1993

PART IV

Summary

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We have summarized, at varying levels of detail, our current knowledge regarding the mineral jade, as well as related lithic materials utilized to produce social jade artifacts. Various authors also have summarized the cultural significance of both real and social jade to prehistoric mesoamerican and Central American peoples. Our emphasis has been more fully, although by no means exclusively, on the Maya and Costa Rican lapidary traditions and cultures, and less on the Olmec and Honduran ones. In this final chapter we summarize what we do know, and what we need to learn in the future. All of the efforts, past and future, can be characterized under one or more of three broad headings: (1) emphasis on the raw material; (2) emphases in which a thorough understanding of both the geological and cultural dimensions of the data are essential; and (3) emphasis on the cultural context.

Raw Material

In Chapters 1, 2, and 6 our contributors defined a major difference of opinion regarding whether or not there was a single source for mesoamerican and Central American jade, or two or more sources. If there is more than one source area, we need to identify it/them; if not, we need to gather the additional data needed to make the single-source theory more supportable.

Considering all of the geological and cultural variables, the present data base favors the multiple-source model, especially when the archaeological data base is taken into account. Bishop, Sayre, and Mishara (Chapter 2) and Hauff (Chapter 6) also argue persuasively that the chemical and geological data favor multiple sources. This is not an immutable conclusion, however, only the interpretation that seems most accurate at this time. Future geological research throughout the region, and additional archaeological research in Nicaragua and eastern Honduras may gradually fill in the data gaps that appear to exist today.

In: Precolumbian Jade: New Geological and Cultural Interpretations
Edited by: Frederick W. Lange
University of Utah Press, Salt Lake City

The suggestion by Professor Laguna, the geologist from the University of Costa Rica, that a jade source may be found in a buried transverse trench (the Murcielago-Hess fault) across northern Costa Rica merits careful evaluation. There are also some geological data suggesting the possibility of a source in Belize, but these data are inconclusive at this time. The fabled Guerrero source remains elusive in terms of real geological data, while additional research in the Motagua Valley may expand the range of known variation within that source region. We are certain we can say that the Santa Elena Peninsula of Costa Rica was not a source area.

As we point out elsewhere (Bishop and Lange, 1991), there is only very limited evidence of archaeological jade in the immediate Motagua source area. If a Costa Rican source cannot be identified, or if the single-source theory is supported for the Motagua region, then the assumptions underlying the oft-cited "criterion of abundance" as a statement of spatial relationship between source area and artifact distribution must be reexamined.

The authors in Part I document the wide variety of geological materials that have been identified as jade in the context of Costa Rican geology and archaeology. There is a great deal of mythology about jade and its identification, and these authors make clear that true jade cannot be identified on the basis of color, feel, heft, or any other nonquantified, nonanalytical method.

A significant related issue that bridges the categories of raw material, cultural behavior, and context is whether or not the precolumbian artisans were cognizant of the same geological distinctions we are making. We infer that they probably recognized three categories of stone, based on the workability of the materials: Group I would have been composed of true jade, which was the most infrequently available and the most difficult to work; Group II would have been composed of quartz, which was visually the most similar to jade as far as reflectance and which was considerably more common; Group III would have been composed of serpentine and other pyrophyllites (Weyl's and Balser's term). Both quartz and the pyrophyllites would be considered social jade, while most objects made from Group II stones would be classified as high-intensity, and almost all of those in Group III would be classified as low-intensity.

BRIDGES BETWEEN RAW MATERIAL AND CULTURAL CONTEXT

A number of the contributors have demonstrated a strong interrelationship between understanding the nature of the raw material and the cultural manipulation of the stone. Carlson's chapter examines possible ceremonial replication in jade of a Olmec iron oxide ore mirror. Prehistoric knowledge of the raw materials and utilization of sophisticated grinding techniques were important in this transformation, and the ritualization of utilitarian items is a well-known phenomenon. Graham (1981) has discussed the ceremonial conversion of metates and celts, and Lange (Chapter 21) has also discussed the

possibility of viewing jade celts as small reproductions of monolithic columns such as those found in Nicaragua.

The chapter by Garza-Valdés provides a detailed introduction to the weathering processes of both real and social jade, and pioneers an analytical technique that may become important in the relative dating of lithic artifacts made from the group of minerals he has studied.

Kurbjuhn also shows the close relationship between analysis of the raw material and the cultural symbolism added to it; in this case the results were somewhat more spectacular than anticipated—what began as a simple iconographical analysis of the celt, with all of the doubts and limitations attached to nonprovenienced artifacts, expanded greatly as minute organic traces from the cracks and crevasses on the object itself produced a radiocarbon date in agreement with the stylistic analyses. This is another example of the excellent value of materials analyses that allow the artifacts to "speak" for themselves (Bishop et al. 1988; Lange et al. 1990) and increases the possibility that the weathering data can be utilized for establishing chronological placement of similarly unprovenienced objects; additional research needs to be conducted on other artifacts made from similar materials.

Balser's examination of soft stone artifacts deals not only with objects that are clearly social jade, but also with those that have stylistic attributes that are largely different from the forms of those made from real jade or quartz. Some similarly shaped artifacts are pictured in Hartman (1907) and were reanalyzed by Fonseca and Scaglion (1978); they report a similar range of raw materials to those described in Part I.

The trial classification of Costa Rican material is a first attempt, by dividing artifacts into low-intensity (soft-quality stone) and high-intensity (harder- and tougher-quality stone), to correlate cultural values, technical expertise, resource access, and stylistic manipulation with the various raw materials utilized by prehistoric Costa Rican lapidary specialists.

Cultural Context

The authors in Part II provide regional overviews of the importance of jade, and how it contributes to interpretation, in different parts of Mesoamerica and Central America. The general summary by Garber, Grove, Hirth, and Hoopes emphasizes regional differences in chronological use of jade, contextual appearance in domestic and mortuary settings, and the differing levels of interpretation that are possible from glyphs and from form alone. More than anything, these researchers stress how few comparative data we have from Mesoamerica and Central America.

In part this is because there are relatively so few objects from controlled excavation contexts, and otherwise because there exists no standardized descriptive nomenclature for the area as a whole (similar to the type-variety system in ceramics) that would facilitate comparison from one area to another.

Our characterization of four major stone-carving traditions (Olmec, Maya, Costa Rica, and Ulua) are based largely on intuitive observations and nonprovenienced collections.

As noted above, the lack of strong quantitative data from secure archaeological context is a continuing impediment to interpreting the significance of jade in prehistoric Mesoamerica and Central America. The Hartman material from Las Guacas (1907) in Pacific Costa Rica, and the Hirths' chapter in this volume on central Honduran material are the only two quantitatively significant bodies of jade data we have. Both demonstrate the tremendous value of contextual data, and the fact that they are from different countries and were recovered more than 80 years apart is an indicator of how limited our data bases really are.

Guerrero's inventory of contextual material from Costa Rica is discouragingly small, and both the source and function of the Tibas jade (Chapter 19) would be wildly speculative were it an acontextual object. Guerrero's inventory and Lange's development of a trial classification of Costa Rican jades using both contextual and noncontextual materials are efforts that should be duplicated in the areas of the other carving traditions to facilitate regional comparisons.

The trial classification presented in Chapter 21 is but a first attempt to organize the many forms of Costa Rican jade into a descriptive organizational structure. One benefit from doing this was the subsequent opportunity to evaluate traditional designations of "Pacific," "Atlantic," and so forth that have frequently been attached to various Costa Rican jade styles. As noted for the jade collection recorded by Hartman from the Las Guacas cemetery on the Nicoya Peninsula on the Pacific Coast, it contains a wide diversity of forms that suggest that geographical covariation may not be as fixed as has been previously thought. Does the term axe god really describe the same form in Honduras that it does in Costa Rica or in Yucatán? More basically, we are not even consistent in the term's application in Costa Rica.

We need commensurate comparability in our geological and mineralogical terminology. Even after all of the neutron activation analyses of geological materials from the Santa Elena Peninsula in Costa Rica, there are those who prefer either to ignore the data, or who have access only to less-sophisticated analytical tools. The continued reports of true jade from the peninsula are both discouraging and misleading as far as future research is concerned. However, nonanalytical identification of minerals, and the attendant potential interpretive disasters, is not the sole provenance of Central American researchers.

Cody (1991:4), working in the West Indies, wrote that "a frog ornament looted from the site *appears in photographs to be nephrite*" (emphasis added). Because of the oft-suggested and sometimes demonstrated trade linkages between prehistoric peoples in the West Indies and those in Central America, a rigor similar to that displayed in Part I for Mesoamerica and Central America

should also be applied to the Caribbean area when identifying greenstone types.

Context is also essential in evaluating diffusion of form, iconography, and materials. As an example at the level of raw materials, there are five objects in the National Insurance Institute collection in San José, Costa Rica, that are made from Motagua Valley jade (Chapter 2): were they all from the same site; were they traded to Costa Rica in precolumbian or in modern times?

Are the Olmec-style materials found in Costa Rican trade items (again prehistoric or more recent), heirlooms, or raw material? Are they concentrated in areas of Costa Rican jade production? Is the Tibas jade really an import from outside the Costa Rican area? No chemical analyses have been permitted, and various stylistic analyses have been made (Snarskis 1979; Chapter 19). As we debate the correctness of these different arguments regarding source and symbol, we often lose sight of the fact that our major handicap is having but this one example. It is so anomalous in the context of Costa Rican archaeology that, had it not come from a controlled excavation, there might be a tendency to consider it a fake, or at best a modern import (fake or otherwise) from southern Mesoamerica.

After exhaustive study, Reents-Budet and Fields (1987) feel that the Maya belt celts reported from Costa Rica have legitimate glyphic texts on them and are almost certainly authentic; however, they are acontextual and especially mystifying because at present there are more known from Costa Rica than are known from the Maya area. Are they all from the Bagaces area, as generally attributed, or from a wider area? Such a distinction would help to assess whether these objects arrived as a result of structured Maya interaction with northern Costa Rica, or were heirlooms that worked their way, point-to-point, from the Maya borderlands to be employed as raw material in the Costa Rican lapidary industry.

A major difference among the different jade-carving traditions is the contrast between domestic and ritual archaeological occurrence. In the Maya area jade (in the social sense, as reliable geological or mineralogical evaluations are absent in 99 percent of the relevant archaeological literature) occurs in both domestic and mortuary contexts, whereas in Costa Rica and the Olmec region it is found almost exclusively in the mortuary settings. In the latter two areas there have been considerably more mortuary areas both excavated and pothunted than domestic ones, and the archaeological record may gradually balance out the distributional picture.

We know very little about how real jade and social jade resources were exploited and who worked them, who the artisans were, and how the finished products were distributed. Workshop debris outside the Motagua Valley is almost nonexistent. Some partially finished jade celts suggest that in some cases blanks may have been made and then finished "on demand." This certainly appears to be the case with the "split celts" from Costa Rica that are discussed in Chapter 21. The distributional gap in Nicaragua continues to be one of the

main archaeological supports of the multiple-source model, but the recent work in northern Nicaragua by Fletcher and Salgado (n.d.) is narrowing the geographical gap between southern Honduras and northern Costa Rica. Illustrations in their preliminary report suggest we are dealing with social jade and not real jade, but the actual specimens, which thus far are all from private collections in northern Nicaragua, have yet to be analyzed.

We also need to begin looking at cultural assemblages, instead of the artificial classes of ceramics, jade, stone, bone, and similar categories. Day shows the cross-media utilization of similar decorative motifs. Did the same artisan produce in more than one medium, or were the symbols tightly controlled and repeated by different production groups working with different raw materials? Is this overlap common in all four of the lapidary traditions, or only selected ones? Did this covariation occur only at certain times, or were the similarities present throughout the period of jade use within the individual traditions?

In summary, all of the important culture-history questions are dependent on the contextual data that must be derived from both geological and archaeological research. There are tantalizing suggestions of jade sources in Belize, and the corpus of contextual archaeological jade is increasing, but ever so slowly. We hope we will not have to wait another 80 years for another Las Guacas or another El Cajón to begin to produce more-precise and more-accurate interpretations.

APPENDICES

A Descriptive Data for Analyzed Specimens Belonging to Reference Groups[1]
B Oxide Concentrations for Analyzed Jadeitite Specimens Belonging to Reference Groups
C Relative X-Ray Diffraction Peak Intensities for Reference Group Members
D Descriptive Data for Nongrouped Analyzed Specimens Arranged by Site[2]
E Oxide Concentrations for Nongrouped Specimens Arranged by Site
F Relative X-Ray Diffraction Peak Intensities for Nongrouped Specimens

NOTES

1. Sources are abbreviated as follows. Belize: Department of Archaeology, Belize; El Cajón: El Cajón Project, Honduras; INS: Instituto Nacional de Seguros, Costa Rica; MFA Survey: Survey supported by the Museum of Fine Arts, Boston; MNCR: Museo Nacional de Costa Rica; PMAE: Peabody Museum of Archaeology and Ethnology; SAA: San Agustín Acasaguastlan; Univ. Museum: University Museum, University of Pennsylvania.

2. Abbreviations enclosed in brackets for "attributed" but not grouped samples: CHIG = Chichen Green; MOTD = Motagua Dark; MOTL = Motagua Light; CRD = Costa Rican Dark; CRL = Costa Racan Light.

APPENDIX A: DESCRIPTIVE DATA FOR ANALYZED SPECIMENS BELONGING TO REFERENCE GROUPS

MOTAGUA LIGHT REFERENCE GROUP

ID No	SITE	GENERAL FORM	SOURCE	INSTITUTION No	CATALOG No
J A387	ALTUN HA	BEAD	BELIZE	964.216.18	RP34/10-27
J A388	ALTUN HA	BEAD	BELIZE	964.216.18	RP34/10-27
J A398	ALTUN HA	MOSAIC MASK	BELIZE	966.159.153	RP215/33
J A312	CERROS	BEAD	BELIZE	SF543	
J A249	CR-GUACIMO	PREFORM	MNCR	22.497	
J A163	CUELLO	BEAD	BELIZE	33/199-3:40	462 Q8.6.19
J A214	CUELLO	BEAD FRAGMENT	BELIZE	33/199-3:28	467 Q75.6.2
J A518	EL CAJON	BEAD FRAGMENT	EL CAJON	PC-1 No. 1100-b	
J A139	HOLMUL	FRAGMENT	PMAE		C/5702
J A145	HOLMUL	FRAGMENT	PMAE		C/5596
J A281	HOLMUL	FRAGMENT	PMAE		C-5702
J S061	MIDDLE MOTAGUA	SOURCE JADE	JADES, S.A.	#1 (S006)	
J S063	MIDDLE MOTAGUA	SOURCE JADE	JADES, S.A.	#6 (S014)	
J S064	MIDDLE MOTAGUA	SOURCE JADE	JADES, S.A.	#5 (S008)	
J S067	MIDDLE MOTAGUA	SOURCE JADE	JADES, S.A.	TEMP X	
J S077	MIDDLE MOTAGUA	SOURCE JADE	MFA SURVEY	79-RB-24	
J S137	MIDDLE MOTAGUA	SOURCE JADE	JADES, S.A.	9C	
J S148	MIDDLE MOTAGUA	SOURCE JADE	JADES, S.A.	15A	
J S149	MIDDLE MOTAGUA	SOURCE JADE	JADES, S.A.	15D	
J S154	MIDDLE MOTAGUA	SOURCE JADE	MFA SURVEY	(96,97)	
J S158	MIDDLE MOTAGUA	SOURCE JADE	JADES, S.A.	(42A,B,C) &116,	117,118)
J A158	NOHMUL	BIBBED HEAD PENDANT	BELIZE	33/201-1:55 C	303-B-6 SF 5,6
J A300	TERZUOLA	FRAGMENT	MFA SURVEY	TZ-5	
J A301	TERZUOLA	FRAGMENT	MFA SURVEY	TZ-6	

MOTAGUA DARK REFERENCE GROUP

ID No	SITE	GENERAL FORM	SOURCE	INSTITUTION No	CATALOG No
J A380	ALTUN HA	HUMAN FACE PENDANT	BELIZE		RP418/3
J A310	CERROS	BEAD	BELIZE	SF539	
J A323	CERROS	BEAD	BELIZE	SF543	
J A030	COPAN	FRAGMENT	PMAE	92-49-20	C-186
J A035	COPAN	FRAGMENT	PMAE	92-49-20	C-186
J A037	COPAN	FRAGMENT	PMAE	92-49-20	C-186
J A051	COPAN	TUBULAR BEAD	PMAE	92-49-20	C-54
J A117	COPAN	FLAT FRAGMENT	PMAE	92-49-20	C/186
J A120	COPAN	FLAT FRAGMENT	PMAE	92-49-20	C/186
J A124	COPAN	FLAT FRAGMENT	PMAE	92-49-20	C/186
J A125	COPAN	FLAT FRAGMENT	PMAE	92-49-20	C/186
J A456	EL CAJON	BEAD FRAGMENT	EL CAJON	1100-C	
J S123	EL PROGRESSO	SOURCE JADE	JADES, S.A.		
J A137	HOLMUL	FRAGMENT	PMAE		C/5702
J*S006	MIDDLE MOTAGUA	SOURCE JADE	JADES, S.A.		
J*S029	MIDDLE MOTAGUA	SOURCE JADE	JADES, S.A.		
J*S070	MIDDLE MOTAGUA	SOURCE JADE	JADES, S.A.	TEMP R	
J*S076	MIDDLE MOTAGUA	SOURCE JADE	MFA SURVEY	79-RB-28	
J*S095	MIDDLE MOTAGUA	SOURCE JADE	MFA SURVEY	79-RB-30	
J*S152	MIDDLE MOTAGUA	SOURCE JADE	MFA SURVEY		
J A494	PIEDRAS NEGRAS	FRAGMENT	MFA	6791	
J A420	SAA	FRAGMENT	SAA	#116	
J*S115	SAA	SOURCE JADE	EDWIN SHOOK		
J A439	SALAMA VALLEY	BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.5/11A/32	
J A465	SALAMA VALLEY	FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/131	
J A336	SANTA RITA	BEAD	BELIZE	P2B/75-5n	SD-P2B-1
J A295	TERZUOLA	FRAGMENT	MFA SURVEY	TZ-1	
J A296	TERZUOLA	FRAGMENT	MFA SURVEY	TZ-2	

APPENDIX A:2

MOTAGUA EXCEPTIONAL REFERENCE GROUP

ID No	SITE	GENERAL FORM	SOURCE	INSTITUTION No	CATALOG No
J S001	MIDDLE MOTAGUA	SOURCE JADE	JADES, S.A.		
J S006	MIDDLE MOTAGUA	SOURCE JADE	JADES, S.A.		
J S057	MIDDLE MOTAGUA	SOURCE JADE	JADES, S.A.	Q7 (S017)	
J S059	MIDDLE MOTAGUA	SOURCE JADE	JADES, S.A.	#4 (S013)	
J S060	MIDDLE MOTAGUA	SOURCE JADE	JADES, S.A.	#2 (S012)	
J S062	MIDDLE MOTAGUA	SOURCE JADE	JADES, S.A.	#12 (S004)	
J S071	MIDDLE MOTAGUA	SOURCE JADE	JADES, S.A.	TEMP S	
J S143	MIDDLE MOTAGUA	SOURCE JADE	JADES, S.A.	ZA	
J S155	MIDDLE MOTAGUA	SOURCE JADE	JADES, S.A.	(103,104)	
J S161	MIDDLE MOTAGUA	SOURCE JADE	JADES, S.A.	2C	

CHICHEN GREEN REFERENCE GROUP

ID No	SITE	GENERAL FORM	SOURCE	INSTITUTION No	CATALOG No
J A325	ALTUN HA	NECKLACE BEAD	BELIZE	L.965.9.77	RP/200
J A386	ALTUN HA	GLYPH PLAQUE	BELIZE	L966.10.1	RP256/3
J A389	ALTUN HA	BEAD	BELIZE	964.216.18	RP34/10-27
J A433	CAHAL PECH	PENDANT	BELIZE	27/189-3:25	
J A026	CHICHEN ITZA	BEAD FRAGMENT	PMAE	63-32-20	CENOTE
J A042	CHICHEN ITZA	BEAD FRAGMENT	PMAE	63-32-20	CENOTE
J A044	CHICHEN ITZA	BEAD FRAGMENT	PMAE	63-32-20	CENOTE
J A085	CHICHEN ITZA	BEAD FRAGMENT	PMAE	63-32-20	23435
J A086	CHICHEN ITZA	BEAD FRAGMENT	PMAE	63-32-20	23435
J A088	CHICHEN ITZA	BEAD FRAGMENT	PMAE	63-32-20	23435
J A089	CHICHEN ITZA	BEAD FRAGMENT	PMAE	63-32-20	23435
J A090	CHICHEN ITZA	BEAD FRAGMENT	PMAE	63-32-20	23435
J A091	CHICHEN ITZA	BEAD FRAGMENT	PMAE	63-32-20	23435
J A094	CHICHEN ITZA	BEAD FRAGMENT	PMAE	63-32-20	23440
J A095	CHICHEN ITZA	BEAD FRAGMENT	PMAE	63-32-20	23440
J A096	CHICHEN ITZA	BEAD FRAGMENT	PMAE	63-32-20	23440
J A097	CHICHEN ITZA	BEAD FRAGMENT	PMAE	63-32-20	23440
J A098	CHICHEN ITZA	BEAD FRAGMENT	PMAE	63-32-20	23440
J A099	CHICHEN ITZA	BEAD FRAGMENT	PMAE	63-32-20	23440
J A100	CHICHEN ITZA	BEAD FRAGMENT	PMAE	63-32-20	23440
J A272	COPAN	CARVED OBJECT	PMAE		C-10892
J A254	CR-PACIFIC	HUMAN FIGURE PENDANT	MNCR	7.717	VELASCO
J A356	CUELLO	BEAD	BELIZE	17F127	C916
J A411	SAA	BEAD FRAGMENT	SAA	#111	
J A416	SAA	BEAD FRAGMENT	SAA	#105	
J A417	SAA	FRAGMENT	SAA	#124	
J A419	SAA	FRAGMENT	SAA	#115	
J S114	SAA	SOURCE JADE	EDWIN SHOOK		
J A442	SALAMA VALLEY	BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/184	
J A449	SALAMA VALLEY	BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.3/3/26	
J A450	SALAMA VALLEY	BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.3/3/27	
J A348	SANTA RITA	TOOTH INLAY	BELIZE	P2B/75-4a-d	
J A297	TERZUOLA	FRAGMENT	MFA SURVEY	TZ-3/1	
J A298	TERZUOLA	FRAGMENT	MFA SURVEY	TZ-3/2	

APPENDIX A:3

MAYA GREEN REFERENCE GROUP

ID No	SITE	GENERAL FORM	SOURCE	INSTITUTION No	CATALOG No
J A324	ALTUN HA	NECKLACE BEAD	BELIZE	L.965.9.77	RP/200
J A327	ALTUN HA	NECLACE BEAD	BELIZE	L.965.9.77	RP/200
J A328	ALTUN HA	NECLACE BEAD	BELIZE	L.965.9.77	RP/200
J A329	ALTUN HA	NECLACE BEAD	BELIZE	L.965.9.77	RP/200
J A317	CERROS	BEAD	BELIZE	SF540	
J A024	CHICHEN ITZA	BEAD	PMAE	63-32-20	CENOTE
J A043	CHICHEN ITZA	BEAD FRAGMENT	PMAE	63-32-20	CENOTE
J A101	CHICHEN ITZA	BEAD FRAGMENT	PMAE	63-32-20	23440
J A103	CHICHEN ITZA	BEAD FRAGMENT	PMAE	63-32-20	23440
J A010	COPAN	BEAD	PMAE	92-49-20	C-199
J A028	COPAN	BEAD	PMAE	63-32-20	CENOTE
J A052	COPAN	BEAD	PMAE	92-49-20	C-246
J A053	COPAN	BEAD	PMAE	92-49-20	c-246
J A054	COPAN	BEAD	PMAE	92-49-20	C-246
J A060	CUELLO	BEAD	BELIZE		
J A224	CUELLO	BEAD FRAGMENT	BELIZE	33/199-3:27	470 Q115.6.2
J A225	CUELLO	BEAD FRAGMENT	BELIZE	33/199-3:17	318 Q62.6.1
J A357	CUELLO	BEAD	BELIZE	17F81	C894
J A359	CUELLO	FRAGMENT	BELIZE	17F124	C908
J A474	CUELLO	FRAGMENT	BELIZE		1525-H
J A476	CUELLO	BEAD	BELIZE		1525-B
J A506	CUELLO	BEAD	BELIZE		1525-
J A141	HOLMUL	BEAD FRAGMENT	PMAE		C/5719
J A147	HOLMUL	BEAD FRAGMENT	PMAE		C/5602
J A368	LA BLANCA	BEAD	EDWIN SHOOK	K-62	
J A373	MONTE ALTO	BEAD	EDWIN SHOOK	J-18C	
J A375	MONTE ALTO	CARVED CLAW PENDANT	EDWIN SHOOK	J-18C	
J A377	MONTE ALTO	CARVED BEAD	EDWIN SHOOK	J-18C	
J A378	MONTE ALTO	BEAD	EDWIN SHOOK	J-18C	
J A005	NONPROVENIENCED	BEAD	MFA	MISC. COLLECTION	
J A008	NONPROVENIENCED	BEAD	MFA	MISC. COLLECTION	
J A365	QUIRIGUA	FRAGMENT	UNIV. MUSEUM	6F/51-5	
J A461	SALAMA VALLEY	FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/127	
J A330	SANTA RITA	PENDANT	BELIZE	P2B/75-4aa	
J A338	SANTA RITA	INLAY	BELIZE	P2B/75-4jj-yy	
J A339	SANTA RITA	INLAY	BELIZE	P2B/75-4jj-yy	
J A340	SANTA RITA	INLAY	BELIZE	P2B/75-4jj-yy	
J A341	SANTA RITA	INLAY	BELIZE	P2B/75-4jj-yy	
J A343	SANTA RITA	INLAY	BELIZE	P2B/75-4r-z	
J A344	SANTA RITA	INLAY	BELIZE	P2B/75-4r-z	
J A345	SANTA RITA	INLAY	BELIZE	P2B/75-4r-z	
J A346	SANTA RITA	INLAY	BELIZE	P2B/75-4r-z	
J A347	SANTA RITA	INLAY	BELIZE	P2B/75-4r-z	
J A350	SANTA RITA	INLAY	BELIZE	P2B/75-4e-g	
J A351	SANTA RITA	INLAY	BELIZE	P2B/75-4e-g	
J A352	SANTA RITA	INLAY	BELIZE	P2B/75-4e-g	
J A353	SANTA RITA	INLAY	BELIZE	P2B/75-4e-g	
J A354	SANTA RITA	INLAY	BELIZE	P2B/75-4e-g	
J A185	TIBAS	TUBULAR BEAD	MNCR	1.5TM-19	

APPENDIX A:4

ALBITE LIGHT REFERENCE GROUP

ID No	SITE	GENERAL FORM	SOURCE	INSTITUTION No	CATALOG No
J A383	ALTUN HA	HUMAN FIGURE PENDANT	BELIZE	L966.10.2	RP256/1
J A114	COPAN	CARVED OBJECT	PMAE	93-27-20	C/893
J A262	CR-GUANACASTE	TUBULAR BAR	INS	1473	
J A452	EL CAJON	FRAGMENT	EL CAJON	1070	
J A453	EL CAJON	FRAGMENT	EL CAJON	1084	
J A454	EL CAJON	FRAGMENT	EL CAJON	1059	
J A455	EL CAJON	FRAGMENT	EL CAJON	(1059)	
J A458	EL CAJON	FRAGMENT	EL CAJON	(58)	
J A483	EL CAJON	FRAGMENT	EL CAJON	SN-2	
J A484	EL CAJON	DISK FRAGMENT	EL CAJON	PC-1/12	
J A486	EL CAJON	FRAGMENT	EL CAJON	PC-1/62	
J A488	EL CAJON	DISK FRAGMENT	EL CAJON	PC-1/347	
J A489	EL CAJON	FRAGMENT	EL CAJON	PC-1/832	
J A491	EL CAJON	FRAGMENT	EL CAJON	PC-1/1050	
J A492	EL CAJON	FRAGMENT	EL CAJON	PC-1/1051	
J A514	EL CAJON	FRAGMENT	EL CAJON	PC-1 No. 18	
J A517	EL CAJON	FRAGMENT	EL CAJON	PC-1 No. 105	
J A432	SAA	FRAGMENT	SAA	#117	
J A299	TERZUOLA	FRAGMENT	MFA SURVEY	TZ-4	

ALBITE DARK REFERENCE GROUP

ID No	SITE	GENERAL FORM	SOURCE	INSTITUTION No	CATALOG No
J A032	COPAN	FRAGMENT	PMAE	92-49-20	C-186
J A033	COPAN	FRAGMENT	PMAE	92-49-20	C-186
J A034	COPAN	FRAGMENT	PMAE	92-49-20	C-186
J A039	COPAN	FRAGMENT	PMAE	92-49-20	C-186
J A041	COPAN	FRAGMENT	PMAE	92-49-20	C-186
J A119	COPAN	FLAT FRAGMENT	PMAE	92-49-20	C/186
J A121	COPAN	FLAT FRAGMENT	PMAE	92-49-20	C/186
J A126	COPAN	FLAT FRAGMENT	PMAE	92-49-20	C/186
J A184	CR-GRECIA	BEAD	MNCR	3346III-3	
J A047	KAMINALJUYU	BEAD FRAGMENT	PMAE	55-8-20	19622

APPENDIX A:5

COSTA RICAN LIGHT REFERENCE GROUP

ID No	SITE	GENERAL FORM	SOURCE	INSTITUTION No	CATALOG No
J A321	CERROS	BEAD	BELIZE	SF545	
J A423	CERROS	CELT	BELIZE	SF-225	
J A062	CHIAPAS	CELT	PMAE	06-61-20	C/3950
J A210	CR-ATLANTIC	BIRD PENDANT	INS	6484	
J A242	CR-BAGACES	PENDANT	INS	4431	
J A197	CR-CANAS	BIRD PENDANT	INS	6468	
J A230	CR-GUACIMO	BIRD PENDANT	INS	6465	
J A269	CR-GUACIMO	BAR PENDANT	INS	6464	
J A200	CR-GUANACASTE	PENDANT	INS	1809	
J A201	CR-GUANACASTE	CROCODILE PENDANT	INS	6492	
J A202	CR-GUANACASTE	HUMAN FIGURE PENDANT	INS	6455	
J A208	CR-GUANACASTE	BIRD PENDANT	INS	6469	
J A232	CR-GUANACASTE	HUMAN FIGURE PENDANT	INS	6473	
J A261	CR-GUANACASTE	HUMAN FIGURE PENDANT	INS	6482	
J A265	CR-GUANACASTE	PENDANT	INS	2244	
J A178	CR-PACIFIC	PENDANT	MNCR	23.688	
J A181	CR-PACIFIC	PENDANT	MNCR	23.687	
J A187	CR-PACIFIC	PENDANT	MNCR	23.683	
J A188	CR-PACIFIC	PENDANT	MNCR	23.685	
J A192	CR-PACIFIC	PENDANT	MNCR	7.725	
J A193	CR-PACIFIC	BIRD PENDANT	MNCR	7.732	
J A195	CR-PACIFIC	PENDANT	MNCR	8.037	
J A245	CR-PACIFIC	PREFORM	MNCR	8.000	VELASCO
J A253	CR-PACIFIC	BIRD PENDANT	MNCR	23.267	VELASCO
J A256	CR-PACIFIC	PENDANT	MNCR	2.980	VELASCO
J A260	CR-PACIFIC	LIZARD HEAD BAR PENDANT	MNCR	7.962	VELASCO
J A169	CUELLO	BEAD FRAGMENT	BELIZE	33/199-3:35	460 Q8.6.17
J A172	CUELLO	BEAD	BELIZE	33/199-3:42	459 Q8.6.16
J A176	CUELLO	BEAD	BELIZE		
J A213	CUELLO	BEAD FRAGMENT	BELIZE	33/199-3:43	456 Q8.6.13
J A221	CUELLO	BEAD FRAGMENT	BELIZE	33/199-3:25	455 Q8.6.12
J A222	CUELLO	FRAGMENT	BELIZE	33/199-3:48	159 Q8.6.1
J A198	NOSARA	BIRD PENDANT	INS	6201	
J A209	NOSARA	HUMAN FIGURE PENDANT	INS	6205	
J A063	SAN SALVADOR	CELT	PMAE	31-39-20	C/13497
J A071	YUCATAN	CELT	PMAE	26-42-20	C/9937
J A113	YUCATAN	CELT	PMAE	88-19-20	C/45711

COSTA RICAN DARK REFERENCE GROUP

ID No	SITE	GENERAL FORM	SOURCE	INSTITUTION No	CATALOG No
J A206	CR-ATLANTIC	BIRD PENDANT	INS	0296	
J A204	CR-GUANACASTE	PENDANT	INS	6167	
J A237	CR-GUANACASTE	BIRD PENDANT	INS	6488	
J A240	CR-GUANACASTE	ANTHROPOMORPIC PENDANT	INS	6456	
J A243	CR-GUANACASTE	HUMAN FIGURE PENDANT	INS	2216	
J A244	CR-GUANACASTE	HUMAN FIGURE PENDANT	INS	2219	
J A238	CR-NICOYA	WINGED PENDANT	INS	6457	
J A183	CR-PACIFIC	HUMAN FIGURE	MNCR	24.208	
J A247	CR-PACIFIC	PENDANT	MNCR	7.855	VELASCO
J A251	CR-PACIFIC	PREFORM	MNCR	8.030	VELASCO
J A255	CR-PACIFIC	PREFORM	MNCR	8.002	VELASCO
J A258	CR-PACIFIC	HUMAN FIGURE PENDANT	MNCR	7.737	VELASCO

NON-JADE

ID No	SITE	GENERAL FORM	SOURCE	INSTITUTION No	CATALOG No
J A311	CERROS	BEAD FRAGMENT	BELIZE	SF539	
J A405	CHALCATZINGO	BEAD	JADES, S.A.		
J A406	CHALCATZINGO	BEAD	JADES, S.A.		
J A013	COPAN	BEAD	PMAE	92-49-20	C-199
J A129	COPAN	SMOOTHED OBJECT	PMAE	48-11-20	17871
J A131	COPAN	FRAGMENT	PMAE	04-22-20	C/3816
J A228	CR-GUANACASTE	PENDANT	INS	2072	
J A182	CR-PACIFIC	HUMAN FIGURE PENDANT	MNCR	3.001	
J A194	CR-PACIFIC	BIRD PENDANT	MNCR	22.543	
J A165	CUELLO	BEAD	BELIZE	33/199-3:61	504 Q339.6.1
J A166	CUELLO	BEAD	BELIZE	33/199-3:34	457 Q8.6.14
J A167	CUELLO	BEAD	BELIZE	33/199-3:16	283 Q114.6.3
J A168	CUELLO	BEAD	BELIZE	33/199-3:15	282 Q114.6.2
J A175	CUELLO	BEAD	BELIZE		
J A219	CUELLO	BEAD FRAGMENT	BELIZE	33/199-3:20	453 Q8.6.10
J A136	HOLMUL	FRAGMENT	PMAE		C/5702
J A285	HOLMUL	FRAGMENT	PMAE		C-5702
J A286	HOLMUL	FRAGMENT	PMAE		C-5702
J A079	HONDURAS	CELT	PMAE	48-11-20	17871
J A111	MEXICO	CELT	PMAE	28-1-20	C/10303
J A001	NONPROVENIENCED	BEAD	MFA	MISC. COLLECTION	
J A002	NONPROVENIENCED	BUTTON	MFA	MISC. COLLECTION	
J A003	NONPROVENIENCED	TUBULAR BEAD	MFA	MISC. COLLECTION	
J A481	SALAMA VALLEY	FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/31	
J A503	SALAMA VALLEY	BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/75	
J A512	SALAMA VALLEY	BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/48	
J A250	TIBAS	MACE HEAD	MNCR	1.5TM-25	
J A078	VALLEY OF MEXICO	CELT	PMAE	78-45-20	15316

APPENDIX B: OXIDE CONCENTRATIONS FOR ANALYZED JADEITITE SPECIMENS BELONGING TO REFERENCE GROUPS

MOTAGUA LIGHT REFERENCE GROUP

	Na_2O	Sc_2O_3	Eu_2O_3	Lu_2O_3	Yb_2O_3	HfO_2	Cr_2O_3	Fe_2O_3	CoO	
	PCT	PPM	PPB	PPB	PPM	PPM	PPM	PCT	PPM	
J A139		4.04	86.3	60.0	0.283	2.91	54.6	1.449	7.66	
J A145		1.26	41.0	40.4	0.156	0.85	93.3	1.321	8.47	
J A158	12.8	1.56	15.7			0.73	72.4	1.230	5.11	
J A163	12.7	0.62	74.8	37.4	0.207	0.81	16.7	0.776	5.45	
J A214		1.14	61.0	52.8	0.242	1.79	92.3	1.679	7.46	
J A249	11.3	0.33	34.2	26.3	0.098	1.20	6.4	0.793	4.53	
J A281	17.5<	4.32	92.3	48.1	0.238	2.47	156.0	1.479	9.66	
J A300	11.9	0.45	23.0	19.8	0.106	0.73	2.9	0.452	1.98	
J A301	13.5	0.87	69.8	27.0	0.152	1.28	30.7	1.130	6.55	
J A312	12.7	2.92		18.7	0.091	2.19	6.0	0.912	3.28	
J A387	12.6	0.94	14.2	24.7	0.132	1.26	52.1	0.863	2.12	
J A388	11.3	0.63	16.0	12.6	0.097	0.87	73.8	0.794	4.65	
J A398	13.1	0.79	11.0	12.5	0.082	0.79	60.3	0.710	2.61	
J A518	14.0	0.99	12.6	21.0	0.103	0.64	48.5	0.877	1.93	
J S061	12.8	0.25	34.6	17.2	0.090	1.66	1.7	0.682	3.42	
J S063	13.1	0.40	18.2	11.8	0.067	1.17	3.9	0.548	2.33	
J S077	11.9	1.87	9.5	15.5	0.089	1.05	0.9	1.050	1.85	
J S148	12.9	0.26	25.7	18.9	0.080	1.24	1.8	0.759	2.54	
J S149	14.4	0.89	38.9	34.2	0.171	1.53	26.1	0.488	2.57	
J S154	12.1	1.11	17.7	17.1	0.073	1.60	1.2	1.230	3.16	
J-S064	12.2	2.09	14.9	18.8	0.070	1.96		1.459	4.10	
J-S067		1.42	19.0	16.5	0.069	1.06	95.5	1.140	3.26	
J-S137	14.0	1.31	51.1	34.2	0.153	2.05	50.4	1.219	4.78	
J-S158	10.8	2.20	26.5	31.5	0.155	2.24	34.4	1.429	4.72	
NUMBER AVERAGED	20	24	23	23	23	24	23	24	24	
MEAN CONC	12.8	1.02	27.8	24.0	0.119	1.30	18.7	0.959	3.85	
GRP STD DEV (PCT)	11.0	119.8	100.1	60.3	55.2	54.3	410.9	44.3	64.3	
MEAN + GSD	14.2	2.25	55.6	38.5	0.184	2.00	95.8	1.384	6.33	
MEAN - GSD	11.5	0.46	13.9	15.0	0.076	0.84	3.7	0.665	2.34	
UPPER 95% LIMIT	15.9	5.21	117.2	63.9	0.295	3.18	552.2	2.049	10.76	
LOWER 95% LIMIT	10.3	0.20	6.6	9.0	0.048	0.53	0.6	0.449	1.38	

< CONCENTRATIONS EXCEEDING 95% CONFIDENCE LIMITS

APPENDIX B:2

MOTAGUA DARK REFERENCE GROUP

	Na_2O PCT	Sc_2O_3 PPM	Eu_2O_3 PPB	Lu_2O_3 PPB	Yb_2O_3 PPM	HfO_2 PPM	Cr_2O_3 PPM	Fe_2O_3 PCT	CoO PPM
J A030	7.91	5.16	71.9	67.0	0.273	0.56	403.	2.40	16.2
J A035	7.53	5.40	84.9	43.3	0.256	0.55	879.	2.35	15.9
J A037	7.48	5.18	29.1	34.6	0.197	0.39	379.	2.47	17.1
J A051	9.29	4.01	147.9	65.2	0.519	1.61	733.	2.49	14.9
J A117	10.99	4.95	93.3	85.1	0.279	0.60	439.	2.22	15.4
J A120	11.19	5.24	174.2	66.5	0.331	0.45	482.	2.37	16.4
J A124	12.11	3.46	58.3	56.8	0.173	1.39	377.	1.57	10.8
J A125	10.09	4.42	46.6	42.1	0.101<	1.19	1009.	2.13	21.9
J A137	7.74	5.93	148.9	148.9<	0.550	3.16	148.	3.80	21.1
J A295	9.35	2.62	87.1	44.7	0.268	0.64	1510.	1.37	13.9
J A296	6.82	7.23	71.6	60.3	0.379	1.32		2.17	20.1
J A310	7.38	4.42	214.8	106.9	0.661	0.57	764.	2.21	13.3
J A323	7.64	4.38	55.7	63.0	0.320	1.62	1629.	2.15	17.9
J A336	9.44	2.48	137.1	91.8	0.612	1.93	196.	1.51	9.7
J A380	7.08	3.56	136.1	87.9	0.387	0.81	984.	2.20	16.3
J A420	7.76	4.65	115.9	97.9	0.552	0.50	1371.	2.27	16.9
J A439	7.46	2.93	45.0	60.3	0.238	3.42	425.	1.90	16.2
J A456		2.57	48.1	47.4	0.206	1.47	388.	1.70	18.5
J A465	10.89	4.70	57.5	32.3	0.146	0.96	168.	2.43	10.8
J A494		3.97	123.9	58.7	0.363	0.94	1180.	2.31	17.3
J*S006	6.22	9.55<	31.2	75.2		3.43	671.	4.29	45.3<
J*S029	8.69	5.37	47.3		0.199	0.91	614.	2.98	20.6
J*S070	4.70<	5.04	35.0	51.4	0.295	2.96	782.	3.17	25.0
J*S076	5.55	4.93	43.3	98.4	0.261	0.73	1000.	3.79	27.0
J*S095	6.28	7.60	79.3	77.3	0.381	0.83	569.	4.69<	29.8
J*S115	7.29	3.52	133.0	74.8	0.409	1.42	453.	2.45	20.5
J*S123	9.53	4.42	179.1	61.9	0.351	1.37	76.<	1.99	10.2
J*S152	9.06	6.24	140.0	94.2	0.675	2.03	126.	2.74	15.2
NUMBER AVERAGED	26	28	28	27	27	28	27	28	28
MEAN CONC	8.09	4.55	80.8	65.9	0.314	1.11	513.	2.40	17.3
GRP STD DEV (PCT)	25.3	37.7	78.1	43.1	60.0	88.6	119.7	34.1	39.4
MEAN + GSD	10.14	6.27	143.9	94.4	0.502	2.09	1127.	3.22	24.2
MEAN - GSD	6.46	3.31	45.4	46.1	0.196	0.59	234.	1.79	12.4
UPPER 95% LIMIT	12.87	8.78	264.0	137.8	0.825	4.07	2589.	4.38	34.3
LOWER 95% LIMIT	5.09	2.36	24.7	31.5	0.120	0.30	102.	1.31	8.8

< CONCENTRATIONS EXCEEDING 95% CONFIDENCE LIMITS

APPENDIX B:3

MOTAGUA EXCEPTIONAL REFERENCE GROUP

	Na_2O PCT	Sc_2O_3 PPM	Eu_2O_3 PPB	Lu_2O_3 PPB	Yb_2O_3 PPM	HfO_2 PPM	Cr_2O_3 PPM	Fe_2O_3 PCT	CoO PPM
J S001	11.1	0.443	11.4	11.5	91.0	0.51	2.12	0.637	1.44
J S057	12.4	0.307	32.1	13.1	76.7	1.41	5.40	0.600	1.53
J S059	13.2	1.321	70.6	24.8	166.0	0.94	1.99	0.906	1.81
J S060	13.8	1.409	21.4	16.0	87.1	1.26	0.48	1.130	1.40
J S062	13.0	1.349	15.6	13.5	53.3	1.52	0.25	0.778	1.06
J S071	15.3	0.735	17.2	15.3	84.3	1.43	10.59	0.718	1.51
J S143	12.8	1.239	20.5	9.6	35.0	1.34	1.39	0.820	1.09
J S155	11.1	0.321	17.0	9.4	65.2	0.82	0.95	0.721	1.93
J S161	13.6	1.770	90.8	19.7	119.1	1.36	0.26	1.119	0.85
J S006	16.3	1.199	29.0	23.4	97.9	2.15	9.91	0.793	1.53
NUMBER AVERAGED	10	10	10	10	10	10	10	10	10
MEAN CONC	13.2	0.856	25.9	14.8	80.9	1.20	1.58	0.805	1.38
GRP STD DEV (PCT)	13.0	93.0	94.9	40.4	53.4	48.6	296.9	23.7	28.8
MEAN + GSD	14.9	1.653	50.5	20.8	124.2	1.78	6.26	0.996	1.77
MEAN - GSD	11.7	0.444	13.3	10.6	52.8	0.80	0.40	0.651	1.07
UPPER 95% LIMIT	17.4	3.790	117.1	32.0	213.2	2.93	35.64	1.302	2.44
LOWER 95% LIMIT	10.0	0.193	5.7	6.9	30.7	0.49	0.07	0.498	0.78

< CONCENTRATIONS EXCEEDING 95% CONFIDENCE LIMITS

APPENDIX B:4

CHICHEN GREEN REFERENCE GROUP

	Na_2O PCT	Sc_2O_3 PPM	Eu_2O_3 PPB	Lu_2O_3 PPB	Yb_2O_3 PPM	HfO_2 PPM	Cr_2O_3 PPM	Fe_2O_3 PCT	CoO PPM
J A026		1.03	34.7	25.0		0.226	671.	0.726	3.85
J A042	8.5	0.79	36.0	22.1	0.158	1.799	378.	0.701	4.74
J A044	7.8<	1.45	24.1	16.9	0.086	0.154	1271.	0.498	3.68
J A085	11.7	0.67	61.2			1.762	1770.	0.979	9.02
J A086	11.5	1.70	48.0	41.0	0.177	0.298	940.	0.855	6.28
J A088	7.8<	2.62	43.2	16.6	0.125	0.311	516.	0.689	4.16
J A089	12.1	1.51	47.8			0.332	957.	0.818	6.27
J A090	14.2	1.90	37.9	23.2	0.148	0.335	421.	0.714	3.43
J A091	13.8	0.92	38.4			1.722	454.	0.875	3.85
J A094	13.0	3.59	42.6	33.9	0.207	2.642	1479.	0.753	4.73
J A095	12.1	1.75	48.2	28.1	0.254	0.367	895.	0.728	4.24
J A096	12.3	1.88	32.5	21.2	0.120	1.919	1030.	0.728	4.62
J A097		3.03	26.0	50.0		1.219	1040.	0.594	3.93
J A098	12.6	2.69	27.0	14.1	0.154	0.163	1742.	0.653	4.20
J A099	13.8	1.97	44.1	28.6	0.177	1.030	1200.	0.760	5.04
J A100	13.4	0.90	20.7	14.0	0.112	0.201	1000.	0.596	3.73
J A254	9.8	0.92	30.4	18.3	0.144	0.713	16.<	0.982	6.65
J A272		1.91	57.3	39.5	0.152	1.340	1009.	1.040	8.09
J A297	12.4	0.38	10.3	8.0	0.052	3.793	107.	0.429	2.45
J A298	12.5	0.37	9.7	8.1	0.036<	0.773	91.	0.431	2.29
J A325	10.7	4.88		25.0	0.169	0.395		0.908	5.35
J A348	12.4	1.50	14.6	23.6	0.102	3.357	1279.	0.415	2.35
J A356		5.16	94.2	57.8	0.332	0.337	670.	1.330	6.27
J A386	11.2	1.52	26.1	31.2	0.110	8.017	214.	0.652	3.13
J A389	12.2	1.63	33.1	17.9	0.105	0.701	128.	1.000	3.84
J A411	13.9	0.61	11.9	35.0	0.175	6.998	692.	0.400	2.98
J A416	10.7	1.28	20.2	17.8	0.082	0.277	44.	0.736	4.24
J A417	10.8	0.91	13.0	15.6	0.049	1.230	41.	0.516	3.17
J A419		3.27	89.7	40.1	0.281	0.333	5470.	1.050	7.19
J A433	10.8	0.80	72.1	31.6	0.134	0.741	20.<	1.400	7.48
J A442	9.0	0.56	28.3	15.5	0.079	0.196	86.	0.794	7.50
J A449		0.38	12.0	18.9	0.071	4.819	301.	0.374	2.51
J A450	13.2	0.82	9.0	8.1	0.035<	1.871	321.	0.318<	1.52<
J-S114	12.3	0.34	23.5	12.7	0.071	1.570	69.	0.706	5.24
NUMBER AVERAGED	28	34	33	31	29	34	33	34	34
MEAN CONC	11.5	1.28	29.6	21.7	0.117	0.829	393.	0.698	4.30
GRP STD DEV (PCT)	18.2	107.2	87.7	66.3	76.0	207.0	311.6	42.5	50.4
MEAN + GSD	13.6	2.65	55.5	36.1	0.205	2.546	1619.	0.994	6.47
MEAN - GSD	9.7	0.62	15.7	13.1	0.066	0.270	96.	0.490	2.86
UPPER 95% LIMIT	16.2	5.62	106.6	61.4	0.371	8.129	7023.	1.434	9.87
LOWER 95% LIMIT	8.2	0.29	8.2	7.7	0.037	0.085	22.	0.339	1.87

< CONCENTRATIONS EXCEEDING 95% CONFIDENCE LIMITS

APPENDIX B:5

MAYA GREEN REFERENCE GROUP

	Na_2O	Sc_2O_3	Eu_2O_3	Lu_2O_3	Yb_2O_3	HfO_2	Cr_2O_3	Fe_2O_3	CoO
	PCT	PPM	PPB	PPB	PPM	PPM	PPM	PCT	PPM
J A005	9.5	6.58	0.199	113.0	0.710	0.376	0.363	1.47	8.63
J A008	9.6	4.92	0.189	140.0	0.488	0.377	0.427	1.49	8.36
J A010	8.1<	4.35	0.151	121.9	0.507	0.413	0.146	1.41	8.67
J A024	13.2	4.16	0.141	62.8	0.542	0.264	0.171	1.15	6.22
J A028	12.3	8.22<	0.184	97.9	0.736	0.522	0.129	1.61<	9.31
J A043		5.28	0.124	57.5	0.460	0.227	0.311	1.10	6.10
J A052	13.9	3.53	0.164	79.1	0.646	0.295	0.211	1.23	7.82
J A053	15.0<	3.64	0.195	139.0	0.834	0.459	0.082	1.43	9.44
J A054	12.1	7.50<	0.202	164.1	0.879	0.540	0.117	1.45	9.46
J A060	11.3	4.30	0.106	61.4	0.444	0.154<	0.173	1.05	5.24
J A101	12.0	3.40	0.143	116.9	0.738	0.307	0.220	1.25	6.93
J A103	11.3	2.31	0.163	93.8	0.562	0.319	0.150	1.23	7.73
J A141		2.58	0.140	109.9	0.465	0.291	0.126	1.24	7.62
J A147	12.9	3.69	0.145	115.1	0.471	0.250	0.181	1.31	6.89
J A185	11.0	2.91	0.149	79.8	0.604	0.343	0.071	1.40	6.93
J A224	11.4	3.39		93.3	0.575	0.485	0.079	1.48	7.82
J A225	11.8	2.22		84.3	0.619	0.349	0.061	1.22	6.24
J A317	10.2	4.85	0.185	118.0	0.794	0.289		1.23	8.41
J A324	12.5	2.85	0.089<	58.1	0.395	0.177	0.119	1.04	5.24
J A327	11.4	4.00	0.191	121.9	0.752	0.380	0.133	1.39	8.61
J A328	12.3	2.91	0.109	82.2	0.481	0.388	0.164	1.22	6.52
J A329	11.8	3.05	0.123	88.7	0.509	0.302		1.14	6.46
J A330	11.9	3.05	0.102	73.3	0.402	0.293	0.185	1.13	5.90
J A338		2.86	0.106	75.7	0.419	0.231	0.182	1.09	5.51
J A339	11.6	5.56	0.205	140.9	0.818	0.347	0.202	1.31	8.51
J A340	11.2	3.73	0.214	148.9	0.818	0.368	0.290	1.26	9.23
J A341	11.5	3.32	0.146	89.5	0.516	0.271	0.306	1.17	6.32
J A343	12.5	3.01	0.130	69.3	0.414	0.298	0.237	1.11	5.16
J A344	10.0	3.67	0.185	129.1	0.766	0.414	0.270	1.30	7.96
J A345	11.3	4.66	0.133	74.1	0.426	0.379	0.254	1.37	6.81
J A346	11.3	2.24	0.103	68.1	0.397	0.269	0.202	1.05	5.56
J A347	11.8	4.43	0.135	86.9	0.495	0.207	0.186	1.11	6.53
J A350	9.1<	4.72	0.132	109.9	0.514	0.204	0.254	1.10	5.90
J A351	11.7	4.67	0.126	105.9	0.452	0.295	0.339	1.13	5.98
J A352	12.6	4.56	0.150	102.1	0.542	0.296	0.314	1.17	6.07
J A353	12.4	2.47	0.121	80.2	0.461	0.227	0.083	1.17	6.07
J A354	11.5	4.84	0.149	115.1	0.575	0.297	0.290	1.24	6.71
J A357		7.48<	0.131	109.9	0.583	0.311	0.235	1.30	5.73
J A359		1.98<	0.118	64.6	0.393	0.212	0.057	1.12	5.40
J A365		3.74	0.157	123.9	0.714		0.028<	1.47	8.87
J A368	12.4	3.68	0.171	92.9	0.561	0.268	0.175	1.17	6.32
J A373		4.01	0.185	100.9	0.634	0.447	0.116	1.51	8.77
J A375		2.96	0.143	87.3	0.548	0.306	0.101	1.24	6.84
J A377		3.35	0.116	71.0	0.468	0.281	0.206	1.31	4.88
J A378	12.1	3.42	0.169	119.1	0.619	0.362	0.079	1.40	7.16
J A461	11.1	4.18	0.211	141.9	0.700	0.462	0.080	1.40	10.30
J A474		3.12	0.149	116.9	0.547	0.317	0.072	1.23	7.35
J A476	11.3	5.05	0.206	139.0	0.766	0.661<	0.111	1.51	10.09
J A506	10.9	2.95	0.154	95.3	0.755	0.321	0.065	1.18	8.20
NUMBER AVERAGED	39	49	47	49	49	48	47	49	49
MEAN CONC	11.5	3.77	0.148	97.1	0.567	0.317	0.153	1.26	7.06
GRP STD DEV (PCT)	11.9	37.4	25.0	31.1	26.3	33.7	80.0	12.0	21.8
MEAN + GSD	12.9	5.18	0.185	127.4	0.715	0.424	0.275	1.41	8.60
MEAN - GSD	10.3	2.74	0.119	74.1	0.449	0.237	0.085	1.12	5.80
UPPER 95% LIMIT	14.5	7.14	0.232	167.6	0.906	0.569	0.499	1.58	10.50
LOWER 95% LIMIT	9.2	1.99	0.095	56.3	0.354	0.177	0.047	1.00	4.75

< CONCENTRATIONS EXCEEDING 95% CONFIDENCE LIMITS

APPENDIX B:6

ALBITE LIGHT REFERENCE GROUP

	Na_2O PCT	Sc_2O_3 PPM	Eu_2O_3 PPB	Lu_2O_3 PPB	Yb_2O_3 PPM	HfO_2 PPM	Cr_2O_3 PPM	Fe_2O_3 PCT	CoO PPM
J A114	11.2	0.190		8.99	31.0	0.315	16.11	0.293	1.009
J A262	10.9	0.564	24.6	6.90	46.7	0.096	0.84	0.284	1.079
J A299	12.0	0.243	8.7	6.40	32.4	0.839	6.65	0.231	1.030
J A383	10.9	0.102	11.2	8.99	30.1	0.074	2.13	0.209	0.865
J A432	11.6	0.687	11.9	13.90	56.6	0.338	59.43<	0.296	1.698
J A452		0.081	8.5	4.60	32.0	0.226	1.36	0.169	0.480
J A453	11.6	0.058				0.414	0.26	0.142	0.448
J A454	12.2	0.335	16.6			0.104	45.39	0.322	1.279
J A455	13.2	0.073	7.3	5.90	31.6	2.500	0.32	0.145	0.365
J A458	11.9	0.491	2.7	5.60	28.4	0.158	0.83	0.247	1.600
J A483	12.9	0.047				0.422	0.87	0.145	0.560
J A484	13.3	0.257		10.69	21.6	4.093<	0.70	0.182	0.925
J A486	13.3	0.091				0.736	2.17	0.163	0.667
J A488	12.4	0.062	26.3	4.90	41.9	0.075	1.25	0.165	0.794
J A489	11.3	0.092		5.79	43.3	1.030	2.49	0.156	0.524
J A491	12.8	0.076	8.7	8.30	32.0	0.149	2.26	0.205	0.664
J A492	11.4	0.116		3.80		0.109	1.11	0.226	0.711
J A514	14.6<	0.177	35.8	9.79	67.5	0.085	0.70	0.304	0.923
J A517	11.7	0.409		9.29	35.7	0.555	0.43	0.183	1.079
NUMBER AVERAGED	18	19	11	15	14	19	19	19	19
MEAN CONC	12.1	0.155	11.9	7.15	36.3	0.307	1.87	0.206	0.809
GRP STD DEV (PCT)	8.4	132.3	106.2	43.0	34.7	226.6	361.4	32.2	52.6
MEAN + GSD	13.2	0.360	24.4	10.23	48.9	1.004	8.64	0.273	1.234
MEAN - GSD	11.2	0.067	5.8	5.00	27.0	0.094	0.41	0.156	0.530
UPPER 95% LIMIT	14.4	0.911	59.4	15.40	69.0	3.694	46.51	0.371	1.966
LOWER 95% LIMIT	10.2	0.026	2.4	3.32	19.1	0.026	0.08	0.115	0.333

< CONCENTRATIONS EXCEEDING 95% CONFIDENCE LIMITS

APPENDIX B:7

ALBITE DARK REFERENCE GROUP

	Na_2O PCT	Sc_2O_3 PPM	Eu_2O_3 PPB	Lu_2O_3 PPB	Yb_2O_3 PPM	HfO_2 PPM	Cr_2O_3 PPM	Fe_2O_3 PCT	CoO PPM
J A032	8.51	2.41	27.6	22.8	0.124	0.163	239.	1.41	8.5<
J A033	8.93	4.88	21.8	22.0	0.130	0.308	773.	1.81	11.9
J A034	8.24	5.32	23.3	27.9	0.120	0.566	462.	2.10	13.8
J A039	7.24	5.55	21.0	26.6	0.152	0.394	682.	2.16	14.2
J A041	7.89	5.05	11.8	29.2	0.134	0.394	553.	1.97	13.3
J A047	5.19	1.95	45.9	30.9	0.126	0.491	217.	1.90	14.0
J A119	10.50	5.45	30.4	35.5	0.200	0.417	887.	1.95	13.1
J A121	11.09	5.77	17.4	28.2	0.115	0.525	587.	2.19	14.4
J A126	11.80	2.97	40.9	33.7	0.170	0.168	547.	1.39	11.2
J A184	6.93	3.02	25.4	29.5	0.162	0.558	372.	2.15	16.8
NUMBER AVERAGED	10	10	10	10	10	10	10	10	10
MEAN CONC	8.41	3.97	24.8	28.3	0.141	0.367	486.	1.88	12.9
GRP STD DEV (PCT)	27.8	49.4	48.5	16.4	19.6	58.4	60.0	18.2	20.1
MEAN + GSD	10.75	5.92	36.8	33.0	0.169	0.581	778.	2.22	15.5
MEAN - GSD	6.58	2.65	16.7	24.4	0.118	0.232	304.	1.59	10.8
UPPER 95% LIMIT	14.65	9.83	60.7	39.9	0.212	1.039	1409.	2.74	19.6
LOWER 95% LIMIT	4.83	1.60	10.1	20.1	0.094	0.130	168.	1.29	8.5

< CONCENTRATIONS EXCEEDING 95% CONFIDENCE LIMITS

APPENDIX B:8

COSTA RICAN LIGHT REFERENCE GROUP

	Na_2O PCT	Sc_2O_3 PPM	Eu_2O_3 PPB	Lu_2O_3 PPB	Yb_2O_3 PPM	HfO_2 PPM	Cr_2O_3 PPM	Fe_2O_3 PCT	CoO PPM
J A062	12.3	3.96	0.221	25.5	0.118	3.23	12.59	1.31	4.36
J A063	12.7	5.40	0.363	49.4	0.273	4.20	17.30	1.35	4.88
J A071	13.0	4.46	0.235	26.5	0.120	3.25	10.21	1.38	5.16
J A113	11.8	3.47	0.157	28.6	0.130	3.03	13.61	1.32	6.08
J A169	14.5	5.22	0.551	325.8	1.400	5.26	3.69	1.84	3.37
J A172	14.0	5.37	0.472	302.0	1.321	5.11	4.24	1.85	3.39
J A176	14.4	5.14	0.508	302.0	1.349	5.04	3.53	1.82	3.30
J A178	11.4	3.66	0.099	28.0	0.177	2.49	17.50	1.33	4.89
J A187	12.4	3.80	0.237	35.2	0.118	2.97	8.53	1.32	4.94
J A188	14.1	3.46	0.103	4.9	0.073	2.47	6.75	1.06	4.02
J A192	11.6	4.65	0.081	22.9	0.221	4.25	10.59	1.52	5.55
J A193	12.7	2.89	0.086	18.6	0.108	2.93	6.76	1.05	3.25
J A195	11.8	3.62	0.273	15.3	0.126	3.24	11.51	1.39	4.75
J A197	12.3	5.40	0.693	382.8	1.828	6.43<	3.88	1.87	3.53
J A198	13.8	4.94	0.372	281.2	1.371	4.19	3.91	1.74	3.81
J A200	13.1	3.19	0.154	27.2	0.175	1.91	8.81	1.10	4.70
J A209	14.0	1.79	0.111	15.2	0.104	1.30	6.40	0.77	2.91
J A210	13.3	4.70	0.575	246.0	1.191	5.02	4.13	1.34	2.87
J A230	13.4	1.84	0.350	25.3		1.81	3.17	0.77	2.51
J A232	12.5	2.22	0.556	60.4	0.485	2.35	2.97	1.15	3.39
J A242	12.4	2.23	0.145	7.6	0.066	2.33	4.50	0.94	3.86
J A261	13.0	3.08	0.264	12.6	0.098	2.52	5.24	1.19	3.77
J A265	12.7	1.88	0.145	16.1	0.122	1.84	2.90	0.76	2.59
J A269	13.2	2.61	0.052	9.5	0.094	2.64	6.78	0.84	3.10
J A423	15.6<	3.43	0.331	24.7	0.155	3.08	5.98	1.05	3.51
J A181 +	12.4	2.43	0.095	41.7	0.094	1.98	4.39	1.05	4.11
J A201 +	13.4	3.73	0.141	68.9	0.428	2.04	13.21	1.51	2.40
J A202 +	13.2	2.12	0.086	31.3	0.157	1.70	6.35	0.81	3.60
J A208 +	12.1	8.18	0.201	110.9	0.587	2.47	25.18	2.80<	8.13<
J A213 +	11.8	6.49	0.218	102.1	0.482	1.52	25.29	1.70	4.09
J A221 +	11.2	3.75	0.220	98.6	0.630	1.84	15.89	1.32	3.15
J A222 +	11.4	1.21<	0.127	61.4	0.318	1.65	3.06	1.32	2.22
J A245 +	10.9	7.11	0.204	71.4	0.423	2.20	16.60	2.28	6.75
J A253 +	13.7	2.36	0.243	51.6		2.02	0.59<	1.08	1.69<
J A256 +	12.0	2.78	0.072	41.5	0.065	2.40	6.08	1.21	4.70
J A260 +	11.5	5.53	0.081	54.8	0.353	1.54	4.84	1.69	4.12
J A321 +	12.1	2.08	0.099	48.6	0.272	1.10<	10.89	1.10	2.60
NUMBER AVERAGED	37	37	37	37	35	37	37	37	37
MEAN CONC	12.7	3.47	0.193	44.9	0.255	2.60	6.74	1.29	3.76
GRP STD DEV (PCT)	8.5	54.7	98.1	200.8	172.7	52.8	111.1	35.6	37.7
MEAN + GSD	13.8	5.36	0.381	135.1	0.695	3.98	14.22	1.75	5.17
MEAN - GSD	11.7	2.24	0.097	14.9	0.093	1.70	3.19	0.95	2.73
UPPER 95% LIMIT	15.0	8.40	0.770	419.1	1.957	6.15	30.66	2.39	7.18
LOWER 95% LIMIT	10.8	1.43	0.048	4.8	0.033	1.10	1.48	0.69	1.96

< CONCENTRATIONS EXCEEDING 95% CONFIDENCE LIMITS
+ MEMBERS OF COSTA RICAN LIGHT SUBGROUP

APPENDIX B:9

COSTA RICAN DARK REFERENCE GROUP

	Na_2O PCT	Sc_2O_3 PPM	Eu_2O_3 PPB	Lu_2O_3 PPB	Yb_2O_3 PPM	HfO_2 PPM	Cr_2O_3 PPM	Fe_2O_3 PCT	CoO PPM
J A183	6.27	12.5	0.26	0.152	1.14	2.51	375.0	3.31<	9.8
J A204	9.98	22.5	0.81	0.283	1.60	2.63	85.1	5.78	17.4
J A206	7.23	53.5	2.03	1.040	5.55	7.45	221.8	9.31	23.4
J A237	10.59	31.7	1.76	0.923	7.18	7.48	74.3	6.19	15.6
J A238	10.99	32.0	2.35	1.059	5.30	8.63	88.3	6.05	17.1
J A240	8.53	18.4	2.56	3.990	31.33	22.70<	11.2	5.19	22.4
J A243	6.15	18.8	0.35	1.419	2.70	2.84	279.3	4.84	20.7
J A244	9.57	24.5	0.67	2.051	17.22	4.76	72.8	7.73	19.8
J A247	12.30	18.4	1.01	0.400	1.84	4.06	3.7	5.58	11.5
J A251	8.57	29.1	1.64	0.752	4.35	2.79	12.2	7.16	22.5
J A255	8.93	31.9	0.87	0.271		2.34	103.0	6.47	22.7
J A258	7.94	30.5	1.04	0.122	1.98	3.23	49.2	7.24	21.9
NUMBER AVERAGED	12	12	12	12	11	12	12	12	12
MEAN CONC	8.74	25.3	1.04	0.644	4.28	4.57	60.5	6.06	18.1
GRP STD DEV (PCT)	24.1	46.0	106.9	189.5	178.9	98.5	301.3	30.0	32.8
MEAN + GSD	10.84	36.9	2.15	1.863	11.94	9.08	242.9	7.87	24.1
MEAN - GSD	7.04	17.3	0.50	0.222	1.54	2.30	15.1	4.66	13.6
UPPER 95% LIMIT	14.05	58.1	5.14	6.678	42.07	20.68	*****	10.79	33.8
LOWER 95% LIMIT	5.43	11.0	0.21	0.062	0.44	1.01	2.8	3.40	9.7

< CONCENTRATIONS EXCEEDING 95% CONFIDENCE LIMITS

APPENDIX C: RELATIVE X-RAY DIFFRACTION PEAK INTENSITIES FOR REFERENCE GROUP MEMBERS

REFERENCE GROUP ID No.	JADEITE	OMPHACITE	ALBITE	PARAGONITE	MUSCOVITE	ANALCITE	OTHER
MOTAGUA LIGHT							
J A249	MAJOR	MEDIUM	MEDIUM	MAJOR		MEDIUM	
J A300			MAJOR				
J A301	MAJOR		MAJOR	L-MED			
J A387	MAJOR	Q	MAJOR	MAJOR		L-MED	
J A388	MAJOR		MAJOR	V-LOW	LOW		
J S067	MAJOR	Q	LOW			MAJOR	
J S077	MAJOR	V-LOW	H-MED			MAJOR	
J S149	MAJOR		MAJOR				
MOTAGUA DARK							
J A295	H-MED	MAJOR	MEDIUM				
J A380			MAJOR				
J*S070	TRACE	MAJOR		H-MED		H-MED	
J*S076	MEDIUM	MAJOR				H-MED	
J*S152	LOW	MAJOR	V-LOW			MED	
MOTAGUA EXCEPTIONAL							
J S006	MAJOR						
J S071	MAJOR	Q	MEDIUM	V-LOW		L-MED	
J S143	MAJOR		MEDIUM				
CHICHEN GREEN							
J A026	MAJOR	TRACE	Q	LOW		L-MED	
J A042	MAJOR	PRESENT	PRESENT				
J A044	MAJOR	TRACE		LOW	LOW	LOW	
J A085		MAJOR	MEDIUM	TRACE	Q	LOW	
J A086	MAJOR	MEDIUM	MAJOR	V-LOW	LOW		
J A089	MAJOR	HIGH	HIGH		LOW	LOW	
J A090	MAJOR	LOW				LOW	
J A094	MAJOR	Q	LOW			V-LOW	
J A098	MAJOR	V-LOW					
J A099	MAJOR	V-LOW		MEDIUM	TRACE	V-LOW	
J A254	LOW	MEDIUM	MAJOR	H-MED	V-LOW		
J A298	MAJOR		MAJOR	V-LOW			
J A386	H-MED	MEDIUM	MAJOR	MAJOR	TRACE		
J A389	MAJOR	LOW	MAJOR	LOW		V-LOW	
J A416			MAJOR				
J A417			MAJOR				
J A433	MAJOR	Q	MAJOR	MAJOR			

APPENDIX C.2

REFERENCE GROUP ID No.	JADEITE	OMPHACITE	ALBITE	PARAGONITE	MUSCOVITE	ANALCITE	OTHER
MAYA GREEN							
J A043	MAJOR		V-LOW		H-MED	V-LOW	
J A101	MAJOR	TRACE	V-LOW		LOW	V-LOW	
J A185	MAJOR	TRACE				LOW	
J A317	MAJOR	TRACE	MED	H-MED	V-LOW		
J A368	MAJOR	TRACE			LOW	V-LOW	
J A461	MAJOR				LOW		
ALBITE LIGHT							
J A299	LOW		MAJOR	M-HIGH	TRACE		
J A383	H-MED		MAJOR	H-MED	V-LOW	H-MED	
J A432			MAJOR				
J A483	MAJOR	TRACE	MEDIUM				
J A484	Q	Q	MAJOR				
J A488			MAJOR				
J A489	MEDIUM		MAJOR		H-MED		
J A491	MAJOR		MAJOR	LOW	V-LOW		
J A492			MAJOR	V-LOW			
ALBITE DARK							
J A184		MAJOR	MAJOR				

APPENDIX C.3

REFERENCE GROUP ID No.	JADEITE	OMPHACITE	ALBITE	PARAGONITE	MUSCOVITE	ANALCITE	OTHER
COSTA RICAN LIGHT							
J A063	MAJOR						
J A178	MAJOR	PRESENT					HORNBLENDE
J A181	MAJOR	PRESENT					HORNBLENDE
J A187	MAJOR	PRESENT					HORNBLENDE
J A188	MAJOR						
J A192	MAJOR	V-LOW				TRACE	
J A195	MAJOR	LOW	TRACE			V-LOW	
J A197	MAJOR						
J A198	MAJOR	PRESENT					HORNBLENDE
J A200	MAJOR	LOW		TRACE		V-LOW	
J A201	MAJOR	TRACE	V-LOW				
J A202	MAJOR	LOW					
J A208	MAJOR	MEDIUM					
J A209	MAJOR	TRACE				Q	
J A210	MAJOR		TRACE			TRACE	
J A222	MAJOR	Q	MAJOR	LOW	V-LOW	L-MED	
J A230	MAJOR	TRACE	Q	Q	Q	Q	
J A232	MAJOR	MAJOR					
J A245	MAJOR	Q	MEDIUM			LOW	
J A253	MAJOR		LOW?				
J A256	MAJOR	PRESENT					
J A423	MAJOR	TRACE	TRACE			TRACE	
COSTA RICAN DARK							
J A183		MAJOR					
J A204	MAJOR	MAJOR					HORNBLENDE
J A206		MAJOR					
J A237	MAJOR						
J A238	MAJOR	MAJOR					HORNBLENDE
J A240	MAJOR	MAJOR					
J A251	L-MED	MAJOR				MEDIUM	

APPENDIX D: DESCRIPTIVE DATA FOR NONGROUPED SPECIMENS ARRANGED BY SITE

ID No	SITE	PROB ATTRIB	GENERAL FORM	SOURCE	INSTITUTION	CATALOG
J A326	ALTUN HA		NECKLACE BEAD	BELIZE	L.965.9.77	RP/200
J A381	ALTUN HA		HUMAN FIGURE PENDANT	BELIZE	967.71.45	RP313/1
J A382	ALTUN HA		SERPENT HEAD PENDANT	BELIZE		RP364/12
J A384	ALTUN HA		TURTLE PENDANT	BELIZE	L965.9.41	RP200/136
J A385	ALTUN HA		HUMAN FACE PENDANT	BELIZE	L965.9.35	RP164/20
J A395	ALTUN HA		MOSAIC MASK	BELIZE	966.159.153	RP215/33
J A396	ALTUN HA		MOSAIC MASK	BELIZE	966.159.153	RP215/33
J A397	ALTUN HA		MOSAIC MASK	BELIZE	966.159.153	RP215/33
J A408	ALTUN HA		SERPENT HEAD PENDANT	BELIZE		RP364/12
J A459	ALTUN HA		GLOBULAR BEAD	BELIZE	964.216.41	RP30/52
J A505	ALTUN HA		BEAD	BELIZE	L965.9.77	RP200/
J A434	CAHAL PECH		PENDANT	BELIZE	27/189-3-26	
J A435	CAHAL PECH		SPACER BEAD	BELIZE	27-189-3:24	
J A311	CERROS		FRAGMENT	BELIZE	SF1117	
J A313	CERROS		BEAD	BELIZE	SF544	
J A314	CERROS		BEAD FRAGMENT	BELIZE	SF543	
J A315	CERROS	[CHIG]	BEAD	BELIZE	SF552	
J A316	CERROS	[CHIG]	BEAD FRAGMENT	BELIZE	SF552	
J A318	CERROS		BEAD FRAGMENT	BELIZE	SF878	
J A319	CERROS		FRAGMENT	BELIZE	SF433	
J A320	CERROS	[CHIG]	BEAD	BELIZE	SF1116	
J A322	CERROS		BEAD	BELIZE	SF13	
J A424	CERROS		BEAD	BELIZE	CM1-SF-1068	
J A425	CERROS	[MOTD]	FRAGMENT	BELIZE	CM1-SF-987	
J A426	CERROS		BEAD	BELIZE	SF-736	
J A428	CERROS		CRUDE BEAD	BELIZE	CM1-SF-1186	
J A407	CHALCATZINGO		FRAGMENT	JADES, S.A.		
J A023	CHICHEN ITZA		BEAD	PMAE	63-32-20	CENOTE
J A025	CHICHEN ITZA		BEAD FRAGMENT	PMAE	63-32-20	CENOTE
J A027	CHICHEN ITZA		BEAD FRAGMENT	PMAE	63-32-20	CENOTE
J A045	CHICHEN ITZA	[CHIG]	BEAD FRAGMENT	PMAE	63-32-20	CENOTE
J A046	CHICHEN ITZA		BEAD FRAGMENT	PMAE	63-32-20	CENOTE
J A048	CHICHEN ITZA		BEAD FRAGMENT	PMAE	63-32-20	CENOTE
J A092	CHICHEN ITZA		BEAD FRAGMENT	PMAE	63-32-20	23435
J A102	CHICHEN ITZA	[CHIG]	BEAD FRAGMENT	PMAE	63-32-20	23440
J A011	COPAN		BEAD	PMAE	92-49-20	C-199
J A012	COPAN		BEAD	PMAE	92-49-20	C-199
J A014	COPAN		BEAD	PMAE		C-185
J A015	COPAN		BEAD	PMAE		C-185
J A016	COPAN		BEAD	PMAE		C-185
J A017	COPAN		BEAD	PMAE		C-185
J A018	COPAN		BEAD	PMAE		C-9933
J A020	COPAN		BEAD	PMAE	92-49-20	C-213
J A021	COPAN		BEAD	PMAE	92-49-20	C-213
J A022	COPAN		BEAD	PMAE	92-49-20	C-213
J A029	COPAN		FRAGMENT	PMAE	92-49-20	C-186
J A031	COPAN		FRAGMENT	PMAE	92-49-20	C-186

APPENDIX D.2

ID No	SITE	PROB ATTRIB	GENERAL FORM	SOURCE	INSTITUTION	CATALOG
J A036	COPAN		FRAGMENT	PMAE	92-49-20	C-186
J A038	COPAN		FRAGMENT	PMAE	92-49-20	C-186
J A040	COPAN	[MOTD]	FRAGMENT	PMAE	92-49-20	C-186
J A073	COPAN		CARVED PLAQUE	PMAE	95-42-20	C/677
J A074	COPAN		CARVED	PMAE	95-42-20	C/678
J A075	COPAN	[MOTD]	ROUGH CARVED ROCK	PMAE	95-42-20	C/676
J A080	COPAN		PENDANT	PMAE	19-35-20	C/8541
J A081	COPAN		CUT STONE	PMAE	19-35-20	C/8542
J A083	COPAN		CARVED PLAQUE	PMAE	95-42-20	C/692
J A105	COPAN		CARVED BEAD	PMAE	92-49-20	C/247
J A106	COPAN	[CHIG]	BEAD FRAGMENT	PMAE	92-49-20	C/199
J A107	COPAN	[MOTD]	BEAD FRAGMENT	PMAE	92-49-20	C/378
J A110	COPAN		CARVED PENDANT	PMAE	92-49-20	C/231
J A116	COPAN		FLAT FRAGMENT	PMAE	92-49-20	C/186
J A118	COPAN		FLAT FRAGMENT	PMAE	92-49-20	C/186
J A122	COPAN		FLAT FRAGMENT	PMAE	92-49-20	C/186
J A123	COPAN		FLAT FRAGMENT	PMAE	92-49-20	C/186
J A127	COPAN		CELT	PMAE	28-1-20	C/10269
J A128	COPAN		CELT	PMAE	05-24-20	C/3544
J A130	COPAN		BEAD FRAGMENT	PMAE	92-49-20	C/213
J A273	COPAN		EAR FLARE	PMAE		C-10923
J A274	COPAN		EAR FLARE	PMAE		C-10923
J A275	COPAN		BEAD	PMAE		C-10922
J A276	COPAN		BEAD	PMAE		C-10922
J A277	COPAN		BEAD	PMAE		C-10922
J A278	COPAN		BEAD	PMAE		C-10922
J A279	COPAN		BEAD	PMAE		C-10922
J A280	COPAN		BEAD	PMAE		C-10922
J A302	COPAN		PENDANT	PMAE		C-1909
J A303	COPAN		INLAY	PMAE		C-1909
J C25T	COPAN		SOURCE JADE	MFA SURVEY	SYKES	
J A203	CR-BAGACES		CARVED CELT PENDENT	INS	4557	
J A264	CR-BAGACES		PENDANT	INS	4437	
J A271	CR-BAGACES	[CRL]	BIRD SPOON	INS	4.428	
J A199	CR-GUANACASTE		CELT	INS	6313	
J A207	CR-GUANACASTE		EAR DISK?	INS	4873	
J A227	CR-GUANACASTE		BIRD PENDANT	INS	6452	
J A229	CR-GUANACASTE		CELT	INS	6314	
J A231	CR-GUANACASTE		PENDANT	INS	1888	
J A233	CR-GUANACASTE		PENDANT	INS	6480	
J A234	CR-GUANACASTE		BIRD PENDANT	INS	6176	
J A239	CR-GUANACASTE		HUMAN FIGURE PENDANT	INS	6444	
J A263	CR-GUANACASTE		FROG PENDANT	INS	2148	
J A266	CR-GUANACASTE		TUBULAR BAR	INS	1476	
J A267	CR-GUANACASTE	[CRL]	PENDANT	INS	2236	
J A268	CR-GUANACASTE		WINGED PENDANT	INS	6458	
J A196	CR-GUAPILES		BIRD PENDANT	INS	6210	
J A205	CR-NICOYA		BIRD PENDANT	INS	6231	
J A190	CR-PACIFIC		PENDANT	MNCR	3.336	

APPENDIX D.3

ID No	SITE	PROB ATTRIB	GENERAL FORM	SOURCE	INSTITUTION	CATALOG
J A191	CR-PACIFIC		PENDANT	MNCR	10.812	
J A235	CR-PACIFIC		PENDANT	MNCR	7732	VELASCO
J A236	CR-PACIFIC		HUMAN FIGURE PENDANT	MNCR	7714	VELASCO
J A246	CR-PACIFIC		BIRD PENDANT	MNCR	23.270	VELASCO
J A248	CR-PACIFIC	[MOTL]	HUMAN FIGURE PENDANT	MNCR	23.272	VELASCO
J A252	CR-PACIFIC		PENDANT	MNCR	23.257	VELASCO
J A259	CR-PACIFIC		PENDANT	MNCR	1.908	VELASCO
J A049	CUELLO		CLAW	BELIZE		
J A050	CUELLO		CARVED DUCK	BELIZE		
J A059	CUELLO		BEAD	BELIZE		
J A164	CUELLO		BEAD	BELIZE	33/199-3:37	464 Q8.6.21
J A170	CUELLO		BEAD	BELIZE	33/199-33:18	388 Q149.6.1
J A171	CUELLO		BEAD	BELIZE	33/199-3:12	37 Q73.6.1
J A173	CUELLO		FRAGMENT	BELIZE	33/199-3:23	431 Q202.6.1
J A174	CUELLO		BEAD	BELIZE	33/199-3:13	162 Q115.6.1
J A211	CUELLO		BEAD FRAGMENT	BELIZE	33/199-3:47	454 Q8.6.11
J A212	CUELLO		FRAGMENT	BELIZE	33/99-3:19	428 Q190.6.1
J A215	CUELLO	[CRL]	BEAD FRAGMENT	BELIZE	33/199-3:38	463 Q8.6.20
J A216	CUELLO		BEAD FRAGMENT	BELIZE	33/199-3:46	332 Q108.6.2
J A218	CUELLO		BEAD FRAGMENT	BELIZE	33/199-3:45	452 Q8.6.9
J A220	CUELLO		FRAGMENT	BELIZE	33/199-3:21	429 Q190.6.2
J A226	CUELLO		BEAD FRAGMENT	BELIZE	33/199-3:33	465 Q250.6.1
J A292	CUELLO		FRAGMENT	BELIZE		[218D]
J A293	CUELLO		FRAGMENT	BELIZE		[218E]
J A309	CUELLO		BEAD FRAGMENT	BELIZE	33/199-3:45	452 OR [218A]
J A355	CUELLO	[CHIG]	BEAD	BELIZE	17F127	C916
J A473	CUELLO		BEAD	BELIZE		1525-F
J A475	CUELLO		FRAGMENT	BELIZE		1525-W
J A477	CUELLO		BEAD	BELIZE		1525-J
J A507	CUELLO		BEAD	BELIZE		1525-M
J A508	CUELLO		BEAD	BELIZE		1525-T
J A509	CUELLO		BEAD	BELIZE		1525-K
J A457	EL CAJON		FRAGMENT	EL CAJON	(65)	
J A485	EL CAJON		FRAGMENT	EL CAJON	PC-1/40	
J A490	EL CAJON		FRAGMENT	EL CAJON	PC-1/1049	
J A515	EL CAJON		FRAGMENT	EL CAJON	PC-1 No. 68	
J A516	EL CAJON		FRAGMENT	EL CAJON	PC-1 No. 91	
J A519	EL CAJON		FRAGMENT	EL CAJON	PC-G85-A No. 1064	
J A520	EL CAJON		FRAGMENT	EL CAJON	PC-1G85-A No. 1081	
J S121	EL PROGRESSO		SOURCE JADE	JADES, S.A.		
J S124	EL PROGRESSO		SOURCE JADE	JADES, S.A.		
J A066	GUATEMALA		CELT	PMAE	10-63-20	C/5168
J A076	GUATEMALA	[CRD]	CELT	PMAE	94-57-20	R/1977
J A115	GUATEMALA		BEAD	PMAE	19-35-20	C/8576

APPENDIX D.4

ID No	SITE	PROB ATTRIB	GENERAL FORM	SOURCE	INSTITUTION	CATALOG
J A132	HOLMUL		FRAGMENT	PMAE		C/5702
J A133	HOLMUL		FRAGMENT	PMAE		C/5702
J A134	HOLMUL		FRAGMENT	PMAE		C/5702
J A135	HOLMUL		FRAGMENT	PMAE		C/5548
J A138	HOLMUL		FRAGMENT	PMAE		C/5702
J A140	HOLMUL		FRAGMENT	PMAE		C/5702
J A142	HOLMUL		ANIMAL HEAD PENDANT	PMAE		C/5512
J A143	HOLMUL	[CRL]	BEAD FRAGMENT	PMAE		C/5468
J A144	HOLMUL		BEAD FRAGMENT	PMAE		C/5601
J A146	HOLMUL		BEAD FRAGMENT	PMAE		C/5598
J A154	HOLMUL		BEAD FRAGMENT	PMAE		C/5467
J A282	HOLMUL		FRAGMENT	PMAE		C-5702
J A283	HOLMUL		FRAGMENT	PMAE		C-5702
J A284	HOLMUL		FRAGMENT	PMAE		C-5702
J A287	HOLMUL		FRAGMENT	PMAE		C-5702
J A288	HOLMUL	[MOTL]	FRAGMENT	PMAE		C-5702
J A289	HOLMUL		FRAGMENT	PMAE		C-5702
J A290	HOLMUL		FRAGMENT	PMAE		C-5702
J A291	HOLMUL	[MOTL]	FRAGMENT	PMAE		C-5702
J A067	HONDURAS		ROUGH STONE	PMAE	96-35-20	C/1165
J A068	HONDURAS	[CRD]	CELT	PMAE	48-11-20	17871
J A108	HONDURAS		TUBULAR BEAD	PMAE	39-8-20	6720
J A109	HONDURAS		BEAD FRAGMENT	PMAE	55-8-20	19623
J A055	KAMINALJUYU		BEAD	PMAE	55-8-20	19622
J A056	KAMINALJUYU		BEAD	PMAE	55-8-20	19622
J A057	KAMINALJUYU		BEAD	PMAE	55-8-20	19622
J A058	KAMINALJUYU		BEAD FRAGMENT	PMAE	55-8-20	19622
J S068	MIDDLE MOTAGUA		SOURCE JADE	JADES, S.A.	TEMP N	
J S090	MIDDLE MOTAGUA		SOURCE JADE	MFA SURVEY	A-16-5	
J S106	MIDDLE MOTAGUA		SOURCE JADE	JADES, S.A.	TEMP 2B	
J S131	MIDDLE MOTAGUA		SOURCE JADE	JADES, S.A.	(S010)	
J S133	MIDDLE MOTAGUA		SOURCE JADE	JADES, S.A.	10A	
J S135	MIDDLE MOTAGUA		SOURCE JADE	JADES, S.A.	SAMPLE O	
J S138	MIDDLE MOTAGUA		SOURCE JADE	JADES, S.A.	15B	
J S146	MIDDLE MOTAGUA		SOURCE JADE	JADES, S.A.	11B	
J S150	MIDDLE MOTAGUA		SOURCE JADE	JADES, S.A.	15C	
J S157	MIDDLE MOTAGUA		SOURCE JADE	JADES, S.A.	(S144,S145)	
J S160	MIDDLE MOTAGUA		SOURCE JADE	JADES, S.A.		
J*S007	MIDDLE MOTAGUA		SOURCE JADE	JADES, S.A.		
J*S071	MIDDLE MOTAGUA		SOURCE JADE	JADES, S.A.	TEMP S	
J*S098	MIDDLE MOTAGUA		SOURCE JADE	MFA SURVEY	79-RB-16	
J*S105	MIDDLE MOTAGUA		SOURCE JADE	MFA SURVEY	A-16-3	
J*S153	MIDDLE MOTAGUA		SOURCE JADE	MFA SURVEY	SYKES(10J,10T)	
J*S161	MIDDLE MOTAGUA		SOURCE JADE	JADES, S.A.	(S111,112,113,	S87,S88)
J A370	MONTE ALTO		CARVED ELONGATE BEAD	EDWIN SHOOK	B-1-30	
J A371	MONTE ALTO		BEAD	EDWIN SHOOK	J-18C	
J A372	MONTE ALTO		LIP PLUG	EDWIN SHOOK	J-18C	
J A374	MONTE ALTO	[CHIG]	BEAD	EDWIN SHOOK	J-18C	
J A376	MONTE ALTO		BEAD	EDWIN SHOOK	J-18C	
J A379	MONTE ALTO		BEAD	EDWIN SHOOK	J-18C	

APPENDIX D.5

ID No	SITE	PROB ATTRIB	GENERAL FORM	SOURCE	INSTITUTION	CATALOG
J A156	NOHMUL		BIBBED HEAD PENDANT	BELIZE	33/201-1:55 A	303-B-6 SF 5,6
J A157	NOHMUL		BIBBED HEAD PENDANT	BELIZE	33/201-1:55 B	303-B-6 SF 5,6
J A159	NOHMUL		BIBBED HEAD PENDANT	BELIZE	33/201-1:55 D	303-B-6 SF 5,6
J A294	NOHMUL		FRAGMENT	BELIZE		
J A004	NONPROV		BEAD	MFA	MISC. COLLECTION	
J A006	NONPROV		BEAD	MFA	MISC. COLLECTION	
J A436	NONPROV		HUMAN FIGURE PENDANT	PMAE	977-4-20/25501	
J A493	PIEDRAS NEGRAS		FRAGMENT	MFA	6791	
J A360	QUIRIGUA		FRAGMENT	UNIV. MUSEUM	14D/9-2	
J A362	QUIRIGUA		FRAGMENT	UNIV. MUSEUM	6F/51-5	
J A363	QUIRIGUA		FRAGMENT	UNIV. MUSEUM	6F/51-5	
J A364	QUIRIGUA		FRAGMENT	UNIV. MUSEUM	6F/51-5	
J A366	QUIRIGUA		FRAGMENT	UNIV. MUSEUM	6F/51-5	
J A410	SAA		FRAGMENT	SAA	#119	
J A412	SAA		FRAGMENT	SAA	#101	
J A413	SAA		PLUG	SAA	#110	
J A414	SAA		BEAD FRAGMENT	SAA	#109	
J A421	SAA		FRAGMENT	SAA	#116	
J A422	SAA		FRAGMENT	SAA	#116	
J A429	SAA		FRAGMENT	SAA	#118	
J A430	SAA		BEAD FRAGMENT	SAA	#120	
J A431	SAA		FRAGMENT	SAA	#104	
J A437	SALAMA VALLEY		BEAD	UNIV. MUSEUM	EP1-1.3/3/48	
J A438	SALAMA VALLEY		BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.3/3/10	
J A440	SALAMA VALLEY		BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.5/11A/31	
J A443	SALAMA VALLEY		BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/152	
J A444	SALAMA VALLEY	[CHIG]	BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/128	
J A445	SALAMA VALLEY		BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/78	
J A446	SALAMA VALLEY		BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.1/6A/27	
J A447	SALAMA VALLEY		BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/18	
J A448	SALAMA VALLEY		BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/63	
J A460	SALAMA VALLEY		BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/119	
J A462	SALAMA VALLEY	[CHIG]	BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/105	
J A463	SALAMA VALLEY		FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/129	
J A464	SALAMA VALLEY		FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/171	
J A466	SALAMA VALLEY		BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/111	
J A467	SALAMA VALLEY		FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/164	
J A468	SALAMA VALLEY		BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/176	
J A469	SALAMA VALLEY		FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/180	
J A471	SALAMA VALLEY		BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/85	
J A472	SALAMA VALLEY		BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/119	
J A479	SALAMA VALLEY		BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/19	
J A480	SALAMA VALLEY		BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.3/3/1	
J A482	SALAMA VALLEY		FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/68	
J A496	SALAMA VALLEY		BEAD	UNIV. MUSEUM	EP1-1.3/3/49	
J A497	SALAMA VALLEY		FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/153	
J A498	SALAMA VALLEY		BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/109	
J A499	SALAMA VALLEY		FRAGMENT	UNIV. MUSEUM	EP1-1.3/3/29	
J A501	SALAMA VALLEY		FRAGMENT	UNIV. MUSEUM	EP1-1.3/3/25	

APPENDIX D.6

ID No	SITE	PROB ATTRIB	GENERAL FORM	SOURCE	INSTITUTION	CATALOG
J A502	SALAMA VALLEY		BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/69	
J A504	SALAMA VALLEY		FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/54	
J A510	SALAMA VALLEY		BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/57	
J A511	SALAMA VALLEY		BEAD FRAGMENT	UNIV. MUSEUM	EP1-1.3/3/3	
J A513	SALAMA VALLEY		PENDANT	UNIV. MUSEUM	ET1-1/B/5	BURIAL 2
J A521	SALAMA VALLEY		FRAGMENT	UNIV. MUSEUM	EP1-1.1/8/79	
J A331	SANTA RITA		BEAD	BELIZE	P2B/75-5t	SDP2B-1
J A332	SANTA RITA		BEAD	BELIZE	P2B/75-5z	SD-P2B-1
J A334	SANTA RITA		BEAD	BELIZE	P2B/75-5y	SD-P2B-1
J A335	SANTA RITA		BEAD	BELIZE	P2B/75-5oo	SD-P2B-1
J A337	SANTA RITA		BEAD	BELIZE	P3B/15-2	
J A342	SANTA RITA	[CHIG]	INLAY	BELIZE	P2B/75-4jj-yy	
J A349	SANTA RITA		TOOTH INLAY	BELIZE	P2B/75-4a-d	
J A064	YUCATAN		CELT	PMAE	10-4-20	C/5265
J A069	YUCATAN		CELT	PMAE	15-71-20	C/7355
J A070	YUCATAN		CELT	PMAE	15-71-20	C/7356
J A072	YUCATAN		CELT	PMAE	10-4-20	C/5265

APPENDIX E: OXIDE CONCENTRATIONS FOR NONGROUPED SPECIMENS ARRANGED BY SITE

	Na_2O PCT	Sc_2O_3 PPM	Eu_2O_3 PPB	Lu_2O_3 PPB	Yb_2O_3 PPM	HfO_2 PPM	Cr_2O_3 PPM	Fe_2O_3 PCT	CoO PPM
ALTUN HA									
J A326	9.7	2.87	59.6	29.5	0.165	0.59	2099.	1.21	6.81
J A381	9.8	0.23	38.7	12.9	0.079	0.39	20.	0.77	4.50
J A382	10.9	6.82	106.9	11.7	0.112	0.10	710.	0.77	4.42
J A384	9.6	0.72	115.1	27.3	0.176	0.91	32.	1.17	8.38
J A385	11.9	0.45	2.9	16.4	0.070	0.71	114.	0.76	6.10
J A395	7.6	15.81	108.9	279.9	0.675	0.92	2301.	3.04	16.60
J A396	7.4	15.10	115.1	151.0	0.668	1.59	1330.	3.18	16.48
J A397	7.6	12.11	387.3	179.9	1.099	0.20	1799.	4.32	29.17
J A408	10.3	1.13	8.7	6.5	0.014	0.06	121.	0.44	2.40
J A459		0.37	102.1	59.7	0.358	0.69	50.	1.11	9.48
J A505	11.8	0.81	28.6	26.8	0.145	2.44	1059.	0.31	1.47
CAHAL PECH									
J A434	13.9	0.22	24.4	27.8	0.183	0.84	10.	0.74	2.47
J A435	11.7	0.57	5.3	2.9	0.021	0.14	35.	0.31	1.75
CERROS									
J A311	0.9	14.69	208.9	44.5	0.089	0.24	869.	0.44	2.01
J A313	14.1	2.88		118.0	0.516	1.73	148.	1.05	2.36
J A314		0.47	4.7	5.0	0.017	0.08	550.	0.10	0.15
J A315	10.7	2.60	127.1	70.0	0.407	0.41	121.	1.54	7.08
J A316	12.4	14.49	108.9	83.8	0.484	0.40	1371.	1.39	5.62
J A318	11.9		105.9	164.1	0.511	0.35	2350.	1.29	5.98
J A319	14.8	14.59	20.7	91.2	0.308	3.31	169.	1.70	4.01
J A320	13.6	3.00	47.8	39.6	0.233	0.12	342.	1.02	3.85
J A322	9.3	6.37	134.9	96.2	0.495	0.50	1200.	1.85	11.30
J A424	13.3	0.87	20.4	13.0	0.068	0.19	32.	0.97	4.62
J A425		2.32	169.0	104.0	0.603	0.77	213.	1.50	7.76
J A426	14.1	0.55	4.6	5.3	0.016	0.10	910.	0.11	0.14
J A428	14.5	0.16	11.1	5.0	0.033	0.09	34.	0.36	0.96
CHALCATZINGO									
J A407		56.89	166.0		0.171		3396.	1.97	37.67
CHICHEN ITZA									
J A023	11.3	6.65	142.9	62.8	0.495	0.27	3972.	1.04	4.88
J A025	13.3	1.29	9.3	12.4	0.079	1.67	1371.	0.83	4.61
J A027	14.3	25.82	201.8	38.0	0.107	1.41	2270.	1.29	8.69
J A045		1.82	71.4	25.5		2.88	993.	1.09	4.93
J A046	6.1	5.97	1030.	38.4	0.265	0.40	946.	1.46	21.18
J A048	8.9	2.94	129.1	58.5	0.379	0.23	1340.	1.01	5.43
J A092	16.1	0.36	14.9	14.2	0.061	0.48	281.	0.33	1.70
J A102	14.4	1.86	33.9	14.4	0.187	0.20	1828.	0.70	4.28

APPENDIX E.2

	Na_2O PCT	Sc_2O_3 PPM	Eu_2O_3 PPB	Lu_2O_3 PPB	Yb_2O_3 PPM	HfO_2 PPM	Cr_2O_3 PPM	Fe_2O_3 PCT	CoO PPM
COPAN									
J A011	9.3	3.51	156.0	0.1	0.587	0.35	2051.	1.33	7.53
J A012	9.6	0.22	48.3	27.1		3.91	2.	0.23	0.69
J A014	5.8	2.77	62.2	40.0	0.185	2.71	741.	1.42	8.30
J A015	5.5	2.20	20.0	12.4	0.045	3.92	893.	0.36	2.31
J A016	10.3	3.50	158.9	127.1	0.643	0.70	2421.	1.42	8.24
J A017	6.4	12.39	153.1	91.8	0.508	0.49	1130.	1.43	7.94
J A018		41.59		187.1	0.920	0.32	845.	0.05	0.07
J A020	10.6	3.60	49.3	27.0	0.122	0.37	1888.	1.12	4.94
J A021	5.5	3.22	184.1	148.9	0.729	0.34	2529.	1.29	8.04
J A022	16.1	10.09	153.1	23.2	0.134	0.46	2178.	1.21	10.89
J A029	6.8	13.09	119.9	79.6	0.485	1.42	4295.	3.38	21.18
J A031	6.5	21.68	150.0	171.0	0.509	0.64	4977.	2.86	24.49
J A036	8.9	3.56	43.0	42.5	0.181	0.50	1021.	1.17	8.38
J A038	7.5	1.44	175.0	84.7	0.565	1.89	236.	2.81	13.40
J A040	7.6	5.70	287.1	72.9	0.605	0.66	558.	2.43	16.71
J A073	6.8	0.67		95.9	0.736	15.89	58.	2.54	19.32
J A074	6.9	1.47		84.9	0.463	1.51	261.	2.31	21.68
J A075	6.6	7.98		107.9	0.429	4.04	767.	4.34	28.77
J A080	11.1	0.04					3.	0.30	0.69
J A081	8.2	26.42	314.1	193.2	1.009	1.28	7413.	2.49	11.40
J A083	7.5	3.65	279.9	198.2	0.953	6.08	74.	2.67	15.49
J A105		8.77	105.9	75.0	0.242	5.36	1862.	1.23	5.79
J A106		4.45	18.7	45.6	0.206	8.81		0.50	2.83
J A107		7.35	289.7	106.9	0.877	1.03		3.09	21.18
J A110		2.92	252.9	37.7	0.198	1.46	196.	1.05	4.95
J A116	11.1	5.78	89.3	138.0	0.406	2.98	2388.	2.10	14.49
J A118	11.4	1.35	35.3	67.0	0.304	2.40	204.	1.88	15.89
J A122	12.8	10.21	105.9	81.7	0.418	0.53	2312.	2.93	17.78
J A123	14.9	1.85	8.2	20.1	0.071	0.43	356.	0.61	4.62
J A127	8.1	25.59		41.1	1.671	2.14	97.	8.28	42.95
J A128	11.2	18.28		55.8	2.871	4.24	41.	5.55	17.30
J A130		1.11	16.7			3.03	1581.	0.76	2.99
J A273		6.28	269.2	216.8	0.841	1.81	148.	2.80	14.49
J A274		7.11	263.0	145.9	0.787	4.19	349.	2.81	15.49
J A275		1.33	92.9	62.2	0.402	0.19	58.	1.11	5.22
J A276	19.2	1.18	88.1	52.8	0.358	0.49	69.	1.23	9.14
J A277		0.70	69.0	49.9	0.356	0.20	36.	1.04	4.92
J A278	15.6	2.93	151.0	102.1	0.612	1.01	368.	1.75	9.53
J A279	17.3	7.16	111.9	80.2	0.445	0.42	546.	1.66	7.28
J A280	9.4	3.87	119.9	51.1	0.706	0.54	18.	1.96	12.59
J A302		4.47	803.5	79.3	0.430	1.54	186.	0.58	3.52
J A303		70.31	94.6	380.2	0.630		3428.	3.28	39.63
J C25I	13.0	1.55		27.7	0.184	1.21	223.	3.58	9.59

APPENDIX E.3

	Na_2O PCT	Sc_2O_3 PPM	Eu_2O_3 PPB	Lu_2O_3 PPB	Yb_2O_3 PPM	HfO_2 PPM	Cr_2O_3 PPM	Fe_2O_3 PCT	CoO PPM
COSTA RICAN SITES									
J A203	13.8	3.16	196.8	138.0	0.711	5.24	5.	0.85	2.75
J A264		4.30	141.9	289.7	1.040	2.66	17.	2.34	7.05
J A271		3.53	167.1	27.6	0.192	2.88	11.	1.16	4.69
J A199	12.6	3.83	488.7	116.9	0.782	1.43	40.	1.50	4.41
J A207	11.5	0.06	4.4	2.7	0.014	0.10	12.	0.21	1.02
J A227	12.2	5.87		285.8		4.53	4.	2.38	7.55
J A229	13.0	1.72	45.2	36.1	0.083	1.41	4.	0.78	2.85
J A231	9.7	5.26	269.8	100.9	0.327	2.47	356.	1.84	17.10
J A233	14.0	0.26	3.2			0.77	1.	0.63	0.84
J A234	11.2	4.25	75.7	78.0	0.380	4.51	7.	1.08	4.13
J A239	13.1	3.83	224.9		0.097	3.78	7.	0.89	3.19
J A263	13.9	2.37	80.5	33.0	0.053	4.54	8.	0.80	2.93
J A266	10.2	0.24	2.2	2.6	0.021	0.13	0.	0.14	0.57
J A267	14.1	2.24	89.1		0.052	2.04	12.	0.70	3.04
J A268	11.3	5.01	47.1	15.0	0.162	3.00	105.	1.75	8.13
J A196	10.8	3.13	339.6	86.9	0.438	2.42	1.	2.97	11.19
J A205	13.5	0.70	8.7	20.2	0.072	2.45	2.	0.78	1.31
J A190	10.9	11.30	466.7	130.9	0.501	2.14	44.	2.74	12.50
J A191	7.8	4.60	169.8	23.8	0.136	3.17	30.	2.10	13.61
J A235	10.3	3.80	83.9	32.7	0.188	3.30	9.	1.99	9.93
J A236	13.0	5.50	330.4	24.0	0.512	2.65	4.	2.80	9.53
J A246	10.4	2.54	137.1	34.5	0.272	1.37	35.	1.87	13.00
J A248	12.5	2.49	74.1	54.6	0.286	2.23	9.	1.07	5.43
J A252	8.8	4.85	867.0	920.4	3.177	4.24	7.	0.95	1.82
J A259	11.4	10.79	648.6	22.0	0.367	2.64	21.	3.18	14.69
CUELLO									
J A049	6.6	2.78	184.9	60.4	0.383	0.45	728.	1.71	11.51
J A050	10.0	10.21	193.2	144.9	0.836	0.77	1180.	1.65	9.48
J A059	9.7	11.51	140.0	134.9	0.703	0.59	938.	1.52	10.69
J A164	12.8	0.61	52.4	26.6	0.131	0.36	16.	0.68	3.91
J A170	6.9	20.61	143.9	23.9	0.093	1.72	3532.	0.29	0.46
J A171	6.7	51.05	238.8	154.2	0.693	0.12	3828.	1.85	12.11
J A173	11.6	1.71	158.9	78.3	0.290	4.18	78.	0.43	2.40
J A174	12.9	0.25	17.3	15.3	0.069	1.10	27.	0.50	4.95
J A211		1.42	166.0	58.7	0.272	1.59	2.	1.42	2.30
J A212		8.04	34.0	22.3	0.023	0.37	1119.	0.79	0.79
J A215	11.9	5.57		29.1	0.229	2.45	10.	1.66	6.87
J A216		26.12	899.5	96.6	0.598	4.28	2291.	0.40	0.66
J A218	11.6	0.65	119.1	94.2	0.511	0.72	9.	1.36	7.69
J A220		22.08	487.5	74.8	0.339	1.00	1271.	0.40	0.37
J A226		3.57	77.4	38.0	0.209	0.38	154.	0.68	0.37
J A292	13.0	0.77	130.9	99.3	0.587	1.19	14.	1.38	8.26
J A293	10.9	0.86	138.0	121.1	0.671	0.72	15.	1.39	8.38
J A309		0.71	103.0	89.7	0.447	2.83	11.	1.26	7.00
J A355		1.78	92.9	67.9	0.371	0.63	143.	1.34	6.37
J A473	12.1	1.84	121.1	72.9	0.383	7.60	357.	1.21	8.36
J A475	13.9	2.83	28.2	23.7	0.117	0.24	349.	0.41	1.77
J A477	20.6	2.00	114.0	85.1	0.430	2.20	147.	1.39	7.67
J A507	12.4	1.83	89.5	65.8	0.357	26.79	50.	1.10	5.87
J A508	12.4	1.87	73.6	58.7	0.324	7.89	149.	1.14	6.17
J A509	10.6	13.30	115.1	90.8	0.455	0.74	652.	1.54	8.32
EL CAJON									
J A457		0.27	26.0	22.5	0.096	18.49	6.	0.45	2.28
J A485	10.0	0.87	41.3	13.0	0.044	0.17	2.	0.89	6.19
J A490	12.1	0.29	68.7	25.6	0.124	0.26	17.	0.67	2.74
J A515	13.6	0.15	5.2	4.9	0.026	0.07	5.	0.14	0.52
J A516	12.3	0.22	3.4	5.3	0.025	2.13	8.	0.27	0.89
J A519	13.7	0.13	7.9	12.7	0.049	7.74	4.	0.26	1.08
J A520	7.3	1.39	16.5	8.3	0.048	1.01	822.	0.42	3.12

APPENDIX E.4

	Na_2O PCT	Sc_2O_3 PPM	Eu_2O_3 PPB	Lu_2O_3 PPB	Yb_2O_3 PPM	HfO_2 PPM	Cr_2O_3 PPM	Fe_2O_3 PCT	CoO PPM
SOURCE JADE (EL PROGRESSO)									
J S121	11.4	4.72	31.6	64.9	0.282	1.23	3.	0.93	2.94
J S124		3.09	49.0	81.8	0.360	1.89	3.	0.77	2.46
GUATEMALA									
J A066	10.9	39.63		732.8	3.311	2.47	77.	9.25	25.41
J A076	11.2	25.41		857.0	3.656	6.03	60.	6.37	19.50
J A115	10.7	1.24	18.0	32.0	0.100	0.92	205.	1.07	11.40
HOLMUL									
J A132	8.6	13.00	134.0	54.0	0.137	2.51	134.	2.55	17.30
J A133	13.3	7.94	246.0	75.7	0.210	2.92	133.	6.85	8.71
J A134	10.8	8.49	158.9	50.6	0.138	2.63	139.	2.21	11.91
J A135	6.8	5.64	228.0	143.9	0.436	1.74	2812.	4.88	47.64
J A138	8.9	0.44	0.5						
J A140		0.39	6.5			0.08	935.	0.10	0.20
J A142		1.58	46.9	95.5	0.366	54.08	853.	0.77	2.47
J A143		4.21	271.0	28.2	0.140	3.55	8.	1.71	6.24
J A144	15.0	1.79	3.4	6.6		5.64	759.	0.54	1.66
J A146	11.0	1.05	59.0	69.8	0.263	1.79	99.	1.87	11.09
J A154	10.6	2.86	33.0	51.1	0.178	1.92	5.	1.90	8.15
J A282		7.74	134.9	41.7	0.143	2.30	113.	1.56	7.71
J A283		14.39	179.9	65.3	0.199	0.08	594.	2.44	19.19
J A284		8.51	113.0	51.3	0.107	2.03	97.	1.72	8.81
J A287		0.69	19.3	9.3	0.069	0.13	530.	0.17	0.27
J A288	13.7	2.78	36.3	38.6	0.186	2.43	8.	0.92	2.71
J A289	12.6	3.87	132.1	27.5	0.132	2.90	150.	1.35	6.64
J A290		1.29	24.3	14.3	0.070	0.31	58.	0.99	2.17
J A291		4.62	44.0	41.8	0.161	3.04	4.	1.34	4.80
HONDURAS									
J A067	7.1	2.96	241.0	94.0	0.621	0.40	565.	3.19	19.10
J A068	12.1	14.79	833.7	598.4	3.451	4.39	40.	4.38	12.59
J A108		8.45	466.7	18.0	0.385	0.45		2.99	37.58
J A109	11.2	27.67	100.0	71.0	0.183	0.70	1648.	1.71	9.38
KAMINALJUYU									
J A055	6.5	13.00	79.6			0.15	136.	0.37	0.18
J A056	5.9	5.07	90.2	10.2	0.058	1.34	253.	0.34	0.42
J A057	5.2	22.49	167.1	130.9		0.69	1119.	0.45	0.50
J A058	5.5	15.31	81.7	40.1		2.00	506.	0.63	0.27
MIDDLE MOTAGUA (SOURCE JADEITITE)									
J S068	14.9	0.44	13.7	14.5	0.068	0.51	2.	1.07	2.77
J S090	13.7	0.18	5.5	4.7	0.029	0.45	2.	0.35	0.97
J S106	11.3	1.10	73.6	25.2	0.130	0.26	13.	0.95	4.53
J S131	10.0	1.82	90.2	45.9	0.263	2.92	83.	1.88	6.62
J S133	14.0	1.08	90.4	34.9	0.179	2.07	13.	1.44	5.16
J S135	18.1	0.44	6.2	15.2	0.068	1.15	1.	0.66	1.18
J S138	17.7	0.39	55.7	18.9	0.111	2.07	4.	0.95	3.43
J S146	15.0	0.55	37.4	6.9	0.038	0.28		0.63	0.54
J S150	12.8	0.59	83.9	45.4	0.231	0.40	36.	1.07	4.63
J S157	14.3	0.15	50.0	15.7	0.076	0.94	1.	0.94	3.52
J S160	11.5	2.82	59.0	23.7	0.098	1.39	5.	2.11	6.95
J*S007	9.1	5.02		63.2	0.446	3.82	381.	3.15	95.28
J*S071	7.9	8.45	13.7	62.5	0.178	1.75	755.	3.76	20.89
J*S098		5.47	10.8	65.2	0.164	8.26	627.	3.54	14.29
J*S105	9.2	3.98	35.5	69.2	0.174	2.78	511.	1.14	11.69
J*S153	10.3	2.16	89.5	50.5	0.284	3.19	177.	2.99	8.99
J*S161	13.6	1.77	90.8	19.7	0.119	1.36		1.12	0.85

APPENDIX E.5

	Na_2O PCT	Sc_2O_3 PPM	Eu_2O_3 PPB	Lu_2O_3 PPB	Yb_2O_3 PPM	HfO_2 PPM	Cr_2O_3 PPM	Fe_2O_3 PCT	CoO PPM
MONTE ALTO									
J A370		3.83	123.0	90.6	0.516	0.57	414.	1.41	4.93
J A371	10.2	3.15	158.1	115.1	0.566	0.51	2793.	1.58	9.29
J A372	14.7	5.87		18.1	0.085	0.91	2239.	2.63	8.13
J A374		4.60	107.9	51.6	0.312	0.45	1069.	1.50	6.92
J A376		0.48	9.1	23.4	0.092	9.35	1300.	0.61	2.22
J A379	7.1	16.98	110.9	49.9	0.229	0.32		1.24	25.29

APPENDIX E (continued)

	Na_2O PCT	Sc_2O_3 PPM	Eu_2O_3 PPB	Lu_2O_3 PPB	Yb_2O_3 PPM	HfO_2 PPM	Cr_2O_3 PPM	Fe_2O_3 PCT	CoO PPM
NOHMUL									
J A156	10.2	1.66	9.0	24.4		5.21	126.	1.29	5.78
J A157	12.7	2.28	10.9	6.6		0.65	203.	0.83	2.51
J A159	12.2	1.78	14.1	27.8		0.62	146.	1.50	6.53
J A294	11.4	5.24	13.3	56.9	0.092	0.56	741.	1.75	7.24
NON PROVENIENCED									
J A004	8.7	16.79	209.9	222.8	0.555	0.69	2249.	1.93	16.29
J A006	10.4	8.36	158.9	111.9	0.461	0.37	2259.	1.67	7.05
J A436	12.9	3.57	138.0	40.3	0.295	2.36	8.	1.75	8.55
PIEDRAS NEGRAS									
J A493		1.30	214.8	44.0	0.257	1.96	423.	2.53	10.99
QUIRIGUA									
J A360	9.7	2.09	69.3	31.0	0.169	3.03	83.	1.88	9.73
J A362	7.3	1.87	195.0	61.4	0.339	0.81	314.	2.56	10.89
J A363	8.9	6.37	115.9	154.2	0.729	3.41	1409.	2.73	26.30
J A364		12.39	210.9	83.0	0.417	2.42		1.52	10.99
J A366	7.4	1.99	158.9	53.5	0.346	0.78	341.	2.50	13.49
SAN AGUSTIN ACASAGUASTLAN									
J A410		3.16			0.022		3707.	0.34	14.00
J A412		1.62	108.9	83.0	0.424	0.64	953.	2.27	27.42
J A413	11.6	0.79	34.4	10.3	0.060	0.11	90.	0.43	2.78
J A414	7.6	6.22	267.3	119.1	0.764	3.67	2099.	2.38	14.00
J A421		22.18	191.9	148.9	0.871	0.89	3926.	2.26	19.82
J A422	6.4	10.40	152.1	130.0	0.664	0.91	2618.	2.33	24.10
J A429	10.8	1.22	24.1	19.0	0.114	0.12	171.	0.89	6.55
J A430	13.0	0.14	12.3	5.6	0.030	0.13	4.	0.47	1.46
J A431	11.1		9.7	38.9	0.206	0.40	337.	0.38	2.90

APPENDIX E.6

	Na_2O PCT	Sc_2O_3 PPM	Eu_2O_3 PPB	Lu_2O_3 PPB	Yb_2O_3 PPM	HfO_2 PPM	Cr_2O_3 PPM	Fe_2O_3 PCT	CoO PPM
SALAMA VALLEY									
J A437	12.6	0.98	87.7	186.2	0.661		228.	1.71	6.21
J A438	5.2	14.19	26.0	37.3	0.146	0.53	4613.	2.95	10.99
J A440	12.3	0.85	39.7	27.1	0.130	0.29	127.	1.20	11.09
J A443	12.9	8.55	140.9	102.1	0.381	1.13		0.70	5.86
J A444	10.3	2.70	105.9	74.1	0.409	0.44	159.	1.47	9.14
J A445	11.1	0.65	1.7	9.0	0.026	1.73	440.	0.24	1.17
J A446	14.1	0.40	3.9	14.7	0.064	7.40	414.	0.20	0.61
J A447	15.3	5.58	13.6	23.3	0.054	0.74	1400.	0.73	2.99
J A448	11.5	4.21	230.1	162.9	0.828	1.79	407.	1.78	10.99
J A460	7.1	15.89	269.2	125.9	0.391	0.71	3243.	2.64	32.14
J A462		2.96	95.1	72.4	0.392	0.37	204.	1.32	7.80
J A463	7.0	9.91	321.4	153.1	0.908	1.63	368.	3.48	15.21
J A464	9.0	6.00	71.9	63.0	0.372	0.37	319.	1.42	10.69
J A466	10.3	3.93	261.8	142.9	0.723	0.94	261.	3.04	18.62
J A467	10.7	16.41	477.5	95.5	0.701	1.56	785.	2.61	12.50
J A468	12.3	8.17	85.1	66.1	0.325	0.38	328.	1.24	5.50
J A469	13.0	8.61	478.6	113.0	0.789	2.31	857.	2.04	9.82
J A471	13.7	7.14	409.3	78.5	0.535	1.51	646.	2.63	12.71
J A472	8.5	6.43	765.6	186.2	1.009	1.52	410.	2.33	33.27
J A479		5.86	78.7	95.9	0.420	0.57	265.	0.96	1.71
J A480	7.0	15.70	61.2	35.1	0.070		675.	0.51	3.44
J A482	13.2	5.79	30.3	48.2	0.180	0.73	767.	2.21	8.53
J A496	10.8	3.45	162.9	123.9	0.659	0.89	288.	1.41	10.50
J A497	13.8	5.64	167.9	82.4	0.325	1.13	411.	1.11	3.03
J A498	11.8	6.19	106.9	79.4	0.341	0.58	228.	1.29	9.84
J A499	10.0	1.31	19.1	29.4	0.139	2.84	106.	1.07	13.21
J A501	7.5	6.18	239.9	84.3	0.397	2.63	399.	1.41	15.89
J A502	11.0	2.40	138.0	110.9	0.740	82.79	73.	1.42	9.12
J A504	11.1	3.87	171.0	130.0	0.548	0.49	263.	1.44	9.25
J A510	7.8		238.2	570.2	0.463		2661.	1.75	11.19
J A511	7.8	1.59	127.1	42.4	0.255	0.44	728.	1.82	18.62
J A513	8.8	3.08	83.4	73.6	0.408	10.40	771.	1.22	10.79
J A521	15.3	3.41	319.2	102.1	0.545	0.89	173.	1.26	4.04
SANTA RITA									
J A331		2.06	129.1	80.5	0.509	0.52	211.	1.27	7.53
J A332	12.3	2.49	130.9	91.8	0.681	1.83	253.	1.31	8.07
J A334	12.1	2.90	182.8	105.9	0.693	5.28	780.	1.55	9.31
J A335	10.1	2.19	119.9	100.9	0.653	78.16	160.	1.43	9.25
J A337		22.91	50.4	40.4		0.19	386.	0.61	0.86
J A342	12.5	9.66	139.0	93.3	0.492	0.72	1340.	1.46	6.61
J A349	13.1	3.94	407.4	115.1	0.619	0.43	1059.	1.44	4.13
YUCATAN									
J A064	5.5	65.31	1330.	450.8	2.410	1.59	27.	12.59	45.08
J A069	11.3	43.25	2420.	1330.	5.808	9.62	116.	7.23	18.88
J A070	6.8	45.60	1490.	555.0	2.679	6.25	250.	9.40	27.99
J A072	6.4	75.16	2010.	1050.	8.017	3.55	214.	8.36	30.62

APPENDIX F: RELATIVE X-RAY DIFFRACTION PEAK INTENSITIES FOR NONGROUPED SPECIMENS

REFERENCE GROUP ID No.	JADEITE	OMPHACITE	ALBITE	PARAGONITE	MUSCOVITE	ANALCITE	OTHER
J A004	MAJOR						
J A023	MAJOR	TRACE	L.MED		LOW		
J A046		MAJOR					
J A067	MAJOR	PRESENT					
J A069	MAJOR	PRESENT					
J A075							
J A080	MAJOR		PRESENT				
J A081	MAJOR	PRESENT					
J A083	MAJOR						
J A135	MAJOR		LOW				
J A138	MAJOR		LOW	LOW		MEDIUM	
J A190	MAJOR	H-MED				V-LOW	
J A191	MAJOR						
J A199	MAJOR	V-LOW		V-LOW		V-LOW	
J A203	MAJOR	TRACE				TRACE	
J A227	MAJOR	TRACE					
J A229	LOW		MAJOR	H-MED	TRACE		
J A231	MAJOR	MAJOR		V-LOW	V-LOW		
J A234	MAJOR	LOW	MAJOR	H-MED	LOW	LOW	
J A235	MAJOR	LOW	MAJOR		V-LOW	LOW	
J A236	MAJOR	LOW	LOW			V-LOW	
J A246	MAJOR	MED	LOW		Q	TRACE	
J A248	MAJOR	Q	L-MED			V-LOW	
J A252	MAJOR	Q	HIGH	MAJOR		V-LOW	
J A282		MAJOR					
J A290	MAJOR	Q	LOW	MEDIUM	L-MED	MEDIUM	
J A360	MAJOR	MAJOR	H-MED			LOW	
J A362	TRACE	MAJOR					
J A363		MAJOR			LOW		
J A381	H-MED	H-MED	MED	MAJOR		MED	
J A382		Q	MAJOR				
J A384	MAJOR	MAJOR	MAJOR	MAJOR	MED		
J A385		Q	MAJOR				
J A408			MAJOR				
J A428	MAJOR		MAJOR	V-LOW	V-LOW	MED	
J A429		MEDIUM	MAJOR				
J A431							
J A434	MAJOR		TRACE	MAJOR	TRACE	L-MED	
J A435	LOW	V-LOW	MAJOR	MAJOR			
J A436	MAJOR	H-MED	V-LOW			V-LOW	
J A457	MAJOR		MAJOR	MAJOR		LOW	
J A464	MAJOR	Q			MAJOR		
J A467	MAJOR	MAJOR			HIGH	L-MED	
J A482	MAJOR	V-LOW?			TRACE	V-LOW	
J A485		LOW?	MAJOR		LOW		
J A490	MAJOR	LOW	MAJOR	H-MED	TRACE		
J A499	MEDIUM	MAJOR	MAJOR	H-MED	V-LOW		
J A504	MAJOR	L-MED		L-MED	LOW	LOW	
J S068	MAJOR	Q	Q	MAJOR	Q	LOW-MED	
J S124	MAJOR	L-MED	MAJOR	MAJOR	LOW	H-MED	
J S146	MAJOR	TRACE	MEDIUM				
J S150	MAJOR		MAJOR				
J*S071	MEDIUM	MAJOR		V-LOW		LOW	