

THE MIDWEST FACETER



JANUARY, 1991

VOLUME 12, NUMBER 1

AN EDUCATIONAL PUBLICATION OF THE MIDWEST FACETERS GUILD

THE MIDWEST FACETER
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Lincoln Park, Mi.
48146

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THE MIDWEST FACETERS GUILD

ORGANIZED JULY 14, 1979

INCORPORATED 1979

BECAME A NON-PROFIT EDUCATIONAL ORGANIZATION - JULY 7, 1982

PURPOSES

1. To promote education and recreation.
2. To develop "THE ART OF FACETING".
3. To exchange information related to faceting.
4. To provide meetings for those of like interests.
5. To promote achievement in individuals.

MEMBER OF:

MIDWEST FEDERATION OF MINERALOGICAL and GEOLOGICAL SOCIETIES
THE AMERICAN FEDERATION OF MINERALOGICAL SOCIETIES

OFFICIAL PUBLICATION: THE MIDWEST FACETER

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WILLIAM H. GARDINER, MEMBERSHIP SECRETARY
4518 Sandstone Drive
Williamston, MI 48895

MIDWEST FACETERS MEETING.....JANUARY 12, 1991

Cleveland Museum of Natural History
(See Map page 3)

10:00 AM - BOARD MEETING

1:00 PM - SHORT INFORMAL MEMBERSHIP MEETING
FOLLOWED BY VIEWING "THE GEMS OF FIRE"
AND ENJOYING THE MUSEUM. HOSTED BY PAUL
CLIFFORD.

§§§§§§§§§§

How to order your MIDWEST FACETERS GUILD badge:

Send exact name you wish on the Badge
Along with \$5.75 and mail to:

A- FRAME AWARDS
414 South Dort Hwy.
Flint, Michigan 48503



PHONE (313) 767-8881

\$5.75 includes shipping and handling.

MEMBERSHIP INFORMATION for MIDWEST FACETERS GUILD

Please use the application blank below to join or renew your membership in the Midwest Faceters Guild. Dues are \$5.00 per year, payable for the next year beginning Oct. 1st. Non-payment of dues by April 1st will cause your name to be dropped from the rolls. After Jan. 1st, a red mark will appear on the label of those members who have not renewed their membership.

NAME: _____ ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

PHONE: _____ TYPE MACHINE: _____ TEACH: _____

☐ New membership ☐ Renewal membership

While it is not mandatory, dues should be paid by check when possible and mailed to the membership chairmen at:

William H. Gardiner
MFG Membership Chairman
4518 Sandstone Drive
Williamston, MI 48895

HOORAY FOR 1991



It's hard to believe, 1990 is almost history. It's been a very good year for me. It's also been a very good year for the Midwest Faceters Guild. We visited new places, had a wonderful Seminar, demonstrated our hobby at new areas at shows, and are solvent. We have a lot to be thankful for. I want to thank the stal-

warts of the Guild, who carry on the burden of making the Guild successful.

It's time now to roll up our sleeves and make 1991 even better than ever. Our first meeting will be at the Cleveland Museum. This will double as a Field Trip. The Museum, with help from Mr. Paul Clifford, the curator, will host our meeting. The feature for the day will be a visit to the "GEM FIRE DISPLAY." This exhibit will not be seen again for twenty years. This will be an event you will not want to miss. In March, we will have our meeting in conjunction with the Flint, Michigan show. For our May meeting, we will travel to Michigan City, Indiana. The August meeting will be hosted by the Toledo Faceters. For our Homecoming meeting in October, we will once again be in Dearborn, Michigan. We have had a very good turn out for our meetings this year. I'm hopeful that our attendance will increase again this year. Come on out and join us, have some fun as well as help give direction for our organization.

Once again, I have been elected to serve as your President. This is an honor. I'll try to lead as effectively as possible. I'll need all the help

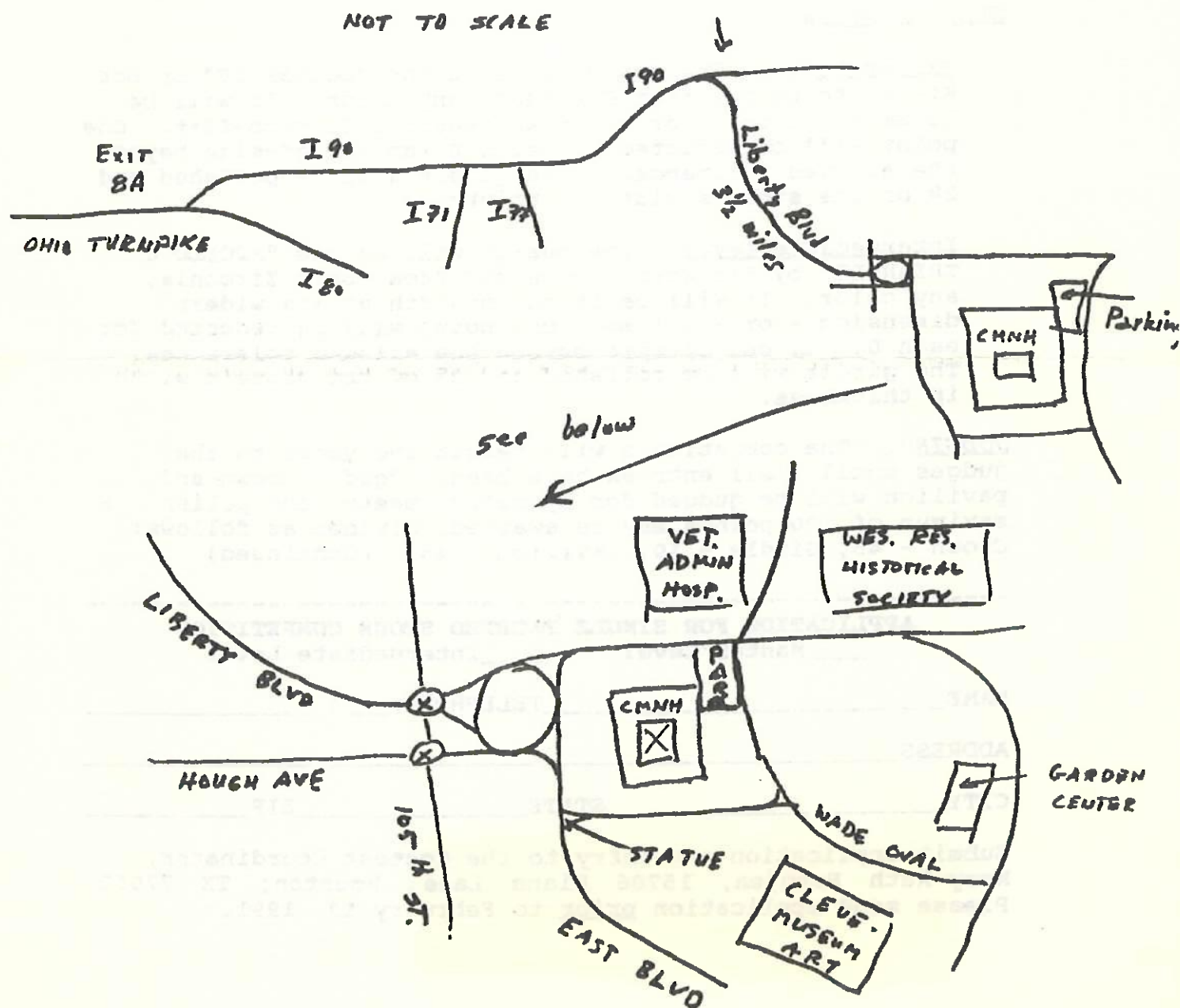
It takes as much courage to have tried
and failed as it does to have tried
and succeeded.

Anne Morrow Lingbergh
Via Readers Digest

I can get. Come to the meetings and help support your staff. My thanks to Art Kalinski, our Vice President, Elery Holt, Our Treasurer, and Francis Bush, our Secretary.

Cleveland Museum of Natural History

Take I 80-I90 Ohio Turnpike to Gate 8A (which is I90 East). Follow I90 East through and past downtown Cleveland. (You will pass junctions for I71 and I 77) After passing the two electric generating plants, take the exit for Liberty Blvd. and go south about $3\frac{1}{2}$ miles to a traffic light and traffic circle (se map below). The Museum is in the trees directly in front of you. Go to the parking lot which is on the other side of the building.



THE MIDWEST FACETER

4.

JANUARY, 1991

Via: Texas Faceters' Guild
Oct. 1990

CLEAR LAKE GEM & MINERAL SOCIETY, INC.
16th Annual Gem & Mineral Show
February 23 - 24, 1991

The Clear Lake Gem and Mineral Society, Inc. announces a Faceting Competition to be held in connection with its 16th Annual Gem & Mineral Show. This competition is open to all faceters. The Master Level is open to those who have earned 95 points or more in a previous competition. The Intermediate Level is for faceters who have not earned 95 points or more in competition.

SPECIFICATIONS:

Master Level - The design will be the "OCTOBRITE" by Bob Klein, to be cut from Corundum, any color. It will be 12 mm in width, + or - 0.5 mm measured flat-to-flat. One point will be deducted for each 0.1mm out-of-size beyond the allowed tolerances. The girdle will be polished and 2% of the stone's width in thickness.

Intermediate Level - The design will be the "APOLLO C TRIANGLE" by Sid Word, to be cut from Cubic Zirconia, any color. It will be 15 mm in width at its widest dimension + or - 0.5 mm. One point will be deducted for each 0.1 mm out-of-size beyond the allowed tolerances. The girdle will be polished and 2% of the stone's width in thickness.

JUDGING: The competitors will remain anonymous to the judges until all entries have been judged. Crown and pavilion will be judged for symmetry, meets, and polish. A maximum of 100 points may be awarded, divided as follows: Crown - 45, Girdle - 10, Pavilion - 45. (Continued)

APPLICATION FOR SINGLE FACETED STONE COMPETITION

____Master Level ____Intermediate Level

NAME _____ TELEPHONE(____) _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

Submit application and entry to the Contest Coordinator,
Mary-Ruth Rathjen, 15706 Diana Lane, Houston, TX 77062.
Please send application prior to February 13, 1991.

THE MIDWEST FACETER

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A copy of the judging sheet may be obtained upon request to the Contest Coordinator. Stones will be judged using not more than 10 power magnification and a single incandescent light source. Entries will not be handled nor held by a metallic instrument during the judging process. A trophy will be awarded to the contestant receiving the highest point score (above 90). Ribbons will also be awarded (Blue - 90 or above, Red - 80 to 90, and White - 70 to 80).

OTHER CONDITIONS: Your stone will be given careful attention and handling. However, the Clear Lake Gem & Mineral Society, Inc. cannot assume any liability due to loss or damage to contestant's property. Application for entry acknowledges understanding and acceptance of this condition.

Entries may be mailed in. If mailed, please include return postage of \$4.00. The faceted stone, placed in a protective box with contestant's name and address on the bottom, must be in the hands of the Contest Coordinator no later than 9:00 a.m., February 23, 1991. The exhibit hall will be open the afternoon and evening of February 22 at which time contestants may submit their entries in person.

Entries must be exhibited during all hours the show is open. The contestant is responsible for retrieving his entry from the Contest Coordinator after the end of the show unless it is to be returned by mail.

WARNING - TRANSFER DOPPING WITH KICKER.

In the article that was presented on the use of cyanoacrylate glues for transfer dopping, it was recommended that the stone be sprayed with the kicker as a first step. This method does not appear to work as the CA seems to take a flash set as the stone and dop with the CA on it are mated, thus resulting in an inadequate bonding at the face of the stone. A better method seems to be to place a small amount of the CA on both surfaces, then mating them, after which the joint can be sprayed with the kicker to provide an accelerated bonding.

We intend to contact the manufacturer of the CA for their suggestions in using the material in transfer dopping.

By Clare Gagnon

Via; Angles, Sept. 1990

SEATTLE FACETOR DESIGN

JANUARY 1987



CLEAR LAKE GEM AND MINERAL SOCIETY, INC.
MASTER LEVEL DESIGN, 1991
12 mm + or - 0.5 mm, Corundum

CROWN CUTTING INSTRUCTIONS

STEP	ANGLE	BEARING INDEX	REMARKS
C1	56.0	96-84-72-60-48-36-24-12	Match pavilion
C2	42.0	91-89-79-77-67-65-55-53	Meet C1 at girdle
		43-41-31-29-19-17-07-05	
C3	27.0	96-84-72-60-48-36-24-12	Meet (C1-C2)
C4	20.0	96-84-72-60-48-36-24-12	Meet (C2-C3)
C5	0.0	ANY FOR 50% TABLE	

Height 22.0 percent of width

CORRIGENDA: Some facets, but not all, are marked on the diagram. Facet marked "41" (part of step C2) is in the wrong location. It should be one of the corner mains next to the facet marked "43". The angle Translation Table is not correct as given, if a series of stones having identical appearance from the top is intended. See extended discussion on page 2 about how Tangent Ratio principles are used to correctly construct such Tables.

96 INDEX

L/W 1.00

97 FACETS

Reference: KLEIN, Bob; OFF-THE-DOP, Nr 1, Nov 86

PAVILION CUTTING INSTRUCTIONS (do first)

STEP	ANGLE	BEARING INDEX	REMARKS
P1	90.0	96-84-72-60-48-36-24-12	ECED perform
P2	55.0	96-84-72-60-48-36-24-12	Level girdle
P3	41.0	90-78-66-54-42-30-18-06	Meet (P1-P2-girdle)
P4	42.4	93-87-81-75-69-63-55-51	Meet (P1-P2-P3) and
		45-39-33-27-21-15-09-03	make new P3-P4 MP
P5	42.9	95-83-71-59-47-35-23-11	Meet (P3-P4-P4-P3)
		85-73-61-49-37-25-13-01	

DEPTH 47.0 Percent of Width

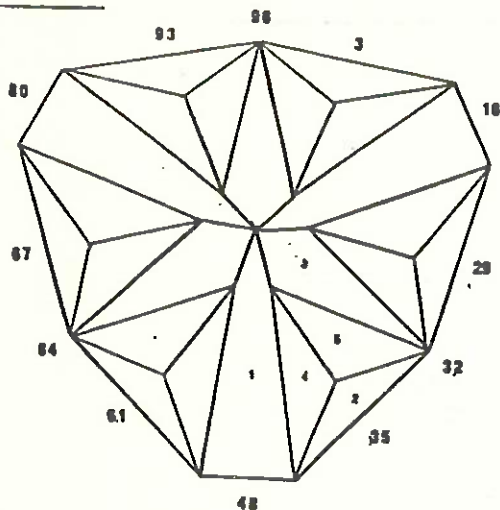
CORRIGENDA: Indexing information omitted from text cutting instructions in the original article. Some but not all indexing information is given on the drawings.

This design is an application of Basil Watermeyer's Barion and Split Facet techniques we have previously discussed. Pavilion facets are "split" relative to the Crown and the "Halfmoon" facet along with the "Fan" are elements of the Barion. The pavilion and most of the crown are possible "meetpoint" cutting sequences which makes this design very easy to cut.

APOLLO C TRIANGLE

by Sid Word

Pavilion



Inasmuch as APOLLO A had sides of plus and minus 1, and APOLLO B had sides of plus and minus 2, the next logical step is to use plus and minus 3. This is also the indexing used for the conventional OLD MINE CUT.

This first stone was cut in pale blue topaz. It is quite bright, but on working up the diagram, I noticed that I used the high refractive index angles for the crown. I will have to cut another stone with steeper angles to see if it makes a difference.

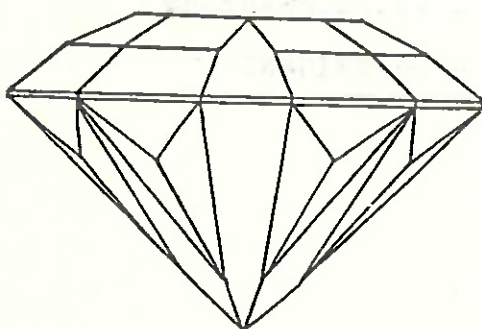
CUTTING DIRECTIONS

Angles given are for a 96 index gear. Numbers outside the diagram indicate index reference points. Numbers inside the diagram indicate order of cutting.

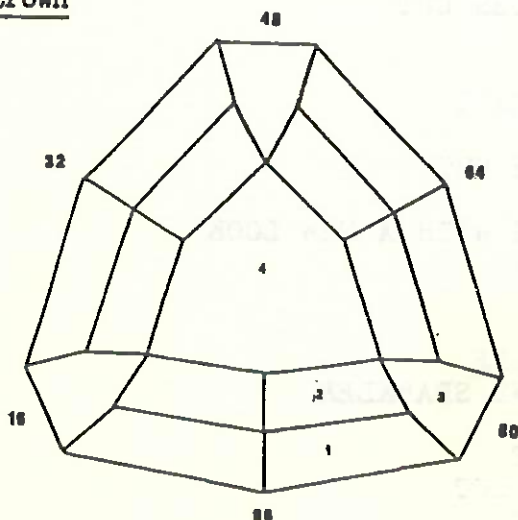
PAVILION

Step	Angle	Index
1	43°	16-48-80
2	55°	93-3, 29-35, 61-67
3	49.4°	96-32-64
4	50.5°	94-2, 30-34, 62-66
5	49.8°	92-4, 28-36, 60-68

End View



Crown



CROWN

Step	Angle	Index
1	35°	93-3, 29-35, 61-67
2	28°	93-3, 29-35, 61-67
3	33°	16-48-80
4	0°	Table

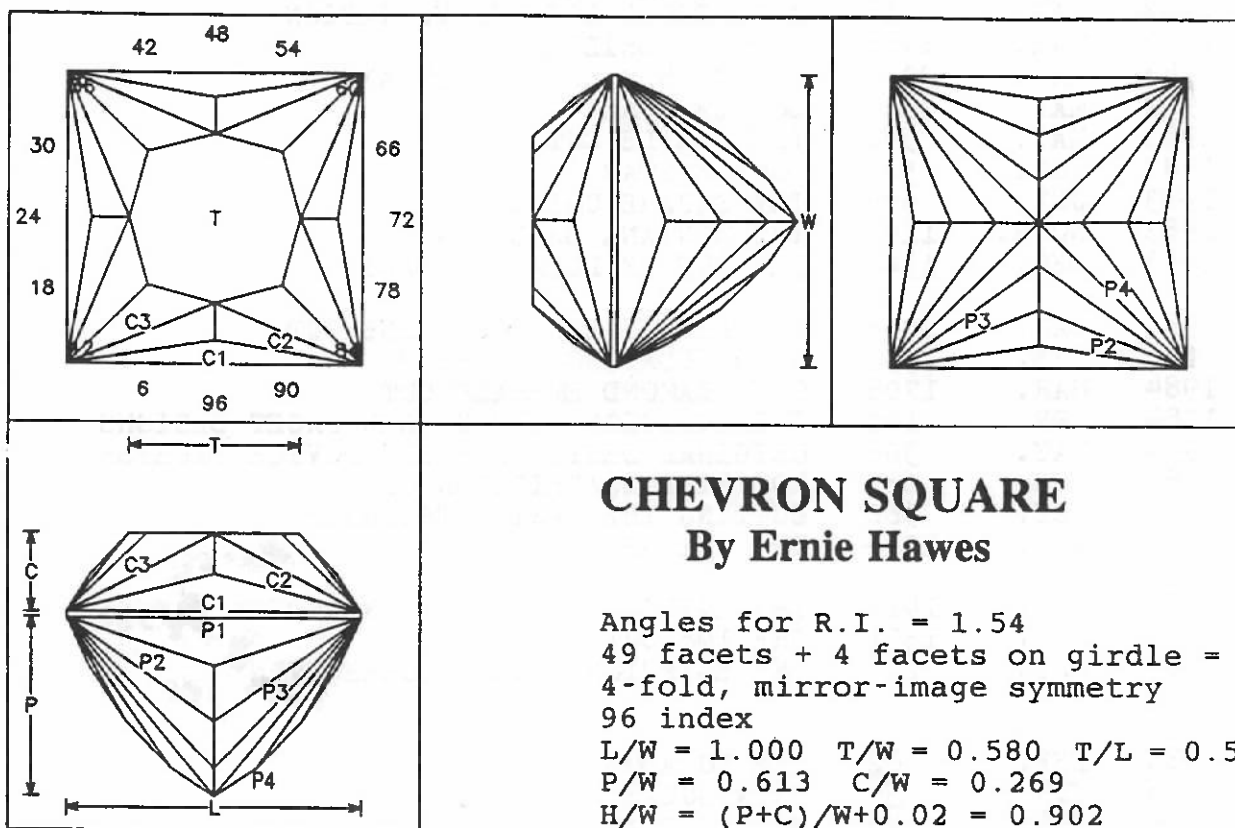
CLEAR LAKE GEM AND MINERAL SOCIETY, INC.
 INTERMEDIATE LEVEL DESIGN, 1991
 15 mm + or - 0.5 mm, Cubic Zirconia

The following Index was given to me by Bill Horton , it came from Ed. Matson of Flint, Michigan. It is an Indexing of all the Faceting designs from all The Lapidary Journals Mr. Matson had on hand. Bill Horton thought they would be of interest of our whole group. This will be a handy reference to keep on hand, since many times we see or hear of a certain design and Wish we could find a diagram of that cut;

YEAR	MONTH	PAGE	NAME OF CUT
1974	FEB.	1644	SPHERE FACETING
1974	NOV.	1284	HI LITE VARIATION
1974	DEC.	1416	THE TEXAS BRILLIANT
1975	MAR.	1856	THE PULSAR CUT
1975	AUG.	906	THE CAROUSEL CUT
1975	SEP.	1178	THE FRENCH BLUE
1975	OCT.	1344	BRILLIANT SQUARE CUT1975
1976	JAN.	1840	THE SPIRAL CUT
1976	FEB.	2034	THE BARB CUT MODIFIED
1976	MAR.	2074	A PENTAGON FACET SET
1976	JUL.	912	PARADISE BRILLIANT
1976	OCT.	1658	CAYS EYE CUT
1977	NOV.	1756	THE KALEIDOSCOPE CUT
1978	MAY.	616	FACETING MUST BE DIFFICULT/MARBLES
1978	JUL.	940	THE S KAYS CUT
1978	OCT.	1536	BRILLIANT OCTAGON WITH TRIGONS
1978	DEC.	1990	LODE STAR
1979	JAN.	2210	FIRE BALL II
1979	FEB.	2408	THE CRUSADER
1979	MAR.	2624	CAPRACIO CUSHION
1979	MAY.	556	THE SIX-FOUR CUT
1979	AUG.	1148	THE FANTASY CUSHION
1979	SEP.	1278	THE TREFOIL CUT
1980	JAN.	2270	ARIONA FARI PALM
1980	APR.	266	16 SIDED ARDHIMEDES CUT
1980	MAY.	580	THE MERIDIAN CUT
1980	JUN.	760	ESTRELLITA CUT
1980	NOV.	1760	CONSTELLATION GEMINI
1981	MAR.	2670	REGENCY RECTANGLE CUT
1981	APR.	60	THE PIN WHEEL
1981	SEP.	1340	FACETING OLD CUTS WITH A NEW LOOK
1981	DEC.	1938	GEODESIC BRILLIAN
1982	FEB.	2293	PIXIES DIAMOND
1982	APR.	96	BRILLIANT RECTANGLE
1982	MAY.	492	CUT CORNER DIAMOND SPARKLER
1982	JUL.	694	HELLINIC CUT
1982	AUG.	838	THE BALLERINA CUT
1982	OCT.	1160	THE DOUBLE PRISM CUT
1982	NOV.	1424	THE BOX BRILLIANT

INDEX: Con't

<u>YEAR</u>	<u>MONTH</u>	<u>PAGE</u>	<u>NAME OF CUT</u>
1983	JAN.	1766	THE O!HENRY CUT
1983	FEB.	1916	A CARDINAL LOZENGE VARIATION
1983	MAR.	1988	THE BOX BRILLIANT
1983	MAR.	2037	CUT CORNER KITE BRILLIANT
1983	MAY	332	DOUBLE STAR
1983	MAY.	390	THE CASTLE CUT
1983	JUN.	523	DOUBLE STAR
1983	JUL.	604	THE SQUARE ONE CUT
1983	NOVE.	1194	THE MONTANA BRILLIANT
1983	DEC.	1344	THE CUT BRILLIANT SQUARE
1984	JAN.	1446	COUBLE SCISSORS OLD MINE CUT
1984	FEB.	1558	SCINTILLATING CUT ROUND
1984	MAR.	1708	THE DIAMOND EMERALD CUT
1984	APR.	100	INTRODUCTION TO FOUR NEW FACET DESIGNS
1984	MAY.	306	ORIGINAL DESIGN FOR THE NOVICE FACETOR
1984	AUG.	682	MODIFIED QUADRILLION CUT
1984	OCT.	960	CUTTING THE BARION TRIANGLE
1984	DEC.	1210	THE SEXI-BRILL
1985	FEB.	1414	THE EGYPTION SQUARE (CORRECTION MAY 85)
1985	MAR.	1531	THE 108 CUT
1985	MAY.	272	THE EGYPTION SQUARE CORRECTION
1986	FEB.	62	THE DORADUS CUT
1986	JUN.	57	TRIANGULAR RADIANCE
1986	JUL.	43	DOUBLE DIAMOND DODECAGON
1986	OCT.	49	THE PHANTOM STAR
1986	NOV.	61	THE TUTU
1986	DEC.	64	WINTER ROSE
1987	FEB.	63	DANCE SQUARE DANCE
1987	APR.	85	SIMPLICITY
1987	JUN.	65	MAGEN DAVID
1987	JUL.	65	THE CYCLOPS
1987	AUG.	64	TRIANGLE
1987	SEP.	62	THE CC CUT
1987	OCT.	62	ODD NUMBER SYMMETRY GEMS
1988	JAN.	61	ROCKET 88
1988	APR.	78	OCTOBRITE
1988	JUL.	64	FAT MARQUISE
1988	SEP.	56	HARLEQUIN RADIANCE
1988	SEP.	60	PUTTING THE HEX ON FACET DESIGN
1988	DEC.	91	PENTABRITE
1989	JAN.	79	THE SWEETEST SIXTEEN
1989	APR.	93	THE CHALLENGER
1989	MAY.	54	TRIBRITE
1989	JUN.	59	RADIAL STEP POLYGON
1989	NOV.	79	BLUEBONNET
1989	DEC.	90	BRILLIANCE IN TILT
1990	JAN.	89	PARACHUTE PEAR
1990	MAR.	73	SQUAREBRITE
1990	APR.	109	COSMOS



CHEVRON SQUARE

By Ernie Hawes

Angles for R.I. = 1.54

49 facets + 4 facets on girdle = 53

4-fold, mirror-image symmetry

96 index

$L/W = 1.000$ $T/W = 0.580$ $T/L = 0.580$

$P/W = 0.613$ $C/W = 0.269$

$H/W = (P+C)/W+0.02 = 0.902$

$P/H = 0.680$ $C/H = 0.298$

GIRDLE

90.0° | 96 24 48 72

PAVILION

P1	65.0°	96 24 48 72
P2	56.5°	1 23 25 47 49 71 73 95
P3	47.5°	4 20 28 44 52 68 76 92
P4	41.0°	11 13 35 37 59 61 83 85

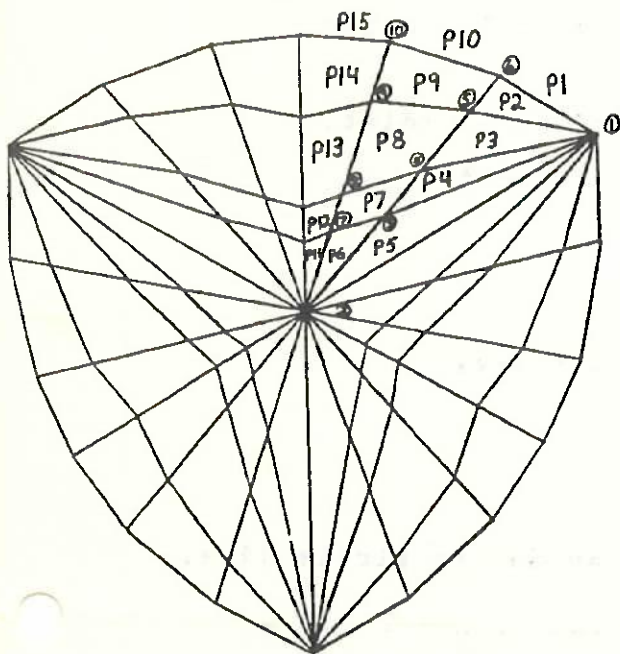
CROWN

C1	57.0°	96 24 48 72
C2	48.0°	1 23 25 47 49 71 73 95
C3	39.0°	4 20 28 44 52 68 76 92
T	0.0°	Table

SPLIT TRI-POLAR

By Stephen W. Attaway, Ph.D.

PAVILION
96



Index 96 - Quartz Angles

PAVILION

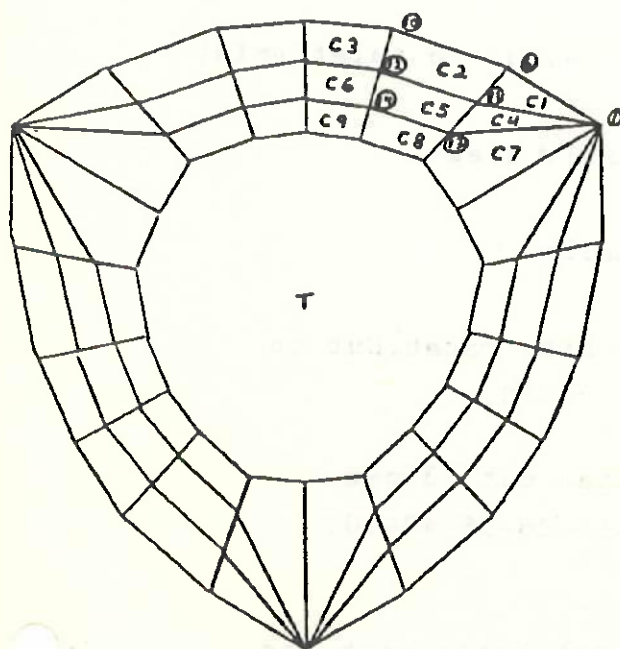
STEP	ANGLE	INDEX	MEET
P1	90°	8-24-40-56-72-88	
P2	56.3°	8-24-40-56-72-88	Meet P1= 1
P3	48°	10-22-42-54-74-86	Meet P1,P2= 1
P4	45°	12-20-44-52-76-84	Meet P1,P2,P3= 1
P5	43°	15-17-47-49-79-81	Meet P1,P2,P3,P4= 1
P6	42.25°	10-22-42-54-74-86	Meet P5 @ culet= 2
P7	45.5°	8-24-40-56-72-88	Meet P4,P5,P6= 3
P8	49.5°	6-26-38-58-70-90	Meet P3,P4,P7= 4
P9	57.8°	5-27-37-59-69-91	Meet P2,P3,P8= 5
P10	90°	5-27-37-59-69-91	Meet P1,P2,P9= 6
P11	41.24°	8-24-40-56-72-88	Meet P6 @ culet= 2
P12	45°	6-26-38-58-70-90	Meet P6,P7,P11= 7
P13	49.8°	4-28-36-60-68-92	Meet P7,P8,P12= 8
P14	58.35°	2-30-34-62-66-94	Meet P8,P9,P13= 9
P15	90°	2-30-34-62-66-94	Meet P4,P10,P14= 10

For smaller stones omit P4,P7,P12

Alternate pavilion cutting order:

P1,P5,P6,P11,P4,P7,P12,P3,P8,P13,P2,P9,P10,P14,P15

CROWN
96



CROWN

STEP	ANGLE	INDEX	MEET
C1	54.03°	2-30-34-62-66-94	Meet P1= 1
C2	53.50°	5-27-37-59-69-91	Meet P1,C1= 6
C3	51.85°	8-24-40-56-72-88	Meet P10,C2= 10
C4	40.60°	11-21-43-53-75-85	Meet C1,P1= 11 & 1
C5	42.85°	5-27-37-59-69-91	Meet C1,C2,C4= 11
C6	43.40°	2-30-34-62-66-94	Meet C2,C3,C5= 12
C7	35.05°	15-17-47-49-79-81	Meet P1,C1,C4= 1
C8	36.26°	5-27-37-59-69-91	Meet C4,C5,C8= 13
C9	36.80°	2-30-34-62-66-90	Meet C5,C6,C8= 14
Table	0°	any setting	

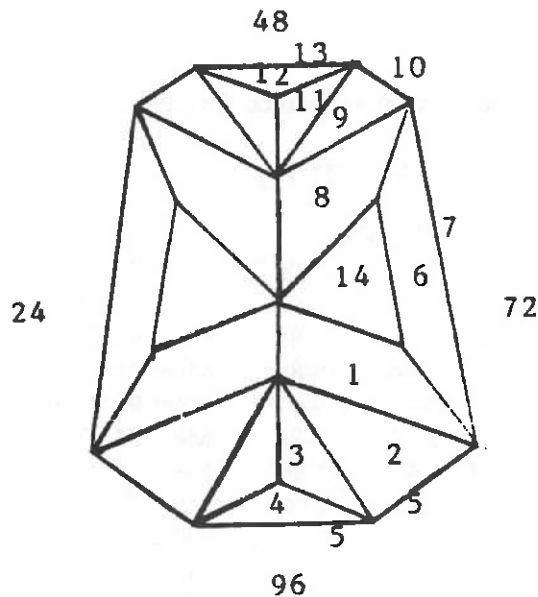
Stone width measured point-to-point.

Pavilion depth = 46.5 % of width.

Crown height = 17.5 % of width.

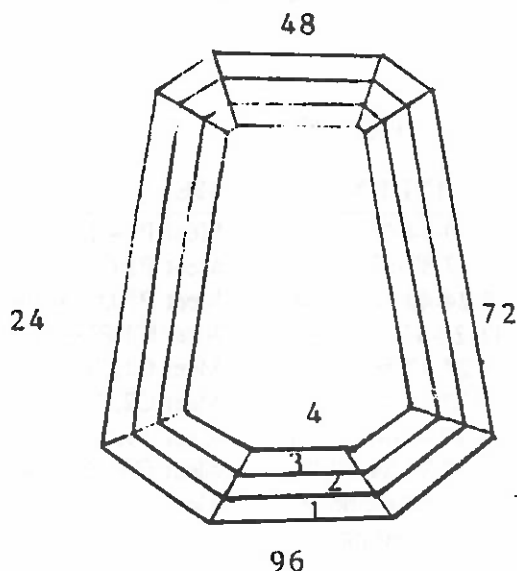
BUNDABERG KEYSTONE.

Designed and drawn by Evan Williams, Montville, Qld.



Pavilion angles.

1-40°. 2-40°. 3-40°. 4-50°. 5-90°.
 6-55°. 7-90°. 8-40°. 9-40°.
 10-90°. 11-40°. 12-50°. 13-90°.
 14-41°/43°. Angle varies, P14,
 Depending on length of stone.



Crown angles.

1-53°. 2-43°. 3-20°. 4-Table.

1. Side culet.
 23-73. Cut to form culet line.

2. Wide corners.

10-86. Cut to culet point.

3. Wide end

92-4. Cut to culet point.

4. End girdle break.

96.

5. Girdle.

96-10-86.

6. Side girdle breaks.

26-70.

7. Girdle.

26-70.

8. Side mains. Cut to girdle line.

29-67.

9. Corners.

36-60.

10. Girdle

36-60.

11. End mains. Cut to culet point.

44-52.

12. End girdle break.

48.

13. End girdle.

48.

14. Centre side facet. Cut to
 cut line. 26-70.

CROWN. Step cut. 3 rows.

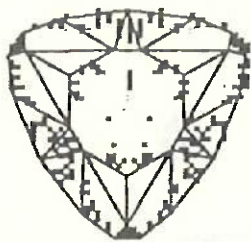
70-86-96-10-26-36-48-60.

This design is adaptable to any length width ratio, with the
 only angle change being P14.

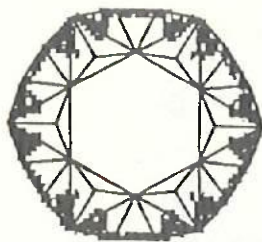
(REPRINTED FROM FACET TALK, AUS. FACETERS GUILD, MAY-JUNE 1990)

(From: ANGLES, Sept. 1990)

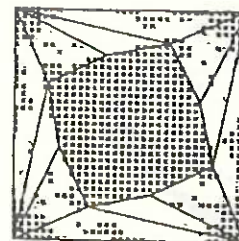
From: "MEET POINT" Nov. 1990.



TRIBBLE
Robert Strickland
B.F. - 81 R.I.=1.54

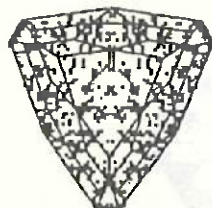


ARROWHEAD HEXAGON
Craig Newcomb
A.B. - 77 R.I.=1.54



SQUARE FAN
Don Serafin
A.B. - 52 R.I.=1.54

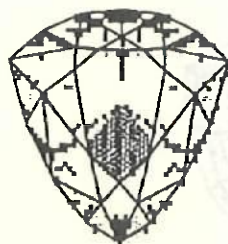
12 BEST OF '89 - BRIGHTNESS PLOTS



BARION OLD MINE TRIANGLE
Ben Dawson
A.B. - 65 R.I.=1.54



MARY'S STAR
Joseph C. Smith
A.B. - 56 R.I.=1.54



ROUND TRIANGLE
Charles Covill
A.B. - 77 R.I.=1.54

The purpose of this article is not to reproduce cutting instructions for last year's 12 best designs (several people in the Guild have these as supplied by the C.W.F.G.), but to examine them in terms of "brightness" potential.

"Brightness Plots" are close approximations of the amount and patterns of light returned from a gem design. They are derived by "ray tracing", the computer simulation of light ray paths into, through and out of a 3 dimensional model of a given gem design.

The patterns have been superimposed on the crown design layouts. Their darker shaded areas represent lesser amounts of brightness: black usually means no light return and pure white shows the very brightest parts of the stone. Determining a weaker or brighter ray depends on calculations of entry and exit angles (Fresnel equations) and the relative length of the ray's path through the stone (some will bounce around a few extra times before exiting and are therefore weaker).

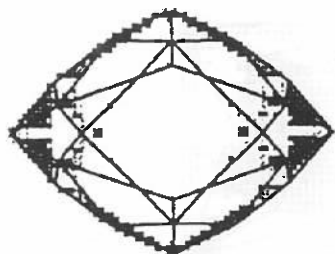
A numeric value representing the total light return of the design is calculated as a percentage of the 'ideal' 100% - this becomes the Average Brightness factor. An ABF of 64, then, means that 36% of the entering light has leaked through the pavilion and been absorbed by longer ray paths. While a 100% design has not yet been found, 96% or so has been attained with a round brilliant variation.

While it is recognized that a true simulation of a gem's brilliance depends on far more variables than are accounted for (double refraction, polarity, colour density, etc.), the brightness plots have plenty of merit on a comparative basis so long as the controllable variables (lighting simulation, RI value, etc.) remain the same.

Under such controlled conditions one can, with the computer, do "what if" situations with the design. The operator may vary facet angles and the arrangement of facet groups to see the effect on comparative brightness values and patterns.

At this writing, there are 2 available versions of ray-tracing programs which work on IBM compatible systems. Robert Strickland's "Raytrace" is attached to his GemCad facet design program and there is also "LSRAYVGA" which is used by Robert Long and Norm Steele of Seattle Facet Design. GemCad design files can be automatically converted for use with LSRAYVGA.

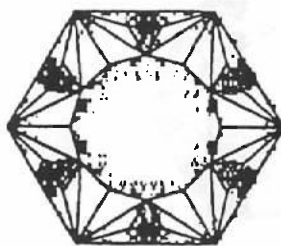
While resulting design interpretations are similar, the



CUSHION LOZENGE

Alex Wolkonsky

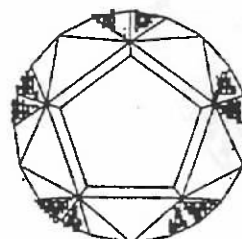
A.B. - 80 R.I.= 1.54



COWICHAN SNOWFLAKE

Walt Heitland

A.B. - 79 R.I.= 1.76



STAR96

Robert Long

A.B. - 90 R.I.=1.54

12 BEST OF '89 - BRIGHTNESS PLOTS (Con't)

actual appearance of the results differ somewhat. GemCad gives a more realistic looking pattern of brightness, the LSRAYVGA version which claims to give us a more realistic numeric value for the brightness factor. In both cases the brightness value is relevant on a comparative level: after a design change, brightness patterns reflect good or bad changes from that of the previous raytrace version's appearance.

Since light paths are reversible, both of these programs trace rays backwards from the eye, into the stone, through it and back out to the light's actual source. All rays leaving the crown are counted equally in LSRAYVGA and this simulates "isotropic" light or equal light from all directions.

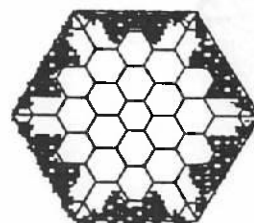
The Strickland Raytrace, however, uses a modified iso. lighting simulation which assigns higher values to rays originating from the overhead area than those coming into the stone at low angles (eg.: from the horizon). While more complicated to calculate, it would seem this has the potential to mimic the real situation more accurately. The graphic representation of the Strickland plot, at least on the computer screen, also has a better range of contrasting areas than the output of Long & Steele's raytrace. Bob Long plans to improve on this fairly soon.

Fred VanSant is also working on a raytrace feature for his design program on the Macintosh computer. Hopefully the results of this program will closely resemble one of the other two at least in terms of the brightness factor values.

For some time now, "Seattle Faceter Design", the bulletin published by Bob Long and Norm Steele, has included brightness plots with their designs and these are routinely done when double-checking older designs. (The illustrations of the "12 Best" originated from March & April issues of S.F.D.) The BP's sometimes point out deficiencies which are then improved and a "corrigenda" is published.

Bob Long has trial-cut most, if not all, of their new designs and comparisons to the BP's have convinced him that the computer's simulations are quite valid even if not 100% correct.

The availability and use of computer design and raytracing programs will benefit us all in that users of the software will be able to publish better, more complete facet designs with less time spent in development and fine-tuning. Cutters will benefit by having more new designs with higher potential for brilliance.



FVS-172 HONEYCOMB

Fred Van Sant

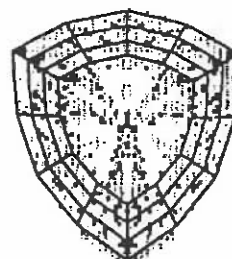
A.B. - 71 R.I.=1.76



LONE STAR IN A PEAR

Charles Covill

A.B. - 57 R.I.=2.15



TRIBRITE III

Robert Klein

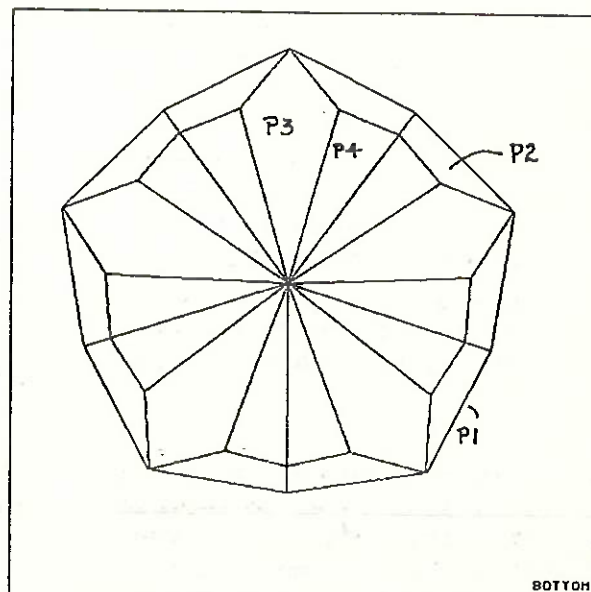
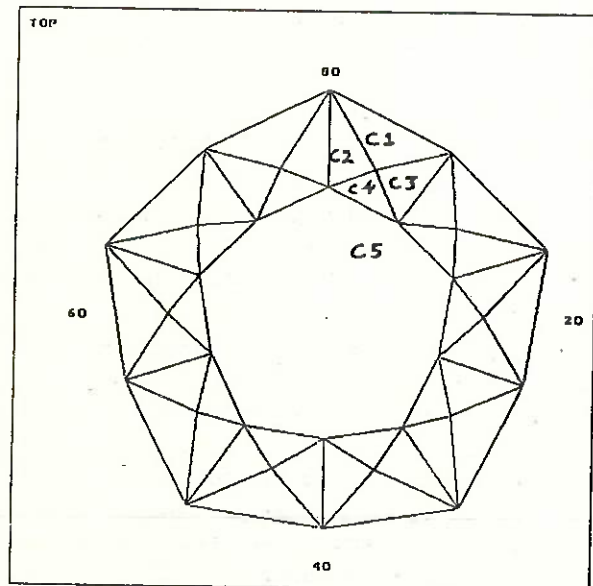
A.B. - 84 R.I.=2.15

From: MEETPOINTS Nov. 1990.

PENTA BENT

By WALT HEITLAND

80 INDEX - 76 FACETS - ANGLES FOR CORUNDUM
 Table Width = 57%
 Brightness Factor = 90

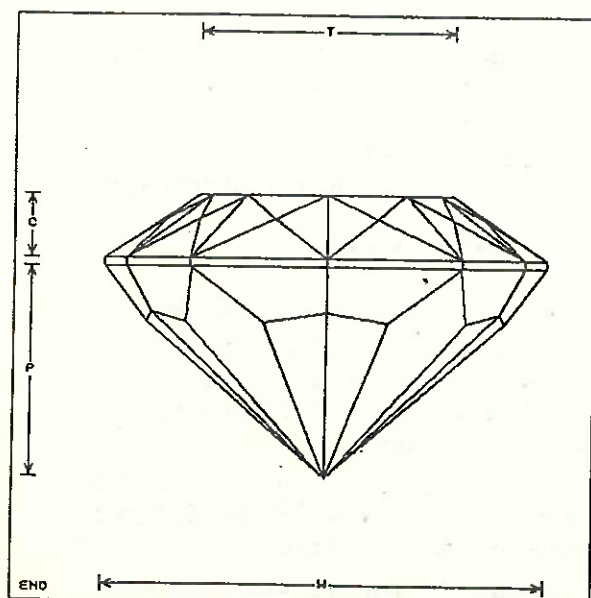


PAVILION:

ROW	ANGLE	INDEXES
p1	90.0	- 06 10 22 26 38 42 54 58 70 74
p2	60.0	- (as row p1)
p3	42.0	- 80 16 32 48 64
p4	42.0	- 07 09 23 25 39 41 55 57 71 73
[p3 & 4 can be cut as one row]		

CROWN:

ROW	ANGLE	INDEXES
c1	38.2	- 06 10 22 26 38 42 54 58 70 74
c2	35.1	- 05 11 21 27 37 43 53 59 69 75
c3	35.8	- 07 09 23 25 39 41 55 57 71 73
c4	33.1	- (as row c1)
c5	00.0	- Table to meet c2 - c3 facets



=====
 This cut was designed and cut several years ago but never published. The prototype was a brownish golden syn. corundum which was quite brilliant. The design was slightly modified with Robert Strickland's "GemCad" program but has not been trial-cut. Proceed carefully.
 =====

SECRETARY'S MINUTES

The Board of Directors of the Midwest Faceters Guild meeting was called to order on October 6, 1990 by President, Bill Horton in the Dearborn Civic Center, Dearborn, Michigan. Those present were: President Horton, Arthur Kalinski, Elery Holt, Frances Bush, Dorothy Loyd, Jane Holt, John Takis and Bernie Bush.

The minutes were accepted as published in "The Midwest Faceter" through a motion made by Bernard Bush and seconded by Jane Holt.

The Treasurer's report was approved as read by Elery Holt and filed for audit through a motion made by Arthur Kalinski and seconded by Dorothy Loyd.

Comments were made on the fantastic Midwest Convention and the great hospitality put forth by the Evansville Lapidary Society.

OLD BUSINESS:

A Show Chairman is needed for our November 14, 15, 16, 1991 Show, to be held at the Dearborn Civic Center. It was suggested we have Co-Chairmen. Art Kalinski will work with someone but feels he lacks the experience to handle the job alone.

Bill Horton will prepare the "Rules and Regulations" for our Show and they will be mailed as a special mailing.

Art Kalinski offered an Emerald and Diamond Ring to be used as first prize for our raffle to be held at our show. Bill Horton will apply for the State Raffle Permit. Bernard Bush will be the Chairman. Many more prizes will be needed for the raffle to be a success. Please inform Bernie (or one of the officers) of that special prize you will donate. A Show Budget should be compiled by the next meeting.

The Stones for the Field Museum are still not ready. Only seven are completed. Joe Scott, Betty Mack, Tony West and John Forsythe are working on stones and Art Kalinski agreed to cut one. If you have agreed to cut a stone and have the material but have been unable to do so, please return the material so he can reassign

the cut.

NEW BUSINESS::

Suggested meeting dates for 1991 are:

January 12 - Cleveland Museum of Natural History to view "Fire of Gems".

March - possibly Flint (must be confirmed)

May 18 - Michigan City, Indiana, Mr. & Mrs. C. L. Orrell Hosts.

August 17th - Toledo, OHio

October 26th - Dearborn, Michigan- Annual Business Meeting.

Flyers for the upcoming Hartland, Detroit and Lansing Shows and the AFMS and Midwest Newsletters were available to anyone wishing to review them.

Bill Horton received many favorable comments regarding the Seminar. Dorothy Loyd received a Thank you letter complimenting all the teachers, from Colleen Cramer. Thank You notes were also received from Alma Streiff and Irene Malone. The Committee feels they could have accommodated another 20 or 30 persons. It was suggested that the questionnaire regarding the Seminar be more pointed and require direct answers rather than ones that are answered yes or no or just to say they loved everything about it.

President Horton declared the meeting adjourned at 11:05 AM, due to lack of further business.

Respectfully submitted,
Frances Bush, Secretary.

The Membership meeting of the Midwest Faceters Guild was called to order at 1:00 PM by President, Bill Horton, on October 6, 1991, in the Civic Center of Dearborn, Michigan.

The Minutes were approved as published through a motion made by Jim Schlottman and seconded by Harold Rice.

The Treasurer's report was approved as read by Elery Holt and filed for audit through a motion made by Harold Rice and seconded by Tony West.

(next page please)

SECRETARY'S MINUTES (cont'd)

It was suggested we have Co-Chairman for the Show. Art Kalinski agreed to be a Co-Chairman for our November 14,15, 16, 1991 Show.

OLD BUSINESS:

Meetings for 1991 were suggested as follows:

- January 12 - Cleveland Museum of Natural History
- March - possibly Flint, MI.
- May 18 - Michigan City, Indiana
- August 17 - Toledo, OH
- October 26 - Dearborn, MI

Our Library is presently lost. It was last with Ann Czpatski when she became ill. Bill will call to see if her husband knows anything about the books. Bill has two new books for the Library.

Bill Horton will write Special Rules and Regulations for our Show Competition and they will be a special mailing.

Bill will apply for the State of Michigan Raffle Permit and the Show Insurance.

President Horton expressed his embarrassment for the long delay in completing the diamond replicas for the Field Museum. It has been much too long. If those assigned the stones cannot complete them they should notify Bill and return the CZ so they can be reassigned. As of today only seven have been completed. Art Kalinski has agreed to cut one of them.

NEW BUSSINESS:

New members welcomed were John Tate, Young Hee Han, Virginia Harmath and Helen Irea.

Chairman for the USA-Australian Competition for Faceters is Marian E. Alden. If interested, please contact Bill Horton for Rules & Regulations.

A new Educational Chairman is needed. Dorothy Loyd is retiring due to health

problems. Words can not express enough gratitude for all that Dorothy has done for the Guild and we are really sorry she can no longer provide the superb programs as she has in the last nine years. Thank You, Dorothy and best wishes for better times ahead.

Bernard Bush agreed to give a hand at being Program Chairman.

Bill Horton will remain Rules Chairman and John Tate will be Co-Chairman. Bill will rewrite the rules and glass will be included in the new rules.

Nominating Chairman, Bernard Bush introduced the slate of Officers. Additional nominations were called for from the floor. Harold Rice made a motion, "that nominations be closed and the Slate of Officers be elected by a consent unanimous vote". Jim Schlottman seconded the motion and the following are Officers for 1991:

- President - William Horton
- Vice-President - Arthur Kalinski
- Treasurer - Elery Holt
- Secretary - Frances Bush

Tentatively the Dome Room of the Dearborn Civic Center has been rented and five more rooms will be rented for Saturday and Sunday for programs and meetings. A lot of help will be needed for advertising the Show as well as various other jobs. Please start thinking about the way you can help.

Show flyers from Hartland, Detroit and Lansing Shows were available, along with the Comment Sheets received from the participants of the Seminar.

Elery Holt was presented "The Murray Award" for his outstanding service to the Guild.

Meeting adjourned at 2:19 PM so we could enjoy the program on "How to Get More Brilliance from a Stone" as presented by Jim Schlottman. Thank You Jim for an informative session.

Respectfully submitted, Frances Bush, Sec'y.

T H I N K S H O W !

START GETTING THOSE DISPLAYS READY TO MAKE THIS THE BEST SHOW EVER. ! ! ! ! ! ! !

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AMETHYST ZAMBIAN SPECIAL SALE

(AMAC-01) *A* grade pieces to 30 cts at only \$2.50 per carat (P/C)

TOURMALINE: NAMIBIAN

(AMAC-05) Indicolite AAA quality \$20 P/C Avg. wt 14.5 CT ea.
(AMAC-06) Indicolite AAA quality \$18.00 P/C Avg. wt 8.25C CTS
(AMAC-07) Indicolite AAA quality \$15.00 P/C Avg. wt 4.75C CTS
(AMAC-04) Bi-color & Bl/Grn AAA quality \$20.00 P/C Avg. wt 8.25 CTS
Note! All of these stones are very clean
(AMAC-08) Mixed colors A grade \$12.00 P/C (3-12 CT sizes) Some have minor inclusions
(AMAC-09) Mixed colors B grade \$10.00 P/C (2.5-5 CT sizes) Very clean
(AMAC-10) Mixed colors B grade \$8.00 P/C Mixed sizes and clarity; Very clean
(AMAC-11/12) Mixed colors CAB grade \$.85 P/C Larger
(AMAC-13) Mixed colors CAB grade \$.70 P/C Smaller
(ALC-04) Bl/Green AA quality \$15.00 P/C Avg. 10 CTS ea.
(ALC-05) Bl/Green A quality \$12.00 P/C (4-10 CT sizes) Very slight inclusion
(ALC-06) Bl/Green \$10.00 P/C (3-6 CT sizes) Very slight inclusion
(ALC-02) Mixed colors \$9.00 P/C (2.5-7 CT sizes) Clean
(ALC-03) Mixed colors \$7.50 P/C Request colors Minor inclusions
(ALC-07) Bl/Green 34.1 CTS (13 pieces) Small very clean lot \$200.00
(ALC-08) Indicolite parcel 13 CTS (5 pieces) Small flawless lot \$130.00.

AQUAMARINE: NIGERIAN

(ARS-05) \$8.00 P/C Med Bl (4-12 CT sizes) Minor inclusions
(ARS-04) \$10.00 P/C Med Dk Bl (4-15 CT sizes) Minor inclusions
(ARS-02) \$12.00 P/C Med Dk Bl Larger sizes clean
(ARS-01) \$15.00 P/C Dk blue Nice sizes-clean Ltd. supply
(ARS-03) (1) 57.3 CT Bl/green piece \$12.00 P/C \$685.00 stone

AQUAMARINE: ZAMBIAN

(AMSC-07) \$6.00 P/C Lt blue (3-7 CT sizes) Some inclusions
(AMSC-06) \$8.00 P/C Blue (3-8 CT sizes) Minor inclusions
(AMSC-05) \$10.00 P/C Med blue (5-16 CT sizes) Clean
(AMSC-04) \$12.00 P/C Blue (3-5 CT sizes) Clean
(AMSC-03) \$15.00 P/C Blue (5-10 CT sizes) Clean
(AMSC-02) \$18.00 P/C Blue (10-16 CT sizes) Clean/clean
(AMSC-01) \$20.00 P/C Dk blue (10-16 CT sizes) Clean
(AMSC-09) \$15.00 P/C Med bl/bl/green (15-35 CT sizes) Minor inclusions
(AMSC-10) \$10.00 P/C Med bl 26.5 CT 23.8 CTS, 31.4 CTS Minor inclusions
(AMSC-11) (1) 130.7 CT piece Beautiful color Minor inclusions \$1,960.00 stone
(AMSC-08) (1) 63.5 CT piece Blocky, med color \$1,143.00 stone

BERYL: NIGERIAN

(ATS-01) Dk blue C-axis Rare color 1 piece \$10.00 P/C \$157.00
(ATS-02) Blue C-axis to yellow \$7.00 P/C (ATS-03) Bl/green \$6.00 P/C
(AIR-04) Dk green \$7.00 P/C
(AIR-05) Lg Biky Heliodor (15-45 CTS sizes) \$6.50 P/C

GARNET RHODOLITE: RHODESIAN - EVERY PIECE IS CLEAN

(AHB-01) 4-10 CT sizes \$3.85 P/C (AHB-02) 10+ CT sizes \$4.50 P/C

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(AHB-201/206) Six 40+ CT parcels (14 piece avg) \$600 ea. parcel
(AHB-15) Bl/green piece Color/change 24 CTS \$432.00 stone
(AHB-16) Yellow/lav/blue C/C piece 15.7 CTS \$314.00 stone
(AHB-14) Purple/blue C/C piece 46.8 CTS \$936.00 stone

TOPAZ

(MUTS-01) London Blue Topaz Preforms Larger sizes and many shapes \$6.50 P/C
(MUTS-02) Blue Topaz Preforms Sky blue Larger sizes and many shapes \$1.00 P/C

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