2009 End-of-Course World Geography Online Comparability Study Report

11/17/2009

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Executive Summary

The World Geography End-of-Course (EOC) Assessment was first administered, as a stand-alone field test, in both online and paper modes in May 2009. The field-test samples were selected at the campus level. Each chosen campus was assigned to test in one mode (either online or paper). The campuses were selected such that both the online and paper samples included an adequate number of students representative of the students enrolled in the world geography course statewide (in terms of ethnicity composition). In addition, the online and paper samples were selected to be as similar as possible (in terms of number, campus size, and ethnicity composition).

To facilitate field-test equating, test construction, and future planning on comparability issues, a comparability study was designed and conducted to evaluate the potential mode effect for each of the world geography items and each of the field-test forms. Because there were no operational/base test forms, the focus of this study was on the item comparability. Three types of item-level comparison were performed:
- *Comparison of item p-values;*
- *Comparison of Rasch item difficulties (RIDs); and*
- *Mantel Haenszel (MH) differential item functioning (DIF) analysis.*

To make the comparisons more interpretable, a matched-samples approach was adopted, for which students who took the assessment on paper were matched to students who took the assessment online with the same estimated ability level, gender, and ethnicity. This approach have been used for evaluating the online and paper comparability for the Texas Assessment of Knowledge and Skills (TAKS) exit-level retests and the Texas English Language Proficiency Assessment System (TELPAS) reading assessments. This approach was desirable because it did not require randomly-equivalent groups, common students across modes, or common items across modes.

A total of 390 items were analyzed, and the results showed that 23 items (6%) were flagged for mode effects. Out of the 23 items, 17 items (74%) showed a mode effect favoring paper and 6 items (26%) showed a mode effect favoring online.

Although the focus of the study was item-level comparability, additional analyses were conducted to evaluate comparability for each pair of test forms (a total of 11 forms for each mode). In this study, each field-test form was treated as a test. Two types of test-level analysis were conducted to evaluate differences in student performance across modes:
- *Analysis of mean test scores; and*
- *Analysis of covariance (ANCOVA), using students' TAKS reading and math scores as covariates.*

Results of the test-level comparability analysis showed that the test-level mean scores were slightly lower for the online version of all the 11 forms, indicating that the online version of the tests tended to be slightly more challenging than the paper version. Only two forms, however, showed a significant difference between the online and paper versions when controlling for students' reading and math abilities as measured by their TAKS scores. In both cases, the online forms were more challenging than the corresponding paper forms.

Proper interpretation of the study findings should take into account the limitations of the study such as the use of field-test forms rather than operational tests. Results of the various comparability analyses may be used to facilitate operational test construction.

Introduction

The End-of-Course (EOC) program will replace the Texas Assessment of Knowledge and Skills (TAKS) program at the high school level and be used as a graduation requirement beginning with 9th grade students in the 2011–2012 school year. The Texas legislation requires the assessments to be capable of being administered by computer. However, campuses cannot be required to test by computer. Therefore, the assessments will be offered both online and on paper. Addressing comparability across testing modes is hence vital to the fairness of the assessment and legal defensibility of the testing program.

The EOC assessment in world geography was first administered, as a stand-alone field test, both online and on paper in May 2009. Although 12 forms were administered in each mode, one online form (*Form 9*) was discontinued during the first week of administration due to unexpected events resulting in a large number of school closures. As shown in Figure 1, each form was composed of two types of items: linking items and non-linking items. Specifically, each form contained 60 multiple-choice items, 25 of which were linking items across forms. These linking items were the same across forms and across modes (in terms of content and item positions). Most non-linking items were unique but few non-linking items appeared on multiple forms.
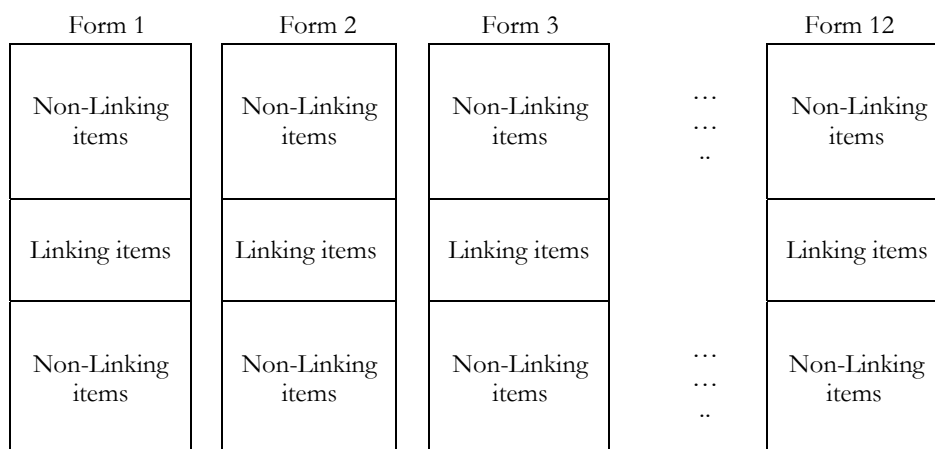
Figure1. Form Design for EOC Stand-Alone Field Tests in World Geography

The EOC world geography field test was mandatory for selected campuses. Procedurally, sampling was conducted at the campus level. Each chosen campus was assigned to test in one mode (either online or paper). Both the online and paper samples were selected to be similar to the ethnic representation of students enrolled in world geography statewide. In addition, the samples were selected such that the online and paper samples were as similar as possible in terms of the campus size, ethnicity composition, and the total numbers of campuses and students to be tested. The samples were limited to high school campuses.

This comparability study was conducted at two levels, item level and test level, with different approaches being used in each level of the analyses. Methodologies and findings are reported in the following sections.

Part I. Item-Level Analysis

The main purpose of this study was to investigate the item comparability as the intention of this world geography administration was to collect data for field-test items prior to the development of operational tests. Except for the non-linking items on Form 9 (with an extremely low n-count for the online mode), items were evaluated one-by-one for potential mode effects. A total of 390 items were analyzed in the study, with analysis procedures varying slightly for the linking items than for the non-linking items.

Methodology

Given that the samples were selected at the campus level based on 2007 enrollment data, it was possible that the groups of students that took the world geography field test in 2009 in each mode were not equivalent. Therefore, the approach of matched samples comparability analyses (MSCA; Way, Davis, & Fitzpatrick 2006), which had been successfully implemented in the comparability studies for TAKS and TELPAS, was partially adopted in the current study. This approach was desirable because it did not require randomly-equivalent groups, common students across modes, or common items across modes.

Based on the matched samples obtained through the MSCA procedures, three types of item-level analyses were conducted: analysis of item p-values, analysis of Rasch item difficulties, and differential item functioning (DIF) analysis.

Obtaining Matched Samples

The traditional MSCA method proceeds by drawing a sample of students testing in one mode and matching them to students taking the test in the other mode based on a set of matching variables. In the current study, three matching variables were used: students' grade 9 TAKS reading and math scores from the 2009 spring administration, gender, and ethnicity. Given that the number of students taking the online version was larger than the number of students that took the paper version, the online group was treated as the primary group in the analysis, and each student from the paper group was matched to a student from the online group with an identical profile on the matching variables.

Procedurally, the online group was selected first to establish a regression model and the resulting regression weights were applied to all students including those in the paper group. Students were then divided into smaller groups based on their predicted world geography raw scores from the regression model and other defined matching variables. Following the grouping procedures, a bootstrap sampling approach was conducted to select online and paper samples where each selected paper student was matched to an online student with the same ability level (based on students' TAKS scores) and demographic variables. Once both the paper and online matched samples were selected three analyses were conducted. Rasch item difficulty (RID) estimates were obtained using the Rasch measurement model, item p-values were calculated, and DIF analysis was conducted.

The process for obtaining matched samples can be summarized in the following steps:

1. A data file was created containing the records of students eligible for inclusion in the analysis. Note that students must have met certain criteria to be eligible such as having complete information about their gender, ethnicity, and TAKS scores. Given that over 90%

of the students who had taken the world geography assessments were 9th graders, only grade 9 students were included in the MSCA.

2. For students who tested in the online mode, their scores were regressed on their 2009 TAKS scores. In other words, the ability matching was based on a composite score, the estimated world geography raw scores (expressed below as $\hat{Y}_{predicted\_WGscore}$), predicted through a regression approach, where the independent variables included the students' 2009 TAKS reading and math scores.

$$\hat{Y}_{predicted\_WGscore} = \beta_0 + \beta_1 X_{1(Reading)} + \beta_2 X_{2(Math)} \qquad (1)$$

Once the regression models were established for the students testing online, these same models (regression weights) were applied to students who took the world geography assessment on paper.

3. All the students were broken into 20 groups based on their estimated raw scores. The grouping resulted in a 20 (score groups) x 2 (gender) x 4 (ethnicity) grid. Students from the paper group were deleted when there was not a student who tested online in the same cell. The paper group of students was then separated from the online group of students to form the base paper sample and base online sample.

4. A bootstrap sampling procedure was followed such that a sample of students testing on paper was first drawn with the sample size equal to the number of the paper base sample, and then, a sample of students testing online was drawn with the same sample size and the same profile composition (ability level, gender, and ethnicity) as the sample drawn in the previous step. Using these matched samples, the analyses of item p-values, Rasch item difficulties, and DIF were performed. The same procedure was repeated for 100 times and the appropriate statistics, such as the item difficulty estimates and bootstrap standard errors, were averaged across the replications.

Analysis of Item P-values

At each iteration, the item p-value, or the proportion of students who correctly answer the item (i.e., item mean), for the online and paper matched groups, along with the p-value difference, were calculated. The effect size of the p-value difference between the two modes was then calculated by the following equation:

$$d = \frac{\overline{X}_{Online} - \overline{X}_{Paper}}{\sqrt{\frac{(SD^2_{Online} + SD^2_{Paper})}{2}}} \qquad (2)$$

The final effect size was determined by the average of the effect sizes over the replications. After the 100 replications, a significance test was performed using the following test statistic:

$$Z_{dif} = \frac{\overline{D}_{Diff}}{\sqrt{SE^2_{Diff}}} \qquad (3)$$

where $\overline{D}_{Diff}$ was the mean of the differences between the online and paper p-values over the replications; and SE_{diff} was the bootstrap standard error of the mean differences over the replications.

Analysis of Rasch Item Difficulties

At each iteration, separate WINSTEPS calibrations were conducted to obtain Rasch item difficulty estimates for the matched online and paper groups. The differences in RIDs between groups were calculated. Using Equations 2 and 3, the effect size of RID difference was obtained at each iteration and averaged across the iterations, and a significance test was performed for each item across the iterations.

Differential Item Functioning Analysis

DIF analysis by testing mode was conducted using Mantel Haenszel (MH) approach (Holland & Thayer, 1988). The traditional MH procedure is to detect differential item functioning between two groups for a dichotomously scored test item by summarizing test data in a form of a 2 (scoring categories) x 2 (groups) x k (categories in matching criterion) contingency table.

As shown in the table below, the MH analysis involved the construction of a contingency table which gave the count of correct (1) and incorrect (0) responses. These counts can be broken up by the group indictor (focal and reference groups) and the matching criterion (*k* categories).

Response to item *i* for the *j*th matching category			
	Correct(1)	Incorrect(0)	Total
Reference Group (*online*)	a_j	b_j	n_{rj}
Focal Group (*paper*)	c_j	d_j	n_{fj}
Total	n_{1j}	n_{0j}	n_j

In the current study, the online group was treated as the "reference group" and the paper group was treated as the "focal group". The estimated world geography raw score (y-hat) was used as the external matching criterion in the computation of MH common odds ratios.

At each iteration, a MH common odds-ratio for each item was computed using the following equation. The estimate of the common odds-ratio for item *j* was obtained by

$$\hat{\alpha}_{MH} = \frac{\sum_{j=1}^{k}\left(\dfrac{a_j d_j}{n_j}\right)}{\sum_{j=1}^{k}\left(\dfrac{b_j c_j}{n_j}\right)} \qquad (4)$$

where a_j, b_j, c_j, and d_j were defined in the 2 x 2 contingency table, $n_j = a_j + b_j + c_j + d_j$, and *j* was the *j*th category in the matching criterion (*j*= 1, 2, .. *k*).

For each item, a signed index on a scale of log-odds-ratio was computed by taking the natural-log of the common odds ratio.

$$\hat{\beta} = \mathrm{Ln}(\hat{\alpha}_{MH}) \qquad (5)$$

This signed index was then transformed a quantity Δ_{MH} by multiply by -2.35:

$$\Delta_{MH} = -2.35\ \hat{\beta} \qquad (6)$$

A positive value of Δ_{MH} was an indication of possible mode effect favoring the paper group whereas a negative value was an indication of possible mode effect favoring the online group. Because the chi-square test is sensitive to sample size and the sample size was rather large in this study, significance tests based on MH chi-square were not conducted. Instead, the 95% confidence intervals for Δ_{MH} were used for examining statistically significant DIF. After 100 replications, the median value of MH alpha (and the corresponding Δ_{MH}, and confidence interval) were used as the final results.

The DIF item classification system used in Educational Testing Service (Dorans & Holland, 1993; Zieky, 1993) were adopted here. Specifically, an item was classified as a "C" item (indicative of large DIF) when its absolute value of Δ_{MH} was greater than 1.5 and significantly greater than 1.0. Any items with value of Δ_{MH} less than 1.0 in magnitude or not significantly different from zero were considered negligible for DIF. These items were classified as "A" items. All remaining items with values greater 1.0 but less than 1.5 or not significantly different from 1, which indicated slight to moderate DIF, were classified as "B" items. Additionally, the plus sign associated with item category (e.g., "B+") indicated possible mode effect favoring the paper group, and the minus sign (e.g., "B-") indicated possible mode effect favoring the online group.

Differences in Analyzing Linking and Non-Linking Items

As mentioned previously, each test form contained 25 linking items and 35 non-linking items. The analysis procedures for these two types of items were slightly different. Because the linking items were the same across forms, the student data from all the 12 forms were combined in the analyses. For non-linking items, however, only the students who took the specific form on which a non-linking item was presented were included in the analyses. This difference was reflected in the procedures for obtaining matched samples. As a result, the sample size for the linking items was much larger than that for the non-linking items. For the non-linking items that appeared on multiple forms, item statistics from the form with the largest n-count were used.

Evaluation Criteria

To evaluate the comparability between the paper and online modes for each world geography item, both statistical and practical significance were considered. Criteria are listed below for each type of analyses.

(a) Item p-values were computed separately for the matched online and paper samples and compared using the following criteria:
  - Statistical significance: a significance test was performed using Z_{dif}.
  - Practical significance: the effect size, d, was greater than 0.2.

(b) Items were calibrated separately for the matched online and paper samples using WINSTEPS, and the estimated Rasch item difficulties were compared using the following criteria:

- Statistical significance: a significance test was performed using Z_{dif}.
- Practical significance: the absolute value of the difference was greater than 0.3.

(c) Differential item functioning using the Mantel Haenszel technique was performed, and the item comparability was evaluated using following evaluation criteria:

- Statistical significance: confidence intervals were used.
- Practical significance: items were flagged as showing a significant mode effect if classified as "B" category or above.

Results and Discussion

Table 1 displays the demographic information of the online and paper samples for each form (used for the analysis of non-linking items) and for all the forms combined (used for the analysis of linking items). The online and paper samples tended to differ in terms of ethnicity proportions. For example, the proportion of African American students tended to be higher in the paper samples than the online samples across forms, and the proportion of White students was slightly higher in the online samples than the paper samples for most of the forms. It can also be seen that for all forms, students taking the assessment online generally scored lower than the students taking the assessment on paper.

Table 2 presents the list of items with observed significant mode differences. Out of the 390 items, 5 items were flagged as showing a mode effect based on the analysis of item p-values, 23 items were flagged based on the analysis of Rasch item difficulties, and 9 items were flagged based on the DIF analysis. Different analysis approaches resulted in rather consistent results: all the items flagged by significant p-value differences were also flagged by significant DIF and Rasch value differences. The RID analysis yielded more flagged items, which tended to show large differences in p-values and DIF as well, though not all of the differences were considered as significant based on the predefined criteria. There were only five items (1.3%) commonly flagged by all three types of analyses. The p-value, RID, MH statistics associated with each of the 390 items are listed in *Appendix A*, *Appendix B*, and *Appendix C*, respectively.

The item-level comparability findings are going to be used in the subsequent process of field-test equating for the world geography assessment. Considering the critical role of RIDs in the equating and potential threat of mode effects, the results based on analyzing RID differences were used as the final results. In summary, a total of 390 items were analyzed in the item-by-item comparability analysis, and 23 items (6%) were flagged for mode effects. Out of the 23 items, 17 items (74%) showed a mode effect favoring paper and 6 items (26%) showed a mode effect favoring online (see Table 3).

Additional qualitative analysis was conducted to compare the items with a mode effect identified based on content assessment with those identified based on statistical examination. Prior to the test administration, content experts reviewed and assessed each world geography item from a content perspective such that predictions were made on whether an item would be likely to show mode effect and in which direction (favoring paper or favoring online). This activity was done for the purpose of finding factors/item features associated with testing modes that may influence student performance.

Factors/item features that may have caused the observed mode differences could be revealed by the consistency in content-based and statistics-based evaluation results. For instance, it was predicted by content experts that three items that require the use of ruler would be easier for students taking the assessment on paper than those taking online because the physical ruler was easier to manipulate than the online ruler tool. The comparability analysis results indicated that these three items were flagged as showing a mode effect in favor of the paper version of the assessment. It seems reasonable to assume that the use of ruler is a plausible explanation for the significant differences in student performance. Out of the 23 items statistically flagged, 12 items had been predicted by content experts as being likely to show a mode effect. The various reasons for mode effect provided by content experts were place into 10 categories. For each category, the predicted items with a mode effect were compared to those actually flagged for a mode effect. For instance, 54 items were predicted as being easier on paper than online because item/image appeared clearer or larger on paper. Out of these 54 items, 4 items (7%) were flagged as favoring paper and 2items (4%) were flagged as favoring online. Summary information is presented in Tables 4 and 5.

Part II. Test-Level Analysis

In addition to the evaluation of item comparability, this study investigated test-level comparability between the online and paper testing modes. Since there was no base test, each field-test form was treated as a test. The form-by-form analysis provided useful information for determining whether the online and paper modes were comparable at an aggregate level.

Methodology

As described previously, one online form, *Form 9*, was dropped during the early stage of administration due to unusual circumstances. Thus, both the online and paper versions of *Form 9* were excluded from the test-level comparability analyses. The two test-level analysis approaches focused on differences between mean test scores to evaluate mode effects for the 11 forms: *analysis of mean test scores*, and *analysis of covariance (ANCOVA)*.

Analysis of Mean Test Scores

The item p-values obtained during the `item-level analysis (based on the matched samples) were used to determine mean test-level scores. In analyzing mean test scores, the sum of item p-values was computed for each form. Then the difference in mean test scores between modes for each corresponding form was evaluated.

Analysis of Covariance

As an alternative approach for evaluating test level mode effects, analysis of covariance (ANCOVA) was performed. In an ANCOVA, covariate variables are used to control for pre-existing differences between the groups of interest. In this study, TAKS reading and math scores were available and considered as good covariates. Differences in student performance in the world geography test across testing modes were compared, controlling for group (online/paper) differences on reading and math test performance (as measured by students' TAKS scores).

ANCOVA assumes that the covariates (i.e., TAKS reading and math scores in the current study) are linearly related to the dependent variable (i.e., world geography scores) and is not related to the

factor (i.e., testing mode). ANCOVA was appropriate for this study because the TAKS reading and math scores were found to be linearly related to the world geography scores (with the r2 range of 0.52 – 0.64). Furthermore, TAKS test performance was not used to assign campuses to each mode. Therefore, no relationship was expected between students' TAKS scores and testing modes.

The ANCOVA model used in this study is shown below:

$$y_{(WG)_{ij}} = \alpha_{ij} + \beta_x (x_{(Reading)_{ij}} - \bar{x}_{(Reading)}) + \beta_z (z_{(Math)_{ij}} - \bar{z}_{(Math)}) + \varepsilon_{ij}$$

where $y_{(WG)_{ij}}$ is the world geography score of student i under testing mode j; a_{ij} is the effect of testing mode; β_x and β_z are common regression coefficients for y on x and z, respectively. $x_{(Reading)_{ij}}$ is the reading score for the ith student in testing mode j; $\bar{x}_{(Reading)}$ is the grand mean of the reading covariate. Similarly, $z_{(Math)_{ij}}$ is the math score for ith student in testing mode jth; $\bar{z}_{(Math)}$ is the grand mean of the math covariate; and ε_{ij} is variation in y not explained by either testing mode or reading and math scores.

The interaction between the TAKS scores and the testing modes was not significant, indicating that common slopes could be used for the online and paper modes in the analysis. The effects of testing modes on student performance were evaluated controlling for the effects of reading and math abilities. In other words, a form was detected as showing significant mode effect if the group membership (i.e., being in the online group or paper group) was a significant indicator of students' world geography scores after students' reading and math scores had been taken into account. For test forms with a significant mode effect, the adjusted mean world geography test scores were then compared between the online and paper groups.

Results and Discussion

Results of the test-level comparability analyses (presented in Tables 6 - 7) showed that the mean test scores were slightly higher for the paper version of all the 11 forms, indicating that the online version of the tests tended to be more difficult than the paper version. The mean test scores of the online versions ranged from 30.44 to 34.18 whereas the mean test scores of the paper versions ranged from 31.27 to 34.87. The absolute difference in mean test scores ranged from 0.19 to 1.46. Form 8 showed the largest mean score difference between the online and paper versions, and was the only form that had a difference in mean test scores greater than 1.0.

Two forms (*Form 8* and *Form 11*) showed statistically significant differences in student performance between the online and paper versions based on the ANCOVA analysis. For *Form 8*, the adjusted mean test score difference between paper and online was 1.46. For *Form 11*, the adjusted mean test score difference was 1.00. It can be seen that the test forms identified as showing mode effects by the ANCOVA procedures also showed large mean test score differences in the *analysis of mean test scores*: the absolute differences were 1.46 and 0.76 for *Form 8* and *Form 11*, respectively.

It should be noted that this study had practical and statistical limitations, which should be taken into consideration when interpreting the test-level study findings. For instance, only the world geography field-test forms were available for the comparability analysis and no operational test form was yet constructed. The world geography field-test forms differ than the operational tests in many aspects such as content requirements, test length, and student test-taking motivation. Furthermore, a single criterion was used for evaluating test-level mode effect in each type of analyses – no statistical

significance was tested in the p-value analysis and no practical significance was evaluated in the ANCOVA analysis.

Conclusions and Implications

This study provides insights into the online and paper comparability of EOC world geography items and test forms. The results of the item-level analyses suggest that students with the same level of ability performed similarly on most of the items regardless whether they tested online or on paper. For a small proportion of the items (6%), students with the same level of ability tended to perform differently depending on whether they tested online or on paper. In addition, 9 of the 11 test forms were found comparable across modes in terms of test scores. It was found that the online and paper versions of *Form 8* had a mean test score difference of 1.5 and showed statistically significant difference in the online and paper mean scores. *Form 11* also showed significant group mean difference; however, the mean test score difference was relatively small. As stated previous, study limitations should be considered in evaluating the overall comparability of the world geography assessment.

Given that this was the first field-test administration of the EOC world geography assessment, the results of the comparability analyses may be used to inform the test construction process. If the tests are constructed entirely of items that do not show mode effects, the raw scores from the two versions of the test could be considered comparable. However items showing a mode effect might be included on a test for content reasons. In this case, tests could be constructed using items that both did and did not show mode effects, and the comparability between the two modes could be examined prior to the operational test administrations. It would be desirable to construct a test such that mode effects for individual items cancel out at the test-level score.

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Table 1. Student Demographic and Descriptive Information

Form	Number of Campuses		Number of Students		Mean Raw Score		Estimated Raw Score, or y-hat		Demographic Information**											
									Male		White		Hispanic		African American		Other Ethnicity		Special Education***	
	CBT*	PAP*	CBT	PAP	CBT	PAP	CBT	PAP	CBT	PAP	CBT	PAP	CBT	PAP	CBT	PAP	CBT	PAP	CBT	PAP
1	192	99	1807	909	32.94	33.80	32.15	32.44	48	48	34	35	48	45	15	18	3	3	2	1
2	201	99	1851	901	31.87	32.87	32.15	32.62	51	49	39	35	45	46	13	18	2	1	2	2
3	200	100	1799	883	31.52	31.96	32.23	32.35	48	52	35	35	48	46	15	17	2	3	2	2
4	201	101	1717	897	31.35	32.07	32.02	32.41	50	49	38	37	46	47	13	15	2	1	2	2
5	192	102	1782	922	31.58	31.95	32.04	32.09	49	47	37	34	46	47	15	18	2	2	1	2
6	207	97	1755	901	31.62	32.11	32.11	32.14	49	48	36	32	46	48	15	17	3	3	2	2
7	204	100	1683	936	30.67	31.25	32.11	31.96	50	48	34	35	48	46	15	18	3	1	1	2
8	200	99	1851	907	31.76	33.55	31.82	32.20	51	50	35	33	48	48	15	17	3	2	2	2
10	203	101	1687	911	31.66	32.19	32.06	31.89	52	50	37	35	45	44	14	19	3	2	2	1
11	201	101	1763	930	33.62	34.90	31.92	32.27	51	50	36	36	47	43	14	19	4	2	2	1
12	198	99	1751	909	34.15	34.61	32.21	32.21	49	50	38	34	45	47	15	17	2	3	2	2
ALL	256	110	19512	11004	32.07	32.73	32.07	32.23	50	49	36	34	47	46	14	17	3	3	2	2

Notes: Information presented above was based on the data records eligible for the inclusion in the Matched Sample Comparability Analysis.

* CBT-Online administration; PAP-Paper administration.

** Cell entries represent percentages rounded to the nearest integer. Due to rounding, the percentages may not add up to 100%.

*** Special education status is included in the demographics table, but was not used as a matching variable.

Table 2. EOC World Geography Items with Significant Mode Difference

Item	RID*			P-Value			DIF* Analysis (MH*)				
	O*	P*	Diff**	O*	P*	d**	MH	Δ_MH	CI_L**	CI_H**	Level**
WGOT01G01AZ08007	*0.221*	*-0.12*	*0.34*	45	52	-0.149	0.722	0.766	0.305	1.226	A
WGOT01G01BZ08013	*0.489*	*0.182*	*0.306*	39	46	-0.138	0.741	0.704	0.254	1.154	A
WGOT01G01BZ08018	*-0.78*	*-1.09*	*0.31*	66	72	-0.127	0.736	0.722	0.202	1.241	A
WGOT01G01BZ08019	*-0.327*	*0.023*	*-0.35*	57	49	0.149	1.345	-0.697	-1.132	-0.262	A
WGOT02G05AZ08075	*-0.794*	*-1.359*	*0.565*	*66*	*76*	*-0.228*	*0.567*	*1.333*	0.829	1.837	B+
WGOT02G05AZ085030801	*-0.53*	*-0.149*	*-0.38*	61	53	0.167	1.432	-0.845	-1.297	-0.393	A
WGOT02G06BZ08100	*0.213*	*-0.137*	*0.35*	45	53	-0.153	0.707	0.814	0.351	1.277	A
WGOT02G08BZ08141	*-2.321*	*-2.736*	*0.415*	89	92	-0.105	0.679	0.908	0.119	1.698	A
WGOT02G09BZ08169	*-0.17*	*-0.73*	*0.56*	*54*	*65*	*-0.239*	*0.609*	*1.166*	0.71	1.622	B+
WGOT03G10AZ08174	*1.466*	*1.001*	*0.464*	22	29	-0.178	*0.647*	*1.023*	0.512	1.535	B+
WGOT03G20BZ08245	*0.545*	*1.011*	*-0.466*	38	29	0.192	1.485	-0.93	-1.387	-0.472	A
WGOT04G13AZ08250	*-1.773*	*-1.405*	*-0.368*	83	77	0.131	1.403	-0.795	-1.342	-0.248	A
WGOT05G18CZ08191	*-1.19*	*-1.59*	*0.401*	74	80	-0.144	0.69	0.873	0.328	1.418	A
WGOT05G18DZ08357	*0.158*	*-0.194*	*0.352*	46	54	-0.154	0.714	0.792	0.34	1.243	A
WGOT06G21AZ08367	*0.303*	*0.743*	*-0.441*	43	34	0.188	1.452	-0.876	-1.323	-0.428	A
WGOT06G21AZ08368	*1.429*	*1.052*	*0.377*	22	29	-0.145	0.71	0.806	0.29	1.323	A
WGOT06G21CZ08377	*0.109*	*-0.217*	*0.326*	47	54	-0.142	0.744	0.695	0.237	1.153	A
WGOT06G21CZ08380	*-1.325*	*-1.794*	*0.469*	76	83	-0.169	*0.614*	*1.146*	0.575	1.717	B+
WGOT06G21CZ08382	*-0.281*	*-0.739*	*0.457*	56	65	-0.196	*0.634*	*1.069*	0.596	1.542	B+
WGOT06G21CZ08383	*-0.432*	*-1.011*	*0.579*	*59*	*71*	*-0.24*	*0.579*	*1.285*	0.804	1.765	B+
WGOT06G21DZ08388	*-0.262*	*-0.694*	*0.432*	56	65	-0.187	*0.642*	*1.042*	0.569	1.514	B+
WGOT06G22AZ085070801	*-1.636*	*-1.064*	*-0.572*	*81*	*71*	*0.214*	*1.805*	*-1.388*	-1.939	-0.838	B-
WGOT06G23CZ085240803	*0.06*	*-0.492*	*0.552*	*49*	*60*	*-0.24*	*0.586*	*1.255*	0.797	1.714	B+

Notes. Bold Italics indicates significant mode differences.

* "RID" = Rasch item difficulty; "O" = Online; "P" = Paper; "DIF" = Differential Item Functioning; "MH" = Mental Haenszel

** "d" = Cohen's d; Effect Size; "Diff" = Difference in RID (O-P); "Level" = Item classification criteria: "A" level representing minor or no mode effect, "B" level representing moderate mode effect, and "C" level representing strong mode effect. "B+" = Moderate mode effect favoring paper ; "B-" = Moderate mode effect favoring online.

Table 3. Summary of Item-Level Analysis Results

Items showing No Mode Effect		Items showing Mode Effect			
		Favoring Paper Mode		Favoring Online Mode	
N	Percent	N	Percent	N	Percent
367	94%	17	74%	6	26%

Table 4. **Summary of Qualitative Analysis of Items with Significant Mode Difference**

Mode-Effect Item	Direction of Mode Effect*	Factor/Item Feature Potentially Influencing Mode Difference**
WGOT01G01BZ08019***	Easier for Online	The pattern shown on map looked different on paper than online.
WGOT02G05AZ08075***	Easier for Paper	The online version involves a three-dimensional appearance and side-by-side layout. The paper version has a stacked layout. Small details were easier to read.
WGOT02G05AZ08503-0801	Easier for Online	Passage-based Item looked different on paper than online.
WGOT03G20BZ08245	Easier for Online	Item image was sharper online than on paper.
WGOT05G18CZ08191***	Easier for Paper	Item layout was different – Art was presented side-by-side online and stacked vertically for paper. Text was easier to read.
WGOT06G21AZ08367***	Easier for Online	Easier to see differences in gradients.
WGOT06G21CZ08377	Easier for Paper	Border lines on map were easier to read on paper than online.
WGOT06G21CZ08380	Easier for Paper	Paper ruler was easier to manipulate than online ruler.
WGOT06G21CZ08382	Easier for Paper	Paper ruler was easier to manipulate than online ruler.
WGOT06G21CZ08383	Easier for Paper	Paper ruler was easier to manipulate than online ruler.
WGOT06G22AZ08507-0801	Easier for Online	Passage-based Item looked different on paper than online.
WGOT06G23CZ08524-0803	Easier for Paper	Passage-based Item looked different on paper than online.

* Direction of item mode effect was based on the statistical analyses.
**Explanations were provided by content experts when assessing the item comparability prior to world geography test administration.
*** An opposite direction of mode effect was predicted by content experts.

Table 5. Comparison of Content-Based Prediction and Statistical Flags

Category of Reasons for Item Mode Effect*	Number of Mode-Effect Items *Predicted*	Number of Mode-Effect Items *Flagged* (Percent)
1. Item/image appears clearer or larger on paper. It is easier to read/distinguish things (e.g., lines, numbers, dots, and patterns on map) on paper.	54	6** (11%)
2. Item/image appears clearer/larger/more accurate online. It is easier to read/distinguish things (e.g., lines, numbers, dots, and patterns on map) online.	31	3** (10%)
3. Item layout makes a difference – the layout on paper makes the item more readable.	4	1 (25%)
4. Item layout makes a difference – the side-by-side online layout makes the item more readable than the vertically stacked layout on paper.	39	4** (10%)
5. Item is colored online, which makes the item more distracting/confusing to students – easier on paper.	1	0 (0%)
6. Item is colored online, which makes the item more engaging to students – easier online.	4	0 (0%)
7. Online feature (i.e., the lack of "mark up" functionality) makes the paper version easier.	3	0 (0%)
8. Online feature (i.e., 3-dimentionality) makes the online version easier.	4	1*** (25%)
9. Online ruler tool is harder to manipulate than the physical ruler, which makes the online item harder.	3	3 (100%)
10. Cluster item/item associated with a passage is easier online.	21	3 (14%)

* Notes. Items provided with multiple reasons were classified and computed under different categories. "Number of Mode-Effect Items Flagged" refers to the number of items predicted and also statistically flagged for a mode effect.

** Two items were flagged for an opposite direction of mode effect.

*** One item was flagged for an opposite direction of mode effect.

Table 6. Results of Mean Test Scores Analysis

Form	CBT*	PAP*	Difference
1	33.51	33.81	-0.30
2	32.21	32.85	-0.64
3	31.79	31.98	-0.19
4	31.74	32.06	-0.32
5	31.52	32.00	-0.48
6	31.55	32.18	-0.63
7	30.44	31.27	-0.83
8	32.12	33.58	-1.46
10	31.45	32.16	-0.71
11	34.11	34.87	-0.76
12	34.18	34.65	-0.47

Notes. The online form 9 was discontinued during the test administration due to unexpected events. Both the online and paper versions of form 9 were excluded from the test-level analysis.

*CBT represents the mean test scores for the online administration.
*PAP represents the mean test scores for the paper administration.

Table 7. Results of Test-Level ANCOVA Analysis

Form	Number of Students	F Value	Prob.	Mode Effect
1	2895	4.08	0.044	No
2	2880	3.80	0.051	No
3	2835	1.76	0.185	No
4	2741	2.01	0.157	No
5	2861	2.78	0.096	No
6	2833	3.07	0.080	No
7	2769	6.33	0.012	No
8	**2898**	**28.50**	**<0.001**	**Yes**
10	2744	5.16	0.023	No
11	**2826**	**11.21**	**<0.001**	**Yes**
12	2799	3.37	0.066	No

Note. significance level of 0.001 as used in the ANOVA analysis.

Appendix A. List of Item P-Values

UIN	CBT_PVAL	PAP_PVAL	PVAL_DIF	ZDIF	EFFECT_SIZE	SIG
WGOT01G01AZ08001	46	44	1	0.630	0.027	
WGOT01G01AZ08002	53	56	-2	-1.060	-0.049	
WGOT01G01AZ08003	60	63	-3	-1.410	-0.069	
WGOT01G01AZ08005	49	49	0	0.020	0.001	
WGOT01G01AZ08006	42	44	-2	-3.320	-0.047	
WGOT01G01AZ08007	45	52	-7	-3.460	-0.149	
WGOT01G01AZ08008	61	60	1	0.500	0.020	
WGOT01G01AZ08009	63	67	-4	-2.160	-0.088	
WGOT01G01AZ08010	43	46	-3	-1.200	-0.056	
WGOT01G01AZ085010801	55	57	-2	-0.750	-0.035	
WGOT01G01AZ085020801	72	67	6	2.610	0.122	
WGOT01G01BZ08011	69	71	-2	-1.160	-0.047	
WGOT01G01BZ08013	39	46	-7	-3.230	-0.138	
WGOT01G01BZ08014	50	54	-3	-1.630	-0.062	
WGOT01G01BZ08015	41	37	4	1.590	0.080	
WGOT01G01BZ08016	51	50	1	0.420	0.018	
WGOT01G01BZ08017	39	45	-6	-2.280	-0.114	
WGOT01G01BZ08018	66	72	-6	-3.040	-0.127	
WGOT01G01BZ08019	57	49	7	3.270	0.149	
WGOT01G01BZ08020	58	60	-2	-1.050	-0.046	
WGOT01G02AZ08021	48	48	0	0.150	0.007	
WGOT01G02AZ08022	34	40	-5	-2.460	-0.113	
WGOT01G02AZ08024	53	52	0	0.200	0.009	
WGOT01G02AZ08025	50	48	2	0.820	0.041	
WGOT01G02AZ08026	60	61	-1	-1.290	-0.015	
WGOT01G02AZ08028	65	68	-3	-1.500	-0.067	
WGOT01G02AZ085090802	31	34	-3	-1.570	-0.068	
WGOT01G02BZ08029	69	71	-2	-1.160	-0.051	
WGOT01G02BZ08030	46	43	2	0.950	0.044	
WGOT01G02BZ08031	43	48	-4	-2.100	-0.085	
WGOT01G02BZ08033	33	34	0	-0.160	-0.008	
WGOT01G02BZ08034	38	40	-2	-0.850	-0.036	
WGOT01G02BZ08035	22	19	3	1.620	0.075	
WGOT01G02BZ08037	81	80	1	0.480	0.021	
WGOT01G02BZ08038	50	53	-3	-1.340	-0.061	
WGOT02G03AZ08039	46	49	-3	-1.420	-0.064	
WGOT02G03AZ08040	48	45	3	1.460	0.060	
WGOT02G03AZ08041	55	58	-3	-1.500	-0.065	
WGOT02G03AZ08042	55	55	0	-0.110	-0.005	
WGOT02G03AZ08043	57	52	5	1.800	0.096	
WGOT02G03AZ08044	58	59	0	-0.090	-0.004	
WGOT02G03AZ08045	27	27	0	-0.150	-0.006	
WGOT02G03BZ08046	64	65	-1	-0.580	-0.026	
WGOT02G03BZ08047	91	89	2	1.880	0.082	

WGOT02G03BZ08048	42	42	0	-0.150	-0.002
WGOT02G03BZ08049	82	82	0	-0.040	-0.002
WGOT02G03BZ08050	84	86	-2	-1.020	-0.043
WGOT02G03BZ08051	33	30	3	1.400	0.061
WGOT02G03BZ08052	45	48	-3	-1.480	-0.063
WGOT02G03BZ08433	70	72	-1	-0.650	-0.030
WGOT02G04AZ08053	41	45	-4	-1.910	-0.083
WGOT02G04AZ08055	46	47	-1	-0.600	-0.026
WGOT02G04AZ08056	50	53	-3	-1.440	-0.063
WGOT02G04AZ08057	33	35	-2	-0.810	-0.041
WGOT02G04AZ08058	32	27	5	2.370	0.103
WGOT02G04AZ08059	28	25	2	1.090	0.054
WGOT02G04BZ08061	85	83	2	1.000	0.041
WGOT02G04BZ08062	59	59	-1	-0.910	-0.011
WGOT02G04BZ08063	81	78	3	2.000	0.081
WGOT02G04BZ08064	83	79	4	2.300	0.099
WGOT02G04BZ08065	54	55	-2	-0.730	-0.032
WGOT02G04BZ08066	70	68	2	0.770	0.037
WGOT02G04BZ08067	58	58	0	0.010	0.001
WGOT02G04CZ08068	84	81	3	1.810	0.079
WGOT02G04CZ08069	70	71	-2	-0.790	-0.033
WGOT02G04CZ08072	36	38	-2	-1.160	-0.051
WGOT02G04CZ08073	62	60	3	1.130	0.052
WGOT02G04CZ08074	81	81	0	0.260	0.010
WGOT02G05AZ08075	66	76	-10	-5.640	-0.228	*
WGOT02G05AZ08076	69	68	1	0.490	0.021
WGOT02G05AZ08077	65	63	2	0.890	0.039
WGOT02G05AZ08078	87	88	-2	-4.290	-0.050
WGOT02G05AZ08079	81	81	0	0.130	0.006
WGOT02G05AZ08080	55	59	-4	-2.010	-0.078
WGOT02G05AZ085030801	61	53	8	3.430	0.167
WGOT02G05BZ08081	63	65	-2	-1.140	-0.048
WGOT02G05BZ08082	67	71	-4	-2.000	-0.086
WGOT02G05BZ08083	56	54	2	0.930	0.042
WGOT02G05BZ08084	82	82	0	-0.210	-0.010
WGOT02G05BZ08085	55	58	-3	-1.450	-0.064
WGOT02G05BZ08087	61	64	-3	-1.490	-0.065
WGOT02G06AZ08088	79	75	4	2.110	0.092
WGOT02G06AZ08089	64	63	1	0.360	0.017
WGOT02G06AZ08090	89	87	2	1.200	0.051
WGOT02G06AZ08091	45	46	-2	-0.640	-0.033
WGOT02G06AZ08092	43	44	-1	-0.540	-0.026
WGOT02G06AZ08600	66	67	0	-0.210	-0.010
WGOT02G06BZ08095	56	53	3	1.190	0.054
WGOT02G06BZ08096	60	59	1	0.340	0.017
WGOT02G06BZ08097	37	36	1	0.260	0.011

WGOT02G06BZ08098	78	80	-3	-1.770	-0.071
WGOT02G06BZ08099	90	90	0	-0.260	-0.011
WGOT02G06BZ08100	45	53	-8	-3.640	-0.153
WGOT02G06BZ08102	65	67	-2	-3.790	-0.046
WGOT02G06BZ08601	66	66	0	-0.100	-0.004
WGOT02G07AZ08103	52	53	0	-0.150	-0.007
WGOT02G07AZ08104	50	52	-3	-1.070	-0.052
WGOT02G07AZ08105	61	61	0	-0.110	-0.005
WGOT02G07AZ08107	53	56	-4	-5.870	-0.071
WGOT02G07AZ08108	32	31	1	0.570	0.029
WGOT02G07AZ08109	24	23	1	0.410	0.018
WGOT02G07AZ08111	58	54	4	1.750	0.082
WGOT02G07BZ08112	41	37	4	2.330	0.088
WGOT02G07BZ08115	56	58	-2	-1.010	-0.045
WGOT02G07BZ08116	51	46	6	2.350	0.112
WGOT02G07BZ08117	34	39	-5	-2.150	-0.098
WGOT02G07BZ08118	52	54	-2	-3.230	-0.040
WGOT02G07BZ085100802	47	46	1	0.350	0.017
WGOT02G07CZ08119	58	59	-1	-0.380	-0.019
WGOT02G07CZ08120	65	69	-4	-2.200	-0.094
WGOT02G07CZ08122	79	82	-3	-1.590	-0.079
WGOT02G07CZ08123	70	75	-5	-2.550	-0.102
WGOT02G07CZ08124	80	79	1	0.410	0.020
WGOT02G07CZ08125	63	63	0	-0.070	-0.003
WGOT02G07DZ08126	32	29	2	1.160	0.053
WGOT02G07DZ08128	23	25	-2	-1.080	-0.048
WGOT02G07DZ08129	97	95	1	1.540	0.073
WGOT02G07DZ08130	64	65	-1	-0.320	-0.014
WGOT02G07DZ08131	59	64	-5	-2.290	-0.105
WGOT02G07DZ08132	54	59	-5	-2.280	-0.098
WGOT02G08AZ08133	20	17	3	1.570	0.074
WGOT02G08AZ08134	70	71	-1	-0.360	-0.018
WGOT02G08AZ08135	79	80	-1	-0.370	-0.017
WGOT02G08AZ08137	24	21	3	1.470	0.072
WGOT02G08AZ08138	32	29	3	1.450	0.066
WGOT02G08AZ08139	51	52	-1	-0.440	-0.019
WGOT02G08BZ08140	55	57	-3	-1.110	-0.055
WGOT02G08BZ08141	89	92	-3	-2.430	-0.105
WGOT02G08BZ08142	33	38	-5	-2.500	-0.103
WGOT02G08BZ08143	74	75	-1	-0.310	-0.014
WGOT02G08BZ08145	54	55	-1	-0.280	-0.016
WGOT02G08CZ08146	64	61	3	1.490	0.066
WGOT02G08CZ08147	25	27	-2	-0.950	-0.043
WGOT02G08CZ08150	37	39	-2	-0.830	-0.040
WGOT02G08CZ08151	76	74	2	1.010	0.046
WGOT02G08CZ08152	42	42	0	0.160	0.007

WGOT02G08DZ08153	47	48	-1	-0.520	-0.019	
WGOT02G08DZ08154	70	66	4	2.040	0.081	
WGOT02G08DZ08155	59	60	-1	-0.470	-0.018	
WGOT02G08DZ08156	56	61	-4	-2.080	-0.089	
WGOT02G08DZ08157	69	68	1	0.650	0.029	
WGOT02G08DZ08158	43	47	-3	-5.240	-0.069	
WGOT02G08DZ08602	58	59	-1	-0.450	-0.018	
WGOT02G09AZ08160	82	80	2	1.270	0.051	
WGOT02G09AZ08161	62	62	0	-0.040	-0.002	
WGOT02G09AZ08162	58	58	0	-0.130	-0.006	
WGOT02G09AZ08163	34	33	1	0.540	0.024	
WGOT02G09AZ08164	38	39	-1	-1.900	-0.024	
WGOT02G09AZ08165	41	42	-2	-0.830	-0.034	
WGOT02G09AZ08166	61	57	4	1.790	0.086	
WGOT02G09BZ08169	54	65	-12	-5.030	-0.239	*
WGOT02G09BZ08171	31	34	-3	-1.380	-0.056	
WGOT02G09BZ08172	41	43	-2	-0.840	-0.039	
WGOT02G09BZ08173	66	65	1	0.670	0.031	
WGOT03G10AZ08174	22	29	-8	-3.540	-0.178	
WGOT03G10AZ08175	70	71	-1	-2.220	-0.029	
WGOT03G10AZ08176	26	26	0	0.010	0.001	
WGOT03G10AZ08177	30	30	-1	-0.320	-0.015	
WGOT03G10AZ08178	65	63	2	0.870	0.039	
WGOT03G10BZ08179	46	44	2	1.080	0.050	
WGOT03G10BZ08180	43	43	0	0.120	0.006	
WGOT03G10BZ08181	32	33	0	-0.210	-0.010	
WGOT03G10BZ08182	45	46	-1	-0.620	-0.028	
WGOT03G10BZ08185	47	45	2	0.960	0.046	
WGOT03G10CZ08187	38	40	-2	-0.920	-0.038	
WGOT03G10CZ08188	78	78	0	0.100	0.004	
WGOT03G10CZ08189	36	39	-3	-1.650	-0.070	
WGOT03G10CZ08190	65	63	3	1.320	0.053	
WGOT03G10CZ08192	40	43	-3	-1.440	-0.063	
WGOT03G11AZ08194	17	19	-2	-1.000	-0.050	
WGOT03G11AZ08195	6	8	-2	-1.800	-0.084	
WGOT03G11AZ08196	57	60	-3	-1.410	-0.061	
WGOT03G11AZ08197	44	44	-1	-1.390	-0.019	
WGOT03G11AZ085110802	31	35	-4	-1.770	-0.076	
WGOT03G11BZ08198	84	85	-1	-0.430	-0.020	
WGOT03G11BZ08199	40	40	0	0.190	0.008	
WGOT03G11BZ08200	70	68	2	0.900	0.035	
WGOT03G11BZ08201	30	30	0	0.110	0.005	
WGOT03G11BZ08202	51	52	-1	-0.340	-0.015	
WGOT03G11BZ08203	62	63	0	-0.140	-0.007	
WGOT03G11BZ085120802	58	56	1	0.780	0.029	
WGOT03G11CZ08101	60	59	2	0.650	0.032	

WGOT03G11CZ08204	59	62	-2	-1.040	-0.046
WGOT03G11CZ08206	40	44	-4	-1.540	-0.072
WGOT03G11CZ08207	35	35	0	-0.020	-0.001
WGOT03G11CZ08208	48	48	1	0.290	0.013
WGOT03G11CZ08238	32	34	-3	-1.290	-0.053
WGOT03G12AZ08209	58	59	-1	-1.050	-0.015
WGOT03G12AZ08210	29	30	-1	-0.580	-0.028
WGOT03G12AZ08211	30	30	0	-0.250	-0.010
WGOT03G12AZ08213	44	41	2	1.100	0.050
WGOT03G12AZ08214	45	50	-5	-2.210	-0.102
WGOT03G12BZ08215	25	23	2	0.850	0.039
WGOT03G12BZ08216	57	54	4	1.560	0.071
WGOT03G12BZ08217	52	52	0	0.130	0.006
WGOT03G12BZ08218	40	45	-5	-2.440	-0.096
WGOT03G12BZ08219	48	51	-3	-1.130	-0.054
WGOT03G12CZ08221	25	30	-5	-2.420	-0.111
WGOT03G12CZ08222	53	53	0	-0.020	-0.001
WGOT03G12CZ08223	23	27	-4	-2.590	-0.097
WGOT03G12CZ08224	36	36	-1	-0.370	-0.016
WGOT03G12CZ085170803	64	66	-2	-1.250	-0.048
WGOT03G19AZ08225	44	44	1	0.320	0.014
WGOT03G19AZ08226	71	69	2	0.710	0.033
WGOT03G19AZ08227	63	63	0	-0.560	-0.007
WGOT03G19AZ08230	41	38	2	1.040	0.050
WGOT03G19BZ08232	42	46	-4	-1.560	-0.076
WGOT03G19BZ08233	37	36	0	0.140	0.006
WGOT03G19BZ08234	95	96	-1	-0.510	-0.024
WGOT03G19BZ08235	79	81	-3	-1.670	-0.067
WGOT03G19BZ08236	26	28	-2	-1.060	-0.046
WGOT03G20AZ08032	62	59	3	1.480	0.067
WGOT03G20AZ08237	30	31	0	-0.170	-0.009
WGOT03G20AZ08239	53	54	-1	-0.460	-0.020
WGOT03G20AZ08241	60	61	-1	-0.490	-0.022
WGOT03G20AZ08242	47	48	-2	-0.660	-0.030
WGOT03G20BZ08159	56	55	1	0.540	0.023
WGOT03G20BZ08243	21	21	0	-0.140	-0.006
WGOT03G20BZ08244	41	43	-3	-1.130	-0.054
WGOT03G20BZ08245	38	29	9	3.980	0.192
WGOT03G20BZ08246	20	18	2	1.270	0.060
WGOT04G13AZ08247	83	85	-3	-5.510	-0.071
WGOT04G13AZ08248	59	64	-5	-2.100	-0.105
WGOT04G13AZ08250	83	77	5	2.950	0.131
WGOT04G13AZ08251	30	33	-3	-1.820	-0.067
WGOT04G13AZ08252	20	19	0	0.170	0.009
WGOT04G13AZ08253	57	58	-1	-0.640	-0.028
WGOT04G13BZ08255	70	68	2	1.090	0.048

WGOT04G13BZ08256	70	70	1	0.350	0.015
WGOT04G13BZ08257	73	76	-3	-1.160	-0.058
WGOT04G13BZ08258	35	34	1	0.650	0.026
WGOT04G13BZ08259	34	37	-3	-1.450	-0.064
WGOT04G14AZ08260	41	40	0	0.500	0.006
WGOT04G14AZ08263	40	42	-2	-0.960	-0.041
WGOT04G14AZ08265	81	79	2	1.160	0.056
WGOT04G14BZ08268	35	35	0	-0.010	-0.001
WGOT04G14BZ08269	39	37	3	1.160	0.052
WGOT04G14BZ08270	35	38	-3	-1.390	-0.058
WGOT04G14BZ08271	53	54	-1	-0.330	-0.015
WGOT04G14CZ08273	52	49	3	1.210	0.052
WGOT04G14CZ08274	67	70	-4	-1.840	-0.076
WGOT04G14CZ08275	38	37	1	0.470	0.021
WGOT04G14CZ08276	29	26	2	1.090	0.051
WGOT04G14CZ08277	47	48	-1	-0.390	-0.018
WGOT04G14CZ08278	36	38	-2	-0.770	-0.040
WGOT04G14CZ08279	43	45	-2	-1.160	-0.048
WGOT04G15AZ08282	29	31	-2	-0.910	-0.043
WGOT04G15AZ08283	67	65	2	1.180	0.047
WGOT04G15AZ08284	66	68	-2	-0.960	-0.041
WGOT04G15AZ08285	37	41	-3	-1.600	-0.071
WGOT04G15AZ08286	36	35	1	0.630	0.026
WGOT04G15AZ08287	65	69	-4	-2.110	-0.089
WGOT04G15BZ08288	38	37	1	0.440	0.019
WGOT04G15BZ08289	47	44	2	1.080	0.045
WGOT04G15BZ08290	62	66	-4	-2.140	-0.091
WGOT04G15BZ08291	35	37	-2	-0.810	-0.038
WGOT04G15BZ08292	54	56	-2	-0.820	-0.041
WGOT04G15BZ08293	66	67	-1	-0.320	-0.013
WGOT04G15CZ08266	34	36	-3	-1.010	-0.053
WGOT04G15CZ08295	48	53	-5	-1.820	-0.095
WGOT04G15CZ08296	42	44	-2	-2.520	-0.035
WGOT04G15CZ08298	53	55	-1	-0.510	-0.023
WGOT04G15CZ085180803	52	52	1	0.390	0.017
WGOT04G15CZ085190803	53	54	-1	-0.500	-0.024
WGOT04G15CZ085210803	65	64	0	0.110	0.005
WGOT05G16AZ08299	58	58	0	-0.040	-0.002
WGOT05G16AZ08300	36	33	3	1.480	0.072
WGOT05G16AZ08302	24	29	-4	-2.310	-0.100
WGOT05G16AZ08303	80	83	-4	-2.300	-0.100
WGOT05G16AZ085040801	57	54	3	1.410	0.061
WGOT05G16BZ08304	76	79	-3	-1.420	-0.067
WGOT05G16BZ08305	50	50	0	0.230	0.003
WGOT05G16BZ08306	67	68	-2	-0.910	-0.038
WGOT05G16BZ08307	60	60	0	0.070	0.004

WGOT05G16BZ08309	73	72	2	0.900	0.039
WGOT05G16BZ08310	39	43	-4	-2.030	-0.081
WGOT05G16CZ08311	63	61	2	1.030	0.050
WGOT05G16CZ08313	57	59	-2	-1.040	-0.049
WGOT05G16CZ08314	54	57	-4	-1.760	-0.078
WGOT05G16CZ08315	61	60	1	0.430	0.021
WGOT05G16CZ08316	48	48	0	0.090	0.004
WGOT05G16CZ08317	46	47	-2	-0.690	-0.033
WGOT05G16CZ08318	54	51	3	1.580	0.067
WGOT05G17AZ08319	60	59	1	0.500	0.026
WGOT05G17AZ08320	61	62	-1	-1.380	-0.016
WGOT05G17AZ08321	53	54	-1	-0.460	-0.020
WGOT05G17AZ08322	55	56	-1	-0.640	-0.030
WGOT05G17AZ08323	33	35	-3	-1.270	-0.058
WGOT05G17AZ08324	82	82	0	-0.030	-0.001
WGOT05G17AZ08325	27	28	-1	-0.470	-0.022
WGOT05G17BZ08327	67	67	-1	-0.360	-0.016
WGOT05G17BZ08328	94	92	2	1.900	0.093
WGOT05G17BZ08329	30	26	5	2.420	0.103
WGOT05G17BZ08330	82	85	-2	-1.600	-0.059
WGOT05G17BZ08331	48	44	4	1.960	0.086
WGOT05G17BZ08332	73	72	0	0.210	0.009
WGOT05G17BZ08333	63	65	-3	-1.140	-0.058
WGOT05G18AZ08335	58	57	1	0.490	0.021
WGOT05G18AZ08336	38	37	1	0.650	0.029
WGOT05G18AZ08337	32	33	0	-0.210	-0.009
WGOT05G18AZ08338	21	21	0	0.050	0.002
WGOT05G18AZ08339	69	72	-3	-1.300	-0.058
WGOT05G18AZ085050801	40	41	-1	-0.300	-0.013
WGOT05G18AZ085060801	55	55	-1	-0.320	-0.012
WGOT05G18BZ08340	70	72	-1	-0.570	-0.027
WGOT05G18BZ08341	69	72	-3	-1.530	-0.074
WGOT05G18BZ08342	57	60	-3	-1.290	-0.056
WGOT05G18BZ08343	22	25	-3	-1.610	-0.071
WGOT05G18BZ08344	47	49	-2	-0.920	-0.039
WGOT05G18BZ08345	38	44	-6	-9.720	-0.121
WGOT05G18BZ08346	69	72	-3	-1.320	-0.057
WGOT05G18BZ08347	46	45	1	0.230	0.011
WGOT05G18CZ08191	74	80	-6	-3.860	-0.144
WGOT05G18CZ08348	34	39	-4	-2.100	-0.093
WGOT05G18CZ08349	60	64	-3	-1.680	-0.072
WGOT05G18CZ08352	41	42	-1	-0.560	-0.028
WGOT05G18CZ08353	33	32	1	0.280	0.013
WGOT05G18CZ08354	80	80	0	-0.130	-0.006
WGOT05G18CZ08355	94	93	1	1.690	0.021
WGOT05G18DZ08356	89	90	0	-0.220	-0.010

WGOT05G18DZ08357	46	54	-8	-3.850	-0.154	
WGOT05G18DZ08359	51	54	-2	-1.160	-0.049	
WGOT05G18DZ08360	35	38	-2	-1.030	-0.049	
WGOT05G18DZ08361	53	58	-5	-2.290	-0.101	
WGOT05G18DZ08362	46	46	0	-0.030	-0.002	
WGOT06G21AZ08364	41	43	-3	-4.430	-0.052	
WGOT06G21AZ08365	37	35	2	1.010	0.051	
WGOT06G21AZ08366	59	60	-1	-0.470	-0.018	
WGOT06G21AZ08367	43	34	9	4.440	0.188	
WGOT06G21AZ08368	22	29	-6	-3.270	-0.145	
WGOT06G21AZ08370	70	71	-2	-0.920	-0.040	
WGOT06G21AZ085220803	47	45	2	0.920	0.042	
WGOT06G21BZ08371	29	28	1	0.640	0.030	
WGOT06G21BZ08372	18	17	1	0.400	0.017	
WGOT06G21BZ08374	29	26	3	1.300	0.065	
WGOT06G21BZ08375	56	57	-1	-0.250	-0.010	
WGOT06G21BZ08376	36	35	0	0.150	0.007	
WGOT06G21BZ085230803	38	39	-1	-0.320	-0.013	
WGOT06G21CZ08377	47	54	-7	-2.950	-0.142	
WGOT06G21CZ08378	60	62	-2	-0.800	-0.034	
WGOT06G21CZ08380	76	83	-7	-3.610	-0.169	
WGOT06G21CZ08382	56	65	-10	-4.450	-0.196	
WGOT06G21CZ08383	59	71	-11	-6.000	-0.240	*
WGOT06G21CZ085140802	46	44	2	1.000	0.045	
WGOT06G21DZ08384	41	40	1	0.510	0.025	
WGOT06G21DZ08385	45	44	1	0.530	0.023	
WGOT06G21DZ08387	68	64	4	1.850	0.080	
WGOT06G21DZ08388	56	65	-9	-4.840	-0.187	
WGOT06G21DZ08389	56	56	0	-0.240	-0.010	
WGOT06G21DZ08390	76	81	-4	-8.250	-0.105	
WGOT06G21EZ08391	85	88	-3	-1.610	-0.074	
WGOT06G21EZ08393	56	57	-1	-0.390	-0.016	
WGOT06G21EZ08394	78	78	-1	-0.370	-0.018	
WGOT06G22AZ08386	75	77	-2	-0.960	-0.042	
WGOT06G22AZ08395	85	86	-1	-0.720	-0.032	
WGOT06G22AZ08396	67	67	0	-0.150	-0.007	
WGOT06G22AZ08397	43	40	3	1.380	0.061	
WGOT06G22AZ08398	88	88	0	0.040	0.002	
WGOT06G22AZ08399	98	97	0	0.590	0.031	
WGOT06G22AZ085070801	81	71	9	5.270	0.214	*
WGOT06G22AZ085080801	59	62	-3	-1.220	-0.052	
WGOT06G22AZ085160802	32	32	-1	-0.460	-0.019	
WGOT06G22BZ08400	37	35	2	1.100	0.045	
WGOT06G22BZ08401	54	49	5	2.380	0.097	
WGOT06G22BZ08402	68	71	-3	-1.610	-0.071	
WGOT06G22BZ08403	64	65	-1	-0.430	-0.020	

WGOT06G22BZ08404	26	24	2	1.000	0.047	
WGOT06G22CZ08405	57	60	-2	-1.210	-0.050	
WGOT06G22CZ08406	38	41	-2	-3.950	-0.049	
WGOT06G22CZ08407	52	53	-1	-0.640	-0.028	
WGOT06G22CZ08408	57	60	-2	-1.040	-0.043	
WGOT06G22CZ08409	37	35	1	0.700	0.031	
WGOT06G22CZ08411	67	69	-1	-0.730	-0.032	
WGOT06G23AZ08373	28	28	0	-0.220	-0.010	
WGOT06G23AZ08412	65	67	-2	-0.950	-0.039	
WGOT06G23AZ08413	18	22	-4	-2.300	-0.099	
WGOT06G23AZ08414	77	75	3	1.470	0.062	
WGOT06G23AZ08415	73	73	0	0.230	0.010	
WGOT06G23AZ08416	62	60	2	1.270	0.049	
WGOT06G23BZ08417	48	47	1	0.650	0.028	
WGOT06G23BZ08418	35	37	-2	-0.700	-0.035	
WGOT06G23BZ08419	35	33	1	0.550	0.025	
WGOT06G23BZ08420	17	18	-1	-0.310	-0.013	
WGOT06G23CZ08424	69	72	-3	-1.380	-0.060	
WGOT06G23CZ08425	65	65	-1	-0.960	-0.013	
WGOT06G23CZ08427	31	33	-2	-0.710	-0.033	
WGOT06G23CZ085240803	49	60	-12	-5.270	-0.240	*
WGOT06G23DZ08428	60	62	-2	-1.030	-0.046	
WGOT06G23DZ08430	59	62	-3	-1.520	-0.066	
WGOT06G23DZ08431	43	48	-5	-2.090	-0.092	

Appendix B. List of Rasch Item Difficulties

UIN	CBT_RID	PAP_RID	RID_DIF	ZDIF	EFFECT	SIG
WGOT01G01AZ08001	0.198	0.260	-0.062	-0.627	-0.725	
WGOT01G01AZ08002	-0.164	-0.279	0.115	1.071	1.428	
WGOT01G01AZ08003	-0.448	-0.607	0.159	1.416	1.765	
WGOT01G01AZ08005	0.015	0.018	-0.003	-0.032	-0.044	
WGOT01G01AZ08006	0.397	0.292	0.105	3.141	4.479	
WGOT01G01AZ08007	0.221	-0.120	0.340	3.417	3.939	*
WGOT01G01AZ08008	-0.556	-0.496	-0.060	-0.621	-0.715	
WGOT01G01AZ08009	-0.634	-0.844	0.209	2.127	2.629	
WGOT01G01AZ08010	0.326	0.207	0.120	1.096	1.436	
WGOT01G01AZ085010801	-0.252	-0.342	0.090	0.831	1.061	
WGOT01G01AZ085020801	-1.097	-0.807	-0.290	-2.450	-3.199	
WGOT01G01BZ08011	-0.921	-1.027	0.105	1.035	1.273	
WGOT01G01BZ08013	0.489	0.182	0.306	3.125	4.126	*
WGOT01G01BZ08014	-0.028	-0.180	0.152	1.727	2.052	
WGOT01G01BZ08015	0.403	0.595	-0.192	-1.614	-2.272	
WGOT01G01BZ08016	-0.065	-0.015	-0.049	-0.489	-0.628	
WGOT01G01BZ08017	0.479	0.219	0.260	2.246	3.273	
WGOT01G01BZ08018	-0.780	-1.090	0.310	3.132	3.482	*
WGOT01G01BZ08019	-0.327	0.023	-0.350	-3.322	-4.796	*
WGOT01G01BZ08020	-0.369	-0.475	0.106	1.032	1.287	
WGOT01G02AZ08021	0.069	0.086	-0.017	-0.160	-0.217	
WGOT01G02AZ08022	0.728	0.474	0.253	2.384	3.187	
WGOT01G02AZ08024	-0.134	-0.113	-0.022	-0.211	-0.253	
WGOT01G02AZ08025	0.008	0.105	-0.097	-0.831	-1.123	
WGOT01G02AZ08026	-0.498	-0.529	0.032	1.139	1.350	
WGOT01G02AZ08028	-0.723	-0.875	0.152	1.383	1.836	
WGOT01G02AZ085090802	0.924	0.753	0.170	1.613	1.975	
WGOT01G02BZ08029	-0.913	-1.040	0.127	1.158	1.453	
WGOT01G02BZ08030	0.203	0.305	-0.102	-0.947	-1.332	
WGOT01G02BZ08031	0.288	0.105	0.182	1.964	2.520	
WGOT01G02BZ08033	0.781	0.765	0.016	0.128	0.197	
WGOT01G02BZ08034	0.545	0.463	0.082	0.837	1.029	
WGOT01G02BZ08035	1.471	1.672	-0.201	-1.537	-2.258	
WGOT01G02BZ08037	-1.672	-1.616	-0.056	-0.464	-0.602	
WGOT01G02BZ08038	0.001	-0.139	0.140	1.346	1.615	
WGOT02G03AZ08039	0.178	0.022	0.156	1.499	1.927	
WGOT02G03AZ08040	0.082	0.224	-0.142	-1.464	-1.806	
WGOT02G03AZ08041	-0.260	-0.402	0.142	1.386	1.794	
WGOT02G03AZ08042	-0.243	-0.254	0.012	0.108	0.155	
WGOT02G03AZ08043	-0.327	-0.100	-0.227	-1.830	-2.739	
WGOT02G03AZ08044	-0.397	-0.407	0.010	0.092	0.134	
WGOT02G03AZ08045	1.163	1.142	0.021	0.211	0.267	
WGOT02G03BZ08046	-0.695	-0.746	0.051	0.473	0.661	
WGOT02G03BZ08047	-2.625	-2.325	-0.300	-1.950	-2.529	
WGOT02G03BZ08048	0.365	0.367	-0.002	-0.045	-0.064	
WGOT02G03BZ08049	-1.713	-1.740	0.027	0.212	0.264	

WGOT02G03BZ08050	-1.901	-2.037	0.136	1.039	1.326	
WGOT02G03BZ08051	0.785	0.943	-0.159	-1.504	-2.076	
WGOT02G03BZ08052	0.216	0.073	0.143	1.430	1.989	
WGOT02G03BZ08433	-0.992	-1.077	0.085	0.747	0.957	
WGOT02G04AZ08053	0.414	0.219	0.195	1.927	2.587	
WGOT02G04AZ08055	0.171	0.118	0.053	0.526	0.654	
WGOT02G04AZ08056	-0.023	-0.167	0.145	1.430	1.883	
WGOT02G04AZ08057	0.792	0.706	0.087	0.725	1.035	
WGOT02G04AZ08058	0.847	1.106	-0.259	-2.439	-3.563	
WGOT02G04AZ08059	1.105	1.247	-0.141	-1.091	-1.747	
WGOT02G04BZ08061	-1.951	-1.830	-0.121	-0.994	-1.156	
WGOT02G04BZ08062	-0.429	-0.450	0.021	0.753	0.907	
WGOT02G04BZ08063	-1.654	-1.427	-0.227	-2.055	-2.677	
WGOT02G04BZ08064	-1.764	-1.492	-0.272	-2.253	-2.841	
WGOT02G04BZ08065	-0.183	-0.255	0.071	0.693	0.920	
WGOT02G04BZ08066	-0.942	-0.864	-0.078	-0.667	-0.929	
WGOT02G04BZ08067	-0.376	-0.371	-0.005	-0.050	-0.059	
WGOT02G04CZ08068	-1.847	-1.630	-0.217	-1.734	-2.173	
WGOT02G04CZ08069	-0.973	-1.069	0.095	0.927	1.087	
WGOT02G04CZ08072	0.657	0.545	0.112	1.081	1.480	
WGOT02G04CZ08073	-0.587	-0.459	-0.128	-1.197	-1.592	
WGOT02G04CZ08074	-1.650	-1.633	-0.017	-0.147	-0.177	
WGOT02G05AZ08075	-0.794	-1.359	0.565	5.612	6.585	*
WGOT02G05AZ08076	-0.913	-0.858	-0.055	-0.523	-0.657	
WGOT02G05AZ08077	-0.723	-0.632	-0.091	-0.873	-1.109	
WGOT02G05AZ08078	-2.180	-2.355	0.175	4.471	5.572	
WGOT02G05AZ08079	-1.657	-1.642	-0.015	-0.116	-0.148	
WGOT02G05AZ08080	-0.245	-0.425	0.180	2.010	2.428	
WGOT02G05AZ085030801	-0.530	-0.149	-0.380	-3.329	-4.566	*
WGOT02G05BZ08081	-0.602	-0.721	0.119	1.204	1.439	
WGOT02G05BZ08082	-0.829	-1.038	0.209	1.963	2.568	
WGOT02G05BZ08083	-0.291	-0.189	-0.102	-0.973	-1.249	
WGOT02G05BZ08084	-1.675	-1.725	0.050	0.364	0.501	
WGOT02G05BZ08085	-0.216	-0.352	0.137	1.352	1.850	
WGOT02G05BZ08087	-0.511	-0.663	0.153	1.500	1.893	
WGOT02G06AZ08088	-1.479	-1.255	-0.225	-1.955	-2.564	
WGOT02G06AZ08089	-0.647	-0.607	-0.040	-0.352	-0.475	
WGOT02G06AZ08090	-2.342	-2.186	-0.156	-1.081	-1.323	
WGOT02G06AZ08091	0.232	0.166	0.066	0.551	0.790	
WGOT02G06AZ08092	0.342	0.287	0.054	0.487	0.635	
WGOT02G06AZ08600	-0.767	-0.783	0.016	0.145	0.205	
WGOT02G06BZ08095	-0.287	-0.162	-0.125	-1.178	-1.537	
WGOT02G06BZ08096	-0.484	-0.455	-0.030	-0.262	-0.368	
WGOT02G06BZ08097	0.639	0.664	-0.025	-0.243	-0.313	
WGOT02G06BZ08098	-1.427	-1.625	0.198	1.815	2.038	
WGOT02G06BZ08099	-2.506	-2.540	0.035	0.219	0.309	
WGOT02G06BZ08100	0.213	-0.137	0.350	3.647	4.458	*
WGOT02G06BZ08102	-0.736	-0.848	0.112	3.693	4.445	

WGOT02G06BZ08601	-0.773	-0.793	0.020	0.199	0.228	
WGOT02G07AZ08103	-0.119	-0.143	0.025	0.219	0.298	
WGOT02G07AZ08104	0.000	-0.119	0.119	1.073	1.434	
WGOT02G07AZ08105	-0.500	-0.512	0.012	0.110	0.158	
WGOT02G07AZ08107	-0.127	-0.291	0.165	5.680	7.301	
WGOT02G07AZ08108	0.874	0.942	-0.068	-0.545	-0.827	
WGOT02G07AZ08109	1.336	1.378	-0.042	-0.350	-0.487	
WGOT02G07AZ08111	-0.361	-0.164	-0.197	-1.838	-2.689	
WGOT02G07BZ08112	0.396	0.613	-0.217	-2.470	-3.041	
WGOT02G07BZ08115	-0.292	-0.396	0.104	0.990	1.263	
WGOT02G07BZ08116	-0.076	0.190	-0.266	-2.386	-3.239	
WGOT02G07BZ08117	0.738	0.513	0.225	2.058	2.772	
WGOT02G07BZ08118	-0.121	-0.212	0.090	3.042	3.843	
WGOT02G07BZ085100802	0.127	0.168	-0.041	-0.379	-0.534	
WGOT02G07CZ08119	-0.365	-0.409	0.044	0.379	0.536	
WGOT02G07CZ08120	-0.702	-0.929	0.226	2.191	2.694	
WGOT02G07CZ08122	-1.496	-1.719	0.223	1.636	2.201	
WGOT02G07CZ08123	-1.012	-1.261	0.248	2.460	2.859	
WGOT02G07CZ08124	-1.585	-1.551	-0.034	-0.255	-0.355	
WGOT02G07CZ08125	-0.635	-0.641	0.006	0.059	0.068	
WGOT02G07DZ08126	0.868	1.000	-0.132	-1.170	-1.601	
WGOT02G07DZ08128	1.392	1.268	0.124	1.022	1.393	
WGOT02G07DZ08129	-3.821	-3.409	-0.412	-1.595	-2.199	
WGOT02G07DZ08130	-0.670	-0.703	0.033	0.330	0.421	
WGOT02G07DZ08131	-0.434	-0.680	0.245	2.288	3.056	
WGOT02G07DZ08132	-0.180	-0.410	0.230	2.314	2.964	
WGOT02G08AZ08133	1.532	1.749	-0.216	-1.577	-2.142	
WGOT02G08AZ08134	-0.969	-1.027	0.057	0.465	0.642	
WGOT02G08AZ08135	-1.491	-1.537	0.047	0.377	0.493	
WGOT02G08AZ08137	1.297	1.515	-0.218	-1.611	-2.327	
WGOT02G08AZ08138	0.863	1.033	-0.171	-1.508	-2.103	
WGOT02G08AZ08139	-0.061	-0.105	0.044	0.432	0.592	
WGOT02G08BZ08140	-0.220	-0.346	0.127	1.096	1.469	
WGOT02G08BZ08141	-2.321	-2.736	0.415	2.682	3.441	*
WGOT02G08BZ08142	0.801	0.551	0.250	2.531	3.078	
WGOT02G08BZ08143	-1.179	-1.219	0.040	0.354	0.498	
WGOT02G08BZ08145	-0.177	-0.214	0.038	0.285	0.432	
WGOT02G08CZ08146	-0.671	-0.513	-0.158	-1.508	-1.932	
WGOT02G08CZ08147	1.218	1.119	0.100	0.873	1.342	
WGOT02G08CZ08150	0.592	0.502	0.090	0.802	1.235	
WGOT02G08CZ08151	-1.333	-1.216	-0.117	-0.975	-1.251	
WGOT02G08CZ08152	0.347	0.365	-0.018	-0.173	-0.229	
WGOT02G08DZ08153	0.127	0.081	0.046	0.540	0.566	
WGOT02G08DZ08154	-0.975	-0.778	-0.197	-2.022	-2.517	
WGOT02G08DZ08155	-0.417	-0.449	0.032	0.360	0.430	
WGOT02G08DZ08156	-0.308	-0.518	0.210	2.083	2.611	
WGOT02G08DZ08157	-0.958	-0.873	-0.085	-0.745	-1.049	
WGOT02G08DZ08158	0.313	0.154	0.159	5.028	6.464	

WGOT02G08DZ08602	-0.406	-0.438	0.032	0.331	0.389	
WGOT02G09AZ08160	-1.722	-1.579	-0.143	-1.240	-1.474	
WGOT02G09AZ08161	-0.545	-0.548	0.003	0.034	0.041	
WGOT02G09AZ08162	-0.382	-0.385	0.003	0.034	0.044	
WGOT02G09AZ08163	0.756	0.815	-0.059	-0.562	-0.826	
WGOT02G09AZ08164	0.592	0.540	0.052	1.664	2.153	
WGOT02G09AZ08165	0.426	0.350	0.076	0.771	1.077	
WGOT02G09AZ08166	-0.533	-0.318	-0.214	-1.872	-2.800	
WGOT02G09BZ08169	-0.170	-0.730	0.560	4.978	6.686	*
WGOT02G09BZ08171	0.914	0.796	0.117	1.163	1.586	
WGOT02G09BZ08172	0.407	0.320	0.086	0.810	1.125	
WGOT02G09BZ08173	-0.781	-0.705	-0.075	-0.676	-0.902	
WGOT03G10AZ08174	1.466	1.001	0.464	3.603	5.327	*
WGOT03G10AZ08175	-0.989	-1.062	0.073	2.132	2.859	
WGOT03G10AZ08176	1.217	1.241	-0.024	-0.208	-0.283	
WGOT03G10AZ08177	0.987	0.945	0.042	0.367	0.450	
WGOT03G10AZ08178	-0.721	-0.632	-0.089	-0.856	-1.129	
WGOT03G10BZ08179	0.171	0.287	-0.116	-1.089	-1.513	
WGOT03G10BZ08180	0.296	0.315	-0.019	-0.170	-0.233	
WGOT03G10BZ08181	0.849	0.835	0.014	0.117	0.172	
WGOT03G10BZ08182	0.215	0.162	0.052	0.509	0.689	
WGOT03G10BZ08185	0.127	0.246	-0.118	-1.062	-1.498	
WGOT03G10CZ08187	0.560	0.473	0.087	0.872	1.130	
WGOT03G10CZ08188	-1.415	-1.422	0.007	0.062	0.082	
WGOT03G10CZ08189	0.662	0.497	0.165	1.614	2.227	
WGOT03G10CZ08190	-0.736	-0.608	-0.129	-1.318	-1.574	
WGOT03G10CZ08192	0.441	0.307	0.134	1.337	1.746	
WGOT03G11AZ08194	1.819	1.679	0.140	0.986	1.422	
WGOT03G11AZ08195	3.045	2.727	0.318	1.629	2.318	
WGOT03G11AZ08196	-0.326	-0.478	0.152	1.488	1.946	
WGOT03G11AZ08197	0.305	0.267	0.038	1.189	1.537	
WGOT03G11AZ085110802	0.895	0.714	0.180	1.736	2.245	
WGOT03G11BZ08198	-1.937	-1.991	0.054	0.378	0.503	
WGOT03G11BZ08199	0.436	0.462	-0.026	-0.239	-0.306	
WGOT03G11BZ08200	-0.960	-0.884	-0.076	-0.790	-0.970	
WGOT03G11BZ08201	0.984	0.994	-0.010	-0.080	-0.119	
WGOT03G11BZ08202	-0.064	-0.097	0.033	0.321	0.428	
WGOT03G11BZ08203	-0.596	-0.601	0.004	0.040	0.051	
WGOT03G11BZ085120802	-0.362	-0.295	-0.067	-0.779	-0.824	
WGOT03G11CZ08101	-0.482	-0.405	-0.077	-0.660	-0.917	
WGOT03G11CZ08204	-0.446	-0.564	0.118	1.128	1.590	
WGOT03G11CZ08206	0.438	0.283	0.155	1.425	1.959	
WGOT03G11CZ08207	0.727	0.730	-0.003	-0.027	-0.035	
WGOT03G11CZ08208	0.079	0.106	-0.028	-0.274	-0.380	
WGOT03G11CZ08238	0.853	0.736	0.117	1.192	1.449	
WGOT03G12AZ08209	-0.390	-0.421	0.031	0.924	1.330	
WGOT03G12AZ08210	1.013	0.944	0.070	0.588	0.843	
WGOT03G12AZ08211	0.983	0.960	0.024	0.226	0.281	

WGOT03G12AZ08213	0.273	0.398	-0.124	-1.146	-1.518	
WGOT03G12AZ08214	0.220	-0.019	0.238	2.209	2.959	
WGOT03G12BZ08215	1.235	1.354	-0.119	-0.982	-1.412	
WGOT03G12BZ08216	-0.351	-0.184	-0.167	-1.575	-2.035	
WGOT03G12BZ08217	-0.093	-0.079	-0.014	-0.120	-0.156	
WGOT03G12BZ08218	0.448	0.225	0.222	2.367	3.034	
WGOT03G12BZ08219	0.086	-0.031	0.117	1.050	1.549	
WGOT03G12CZ08221	1.236	0.950	0.286	2.482	3.522	
WGOT03G12CZ08222	-0.129	-0.129	0.000	-0.003	-0.004	
WGOT03G12CZ08223	1.396	1.159	0.238	2.429	3.084	
WGOT03G12CZ08224	0.661	0.633	0.028	0.265	0.351	
WGOT03G12CZ085170803	-0.653	-0.769	0.116	1.256	1.480	
WGOT03G19AZ08225	0.255	0.294	-0.039	-0.374	-0.516	
WGOT03G19AZ08226	-1.004	-0.934	-0.070	-0.612	-0.807	
WGOT03G19AZ08227	-0.635	-0.649	0.014	0.450	0.570	
WGOT03G19AZ08230	0.433	0.553	-0.120	-1.056	-1.460	
WGOT03G19BZ08232	0.357	0.186	0.171	1.527	2.123	
WGOT03G19BZ08233	0.639	0.652	-0.014	-0.122	-0.173	
WGOT03G19BZ08234	-3.294	-3.384	0.091	0.387	0.559	
WGOT03G19BZ08235	-1.521	-1.697	0.176	1.564	1.898	
WGOT03G19BZ08236	1.207	1.103	0.105	0.919	1.200	
WGOT03G20AZ08032	-0.584	-0.423	-0.161	-1.516	-2.000	
WGOT03G20AZ08237	0.970	0.950	0.020	0.160	0.227	
WGOT03G20AZ08239	-0.134	-0.175	0.041	0.415	0.509	
WGOT03G20AZ08241	-0.469	-0.518	0.049	0.466	0.555	
WGOT03G20AZ08242	0.148	0.085	0.063	0.583	0.825	
WGOT03G20BZ08159	-0.300	-0.255	-0.046	-0.456	-0.588	
WGOT03G20BZ08243	1.505	1.513	-0.008	-0.065	-0.087	
WGOT03G20BZ08244	0.434	0.309	0.126	1.115	1.516	
WGOT03G20BZ08245	0.545	1.011	-0.466	-3.977	-6.111	*
WGOT03G20BZ08246	1.534	1.709	-0.174	-1.295	-1.864	
WGOT04G13AZ08247	-1.822	-2.044	0.223	5.694	7.025	
WGOT04G13AZ08248	-0.430	-0.688	0.258	2.180	2.982	
WGOT04G13AZ08250	-1.773	-1.405	-0.368	-2.920	-3.975	*
WGOT04G13AZ08251	0.959	0.800	0.159	1.784	2.252	
WGOT04G13AZ08252	1.591	1.640	-0.049	-0.347	-0.541	
WGOT04G13AZ08253	-0.336	-0.390	0.054	0.544	0.695	
WGOT04G13BZ08255	-0.975	-0.852	-0.122	-1.102	-1.479	
WGOT04G13BZ08256	-1.003	-0.967	-0.037	-0.358	-0.427	
WGOT04G13BZ08257	-1.160	-1.311	0.151	1.182	1.658	
WGOT04G13BZ08258	0.704	0.770	-0.066	-0.664	-0.837	
WGOT04G13BZ08259	0.773	0.629	0.144	1.362	1.727	
WGOT04G14AZ08260	0.443	0.466	-0.023	-0.731	-1.006	
WGOT04G14AZ08263	0.467	0.366	0.101	1.004	1.270	
WGOT04G14AZ08265	-1.643	-1.495	-0.148	-1.126	-1.457	
WGOT04G14BZ08268	0.709	0.706	0.004	0.032	0.042	
WGOT04G14BZ08269	0.492	0.618	-0.126	-1.198	-1.606	
WGOT04G14BZ08270	0.722	0.583	0.139	1.364	1.842	

WGOT04G14BZ08271	-0.138	-0.162	0.025	0.231	0.314
WGOT04G14CZ08273	-0.095	0.025	-0.120	-1.219	-1.633
WGOT04G14CZ08274	-0.788	-0.964	0.176	1.781	2.262
WGOT04G14CZ08275	0.534	0.588	-0.054	-0.509	-0.689
WGOT04G14CZ08276	1.041	1.194	-0.153	-1.278	-1.831
WGOT04G14CZ08277	0.111	0.072	0.039	0.372	0.470
WGOT04G14CZ08278	0.679	0.584	0.095	0.769	1.077
WGOT04G14CZ08279	0.326	0.216	0.110	1.142	1.497
WGOT04G15AZ08282	1.042	0.931	0.111	0.965	1.312
WGOT04G15AZ08283	-0.842	-0.740	-0.103	-1.062	-1.171
WGOT04G15AZ08284	-0.783	-0.879	0.096	0.929	1.093
WGOT04G15AZ08285	0.577	0.418	0.159	1.544	1.997
WGOT04G15AZ08286	0.674	0.740	-0.066	-0.656	-0.824
WGOT04G15AZ08287	-0.711	-0.916	0.205	2.035	2.828
WGOT04G15BZ08288	0.579	0.628	-0.049	-0.469	-0.621
WGOT04G15BZ08289	0.141	0.253	-0.111	-1.146	-1.396
WGOT04G15BZ08290	-0.567	-0.782	0.215	2.173	2.643
WGOT04G15BZ08291	0.697	0.614	0.082	0.739	1.067
WGOT04G15BZ08292	-0.167	-0.261	0.094	0.820	1.082
WGOT04G15BZ08293	-0.786	-0.818	0.032	0.313	0.372
WGOT04G15CZ08266	0.787	0.660	0.127	1.000	1.441
WGOT04G15CZ08295	0.080	-0.134	0.214	1.770	2.598
WGOT04G15CZ08296	0.375	0.299	0.077	2.301	3.128
WGOT04G15CZ08298	-0.167	-0.217	0.050	0.475	0.625
WGOT04G15CZ085180803	-0.118	-0.078	-0.040	-0.396	-0.481
WGOT04G15CZ085190803	-0.136	-0.190	0.054	0.490	0.623
WGOT04G15CZ085210803	-0.705	-0.692	-0.013	-0.127	-0.168
WGOT05G16AZ08299	-0.365	-0.378	0.013	0.129	0.161
WGOT05G16AZ08300	0.640	0.816	-0.176	-1.508	-2.096
WGOT05G16AZ08302	1.280	1.039	0.241	2.188	2.829
WGOT05G16AZ08303	-1.585	-1.863	0.277	2.274	2.835
WGOT05G16AZ085040801	-0.322	-0.178	-0.144	-1.427	-1.945
WGOT05G16BZ08304	-1.320	-1.495	0.175	1.393	1.844
WGOT05G16BZ08305	-0.003	0.011	-0.014	-0.408	-0.617
WGOT05G16BZ08306	-0.788	-0.882	0.093	0.929	1.085
WGOT05G16BZ08307	-0.493	-0.482	-0.011	-0.096	-0.134
WGOT05G16BZ08309	-1.161	-1.077	-0.084	-0.765	-0.967
WGOT05G16BZ08310	0.502	0.315	0.187	2.031	2.394
WGOT05G16CZ08311	-0.627	-0.508	-0.118	-1.025	-1.399
WGOT05G16CZ08313	-0.325	-0.439	0.114	1.047	1.431
WGOT05G16CZ08314	-0.174	-0.341	0.167	1.663	2.093
WGOT05G16CZ08315	-0.500	-0.443	-0.057	-0.505	-0.694
WGOT05G16CZ08316	0.081	0.100	-0.019	-0.178	-0.242
WGOT05G16CZ08317	0.197	0.122	0.075	0.678	0.944
WGOT05G16CZ08318	-0.207	-0.050	-0.157	-1.589	-1.843
WGOT05G17AZ08319	-0.487	-0.436	-0.050	-0.415	-0.589
WGOT05G17AZ08320	-0.536	-0.571	0.035	1.241	1.495
WGOT05G17AZ08321	-0.153	-0.197	0.044	0.443	0.596

WGOT05G17AZ08322	-0.236	-0.308	0.072	0.663	0.875	
WGOT05G17AZ08323	0.812	0.684	0.128	1.186	1.594	
WGOT05G17AZ08324	-1.711	-1.718	0.007	0.054	0.070	
WGOT05G17AZ08325	1.129	1.076	0.052	0.435	0.607	
WGOT05G17BZ08327	-0.797	-0.834	0.037	0.346	0.432	
WGOT05G17BZ08328	-3.026	-2.657	-0.369	-1.800	-2.384	
WGOT05G17BZ08329	0.958	1.221	-0.264	-2.391	-3.172	
WGOT05G17BZ08330	-1.745	-1.946	0.201	1.816	2.142	
WGOT05G17BZ08331	0.056	0.261	-0.205	-2.015	-2.371	
WGOT05G17BZ08332	-1.135	-1.108	-0.028	-0.250	-0.342	
WGOT05G17BZ08333	-0.620	-0.748	0.128	1.050	1.515	
WGOT05G18AZ08335	-0.383	-0.334	-0.049	-0.491	-0.652	
WGOT05G18AZ08336	0.563	0.629	-0.066	-0.609	-0.850	
WGOT05G18AZ08337	0.845	0.818	0.027	0.240	0.349	
WGOT05G18AZ08338	1.500	1.512	-0.012	-0.093	-0.121	
WGOT05G18AZ08339	-0.939	-1.083	0.144	1.296	1.618	
WGOT05G18AZ085050801	0.458	0.427	0.032	0.311	0.395	
WGOT05G18AZ085060801	-0.221	-0.247	0.027	0.300	0.343	
WGOT05G18BZ08340	-0.982	-1.043	0.061	0.534	0.725	
WGOT05G18BZ08341	-0.922	-1.117	0.195	1.625	2.241	
WGOT05G18BZ08342	-0.332	-0.462	0.130	1.284	1.520	
WGOT05G18BZ08343	1.418	1.232	0.186	1.580	2.175	
WGOT05G18BZ08344	0.115	0.025	0.090	0.912	1.145	
WGOT05G18BZ08345	0.564	0.280	0.283	9.351	11.742	
WGOT05G18BZ08346	-0.965	-1.096	0.131	1.226	1.700	
WGOT05G18BZ08347	0.173	0.204	-0.032	-0.282	-0.399	
WGOT05G18CZ08191	-1.190	-1.590	0.401	3.966	4.981	*
WGOT05G18CZ08348	0.755	0.535	0.220	2.053	2.901	
WGOT05G18CZ08349	-0.491	-0.661	0.170	1.667	2.087	
WGOT05G18CZ08352	0.424	0.372	0.053	0.461	0.639	
WGOT05G18CZ08353	0.801	0.844	-0.043	-0.367	-0.520	
WGOT05G18CZ08354	-1.571	-1.610	0.038	0.311	0.396	
WGOT05G18CZ08355	-3.047	-2.964	-0.083	-1.523	-1.991	
WGOT05G18DZ08356	-2.399	-2.421	0.022	0.127	0.175	
WGOT05G18DZ08357	0.158	-0.194	0.352	3.841	4.687	*
WGOT05G18DZ08359	-0.062	-0.171	0.109	1.113	1.440	
WGOT05G18DZ08360	0.675	0.562	0.113	1.005	1.347	
WGOT05G18DZ08361	-0.144	-0.379	0.235	2.295	2.825	
WGOT05G18DZ08362	0.167	0.171	-0.004	-0.035	-0.047	
WGOT06G21AZ08364	0.438	0.320	0.118	4.241	4.951	
WGOT06G21AZ08365	0.594	0.718	-0.124	-1.043	-1.561	
WGOT06G21AZ08366	-0.433	-0.474	0.041	0.445	0.529	
WGOT06G21AZ08367	0.303	0.743	-0.441	-4.427	-5.967	*
WGOT06G21AZ08368	1.429	1.052	0.377	3.216	4.358	*
WGOT06G21AZ08370	-0.942	-1.053	0.111	1.051	1.232	
WGOT06G21AZ085220803	0.118	0.220	-0.102	-0.970	-1.188	
WGOT06G21BZ08371	1.010	1.095	-0.084	-0.726	-1.054	
WGOT06G21BZ08372	1.746	1.820	-0.074	-0.584	-0.819	

WGOT06G21BZ08374	1.038	1.207	-0.168	-1.324	-1.879	
WGOT06G21BZ08375	-0.296	-0.309	0.014	0.142	0.185	
WGOT06G21BZ08376	0.689	0.709	-0.020	-0.166	-0.232	
WGOT06G21BZ085230803	0.542	0.516	0.026	0.260	0.315	
WGOT06G21CZ08377	0.109	-0.217	0.326	2.904	3.877	*
WGOT06G21CZ08378	-0.463	-0.533	0.069	0.718	0.825	
WGOT06G21CZ08380	-1.325	-1.794	0.469	3.635	4.933	*
WGOT06G21CZ08382	-0.281	-0.739	0.457	4.280	5.555	*
WGOT06G21CZ08383	-0.432	-1.011	0.579	6.078	7.713	*
WGOT06G21CZ085140802	0.180	0.286	-0.106	-1.022	-1.421	
WGOT06G21DZ08384	0.419	0.478	-0.059	-0.505	-0.661	
WGOT06G21DZ08385	0.212	0.266	-0.053	-0.551	-0.650	
WGOT06G21DZ08387	-0.861	-0.680	-0.181	-1.752	-2.298	
WGOT06G21DZ08388	-0.262	-0.694	0.432	4.879	5.629	*
WGOT06G21DZ08389	-0.279	-0.301	0.023	0.241	0.305	
WGOT06G21DZ08390	-1.373	-1.669	0.296	8.270	10.398	
WGOT06G21EZ08391	-1.967	-2.230	0.264	1.823	2.465	
WGOT06G21EZ08393	-0.289	-0.324	0.035	0.367	0.446	
WGOT06G21EZ08394	-1.411	-1.462	0.052	0.391	0.526	
WGOT06G22AZ08386	-1.227	-1.342	0.115	1.018	1.348	
WGOT06G22AZ08395	-1.983	-2.087	0.104	0.755	0.969	
WGOT06G22AZ08396	-0.818	-0.834	0.016	0.142	0.177	
WGOT06G22AZ08397	0.325	0.477	-0.151	-1.489	-2.101	
WGOT06G22AZ08398	-2.278	-2.275	-0.003	-0.018	-0.025	
WGOT06G22AZ08399	-4.031	-3.866	-0.165	-0.472	-0.721	
WGOT06G22AZ085070801	-1.636	-1.064	-0.572	-5.142	-6.128	*
WGOT06G22AZ085080801	-0.440	-0.572	0.132	1.316	1.637	
WGOT06G22AZ085160802	0.888	0.837	0.051	0.500	0.608	
WGOT06G22BZ08400	0.589	0.713	-0.125	-1.302	-1.665	
WGOT06G22BZ08401	-0.201	0.036	-0.238	-2.459	-3.115	
WGOT06G22BZ08402	-0.867	-1.041	0.174	1.585	2.024	
WGOT06G22BZ08403	-0.657	-0.703	0.045	0.398	0.548	
WGOT06G22BZ08404	1.177	1.293	-0.116	-0.921	-1.296	
WGOT06G22CZ08405	-0.347	-0.464	0.117	1.198	1.416	
WGOT06G22CZ08406	0.553	0.441	0.112	3.671	4.572	
WGOT06G22CZ08407	-0.098	-0.155	0.057	0.542	0.702	
WGOT06G22CZ08408	-0.352	-0.453	0.101	1.017	1.395	
WGOT06G22CZ08409	0.633	0.711	-0.078	-0.723	-1.015	
WGOT06G22CZ08411	-0.833	-0.920	0.087	0.823	0.940	
WGOT06G23AZ08373	1.061	1.045	0.016	0.139	0.200	
WGOT06G23AZ08412	-0.723	-0.814	0.091	0.924	1.055	
WGOT06G23AZ08413	1.710	1.437	0.273	2.222	2.935	
WGOT06G23AZ08414	-1.387	-1.233	-0.153	-1.416	-1.962	
WGOT06G23AZ08415	-1.166	-1.137	-0.029	-0.245	-0.343	
WGOT06G23AZ08416	-0.578	-0.461	-0.117	-1.296	-1.494	
WGOT06G23BZ08417	0.077	0.152	-0.075	-0.739	-0.977	
WGOT06G23BZ08418	0.705	0.617	0.088	0.716	1.055	
WGOT06G23BZ08419	0.740	0.804	-0.064	-0.564	-0.743	

WGOT06G23BZ08420	1.811	1.774	0.037	0.283	0.389	
WGOT06G23CZ08424	-0.919	-1.069	0.151	1.390	1.726	
WGOT06G23CZ08425	-0.715	-0.744	0.029	0.872	1.132	
WGOT06G23CZ08427	0.903	0.840	0.062	0.542	0.787	
WGOT06G23CZ085240803	0.060	-0.492	0.552	5.240	6.384	*
WGOT06G23DZ08428	-0.450	-0.548	0.097	0.939	1.257	
WGOT06G23DZ08430	-0.437	-0.595	0.157	1.553	1.833	
WGOT06G23DZ08431	0.300	0.090	0.210	2.045	2.790	

Appendix C. List of Item DIF Statistics

UIN	MH_ALPHA	DELTA	CL_L	CI_H	SIG
WGOT01G01AZ08001	1.051	-0.116	-0.566	0.334	A
WGOT01G01AZ08002	0.911	0.220	-0.233	0.673	A
WGOT01G01AZ08003	0.853	0.375	-0.082	0.831	A
WGOT01G01AZ08005	1.012	-0.028	-0.469	0.413	A
WGOT01G01AZ08006	0.905	0.234	0.105	0.362	A
WGOT01G01AZ08007	0.722	0.766	0.305	1.226	A
WGOT01G01AZ08008	1.050	-0.114	-0.581	0.354	A
WGOT01G01AZ08009	0.808	0.500	0.002	0.997	A
WGOT01G01AZ08010	0.881	0.296	-0.162	0.755	A
WGOT01G01AZ085010801	0.926	0.181	-0.280	0.643	A
WGOT01G01AZ085020801	1.319	-0.651	-1.142	-0.161	A
WGOT01G01BZ08011	0.870	0.328	-0.177	0.834	A
WGOT01G01BZ08013	0.741	0.704	0.254	1.154	A
WGOT01G01BZ08014	0.886	0.284	-0.162	0.731	A
WGOT01G01BZ08015	1.208	-0.443	-0.897	0.010	A
WGOT01G01BZ08016	1.037	-0.085	-0.537	0.367	A
WGOT01G01BZ08017	0.784	0.572	0.128	1.016	A
WGOT01G01BZ08018	0.736	0.722	0.202	1.241	A
WGOT01G01BZ08019	1.345	-0.697	-1.132	-0.262	A
WGOT01G01BZ08020	0.900	0.248	-0.211	0.707	A
WGOT01G02AZ08021	1.003	-0.007	-0.464	0.449	A
WGOT01G02AZ08022	0.791	0.550	0.106	0.993	A
WGOT01G02AZ08024	1.028	-0.065	-0.533	0.402	A
WGOT01G02AZ08025	1.097	-0.218	-0.657	0.221	A
WGOT01G02AZ08026	0.970	0.072	-0.061	0.206	A
WGOT01G02AZ08028	0.856	0.365	-0.123	0.853	A
WGOT01G02AZ085090802	0.841	0.408	-0.066	0.881	A
WGOT01G02BZ08029	0.879	0.303	-0.205	0.811	A
WGOT01G02BZ08030	1.098	-0.220	-0.665	0.226	A
WGOT01G02BZ08031	0.828	0.444	-0.006	0.894	A
WGOT01G02BZ08033	0.976	0.057	-0.400	0.514	A
WGOT01G02BZ08034	0.929	0.174	-0.276	0.624	A
WGOT01G02BZ08035	1.197	-0.422	-0.956	0.113	A
WGOT01G02BZ08037	1.060	-0.136	-0.699	0.426	A
WGOT01G02BZ08038	0.870	0.326	-0.130	0.782	A
WGOT02G03AZ08039	0.860	0.353	-0.104	0.811	A
WGOT02G03AZ08040	1.136	-0.300	-0.748	0.148	A
WGOT02G03AZ08041	0.860	0.355	-0.097	0.806	A
WGOT02G03AZ08042	0.995	0.012	-0.432	0.457	A
WGOT02G03AZ08043	1.207	-0.442	-0.897	0.012	A
WGOT02G03AZ08044	0.989	0.025	-0.431	0.482	A
WGOT02G03AZ08045	0.992	0.019	-0.497	0.536	A
WGOT02G03BZ08046	0.942	0.139	-0.328	0.606	A
WGOT02G03BZ08047	1.359	-0.721	-1.465	0.023	A
WGOT02G03BZ08048	0.993	0.017	-0.112	0.146	A
WGOT02G03BZ08049	1.004	-0.008	-0.592	0.576	A

WGOT02G03BZ08050	0.865	0.340	-0.286	0.966	A
WGOT02G03BZ08051	1.138	-0.304	-0.771	0.163	A
WGOT02G03BZ08052	0.860	0.354	-0.115	0.823	A
WGOT02G03BZ08433	0.931	0.169	-0.336	0.674	A
WGOT02G04AZ08053	0.843	0.402	-0.054	0.858	A
WGOT02G04AZ08055	0.938	0.150	-0.298	0.597	A
WGOT02G04AZ08056	0.873	0.319	-0.137	0.775	A
WGOT02G04AZ08057	0.906	0.231	-0.228	0.689	A
WGOT02G04AZ08058	1.269	-0.559	-1.031	-0.088	A
WGOT02G04AZ08059	1.143	-0.314	-0.805	0.177	A
WGOT02G04BZ08061	1.141	-0.310	-0.973	0.353	A
WGOT02G04BZ08062	0.978	0.053	-0.079	0.186	A
WGOT02G04BZ08063	1.276	-0.573	-1.131	-0.014	A
WGOT02G04BZ08064	1.321	-0.655	-1.235	-0.075	A
WGOT02G04BZ08065	0.924	0.186	-0.277	0.650	A
WGOT02G04BZ08066	1.091	-0.204	-0.691	0.283	A
WGOT02G04BZ08067	1.011	-0.026	-0.490	0.438	A
WGOT02G04CZ08068	1.234	-0.495	-1.096	0.107	A
WGOT02G04CZ08069	0.914	0.211	-0.311	0.732	A
WGOT02G04CZ08072	0.902	0.244	-0.212	0.699	A
WGOT02G04CZ08073	1.116	-0.257	-0.705	0.191	A
WGOT02G04CZ08074	1.022	-0.051	-0.637	0.535	A
WGOT02G05AZ08075	0.567	1.333	0.829	1.837	B+
WGOT02G05AZ08076	1.036	-0.084	-0.555	0.387	A
WGOT02G05AZ08077	1.103	-0.231	-0.713	0.250	A
WGOT02G05AZ08078	0.849	0.385	0.187	0.583	A
WGOT02G05AZ08079	1.012	-0.029	-0.612	0.555	A
WGOT02G05AZ08080	0.860	0.354	-0.098	0.806	A
WGOT02G05AZ085030801	1.432	-0.845	-1.297	-0.393	A
WGOT02G05BZ08081	0.888	0.279	-0.208	0.766	A
WGOT02G05BZ08082	0.818	0.473	-0.009	0.955	A
WGOT02G05BZ08083	1.118	-0.263	-0.746	0.220	A
WGOT02G05BZ08084	0.979	0.050	-0.538	0.639	A
WGOT02G05BZ08085	0.876	0.310	-0.136	0.756	A
WGOT02G05BZ08087	0.855	0.369	-0.089	0.828	A
WGOT02G06AZ08088	1.267	-0.556	-1.102	-0.011	A
WGOT02G06AZ08089	1.039	-0.090	-0.554	0.374	A
WGOT02G06AZ08090	1.221	-0.470	-1.225	0.285	A
WGOT02G06AZ08091	0.947	0.128	-0.310	0.566	A
WGOT02G06AZ08092	0.943	0.137	-0.314	0.588	A
WGOT02G06AZ08600	0.956	0.106	-0.372	0.585	A
WGOT02G06BZ08095	1.125	-0.276	-0.724	0.171	A
WGOT02G06BZ08096	1.030	-0.070	-0.538	0.397	A
WGOT02G06BZ08097	1.029	-0.066	-0.532	0.399	A
WGOT02G06BZ08098	0.813	0.487	-0.088	1.062	A
WGOT02G06BZ08099	0.950	0.120	-0.616	0.857	A
WGOT02G06BZ08100	0.707	0.814	0.351	1.277	A
WGOT02G06BZ08102	0.900	0.249	0.109	0.388	A

WGOT02G06BZ08601	0.992	0.019	-0.470	0.509	A
WGOT02G07AZ08103	0.979	0.051	-0.414	0.516	A
WGOT02G07AZ08104	0.894	0.263	-0.193	0.720	A
WGOT02G07AZ08105	0.994	0.013	-0.432	0.458	A
WGOT02G07AZ08107	0.856	0.366	0.236	0.495	A
WGOT02G07AZ08108	1.074	-0.168	-0.638	0.302	A
WGOT02G07AZ08109	1.041	-0.094	-0.623	0.434	A
WGOT02G07AZ08111	1.154	-0.337	-0.773	0.099	A
WGOT02G07BZ08112	1.194	-0.418	-0.864	0.028	A
WGOT02G07BZ08115	0.898	0.252	-0.202	0.705	A
WGOT02G07BZ08116	1.308	-0.631	-1.096	-0.166	A
WGOT02G07BZ08117	0.806	0.507	0.038	0.976	A
WGOT02G07BZ08118	0.918	0.201	0.071	0.330	A
WGOT02G07BZ085100802	1.040	-0.092	-0.532	0.349	A
WGOT02G07CZ08119	0.962	0.091	-0.361	0.543	A
WGOT02G07CZ08120	0.802	0.519	0.030	1.008	A
WGOT02G07CZ08122	0.806	0.506	-0.067	1.079	A
WGOT02G07CZ08123	0.773	0.605	0.106	1.104	A
WGOT02G07CZ08124	1.054	-0.123	-0.676	0.430	A
WGOT02G07CZ08125	0.987	0.031	-0.459	0.520	A
WGOT02G07DZ08126	1.135	-0.298	-0.781	0.184	A
WGOT02G07DZ08128	0.897	0.257	-0.255	0.768	A
WGOT02G07DZ08129	1.467	-0.900	-2.013	0.213	A
WGOT02G07DZ08130	0.966	0.080	-0.394	0.554	A
WGOT02G07DZ08131	0.801	0.522	0.060	0.984	A
WGOT02G07DZ08132	0.811	0.491	0.034	0.949	A
WGOT02G08AZ08133	1.208	-0.444	-0.999	0.111	A
WGOT02G08AZ08134	0.962	0.091	-0.431	0.614	A
WGOT02G08AZ08135	0.963	0.089	-0.482	0.661	A
WGOT02G08AZ08137	1.184	-0.398	-0.930	0.135	A
WGOT02G08AZ08138	1.165	-0.359	-0.853	0.136	A
WGOT02G08AZ08139	0.967	0.079	-0.367	0.525	A
WGOT02G08BZ08140	0.888	0.279	-0.180	0.738	A
WGOT02G08BZ08141	0.679	0.908	0.119	1.698	A
WGOT02G08BZ08142	0.789	0.557	0.070	1.043	A
WGOT02G08BZ08143	0.977	0.055	-0.444	0.555	A
WGOT02G08BZ08145	0.966	0.082	-0.360	0.524	A
WGOT02G08CZ08146	1.151	-0.331	-0.797	0.135	A
WGOT02G08CZ08147	0.902	0.243	-0.246	0.731	A
WGOT02G08CZ08150	0.916	0.206	-0.243	0.655	A
WGOT02G08CZ08151	1.132	-0.291	-0.811	0.229	A
WGOT02G08CZ08152	1.018	-0.042	-0.497	0.413	A
WGOT02G08DZ08153	0.947	0.127	-0.341	0.595	A
WGOT02G08DZ08154	1.203	-0.434	-0.918	0.051	A
WGOT02G08DZ08155	0.955	0.109	-0.338	0.556	A
WGOT02G08DZ08156	0.817	0.474	0.000	0.949	A
WGOT02G08DZ08157	1.074	-0.168	-0.633	0.297	A
WGOT02G08DZ08158	0.859	0.358	0.226	0.490	A

WGOT02G08DZ08602	0.949	0.122	-0.342	0.585	A
WGOT02G09AZ08160	1.172	-0.373	-0.948	0.201	A
WGOT02G09AZ08161	0.989	0.027	-0.448	0.501	A
WGOT02G09AZ08162	0.978	0.051	-0.385	0.487	A
WGOT02G09AZ08163	1.042	-0.096	-0.561	0.370	A
WGOT02G09AZ08164	0.950	0.120	-0.010	0.250	A
WGOT02G09AZ08165	0.930	0.171	-0.298	0.641	A
WGOT02G09AZ08166	1.177	-0.384	-0.833	0.065	A
WGOT02G09BZ08169	0.609	1.166	0.710	1.622	B+
WGOT02G09BZ08171	0.889	0.275	-0.189	0.740	A
WGOT02G09BZ08172	0.912	0.217	-0.223	0.657	A
WGOT02G09BZ08173	1.081	-0.182	-0.654	0.289	A
WGOT03G10AZ08174	0.647	1.023	0.512	1.535	B+
WGOT03G10AZ08175	0.943	0.138	0.002	0.275	A
WGOT03G10AZ08176	0.989	0.025	-0.470	0.521	A
WGOT03G10AZ08177	0.981	0.044	-0.446	0.534	A
WGOT03G10AZ08178	1.100	-0.224	-0.688	0.240	A
WGOT03G10BZ08179	1.116	-0.257	-0.716	0.201	A
WGOT03G10BZ08180	1.007	-0.015	-0.472	0.441	A
WGOT03G10BZ08181	0.999	0.003	-0.469	0.475	A
WGOT03G10BZ08182	0.936	0.154	-0.279	0.588	A
WGOT03G10BZ08185	1.106	-0.238	-0.688	0.213	A
WGOT03G10CZ08187	0.908	0.228	-0.238	0.694	A
WGOT03G10CZ08188	1.010	-0.022	-0.567	0.522	A
WGOT03G10CZ08189	0.856	0.364	-0.092	0.821	A
WGOT03G10CZ08190	1.126	-0.279	-0.754	0.197	A
WGOT03G10CZ08192	0.871	0.326	-0.128	0.779	A
WGOT03G11AZ08194	0.889	0.277	-0.303	0.857	A
WGOT03G11AZ08195	0.703	0.829	-0.043	1.701	A
WGOT03G11AZ08196	0.860	0.355	-0.100	0.811	A
WGOT03G11AZ08197	0.962	0.092	-0.036	0.220	A
WGOT03G11AZ085110802	0.825	0.452	-0.031	0.935	A
WGOT03G11BZ08198	0.945	0.133	-0.499	0.764	A
WGOT03G11BZ08199	1.018	-0.043	-0.499	0.413	A
WGOT03G11BZ08200	1.097	-0.217	-0.700	0.266	A
WGOT03G11BZ08201	0.995	0.012	-0.465	0.490	A
WGOT03G11BZ08202	0.970	0.071	-0.375	0.517	A
WGOT03G11BZ08203	0.974	0.063	-0.429	0.555	A
WGOT03G11BZ085120802	1.063	-0.144	-0.619	0.331	A
WGOT03G11CZ08101	1.065	-0.148	-0.588	0.292	A
WGOT03G11CZ08204	0.897	0.255	-0.206	0.716	A
WGOT03G11CZ08206	0.852	0.376	-0.062	0.813	A
WGOT03G11CZ08207	0.999	0.002	-0.464	0.469	A
WGOT03G11CZ08208	1.028	-0.066	-0.519	0.387	A
WGOT03G11CZ08238	0.886	0.284	-0.176	0.744	A
WGOT03G12AZ08209	0.969	0.075	-0.055	0.205	A
WGOT03G12AZ08210	0.930	0.170	-0.310	0.650	A
WGOT03G12AZ08211	0.977	0.054	-0.430	0.538	A

WGOT03G12AZ08213	1.123	-0.273	-0.731	0.185	A
WGOT03G12AZ08214	0.827	0.446	0.009	0.884	A
WGOT03G12BZ08215	1.117	-0.260	-0.759	0.239	A
WGOT03G12BZ08216	1.187	-0.402	-0.863	0.059	A
WGOT03G12BZ08217	1.025	-0.059	-0.524	0.407	A
WGOT03G12BZ08218	0.823	0.456	0.014	0.899	A
WGOT03G12BZ08219	0.894	0.264	-0.181	0.709	A
WGOT03G12CZ08221	0.766	0.627	0.112	1.143	A
WGOT03G12CZ08222	1.008	-0.018	-0.463	0.427	A
WGOT03G12CZ08223	0.796	0.536	0.037	1.034	A
WGOT03G12CZ08224	0.976	0.058	-0.399	0.514	A
WGOT03G12CZ085170803	0.889	0.277	-0.202	0.757	A
WGOT03G19AZ08225	1.032	-0.075	-0.531	0.381	A
WGOT03G19AZ08226	1.090	-0.203	-0.693	0.287	A
WGOT03G19AZ08227	0.988	0.028	-0.107	0.163	A
WGOT03G19AZ08230	1.131	-0.290	-0.753	0.173	A
WGOT03G19BZ08232	0.855	0.369	-0.082	0.821	A
WGOT03G19BZ08233	1.009	-0.021	-0.478	0.437	A
WGOT03G19BZ08234	0.909	0.225	-0.813	1.264	A
WGOT03G19BZ08235	0.824	0.454	-0.108	1.016	A
WGOT03G19BZ08236	0.908	0.226	-0.274	0.726	A
WGOT03G20AZ08032	1.164	-0.356	-0.828	0.116	A
WGOT03G20AZ08237	0.979	0.049	-0.425	0.524	A
WGOT03G20AZ08239	0.950	0.121	-0.352	0.594	A
WGOT03G20AZ08241	0.969	0.074	-0.393	0.540	A
WGOT03G20AZ08242	0.931	0.167	-0.280	0.614	A
WGOT03G20BZ08159	1.041	-0.095	-0.553	0.362	A
WGOT03G20BZ08243	0.969	0.075	-0.470	0.620	A
WGOT03G20BZ08244	0.882	0.294	-0.161	0.749	A
WGOT03G20BZ08245	1.485	-0.930	-1.387	-0.472	A
WGOT03G20BZ08246	1.178	-0.384	-0.918	0.149	A
WGOT04G13AZ08247	0.805	0.510	0.334	0.687	A
WGOT04G13AZ08248	0.787	0.563	0.101	1.024	A
WGOT04G13AZ08250	1.403	-0.795	-1.342	-0.248	A
WGOT04G13AZ08251	0.847	0.390	-0.101	0.881	A
WGOT04G13AZ08252	1.024	-0.055	-0.616	0.506	A
WGOT04G13AZ08253	0.934	0.160	-0.293	0.613	A
WGOT04G13BZ08255	1.138	-0.303	-0.787	0.180	A
WGOT04G13BZ08256	1.028	-0.065	-0.568	0.438	A
WGOT04G13BZ08257	0.855	0.368	-0.153	0.889	A
WGOT04G13BZ08258	1.048	-0.111	-0.589	0.368	A
WGOT04G13BZ08259	0.886	0.285	-0.174	0.744	A
WGOT04G14AZ08260	1.014	-0.032	-0.160	0.095	A
WGOT04G14AZ08263	0.907	0.231	-0.226	0.687	A
WGOT04G14AZ08265	1.193	-0.414	-0.991	0.163	A
WGOT04G14BZ08268	0.997	0.007	-0.455	0.468	A
WGOT04G14BZ08269	1.134	-0.295	-0.737	0.148	A
WGOT04G14BZ08270	0.872	0.321	-0.133	0.775	A

WGOT04G14BZ08271	0.957	0.104	-0.341	0.550	A
WGOT04G14CZ08273	1.118	-0.262	-0.706	0.183	A
WGOT04G14CZ08274	0.840	0.410	-0.068	0.889	A
WGOT04G14CZ08275	1.056	-0.127	-0.597	0.342	A
WGOT04G14CZ08276	1.143	-0.314	-0.806	0.179	A
WGOT04G14CZ08277	0.962	0.092	-0.370	0.554	A
WGOT04G14CZ08278	0.888	0.280	-0.187	0.747	A
WGOT04G14CZ08279	0.904	0.238	-0.208	0.684	A
WGOT04G15AZ08282	0.889	0.276	-0.219	0.770	A
WGOT04G15AZ08283	1.118	-0.262	-0.758	0.234	A
WGOT04G15AZ08284	0.914	0.211	-0.269	0.691	A
WGOT04G15AZ08285	0.873	0.320	-0.138	0.778	A
WGOT04G15AZ08286	1.073	-0.165	-0.638	0.308	A
WGOT04G15AZ08287	0.812	0.490	0.017	0.963	A
WGOT04G15BZ08288	1.031	-0.071	-0.513	0.370	A
WGOT04G15BZ08289	1.101	-0.227	-0.686	0.233	A
WGOT04G15BZ08290	0.798	0.530	0.041	1.019	A
WGOT04G15BZ08291	0.914	0.211	-0.247	0.669	A
WGOT04G15BZ08292	0.930	0.169	-0.277	0.616	A
WGOT04G15BZ08293	0.970	0.072	-0.434	0.577	A
WGOT04G15CZ08266	0.898	0.253	-0.217	0.723	A
WGOT04G15CZ08295	0.823	0.459	0.012	0.906	A
WGOT04G15CZ08296	0.926	0.180	0.052	0.309	A
WGOT04G15CZ08298	0.960	0.095	-0.360	0.550	A
WGOT04G15CZ085180803	1.035	-0.082	-0.544	0.380	A
WGOT04G15CZ085190803	0.957	0.103	-0.359	0.564	A
WGOT04G15CZ085210803	1.020	-0.046	-0.537	0.446	A
WGOT05G16AZ08299	0.992	0.018	-0.445	0.482	A
WGOT05G16AZ08300	1.164	-0.356	-0.816	0.104	A
WGOT05G16AZ08302	0.787	0.564	0.064	1.064	A
WGOT05G16AZ08303	0.736	0.721	0.116	1.326	A
WGOT05G16AZ085040801	1.148	-0.325	-0.780	0.130	A
WGOT05G16BZ08304	0.840	0.411	-0.134	0.956	A
WGOT05G16BZ08305	1.010	-0.023	-0.148	0.102	A
WGOT05G16BZ08306	0.914	0.212	-0.273	0.697	A
WGOT05G16BZ08307	0.989	0.026	-0.439	0.490	A
WGOT05G16BZ08309	1.119	-0.265	-0.798	0.267	A
WGOT05G16BZ08310	0.834	0.425	-0.031	0.882	A
WGOT05G16CZ08311	1.137	-0.303	-0.777	0.172	A
WGOT05G16CZ08313	0.892	0.269	-0.186	0.724	A
WGOT05G16CZ08314	0.841	0.406	-0.052	0.864	A
WGOT05G16CZ08315	1.047	-0.108	-0.568	0.352	A
WGOT05G16CZ08316	1.012	-0.029	-0.485	0.427	A
WGOT05G16CZ08317	0.931	0.169	-0.276	0.614	A
WGOT05G16CZ08318	1.166	-0.361	-0.819	0.098	A
WGOT05G17AZ08319	1.057	-0.131	-0.575	0.314	A
WGOT05G17AZ08320	0.969	0.074	-0.058	0.206	A
WGOT05G17AZ08321	0.955	0.108	-0.336	0.552	A

WGOT05G17AZ08322	0.941	0.144	-0.313	0.601	A
WGOT05G17AZ08323	0.884	0.290	-0.168	0.749	A
WGOT05G17AZ08324	0.999	0.003	-0.600	0.606	A
WGOT05G17AZ08325	0.960	0.096	-0.382	0.574	A
WGOT05G17BZ08327	0.971	0.069	-0.433	0.572	A
WGOT05G17BZ08328	1.397	-0.786	-1.610	0.037	A
WGOT05G17BZ08329	1.258	-0.539	-1.027	-0.052	A
WGOT05G17BZ08330	0.838	0.416	-0.180	1.012	A
WGOT05G17BZ08331	1.189	-0.408	-0.858	0.043	A
WGOT05G17BZ08332	1.030	-0.069	-0.560	0.422	A
WGOT05G17BZ08333	0.905	0.234	-0.222	0.691	A
WGOT05G18AZ08335	1.058	-0.131	-0.581	0.318	A
WGOT05G18AZ08336	1.066	-0.151	-0.603	0.301	A
WGOT05G18AZ08337	0.975	0.058	-0.414	0.531	A
WGOT05G18AZ08338	1.009	-0.022	-0.570	0.526	A
WGOT05G18AZ08339	0.879	0.303	-0.201	0.808	A
WGOT05G18AZ085050801	0.959	0.099	-0.357	0.554	A
WGOT05G18AZ085060801	0.969	0.075	-0.381	0.530	A
WGOT05G18BZ08340	0.933	0.162	-0.330	0.655	A
WGOT05G18BZ08341	0.837	0.419	-0.077	0.915	A
WGOT05G18BZ08342	0.879	0.304	-0.172	0.779	A
WGOT05G18BZ08343	0.847	0.392	-0.119	0.902	A
WGOT05G18BZ08344	0.924	0.185	-0.269	0.640	A
WGOT05G18BZ08345	0.776	0.597	0.468	0.726	A
WGOT05G18BZ08346	0.866	0.339	-0.144	0.823	A
WGOT05G18BZ08347	1.017	-0.039	-0.481	0.403	A
WGOT05G18CZ08191	0.690	0.873	0.328	1.418	A
WGOT05G18CZ08348	0.814	0.484	0.018	0.950	A
WGOT05G18CZ08349	0.863	0.346	-0.115	0.807	A
WGOT05G18CZ08352	0.947	0.128	-0.318	0.574	A
WGOT05G18CZ08353	1.030	-0.069	-0.524	0.386	A
WGOT05G18CZ08354	0.992	0.020	-0.542	0.582	A
WGOT05G18CZ08355	1.097	-0.218	-0.473	0.038	A
WGOT05G18DZ08356	0.990	0.024	-0.701	0.749	A
WGOT05G18DZ08357	0.714	0.792	0.340	1.243	A
WGOT05G18DZ08359	0.900	0.248	-0.191	0.687	A
WGOT05G18DZ08360	0.910	0.223	-0.234	0.680	A
WGOT05G18DZ08361	0.801	0.522	0.061	0.983	A
WGOT05G18DZ08362	0.970	0.072	-0.389	0.532	A
WGOT06G21AZ08364	0.891	0.270	0.136	0.405	A
WGOT06G21AZ08365	1.102	-0.229	-0.676	0.217	A
WGOT06G21AZ08366	0.962	0.091	-0.386	0.568	A
WGOT06G21AZ08367	1.452	-0.876	-1.323	-0.428	A
WGOT06G21AZ08368	0.710	0.806	0.290	1.323	A
WGOT06G21AZ08370	0.907	0.229	-0.291	0.749	A
WGOT06G21AZ085220803	1.099	-0.221	-0.679	0.236	A
WGOT06G21BZ08371	1.075	-0.169	-0.663	0.325	A
WGOT06G21BZ08372	1.030	-0.069	-0.637	0.499	A

WGOT06G21BZ08374	1.156	-0.340	-0.834	0.154	A
WGOT06G21BZ08375	0.974	0.062	-0.376	0.499	A
WGOT06G21BZ08376	1.004	-0.009	-0.462	0.444	A
WGOT06G21BZ085230803	0.978	0.053	-0.434	0.539	A
WGOT06G21CZ08377	0.744	0.695	0.237	1.153	A
WGOT06G21CZ08378	0.925	0.183	-0.279	0.645	A
WGOT06G21CZ08380	0.614	1.146	0.575	1.717	B+
WGOT06G21CZ08382	0.634	1.069	0.596	1.542	B+
WGOT06G21CZ08383	0.579	1.285	0.804	1.765	B+
WGOT06G21CZ085140802	1.116	-0.257	-0.698	0.183	A
WGOT06G21DZ08384	1.050	-0.114	-0.558	0.329	A
WGOT06G21DZ08385	1.048	-0.111	-0.574	0.352	A
WGOT06G21DZ08387	1.208	-0.444	-0.918	0.031	A
WGOT06G21DZ08388	0.642	1.042	0.569	1.514	B+
WGOT06G21DZ08389	0.978	0.053	-0.415	0.521	A
WGOT06G21DZ08390	0.756	0.656	0.497	0.816	A
WGOT06G21EZ08391	0.800	0.524	-0.112	1.160	A
WGOT06G21EZ08393	0.965	0.085	-0.384	0.553	A
WGOT06G21EZ08394	0.976	0.056	-0.488	0.600	A
WGOT06G22AZ08386	0.891	0.270	-0.251	0.791	A
WGOT06G22AZ08395	0.907	0.231	-0.469	0.930	A
WGOT06G22AZ08396	0.996	0.010	-0.471	0.491	A
WGOT06G22AZ08397	1.147	-0.322	-0.766	0.122	A
WGOT06G22AZ08398	0.987	0.032	-0.649	0.713	A
WGOT06G22AZ08399	1.165	-0.359	-1.747	1.030	A
WGOT06G22AZ085070801	1.805	-1.388	-1.939	-0.838	B-
WGOT06G22AZ085080801	0.889	0.278	-0.174	0.729	A
WGOT06G22AZ085160802	0.970	0.070	-0.413	0.554	A
WGOT06G22BZ08400	1.122	-0.270	-0.734	0.194	A
WGOT06G22BZ08401	1.261	-0.544	-1.007	-0.082	A
WGOT06G22BZ08402	0.837	0.417	-0.071	0.905	A
WGOT06G22BZ08403	0.951	0.118	-0.357	0.592	A
WGOT06G22BZ08404	1.119	-0.264	-0.770	0.242	A
WGOT06G22CZ08405	0.874	0.317	-0.159	0.792	A
WGOT06G22CZ08406	0.896	0.257	0.125	0.389	A
WGOT06G22CZ08407	0.936	0.156	-0.290	0.603	A
WGOT06G22CZ08408	0.906	0.231	-0.217	0.679	A
WGOT06G22CZ08409	1.058	-0.133	-0.592	0.325	A
WGOT06G22CZ08411	0.935	0.157	-0.350	0.664	A
WGOT06G23AZ08373	0.956	0.106	-0.382	0.593	A
WGOT06G23AZ08412	0.936	0.154	-0.324	0.633	A
WGOT06G23AZ08413	0.757	0.653	0.105	1.201	A
WGOT06G23AZ08414	1.156	-0.340	-0.839	0.158	A
WGOT06G23AZ08415	1.021	-0.050	-0.564	0.465	A
WGOT06G23AZ08416	1.121	-0.268	-0.753	0.216	A
WGOT06G23BZ08417	1.074	-0.169	-0.610	0.272	A
WGOT06G23BZ08418	0.936	0.157	-0.302	0.615	A
WGOT06G23BZ08419	1.065	-0.147	-0.624	0.330	A

WGOT06G23BZ08420	0.977	0.054	-0.522	0.631	A
WGOT06G23CZ08424	0.871	0.326	-0.161	0.813	A
WGOT06G23CZ08425	0.970	0.072	-0.060	0.205	A
WGOT06G23CZ08427	0.910	0.221	-0.256	0.699	A
WGOT06G23CZ085240803	0.586	1.255	0.797	1.714	B+
WGOT06G23DZ08428	0.901	0.246	-0.210	0.702	A
WGOT06G23DZ08430	0.872	0.321	-0.146	0.788	A
WGOT06G23DZ08431	0.830	0.438	-0.003	0.880	A