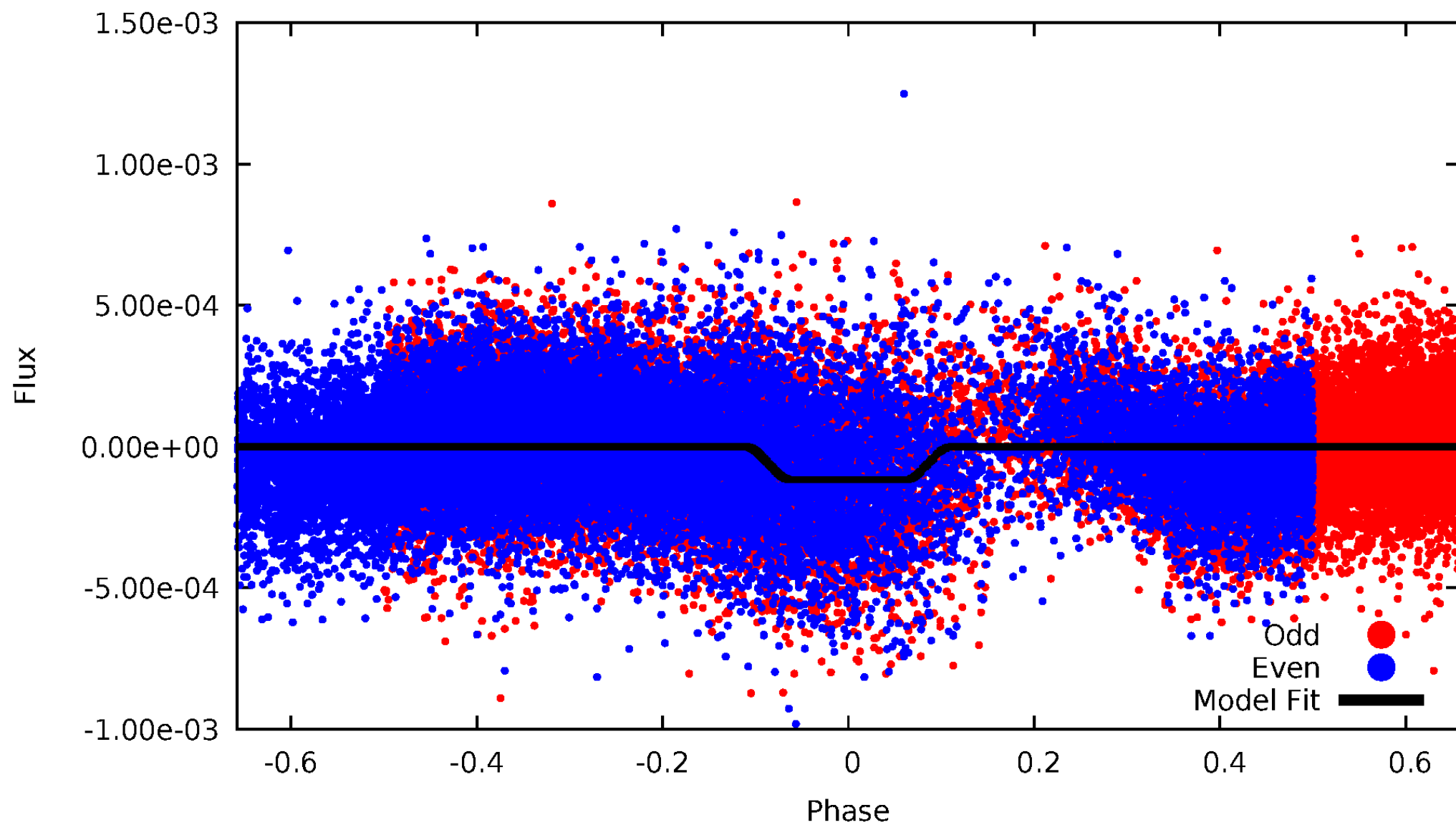
DV Odd/Even

TCE 006060355-02



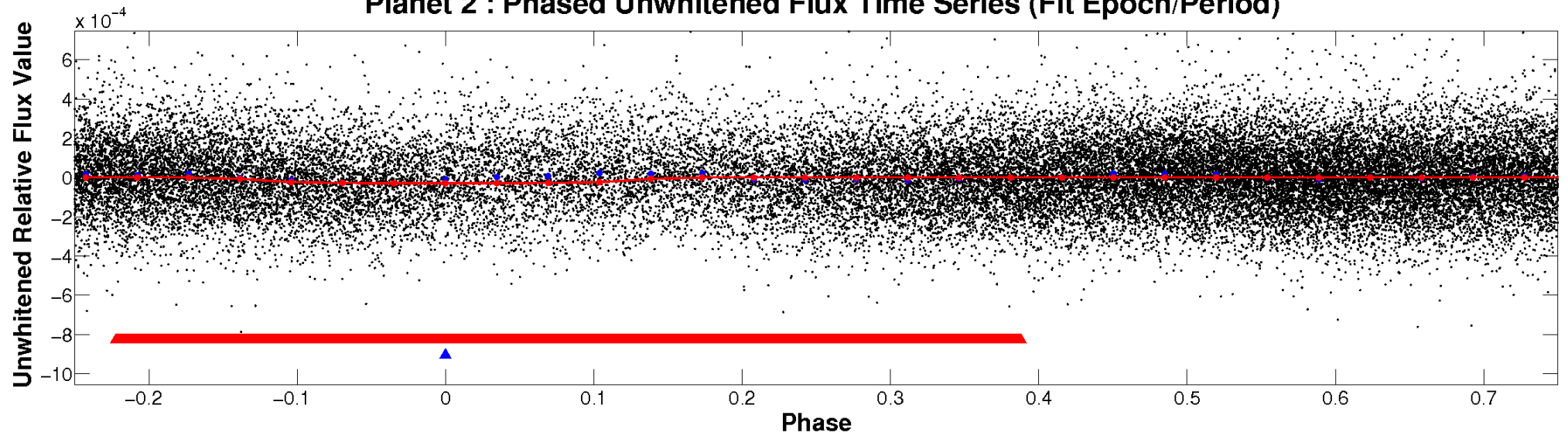
ALT Odd/Even

TCE 006060355-02

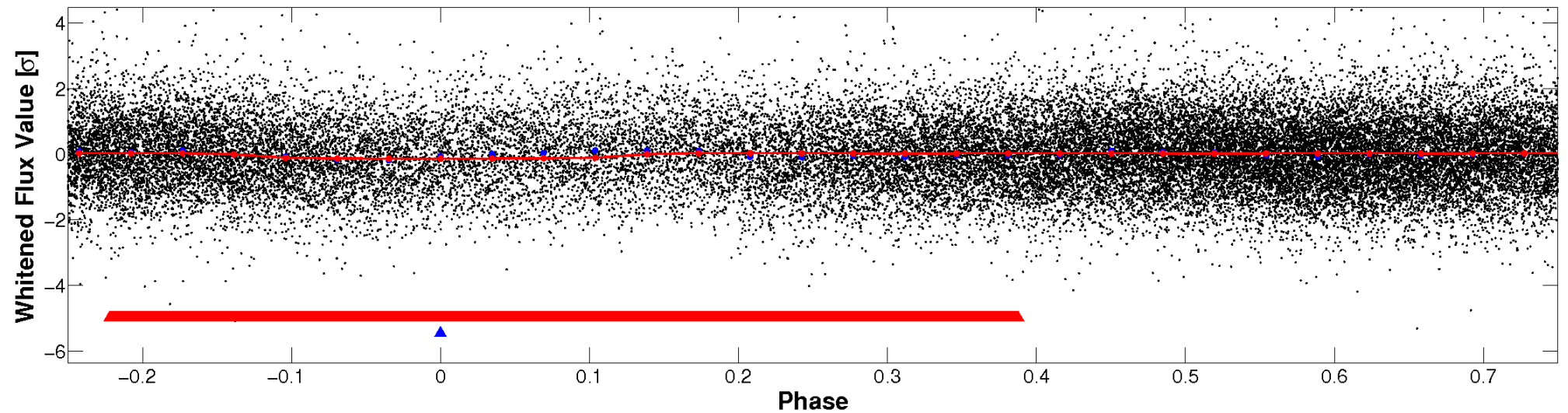


Non-Whitened Vs. Whitened Light Curve

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

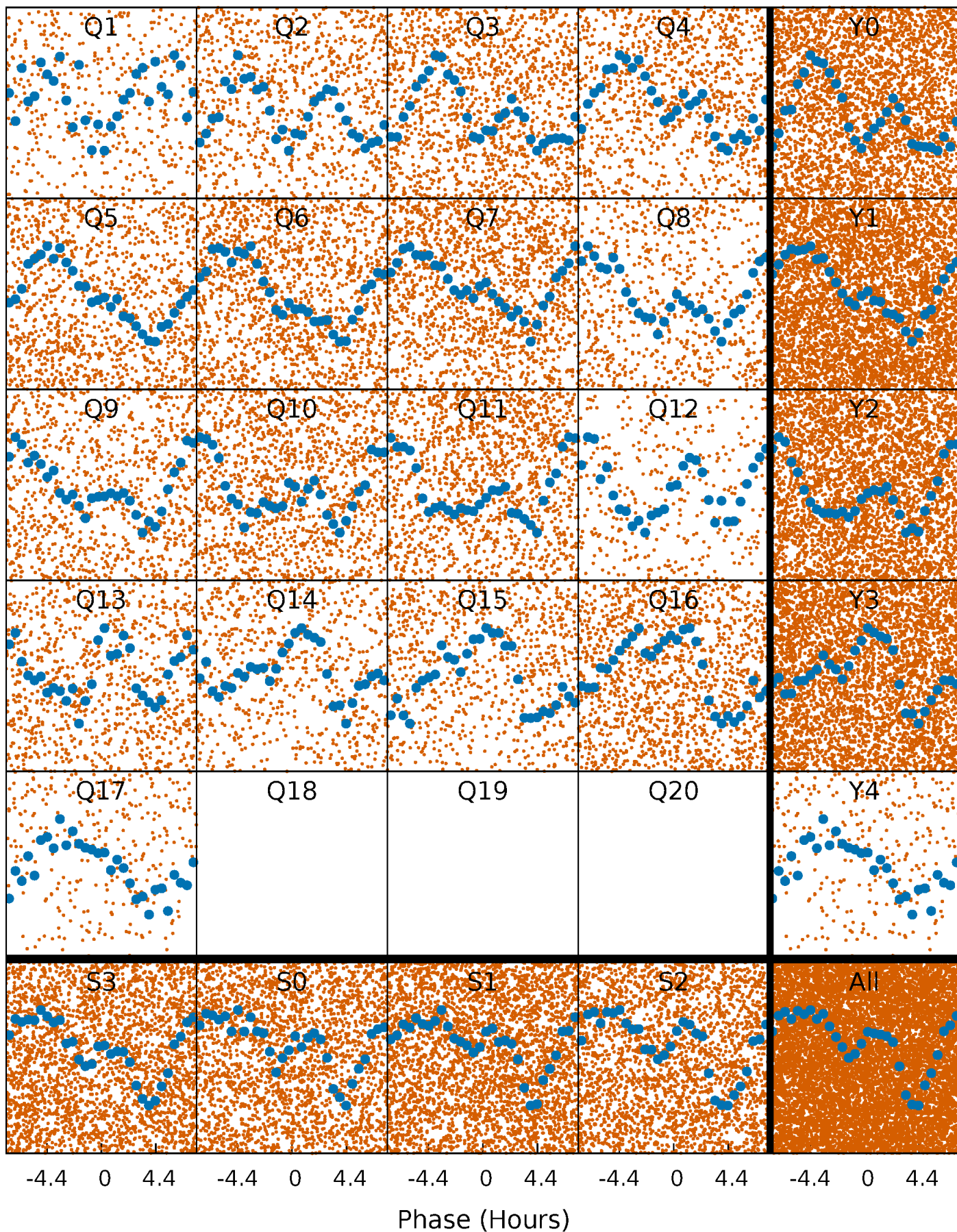


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



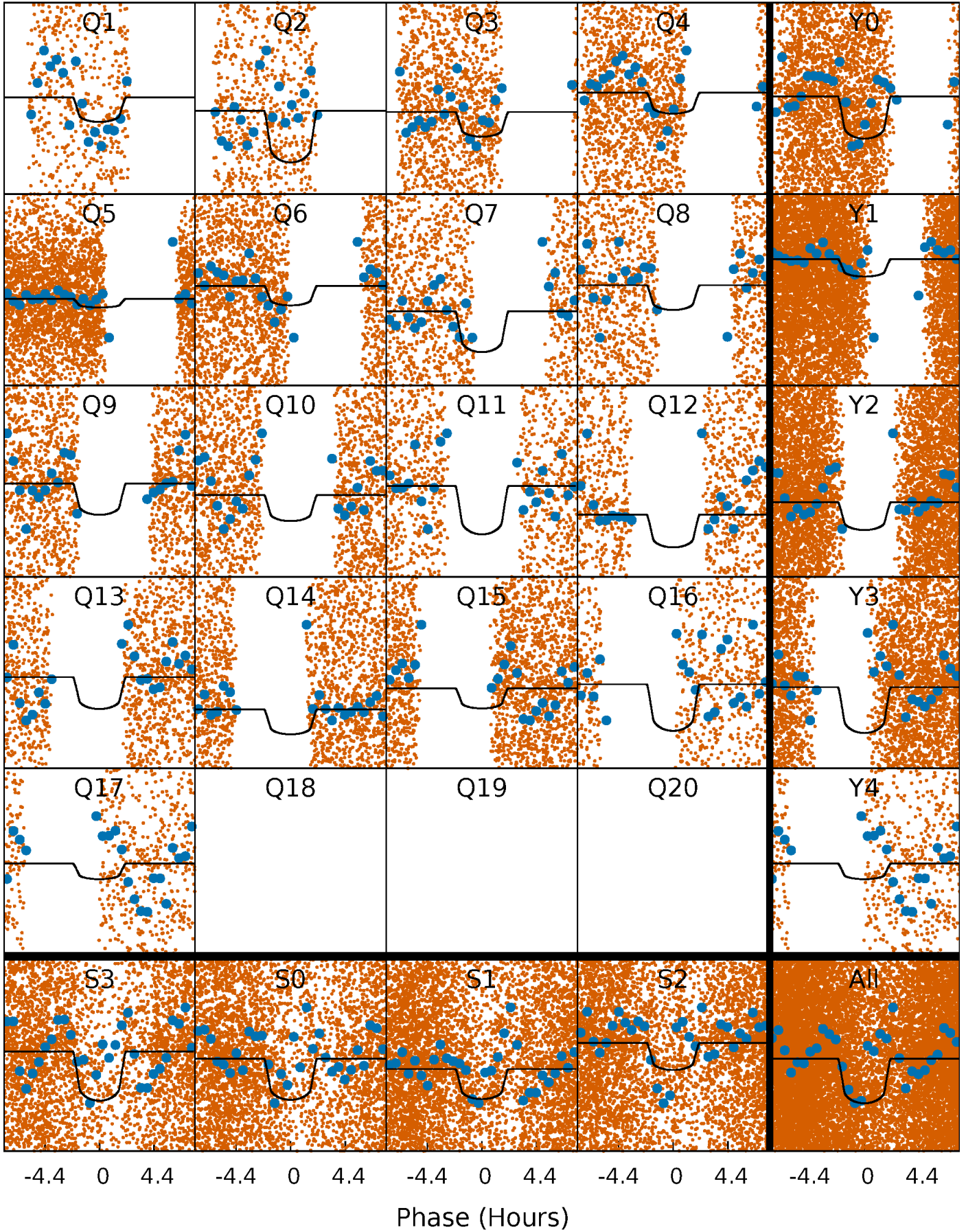
PDC Quarter-Phased Transit Curves

TCE 006060355-02 P= 0.589909 Days $T_0=131.681130$ (BKJD)



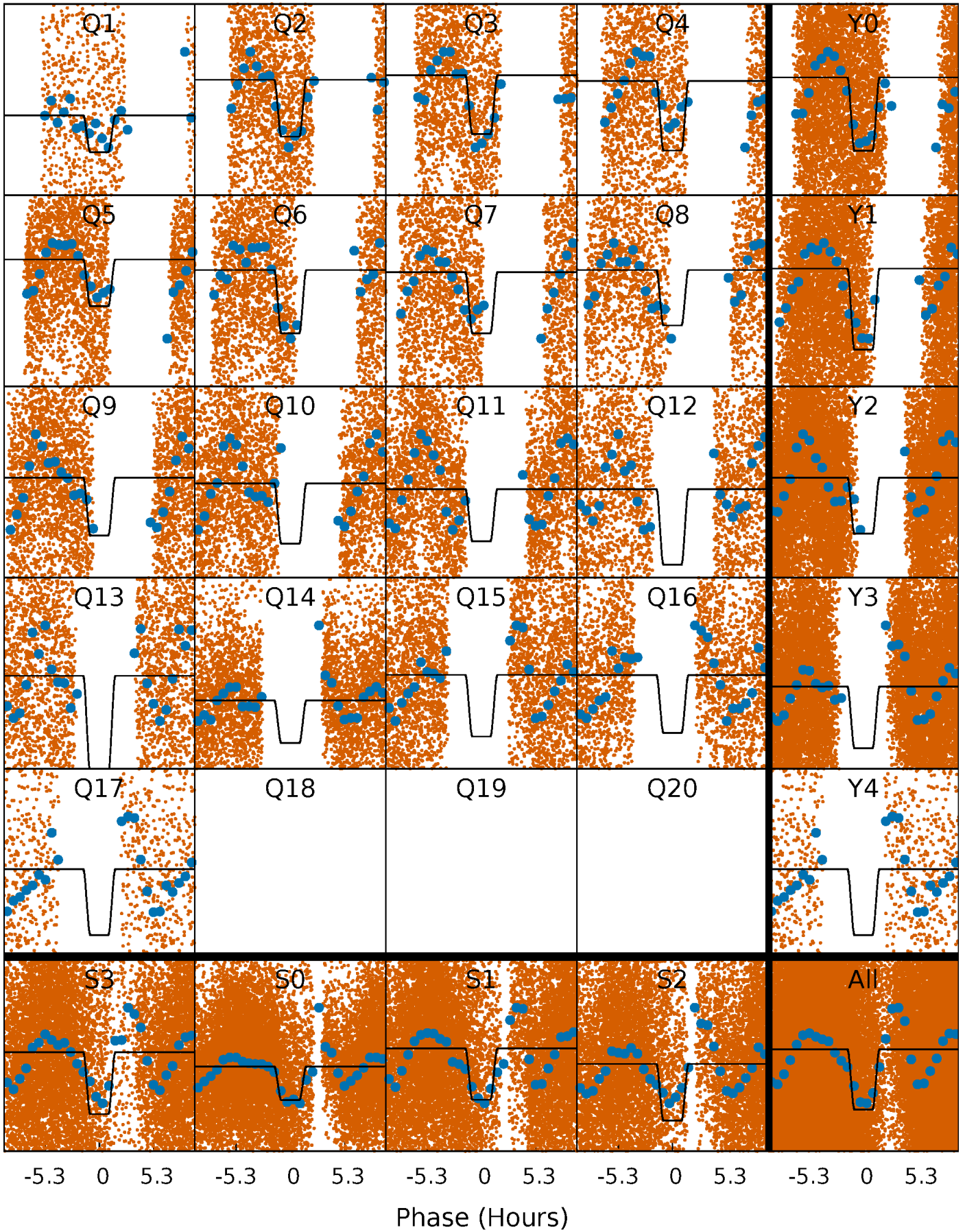
DV Quarter-Phased Transit Curves

TCE 006060355-02 P= 0.589909 Days $T_0=131.681130$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

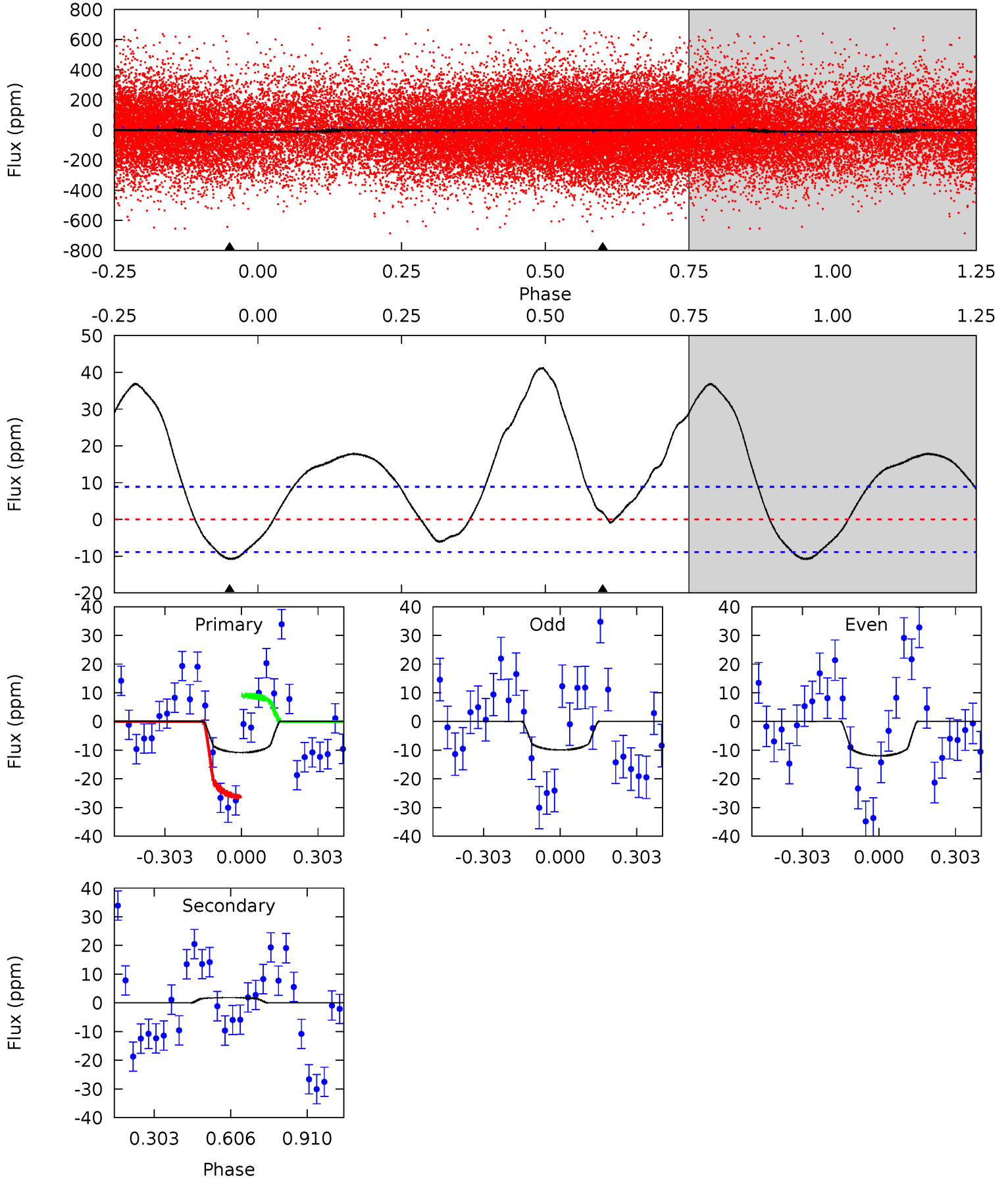
TCE 006060355-02 P= 0.589875 Days $T_0=131.677183$ (BKJD)



DV Model-Shift Uniqueness Test

006060355-02, P = 0.589909 Days, E = 131.091221 Days

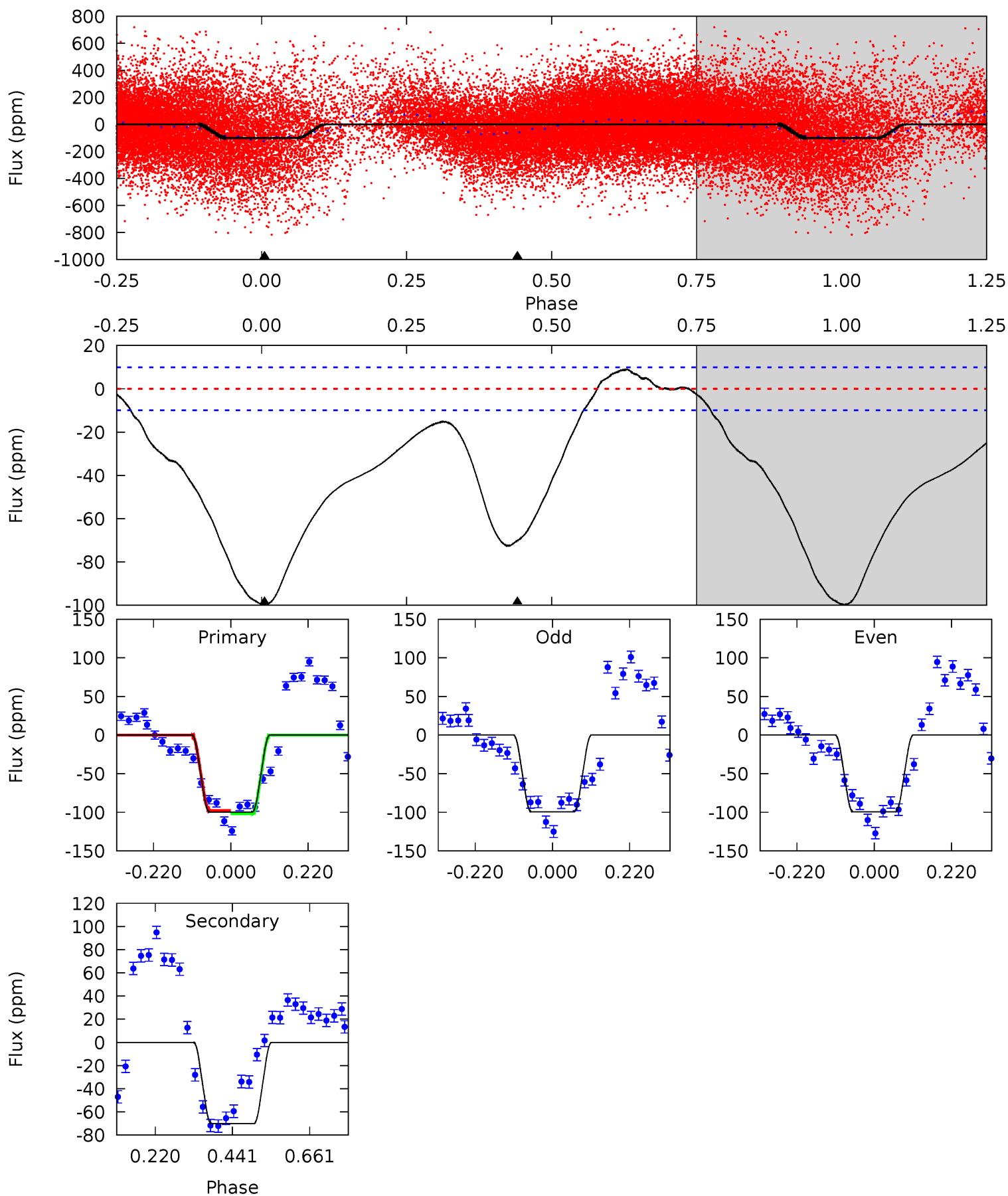
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.26	-0.90	0	0	4.33	1.03	3.40	5.26	5.26	-0.90	-0.90	0.50	0.22	0.79	4.04



Alt Model-Shift Uniqueness Test

006060355-02, P = 0.589875 Days, E = 131.087308 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44.2	31.1	0	0	4.40	1.23	1.89	44.2	44.2	31.1	31.1	0.02	1.01	0.08	0.88



Stellar Parameters For KIC 006060355

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6760^{+188}_{-235}	$4.318^{+0.116}_{-0.174}$	$-0.560^{+0.300}_{-0.300}$	$1.192^{+0.337}_{-0.182}$	$1.076^{+0.157}_{-0.128}$	$0.894^{+0.484}_{-0.431}$
	+3%/-3%	+3%/-4%	+54%/-54%	+28%/-15%	+15%/-12%	+54%/-48%
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 006060355-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	2 ± 2	$0.82^{+0.47}_{-0.44}$	3846^{+241}_{-214}	-4006^{+442}_{-1002}	$-0.252^{+0.256}_{-1.203}$
Alt.	-70 ± 2	$1.42^{+0.56}_{-0.47}$	3839^{+313}_{-207}	5795^{+1340}_{-802}	$3.749^{+4.691}_{-1.794}$

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 $A_{\text{obs}} \gg 1.0$

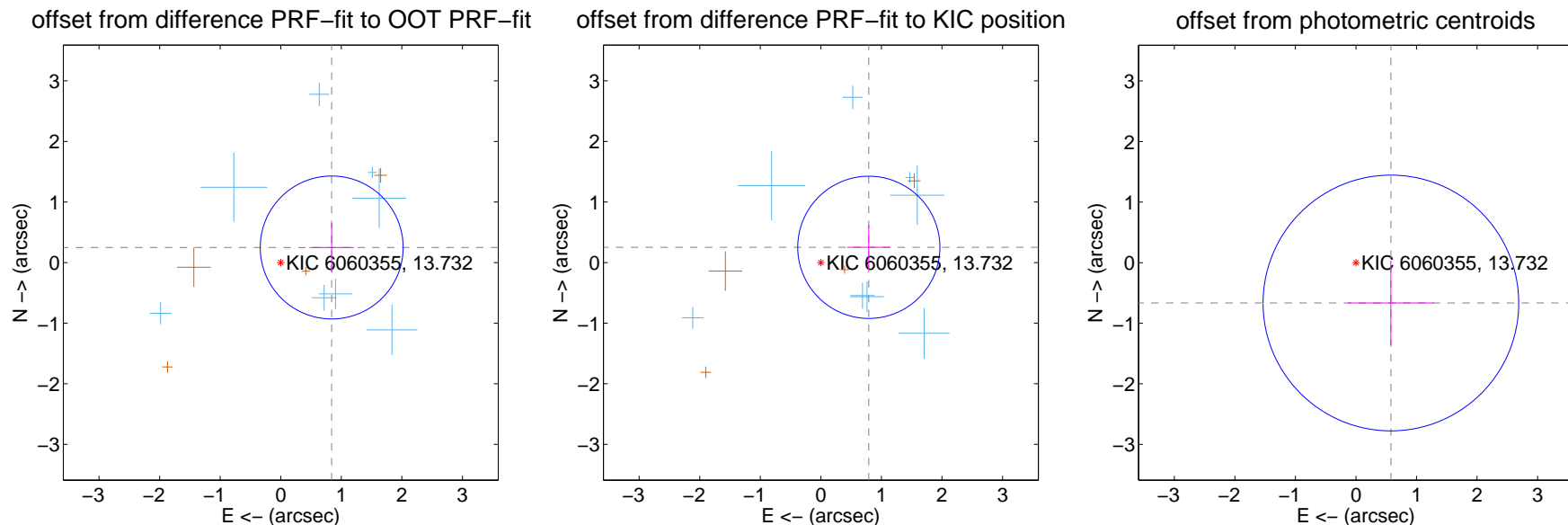
DV Centroid Data

Supplemental centroid analysis for 006060355-02. Kepler magnitude: 13.73. Transit SNR 9.88

There are 8 quarters with good PRF difference image offsets

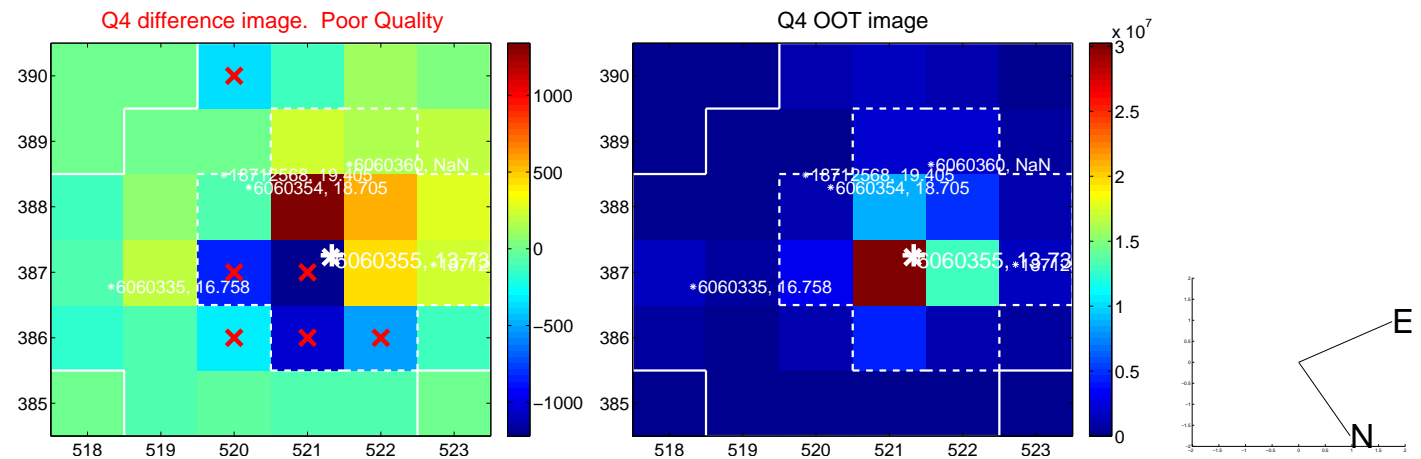
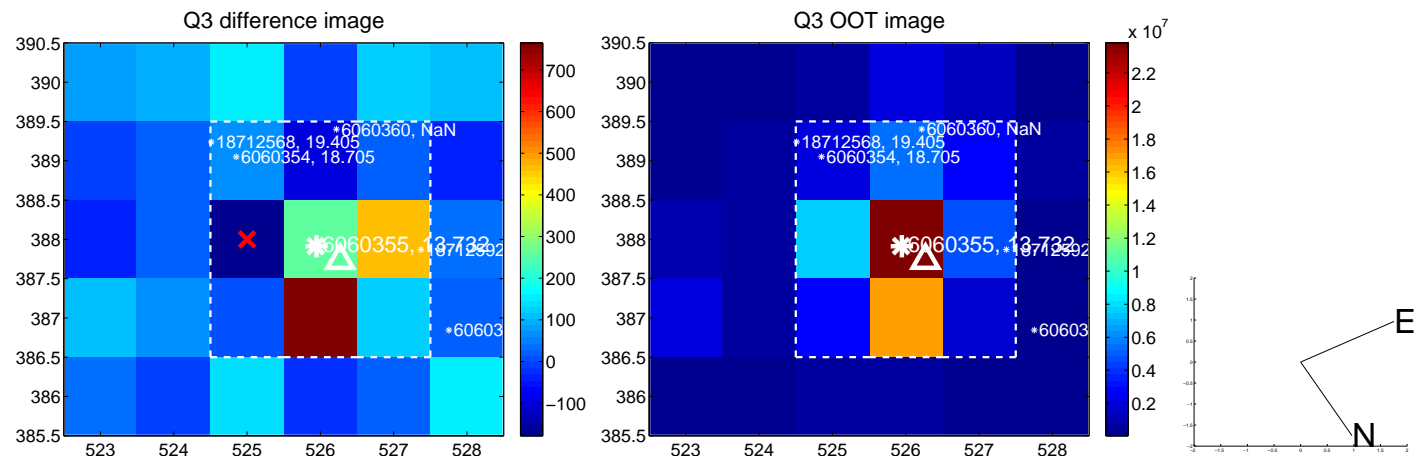
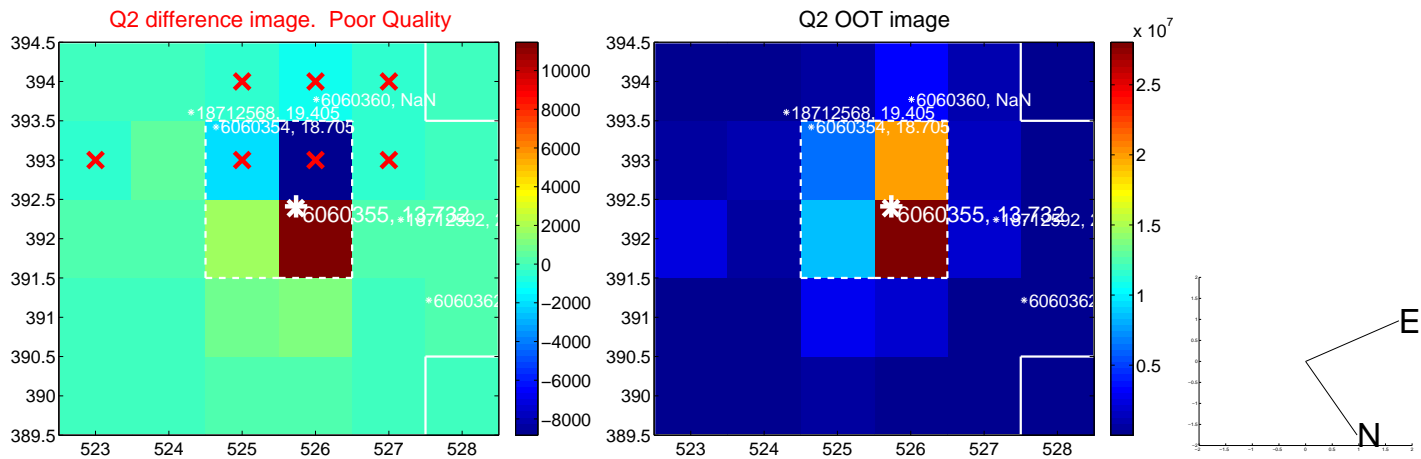
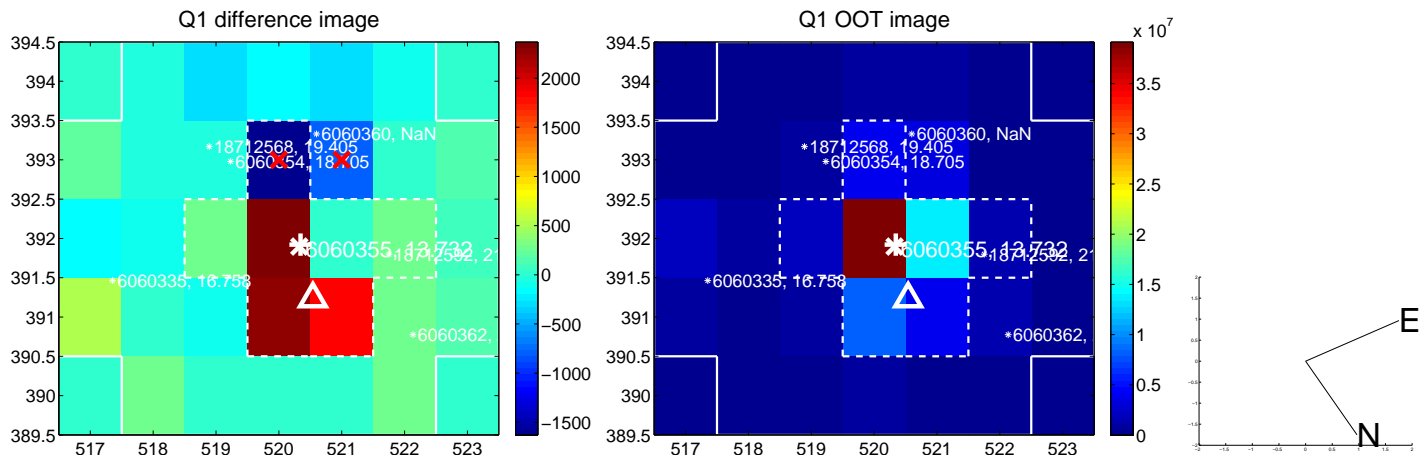
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.877 ± 0.393	2.23	-0.841 ± 0.364	0.249 ± 0.406
PRF-fit source offset from KIC position	0.831 ± 0.391	2.12	-0.792 ± 0.360	0.252 ± 0.366
photometric centroid source offset	0.88 ± 0.70	1.25	-0.58 ± 0.71	-0.67 ± 0.70

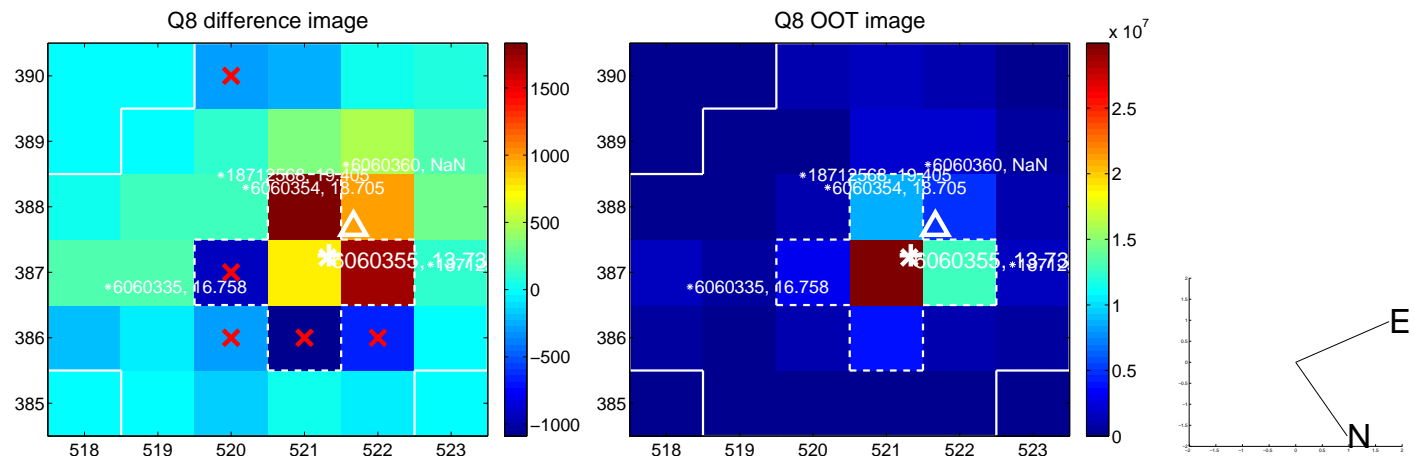
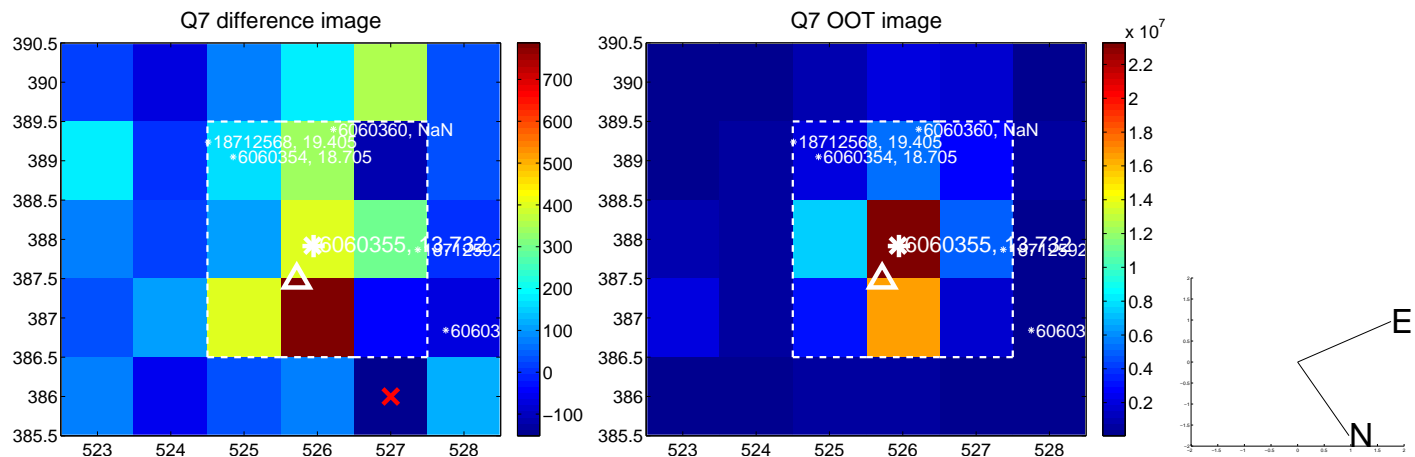
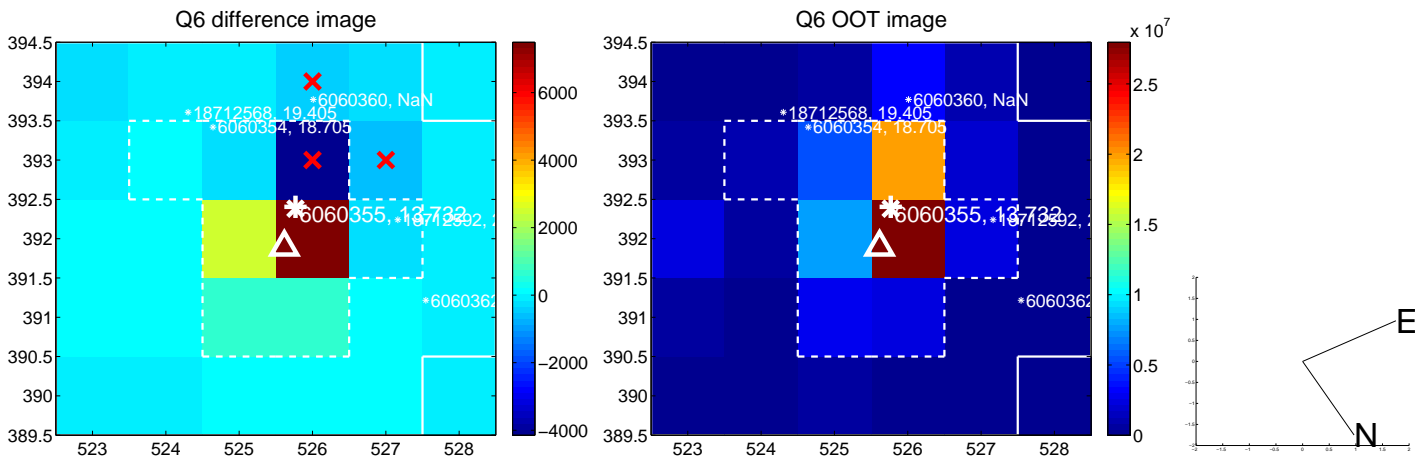
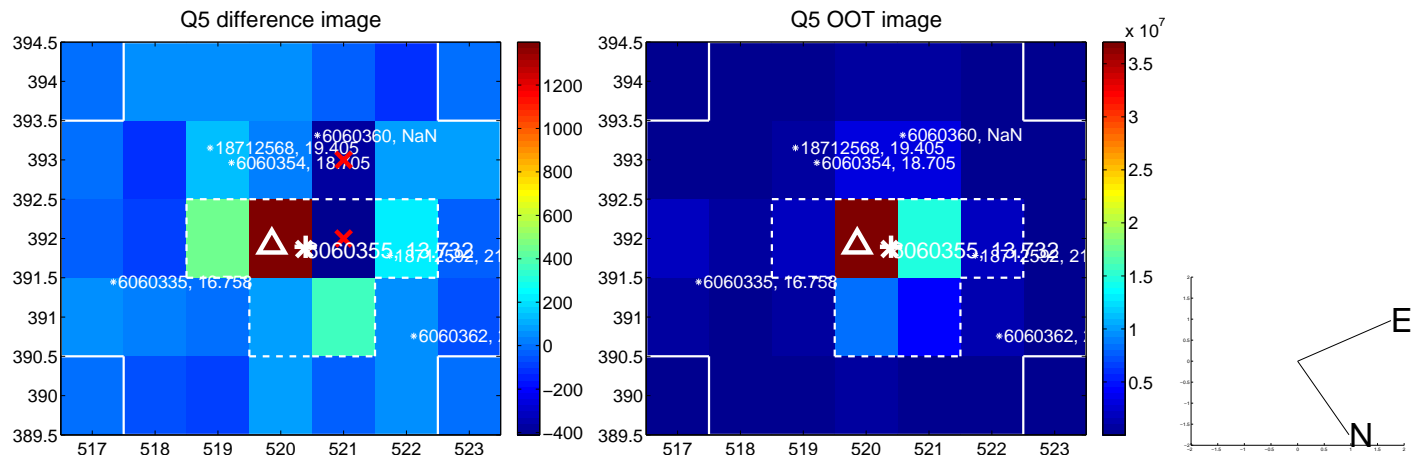


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

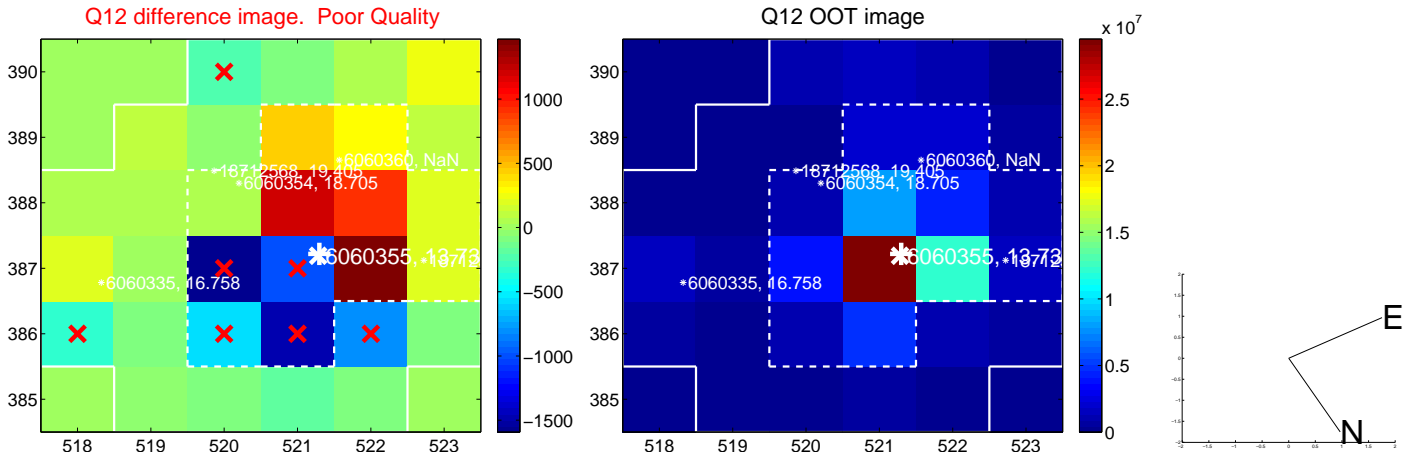
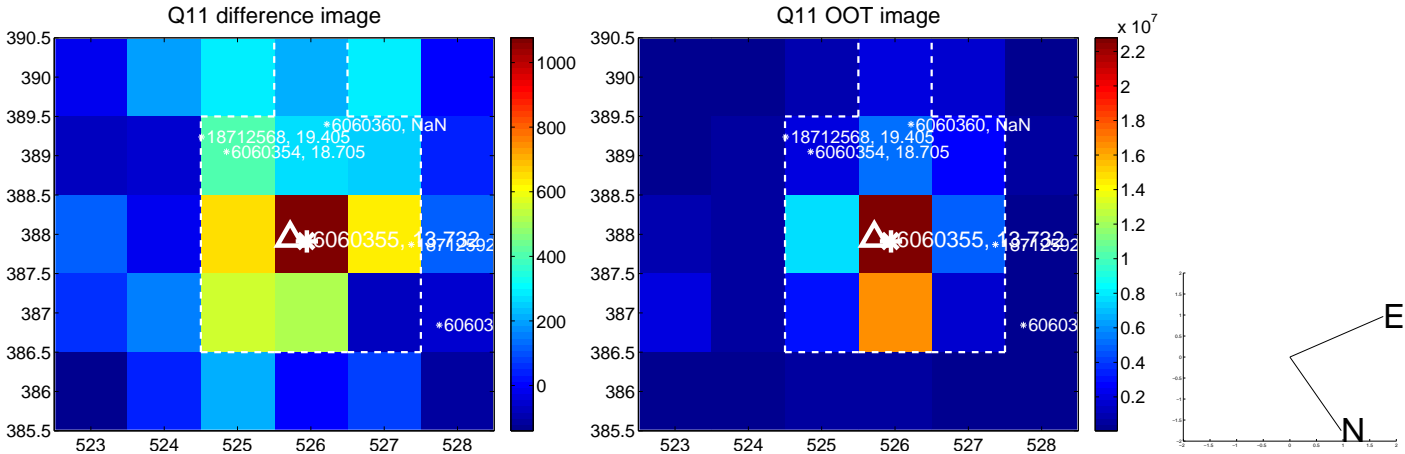
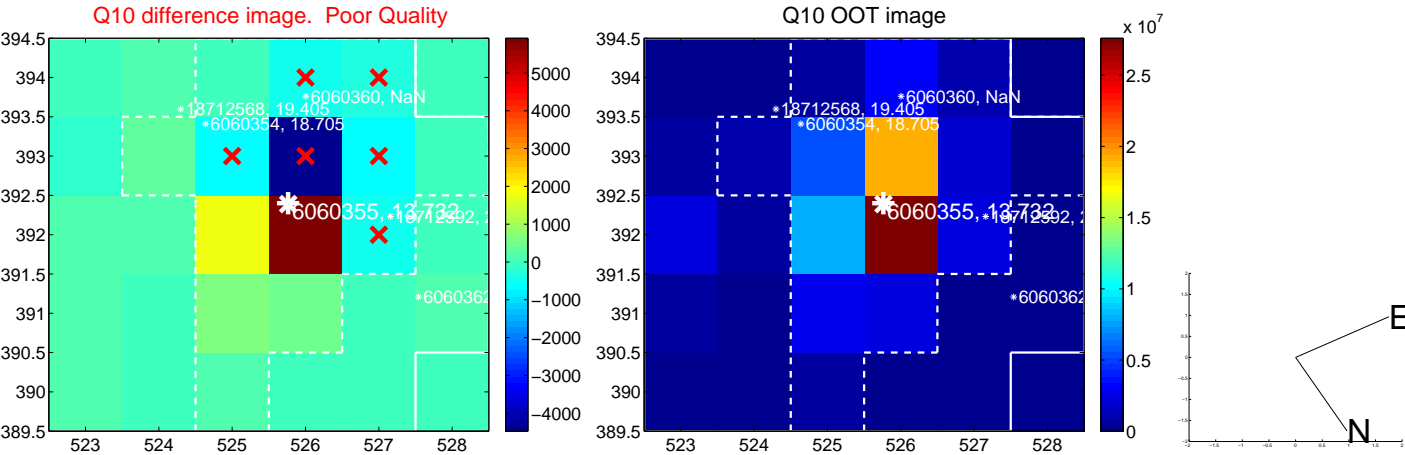
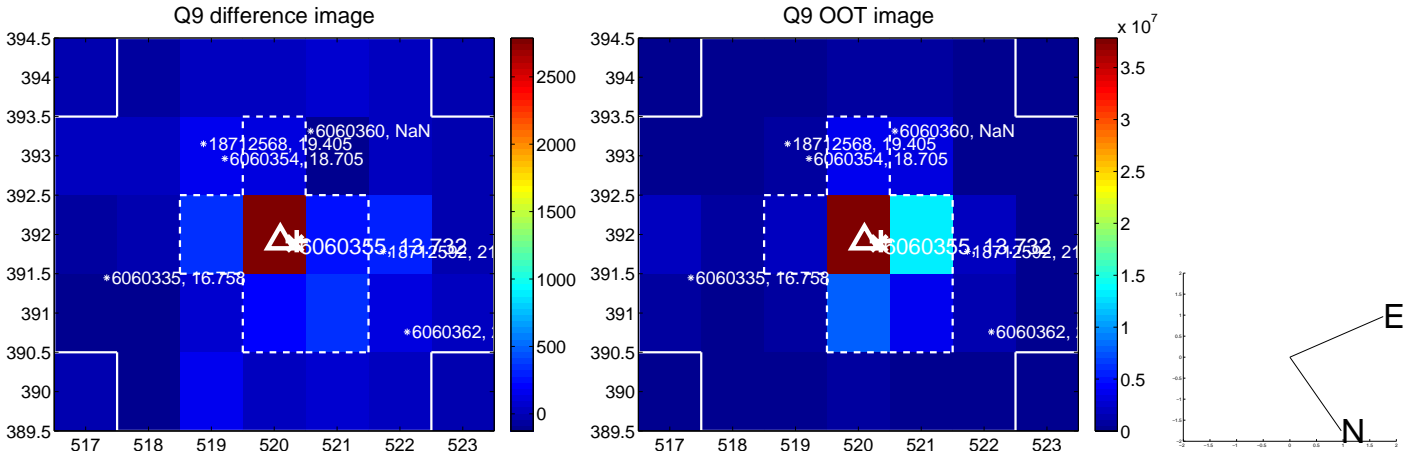
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



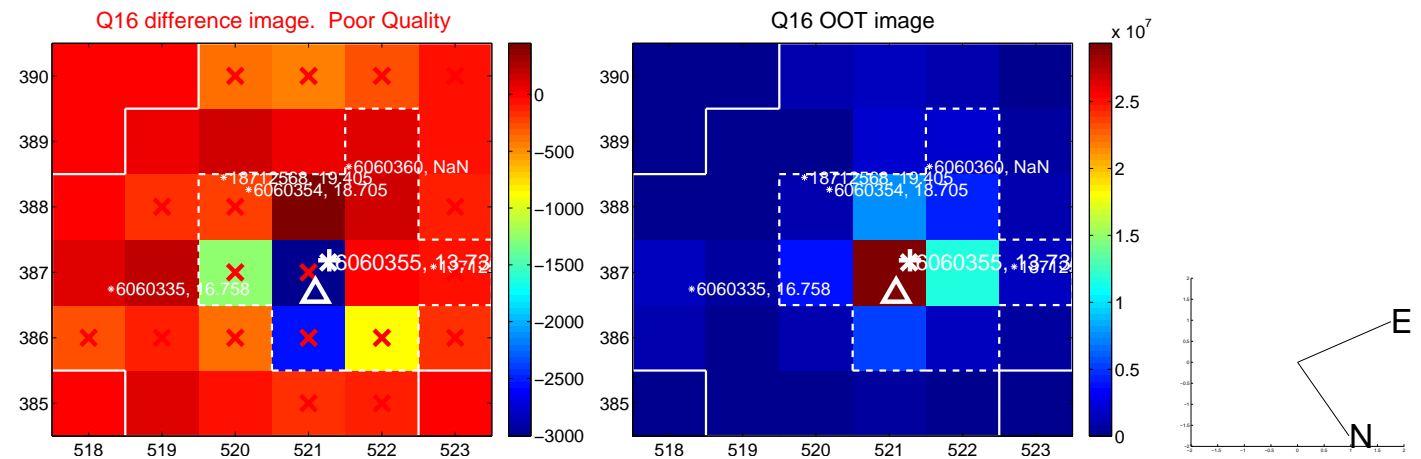
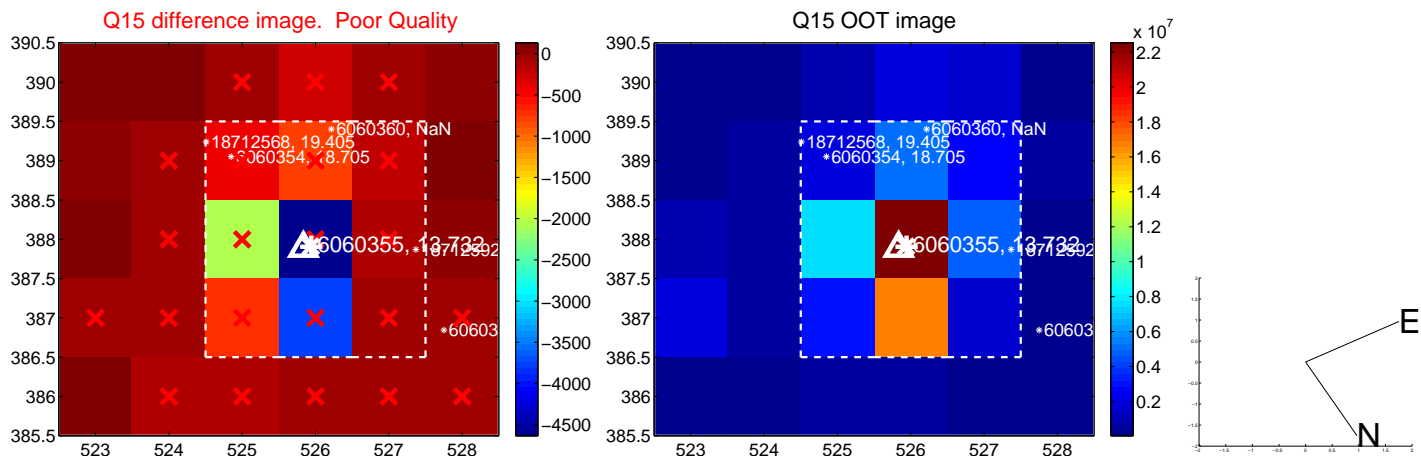
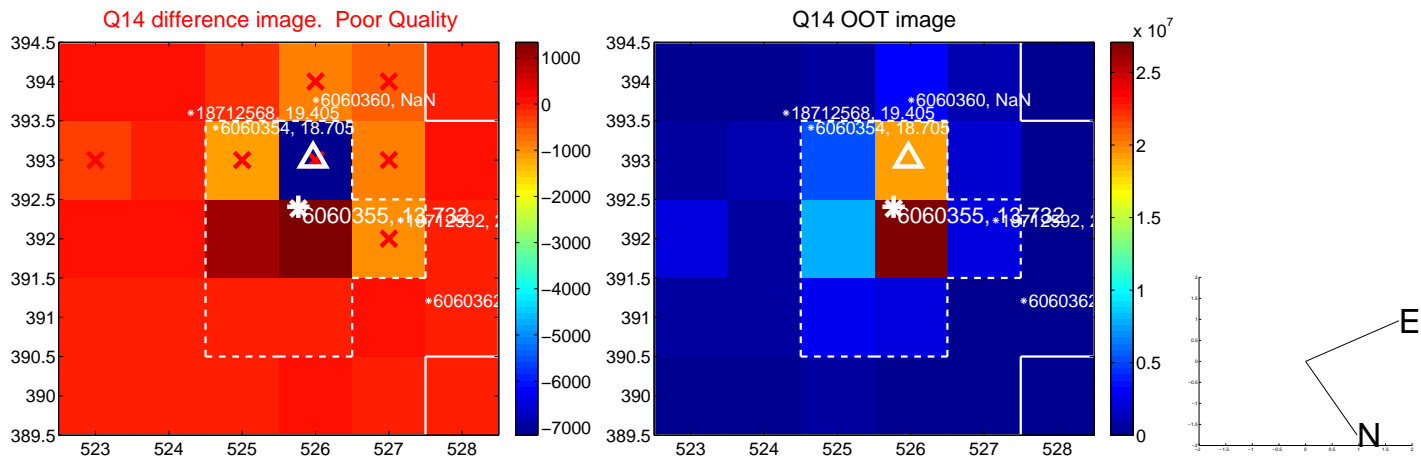
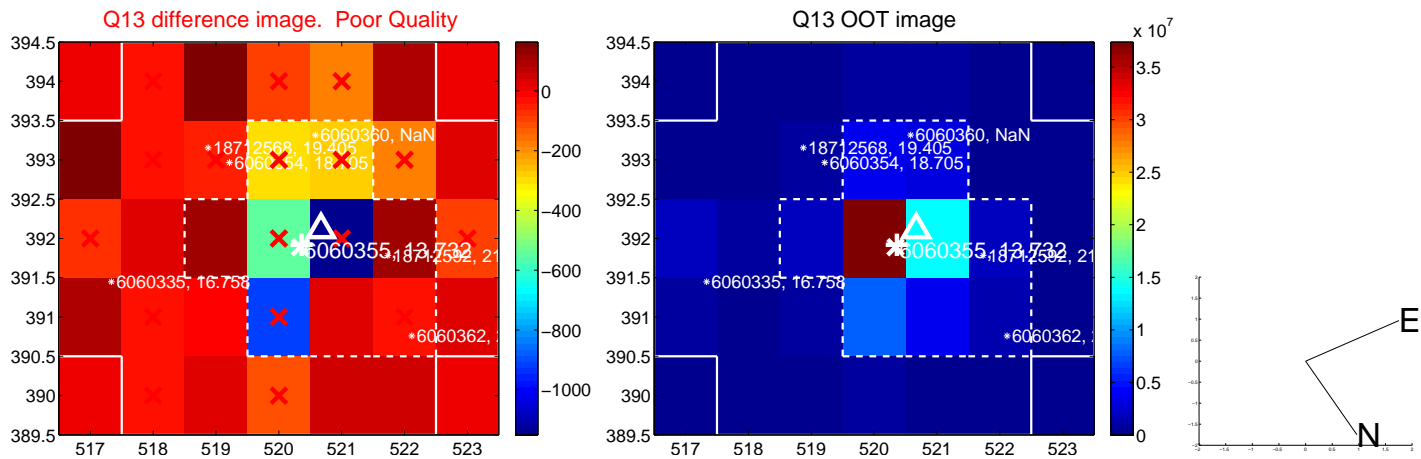
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



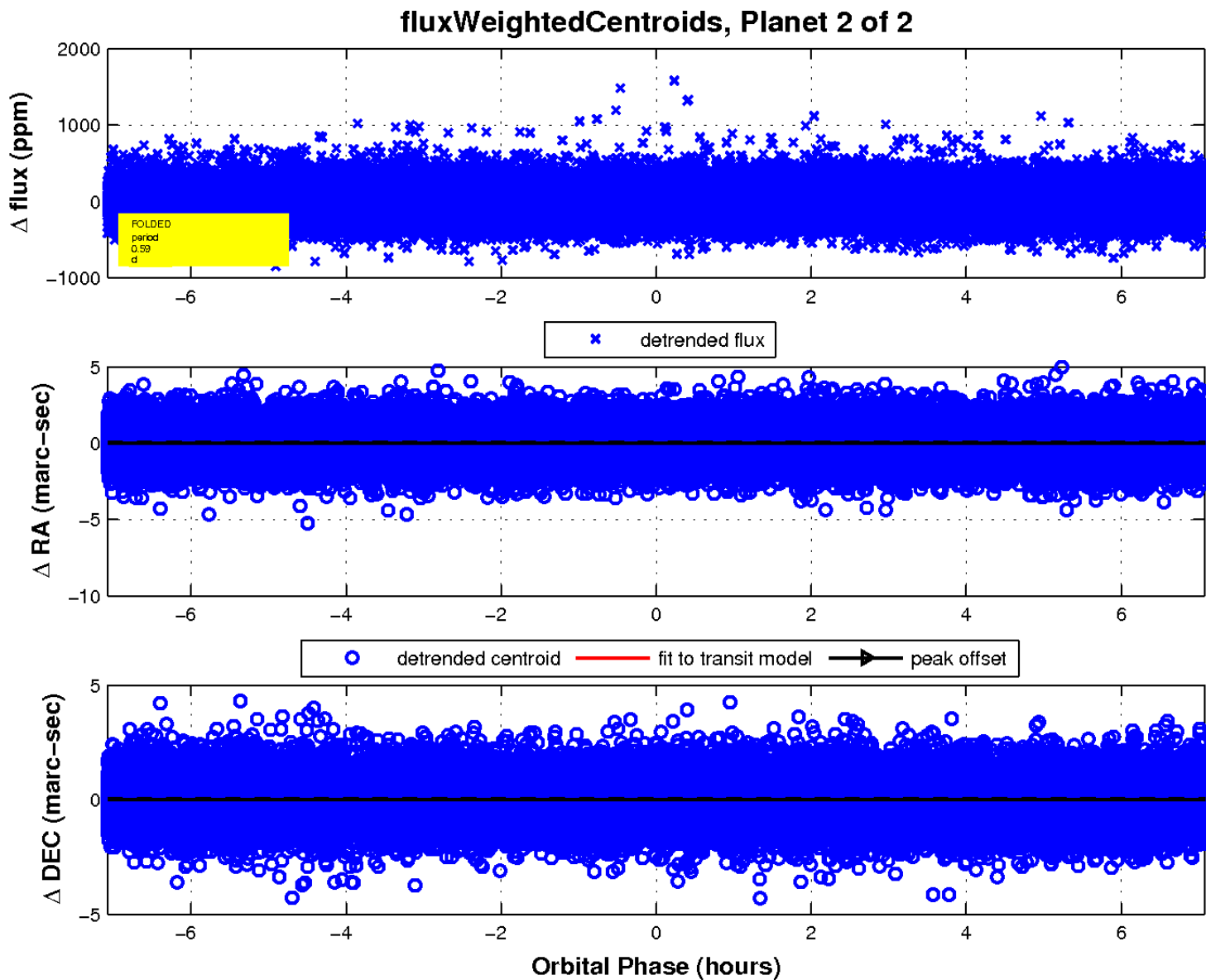
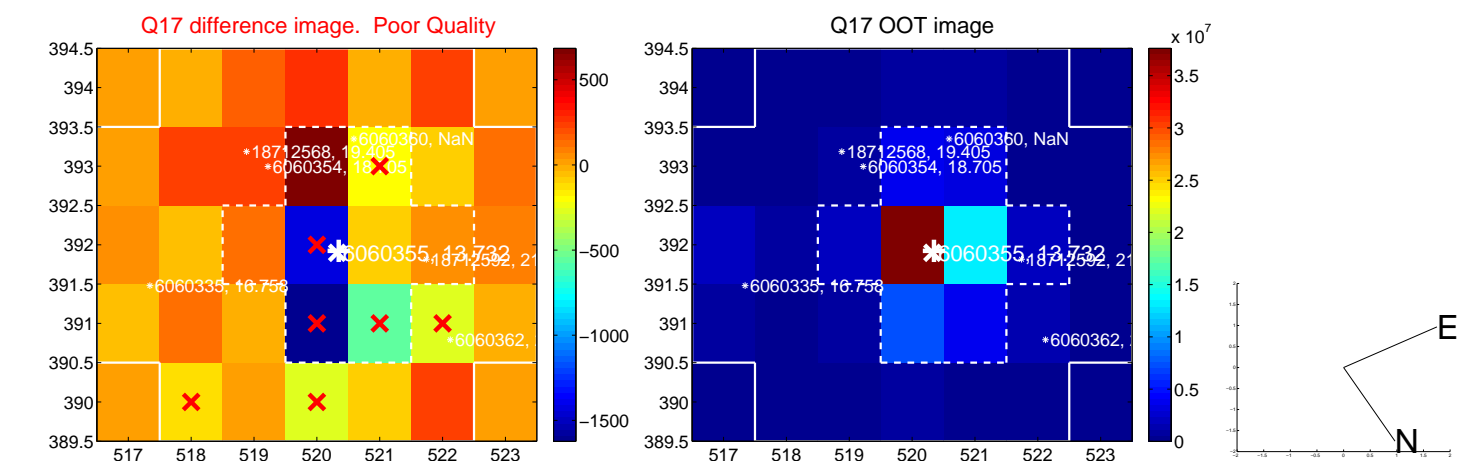
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

