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0-VAL METAL SEALS (Del Mfg.Co)

J. C. Schuchman

August 1966

Collider Accelerator Department

Brookhaven National Laboratory

U.S. Department of Energy

USDOE Office of Science (SC)

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Accelerator Department
BROOKHAVEN NATIONAL LABORATORY
Associated Universities, Inc.
Upton, L.I., N.Y.

AGS DIVISION TECHNICAL NOTE

No. 24

J.C. Schuchman

August 23, 1966

O-VAL METAL SEALS (Del Mfg.Co)

A total of ten O-val gaskets, manufactured by Del Mfg. Co., were tested for possible use in the AGS and also in the conversion program. Four variations were tested, the last type being specifically designed for our requirement. The previous rings were also designed for us, but they (Del) somehow misunderstood that we were after low-sealing forces.

Only one gasket sealed. A silver-plated #304 stainless steel ring sealed at 1070 lbs/lin.in. however, the ring was only compressed to .231-in. a total of about .004-in. It must be noted that this seal was not of the latest design which Del claims will compress to .206 at 650/750 lbs/lin. in. We did notice the reduced closing forces for this latest design, but still we were unable to effect a seal.

To sum up, I think we should not rely on Del to produce a reliable gasket for us at the present time. More development work is definitely required on the O-val seal to bring it to a point where it is reliable enough for use at the AGS.

Test results are listed on following page.

Test Results

Gasket Mat'l	Seal No.	Sealed yes/no	Load/lin.in. (lbs)	Initial Hgt.(in.)	Compressed Hgt. (in.)
S/S 304 Silver plate	1	No	976	.232	.231
	2	No	1200	.235	.231
	3	Yes	1070	(.235)	.231
Inconel-X Silver plate	1	No	1200	.239	.225
	2(2)	No	1260	.239	.219
	3(2)	No	1330	.239	(.232)
S/S 304 Copper plate	1	No	1330	.236	.234
Latest Design S/S 304 Indium/Lead plate	1	No	500	.239	(.230)
	2	No	623	.242	.226
	3(3)	No	970	.242	.229

NOTE:

1. All gaskets were 9" O.D.
2. Leaked at weld joint.
3. Leaked due to damaged plating.
4. Compressed height was measured with a "feeler" gauge limiting accuracy to about $\pm$ .001 inch.

cc: V. Buchanan
C. Gould
J. Grisoli
D. Hoober
C. Lasky
I. Polk
A. van Steenbergen

G. K. Green
(File in AGS Tech Notes
(for BKS))

BROOKHAVEN NATIONAL LABORATORY

MEMORANDUM

DATE: September 27, 1966

TO: Those listed below

FROM: Th. Sluyters

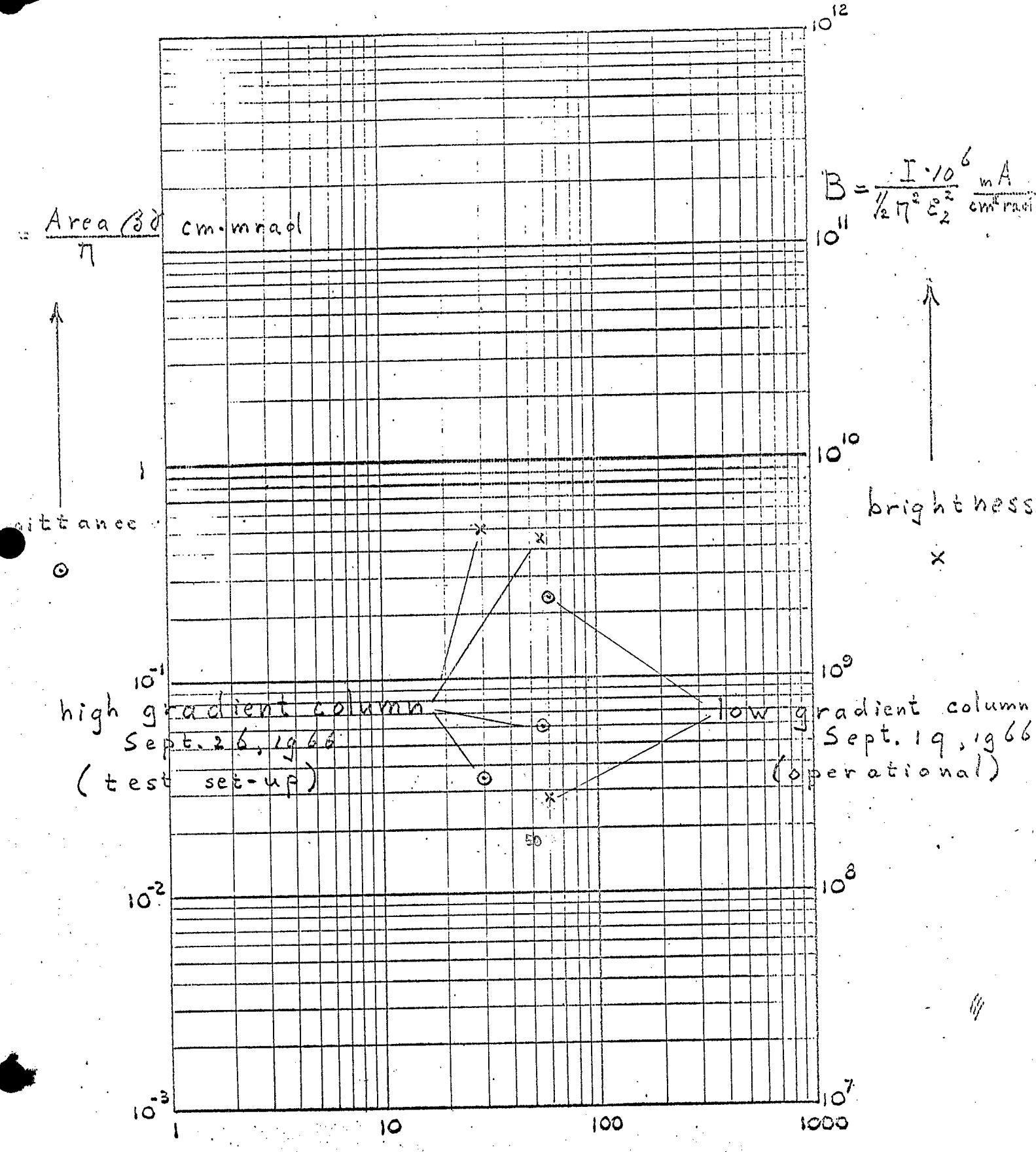
SUBJECT: High Gradient Pre-accelerator

We (Vincent Kovarik, Bill Schneider, Ray Abbott, Ron Clipperton, Dick Lane, Bob Boley, Steve Larson and writer) are very pleased to show you on the attached plot, the very first results of the high gradient column operating at 740 kV and about 50 mA beam current.

Encl.

cc: G.K. Green
A. Maschke
J. Spiro
A. van Steenbergen
G. Wheeler
V.J. Buchanan
A. Soukas
R. Damm

Emittance and brightness against beam current measured at 740 kV



Th. S. 27 Sept. '66