



☉ \* ○ • SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS

CELESTIAL TIME TABLE

November, 1943			
Nov.	EWT	PHENOMENON	
3	7:44 p. m.	Algol (variable star in Perseus) at minimum.	19 6:00 a. m. Moon farthest; distance 251,200 miles.
4	11:22 p. m.	Moon at first quarter.	21 5:03 p. m. Moon passes Jupiter.
6	6:00 a. m.	Moon nearest; distance 229,800 miles.	23 6:43 p. m. Moon in last quarter.
11	9:26 p. m.	Full moon.	27 12:38 a. m. Algol at minimum.
14	5:50 a. m.	Moon passes Mars.	28 2:18 p. m. Moon passes Venus.
	4:36 p. m.	Moon passes Saturn.	29 9:27 p. m. Algol at minimum.
16	early a. m.	Leonid meteors visible.	27 11:23 p. m. New moon.
18	12:00 a. m.	Venus farthest west of sun.	28 9:00 a. m. Mars nearest; distance 50,120,000 miles.
	3:49 a. m.	Algol at minimum.	29 6:00 p. m. Uranus nearest; distance 1,707,000,000 miles.

Subtract one hour for CWT, two hours for MWT, and three for PWT.  
 Science News Letter, October 30, 1943

ORDNANCE

# Nazi Rocket Weapon

German use of these time-fused explosives against American heavy bombers is admission of inadequacy of their fighter planes and their armament.

► GERMAN USE of high-explosive rockets launched from fighters at a respectful distance from the deadly defensive gun armament of American heavy bombers is in itself a confession of the inadequacy of their own fighter planes and their machine guns and cannon. To this extent, Gen. H. H. Arnold's newest gibe about the tactic's birth from the brains of "long-haired scientists" is justified.

General Arnold, however, may have been giving long-haired German theorists credit for more originality than they exercised. The business of launching rockets from tubes under the wings of fighter planes seems rather to have been an invention of short-haired Soviet soldiers; though in their case the attack was against targets on the ground rather than in the air, when they fired rockets from specially equipped Stormovik low-altitude strafing planes against Nazi tanks. The main difference is that the anti-tank rockets were fired by contact fuses, like ordinary naval shells, whereas the anti-bomber rockets of the Luftwaffe

are of necessity fired by time fuses like the projectiles sent up by ack-ack guns on the ground. The burst of such a shell within 20 or 30 yards of a plane will damage it, and may destroy it, depending where the flying fragments strike.

Neither German, Italian nor Japanese fighters have been able to solve the problem of Fortresses or Liberators flying in close formation, and able to bring overwhelming numbers of .50-caliber machine guns to bear against any oncoming attacker. Although enemy fighters usually include light cannon of materially greater than half-inch caliber in their armaments, most of these bigger weapons have shorter effective ranges than that of the heavy American machine guns. Hence the attempts to find a longer-range weapon that will not expose the fighters of the defense forces to such great risks. First, time bombs were tried, intended to burst in the midst of the compact American bomber formations; they were not particularly successful. So now the rockets are having their day.

This is not the first time that German planes are reported to have used rockets as a means of attack. During the period of Axis ascendancy in the Mediterranean, Nazi bombers were said to be dropping heavy, armor-piercing bombs with rocket charges in their tails, in attacks on British battleships.

The theory of this was that no dropped bomb ever gets up enough velocity from the force of gravity alone to pierce thick deck armor, but that the rocket charge might give the bombs a sufficient added downward push to make them the equivalent, in penetration, of shells hurled from big-caliber guns. This kind of rocket attack, if it actually took place, seems not to have had much success, for little has been heard of it for well over a year.

The Germans, like the Russians, have paid a good deal of attention to the possibilities of rockets during the present war. Both Russians and Germans have used multiple rocket launchers on the ground, the Russians in straight rows, the Germans in their now well-known six-barreled "Nebelwerfer," or fog thrower. The latter, a weapon that looks like an exaggerated version of the old-fashioned "pepperbox" revolver, launches projectiles of ordinary field-gun caliber. Its name indicates that it is intended primarily for the laying of concealing smoke screens, though the Russians state that it sometimes throws high-explosive shell as well.

Two other rocket weapons which the Germans darkly hint about in their propaganda broadcasts, a super-long-range, super-big-caliber rocket for cross-channel bombardments, and a radio-directed robot plane claimed to have been responsible for the destruction of the escaping Italian battleship Roma, are both still so thoroughly veiled in the "Nebel" of rumor that any discussion of them would of necessity be more speculative than factual.

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