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Project IDEALIST-ORCART-CORONA-GAMBIT-  
QUILL-██████████-HEXAGON-DORIAN

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# SEMI-ANNUAL REPORT

TO THE  
PRESIDENTS FOREIGN INTELLIGENCE  
ADVISORY BOARD

ON THE  
ACTIVITIES OF THE  
NATIONAL RECONNAISSANCE PROGRAM

1 NOVEMBER 1965 — 30 APRIL 1966

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CHESS  
ZARF  
RUFF  
COMINT

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**CHESS - ZARF - RUFF**

**COMINT**

**SEMI-ANNUAL REPORT  
TO THE  
PRESIDENT'S FOREIGN INTELLIGENCE  
ADVISORY BOARD  
ON ACTIVITIES OF  
THE NATIONAL RECONNAISSANCE PROGRAM**

**1 Nov 65 - 30 Apr 66**

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**IDEALIST/OXCART/CORONA/GAMBIT/DORIAN  
HEXAGON/QUILL/**

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I. FOREWORD

The organization and functions of the National Reconnaissance Office remain essentially unchanged since the last Annual Report to the Board, in October 1965. Additionally, there have been few significant changes in USIB intelligence requirements against which the efforts of the National Reconnaissance Program are directed. These items are not included in this Semi-Annual Report but will be covered in detail in the next Annual issue.

Recent significant decisions of the NRP Executive Committee concerning the new general search system (HEXAGON) and the initiation of the [REDACTED] program are reflected in this report.

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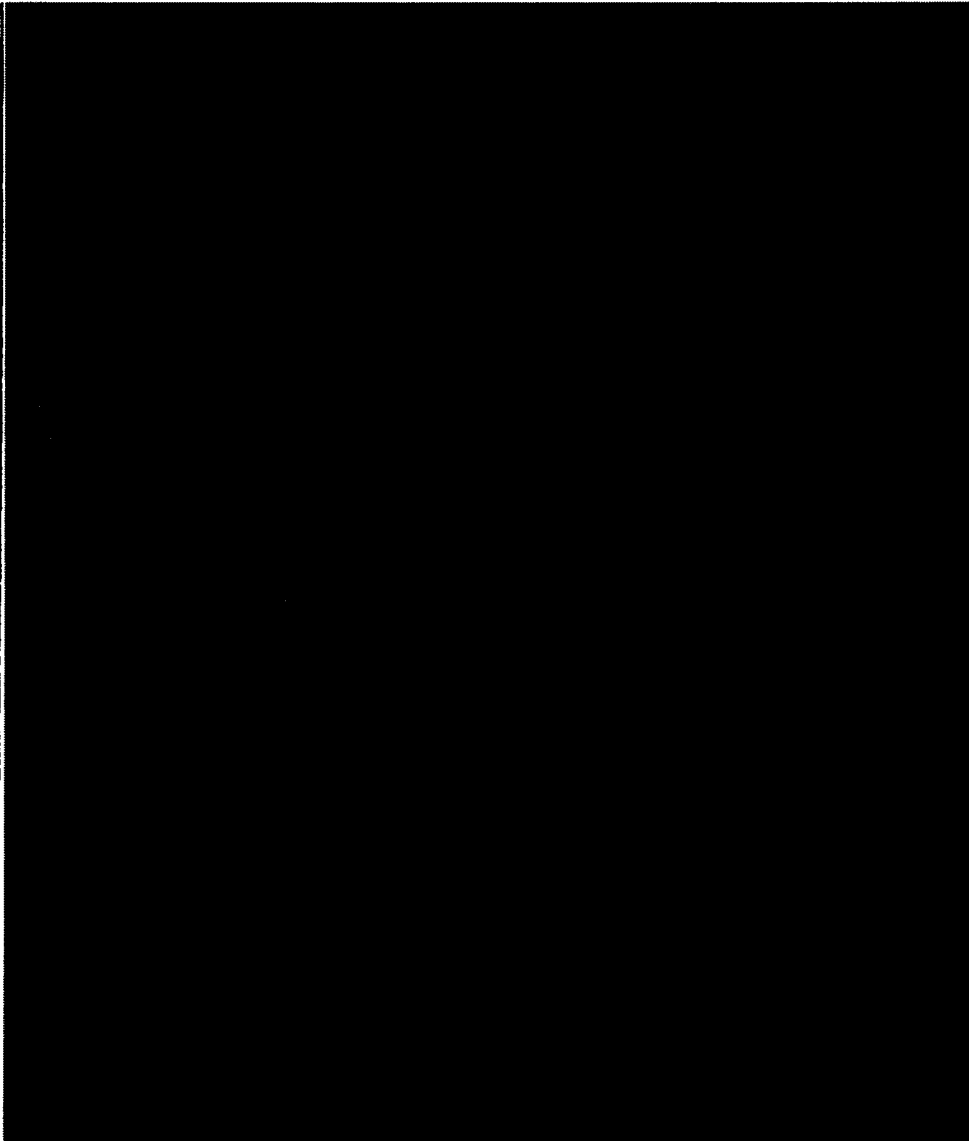
## II. BUDGET

Because of the sensitivity of its mission, the National Reconnaissance Program financial program is handled partly as classified open ("white") and partly as classified covert ("black"). The pages which follow show the National Reconnaissance Program financial costs, and the level of activity on which these costs are estimated, through 1971.

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NATIONAL RECONNAISSANCE FINANCIAL PROGRAM - FY 1964 THRU 1971

FY 64 FY 65 FY 66 FY 67\*\* FY 68 FY 69 FY 70 FY 71



TOTAL COSTS

SATELLITE PROGRAMS:

Broad Coverage:

CORONA, ARGON, LANYARD  
New General Search  
Sub-Total

High Resolution:

GAMBIT  
G-3  
Sub-Total

Special Payloads:

SIGINT  
QUILL  
Sub-Total

Advanced Studies and Research

Adv Development, Systems and Components

\* Includes exploratory development on FULCRUM, [redacted], and S-2 [redacted] in FY 1965. In FY 1966 and subsequent years, these are reflected in appropriate system entries.  
\*\* Based on President's Budget - program distribution expected to change somewhat.

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FY 64 FY 65 FY 66 FY 67 FY 68 FY 69 FY 70 FY 71

Support and Operations:

Satellite Control Facilities  
AF Special Projects  
Production Facility  
Misc Investment & Operating  
Sub-Total

SATELLITE TOTAL:

AIRCRAFT AND SUPPORT PROGRAMS

OX CART (A-12)

AQ-12 Drone

Advanced Studies and Research

Support and Operations:

Agency U-2's  
DOD U-2's  
Photographic  
Fuel, Agency P3's, Misc  
Sub-Total

AIRCRAFT & SUPPORT TOTAL

GENERAL DEVELOPMENT PROGRAM  
Satellite/Aircraft

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LAUNCH SCHEDULE BASIS FOR SATELLITE PROGRAM ESTIMATES

	FY 64	FY 65	FY 66	FY 67(c)	FY 68(c)	FY 69(c)	FY 70(c)	FY 71(c)
<b>Broad Coverage:</b>								
CORONA (a)	11	14	14	12	12	6	-	-
ARGON	3	1	-	-	-	-	-	-
LANYARD	1	-	-	-	-	-	-	-
New General Search	-	-	-	-	1	8	8	8
<b>High Resolution:</b>								
GAMBIT	8	11	12	14	5	-	-	-
G-3	-	-	-	8	12	12	12	12
<b>Special Payloads:</b>								
SIGINT-Booster Assigned	[REDACTED]							
QUILL	[REDACTED]							

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- (a) CORONA data does not include, in the FY 1966, 1967 and first half of FY 1968 time period, a variable number of reserve systems which could be launched if needed. However, these reserve systems are included in the 2nd half FY 1968 or FY 1969 launches. Accordingly, all CORONA planned assets would be launched by FY 1969.
- (b) Two QUILLs were procured for launch in FY 1965. However, only one was launched.
- (c) Based on President's Budget - it is now expected that New General Search launches will be delayed and on a 6 per year basis; that additional CORONAs will be necessary in FY 1969 to provide overlap; and that fewer GAMBITs will be launched in FY 1968.

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### III. COLLECTION OPERATIONS

This section of the report describes satellite and aircraft reconnaissance collection activities of the National Reconnaissance Program during the period 1 November 1965 through 30 April 1966.

#### A. Satellite Photographic Reconnaissance

CORONA (Photographic Search and Surveillance): There were five CORONA launchings during this reporting period and all ten payload capsules were successfully recovered. While two of the missions were degraded due to on-orbit malfunctions (see Footnotes 1 and 2) all provided usable intelligence information.

#### CORONA Highlights

Mission 1030-J, 9 to 19 March, was extremely productive (especially the second capsule) with highlights as follow:

- a. Covered 13 of the 25 deployed ICBM complexes;
- b. Revealed ten new, large, single silos at Zhangiz Tobe, Imeni Gastello and Dombarovski;
- c. Achieved coverage of Tyura Tam with both capsules;
- d. Revealed an AMM/SAM launch facility near Kalinin with three launch areas under construction;

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- e. The Novaya Zemlya nuclear test area was covered and new activity was observed in the underground test area;
- f. A probable new class of missile destroyer was photographed at the Leningrad shipyards.
- g. Semipalatinsk was covered on 13 and 17 March. The crater of the 13 February underground test now appears to be 190 feet deep rather than 300 as reported in the readout of 4025-G. No evidence was observed of preparation for the 20 March test.

Mission 1031-J, 8 to 18 April, acquired good coverage on the first bucket but was limited to mono coverage on the second bucket (see Footnote 2). Highlights of the missions were as follow:

- a. Covered 14 of the 25 ICBM deployed complexes;
- b. Obtained very limited coverage of the Tyura Tam missile test center;
- c. Revealed four new single silo launch sites (large) at Uzhur, six at Kartaly and three in the Dombarovskiy complex;
- d. Revealed new single silo (small) launch groups at Perm and Tatishchevo;
- e. Covered the Sary Shagan missile test center on three successive days of coverage on the first bucket;

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f. Covered three major nuclear production facilities.

Mission 1026-J, flown 28 October through 7 November, covered ten of the 25 deployed ICBM complexes and revealed two new large single silo sites at Uzhur and a possible new group of small single silos at Gladkaya. Also photographed were the missile test centers at Sary Shagan and Kapustin Yar.

Mission 1027-J, flown 10 December (see Footnote 1), covered three of the 25 deployed ICBM complexes and the Makat field launch R&D point.

Mission 1028-J, flown from 25 December 1965 to 2 January 1966, covered 15 of the 25 deployed ICBM complexes. This mission revealed new large single silos at the Kartaly and Dombarovskiy complexes, and new small single silo groups at the Perm and Olovyannaya complexes. Also, three AMM/SAM launch complexes, similar to those at Tallinn and Cherepovets, were discovered in the Zverdlovsk region.

Mission 1029-J, flown 3 to 12 February, was very productive, especially the first bucket, with highlights as follow:

- a. Covered 19 of the 25 deployed ICBM complexes;
- b. Revealed three new, large, single silos at Zhangiz Tobe and Imeni Gastello;

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c. Revealed a large unexplained crater near D2 in complex D at Tyura Tam;

d. At Plesetsk identified a new area of construction activity;

e. At Kimry, near Moscow, an AMM/SAM launch facility was discovered which was similar to the Cherepovets complex except that the Kimry site was composed of only three launch areas.

f. BLINDERS were observed at Nezhin airfield for the first time;

g. Dismantling of the HEN ROOST facility at Sary Shagan was continuing;

h. Semipalatinsk was covered on 6 and 10 February but no evidence of preparations for the 13 February underground test was observed.

FOOTNOTES: Cause of CORONA mission degradation, due to on-orbit malfunctions, were:

1. Mission 1027, launched 10 December, failed to change from high to low pressure gas system after injection and all control gas was expended by rev 9. Thus, photography was obtained only during these nine orbits -- and on only one capsule. Since the control gas supply was low, recovery required use of the back-up "Lifeboat" recovery system. Normally, this system can be used only once during a mission;

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however, in this instance, both capsules were returned (one with 9 revs of exposed film -- the other containing no usable film).

2. A camera malfunction occurred during the second phase of Mission 1031, launched 8 April, and only monoscopic (instead of stereo) photography was obtained for this portion of the mission.

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GAMBIT (Photographic Spotting): Five GAMBIT missions were flown during this reporting period. Four of these missions were complete successes and included the most successful, in terms of number of priority targets covered, of any GAMBIT mission to date.

GAMBIT Highlights

Mission 4023-G, flown on 9 November, covered parts of the Tyura Tam missile test center and the ICBM complex at Imeni Gastello. Due to on-orbit malfunction (see Footnote 3) only three photographic passes were accomplished over the USSR and European Satellites.

Mission 4024-G, flown 20 to 24 January, covered portions of 15 of 25 deployed ICBM complexes and revealed a new type of single silo under construction in complex M at Tyura Tam. In addition, six large single silos at Uzhur appeared to be complete, as were six small silos in group L of Tyura Tam.

Mission 4025-G, 16 to 20 February, covered 10 of 25 deployed ICBM complexes, Tyura Tam, Sary Shagan launch complex 1, and three major submarine bases. A new launch area was identified in the Dombarovskiy ICBM complex and the Ugoinyy missile facility was determined to be a possible dual MRBM/IRBM site.

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Mission 4026-G, 19 to 24 March, covered portions of eight of the 25 deployed ICBM complexes and Tyura Tam, nine Soviet submarine bases, five sensitive operations complexes, the Kapustin Yar and Emba missile test facilities, and the Volsk/Shikhany CW proving grounds. Highlights of the mission included discovery of a new group of single silo launch sites (small) at Tatishchevo and extensive new construction activity in the Volsk/Shikhany CW complex operations support area.

Mission 4027-G, in April 1966, was the most productive GAMBIT mission to date. Previously, the two most productive GAMBIT missions (4018 and 4026) covered, respectively, 585 and 491 targets. Mission 4027 covered 834 COMOR targets due to two factors: approximately 20 percent of the increase may be attributed to improved programming and the remainder to the high inclination angle ( $117^{\circ}$ ) used on this mission. Each pass of the  $117^{\circ}$  orbit goes across the long dimension of the Sino-Soviet Bloc, thus providing more time for photography per pass.





FOOTNOTE 3: 4023-G, launched on 9 November, lost control gas pressure and accomplished little productive photography.

NRP photographic satellite performance (CORONA and GAMBIT) and key areas of the globe which have been photographed by these systems are depicted on the charts which follow.







# NRP PHOTOGRAPHIC SATELLITE PERFORMANCE

NOV      DEC      JAN      FEB      MAR      APR

**CORONA**

**GAMBIT**



Successful CORONA mission (2 capsules)

Unsuccessful CORONA mission (0 capsules)

**LEGEND**



Successful GAMBIT mission

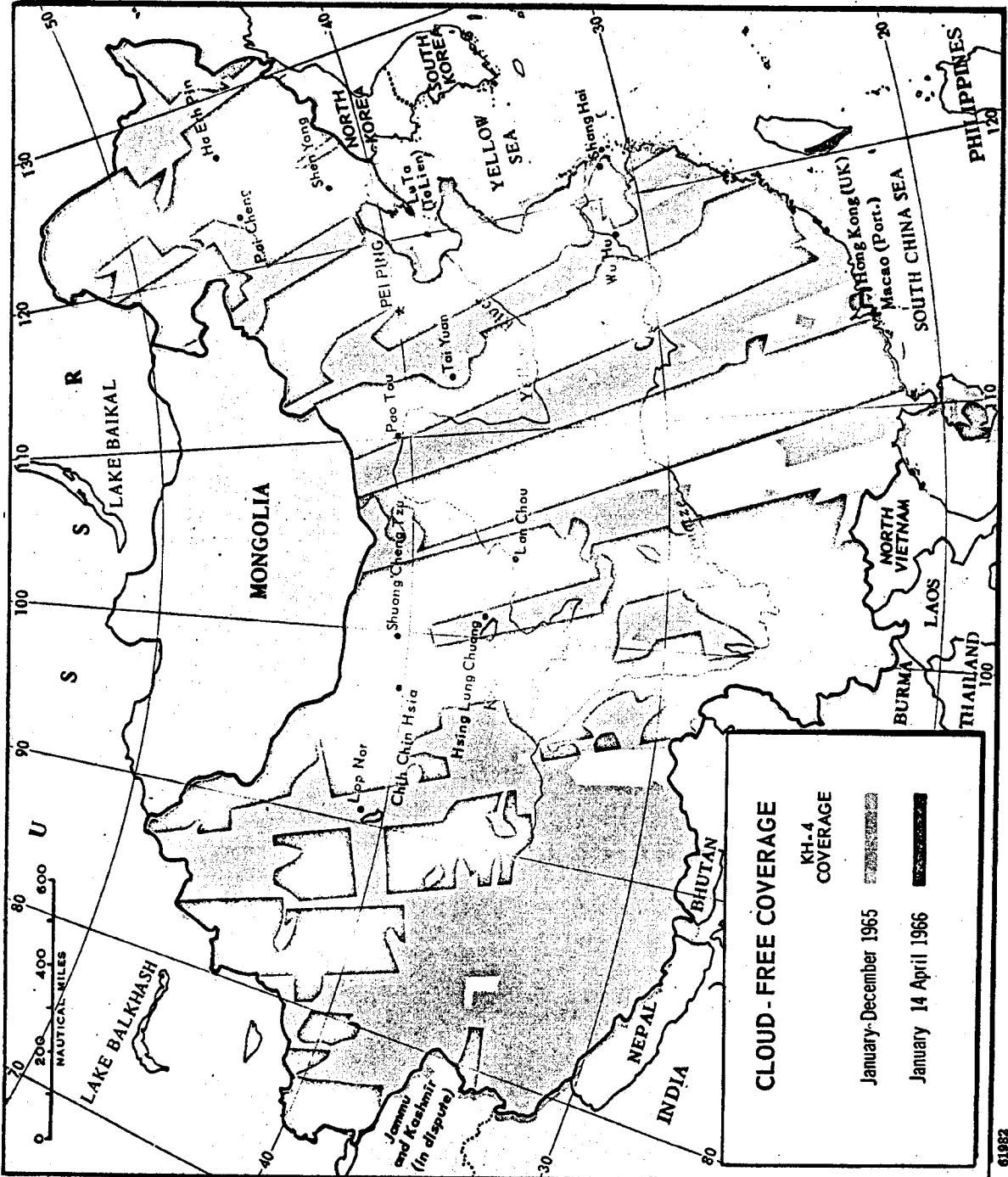
Unsuccessful GAMBIT mission

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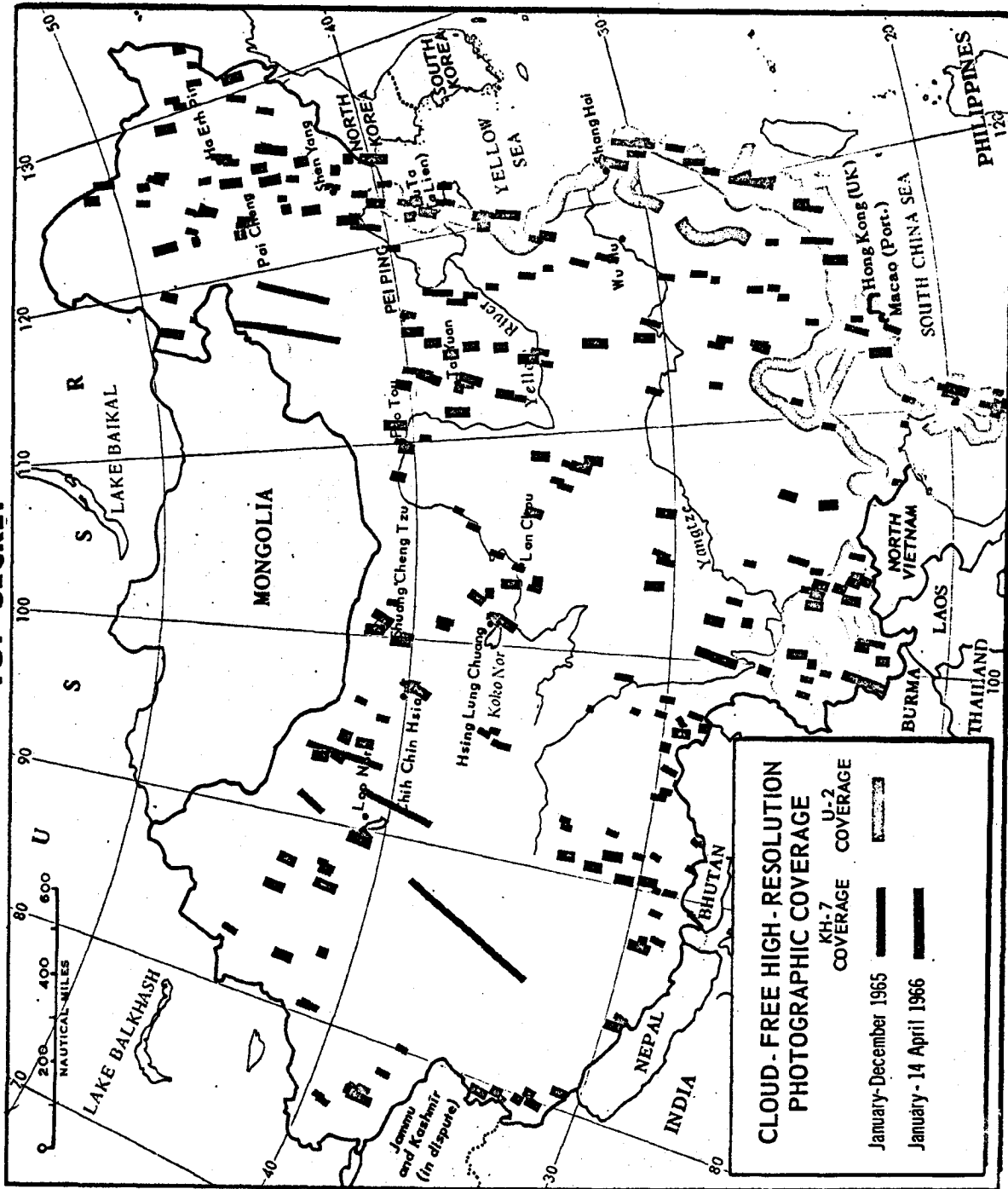
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22 APRIL 1966

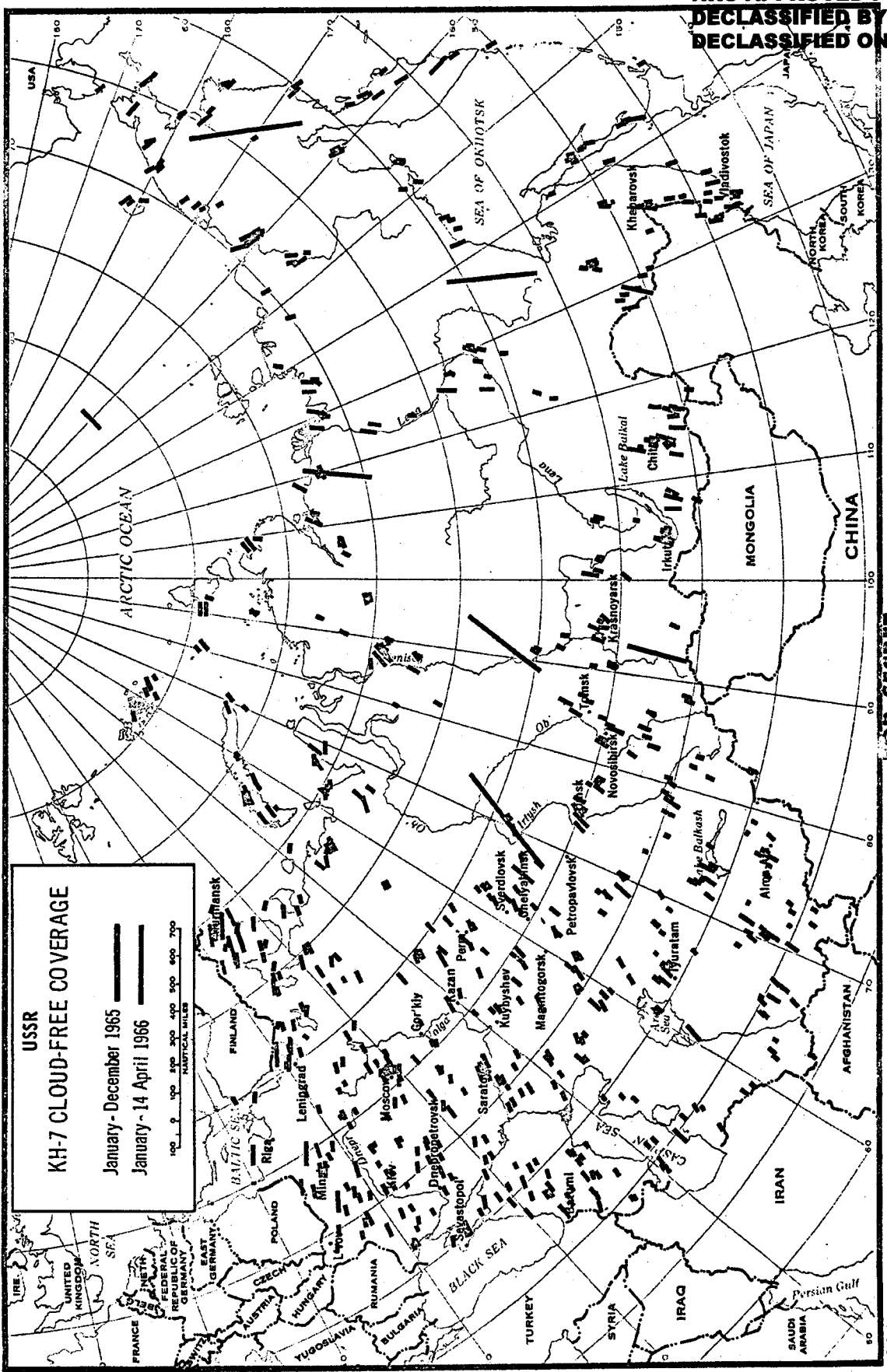
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22 APRIL 1966

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**USSR**

**KH-7 CLOUD-FREE COVERAGE**

January - December 1965

January - 14 April 1966

0 100 200 300 400 500 600 700  
NAUTICAL MILES

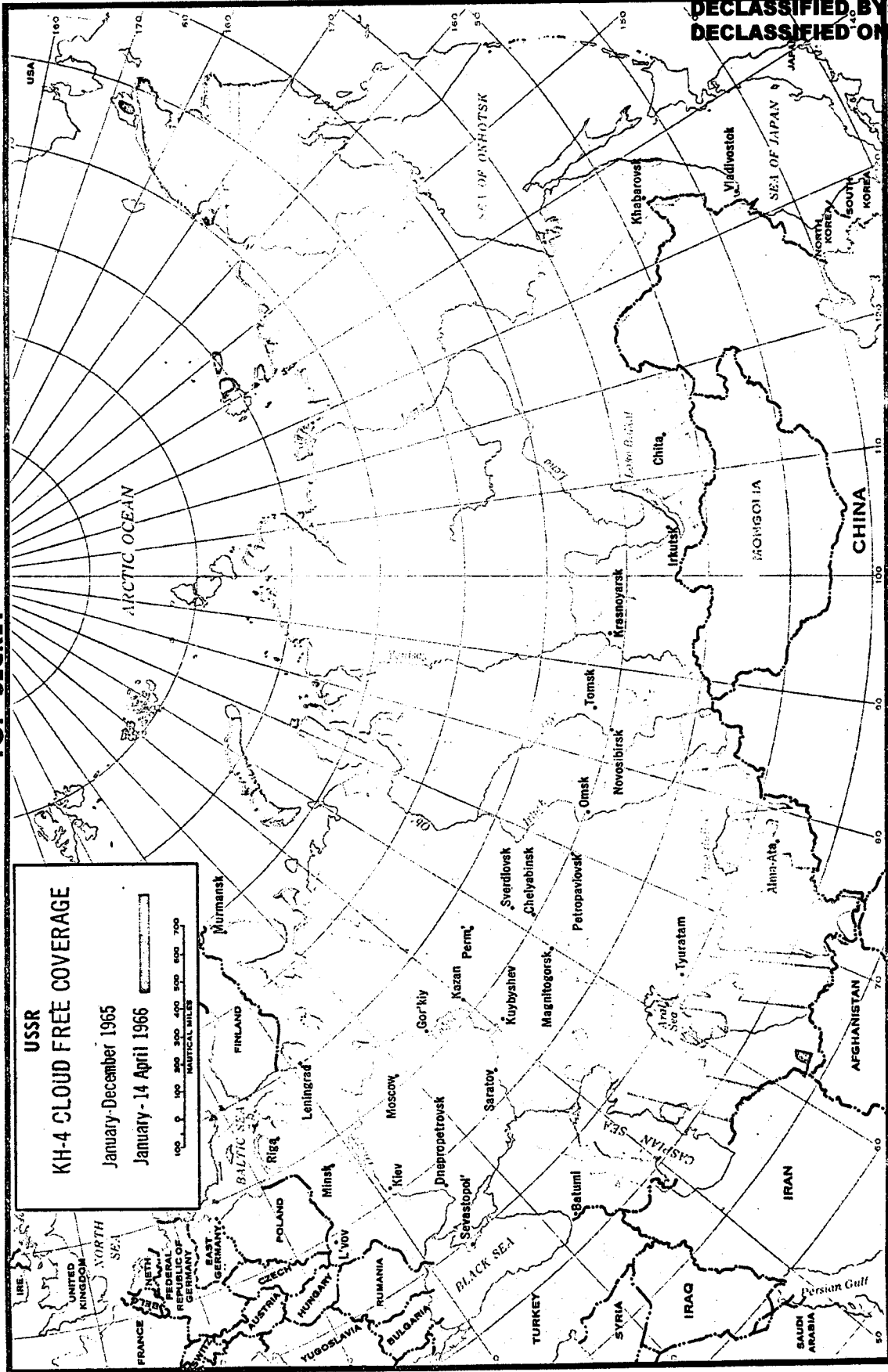
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NO FOREIGN DISSEM

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USSR  
 KH-4 CLOUD FREE COVERAGE  
 January - December 1965  
 January - 14 April 1966

0 100 200 300 400 500 600 700  
 NAUTICAL MILES

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B. Satellite SIGINT Reconnaissance

SIGINT payloads employed by the National Reconnaissance Program are designed primarily to satisfy general search, electronics order of battle (EOB), or directed coverage of specific areas. Following are brief program descriptions and summary highlight SIGINT achievements during this reporting period.

POPPY - Mission [REDACTED]:

The objective of this mission is to conduct General Search for new and unusual signals in the [REDACTED]. A secondary mission is to locate selected radars for updating the EOB. The [REDACTED] were placed into orbit by a THOR/AGENA booster combination on 9 March 1965, to an altitude of 500 n. m.

A POPPY payload consists of [REDACTED] simple fixed bandwidth crystal video receivers. A separate pulse is transmitted by the payload whenever a receiver intercepts a radar pulse. The payload transmitted pulses are received by strategically placed friendly ground stations around the periphery of the USSR.

Using a processing program devised by NSA, locations to less than [REDACTED] accuracy can be derived for some types of emitters. This EOB by-product of the POPPY General Search mission uses an [REDACTED]

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[REDACTED]

Current Status: [REDACTED] POPPY receivers [REDACTED] have failed to date. The other receivers are still operating normally. [REDACTED] one must now be tasked at a reduced level due to power supply degradation. The next POPPY launch is scheduled for the fall of this year.

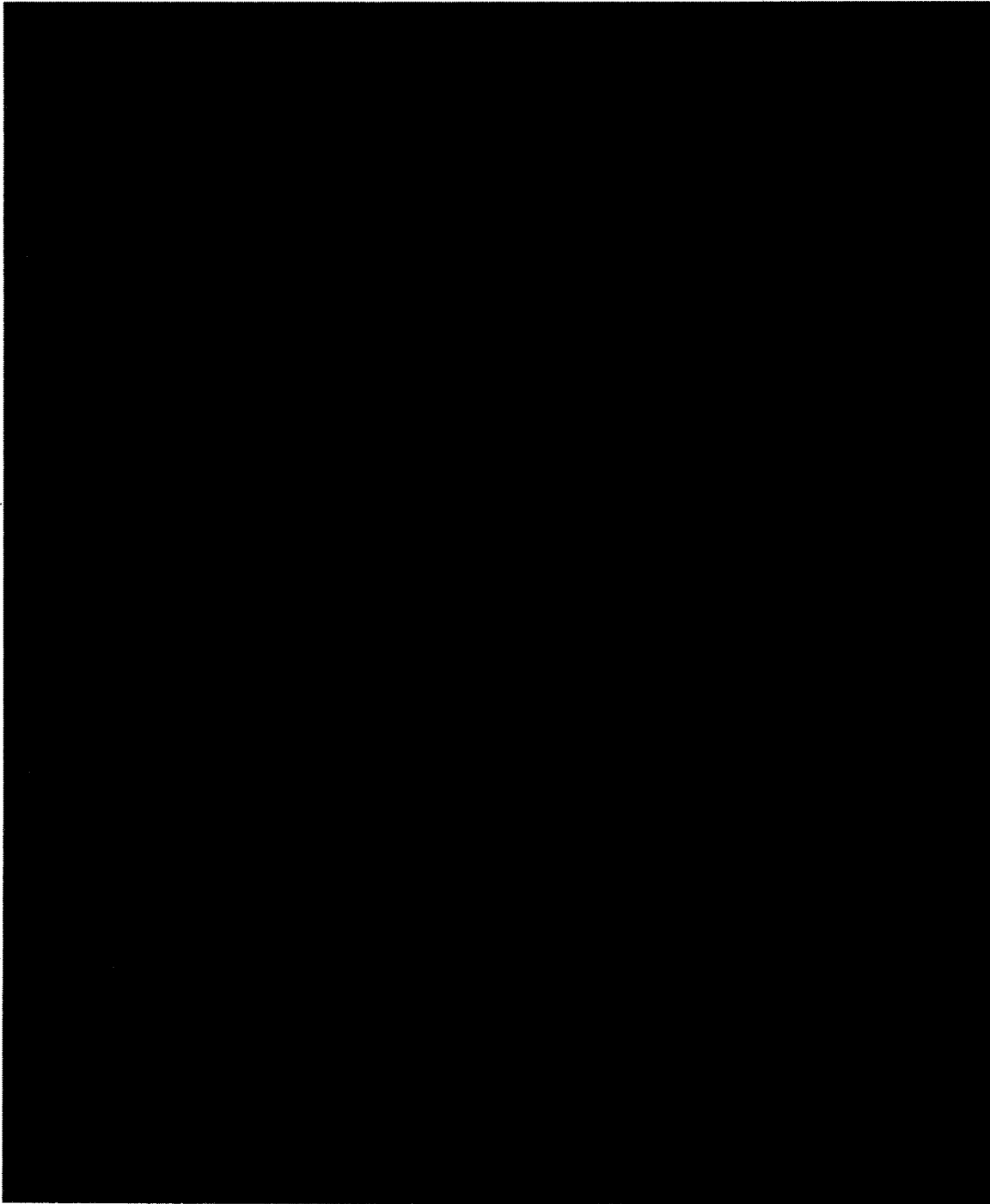
Intelligence Highlights: POPPY has intercepted [REDACTED] signals on numerous occasions. [REDACTED] has tracked the POPPY payloads. POPPY has [REDACTED] intercepts of these two signals. POPPY's unique contribution has been to define the [REDACTED]

[REDACTED]. Additional POPPY intercepts have detected several unknown signals, [REDACTED] and, as an EOB by-product, several [REDACTED] and [REDACTED]

[REDACTED]

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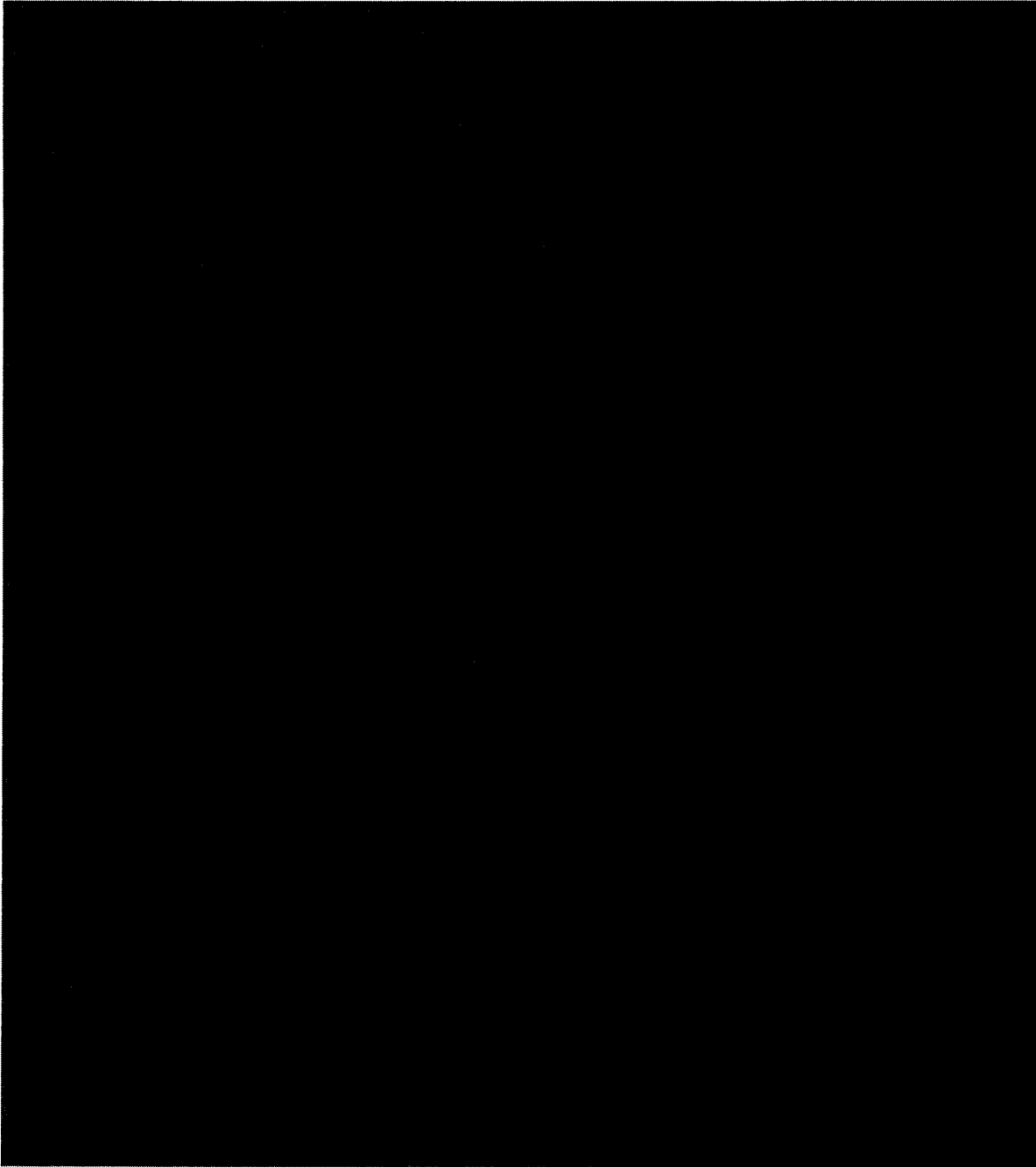


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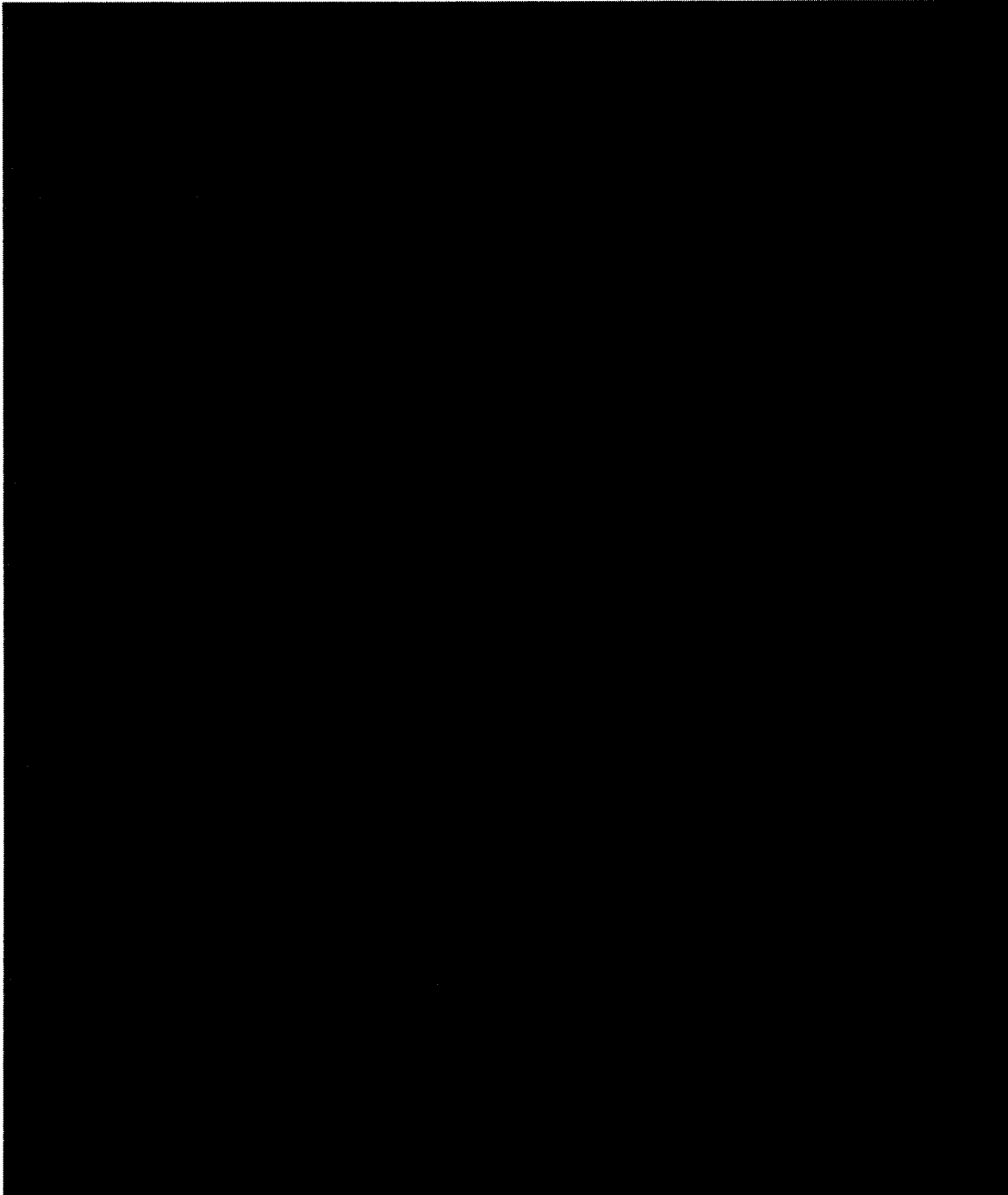
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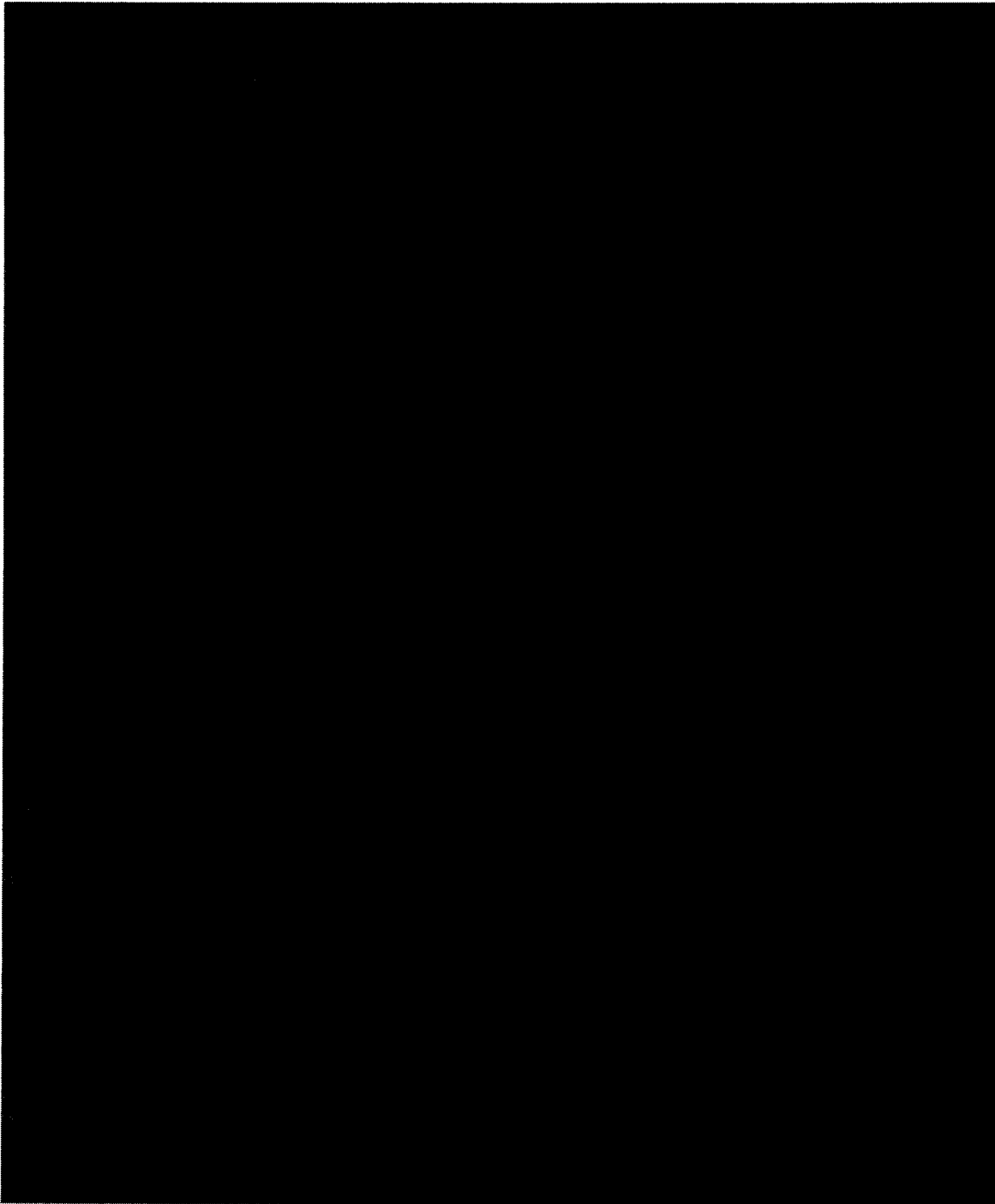
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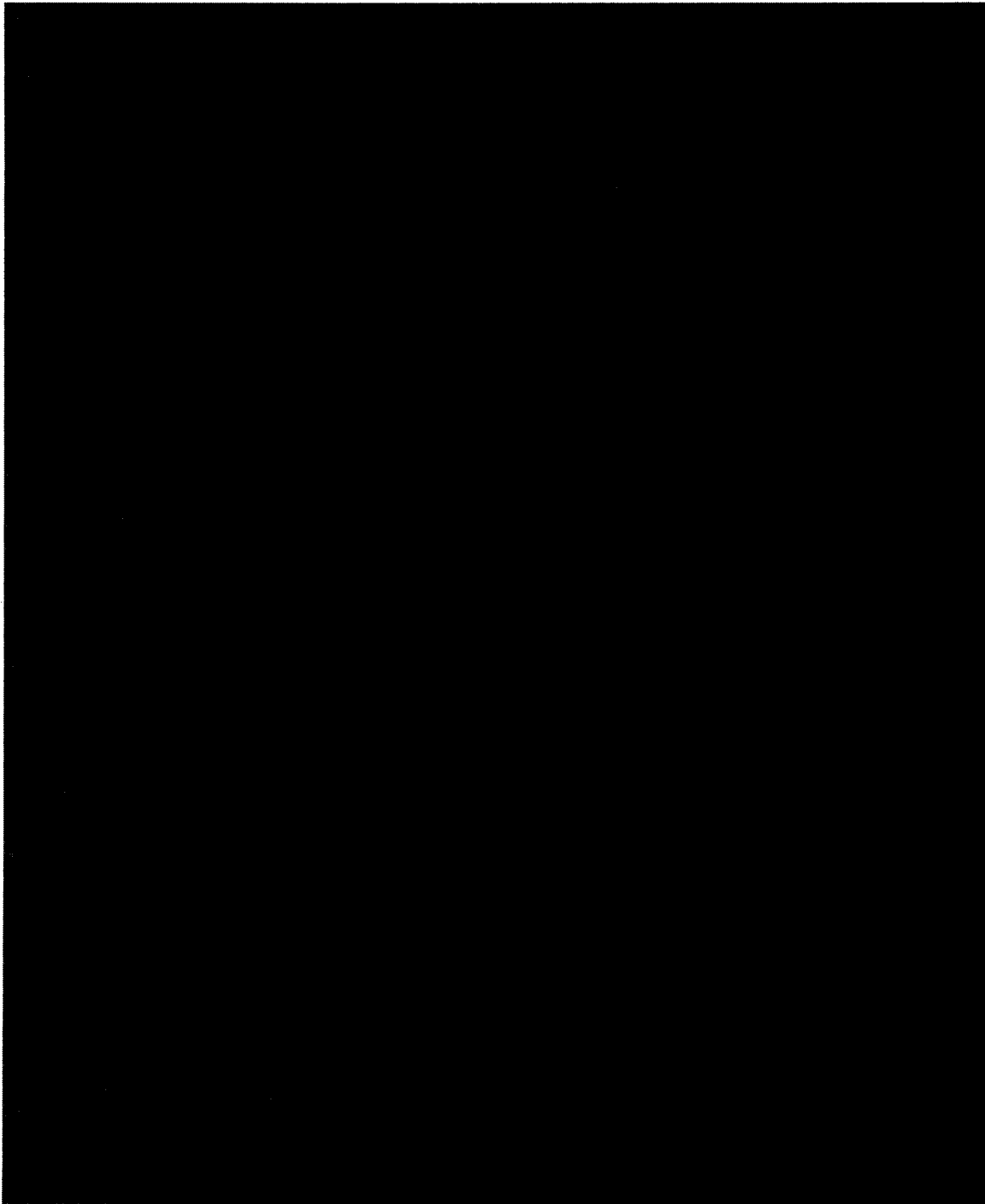
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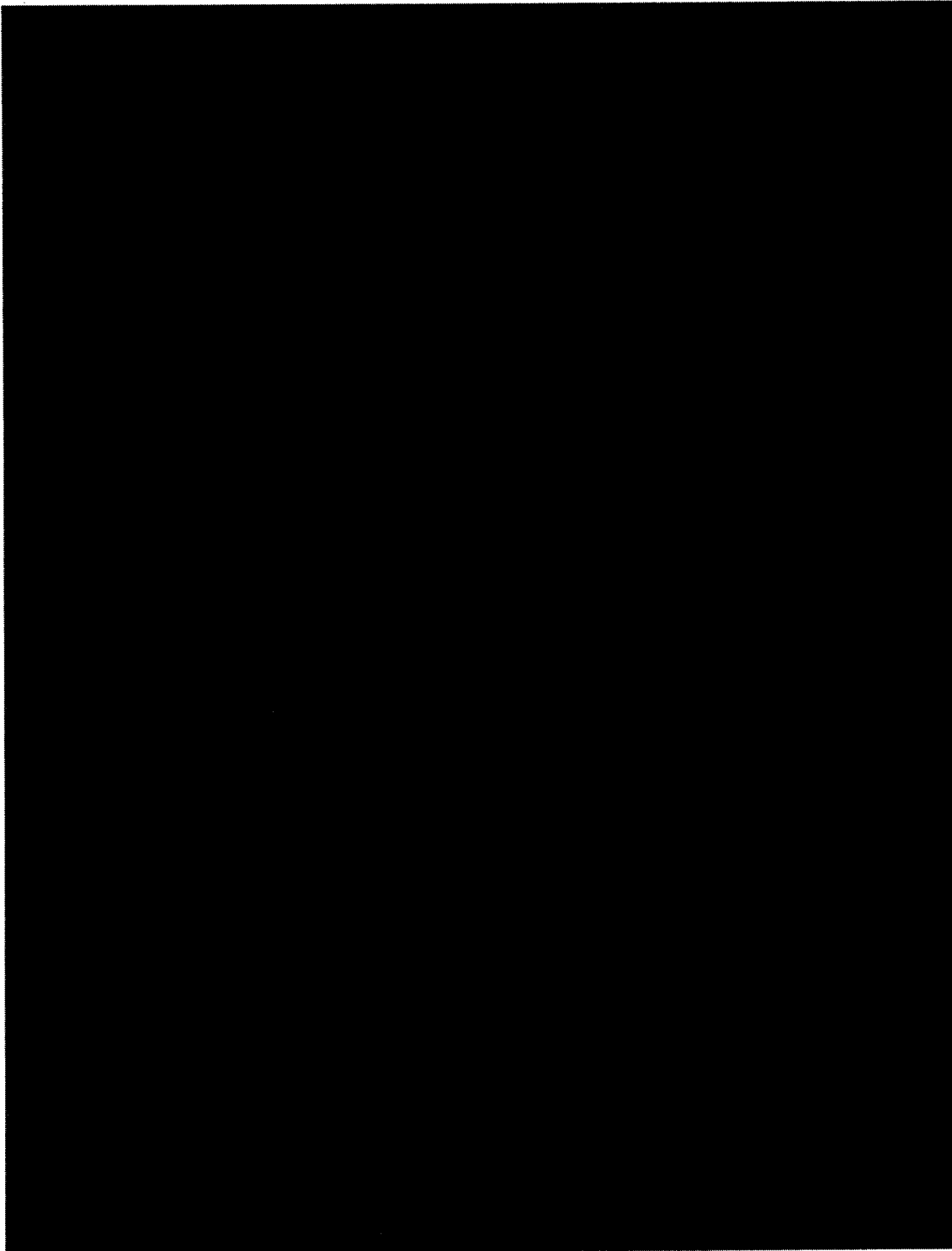


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