

Jade Material - Observations and analysis

LRN: 2931

Accession No. S1987.842

Period Neolithic (?)
Culture Hongshan

Checklist name Tubular ornament (Gu)

Object term

Mineral(jade) nephrite
Color green with areas of whitish beige
Hardness very hard
Texture massive compact

Mineral Inclusions

Veining features -

Burned surface -

Translucency ++/-

Color ++/-

Luster +

Class of Alteration |

Munsell-Unaltered 5GY 4/4

Munsell-Altered 10Y 8.5/1

Munsell-discoloration -

XRD

FTIR sample taken 2/14/96 JD; 3/11/97 JD

SEM sample taken 2/14/96 JD; 3/11/97 JD

FTIR done JGD 4/1996; WG 6/1997

SEM done

Fe to Fe+Mg ratio

Si sample possible

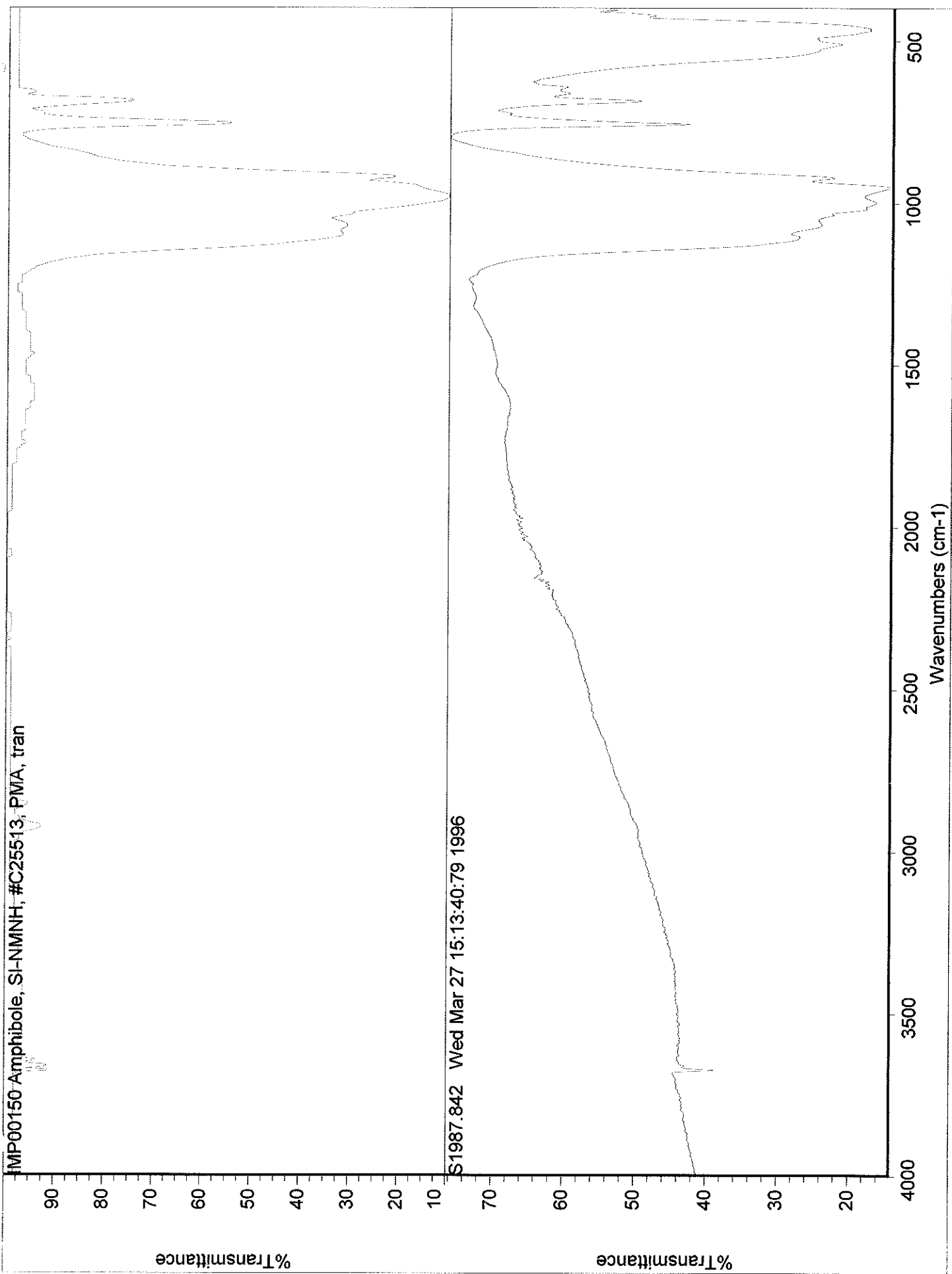
Sample location flared end of tube shape, near break in edge. Resampled near break on bottom "back" edge of cuff. Jade is very hard.

XRF Data

<u>SiO2</u>	65.866	<u>MnO</u>	0.028
<u>CaO</u>	14.329	<u>FeO</u>	0.601
<u>K2O</u>	0	<u>Cr2O3</u>	0.054
<u>TiO2</u>	0.132	<u>NiO</u>	0
		<u>MgO.Al2O3</u>	18.991

Comments unaltered part (mainly) is translucent.

Date in 2/16/96
Date mod 4/24/2008



51987.842

Spectrum #322

EDXRF ANALYSIS
SPECTRACE INSTRUMENTS

PROCEDURE : NEPHRITE - HE
FILTER USED : NO FILTER
ATMOSPHERE : AIR
COUNT RATE RANGE : MED
ANALYSIS METHOD : FUN. PARAMS.

TUBE VOLTAGE : 15 KV
TUBE CURRENT : 0.99 MA
LIVETIME : 200 SEC
PRESET COUNT : 0 K

TIME : 7:34 pm

DATE : 9/19/96

SAMPLE	ELEMENT	CONCENTRATION	ERROR
51987.842.1			
	SI02	52.552 %	+/- 0.3249
	K2O	N D	
	CAO	11.045 %	+/- 0.0511
	TIO2	0.144 %	+/- 0.0092
	CR2O3	0.024 %	+/- 0.0046
	MNO	0.059 %	+/- 0.0046
	FE0	1.213 %	+/- 0.0105
	NIO	N D	
	C	0.000 ADDED	
	MG0	34.963 DIFF	

51987.842

EDXRF ANALYSIS
SPECTRACE INSTRUMENTS

PROCEDURE : NIPPURITE - HE
FILTER USED : NO FILTER
ATMOSPHERE : AIR
COUNT RATE RANGE : MED
ANALYSIS METHOD : FUN. PARAMS.

TUBE VOLTAGE : 15 KV
TUBE CURRENT : 0.99 MA
LIVETIME : 100 SEC
PRESET COUNT : 0 K

TIME : 9:40 am

DATE : 5/11/98

SAMPLE	ELEENENT	CONCENTRATION		ERROR
51987.842.E	SI02	52.453 %	+/-	0.2270
	K2O	N D		
	CAO	13.706 %	+/-	0.0439
	TIO2	0.121 %	+/-	0.0073
	CR2O3	0.056 %	+/-	0.0050
	MNO	0.080 %	+/-	0.0040
	FE0	1.630 %	+/-	0.0094
	NIO	N D		
	C	0.000 ADDED		
	MO	31.953 DIFF		

Area curved; not flat

51987-842

EDXRF ANALYSIS
SPECTRACE INSTRUMENTS

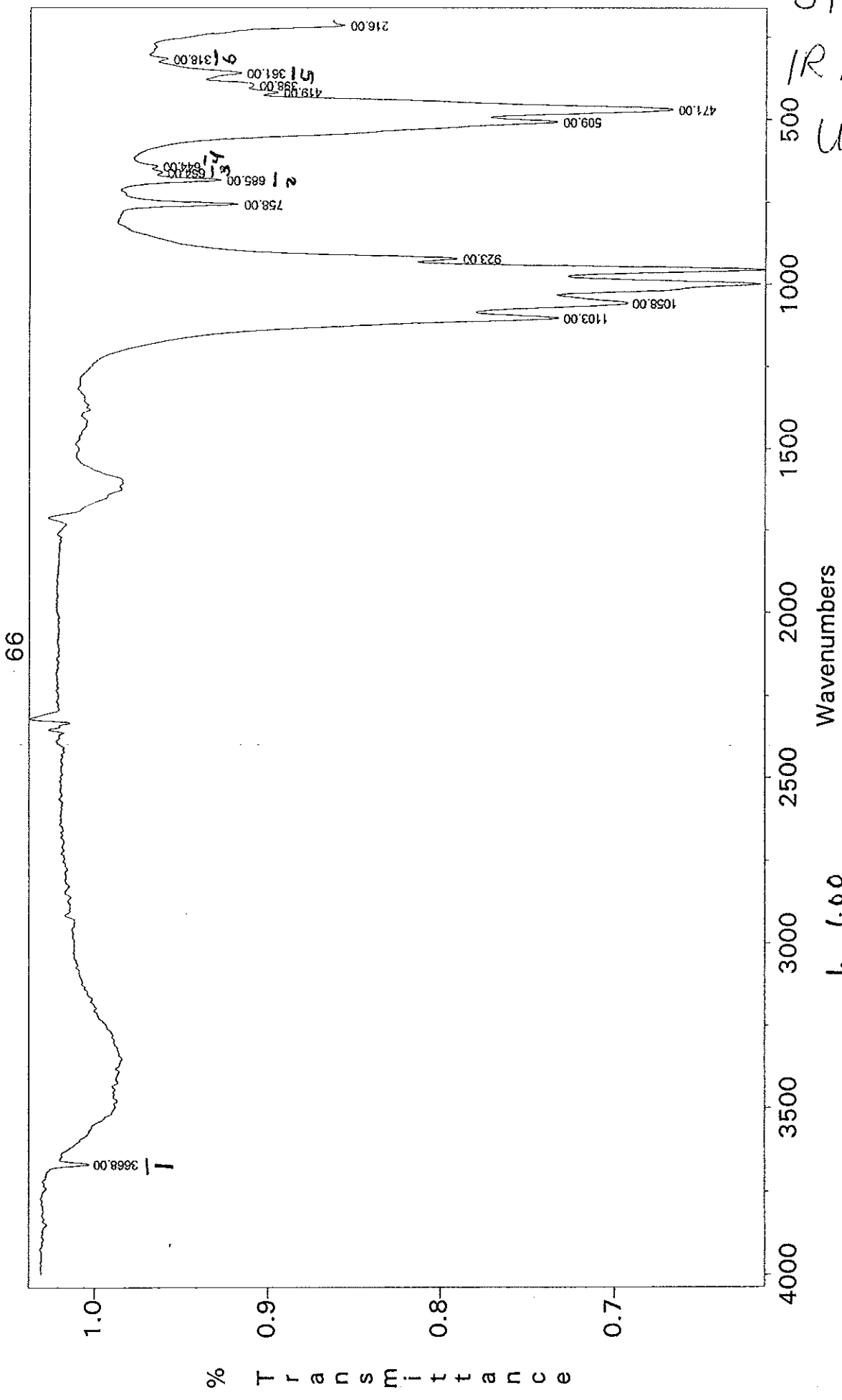
PROCEDURE : NEPHRITE - HE
FILTER USED : NO FILTER
ATMOSPHERE : AIR
COUNT RATE RANGE : MED
ANALYSIS METHOD : FUN. PARAMS.
TUBE VOLTAGE : 15 KV
TUBE CURRENT : 0.99 MA
LIVETIME : 100 SEC
PRESET COUNT : 0 K

TIME : 8:58 am

DATE : 5/11/98

SAMPLE	ELEMENT	CONCENTRATION	ERROR
51987.842.1	SI02	56.489 %	+/- 0.2309
	K2O	N D	
	CAO	14.660 %	+/- 0.0456
	TI02	0.121 %	+/- 0.0070
	CR2O3	0.109 %	+/- 0.0059
	MNO	0.104 %	+/- 0.0042
	FEO	1.506 %	+/- 0.0093
	NI0	N D	
	C	0.000 ADDED	
	MGO	27.010 DIFF	

S1987.842
IR Analysis
Wien, G
1997



- 1. 1.00
- 2. .92
- 3. .96
- 4. .96
- 5. .91
- 6. .95