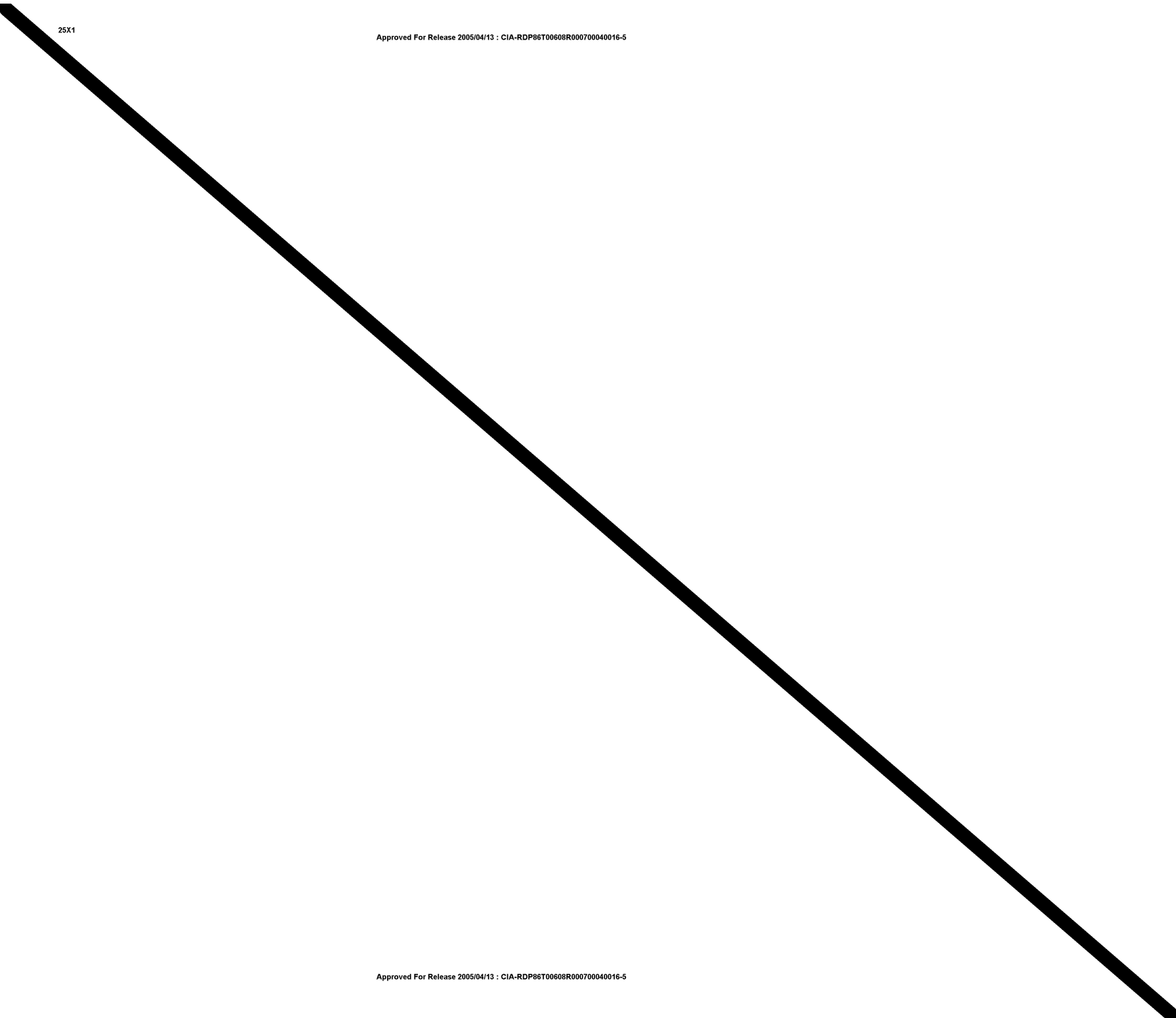


25X1

Top Secret

Weekly Surveyor

25X1

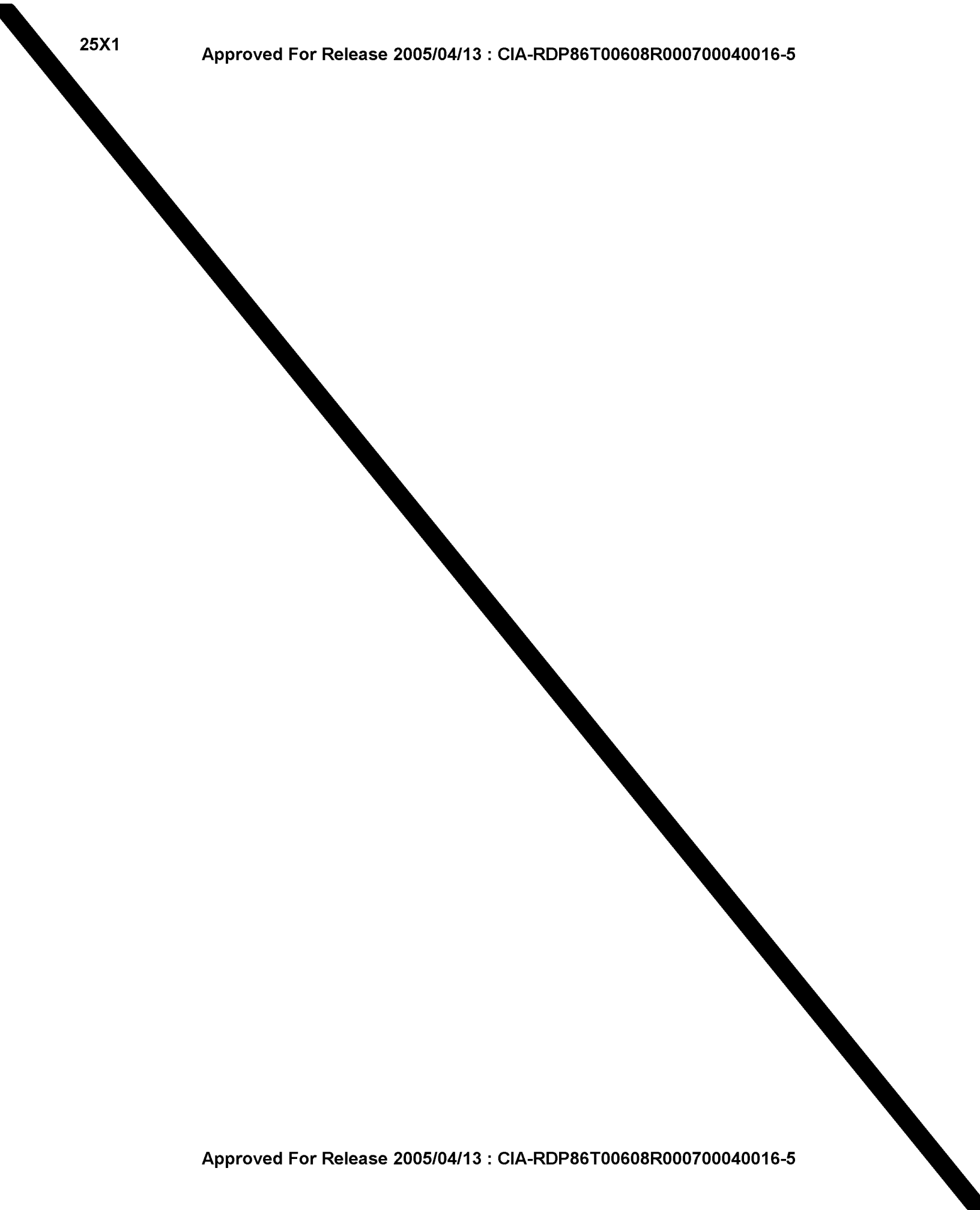
Top Secret

134

TSWS-16/75

21 April 1975

25X1



Approved For Release 2005/04/13 : CIA-RDP86T00608R000700040016-5

25X1

WEEKLY SURVEYOR

25X1

USSR AND EASTERN EUROPE

Relatively intensive Soviet training has been carried out for the Apollo-Soyuz mission. Nevertheless, this training still is not nearly as extensive as that given US astronauts. The sixth and last joint training session during 14-25 April will include inspection of the Soyuz spacecraft at the launch site.

25X1

25X1

A Soviet hydrometeorologist has proposed that a technical inspection service be established in the USSR Ministry of Agriculture. This program appears to be a rudimentary effort to initiate low-altitude sensing of local agricultural situations. The altitude specified would not be helpful in detecting unusual developments in the overall outlook for crop production.

25X1

25X1

25X1

Multipurpose agricultural machines for presowing soil cultivation are to be used in the RSFSR non-black soil zone for the first time. The Soviets are launching a large scale effort in the non-black soil zone to increase the arable land. This type of equipment have been available in the US for over 2 decades

25X1

A new scientific research center devoted to agriculture and forestry in Siberia and the Soviet Far East is being built near the West Siberian city of Novosibirsk. The work of the center in expanding the area of agriculture cultivation and in improving yields under adverse climatic conditions could lead to a significant increase in agricultural production in Siberia and the Far East by the end of the century.

The new Soviet 6-meter telescope mirror is optically imperfect and a blank for a third primary mirror now is being formed. This suggests that the optical quality of the existing mirror cannot be corrected by refiguring the mirror. In addition, temperature problems may be lowering the image quality significantly below that desired. Soviet astronomical studies requiring very high resolution observations will be handicapped until these problems are solved.

25X1

25X1

The Soviets have failed to put a second crew on board Salyut 4,

The cosmonauts were returned safely to earth aboard the descent module.

25X1

25X1

25X1

25X1

25X1

25X1

CHINA

25X1

It is believed that the Chinese are in the early stages of photorespiration research and the methods used are similar to those used in US work. The few countries in the world now engaged in photorespiration research have barely scratched the surface, but this research has potential for achieving a major advance in crop production efficiency.

25X1

MIDDLE EAST AND ISLAMIC WORLD

Numerous measures are being undertaken to improve agriculture in Iran. The Iranian government expressed interest in setting up a program for computer-controlled environmental farming by 1976.

25X1

The creation of several acupuncture centers in Algeria using Chinese-trained Algerians and under the direction of Chinese medical workers, can be expected ultimately to place most rural medical care in that country in Chinese hands. The rendering of such vital personal services on a sizable scale can be used effectively to advance and support Chinese political interests in Algeria.

25X1

MISCELLANEOUS

25X1

Parts of the South African uranium enrichment pilot plant are now in operation. The process used in the plant is believed to be based on aerodynamic principles like the Becker nozzle process, and it is likely that only certain parts of the process are being tested.

A typhoid fever outbreak has been reported in the Dominican Republic. An epidemic of this disease would present a high risk of

25X1

25X1

25X1

[redacted] 25X1

25X1

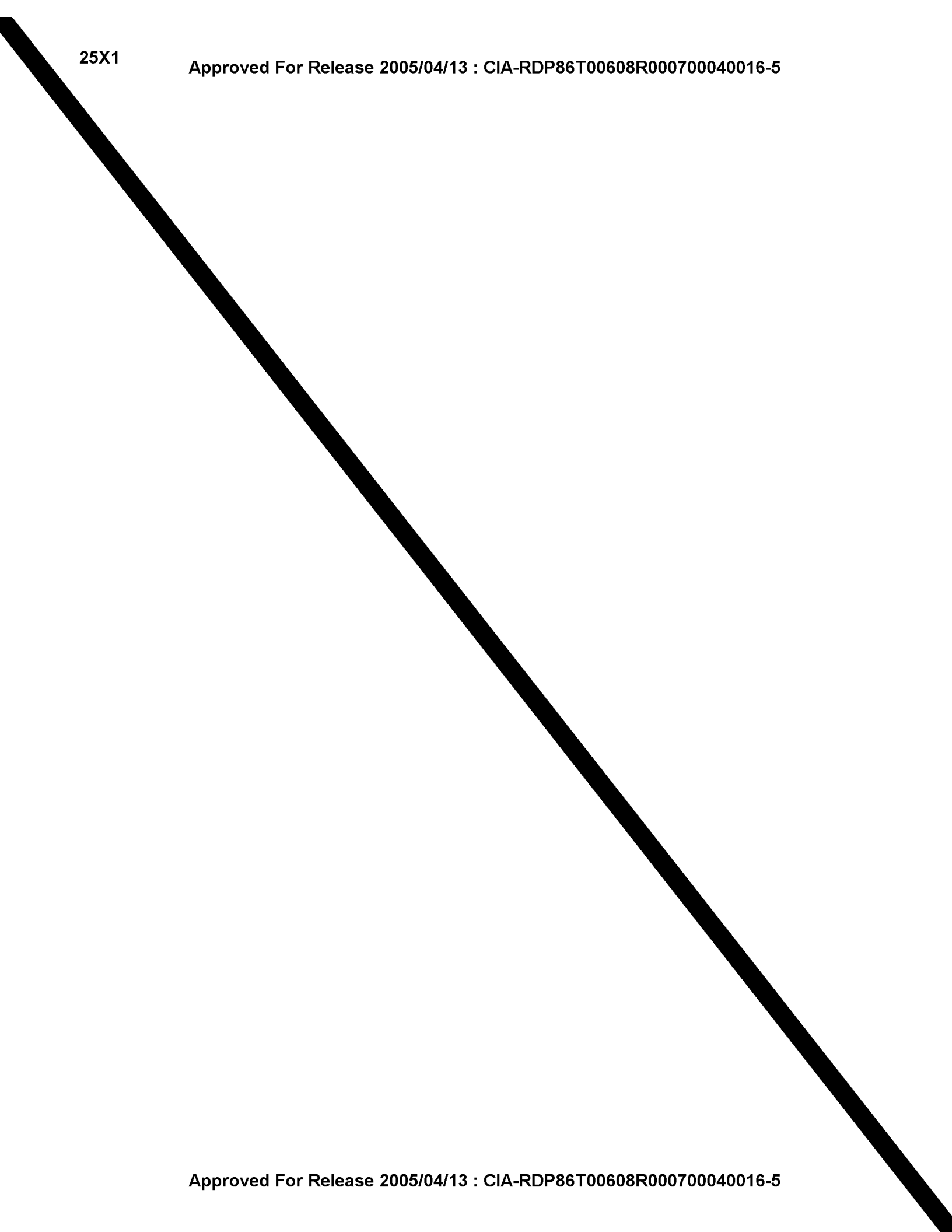
disease transmission to the US. [redacted]

[redacted]

25X1

25X1

[redacted]



Approved For Release 2005/04/13 : CIA-RDP86T00608R000700040016-5

[redacted]

25X1

South African Uranium Enrichment Pilot Plant in Operation: The Prime Minister of the Republic of South Africa has announced that the pilot plant at Valindaba went into

25X1 operation during the weekend of 5-6 April. [redacted] 25X1

[redacted]

Comment: Since 1971, the South Africans have been constructing a pilot plant for enrichment of uranium, which they claim uses a new domestically developed process. Various dates had been set for the plant to go into operation, the latest having been at the end of 1975. [redacted] 25X1 25X1

[redacted] it is likely that only certain parts of the process are being tested.

25X1 The process used in the plant is believed to be based on aerodynamic principles like the Becker nozzle process. The pilot plant is large enough to have a small economic production capability. The South Africans are planning to construct a full scale commercial plant to be built with South African funds or jointly with funds from a Western country. The South Africans will use the large domestic uranium ore reserves available to them. [redacted]

25X1 25X1

25X1

[redacted]

25X1

SPACE

[redacted]

25X1

Soviet Attempt to Put Second Crew on Board Salyut 4 Fails: On April 5 a manned Soyuz spacecraft was launched by the USSR for continuing experiments jointly with the Salyut 4 space-station. The crew on board the spacecraft consisted of Colonel Vasily Lazarev and Oleg Makarov. The third stage of the carrier rocket deviated from course; the spacecraft

25X1

25X1

was then detached for return to earth. The descent module soft-landed southwest of Gorno-Attaisk in Western Siberia. Both cosmonauts were picked up by the search and rescue service and are well. 25X1

Relatively Intensive Cosmonaut Training Carried Out for Apollo-Soyuz Mission: Tass announced that a full simulation of the joint US-USSR mission (ASTP) had been carried out for the past 9 days by the US and USSR space crews and flight controllers at their respective mission control centers. These training sessions included extensive practice of rendezvous and docking operations, communication check-out with the flight control centers, and procedures for handling flight emergencies. 25X1

25X1

25X1

Comment: Training for the upcoming ASTP in July has been the most intensive by far ever carried out by Soviet cosmonauts. Nevertheless, this training still is not nearly as extensive as that given US astronauts. The Soviet training has included simulation training, briefings on spacecraft systems, and lengthy review of the joint crew flight plan. Previously, the Soviet cosmonauts had very limited knowledge of their spacecraft systems and appeared to have little input or extensive familiarity with the flight plan. 25X1

25X1

25X1

25X1

25X1

The sixth and last joint training session, which has just begun in the USSR (14-25 April), will include inspection of the Soyuz spacecraft at the launch site. Two test and simulation sessions involving the control centers and crews in their own country will be held in May and June 1975.

25X1

25X1

[redacted] 25X1

LIFE SCIENCES

Typhoid Fever Outbreak Reported in the Dominican Republic: According to the Dominican Republic Public Health Secretariat, a medical shipment was sent to Cotui, Sanchez Ramiriz Province, for the treatment of several cases of water-borne "typhus." The Secretariat downplayed earlier reports of an epidemic and claimed that the outbreak was not serious and that measures were being taken to eradicate the disease. While health officials blamed unsanitary conditions as contributing to the outbreak, they denied that the drinking water was contaminated. [redacted] 25X1

Comment: This outbreak undoubtedly is typhoid fever. A typhoid fever epidemic in the Dominican Republic would present a high risk of disease transmission to the US. The generally low standards of hygiene and sanitation practiced in the Dominican Republic provide an environment highly receptive to epidemics of enteric diseases such as typhoid. Efforts of local health officials to downplay the reported outbreak may reflect concern over the potential loss of much needed foreign exchange from tourists, particularly those from the US.

Typhoid fever, a systemic bacterial disease, is spread primarily through contaminated food and water, but human carriers often transmit it to previously uninfected areas. In 1973, a typhoid fever epidemic in Florida resulting in more than 100 cases among migrant workers was traced to an American tourist who had acquired the infection while in Mexico. [redacted] 25X1

Chinese Train Algerians in Acupuncture: On 10 March, the Algerian Minister of Health dedicated an acupuncture training center in Medea. The center will be staffed with Chinese specialists. Following the course of instruction, Algerian students will be sent to Peking for supplementary training and practical work. Upon their return from China, the students are to train others in the art. The Minister of Health indicated that the facility at Medea is the first of several such centers to be built across the country. The Chinese now staff at least five Western style hospitals and clinics in Algeria and have a medical aid force there of nearly 100. Acupuncture is said to have become quite fashionable in Algeria, even in the diplomatic community. It fits

25X1

[redacted]

25X1

well with local predilections, and a number of "cures" have been attributed to it.

25X1

Comment: The Chinese have introduced acupuncture successfully into several African countries since about 1969. Natives of Tanzania, Zambia, the Congo, and Nigeria tend to regard it highly. In Zambia, acupuncture by Chinese traveling medical teams has begun to replace the traditional African witch doctors. In 1972, Nigeria expressed an interest in the use of acupuncture anesthesia and sent several students to China to learn the technique.

The creation of several acupuncture centers in Algeria using Chinese trained Algerians and under the direction of Chinese medical workers, can be expected ultimately to place most rural medical care in that country in Chinese hands. If acupuncture remains fashionable among the officials and diplomatic community, the Chinese may well furnish most of the medical care in that quarter as well. The rendering of vital personal services on a sizable scale can be used effectively to advance and support Chinese political interests in Algeria.

25X1

25X1

25X1

25X1

AGROTECHNOLOGY AND FOOD RESOURCES

PRC Initiates Photorespiration Research--A Potential Breakthrough Frontier Area for Crop Productivity: A member of the PRC photosynthesis delegation which toured the US in 1974 indicated that photorespiration research is being conducted in the PRC. Great interest was shown in a US program to develop soybean mutants which do not photorespire (and therefore would have greater net photosynthetic productivity). It was implied that PRC research methods are similar to those in US soybean work but are directed toward rice mutants that do not photorespire. Vast numbers of plants must be screened and, to date, no mutant capable of modifying an enzyme chemically to eliminate photorespiration has been discovered anywhere in the world. The economic potential is great because an increase of up to 50 percent in productivity possibly could be achieved by modifying food crops which naturally photorespire. 25X1

Comment: The few countries in the world now engaged in experimentation in photorespiration have barely scratched the surface, but this research has potential for achieving a major advance in crop production efficiency. At this early research stage, the Chinese do not need sophisticated instrumentation. But should their search for mutants succeed, the PRC could be handicapped by lack of the very advanced instrumentation and techniques which will be required to understand and exploit the complicated biochemical processes involved. This initial research demonstrates that the PRC recognizes the high agricultural potential of photorespiration studies and is willing to commit resources to limited domestic research of this kind.

The major emphasis in world-wide experimentation has been an attempt to examine the biochemistry, genetics, and breeding characteristics of low photorespiration plants. Lowering or eliminating photorespiration could greatly increase net photosynthesis in many species and increase plant productivity (up to 50 percent), provided no adverse effects were introduced by breeding or by use of biochemical inhibitors. The highly productive tropical grasses, crabgrass, corn, sorghum and sugarcane plants do not photorespire. Species that do photorespire and therefore are limited in net photosynthetic productivity include, among others, soybeans (legumes) and most cereal grains. 25X1

25X1

25X1

25X1

Soviets Initiate New Cultivation Program for Marginal Lands: Thousands of new multipurpose agricultural machines for presowing soil cultivation are to be used for the first time in Moscow, Kalinin, Ivanovo and other oblasts in the RSFSR non-black soil zone. In one sweep of the field, the machine loosens the soil, levels the surface, and rolls it. The improved soil cultivation achieved will increase cereal yields by 2 quintals per hectare. The machine is intended especially for the country's non-black soil zone.

25X1

25X1

Comment: This type of equipment, still being introduced in the USSR, has been used in the US for over 2 decades to reduce the number of separate tillage operations required to grow a crop. The Soviets probably will succeed in this practice and thus will reduce the cost of growing crops. The Soviet model of this machine probably is designed for stubble mulch tillage, i.e., much of the residue from preceding crop growth is left on the surface to protect the loosened soil by conserving soil moisture and preventing soil erosion.

The Soviets are launching this large scale effort in the non-black soil zone to increase the arable land. This area is characterized by sandy, erosive and leached soils and by large areas with poor drainage. Expensive drainage systems and careful management of the relatively infertile soils will be required to intensify and expand crop production in this area. In this area of short growing seasons, reducing the time required to prepare seedbeds for spring sowing of crops would be a decided benefit.

25X1

25X1

Aerial Monitoring of USSR Crop Conditions Proposed: A Ukrainian hydrometeorologist has proposed that a "technical inspection service" be established in the USSR Ministry of Agriculture. This service would monitor crop conditions using special techniques developed by Soviet research for gathering radiometry and photography data by aerial survey. Radiometry uses long-range radiation thermoelements to distinguish contrasts in temperature between the plants and the exposed soil. The more useful photo-optic method notes the contrasts of optical density on aerial film to measure the ratio of the areas occupied by and devoid of plants. Data would be gathered by helicopter, flying at

25X1

25X1

100 to 150 meters altitude, and ground observations would be used to complement the aerial data.

25X1 25X1 25X1

25X1

Siberian Agricultural Science City Under Construction at Novosibirsk: A new scientific research center devoted to agriculture and forestry in Siberia and the Soviet Far East is being built near the West Siberian city of Novosibirsk.

25X1

Plans for the center were announced in 1969; its construction at this time is a strong indicator of official concern about future food production capabilities. The new center will provide a focus for agricultural research in the remote eastern regions, which comprise 57 percent of the Soviet land area but contribute only about 9 percent of the total value of Soviet farm products. Much of the area is useless for crop cultivation because of its harsh climate and poor soils. Sparse population, inadequate transportation, and slow diffusion of technology further constrain the agricultural development of the region.

25X1

The work of the center in expanding the area of agricultural cultivation and in improving yields under adverse climatic

25X1

25X1

conditions could lead to a significant increase in agricultural production in Siberia and the Far East by the end of the century. Even if climatic conditions worsen, the research center will provide useful studies of production limitations in a severe climate.

The Siberian Department of the All-Union Academy of Agricultural Sciences imeni V. I. Lenin (VASKHNIL) will be housed at the center. Several of its research institutes will share common laboratories and conference rooms in a single multisection building. Experimental fields will occupy 800 hectares (nearly 2,000 acres) of the 6,000 hectares of land alloted to the center.

The research center is being developed as a science city similar in concept to Akademgorodok, the science city of the Siberian Academy of Sciences, also located near Novosibirsk. 25X1

The location of the agricultural center adds significantly to the preeminence of Novosibirsk as the major scientific center east of the Urals and will facilitate cooperation between the two science centers.

25X1

Iran Considers US Agrotechnology to Help Increase Farm Productivity and Efficiency: the Iranian government expressed interest in setting up a program for computer-controlled environmental farming by 1976. The program would include a weather modification project aimed at a 25 percent seasonal increase in the water content of the Carag reservoir northwest of Tehran. The thrust of the program will be to increase the farm productivity of the arid areas in north central Iran. The program is designed specifically to use irrigation water efficiently, to predict maturity dates and yields, to estimate the salvage potential of damaged crops, and to facilitate disease and insect control.

25X1

25X1

25X1

Comment: This is another example of the measures underway in Iran to improve agriculture, the bane of the

25X1

25X1

Iranian economy. Agricultural production in Iran has not met domestic demands in recent years, and the population is growing at an annual rate of about 3 percent. Meat is chronically in short supply, and most of the wheat which provides about one-half of the caloric intake for the average Iranian is grown on non-irrigated land, making it highly susceptible to drought.

Agricultural mechanization in Iran has increased considerably in the past few years, but farm practices generally remain primitive. Iran's Fifth Development Plan calls for the production of sufficient food to meet expanding domestic needs through improved agrotechnology. The principal goal is to raise farm production by an average of at least 7 percent annually--an unlikely achievement in this time frame even with foreign assistance. Moreover, domestic food requirements during this period will rise by an estimated 11.5 percent per year.

25X1

25X1

25X1

25X1

25X1

PHYSICAL SCIENCES AND TECHNOLOGIES

[redacted]

New Soviet Six-Meter Telescope Mirror Is Unsatisfactory: According to E. R. Mustel, Chairman of the Soviet Astronomical Council, the second 6-meter diameter mirror for the world's largest telescope is optically imperfect and a blank for a third primary mirror now is being formed. The first mirror broke during the final stages of completion in 1970. The existing mirror's quality is inferior to the 150-inch mirror at Kitt Peak and the 200-inch mirror at Mt. Palomar. [redacted]

25X1

Comment: The preparation of a blank for a third primary mirror strongly suggests that the optical quality of the existing mirror cannot be corrected by refiguring the mirror.

25X1

[redacted]

preparation of a new blank requires about 1 to 2 years and

25X1

25X1

the grinding, polishing, and correcting probably another 2 years.

The chief designer of the 6-meter telescope, B. K. Ioanissianni, was also in charge of development of what is now the second largest Soviet telescope (2.6-meter diameter). This telescope also had not achieved the desired image quality even after corrective figuring measures were attempted. If the problem for the 6-meter mirror is one of figuring, there is some doubt that the Soviets will be able to produce a mirror of this size of high optical quality.

25X1

In spite of the problems, the existing mirror probably will be used until it is replaced. In the meantime planned 25X6 astronomical studies requiring very high resolution observations will be handicapped.

[redacted]

25X1

Next 29 Page(s) In Document Exempt

Approved For Release 2005/04/13 : CIA-RDP86T00608R000700040016-5